



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1223806  
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: \_\_\_\_\_

1223806

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> _____
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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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<b>JOB SUMMARY</b>			PROJECT NUMBER <b>SOK 3817</b>	TICKET DATE <b>06/11/14</b>
COUNTY <b>Harper</b>	State <b>Kansas</b>	COMPANY <b>Sandridge Exploration &amp; Production</b>	CUSTOMER REP <b>Mark Turner</b>	
LEASE NAME <b>Joyce</b>	Well No. <b>1406 1-271</b>	JOB TYPE <b>2-Stage Intermediate</b>	EMPLOYEE NAME <b>Mike Hall</b>	

EMP NAME <b>Mike Hall</b>	<b>Eric Parsons</b>				
<b>Cheryl Newton</b>					
<b>R J Stonehocker</b>					
<b>Justin</b>					

Form. Name \_\_\_\_\_ Type: \_\_\_\_\_

Packer Type \_\_\_\_\_ Set At **3,931'**

Bottom Hole Temp. **155** Pressure \_\_\_\_\_

Retainer Depth \_\_\_\_\_ Total Depth **5,526'**

Date	Called Out	On Location	Job Started	Job Completed
		<b>6/11/2014</b>	<b>6/11/2014</b>	<b>6/11/2014</b>
Time		<b>7:00am</b>	<b>9:15am</b>	<b>11:30am</b>

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float Val	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	Max. Allow
Casing		26#	7"	Surface		5,000
Liner						
Liner						
Tubing			0			
Drill Pipe						
Open Hole			8 1/2"	Surface		Shots/Ft.
Perforations						
Perforations						
Perforations						

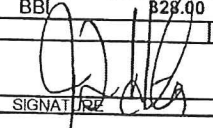
Materials			
Mud Type	WBM	Density	9 Lb/Gal
Disp. Fluid	Fresh Water	Density	8.33 Lb/Gal
Spacer type	Fresh Water	WBL	20 8.33
Spacer type		WBL	
Acid Type		Gal.	%
Acid Type		Gal.	%
Surfactant		Gal.	In
NE Agent		Gal.	In
Fluid Loss		Gal/Lb	In
Gelling Agent		Gal/Lb	In
Fric. Red.		Gal/Lb	In
MISC.		Gal/Lb	In
Perfpac Balls		Qty.	
Other			
Other			
Other			
Other			
Other			

Hours On Location		Operating Hours		Description of Job
Date	Hours	Date	Hours	
6/11	4.0	6/11	2.0	2-Stage Intermediate
Total	4.0	Total	2.0	

Pressures			
MAX	5,000 PSI	AVG	300
Average Rates in BPM			
MAX	8 BPM	AVG	4
Cement Left in Pipe			
Feet	43	Reason	SHOE JOINT

Cement Data						
Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	180	50/50 PO	PREMIUM 4% Gal - 0.2% FL-17 - 0.1% C-51 - 0.2% C-20 - 0.1% C-37 - 0.4% C-41P	6.93	1.43	13.60
2	190	Premium	0.2% FL-17 - 0.1% C-51 - 0.1% C-20 - 0.4% C-41P	5.19	1.19	15.60
3	0			0	0.00	0.00

Summary					
Preflush	30.00	Type:	Gel Spacer		
Breakdown	MAXIMUM 5,000 PSI	Load & Bkdn:	Gal - BBI	N/A	Pad: Bbl - Gal N/A
	Lost Returns - N	Excess /Return	BBI	N/A	Calc. Disp Bbl 211
	Actual TOC	Calc. TOC:			Actual Disp. 212.00
Average	Bump Plug PSI: 980	Final Circ.	PSI: 490		Disp: Bbl
5 Min.	10 Min	Cement Slurry:	BBI	86.0	
	15 Min	Total Volume	BBI	828.00	

CUSTOMER REPRESENTATIVE \_\_\_\_\_ SIGNATURE 

# JOB SUMMARY

PROJECT NUMBER <b>SOK 3780</b>		TICKET DATE <b>05/31/14</b>	
COUNTY <b>Harper</b>	State <b>Kansas</b>	COMPANY <b>Bridge Exploration &amp; Produc</b>	CUSTOMER REP <b>Mark Turner</b>
LEASE NAME <b>Joyce</b>	Well No. <b>1406 1-271</b>	JOB TYPE <b>Surface</b>	EMPLOYEE NAME <b>Barry Barkley</b>

EMP NAME <b>Barry Barkley</b>	<b>0</b>				
<b>Rocky Anthis</b>					
<b>Flo Helkena</b>					
<b>0.00</b>					

