



## **Cimarex Energy Co., Inc.**

**Ward Co., Texas**

**Cimarex-University 18-38 #2H**

**Cimarex-University 18-38 #2H**

**Lateral**

**Plan: Plan #7**

## **Standard Survey Report**

**14 December, 2007**





# Black Viper Energy

## Survey Report



<b>Company:</b>	Cimarex Energy Co., Inc.	<b>Local Co-ordinate Reference:</b>	Well Cimarex-University 18-38 #2H
<b>Project:</b>	Ward Co., Texas	<b>TVD Reference:</b>	Rig KB @ 2812.00ft (Key Rig #92 KB Elev)
<b>Site:</b>	Cimarex-University 18-38 #2H	<b>MD Reference:</b>	Rig KB @ 2812.00ft (Key Rig #92 KB Elev)
<b>Well:</b>	Cimarex-University 18-38 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #7	<b>Database:</b>	EDM 2003.14.1.0 Server DB

<b>Project</b>	Ward Co., Texas		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Texas Central 4203		

<b>Site</b>	Cimarex-University 18-38 #2H			
<b>Site Position:</b>		<b>Northing:</b>	715,197.40 ft	<b>Latitude:</b> 31° 35' 55.942 N
<b>From:</b>	Map	<b>Easting:</b>	1,070,805.16 ft	<b>Longitude:</b> 103° 19' 5.350 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b> -1.54 °

<b>Well</b>	Cimarex-University 18-38 #2H			
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	715,197.40 ft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,070,805.16 ft
<b>Position Uncertainty</b>	0.00 ft		<b>Wellhead Elevation:</b>	ft
			<b>Ground Level:</b>	2,796.00 ft

<b>Wellbore</b>	Lateral				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	11/20/2007	7.84	59.74	48,648

<b>Design</b>	Plan #7			
<b>Audit Notes:</b>				
<b>Version:</b>	ZERO	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b> 12,986.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	218.33

<b>Survey Tool Program</b>	<b>Date</b>	12/14/2007		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
12,986.00	15,524.14	Plan #7 (Lateral)	MWD	MWD - Standard

<b>Planned Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
12,986.00	92.20	217.50	11,444.55	-1,283.22	-1,040.82	1,652.13	0.00	0.00	0.00
<b>Build 1.09° / 100 :: Turn 0.56°</b>									
13,000.00	92.35	217.58	11,444.00	-1,294.31	-1,049.34	1,666.12	1.23	1.09	0.56
13,050.00	92.90	217.86	11,441.71	-1,333.82	-1,079.90	1,716.06	1.23	1.09	0.56
<b>Drop -3.20° / 100</b>									
13,100.00	91.30	217.86	11,439.87	-1,373.27	-1,110.57	1,766.02	3.20	-3.20	0.00
<b>EOD - Hold 91.3° Inc. :: 217.86° Azi.</b>									
13,200.00	91.30	217.86	11,437.60	-1,452.20	-1,171.92	1,865.99	0.00	0.00	0.00
13,300.00	91.30	217.86	11,435.34	-1,531.13	-1,233.28	1,965.97	0.00	0.00	0.00
13,400.00	91.30	217.86	11,433.07	-1,610.06	-1,294.64	2,065.94	0.00	0.00	0.00
13,500.00	91.30	217.86	11,430.80	-1,688.99	-1,356.00	2,165.91	0.00	0.00	0.00
13,600.00	91.30	217.86	11,428.53	-1,767.92	-1,417.35	2,265.88	0.00	0.00	0.00
13,700.00	91.30	217.86	11,426.26	-1,846.85	-1,478.71	2,365.85	0.00	0.00	0.00



**Black Viper Energy**  
Survey Report



<b>Company:</b>	Cimarex Energy Co., Inc.	<b>Local Co-ordinate Reference:</b>	Well Cimarex-University 18-38 #2H
<b>Project:</b>	Ward Co., Texas	<b>TVD Reference:</b>	Rig KB @ 2812.00ft (Key Rig #92 KB Elev)
<b>Site:</b>	Cimarex-University 18-38 #2H	<b>MD Reference:</b>	Rig KB @ 2812.00ft (Key Rig #92 KB Elev)
<b>Well:</b>	Cimarex-University 18-38 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #7	<b>Database:</b>	EDM 2003.14.1.0 Server DB

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,800.00	91.30	217.86	11,423.98	-1,925.79	-1,540.07	2,465.82	0.00	0.00	0.00
13,900.00	91.30	217.86	11,421.71	-2,004.72	-1,601.43	2,565.79	0.00	0.00	0.00
14,000.00	91.30	217.86	11,419.44	-2,083.65	-1,662.79	2,665.76	0.00	0.00	0.00
14,100.00	91.30	217.86	11,417.17	-2,162.58	-1,724.14	2,765.73	0.00	0.00	0.00
14,200.00	91.30	217.86	11,414.90	-2,241.51	-1,785.50	2,865.70	0.00	0.00	0.00
14,300.00	91.30	217.86	11,412.63	-2,320.44	-1,846.86	2,965.67	0.00	0.00	0.00
14,400.00	91.30	217.86	11,410.35	-2,399.37	-1,908.22	3,065.65	0.00	0.00	0.00
14,500.00	91.30	217.86	11,408.08	-2,478.30	-1,969.57	3,165.62	0.00	0.00	0.00
14,600.00	91.30	217.86	11,405.81	-2,557.23	-2,030.93	3,265.59	0.00	0.00	0.00
14,700.00	91.30	217.86	11,403.53	-2,636.16	-2,092.29	3,365.56	0.00	0.00	0.00
14,800.00	91.30	217.86	11,401.26	-2,715.09	-2,153.65	3,465.53	0.00	0.00	0.00
14,900.00	91.30	217.86	11,398.99	-2,794.02	-2,215.00	3,565.50	0.00	0.00	0.00
15,000.00	91.30	217.86	11,396.71	-2,872.96	-2,276.36	3,665.47	0.00	0.00	0.00
15,100.00	91.30	217.86	11,394.44	-2,951.89	-2,337.72	3,765.44	0.00	0.00	0.00
15,200.00	91.30	217.86	11,392.16	-3,030.82	-2,399.08	3,865.41	0.00	0.00	0.00
15,300.00	91.30	217.86	11,389.89	-3,109.75	-2,460.43	3,965.38	0.00	0.00	0.00
15,400.00	91.30	217.86	11,387.61	-3,188.68	-2,521.79	4,065.35	0.00	0.00	0.00
15,500.00	91.30	217.86	11,385.34	-3,267.61	-2,583.15	4,165.32	0.00	0.00	0.00
15,524.16	91.30	217.86	11,384.93	-3,286.64	-2,598.03	4,189.48	0.03	-0.03	0.01
PBHL#7[CU18-38#2H]									



