

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1248149
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: _____

1248149

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No 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: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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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> _____				
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	SandRidge Exploration and Production LLC
Well Name	Richard 3206 2-30H 1L
Doc ID	1248149

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
2	5473-5475	7.5% acid= 750 gals ; 15% XLA =1300 gals	
2	5588-5590	7.5% acid= 750 gals ; 15% XLA =1800 gals	
2	5698-5700	7.5% acid= 750 gals ; 15% XLA =2800 gals	
2	5839-5841	7.5% acid= 750 gals ; 15% XLA =2800 gals	
2	5935-5937	7.5% acid= 750 gals ; 15% XLA =2100 gals	
2	6081-6083	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	6223-6225	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	6369-6371	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	6511-6513	7.5% acid= 750 gals ; 15% XLA =3900 gals	
2	6656-6658	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	6799-6801	7.5% acid= 750 gals ; 15% XLA =2000 gals	
2	6897-6899	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	7042-7044	7.5% acid= 750 gals ; 15% XLA =2000 gals	
2	7187-7189	7.5% acid= 750 gals ; 15% XLA =3900 gals	
2	7478-7480	7.5% acid= 750 gals ; 15% XLA =2000 gals	

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Richard 3206 2-30H 1L
Doc ID	1248149

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
2	7625-7627	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	7770-7772	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	7914-7916	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	8060-8062	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	8206-8208	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	8351-8353	7.5% acid= 750 gals ; 15% XLA =3300 gals	
2	8496-8498	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	8641-8643	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	8787-8789	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	8927-8929	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	9070-9072	7.5% acid= 750 gals ; 15% XLA =2900 gals	
2	9215-9217	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	9361-9363	7.5% acid= 750 gals ; 15% XLA =3000 gals	
2	9555-9557	7.5% acid= 1750 gals ; 15% XLA =3300 gals	



INVOICE

DATE	INVOICE #
9/16/2013	4216

BILL TO
SANDRIDGE ENERGY, INC. ATTN: PURCHASING MANAGER 123 ROBERT S. KERR AVENUE OKLAHOMA CITY, OK 73102

REMIT TO
EDGE SERVICES, INC. PO BOX 609 WOODWARD, OK 73802

COUNTY	STARTING D...	WORK ORDER	RIG NUMBER	LEASE NAME	Terms
HARPER, KS	9/17/2013	3280	HORIZON 15	RICHARD 3206 1-30	Due on rec...

Description

DRILLED 60' OF 30" CONDUCTOR HOLE
 DRILLED 6' OF 76" HOLE
 FURNISHED AND SET 6' X 6' TINHORN CELLAR
 FURNISHED 60' OF 20" CONDUCTOR PIPE
 FURNISHED WELDER AND MATERIALS
 FURNISHED 8 YARDS OF GRADE A CEMENT
 DRILL MOUSE HOLE
 FURNISHED 80' OF 14" CONDUCTOR PIPE FOR MOUSE HOLE

TOTAL BID \$ 16,000.00

Sales Tax (6.15%)	\$125.58
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TOTAL	\$16,125.58
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JOB SUMMARY			PROJECT NUMBER SOK 4611	TRIP DATE 12/11/14
COUNTY Harper	STATE Kansas	COMPANY Bridge Exploration & Produc	CUSTOMER REP JT Hunter	
LEASE NAME Richard 3206	Well No. 2-30H	JOB TYPE Surface	EMPLOYEE NAME Arthur Setzer	

EMP NAME	0				
Arthur Setzer					
Jared Green					
Tony Phillips					
Paul Thomas					

Form. Name _____ Type: _____

Packer Type _____ Set At _____ 0

Bottom Hole Temp. 80 Pressure _____

Retainer Depth _____ Total Depth 788'

Date	Called Out 12/11/2014	On Location 12/11/2014	Job Started 12/11/2014	Job Completed 12/11/2014
Time	0400	1200	2130	2400

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float Valve	0	IR
Centralizers	0	IR
Top Plug	0	IR
HEAD	0	IR
Limit clamp	0	IR
Weld-A	0	IR
Texas Pattern Guide Shoe	0	IR
Cement Basket	0	IR

	New/Used	Weight	Size	Grade	From	To	Max. Allow
Casing		36#	9 5/8"		Surface	788'	1,500
Liner							
Liner							
Tubing			0				
Drill Pipe							
Open Hole			12 1/4"		Surface	750	Shots/Ft.
Perforations							
Perforations							
Perforations							

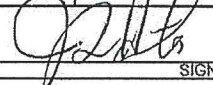
Materials			
Mud Type	WBM	Density	9 Lb/Gal
Disp. Fluid	Fresh Water	Density	8.33 Lb/Gal
Spacer type	Fresh Water	BBL	10 8.33
Spacer type		BBL	
Acid Type		Gal.	%
Acid Type		Gal.	%
Surfactant		Gal.	In
NE Agent		Gal.	In
Fluid Loss		Gal/Lb	In
Gelling Agent		Gal/Lb	In
Fric. Red.		Gal/Lb	In
MISC.		Gal/Lb	In
Perfpac Balls		Qty.	
Other			
Other			
Other			
Other			
Other			

Hours On Location		Operating Hours		Description of Job
Date	Hours	Date	Hours	
12/11	12.0	12/11	3.0	Surface
Total	12.0	Total	3.0	

MAX 1,500 PSI		AVG. 250	
Average Rates in BPM			
MAX 6 BPM		AVG 5	
Cement Left in Pipe			
Feet 46		Reason SHOE JOINT	

Cement Data						
Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	460	Premium Plus (Class C)	2% Calcium Chloride - 1/2% Cello-Flake	6.32	1.32	14.80
2	0	0	Displacement 57BBL	0.00	0.00	0.00
3	0	0		0	0.00	0.00

Summary							
Preflush		Type:		Preflush:	BBI	10.00	Type: Fresh Water
Breakdown		MAXIMUM	1,500 PSI	Load & Bkdn:	Gal - BBI	N/A	Pad:Bbl -Gal N/A
		Lost Returns-	NO/FULL	Excess /Return	BBI	45	Calc. Disp Bbl 57
		Actual TOC	SURFACE	Calc. TOC:		SURFACE	Actual Disp. 57.00
Average		Bump Plug PSI:	850	Final Circ.	PSI:	250	Disp:Bbl 57.00
5 Min.		10 Min		Cement Slurry	BBI	108.0	
		15 Min		Total Volume	BBI	175.00	

CUSTOMER REPRESENTATIVE _____ SIGNATURE 

JOB SUMMARY			PROJECT NUMBER SOK 4640	TICKET DATE 12/18/14
COUNTY Harper	STATE Kansas	COMPANY Sandridge Exploration & Production	CUSTOMER REP MARK TURNER	
LEASE NAME Richard 3206	Well No. 2-30H	JOB TYPE Intermediate	EMPLOYEE NAME LOUIS ARNEY	

EMP NAME Louis Arney					
Donnie Brown					
Flo Helkena					
Jacob Jackson					

Form. Name _____ Type: _____

Packer Type _____ Set At **0**

Bottom Hole Temp. **155** Pressure _____

Retainer Depth _____ Total Depth **5457**

Date	Called Out 12/18/2014	On Location 12/18/2014	Job Started 12/18/2014	Job Completed 12/18/2014
Time	2100	0530	1049	1330

