

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 \_\_\_\_\_

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](mailto: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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Form	ACO1 - Well Completion
Operator	Black Oak Exploration, LLC
Well Name	WITHERS 2-21
Doc ID	1648337

All Electric Logs Run

POR
MICRO
DIL
SONIC




**CEMENT TREATMENT REPORT**

Customer:	Black Oak Exploration	Well:	Withers #2-21	Ticket:	WP 2458
City, State:	Oakley KS	County:	Decatur KS	Date:	2/26/2022
Field Rep:	Jason Galli	S-T-R:	21-5S-30W	Service:	Surface

Downhole Information			Calculated Slurry - Lead			Calculated Slurry - Tail		
Hole Size:	12.25 in		Blend:	H-325		Blend:		
Hole Depth:	288 ft		Weight:	14.8 ppg		Weight:	ppg	
Casing Size:	8 5/8 in		Water / Sx:	6.9 gal / sx		Water / Sx:	gal / sx	
Casing Depth:	286 ft		Yield:	1.41 ft <sup>3</sup> / sx		Yield:	ft <sup>3</sup> / sx	
Tubing / Liner:	in		Annular Bbls / Ft.:	0.0735 bbs / ft.		Annular Bbls / Ft.:	bbs / ft.	
Depth:	ft		Depth:	ft		Depth:	ft	
Tool / Packer:			Annular Volume:	0.0 bbls		Annular Volume:	0 bbls	
Tool Depth:	ft		Excess:			Excess:		
Displacement:	17.0 bbls		Total Slurry:	45.2 bbls		Total Slurry:	0.0 bbls	
			Total Sacks:	180 sx		Total Sacks:	0 sx	

TIME	RATE	PSI	BBLs	TOTAL BBLs	REMARKS
800p			-	-	Arrived on location/rig was circulating mud on arrival.
810p				-	Safety meeting
820p				-	Rig up
836p	3.0	150.0	5.0	5.0	Water ahead
839p	4.5	275.0	45.2	50.2	Mixed cement @ 14.8 ppg
852p	6.0	275.0	17.0	67.2	Begin displacement
856p		150.0		67.2	Plug down and shut in
905p				67.2	Wash up and rig down
941p				67.2	Left location
				67.2	
				67.2	
					Cement spotted in bottom of cellar per tool pusher.

CREW		UNIT		SUMMARY		
Cementer:	John		208	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Jose V		242	4.5 bpm	213 psi	67 bbls
Bulk #1:						
Bulk #2:						



### CEMENT TREATMENT REPORT

Customer:	Black Oak Exploration	Well:	Withers # 2-21	Ticket:	WP-2499
City, State:	Oakley KS	County:	Decatur KS	Date:	3/8/2022
Field Rep:	Jason Galli	S-T-R:	21-5S-30W	Service:	Longstring

Downhole Information	
Hole Size:	7 7/8 in
Hole Depth:	4242 ft
Casing Size:	5 1/2 in
Casing Depth:	4241 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	99.9 bbls

Calculated Slurry - Lead	
Blend:	H-Con
Weight:	12.0 ppg
Water / Sx:	15.5 gal / sx
Yield:	2.56 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0309 bbs / ft.
Depth:	4242 ft
Annular Volume:	131.1 bbls
Excess:	
Total Slurry:	170.9 bbls
Total Sacks:	375 sx

Calculated Slurry - Tail	
Blend:	H_LD
Weight:	14.8 ppg
Water / Sx:	6.5 gal / sx
Yield:	1.51 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0309 bbs / ft.
Depth:	4242 ft
Annular Volume:	131.0778 bbls
Excess:	
Total Slurry:	40.3 bbls
Total Sacks:	150 sx

TIME	RATE	PSI	BBLs	STAGE	TOTAL BBLs	REMARKS
3:15p			-		-	Arrival
3:20p					-	Safety meeting
5:00p					-	Run float equipment
7:40p					-	Drop ball and circulate hole for one hour Mud 34#
9:00p	5.3	310.0	5.0		5.0	H2O ahead
9:01p	5.4	270.0	12.0		17.0	Mixed 12 bbl of mud flush
9:03p	5.4	260.0	5.0		22.0	H2O behide
9:04p	6.0	540.0	170.9		192.9	Mixed 375 sks of H-Con @ 12 ppg @ 4242'
9:06p	6.0	540.0	13.6		206.5	Mixed 30 sks of H-Con @ 12 ppg @ Rat hole
9:11p	6.0	540.0	9.1		215.6	Mixed 20 sks of H-Con @ 12 ppg @ Mouse hole
9:30p	4.0	180.0	40.3		255.9	Mixed 150 sks of H-LD @ 14.8 ppg @ 4242'
9:45p						Wash up pump and lines
9:46p						Drop plug
9:48p	6.6	540.0	99.9			Displace H2O with 2 % KCL
10:00p						Land plug @ 1790 psi @ 3.2 bpm
10:06p						Wash up pump and lines
10:13p						Rig down
10:35p						Depart location

CREW		UNIT	SUMMARY		
Cementor:	Jesse J	78	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Michael R	230	5.6 bpm	398 psi	356 bbls
Bulk #1:	Charles	194-235			
Bulk #2:	Christan E	242			



## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.02 @ 14:45:00

End Date: 2022.03.02 @ 20:21:30

Job Ticket #: 68803                      DST #: 1

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

Printed: 2022.03.09 @ 14:19:26



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68803

**DST#: 1**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 14:45:00

## GENERAL INFORMATION:

Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:57:30

Time Test Ended: 20:21:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3902.00 ft (KB) To 3922.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3922.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353 Inside**

Press@RunDepth: psig @ 3903.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.02 End Date: 2022.03.02

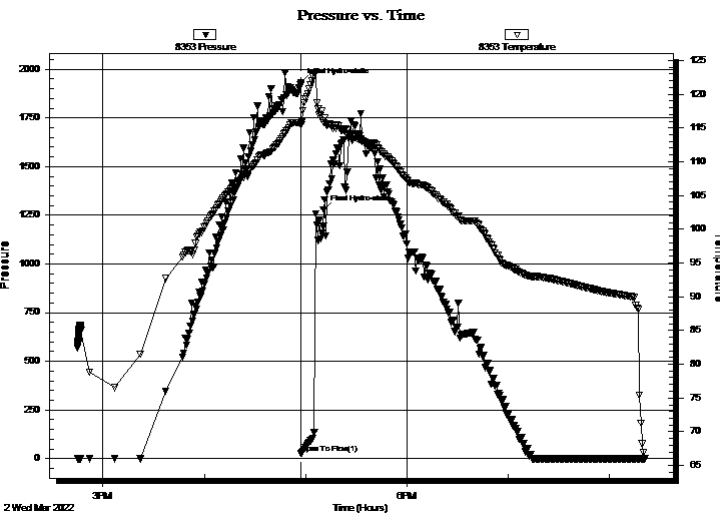
Last Calib.: 2022.03.02

Start Time: 14:45:01 End Time: 20:21:30

Time On Btm: 2022.03.02 @ 16:57:15

Time Off Btm: 2022.03.02 @ 17:10:45

**TEST COMMENT:** 30:IF- Fair surface blow , built to 6 inch in 5 min, BOB in 8 min  
Packer failure 15 min into open



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.79	115.84	Initial Hydro-static
1	26.60	115.43	Open To Flow (1)
14	1279.24	115.74	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2520.00	Mud 100%M	33.65

## Gas Rates

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





# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

Black Oak Exploration LLC

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

**21-5S-30W Decatur, KS**

**Withers #2-21**

Job Ticket: 68803

**DST#: 1**

Test Start: 2022.03.02 @ 14:45:00

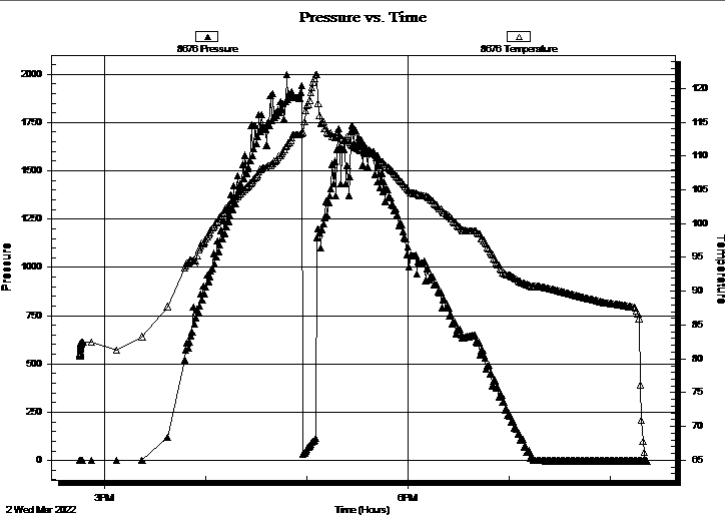
### GENERAL INFORMATION:

Formation: **Toronto**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 16:57:30 Tester: Nathan Aneas  
 Time Test Ended: 20:21:30 Unit No: 71  
 Interval: **3902.00 ft (KB) To 3922.00 ft (KB) (TVD)**  
 Total Depth: 3922.00 ft (KB) (TVD) Reference Elevations: 2894.00 ft (KB)  
 Hole Diameter: 7.87 inches Hole Condition: Fair KB to GR/CF: 2889.00 ft (CF)  
 Reference Elevations: 2894.00 ft (KB)  
 KB to GR/CF: 2889.00 ft (CF)  
 KB to GR/CF: 5.00 ft

### Serial #: 8676 Outside

Press@RunDepth:	psig @	3903.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2022.03.02	End Date:	2022.03.02	Last Calib.:	2022.03.02
Start Time:	14:45:01	End Time:	20:21:45	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 30:IF- Fair surface blow, built to 6 inch in 5 min, BOB in 8 min  
Packer failure 15 min into open



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
2520.00	Mud 100%M	33.65

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68803

**DST#: 1**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 14:45:00

## Tool Information

Drill Pipe:	Length: 3725.00 ft	Diameter: 3.80 inches	Volume: 52.25 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	37.00 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	3902.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	48.00 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			3879.00	
Hydraulic tool	5.00			3884.00	
Jars	5.00			3889.00	
Safety Joint	3.00			3892.00	
Packer	5.00			3897.00	28.00 Bottom Of Top Packer
Packer	5.00			3902.00	
Stubb	1.00			3903.00	
Recorder	0.00	8353	Inside	3903.00	
Recorder	0.00	8676	Outside	3903.00	
Perforations	16.00			3919.00	
Bullnose	3.00			3922.00	20.00 Bottom Packers & Anchor

**Total Tool Length: 48.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68803

**DST#: 1**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 14:45:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2520.00	Mud 100%M	33.655

Total Length: 2520.00 ft      Total Volume: 33.655 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

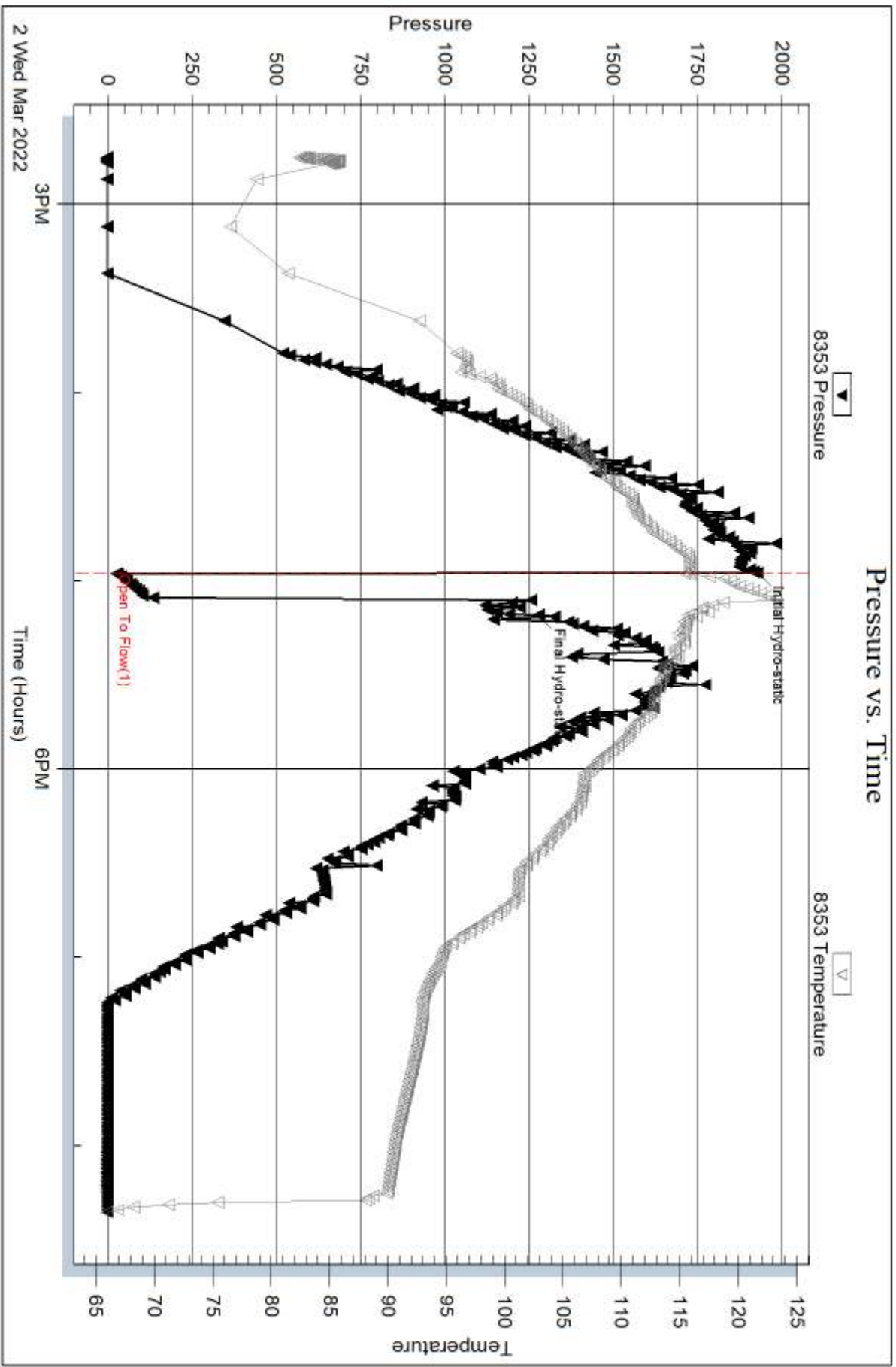
Serial #: 8353

Inside

Black Oak Exploration LLC

Withers #2-21

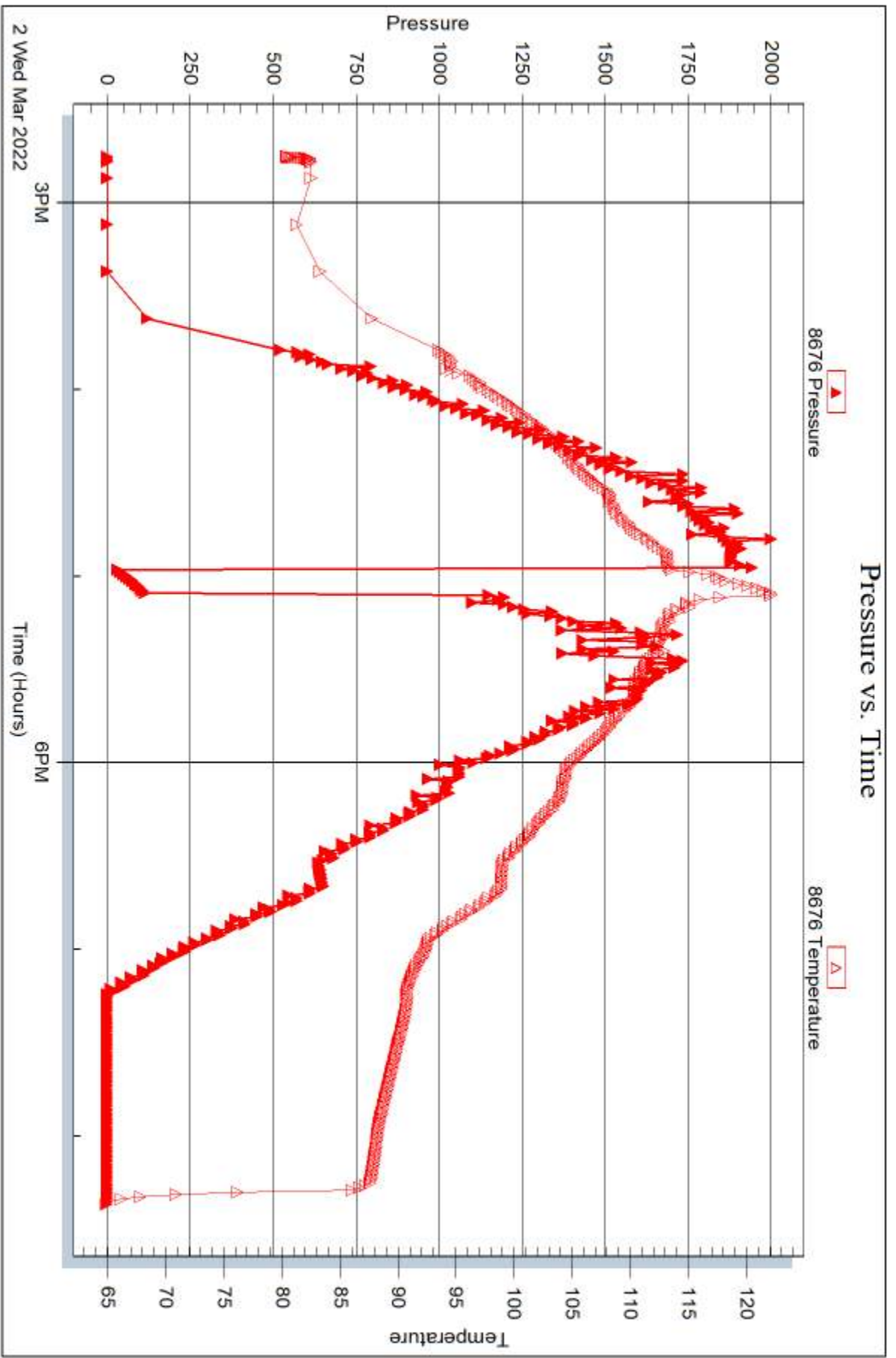
DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 68803

Printed: 2022.03.09 @ 14:19:26





## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.02 @ 21:00:00

End Date: 2022.03.03 @ 03:21:30

Job Ticket #: 68804                      DST #: 2

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

Printed: 2022.03.09 @ 14:02:02



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68804

**DST#: 2**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 21:00:00

## GENERAL INFORMATION:

Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:52:30

Time Test Ended: 03:21:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3882.00 ft (KB) To 3922.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3922.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 250.77 psig @ 3883.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.02

End Date:

2022.03.03

Last Calib.:

2022.03.03

Start Time: 21:00:01

End Time:

03:21:30

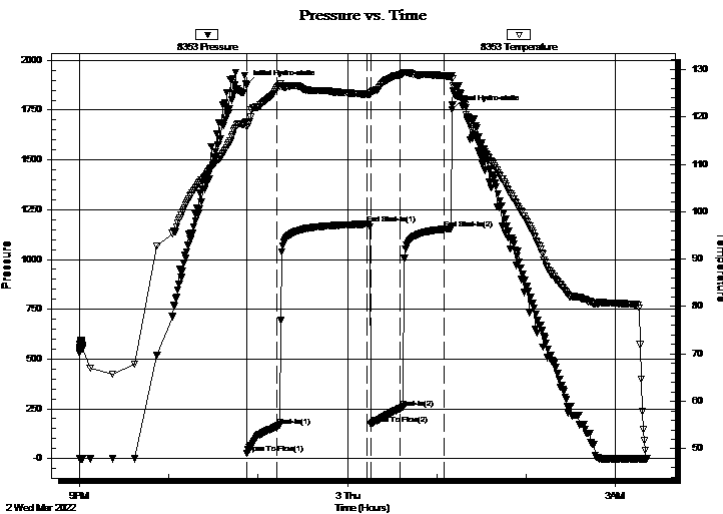
Time On Btm:

