

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 Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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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) (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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**CEMENT TREATMENT REPORT**

Customer:	Petroleum Development Co	Well:	Cross Bell Farms #1-21	Ticket:	ICT2157
City, State:	Tulsa, OK	County:	Kearny, KS	Date:	7/18/2019
Field Rep:	Juan / Harvey	S-T-R:	Sec21-T22S-R35W	Service:	Cement

Downhole Information	
Hole Size:	12.25 in
Hole Depth:	1665 ft
Casing Size:	8.625 in
Casing Depth:	1665 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	103.2 bbls

Slurry	
Weight:	12.0 / 14.8 # / sx
Water / Sx:	15.47/6.88 gal / sx
Yield:	2.56 / 1.41 ft <sup>3</sup> / sx
Bbls / Ft.:	0.0735
Depth:	1665 ft
Volume:	122.4 bbls
Excess:	100% %
Total Slurry:	244.8 bbls
Total Sacks:	485 / 150 sx

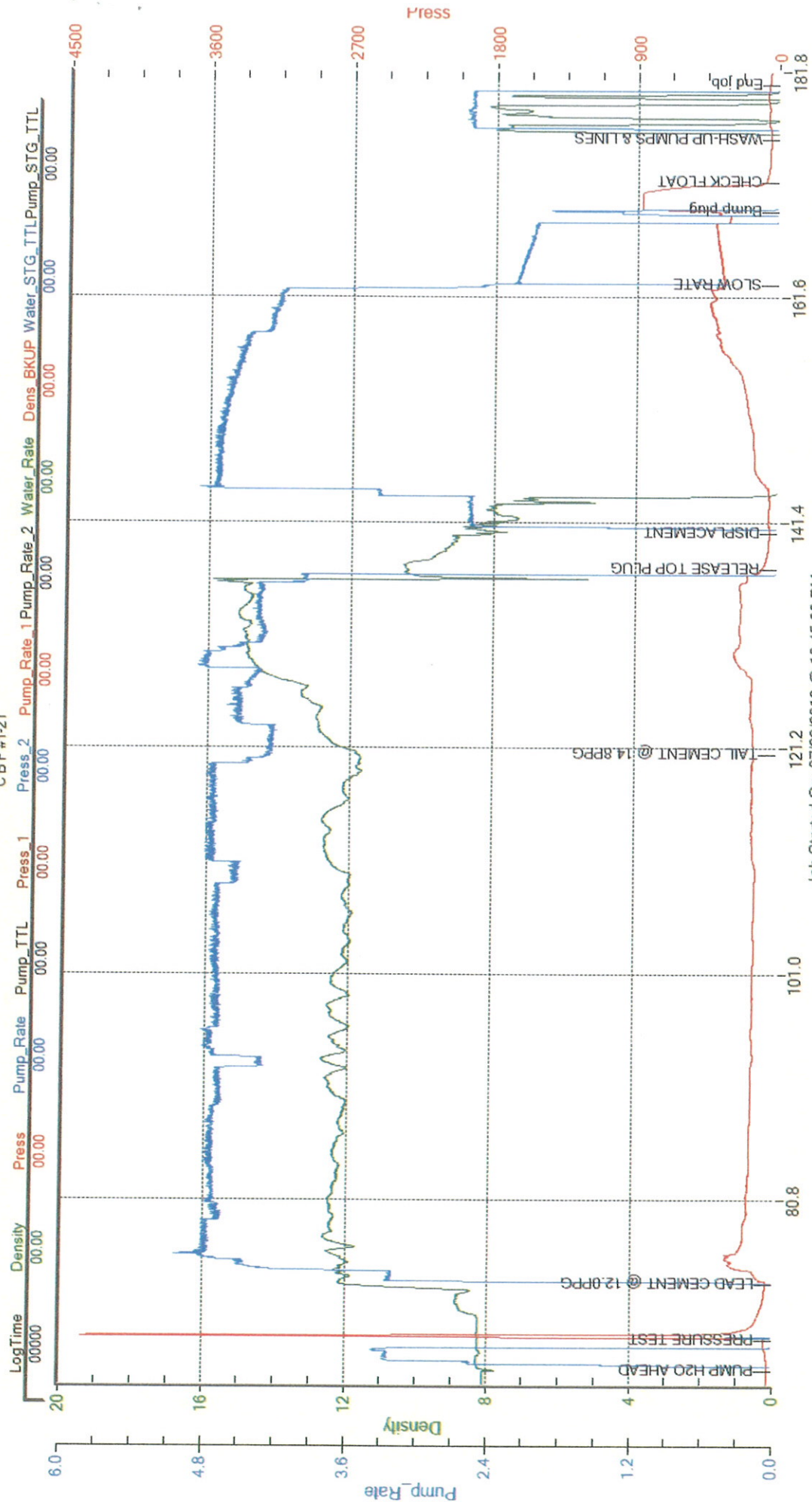
Cement Blend		
Product	%	#
Class A	100.0	45590
Gel	2.0	912
CaCl	3.0	1368
Metso	2.0	912
Class A	100.0	14100
Gel	2.0	282
CaCl	3.0	423
<b>Total</b>		<b>63,587</b>

TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS
2:30 PM				Called for job					
3:00 PM				Depart Oakley yard					
4:30 PM				Arrive on locn. Rig on btm circulating					
4:35 PM				JSA, discuss moving, spotting & rig-up					
4:40 PM				Move on, spot & rig-up					
5:00 PM				Rig-up complete					
5:05 PM				Rig perform wiper trip					
7:45 PM				Rig back on btm circ & condition hole					
8:30 PM				Rig TOH w/ DP					
10:30 PM				RIH w/ 8 5/8" casing					
12:10 AM				Casing @ setting depth					
12:20 AM				Circulate & condition hole					
12:50 AM	3.3	50.0	5.0	Pump H2O ahead					Note: Circulated approx 103bbl good
12:54 AM		1,000.0		Pressure test					cement to surface (225sx)
12:56 AM	4.8	200.0	221.0	Mix & pump 485sx cement @ 12.0#					Thanks for calling Hurricane Svcs Inc
				Y - 2.56cuft/sk, MW - 15.47g/sk					
1:51 AM	4.8	220.0	38.0	Mix & pump 150sx cement @ 14.8#					
				Y - 1.41cuft/sk, MW - 6.88g/sk					
				Started to get cmt to surface at shutdc					
2:00 AM				Shutdown. Release plug					
2:04 AM	4.7	480.0		Displace w/ H2O					
2:26 AM	2.0	340.0	90.0	Slow rate					
2:33 AM		870.0	103.2	Bump plug. Final circ - 380psi					
2:35 AM				Bleed off, float good. 0.3bbl back					
2:40 AM				End Job					
2:45 AM				JSA, discuss rigging down of equipme					
3:15 AM				Rig down complete					
3:30 AM				Depart locn					

