

# **EXTRACTION OIL & GAS**

**WELD COUNTY, COLORADO (NAD 83)**

**NW SW SEC. 21 T2N R67W 6th P.M.**

**LEONARD 5C**

**ORIGINAL WELLBORE**

**27 March, 2017**

**Plan: PROPOSAL #1**

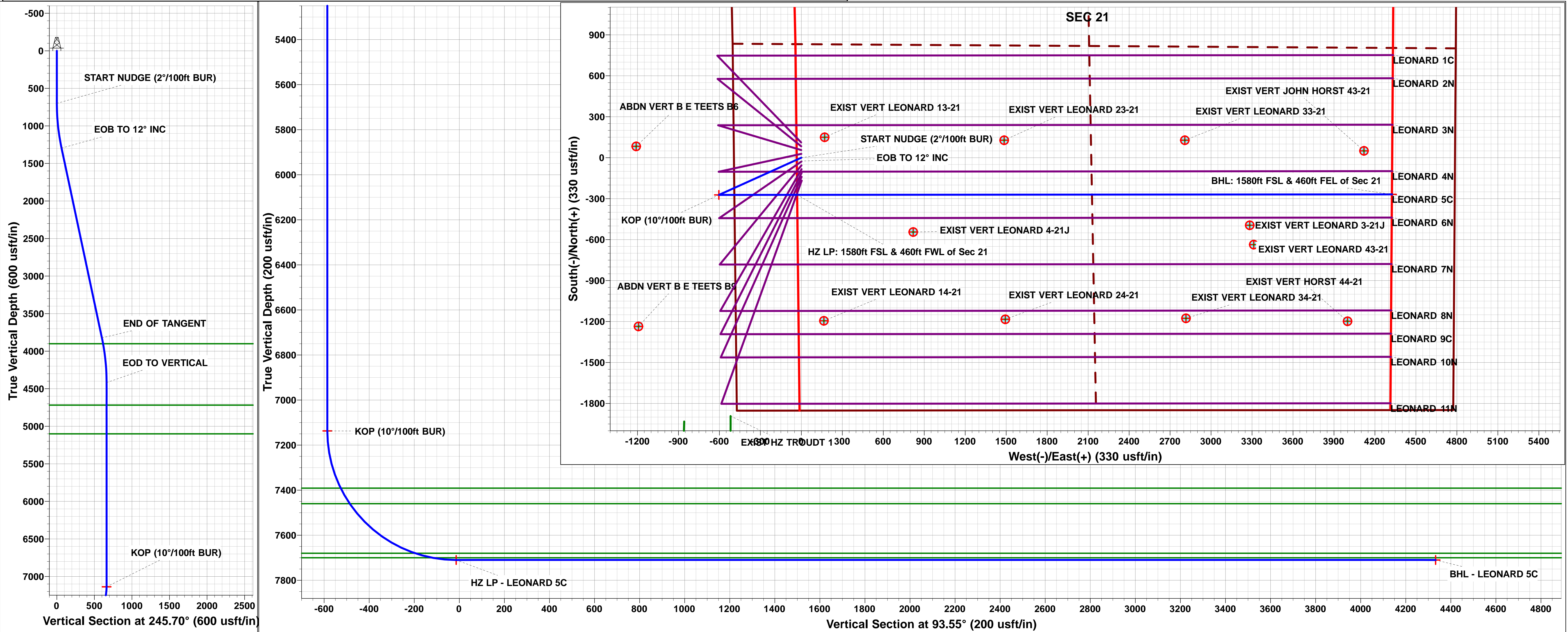
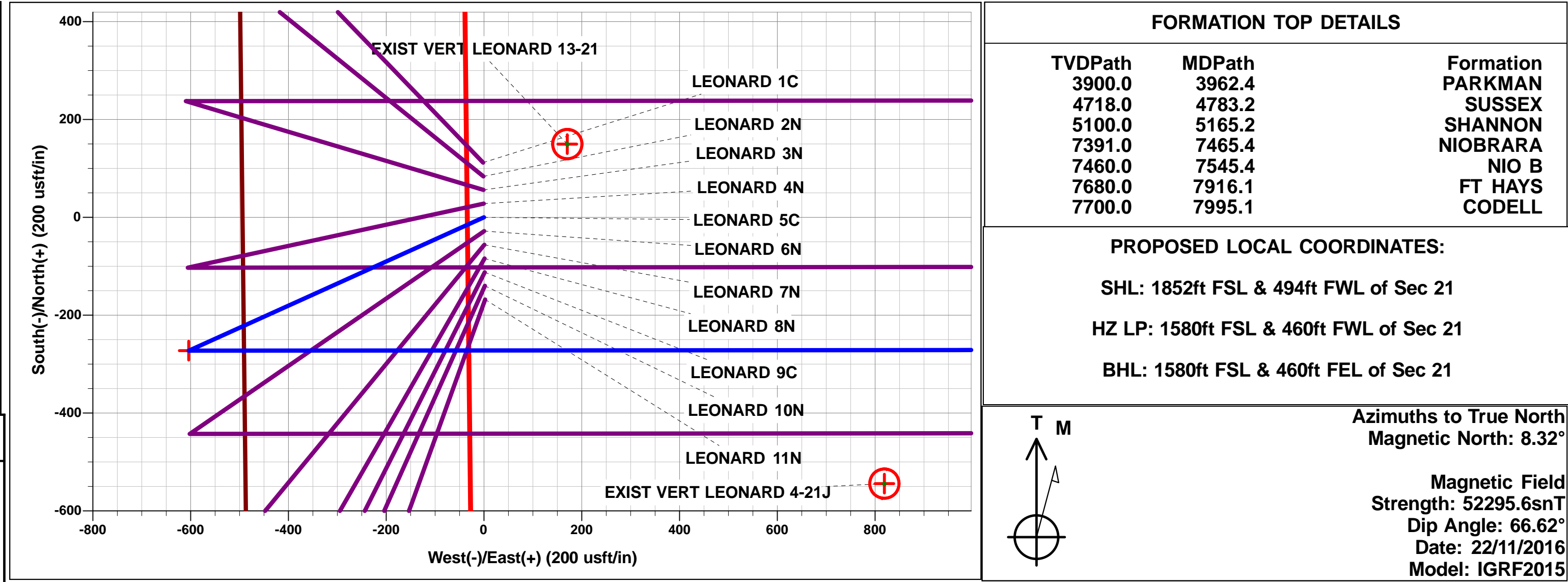