2022.03.02 @ 22:52:00

Time Off Btm:

2022.03.03 @ 01:10:15

**TEST COMMENT:** 20:IF- Weak surface blow , built to 7 inches in 5 min, BOB in 9 min  
60:IS- No blow back  
20:FF- Weak surface blow , built to 6 inches in 5 min, BOB in 12 min  
30:FS- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1876.46	118.95	Initial Hydro-static
1	27.36	117.92	Open To Flow (1)
21	162.45	126.11	Shut-In(1)
81	1177.93	124.75	End Shut-In(1)
84	171.91	125.00	Open To Flow (2)
103	250.77	128.87	Shut-In(2)
133	1152.33	128.66	End Shut-In(2)
139	1753.84	128.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	MW 90%W 10%M	0.99
409.00	MW 95%W 5%M Spots of oil	5.74

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68804

**DST#: 2**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 21:00:00

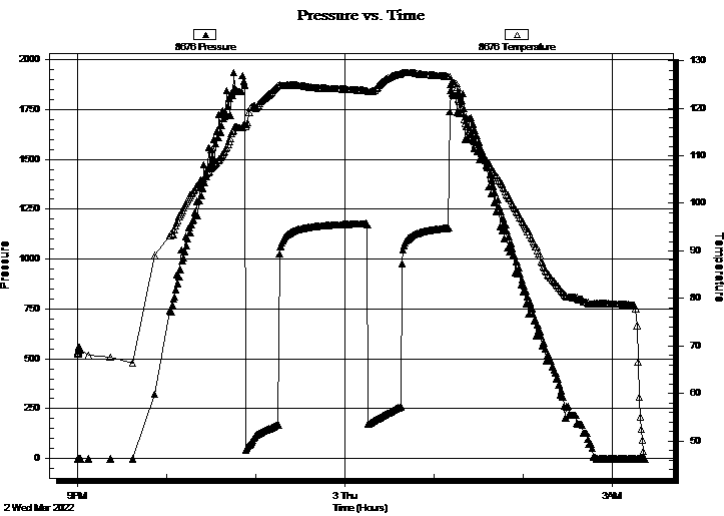
## GENERAL INFORMATION:

Formation: **Toronto**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 22:52:30  
 Time Test Ended: 03:21:30  
 Interval: **3882.00 ft (KB) To 3922.00 ft (KB) (TVD)**  
 Total Depth: 3922.00 ft (KB) (TVD)  
 Hole Diameter: 7.87 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Nathan Aneas  
 Unit No: 71  
 Reference Elevations: 2894.00 ft (KB)  
 2889.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 8676 Outside

Press@RunDepth: psig @ 3883.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2022.03.02 End Date: 2022.03.03 Last Calib.: 2022.03.03  
 Start Time: 21:00:01 End Time: 03:21:45 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 20:IF- Weak surface blow , built to 7 inches in 5 min, BOB in 9 min  
 60:IS- No blow back  
 20:FF- Weak surface blow , built to 6 inches in 5 min, BOB in 12 min  
 30:FS- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	MW 90%W 10%M	0.99
409.00	MW 95%W 5%M Spots of oil	5.74

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68804

**DST#: 2**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 21:00:00

## Tool Information

Drill Pipe:	Length: 3694.00 ft	Diameter: 3.80 inches	Volume: 51.82 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3882.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	68.00 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			3859.00	
Hydraulic tool	5.00			3864.00	
Jars	5.00			3869.00	
Safety Joint	3.00			3872.00	
Packer	5.00			3877.00	28.00 Bottom Of Top Packer
Packer	5.00			3882.00	
Stubb	1.00			3883.00	
Recorder	0.00	8353	Inside	3883.00	
Recorder	0.00	8676	Outside	3883.00	
Perforations	36.00			3919.00	
Bullnose	3.00			3922.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68804

**DST#: 2**

ATTN: Tim Hedrick

Test Start: 2022.03.02 @ 21:00:00

### 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:

44000 ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.20 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	MW 90%W 10%M	0.988
409.00	MW 95%W 5%M Spots of oil	5.737

Total Length: 595.00 ft

Total Volume: 6.725 bbl

Num Fluid Samples: 0

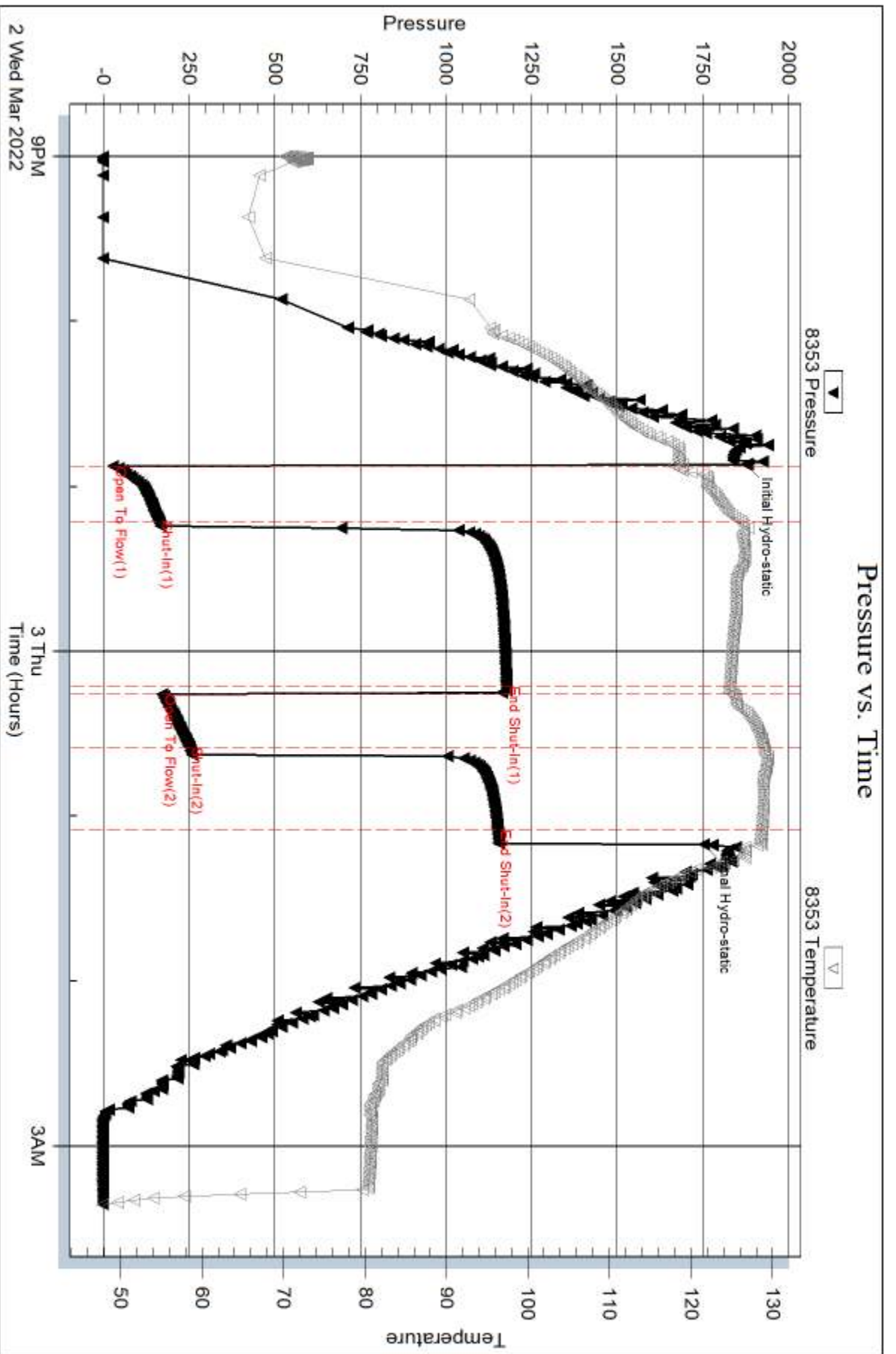
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

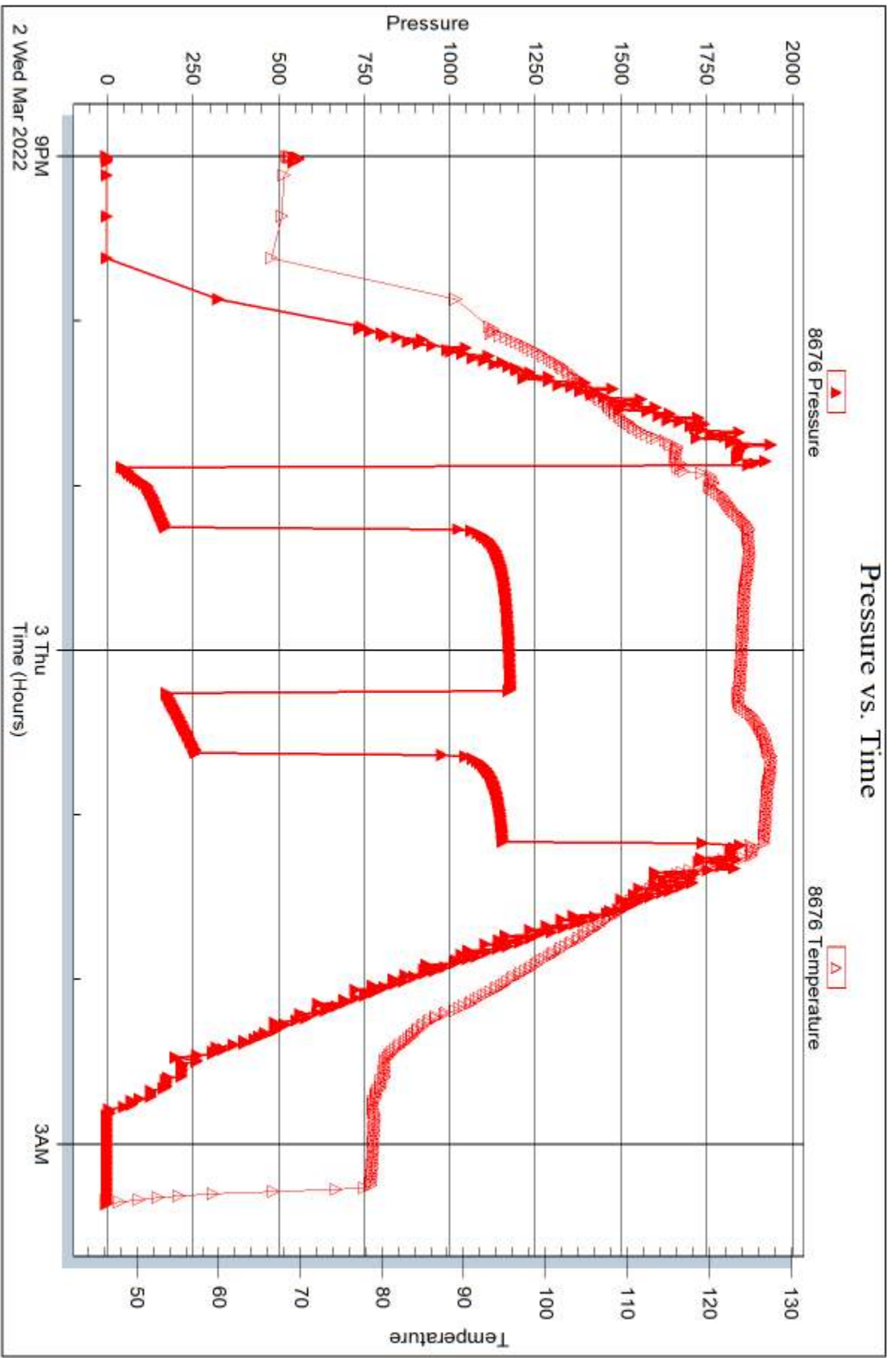


Serial #: 8676

Outside Black Oak Exploration LLC

Withers #2-21

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 68804

Printed: 2022.03.09 @ 14:02:04



## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.03 @ 11:54:00

End Date: 2022.03.03 @ 18:38:15

Job Ticket #: 68805                      DST #: 3

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

Printed: 2022.03.09 @ 14:00:49

Black Oak Exploration LLC  
21-5S-30W Decatur,KS  
Withers #2-21  
DST # 3  
LKC A  
2022.03.03



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68805

**DST#: 3**

ATTN: Tim Hedrick

Test Start: 2022.03.03 @ 11:54:00

## GENERAL INFORMATION:

Formation: **LKC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:56:45

Time Test Ended: 18:38:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3923.00 ft (KB) To 3942.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3942.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 75.64 psig @ 3924.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.03

End Date:

2022.03.03

Last Calib.:

2022.03.03

Start Time: 11:54:01

End Time:

18:38:15

Time On Btm:

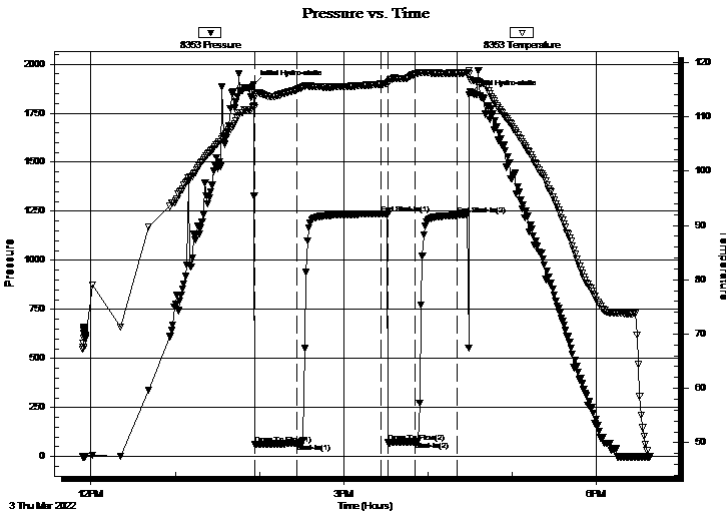
2022.03.03 @ 13:56:00

Time Off Btm:

2022.03.03 @ 16:29:30

**TEST COMMENT:** 30:IF- Good surface blow , built to 1 inch in 5 min, final blow is 2 1/4 inch  
60:IS- No blow back  
20:FF- Weak surface blow , built to 1/4 inch in 5 min, final blow is 1/2 inch  
30:FS- No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1897.30	111.95	Initial Hydro-static
1	60.69	113.60	Open To Flow (1)
31	67.64	114.94	Shut-In(1)
91	1236.63	115.98	End Shut-In(1)
96	70.54	116.19	Open To Flow (2)
115	75.64	117.85	Shut-In(2)
145	1229.69	118.03	End Shut-In(2)
154	1844.19	118.52	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
144.00	Mud 100%M	0.71
0.00	Few spots of oil in the tool	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68805

**DST#: 3**

ATTN: Tim Hedrick

Test Start: 2022.03.03 @ 11:54:00

## GENERAL INFORMATION:

Formation: **LKC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:56:45

Time Test Ended: 18:38:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3923.00 ft (KB) To 3942.00 ft (KB) (TVD)**

Total Depth: 3942.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 2894.00 ft (KB)

2889.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8676 Outside**

Press@RunDepth: psig @ 3924.00 ft (KB)

Start Date: 2022.03.03

End Date:

2022.03.03

Start Time: 11:54:01

End Time:

18:38:15

Capacity: 8000.00 psig

Last Calib.:

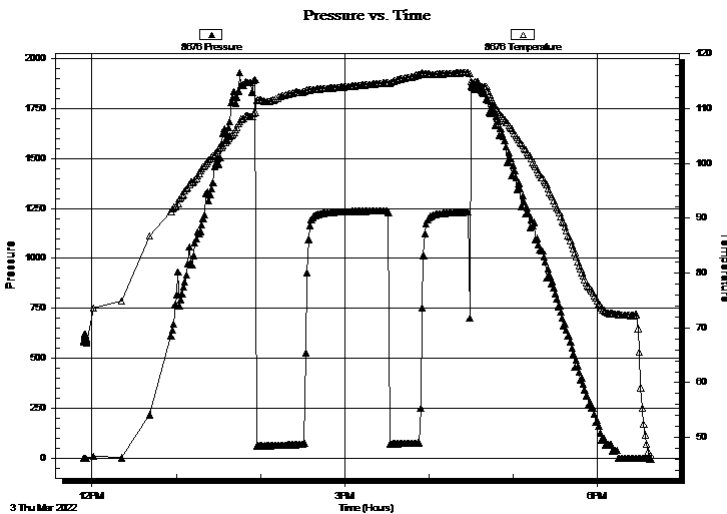
2022.03.03

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30:IF- Good surface blow , built to 1 inch in 5 min, final blow is 2 1/4 inch  
60:IS- No blow back  
20:FF- Weak surface blow , built to 1/4 inch in 5 min, final blow is 1/2 inch  
30:FS- No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
-------------	-----------------	--------------	------------

## Recovery

Length (ft)	Description	Volume (bbl)
144.00	Mud 100%M	0.71
0.00	Few spots of oil in the tool	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68805

**DST#: 3**

ATTN: Tim Hedrick

Test Start: 2022.03.03 @ 11:54:00

## Tool Information

Drill Pipe:	Length: 3725.00 ft	Diameter: 3.80 inches	Volume: 52.25 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	64000.00 lb
Drill Pipe Above KB:	8.00 ft			Final	68000.00 lb
Depth to Top Packer:	3923.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	19.00 ft				
Tool Length:	47.00 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			3900.00	
Hydraulic tool	5.00			3905.00	
Jars	5.00			3910.00	
Safety Joint	3.00			3913.00	
Packer	5.00			3918.00	28.00 Bottom Of Top Packer
Packer	5.00			3923.00	
Stubb	1.00			3924.00	
Recorder	0.00	8353	Inside	3924.00	
Recorder	0.00	8676	Outside	3924.00	
Perforations	15.00			3939.00	
Bullnose	3.00			3942.00	19.00 Bottom Packers & Anchor

**Total Tool Length: 47.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68805

**DST#: 3**

ATTN: Tim Hedrick

Test Start: 2022.03.03 @ 11:54:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
144.00	Mud 100%M	0.708
0.00	Few spots of oil in the tool	0.000

