

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	ZERFAS 30-1
Doc ID	1587509

All Electric Logs Run

DIL
CDN
MIL
Sonic

Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	ZERFAS 30-1
Doc ID	1587509

Tops

Name	Top	Datum
Anhydrite	1487	+651
Topeka	3127	-989
Heebner	3347	-1209
Toronto	3366	-1228
Lansing	3387	-1249
BKC	3606	-1468
Arbuckle	3684	-1546
LTD	3771	-1633

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

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

No. 2335

Date	7-21-21	Sec.	30	Twp.	11	Range	19	County	Ellis	State	Ks	On Location		Finish	9:00pm
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Location Y Cemento N to Homestead Rd 2 W 3 N

Lease	ZERFAS	Well No.	30-1	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	DISCOVERY #4				Charge To I. A. Operating
Type Job	SURFACE				
Hole Size	12 1/4	T.D.	JR		
Csg.	8 5/8	Depth		Street	
Tbg. Size		Depth		City State	
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	15	Shoe Joint	B	Cement Amount Ordered 1504 80/20 3-2	

Meas Line	Displace					
EQUIPMENT						
Pumptrk	17	No.	Cementor Helper	BiH	Common	120
Bulktrk		No.	Driver	Craig	Poz. Mix	30
Bulktrk	9	No.	Driver	Doug	Gel.	3
		No.	Driver		Calcium	96

JOB SERVICES & REMARKS		Hulls
Remarks:		Salt
Rat Hole		Flowseal
Mouse Hole		Kol-Seal
Centralizers		Mud CLR 48
Baskets		CFL-117 or CD110 CAF 38
D/V or Port Collar		Sand
	Raw 5 JTs of 8 5/8 set e 221	Handling 159
	Cent w 27	Mileage
	pump plug w 13 pbls of water	
	Cent did circ.	

FLOAT EQUIPMENT	
	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down

Signature	<i>Thanks</i>	Pumptrk Charge	Surface	Tax	
		Mileage	18	Discount	
				Total Charge	

Thanks

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

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

No. 2343

Date	7-28-21	Sec.	30	Twp.	18	Range	19	County	Ellis	State	Ks	On Location		Finish	11:30PM
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Location *Yocemento N To Homestead Rd 2 W 1/2 N*

Lease	<i>Zerfas</i>	Well No.	<i>30-1</i>	Owner	
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Contractor *Discovery #4*
To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job	<i>Long String</i>	Charge To	<i>I.A. operating</i>
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Hole Size	<i>7 7/8</i>	T.D.	<i>3770</i>
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Csg.	<i>5 1/2 15.5</i>	Depth	<i>3770</i>
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Tbg. Size		Depth	
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Tool		Depth	
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The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg.	<i>42.04</i>	Shoe Joint	<i>42.04</i>	Cement Amount Ordered	<i>150 com 10% salt</i>
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Meas Line		Displace	<i>88.72</i>	5% gilsonite	<i>425 9/16 Qmde 1/4 f/o</i>
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EQUIPMENT

Pumptrk	<i>17</i>	No.		Cement	
---------	-----------	-----	--	--------	--

Bulktrk	<i>19</i>	No.		Driver	<i>DAVE</i>
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Bulktrk	<i>15</i>	No.		Driver	<i>POOS</i>
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JOB SERVICES & REMARKS

Remarks:		Hulls	
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Rat Hole	<i>15</i>	Salt	<i>13</i>
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Mouse Hole	<i>30</i>	Flowseal	<i>100 #</i>
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Centralizers		Kol-Seal	<i>750 #</i>
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Baskets		Mud CLR 48	<i>500 gal</i>
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D/V or Port Collar		CFL-117 or CD110 CAP	<i>38</i>
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pipe set c	<i>3770 shoe J+ 42.04</i>	Sand	
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In. set c	<i>3728</i>	Handling	<i>596</i>
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pump	<i>500 gal flush</i>	Mileage	
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Cent. w/	<i>38oz Qmde f/w 15oz can</i>	Guide Shoe	
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pump plug w/	<i>88.72 lbs of water</i>	Centralizer	<i>6</i>
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land plug c	<i>1250 #</i>	Baskets	<i>3</i>
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Flodr did hold		AFU Inserts	
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FLOAT EQUIPMENT

Float Shoe	<i>1</i>
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Latch Down	<i>1</i>
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Pumptrk Charge	<i>prod. string</i>
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Mileage	<i>18</i>
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Signature *[Signature]* Thanks

Tax
Discount
Total Charge



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
25
 2021

DST #1 **Formation: LKC "A-C"** **Test Interval: 3378 - 3440'** **Total Depth: 3440'**
 Time On: 09:13 07/25 Time Off: 17:13 07/25
 Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

Electronic Volume
 Estimate:
 455'

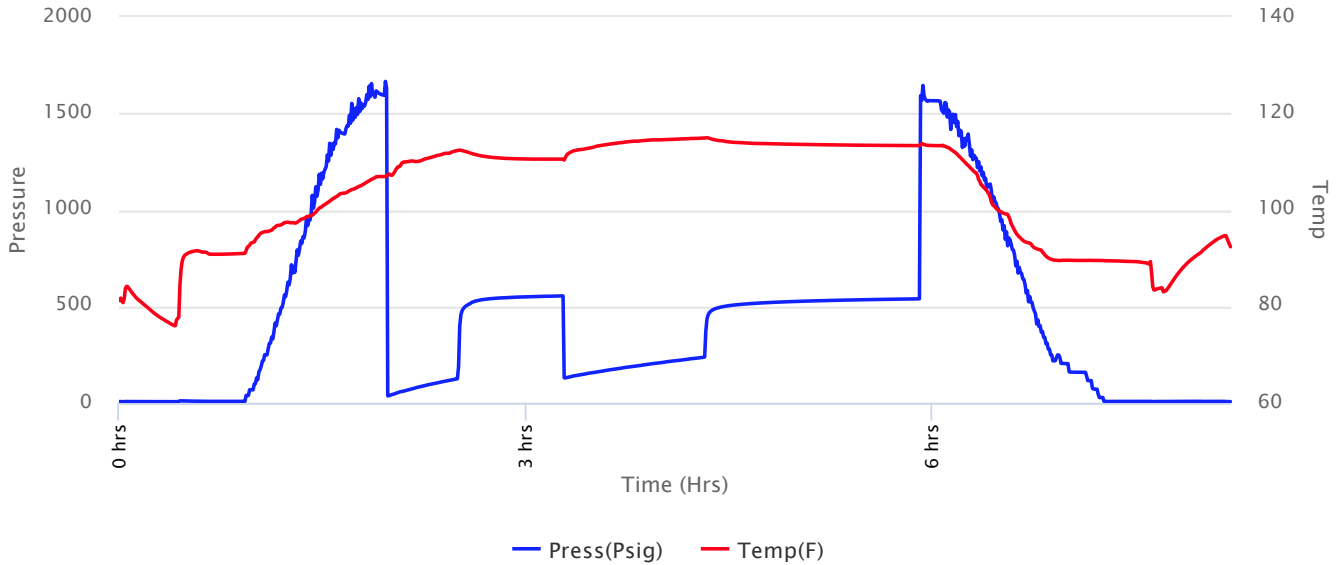
1st Open
 Minutes: 30
 Current Reading:
 26.3" at 30 min
 Max Reading: 26.3"

1st Close
 Minutes: 45
 Current Reading:
 0" at 45 min
 Max Reading: 0"

2nd Open
 Minutes: 60
 Current Reading:
 26.2" at 60 min
 Max Reading: 26.2"

2nd Close
 Minutes: 90
 Current Reading:
 0" at 90 min
 Max Reading: 0"

Inside Recorder





Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
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Operation:
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DATE
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 Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
60	0.8538	SLOCSLWCM	0	1	5	94
75	1.06725	SLOCMCW	0	1	74	25
126	1.79298	SLMCW	0	0	90	10
188	2.67524	SLMCW	0	0	95	5

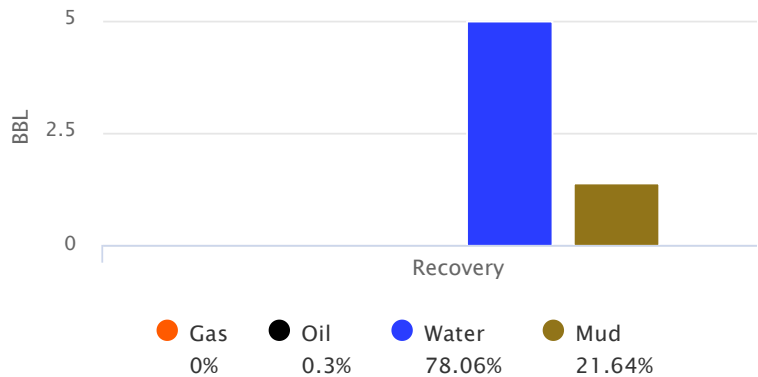
Total Recovered: 449 ft
 Total Barrels Recovered: 6.38927

Reversed Out
NO

Initial Hydrostatic Pressure 1631 PSI
 Initial Flow 42 to 122 PSI
Initial Closed in Pressure 555 PSI
 Final Flow Pressure 131 to 233 PSI
Final Closed in Pressure 539 PSI
 Final Hydrostatic Pressure 1566 PSI
 Temperature 115 °F

 Pressure Change Initial 2.8 %
 Close / Final Close

Recovery at a glance



GIP cubic foot volume: 0



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
25
2021

DST #1 **Formation: LKC "A-
C"** **Test Interval: 3378 -
3440'** **Total Depth: 3440'**
Time On: 09:13 07/25 Time Off: 17:13 07/25
Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

BUCKET MEASUREMENT:

1st Open: BoB in 6 minutes 58 seconds.
1st Close: No Return Blowover 45 minutes.
2nd Open: BoB in 19 minutes 52 seconds.
2nd Close: No Return Blow over 60 minutes.

