

GEOLOGICAL REPORT

RUSSELL OIL, INC.

MCDANIEL "M" NO. 1-28

1670' FNL; 1010' FEL

28-15S-34W

LOGAN COUNTY, KANSAS

API NO. 15-109-20815-0000

Commenced: June 26, 2008

Completed: July 7, 2008

KCC
SEP 22 2008
CONFIDENTIAL

RECEIVED
KANSAS CORPORATION COMMISSION

SEP 29 2008

CONSERVATION DIVISION
WICHITA, KS

Russell Oil, Inc.
P.O. Box 1469
Plainfield, Il. 60544

Re: Russell Oil, Inc.
McDaniel "M" No. 1-28
1670' FNL; 1010' FEL
28-H5S-34W
Logan, County, Kansas

Dear Sir:

The following is a Geological Report with a Time Log attached on the above captioned well.

Drilling was supervised from 2600' to 4800', rotary total depth. Samples were examined from 2600' to 4800', rotary total depth.

All formation tops, zones of interest, porosity and staining are based on rotary bushing measurements. Any corrections in measurements during the drilling of this well have been incorporated into this report.

Elevation

3028 GL -- 3041 KB

Log Tops

Anhydrite	-----	2391'	to 2410'	+ 650	to + 631
Herington	-----		2734'	+ 307	
Winfield	-----		2773'	+ 268	
Wreford	-----		2993'	+ 48	
Neva	-----		3197'	- 156	
Red Eagle	-----		3260'	- 219	
Tarkio Lime	-----		3523'	- 482	
Howard	-----		3630'	- 583	
Topeka	-----		3655'	- 614	
Heebner	-----		3886'	- 845	
Toronto	-----		3904'	- 863	
Lansing/Kansas City	-----		3930'	- 889	
Stark Shale	-----		4256'	-11215	
Base/Kansas City	-----		4316'	-11275	
Marmaton	-----		4341'	-11300	
Pawnee	-----		4421'	-11380	
Myric Station	-----		4458'	-11417	
Fort Scott	-----		4475'	-11434	
Cherokee Shale	-----		4501'	-11460	
Basal Pennsylvanian Sand	-----		4665'	-11624	
Mississippi	-----		4713'	-11672	
Rotary Total Depth	-----		4800'	-11759	
Log Total Depth	-----		4801'	-11760	

(continued)

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Logan, County, Kansas

Structurally, on top of the Lansing/Kansas City, the Russell Oil, McDaniel "M" No. 1-28 ran 10' low to the Cities Service, McDaniel "B" No. 1 located approximately 720' to the southwest.

On top of the Cherokee Shale, the Russell Oil, Inc., McDaniel "M" ran 7" low to the Cities Service McDaniel "B" No. 1.

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Log-Tech logs of Borehole Compensated Sonic, Dual Compensated Porosity and Dual Induction.

Due to the low structural position and negative drill stem tests, the Russell Oil, Inc. McDaniel "M" No. 1-28 was plugged and abandoned a dry hole.

Sincerely,


Steven D. Angle

Russell Oil, Inc.
P.O. Box 1469
Plainfield, Il. 60544

McDaniel "M" No. 1-28
1670' FNL; 1010' FEL
28-15S-34W
Logan County, Kansas

ZONES OF INTEREST

Note: All oil shows and odors are denoted with an asterisk (*). Samples only showing florescence are not.

2621 to 2629	Tan dense and tan sucrosic crystalline limes.
2629 to 2638	White and tan dense and fine crystalline limes.
2638 to 2646	Light green and glauconitic sand clusters and white dense limes.
2646 to 2659	White and light tan to tan dense to crystalline limes.
2659 to 2671	Varied colored shales and scattered angular clear quartz sand grains.
2671 to 2680	Varied colored shales and sucrosic crystalline white limes.
2680 to 2692	Tan sandy limes and varied colored shales.
2700 to 2710	Light grey, very fine fairly soft sandy lime.
2710 to 2729	White fine crystalline limes and soft fine sandy shales.
<u>HERINGTON (Top @ 2734)</u>	
2734 to 2737	White dolomite.
2734 to 2447	White crystalline dolomite.
2747 to 2755	Tan dolmitic sand and tan dolmitic limes.

WINFIELD (Top @ 2763)

2763 to 2772	White sandy dolomitic limes.
2772 to 2882	White fine sandy dolomite.
2782 to 2797	Varied colored shales and scattered white dolomitic limes.
2797 to 2808	White, tan, brown dolomite and dolmitic sand clusters.
2808 to 2814	Tan dolomitic, silty limes.
2814 to 2822	White dolomitic limes.
2822 to 2835	White to light tan dolomitic limes.
2835 to 2844	Varied colored shales and a few white dolomitic limes.
2844 to 2853	A few tan, slightly vuggy, dolomitic limes.
2853 to 2861	White, sandy, dolomitic limes and tan, silty, loose sand clusters.
2861 to 2882	Varied colored shales and a few scattered fine grained brown and white sand clusters.
2882 to 2896	Light tan, weathered limes, and fossiliferous limes, scattered pinpoint and slightly vuggy porosity and slightly vuggy dolomitic limes.
2896 to 2905	Dark tan with black fossils dolomitic limes.
2905 to 2917	Same as above with light tan and buff instead.
2917 to 2928	Tan fossiliferous and grey lime with black fossils dolomitic limes.
2928 to 2941	Tan fossiliferous and grey with black fossils and other varied colored dolomitic limes.

