1089238

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

OPERATOR: License # 34574
Name: Shell Gulf of Mexico Inc.
Address 1: 150 N DAIRY-ASHFORD (77079)
Address 2: PO BOX 576 (77001-0576)
City: HOUSTON State: TX Zip: 77001 + 0576
Contact Person: Damonica Pierson
Phone: (832) 337-2172
CONTRACTOR: License # 34718
Name: Nabors Drilling USA, LP
Wellsite Geologist: Earl Manning
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [ ] Oil
- [ ] WSW
- [x] 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 #:

05/23/2012	07/20/2012	11/06/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-077-21815-01-00
Spot Description:
E2 - SE - SW - SW Sec. 30 Twp. 34 S. R. 7 [ ] East [x] West
330 Feet from [ ] North / [x] South Line of Section
1310 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [ ] NW [ ] SE [x] SW
County: Harper
Lease Name: Croft Farms 3407 Well #: 30-2H
Field Name:
Producing Formation: N/A
Elevation: Ground: 1331 Kelly Bushing: 1351
Total Depth: 9745 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 815 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] 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: 0 ppm Fluid volume: 9999 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Plumb Thicket Landfill
Lease Name: N/A License #: 99999
Quarter SW Sec. 4 Twp. 31 S. R. 6 [ ] East [x] West
County: Harper Permit #: KDHE Permit No. 0842

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.