CREW		UNIT	SUMMARY		
Cementer:	Scott Green	74	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Michael Rebarchek	231	3.92 bpm	451.43 psi	457.20 bbls
Bulk #1:	Kale Ochs	181 / 254			
Bulk #2:	Alan Ryan	182 / 256			

# Petroleum Development Co

CBF #1-21



Job Started On: 07/22/2019 @ 10:45:30 PM



**CEMENT TREATMENT REPORT**

Customer: <b>Petroleum Development</b>	Well: <b>Cross Bell Farms 1-21</b>	Ticket: <b>ICT2188</b>
City, State:	County: <b>Kearny, KS</b>	Date: <b>7/28/2019</b>
Field Rep:	S-T-R: <b>21-22S-35W</b>	Service: <b>cement</b>

Downhole Information	
Hole Size:	<b>7.875</b>
Hole Depth:	<b>4950'</b>
Casing Size:	<b>5.5"</b>
Casing Depth:	<b>4694'</b>
Tubing / Liner:	<b>in</b>
Depth:	<b>ft</b>
Tool / Packer:	
Depth:	<b>ft</b>
Displacement:	<b>110.8</b>

Slurry	
Weight:	<b>11.2 / 14.8 # / sx</b>
Water / Sx:	<b>23.5 / 6.61 gal / sx</b>
Yield:	<b>3.83 / 1.5 ft<sup>3</sup> / sx</b>
Bbls / Ft.:	
Depth:	<b>ft</b>
Volume:	<b>bbls</b>
Excess:	<b>25% %</b>
Total Slurry:	<b>110 bbls</b>
Total Sacks:	<b>325 sx</b>

Cement Blend		
Product	%	#
Class A		
Gel		
CaCl		
Metso		
KolSeal		
PhenoSeal		
Salt		

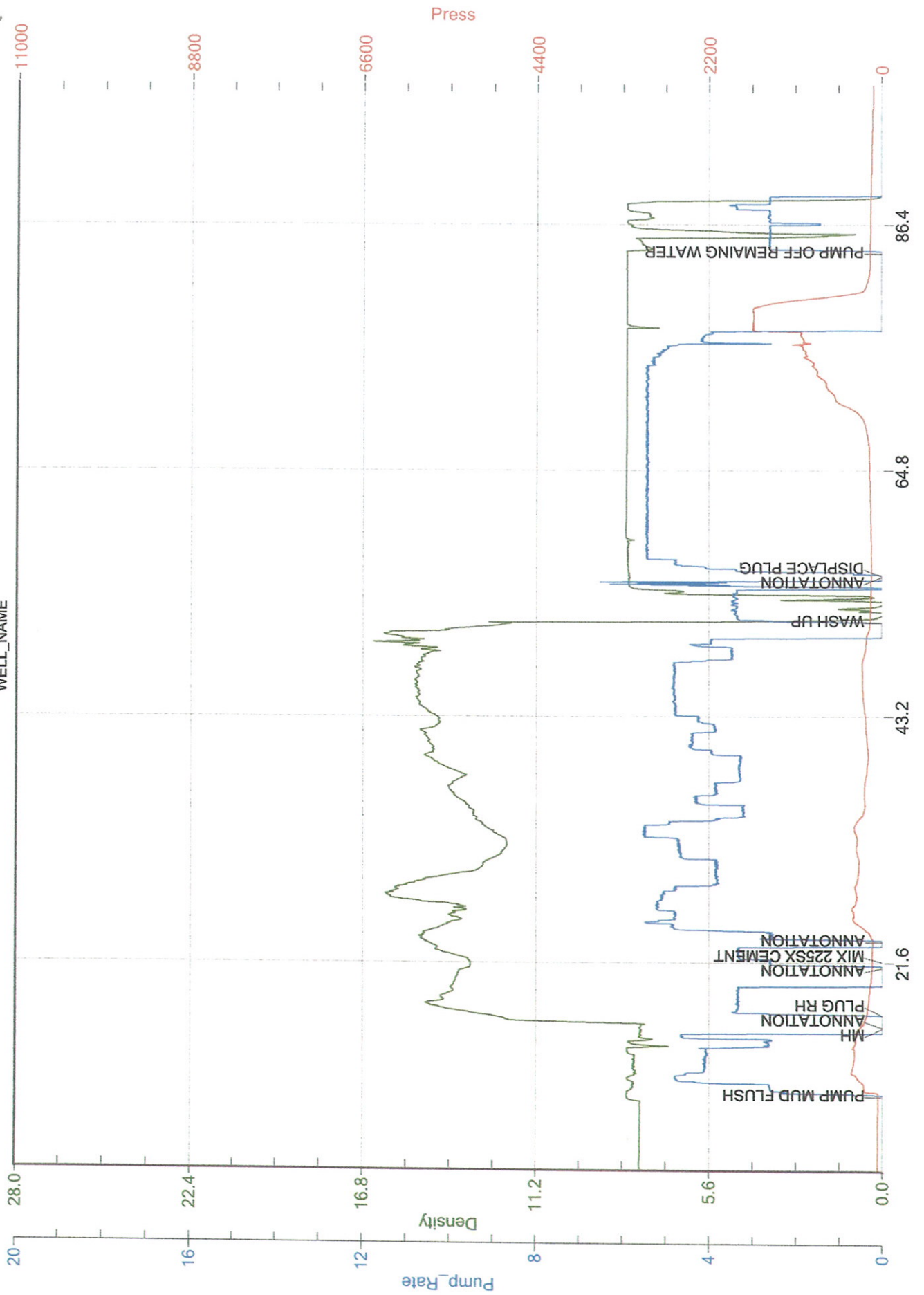
TIME	RATE	PSI	BBLs	REMARKS	TIME	RATE	PSI	BBLs	REMARKS	Total
530am				Arrival						
6am				Run in casing						
				Centralizes on jnts 1,2,6,9,12,15,18						
				21,24,27,30,33,36,39,42						
				Basket on jnt 5						
715am				Circulate jnt 47 5 mins						
817am				Circulate jnt 94 5 mins						
9am				Circulate casing on bottom						
945am	4.0	400.0	22.0	Pump mud flush						
955am			8.0	30 sx rh						
10am	4.0		5.0	20sx mh						
1005am	4.0	350.0	35.0	Pump 50sx lead cement						
1020am	5.0	300.0	60.0	Pump 225sx Tail cement						
1030am				Wash up clear pump and lines						
1035am	5.5	1,050.0	110.8	Displace						
1055am		1,650.0		Plug down and held						
1110am				Wash up and rig down						
1145am				Depart						