2941 to 2950	Tan, fine sandy dolomitic limes and varied colored fine sand clusters.
2950 to 2960	Same as above.
2960 to 2977	Tan, slightly crystalline with black fossils and buff and white colored weathered dolomitic limes.
2977 to 2996	Same with grey with black fossiliferous dolomitic limes.
<u>WREFORD (Top @ 2993)</u>	
2993 to 3002	Tan, slightly crystalline dolomitic limes with black fossils, buff and white weathered dolomitic limes.
3006 to 3013	Light tan and glauconitic sand clusters.
3013 to 3029	Varied colored shales and scattered white and tan dolomitic limes. Angular clear loose quartz sand.
3029 to 3043	Varied colored shales and clays.
3043 to 3057	Varied colored shales, scattered white loosely bonded sand clusters and tan dolomitic limes.
3057 to 3067	Tan and white sandy dolomitic limes.
3067 to 3072	Tan and white fine crystalline dolomitic limes and scattered tan fine crystalline dolomite.
3072 to 3080	Varied colored shales and scattered light pinkish, sandy dolomite and grey with black fossiliferous dolomitic limes, and tan sandy dolomitic limes.
3080 to 3083	tan and pinkish to white sandy, fine crystalline dolomite.
3083 to 3089	Tan, fine crystalline dolomitic limes and a few scattered clear sand clusters.
3089 to 3098	Tan and pinkish sandy dolomitic limes.

3098 to 3106	Tan dolomitic sandstone.
3106 to 3128	Pinkish to tan to light grey sandy dolomitic limes.
3128 to 3145	Scattered friable clear sand grained clusters and tan dolomitic limes.
3145 to 3153*	Buff fossiliferous dolomitic limes. One small glob of gilsonite asphaltic oil with gold flakes.
3153 to 3167	Buff colored dolomitic lime with pinpoint porosity.
3167 to 3177	Buff eathered slightly vuggy dolomitic limes with a show of florescence. Scattered brown and tan sandstone.
3177 to 3185	Grey and light tan crystalline dolomitic limes.
3185 to 3196	Tan crystalline dolomitic limes and light grey fine crystalline dolomitic limes.
<u>NEVA (Top @ 3197)</u> 3197 to 3208	Buff weathered dolomitic lime with pinpoint to vuggy porosity.
3208 to 3220	White and tan crystalline dolomitic limes.
3220 to 3227	Tan and white crystalline dolomitic limes.
3227 to 3236	Buff to white to grey with black fossils dolomitic limes.
3236 to 3251	Light grey crystalline dolomitic and white dolomitic lime.
3251 to 3261	Varied colored shales and scattered white sandy dolomitic limes.
<u>RED EAGLE (Top @ 3260)</u> 3261 to 3272	White fossiliferous dolomitic limes and buff dense to sandy dolomitic limes.

3272 to 3285	White dense limes.
3285 to 3294	Grey crystalline dolomitized limes and white cherty dolomitic limes.
3294 to 3303	Scattered grey shaley sand clusters.
3303 to 3310	Pale green shales and sandy shales. Light white fine crystalline dolomitic limes.
3310 to 3319	Tan, fine grained sandstone.
3319 to 3333	White scattered fossiliferous limes and grey crystalline dolomitized limes.
3333 to 3346	Varied colored shales and grey crystalline dolomite.
3346 to 3357	Varied colored shales and white fine crystalline dolomitic limes.
3357 to 3366	Buff colored fossiliferous, very weathered pieces of dolomitic lime with a fair show of florescence.
3366 to 3375	Scattered firm and soft white shales and a few scattered glauconitic sand clusters.
3375 to 3384	Varied colored shales.
3384 to 3390	Red shales (sluff) and a few scattered tan dolomitic limes.
3390 to 3597	Green and grey soft shales and scattered tan dolomitic limes and chalky greyish limes.
3597 to 3412	Varied colored shales and scattered weathered light tan dolomitic limes.
3412 to 3422	Red gummy shales.
3422 to 3434	Pale green and light grey soft clays.

3434 to 3443	Scattered medium sized clear quartz grained sand clusters and red shales.
3443 to 3451	Varied colored shales and scattered buff colored fossiliferous dolomitic limes.
3464 to 3472	Red and varied colored shales.
3472 to 3490	Same as above.
3490 to 3496	Scattered dark green shales and scattered light white dolomite.
3496 to 3511	Light grey and green soft shales and a few pieces of white dolomitic limes.
<u>TARKIO LIME (Top @ 3523)</u>	
3523 to 3533	Light grey fossiliferous limes and white fossiliferous dolomitized lime.
3562 to 3570	Tan fossiliferous lime and dense limes.
3570 to 3577	Tan and grey dense limes.
3577 to 3585	Same as above.
3585 to 3595	Tan and white dense and fossiliferous limes.
3595 to 3605	Tan dense limes.
3605 to 3616	Light tan dense and scattered fossiliferous limes and fossiliferous cherty limes.
3616 to 3622	Scattered black shales, grey dense and grey fossiliferous limes.

