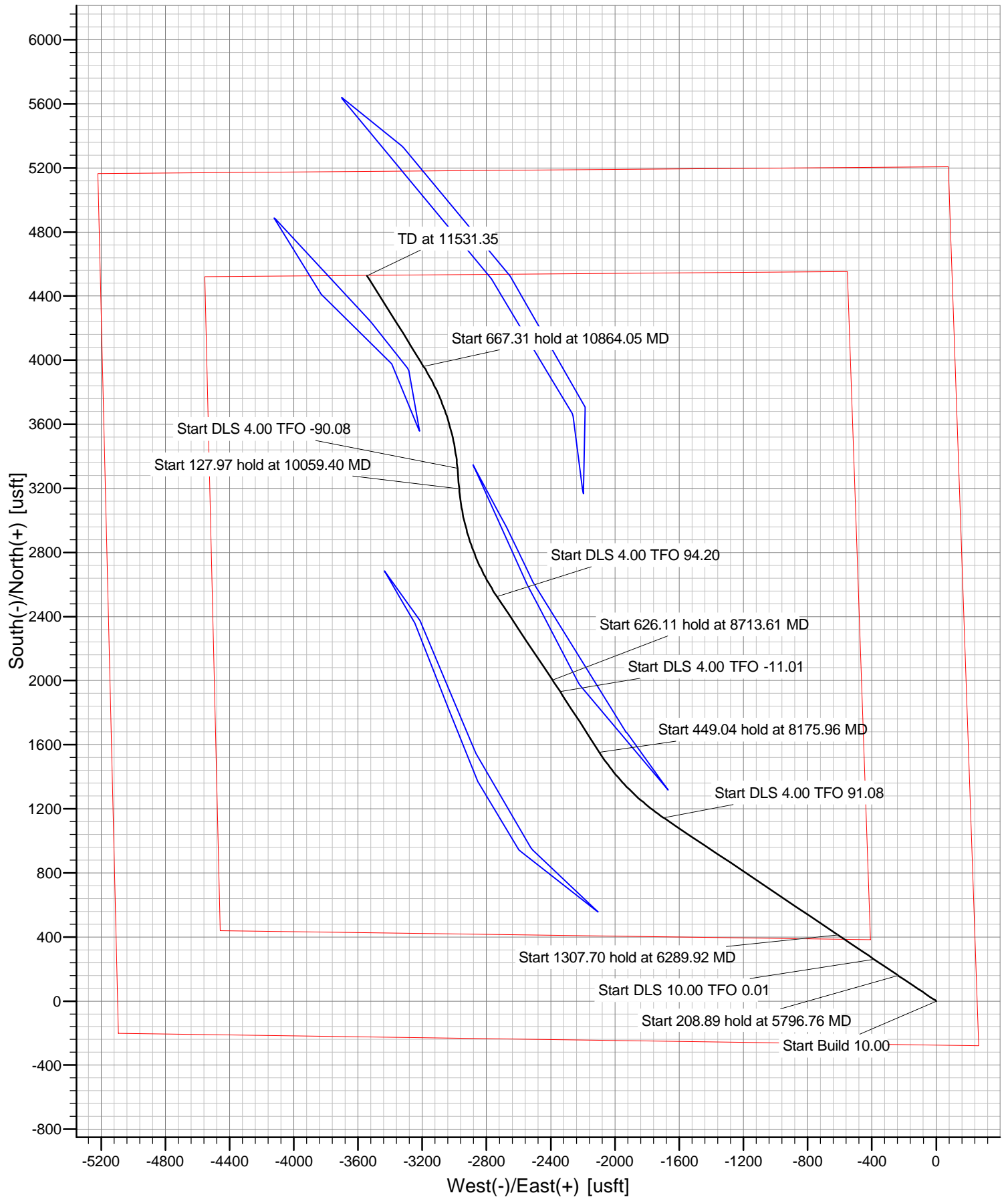
