

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	Grand Mesa Operating Company
Well Name	OBRIEN 1-9
Doc ID	1439045

All Electric Logs Run

CPDCN MICRO LOG
AI SHALLOW FOCUSED ELECT LOG
COMP SONIC W/INTG TRANSIT TIME
COMPOSITE LOG
CALIPER LOG
MICRO LOG

Form	ACO1 - Well Completion
Operator	Grand Mesa Operating Company
Well Name	OBRIEN 1-9
Doc ID	1439045

Tops

Name	Top	Datum
Stone Corral	2058	+ 603
Bs Stone Corral	2086	+ 575
Heebner	3741	-1080
Lansing	3774	-1113
Bs/KC	4118	-1457
Ft Scott	4278	-1617
Mississippian	4397	-1736
LTD	4520	0



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

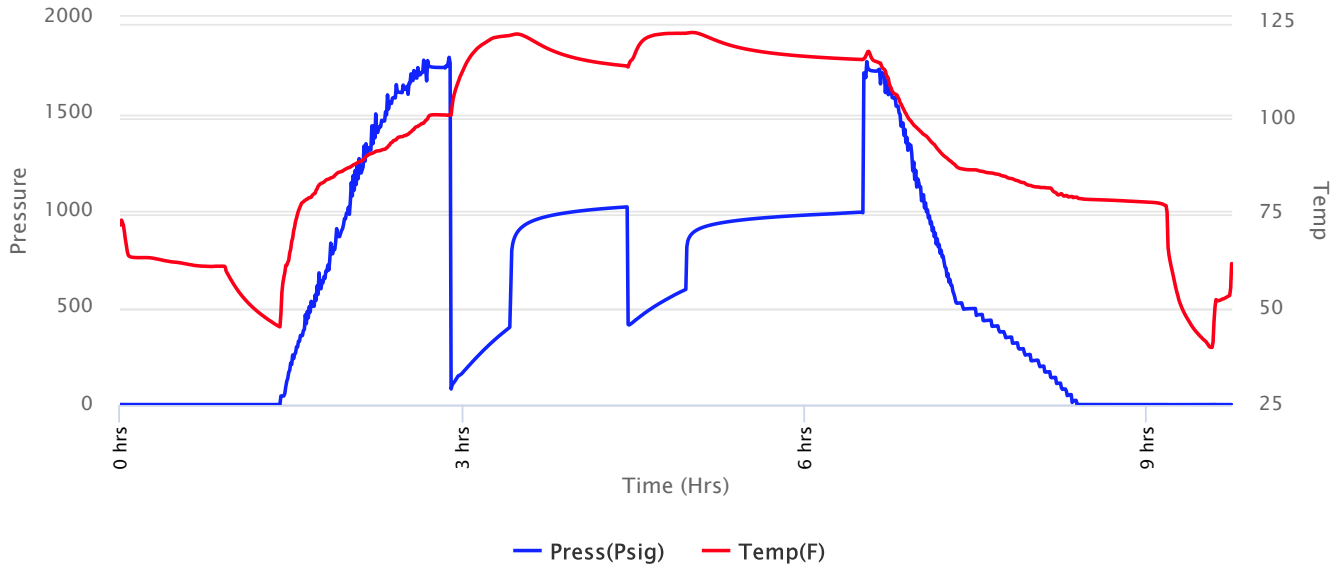
DATE
December
08
2018

DST #1 Formation: Lansing "A" Test Interval: 3736 - 3792' Total Depth: 3792'
Time On: 08:17 12/08 Time Off: 17:47 12/08
Time On Bottom: 11:06 12/08 Time Off Bottom: 14:36 12/08

Electronic Volume Estimate:
2873'

<u>1st Open</u>	1st Close	<u>2nd Open</u>	2nd Close
Minutes: 30	Minutes: 60	Minutes: 30	Minutes: 90
Current Reading: 199.0" at 30 min	Current Reading: 49.2" at 60 min	Current Reading: 133.3" at 30 min	Current Reading: 33.7" at 90 min
Max Reading: 199.0"	Max Reading: 49.2"	Max Reading: 133.3"	Max Reading: 33.7"

Inside Recorder





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

DATE
December
08
2018

DST #1 **Formation: Lansing "A"** **Test Interval: 3736 - 3792'** **Total Depth: 3792'**
Time On: 08:17 12/08 Time Off: 17:47 12/08
Time On Bottom: 11:06 12/08 Time Off Bottom: 14:36 12/08

Recovered

Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
1440	20.4912	G	100	0	0	0
1395	19.85085	SLMCSLGCO	8	88	0	4
120	0.6173059	SLGCHMCO	5	55	0	40

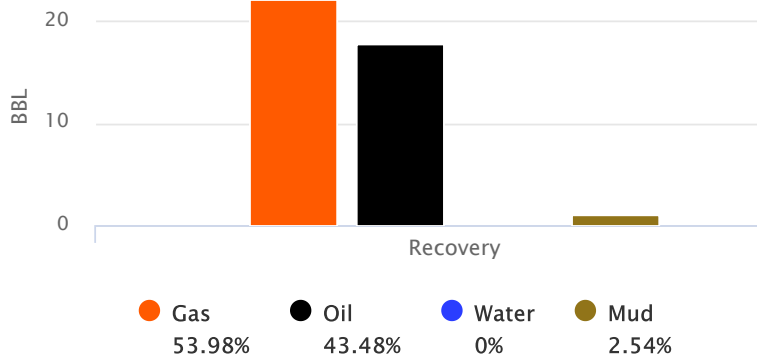
Total Recovered: 2955 ft

Total Barrels Recovered: 40.9593559

Reversed Out
NO

Initial Hydrostatic Pressure	1745	PSI
Initial Flow	81 to 399	PSI
Initial Closed in Pressure	1020	PSI
Final Flow Pressure	412 to 595	PSI
Final Closed in Pressure	993	PSI
Final Hydrostatic Pressure	1734	PSI
Temperature	123	°F
Pressure Change Initial Close / Final Close	2.6	%

Recovery at a glance





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
08
2018

DST #1	Formation: Lansing "A"	Test Interval: 3736 - 3792'	Total Depth: 3792'
	Time On: 08:17 12/08	Time Off: 17:47 12/08	
	Time On Bottom: 11:06 12/08	Time Off Bottom: 14:36 12/08	

BUCKET MEASUREMENT:

1st Open: 3" blow building to BOB 1 1/2 min.

1st Close: BOB BB

2nd Open: 1" building to BOB 3 min.

2nd Close: BOB BB

REMARKS:

The blow-back on initial shut-in hit BOB 9 min after bled off (bled off 15 min.).

The blow back on final shut-in took 11 1/2 min. to reach BOB after bled off (20 min. bleed off)

Tool Sample: 0% Gas 99% Oil 0% Water 1% Mud

Gravity: 24.9 @ 60 °F



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
08
2018

DST #1 Formation: Lansing Test Interval: 3736 - Total Depth: 3792'
"A" **3792'**
Time On: 08:17 12/08 Time Off: 17:47 12/08
Time On Bottom: 11:06 12/08 Time Off Bottom: 14:36 12/08

Down Hole Makeup

Heads Up: 13.02 FT	Packer 1: 3731.2 FT
Drill Pipe: 3599.54 FT <i>ID-3 1/2</i>	Packer 2: 3736.2 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3720.62 FT
Collars: 117.11 FT <i>ID-2 1/4</i>	Bottom Recorder: 3775 FT
Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 55.8	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 3 FT <i>4 1/2-FH</i>	
Change Over: 1 FT	
Drill Pipe: (in anchor): 31.80 FT <i>ID-3 1/2</i>	
Change Over: 1 FT	
Perforations: (below): 18 FT <i>4 1/2-FH</i>	



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

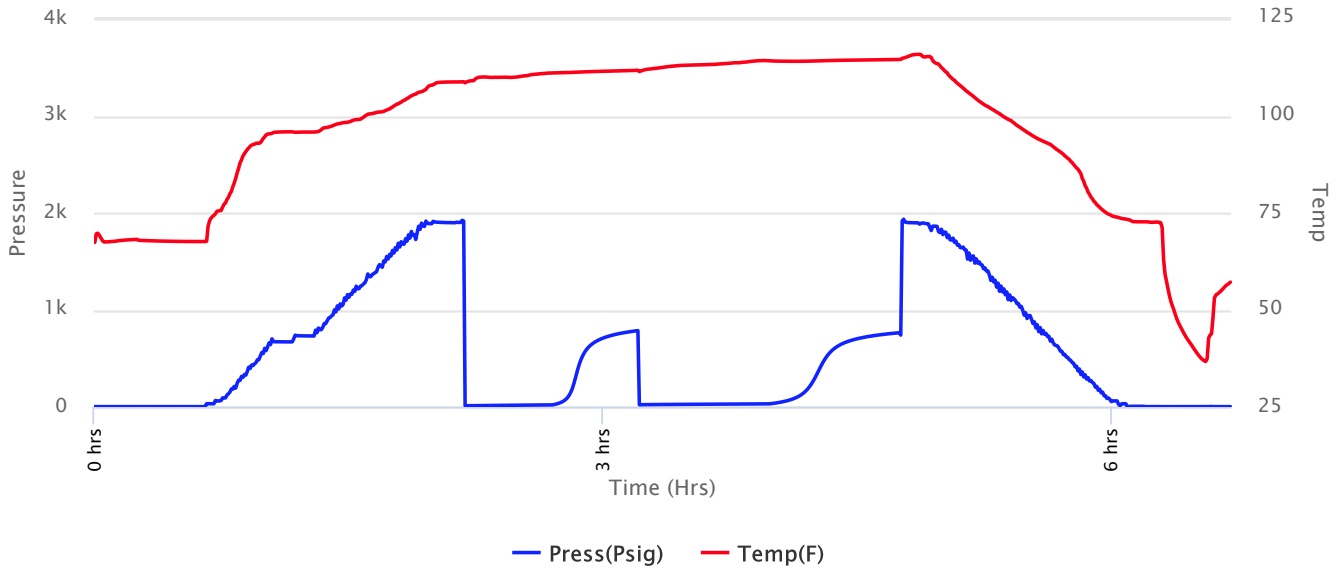
DATE
December
09
2018

DST #2 **Formation: Westerville "I"** **Test Interval: 3973 - 3998'** **Total Depth: 3998'**
Time On: 16:25 12/09 Time Off: 22:57 12/09
Time On Bottom: 18:32 12/09 Time Off Bottom: 21:02 12/09