Form, Name \_\_\_\_\_ Type: \_\_\_\_\_

Packer Type \_\_\_\_\_ Set At **0**

Bottom Hole Temp. **80** Pressure \_\_\_\_\_

Retainer Depth \_\_\_\_\_ Total Depth **669**

Date	Called Out <b>5/30/2014</b>	On Location <b>5/30/2014</b>	Job Started <b>5/30/2014</b>	Job Completed <b>5/31/2014</b>
Time	<b>11:30</b>	<b>15:00</b>	<b>22:30</b>	<b>1:00</b>

Tools and Accessories

Type and Size	Qty	Make
Auto Fill Tube	0	IR
Insert Float V <sub>2</sub>	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	Max. Allow
Casing		36#	9 5/8"		Surface	669	1,500
Liner							
Liner							
Tubing			0				
Drill Pipe							
Open Hole			12 1/4"		Surface	665	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		

Perfor. Balls \_\_\_\_\_ Qty. \_\_\_\_\_

Other \_\_\_\_\_

Other \_\_\_\_\_

Other \_\_\_\_\_

Other \_\_\_\_\_

Hours On Location

Date	Hours	Date	Hours	Description of Job
5/30	9.0	5/30	1.5	Surface
5/31	1.0	5/31	1.0	
Total		Total		
10.0		2.5		

Pressures

MAX	1,500 PSI	AVG.	200
Average Rates in BPM			
MAX	6 BPM	AVG	4.5
Cement Left in Pipe			
Feet	43	Reason	SHOE JOINT

Cement Data

Stage	Sacks	Cement	Additives	W/Rq.	Yield	Lbs/Gal
1	200	TEX Lite Premium Plus 65 (6% Gel)	2% Calcium Chloride - 1/4pps Cello-Flake - .4% C-41P	11.11	2.01	12.40
2	200	Premium Plus (Class C)	2% Calcium Chloride - 1/4pps Cello-Flake	6.32	1.32	14.80
3	0	0		0	0.00	0.00

Summary

Preflush	_____	Type:	_____	Preflush:	BBI	_____	Type:	Fresh Water
Blowdown	_____	MAXIMUM	1,500 PSI	Load & Bkdn:	Gal - BBI	N/A	Pad:Bbl -Gal	N/A
		Lost Returns-l	NO/FULL	Excess /Return BBI		61	Calc. Disp Bbl	48
		Actual TOC	SURFACE	Calc. TOC:		SURFACE	Actual Disp.	48.40
Average		Bump Plug PSI:	800	Final Circ. PSI:		300	Disp:Bbl	48.40
_____ 5 Min.		10 Min	15 Min	Cement Slurry BBI		118.0		
				Total Volume BBI		176.40		

CUSTOMER REPRESENTATIVE \_\_\_\_\_ SIGNATURE \_\_\_\_\_



# Joyce 3406 1-27H

Perforations 5 shots/foot

Date	Top (ftKB)	Blm (ftKB)	Zone
8/13/2014	5,654.0	5,656.0	Miss Lime, Original Hole
8/13/2014	5,826.0	5,858.0	Miss Lime, Original Hole
8/13/2014	5,991.0	5,993.0	Miss Lime, Original Hole
8/13/2014	6,158.0	6,160.0	Miss Lime, Original Hole
8/13/2014	6,323.0	6,325.0	Miss Lime, Original Hole
8/13/2014	6,490.0	6,492.0	Miss Lime, Original Hole
8/13/2014	6,654.0	6,656.0	Miss Lime, Original Hole
8/13/2014	6,820.0	6,822.0	Miss Lime, Original Hole
8/13/2014	7,025.0	7,027.0	Miss Lime, Original Hole
8/13/2014	7,191.0	7,193.0	Miss Lime, Original Hole
8/13/2014	7,398.0	7,400.0	Miss Lime, Original Hole
8/13/2014	7,567.0	7,569.0	Miss Lime, Original Hole
8/12/2014	7,778.0	7,780.0	Miss Lime, Original Hole
8/12/2014	7,950.0	7,952.0	Miss Lime, Original Hole
8/12/2014	8,160.0	8,162.0	Miss Lime, Original Hole
8/12/2014	8,331.0	8,333.0	Miss Lime, Original Hole
8/12/2014	8,542.0	8,544.0	Miss Lime, Original Hole
8/12/2014	8,714.0	8,716.0	Miss Lime, Original Hole
8/12/2014	8,929.0	8,931.0	Miss Lime, Original Hole
8/12/2014	9,098.0	9,100.0	Miss Lime, Original Hole

