

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](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)</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	CARRIE 2-5
Doc ID	1471325

All Electric Logs Run

CND
Micro
Sonic
DIL

Form	ACO1 - Well Completion
Operator	IA Operating, Inc.
Well Name	CARRIE 2-5
Doc ID	1471325

Tops

Name	Top	Datum
Anhydrite	981	+842
Topeka	2736	-913
Heebner	2984	-1161
Toronto	3005	-1182
Lansing	3031	-1208
BKC	3273	-1450
Simpson	3365	-1542
Arbuckle	3373	-1550
LTD	3449	-1626



# 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. 1510

Date	7-25-19	Sec.	2	Twp.	12	Range	16	County	Ellis	State	Ks	On Location		Finish	11:00p				
Location <i>Blue Hill School 2 1/2 E S into</i>																			
Lease	<i>Came</i>			Well No.	<i>2.5</i>			Owner											
Contractor	<i>Deery #4</i>			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>Surface</i>			Charge To								<i>I. A. Operating</i>							
Hole Size	<i>12 1/4</i>			T.D.	<i>984</i>			Street											
Csg.	<i>8 5/8</i>			Depth	<i>983</i>			City								State			
Tbg. Size				Depth				The above was done to satisfaction and supervision of owner agent or contractor.											
Tool				Depth				Cement Amount Ordered								<i>380 8/20 3/16 2/16</i>			
Cement Left in Csg.	<i>30'</i>			Shoe Joint	<i>30'</i>			Meas Line								Displace <i>60 1/2 BCL</i>			
<b>EQUIPMENT</b>																			
Pumptrk	<i>17</i>	No.	Cement	<i>17</i>			Common								<i>305</i>				
			Helper	<i>17</i>			Poz. Mix								<i>75</i>				
Bulktrk		No.	Driver	<i>17</i>			Gel.								<i>7</i>				
Bulktrk	<i>13</i>	No.	Driver	<i>13</i>			Calcium								<i>13</i>				
<b>JOB SERVICES &amp; REMARKS</b>																			
Remarks:	Hulls																		
Rat Hole	Salt																		
Mouse Hole	Flowseal																		
Centralizers	Kol-Seal																		
Baskets	Mud CLR 48																		
D/V or Port Collar	CFL-117 or CD110 CAF 38																		
	Sand																		
	Handling <i>400</i>																		
	Mileage																		
<b>FLOAT EQUIPMENT</b>																			
	Guide Shoe <i>Rubber Plug</i>																		
	Centralizer <i>Baffle Plate Composite</i>																		
	Baskets																		
	AFU Inserts																		
	Float Shoe																		
	Latch Down																		
	Pumptrk Charge <i>Long Surface</i>																		
	Mileage <i>30</i>																		
Tax																			
Discount																			
Total Charge																			
Signature <i>[Signature]</i>																			

Thanks

*8 5/8 on bottom Baffle @ 953*  
*Best Circulation Mix 380SK v Displace*  
*Cement Circulated.*  
*Plug land @ 800\**  
*Shut in @ 500\**

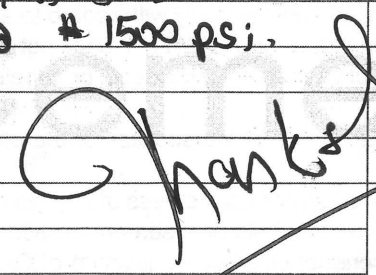
# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

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

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

No. 1563

Date	Sec.	Twp.	Range	County	State	On Location	Finish
8-2-19	2	12	16	Ellis	Ks		
Lease				Location			
Carrie				Fairport Stop 5 1/2 S to Curve			
Well No. 2-5				Owner			
Discovery Drilling Inc.				W 1 1/2 S into.			
Type Job				To Quality Oilwell Cementing, Inc.			
Long String				You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Hole Size		T.D.		Charge To			
5 1/2 #15.5		3450		I.A. Operating			
Csg.		Depth		Street			
5 1/2 #15.5		3448.35					
Tbg. Size		Depth		City		State	
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg.		Shoe Joint		Cement Amount Ordered			
		43.20		180 com 10% 5% gel			
Meas Line		Displace		+ 500 gal mud flush			
		81 1/2 #7 1/2					
EQUIPMENT				Common			
Pumptrk #5				180			
No. Cementer				Poz. Mix			
Helper Tony P							
No. Driver				Gel.			
Driver Craig							
No. Driver				Calcium			
Driver Doug							
JOB SERVICES & REMARKS				Hulls			
Remarks: USED: 180 com 10% salt				Salt 15			
Rat Hole 5% gel.				Flowseal			
Mouse Hole 500 gal mud flush				Kol-Seal 800 ft			
Centralizers				Mud CLR 48 500 gal			
Baskets				CFL-117 or CD110 CAF 98			
D/V or Port Collar				Sand			
* Set 5 1/2 @ 3448.35' Broke				Handling 203			
Circulation @ 1/2 HR.				Mileage			
* Drop Ball - circulate				FLOAT EQUIPMENT			
* mix 500 gal mud flush				Float Guide Shoe 1			
* mix 30% RAT				Centralizer 7			
* mix 15% mouse.				Baskets			
* mix 1.35% 10% salt 5% gel				AFU Inserts			
* Clean lines				Float Shoe			
* Displace 5 1/2 1 set off Down				Latch Down 1 + 5 1/2 plug.			
* 81 1/2 #7 1/2 @ #1500 psi.							
* Return Dry							
				Pumptrk Charge			
				Mileage 830			
X Signature Tom Belew				Tax			
				Discount			
				Total Charge			



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**29**  
 2019

**DST #1**    **Formation: Toronto - LKC A**    **Test Interval: 2982 - 3050'**    **Total Depth: 3050'**  
 Time On: 00:01 07/29    Time Off: 06:52 07/29  
 Time On Bottom: 01:58 07/29    Time Off Bottom: 05:13 07/29

Electronic Volume  
 Estimate:  
 2'

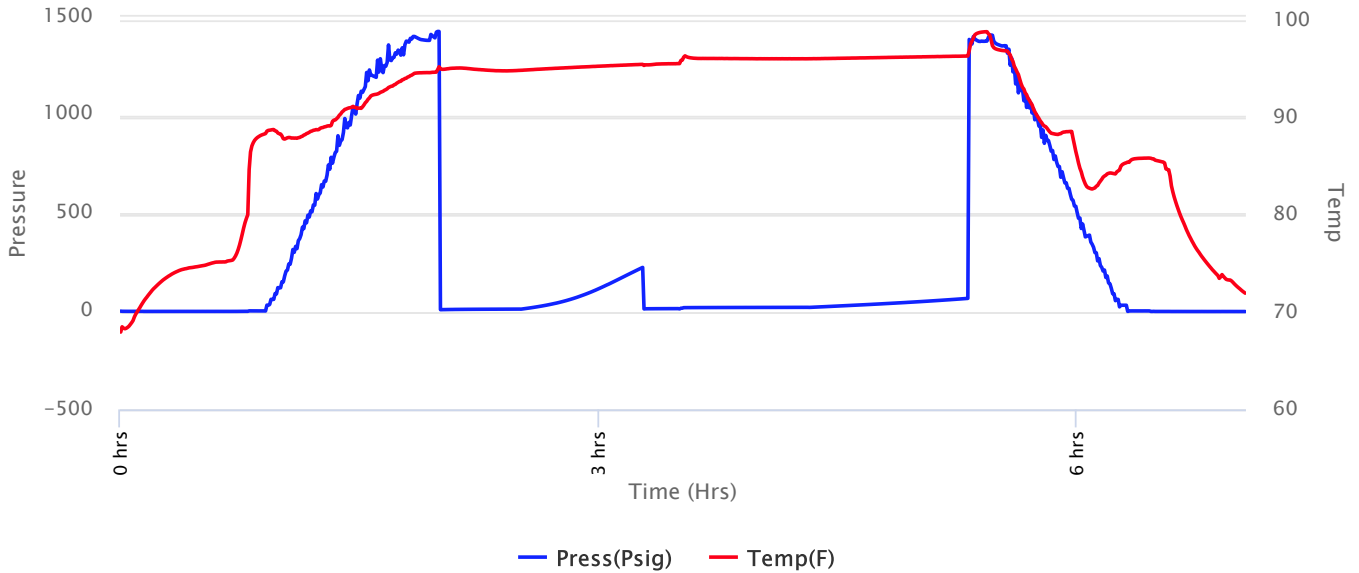
1st Open  
 Minutes: 30  
 Current Reading:  
 0" at 30 min  
 Max Reading: .1"

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

2nd Open  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

2nd Close  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

Inside Recorder







**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**29**  
 2019

**DST #1**    **Formation: Toronto - LKC A**    **Test Interval: 2982 - 3050'**    **Total Depth: 3050'**  
 Time On: 00:01 07/29    Time Off: 06:52 07/29  
 Time On Bottom: 01:58 07/29    Time Off Bottom: 05:13 07/29

Recovered

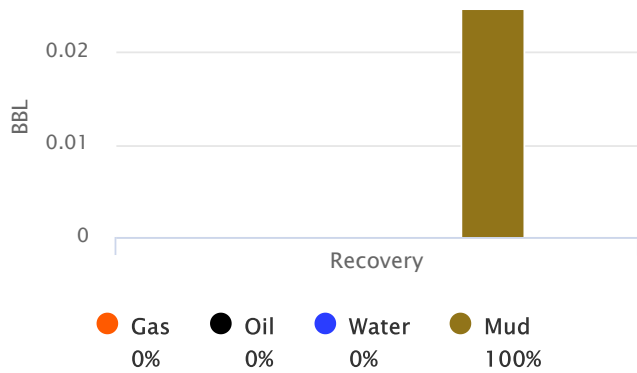
Foot	BBLS	Description of Fluid	Gas %	Oil %	Water %	Mud %
5	0.0246	M	0	0	0	100

Total Recovered: 5 ft  
 Total Barrels Recovered: 0.0246

Reversed Out  
 NO

Initial Hydrostatic Pressure	1381	PSI
Initial Flow	8 to 11	PSI
<b>Initial Closed in Pressure</b>	<b>224</b>	<b>PSI</b>
Final Flow Pressure	12 to 20	PSI
<b>Final Closed in Pressure</b>	<b>66</b>	<b>PSI</b>
Final Hydrostatic Pressure	1375	PSI
Temperature	97	°F
Pressure Change Initial Close / Final Close	70.7	%

**Recovery at a glance**



GIP cubic foot volume: 0









**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**29**  
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**DST #2    Formation: LKC. B-F    Test Interval: 3048 - 3123'    Total Depth: 3123'**  
 Time On: 16:45 07/29    Time Off: 00:01 07/30  
 Time On Bottom: 18:39 07/29    Time Off Bottom: 21:54 07/29

Electronic Volume  
 Estimate:  
 798'

