



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1204170
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: _____

1204170

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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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> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	OSAGE Resources, LLC
Well Name	Osage 3314 13-01HC
Doc ID	1204170

Tops

Name	Top	Datum
Heebner Sh	4037	-2171
Toronto LS	4054	-2188
Douglas GP	4078	-2212
Haskell	4223	-2317
Lansing	4201	-2357
Stark	4231	-2365
Hushpuckney	4543	-2677
BKC	4598	-2732
Marmaton	4628	-2762
Mississippian	4635	-2769

Customer OS99e Resources LLC	Lease No.	Date 4/6/2014
Lease OS99e 3314	Well # 13-01 HC	
Field Order # 10193	Station Pratt, KS	Casing 4 1/2
		Depth 4139'
Type Job CNW/Liner	Formation TD-9170	County Barber
		State KS
		Legal Description 13-33-13

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP	
4 1/2								
Depth 4139'	Depth	From	To	Pre Pad	Max		5 Min.	
Volume 64	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 9101'	Packer Depth	From	To	Flush 2% KELUCR	Gas Volume		Total Load	

Customer Representative	Station Manager	Treater
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Service Units	27283	78982	78982	78983	70955	19918	19826	19860			
Driver Names	Darin	James	James	James	Pat	pat	Mike	Mike			

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
4:00pm					on location / safety meeting
					4 1/2 11.6# casing - 4139'
					DD - 4" 14# - 3675'
					HW - 1287'
					Hook up to well head
8:00pm	5,000		1	1/4	pressure test to 5,000psi
	6,000		5	5	pump 5 bbls water
	1,000		12	5	12 bbls mud flush
	1,000		5	5	5 bbls water
	4,000		95	5	mix 430sx Premium Cement, .75% C-37
					.25% C-41P, .1% C-51, 10% SSIT
					15.6 ppg, 5.43 water Reg., 1.24 slurry vol.
					Shut down / wash lines
8:50	250		0	5	stgrt displacement
	1,000		40	2	shove 40 bbls out slow rate
	2,000		47	2	shear pin at 47 bbls
	1,000		47	5	speed rate back up
	750		102	2	slow rate 9# 102 bbls
	1,100		112	2	Bumping 9# 112 bbls
					Flow held
	2,000		1	1	shear plus pin
	1,600		8	5	pump 8 bbls

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APR 9 2014

TREATMENT REPORT

Customer <i>OSGSA Rosquias</i>		Lease No.		Date <i>4/6/2014</i>	
Lease <i>OSGSA 3314</i>		Well # <i>13-01 HC</i>			
Field Order # <i>10193</i>	Station <i>Prattville</i>	Casing	Depth	County <i>Becher</i>	State <i>KS</i>
Type Job <i>CNW/ Driller</i>			Formation <i>7D-9170</i>	Legal Description <i>13-33-13</i>	

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
Depth	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				Station Manager				Treater			
Service Units											
Driver Names											

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
					<i>Set packer on 4 1/2 casing & back out of 4 1/2</i>
	<i>1300</i>		<i>2</i>	<i>2</i>	<i>clean annulus & place annulus</i>
	<i>1000</i>		<i>132</i>	<i>5</i>	<i>Pump 130 bbls</i>
					<i>25 bbls to pit of cement</i>
<i>10:00pm</i>					<i>Job Complete - Driller & Crew</i>
					<i>Thank you!!!</i>

Customer <u>OSAGE RESOURCES LLC</u>		Lease No.		Date <u>3-20-14</u>	
Lease <u>OSAGE 3314</u>		Well # <u>13-01 HC</u>			
Field Order # <u>9817</u>	Station <u>PRATT</u>	Casing <u>1 3/8</u>	Depth <u>209.53</u>	County <u>BAIBOI</u>	State <u>KS</u>
Type Job <u>CAN CONDUCTOR</u>			Formation <u>RTD 210</u>	Legal Description <u>13-33-14</u>	

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size <u>1 3/8</u>	Tubing Size	Shots/Ft		Acid <u>255 SKS</u>	RATE	PRESS	ISIP	
Depth <u>209.53</u>	Depth	From	To	Pre Pad	Max		5 Min.	
Volume <u>32.9</u>	Volume	From	To	Pad	Min		10 Min.	
Max Press <u>300</u>	Max Press	From	To	Frac	Avg		15 Min.	
Well Connection <u>SV</u>	Annulus Vol.	From	To		HHP Used		Annulus Pressure	
Plug Depth <u>181.53</u>	Packer Depth	From	To	Flush <u>30</u>	Gas Volume		Total Load	

Customer Representative <u>SCOTT HIGGINS</u>			Station Manager <u>KEVIN GOLDBY</u>			Treater <u>M. K. MATTAI</u>		
Service Units	<u>37586</u>	<u>79889</u>	<u>19843</u>	<u>19959</u>	<u>73768</u>			
Driver Names	<u>MATTAI</u>	<u>MARQUEZ</u>		<u>GIBSON</u>				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
8:25					ON LOCATION / SAFETY MEETING
11:15					RUN 1 3/8 CASING 5 JS
12:05					CASING ON BOTTOM
12:10					HOOK UP TO CASING / BREAK CIRC W. RIG
1:04	300		3	6	PUMP 3 BBL H2O
1:05	300		55		MIX 255 SKS COMMON CMT
1:24	-		-	-	DROP PLUG
1:33	100		-	3	START DISK
1:36	-		10	-	SHUT DOWN, TIGHTEN SWEDGE
1:40	100		-	3	START DISK
1:50	100		30	-	PLUG DOWN, SHUT IN WELL
					30 BBL BBL TO PIT
					JOB COMPLETE
					THANK YOU!
					M. K. MATTAI

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MAR 24 2014

Customer OSAGE RESOURCE LLC	Lease No.	Date 3-30-14
Lease OSAGE 3314	Well # 13-014C	
Field Order # 10202	Station Pratt	Casing 7"
Type Job CNW 7inch	Depth 5281	County Baker
	Formation	State KS
		Legal Description 13-33-13

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size 7	Tubing Size	Shots/Ft		Acid EMT 150 SLS	AA-2	RATE 125 bbl/hr	PRESS 1/4" CF	ISIP 1026 SMT
Depth 5281	Depth	From	To	Pre Pad 520 CFC .328	Max FLU 322			5 Min.
Volume 201.7	Volume	From	To	Pad	Min			10 Min.
Max Press 1	Max Press	From	To	Frac	Avg			15 Min.
Well Connection P.C.	Annulus Vol.	From	To		HHP Used			Annulus Pressure
Plug Depth 5257.7	Packer Depth	From	To	Flush 200	Gas Volume			Total Load

Customer Representative SCOTT HIGGINSON	Station Manager KEVIN GARDNER	Treater MIKE MARTAI
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Service Units 37586	77686	19905	19959	73768
Driver Names MARTAI	McGRAW		ERAST	

