Confidentiality Requested:

Yes No

#### Kansas Corporation Commission Oil & Gas Conservation Division

1244925

Form ACO-1 August 2013 Form must be Typed Form must be Signed All blanks must be Filled

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

OPERATOR: License #			API No. 15	
Name:			Spot Description:	
Address 1:			Sec	TwpS. R
Address 2:			Feet	from $\ \square$ North / $\ \square$ South Line of Section
City: Sta	ate: Ziŗ	D:+	Feet	from East / West Line of Section
Contact Person:			Footages Calculated from Ne	arest Outside Section Corner:
Phone: ()			□ NE □ NW	□ SE □ SW
CONTRACTOR: License #			GPS Location: Lat:	, Long:
Name:				. xx.xxxxx) (e.gxxx.xxxxx)
Wellsite Geologist:			Datum: NAD27 NAD27	
Purchaser:			County:	
Designate Type of Completion:			Lease Name:	Well #:
New Well Re-	Entry	Workover	Field Name:	
	_		Producing Formation:	
☐ Oil ☐ WSW	SWD	SIOW	Elevation: Ground:	Kelly Bushing:
☐ Gas ☐ D&A ☐ OG	☐ ENHR ☐ GSW	☐ SIGW ☐ Temp. Abd.	Total Vertical Depth:	Plug Back Total Depth:
CM (Coal Bed Methane)	G3W	Terrip. Abd.	Amount of Surface Pipe Set a	and Cemented at: Feet
Cathodic Other (Core	Expl etc.)		Multiple Stage Cementing Co	
If Workover/Re-entry: Old Well Info				Feet
Operator:				nent circulated from:
Well Name:			, ,	w/sx cmt.
Original Comp. Date:			loot doparto.	W,
<u> </u>	_	NHR Conv. to SWD		
Deepening Re-perf. Plug Back	Conv. to GS		Drilling Fluid Management F (Data must be collected from the	
Commingled	Permit #:		Chloride content:	ppm Fluid volume: bbls
Dual Completion	Permit #:		Dewatering method used:	
SWD	Permit #:		Location of fluid disposal if ha	uled offsite:
☐ ENHR	Permit #:		On a water Manage	
GSW	Permit #:			L'acces II
				License #:
Spud Date or Date Rea	ched TD	Completion Date or		TwpS. R
Recompletion Date		Recompletion Date	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				
Geologist Report Received				
UIC Distribution				
ALT I II Approved by: Date:				

1244925	

Operator Name:			Lease Name: _			Well #:	
Sec Twp	S. R [	East West	County:				
INSTRUCTIONS: Show open and closed, flowin and flow rates if gas to s	g and shut-in pressur	es, whether shut-in pre	essure reached stat	c level, hydrosta	tic pressures, b		
Final Radioactivity Log, files must be submitted				ogs must be ema	iled to kcc-well-	logs@kcc.ks.go	v. Digital electronic log
Drill Stem Tests Taken (Attach Additional Sh	eets)	Yes No	□ L		on (Top), Depth		Sample
Samples Sent to Geolog	gical Survey	Yes No	Nam	е		Тор	Datum
Cores Taken Electric Log Run		☐ Yes ☐ No ☐ Yes ☐ No					
List All E. Logs Run:							
		CASING	RECORD No	ew Used			
		Report all strings set-			on, 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 / SOL	IEEZE DECODO			
Purpose:	Depth	Type of Cement	# Sacks Used	JEEZE NECOND	Type and	d Percent Additives	
Perforate Protect Casing	Top Bottom			7,			
Plug Back TD Plug Off Zone							
Did you perform a hydraulid	c fracturing treatment on	this well?		Yes	No (If No,	skip questions 2 ar	nd 3)
Does the volume of the total Was the hydraulic fracturing	,	· ·	, 0	?	_ , ,	skip question 3) fill out Page Three	of the ACO-1)
Shots Per Foot		NRECORD - Bridge Plugotage of Each Interval Per			cture, Shot, Ceme	ent Squeeze Record	d Depth
TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:	Yes	lo	
Date of First, Resumed Pr	roduction, SWD or ENHF	Producing Meth	nod:	Gas Lift C	other (Explain)		
Estimated Production Per 24 Hours	Oil Bb	ls. Gas	Mcf Wat	er Bi	bls.	Gas-Oil Ratio	Gravity
DISPOSITION	N OF GAS:		METHOD OF COMPLI			PRODUCTIO	DN INTERVAL:
Vented Sold	Used on Lease	Open Hole	Perf. Dually (Submit		nmingled mit ACO-4)		
(If vented, Subm	nit ACO-18.)	Other (Specify)			-		

