

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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Form	ACO1 - Well Completion
Operator	Royal Energy, Inc.
Well Name	ALPERS 2
Doc ID	1473630

Tops

Name	Top	Datum
Anhydrite	638	+1213
Heebner	3156	-1305
Brown Lime	3289	-1438
Lansing	3314	-1463
Base/Kansas City	3568	-1717
Rew. Viola	3590	-1739
Simpson	3674	-1823
Arbuckle	3704	-1853
RTD	3800	-1949
LTD	3798	-1947



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 WEST WICHITA AVE, RUSSELL KS 67665
 PHONE: 785-324-1041 FAX: 785-483-1087
 EMAIL: cementing@ruraltel.net

Date: 8/31/2018
 Invoice # 941

P.O.#:
 Due Date: 9/30/2018
 Division: Russell

Invoice

POSTED	
CK. NO.	DATE
	10/13/18

Contact:
 Royal World Energy
 Address/Job Location:

PO BOX 1820
 Dodge City ks 67801

Reference:
 ALPERS 2 SEC 4-23-12

Description of Work:
 SURFACE JOB

VEN. NO. BUALI WELL # 18502-01
 ACCT. # 71730 AMT. 6441.97
 ACCT. # _____ AMT. _____
 ACCT. # _____ AMT. _____
 ACCT. # _____ AMT. _____

Services / Items Included:	Quantity	Price	Taxable
Labor		\$ 641.27	Yes
Common-Class A	255	\$ 3,775.59	Yes
Calcium Chloride	11	\$ 442.75	Yes
POZ Mix-Standard	65	\$ 327.03	Yes
Bulk Truck Mat-Material Service Charge	425	\$ 305.47	Yes
Flo Seal	200	\$ 287.50	Yes
Pump Truck Mileage-Job to Nearest Camp	42	\$ 135.84	Yes
Premium Gel (Bentonite)	6	\$ 125.06	Yes
Bulk Truck Mileage-Job to Nearest Bulk Plant	42	\$ 105.66	Yes

PAID	
Item	Quantity
CK. NO.	DATE
5570	10/13/18

Invoice Terms:

Net 30

SubTotal: \$ 6,146.18
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (153.65)

SubTotal for Taxable Items:	\$ 5,992.52
SubTotal for Non-Taxable Items:	\$ -
Total:	\$ 5,992.53
Tax:	\$ 449.44
Amount Due:	\$ 6,441.97
Applied Payments:	
Balance Due:	\$ 6,441.97

7.50% Stafford County Sales Tax

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 941

Date	8-31-18	Sec.	4	Twp.	23	Range	12	County	Stafford	State	KS	On Location		Finish	6:30 AM	
Lease	Alpers							Location	Hudson - East side Rd 50, 1S, 1/2 E, 5/4th							
Well No.	2		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	Southwind #		Charge To	Royal Energy												
Type Job	Surface		Street	world												
Hole Size	12 1/4"		T.D.	340'		Depth	340'		City	State						
Csg.	8 5/8"		Depth													
Tbg. Size			Depth													
Tool			Depth	The above was done to satisfaction and supervision of owner agent or contractor.												
Cement Left in Csg.	20'		Shoe Joint	20'		Cement Amount Ordered	425 80/20 3% CC 2% Gel 1/2 #fl ₅₀									
Meas Line	Displace		20 1/4 BUS		used	320										
EQUIPMENT				Common	255											
Pumptrk	16	No.	Cementer	David		Poz. Mix	65									
Bulktrk	21	No.	Driver	Tony		Gel.	6									
Bulktrk	p.u.	No.	Driver	Rick		Calcium	11									
JOB SERVICES & REMARKS				Hulls												
Remarks:	Cement did		Circulate		Salt											
Rat Hole					Flowseal	200#										
Mouse Hole					Kol-Seal											
Centralizers					Mud CLR 48											
Baskets					CFL-117 or CD110 CAF 38											
D/V or Port Collar					Sand											
				Handling	425											
				Mileage												
				FLOAT EQUIPMENT												
				Guide Shoe												
				Centralizer												
				Baskets												
				AFU Inserts												
				Float Shoe												
				Latch Down												
				Pumptrk Charge	Surface											
				Mileage	42											
				Tax												
				Discount												
				Total Charge												
Signature																



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 WEST WICHITA AVE, RUSSELL KS 67665
 PHONE: 785-324-1041 FAX: 785-483-1087
 EMAIL: cementing@ruraltel.net

Date: 9/9/2018
 Invoice # 943

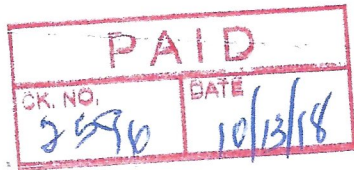
P.O.#:
 Due Date: 10/9/2018
 Division: Russell

Invoice



Contact:
 Royal World Energy
 Address/Job Location:

PO BOX 1820
 Dodge City ks 67801



Reference:
 ALPERS 2 SEC 4-23-12

Description of Work:
 PLUG JOB

VEN. NO. QUALI WELL # 18505-01
 ACCT. # 71890 AMT. 3857.71
 ACCT. # _____ AMT. _____
 ACCT. # _____ AMT. _____
 ACCT. # _____ AMT. _____

Services / Items Included:

	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 641.27	Yes				
Common-Class A	126	\$ 1,865.59	Yes				
POZ Mix-Standard	84	\$ 422.63	Yes				
Calcium Chloride	7	\$ 281.75	Yes				
Bulk Truck Matl-Material Service Charge	217	\$ 155.97	Yes				
Pump Truck Mileage-Job to Nearest Camp	42	\$ 135.84	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	42	\$ 105.66	Yes				
Flo Seal	50	\$ 71.88	Yes				

Invoice Terms:

Net 30

	SubTotal:	\$	3,680.58
	Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice:	\$	(92.01)
<hr/>			
	SubTotal for Taxable Items:	\$	3,588.56
	SubTotal for Non-Taxable Items:	\$	-
<hr/>			
	Total:	\$	3,588.57
	Tax:	\$	269.14
	Amount Due:	\$	3,857.71
	Applied Payments:		
	Balance Due:	\$	3,857.71

7.50% Stafford County Sales Tax

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 943

Date	9-9-18	Sec.	4	Twp.	23	Range	12	County	Stafford	State	Ks	On Location		Finish	5:00 AM
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Lease Alpers Location Hudson East side to 50 rd, 15, 1/2 E

Well No. 2 Owner S/Intro

Contractor Southwind #1 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.

Type Job Plug Charge To Royal Energy

Hole Size 7 7/8" T.D. 3800' Street

Csg. Depth 3717' City State

Tbg. Size 4 1/2" D.P. Depth 3717' The above was done to satisfaction and supervision of owner agent or contractor.

Tool Depth Cement Amount Ordered 210 60/40 4% Gel 1/4# Flow-seal

Cement Left in Csg. Shoe Joint Cement Amount Ordered

Meas Line Displace H2O/mud

EQUIPMENT

Pumptrk	16	No.	Cementor	David	Common	126
			Helper		Poz. Mix	84
Bulktrk	15	No.	Driver	Jack	Gel.	7
			Driver		Calcium	
Bulktrk	p.u.	No.	Driver	Rick	Hulls	
			Driver		Salt	

JOB SERVICES & REMARKS

Remarks:	3717' - 50SX	Flowseal	50 #
Rat Hole	661' - 50SX	Kol-Seal	
Mouse Hole	378' - 40SX	Mud CLR 48	
Centralizers	60' - 20SX	CFL-117 or CD110 CAF 38	
Baskets	Rathole w/ 30SX	Sand	
D/V or Port Collar	Mousehole w/ 20SX	Handling	217

Cement did Circulate

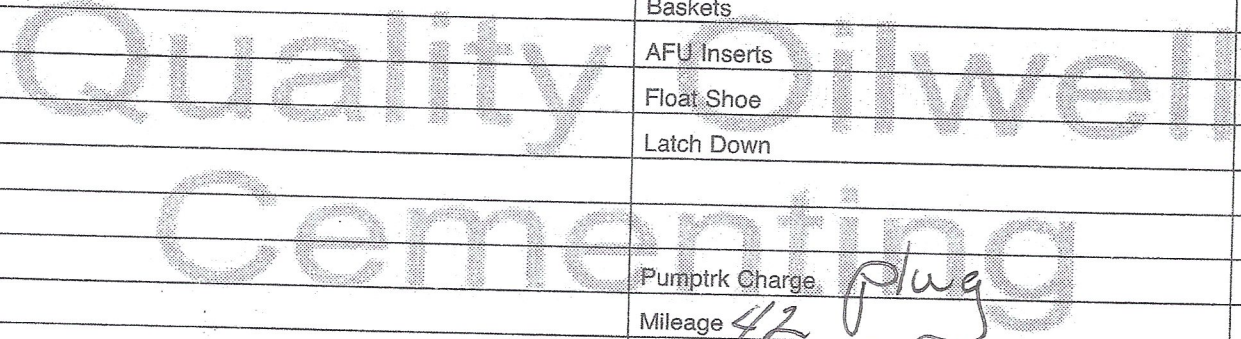
FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	

Pumptrk Charge Plug Mileage 42

X Signature [Signature]

Tax
Discount
Total Charge



Paul's Oilfield Service, Inc.

P.O. Box 1773
Great Bend, KS 67530

Invoice

DATE	INVOICE #
9/20/2018	94642

BILL TO
Royal Energy, Inc. P.O. Box 1820 Dodge City, KS 67801

POSTED	
CHK. NO.	DATE
	10/13/18

PAID	
CHK. NO.	DATE
2594	10/13/18

DESCRIPTION	RATE	QUANTITY	TERMS
			AMOUNT
PRAEGER: Pull water / oil out of cellar at well, pump into gun barrel, approx. 12 bbls. Vacuum Truck - Tim	88.00	2.5	220.00T
VEN. NO. <u>PAYES</u>	WELL # <u>18505-01</u>		
ACCT. # <u>71210</u>	AMT. <u>\$236.50</u>		
ACCT. # _____	AMT. _____		
ACCT. # _____	AMT. _____		
ACCT. # _____	AMT. _____		

Thank you for your business.	Subtotal	\$220.00
	Sales Tax (7.5%)	\$16.50
	Total	\$236.50
	Payments/Credits	\$0.00
	Balance Due	\$236.50



DRILL STEM TEST REPORT

Prepared For: **Royal Energy**
P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.04 @ 13:00:22
End Date: 2018.09.04 @ 19:42:00
Job Ticket #: 01007 DST #: 1

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.04 @ 19:58:02

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 1
Lansing "A-F"
2018.09.04



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

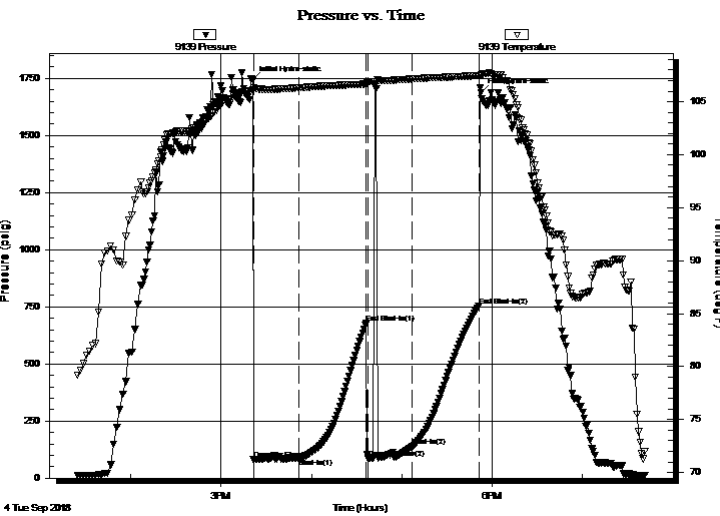
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01007 **DST#: 1**
 Test Start: 2018.09.04 @ 13:00:22

