KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1074683

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 5455
Name: Crawford Oil & Gas Co LLC
Address 1: PO BOX 1366
Address 2: 1780 JASON DR
City: EL DORADO State: KS Zip: 67042 + __ __ __ __
Contact Person: Larry Dale Crawford
Phone: (316) 377-3373
CONTRACTOR: License # 33575
Name: WW Drilling, LLC
Wellsite Geologist: Larry Friend
Purchaser: D&A

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [x] D&A
- [ ] ENHR
- [ ] SIGW
- [ ] OG
- [ ] GSW
- [ ] Temp. Abd.
- [ ] 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 ENHR
- [ ] Conv. to SWD
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

4/28/2011	5/3/2011	5/3/2011
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-137-20561-00-00
Spot Description:
NW - SW - SE - NW Sec. 1 Twp. 3 S. R. 25 [ ] East [x] West
2209 Feet from [x] North / [ ] South Line of Section
1322 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [x] NW [ ] SE [ ] SW
County: Norton
Lease Name: Bohl Trust Well #: 1-1
Field Name: Wildcat
Producing Formation: Plugged
Elevation: Ground: 2493 Kelly Bushing: 2498
Total Depth: 3756 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 260 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 31000 ppm Fluid volume: 1000 bbls
Dewatering method used: Evaporated
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

- [ ] **Letter of Confidentiality Received**
  Date:
- [ ] **Confidential Release Date:**
- [x] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [ ] I [x] II [ ] III **Approved by:** Deanna Garrisor **Date:** 02/27/2012

Side Two

1074683

Operator Name: Crawford Oil & Gas Co LLC Lease Name: Bohl Trust Well #: 1-1

Sec. 1 Twp. 3 S. R. 25 ☐ East ☑ West County: Norton

INSTRUCTIONS: Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

Electric Log Submitted Electronically ☑ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:

DI, CND, Micro

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☑ New ☐ 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
Surface Pipe	12.25	8.625	23	260	common	165	3%cc 2% gel

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:
☐ Perforate
☐ Protect Casing
☐ Plug Back TD
☐ Plug Off Zone

Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
-			
-			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Crawford Oil & Gas Co LLC
Well Name	Bohl Trust 1-1
Doc ID	1074683

Tops

Name	Top	Datum
Stone Corral	2030	+468
Base	2058	+440
Tarkio	3120	-622
Topeka	3252	-754
Heebner	3425	-927
Lansing	3470	-972
BKC	3656	-1156
Pre-Camb. Wash	3753 sample	-1255 sample

ALLIED CEMENTING CO., LLC. 043300

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT: Oakley

DATE 4-28-1	SEC. 1	TWP. 3S	RANGE 25W	CALLED OUT	ON LOCATION	JOB START 6:00pm	JOB FINISH 6:30pm
LEASE Rohl Trust	WELL # 1-1	LOCATION Kerger 1/2 S E into				COUNTY Norton	STATE KS
OLD OR NEW (Circle one)							

CONTRACTOR WTW Drilling Rig 6
TYPE OF JOB Surface
HOLE SIZE 12¼ T.D. 262'
CASING SIZE 8⅝ DEPTH 260'
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15'
PERFS.
DISPLACEMENT 15.77 BBL

OWNER Same

EQUIPMENT

PUMP TRUCK # 423-281 CEMENTER Andrew
HELPER Jerry
BULK TRUCK # 404 DRIVER Wes
BULK TRUCK # DRIVER

CEMENT

AMOUNT ORDERED 165 sks com 3%cc 2%gel

COMMON	165 sks	@ 14.25	2351.25
POZMIX		@	
GEL	2 sks	@ 21.25	63.75
CHLORIDE	6 sks	@ 58.20	349.20
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING	174 sks	@ 2.25	391.50
MILEAGE	174 sks/mile		1571.20
		TOTAL	5016.20

REMARKS:

Cement Did circulate

Thank you

SERVICE

DEPTH OF JOB	262'		
PUMP TRUCK CHARGE			1125.00
EXTRA FOOTAGE		@	
MILEAGE	80 miles x 2	@ 7.00	1120.00
MANIFOLD		@	
Light Vehicle		@ 4.00	400.00
		@	
		TOTAL	2645.00

CHARGE TO: Crawford Oil + Gas
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

		@	
		@	
		@	
		@	
		@	
		TOTAL	

To Allied Cementing Co., LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any)
TOTAL CHARGES
DISCOUNT IF PAID IN 30 DAYS

PRINTED NAME Mark Kyle

SIGNATURE Mark Kyle

ALLIED CEMENTING CO., LLC. 039929

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31
RUSSELL, KANSAS 67665

SERVICE POINT:

DATE	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
LEASE	WELL #		LOCATION			COUNTY	STATE
OLD OR NEW (Circle one)							

CONTRACTOR
TYPE OF JOB
HOLE SIZE T.D.
CASING SIZE DEPTH
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG.
PERFS.
DISPLACEMENT

OWNER

CEMENT
AMOUNT ORDERED

COMMON		@	
POZMIX		@	
GEL		@	
CHLORIDE		@	
ASC		@	
		@	
		@	
		@	
		@	
		@	
		@	
		@	
HANDLING		@	
MILEAGE			

TOTAL

EQUIPMENT

PUMP TRUCK CEMENTER
HELPER
BULK TRUCK
DRIVER
BULK TRUCK
DRIVER

REMARKS:

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			
EXTRA FOOTAGE		@	
MILEAGE		@	
MANIFOLD		@	
		@	
		@	

TOTAL

CHARGE TO:
STREET
CITY STATE ZIP

PLUG & FLOAT EQUIPMENT

		@	
		@	
		@	
		@	
		@	

TOTAL

To Allied Cementing Co., LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any)
TOTAL CHARGES
DISCOUNT IF PAID IN 30 DAYS

PRINTED NAME

SIGNATURE

DRILL STEM TEST REPORT

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 041999 **DST#: 1**

Test Start: 2011.05.01 @ 20:05:00

GENERAL INFORMATION:

Formation: **Toronto - Lans. G**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:29:30
Time Test Ended: 02:28:30

Test Type: Conventional Bottom Hole
Tester: James Winder
Unit No: 46

Interval: 3420.00 ft (KB) To 3554.00 ft (KB) (TVD)
Total Depth: 3554.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