CREW	UNIT
Cementer: <b>Miles Shaw</b>	<b>73.0</b>
Pump Operator: <b>Michael Rebarcek</b>	<b>231.0</b>
Bulk #1: <b>Jesse Jones</b>	<b>181 / 250</b>
Bulk #2:	

SUMMARY		
Average Rate	Average Pressure	Total Fluid
<b>4.5 bpm</b>	<b>750.00 psi</b>	<b>240.75 bbls</b>

50 Ict 2/88

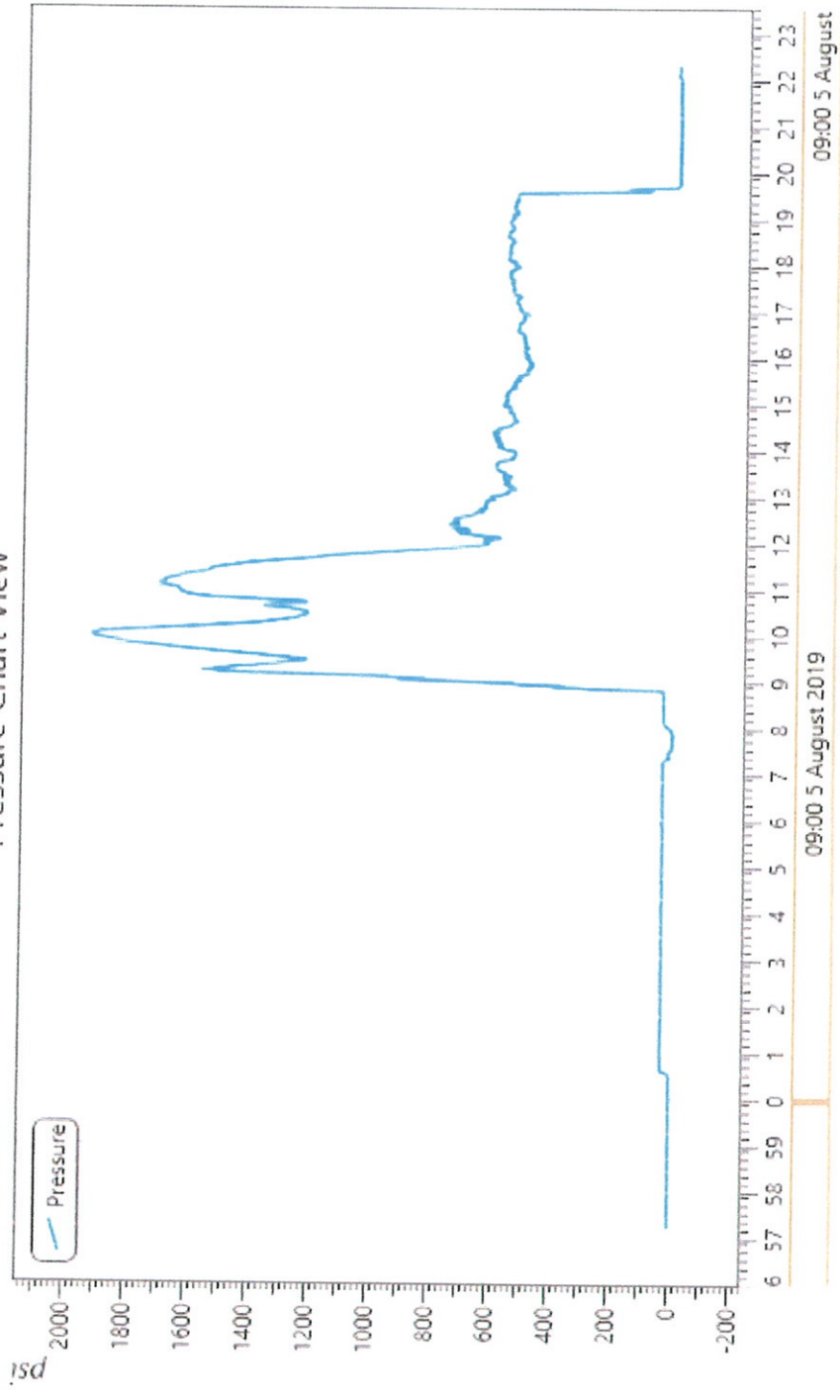
CUSTOMER  
WELL\_NAME

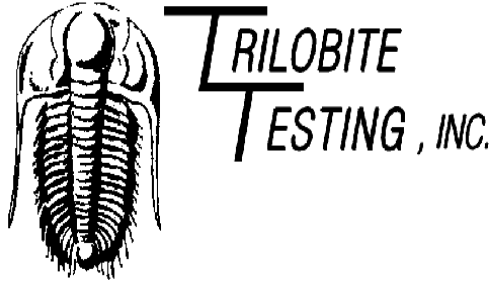






Pressure Chart View





## DRILL STEM TEST REPORT

Prepared For: **Petroleum Development Co.**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