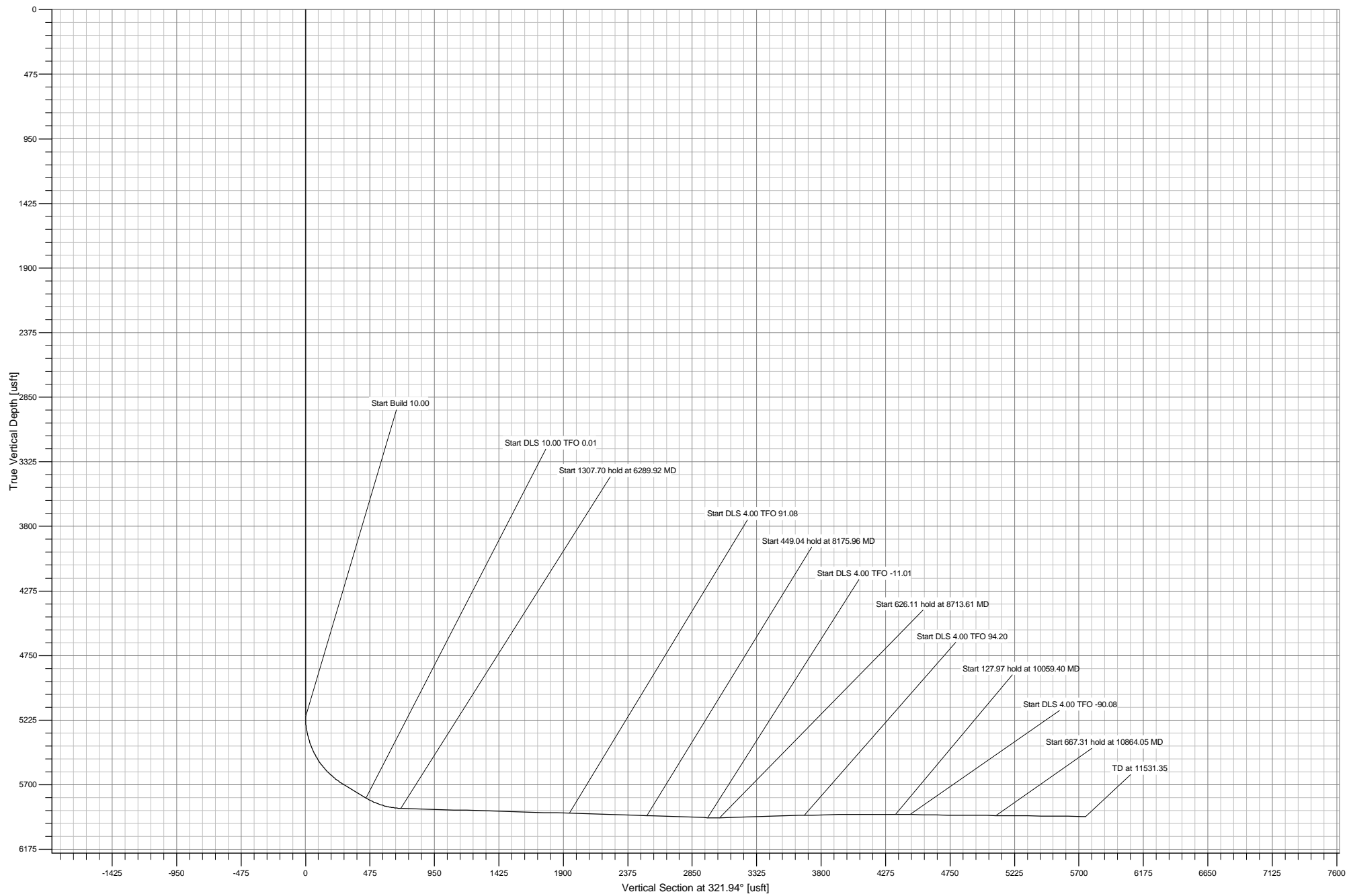