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float Va	0	IR
Centralizers	0	IR
Top Plug	0	IR
HEAD	0	IR
Limit clamp	0	IR
Weld-A	0	IR
Texas Pattern Guide Shoe	0	IR
Cement Basket	0	IR

Well Data					
	New/Used	Weight	Size	Grade	From To
Casing		26#	7"		Surface
Liner					
Liner					
Tubing			0		
Drill Pipe					
Open Hole			8 1/2"		Surface 5,472
Perforations					Shots/Ft.
Perforations					
Perforations					

Materials			
Mud Type	WBM	Density	Lb/Gal
Disp. Fluid	Fresh Water	8.33	
Spacer type	Fresh Water BBL	20	8.33
Spacer type	Caustic BBL	10	8.40
Acid Type	Gal.		%
Acid Type	Gal.		%
Surfactant	Gal.		ln
NE Agent	Gal.		ln
Fluid Loss	Gal/Lb		ln
Gelling Agent	Gal/Lb		ln
Fric. Red.	Gal/Lb		ln
MISC.	Gal/Lb		ln

Hours On Location		Operating Hours		Description of Job
Date	Hours	Date	Hours	
12/18	8.0	12/18	1.7	Intermediate
Total	8.0	Total	1.7	

Perfpac Balls _____ Qty. _____

Other _____

Other _____

Other _____

Other _____

Pressures			
MAX	5,000 PSI	AVG	500
Average Rates in BPM			
MAX	8 BPM	AVG	3.5
Cement Left in Pipe			
Feet	79	Reason	SHOE JOINT

Cement Data						
Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	250	50/50 POZ PREMIUM	4% Gel - 0.2% FL-17 - 0.1% C-51 - 0.3% C-20 - 0.1% C-37 - 0.2% X-Air	6.93	1.43	13.60
2	100	Premium	0.2% FL-17 - 0.1% C-51 - 0.15% C-20 - 0.2% X-Air	5.19	1.19	15.60
3	0	0		0	0.00	0.00

Summary					
Preflush	10	Type: Caustic	Preflush: BBI	30.00	Type: Gel Spacer
Breakdown		MAXIMUM 5,000 PSI	Load & Bkdn: Gal - BBI	N/A	Pad:Bbl -Gal N/A
		Lost Returns-# NO/FULL	Excess /Return BBI	0	Calc.Disp Bbl 206
		Actual TOC	Calc. TOC:	3,300	Actual Disp. 200.00
Average		Bump Plug PSI: 1,450	Final Circ. PSI:	1,110	Disp:Bbl
ISIP	5 Min.	10 Min.	Cement Slurry BBI	89.0	
		15 Min.	Total Volume BBI	319.00	

CUSTOMER REPRESENTATIVE *Bobby Self* SIGNATURE



Weatherford[®]

Drilling Services

L1 Final Survey Report



Richard 3206 2-3H_L1

HARPER COUNTY, KS

WELL FILE: **10589521**

DEC 26, 2014

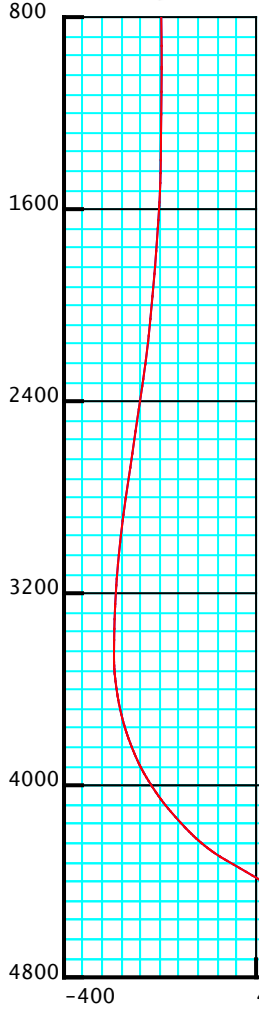
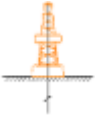
Weatherford
6525 N. Meridian Ste. #201
Oklahoma City, OK 73116
+1.405.773.1100 Main
+1.405.773.1200 Fax
www.weatherford.com



Weatherford

Richard 3206 2-30H L1
 Patterson 56
 Harper County, KS
 X= 2142870.00'
 Y= 203811.00'
 Plan 2 vs Actual

KB: 1431'
 GL: 1407'



Plan Data for Richard 3206 2-30H L1

Plan Point Information:
 DogLeg Severity Unit: °/100.00ft Position offsets from Site centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	VSec (USft)	DLS (DLSU)	Toolface (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5024.00	85.44	343.20	4469.95	738.14	53.12	732.42	0.90	0.0
5082.48	88.00	340.00	4473.30	793.53	34.69	788.99	7.00	308.6
5482.48	88.00	340.00	4487.26	1169.18	-102.03	1173.49	0.00	0.0
5704.64	91.12	318.00	4489.00	1358.41	-215.74	1370.40	10.00	277.9
5764.64	91.12	318.00	4487.83	1402.99	-255.88	1417.75	0.00	0.0
6420.69	90.35	318.00	4479.44	1890.48	-694.83	1935.52	0.12	180.0
7066.00	90.35	318.00	4475.49	2370.03	-1126.62	2444.85	0.00	0.0
8096.83	90.35	354.08	4468.98	3296.53	-1538.35	3398.53	3.50	89.9
9567.17	90.35	354.08	4460.00	4759.00	-1690.00	4868.12	0.00	0.0

Target Set Information:
 Name: Richard 3206 2-3H L1-T2

Name	TVD (USft)	Northing (USft)	Easting (USft)	Lat (°/'/'")	Long (°/'/'")
PBHL	4460.00	208570.00	2141180.00	37°14'18.5"	-98°0'54.2"

Plan Data for Richard 3206 2-30H L1

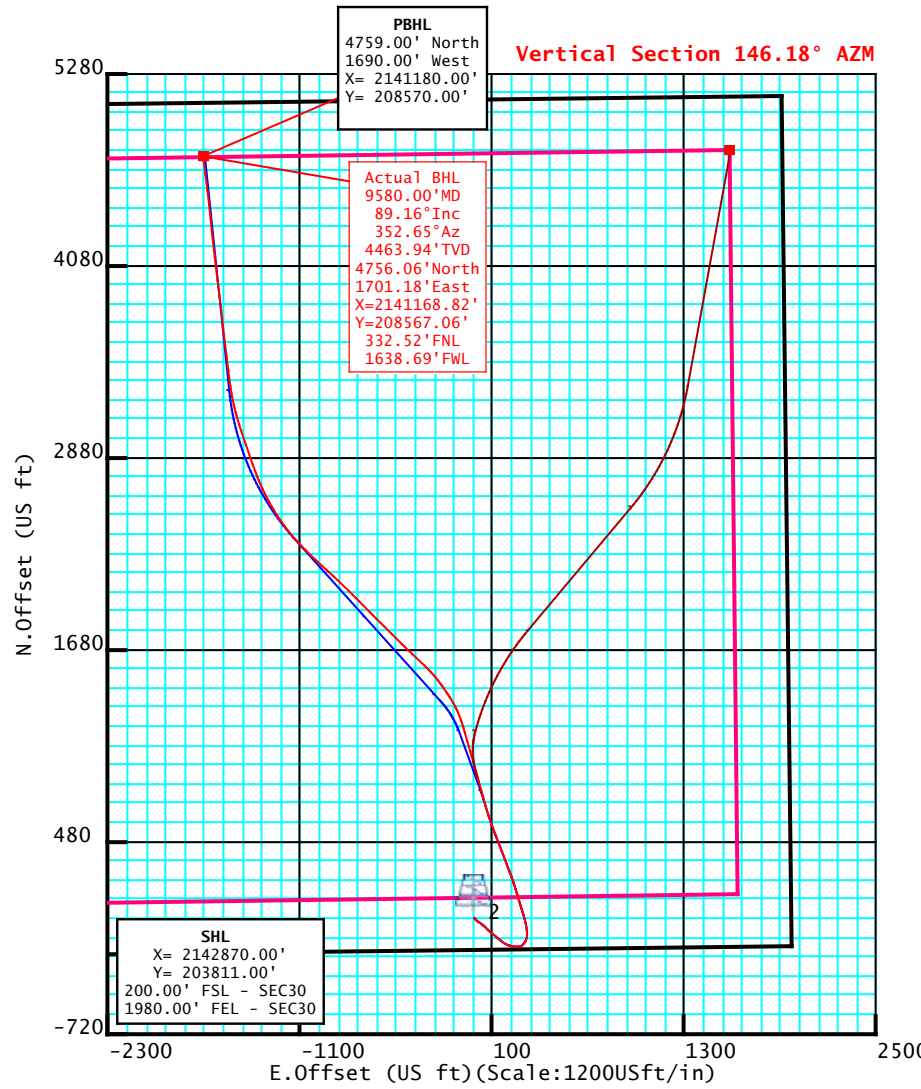
Field: SandRidge Energy - Harper County, KS S NAD 27 US FT
 Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
 Projected Coordinate System: NAD27 / Kansas South