ATTN: Ken LeBlanc

**21-22-35w Kearney,KS**

**Cross Bell Farms #1-21**

Start Date: 2019.07.24 @ 12:21:00

End Date: 2019.07.24 @ 23:00:15

Job Ticket #: 64368                      DST #: 1

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

Printed: 2019.07.29 @ 14:44:50



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Petroleum Development Co.  
401 S Boston Ave Ste 1850  
Tulsa, OK 74103  
ATTN: Ken LeBlanc

**Cross Bell Farms #1-21**  
**21-22-35w Kearney, KS**  
Job Ticket: 64368 **DST#: 1**  
Test Start: 2019.07.24 @ 12:21:00

## GENERAL INFORMATION:

Formation: **Marmaton**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 16:09:00  
Time Test Ended: 23:00:15  
Interval: **4366.00 ft (KB) To 4390.00 ft (KB) (TVD)**  
Total Depth: 4390.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Bradley Walter  
Unit No: 78  
Reference Elevations: 3084.00 ft (KB)  
3073.00 ft (CF)  
KB to GR/CF: 11.00 ft

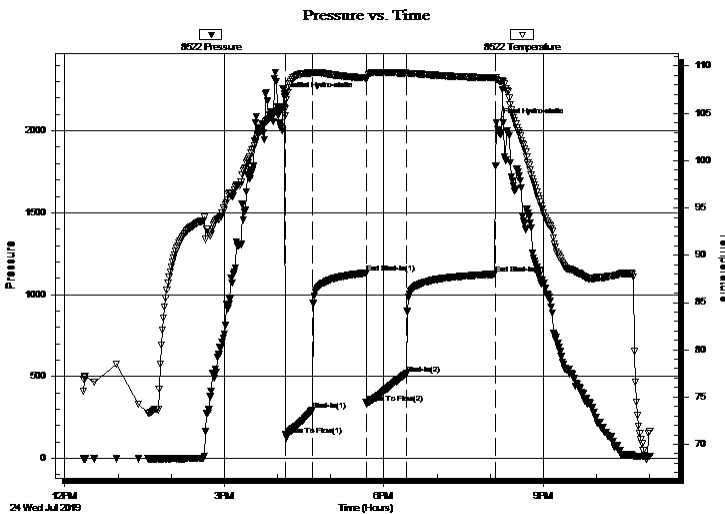
## Serial #: 8522

Inside

Press@RunDepth: 516.75 psig @ 4367.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2019.07.24 End Date: 2019.07.24 Last Calib.: 2019.07.24  
Start Time: 12:21:05 End Time: 23:00:15 Time On Btm: 2019.07.24 @ 16:08:00  
Time Off Btm: 2019.07.24 @ 20:07:15

TEST COMMENT: 30- IF:BOB @ 3 min, built to 89".  
60- IS: BOB @ 9 min, built to 42".  
45- FF: BOB @ 6 min, built to 96".  
90- FSI: BOB @ 10 min. Built to 36".

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2210.19	105.59	Initial Hydro-static
1	144.70	105.47	Open To Flow (1)
31	292.27	109.28	Shut-In(1)
92	1131.74	108.74	End Shut-In(1)
93	339.36	108.65	Open To Flow (2)
138	516.75	109.24	Shut-In(2)
238	1124.88	108.75	End Shut-In(2)
240	2048.22	108.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
770.00	smcw 2m 98w W/oil spots	8.30
150.00	gw mco 30g 20w 20m 30o	2.10
280.00	go 40g 60o	3.93
0.00	700' GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Petroleum Development Co.

**Cross Bell Farms #1-21**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

**21-22-35w Kearney,KS**

ATTN: Ken LeBlanc

Job Ticket: 64368

**DST#: 1**

Test Start: 2019.07.24 @ 12:21:00

## Tool Information

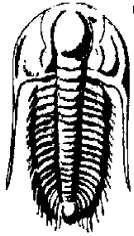
Drill Pipe:	Length: 4076.00 ft	Diameter: 3.80 inches	Volume: 57.18 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 275.00 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 58.53 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4366.00 ft			Final 77000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	51.00 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			4340.00	
Shut In Tool	5.00		Fluid	4345.00	
Hydraulic tool	5.00			4350.00	
Jars	5.00			4355.00	
Safety Joint	2.00			4357.00	
Packer	5.00		Inside	4362.00	27.00 Bottom Of Top Packer
Packer	4.00			4366.00	
Stubb	1.00			4367.00	
Recorder	0.00	8522	Inside	4367.00	
Recorder	0.00	8319	Outside	4367.00	
Perforations	20.00			4387.00	
Bullnose	3.00			4390.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Petroleum Development Co.

**Cross Bell Farms #1-21**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

**21-22-35w Kearney,KS**

Job Ticket: 64368

**DST#: 1**

ATTN: Ken LeBlanc

Test Start: 2019.07.24 @ 12:21:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

80000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3800.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
770.00	smcw 2m 98w W/oil spots	8.296
150.00	gw mco 30g 20w 20m 30o	2.104
280.00	go 40g 60o	3.928
0.00	700' GIP	0.000