GENERAL INFORMATION:

Formation: **Lansing "A-F"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:22:00 Tester: Gene Budig
 Time Test Ended: 19:42:00 Unit No: 1
Interval: 3288.00 ft (KB) To 3395.00 ft (KB) (TVD)
 Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3395.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 754.87 psig @ 3390.06 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.04 End Date: 2018.09.04 Last Calib.: 2018.09.04
 Start Time: 13:22:00 End Time: 19:41:00 Time On Btm: 2018.09.04 @ 15:21:00
 Time Off Btm: 2018.09.04 @ 17:52:30

TEST COMMENT: 1st Opening 30 Minutes weak blow for 12 minutes and died
 1st Shut-In 45 Minutes
 2nd Opening 30 Minutes no blow - Flushed tool-w eak blow 3 minutes and died
 2nd Shut-In 45 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1742.43	106.03	Initial Hydro-static
1	80.96	106.13	Open To Flow (1)
31	86.40	106.32	Shut-In(1)
76	679.79	106.68	End Shut-In(1)
77	87.83	106.90	Open To Flow (2)
106	137.61	107.15	Shut-In(2)
150	754.87	107.47	End Shut-In(2)
152	1689.02	107.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	Drilling Mud	0.35

Gas Rates

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



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

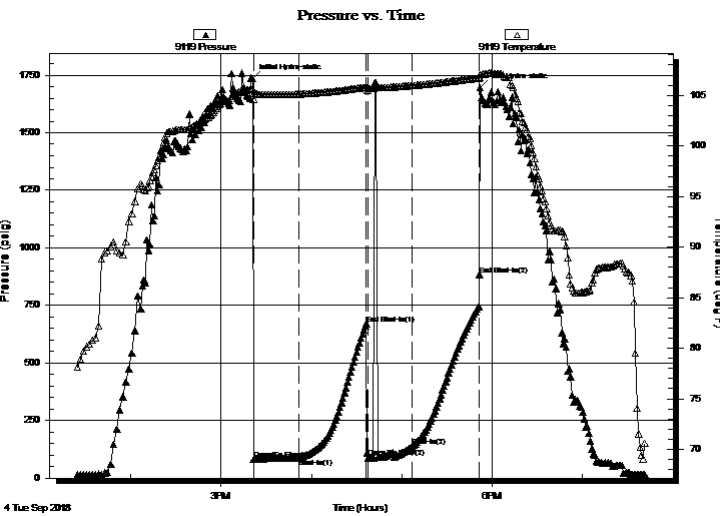
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01007 **DST#: 1**
 Test Start: 2018.09.04 @ 13:00:22

GENERAL INFORMATION:

Formation: **Lansing "A-F"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 15:22:00 Tester: Gene Budig
 Time Test Ended: 19:42:00 Unit No: 1
 Interval: **3288.00 ft (KB) To 3395.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3395.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 884.01 psig @ 3390.06 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.04 End Date: 2018.09.04 Last Calib.: 2018.09.04
 Start Time: 13:22:00 End Time: 19:41:00 Time On Btm: 2018.09.04 @ 15:21:00
 Time Off Btm: 2018.09.04 @ 17:52:00

TEST COMMENT: 1st Opening 30 Minutes weak blow for 12 minutes and died
 1st Shut-In 45 Minutes
 2nd Opening 30 Minutes no blow - Flushed tool-weak blow 3 minutes and died
 2nd Shut-In 45 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1733.76	105.68	Initial Hydro-static
1	80.86	104.62	Open To Flow (1)
31	87.05	105.12	Shut-In(1)
76	669.64	105.82	End Shut-In(1)
77	88.47	105.68	Open To Flow (2)
106	136.35	105.97	Shut-In(2)
151	884.01	106.81	End Shut-In(2)
151	1696.62	107.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	Drilling Mud	0.35

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01007 **DST#: 1**
 Test Start: 2018.09.04 @ 13:00:22

Tool Information

Drill Pipe:	Length: 3295.00 ft	Diameter: 3.80 inches	Volume: 46.22 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:	64000.00 lb
			<u>Total Volume: 46.22 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3298.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	97.06 ft				
Tool Length:	127.06 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			3273.00	
Hydraulic tool	5.00			3278.00	
Jars	5.00			3283.00	
Safety Joint	5.00			3288.00	
Packer	5.00			3293.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3298.00	
Anchor	5.00			3303.00	
Change Over Sub	0.75			3303.75	
Drill Pipe	63.56			3367.31	
Change Over Sub	0.75		Inside	3368.06	
Anchor	22.00			3390.06	
Recorder	0.00	9119	Inside	3390.06	
Recorder	0.00	9139	Outside	3390.06	
Bullnose	5.00			3395.06	97.06 Bottom Packers & Anchor

Total Tool Length: 127.06



DRILL STEM TEST REPORT

FLUID SUMMARY

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01007 **DST#: 1**
 Test Start: 2018.09.04 @ 13:00:22

Mud and Cushion Information

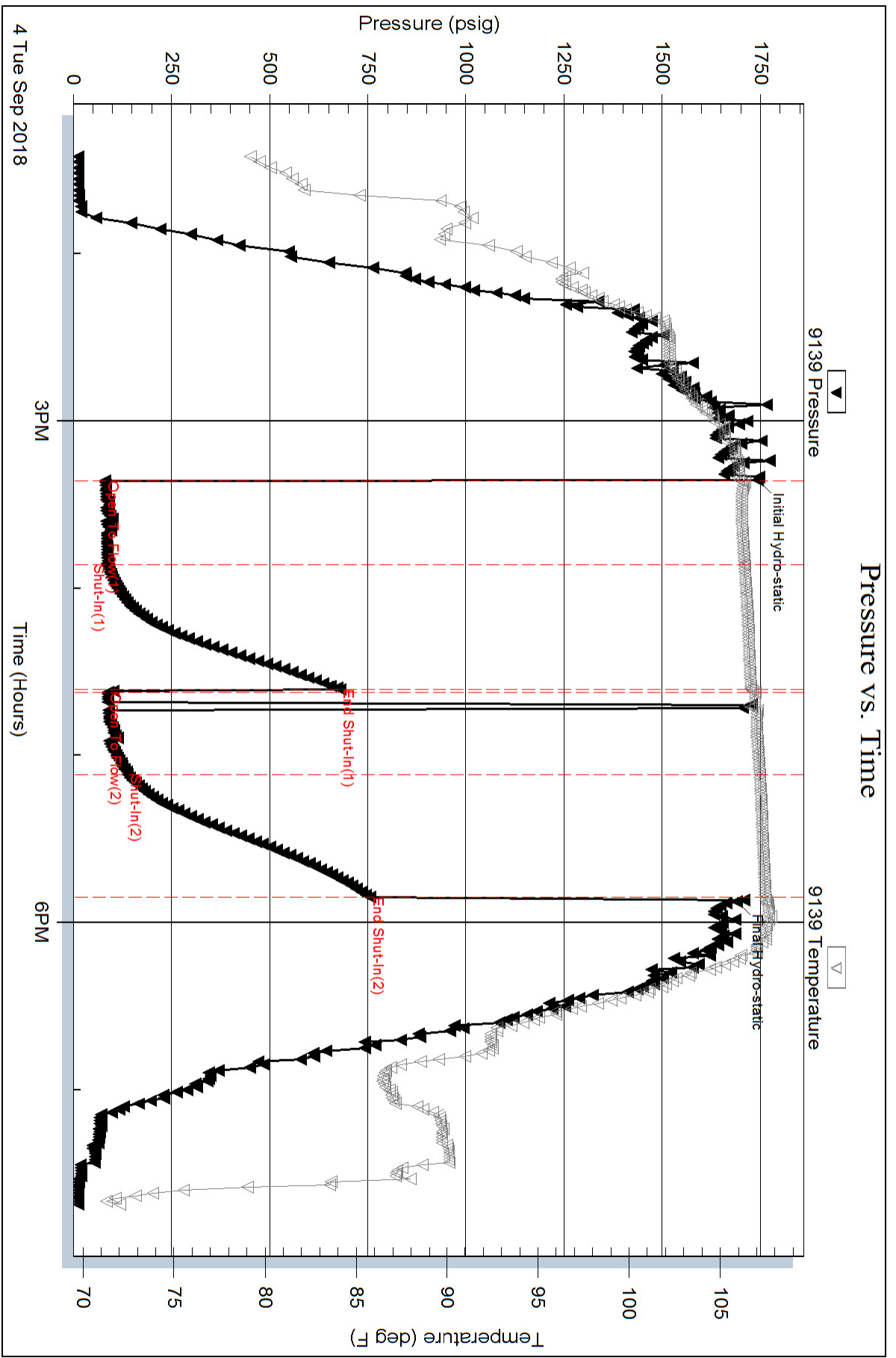
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 64.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 10500.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