Form	ACO1 - Well Completion		
Operator	Mai Oil Operations, Inc.		
Well Name	F. A. Krug 5		
Doc ID	1244925		

# Tops

Name	Тор	Datum
Anhydrite	913	+990
Tarkio Lime	2531	-628
Topeka	2803	-900
Heebner	3030	-1127
Toronto	3046	-1143
Lansing	3083	-1180
Base Kansas City	3296	-1393
Arbuckle	3339	-1436

Form	ACO1 - Well Completion		
Operator	Mai Oil Operations, Inc.		
Well Name	F. A. Krug 5		
Doc ID	1244925		

# Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement		Type and Percent Additives
Surface	12.25	8.625	23	515	60-40 POZ		2%gel, 3% CC
Production	7.875	5.5	14	3399	60-40 POZ	160	2%gel

### JAMES C. MUSGROVE

Petroleum Geologist, LLC 212 Main Street P.O. Box 215 Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 587-3444

Mai Oil Operations FA Krug #5 SW-SW-SW-NE (2476' FNL & 2695' FNL) Section 15-15s-14w Russell County, Kansas

Page 1

## 5 1/2" Production Casing Set

Contractor:

Southwind Drilling Co. (rig #3)

Commenced:

December 5, 2014

Completed:

December 11, 2014

Elevation:

1903' K.B., 1901' D.F., 1895' G.L.

Casing program:

Surface; 8 5/8" @ 515'

Production, 5 1/2" @ 3407'

Sample:

Samples saved and examined 2300' to the Rotary Total Depth.

**Drilling time:** 

One (1) foot drilling time recorded and kept 2300' to the Rotary Total Depth.

Measurements:

All depths measured from the Kelly Bushing.

**Drill Stem Tests:** 

There were two (2) Drill Stem Tests ran by Trilobite Testing Co.

Electric Log:

By Nabors, Dual Induction, Compensated Density/Neutron Log and Micro

Log.

<u>Formation</u>	Log Depth	Sub-Sea Datum
Anhydrite	913	+990
Base Anhydrite	943	+967
Grand Haven	2461	-558
1 <sup>st</sup> Tarkio Sand	2473	-570
Dover	2486	-583
2 <sup>nd</sup> Tarkio Sand	2492	-589
Tarkio Lime	2531	-628
Topeka	2803	-900
Heebner	3030	-1127
Toronto	3046	-1143
Lansing	3083	-1180
Base Kansas City	3296	-1393
Arbuckle	3339	-1436
Rotary Total Depth	3408	-1505
Log Total Depth	3408	-1505

All tops and zones corrected to Electric Log Measurement

Mai Oil Operations FA Krug #5 SW-SW-SW-NE (2476' FNL & 2695' FNL) Section 15-15s-14w Russell County, Kansas

Page 2

#### SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

# TARKIO SECTION 1ST SAND

2473-2479'

Poorly developed sand, poor samples; no visible shows.

2<sup>nd</sup> SAND

2493-2506'

Sand; gray, white, very fine grained shaley, micaeous, no shows.

**TOPEKA SECTION** 

2940-2947' Limestone, cream, finely crystalline, chalky, questionable stain, no free

oil and no odor in fresh samples.

2978-2990' Limestone, cream, finely crystalline, chalky in part, trace brown stain, no

free oil and no odor.

2992-3012' Limestone, cream finely crystalline, fossiliferous in part, light brown stain,

show of free oil and faint odor in fresh samples.

<u>Drill Stem Test #1</u> 2948-3020

Times: 30-30-30-45

Blow: Weak

Recovery: 5' mud

Pressures: ISIP 748 psi

FSIP 757 psi IFP 41-50 psi FFP 50-52 psi HSH 1447-1367 psi

## **TORONTO SECTION**

3046-3056'

Limestone, cream, white, chalky; no shows.

#### LANSING SECTION

3103-3113' Limestone, cream, fine and medium crystalline, scattered porosity, no

shows.

3123-3134' Limestone, cream, finely crystalline, chalky, trace spotty stain, no free oil

and no odor.

3131-3144' Limestone, cream, finely crystalline, oomoldic, scattered oomoldic

porosity, no shows.

3161-3170' Limestone, cream, finely crystalline, cherty in part, scattered porosity, no

shows.

