



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1214129
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- 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: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

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.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1214129

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input 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

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				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

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

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

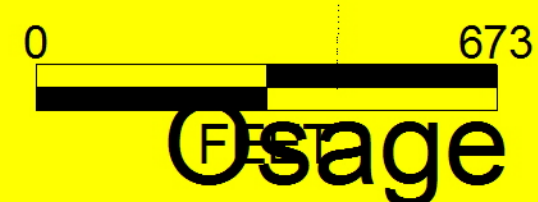
DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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12

13

Osage
3314 13-03HC

FTF
No. 23



Customer <i>OSAGE Res</i>	Lease No.	Date <i>06-03-14</i>
Lease <i>OSAGE 3314</i>	Well # <i>13-034c</i>	
Field Order # <i>10876</i>	Station <i>PRATT Kc</i>	Casing <i>13 3/8</i>
	Depth <i>180'</i>	County <i>BARBERS</i>
Type Job <i>CNW</i>	Formation <i>13 3/8 Surface</i>	Legal Description <i>13-33-14</i>

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size <i>13 3/8</i>	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth <i>180</i>	Depth	From	To	Pre Pad	Max		5 Min.
Volume <i>50</i>	Volume	From	To	Pad	Min		10 Min.
Max Press <i>500</i>	Max Press	From	To	Frac	Avg		15 Min.
Well Connection <i>Swage</i>	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth <i>103</i>	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative	Station Manager <i>DAVE SOD</i>	Treater <i>Robert J. [unclear]</i>
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Service Units	<i>37900</i>	<i>53708</i>	<i>20920</i>	<i>19960</i>	<i>21010</i>				
Driver Names	<i>Sullivan</i>	<i>Spring</i>		<i>GIBSON</i>					

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>7:15</i>					<i>on the safety meeting</i>
					<i>←</i>
					<i>CASING ON BOTTOM</i>
					<i>Rig Hook of circ esp.</i>
<i>8:00</i>			<i>3</i>	<i>3.5</i>	<i>AT SPACER</i>
				<i>4.5</i>	<i>mix emt 255 sk comm 2% rec 1/4 ct</i>
			<i>54</i>		<i>emt. mixed START</i>
				<i>3.5</i>	<i>Disp</i>
<i>8:30</i>	<i>200</i>		<i>30</i>		<i>plug down</i>
					<i>circ 12 B3L emt Pit</i>
					<i>5013 Compld</i>
					<i>THANK YOU</i>

RECEIVED
JUN 05 2014

Customer <i>OSAGE Resources LLC</i>		Lease No. <i>OSAGE 3314-13-03 HC</i>		Date <i>06-11-14</i>	
Lease <i>OSAGE 3314</i>		Well # <i>13-03 HC</i>		Service Receipt <i>1718-10619A</i>	
Casing <i>7"</i>		Depth <i>5370'</i>		County <i>Barber</i> State <i>KS</i>	
Job Type <i>7" Intermediate</i>		Formation <i>SNW</i>		Legal Description <i>13-33-14</i>	
Pipe Data			Perforating Data		Cement Data
Casing size <i>7"</i>		Tubing Size		Shots/Ft	
Depth <i>5370'</i>		Depth		From To	
Volume <i>204 BBLs</i>		Volume		From To	
Max Press		Max Press		From To	
Well Connection		Annulus Vol.		From To	
Plug Depth <i>5327'</i>		Packer Depth		From To	
Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>2100</i>					<i>Called out 06-10-14</i>
<i>0130</i>					<i>On Location 06-11-14</i>
<i>0345</i>					<i>Circ W/ Bottom</i>
					<i>Safety Meeting</i>
<i>0445</i>					<i>Test Lines 2000PSI</i>
<i>0450</i>	<i>100</i>		<i>12</i>	<i>5</i>	<i>Pump 500 gals Mud Flush</i>
<i>0455</i>	<i>100</i>		<i>38</i>	<i>5</i>	<i>Mix Pump Cement 15 ppg</i>
<i>0510</i>					<i>Drop Plug Washup</i>
<i>0515</i>			<i>204</i>		<i>Displacement</i>
<i>0600</i>					<i>Bump Plug</i>
<i>0605</i>					<i>Released</i>
					<i>Float Held</i>
					<i>Back up</i>
					<i>Released</i>
					<i>3 Tanks</i>
					<i>Ryan & Crew</i>
					<i>BASIC</i>
					<i>TOL 4300 ft ±</i>
Service Units	<i>Rogen</i>	<i>Mike</i>	<i>Joett</i>	<i>JOE</i>	
Driver Names	<i>21755</i>	<i>27463</i>	<i>19826-19860</i>	<i>28443</i>	

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JUN 17 2014

Scott Higgins
Customer Representative

Kevin Conalley
Station Manager

Rogen Brown
Cementer

Customer <i>Ossse Resources LLC</i>	Lease No.	Date <i>6-17-2014</i>
Lease <i>Ossse 3314</i>	Well # <i>13-03HC</i>	
Field Order # <i>0672</i>	Station <i>Pratt, KS</i>	Casing <i>4 1/2</i>
Type Job <i>CNU 4 1/2" Liner</i>	Depth <i>5758'</i>	County <i>Barber</i>
	Formation <i>TD-10 792</i>	State <i>KS</i>
		Legal Description <i>13-33-14</i>

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
<i>4 1/2</i>							
Depth <i>5758</i>	Depth	From	To	Pre Pad	Max		5 Min.
Volume	Volume	From	To	Pad	Min		10 Min.
Max Press	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative <i>Scott Hissins</i>	Station Manager <i>Kevin Gortley</i>	Treater <i>Darin Franklin</i>
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Service Units	<i>27763</i>	<i>70890</i>	<i>20920</i>	<i>70459</i>	<i>19918</i>				
Driver Names	<i>Darin</i>	<i>Pgt E</i>	<i>Pgt E</i>	<i>Dsic</i>	<i>Dsic</i>				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>1:00pm</i>					<i>on location / SSPeq meeting</i>
	<i>800</i>		<i>5</i>	<i>3 1/2</i>	<i>Pump 5 bbls water</i>
	<i>800</i>		<i>12</i>	<i>3 1/2</i>	<i>12 bbls mix</i>
	<i>800</i>		<i>5</i>	<i>3 1/2</i>	<i>5 bbls water</i>
	<i>400</i>		<i>108</i>	<i>4 1/2</i>	<i>mix 400sr 50/50 po2</i>
					<i>Shut down</i>
					<i>Wash pump & lines</i>
	<i>100</i>		<i>0</i>	<i>4</i>	<i>Start displacement</i>
	<i>900</i>		<i>30</i>	<i>4</i>	<i>30 bbls</i>
	<i>600</i>		<i>35</i>	<i>2 1/2</i>	<i>35 bbls</i>
	<i>1800</i>		<i>43</i>	<i>2 1/2</i>	<i>43 open by pss</i>
	<i>1500</i>		<i>45</i>	<i>4</i>	<i>Excess Rsr</i>
	<i>1800</i>		<i>80</i>	<i>4</i>	
	<i>400</i>		<i>125</i>	<i>1</i>	<i>Slow Rate</i>
	<i>500</i>		<i>136</i>	<i>1</i>	<i>Close by pss</i>
					<i>Start packer</i>
					<i>Pull up</i>
	<i>800</i>		<i>120</i>	<i>6</i>	<i>Reverse out</i>
					<i>Job complete / Darin & crew</i>
					<i>THANK YOU!!!</i>

WELLBORE: Lateral #1
 PLAN: Design #2
 GEODETIC SYSTEM: US State Plane 1983
 DATUM: North American Datum 1983
 ELLIPSOID: GRS 1980
 ZONE: Kansas Southern Zone
 SYSTEM DATUM: Mean Sea Level

SURFACE HOLE COORDINATES
 LATITUDE: 37° 10' 16.046 N
 LONGITUDE: 98° 47' 40.027 W
 NORTHING (Y): 1496155.22
 EASTING (X): 1226535.31

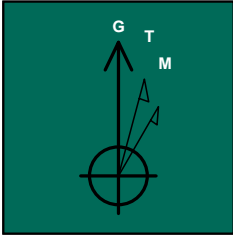
GROUND LEVEL: 1874.0
 RIG FLOOR(KB):
 WELL @ 1891.0usft (Original Well Elev)

MAGNETIC FIELD:
 STRENGTH: 51621
 DIP ANGLE: 65.13°
 MODEL: IGRF2010
 DATE: 29-May-14
 AZIMUTHS CORRECTED TO: Grid

MWD - USE IF ABOVE IS GRID
 Magnetic North is 5.00° East of Grid North (Magnetic Convergence)

MWD - USE IF ABOVE IS TRUE
 Magnetic North is 4.82° East of True North (Magnetic Declination)

Operator: Osage Resources, LLC
 Location: Barber Co, Kansas (NAD-83)
 Well Name: Osage #3314 13-03HC
 Calmena Job# 14060

