



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1211720  
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: \_\_\_\_\_

1211720

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Ruth Ellen 3420 1-11H
Doc ID	1211720

Tops

Name	Top	Datum
Base Heebner Shale Marker	4160	
Lansing Limestone Group	4349	
Marmaton Limestone Group	4962	
Big Lime	5019	
Oswego Limestones	5033	
Pawnee Limestones	5120	
Fort Scott Limestone	5195	
Cherokee Shale Marker	5215	
Mississippi Unconformity & Lime	5485	

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Ruth Ellen 3420 1-11H
Doc ID	1211720

#### Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
5	9298-9530	1500 gals 15% HCL Acid, 6032 bbls Fresh Slickwater, Running TLTR: 6380	
5	8603-8846	1500 gals 15% HCL Acid, 6325 bbls Fresh Slickwater, Running TLTR: 12933	
5	8235-8525	1500 gals 15% HCL Acid, 5611 bbls Fresh Slickwater, Running TLTR: 18636	
5	7860-8175	1500 gals 15% HCL Acid, 6530 bbls Fresh Slickwater, Running TLTR: 25260	
5	7423-7762	1500 gals 15% HCL Acid, 5888 bbls Fresh Slickwater, Running TLTR: 31224	
5	7073-7323	1500 gals 15% HCL Acid, 5898 bbls Fresh Slickwater, Running TLTR: 37122	
5	6688-6962	1500 gals 15% HCL Acid, 5864 bbls Fresh Slickwater, Running TLTR: 42986	
5	6268-6624	1500 gals 15% HCL Acid, 5955 bbls Fresh Slickwater, Running TLTR: 48992	

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Ruth Ellen 3420 1-11H
Doc ID	1211720

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
5	5946-6206	1500 gals 15% HCL Acid, 5964 bbls Fresh Slickwater, Running TLTR: 54997	
5	5578-5840	1500 gals 15% HCL Acid, 6034 bbls Fresh Slickwater, Running TLTR: 61058	





**INVOICE**

DATE	INVOICE #
3/18/2014	4633

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

<b>REMIT TO</b>
EDGE SERVICES, INC. PO BOX 609 WOODWARD, OK 73802

COUNTY	STARTING D...	WORK ORDER	RIG NUMBER	LEASE NAME	Terms
COMANCHE, ...	3/14/2014	3521	HWD 14	RUTH ELLEN 3420 1-11 H	Due on rec...

Description
DRILLED 120' OF 30" CONDUCTOR HOLE DRILLED 6' OF 76" HOLE FURNISHED AND SET 6' X 6' TINHORN CELLAR FURNISHED 120' OF 20" CONDUCTOR PIPE FURNISHED MUD, WATER, AND TRUCKING FURNISHED WELDER AND MATERIALS FURNISHED 12 YARDS OF 10 SACK GROUT FOR CONDUCTOR HOLE  TOTAL BID \$15,131.73

<b>Sales Tax (6.15%)</b>	\$131.73
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<b>TOTAL</b>	\$15,131.73
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*Depend on US*

# Post Job Report

## **SandRidge Energy**

4/21/2014

Ruth Ellen #3420 1-11H

Comanche County, KS







SandRidge Energy  
Ruth Ellen #3420 1-11  
Comanche County, KS.

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SandRidge Energy  
Ruth Ellen #3420 1-11  
Comanche County, KS.

## 1.0 Executive Summary

Allied Oil & Gas Services would like to thank you, for the award of the provision of cementing products and services on the well Ruth Ellen #3420 1-11H surface Casing.

A pre-job meeting was held to discuss job details, review the safety hazards, potential environmental impact and established emergency procedures.

Allied started the job testing lines to 1500 psi. After a successful test we began the job by pumping 10 bbls of preflush spacer. We then mixed and pumped the following cements:

76.60 Bbls (230 sacks) of 12.7 ppg Lead slurry:  
65:35 Class A:Poz Blend - 1.87 Yield  
6.0% Gel  
2%cc  
¼# Floseal

32 Bbls (150 sacks) of 15.6 ppg Tail slurry:  
2% cc  
¼# Floseal

The top plug was then released and displaced with 53.5 of fresh water. The plug bumped and pressured up to 1100 psi. Pressure was released and floats held. 40 bbl cement circulated to the pit.

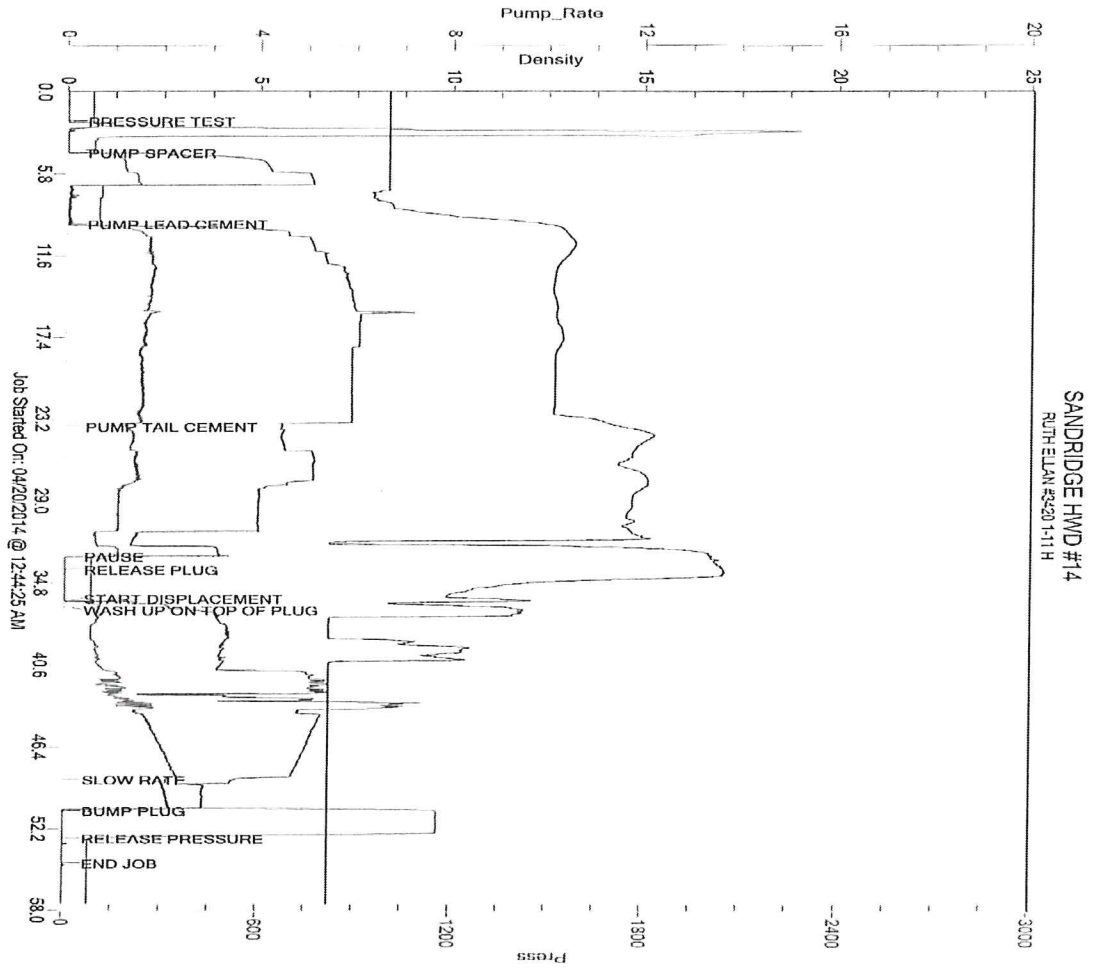
All real time data is shown on the graph in the attachment section.