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
3:30 AM					ON LOCATION / SAFETY MEETING
					RUNNING 7" CASING, PULL 30 JTS, CIRC.
					RUN 7 INCH CASING
					CASING ON BOTTOM, CIRCULAR WHITE
10:20					CASING CROW RIGS DOWN, EMT CROW RIG UP
11:26	2,000		-	-	PRESSURE TEST TO 2,000 LBS
11:29	400		5	6	PUMP 5 BBL H2O
11:30	400		12	6	PUMP 12 BBL MUD FLUSH
11:32	400		5	6	PUMP 5 BBL H2O
11:34	350		40	6	MIX 150 SLS AA-2
11:50	-		-	-	RELEASE PLUG
11:54	150		-	6.5	START DISPLACEMENT
12:16	250		150	6	LIFT PRESSURE
12:29	1000		200	-	PLUG DOWN, RELEASE, FLOWING BLEN
12:39	500			-	REDUCE PRESSURE WELL, SHUT IN WELL
					CIRC. TRIP TOB
					JOB COMPLETE
					THANK YOU!
					MIKE MARTAI

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' 32.095 N
 LONGITUDE: 98° 47' 17.653 W
 NORTHING (Y): 1497772.81
 EASTING (X): 1228351.26

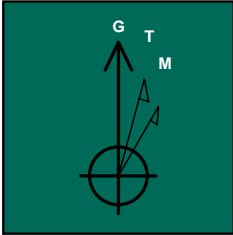
GROUND LEVEL: 1849.0
 RIG FLOOR(KB):
 WELL @ 1866.0usft (Original Well Elev)

MAGNETIC FIELD:
 STRENGTH: 51649
 DIP ANGLE: 65.15°
 MODEL: IGRF2010
 DATE: 06-Mar-14
 AZIMUTHS CORRECTED TO: Grid

MWD - USE IF ABOVE IS GRID
 Magnetic North is 5.03° East of Grid North (Magnetic Convergence)

MWD - USE IF ABOVE IS TRUE
 Magnetic North is 4.85° East of True North (Magnetic Declination)

Operator: Osage Resources, LLC
 Location: Barber Co, Kansas (NAD-83)
 Well Name: Osage #3314 13-01HC
 Calmena Job# 14032

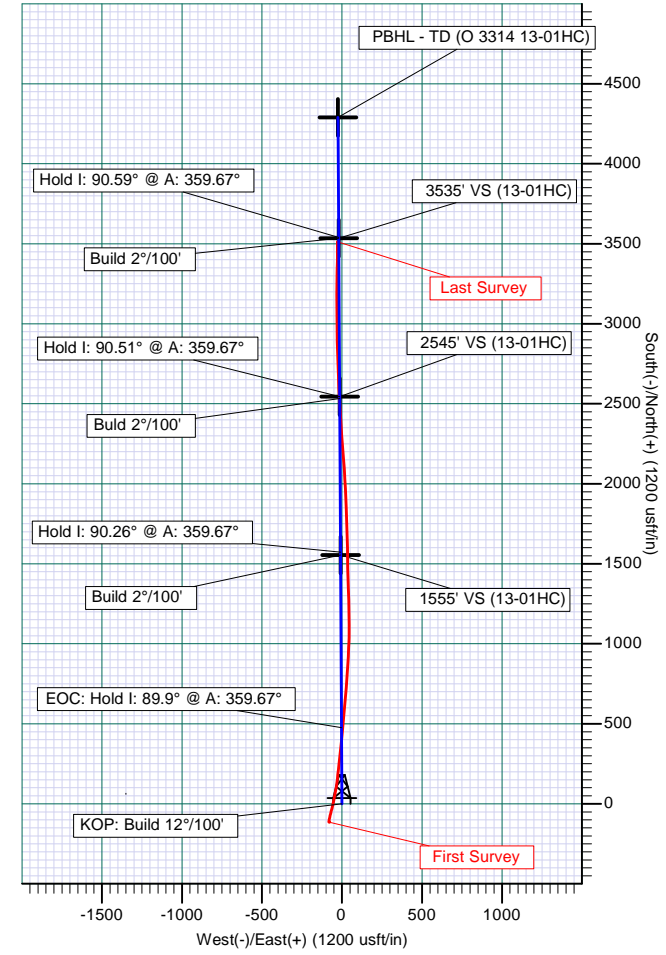
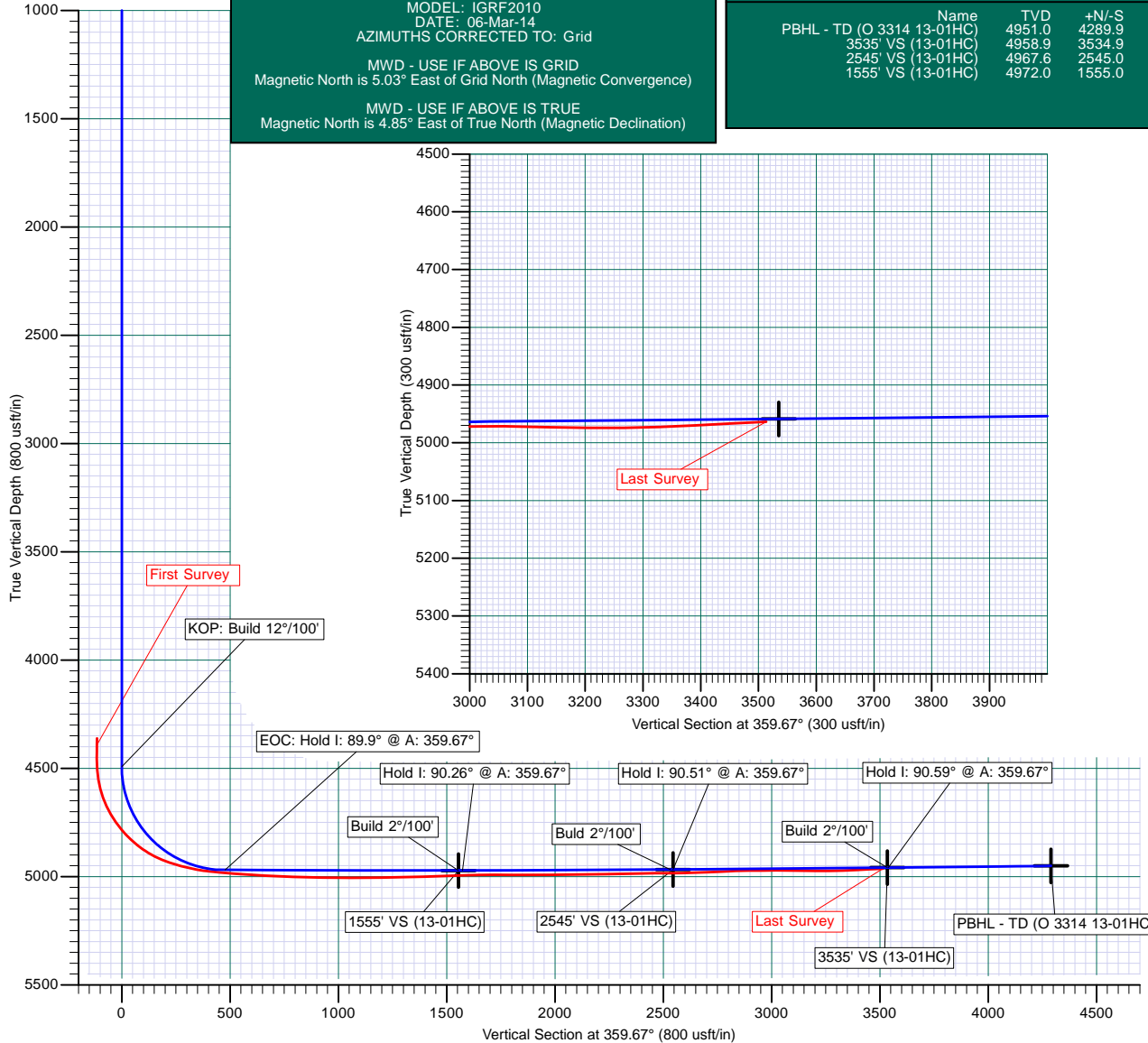


