

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

**ORIGINAL**

Form ACO-1  
June 2009

Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # 33217  
Name: Three Rivers Exploration  
Address 1: 538 RD 20  
Address 2: \_\_\_\_\_  
City: Olpe State: KS Zip: 66865 + \_\_\_\_\_  
Contact Person: David Farthing  
Phone: ( 620 ) 437-2716  
CONTRACTOR: License # 33217  
Name: Three Rivers Explortion  
Wellsite Geologist: David Griffin  
Purchaser: Sonoco

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Designate Type of Completion:

- New Well     Re-Entry     Workover
- Oil     WSW     SWD     SLOW
- Gas     D&A     ENHR     SIGW
- OG     GSW     Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic     Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: NA  
Well Name: NA  
Original Comp. Date: NA Original Total Depth: NA

Deepening     Re-perf.     Conv. to ENHR     Conv. to SWD

Conv. to GSW

Plug Back: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_

Commingled    Permit #: \_\_\_\_\_

Dual Completion    Permit #: \_\_\_\_\_

SWD    Permit #: \_\_\_\_\_

ENHR    Permit #: \_\_\_\_\_

GSW    Permit #: \_\_\_\_\_

12-1-9	12-5-9	12-5-9
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 073-24129-0000

Spot Description: \_\_\_\_\_  
NE NW NW SW Sec. 15 Twp. 23 S. R. 10  East  West  
2,456 Feet from  North /  South Line of Section  
4,667 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE     NW     SE     SW

County: Greenwood

Lease Name: Waddell Well #: 2-A

Field Name: Hollis

Producing Formation: Cattleman Sand

Elevation: Ground: 1335 Kelly Bushing: 1340

Total Depth: 2190 Plug Back Total Depth: 2190

Amount of Surface Pipe Set and Cemented at: 200 Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: NA Feet

If Alternate II completion, cement circulated from: NA

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)

Chloride content: 600 ppm Fluid volume: 500 bbls

Dewatering method used: Dehydration

Location of fluid disposal if hauled offsite:

Operator Name: na

Lease Name: na License #: \_\_\_\_\_

Quarter X Sec. X Twp. X S. R. X  East  West

County: X Permit #: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: David Farthing  
Title: owner Date: 6-17-10

**KCC Office Use ONLY**

Letter of Confidentiality Received  
Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received

Geologist Report Received

UIC Distribution

ALT  I  II  III Approved by: Dlg Date: 6/23/10

Operator Name: Three Rivers Exploration Lease Name: Waddell Well #: 2-A  
 Sec. 15 Twp. 23 S. R. 10  East  West County: Greenwood

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run: <u>Gamma Ray / Neutron / CCL</u>	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input checked="" type="checkbox"/> Sample  <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Name</td> <td style="width:20%;">Top</td> <td style="width:20%;">Datum</td> </tr> <tr> <td>Cherokee</td> <td>1959</td> <td>-624</td> </tr> <tr> <td>Ardmore LS</td> <td>2046</td> <td>-711</td> </tr> <tr> <td>Catlemon SSS</td> <td>2090</td> <td>-755</td> </tr> <tr> <td>Base Cattleman</td> <td>2124</td> <td>-789</td> </tr> </table>	Name	Top	Datum	Cherokee	1959	-624	Ardmore LS	2046	-711	Catlemon SSS	2090	-755	Base Cattleman	2124	-789
Name	Top	Datum														
Cherokee	1959	-624														
Ardmore LS	2046	-711														
Catlemon SSS	2090	-755														
Base Cattleman	2124	-789														

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12 1/4	8 5/8	26 lbs	200	Reg Cement	105	Gel 2%
Long String	7 7/8	4 1/2	10 1/2	2188	Thick Set	100	NA

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone	NA			
	NA			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth
1	2098-2114	8,000 lbs FRAC	2098