# Black Viper Energy Survey Report



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<b>Site:</b>	Cimarex-University 18-38 #2H	<b>MD Reference:</b>	Rig KB @ 2812.00ft (Key Rig #92 KB Elev)
<b>Well:</b>	Cimarex-University 18-38 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #7	<b>Database:</b>	EDM 2003.14.1.0 Server DB

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL#4[CU18-38#2H] - plan misses by 12.64ft at 15524.16ft MD (11384.93 TVD, -3286.64 N, -2598.03 E) - Point	0.00	0.00	11,372.29	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
z1 - plan misses by 11563.21ft at 12986.00ft MD (11444.55 TVD, -1283.22 N, -1040.82 E) - Point	0.00	0.00	0.00	0.00	0.00	715,197.40	1,070,805.16	31° 35' 55.942 N	103° 19' 5.350 W
PBHL#5[CU18-38#2H] - plan misses by 18.08ft at 15523.86ft MD (11384.80 TVD, -3286.44 N, -2597.79 E) - Point	0.00	0.00	11,402.87	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
PBHL#7[CU18-38#2H] - plan hits target - Point	0.00	0.00	11,384.93	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
PBHL#2[CU18-38#2H] - plan misses by 49.33ft at 15523.33ft MD (11384.81 TVD, -3286.03 N, -2597.47 E) - Point	0.00	0.00	11,434.13	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
PBHL#3[CU18-38#2H] - plan misses by 40.01ft at 15523.49ft MD (11384.80 TVD, -3286.15 N, -2597.56 E) - Point	0.00	0.00	11,424.81	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
PBHL#6[CU18-38#2H] - plan misses by 2.14ft at 15524.13ft MD (11384.79 TVD, -3286.65 N, -2597.95 E) - Point	0.00	0.00	11,386.93	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W
PBHL#1[CU18-38#2H] - plan misses by 19.08ft at 15523.84ft MD (11384.80 TVD, -3286.43 N, -2597.78 E) - Point	0.00	0.00	11,403.87	-3,286.64	-2,598.03	711,910.76	1,068,207.13	31° 35' 22.735 N	103° 19' 34.357 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	11,473.50	T/ 'D' Sand	Sand	1.30	38.33
	11,486.50	B/ 'D' Sand	Sand	1.30	38.33

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,986.00	11,444.55	-1,283.22	-1,040.82	Build 1.09° / 100 :: Turn 0.56°
13,050.00	11,441.71	-1,333.82	-1,079.90	Drop -3.20° / 100
13,100.00	11,439.87	-1,373.27	-1,110.57	EOD - Hold 91.3° Inc. :: 217.86° Azi.

Checked By: _____	Approved By: _____	Date: _____
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Ci marex Energy Co. , Inc.  
Ci marex-Uni versi ty 18-38 #2H - Pl an #7

Ward Co. , Texas  
Ci marex-Uni versi ty 18-38 #2H

Measured Dogleg Depth Rate (ft) (°/100ft)	Incl .	Azi m.	Verti cal Depth (ft)	Northi ngs (ft)	Easti ngs (ft)	Verti cal Secti on (ft)
12990.00	92.244	217.522	11444.40	1286.39 S	1043.25 W	1656.13
0.00						
13000.00	92.353	217.579	11444.00	1294.31 S	1049.34 W	1666.12
1.23						
13010.00	92.463	217.635	11443.58	1302.23 S	1055.44 W	1676.11
1.23						
13020.00	92.572	217.691	11443.14	1310.14 S	1061.55 W	1686.10
1.23						
13030.00	92.681	217.747	11442.68	1318.04 S	1067.66 W	1696.09
1.23						
13040.00	92.791	217.804	11442.20	1325.93 S	1073.78 W	1706.07
1.23						
13050.00	92.900	217.860	11441.71	1333.82 S	1079.90 W	1716.06
1.23						
13060.00	92.580	217.860	11441.23	1341.71 S	1086.03 W	1726.05
3.20						
13070.00	92.260	217.860	11440.80	1349.60 S	1092.16 W	1736.04
3.20						
13080.00	91.940	217.860	11440.44	1357.48 S	1098.30 W	1746.03
3.20						
13090.00	91.620	217.860	11440.13	1365.38 S	1104.43 W	1756.03
3.20						
13100.00	91.300	217.860	11439.87	1373.27 S	1110.57 W	1766.02
3.20						
13110.00	91.300	217.860	11439.65	1381.16 S	1116.70 W	1776.02
0.00						
13120.00	91.300	217.860	11439.42	1389.05 S	1122.84 W	1786.02
0.00						
13130.00	91.300	217.860	11439.19	1396.95 S	1128.97 W	1796.02
0.00						
13140.00	91.300	217.860	11438.97	1404.84 S	1135.11 W	1806.01
0.00						
13150.00	91.300	217.860	11438.74	1412.73 S	1141.25 W	1816.01
0.00						
13160.00	91.300	217.860	11438.51	1420.63 S	1147.38 W	1826.01
0.00						
13170.00	91.300	217.860	11438.29	1428.52 S	1153.52 W	1836.00
0.00						
13180.00	91.300	217.860	11438.06	1436.41 S	1159.65 W	1846.00
0.00						
13190.00	91.300	217.860	11437.83	1444.31 S	1165.79 W	1856.00
0.00						
13200.00	91.300	217.860	11437.60	1452.20 S	1171.92 W	1865.99
0.00						
13210.00	91.300	217.860	11437.38	1460.09 S	1178.06 W	1875.99
0.00						
13220.00	91.300	217.860	11437.15	1467.99 S	1184.20 W	1885.99
0.00						
13230.00	91.300	217.860	11436.92	1475.88 S	1190.33 W	1895.99
0.00						

