Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1239462

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 # 34192
Name: SandRidge Exploration and Production LLC
Address 1: 123 ROBERT S. KERR AVE
Address 2:
City: OKLAHOMA CITY State: OK Zip: 73102 + 6406
Contact Person: Wanda Ledbetter
Phone: (405) 429-5500
CONTRACTOR: License # 34464
Name: Lariat Services, Inc. dba Chaparral, Drilling, Fluids
Wellsite Geologist: Bob Wilcox
Purchaser: oil - Plains & Gas - Atlas

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 #:

9/24/2014	11/25/2014	12/13/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-077-22095-01-00
Spot Description:
NW NW NE NE Sec. 30 Twp. 34 S. R. 6 ☐ East ☑ West
200 Feet from ☑ North / ☐ South Line of Section
1240 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Harper
Lease Name: Jane 3406 Well #: 2-30H
Field Name:
Producing Formation: Mississippi
Elevation: Ground: 1333 Kelly Bushing: 1352
Total Vertical Depth: 4734 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 741 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: 18000 ppm Fluid volume: 3540 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: NEMAHA Disp
Lease Name: unknown License #: 99999
Quarter SW Sec. 15 Twp. 24 S. R. 7 ☐ East ☑ West
County: Garfield County, OK Permit #: 608693

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: 01/20/2015
☑ **Confidential Release Date:** 01/19/2017
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 01/26/2015

[redacted]

1239462

Operator Name: SandRidge Exploration and Production LLC Lease Name: Jane 3406 Well #: 2-30H

Sec. 30 Twp. 34 S. R. 6 ☐ East ☑ West County: Harper

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Array Induction Gamma Ray
Spectral Density Sual Spaced Neutron

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Base Heebner	3360	-2008
Lansing	3723	-2371
Cottage Grove	4003	-2651
Oswego	4348	-2996
Cherokee	4474	-3120
Verdigria	4492	-3140
Miss Unconformity	4675	-3323

CASING RECORD ☑ New ☐ 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
Conductor	30	20	75	90	Grout	10	none
Surface	12.25	9.625	36	741	Class A & 65/35 POZ	380	See Report
Intermediate	8.75	7	26	5628	Class C	330	See Report

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate ___ Protect Casing ___ Plug Back TD ___ 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 *(Amount and Kind of Material Used)*	Depth
1	5677-9336 (Frac Sleeve)	Slickwater & Acid Frac	5677-9336
	Attached	(See Frac Report)	

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☑ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 12/21/2014

Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☑ Other *(Explain)* ESP

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	36	283	2851		

DISPOSITION OF GAS:
☐ Vented ☑ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☑ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☑ Other *(Specify)* Frac Liner

PRODUCTION INTERVAL:
5677-9336

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Jane 3406 2-30H
Doc ID	1239462

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Conductor	30	20	75	90	Grout	10	none
Surface	12.25	9.625	36	741	Class A & 65/35 POZ	380	See Report
Intermediate	8.75	7	26	5628	Class C	330	See Report

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/10/2014
Job End Date:	12/11/2014
State:	Kansas
County:	Harper
API Number:	15-077-22095-01-00
Operator Name:	SandRidge Energy
Well Name and Number:	Jane 3406 2-30H
Longitude:	-98.00575287
Latitude:	37.06500124
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	4,734
Total Base Water Volume (gal):	2,345,126
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	Archer	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	95.94956	None
Sand (Proppant)	Archer	Proppant					
			Silica Substrate	NA	100.00000	3.65362	None
Hydrochloric Acid (15%)	Archer	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.04727	None
			Methyl Alcohol	67-56-1	80.00000	0.00046	None
			thiourea-formaldehyde copolymer	68527-49-1	15.00000	0.00009	None
AIC	Archer	Liquid Acid Iron Control					
			Acetic Acid	64-19-7	50.00000	0.00101	None
			Citric Acid	77-92-9	30.00000	0.00061	None
Chemflush	Archer	Enviro-Friendly Chemical Flush					
			Hydrotreated Petroleum Distillate	64742-47-8	99.00000	0.00068	None
			Alcohol Ethoxylate Surfactants	NA	10.00000	0.00007	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.							
		Other Chemicals					
			Water	7732-18-5		0.04120	