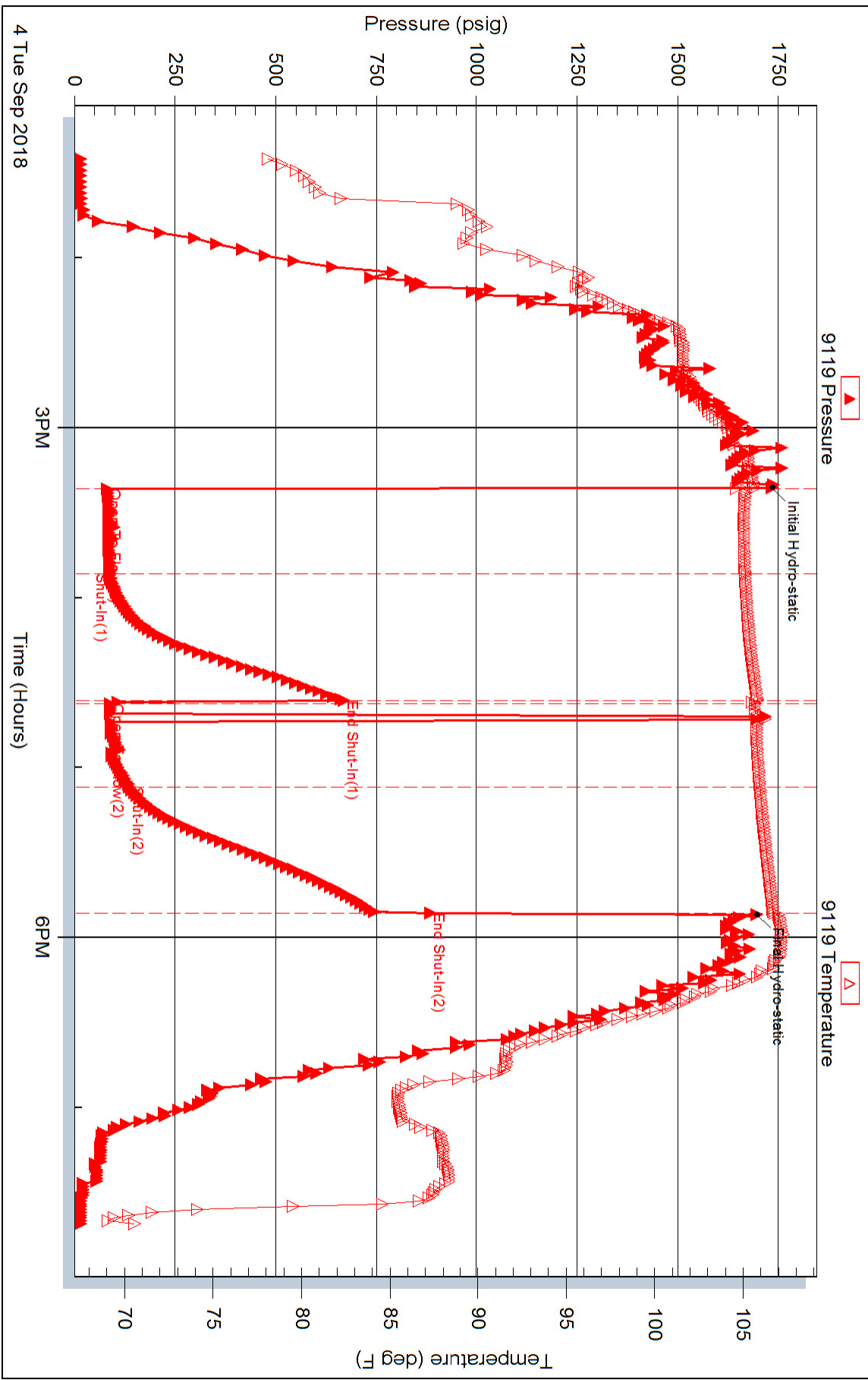
Recovery Table

Length ft	Description	Volume bbl
25.00	Drilling Mud	0.351

Total Length: 25.00 ft Total Volume: 0.351 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.05 @ 06:17:00

End Date: 2018.09.05 @ 12:08:00

Job Ticket #: 01008 DST #: 2

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.05 @ 12:29:17

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 2
Kansas City "H & I"
2018.09.05



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

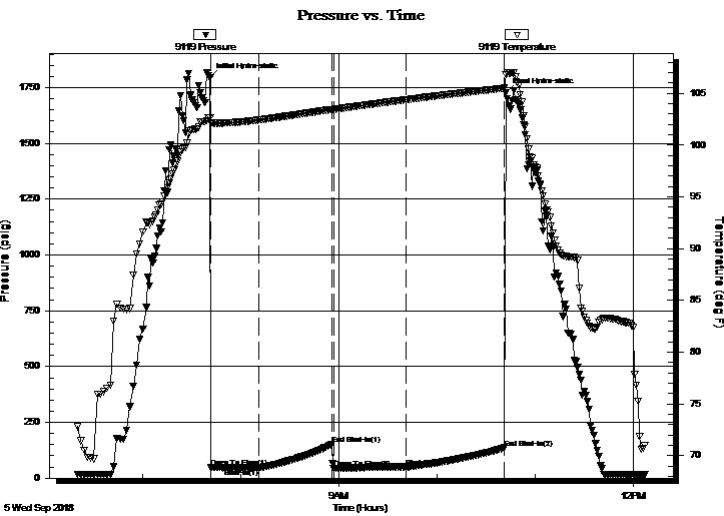
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01008 **DST#: 2**
 Test Start: 2018.09.05 @ 06:17:00

GENERAL INFORMATION:

Formation: **Kansas City "H & I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:41:00
 Time Test Ended: 12:08:00
 Interval: **3440.00 ft (KB) To 3470.00 ft (KB) (TVD)**
 Total Depth: 3470.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1851.00 ft (KB)
 1841.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 135.45 psig @ 3465.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.05 End Date: 2018.09.05 Last Calib.: 2018.09.05
 Start Time: 06:20:00 End Time: 12:07:30 Time On Btm: 2018.09.05 @ 07:41:00
 Time Off Btm: 2018.09.05 @ 10:42:00

TEST COMMENT: 1st Opening 30 Minutes weak building blow built to 2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 36 minutes and died
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1794.40	102.68	Initial Hydro-static
1	48.23	102.20	Open To Flow (1)
30	45.72	102.44	Shut-In(1)
75	151.53	103.46	End Shut-In(1)
76	42.61	103.45	Open To Flow (2)
120	48.84	104.39	Shut-In(2)
180	135.45	105.50	End Shut-In(2)
181	1728.35	106.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	gassy mud	0.21
0.00	slight show of oil between the tools	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
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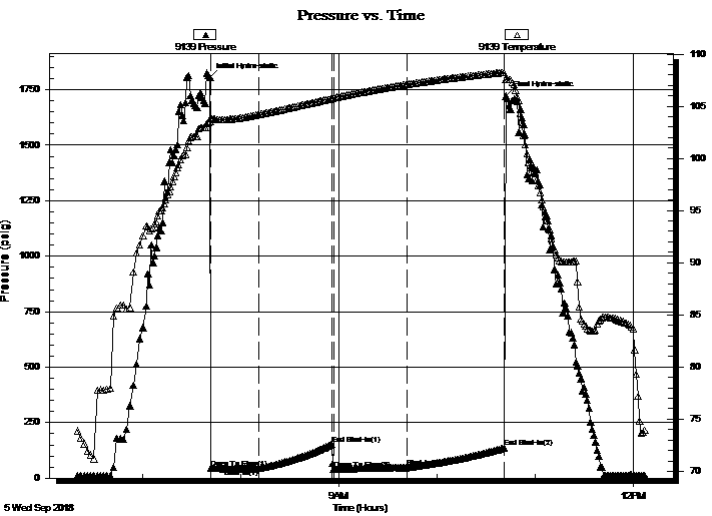
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01008 **DST#: 2**
 Test Start: 2018.09.05 @ 06:17:00

GENERAL INFORMATION:

Formation: **Kansas City "H & I"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:41:00
 Time Test Ended: 12:08:00
 Interval: **3440.00 ft (KB) To 3470.00 ft (KB) (TVD)**
 Total Depth: 3470.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1851.00 ft (KB)
 1841.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 136.97 psig @ 3465.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.05 End Date: 2018.09.05 Last Calib.: 2018.09.05
 Start Time: 06:20:00 End Time: 12:07:30 Time On Btm: 2018.09.05 @ 07:41:00
 Time Off Btm: 2018.09.05 @ 10:42:00

TEST COMMENT: 1st Opening 30 Minutes weak building blow built to 2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 36 minutes and died
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1804.42	103.53	Initial Hydro-static
1	45.22	103.89	Open To Flow (1)
30	43.75	104.20	Shut-In(1)
75	153.87	105.71	End Shut-In(1)
76	40.79	105.80	Open To Flow (2)
121	47.37	107.08	Shut-In(2)
180	136.97	108.24	End Shut-In(2)
181	1721.22	107.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	gassy mud	0.21
0.00	slight show of oil between the tools	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01008 **DST#: 2**
 Test Start: 2018.09.05 @ 06:17:00

Tool Information

Drill Pipe:	Length: 3424.00 ft	Diameter: 3.80 inches	Volume: 48.03 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:	68000.00 lb
			<u>Total Volume: 48.03 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3440.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	60.00 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			3415.00	
Hydraulic tool	5.00			3420.00	
Jars	5.00			3425.00	
Safety Joint	5.00			3430.00	
Packer	5.00			3435.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3440.00	
Anchor	25.00			3465.00	
Recorder	0.00	9119	Inside	3465.00	
Recorder	0.00	9139	Outside	3465.00	
Bullnose	5.00			3470.00	30.00 Bottom Packers & Anchor
Total Tool Length:	60.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01008 **DST#: 2**
 Test Start: 2018.09.05 @ 06:17:00

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: 64.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 10500.00 ppm			
Filter Cake: 1.00 inches			

