

	Scale 1:240 Imperial		
Well Name: Surface Location:	Renick #1 1650' FNL and 330' FEL		
Bottom Location: API: License Number: Spud Date:	15-069-20446-0000 34320 11/14/2013	Time:	7:30 PM
Region:	Sec. 29 - T25S - R29W, Gray County		7.50 F WI
Drilling Completed: Surface Coordinates: Bottom Hole Coordinates:	11/26/2013	Time:	2:50 PM
Ground Elevation: K.B. Elevation: Logged Interval: Total Depth: Formation: Drilling Fluid Type:	2682.00ft 2694.00ft 3500.00ft 5870.00ft Mississippian - St. Louis Chemical/Fresh Water Gel	To:	5870.00ft
	OPERATOR		
Company:	Lasso Energy LLC		
Address:	P.O. Box 465		
	1125 S. Main St.		
	Chase, KS 67524		
Contact Geologist: Contact Phone Nbr:	Bruce Kelso 918.633.9655		
Well Name:	Renick #1		
Location:	1650' FNL and 330' FEL	API:	15-069-20446-0000
Pool:		Field:	Ingalls
State:	Kansas	Country:	UŠA
	LOGGED BY		
Company:	Valhalla Exploration, LLC		
Address:	8100 E. 22nd St. North		
	Building 1800-2		
	Wichita, KS 67226		
Phone Nbr:	316.655.3550	Nome	Derek W. Patterson
Logged By:	Geologist	Name:	Derek W. Pallerson

## REMARKS

After review of the geologic log and sample descriptions, as well as the open hole electric logs for the Renick #1, it was decided upon by operator to run 5 1/2" production casing for further evaluation of said well.

Note: the RTD was 5870' and the LTD 5866'. The drill time, lithology, and gas curves have been shifted anywhere from 3'-5' shallow/higher to correspond with the electric log curves. DST #1 interval has been shifted 4' shallow/higher. All connection and circulation points have also been moved to match the overall shift.

The well samples were saved, submitted, and will be available for review at the Kansas Geologic Survey's Well Sample Library located in Wichita, KS.

Respectfully Submitted,

Derek W. Patterson

# GENERAL INFORMATION

#### Service Companies

Drilling Contractor: Ninnescah Drilling - Rig #101 Tool Pusher: Rick Barringer Daylight Driller: Jason Barringer Drilling Fluid: Mud-Co/Service Mud Inc. Engineers: Terry Ison Justin Whiting Evening Driller: Juan Navarro Morning Driller: Ronald Guerrero Relief: Oscar Orona

Gas Detector: Bluestem Environmental Engineer: Sidney Edelbrock Unit: 0756 Operational By: 1840'

Deviatio	n Survey
Depth	Survey
1630'	1 1/2°
2686'	1/4 °
4852'	3/4 °
RTD - 5870'	1/2°

Logging Company: Tucker Energy Services Engineer: J. Adams Logs Ran: DI, CDNL, Micro

Testing Company: Superior Testers Tester: Shane Konzem

Pipe	Strap
Depth	Pipe Strap
4852'	6.47' Long to Board (windy)

				Bit Record				
Bit #	Size	Make	Туре	Serial Number	Depth In	Depth Out	Feet	Hours
1	12 1/4"	Varel	Mill Tooth	1386925	0'	1630'	1630'	20
2	13 1/4"	Varel	Mill Tooth	1386926	1630'	1672'	42'	1.25
3	7 7/8"	Varel	HE21	1384993	1672'	4852'	3180'	96.5
4	7 7/8"	Varel	HE29	1382860	4852'	5870'	1018'	63.25

	Surface Casing
11.17.2013	Ran 39 joints of new 23#/ft 8 5/8" casing, tallying 1655', set @ 1670' KB.
	Cemented with 455 sacks A Common, 150 sacks Premium Plus. Cement did circulate.
	Plug down @ 1815 hrs 11.17.13. By Basic Energy Services.
	Production Casing
11.27.2013	Ran 154 joints of used 17#/ft 5 1/2" production casing, tallying 5796.19', set @ 5796' KB.
11.28.2013	Cemented with 345 sacks AA2 Class H. Cement did circulate.
	Plug down @ 1300 hrs 11.28.13. By Basic Energy Services.

## DAILY DRILLING REPORT

[	Date	0700 Hrs Depth	Previous 24 Hours of Operations
-	11.20.2013	4025'	Drilling and connections Topeka. Geologist Derek W. Patterson on location 2220 hrs 11.19.13. Reset Bloodhound, rezero system, test system. Drilling and connections Topeka, Heebner, and into Toronto. Drilling and connections Toronto. Made 825' over past 24 hrs of operations. WOB: 40k RPM: 75 PP: 900 SPM: 60 DMC: \$0.00 CMC: \$5,580.20
	11.21.2013	4550'	CFS @ 4028' (Tor). Resume drilling and connections Toronto and into Lansing-KC. Drilling and connections Lansing-KC. Rezero system, test system. Drilling and connections Lansing-KC, Base Kansas City, and into Marmaton. Made 525' over past 24 hrs of operations. WOB: 40k RPM: 75 PP: 1200 SPM: 60 DMC: \$4,979.65 CMC: \$10,559.85
	11.22.2013	4852'	Drilling and connections Marmaton, Pawnee, Fort Scott, and into Cherokee. Stop @ 4760' for short trip 1950 hrs 11.21.13. Conduct 20 stand short trip, CTCH back on bottom. Resume drilling following short trip 2330 hrs 11.21.13. Drilling and connections Cherokee, Ste. Genevieve (Miss), and into St. Louis (Miss). CFS @ 4852' (St. Louis 'B'). Made 302' over past 24 hrs of operations. WOB: 40k RPM: 75 PP: 1200 SPM: 60 DMC: \$2,325.10 CMC: \$12,884.95
	11.23.2013	4852'	CFS @ 4852' (St. Louis 'B'). Shows and structure warrant test. CTCH, drop survey, strap out for DST #1 0730 hrs 11.22.13. Rig up tester, make up tool. Bridge encountered @ 1775', impassable with tool. Pull out of hole with tool. TIH with bit to bottom, CTCH. TOH with bit for DST #1 (re-run). Bridge encountered again. TIH with tool. TIH with bit to bridge. Wash through bridge, circulate on zone before TOH with bit. TIH with tool. Made 0' over past 24 hrs of operations. WOB: n/a RPM: n/a PP: n/a SPM: n/a DMC: \$496.30 CMC: \$13,381.25
	11.24.2013	5063'	TIH with tool all the way to bottom. Conduct DST #1, test successful. TIH with new bit, CTCH. Resume drilling following DST #1 1700 hrs 11.23.13. Drilling and connections St. Louis and into Spergen. Drilling and connections Spergen. Made 211' over past 24 hrs of operations. WOB: 40k RPM: 70-75 PP: 1000 SPM: 60 DMC: \$0.00 CMC: \$12,281,25

