

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

VT-LDS 1-16-18

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2

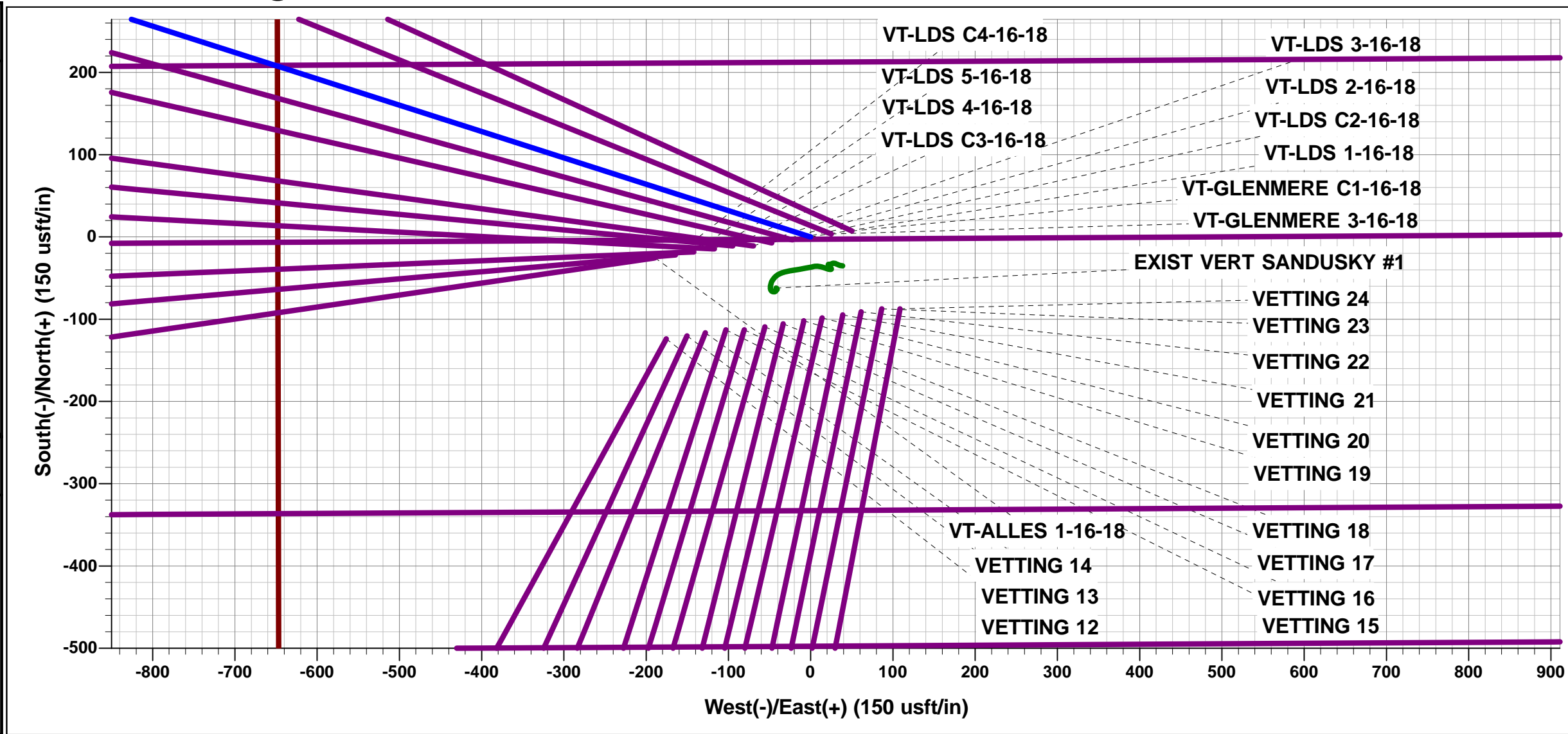




Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 15 T5N R65W 6th P.M.
Well: VT-LDS 1-16-18
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
900.0	900.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1600.0	1607.2	14.14	287.76	26.5	-82.7	84.5	86.8	9 5/8" SURAFCE CASING	
1663.1	1672.2	14.14	287.76	31.3	-97.8	100.0	102.7	END OF TANGENT	
2606.2	2715.0	35.00	287.76	162.9	-508.5	519.6	534.0	EOT TO 35° INC	
6463.6	7424.0	35.00	287.76	986.8	-3080.8	3148.1	3234.9	KOP (10°/100ft DGLG)	
6749.1	7875.4	54.82	287.76	1092.3	-3410.5	3485.0	3581.1	START BUILD & TURN	
6865.0	8262.2	90.00	270.50	1144.2	-3768.1	3845.6	3943.8	LANDING PNT - VT-LDS 1-16-18	
6865.0	20550.2	90.00	270.50	1251.2	-16055.6	16104.3	16231.8	BHL - VT-LDS 1-16-18	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - VT-LDS 1-16-18	6865.0	1144.2	-3768.1	40.404460	-104.670080
BHL - VT-LDS 1-16-18	6865.0	1251.2	-16055.6	40.404740	-104.714200