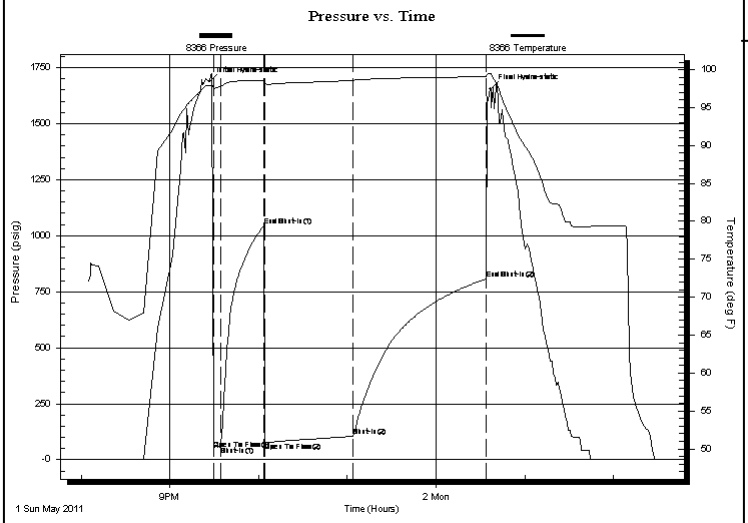
Reference Elevations: 2493.00 ft (KB)
2488.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8366 **Inside**

Press@RunDepth: 104.50 psig @ 3421.00 ft (KB)
Start Date: 2011.05.01 End Date: 2011.05.02
Start Time: 20:05:05 End Time: 02:28:29

Capacity: 8000.00 psig
Last Calib.: 2011.05.02
Time On Btm: 2011.05.01 @ 21:27:00
Time Off Btm: 2011.05.02 @ 00:37:00

TEST COMMENT: IF: 1" blow at open, built to 4 1/4"
ISI: No blow back
FF: Blow built to BOB (11") in 28 min.
FSI: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1688.32	97.90	Initial Hydro-static
3	47.10	97.61	Open To Flow (1)
7	61.20	97.77	Shut-In(1)
37	1043.09	98.59	End Shut-In(1)
38	79.20	98.16	Open To Flow (2)
97	104.50	98.63	Shut-In(2)
187	807.56	99.07	End Shut-In(2)
190	1654.80	99.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	GOM 50%m, 36%o, 14%g	0.61
63.00	OCM 70%m, 25%o, 5%g	0.88
15.00	OM 53%m, 46%o, 1%g	0.21
0.00	GIP = 50'	0.00

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 041999 **DST#: 1**

Test Start: 2011.05.01 @ 20:05:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	51.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.98 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

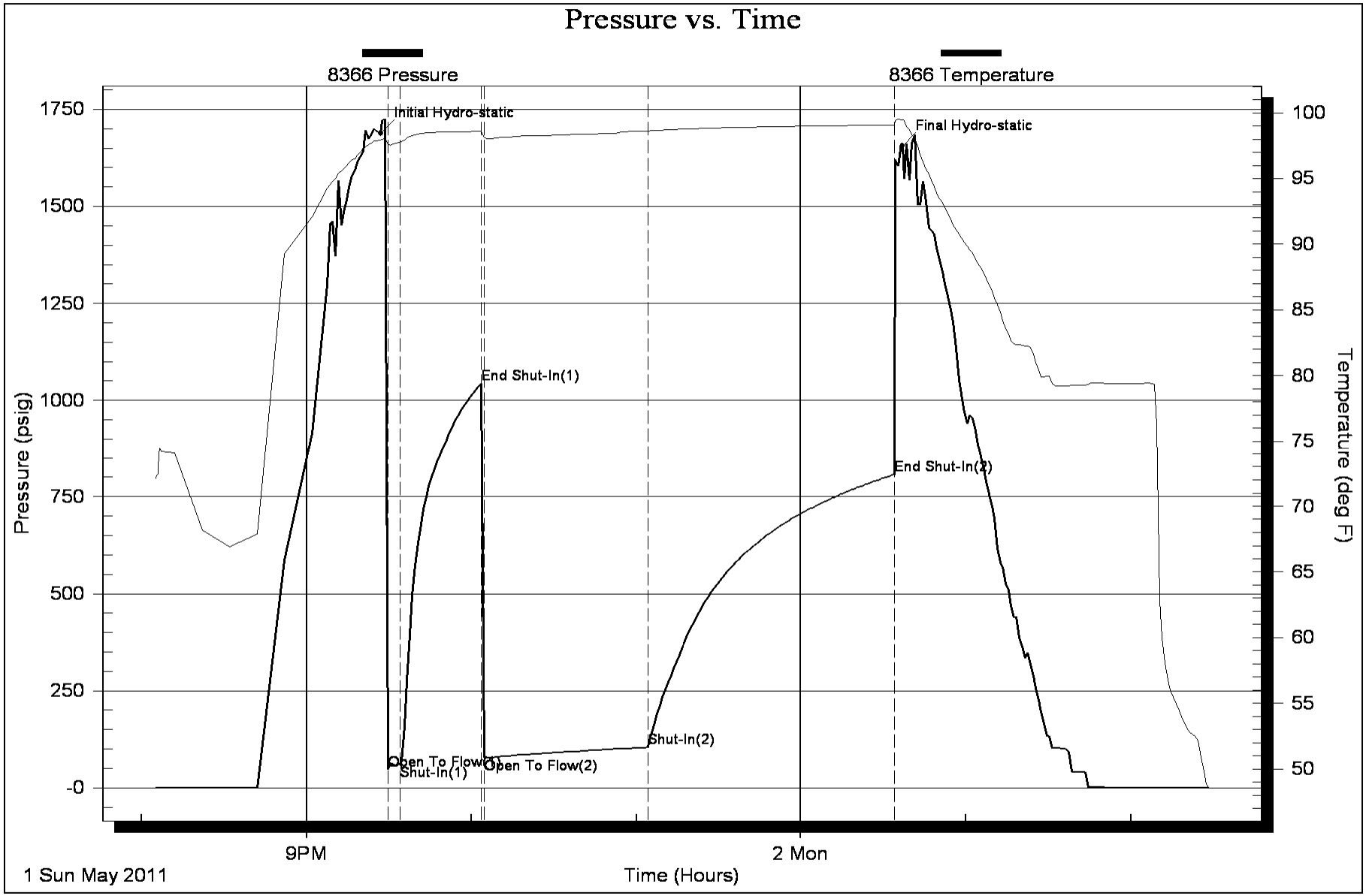
Length ft	Description	Volume bbl
124.00	GOM 50%m, 36%o, 14%g	0.610
63.00	OCM 70%m, 25%o, 5%g	0.884
15.00	OM 53%m, 46%o, 1%g	0.210
0.00	GIP = 50'	0.000

Total Length: 202.00 ft Total Volume: 1.704 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
8366 Pressure
8366 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Pressure (psig)
Temperature (deg F)
1750
1500
1250
1000
750
500
250
-0
100
95
90
85
80
75
70
65
60
55
50
9PM
2 Mon
1 Sun May 2011
Time (Hours)

DRILL STEM TEST REPORT

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 042000 **DST#: 2**

Test Start: 2011.05.02 @ 19:56:00

GENERAL INFORMATION:

Formation: **Granite Wash**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:12:30
Time Test Ended: 00:44:00