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JUN 21 2010  
  
CONSERVATION DIVISION  
WICHITA, KS

TUBING RECORD: Size: <u>2 3/8</u> Set At: <u>2098</u> Packer At: _____		Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Date of First, Resumed Production, SWD or ENHR. <u>4-1-10</u>		Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____	
Estimated Production Per 24 Hours	Oil Bbls. <u>5</u>	Gas Mcf <u>None</u>	Water Bbls. <u>120</u> Gas-Oil Ratio <u>4%</u> Gravity <u>39</u>

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input checked="" type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>2098-2114</u>
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**CONSOLIDATED**  
Oil Well Services, LLC

**ENTERED**

TICKET NUMBER 23791  
LOCATION Eureka  
FOREMAN Russell Mcloy

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
12-1-09	7993	WADDELL A-2				G.W.	
CUSTOMER Three Rivers Exploration			CO Tools				
MAILING ADDRESS 538 ROAD 20							
CITY OIFE		STATE KS					ZIP CODE 66685
TRUCK #	DRIVER	TRUCK #					DRIVER
	485	ALAN					
	439	JIM					

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 206 CASING SIZE & WEIGHT 8 5/8 used  
 CASING DEPTH 206 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 15 # SLURRY VOL 25 bbl WATER gal/sk 6.5 CEMENT LEFT in CASING 20'  
 DISPLACEMENT 11 1/2 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting, Rig up to 8 5/8 casing, Break circulation w/ 10 bbl  
Dye water, mix 105 SKs Reg cement 3% CaCl2 2% Gel 1/4 # Floccle  
Displace w/ 11 1/2 bbl water to bbl good cement Returns to surface.  
Job complete, Tear Down.

Thanks  
Russell  
Mcloy

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401s	1	PUMP CHARGE	680.00	680.00
5406	15	MILEAGE	3.45	51.75
1104s	105 SKs	Regular cement	12.70	1333.50
1102	300 #	CaCl2 = 3%	.71	213.00
1118 A	200 #	Gel = 2%	.16	32.00
1107	25 #	Floccle 1/4 # per/sk	1.97	49.25
5407	5 Tons	Ton mileage	mic	296.00
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Sub Total				2,655.50
SALES TAX				102.55
ESTIMATED TOTAL				2758.05

Ravin 3737

032243

AUTHORIZATION Witnessed by Dave Farthing TITLE owner DATE 12-1-09



**CONSOLIDATED**  
Oil Well Services, LLC

**ENTERED**

TICKET NUMBER 23866  
LOCATION Eureka  
FOREMAN Russell McLoy

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
12-5-09	7993	WADDELL 2-A	15	23	10E	G.W.
CUSTOMER Three Rivers Exploration L.L.C.			TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS 538 RD 20			445	John		
CITY OPIE			515	Chris		
STATE KS			437	Shaneen		
ZIP CODE 66865						

JOB TYPE Logging HOLE SIZE 7 7/8 HOLE DEPTH 2191 CASING SIZE & WEIGHT 4 1/2 New  
CASING DEPTH 2188 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
SLURRY WEIGHT 13.6 SLURRY VOL 30 861 WATER gal/sk 8.0 CEMENT LEFT in CASING 0  
DISPLACEMENT 35 3/4 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting, Rig up to 4 1/2 casing, Break circulation w/ 15 861  
water. Mix 100 SKs T.S. cement w/ 5# Kolseal per/sk At 13.6 # yield 1.69  
shut down, wash out pump + lines Release 4 1/2 Top Rubber Plug Displace w/ 35 3/4  
861 Fresh water Final pump PST 400# Bump to 900# check float, float hold  
Good circulation During All cementing procedure. Job complete, Tear Down.