3622 to 3642	Light white fine crystalline lime with a show of florescence and tan fossiliferous dense limes.
3642 to 3653	Buff, fossiliferous limes.
<u>TOPEKA (Top @ 3655)</u> 3655 to 3662	Tan fossiliferous limes and tan weathered limes with scattered pinpoint to very slightly vuggy porosity.
3662 to 3669	Tan dense and tan fossiliferous limes.
3669 to 3679	Tan silty to chalky to scattered fossiliferous limes.
3679 to 3690	Scattered grey fossiliferous limes and tan dense to fine crystalline to scattered fossiliferous limes.
3690 to 3700	White, slightly silty limes.
3700 to 3709	Scattered black shales and light tan fossiliferous limes.
3709 to 3717	Same as above with dense cherty grey lime.
3717 to 3723	Tan dense limes and scattered grey fossiliferous limes.
3723 to 3732	Scattered tan dense limes and tan fine crystalline to slightly sandy limes.
3732 to 3752	Light tan, friable, silty, fossiliferous limes and tan dense to slightly crystalline limes.
3752 to 3763	Scattered black shales and silty tan fossiliferous limes.
3763 to 3772	Light tan, fine crystalline, slightly sandy limes and dark grey fossiliferous limes.

3772 to 3785	Tan dense, tan silty and tan fossiliferous limes and a few scattered fine grained shaley sand clusters.
3785 to 3796	Brown fossiliferous limes.
3796 to 3809	White and tan chalky and tan fossiliferous limes.
3809 to 3815	Scattered black shales. A few scattered grey sandy shales and a few white chalky, fossiliferous limes and white chalk.
3815 to 3822	Light tan fossiliferous and sandy limes.
3822 to 3831	Tan, slightly weathered fossiliferous limes and fossiliferous dense limes with some scattered florescence.
3831 to 3842	Tan slightly crystalline and tan dense and tan fossiliferous limes.
3855 to 3865	Tan, fine crystalline, tan fine sandy and tan fossiliferous limes.
<u>HEEBNER SHALE (Top @ 3886)</u>	Jet black shale.
<u>TORONTO (Top @ 3904)</u> 3904 to 3907	Tan and light grey crystalline limes and brown fossiliferous limes.
3907 to 3914	Tan dense and tan weathered loose fossiliferous limes.
<u>LANSING/KANSAS CITY (Top @ 3930)</u> 3930 to 3940	Light tan to buff weathered limes and fossiliferous limes.
3940 to 3950	Tan, weathered, fairly loose limes with slightly vuggy porosity.
<u>CFS @ 3950</u>	

3951 to 3958

White crystalline, slightly weathered limes with good overall florescence.

3962* to 3970*

Tan crystalline to slightly fossiliferous with three pieces with a very slight show of oil and overall florescence.

3972 to 3976*

Light tan weathered, vuggy lime with pinpoint and vuggy porosity with a fair show of free oil. No odor.

3976 to 3986*

Tan crystalline limes with fair pinpoint and slightly vuggy porosity and a fair show of free oil. No odor.

CFS @ 4005

DRILL STEM TEST NO. 1

3971 to 4005

TEST: 60-30-60-30, Strong blow off bottom of 5 gallon bucket in 4-1/2 minutes.

Shut In 30 minutes. No blow back.

Strong blow off bottom of bucket in 9-1/2 minutes.

Shut In 30 minutes. No blow back.

Recovered: 93' of water cut mud, 186' of mud cut water, 186' of slightly mud cut water and 1116' of water.

Pressures: 101-424, 434-670, 1138-1139 Bhps. 1945-1875 hydrostatic.

4016 to 4023

Light tan dense, slightly silty limes and scattered tan to white crystalline limes.

4025 to 4030

Tan fossiliferous, friable limes.

4034 to 4042

Tan to light grey fossiliferous, slightly cherty limes.

4044 to 4052

Tan and white dense to scattered tan and white chalky limes.

4058 to 4062	Tan fossiliferous firm chalky and scattered harder friable limes.
4063 to 4072*	One piece of poorly developed oolitic and fossiliferous lime with an excellent show of free oil. Loaded with oil when sample broken. No odor.
4075 to 4083	Tan, fossiliferous limes, weathered and slightly vuggy.
4084 to 4092	Scattered tan fossiliferous, cherty to crystalline limes.
3094 to 4103	Tan to white dense to slightly crystalline limes.
4106 to 4113*	Faint odor and a show of very light oil floating. Tan dense to slightly crystalline lime.
4114 to 4124*	Very faint odor. One piece of of cherty dark grey fossiliferous lime with vuggy porosity and a good show of "wet" oil staining and a small show of free oil.
4126 to 4134	Tan cherty, firm, fossiliferous limes.
4138 to 4148*	One piece of tan, slightly vuggy lime with a fair show of free oil when broken. Very light colored oil floating and a faint odor.
4151 to 4156*	Tan, fossiliferous lime with a very light colored oil show. No odor.
4157 to 4163	Tan to light grey, chalky to slightly weathered junky limes.
4165 to 4170	White to tan slightly chalky, crystalline, fossiliferous limes.

CFS @ 4170

DRILL STEM TEST NO. 2

4054 to 4170

TEST: 60-30-60-30, Strong blow off bottom of 5 gallon bucket in 3-1/2 minutes.
Shut In 30 minutes. No blow back.
Strong blow off bottom of bucket in 5-1/2 minutes.
Shut In 30 minutes. No blow back.
Recovered: 186' of water cut mud, 124' of mud cut water, 124' slightly mud cut water, 1860' of water.
Pressures: 114-768, 764-1034, 1174-1190 Bhps.

4178 to 4182

Tan dense crystalline lime.

4184 to 4193*

Same with barren oolitic limes and fairly well developed oolitic lime with a good show of free oil, "wet" black oil staining and a faint odor.