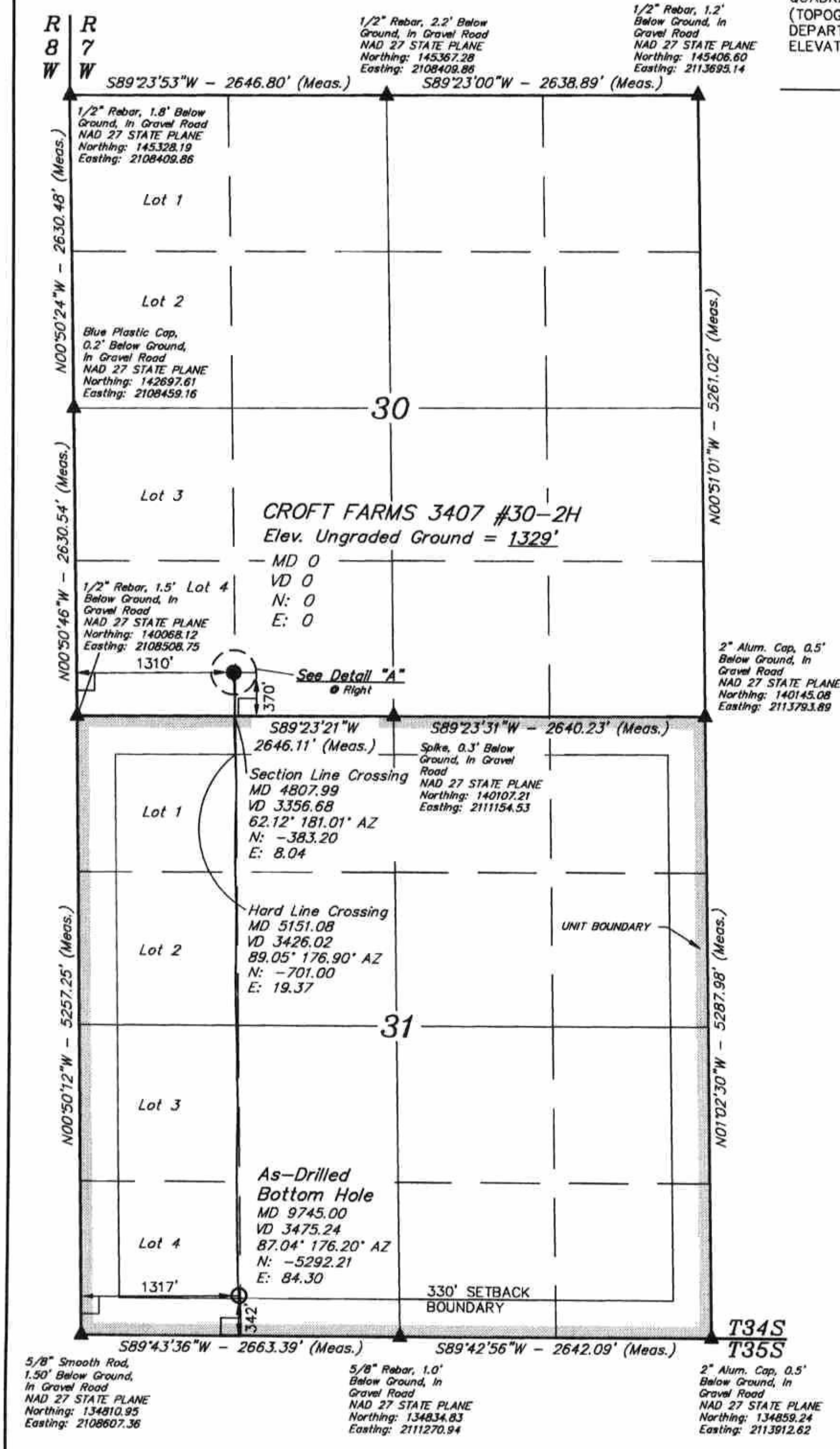
Submitted Electronically

KCC Office Use ONLY

- [x] **Letter of Confidentiality Received**
  Date: 04/05/2012
- [ ] **Confidential Release Date:**
- [x] **Wireline Log Received**
- [ ] **Geologist Report Received**
- [x] **UIC Distribution**

ALT [x] I [ ] II [ ] III Approved by: NAOMI JAMES Date: 11/09/2012

T34S, R7W, 6th P.M.



SGOMI

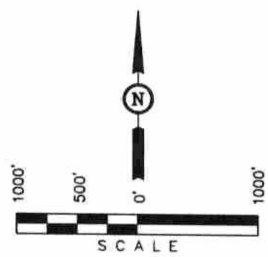
Well location, CROFT FARMS 3407 #30-2H, located as shown in Lot 4 of Section 30, T34S, R7W, 6th P.M., Harper County, Kansas.

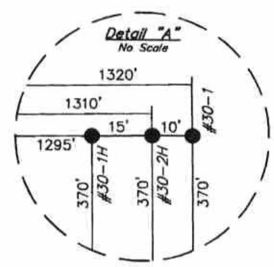
BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE NORTHEAST CORNER OF SECTION 22, T33S, R7W, 6th P.M. TAKEN FROM THE ANTHONY, QUADRANGLE, KANSAS, HARPER COUNTY, 7.5 MINUTE QUAD (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 1348 FEET.

BASIS OF BEARINGS

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





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.