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13240.00	91.300	217.860	11436.70	1483.77 S	1196.47 W	1905.98
0.00						
13250.00	91.300	217.860	11436.47	1491.67 S	1202.60 W	1915.98
0.00						
13260.00	91.300	217.860	11436.24	1499.56 S	1208.74 W	1925.98
0.00						
13270.00	91.300	217.860	11436.02	1507.45 S	1214.87 W	1935.97
0.00						
13280.00	91.300	217.860	11435.79	1515.34 S	1221.01 W	1945.97
0.00						
13290.00	91.300	217.860	11435.56	1523.24 S	1227.15 W	1955.97
0.00						
13300.00	91.300	217.860	11435.34	1531.13 S	1233.28 W	1965.97
0.00						
13310.00	91.300	217.860	11435.11	1539.02 S	1239.42 W	1975.96
0.00						
13320.00	91.300	217.860	11434.88	1546.92 S	1245.55 W	1985.96
0.00						
13330.00	91.300	217.860	11434.65	1554.81 S	1251.69 W	1995.96
0.00						
13340.00	91.300	217.860	11434.43	1562.70 S	1257.83 W	2005.95
0.00						
13350.00	91.300	217.860	11434.20	1570.60 S	1263.96 W	2015.95
0.00						
13360.00	91.300	217.860	11433.97	1578.49 S	1270.10 W	2025.95
0.00						
13370.00	91.300	217.860	11433.75	1586.38 S	1276.23 W	2035.95
0.00						
13380.00	91.300	217.860	11433.52	1594.28 S	1282.37 W	2045.94
0.00						
13390.00	91.300	217.860	11433.29	1602.17 S	1288.50 W	2055.94
0.00						
13400.00	91.301	217.860	11433.07	1610.06 S	1294.64 W	2065.94
0.00						
13410.00	91.301	217.860	11432.84	1617.95 S	1300.78 W	2075.93
0.00						
13420.00	91.301	217.860	11432.61	1625.85 S	1306.91 W	2085.93
0.00						
13430.00	91.301	217.860	11432.38	1633.74 S	1313.05 W	2095.93
0.00						
13440.00	91.301	217.860	11432.16	1641.63 S	1319.18 W	2105.93
0.00						
13450.00	91.301	217.860	11431.93	1649.53 S	1325.32 W	2115.92
0.00						
13460.00	91.301	217.860	11431.70	1657.42 S	1331.45 W	2125.92
0.00						
13470.00	91.301	217.860	11431.48	1665.31 S	1337.59 W	2135.92
0.00						
13480.00	91.301	217.860	11431.25	1673.21 S	1343.73 W	2145.91
0.00						
13490.00	91.301	217.860	11431.02	1681.10 S	1349.86 W	2155.91
0.00						
13500.00	91.301	217.860	11430.80	1688.99 S	1356.00 W	2165.91
0.00						
13510.00	91.301	217.860	11430.57	1696.89 S	1362.13 W	2175.90
0.00						
13520.00	91.301	217.860	11430.34	1704.78 S	1368.27 W	2185.90
0.00						
13530.00	91.301	217.860	11430.11	1712.67 S	1374.40 W	2195.90
0.00						
13540.00	91.301	217.860	11429.89	1720.56 S	1380.54 W	2205.90
0.00						
13550.00	91.301	217.860	11429.66	1728.46 S	1386.68 W	2215.89