Well: Richard 3206 2-30H L1
 Type: Main-Well
 File Number:
 Plan Folder: P1 Plan: P2:V1
 Vertical Section: Position offset of origin from Site centre:
 +N/-S: 0.00USft Azimuth: 355.88°
 +E/-W: 0.00USft

Magnetic Parameters:
 Model: Field Strength: Declination: Dip: Date:
 BGGM 51619(nT) 4.46° 65.32° 2014-11-22

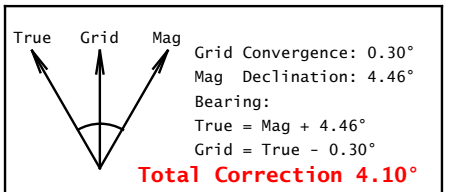
Proj to TD
 9580.00'MD
 89.16°Inc
 352.65°Az
 4463.94'TVD
 4756.06'North
 1701.18'East

Richard 3206 2-3H L1 ———
 Richard 3206 2-3H L2 ———
 Richard 3206 2-30H L1 Actual —



Proj to TD

Planned By: Lando Hiler Date: 11/24/2014
 Weatherford Drilling Services
 6525 N. Meridian Ste. #201
 Oklahoma City, OK 73116
 +1.405.773.1100 Main
 +1.405.773.1887 Fax



VS (US ft)(Bearing:355.88° Scale:800USft/in)

5D Survey Report**SandRidge Energy**

Field Name: *SandRidge Energy - Harper County, KS S NAD 27 US FT*
Site Name: *Richard 3206 2-30H*
Well Name: *Richard 3206 2-30H L1*
Survey: *Definitive Survey*

27 December 2014



Richard 3206 2-30H L1

Field Name SandRidge Energy - Harper County, KS S NAD 27 US FT	Map Units : US ft		Company Name : SandRidge Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD27 / Kansas South			
Site Name Richard 3206 2-30H	Comment :			
	Units : US ft	North Reference : Grid	Convergence Angle : 0.30	
	Position	Northing : 203811.00 US ft	Latitude : 37° 13' 31.35"	
		Easting : 2142870.00 US ft	Longitude : -98° 0' 33.61"	
	Site TVD Reference : GL			
Elevation above Mean Sea Level :1407.00 US ft				
Slot Name Richard 3206 2-30H	Comment :			
	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing :203811.00 US ft	Latitude : 37°13'31.35"	
	+E / -W : 0.00 US ft	Easting :2142870.00 US ft	Longitude : -98°0'33.61"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 1407.00 US ft				
Well Name Richard 3206 2-30H L1	Comment :			
	Type : Main well		UWI :	
	Rig Height <i>Drill Floor</i> : 24.00 US ft		Comment :	
	Relative to Mean Sea Level : 1431.00 US ft		Closure Azimuth : 340.319°	
	Closure Distance : 5051.15 US ft		Az :355.88°	
Vertical Section (Position of Origin Relative to Site)				
+N / -S : 0.00 US ft		+E / -W : 0.00 US ft		

5D Survey Report

Target Set

Name : Richard 3206 2-30H L1-T2 **Number of Targets :** 1

Comment :

TargetName:	Position (Relative to Site centre)		
PBHL	+N / -S : 4759.00US ft	Northing : 208570.00 US ft	Latitude : 37°14'18.49"
Shape:	+E / -W : -1690.00 US ft	Easting : 2141180.00US ft	Longitude : -98°0'54.20"
Cuboid	TVD (Drill Floor) : 4460.00 US ft SS : -3029.00 US ft		
Orientation	Azimuth : 0.00°	Inclination : 0.00°	
Dimensions	Length : 20.00 US ft	Breadth : 20.00 US ft	Height : 20.00 US ft

Survey Name :Definitive Survey

Date : 22/Nov/2014 **Survey Tool :** **Comment :** **Company :**

Magnetic Model

Model Name: BGGM **Date:** 22/Nov/2014 **Field Strength:** 51619.4 nT **Declination:** 4.46° **Dip:** 65.32°

Survey Tool Ranges

Name	Start MD (US ft)	End MD (US ft)	Source Survey
MWD	0.00	728.00	SRE Rig Svys
MWD	728.00	9580.00	WFT/MWD Svys