Test Type: Conventional Bottom Hole
Tester: James Winder
Unit No: 46

Interval: 3718.00 ft (KB) To 3756.00 ft (KB) (TVD)
Total Depth: 3756.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

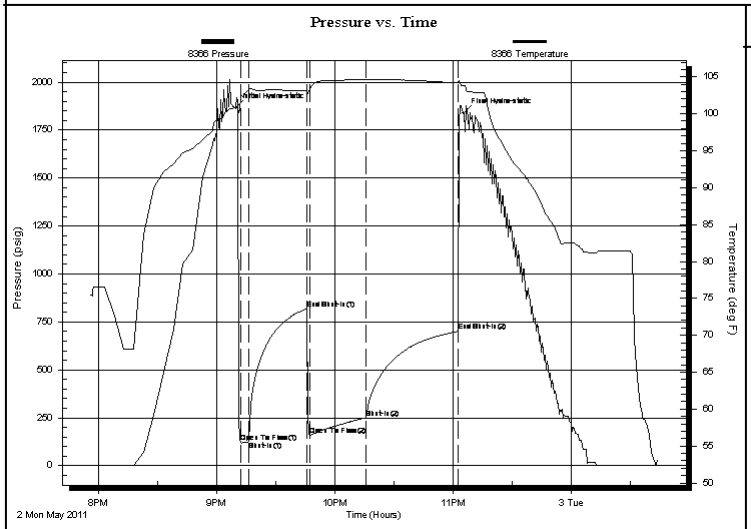
Reference Elevations: 2493.00 ft (KB)
2488.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8366 **Inside**

Press@RunDepth: 250.67 psig @ 3719.00 ft (KB)
Start Date: 2011.05.02 End Date: 2011.05.03
Start Time: 19:56:05 End Time: 00:43:59

Capacity: 8000.00 psig
Last Calib.: 2011.05.03
Time On Btm: 2011.05.02 @ 21:10:00
Time Off Btm: 2011.05.02 @ 23:05:30

TEST COMMENT: IF: Blow built to BOB (11") in 2 1/2 min.
ISI: No blow back
FF: Blow built to BOB in 4 min.
FSI: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1864.84	100.78	Initial Hydro-static
3	122.02	102.34	Open To Flow (1)
7	127.16	103.25	Shut-In(1)
36	818.65	103.09	End Shut-In(1)
38	158.74	103.30	Open To Flow (2)
66	250.67	104.61	Shut-In(2)
113	700.76	104.30	End Shut-In(2)
116	1838.94	103.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
370.00	MCW 80%w , 20%m	4.06
145.00	MW w/trace of oil 53%w , 47%m	2.03

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 042000 **DST#: 2**

Test Start: 2011.05.02 @ 19:56:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	27500 ppm
Viscosity:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

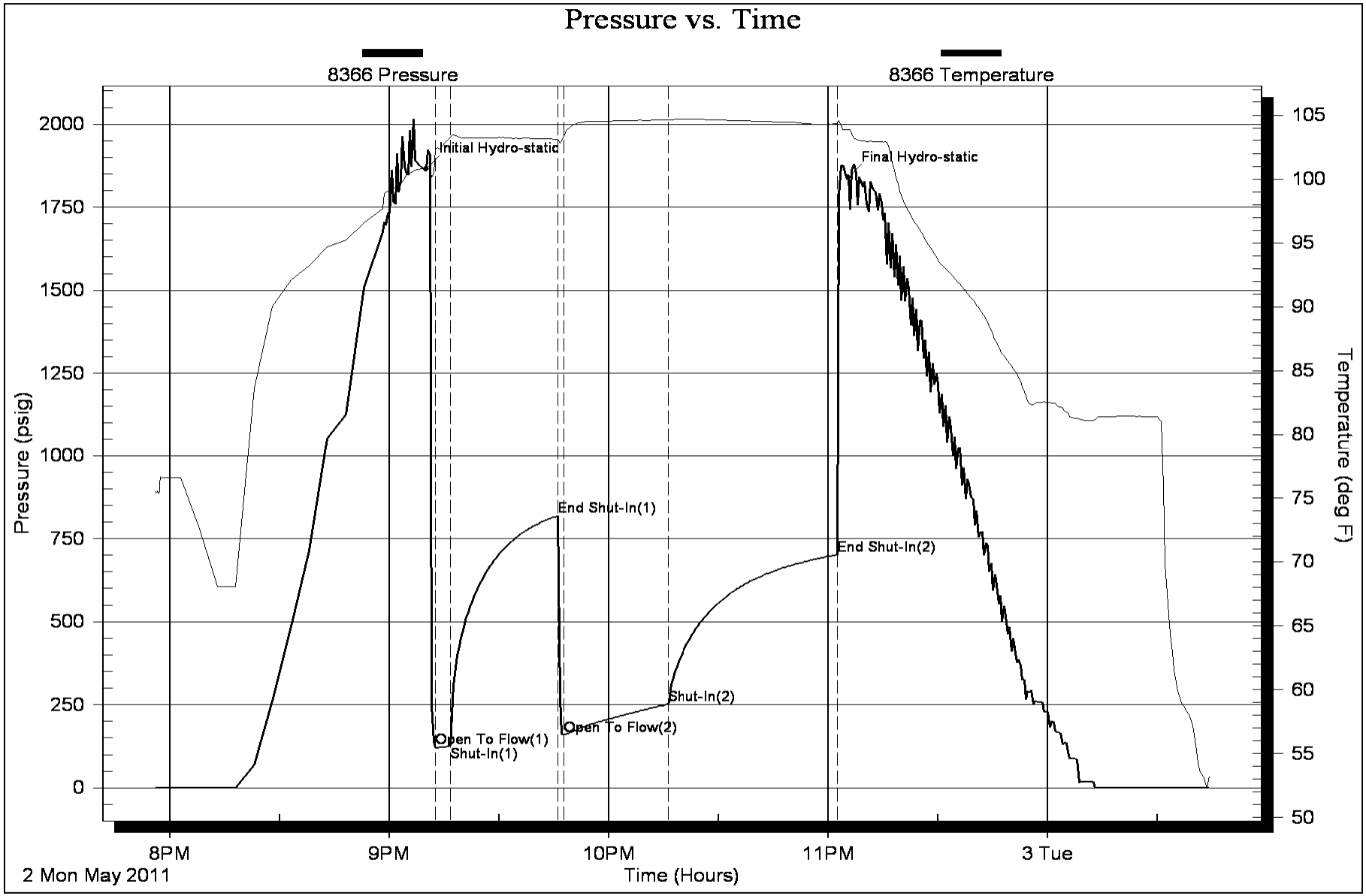
Length ft	Description	Volume bbl
370.00	MCW 80%w , 20%m	4.061
145.00	MW w /trace of oil 53%w , 47%m	2.034

