



WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

Confidentiality Requested:

Yes No

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: _____



1141172

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: 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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Shell Gulf of Mexico Inc.
Well Name	Reffner 2308 4-1HN
Doc ID	1141172

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	24	18	45	60	Portland Neat	30	
Surface	12.25	9.625	36	327	Class C	270	See attached
Intermediate	8.75	7	26	3941	Class C	320	See attached
Liner	6.125	4.5	11.6	5087	Class H	367	See attached

SHELL GULF OF MEXICO, INC. (34574)

REFFNER 2308-4

**PETE MARTIN DRILLING (34645)
(SET THE CONDUCTOR)**

	1-HN CONDUCTOR	1-HN MOUSE HOLE
Call in DATE OF SPUD	2/4/2013	
spud in date	2/4/2013	2/15/2013
T.D date	2/8/2013	2/16/2013
Size Hole Drilled	24"	20"
Size Casing Set (in O.D)	18"	14"
Conductor wall thickness	.236	.219
Weight Lbs./Ft.	45lbs	32.26lbs
Setting Depth	60'	77'
Type of Cement	Portland Neat	Portland Neat
Cubic yards of cement	5cy	5cy
2500 PSI Grout Mix		
Type and Percent of Additives	0%	0%
Comments	0-6ft gravel, 6-42ft clay, 42-60ft sand water@ 21ft	0-6ft gravel 6-20ft, clay 20-42ft sand, 42-62ft clay, 62-75ft sand, water@ 21ft

CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC	DATE 11-MAR-13	F.R. # 1001971030	SERV. SUPV. Jonathan M Schulz
LEASE & WELL NAME REFFNER 2308 #4-1HN - API 15155216290000	LOCATION 4-23S-8W		COUNTY-PARISH-BLOCK Reno Kansas
DISTRICT McAlester	DRILLING CONTRACTOR RIG # Patterson 264		TYPE OF JOB Surface

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
9-5/8" Top Cem Plug, Nitrile cvr, Phe	Float Shoe 9-5/8 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES					
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY
Fresh Water Spacer		0	8.34	0	0	00:00	20
C + 1/4pps Celloflake		270	14.8	1.35	6.34	02:45	83 52.11
Fresh Water Disp.		0	8.34	0	0	00:00	22
Available Mix Water <u>400</u> Bbl.		Available Displ. Fluid <u>340</u> Bbl.		TOTAL		125	52.11

HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
12.25	100	343	8.921	9.625	36	CSG	327	327	J-55	327	281.24	1

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID	
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
18.	18	47.	CSG	60	60	Packer - N/A	0	0	0	9.625	8RD	WATER BASED MU	8.5

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	Rig Tank
22	BBLs	Fresh Water Disp.	8.34	94	94	2800	0	0	2800	1500	Rig Tank

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: Arrive on location @ 730, Drilling hole, Rig Repairs, Running Casing, Pull Casing out of hole, Ream Hole w/DP, Rerun casing

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 2800 PSI	
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>	
13:39	2800				WATER	test pumps & lines	
13:40	167		5		WATER	open well/start water spacer ahead	
13:45	253		5	20	WATER	end water spacer/start slurry 14.8ppg	
14:03	135		4	83	SLURRY	end slurry/shutdown	
14:05	71		2		WATER	drop TRP/start displacement	
14:07	141		4	6	WATER	bbls pumped when cement to surface	
14:11	930		3	22	WATER	bump plug/shutdown/start casing test	
14:21	919					end casing test	
14:22	0			-.125		check floats/ holding/ bbls back	
						16bbls of cement return to surface	
						Thanks for using BHI Pressure Pumping	

Jonathan Schulz & Crew

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> N	930	<input checked="" type="checkbox"/> N	16	125	0	Y <input checked="" type="checkbox"/> N	

CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC	DATE 22-MAR-13	F.R. # 1001974578	SERV. SUPV. Justin D Stamper
LEASE & WELL NAME REFNER 2308 #4-1HN - API 15155216290000	LOCATION 4-23S-8W		COUNTY-PARISH-BLOCK Reno Kansas
DISTRICT McAlester	DRILLING CONTRACTOR RIG # Patterson 264		TYPE OF JOB Intermediate