4195 to 4199*

Same as above but with a fair odor.

4203 to 4210*

Scattered white barren oolitic lime. Two pieces with fair show of dark oil and a fair odor.

4213 to 4220*

Tan, slightly silty, fairly loose fossiliferous lime with a fair show of dark oil and a fair odor.

DRILL STEM TEST NO. 3

4174 to 4220

TEST: 60-30-60-30, Strong blow off bottom of 5 gallon bucket in 28 minutes.
Shut In 30 minutes with a 5 inch blow back return.
Strong blow off bottom of bucket in 14 minutes.
Shut In 30 minutes with a 6 inch blow back.
Recovered: 124' of mud cut water, 124' of slightly mud cut water and 682' of sulfur water.
Pressures: 24-201, 262-372, 288-441 Bhps. 2060-1978 hydrostatic pressures.

4222 to 4231*

A few light tan silty, slightly vuggy lime with a fair show of dark oil and plastic oil with a fair odor.

4233 to 4236*

Same as above but with no odor.

4238 to 4246

Scattered vuggy fossiliferous barren limes.

4250 to 4255

Tan and white dense to crystalline limes.

STARK SHALE (Top @ 4256)

4260 to 4271*

Light tan and dark tan crystalline to silty limes. One piece of white oolitic lime with a fair show of black "wet" oil stain. No odor.

4274 to 4284

Tan and light tan dense to slightly crystalline limes, a few white fossiliferous limes and one piece of grey chert.

4286 to 4294

Tan and buff dense to slightly crystalline limes.

4299 to 4306

Scattered light grey cherty and varied colored dense to fossiliferous limes.

BASE/KANSAS CITY (Top @ 4316)

4318 to 4331

Tan and white junky to silty and fossiliferous limes.

MARMATON (Top @ 4341)

4341 to 4349

Tan and white silty fossiliferous limes..

4351 to 4360*

Tan junky to crystalline to fossiliferous limes. One small piece of lime with a trace of oil and a very faint odor.

4362 to 4368*

Tan junky to crystalline to fossiliferous slightly weathered fractured with a good show of fairly dark free oil and a faint odor.

4370 to 4379*

Scattered weathered fossiliferous limes with a fair show of "wet" oil stain and a faint odor.

4380 to 4386*

Scattered tan slightly vuggy lime with a fair show of oil. No odor.

4388 to 4494*

A few slightly silty, slightly cherty tan limes with a show of oil. No odor.

4400 to 4410

Tan to white cherty fossiliferous limes.

PAWNEE (Top @ 4421)
4421 to 4436

Tan to white cherty, fossiliferous limes.

CFS @ 4451

DRILL STEM TEST NO. 4
4288 to 4451

TEST: 60-30-60-30, Strong blow off bottom of 5 gallon bucket in 7-1/2 minutes.
Shut In 30 minutes. No blow back.
Strong blow off the bottom of bucket in 11-1/2 minutes.
Shut In 30 minutes with no blow back.
Recovered: 124' of mud cut water, 124' of slightly mud cut water, 248' of very slightly mud cut water and 992' of water.
Pressures: 118-470, 460-706, 1290-1284 Bhps. 2272-2081 hydrostatic pressures.

MYRIC STATION (Top @ 4458)
4458 to 4470

Tan crystalline limes and tan fossiliferous to junky fossiliferous limes.

FORT SCOTT (Top @ 4475)
4475 to 4486*

A few scattered pale grey and dark grey fossiliferous sharp hard cherts and fossiliferous limes. One piece with a show of free oil and a faint odor.

CFS @ 4486

CFS @ 4490

CFS @ 4495

CHEROKEE SHALE (Top @ 4501)

4505 to 4511*

Light cream colored limey, weathered vugular chert with a fairly good show of free oil and a fairly good odor.

CFS @ 4512

DRILL STEM TEST NO. 5

4451 to 4512

TEST: 60-30-0-0, good blow of 5-1/2 inches in bucket at 60 minutes.
Shut In 30 minutes. No blow back.
Fair blow of 2-1/2 inches at 35 minutes then lost packer seat.
Ended test and came out of hole.
Recovered: 449' of slightly gassy oil cut mud and 1039' of mud.
Pressures: 21-67, 68-72, 342-N/A Bhps.
2274-2125 hydrostatic pressures.

4524 to 4530*

One piece of tan crystalline lime with a fair show of light free oil. No odor.

4534 to 4540*

One piece of white lime with a trace of free oil. Light tan fresh chert with no show.

4542 to 4550*

A few pieces of hard cherty vuggy lime with a show of free oil. No odor.

4556 to 4560*

One barren sand cluster and tan slightly vuggy limes with a show of free oil. No odor.

4568 to 4570

A few scattered brown fresh cherts.

CFS @ 4576

DRILL STEM TEST NO. 6

4460 to 4576

TEST: 60-30-15-30, very weak blow of 1/4 inch building to 3/4" then dead at 53 minutes.
Shut In 30 minutes. No blow back.
Weak surface blow for 1 minute, dead.
Shut In 30 minutes. No blow back.
Recovered: 52' of very slightly oil cut mud and 62' of slightly oil and water cut mud (water had 12,000 chlorides).
Pressures: 27-70, 118-80, 544-528 Bhps.
2306-2240 hydrostatic pressures.