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0. 00							
13560. 00	91. 301	217. 860	11429. 43	1736. 35 S	1392. 81 W	2225. 89	
0. 00							
13570. 00	91. 301	217. 860	11429. 21	1744. 24 S	1398. 95 W	2235. 89	
0. 00							
13580. 00	91. 301	217. 860	11428. 98	1752. 14 S	1405. 08 W	2245. 88	
0. 00							
13590. 00	91. 301	217. 860	11428. 75	1760. 03 S	1411. 22 W	2255. 88	
0. 00							
13600. 00	91. 301	217. 860	11428. 53	1767. 92 S	1417. 35 W	2265. 88	
0. 00							
13610. 00	91. 301	217. 860	11428. 30	1775. 82 S	1423. 49 W	2275. 88	
0. 00							
13620. 00	91. 301	217. 860	11428. 07	1783. 71 S	1429. 63 W	2285. 87	
0. 00							
13630. 00	91. 301	217. 860	11427. 84	1791. 60 S	1435. 76 W	2295. 87	
0. 00							
13640. 00	91. 301	217. 860	11427. 62	1799. 50 S	1441. 90 W	2305. 87	
0. 00							
13650. 00	91. 301	217. 860	11427. 39	1807. 39 S	1448. 03 W	2315. 86	
0. 00							
13660. 00	91. 301	217. 860	11427. 16	1815. 28 S	1454. 17 W	2325. 86	
0. 00							
13670. 00	91. 301	217. 860	11426. 94	1823. 18 S	1460. 31 W	2335. 86	
0. 00							
13680. 00	91. 301	217. 860	11426. 71	1831. 07 S	1466. 44 W	2345. 86	
0. 00							
13690. 00	91. 301	217. 860	11426. 48	1838. 96 S	1472. 58 W	2355. 85	
0. 00							
13700. 00	91. 301	217. 860	11426. 26	1846. 85 S	1478. 71 W	2365. 85	
0. 00							
13710. 00	91. 301	217. 860	11426. 03	1854. 75 S	1484. 85 W	2375. 85	
0. 00							
13720. 00	91. 301	217. 860	11425. 80	1862. 64 S	1490. 98 W	2385. 84	
0. 00							
13730. 00	91. 301	217. 860	11425. 57	1870. 53 S	1497. 12 W	2395. 84	
0. 00							
13740. 00	91. 301	217. 860	11425. 35	1878. 43 S	1503. 26 W	2405. 84	
0. 00							
13750. 00	91. 301	217. 860	11425. 12	1886. 32 S	1509. 39 W	2415. 83	
0. 00							
13760. 00	91. 301	217. 860	11424. 89	1894. 21 S	1515. 53 W	2425. 83	
0. 00							
13770. 00	91. 301	217. 860	11424. 67	1902. 11 S	1521. 66 W	2435. 83	
0. 00							
13780. 00	91. 301	217. 860	11424. 44	1910. 00 S	1527. 80 W	2445. 83	
0. 00							
13790. 00	91. 301	217. 860	11424. 21	1917. 89 S	1533. 93 W	2455. 82	
0. 00							
13800. 00	91. 301	217. 860	11423. 98	1925. 79 S	1540. 07 W	2465. 82	
0. 00							
13810. 00	91. 301	217. 860	11423. 76	1933. 68 S	1546. 21 W	2475. 82	
0. 00							
13820. 00	91. 301	217. 860	11423. 53	1941. 57 S	1552. 34 W	2485. 81	
0. 00							
13830. 00	91. 301	217. 860	11423. 30	1949. 46 S	1558. 48 W	2495. 81	
0. 00							
13840. 00	91. 301	217. 860	11423. 08	1957. 36 S	1564. 61 W	2505. 81	
0. 00							
13850. 00	91. 301	217. 860	11422. 85	1965. 25 S	1570. 75 W	2515. 81	
0. 00							
13860. 00	91. 301	217. 860	11422. 62	1973. 14 S	1576. 88 W	2525. 80	
0. 00							

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13870.00 0.00	91.301	217.860	11422.40	1981.04 S	1583.02 W	2535.80
13880.00 0.00	91.301	217.860	11422.17	1988.93 S	1589.16 W	2545.80
13890.00 0.00	91.301	217.860	11421.94	1996.82 S	1595.29 W	2555.79
13900.00 0.00	91.301	217.860	11421.71	2004.72 S	1601.43 W	2565.79
13910.00 0.00	91.301	217.860	11421.49	2012.61 S	1607.56 W	2575.79
13920.00 0.00	91.301	217.860	11421.26	2020.50 S	1613.70 W	2585.79
13930.00 0.00	91.301	217.860	11421.03	2028.40 S	1619.83 W	2595.78
13940.00 0.00	91.301	217.860	11420.81	2036.29 S	1625.97 W	2605.78
13950.00 0.00	91.301	217.860	11420.58	2044.18 S	1632.11 W	2615.78
13960.00 0.00	91.301	217.860	11420.35	2052.07 S	1638.24 W	2625.77
13970.00 0.00	91.301	217.860	11420.12	2059.97 S	1644.38 W	2635.77
13980.00 0.00	91.301	217.860	11419.90	2067.86 S	1650.51 W	2645.77
13990.00 0.00	91.301	217.860	11419.67	2075.75 S	1656.65 W	2655.77
14000.00 0.00	91.302	217.860	11419.44	2083.65 S	1662.79 W	2665.76
14010.00 0.00	91.302	217.860	11419.22	2091.54 S	1668.92 W	2675.76
14020.00 0.00	91.302	217.860	11418.99	2099.43 S	1675.06 W	2685.76
14030.00 0.00	91.302	217.860	11418.76	2107.33 S	1681.19 W	2695.75
14040.00 0.00	91.302	217.860	11418.53	2115.22 S	1687.33 W	2705.75
14050.00 0.00	91.302	217.860	11418.31	2123.11 S	1693.46 W	2715.75
14060.00 0.00	91.302	217.860	11418.08	2131.01 S	1699.60 W	2725.74
14070.00 0.00	91.302	217.860	11417.85	2138.90 S	1705.74 W	2735.74
14080.00 0.00	91.302	217.860	11417.63	2146.79 S	1711.87 W	2745.74
14090.00 0.00	91.302	217.860	11417.40	2154.68 S	1718.01 W	2755.74
14100.00 0.00	91.302	217.860	11417.17	2162.58 S	1724.14 W	2765.73
14110.00 0.00	91.302	217.860	11416.94	2170.47 S	1730.28 W	2775.73
14120.00 0.00	91.302	217.860	11416.72	2178.36 S	1736.41 W	2785.73
14130.00 0.00	91.302	217.860	11416.49	2186.26 S	1742.55 W	2795.72
14140.00 0.00	91.302	217.860	11416.26	2194.15 S	1748.69 W	2805.72
14150.00 0.00	91.302	217.860	11416.03	2202.04 S	1754.82 W	2815.72
14160.00 0.00	91.302	217.860	11415.81	2209.94 S	1760.96 W	2825.72
14170.00 0.00	91.302	217.860	11415.58	2217.83 S	1767.09 W	2835.71
14180.00	91.302	217.860	11415.35	2225.72 S	1773.23 W	2845.71