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
	Shoe PROVIDED BY CUSTOMER						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
SEAL BOND			8.45				20	
WATER			8.34				10	
15:85:8(POZ,C,GEL)+10%SALT+.5%SMS+4PPS KOLS	125102947	170	12.4	2.45	13.52	05:44	74	54.59
50:50:2(POZ,C,GEL)+4#KOLSL+.15%SMS+.3%FL52	125102948	150	14.2	1.32	5.66	04:56	35	20.06
WATER			8.34				149	

Available Mix Water 500 Bbl. Available Displ. Fluid 500 Bbl. TOTAL 288 Bbl. 74.66

HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
8.75		3950	6.276	7	26	CSG	3941	3677	P-110	3941	3893	

LAST CASING				PKR-CMT RET-BR PL-LINER			PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
8.9	9.625	36		350	350			4600	4600	7	8RD	WATER BASED MU	9.3

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
149	BBLS	WATER	8.34	950					7968	4000	RIG

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: ARRIVE ON LOCATION, WAIT ON CASING

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES	5400 PSI
						CIRCULATING WELL - RIG	BJ
05:00						ARRIVE ON LOCATION	
14:30						SAFETY MEETING	
14:35	525		3	20	SEAL BND	RIG TO PUMP SEAL BOND	
14:44	5400				WATER	TEST LINES, START WATER AHEAD	
14:49	525		2	10	WATER	FINISH WATER, START LEAD	
15:10	416		3	74	LEAD	FINISH LEAD, START TAIL	
15:23	140		3	35	TAIL	FINISH TAIL, SHUT DOWN, DROP PLUG, DISPLACE	
15:41	100		4	65	WATER	CATCH CMT	
15:43	300		3	5	WATER	SLOW RATE	
15:47	430		2	10	WATER	SLOW RATE	
16:22	900		2	66	WATER	BUMP PLUG PRESSURE TO 1508, HOLD FOR 10 MINS	
16:32	0					BLEED OFF RECIEVED 1 BBLS BACK TO TRUCK	
						FLAOTS HOLDING	
						THANK YOU FOR USING BHI	
						JUSTIN STAMPER AND CREW	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1500	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	287	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC	DATE 04-APR-13	F.R. # 1001975603	SERV. SUPV. Justin D Stamper
LEASE & WELL NAME REFFNER 2308 #4-1HN - API 15155216290000	LOCATION 4-23S-8W		COUNTY-PARISH-BLOCK Reno Kansas
DISTRICT McAlester	DRILLING CONTRACTOR RIG # Patterson 264		TYPE OF JOB Liner

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
	Shoe PROVIDED BY CUSTOMER						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
SealBond Spacer			8.45				40	
50/50(poz/h)+3%salt+.5%f162+.6%sms+.5%f152		367	14.3	1.24	5.54	05:30	81	48.20
Displacement			8.34				105	
Available Mix Water <u>500</u> Bbl.		Available Displ. Fluid <u>500</u> Bbl.		TOTAL			<u>226</u>	<u>48.20</u>

HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
6.125		8722	4	4.5	11.6	CSG	5087		P-110	8538	8488	
			3.34	4	12.93	DP	3412		S-135			

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID		
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
6.3	7	26		3945	3945						2	1502		

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	RIG
105	BBLs	Displacement	8.34	1300					8552	6000	RIG

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: ARRIVE ON LOCATION, RIG UP, WAIT ON RIG

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES	6000 PSI
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/>	BJ <input type="checkbox"/>
08:45						ARRIVE ON LOCATION	
10:55						SAFETY MEETING	
11:25	300		3	40	SEAL BND	RIG TO PUMP SEAL BOND	
11:35	6500				WATER	TEST LINES, START SLURRY	
12:10	300		4	81	SLURRY	FINISH SLURRY, SHUT DOWN, WASH PUMP AND LINES, DROP DP DART	
12:15	900		5	15	WATER	CATCH CEMENT	
12:16	500		4	5	WATER	SLOW TO PICK UP WIPER DART	
12:19	450		3	9	WATER	PICK UP WIPER PLUG, BREAK 1100	
12:36	1000		4	68	WATER	SLOW TO BUMP PLUG	
12:40	650		3	10	WATER	BUMP PLUG, PRESSURE TO 1360	
12:50				-5	WATER	BLEED OFF RECIVED .5 BBLs BACK TO TRUCK	
13:08		4500		1.5	WATER	TEST BACK SIDE TO 4500	
13:18				-1.5		BLEED OFF TO TRIP TANK	
						THANK YOU FOR USING BHI	
						JUSTIN STAMPER AND CREW	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> N	1360	<input checked="" type="checkbox"/> N	0	230	0	Y <input checked="" type="checkbox"/> N	