MISSISSIPPI (Top @ 4713)

4713 to 4749

Scattered tan fossiliferous crystalline limes, tan fossiliferous cherty limes, tan crystalline and white chalky limes with a few scattered sandy limes and white sand clusters.

4749 to 4757

Tan crystalline limes and scattered white and tan fossiliferous limes.

4757 to 4765

Tan crystalline limes, tan cherty fossiliferous limes, scattered white bonded sand and brown sandy shales.

4765 to 4774

White and tan sandy limes and varied colored shales.

4774 to 4786

Varied colored shales and scattered tan fossiliferous limes.

4786 to 4795

Varied colored greenish shales and varied colored shales, and a few bonded white sand clusters.

4795 to 4800

White and tan fine fossiliferous limes and fine sand white limes and varied colored shales.

CFS @ 4800

ROTARY TOTAL DEPTH @ 4800

LOG TOTAL DEPTH @ 4801

DRILLING INFORMATION ON THE MCDANIEL "M" NO. 1-28

Drilling Contractor: H2 Drilling Company, Rig 2. Drillers: R. Baker
Tool Pusher: Wes Pfaff J. Coleman
J. Durr

Spud Date: June 26, 2008

Date of RTD: July 7, 2008

Surface Pipe: New 8-5/8", 24# set @ 227' w/160 sx Common Cement, 6% cc & 3% gel.
Cement did circulate.

Status: Dry and Abandoned.

Production Casing: None.

Drilling Mud: Mud-Co, Engineer, Reid Atkins.

Drill Stem Testing: Trilobite Testing, Tester: Shane McBride.
Tests Ran: Five, none positive.

Cementing: Surface Pipe, Allied Cementing Co.

Electric Logging: Log-Tech, Engineer: C. Desaire, M. Garrison.
Logs Ran: Borehole Compensated Sonic, Dual Compensated Porosity
and Dual Induction.

Hydrocarbon Detection & Well Management: Geocertified, LLC; Engineer: Kevin J.
Bailey.

TOTAL FOOTAGE DRILLED PER DAY
Spudded on June 26, 2008

Under surface at 12:00 A.M. On June 27, 2008

700	Feet	At	7:00 A.M.	On	6-27-08
1632	"	"	"	"	6-28-08
2815	"	"	"	"	6-29-08
3632	"	"	"	"	6-30-08
4005	"	"	"	"	7-01-08
4170	"	"	"	"	7-02-08
4220	"	"	"	"	7-03-08
4451	"	"	"	"	7-04-08
4512	"	"	"	"	7-05-08
4576	"	"	"	"	7-06-08
4735	"	"	"	"	7-07-08
4800	Feet	At	7:17 P.M.	On	7-07-08

MUD RECORD

Pre-Mix Tank Used and steel pits.

Surface - 70 sx gel, 1 sx lime, 25 sx hulls, 15 sx of quick seal.

2510' - 12 sx quick seal, 10 sx hulls.

3415' - 95 sx gel, 3/4 sx Drispac, 3 sx soda ash, 1-1/2 sx lignite,
30 sx quick seal, 2 sx caustic, 30 sx hulls.

3971' - 150 sx gel, 6 sx soda ash, 4 sx caustic, 2 sx lignite, 1/2 sx drispac,
15 sx hulls, 6 sx of quick seal.

4451' - 1 gal of poly plus.

4512' - 110 sx gel, 1 sx caustic soda, 3 sx soda ash, 1 sx lignite, 1/2
sx of Drispac.

BIT RECORD

	<u>Size</u>	<u>Type</u>	<u>In</u>	<u>Out</u>	<u>Jet Sizes</u>	<u>Pump Pressure Ran</u>
Surface	- 12-1/4"		0'-	230'	N/A	
Smith	- 7-7/8"	FH 24Y	230'-	4800'	3 - 13's	1250#

DRILLERS TIME LOG

RUSSELL OIL COMPANY
McDaniel "M" No. 1-28

1670' FNL & 1010' FEL
28-15S-34W Logan County, Kansas

ELEVATION: 3028 GL
3041 KB

DEPTH	MINUTES	REMARKS
Note: 1/3" made 1/4".	1 foot drilling time	
2600 to 2610	1-1-1-1-1-1-1-1 1/2-1-1 1/2	
2620	2-2-1 1/2-1 1/2-1 1/2-2 1/2-1-2-2-2	
2630	2-1 1/2-2 1/2-2-2-1-1 1/2-2-2-1 1/2	
2640	1-1-1-2-1-1-2-1-1/2-1	
2650	1-1 1/2-1 1/2-1-2-2-1-1-2-1	
2660	1 1/2-1 1/2-1-1-1-1-1-1-1-1	
2670	1-1-1-1-1-1-1-1-1-1 1/2	
2680	1-1 1/2-1 1/2-2-2 1/2-1 1/2-1-1-1-1 1/2	
2690	2-2-1-1-1-1-1-1-1-1 1/2	
2700	1 1/2-2-2-1 1/2-1-1-2-1 1/2-1-2	
2700 to 2710	1/2-1-3-2-1-3-1-1-1-1	
2720	1 1/2-1 1/2-1-1-1-1-1-2-1-1	
2730	2-1-1-1-2-1-1-2-1-2	
2740	1/2 1-2-1-2-2-2-2-1-2-2	
2750	1 1/2-1 1/2-2-2-3-2-2-2-2-2	
2760	2-2-2-2-2-2-2-2-1-2-1	
2770	2-2-1-1 1/2-1 1/2-2-2-1-2-1 1/2	
2780	1 1/2-1-1 1/2-3-1 1/2-1 1/2-1 1/2-2-2-1	
2790	1-2-2-1-2-1-1-1-1/2-1/2	
2800	1/2-1/2-1-1-2-2-2-3-2-2	
2800 to 2810	1 1/2-1 1/2-2-2 1/2-1 1/2-2-1-2 1/2-2-2	
2820	1-1-1 1/2-2 1/2-1-1-1-1/2-1/2-1	
2830	1-1-1-2 1/2-1 1/2-2-1/2-1/2-1/2-1/2	
2840	1/2-1/2-1/2-1/2-2-1-2-1-1-1	
2850	1/2-1-1-1-1-1-1-1-1/2-1-1	
2860	1-1-1-1-1-1-1-1-1-2-1	
2870	1-1-1-1/2-1 1/2-1-1 1/2-1 1/2-1-1	
2880	1-1/2-1/2-1/2-1/2-1-1-1-1 1/2-2	
2890	1-1 1/2-1/2-1-1-1-1-1/2-1/2-1	
2900	1/2-1/2-1-1 1/2-1 1/2-2-1 1/2-1 1/2-1-1	

