





Survey Report

Company:	Caerus Oil & Gas (NAD 27)	Local Co-ordinate Reference:	Well Nolte 43C-14
Project:	Garfield County, CO	TVD Reference:	WELL @ 5108.1usft
Site:	S14-T7S-R96W	MD Reference:	WELL @ 5108.1usft
Well:	Nolte 43C-14	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Garfield County, CO		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site		S14-T7S-R96W			
Site Position:		Northing:	592,602.09 usft	Latitude:	39.432320
From:	Lat/Long	Easting:	1,274,369.93 usft	Longitude:	-108.069280
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.62 °

Well	Nolte 43C-14					
Well Position	+N/-S	0.0 usft	Northing:	592,627.08 usft	Latitude:	39.432403
	+E/-W	0.0 usft	Easting:	1,274,558.84 usft	Longitude:	-108.068614
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,091.1 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/4/2014	10.02	65.60	51,930

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	339.74	

Survey Program	Date	4/8/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
144.0	6,020.0	Survey #1 (DD)	MWD	Geolink MWD	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
144.0	0.30	155.00	144.0	-0.3	0.2	-0.4	0.21	0.21		
235.0	0.40	352.10	235.0	-0.2	0.2	-0.3	0.76	0.11		
266.0	0.90	359.40	266.0	0.1	0.2	0.0	1.63	1.61		
297.0	1.30	351.20	297.0	0.7	0.1	0.6	1.38	1.29		
328.0	1.50	357.40	328.0	1.5	0.1	1.3	0.81	0.65		
359.0	1.50	341.40	359.0	2.2	-0.1	2.1	1.35	0.00		
390.0	1.70	344.30	390.0	3.1	-0.3	3.0	0.70	0.65		
420.0	2.10	347.10	419.9	4.0	-0.6	4.0	1.37	1.33		
450.0	3.30	339.50	449.9	5.4	-1.0	5.4	4.17	4.00		
481.0	4.00	340.70	480.8	7.2	-1.7	7.4	2.27	2.26		
511.0	4.40	339.00	510.8	9.3	-2.4	9.6	1.40	1.33		
542.0	5.10	343.20	541.7	11.7	-3.3	12.1	2.52	2.26		