Shell

Reno County, Kansas (NAD27)

Reffner 2308

4-1HN

Wellbore #1

Survey: MS MWD

Standard Survey Report

01 April, 2013



Company:	Shell	Local Co-ordinate Reference:	Well 4-1HN
Project:	Reno County, Kansas (NAD27)	TVD Reference:	WELL @ 1681.90usft (Patterson 264)
Site:	Reffner 2308	MD Reference:	WELL @ 1681.90usft (Patterson 264)
Well:	4-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Well Planning Conroe

Project	Reno County, Kansas (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas South 1502		

Well	4-1HN				
Well Position	+N/-S	0.00 usft	Northing:	516,692.65 usft	Latitude: 38° 5' 7.2285 N
	+E/-W	0.00 usft	Easting:	2,083,651.69 usft	Longitude: 98° 12' 33.696 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 1,659.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	03/10/13	4.62	66.01	52,296

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		344.44

Survey Program	Date	04/01/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
146.00	8,722.00	MS MWD (Wellbore #1)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
146.00	0.70	16.70	146.00	0.85	0.26	0.75	0.48	0.48	0.00
236.00	1.70	335.90	235.98	2.60	-0.13	2.54	1.40	1.11	-45.33
293.00	2.70	316.80	292.93	4.35	-1.40	4.56	2.15	1.75	-33.51
418.00	3.50	312.90	417.75	9.09	-6.21	10.42	0.66	0.64	-3.12
510.00	3.50	314.40	509.58	12.97	-10.27	15.25	0.10	0.00	1.63
602.00	3.90	292.30	601.39	16.12	-15.17	19.60	1.60	0.43	-24.02
695.00	3.10	246.80	694.23	16.33	-20.41	21.21	3.02	-0.86	-48.92
787.00	0.90	230.40	786.17	14.89	-23.25	20.58	2.45	-2.39	-17.83
876.00	0.70	218.70	875.17	14.02	-24.13	19.98	0.29	-0.22	-13.15
968.00	0.80	219.60	967.16	13.09	-24.89	19.29	0.11	0.11	0.98
1,062.00	0.80	224.90	1,061.15	12.12	-25.77	18.59	0.08	0.00	5.64
1,156.00	0.90	226.50	1,155.14	11.14	-26.77	17.92	0.11	0.11	1.70
1,249.00	0.90	219.60	1,248.13	10.08	-27.77	17.16	0.12	0.00	-7.42
1,343.00	0.80	208.10	1,342.12	8.93	-28.55	16.26	0.21	-0.11	-12.23



Company:	Shell	Local Co-ordinate Reference:	Well 4-1HN
Project:	Reno County, Kansas (NAD27)	TVD Reference:	WELL @ 1681.90usft (Patterson 264)
Site:	Reffner 2308	MD Reference:	WELL @ 1681.90usft (Patterson 264)
Well:	4-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Well Planning Conroe