Total Length: 1200.00 ft      Total Volume: 14.328 bbl

Num Fluid Samples: 0

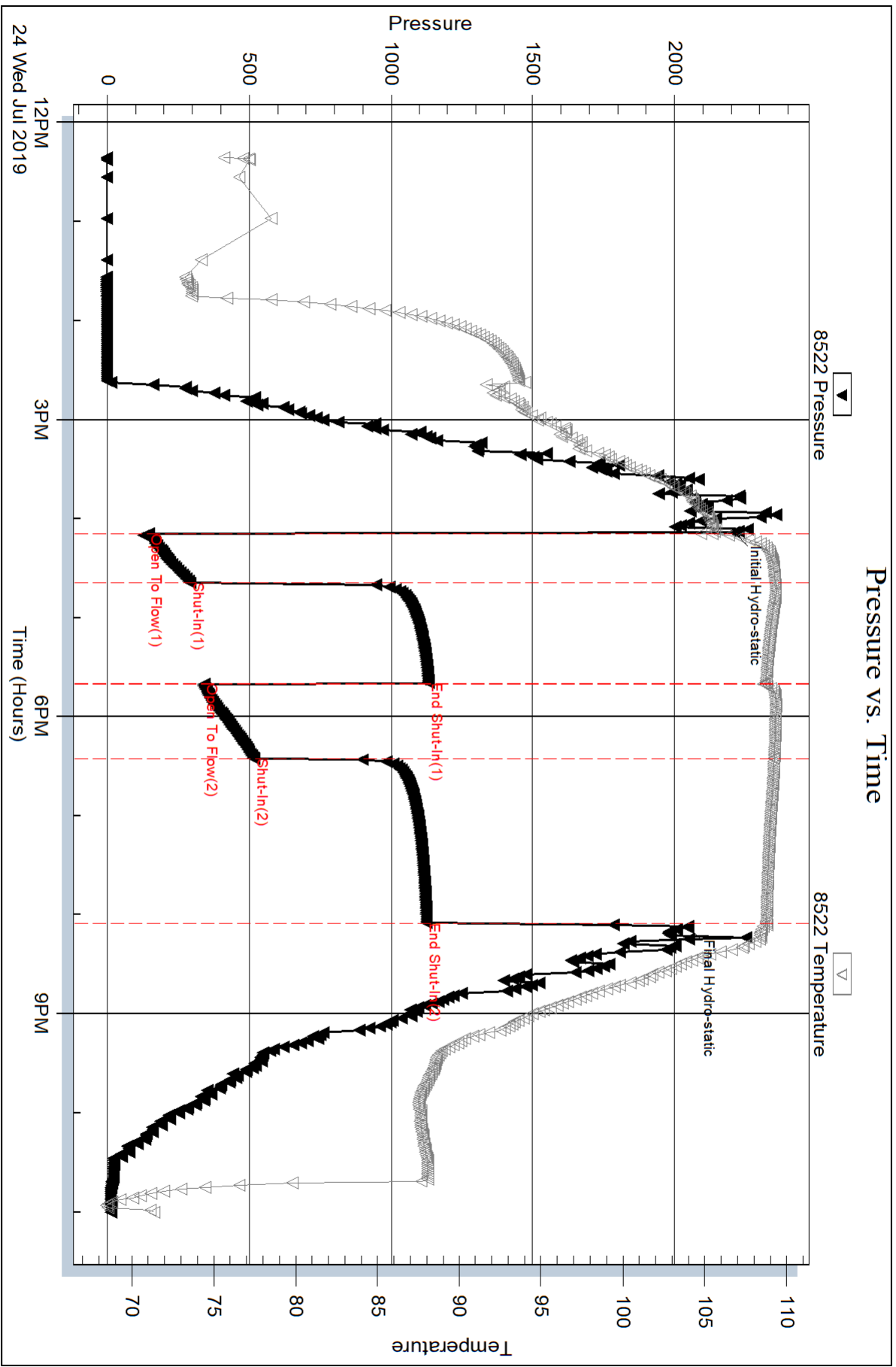
Num Gas Bombs: 0

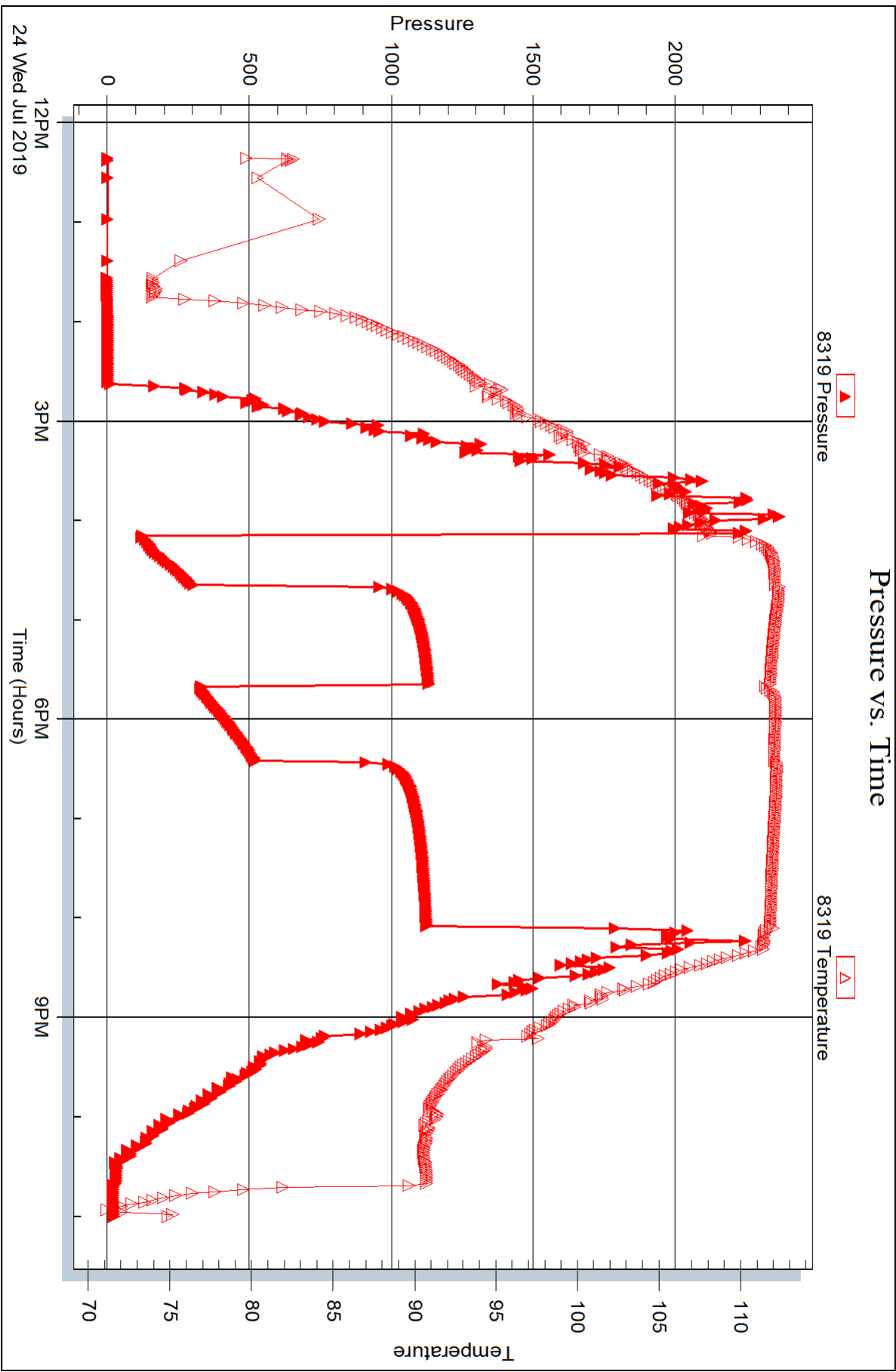
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .095 @ 72f = 80,000 ppm