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/12/2014
Job End Date:	8/12/2014
State:	Kansas
County:	Harper
API Number:	15-077-22048-01-00
Operator Name:	SandRidge Energy
Well Name and Number:	Joyce 3406 #1-27H
Longitude:	-97.96341737
Latitude:	37.06507260
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	4,704
Total Base Water Volume (gal):	2,186,940
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	95.21196	None
40/70 Premium Preferred Sand	Cimarron Acid	Proppant, Scouring, Fill	Crystalline Silica (quartz)	14808-60-7	100.00000	2.58932	None
40/70 Resin Coated Sand	Cimarron Acid	Proppant, Scouring, Fill	Crystalline Silica (quartz)	14808-60-7	97.00000	1.30360	None
15% Unihibited HCl Acid	Cimarron Acid	Etching, Dissolving, Cleaning	Water	7732-18-5	85.00000	0.63651	None
			Hydrochloric Acid	7647-01-0	15.00000	0.11232	None
			Water	7732-18-5	24.00000	0.00015	None
			Methanol	67-56-1	9.00000	0.00006	None
			Triethyl Phosphate	78-40-0	8.40000	0.00005	None
			Ethoxylated Nonylphenol	68412-54-4	8.40000	0.00005	None
			Isopropyl Alcohol	67-63-0	8.40000	0.00005	None
			Cinnamaldehyde	104-55-2	8.40000	0.00005	None
			Tar Bases-quinoline derivs-benzyl chloride/quaternized	72480-70-7	8.40000	0.00005	None
			Ethylene Glycol	107-21-1	8.40000	0.00005	None

			N-Dimethylformamide	68-12-2	8.40000	0.00005	None
			2-Butoxyethanol	111-76-2	8.40000	0.00005	None
Iron Control, Sodium Erythorbate	Cimarron Acid	Iron Control					
			Water	7732-18-5	55.50000	0.02471	None
			Methanol	67-56-1	12.70000	0.00567	None
			Nonylphenol Polyethylene Glycol Ether	127087-87-0	9.10000	0.00405	None
			Poly(ethylene Oxide)	25322-68-3	9.10000	0.00405	None
			Dinanylphenyl Polyoxyethylene	201602-88-2	9.10000	0.00405	None
			Isopropanol	67-63-0	4.60000	0.00203	None
			Sodium Erythorbate	6381-77-7	100.00000	0.00023	None
			Water	7732-18-5	54.50000	0.00018	None
			Isopropanol	67-63-0	13.60000	0.00004	None
			Polyglycol Ethers	52624-57-4	13.60000	0.00004	None
			Methanol	67-56-1	9.00000	0.00003	None
			Glycol Ether EB	111-76-2	9.00000	0.00003	None
FR-986, Cationic Friction Reducer	Cimarron Acid	Friction Reducer					
			Water	7732-18-5	50.00000	0.00473	None
			Phosphoric Acid	7664-38-2	16.80000	0.00159	None
			Hydrochloric Acid	7647-01-0	16.80000	0.00159	None
			Petroleum Hydrotreated Light Distillate	64742-47-8	2.50000	0.00127	None
			Ethylene Glycol	107-21-1	12.70000	0.00120	None
			Methanol	67-56-1	3.60000	0.00034	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)





**Joyce 3406 1-27H**  
 Latshaw 36  
 Harper County, KS  
 X= 2156575.00'  
 Y= 145519.00'  
 Plan 2 vs Actual

**Plan Data for Joyce 3406 1-27H**

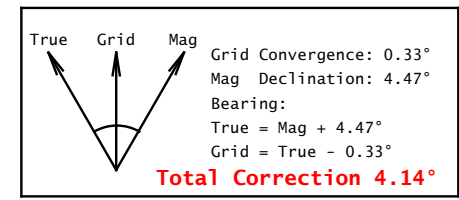
Plan Point Information:

DogLeg	Severity	Unit:	Position offsets from Site centre					
MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
1200.70	0.00	0.00	1200.70	0.00	0.00	0.00	0.00	0.0
1950.70	15.00	67.00	1942.16	38.14	89.86	-36.74	2.00	67.0
3980.70	15.00	67.00	3902.99	243.43	573.49	-234.50	0.00	0.0
5139.41	87.00	179.19	4667.42	-430.27	763.00	442.07	8.00	112.2
5439.41	87.00	179.19	4683.12	-729.82	767.26	741.65	0.00	0.0
5526.07	89.60	179.19	4685.69	-816.44	768.49	828.28	3.00	0.0
9290.11	89.60	179.19	4711.97	-4580.00	822.00	4592.22	0.00	0.0

Target Set Information:

Name: Joyce 3406 1-27H T1

Name	TVD	Northing	Easting	Lat	Long
(USft)	(USft)	(USft)	(USft)	(°/'/'")	(°/'/'")
PBHL	4711.97	140919.00	2157398.00	37°3'8.7"	-97°57'38.5"