Allied Oil & Gas Services remains committed to provide operational excellence and superior product performance. All comments and suggestions are greatly appreciated and help us to continue to provide this level of service.

Again we want to thank you for the opportunity to perform these and your future cementing & acidizing service needs.



2.2 Job Summary Chart





SandRidge Energy  
 Ruth Ellen #3420 1-11  
 Comanche County, KS.

3.0 Customer Satisfaction Survey

Customer: SANDRIDGE  
 Date: 4-21-14  
 Well Name: RUTH ELLEN 3420#1-11#  
 Well Location: COMMANCHE CO, KS  
 Supervisor: SCOTT FRIDAY / TODD SIBBY  
 Equipment Operators: CARL R. TODD S. HECTOR



Performance	Customer	
Was the appearance of the personnel and equipment satisfactory?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Was the job performed in a professional manner?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Were the calculations prepared and explained properly?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Were the correct services dispatched to the job site?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Were the services performed as requested?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Did the job site environment remain unchanged?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Did the equipment perform in the manner expected?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Did the materials meet your expectations?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Was the crew prepared for the job?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Was the crew prompt in the rig-up and actual job?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Were reasonable recommendations given, as requested?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Did the crew perform safely?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Was the job performed to your satisfaction?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Customer Signature:		
<u>Richard Hables</u>		Date: <u>4-21-2014</u>
Additional Comments:		





*Depend on US*

## Post Job Report

### **SandRidge Energy**

RuthEllen #3420 1-11 H

5/4/2014

Intermediate Casing

Comanche County, KS





SandRidge Energy  
Ruth Ellen #3420 1-11  
Comanche County, KS.

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SandRidge Energy  
Ruth Ellen #3420 1-11  
Comanche County, KS.

## 1.0 Executive Summary

Allied Oil & Gas Services would like to thank you, for the award of the provision of cementing products and services on the well Ruth Ellen #3420 1-11 H Intermediate Casing.

A pre-job meeting was held to discuss job details, review the safety hazards, potential environmental impact and established emergency procedures.

Allied started the job testing lines to 3500 psi. After a successful test we began the job by pumping 30 bbls of preflush spacer. We then mixed and pumped the following cements:

60 Bbls (240 sacks) of 13.6 ppg Lead slurry:  
50:50 Class A:Poz Blend - 1.4 Yield  
2.0% Gel  
0.4% FL-160  
0.1% SA-51

21Bbls (100 sacks) of 15.6 ppg Tail slurry:  
Class A - 1.18 Yield  
0.8% FL-160  
0.2% CD-31

The top plug was then released and displaced with 212.5 of fresh water. The plug bumped and pressured up to 1500 psi. Pressure was released and floats held.

All real time data is shown on the graph in the attachment section.

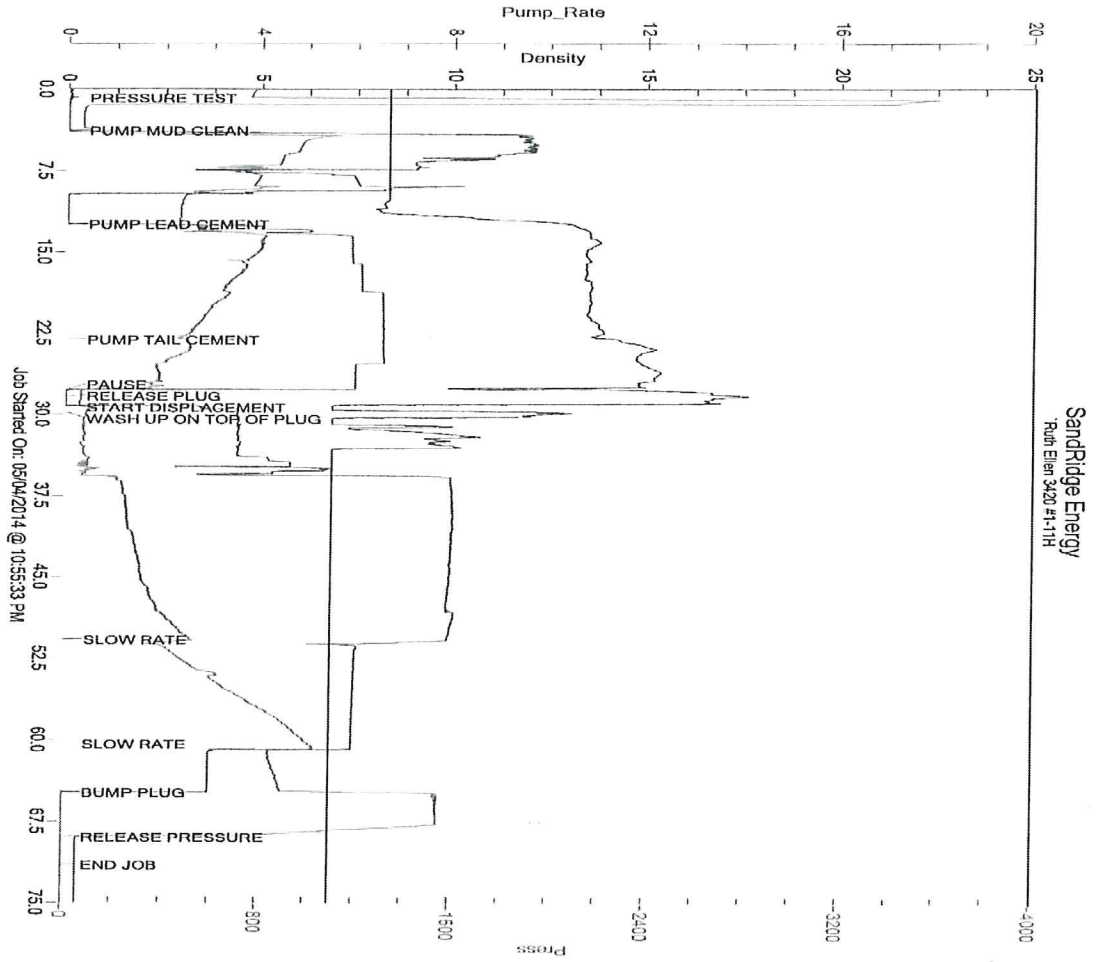
Allied Oil & Gas Services remains committed to provide operational excellence and superior product performance. All comments and suggestions are greatly appreciated and help us to continue to provide this level of service.

Again we want to thank you for the opportunity to perform these and your future cementing & acidizing service needs.





2.2 Job Summary Chart



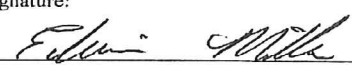


SandRidge Energy  
 Ruth Ellen #3420 1-11  
 Comanche County, KS.