REMARKS:

Tool Sample: 0% Gas .1% Oil 94.9% Water 5% Mud

Ph: 7

Chlorides: 82000ppm ppm



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
25
 2021

DST #1 **Formation: LKC "A-C"** **Test Interval: 3378 - 3440'** **Total Depth: 3440'**
 Time On: 09:13 07/25 Time Off: 17:13 07/25
 Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

Down Hole Makeup

Heads Up: 28.52 FT	Packer 1: 3373.39 FT
Drill Pipe: 3381.75 FT <i>ID-3 1/2</i>	Packer 2: 3378.39 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3365.39 FT
Collars: 0 FT <i>ID-2 1/4</i>	Bottom Recorder: 3438 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 61.61	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 25 FT <i>4 1/2-FH</i>	
Change Over: .5 FT	
Drill Pipe: (in anchor): 31.61 FT <i>ID-3 1/2</i>	
Change Over: .5 FT	
Perforations: (below): 3 FT <i>4 1/2-FH</i>	



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
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DST #1 **Formation: LKC "A-
C"** **Test Interval: 3378 -
3440'** **Total Depth: 3440'**
Time On: 09:13 07/25 Time Off: 17:13 07/25
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Mud Properties

Mud Type: Chem. **Weight:** 9.0 **Viscosity:** 56 **Filtrate:** 5.4 **Chlorides:** 1800 ppm



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 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
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 pressures

DATE
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DST #1 **Formation: LKC "A-C"** **Test Interval: 3378 - 3440'** **Total Depth: 3440'**
 Time On: 09:13 07/25 Time Off: 17:13 07/25
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Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: IA Operating, Inc.
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SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #2 **Formation: LKC "D-F"** **Test Interval: 3438 - 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

Electronic Volume
 Estimate:
 168'

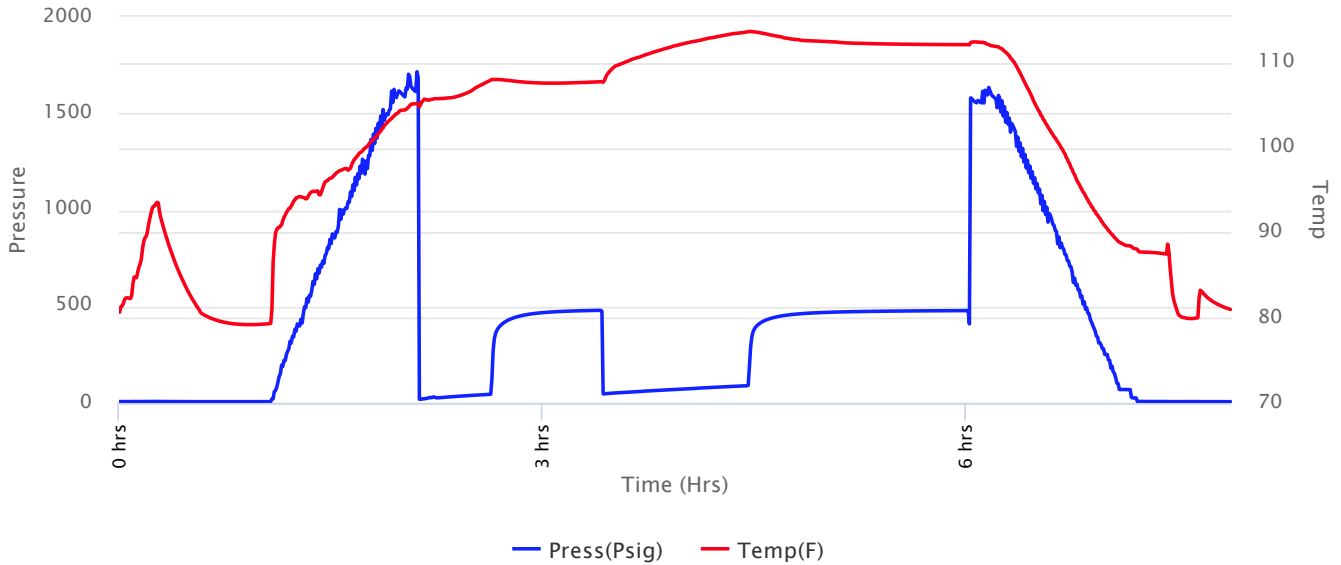
1st Open
 Minutes: 30
 Current Reading:
 8.6" at 30 min
 Max Reading: 8.6"

1st Close
 Minutes: 45
 Current Reading:
 0" at 45 min
 Max Reading: 0"

2nd Open
 Minutes: 60
 Current Reading:
 10" at 60 min
 Max Reading: 10"

2nd Close
 Minutes: 90
 Current Reading:
 0" at 90 min
 Max Reading: 0"

Inside Recorder





Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery & pressures

DATE
 July
26
 2021

DST #2 **Formation: LKC "D-F"** **Test Interval: 3438 - 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

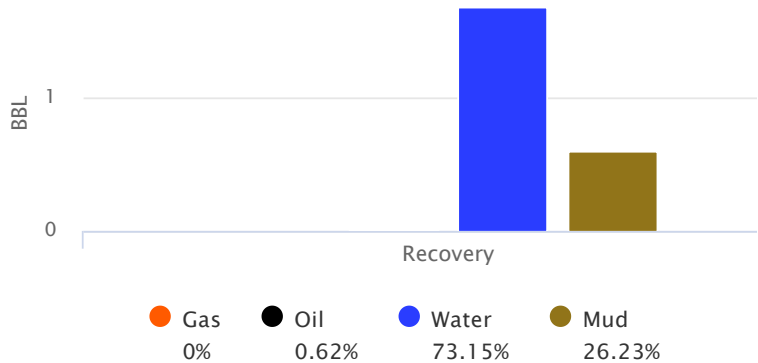
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
1	0.01423	O	0	100	0	0
93	1.32339	MCW	0	0	80	20
63	0.89649	HMCW	0	0	70	30
5	0.07115	M	0	0	0	100

Total Recovered: 162 ft
 Total Barrels Recovered: 2.30526

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	1632	PSI
Initial Flow	19 to 42	PSI
Initial Closed in Pressure	475	PSI
Final Flow Pressure	51 to 88	PSI
Final Closed in Pressure	478	PSI
Final Hydrostatic Pressure	1563	PSI
Temperature	114	°F
Pressure Change Initial Close / Final Close	0.0	%

GIP cubic foot volume: 0



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
26
2021

DST #2 **Formation: LKC "D-
F"** **Test Interval: 3438 -
3470'** **Total Depth: 3470'**
Time On: 00:08 07/26 Time Off: 07:47 07/26
Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

BUCKET MEASUREMENT:

1st Open: 1/2" Blow built to 8 1/2" over 30 min
1st Close: No Return Blow over 45 minutes.
2nd Open: BoB in 59 minutes 45 seconds.
2nd Close: No Return Blow over 90 min.

