

# **EXTRACTION OIL & GAS**

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

**SW NW SEC. 15 T5N R65W 6th P.M.**

**VT-LDS 3-16-18**

**ORIGINAL WELLBORE**

**09 March, 2016**

**Plan: PROPOSAL #2**

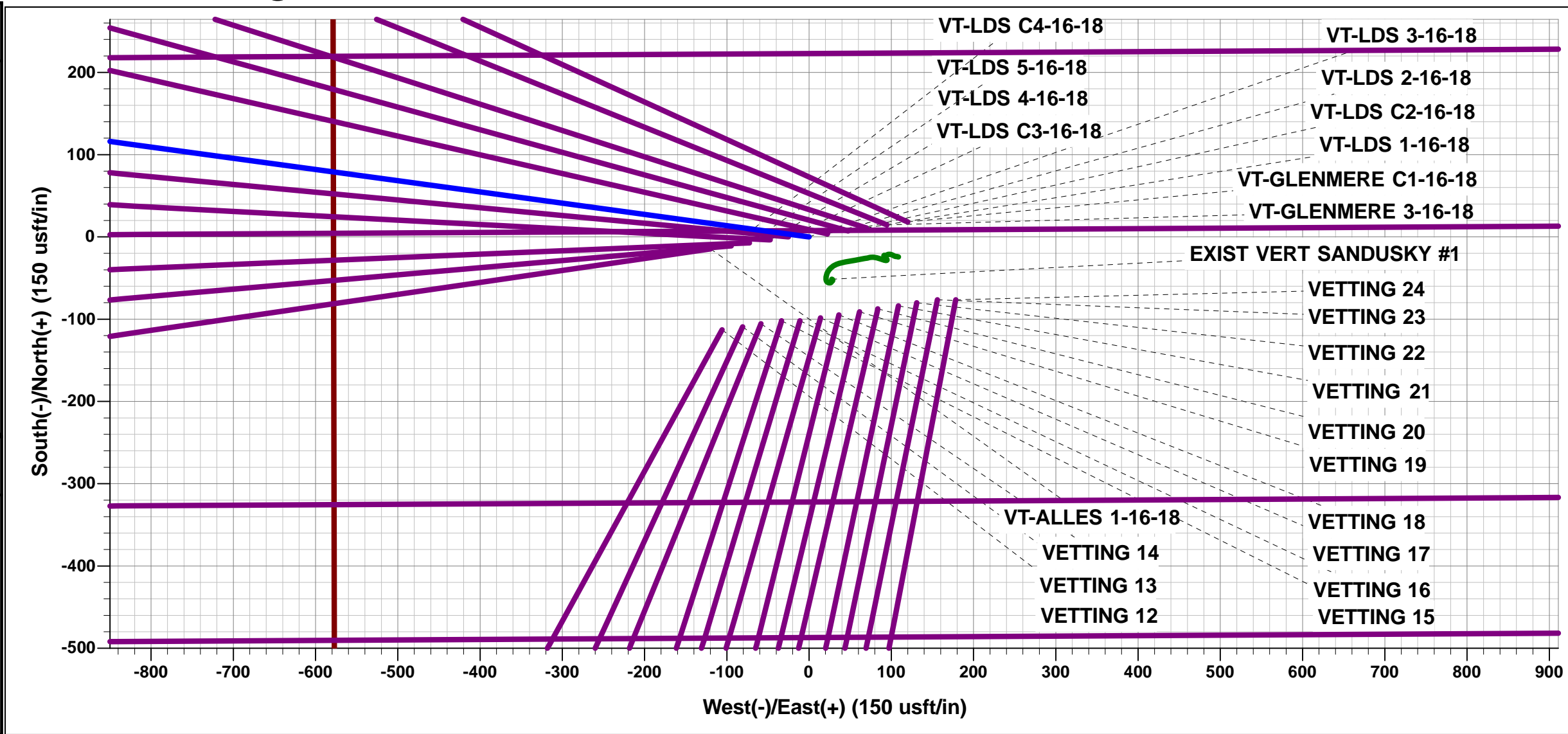




Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW NW SEC. 15 T5N R65W 6th P.M.  
Well: VT-LDS 3-16-18  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation		
600.0	600.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
1600.0	1621.5	20.43	277.78	24.4	-178.5	179.3	180.2	9 5/8" SURFACE CASING		
1660.9	1686.5	20.43	277.78	27.5	-201.0	201.9	202.9	END OF TANGENT		
2136.4	2215.0	31.00	277.78	58.5	-427.9	429.8	431.9	EOB TO 31° INC		
6556.4	7371.5	31.00	277.78	418.0	-3059.2	3072.8	3087.7	KOP (10°/100ft DGLG)		
6849.7	7972.4	77.67	277.78	485.6	-3554.5	3570.3	3587.5	START BUILD & TURN		
6865.0	8115.3	90.00	270.50	495.8	-3695.9	3711.9	3729.3	LANDING PNT - VT-LDS 3-16-18		
6865.0	20403.6	90.00	270.50	602.7	-15983.7	15995.0	16017.6	BHL - VT-LDS 3-16-18		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - VT-LDS 3-16-18	6865.0	495.8	-3695.8	40.402650	-104.670070
BHL - VT-LDS 3-16-18	6865.0	602.7	-15983.7	40.402930	-104.714190