3.0 Customer Satisfaction Survey

Customer: Sandridge  
 Date: 5-4-14  
 Well Name: Ruth Ellen 3420 1-11 H  
 Well Location: Vic Protection KS  
 Supervisor: JAKE Heard  
 Equipment Operators: Jason - pump Andrew - Bulk  
Scott



Performance	Customer	
Was the appearance of the personnel and equipment satisfactory?	Yes	No
Was the job performed in a professional manner?	Yes	No
Were the calculations prepared and explained properly?	Yes	No
Were the correct services dispatched to the job site?	Yes	No
Were the services performed as requested?	Yes	No
Did the job site environment remain unchanged?	Yes	No
Did the equipment perform in the manner expected?	Yes	No
Did the materials meet your expectations?	Yes	No
Was the crew prepared for the job?	Yes	No
Was the crew prompt in the rig-up and actual job?	Yes	No
Were reasonable recommendations given, as requested?	Yes	No
Did the crew perform safely?	Yes	No
Was the job performed to your satisfaction?	Yes	No
Customer Signature:		
	Date:	
Additional Comments:		



# **Weatherford<sup>®</sup>**

## **Drilling Services**

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### **Final Survey Report**

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Ruth Ellen 3420 1-11H

COMANCHE COUNTY, KS

WELL FILE: **4032472**

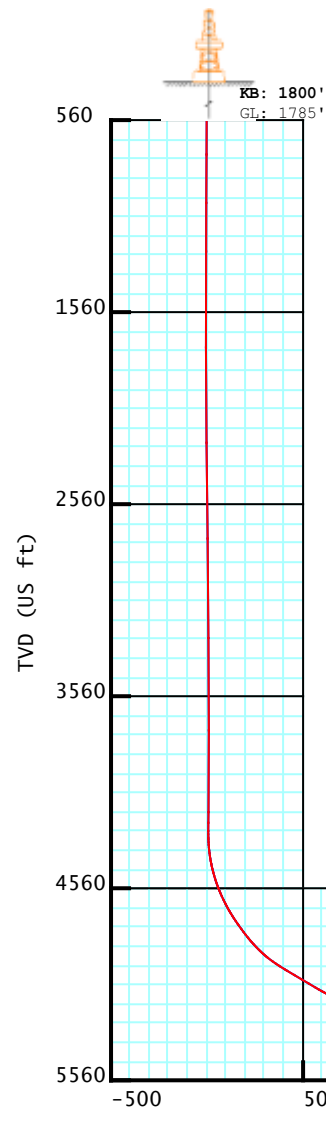
MAY 20, 2014

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Weatherford  
6525 N. Meridian Ste. #201  
Oklahoma City, OK 73116  
+1.405.773.1100 Main  
+1.405.773.1200 Fax  
[www.weatherford.com](http://www.weatherford.com)

Grid True  
 Grid Convergence: -0.59°  
 Mag Declination: 5.26°  
 Bearing:  
 True = Mag + 5.26°  
 Grid = True + 0.59°  
**Total Correction 5.85°**

Ruth Ellen 3420 1-11H  
 HWD 14  
 Comanche County, KS  
 X= 1721709.1230'  
 Y= 161499.8491'  
 Plan 3 vs Actual



**Plan Data for Ruth Ellen 3420 1-11H**

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 (°)
6365.00	88.81	180.65	5188.17	-1602.00	1.27	1601.99	1.05	55.3
6425.00	88.81	180.65	5189.42	-1661.99	0.59	1661.98	0.00	0.0
6511.71	90.50	180.26	5189.94	-1748.68	-0.10	1748.68	2.00	347.0
6669.21	90.50	180.26	5188.56	-1906.18	-0.82	1906.17	0.00	0.0
6706.71	89.75	180.26	5188.48	-1943.68	-0.99	1943.67	2.00	180.0
10026.95	89.75	180.26	5202.97	-5263.85	-16.12	5263.87	0.00	0.0

Target Set Information:  
 Name: Ruth Ellen 3420 1-11H T3

Name	TVD (USft)	Northing (USft)	Easting (USft)	Lat (°/'/'")	Long (°/'/'")
PBHL	5202.97	156236.00	1721693.00	37°5'30.6"	-99°27'14.8"

**Plan Data for Ruth Ellen 3420 1-11H**

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

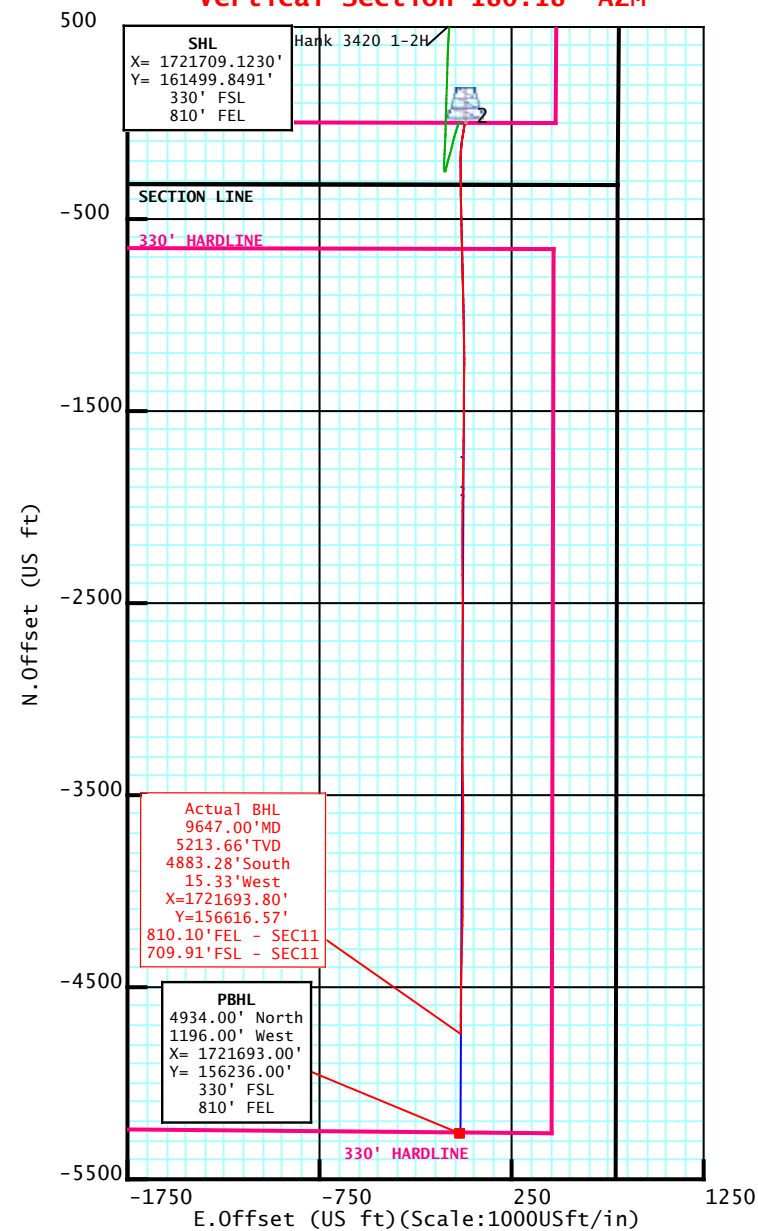
Well: Ruth Ellen 3420 1-11H  
 Type: Main-Well  
 File Number:  
 Plan Folder: P3 Plan: P3:V1  
 Vertical Section: Position offset of origin from Site centre:  
 +N/-S: 0.00USft Azimuth: 180.18°  
 +E/-W: 0.00USft

