

# **EXTRACTION OIL & GAS**

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

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

**VETTING 17**

**ORIGINAL WELLBORE**

**09 March, 2016**

**Plan: PROPOSAL #2**

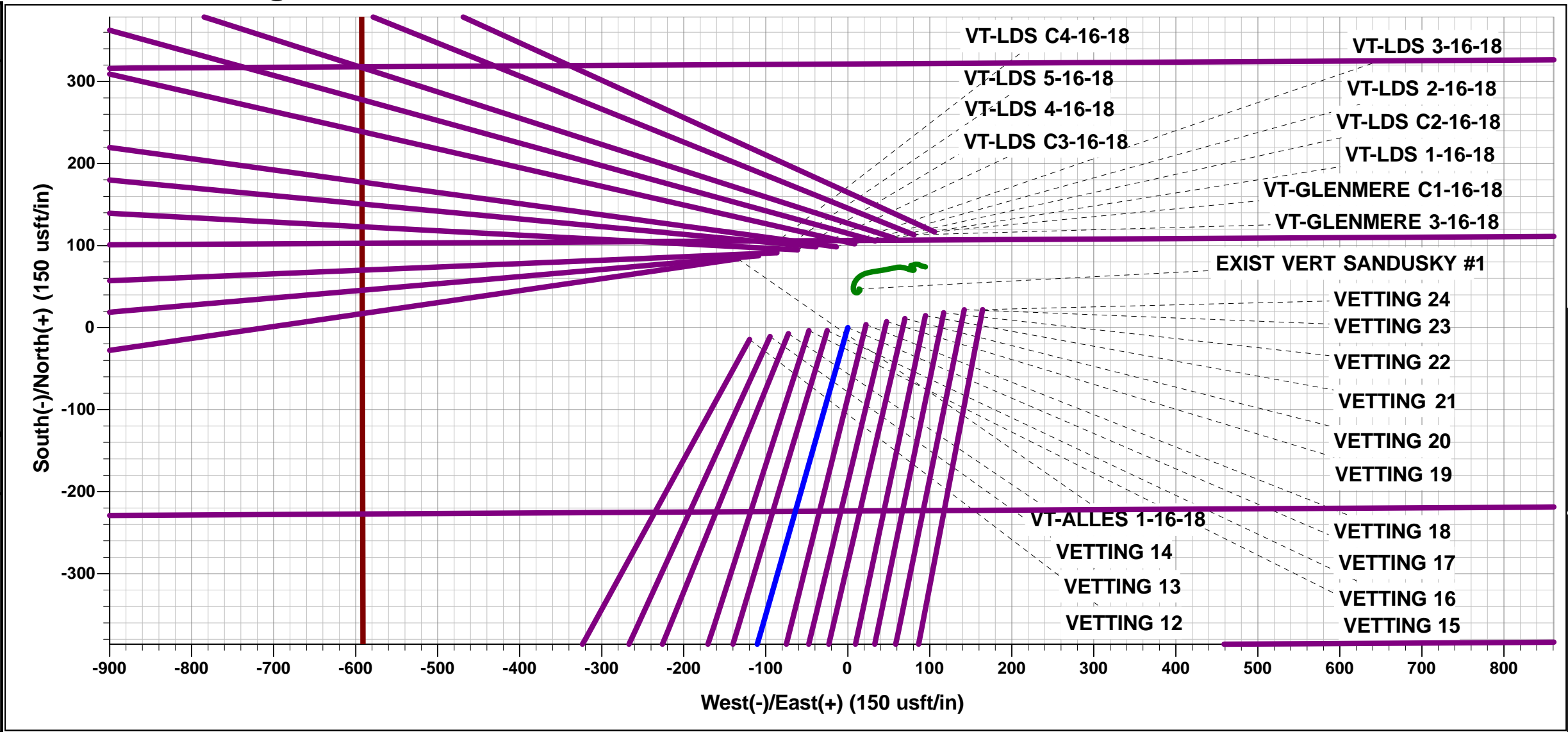




Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW NW SEC. 15 T5N R65W 6th P.M.  
Well: VETTING 17  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	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	195.93	-173.3	-49.5	80.9	180.2	9 5/8" SURFACE CASING		
1660.9	1686.5	20.43	195.93	-195.1	-55.7	91.1	202.9	END OF TANGENT		
1670.1	1696.3	20.63	195.93	-198.4	-56.6	92.6	206.3	EOB TO 20.63° INC		
5252.8	5524.4	20.63	195.93	-1495.2	-426.7	697.8	1554.9	END OF TANGENT		
6262.0	6555.7	0.00	195.93	-1671.8	-477.1	780.2	1738.5	EOD TO VERTICAL		
6292.0	6585.7	0.00	0.00	-1671.8	-477.1	780.2	1738.5	KOP (10°/100ft BUR)		
6865.0	7485.8	90.00	269.96	-1672.2	-1050.1	1343.2	2311.5	LANDING PNT - VETTING 17		
6865.0	15284.8	90.00	269.96	-1677.9	-8849.1	9006.8	10110.5	BHL - VETTING 17		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - VETTING 17	6292.0	-1671.8	-477.1	40.396431	-104.658463
LANDING PNT - VETTING 17	6865.0	-1672.2	-1050.1	40.396430	-104.660520
BHL - VETTING 17	6865.0	-1677.9	-8849.1	40.396410	-104.688520