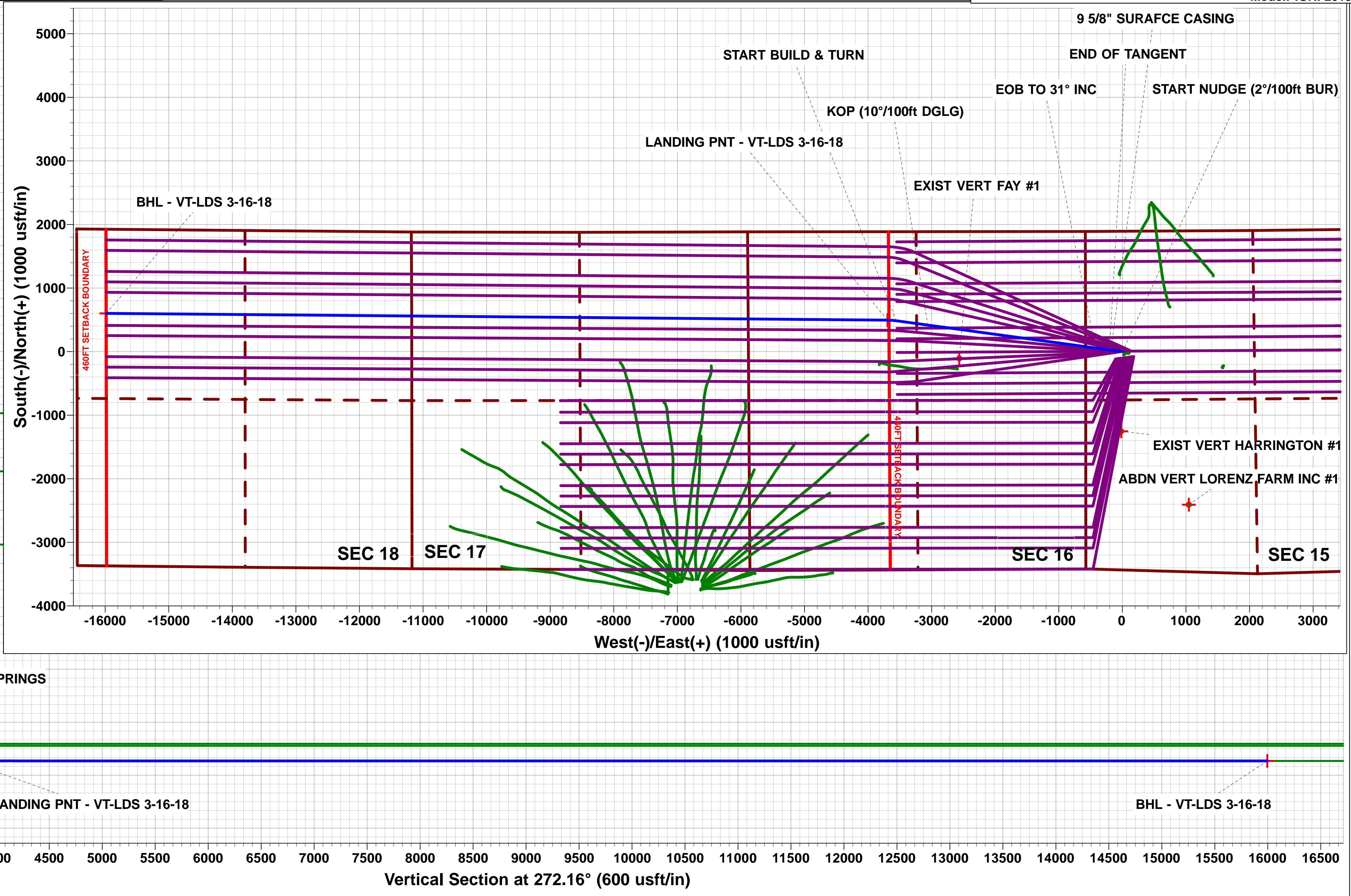
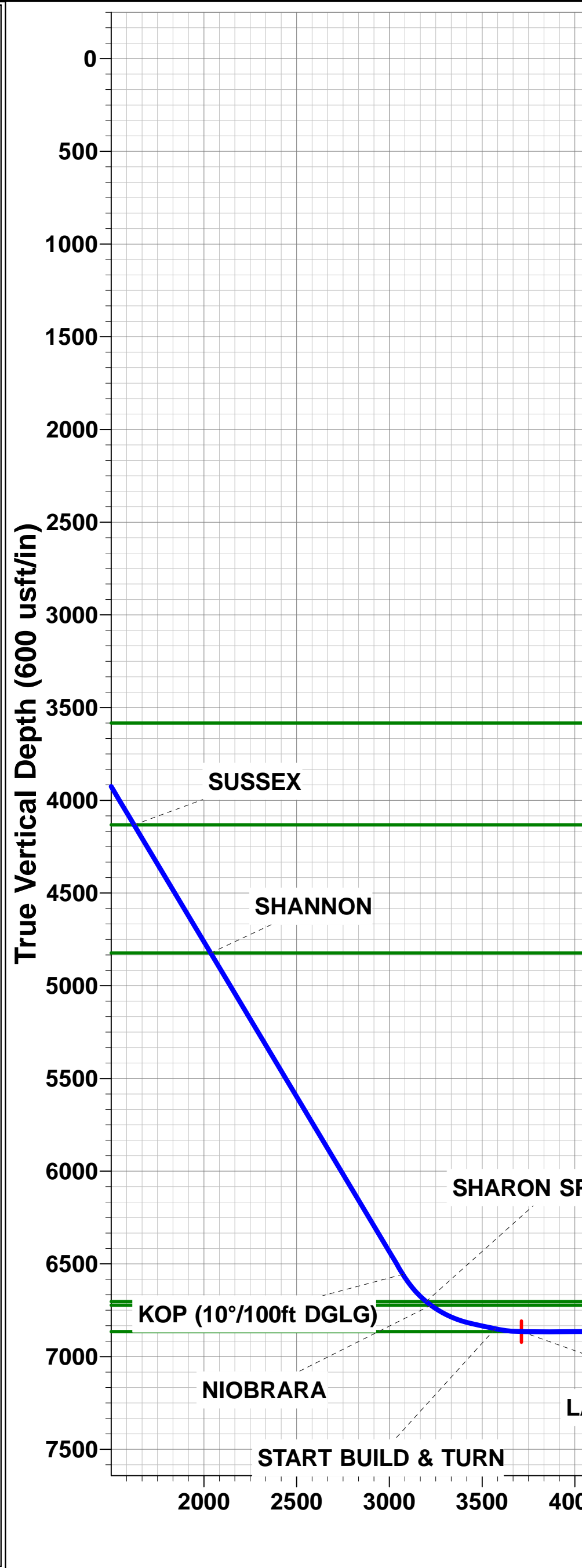
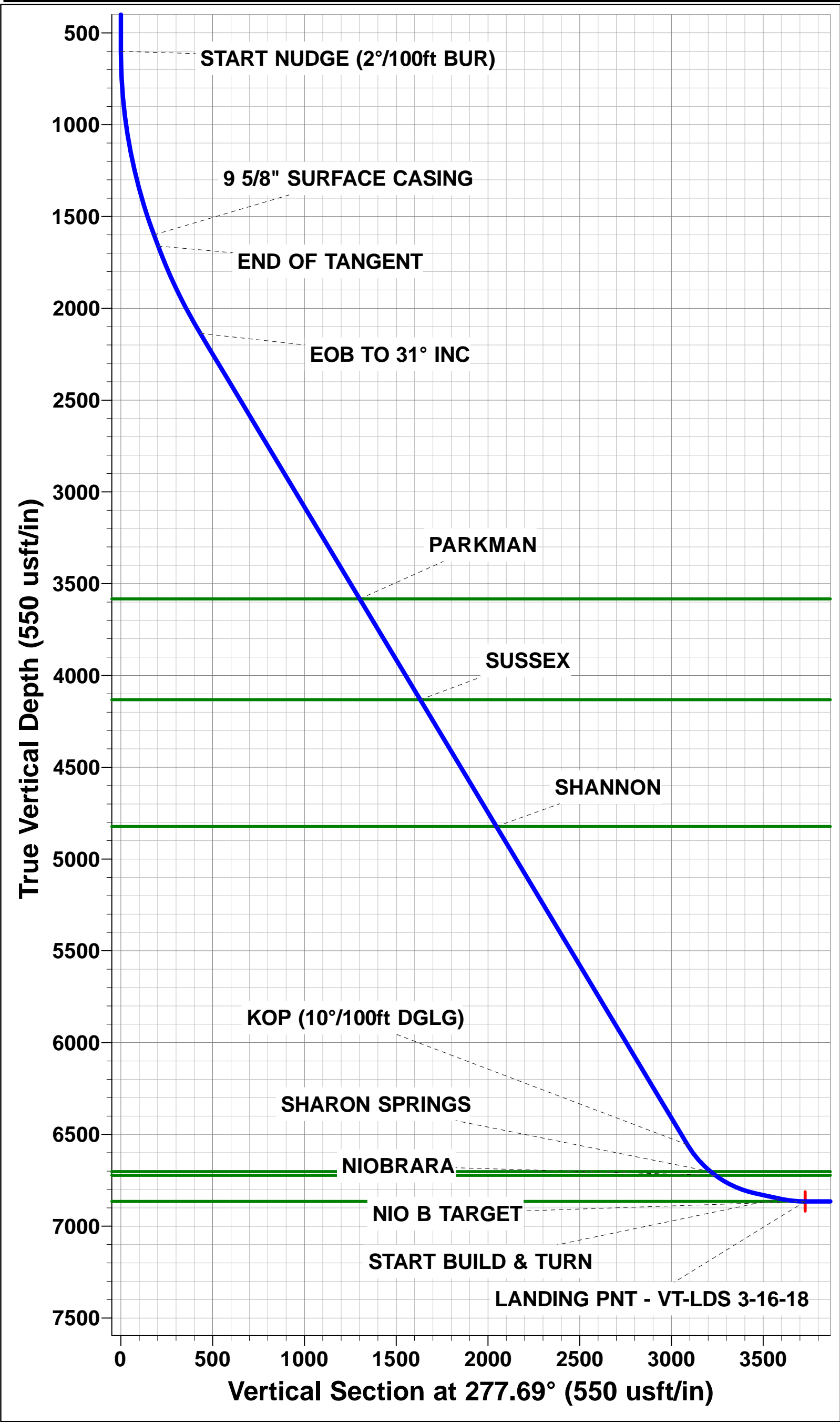
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	3902.7	PARKMAN
4132.0	4543.1	SUSSEX
4823.0	5349.3	SHANNON
6703.0	7565.9	SHARON SPRINGS
6723.0	7598.4	NIOBRARA
6865.0	8115.3	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1892ft FNL & 578ft FWL of Sec 15		
LP: 1391ft FNL & 2190ft FWL of Sec 16		
BHL: 1320ft FNL & 460ft FWL of Sec 18		