Magnetic Parameters:  
 Model: Field Strength: Declination: Dip: Date:  
 IGRF 51579(nT) 5.26° 65.01° 2014-03-11

Ruth Ellen 3420 1-11H ———  
 Hank 3420 1-2H ———  
 Ruth Ellen 3420 1-11H — Actual —

Proj. to TD  
 9647.00' MD  
 5213.66' TVD  
 90.30' INC  
 180.07° AZ

**Vertical Section 180.18° AZM**



Planned By: Lando Hiler Date: 05/07/2014

Weatherford Drilling Services  
 6525 N. Meridian Ste. #201  
 Oklahoma City, OK 73116  
 +1.405.773.1100 Main  
 +1.405.773.1887 Fax

**5D Survey Report****SandRidge Energy**

**Field Name:** *SandRidge Energy - Comanche County, KS S NAD 27 US FT*  
**Site Name:** *Ruth Ellen 3420 1-11H*  
**Well Name:** *Ruth Ellen 3420 1-11H*  
**Survey:** *Definitive Survey*

20 May 2014



## Ruth Ellen 3420 1-11H

<b>Field Name</b> SandRidge Energy - Comanche County, KS S NAD 27 US FT	<b>Map Units :</b> US ft		<b>Company Name :</b> SandRidge Energy	
	<b>Vertical Reference Datum (VRD) :</b> Mean Sea Level			
	<b>Projected Coordinate System :</b> NAD27 / Kansas South			
	<b>Comment :</b>			
<b>Site Name</b> Ruth Ellen 3420 1-11H	<b>Units :</b> US ft	<b>North Reference :</b> Grid	<b>Convergence Angle :</b> -0.59	
	<b>Position</b>	<b>Northing :</b> 161499.85 US ft	<b>Latitude :</b> 37° 6' 22.65"	
		<b>Easting :</b> 1721709.12 US ft	<b>Longitude :</b> -99° 27' 15.24"	
	<b>Site TVD Reference :</b> Mean Sea Level			
	<b>Elevation above Mean Sea Level:</b> 1785.00 US ft			
	<b>Comment :</b>			
<b>Slot Name</b> Ruth Ellen 3420 1-11H	<b>Position (Offsets relative to Site Centre)</b>			
	<b>+N / -S :</b> 0.00 US ft	<b>Northing :</b> 161499.85 US ft	<b>Latitude :</b> 37°6'22.65"	
	<b>+E / -W :</b> 0.00 US ft	<b>Easting :</b> 1721709.12 US ft	<b>Longitude :</b> -99°27'15.24"	
	<b>Slot TVD Reference :</b> Ground Elevation			
	<b>Elevation above Mean Sea Level :</b> 1785.00 US ft			
	<b>Comment :</b>			
<b>Well Name</b> Ruth Ellen 3420 1-11H	<b>Type :</b> Main well	<b>UWI :</b>		
	<b>Rig Height <i>Drill Floor</i> :</b> 18.00 US ft	<b>Comment :</b>		
	<b>Relative to Mean Sea Level:</b> 1803.00 US ft			
	<b>Closure Distance :</b> 4883.3 US ft	<b>Closure Azimuth :</b> 180.18°		
	<b>Vertical Section (Position of Origin Relative to Site )</b>			
	<b>+N / -S :</b> 0.00 US ft	<b>+E / -W :</b> 0.00 US ft	<b>Az :</b> 180.18°	

5D Survey Report

**Target Set**

**Name :** Ruth Ellen 3420 1-11H T3      **Number of Targets :** 1

**Comment :**

<b>TargetName:</b>	<b>Position (Relative to Site centre)</b>		
PBHL	+N / -S : -5263.85US ft	<b>Northing :</b> 156236.00 US ft	<b>Latitude :</b> 37°5'30.60"
<b>Shape:</b>	+E / -W : -16.12 US ft	<b>Easting :</b> 1721693.00US ft	<b>Longitude :</b> -99°27'14.78"
Cuboid	<b>TVD (Drill Floor) :</b> 5202.97 US ft <b>SS :</b> -3399.97 US ft		
<b>Orientation</b>	<b>Azimuth :</b> 0.00°	<b>Inclination :</b> 0.00°	
<b>Dimensions</b>	<b>Length :</b> 20.00 US ft	<b>Breadth :</b> 20.00 US ft	<b>Height :</b> 20.00 US ft

**Survey Name :Definitive Survey**

**Date :** 11/Mar/2014      **Survey Tool :**      **Comment :**      **Company :**

**Magnetic Model**

**Model Name:** IGRF      **Date:** 11/Mar/2014      **Field Strength:** 51579.6 nT      **Declination:** 5.26°      **Dip:** 65.01°

**Survey Tool Ranges**

Name	Start MD (US ft)	End MD (US ft)	Source Survey
MWD	0.00	9647.00	WFT MWD Surveys

**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	
739.00	0.56	38.24	738.99	2.84	2.24	-2.84	0.08	First WFT/MWD Svy	
991.00	0.31	55.66	990.98	4.19	3.56	-4.20	0.11		
1244.00	0.16	42.67	1243.98	4.83	4.37	-4.85	0.06		
1744.00	0.25	64.21	1743.98	5.82	5.82	-5.84	0.02		
2240.00	0.80	178.78	2239.96	2.83	6.87	-2.85	0.19		
2739.00	0.53	183.54	2738.93	-2.96	6.80	2.93	0.06		
3257.00	0.47	139.60	3256.91	-6.96	8.03	6.94	0.07		
3738.00	0.20	147.52	3737.90	-9.18	9.76	9.14	0.06		
4219.00	0.93	325.86	4218.88	-6.65	8.02	6.63	0.23		
4262.00	0.51	297.60	4261.88	-6.27	7.65	6.25	1.25		
4306.00	2.52	211.21	4305.86	-7.01	6.98	6.99	5.77		
4350.00	5.47	199.17	4349.75	-9.82	5.79	9.80	6.93		