		DNIC. \$0.00 CNIC. \$13,301.23
11.25.2013	5449'	Drilling and connections Spergen. Superior Tester released and tool off location. Drilling and connections Spergen and into Warsaw. CFS @ 5377' (Warsaw). Resume drilling and connections Warsaw and into Osage. Made 386' over past 24 hrs of operations. WOB: 40k RPM: 70-75 PP: 1000 SPM: 60 DMC: \$1,330.35 CMC: \$14,711.60
11.26.2013	5739'	Drilling and connections Osage, Kinderhook, and into Viola. Drilling and connections Viola. Made 290' over past 24 hrs of operations. WOB: 40k RPM: 70-75 PP: 1000 SPM: 60 DMC: \$1,115.15 CMC: \$15,826.75
11.27.2013	RTD- 5870' LTD - 5866'	Drilling and connections Viola, Simpson, and into Arbuckle. Drilling and connections Arbuckle ahead to RTD of 5870'. RTD reached 1450 hrs 11.26.13. CTCH, conduct 20 stand short trip, CTCH back on bottom. Drop survey, TOH for open hole logging operations 1845 hrs 11.26.13. Rig up Tucker Energy Services. Conduct open hole logging operations. Orders received to run 5 1/2" production casing for further evaluation of the Renick #1. Geologist Derek W. Patterson off location 0540 hrs 11.27.13. Made 131' over past 24 hrs of operations. WOB: 40k RPM: 70-75 PP: 1000 SPM: 60 DMC: \$1,378.85 CMC: \$17,205.60 Total Mud Cost: \$17,292.45

					١	NELL C	OMPA	RISON	SHEE	Т						
		Drillin	g Well			Compar	ison Well			Compari	ison Well			Compar	ison Well	
	Lass	o Energy l	0	ick #1	5	Slawson - F		#1	Gear	Pet - Klies		t 'B' #1	Slawson		Strawn-St.	Jnit 'A' #1
		Sec. 29 - T			5	Sec. 29 - T	25S - R29	w	5	Sec. 28 - T2	25S - R29	W	ຣ	Sec. 29 - T	25S - R29	N
		NE S	E NE			NE N	IE SE			SW S	W NW			SE N	IE NE	
					Oil - S	St. Louis	Stru	ctural	Oil - S	t. Louis	Struc	ctural	Oil - S	t. Louis	Struc	tural
	2694				2685			ionship	2686			onship	2685		Relati	onship
Formation		Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	<u> </u>	Log	Log	Sub-Sea	Sample	Log	Log		Sample	Log
Heebner	3993	-1299	3989	-1295	3997	-1312	13	17	3993	-1307	8	12	3984	-1299	0	4
Toronto	4008	-1314	4004	-1310	4011	-1326	12	16	4008	-1322	8	12	3996	-1311	-3	1
Lansing-Kansas City	4079	-1385	4074	-1380	4080	-1395	10	15	4077	-1391	6	11	4067	-1382	-3	2
LKC 'B'	4118	-1424	4109	-1415	4116	-1431	7	16	4112	-1426	2	11	4103	-1418	-6	3
LKC 'D'	4152	-1458	4144	-1450	4151	-1466	8	16	4146	-1460	2	10	4140	-1455	-3	5
LKC 'F'	4184	-1490	4174	-1480	4182	-1497	7	17	4176	-1490	0	10	4170	-1485	-5	5
LKC 'G'	4204	-1510	4199	-1505	4206	-1521	11	16	4202	-1516	6	11	4195	-1510	0	5
Muncie Creek	4250	-1556	4244	-1550	4250	-1565	9	15	4246	-1560	4	10	4239	-1554	-2	4
LKC 'H'	4258	-1564	4251	-1557	4258	-1573	9	16	4253	-1567	3	10	4250	-1565	1	8
LKC 'l'	4282	-1588	4276	-1582	4283	-1598	10	16	4276	-1590	2	8	4271	-1586	-2	4
LKC 'J'	4317	-1623	4312	-1618	4320	-1635	12	17	4310	-1624	1	6	4307	-1622	-1	4
Stark	4376	-1682	4373	-1679	4380	-1695	13	16	4374	-1688	6	9	4368	-1683	1	4
LKC 'K'	4378	-1684	4387	-1693	4382	-1697	13	4	4377	-1691	7	-2	4372	-1687	3	-6
Hushpuckney	4419	-1725	4417	-1723	4419	-1734	9	11	4418	-1732	7	9	4409	-1724	-1	1
LKC 'L'	4423	-1729	4419	-1725	4422	-1737	8	12	4421	-1735	6	10	4412	-1727	-2	2
Base Kansas City	4512	-1818	4504	-1810	4510	-1825	7	15	4508	-1822	4	12	4500	-1815	-3	5
Marmaton	4534	-1840	4527	-1833	4534	-1849	9	16	4530	-1844	4	11	4525	-1840	0	7
Pawnee	4609	-1915	4605	-1911	4611	-1926	11	15	4611	-1925	10	14	4600	-1915	0	4
Fort Scott	4635	-1941	4631	-1937	4638	-1953	12	16	4636	-1950	9	13	4626	-1941	0	4
Cherokee	4652	-1958	4645	-1951	4652	-1967	9	16	4649	-1963	5	12	4641	-1956	-2	5
Basal Penn Sand		Not P	resent		4780	-2095	Ν	J/A		Not P	resent			Not P	resent	
Ste. Genevieve	4776	-2082	4773	-2079	4805	-2120	38	41	4778	-2092	10	13	4768	-2083	1	4
St. Louis	4828	-2134	4831	-2137	4835	-2150	16	13	4826	-2140	6	3	4812	-2127	-7	-10
Spergen	5046	-2352	5041	-2347												
Warsaw	5266	-2572	5262	-2568												
Osage	5390	-2696	5384	-2690												
Kinderhook	5549	-2855	5544	-2850		Not Pe	netrated			Not Per	netrated		1	Not Pe	netrated	
Viola	5701	-3007	5694	-3000												
Simpson	5789	-3095	5784	-3090												
Arbuckle	5806	-3112	5800	-3106												
Total Depth	5870	-3176	5866	-3172	5054	-2369	-807	-803	4984	-2298	-878	-874	5000	-2315	-861	-857
						4019	4020	SQU'D		4835	4842	ACTIVE		4824	4828	P&A
NOTE: DST interva				higher to		-1334	-1335		Perf:	-2149	-2156		Perf:	-2139	-2143	
correspon	d with the	electric log	g curves.		Perf:	4838	4843	ACTIVE	Prod	63703 BC			Prod:	7061 BO		
						-2153	-2158	//onite	1100.	00/00 DC		1	1100.	7001 00		
					Prod	: 189121 B		-								
							-	1								
L																
(																
							ROCK	TYPES								
	ht		111	DOL4				MST4	_	_	SHALE	GRN				
	ht av			LMST	1			MSTSDY			SHALE	GRA				
	0,			-			<u> </u>				-	-				
	OL1			LMST		····		-			SHALE					
<del></del> D	OL2			LMST	3		S	HALE CA	2	_	SHALE	TEAL				

# ACCESSORIES

# STRINGER

MINERAL

▲ Chert, dark
 ∠ Dolomitic

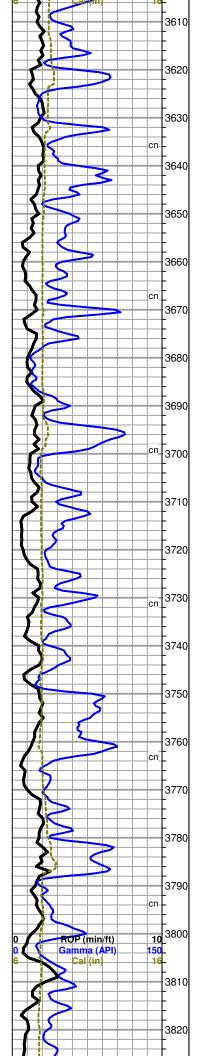
FOSSIL

F Fossils < 20% ♦ Oolite

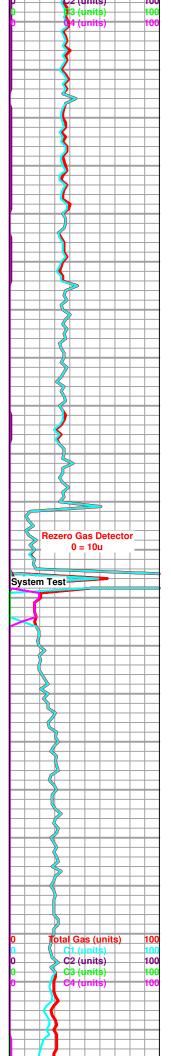
Limestone1 Shale Carb TEXTURE C Chalky L Lithogr