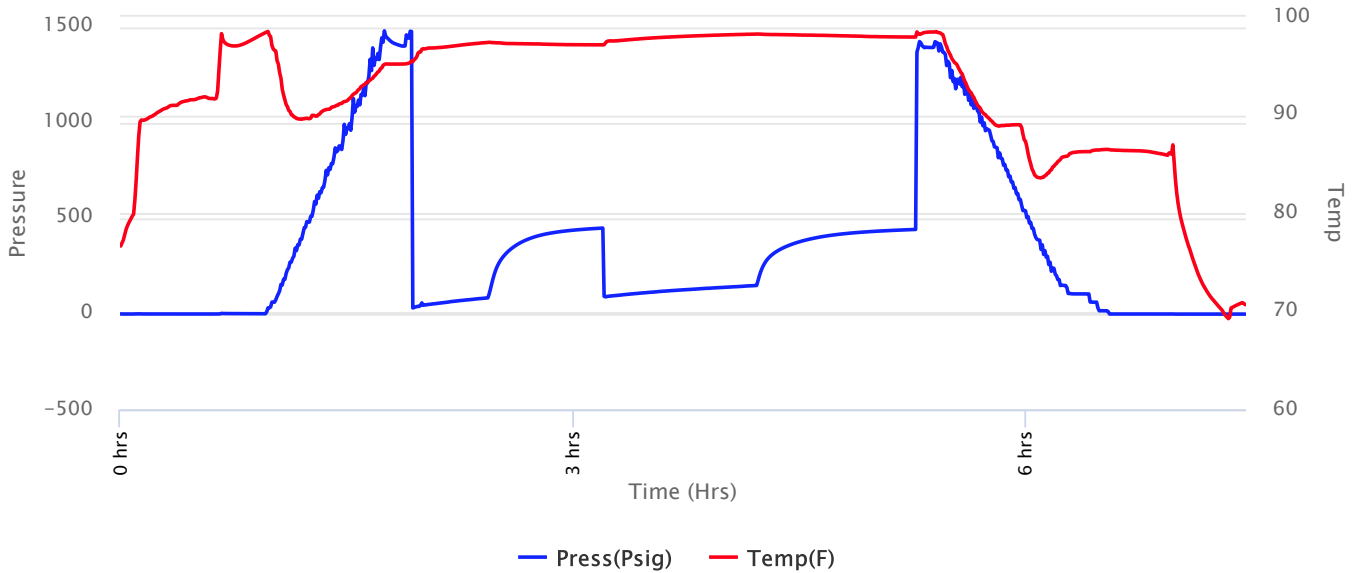
1st Open  
 Minutes: 30  
 Current Reading:  
 38" at 30 min  
 Max Reading: 38"

1st Close  
 Minutes: 45  
 Current Reading:  
 2.3" at 45 min  
 Max Reading: 2.5"

2nd Open  
 Minutes: 60  
 Current Reading:  
 51.4" at 60 min  
 Max Reading: 51.4"

2nd Close  
 Minutes: 60  
 Current Reading:  
 11.3" at 60 min  
 Max Reading: 15.1"

Inside Recorder





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**29**  
 2019

**DST #2 Formation: LKC. B-F Test Interval: 3048 - 3123' Total Depth: 3123'**  
 Time On: 16:45 07/29 Time Off: 00:01 07/30  
 Time On Bottom: 18:39 07/29 Time Off Bottom: 21:54 07/29

Recovered

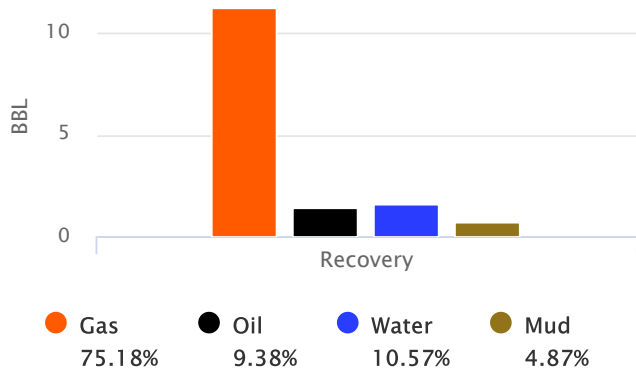
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
756	10.75788	G	100	0	0	0
73	1.03879	SLMCO	0	97	0	3
53	0.75419	SLWCSLGCHMCO	10	48	2	40
63	0.89649	SLOGGCHMCW	25	2	43	30
63	0.89649	SLOCSLMCGCW	20	1	69	10
63	0.6028526	SLOCSLMCW	0	1	93	6

Total Recovered: 1071 ft  
 Total Barrels Recovered: 14.9466926

Reversed Out  
 NO

Initial Hydrostatic Pressure	1401	PSI
Initial Flow	31 to 84	PSI
<b>Initial Closed in Pressure</b>	<b>449</b>	<b>PSI</b>
Final Flow Pressure	92 to 149	PSI
<b>Final Closed in Pressure</b>	<b>442</b>	<b>PSI</b>
Final Hydrostatic Pressure	1397	PSI
Temperature	99	°F
Pressure Change Initial Close / Final Close	1.6	%

**Recovery at a glance**



GIP cubic foot volume: 63.08856



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**

Uploading recovery &  
pressures

**DATE**

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**DST #2      Formation: LKC. B-F      Test Interval: 3048 -      Total Depth: 3123'**  
**3123'**

Time On: 16:45 07/29

Time Off: 00:01 07/30

Time On Bottom: 18:39 07/29

Time Off Bottom: 21:54 07/29

**BUCKET MEASUREMENT:**

1st Open: 1/2" Bob in 6 min

1st Close: Built to 2 1/2"

2nd Open: 1" Bob in 7 min

2nd Close: Bob in 15 min

**REMARKS:**

Tool Sample: 5% Gas 1% Oil 64% Water 30% Mud

Ph: 7

Measured RW: .125 @ 69 degrees °F

RW at Formation Temp: 0.09 @ 99 °F

Chlorides: 62300 ppm







**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**29**  
2019

**DST #2      Formation: LKC. B-F      Test Interval: 3048 -      Total Depth: 3123'**  
**3123'**

Time On: 16:45 07/29      Time Off: 00:01 07/30  
Time On Bottom: 18:39 07/29      Time Off Bottom: 21:54 07/29

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 8.5      **Viscosity:** 56      **Filtrate:** 9.2      **Chlorides:** 4000 ppm



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**30**  
 2019

**DST #3      Formation: LKC. I-K      Test Interval: 3180 - 3260'      Total Depth: 3260'**  
 Time On: 17:07 07/30      Time Off: 22:29 07/30  
 Time On Bottom: 17:07 07/30      Time Off Bottom: 20:22 07/30

Electronic Volume  
 Estimate:  
 297'

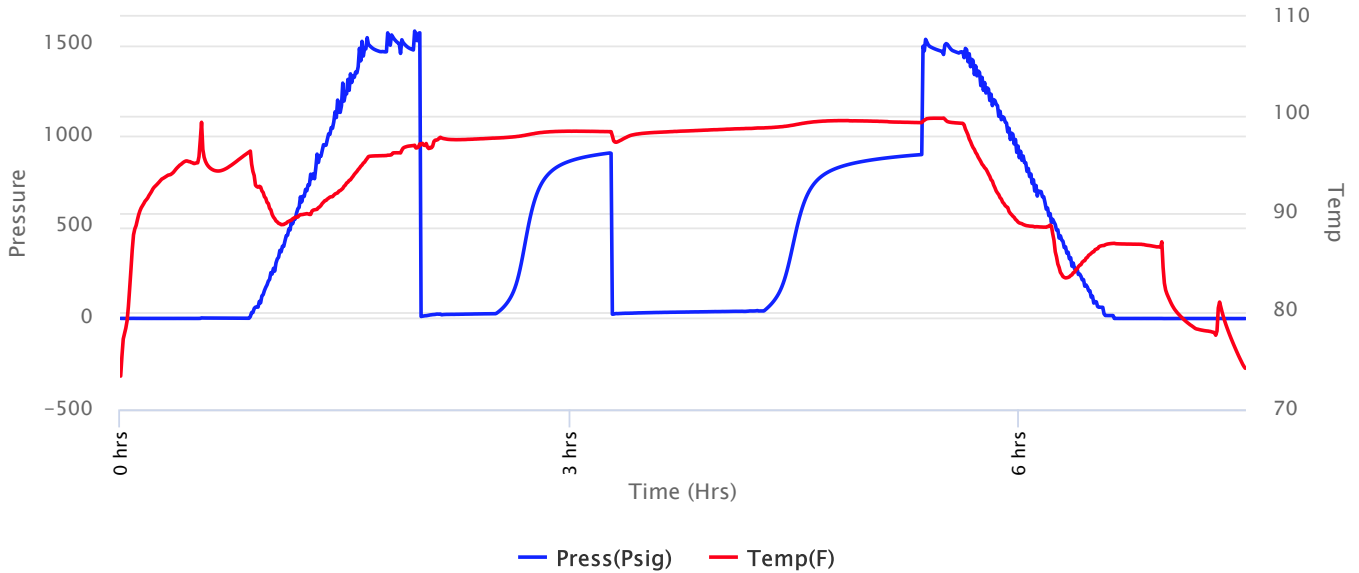
1st Open  
 Minutes: 30  
 Current Reading:  
 9.9" at 30 min  
 Max Reading: 9.9"

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

2nd Open  
 Minutes: 60  
 Current Reading:  
 24.1" at 60 min  
 Max Reading: 24.1"

2nd Close  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: .1"

Inside Recorder





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**30**  
 2019

**DST #3**      **Formation: LKC. I-K**      **Test Interval: 3180 - 3260'**      **Total Depth: 3260'**  
 Time On: 17:07 07/30      Time Off: 22:29 07/30  
 Time On Bottom: 17:07 07/30      Time Off Bottom: 20:22 07/30

Recovered

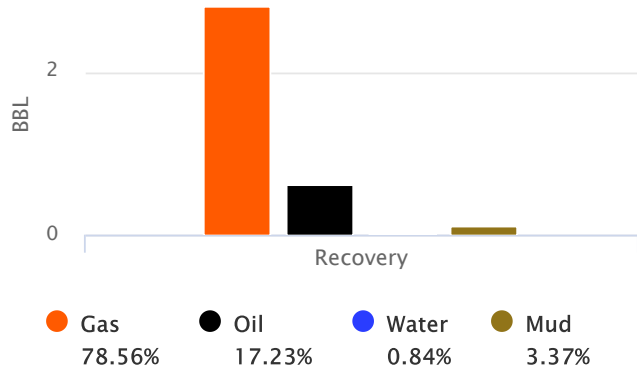
Foot	BCLS	Description of Fluid	Gas %	Oil %	Water %	Mud %
189	2.68947	G	100	0	0	0
20	0.2846	O	0	100	0	0
63	0.6028526	SLWCGCMCO	20	55	5	20

Total Recovered: 272 ft  
 Total Barrels Recovered: 3.5769226

**Reversed Out**  
**NO**

Initial Hydrostatic Pressure	1478	PSI
Initial Flow	10 to 25	PSI
<b>Initial Closed in Pressure</b>	<b>907</b>	<b>PSI</b>
Final Flow Pressure	23 to 41	PSI
<b>Final Closed in Pressure</b>	<b>899</b>	<b>PSI</b>
Final Hydrostatic Pressure	1474	PSI
Temperature	100	°F
Pressure Change Initial Close / Final Close	1.0	%

**Recovery at a glance**



GIP cubic foot volume: 15.77697





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**30**  
 2019

**DST #3**      **Formation: LKC. I-K**      **Test Interval: 3180 - 3260'**      **Total Depth: 3260'**  
 Time On: 17:07 07/30      Time Off: 22:29 07/30  
 Time On Bottom: 17:07 07/30      Time Off Bottom: 20:22 07/30