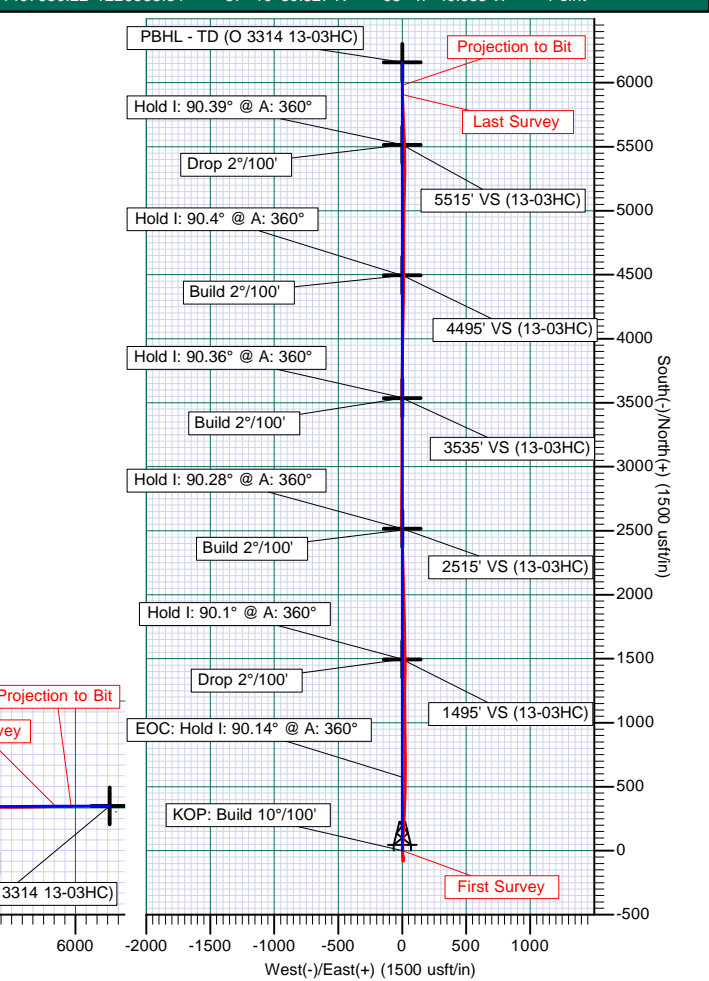
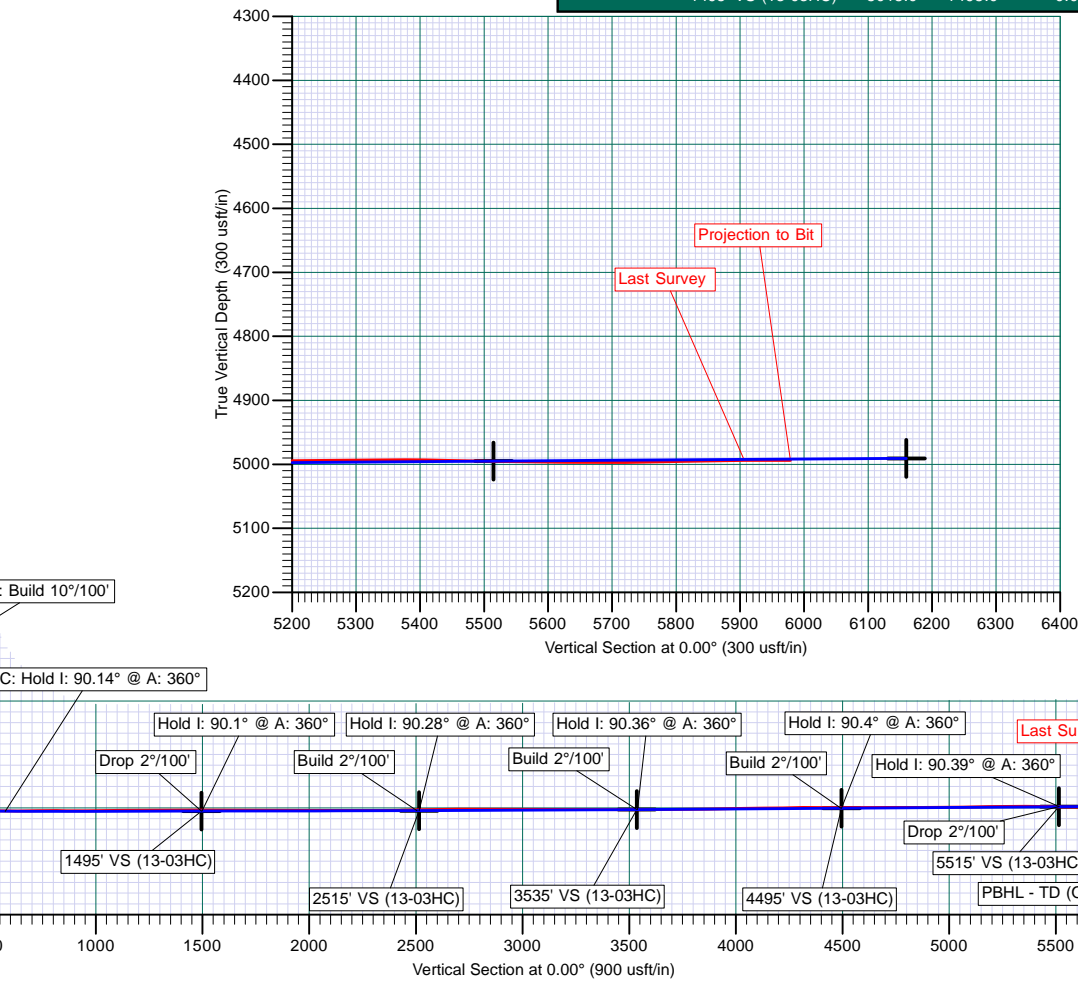
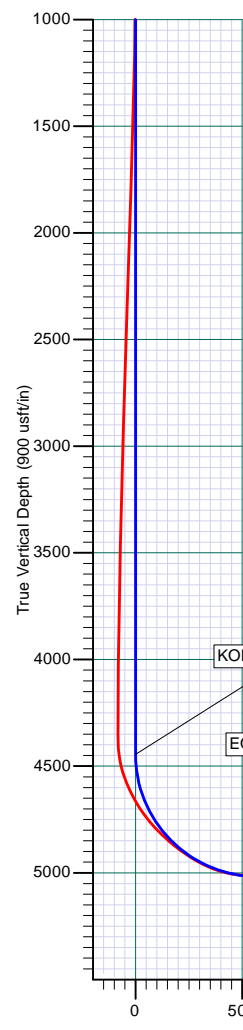


PLAN SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4444.3	0.00	0.00	4444.3	0.0	0.0	0.00	0.00	0.0		KOP: Build 10°/100'
3	5345.7	90.14	0.00	5017.3	574.4	0.0	10.00	0.00	574.4		EOC: Hold I: 90.14° @ A: 360°
4	6266.4	90.14	0.00	5015.0	1495.0	0.0	0.00	0.00	1495.0	1495' VS (13-03HC)	Drop 2°/100'
5	6268.3	90.10	0.00	5015.0	1496.9	0.0	2.00	180.00	1496.9		Hold I: 90.1° @ A: 360°
6	7277.3	90.10	0.00	5013.3	2505.9	0.0	0.00	0.00	2505.9		Build 2°/100'
7	7286.4	90.28	0.00	5013.2	2515.0	0.0	2.00	0.00	2515.0	2515' VS (13-03HC)	Hold I: 90.28° @ A: 360°
8	8306.4	90.28	0.00	5008.2	3535.0	0.0	0.00	0.00	3535.0	3535' VS (13-03HC)	Build 2°/100'
9	8310.4	90.36	0.00	5008.2	3539.0	0.0	2.00	0.00	3539.0		Hold I: 90.36° @ A: 360°
10	9264.5	90.36	0.00	5002.1	4493.1	0.0	0.00	0.00	4493.1		Build 2°/100'
11	9266.4	90.40	0.00	5002.1	4495.0	0.0	2.00	0.00	4495.0	4495' VS (13-03HC)	Hold I: 90.4° @ A: 360°
12	10286.4	90.40	0.00	4995.0	5515.0	0.0	0.00	0.00	5515.0	5515' VS (13-03HC)	Drop 2°/100'
13	10287.1	90.39	0.00	4995.0	5515.7	0.0	2.00	180.00	5515.7		Drop 2°/100'
14	10931.5	90.39	0.00	4990.6	6160.0	0.0	0.00	0.00	6160.0	PBHL - TD (O 3314 13-03HC)	

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (O 3314 13-03HC)	4990.6	6160.0	0.0	1502315.22	1226535.31	37° 11' 16.949 N	98° 47' 40.267 W	Point
5515' VS (13-03HC)	4995.0	5515.0	0.0	1501670.22	1226535.31	37° 11' 10.572 N	98° 47' 40.242 W	Point
4495' VS (13-03HC)	5002.1	4495.0	0.0	1500650.22	1226535.31	37° 11' 0.487 N	98° 47' 40.202 W	Point
3535' VS (13-03HC)	5008.2	3535.0	0.0	1499690.22	1226535.31	37° 10' 50.996 N	98° 47' 40.165 W	Point
2515' VS (13-03HC)	5013.2	2515.0	0.0	1498670.22	1226535.31	37° 10' 40.911 N	98° 47' 40.125 W	Point
1495' VS (13-03HC)	5015.0	1495.0	0.0	1497650.22	1226535.31	37° 10' 30.827 N	98° 47' 40.085 W	Point



Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Project	Barber Co, Kansas (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Kansas Southern Zone		

Site	Osage #3314 13-03HC				
Site Position:		Northing:	1,496,155.23 usft	Latitude:	37° 10' 16.046 N
From:	Lat/Long	Easting:	1,226,535.30 usft	Longitude:	98° 47' 40.027 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.18 °

Well	Osage #3314 13-03HC					
Well Position	+N/-S	0.0 usft	Northing:	1,496,155.23 usft	Latitude:	37° 10' 16.046 N
	+E/-W	0.0 usft	Easting:	1,226,535.30 usft	Longitude:	98° 47' 40.027 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	1,891.0 usft	Ground Level:	1,874.0 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/29/2014	4.82	65.13	51,621