**Plan Data for Joyce 3406 1-27H**

**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:** Joyce 3406 1-27H  
 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: 179.11°  
 +E/-W: 0.00USft

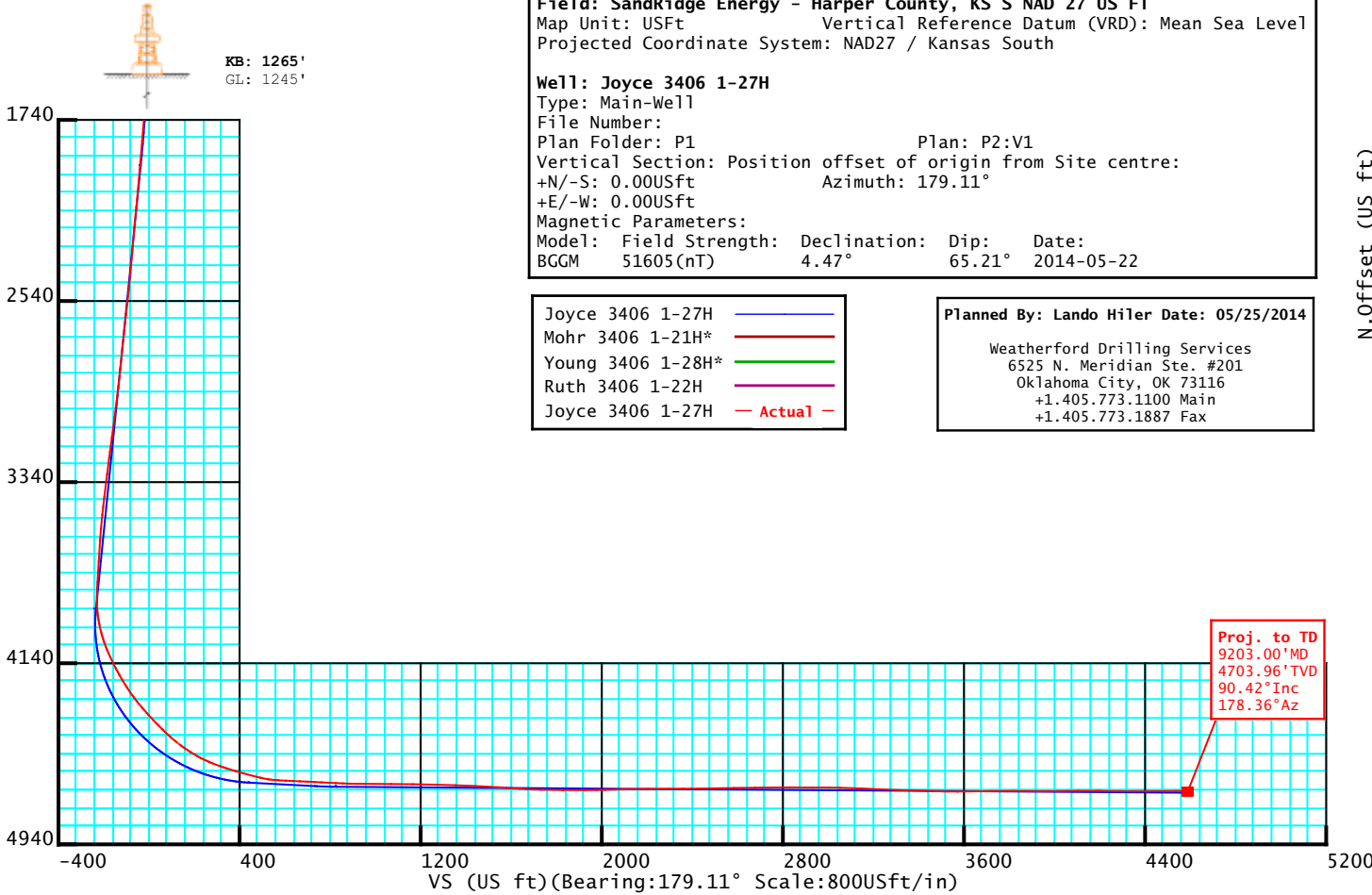
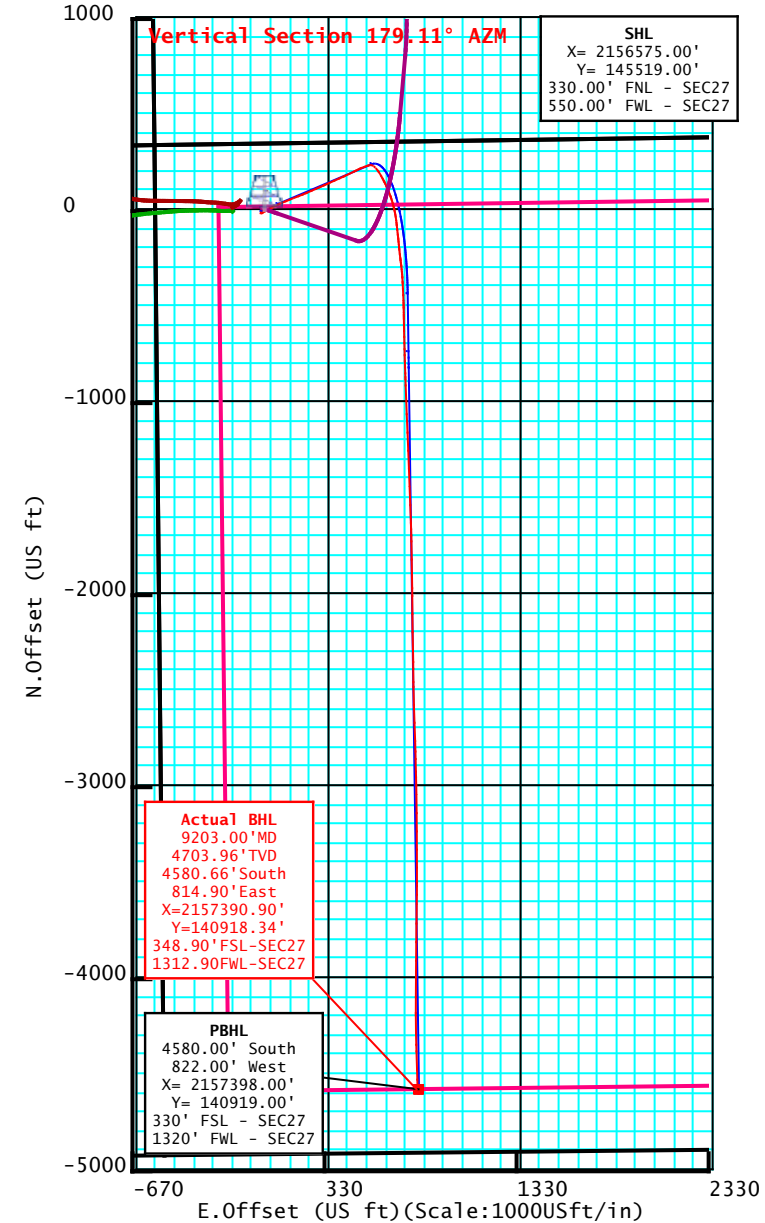
**Magnetic Parameters:**  
 Model: Field Strength: Declination: Dip: Date:  
 BGGM 51605(nT)    4.47°    65.21°    2014-05-22