**Down Hole Makeup**

<b>Heads Up:</b> 15.22 FT	<b>Packer 1:</b> 3175 FT
<b>Drill Pipe:</b> 3138.52 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3180 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3167 FT
<b>Collars:</b> 31.54 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3249 FT
<b>Test Tool:</b> 26.16 FT <i>ID-3 1/2-FH</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 80	<b>Surface Choke:</b> 1"
<b>Anchor Makeup</b>	
<b>Packer Sub:</b> 1 FT	<b>Bottom Choke:</b> 5/8"
<b>Perforations: (top):</b> 2 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 1 FT	
<b>Drill Pipe: (in anchor):</b> 63.5 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> .5 FT	
<b>Perforations: (below):</b> 12 FT <i>4 1/2-FH</i>	



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**30**  
2019

**DST #3**      **Formation: LKC. I-K**      **Test Interval: 3180 - 3260'**      **Total Depth: 3260'**  
Time On: 17:07 07/30      Time Off: 22:29 07/30  
Time On Bottom: 17:07 07/30      Time Off Bottom: 20:22 07/30

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 8.8      **Viscosity:** 44      **Filtrate:** 8.8      **Chlorides:** 5000 ppm



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #4**    **Formation: Simpson Sand**    **Test Interval: 3252 - 3370'**    **Total Depth: 3370'**  
 Time On: 11:01 07/31    Time Off: 18:01 07/31  
 Time On Bottom: 12:51 07/31    Time Off Bottom: 16:06 07/31

Electronic Volume  
 Estimate:  
 104'

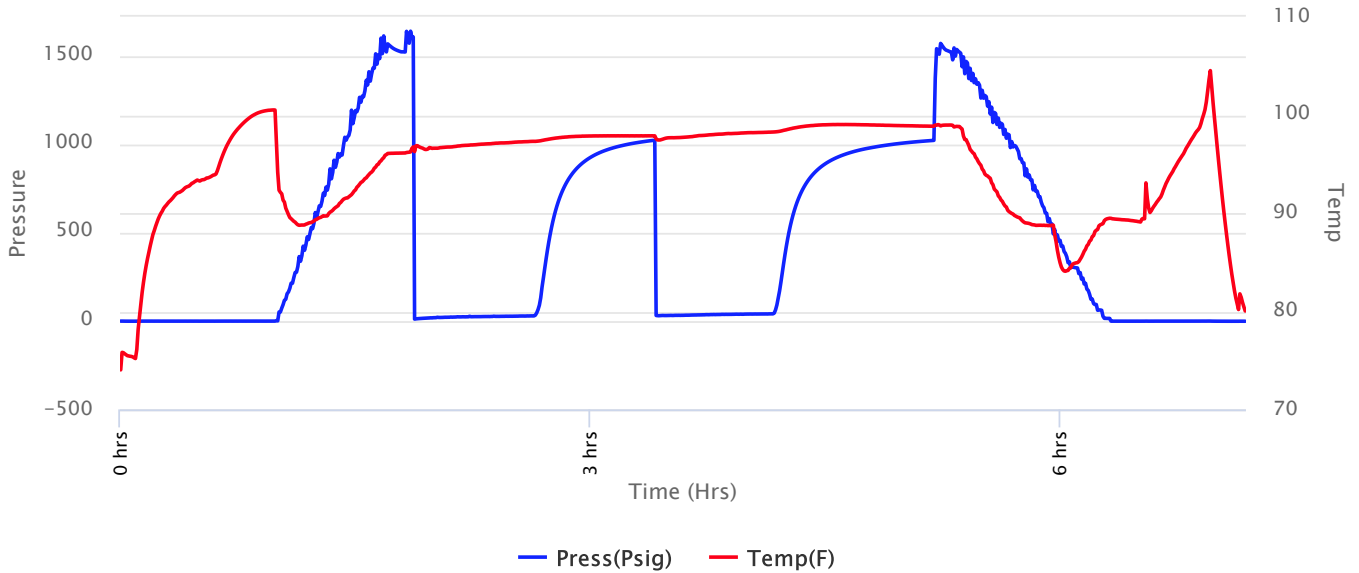
1st Open  
 Minutes: 45  
 Current Reading:  
 4.5" at 45 min  
 Max Reading: 4.5"

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

2nd Open  
 Minutes: 45  
 Current Reading:  
 5.4" at 45 min  
 Max Reading: 5.4"

2nd Close  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

Inside Recorder





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #4**      **Formation: Simpson Sand**      **Test Interval: 3252 - 3370'**      **Total Depth: 3370'**  
 Time On: 11:01 07/31      Time Off: 18:01 07/31  
 Time On Bottom: 12:51 07/31      Time Off Bottom: 16:06 07/31

Recovered

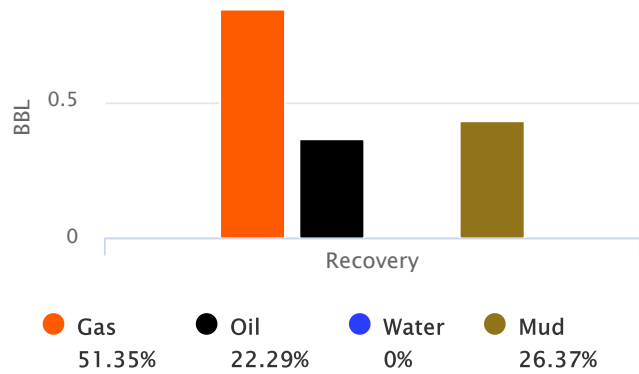
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
53	0.75419	G	100	0	0	0
10	0.1423	O	0	100	0	0
10	0.1423	GCHOCM	20	30	0	50
63	0.6028526	SLGCHOCM	10	30	0	60

Total Recovered: 136 ft  
 Total Barrels Recovered: 1.6416426

Reversed Out  
 NO

Initial Hydrostatic Pressure      1522      PSI  
 Initial Flow      11 to 29      PSI  
**Initial Closed in Pressure**      **1022**      **PSI**  
 Final Flow Pressure      31 to 41      PSI  
**Final Closed in Pressure**      **1022**      **PSI**  
 Final Hydrostatic Pressure      1521      PSI  
 Temperature      100      °F  
  
 Pressure Change Initial  
 Close / Final Close      0.0      %

**Recovery at a glance**



GIP cubic foot volume: 4.73266





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**31**  
2019

**DST #4**      **Formation: Simpson Sand**      **Test Interval: 3252 - 3370'**      **Total Depth: 3370'**  
Time On: 11:01 07/31      Time Off: 18:01 07/31  
Time On Bottom: 12:51 07/31      Time Off Bottom: 16:06 07/31

**BUCKET MEASUREMENT:**

1st Open: Wsb built to 4 1/2"  
1st Close: Nobb  
2nd Open: Wsb built to 5 1/2"  
2nd Close: Nobb

**REMARKS:**

Tool Sample: 10% Gas 30% Oil 0% Water 60% Mud

Gravity: 34.3 @ 60 °F



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #4**      **Formation: Simpson Sand**      **Test Interval: 3252 - 3370'**      **Total Depth: 3370'**  
 Time On: 11:01 07/31      Time Off: 18:01 07/31  
 Time On Bottom: 12:51 07/31      Time Off Bottom: 16:06 07/31

**Down Hole Makeup**

<b>Heads Up:</b> 6.90999999999997 FT	<b>Packer 1:</b> 3247 FT
<b>Drill Pipe:</b> 3202.21 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3252 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3239 FT
<b>Collars:</b> 31.54 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3353 FT
<b>Test Tool:</b> 26.16 FT <i>ID-3 1/2-FH</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 118	<b>Surface Choke:</b> 1"
<b>Anchor Makeup</b>	
<b>Packer Sub:</b> 1 FT	<b>Bottom Choke:</b> 5/8"
<b>Perforations: (top):</b> 2 FT <i>4 1/2-FH</i>	
<b>Change Over:</b> 1 FT	
<b>Drill Pipe: (in anchor):</b> 95 FT <i>ID-3 1/2</i>	
<b>Change Over:</b> 1 FT	
<b>Perforations: (below):</b> 18 FT <i>4 1/2-FH</i>	



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**31**  
2019

**DST #4**      **Formation: Simpson Sand**      **Test Interval: 3252 - 3370'**      **Total Depth: 3370'**  
Time On: 11:01 07/31      Time Off: 18:01 07/31  
Time On Bottom: 12:51 07/31      Time Off Bottom: 16:06 07/31

**Mud Properties**

**Mud Type:** Chemical      **Weight:** 8.8      **Viscosity:** 44      **Filtrate:** 8.8      **Chlorides:** 5000 ppm



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #5**    **Formation: Arbuckle**    **Test Interval: 3371 - 3380'**    **Total Depth: 3380'**  
 Time On: 23:32 07/31    Time Off: 06:29 08/01  
 Time On Bottom: 01:27 08/01    Time Off Bottom: 04:42 08/01

Electronic Volume  
 Estimate:  
 38'

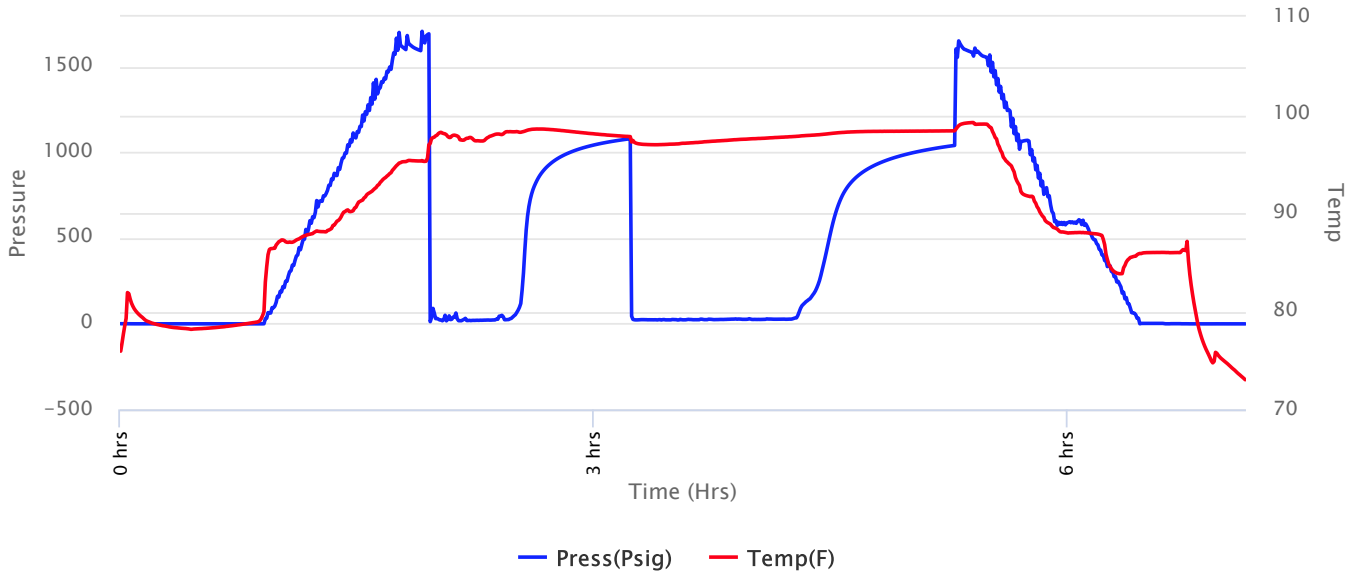
1st Open  
 Minutes: 30  
 Current Reading:  
 1.1" at 30 min  
 Max Reading: 1.1"

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

2nd Open  
 Minutes: 60  
 Current Reading:  
 .5" at 60 min  
 Max Reading: .9"