Electronic Volume Estimate:
18'

<u>1st Open</u>	<u>1st Close</u>	<u>2nd Open</u>	<u>2nd Close</u>
Minutes: 30	Minutes: 30	Minutes: 45	Minutes: 45
Current Reading: .6" at 30 min	Current Reading: 0" at 30 min	Current Reading: 0" at 45 min	Current Reading: 0" at 45 min
Max Reading: .6"	Max Reading: 0"	Max Reading: 0"	Max Reading: 0"

Inside Recorder





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

DATE
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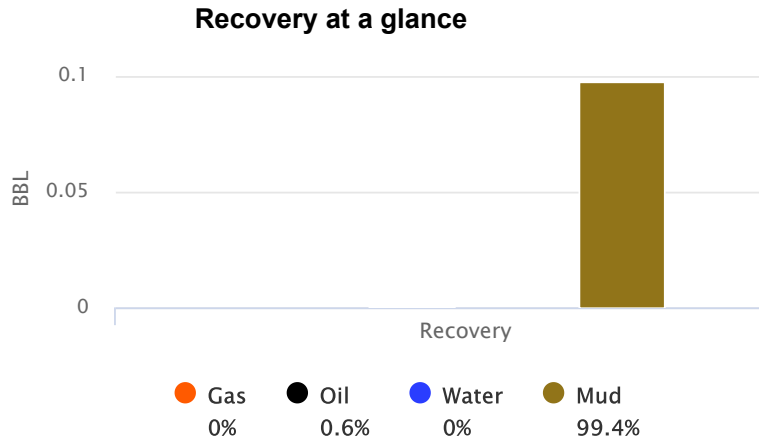
DST #2 **Formation: Westerville "I"** **Test Interval: 3973 - 3998'** **Total Depth: 3998'**
Time On: 16:25 12/09 Time Off: 22:57 12/09
Time On Bottom: 18:32 12/09 Time Off Bottom: 21:02 12/09

Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
20	0.0984	M (trace O)	0	.6	0	99.4

Total Recovered: 20 ft
Total Barrels Recovered: 0.0984

Reversed Out
NO

Initial Hydrostatic Pressure	1901	PSI
Initial Flow	10 to 19	PSI
Initial Closed in Pressure	785	PSI
Final Flow Pressure	21 to 29	PSI
Final Closed in Pressure	763	PSI
Final Hydrostatic Pressure	1900	PSI
Temperature	115	°F
Pressure Change Initial Close / Final Close	2.8	%





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
09
2018

DST #2	Formation: Westerville "I"	Test Interval: 3973 - 3998'	Total Depth: 3998'
	Time On: 16:25 12/09	Time Off: 22:57 12/09	
	Time On Bottom: 18:32 12/09	Time Off Bottom: 21:02 12/09	

BUCKET MEASUREMENT:

1st Open: Surface blow building to 1/2"
1st Close: No BB
2nd Open: Weak surface blow
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 2% Oil 0% Water 98% Mud



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
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09
2018

DST #2 **Formation:** **Test Interval: 3973 -** **Total Depth: 3998'**
Westerville "I" **3998'**
Time On: 16:25 12/09 Time Off: 22:57 12/09
Time On Bottom: 18:32 12/09 Time Off Bottom: 21:02 12/09

Down Hole Makeup

Heads Up: 28.61 FT	Packer 1: 3968 FT
Drill Pipe: 3851.93 FT <i>ID-3 1/2</i>	Packer 2: 3973 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3957.42 FT
Collars: 117.11 FT <i>ID-2 1/4</i>	Bottom Recorder: 3965 FT
Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 25	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 0 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): 24 FT <i>4 1/2-FH</i>	



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

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DST #2 **Formation:** **Test Interval: 3973 -** **Total Depth: 3998'**
Westerville "I" **3998'**
Time On: 16:25 12/09 Time Off: 22:57 12/09
Time On Bottom: 18:32 12/09 Time Off Bottom: 21:02 12/09

Mud Properties

Mud Type: Chemical **Weight:** 9.2 **Viscosity:** 50 **Filtrate:** 9.2 **Chlorides:** 3,200 ppm



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

DATE
December
10
2018

DST #3 Formation: Dennis Test Interval: 4000 - 4036' Total Depth: 4036'
Time On: 06:51 12/10 Time Off: 12:52 12/10
Time On Bottom: 08:48 12/10 Time Off Bottom: 11:18 12/10

Electronic Volume Estimate:
49'

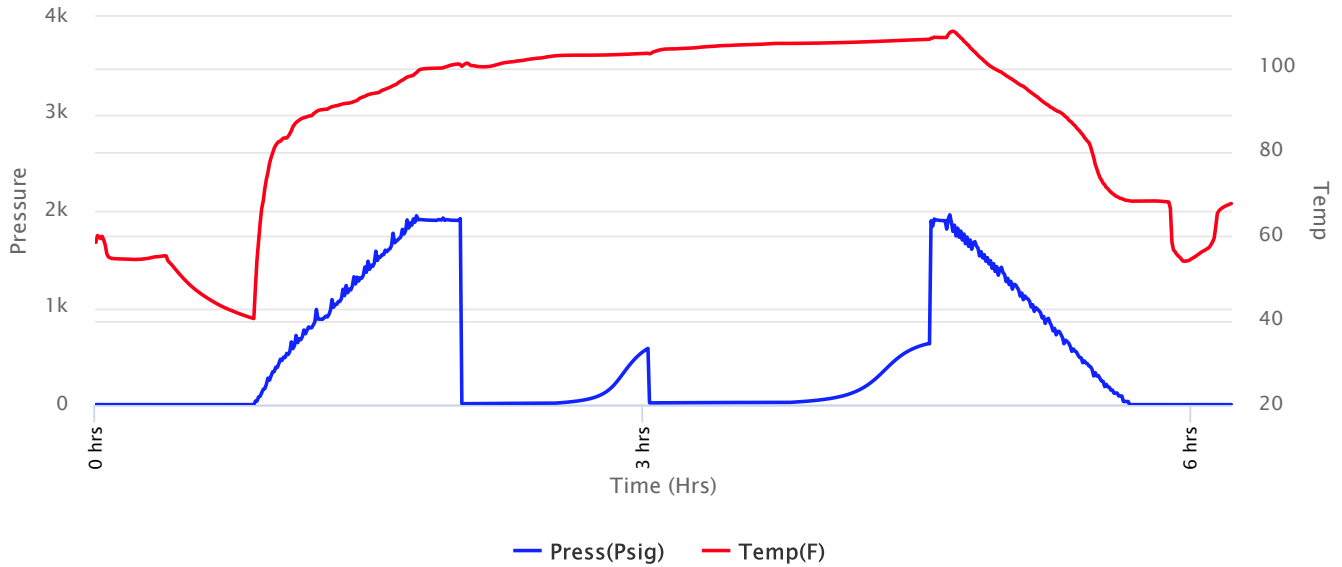
1st Open
Minutes: 30
Current Reading:
1.6" at 30 min
Max Reading: 1.6"

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

2nd Open
Minutes: 45
Current Reading:
0" at 45 min
Max Reading: 0"

2nd Close
Minutes: 45
Current Reading:
0" at 45 min
Max Reading: 0"

Inside Recorder





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

DATE
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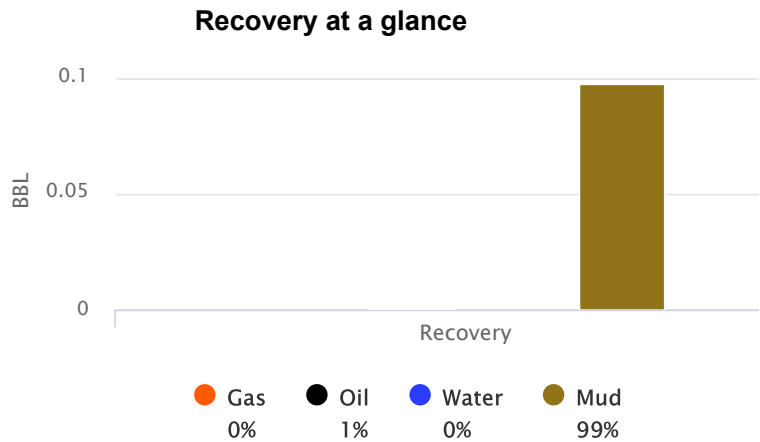
DST #3 **Formation: Dennis** **Test Interval: 4000 - 4036'** **Total Depth: 4036'**
Time On: 06:51 12/10 Time Off: 12:52 12/10
Time On Bottom: 08:48 12/10 Time Off Bottom: 11:18 12/10