Thanks  
Russell McLoy

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401	1	PUMP CHARGE	870.00	870.00
5406	15	MILEAGE	3.45	51.75
1126A	100 SKs	Thick set set cement	16.00	1600.00
1110A	500 #	Kolseal 5#/sk	.39	195.00
5407	5.5 Ton's	Ton Mileage Bulk Truck	m/c	296.00
5502 c	3 hrs	80 861 VAC Truck	94.00	282.00
1123	3,000	gallons city water	14 7/10	42.00
4404	1	4 1/2 TOP Rubber Plug	43.00	43.00
4156	1	4 1/2 F.V. FLOAT shoe	214.00	214.00
4129	4	4 1/2 x 7 7/8 centralizers	38.00	152.00
4103	1	4 1/2 cement Basket	196.00	196.00
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CONSERVATION DIVISION WICHITA, KS			Sub TOTAL	3,941.75
			SALES TAX	153.86
			ESTIMATED TOTAL	4095.61

Ravin 3737

232013

AUTHORIZATION Witnessed by Dave Farthing TITLE owner DATE 12-5-09

# Griffin Geological Resources, Inc.

David B. Griffin, RG, Owner  
1502 W. 27<sup>th</sup> Terrace  
Lawrence, Kansas 66046

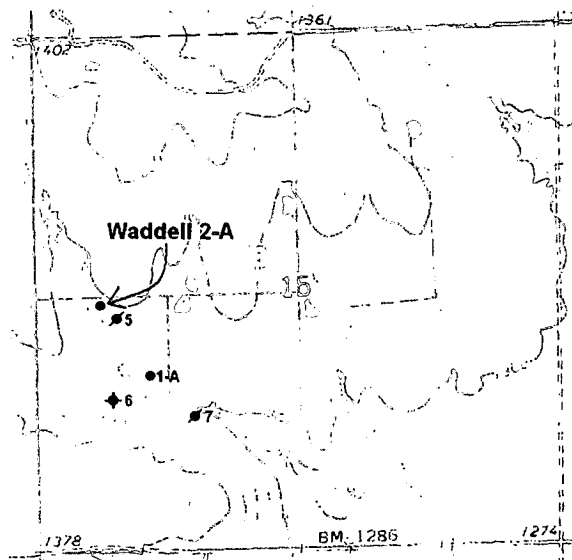
Ph. (785) 842-3665  
Cell (785) 766-0099  
Fax (785) 856-3935

December 12, 2009

## Geological Wellsite Report

For: Waddell 2-A  
NE NW NW SW/4  
2456' fsl, 4667' fel  
Section 15, T23S – R10E  
Greenwood County, Kansas  
Lat/Long: N38.04940,  
W-96.30205  
API: 15-073-24129  
GL Elev. 1335' (Est. Topo)  
RTD: 2190', GL  
Field: Hollis  
Status: 5½' Casing Set

Operator: Three Rivers Exploration LLC  
538 Road 20  
Olpe, KS 66865  
License No.: 33217  
Attn: Dave Farthing



The following report on the subject well includes detailed information and geological data based on microscopic examination of rotary drill cuttings from 1850' to a total depth of 2190' below ground level (GL) reached on December 5, 2009. This report includes a sample log with drilling time, sample cuttings description and geological tops. The Cattleman sandstone was the primary objective. Subsea corrected geological sample tops were based on a relative GL datum elevation of 1335' above sea level estimated from a topographic map.

**Drilling Contr.:** Same as Operator  
**Commenced:** Spud December 1, 2009, 12¼" Bit, Set 200' 8⅝" Casing  
**Completed:** December 5, 2009, Set 5½" Casing and Cemented  
**Drilling Notes:** 4½" Drill Pipe, One 6-blade PDC Bit, from 200' to 2190' TD  
**Mud Program:** Native fresh water mud to 1850', Fresh water chemical gel mud from 1850' to TD, 39 Vis, 8.9 wt, 1.5# LCM.

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JUN 21 2010

CONSERVATION DIVISION  
WICHITA, KS

**Cement Co.:** Consolidated Oil Well Service Co.  
 KS Operator License No.: 04996

**Geological Supervision:**

David Griffin, RG, of GGR, Inc., provided wellsite supervision on Dec. 4 and 5, 2009. Samples microscopically examined from 1850' to 2190'.