Mai Oil Operations FA Krug #5 SW-SW-SW-NE (2476' FNL & 2695' FNL) Section 15-15s-14w Russell County, Kansas

Page 3

3240-3250'	Limestone, cream, finely crystalline, oomoldic in part, fair porosity, no shows.
3255-3265'	Limestone, cream, finely crystalline oolitic, scattered porosity, trace stain, show of free oil and faint odor in fresh samples.
3275-3290'	Limestone, cream, finely crystalline oomoldic, scattered oomoldic porosity; trace stain, show of free oil and fair odor in fresh samples.
3310-3320'	Limestone, cream, finely crystalline, cherty, poor visible porosity, no shows.

#### **ARBUCKLE SECTION**

3339-3348'

Dolomite, white, medium crystalline, good inter-crystalline porosity, light brown stain, show of free oil and good odor in fresh samples.

Drill Stem Test #2	3290-3348

Times:

30-30-45-60

Blow:

Strong

Recovery:

5' clean oil

1741' gassy oil cut muddy water (20% oil; 50% water; 10% mud)

Pressures: ISIP 463

ISIP 463 FSIP 491 psi psi

IFP 20-198

psi

FFP 199-325 HSH 1580-1569

psi psi

3348-3360'

Dolomite, as above, trace stain, show of free oil and odor in fresh samples.

3360-3380'

Dolomite, white, cream, fine and medium crystalline, scattered intercrystalline porosity, trace stain, show of free oil and good odor in fresh samples.

3380-3408'

Dolomite, white/cream, medium crystalline, scattered porosity, no stain, no free oil and no odor in fresh samples.

Rotary Total Depth Log Total Depth 3408 3408 Mai Oil Operations FA Krug #5 SW-SW-SW-NE (2476' FNL & 2695' FNL) Section 15-15s-14w Russell County, Kansas

Page 4

#### Recommendations:

The 5 ½" production casing was set and cemented on Mai Oil Operation Inc., F.A. Krug #5.

Respectfully yours,

James C. and Clint Musgrove

ans C. & Chint Mus

Petroleum Geologists



#### DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

15-15s-14w Russell,KS

8411 Preston Rd STE 800 Dallas TX 75225-5520

FA Krug #5 Job Ticket: 60419

DST#: 1

ATTN: Clint Musgrove

Test Start: 2014.12.08 @ 13:55:00

#### GENERAL INFORMATION:

Time Tool Opened: 15:23:30

Time Test Ended: 18:46:00

Formation:

Plattsmouth

Deviated:

No Whipstock:

ft (KB)

Test Type: Conventional Bottom Hole (Initial)

Shane Konzem

Unit No:

S3

Reference Bevations:

1903.00 ft (KB) 1895.00 ft (CF)

Interval: Total Depth:

2948.00 ft (KB) To 3020.00 ft (KB) (TVD)

3020.00 ft (KB) (TVD)

7.88 inches Hole Condition: Fair

KB to GR/CF:

8.00 ft

Hole Diameter: Serial #: 6806

Press@RunDepth:

Inside 52.71 psig @

13:56:00

3016.18 ft (KB)

Capacity:

8000.00 psig

Start Date: Start Time:

2014,12,08

End Date: End Time:

2014.12.08 18:46:00 Last Calib.: Time On Btm: 2014.12.08

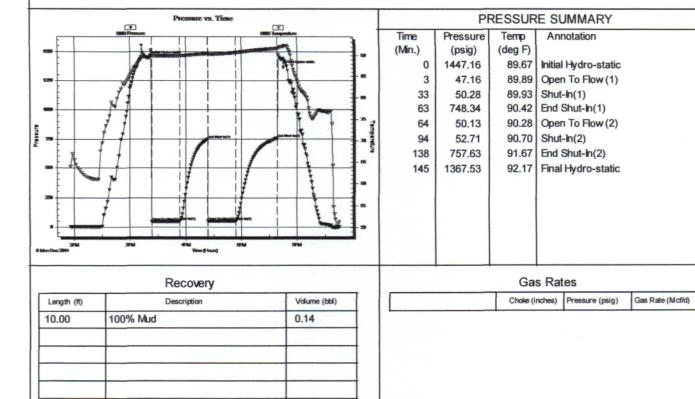
2014.12.08 @ 15:20:30 Time Off Btm: 2014.12.08 @ 17:45:00

TEST COMMENT: IFP 30 Minutes. Weak blow built to 1/2" into water.

ISI 30 Minutes. No blow back.