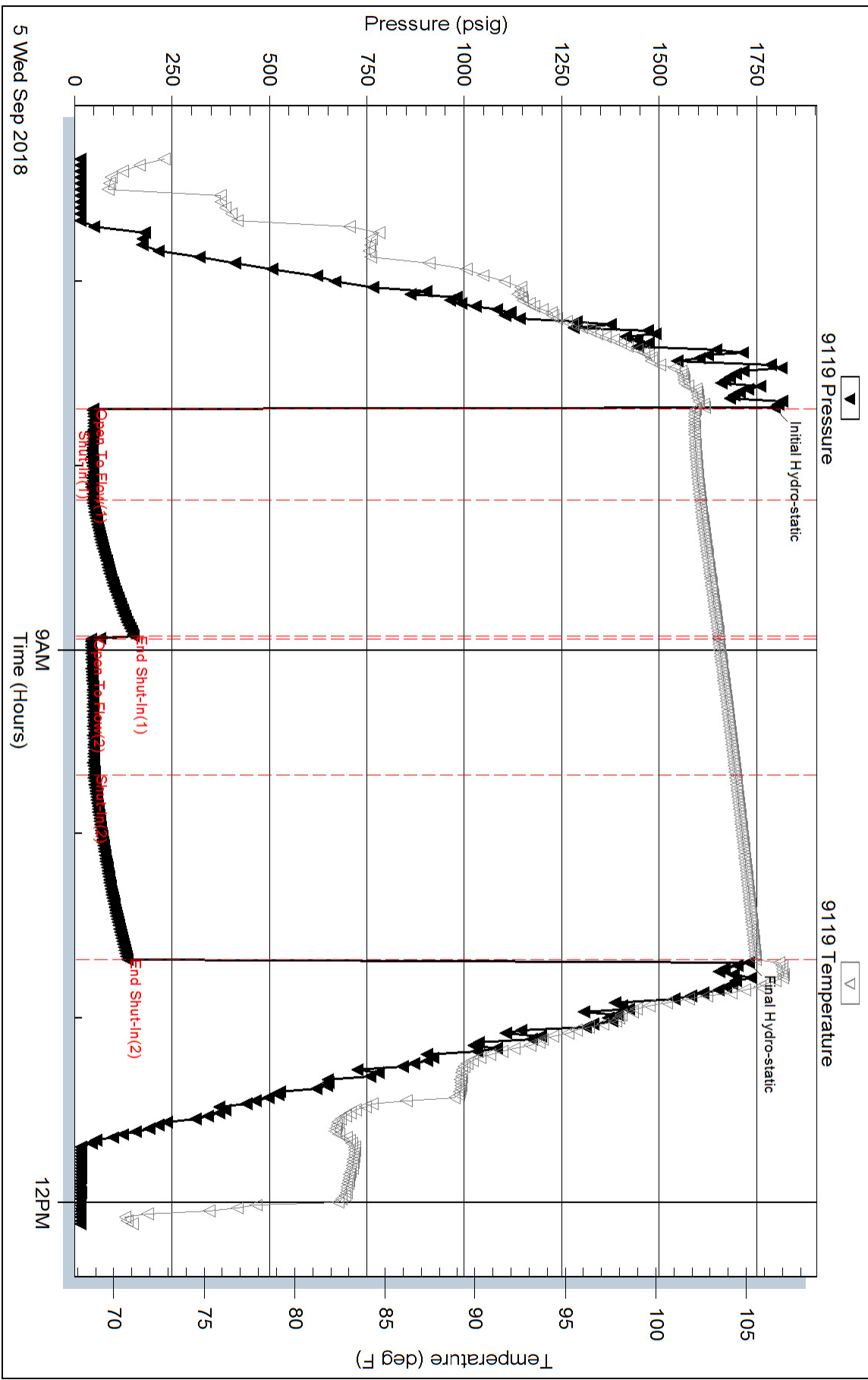
Recovery Information

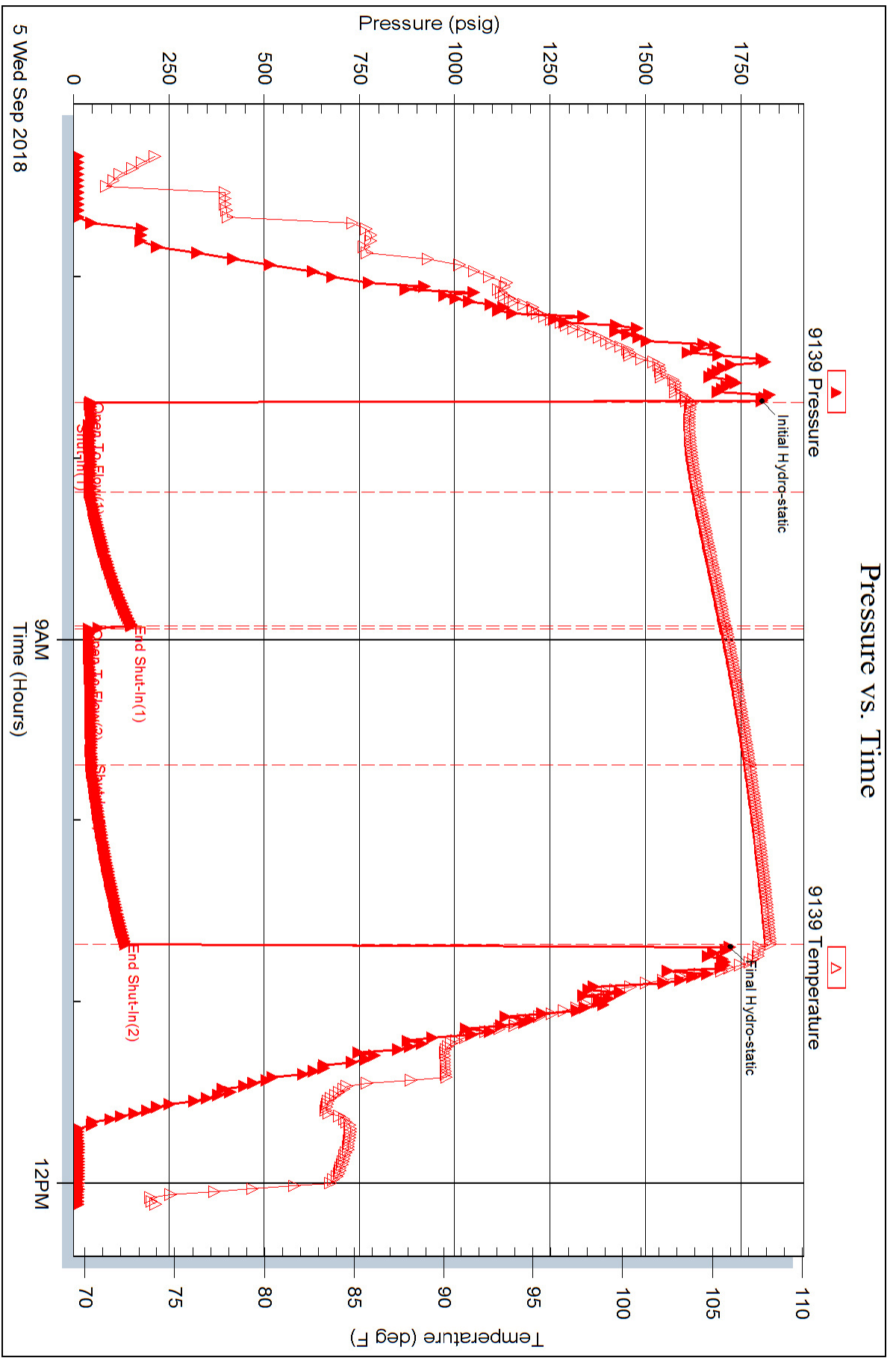
Recovery Table

Length ft	Description	Volume bbl
15.00	gassy mud	0.210
0.00	slight show of oil betw een the tools	0.000

Total Length: 15.00 ft Total Volume: 0.210 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.06 @ 23:52:00

End Date: 2018.09.06 @ 06:30:00

Job Ticket #: 01009 DST #: 3

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.06 @ 06:52:16

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 3
Kansas City "J & K"
2018.09.06



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

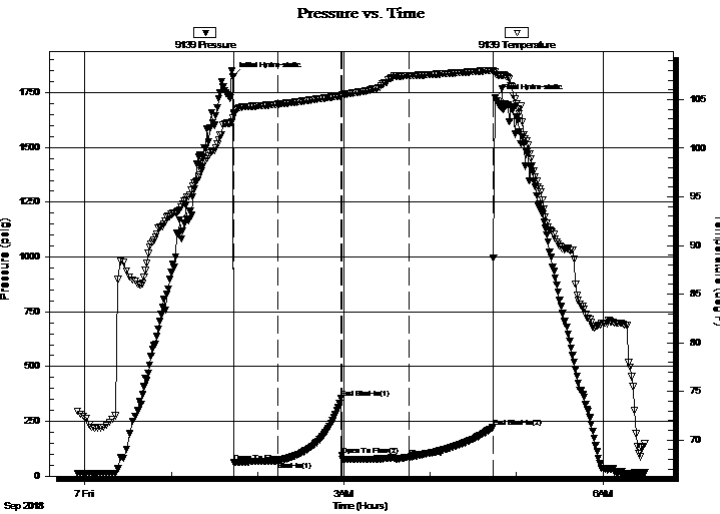
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

GENERAL INFORMATION:

Formation: **Kansas City "J & K"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 01:44:00 Tester: Gene Budig
 Time Test Ended: 06:30:00 Unit No: 1
 Interval: **3476.00 ft (KB) To 3535.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3535.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 222.78 psig @ 3529.77 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 2018.09.06
 Start Time: 23:52:00 End Time: 06:29:00 Time On Btm: 2018.09.07 @ 01:43:00
 Time Off Btm: 2018.09.07 @ 04:45:00

TEST COMMENT: 1st Opening 30 Minutes weak blow built to 1 1/2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 24 minutes and died
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1822.78	103.08	Initial Hydro-static
1	63.02	103.51	Open To Flow (1)
32	69.76	104.53	Shut-In(1)
75	354.52	105.37	End Shut-In(1)
76	96.28	105.46	Open To Flow (2)
122	86.56	107.46	Shut-In(2)
181	222.78	108.00	End Shut-In(2)
182	1724.99	107.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Drilling Mud	0.49

Gas Rates

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



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

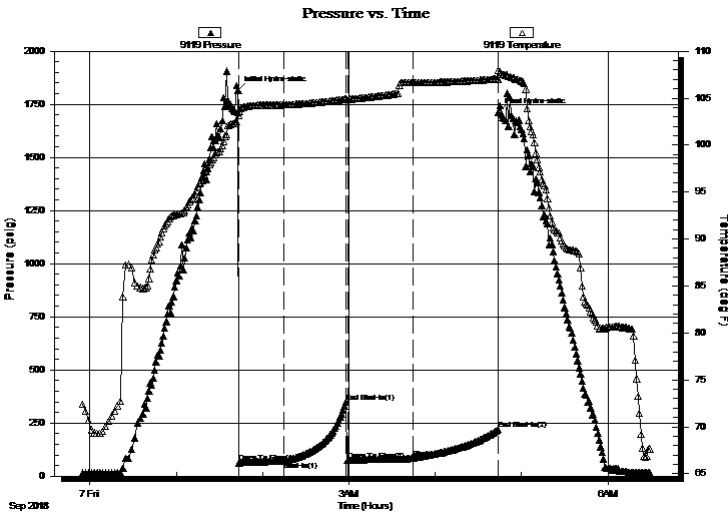
GENERAL INFORMATION:

Formation: **Kansas City "J & K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:44:00
 Time Test Ended: 06:30:00
 Interval: **3476.00 ft (KB) To 3535.00 ft (KB) (TVD)**
 Total Depth: 3535.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1851.00 ft (KB)
 1841.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 219.09 psig @ 3529.77 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 2018.09.06
 Start Time: 23:52:00 End Time: 06:29:00 Time On Btm: 2018.09.07 @ 01:43:00
 Time Off Btm: 2018.09.07 @ 04:44:00

TEST COMMENT: 1st Opening 30 Minutes weak blow built to 1 1/2 inches into the water
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak blow for 24 minutes and died
 2nd Shut-In 60 Minutes

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1814.23	103.51	Initial Hydro-static
1	63.38	103.19	Open To Flow (1)
32	70.73	104.29	Shut-In(1)
75	347.48	104.91	End Shut-In(1)
76	75.24	104.87	Open To Flow (2)
122	85.75	106.65	Shut-In(2)
181	219.09	107.05	End Shut-In(2)
181	1711.46	107.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Drilling Mud	0.49

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

Tool Information

Drill Pipe:	Length: 3452.00 ft	Diameter: 3.80 inches	Volume: 48.42 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:	84000.00 lb
			<u>Total Volume: 48.42 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3476.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.77 ft				
Tool Length:	88.77 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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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3451.00	
Hydraulic tool	5.00			3456.00	
Jars	5.00			3461.00	
Safety Joint	5.00			3466.00	
Packer	5.00			3471.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3476.00	
Anchor	5.00			3481.00	
Change Over Sub	0.75			3481.75	
Drill Pipe	31.27			3513.02	
Change Over Sub	0.75		Inside	3513.77	
Anchor	16.00			3529.77	
Recorder	0.00	9119	Inside	3529.77	
Recorder	0.00	9139	Outside	3529.77	
Bullnose	5.00			3534.77	58.77 Bottom Packers & Anchor

Total Tool Length: 88.77



DRILL STEM TEST REPORT

FLUID SUMMARY

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01009 **DST#: 3**
 Test Start: 2018.09.06 @ 23:52:00

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: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 13.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 12500.00 ppm			
Filter Cake: 1.00 inches			