**Logs, Gas Detection, Cores, DST's:**

No open-hole logs, cores or drill stem tests were obtained for this well, nor was gas detection in use.

**Geological Datums:**

<b>Three Rivers Exploration, LLC Waddell 2-A NE NW NW SW/4 Sec. 15-T23S-R10E Geological Tops</b>			<b>Structural Comparison Wells</b>						
			<b>Teichgraeber Oil Bledsoe 5 NW NE NW SW/4 Sec. 15-23S-R10E</b>			<b>Three Rivers Expl. LLC Waddell 1-A NE SE NW SW/4 Sec. 15-T23S-R10E Geological Tops</b>			
		<b>Sample Tops GL Elev. 1335'</b>		<b>STRC COMP</b>	<b>Open-Hole Log Tops KB Elev. 1334'</b>		<b>STRC COMP</b>	<b>Sample Tops GL Elev. 1315'</b>	
<b>Zones of Interest</b>		<b>Depth</b>	<b>Subsea</b>		<b>Depth</b>	<b>Subsea</b>		<b>Depth</b>	<b>Subsea</b>
<b>Kansas City Group</b>		NA			1495	-161		NA	
<b>Base Kansas City Group</b>		NA			1678	-344		NA	
<b>Marmaton Group</b>		NA			1794	-460		NA	
<b>Cherokee Group</b>		1959	-624	-3	1955	-621	+4	1943	-628
<b>Ardmore LS</b>		2046	-711	-4	2041	-707	+6	2032	-717
<b>Cattleman SS</b>		2090	-755	+7	2096	-762	+19	2089	-774
<b>Base Cattleman SS</b>		2124	-789	+1	2124	-790	+3	2107	-792
<b>Upper Bartlesville SS</b>		absent			absent			absent	
<b>Total Depth</b>		2190	-855		2235	-901		2224	-909

**Structural Comparisons:**

Structural comparison of subsea geological log tops for Waddell 2-A indicates that the top of the Cattleman Sandston Pay Zone is 7' higher than in Bledsoe 5 lying approximately 300' to the southeast.

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JUN 21 2010

CONSERVATION DIVISION  
 WICHITA, KS

Waddell 2-A  
 Wellsite Geology Report  
 By David Griffin, RG  
 December 16, 2009

## Description of Pay Zone

### Cattleman Sandstone: 2090' to 2124', GL

**2080'-2090'**, (2090' to 2100' sample), **Top of Pay Zone, 3% sandstone**, light gray, very fine grained, fair to good porosity, fair (first) odor, good show of light gravity oil bleeding from the sandstone, 3% bright fluorescence, micaceous, carbonaceous; 97% shale, gray, silty, micaceous and carbonaceous.

**2090'-2093'**, (2100'-2103' sample), **Good Pay Zone, 25% sandstone**, light grayish-tan, very fine grained, good porosity in SS, sub-angular quartz, very good odor, very good oil saturations with minor gas bubbles, very good show of oil bleeding from sample and in bag, takes multiple rinses to remove oil for sample examination, 25% medium to bright fluorescence, mica; 75% shale, gray, silty, mica, carbon.

**2093'-2096'**, (2103'-2106' sample), **Good Pay Zone, 30% sandstone**, light grayish-tan, very fine grained, good porosity, very good odor, very good oil saturations with minor gas bubbles, very good show of oil bleeding from sample into sample bag, takes multiple rinses to remove oil for sample examination, 30% medium to bright fluorescence, mica; 70% shale, gray, silty, mica, carbon.

**2096'-2099'**, (2106'-2109' sample), **Very Good Pay Zone, 60% sandstone**, light grayish-tan, very fine to fine grained, very good porosity, good odor, very good show of free oil and minor gas bubbles, 60% medium fluorescence; 40% shale, gray, silty, mica, carbon.