## 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	
4393.00	8.47	192.84	4392.43	-14.85	4.41	14.83	7.19		
4437.00	11.82	189.18	4435.74	-22.46	2.97	22.45	7.75		
4481.00	15.32	188.96	4478.50	-32.65	1.35	32.64	7.96		
4525.00	18.16	189.83	4520.63	-45.15	-0.73	45.15	6.48		
4568.00	21.50	189.64	4561.08	-59.52	-3.19	59.53	7.77		
4612.00	24.92	188.90	4601.51	-76.64	-5.98	76.66	7.80		
4656.00	27.19	187.94	4641.04	-95.75	-8.80	95.78	5.25		
4699.00	30.38	185.81	4678.72	-116.31	-11.26	116.34	7.79		
4743.00	33.28	184.85	4716.10	-139.41	-13.41	139.45	6.69		
4787.00	35.33	181.97	4752.45	-164.16	-14.87	164.20	5.94		
4831.00	36.77	180.00	4788.02	-190.04	-15.30	190.09	4.20		
4874.00	39.22	179.38	4821.90	-216.51	-15.16	216.56	5.77		
4918.00	42.87	179.32	4855.08	-245.40	-14.83	245.44	8.30		
4962.00	45.75	179.83	4886.56	-276.13	-14.60	276.17	6.60		
5005.00	50.29	179.87	4915.32	-308.09	-14.52	308.13	10.56		
5049.00	54.76	179.70	4942.08	-343.00	-14.39	343.04	10.16		
5092.00	57.47	179.26	4966.05	-378.69	-14.06	378.73	6.36		
5136.00	58.95	178.87	4989.23	-416.08	-13.45	416.12	3.45		
5180.00	59.51	178.90	5011.74	-453.88	-12.71	453.92	1.27		
5224.00	59.46	178.52	5034.08	-491.78	-11.86	491.81	0.75		
5268.00	59.47	178.57	5056.44	-529.66	-10.90	529.69	0.10		
5311.00	59.20	178.27	5078.37	-566.64	-9.88	566.66	0.87		
5355.00	61.76	178.92	5100.05	-604.91	-8.94	604.93	5.96		
5399.00	65.60	179.04	5119.55	-644.33	-8.24	644.36	8.73		
5442.00	69.79	178.89	5135.87	-684.10	-7.52	684.12	9.75		
5486.00	73.35	178.40	5149.78	-725.83	-6.53	725.84	8.16		
5530.00	77.59	177.97	5160.81	-768.39	-5.18	768.40	9.68		
5566.00	80.74	178.66	5167.58	-803.72	-4.15	803.73	8.95		
5621.00	85.87	179.15	5173.99	-858.32	-3.10	858.33	9.37		
5652.00	89.23	178.76	5175.32	-889.28	-2.54	889.29	10.91		
5682.00	88.95	178.35	5175.79	-919.27	-1.78	919.27	1.65		
5713.00	88.53	178.64	5176.47	-950.25	-0.97	950.25	1.65		
5744.00	88.04	178.78	5177.40	-981.23	-0.27	981.23	1.64		
5776.00	87.83	178.83	5178.56	-1013.20	0.40	1013.20	0.67		
5807.00	87.48	179.09	5179.82	-1044.17	0.96	1044.16	1.41		
5838.00	86.92	179.02	5181.34	-1075.13	1.47	1075.12	1.82		
5868.00	87.90	179.18	5182.69	-1105.09	1.94	1105.08	3.31		
5897.00	90.21	179.46	5183.17	-1134.09	2.28	1134.07	8.02		
5928.00	90.07	179.34	5183.10	-1165.09	2.61	1165.07	0.59		
5960.00	89.86	179.19	5183.12	-1197.08	3.02	1197.07	0.81		
5991.00	90.14	179.61	5183.12	-1228.08	3.34	1228.06	1.63		

## 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	
6022.00	90.70	181.06	5182.89	-1259.08	3.16	1259.06	5.01		
6053.00	90.28	180.90	5182.62	-1290.07	2.63	1290.06	1.45		
6084.00	89.93	180.31	5182.57	-1321.07	2.31	1321.06	2.21		
6178.00	88.95	180.31	5183.49	-1415.06	1.80	1415.05	1.04		
6271.00	88.25	179.84	5185.76	-1508.03	1.67	1508.02	0.91		
6365.00	88.81	180.65	5188.17	-1602.00	1.27	1601.99	1.05		
6462.00	91.05	180.90	5188.29	-1698.99	-0.04	1698.98	2.32		
6555.00	90.63	181.19	5186.92	-1791.96	-1.73	1791.96	0.55		
6649.00	90.63	181.25	5185.89	-1885.93	-3.74	1885.94	0.06		
6742.00	90.21	180.77	5185.21	-1978.92	-5.38	1978.92	0.69		
6836.00	87.97	180.62	5186.70	-2072.89	-6.52	2072.90	2.39		
6929.00	89.93	180.01	5188.41	-2165.87	-7.03	2165.88	2.21		
7023.00	89.86	179.86	5188.58	-2259.87	-6.92	2259.88	0.18		
7117.00	90.28	179.13	5188.46	-2353.87	-6.09	2353.87	0.90		
7211.00	89.93	179.20	5188.29	-2447.85	-4.72	2447.86	0.38		
7305.00	90.42	179.85	5188.00	-2541.85	-3.94	2541.85	0.87		
7400.00	89.79	180.94	5187.83	-2636.85	-4.60	2636.85	1.33		
7496.00	88.95	180.50	5188.89	-2732.83	-5.80	2732.84	0.99		
7591.00	89.09	180.22	5190.51	-2827.82	-6.40	2827.82	0.33		
7686.00	90.00	180.07	5191.26	-2922.81	-6.64	2922.82	0.97		
7782.00	90.14	179.29	5191.15	-3018.81	-6.10	3018.81	0.83		
7876.00	92.24	180.50	5189.20	-3112.78	-5.93	3112.78	2.58		
7972.00	90.56	180.03	5186.85	-3208.75	-6.38	3208.75	1.82		
8067.00	88.81	179.27	5187.37	-3303.74	-5.80	3303.74	2.01		
8162.00	88.04	178.85	5189.98	-3398.69	-4.24	3398.69	0.92		
8257.00	90.42	179.35	5191.26	-3493.66	-2.75	3493.65	2.56		
8350.00	88.88	179.62	5191.83	-3586.66	-1.91	3586.64	1.68		
8446.00	88.74	180.71	5193.82	-3682.63	-2.19	3682.62	1.14		
8541.00	88.53	180.63	5196.08	-3777.60	-3.30	3777.59	0.24		
8636.00	89.02	179.99	5198.12	-3872.58	-3.81	3872.57	0.85		
8730.00	89.44	180.34	5199.38	-3966.57	-4.08	3966.56	0.58		
8846.00	88.95	180.16	5201.01	-4082.55	-4.59	4082.55	0.45		
8941.00	89.86	181.88	5202.00	-4177.53	-6.28	4177.53	2.05		
9036.00	88.60	180.92	5203.27	-4272.49	-8.60	4272.49	1.67		
9131.00	90.21	181.62	5204.26	-4367.46	-10.70	4367.47	1.85		
9226.00	90.00	180.99	5204.08	-4462.43	-12.87	4462.45	0.70		
9322.00	88.18	180.25	5205.61	-4558.41	-13.91	4558.43	2.05		
9416.00	89.23	180.60	5207.73	-4652.38	-14.60	4652.40	1.18		
9511.00	87.20	180.07	5210.69	-4747.33	-15.16	4747.35	2.21	Last WFT/MWD Svy	
9647.00	90.30	180.07	5213.66	-4883.28	-15.33	4883.30	2.28	Proj. to TD	

**5D Survey Report****SandRidge Energy**

**Field Name:** *SandRidge Energy - Comanche County, KS S NAD 27 US FT*  
**Site Name:** *Ruth Ellen 3420 1-11H*  
**Well Name:** *Ruth Ellen 3420 1-11H*  
**Survey:** *Definitive Survey (Geographic)*