Joyce 3406 1-27H	—
Mohr 3406 1-21H*	—
Young 3406 1-28H*	—
Ruth 3406 1-22H	—
Joyce 3406 1-27H	— Actual —

**Planned By:** Lando Hiler Date: 05/25/2014

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

**Proj. to TD**  
 9203.00' MD  
 4703.96' TVD  
 90.42° Inc  
 178.36° Az



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

**Field Name:** *SandRidge Energy - Harper County, KS S NAD 27 US FT*  
**Site Name:** *Joyce 3406 1-27H*  
**Well Name:** *Joyce 3406 1-27H*  
**Survey:** *Definitive Survey*

22 September 2014



## Joyce 3406 1-27H

<b>Field Name</b> SandRidge Energy - Harper 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> Joyce 3406 1-27H	<b>Units :</b> US ft	<b>North Reference :</b> Grid	<b>Convergence Angle :</b> 0.33
	<b>Position</b>	<b>Northing :</b> 145519.00 US ft	<b>Latitude :</b> 37° 3' 54.27"
		<b>Easting :</b> 2156575.00 US ft	<b>Longitude :</b> -97° 57' 48.32"
	<b>Site TVD Reference :</b> Ground Level		
	<b>Elevation above Mean Sea Level:</b> 1320.00 US ft		
	<b>Comment :</b>		
<b>Slot Name</b> Joyce 3406 1-27H	<b>Position (Offsets relative to Site Centre)</b>		
	<b>+N / -S :</b> 0.00 US ft	<b>Northing :</b> 145519.00 US ft	<b>Latitude :</b> 37°3'54.27"
	<b>+E / -W :</b> 0.00 US ft	<b>Easting :</b> 2156575.00 US ft	<b>Longitude :</b> -97°57'48.32"
	<b>Slot TVD Reference :</b> Ground Elevation		
	<b>Elevation above Mean Sea Level :</b> 1320.00 US ft		
	<b>Comment :</b>		
<b>Well Name</b> Joyce 3406 1-27H	<b>Type :</b> Main well	<b>UWI :</b>	
	<b>Rig Height <i>Drill Floor</i> :</b> 20.00 US ft	<b>Comment :</b>	
	<b>Relative to Mean Sea Level:</b> 1340.00 US ft		
	<b>Closure Distance :</b> 4652.59 US ft	<b>Closure Azimuth :</b> 169.913°	
	<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> 179.11°