			Aliphatic Hydrocarbon	64742-47-8		0.02060	
			Anionic Polymer	N/A		0.02060	
			Water	7732-18-5		0.00878	
			Oxyalkylated Alcohol	68002-97-1		0.00343	
			Polyol Ester	N/A		0.00343	
			Sodium Salt of Phosphate Ester	68131-72-6		0.00146	
			Acrylic Polymer	28205-96-1		0.00146	
			Water	7732-18-5		0.00071	
			Polyglycol Ester	N/A		0.00069	
			Alcohol Ethoxylate Surfactants	N/A		0.00009	
			Tetrasodium Ethylenediaminetetraacetate	64-02-8		0.00007	
			n-olefins	N/A		0.00005	
			Propargyl Alcohol	107-19-7		0.00003	
			Surfactant	N/A			
			ISOPROPANOL	67-63-0			
			WATER	7732-18-5			
			Acetic Acid	64-19-7			
			Water	7732-18-5			
			Cinnamic Aldehyde	104-55-2			
			TRADE SECRET	N/A			
			METHANOL	67-56-1			
			Buffer	N/A			

* 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)

ALLIED
OIL & GAS SERVICES, LLC

SandRidge Energy
Jane 3406 #2-30H
Harper 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 Jane 3406 #2-30H 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 1000 psi. After a successful test we began the job by pumping 10 bbls of fresh water spacer. We then mixed and pumped the following cements:

57.35 Bbls (230 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

21.01 Bbls (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 213.87 Bbls of fresh water. The plug bumped and pressured up to 1200 psi. Pressure was released and floats held. Cement circulated to the pit.

Due to technical difficulties on location no chart was provided.

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.

ALLIED
OIL & GAS SERVICES, LLC

SandRidge Energy
Jane 3406 #2-30H
Harper 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 Jane 3406 #2-30H 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 1000 psi. After a successful test we began the job by pumping 10 bbls of fresh water spacer. We then mixed and pumped the following cements:

76.6 Bbls (230 sacks) of 12.7 ppg Lead slurry:
65/35 Class A - 1.87 Yield
2% Calcium Chloride
.25 lb/sk Flocele

32.06 Bbls (150 sacks) of 15.6 ppg Tail slurry:
Class A - 1.2 Yield
2% Calcium Chloride
.25 lb/sk Flocele

The top plug was then released and displaced with 54.1 Bbls of fresh water. The plug bumped and pressured up to 1400 psi. Pressure was released and floats held. Cement circulated to the pit.

Due to technical difficulties on location no chart was provided.

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.

Sandridge Energy

DrillRight TECHNOLOGY, INC.

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2475.5	19.51	284.29	2456.8	40.6	-159.4	2.00	284.29	-9.1	Start 1631.3 hold at 2475.5 MD
4106.8	19.51	284.29	3994.4	175.1	-687.3	0.00	0.00	-39.1	Start DLS 8.00
5267.3	88.00	180.00	4730.0	-515.0	-930.9	8.00	-104.15	684.9	Start 275.0 hold at 5267.3 MD
5542.3	88.00	180.00	4739.6	-789.9	-930.9	0.00	0.00	954.7	Start DLS 8.00
5567.3	90.00	180.00	4740.0	-814.9	-930.9	8.00	0.00	979.2	Landing Point
9486.4	90.00	180.00	4740.0	-4734.0	-931.0	0.00		4824.7	TD at 9486.4