Recovered		Description of Fluid	Gas %	Oil %	Water %	Mud %
Foot	BBLs					
20	0.0984	SLOCM	0	1	0	99

Total Recovered: 20 ft
Total Barrels Recovered: 0.0984

**Reversed Out
NO**

Initial Hydrostatic Pressure	1902	PSI
Initial Flow	10 to 15	PSI
Initial Closed in Pressure	580	PSI
Final Flow Pressure	19 to 24	PSI
Final Closed in Pressure	628	PSI
Final Hydrostatic Pressure	1902	PSI
Temperature	107	°F
Pressure Change Initial Close / Final Close	0.0	%





**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
10
2018

DST #3 Formation: Dennis Test Interval: 4000 - Total Depth: 4036'
4036'
Time On: 06:51 12/10 Time Off: 12:52 12/10
Time On Bottom: 08:48 12/10 Time Off Bottom: 11:18 12/10

BUCKET MEASUREMENT:

1st Open: 1/4" blow building to 1 1/4"
1st Close: No BB
2nd Open: Surface blow building to 1/4"
2nd Close: No BB

REMARKS:

Tool Sample: 0% Gas 3% Oil 0% Water 97% Mud



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
10
2018

DST #3 Formation: Dennis Test Interval: 4000 - 4036' Total Depth: 4036'
Time On: 06:51 12/10 Time Off: 12:52 12/10
Time On Bottom: 08:48 12/10 Time Off Bottom: 11:18 12/10

Down Hole Makeup

Heads Up: 33.7 FT	Packer 1: 3995 FT
Drill Pipe: 3884.02 FT <i>ID-3 1/2</i>	Packer 2: 4000 FT
Weight Pipe: 0 FT <i>ID-2 7/8</i>	Top Recorder: 3984.42 FT
Collars: 117.11 FT <i>ID-2 1/4</i>	Bottom Recorder: 4002 FT
Test Tool: 33.57 FT <i>ID-3 1/2-FH</i> <i>Jars</i> <i>Safety Joint</i>	Well Bore Size: 7 7/8
Total Anchor: 36	Surface Choke: 1"
Anchor Makeup	Bottom Choke: 5/8"
Packer Sub: 1 FT	
Perforations: (top): 0 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): 35 FT <i>4 1/2-FH</i>	



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
10
2018

DST #3 Formation: Dennis Test Interval: 4000 - Total Depth: 4036'
4036'
Time On: 06:51 12/10 Time Off: 12:52 12/10
Time On Bottom: 08:48 12/10 Time Off Bottom: 11:18 12/10

Mud Properties

Mud Type: Chemical **Weight:** 9.2 **Viscosity:** 50 **Filtrate:** 9.2 **Chlorides:** 3,200 ppm



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC - Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery & pressures

DATE
December
10
2018

DST #4 **Formation: Swipe "J"** **Test Interval: 4034 - 4065'** **Total Depth: 4065'**
Time On: 20:27 12/10 Time Off: 04:54 12/11
Time On Bottom: 22:45 12/10 Time Off Bottom: 02:15 12/11

Recovered

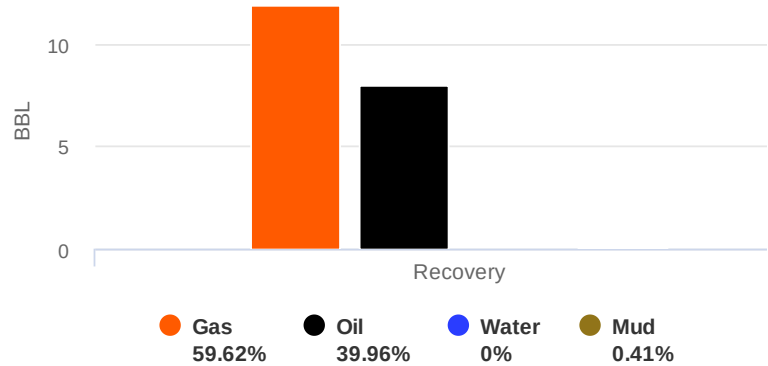
Foot	BBLs	Description of Fluid	Gas %	Oil %	Water %	Mud %
795	11.31285	G	100	0	0	0
605	8.2636559	SLGCO	6	94	0	0
80	0.3936	MCGCO	25	54	0	21

Total Recovered: 1480 ft

Total Barrels Recovered: 19.9701059

Reversed Out
NO

Recovery at a glance



Initial Hydrostatic Pressure	1921	PSI
Initial Flow	62 to 215	PSI
Initial Closed in Pressure	307	PSI
Final Flow Pressure	217 to 268	PSI
Final Closed in Pressure	308	PSI
Final Hydrostatic Pressure	1900	PSI
Temperature	122	°F
Pressure Change Initial Close / Final Close	0.0	%



**Company: Grand Mesa
Operating Company
Lease: O'Brien #1-9**

SEC: 9 TWN: 16S RNG: 29W
County: LANE
State: Kansas
Drilling Contractor: WW Drilling, LLC -
Rig 8
Elevation: 2656 GL
Field Name: Wildcat
Pool: WILDCAT
Job Number: 293

Operation:
Uploading recovery &
pressures

DATE
December
10
2018

DST #4	Formation: Swipe "J"	Test Interval: 4034 - 4065'	Total Depth: 4065'
	Time On: 20:27 12/10	Time Off: 04:54 12/11	
	Time On Bottom: 22:45 12/10	Time Off Bottom: 02:15 12/11	

BUCKET MEASUREMENT:

1st Open: 2" blow building to BOB 1 1/2 min.
1st Close: 8" BB
2nd Open: Surface blow building to BOB 11 1/2 min.
2nd Close: 1/4" BB

REMARKS:

Tool Sample: 0% Gas 97% Oil 0% Water 3% Mud

Gravity: 36.2 @ 60 °F

**GRAND
MESA****OPERATING COMPANY**

(316) 265-3000
FAX: (316) 265-3455

1700 N. WATERFRONT PARKWAY
BLDG. 600
WICHITA, KANSAS 67206-5514

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

Well Name: OBrien 1-9
Well Id: 15-101-22619
Location: 2225 ft. FSL & 2305 ft. FEL
License Number: 9855
Spud Date: 12/03/2018
Surface Coordinates: Latitud: 38.67705
Longitude:-100.53106
Bottom Hole (Same)
Coordinates:
Ground Elevation (ft): 2656
Logged Interval (ft): 3600 To: 4520
Formation: Mississippian
Type of Drilling Fluid: Chemical

Region: Kansas
Drilling Completed: 12/12/2018
K.B. Elevation (ft): 2661
Total Depth (ft): 4520

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Grand Mesa Operating Company
Address: 1700 North Waterfront Parkway
Building #600

GEOLOGIST

Name: Gareth Dinkel
Company: Grand Mesa Operating Company
Address: 1700 North Waterfront Parkway
Building #600

COMMENTS

Due to the favorable sample shows, results of DST #1 and #4, as well as, positive wireline log results, it was decided by all parties to run 5-1/2" casing to rotary total depth to further test the Obrien #1-9 through casing.