Total Length: 144.00 ft      Total Volume: 0.708 bbl

Num Fluid Samples: 0

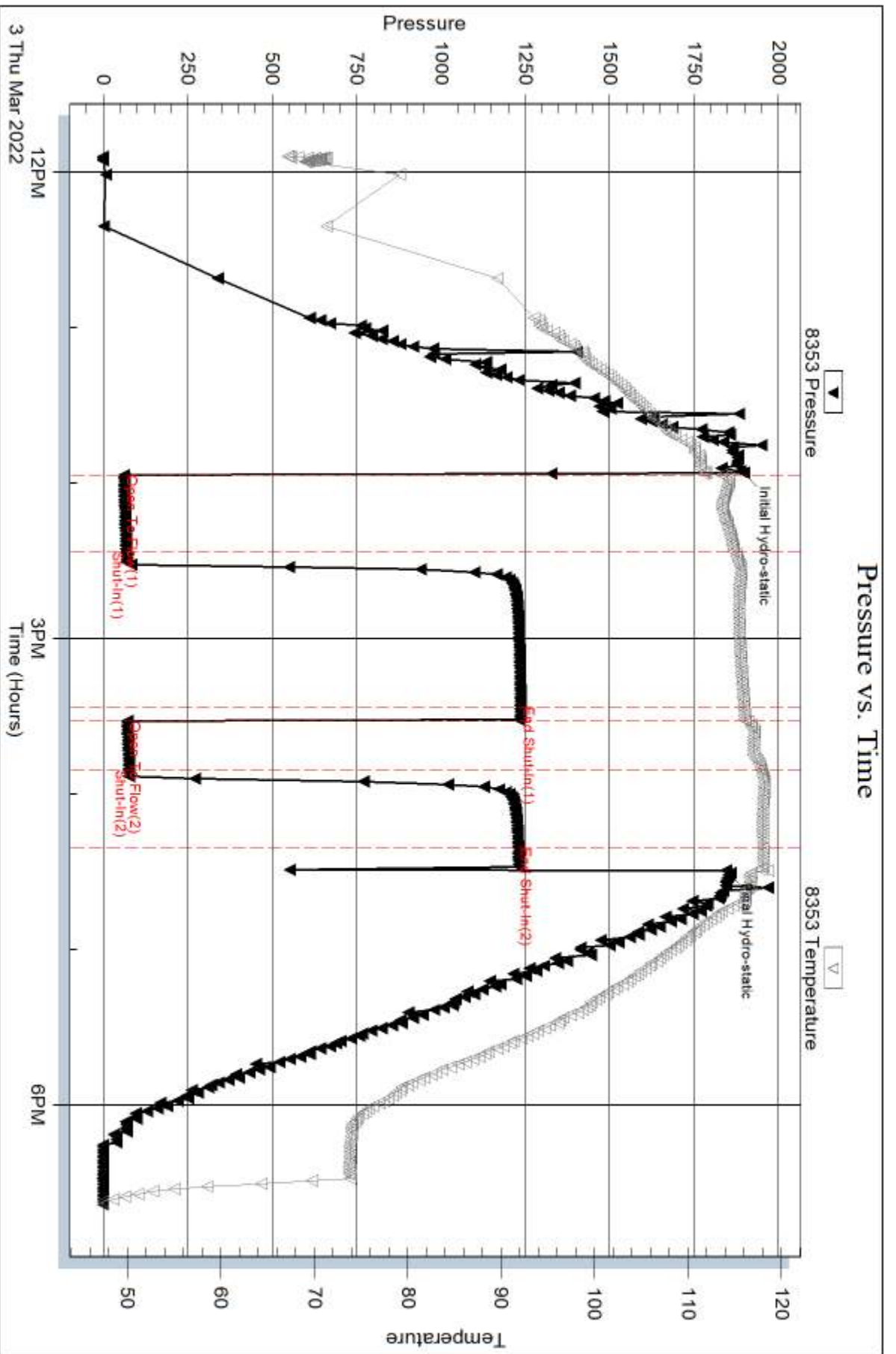
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

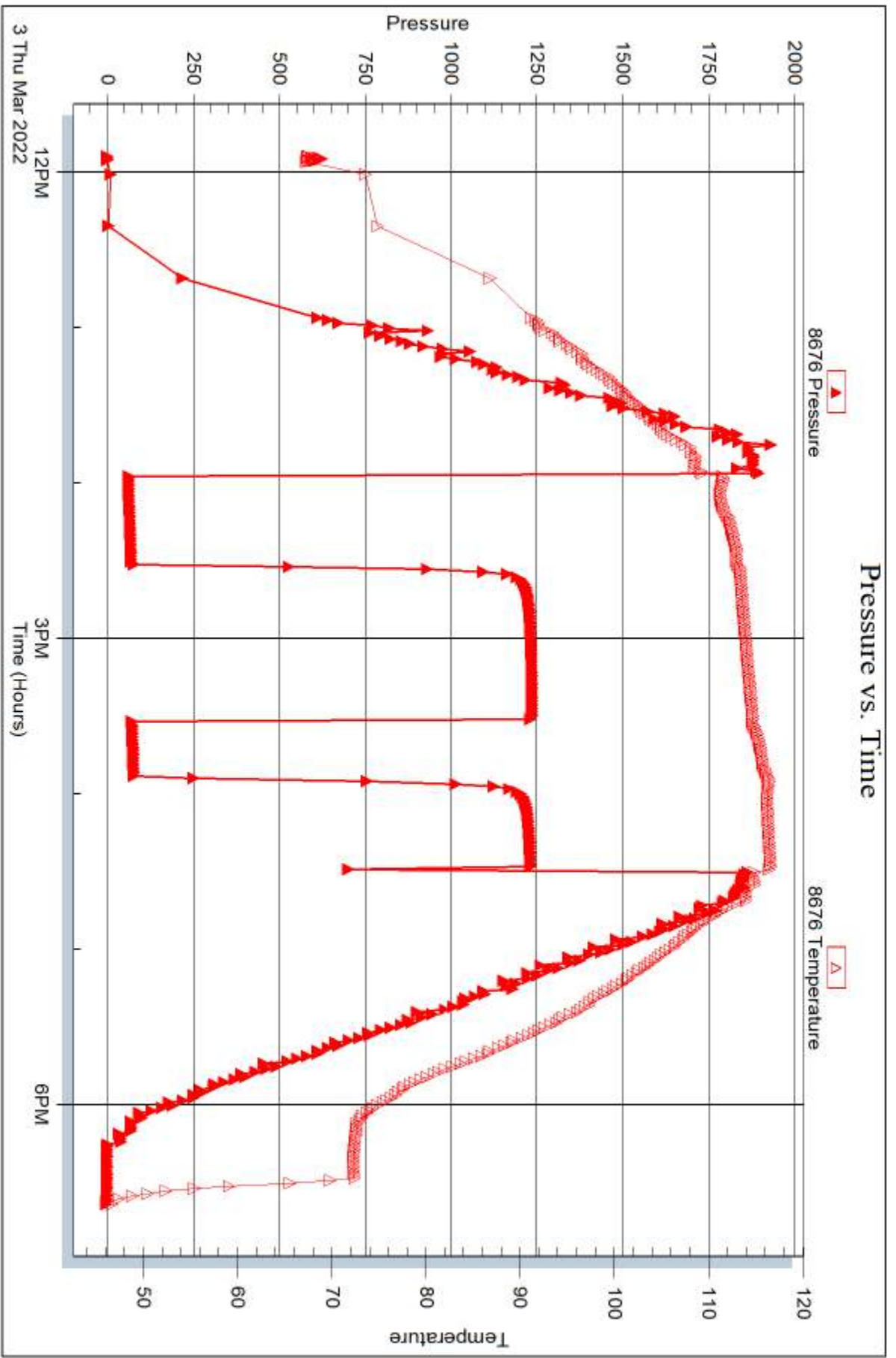


Serial #: 8676

Outside Black Oak Exploration LLC

Withers #2-21

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 68805

Printed: 2022.03.09 @ 14:00:50



## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.04 @ 03:00:00

End Date: 2022.03.04 @ 11:25:30

Job Ticket #: 68806                      DST #: 4

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

Printed: 2022.03.09 @ 14:00:13



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68806

**DST#: 4**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 03:00:00

## GENERAL INFORMATION:

Formation: **LKC B - C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:21:30

Time Test Ended: 11:25:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3938.00 ft (KB) To 3962.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3962.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 183.38 psig @ 3939.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.04

End Date:

2022.03.04

Last Calib.:

2022.03.04

Start Time: 03:00:01

End Time:

11:25:30

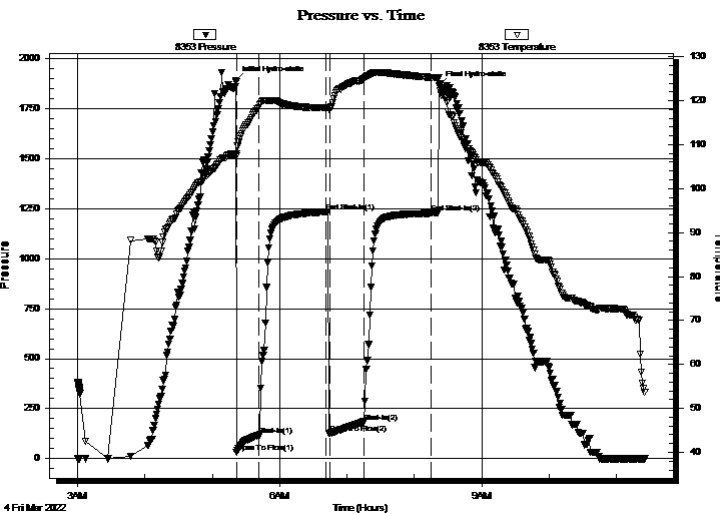
Time On Btm:

2022.03.04 @ 05:21:00

Time Off Btm:

2022.03.04 @ 08:22:15

**TEST COMMENT:** 20:IF- Good surface blow , built to 4 inches in 5 min, BOB in 11 min  
60:IS- Weak surface blow , built to 1/4 inch in 5 min, final blow is 2 1/2 inches  
30:FF- Fair surface blow , built to 3 inches in 5 min, BOB in 13 min  
60:FS- Weak surface blow , built to 1 inch in 5 min, final blow is 3 inches



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1889.23	107.78	Initial Hydro-static
1	32.09	107.53	Open To Flow (1)
21	117.29	118.49	Shut-In(1)
80	1233.50	118.38	End Shut-In(1)
84	125.86	118.03	Open To Flow (2)
114	183.38	124.95	Shut-In(2)
174	1228.27	125.30	End Shut-In(2)
182	1866.98	125.33	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	VSGMCO 50%O 40%M 10%G	0.91
315.00	GMCO 70%O 20%G 10%M	4.42

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68806

**DST#: 4**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 03:00:00

## GENERAL INFORMATION:

Formation: **LKC B - C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:21:30

Time Test Ended: 11:25:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3938.00 ft (KB) To 3962.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3962.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8676 Outside**

Press@RunDepth: psig @ 3939.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.04

End Date:

2022.03.04

Last Calib.:

2022.03.04

Start Time: 03:00:01

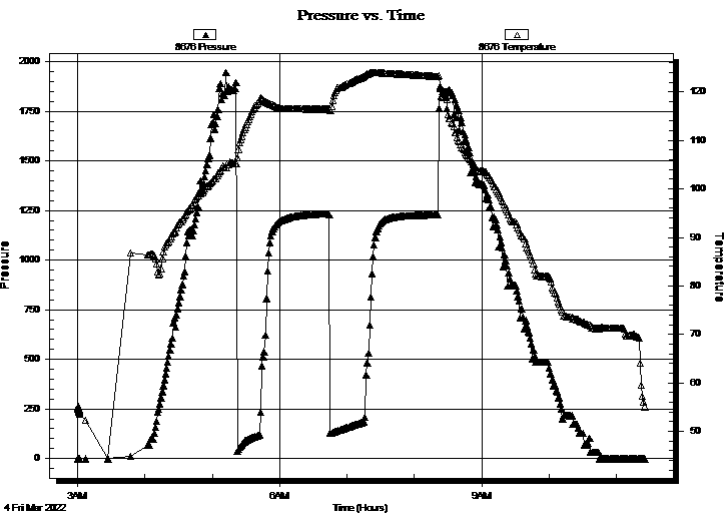
End Time:

11:25:45

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 20:IF- Good surface blow, built to 4 inches in 5 min, BOB in 11 min  
 60:IS- Weak surface blow, built to 1/4 inch in 5 min, final blow is 2 1/2 inches  
 30:FF- Fair surface blow, built to 3 inches in 5 min, BOB in 13 min  
 60:FS- Weak surface blow, built to 1 inch in 5 min, final blow is 3 inches



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	VSGMCO 50%O 40%M 10%G	0.91
315.00	GMCO 70%O 20%G 10%M	4.42

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68806

**DST#: 4**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 03:00:00

## Tool Information

Drill Pipe:	Length: 3745.00 ft	Diameter: 3.80 inches	Volume: 52.53 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	3938.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	52.00 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			3915.00	
Hydraulic tool	5.00			3920.00	
Jars	5.00			3925.00	
Safety Joint	3.00			3928.00	
Packer	5.00			3933.00	28.00 Bottom Of Top Packer
Packer	5.00			3938.00	
Stubb	1.00			3939.00	
Recorder	0.00	8353	Inside	3939.00	
Recorder	0.00	8676	Outside	3939.00	
Perforations	20.00			3959.00	
Bullnose	3.00			3962.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 52.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68806

**DST#: 4**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 03:00:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	VSGMCO 50%O 40%M 10%G	0.915
315.00	GMCO 70%O 20%G 10%M	4.419

Total Length: 501.00 ft

Total Volume: 5.334 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

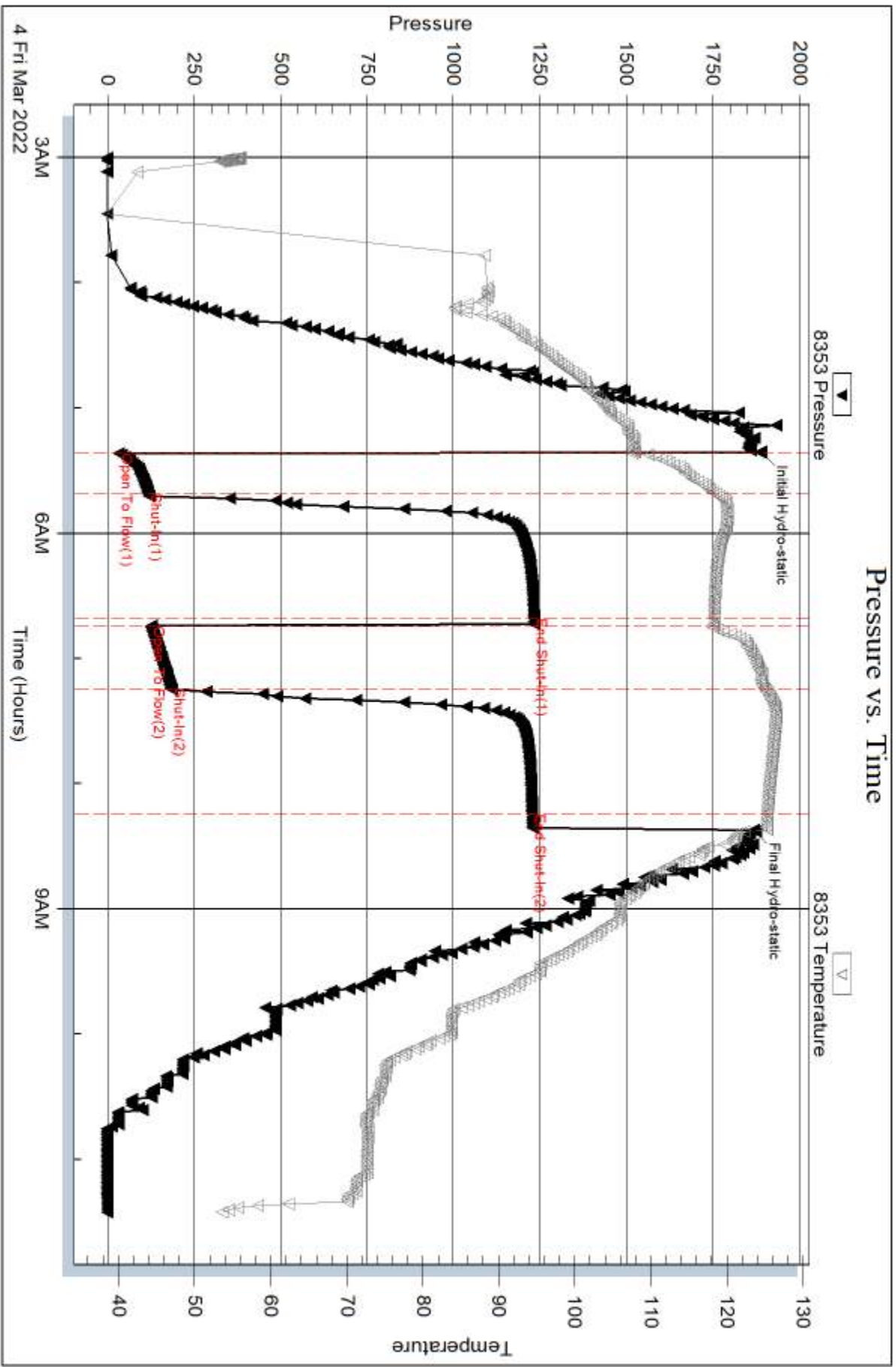
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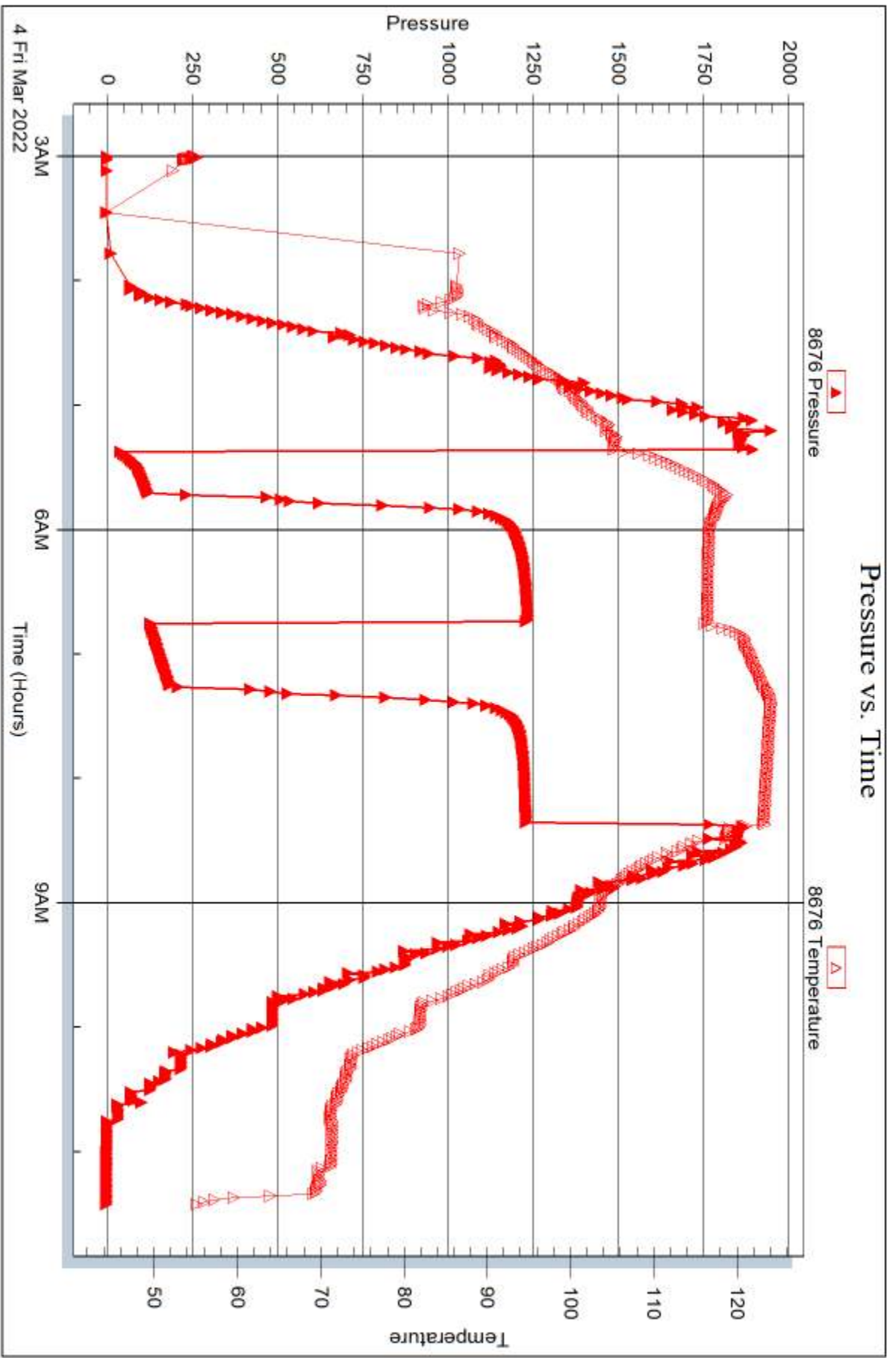
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.04 @ 20:00:00

End Date: 2022.03.05 @ 03:11:00

Job Ticket #: 68807                      DST #: 5

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

Printed: 2022.03.09 @ 13:58:52

Black Oak Exploration LLC  
21-5S-30W Decatur,KS  
Withers #2-21  
DST # 5  
LKC D  
2022.03.04



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

ATTN: Tim Hedrick

Job Ticket: 68807

**DST#: 5**

Test Start: 2022.03.04 @ 20:00:00

## GENERAL INFORMATION:

Formation: **LKC D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:05:00

Time Test Ended: 03:11:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3966.00 ft (KB) To 3990.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 3990.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 748.59 psig @ 3967.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.04

End Date:

2022.03.05

Last Calib.:

2022.03.05

Start Time: 20:00:01

End Time:

03:11:00

Time On Btm:

2022.03.04 @ 22:04:30

Time Off Btm:

2022.03.05 @ 00:25:30

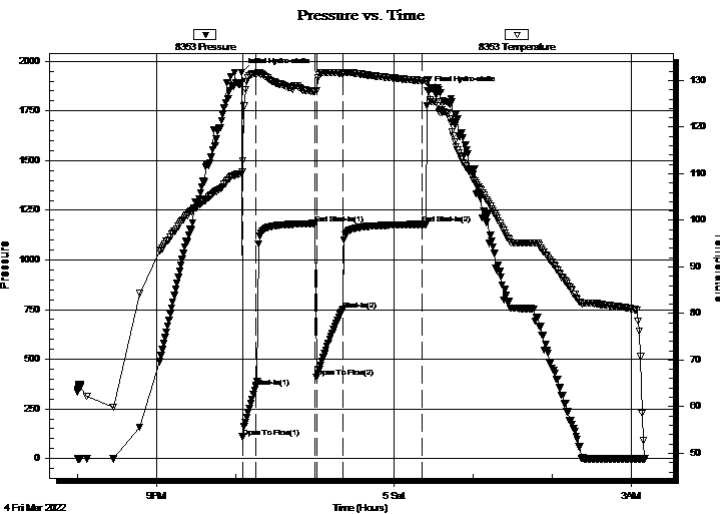
## TEST COMMENT:

10:IF- Strong surface blow , BOB in 2 min

45:IS- No blow back

20:FF- Strong surface blow , 6 inches in 5 min, final blow w as 3 1/2 inches

60:FS- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1943.62	109.95	Initial Hydro-static
1	109.49	110.42	Open To Flow (1)
11	360.81	131.50	Shut-In(1)
56	1183.13	127.61	End Shut-In(1)
57	410.75	127.83	Open To Flow (2)
77	748.59	131.61	Shut-In(2)
137	1179.48	129.97	End Shut-In(2)
141	1851.01	129.78	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	W 100%W	0.99
1389.00	VSMW 95%W 5%M	19.48

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

**DRILL STEM TEST REPORT**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

ATTN: Tim Hedrick

Job Ticket: 68807

**DST#: 5**

Test Start: 2022.03.04 @ 20:00:00

**GENERAL INFORMATION:**

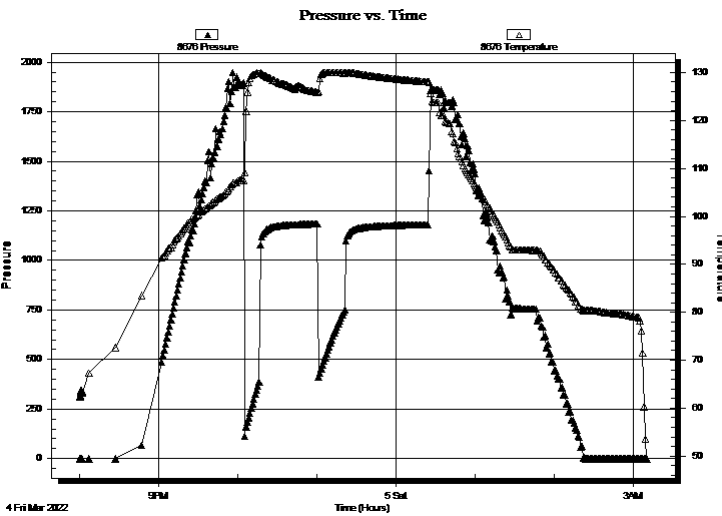
Formation: **LKC D**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 22:05:00  
 Tester: Nathan Aneas  
 Time Test Ended: 03:11:00  
 Unit No: 71  
 Interval: **3966.00 ft (KB) To 3990.00 ft (KB) (TVD)**  
 Reference Elevations: 2894.00 ft (KB)  
 Total Depth: 3990.00 ft (KB) (TVD)  
 2889.00 ft (CF)  
 Hole Diameter: 7.87 inches  
 Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

**Serial #: 8676**

**Outside**

Press@RunDepth: psig @ 3967.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2022.03.04 End Date: 2022.03.05 Last Calib.: 2022.03.05  
 Start Time: 20:00:01 End Time: 03:11:00 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 10:IF- Strong surface blow , BOB in 2 min  
 45:IS- No blow back  
 20:FF- Strong surface blow , 6 inches in 5 min, final blow w as 3 1/2 inches  
 60:FS- No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

**Recovery**

Length (ft)	Description	Volume (bbl)
186.00	W 100%W	0.99
1389.00	VSMW 95%W 5%M	19.48

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68807

**DST#: 5**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 20:00:00

## Tool Information

Drill Pipe:	Length: 3781.00 ft	Diameter: 3.80 inches	Volume: 53.04 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 178.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3966.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 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			3943.00	
Hydraulic tool	5.00			3948.00	
Jars	5.00			3953.00	
Safety Joint	3.00			3956.00	
Packer	5.00			3961.00	28.00 Bottom Of Top Packer
Packer	5.00			3966.00	
Stubb	1.00			3967.00	
Recorder	0.00	8353	Inside	3967.00	
Recorder	0.00	8676	Outside	3967.00	
Perforations	20.00			3987.00	
Bullnose	3.00			3990.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 52.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68807

**DST#: 5**

ATTN: Tim Hedrick

Test Start: 2022.03.04 @ 20:00:00

### 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:

34000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.25 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	W 100%W	0.988
1389.00	VSMW 95%W 5%M	19.484

Total Length: 1575.00 ft

Total Volume: 20.472 bbl

Num Fluid Samples: 0

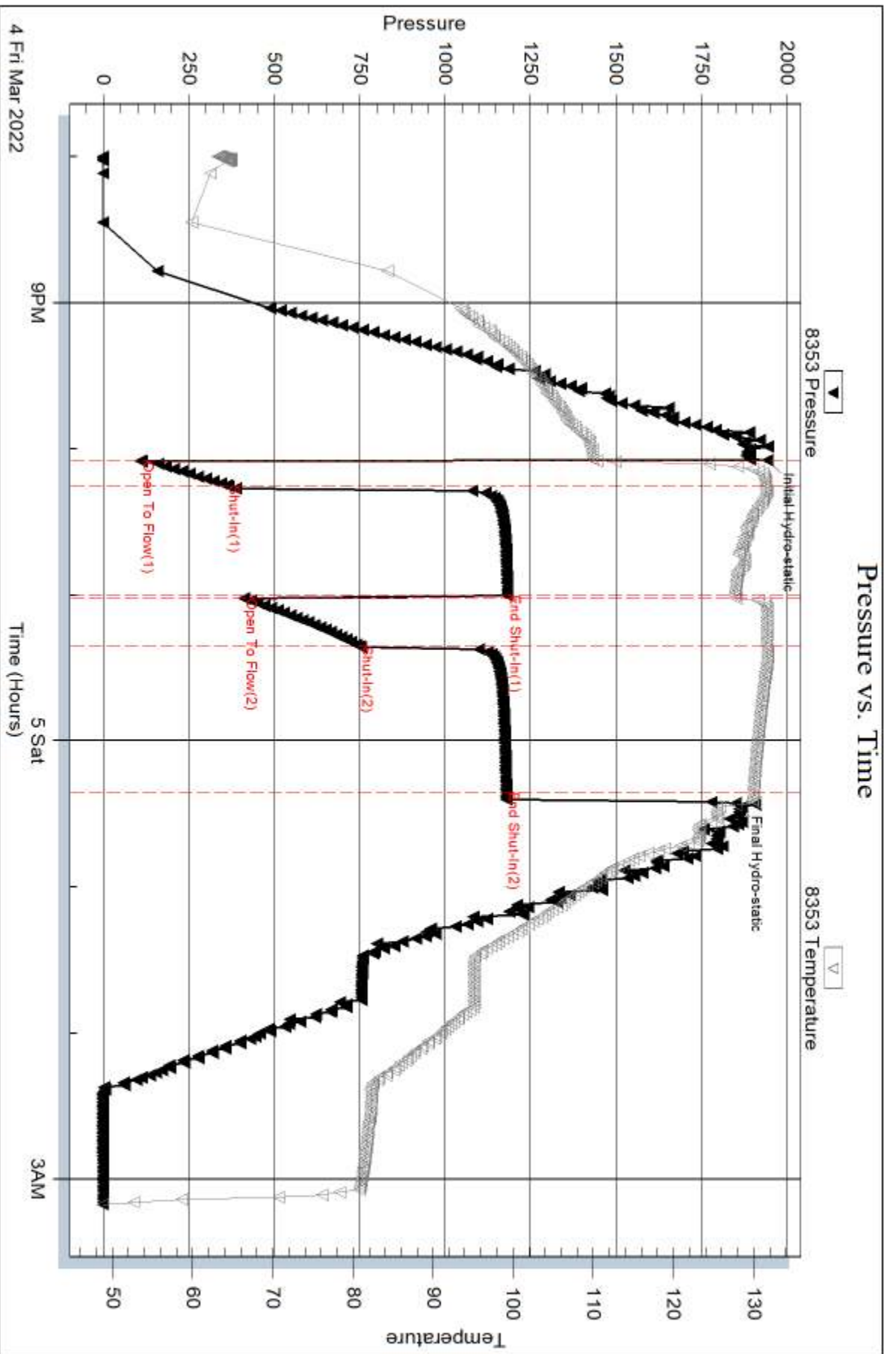
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



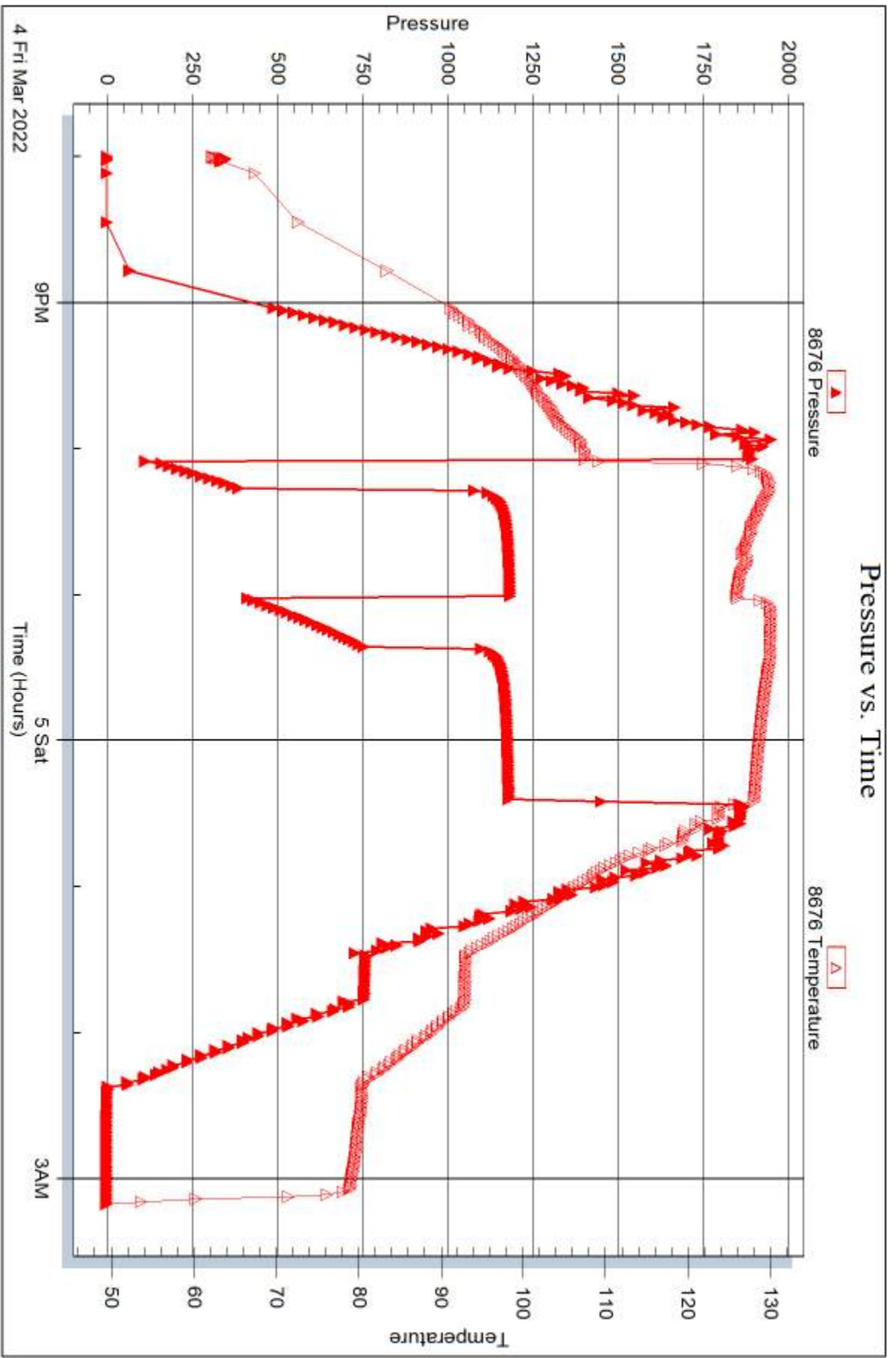


Serial #: 8676

Outside Black Oak Exploration LLC

Withers #2-21

DST Test Number: 5





## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.05 @ 11:35:00

End Date: 2022.03.05 @ 19:51:15

Job Ticket #: 68808                      DST #: 6

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

Printed: 2022.03.09 @ 13:58:21



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68808

**DST#: 6**

ATTN: Tim Hedrick

Test Start: 2022.03.05 @ 11:35:00

## GENERAL INFORMATION:

Formation: **Lansing F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:53:00

Time Test Ended: 19:51:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3987.00 ft (KB) To 4008.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 4008.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 222.65 psig @ 3988.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.05

End Date:

2022.03.05

Last Calib.:

2022.03.05

Start Time:

11:35:01

End Time:

19:51:15

Time On Btm:

2022.03.05 @ 13:52:30

Time Off Btm:

2022.03.05 @ 17:04:00

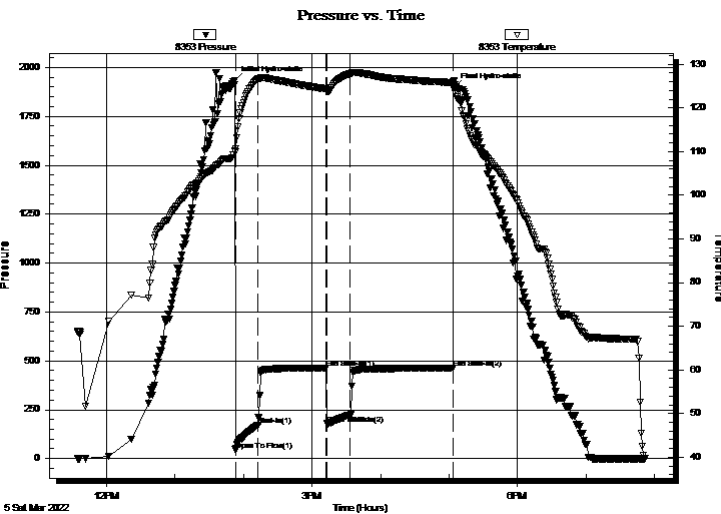
## TEST COMMENT:

20:IF- Fair surface blow , BOB in 7 min

60:IS- Weak surface blow , built to 1 1/2 inch in 5 min, BOB in 18 min

20:FF- Good surface blow , built to 5 inches in 5 min, BOB in 10 min

90:FS- Weak surface blow , built to 1 1/2 inch in 5 min, final blow is 1 inch



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1932.15	110.30	Initial Hydro-static
1	45.18	110.01	Open To Flow (1)
21	170.11	126.55	Shut-In(1)
80	462.07	124.34	End Shut-In(1)
81	178.40	124.18	Open To Flow (2)
101	222.65	127.75	Shut-In(2)
191	462.53	125.71	End Shut-In(2)
192	1894.40	126.00	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	MCO 60%O 40%M	0.91
441.00	CO 100%O	6.19

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

**DRILL STEM TEST REPORT**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68808

**DST#: 6**

ATTN: Tim Hedrick

Test Start: 2022.03.05 @ 11:35:00

**GENERAL INFORMATION:**

Formation: **Lansing F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:53:00

Time Test Ended: 19:51:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 3987.00 ft (KB) To 4008.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 4008.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8676**

**Outside**

Press@RunDepth: psig @ 3988.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.05

End Date:

2022.03.05

Last Calib.:

2022.03.05

Start Time: 11:35:01

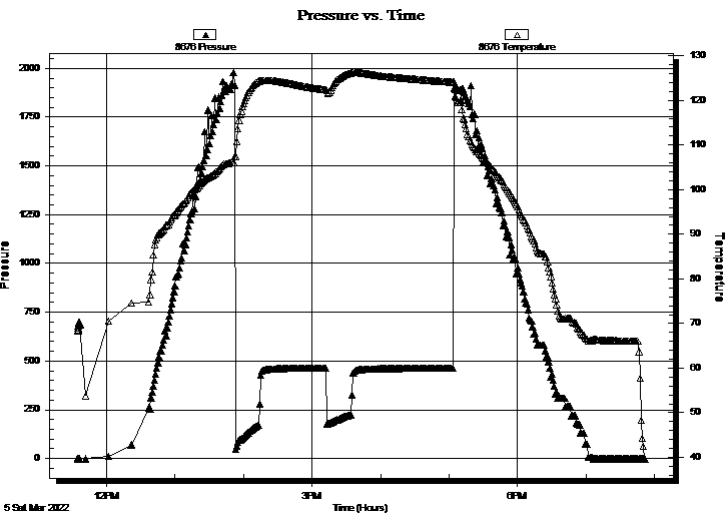
End Time:

19:51:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 20:IF- Fair surface blow , BOB in 7 min  
60:IS- Weak surface blow , built to 1 1/2 inch in 5 min, BOB in 18 min  
20:FF- Good surface blow , built to 5 inches in 5 min, BOB in 10 min  
90:FS- Weak surface blow , built to 1 1/2 inch in 5 min, final blow is 1 inch



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

**Recovery**

Length (ft)	Description	Volume (bbl)
186.00	MCO 60%O 40%M	0.91
441.00	CO 100%O	6.19

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68808

**DST#: 6**

ATTN: Tim Hedrick

Test Start: 2022.03.05 @ 11:35:00

## Tool Information

Drill Pipe:	Length: 3780.00 ft	Diameter: 3.80 inches	Volume: 53.02 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	70000.00 lb
Drill Pipe Above KB:	7.00 ft			Final	70000.00 lb
Depth to Top Packer:	3987.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	49.00 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			3964.00	
Hydraulic tool	5.00			3969.00	
Jars	5.00			3974.00	
Safety Joint	3.00			3977.00	
Packer	5.00			3982.00	28.00 Bottom Of Top Packer
Packer	5.00			3987.00	
Stubb	1.00			3988.00	
Recorder	0.00	8353	Inside	3988.00	
Recorder	0.00	8676	Outside	3988.00	
Perforations	17.00			4005.00	
Bullnose	3.00			4008.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68808

**DST#: 6**

ATTN: Tim Hedrick

Test Start: 2022.03.05 @ 11:35:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
186.00	MCO 60%O 40%M	0.915
441.00	CO 100%O	6.186