## DRILL STEM TEST REPORT

Prepared For: **Petroleum Development Co.**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

ATTN: Ken LeBlanc

**21-22-35w Kearney,KS**

**Cross Bell Farms #1-21**

Start Date: 2019.07.25 @ 12:27:00

End Date: 2019.07.25 @ 20:27:30

Job Ticket #: 64369                      DST #: 2

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

Printed: 2019.07.29 @ 14:41:33



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Petroleum Development Co.  
 401 S Boston Ave Ste 1850  
 Tulsa, OK 74103  
 ATTN: Ken LeBlanc

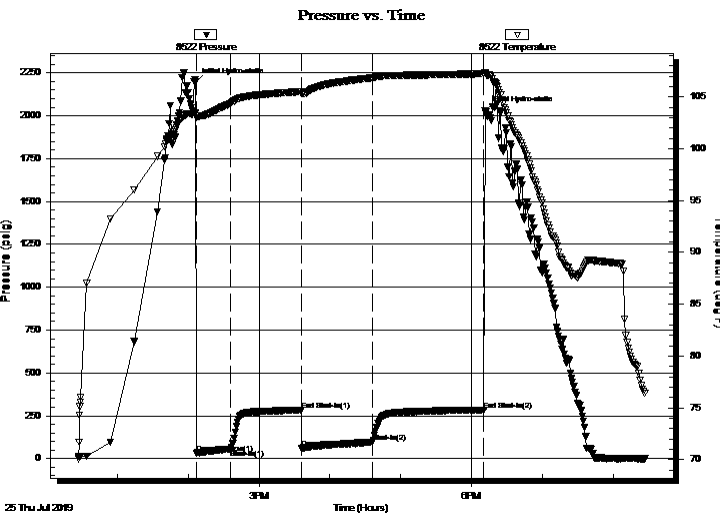
**Cross Bell Farms #1-21**  
**21-22-35w Kearney, KS**  
 Job Ticket: 64369 **DST#: 2**  
 Test Start: 2019.07.25 @ 12:27:00

## GENERAL INFORMATION:

Formation: **Ft. Scott**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:06:45  
 Time Test Ended: 20:27:30  
 Interval: **4462.00 ft (KB) To 4477.00 ft (KB) (TVD)**  
 Total Depth: 4477.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Bradley Walter  
 Unit No: 78  
 Reference Elevations: 3084.00 ft (KB)  
 3073.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8522 Inside**  
 Press@RunDepth: 96.62 psig @ 4463.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.07.25 End Date: 2019.07.25 Last Calib.: 2019.07.25  
 Start Time: 12:27:05 End Time: 20:27:29 Time On Btm: 2019.07.25 @ 14:06:15  
 Time Off Btm: 2019.07.25 @ 18:11:30

**TEST COMMENT:** 30- IF: BOB @ 27 min. 11.5" blow .  
 60- IS: No return.  
 60- FF: BOB @ 10 min, 34" blow .  
 90- FSI: 3/4" return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2196.00	103.44	Initial Hydro-static
1	32.12	102.98	Open To Flow (1)
30	57.05	104.38	Shut-In(1)
90	283.28	105.51	End Shut-In(1)
90	61.79	105.32	Open To Flow (2)
150	96.62	106.82	Shut-In(2)
245	284.13	107.23	End Shut-In(2)
246	2029.11	107.36	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
150.00	gmocw 20g 10m 20o 50w	0.74
80.00	go 40g 60o	0.39
0.00	400' GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Petroleum Development Co.

**Cross Bell Farms #1-21**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

**21-22-35w Kearney,KS**

ATTN: Ken LeBlanc

Job Ticket: 64369

**DST#: 2**

Test Start: 2019.07.25 @ 12:27:00

## Tool Information

Drill Pipe:	Length: 4172.00 ft	Diameter: 3.80 inches	Volume: 58.52 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 275.00 ft	Diameter: 2.25 inches	Volume: 1.35 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 59.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 73000.00 lb
Depth to Top Packer:	4462.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	42.00 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			4436.00	
Shut In Tool	5.00		Fluid	4441.00	
Hydraulic tool	5.00			4446.00	
Jars	5.00			4451.00	
Safety Joint	2.00			4453.00	
Packer	5.00		Inside	4458.00	27.00 Bottom Of Top Packer
Packer	4.00			4462.00	
Stubb	1.00			4463.00	
Recorder	0.00	8522	Inside	4463.00	
Recorder	0.00	8319	Outside	4463.00	
Perforations	11.00			4474.00	
Bullnose	3.00			4477.00	15.00 Bottom Packers & Anchor

**Total Tool Length: 42.00**



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**FLUID SUMMARY**

Petroleum Development Co.