## 5D Survey Report

**Target Set****Name :** Joyce 3406 1-27H T1**Number of Targets :** 1**Comment :**

<b>TargetName:</b>	<b>Position (Relative to Site centre)</b>		
PBHL	+N / -S : -4600.00US ft	<b>Northing :</b> 140919.00 US ft	<b>Latitude :</b> 37°3'8.74"
<b>Shape:</b>	+E / -W : 823.00 US ft	<b>Easting :</b> 2157398.00US ft	<b>Longitude :</b> -97°57'38.49"
Cuboid	<b>TVD (Drill Floor) :</b> 4711.97 US ft		
	<b>SS :</b> -3371.97 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 :** 22/May/2014**Survey Tool :****Comment :****Company :****Magnetic Model****Model Name:** BGGM**Date:** 22/May/2014**Field Strength:** 51605.5 nT**Declination:** 4.47°**Dip:** 65.21°**Survey Tool Ranges**

<b>Name</b>	<b>Start MD (US ft)</b>	<b>End MD (US ft)</b>	<b>Source Survey</b>
Inc Only 3deg_WFTR	0.00	665.00	Rig Surveys
MWD	665.00	9203.00	WFT MWD Surveys

**Well path created using minimum curvature**

<b>Survey Points (Relative to Site centre, TVD relative to Drill Floor )</b>									
<b>MD (US ft)</b>	<b>Inc (°)</b>	<b>Az (°)</b>	<b>TVD (US ft)</b>	<b>N.Offset (US ft)</b>	<b>E.Offset (US ft)</b>	<b>VS (US ft)</b>	<b>DLS (°/100 US ft)</b>	<b>Comment</b>	
0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	2	
250.00	1.20	193.10	249.98	-2.55	-0.59	2.54	0.48	First SRE Rig Svy	
500.00	1.20	193.10	499.93	-7.65	-1.78	7.62	0.00		
665.00	1.40	193.10	664.88	-11.30	-2.63	11.25	0.12	Last SRE Rig Svy	
765.00	0.78	193.10	764.87	-13.15	-3.06	13.10	0.62	First WFT/MWD Svy	
857.00	0.73	185.82	856.86	-14.34	-3.26	14.29	0.12		
947.00	0.56	92.27	946.85	-14.93	-2.88	14.88	1.05		
1039.00	1.40	58.46	1038.84	-14.36	-1.47	14.33	1.07		
1131.00	1.51	59.67	1130.81	-13.16	0.53	13.17	0.12		
1223.00	3.57	57.44	1222.72	-11.00	3.99	11.07	2.24		
1315.00	6.09	57.92	1314.38	-6.87	10.54	7.03	2.74		
1407.00	7.97	62.42	1405.69	-1.33	20.33	1.64	2.13		