Project: WELD COUNTY, COLORADO (NAD 83)  
Site: NW SW SEC. 21 T2N R67W 6th P.M.  
Well: LEONARD 5C  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1852ft FSL & 494ft FWL of Sec 21	
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1295.8	1300.2	12.00	245.70	-25.8	-57.1	-55.4	62.6	EOB TO 12° INC	
3822.2	3883.0	12.00	245.70	-246.8	-546.7	-530.4	599.8	END OF TANGENT	
4418.0	4483.2	0.00	0.00	-272.6	-603.8	-585.7	662.5	EOD TO VERTICAL	
7137.0	7202.2	0.00	0.00	-272.6	-603.8	-585.7	662.5	KOP (10°/100ft BUR)	
7710.0	8102.3	90.00	89.95	-272.1	-30.8	-13.8	1235.5	HZ LP: 1580ft FSL & 460ft FWL of Sec 21	
7710.0	12457.3	90.00	89.95	-268.5	4324.2	4332.6	5590.5	BHL: 1580ft FSL & 460ft FEL of Sec 21	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - LEONARD 5C	7137.0	-272.6	-603.8	40.120821	-104.905439
HZ LP - LEONARD 5C	7710.0	-272.1	-30.8	40.120822	-104.903390
BHL - LEONARD 5C	7710.0	-268.5	4324.2	40.120831	-104.887818