Design	Lateral #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	0.00	

Survey Program	Date	6/17/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
606.0	10,792.0	Survey #1 (Lateral #1)	MWD	MWD - Calmena	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
606.0	0.30	61.90	606.0	0.7	1.4	0.7	0.05	0.05	0.00	
First Survey										
1,164.0	1.20	188.20	1,164.0	-4.3	1.9	-4.3	0.25	0.16	22.63	
1,796.0	2.00	169.50	1,795.7	-21.7	2.9	-21.7	0.15	0.13	-2.96	
2,349.0	1.80	169.80	2,348.4	-39.8	6.2	-39.8	0.04	-0.04	0.05	
2,905.0	1.70	162.80	2,904.1	-56.3	10.2	-56.3	0.04	-0.02	-1.26	
3,464.0	1.40	192.30	3,463.0	-70.8	11.2	-70.8	0.15	-0.05	5.28	
4,026.0	0.70	190.70	4,024.9	-80.9	9.1	-80.9	0.12	-0.12	-0.28	
4,344.0	1.10	282.80	4,342.8	-82.2	5.8	-82.2	0.42	0.13	28.96	
4,355.0	1.10	280.20	4,353.8	-82.1	5.6	-82.1	0.45	0.00	-23.64	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,386.0	1.30	310.30	4,384.8	-81.8	5.0	-81.8	2.10	0.65	97.10	
4,417.0	4.10	346.50	4,415.8	-80.5	4.5	-80.5	10.15	9.03	116.77	
4,448.0	7.90	357.70	4,446.6	-77.3	4.1	-77.3	12.77	12.26	36.13	
4,479.0	11.00	359.40	4,477.2	-72.2	4.0	-72.2	10.04	10.00	5.48	
4,510.0	14.10	358.20	4,507.4	-65.5	3.9	-65.5	10.03	10.00	-3.87	
4,541.0	17.50	357.70	4,537.3	-57.1	3.6	-57.1	10.98	10.97	-1.61	
4,572.0	20.90	357.80	4,566.5	-46.9	3.2	-46.9	10.97	10.97	0.32	
4,603.0	24.50	358.00	4,595.1	-34.9	2.7	-34.9	11.62	11.61	0.65	
4,635.0	27.10	359.30	4,623.9	-21.0	2.4	-21.0	8.31	8.13	4.06	
4,666.0	27.80	1.00	4,651.4	-6.7	2.4	-6.7	3.39	2.26	5.48	
4,697.0	30.60	2.10	4,678.5	8.4	2.8	8.4	9.20	9.03	3.55	
4,729.0	33.50	3.30	4,705.6	25.4	3.7	25.4	9.28	9.06	3.75	
4,760.0	36.60	3.50	4,731.0	43.1	4.7	43.1	10.01	10.00	0.65	
4,791.0	39.50	3.30	4,755.4	62.2	5.8	62.2	9.36	9.35	-0.65	
4,823.0	42.20	3.20	4,779.6	83.1	7.0	83.1	8.44	8.44	-0.31	
4,854.0	44.50	2.90	4,802.2	104.3	8.2	104.3	7.45	7.42	-0.97	
4,885.0	46.60	2.40	4,823.9	126.4	9.2	126.4	6.87	6.77	-1.61	
4,917.0	48.50	2.30	4,845.5	150.0	10.2	150.0	5.94	5.94	-0.31	
4,948.0	50.40	2.50	4,865.6	173.6	11.1	173.6	6.15	6.13	0.65	
4,979.0	52.40	2.40	4,885.0	197.8	12.2	197.8	6.46	6.45	-0.32	
5,010.0	54.50	2.50	4,903.4	222.7	13.2	222.7	6.78	6.77	0.32	
5,041.0	56.80	2.60	4,920.9	248.2	14.4	248.2	7.42	7.42	0.32	
5,073.0	59.40	3.20	4,937.8	275.3	15.8	275.3	8.28	8.13	1.88	
5,104.0	62.50	3.20	4,952.9	302.4	17.3	302.4	10.00	10.00	0.00	
5,135.0	64.90	2.20	4,966.6	330.2	18.6	330.2	8.26	7.74	-3.23	
5,166.0	68.00	1.70	4,979.0	358.6	19.5	358.6	10.11	10.00	-1.61	
5,228.0	76.10	1.50	4,998.1	417.5	21.2	417.5	13.07	13.06	-0.32	
5,258.0	80.10	1.30	5,004.3	446.8	21.9	446.8	13.35	13.33	-0.67	
5,289.0	83.10	1.30	5,008.8	477.5	22.6	477.5	9.68	9.68	0.00	
5,320.0	86.20	1.10	5,011.7	508.3	23.2	508.3	10.02	10.00	-0.65	
5,395.0	89.40	0.50	5,014.6	583.2	24.3	583.2	4.34	4.27	-0.80	
5,426.0	89.90	0.30	5,014.7	614.2	24.5	614.2	1.74	1.61	-0.65	
5,457.0	90.50	0.30	5,014.6	645.2	24.7	645.2	1.94	1.94	0.00	
5,488.0	90.80	0.00	5,014.3	676.2	24.7	676.2	1.37	0.97	-0.97	
5,519.0	90.50	0.10	5,013.9	707.2	24.8	707.2	1.02	-0.97	0.32	
5,550.0	90.80	359.80	5,013.6	738.2	24.7	738.2	1.37	0.97	-0.97	
5,581.0	91.10	359.70	5,013.1	769.2	24.6	769.2	1.02	0.97	-0.32	
5,612.0	90.30	359.40	5,012.7	800.2	24.4	800.2	2.76	-2.58	-0.97	
5,643.0	89.30	359.30	5,012.8	831.2	24.0	831.2	3.24	-3.23	-0.32	
5,674.0	89.40	359.40	5,013.1	862.2	23.7	862.2	0.46	0.32	0.32	
5,704.0	89.50	359.10	5,013.4	892.2	23.3	892.2	1.05	0.33	-1.00	
5,766.0	90.40	359.20	5,013.5	954.2	22.4	954.2	1.46	1.45	0.16	
5,828.0	90.80	358.40	5,012.8	1,016.2	21.1	1,016.2	1.44	0.65	-1.29	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,889.0	90.70	358.80	5,012.0	1,077.2	19.6	1,077.2	0.68	-0.16	0.66	
5,952.0	90.30	0.00	5,011.5	1,140.2	18.9	1,140.2	2.01	-0.63	1.90	
6,013.0	90.90	0.50	5,010.9	1,201.2	19.2	1,201.2	1.28	0.98	0.82	
6,076.0	90.60	0.70	5,010.0	1,264.2	19.8	1,264.2	0.57	-0.48	0.32	
6,138.0	89.20	1.40	5,010.1	1,326.1	21.0	1,326.1	2.52	-2.26	1.13	
6,200.0	89.70	0.90	5,010.7	1,388.1	22.2	1,388.1	1.14	0.81	-0.81	
6,294.0	89.10	359.40	5,011.7	1,482.1	22.5	1,482.1	1.72	-0.64	-1.60	
6,387.0	90.50	359.00	5,012.0	1,575.1	21.2	1,575.1	1.57	1.51	-0.43	
6,481.0	90.20	359.20	5,011.5	1,669.1	19.7	1,669.1	0.38	-0.32	0.21	
6,575.0	91.10	358.60	5,010.4	1,763.1	17.9	1,763.1	1.15	0.96	-0.64	
6,668.0	89.00	358.80	5,010.3	1,856.0	15.8	1,856.0	2.27	-2.26	0.22	
6,762.0	89.70	358.80	5,011.4	1,950.0	13.8	1,950.0	0.74	0.74	0.00	
6,855.0	89.30	358.90	5,012.2	2,043.0	11.9	2,043.0	0.44	-0.43	0.11	
6,948.0	90.20	358.30	5,012.6	2,136.0	9.7	2,136.0	1.16	0.97	-0.65	
7,048.0	89.50	358.30	5,012.9	2,235.9	6.7	2,235.9	0.70	-0.70	0.00	
7,135.0	90.40	357.90	5,012.9	2,322.9	3.8	2,322.9	1.13	1.03	-0.46	
7,229.0	91.50	357.10	5,011.4	2,416.8	-0.3	2,416.8	1.45	1.17	-0.85	
7,322.0	90.90	358.40	5,009.4	2,509.7	-3.9	2,509.7	1.54	-0.65	1.40	
7,415.0	90.30	0.00	5,008.5	2,602.6	-5.2	2,602.6	1.84	-0.65	1.72	
7,509.0	91.80	359.70	5,006.7	2,696.6	-5.5	2,696.6	1.63	1.60	-0.32	
7,602.0	88.70	1.00	5,006.3	2,789.6	-4.9	2,789.6	3.61	-3.33	1.40	
7,696.0	89.60	0.50	5,007.7	2,883.6	-3.7	2,883.6	1.10	0.96	-0.53	
7,788.0	90.90	0.70	5,007.3	2,975.6	-2.7	2,975.6	1.43	1.41	0.22	
7,882.0	88.90	0.50	5,007.5	3,069.6	-1.7	3,069.6	2.14	-2.13	-0.21	
7,974.0	90.10	0.40	5,008.3	3,161.6	-1.0	3,161.6	1.31	1.30	-0.11	
8,067.0	90.70	359.60	5,007.6	3,254.6	-1.0	3,254.6	1.08	0.65	-0.86	
8,160.0	89.00	0.00	5,007.9	3,347.6	-1.3	3,347.6	1.88	-1.83	0.43	
8,284.0	90.00	359.90	5,009.0	3,471.5	-1.5	3,471.5	0.81	0.81	-0.08	
8,378.0	89.60	0.30	5,009.3	3,565.5	-1.3	3,565.5	0.60	-0.43	0.43	
8,471.0	90.70	0.50	5,009.1	3,658.5	-0.6	3,658.5	1.20	1.18	0.22	
8,565.0	91.90	0.20	5,006.9	3,752.5	-0.1	3,752.5	1.32	1.28	-0.32	
8,658.0	91.10	1.10	5,004.5	3,845.5	1.0	3,845.5	1.29	-0.86	0.97	
8,752.0	90.00	1.10	5,003.6	3,939.5	2.8	3,939.5	1.17	-1.17	0.00	
8,845.0	91.50	1.30	5,002.4	4,032.4	4.7	4,032.4	1.63	1.61	0.22	
8,939.0	90.20	1.40	5,001.0	4,126.4	7.0	4,126.4	1.39	-1.38	0.11	
9,033.0	91.30	1.10	4,999.7	4,220.4	9.0	4,220.4	1.21	1.17	-0.32	
9,127.0	90.10	0.40	4,998.6	4,314.3	10.2	4,314.3	1.48	-1.28	-0.74	
9,222.0	89.40	0.90	4,999.0	4,409.3	11.3	4,409.3	0.91	-0.74	0.53	
9,315.0	89.90	0.20	4,999.6	4,502.3	12.2	4,502.3	0.92	0.54	-0.75	
9,410.0	90.10	359.90	4,999.6	4,597.3	12.3	4,597.3	0.38	0.21	-0.32	
9,504.0	91.20	0.10	4,998.5	4,691.3	12.3	4,691.3	1.19	1.17	0.21	
9,598.0	89.40	0.00	4,998.0	4,785.3	12.4	4,785.3	1.92	-1.91	-0.11	
9,692.0	90.80	0.50	4,997.9	4,879.3	12.8	4,879.3	1.58	1.49	0.53	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,786.0	90.10	0.90	4,997.1	4,973.3	13.9	4,973.3	0.86	-0.74	0.43	
9,880.0	91.00	1.70	4,996.2	5,067.3	16.1	5,067.3	1.28	0.96	0.85	
9,973.0	90.90	1.60	4,994.7	5,160.2	18.7	5,160.2	0.15	-0.11	-0.11	
10,066.0	90.20	0.60	4,993.8	5,253.2	20.5	5,253.2	1.31	-0.75	-1.08	
10,159.0	90.60	359.60	4,993.1	5,346.2	20.7	5,346.2	1.16	0.43	-1.08	
10,253.0	88.60	358.70	4,993.8	5,440.2	19.3	5,440.2	2.33	-2.13	-0.96	
10,346.0	89.20	358.40	4,995.6	5,533.1	16.9	5,533.1	0.72	0.65	-0.32	
10,440.0	89.30	357.80	4,996.8	5,627.1	13.8	5,627.1	0.65	0.11	-0.64	
10,534.0	90.40	357.20	4,997.0	5,721.0	9.7	5,721.0	1.33	1.17	-0.64	
10,627.0	91.90	357.60	4,995.2	5,813.8	5.5	5,813.8	1.67	1.61	0.43	
10,720.0	90.00	358.50	4,993.6	5,906.8	2.3	5,906.8	2.26	-2.04	0.97	
Last Survey										
10,792.0	90.00	358.50	4,993.6	5,978.8	0.5	5,978.8	0.00	0.00	0.00	
Projection to Bit										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
606.0	606.0	0.7	1.4	First Survey	
10,720.0	4,993.6	5,906.8	2.3	Last Survey	
10,792.0	4,993.6	5,978.8	0.5	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____