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,436.00	0.60	216.20	1,435.11	7.97	-29.14	15.49	0.24	-0.22	8.71
1,530.00	0.80	213.70	1,529.10	7.02	-29.80	14.76	0.22	-0.21	-2.66
1,624.00	0.80	214.60	1,623.09	5.94	-30.53	13.91	0.01	0.00	0.96
1,717.00	0.60	215.80	1,716.09	5.01	-31.19	13.19	0.22	-0.22	1.29
1,811.00	0.90	210.70	1,810.08	3.97	-31.85	12.37	0.33	0.32	-5.43
1,905.00	0.80	205.40	1,904.07	2.75	-32.51	11.37	0.14	-0.11	-5.64
1,999.00	0.60	208.70	1,998.06	1.72	-33.03	10.52	0.22	-0.21	3.51
2,093.00	0.80	198.90	2,092.05	0.67	-33.48	9.62	0.25	-0.21	-10.43
2,186.00	0.60	168.60	2,185.05	-0.42	-33.59	8.60	0.44	-0.22	-32.58
2,280.00	0.70	188.70	2,279.04	-1.47	-33.58	7.59	0.26	0.11	21.38
2,374.00	0.80	200.30	2,373.03	-2.66	-33.89	6.53	0.19	0.11	12.34
2,467.00	0.60	184.00	2,466.03	-3.75	-34.15	5.55	0.30	-0.22	-17.53
2,561.00	0.40	194.40	2,560.02	-4.56	-34.27	4.80	0.23	-0.21	11.06
2,655.00	0.50	189.00	2,654.02	-5.28	-34.41	4.14	0.12	0.11	-5.74
2,748.00	0.40	207.30	2,747.02	-5.97	-34.63	3.54	0.19	-0.11	19.68
2,842.00	0.70	137.10	2,841.01	-6.68	-34.39	2.78	0.72	0.32	-74.68
2,936.00	0.50	169.90	2,935.01	-7.51	-33.92	1.87	0.41	-0.21	34.89
3,029.00	0.50	154.40	3,028.00	-8.27	-33.68	1.06	0.14	0.00	-16.67
3,123.00	0.30	174.50	3,122.00	-8.89	-33.48	0.42	0.26	-0.21	21.38
3,154.00	0.40	160.50	3,153.00	-9.07	-33.43	0.23	0.42	0.32	-45.16
3,185.00	0.10	315.60	3,184.00	-9.15	-33.42	0.14	1.59	-0.97	500.32
3,217.00	3.40	347.40	3,215.98	-8.21	-33.64	1.12	10.36	10.31	99.38
3,248.00	7.40	350.60	3,246.84	-5.34	-34.17	4.02	12.93	12.90	10.32
3,279.00	10.30	351.30	3,277.47	-0.63	-34.91	8.76	9.36	9.35	2.26
3,310.00	13.50	351.20	3,307.80	5.69	-35.89	15.10	10.32	10.32	-0.32
3,342.00	16.10	349.70	3,338.73	13.74	-37.25	23.23	8.21	8.13	-4.69
3,373.00	19.50	347.50	3,368.24	23.03	-39.14	32.68	11.18	10.97	-7.10
3,404.00	23.60	346.80	3,397.07	34.13	-41.68	44.06	13.25	13.23	-2.26
3,435.00	27.70	348.80	3,425.01	47.24	-44.50	57.45	13.52	13.23	6.45
3,467.00	31.60	349.60	3,452.82	62.79	-47.46	73.22	12.25	12.19	2.50
3,498.00	35.30	349.10	3,478.68	79.58	-50.62	90.24	11.97	11.94	-1.61
3,529.00	39.40	348.50	3,503.31	98.02	-54.27	108.99	13.28	13.23	-1.94
3,560.00	43.10	349.60	3,526.62	118.09	-58.15	129.36	12.16	11.94	3.55
3,592.00	45.00	347.70	3,549.62	139.90	-62.53	151.54	7.23	5.94	-5.94
3,623.00	47.90	346.90	3,570.97	161.81	-67.48	173.98	9.54	9.35	-2.58
3,654.00	51.80	346.30	3,590.96	184.86	-72.97	197.65	12.67	12.58	-1.94
3,685.00	56.00	347.20	3,609.22	209.23	-78.70	222.68	13.75	13.55	2.90
3,717.00	60.10	348.40	3,626.15	235.77	-84.43	249.77	13.20	12.81	3.75
3,748.00	64.30	349.10	3,640.60	262.66	-89.78	277.11	13.69	13.55	2.26
3,779.00	68.80	348.90	3,652.94	290.57	-95.21	305.45	14.53	14.52	-0.65
3,810.00	73.80	348.30	3,662.87	319.34	-101.01	334.73	16.23	16.13	-1.94
3,841.00	79.00	347.80	3,670.16	348.81	-107.25	364.79	16.85	16.77	-1.61
3,873.00	83.90	347.00	3,674.92	379.68	-114.15	396.38	15.51	15.31	-2.50
3,888.00	86.40	346.70	3,676.19	394.23	-117.55	411.32	16.79	16.67	-2.00



Company:	Shell	Local Co-ordinate Reference:	Well 4-1HN
Project:	Reno County, Kansas (NAD27)	TVD Reference:	WELL @ 1681.90usft (Patterson 264)
Site:	Reffner 2308	MD Reference:	WELL @ 1681.90usft (Patterson 264)
Well:	4-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Well Planning Conroe