Plan: Design #4 (5-44-5-60/Wellbore #1)



Plan: Design #4 (5-44-5-60/Wellbore #1)





Carrizo Oil & Gas

Morgan County, Colorado (NAD 83)

Wickstrom

5-44-5-60

Wellbore #1

Plan: Design #4

Standard Planning Report

16 March, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 5-44-5-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4558.80usft (KB)
Project:	Morgan County, Colorado (NAD 83)	MD Reference:	WELL @ 4558.80usft (KB)
Site:	Wickstrom	North Reference:	Grid
Well:	5-44-5-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #4		

Project	Morgan County, Colorado (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Well	5-44-5-60			
Well Position	+N/-S	1,400,103.51 usft	Northing:	1,400,103.51 usft
	+E/-W	3,387,216.83 usft	Easting:	3,387,216.83 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Ground Level:	4,543.80 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	02/16/2011	8.55	67.19	53,260

Design	Design #4			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	321.94

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,196.80	0.00	0.01	5,196.80	0.00	0.00	0.00	0.00	0.00	0.01	
5,796.76	60.00	303.98	5,692.98	160.08	-237.54	10.00	10.00	0.00	303.98	
6,005.66	60.00	303.98	5,797.44	261.17	-387.56	0.00	0.00	0.00	0.00	
6,289.92	88.42	303.98	5,874.00	412.48	-612.07	10.00	10.00	0.00	0.01	
7,597.62	88.42	303.98	5,910.00	1,143.08	-1,696.04	0.00	0.00	0.00	0.00	Wickstrom 5-44-5-60
8,175.96	88.13	327.12	5,927.66	1,552.95	-2,098.12	4.00	-0.05	4.00	91.08	
8,625.00	88.13	327.12	5,942.34	1,929.86	-2,341.74	0.00	0.00	0.00	0.00	Wickstrom 5-44-5-60
8,713.61	91.61	326.45	5,942.54	2,003.98	-2,390.27	4.00	3.93	-0.76	-11.01	
9,339.72	91.61	326.45	5,925.00	2,525.56	-2,736.20	0.00	0.00	0.00	0.00	Wickstrom 5-44-5-60
10,059.40	89.39	355.15	5,918.63	3,198.05	-2,970.39	4.00	-0.31	3.99	94.20	
10,187.37	89.39	355.15	5,920.00	3,325.56	-2,981.20	0.00	0.00	0.00	0.00	Wickstrom 5-44-5-60
10,864.05	89.42	328.08	5,927.20	3,961.71	-3,192.63	4.00	0.00	-4.00	-90.08	
11,531.35	89.42	328.08	5,934.00	4,528.09	-3,545.42	0.00	0.00	0.00	0.00	Wickstrom 5-44-5-60

Database:	Southern Region	Local Co-ordinate Reference:	Well 5-44-5-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4558.80usft (KB)
Project:	Morgan County, Colorado (NAD 83)	MD Reference:	WELL @ 4558.80usft (KB)
Site:	Wickstrom	North Reference:	Grid
Well:	5-44-5-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #4		