Respectively submitted,
Gareth Dinkel

Plat

Sec.9 T16S-R29W

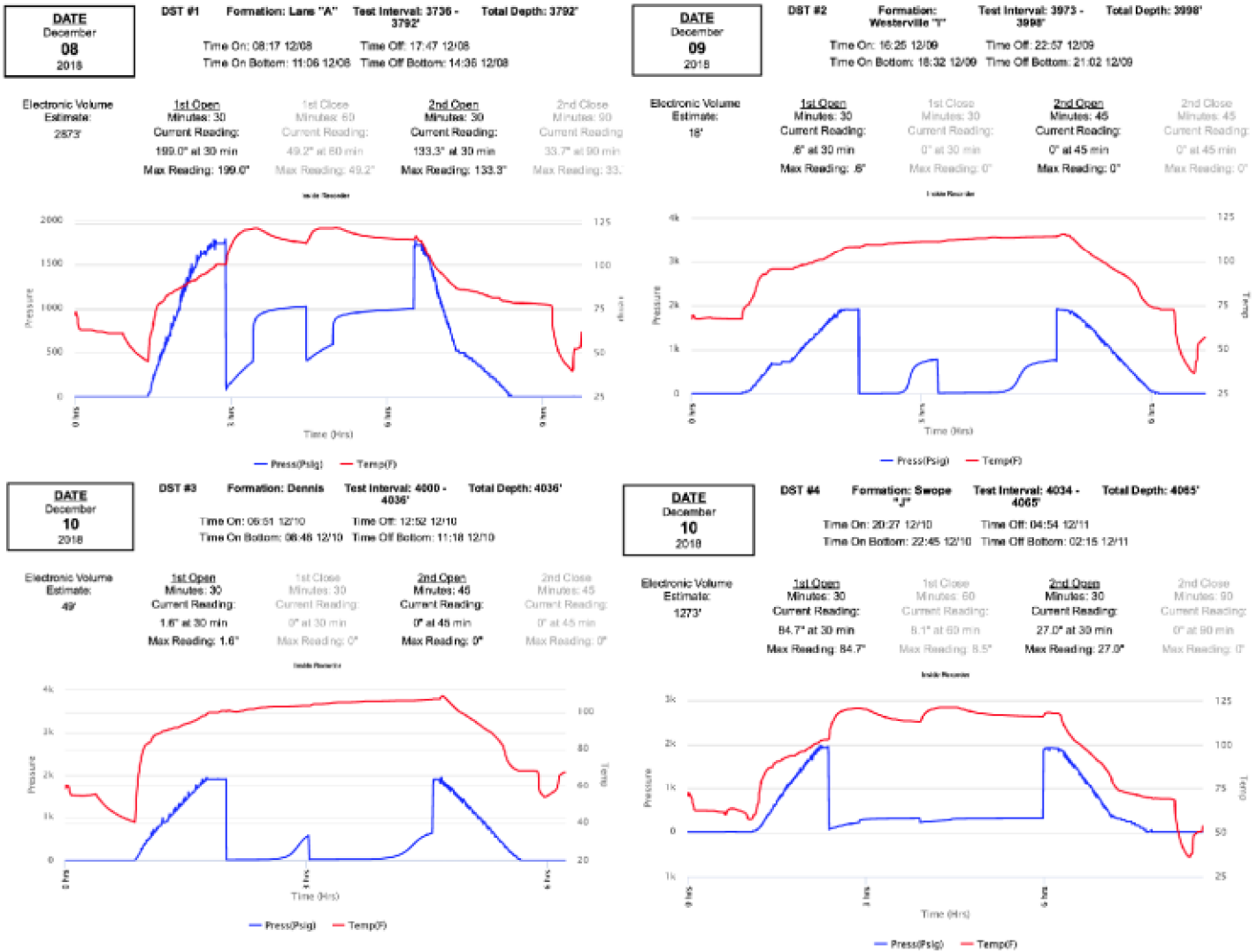


Log Top Structural Comparison

Formation Top	Grand Mesa Operating Obrien #1-9		Structural Comparison		Bern Corp Dowell #1		Gear Petroleum O'Brien #1-9	
	MD	Subsea	To Dowell #1	To Gear O'Brein	MD	Subsea	MD	Subsea
Kelley Bushing		2661				2622		2662
Stone Corral	2058	603	-2	-3	2017	605	2057	605
Base StoneCorral	2084	577	2	4	2047	575	2089	573
Topeka	3468	-807	-2	12	3427	-805	3481	-819
QueenHill	3616	-955	2	16	3579	-957	3633	-971
Heebner	3741	-1080	4	18	3706	-1084	3760	-1098
Toronto	3760	-1099	4	18	3725	-1103	3778	-1116
Lansing	3774	-1113	6	20	3742	-1120	3795	-1133
LansingC	3809	-1148	3	19	3773	-1151	3829	-1167
LansingD	3824	-1163	0	22	3785	-1163	3848	-1186
LansingE	3862	-1201	3	21	3826	-1204	3883	-1221
LansingF	3874	-1213	3	20	3838	-1216	3894	-1232
LansingG	3891	-1230	3	20	3855	-1233	3912	-1250
Muncie Creek	3940	-1279	0	19	3901	-1279	3960	-1298
LansingH	3961	-1300	0	14	3922	-1300	3977	-1315
Westerville	3993	-1332	1	13	3955	-1333	4007	-1345
Dennis	4013	-1352	-1	11	3973	-1351	4025	-1363
Stark	4039	-1378	3	16	4003	-1381	4056	-1394
Swope	4048	-1387	8	19	4018	-1396	4068	-1406
Hushpuckney	4072	-1411	1	16	4034	-1412	4088	-1426
Hertha	4092	-1431	5	18	4058	-1436	4111	-1449
Base Kansas City	4119	-1458	2	14	4082	-1460	4134	-1472
Pleasanton	4131	-1470	5	17	4097	-1475	4149	-1487
Marmaton	4148	-1487	3	16	4112	-1490	4165	-1503
Altamont	4194	-1533	5		4160	-1538		
Pawnee	4204	-1543	4	50	4169	-1547	4255	-1593
Little Osage	4265	-1604	4	14	4230	-1608	4280	-1618
Upper Fort Scott	4240	-1579	4	14	4205	-1583	4254	-1593
Fort Scott	4277	-1616	5	2	4243	-1621	4290	-1618
Excello	4289	-1628	6	15	4256	-1634	4305	-1643
CherokeeSh	4319	-1659	7	14	4288	-1666	4335	-1673
Basial Penn. Lm	4374	-1714	14	16	4350	-1728	4391	-1730

Mississippi	4397	-1736	12	4370	-1748	4404	-1742
Spergen	4475	-1814		4400	-1778		

Drill Stem Tests



ROCK TYPES

LITHOLOGY

- Anhy
- Cht
- Coal
- Congl
- Dol
- Gyp
- Lmst
- Salt
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Carb sh
- Dol
- Dtd
- Gry sh

- Sitysh
- Sdy dolo
- Silty dolo
- Shy dolo
- Shaly ls

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

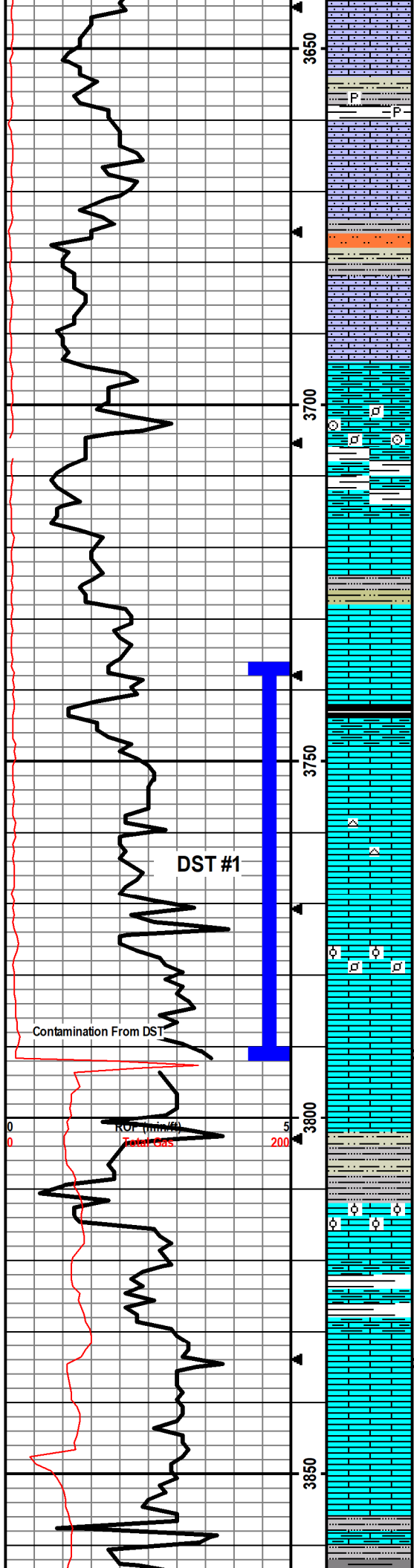
MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brefracg
- Calc
- Carb

- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- MinxI
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite

	Sandylms		Foram		Chtdk		Dol
	Shale		Fossil		Chtlt		Sand
	Siltstn		Gastro		Dol		Silty
	Shlysits		Oolite		Feldspar		

Curve Track 1		MD	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
ROP (min/ft)	Total Gas						
		3500				<p>Daily Progression: Spud: 12/3/2018 8:30 A.M. Complete:12/12/2018 12:45 P.M.</p> <p>Day1-Depth: 0ft. Activity: Spud Day2-Depth: 219ft. Activity: Waiting on cement Day3-Depth: 1406ft. Activity: Drilling Day4-Depth: 2666ft. Activity: Drilling Day5-Depth: 3365ft. Activity: Drilling Day6-Depth: 3792ft. Activity: TOOH DST#1 Day7-Depth: 3916ft. Activity: Work on pump Day8-Depth: 4036ft. Activity: TOOH DST#3 Day9-Depth: 4065ft. Activity: CTCH Day10-Depth: 4427ft. Activity: Drilling Day11-Depth: 4520ft. Activity: Lay Down Day12-Depth: 4520ft. Activity: Done</p> <p>Geologist on location 12/7/2018 10:45 A.M. at 3455ft.</p> <p>3600 to TD. Drilling samples were collected every 10ft at the flowline sample box, washed and tagged. The samples were then examined under heated white lite by microscope to record lithological properties, as well as, detect for the presence of visible hydrocarbons and odor. Ultraviolet light and lighter fluid were also used to perform stream cut tests as needed. The lagged record of these descriptions is as follows:</p> <p>Drilling rate of penetration and mud system total gas were monitored by from spud to RTD by Pason Industries.</p> <p>Limestone: grey-black, micro-crystalline, sandy, earthy, dense, few pelletal, some crinoidal. No visible porosity, No odor, No show 3610</p> <p>Limestone: cream-light brown, micro-crystalline, sandy, pelletal/crinoidal, slightly chalky in part with scattered Shale-Siltstone: red,grey: No visible porosity, No odor, No show 3620</p> <p>Flood Limestone:cream-light brown, micro-crystalline, sandy, pelletal/crinoidal, No visible porosity, No odor, No show 3630</p> <p>Limestone:grey mottled brown, micro-crystalline, earthy, sandy, few stained gilsonite, No visible porosity, No odor, No show 3640</p> <p>Limestone: AA, No visible porosity, No odor, No show 3650</p> <p>Limestone: cream, micro-crystalline, sandy with Siltstone: grey-green, waxy, dense, No visible porosity, No odor, No show 3660</p>	<p>Bit Record: #1-Smith 12-1/4" Type: Tooth In: Surface Out: 219ft.</p> <p>#2-Smith 7-7/8" Type: F271 Serial: RJ9417 In: 219 Out:RTD</p> <p>Mud-Co mud check #1 12/2/18 11:40 A.M. 0ft Weight: NA Funnel Vis: NA Filtrate API 7NA LCM: NA Chlorides : 230 ppm (MAKE UP WATER)</p> <p>Mud-Co mud check #2 12/5/18 11:30 A.M. 1721ft Weight: 8.7 lbs/gal Funnel Vis: 28sec/qt. API Filtrate API NA LCM: 0 lb./bbi Chlorides :6,000 ppm</p> <p>Mud-Co mud check #3 12/7/18 12:25P.M. 3474ft Weight: 9.6 lbs/gal Funnel Vis: 31sec/qt. API Filtrate API NA LCM: TR Chlorides :19,000 ppm</p> <p>Mud-Co mud check #4 12/7/18 11:40 A.M. 3474ft Weight: 8.6 lbs/gal Funnel Vis: 75sec/qt. API Filtrate API 7.6 ml/30min LCM: 1 lb./bbi Chlorides :1,900 ppm</p>