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,971.00	89.80	346.20	3,678.94	474.87	-136.98	494.21	4.14	4.10	-0.60	
4,063.00	91.30	345.50	3,678.05	564.07	-159.47	586.17	1.80	1.63	-0.76	
4,156.00	90.60	344.70	3,676.51	653.93	-183.38	679.15	1.14	-0.75	-0.86	
4,247.00	89.80	344.00	3,676.19	741.55	-207.93	770.15	1.17	-0.88	-0.77	
4,337.00	89.60	343.50	3,676.67	827.95	-233.11	860.14	0.60	-0.22	-0.56	
4,428.00	89.40	343.90	3,677.46	915.29	-258.65	951.13	0.49	-0.22	0.44	
4,518.00	88.50	343.20	3,679.11	1,001.59	-284.13	1,041.10	1.27	-1.00	-0.78	
4,608.00	88.10	343.00	3,681.78	1,087.67	-310.29	1,131.04	0.50	-0.44	-0.22	
4,701.00	88.50	342.60	3,684.54	1,176.47	-337.77	1,223.96	0.61	0.43	-0.43	
4,795.00	88.40	342.60	3,687.08	1,266.14	-365.87	1,317.88	0.11	-0.11	0.00	
4,889.00	88.50	342.80	3,689.62	1,355.85	-393.82	1,411.80	0.24	0.11	0.21	
4,983.00	89.40	344.00	3,691.35	1,445.91	-420.67	1,505.76	1.60	0.96	1.28	
5,076.00	90.10	344.80	3,691.75	1,535.49	-445.68	1,598.76	1.14	0.75	0.86	
5,174.00	91.30	346.20	3,690.55	1,630.35	-470.21	1,696.73	1.88	1.22	1.43	
5,264.00	91.90	345.60	3,688.04	1,717.61	-492.13	1,786.67	0.94	0.67	-0.67	
5,357.00	92.20	344.00	3,684.71	1,807.29	-516.49	1,879.60	1.75	0.32	-1.72	
5,451.00	91.90	344.10	3,681.35	1,897.62	-542.31	1,973.54	0.34	-0.32	0.11	
5,545.00	91.20	344.00	3,678.81	1,987.96	-568.13	2,067.50	0.75	-0.74	-0.11	
5,639.00	91.30	344.20	3,676.76	2,078.35	-593.88	2,161.48	0.24	0.11	0.21	
5,732.00	90.20	344.30	3,675.54	2,167.85	-619.12	2,254.47	1.19	-1.18	0.11	
5,826.00	90.00	344.60	3,675.38	2,258.41	-644.32	2,348.47	0.38	-0.21	0.32	
5,920.00	90.40	343.80	3,675.05	2,348.85	-669.91	2,442.47	0.95	0.43	-0.85	
6,013.00	88.40	344.00	3,676.02	2,438.20	-695.70	2,535.45	2.16	-2.15	0.22	
6,107.00	88.20	343.20	3,678.81	2,528.33	-722.23	2,629.40	0.88	-0.21	-0.85	
6,201.00	88.70	344.00	3,681.35	2,618.47	-748.76	2,723.36	1.00	0.53	0.85	
6,295.00	90.10	344.30	3,682.34	2,708.89	-774.43	2,817.35	1.52	1.49	0.32	
6,388.00	90.00	343.80	3,682.26	2,798.31	-799.98	2,910.35	0.55	-0.11	-0.54	
6,482.00	90.80	343.70	3,681.60	2,888.55	-826.29	3,004.34	0.86	0.85	-0.11	
6,576.00	91.90	343.10	3,679.39	2,978.61	-853.13	3,098.29	1.33	1.17	-0.64	
6,669.00	90.80	342.40	3,677.20	3,067.40	-880.70	3,191.22	1.40	-1.18	-0.75	
6,763.00	89.70	342.30	3,676.78	3,156.97	-909.20	3,285.16	1.18	-1.17	-0.11	
6,857.00	87.80	341.80	3,678.84	3,246.37	-938.16	3,379.05	2.09	-2.02	-0.53	
6,951.00	88.10	342.30	3,682.20	3,335.74	-967.11	3,472.91	0.62	0.32	0.53	
7,044.00	88.30	344.00	3,685.12	3,424.70	-994.06	3,565.83	1.84	0.22	1.83	
7,138.00	89.30	345.30	3,687.09	3,515.32	-1,018.93	3,659.81	1.74	1.06	1.38	
7,315.00	92.70	344.80	3,684.00	3,686.28	-1,064.58	3,836.75	1.94	1.92	-0.28	
7,409.00	92.90	344.70	3,679.41	3,776.86	-1,089.28	3,930.63	0.24	0.21	-0.11	
7,503.00	91.20	343.90	3,676.05	3,867.29	-1,114.70	4,024.57	2.00	-1.81	-0.85	
7,597.00	88.60	344.30	3,676.21	3,957.69	-1,140.45	4,118.56	2.80	-2.77	0.43	
7,690.00	91.40	344.00	3,676.21	4,047.14	-1,165.84	4,211.55	3.03	3.01	-0.32	
7,784.00	91.00	343.70	3,674.24	4,137.41	-1,191.99	4,305.52	0.53	-0.43	-0.32	
7,878.00	91.10	343.30	3,672.52	4,227.52	-1,218.68	4,399.49	0.44	0.11	-0.43	
7,971.00	93.00	343.70	3,669.19	4,316.63	-1,245.07	4,492.42	2.09	2.04	0.43	