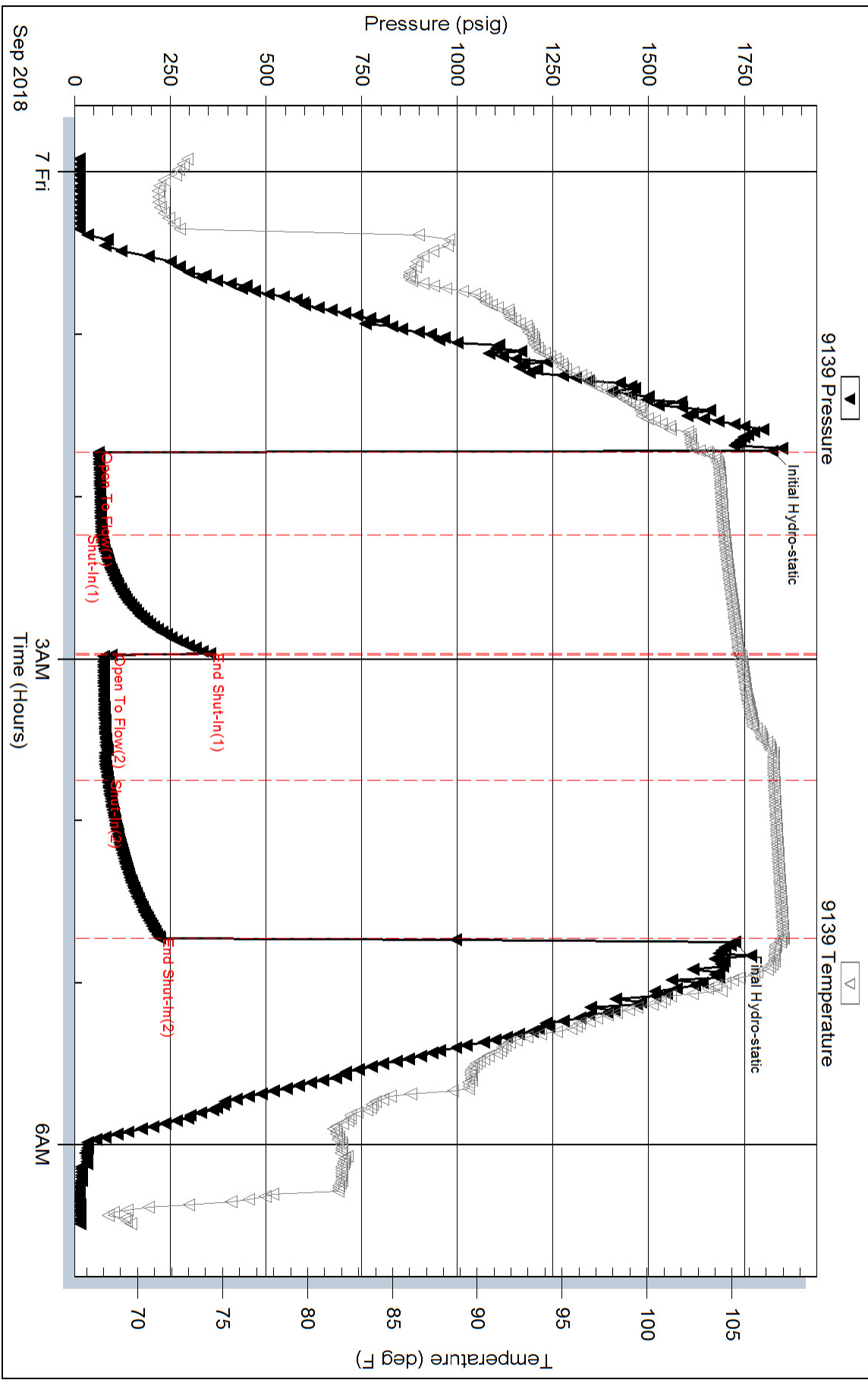
Recovery Information

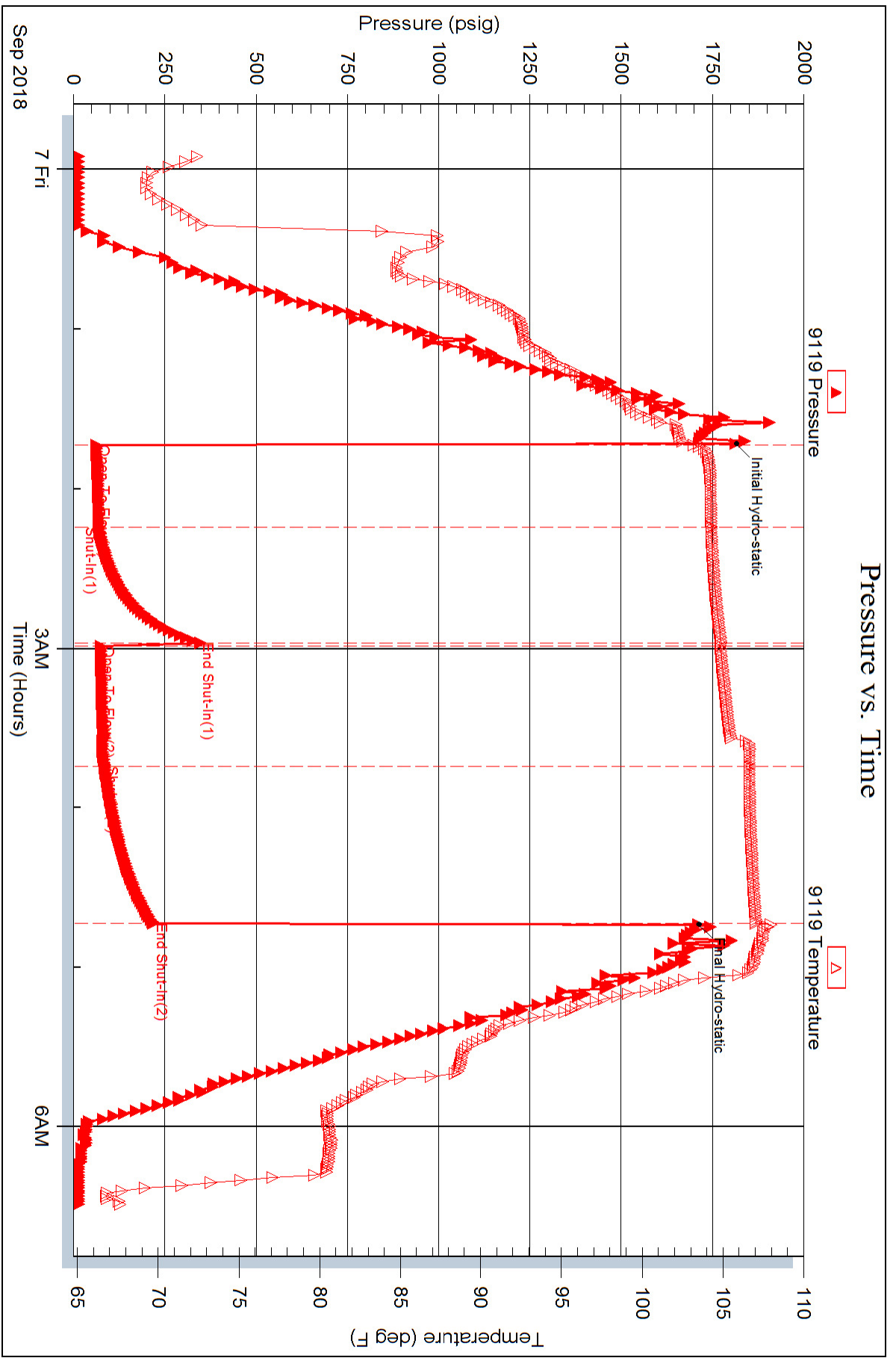
Recovery Table

Length ft	Description	Volume bbl
35.00	Drillinbg Mud	0.491

Total Length: 35.00 ft Total Volume: 0.491 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.06 @ 18:53:00

End Date: 2018.09.07 @ 02:04:00

Job Ticket #: 01010 DST #: 4

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.07 @ 02:28:10



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

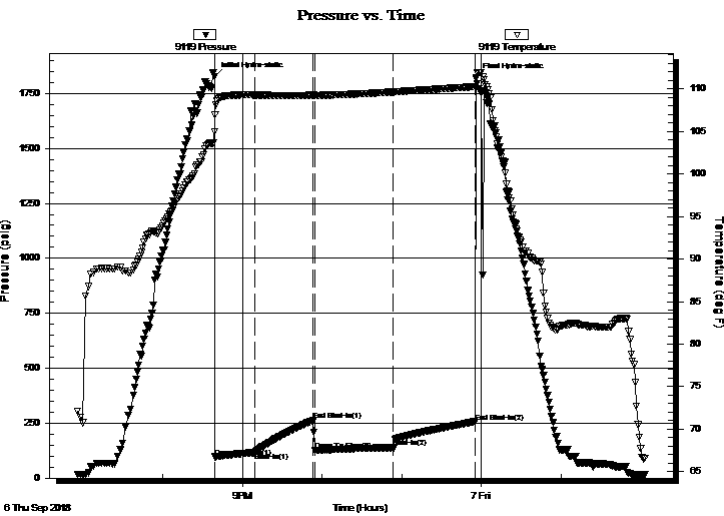
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01010 **DST#: 4**
 Test Start: 2018.09.06 @ 18:53:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 21:10:00 Tester: Gene Budig
 Time Test Ended: 02:04:00 Unit No: 1
Interval: 3542.00 ft (KB) To 3637.00 ft (KB) (TVD)
 Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3637.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9119 Outside
 Press@RunDepth: 255.38 psig @ 3632.06 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 2018.09.07
 Start Time: 18:53:00 End Time: 02:03:00 Time On Btm: 2018.09.06 @ 20:39:00
 Time Off Btm: 2018.09.06 @ 23:56:00

TEST COMMENT: 1st Opening 30 Minutes w eak building blow built to the bottom of the bucket in 9 minutes
 1st Shut-In 45 Minutes w eak blow back
 2nd Opening 60 Minutes w eak buiding blow built to the bottom of the bucket in 8 minutes
 2nd Shut-In 60 Minutes w eak blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1827.99	105.02	Initial Hydro-static
1	96.36	106.95	Open To Flow (1)
31	116.47	109.29	Shut-In(1)
75	263.87	109.28	End Shut-In(1)
76	127.97	109.25	Open To Flow (2)
135	139.02	109.65	Shut-In(2)
196	255.38	110.28	End Shut-In(2)
197	1821.80	111.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	180 feet of gas in the pipe	0.00
30.00	oil cut mud 10%Oil 90% Mud	0.42
60.00	very GASSY OIL CUT MUD	0.84
0.00	75%Gas 10%Oil 25% Mud	0.00
60.00	Very gassy oil cut mud	0.84
0.00	70%Gas 10%Oil 20%Mud	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

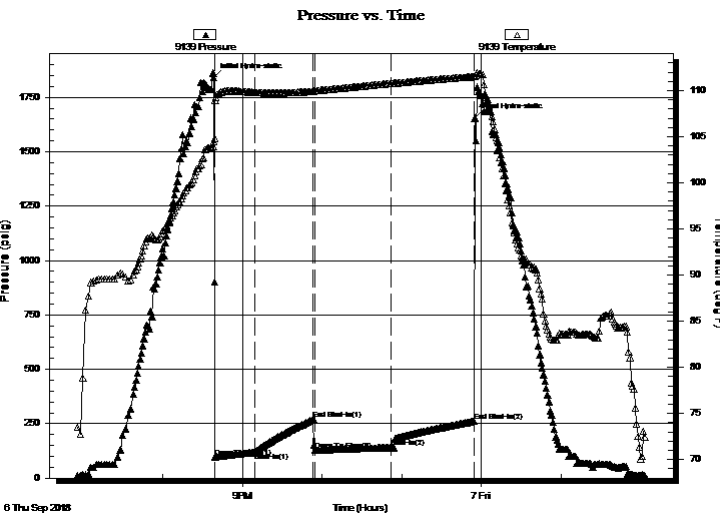
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01010 **DST#: 4**
 Test Start: 2018.09.06 @ 18:53:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:10:00
 Time Test Ended: 02:04:00
 Interval: **3542.00 ft (KB) To 3637.00 ft (KB) (TVD)**
 Total Depth: 3637.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 1851.00 ft (KB)
 1841.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9139 Inside
 Press@RunDepth: 261.67 psig @ 3632.06 ft (KB) Capacity: psig
 Start Date: 2018.09.06 End Date: 2018.09.07 Last Calib.: 1899.12.30
 Start Time: 18:53:00 End Time: 02:03:00 Time On Btm: 2018.09.06 @ 20:38:30
 Time Off Btm: 2018.09.06 @ 23:55:00