Day 11 - 2014/06/16

FILE #: OK0014060
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314-13-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

DIR Supervisor: Chris Garvin, Shane Lewis, Matt Wright
MWD Supervisor: Joe Newberry, Jeff Atwood
Company Man: Scott Higgins

GROUND ELEV: 1874 ft **START DEPTH:** 10005.0 ft **PROGRESS:** 787.0 ft **DAILY COST:** USD\$10200.00
KB ELEV: 0 ft **END DEPTH:** 10792.0 ft **AVG. ROP.:** 63.0 ft/hr **PREVIOUS COST:** USD\$114600.00
TOTAL COST: USD\$124800.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:00	Orienting With Motor - 21' @ 220L	1.00	10026	3	09:15-10:15	Rotating With Motor	1.00	10587	3
01:00-01:15	Circ & Accumulate Surveys - @ 9973	0.25	10026	3	10:15-10:30	Circ & Accumulate Surveys - @ 10534	0.25	10587	3
01:15-02:15	Rotating With Motor	1.00	10119	3	10:30-11:15	Rotating With Motor	0.75	10680	3
02:15-02:30	Circ & Accumulate Surveys - @ 10066	0.25	10119	3	11:15-11:30	Circ & Accumulate Surveys - @ 10627	0.25	10680	3
02:30-03:45	Rotating With Motor	1.25	10212	3	11:30-12:45	Orienting With Motor - 20' @ LS	1.25	10700	3
03:45-04:00	Circ & Accumulate Surveys - @10159	0.25	10212	3	12:45-14:00	Rotating With Motor	1.25	10773	3
04:00-05:15	Orienting With Motor	1.25	10212	3	14:00-14:15	Circ & Accumulate Surveys - @ 10720	0.25	10773	3
05:15-06:00	Rotating With Motor	0.75	10306	3	14:15-14:45	Rotating With Motor	0.50	10792	3
06:00-06:15	Circ & Accumulate Surveys - @ 10253	0.25	10306	3	14:45-17:00	Circulating - See Comments - TD WELL	2.25	10792	3
06:15-07:45	Rotating With Motor	1.50	10399	3	17:00-22:00	POOH - See Comments - TD WELL	5.00	10792	3
07:45-08:00	Circ & Accumulate Surveys - @ 109346	0.25	10399	3	22:00-23:00	Lay Down Directional Tools	1.00	10792	3
08:00-09:00	Rotating With Motor	1.00	10493	3	23:00-24:00	Released	1.00	10792	3
09:00-09:15	Circ & Accumulate Surveys - @ 10440	0.25	10493	3			0.00		

TIME SUMMARY (hrs):			DRILLING PARAMETERS:						
MOTOR DRILL:	12.50	ORIENTING HRS:	3.50	ROTARY DRILL:	0.00	ROTARY TORQUE:		STRING WEIGHT:	102000 lbs
TIME DRILL:	0.00	ROTATING HRS:	9.00	MOTOR HRS:	17.00	WOB SLIDING (HI):	30 lbf	WOB ROTATE (HI):	18 lbf
MOTOR REAM:	0.00	ROTARY DRILL:	0.00	TRIP:	5.00	WOB SLIDING (LO):	20 lbf	WOB ROTATE (LO):	15 lbf
CIRC:	4.50	OTHER:	2.00	RPM (ROTARY):	55 rpm	RPM (MOTOR):	70 rpm	DRAG UP:	160000 lbf
MOTOR HRS:	17.00	DRILL HRS:	12.50	TOTAL HRS:	24.00			DRAG DN:	38000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3	HOLE SIZE: 6.125 in	SECTION TYPE: Lateral 1	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Calmena	STABILIZER: No	SERIAL#: 475-084	MODEL: 7829
SETTING: 1.75 °	KICKPAD: No	SIZE: 475-084	MTR HRS THIS DAY: 17
MANFCT: Halliburton	BIT TYPE: PDC Bit	TYPE: MMD64C	MTR HRS TO DATE: 111.25
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ? / ?			NOZZLES: 1.04 in ² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 1800	PRESSURE OFF BTM: 1600	TOTAL FLOW RATE: 232.38 gal/min
PUMP 1: TYPE: MP-10	EFF.: 95.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 3.4944 gal/stk
PUMP 2: TYPE: MP-10	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Brine or Salt	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:
Drilled ahead and slid as needed to maintain well path. TD @ 10792...Circulate 2 hours and then POOH to lay down directional tools.

CUSTOMER SIGNATURE: _____



Slide Sheet Report

BHA 3 - 2014/06/14 TO 2014/06/16

FILE #: OK0014060
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314-13-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

DIR Supervisor: Chris Garvin, Shane Lewis, Matt Wright
MWD Supervisor: Joe Newberry, Jeff Atwood
Company Man: Scott Higgins