PLAN SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4492.6	0.00	0.00	4492.6	0.0	0.0	0.00	0.00	0.0		KOP: Build 12"/100'
3	5241.7	89.89	359.67	4970.0	476.6	-2.8	12.00	359.67	476.6		EOC: Hold I: 89.9° @ A: 359.67°
4	6320.1	89.89	359.67	4972.0	1555.0	-9.1	0.00	0.00	1555.0	1555' VS (13-01HC)	Build 2"/100'
5	6338.2	90.26	359.67	4972.0	1573.1	-9.2	2.00	0.00	1573.1		Hold I: 90.26° @ A: 359.67°
6	7297.7	90.26	359.67	4967.7	2532.5	-14.8	0.00	0.00	2532.6		Build 2"/100'
7	7310.1	90.51	359.67	4967.6	2545.0	-14.8	2.00	0.00	2545.0	2545' VS (13-01HC)	Hold I: 90.51° @ A: 359.67°
8	8300.2	90.51	359.67	4958.9	3534.9	-20.6	0.00	0.00	3535.0	3535' VS (13-01HC)	Build 2"/100'
9	8304.5	90.59	359.67	4958.8	3539.3	-20.6	2.00	0.00	3539.4		Hold I: 90.59° @ A: 359.67°
10	9055.2	90.59	359.67	4951.0	4289.9	-25.0	0.00	0.00	4290.0	PBHL - TD (O 3314 13-01HC)	

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (O 3314 13-01HC)	4951.0	4289.9	-25.0	1502062.75	1228326.26	37° 11' 14.508 N	98° 47' 18.126 W	Point
3535' VS (13-01HC)	4958.9	3534.9	-20.6	1501307.75	1228330.66	37° 11' 7.044 N	98° 47' 18.043 W	Point
2545' VS (13-01HC)	4967.6	2545.0	-14.8	1500317.77	1228336.43	37° 10' 57.256 N	98° 47' 17.933 W	Point
1555' VS (13-01HC)	4972.0	1555.0	-9.1	1499327.79	1228342.20	37° 10' 47.469 N	98° 47' 17.824 W	Point



Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-01HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1866.0usft (Original Well Elev)
Site:	Osage #3314 13-01HC	MD Reference:	WELL @ 1866.0usft (Original Well Elev)
Well:	Osage #3314 13-01HC	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 13-01HC				
Site Position:		Northing:	1,497,772.82 usft	Latitude:	37° 10' 32.095 N
From:	Lat/Long	Easting:	1,228,351.26 usft	Longitude:	98° 47' 17.653 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.18 °

Well	Osage #3314 13-01HC					
Well Position	+N/-S	0.0 usft	Northing:	1,497,772.82 usft	Latitude:	37° 10' 32.095 N
	+E/-W	0.0 usft	Easting:	1,228,351.26 usft	Longitude:	98° 47' 17.653 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	1,866.0 usft	Ground Level:	1,849.0 usft