20 May 2014



## Ruth Ellen 3420 1-11H

<b>Field Name</b>	<b>Map Units :</b> US ft		<b>Company Name :</b> SandRidge Energy	
SandRidge Energy - Comanche County, KS S NAD 27 US FT	<b>Vertical Reference Datum (VRD) :</b> Mean Sea Level			
	<b>Projected Coordinate System :</b> NAD27 / Kansas South			
	<b>Comment :</b>			
<b>Site Name</b>	<b>Units :</b> US ft	<b>North Reference :</b> Grid	<b>Convergence Angle :</b> -0.59	
Ruth Ellen 3420 1-11H	<b>Position</b>	<b>Northing :</b> 161499.85 US ft	<b>Latitude :</b> 37° 6' 22.65"	
		<b>Easting :</b> 1721709.12 US ft	<b>Longitude :</b> -99° 27' 15.24"	
	<b>Site TVD Reference :</b> Mean Sea Level			
	<b>Elevation above Mean Sea Level:</b> 1785.00 US ft			
	<b>Comment :</b>			
<b>Slot Name</b>	<b>Position (Offsets relative to Site Centre)</b>			
Ruth Ellen 3420 1-11H	<b>+N / -S :</b> 0.00 US ft	<b>Northing :</b> 161499.85 US ft	<b>Latitude :</b> 37°6'22.65"	
	<b>+E / -W :</b> 0.00 US ft	<b>Easting :</b> 1721709.12 US ft	<b>Longitude :</b> -99°27'15.24"	
	<b>Slot TVD Reference :</b> Ground Elevation			
	<b>Elevation above Mean Sea Level :</b> 1785.00 US ft			
	<b>Comment :</b>			
<b>Well Name</b>	<b>Type :</b> Main well	<b>UWI :</b>		
Ruth Ellen 3420 1-11H	<b>Rig Height <i>Drill Floor</i> :</b> 18.00 US ft	<b>Comment :</b>		
	<b>Relative to Mean Sea Level:</b> 1803.00 US ft	<b>Closure Azimuth :</b> 180.18°		
	<b>Closure Distance :</b> 4883.3 US ft			
	<b>Vertical Section (Position of Origin Relative to Site )</b>			
	<b>+N / -S :</b> 0.00 US ft	<b>+E / -W :</b> 0.00 US ft	<b>Az :</b> 180.18°	

## 5D Survey Report

**Target Set****Name :** Ruth Ellen 3420 1-11H T3**Number of Targets :** 1**Comment :**

<b>TargetName:</b>	<b>Position (Relative to Site centre)</b>		
PBHL	+N / -S : -5263.85US ft	<b>Northing :</b> 156236.00 US ft	<b>Latitude :</b> 37°5'30.60"
	+E / -W : -16.12 US ft	<b>Easting :</b> 1721693.00US ft	<b>Longitude :</b> -99°27'14.78"
<b>Shape:</b>	TVD (Drill Floor) : 5202.97 US ft		
Cuboid	SS : -3399.97 US ft		
<b>Orientation</b>	<b>Azimuth :</b> 0.00°	<b>Inclination :</b> 0.00°	
<b>Dimensions</b>	<b>Length :</b> 20.00 US ft	<b>Breadth :</b> 20.00 US ft	<b>Height :</b> 20.00 US ft

**Survey Name :**Definitive Survey**Date :** 11/Mar/2014**Survey Tool :****Comment :****Company :****Magnetic Model****Model Name:** IGRF**Date:** 11/Mar/2014**Field Strength:** 51579.6 nT**Declination:** 5.26°**Dip:** 65.01°**Survey Tool Ranges**

Name	Start MD (US ft)	End MD (US ft)	Source Survey
MWD	0.00	9647.00	WFT MWD Surveys

**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	161499.85	1721709.12	37°6'22.65"	-99°27'15.24"		
739.00	0.56	38.24	738.99	2.84	2.24	161502.69	1721711.36	37°6'22.68"	-99°27'15.22"		
991.00	0.31	55.66	990.98	4.19	3.56	161504.04	1721712.68	37°6'22.69"	-99°27'15.20"		
1244.00	0.16	42.67	1243.98	4.83	4.37	161504.68	1721713.49	37°6'22.69"	-99°27'15.19"		
1744.00	0.25	64.21	1743.98	5.82	5.82	161505.67	1721714.94	37°6'22.70"	-99°27'15.17"		
2240.00	0.80	178.78	2239.96	2.83	6.87	161502.68	1721715.99	37°6'22.68"	-99°27'15.16"		
2739.00	0.53	183.54	2738.93	-2.96	6.80	161496.89	1721715.92	37°6'22.62"	-99°27'15.16"		
3257.00	0.47	139.60	3256.91	-6.96	8.03	161492.88	1721717.15	37°6'22.58"	-99°27'15.14"		
3738.00	0.20	147.52	3737.90	-9.18	9.76	161490.67	1721718.88	37°6'22.56"	-99°27'15.12"		
4219.00	0.93	325.86	4218.88	-6.65	8.02	161493.20	1721717.14	37°6'22.58"	-99°27'15.14"		
4262.00	0.51	297.60	4261.88	-6.27	7.65	161493.57	1721716.78	37°6'22.59"	-99°27'15.15"		
4306.00	2.52	211.21	4305.86	-7.01	6.98	161492.84	1721716.10	37°6'22.58"	-99°27'15.16"		
4350.00	5.47	199.17	4349.75	-9.82	5.79	161490.03	1721714.91	37°6'22.55"	-99°27'15.17"		