Total Length: 627.00 ft      Total Volume: 7.101 bbl

Num Fluid Samples: 0

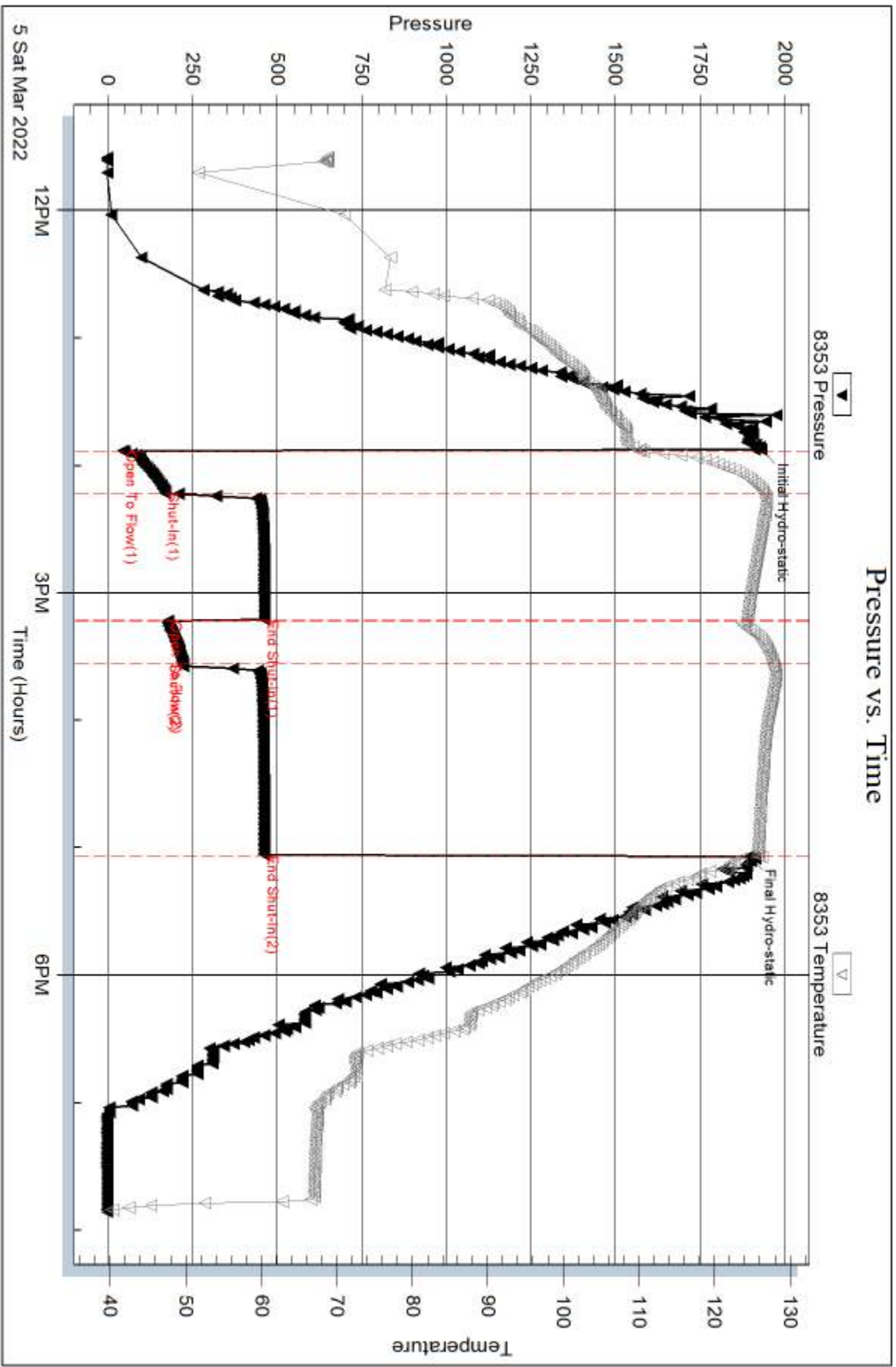
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 34@40 corrected to 36@60

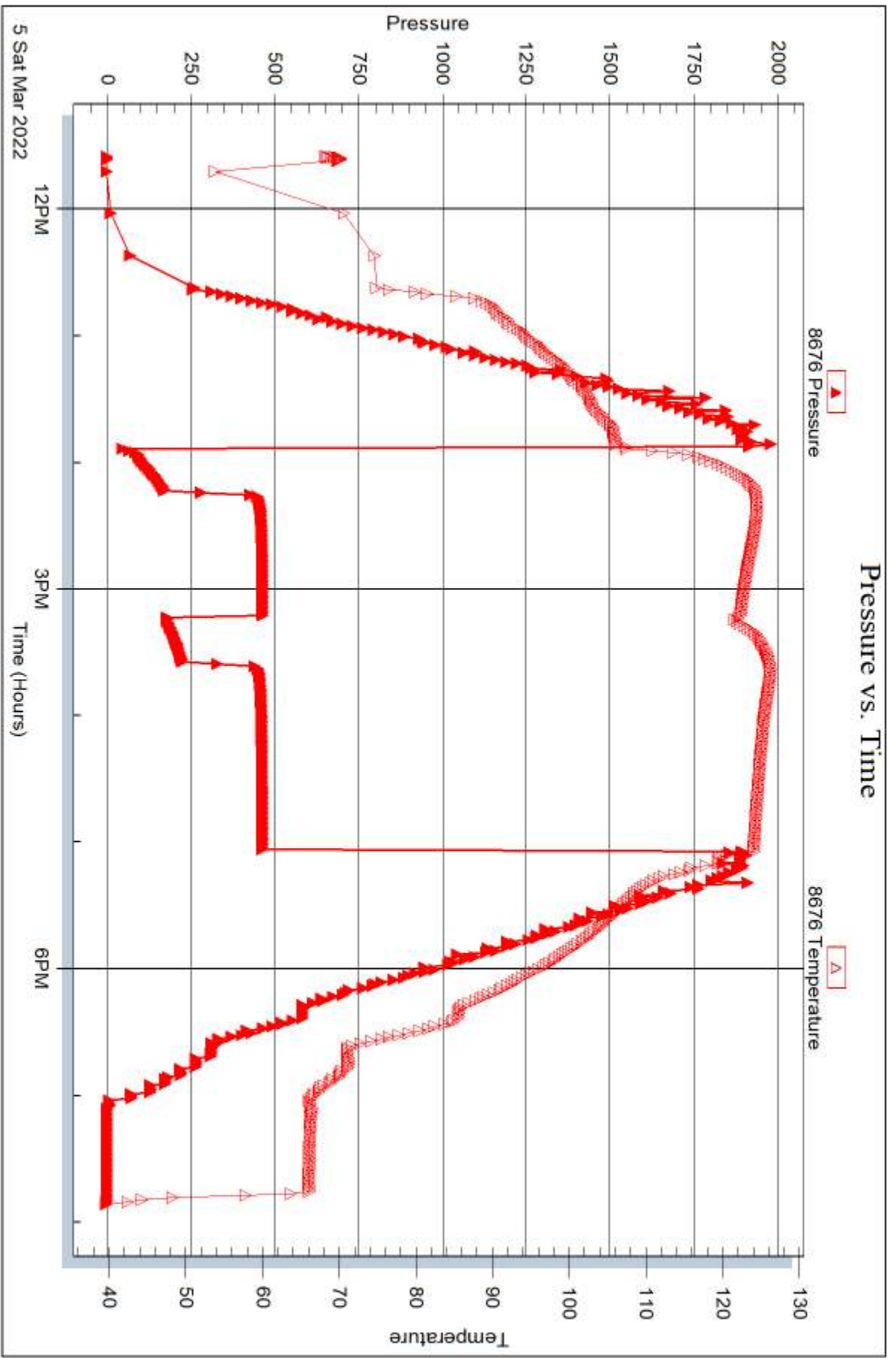


Serial #: 8676

Outside Black Oak Exploration LLC

Withers #2-21

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 68808

Printed: 2022.03.09 @ 13:58:22





## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.06 @ 11:00:00

End Date: 2022.03.06 @ 19:12:15

Job Ticket #: 68809                      DST #: 7

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

Printed: 2022.03.09 @ 13:57:42



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68809

**DST#: 7**

ATTN: Tim Hedrick

Test Start: 2022.03.06 @ 11:00:00

## GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:40:45

Time Test Ended: 19:12:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 4026.00 ft (KB) To 4095.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 4095.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 202.50 psig @ 4027.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.06

End Date:

2022.03.06

Last Calib.:

2022.03.06

Start Time:

11:00:01

End Time:

19:12:15

Time On Btm:

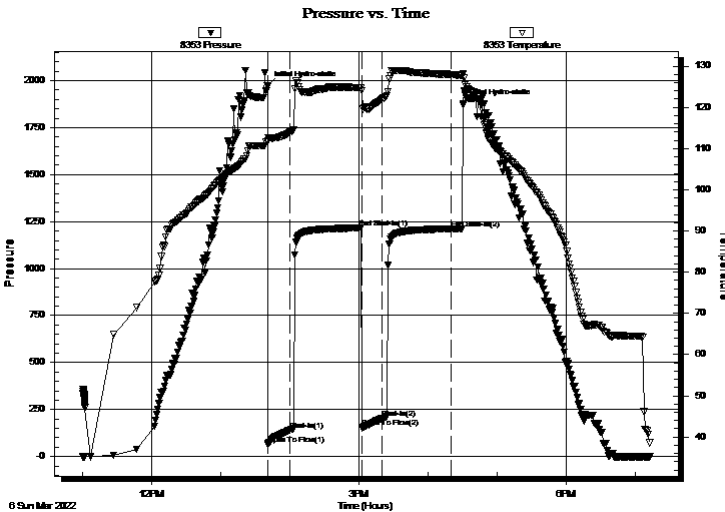
2022.03.06 @ 13:40:15

Time Off Btm:

2022.03.06 @ 16:30:00

**TEST COMMENT:** 20:IF- Strong surface blow ,built to 7 inch in 5 min, BOB in 8 min  
60:IS- Weak surface blow in 22 min, final blow is weak surface  
20:FF- Good surface blow , built to 6 inch in 5 min, BOB in 18 min  
60:FS- No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1971.28	111.71	Initial Hydro-static
1	65.90	111.98	Open To Flow (1)
20	141.45	113.97	Shut-In(1)
80	1215.77	124.73	End Shut-In(1)
82	153.66	124.07	Open To Flow (2)
100	202.50	122.03	Shut-In(2)
160	1211.52	127.95	End Shut-In(2)
170	1878.56	128.22	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	MW 90%W 10%M	0.91
252.00	MW 80%W 20%M	3.53

\* Recovery from multiple tests

## Gas Rates

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



TRILOBITE TESTING, INC

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

21-5S-30W Decatur, KS

1474 S. St. Paul St.  
Denver, CO 80210

Withers #2-21

Job Ticket: 68809

DST#: 7

ATTN: Tim Hedrick

Test Start: 2022.03.06 @ 11:00:00

## GENERAL INFORMATION:

Formation: **LKC H - J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:40:45

Time Test Ended: 19:12:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

Interval: **4026.00 ft (KB) To 4095.00 ft (KB) (TVD)**

Total Depth: 4095.00 ft (KB) (TVD)

Hole Diameter: 7.87 inches Hole Condition: Fair

Reference Elevations: 2894.00 ft (KB)

2889.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8676 Outside**

Press@RunDepth: psig @ 4027.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.06

End Date: 2022.03.06

Last Calib.: 2022.03.06

Start Time: 11:00:01

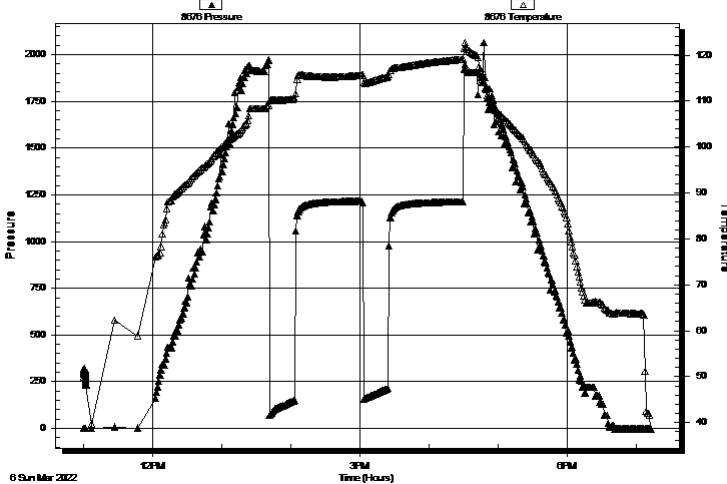
End Time: 19:12:15

Time On Btm:

Time Off Btm:

TEST COMMENT: 20:IF- Strong surface blow ,built to 7 inch in 5 min, BOB in 8 min  
60:IS- Weak surface blow in 22 min, final blow is weak surface  
20:FF- Good surface blow , built to 6 inch in 5 min, BOB in 18 min  
60:FS- No blow back

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	MW 90%W 10%M	0.91
252.00	MW 80%W 20%M	3.53

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68809

**DST#: 7**

ATTN: Tim Hedrick

Test Start: 2022.03.06 @ 11:00:00

## Tool Information

Drill Pipe:	Length: 3844.00 ft	Diameter: 3.80 inches	Volume: 53.92 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4026.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	97.00 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			4003.00	
Hydraulic tool	5.00			4008.00	
Jars	5.00			4013.00	
Safety Joint	3.00			4016.00	
Packer	5.00			4021.00	28.00 Bottom Of Top Packer
Packer	5.00			4026.00	
Stubb	1.00			4027.00	
Recorder	0.00	8353	Inside	4027.00	
Recorder	0.00	8676	Outside	4027.00	
Perforations	32.00			4059.00	
Change Over Sub	1.00			4060.00	
Blank Spacing	31.00			4091.00	
Change Over Sub	1.00			4092.00	
Bullnose	3.00			4095.00	69.00 Bottom Packers & Anchor

**Total Tool Length: 97.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68809

**DST#: 7**

ATTN: Tim Hedrick

Test Start: 2022.03.06 @ 11:00:00

### 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:

42000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.35 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	MW 90%W 10%M	0.915
252.00	MW 80%W 20%M	3.535

Total Length: 438.00 ft

Total Volume: 4.450 bbl

Num Fluid Samples: 0

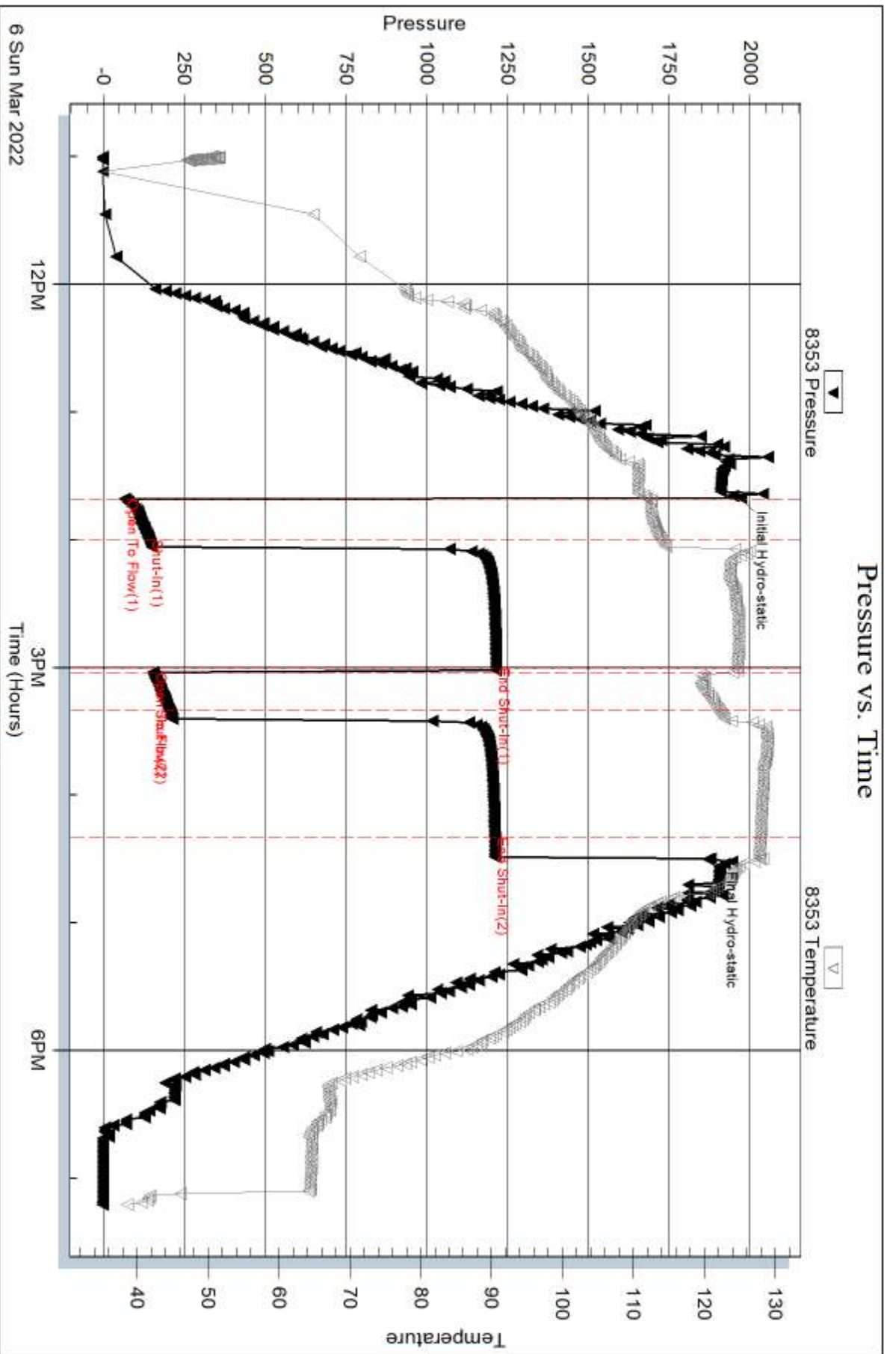
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

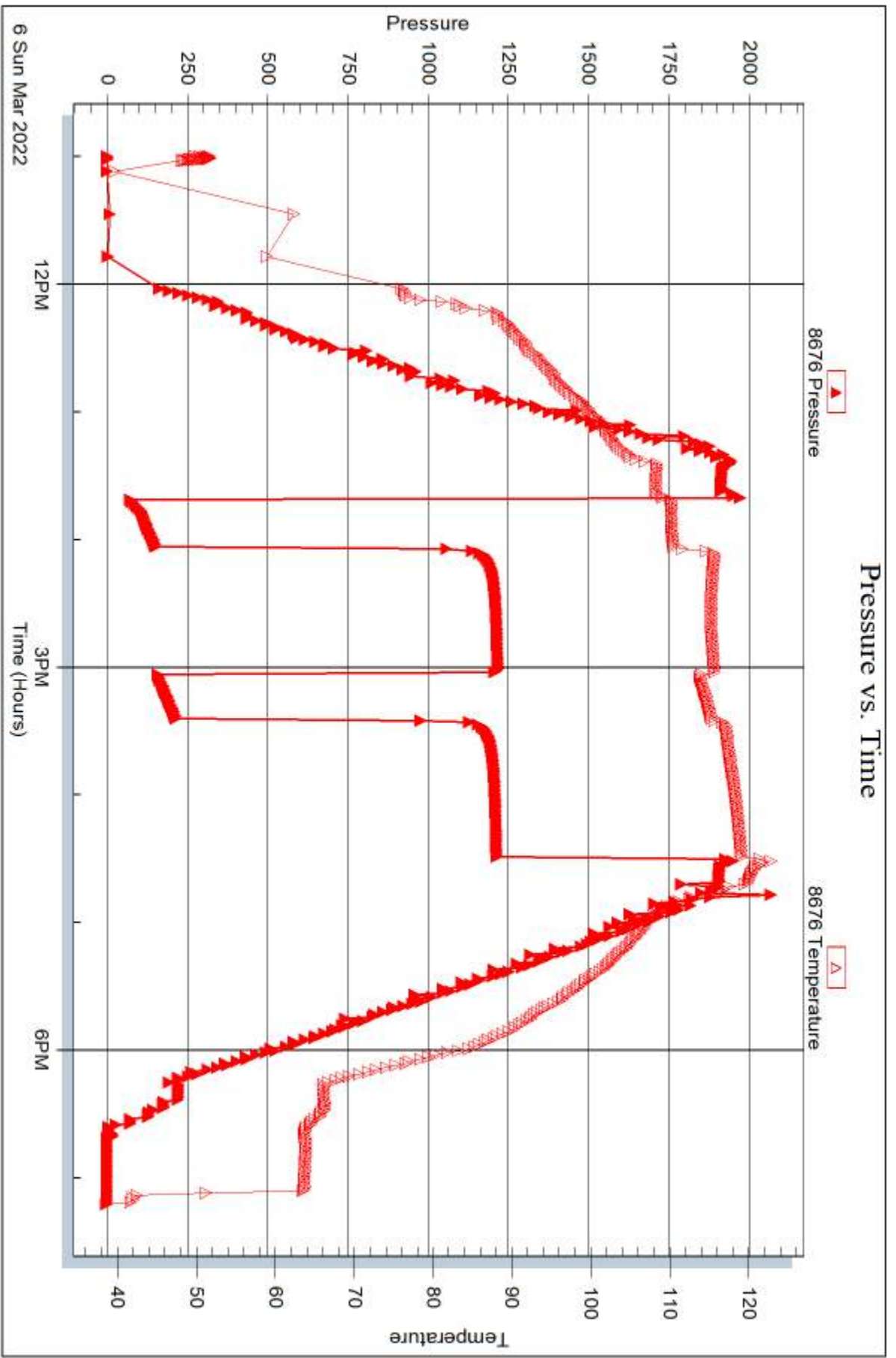


Serial #: 8676

Outside Black Oak Exploration LLC

Withers #2-21

DST Test Number: 7



Triobite Testing, Inc

Ref. No: 68809

Printed: 2022.03.09 @ 13:57:44



## DRILL STEM TEST REPORT

Prepared For: **Black Oak Exploration LLC**

1474 S. St. Paul St.  
Denver, CO 80210

ATTN: Tim Hedrick

### **Withers #2-21**

#### **21-5S-30W Decatur,KS**

Start Date: 2022.03.07 @ 04:00:00

End Date: 2022.03.07 @ 11:09:45

Job Ticket #: 68810                      DST #: 8

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

Printed: 2022.03.09 @ 13:56:28

Black Oak Exploration LLC  
21-5S-30W Decatur,KS  
Withers #2-21  
DST # 8  
LKC K  
2022.03.07





