

# **O'Brien Energy Resources, Inc.**

**Larrabee No. 5-4**

**Section 4, T34S, R29W**

Meade County, Kansas

April 2015

## **Well Summary**

The Larrabee No. 5-4 was drilled to a total depth of 6394' in the St. Louis Formation. It ran considerably higher relative to offsets in the area. Formation tops from the Heebner to the Cherokee came in 24' to 28' high relative to the Larrabee No. 4-4, approximately 1800' to the NE. The Atoka, Morrow and Chester ran 38', 34' and 35' high respectively. The Ste. Genevieve and St. Louis came in 52' and 48' high.

The Morrow came in 53' high relative to the Larrabee No. 1-4, to the North. The Mississippian Chester ran 40' high.

Sever lost circulation occurred in the Lansing at 4865' (1150 bbls) and necessitated mudding up with a 30+ LCM/bbl mud system prior to regaining circulation. Hydrocarbon shows were documented after regaining circulation and may have come from the lost circulation zone but likely from below it. Limestone: Light brown, microcrystalline, microsucrosic, subchalky, brittle, clean, fossiliferous, trace intercrystalline, moldic and vuggy porosity, light yellow hydrocarbon fluorescence in 1% of the samples, good streaming cut. Traces of course calcite crystal development in vugs and planning surfaces with very bright yellow hydrocarbon fluorescence and with excellent cut. Trace even light brown oil stain. No gas reading were recorded due to the abundance of LCM material in the mud system.

A very poor tight show occurred in the Marathon (5194'-5202') with a 70 Unit gas increase and with just a trace (<1% spl) of weak hydrocarbon fluorescence, no stain.

Minor shows occurred in the Morrow with 60 to 100 Units of gas increases (5732'-5756') and consists of a Sandstone in 5% of the samples: Medium gray to brown, translucent, very fine well sorted grains, siliceous cement, slightly calcareous, glauconitic in part, clean to argillaceous, trace visible intergranular and fine vuggy porosity, no fluorescence, no stain, very slow weak bleeding to residual ring cut.

Addition sandstones were noted from 5763' to 5790' and lacked shows or gas.

A 100 Unit gas increase was documented from 6006' to 6009'. No hydrocarbon show was noted in samples.

Poor shows occurred in the Basal Chester from 6057' to 6094'. 280 to 100 Units of gas increase were recorded.

4 1/2" production casing was run on the Larrabee No. 5-4 on 4/8/15.

Respectfully Submitted,

Peter Debenham

## WELL DATA

Operator: O'Brien Energy Resources, Inc., John Forma – Portsmouth, NH  
Geologist: Paul Wiemann – Denver, CO

Prospect Geologist: Ed Schuett & Dave Ward

Well: Larrabee No. 5-4, Mohler Field

Location: 2100' FNL & 1550' FEL, Section 4, T34S, R29W, Meade County, Kansas – South of Meade.

Elevation: Ground Level 2525', Kelly Bushing 2537'

Contractor: Duke Drilling Rig No. 9, T.P. Emidgio Rojas, Drillers Victor Martinez, Alejandro V., Fernando Juroeb, Type: Double jackknife, double stand

Company Man: Roger Pearson – Liberal, Kansas

Spud Date: 3/31/15

Total Depth: 4/7/15, Driller 6394', Logger 6392', St. Louis Fm.

Casing Program: 35 joints of 8 5/8" J-55, 24 Lbs/ft set at 1482' with 325 sacks A Con(3% & ¼ lb/bbl floseal) and 150 sacks Class C(2% & ¼ Lb). 4 ½" production casing run to TD 4/8/15.

Mud Program: Service Mud/Mud-Co, Engineer Brad Bortz, Chemical/gel, displaced 3590'

Wellsite Consultant: Peter Debenham with mudlogging trailer, Call depth 4000', Box 350, Drake, CO 80515, 720/220-4860.

Samples: 20' to TD.

Electric Logs: Weatherford, engineer Jeff Randle and Miles Wilkins, Array Induction, Compensated Neutron/Density, Microlog, Hi Res.

Status: 4 ½" production casing run 4/8/15.