Total Length: 515.00 ft Total Volume: 6.095 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RW = .395 ohms @ 44.8 deg F Chlorides = 27,500


Pressure vs. Time
8366 Pressure
8366 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Shut-In(2)
Open To Flow(2)
Pressure (psig)
Temperature (deg F)
2000
1750
1500
1250
1000
750
500
250
0
105
100
95
90
85
80
75
70
65
60
55
50
8PM
9PM
10PM
11PM
3 Tue
2 Mon May 2011
Time (Hours)

DRILL STEM TEST REPORT

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 042001 **DST#: 3**

Test Start: 2011.05.03 @ 08:37:00

GENERAL INFORMATION:

Formation: **Toronto**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:18:00
Time Test Ended: 13:30:30

Test Type: Conventional Straddle
Tester: James Winder
Unit No: 46

Interval: 3419.00 ft (KB) To 3476.00 ft (KB) (TVD)
Total Depth: 3757.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

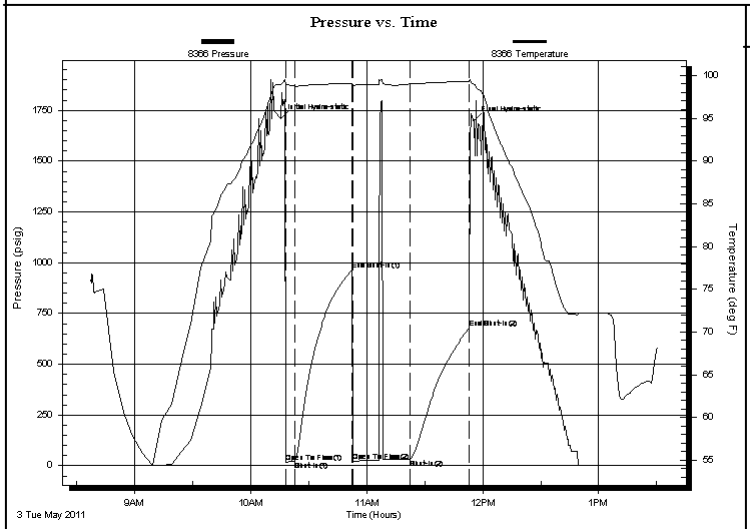
Reference Elevations: 2493.00 ft (KB)
2488.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8366 **Inside**

Press@RunDepth: 33.06 psig @ 3420.00 ft (KB)
Start Date: 2011.05.03 End Date: 2011.05.03
Start Time: 08:37:05 End Time: 13:30:29

Capacity: 8000.00 psig
Last Calib.: 2011.05.03
Time On Btm: 2011.05.03 @ 10:15:30
Time Off Btm: 2011.05.03 @ 11:55:30

TEST COMMENT: IF: 1/4" Blow at open, built to 1"
ISI: No blow back
FF: No blow, Flushed tool at 15 min., Surface blow till 25 min., then dead
FSI: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1710.31	98.97	Initial Hydro-static
3	18.17	98.99	Open To Flow (1)
7	20.77	98.78	Shut-In(1)
37	966.38	99.08	End Shut-In(1)
38	22.67	98.72	Open To Flow (2)
67	33.06	99.00	Shut-In(2)
98	676.92	99.30	End Shut-In(2)
100	1701.13	98.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud 100%	0.10
0.00	Trace of Oil in tool	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 042001 **DST#: 3**

Test Start: 2011.05.03 @ 08:37:00

GENERAL INFORMATION:

Formation: **Toronto**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:18:00
Time Test Ended: 13:30:30

Test Type: Conventional Straddle
Tester: James Winder
Unit No: 46

Interval: 3419.00 ft (KB) To 3476.00 ft (KB) (TVD)
Total Depth: 3757.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

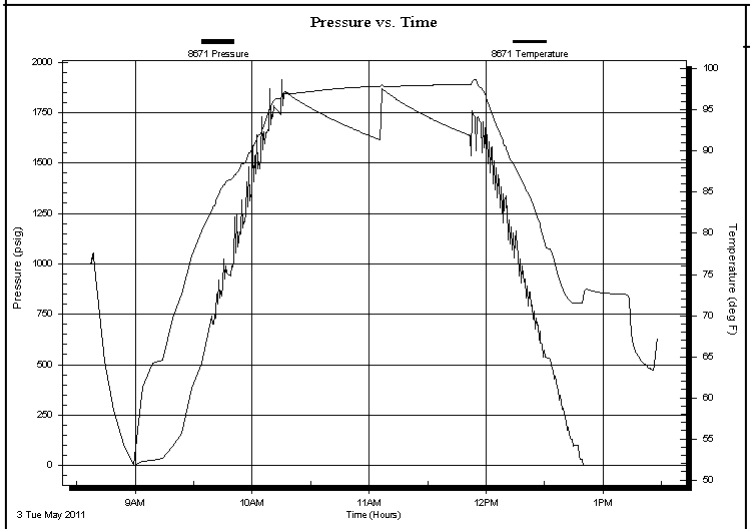
Reference Elevations: 2493.00 ft (KB)
2488.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8671 **Inside**

Press@RunDepth: psig @ 3477.00 ft (KB)
Start Date: 2011.05.03 End Date: 2011.05.03
Start Time: 08:37:05 End Time: 13:27:59

Capacity: 8000.00 psig
Last Calib.: 2011.05.03
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: 1/4" Blow at open, built to 1"
ISI: No blow back
FF: No blow, Flushed tool at 15 min., Surface blow till 25 min., then dead
FSI: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud 100%	0.10
0.00	Trace of Oil in tool	0.00

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Crawford Oil & Gas Co., LLC

1780 Jason Dr.
El Dorado, KS 67042

ATTN: Larry Friend

Bohl Trust #1-1

1/3s/25w Norton KS

Job Ticket: 042001 **DST#: 3**

Test Start: 2011.05.03 @ 08:37:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	53.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	1.00 inches				