WELL DETAILS: Jane 3406 2-30H

Ground Level: 1333.0

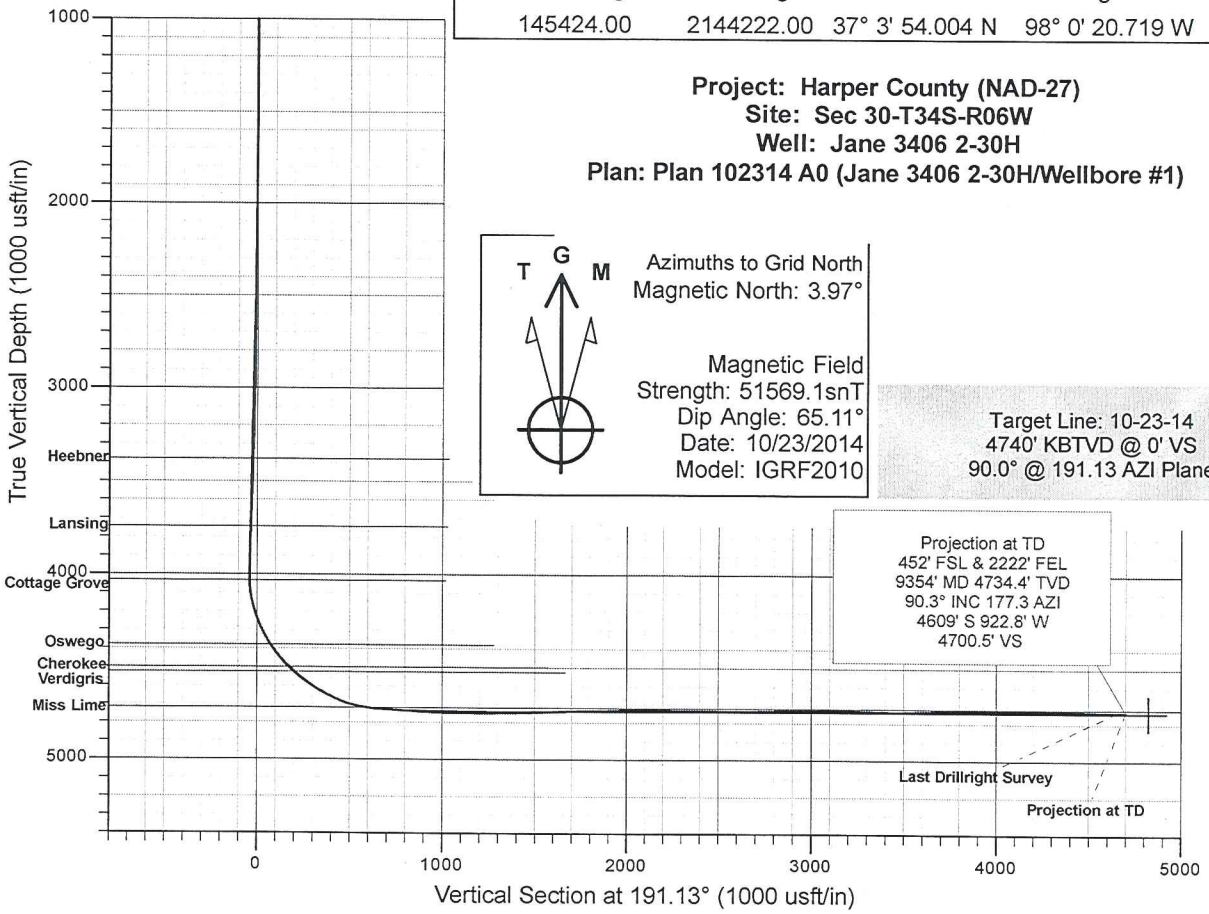
Northing	Easting	Latittude	Longitude
145424.00	2144222.00	37° 3' 54.004 N	98° 0' 20.719 W

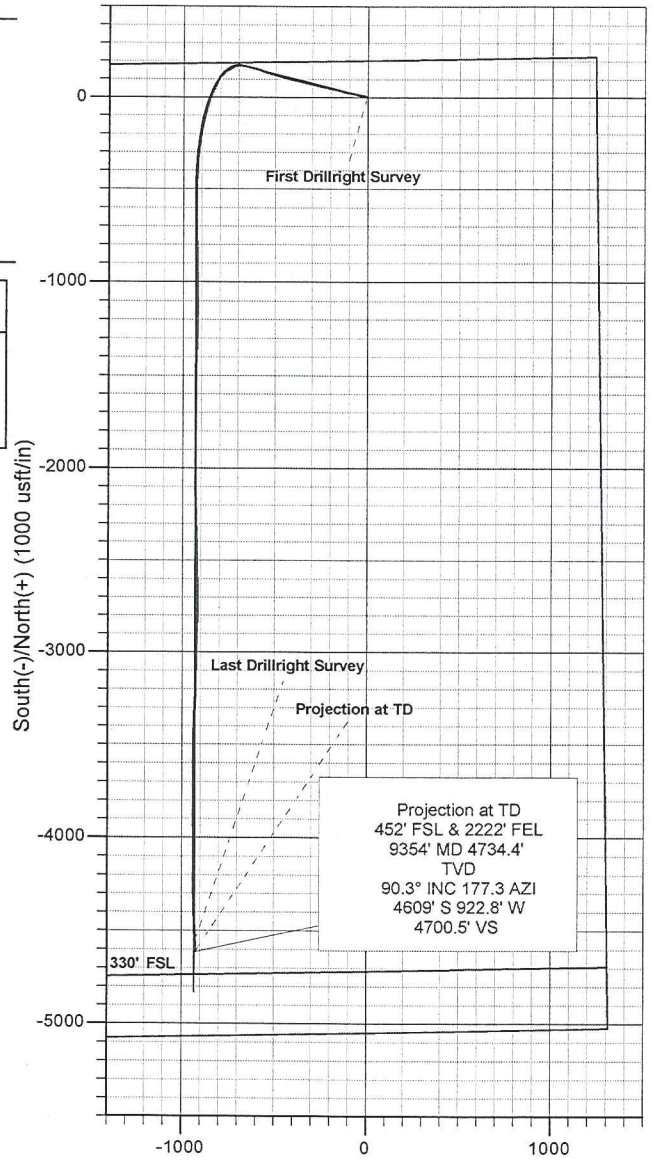
Project: Harper County (NAD-27)
Site: Sec 30-T34S-R06W
Well: Jane 3406 2-30H
Plan: Plan 102314 A0 (Jane 3406 2-30H/Wellbore #1)

Azimuths to Grid North
Magnetic North: 3.97°

Magnetic Field
Strength: 51569.1snT
Dip Angle: 65.11°
Date: 10/23/2014
Model: IGRF2010

Target Line: 10-23-14
4740' KBTVD @ 0' VS
90.0° @ 191.13 AZI Plane





SandRidge ENERGY

DrillRight TECHNOLOGY, INC.