REGISTERED LAND SURVEYOR
REGISTRATION NO. [illegible]
STATE OF KANSAS [illegible]-12

LEGEND:

- ∟ = 90° SYMBOL
- ● = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

NAD 83 (#30-2H AS DRILLED BOTTOM HOLE)	NAD 83 (#30-2H SURFACE LOCATION)
LATITUDE = 37°02'14.25" (37.037292)	LATITUDE = 37°03'06.58" (37.051828)
LONGITUDE = 98°07'25.67" (98.123797)	LONGITUDE = 98°07'26.71" (98.124086)
NAD 27 (#30-2H AS DRILLED BOTTOM HOLE)	NAD 27 (#30-2H SURFACE LOCATION)
LATITUDE = 37°02'14.16" (37.037267)	LATITUDE = 37°03'06.49" (37.051803)
LONGITUDE = 98°07'24.43" (98.123453)	LONGITUDE = 98°07'25.48" (98.123744)
STATE PLANE NAD 27	STATE PLANE NAD 27
N: 135165.36 E: 2109918.38	N: 140457.87 E: 2109812.34

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

SCALE	DATE SURVEYED:	DATE DRAWN:
1" = 1000'	07-23-12	11-02-12
PARTY L.S. D.S. C.A.G.	REFERENCES G.L.O. PLAT	
WEATHER COLD	FILE SGOMI	

Shell Exploration & Production Co. Inc.