T  
M

Azimuths to True North  
Magnetic North: 8.32°

Magnetic Field  
Strength: 52585.3snT  
Dip Angle: 66.91°  
Date: 20/11/2015  
Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<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>	SW NW SEC. 15 T5N R65W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,390,032.91 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,234,727.17 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.400980
		<b>Longitude:</b>	-104.657180
		<b>Grid Convergence:</b>	0.54 °

<b>Well</b>	VT-LDS 3-16-18		
<b>Well Position</b>	<b>+N/-S</b>	112.9 usft	<b>Northing:</b>
	<b>+E/-W</b>	105.8 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	20/11/2015	8.32	66.91	52,585

<b>Design</b>	PROPOSAL #2			
<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	272.16

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,664.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	-4,064.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,621.5	20.43	277.78	1,600.0	-3,064.0	24.4	-178.5	2.00	2.00	0.00	277.78	
1,686.5	20.43	277.78	1,660.9	-3,003.1	27.5	-201.0	0.00	0.00	0.00	0.00	
2,215.0	31.00	277.78	2,136.4	-2,527.6	58.5	-427.9	2.00	2.00	0.00	0.00	
7,371.5	31.00	277.78	6,556.4	1,892.4	418.0	-3,059.2	0.00	0.00	0.00	0.00	
7,838.2	77.67	277.78	6,821.0	2,157.0	467.9	-3,424.6	10.00	10.00	0.00	0.00	
7,972.4	77.67	277.78	6,849.7	2,185.7	485.6	-3,554.5	0.00	0.00	0.00	0.00	
8,115.3	90.00	270.50	6,865.0	2,201.0	495.8	-3,695.8	10.00	8.63	-5.10	-30.89	LANDING PNT - V1
20,403.6	90.00	270.50	6,865.0	2,201.0	602.7	-15,983.7	0.00	0.00	0.00	0.00	BHL - VT-LDS 3-16