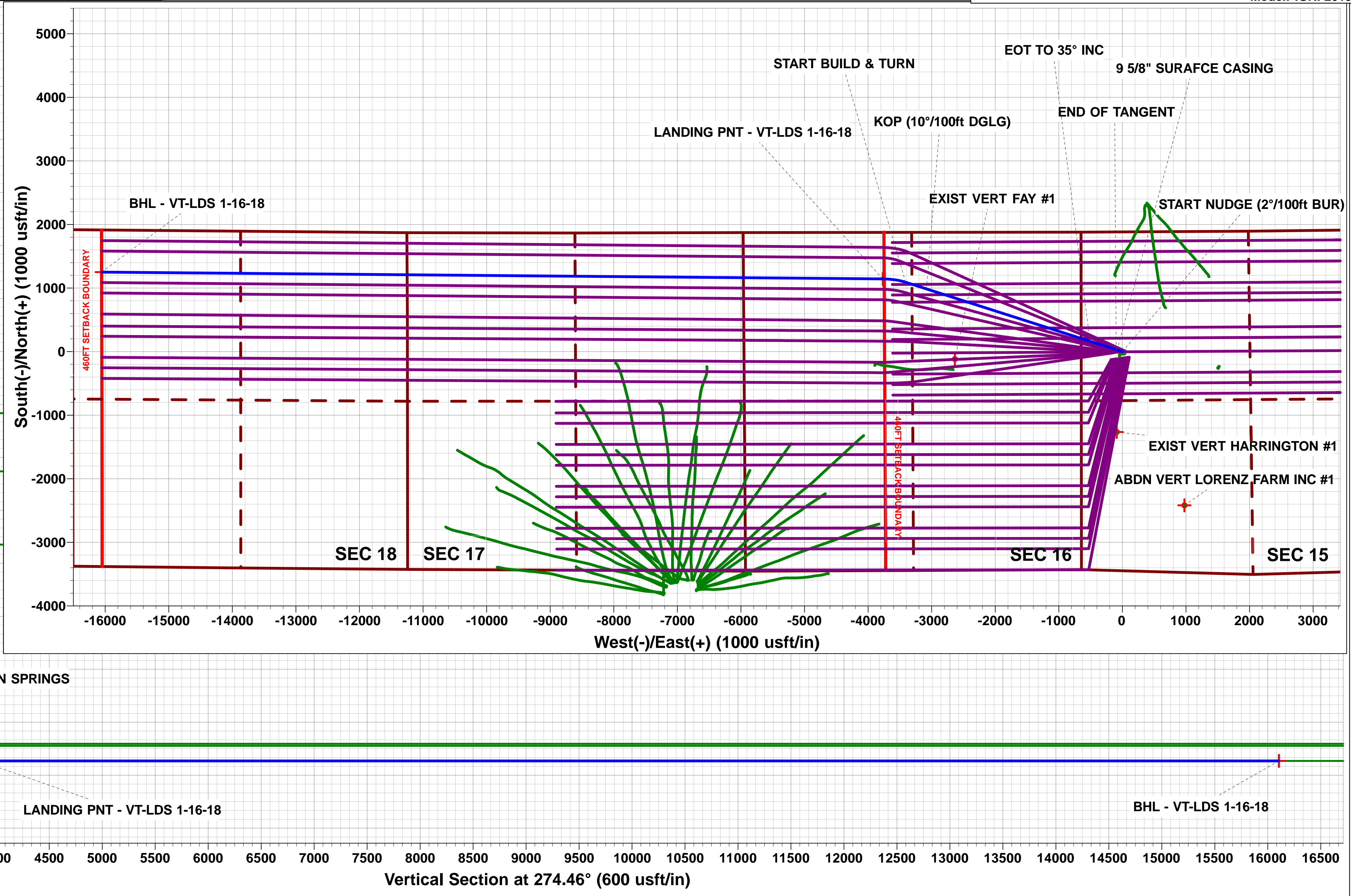
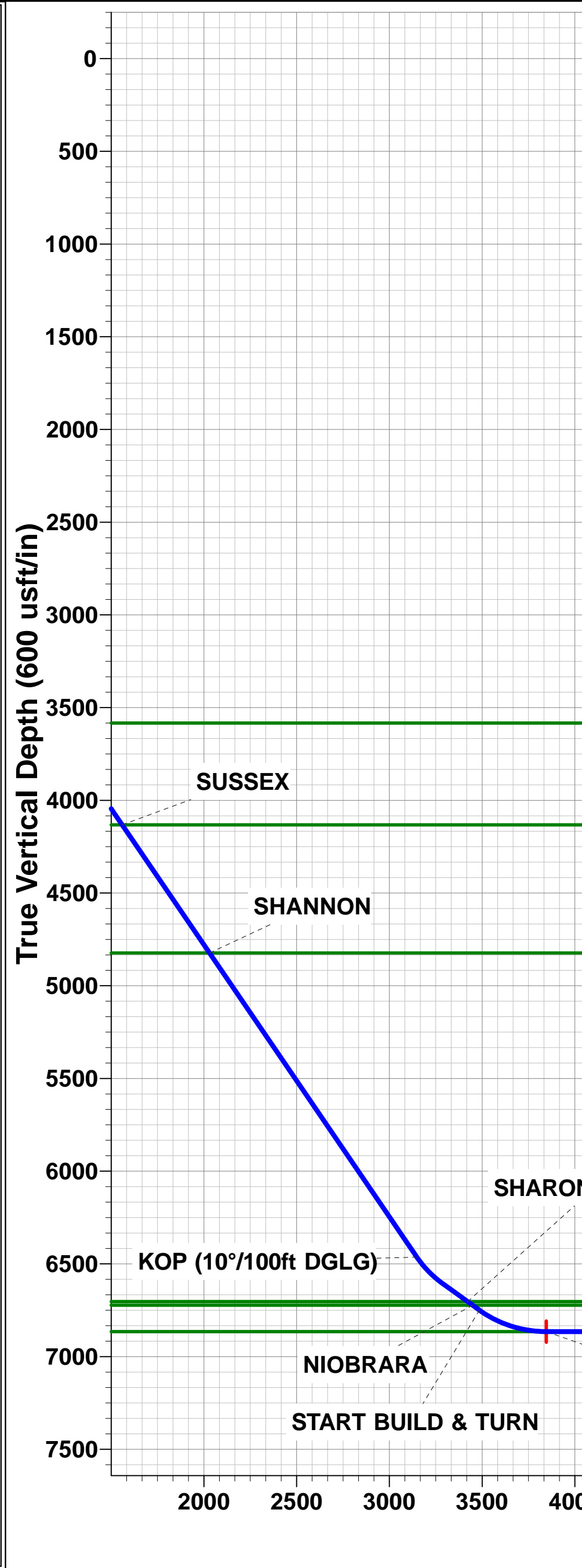
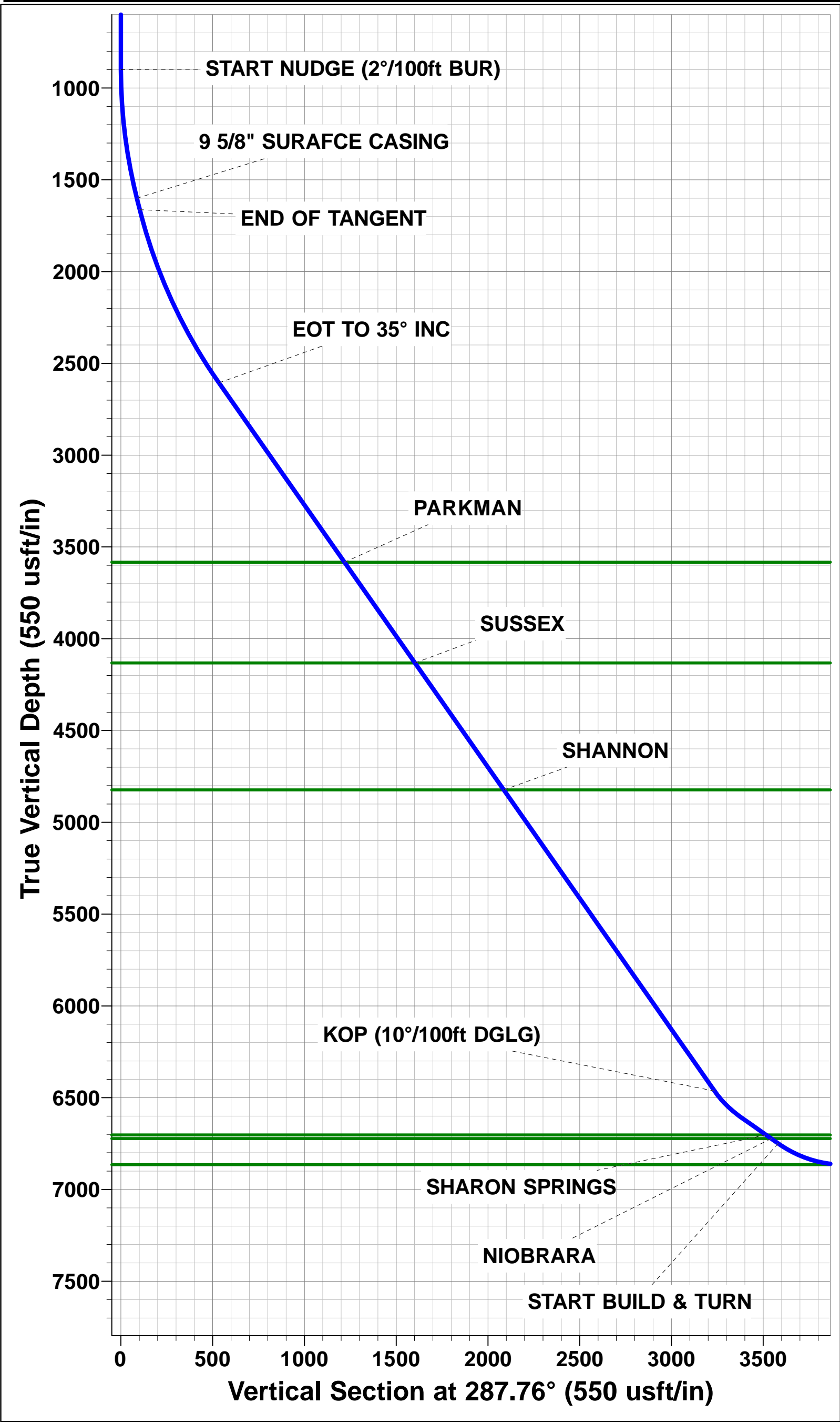
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	3907.4	PARKMAN
4132.0	4577.7	SUSSEX
4823.0	5421.2	SHANNON
6703.0	7795.3	SHARON SPRINGS
6723.0	7830.0	NIOBRARA
6865.0	8261.5	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1882ft FNL & 650ft FWL of Sec 15		
LP: 731ft FNL & 2192ft FWL of Sec 16		
BHL: 660ft FNL & 460ft FWL of Sec 18		