2900 to 2910	1-1-2-1-2- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
2920	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-2-1-1-2-1
2930	1-2-2-1-1-2-2-1-1-1
2940	1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-2-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -2
2950	1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-2-2-2-1-2-1-2
2960	2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1-2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -3-1 $\frac{1}{2}$
2970	1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$
2980	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
2990	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1
3000	2-1-1-2-2-2-3-2-2-2 $\frac{1}{2}$
3000 to 3010	2 $\frac{1}{2}$ -2-3-2-2-2 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1-2
3020	1-1-2-2-1-2-1-2-2-1 $\frac{1}{2}$
3030	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
3040	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
3050	2-1-2-2-2-2-3-2 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2
3060	2-2-2-1-2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$
3070	1-2-1-2-2-1-1-1-2-1
3080	2-2-1-2-2-1-2-1-1-1
3090	1-1-3-1-1-1-1-1 $\frac{1}{2}$ -1-1
3100	1-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
3100 to 3110	2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
3120	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
3130	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
3140	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
3150	1-1-1-1-1-2 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-2-1
3160	1-1-2-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$
3170	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-2-1-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$
3180	1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-2
3190	1-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-2-2-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$
3200	2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$
3200 to 3210	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-2-1-1-1
3220	1-2-1-1-2-2 $\frac{1}{2}$ -3-1 $\frac{1}{2}$ -1-2
3230	1-2-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$
3240	1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-2-2-2-1-2
3250	1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-2-1-1- $\frac{1}{2}$ -1-1-1
3260	2 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -2-1
3270	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-3-2-2-2-3-2 $\frac{1}{2}$
3280	2 $\frac{1}{2}$ -2- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -3-2 $\frac{1}{2}$ -2
3290	2-2-2-1 $\frac{1}{2}$ -3 $\frac{1}{2}$ -2-2-2-3-2
3300	2 $\frac{1}{2}$ -2 $\frac{1}{2}$ -2 $\frac{1}{2}$ -2-2 $\frac{1}{2}$ -2-1-1 $\frac{1}{2}$ -2-2 $\frac{1}{2}$
3300 to 3310	2-2-2-2-2 $\frac{1}{2}$ -2-2-2-2-2
3320	3-2-2-2-2-2-1 $\frac{1}{2}$ -2-1 $\frac{1}{2}$ -2
3330	1-2-2-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1-1-1-1
3340	2-2-2-2-2-2-2-2-2-2
3350	2-2 $\frac{1}{2}$ -2 $\frac{1}{2}$ -2-2-3-2-2-2-2
3360	2 $\frac{1}{2}$ -3-2 $\frac{1}{2}$ -2-3-2-2-3-2-2 $\frac{1}{2}$
3370	2 $\frac{1}{2}$ -2-3-2-2-3-2 $\frac{1}{2}$ -3-2-2 $\frac{1}{2}$
3380	2-1 $\frac{1}{2}$ -3-2-2 $\frac{1}{2}$ -2-2 $\frac{1}{2}$ -2 $\frac{1}{2}$ -2-2 $\frac{1}{2}$
3390	2-2-3-2-2-2-1-2 $\frac{1}{2}$ -2 $\frac{1}{2}$ -2 $\frac{1}{2}$
3400	2 $\frac{1}{2}$ -3-2-1-2-2-1-2-2-2