Survey Report

DRT Job # : DR1410219

Company:	Sandridge
Well Name:	Jane 3406 2-30H
Legals:	Sec: 30 Township: 34S
County/State:	Harper KS
Rig Name:	Lariat 20

Customer Rep	Position	Directional Driller	MWD Operator
		Scott Graham	George Hunt
		Phillip Bryant	

Jane 3406 2-30H Surveys

Type	M Depth	Incl.	Azimuth	TVD	North	East	V Section	Dogleg	B Rate	T Rate	Clos Azi	Clos Dist
TieInPoint	0	0	0	0	0	0	0	0	0	0	0	0
Survey	804	0.2	313.8	804	0.97	-1.01	-0.76	0.02	0.02	5.75	313.84	1.4
Survey	1046	0.3	298.2	1046	1.56	-1.88	-1.17	0.05	0.04	6.45	309.69	2.44
Survey	1319	0.3	316.1	1318.99	2.42	-3	-1.8	0.03	0	6.56	308.89	3.85
Survey	1506	1.1	302.6	1505.98	3.74	-4.85	-2.73	0.43	0.43	7.22	307.64	6.12
Survey	1600	3.4	283.7	1599.9	4.88	-8.32	-3.18	2.54	2.45	20.11	300.39	9.65
Survey	1696	5.2	280.8	1695.63	6.37	-15.36	-3.29	1.89	1.88	3.02	292.52	16.63
Survey	1791	6.4	283.8	1790.14	8.44	-24.73	-3.51	1.3	1.26	3.16	288.84	26.13
Survey	1885	8.2	282	1883.37	11.08	-36.38	-3.85	1.93	1.91	1.91	286.94	38.03
Survey	1979	9.8	280.8	1976.21	13.98	-50.79	-3.91	1.71	1.7	1.28	285.39	52.68
Survey	2074	12	282.7	2069.49	17.66	-68.37	-4.13	2.35	2.32	2	284.48	70.61
Survey	2168	13.4	281.9	2161.19	22.06	-88.56	-4.55	1.5	1.49	0.85	283.99	91.27
Survey	2262	15.7	282.2	2252.17	26.99	-111.66	-4.93	2.45	2.45	0.32	283.59	114.88
Survey	2356	16.4	286.3	2342.51	33.41	-136.83	-6.37	1.42	0.74	4.36	283.72	140.85
Survey	2450	17.4	284.5	2432.45	40.65	-163.17	-8.39	1.2	1.06	1.91	283.99	168.16
Survey	2544	18.4	282.7	2521.9	47.43	-191.25	-9.62	1.22	1.06	1.91	283.93	197.04
Survey	2638	20.1	282	2610.64	54.05	-221.52	-10.27	1.83	1.81	0.74	283.71	228.02
Survey	2732	20.5	281.1	2698.8	60.58	-253.48	-10.51	0.54	0.43	0.96	283.44	260.62
Survey	2827	19.4	281.3	2788.1	66.87	-285.27	-10.54	1.16	1.16	0.21	283.19	293
Survey	2922	17	281.8	2878.34	72.8	-314.34	-10.75	2.53	2.53	0.53	283.04	322.66
Survey	3016	17.8	285.1	2968.04	79.36	-341.67	-11.91	1.35	0.85	3.51	283.08	350.77
Survey	3110	19.5	284.9	3057.1	87.14	-370.7	-13.94	1.81	1.81	0.21	283.23	380.8
Survey	3205	19.8	284.6	3146.57	95.27	-401.59	-15.96	0.33	0.32	0.32	283.35	412.74
Survey	3300	19.5	283	3236.03	102.89	-432.62	-17.44	0.65	0.32	1.68	283.38	444.69
Survey	3395	19.2	285	3325.67	110.5	-463.15	-19.02	0.77	0.32	2.11	283.42	476.15
Survey	3489	18	286.7	3414.76	118.68	-492	-21.47	1.4	1.28	1.81	283.56	506.11
Survey	3584	17.1	285.1	3505.34	126.53	-519.54	-23.86	1.07	0.95	1.68	283.69	534.73
Survey	3678	16.1	287.6	3595.42	134.07	-545.31	-26.28	1.31	1.06	2.66	283.81	561.55
Survey	3773	18.1	290	3686.22	143.1	-571.73	-30.04	2.23	2.11	2.53	284.05	589.37
Survey	3868	19.8	289.6	3776.06	153.55	-600.76	-34.69	1.79	1.79	0.42	284.34	620.07
Survey	3962	19	284.6	3864.73	162.75	-630.57	-37.97	1.96	0.85	5.32	284.47	651.23
Survey	4057	17.5	280.8	3954.95	169.32	-659.57	-38.81	2.01	1.58	4	284.4	680.96
Survey	4089	17.6	281.5	3985.46	171.19	-669.04	-38.82	0.73	0.31	2.19	284.35	690.59