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## 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)
0.0	0.00	0.00	0.0	4,664.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,564.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,464.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,364.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,264.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,164.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
600.0	0.00	0.00	600.0	4,064.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	2.00	277.78	700.0	3,964.02	0.2	-1.7	1.7	2.00	2.00	0.00
800.0	4.00	277.78	799.8	3,864.16	0.9	-6.9	6.9	2.00	2.00	0.00
900.0	6.00	277.78	899.5	3,764.55	2.1	-15.5	15.6	2.00	2.00	0.00
1,000.0	8.00	277.78	998.7	3,665.30	3.8	-27.6	27.7	2.00	2.00	0.00
1,100.0	10.00	277.78	1,097.5	3,566.53	5.9	-43.1	43.3	2.00	2.00	0.00
1,200.0	12.00	277.78	1,195.6	3,468.38	8.5	-62.0	62.3	2.00	2.00	0.00
1,300.0	14.00	277.78	1,293.1	3,370.94	11.5	-84.3	84.7	2.00	2.00	0.00
1,400.0	16.00	277.78	1,389.6	3,274.36	15.0	-110.0	110.4	2.00	2.00	0.00
1,500.0	18.00	277.78	1,485.3	3,178.73	19.0	-138.9	139.5	2.00	2.00	0.00
1,600.0	20.00	277.78	1,579.8	3,084.18	23.4	-171.2	171.9	2.00	2.00	0.00
<b>9 5/8" SURFACE CASING</b>										
1,621.5	20.43	277.78	1,600.0	3,064.01	24.4	-178.5	179.3	2.00	2.00	0.00
<b>END OF TANGENT</b>										
1,686.5	20.43	277.78	1,660.9	3,003.10	27.5	-201.0	201.9	0.00	0.00	0.00
1,700.0	20.70	277.78	1,673.5	2,990.46	28.1	-205.7	206.6	2.00	2.00	0.00
1,800.0	22.70	277.78	1,766.5	2,897.55	33.1	-242.3	243.4	2.00	2.00	0.00
1,900.0	24.70	277.78	1,858.0	2,805.99	38.6	-282.2	283.4	2.00	2.00	0.00
2,000.0	26.70	277.78	1,948.1	2,715.88	44.4	-325.1	326.6	2.00	2.00	0.00
2,100.0	28.70	277.78	2,036.7	2,627.35	50.7	-371.2	372.8	2.00	2.00	0.00
2,200.0	30.70	277.78	2,123.5	2,540.49	57.4	-420.3	422.1	2.00	2.00	0.00
<b>EOB TO 31° INC</b>										
2,215.0	31.00	277.78	2,136.4	2,527.61	58.5	-427.9	429.8	2.00	2.00	0.00
2,300.0	31.00	277.78	2,209.2	2,454.75	64.4	-471.3	473.4	0.00	0.00	0.00
2,400.0	31.00	277.78	2,295.0	2,369.04	71.4	-522.3	524.6	0.00	0.00	0.00
2,500.0	31.00	277.78	2,380.7	2,283.32	78.3	-573.3	575.9	0.00	0.00	0.00
2,600.0	31.00	277.78	2,466.4	2,197.60	85.3	-624.4	627.1	0.00	0.00	0.00
2,700.0	31.00	277.78	2,552.1	2,111.89	92.3	-675.4	678.4	0.00	0.00	0.00
2,800.0	31.00	277.78	2,637.8	2,026.17	99.2	-726.4	729.6	0.00	0.00	0.00
2,900.0	31.00	277.78	2,723.5	1,940.45	106.2	-777.5	780.9	0.00	0.00	0.00
3,000.0	31.00	277.78	2,809.3	1,854.74	113.2	-828.5	832.2	0.00	0.00	0.00
3,100.0	31.00	277.78	2,895.0	1,769.02	120.2	-879.5	883.4	0.00	0.00	0.00
3,200.0	31.00	277.78	2,980.7	1,683.30	127.1	-930.5	934.7	0.00	0.00	0.00
3,300.0	31.00	277.78	3,066.4	1,597.59	134.1	-981.6	985.9	0.00	0.00	0.00
3,400.0	31.00	277.78	3,152.1	1,511.87	141.1	-1,032.6	1,037.2	0.00	0.00	0.00
3,500.0	31.00	277.78	3,237.8	1,426.15	148.1	-1,083.6	1,088.4	0.00	0.00	0.00
3,600.0	31.00	277.78	3,323.6	1,340.44	155.0	-1,134.7	1,139.7	0.00	0.00	0.00
3,700.0	31.00	277.78	3,409.3	1,254.72	162.0	-1,185.7	1,191.0	0.00	0.00	0.00
3,800.0	31.00	277.78	3,495.0	1,169.00	169.0	-1,236.7	1,242.2	0.00	0.00	0.00
3,900.0	31.00	277.78	3,580.7	1,083.29	175.9	-1,287.8	1,293.5	0.00	0.00	0.00
<b>PARKMAN</b>										
3,902.7	31.00	277.78	3,583.0	1,081.00	176.1	-1,289.1	1,294.8	0.00	0.00	0.00
4,000.0	31.00	277.78	3,666.4	997.57	182.9	-1,338.8	1,344.7	0.00	0.00	0.00
4,100.0	31.00	277.78	3,752.1	911.85	189.9	-1,389.8	1,396.0	0.00	0.00	0.00
4,200.0	31.00	277.78	3,837.9	826.14	196.9	-1,440.8	1,447.2	0.00	0.00	0.00
4,300.0	31.00	277.78	3,923.6	740.42	203.8	-1,491.9	1,498.5	0.00	0.00	0.00
4,400.0	31.00	277.78	4,009.3	654.70	210.8	-1,542.9	1,549.7	0.00	0.00	0.00



## Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## 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)
4,500.0	31.00	277.78	4,095.0	568.99	217.8	-1,593.9	1,601.0	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>4,543.1</b>	<b>31.00</b>	<b>277.78</b>	<b>4,132.0</b>	<b>532.00</b>	<b>220.8</b>	<b>-1,615.9</b>	<b>1,623.1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,600.0	31.00	277.78	4,180.7	483.27	224.7	-1,645.0	1,652.3	0.00	0.00	0.00
4,700.0	31.00	277.78	4,266.4	397.55	231.7	-1,696.0	1,703.5	0.00	0.00	0.00
4,800.0	31.00	277.78	4,352.2	311.84	238.7	-1,747.0	1,754.8	0.00	0.00	0.00
4,900.0	31.00	277.78	4,437.9	226.12	245.7	-1,798.0	1,806.0	0.00	0.00	0.00
5,000.0	31.00	277.78	4,523.6	140.40	252.6	-1,849.1	1,857.3	0.00	0.00	0.00
5,100.0	31.00	277.78	4,609.3	54.69	259.6	-1,900.1	1,908.5	0.00	0.00	0.00
5,200.0	31.00	277.78	4,695.0	-31.03	266.6	-1,951.1	1,959.8	0.00	0.00	0.00
5,300.0	31.00	277.78	4,780.7	-116.75	273.6	-2,002.2	2,011.1	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,349.3</b>	<b>31.00</b>	<b>277.78</b>	<b>4,823.0</b>	<b>-159.00</b>	<b>277.0</b>	<b>-2,027.3</b>	<b>2,036.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,400.0	31.00	277.78	4,866.5	-202.46	280.5	-2,053.2	2,062.3	0.00	0.00	0.00
5,500.0	31.00	277.78	4,952.2	-288.18	287.5	-2,104.2	2,113.6	0.00	0.00	0.00
5,600.0	31.00	277.78	5,037.9	-373.90	294.5	-2,155.3	2,164.8	0.00	0.00	0.00
5,700.0	31.00	277.78	5,123.6	-459.61	301.4	-2,206.3	2,216.1	0.00	0.00	0.00
5,800.0	31.00	277.78	5,209.3	-545.33	308.4	-2,257.3	2,267.3	0.00	0.00	0.00
5,900.0	31.00	277.78	5,295.0	-631.05	315.4	-2,308.3	2,318.6	0.00	0.00	0.00
6,000.0	31.00	277.78	5,380.8	-716.77	322.4	-2,359.4	2,369.8	0.00	0.00	0.00
6,100.0	31.00	277.78	5,466.5	-802.48	329.3	-2,410.4	2,421.1	0.00	0.00	0.00
6,200.0	31.00	277.78	5,552.2	-888.20	336.3	-2,461.4	2,472.4	0.00	0.00	0.00
6,300.0	31.00	277.78	5,637.9	-973.92	343.3	-2,512.5	2,523.6	0.00	0.00	0.00
6,400.0	31.00	277.78	5,723.6	-1,059.63	350.2	-2,563.5	2,574.9	0.00	0.00	0.00
6,500.0	31.00	277.78	5,809.3	-1,145.35	357.2	-2,614.5	2,626.1	0.00	0.00	0.00
6,600.0	31.00	277.78	5,895.1	-1,231.07	364.2	-2,665.6	2,677.4	0.00	0.00	0.00
6,700.0	31.00	277.78	5,980.8	-1,316.78	371.2	-2,716.6	2,728.6	0.00	0.00	0.00
6,800.0	31.00	277.78	6,066.5	-1,402.50	378.1	-2,767.6	2,779.9	0.00	0.00	0.00
6,900.0	31.00	277.78	6,152.2	-1,488.22	385.1	-2,818.6	2,831.2	0.00	0.00	0.00
7,000.0	31.00	277.78	6,237.9	-1,573.93	392.1	-2,869.7	2,882.4	0.00	0.00	0.00
7,100.0	31.00	277.78	6,323.6	-1,659.65	399.0	-2,920.7	2,933.7	0.00	0.00	0.00
7,200.0	31.00	277.78	6,409.4	-1,745.37	406.0	-2,971.7	2,984.9	0.00	0.00	0.00
7,300.0	31.00	277.78	6,495.1	-1,831.08	413.0	-3,022.8	3,036.2	0.00	0.00	0.00
<b>KOP (10°/100ft DGLG)</b>										
<b>7,371.5</b>	<b>31.00</b>	<b>277.78</b>	<b>6,556.4</b>	<b>-1,892.37</b>	<b>418.0</b>	<b>-3,059.2</b>	<b>3,072.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
7,400.0	33.85	277.78	6,580.4	-1,916.42	420.0	-3,074.4	3,088.0	10.00	10.00	0.00
7,500.0	43.85	277.78	6,658.2	-1,994.20	428.5	-3,136.5	3,150.4	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
<b>7,565.9</b>	<b>50.44</b>	<b>277.78</b>	<b>6,703.0</b>	<b>-2,039.00</b>	<b>435.1</b>	<b>-3,184.3</b>	<b>3,198.4</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA</b>										
<b>7,598.4</b>	<b>53.69</b>	<b>277.78</b>	<b>6,723.0</b>	<b>-2,059.00</b>	<b>438.5</b>	<b>-3,209.7</b>	<b>3,224.0</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,600.0	53.85	277.78	6,723.9	-2,059.92	438.7	-3,211.0	3,225.2	10.00	10.00	0.00
7,700.0	63.85	277.78	6,775.6	-2,111.59	450.3	-3,295.7	3,310.3	10.00	10.00	0.00
7,800.0	73.85	277.78	6,811.6	-2,147.62	462.9	-3,387.9	3,403.0	10.00	10.00	0.00
7,838.2	77.67	277.78	6,821.0	-2,157.02	467.9	-3,424.6	3,439.8	10.00	10.00	0.00
7,900.0	77.67	277.78	6,834.2	-2,170.21	476.1	-3,484.4	3,499.9	0.00	0.00	0.00