REMARKS:

Tool Sample: 0% Gas 0% Oil 60% Water 40% Mud

Ph: 7

Measured RW: .07 @ 72 degrees °F

RW at Formation Temp: 0.046 @ 114 °F

Chlorides: 81000 ppm



Company: IA Operating, Inc.
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 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
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DST #2 **Formation: LKC "D-
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 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

Down Hole Makeup

Heads Up: 32.03 FT	Packer 1: 3433 FT
Drill Pipe: 3444.87 FT <i>ID-3 1/2</i>	Packer 2: 3438 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3425 FT
Collars: 0 FT <i>ID-2 1/4</i>	Bottom Recorder: 3468 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 32	Surface Choke: 1"
Anchor Makeup	
Packer Sub: 1 FT	Bottom Choke: 5/8"
Perforations: (top): 28 FT <i>4 1/2-FH</i>	
Change Over: 0 FT	
Drill Pipe: (in anchor): 0 FT <i>ID-3 1/2</i>	
Change Over: 0 FT	
Perforations: (below): 3 FT <i>4 1/2-FH</i>	



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

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2021

DST #2 **Formation: LKC "D-
F"** **Test Interval: 3438 -
3470'** **Total Depth: 3470'**
Time On: 00:08 07/26 Time Off: 07:47 07/26
Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

Mud Properties

Mud Type: Chem. **Weight:** 9.0 **Viscosity:** 56 **Filtrate:** 5.4 **Chlorides:** 1800 ppm



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #2 **Formation: LKC "D-
 F"** **Test Interval: 3438 -
 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #3 Formation: LKC "H-K" Test Interval: 3507 - 3604' Total Depth: 3604'
 Time On: 19:55 07/26 Time Off: 03:59 07/27
 Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Electronic Volume
 Estimate:
 191'

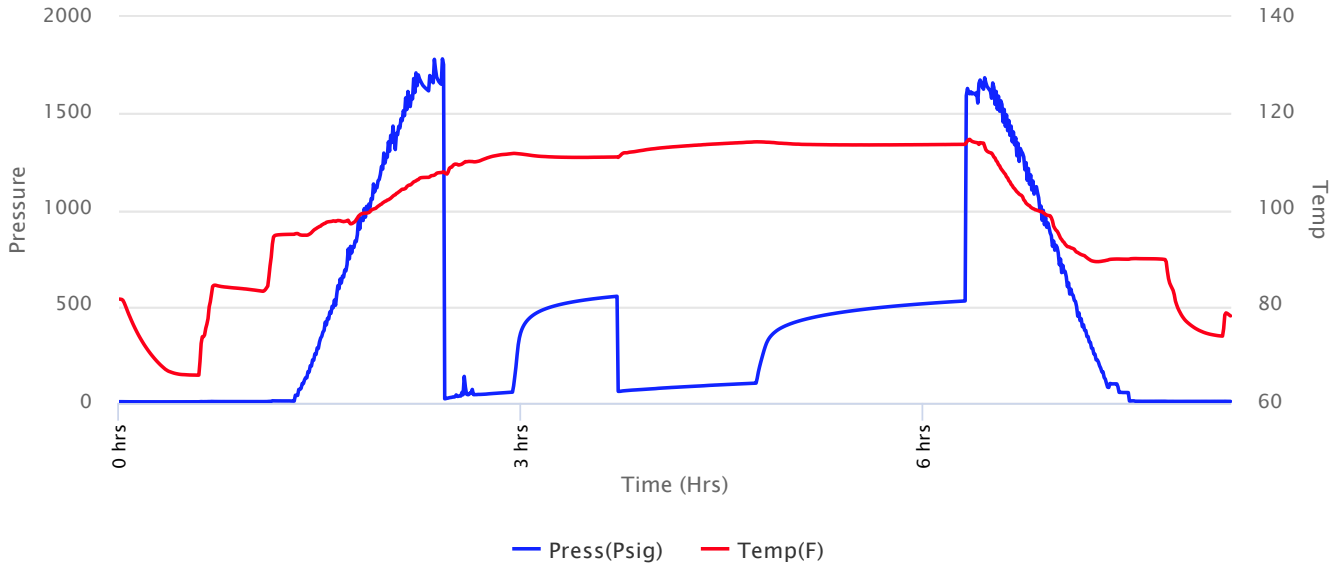
1st Open
 Minutes: 30
 Current Reading:
 9.8" at 30 min
 Max Reading: 9.8"

1st Close
 Minutes: 60
 Current Reading:
 0" at 60 min
 Max Reading: 0"

2nd Open
 Minutes: 60
 Current Reading:
 11" at 60 min
 Max Reading: 11"

2nd Close
 Minutes: 90
 Current Reading:
 0" at 90 min
 Max Reading: 0"

Inside Recorder





Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #3 **Formation: LKC "H-K"** **Test Interval: 3507 - 3604'** **Total Depth: 3604'**
 Time On: 19:55 07/26 Time Off: 03:59 07/27
 Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Recovered

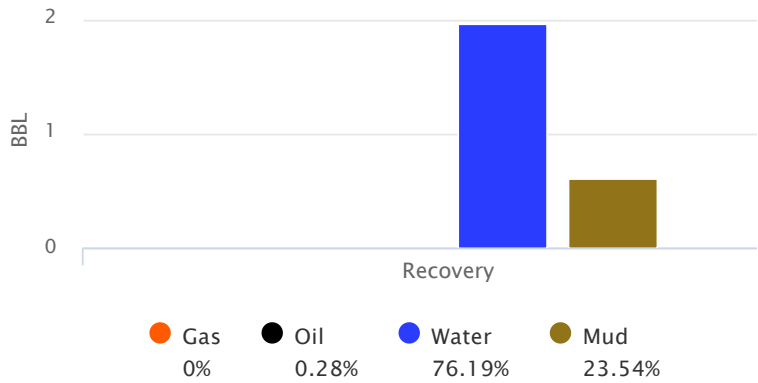
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
50	0.7115	SLOCHWCM	0	1	49	50
126	1.79298	SLMCW	0	0	90	10
5	0.07115	M	0	0	0	100

Total Recovered: 181 ft
 Total Barrels Recovered: 2.57563

Reversed Out
 NO

Initial Hydrostatic Pressure	1664	PSI
Initial Flow	23 to 52	PSI
Initial Closed in Pressure	552	PSI
Final Flow Pressure	62 to 102	PSI
Final Closed in Pressure	526	PSI
Final Hydrostatic Pressure	1655	PSI
Temperature	115	°F
Pressure Change Initial Close / Final Close	4.8	%

Recovery at a glance



GIP cubic foot volume: 0



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
26
2021

DST #3 **Formation: LKC "H-
K"** **Test Interval: 3507 -
3604'** **Total Depth: 3604'**
Time On: 19:55 07/26 Time Off: 03:59 07/27
Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

BUCKET MEASUREMENT:

1st Open: 1/2" Blow built to 9 3/4" over 30 min.
1st Close: No Return Blow over 45 minutes.
2nd Open: BoB in 53 minutes 37 seconds.
2nd Close: No Return Blow over 90 min.

REMARKS:

Tool Sample: 0% Gas 1% Oil 69% Water 30% Mud

Ph: 7

Measured RW: .9 @ 68 degrees °F

RW at Formation Temp: 0.553 @ 115 °F

Chlorides: 68000 ppm



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #3 **Formation: LKC "H-
 K"** **Test Interval: 3507 -
 3604'** **Total Depth: 3604'**
 Time On: 19:55 07/26 Time Off: 03:59 07/27
 Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Down Hole Makeup

Heads Up: 26.58 FT	Packer 1: 3501.77 FT
Drill Pipe: 3508.19 FT <i>ID-3 1/2</i>	Packer 2: 3506.77 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3493.77 FT
Collars: 0 FT <i>ID-2 1/4</i>	Bottom Recorder: 3602 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 97.23	Surface Choke: 1"
<u>Anchor Makeup</u>	
Packer Sub: 1 FT	Bottom Choke: 5/8"
Perforations: (top): 29 FT <i>4 1/2-FH</i>	
Change Over: .5 FT	
Drill Pipe: (in anchor): 63.23 FT <i>ID-3 1/2</i>	
Change Over: .5 FT	
Perforations: (below): 3 FT <i>4 1/2-FH</i>	



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
26
2021

DST #3 **Formation: LKC "H-
K"** **Test Interval: 3507 -
3604'** **Total Depth: 3604'**
Time On: 19:55 07/26 Time Off: 03:59 07/27
Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Mud Properties

Mud Type: Chem. **Weight:** 9.2 **Viscosity:** 60 **Filtrate:** 6.0 **Chlorides:** 3400 ppm



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery & pressures

DATE
 July
26
 2021

DST #3 Formation: LKC "H-K" Test Interval: 3507 - 3604' Total Depth: 3604'
 Time On: 19:55 07/26 Time Off: 03:59 07/27
 Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
27
 2021

DST #4 **Formation: Arbuckle** **Test Interval: 3644 - 3695'** **Total Depth: 3695'**

Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Electronic Volume
 Estimate:
 3634'