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/6/2014	4.85	65.15	51,649

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	359.67	

Survey Program	Date	4/4/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
4,396.0	8,394.0	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)	
4,365.0	3.00	240.50	4,361.8	-114.1	-76.5	-113.7	0.00	0.00	0.00	
4,396.0	3.00	241.80	4,392.8	-114.9	-78.0	-114.5	0.22	0.00	4.19	
First Survey										
4,427.0	2.80	247.00	4,423.7	-115.6	-79.4	-115.1	1.07	-0.65	16.77	
4,458.0	2.40	286.70	4,454.7	-115.7	-80.7	-115.2	5.82	-1.29	128.06	
4,489.0	3.60	330.10	4,485.6	-114.7	-81.8	-114.2	8.01	3.87	140.00	
4,521.0	5.60	354.40	4,517.5	-112.2	-82.5	-111.8	8.60	6.25	75.94	
4,552.0	8.40	8.50	4,548.3	-108.5	-82.3	-108.0	10.53	9.03	45.48	
4,583.0	12.30	13.10	4,578.8	-103.0	-81.2	-102.6	12.85	12.58	14.84	
4,613.0	16.50	13.00	4,607.9	-95.8	-79.5	-95.3	14.00	14.00	-0.33	
4,645.0	20.90	13.10	4,638.2	-85.8	-77.2	-85.3	13.75	13.75	0.31	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-01HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1866.0usft (Original Well Elev)
Site:	Osage #3314 13-01HC	MD Reference:	WELL @ 1866.0usft (Original Well Elev)
Well:	Osage #3314 13-01HC	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)	
4,677.0	25.00	13.80	4,667.6	-73.7	-74.3	-73.2	12.84	12.81	2.19	
4,707.0	28.80	13.70	4,694.4	-60.5	-71.0	-60.1	12.67	12.67	-0.33	
4,738.0	32.20	13.80	4,721.1	-45.2	-67.3	-44.8	10.97	10.97	0.32	
4,769.0	35.50	13.90	4,746.8	-28.4	-63.2	-28.1	10.65	10.65	0.32	
4,800.0	38.50	13.60	4,771.6	-10.3	-58.7	-10.0	9.69	9.68	-0.97	
4,831.0	42.10	13.00	4,795.2	9.2	-54.1	9.5	11.68	11.61	-1.94	
4,862.0	45.70	12.20	4,817.5	30.2	-49.5	30.5	11.75	11.61	-2.58	
4,894.0	48.70	11.10	4,839.3	53.2	-44.7	53.4	9.71	9.38	-3.44	
4,925.0	52.00	9.70	4,859.1	76.6	-40.4	76.9	11.20	10.65	-4.52	
4,956.0	56.10	8.40	4,877.3	101.4	-36.5	101.6	13.65	13.23	-4.19	
4,987.0	59.80	7.70	4,893.7	127.4	-32.8	127.6	12.09	11.94	-2.26	
5,018.0	63.60	6.80	4,908.4	154.5	-29.4	154.7	12.52	12.26	-2.90	
5,049.0	67.20	6.30	4,921.3	182.5	-26.1	182.7	11.71	11.61	-1.61	
5,080.0	70.60	5.90	4,932.5	211.3	-23.1	211.4	11.03	10.97	-1.29	
5,111.0	72.80	6.10	4,942.2	240.5	-20.0	240.6	7.12	7.10	0.65	
5,143.0	75.20	6.50	4,951.0	271.1	-16.6	271.2	7.60	7.50	1.25	
5,175.0	76.90	6.70	4,958.7	301.9	-13.1	302.0	5.35	5.31	0.63	
5,206.0	78.70	6.50	4,965.3	332.0	-9.6	332.1	5.84	5.81	-0.65	
5,237.0	81.20	6.10	4,970.7	362.4	-6.2	362.4	8.16	8.06	-1.29	
5,298.0	84.60	5.40	4,978.2	422.6	-0.2	422.6	5.69	5.57	-1.15	
5,329.0	84.90	5.30	4,981.1	453.3	2.7	453.3	1.02	0.97	-0.32	
5,360.0	85.30	5.30	4,983.7	484.1	5.6	484.1	1.29	1.29	0.00	
5,390.0	86.00	5.30	4,986.0	513.9	8.3	513.8	2.33	2.33	0.00	
5,421.0	86.20	5.60	4,988.1	544.7	11.3	544.6	1.16	0.65	0.97	
5,452.0	86.00	4.90	4,990.2	575.5	14.1	575.4	2.34	-0.65	-2.26	
5,483.0	86.40	5.00	4,992.3	606.3	16.8	606.2	1.33	1.29	0.32	
5,513.0	86.80	5.10	4,994.0	636.1	19.4	636.0	1.37	1.33	0.33	
5,544.0	86.70	4.50	4,995.8	667.0	22.0	666.8	1.96	-0.32	-1.94	
5,575.0	87.10	4.30	4,997.5	697.8	24.4	697.7	1.44	1.29	-0.65	
5,606.0	87.50	4.20	4,998.9	728.7	26.7	728.5	1.33	1.29	-0.32	
5,636.0	87.40	3.70	5,000.3	758.6	28.7	758.4	1.70	-0.33	-1.67	
5,667.0	87.70	4.20	5,001.6	789.5	30.9	789.3	1.88	0.97	1.61	
5,698.0	87.90	3.60	5,002.8	820.4	33.0	820.2	2.04	0.65	-1.94	
5,734.0	88.70	3.40	5,003.9	856.3	35.2	856.1	2.29	2.22	-0.56	
5,765.0	88.90	3.60	5,004.5	887.3	37.1	887.0	0.91	0.65	0.65	
5,796.0	89.00	3.40	5,005.1	918.2	39.0	917.9	0.72	0.32	-0.65	
5,826.0	89.20	2.70	5,005.5	948.1	40.5	947.9	2.43	0.67	-2.33	
5,857.0	89.30	2.10	5,005.9	979.1	41.8	978.9	1.96	0.32	-1.94	
5,888.0	89.90	1.80	5,006.2	1,010.1	42.9	1,009.8	2.16	1.94	-0.97	
5,919.0	90.20	1.10	5,006.1	1,041.1	43.7	1,040.8	2.46	0.97	-2.26	
5,949.0	90.30	0.40	5,006.0	1,071.1	44.1	1,070.8	2.36	0.33	-2.33	
5,980.0	90.70	0.30	5,005.7	1,102.1	44.3	1,101.8	1.33	1.29	-0.32	
6,011.0	90.90	359.50	5,005.3	1,133.1	44.2	1,132.8	2.66	0.65	-2.58	

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-01HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1866.0usft (Original Well Elev)
Site:	Osage #3314 13-01HC	MD Reference:	WELL @ 1866.0usft (Original Well Elev)
Well:	Osage #3314 13-01HC	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)	
6,042.0	91.30	359.20	5,004.7	1,164.1	43.9	1,163.8	1.61	1.29	-0.97	
6,104.0	90.80	358.90	5,003.6	1,226.0	42.8	1,225.8	0.94	-0.81	-0.48	
6,166.0	90.40	358.40	5,002.9	1,288.0	41.4	1,287.8	1.03	-0.65	-0.81	
6,228.0	91.10	357.80	5,002.1	1,350.0	39.3	1,349.7	1.49	1.13	-0.97	
6,290.0	92.50	358.50	5,000.2	1,411.9	37.3	1,411.7	2.52	2.26	1.13	
6,352.0	91.80	358.50	4,997.8	1,473.9	35.7	1,473.6	1.13	-1.13	0.00	
6,413.0	91.90	358.90	4,995.9	1,534.8	34.3	1,534.6	0.68	0.16	0.66	
6,476.0	91.50	359.70	4,994.0	1,597.8	33.5	1,597.6	1.42	-0.63	1.27	
6,538.0	91.50	359.10	4,992.4	1,659.8	32.9	1,659.5	0.97	0.00	-0.97	
6,600.0	90.10	358.10	4,991.5	1,721.7	31.4	1,721.5	2.77	-2.26	-1.61	
6,662.0	88.80	357.80	4,992.1	1,783.7	29.2	1,783.5	2.15	-2.10	-0.48	
6,725.0	89.70	357.60	4,992.9	1,846.6	26.6	1,846.4	1.46	1.43	-0.32	
6,786.0	90.30	357.40	4,992.9	1,907.6	24.0	1,907.4	1.04	0.98	-0.33	
6,848.0	91.10	357.40	4,992.2	1,969.5	21.2	1,969.3	1.29	1.29	0.00	
6,910.0	91.50	356.80	4,990.8	2,031.4	18.0	2,031.3	1.16	0.65	-0.97	
6,973.0	90.10	356.20	4,989.9	2,094.3	14.2	2,094.2	2.42	-2.22	-0.95	
7,034.0	90.40	355.50	4,989.6	2,155.1	9.8	2,155.0	1.25	0.49	-1.15	
7,096.0	90.10	355.90	4,989.3	2,216.9	5.1	2,216.9	0.81	-0.48	0.65	
7,158.0	90.70	355.90	4,988.9	2,278.8	0.7	2,278.7	0.97	0.97	0.00	
7,220.0	91.10	355.70	4,987.9	2,340.6	-3.9	2,340.6	0.72	0.65	-0.32	
7,281.0	92.20	356.00	4,986.2	2,401.4	-8.3	2,401.4	1.87	1.80	0.49	
7,343.0	90.90	356.90	4,984.5	2,463.3	-12.1	2,463.3	2.55	-2.10	1.45	
7,405.0	89.90	357.40	4,984.1	2,525.2	-15.2	2,525.2	1.80	-1.61	0.81	
7,467.0	91.20	357.10	4,983.5	2,587.1	-18.2	2,587.2	2.15	2.10	-0.48	
7,529.0	91.90	356.80	4,981.8	2,649.0	-21.5	2,649.1	1.23	1.13	-0.48	
7,591.0	92.20	357.30	4,979.6	2,710.9	-24.6	2,711.0	0.94	0.48	0.81	
7,653.0	92.60	357.70	4,977.0	2,772.8	-27.4	2,772.9	0.91	0.65	0.65	
7,715.0	92.50	358.50	4,974.2	2,834.7	-29.4	2,834.8	1.30	-0.16	1.29	
7,777.0	90.80	359.30	4,972.4	2,896.6	-30.6	2,896.8	3.03	-2.74	1.29	
7,838.0	89.80	0.20	4,972.1	2,957.6	-30.9	2,957.8	2.21	-1.64	1.48	
7,899.0	91.00	359.90	4,971.7	3,018.6	-30.8	3,018.8	2.03	1.97	-0.49	
7,961.0	88.60	0.50	4,971.9	3,080.6	-30.6	3,080.8	3.99	-3.87	0.97	
8,023.0	88.70	0.10	4,973.4	3,142.6	-30.3	3,142.7	0.66	0.16	-0.65	
8,085.0	89.60	359.70	4,974.3	3,204.6	-30.4	3,204.7	1.59	1.45	-0.65	
8,147.0	90.80	0.20	4,974.1	3,266.6	-30.4	3,266.7	2.10	1.94	0.81	
8,209.0	92.10	0.70	4,972.5	3,328.6	-29.9	3,328.7	2.25	2.10	0.81	
8,271.0	92.70	0.00	4,969.9	3,390.5	-29.6	3,390.6	1.49	0.97	-1.13	
8,332.0	93.40	0.10	4,966.7	3,451.4	-29.5	3,451.5	1.16	1.15	0.16	
8,394.0	92.40	0.00	4,963.5	3,513.4	-29.5	3,513.5	1.62	-1.61	-0.16	
Last Survey										