2nd Close  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

Inside Recorder





**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #5 Formation: Arbuckle Test Interval: 3371 - 3380' Total Depth: 3380'**  
 Time On: 23:32 07/31 Time Off: 06:29 08/01  
 Time On Bottom: 01:27 08/01 Time Off Bottom: 04:42 08/01

Recovered

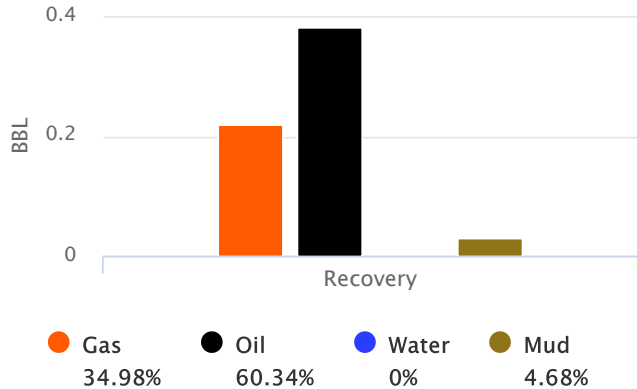
Foot	BCLS	Description of Fluid	Gas %	Oil %	Water %	Mud %
15	0.21345	G	100	0	0	0
20	0.2702626	O	0	100	0	0
30	0.1476	SLGCMCO	5	75	0	20

Total Recovered: 65 ft  
 Total Barrels Recovered: 0.6313126

Reversed Out  
 NO

Initial Hydrostatic Pressure	1597	PSI
Initial Flow	12 to 24	PSI
<b>Initial Closed in Pressure</b>	<b>1078</b>	<b>PSI</b>
Final Flow Pressure	23 to 33	PSI
<b>Final Closed in Pressure</b>	<b>1039</b>	<b>PSI</b>
Final Hydrostatic Pressure	1587	PSI
Temperature	99	°F
Pressure Change Initial Close / Final Close	3.6	%

**Recovery at a glance**



GIP cubic foot volume: 1.23985



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**

Uploading recovery &  
pressures

**DATE**

July

**31**

2019

**DST #5      Formation: Arbuckle      Test Interval: 3371 -      Total Depth: 3380'**  
**3380'**

Time On: 23:32 07/31

Time Off: 06:29 08/01

Time On Bottom: 01:27 08/01

Time Off Bottom: 04:42 08/01

**BUCKET MEASUREMENT:**

1st Open: Wsb built to 1"

1st Close: Nobb

2nd Open: Wsb built to 1"

2nd Close: Nobb

**REMARKS:**

Tool Sample: 7% Gas 40% Oil 3% Water 50% Mud

Gravity: 29.3 @ 60 °F



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling  
 Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery &  
 pressures

**DATE**  
 July  
**31**  
 2019

**DST #5      Formation: Arbuckle      Test Interval: 3371 - 3380'      Total Depth: 3380'**  
 Time On: 23:32 07/31      Time Off: 06:29 08/01  
 Time On Bottom: 01:27 08/01      Time Off Bottom: 04:42 08/01

**Down Hole Makeup**

<b>Heads Up:</b> 14.66 FT	<b>Packer 1:</b> 3366 FT
<b>Drill Pipe:</b> 3328.96 FT <i>ID-3 1/2</i>	<b>Packer 2:</b> 3371 FT
<b>Weight Pipe:</b> FT <i>ID-2 7/8</i>	<b>Top Recorder:</b> 3358 FT
<b>Collars:</b> 31.54 FT <i>ID-2 1/4</i>	<b>Bottom Recorder:</b> 3373 FT
<b>Test Tool:</b> 26.16 FT <i>ID-3 1/2-FH</i>	<b>Well Bore Size:</b> 7 7/8
<b>Total Anchor:</b> 9	<b>Surface Choke:</b> 1"
	<b>Bottom Choke:</b> 5/8"

**Anchor Makeup**

**Packer Sub:** 1 FT

**Perforations: (top):** FT  
*4 1/2-FH*

**Change Over:** FT

**Drill Pipe: (in anchor):** FT  
*ID-3 1/2*

**Change Over:** FT

**Perforations: (below):** 8 FT  
*4 1/2-FH*



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**

Uploading recovery &  
pressures

**DATE**

July  
**31**  
2019

**DST #5      Formation: Arbuckle      Test Interval: 3371 -      Total Depth: 3380'**  
**3380'**

Time On: 23:32 07/31

Time Off: 06:29 08/01

Time On Bottom: 01:27 08/01      Time Off Bottom: 04:42 08/01

**Mud Properties**

**Mud Type:** Chemical

**Weight:** 9

**Viscosity:** 50

**Filtrate:** 8.8

**Chlorides:** 5500 ppm



Scale 1:240 Imperial

Well Name: CARRIE #2-5  
Surface Location: SW NW NE SW Sec. 2 - 12S - 16W  
Bottom Location:  
API: 15-051-26958  
License Number: 33335  
Spud Date: 7/24/2019 Time: 3:45 PM  
Region: ELLIS COUNTY  
Drilling Completed: 8/1/2019 Time: 11:55 AM  
Surface Coordinates: 2180' FSL & 1460' FWL  
Bottom Hole Coordinates:  
Ground Elevation: 1815.00ft  
K.B. Elevation: 1823.00ft  
Logged Interval: 2500.00ft To: 3450.00ft  
Total Depth: 3450.00ft  
Formation: LANSING - KANSAS CITY; ARBUCKLE  
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

**OPERATOR**

Company: IA OPERATING, INC.  
Address: 785 W COVELL ROAD  
SUITE 200  
EDMOND, OK 73003  
Contact Geologist: JONATHAN ALLEN  
Contact Phone Nbr: (316) 721-0036  
Well Name: CARRIE #2-5  
Location: SW NW NE SW Sec. 2 - 12S - 16W  
API: 15-051-26958  
Pool: State: KANSAS Field: BLUE HILL NORTHWEST  
Country: USA

**SURFACE CO-ORDINATES**

Well Type: Vertical  
Longitude: -99.0698497  
Latitude: 39.0366406  
N/S Co-ord: 2180' FSL  
E/W Co-ord: 1460' FWL

**LOGGED BY**



Company: BIG CREEK CONSULTING, INC.  
Address: 1909 MAPLE  
ELLIS, KS 67637  
Phone Nbr: (785) 259-3737  
Logged By: GEOLOGIST Name: JEFF LAWLER

**CONTRACTOR**

Contractor: DISCOVERY DRILLING  
Rig #: 4  
Rig Type: MUD ROTARY  
Spud Date: 7/24/2019 Time: 3:45 PM  
TD Date: 8/1/2019 Time: 11:55 AM  
Rig Release: 8/2/2019 Time: 3:45 AM

### ELEVATIONS

K.B. Elevation: 1823.00ft  
K.B. to Ground: 8.00ft

Ground Elevation: 1815.00ft

### NOTES

### WELL COMPARISON SHEET

FORMATION	CARRIE #2-5				SWNW SW 2-12-16				NESE NW NW 2-12-16				SW SW NE 2-12-16				E2 SW SE SW 2-12-16			
	KB		GL		KB		1828		KB		1765		KB		1812		KB		1853	
	LOG TOPS	SAMPLE TOPS	LOG	LOG	SMPL.	LOG	LOG	SMPL.	LOGS	LOG	SMPL.	LOGS	LOG	SMPL.	LOGS	LOG	SMPL.	LOGS	LOG	SMPL.
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.
ANHYDRITE TOP				1000	828			923	842			970	842			1008	845			
BASE	1011	812	1011	812				960	805	+ 7	+ 7	1006	806	+ 6	+ 6	1044	809	+ 3	+ 3	
TOPEKA	2736	-913	2736	-913				2684	-919	+ 6	+ 6	2711	-899	- 14	- 14	2769	-916	+ 3	+ 3	
HEEBNER SHALE	2984	-1161	2986	-1163	3011	-1183	+ 22 + 20	2930	-1165	+ 4 + 2		2977	-1165	+ 4 + 2		3019	-1166	+ 5 + 3		
TORONTO	3005	-1182	3007	-1184	3033	-1205	+ 23 + 21	2948	-1183	+ 1 - 1		3000	-1188	+ 6 + 4		3041	-1188	+ 6 + 4		
LKC	3031	-1208	3032	-1209	3059	-1231	+ 23 + 22	2975	-1210	+ 2 + 1		3027	-1215	+ 7 + 6		3068	-1215	+ 7 + 6		
BKC	3273	-1450	3279	-1456	3280	-1452	+ 2 - 4	3220	-1455	+ 5 - 1		3268	-1456	+ 6 + 0		3308	-1455	+ 5 - 1		
MARMATON					3330	-1502														
SIMPSON SAND	3365	-1542	3365	-1542				3311	-1546	+ 4 + 4		3367	-1555	+ 13 + 13		3394	-1541	- 1 - 1		
ARBUCKLE	3373	-1550	3373	-1550	3398	-1570	+ 20 + 20	3319	-1554	+ 4 + 4		3376	-1564	+ 14 + 14		3401	-1548	- 2 - 2		
TOTAL DEPTH	3449	-1626	3450	-1627	3480	-1652	+ 26 + 25					3380	-1568	- 58 - 59		3448	-1595	- 31 - 32		

### DST #1 TORONTO - LKC A 2982' - 3050'



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery & pressures

**DATE**  
July  
**29**  
2019

**DST #1**    **Formation: Toronto - LKC A**    **Test Interval: 2982 - 3050'**    **Total Depth: 3050'**  
Time On: 00:01 07/29    Time Off: 06:52 07/29  
Time On Bottom: 01:58 07/29    Time Off Bottom: 05:13 07/29

Recovered

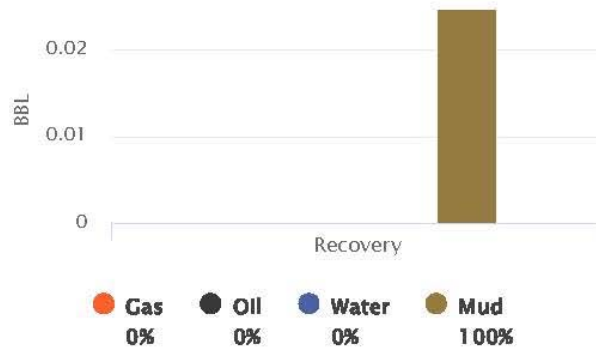
Foot    BBLs  
5    0.0246

Description of Fluid    Gas %    Oil %    Water %    Mud %  
M    0    0    0    100

Total Recovered: 5 ft  
Total Barrels Recovered: 0.0246

**Reversed Out  
NO**

**Recovery at a glance**



Initial Hydrostatic Pressure	1381	PSI
Initial Flow	8 to 11	PSI
<b>Initial Closed in Pressure</b>	<b>224</b>	<b>PSI</b>
Final Flow Pressure	12 to 20	PSI
<b>Final Closed in Pressure</b>	<b>66</b>	<b>PSI</b>
Final Hydrostatic Pressure	1375	PSI
Temperature	97	°F

Pressure Change Initial Close / Final Close    70.7    %

GIP cubic foot volume: 0

**DST #1 TORONTO - LKC A 2982' - 3050'**



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery & pressures

**DATE**  
 July  
**29**  
 2019

**DST #1 Formation: Toronto - LKC A Test Interval: 2982 - 3050' Total Depth: 3050'**  
 Time On: 00:01 07/29 Time Off: 06:52 07/29  
 Time On Bottom: 01:58 07/29 Time Off Bottom: 05:13 07/29