Limestone: cream-tan, micro-crystalline, pelletal, sandy, few stained with gilsonite, No visible porosity, No odor, No show 3670

Limestone: cream mottled brown, micro-crystalline, earth, sandy, slightly chalky with Shale-Siltstone, grey, red waxy, soft, few pyritic No visible porosity, No odor, No show 3680

Limestone: AA No visible porosity, No odor, No show 3690

Limestone: cream, micro-crystalline, fossiliferous (pelletal), sandy, some stained with gilsonite, Siltstone: Brown, soft. No visible porosity, No odor, No show 3700

Limestone: AA, No visible porosity, No odor, No show 3710

Limestone: Brown mottled Cream, micro-crystalline, earthy, fossiliferous (pelletal/crinoidal), chalky, soft, few platey very dense, No visible porosity, No odor, No show 3720

Limestone AA with increase of white globular chalk, No visible porosity, No odor, No show.3730

Limestone: cream-tan, micro-crystalline, fossiliferous, No visible porosity, No odor, No show 3740

Limestone: cream mottled brown, earthy, soft, heavy stain of gilsonite, Siltstone: maroon, grey-green, soft, No visible porosity, No odor, No show 3750

Heebner Shale Mbr. 3743ft. (-1082)

Shale: Black, carbonaceous 3760

Limestone: Tan- Light Brown, micro-crystalline, fossiliferous (pelletal), dense, No visible porosity, No odor, No show.3770

Limestone: cream, micro-crystalline, dense, with chert white, fresh, sharp, No visible porosity, No odor, No show.3780

Lansing Group 3775ft. (-1114)

Limestone: buff, micro-crystalline, fossiliferous (ool-peletal), some with poor inter-ool porosity, faint odor, fair show free oil, good show on break, good instant green streaming cut 3790

Predominantly Limestone: buff, micro-crystalline - sub-cryptocrystalline, decreasing amount of Limestone with show: AA in respective circulating samples 3792 30-45-60min

3800, 3810 Trip Trash

Limestone: cream, micro-crystalline to sub-cryptocrystalline, very dense with Shale-Siltstone: grey-green, mushy, slightly pyritic. No visible porosity, No odor, No show (trashy Sample) 3820

Limestone: cream-light tan, micro crystalline, v. dense, 3 pieces oolitic, with f-good interoolitic porosity, No odor, No show 3830

Limestone: bone, micro-crystalline, few with fine pelletal-oolitic texture, heavily recrystallized with translucent sparite, No visible porosity, No odor, No show 3834 30min

Limestone: AA, with many pieces, slightly chalky and brittle, No visible porosity, No odor, No show

Limestone: bone, micro-crystalline, very dense, abundant recrystallized inter-crystalline sparite, No visible porosity, No odor, No show.3850

Limestone: AA, with few scattered Siltstones: grey-green, mushy, waxy, few pyritic, No visible porosity, No odor, No show 3860

Shale: grey-blue, brown, soft with Limestone: Light Brown, microcrystalline with recrystallized intercrystalline sparite. No visible porosity, No odor, No show 3870

Down 15min for mud pump repair

Strap: 3801.22'
Board: 3802.66'
Diff: -1.44'

Note:
While tripping for DST#1 a washed joint was discovered and replaced prior to DST

DST #1
Stanton "A"
3736ft.-3712ft.
30-60-30-90

1st Open:
BOB 1.5min
1st Close:
BOB Blow Back
2nd Open:
BOB 3min
2nd Close:
BOB Blow Back

Rec:
1500ft. GIP
1515ft. SLIMCOG

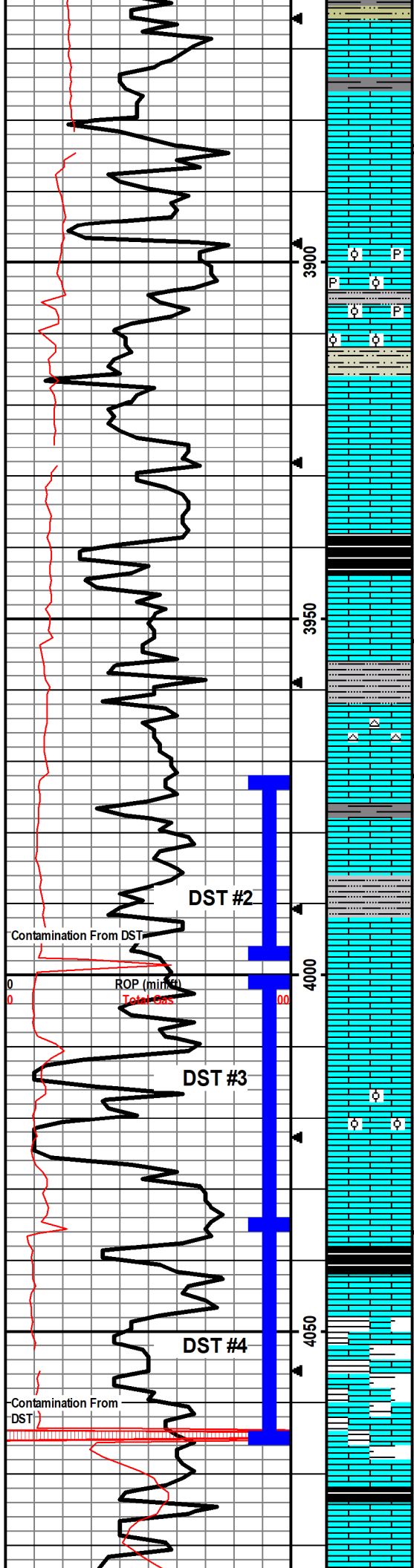
IHP: 1745 PSI
IFP: 81-399 PSI
ISIP: 1020 PSI
FFP: 412-595 PSI
FSIP: 993 PSI
FHP: 1734 PSI
Temp: 123 Deg

CFS 3792
30-45-60min

Mud-Co mud check #5
12/8/18 12:45 A.M. 3792ft.
Weight: 9.0 lbs/gal
Funnel Vis: 60sec/qt. API
Filtrate API 5.6 ml/30min
LCM: 1 lb./bbl
Chlorides :1,800 ppm

Down 20min for mud pump repair 3810

CFS 3834
30-45min



show 3880
 Flood Shale, AA, few black with Limestone Grey-Green, micro crystalline, chalky in part dense, No visible porosity, No odor, No show 3880

Shale: gret-green,waxy with Limestone: cream,micro-crystalline, fine fossiliferous text, with poor fine intercrystalline porosity No odor, No show 3884 30 min

Limestone: AA, No visible porosity, No odor, No show 3884 45min

Limestone: cream, microcrystalline, very dense, No visible porosity, No odor, No show 3900

Limestone: grey, micocrystalline, with poor ool-castic to vuggy porosity, some- filled with pyrite, No Show No odor 3910

Limestone, cream, micro-crystalline, few fossiliferous (pelletal), with poor ool-castic porosity, with Siltstone: grey, mushy, waxy No Show, No oder 3920

Limestone:cream, micro-crystalline, dense, chalky in part with Shale-Siltstone: red, grey, green, few mottled, No visible porosity, No odor, No show 3930

Limestone: cream, micro-crystalline, dense, chalky in part, No visible porosity, No odor, No show 3940

Muncie Creek Shale 3940ft. (-1279)

Flood of Shale: black, fissile, slightly carbonaceous, slightly pyritic, No visible porosity, No odor, No show 3950

Limestone: light brown, micro-crystalline, fossiliferous (crinoid/pelletal/fragments), recrystallized intercrystalline sparite, very dense. No visible porosity, No odor, No show 3953 30min-45min

Trash 3960

Limestone: cream, micro-crystalline, with chert: white, opaque, fresh, sharp. Shale: grey, mushy, silty, No visible porosity, No odor, No show 3970

Limestone: cream, micro-crystalline, with intercrystalline sparite, very dense No visible porosity, No odor, No show 3972 30min