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14190. 00	91. 302	217. 860	11415. 13	2233. 62 S	1779. 36 W	2855. 71	
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14200. 00	91. 302	217. 860	11414. 90	2241. 51 S	1785. 50 W	2865. 70	
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14210. 00	91. 302	217. 860	11414. 67	2249. 40 S	1791. 64 W	2875. 70	
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14220. 00	91. 302	217. 860	11414. 44	2257. 30 S	1797. 77 W	2885. 70	
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14230. 00	91. 302	217. 860	11414. 22	2265. 19 S	1803. 91 W	2895. 70	
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14240. 00	91. 302	217. 860	11413. 99	2273. 08 S	1810. 04 W	2905. 69	
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14250. 00	91. 302	217. 860	11413. 76	2280. 97 S	1816. 18 W	2915. 69	
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14260. 00	91. 302	217. 860	11413. 54	2288. 87 S	1822. 31 W	2925. 69	
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14270. 00	91. 302	217. 860	11413. 31	2296. 76 S	1828. 45 W	2935. 68	
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14280. 00	91. 302	217. 860	11413. 08	2304. 65 S	1834. 59 W	2945. 68	
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14290. 00	91. 302	217. 860	11412. 85	2312. 55 S	1840. 72 W	2955. 68	
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14300. 00	91. 302	217. 860	11412. 63	2320. 44 S	1846. 86 W	2965. 67	
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14310. 00	91. 302	217. 860	11412. 40	2328. 33 S	1852. 99 W	2975. 67	
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14320. 00	91. 302	217. 860	11412. 17	2336. 23 S	1859. 13 W	2985. 67	
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14340. 00	91. 302	217. 860	11411. 72	2352. 01 S	1871. 40 W	3005. 66	
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14350. 00	91. 302	217. 860	11411. 49	2359. 91 S	1877. 54 W	3015. 66	
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14360. 00	91. 302	217. 860	11411. 26	2367. 80 S	1883. 67 W	3025. 66	
0. 00							
14370. 00	91. 302	217. 860	11411. 04	2375. 69 S	1889. 81 W	3035. 65	
0. 00							
14380. 00	91. 302	217. 860	11410. 81	2383. 58 S	1895. 94 W	3045. 65	
0. 00							
14390. 00	91. 302	217. 860	11410. 58	2391. 48 S	1902. 08 W	3055. 65	
0. 00							
14400. 00	91. 302	217. 860	11410. 35	2399. 37 S	1908. 22 W	3065. 65	
0. 00							
14410. 00	91. 302	217. 860	11410. 13	2407. 26 S	1914. 35 W	3075. 64	
0. 00							
14420. 00	91. 302	217. 860	11409. 90	2415. 16 S	1920. 49 W	3085. 64	
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14430. 00	91. 302	217. 860	11409. 67	2423. 05 S	1926. 62 W	3095. 64	
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14440. 00	91. 302	217. 860	11409. 45	2430. 94 S	1932. 76 W	3105. 63	
0. 00							
14450. 00	91. 302	217. 860	11409. 22	2438. 84 S	1938. 89 W	3115. 63	
0. 00							
14460. 00	91. 302	217. 860	11408. 99	2446. 73 S	1945. 03 W	3125. 63	
0. 00							
14470. 00	91. 302	217. 860	11408. 76	2454. 62 S	1951. 17 W	3135. 63	
0. 00							
14480. 00	91. 302	217. 860	11408. 54	2462. 52 S	1957. 30 W	3145. 62	
0. 00							
14490. 00	91. 302	217. 860	11408. 31	2470. 41 S	1963. 44 W	3155. 62	
0. 00							