Planned 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)	
5,196.80	0.00	0.01	5,196.80	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 10.00										
5,200.00	0.32	303.98	5,200.00	0.00	-0.01	0.01	10.00	10.00	0.00	
5,250.00	5.32	303.98	5,249.92	1.38	-2.05	2.35	10.00	10.00	0.00	
5,300.00	10.32	303.98	5,299.44	5.18	-7.69	8.82	10.00	10.00	0.00	
5,350.00	15.32	303.98	5,348.18	11.38	-16.88	19.37	10.00	10.00	0.00	
5,400.00	20.32	303.98	5,395.77	19.93	-29.57	33.92	10.00	10.00	0.00	
5,450.00	25.32	303.98	5,441.84	30.76	-45.65	52.36	10.00	10.00	0.00	
5,500.00	30.32	303.98	5,486.05	43.80	-64.99	74.55	10.00	10.00	0.00	
5,550.00	35.32	303.98	5,528.05	58.94	-87.46	100.32	10.00	10.00	0.00	
5,600.00	40.32	303.98	5,567.54	76.06	-112.87	129.47	10.00	10.00	0.00	
5,650.00	45.32	303.98	5,604.20	95.05	-141.05	161.79	10.00	10.00	0.00	
5,700.00	50.32	303.98	5,637.76	115.75	-171.76	197.03	10.00	10.00	0.00	
5,750.00	55.32	303.98	5,667.97	138.00	-204.79	234.91	10.00	10.00	0.00	
5,796.76	60.00	303.98	5,692.98	160.08	-237.54	272.48	10.00	10.00	0.00	
Start 208.89 hold at 5796.76 MD										
5,800.00	60.00	303.98	5,694.60	161.64	-239.87	275.15	0.00	0.00	0.00	
5,900.00	60.00	303.98	5,744.60	210.04	-311.68	357.53	0.00	0.00	0.00	
6,005.66	60.00	303.98	5,797.44	261.17	-387.56	444.56	0.00	0.00	0.00	
Start DLS 10.00 TFO 0.01										
6,050.00	64.43	303.98	5,818.10	283.09	-420.09	481.87	10.00	10.00	0.00	
6,100.00	69.43	303.98	5,837.69	308.79	-458.22	525.62	10.00	10.00	0.00	
6,150.00	74.43	303.98	5,853.19	335.35	-497.63	570.82	10.00	10.00	0.00	
6,200.00	79.43	303.98	5,864.50	362.56	-538.00	617.14	10.00	10.00	0.00	
6,250.00	84.43	303.98	5,871.51	390.22	-579.04	664.21	10.00	10.00	0.00	
6,289.92	88.42	303.98	5,874.00	412.48	-612.07	702.11	10.00	10.00	0.00	
Start 1307.70 hold at 6289.92 MD										
6,300.00	88.42	303.98	5,874.28	418.11	-620.43	711.69	0.00	0.00	0.00	
6,400.00	88.42	303.98	5,877.03	473.98	-703.32	806.78	0.00	0.00	0.00	
6,500.00	88.42	303.98	5,879.78	529.85	-786.21	901.88	0.00	0.00	0.00	
6,600.00	88.42	303.98	5,882.54	585.72	-869.10	996.97	0.00	0.00	0.00	
6,700.00	88.42	303.98	5,885.29	641.59	-951.99	1,092.06	0.00	0.00	0.00	
6,800.00	88.42	303.98	5,888.04	697.46	-1,034.89	1,187.15	0.00	0.00	0.00	
6,900.00	88.42	303.98	5,890.80	753.33	-1,117.78	1,282.24	0.00	0.00	0.00	
7,000.00	88.42	303.98	5,893.55	809.20	-1,200.67	1,377.33	0.00	0.00	0.00	
7,100.00	88.42	303.98	5,896.30	865.06	-1,283.56	1,472.42	0.00	0.00	0.00	
7,200.00	88.42	303.98	5,899.05	920.93	-1,366.45	1,567.52	0.00	0.00	0.00	
7,300.00	88.42	303.98	5,901.81	976.80	-1,449.35	1,662.61	0.00	0.00	0.00	
7,400.00	88.42	303.98	5,904.56	1,032.67	-1,532.24	1,757.70	0.00	0.00	0.00	
7,500.00	88.42	303.98	5,907.31	1,088.54	-1,615.13	1,852.79	0.00	0.00	0.00	
7,597.62	88.42	303.98	5,910.00	1,143.08	-1,696.04	1,945.61	0.00	0.00	0.00	
Start DLS 4.00 TFO 91.08										
7,600.00	88.42	304.08	5,910.07	1,144.41	-1,698.02	1,947.88	4.00	-0.08	4.00	
7,700.00	88.35	308.08	5,912.89	1,203.26	-1,778.80	2,044.01	4.00	-0.07	4.00	
7,800.00	88.29	312.08	5,915.82	1,267.60	-1,855.27	2,141.82	4.00	-0.06	4.00	
7,900.00	88.23	316.08	5,918.86	1,337.12	-1,927.06	2,240.81	4.00	-0.05	4.00	
8,000.00	88.19	320.08	5,921.99	1,411.48	-1,993.82	2,340.52	4.00	-0.05	4.00	
8,100.00	88.15	324.08	5,925.19	1,490.31	-2,055.23	2,440.44	4.00	-0.04	4.00	
8,175.96	88.13	327.12	5,927.66	1,552.95	-2,098.12	2,516.20	4.00	-0.03	4.00	
Start 449.04 hold at 8175.96 MD										
8,200.00	88.13	327.12	5,928.44	1,573.13	-2,111.16	2,540.13	0.00	0.00	0.00	
8,300.00	88.13	327.12	5,931.71	1,657.06	-2,165.41	2,639.67	0.00	0.00	0.00	
8,400.00	88.13	327.12	5,934.98	1,741.00	-2,219.67	2,739.20	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 5-44-5-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4558.80usft (KB)
Project:	Morgan County, Colorado (NAD 83)	MD Reference:	WELL @ 4558.80usft (KB)
Site:	Wickstrom	North Reference:	Grid
Well:	5-44-5-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #4		