TEST COMMENT: 1st Opening 30 Minutes w eak building blow built to the bottom of the bucket in 9 minutes
 1st Shut-In 45 Minutes w eak blow back
 2nd Opening 60 Minutes w eak buiding blow built to the bottom of the bucket in 8 minutes
 2nd Shut-In 60 Minutes w eak blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1839.42	104.49	Initial Hydro-static
1	98.03	108.90	Open To Flow (1)
31	116.76	109.79	Shut-In(1)
75	270.28	109.93	End Shut-In(1)
77	128.83	110.00	Open To Flow (2)
134	139.66	110.78	Shut-In(2)
196	261.67	111.52	End Shut-In(2)
197	1654.46	111.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	180 feet of gas in the pipe	0.00
30.00	oil cut mud 10%Oil 90% Mud	0.42
60.00	very GASSY OIL CUT MUD	0.84
0.00	75%Gas 10%Oil 25% Mud	0.00
60.00	Very gassy oil cut mud	0.84
0.00	70%Gas 10%Oil 20%Mud	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eli Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01010 **DST#: 4**
 Test Start: 2018.09.06 @ 18:53:00

Tool Information

Drill Pipe:	Length: 3518.00 ft	Diameter: 3.80 inches	Volume: 49.35 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:	74000.00 lb
			<u>Total Volume: 49.35 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3542.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	95.06 ft				
Tool Length:	125.06 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			3517.00	
Hydraulic tool	5.00			3522.00	
Jars	5.00			3527.00	
Safety Joint	5.00			3532.00	
Packer	5.00			3537.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3542.00	
Anchor	5.00			3547.00	
Change Over Sub	0.75			3547.75	
Drill Pipe	63.56			3611.31	
Change Over Sub	0.75		Inside	3612.06	
Anchor	20.00			3632.06	
Recorder	0.00	9119	Outside	3632.06	
Recorder	0.00	9139	Inside	3632.06	
Bullnose	5.00			3637.06	95.06 Bottom Packers & Anchor

Total Tool Length: 125.06



DRILL STEM TEST REPORT

FLUID SUMMARY

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01010 **DST#: 4**
 Test Start: 2018.09.06 @ 18:53:00

Mud and Cushion Information

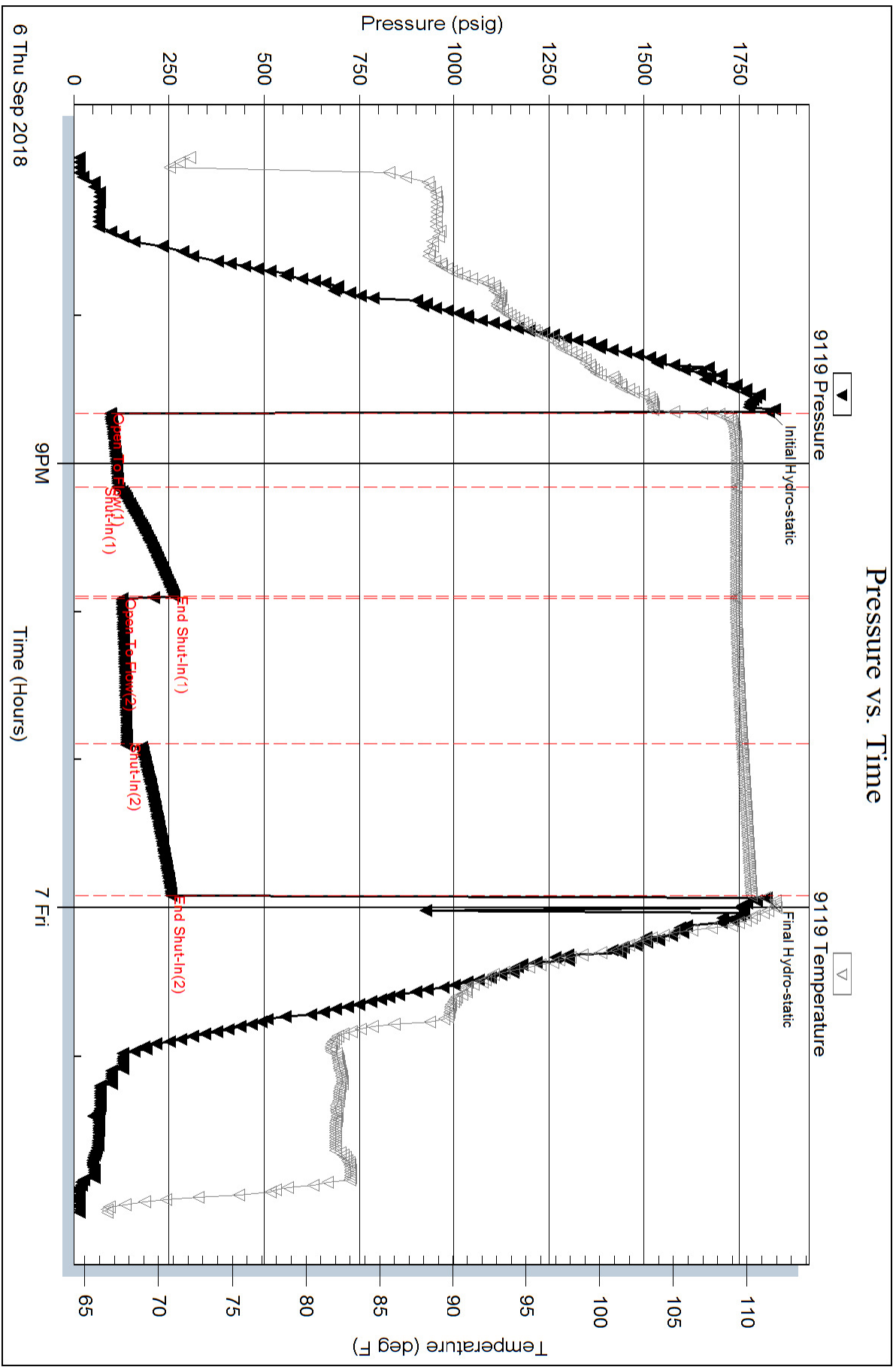
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 14.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 14000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

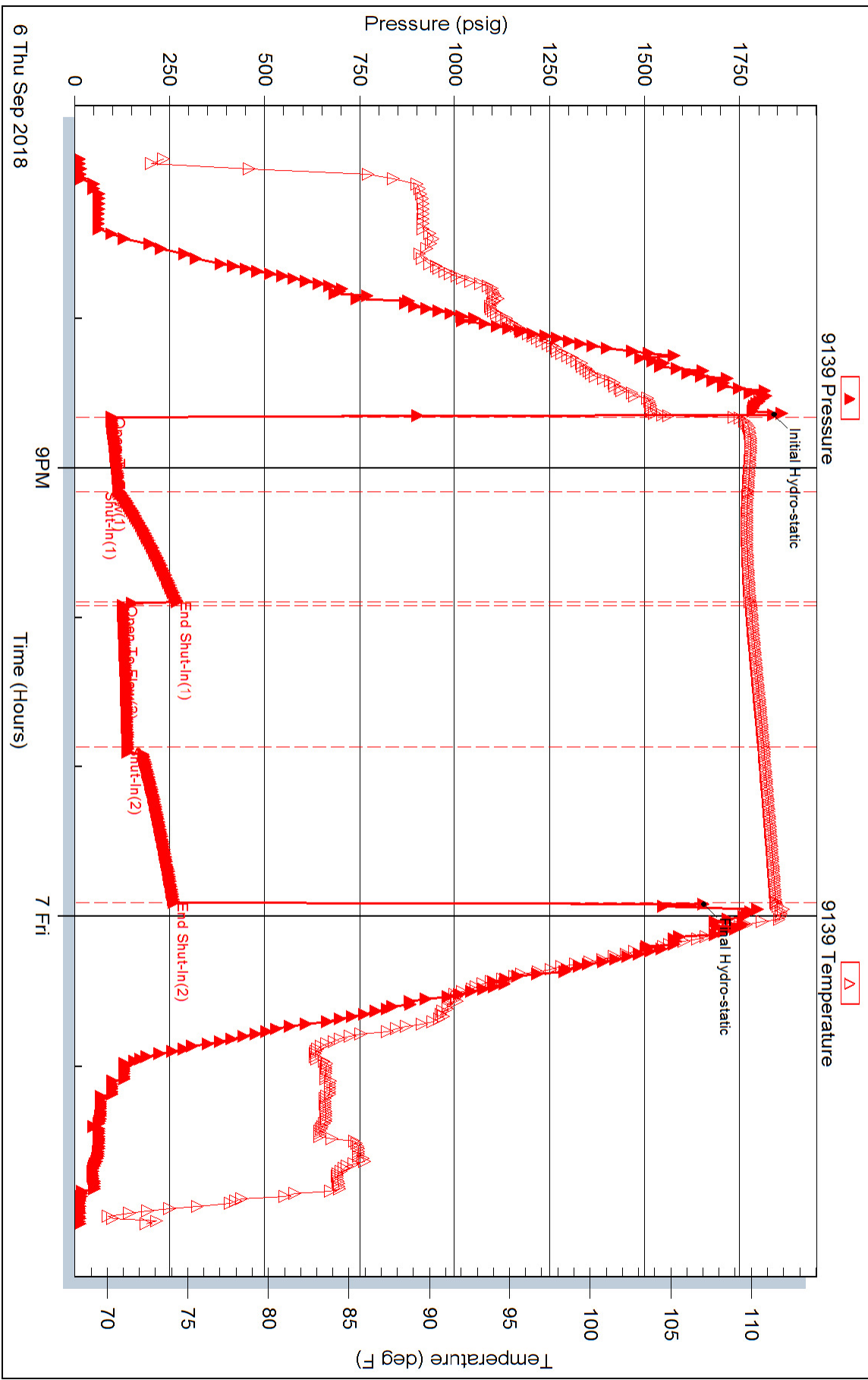
Recovery Table

Length ft	Description	Volume bbl
0.00	180 feet of gas in the pipe	0.000
30.00	oil cut mud 10%Oil 90% Mud	0.421
60.00	very GASSY OIL CUT MUD	0.842
0.00	75%Gas 10%Oil 25% Mud	0.000
60.00	Very gassy oil cut mud	0.842
0.00	70%Gas 10%Oil 20%Mud	0.000

Total Length: 150.00 ft Total Volume: 2.105 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:



Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Royal Energy**

P.O. Box 1820
Dodge City ,Kansas 67801

ATTN: Eli Felts

Alpers #2

4-23s-12w Stafford

Start Date: 2018.09.07 @ 10:27:00

End Date: 2018.09.07 @ 16:46:00

Job Ticket #: 01011 DST #: 5

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2018.09.07 @ 17:01:30

Royal Energy
4-23s-12w Stafford
Alpers #2
DST # 5
Viola
2018.09.07



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

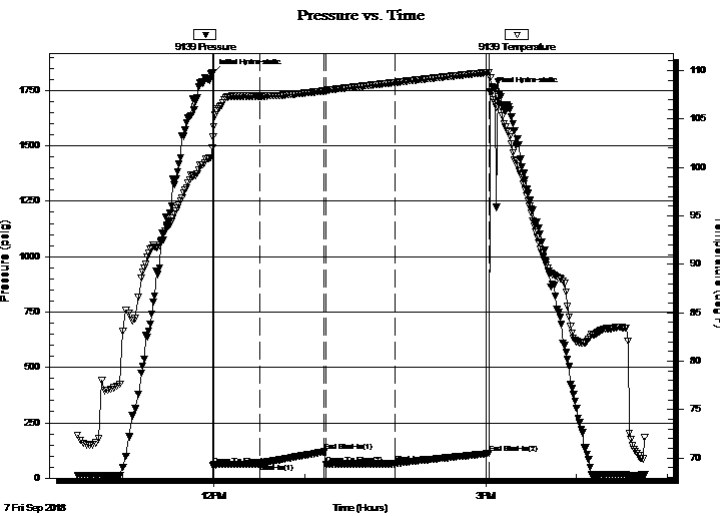
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 12:00:00 Tester: Gene Budig
 Time Test Ended: 16:46:00 Unit No: 1
 Interval: **3637.00 ft (KB) To 3665.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3665.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 111.25 psig @ 3660.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.07 End Date: 2018.09.07 Last Calib.: 2018.09.07
 Start Time: 10:27:00 End Time: 16:45:00 Time On Btm: 2018.09.07 @ 11:59:00
 Time Off Btm: 2018.09.07 @ 15:03:00

TEST COMMENT: 1st Opening 30 Minutes weak steady 3/4 inch blow through out
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak steady surface blow through out
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1827.89	102.06	Initial Hydro-static
1	59.00	103.15	Open To Flow (1)
32	65.14	107.37	Shut-In(1)
74	119.33	107.90	End Shut-In(1)
75	62.06	107.97	Open To Flow (2)
121	66.07	108.79	Shut-In(2)
183	111.25	109.83	End Shut-In(2)
184	1746.03	109.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	very slightly oil and gas cut mud	0.77
0.00	3%gAS 2%oIL 95% Mud	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Royal Energy
 P.O. Box 1820
 Dodge City, Kansas 67801
 ATTN: Eli Felts

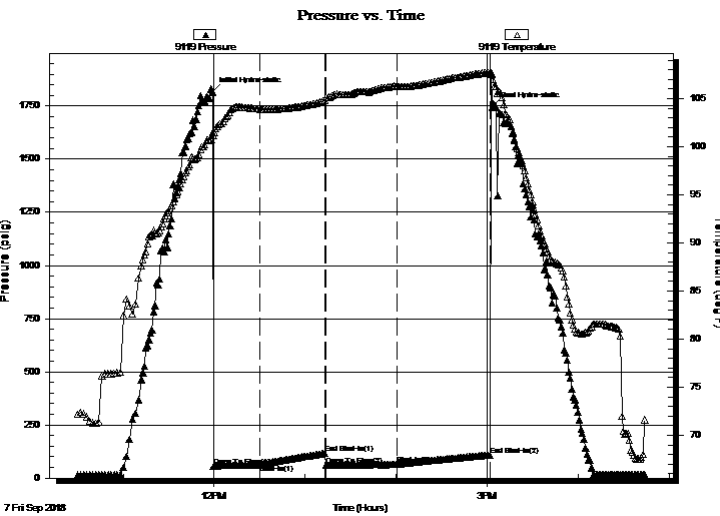
4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

GENERAL INFORMATION:

Formation: **Viola**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 12:00:00 Tester: Gene Budig
 Time Test Ended: 16:46:00 Unit No: 1
 Interval: **3637.00 ft (KB) To 3665.00 ft (KB) (TVD)** Reference Elevations: 1851.00 ft (KB)
 Total Depth: 3665.00 ft (KB) (TVD) 1841.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 108.43 psig @ 3660.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2018.09.07 End Date: 2018.09.07 Last Calib.: 2018.09.07
 Start Time: 10:27:00 End Time: 16:44:30 Time On Btm: 2018.09.07 @ 11:59:00
 Time Off Btm: 2018.09.07 @ 15:03:30

TEST COMMENT: 1st Opening 30 Minutes weak steady 3/4 inch blow through out
 1st Shut-In 45 Minutes
 2nd Opening 45 Minutes weak steady surface blow through out
 2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1815.35	101.46	Initial Hydro-static
1	55.98	101.14	Open To Flow (1)
31	63.60	103.92	Shut-In(1)
74	116.99	104.83	End Shut-In(1)
75	58.78	105.07	Open To Flow (2)
122	65.81	106.23	Shut-In(2)
183	108.43	107.72	End Shut-In(2)
185	1745.42	107.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	very slightly oil and gas cut mud	0.77
0.00	3%gAS 2%oIL 95% Mud	0.00

Gas Rates

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

Tool Information

Drill Pipe:	Length: 3612.00 ft	Diameter: 3.80 inches	Volume: 50.67 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:	78000.00 lb
			<u>Total Volume: 50.67 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3637.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	28.00 ft				
Tool Length:	58.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Hit a bridge 400 feet off bottom opened the tool to get through hit one at 350 never opened the tool hit 4-6 more going to bottom slid tool 6 feet to bottom

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3612.00	
Hydraulic tool	5.00			3617.00	
Jars	5.00			3622.00	
Safety Joint	5.00			3627.00	
Packer	5.00			3632.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3637.00	
Anchor	23.00			3660.00	
Recorder	0.00	9119	Inside	3660.00	
Recorder	0.00	9139	Outside	3660.00	
Bullnose	5.00			3665.00	28.00 Bottom Packers & Anchor
Total Tool Length:	58.00				



DRILL STEM TEST REPORT

FLUID SUMMARY

Royal Energy
 P.O. Box 1820
 Dodge City ,Kansas 67801
 ATTN: Eii Felts

4-23s-12w Stafford
Alpers #2
 Job Ticket: 01011 **DST#: 5**
 Test Start: 2018.09.07 @ 10:27:00

Mud and Cushion Information

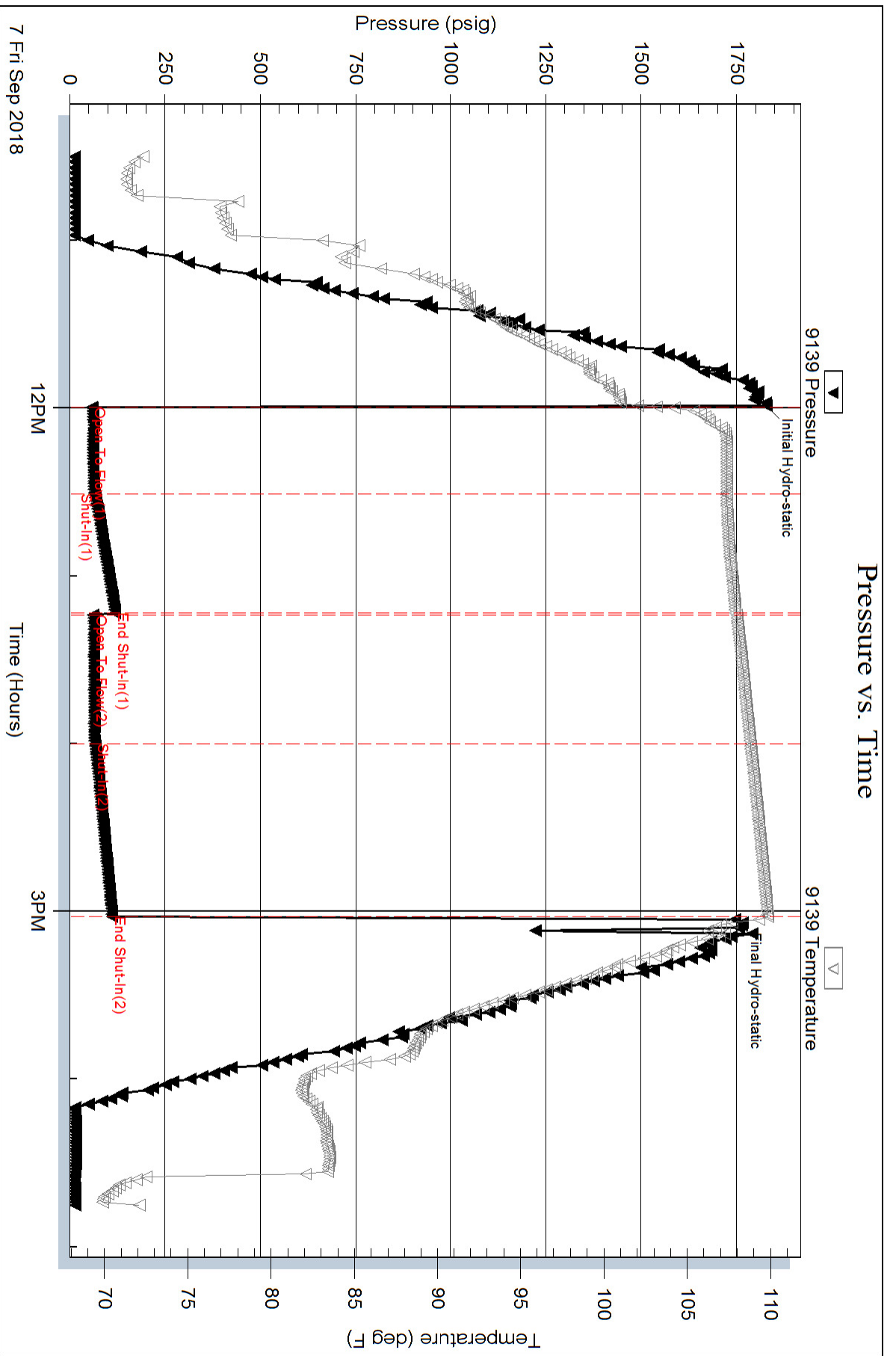
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 42.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.20 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 11000.00 ppm			
Filter Cake: 1.00 inches			