BHA NO: 3	DATES RUN: 2014/06/14 TO 2014/06/16	SECTION: Lateral 1	TOOLFACE OFFSET:	SURVEY OFFSET: 53 ft
MOTOR SETTING: 1.75 °	KICKPAD: No	STABILIZER: No	MODEL: 7829	SERIAL NO: 475-084
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT DEPTH DRILLED	SURVEY		ORIENTING			ROTATING			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS			
	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM					TO	FEET	
8337.00	94.00	8284.00	90.00	359.90	180	8337.00	8347.00	10.00	8347.00	8431.00	84.00	0.00	0.00	0.00	
8431.00	93.00	8378.00	89.60	0.30		8431.00	8431.00	0.00	8431.00	8524.00	93.00	10.00	-0.04	-0.43	
8524.00	94.00	8471.00	90.70	0.50		8524.00	8524.00	0.00	8524.00	8618.00	94.00	0.00	0.00	1.18	
8618.00	93.00	8565.00	91.90	0.20	170 R	8618.00	8633.00	15.00	8633.00	8711.00	78.00	0.00	0.00	1.28	
8711.00	94.00	8658.00	91.10	1.10	180	8711.00	8726.00	15.00	8726.00	8805.00	79.00	15.00	-0.05	-0.86	
8805.00	93.00	8752.00	90.00	1.10		8805.00	8805.00	0.00	8805.00	8898.00	93.00	15.00	-0.07	-1.17	
8898.00	94.00	8845.00	91.50	1.30	170 L	8898.00	8913.00	15.00	8913.00	8992.00	79.00	0.00	0.00	1.61	
8992.00	94.00	8939.00	90.20	1.40		8992.00	8992.00	0.00	8992.00	9086.00	94.00	15.00	-0.09	-1.38	
9086.00	94.00	9033.00	91.30	1.10	160 L	9086.00	9101.00	15.00	9101.00	9180.00	79.00	0.00	0.00	1.17	
9180.00	95.00	9127.00	90.10	0.40	180	9180.00	9197.00	17.00	9197.00	9275.00	78.00	15.00	-0.08	-1.28	
9275.00	93.00	9222.00	89.40	0.90		9275.00	9275.00	0.00	9275.00	9368.00	93.00	17.00	-0.04	-0.74	
9368.00	95.00	9315.00	89.90	0.20		9368.00	9368.00	0.00	9368.00	9463.00	95.00	0.00	0.00	0.54	
9463.00	95.00	9410.00	90.10	359.90		9463.00	9463.00	0.00	9463.00	9558.00	95.00	0.00	0.00	0.21	
9558.00	94.00	9505.00	91.20	0.10	180	9558.00	9575.00	17.00	9575.00	9652.00	77.00	0.00	0.00	1.16	
9652.00	93.00	9599.00	89.40	0.00		9652.00	9652.00	0.00	9652.00	9745.00	93.00	17.00	-0.11	-1.91	
9745.00	94.00	9692.00	90.80	0.50	195	9745.00	9757.00	12.00	9757.00	9839.00	82.00	0.00	0.00	1.51	
9839.00	94.00	9786.00	90.10	0.90	140 L	9839.00	9860.00	21.00	9860.00	9933.00	73.00	12.00	-0.06	-0.74	
9933.00	62.00	9880.00	91.00	1.70		9933.00	9933.00	0.00	9933.00	9995.00	62.00	21.00	0.04	0.96	
9995.00	31.00	9942.00	90.40	1.30	140 L	9995.00	10016.00	21.00	10016.00	10026.00	10.00	0.00	0.00	-0.97	
10026.00	93.00	9973.00	90.90	1.60		10026.00	10026.00	0.00	10026.00	10119.00	93.00	0.00	0.00	1.61	
10119.00	93.00	10066.00	90.20	0.60		10119.00	10119.00	0.00	10119.00	10212.00	93.00	21.00	-0.03	-0.75	
10212.00	94.00	10159.00	90.60	359.60	140 L	10212.00	10232.00	20.00	10232.00	10306.00	74.00	0.00	0.00	0.43	
10306.00	93.00	10253.00	88.60	358.70		10306.00	10306.00	0.00	10306.00	10399.00	93.00	20.00	-0.10	-2.13	
10399.00	94.00	10346.00	89.20	358.40		10399.00	10399.00	0.00	10399.00	10493.00	94.00	0.00	0.00	0.65	

Slide Sheet Report

BHA 3 - 2014/06/14 TO 2014/06/16

(Distances are shown in feet.)

BIT		SURVEY			----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS	
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft		/100ft
10493.00	94.00	10440.00	89.30	357.80		10493.00	10493.00	0.00	10493.00	10587.00	94.00	0.00	0.00	0.11	
10587.00	93.00	10534.00	90.40	357.20		10587.00	10587.00	0.00	10587.00	10680.00	93.00	0.00	0.00	1.17	
10680.00	112.00	10627.00	91.90	357.60	LS	10680.00	10700.00	20.00	10700.00	10792.00	92.00	0.00	0.00	1.61	
10792.00	0.00	10739.00	90.00	358.50		10792.00	10792.00	0.00	10792.00	10792.00	0.00	20.00	-0.10	-1.70	

Totals:	198.00 ft	2257.00 ft
Percentages:	8.1%	91.9%
Time:	10.75 hrs	31.50 hrs
Percentages:	25.4%	74.6%

WELLBORE: Lateral #1
 PLAN: Design #2
 GEODETIC SYSTEM: US State Plane 1983
 DATUM: North American Datum 1983
 ELLIPSOID: GRS 1980
 ZONE: Kansas Southern Zone
 SYSTEM DATUM: Mean Sea Level

SURFACE HOLE COORDINATES
 LATITUDE: 37° 10' 16.046 N
 LONGITUDE: 98° 47' 40.027 W
 NORTHING (Y): 1496155.22
 EASTING (X): 1226535.31

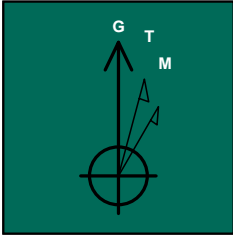
GROUND LEVEL: 1874.0
 RIG FLOOR(KB):
 WELL @ 1891.0usft (Original Well Elev)

MAGNETIC FIELD:
 STRENGTH: 51621
 DIP ANGLE: 65.13°
 MODEL: IGRF2010
 DATE: 29-May-14
 AZIMUTHS CORRECTED TO: Grid

MWD - USE IF ABOVE IS GRID
 Magnetic North is 5.00° East of Grid North (Magnetic Convergence)

MWD - USE IF ABOVE IS TRUE
 Magnetic North is 4.82° East of True North (Magnetic Declination)

Operator: Osage Resources, LLC
 Location: Barber Co, Kansas (NAD-83)
 Well Name: Osage #3314 13-03HC
 Calmena Job# 14060

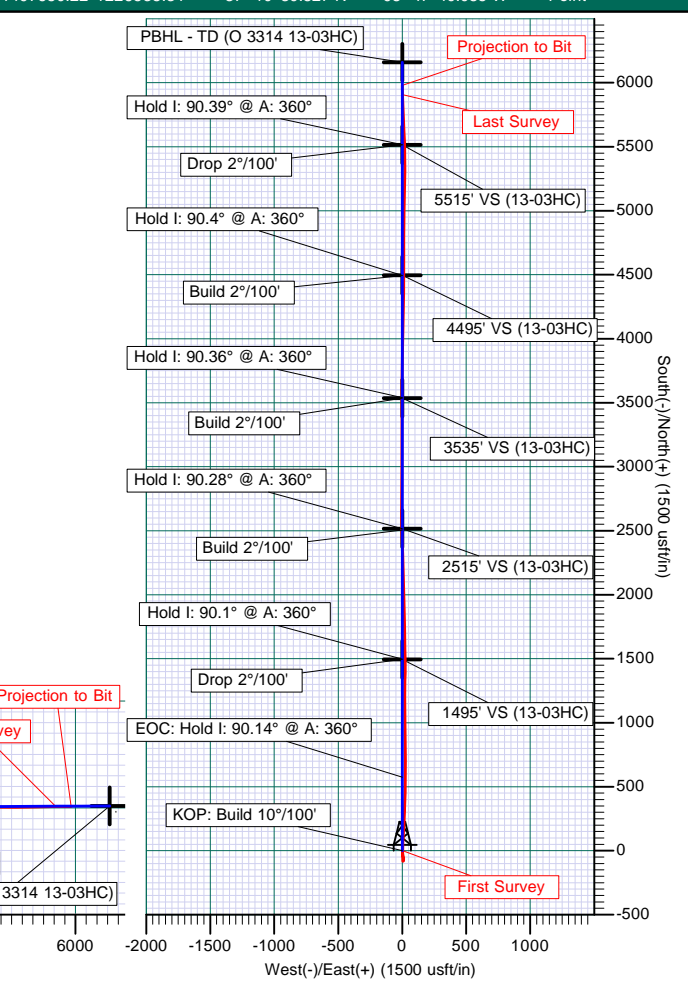
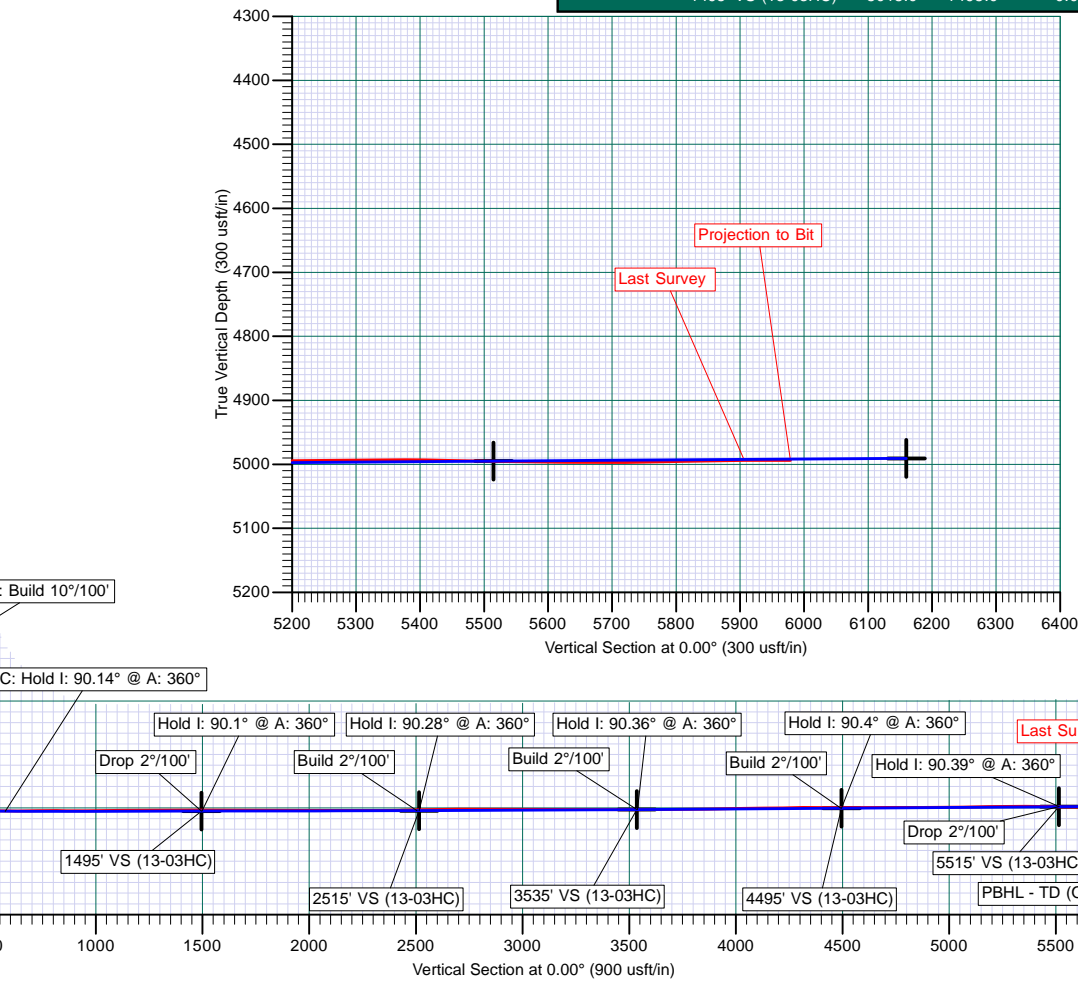
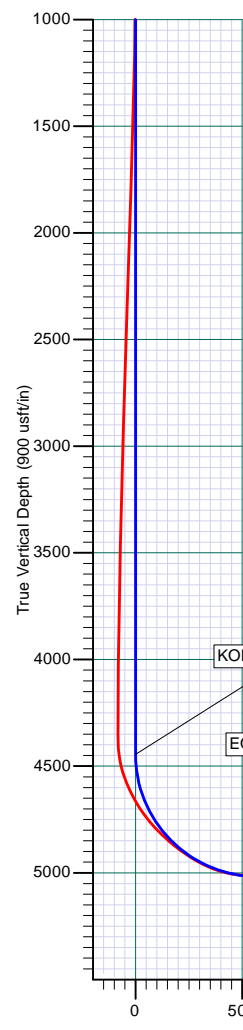