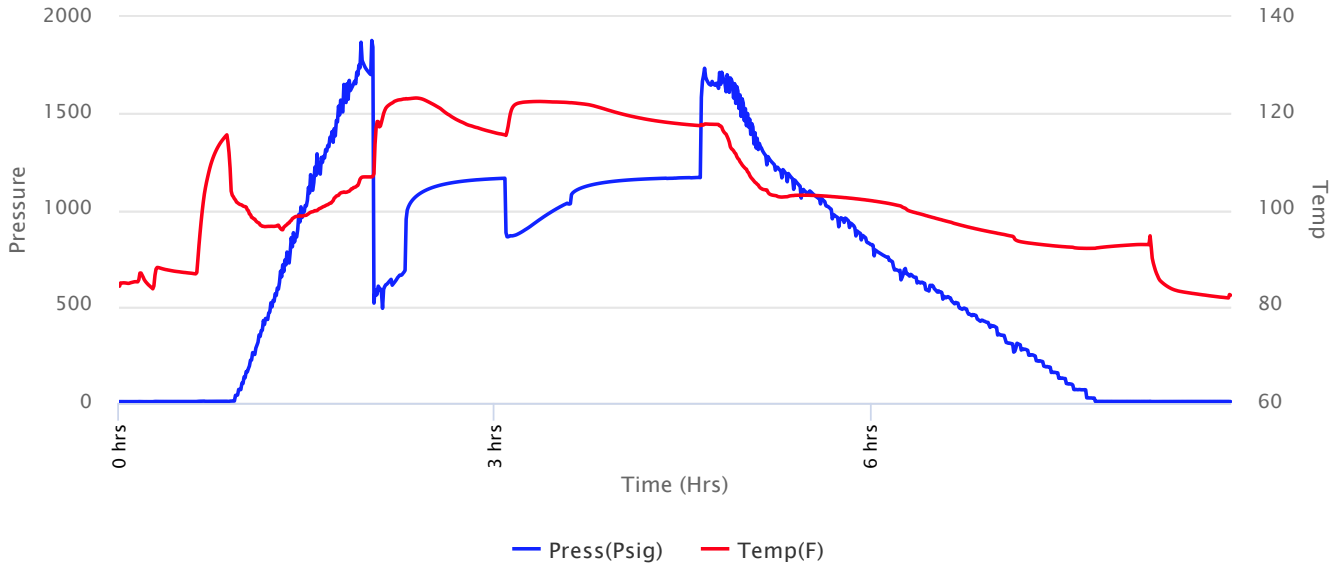
1st Open
 Minutes: 15
 Current Reading:
 228.1" at 15 min
 Max Reading: 228.1"

1st Close
 Minutes: 45
 Current Reading:
 2.7" at 45 min
 Max Reading: 2.7"

2nd Open
 Minutes: 30
 Current Reading:
 415" at 30 min
 Max Reading: 415"

2nd Close
 Minutes: 60
 Current Reading:
 4.4" at 60 min
 Max Reading: 5.1"

Inside Recorder





Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
27
 2021

DST #4 Formation: Arbuckle Test Interval: 3644 - Total Depth: 3695'
3695'
 Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Recovered

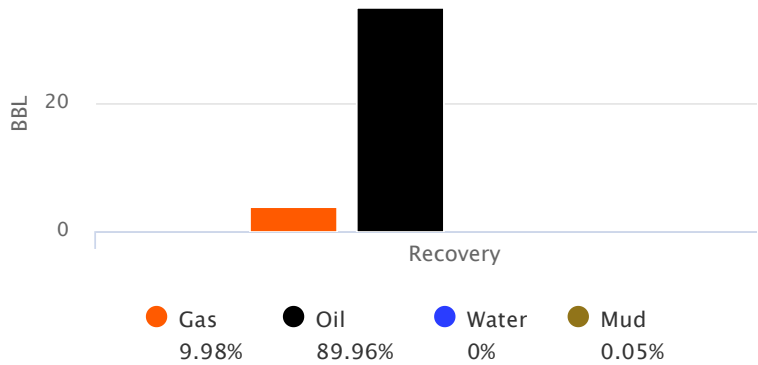
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
2739	38.97597	SLGCO	10	90	0	0
5	0.07115	HMCO	0	70	0	30

Total Recovered: 2744 ft
 Total Barrels Recovered: 39.04712

Reversed Out
 NO

Initial Hydrostatic Pressure	1748	PSI
Initial Flow	517 to 664	PSI
Initial Closed in Pressure	1163	PSI
Final Flow Pressure	863 to 1030	PSI
Final Closed in Pressure	1166	PSI
Final Hydrostatic Pressure	1653	PSI
Temperature	124	°F
Pressure Change Initial Close / Final Close	0.0	%

Recovery at a glance



GIP cubic foot volume: 21.88306



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
27
2021

DST #4 Formation: Arbuckle Test Interval: 3644 - Total Depth: 3695'
3695'
Time On: 14:07 07/27 Time Off: 22:46 07/27
Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

BUCKET MEASUREMENT:

1st Open: BoB in 34 seconds.

1st Close: Weak surfac Return started at 7 minutes 42 seconds. Built to 2 3/4" over 45 min.

2nd Open: BoB in 45 seconds.

2nd Close: Surface Return built to 5 3/4" then died back to 4 1/2" over 60 minutes.

REMARKS:

Max floor guage pressure of 415 INWC reached at 27 minutes into FFP.

Tool Sample: 0% Gas 100% Oil 0% Water 0% Mud

Gravity: 27.3 @ 60 °F



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
27
 2021

DST #4 Formation: Arbuckle Test Interval: 3644 - 3695' Total Depth: 3695'
 Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Down Hole Makeup

Heads Up: 15.15 FT	Packer 1: 3639.44 FT
Drill Pipe: 3634.43 FT <i>ID-3 1/2</i>	Packer 2: 3644.44 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3631.44 FT
Collars: 0 FT <i>ID-2 1/4</i>	Bottom Recorder: 3692 FT
Test Tool: 26.16 FT <i>ID-3 1/2-FH</i>	Well Bore Size: 7 7/8
Total Anchor: 50.56	Surface Choke: 1"
<u>Anchor Makeup</u>	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 13 FT <i>4 1/2-FH</i>	
Change Over: .5 FT	
Drill Pipe: (in anchor): 31.56 FT <i>ID-3 1/2</i>	
Change Over: .5 FT	
Perforations: (below): 4 FT <i>4 1/2-FH</i>	



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling
Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery &
pressures

DATE
July
27
2021

DST #4 Formation: Arbuckle Test Interval: 3644 - Total Depth: 3695'
3695'
Time On: 14:07 07/27 Time Off: 22:46 07/27
Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Mud Properties

Mud Type: Chem. **Weight:** 9.4 **Viscosity:** 59 **Filtrate:** 6.4 **Chlorides:** 6200 ppm



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
27
 2021

DST #4 Formation: Arbuckle Test Interval: 3644 - Total Depth: 3695'
3695'
 Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Gas Volume Report

1st Open			
Time	Orifice	PSI	MCF/D

2nd Open			
Time	Orifice	PSI	MCF/D

Scale 1:240 Imperial

Well Name: ZERFAS #30-1
Surface Location: S2 SE NE SE Section 30 - 11S - 19W
Bottom Location:
API: 15-051-27004
License Number: 33335
Spud Date: 7/21/2021 Time: 2:15 PM
Region: ELLIS COUNTY
Drilling Completed: 7/28/2021 Time: 4:43 AM
Surface Coordinates: 1604' FSL & 330' FEL
Bottom Hole Coordinates:
Ground Elevation: 2130.00ft
K.B. Elevation: 2138.00ft
Logged Interval: 2900.00ft To: 3770.00ft
Total Depth: 3770.00ft
Formation: LANSING; KANSAS CITY, ARBUCKLE
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: IA OPERATING, INC.
Address: 785 W COVELL RD
STE. 200
EDMOND, OK 73003-2389
Contact Geologist: JONATHAN ALLEN
Contact Phone Nbr: (316) 721-0036
Well Name: ZERFAS #30-1
Location: S2 SE NE SE Section 30 - 11S - 19W
API: 15-051-27004
Pool:
State: KANSAS Field: ZERFAS
Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.464508
Latitude: 39.063999
N/S Co-ord: 1604' FSL
E/W Co-ord: 330' FEL

LOGGED BY



Company: BIG CREEK CONSULTING, INC.
Address: 3504 DUNCAN ST
ST. JOE, MO 64507
Phone Nbr: (785) 259-3737
Logged By: GEOLOGIST Name: JEFF LAWLER

CONTRACTOR

Contractor: DISCOVERY DRILLING
Rig #: 4
Rig Type: MUD ROTARY
Spud Date: 7/21/2021 Time: 2:15 PM
TD Date: 7/28/2021 Time: 4:43 AM
Rig Release: 7/29/2021 Time: 12:30 AM

ELEVATIONS

K.B. Elevation: 2138.00ft
K.B. to Ground: 8.00ft

Ground Elevation: 2130.00ft

NOTES

5 1/2" PRODUCTION CASING WAS RAN TO FURTHER EVALUATE THE ARBUCKLE.