Limestone: AAw/ few cream, micro-crystalline, fossiliferous, dense, No visible porosity, No odor, No show 3972 45min

3980 trash

Limestone: Light brown, micro-crystalline to sub-crypto crystalline, very dense, with poor inter-crystalline porosity possibly along frac?, weak show free oil, good show on break, strong odor, instant milky green cut 3990

Down 1hr for mud pump repair 3915

CFS 3884
30-45min

Mud-Co mud check #6
12/9/18 11:15 A.M. 3972ft.
Weight 9.2 lbs/gal
Funnel Vis: 50sec/qt. API
Filtrate API 9.2 ml/30min
LCM: 1 lb./bbl
Chlorides :3,200 ppm

CFS 3953
30-45min

CFS 3972
30-45min

CFS 3998
30-45min

Limestone: AA, decrease in show, good odor 4000

Limestone: cream, micro-crystalline, slightly fossiliferous with poor inter-foss - vuggy porosity, slight show free oil, good show on break, fair odor, 4000 30min

4010 trash

4020: cream, micro-crystalline, slightly fossiliferous, with poor inter-fossiliferous porosity, dense few with slight show few oil, fair show on break

Limestone: brown, crypto-crystalline, fossiliferous, dense with fair to good oolcastic to vugular porosity, good show free oil, good show on break, good odor, 4030

Limestone: cream, crypto-crystalline, fossiliferous, very dense, fair to good ool castic porosity, fair show free oil, good show on break, strong odor. 4030 30min

Limestone: cream, micro-crystalline, slightly fossiliferous, dense, No visible porosity, No odor, No show 4030 45min

CFS 4036
30-45min

Mud-Co mud check #7
12/10/18 12:35 A.M. 4036ft.
Weight 9.1 lbs/gal
Funnel Vis: 46sec/qt. API
Filtrate API 7.2 ml/30min
LCM: 1 lb./bbl
Chlorides :3,200 ppm

CFS 4065
30-45min

Stark Shale 4038ft. (-1377)

Shale: Black, carb, dense, slightly pyritic, No visible porosity, No odor, No show 4050

Limestone: brown, crypto-crystalline, very dense, slightly chalky in part, few with poor intercrystalline- vuggy porosity along fractures?, poor show free oil, fair show on break, strong odor 4060

Flood Chalk: white, globular, with Limestone: cream, micro-crystalline, slightly fossiliferous (pelletal), soft, fair show free oil, good show on break, very strong odor, 4065 30min

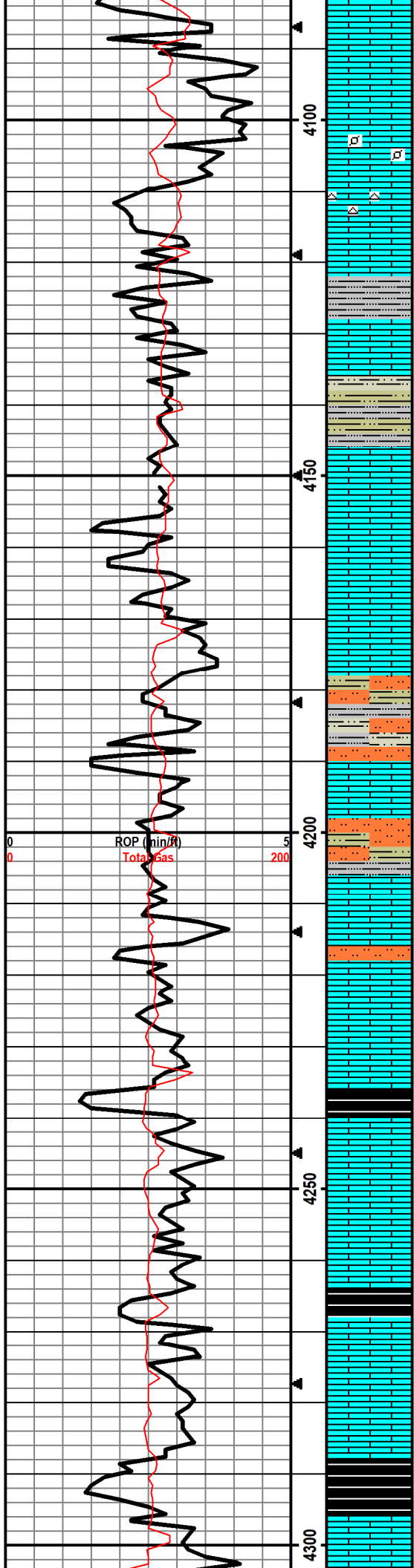
Limestone: brown, crypto-crystalline, very dense, chalky, very strong odor 4065 45

Limestone: Cream, micro-crystalline, dense, slightly chalky, No visible porosity, No odor, No show 4080

Hushpuckney Shale 4072ft. (-1411)

Shale: black, mushy with limestone cream to light brown, crypto-crystalline, very dense, with recrystallized coarse inter-crystalline sparite with poor inter-crystalline porosity, slight show free oil, slight show on break, fair odor. 4090

Limestone: cream, light brown, crypto-crystalline, very dense, few slightly fossiliferous with



Limestone: cream-light brown, crypto-crystalline, very dense, few slightly fossiliferous with heavy coarse intercrystalline sparite, slight show free oil, slight show on break, good odor, 4090 30-45

Limestone: AA, few oolcastic, slight show free oil, slight show on break, good odor, with Limestone: cream micro-crystalline, with fair to good pinpoint porosity No show no odor 4100

Limestone: cream, crypto-crystalline, very dense, No visible porosity, No odor, No show 4110

Limestone: cream, crypto-crystalline, slight fossiliferous porosity (pelletal) few oolcastic with recrystallized fine grained intercrystalline sparite, poor intercrystalline porosity, slight show free oil, good show on break 4120

Limestone: cream, micro-crystalline, dense, fossiliferous (crinoidal) earthy with chert and black inclusions, No visible porosity, No odor, No show 4120 30min

Limestone AA, with shale black, mushy slightly carbonaceous 4120 45min

Limestone: cream, micro-crystalline, dense, No visible porosity, No odor, No show 4130

Limestone: brown, crypto-crystalline, very dense, with poor intercrystalline-pinpoint porosity, slight show free oil, fair show on break, good odor, 4140

Flood Siltstone:green, brown, grey, mushy, chalky,No visible porosity, No odor, No show 4150

Marmaton Group 4148ft. (-1487)

Limestone: cream, micro-crystalline, fossiliferous, (pelletal to oolitic), with good interfossiliferous to vuggy porosity, good show dark black oil, good show on break, fair odor 4160

Limestone: AA, decrease in porosity and show, most micro-crystalline, dense No visible porosity, No odor, No show 4170

Limestone: cream, micro-crystalline, dense, no visible porosity, No odor, No show 4180

Flood of Siltstone-Shale: red, green, maroon, mottled, mushy, No visible porosity, No odor, No show, 4190

Limestone: cream, micro-crystalline, dense, No visible porosity, No odor, No show 4200

Limestone: cream, micro-crystalline, No visible porosity, No odor, No show 4210

Flood of siltstone: red, green, mushy, few Limestone: AA, No visible porosity, No odor, No show 4220

Limestone: cream, micro-crystalline, slightly fossiliferous (pelletal), slightly chalky, poor interfossiliferous porosity, few with very slight show free oil 4230

Limestone: cream, crypto-crystalline, very dense with sparite inclusions, No visible porosity, No odor, No show 4240

Anna Shale Mbr. 4236ft. (-1575)

Shale: black, dense, slightly carb, Limestone: cream, crypto-crystalline, dense, No visible porosity, No odor, No show 4250

Limestone: cream, crypto-crystalline, dense, No visible porosity, No odor, No show 4260

Limestone: cream, crypto-crystalline, dense, fossiliferous, some with fair interfossiliferous to oolcastic porosity, No visible porosity, No odor, No show 4270

Little Osage Shale Mbr. 4264ft. (-1603)

Shale: Black, dense, carbonaceous, No visible porosity, No odor, No show 4280

Limestone: brown, crypto-crystalline, very dense, chalky in part, No visible porosity, No odor, No show 4290

Limestone: cream, crypto-crystalline, very dense, No visible porosity, No odor, No show 4300

Excello Shale Mbr. 4288ft. (-1627)

Shale: black, dense, carbonaceous No visible porosity, No odor, No show 4310

CFS 4089
30-45min

CFS 4119
30-45min

Mud-Co mud check #8
12/11/18 12:35 A.M. 4119ft.
Weight 9.1 lbs/gal
Funnel Vis: 53sec/qt. API
Filtrate API 6.8 ml/30min
LCM: 1 lb./bbl
Chlorides :3,300 ppm