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14500.00	91.302	217.860	11408.08	2478.30 S	1969.57 W	3165.62
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14510.00	91.302	217.860	11407.85	2486.19 S	1975.71 W	3175.61
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14520.00	91.302	217.860	11407.63	2494.09 S	1981.84 W	3185.61
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14530.00	91.302	217.860	11407.40	2501.98 S	1987.98 W	3195.61
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14540.00	91.302	217.860	11407.17	2509.87 S	1994.12 W	3205.60
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14550.00	91.302	217.860	11406.94	2517.77 S	2000.25 W	3215.60
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14560.00	91.302	217.860	11406.72	2525.66 S	2006.39 W	3225.60
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14570.00	91.302	217.860	11406.49	2533.55 S	2012.52 W	3235.60
0.00						
14580.00	91.302	217.860	11406.26	2541.45 S	2018.66 W	3245.59
0.00						
14590.00	91.302	217.860	11406.04	2549.34 S	2024.79 W	3255.59
0.00						
14600.00	91.303	217.860	11405.81	2557.23 S	2030.93 W	3265.59
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14610.00	91.303	217.860	11405.58	2565.13 S	2037.07 W	3275.58
0.00						
14620.00	91.303	217.860	11405.35	2573.02 S	2043.20 W	3285.58
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14630.00	91.303	217.860	11405.13	2580.91 S	2049.34 W	3295.58
0.00						
14640.00	91.303	217.860	11404.90	2588.80 S	2055.47 W	3305.58
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14650.00	91.303	217.860	11404.67	2596.70 S	2061.61 W	3315.57
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14660.00	91.303	217.860	11404.44	2604.59 S	2067.75 W	3325.57
0.00						
14670.00	91.303	217.860	11404.22	2612.48 S	2073.88 W	3335.57
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14680.00	91.303	217.860	11403.99	2620.38 S	2080.02 W	3345.56
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14690.00	91.303	217.860	11403.76	2628.27 S	2086.15 W	3355.56
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14700.00	91.303	217.860	11403.53	2636.16 S	2092.29 W	3365.56
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14710.00	91.303	217.860	11403.31	2644.06 S	2098.42 W	3375.56
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14720.00	91.303	217.860	11403.08	2651.95 S	2104.56 W	3385.55
0.00						
14730.00	91.303	217.860	11402.85	2659.84 S	2110.70 W	3395.55
0.00						
14740.00	91.303	217.860	11402.63	2667.74 S	2116.83 W	3405.55
0.00						
14750.00	91.303	217.860	11402.40	2675.63 S	2122.97 W	3415.54
0.00						
14760.00	91.303	217.860	11402.17	2683.52 S	2129.10 W	3425.54
0.00						
14770.00	91.303	217.860	11401.94	2691.41 S	2135.24 W	3435.54
0.00						
14780.00	91.303	217.860	11401.72	2699.31 S	2141.37 W	3445.53
0.00						
14790.00	91.303	217.860	11401.49	2707.20 S	2147.51 W	3455.53
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14800.00	91.303	217.860	11401.26	2715.09 S	2153.65 W	3465.53
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14810.00	91.303	217.860	11401.03	2722.99 S	2159.78 W	3475.53

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14820. 00	91. 303	217. 860	11400. 81	2730. 88 S	2165. 92 W	3485. 52	
0. 00							
14830. 00	91. 303	217. 860	11400. 58	2738. 77 S	2172. 05 W	3495. 52	
0. 00							
14840. 00	91. 303	217. 860	11400. 35	2746. 67 S	2178. 19 W	3505. 52	
0. 00							
14850. 00	91. 303	217. 860	11400. 12	2754. 56 S	2184. 32 W	3515. 51	
0. 00							
14860. 00	91. 303	217. 860	11399. 90	2762. 45 S	2190. 46 W	3525. 51	
0. 00							
14870. 00	91. 303	217. 860	11399. 67	2770. 35 S	2196. 60 W	3535. 51	
0. 00							
14880. 00	91. 303	217. 860	11399. 44	2778. 24 S	2202. 73 W	3545. 51	
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14890. 00	91. 303	217. 860	11399. 21	2786. 13 S	2208. 87 W	3555. 50	
0. 00							
14900. 00	91. 303	217. 860	11398. 99	2794. 02 S	2215. 00 W	3565. 50	
0. 00							
14910. 00	91. 303	217. 860	11398. 76	2801. 92 S	2221. 14 W	3575. 50	
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14920. 00	91. 303	217. 860	11398. 53	2809. 81 S	2227. 27 W	3585. 49	
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14930. 00	91. 303	217. 860	11398. 30	2817. 70 S	2233. 41 W	3595. 49	
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14940. 00	91. 303	217. 860	11398. 08	2825. 60 S	2239. 55 W	3605. 49	
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14950. 00	91. 303	217. 860	11397. 85	2833. 49 S	2245. 68 W	3615. 49	
0. 00							
14960. 00	91. 303	217. 860	11397. 62	2841. 38 S	2251. 82 W	3625. 48	
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14970. 00	91. 303	217. 860	11397. 40	2849. 28 S	2257. 95 W	3635. 48	
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14980. 00	91. 303	217. 860	11397. 17	2857. 17 S	2264. 09 W	3645. 48	
0. 00							
14990. 00	91. 303	217. 860	11396. 94	2865. 06 S	2270. 23 W	3655. 47	
0. 00							
15000. 00	91. 303	217. 860	11396. 71	2872. 96 S	2276. 36 W	3665. 47	
0. 00							
15010. 00	91. 303	217. 860	11396. 49	2880. 85 S	2282. 50 W	3675. 47	
0. 00							
15020. 00	91. 303	217. 860	11396. 26	2888. 74 S	2288. 63 W	3685. 46	
0. 00							
15030. 00	91. 303	217. 860	11396. 03	2896. 64 S	2294. 77 W	3695. 46	
0. 00							
15040. 00	91. 303	217. 860	11395. 80	2904. 53 S	2300. 90 W	3705. 46	
0. 00							
15050. 00	91. 303	217. 860	11395. 58	2912. 42 S	2307. 04 W	3715. 46	
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15060. 00	91. 303	217. 860	11395. 35	2920. 31 S	2313. 18 W	3725. 45	
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15070. 00	91. 303	217. 860	11395. 12	2928. 21 S	2319. 31 W	3735. 45	
0. 00							
15080. 00	91. 303	217. 860	11394. 89	2936. 10 S	2325. 45 W	3745. 45	
0. 00							
15090. 00	91. 303	217. 860	11394. 67	2943. 99 S	2331. 58 W	3755. 44	
0. 00							
15100. 00	91. 303	217. 860	11394. 44	2951. 89 S	2337. 72 W	3765. 44	
0. 00							
15110. 00	91. 303	217. 860	11394. 21	2959. 78 S	2343. 85 W	3775. 44	
0. 00							
15120. 00	91. 303	217. 860	11393. 98	2967. 67 S	2349. 99 W	3785. 44	
0. 00							

