

Thomas J. Funk
Petroleum Geologist

Geologist's Report		Drilling Time and Sample Log	
OPERATOR Murfin Drilling Co., Inc			
LEASE	Racette	FIELD Field Ext	API 15-109-21169
LOCATION	335' FNL & 1100' FEL	ELEVATION	WELL NO #1-12
SEC.	12	RTD 4/10/13	KB 3052'
COUNTY	Logan	SAMPLE SAVED FROM	DATE 4/14/13
		3650'	Spud
		LOG TD 4/20/13	840'
		DRILLING TIME KEPT FROM	4/15/13
		3650'	840'
		SAMPLES EXAMINED FROM	4/16/13
		3650'	840'
		GEOLOGICAL SUPERVISION FROM	4/17/13
		3700'	840'
		MUD UP 3200	840'
		TYPE MUD Chemical	840'

Date	Depth	No	Size	Make	Type	Bit Record
4/10/13	Spud	1	12 1/4"	GMS	RR	228
4/11/13	840'	12	12 1/4"	GMS	RR	228
4/12/13	3020'	2	7 7/8"	HTC	DP506F	3650
4/13/13	3778'	3	7 7/8"	HTC	GL225	4760
4/14/13	3052'	4	7 7/8"	HTC	GL225	4760
4/15/13	4130'	5	7 7/8"	HTC	GL225	4760
4/16/13	4230'	6	7 7/8"	HTC	GL225	4760
4/17/13	4285'	7	7 7/8"	HTC	GL225	4760
4/18/13	4480'	8	7 7/8"	HTC	GL225	4760
4/19/13	4540'	9	7 7/8"	HTC	GL225	4760
4/20/13	4620'	10	7 7/8"	HTC	GL225	4760
4/21/13	4760' TD	11	7 7/8"	HTC	GL225	4760
		12	7 7/8"	HTC	GL225	4760

Depth Remarks

Based upon log analysis, DST recovery and sample examination, it was decided to run log production casing to further evaluate the #1-12 Racette.

DEV. SURVEYS:

1/4 deg @ 228'

1 deg @ 1732'

1 deg @ 3650'

1/2 deg @ 4130'

1 1/2 deg @ 4760'

REC:

204' MCW (50%w, 50%m)

257' MCW (70%w, 30%m)

374' SW

189' MCW GO (10%g, 40%o, 50%w)

1330' Total Fluid

IFP 28-309 ISIP 1138

FPP 316-651 FSIP 1131

IHP 2058 FHP 1968

Temp: 122 deg F

Chls: 75,000 ppm

DST #1 4094-4130

30'-60'-60"-90"

BOB in 7' on IFP

BOB in 8' on FFP

REC:

124' MCGO (30%g, 40%, 30%w)

62' WCGO (20%g, 28%, 20%w)

220' CO

367' SW

760' Total Fluid

IFP 41-249 ISIP 892

FPP 243-393 FSIP 908

IHP 2139 FHP 2002

Temp: 121 deg F

Chls: 90,000 ppm

DST #2 4197-4230

30'-60'-60"-90"

BOB in 7' on IFP

BOB in 12" on FFP

REC:

118' WCM w/oil scum (10%w, 50%k)

189' WCM w/oil scum (40%w, 60%k)

220' CO

367' SW

1330' Total Fluid

IFP 28-309 ISIP 1138

FPP 316-651 FSIP 1131

IHP 2058 FHP 1968

Temp: 122 deg F

Oil Grav: 32 deg API

DST #3 4230-4285

30'-60'-60"-90"

BOB in 7' on IFP

BOB in 23" on FFP

REC:

124' MCGO (30%g, 40%, 30%w)

62' WCGO (20%g, 28%, 20%w)

220' CO

367' SW

760' Total Fluid

IFP 41-249 ISIP 892

FPP 243-393 FSIP 908

IHP 2139 FHP 2002

Temp: 121 deg F

Oil Grav: 32 deg API

DST #4 4377-4480

30'-60'-60"-90"

BOB in 9 1/2" on IFP

BOB in 8" on FFP

REC:

180' MCW (10%g, 40%, 50%w)

220' CO

367' SW

220' GCO (30%, 40%, 50%w)

367' SW