## 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 (° ' ")		
4393.00	8.47	192.84	4392.43	-14.85	4.41	161485.00	1721713.53	37°6'22.50"	-99°27'15.19"		
4437.00	11.82	189.18	4435.74	-22.46	2.97	161477.39	1721712.09	37°6'22.43"	-99°27'15.20"		
4481.00	15.32	188.96	4478.50	-32.65	1.35	161467.20	1721710.47	37°6'22.32"	-99°27'15.22"		
4525.00	18.16	189.83	4520.63	-45.15	-0.73	161454.70	1721708.39	37°6'22.20"	-99°27'15.25"		
4568.00	21.50	189.64	4561.08	-59.52	-3.19	161440.32	1721705.93	37°6'22.06"	-99°27'15.28"		
4612.00	24.92	188.90	4601.51	-76.64	-5.98	161423.21	1721703.14	37°6'21.89"	-99°27'15.31"		
4656.00	27.19	187.94	4641.04	-95.75	-8.80	161404.10	1721700.32	37°6'21.70"	-99°27'15.34"		
4699.00	30.38	185.81	4678.72	-116.31	-11.26	161383.54	1721697.86	37°6'21.50"	-99°27'15.37"		
4743.00	33.28	184.85	4716.10	-139.41	-13.41	161360.44	1721695.72	37°6'21.27"	-99°27'15.39"		
4787.00	35.33	181.97	4752.45	-164.16	-14.87	161335.69	1721694.26	37°6'21.02"	-99°27'15.41"		
4831.00	36.77	180.00	4788.02	-190.04	-15.30	161309.80	1721693.82	37°6'20.77"	-99°27'15.41"		
4874.00	39.22	179.38	4821.90	-216.51	-15.16	161283.34	1721693.97	37°6'20.50"	-99°27'15.40"		
4918.00	42.87	179.32	4855.08	-245.40	-14.83	161254.45	1721694.29	37°6'20.22"	-99°27'15.40"		
4962.00	45.75	179.83	4886.56	-276.13	-14.60	161223.72	1721694.52	37°6'19.92"	-99°27'15.39"		
5005.00	50.29	179.87	4915.32	-308.09	-14.52	161191.76	1721694.60	37°6'19.60"	-99°27'15.38"		
5049.00	54.76	179.70	4942.08	-343.00	-14.39	161156.85	1721694.74	37°6'19.25"	-99°27'15.38"		
5092.00	57.47	179.26	4966.05	-378.69	-14.06	161121.16	1721695.06	37°6'18.90"	-99°27'15.37"		
5136.00	58.95	178.87	4989.23	-416.08	-13.45	161083.77	1721695.67	37°6'18.53"	-99°27'15.36"		
5180.00	59.51	178.90	5011.74	-453.88	-12.71	161045.97	1721696.41	37°6'18.16"	-99°27'15.34"		
5224.00	59.46	178.52	5034.08	-491.78	-11.86	161008.07	1721697.26	37°6'17.78"	-99°27'15.33"		
5268.00	59.47	178.57	5056.44	-529.66	-10.90	160970.19	1721698.22	37°6'17.41"	-99°27'15.31"		
5311.00	59.20	178.27	5078.37	-566.64	-9.88	160933.21	1721699.24	37°6'17.04"	-99°27'15.29"		
5355.00	61.76	178.92	5100.05	-604.91	-8.94	160894.94	1721700.18	37°6'16.67"	-99°27'15.28"		
5399.00	65.60	179.04	5119.55	-644.33	-8.24	160855.52	1721700.88	37°6'16.28"	-99°27'15.26"		
5442.00	69.79	178.89	5135.87	-684.10	-7.52	160815.75	1721701.60	37°6'15.88"	-99°27'15.25"		
5486.00	73.35	178.40	5149.78	-725.83	-6.53	160774.02	1721702.59	37°6'15.47"	-99°27'15.23"		
5530.00	77.59	177.97	5160.81	-768.39	-5.18	160731.46	1721703.94	37°6'15.05"	-99°27'15.21"		
5566.00	80.74	178.66	5167.58	-803.72	-4.15	160696.12	1721704.98	37°6'14.70"	-99°27'15.19"		
5621.00	85.87	179.15	5173.99	-858.32	-3.10	160641.53	1721706.02	37°6'14.16"	-99°27'15.17"		
5652.00	89.23	178.76	5175.32	-889.28	-2.54	160610.57	1721706.58	37°6'13.85"	-99°27'15.16"		
5682.00	88.95	178.35	5175.79	-919.27	-1.78	160580.58	1721707.34	37°6'13.56"	-99°27'15.15"		
5713.00	88.53	178.64	5176.47	-950.25	-0.97	160549.60	1721708.15	37°6'13.25"	-99°27'15.14"		
5744.00	88.04	178.78	5177.40	-981.23	-0.27	160518.62	1721708.85	37°6'12.95"	-99°27'15.12"		
5776.00	87.83	178.83	5178.56	-1013.20	0.40	160486.65	1721709.52	37°6'12.63"	-99°27'15.11"		
5807.00	87.48	179.09	5179.82	-1044.17	0.96	160455.68	1721710.08	37°6'12.32"	-99°27'15.10"		
5838.00	86.92	179.02	5181.34	-1075.13	1.47	160424.72	1721710.59	37°6'12.02"	-99°27'15.09"		
5868.00	87.90	179.18	5182.69	-1105.09	1.94	160394.75	1721711.06	37°6'11.72"	-99°27'15.08"		
5897.00	90.21	179.46	5183.17	-1134.09	2.28	160365.76	1721711.41	37°6'11.43"	-99°27'15.07"		
5928.00	90.07	179.34	5183.10	-1165.09	2.61	160334.76	1721711.73	37°6'11.13"	-99°27'15.07"		
5960.00	89.86	179.19	5183.12	-1197.08	3.02	160302.77	1721712.14	37°6'10.81"	-99°27'15.06"		
5991.00	90.14	179.61	5183.12	-1228.08	3.34	160271.77	1721712.47	37°6'10.51"	-99°27'15.05"		

## 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 (° ' ")		
6022.00	90.70	181.06	5182.89	-1259.08	3.16	160240.77	1721712.29	37°6'10.20"	-99°27'15.05"		
6053.00	90.28	180.90	5182.62	-1290.07	2.63	160209.78	1721711.76	37°6'9.89"	-99°27'15.05"		
6084.00	89.93	180.31	5182.57	-1321.07	2.31	160178.78	1721711.43	37°6'9.59"	-99°27'15.05"		
6178.00	88.95	180.31	5183.49	-1415.06	1.80	160084.79	1721710.92	37°6'8.66"	-99°27'15.04"		
6271.00	88.25	179.84	5185.76	-1508.03	1.67	159991.81	1721710.80	37°6'7.74"	-99°27'15.03"		
6365.00	88.81	180.65	5188.17	-1602.00	1.27	159897.85	1721710.40	37°6'6.81"	-99°27'15.03"		
6462.00	91.05	180.90	5188.29	-1698.99	-0.04	159800.86	1721709.08	37°6'5.85"	-99°27'15.03"		
6555.00	90.63	181.19	5186.92	-1791.96	-1.73	159707.89	1721707.39	37°6'4.93"	-99°27'15.04"		
6649.00	90.63	181.25	5185.89	-1885.93	-3.74	159613.92	1721705.39	37°6'4.00"	-99°27'15.05"		
6742.00	90.21	180.77	5185.21	-1978.92	-5.38	159520.93	1721703.75	37°6'3.08"	-99°27'15.06"		
6836.00	87.97	180.62	5186.70	-2072.89	-6.52	159426.96	1721702.61	37°6'2.15"	-99°27'15.06"		
6929.00	89.93	180.01	5188.41	-2165.87	-7.03	159333.98	1721702.10	37°6'1.23"	-99°27'15.06"		
7023.00	89.86	179.86	5188.58	-2259.87	-6.92	159239.98	1721702.20	37°6'0.30"	-99°27'15.04"		
7117.00	90.28	179.13	5188.46	-2353.87	-6.09	159145.98	1721703.03	37°5'59.37"	-99°27'15.02"		
7211.00	89.93	179.20	5188.29	-2447.85	-4.72	159051.99	1721704.40	37°5'58.45"	-99°27'14.99"		
7305.00	90.42	179.85	5188.00	-2541.85	-3.94	158958.00	1721705.18	37°5'57.52"	-99°27'14.97"		
7400.00	89.79	180.94	5187.83	-2636.85	-4.60	158863.00	1721704.53	37°5'56.58"	-99°27'14.97"		
7496.00	88.95	180.50	5188.89	-2732.83	-5.80	158767.02	1721703.32	37°5'55.63"	-99°27'14.97"		
7591.00	89.09	180.22	5190.51	-2827.82	-6.40	158672.03	1721702.72	37°5'54.69"	-99°27'14.97"		
7686.00	90.00	180.07	5191.26	-2922.81	-6.64	158577.04	1721702.48	37°5'53.75"	-99°27'14.96"		
7782.00	90.14	179.29	5191.15	-3018.81	-6.10	158481.04	1721703.02	37°5'52.80"	-99°27'14.94"		
7876.00	92.24	180.50	5189.20	-3112.78	-5.93	158387.07	1721703.19	37°5'51.87"	-99°27'14.92"		
7972.00	90.56	180.03	5186.85	-3208.75	-6.38	158291.10	1721702.75	37°5'50.92"	-99°27'14.92"		
8067.00	88.81	179.27	5187.37	-3303.74	-5.80	158196.11	1721703.33	37°5'49.98"	-99°27'14.90"		
8162.00	88.04	178.85	5189.98	-3398.69	-4.24	158101.16	1721704.89	37°5'49.04"	-99°27'14.87"		
8257.00	90.42	179.35	5191.26	-3493.66	-2.75	158006.19	1721706.38	37°5'48.11"	-99°27'14.84"		
8350.00	88.88	179.62	5191.83	-3586.66	-1.91	157913.19	1721707.21	37°5'47.19"	-99°27'14.81"		
8446.00	88.74	180.71	5193.82	-3682.63	-2.19	157817.22	1721706.94	37°5'46.24"	-99°27'14.81"		
8541.00	88.53	180.63	5196.08	-3777.60	-3.30	157722.25	1721705.83	37°5'45.30"	-99°27'14.81"		
8636.00	89.02	179.99	5198.12	-3872.58	-3.81	157627.27	1721705.31	37°5'44.36"	-99°27'14.80"		
8730.00	89.44	180.34	5199.38	-3966.57	-4.08	157533.28	1721705.04	37°5'43.43"	-99°27'14.79"		
8846.00	88.95	180.16	5201.01	-4082.55	-4.59	157417.30	1721704.54	37°5'42.28"	-99°27'14.79"		
8941.00	89.86	181.88	5202.00	-4177.53	-6.28	157322.32	1721702.84	37°5'41.34"	-99°27'14.79"		
9036.00	88.60	180.92	5203.27	-4272.49	-8.60	157227.36	1721700.52	37°5'40.41"	-99°27'14.81"		
9131.00	90.21	181.62	5204.26	-4367.46	-10.70	157132.39	1721698.42	37°5'39.47"	-99°27'14.82"		
9226.00	90.00	180.99	5204.08	-4462.43	-12.87	157037.42	1721696.25	37°5'38.53"	-99°27'14.84"		
9322.00	88.18	180.25	5205.61	-4558.41	-13.91	156941.44	1721695.22	37°5'37.58"	-99°27'14.84"		
9416.00	89.23	180.60	5207.73	-4652.38	-14.60	156847.47	1721694.52	37°5'36.65"	-99°27'14.84"		
9511.00	87.20	180.07	5210.69	-4747.33	-15.16	156752.52	1721693.96	37°5'35.71"	-99°27'14.83"		
9647.00	90.30	180.07	5213.66	-4883.28	-15.33	156616.57	1721693.80	37°5'34.37"	-99°27'14.82"		