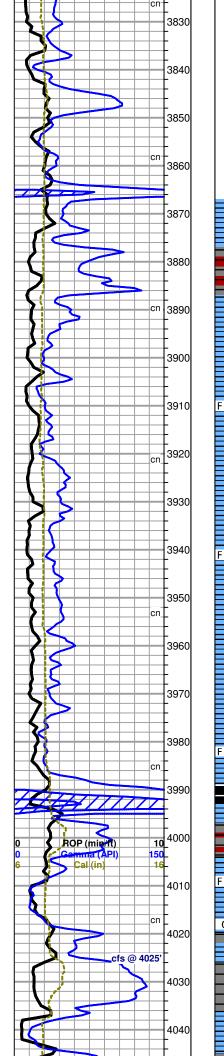
<ul> <li>∩ Glauconite</li> <li>P Pyrite</li> <li>Sandy</li> <li>∧ Siliceous</li> <li>Silty</li> <li>△ Chert White</li> <li>✓ Euhed rhombs of dol or (</li> </ul>	<ul> <li>✓ Oomoldic</li> <li>× Sponge Spicules</li> </ul>	Shale Green Shale Gray Shale Teal
		OTHER SYMBOLS
Image: Sector of the secto	DST DST1 DST2 DST3 Core tail pipe	

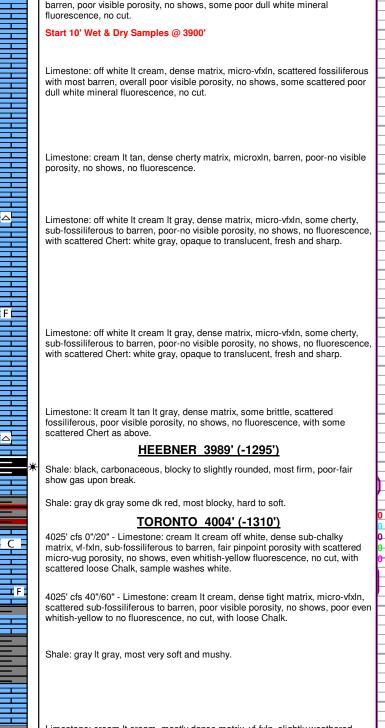
		Printed by GEOstrip VC Striplo	g version 4.0.7.0 (www.grsi.ca)
Curve Track #1			TG, C1 - C5
ROP (min/ft)			Total Gas (units)
Gamma (API) Gal (in)			C1 (units)
Cal (in) 1			C2 (units)
	DST Lithology		C3 (units)
btt		ō	
		5 Geological Descriptions	C4 (units)
a sa	5		
Inte			
1:240 Imperial         0           0         ROP (min/ft)         10           0         Gamma (API)         150			
1:240 Imperial			1:240 Imperial
0 ROP (min/ft) 10 0 Gamma (API) 150		Displace Mud System @ 3495'	D Total Gas (units) 100
0 ROP (min/ft) 10 0 Gimma (API) 150 6 Cal (in) 16			0\$2 (units)100
cn 3510			0
	1		
3520			
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3560	<b>/</b>		
3570 cn	<b>/</b>		
3580	ין אין אין אין אין אין אין אין אין אין א		
3590	ין אין אין אין אין אין אין אין אין אין א		
0 <b>Gamma (API)</b> <b>Gamma (API)</b> <b>Gamma (API)</b>	ין אין אריין אין אין אין אין אין אין אין אין אין		D         Total Gas (units)         100           1         1 (units)         100           0         2 (units)         100
0 Gamma (API) cn			0 <b>100</b>



Geologist Derek W. Patterson On Location 2220 hrs 11.19.13





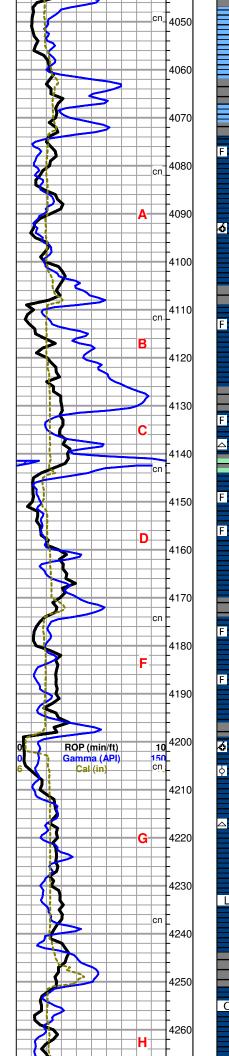


Limestone: It cream It gray, dense tight matrix, microxln, scattered subfossiliferous to barren, poor visible porosity, no shows, no fluorescence.

Shale: dk red dk gray, blocky to slightly rounded, most dense and hard.

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Limestone: cream It gray, dense tight matrix, microxln, scattered fossiliferous to Vis: 53 Wt: 9.1 Shale Kick Total Gas (units) C2 (units) 100 3 (units) 10



texture, most barren, fair pinpoint porosity in most, no shows, even it yellow mineral fluorescence, no cut.

Shale: gray It gray dk gray, blocky to rounded, hard to soft, with abundant interbedded Limestone: cream tan, dense tight matrix, micro-cryptoxln, sub-fossiliferous, poor visible porosity, no shows, poor dull white mineral fluorescence in few pieces, no cut.

#### LANSING-KANSAS CITY 4074' (-1380')

Limestone: It cream cream, dense chalky matrix, microxln, most fossiliferous, poor visible porosity, no shows, even dull white mineral fluorescence, no cut, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp.

Limestone: cream It cream, softer chalky matrix, vfxln, fossiliferous-oolitic, fair pinpoint to medium vuggy/oomoldic porosity in most, scattered poor whitishyellow fluorescence, no cut, with Chert: gray It gray off white cream, opaquetranslucent, fresh and sharp, most fossiliferous, and some scattered Chalk in sample.

Shale: gray It gray, blocky to rounded, most soft.

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Limestone: cream tan, dense compact matrix, micro-cryptoxln, subfossiliferous, poor visible porosity, no shows, no fluorescence, with abundant Chert; tan brown, opaque-translucent, fresh and sharp.

Limestone: cream It cream tan, dense tight matrix, micro-cryptoxln, abundant compact fossiliferous, poor-no visible porosity, no shows, no fluorescence, with some scattered Chert as above.

Shale: gray It gray pale green, most rounded and soft.

Limestone: cream It cream It gray, dense chalky matrix, microxln, fossiliferous, poor-fair interfossiliferous porosity, no shows, poor dull whitish-yellow mineral fluorescence, no cut, with Chert: white cream gray, opaque, fresh and sharp, fossiliferous, and some scattered Chalk.