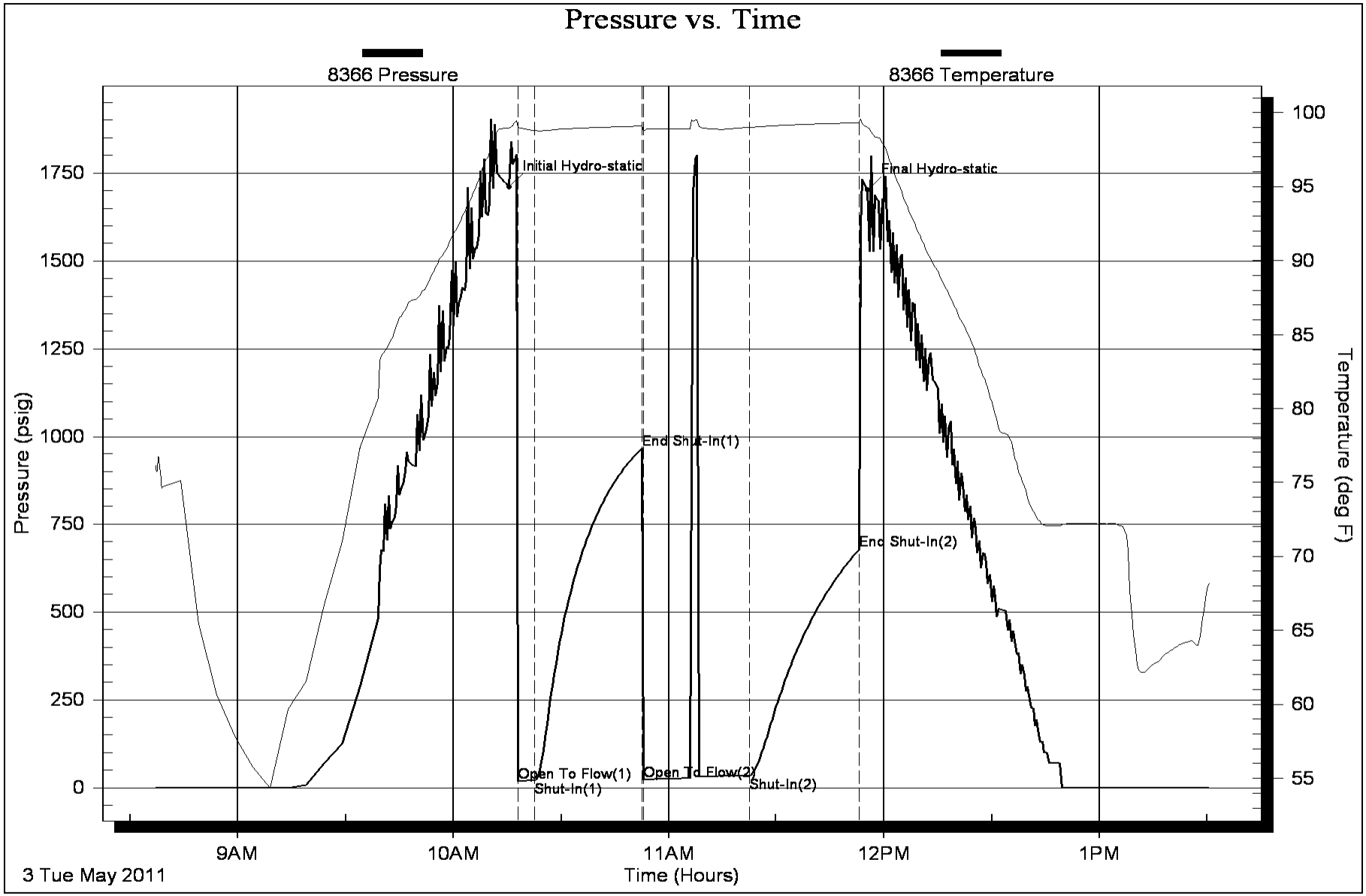
Recovery Information

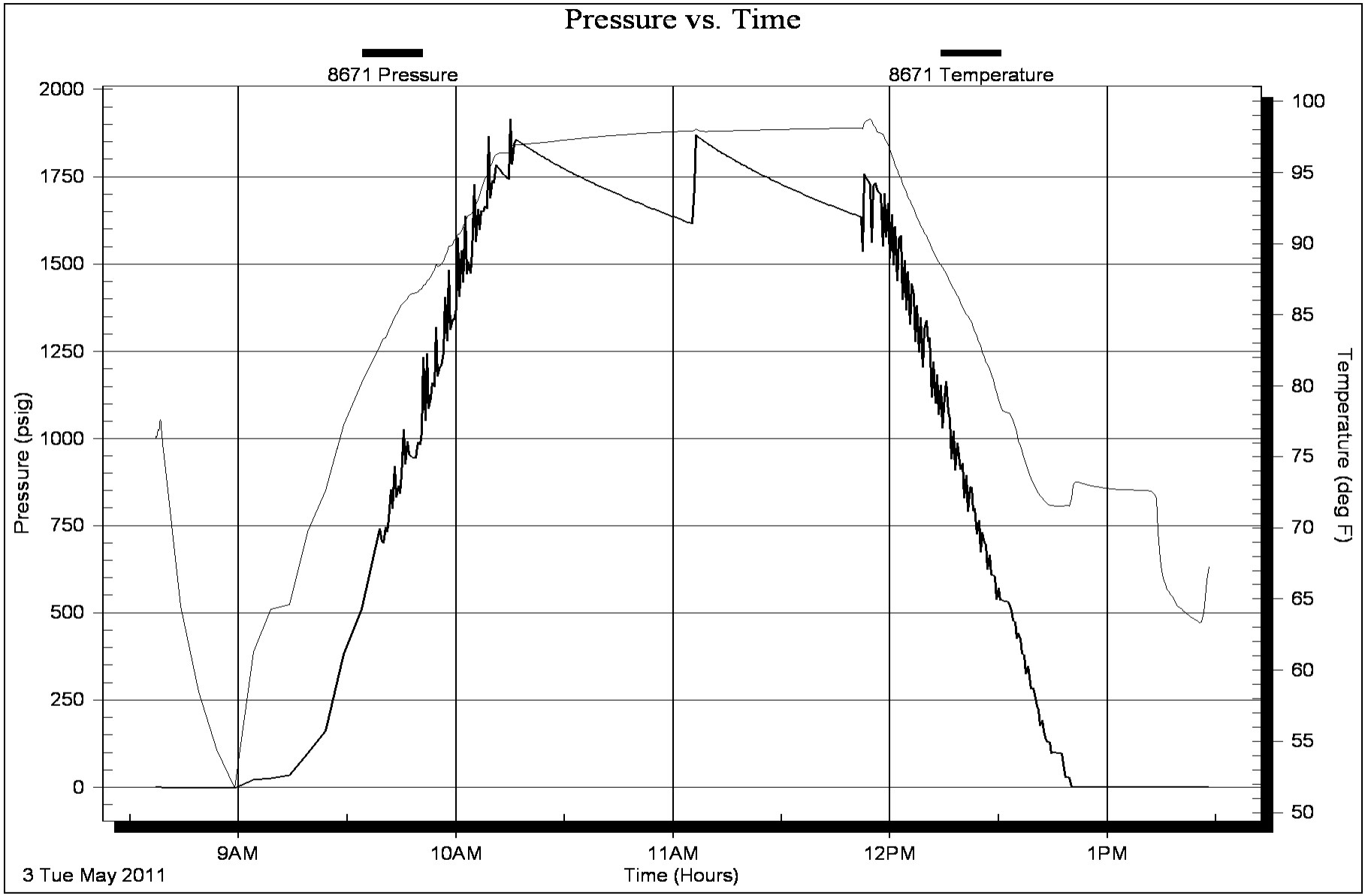
Recovery Table

Length ft	Description	Volume bbl
20.00	Mud 100%	0.098
0.00	Trace of Oil in tool	0.000

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
8366 Pressure
8366 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure (psig)
Temperature (deg F)
1750
1500
1250
1000
750
500
250
0
100
95
90
85
80
75
70
65
60
55
9AM
10AM
11AM
12PM
1PM
3 Tue May 2011
Time (Hours)


Pressure vs. Time
8671 Pressure
8671 Temperature
2000
1750
1500
1250
1000
750
500
250
0
Pressure (psig)
100
95
90
85
80
75
70
65
60
55
50
Temperature (deg F)
9AM
10AM
11AM
12PM
1PM
Time (Hours)
3 Tue May 2011

COMPANY CRAWFORD OIL + GAS CO., LLC.