**Cross Bell Farms #1-21**

401 S Boston Ave Ste 1850  
Tulsa, OK 74103

**21-22-35w Kearney,KS**

ATTN: Ken LeBlanc

Job Ticket: 64369

**DST#: 2**

Test Start: 2019.07.25 @ 12:27:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

16000 ppm

Viscosity: 74.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
150.00	gmocw 20g 10m 20o 50w	0.738
80.00	go 40g 60o	0.393
0.00	400' GIP	0.000

Total Length: 230.00 ft      Total Volume: 1.131 bbl

Num Fluid Samples: 0

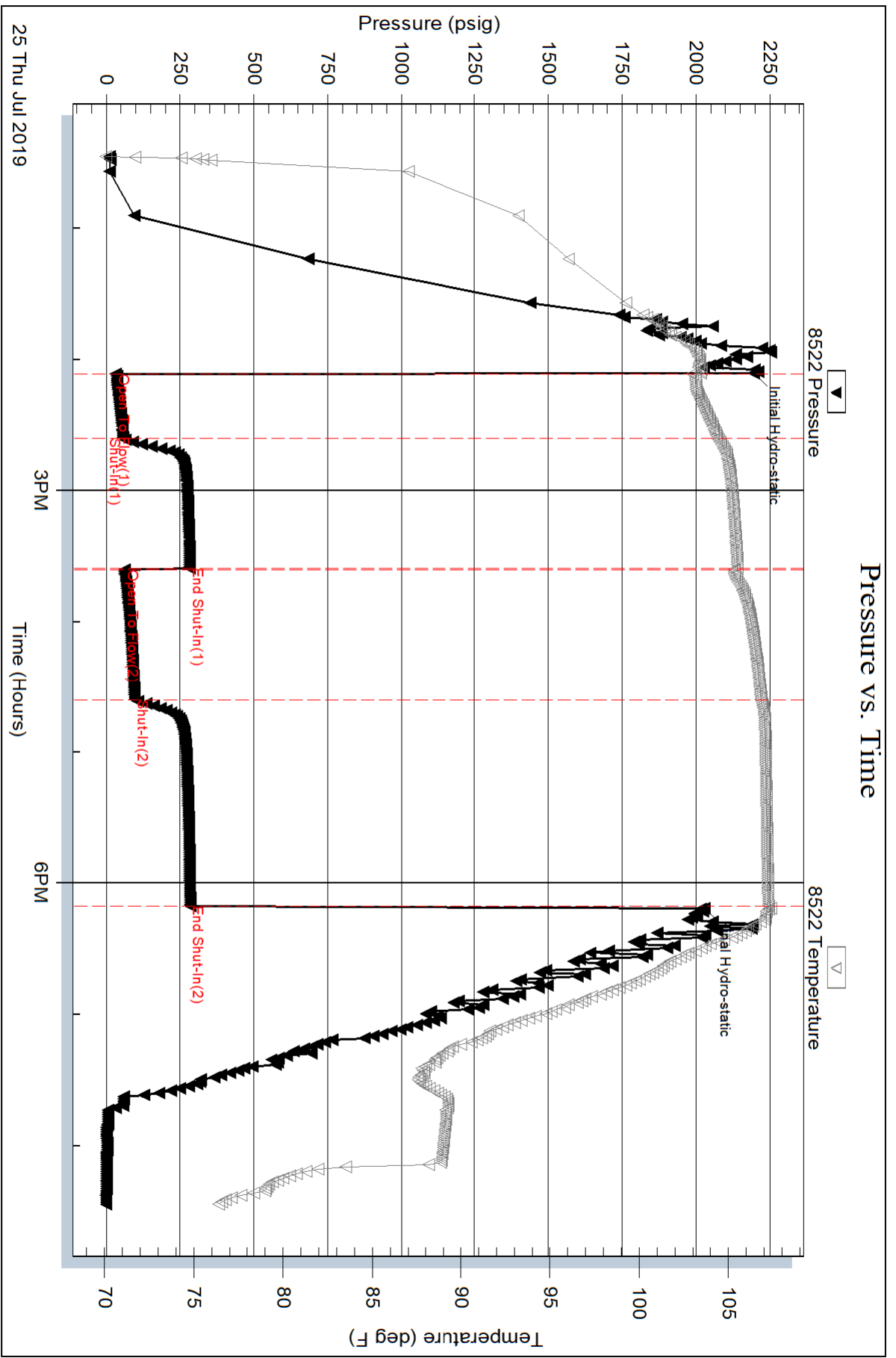
Num Gas Bombs: 0

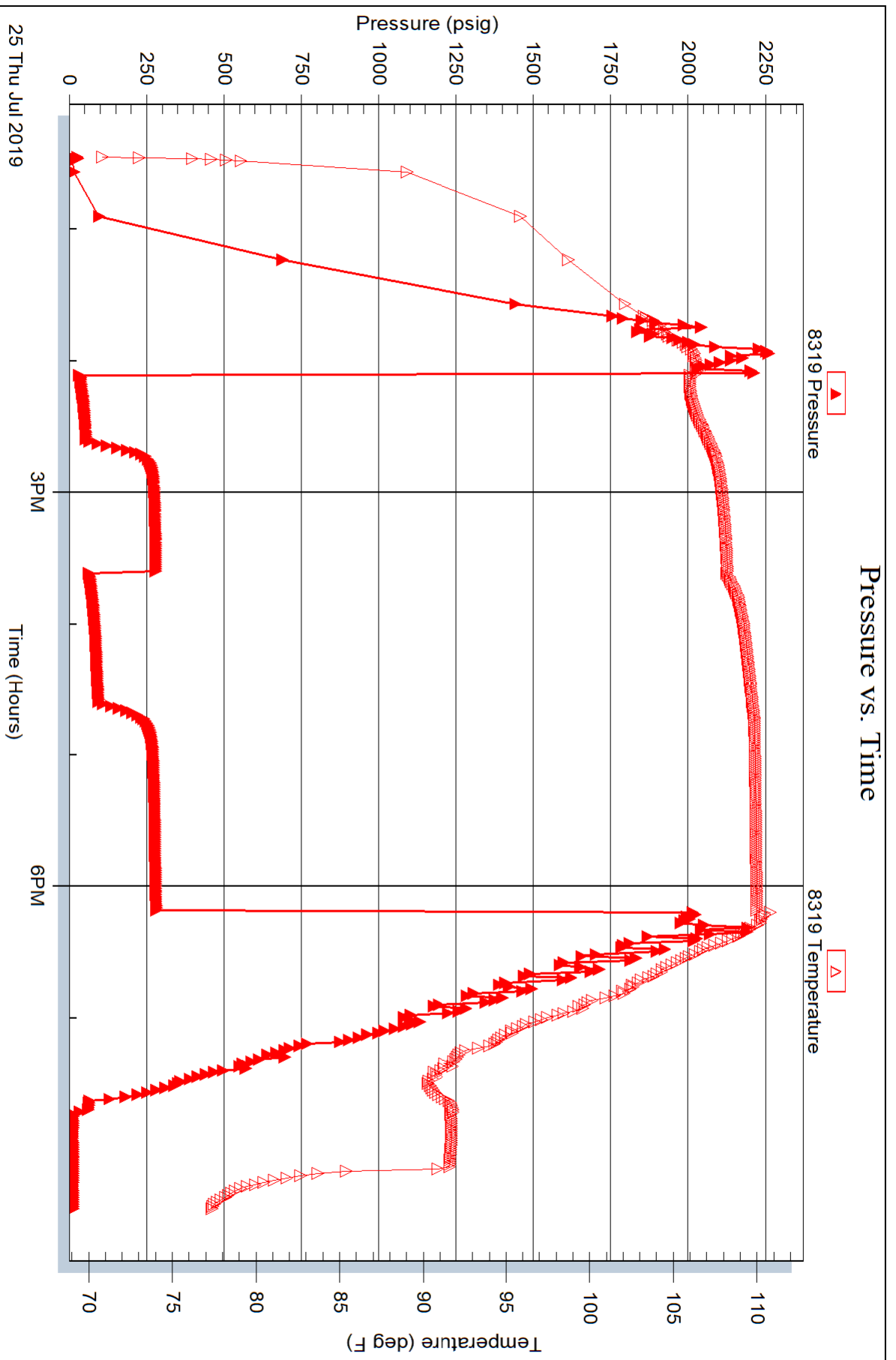
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: rw is .458 @ 76 = 16000ppm