Well path created using minimum curvature

Survey Points (Relative to Site centre, TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2
410.00	0.50	310.75	409.99	1.17	-1.36	1.26	0.12	
728.00	1.00	310.75	727.97	3.88	-4.51	4.20	0.16	
920.00	0.84	310.75	919.94	5.90	-6.84	6.37	0.08	First WFT/MWD Svy
1016.00	0.35	182.02	1015.94	6.06	-7.39	6.58	1.14	
1111.00	0.53	167.11	1110.94	5.35	-7.30	5.86	0.22	
1205.00	0.66	155.52	1204.93	4.43	-6.98	4.92	0.19	
1300.00	0.64	153.00	1299.92	3.46	-6.51	3.92	0.04	
1396.00	0.55	160.01	1395.92	2.55	-6.11	2.98	0.12	
1491.00	2.28	140.55	1490.89	0.66	-4.75	1.00	1.86	
1586.00	4.57	132.00	1585.71	-3.33	-0.74	-3.27	2.46	
1681.00	6.12	127.98	1680.30	-8.98	6.07	-9.39	1.68	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Comment	
1776.00	6.20	125.26	1774.75	-15.06	14.25	-16.04	0.32		
1871.00	7.73	123.84	1869.04	-21.58	23.74	-23.23	1.62		
1966.00	8.15	127.60	1963.13	-29.25	34.38	-31.64	0.70		
2061.00	7.74	126.45	2057.22	-37.16	44.86	-40.28	0.46		
2156.00	8.82	132.03	2151.23	-45.83	55.42	-49.70	1.42		
2252.00	9.78	137.12	2245.97	-56.74	66.44	-61.36	1.32		
2346.00	11.13	133.86	2338.41	-68.87	78.41	-74.33	1.57		
2442.00	12.43	129.84	2432.39	-81.91	93.03	-88.38	1.60		
2537.00	11.94	129.06	2525.25	-94.66	108.51	-102.21	0.54		
2632.00	11.26	130.38	2618.30	-106.86	123.20	-115.43	0.77		
2728.00	12.84	129.07	2712.19	-119.65	138.63	-129.30	1.67		
2823.00	11.91	128.93	2804.98	-132.47	154.45	-143.22	0.98		
2918.00	10.56	128.14	2898.16	-144.00	168.92	-155.77	1.43		
3010.00	10.74	120.29	2988.58	-153.53	182.95	-166.28	1.59		
3102.00	11.61	112.47	3078.84	-161.40	198.91	-175.27	1.90		
3192.00	11.26	105.35	3167.05	-167.18	215.75	-182.25	1.61		
3284.00	11.06	99.49	3257.32	-171.02	233.12	-187.32	1.25		
3377.00	12.01	91.83	3348.44	-172.80	251.59	-190.42	1.94		
3472.00	10.15	87.86	3441.67	-172.80	269.84	-191.74	2.12		
3504.00	9.74	84.81	3473.19	-172.45	275.35	-191.79	2.09		
3536.00	9.60	70.40	3504.74	-171.31	280.56	-191.02	7.56		
3568.00	10.52	55.19	3536.25	-168.75	285.47	-188.82	8.76		
3599.00	11.44	48.37	3566.69	-165.09	290.10	-185.50	5.13		
3631.00	12.40	46.12	3598.00	-160.60	294.94	-181.37	3.33		
3663.00	13.55	43.09	3629.18	-155.48	299.98	-176.63	4.17		
3694.00	14.58	35.91	3659.25	-149.67	304.75	-171.17	6.53		
3725.00	15.35	32.27	3689.20	-143.04	309.23	-164.88	3.92		
3757.00	16.61	26.14	3719.96	-135.35	313.51	-157.52	6.58		
3788.00	17.72	19.25	3749.59	-126.91	317.02	-149.36	7.47		
3820.00	18.83	11.83	3779.98	-117.26	319.68	-139.93	8.05		
3852.00	20.44	5.91	3810.12	-106.65	321.31	-129.46	7.99		
3884.00	21.53	0.85	3840.00	-95.22	321.98	-118.10	6.61		
3915.00	22.84	357.01	3868.70	-83.52	321.75	-106.42	6.30		
3947.00	24.76	353.80	3897.98	-70.65	320.70	-93.51	7.24		
3978.00	27.42	351.19	3925.82	-57.14	318.90	-79.91	9.34		
4010.00	30.28	349.62	3953.85	-41.92	316.32	-64.54	9.25		
4042.00	31.95	347.24	3981.24	-25.73	313.00	-48.15	6.48		
4074.00	33.56	345.14	4008.16	-8.92	308.86	-31.09	6.16		
4106.00	34.98	344.09	4034.60	8.45	304.08	-13.42	4.81		
4138.00	37.39	343.53	4060.43	26.59	298.81	5.06	7.60		
4170.00	39.52	343.23	4085.48	45.66	293.11	24.48	6.68		

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Comment	
4201.00	41.54	342.79	4109.04	64.93	287.23	44.12	6.58		
4233.00	42.40	342.74	4132.84	85.36	280.89	64.96	2.69		
4265.00	43.28	342.65	4156.30	106.14	274.41	86.15	2.76		
4297.00	44.52	343.33	4179.36	127.36	267.92	107.78	4.15		
4329.00	46.22	343.55	4201.84	149.18	261.43	130.01	5.33		
4360.00	48.46	343.12	4222.84	171.02	254.89	152.27	7.30		
4392.00	51.01	342.48	4243.52	194.34	247.67	176.05	8.11		
4424.00	53.37	342.16	4263.14	218.43	239.99	200.62	7.42		
4456.00	56.27	341.12	4281.57	243.25	231.75	225.97	9.44		
4488.00	59.58	339.84	4298.57	268.80	222.69	252.11	10.88		
4520.00	61.17	339.16	4314.38	294.85	212.95	278.79	5.30		
4552.00	61.18	339.20	4329.81	321.06	202.98	305.64	0.11		
4583.00	60.88	339.29	4344.83	346.42	193.37	331.63	1.00		
4615.00	60.63	339.26	4360.46	372.53	183.49	358.39	0.79		
4647.00	60.54	339.28	4376.18	398.60	173.62	385.10	0.29		
4678.00	61.12	338.82	4391.29	423.88	163.94	411.01	2.28		
4709.00	63.95	338.12	4405.58	449.46	153.85	437.25	9.35		
4741.00	66.78	338.80	4418.92	476.52	143.17	465.00	9.05		
4773.00	70.10	339.05	4430.68	504.29	132.47	493.46	10.40		
4805.00	73.92	339.12	4440.56	532.71	121.61	522.60	11.94		
4837.00	77.31	339.88	4448.51	561.74	110.76	552.33	10.84		
4869.00	80.94	340.30	4454.54	591.28	100.06	582.57	11.42		
4900.00	84.05	340.76	4458.59	620.26	89.82	612.20	10.14		
4931.00	84.19	342.35	4461.77	649.51	80.06	642.08	5.12		
4963.00	84.89	343.20	4464.81	679.93	70.63	673.10	3.43		
4994.00	85.80	344.16	4467.33	709.59	61.95	703.30	4.26		
5026.00	87.69	344.61	4469.15	740.35	53.35	734.61	6.07		
5057.00	89.02	344.43	4470.04	770.22	45.08	764.99	4.33		
5089.00	88.39	344.59	4470.76	801.05	36.53	796.35	2.03		
5121.00	88.46	344.94	4471.64	831.91	28.13	827.74	1.12		
5153.00	88.74	344.69	4472.42	862.78	19.75	859.13	1.17		
5185.00	89.02	344.45	4473.05	893.62	11.23	890.51	1.15		
5216.00	87.97	344.05	4473.86	923.45	2.82	920.86	3.62		
5248.00	87.34	343.74	4475.17	954.17	-6.05	952.14	2.19		
5280.00	87.34	343.63	4476.65	984.84	-15.03	983.38	0.34		
5312.00	87.69	343.67	4478.04	1015.52	-24.03	1014.62	1.10		
5344.00	87.97	343.78	4479.25	1046.22	-32.99	1045.88	0.94		
5375.00	88.39	343.93	4480.24	1075.98	-41.60	1076.19	1.44		
5411.00	88.95	343.96	4481.07	1110.57	-51.56	1111.40	1.56		
5467.00	89.58	344.44	4481.79	1164.45	-66.80	1166.24	1.41		
5499.00	90.14	343.59	4481.87	1195.21	-75.61	1197.55	3.18		