<b>START BUILD &amp; TURN</b>										
<b>7,972.4</b>	<b>77.67</b>	<b>277.78</b>	<b>6,849.7</b>	<b>-2,185.67</b>	<b>485.6</b>	<b>-3,554.5</b>	<b>3,570.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
8,000.0	80.05	276.34	6,855.0	-2,191.00	489.0	-3,581.4	3,597.3	10.01	8.60	-5.22
8,100.0	88.68	271.26	6,864.8	-2,200.82	495.5	-3,680.6	3,696.6	10.00	8.63	-5.07
<b>LANDING PNT - VT-LDS 3-16-18 - NIO B TARGET</b>										
<b>8,115.3</b>	<b>90.00</b>	<b>270.50</b>	<b>6,865.0</b>	<b>-2,201.00</b>	<b>495.8</b>	<b>-3,695.8</b>	<b>3,711.9</b>	<b>9.99</b>	<b>8.64</b>	<b>-5.01</b>
8,200.0	90.00	270.50	6,865.0	-2,201.00	496.5	-3,780.6	3,796.6	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
8,300.0	90.00	270.50	6,865.0	-2,201.00	497.4	-3,880.6	3,896.5	0.00	0.00	0.00
8,400.0	90.00	270.50	6,865.0	-2,201.00	498.2	-3,980.6	3,996.5	0.00	0.00	0.00
8,500.0	90.00	270.50	6,865.0	-2,201.00	499.1	-4,080.5	4,096.5	0.00	0.00	0.00
8,600.0	90.00	270.50	6,865.0	-2,201.00	500.0	-4,180.5	4,196.4	0.00	0.00	0.00
8,700.0	90.00	270.50	6,865.0	-2,201.00	500.8	-4,280.5	4,296.4	0.00	0.00	0.00
8,800.0	90.00	270.50	6,865.0	-2,201.00	501.7	-4,380.5	4,396.3	0.00	0.00	0.00
8,900.0	90.00	270.50	6,865.0	-2,201.00	502.6	-4,480.5	4,496.3	0.00	0.00	0.00
9,000.0	90.00	270.50	6,865.0	-2,201.00	503.5	-4,580.5	4,596.2	0.00	0.00	0.00
9,100.0	90.00	270.50	6,865.0	-2,201.00	504.3	-4,680.5	4,696.2	0.00	0.00	0.00
9,200.0	90.00	270.50	6,865.0	-2,201.00	505.2	-4,780.5	4,796.2	0.00	0.00	0.00
9,300.0	90.00	270.50	6,865.0	-2,201.00	506.1	-4,880.5	4,896.1	0.00	0.00	0.00
9,400.0	90.00	270.50	6,865.0	-2,201.00	506.9	-4,980.5	4,996.1	0.00	0.00	0.00
9,500.0	90.00	270.50	6,865.0	-2,201.00	507.8	-5,080.5	5,096.0	0.00	0.00	0.00
9,600.0	90.00	270.50	6,865.0	-2,201.00	508.7	-5,180.5	5,196.0	0.00	0.00	0.00
9,700.0	90.00	270.50	6,865.0	-2,201.00	509.5	-5,280.5	5,296.0	0.00	0.00	0.00
9,800.0	90.00	270.50	6,865.0	-2,201.00	510.4	-5,380.5	5,395.9	0.00	0.00	0.00
9,900.0	90.00	270.50	6,865.0	-2,201.00	511.3	-5,480.5	5,495.9	0.00	0.00	0.00
10,000.0	90.00	270.50	6,865.0	-2,201.00	512.2	-5,580.5	5,595.8	0.00	0.00	0.00
10,100.0	90.00	270.50	6,865.0	-2,201.00	513.0	-5,680.5	5,695.8	0.00	0.00	0.00
10,200.0	90.00	270.50	6,865.0	-2,201.00	513.9	-5,780.5	5,795.7	0.00	0.00	0.00
10,300.0	90.00	270.50	6,865.0	-2,201.00	514.8	-5,880.5	5,895.7	0.00	0.00	0.00
10,400.0	90.00	270.50	6,865.0	-2,201.00	515.6	-5,980.5	5,995.7	0.00	0.00	0.00
10,500.0	90.00	270.50	6,865.0	-2,201.00	516.5	-6,080.5	6,095.6	0.00	0.00	0.00
10,600.0	90.00	270.50	6,865.0	-2,201.00	517.4	-6,180.5	6,195.6	0.00	0.00	0.00
10,700.0	90.00	270.50	6,865.0	-2,201.00	518.2	-6,280.5	6,295.5	0.00	0.00	0.00
10,800.0	90.00	270.50	6,865.0	-2,201.00	519.1	-6,380.5	6,395.5	0.00	0.00	0.00
10,900.0	90.00	270.50	6,865.0	-2,201.00	520.0	-6,480.5	6,495.4	0.00	0.00	0.00
11,000.0	90.00	270.50	6,865.0	-2,201.00	520.9	-6,580.5	6,595.4	0.00	0.00	0.00
11,100.0	90.00	270.50	6,865.0	-2,201.00	521.7	-6,680.5	6,695.4	0.00	0.00	0.00
11,200.0	90.00	270.50	6,865.0	-2,201.00	522.6	-6,780.4	6,795.3	0.00	0.00	0.00
11,300.0	90.00	270.50	6,865.0	-2,201.00	523.5	-6,880.4	6,895.3	0.00	0.00	0.00
11,400.0	90.00	270.50	6,865.0	-2,201.00	524.3	-6,980.4	6,995.2	0.00	0.00	0.00
11,500.0	90.00	270.50	6,865.0	-2,201.00	525.2	-7,080.4	7,095.2	0.00	0.00	0.00
11,600.0	90.00	270.50	6,865.0	-2,201.00	526.1	-7,180.4	7,195.2	0.00	0.00	0.00
11,700.0	90.00	270.50	6,865.0	-2,201.00	526.9	-7,280.4	7,295.1	0.00	0.00	0.00
11,800.0	90.00	270.50	6,865.0	-2,201.00	527.8	-7,380.4	7,395.1	0.00	0.00	0.00
11,900.0	90.00	270.50	6,865.0	-2,201.00	528.7	-7,480.4	7,495.0	0.00	0.00	0.00
12,000.0	90.00	270.50	6,865.0	-2,201.00	529.6	-7,580.4	7,595.0	0.00	0.00	0.00
12,100.0	90.00	270.50	6,865.0	-2,201.00	530.4	-7,680.4	7,694.9	0.00	0.00	0.00
12,200.0	90.00	270.50	6,865.0	-2,201.00	531.3	-7,780.4	7,794.9	0.00	0.00	0.00