Company:	Osage Resources, LLC	Local Co-ordinate Reference:	Site Osage #3314 13-01HC
Project:	Barber Co, Kansas (NAD-83)	TVD Reference:	WELL @ 1866.0usft (Original Well Elev)
Site:	Osage #3314 13-01HC	MD Reference:	WELL @ 1866.0usft (Original Well Elev)
Well:	Osage #3314 13-01HC	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Lateral #1	Database:	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,396.0	4,392.8	-114.9	-78.0	First Survey
8,394.0	4,963.5	3,513.4	-29.5	Last Survey

Checked By: _____ Approved By: _____ Date: _____

Day 12 - 2014/04/03

FILE #: OK0014032
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage #3314-13-01HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

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

Company Man: Scott Higgins
DIR Supervisor: Mark Sanders, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood
MWD Trainee: Dean Cegal

GROUND ELEV: 1849 ft **START DEPTH:** 7237.0 ft **PROGRESS:** 959.0 ft **DAILY COST:** USD\$9200.00
KB ELEV: 1866 ft **END DEPTH:** 8196.0 ft **AVG. ROP.:** 55.6 ft/hr **PREVIOUS COST:** USD\$122050.00
TOTAL COST: USD\$131250.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	Rotating With Motor	0.25	7268	2	12:00-12:15	Orienting With Motor - 5'@LS	0.25	7737	2
00:15-00:30	Circ & Accumulate Surveys - @ 7220	0.25	7268	2	12:15-12:45	Rotating With Motor	0.50	7763	2
00:30-01:00	Orienting With Motor - 5' @ 90 R	0.50	7273	2	12:45-13:00	Circ & Accumulate Surveys - @7715	0.25	7763	2
01:00-01:15	Rotating With Motor	0.25	7299	2	13:00-13:15	Orienting With Motor - 6'@LS	0.25	7769	2
01:15-01:30	Circ & Accumulate Surveys - @ 7251	0.25	7299	2	13:15-13:30	Rotating With Motor	0.25	7794	2
01:30-02:00	Orienting With Motor - 5' @ LS	0.50	7304	2	13:30-13:45	Circ & Accumulate Surveys - CHECK SHOT	0.25	7794	2
02:00-02:15	Rotating With Motor	0.25	7329	2	13:45-14:00	Orienting With Motor - 5'@LS	0.25	7799	2
02:15-02:30	Circ & Accumulate Surveys - @ 7281	0.25	7329	2	14:00-14:30	Rotating With Motor	0.50	7825	2
02:30-03:00	Orienting With Motor - 5' @ HS	0.50	7334	2	14:30-14:45	Circ & Accumulate Surveys - @7777	0.25	7825	2
03:00-03:30	Rotating With Motor	0.50	7360	2	14:45-15:45	Rotating With Motor	1.00	7886	2
03:30-03:45	Circ & Accumulate Surveys - @ 7312	0.25	7360	2	15:45-16:00	Circ & Accumulate Surveys - @7838	0.25	7886	2
03:45-04:00	Orienting With Motor - 5' @ LS	0.25	7365	2	16:00-16:15	Rotating With Motor	0.25	7916	2
04:00-04:30	Rotating With Motor	0.50	7391	2	16:15-16:30	Rig Service	0.25	7916	2
04:30-04:45	Circ & Accumulate Surveys - @ 7343	0.25	7391	2	16:30-16:45	Circ & Accumulate Surveys - CHECK SHOT	0.25	7916	2
04:45-05:00	Rotating With Motor	0.25	7422	2	16:45-17:00	Orienting With Motor - 6'@LS	0.25	7922	2
05:00-05:15	Circ & Accumulate Surveys - @ 7374	0.25	7422	2	17:00-17:15	Rotating With Motor	0.25	7947	2
05:15-05:30	Rotary Drill To KOP	0.25	7453	2	17:15-17:30	Circ & Accumulate Surveys - @7899	0.25	7947	2
05:30-05:45	Circ & Accumulate Surveys - @ 7405	0.25	7453	2	17:30-17:45	Orienting With Motor - 6' @ LS	0.25	7953	2
05:45-06:15	Orienting With Motor - 4'@HS	0.50	7457	2	17:45-18:45	Rotating With Motor	1.00	8009	2
06:15-06:45	Rotating With Motor	0.50	7484	2	18:45-19:00	Circ & Accumulate Surveys - @ 7961	0.25	8009	2
06:45-07:00	Circ & Accumulate Surveys - CHECK SHOT	0.25	7484	2	19:00-20:00	Rotating With Motor	1.00	8071	2
07:00-07:15	Rotating With Motor	0.25	7515	2	20:00-20:15	Circ & Accumulate Surveys - @ 8023	0.25	8071	2
07:15-07:30	Circ & Accumulate Surveys - @7467	0.25	7515	2	20:15-20:30	Orienting With Motor - 4' @ HS	0.25	8075	2
07:30-08:15	Rotating With Motor	0.75	7577	2	20:30-21:00	Rotating With Motor	0.50	8102	2
08:15-08:30	Circ & Accumulate Surveys - @7529	0.25	7577	2	21:00-21:30	Rig Repair - WORK ON LIGHT PLANT	0.50	8102	2
08:30-09:00	Orienting With Motor - 5'@90R	0.50	7582	2	21:30-22:00	Rotating With Motor	0.50	8133	2
09:00-09:45	Rotating With Motor	0.75	7639	2	22:00-22:15	Circ & Accumulate Surveys - @ 8085	0.25	8133	2
09:45-10:00	Circ & Accumulate Surveys - @7591	0.25	7639	2	22:15-22:45	Orienting With Motor - 6' @ 30 R	0.50	8139	2
10:00-11:00	Rotating With Motor	1.00	7701	2	22:45-23:00	Rotating With Motor	0.25	8164	2
11:00-11:15	Circ & Accumulate Surveys - @7653	0.25	7701	2	23:00-23:15	Circ & Accumulate Surveys - @ 8116	0.25	8164	2
11:15-11:30	Orienting With Motor - 6'@LS	0.25	7707	2	23:15-23:30	Rotating With Motor	0.25	8195	2
11:30-11:45	Rotating With Motor	0.25	7732	2	23:30-23:45	Circ & Accumulate Surveys - @ 8147	0.25	8195	2
11:45-12:00	Circ & Accumulate Surveys - CHECK SHOT	0.25	7732	2	23:45-24:00	Rotating With Motor - 1' @ HS	0.25	8196	2