Limestone: tan brown mottled, dense matrix, vfxln, most fossiliferous, grainy texture, poor visible porosity, no shows, no fluorescence, with scattered Chert as above, loose Chalk drops out.

Shale: gray dk gray some dk red, blocky to rounded, mostly soft.

Limestone: cream It cream off white, dense tight matrix, microxln, compact fossiliferous, poor visible porosity, no shows, poor dull white mineral fluorescence, no cut, with Chert: cream tan gray off white, opaque, fresh and sharp, some fossiliferous.

Limestone: cream tan, dense xln matrix, micro-vfxln, oolitic/fossiliferous with good-excellent oomoldic development and associated porosity, no shows, poor yellowish-white mineral fluorescence, no cut, with Chert: cream tan off white, opaque, fresh and sharp, some fossiliferous.

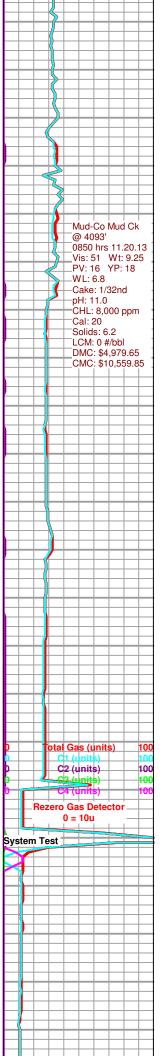
Limestone: cream tan, dense tight matrix, most cryptoxin to lithographic nondescript, some scattered sub-fossiliferous with most barren, poor-no visible porosity, no shows, no fluorescence, with Chert: gray cream off white, opaquetranslucent, fresh and sharp, fossiliferous in part.

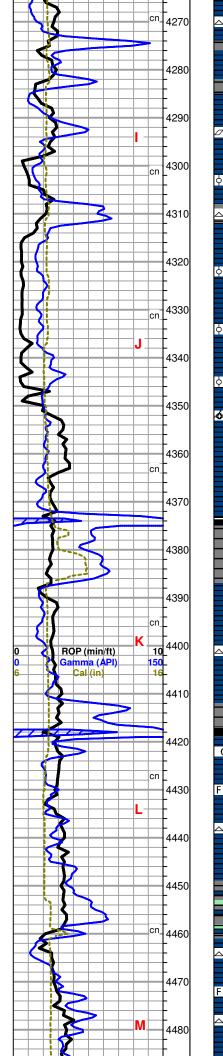
Limestone: cream tan, dense matrix, micro-cryptoxln, some lithographic nondescript, barren, poor-no visible porosity, no shows, poor dull white mineral fluorescence, no cut, with scattered Chert as above.

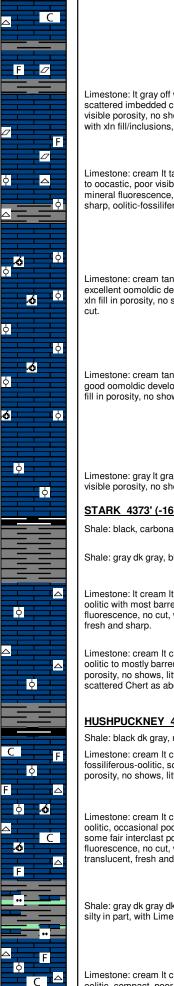
## MUNCIE CREEK 4244' (-1550')

Shale: gray dk gray It gray, most soft and mushy.

Limestone: off white It gray It cream, dense sub-chalky to sub-cherty matrix, micro-cryptoxIn, scattered sub-fossiliferous to barren, trace poor vug development and associated porosity, no shows, even dull yellow-white mineral fluorescence, no cut, with fair amount of loose Chalk, and Chert: It gray white, translucent, fresh and sharp.







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Limestone: It gray off white, dense matrix, micro-cryptoxln, fossiliferous in part, scattered imbedded calcite crystals with some 2ndary xln fill, overall poor visible porosity, no shows, some bright It yellow mineral fluorescence in those with xln fill/inclusions, no cut, with some interbedded Shale.

Limestone: cream It tan, dense matrix, micro-vfxln, some grainy, heavily oolitic to oocastic, poor visible porosity with most xln filled, no shows, poor It yellow mineral fluorescence, no cut, with Chert: cream off white, opaque, fresh and sharp, oolitic-fossiliferous, and some loose Chalk.

Limestone: cream tan brown, dense matrix, vf-microxln, heavily oolitic with excellent oomoldic development and associated porosity, fair amount of 2ndary xIn fill in porosity, no shows, even dull whitish-green mineral fluorescence, no

Limestone: cream tan brown, dense matrix, vf-microxln, heavily oolitic with good oomoldic development and associated porosity, fair amount of 2ndary xln fill in porosity, no shows, even dull whitish-green mineral fluorescence, no cut.

Limestone: gray It gray cream, dense cherty matrix, oolitic to sub-oolitic, poor visible porosity, no shows, little-no fluorescence, no cut.

## STARK 4373' (-1679')

Shale: black, carbonaceous, blocky to rounded, softer, no gas show.

Shale: gray dk gray, blocky to rounded, soft.

Limestone: It cream It tan, dense tight matrix, microxIn, occasional compact oolitic with most barren, poor visible porosity, no shows, little-no mineral fluorescence, no cut, with scattered Chert: It gray white, opaque-translucent,

Limestone: cream It cream, dense tight matrix, microxln, scattered compact oolitic to mostly barren, some 2ndary xln along edges, overall poor visible porosity, no shows, little-no mineral fluorescence, no cut, with continued scattered Chert as above.

# HUSHPUCKNEY 4417' (-1723')

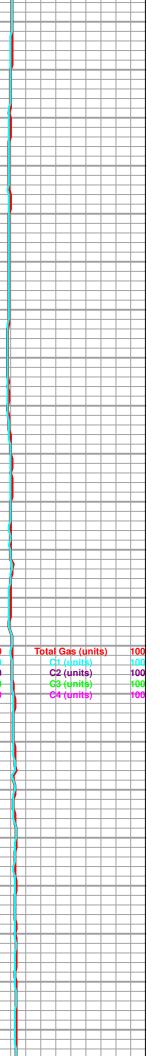
Shale: black dk gray, most carbonaceous, blocky and dense, no gas show.

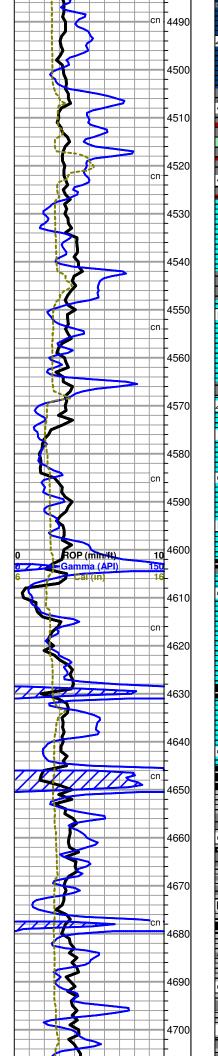
Limestone: cream It cream, dense sub-chalky matrix, micro-vfxln, most fossiliferous-oolitic, some imbedded calcite crystals, overall poor visible porosity, no shows, little-no fluorescence, no cut.

Limestone: cream It cream, dense sub-chalky matrix, microxln, fossiliferousoolitic, occasional poor oomoldic/vug development and associated porosity, some fair interclast porosity, no shows, even dull It yellow mineral fluorescence, no cut, with scattered Chert: It gray cream tan, opaquetranslucent, fresh and sharp, some fossiliferous in part.