T
M

Azimuths to True North
Magnetic North: 8.32°

Magnetic Field
Strength: 52585.4snT
Dip Angle: 66.91°
Date: 20/11/2015
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 1-16-18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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

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

Well	VT-LDS 1-16-18		
Well Position	+N/-S	123.9 usft	Northing:
	+E/-W	175.5 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	20/11/2015	8.32	66.91	52,585

Design	PROPOSAL #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	274.46

Plan Sections											
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	
900.0	0.00	0.00	900.0	-3,764.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,607.2	14.14	287.76	1,600.0	-3,064.0	26.5	-82.7	2.00	2.00	0.00	287.76	
1,672.2	14.14	287.76	1,663.0	-3,001.0	31.3	-97.8	0.00	0.00	0.00	0.00	
2,715.0	35.00	287.76	2,606.2	-2,057.8	162.9	-508.5	2.00	2.00	0.00	0.00	
7,424.0	35.00	287.76	6,463.6	1,799.6	986.8	-3,080.8	0.00	0.00	0.00	0.00	
7,622.2	54.82	287.76	6,603.3	1,939.3	1,029.2	-3,213.4	10.00	10.00	0.00	0.00	
7,875.4	54.82	287.76	6,749.1	2,085.1	1,092.3	-3,410.4	0.00	0.00	0.00	0.00	
8,262.2	90.00	270.50	6,865.0	2,201.0	1,144.2	-3,768.1	10.00	9.09	-4.46	-28.34	LANDING PNT - V1
20,550.2	90.00	270.50	6,865.0	2,201.0	1,251.2	-16,055.6	0.00	0.00	0.00	0.00	BHL - VT-LDS 1-16