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)								
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Comment
5530.00	91.40	341.66	4481.45	1224.79	-84.87	1227.72	7.43	
5561.00	91.68	339.29	4480.62	1253.99	-95.23	1257.59	7.70	
5592.00	92.24	337.78	4479.56	1282.83	-106.56	1287.17	5.19	
5624.00	91.12	334.74	4478.62	1312.10	-119.44	1317.29	10.12	
5655.00	90.28	331.57	4478.24	1339.75	-133.44	1345.88	10.58	
5686.00	89.86	328.70	4478.20	1366.63	-148.87	1373.80	9.36	
5717.00	90.07	326.28	4478.22	1392.77	-165.53	1401.07	7.84	
5749.00	91.26	325.21	4477.85	1419.22	-183.54	1428.74	5.00	
5781.00	91.89	325.73	4476.97	1445.57	-201.67	1456.33	2.55	
5844.00	91.54	321.57	4475.09	1496.28	-238.99	1509.58	6.62	
5875.00	89.86	318.94	4474.71	1520.11	-258.81	1534.78	10.07	
5969.00	87.06	313.52	4477.24	1587.94	-323.77	1607.09	6.49	
6063.00	87.20	313.36	4481.94	1652.49	-391.94	1676.38	0.23	
6157.00	89.65	314.55	4484.53	1717.70	-459.58	1746.28	2.90	
6251.00	90.70	314.94	4484.24	1783.87	-526.34	1817.08	1.19	
6345.00	89.16	314.70	4484.35	1850.13	-593.02	1887.96	1.66	
6439.00	91.89	315.06	4483.49	1916.45	-659.61	1958.89	2.93	
6533.00	92.17	315.83	4480.16	1983.39	-725.52	2030.39	0.87	
6626.00	89.58	314.22	4478.74	2049.16	-791.24	2100.72	3.28	
6720.00	89.65	313.87	4479.37	2114.51	-858.80	2170.75	0.38	
6815.00	88.88	311.68	4480.59	2179.02	-928.53	2240.10	2.44	
6910.00	90.56	313.17	4481.06	2243.10	-998.64	2309.06	2.36	
7005.00	90.07	315.43	4480.53	2309.45	-1066.63	2380.11	2.43	
7100.00	89.09	318.41	4481.23	2378.83	-1131.51	2453.97	3.30	
7195.00	89.16	323.21	4482.68	2452.43	-1191.51	2531.69	5.05	
7290.00	90.49	328.07	4482.97	2530.82	-1245.11	2613.74	5.30	
7385.00	89.44	331.26	4483.03	2612.81	-1293.09	2698.96	3.54	
7479.00	91.12	335.54	4482.57	2696.83	-1335.16	2785.79	4.89	
7574.00	91.75	339.46	4480.19	2784.56	-1371.50	2875.90	4.18	
7669.00	90.84	340.73	4478.04	2873.85	-1403.83	2967.29	1.64	
7764.00	90.35	341.10	4477.06	2963.63	-1434.89	3059.06	0.65	
7859.00	90.21	341.61	4476.59	3053.64	-1465.27	3151.02	0.56	
7954.00	91.26	344.37	4475.37	3144.47	-1493.05	3243.61	3.11	
8049.00	91.19	348.23	4473.34	3236.73	-1515.54	3337.25	4.06	
8144.00	90.35	351.75	4472.07	3330.26	-1532.05	3431.72	3.81	
8239.00	91.19	353.40	4470.79	3424.45	-1544.33	3526.55	1.95	
8334.00	90.98	352.96	4468.99	3518.76	-1555.60	3621.43	0.51	
8429.00	89.86	352.38	4468.29	3612.98	-1567.72	3716.27	1.33	
8524.00	90.28	354.65	4468.18	3707.36	-1578.45	3811.19	2.43	
8619.00	90.84	352.80	4467.25	3801.78	-1588.84	3906.11	2.03	
8714.00	90.56	352.95	4466.09	3896.04	-1600.62	4000.97	0.33	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)								
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Comment
8808.00	89.58	353.02	4465.97	3989.34	-1612.10	4094.85	1.05	
8903.00	88.88	353.68	4467.25	4083.69	-1623.10	4189.75	1.01	
8998.00	90.35	352.92	4467.89	4178.03	-1634.18	4284.65	1.74	
9093.00	91.61	354.14	4466.26	4272.41	-1644.89	4379.55	1.85	
9188.00	91.05	354.10	4464.06	4366.89	-1654.61	4474.48	0.59	
9283.00	90.77	353.80	4462.55	4461.35	-1664.63	4569.41	0.43	
9378.00	90.14	352.95	4461.80	4555.71	-1675.59	4664.32	1.11	
9473.00	89.16	352.65	4462.38	4649.95	-1687.49	4759.18	1.08	Last WFT/MWD Svy
9580.00	89.16	352.65	4463.94	4756.06	-1701.18	4866.00	0.00	Proj to TD

5D Survey Report**SandRidge Energy**

Field Name: *SandRidge Energy - Harper County, KS S NAD 27 US FT*
Site Name: *Richard 3206 2-30H*
Well Name: *Richard 3206 2-30H L1*
Survey: *Definitive Survey(Geographic)*

27 December 2014



Richard 3206 2-30H L1

Field Name SandRidge Energy - Harper County, KS S NAD 27 US FT	Map Units : US ft		Company Name : SandRidge Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD27 / Kansas South			
Site Name Richard 3206 2-30H	Units : US ft		North Reference : Grid	
	Position		Convergence Angle : 0.30	
	Northing : 203811.00 US ft		Latitude : 37° 13' 31.35"	
	Easting : 2142870.00 US ft		Longitude : -98° 0' 33.61"	
	Site TVD Reference : GL			
Slot Name Richard 3206 2-30H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft		Northing : 203811.00 US ft	
	+E / -W : 0.00 US ft		Easting : 2142870.00 US ft	
	Slot TVD Reference : Ground Elevation		Latitude : 37°13'31.35"	
	Elevation above Mean Sea Level : 1407.00 US ft		Longitude : -98°0'33.61"	
Well Name Richard 3206 2-30H L1	Type : Main well		UWI :	
	Rig Height Drill Floor : 24.00 US ft		Comment :	
	Relative to Mean Sea Level : 1431.00 US ft		Closure Azimuth : 340.319°	
	Closure Distance : 5051.15 US ft		+E / -W : 0.00 US ft	
	Vertical Section (Position of Origin Relative to Site)		Az : 355.88°	
	+N / -S : 0.00 US ft			

5D Survey Report

Target Set**Name :** Richard 3206 2-30H L1-T2**Number of Targets :** 1**Comment :**

TargetName:	Position (Relative to Site centre)		
PBHL	+N / -S : 4759.00US ft	Northing : 208570.00 US ft	Latitude : 37°14'18.49"
Shape:	+E / -W : -1690.00 US ft	Easting : 2141180.00US ft	Longitude : -98°0'54.20"
Cuboid	TVD (Drill Floor) : 4460.00 US ft		
	SS : -3029.00 US ft		
Orientation	Azimuth : 0.00°	Inclination : 0.00°	
Dimensions	Length : 20.00 US ft	Breadth : 20.00 US ft	Height : 20.00 US ft

Survey Name :Definitive Survey**Date :** 22/Nov/2014**Survey Tool :****Comment :****Company :****Magnetic Model****Model Name:** BGGM**Date:** 22/Nov/2014**Field Strength:** 51619.4 nT**Declination:** 4.46°**Dip:** 65.32°**Survey Tool Ranges**

Name	Start MD (US ft)	End MD (US ft)	Source Survey
MWD	0.00	728.00	SRE Rig Svys
MWD	728.00	9580.00	WFT/MWD Svys