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well LEONARD 5C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Site:</b>	NW SW SEC. 21 T2N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	LEONARD 5C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	NW SW SEC. 21 T2N R67W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,287,804.83 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,166,871.56 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.121876
		<b>Longitude:</b>	-104.903286
		<b>Grid Convergence:</b>	0.39 °

<b>Well</b>	LEONARD 5C		
<b>Well Position</b>	<b>+N/-S</b>	-111.9 usft	<b>Northing:</b>
	<b>+E/-W</b>	1.7 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.121569
		<b>Longitude:</b>	-104.903280
		<b>Ground Level:</b>	5,003.0 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	22/11/2016	8.32	66.62	52,296

<b>Design</b>	PROPOSAL #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	93.55

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-5,019.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	-4,319.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.2	12.00	245.70	1,295.8	-3,723.2	-25.8	-57.1	2.00	2.00	0.00	245.70	
3,883.0	12.00	245.70	3,822.2	-1,196.8	-246.8	-546.7	0.00	0.00	0.00	0.00	
4,483.2	0.00	0.00	4,418.0	-601.0	-272.6	-603.8	2.00	-2.00	0.00	180.00	
7,202.2	0.00	0.00	7,137.0	2,118.0	-272.6	-603.8	0.00	0.00	0.00	0.00	KOP - LEONARD 5
8,102.3	90.00	89.95	7,710.0	2,691.0	-272.1	-30.8	10.00	10.00	9.99	89.95	HZ LP - LEONARD
12,457.3	90.00	89.95	7,710.0	2,691.0	-268.5	4,324.2	0.00	0.00	0.00	-179.87	BHL - LEONARD 5