Company:	Shell	Local Co-ordinate Reference:	Well 4-1HN
Project:	Reno County, Kansas (NAD27)	TVD Reference:	WELL @ 1681.90usft (Patterson 264)
Site:	Reffner 2308	MD Reference:	WELL @ 1681.90usft (Patterson 264)
Well:	4-1HN	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Well Planning Conroe

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,065.00	89.40	342.10	3,667.22	4,406.44	-1,272.70	4,586.34	4.19	-3.83	-1.70	
8,158.00	90.30	341.70	3,667.47	4,494.84	-1,301.60	4,679.25	1.06	0.97	-0.43	
8,251.00	90.40	342.80	3,666.90	4,583.41	-1,329.95	4,772.18	1.19	0.11	1.18	
8,345.00	91.20	344.00	3,665.59	4,673.48	-1,356.80	4,866.15	1.53	0.85	1.28	
8,439.00	92.20	343.80	3,662.80	4,763.75	-1,382.85	4,960.11	1.08	1.06	-0.21	
8,532.00	91.60	344.00	3,659.71	4,853.05	-1,408.63	5,053.05	0.68	-0.65	0.22	
8,626.00	91.50	343.50	3,657.17	4,943.26	-1,434.92	5,147.01	0.54	-0.11	-0.53	
8,722.00	91.50	343.50	3,654.66	5,035.28	-1,462.18	5,242.96	0.00	0.00	0.00	
Projection to TD-8722.00' MD										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
8,722.00	3,654.66	5,035.28	-1,462.18	Projection to TD-8722.00' MD	

T23S, R8W, 6th P.M.

SGOMI

Well location, REFFNER 2308 #4-1HN, located as shown in the Lot 3 of Section 4, T23S, R8W, 6th P.M., Reno County, Kansas.

BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE SW CORNER OF SECTION 18, T23S, R8W, 6th P.M. TAKEN FROM THE ALDEN SE, QUADRANGLE, KANSAS, RENO COUNTY, 7.5 MINUTE QUAD (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, SAID ELEVATION IS MARKED AS BEING 1688 FEET.

BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.

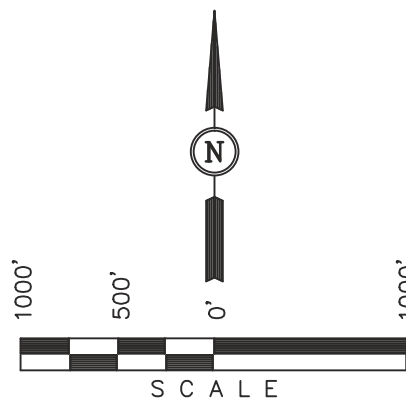
1/2" Rebar
0.5' Below Ground,
In Road
NAD 27 Kansas South
N: 522216.78
E: 2081869.88

Large Spike
0.3' Below Ground
NAD 27 Kansas South
N: 522283.84
E: 2084519.92

5/8" Rebar
0.3' Below Ground,
In Road
NAD 27 Kansas South
N: 522333.50
E: 2087162.09