12,300.0	90.00	270.50	6,865.0	-2,201.00	532.2	-7,880.4	7,894.9	0.00	0.00	0.00
12,400.0	90.00	270.50	6,865.0	-2,201.00	533.0	-7,980.4	7,994.8	0.00	0.00	0.00
12,500.0	90.00	270.50	6,865.0	-2,201.00	533.9	-8,080.4	8,094.8	0.00	0.00	0.00
12,600.0	90.00	270.50	6,865.0	-2,201.00	534.8	-8,180.4	8,194.7	0.00	0.00	0.00
12,700.0	90.00	270.50	6,865.0	-2,201.00	535.6	-8,280.4	8,294.7	0.00	0.00	0.00
12,800.0	90.00	270.50	6,865.0	-2,201.00	536.5	-8,380.4	8,394.7	0.00	0.00	0.00
12,900.0	90.00	270.50	6,865.0	-2,201.00	537.4	-8,480.4	8,494.6	0.00	0.00	0.00
13,000.0	90.00	270.50	6,865.0	-2,201.00	538.3	-8,580.4	8,594.6	0.00	0.00	0.00
13,100.0	90.00	270.50	6,865.0	-2,201.00	539.1	-8,680.4	8,694.5	0.00	0.00	0.00
13,200.0	90.00	270.50	6,865.0	-2,201.00	540.0	-8,780.4	8,794.5	0.00	0.00	0.00
13,300.0	90.00	270.50	6,865.0	-2,201.00	540.9	-8,880.4	8,894.4	0.00	0.00	0.00
13,400.0	90.00	270.50	6,865.0	-2,201.00	541.7	-8,980.4	8,994.4	0.00	0.00	0.00
13,500.0	90.00	270.50	6,865.0	-2,201.00	542.6	-9,080.4	9,094.4	0.00	0.00	0.00
13,600.0	90.00	270.50	6,865.0	-2,201.00	543.5	-9,180.4	9,194.3	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
13,700.0	90.00	270.50	6,865.0	-2,201.00	544.3	-9,280.4	9,294.3	0.00	0.00	0.00
13,800.0	90.00	270.50	6,865.0	-2,201.00	545.2	-9,380.3	9,394.2	0.00	0.00	0.00
13,900.0	90.00	270.50	6,865.0	-2,201.00	546.1	-9,480.3	9,494.2	0.00	0.00	0.00
14,000.0	90.00	270.50	6,865.0	-2,201.00	547.0	-9,580.3	9,594.1	0.00	0.00	0.00
14,100.0	90.00	270.50	6,865.0	-2,201.00	547.8	-9,680.3	9,694.1	0.00	0.00	0.00
14,200.0	90.00	270.50	6,865.0	-2,201.00	548.7	-9,780.3	9,794.1	0.00	0.00	0.00
14,300.0	90.00	270.50	6,865.0	-2,201.00	549.6	-9,880.3	9,894.0	0.00	0.00	0.00
14,400.0	90.00	270.50	6,865.0	-2,201.00	550.4	-9,980.3	9,994.0	0.00	0.00	0.00
14,500.0	90.00	270.50	6,865.0	-2,201.00	551.3	-10,080.3	10,093.9	0.00	0.00	0.00
14,600.0	90.00	270.50	6,865.0	-2,201.00	552.2	-10,180.3	10,193.9	0.00	0.00	0.00
14,700.0	90.00	270.50	6,865.0	-2,201.00	553.0	-10,280.3	10,293.9	0.00	0.00	0.00
14,800.0	90.00	270.50	6,865.0	-2,201.00	553.9	-10,380.3	10,393.8	0.00	0.00	0.00
14,900.0	90.00	270.50	6,865.0	-2,201.00	554.8	-10,480.3	10,493.8	0.00	0.00	0.00
15,000.0	90.00	270.50	6,865.0	-2,201.00	555.7	-10,580.3	10,593.7	0.00	0.00	0.00
15,100.0	90.00	270.50	6,865.0	-2,201.00	556.5	-10,680.3	10,693.7	0.00	0.00	0.00
15,200.0	90.00	270.50	6,865.0	-2,201.00	557.4	-10,780.3	10,793.6	0.00	0.00	0.00
15,300.0	90.00	270.50	6,865.0	-2,201.00	558.3	-10,880.3	10,893.6	0.00	0.00	0.00
15,400.0	90.00	270.50	6,865.0	-2,201.00	559.1	-10,980.3	10,993.6	0.00	0.00	0.00
15,500.0	90.00	270.50	6,865.0	-2,201.00	560.0	-11,080.3	11,093.5	0.00	0.00	0.00
15,600.0	90.00	270.50	6,865.0	-2,201.00	560.9	-11,180.3	11,193.5	0.00	0.00	0.00
15,700.0	90.00	270.50	6,865.0	-2,201.00	561.7	-11,280.3	11,293.4	0.00	0.00	0.00
15,800.0	90.00	270.50	6,865.0	-2,201.00	562.6	-11,380.3	11,393.4	0.00	0.00	0.00
15,900.0	90.00	270.50	6,865.0	-2,201.00	563.5	-11,480.3	11,493.3	0.00	0.00	0.00
16,000.0	90.00	270.50	6,865.0	-2,201.00	564.4	-11,580.3	11,593.3	0.00	0.00	0.00
16,100.0	90.00	270.50	6,865.0	-2,201.00	565.2	-11,680.3	11,693.3	0.00	0.00	0.00
16,200.0	90.00	270.50	6,865.0	-2,201.00	566.1	-11,780.3	11,793.2	0.00	0.00	0.00
16,300.0	90.00	270.50	6,865.0	-2,201.00	567.0	-11,880.3	11,893.2	0.00	0.00	0.00
16,400.0	90.00	270.50	6,865.0	-2,201.00	567.8	-11,980.3	11,993.1	0.00	0.00	0.00
16,500.0	90.00	270.50	6,865.0	-2,201.00	568.7	-12,080.2	12,093.1	0.00	0.00	0.00
16,600.0	90.00	270.50	6,865.0	-2,201.00	569.6	-12,180.2	12,193.1	0.00	0.00	0.00
16,700.0	90.00	270.50	6,865.0	-2,201.00	570.4	-12,280.2	12,293.0	0.00	0.00	0.00
16,800.0	90.00	270.50	6,865.0	-2,201.00	571.3	-12,380.2	12,393.0	0.00	0.00	0.00
16,900.0	90.00	270.50	6,865.0	-2,201.00	572.2	-12,480.2	12,492.9	0.00	0.00	0.00
17,000.0	90.00	270.50	6,865.0	-2,201.00	573.1	-12,580.2	12,592.9	0.00	0.00	0.00
