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 Krug 'L' #2 S/2-NE-SE-NW (1875'FNL&2310'FWL) Section 15-15s-14w Russell County, Kansas Page 1

5 1/2" Production Casing Set

Contractor:

Southwind Drilling Co. (Rig #3)

Commenced:

February 13, 2014

Completed:

February 17, 2014

Elevation:

1787' K.B; 1779' D.F; 1773' G.L.

Casing program:

Surface; 8 5/8" @ 534'

Production; 5 1/2" @ 3299'

Sample:

Samples saved and examined 2800' to the Rotary Total Depth.

Drilling time:

One (1) foot drilling time recorded and kept 2800 ft. to the Rotary Total

Depth.

Measurements:

All depths measured from the Kelly Bushing.

Drill Stem Tests:

None.

Electric Log:

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

<u>Formation</u>	Log Depth	Sub-Sea Datum
Anhydrite	793	+994
Base Anhydrite	826	+961
Grand Haven	2338	-551
1 st Tarkio Sad	2350	-563
Dover	2304	-577
2 nd Tarkio Sand	2380	-593
Tarkio Lime	2408	-621
Elmont	2470	-683
Howard	2609	-822
Topeka	2675	-888
Heebner	2908	-1121
Toronto	2925	-1138
Lansing	2970	-1183
Base Kansas City	3173	-1396
Arbuckle	3217	
Rotary Total Depth	3300	-1513
Log Total Depth	3299	-1512
(All tone and zones or	proceed to Electric Log I	meacurements)

(All tops and zones corrected to Electric Log measurements).

Mai Oil Operations Krug'L' #2 S/2-NE-SE-NW (1875' FNL & 2310' FWL) Section 15-15s-14w Russell County, Kansas Page 2

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

TARKIO SANDS SECTION

2350-2470' No samples or drilling time was caught and/or kept through the

Tarkio Sections. (Remarks: the hole was flowing water and it

was decided to mud up with starch mud at 2700ft.)

TOPEKA SECTION

2835-2845' Limestone; tan, fossiliferous, chalky, poor porosity, trace

black/brown stain, no show of free oil and no odor in fresh

samples.

2854-2870' Limestone; tan, fossiliferous, fair fossil cast porosity, fair stain

and saturation, show of free oil in fresh samples

TORONTO SECTION

2925-2939' Limestone; white/gray, finely crystalline, oolitic, chalky,

questionable stain/discoloration, no free oil and no odor, trace

gray chert.

LANSING SECTION

2970-2980' Limestone; gray and white, fine and medium crystalline,

scattered intercrystalline porosity, chalky, dark brown/brown

stain, no free oil and no odor in fresh samples.

2994-3004' Limestone; tan, few sub oomoldic, poor porosity, trace poor

stain, no free oil and no odor in fresh samples.

3006-3013' Limestone; as above, poor porosity, questionable edge staining,

no show of free oil and no odor.

3050-3060' Limestone; gray, finely oomoldic, chalky, poorly developed

porosity, no shows.

3062-3077' Limestone; gray, white, oomoldic, scattered porosity, trace brown

stain, no free oil and no odor in fresh samples.

3134-3140' Limestone; gray, white, cream, finely crystalline, sub oomoldic,

chalky, no stain, no free oil and no odor.

3152-3160' Limestone; gray, oomoldic, good oomoldic porosity, gray and

brown stain, show of free oil and faint/fair odor in fresh samples.

3185-3196' Limestone; tan, finely and medium crystalline, few fossiliferous,

chalky, brown and golden brown stain, show of free oil and odor

in fresh samples.

Mai Oil Operations Krug'L' #2 S/2-NE-SE-NW (1875' FNL & 2310' FWL) Section 15-15s-14w Russell County, Kansas Page 3

ARBUCKLE SECTION

3217-3230'	Dolomite; white/cream, medium crystalline, fair/good intercrystalline porosity, golden brown to brown stain and saturation, show of free oil and good odor in fresh samples.
3230-3235'	Dolomite; as above, good porosity, brown and golden brown stain and saturation, show of free oil and good odor in fresh samples.
3235-3240'	Dolomite; white, gray, medium crystalline, few coarse crystalline good intercrystalline and vuggy type porosity, good stain and saturation, good show of free oil and fair odor in fresh samples.
3240-3260'	Dolomite; as above, fair to good porosity, brown and golden brown stain, show of free oil and fair odor, plus white/gray, oolitic, opaque chert.
3260-3280'	Dolomite; cream, white, medium crystalline, scattered porosity, no shows.
3280-3300'	Dolomite; as above, sandy in part, trace gray and white chert and iron pyrite.

Rotary Total Depth Log Total Depth 3300 3299

Recommendations:

5 ½" production casing was set and cemented in the Krug 'L' #2.

Respectfully submitted;