Survey	4120	17.9	277.5	4014.99	172.75	-678.35	-38.56	4.05	0.97	12.9	284.29	700
Survey	4151	18.8	271.4	4044.42	173.49	-688.07	-37.4	6.84	2.9	19.68	284.15	709.6
Survey	4183	20.2	265.2	4074.58	173.15	-698.73	-35.01	7.8	4.38	19.37	283.92	719.86
Survey	4214	21.3	258.7	4103.58	171.6	-709.59	-31.4	8.23	3.55	20.97	283.59	730.04
Survey	4245	22.4	252.4	4132.35	168.71	-720.74	-26.41	8.35	3.55	20.32	283.17	740.22
Survey	4277	23.4	246.2	4161.83	164.3	-732.37	-19.84	8.16	3.12	19.37	282.64	750.57
Survey	4308	24	241	4190.22	158.76	-743.52	-12.25	7.01	1.94	16.77	282.05	760.28
Survey	4340	25.3	236.6	4219.3	151.84	-754.92	-3.26	7.03	4.06	13.75	281.37	770.04
Survey	4371	27	231.9	4247.13	143.85	-765.99	6.72	8.64	5.48	15.16	280.64	779.38
Survey	4402	28.6	227.4	4274.55	134.48	-776.99	18.04	8.51	5.16	14.52	279.82	788.54
Survey	4434	29.8	222.4	4302.49	123.42	-787.99	31.01	8.49	3.75	15.63	278.9	797.6
Survey	4466	30.3	215.3	4330.2	110.96	-798.02	45.17	11.21	1.56	22.19	277.92	805.7
Survey	4497	32	210.5	4356.73	97.5	-806.71	60.06	9.7	5.48	15.48	276.89	812.58
Survey	4529	34.5	206.8	4383.5	82.1	-815.1	76.79	10.06	7.81	11.56	275.75	819.22
Survey	4560	37.5	205.4	4408.58	65.74	-823.11	94.39	10.03	9.68	4.52	274.57	825.73
Survey	4592	39.8	204.4	4433.57	47.61	-831.52	113.8	7.45	7.19	3.13	273.28	832.88
Survey	4624	41.8	202.8	4457.79	28.45	-839.88	134.21	7.05	6.25	5	271.94	840.36
Survey	4655	44.1	200.9	4480.48	8.84	-847.74	154.97	8.51	7.42	6.13	270.6	847.79
Survey	4686	46.4	199.1	4502.31	-11.84	-855.26	176.71	8.49	7.42	5.81	269.21	855.34
Survey	4718	48.1	197.3	4524.03	-34.16	-862.59	200.03	6.73	5.31	5.62	267.73	863.27
Survey	4750	50	195.5	4545	-57.34	-869.41	224.09	7.3	5.94	5.63	266.23	871.3
Survey	4781	51.7	194	4564.57	-80.59	-875.53	248.08	6.64	5.48	4.84	264.74	879.23
Survey	4813	53.6	193	4583.99	-105.32	-881.46	273.49	6.44	5.94	3.12	263.19	887.73
Survey	4844	56.2	191.7	4601.81	-130.1	-886.88	298.85	9.06	8.39	4.19	261.65	896.37
Survey	4875	58.4	190.8	4618.56	-155.68	-891.97	324.93	7.51	7.1	2.9	260.1	905.45
Survey	4907	60.5	189.9	4634.82	-182.79	-896.92	352.49	7	6.56	2.81	258.48	915.36
Survey	4938	61.9	189.1	4649.76	-209.58	-901.4	379.64	5.05	4.52	2.58	256.91	925.44
Survey	4970	63.7	188.2	4664.39	-237.72	-905.68	408.08	6.16	5.63	2.81	255.29	936.36
Survey	5002	66.8	187.6	4677.78	-266.5	-909.67	437.09	9.84	9.69	1.88	253.67	947.9
Survey	5033	70.2	186.8	4689.14	-295.11	-913.28	465.86	11.23	10.97	2.58	252.09	959.78
Survey	5064	73.5	185.9	4698.8	-324.38	-916.54	495.2	11	10.65	2.9	250.51	972.25
Survey	5096	75.7	184.4	4707.3	-355.1	-919.31	525.88	8.23	6.88	4.69	248.88	985.51
Survey	5127	78.2	183.6	4714.3	-385.22	-921.42	555.84	8.45	8.06	2.58	247.31	998.7
Survey	5159	80.6	183.6	4720.19	-416.61	-923.39	587.02	7.5	7.5	0	245.72	1013.02
Survey	5190	83.9	182.7	4724.37	-447.28	-925.08	617.44	11.03	10.65	2.9	244.2	1027.54