3400 to 3410	$1-1-2-1-1-1-1-1-1\frac{1}{2}-1\frac{1}{2}$
3420	$1\frac{1}{2}-2-1\frac{1}{2}-2-2-2-2-2-1\frac{1}{2}-1\frac{1}{2}$
3430	$1-2-2-2-2-2-2-2-2\frac{1}{2}-1\frac{1}{2}-2-2-2\frac{1}{2}-2-1\frac{1}{2}-2$
3440	$2-2\frac{1}{2}-2-1\frac{1}{2}-2-2-2-1-2-2$
3450	$2-2-3-2-2-2-3\frac{1}{2}-2\frac{1}{2}-2-2$
3460	$1-2-1-1\frac{1}{2}-1\frac{1}{2}-2-2-2-2-2$
3470	$2-2-1-1\frac{1}{2}-2\frac{1}{2}-2-2-2-2-2\frac{1}{2}$
3480	$2-2\frac{1}{2}-2-1-2-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-2-2$
3490	$2\frac{1}{2}-1\frac{1}{2}-2-1\frac{1}{2}-2-2-1\frac{1}{2}-2-2-2\frac{1}{2}$
3500	$2-2-1\frac{1}{2}-2-1\frac{1}{2}-2-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
3500 to 3510	$1-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-1-1\frac{1}{2}-1\frac{1}{2}-1$
3520	$1-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-2-1\frac{1}{2}-2-2-2-1$
3530	$1-1\frac{1}{2}-1-3-2-2-3-2-2-2$
3540	$2-2-2-2-2-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-3$
3550	$2-2-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-2-1\frac{1}{2}-1\frac{1}{2}$
3560	$2-2\frac{1}{2}-2-3-2-2-2\frac{1}{2}-2-2-1\frac{1}{2}$
3570	$2-1\frac{1}{2}-1\frac{1}{2}-2-2-2\frac{1}{2}-2\frac{1}{2}-2-2-2$
3580	$2\frac{1}{2}-2\frac{1}{2}-2-2\frac{1}{2}-2\frac{1}{2}-2-2-3-1-1$
3590	$1-2-2\frac{1}{2}-2-2-2-1-1-1-2$
3600 to 3610	$2-2-1\frac{1}{2}-1-1-1-1-1-1-2-2$
3620	$2-1\frac{1}{2}-1-1-1-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-2$
3630	$2-2-2-2-2-2-2-1\frac{1}{2}-1-1$
3640	$1\frac{1}{2}-1\frac{1}{2}-1-1-1-1-1\frac{1}{2}-1-1-2\frac{1}{2}$
3650	$2-2-2-2-2-2-2-2-3-2\frac{1}{2}-2$
3660	$2-3-3-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}$
3670	$2-3-2-3-3-3-2-2-3-1$
3680	$1-2-1-2-1-2-2-2-1-1\frac{1}{2}$
3690	$1\frac{1}{2}-1-2-2-2-3-2-2-1-2$
3700 to 3710	$2-2-2-1-1-2-2-2-1\frac{1}{2}-1\frac{1}{2}$
3720	$1-2-1-1-2-1\frac{1}{2}-2\frac{1}{2}-2-2\frac{1}{2}-2\frac{1}{2}$
3730	$2-2-2-2-2\frac{1}{2}-2\frac{1}{2}-2-2\frac{1}{2}-\frac{1}{2}-1$
3740	$2-2\frac{1}{2}-1\frac{1}{2}-2-2-3-1-2-1-1$
3750	$1-1-1-1-1\frac{1}{2}-2\frac{1}{2}-2-1\frac{1}{2}-1\frac{1}{2}-1-1$
3760	$1\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-2-1\frac{1}{2}-2-2$
3770	$2-2\frac{1}{2}-2-3-2-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-2-3$
3780	$3-2-2-3-1\frac{1}{2}-1\frac{1}{2}-2-1-1-2$
3790	$1-1-1-2-2-2-5-3\frac{1}{2}-3\frac{1}{2}-4$
3800 to 3810	$3-3-2-3-2-3-2-1-3-1$
3820	$2-3-3-3-2-3-4-4-3-3$
3830	$4-3-4-2\frac{1}{2}-3\frac{1}{2}-3-2\frac{1}{2}-3-3\frac{1}{2}-3$
3840	$3-4-3-3-2\frac{1}{2}-2\frac{1}{2}-2-3-1\frac{1}{2}-1\frac{1}{2}$
3850	$2-3-2-2\frac{1}{2}-1\frac{1}{2}-2-1-1-2-1$
3860	$2-2-2-2-1-4-3-2-2-2$
3870	$2-2-3-2\frac{1}{2}-2\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-2-2$
3880	$1\frac{1}{2}-2-1\frac{1}{2}-1-1-1\frac{1}{2}-1\frac{1}{2}-2-2-1\frac{1}{2}$
3890	$1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-2-1\frac{1}{2}-1\frac{1}{2}-1-1-1\frac{1}{2}-1\frac{1}{2}$
3900 to 3910	$2-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-2\frac{1}{2}-3-2-1-2-3$
3920	$2\frac{1}{2}-3-3\frac{1}{2}-3\frac{1}{2}-3\frac{1}{2}-4-3\frac{1}{2}-3\frac{1}{2}-2-4$