Shale: gray dk gray dk green, blocky and firm, limey, most fissile to splintery, silty in part, with Limestone stringers as above, no shows.

Limestone: cream It cream, dense sub-chalky matrix, vfxln, most fossiliferousoolitic, compact, poor interfossiliferous porosity in few pieces, no shows, littleno mineral fluorescence, no cut, with Chert: gray cream tan, opaque, fresh and sharp, some fossiliferous in part.





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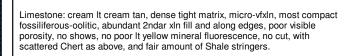
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## BASE KANSAS CITY 4504' (-1810')

INFLUX - Shale: gray dk gray dk green dk red, blocky to rounded, dense and hard to soft, some silty in part.

Shale: gray dk gray dk green dk red, blocky to rounded, dense and hard to soft, some silty in part.

#### MARMATON 4527' (-1833')

Limestone: cream It cream off white, dense matrix, micro-cryptoxln, mostly barren, poor visible porosity, no shows, little-no mineral fluorescence, no cut, with scattered Chert fragments.

Limestone: cream It cream off white, dense matrix, micro-cryptoxln with some lithographic non-descript, mostly barren with the occasional sub-fossiliferous, poor visible porosity, no shows, little-no mineral fluorescence, no cut, with scattered Chert fragments.

Limestone: It cream cream, dense matrix, micro-vfxln, most oolitic with fair oomoldic development and associated porosity, no shows, poor-no mineral fluorescence, no cut, with abundant loose Chalk in sample, sample washes white.

Limestone: cream It cream tan, dense matrix, micro-vfxln, most heavily ooliticfossiliferous, grainy texture in some, fair-poor interclast porosity with fair amount of 2ndary xln fill, no shows, no fluorescence, with scattered Chert: cream tan brown, opaque-translucent, fresh and sharp.

#### PAWNEE 4605' (-1911')

Limestone: cream It cream, dense matrix, vfxln, heavily oolitic with fair-good oomoldic development and associated porosity, no shows, little-no mineral fluorescence, no cut.

Limestone: cream tan, dense matrix, cryptoxln, most barren, no visible porosity, no shows, with scattered Chert: off white It cream, opaque, fresh and sharp, heavily oolitic.

#### FORT SCOTT 4631' (-1937')

Limestone: cream tan, dense matrix, microxln, scattered oolitic-fossiliferous, poor visible porosity, no shows, little-no mineral fluorescence, no cut.

#### CHEROKEE 4645' (-1951')

Shale: black dk gray, carbonaceous, blocky, most firm and dense, some softer and waxy, good show gas.

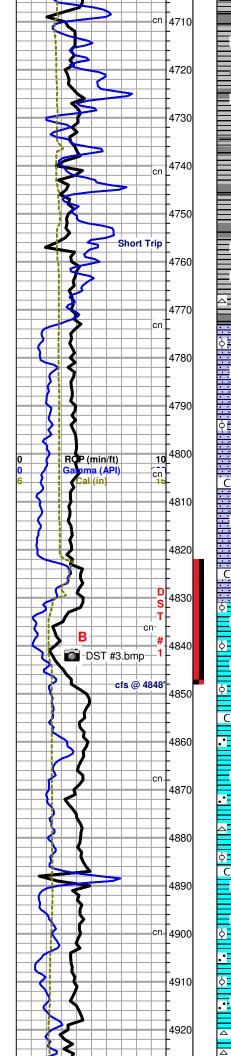
Limestone: cream tan, dense tight matrix, microxln, fossiliferous-oolitic, poor visible porosity, no shows, no fluorescence, with abundant (interbedded/stringers) Shale: gray dk gray some black, very dense and blocky, hard, some pyritic in part.

Limestone: tan gray, dense tight matrix, cryptoxln with abundant lithographic non-descript, barren, no visible porosity, no shows, no fluorescence, with continued abundant Shale as above.

Limestone: cream gray, mostly dense matrix, micro-vfxln, most heavily oolitic, fair interclast porosity, no shows, no fluorescence, with Limestone: cream tan, dense tight matrix, lithographic non-descript, barren, no visible porosity, no shows, no fluorescence, and scattered Shale stringers: gray It gray, blocky and dense, most hard.

Limestone: gray cream, dense tight matrix, cryptoxIn, some lithographic nondescript, barren, no visible porosity, no shows, no fluorescence, with

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interbedded Shale: gray It gray, blocky to rounded, soft.

Limestone: most as above, with trace Limestone: cream, chalky matrix, microxln, some edge weathering, fair pinpoint porosity, poor-fair show It brown oil upon break, spotty It yellow fluorescence, bluish-white cut, moderate odor.

Limestone: gray cream, dense tight matrix, micro-cryptoxln, most barren, poor visible porosity, no shows, no fluorescence.

4756' cfs - Predominately Limestone: gray cream, dense tight matrix, microcryptoxln, most barren, poor visible porosity, no shows, no fluorescence, with some scattered Chert: cream tan, opaque, fresh and sharp, and interbedded/stringers of Shale: gray dk gray, blocky to rounded, most firm.

Limestone: cream It cream, dense matrix, cryptoxln, barren, poor-no visible porosity, no shows, no fluorescence, with fair amount of loose Chalk, and scattered Chert: cream tan, opaque, fresh and sharp, sample washes white.

## MISSISSIPPIAN - STE. GENEVIEVE 4773' (-2079')

INFLUX - Limestone: It cream It cream off white, dense sub-chalky matrix, vfmicroxln, most oolitic, some scattered arenaceous material, fair intergranular/interclast porosity, no shows, no fluorescence.

Limestone: It cream off white It gray, most soft chalky matrix, some friable, vfmicroxln, scattered oolitic material, most heavily arenaceous, fair-poor interclast porosity, no shows, no fluorescence.

Limestone: It cream off white It gray, friable-dense chalky matrix, vf-microxln, scattered oolitic material, most heavily arenaceous, fair-poor interclast porosity, no shows, no fluorescence, with some loose Chalk.

Limestone: It cream off white It gray, mostly friable chalky matrix, vf-microxln, scattered oolitic material, some glauconitic in part, most heavily arenaceous, fair-poor interclast porosity, no shows, no fluorescence, with some loose Chalk.

## ST. LOUIS 4831' (-2137')

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Limestone: off white It cream, mostly dense matrix, vfxIn, heavily oolitic, fair amount of imbedded silica grains, some chalky in part, overall poor interoolitic porosity, no shows, no fluorescence, no odor, with loose Chalk.

4848' cfs - Limestone: cream tan It cream, dense matrix, micro-vfxln, heavily oolitic, overall fair/-good interoolitic/pinpoint porosity, fair-good show heavy brown oil upon break with increase under lamp, good milky-white cut upon break, even-spotty bright It yellow fluorescence, grading to a tighter oolitic lime, decrease in visible porosity in lower portion, moderate gassy odor.

Limestone: It gray off white, sub-friable to dense slightly chalky matrix, vfmicroxln, heavily arenaceous, some oolitic in part, fair interclast porosity, no shows, no fluorescence.