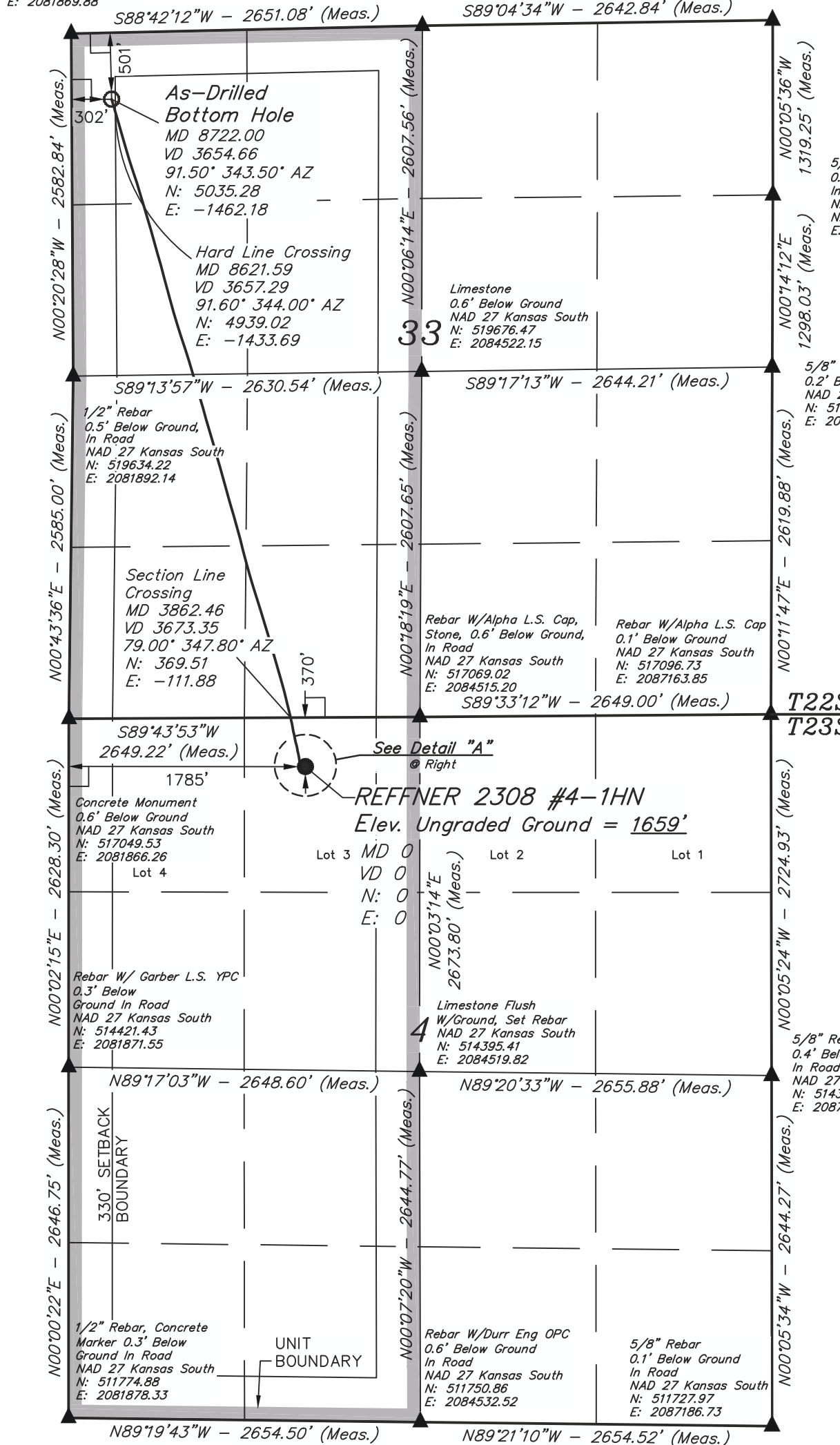
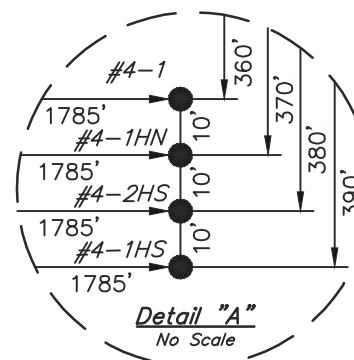
5/8" Rebar
0.5' Below Ground,
In Road
NAD 27 Kansas South
N: 521014.35
E: 2087167.76

5/8" Rebar
0.2' Below Ground
NAD 27 Kansas South
N: 519716.42
E: 2087165.85



LEGEND:

- └─┘ = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.