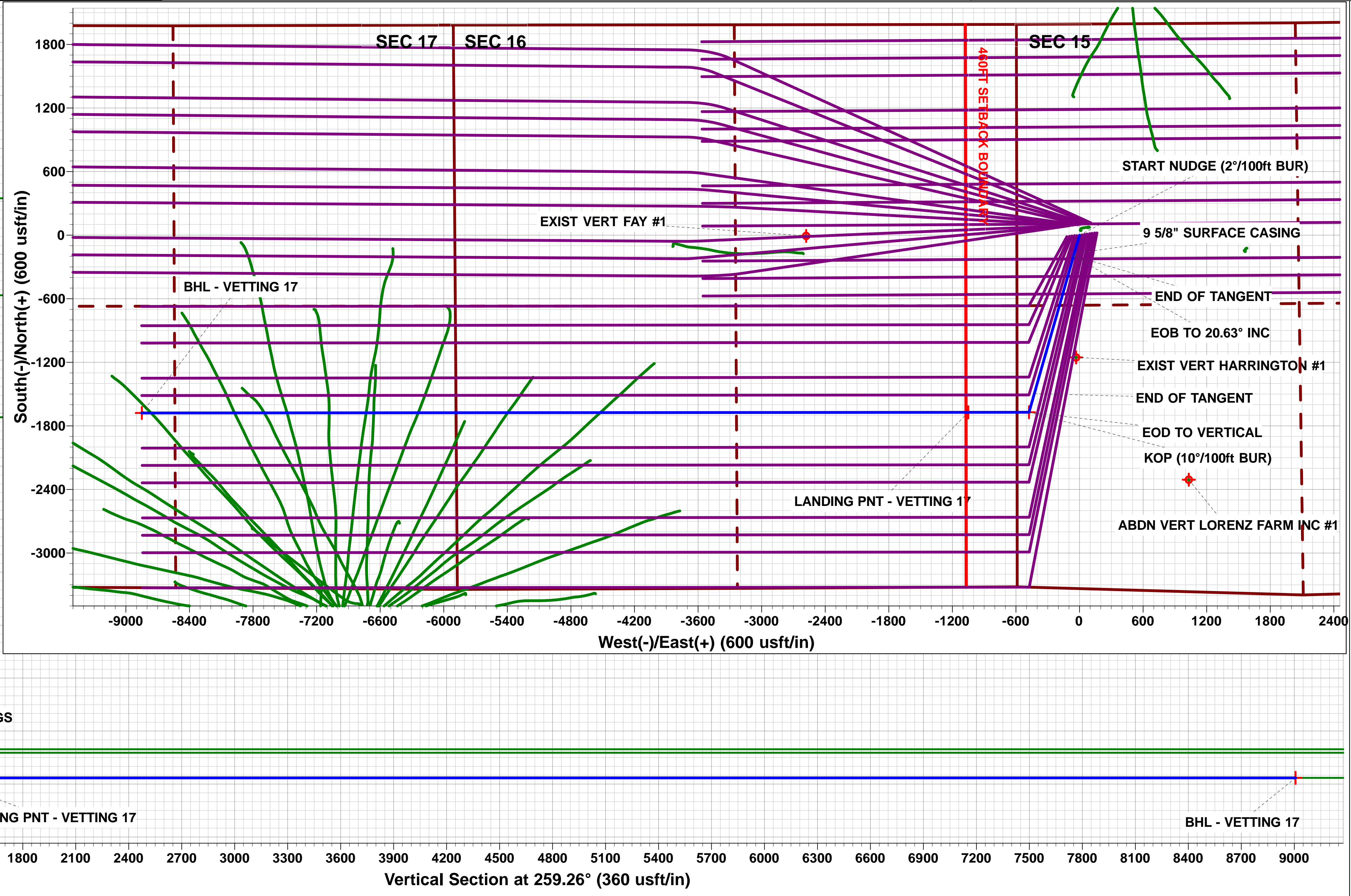
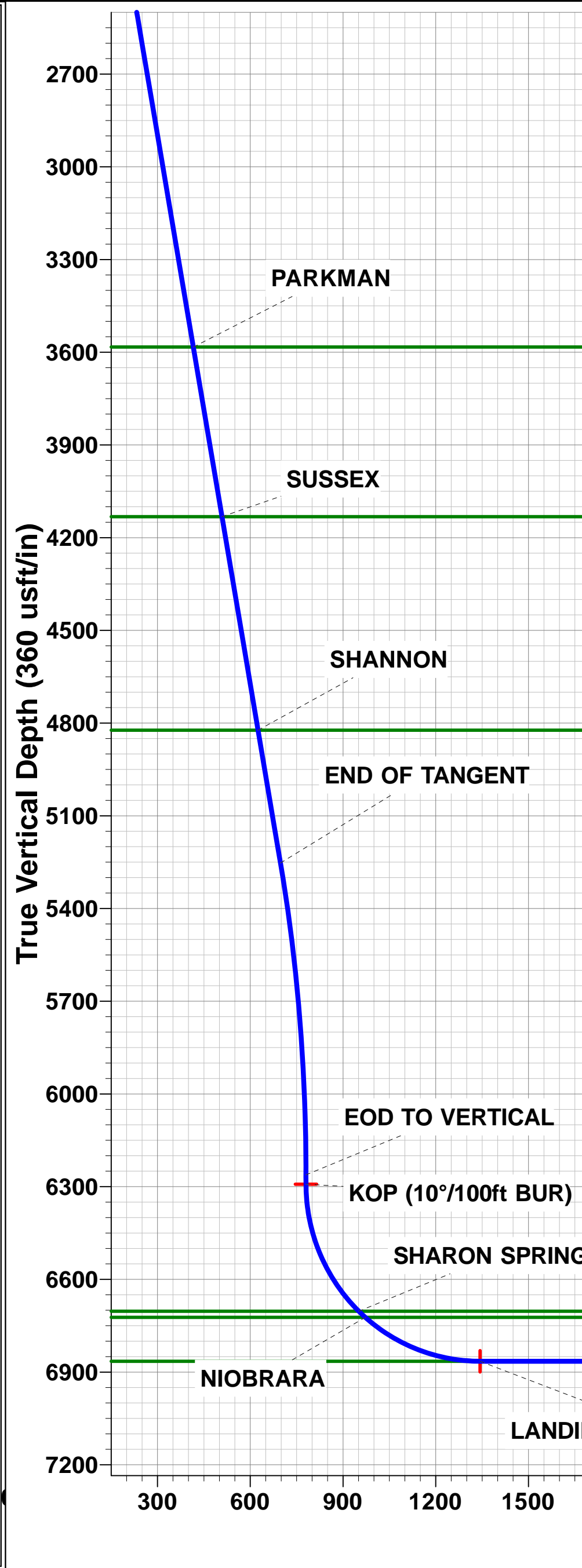
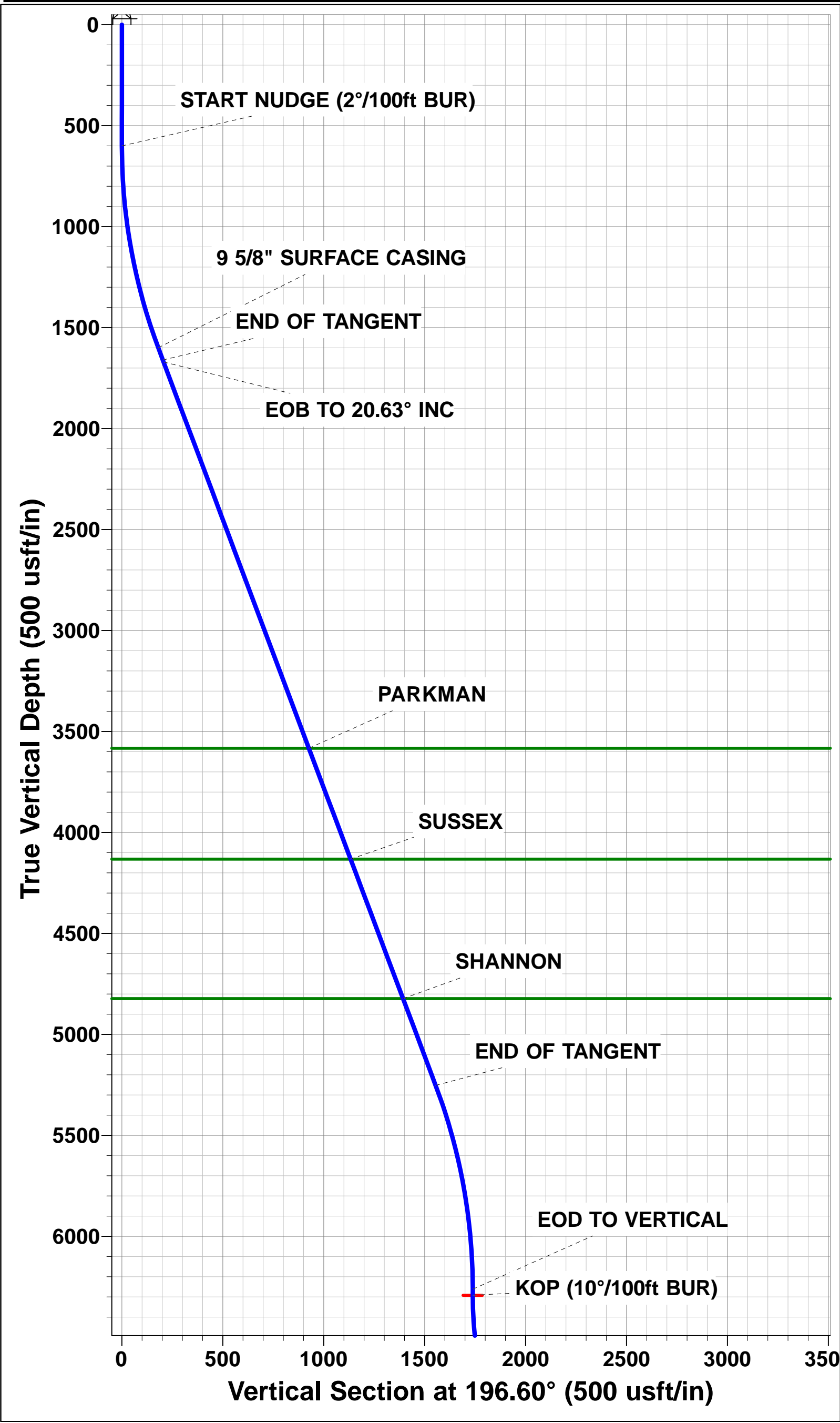
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	3740.2	PARKMAN
4132.0	4326.8	SUSSEX
4823.0	5065.2	SHANNON
6703.0	7044.1	SHARON SPRINGS
6723.0	7073.6	NIOBRARA
6865.0	7485.8	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1991ft FNL & 591ft FWL of Sec 15		
LP: 1650ft FSL & 460ft FEL of Sec 16		
BHL: 1650ft FNL & 2341ft FWL of Sec 17		