PLAN SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4444.3	0.00	0.00	4444.3	0.0	0.0	0.00	0.00	0.0		KOP: Build 10°/100'
3	5345.7	90.14	0.00	5017.3	574.4	0.0	10.00	0.00	574.4		EOC: Hold I: 90.14° @ A: 360°
4	6266.4	90.14	0.00	5015.0	1495.0	0.0	0.00	0.00	1495.0	1495' VS (13-03HC)	Drop 2°/100'
5	6268.3	90.10	0.00	5015.0	1496.9	0.0	2.00	180.00	1496.9		Hold I: 90.1° @ A: 360°
6	7277.3	90.10	0.00	5013.3	2505.9	0.0	0.00	0.00	2505.9		Build 2°/100'
7	7286.4	90.28	0.00	5013.2	2515.0	0.0	2.00	0.00	2515.0	2515' VS (13-03HC)	Hold I: 90.28° @ A: 360°
8	8306.4	90.28	0.00	5008.2	3535.0	0.0	0.00	0.00	3535.0	3535' VS (13-03HC)	Build 2°/100'
9	8310.4	90.36	0.00	5008.2	3539.0	0.0	2.00	0.00	3539.0		Hold I: 90.36° @ A: 360°
10	9264.5	90.36	0.00	5002.1	4493.1	0.0	0.00	0.00	4493.1		Build 2°/100'
11	9266.4	90.40	0.00	5002.1	4495.0	0.0	2.00	0.00	4495.0	4495' VS (13-03HC)	Hold I: 90.4° @ A: 360°
12	10286.4	90.40	0.00	4995.0	5515.0	0.0	0.00	0.00	5515.0	5515' VS (13-03HC)	Drop 2°/100'
13	10287.1	90.39	0.00	4995.0	5515.7	0.0	2.00	180.00	5515.7		Drop 2°/100'
14	10931.5	90.39	0.00	4990.6	6160.0	0.0	0.00	0.00	6160.0	PBHL - TD (O 3314 13-03HC)	

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (O 3314 13-03HC)	4990.6	6160.0	0.0	1502315.22	1226535.31	37° 11' 16.949 N	98° 47' 40.267 W	Point
5515' VS (13-03HC)	4995.0	5515.0	0.0	1501670.22	1226535.31	37° 11' 10.572 N	98° 47' 40.242 W	Point
4495' VS (13-03HC)	5002.1	4495.0	0.0	1500650.22	1226535.31	37° 11' 0.487 N	98° 47' 40.202 W	Point
3535' VS (13-03HC)	5008.2	3535.0	0.0	1499690.22	1226535.31	37° 10' 50.996 N	98° 47' 40.165 W	Point
2515' VS (13-03HC)	5013.2	2515.0	0.0	1498670.22	1226535.31	37° 10' 40.911 N	98° 47' 40.125 W	Point
1495' VS (13-03HC)	5015.0	1495.0	0.0	1497650.22	1226535.31	37° 10' 30.827 N	98° 47' 40.085 W	Point



Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Project	Barber Co, Kansas (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Kansas Southern Zone		

Site	Osage #3314 13-03HC				
Site Position:		Northing:	1,496,155.23 usft	Latitude:	37° 10' 16.046 N
From:	Lat/Long	Easting:	1,226,535.30 usft	Longitude:	98° 47' 40.027 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.18 °

Well	Osage #3314 13-03HC					
Well Position	+N/-S	0.0 usft	Northing:	1,496,155.23 usft	Latitude:	37° 10' 16.046 N
	+E/-W	0.0 usft	Easting:	1,226,535.30 usft	Longitude:	98° 47' 40.027 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	1,891.0 usft	Ground Level:	1,874.0 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/29/2014	4.82	65.13	51,621