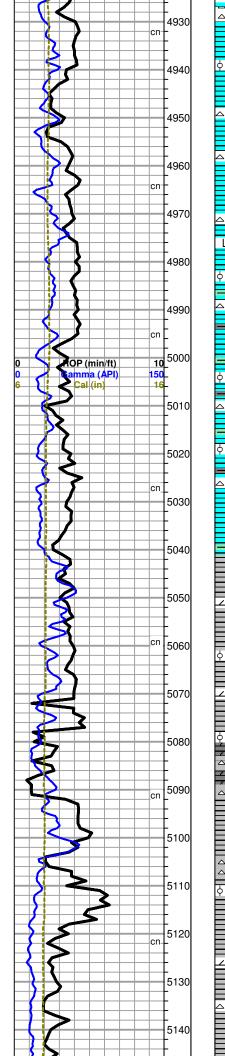
Limestone: It gray off white, sub-friable to dense slightly chalky matrix, vfmicroxln, heavily arenaceous, some oolitic in part, fair interclast porosity, no shows, no fluorescence.

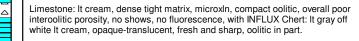
Limestone: It cream It gray, mostly dense matrix, some chalky and softer, microxln, increase in oolitic material, still carrying fair amount of arenaceous material, some with just a few imbedded silica grains, fair-poor interclast porosity, no shows, no fluorescence, with trace Chert: cream off white, opaque, fresh and sharp, oolitic in part, and loose Chalk, sample washes white.

Limestone: It cream It gray, mostly dense with some sub-chalky softer matrix, microxln, most oolitic to heavily oolitic, still carrying fair amount of arenaceous material, some with just a few imbedded silica grains, fair-poor interclast porosity, no shows, no fluorescence, with trace Chert: cream off white, opaque, fresh and sharp, oolitic in part, and fair amount of loose Chalk, sample washes white.

Limestone: It cream It gray, dense tight matrix in most, vf-microxln, most compact oolitic, some scattered arenaceous material, overall poor visible porosity, no shows, no fluorescence, loose Chalk drops out.

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Limestone: It cream, dense tight matrix, microxIn, compact oolitic, overall poor interoolitic porosity, no shows, no fluorescence.

Limestone: cream It cream, mostly dense tight matrix, some softer and chalky, micro-vfxln, heavily oolitic, some fair interoolitic porosity, no shows, no fluorescence, with scattered Chert: It gray off white It cream, opaquetranslucent, fresh and sharp, oolitic in part.

Limestone: cream tan It brown, dense tight sub-chalky matrix, micro-cryptoxln, most compact oolitic with some barren to lithographic non-descript, poor-no visible porosity, no shows, no fluorescence, with fair amount of Chert as above.

Limestone: cream tan, dense matrix, micro-cryptoxln, some lithographic nondescript, compact oolitic to barren, poor-no visible porosity, no shows, no fluorescence, with continued scattered Chert, and carrying fair amount of Shale content: gray dk gray dk green, blocky and dense (background?).

Limestone: cream tan, dense matrix, micro-cryptoxln, some lithographic nondescript, compact oolitic to barren, poor-no visible porosity, no shows, no fluorescence, with continued scattered Chert, and carrying increased amount of Shale content: gray dk gray dk green, blocky and dense (background?).

Limestone: cream tan, dense matrix, micro-cryptoxln, some lithographic nondescript, compact oolitic to barren, poor-no visible porosity, no shows, no fluorescence, with continued scattered Chert, and carrying increased amount of Shale content: gray dk gray dk green, blocky and dense (background?).

# SPERGEN 5041' (-2347')

INFLUX - Limestone: tan cream brown some gray, dense dolomitic matrix, micro-cryptoxln, oolitic, no visible porosity, no shows, no fluorescence, with some scattered Chert: cream tan, opaque, fresh and sharp, barren, and still carrying fair amount of Shale as above.

Limestone: tan cream some gray, dense dolomitic matrix, micro-cryptoxln, oolitic, no visible porosity, no shows, no fluorescence, with INFLUX Limestone: off white It gray some mottled, softer chalky matrix, microxln, some oolitic in part, overall poor visible porosity, no shows, no fluorescence, and scattered Chert: cream tan, opaque, fresh and sharp, barren.

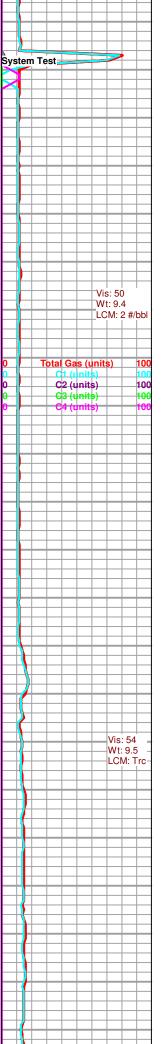
INFLUX - Chert: gray smokey gray some cream to tan, opaque-translucent, fresh and sharp, oolitic, no shows, with INLUX Dolomite: It cream, dense to sub-friable matrix, vf-fxln, sucrosic texture, fair interxln porosity, no shows, no fluorescence.

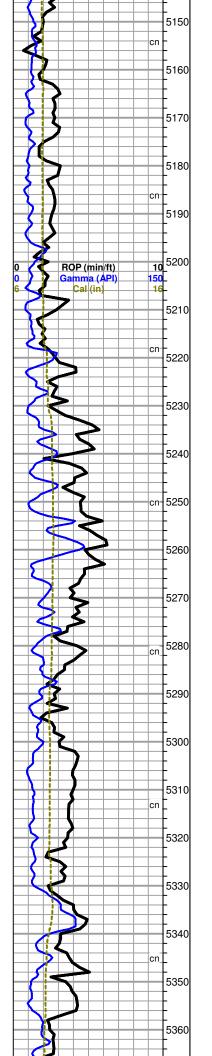
Limestone: cream It cream, dense tight to softer sub-chalky matrix, vfxIn, scattered sub-oolitic to barren, poor visible porosity, no shows, no fluorescence, with some loose Chalk.

Chert: gray It gray cream, translucent, fresh and sharp, most fossiliferousoolitic, some spiculitic in part.

Limestone: cream It cream, mostly dense matrix, vfxln, most oolitic to suboolitic with some barren, poor visible porosity, no shows, no fluorescence.

Limestone: cream It cream, sub-chalky to dolomitic matrix, vf-fxln, some grainy, sub-oolitic to barren, fair interclast/interxln porosity, no shows, no fluorescence, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp, fossiliferous-oolitic in part, and some loose Chalk in sample.





Limestone: cream It cream, sub-chalky to dolomitic matrix, vf-fxln, some grainy, sub-oolitic to barren, fair interclast/interxln porosity, no shows, no fluorescence, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp, fossiliferous-oolitic in part, and some loose Chalk in sample.

Limestone: cream It cream some tan mottled, sub-chalky to dolomitic matrix, vf-fxln, increase in dolomitic material, some grainy, mostly barren with some sub-oolitic, fair interclast/interxln porosity, no shows, no fluorescence, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp, fossiliferous-oolitic in part, and some loose Chalk in sample.

Limestone: cream It cream gray some tan mottled, sub-chalky to dolomitic matrix, vf-fxln, fair amount of dolomitic material, some grainy, mostly barren with some sub-oolitic, fair interclast/interxln porosity, no shows, no fluorescence, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp, fossiliferous-oolitic in part, and some loose Chalk in sample.

Limestone: cream It cream gray some tan mottled, sub-chalky to dolomitic matrix, vf-fxln, fair amount of dolomitic material, some grainy, mostly barren with some sub-oolitic, fair interclast/interxln porosity, no shows, no fluorescence, with scattered Chert: It gray off white, opaque-translucent, fresh and sharp, fossiliferous-oolitic in part, and some loose Chalk in sample.