## 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	
1501.00	9.27	63.26	1498.62	5.10	32.87	-4.59	1.39		
1595.00	8.68	61.27	1591.47	11.91	45.85	-11.20	0.71		
1689.00	10.00	61.88	1684.22	19.17	59.27	-18.25	1.41		
1783.00	10.10	61.88	1776.78	26.90	73.74	-25.75	0.11		
1877.00	11.66	64.55	1869.09	34.87	89.59	-33.47	1.74		
1971.00	13.37	67.90	1960.85	43.04	108.23	-41.36	1.98		
2066.00	14.15	68.69	2053.13	51.39	129.23	-49.38	0.84		
2160.00	15.38	67.10	2144.02	60.42	151.42	-58.06	1.38		
2254.00	13.60	68.99	2235.03	69.23	173.22	-66.54	1.96		
2348.00	14.11	68.90	2326.29	77.32	194.22	-74.30	0.54		
2442.00	14.43	68.49	2417.39	85.74	215.81	-82.38	0.36		
2537.00	15.50	65.95	2509.17	95.25	238.42	-91.54	1.32		
2631.00	16.49	66.67	2599.53	105.66	262.14	-101.57	1.07		
2725.00	15.73	66.47	2689.84	116.03	286.07	-111.57	0.81		
2819.00	14.03	66.40	2780.68	125.68	308.20	-120.87	1.81		
2914.00	15.57	65.95	2872.53	135.48	330.39	-130.33	1.63		
3008.00	17.40	65.54	2962.66	146.44	354.71	-140.92	1.95		
3102.00	18.14	66.08	3052.17	158.20	380.88	-152.26	0.81		
3197.00	19.01	66.19	3142.22	170.44	408.55	-164.07	0.92		
3292.00	17.65	64.96	3232.40	182.78	435.76	-175.99	1.49		
3386.00	16.43	64.45	3322.27	194.55	460.66	-187.37	1.31		
3481.00	15.34	63.53	3413.65	205.94	484.03	-198.40	1.18		
3576.00	12.76	62.38	3505.80	216.41	504.58	-208.55	2.73		
3670.00	11.02	68.91	3597.78	224.46	522.16	-216.32	2.34		
3764.00	10.95	70.92	3690.06	230.61	538.98	-222.21	0.41		
3858.00	10.76	69.90	3782.38	236.54	555.66	-227.88	0.29		
3952.00	10.77	93.07	3874.76	239.09	572.68	-230.16	4.57		
3983.00	12.41	111.19	3905.14	237.73	578.68	-228.71	12.81		
4014.00	14.14	125.57	3935.32	234.32	584.87	-225.21	11.98		
4046.00	16.02	133.14	3966.22	229.03	591.27	-219.82	8.50		
4077.00	18.12	137.41	3995.85	222.55	597.66	-213.24	7.88		
4109.00	20.92	141.69	4026.01	214.40	604.57	-204.99	9.82		
4141.00	23.44	145.97	4055.65	204.64	611.67	-195.12	9.35		
4172.00	25.91	148.89	4083.81	193.73	618.62	-184.10	8.88		
4203.00	28.09	151.01	4111.43	181.55	625.66	-171.81	7.69		
4235.00	28.84	152.09	4139.57	168.14	632.92	-158.29	2.84		
4266.00	30.10	152.69	4166.55	154.62	639.99	-144.66	4.17		
4297.00	32.24	154.15	4193.08	140.27	647.16	-130.20	7.32		
4329.00	33.44	156.04	4219.96	124.53	654.47	-114.35	4.93		
4361.00	34.78	157.73	4246.46	108.03	661.51	-97.74	5.13		
4392.00	36.56	158.76	4271.64	91.24	668.20	-80.85	6.06		

## 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
4423.00	38.80	160.74	4296.18	73.46	674.75	-62.97	8.21	
4455.00	40.54	163.04	4320.81	54.05	681.09	-43.46	7.11	
4486.00	41.74	164.68	4344.15	34.46	686.76	-23.79	5.21	
4518.00	42.63	166.82	4367.87	13.63	692.04	-2.88	5.28	
4549.00	44.01	168.81	4390.42	-7.15	696.53	17.97	6.26	
4581.00	45.06	171.01	4413.23	-29.25	700.46	40.12	5.83	
4612.00	45.51	172.68	4435.04	-51.05	703.58	61.98	4.09	
4644.00	47.58	173.98	4457.05	-74.12	706.27	85.08	7.11	
4675.00	49.99	173.94	4477.48	-97.31	708.73	108.31	7.77	
4707.00	52.88	173.43	4497.42	-122.18	711.48	133.21	9.12	
4739.00	55.50	174.09	4516.14	-147.97	714.30	159.05	8.36	
4771.00	57.79	174.47	4533.74	-174.57	716.96	185.68	7.22	
4802.00	60.61	174.40	4549.61	-201.07	719.54	212.22	9.10	
4834.00	63.94	173.01	4564.49	-229.22	722.65	240.41	11.09	
4865.00	67.47	172.76	4577.25	-257.25	726.15	268.50	11.41	
4897.00	69.89	173.43	4588.88	-286.84	729.74	298.14	7.81	
4929.00	71.35	174.54	4599.50	-316.86	732.90	328.21	5.61	
4960.00	72.90	176.37	4609.02	-346.27	735.23	357.65	7.52	
4991.00	74.15	176.94	4617.81	-375.94	736.97	387.35	4.40	
5023.00	74.58	177.59	4626.43	-406.72	738.44	418.15	2.37	
5055.00	75.01	177.36	4634.82	-437.57	739.80	449.01	1.51	
5086.00	76.02	177.78	4642.58	-467.56	741.07	479.02	3.51	
5117.00	78.74	178.69	4649.35	-497.79	742.00	509.26	9.23	
5149.00	83.48	179.02	4654.29	-529.40	742.63	540.87	14.85	
5180.00	86.50	179.27	4657.00	-560.27	743.09	571.74	9.77	
5212.00	87.34	178.95	4658.72	-592.22	743.59	603.70	2.81	
5244.00	87.41	178.80	4660.19	-624.18	744.22	635.66	0.52	
5275.00	87.48	178.55	4661.57	-655.14	744.93	666.63	0.84	
5307.00	87.34	178.58	4663.01	-687.10	745.73	698.60	0.45	
5339.00	87.20	178.51	4664.54	-719.05	746.54	730.56	0.49	
5370.00	87.06	178.60	4666.09	-750.00	747.32	761.52	0.54	
5402.00	87.20	178.20	4667.69	-781.95	748.22	793.48	1.32	
5433.00	87.27	177.95	4669.19	-812.90	749.26	824.44	0.84	
5465.00	87.13	178.02	4670.75	-844.84	750.38	856.39	0.49	
5496.00	88.67	178.17	4671.89	-875.80	751.41	887.36	4.99	
5528.00	89.30	178.17	4672.45	-907.78	752.43	919.36	1.97	
5678.00	89.86	177.54	4673.55	-1057.67	758.05	1069.31	0.56	
5774.00	89.16	177.54	4674.37	-1153.57	762.17	1165.27	0.73	
5868.00	88.46	177.79	4676.33	-1247.48	766.00	1259.22	0.79	
5963.00	88.32	177.84	4679.00	-1342.37	769.62	1354.16	0.16	
6057.00	87.27	178.03	4682.61	-1436.24	773.00	1448.07	1.14	