Design	Lateral #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	0.00	

Survey Program	Date	6/17/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
606.0	10,792.0	Survey #1 (Lateral #1)	MWD	MWD - Calmena	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
606.0	0.30	61.90	606.0	0.7	1.4	0.7	0.05	0.05	0.00	
First Survey										
1,164.0	1.20	188.20	1,164.0	-4.3	1.9	-4.3	0.25	0.16	22.63	
1,796.0	2.00	169.50	1,795.7	-21.7	2.9	-21.7	0.15	0.13	-2.96	
2,349.0	1.80	169.80	2,348.4	-39.8	6.2	-39.8	0.04	-0.04	0.05	
2,905.0	1.70	162.80	2,904.1	-56.3	10.2	-56.3	0.04	-0.02	-1.26	
3,464.0	1.40	192.30	3,463.0	-70.8	11.2	-70.8	0.15	-0.05	5.28	
4,026.0	0.70	190.70	4,024.9	-80.9	9.1	-80.9	0.12	-0.12	-0.28	
4,344.0	1.10	282.80	4,342.8	-82.2	5.8	-82.2	0.42	0.13	28.96	
4,355.0	1.10	280.20	4,353.8	-82.1	5.6	-82.1	0.45	0.00	-23.64	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,386.0	1.30	310.30	4,384.8	-81.8	5.0	-81.8	2.10	0.65	97.10	
4,417.0	4.10	346.50	4,415.8	-80.5	4.5	-80.5	10.15	9.03	116.77	
4,448.0	7.90	357.70	4,446.6	-77.3	4.1	-77.3	12.77	12.26	36.13	
4,479.0	11.00	359.40	4,477.2	-72.2	4.0	-72.2	10.04	10.00	5.48	
4,510.0	14.10	358.20	4,507.4	-65.5	3.9	-65.5	10.03	10.00	-3.87	
4,541.0	17.50	357.70	4,537.3	-57.1	3.6	-57.1	10.98	10.97	-1.61	
4,572.0	20.90	357.80	4,566.5	-46.9	3.2	-46.9	10.97	10.97	0.32	
4,603.0	24.50	358.00	4,595.1	-34.9	2.7	-34.9	11.62	11.61	0.65	
4,635.0	27.10	359.30	4,623.9	-21.0	2.4	-21.0	8.31	8.13	4.06	
4,666.0	27.80	1.00	4,651.4	-6.7	2.4	-6.7	3.39	2.26	5.48	
4,697.0	30.60	2.10	4,678.5	8.4	2.8	8.4	9.20	9.03	3.55	
4,729.0	33.50	3.30	4,705.6	25.4	3.7	25.4	9.28	9.06	3.75	
4,760.0	36.60	3.50	4,731.0	43.1	4.7	43.1	10.01	10.00	0.65	
4,791.0	39.50	3.30	4,755.4	62.2	5.8	62.2	9.36	9.35	-0.65	
4,823.0	42.20	3.20	4,779.6	83.1	7.0	83.1	8.44	8.44	-0.31	
4,854.0	44.50	2.90	4,802.2	104.3	8.2	104.3	7.45	7.42	-0.97	
4,885.0	46.60	2.40	4,823.9	126.4	9.2	126.4	6.87	6.77	-1.61	
4,917.0	48.50	2.30	4,845.5	150.0	10.2	150.0	5.94	5.94	-0.31	
4,948.0	50.40	2.50	4,865.6	173.6	11.1	173.6	6.15	6.13	0.65	
4,979.0	52.40	2.40	4,885.0	197.8	12.2	197.8	6.46	6.45	-0.32	
5,010.0	54.50	2.50	4,903.4	222.7	13.2	222.7	6.78	6.77	0.32	
5,041.0	56.80	2.60	4,920.9	248.2	14.4	248.2	7.42	7.42	0.32	
5,073.0	59.40	3.20	4,937.8	275.3	15.8	275.3	8.28	8.13	1.88	
5,104.0	62.50	3.20	4,952.9	302.4	17.3	302.4	10.00	10.00	0.00	
5,135.0	64.90	2.20	4,966.6	330.2	18.6	330.2	8.26	7.74	-3.23	
5,166.0	68.00	1.70	4,979.0	358.6	19.5	358.6	10.11	10.00	-1.61	
5,228.0	76.10	1.50	4,998.1	417.5	21.2	417.5	13.07	13.06	-0.32	
5,258.0	80.10	1.30	5,004.3	446.8	21.9	446.8	13.35	13.33	-0.67	
5,289.0	83.10	1.30	5,008.8	477.5	22.6	477.5	9.68	9.68	0.00	
5,320.0	86.20	1.10	5,011.7	508.3	23.2	508.3	10.02	10.00	-0.65	
5,395.0	89.40	0.50	5,014.6	583.2	24.3	583.2	4.34	4.27	-0.80	
5,426.0	89.90	0.30	5,014.7	614.2	24.5	614.2	1.74	1.61	-0.65	
5,457.0	90.50	0.30	5,014.6	645.2	24.7	645.2	1.94	1.94	0.00	
5,488.0	90.80	0.00	5,014.3	676.2	24.7	676.2	1.37	0.97	-0.97	
5,519.0	90.50	0.10	5,013.9	707.2	24.8	707.2	1.02	-0.97	0.32	
5,550.0	90.80	359.80	5,013.6	738.2	24.7	738.2	1.37	0.97	-0.97	
5,581.0	91.10	359.70	5,013.1	769.2	24.6	769.2	1.02	0.97	-0.32	
5,612.0	90.30	359.40	5,012.7	800.2	24.4	800.2	2.76	-2.58	-0.97	
5,643.0	89.30	359.30	5,012.8	831.2	24.0	831.2	3.24	-3.23	-0.32	
5,674.0	89.40	359.40	5,013.1	862.2	23.7	862.2	0.46	0.32	0.32	
5,704.0	89.50	359.10	5,013.4	892.2	23.3	892.2	1.05	0.33	-1.00	
5,766.0	90.40	359.20	5,013.5	954.2	22.4	954.2	1.46	1.45	0.16	
5,828.0	90.80	358.40	5,012.8	1,016.2	21.1	1,016.2	1.44	0.65	-1.29	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,889.0	90.70	358.80	5,012.0	1,077.2	19.6	1,077.2	0.68	-0.16	0.66	
5,952.0	90.30	0.00	5,011.5	1,140.2	18.9	1,140.2	2.01	-0.63	1.90	
6,013.0	90.90	0.50	5,010.9	1,201.2	19.2	1,201.2	1.28	0.98	0.82	
6,076.0	90.60	0.70	5,010.0	1,264.2	19.8	1,264.2	0.57	-0.48	0.32	
6,138.0	89.20	1.40	5,010.1	1,326.1	21.0	1,326.1	2.52	-2.26	1.13	
6,200.0	89.70	0.90	5,010.7	1,388.1	22.2	1,388.1	1.14	0.81	-0.81	
6,294.0	89.10	359.40	5,011.7	1,482.1	22.5	1,482.1	1.72	-0.64	-1.60	
6,387.0	90.50	359.00	5,012.0	1,575.1	21.2	1,575.1	1.57	1.51	-0.43	
6,481.0	90.20	359.20	5,011.5	1,669.1	19.7	1,669.1	0.38	-0.32	0.21	
6,575.0	91.10	358.60	5,010.4	1,763.1	17.9	1,763.1	1.15	0.96	-0.64	
6,668.0	89.00	358.80	5,010.3	1,856.0	15.8	1,856.0	2.27	-2.26	0.22	
6,762.0	89.70	358.80	5,011.4	1,950.0	13.8	1,950.0	0.74	0.74	0.00	
6,855.0	89.30	358.90	5,012.2	2,043.0	11.9	2,043.0	0.44	-0.43	0.11	
6,948.0	90.20	358.30	5,012.6	2,136.0	9.7	2,136.0	1.16	0.97	-0.65	
7,048.0	89.50	358.30	5,012.9	2,235.9	6.7	2,235.9	0.70	-0.70	0.00	
7,135.0	90.40	357.90	5,012.9	2,322.9	3.8	2,322.9	1.13	1.03	-0.46	
7,229.0	91.50	357.10	5,011.4	2,416.8	-0.3	2,416.8	1.45	1.17	-0.85	
7,322.0	90.90	358.40	5,009.4	2,509.7	-3.9	2,509.7	1.54	-0.65	1.40	
7,415.0	90.30	0.00	5,008.5	2,602.6	-5.2	2,602.6	1.84	-0.65	1.72	
7,509.0	91.80	359.70	5,006.7	2,696.6	-5.5	2,696.6	1.63	1.60	-0.32	
7,602.0	88.70	1.00	5,006.3	2,789.6	-4.9	2,789.6	3.61	-3.33	1.40	
7,696.0	89.60	0.50	5,007.7	2,883.6	-3.7	2,883.6	1.10	0.96	-0.53	
7,788.0	90.90	0.70	5,007.3	2,975.6	-2.7	2,975.6	1.43	1.41	0.22	
7,882.0	88.90	0.50	5,007.5	3,069.6	-1.7	3,069.6	2.14	-2.13	-0.21	
7,974.0	90.10	0.40	5,008.3	3,161.6	-1.0	3,161.6	1.31	1.30	-0.11	
8,067.0	90.70	359.60	5,007.6	3,254.6	-1.0	3,254.6	1.08	0.65	-0.86	
8,160.0	89.00	0.00	5,007.9	3,347.6	-1.3	3,347.6	1.88	-1.83	0.43	
8,284.0	90.00	359.90	5,009.0	3,471.5	-1.5	3,471.5	0.81	0.81	-0.08	
8,378.0	89.60	0.30	5,009.3	3,565.5	-1.3	3,565.5	0.60	-0.43	0.43	
8,471.0	90.70	0.50	5,009.1	3,658.5	-0.6	3,658.5	1.20	1.18	0.22	
8,565.0	91.90	0.20	5,006.9	3,752.5	-0.1	3,752.5	1.32	1.28	-0.32	
8,658.0	91.10	1.10	5,004.5	3,845.5	1.0	3,845.5	1.29	-0.86	0.97	
8,752.0	90.00	1.10	5,003.6	3,939.5	2.8	3,939.5	1.17	-1.17	0.00	
8,845.0	91.50	1.30	5,002.4	4,032.4	4.7	4,032.4	1.63	1.61	0.22	
8,939.0	90.20	1.40	5,001.0	4,126.4	7.0	4,126.4	1.39	-1.38	0.11	
9,033.0	91.30	1.10	4,999.7	4,220.4	9.0	4,220.4	1.21	1.17	-0.32	
9,127.0	90.10	0.40	4,998.6	4,314.3	10.2	4,314.3	1.48	-1.28	-0.74	
9,222.0	89.40	0.90	4,999.0	4,409.3	11.3	4,409.3	0.91	-0.74	0.53	
9,315.0	89.90	0.20	4,999.6	4,502.3	12.2	4,502.3	0.92	0.54	-0.75	
9,410.0	90.10	359.90	4,999.6	4,597.3	12.3	4,597.3	0.38	0.21	-0.32	
9,504.0	91.20	0.10	4,998.5	4,691.3	12.3	4,691.3	1.19	1.17	0.21	
9,598.0	89.40	0.00	4,998.0	4,785.3	12.4	4,785.3	1.92	-1.91	-0.11	
9,692.0	90.80	0.50	4,997.9	4,879.3	12.8	4,879.3	1.58	1.49	0.53	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-03HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1891.0usft (Original Well Elev)
Site:	Osage #3314 13-03HC	MD Reference:	WELL @ 1891.0usft (Original Well Elev)
Well:	Osage #3314 13-03HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,786.0	90.10	0.90	4,997.1	4,973.3	13.9	4,973.3	0.86	-0.74	0.43	
9,880.0	91.00	1.70	4,996.2	5,067.3	16.1	5,067.3	1.28	0.96	0.85	
9,973.0	90.90	1.60	4,994.7	5,160.2	18.7	5,160.2	0.15	-0.11	-0.11	
10,066.0	90.20	0.60	4,993.8	5,253.2	20.5	5,253.2	1.31	-0.75	-1.08	
10,159.0	90.60	359.60	4,993.1	5,346.2	20.7	5,346.2	1.16	0.43	-1.08	
10,253.0	88.60	358.70	4,993.8	5,440.2	19.3	5,440.2	2.33	-2.13	-0.96	
10,346.0	89.20	358.40	4,995.6	5,533.1	16.9	5,533.1	0.72	0.65	-0.32	
10,440.0	89.30	357.80	4,996.8	5,627.1	13.8	5,627.1	0.65	0.11	-0.64	
10,534.0	90.40	357.20	4,997.0	5,721.0	9.7	5,721.0	1.33	1.17	-0.64	
10,627.0	91.90	357.60	4,995.2	5,813.8	5.5	5,813.8	1.67	1.61	0.43	
10,720.0	90.00	358.50	4,993.6	5,906.8	2.3	5,906.8	2.26	-2.04	0.97	
Last Survey										
10,792.0	90.00	358.50	4,993.6	5,978.8	0.5	5,978.8	0.00	0.00	0.00	
Projection to Bit										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
606.0	606.0	0.7	1.4	First Survey	
10,720.0	4,993.6	5,906.8	2.3	Last Survey	
10,792.0	4,993.6	5,978.8	0.5	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____

Day 11 - 2014/06/16

FILE #: OK0014060
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314-13-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

DIR Supervisor: Chris Garvin, Shane Lewis, Matt Wright
MWD Supervisor: Joe Newberry, Jeff Atwood
Company Man: Scott Higgins