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68810

**DST#: 8**

ATTN: Tim Hedrick

Test Start: 2022.03.07 @ 04:00:00

## GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:55:30

Time Test Ended: 11:09:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 4090.00 ft (KB) To 4118.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 4118.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8353**

**Inside**

Press@RunDepth: 16.46 psig @ 4091.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.07

End Date:

2022.03.07

Last Calib.:

2022.03.07

Start Time: 04:00:01

End Time:

11:09:45

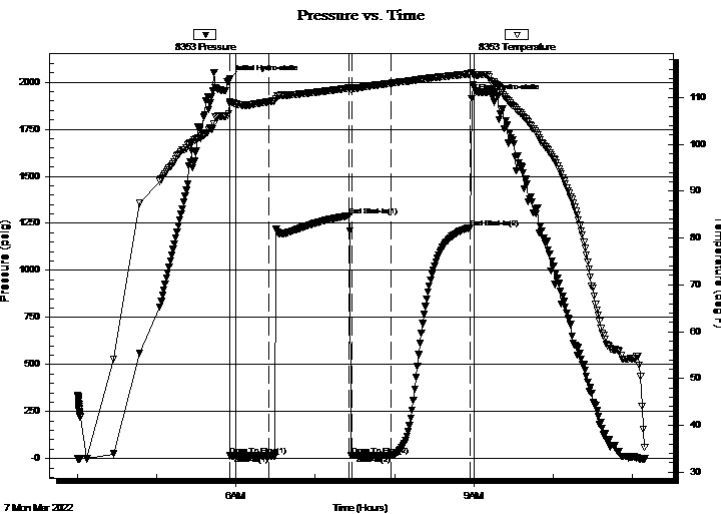
Time On Btm:

2022.03.07 @ 05:55:00

Time Off Btm:

2022.03.07 @ 08:58:15

**TEST COMMENT:** 30:IF- Weak surface blow, built to 3/4 inch in 5 min, final blow is 1 1/2 inch  
60:IS- Weak surface blow in 15 min, stayed at weak surface  
30:FF- Weak surface blow in 18 min, final blow is 3/4 inch  
60:FS- No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2016.44	109.10	Initial Hydro-static
1	15.03	108.89	Open To Flow (1)
30	15.16	109.11	Shut-In(1)
90	1290.16	111.97	End Shut-In(1)
93	16.71	111.77	Open To Flow (2)
123	16.46	113.02	Shut-In(2)
183	1227.23	115.03	End Shut-In(2)
184	1911.96	115.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%M Trace Oil	0.02

\* Recovery from multiple tests

## Gas Rates

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



# DRILL STEM TEST REPORT

Black Oak Exploration LLC

21-5S-30W Decatur, KS

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68810

**DST#: 8**

ATTN: Tim Hedrick

Test Start: 2022.03.07 @ 04:00:00

## GENERAL INFORMATION:

Formation: **LKC K**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:55:30

Time Test Ended: 11:09:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Nathan Aneas

Unit No: 71

**Interval: 4090.00 ft (KB) To 4118.00 ft (KB) (TVD)**

Reference Elevations: 2894.00 ft (KB)

Total Depth: 4118.00 ft (KB) (TVD)

2889.00 ft (CF)

Hole Diameter: 7.87 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

## Serial #: 8676

**Outside**

Press@RunDepth: psig @ 4091.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2022.03.07 End Date: 2022.03.07

Last Calib.: 2022.03.07

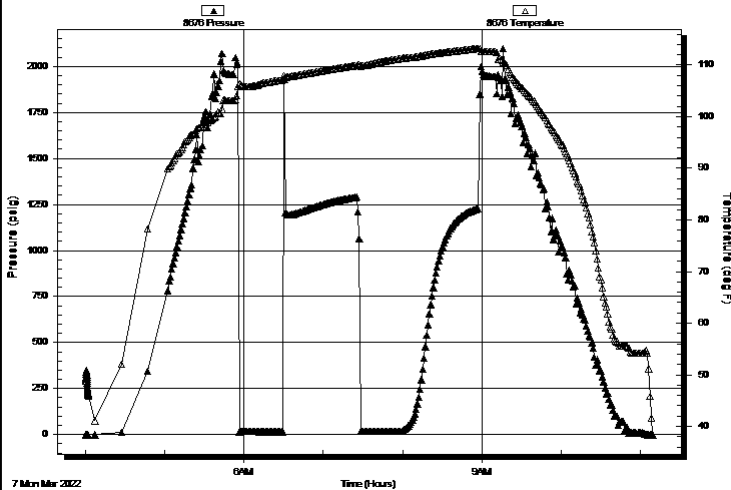
Start Time: 04:00:01 End Time: 11:10:00

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30:IF- Weak surface blow , built to 3/4 inch in 5 min, final blow is 1 1/2 inch  
 60:IS- Weak surface blow in 15 min, stayed at weak surface  
 30:FF- Weak surface blow in 18 min, final blow is 3/4 inch  
 60:FS- No blow back

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100%M Trace Oil	0.02

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Black Oak Exploration LLC

**21-5S-30W Decatur, KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68810

**DST#: 8**

ATTN: Tim Hedrick

Test Start: 2022.03.07 @ 04:00:00

## Tool Information

Drill Pipe:	Length: 3906.00 ft	Diameter: 3.80 inches	Volume: 54.79 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4090.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	56.00 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			4067.00	
Hydraulic tool	5.00			4072.00	
Jars	5.00			4077.00	
Safety Joint	3.00			4080.00	
Packer	5.00			4085.00	28.00 Bottom Of Top Packer
Packer	5.00			4090.00	
Stubb	1.00			4091.00	
Recorder	0.00	8353	Inside	4091.00	
Recorder	0.00	8676	Outside	4091.00	
Perforations	24.00			4115.00	
Bullnose	3.00			4118.00	28.00 Bottom Packers & Anchor

**Total Tool Length: 56.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Black Oak Exploration LLC

**21-5S-30W Decatur,KS**

1474 S. St. Paul St.  
Denver, CO 80210

**Withers #2-21**

Job Ticket: 68810

**DST#: 8**

ATTN: Tim Hedrick

Test Start: 2022.03.07 @ 04:00:00

### 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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100%M Trace Oil	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

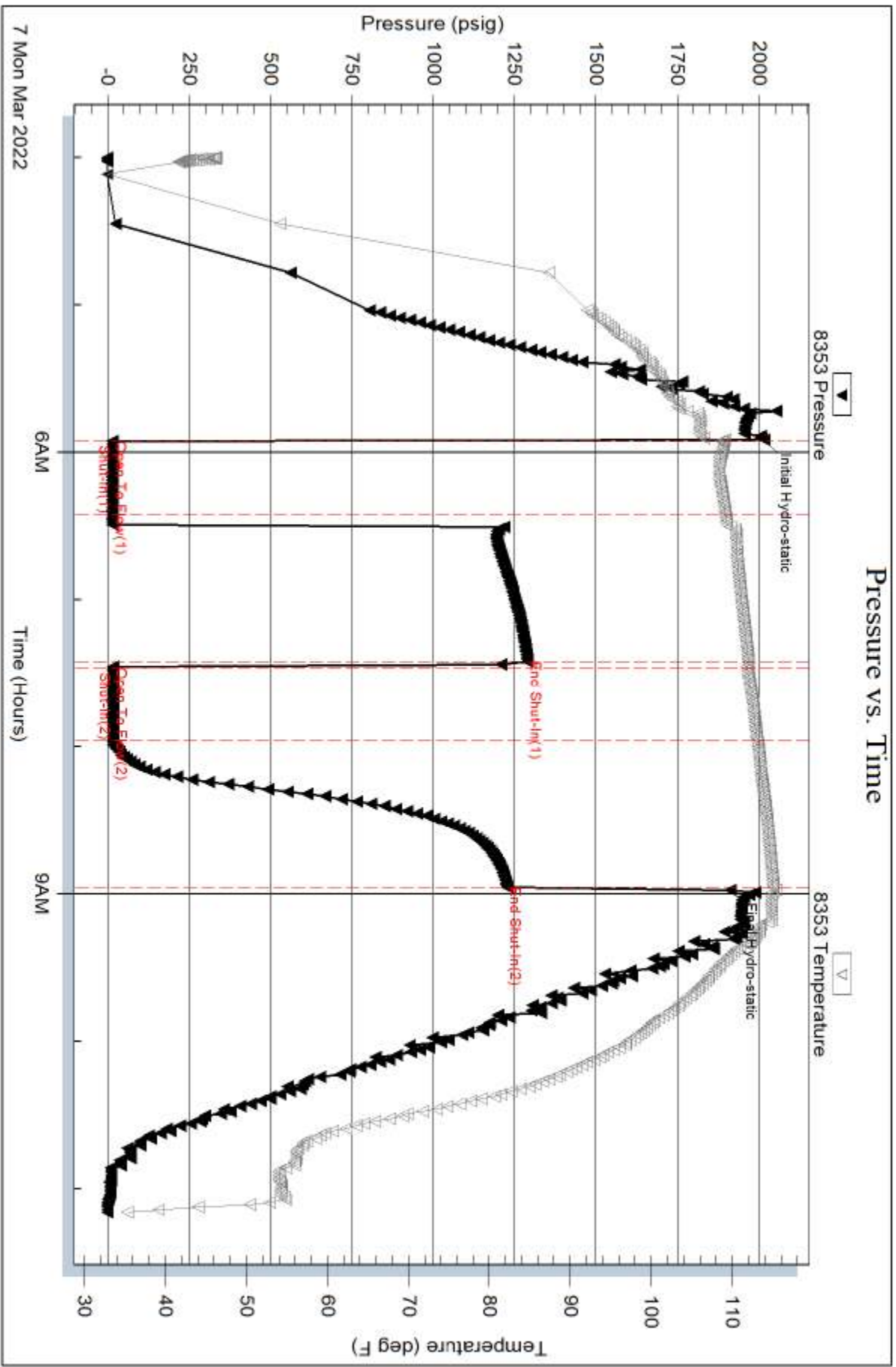
Num Gas Bombs: 0

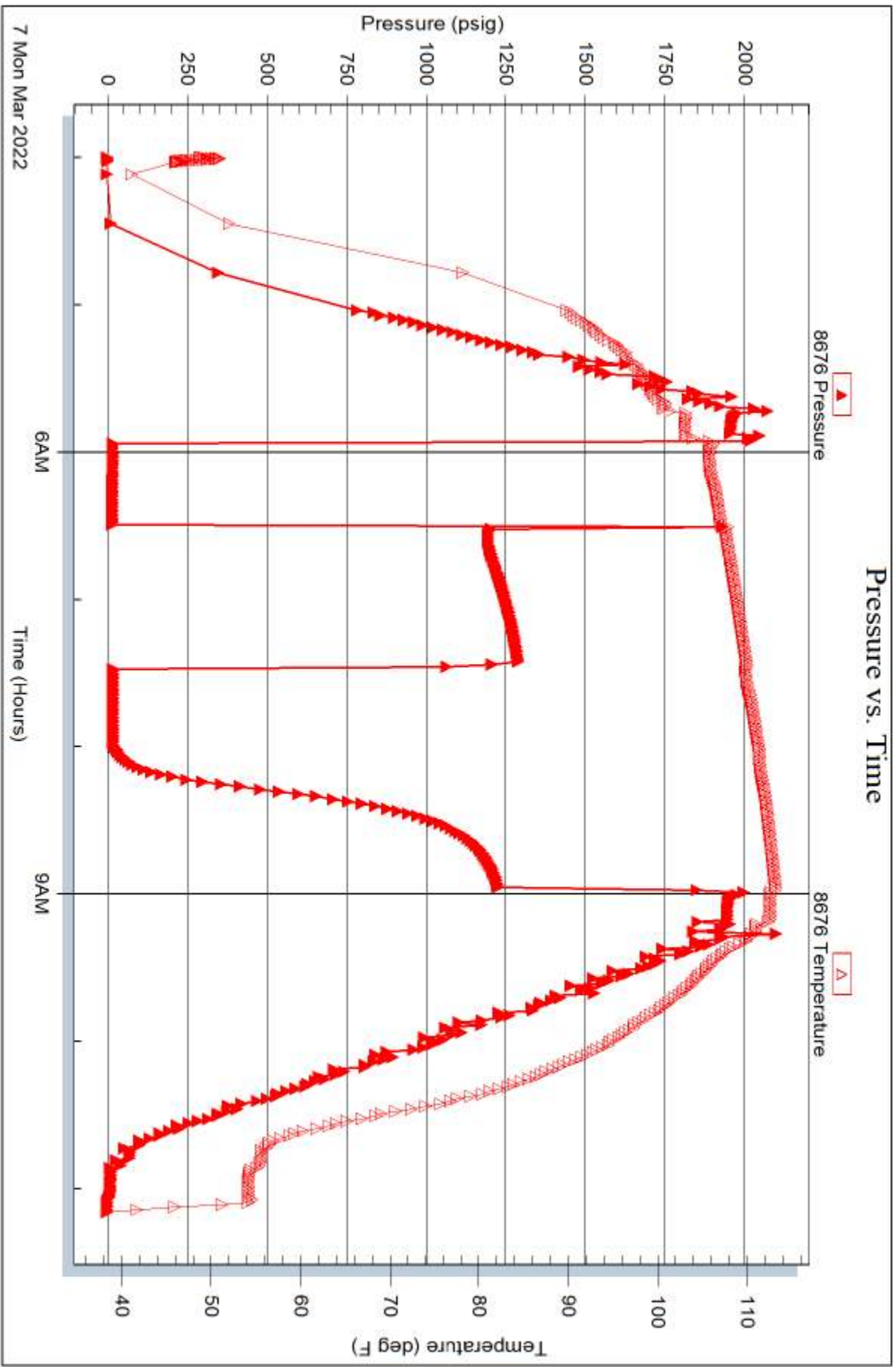
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **68803**

Well Name & No. Withers #2-21 Test No. 1 Date 3/2/22  
 Company Blacks Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 5 Rge. 30W Co. Decatur State KS

Interval Tested 3902-3922 Zone Tested Toronto  
 Anchor Length 20 Drill Pipe Run 3725 Mud Wt. 9.0  
 Top Packer Depth 3897 Drill Collars Run 185 Vls 69  
 Bottom Packer Depth 3902 Wt. Pipe Run \_\_\_\_\_ WL 6.4  
 Total Depth 3922 Chlorides 700 ppm System LCM 5

Blow Description IF - Fair surface blow, built to 6 inch in 5 min, BOB in 8 min  
ISI -  
FF - Packer Failure  
FSI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>2520</u>	<u>Mud Packer Failure</u>				
_____	_____				
_____	_____				
_____	_____				
_____	_____				

Rec Total 2520 BHT 115 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1929</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>13:00</u>
(B) First Initial Flow <u>27</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>14:45</u>
(C) First Final Flow _____	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>16:57</u>
(D) Initial Shut-In _____	<input checked="" type="checkbox"/> Circ Sub _____	T-Pulled <u>17:10</u>
(E) Second Initial Flow _____	<input type="checkbox"/> Hourly Standby _____	T-Out <u>20:00</u>
(F) Second Final Flow _____	<input checked="" type="checkbox"/> Mileage <u>SORT 75</u>	Comments <u>Packer failure</u>
(G) Final Shut-In _____	<input type="checkbox"/> Sampler _____	<u>15 min into 1st Open</u>
(H) Final Hydrostatic <u>1279</u>	<input type="checkbox"/> Straddle _____	

Initial Open _____	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> EM Tool _____
Initial Shut-In _____	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Final Flow _____	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
Final Shut-In _____	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1450</u>
	Sub Total <u>1450</u>	MP/DST Disc'l _____

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.



# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 68804

Well Name & No. Withers #2-21 Test No. 2 Date 3/2/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 5 Rge. 30w Co. Decatur State KS

Interval Tested 3882-3922 Zone Tested Toronto  
 Anchor Length 40 Drill Pipe Run 3694 Mud Wt. 9.0  
 Top Packer Depth 3877 Drill Collars Run 186 Vls 69  
 Bottom Packer Depth 3882 Wt. Pipe Run \_\_\_\_\_ WL 64  
 Total Depth 3922 Chlorides 700 ppm System LCM 5

Blow Description IF-Weak surface blow, built to 7 inches in 5 min, BOB in 9 min  
ISI- No blow back  
FF-Weak surface blow, built to 6 inches in 5 min, BOB in 12 min  
FSI- No blow back

Rec	Feet of	MW	Oil spots	%gas	%oil	%water	%mud
<u>409</u>	<u>Feet of</u>	<u>MW</u>	<u>Oil spots</u>	<u>%gas</u>	<u>%oil</u>	<u>90%water</u>	<u>10 %mud</u>
<u>186</u>	<u>Feet of</u>	<u>MW</u>		<u>%gas</u>	<u>%oil</u>	<u>95 %water</u>	<u>5 %mud</u>
<u>    </u>	<u>Feet of</u>	<u>    </u>		<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>    </u>	<u>Feet of</u>	<u>    </u>		<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>
<u>    </u>	<u>Feet of</u>	<u>    </u>		<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>

Rec Total 595 BHT 128 Gravity      API RW .195 @ 63 °F Chlorides 44,000 ppm

(A) Initial Hydrostatic 1876  Test 1300 T-On Location 13:00  
 (B) First Initial Flow 27  Jars 250 T-Started 21:00  
 (C) First Final Flow 162  Safety Joint 75 T-Open 22:52  
 (D) Initial Shut-In 1178  Circ Sub \_\_\_\_\_ T-Pulled 01:09  
 (E) Second Initial Flow 172  Hourly Standby \_\_\_\_\_ T-Out 03:20  
 (F) Second Final Flow 251  Mileage      Comments \_\_\_\_\_  
 (G) Final Shut-In 1152  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1754  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 1625  
 Sub Total 1625 MP/DST Disc't \_\_\_\_\_

Initial Open 20  
 Initial Shut-In 60  
 Final Flow 20  
 Final Shut-In 30

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

Tribolite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 68805

Well Name & No. Withers #2-21 Test No. 3 Date 3/3/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 5s Rge. 30W Co. Decatur State KS

Interval Tested 3923-3942 Zone Tested Lansing A  
 Anchor Length 19 Drill Pipe Run 3725 Mud Wt. 9.0  
 Top Packer Depth 3918 Drill Collars Run 186 Vls 69  
 Bottom Packer Depth 3923 Wt. Pipe Run \_\_\_\_\_ WL 6.4  
 Total Depth 3942 Chlorides 700 ppm System LCM 5

Blow Description IF- Good surface blow, built to 1 inch in 5 min, Final blow is 2 1/4 in  
ISI- No blow back  
FF- weak surface blow, built to 1/4 inch in 5 min, Final blow is 1/2 inch  
FST- No blow back

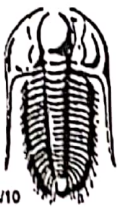
Rec	Feet of		%gas	%oil	%water	%mud
<u>144</u>	<u>Mud</u>	<u>Few spots of oil</u>				<u>100</u>
		<u>in tool</u>				

Rec Total 144 BHT 118 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1897  Test 1300 T-On Location 10:15  
 (B) First Initial Flow 61  Jars 250 T-Started 11:54  
 (C) First Final Flow 68  Safety Joint 75 T-Open 13:56  
 (D) Initial Shut-In 1237  Circ Sub \_\_\_\_\_ T-Pulled 16:15  
 (E) Second Initial Flow 71  Hourly Standby \_\_\_\_\_ T-Out 18:15  
 (F) Second Final Flow 76  Mileage 50 RT 75  
 (G) Final Shut-In 1230  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1844  Straddle \_\_\_\_\_  
 Shale Packer 250  EM Tool \_\_\_\_\_  
 Ruined Shale Packer 365  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 365  
 Accessibility \_\_\_\_\_ Total 2315  
 Sub Total 1950 MP/DST Disc'l \_\_\_\_\_

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

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# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 68806

Well Name & No. Withers #2-21 Test No. 4 Date 3/4/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 5s Rge. 30w Co. Decatur State KS

Interval Tested 3938-3962 Zone Tested Lansing B+C  
 Anchor Length 24 Drill Pipe Run 3745 Mud Wt. 9.0  
 Top Packer Depth 3933 Drill Collars Run 186 Vls 45 (58 after mixing Tank)  
 Bottom Packer Depth 3938 Wt. Pipe Run \_\_\_\_\_ WL 6.8  
 Total Depth 3962 Chlorides 2,000 ppm System LCM 4

Blow Description IF - Good surface blow, built to 4 inches in 5 min, BOB in 11 min  
ISI - Weak surface blow, built to 1/4 inch in 5 min, Final blow 2 1/2 inches  
FF - Fair surface blow, built to 3 inches in 5 min, BOB in 13 min  
FBI - Weak surface blow, built to 1 inch in 5 min, Final blow 3 inches

Rec	Feet of	%gas	%oil	%water	%mud
<u>315</u>	<u>G/MCO</u>	<u>20</u>	<u>70</u>	<u>10</u>	<u>0</u>
<u>186</u>	<u>VSG/MCO</u>	<u>10</u>	<u>50</u>	<u>40</u>	<u>0</u>
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 501 BHT 125 Gravity 28@60° API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1889  Test 1300 T-On Location 02:30  
 (B) First Initial Flow 3300  Jars 250 T-Started 03:00  
 (C) First Final Flow 119  Safety Joint 75 T-Open 05:21  
 (D) Initial Shut-In 1234  Circ Sub \_\_\_\_\_ T-Pulled 08:05  
 (E) Second Initial Flow 126  Hourly Standby \_\_\_\_\_ T-Out 11:00  
 (F) Second Final Flow 183  Mileage 50RT 75 Comments \_\_\_\_\_  
 (G) Final Shut-In 1228  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1867  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Extra Copies \_\_\_\_\_

Initial Open 20  
 Initial Shut-In 60  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 1700  
 Total 1700  
 MP/DST Disc'l \_\_\_\_\_

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

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# TRIBOLITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **68807**

Well Name & No. Withers #2-21 Test No. 5 Date 3/4/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 5S Rge. 30W Co. DeCATUR State KS

Interval Tested 3966 - 3990 Zone Tested Lansing D  
 Anchor Length 24 Drill Pipe Run 3781 Mud Wt. 8.8  
 Top Packer Depth 3961 Drill Collars Run 186 Vis 53  
 Bottom Packer Depth 3966 Wt. Pipe Run \_\_\_\_\_ WL 6.8  
 Total Depth 3990 Chlorides 1000 ppm System LCM 5

Blow Description IF - Strong surface blow, BOB in 2 min  
ISF - No blow back  
FP - Strong surface blow, 6 inches in 5 min. Final blow was 3 1/2 inches  
FSF - No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>1389</u>	<u>VSMW</u>		<u>5</u>	<u>95</u>	
<u>186</u>	<u>W</u>		<u>100</u>		
_____	_____				
_____	_____				
_____	_____				

Rec Total 1575 BHT 129 Gravity \_\_\_\_\_ API RW 250 @ 61 °F Chlorides 34,000 ppm

(A) Initial Hydrostatic <u>1944</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>19:45</u>
(B) First Initial Flow <u>110</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>20:00</u>
(C) First Final Flow <u>361</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>22:05</u>
(D) Initial Shut-In <u>1183</u>	<input checked="" type="checkbox"/> Circ Sub _____	T-Pulled <u>00:25</u>
(E) Second Initial Flow <u>411</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>03:05</u>
(F) Second Final Flow <u>749</u>	<input checked="" type="checkbox"/> Mileage <u>50 RT 75</u>	Comments <u>Hammering</u>
(G) Final Shut-In <u>1179</u>	<input type="checkbox"/> Sampler _____	<u>Union was loose on one</u>
(H) Final Hydrostatic <u>1851</u>	<input type="checkbox"/> Straddle _____	<u>of the hoses</u>

Initial Open <u>10</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> EM Tool _____
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Final Flow <u>20</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Ruined Packer _____
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	<input type="checkbox"/> Extra Copies _____
	<input type="checkbox"/> Accessibility _____	Sub Total <u>0</u>
	Sub Total <u>1700</u>	Total <u>1700</u>

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

Tribolite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **68808**

Well Name & No. Withers #2-21 Test No. 6 Date 3/5/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Geo. Tim Hedrick Rig Murfin #18  
 Location: Sec. 21 Twp S3 Rge. 30W Co. Decatur State KS

Interval Tested 3987-4008 Zone Tested Lansing F  
 Anchor Length 21 Drill Pipe Run 3780 Mud Wt. 8.8  
 Top Packer Depth 3982 Drill Collars Run 186 Vls 53  
 Bottom Packer Depth 3987 Wt. Pipe Run \_\_\_\_\_ WL 6.8  
 Total Depth 4008 Chlorides 1000 ppm System LCM 5

Blow Description TF - Fair surface blow, built to BOB in 7 min  
ISI - Weak surface blow, built to 1 1/2 inch in 5 min, BOB in 18 min  
FF - Good surface, built to 5 inches in 5 min, BOB in 10 min  
FSI - Weak surface blow, built to 1 1/2 in 5 min, Final blow is 1 inch

Rec	Feet of	%gas	%oil	%water	%mud
<u>441</u>	<u>CO</u>	<u>100</u>			
<u>186</u>	<u>MCO</u>	<u>60</u>		<u>40</u>	
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

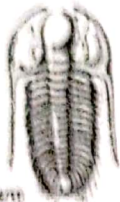
Rec Total 627 BHT 126 Gravity 36@160° API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1932  Test 1450 T-On Location 10:30  
 (B) First Initial Flow 45  Jars 250 T-Started 11:35  
 (C) First Final Flow 170  Safety Joint 75 T-Open 13:53  
 (D) Initial Shut-In 462  Circ Sub \_\_\_\_\_ T-Pulled 17:07  
 (E) Second Initial Flow 178  Hourly Standby \_\_\_\_\_ T-Out 19:50  
 (F) Second Final Flow 223  Mileage 50 RT 75  
 (G) Final Shut-In 463  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1894  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 20  EM Tool \_\_\_\_\_  
 Initial Shut-In 60  Ruined Shale Packer \_\_\_\_\_  
 Final Flow 20  Ruined Packer \_\_\_\_\_  
 Final Shut-In 90  Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1850  
 Sub Total 1850 MP/DST Disc 1 \_\_\_\_\_

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **68809**

Well Name & No. Withers #2-21 Test No. 7 Date 3/6/22  
 Company Black Oaks Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Gen. Tim Hedrick Rig Murfin #8  
 Location: Sec. 21 Twp 50 Rge 30w Co. Decatur State KS

Interval Tested 4026-4095 Zone Tested Lansing H-J  
 Anchor Length 69' Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.1  
 Top Packer Depth 4021 Drill Collars Run 186 Via 48  
 Bottom Packer Depth 4026 Wt. Pipe Run \_\_\_\_\_ WL 7.2  
 Total Depth 4095 Chlorides 2100 ppm System LCM 5

Blow Description IF - Strong surface blow, built to 7 inch in 5 min, BOB in 8 min  
ISF - ~~Weak~~ Weak surface blow in 22 min. Final blow is weak, surf  
FF - Good surface blow, built to 6 inches, 5 min, BOB in 18 min  
FBI - No blow back

Rec	Feet of	MW	Trace oil	%gas	%oil	%water	%mud
<u>252</u>	<u>252</u>	<u>MW</u>	<u>Trace oil</u>	<u>%gas</u>	<u>90</u>	<u>10</u>	<u>%mud</u>
<u>186</u>	<u>186</u>	<u>MW</u>	<u>%gas</u>	<u>80</u>	<u>20</u>	<u>%mud</u>	
____	____	____	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>	
____	____	____	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>	
____	____	____	<u>%gas</u>	<u>%oil</u>	<u>%water</u>	<u>%mud</u>	

Rec Total 438 BHT 128 Gravity \_\_\_\_\_ API RW .350 @ 46.4 °F Chlorides 42,000 ppm

(A) Initial Hydrostatic 1971  Test 1450 T-On Location 10:30  
 (B) First Initial Flow 66  Jars 250 T-Started 11:00  
 (C) First Final Flow 141  Safety Joint 75 T-Open 13:40  
 (D) Initial Shut-In 1216  Circ Sub \_\_\_\_\_ T-Pulled 16:10  
 (E) Second Initial Flow 154  Hourly Standby \_\_\_\_\_ T-Out 18:50  
 (F) Second Final Flow 203  Mileage 50 RT 75  
 (G) Final Shut-In 1212  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1879  Straddle \_\_\_\_\_

Initial Open 20  Shale Packer \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Final Flow 20  Extra Recorder \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Shut-In 60  Day Standby \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Sub Total 1850  Accessibility \_\_\_\_\_ Sub Total 0  
 Total 1850 MP/DSE Disc't \_\_\_\_\_

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **68810**

Well Name & No. Withers #2-21 Test No. 8 Date 3/7/22  
 Company Black Oak Exploration LLC Elevation 2894 KB 2889 GL  
 Address 1474 S. St. Paul St. Denver, CO 80210  
 Co. Rep / Gen. Tim Hedrick Pig Murfin #8  
 Location: Sec. 21 Twp 5S Rge. 30W Co. Decatur State KS

Interval Tested 4090-4118 Zone Tested Lansing K  
 Anchor Length 28 Drill Pipe Run 3806 Mud Wt. 9.0  
 Top Packer Depth 4085 Drill Collars Run 186 Vis 50  
 Bottom Packer Depth 4090 Wt. Pipe Run \_\_\_\_\_ WL 7.2  
 Total Depth 4118- Chlorides 1400 ppm System LCM 5

Blow Description IF-Weak surface blow, built to 3/4 inch in 5 min, Final blow is 1 1/2 inch  
ISF-Weak surface blow in 15 min, stayed weak surface  
FF-Weak surface blow in 18 min, Final blow is 3/4 inch  
FSI- No blow back

Rec	Feet of	Mud	Trace Oil	%gas	%oil	%water	%mud
<u>5</u>						<u>100</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 115 Gravity — API RW — @ — °F Chlorides — ppm

- (A) Initial Hydrostatic 2016
- (B) First Initial Flow 15
- (C) First Final Flow 15
- (D) Initial Shut-In 1290
- (E) Second Initial Flow 17
- (F) Second Final Flow 16
- (G) Final Shut-In 1227
- (H) Final Hydrostatic 1912

- Test 1450
- Jars 250
- Safety Joint 75
- Circ Sub \_\_\_\_\_
- Hourly Standby \_\_\_\_\_
- Mileage SORT 75
- Sampler \_\_\_\_\_
- Straddle \_\_\_\_\_
- Shale Packer \_\_\_\_\_
- Extra Packer \_\_\_\_\_
- Extra Recorder \_\_\_\_\_
- Day Standby \_\_\_\_\_
- Accessibility \_\_\_\_\_
- Sub Total 1850

T-On Location 03:30  
 T-Started 04:00  
 T-Open 05:55  
 T-Pulled 08:58  
 T-Out 11:15

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 EM Tool \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1850

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

Approved By \_\_\_\_\_

Our Representative [Signature]

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# Black Oak Exploration, LLC

## WELL COMPARISON SHEET

Company: Black Oak Exploration, LLC  
 1474 S St Paul St  
 Denver, CO 80210

Contact: Clayton Camozzi 303-968-4999 (Cell)

Well: Withers 2-21  
 Location: 1500 FSL / 950 FWL  
 21 - 5S - 30W  
 Decatur Co., KS  
 Wellsite Geologist: Tim Hedrick Cell: (580) 754-0062

Elevation: 2894' KB 2889' GL  
 Field: Unknown  
 API No: 15-039- 21279-0000  
 Surface Casing: 8 5/8" set @ 288' KB

Drilling Contractor: Murfin Drilling Co Rig #108. Rig Phone (785-259-0816), Tool Pusher Justin Polfus (402-318-1972)

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
Withers 2-21					Withers 1-21				Huber 1			
1500 FSL / 950 FWL 21 - 5S - 30W					340 FSL / 845 FWL 21 - 5S - 30W				1980 FNL / 1980 FWL 21 - 5S - 30W			
2894 KB					2895 KB		Structural Relationship		2882 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
STONE CORAL	2596	298	2606	288	2596	299	-1	-11	2609	273	25	15
FORAKER	3417	-523	3418	-524	3413	-518	-5	-6	3433	-551	28	27
TOPEKA	3703	-809	3714	-820	3701	-806	-3	-14	3718	-836	27	16
DEER CREEK	3763	-869	3764	-870	3750	-855	-14	-15	3772	-890	21	20
LECOMPTON	3825	-931	3826	-932	3816	-921	-10	-11	3832	-950	19	18
HEEBNER	3885	-991	3888	-994	3873	-978	-13	-16	3891	-1009	18	15
LANSING	3930	-1036	3934	-1040	3922	-1027	-9	-13	3940	-1058	22	18
LANSING "D" ZONE	3965	-1071	3974	-1080	3957	-1062	-9	-18	3979	-1097	26	17
LANSING "F" ZONE	3996	-1102	4002	-1108	3990	-1095	-7	-13	4011	-1129	27	21
LANSING "H" ZONE	4041	-1147	4048	-1154	4034	-1139	-8	-15	4054	-1172	25	18
BKC	4136	-1242	4150	-1256	4134	-1239	-3	-17	4152	-1270	28	14
Total Depth	4240	-1346	4242	-1348	4548	-1653			4174	-1292	-54	

# BLACK OAK



## EXPLORATION

Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: WITHERS 2-21  
Well Id:  
Location: Section 21 - 5S - 30W Decatur Co, Kansas  
License Number: API # 15-039-21279  
Spud Date: Feb. 26th 2022  
Surface Coordinates: 1500' FSL & 950' FWL  
Region: WILDCAT  
Drilling Completed: March 07, 2022

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 2889' K.B. Elevation (ft): 2894'  
Logged Interval (ft): 3650 To: 4240' Total Depth (ft): 4240'  
Formation: Lansing Kansas City  
Type of Drilling Fluid: Chemical Gel/Polymer Fresh Water -Based

Printed by WellSight LogViewer from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

### OPERATOR

Company: BLACK OAK EXPLORATION, LLC  
Address: 1474 S St Paul St  
Denver CO 80210

### GEOLOGIST

Name: TIM HEDRICK  
Company: EARTH TECH OGL, INC  
Address: Po BOX 683  
Hooker, okla. 73945  
580-754-0062 Cell



## ROCK TYPES

### LITHOLOGY

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Congl
- Dol
- Gyp
- Igne
- Lmst
- Meta
- Mrst
- Salt
- Shale
- Shcol
- Shgy
- Slstst
- Ss
- Till
- Slststn
- Shale
- Sandylms
- Lms
- Gry sh
- Dtd
- Dol
- Carb sh
- pipesymbol
- unknown lith
- Red shale

### FOSSIL

- Oomoldic
- Fuss
- Algae

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### MINERAL

- Silty
- Sand
- Dol
- Chlorite
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol

### STRINGER

- Sh
- Sandylms
- Lms
- Gryslt
- Grysh
- Dol
- Clystn
- Carbsh
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Slststrg

- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymn
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

- Ssstrg

### TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

### OIL SHOW

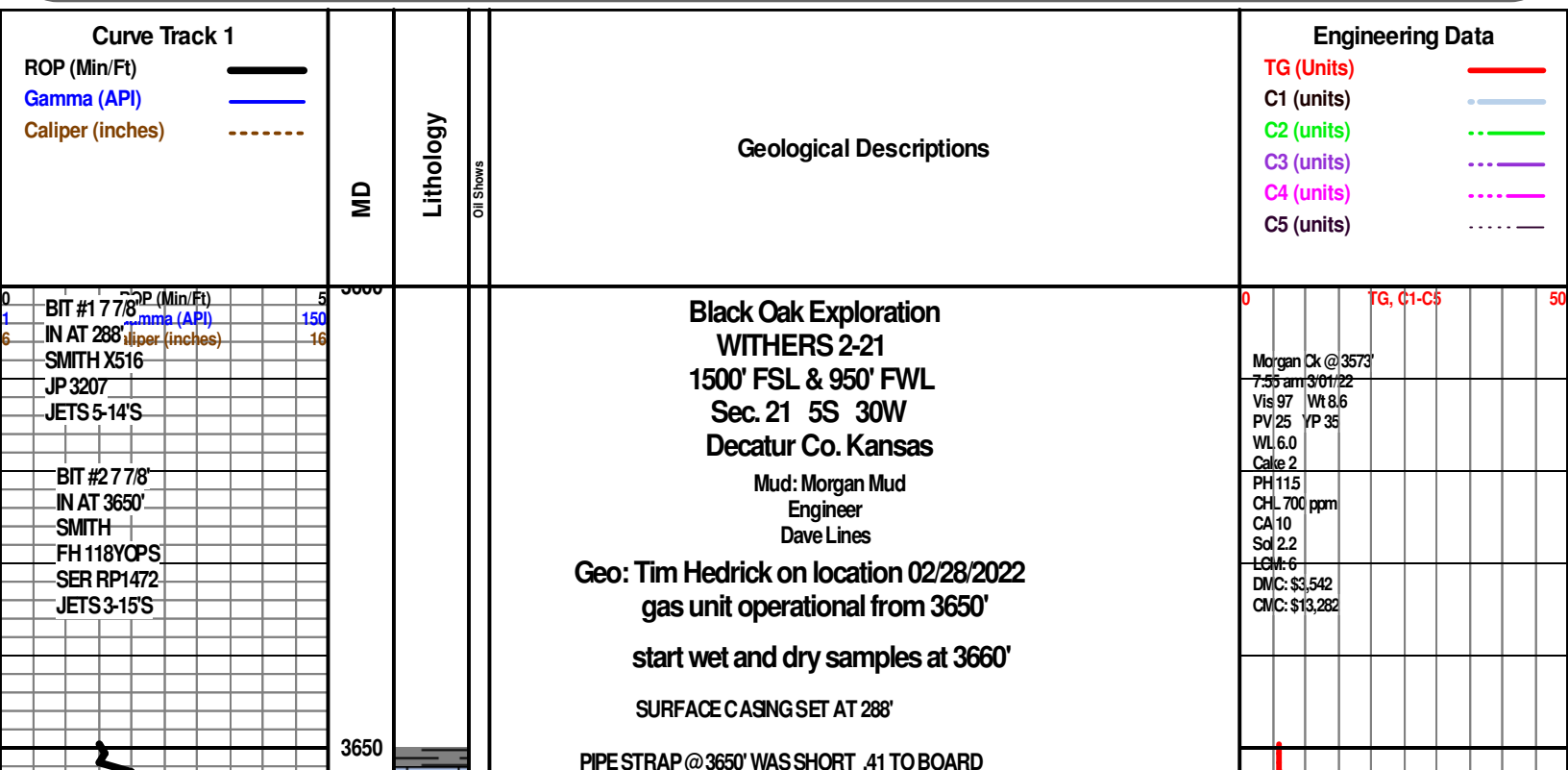
- Gas show
- Even
- Spotted
- Ques
- Dead