## 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	
6152.00	86.36	177.75	4687.89	-1531.02	776.49	1542.90	1.00		
6246.00	86.01	178.05	4694.14	-1624.75	779.93	1636.67	0.49		
6341.00	88.81	178.98	4698.44	-1719.61	782.39	1731.56	3.11		
6436.00	89.51	179.13	4699.83	-1814.59	783.96	1826.55	0.75		
6530.00	89.93	178.91	4700.29	-1908.58	785.56	1920.55	0.50		
6625.00	91.54	179.51	4699.07	-2003.55	786.87	2015.54	1.81		
6719.00	91.19	179.62	4696.83	-2097.53	787.59	2109.51	0.39		
6814.00	90.70	179.06	4695.26	-2192.51	788.68	2204.49	0.78		
6908.00	90.00	178.49	4694.69	-2286.48	790.69	2298.49	0.96		
7004.00	90.56	179.94	4694.22	-2382.47	792.01	2394.48	1.62		
7099.00	91.19	178.74	4692.77	-2477.45	793.10	2489.47	1.43		
7194.00	90.91	178.44	4691.03	-2572.40	795.44	2584.45	0.43		
7286.00	90.63	177.76	4689.79	-2664.34	798.49	2676.43	0.80		
7381.00	90.70	178.20	4688.69	-2759.28	801.83	2771.40	0.47		
7475.00	89.09	178.79	4688.86	-2853.24	804.30	2865.39	1.82		
7569.00	90.49	178.49	4689.21	-2947.21	806.53	2959.38	1.52		
7663.00	88.46	179.17	4690.07	-3041.18	808.45	3053.37	2.28		
7757.00	87.62	179.36	4693.28	-3135.12	809.66	3147.32	0.92		
7852.00	87.34	179.64	4697.46	-3230.02	810.49	3242.22	0.42		
7947.00	88.26	179.91	4701.11	-3324.95	810.86	3337.15	1.01		
8041.00	88.11	179.68	4704.08	-3418.90	811.20	3431.09	0.29		
8137.00	89.16	180.32	4706.37	-3514.88	811.20	3527.05	1.28		
8234.00	91.19	180.99	4706.08	-3611.86	810.09	3624.01	2.20		
8332.00	90.56	180.61	4704.58	-3709.84	808.72	3721.96	0.75		
8429.00	90.00	180.55	4704.10	-3806.83	807.74	3818.92	0.58		
8526.00	89.16	180.44	4704.82	-3903.83	806.90	3915.89	0.87		
8621.00	90.84	180.36	4704.82	-3998.82	806.24	4010.86	1.77		
8715.00	90.42	180.35	4703.78	-4092.81	805.65	4104.83	0.45		
8810.00	89.37	179.89	4703.96	-4187.81	805.45	4199.82	1.21		
8904.00	89.02	178.92	4705.28	-4281.80	806.43	4293.81	1.10		
8998.00	90.42	178.18	4705.74	-4375.76	808.81	4387.80	1.68		
9093.00	90.63	178.30	4704.87	-4470.71	811.73	4482.78	0.25		
9145.00	90.42	178.36	4704.39	-4522.69	813.24	4534.78	0.42	Last WFT/MWD Svy	
9203.00	90.42	178.36	4703.96	-4580.66	814.90	4592.77	0.00	Proj. to TD	