DST #2
Westerville "I"
3973ft.-3998ft.
30-30-45-45

1st Open:
Surface to 1/2"
1st Close: Dead
2nd Open: Surface
2nd Close: Dead

Rec:
20ft Mud Trace Oil

IHP: 1901 PSI
IFP: 10-19 PSI
ISIP: 785 PSI
FFP: 21-29 PSI
FSIP: 763 PSI
FHP: 1900 PSI
Temp: 115 Deg

DST #3
Dennis "I"
4000ft.-4036ft.
30-30-45-45

1st Open:
1/4-1-1/4"
1st Close: Dead
2nd Open:
Surface-1/4"
2nd Close:
Dead

Rec:
20ft SLOCM

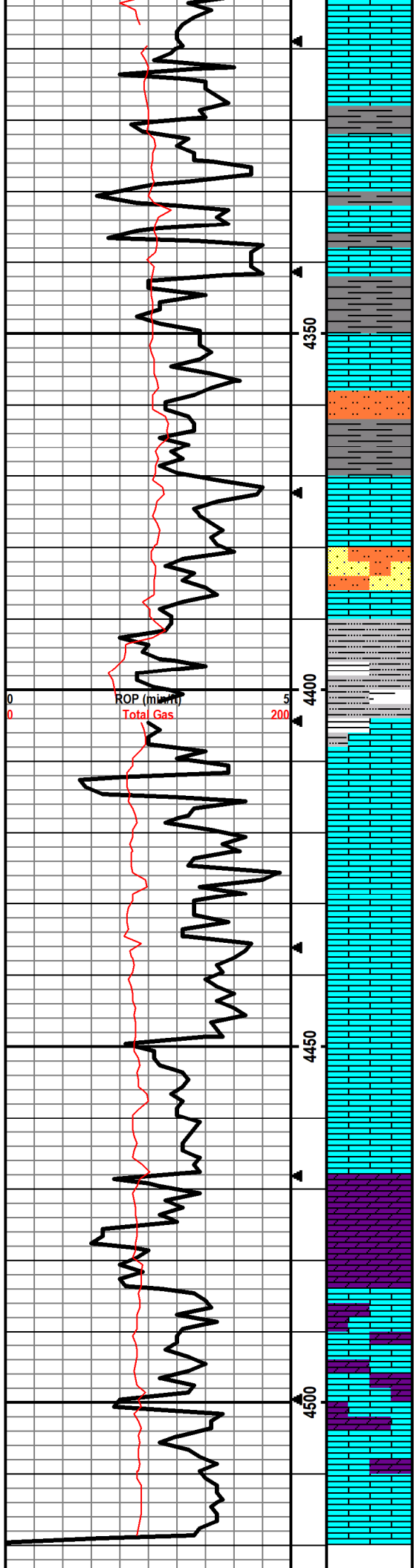
IHP: 1902 PSI
IFP: 10-15 PSI
ISIP: 580 PSI
FFP: 19-24 PSI
FSIP: 628 PSI
FHP: 1902 PSI
Temp: 107 Deg

DST #4
Swope "J"
4034ft.-4065ft.
30-60-30-90

1st Open:
BOB 1.5min
1st Close:
8" Blow Back
2nd Open:
BOB 11.5min
2nd Close:
1/4" Blow Back

Rec:
795ft. GIP
685ft. SLIMCGO

IHP: 1921 PSI
IFP: 62-215 PSI
ISIP: 307 PSI
FFP: 217-268 PSI
FSIP: 308 PSI
FHP: 1900 PSI
Temp: 122 Deg



Limestone: brown, crypto-crystalline, very dense, No visible porosity, No odor, No show 4320

Limestone: cream, micro-crystalline, dense, few with earthy inclusions, slightly chalky, No visible porosity, No odor, No show 4330

Limestone: grey speckled brown, micro-crystalline, few fossiliferous (pelletal) No visible porosity, No odor, No show 4340

Limestone: cream, micro-crystalline, soft, chalky, No visible porosity, No odor, No show 4350

Limestone grey, crypto-crystalline, dense, No visible porosity, No odor, No show 4360

Siltstone: green-grey, mushy, No visible porosity, No odor, No show few 4370

Flood of Limestone: light brown, micro-crystalline, dense, with recrystallized spar, No visible porosity, No odor, No show 4380

Siltstone: brown, red, grey, mushy with scattered sandstone: white, well rounded, well sorted No visible porosity, No odor, No show 4390

Limestone: cream, micro-crystalline, very dense, No visible porosity, No odor, No show 4400

Flood of white globular chalk, with chert: white, fresh, sharp, No visible porosity, No odor, No show 4410

Mississippian System 4408ft. (-1747)

Limestone: cream, micro-crystalline, pelletal, No visible porosity, No odor, No show 4420

Limestone: cream, micro-crystalline, pelletal, No visible porosity, No odor, No show 4430

Limestone: cream to brown, micro-crystalline, pelletal, No visible porosity, No odor, No show 4440

Limestone, cream, micro-crystalline, pelletal with recrystallized sparrite, dense No visible porosity, No odor, No show 4450

Limestone: cream, micro-crystalline, pelletal, with recrystallized sparrite, few Pieces Dolomite: brown, pelletal No visible porosity, No odor, No show 4460

Dolomite: brown, fossiliferous, (pelletal), surcrosic, dense No visible porosity, No odor, No show 4470

Dolomite: AA, few pieces white fine crystalline, No visible porosity, No odor, No show 4480

Dolomite: AA, 4490

Dolomite: brown, pelletal, dense, with Limestone: cream, micro-crystalline, pelletal, No visible porosity, No odor, No show 4500

Limestone: cream, micro-crystalline, pelletal, with few dolomite: brown, pelletal, dense No visible porosity, No odor, No show 4510

Limestone: cream, micro-crystalline, with some intercrystalline sparrite, dense with 4520

Limestone AA 4520 30min

AA 4520 45min



ELI
WIRELINE SERVICES

Please Remit To:
P.O. Box 549
Hays, KS 67601
Phone: (785) 628-6395
Fax: (785) 628-3651

FIELD TICKET No.

- 3513

DATE 1/25/19
UNIT # 3362

INVOICE NO.	P.O. NO.	AFE NO.
CUSTOMER <u>Grand Mesa Opty. Co.</u>	LEASE <u>O'Brien</u>	WELL NO. <u>1-9</u>
ADDRESS	FIELD	STATE <u>Ks.</u> COUNTY <u>Lane</u>
CITY	LOCATION <u>9-165-29W</u>	TBG. SIZE
STATE	CASING SIZE & WT. <u>5 1/2"</u>	TYPE OF JOB <u>Perf</u>
ZIP		

ORDERED BY	TITLE	SERVICE SUPV.			
PART NO.	DESCRIPTION	REV. CODE	QTY.	UNIT PRICE	AMOUNT
<u>70-210-1000</u>	<u>Service Charge</u>				
<u>75-815-0060</u>	<u>Perf 4" Slick</u>				
	<u>4126-28 8 shots</u>				
	<u>4076-84 32 shots</u>				
	<u>4050-58 32 shots</u>				
	<u>2 Extra Cameras</u>				

CALLED OUT _____ Time _____ Date	ON LOCATION <u>8:00</u> Time <u>1/25/19</u> Date	COMPLETED _____ Time _____ Date	TOTAL SERVICE & MATERIALS DISCOUNT TAX TOTAL CHARGES
--	--	---------------------------------------	---

WITH MY INITIALS, I CONFIRM THAT THE TIME SHOWN IN THE "HOURS" COLUMN, ACCURATELY REFLECTS MY COMPENSABLE TIME.

Employee Name (Print)	Hours	Initials
<u>Gottschalk</u>	<u>5</u>	
<u>Brungardt</u>		

CUSTOMER AGREES to pay (the "Company") on a net 45 day basis from date of invoice to avoid loss of discount. Invoices older than 45 days are subject to loss of discount on ticket. If Customer disputes any item invoiced, Customer shall, within 20 days after receipt, notify the Company of the item(s) disputed, specifying the reason(s) therefor; payment of the disputed item(s) may be withheld until settlement of dispute, but payment of undisputed portion of invoice shall be made without delay. All payments shall be made at the address shown on the reverse side of this document. In the absence of a separate written contract, CUSTOMER REPRESENTATIVE REPRESENTS AND WARRANTS THAT HE/SHE IS AUTHORIZED TO ENTER INTO THIS AGREEMENT ON BEHALF OF CUSTOMER AND ACCEPTS ALL TERMS AND CONDITIONS AS PRINTED ON THE REVERSE SIDE OF THIS DOCUMENT (WHICH INCLUDES INDEMNITY LANGUAGE THAT ALLOCATES RISKS RELATED TO THE ABOVE DESCRIBED SERVICES). Pricing and extensions, if shown above, are subject to verification and correction at time of invoicing.