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well LEONARD 5C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Site:</b>	NW SW SEC. 21 T2N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	LEONARD 5C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 1852ft FSL &amp; 494ft FWL of Sec 21</b>										
0.0	0.00	0.00	0.0	5,019.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,919.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,819.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,719.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,619.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,519.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,419.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
700.0	0.00	0.00	700.0	4,319.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	2.00	245.70	800.0	4,219.02	-0.7	-1.6	-1.5	2.00	2.00	0.00
900.0	4.00	245.70	899.8	4,119.16	-2.9	-6.4	-6.2	2.00	2.00	0.00
1,000.0	6.00	245.70	999.5	4,019.55	-6.5	-14.3	-13.9	2.00	2.00	0.00
1,100.0	8.00	245.70	1,098.7	3,920.30	-11.5	-25.4	-24.7	2.00	2.00	0.00
1,200.0	10.00	245.70	1,197.5	3,821.53	-17.9	-39.7	-38.5	2.00	2.00	0.00
1,300.0	12.00	245.70	1,295.6	3,723.38	-25.8	-57.1	-55.4	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,300.2	12.00	245.70	1,295.8	3,723.16	-25.8	-57.1	-55.4	1.98	1.98	0.00
1,400.0	12.00	245.70	1,393.4	3,625.56	-34.3	-76.0	-73.7	0.00	0.00	0.00
1,500.0	12.00	245.70	1,491.2	3,527.75	-42.9	-95.0	-92.1	0.00	0.00	0.00
1,600.0	12.00	245.70	1,589.1	3,429.94	-51.4	-113.9	-110.5	0.00	0.00	0.00
1,700.0	12.00	245.70	1,686.9	3,332.12	-60.0	-132.9	-128.9	0.00	0.00	0.00
1,800.0	12.00	245.70	1,784.7	3,234.31	-68.6	-151.8	-147.3	0.00	0.00	0.00
1,900.0	12.00	245.70	1,882.5	3,136.50	-77.1	-170.8	-165.7	0.00	0.00	0.00
2,000.0	12.00	245.70	1,980.3	3,038.68	-85.7	-189.8	-184.1	0.00	0.00	0.00
2,100.0	12.00	245.70	2,078.1	2,940.87	-94.2	-208.7	-202.5	0.00	0.00	0.00
2,200.0	12.00	245.70	2,175.9	2,843.06	-102.8	-227.7	-220.9	0.00	0.00	0.00
2,300.0	12.00	245.70	2,273.8	2,745.24	-111.3	-246.6	-239.2	0.00	0.00	0.00
2,400.0	12.00	245.70	2,371.6	2,647.43	-119.9	-265.6	-257.6	0.00	0.00	0.00
2,500.0	12.00	245.70	2,469.4	2,549.62	-128.5	-284.5	-276.0	0.00	0.00	0.00
2,600.0	12.00	245.70	2,567.2	2,451.81	-137.0	-303.5	-294.4	0.00	0.00	0.00
2,700.0	12.00	245.70	2,665.0	2,353.99	-145.6	-322.4	-312.8	0.00	0.00	0.00
2,800.0	12.00	245.70	2,762.8	2,256.18	-154.1	-341.4	-331.2	0.00	0.00	0.00
2,900.0	12.00	245.70	2,860.6	2,158.37	-162.7	-360.4	-349.6	0.00	0.00	0.00
3,000.0	12.00	245.70	2,958.4	2,060.55	-171.2	-379.3	-368.0	0.00	0.00	0.00
3,100.0	12.00	245.70	3,056.3	1,962.74	-179.8	-398.3	-386.4	0.00	0.00	0.00
3,200.0	12.00	245.70	3,154.1	1,864.93	-188.4	-417.2	-404.8	0.00	0.00	0.00
3,300.0	12.00	245.70	3,251.9	1,767.11	-196.9	-436.2	-423.1	0.00	0.00	0.00
3,400.0	12.00	245.70	3,349.7	1,669.30	-205.5	-455.1	-441.5	0.00	0.00	0.00
3,500.0	12.00	245.70	3,447.5	1,571.49	-214.0	-474.1	-459.9	0.00	0.00	0.00
3,600.0	12.00	245.70	3,545.3	1,473.67	-222.6	-493.1	-478.3	0.00	0.00	0.00
3,700.0	12.00	245.70	3,643.1	1,375.86	-231.2	-512.0	-496.7	0.00	0.00	0.00
3,800.0	12.00	245.70	3,741.0	1,278.05	-239.7	-531.0	-515.1	0.00	0.00	0.00
<b>END OF TANGENT</b>										
3,883.0	12.00	245.70	3,822.2	1,196.84	-246.8	-546.7	-530.4	0.00	0.00	0.00