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Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
572.0	6.00	347.40	571.5	14.5	-4.0	15.0	3.29	3.00	
603.0	6.40	346.20	602.3	17.8	-4.7	18.3	1.36	1.29	
695.0	8.70	343.50	693.5	29.4	-7.9	30.4	2.53	2.50	
790.0	11.30	344.20	787.1	45.3	-12.5	46.8	2.74	2.74	
885.0	13.10	340.70	879.9	64.4	-18.6	66.9	2.05	1.89	
980.0	16.20	340.60	971.8	87.1	-26.6	90.9	3.26	3.26	
1,000.0	16.60	339.70	991.0	92.4	-28.5	96.5	2.37	2.00	
1,070.0	17.30	338.80	1,058.0	111.5	-35.7	116.9	1.07	1.00	
1,165.0	17.70	336.60	1,148.6	137.9	-46.6	145.5	0.81	0.42	
1,260.0	18.90	337.50	1,238.8	165.4	-58.2	175.3	1.30	1.26	
1,355.0	20.70	337.80	1,328.2	195.1	-70.4	207.4	1.90	1.89	
1,450.0	19.70	335.90	1,417.3	225.3	-83.3	240.2	1.26	-1.05	
1,545.0	17.60	333.00	1,507.3	252.7	-96.4	270.4	2.42	-2.21	
1,641.0	19.90	336.50	1,598.2	280.6	-109.5	301.2	2.67	2.40	
1,736.0	20.50	338.80	1,687.4	311.0	-121.9	333.9	1.05	0.63	
1,831.0	19.90	339.00	1,776.5	341.6	-133.7	366.7	0.64	-0.63	
1,925.0	21.40	339.60	1,864.5	372.6	-145.5	399.9	1.61	1.60	
2,020.0	20.60	339.20	1,953.2	404.4	-157.4	433.9	0.86	-0.84	
2,115.0	20.90	342.80	2,042.0	436.3	-168.4	467.6	1.38	0.32	
2,210.0	20.40	342.40	2,130.9	468.2	-178.4	501.0	0.55	-0.53	
2,305.0	19.50	342.50	2,220.2	499.1	-188.2	533.4	0.95	-0.95	
2,400.0	18.60	341.70	2,310.0	528.6	-197.7	564.4	0.99	-0.95	
2,495.0	20.20	344.30	2,399.6	558.8	-206.9	595.9	1.91	1.68	
2,590.0	19.30	344.10	2,489.0	589.7	-215.6	627.9	0.95	-0.95	
2,685.0	17.90	343.00	2,579.1	618.8	-224.2	658.1	1.52	-1.47	
2,781.0	19.10	341.50	2,670.1	647.8	-233.5	688.5	1.34	1.25	
2,876.0	18.50	341.90	2,760.0	676.8	-243.1	719.1	0.65	-0.63	
2,971.0	17.50	339.40	2,850.4	704.5	-252.8	748.5	1.33	-1.05	
3,066.0	16.70	336.50	2,941.2	730.4	-263.3	776.4	1.23	-0.84	
3,161.0	14.30	336.10	3,032.7	753.7	-273.5	801.7	2.53	-2.53	
3,256.0	12.30	334.70	3,125.2	773.5	-282.6	823.5	2.13	-2.11	
3,351.0	10.10	332.30	3,218.4	790.1	-290.8	841.9	2.37	-2.32	
3,446.0	8.60	332.70	3,312.1	803.8	-297.9	857.2	1.58	-1.58	
3,541.0	7.30	335.70	3,406.2	815.6	-303.6	870.3	1.44	-1.37	
3,636.0	5.30	336.90	3,500.6	825.1	-307.8	880.7	2.11	-2.11	
3,731.0	4.30	345.60	3,595.3	832.6	-310.5	888.6	1.30	-1.05	
3,826.0	2.50	17.70	3,690.1	838.0	-310.7	893.8	2.69	-1.89	
3,920.0	2.90	45.80	3,784.0	841.6	-308.4	896.3	1.45	0.43	
4,015.0	1.90	54.20	3,878.9	844.2	-305.4	897.7	1.11	-1.05	
4,110.0	1.90	55.30	3,973.9	846.0	-302.8	898.6	0.04	0.00	
4,205.0	1.10	57.90	4,068.8	847.4	-300.7	899.1	0.84	-0.84	
4,300.0	0.50	109.20	4,163.8	847.8	-299.6	899.1	0.93	-0.63	
4,395.0	0.40	144.70	4,258.8	847.4	-299.0	898.5	0.31	-0.11	
4,490.0	0.30	129.30	4,353.8	846.9	-298.6	897.9	0.14	-0.11	
4,585.0	0.70	170.90	4,448.8	846.2	-298.3	897.2	0.54	0.42	
4,680.0	0.70	28.40	4,543.8	846.1	-298.0	897.0	1.40	0.00	
4,775.0	0.70	276.80	4,638.8	846.7	-298.3	897.6	1.22	0.00	
4,921.0	0.30	247.40	4,784.8	846.7	-299.5	898.0	0.32	-0.27	
4,966.0	0.10	54.80	4,829.8	846.7	-299.6	898.0	0.88	-0.44	
5,061.0	0.40	210.30	4,924.8	846.4	-299.7	897.8	0.52	0.32	
5,156.0	0.60	223.00	5,019.8	845.8	-300.2	897.4	0.24	0.21	
5,251.0	0.50	35.20	5,114.8	845.7	-300.3	897.4	1.16	-0.11	
5,345.0	0.50	280.00	5,208.8	846.2	-300.4	897.8	0.90	0.00	

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
5,440.0	2.00	262.00	5,303.8	846.0	-302.5	898.4	1.61	1.58	
5,535.0	1.50	273.50	5,398.7	845.8	-305.4	899.3	0.64	-0.53	
5,630.0	2.00	259.30	5,493.7	845.6	-308.2	900.0	0.69	0.53	
5,725.0	3.20	243.60	5,588.6	844.1	-312.3	900.0	1.46	1.26	Last CES Survey @ 5,725' MD
6,020.0	3.20	243.60	5,883.1	836.8	-327.0	898.3	0.00	0.00	PTB @ 6,020'

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Nolte 43C-14 PBHL	0.00	0.00	5,840.3	809.8	-298.9	593,444.98	1,274,282.93	39.434626	-108.069672
- actual wellpath misses target center by 38.2usft at 5976.5usft MD (5839.7 TVD, 837.9 N, -324.8 E)									
- Circle (radius 50.0)									
Nolte 43C-14 PBHL 2	0.00	0.00	5,840.3	844.7	-308.6	593,480.21	1,274,274.29	39.434723	-108.069706
- actual wellpath misses target center by 17.7usft at 5976.1usft MD (5839.3 TVD, 837.9 N, -324.8 E)									
- Circle (radius 50.0)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,725.0	5,588.6	844.1	-312.3	Last CES Survey @ 5,725' MD
6,020.0	5,883.1	836.8	-327.0	PTB @ 6,020'

Checked By: _____ Approved By: _____ Date: _____