Planned 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)
8,500.00	88.13	327.12	5,938.25	1,824.94	-2,273.92	2,838.74	0.00	0.00	0.00
8,600.00	88.13	327.12	5,941.52	1,908.88	-2,328.18	2,938.28	0.00	0.00	0.00
8,625.00	88.13	327.12	5,942.34	1,929.86	-2,341.74	2,963.16	0.00	0.00	0.00
Start DLS 4.00 TFO -11.01									
8,700.00	91.07	326.55	5,942.86	1,992.64	-2,382.76	3,037.88	4.00	3.93	-0.76
8,713.61	91.61	326.45	5,942.54	2,003.98	-2,390.27	3,051.44	4.00	3.93	-0.76
Start 626.11 hold at 8713.61 MD									
8,800.00	91.61	326.45	5,940.12	2,075.95	-2,438.00	3,137.53	0.00	0.00	0.00
8,900.00	91.61	326.45	5,937.32	2,159.25	-2,493.26	3,237.18	0.00	0.00	0.00
9,000.00	91.61	326.45	5,934.52	2,242.56	-2,548.51	3,336.84	0.00	0.00	0.00
9,100.00	91.61	326.45	5,931.72	2,325.86	-2,603.76	3,436.49	0.00	0.00	0.00
9,200.00	91.61	326.45	5,928.91	2,409.17	-2,659.01	3,536.14	0.00	0.00	0.00
9,300.00	91.61	326.45	5,926.11	2,492.47	-2,714.26	3,635.79	0.00	0.00	0.00
9,339.72	91.61	326.45	5,925.00	2,525.56	-2,736.20	3,675.37	0.00	0.00	0.00
Start DLS 4.00 TFO 94.20									
9,400.00	91.43	328.85	5,923.40	2,576.46	-2,768.45	3,735.33	4.00	-0.30	3.99
9,500.00	91.13	332.84	5,921.17	2,663.75	-2,817.14	3,834.08	4.00	-0.30	3.99
9,600.00	90.82	336.83	5,919.47	2,754.23	-2,859.65	3,931.52	4.00	-0.31	3.99
9,700.00	90.51	340.82	5,918.31	2,847.45	-2,895.76	4,027.19	4.00	-0.31	3.99
9,800.00	90.20	344.81	5,917.69	2,942.96	-2,925.31	4,120.60	4.00	-0.31	3.99
9,900.00	89.89	348.79	5,917.62	3,040.30	-2,948.14	4,211.32	4.00	-0.31	3.99
10,000.00	89.57	352.78	5,918.09	3,138.99	-2,964.14	4,298.89	4.00	-0.31	3.99
10,059.40	89.39	355.15	5,918.63	3,198.05	-2,970.39	4,349.24	4.00	-0.31	3.99
Start 127.97 hold at 10059.40 MD									
10,100.00	89.39	355.15	5,919.07	3,238.51	-2,973.82	4,383.21	0.00	0.00	0.00
10,187.37	89.39	355.15	5,920.00	3,325.56	-2,981.20	4,456.30	0.00	0.00	0.00
Start DLS 4.00 TFO -90.08									
10,200.00	89.39	354.64	5,920.14	3,338.14	-2,982.33	4,466.90	4.00	-0.01	-4.00
10,300.00	89.38	350.64	5,921.21	3,437.29	-2,995.13	4,552.86	4.00	0.00	-4.00
10,400.00	89.38	346.64	5,922.29	3,535.31	-3,014.81	4,642.17	4.00	0.00	-4.00
10,500.00	89.38	342.64	5,923.37	3,631.71	-3,041.29	4,734.40	4.00	0.00	-4.00
10,600.00	89.39	338.64	5,924.44	3,726.03	-3,074.42	4,829.09	4.00	0.01	-4.00
10,700.00	89.40	334.64	5,925.50	3,817.82	-3,114.05	4,925.79	4.00	0.01	-4.00
10,800.00	89.41	330.64	5,926.54	3,906.61	-3,159.99	5,024.02	4.00	0.01	-4.00
10,864.05	89.42	328.08	5,927.20	3,961.71	-3,192.63	5,087.52	4.00	0.01	-4.00
Start 667.31 hold at 10864.05 MD									
10,900.00	89.42	328.08	5,927.57	3,992.22	-3,211.64	5,123.27	0.00	0.00	0.00
11,000.00	89.42	328.08	5,928.59	4,077.10	-3,264.50	5,222.69	0.00	0.00	0.00
11,100.00	89.42	328.08	5,929.60	4,161.98	-3,317.37	5,322.11	0.00	0.00	0.00
11,200.00	89.42	328.08	5,930.62	4,246.85	-3,370.24	5,421.53	0.00	0.00	0.00
11,300.00	89.42	328.08	5,931.64	4,331.73	-3,423.11	5,520.95	0.00	0.00	0.00
11,400.00	89.42	328.08	5,932.66	4,416.60	-3,475.98	5,620.38	0.00	0.00	0.00
11,500.00	89.42	328.08	5,933.68	4,501.48	-3,528.85	5,719.80	0.00	0.00	0.00
11,531.35	89.42	328.08	5,934.00	4,528.09	-3,545.42	5,750.97	0.00	0.00	0.00
TD at 11531.35									