Electronic Volume Estimate:  
 2'

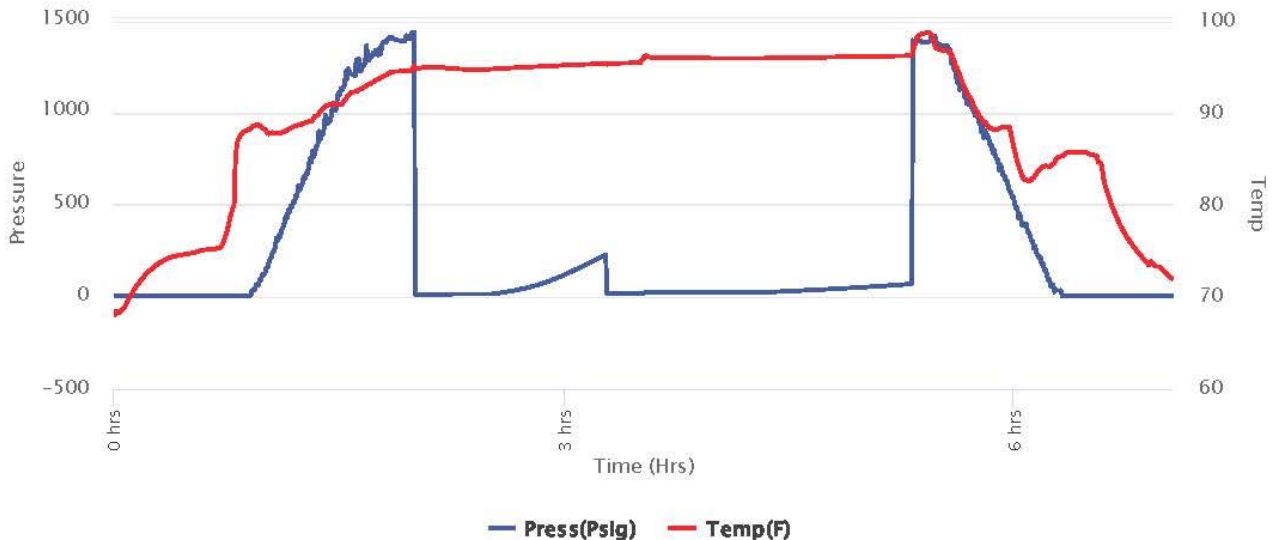
1st Open  
 Minutes: 30  
 Current Reading:  
 0" at 30 min  
 Max Reading: .1"

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

2nd Open  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

2nd Close  
 Minutes: 60  
 Current Reading:  
 0" at 60 min  
 Max Reading: 0"

Inside Recorder



**DST #2 LKC B - F 3048' - 3123'**



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery & pressures

**DATE**  
 July  
**29**  
 2019

**DST #2**      **Formation: LKC. B-F**      **Test Interval: 3048 - 3123'**      **Total Depth: 3123'**  
 Time On: 16:45 07/29      Time Off: 00:01 07/30  
 Time On Bottom: 18:39 07/29      Time Off Bottom: 21:54 07/29

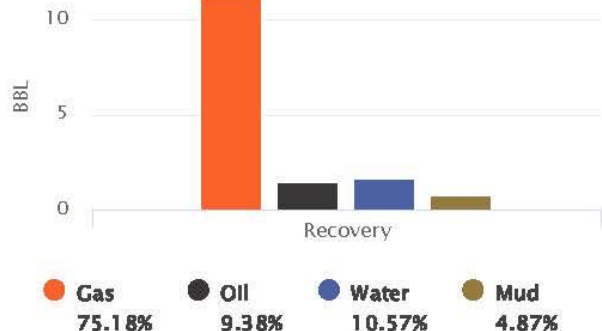
Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
756	10.75788	G	100	0	0	0
73	1.03879	SLMCO	0	97	0	3
53	0.75419	SLWCSLGCHMCO	10	48	2	40
63	0.89649	SLOGCHMCW	25	2	43	30
63	0.89649	SLOCSLMCGCW	20	1	69	10
63	0.6028526	SLOCSLMCW	0	1	93	6

Total Recovered: 1071 ft  
 Total Barrels Recovered: 14.9466926

**Reversed Out**  
**NO**

**Recovery at a glance**



Initial Hydrostatic Pressure	1401	PSI
Initial Flow	31 to 84	PSI
<b>Initial Closed in Pressure</b>	<b>449</b>	<b>PSI</b>
Final Flow Pressure	92 to 149	PSI
<b>Final Closed in Pressure</b>	<b>442</b>	<b>PSI</b>
Final Hydrostatic Pressure	1397	PSI
Temperature	99	°F
Pressure Change Initial Close / Final Close	1.6	%

GIP cubic foot volume: 63.08856

**DST #2 LKC B - F 3048' - 3123'**



**Company: IA Operating, Inc.**  
**Lease: Carrie #2-5**

SEC: 2 TWN: 12S RNG: 16W  
 County: ELLIS  
 State: Kansas  
 Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
 Elevation: 1814 GL  
 Field Name: Blue Hill NW  
 Pool: Infield  
 Job Number: 360  
 API #: 15-051-26958-00-00

**Operation:**  
 Uploading recovery & pressures

**DATE**  
 July  
**29**  
 2019

**DST #2**    **Formation: LKC. B-F**    **Test Interval: 3048 - 3123'**    **Total Depth: 3123'**  
 Time On: 16:45 07/29    Time Off: 00:01 07/30  
 Time On Bottom: 18:39 07/29    Time Off Bottom: 21:54 07/29

Electronic Volume Estimate:  
 798'

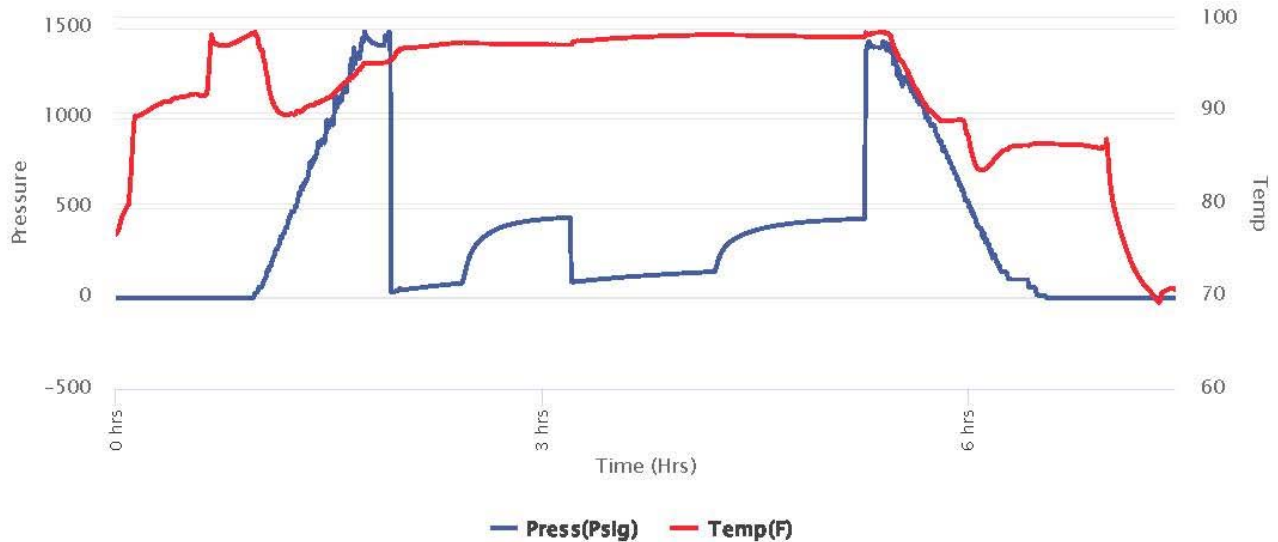
1st Open  
 Minutes: 30  
 Current Reading:  
 38" at 30 min  
 Max Reading: 38"

1st Close  
 Minutes: 45  
 Current Reading:  
 2.3" at 45 min  
 Max Reading: 2.5"

2nd Open  
 Minutes: 60  
 Current Reading:  
 51.4" at 60 min  
 Max Reading: 51.4"

2nd Close  
 Minutes: 60  
 Current Reading:  
 11.3" at 60 min  
 Max Reading: 15.1"

Inside Recorder



### ROCK TYPES

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

### ACCESSORIES

#### FOSSIL

- Oolite
- Oomoldic
- Fussilinid

#### STRINGER

- Chert

### OTHER SYMBOLS

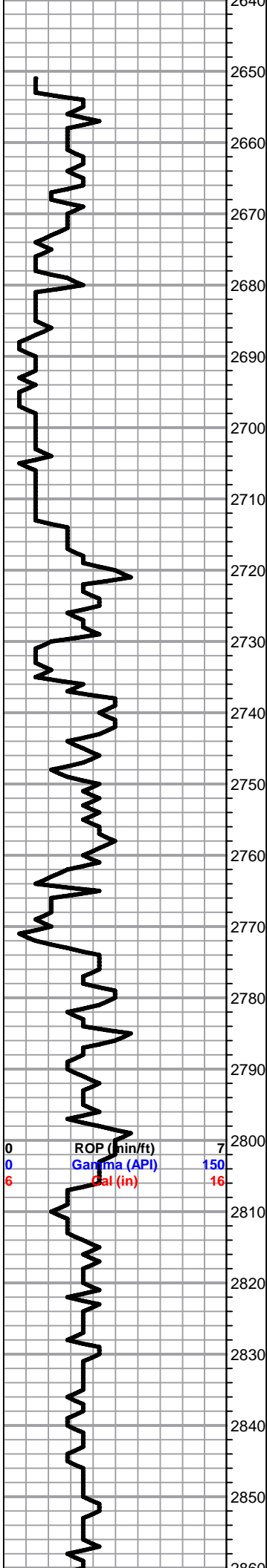
#### MISC

- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

#### DST

- DST Int
- DST alt

Curve Track #1	Depth   Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft) Gamma (API) Cal (in)	Cored Interval DST Interval					
1:240 Imperial 0 ROP (min/ft) 7 0 Gamma (API) 150 6 Cal (in) 16	2610 2620 2630 2640				<p><b>1' DRILL TIME THROUGH ANHYDRITE FROM 960' - 1030'</b>  <b>10' DRILL TIME FROM 2650' - RTD</b>  <b>10' WET/DRY SAMPLES FROM 2700' - RTD</b></p> <p><b>GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 2650' - RTD</b></p> <p><b>8 5/8" SURFACE PIPE SET @ 983' SURVEY 3/4 deg.</b></p> <p><b>ANHYDRITE TOP 971' (+852)</b>  <b>ANHYDRITE BASE 1011' (+812) E-LOG 1011' (+812)</b></p>	1:240 Imperial



Lm- Cream Gray, FXLN, fsl, semi-trashy high energy mix, fsl fragments, dense XLN porosity, barren

Lm- Cream Gray Buff, FXLN, dense, fsl, mostly well cemented w/ sctrd to dense XLN porosity, some sl chalky in part w/ poor vis. porosity

Ss/Sh- Frosted Gray, Fn Grn, well cemented, consolidated & mod. sorted, semi-angular, highly micaceous, consistent ppt intergranular porosity, barren, soft & gummy wash

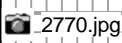
Lm- Cream Off White, VF-FXLN, dense, well cemented, fsl, most w/ clear replacement cementation & sctrd to dense XLN porosity, clean & barren

Sh/Ss- Gray Frosted, Fn Grn, most loosely cemented, consolidated w/ mod. sorting, semi-angular, semi mature & barren, dense & waxy shale

**TOPEKA 2736' (-913) E-LOG 2736' (-913)** Lm- Cream Gray, VF-FXLN, dense, well cemented, some fsl, mostly tight w/ sctrd XLN porosity, barren

Lm- Buff Cream, VFXLN, dense, well cemented, min. vis. porosity, barren

● Lm- Brown, FXLN, massive, arenaceous, well cemented, dense fn ppt & XLN porosity, semi vugular porosity in appearance, SAT DRK STN, NSFO, LT ODR, STRNG FLOR.