FFP 30 Minutes. No blow, flushed tool had good flush bubbles and gained no blow.

FSI 45 Minutes. No blow back.



Trilobite Testing, Inc

Ref. No: 60419

Printed: 2014.12.11 @ 16:50:35



### DRILL STEM TEST REPORT

Mai Oil Operations, Inc.

8411 Preston Rd STE 800 Dallas TX 75225-5520

ATTN: Clint Musgrove

15-15s-14w Russell,KS

FA Krug #5

Job Ticket: 60420

DST#: 2

Test Start: 2014.12.09 @ 19:55:00

#### GENERAL INFORMATION:

Time Tool Opened: 21:09:30

Time Test Ended: 03:12:00

Formation:

Arbuckle

Deviated:

No Whipstock:

ft (KB)

Test Type: Conventional Bottom Hole (Initial) Tester:

Shane Konzem

Unit No:

Reference Bevations:

1903.00 ft (KB)

KB to GR/CF:

1895.00 ft (CF) 8.00 ft

Total Depth:

3290.00 ft (KB) To 3348.00 ft (KB) (TVD)

Hole Diameter:

3348.00 ft (KB) (TVD)

7.88 inches Hole Condition: Fair

Serial #: 6806 Inside

Press@RunDepth:

19:56:00

997.87 psig @ 3344.22 ft (KB) End Date:

2014.12.10

Capacity: Last Calib.: 8000.00 psig

Start Date: Start Time:

2014.12.09

End Time:

03:12:00

Time On Btm:

2014.12.10 2014.12.09 @ 21:06:30

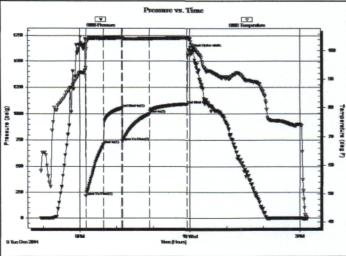
Time Off Btm: 2014.12.09 @ 23:59:30

TEST COMMENT: IFP 30 Minutes. BOB in 55 seconds.

ISI 30 Minutes. No blow back.

FFP 45 Minutes. BOB in 1 minute and 15 seconds.

FSI 60 Minutes. No blow back.



	PRESSURE SUMMARY						
1	Time	Pressure	Temp	Annotation			
	(Min.)	(psig)	(deg F)				
	0	1663.96	92.24	Initial Hydro-static			
1	3	214.82	93.98	Open To Flow (1)			
	32	711.17	104.45	Shut-In(1)			
_	62	1053.28	104.57	End Shut-In(1)			
9	63	739.25	104.49	Open To Flow (2)			
- Purple	107	997.87	104.30	Shut-In(2)			
Temperature (dag F)	169	1091.21	104.50	End Shut-In(2)			
3	173	1605.47	104.27	Final Hydro-static			
				-			

DDECCLIDE CLIMMADY

	Recovery
th (ft)	Description

Length (ft)	Description	Volume (bbl)
5.00	100% Clean Oil	0.07
126.00	OCMW 20% oil, 20% mud, 60% w ater	1.77
126.00	GOCMW 15% gas, 20% oil, 15% mud, 5	01.77at
252.00	GOCMW 20% gas, 20% oil, 10% mud, 5	03.53at
504.00	GOCMW 25% gas, 20% oil, 10% mud, 4	57.07at
378.00	GOCMW 20% gas, 20% oil, 20% mud, 4	05.30at