3,900.0	11.66	245.70	3,838.8	1,180.22	-248.3	-549.9	-533.4	2.00	-2.00	0.00
<b>PARKMAN</b>										
3,962.4	10.42	245.70	3,900.0	1,119.00	-253.2	-560.8	-544.0	2.00	-2.00	0.00
4,000.0	9.66	245.70	3,937.0	1,081.96	-255.9	-566.7	-549.8	2.00	-2.00	0.00
4,100.0	7.66	245.70	4,035.9	983.10	-262.1	-580.5	-563.1	2.00	-2.00	0.00
4,200.0	5.66	245.70	4,135.2	883.78	-266.8	-591.0	-573.4	2.00	-2.00	0.00
4,300.0	3.66	245.70	4,234.9	784.12	-270.2	-598.5	-580.6	2.00	-2.00	0.00
4,400.0	1.66	245.70	4,334.8	684.23	-272.1	-602.7	-584.7	2.00	-2.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well LEONARD 5C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Site:</b>	NW SW SEC. 21 T2N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	LEONARD 5C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>EOD TO VERTICAL</b>										
<b>4,483.2</b>	<b>0.00</b>	<b>0.00</b>	<b>4,418.0</b>	<b>601.00</b>	<b>-272.6</b>	<b>-603.8</b>	<b>-585.7</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
4,500.0	0.00	0.00	4,434.8	584.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
4,600.0	0.00	0.00	4,534.8	484.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
4,700.0	0.00	0.00	4,634.8	384.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>4,783.2</b>	<b>0.00</b>	<b>0.00</b>	<b>4,718.0</b>	<b>301.00</b>	<b>-272.6</b>	<b>-603.8</b>	<b>-585.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,800.0	0.00	0.00	4,734.8	284.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
4,900.0	0.00	0.00	4,834.8	184.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,934.8	84.24	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,100.0	0.00	0.00	5,034.8	-15.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,165.2</b>	<b>0.00</b>	<b>0.00</b>	<b>5,100.0</b>	<b>-81.00</b>	<b>-272.6</b>	<b>-603.8</b>	<b>-585.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,200.0	0.00	0.00	5,134.8	-115.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,234.8	-215.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,334.8	-315.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,434.8	-415.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,534.8	-515.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,634.8	-615.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,734.8	-715.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,834.8	-815.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,934.8	-915.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,034.8	-1,015.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,134.8	-1,115.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,234.8	-1,215.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,334.8	-1,315.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,500.0	0.00	0.00	6,434.8	-1,415.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,534.8	-1,515.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,700.0	0.00	0.00	6,634.8	-1,615.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,734.8	-1,715.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
6,900.0	0.00	0.00	6,834.8	-1,815.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,934.8	-1,915.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