Harper Co. KS (NAD-27)
Sec 30-T34S-R07W
Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services

Combo Report With Grid North & True North

23 July, 2012

Well Coordinates: 140,457.87 N, 2,109,812.34 E (37° 03' 06.49" N, 098° 07' 25.48" W)
Ground Level: 1,329.00 ft

Local Coordinate Origin:	Centered on Well Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774
Viewing Datum:	WELL @ 1350.68ft (Original Well Elev)
TVDs to System:	N
North Reference:	True
Unit System:	API-US-new

Version: 2003.21 Build: 43

HALLIBURTON

Design Report for Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	359.77	0.00	1,350.68	0.00	0.00 N	0.00 E	140,457.87	2,109,812.34	0.00	0.00	
144.00	0.25	141.80	142.03	1,206.68	144.00	0.25 S	0.19 E	140,457.62	2,109,812.53	0.17	0.25	First MWD Survey
205.00	0.59	171.13	171.36	1,145.68	205.00	0.66 S	0.32 E	140,457.21	2,109,812.67	0.64	0.67	
236.00	1.60	169.52	169.75	1,114.69	235.99	1.25 S	0.42 E	140,456.62	2,109,812.77	3.26	1.25	
267.00	2.63	175.76	175.99	1,083.71	266.97	2.38 S	0.55 E	140,455.49	2,109,812.90	3.40	2.39	
297.00	4.00	182.08	182.31	1,053.76	296.92	4.11 S	0.56 E	140,453.76	2,109,812.91	4.72	4.12	
328.00	4.38	182.95	183.18	1,022.84	327.84	6.38 S	0.45 E	140,451.50	2,109,812.81	1.24	6.38	
420.00	4.63	173.21	173.44	931.13	419.55	13.57 S	0.68 E	140,444.30	2,109,813.07	0.87	13.58	
512.00	4.67	178.75	178.98	839.43	511.25	21.01 S	1.17 E	140,436.87	2,109,813.59	0.49	21.02	
604.00	4.43	178.52	178.75	747.72	602.96	28.30 S	1.31 E	140,429.57	2,109,813.77	0.26	28.32	
697.00	4.30	177.56	177.79	654.99	695.69	35.38 S	1.52 E	140,422.50	2,109,814.01	0.16	35.40	
757.00	4.08	175.89	176.12	595.15	755.53	39.76 S	1.76 E	140,418.12	2,109,814.26	0.42	39.78	
898.00	3.57	181.87	182.10	454.46	896.22	49.15 S	1.93 E	140,408.73	2,109,814.47	0.46	49.17	
990.00	2.75	181.76	181.99	362.60	988.08	54.22 S	1.75 E	140,403.66	2,109,814.31	0.89	54.24	
1,082.00	2.60	189.38	189.61	270.70	1,079.98	58.48 S	1.33 E	140,399.40	2,109,813.90	0.42	58.49	
1,267.00	2.14	190.52	190.75	85.86	1,264.82	66.01 S	0.02 W	140,391.86	2,109,812.59	0.25	66.00	
1,451.00	0.87	197.68	197.91	-98.07	1,448.75	70.71 S	1.09 W	140,387.15	2,109,811.54	0.70	70.69	
1,639.00	0.33	177.90	178.13	-286.06	1,636.74	72.61 S	1.51 W	140,385.25	2,109,811.12	0.30	72.58	
1,827.00	0.25	89.71	89.94	-474.06	1,824.74	73.15 S	1.08 W	140,384.71	2,109,811.55	0.22	73.13	
2,016.00	0.31	169.41	169.64	-663.06	2,013.74	73.66 S	0.58 W	140,384.21	2,109,812.06	0.19	73.64	
2,205.00	0.28	179.49	179.72	-852.05	2,202.73	74.62 S	0.48 W	140,383.25	2,109,812.16	0.03	74.61	
2,394.00	0.20	141.01	141.24	-1,041.05	2,391.73	75.34 S	0.27 W	140,382.53	2,109,812.37	0.09	75.33	
2,583.00	0.29	167.32	167.55	-1,230.05	2,580.73	76.06 S	0.04 E	140,381.81	2,109,812.68	0.08	76.06	
2,773.00	0.10	294.35	294.58	-1,420.05	2,770.73	76.46 S	0.01 W	140,381.41	2,109,812.64	0.19	76.46	
2,962.00	0.15	217.67	217.90	-1,609.05	2,959.73	76.59 S	0.31 W	140,381.28	2,109,812.34	0.08	76.58	
3,151.00	0.19	58.56	58.79	-1,798.05	3,148.73	76.62 S	0.20 W	140,381.25	2,109,812.45	0.18	76.61	
3,339.00	0.29	137.74	137.97	-1,986.05	3,336.73	76.82 S	0.39 E	140,381.06	2,109,813.04	0.17	76.81	
3,529.00	0.18	67.01	67.24	-2,176.05	3,526.73	77.06 S	0.98 E	140,380.82	2,109,813.64	0.15	77.06	
3,718.00	0.76	80.31	80.54	-2,365.04	3,715.72	76.74 S	2.49 E	140,381.14	2,109,815.14	0.31	76.77	
3,907.00	0.75	65.20	65.43	-2,554.02	3,904.70	76.02 S	4.86 E	140,381.87	2,109,817.50	0.11	76.08	
4,096.00	0.77	57.73	57.96	-2,743.01	4,093.69	74.83 S	7.06 E	140,383.07	2,109,819.70	0.05	74.92	
4,190.00	0.86	183.23	183.46	-2,837.00	4,187.68	75.20 S	7.55 E	140,382.70	2,109,820.19	1.54	75.30	
4,222.00	3.46	186.43	186.66	-2,868.98	4,219.66	76.40 S	7.42 E	140,381.50	2,109,820.07	8.13	76.50	
4,253.00	7.57	187.50	187.73	-2,899.83	4,250.51	79.35 S	7.04 E	140,378.55	2,109,819.70	13.26	79.45	
4,285.00	11.70	180.71	180.94	-2,931.37	4,282.05	84.69 S	6.70 E	140,373.21	2,109,819.39	13.36	84.77	
4,316.00	14.83	177.70	177.93	-2,961.54	4,312.22	91.79 S	6.80 E	140,366.10	2,109,819.51	10.34	91.88	
4,348.00	17.38	177.25	177.48	-2,992.28	4,342.96	100.66 S	7.15 E	140,357.24	2,109,819.90	7.98	100.76	