INFLUX - Dolomitic Limestone: It gray gray dk gray cream dk cream most mottled, dense dolomitic matrix, vf-fxln, barren, some grainy, overall poor visible porosity, no shows, no fluorescence, with scattered Chert: gray cream tan mottled, opaque-translucent, fresh and sharp, majority fossiliferous.

# WARSAW 5262' (-2568')

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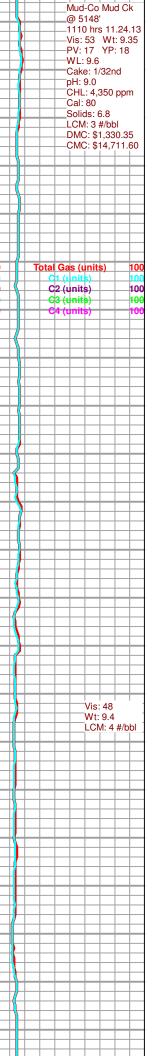
Dolomitic Limestone: It gray gray dk gray cream dk cream most mottled, dense dolomitic matrix, vf-fxln, barren, some grainy, overall poor visible porosity, no shows, no fluorescence, with scattered Dolomite: gray It gray, sucrosic matrix, fxln, fair interxln porosity, no shows, no fluorescence, and scattered Chert: gray cream tan mottled, opaque-translucent, fresh and sharp, majority fossiliferous.

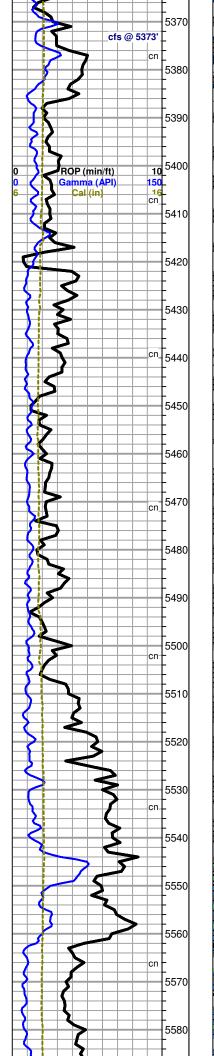
Dolomitic Limestone: It gray gray dk gray cream dk cream most mottled, dense dolomitic matrix, vf-fxln, barren, some grainy, some fair pinpoint/interxln porosity, no shows, no fluorescence, with scattered Dolomite: gray It gray, sucrosic matrix, fxln, fair interxln porosity, no shows, no fluorescence, scattered Chert as above, and fair amount of loose translucent Silica shards (chalcedonic Chert?).

Dolomitic Limestone: It gray gray cream dk cream most mottled, dense dolomitic matrix, vf-fxln, some scattered large imbedded clasts, some grainy, overall poor visible porosity, no shows, no fluorescence, with scattered Dolomite: gray It gray, sucrosic matrix, fxln, fair interxln porosity, no shows, no fluorescence, most Chert and Silica shards drop out.

Dolomitic Limestone: It gray off white It cream mottled, dense dolomitic to softer sub-chalky matrix, vf-fxln, most barren, grainy, becoming glauconitic, overall poor-fair interxln porosity, no shows, no fluorescence, with fair amount of loose Chalk.

5373' cfs - Dolomite/Dolomitic Limestone: gray It gray off white cream mottled, dense matrix, fxln, much glauconitic, fair interxln/pinpoint porosity, no shows, no fluorescence, with increase in Chert: clear smokey gray, translucent, fresh and sharp, some fossiliferous-spiculitic in part, couple of pieces with poor It brown stain, no live shows, spotty It yellow fluorescence in stained area, no cut, no odor in sample.





Predominately Dolomite: gray It gray off white, dense sucrosic matrix, vfxln, spiculitic in part, abundant glauconitic, overall poor visible porosity, no shows, no fluorescence, with Dolomitic Limestone: gray It gray mottled, dense dolomitic matrix, vf-fxln, poor visible porosity, no shows, no fluorescence, and scattered Chert as above, no shows.

#### OSAGE 5384' (-2690')

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Chert: clear smokey gray, translucent-opaque, fresh and sharp, some fossiliferous-spiculitic in part, no shows, no fluorescence, with Dolomite: gray It gray off white, dense to slightly friable sucrosic matrix, vfxln, spiculitic in part, overall fair interxln/pinpoint porosity, no shows, no fluorescence.

Chert: clear smokey gray, translucent-opaque, fresh and sharp, some fossiliferous-spiculitic in part, no shows, no fluorescence, with Dolomite: gray It gray off white, dense to slightly friable sucrosic matrix, vfxln, spiculitic in part, overall fair interxln/pinpoint porosity, no shows, no fluorescence.

Dolomite: gray It gray off white, dense to slightly friable sucrosic matrix, vfxln, spiculitic in part, overall fair interxln/pinpoint porosity, no shows, no fluorescence, with Chert: clear smokey gray, translucent-opaque, fresh and sharp, some fossiliferous-spiculitic in part, no shows, no fluorescence, and trace Limestone: gray dk gray mottled, dense dolomitic matrix, vf-fxln, barren, glauconitic in part, poor interxln porosity, no shows, no fluorescence.

Dolomite: gray It gray off white, dense to slightly friable sucrosic matrix, vfxln, spiculitic in part, overall fair interxln/pinpoint porosity, no shows, no fluorescence, with Chert: clear smokey gray, translucent-opaque, fresh and sharp, some fossiliferous-spiculitic in part, no shows, no fluorescence, and trace Limestone: gray dk gray mottled, dense dolomitic matrix, vf-fxln, barren, glauconitic in part, poor interxln porosity, no shows, no fluorescence.

Dolomite: gray It gray off white, dense to slightly friable sucrosic matrix, vfxln, spiculitic in part, overall fair interxln/pinpoint porosity, no shows, no fluorescence, with abundant Chert: gray It gray smokey gray frosted, translucent-opaque, fresh and sharp, some fossiliferous-spiculitic in part, no shows, no fluorescence, and trace Limestone: gray dk gray mottled, dense dolomitic matrix, vf-fxln, barren, poor interxln porosity, no shows, no fluorescence.

Limestone: tan gray, dense dolomitic matrix, vfxln, barren, poor interxln/micro pinpoint porosity, no shows, no fluorescence, with some scattered Dolomite as above, and continued Chert, no shows.

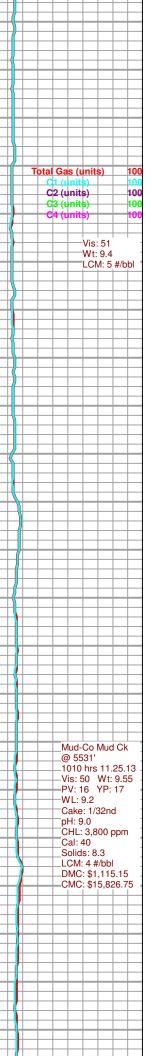
Dolomite: It gray off white, very dense matrix, micro-vfxln, barren, poor visible porosity, no shows, scattered It yellow mineral fluorescence, no cut, with nearly 50% Chert: gray It gray smokey gray, opaque-translucent, fresh and sharp, some frosted.