7,100.0	0.00	0.00	7,034.8	-2,015.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
7,200.0	0.00	0.00	7,134.8	-2,115.76	-272.6	-603.8	-585.7	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>7,202.2</b>	<b>0.00</b>	<b>0.00</b>	<b>7,137.0</b>	<b>-2,118.00</b>	<b>-272.6</b>	<b>-603.8</b>	<b>-585.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7,300.0	9.77	89.95	7,234.3	-2,215.28	-272.6	-595.5	-577.4	10.00	10.00	0.00
7,400.0	19.77	89.95	7,330.9	-2,311.85	-272.6	-570.0	-552.0	10.00	10.00	0.00
<b>NIOBRARA</b>										
<b>7,465.4</b>	<b>26.31</b>	<b>89.95</b>	<b>7,391.0</b>	<b>-2,372.00</b>	<b>-272.5</b>	<b>-544.4</b>	<b>-526.5</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,500.0	29.77	89.95	7,421.5	-2,402.53	-272.5	-528.2	-510.3	10.00	10.00	0.00
<b>NIO B</b>										
<b>7,545.4</b>	<b>34.31</b>	<b>89.95</b>	<b>7,460.0</b>	<b>-2,441.00</b>	<b>-272.5</b>	<b>-504.1</b>	<b>-486.2</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,600.0	39.77	89.95	7,503.6	-2,484.57	-272.5	-471.2	-453.4	10.00	10.00	0.00
7,700.0	49.77	89.95	7,574.5	-2,555.47	-272.4	-400.9	-383.2	10.00	10.00	0.00
7,800.0	59.77	89.95	7,632.1	-2,613.08	-272.4	-319.3	-301.8	10.00	10.00	0.00
7,900.0	69.77	89.95	7,674.7	-2,655.65	-272.3	-228.9	-211.6	10.00	10.00	0.00
<b>FT HAYS</b>										
<b>7,916.1</b>	<b>71.38</b>	<b>89.95</b>	<b>7,680.0</b>	<b>-2,661.00</b>	<b>-272.3</b>	<b>-213.8</b>	<b>-196.5</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>CODELL</b>										
<b>7,995.1</b>	<b>79.28</b>	<b>89.95</b>	<b>7,700.0</b>	<b>-2,681.00</b>	<b>-272.2</b>	<b>-137.4</b>	<b>-120.3</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
8,000.0	79.77	89.95	7,700.9	-2,681.89	-272.2	-132.6	-115.4	10.00	10.00	0.00
8,100.0	89.77	89.95	7,710.0	-2,691.00	-272.1	-33.1	-16.2	10.00	10.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well LEONARD 5C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Site:</b>	NW SW SEC. 21 T2N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	LEONARD 5C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>HZ LP: 1580ft FSL &amp; 460ft FWL of Sec 21</b>										
8,102.3	90.00	89.95	7,710.0	-2,691.00	-272.1	-30.8	-13.8	10.00	10.00	0.00
8,200.0	90.00	89.95	7,710.0	-2,690.99	-272.0	66.9	83.6	0.00	0.00	0.00
8,300.0	90.00	89.95	7,710.0	-2,690.99	-271.9	166.9	183.4	0.00	0.00	0.00
8,400.0	90.00	89.95	7,710.0	-2,690.98	-271.9	266.9	283.2	0.00	0.00	0.00
8,500.0	90.00	89.95	7,710.0	-2,690.98	-271.8	366.9	383.0	0.00	0.00	0.00
8,600.0	90.00	89.95	7,710.0	-2,690.97	-271.7	466.9	482.8	0.00	0.00	0.00
8,700.0	90.00	89.95	7,710.0	-2,690.97	-271.6	566.9	582.6	0.00	0.00	0.00
8,800.0	90.00	89.95	7,710.0	-2,690.96	-271.5	666.9	682.4	0.00	0.00	0.00
8,900.0	90.00	89.95	7,710.0	-2,690.96	-271.4	766.9	782.2	0.00	0.00	0.00
9,000.0	90.00	89.95	7,710.0	-2,690.95	-271.4	866.9	882.0	0.00	0.00	0.00
9,100.0	90.00	89.95	7,710.0	-2,690.95	-271.3	966.9	981.8	0.00	0.00	0.00
9,200.0	90.00	89.95	7,709.9	-2,690.95	-271.2	1,066.9	1,081.6	0.00	0.00	0.00
9,300.0	90.00	89.95	7,709.9	-2,690.94	-271.1	1,166.9	1,181.4	0.00	0.00	0.00
9,400.0	90.00	89.95	7,709.9	-2,690.94	-271.0	1,266.9	1,281.2	0.00	0.00	0.00
9,500.0	90.00	89.95	7,709.9	-2,690.94	-270.9	1,366.9	1,381.1	0.00	0.00	0.00
9,600.0	90.00	89.95	7,709.9	-2,690.94	-270.9	1,466.9	1,480.9	0.00	0.00	0.00