X _____

X _____
CUSTOMER REPRESENTATIVE

White - Main Canary - Customer Pink - Field

Pro-Stim Chemicals LLC

Acidizing Report

Date 1-29-19

Customer <u>Grand Mesa</u>		Pro-Stim Chemical Yard <u>Dighton</u>		Pro-Stim Number <u>A-18</u>	
Well Name & Number <u>O'Brien 1-9</u>			Formation		
County <u>Lane</u>		State <u>KS</u>	Interval <u>4126-28</u>		
Well Type: Completion <input checked="" type="checkbox"/> Recompletion <input type="checkbox"/> Workover <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Water <input type="checkbox"/> Disposal <input type="checkbox"/> Perf <input checked="" type="checkbox"/> OH <input type="checkbox"/>					
Job Pumped Via: Tubing <input checked="" type="checkbox"/> Casing <input type="checkbox"/> Annulus <input type="checkbox"/> CTU <input type="checkbox"/> Combination <input type="checkbox"/>		Plug Depth		Packer Depth <u>4118</u>	
Casing Size: <u>5 1/2</u>		GRD	WT	Depth	Tubing Size: <u>2 3/4</u>
Casing Vol. <u>.2</u>		Tbg Vol <u>23.8</u>	Ann Vol	OH Vol	Total Displacement <u>24</u>

Customer Representative Signature _____

Treatment Record

Time	Type Fluid	Rate BMP	Increment Vol Bbls	Cum Vol Bbls	Pressure		Observations
					Tubing	Casing	
<u>1</u>	<u>Acid</u>						<u>Start Acid</u>
<u>7</u>	<u>Acid</u>	<u>3.5</u>		<u>24</u>	<u>10</u>		<u>Acid off truck</u>
<u>10</u>	<u>Flush</u>	<u>3.6</u>		<u>35</u>	<u>10</u>		
<u>11</u>	<u>Flush</u>	<u>1.0</u>		<u>36</u>	<u>40</u>		<u>hole loaded late</u>
<u>13</u>	<u>Flush</u>	<u>1.2</u>		<u>39</u>	<u>690</u>		
<u>14</u>	<u>Flush</u>	<u>2.0</u>		<u>41</u>	<u>500</u>		
<u>16</u>	<u>Flush</u>	<u>2.0</u>		<u>44</u>	<u>650</u>		
<u>18</u>	<u>Flush</u>	<u>2.0</u>		<u>48.5</u>	<u>750</u>		<u>max pressure + total load</u>
<p><u>1000 gal 15% H₂O</u> <u>30 Bush 2% KCl</u></p>							
<p><u>Shannon M.</u></p>							

Treatment Synopsis

Avg Inj Rate	Fluid BPM <u>2.0</u>	Total Injected		H ₂ O <u>24.5</u>	Acid <u>24</u>	Oil
Treating Prs	Max <u>750</u>	Final <u>750</u>	Avg. <u>650</u>	ISIP <u>670</u>	5'SI	10'SI
			<u>3 min VAC</u>		20	30

Pro-Stim Chemicals LLC

Acidizing Report

Date 1-30-19

Customer <u>Grand Mesa</u>		Pro-Stim Chemical Yard <u>Aighton</u>		Pro-Stim Number <u>A18</u>	
Well Name & Number <u>O'Brien 1-9</u>			Formation		
County <u>Lane</u>		State <u>KS</u>		Interval <u>4076-84</u>	
Well Type: Completion <input checked="" type="checkbox"/> Recompletion <input type="checkbox"/> Workover <input type="checkbox"/> Oil <input type="checkbox"/> Gas <input type="checkbox"/> Water <input type="checkbox"/> Disposal <input type="checkbox"/> Perf <input checked="" type="checkbox"/> OH <input type="checkbox"/>					
Job Pumped Via: Tubing <input checked="" type="checkbox"/> Casing <input type="checkbox"/> Annulus <input type="checkbox"/> CTU <input type="checkbox"/> Combination <input type="checkbox"/>				Plug Depth	
Casing Size: <u>5 1/2</u>		GRD	WT	Depth	Tubing Size: <u>2 7/8</u>
Casing Vol. <u>.2</u>		Tbg Vol <u>23.5</u>	Ann Vol	OH Vol	Spot
					Packer Depth <u>4067</u>
					Total Displacement <u>23.7</u>

Customer Representative Signature _____

Treatment Record

Time	Type Fluid	Rate BMP	Increment Vol Bbls	Cum Vol Bbls	Pressure		Observations
					Tubing	Casing	
<u>1</u>	<u>Acid</u>	<u>3.5</u>					<u>start Acid</u> <u>Acid off truck</u> <u>hole loaded late</u> <u>went on VAC</u> <u>Total load</u>
<u>2</u>	<u>Acid</u>	<u>3.5</u>		<u>6</u>			
<u>7</u>	<u>Flush</u>	<u>0</u>		<u>23.9</u>	<u>20</u>		
<u>7 1/2</u>	<u>Flush</u>	<u>1.7</u>		<u>24.5</u>	<u>0</u>		
<u>8</u>	<u>Flush</u>	<u>3.1</u>		<u>26.5</u>	<u>0</u>		
<u>10</u>	<u>Flush</u>	<u>3.1</u>		<u>30</u>	<u>0</u>		

250 gal 15% mch
30 Bbls 2% KCl

Shannon M.

Treatment Synopsis

Avg Inj Rate	Fluid BPM <u>3.1</u>	Total Injected		H2O <u>24</u>	Acid <u>6</u>	Oil
Treating Prs	Max <u>20</u>	Final <u>0</u>	Avg.	ISIP <u>0</u>	5'SI	10'SI
					20	25
						30

API # 15-101-22619-00-00

Operator: Grand Mesa Operating Co

Well Name & No: Obrien #1-9

Location: 2225' FSL & 2305' FEL Section 9-16s-29w

County: Lane

State: Kansas

Rig No.: 2 Contractor: WW Drilling LLC

Tool Pusher: Jon Nicodemus 785-743-8420

Drill Collars: 14 2.25"x6.25"x31'

Rig Phone: 785-259-4388

Make Pump: K-380

Liner & Stroke: 6 x 14

Spud 12/3/2018 @ 8:30 PM

Approx. TD: 4900'

Elevation: 2656'

KB 2661'

Hole

Complete 12/12/2018 @ 12:45 PM

Mud Co.:

Mudco

Mud Engineer: Jasen Whiting

Water Pfeifer Hauling

Date	12/13/18	12/14/18							
Days	11-LDDC	12-Done							
Depth	4520'	4520'							
Ft. Cut	93'								
Drill Time	5.75								
Down Time	0								
Comp. Time	18 1/4	12.25							
Bit Wt.	38,000								
RPM	85								
Pressure	1000								
SPM	60								
Mud Cost	\$9,993	\$9,993							
Mud Wt.	9.3								
Viscosity	52								
Water Loss	7.2								
Chlorides	3,200								
L.C.M.	1#								
Dev. Sur	1.25°								
Dev. Sur	4520'								
Fuel	1356	1299							
Water-Pit	1/2								
ACC Bit Hrs.	114.75								
Formation	sh-lm								
Weather	P/C								
Safety Topic	LDDP								
No.	Size	Type	Out	Ft.	Hrs.	Cum Hrs.	Bit Cond	Serial #	Tops
1	12 1/4"	Tooth	219'	219'	4.25	4.25	RR	RD9696	
2	7 7/8"	SM-F27	4520'	4301'	114.75	119	New	RJ9417	
3									
4									
DEPTH	SIZE	SACKS	CEMENT MATERIAL			Plug Down	Drilled Out	REMARKS	
219'	8 5/8"	165	Common, 3% cc, 2% gel			5:15 AM	1:15 PM	Qes did circulate	
4518'	5 1/2"	430	1st 195sx EA2 2nd 235sx SMD			3:15 PM		Swift Did Circulate	
108jts		30	30sx Rathole & DV Tool @ 2067'						
NO	INTERVAL	OPEN	SHUT	OPEN	SHUT	RECOVERY			
1	X								
2	X								
3	X								
4	X								
5									
6									
7									
8									

Surface Casing Furnished by: Sunrise/WW Hauled. Ran 5 jts of 8 5/8" tally 212' set @ 219'

Remarks: Welded by WW Keith Hertel. Anhydrite @ 2057'-2085'. Displaced @ 3472' (750 BBLs). Short trip @ 3792' (35 stands) 2.25 hrs. Pipe strap 1.44 short. Short trip @ 4520' (15 stands) .5 hr. Logged by Weatherford (LTD 4520') 6 hrs. Ran 108 jts of 5 1/2" set @ 4518'. Cemented by Swift w/195sx EA2 on bottom & 235sx SMD on top w/DV tool @ 2067'. Cement did circulate, plug down @ 3:15 pm, 12/13/2018. Released rig @ 7:15, 12/13/2018.

JOB LOG

SWIFT Services, Inc. *PROD*

DATE

12/13/18

PAGE NO.

1

CUSTOMER

Grand Mesa

WELL NO.

1-9

LEASE

O'Brien

JOB TYPE

2 stage L.S.

TICKET NO.

27723

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0645							On location w/ Float Equipment
								5 1/2" x 14 #
								RTD - 4320'
								Total Pipe - 4518'
								Insert - 4508'
								D.V. Tool - Top of 57, @ 2068'
								Centralizers - 1, 5, 8, 11, 14, 17, 20, 56
								Basket - 2, 57
	0845							Start Casing w/ Float Equipment
	1045							Break Circulation on Bottom
	1140	2	8					Plug Rathole w/ 30 SKS EA2
		5	12			400		Pump Mud flush
		5	20			400		Pump KGL Spacer
	1155	4				400		Start Cmt, 195 SKS EA2
		4	47			Vac		Fin Cmt
	1205							Drop 1st Plug, Washout Pump + Lines
	1210	7						Start Displacement
		5	60			300		Switch to Mud
		6	96			400		Finish Mud, Catch Cmt
	1230	6	110			800 / 1350		Land Plug Lift 800 #
								Land 1350 #
								Release Truck, Dry
	1240							Drop D.V. Bomb
	1255					1200		Open D.V. Tool
	1300							Start Circulation
	1435							Hook up for 2nd Stage
	1440	4	20			350		Pump KGL Spacer
	1445	4 1/2				350		Start SMD Cement @ 11.2 ppg 235 SKS
		4 1/2	130			Vac		Fin Cmt
								Drop Plug
	1505	6						Start Displacement
	1515	5 1/2	51			600		Fin Disp. Lift 600 psi
								Rls Trk, Dry Land 1300 psi
								Washup, Rack up
	1530							Job Complete

Cmt Did Not Circulate

Thanks,
Jon, Austin, Kirby