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL: 17.00	ORIENTING HRS: 5.00	ROTARY DRILL: 0.25	ROTARY TORQUE:	STRING WEIGHT 100000 lbs	
TIME DRILL: 0.00	ROTATING HRS: 12.00	MOTOR HRS: 23.00	WOB SLIDING (HI): 8000 lbf	WOB ROTATE (HI): 12000 lbf	
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 4000 lbf	WOB ROTATE (LO): 8000 lbf	
CIRC: 6.00	ROTARY DRILL: 0.25	OTHER: 0.75	RPM (ROTARY): 60 rpm	DRAG UP: 32000 lbf	
MOTOR HRS: 23.00	DRILL HRS: 17.25	TOTAL HRS: 24.00	RPM (MOTOR): 127 rpm	DRAG DN: 30000 lbf	

Day 12 - 2014/04/03

BHA / MOTOR / BIT INFORMATION:

BHA: 2	HOLE SIZE: 0 in	SECTION TYPE: Lateral 1	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Calmena	STABILIZER: No	SERIAL#: 475-092	MODEL:
SETTING: 1.75 °	KICKPAD: No	SIZE: 4 3/4" (121mm)	LOBE CFG.: 7/8
MANFCT: Halliburton	BIT TYPE: PDC Bit	TYPE: MMD64C	MTR HRS THIS DAY: 23
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ?			MTR HRS TO DATE: 76.75
			NOZZLES: 16, 16, 32, 32: 1.963 in ² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 1330	PRESSURE OFF BTM: 1150	TOTAL FLOW RATE: 244.30 gal/min
PUMP 1: TYPE: MP-10	EFF.: 100.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 3.4900 gal/stk
PUMP 2: TYPE: MP-10	EFF.: 100.0% 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: Water	VISC: 30 sec/qt	WTR LOSS: 0 cc/30min	PV: 1 cP	YP: 2 lb/100 ft ²	pH: 7
DENSITY: 9.1 lb/gal	GEL 0/10: 0.67 lb/100 ft ²	SAND: 0	SOLIDS: 0.9	OIL: 0	TEMP: 0 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Talked to Steve @ 4:00 and he wanted to bring our TVD up to 4970. He told Shane Lewis Directional Driller that he had talked to Ben about it - Went and discussed this with Scott and he wants us to bring the TVD up 10' to 4974 and then we will reevaluate our current plan. Talked to Steve @ 1900 he wanted to bring the TVD up to 4965 -- I let him know to inform Scott of the change and then I contacted Scott and he informed Shane Lewis to bring the TVD up to 4965

CUSTOMER SIGNATURE:

Day 13 - 2014/04/04

FILE #: OK0014032
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage #3314-13-01HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

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

Company Man: Scott Higgins
DIR Supervisor: Mark Sanders, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood
MWD Trainee: Dean Cegal

GROUND ELEV: 1849 ft **START DEPTH:** 8196.0 ft **PROGRESS:** 277.0 ft **DAILY COST:** USD\$0.00
KB ELEV: 1866 ft **END DEPTH:** 8473.0 ft **AVG. ROP.:** 58.3 ft/hr **PREVIOUS COST:** USD\$131250.00
WORK STATUS: Operating (All units are imperial.) **TOTAL COST:** USD\$131250.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	Orienting With Motor - 5' @ HS	0.25	8201	2	03:30-04:00	Orienting With Motor - 6' @ LS	0.50	8386	2
00:15-01:00	Rotating With Motor	0.75	8257	2	04:00-04:15	Rotating With Motor	0.25	8411	2
01:00-01:15	Circ & Accumulate Surveys - @ 8209	0.25	8257	2	04:15-04:30	Circ & Accumulate Surveys - @ 8363	0.25	8411	2
01:15-01:30	Rotating With Motor	0.25	8288	2	04:30-05:00	Orienting With Motor - 6' @ 160 R	0.50	8411	2
01:30-01:45	Circ & Accumulate Surveys - @ 8240	0.25	8288	2	05:00-05:15	Rotating With Motor	0.25	8442	2
01:45-02:15	Rotating With Motor	0.50	8319	2	05:15-05:30	Circ & Accumulate Surveys - @ 8394	0.25	8442	2
02:15-02:30	Circ & Accumulate Surveys - @ 8271	0.25	8319	2	05:30-05:45	Orienting With Motor - 6' @ LS	0.25	8448	2
02:30-03:15	Rotating With Motor	0.75	8380	2	05:45-06:15	Rotating With Motor	0.50	8473	2
03:15-03:30	Circ & Accumulate Surveys - @8332	0.25	8380	2	06:15-06:30	Circ & Accumulate Surveys - @ 8425	0.25	8473	2

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	4.75	ORIENTING HRS:	1.50	ROTARY DRILL:	0.00	ROTARY TORQUE:	STRING WEIGHT	100000 lbs	
TIME DRILL:	0.00	ROTATING HRS:	3.25	MOTOR HRS:	6.50	WOB SLIDING (HI):	8000 lbf	WOB ROTATE (HI):	12000 lbf
MOTOR REAM:	0.00	TRIP:	0.00	OTHER:	0.00	WOB SLIDING (LO):	4000 lbf	WOB ROTATE (LO):	8000 lbf
CIRC:	1.75	ROTARY DRILL:	0.00	RPM (ROTARY):	60 rpm	DRAG UP:	32000 lbf		
MOTOR HRS:	6.50	DRILL HRS:	4.75	TOTAL HRS:	6.50	RPM (MOTOR):	127 rpm	DRAG DN:	30000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 2	HOLE SIZE: 0 in	SECTION TYPE: Lateral 1	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Calmena	STABILIZER: No	SERIAL#: 475-092	MODEL: LOBE CFG.:7/8
SETTING: 1.75 °	KICKPAD: No	SIZE: 4 3/4" (121mm)	MTR HRS THIS DAY: 6.5 MTR HRS TO DATE: 83.25
MANFCT: Halliburton	BIT TYPE: PDC Bit	TYPE: MMD64C	NOZZLES: 16, 16, 32, 32: 1.963 in ² TFA
IADC BIT GRADE: ? / ? / ? / ? / ? / ? / ? / ? / ?			