See Detail "A"
● Right
REFNER 2308 #4-1HN
Elev. Ungraded Ground = 1659'

Lot 3 MD 0
VD 0
N: 0
E: 0

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JUSTIN S. JENSEN
REGISTERED LAND SURVEYOR
REGISTRATION NO. 1451
STATE OF KANSAS
LAND SURVEYOR 10-13

UINTAH ENGINEERING & LAND SURVEYING
85 SOUTH 200 EAST - VERNAL, UTAH 84078
(435) 789-1017

NAD 83 (#4-1HN AS DRILLED BOTTOM HOLE) LATITUDE = 38°05'57.06" (38.099183) LONGITUDE = 98°12'53.18" (98.214772)	NAD 83 (#4-1HN SURFACE LOCATION) LATITUDE = 38°05'07.27" (38.085353) LONGITUDE = 98°12'34.92" (98.209700)	SCALE 1" = 1000'	DATE SURVEYED: 11-28-12	DATE DRAWN: 04-25-13
NAD 27 (#4-1HN AS DRILLED BOTTOM HOLE) LATITUDE = 38°05'57.01" (38.099169) LONGITUDE = 98°12'51.96" (98.214433)	NAD 27 (#4-1HN SURFACE LOCATION) LATITUDE = 38°05'07.23" (38.085342) LONGITUDE = 98°12'33.70" (98.209361)	PARTY C.B. D.W. S.F.	REFERENCES G.L.O. PLAT	
STATE PLANE NAD 27 N: 521723.66 E: 2082176.20	STATE PLANE NAD 27 (KANSAS SOUTH) N: 516692.65 E: 2083651.69	WEATHER COOL	FILE SGOMI	

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

June 03, 2013

Damonica Pierson
Shell Gulf of Mexico Inc.
150 N DAIRY-ASHFORD (77079)
PO BOX 576 (77001-0576)
HOUSTON, TX 77001-0576

Re: ACO1
API 15-155-21629-01-00
Reffner 2308 4-1HN
NW/4 Sec.04-23S-08W
Reno County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Damonica Pierson

Summary of Changes

Lease Name and Number: Reffner 2308 4-1HN

API/Permit #: 15-155-21629-01-00

Doc ID: 1141172

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Amount of Surface Pipe Set and Cemented at	0	327
Approved Date	03/15/2013	06/10/2013
CasingAdd_Type_PctPDF_1		Attached
CasingNumbSacksUsedPDF_1	30	Attached
CasingPurposeOfStringPDF_1	Conductor	Attached
CasingSettingDepthPDF_1	60	Attached
CasingSizeCasingSetPDF_1	18	Attached
CasingSizeHoleDrilledPDF_1	24	Attached
CasingTypeOfCementPDF_1	Portland Neat	Attached
CasingWeightPDF_1	45	Attached

Summary of changes for correction 1 continued

Field Name	Previous Value	New Value
Completion Or Recompletion Date	02/08/2013	05/12/2013
Date Reached TD	02/08/2013	03/29/2013
Electric Log Run?	No	Yes
Electric Log Submitted Electronically?		Yes
Elogs_PDF		Triple Combo
Fluid Mngmt - Range	4	6
Fluid Mngmt - Section	6	4
Formation Top Source - Log	No	Yes
Kelly Bushing Elevation	0	16
Liner Run?	No	Yes
Producing Formation	CONDUCTOR ONLY	Mississippi
Purchaser's Name	CONDUCTOR ONLY	
Save Link	../kcc/detail/operatorEditDetail.cfm?docID=1124575	../kcc/detail/operatorEditDetail.cfm?docID=1141172

Summary of changes for correction 1 continued

Field Name	Previous Value	New Value
Spud Or Recompletion Date	02/04/2013	03/09/2013
TopsDepth1		3494
TopsDepth2		3580
TopsDepth3		3680
TopsDepth4		3770
TopsName1	CONDUCTOR ONLY	Hushpuckney
TopsName2		Marmaton
TopsName3		Cherokee
TopsName4		Mississippi
Total Depth	60	8722

Summary of Attachments

Lease Name and Number: Reffner 2308 4-1HN

API: 15-155-21629-01-00

Doc ID: 1141172

Correction Number: 1

Attachment Name

Reffner 2308 4-1HN Conductor record

Reffner 2308 4-1HN Surface Cement report

Reffner 2308 4-1HN Intermediate Cement report

Reffner 2308 4-1HN Liner Cement rpt

Reffner 2308 4-1HN - Directional Survey

REFFNER 2308 #4-1HN - AS-DRILLED PLAT

Two Year Confidentiality



CONFIDENTIAL

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
- Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

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

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total 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

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____