Survey	5223	85.8	181.7	4727.33	-480.12	-926.34	649.91	6.5	5.76	3.03	242.6	1043.37
Survey	5254	86.4	180.2	4729.44	-511.04	-926.85	680.34	5.2	1.94	4.84	241.13	1058.4
Survey	5285	87	180.1	4731.22	-541.99	-926.93	710.73	1.96	1.94	0.32	239.68	1073.76
Survey	5317	87	179.5	4732.9	-573.95	-926.82	742.06	1.87	0	1.88	238.23	1090.14
Survey	5379	86.5	179.1	4736.41	-635.85	-926.06	802.65	1.03	0.81	0.65	235.53	1123.34
Survey	5474	86.6	179.5	4742.13	-730.67	-924.9	895.47	0.43	0.11	0.42	231.69	1178.69
Survey	5502	87.3	179.1	4743.62	-758.63	-924.56	922.83	2.88	2.5	1.43	230.63	1195.96
Survey	5534	87.3	179.1	4745.13	-790.59	-924.06	954.1	0	0	0	229.45	1216.11
Survey	5567	87.9	179.2	4746.51	-823.56	-923.57	986.35	1.84	1.82	0.3	228.28	1237.43
Survey	5598	88.2	179.4	4747.57	-854.54	-923.19	1016.68	1.16	0.97	0.65	227.21	1257.98
Survey	5675	89.5	179	4749.12	-931.52	-922.12	1092	1.77	1.69	0.52	224.71	1310.74
Survey	5735	89.8	179.4	4749.49	-991.51	-921.28	1150.7	0.83	0.5	0.67	222.9	1353.46
Survey	5826	89.7	179.3	4749.89	-1082.5	-920.25	1239.78	0.16	0.11	0.11	220.37	1420.8
Survey	5916	90.9	181	4749.42	-1172.49	-920.49	1328.12	2.31	1.33	1.89	218.13	1490.65
Survey	6008	91.2	181.3	4747.73	-1264.46	-922.34	1418.72	0.46	0.33	0.33	216.11	1565.11
Survey	6100	91.3	181.4	4745.72	-1356.41	-924.51	1509.36	0.15	0.11	0.11	214.28	1641.51
Survey	6190	93	181.1	4742.34	-1446.32	-926.47	1597.96	1.92	1.89	0.33	212.64	1717.61
Survey	6282	92.6	180.9	4737.85	-1538.2	-928.07	1688.42	0.49	0.43	0.22	211.1	1796.49
Survey	6372	90.7	181.5	4735.26	-1628.14	-929.95	1777.03	2.21	2.11	0.67	209.73	1875.01
Survey	6464	89.8	179.7	4734.86	-1720.13	-930.91	1867.48	2.19	0.98	1.96	208.42	1955.87
Survey	6555	91.5	179.5	4733.83	-1811.12	-930.27	1956.63	1.88	1.87	0.22	207.19	2036.06
Survey	6645	90.7	180.1	4732.1	-1901.1	-929.96	2044.86	1.11	0.89	0.67	206.07	2116.37
Survey	6737	89.1	179.5	4732.26	-1993.1	-929.64	2135.07	1.86	1.74	0.65	205.01	2199.24
Survey	6832	89.4	179.5	4733.5	-2088.09	-928.81	2228.11	0.32	0.32	0	203.98	2285.35
Survey	6927	90	179.1	4734	-2183.08	-927.65	2321.09	0.76	0.63	0.42	203.02	2372
Survey	6996	90	178.2	4734	-2252.06	-926.02	2388.46	1.31	0	1.3	202.35	2435.01
Survey	7091	89.9	178.6	4734.08	-2347.02	-923.37	2481.12	0.43	0.11	0.42	201.48	2522.13
Survey	7186	89.6	178.5	4734.5	-2441.99	-920.97	2573.84	0.33	0.32	0.11	200.66	2609.89
Survey	7279	90.4	178.1	4734.5	-2534.95	-918.21	2664.52	0.96	0.86	0.43	199.91	2696.12
Survey	7374	91.1	179.8	4733.25	-2629.92	-916.47	2757.37	1.94	0.74	1.79	199.21	2785.03
Survey	7467	90.5	180.1	4731.96	-2722.91	-916.39	2848.59	0.72	0.65	0.32	198.6	2872.98
Survey	7562	89.9	181.8	4731.62	-2817.89	-917.97	2942.09	1.9	0.63	1.79	198.04	2963.64
Survey	7657	90.1	181.7	4731.62	-2912.85	-920.87	3035.83	0.24	0.21	0.11	197.54	3054.95
Survey	7752	91	181.2	4730.71	-3007.81	-923.27	3129.46	1.08	0.95	0.53	197.06	3146.32
Survey	7847	88.6	180.6	4731.04	-3102.79	-924.76	3222.94	2.6	2.53	0.63	196.6	3237.67
Survey	7941	87.7	181.5	4734.08	-3196.72	-926.48	3315.44	1.35	0.96	0.96	196.16	3328.27
Survey	8036	90.1	182.3	4735.9	-3291.64	-929.63	3409.18	2.66	2.53	0.84	195.77	3420.4
Survey	8132	90.7	181.8	4735.23	-3387.58	-933.06	3503.98	0.81	0.63	0.52	195.4	3513.73
Survey	8227	91.3	181.2	4733.57	-3482.53	-935.55	3597.62	0.89	0.63	0.63	195.04	3606
Survey	8321	90.4	180.9	4732.18	-3576.5	-937.27	3690.16	1.01	0.96	0.32	194.68	3697.27
Survey	8415	90.1	180.7	4731.77	-3670.49	-938.58	3782.63	0.38	0.32	0.21	194.34	3788.59
Survey	8510	90.9	180.2	4730.94	-3765.48	-939.33	3875.98	0.99	0.84	0.53	194.01	3880.87
Survey	8604	91.6	178.8	4728.89	-3859.45	-938.51	3968.03	1.66	0.74	1.49	193.67	3971.92
Survey	8698	90.3	179.2	4727.33	-3953.42	-936.87	4059.91	1.45	1.38	0.43	193.33	4062.91
Survey	8792	91	179.4	4726.26	-4047.41	-935.72	4151.91	0.77	0.74	0.21	193.02	4154.17
Survey	8886	89	180.4	4726.26	-4141.4	-935.56	4244.1	2.38	2.13	1.06	192.73	4245.76
Survey	8980	87.5	179.4	4729.13	-4235.35	-935.4	4336.26	1.92	1.6	1.06	192.45	4337.41
Survey	9075	88.8	178.5	4732.2	-4330.28	-933.66	4429.06	1.66	1.37	0.95	192.17	4429.79
Survey	9169	89	178.3	4734	-4424.23	-931.04	4520.74	0.3	0.21	0.21	191.88	4521.13
Survey	9264	90	177	4734.83	-4519.14	-927.14	4613.11	1.73	1.05	1.37	191.59	4613.27
Survey	9304	90.3	177.3	4734.73	-4559.09	-925.15	4651.93	1.06	0.75	0.75	191.47	4652.01
PrjCalcPnt	9354	90.3	177.3	4734.47	-4609.03	-922.79	4700.48	0	0	0	191.32	4700.5