PUMP PARAMETERS

PRESSURE ON BTM: 1380	PRESSURE OFF BTM: 1215	TOTAL FLOW RATE: 244.30 gal/min
PUMP 1: TYPE: MP-10	EFF.: 100.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 3.4900 gal/stk
PUMP 2: TYPE: MP-10	EFF.: 100.0% 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: Water	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:

CUSTOMER SIGNATURE:

Slide Sheet Report

BHA 2 - 2014/03/30 TO 2014/04/04

FILE #: OK0014032
JOB TYPE: Horizontal
RIG & NO: Duke Drilling 21

WELL NAME: Osage #3314-13-01HC
COMPANY: Osage Resources LLC
SURFACE LOCATION: Barber County

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

Company Man: Scott Higgins
DIR Supervisor: Mark Sanders, Shane Lewis
MWD Supervisor: Joe Newberry, Jeff Atwood

BHA NO: 2	DATES RUN: 2014/03/30 TO 2014/04/04	SECTION: Lateral 1	TOOLFACE OFFSET:	SURVEY OFFSET: 48 ft
MOTOR SETTING: 1.75 °	KICKPAD: No	STABILIZER: No	MODEL:	SERIAL NO: 475-092
			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
5346.00	31.00	5298.00	84.90	5.30		5346.00	5346.00	0.00	5346.00	5377.00	31.00	0.00	0.00	0.00	
5377.00	31.00	5329.00	84.90	5.30		5377.00	5377.00	0.00	5377.00	5408.00	31.00	0.00	0.00	0.00	
5408.00	30.00	5360.00	85.30	5.30		5408.00	5408.00	0.00	5408.00	5438.00	30.00	0.00	0.00	1.29	
5438.00	31.00	5390.00	86.00	5.30	130L	5438.00	5441.00	3.00	5441.00	5469.00	28.00	0.00	0.00	2.33	
5469.00	31.00	5421.00	86.20	5.60		5469.00	5469.00	0.00	5469.00	5500.00	31.00	0.00	0.00	0.65	
5500.00	31.00	5452.00	86.00	4.90		5500.00	5500.00	0.00	5500.00	5531.00	31.00	3.00	-0.07	-0.65	
5531.00	30.00	5483.00	86.40	5.00	110 L	5531.00	5535.00	4.00	5535.00	5561.00	26.00	0.00	0.00	1.29	
5561.00	31.00	5513.00	86.80	5.10		5561.00	5561.00	0.00	5561.00	5592.00	31.00	0.00	0.00	1.33	
5592.00	31.00	5544.00	86.70	4.50		5592.00	5592.00	0.00	5592.00	5623.00	31.00	4.00	-0.02	-0.32	
5623.00	31.00	5575.00	87.10	4.30	140L	5623.00	5627.00	4.00	5627.00	5654.00	27.00	0.00	0.00	1.29	
5654.00	30.00	5606.00	87.50	4.20		5654.00	5654.00	0.00	5654.00	5684.00	30.00	0.00	0.00	1.29	
5684.00	31.00	5636.00	87.40	3.70	130L	5684.00	5687.00	3.00	5687.00	5715.00	28.00	4.00	-0.02	-0.33	
5715.00	31.00	5667.00	87.70	4.20		5715.00	5715.00	0.00	5715.00	5746.00	31.00	0.00	0.00	0.97	
5746.00	36.00	5698.00	87.90	3.60		5746.00	5746.00	0.00	5746.00	5782.00	36.00	3.00	0.07	0.65	
5782.00	31.00	5734.00	88.70	3.40	100L	5782.00	5786.00	4.00	5786.00	5813.00	27.00	0.00	0.00	2.22	
5813.00	31.00	5765.00	88.90	3.60	100L	5813.00	5816.00	3.00	5816.00	5844.00	28.00	0.00	0.00	0.65	
5844.00	30.00	5796.00	89.00	3.40	90L	5844.00	5848.00	4.00	5848.00	5874.00	26.00	4.00	0.02	0.32	
5874.00	31.00	5826.00	89.20	2.70		5874.00	5874.00	0.00	5874.00	5905.00	31.00	3.00	0.07	0.67	
5905.00	31.00	5857.00	89.30	2.10	90L	5905.00	5910.00	5.00	5910.00	5936.00	26.00	4.00	0.02	0.32	
5936.00	31.00	5888.00	89.90	1.80	100L	5936.00	5941.00	5.00	5941.00	5967.00	26.00	0.00	0.00	1.94	
5967.00	30.00	5919.00	90.20	1.10		5967.00	5967.00	0.00	5967.00	5997.00	30.00	5.00	0.06	0.97	
5997.00	31.00	5949.00	90.30	0.40	140L	5997.00	6002.00	5.00	6002.00	6028.00	26.00	5.00	0.02	0.33	
6028.00	31.00	5980.00	90.70	0.30		6028.00	6028.00	0.00	6028.00	6059.00	31.00	0.00	0.00	1.29	
6059.00	31.00	6011.00	90.90	359.50	190 L	6059.00	6062.00	3.00	6062.00	6090.00	28.00	5.00	0.04	0.65	

Slide Sheet Report

BHA 2 - 2014/03/30 TO 2014/04/04

(Distances are shown in feet.)