LEASE BOHL TRUST #1-1

FIELD

LOCATION 2209 FNL + 1322 FWL

SEC 1 TWP 3 S RGE 25 W

COUNTY NORTON STATE KANSAS

CONTRACTOR WW DRILLING, RIG #6

SPUD 4/28/11 COMP 5/3/11

RTD 3756 LTD 3758

LOG RTD 2925 TYPE LOG CHEMICAL

SAMPLES SAVED FROM 3100 TO RTD

DRILLING TIME KEPT FROM 2950 TO RTD

SAMPLES EXAMINED FROM 3100 TO RTD

GEOLOGICAL SUPERVISION FROM 3140 TO RTD

GEOLOGIST ON WELL LARRY P. FRIEND

ELEVATIONS

KB 2498

DF

GL 2493

Measurements Are From KB

CASING

Surface 8 5/8 @ 261.9'

Production NONE

ELECTRICAL SURVEYS

DI, CND, MICRO.

FORMATION TOPS	LOG	SAMPLES
STONE CORRAL	2030 (+468)	2028 (+470)
BASE	2058 (+440)	2058 (+440)
TARKIO	3120 (-622)	3118 (-620)
TOPEKA	3252 (-754)	3251 (-753)
HEEBNER	3425 (-927)	3426 (-928)
LANSING	3470 (-972)	3468 (-970)
MUNCIE CREEK	3557 (-1059)	N/A
BKC	3656 (-1158)	3654 (-1156)
PRE-CAMB. WASH	N/A	3753 (-1255)

REMARKS THE MAIN TARGET FOR THIS WELL WAS THE REAGAN SAND, WHICH WAS ABSENT IN THIS WELL, THE TORONTO THROUGH KANSAS CITY CARRIED NUMEROUS SHOWS OF OIL + GAS. FROM THE LOGS THE OIL RECOVERED ON DST #1 APPEARED TO BE COMING FROM THE TORONTO. THE TORONTO WAS RETESTED WITH DST #3 AND HAD NEGATIVE RESULTS. THE "J" ZONE IN THE KANSAS CITY WAS ALSO DETERMINED TO BE AN OIL ZONE BUT WAS CONSIDERED TOO THIN TO WARRENT FURTHER TESTING. IT WAS DECIDED TO PLUG AND ABANDON THIS WELL.

RESPECTFULLY SUBMITTED,

Larry P. Friend

LEGEND

Anhydrite Salt Sandstone Shale Sub ch Limestone Oolitic Lm Chert Dolomite

SCALE " = 100'

DRILLING TIME IN MINUTES PER FOOT

Rate of Penetration Increases

DEPTH 5" 10" 15" 20" 25"

SAMPLES

SAMPLE DESCRIPTIONS

REMARKS

2020

ANHYDRITE

30

2028 (+470)

40

2050

BASE

700 AM DEPTHS:

4/28/11 : SPUD

4/29 : 782'

4/30 : 2800'

5/1 : 3482'

5/2 : 3600'

5/3 : 3756 RTD.

2050

BASE
2058 (+440)

2950

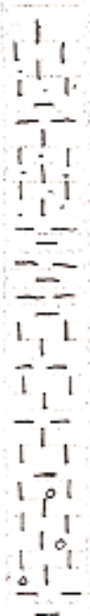
3000

3050

3100

TARKIO
3118 (-620)

3150



100: LS, F-M.N - GRANULAR, PR-FR, XLN Φ; SHALE GRY, MAROON.

10: LS, GRY, F.X.L.N, SILTY, PR-FR, XLN, Φ

SILTY GRY LS + GRY. SHALE.

30: LS. TAN, SILTY AND MAROON SHALE.

40: MOSTLY SHALE, DK. GRY - BLK. CARB.

50: LS, TAN, F-X.L.N, V. FOSS./OOL. w/ FR-FR. XLN. Φ; SIM. ABT. CRM CHALK; NS.

60: TR LS, TAN, V. FOSS/OOL w/ GOOD X.L.N, Φ; TR. LS. TAN 'DSE'; NS.

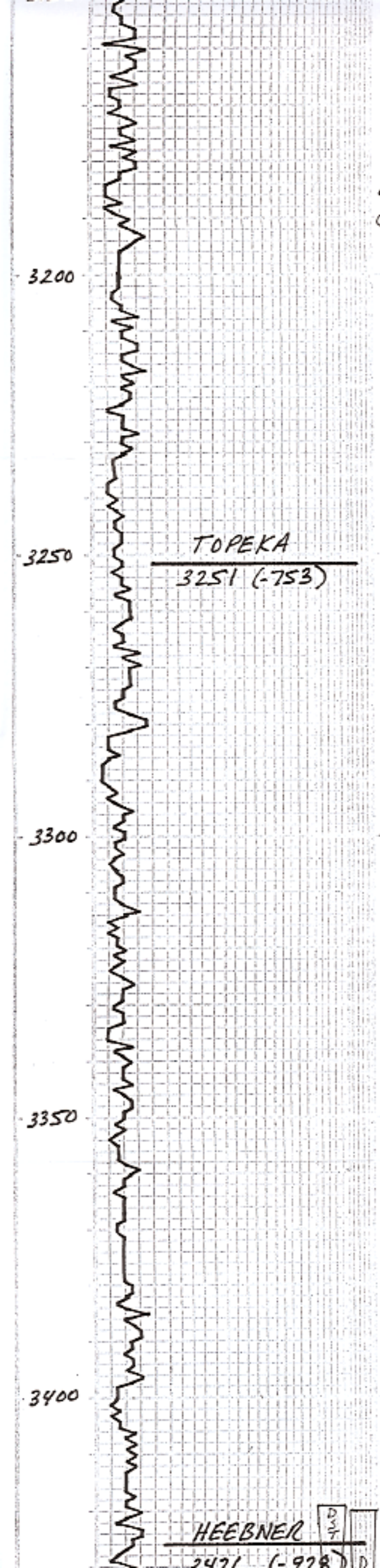
70: LS, TAN, SLI. FOSS./OOL. FR-FR. XLN. Φ; NS.