SHAMROCK GAS ANALYSIS, INC.

LABORATORY REFERENCE NUMBER : **U12571.Q07439**

SANDRIDGE ENERGY, INC.

ID: **KS04R0433**
AREA: **KANSAS**
METER: **JANE 3406 2-30H**
LEASE: **JANE 3406 2-30H**
OPERATOR: **SANDRIDGE**
STATION: **KS04R0433**
SAMPLE DATE: **1/9/2015**
SAMPLE OF: **GAS**

LINE PRESSURE: **34.27 PSI**
LINE TEMPERATURE: **52.5 F**
CYLINDER NUMBER: **7038**
EFFECTIVE DATE: **1/1/2015**
SAMPLED BY: **A.S.**
ANALYZED BY: **BRENNAN**
ANALYZED DATE: **1/14/2015**
SAMPLE TYPE: **SPOT**

For: SANDRIDGE ENERGY, INC.
Attn: JULIE COSTELLO
123 ROBERT S. KERR AVENUE
OKLAHOMA CITY, OK 73102-6406

Physical Properties per GPA 2145-09 — Calculations per GPA 2172-09

Note: Zero = Less than detection limit

	MOL%	GPM @ 14.696
HYDROGEN	0.087	0.008
HELIUM	0.125	0.013
NITROGEN	2.911	0.320
CARBON DIOXIDE	0.393	0.067
METHANE	78.185	13.228
ETHANE	8.380	2.237
PROPANE	4.894	1.346
ISOBUTANE	0.742	0.242
N-BUTANE	2.054	0.646
ISOPENTANE	0.530	0.193
N-PENTANE	0.704	0.255
HEXANES PLUS	0.995	0.443
	100.000	18.998