Design Report for Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
4,380.00	19.42	178.32	178.55	-3,022.64	4,373.32	110.76 S	7.50 E	140,347.14	2,109,820.29	6.46	110.86	
4,411.00	21.60	179.62	179.85	-3,051.68	4,402.36	121.62 S	7.64 E	140,336.29	2,109,820.47	7.18	121.72	
4,443.00	23.68	178.75	178.98	-3,081.21	4,431.89	133.93 S	7.77 E	140,323.97	2,109,820.65	6.58	134.03	
4,474.00	25.94	177.72	177.95	-3,109.35	4,460.03	146.94 S	8.13 E	140,310.97	2,109,821.06	7.42	147.04	
4,506.00	29.03	177.27	177.50	-3,137.73	4,488.41	161.69 S	8.72 E	140,296.22	2,109,821.71	9.68	161.80	
4,538.00	32.32	178.19	178.42	-3,165.25	4,515.93	178.00 S	9.29 E	140,279.91	2,109,822.35	10.39	178.12	
4,569.00	35.80	178.61	178.84	-3,190.93	4,541.61	195.36 S	9.70 E	140,262.55	2,109,822.83	11.25	195.48	
4,601.00	38.43	178.89	179.12	-3,216.44	4,567.12	214.66 S	10.05 E	140,243.25	2,109,823.25	8.24	214.79	
4,633.00	41.30	179.56	179.79	-3,241.00	4,591.68	235.17 S	10.24 E	140,222.74	2,109,823.53	9.07	235.29	
4,664.00	44.36	180.01	180.24	-3,263.73	4,614.41	256.24 S	10.23 E	140,201.67	2,109,823.60	9.92	256.36	
4,696.00	48.39	180.52	180.75	-3,285.81	4,636.49	279.40 S	10.03 E	140,178.51	2,109,823.49	12.65	279.52	
4,727.00	52.34	180.57	180.80	-3,305.58	4,656.26	303.27 S	9.70 E	140,154.65	2,109,823.27	12.74	303.38	
4,759.00	56.01	180.79	181.02	-3,324.31	4,674.99	329.20 S	9.29 E	140,128.71	2,109,822.96	11.48	329.31	
4,790.00	59.00	181.28	181.51	-3,340.96	4,691.64	355.34 S	8.71 E	140,102.57	2,109,822.48	9.74	355.43	
4,807.99	60.75	181.12	181.36	-3,349.99	4,700.67	370.90 S	8.32 E	140,087.01	2,109,822.16	9.78	370.98	Cross section Line @4807.99' MD / 4700.67' TVD
4,822.00	62.12	181.01	181.24	-3,356.68	4,707.36	383.20 S	8.04 E	140,074.71	2,109,821.93	9.78	383.27	
4,853.00	64.65	179.97	180.20	-3,370.57	4,721.25	410.91 S	7.70 E	140,047.00	2,109,821.70	8.69	410.98	
4,885.00	68.15	178.67	178.90	-3,383.38	4,734.06	440.23 S	7.93 E	140,017.68	2,109,822.05	11.55	440.29	
4,916.00	72.12	177.62	177.85	-3,393.91	4,744.59	469.36 S	8.76 E	139,988.55	2,109,823.00	13.20	469.44	
4,948.00	75.27	177.78	178.01	-3,402.90	4,753.58	500.05 S	9.87 E	139,957.86	2,109,824.23	9.86	500.14	
4,979.00	77.82	178.13	178.36	-3,410.11	4,760.79	530.18 S	10.82 E	139,927.74	2,109,825.30	8.30	530.28	
5,011.00	80.84	177.46	177.69	-3,416.03	4,766.71	561.61 S	11.91 E	139,896.32	2,109,826.52	9.66	561.72	
5,042.00	83.68	176.64	176.87	-3,420.21	4,770.89	592.29 S	13.37 E	139,865.64	2,109,828.10	9.53	592.42	
5,105.00	87.90	176.42	176.65	-3,424.83	4,775.51	655.00 S	16.92 E	139,802.94	2,109,831.90	6.71	655.18	
5,137.00	88.80	176.88	177.11	-3,425.75	4,776.43	686.94 S	18.66 E	139,771.01	2,109,833.77	3.16	687.14	
5,151.08	89.05	176.90	177.13	-3,426.02	4,776.70	701.00 S	19.37 E	139,756.95	2,109,834.54	1.78	701.21	Cross 330' FNL @5151.08' MD/ 4776.70' TVD (330' FNL, 1320' FWL)
5,168.00	89.35	176.92	177.15	-3,426.25	4,776.93	717.90 S	20.21 E	139,740.06	2,109,835.45	1.78	718.12	
5,256.00	92.90	177.08	177.31	-3,424.53	4,775.21	805.76 S	24.46 E	139,652.21	2,109,840.05	4.04	806.04	
5,348.00	90.65	178.63	178.86	-3,421.68	4,772.36	897.66 S	27.53 E	139,560.33	2,109,843.50	2.97	897.97	
5,440.00	90.77	180.51	180.74	-3,420.54	4,771.22	989.65 S	27.86 E	139,468.34	2,109,844.19	2.05	989.95	
5,532.00	90.93	180.29	180.52	-3,419.17	4,769.85	1,081.63 S	26.84 E	139,376.36	2,109,843.55	0.30	1,081.91	
5,624.00	86.61	180.35	180.58	-3,421.15	4,771.83	1,173.59 S	25.96 E	139,284.40	2,109,843.04	4.70	1,173.84	
5,704.00	87.44	180.38	180.61	-3,425.30	4,775.98	1,253.47 S	25.13 E	139,204.51	2,109,842.53	1.04	1,253.71	
5,798.00	89.20	180.57	180.80	-3,428.05	4,778.73	1,347.42 S	23.98 E	139,110.56	2,109,841.75	1.88	1,347.63	
5,892.00	89.29	180.01	180.24	-3,429.29	4,779.97	1,441.41 S	23.12 E	139,016.57	2,109,841.28	0.60	1,441.59	
5,987.00	90.96	178.82	179.05	-3,429.08	4,779.76	1,536.40 S	23.71 E	138,921.58	2,109,842.25	2.16	1,536.58	