Sh- Black Gray Green, fissile & carbonaceous, silty & soft, some sl gummy

Lm- Cream Buff Gray, VF-FXLN, dense, well cemented, poor vis. porosity, clean & barren

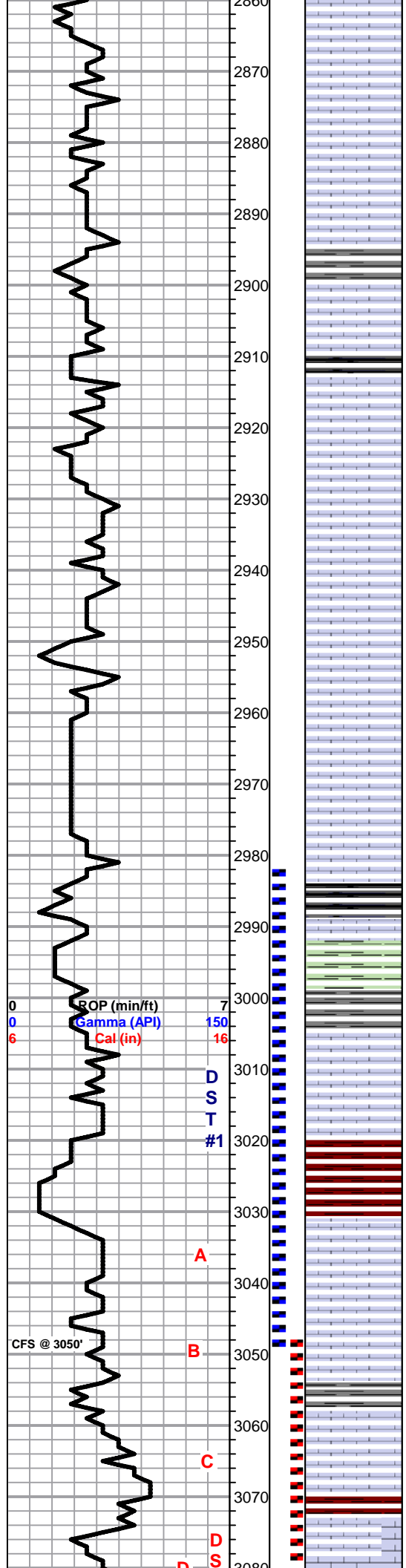
Lm- A/A

Lm- Cream Buff, VF-FXLN, some sl fsl, all poorly dev. & mostly tight w/ sctrd XLN porosity, barren

Lm- Cream Tan, FXLN, sl fsl, sctrd mottling, sctrd XLN & clear replacement cementation, barren

Lm- A/A w/ some dense cherty Ls w/o vis. porosity

Sh- Black, fissile & carbonaceous, several pcs of black vitreous chert



Lm- Cream Off White Tan, FXLN, mix of tight w/o vis. porosity cherty Ls, fsl w/ dense XLN & some sctrd reXLN porosity (possible fracturing??), TR OF ODR, NO STN OR SHW, sctrd mottling

Lm- Cream Off White, VF-FXLN, dense, tight w/ poor vis. porosity, vry clean & barren

Lm- A/A w/ sl fsl, sctrd XLN porosity, barren

Sh- Black Green, fissile & carbonaceous, silty & semi sandy, several pcs of vitreous black chert

Lm- Cream Off White, FXLN, fsl & sl oolitic, poorly dev. w/ sctrd to dense XLN & reXLN porosity, some w/ clear replacement cementation, barren

Lm- A/A w/ lt gray, sl sandy Lm, poorly dev & loosely cemented, barren

Lm- Cream Off White, FXLN, sl fsl, sctrd XLN porosity, mostly tight, barren

Lm- Cream, F-MXLN, fsl, mod. well dev. w/ dense XLN & sctrd fn ppt interXLN porosity, some sctrd clear replacement cementation, DRK STN, NSFO, FR ODR

Lm- Cream, VF-FXLN, dense, well cemented, sl fsl w/ fusulinids, sctrd XLN porosity, SCTRD DRK STN, NSFO, GD ODR

Lm- Cream Off White, FXLN, A/A w/ some loosely cemented, sl chalky in part, sctrd mottling, barren

**HEEBNER 2986' (-1163) E-LOG 2984' (-1161)** Sh- Black Gray Green Maroon, fissile & carbonaceous, dense & waxy, gritty & earthy

Sh- A/A w/ various colored argillaceous clumps

**TORONTO 3007' (-1184) E-LOG 3005' (-1182)** Lm/Chert- Cream Off White, mostly fresh bedded vitreous chert & tight cherty Ls, 3-5 pcs of loosely cemented Ls w/ sctrd to dense XLN & edge fn ppt porosity, LT STN, NSFO, TR ODR??

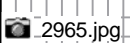
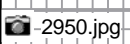
Sh- Gray Maroon Green, gummy clumps, silty & sandy, gritty & earthy

**LKC 3032' (-1209) E-LOG 3031' (-1208)** Lm- Cream Off White, FXLN, fsl, top of zone is well dev. w/ consistent fn ppt porosity throughout, SAT LT STN, NSFO, TR ODR, BRIGHT YLLW FLOR.

Lm- Cream Off White, FXLN, sl fsl, sctrd to dense XLN porosity, barren, several pcs sl trashy high-energy mix, barren

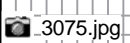
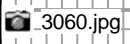
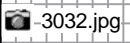
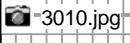
Lm- Off White Cream, FXLN, fsl & sl oolitic, mod. dev. w/ sctrd-consistent fn ppt to ppt inter fsl porosity, LT SCTRD STN, 1-2 PCS W/ TR FR O, WK ODR

Lm- Cream Off White, F-MXLN, well dev. & oolitic w/ mostly consistent ppt inter oolite porosity, semi-vuggy, LT STN, 1-2 PCS W/ TR FR O, GD ODR

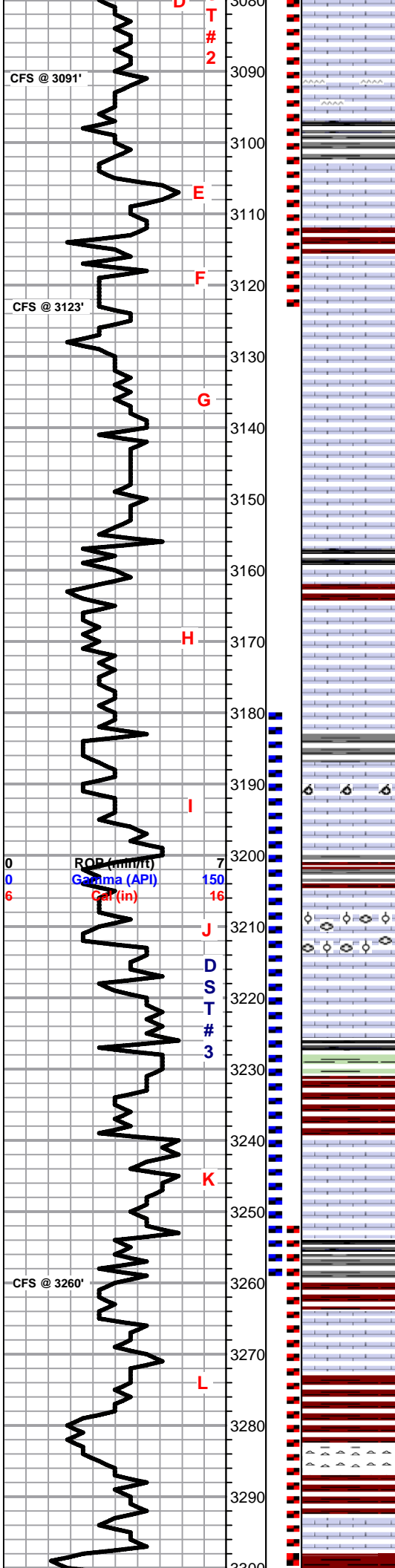


SHORT TRIP  
 CTCH  
 SURVEY 1 1/4  
 deg.  
 DST #1  
 TORONTO - LKC A  
 2982' - 3050'  
 30-45-60-60

5' MUD  
 IFP: 8-11#  
 FFP: 12-20#  
 SIP: 224-66#  
 BHT: 97 deg.







Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight, several pcs of chert/cherty Ls w/o vis. porosity, all clean & barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd XLN & ppt inter fsl porosity, LT SCTRD STN, HVY OILY SHEEN, NSFO, FR ODR

Lm- Cream Off White, FXLN, sl fsl w/ edge development w/ sctrd XLN & vry fn ppt porosity, LT SCTRD STN, SL TR FO??, GD ODR

Lm- Cream Off White, FXLN, oomoldic w/ mostly consistent vugular porosity, good inter vugular connectivity w/ reXLN within vugs, LT SCTRD STN, NO SFO, FR ODR

Lm- Buff, VFXLN, dense, well cemented, tight w/ poor vis. porosity, several pcs of milky white fresh bedded vitreous chert.

Sh- Black Gray, fissile & carbonaceous, dense & waxy

Lm- Cream Buff, VF-FXLN, dense, well cemented, some sl fsl, sctrd XLN porosity, poorly dev. clean & barren, several pcs of cherty Lm/dolomitic chert/dolomitic Lm, all barren

Lm- Cream Tan, FXLN, mix of well dev. w/ densely packed small oolitic/oomoldic w/ mostly consistent fn ppt inter oolite & sctrd XLN porosity, some sctrd reXLN porosity w/in ppt porosity, SUB-SAT/SAT STN, SHW FRO UNDER LAMP, FR ODR & FXLN, dense & poorly dev. w/ sctrd XLN porosity, some chert/cherty Ls, barren

Lm- Cream Off White, F-MXLN, oolitic/oomoldic w/ fusulinids, mod. dev. w/ sctrd-dense XLN & sctrd ppt-semi-vuggy porosity, some reXLN w/in vugs, LT SCTRD STN, SOME W/ GSY FR OIL, FR ODR

Lm- Cream Tan, FXLN, dense, well cemented, sl fsl, sctrd XLN porosity, barren

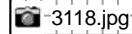
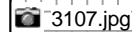
Sh- Black Maroon Green, fissile & carbonaceous, gritty & earthy, silty w/ pebble inclusions

Lm- Cream Tan Buff, VF-FXLN, dense, well cemented, poorly dev., some sl fsl, vry sctrd XLN porosity, barren

Lm- Cream Off White, FXLN, mix of densely packed, small oolites, well cemented, poorly dev. w/ poor vis. porosity, & tight & well cemenetd, clean & barren  
 Do- Off White, FXLN, well dev. w/ consistent fn ppt porosity throughout, SAT DRK STN, NSFO, FR ODR