Well path created using minimum curvature

Survey Points (Relative to Site centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Latitude (° ' ")	Longitude (° ' ")	
0.00	0.00	0.00	0.00	0.00	0.00	203811.00	2142870.00	37°13'31.35"	-98°0'33.61"	
410.00	0.50	310.75	409.99	1.17	-1.36	203812.17	2142868.64	37°13'31.36"	-98°0'33.62"	
728.00	1.00	310.75	727.97	3.88	-4.51	203814.88	2142865.49	37°13'31.39"	-98°0'33.66"	
920.00	0.84	310.75	919.94	5.90	-6.84	203816.90	2142863.16	37°13'31.41"	-98°0'33.69"	
1016.00	0.35	182.02	1015.94	6.06	-7.39	203817.06	2142862.61	37°13'31.41"	-98°0'33.70"	
1111.00	0.53	167.11	1110.94	5.35	-7.30	203816.35	2142862.70	37°13'31.40"	-98°0'33.70"	
1205.00	0.66	155.52	1204.93	4.43	-6.98	203815.43	2142863.02	37°13'31.39"	-98°0'33.69"	
1300.00	0.64	153.00	1299.92	3.46	-6.51	203814.46	2142863.49	37°13'31.38"	-98°0'33.69"	
1396.00	0.55	160.01	1395.92	2.55	-6.11	203813.55	2142863.89	37°13'31.37"	-98°0'33.68"	
1491.00	2.28	140.55	1490.89	0.66	-4.75	203811.66	2142865.25	37°13'31.35"	-98°0'33.67"	
1586.00	4.57	132.00	1585.71	-3.33	-0.74	203807.67	2142869.26	37°13'31.31"	-98°0'33.62"	
1681.00	6.12	127.98	1680.30	-8.98	6.07	203802.02	2142876.07	37°13'31.26"	-98°0'33.53"	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Latitude (° ' ")	Longitude (° ' ")	
1776.00	6.20	125.26	1774.75	-15.06	14.25	203795.94	2142884.25	37°13'31.20"	-98°0'33.43"	
1871.00	7.73	123.84	1869.04	-21.58	23.74	203789.42	2142893.74	37°13'31.13"	-98°0'33.32"	
1966.00	8.15	127.60	1963.13	-29.25	34.38	203781.75	2142904.38	37°13'31.06"	-98°0'33.18"	
2061.00	7.74	126.45	2057.22	-37.16	44.86	203773.84	2142914.86	37°13'30.98"	-98°0'33.06"	
2156.00	8.82	132.03	2151.23	-45.83	55.42	203765.17	2142925.42	37°13'30.89"	-98°0'32.93"	
2252.00	9.78	137.12	2245.97	-56.74	66.44	203754.26	2142936.44	37°13'30.78"	-98°0'32.79"	
2346.00	11.13	133.86	2338.41	-68.87	78.41	203742.13	2142948.41	37°13'30.66"	-98°0'32.64"	
2442.00	12.43	129.84	2432.39	-81.91	93.03	203729.09	2142963.03	37°13'30.53"	-98°0'32.46"	
2537.00	11.94	129.06	2525.25	-94.66	108.51	203716.34	2142978.51	37°13'30.41"	-98°0'32.27"	
2632.00	11.26	130.38	2618.30	-106.86	123.20	203704.14	2142993.20	37°13'30.28"	-98°0'32.09"	
2728.00	12.84	129.07	2712.19	-119.65	138.63	203691.35	2143008.63	37°13'30.16"	-98°0'31.90"	
2823.00	11.91	128.93	2804.98	-132.47	154.45	203678.53	2143024.45	37°13'30.03"	-98°0'31.71"	
2918.00	10.56	128.14	2898.16	-144.00	168.92	203667.00	2143038.92	37°13'29.91"	-98°0'31.53"	
3010.00	10.74	120.29	2988.58	-153.53	182.95	203657.47	2143052.95	37°13'29.82"	-98°0'31.36"	
3102.00	11.61	112.47	3078.84	-161.40	198.91	203649.60	2143068.91	37°13'29.74"	-98°0'31.16"	
3192.00	11.26	105.35	3167.05	-167.18	215.75	203643.82	2143085.75	37°13'29.68"	-98°0'30.95"	
3284.00	11.06	99.49	3257.32	-171.02	233.12	203639.98	2143103.12	37°13'29.64"	-98°0'30.74"	
3377.00	12.01	91.83	3348.44	-172.80	251.59	203638.20	2143121.59	37°13'29.63"	-98°0'30.51"	
3472.00	10.15	87.86	3441.67	-172.80	269.84	203638.20	2143139.84	37°13'29.62"	-98°0'30.28"	
3504.00	9.74	84.81	3473.19	-172.45	275.35	203638.55	2143145.35	37°13'29.63"	-98°0'30.21"	
3536.00	9.60	70.40	3504.74	-171.31	280.56	203639.69	2143150.56	37°13'29.64"	-98°0'30.15"	
3568.00	10.52	55.19	3536.25	-168.75	285.47	203642.25	2143155.47	37°13'29.66"	-98°0'30.09"	
3599.00	11.44	48.37	3566.69	-165.09	290.10	203645.91	2143160.10	37°13'29.70"	-98°0'30.03"	
3631.00	12.40	46.12	3598.00	-160.60	294.94	203650.40	2143164.94	37°13'29.74"	-98°0'29.97"	
3663.00	13.55	43.09	3629.18	-155.48	299.98	203655.52	2143169.98	37°13'29.79"	-98°0'29.91"	
3694.00	14.58	35.91	3659.25	-149.67	304.75	203661.33	2143174.75	37°13'29.85"	-98°0'29.85"	
3725.00	15.35	32.27	3689.20	-143.04	309.23	203667.96	2143179.23	37°13'29.92"	-98°0'29.79"	
3757.00	16.61	26.14	3719.96	-135.35	313.51	203675.65	2143183.51	37°13'29.99"	-98°0'29.74"	
3788.00	17.72	19.25	3749.59	-126.91	317.02	203684.09	2143187.02	37°13'30.08"	-98°0'29.70"	
3820.00	18.83	11.83	3779.98	-117.26	319.68	203693.74	2143189.68	37°13'30.17"	-98°0'29.66"	
3852.00	20.44	5.91	3810.12	-106.65	321.31	203704.35	2143191.31	37°13'30.28"	-98°0'29.64"	
3884.00	21.53	0.85	3840.00	-95.22	321.98	203715.78	2143191.98	37°13'30.39"	-98°0'29.63"	
3915.00	22.84	357.01	3868.70	-83.52	321.75	203727.48	2143191.75	37°13'30.50"	-98°0'29.64"	
3947.00	24.76	353.80	3897.98	-70.65	320.70	203740.35	2143190.70	37°13'30.63"	-98°0'29.65"	
3978.00	27.42	351.19	3925.82	-57.14	318.90	203753.86	2143188.90	37°13'30.77"	-98°0'29.67"	
4010.00	30.28	349.62	3953.85	-41.92	316.32	203769.08	2143186.32	37°13'30.92"	-98°0'29.70"	
4042.00	31.95	347.24	3981.24	-25.73	313.00	203785.27	2143183.00	37°13'31.08"	-98°0'29.74"	
4074.00	33.56	345.14	4008.16	-8.92	308.86	203802.08	2143178.86	37°13'31.24"	-98°0'29.79"	
4106.00	34.98	344.09	4034.60	8.45	304.08	203819.45	2143174.08	37°13'31.41"	-98°0'29.85"	
4138.00	37.39	343.53	4060.43	26.59	298.81	203837.59	2143168.81	37°13'31.59"	-98°0'29.91"	
4170.00	39.52	343.23	4085.48	45.66	293.11	203856.66	2143163.11	37°13'31.78"	-98°0'29.98"	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Latitude (° ' ")	Longitude (° ' ")	
4201.00	41.54	342.79	4109.04	64.93	287.23	203875.93	2143157.23	37°13'31.97"	-98°0'30.05"	
4233.00	42.40	342.74	4132.84	85.36	280.89	203896.36	2143150.89	37°13'32.18"	-98°0'30.13"	
4265.00	43.28	342.65	4156.30	106.14	274.41	203917.14	2143144.41	37°13'32.38"	-98°0'30.21"	
4297.00	44.52	343.33	4179.36	127.36	267.92	203938.36	2143137.92	37°13'32.59"	-98°0'30.29"	
4329.00	46.22	343.55	4201.84	149.18	261.43	203960.18	2143131.43	37°13'32.81"	-98°0'30.37"	
4360.00	48.46	343.12	4222.84	171.02	254.89	203982.02	2143124.89	37°13'33.02"	-98°0'30.45"	
4392.00	51.01	342.48	4243.52	194.34	247.67	204005.34	2143117.67	37°13'33.26"	-98°0'30.53"	
4424.00	53.37	342.16	4263.14	218.43	239.99	204029.43	2143109.99	37°13'33.49"	-98°0'30.63"	
4456.00	56.27	341.12	4281.57	243.25	231.75	204054.25	2143101.75	37°13'33.74"	-98°0'30.73"	
4488.00	59.58	339.84	4298.57	268.80	222.69	204079.80	2143092.69	37°13'33.99"	-98°0'30.84"	
4520.00	61.17	339.16	4314.38	294.85	212.95	204105.85	2143082.95	37°13'34.25"	-98°0'30.96"	
4552.00	61.18	339.20	4329.81	321.06	202.98	204132.06	2143072.98	37°13'34.51"	-98°0'31.08"	
4583.00	60.88	339.29	4344.83	346.42	193.37	204157.42	2143063.37	37°13'34.76"	-98°0'31.19"	
4615.00	60.63	339.26	4360.46	372.53	183.49	204183.53	2143053.49	37°13'35.02"	-98°0'31.31"	