17,100.0	90.00	270.50	6,865.0	-2,201.00	573.9	-12,680.2	12,692.8	0.00	0.00	0.00
17,200.0	90.00	270.50	6,865.0	-2,201.00	574.8	-12,780.2	12,792.8	0.00	0.00	0.00
17,300.0	90.00	270.50	6,865.0	-2,201.00	575.7	-12,880.2	12,892.8	0.00	0.00	0.00
17,400.0	90.00	270.50	6,865.0	-2,201.00	576.5	-12,980.2	12,992.7	0.00	0.00	0.00
17,500.0	90.00	270.50	6,865.0	-2,201.00	577.4	-13,080.2	13,092.7	0.00	0.00	0.00
17,600.0	90.00	270.50	6,865.0	-2,201.00	578.3	-13,180.2	13,192.6	0.00	0.00	0.00
17,700.0	90.00	270.50	6,865.0	-2,201.00	579.1	-13,280.2	13,292.6	0.00	0.00	0.00
17,800.0	90.00	270.50	6,865.0	-2,201.00	580.0	-13,380.2	13,392.6	0.00	0.00	0.00
17,900.0	90.00	270.50	6,865.0	-2,201.00	580.9	-13,480.2	13,492.5	0.00	0.00	0.00
18,000.0	90.00	270.50	6,865.0	-2,201.00	581.7	-13,580.2	13,592.5	0.00	0.00	0.00
18,100.0	90.00	270.50	6,865.0	-2,201.00	582.6	-13,680.2	13,692.4	0.00	0.00	0.00
18,200.0	90.00	270.50	6,865.0	-2,201.00	583.5	-13,780.2	13,792.4	0.00	0.00	0.00
18,300.0	90.00	270.50	6,865.0	-2,201.00	584.4	-13,880.2	13,892.3	0.00	0.00	0.00
18,400.0	90.00	270.50	6,865.0	-2,201.00	585.2	-13,980.2	13,992.3	0.00	0.00	0.00
18,500.0	90.00	270.50	6,865.0	-2,201.00	586.1	-14,080.2	14,092.3	0.00	0.00	0.00
18,600.0	90.00	270.50	6,865.0	-2,201.00	587.0	-14,180.2	14,192.2	0.00	0.00	0.00
18,700.0	90.00	270.50	6,865.0	-2,201.00	587.8	-14,280.2	14,292.2	0.00	0.00	0.00
18,800.0	90.00	270.50	6,865.0	-2,201.00	588.7	-14,380.2	14,392.1	0.00	0.00	0.00
18,900.0	90.00	270.50	6,865.0	-2,201.00	589.6	-14,480.2	14,492.1	0.00	0.00	0.00
19,000.0	90.00	270.50	6,865.0	-2,201.00	590.4	-14,580.2	14,592.0	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VT-LDS 3-16-18
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VT-LDS 3-16-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## 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)
19,100.0	90.00	270.50	6,865.0	-2,201.00	591.3	-14,680.1	14,692.0	0.00	0.00	0.00
19,200.0	90.00	270.50	6,865.0	-2,201.00	592.2	-14,780.1	14,792.0	0.00	0.00	0.00
19,300.0	90.00	270.50	6,865.0	-2,201.00	593.1	-14,880.1	14,891.9	0.00	0.00	0.00
19,400.0	90.00	270.50	6,865.0	-2,201.00	593.9	-14,980.1	14,991.9	0.00	0.00	0.00
19,500.0	90.00	270.50	6,865.0	-2,201.00	594.8	-15,080.1	15,091.8	0.00	0.00	0.00
19,600.0	90.00	270.50	6,865.0	-2,201.00	595.7	-15,180.1	15,191.8	0.00	0.00	0.00
19,700.0	90.00	270.50	6,865.0	-2,201.00	596.5	-15,280.1	15,291.8	0.00	0.00	0.00
19,800.0	90.00	270.50	6,865.0	-2,201.00	597.4	-15,380.1	15,391.7	0.00	0.00	0.00
19,900.0	90.00	270.50	6,865.0	-2,201.00	598.3	-15,480.1	15,491.7	0.00	0.00	0.00
20,000.0	90.00	270.50	6,865.0	-2,201.00	599.1	-15,580.1	15,591.6	0.00	0.00	0.00
20,100.0	90.00	270.50	6,865.0	-2,201.00	600.0	-15,680.1	15,691.6	0.00	0.00	0.00
20,200.0	90.00	270.50	6,865.0	-2,201.00	600.9	-15,780.1	15,791.5	0.00	0.00	0.00
20,300.0	90.00	270.50	6,865.0	-2,201.00	601.8	-15,880.1	15,891.5	0.00	0.00	0.00
20,400.0	90.00	270.50	6,865.0	-2,201.00	602.6	-15,980.1	15,991.5	0.00	0.00	0.00
<b>BHL - VT-LDS 3-16-18</b>										
<b>20,403.6</b>	<b>90.00</b>	<b>270.50</b>	<b>6,865.0</b>	<b>-2,201.00</b>	<b>602.7</b>	<b>-15,983.7</b>	<b>15,995.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,902.7	3,583.0	PARKMAN			
4,543.1	4,132.0	SUSSEX			
5,349.3	4,823.0	SHANNON			
7,565.9	6,703.0	SHARON SPRINGS			
7,598.4	6,723.0	NIOBRARA			
8,115.3	6,865.0	NIO B TARGET			

## Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.0	600.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,621.5	1,600.0	24.4	-178.5	9 5/8" SURFACE CASING
1,686.5	1,660.9	27.5	-201.0	END OF TANGENT
2,215.0	2,136.4	58.5	-427.9	EOB TO 31° INC
7,371.5	6,556.4	418.0	-3,059.2	KOP (10°/100ft DGLG)
7,972.4	6,849.7	485.6	-3,554.5	START BUILD & TURN
8,115.3	6,865.0	495.8	-3,695.9	LANDING PNT - VT-LDS 3-16-18
20,403.6	6,865.0	602.7	-15,983.7	BHL - VT-LDS 3-16-18