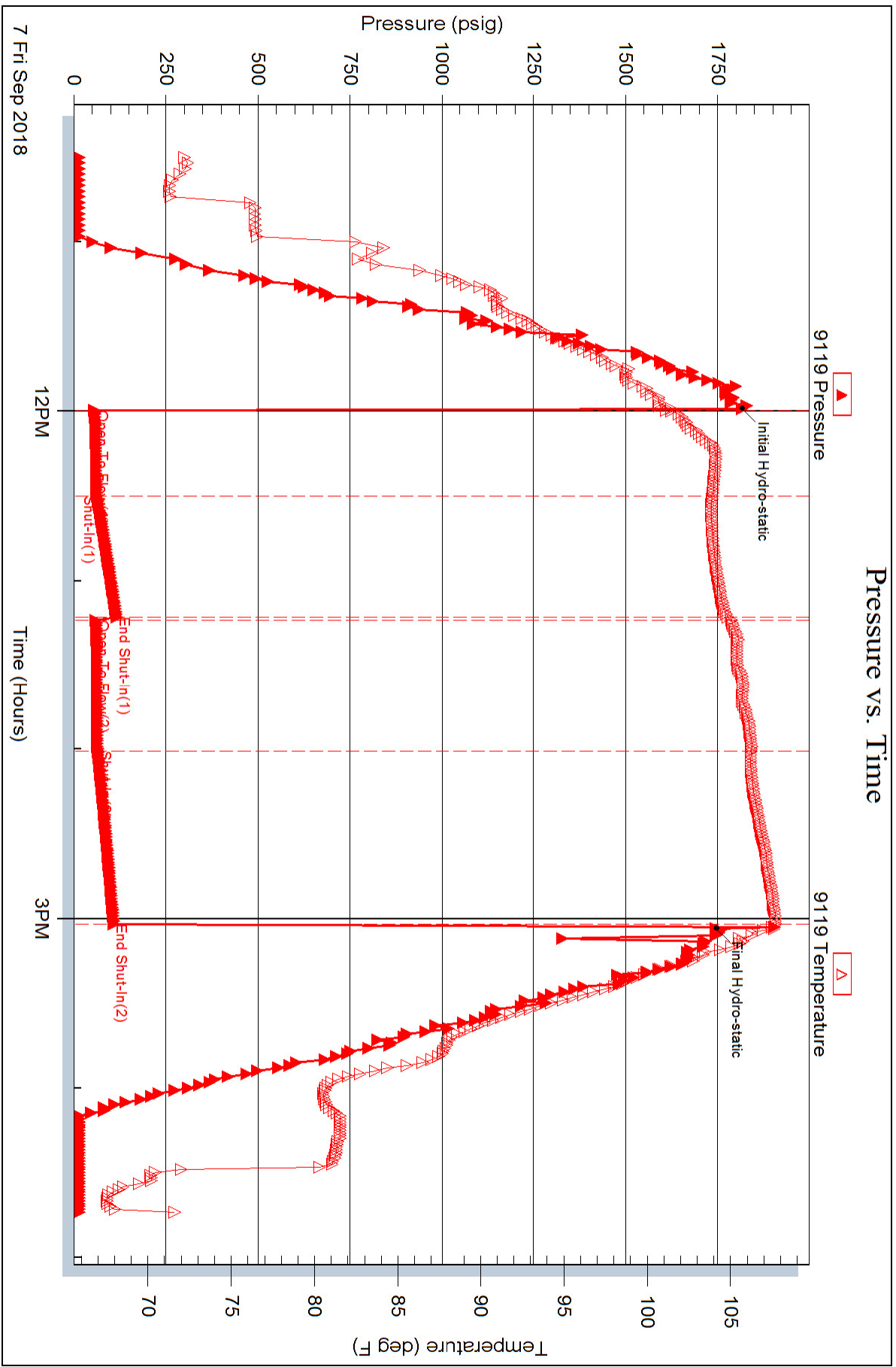
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
55.00	very slightly oil and gas cut mud	0.772
0.00	3%gAS 2%oL 95% Mud	0.000

Total Length: 55.00 ft Total Volume: 0.772 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:





ELI J. FELTS

CONSULTING PETROLEUM GEOLOGIST

GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG 15-185-24031

OPERATOR ROYAL ENERGY, INC.
LEASE ALPERS #2
FIELD HUDSON SOUTH
LOCATION SW NE NE NW
SECTION 4 TOWNSHIP 23S RANGE _____
COUNTY STAFFORD STATE KANSAS
CONTRACTOR SOUTHWIND DRILLING, RIG #1
SPUD 8/30/2018 COMP 9/8/2018
RTD 3800' LTD 3798'
SAMPLES SAVED FROM 3000' TO RTD
DRILLING TIME KEPT FROM 3000' TO RTD
SAMPLES EXAMINED FROM 3200' TO RTD
GEO SUPERVISION FROM 3150' TO RTD
MUD UP 2800'-2840'
MUD TYPE CHEMICAL DRISPAC (MUD-CO)

ELEVATION

KB 1851'
GL 1841'

CASING RECORD

CONDUCTOR

N/A

SURFACE

340'

PRODUCTION

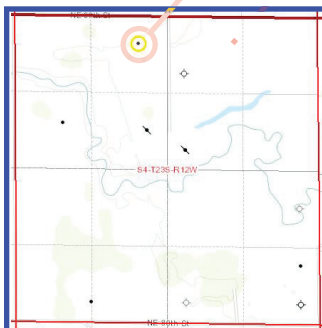
N/A

ELECTRICAL SURVEYS

- CNL/CDL
- DUAL INDUCTION
- MICRO
- SONIC

FORMATION TOPS & STRUCTURAL COMPARISON

FORMATION	DEPTH	SUBSEA	STRUCTURE
Anhydrite	636	1215	+8
Base/Anhydrite	657	1194	+8
Heebner	3156	-1305	+8
Brown Lime	3289	-1438	+9
Lansing	3314	-1463	+9
Stark	3503	-1652	+10
Base/Kansas City	3568	-1717	+5
Viola	3590	-1739	+6
Simpson	3675	-1824	-24
Arbuckle	3705	-1854	+26



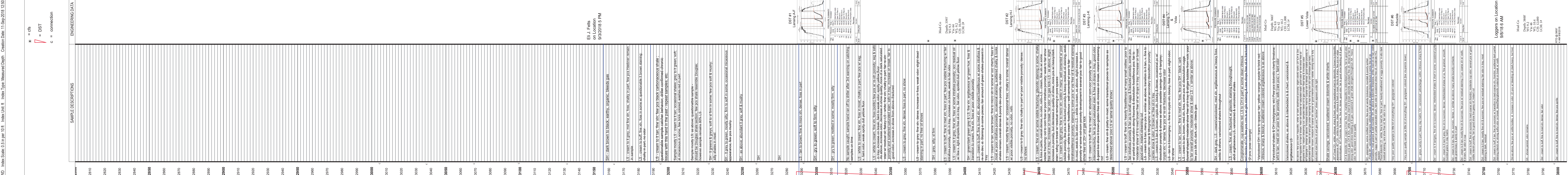
Comparison Well Used for Structure: Dixon Operating Company, Alpers 1-4 (15-185-23370) 12W

REMARKS As a result of careful sample & log analysis; DST results, and the lack of commercial oil recoveries

and/or formation pressures on those tests, it was decided to plug and abandon the Alpers #2.

Respectfully Submitted,

Eli J. Felts



DEPTH (ft)	DESCRIPTION
2800-3150	SH - dark brown to black; earthy, organic, bleeds gas
3150-3180	LS - cream to lt grey, mist fine xln, foss, chalky in part, few pcs Heebner remain in sample
3180-3190	LS - cream to buff, fine xln, foss, in some w/ questionable lt brown staining; earthy in part, no odor
3190-3200	LS - cream to lt tan, fine xln; few pcs black carbonaceous shale; questionable sample catcher behavior; driller confirmed chronic issues with this hand in the past - repeat samples, etc.
3200-3210	Sample mostly LS - cream to lt tan; occasional shales; grey to lt green, soft; sil micaceous in some, few dark colored, washes red in part
3210-3220	Sample mostly LS; as above; questionable sample - should be Douglas shale section; few pcs shale resemble Douglas; however sample remains 80% LS
3220-3230	SH - lt greens & greys; soft to st firm in some; few pcs soft & musty; silty shales in most
3230-3240	SH - lt grey to green, mostly silty; firm to soft in some; occasional micaceous appearance; few pcs musty
3240-3250	SH - as above; abundant lt grey, soft & musty
3250-3260	SH
3260-3270	SH
3270-3280	LS - tan to brown; fine to micro xln, dense, loss in part
3280-3290	SH - grey to green; mottled in some; mostly firm, silty
3290-3300	No sample caught; sample hand ran off by driller after 3rd warning on catching samples on time
3300-3310	LS - white to cream; fine xln, loss in most; chalky in part, few pcs w/ ssg; v. faint odor; weak spotty dull yellow floor
3310-3320	LS - white to cream; fine xln, loss (collic) few pcs w/ re-xln porosity, ssg & ssg in tray; increase on break; faint to weak odor; spotty yellow floor
3320-3330	As above; increase on break; faint to weak odor; spotty yellow floor
3330-3340	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3340-3350	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3350-3360	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3360-3370	LS - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3370-3380	LS - cream, fine xln, fractured w/ argillaceous staining throughout; about argillaceous LS, varicolored shales
3380-3390	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous med blocks of CH; few pcs cm ls w/ gls staining & rare drops free oil in fractures (2 pcs, posse cavings)
3390-3400	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above
3400-3410	Varicolored shales; as above & interbedded ls & chert, varicolored & argillaceous LS
3410-3420	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3420-3430	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3430-3440	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3440-3450	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3450-3460	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3460-3470	LS - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3470-3480	LS - cream, fine xln, fractured w/ argillaceous staining throughout; about argillaceous LS, varicolored shales
3480-3490	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous med blocks of CH; few pcs cm ls w/ gls staining & rare drops free oil in fractures (2 pcs, posse cavings)
3490-3500	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above
3500-3510	Varicolored shales; as above & interbedded ls & chert, varicolored & argillaceous LS
3510-3520	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3520-3530	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3530-3540	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3540-3550	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3550-3560	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3560-3570	LS - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3570-3580	LS - cream, fine xln, fractured w/ argillaceous staining throughout; about argillaceous LS, varicolored shales
3580-3590	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous med blocks of CH; few pcs cm ls w/ gls staining & rare drops free oil in fractures (2 pcs, posse cavings)
3590-3600	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above
3600-3610	Varicolored shales; as above & interbedded ls & chert, varicolored & argillaceous LS
3610-3620	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3620-3630	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3630-3640	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3640-3650	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3650-3660	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3660-3670	LS - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3670-3680	LS - cream, fine xln, fractured w/ argillaceous staining throughout; about argillaceous LS, varicolored shales
3680-3690	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous med blocks of CH; few pcs cm ls w/ gls staining & rare drops free oil in fractures (2 pcs, posse cavings)
3690-3700	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above
3700-3710	Varicolored shales; as above & interbedded ls & chert, varicolored & argillaceous LS
3710-3720	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3720-3730	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3730-3740	LS - cream to tan, brown, fine to med xln, foss, few pcs SH - black, carb fragments in tray; increase on break; faint to weak odor; spotty yellow floor
3740-3750	LS - cream to tan, brown, med xln, foss; some pcs w/ dissolution vugs (faint shaded) moderate show free oil in tray (oil gas bubbles from rock; poor to fair overall porosity; moderate show & odor; LS - v. similar as above; few pcs blk sh; dark, carb - bleeds gas
3750-3760	SH - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3760-3770	LS - dark grey, LS - cream/varicolored, med xln, argillaceous w/ heavy foss; oolitic & others; varicolored shales throughout
3770-3780	LS - cream, fine xln, fractured w/ argillaceous staining throughout; about argillaceous LS, varicolored shales
3780-3790	Conglomerate; cup washes red, LS to CH in part w/ some clean vitreous med blocks of CH; few pcs cm ls w/ gls staining & rare drops free oil in fractures (2 pcs, posse cavings)
3790-3800	Varicolored CH - trans to opaque; tan, yellow, orange, purple to brick red; vitreous, shaly & blocky, scattered cream colored argillaceous ls as above