## WELL CHRONOLOGY

<b>6 AM</b>			
<u>DATE</u>	<u>DEPTH</u>	<u>FOOTAGE</u>	<u>RIG ACTIVITY</u>
3/30			Move rig.
3/31	300'	300'	Move to location and rig up rotary tools. Pump water, mix spud mud. Spud in 12 1/4" to 300'.
4/1	1493'	1193'	Survey(1/2 deg.). To 1493' and circulate and condition hole. Trip out and run and cement 35 joints of 8 5/8" J-55, 24 Lbs/ft set at 1482' with 325 sacks A Con(3% & 1/4 lb floseal) and 150 sacks Class C(2% & 1/4 Lb). Plug down 3 pm. Wait on cement and nipple up BOP. Trip in.
4/2	200'	1407'	Trip in and pressure test BOP to 300 PSI/15 min. Drill plug and cement and 7 7/8" hole to 2900'. Survey(1 1/4 deg.). Displace mud system at 2590'.
4/3	4570'	1670'	Survey(1 1/4 deg.) and drill.
4/4	4865'	295'	Survey(1 deg.). Lost circulation at 4865'(250 bbls) and 700 bbls. Mix mud and LCM and pump down the backside. Trip out and mix mud and LCM. Mix 30 Lbs/bbl LCM mud and pump same. Lost 150 bbls and regained circulation. Trip in breaking circulation and circulate on bottom. Total loss of mud – estimated 1150 bbls.
4/5	5655'	790'	Trip in with full returns and drill to 4655' with 24 to 30 Lbs/bbl LCM mudsystem. Survey(1 1/2 deg.).
4/6	6390'	735'	
4/7	6394'TD	4'	To 6394'TD and circulate. Short trip 61 stands and circulate. Drawworks clutch went out. Wait on mechanic and repair clutch. Trip to bottom and circulate and trip out for Logs. Run Elogs.
4/8	TD		Run Elogs and wait on orders. Trip in and circulate. Trip out laying down and run and cement 4 1/2" production casing to TD.

## BIT RECORD

<u>NO.</u>	<u>MAKE</u>	<u>TYPE</u>	<u>SIZE</u>	<u>OUT</u>	<u>FOOTAGE</u>	<u>HOURS</u>
1		PLS 19	12 1/4"	1493'	1493'	10 1/4
2		PL7 616	7 7/8"	6394'	4901'	75
Total Rotating Hours:						85 1/4
Average:						75 Ft/hr

**DEVIATION RECORD - degree**

2590' 1 ¼, 5560' 1 ½

**MUD PROPERTIES**

<b><u>DATE</u></b>	<b><u>DEPTH</u></b>	<b><u>WT</u></b>	<b><u>VIS</u></b>	<b><u>PV</u></b>	<b><u>YP</u></b>	<b><u>pH</u></b>	<b><u>WL</u></b>	<b><u>CL</u></b>	<b><u>LCM-LBS/BBL</u></b>
4/1	1327'	9.9	36	4	5	8.5	n/c	20K	6
4/2	1701'	9.0	27	1	2	7.0	n/c	43K	0
4/3	3886'	9.4	50	15	16	10.0	10.4	5.5K	2
4/4	4882'	8.4	42	10	12	9.5	9.6	3K	26
4/5	5140'	8.4	56	15	18	9.5	8.8	3K	27
4/6	6142'	8.7	58	14	14	9.5	9.6	4K	19
4/7	6394'TD	8.9	56	22	18	9.0	7.6	2.4K	14

**ELECTRIC LOG FORMATION TOPS- KB Elev. 2537'**

<b><u>FORMATION</u></b>	<b><u>DEPTH</u></b>	<b><u>DATUM</u></b>	<b><u>*No. 1 Vogt "B"</u></b>	
			<b><u>DATUM</u></b>	<b><u>POSITION</u></b>
Casing	1489			
Heebner	4402'	-1865'	-1889'	+24'
Toronto	4425'	-1888'	-1914'	+29'
Lansing	4561'	-2024'	-2051'	+27'
Marmaton	5184'	-2647'	-2675'	+28'
Cherokee	5394'	-2857'	-2881'	+24'
Atoka	5584'	-3047'	-3072'	+38'
Morrow	5704'	-3167'	-3201'	+34'
Mississippi Chester	5816'	-3279'	-3314'	+35'
Ste. Genevieve	6122'	-3585'	-3637'	+52'
St. Louis	6214'	-3677'	-3725'	+48'
TD	6394'			

\*O'Brien Energy, Larrabee No. 4-4, 1220'FNL & 335'FEL, Sec. 4, KB Elev. 2541' – App. 1800' to the NE.