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15130.00	91.303	217.860	11393.76	2975.57 S	2356.13 W	3795.43
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15140.00	91.303	217.860	11393.53	2983.46 S	2362.26 W	3805.43
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15150.00	91.303	217.860	11393.30	2991.35 S	2368.40 W	3815.43
0.00						
15160.00	91.303	217.860	11393.07	2999.25 S	2374.53 W	3825.42
0.00						
15170.00	91.303	217.860	11392.85	3007.14 S	2380.67 W	3835.42
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15180.00	91.303	217.860	11392.62	3015.03 S	2386.80 W	3845.42
0.00						
15190.00	91.303	217.860	11392.39	3022.92 S	2392.94 W	3855.42
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15200.00	91.304	217.860	11392.16	3030.82 S	2399.08 W	3865.41
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15210.00	91.304	217.860	11391.94	3038.71 S	2405.21 W	3875.41
0.00						
15220.00	91.304	217.860	11391.71	3046.60 S	2411.35 W	3885.41
0.00						
15230.00	91.304	217.860	11391.48	3054.50 S	2417.48 W	3895.40
0.00						
15240.00	91.304	217.860	11391.25	3062.39 S	2423.62 W	3905.40
0.00						
15250.00	91.304	217.860	11391.03	3070.28 S	2429.75 W	3915.40
0.00						
15260.00	91.304	217.860	11390.80	3078.18 S	2435.89 W	3925.39
0.00						
15270.00	91.304	217.860	11390.57	3086.07 S	2442.03 W	3935.39
0.00						
15280.00	91.304	217.860	11390.34	3093.96 S	2448.16 W	3945.39
0.00						
15290.00	91.304	217.860	11390.12	3101.86 S	2454.30 W	3955.39
0.00						
15300.00	91.304	217.860	11389.89	3109.75 S	2460.43 W	3965.38
0.00						
15310.00	91.304	217.860	11389.66	3117.64 S	2466.57 W	3975.38
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15320.00	91.304	217.860	11389.43	3125.53 S	2472.70 W	3985.38
0.00						
15330.00	91.304	217.860	11389.21	3133.43 S	2478.84 W	3995.37
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15340.00	91.304	217.860	11388.98	3141.32 S	2484.98 W	4005.37
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15350.00	91.304	217.860	11388.75	3149.21 S	2491.11 W	4015.37
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15360.00	91.304	217.860	11388.52	3157.11 S	2497.25 W	4025.37
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15370.00	91.304	217.860	11388.30	3165.00 S	2503.38 W	4035.36
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15380.00	91.304	217.860	11388.07	3172.89 S	2509.52 W	4045.36
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15390.00	91.304	217.860	11387.84	3180.79 S	2515.66 W	4055.36
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15400.00	91.304	217.860	11387.61	3188.68 S	2521.79 W	4065.35
0.00						
15410.00	91.304	217.860	11387.38	3196.57 S	2527.93 W	4075.35
0.00						
15420.00	91.304	217.860	11387.16	3204.47 S	2534.06 W	4085.35
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15430.00	91.304	217.860	11386.93	3212.36 S	2540.20 W	4095.35
0.00						
15440.00	91.304	217.860	11386.70	3220.25 S	2546.33 W	4105.34

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0.00	15470.00	91.304	217.860	11386.02	3243.93 S	2564.74 W	4135.33
0.00	15480.00	91.304	217.860	11385.79	3251.82 S	2570.88 W	4145.33
0.00	15490.00	91.304	217.860	11385.56	3259.72 S	2577.01 W	4155.33
0.00	15500.00	91.304	217.860	11385.34	3267.61 S	2583.15 W	4165.32
0.00	15510.00	91.301	217.861	11385.11	3275.50 S	2589.28 W	4175.32
0.03	15520.00	91.299	217.863	11384.88	3283.40 S	2595.42 W	4185.32
0.03	15524.16	91.297	217.863	11384.93	3286.64 S	2598.03 W	4189.48
0.03							

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.  
Vertical depths are relative to Rig KB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.  
Vertical Section is from Site and calculated along an Azimuth of 218.326° (Grid).

Coordinate System is NAD 1927 (NADCON CONUS) US State Plane 1927 (Exact solution), Texas Central 4203.  
Central meridian is -100.333°.  
Grid Convergence at Surface is -1.537°.

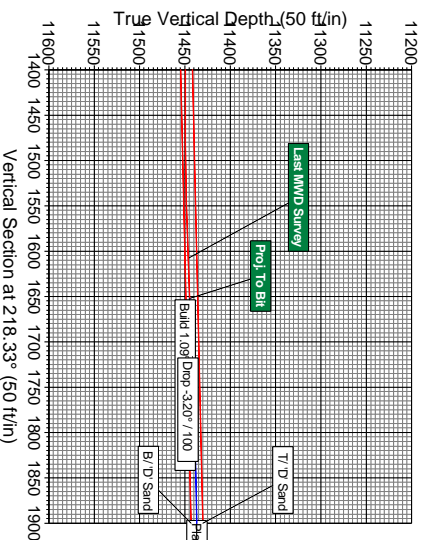
Based upon Minimum Curvature type calculations, at a Measured Depth of 15524.16ft., the Bottom Hole Displacement is 4189.48ft., in the Direction of 218.326° (Grid).