4647.00	60.54	339.28	4376.18	398.60	173.62	204209.60	2143043.62	37°13'35.28"	-98°0'31.44"	
4678.00	61.12	338.82	4391.29	423.88	163.94	204234.88	2143033.94	37°13'35.53"	-98°0'31.55"	
4709.00	63.95	338.12	4405.58	449.46	153.85	204260.46	2143023.85	37°13'35.78"	-98°0'31.68"	
4741.00	66.78	338.80	4418.92	476.52	143.17	204287.52	2143013.17	37°13'36.05"	-98°0'31.81"	
4773.00	70.10	339.05	4430.68	504.29	132.47	204315.29	2143002.47	37°13'36.33"	-98°0'31.94"	
4805.00	73.92	339.12	4440.56	532.71	121.61	204343.71	2142991.61	37°13'36.61"	-98°0'32.07"	
4837.00	77.31	339.88	4448.51	561.74	110.76	204372.74	2142980.76	37°13'36.90"	-98°0'32.20"	
4869.00	80.94	340.30	4454.54	591.28	100.06	204402.28	2142970.06	37°13'37.19"	-98°0'32.33"	
4900.00	84.05	340.76	4458.59	620.26	89.82	204431.26	2142959.82	37°13'37.48"	-98°0'32.46"	
4931.00	84.19	342.35	4461.77	649.51	80.06	204460.51	2142950.06	37°13'37.76"	-98°0'32.58"	
4963.00	84.89	343.20	4464.81	679.93	70.63	204490.93	2142940.63	37°13'38.07"	-98°0'32.69"	
4994.00	85.80	344.16	4467.33	709.59	61.95	204520.59	2142931.95	37°13'38.36"	-98°0'32.80"	
5026.00	87.69	344.61	4469.15	740.35	53.35	204551.35	2142923.35	37°13'38.66"	-98°0'32.90"	
5057.00	89.02	344.43	4470.04	770.22	45.08	204581.22	2142915.08	37°13'38.96"	-98°0'33.00"	
5089.00	88.39	344.59	4470.76	801.05	36.53	204612.05	2142906.53	37°13'39.27"	-98°0'33.10"	
5121.00	88.46	344.94	4471.64	831.91	28.13	204642.91	2142898.13	37°13'39.57"	-98°0'33.21"	
5153.00	88.74	344.69	4472.42	862.78	19.75	204673.78	2142889.75	37°13'39.88"	-98°0'33.31"	
5185.00	89.02	344.45	4473.05	893.62	11.23	204704.62	2142881.23	37°13'40.18"	-98°0'33.41"	
5216.00	87.97	344.05	4473.86	923.45	2.82	204734.45	2142872.82	37°13'40.48"	-98°0'33.51"	
5248.00	87.34	343.74	4475.17	954.17	-6.05	204765.17	2142863.95	37°13'40.78"	-98°0'33.62"	
5280.00	87.34	343.63	4476.65	984.84	-15.03	204795.84	2142854.97	37°13'41.09"	-98°0'33.73"	
5312.00	87.69	343.67	4478.04	1015.52	-24.03	204826.52	2142845.97	37°13'41.39"	-98°0'33.84"	
5344.00	87.97	343.78	4479.25	1046.22	-32.99	204857.22	2142837.01	37°13'41.69"	-98°0'33.95"	
5375.00	88.39	343.93	4480.24	1075.98	-41.60	204886.98	2142828.40	37°13'41.99"	-98°0'34.05"	
5411.00	88.95	343.96	4481.07	1110.57	-51.56	204921.57	2142818.44	37°13'42.33"	-98°0'34.17"	
5467.00	89.58	344.44	4481.79	1164.45	-66.80	204975.45	2142803.20	37°13'42.86"	-98°0'34.36"	
5499.00	90.14	343.59	4481.87	1195.21	-75.61	205006.21	2142794.39	37°13'43.17"	-98°0'34.46"	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Latitude (° ' ")	Longitude (° ' ")	
5530.00	91.40	341.66	4481.45	1224.79	-84.87	205035.79	2142785.13	37°13'43.46"	-98°0'34.58"	
5561.00	91.68	339.29	4480.62	1253.99	-95.23	205064.99	2142774.77	37°13'43.75"	-98°0'34.70"	
5592.00	92.24	337.78	4479.56	1282.83	-106.56	205093.83	2142763.44	37°13'44.04"	-98°0'34.84"	
5624.00	91.12	334.74	4478.62	1312.10	-119.44	205123.10	2142750.56	37°13'44.33"	-98°0'35.00"	
5655.00	90.28	331.57	4478.24	1339.75	-133.44	205150.75	2142736.56	37°13'44.60"	-98°0'35.17"	
5686.00	89.86	328.70	4478.20	1366.63	-148.87	205177.63	2142721.13	37°13'44.87"	-98°0'35.36"	
5717.00	90.07	326.28	4478.22	1392.77	-165.53	205203.77	2142704.47	37°13'45.13"	-98°0'35.56"	
5749.00	91.26	325.21	4477.85	1419.22	-183.54	205230.22	2142686.46	37°13'45.39"	-98°0'35.78"	
5781.00	91.89	325.73	4476.97	1445.57	-201.67	205256.57	2142668.33	37°13'45.65"	-98°0'36.01"	
5844.00	91.54	321.57	4475.09	1496.28	-238.99	205307.28	2142631.01	37°13'46.15"	-98°0'36.47"	
5875.00	89.86	318.94	4474.71	1520.11	-258.81	205331.11	2142611.19	37°13'46.39"	-98°0'36.71"	
5969.00	87.06	313.52	4477.24	1587.94	-323.77	205398.94	2142546.23	37°13'47.06"	-98°0'37.51"	
6063.00	87.20	313.36	4481.94	1652.49	-391.94	205463.49	2142478.06	37°13'47.71"	-98°0'38.35"	
6157.00	89.65	314.55	4484.53	1717.70	-459.58	205528.70	2142410.42	37°13'48.35"	-98°0'39.18"	
6251.00	90.70	314.94	4484.24	1783.87	-526.34	205594.87	2142343.66	37°13'49.01"	-98°0'40.00"	
6345.00	89.16	314.70	4484.35	1850.13	-593.02	205661.13	2142276.98	37°13'49.67"	-98°0'40.82"	
6439.00	91.89	315.06	4483.49	1916.45	-659.61	205727.45	2142210.39	37°13'50.33"	-98°0'41.64"	
6533.00	92.17	315.83	4480.16	1983.39	-725.52	205794.39	2142144.48	37°13'50.99"	-98°0'42.45"	
6626.00	89.58	314.22	4478.74	2049.16	-791.24	205860.16	2142078.76	37°13'51.65"	-98°0'43.26"	
6720.00	89.65	313.87	4479.37	2114.51	-858.80	205925.51	2142011.20	37°13'52.30"	-98°0'44.09"	
6815.00	88.88	311.68	4480.59	2179.02	-928.53	205990.02	2141941.47	37°13'52.94"	-98°0'44.95"	
6910.00	90.56	313.17	4481.06	2243.10	-998.64	206054.10	2141871.36	37°13'53.58"	-98°0'45.81"	
7005.00	90.07	315.43	4480.53	2309.45	-1066.63	206120.45	2141803.37	37°13'54.24"	-98°0'46.65"	
7100.00	89.09	318.41	4481.23	2378.83	-1131.51	206189.83	2141738.49	37°13'54.93"	-98°0'47.44"	
7195.00	89.16	323.21	4482.68	2452.43	-1191.51	206263.43	2141678.49	37°13'55.66"	-98°0'48.18"	
7290.00	90.49	328.07	4482.97	2530.82	-1245.11	206341.82	2141624.89	37°13'56.43"	-98°0'48.84"	
7385.00	89.44	331.26	4483.03	2612.81	-1293.09	206423.81	2141576.91	37°13'57.25"	-98°0'49.43"	
7479.00	91.12	335.54	4482.57	2696.83	-1335.16	206507.83	2141534.84	37°13'58.08"	-98°0'49.94"	
7574.00	91.75	339.46	4480.19	2784.56	-1371.50	206595.56	2141498.50	37°13'58.95"	-98°0'50.38"	
7669.00	90.84	340.73	4478.04	2873.85	-1403.83	206684.85	2141466.17	37°13'59.83"	-98°0'50.78"	
7764.00	90.35	341.10	4477.06	2963.63	-1434.89	206774.63	2141435.11	37°14'0.72"	-98°0'51.16"	
7859.00	90.21	341.61	4476.59	3053.64	-1465.27	206864.64	2141404.73	37°14'1.61"	-98°0'51.53"	
7954.00	91.26	344.37	4475.37	3144.47	-1493.05	206955.47	2141376.95	37°14'2.51"	-98°0'51.86"	
8049.00	91.19	348.23	4473.34	3236.73	-1515.54	207047.73	2141354.46	37°14'3.43"	-98°0'52.14"	
8144.00	90.35	351.75	4472.07	3330.26	-1532.05	207141.26	2141337.95	37°14'4.35"	-98°0'52.33"	
8239.00	91.19	353.40	4470.79	3424.45	-1544.33	207235.45	2141325.67	37°14'5.28"	-98°0'52.48"	
8334.00	90.98	352.96	4468.99	3518.76	-1555.60	207329.76	2141314.40	37°14'6.22"	-98°0'52.61"	
8429.00	89.86	352.38	4468.29	3612.98	-1567.72	207423.98	2141302.28	37°14'7.15"	-98°0'52.76"	
8524.00	90.28	354.65	4468.18	3707.36	-1578.45	207518.36	2141291.55	37°14'8.08"	-98°0'52.88"	
8619.00	90.84	352.80	4467.25	3801.78	-1588.84	207612.78	2141281.16	37°14'9.02"	-98°0'53.01"	
8714.00	90.56	352.95	4466.09	3896.04	-1600.62	207707.04	2141269.38	37°14'9.95"	-98°0'53.15"	