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 60420

Printed: 2014.12.11 @ 16:50:11

# QUALITY OILWELL CEMENTING, INC. Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Cell 785-324-1041

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

No. 899

Cen 703-324-1041							
Sec.	Twp. Range	0	County	State	On Location	Finish	
Date 12-5-14 15	15 14	Ku	55811	ns.	FIGURE TO THE	9.30 PM	
Location Russell Ks - S to winterset Rd, Yaw							
Lease FA Krua Well No. 5			Owner 19/1	- 2	T MAN SECONOLIS IN	DIN YES NI HOTEL	
C 11 bill 1	#3 ·		THE RESERVE AND ADDRESS OF THE PARTY OF THE	lwell Cementing, Inc.			
Contractor Southwind	# 7		You are here	by requested to rent	cementing equipmen	t and furnish	
Type Job Ductare	F. 51		cementer and helper to assist owner or contractor to do work as listed.				
Hole Size	T.D. 515		Charge Mai oil operations				
Csg. 858	Depth 515		Street				
Tbg. Size	Depth	ed mon	City	O' at besail scattered;	State	230189	
Tool	Depth		The above was	s done to satisfaction ar	nd supervision of owner	agent or contractor.	
Cement Left in Csg. 20	Shoe Joint 20		Cement Amo	unt Ordered 250	60140 0	3/2 (C)/- Ge	
Meas Line	Displace 31 %	BLS:	Charles desert		Links (SadhArd)	CHENCT .	
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	aoid		Poz. Mix		O ya hise boy of be	nerto ed (inc. 177)	
Bulktrk V No. Driver Driver	20		Gel.	MIS we by Basic	Tillia lension un	S on languages took	
Bulktrk D. U. No. Driver Driver	Rick		Calcium		mu asonako ju	AHOADO -	
JOB SERVICES	& REMARKS	1 - 1 - 1	Hulls				
Remarks: ement did	Circulate	A(10)	Salt	ALIVO SELECTION OF THE PERSON	and the second		
Rat Hole	e yes bridge trap our	and the	Flowseal		e ere med present og Autil medernagt films		
Mouse Hole			Kol-Seal				
Centralizers			Mud CLR 48				
Baskets	White and the same	Ran O	CFL-117 or CD110 CAF 38				
D/V or Port Collar	and the second		Sand				
C. Destruction of the second			Handling		Sain of the case of the	and the second	
		- 7	Mileage	CELL CONTRACTOR		ec, of greater the	
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Common at anyther took years of			Guide Shoe			.080	
		20	Centralizer	ships" torse.	to retinal your occurren	there and because	
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Signature City / Juin	; and the state of the state of	0.3000			Total Charge		
Signature 10 100					Total Orlaige		

# QUALITY OILWELL CEMENTING, INC. Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665 No. 8315

Sec.	Twp.	Range		County	State	On Location	Finish
Date 12-10-19 15	15	14	Ky	55eH	15	All the and entire the	9:45 Pm
the foll been drained or may	Locati	on Russell's	stowinterset	- 1/2 W N.	nto		
Lease F. A Kruu	to old of	Well No.	METER A	Owner	<b>经</b> 的现在分词 的复数	ng bearing a plan	and we compage
Contractor Catherine	13	TOTAL RESERVE SHARE	TO THE REAL PROPERTY.	To Quality Oi	lwell Cementing, Inc. by requested to rent of	rementing equipmen	and furnish
Type Job Production	ALL YOU	stancy and and a	TANKS	cementer and	d helper to assist own	er or contractor to de	work as listed.
Hole Size 77/8	T.D.	3408	OFFI MAN	Charge Mai Oil			
csg. 5 1/2 14#	Depth	3399'	nak aq	Street			
Tbg. Size	Depth	CONTRACTOR OF CARROL		City State			States on the low
Tool	Depth	Side on Julie.	Miles 23	The above was done to satisfaction and supervision of owner agent or contra			
Cement Left in Csg. 20.32	Shoe	loint 20.32	- 1090 1090	Cement Amo	ount Ordered 1603	2694010%5	1+ 27 gel ty
Meas Line	Displac	ce 82 1/2	r 200 st	1,000 9 41	muc Clear	Mina Coopie	Codesic .
A THE RESIDENCE OF THE PROPERTY OF THE PARTY	MENT	San Arranga (A. A.		Common	Bright Call Street in	Briggious and the colors	per es y Tráduc
Pumptrk   8 No. Cementer Helper		Cody		Poz. Mix	10 per 10 kg		The second second
Bulktrk No. Driver Driver		ick	14000	Gel.	Manager of the delik	\$ 2 SECRETARY MODE	FARBEN .
Bulktrk Pu No. Driver Driver	P	the		Calcium		A CONTRACTOR OF THE STATE OF	or to the factories and
JOB SERVICES & REMARKS			Hulls	refere others and years for	approximate with the company	ext point it even	
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Mouse Hole	Samuel Angel			Kol-Seal			
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Baskets	naunun 1	n seek kansan	Service to	CFL-117 or CD110 CAF 38			
D/V or Port Collar	0006 (I S	elfensylvason hy g	erkien	Sand			
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un Hocket from 542 164	wishe	¿ Dumpar	10	Guide Shoe			
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Washok of vater Janeie Dlune Release			Baskets				
and Dhy held.			AFU Inserts				
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Lill PS; 600				Latch Down			
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Signature				EST WELLEN	NO NOT THE PARTY OF	Total Charge	181K) will to los