Design Report for Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
6,082.00	88.37	178.72	178.95	-3,429.64	4,780.32	1,631.38 S	25.37 E	138,826.61	2,109,844.29	2.73	1,631.57	
6,176.00	89.38	178.15	178.38	-3,431.49	4,782.17	1,725.33 S	27.56 E	138,732.67	2,109,846.86	1.23	1,725.55	
6,270.00	88.28	177.13	177.36	-3,433.41	4,784.09	1,819.25 S	31.05 E	138,638.77	2,109,850.73	1.60	1,819.50	
6,365.00	90.65	178.50	178.73	-3,434.29	4,784.97	1,914.18 S	34.29 E	138,543.85	2,109,854.36	2.88	1,914.47	
6,460.00	89.20	179.39	179.62	-3,434.42	4,785.10	2,009.16 S	35.66 E	138,448.87	2,109,856.11	1.79	2,009.47	
6,554.00	88.71	179.95	180.18	-3,436.13	4,786.81	2,103.15 S	35.82 E	138,354.89	2,109,856.65	0.79	2,103.45	
6,649.00	88.89	179.99	180.22	-3,438.12	4,788.80	2,198.13 S	35.49 E	138,259.91	2,109,856.70	0.19	2,198.41	
6,743.00	90.25	179.53	179.76	-3,438.83	4,789.51	2,292.12 S	35.51 E	138,165.92	2,109,857.10	1.53	2,292.39	
6,838.00	91.88	179.28	179.51	-3,437.06	4,787.74	2,387.10 S	36.11 E	138,070.94	2,109,858.09	1.74	2,387.37	
6,932.00	92.62	180.41	180.64	-3,433.37	4,784.05	2,481.02 S	35.99 E	137,977.02	2,109,858.34	1.44	2,481.28	
7,027.00	89.11	180.25	180.48	-3,431.94	4,782.62	2,575.99 S	35.06 E	137,882.04	2,109,857.80	3.70	2,576.23	
7,121.00	86.73	179.03	179.26	-3,435.35	4,786.03	2,669.92 S	35.27 E	137,788.12	2,109,858.39	2.84	2,670.15	
7,216.00	89.17	177.93	178.16	-3,438.75	4,789.43	2,764.83 S	37.41 E	137,693.22	2,109,860.91	2.82	2,765.08	
7,310.00	86.70	178.09	178.32	-3,442.13	4,792.81	2,858.72 S	40.30 E	137,599.34	2,109,864.17	2.63	2,859.00	
7,404.00	88.06	177.19	177.42	-3,446.43	4,797.11	2,952.55 S	43.79 E	137,505.53	2,109,868.04	1.73	2,952.87	
7,498.00	88.34	177.58	177.81	-3,449.38	4,800.06	3,046.42 S	47.70 E	137,411.67	2,109,872.33	0.51	3,046.79	
7,593.00	90.83	178.35	178.58	-3,450.07	4,800.75	3,141.36 S	50.69 E	137,316.74	2,109,875.71	2.74	3,141.77	
7,688.00	89.08	179.46	179.69	-3,450.14	4,800.82	3,236.35 S	52.12 E	137,221.76	2,109,877.52	2.18	3,236.76	