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 1-16-18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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
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	0.00	0.00	700.0	3,964.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	3,864.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
900.0	0.00	0.00	900.0	3,764.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	2.00	287.76	1,000.0	3,664.02	0.5	-1.7	1.7	2.00	2.00	0.00
1,100.0	4.00	287.76	1,099.8	3,564.16	2.1	-6.6	6.8	2.00	2.00	0.00
1,200.0	6.00	287.76	1,199.5	3,464.55	4.8	-14.9	15.3	2.00	2.00	0.00
1,300.0	8.00	287.76	1,298.7	3,365.30	8.5	-26.6	27.1	2.00	2.00	0.00
1,400.0	10.00	287.76	1,397.5	3,266.53	13.3	-41.4	42.4	2.00	2.00	0.00
1,500.0	12.00	287.76	1,495.6	3,168.38	19.1	-59.6	60.9	2.00	2.00	0.00
1,600.0	14.00	287.76	1,593.1	3,070.94	26.0	-81.0	82.8	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,607.2	14.14	287.76	1,600.0	3,063.96	26.5	-82.7	84.5	1.99	1.99	0.00
END OF TANGENT										
1,672.2	14.14	287.76	1,663.1	3,000.93	31.3	-97.8	100.0	0.00	0.00	0.00
1,700.0	14.70	287.76	1,690.0	2,974.01	33.4	-104.4	106.7	2.00	2.00	0.00
1,800.0	16.70	287.76	1,786.3	2,877.74	41.7	-130.2	133.0	2.00	2.00	0.00
1,900.0	18.70	287.76	1,881.5	2,782.48	51.0	-159.1	162.6	2.00	2.00	0.00
2,000.0	20.70	287.76	1,975.7	2,688.34	61.3	-191.3	195.4	2.00	2.00	0.00
2,100.0	22.70	287.76	2,068.6	2,595.43	72.5	-226.5	231.4	2.00	2.00	0.00
2,200.0	24.70	287.76	2,160.1	2,503.87	84.8	-264.7	270.5	2.00	2.00	0.00
2,300.0	26.70	287.76	2,250.2	2,413.77	98.0	-306.0	312.7	2.00	2.00	0.00
2,400.0	28.70	287.76	2,338.8	2,325.23	112.2	-350.3	358.0	2.00	2.00	0.00
2,500.0	30.70	287.76	2,425.6	2,238.37	127.3	-397.5	406.2	2.00	2.00	0.00
2,600.0	32.70	287.76	2,510.7	2,153.30	143.3	-447.5	457.3	2.00	2.00	0.00
2,700.0	34.70	287.76	2,593.9	2,070.10	160.3	-500.4	511.3	2.00	2.00	0.00
EOT TO 35° INC										
2,715.0	35.00	287.76	2,606.2	2,057.79	162.9	-508.5	519.6	2.00	2.00	0.00
2,800.0	35.00	287.76	2,675.8	1,988.17	177.7	-555.0	567.1	0.00	0.00	0.00
2,900.0	35.00	287.76	2,757.7	1,906.25	195.2	-609.6	622.9	0.00	0.00	0.00
3,000.0	35.00	287.76	2,839.7	1,824.34	212.7	-664.2	678.7	0.00	0.00	0.00
3,100.0	35.00	287.76	2,921.6	1,742.42	230.2	-718.8	734.5	0.00	0.00	0.00
3,200.0	35.00	287.76	3,003.5	1,660.51	247.7	-773.5	790.4	0.00	0.00	0.00
3,300.0	35.00	287.76	3,085.4	1,578.59	265.2	-828.1	846.2	0.00	0.00	0.00
3,400.0	35.00	287.76	3,167.3	1,496.68	282.7	-882.7	902.0	0.00	0.00	0.00
3,500.0	35.00	287.76	3,249.2	1,414.76	300.2	-937.3	957.8	0.00	0.00	0.00
3,600.0	35.00	287.76	3,331.2	1,332.85	317.7	-991.9	1,013.6	0.00	0.00	0.00
3,700.0	35.00	287.76	3,413.1	1,250.93	335.2	-1,046.6	1,069.5	0.00	0.00	0.00
3,800.0	35.00	287.76	3,495.0	1,169.01	352.7	-1,101.2	1,125.3	0.00	0.00	0.00
3,900.0	35.00	287.76	3,576.9	1,087.10	370.2	-1,155.8	1,181.1	0.00	0.00	0.00
PARKMAN										
3,907.4	35.00	287.76	3,583.0	1,081.00	371.5	-1,159.9	1,185.2	0.00	0.00	0.00
4,000.0	35.00	287.76	3,658.8	1,005.18	387.7	-1,210.4	1,236.9	0.00	0.00	0.00
4,100.0	35.00	287.76	3,740.7	923.27	405.2	-1,265.1	1,292.7	0.00	0.00	0.00
4,200.0	35.00	287.76	3,822.6	841.35	422.7	-1,319.7	1,348.5	0.00	0.00	0.00
4,300.0	35.00	287.76	3,904.6	759.44	440.2	-1,374.3	1,404.4	0.00	0.00	0.00
4,400.0	35.00	287.76	3,986.5	677.52	457.7	-1,428.9	1,460.2	0.00	0.00	0.00