5/1 : 3482'
5/2 : 3600'
5/3 : 3756 RTD.

DEVIATION SURVEYS:
1/4° @ 262'
1/4° @ 3554'

- DISPLACED MUD @ 2925'

MUD @ 2932:
VIS: 47.
WT: 8.8
FILT: 8.8
CHLOR: 1,000
LCM: 1#



80: SM. AMT. LS, TAN-BRN, CSELY FOSS, PR. XLN. Ø TO LS. GRY, FXLN W/ PR. XLN. Ø; NS

90: LS. GRY-BRN DETRITAL W/ CSE LS. FRAGMENTS/FOSSILS IN GRY LS. MATRIX, PR-FR. XLN. Ø; NS.

TRACE LS. CRM SLI CHLKY W/ GD. PPT-VUG Ø ABUNDANT FO ON BRK. STFY. SAT. STN. SLI. ODOR ON BRK, LOOKS TITE-?ABLE PERM. — CALCULATES WET ON LOG.

10: LS. TAN, FOSS. W/ PR-FR. XLN. Ø; SM. AMT. CRM CHLKY LIME; SH. MAROON, GRN; NS.

20: TR. GRY, SHP. CHERT; AND AS ABV.

30: TR. LS. TAN, FOSS, GLAUC. PR. XLN. Ø; SHALE; NS.

90: LS. GRY-TAN FXLN, SLI. FOSS. W/ PR-FR. XLN. Ø; NS.

50: SM. AMT. CRM CHLKY LS; LS. TAN SLI. FOSS. W/ PR-GD. XLN. Ø; NS, NO FLUOR.

60: LT. GRN. SILTY LS; MAR. SHALE; TR. MAROON SST. SILT- TO V. FN. GRND, LAM; NS.

70: LS GRY-TAN, FXLN, PR. Ø TR. FOSS. / DOL. W/ PR. XLN. Ø; NS.

80: LS. TAN PR-TR. FR. XLN. Ø SM. AMT. CRM CHLKY LS; NS.

90: LS. TAN, FOSS, FXLN W/ FR. FOSS. CAST. Ø; NS.

100: TR. LS, V. FOSS. W/ FR. FOSS. CAST Ø; AND LAM SILTSTN, CLEAN, TITE.; NS

10: MOSTLY MAROON SHALE

20: LS. TAN. SLI. FOSS. W/ PR-FR. FOSS. CAST- VUG Ø CALCITE FILL; NS, NO FLUOR.

30: LS. AS ABV AND LS. CRM CHLKY; NS.

40: LS. TAN, FXLN, PR-LIT. FR. XLN. Ø; SOME CHLKY; TR. BRN-ORG. SHP. CHT.; NS.

50: SOME CHT. AS ABV.; LS. TAN, FXLN, PR-FR. XLN. Ø; NS.

60: LS. LT. GRY-TAN W/ PR-LIT. FR. XLN. Ø; NS.

70: TR. SHALE, BLK, CARB; LS, BRN, FOSS, SLI. CALCITIC SLI. SHLY; TR LAM SST, V.FN. GRND, FRIABLE; NS.

80: SHALE MAR, GRN. LS, TAN, PR. Ø; NS.

90: LS. TAN SLI. FOSS. TR. FOSS CAST-VUG Ø -SOME CALCITE FILLED; NS.

100: LS. GRY-TAN, GLAUC, PR. Ø NS.

10: LS. TAN, SLI. FOSS., PR. Ø; NS.

20: LS. AS ABV.

30: LS. TAN, SLI. CHLKY; SLI. CALCITIC, PR-FR. XLN. Ø; TR. CHT. CRM-GRY, SHP; NS.

40: SHALE, BLK, CARB.

MUD @ 3465:
VIS: 51
WT: 9.3
FILT. 8.0
CHLOR: 1,000
LCM: 1 #

DST #1
(3420 - 3554)
TIMES: 5-30-60-90
IF: BUILT TO 4½" BLOW
FF: BLOW OFF BOTTOM IN 28".
NO BLOWBACK

3426 (-928)

DST

3450

TORONTO
3455 (-957)

LANSING
3468 (-970)

#3

C

3500

D

E

F

G

#1

3550

H

3600

J

K

L

BKC
3654 (-1156)

3650

3700

50: LS. BRN, VF-FXLN, PR ϕ; NS.

60: MAROON SHALE + MAROON LMY. SILTSTN.

SM. PPT. LS. FOSS./FRAGMENTAL W/ PR-FR. INTER-FRAG. PPT-VUG ϕ, FSFO + G, SPTY.-TR. TOTAL SAT. STN., SLI. ODOR.

TR. LT. CRM-TAN, V. OOLITIC W/ PR-FR. INTER-OOL. PPT + XLN. ϕ SSFO SPTY. SAT. STN.-TR. TOTAL SAT. STN.

100: SHALE, GRY/MAR., SOME LMY.

LS. V. OOL./FOSS. W/PR-FR. INTER-OOL. PPT. ϕ HARD TITE, FSG+ RARO LIVE STN IN WET, TOTAL BRN. SAT. STN.; ALSO CRM, SLI. CHKY LS. W/ FSFO + SPTY-TOT. SAT. STN.

LS. CRM FOSS. W/ PR-FR. PPT-FOSS. CAST-SOL. ϕ, SSFO + G.

CHERT, TAN-ORG, SHP, NS

TR. LS. CRM, PR. PPT. ϕ, SSFO, SPTY SAT. STN., NO ODOR.

TR. LS. V. OOLITIC W/ FN-CSE OOLIS PR. INTER-OOL. PPT. ϕ, S-FSFO + G. SPTY. SAT. STN., NO ODOR.

TR. CRM. LS. V. OOLITIC W/ PR. INTER-OOL. PPT. ϕ, VSSFO + SPTY SAT. STN., NO ODOR.

LS. GRY, VFXLN, DSE; NS.

SHALE, V. COLORED

LS. CRM SLI. CHTY FOSS./OOL. W/ PR-TR. FR. INTER-FOSS. PPT-VUG ϕ, VSSFO, SPTY. STN., NO ODOR.

15"

V. COLORED SHALE; TR. PYRITE, TR. SST., CLR. SHD ANG., FR. SORT., FRIAB.; NS.

LS. CRM, V. OOL. TO FOSS. PR-TR. FR. INTER-OOL.-TO INTER-FOSS. PPT-VUG ϕ, SPTY. TO NEAR TOT. BRN. SAT. STN., TR. BLK. TARRY STN., NFO, NO ODOR.

TR. LS. CRM OOL./FOSS. W/ PR-TR. FR. PPT-FOSS. CAST. ϕ, VSSFO, SPTY. STN.; NO ODOR.