T M

Azimuths to True North  
Magnetic North: 8.32°

Magnetic Field  
Strength: 52585.2snT  
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 VETTING 17
<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>	VETTING 17	<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>	VETTING 17		
<b>Well Position</b>	<b>+N/-S</b>	14.6 usft	<b>Northing:</b>
	<b>+E/-W</b>	119.8 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.401020
		<b>Longitude:</b>	-104.656750
		<b>Ground Level:</b>	4,648.0 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	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	259.26

<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	195.93	1,600.0	-3,064.0	-173.3	-49.5	2.00	2.00	0.00	195.93	
1,686.5	20.43	195.93	1,660.9	-3,003.1	-195.1	-55.7	0.00	0.00	0.00	0.00	
1,696.3	20.63	195.93	1,670.1	-2,993.9	-198.4	-56.6	2.00	2.00	0.00	0.00	
5,524.4	20.63	195.93	5,252.8	588.8	-1,495.2	-426.7	0.00	0.00	0.00	0.00	
6,555.7	0.00	0.00	6,262.0	1,598.0	-1,671.8	-477.1	2.00	-2.00	0.00	180.00	
6,585.7	0.00	0.00	6,292.0	1,628.0	-1,671.8	-477.1	0.00	0.00	0.00	0.00	KOP - VETTING 17
7,485.8	90.00	269.96	6,865.0	2,201.0	-1,672.2	-1,050.1	10.00	10.00	-10.00	269.96	LANDING PNT - VE
15,284.8	90.00	269.96	6,865.0	2,201.0	-1,677.9	-8,849.1	0.00	0.00	0.00	-28.64	BHL - VETTING 17

## Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 17
<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>	VETTING 17	<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
START NUDGE (2°/100ft BUR)										
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	195.93	700.0	3,964.02	-1.7	-0.5	0.8	2.00	2.00	0.00
800.0	4.00	195.93	799.8	3,864.16	-6.7	-1.9	3.1	2.00	2.00	0.00
900.0	6.00	195.93	899.5	3,764.55	-15.1	-4.3	7.0	2.00	2.00	0.00
1,000.0	8.00	195.93	998.7	3,665.30	-26.8	-7.7	12.5	2.00	2.00	0.00
1,100.0	10.00	195.93	1,097.5	3,566.53	-41.9	-11.9	19.5	2.00	2.00	0.00
1,200.0	12.00	195.93	1,195.6	3,468.38	-60.2	-17.2	28.1	2.00	2.00	0.00
1,300.0	14.00	195.93	1,293.1	3,370.94	-81.8	-23.4	38.2	2.00	2.00	0.00
1,400.0	16.00	195.93	1,389.6	3,274.36	-106.7	-30.5	49.8	2.00	2.00	0.00
1,500.0	18.00	195.93	1,485.3	3,178.73	-134.8	-38.5	62.9	2.00	2.00	0.00
1,600.0	20.00	195.93	1,579.8	3,084.18	-166.1	-47.4	77.5	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,621.5	20.43	195.93	1,600.0	3,064.01	-173.3	-49.5	80.9	2.00	2.00	0.00
END OF TANGENT										
1,686.5	20.43	195.93	1,660.9	3,003.10	-195.1	-55.7	91.1	0.00	0.00	0.00
EOB TO 20.63° INC										
1,696.3	20.63	195.93	1,670.1	2,993.92	-198.4	-56.6	92.6	2.00	2.00	-0.02
1,700.0	20.63	195.93	1,673.5	2,990.46	-199.7	-57.0	93.2	0.01	0.01	0.00
1,800.0	20.63	195.93	1,767.1	2,896.87	-233.5	-66.7	109.0	0.00	0.00	0.00
1,900.0	20.63	195.93	1,860.7	2,803.28	-267.4	-76.3	124.8	0.00	0.00	0.00
2,000.0	20.63	195.93	1,954.3	2,709.69	-301.3	-86.0	140.6	0.00	0.00	0.00
2,100.0	20.63	195.93	2,047.9	2,616.10	-335.2	-95.7	156.4	0.00	0.00	0.00
2,200.0	20.63	195.93	2,141.5	2,522.51	-369.0	-105.3	172.2	0.00	0.00	0.00
2,300.0	20.63	195.93	2,235.1	2,428.92	-402.9	-115.0	188.0	0.00	0.00	0.00
2,400.0	20.63	195.93	2,328.7	2,335.33	-436.8	-124.7	203.8	0.00	0.00	0.00
2,500.0	20.63	195.93	2,422.3	2,241.74	-470.7	-134.3	219.7	0.00	0.00	0.00
2,600.0	20.63	195.93	2,515.9	2,148.15	-504.5	-144.0	235.5	0.00	0.00	0.00
2,700.0	20.63	195.93	2,609.4	2,054.56	-538.4	-153.7	251.3	0.00	0.00	0.00
2,800.0	20.63	195.93	2,703.0	1,960.97	-572.3	-163.3	267.1	0.00	0.00	0.00
2,900.0	20.63	195.93	2,796.6	1,867.38	-606.2	-173.0	282.9	0.00	0.00	0.00
3,000.0	20.63	195.93	2,890.2	1,773.79	-640.0	-182.7	298.7	0.00	0.00	0.00
3,100.0	20.63	195.93	2,983.8	1,680.20	-673.9	-192.3	314.5	0.00	0.00	0.00
3,200.0	20.63	195.93	3,077.4	1,586.61	-707.8	-202.0	330.3	0.00	0.00	0.00
3,300.0	20.63	195.93	3,171.0	1,493.02	-741.6	-211.7	346.1	0.00	0.00	0.00
3,400.0	20.63	195.93	3,264.6	1,399.43	-775.5	-221.3	361.9	0.00	0.00	0.00
3,500.0	20.63	195.93	3,358.2	1,305.84	-809.4	-231.0	377.7	0.00	0.00	0.00
3,600.0	20.63	195.93	3,451.7	1,212.25	-843.3	-240.7	393.6	0.00	0.00	0.00
3,700.0	20.63	195.93	3,545.3	1,118.66	-877.1	-250.3	409.4	0.00	0.00	0.00
PARKMAN										
3,740.2	20.63	195.93	3,583.0	1,081.00	-890.8	-254.2	415.7	0.00	0.00	0.00
3,800.0	20.63	195.93	3,638.9	1,025.07	-911.0	-260.0	425.2	0.00	0.00	0.00
3,900.0	20.63	195.93	3,732.5	931.48	-944.9	-269.7	441.0	0.00	0.00	0.00
4,000.0	20.63	195.93	3,826.1	837.89	-978.8	-279.3	456.8	0.00	0.00	0.00
4,100.0	20.63	195.93	3,919.7	744.30	-1,012.6	-289.0	472.6	0.00	0.00	0.00
4,200.0	20.63	195.93	4,013.3	650.71	-1,046.5	-298.7	488.4	0.00	0.00	0.00
4,300.0	20.63	195.93	4,106.9	557.12	-1,080.4	-308.3	504.2	0.00	0.00	0.00



## Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 17
<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>	VETTING 17	<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)
<b>SUSSEX</b>										
4,326.8	20.63	195.93	4,132.0	532.00	-1,089.5	-310.9	508.5	0.00	0.00	0.00
4,400.0	20.63	195.93	4,200.5	463.53	-1,114.3	-318.0	520.0	0.00	0.00	0.00
4,500.0	20.63	195.93	4,294.1	369.94	-1,148.1	-327.7	535.8	0.00	0.00	0.00
4,600.0	20.63	195.93	4,387.6	276.35	-1,182.0	-337.3	551.6	0.00	0.00	0.00
4,700.0	20.63	195.93	4,481.2	182.77	-1,215.9	-347.0	567.5	0.00	0.00	0.00
4,800.0	20.63	195.93	4,574.8	89.18	-1,249.8	-356.7	583.3	0.00	0.00	0.00
4,900.0	20.63	195.93	4,668.4	-4.41	-1,283.6	-366.4	599.1	0.00	0.00	0.00
5,000.0	20.63	195.93	4,762.0	-98.00	-1,317.5	-376.0	614.9	0.00	0.00	0.00
<b>SHANNON</b>										
5,065.2	20.63	195.93	4,823.0	-159.00	-1,339.6	-382.3	625.2	0.00	0.00	0.00
5,100.0	20.63	195.93	4,855.6	-191.59	-1,351.4	-385.7	630.7	0.00	0.00	0.00
5,200.0	20.63	195.93	4,949.2	-285.18	-1,385.3	-395.4	646.5	0.00	0.00	0.00
5,300.0	20.63	195.93	5,042.8	-378.77	-1,419.1	-405.0	662.3	0.00	0.00	0.00
5,400.0	20.63	195.93	5,136.4	-472.36	-1,453.0	-414.7	678.1	0.00	0.00	0.00
5,500.0	20.63	195.93	5,230.0	-565.95	-1,486.9	-424.4	693.9	0.00	0.00	0.00
<b>END OF TANGENT</b>										
5,524.4	20.63	195.93	5,252.8	-588.79	-1,495.2	-426.7	697.8	0.00	0.00	0.00
5,600.0	19.11	195.93	5,323.9	-659.89	-1,519.9	-433.8	709.3	2.00	-2.00	0.00
5,700.0	17.11	195.93	5,418.9	-754.92	-1,549.8	-442.3	723.3	2.00	-2.00	0.00
5,800.0	15.11	195.93	5,515.0	-850.99	-1,576.5	-449.9	735.7	2.00	-2.00	0.00
5,900.0	13.11	195.93	5,612.0	-947.97	-1,599.9	-456.6	746.7	2.00	-2.00	0.00
6,000.0	11.11	195.93	5,709.7	-1,045.73	-1,620.1	-462.4	756.1	2.00	-2.00	0.00
6,100.0	9.11	195.93	5,808.2	-1,144.17	-1,637.0	-467.2	764.0	2.00	-2.00	0.00
6,200.0	7.11	195.93	5,907.2	-1,243.17	-1,650.5	-471.1	770.3	2.00	-2.00	0.00
6,300.0	5.11	195.93	6,006.6	-1,342.59	-1,660.8	-474.0	775.1	2.00	-2.00	0.00
6,400.0	3.11	195.93	6,106.3	-1,442.33	-1,667.7	-476.0	778.3	2.00	-2.00	0.00
6,500.0	1.11	195.93	6,206.3	-1,542.26	-1,671.2	-477.0	780.0	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
6,555.7	0.00	195.93	6,262.0	-1,597.95	-1,671.8	-477.1	780.2	2.00	-2.00	0.00
<b>KOP (10°/100ft BUR)</b>										
6,585.7	0.00	0.00	6,292.0	-1,627.95	-1,671.8	-477.1	780.2	0.00	0.00	0.00
6,600.0	1.43	269.96	6,306.3	-1,642.25	-1,671.8	-477.3	780.4	9.97	9.97	0.00
6,700.0	11.42	269.96	6,405.5	-1,741.50	-1,671.8	-488.5	791.4	10.00	10.00	0.00
6,800.0	21.42	269.96	6,501.3	-1,837.30	-1,671.8	-516.7	819.1	10.00	10.00	0.00
6,900.0	31.42	269.96	6,590.7	-1,926.74	-1,671.8	-561.2	862.8	10.00	10.00	0.00