Section 2  
34S 20W

RUTH ELLEN 3420 1-11H HANK 3420 1-2H

Section 1  
34S 20W

Miss Entry: 5485'  
BEYLER 1-A -99.454560 37.104344  
Top Perf: 5578'  
-99.454542 37.104132

SALLY 3420 1-12H

Comanche County

Section 11  
34S 20W

Section 12  
34S 20W

Bottom Perf: 9530'  
-99.454084 37.093411  
BHL: 9647'  
-99.454067 37.093041  
1895' FEL  
346' FSL

Section 14  
34S 20W

Section 13  
34S 20W



Actual Bottom-Hole Location of Ruth Ellen 3420 1-11H  
T&R: 34S 20W  
Section: 11, 1895' FEL & 346' FSL  
-99.454067 37.093041

1 in = 667 ft

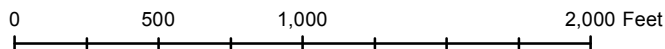


● Actual BH Location

\* SandRidge Wells

--- Perf

□ Sections



Draftsman:

Naomi Martinez

Draft Date: 7/2/2014

Drawing Name/Number:

Addendum\_Ruth Ellen 3420 1-11H.mxd

Coordinate System:

NAD 1927 State Plane  
Kansas South FIPS: 1502



# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/3/2014
Job End Date:	6/3/2014
State:	Kansas
County:	Comanche
API Number:	15-033-21755-01-00
Operator Name:	SandRidge Energy
Well Name and Number:	Ruth Ellen 3420 #1-11H
Longitude:	-99.45234541
Latitude:	37.10629079
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	5,214
Total Base Water Volume (gal):	2,497,488
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Well Operator	Carrier/Base Fluid	Water	7732-18-5	100.00000	95.62637	None
40/70 Premium Preferred Sand	Cimarron Acid	Proppant, Scouring, Fill	Crystalline Silica (quartz)	14808-60-7	100.00000	3.09698	None
DiKlor	Sabre Energy Services	Oxidizer	Chlorine Dioxide	10069-04-4	0.40000	0.29432	
			Water	7732-18-5	99.90000	0.29432	
40/70 Resin Coated Sand	Cimarron Acid	Proppant, Scouring, Fill	Crystalline Silica (quartz)	14808-60-7	97.00000	0.32672	None
15% Unihibited HCl Acid	Cimarron Acid	Etching, Dissolving, Cleaning	Water	7732-18-5	85.00000	0.20992	None
			Hydrochloric Acid	7647-01-0	15.00000	0.03704	None
			Water	7732-18-5	24.00000	0.00002	None
			Methanol	67-56-1	9.00000	0.00001	None
			2-Butoxyethanol	111-76-2	8.40000	0.00001	None
			Tar Bases-quinoline derivs-benzyl chloride/quaternized	72480-70-7	8.40000	0.00001	None
			Triethyl Phosphate	78-40-0	8.40000	0.00001	None

			Cinnamaldehyde	104-55-2	8.40000	0.00001	None
			N-Dimethylformamide	68-12-2	8.40000	0.00001	None
			Ethylene Glycol	107-21-1	8.40000	0.00001	None
			Isopropyl Alcohol	67-63-0	8.40000	0.00001	None
			Ethoxylated Nonylphenol	68412-54-4	8.40000	0.00001	None
Iron Control, Sodium Erythorbate	Cimarron Acid	Iron Control					
			Water	7732-18-5	55.50000	0.02606	None
			Methanol	67-56-1	12.70000	0.00598	None
			Dinanylphenyl Polyoxyethylene	201602-88-2	9.10000	0.00427	None
			Nonylphenol Polyethylene Glycol Ether	127087-87-0	9.10000	0.00427	None
			Poly(ethylene Oxide)	25322-68-3	9.10000	0.00427	None
			Isopropanol	67-63-0	4.60000	0.00214	None
			Water	7732-18-5	54.50000	0.00004	None
			Sodium Erythorbate	6381-77-7	100.00000	0.00004	None
			Polyglycol Ethers	52624-57-4	13.60000	0.00001	None
			Isopropanol	67-63-0	13.60000	0.00001	None
			Glycol Ether EB	111-76-2	9.00000	0.00001	None
			Methanol	67-56-1	9.00000	0.00001	None
FR-986, Cationic Friction Reducer	Cimarron Acid	Friction Reducer					
			Water	7732-18-5	50.00000	0.00493	None
			Phosphoric Acid	7664-38-2	16.80000	0.00166	None
			Hydrochloric Acid	7647-01-0	16.80000	0.00166	None
			Ethylene Glycol	107-21-1	12.70000	0.00125	None
			Petroleum Hydrotreated Light Distillate	64742-47-8	2.50000	0.00118	None
			Methanol	67-56-1	3.60000	0.00036	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)