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	35.00	287.76	4,068.4	595.61	475.2	-1,483.6	1,516.0	0.00	0.00	0.00
SUSSEX										
4,577.7	35.00	287.76	4,132.0	532.00	488.8	-1,526.0	1,559.3	0.00	0.00	0.00
4,600.0	35.00	287.76	4,150.3	513.69	492.7	-1,538.2	1,571.8	0.00	0.00	0.00
4,700.0	35.00	287.76	4,232.2	431.78	510.2	-1,592.8	1,627.6	0.00	0.00	0.00
4,800.0	35.00	287.76	4,314.1	349.86	527.7	-1,647.4	1,683.5	0.00	0.00	0.00
4,900.0	35.00	287.76	4,396.1	267.95	545.2	-1,702.1	1,739.3	0.00	0.00	0.00
5,000.0	35.00	287.76	4,478.0	186.03	562.7	-1,756.7	1,795.1	0.00	0.00	0.00
5,100.0	35.00	287.76	4,559.9	104.12	580.2	-1,811.3	1,850.9	0.00	0.00	0.00
5,200.0	35.00	287.76	4,641.8	22.20	597.7	-1,865.9	1,906.7	0.00	0.00	0.00
5,300.0	35.00	287.76	4,723.7	-59.71	615.1	-1,920.6	1,962.5	0.00	0.00	0.00
5,400.0	35.00	287.76	4,805.6	-141.63	632.6	-1,975.2	2,018.4	0.00	0.00	0.00
SHANNON										
5,421.2	35.00	287.76	4,823.0	-159.00	636.4	-1,986.8	2,030.2	0.00	0.00	0.00
5,500.0	35.00	287.76	4,887.5	-223.54	650.1	-2,029.8	2,074.2	0.00	0.00	0.00
5,600.0	35.00	287.76	4,969.5	-305.46	667.6	-2,084.4	2,130.0	0.00	0.00	0.00
5,700.0	35.00	287.76	5,051.4	-387.37	685.1	-2,139.1	2,185.8	0.00	0.00	0.00
5,800.0	35.00	287.76	5,133.3	-469.29	702.6	-2,193.7	2,241.6	0.00	0.00	0.00
5,900.0	35.00	287.76	5,215.2	-551.20	720.1	-2,248.3	2,297.5	0.00	0.00	0.00
6,000.0	35.00	287.76	5,297.1	-633.12	737.6	-2,302.9	2,353.3	0.00	0.00	0.00
6,100.0	35.00	287.76	5,379.0	-715.03	755.1	-2,357.6	2,409.1	0.00	0.00	0.00
6,200.0	35.00	287.76	5,461.0	-796.95	772.6	-2,412.2	2,464.9	0.00	0.00	0.00
6,300.0	35.00	287.76	5,542.9	-878.87	790.1	-2,466.8	2,520.7	0.00	0.00	0.00
6,400.0	35.00	287.76	5,624.8	-960.78	807.6	-2,521.4	2,576.5	0.00	0.00	0.00
6,500.0	35.00	287.76	5,706.7	-1,042.70	825.1	-2,576.0	2,632.4	0.00	0.00	0.00
6,600.0	35.00	287.76	5,788.6	-1,124.61	842.6	-2,630.7	2,688.2	0.00	0.00	0.00
6,700.0	35.00	287.76	5,870.5	-1,206.53	860.1	-2,685.3	2,744.0	0.00	0.00	0.00
6,800.0	35.00	287.76	5,952.4	-1,288.44	877.6	-2,739.9	2,799.8	0.00	0.00	0.00
6,900.0	35.00	287.76	6,034.4	-1,370.36	895.1	-2,794.5	2,855.6	0.00	0.00	0.00
7,000.0	35.00	287.76	6,116.3	-1,452.27	912.6	-2,849.2	2,911.5	0.00	0.00	0.00
7,100.0	35.00	287.76	6,198.2	-1,534.19	930.1	-2,903.8	2,967.3	0.00	0.00	0.00
7,200.0	35.00	287.76	6,280.1	-1,616.10	947.6	-2,958.4	3,023.1	0.00	0.00	0.00
7,300.0	35.00	287.76	6,362.0	-1,698.02	965.1	-3,013.0	3,078.9	0.00	0.00	0.00
7,400.0	35.00	287.76	6,443.9	-1,779.93	982.6	-3,067.7	3,134.7	0.00	0.00	0.00
KOP (10°/100ft DGLG)										
7,424.0	35.00	287.76	6,463.6	-1,799.59	986.8	-3,080.8	3,148.1	0.00	0.00	0.00
7,500.0	42.60	287.76	6,522.8	-1,858.78	1,001.3	-3,126.1	3,194.4	10.00	10.00	0.00
7,600.0	52.60	287.76	6,590.1	-1,926.12	1,023.8	-3,196.3	3,266.2	10.00	10.00	0.00
7,622.2	54.82	287.76	6,603.3	-1,939.27	1,029.2	-3,213.4	3,283.6	10.00	10.00	0.00
7,700.0	54.82	287.76	6,648.1	-1,984.08	1,048.6	-3,273.9	3,345.5	0.00	0.00	0.00
SHARON SPRINGS										
7,795.3	54.82	287.76	6,703.0	-2,039.00	1,072.4	-3,348.1	3,421.3	0.00	0.00	0.00
7,800.0	54.82	287.76	6,705.7	-2,041.70	1,073.6	-3,351.8	3,425.0	0.00	0.00	0.00
NIOBRARA										
7,830.0	54.82	287.76	6,723.0	-2,059.00	1,081.0	-3,375.2	3,448.9	0.00	0.00	0.00
START BUILD & TURN										
7,875.4	54.82	287.76	6,749.1	-2,085.14	1,092.3	-3,410.5	3,485.0	0.00	0.00	0.00
7,900.0	57.00	286.36	6,762.9	-2,098.92	1,098.3	-3,429.9	3,504.9	10.02	8.85	-5.67
8,000.0	65.97	281.32	6,810.6	-2,146.64	1,119.2	-3,515.2	3,591.5	10.00	8.97	-5.05
8,100.0	75.08	276.94	6,844.0	-2,179.97	1,134.0	-3,608.1	3,685.3	10.00	9.11	-4.38
8,200.0	84.26	272.92	6,861.9	-2,197.89	1,142.4	-3,706.0	3,783.6	10.00	9.19	-4.02
NIO B TARGET										
8,261.5	89.93	270.53	6,865.0	-2,201.00	1,144.2	-3,767.4	3,844.9	10.00	9.21	-3.89