**BKC 3279' (-1456) E-LOG 3273' (-1450)** Sh- Maroon Brown Gray Green, gritty & earthy, dense & waxy

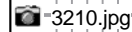
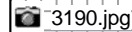
Chert- Salmon Milky White/Gray Semi-Translucent, various colored vitreous fresh bedded chert w/o vis. porosity



DST #2 LKC B-F  
3048' - 3123'  
30-45-60-60

315' TOTAL FLUID  
765' GIP  
73' SLMCO  
(97% O, 3% M)  
53' SLWCGMCW  
(10% G, 48% O,  
2% W, 40% M)  
63' SLOGHMCW  
(25% G, 2% O,  
43% W, 30% M)  
63' SLOCMCGW  
(20% G, 1% O, 69%  
W, 10% M)  
63' SLOCSLMCW  
(1% O, 93% W,  
6% M)

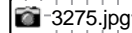
IFP: 31-84#  
FFP: 92-149#  
SIP: 449-442#  
BHT: 99 deg.  
Rw: .125 @ 69deg  
CHLOR: 62K



DST #3 LKC I-K  
3180' - 3260'  
30-45-60-60

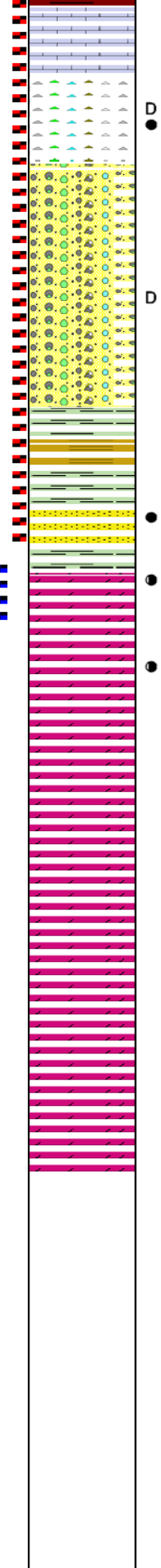
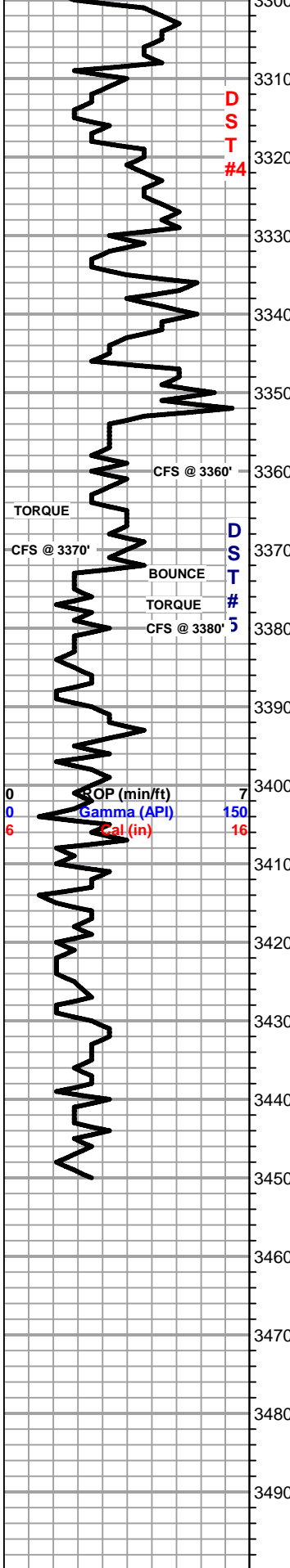
93' TOTAL FLUID  
189' GIP  
20' OIL Gr: 36 deg  
63' SLWCGMCO  
(20% G, 55% O,  
5% W, 20% M)

IFP: 10-25#  
FFP: 23-41#  
SIP: 907-899#  
HYD: 1478-1474#  
BHT: 100 deg.



DST #4  
SIMPSON SAND  
3352' - 3370'  
45-45-45-60

83' TOTAL FLUID  
53' GIP  
10' OIL Gr: 34  
10' GHOCHM  
(20% G, 30% O,  
50% M)  
63' SLGCHOCM



D ● Chert- Bone White, massive gritty dolomitic chert w/ no vis. porosity, SCTRD-SAT BLK DEAD OIL STN, NSFO, NO ODR

● Conglomerate Chert- Pink, fresh bedded & detrital chert w/o vis. porosity

D ● A/A conglomerate chert, some fsl & some w/ BLK TARRY RESIDUAL EDGE STN, NSFO, NO ODR, & fsl FXLN, well cemented, mostly tight Lm w/ sctrd mirxo XLN porosity, barren

● Conglomerate- various light colored conglomerate Ls, all tight & barren, several pcs of maroon limey Ss, barren

Sh- Mint Green various dark colored, dense & waxy, some sl silty & soft

**SIMPSON SAND 3365' (-1542) E-LOG 3365' (-1542)**

● **3370'-** Sand- Clear, F-M Grn, immature, sub-angular, mod. sorting, well consolidated, light Ca cementation, SCTRD-SAT STN, SL TR FO, FR ODR

● **ARBUCKLE 3373' (-1550) E-LOG 3373' (-1550)**

● **3380'-** Dol- Off White, F-MXLN, mostly well dev. semi sucrosic w/ consistent XLN porosity throughout, SCTD DRK STN, SOME OILY SHEEN, TR FRO, FR ODR

● Dol- White Off White, MedXLN, sucrosic, vis. rhombs, consistent ppt interXLN porosity, SCTRD DRK STN, OILY SHEEN, TR FRO, GD DR, PUNGENT & SULPHURIC

● Dol- Cream White, FXLN, dense, well cemented, less dev. w/ sctrd micro XLN porosity, barren

● Dol/Chert- Cream, VFXLN, dense, well cemented, tight w/ poor vis. porosity, White fresh bedded vitreous, densely packed oolitic chert w/o vis. porosity

● Dol- Cream Buff, VFXLN, dense, well cemented, tight w/ poor vis. porosity, barren

● Dol- White, VFXLN, loosely cemented, sl sandy?, crumbley, consistent micro XLN porosity throughout, pristine clean & barren, mixed w/ bone white fresh bedded vitreous chert

A/A w/ influx of white chert

● Dol- Cream Salmon, VFXLN, dense, well cemented cherty dolomite w/ poor micro XLN porosity, barren

**RTD 3450' (-1627) LTD 3449' (-1626) @ 11:55 8/1/2019**

(10% G, 30% O, 60% M)

IFP: 11-29#  
FFP: 31-41#  
SIP: 1022-1022#  
BHT: 100 deg.

3315.jpg

DST #4.jpg

DST #4.1....

3370.jpg

3373.jpg

3385.jpg

DST #5  
ARBUCKLE  
3371' - 3380'  
30-45-60-60

50' TOTAL FLUID  
15' GIP

20' OIL Gr: 29  
30' SLGCMCO  
(5% G, 75% O, 20% M)

IFP: 12-24#  
FFP: 23-33#  
SIP: 1078-1039#  
BHT: 99 deg.

DST #5.jpg

DST #5.1....

CFS  
SURVEY 1deg.  
TOH FOR LOG



0.5 mm

2770' X 25



0.5 mm

2950'





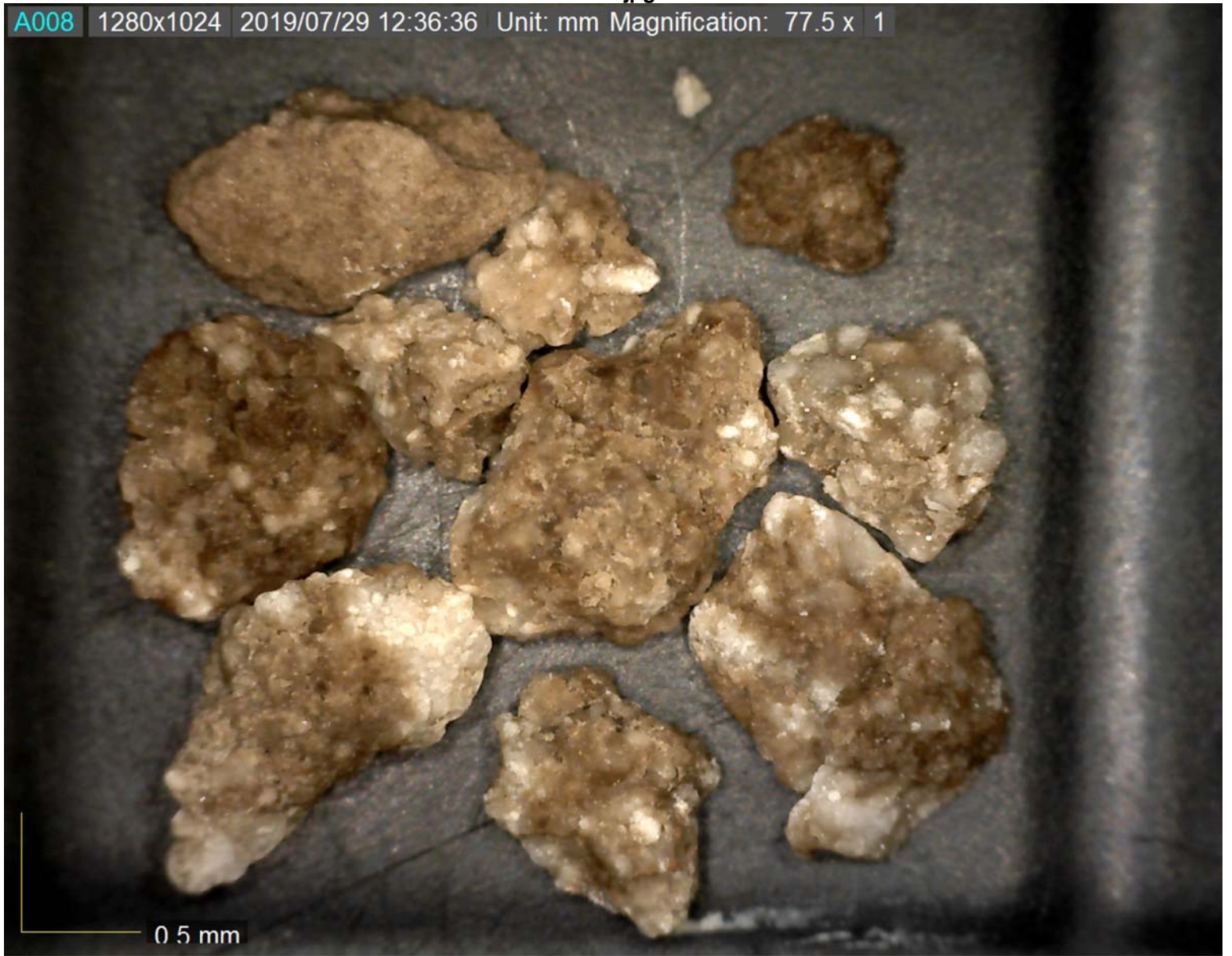
3010'





3060'





3075'



3207'



3118'





3210'

# DST #3.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**30**  
2019

DST #3 Formation: LKC. 1-K Test Interval: 3180 - 3260' Total Depth: 3260'

Time On: 17:07 07/30 Time Off: 22:29 07/30  
Time On Bottom: 17:07 07/30 Time Off Bottom: 20:22 07/30

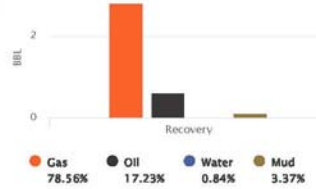
**Recovered**

Foot	PSI/G	Description of Fluid	Gas %	Oil %	Water %	Mud %
189	2.68947	G	100	0	0	0
20	0.2846	O	0	100	0	0
63	0.6028526	SLWCGCMCO	20	55	5	20