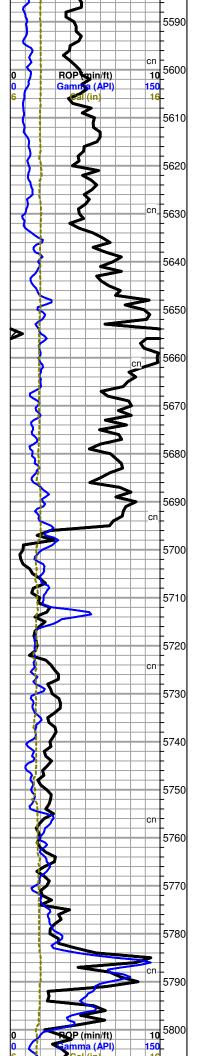
Dolomite: It gray off white, very dense matrix, micro-vfxln, barren, poor visible porosity, no shows, scattered It yellow mineral fluorescence, no cut, with continued abundant Chert: gray It gray smokey gray, opaque-translucent, fresh and sharp, some frosted, and scattered Limestone: cream tan, dense brittle matrix, cryptoxln, barren, no visible porosity, no shows, no fluorescence.

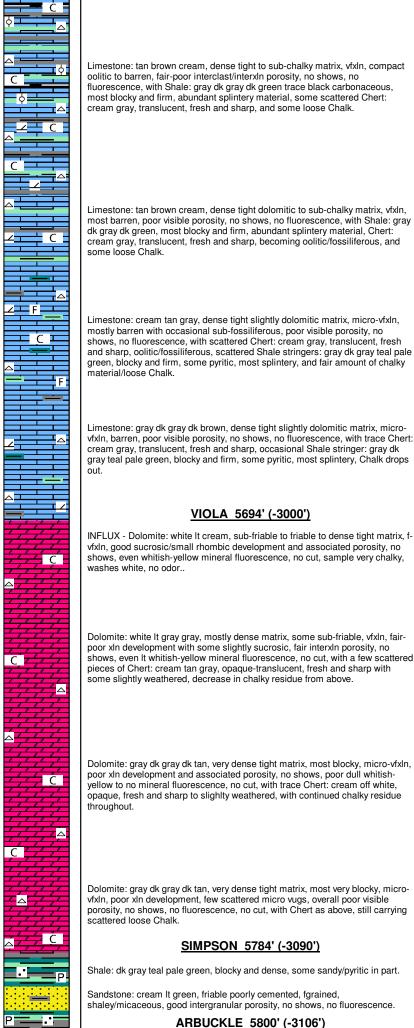
### KINDERHOOK 5544' (-2850')

INFLUX - Shale: gray dk gray pale green some black carbonaceous, blocky and firm to softer and waxy, splintery-fissile material, some pyritic with Limestone: cream It cream, dense dolomitic to chalky matrix, micro-cryptoxln, barren to sub-oolitic, poor-fair interoolitic to poor-no interxln porosity, no shows, no fluorescence, and some loose Chalk in sample.

Predominately Limestone: tan brown cream, dense matrix, micro-vfxln, most compact oolitic with some sub-arenaceous material, fair interclast porosity throughout, no shows, no fluorescence, with continued abundant Shale, and fair amount of loose Chalk.

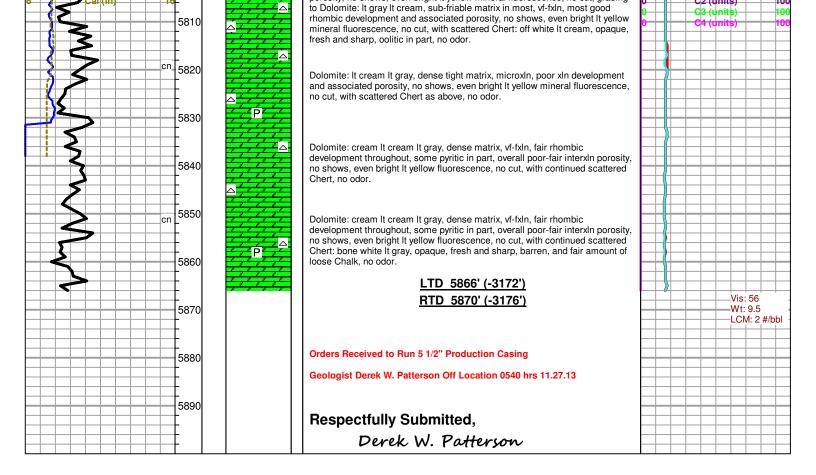






Dolomite: It cream gray, dense tight matrix, microxIn, poor xIn development and porosity, no shows, even bright It vellow mineral fluorescence, no cut, grading

	Total Gas (units)	100					
	C2 (units) C3 (units) C4 (units)	100 100 100					
	Vis: 48						
	Wt: 9.4 LCM: 2 #/bbl						
1							
	Low Flow Rate:						
	Ice Build-Up in Extractor Line						
	Vis: 58 Wt: 9.4 LCM: 5	#/bbl					
	Mud-Co Muc @ 5803'						
	0945 hrs 11 Vis: 57 Wt PV: 17 YP:	.26.13 : 9.45 : 20					
	WL: 8.8 Cake: 1/32n pH: 9.5 CHL: 3,800						
	Cal: 20 Cal: 20 Solids: 7.6 LCM: 3 #/bb						
	DMC: \$1,37 CMC: \$17,2	8.85 05.60					
	Total Gas (units)	100					



# DST #3.bmp

DRI	LL STEM TES	TREP	ORT				
ENTERPRISES LLC	Lasso Energy LLC			29/25s/29w/Gray			
Chase	x 465 buth Main ≺s, 67524 Derek Patterson			ket: 17099	<b>DST</b> .23 @ 05:45:0		
	Derek Fallerson		1631.01	ant. 2015.11	.20 @ 00.40.0	0	
GENERAL INFORMATION:         Formation:       St. Louis Mississipp         Deviated:       No       Whipstock:         Time Tool Opened:       08:35:30         Time Test Ended:       14:04:30	ft (KB)		Test Ty Tester: Unit No	Shane	ntional Bottom Konzem 286/Great Ben		
Interval:         4826.00 ft (KB) To         4852.00 ft (           Total Depth:         4852.00 ft (KB) (TVD)         1000 ft (KB) (TVD)           Hole Diameter:         7.88 inches Hole Condition		Reference Elevations:         2694.00         ft (KB)           2682.00         ft (CF)           KB to GR/CF:         12.00         ft					
Start Date: 2013.11.23 Er Start Time: 05:45:00 Er TEST COMMENT: 1st Open/ 10 Minutes 1st Shut In/ 45 Minutes	. No blow back. . No blow flushed tool a			n: 2013.1 m: 2013.1	2013.11  1.23 @ 08:29  1.23 @ 11:17	:30	
Pressure vs. Time			PRF	SSURE SL			
DEF Presure DEF P	06 Tompozuse 110 100 100 100 100 100 100 10	Time (Min.) 0 15 61 62 76 167 168	Pressure ( (psia) ( 2386.01 53.27 54.22 65.89 54.84 56.31 67.30	Temp Ann deg F)	notation I Hydro-static n To Flow (1) -ln(1) Shut-ln(1) n To Flow (2) -ln(2) Shut-ln(2)		
Recovery			Gas Rates				
Length (ft) Description 20.00 mud	Volume (bbl) 0.28		I	Choke (inches)	Pressure (psia)	Gas Rate (M cf/d)	
Superior Testers Enterprises LLC R	ef. No: 17099				11.21 @ 14:2		

Printed: 2013.11.21 @ 14:25:24