James C. Musgrove, Petroleum Geologist LLC

and iron norte

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. 7103

Available of the selection	Sec.	Twp.	Range	(County	State	On Location	Finish	
Date 2-14-14	15	15	14	Ra	53ell	ks		1:30 AM	
The state of the s						on. Russell sto winterset Rd, 34w, Nn2			
Lease Krus L	LEVELY IS		Well No. 2	No. of Street	Owner	Action was all and	Beds Frederick of Artist	ART AT LESSON	
Contractor South wind	1	3	mos ingel muner	200	You are here	ilwell Cementing, In	nt cementing equipmen	t and furnish	
Type Job Surface			You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.						
Hole Size 12 4		T.D.	534	Act Dist	To Maigil				
Csg. 8 5/8	into accord	Depth	534	und and	Street				
Tbg. Size				City State					
Tool		Depth	Thought tells	0 12 5 1		THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO I	and supervision of owner		
Cement Left in Csg.			oint 20		Cement Amo	ount Ordered 25	05x 60/40 3/000	2/0981	
Meas Line			e 32 /2 861	1 200	March ach		Y 140 2333 H	OMBWOT	
CALLED AS CONTRACTABLES	EQUIPME	ENT			Common	Makedan 10 mag		Charles Million M.	
Pumptrk 17 No. Ceme	r NICI	lc			Poz. Mix	eravior.	M.C. and San San Sec.		
Bulktrk 3 No. Driver	David				Gel.	Alekanam auktoria de	interpolate you	ARKA BATA	
Bulktrk Ph No. Driver	Travis	Acres 400		E - 20 1	Calcium		Mar 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	Control of the Contro	
JOB SE	RVICES 8	REMA	RKS	01. 10 d'	Hulls	letter Appendot was	does began a survivo	bod solite zneme	
Remarks: Cement dia	Prircula	te	40 000 Care VI	1500	Salt	1800			
Rat Hole	1 90 1500	The Cartesian		an out l	Flowseal				
Mouse Hole				Kol-Seal					
Centralizers				Mud CLR 48					
Baskets	vilsku ep	garab 1			CFL-117 or CD110 CAF 38				
D/V or Port Collar	- A			(en la constant	Sand				
				A	Handling				
				a. og	Mileage				
					FLOAT EQUIPMENT				
alligarization of motion legalities	1000	90			Guide Shoe				
constituy to the disease of				2	Centralizer	Electrical and the second	to at states to contante	sono ist peeuss	
	exections.	babba		M. Chienly	Baskets		100		
				AFU Inserts		ological and the	STREET OF RELEASE		
				Float Shoe					
					Latch Down			4/40/13/25/11/19	
		R 10 200	ubais since	0.57.130	uo vi prepre				
				Pumptrk Charge					
Link to the state of the state	,	No.	Marketon v. 11 p	A STATE OF THE STA	Mileage	version to the second		gym kout (8)	
e Description all society	UAUD to	4200	Ran Grop to s				Tax		
· A I	-(e 60 l	AND ALPHANA	d essio			Discount	R to religious garage	
X Signature	nir						Total Charge		
() ()									

QUALITY OILWELL CEMENTING, INC. Federal Tax 1.D.# 20-2886107

Phone 785-483-2025

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

No. 460

Oeii 705-524-1041	described to	Maria Company	THAC Y	PACIF CAMPA	Commence of the second			
Date 2 - 18 - 14 Sec. 15	Twp.	Range	1	County 14 Jack	State	On Location AOO Ah	Finish	
and the same of the same	Stall Carry	ACID MET PARK	Location	on Russe	11 540	vite 6 Se	+ 34W	
Lease Mrug L	W	ell No.	. Albat	Owner N	into		the section when	
Contractor South Upped	3			To Quality Oi	lwell Cementing, Inc.	cementing equipment	and furnish	
Type Job Lang String		200	. 8044	You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.				
Hole Size 7 7/8	T.D. 2	200		Charge /				
Csg. 5 1/2	Depth	1899	e oct va	Street	101	011	in second	
Tbg. Size	Depth		d these	City		State		
Tool	Depth	- 1 // 3	1,190	The above wa	s done to satisfaction a	nd supervision of owner	agent or contractor.	
Cement Left in Csg. 21,40	Shoe Join	nt 2:40	, ,	Cement Amo	ount Ordered 100	60140 %	90881	
Meas Line	Displace	30 BI	1	18 705	2017/41	tou	, yaven't	
EQUIPN	IENT			Common	100 60/40	290,5€		
Pumptrk No. Cementer Helper	tt			Poz. Mix/0	90 Salt YC	1+low	es forgoniación i	
Bulktrk 9 No. Driver Driver	10	-		Gel.			e e e e e e e e e e e e e e e e e e e	
Bulktrk 3 No. Driver Driver	d	douc	>	Calcium	Bosis a combo se	MI ABORAH	in a second	
DA JOB SERVICES	& REMAR	KS		Hulls	rese recently into the	ed its ortons 5 , 4		
Remarks:	the standards	the least YTL	ALD.	Salt				
Rat Hole 30 545	and the state of t	O leadhardse. O	n ond h	Flowseal				
Mouse Hole			111	Kol-Seal				
Centralizers 1-12, 14, 23, 26, 45			Mud CLR 48 1000 8					
Baskets 77 2 17 46			CFL-117 or CD110 CAF 38					
DN or Port Collar 1452 # 46			Sand					
Voped Bull Contains			Handling					
49 min Pin	1/20	14451	5	Mileage	THE OF		es Superhorema	
Diva Part hol	e b	mila		950	FLOAT EQUIPM	ENT		
170 5 ks down	a ho	2/2		Guide Shoe			4000	
Dis Alved Wit	hil	vistel		Centralizer	tur603.	16		
80 131	The same of the same of		eimer i	Baskets	3 Blueson		ROTE ARTEAN	
	A			AFU Inserts		17 / 2000	shir surder never	
NXN	$\langle a \rangle$		100	Float Shoe	A B B VA	VA	existing a summer	
Littou	4	251		Latch Down	1		CANAL REAL	
1 11/10	1	LAUOSSE	BEREO K	nome is to		the erd man contact		
Land low		05/1				4.0000000000000000000000000000000000000	masone subage	
contract of the sign of the	1			Pumptrk Cha	arge			
				Mileage	or a service of the		EN No.	
Citation of the management consistence of the contract of the	11	Negrito staylor	6 201	media men	Apriliae ale	Tax		
7	/	gen samp to t	qubrico	en Islam od		Discount	i reaction of	
X Signature	mee	-	0 00 00		and the Vitalian and	Total Charge		
,							Language Control of the State o	