**2099'-2102'**, (2109'-2112' sample), **Good Pay Zone, 80% sandstone**, light grayish-tan, very fine to fine with minor medium grains, very good to excellent porosity, good show of free oil and minor gas bubbles, much oil in sample bags using fluorescence, 80% dull to medium fluorescence, possible depletion due to waterflooding; 20% shale, gray, silty, mica, carbon.

**2102'-2105'**, (2112'-2115' sample), **Good to Very Good Pay Zone, 70% sandstone**, light grayish-tan, very fine to fine grained, good to very good porosity, thin tight streak, very good show of free oil and minor gas bubbles, much oil in sample bag and rinsing, 70% dull to mostly medium fluorescence; 30% shale, gray, silty, mica, carbon.

**2105'-2108'**, (2115'-2118' sample), **Very Good Pay Zone, 85% sandstone**, light grayish-tan, very fine to fine grained, good to very good porosity, very good to strong odor, rinses much oil, very good show of free oil and minor gas bubbles, 85% medium fluorescence; 15% shale, gray, silty, mica, carbon.

**2108'-2111'**, (2118'-2121' sample), **Good Pay Zone, 70% sandstone**, light grayish-tan, very fine to fine grained, good to very good porosity, good odor, good show of oil but rinses only a fair amount which is less than above sample, possible depleted zone from waterflooding, 70% mostly dull to medium fluorescence; 30% shale, gray, silty, mica, carbon.

**2111'-2114'**, (2121'-2124' sample), **Good to Very Good Pay Zone, 70% sandstone**, light grayish-tan, very fine to fine grained, good to very good porosity, good odor, good to very good show of free oil, 70% mostly medium fluorescence with minor dull; 30% shale, gray, silty, mica, carbon.

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Page 3 of 5

Waddell 2-A  
Wellsite Geology Report  
By David Griffin, RG  
December 16, 2009

JUN 21 2010

CONSERVATION DIVISION  
WICHITA, KS

**2114'-2117'**, (2124'-2127' sample), **Very Good Pay Zone, 90% sandstone**, light grayish-tan, very fine to fine grained, very good to excellent porosity, very good show of free oil, much oil in sample bags using fluorescence, 90% dull to medium fluorescence, possible minor depletion due to waterflooding; 10% shale, gray, silty, mica, carbon.

**2117'-2120'**, (2127'-2130' sample), **Good Pay Zone, 90% sandstone**, light grayish-tan, mostly fin grained, very good porosity, good show of free oil, good amount of oil in sample bags using fluorescence, 90% dull to medium fluorescence, possible minor depletion due to waterflooding; 10% shale, gray, silty, mica, carbon.

**2120'-2123'**, (2130'-2133' sample), **Very Good Pay Zone, 70% sandstone**, light grayish-tan, mostly fine grained, good to very good porosity, very good to strong odor, rinses much oil, very good show of free oil and frequent gas bubbles, 70% medium fluorescence; 30% shale, gray, silty, mica, 3% to 5% coal and carbon debris.

**2123'-2126'**, (2133'-2136' sample), **Bottom of Pay Zone, 30% sandstone**, light grayish-tan, fine to medium grained, good to very good porosity, good show of free oil, good amount of oil in sample bags using fluorescence, 30% medium fluorescence; 70% shale, dark gray, mica.