BTU	**Vol. Ideal Gas Fuel**	**Vol. Real Gas Fuel**
BTU @ 14.65 PSIA (DRY)	1250.5	1255.2
BTU @ 14.65 PSIA (SAT.)	1228.7	1233.7
Specific Gravity	0.7488	0.7512
Compressibility (Z)	0.9963	

Gasoline Content (Gallons Per Thousand - GPM)

Ethane & Heavier	5.362
Propane & Heavier	3.125
Butane & Heavier	1.779
Pentane & Heavier	0.891
Total 26 psi Reid V.P. Gasoline GPM	1.365

Secondary BTU Psia Base

	Vol. IDEAL Gas Fuel	**Vol. Real Gas Fuel**
BTU @ 14.73 PSIA (DRY)	1257.4	1262.1
BTU @ 14.73 PSIA (SAT.)	1235.4	1240.5
Compressibility (Z) at 14.73 =	0.9963	

Remarks: 1ST GAS SAMPLE NO PREVIOUS BTU AVAILABLE
Remarks: 47-36-17 HEXANES SPLIT AS PER K. HARPER 05/02/11

Jane 3406 2-30H Perfs

Stage Num	Date	Top Depth	Top Depth (TVD)	Bottom Depth	Bottom Depth (TVD)	Zone	Shot/Ft	Type
27	12/10/2014	5,677.00	4,749.10	5,678.00	4,749.10	Miss Lime	1	Frac Sleeve
26	12/10/2014	5,778.00	4,749.60	5,779.00	4,749.60	Miss Lime	1	Frac Sleeve
25	12/10/2014	5,878.00	4,750.10	5,879.00	4,750.10	Miss Lime	1	Frac Sleeve
24	12/10/2014	6,027.00	4,748.70	6,028.00	4,748.70	Miss Lime	1	Frac Sleeve
23	12/10/2014	6,175.00	4,745.10	6,176.00	4,745.00	Miss Lime	1	Frac Sleeve
22	12/10/2014	6,320.00	4,739.50	6,321.00	4,739.40	Miss Lime	1	Frac Sleeve
21	12/10/2014	6,513.00	4,737.70	6,514.00	4,737.70	Miss Lime	1	Frac Sleeve
20	12/10/2014	6,612.00	4,735.70	6,613.00	4,735.70	Miss Lime	1	Frac Sleeve
19	12/10/2014	6,805.00	4,736.30	6,806.00	4,736.30	Miss Lime	1	Frac Sleeve
18	12/10/2014	6,907.00	4,737.10	6,908.00	4,737.10	Miss Lime	1	Frac Sleeve
17	12/10/2014	7,096.00	4,737.20	7,097.00	4,737.20	Miss Lime	1	Frac Sleeve
16	12/10/2014	7,245.00	4,737.80	7,246.00	4,737.80	Miss Lime	1	Frac Sleeve
15	12/10/2014	7,394.00	4,736.50	7,395.00	4,736.40	Miss Lime	1	Frac Sleeve
14	12/10/2014	7,495.00	4,735.30	7,496.00	4,735.30	Miss Lime	1	Frac Sleeve
13	12/10/2014	7,643.00	4,735.20	7,644.00	4,735.20	Miss Lime	1	Frac Sleeve
12	12/10/2014	7,790.00	4,733.90	7,791.00	4,733.90	Miss Lime	1	Frac Sleeve
11	12/10/2014	7,930.00	4,737.20	7,931.00	4,737.30	Miss Lime	1	Frac Sleeve
10	12/10/2014	8,122.00	4,738.90	8,123.00	4,738.90	Miss Lime	1	Frac Sleeve
9	12/10/2014	8,219.00	4,737.70	8,220.00	4,737.70	Miss Lime	1	Frac Sleeve
8	12/10/2014	8,369.00	4,735.20	8,370.00	4,735.20	Miss Lime	1	Frac Sleeve
7	12/10/2014	8,548.00	4,733.30	8,549.00	4,733.30	Miss Lime	1	Frac Sleeve
6	12/10/2014	8,649.00	4,731.00	8,650.00	4,731.00	Miss Lime	1	Frac Sleeve
5	12/10/2014	8,777.00	4,729.60	8,778.00	4,729.60	Miss Lime	1	Frac Sleeve
4	12/10/2014	8,916.00	4,730.00	8,917.00	4,730.00	Miss Lime	1	Frac Sleeve
3	12/10/2014	9,055.00	4,734.80	9,056.00	4,734.90	Miss Lime	1	Frac Sleeve
2	12/10/2014	9,195.00	4,737.50	9,196.00	4,737.50	Miss Lime	1	Frac Sleeve
1	12/10/2014	9,335.00	4,737.70	9,336.00	4,737.70	Miss Lime	1	Frac Sleeve