GROUND ELEV: 1874 ft **START DEPTH:** 10005.0 ft **PROGRESS:** 787.0 ft **DAILY COST:** USD\$10200.00
KB ELEV: 0 ft **END DEPTH:** 10792.0 ft **AVG. ROP.:** 63.0 ft/hr **PREVIOUS COST:** USD\$114600.00
TOTAL COST: USD\$124800.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:00	Orienting With Motor - 21' @ 220L	1.00	10026	3	09:15-10:15	Rotating With Motor	1.00	10587	3
01:00-01:15	Circ & Accumulate Surveys - @ 9973	0.25	10026	3	10:15-10:30	Circ & Accumulate Surveys - @ 10534	0.25	10587	3
01:15-02:15	Rotating With Motor	1.00	10119	3	10:30-11:15	Rotating With Motor	0.75	10680	3
02:15-02:30	Circ & Accumulate Surveys - @ 10066	0.25	10119	3	11:15-11:30	Circ & Accumulate Surveys - @ 10627	0.25	10680	3
02:30-03:45	Rotating With Motor	1.25	10212	3	11:30-12:45	Orienting With Motor - 20' @ LS	1.25	10700	3
03:45-04:00	Circ & Accumulate Surveys - @10159	0.25	10212	3	12:45-14:00	Rotating With Motor	1.25	10773	3
04:00-05:15	Orienting With Motor	1.25	10212	3	14:00-14:15	Circ & Accumulate Surveys - @ 10720	0.25	10773	3
05:15-06:00	Rotating With Motor	0.75	10306	3	14:15-14:45	Rotating With Motor	0.50	10792	3
06:00-06:15	Circ & Accumulate Surveys - @ 10253	0.25	10306	3	14:45-17:00	Circulating - See Comments - TD WELL	2.25	10792	3
06:15-07:45	Rotating With Motor	1.50	10399	3	17:00-22:00	POOH - See Comments - TD WELL	5.00	10792	3
07:45-08:00	Circ & Accumulate Surveys - @ 109346	0.25	10399	3	22:00-23:00	Lay Down Directional Tools	1.00	10792	3
08:00-09:00	Rotating With Motor	1.00	10493	3	23:00-24:00	Released	1.00	10792	3
09:00-09:15	Circ & Accumulate Surveys - @ 10440	0.25	10493	3			0.00		

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL:	12.50	ORIENTING HRS:	3.50	ROTARY DRILL:	0.00
TIME DRILL:	0.00	ROTATING HRS:	9.00	MOTOR HRS:	17.00
MOTOR REAM:	0.00	ROTARY DRILL:	0.00	TRIP:	5.00
CIRC:	4.50	OTHER:	2.00	RPM (ROTARY):	55 rpm
MOTOR HRS:	17.00	DRILL HRS:	12.50	TOTAL HRS:	24.00
				ROTARY TORQUE:	
				WOB SLIDING (HI):	30 lbf
				WOB SLIDING (LO):	20 lbf
				RPM (MOTOR):	70 rpm
				STRING WEIGHT	102000 lbs
				WOB ROTATE (HI):	18 lbf
				WOB ROTATE (LO):	15 lbf
				DRAG UP:	160000 lbf
				DRAG DN:	38000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3 **HOLE SIZE:** 6.125 in **SECTION TYPE:** Lateral 1 **SURVEY TYPE:** Positive Pulse MWD
MANFCT.: Calmena **STABILIZER:** No **SERIAL#:** 475-084 **MODEL:** 7829 **LOBE CFG.:** 78
SETTING: 1.75 ° **KICKPAD:** No **SIZE:** 475-084 **MTR HRS THIS DAY:** 17 **MTR HRS TO DATE:** 111.25
MANFCT: Halliburton **BIT TYPE:** PDC Bit **TYPE:** MMD64C **NOZZLES:** 1.04 in² TFA
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ? / ?

PUMP PARAMETERS

PRESSURE ON BTM: 1800 **PRESSURE OFF BTM:** 1600 **TOTAL FLOW RATE:** 232.38 gal/min
PUMP 1: TYPE: MP-10 **EFF.:** 95.0% **SPM:** 70.00 **LINER:** 6.00 in **STROKE VOL.:** 3.4944 gal/stk
PUMP 2: TYPE: MP-10 **EFF.:** 95.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk
PUMP 3: TYPE: **EFF.:** 100.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk

MUD RECORD

MUD TYPE: Brine or Salt **VISC:** 0 sec/qt **WTR LOSS:** 0 cc/30min **PV:** 0 cP **YP:** 0 lb/100 ft² **pH:** 0
DENSITY: 0 lb/gal **GEL 0/10:** 0.00 lb/100 ft² **SAND:** 0 **SOLIDS:** 0 **OIL:** 0 **TEMP:** 0 °F
LIQUID BASE: Water **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:
Drilled ahead and slid as needed to maintain well path. TD @ 10792...Circulate 2 hours and then POOH to lay down directional tools.

CUSTOMER SIGNATURE: _____



Slide Sheet Report

BHA 3 - 2014/06/14 TO 2014/06/16

FILE #: OK0014060
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage 3314-13-03HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

SERVICE CO.: Calmena Energy Services
SURVEY TYPE: Positive Pulse MWD
FIELD / LOCATION: / Kansas / USA

DIR Supervisor: Chris Garvin, Shane Lewis, Matt Wright
MWD Supervisor: Joe Newberry, Jeff Atwood
Company Man: Scott Higgins

BHA NO: 3	DATES RUN: 2014/06/14 TO 2014/06/16	SECTION: Lateral 1	TOOLFACE OFFSET:	SURVEY OFFSET: 53 ft
MOTOR SETTING: 1.75 °	KICKPAD: No	STABILIZER: No	MODEL: 7829	SERIAL NO: 475-084
				BHA SURVEY TYPE: Positive Pulse MWD

(Distances are shown in feet.)

BIT DEPTH DRILLED	SURVEY		ORIENTING			ROTATING			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS			
	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM					TO	FEET	
8337.00	94.00	8284.00	90.00	359.90	180	8337.00	8347.00	10.00	8347.00	8431.00	84.00	0.00	0.00	0.00	
8431.00	93.00	8378.00	89.60	0.30		8431.00	8431.00	0.00	8431.00	8524.00	93.00	10.00	-0.04	-0.43	
8524.00	94.00	8471.00	90.70	0.50		8524.00	8524.00	0.00	8524.00	8618.00	94.00	0.00	0.00	1.18	
8618.00	93.00	8565.00	91.90	0.20	170 R	8618.00	8633.00	15.00	8633.00	8711.00	78.00	0.00	0.00	1.28	
8711.00	94.00	8658.00	91.10	1.10	180	8711.00	8726.00	15.00	8726.00	8805.00	79.00	15.00	-0.05	-0.86	
8805.00	93.00	8752.00	90.00	1.10		8805.00	8805.00	0.00	8805.00	8898.00	93.00	15.00	-0.07	-1.17	
8898.00	94.00	8845.00	91.50	1.30	170 L	8898.00	8913.00	15.00	8913.00	8992.00	79.00	0.00	0.00	1.61	
8992.00	94.00	8939.00	90.20	1.40		8992.00	8992.00	0.00	8992.00	9086.00	94.00	15.00	-0.09	-1.38	
9086.00	94.00	9033.00	91.30	1.10	160 L	9086.00	9101.00	15.00	9101.00	9180.00	79.00	0.00	0.00	1.17	
9180.00	95.00	9127.00	90.10	0.40	180	9180.00	9197.00	17.00	9197.00	9275.00	78.00	15.00	-0.08	-1.28	
9275.00	93.00	9222.00	89.40	0.90		9275.00	9275.00	0.00	9275.00	9368.00	93.00	17.00	-0.04	-0.74	
9368.00	95.00	9315.00	89.90	0.20		9368.00	9368.00	0.00	9368.00	9463.00	95.00	0.00	0.00	0.54	
9463.00	95.00	9410.00	90.10	359.90		9463.00	9463.00	0.00	9463.00	9558.00	95.00	0.00	0.00	0.21	
9558.00	94.00	9505.00	91.20	0.10	180	9558.00	9575.00	17.00	9575.00	9652.00	77.00	0.00	0.00	1.16	
9652.00	93.00	9599.00	89.40	0.00		9652.00	9652.00	0.00	9652.00	9745.00	93.00	17.00	-0.11	-1.91	
9745.00	94.00	9692.00	90.80	0.50	195	9745.00	9757.00	12.00	9757.00	9839.00	82.00	0.00	0.00	1.51	
9839.00	94.00	9786.00	90.10	0.90	140 L	9839.00	9860.00	21.00	9860.00	9933.00	73.00	12.00	-0.06	-0.74	
9933.00	62.00	9880.00	91.00	1.70		9933.00	9933.00	0.00	9933.00	9995.00	62.00	21.00	0.04	0.96	
9995.00	31.00	9942.00	90.40	1.30	140 L	9995.00	10016.00	21.00	10016.00	10026.00	10.00	0.00	0.00	-0.97	
10026.00	93.00	9973.00	90.90	1.60		10026.00	10026.00	0.00	10026.00	10119.00	93.00	0.00	0.00	1.61	
10119.00	93.00	10066.00	90.20	0.60		10119.00	10119.00	0.00	10119.00	10212.00	93.00	21.00	-0.03	-0.75	
10212.00	94.00	10159.00	90.60	359.60	140 L	10212.00	10232.00	20.00	10232.00	10306.00	74.00	0.00	0.00	0.43	
10306.00	93.00	10253.00	88.60	358.70		10306.00	10306.00	0.00	10306.00	10399.00	93.00	20.00	-0.10	-2.13	
10399.00	94.00	10346.00	89.20	358.40		10399.00	10399.00	0.00	10399.00	10493.00	94.00	0.00	0.00	0.65	

Slide Sheet Report

BHA 3 - 2014/06/14 TO 2014/06/16

(Distances are shown in feet.)

BIT		SURVEY			----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS	
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft		/100ft
10493.00	94.00	10440.00	89.30	357.80		10493.00	10493.00	0.00	10493.00	10587.00	94.00	0.00	0.00	0.11	
10587.00	93.00	10534.00	90.40	357.20		10587.00	10587.00	0.00	10587.00	10680.00	93.00	0.00	0.00	1.17	
10680.00	112.00	10627.00	91.90	357.60	LS	10680.00	10700.00	20.00	10700.00	10792.00	92.00	0.00	0.00	1.61	
10792.00	0.00	10739.00	90.00	358.50		10792.00	10792.00	0.00	10792.00	10792.00	0.00	20.00	-0.10	-1.70	

Totals:	198.00 ft	2257.00 ft
Percentages:	8.1%	91.9%
Time:	10.75 hrs	31.50 hrs
Percentages:	25.4%	74.6%