#### **Summary:**

Waddell 2-A contained Cattleman sandstone from approximately 2090' to 2124', GL. Circulation samples were not collected; rather sampling was performed at 3' intervals while drilling ahead. An oil column of good to very good shows of somewhat gassy oil was observed throughout the entire sandstone. However, there was evidence of possible depletion evidenced with the occurrence of partly dull fluorescence in some of the samples coming from below 2099'. The top 6' of the interval contained approximately 25% to 30% sandstone with good to very good porosity, whereas the bottom 28' of the interval contained 60% to 90% fluorescence. Good to very good shows of light gravity slightly gassy brown oil was present in the cuttings and sample bags throughout the entire sandstone. The top of the Cattleman sandstone in Waddell 2-A was 7' higher than in Bledsoe 5, a Cattleman sandstone producer lying approximately 300' to the southeast. The sand appears thicker than in Bledsoe 5, mostly because of better development in the top third of the sand body. It was reported by the operator that the drill pipe was smeared with free oil when tripped out of the well prior to setting production casing. The Upper Bartlesville sandstone and the top of the Lower Bartlesville did not develop in Waddell 2-A. The well was not open-hole logged.

There was no obvious oil-water contact based on sample observations, in fact, gas bubbles were observed in mostly all of the samples representing the pay zone. However, there was suspected evidence of depletion from offsetting waterflooding and production by the presence of dull to medium fluorescence from the cuttings in several of the samples. This could be hinting towards development of higher saltwater saturations.

The scout card completion record for Bledsoe 5 is as follows: PF (CATT SD) 5/ 2096'-2112' SWB DWN, SO, RE-PF 4/ 2097-2112, AC FRAC 300G (MA) and 200# REDIFRAC, SWB LD, GSO, POP, IP 27 BO, 293 BWPD, 6/6/83. It is possible that Bledsoe 5 has been recompleted since this time; however that information is currently unavailable to the author if it exists.

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Page 4 of 5

JUN 21 2010

CONSERVATION DIVISION  
WICHITA, KS

Waddell 2-A  
Wellsite Geology Report  
By David Griffin, RG  
December 16, 2009



The core analysis for Bledsoe 5 showed the Cattleman SS had a high GOR (Gas Oil Ratio) from 2090' to 2108' and made perforation recommendations from 2108'-2121' in what was identified as commercial pay. Only 3 feet of the picked commercial pay was perforated, leaving 8 feet behind pipe (2112' to 2121'). The oil saturations in the picked commercial pay zone varied from 11.5% to 18.5% with a significant amount of pore space volume not accounted for. It is likely that the majority of the unaccounted pore volume was gas and/or oil that bled from the core prior to analysis. If this is the case, then the actual oil saturations could be roughly 10% to 20% higher.

The KGS reports that the Bledsoe lease produced 70,375 barrels of oil from 1982-2000 from as many as 7 wells.

### Recommendations:

Based on the good to very good show of free oil throughout the Cattleman sandstone in Waddell 2-A, the operator set and cemented production casing. The initial production in Bledsoe 5 was reported to be 9% oil cut with 293 barrels of water. It is likely that Waddell 2-A will produce even more water if similarly completed, because of reservoir depletion and water injection in Bledsoe 4 offsetting to the north. If excessive water production is a concern with the operator, initially at least, a less aggressive completion should be considered. Therefore two perforation options are presented. The first option, which is conservative, is to test incrementally, by initially perforating the top 10' of the best sand from approximately 2096' to 2106', GL at two shots per foot. If after natural testing and acid stimulation insufficient fluid volume and cut is obtained, it should be fraced.

The second option is to perforate up to 20' of the heart of the pay zone from approximately 2096' to 2116' at 1 shot per foot and tested naturally. It is likely that acid stimulation and fracing will be needed to obtain sufficient fluid volume. It is advised to study the completion records and success of the productive oil wells in the north part of this lease from the same sand and consider completing Waddell 2-A similarly as in the most successful wells.

The cased hole gamma-ray neutron log should be evaluated to confirm inferred sand thickness and to aid in picking perforations.

Respectfully Submitted,



David B. Griffin, RG, Owner  
Griffin Geological Resources, Inc., (GGR)

Attachments: Sample Log with Drilling Time, Original Drilling Time Sheets

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Page 5 of 5

Waddell 2-A  
Wellsite Geology Report  
By David Griffin, RG  
December 16, 2009

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WICHITA, KS