ORLY CP. RES. LS. CRM-TAN, SLI. FOSS., W/ TR. PR. PPT-FOSS. CAST. ϕ, SPTY. STN., 1 PC. W/ TR. FO; NO ODOR.

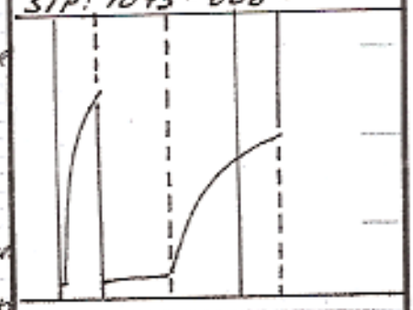
SHALE, MAROON + GRY; TR. LMY, TITE SST.

90: LS. CRM-BRN, SLI. FOSS., V. SLI. CALC.; NS.

100: SHALE, MAROON, GRY AND LS. BRN, FOSS./OOL. PR-TR. FR. XLN. ϕ; NS.

10: LS. CRM SILTY, SLI. CHLKY TO V. LMY SILTSTN.

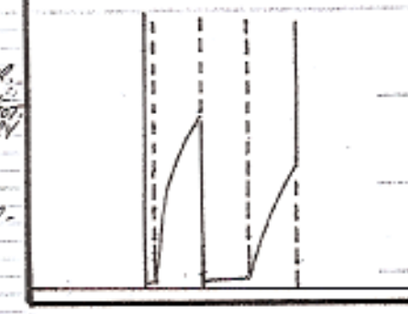
NO BLOWBACK
REC: 202' TOTAL FLUID:
15'OM (1% G, 46% OIL)
63'OCM (5% G, 25% OIL)
124' GSY OCM (14% GAS, 36% OIL)
50' GAS IN PIPE.
IFP: 47-61#
FFP: 79-105#
SIP: 1043-808#



BHT: 99°

PIPE STRAP @ 3554'
1.18' LONG TO BOARD.

DST #3
3419-3476
STRADDLE TEST.
TIMES: 5-30-30-30
IF: BUILT TO 1" BLOW
FF: NO BLOW, FLUSHED TOOL @ 15", REC. WEAK SURFACE BLOW - DEAD AT 25".
NO BLOWBACK.
REC: 20' DRLG. MUD, TRACE OIL IN TOOL.
IFP: 18-21#
FFP: 23-33#
SIP: 966-677#
BHT: 99°.



MUD @ 3666:
VIS: 56
WT: 9.4
FILT: 8.8
CHLOR: 1,000
LCM: 1#

DST #2
(3718-3756)
TIMES: 5-30-30-45
IF: BLOW OFF BTM 2½"
FF: BLOW OFF BTM 4"
REC: 515' TOTAL FLUID;

H

J

K

L

3600

3650

3700

3750

BKC
3654 (-1156)

PRE-CAMB. WASH
3753 (-1255)

RTD 3756
LTD 3758

DST #2

LS. CRM SLI. CHTY, FOSS/OOL, W/ PR-TR. FR. INTER-FOSS, APT-VUG Ø, VSSFO, SPTY. STN., NO ODOR.

V. COLORED SHALE; TR. PYRITE, TR. SST., CLR. SHBANG., FR. SORT., FRIAB.; NS.

LS CRM V. OOL. TO FOSS., PR-TR. FR. INTER-OOL-TO INTER-FOSS., APT-VUG Ø, SPTY TO NEAR TOT. BRN. SAT. STN., TR. BLK. TARRY STN., NFS, NO ODOR.

TR LS, CRM OOL./FOSS. W/ PR-TR FR. APT-FOSS. CAST. Ø VSSFO, SPTY. STN.; NO ODOR.

ABV CA. RCS. LS. CRM-TAN SLI. FOSS. W/ TR. PR. APT-FOSS. CAST. Ø SPTY. STN., 1 PC. W/ TR. FO; NO ODOR.

SHALE MAROON + GRY; TR. LMY, TITE SST.

90: LS. CRM-BRN SLI. FOSS, V. SLI. GLAUC.; NS.

100: SHALE, MAROON, GRY AND LS. BRN, FOSS./OOL. PR-TR. FR. XLN. Ø; NS.

10: LS. CRM, SILTY, SLI. CHLKY TO V. LMY SILTSTN.

20: INC. SHALE MAROON, GRY.

30: LS. CRM-LT. PURPLE, PR-FR. XLN. Ø; SHALE, PURPLE.

40: STICKY MAROON SHALE + CRM. CHLKY LS.

50: SOFT, STICKY MAR. SH.

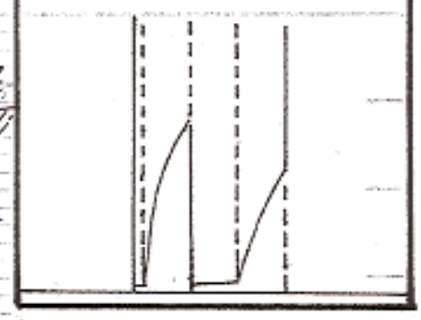
15" AS ABV.

45-52: SHALE, V. COL.; FEW FN-MD SD. GRNS CLR, ANG-SBANG.; TR. CLR. SLI. GLAUC SST, VF-MD, SBANG, PRLY SOFT, TITE; NS.

52-56: CSE QTZ, PEBBLES W/ GRNS, GRY, CSE W/ SSFO OH BRK.; TR BLK, TARRY SPTY RESIDUE; FRIABLE SD., CLR, ANG

DST #2
(3718 - 3756)
TIMES: 5-30-30-45
IF: BLOW OFF BTM 2 1/2"
IF: BLOW OFF BTM 4"
REC: 515' TOTAL FLUID;
145' MDY WTR W/ TRACE OIL, (53% WTR.)
370' MCW (80% WTR)
WTR CHLOR: 27,500 PPM
MUD CHLOR: 1,000 PPM
RW: .395 @ 44.8°F.
IFP: 122-127#
FFP: 159-251#
SIP: 819-701#
BHT: 104°

FFP: 23-33#
SIP: 966-677#
BHT: 99°.



MUD @ 3666:
VIS: 56
WT: 9.4
FILT: 8.8
CHLOR: 1,000
LCM: 1#

MUD @ 3756:
VIS: 53
WT: 9.3
FILT: 8.8
CHLOR: 1,000
LCM: 1#

DEPTH	DRILLING TIME Minutes/Foot (Rate of Penetration Increases)	SAMPLE DESCRIPTIONS	REMARKS

COMPANY CRAWFORD OIL & GAS CO, LLC
LEASE BOHL TRUST 1-1
LOCATION 2209 FNL 1322 FWL SEC. 1 TWP 35 RNG 25W
COUNTY NORTON STATE KANSAS
ELEVATION: 2498 KB