Total Recovered: 272 ft  
Total Barrels Recovered: 3.5769226

Reversed Out  
NO

**Recovery at a glance**



Initial Hydrostatic Pressure	1478	PSI
Initial Flow	10 to 25	PSI
Initial Closed in Pressure	907	PSI
Final Flow Pressure	23 to 41	PSI
Final Closed in Pressure	899	PSI
Final Hydrostatic Pressure	1474	PSI
Temperature	100	°F
Pressure Change Initial Close / Final Close	1.0	%

GIP cubic foot volume: 15.77697

# DST #3.1.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery & pressures

**DATE**  
July  
**30**  
2019

**DST #3** Formation: LKC. I-K Test Interval: 3180 - 3260' Total Depth: 3260'

Time On: 17:07 07/30 Time Off: 22:29 07/30  
Time On Bottom: 17:07 07/30 Time Off Bottom: 20:22 07/30

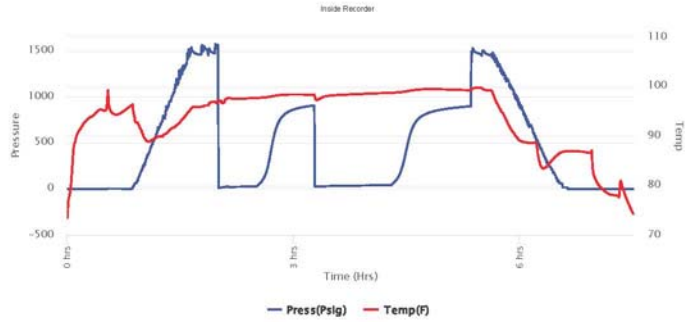
Electronic Volume Estimate: 297'

**1st Open**  
Minutes: 30  
Current Reading: 9.9" at 30 min  
Max Reading: 9.9"

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

**2nd Open**  
Minutes: 60  
Current Reading: 24.1" at 60 min  
Max Reading: 24.1"

**2nd Close**  
Minutes: 60  
Current Reading: 0" at 60 min  
Max Reading: .1"









3315'

# DST #4.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**31**  
2019

**DST #4**    **Formation: Simpson Sand**    **Test Interval: 3252 - 3370'**    **Total Depth: 3370'**  
Time On: 11:01 07/31    Time Off: 18:01 07/31  
Time On Bottom: 12:51 07/31    Time Off Bottom: 16:06 07/31

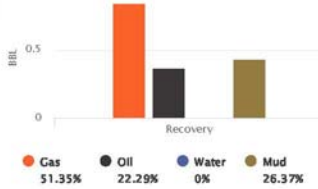
**Recovered**

Foot	REL.S	Description of Fluid	Gas %	Oil %	Water %	Mud %
53	0.75419	G	100	0	0	0
10	0.1423	O	0	100	0	0
10	0.1423	GCHOCM	20	30	0	50
63	0.6028526	SLGCHOCM	10	30	0	60

Total Recovered: 136 ft  
Total Barrels Recovered: 1.6416426

Reversed Out  
NO

**Recovery at a glance**



Initial Hydrostatic Pressure	1522	PSI
Initial Flow	11 to 29	PSI
Initial Closed in Pressure	1022	PSI
Final Flow Pressure	31 to 41	PSI
Final Closed in Pressure	1022	PSI
Final Hydrostatic Pressure	1521	PSI
Temperature	100	°F
Pressure Change Initial Close / Final Close	0.0	%

G.P cubic foot volume: 4.73266

# DST #4.1.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery & pressures

**DATE**  
July  
**31**  
2019

**DST #4**    **Formation: Simpson Sand**    **Test Interval: 3252 - 3370'**    **Total Depth: 3370'**  
Time On: 11:01 07/31    Time Off: 18:01 07/31  
Time On Bottom: 12:51 07/31    Time Off Bottom: 16:06 07/31

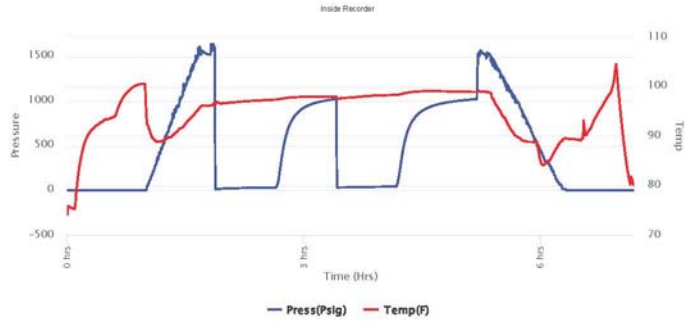
Electronic Volume Estimate:  
104'

**1st Open**  
Minutes: 45  
Current Reading: 4.5" at 45 min  
Max Reading: 4.5"

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

**2nd Open**  
Minutes: 45  
Current Reading: 5.4" at 45 min  
Max Reading: 5.4"

**2nd Close**  
Minutes: 60  
Current Reading: 0" at 60 min  
Max Reading: 0"



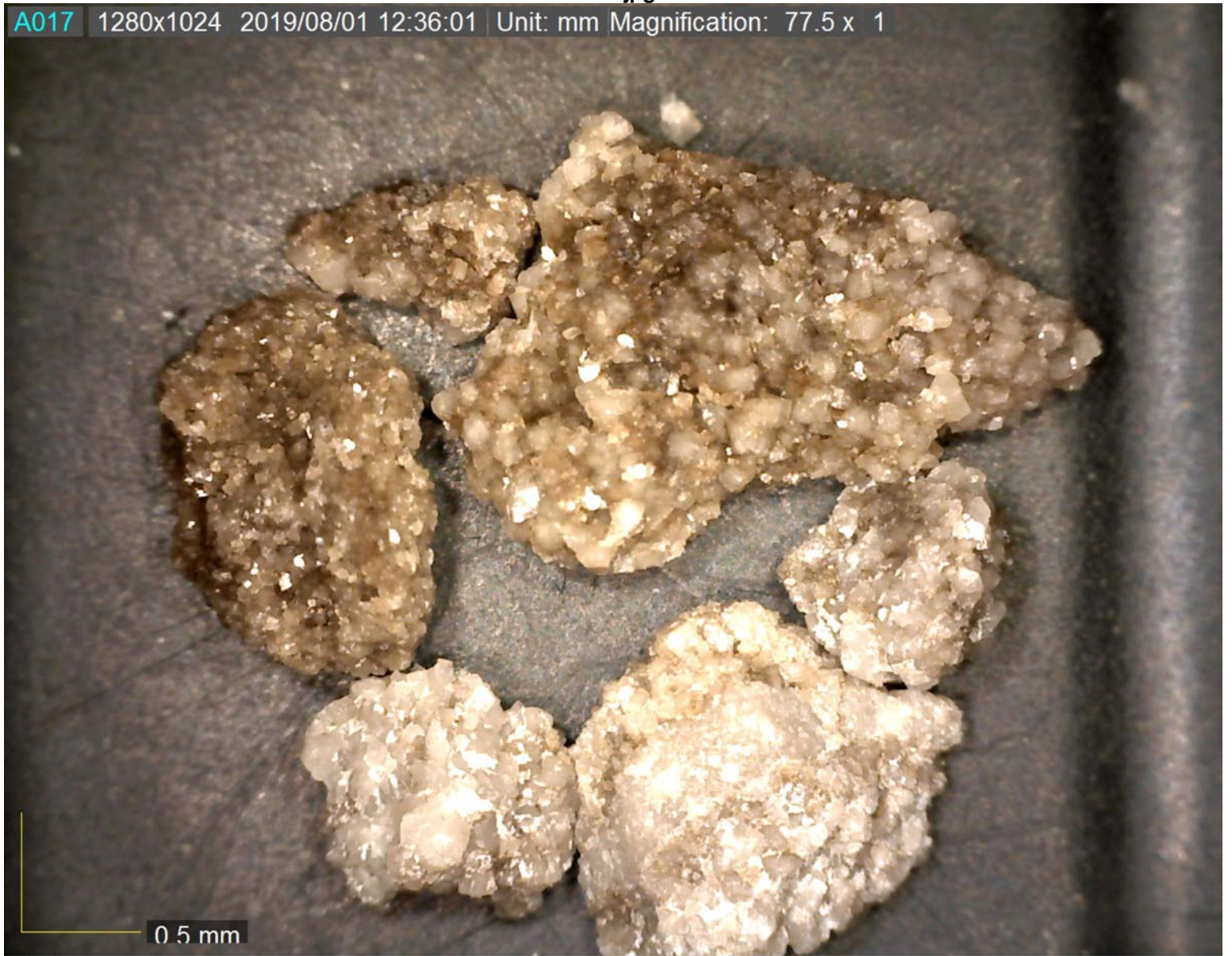


3370'



0.5 mm

3373'



3385'

# DST #5.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling  
Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery &  
pressures

**DATE**  
July  
**31**  
2019

DST #5 Formation: Arbuckle Test Interval: 3371 - 3380' Total Depth: 3380'

Time On: 23:32 07/31 Time Off: 06:29 08/01  
Time On Bottom: 01:27 08/01 Time Off Bottom: 04:42 08/01

**Recovered**

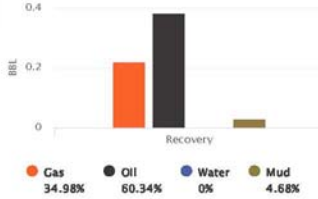
Foot	RELS	Description of Fluid	Gas %	Oil %	Water %	Mud %
15	0.21345	G	100	0	0	0
20	0.2702626	O	0	100	0	0
30	0.1476	SLGCMCO	5	75	0	20

Total Recovered: 65 ft  
Total Barrels Recovered: 0.6313126

Reversed Out  
NO

Initial Hydrostatic Pressure	1597	PSI
Initial Flow	12 to 24	PSI
Initial Closed in Pressure	1078	PSI
Final Flow Pressure	23 to 33	PSI
Final Closed in Pressure	1039	PSI
Final Hydrostatic Pressure	1587	PSI
Temperature	99	°F
Pressure Change Initial Close / Final Close	3.6	%

**Recovery at a glance**



GIP cubic foot volume: 1.23985

# DST #5.1.jpg



Company: IA Operating, Inc.  
Lease: Carrie #2-5

SEC: 2 TWN: 12S RNG: 16W  
County: ELLIS  
State: Kansas  
Drilling Contractor: Discovery Drilling Company, Inc. - Rig 2  
Elevation: 1814 GL  
Field Name: Blue Hill NW  
Pool: Infield  
Job Number: 360  
API #: 15-051-26958-00-00

**Operation:**  
Uploading recovery & pressures

**DATE**  
July  
**31**  
2019

DST #5 Formation: Arbuckle Test Interval: 3371 - 3380' Total Depth: 3380'

Time On: 23:32 07/31 Time Off: 06:29 08/01  
Time On Bottom: 01:27 08/01 Time Off Bottom: 04:42 08/01

Electronic Volume Estimate: 38'

**1st Open**  
Minutes: 30  
Current Reading: 1.1" at 30 min  
Max Reading: 1.1"

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

**2nd Open**  
Minutes: 60  
Current Reading: .5" at 60 min  
Max Reading: .9"

**2nd Close**  
Minutes: 60  
Current Reading: 0" at 60 min  
Max Reading: 0"