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **64368**

Well Name & No. Cross Bell Farms #1-21 Test No. 1 Date 7/24/2019  
 Company Petroleum Development Co. Elevation 3084 KB 3073 GL  
 Address 401 S Boston Ave Ste 1850 Tulsa, Ok 74103  
 Co. Rep / Geo. Ken LeBlond Rig Martin 21  
 Location: Sec. 21 Twp. 22S Rge. 35W Co. Kearney State KS

Interval Tested 4366-4390 Zone Tested Marmaton  
 Anchor Length 24' Drill Pipe Run 4076 Mud Wt. 9.1  
 Top Packer Depth 4361 Drill Collars Run 275 Vis 58  
 Bottom Packer Depth 4366 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4390 Chlorides 3800 ppm System LCM 16#  
 Blow Description IF BOB@ 3min built to 89"  
ISI BOB@ 9min built to 42"  
FF BOB@ 6min Built to 96"  
FSI BOB@ 10min built to 36"

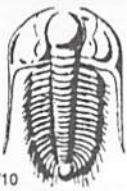
Rec	Feet of	%gas	%oil	%water	%mud
<u>280</u>	<u>60</u>	<u>40</u>	<u>60</u>		
<u>150</u>	<u>GWACO</u>	<u>30</u>	<u>30</u>	<u>20</u>	<u>20</u>
<u>770</u>	<u>SMCW</u>			<u>98</u>	<u>2</u>
	<u>700' GIP</u>				

Rec Total 1200 BHT 109 Gravity 37 API RW .095 @ 72 °F Chlorides 80,000 ppm

(A) Initial Hydrostatic <u>2210</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>1030</u>
(B) First Initial Flow <u>145</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1221</u>
(C) First Final Flow <u>292</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1609</u>
(D) Initial Shut-In <u>1132</u>	<input checked="" type="checkbox"/> Circ Sub <u>50</u>	T-Pulled <u>1954</u>
(E) Second Initial Flow <u>339</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2300</u>
(F) Second Final Flow <u>517</u>	<input checked="" type="checkbox"/> Mileage <u>94RT</u> <u>44</u>	Comments
(G) Final Shut-In <u>1225</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2048</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Total <u>1719</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1719</u>	

Approved By \_\_\_\_\_ Our Representative [Signature]  
 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. **64369**

Well Name & No. Cross Bell Farms #1-21 Test No. 2 Date 7/25/2019  
 Company Petroleum Development Co Elevation 3084 KB 3073 GL  
 Address 401 S Boston Ave Ste 1850 Tulsa, OK 74103  
 Co. Rep / Geo. Ken LeBlond Rig MoAn 21  
 Location: Sec. 21 Twp. 22s Rge. 35w Co. Kearney State KS

Interval Tested 4462-4477 Zone Tested Ft Scott  
 Anchor Length 15' Drill Pipe Run 4172 Mud Wt. 9.2  
 Top Packer Depth 4457 Drill Collars Run 275 Vis 74  
 Bottom Packer Depth 4462 Wt. Pipe Run Ø WL 8.0  
 Total Depth 4477 Chlorides 4,000 ppm System LCM 14<sup>th</sup>  
 Blow Description IF 11 1/2" blow  
ISI No return.  
FF BOB @ 10 min built to 34'  
FSI 34' return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>60</u>	<u>40</u>	<u>60</u>		
<u>150</u>	<u>6mocw</u>	<u>20</u>	<u>20</u>	<u>50</u>	<u>10</u>
	<u>400' GID</u>				

Rec Total 230 BHT 107 Gravity 36 API RW 1458 @ 76° F Chlorides 16,000 ppm

(A) Initial Hydrostatic <u>2196</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>1200</u>
(B) First Initial Flow <u>32</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1227</u>
(C) First Final Flow <u>57</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1407</u>
(D) Initial Shut-In <u>283</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>1807</u>
(E) Second Initial Flow <u>62</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>2027</u>
(F) Second Final Flow <u>97</u>	<input type="checkbox"/> Mileage	Comments
(G) Final Shut-In <u>284</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2029</u>	<input type="checkbox"/> Straddle	
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1625</u>
	Sub Total <u>1625</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative [Signature]  
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