Database:	Southern Region	Local Co-ordinate Reference:	Well 5-44-5-60
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 4558.80usft (KB)
Project:	Morgan County, Colorado (NAD 83)	MD Reference:	WELL @ 4558.80usft (KB)
Site:	Wickstrom	North Reference:	Grid
Well:	5-44-5-60	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #4		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Wickstrom 5-44-5-60 La - plan misses target center by 22.57usft at 6290.11usft MD (5874.01 TVD, 412.59 N, -612.23 E) - Point	0.00	0.00	5,874.00	393.87	-624.85	1,400,497.38	3,386,591.98	40° 25' 28.048 N	104° 6' 40.939 W
Wickstrom 5-44-5-60 T1 - plan hits target center - Point	0.00	0.00	5,910.00	1,143.08	-1,696.04	1,401,246.59	3,385,520.78	40° 25' 35.617 N	104° 6' 54.637 W
Wickstrom 5-44-5-60 T4 - plan hits target center - Point	0.00	0.00	5,920.00	3,325.56	-2,981.20	1,403,429.07	3,384,235.62	40° 25' 57.379 N	104° 7' 10.814 W
Wickstrom 5-44-5-60 T3 - plan hits target center - Point	0.00	0.00	5,925.00	2,525.56	-2,736.20	1,402,629.07	3,384,480.62	40° 25' 49.437 N	104° 7' 7.807 W
Wickstrom 5-44-5-60 PB - plan hits target center - Point	0.00	0.00	5,934.00	4,528.09	-3,545.42	1,404,631.60	3,383,671.40	40° 26' 9.348 N	104° 7' 17.868 W
Wickstrom 5-44-5-60 T2 - plan hits target center - Point	0.00	0.00	5,942.34	1,929.86	-2,341.74	1,402,033.38	3,384,875.09	40° 25' 43.490 N	104° 7' 2.827 W

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
5,196.80	5,196.80	0.00	0.00	Start Build 10.00
5,796.76	5,692.98	160.08	-237.54	Start 208.89 hold at 5796.76 MD
6,005.66	5,797.44	261.17	-387.56	Start DLS 10.00 TFO 0.01
6,289.92	5,874.00	412.48	-612.07	Start 1307.70 hold at 6289.92 MD
7,597.62	5,910.00	1,143.08	-1,696.04	Start DLS 4.00 TFO 91.08
8,175.96	5,927.66	1,552.95	-2,098.12	Start 449.04 hold at 8175.96 MD
8,625.00	5,942.34	1,929.86	-2,341.74	Start DLS 4.00 TFO -11.01
8,713.61	5,942.54	2,003.98	-2,390.27	Start 626.11 hold at 8713.61 MD
9,339.72	5,925.00	2,525.56	-2,736.20	Start DLS 4.00 TFO 94.20
10,059.40	5,918.63	3,198.05	-2,970.39	Start 127.97 hold at 10059.40 MD
10,187.37	5,920.00	3,325.56	-2,981.20	Start DLS 4.00 TFO -90.08
10,864.05	5,927.20	3,961.71	-3,192.63	Start 667.31 hold at 10864.05 MD
11,531.35	5,934.00	4,528.09	-3,545.42	TD at 11531.35