9,700.0	90.00	89.95	7,709.9	-2,690.94	-270.8	1,566.9	1,580.7	0.00	0.00	0.00
9,800.0	90.00	89.95	7,709.9	-2,690.93	-270.7	1,666.9	1,680.5	0.00	0.00	0.00
9,900.0	90.00	89.95	7,709.9	-2,690.93	-270.6	1,766.9	1,780.3	0.00	0.00	0.00
10,000.0	90.00	89.95	7,709.9	-2,690.93	-270.5	1,866.9	1,880.1	0.00	0.00	0.00
10,100.0	90.00	89.95	7,709.9	-2,690.93	-270.4	1,966.9	1,979.9	0.00	0.00	0.00
10,200.0	90.00	89.95	7,709.9	-2,690.93	-270.4	2,066.9	2,079.7	0.00	0.00	0.00
10,300.0	90.00	89.95	7,709.9	-2,690.93	-270.3	2,166.9	2,179.5	0.00	0.00	0.00
10,400.0	90.00	89.95	7,709.9	-2,690.93	-270.2	2,266.9	2,279.3	0.00	0.00	0.00
10,500.0	90.00	89.95	7,709.9	-2,690.93	-270.1	2,366.9	2,379.1	0.00	0.00	0.00
10,600.0	90.00	89.95	7,709.9	-2,690.93	-270.0	2,466.9	2,478.9	0.00	0.00	0.00
10,700.0	90.00	89.95	7,709.9	-2,690.93	-269.9	2,566.9	2,578.7	0.00	0.00	0.00
10,800.0	90.00	89.95	7,709.9	-2,690.93	-269.9	2,666.9	2,678.5	0.00	0.00	0.00
10,900.0	90.00	89.95	7,709.9	-2,690.94	-269.8	2,766.9	2,778.3	0.00	0.00	0.00
11,000.0	90.00	89.95	7,709.9	-2,690.94	-269.7	2,866.9	2,878.1	0.00	0.00	0.00
11,100.0	90.00	89.95	7,709.9	-2,690.94	-269.6	2,966.9	2,977.9	0.00	0.00	0.00
11,200.0	90.00	89.95	7,709.9	-2,690.94	-269.5	3,066.9	3,077.7	0.00	0.00	0.00
11,300.0	90.00	89.95	7,709.9	-2,690.95	-269.4	3,166.9	3,177.5	0.00	0.00	0.00
11,400.0	90.00	89.95	7,709.9	-2,690.95	-269.3	3,266.9	3,277.3	0.00	0.00	0.00
11,500.0	90.00	89.95	7,710.0	-2,690.95	-269.3	3,366.9	3,377.1	0.00	0.00	0.00
11,600.0	90.00	89.95	7,710.0	-2,690.96	-269.2	3,466.9	3,476.9	0.00	0.00	0.00
11,700.0	90.00	89.95	7,710.0	-2,690.96	-269.1	3,566.9	3,576.7	0.00	0.00	0.00
11,800.0	90.00	89.95	7,710.0	-2,690.96	-269.0	3,666.9	3,676.5	0.00	0.00	0.00
11,900.0	90.00	89.95	7,710.0	-2,690.97	-268.9	3,766.9	3,776.3	0.00	0.00	0.00
12,000.0	90.00	89.95	7,710.0	-2,690.97	-268.8	3,866.9	3,876.1	0.00	0.00	0.00
12,100.0	90.00	89.95	7,710.0	-2,690.98	-268.8	3,966.9	3,975.9	0.00	0.00	0.00
12,200.0	90.00	89.95	7,710.0	-2,690.98	-268.7	4,066.9	4,075.7	0.00	0.00	0.00
12,300.0	90.00	89.95	7,710.0	-2,690.99	-268.6	4,166.9	4,175.5	0.00	0.00	0.00
12,400.0	90.00	89.95	7,710.0	-2,691.00	-268.5	4,266.9	4,275.3	0.00	0.00	0.00
<b>BHL: 1580ft FSL &amp; 460ft FEL of Sec 21</b>										
12,457.3	90.00	89.95	7,710.0	-2,691.00	-268.5	4,324.2	4,332.6	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well LEONARD 5C
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 5019.0usft (Original Well Elev)
<b>Site:</b>	NW SW SEC. 21 T2N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	LEONARD 5C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,962.4	3,900.0	PARKMAN			
4,783.2	4,718.0	SUSSEX			
5,165.2	5,100.0	SHANNON			
7,465.4	7,391.0	NIOBRARA			
7,545.4	7,460.0	NIO B			
7,916.1	7,680.0	FT HAYS			
7,995.1	7,700.0	CODELL			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 1852ft FSL & 494ft FWL of Sec 21
700.0	700.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,300.2	1,295.8	-25.8	-57.1	EOB TO 12° INC
3,883.0	3,822.2	-246.8	-546.7	END OF TANGENT
4,483.2	4,418.0	-272.6	-603.8	EOD TO VERTICAL
7,202.2	7,137.0	-272.6	-603.8	KOP (10°/100ft BUR)
8,102.3	7,710.0	-272.1	-30.8	HZ LP: 1580ft FSL & 460ft FWL of Sec 21
12,457.3	7,710.0	-268.5	4,324.2	BHL: 1580ft FSL & 460ft FEL of Sec 21