RESPECTFULLY SUBMITTED,
JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	ZERFAS #30-1				SW NE SE 30-11-19				NW NE SE 30-11-19				N NW SW 29-11-19				SE SW SW 29-11-19			
	KB		GL		KB		GL		KB		GL		KB		GL		KB		GL	
	2138		2130		2143		2143		2125		2125		2122		2122		2099		2099	
	LOG TOPS	SAMPLE TOPS	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.
ANHYDRITE TOP	1487	651	1491	647	1493	650	+ 1	- 3	1479	646	+ 5	+ 1					1444	655	- 4	- 8
BASE	1525	613	1531	607					1525	600	+ 13	+ 7					1482	617	- 4	- 10
TOPEKA	3127	-989	3127	-989	3132	-989	+ 0	+ 0	3119	-994	+ 5	+ 5	3134	-1012	+ 23	+ 23	3096	-997	+ 8	+ 8
HEEBNER SHALE	3347	-1209	3350	-1212	3354	-1211	+ 2	- 1	3338	-1213	+ 4	+ 1	3355	-1233	+ 24	+ 21	3320	-1221	+ 12	+ 9
TORONTO	3366	-1228	3367	-1229	3376	-1233	+ 5	+ 4	3357	-1232	+ 4	+ 3	3372	-1250	+ 22	+ 21	3342	-1243	+ 15	+ 14
LKC	3387	-1249	3390	-1252	3398	-1255	+ 6	+ 3	3378	-1253	+ 4	+ 1	3393	-1271	+ 22	+ 19	3361	-1262	+ 13	+ 10
BKC	3606	-1468	3611	-1473					3600	-1475	+ 7	+ 2	3615	-1493	+ 25	+ 20	3583	-1484	+ 16	+ 11
CONGLOMERATE					3660	-1517			3667	-1542							3653	-1554	+ 8	+ 7
ARBUCKLE	3684	-1546	3685	-1547					3687	-1562	+ 16	+ 15	3711	-1589	+ 43	+ 42	3722	-1623	- 10	- 9
TOTAL DEPTH	3771	-1633	3770	-1632	3775	-1632	- 1	+ 0	3694	-1569	- 64	- 63	3719	-1597	- 36	- 35	3722	-1623	- 10	- 9

DST #1 LKC 3378' - 3440'



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:

Uploading recovery & pressures

DATE

July
25
2021

DST #1 Formation: LKC "A-C" Test Interval: 3378 - 3440' Total Depth: 3440'

Time On: 09:13 07/25 Time Off: 17:13 07/25
Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

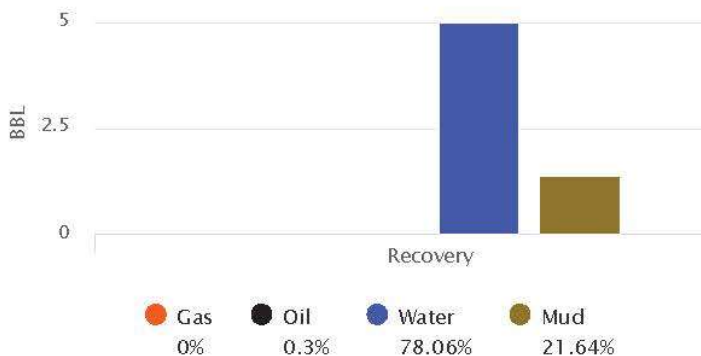
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
60	0.8538	SLOCSLWCM	0	1	5	94
75	1.06725	SLOCMCW	0	1	74	25
126	1.79298	SLMCW	0	0	90	10
188	2.67524	SLMCW	0	0	95	5

Total Recovered: 449 ft
Total Barrels Recovered: 6.38927

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	1631	PSI
Initial Flow	42 to 122	PSI
Initial Closed in Pressure	555	PSI
Final Flow Pressure	131 to 233	PSI
Final Closed in Pressure	539	PSI
Final Hydrostatic Pressure	1566	PSI
Temperature	115	°F

Pressure Change Initial Close / Final Close 2.8 %

GIP cubic foot volume: 0

DST #1 LKC 3378' - 3440'



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
25
 2021

DST #1 **Formation: LKC "A-C"** **Test Interval: 3378 - 3440'** **Total Depth: 3440'**
 Time On: 09:13 07/25 Time Off: 17:13 07/25
 Time On Bottom: 11:08 07/25 Time Off Bottom: 14:53 07/25

Electronic Volume
 Estimate:
 455'

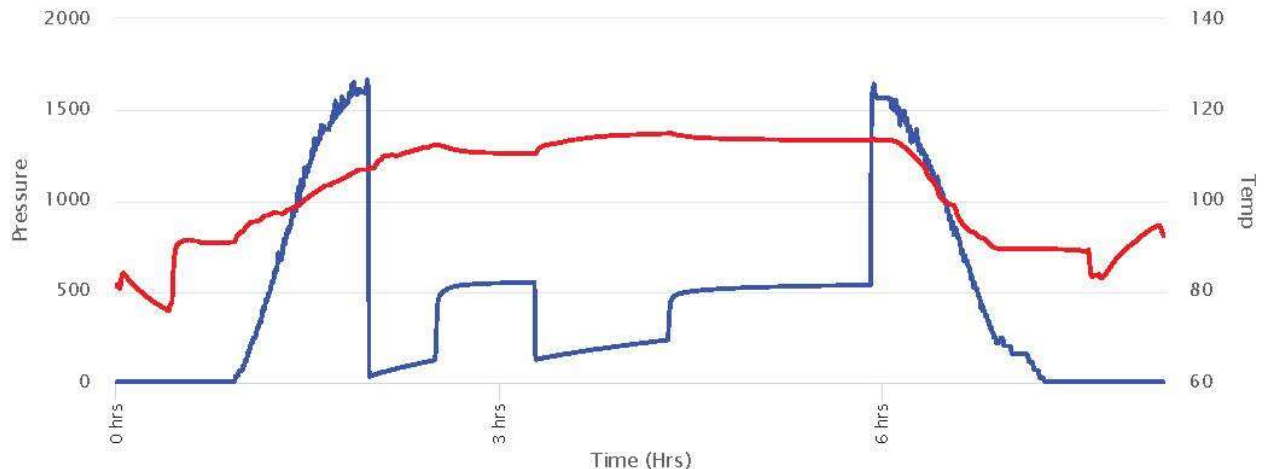
1st Open
 Minutes: 30
 Current Reading:
 26.3" at 30 min
 Max Reading: 26.3"

1st Close
 Minutes: 45
 Current Reading:
 0" at 45 min
 Max Reading: 0"

2nd Open
 Minutes: 60
 Current Reading:
 26.2" at 60 min
 Max Reading: 26.2"

2nd Close
 Minutes: 90
 Current Reading:
 0" at 90 min
 Max Reading: 0"

Inside Recorder



DST #2 LKC D - F 3438' - 3470'



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery & pressures

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26
 2021

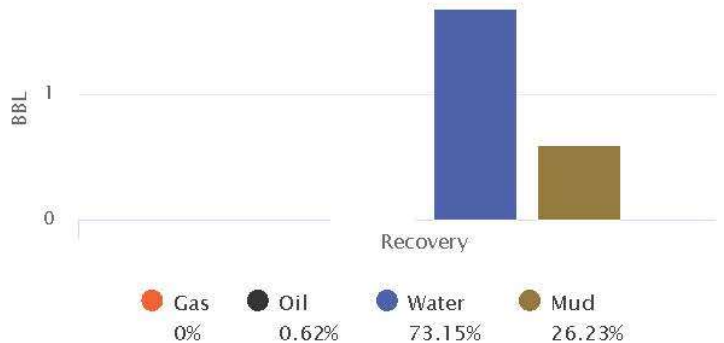
DST #2 **Formation: LKC "D-F"** **Test Interval: 3438 - 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

<u>Recovered</u>		<u>Description of Fluid</u>	<u>Gas %</u>	<u>Oil %</u>	<u>Water %</u>	<u>Mud %</u>
<u>Foot</u>	<u>BBLs</u>					
1	0.01423	O	0	100	0	0
93	1.32339	MCW	0	0	80	20
63	0.89649	HMCW	0	0	70	30
5	0.07115	M	0	0	0	100

Total Recovered: 162 ft
 Total Barrels Recovered: 2.30526

Reversed Out
 NO

Recovery at a glance



Initial Hydrostatic Pressure	1632	PSI
Initial Flow	19 to 42	PSI
Initial Closed in Pressure	475	PSI
Final Flow Pressure	51 to 88	PSI
Final Closed in Pressure	478	PSI
Final Hydrostatic Pressure	1563	PSI
Temperature	114	°F
Pressure Change Initial Close / Final Close	0.0	%

GIP cubic foot volume: 0

DST #2 LKC D - F 3438' - 3470'



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #2 **Formation: LKC "D-
 F"** **Test Interval: 3438 -
 3470'** **Total Depth: 3470'**
 Time On: 00:08 07/26 Time Off: 07:47 07/26
 Time On Bottom: 02:12 07/26 Time Off Bottom: 05:57 07/26

Electronic Volume
 Estimate:
 168'