7,000.0	41.42	269.96	6,671.1	-2,007.10	-1,671.9	-620.5	921.0	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
7,044.1	45.83	269.96	6,703.0	-2,039.00	-1,671.9	-650.9	950.9	10.00	10.00	0.00
<b>NIOBRARA</b>										
7,073.6	48.78	269.96	6,723.0	-2,059.00	-1,671.9	-672.5	972.2	10.00	10.00	0.00
7,100.0	51.42	269.96	6,739.9	-2,075.95	-1,671.9	-692.8	992.1	10.00	10.00	0.00
7,200.0	61.42	269.96	6,795.2	-2,131.18	-1,672.0	-776.0	1,073.9	10.00	10.00	0.00
7,300.0	71.42	269.96	6,835.1	-2,171.14	-1,672.0	-867.5	1,163.8	10.00	10.00	0.00
7,400.0	81.42	269.96	6,858.6	-2,194.59	-1,672.1	-964.6	1,259.2	10.00	10.00	0.00
<b>LANDING PNT - VETTING 17 - NIO B TARGET</b>										
7,485.8	90.00	269.96	6,865.0	-2,201.00	-1,672.2	-1,050.1	1,343.2	10.00	10.00	0.00
7,500.0	90.00	269.96	6,865.0	-2,201.00	-1,672.2	-1,064.3	1,357.2	0.00	0.00	0.00
7,600.0	90.00	269.96	6,865.0	-2,201.01	-1,672.2	-1,164.3	1,455.4	0.00	0.00	0.00
7,700.0	90.00	269.96	6,865.0	-2,201.01	-1,672.3	-1,264.3	1,553.7	0.00	0.00	0.00
7,800.0	90.00	269.96	6,865.0	-2,201.02	-1,672.4	-1,364.3	1,652.0	0.00	0.00	0.00
7,900.0	90.00	269.96	6,865.0	-2,201.02	-1,672.4	-1,464.3	1,750.2	0.00	0.00	0.00
8,000.0	90.00	269.96	6,865.0	-2,201.03	-1,672.5	-1,564.3	1,848.5	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 17
<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>	VETTING 17	<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)
8,100.0	90.00	269.96	6,865.0	-2,201.04	-1,672.6	-1,664.3	1,946.8	0.00	0.00	0.00
8,200.0	90.00	269.96	6,865.0	-2,201.04	-1,672.7	-1,764.3	2,045.0	0.00	0.00	0.00
8,300.0	90.00	269.96	6,865.0	-2,201.05	-1,672.7	-1,864.3	2,143.3	0.00	0.00	0.00
8,400.0	90.00	269.96	6,865.1	-2,201.05	-1,672.8	-1,964.3	2,241.5	0.00	0.00	0.00
8,500.0	90.00	269.96	6,865.1	-2,201.06	-1,672.9	-2,064.3	2,339.8	0.00	0.00	0.00
8,600.0	90.00	269.96	6,865.1	-2,201.06	-1,672.9	-2,164.3	2,438.1	0.00	0.00	0.00
8,700.0	90.00	269.96	6,865.1	-2,201.06	-1,673.0	-2,264.3	2,536.3	0.00	0.00	0.00
8,800.0	90.00	269.96	6,865.1	-2,201.07	-1,673.1	-2,364.3	2,634.6	0.00	0.00	0.00
8,900.0	90.00	269.96	6,865.1	-2,201.07	-1,673.2	-2,464.3	2,732.9	0.00	0.00	0.00
9,000.0	90.00	269.96	6,865.1	-2,201.08	-1,673.2	-2,564.3	2,831.1	0.00	0.00	0.00
9,100.0	90.00	269.96	6,865.1	-2,201.08	-1,673.3	-2,664.3	2,929.4	0.00	0.00	0.00
9,200.0	90.00	269.96	6,865.1	-2,201.08	-1,673.4	-2,764.3	3,027.6	0.00	0.00	0.00
9,300.0	90.00	269.96	6,865.1	-2,201.09	-1,673.4	-2,864.3	3,125.9	0.00	0.00	0.00
9,400.0	90.00	269.96	6,865.1	-2,201.09	-1,673.5	-2,964.3	3,224.2	0.00	0.00	0.00
9,500.0	90.00	269.96	6,865.1	-2,201.09	-1,673.6	-3,064.3	3,322.4	0.00	0.00	0.00
9,600.0	90.00	269.96	6,865.1	-2,201.10	-1,673.7	-3,164.3	3,420.7	0.00	0.00	0.00
9,700.0	90.00	269.96	6,865.1	-2,201.10	-1,673.7	-3,264.3	3,519.0	0.00	0.00	0.00