5D Survey Report

Survey Points (Relative to Site centre, TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Latitude (° ' ")	Longitude (° ' ")		
8808.00	89.58	353.02	4465.97	3989.34	-1612.10	207800.34	2141257.90	37°14'10.87"	-98°0'53.28"		
8903.00	88.88	353.68	4467.25	4083.69	-1623.10	207894.69	2141246.90	37°14'11.81"	-98°0'53.41"		
8998.00	90.35	352.92	4467.89	4178.03	-1634.18	207989.03	2141235.82	37°14'12.74"	-98°0'53.54"		
9093.00	91.61	354.14	4466.26	4272.41	-1644.89	208083.41	2141225.11	37°14'13.67"	-98°0'53.67"		
9188.00	91.05	354.10	4464.06	4366.89	-1654.61	208177.89	2141215.39	37°14'14.61"	-98°0'53.78"		
9283.00	90.77	353.80	4462.55	4461.35	-1664.63	208272.35	2141205.37	37°14'15.54"	-98°0'53.90"		
9378.00	90.14	352.95	4461.80	4555.71	-1675.59	208366.71	2141194.41	37°14'16.48"	-98°0'54.03"		
9473.00	89.16	352.65	4462.38	4649.95	-1687.49	208460.95	2141182.51	37°14'17.41"	-98°0'54.17"		
9580.00	89.16	352.65	4463.94	4756.06	-1701.18	208567.06	2141168.82	37°14'18.46"	-98°0'54.33"		

Section 24
32S 7W

Section 19
32S 6W

1398' FWL

412' FNL

BHL: 9580'
-98.015919 37.238229
Bottom Perf: 9557'
-98.015908 37.238168

Harper County

Section 25
32S 7W

Section 30
32S 6W

Top Perf: 5473'
-98.009989 37.228557

Miss Entry: 4933'
-98.009442 37.227165

RICHARD 3206 2-30H

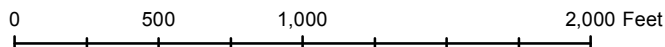
RICHARD 3206 1-30H

Section 31
32S 6W



Actual Bottom-Hole Location of Richard 3206 2-30H 1L
T&R: 32S 6W
Section: 30, 1398' FWL & 412' FNL
-98.015919 37.238229

1 in = 667 ft



● Actual BH Location

* SandRidge Wells

--- Perf
□ Sections

Draftsman:

Dory Deines

Draft Date: 4/7/2015

Drawing Name/Number:

Addendum_Richard 3206 2-30H 1L.mxd

Coordinate System:

NAD 1927 State Plane
Kansas South FIPS: 1502