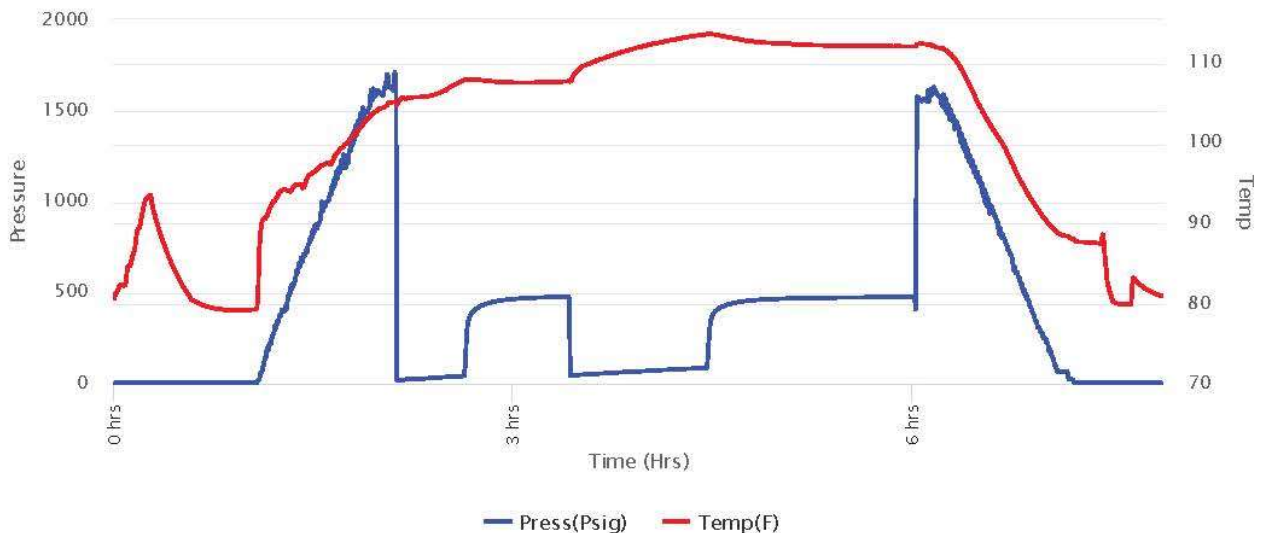
1st Open
 Minutes: 30
 Current Reading:
 8.6" at 30 min
 Max Reading: 8.6"

1st Close
 Minutes: 45
 Current Reading:
 0" at 45 min
 Max Reading: 0"

2nd Open
 Minutes: 60
 Current Reading:
 10" at 60 min
 Max Reading: 10"

2nd Close
 Minutes: 90
 Current Reading:
 0" at 90 min
 Max Reading: 0"

Inside Recorder














ROCK TYPES

 Cht vari	 Dolprim	 shale, grn	 Carbon Sh
 Chtcongl	 Lmst fw7>	 shale, gry	 shale, red

ACCESSORIES

STRINGER
 Sandstone

OTHER SYMBOLS

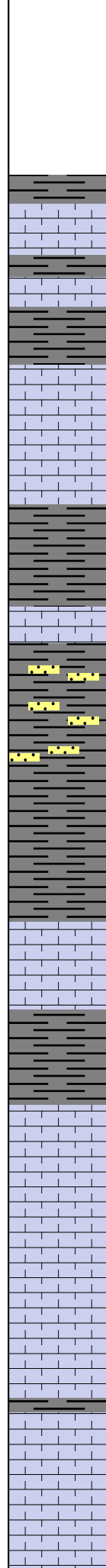
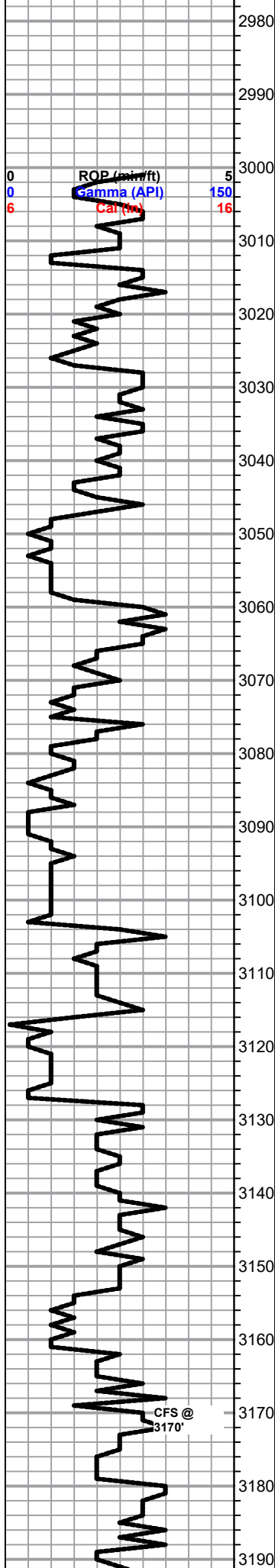
MISC	DST
 Daily Report	 DST Int
 Digital Photo	 DST alt
 Document	
 Folder	
 Link	
 Vertical Log File	
 Horizontal Log File	
 Core Log File	
 Drill Cuttings Rpt	

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1				Curve Track #3			
ROP (min/ft)	Gamma (API)	Cal (in)	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions
0	150	16	2960				<p>1' DRILLING TIME THROUGH ANHYDRITE FROM 1470' - 1550' 1' DRILL TIME FROM 3000' - RTD 10' WET/DRY SAMPLES FROM 3050' - RTD</p> <p>GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3050' - RTD</p>
6			2970				

8 5/8" SURFACE PIPE SET @ 221.85' SURVEY 3/4

ANHYDRITE TOP 1491' (+647) E-LOG 1487' (+651)
ANHYDRITE BASE 1531' (+607) E-LOG 1525' (+613)



Lm- Tan Buff Gray, FXLN, dense, well cemented & fsl w/ sctrd dense XLN porosity

Lm- A/A w/ trashy fsl mix

Sh- Black Dark Gray Green, soft, silty, & calcareous, few dove gray sandy shale clusters, mica, barren

Lm- Tan Buff, FXLN, fsl & dense, mottled, sctrd XLN porosity

Ss- Clear Frosted, FN Grn, consolidated & semi-friable, mica, barren

Sh- Dark & Lt Gray, silty & calcareous

Sh- A/A

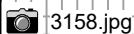
TOPEKA 3127' (-989) E-LOG 3127' (-989) Lm- Cream, FXLN, sl fsl, mod. dev. w/ consistent fn ppt & XLN porosity, some clear replacement cementation, barren

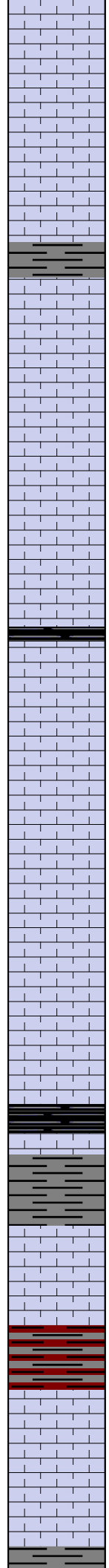
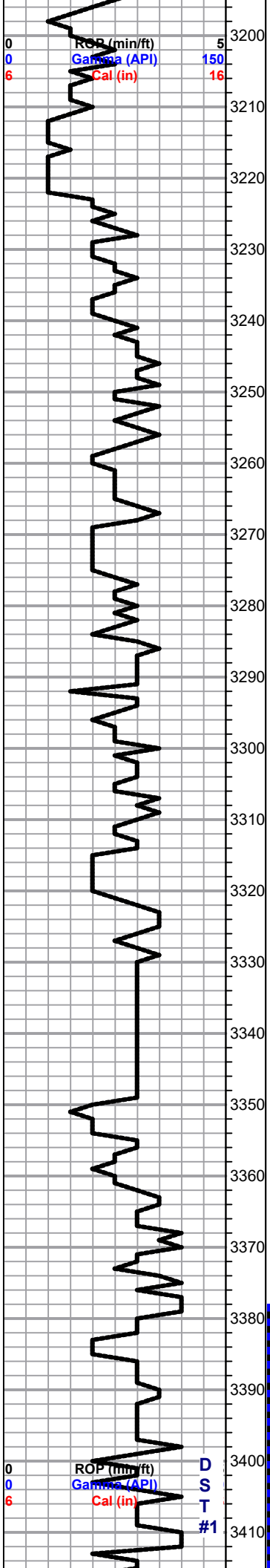
Lm- Cream Tan, VFXLN, dense, well cemented, tight w/ poor vis. porosity, barren

Lm- Cream Off White, FXLN, dev. w/ consistent ppt porosity throughout, some sctrd clear replacement cementation, SCTRD DRK STN, NSFO, TR ODR?, much soft white chalk

SH- Black Gray, carbonaceous, silty & soft

Lm- Cream Buff, VF-FXLN, dense, hvy fsl, dense XLN porosity, fracturing, barren





Lm- Cream Off White, fsl & trashy, chalky in part, dense XLN & fractured porosity, sl sandy in part

Lm- Buff, FXLN, dense, well cemented, sl dolomitic, consistent XLN porosity, barren, chalky in part

Lm- Cream Tan, Fn Grn, sandy loosely cemented, consistent intergranular porosity throughout, mottled, barren

Sh- Dark Gray, dense, semi-waxy

Lm- Cream Off White, VF-FXLN, dense, well cemented & tight w/ sctrd XLN porosity, barren

Lm- Off White, FXLN, some sl fsl, all poorly dev. w/ sctrd XLN porosity, clean & barren

Lm/Chert- Off White, chalky & looselly cemented, poor porosity, fresh bedded sl fsl chert

Sh- Black Gray Maroon, fissile & carbonaceous, soft, earthy

Lm- Cream Buff Tan, FXLN, mix of fsl w/ dense XLN porosity, & tight w/ poor vis. porosity