BIT DEPTH	SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS
	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET				
6090.00	62.00	6042.00	91.30	359.20	175L	6090.00	6093.00	3.00	6093.00	6152.00	59.00	0.00	0.00	1.29	
6152.00	62.00	6104.00	90.80	358.90	130 L	6152.00	6158.00	6.00	6158.00	6214.00	56.00	6.00	-0.08	-0.81	
6214.00	31.00	6166.00	90.40	358.40		6214.00	6214.00	0.00	6214.00	6245.00	31.00	6.00	-0.07	-0.65	
6245.00	31.00	6197.00	90.70	358.40	10 L	6245.00	6249.00	4.00	6249.00	6276.00	27.00	0.00	0.00	0.97	
6276.00	31.00	6228.00	91.10	357.80	45 R	6276.00	6280.00	4.00	6280.00	6307.00	27.00	0.00	0.00	1.29	
6307.00	31.00	6259.00	91.80	357.90	165 R	6307.00	6310.00	3.00	6310.00	6338.00	28.00	4.00	0.18	2.26	
6338.00	31.00	6290.00	92.50	358.50	145 R	6338.00	6342.00	4.00	6342.00	6369.00	27.00	4.00	0.18	2.26	
6369.00	31.00	6321.00	92.20	358.40		6369.00	6369.00	0.00	6369.00	6400.00	31.00	3.00	-0.10	-0.97	
6400.00	61.00	6352.00	91.80	358.50	160 R	6400.00	6407.00	7.00	6407.00	6461.00	54.00	4.00	-0.10	-1.29	
6461.00	63.00	6413.00	91.90	358.90	130 R	6461.00	6469.00	8.00	6469.00	6524.00	55.00	7.00	0.01	0.16	
6524.00	62.00	6476.00	91.50	359.70	LS	6524.00	6535.00	11.00	6535.00	6586.00	51.00	8.00	-0.05	-0.63	
6586.00	62.00	6538.00	91.50	359.10	LS	6586.00	6598.00	12.00	6598.00	6648.00	50.00	11.00	0.00	0.00	
6648.00	62.00	6600.00	90.10	358.10		6648.00	6648.00	0.00	6648.00	6710.00	62.00	12.00	-0.12	-2.26	
6710.00	63.00	6662.00	88.80	357.80	HS	6710.00	6714.00	4.00	6714.00	6773.00	59.00	0.00	0.00	-2.10	
6773.00	61.00	6725.00	89.70	357.60		6773.00	6773.00	0.00	6773.00	6834.00	61.00	4.00	0.23	1.43	
6834.00	62.00	6786.00	90.30	357.40		6834.00	6834.00	0.00	6834.00	6896.00	62.00	0.00	0.00	0.98	
6896.00	62.00	6848.00	91.10	357.40	LS	6896.00	6908.00	12.00	6908.00	6958.00	50.00	0.00	0.00	1.29	
6958.00	63.00	6910.00	91.50	356.80		6958.00	6958.00	0.00	6958.00	7021.00	63.00	12.00	0.03	0.65	
7021.00	61.00	6973.00	90.10	356.20		7021.00	7021.00	0.00	7021.00	7082.00	61.00	0.00	0.00	-2.22	
7082.00	62.00	7034.00	90.40	355.50	130 R	7082.00	7087.00	5.00	7087.00	7144.00	57.00	0.00	0.00	0.49	
7144.00	62.00	7096.00	90.10	355.90	90 R	7144.00	7149.00	5.00	7149.00	7206.00	57.00	5.00	-0.06	-0.48	
7206.00	62.00	7158.00	90.70	355.90	60R	7206.00	7209.00	3.00	7209.00	7268.00	59.00	5.00	0.12	0.97	
7268.00	61.00	7220.00	91.10	355.70	90 R	7268.00	7273.00	5.00	7273.00	7329.00	56.00	3.00	0.13	0.65	
7329.00	62.00	7281.00	92.20	356.00	LS	7329.00	7339.00	10.00	7339.00	7391.00	52.00	5.00	0.22	1.80	
7391.00	62.00	7343.00	90.90	356.90		7391.00	7391.00	0.00	7391.00	7453.00	62.00	10.00	-0.13	-2.10	
7453.00	62.00	7405.00	89.90	357.40	HS	7453.00	7457.00	4.00	7457.00	7515.00	58.00	0.00	0.00	-1.61	
7515.00	62.00	7467.00	91.20	357.10		7515.00	7515.00	0.00	7515.00	7577.00	62.00	4.00	0.32	2.10	
7577.00	62.00	7529.00	91.90	356.80	90R	7577.00	7582.00	5.00	7582.00	7639.00	57.00	0.00	0.00	1.13	
7639.00	62.00	7591.00	92.20	357.30		7639.00	7639.00	0.00	7639.00	7701.00	62.00	5.00	0.06	0.48	
7701.00	62.00	7653.00	92.60	357.70	LS	7701.00	7712.00	11.00	7712.00	7763.00	51.00	0.00	0.00	0.65	
7763.00	62.00	7715.00	92.50	358.50	LS	7763.00	7774.00	11.00	7774.00	7825.00	51.00	11.00	-0.01	-0.16	
7825.00	61.00	7777.00	90.80	359.30		7825.00	7825.00	0.00	7825.00	7886.00	61.00	11.00	-0.15	-2.74	
7886.00	61.00	7838.00	89.80	0.20		7886.00	7886.00	0.00	7886.00	7947.00	61.00	0.00	0.00	-1.64	
7947.00	62.00	7899.00	91.00	359.90	LS	7947.00	7959.00	12.00	7959.00	8009.00	50.00	0.00	0.00	1.97	
8009.00	62.00	7961.00	88.60	0.50		8009.00	8009.00	0.00	8009.00	8071.00	62.00	12.00	-0.20	-3.87	

Slide Sheet Report

BHA 2 - 2014/03/30 TO 2014/04/04

(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	
8071.00	62.00	8023.00	88.70	0.10	HS	8071.00	8075.00	4.00	8075.00	8133.00	58.00	0.00	0.00	0.16	
8133.00	62.00	8085.00	89.60	359.70	20 R	8133.00	8139.00	6.00	8139.00	8195.00	56.00	4.00	0.22	1.45	
8195.00	62.00	8147.00	90.80	0.20	HS	8195.00	8201.00	6.00	8201.00	8257.00	56.00	6.00	0.20	1.94	
8257.00	62.00	8209.00	92.10	0.70		8257.00	8257.00	0.00	8257.00	8319.00	62.00	6.00	0.22	2.10	
8319.00	61.00	8271.00	92.70	0.00		8319.00	8319.00	0.00	8319.00	8380.00	61.00	0.00	0.00	0.97	
8380.00	62.00	8332.00	93.40	0.10	LS	8380.00	8386.00	6.00	8386.00	8442.00	56.00	0.00	0.00	1.15	
8442.00	62.00	8394.00	92.40	0.00	LS	8442.00	8454.00	12.00	8454.00	8504.00	50.00	6.00	-0.17	-1.61	
8504.00	0.00	8456.00	0.00	0.00		8504.00	8504.00	0.00	8504.00	8504.00	0.00	12.00	-7.70	-149.03	

Totals:	226.00 ft	2932.00 ft
Percentages:	7.2%	92.8%
Time:	17.25 hrs	43.00 hrs
Percentages:	28.6%	71.4%

12

13

Osage
3314 13-01HC

FTF
No. 23

Osage
3314 13-09 SWD

0 709
FEET

Lisswell Rd

Lisswell Rd

Lisswell Rd