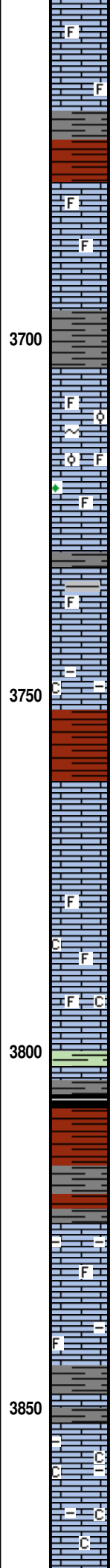
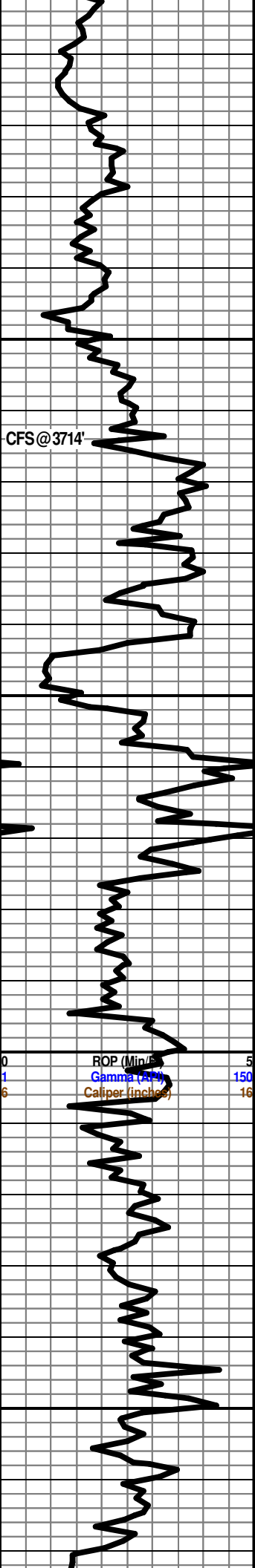
### INTERVAL

- Dst
- Core
- Dst
- Straddle test tail pip

### EVENT

- Rft
- Sidewall
- Dst
- Open hole
- Perforations





LIMESTONE-CREAM OFF WHITE- HARD DENSE TO BRIT IN PART, MICROCRYSTALLINE TO MEDIUM CRYSTALLINE, RE-CRYSTALLINE MATRIX IN PART TRACES OF FOSSIL FRAGMENTS IN PART, NO FLUOR, NO VISIBLE POROSITY, NO SHOW

SHALE- RED TO REDDISH BROWN FIRM BLOCKY GRAINY TEXTURE

LIMESTONE- CREAM DARK BROWN TO BLACK DUE TO OIL STAIN IN 30%, TRACE OF DOS IN PART, VERY SUCROSIC MATRIX TRACE OF FOSSIL FRAGS IN PART VERAGATED SMALL CALCITE CRYSTALS IN PART, BRIGHT YELLOW GOLD FLUORESCENCE IN 60-70% TRACE POOR VISIBLE MICRO PP POROSITY IN 20%, VERY GOOD FLUSH CUT IN 80% TO VERY GOOD SLOW STREAM CUT IN 80%, NO ODOR, TAN LEACH ON DISH

**Topeka 3703' - (809')**

limestone- cream tan hard dense, microcrystalline to tight sucrosic matrix, grading to re-crystalline, with embed fossil fragments, trace of scattered micro oolites in part, slight trace chlorite or glauconite, dull yellow mineral fluorescence in part, no visible porosity, no visible show

Limestone- cream buff light gray, hard dense, fine crystalline to re-crystalline in part, trace of embed fossil fragments, trace of light gray shale embed in part, dull yellow mineral fluorescence, no visible porosity, no show

Limestone- cream off white- hard very brittle, very coarse sucrosic matrix, abundant small angular lime grains thru, small calcite crystals in part, heavy trace embed soft white chalk in part, scattered disseminated lt gray shale in part, no fluorescence, poor fair to good inter-crystalline porosity thruout, no visible show or cut

Shale- red to gray- firm blocky very grainy texture, calcareous in part

**Deer Creek 3763' (- 869')**

Limestone-off white cream- hard dense to brittle, microcrystalline to fine crystalline, re-crystalline matrix, embed small calcite crystals scattered thruout, dull yellow mineral fluorescence in part, no visible porosity, no visible show

limestone-cream off white, hard to brittle in part, very sucrosic matrix, re-crystalline in part, scattered embed small fossil fragments thruout, small calcite crystals in part, heavy trace of free soft white chalk, dull yellow mineral fluorescence, poor visible iner-crystalline porosity. no show or cut

Shale - green to dark green smooth texture

Shale -black soft carbonaceous to very dark gray

Shale- red to reddish brown- firm blocky in part to very soft gummy texture

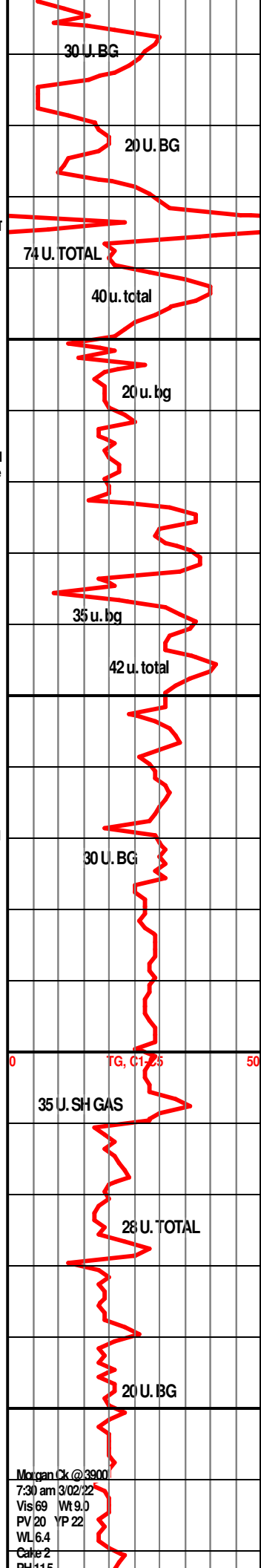
**LeCompton 3825' (-931')**

Limestone- cream tan brown - hard dense, very tight sucrosic matrix, disseminated shale embed in part, trace fossil fragments in part, no fluorescence, no visible porosity, no visible show

shale - light to medium gray- firm blocky slightly calcareous

Limestone- cream off white - hard dense to brittle in part, crypto-crystalline to very sucrosic sub chalky matrix, traces light gray shale embed in part, no fluorescence, no visible porosity, no visible show or cut

Limestone, cream, hard to very brittle, sucrosic to sub-sucrosic sub chalky throughout, traces abundant white free soft chalk, dull yellow fluorescence, poor inter-crystalline porosity to no porosity in part, no visible show or cut



Morgan Ck @ 3900

7:30 am 3/02/22

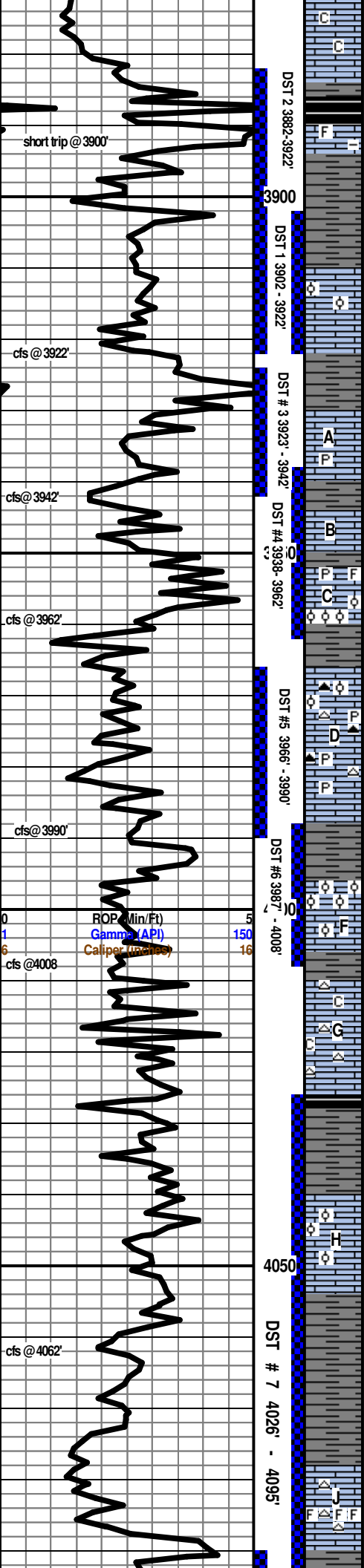
Vis 69 Wt 9.0

PV 20 YP 22

WL 6.4

Core 2

DU 11.5



**Heebner 3890' (-996')**  
 Shale- black soft carbonaceous  
 Limestone- tan brown gray, hard dense fine crystalline to crypto-crystalline, embed fossil fragments, embed disseminated shale in part, no fluorescence, no visible porosity, no visible show

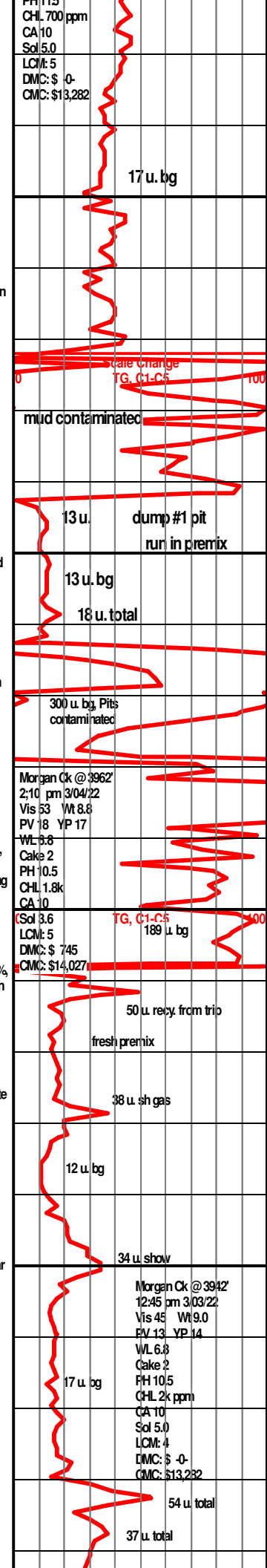
**Toronto 3910' (-1016')**  
 Limestone- off white tan brown due to live oil and live oil stain in 70%, hard to brittle, coarse sucrosic matrix, re-crystalline thruout with small to medium lime grains thruout, scattered small oolites embedded in part, trace pyrite in part, dull yellow gold fluor. thruout, poor to fair trace good visible inter-oolitic and inter-oolitic porosity in 30%, trace poor micro vug porosity in part, excellent flush and excellent slow stream cut thruout, live oil drops in dish and very good oil odor

**Lansing 3930' (-1036')**  
 Limestone- white tan brown due to oil stain and live oil stain thruout, hard to brittle, coarse sucrosic matrix, fine crystalline in part, trace re-crystalline, angular lime grains in part, small to medium calcite crystals in vugs, trace pyrite in part, trace free firm chalk, trace dos, dull yellow gold fluor. in 70%, poor to fair inter-oolitic porosity in 60%, good vug porosity in 20%, abundant free oil in tray, excellent flush to excellent slow stream cut, good oil odor

**Lansing "G" 4010' (-1116')**  
 Limestone- off white cream tan brown, spotted oil stain, live oil stain, dos in part, hard dens to brittle sucrosic to sub sucrosic trace firm white chalk in part, abundant free disseminated pyrite in tray and interbed in part, abundant clear gray black re-worked chert, oil stain in 70-80%, dull yellow gold fluor. thruout, poor to fair visible inter-crystalline porosity 30%, poor inter-crystalline porosity in 10%, excellent flush cut in 60%, excel slow stream cut in 70%, strong oil odor with sulphur hint

**Lansing "H" 4041' (-1147')**  
 Limestone- cream tan brown due to oil stain in 80%, traces of live oil in tray and bleeding, hard to brittle coarse sucrosic matrix to fine crystalline in part, angular lime grains in part, oolitic in part (small oolites) traces of medium clear calcite crystals embed in part, dull yellow gold fluor thruout, poor to fair inter-crystalline & microvugular porosity in 30%, poor to fair visible inter-oolitic porosity in 10%, excellent flush cut thruout to excellent slow stream cut thruout

**Lansing "J" 4078' (-1184')**  
 4078 Limestone- cream tan light brown due to oil stain scattered thruout, hard dense to very brittle, micro crystalline to very sucrosic in 30%, fossil frags in 30%, abundant small brittle lime in tray with live oil stain, white gray chert in part, dull yellow gold fluor. scattered thruout, poor visible to trace fair micro pin point porosity in part, fair to heavy trace good inter-fossil porosity in part, excellent flush to very good slow stream cut thruout, good oil odor



# Lansing "K" 4100' (- 1206')

4100-4109' Limestone- cream tan brown in part due to oil stain scattered thru, hard dense microcrystalline to very tight sucrosic in part, streaky oil stains, dull to bright yellow gold fluor. thruout, excellent flush to excellent slow stream cut thruout, very poor visible micro pinpoint porosity in 20%, good oil odor, trace of live oil

4110-4115' Limestone- tan brown due to even brown oil stain thruout, abundant live oil on rocks and tray, hard very brittle, sucrosic matrix in part to re-crystalline thru, embed small to med oolites, embed fossil frags scatt. in part, dull to bright yellow gold fluor. thru, poor fair to good visible inter-xln and micro pinpoint porosity in 40%, scatt. good microvugular porosity in part, fair inter-oolitic porosity in 10%, excel flush and slow stream cut, abundant live oil in dish, good oil odor

Limestone- off white cream tan with scattered oil stain in 70%, hard dense micro crystalline to very fine crystalline, slightly sub chalky in part, dull yellow gold fluorescence in 30% to bright yellow gold fluorescence in 15%, no visible porosity in 80% to poor visible microvug in 2%, possible micro pin point in part, good flush cut in 40%, good slow stream cut in 20%, light oil odor

## BKC 4136' (- 1242')

Shale, light gray to gray to scattered red, very gummy/chalky to scattered blocky

Limestone- cream tan gray - hard dense, crypto-very fine crystalline, embed fossil frags in part, embed gray shale in part, no fluorescence, no visible porosity, no visible show

Limestone- white off white cream, very soft, chalky matrix with traces of sucrosic sub chalky in part, no fluorescence, no visible porosity, no visible show or cut

Shale- very dark gray - firm blocky smooth texture to black soft carbonaceous

Shale - black soft carbonaceous with embed fossil frags in part

Limestone, cream tan gray, hard dense, microcrystalline to subsucrosic in part, embed dark gray shale in part, no visible porosity, no odor, dull yellow fluorescence, no show

Shale, light gray reddish to maroon, firm to scattered soft, splintery to blocky

Limestone off white cream light gray - hard dense in part sucrosic to sucrosic sub chalky matrix, traces of light gray shale in part, no fluorescence, no visible porosity, no visible show

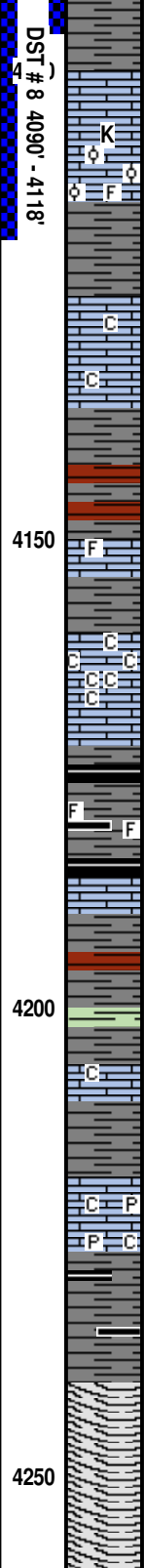
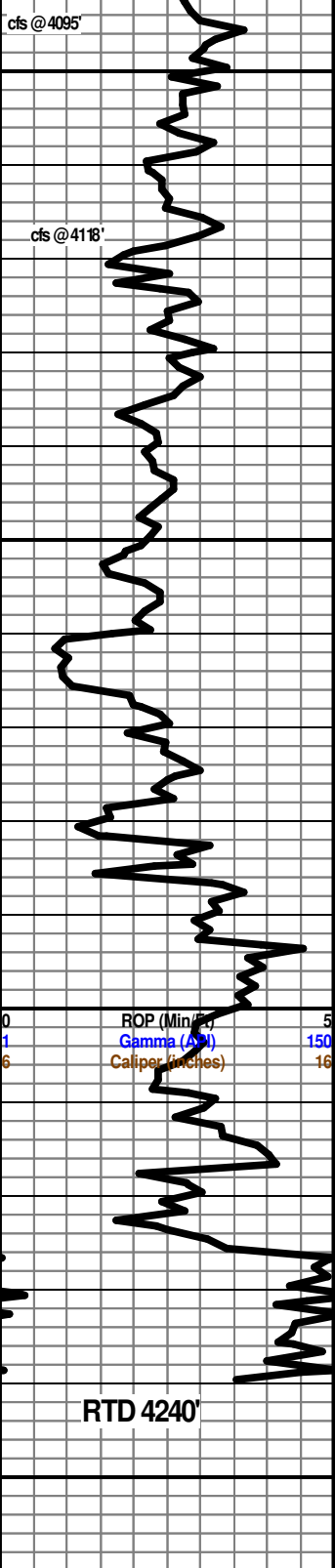
Limestone- white off white cream, hard to very brittle fine crystalline to sucrosic very sub chalky in part, embed angular small quartz grains in aprt, laminated pryite in part, no fluorescence, no visible porosity, no visible show or cut

Shale- gray dark gray - firm blocky smooth texture to traces of black soft carbonaceous in part

RTD @ 8:38 PM March 07, 2022

ctch 1.5 hours/drop survey

TOFL



27 u. bg	Morgan Ck @ 3962' 2:10 pm 3/04/22 Vis 53 Wt 8.8 PV 18 YP 17
9 u. bg	
15 u. total	WL 6.8 Cake 2 PH 10.5 CHL 1.8k ppm CA 10
9 u. bg	Sol 3.6 LCM: 5 DMC: \$ 745 CMC: \$ 14,027
17 u. total	Morgan Ck @ 4008' 2:10 pm 3/05/22 Vis 48 Wt 9.1 PV 16 YP 14
9 u. bg	WL 7.1 Cake 2 PH 10.5 CHL 2.1k ppm CA 10
	Sol 5.0 LCM: 5 DMC: \$ 0 CMC: \$ 14,027
10 u. bg	
27 u. sh	
22 u. sh	
21 u. sh	Morgan Ck @ 4095' 2:10 pm 3/06/22 Vis 50 Wt 9.0 PV 16 YP 15
	WL 7.2 Cake 2 PH 10.5 CHL 1.4k ppm CA 10
0	TC Sol 5.0 \$ 100 LCM: 5 DMC: \$ 1344 CMC: \$ 15,371
	Morgan Ck @ 4185' 5:15 pm 3/07/22 Vis 50 Wt 9.1 PV 18 YP 15
	WL 7.2 Cake 2 PH 10.5 CHL 1.7k ppm CA 10
	Sol 5.7 LCM: 5 DMC: \$ 0 CMC: \$ 15,371
	RTD 4240'