Lm- Cream Off White, FXLN, fsl, well cemented, dense XLN porosity, barren

Lm- Cream, FXLN, fsl w/ fusulinids, dense XLN porosity, barren

Lm- Cream, FXLN, fsl, dense XLN porosity, vry hvy mottling, barren

HEEBNER 3350' (-1212) E-LOG 3347' (-1209) Sh- Black Gray Green, carbonaceous, silty & gritty

TORONTO 3367' (-1229) E-LOG 3368' (-1228) Lm- Off White, FXLN, sl fsl, dense & well cemented, sctrd XLN porosity, some soft white chalk, vry clean & barren

Sh- Gray Maroon, silty & calcareous, gritty & earthy

LKC 3390' (-1252) E-LOG 3387' (-1249) Lm- Off White, FXLN, oolitic & fsl, sctrd fn ppt inter fsl porosity, SCTRD LT STN, NSFO, WK ODR

Lm- Buff Gray, VFXLN, dense, well cemented & tight w/ poor vis. porosity

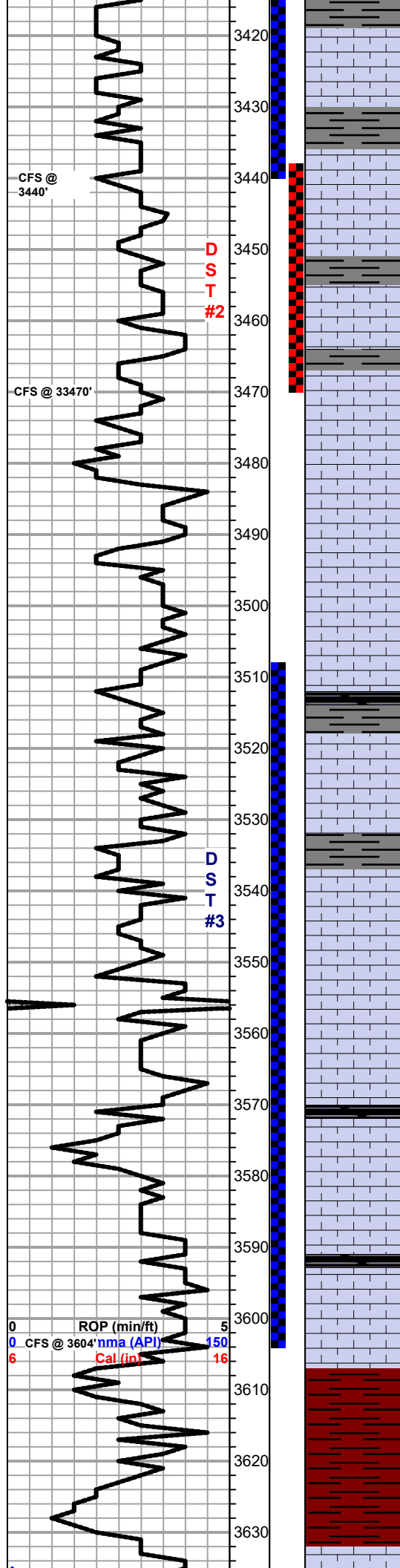
SHORT TRIP SURVEY

DST #1 3378-3440
LKC A-C
30-45-60-90

449' TOTAL FLUID

60' SLO&WCM (1% O, 5% W, 94% M)
126' SLMCW (90% W, 10% M)
188' SLMCW (95% W, 5% M)

IFP: 42-122#
FFP: 131-233#
SIP: 555-539#
BHT: 115
3390.jpg



● Lm- Cream Tan, F-MEDXLN, oolitic & fsl w/ XLN & ppt inter fsl porosity, SCTRD DRK STN, TR FO, FR PUNGENT ODOR

3425.jpg

○ Lm- Cream Off White, FXLN, sl fsl, sctrd XLN & rare fn ppt porosity, SCTRD DRK STN, 1 PCS W/ TR FO, WK ODR

3450.jpg

● D Lm- Cream Tan, FXLN, densely packed fine oolites, mostly consistent fn ppt inter oolite porosity, SAT TO SCTRD DRK STN, NO SFO, WK ODR, 1 PCS SAT BLK DO STN

3460.jpg

○ Lm- Cream Tan, FXLN, dense & well cemented, possible fracturing, sctrd to dense microXLN porosity, SCTRD DRK STN, NSFO, WK ODR

3468.jpg

Lm- Cream Tan, FXLN, sl dolomitic, loosely cemented, consistent interXLN porosity, barren

Lm- Cream Off White, FXLN, sl fsl, sctrd XLN porosity, barren, some soft white chalk

Lm- Cream Off White, A/A

Sh- Black Gray, carbonaceous, silty & soft

● Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd fn ppt & dense XLN porosity, SCTRD DRK ST, NSFO, WK ODR

3520.jpg

Lm- Cream Off White, VF-FXLN, dense, well cemented, few pcs of cherty Ls w/ dense XLN porosity, barren

○ Lm- Tan Buff, VF-FXLN, dense, well cemented, poorly dev. w/ sctrd micro XLN porosity, SCTRD LT EDGE STN, NSFO, NO ODR

3545.jpg

● Lm- Cream Tan, FXLN, oolitic/oomoldic, few clusters, mod. well cemented, sctrd oomoldic & consistent inter oolite porosity, SAT TO SCTRD DRK STN, FEW PCS W/ TR FRO, GOOD ODR

3565.jpg

Sh- Black Gray Maroon, fissile & carbonaceous, silty & soft, gritty & earthy

● Lm- Cream Tan, FXLN, dense XLN porosity, LT SCTRD STN, NSFO, TR ODR

Lm- Cream Off White, FXLN, well cemented, dense XLN porosity, barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd XLN porosity, barren

BKC 3611' (-1473) E-LOG 3606' (-1468) Sh- Maroon Gray Green, gritty & earthy, silty & calcareous

DST #3.j...

DST #3 ...

Sh- A/A w/ argillaceous maroon clumps

DST #4
ARBUCKLE
3645' - 3695'
15-45-30-60

DST #2
LKC D-F
3438' - 3470'
30-45-60-90

162' TOTAL
FLUID
1' OIL
93' MCW
(80% W, 20% M)
63' HMCW
(70% W, 30% M)
5' MUD

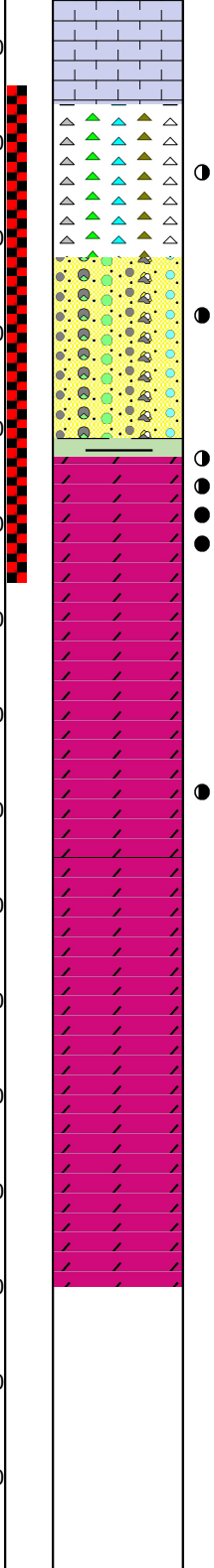
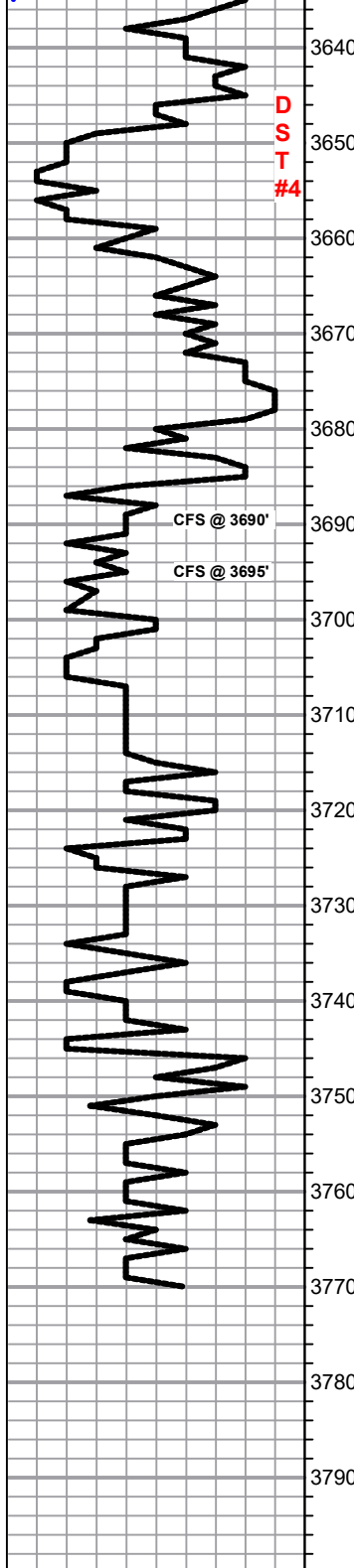
IFP: 19-42#
FFP: 51-88#
SIP: 475-478#