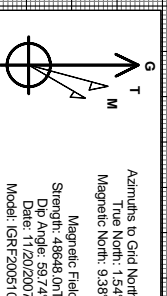
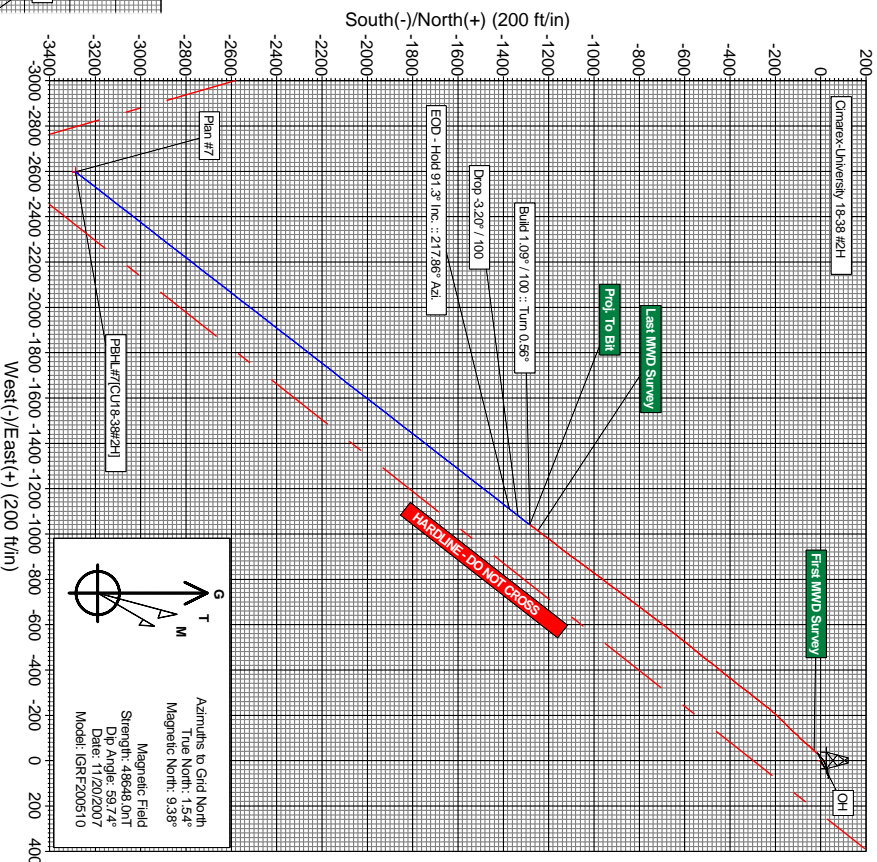
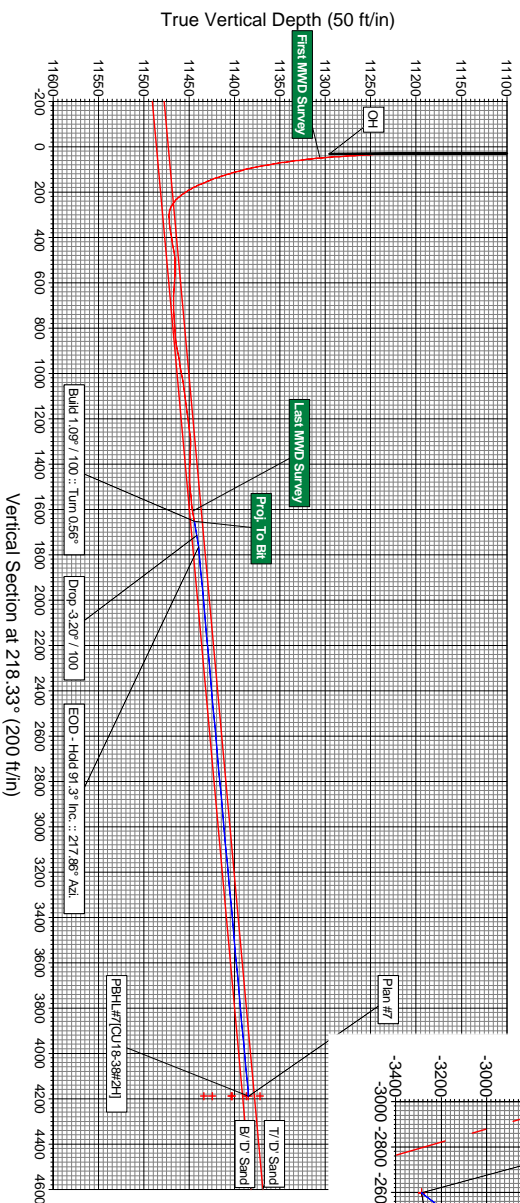
Project: Ward Co., Texas  
Site: Cimarex-University 18-38 #2H  
Well: Cimarex-University 18-38 #2H  
Wellbore: Lateta  
Plan: Plan #7 (Cimarex-University 18-38 #2H Lateta)



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLR	Ttace	VSec	Target	
1	12986.00	92.20	217.50	11444.55	-1283.22	-1040.82	0.00	0.00	1632.13		
2	13050.00	92.90	217.86	11441.71	-1333.82	-1079.90	1.23	27.19	1716.06		
3	13100.00	91.30	217.86	11439.87	-1373.27	-1110.57	3.20	-180.00	1766.02		
4	15524.16	91.30	217.86	11384.93	-3286.64	-2598.03	0.00	0.00	4189.48		
										PBH.#[CU18-38#2H]	



PROJECT DETAILS: Ward Co., Texas  
Geologic System: State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Texas Central 4203  
System Datum: Mean Sea Level



CIMAREX-UNIVERSITY 18-38 #2H

ANNOTATIONS	
TVD	MD
11444.55	12986.00
11441.71	13050.00
11439.87	13100.00
Build 1.09° / 100° :: Turn 0.56°	
Drop 3.20° / 100°	
EOD - Hold 91.3° Inc. :: 217.86° Azi.	

7

Plan: Plan #7 (Cimarex-University 18-38 #2H Lateta)  
Created By: L.D. Burton Date: December 14, 2007