9,800.0	90.00	269.96	6,865.1	-2,201.10	-1,673.8	-3,364.3	3,617.2	0.00	0.00	0.00
9,900.0	90.00	269.96	6,865.1	-2,201.10	-1,673.9	-3,464.3	3,715.5	0.00	0.00	0.00
10,000.0	90.00	269.96	6,865.1	-2,201.11	-1,673.9	-3,564.3	3,813.8	0.00	0.00	0.00
10,100.0	90.00	269.96	6,865.1	-2,201.11	-1,674.0	-3,664.3	3,912.0	0.00	0.00	0.00
10,200.0	90.00	269.96	6,865.1	-2,201.11	-1,674.1	-3,764.3	4,010.3	0.00	0.00	0.00
10,300.0	90.00	269.96	6,865.1	-2,201.11	-1,674.2	-3,864.3	4,108.5	0.00	0.00	0.00
10,400.0	90.00	269.96	6,865.1	-2,201.11	-1,674.2	-3,964.3	4,206.8	0.00	0.00	0.00
10,500.0	90.00	269.96	6,865.1	-2,201.12	-1,674.3	-4,064.3	4,305.1	0.00	0.00	0.00
10,600.0	90.00	269.96	6,865.1	-2,201.12	-1,674.4	-4,164.3	4,403.3	0.00	0.00	0.00
10,700.0	90.00	269.96	6,865.1	-2,201.12	-1,674.5	-4,264.3	4,501.6	0.00	0.00	0.00
10,800.0	90.00	269.96	6,865.1	-2,201.12	-1,674.5	-4,364.3	4,599.9	0.00	0.00	0.00
10,900.0	90.00	269.96	6,865.1	-2,201.12	-1,674.6	-4,464.3	4,698.1	0.00	0.00	0.00
11,000.0	90.00	269.96	6,865.1	-2,201.12	-1,674.7	-4,564.3	4,796.4	0.00	0.00	0.00
11,100.0	90.00	269.96	6,865.1	-2,201.12	-1,674.7	-4,664.3	4,894.6	0.00	0.00	0.00
11,200.0	90.00	269.96	6,865.1	-2,201.12	-1,674.8	-4,764.3	4,992.9	0.00	0.00	0.00
11,300.0	90.00	269.96	6,865.1	-2,201.12	-1,674.9	-4,864.3	5,091.2	0.00	0.00	0.00
11,400.0	90.00	269.96	6,865.1	-2,201.12	-1,675.0	-4,964.3	5,189.4	0.00	0.00	0.00
11,500.0	90.00	269.96	6,865.1	-2,201.12	-1,675.0	-5,064.3	5,287.7	0.00	0.00	0.00
11,600.0	90.00	269.96	6,865.1	-2,201.12	-1,675.1	-5,164.3	5,386.0	0.00	0.00	0.00
11,700.0	90.00	269.96	6,865.1	-2,201.12	-1,675.2	-5,264.3	5,484.2	0.00	0.00	0.00
11,800.0	90.00	269.96	6,865.1	-2,201.12	-1,675.3	-5,364.3	5,582.5	0.00	0.00	0.00
11,900.0	90.00	269.96	6,865.1	-2,201.12	-1,675.3	-5,464.3	5,680.7	0.00	0.00	0.00
12,000.0	90.00	269.96	6,865.1	-2,201.12	-1,675.4	-5,564.3	5,779.0	0.00	0.00	0.00
12,100.0	90.00	269.96	6,865.1	-2,201.12	-1,675.5	-5,664.3	5,877.3	0.00	0.00	0.00
12,200.0	90.00	269.96	6,865.1	-2,201.12	-1,675.6	-5,764.3	5,975.5	0.00	0.00	0.00
12,300.0	90.00	269.96	6,865.1	-2,201.12	-1,675.6	-5,864.3	6,073.8	0.00	0.00	0.00
12,400.0	90.00	269.96	6,865.1	-2,201.11	-1,675.7	-5,964.3	6,172.1	0.00	0.00	0.00
12,500.0	90.00	269.96	6,865.1	-2,201.11	-1,675.8	-6,064.3	6,270.3	0.00	0.00	0.00
12,600.0	90.00	269.96	6,865.1	-2,201.11	-1,675.9	-6,164.3	6,368.6	0.00	0.00	0.00
12,700.0	90.00	269.96	6,865.1	-2,201.11	-1,675.9	-6,264.3	6,466.9	0.00	0.00	0.00
12,800.0	90.00	269.96	6,865.1	-2,201.11	-1,676.0	-6,364.3	6,565.1	0.00	0.00	0.00
12,900.0	90.00	269.96	6,865.1	-2,201.10	-1,676.1	-6,464.3	6,663.4	0.00	0.00	0.00
13,000.0	90.00	269.96	6,865.1	-2,201.10	-1,676.1	-6,564.3	6,761.6	0.00	0.00	0.00