7,782.00	88.61	179.02	179.25	-3,452.04	4,802.72	3,330.32 S	52.99 E	137,127.79	2,109,878.77	0.68	3,330.74	
7,877.00	89.26	178.24	178.47	-3,453.80	4,804.48	3,425.29 S	54.88 E	137,032.84	2,109,881.05	1.07	3,425.72	
7,971.00	90.31	177.88	178.11	-3,454.16	4,804.84	3,519.24 S	57.69 E	136,938.89	2,109,884.23	1.18	3,519.71	
8,066.00	91.08	177.76	177.99	-3,453.01	4,803.69	3,614.18 S	60.92 E	136,843.97	2,109,887.84	0.82	3,614.69	
8,160.00	90.80	179.84	180.07	-3,451.46	4,802.14	3,708.15 S	62.51 E	136,750.01	2,109,889.81	2.23	3,708.67	
8,255.00	90.34	180.43	180.66	-3,450.52	4,801.20	3,803.14 S	61.91 E	136,655.02	2,109,889.59	0.79	3,803.64	
8,349.00	89.54	180.79	181.02	-3,450.62	4,801.30	3,897.13 S	60.53 E	136,561.02	2,109,888.59	0.93	3,897.60	
8,444.00	88.61	180.45	180.68	-3,452.15	4,802.83	3,992.11 S	59.12 E	136,466.04	2,109,887.57	1.04	3,992.55	
8,475.00	89.07	180.79	181.02	-3,452.78	4,803.46	4,023.10 S	58.66 E	136,435.05	2,109,887.23	1.85	4,023.53	
8,507.00	88.86	180.79	181.02	-3,453.36	4,804.04	4,055.09 S	58.09 E	136,403.06	2,109,886.79	0.66	4,055.50	
8,538.00	88.98	180.85	181.08	-3,453.94	4,804.62	4,086.08 S	57.52 E	136,372.07	2,109,886.35	0.43	4,086.48	
8,570.00	89.32	180.30	180.53	-3,454.41	4,805.09	4,118.07 S	57.07 E	136,340.07	2,109,886.03	2.02	4,118.46	
8,601.00	88.86	179.34	179.57	-3,454.91	4,805.59	4,149.07 S	57.04 E	136,309.08	2,109,886.13	3.43	4,149.46	
8,633.00	88.98	179.25	179.48	-3,455.51	4,806.19	4,181.06 S	57.31 E	136,277.08	2,109,886.52	0.47	4,181.45	
8,664.00	89.29	179.69	179.92	-3,455.98	4,806.66	4,212.05 S	57.47 E	136,246.09	2,109,886.81	1.74	4,212.44	
8,696.00	89.94	179.44	179.67	-3,456.19	4,806.87	4,244.05 S	57.59 E	136,214.09	2,109,887.05	2.18	4,244.44	
8,728.00	89.91	179.08	179.31	-3,456.24	4,806.92	4,276.05 S	57.87 E	136,182.09	2,109,887.47	1.13	4,276.44	
8,759.00	89.35	178.74	178.97	-3,456.44	4,807.12	4,307.05 S	58.34 E	136,151.10	2,109,888.06	2.11	4,307.44	
8,791.00	88.95	178.39	178.62	-3,456.91	4,807.59	4,339.04 S	59.01 E	136,119.11	2,109,888.86	1.66	4,339.44	