3900 to 3910

3920

3930

3940

3950

3960

3970

3980

3990

4000

4000 to 4010

4020

4030

4040

4050

4060

4070

4080

4090

4100

4100 to 4110

4120

4130

4140

4150

4160

4170

4180

4190

4200

4200 to 4210

4220

4230

4240

4250

4260

4270

4280

4290

4300

4300 to 4310

4320

4430

4340

4350

4360

4370

4380

4390

4400

4-4½-3½-4-2-2-2-2-1-2

2-1½-1½-2-2-2-3-2-2-2

2-2-3-2-3-3½-4-4½-3-2

1-2-1½-2-2-2-2-2-2-2

2-2-1½-1½-1½-2-2-1½-1½-1½

2-3-4-3-2-2-3-3-3-3

3-4-4-3-4-3-4-4-2-2½

3-3-2-2-2-1-2-1½-2½-2½

2½-2½-3-2-3-2-2-2-2-2½

2½-2-2-2-2-2-2-2-1½-1½

3-2½-2½-3-3-3-4-3-3-3

3-3-3-3-2-4-5-4-3-4

4-4-2-3-3-2-2-2-2-2

3-4-4-5-4-2-3-2-2-3

2-2-3-2-3-3-2-2-2-2

3-4-3-2-3-4-3-3-2-2

1-2-2-2-2-2-2-3-4-3

3-4-3-3½-2-2½-3½-2½-2-3

3-3-2-3-3-3-3½-2½-2½-2½

3-2-1½-2-2½-2-2-3-2-2

2½-3-3½-4-3-4-3½-3½-3½-3

2-2-3½-3-2½-4-3-2½-4½-3

5-2-3-2-2-2-2-2-3-3

2-2-2-2-2-2-3-2-4-3

3-3-3-4-3-2½-4-3-3-3½

2-3-3-4-3-3-4-3-3-4

4-3-4-3-3½-3½-3-3-3-3½

2-3-3-3-3-3½-3-3-2½-2

2-4-3-3-3-3-2-2-2-2

½-½-1-1-½-½-1-3-2-3

3-2½-2½-2-3-3-2½-2-2½-3

2-2-2-2-3-3½-3½-3-2½-3½

2-1-2-2-2-1½-2-2-2-1½

1½-1-1-1½-1½-2½-3-2-3-3

2-3-3-3-2½-2½-3-2-2-2½

2-1½-1-1½-2-3-1-2-3-3

2-3-4-3-3-3-2½-1½-½-½

3-3-3-2-2-1-2-2-3-2

2-3-2-2-3-2-3-1-1½-2½

2-3½-3-2½-3-2½-2-1½-1½-1½

1-2-1-2-2-2-3-3-3-3

3-3-3-3-3-2-4-2-2-2

2-2-1-1-2-1-1½-1½-2-1

2-2-1-2-1-3-2½-3½-4-3½

3½-3½-2½-2-3-3½-3½-4-2½-4½

3½-3½-3-3½-3½-4-4-3½-4-3½

3-3-4-3½-3½-5-3-3-2-3½

2½-2½-3½-3-4-3-4-3½-3½-3

3-3½-3-2½-3-3-4-4-4-3½

5½-4-4-5½-4-4-4½-4-3½-3½

CFS @ 3950.

CFS @ 3971.

CFS @ 4005. DST #1.

CFS @ 4150. DST #2.

SR @ 4219. CFS @ 4220. DST #3.

CFS @ 4302.

4400 to 4410	4-4½-3½-4-3-3-3-3-4-3½	
4420	3½-3-3½-3½-3½-3½-3-3-4-4½	
4430	4½-4½-4-5-4½-4½-4-4-4-3½	
4440	3½-4-3½-3½-3½-3½-3½-3-3½-4	
4450	4-4½-4½-4½-4½-4½-4½-4½-4½-4½	
4460	4½-4-5-4-5-4-4-4½-6½-4	CFS @ 4451. DST #4.
4470	3-4-4½-4-4-3-4-3-3½-2½	
4480	3-4-4-4-4-4½-4-4-4½-4½	
4490	3½-4-4½-4-3½-4½-3-3-4-3½	CFS @ 4486.
4500	4-4-4-2½-4½-2½-3½-4-4-4	CFS @ 4495.
4500 to 4510	2½-2½-3-3-½-½-1-1-1-1	
4520	1-4-3-3-4-3½-5½-4-4½-4½	CFS @ 4512. DST #5.
4530	4-4-4-5-3-4-3½-5-5-6	
4540	3½-5-5-3½-3-2-5-3½-4-5	CFS @ 4540.
4550	4-4-3-3½-3½-3-4-4½-4-4	CFS @ 4550.
4560	3½-4-4½-4½-4½-3½-5-5-4-4	
4570	5-5-4½-4½-4-4½-4-4-4-3½	
4580	4½-4½-4½-5½-4-4-4-4-4-4	CFS # 4576. DST #6.
4590	4-5-3-4-4-4-4½-4-4½-4	
4600	4½-4½-4-4-3½-3½-4-3-3½-3½	
4600 to 4610	3½-4-3½-4-4-4-4½-3½-4-4	
4620	5-3-4-3½-3½-3-2½-3-3-2½	
4630	2-2½-3-4½-4-3½-3½-3½-3½-3½	
4640	4-4-4-4½-4-4-4-4-4-4½	CFS @ 4636.
4650	4-4-3-3-3½-3½-4-4-3½-3	
4660	3-2½-2½-3-3-3½-4-3-3-3	
4670	3½-3-1½-2-3½-4-4-1-4-4	
4680	4½-5-5-5-5-4-5-3-2-4½	CFS @ 4675.
4690	3½-4-4½-4-4-4-4½-3-½-4-5	
4700	3½-4-4½-4-4-4-4-4-4-4	CFS @ 4700.
4700 to 4710	4½-5½-3½-3½-4-4-4-4-4½-3	
4720	5-2½-2-2-2-2-4-4½-5-4½	
4730	4½-5-5-4-4-4-4½-4-4½-4	
4740	4-4½-4-4-4½-4-4-4-4-4	
4750	2-4-4-3½-3½-4½-4½-3-4-4	
4760	5-5-4-5-5-5½-3½-4-3½-4½	
4770	4½-4-4½-3½-3½-4-2-½-8½-3	
4780	1-2-4-3-3-3-3-3-4-3	
4790	4-3-3-3-3-3-3-3-3-3	
4800	3-4-3-4-4-4-4-3½-3½-4	CFS @ 4800. RTD @ 4800.