13,100.0	90.00	269.96	6,865.1	-2,201.10	-1,676.2	-6,664.3	6,859.9	0.00	0.00	0.00
13,200.0	90.00	269.96	6,865.1	-2,201.10	-1,676.3	-6,764.3	6,958.2	0.00	0.00	0.00
13,300.0	90.00	269.96	6,865.1	-2,201.09	-1,676.4	-6,864.3	7,056.4	0.00	0.00	0.00
13,400.0	90.00	269.96	6,865.1	-2,201.09	-1,676.4	-6,964.3	7,154.7	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 17
<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>	VETTING 17	<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)
13,500.0	90.00	269.96	6,865.1	-2,201.09	-1,676.5	-7,064.3	7,253.0	0.00	0.00	0.00
13,600.0	90.00	269.96	6,865.1	-2,201.08	-1,676.6	-7,164.3	7,351.2	0.00	0.00	0.00
13,700.0	90.00	269.96	6,865.1	-2,201.08	-1,676.7	-7,264.3	7,449.5	0.00	0.00	0.00
13,800.0	90.00	269.96	6,865.1	-2,201.08	-1,676.8	-7,364.3	7,547.8	0.00	0.00	0.00
13,900.0	90.00	269.96	6,865.1	-2,201.07	-1,676.8	-7,464.3	7,646.0	0.00	0.00	0.00
14,000.0	90.00	269.96	6,865.1	-2,201.07	-1,676.9	-7,564.3	7,744.3	0.00	0.00	0.00
14,100.0	90.00	269.96	6,865.1	-2,201.06	-1,677.0	-7,664.3	7,842.5	0.00	0.00	0.00
14,200.0	90.00	269.96	6,865.1	-2,201.06	-1,677.1	-7,764.3	7,940.8	0.00	0.00	0.00
14,300.0	90.00	269.96	6,865.1	-2,201.05	-1,677.1	-7,864.3	8,039.1	0.00	0.00	0.00
14,400.0	90.00	269.96	6,865.0	-2,201.05	-1,677.2	-7,964.3	8,137.3	0.00	0.00	0.00
14,500.0	90.00	269.96	6,865.0	-2,201.04	-1,677.3	-8,064.3	8,235.6	0.00	0.00	0.00
14,600.0	90.00	269.96	6,865.0	-2,201.04	-1,677.4	-8,164.3	8,333.9	0.00	0.00	0.00
14,700.0	90.00	269.96	6,865.0	-2,201.03	-1,677.4	-8,264.3	8,432.1	0.00	0.00	0.00
14,800.0	90.00	269.96	6,865.0	-2,201.03	-1,677.5	-8,364.3	8,530.4	0.00	0.00	0.00
14,900.0	90.00	269.96	6,865.0	-2,201.02	-1,677.6	-8,464.3	8,628.7	0.00	0.00	0.00
15,000.0	90.00	269.96	6,865.0	-2,201.02	-1,677.7	-8,564.3	8,726.9	0.00	0.00	0.00
15,100.0	90.00	269.96	6,865.0	-2,201.01	-1,677.7	-8,664.3	8,825.2	0.00	0.00	0.00
15,200.0	90.00	269.96	6,865.0	-2,201.01	-1,677.8	-8,764.3	8,923.4	0.00	0.00	0.00
<b>BHL - VETTING 17</b>										
<b>15,284.8</b>	<b>90.00</b>	<b>269.96</b>	<b>6,865.0</b>	<b>-2,201.00</b>	<b>-1,677.9</b>	<b>-8,849.1</b>	<b>9,006.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,740.2	3,583.0	PARKMAN			
4,326.8	4,132.0	SUSSEX			
5,065.2	4,823.0	SHANNON			
7,044.1	6,703.0	SHARON SPRINGS			
7,073.6	6,723.0	NIOBRARA			
7,485.8	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	-173.3	-49.5	9 5/8" SURFACE CASING
1,686.5	1,660.9	-195.1	-55.7	END OF TANGENT
1,696.3	1,670.1	-198.4	-56.6	EOB TO 20.63° INC
5,524.4	5,252.8	-1,495.2	-426.7	END OF TANGENT
6,555.7	6,262.0	-1,671.8	-477.1	EOD TO VERTICAL
6,585.7	6,292.0	-1,671.8	-477.1	KOP (10°/100ft BUR)
7,485.8	6,865.0	-1,672.2	-1,050.1	LANDING PNT - VETTING 17
15,284.8	6,865.0	-1,677.9	-8,849.1	BHL - VETTING 17