Design Report for Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	True Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
8,822.00	89.14	178.53	178.76	-3,457.43	4,808.11	4,370.02 S	59.72 E	136,088.13	2,109,889.69	0.76	4,370.43	
8,854.00	89.29	178.92	179.15	-3,457.87	4,808.55	4,402.02 S	60.30 E	136,056.14	2,109,890.41	1.31	4,402.43	
8,885.00	89.51	179.18	179.41	-3,458.19	4,808.87	4,433.01 S	60.69 E	136,025.15	2,109,890.92	1.10	4,433.43	
8,917.00	89.23	177.96	178.19	-3,458.54	4,809.22	4,465.00 S	61.36 E	135,993.16	2,109,891.72	3.91	4,465.42	
8,948.00	89.26	179.37	179.60	-3,458.95	4,809.63	4,495.99 S	61.96 E	135,962.17	2,109,892.44	4.55	4,496.42	
8,980.00	89.04	179.40	179.63	-3,459.42	4,810.10	4,527.99 S	62.17 E	135,930.18	2,109,892.79	0.69	4,528.41	
9,011.00	89.07	179.03	179.26	-3,459.94	4,810.62	4,558.98 S	62.47 E	135,899.18	2,109,893.21	1.20	4,559.41	
9,043.00	89.26	179.07	179.30	-3,460.40	4,811.08	4,590.98 S	62.88 E	135,867.19	2,109,893.74	0.61	4,591.41	
9,074.00	89.01	179.14	179.37	-3,460.87	4,811.55	4,621.97 S	63.24 E	135,836.20	2,109,894.23	0.84	4,622.40	
9,106.00	89.02	178.60	178.83	-3,461.42	4,812.10	4,653.96 S	63.74 E	135,804.21	2,109,894.86	1.69	4,654.40	
9,137.00	88.45	179.64	179.87	-3,462.10	4,812.78	4,684.95 S	64.09 E	135,773.22	2,109,895.34	3.82	4,685.39	
9,169.00	88.49	178.70	178.93	-3,462.96	4,813.64	4,716.94 S	64.43 E	135,741.24	2,109,895.80	2.94	4,717.38	
9,200.00	88.15	178.45	178.68	-3,463.87	4,814.55	4,747.92 S	65.07 E	135,710.26	2,109,896.57	1.36	4,748.36	
9,232.00	89.32	178.12	178.35	-3,464.57	4,815.25	4,779.90 S	65.90 E	135,678.28	2,109,897.53	3.80	4,780.35	
9,263.00	90.15	178.31	178.54	-3,464.72	4,815.40	4,810.89 S	66.74 E	135,647.30	2,109,898.50	2.75	4,811.35	
9,295.00	89.94	178.79	179.02	-3,464.69	4,815.37	4,842.88 S	67.42 E	135,615.31	2,109,899.31	1.64	4,843.35	
9,326.00	90.09	178.69	178.92	-3,464.68	4,815.36	4,873.88 S	67.98 E	135,584.32	2,109,899.99	0.58	4,874.35	
9,358.00	90.65	178.75	178.98	-3,464.48	4,815.16	4,905.87 S	68.57 E	135,552.33	2,109,900.70	1.76	4,906.35	
9,389.00	90.99	178.81	179.04	-3,464.03	4,814.71	4,936.86 S	69.10 E	135,521.34	2,109,901.36	1.11	4,937.34	
9,421.00	90.46	178.28	178.51	-3,463.63	4,814.31	4,968.85 S	69.79 E	135,489.35	2,109,902.18	2.34	4,969.34	
9,452.00	90.19	178.54	178.77	-3,463.45	4,814.13	4,999.84 S	70.52 E	135,458.36	2,109,903.04	1.21	5,000.34	
9,484.00	89.57	178.20	178.43	-3,463.52	4,814.20	5,031.83 S	71.30 E	135,426.38	2,109,903.95	2.21	5,032.34	
9,578.00	86.85	177.17	177.40	-3,466.46	4,817.14	5,125.71 S	74.72 E	135,332.51	2,109,907.75	3.09	5,126.26	
9,673.00	87.04	176.20	176.43	-3,471.52	4,822.20	5,220.44 S	79.83 E	135,237.80	2,109,913.23	1.04	5,221.05	Last MWD Survey
9,745.00	87.04	176.20	176.43	-3,475.24	4,825.92	5,292.21 S	84.30 E	135,166.06	2,109,918.00	0.00	5,292.87	Projected to TD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
144.00	144.00	-0.25	0.19	First MWD Survey
4,807.99	4,700.67	-370.90	8.32	Cross section Line @4807.99' MD / 4700.67' TVD
5,151.08	4,776.70	-701.00	19.37	Cross 330' FNL @5151.08' MD/ 4776.70' TVD (330' FNL, 1320' FWL)
9,673.00	4,822.20	-5,220.44	79.83	Last MWD Survey
9,745.00	4,825.92	-5,292.21	84.30	Projected to TD

Design Report for Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	179.16	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
144.00	9,745.00	MWD Surveys	MWD+SC

Design Targets

Target Name - hit/miss target - Shape	Dip Angle ()	Dip Dir. ()	TVD ()	+N/-S ()	+E/-W ()	Northing ()	Easting ()	Latitude	Longitude

Directional Difficulty Index

Average Dogleg over Survey:	1.92 °/100ft	Maximum Dogleg over Survey:	13.36 °/100ft at 4,285.00 ft
Net Tortousity applicable to Plans:	0.85 °/100ft	Directional Difficulty Index:	6.303

Audit Info

North Reference Sheet for Sec 30-T34S-R07W - Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774 - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to WELL @ 1350.68ft (Original Well Elev). Northing and Easting are relative to Croft Farms 3407 #30-2H/ Job#9281847 / Nabors 774

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866
Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is 98° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°
False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00004917

Grid Coordinates of Well: 140,457.87 ft N, 2,109,812.34 ft E
Geographical Coordinates of Well: 37° 03' 06.49" N, 098° 07' 25.48" W
Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 9,745.00ft
the Bottom Hole Displacement is 5,292.88ft in the Direction of 179.09° (True).

Magnetic Convergence at surface is: -4.53° (27 April 2012, , BGGM2011)