DST #3
LKC H-K
3507' - 3604'
30-45-60-90

181' TOTAL
FLUID
50' SLOCWM
(1%O, 49% W,
50% M)
126' SLMCW
(90% W, 10% M)
5' MUD

IFP: 23-52#
FFP: 62-102#
SIP: 552-526#
BHT: 115

ROP (min/ft) 0 5
CFS @ 3604' nma (API) 150
Cal (in) 6 16



Lm- Maroon, conglomerate well cemented & tight, min. vis. porosity

Chert- Mint Green Milky White Salmon, mostly fresh bedded, some sl oolitic, few pcs of conglomerate/detrital dolomitic chert, FEW DETRITIAL PCS W/ DRK SCTRDR STN, NSFO, NO ODR

Cherty Conglomerate- White, massive conglomerate chert, mostly tight, some w/ sctrd fn ppt porosity, SCTRDR TO SUB-SAT DRK/BLK STN, MOSTLY DO STN, NSFO, NO ODR

Sh- Mint Green, blocky & waxy
ARBUCKLE 3684' (-1546) E-LOG 3685' (-1547) Dolomite- Frosted White, mix of rounded fn grn consolidated & mod. sorted Ss clusters & sandy dolomite w/ vis. rhombs in clusters, consistent inter XLN porosity, SCTRDR LT & BLK STN, NSFO, NO ODR

3690' 20 min.- Dol- White, FNXLN, well dev. semi-sucrosic/sucrosic w/ vis. rhombs & consistent interXLN porosity, SCTRDR DRK STN, TR FO, NO ODR

40 min- Dol- Cream, VF-MedXLN, mix of mod to well dev. w/ dense micro XLN to consistent fn ppt porosity, well cemented, MOSTLY SAT/SUB-SAT DRK STN, WK SFO, WK ODR

3695' 40 min- Dol- Cream, F-CrsXLN, well dev. w/ consistent fn ppt-ppt porosity, SAT/SUB-SAT STN, SFO, FR ODR

Dol- Tan, MedXLN, massive, well cemented, consistent XLN & fn ppt porosity, SCTRDR DRK STN, TR O, FR ODR

Dol- Cream, VF-FXLN, dense, loosely to well cemented, dense micro XLN porosity, barren

Dol- Off White Lt Salmon, F-Crs XLN, all well cemented, dense XLN to ppt porosity, barren

A/A w/ influx of Crs XLN, vis. rhombs, consistent ppt porosity, barren

RTD 3770' (-1632) LTD 3771' (-1633) 7/28/2021 @ 04:42

2744' TOTAL FLUID
 2739' SLGCO (10% G, 90% O) Gr: 27 deg.
 5' HMCO (70% O, 30% M)
 IFP: 517-664#
 FFP: 863-1030#
 SIP: 1163-1166#
 BHT: 124 deg.

DST #4.j...
 DST #4 ...

3680.jpg
 3690-20...
 3690-40...
 3695.jpg

3720.jpg



















DST #3.jpg



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
County: ELLIS
State: Kansas
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
Elevation: 2130 GL
Field Name: Zerfas
Pool: Infield
Job Number: 490
API #: 15-051-27004

Operation:
Uploading recovery & pressures

DATE
July
26
2021

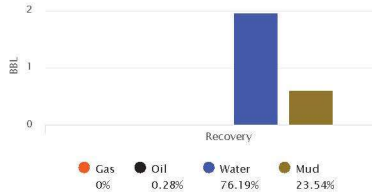
DST #3 **Formation: LKC "H-K"** **Test Interval: 3507 - 3604'** **Total Depth: 3604'**
Time On: 19:55 07/26 Time Off: 03:59 07/27
Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BELS					
50	0.7115	SLOCHWCM	0	1	49	50
126	1.79298	SLMCW	0	0	90	10
5	0.07115	M	0	0	0	100

Total Recovered: 181 ft
Total Barrels Recovered: 2.57563

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	1664	PSI
Initial Flow	23 to 52	PSI
Initial Closed in Pressure	552	PSI
Final Flow Pressure	62 to 102	PSI
Final Closed in Pressure	526	PSI
Final Hydrostatic Pressure	1655	PSI
Temperature	115	°F
Pressure Change Initial Close / Final Close	4.8	%

GIP cubic foot volume: 0

DST #3 CHART.jpg



Company: IA Operating, Inc.
Lease: Zerfas #30-1

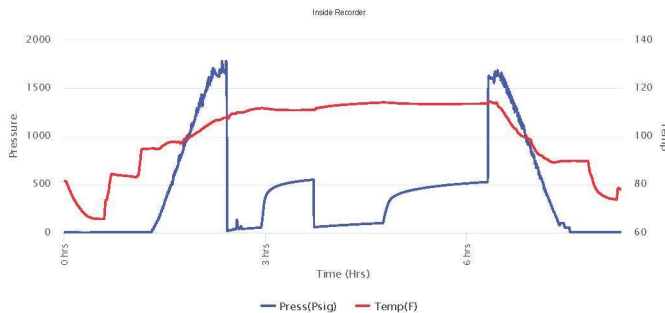
SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery &
 pressures

DATE
 July
26
 2021

DST #3 **Formation: LKC "H-
 K"** **Test Interval: 3507 -
 3604'** **Total Depth: 3604'**
 Time On: 19:55 07/26 Time Off: 03:59 07/27
 Time On Bottom: 22:17 07/26 Time Off Bottom: 02:02 07/27

Electronic Volume Estimate: 191'	1st Open	1st Close	2nd Open	2nd Close
	Minutes: 30	Minutes: 60	Minutes: 60	Minutes: 90
	Current Reading: 9.8" at 30 min	Current Reading: 0" at 60 min	Current Reading: 11" at 60 min	Current Reading: 0" at 90 min
	Max Reading: 9.8"	Max Reading: 0"	Max Reading: 11"	Max Reading: 0"



DST #4.jpg



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

Operation:
 Uploading recovery & pressures

DATE
 July
27
 2021

DST #4 **Formation: Arbuckle** **Test Interval: 3644 - 3695'** **Total Depth: 3695'**
 Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Recovered

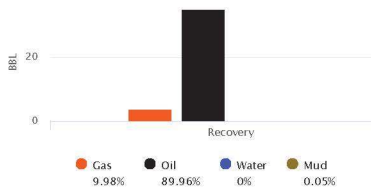
Foot	BELS	Description of Fluid	Gas %	Oil %	Water %	Mud %
2739	39.97597	SLGCO	10	90	0	0
5	0.07115	HMCO	0	70	0	30

Total Recovered: 2744 ft
 Total Barrels Recovered: 39,04712

Reversed Out
NO

Initial Hydrostatic Pressure	1748	PSI
Initial Flow	517 to 664	PSI
Initial Closed in Pressure	1163	PSI
Final Flow Pressure	863 to 1030	PSI
Final Closed in Pressure	1166	PSI
Final Hydrostatic Pressure	1653	PSI
Temperature	124	°F
Pressure Change Initial Close / Final Close	0.0	%

Recovery at a glance



GIP cubic foot volume: 21.88306

DST #4 CHART.jpg



Company: IA Operating, Inc.
Lease: Zerfas #30-1

SEC: 30 TWN: 11S RNG: 19W
 County: ELLIS
 State: Kansas
 Drilling Contractor: Discovery Drilling
 Company, Inc. - Rig 4
 Elevation: 2130 GL
 Field Name: Zerfas
 Pool: Infield
 Job Number: 490
 API #: 15-051-27004

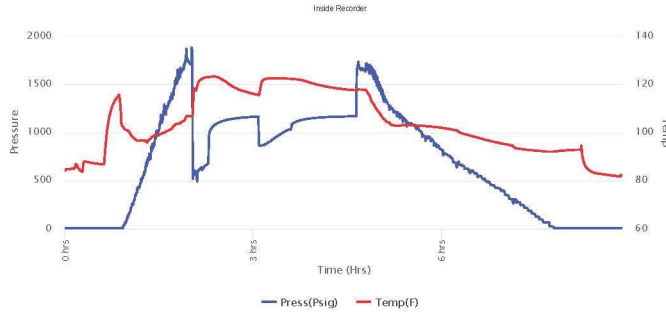
Operation:
 Uploading recovery &
 pressures

DATE
 July
27
 2021

DST #4 Formation: Arbuckle Test Interval: 3644 - 3695' Total Depth: 3695'

Time On: 14:07 07/27 Time Off: 22:46 07/27
 Time On Bottom: 16:07 07/27 Time Off Bottom: 18:37 07/27

Electronic Volume Estimate:	1st Open	1st Close	2nd Open	2nd Close
3634'	Minutes: 15	Minutes: 45	Minutes: 30	Minutes: 60
	Current Reading: 228.1" at 15 min	Current Reading: 2.7" at 45 min	Current Reading: 415" at 30 min	Current Reading: 4.4" at 60 min
	Max Reading: 228.1"	Max Reading: 2.7"	Max Reading: 415"	Max Reading: 5.1"







3690' 20 min.



3690-40