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 1-16-18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
LANDING PNT - VT-LDS 1-16-18										
8,262.2	90.00	270.50	6,865.0	-2,201.00	1,144.2	-3,768.1	3,845.6	10.00	9.22	-3.88
8,300.0	90.00	270.50	6,865.0	-2,201.00	1,144.6	-3,805.9	3,883.3	0.01	0.01	0.00
8,400.0	90.00	270.50	6,865.0	-2,201.00	1,145.4	-3,905.9	3,983.1	0.00	0.00	0.00
8,500.0	90.00	270.50	6,865.0	-2,201.00	1,146.3	-4,005.9	4,082.8	0.00	0.00	0.00
8,600.0	90.00	270.50	6,865.0	-2,201.00	1,147.2	-4,105.9	4,182.6	0.00	0.00	0.00
8,700.0	90.00	270.50	6,865.0	-2,201.00	1,148.0	-4,205.9	4,282.4	0.00	0.00	0.00
8,800.0	90.00	270.50	6,865.0	-2,201.00	1,148.9	-4,305.9	4,382.1	0.00	0.00	0.00
8,900.0	90.00	270.50	6,865.0	-2,201.00	1,149.8	-4,405.9	4,481.9	0.00	0.00	0.00
9,000.0	90.00	270.50	6,865.0	-2,201.00	1,150.7	-4,505.9	4,581.6	0.00	0.00	0.00
9,100.0	90.00	270.50	6,865.0	-2,201.00	1,151.5	-4,605.9	4,681.4	0.00	0.00	0.00
9,200.0	90.00	270.50	6,865.0	-2,201.00	1,152.4	-4,705.9	4,781.2	0.00	0.00	0.00
9,300.0	90.00	270.50	6,865.0	-2,201.00	1,153.3	-4,805.9	4,880.9	0.00	0.00	0.00
9,400.0	90.00	270.50	6,865.0	-2,201.00	1,154.1	-4,905.9	4,980.7	0.00	0.00	0.00
9,500.0	90.00	270.50	6,865.0	-2,201.00	1,155.0	-5,005.9	5,080.5	0.00	0.00	0.00
9,600.0	90.00	270.50	6,865.0	-2,201.00	1,155.9	-5,105.8	5,180.2	0.00	0.00	0.00
9,700.0	90.00	270.50	6,865.0	-2,201.00	1,156.7	-5,205.8	5,280.0	0.00	0.00	0.00
9,800.0	90.00	270.50	6,865.0	-2,201.00	1,157.6	-5,305.8	5,379.7	0.00	0.00	0.00
9,900.0	90.00	270.50	6,865.0	-2,201.00	1,158.5	-5,405.8	5,479.5	0.00	0.00	0.00
10,000.0	90.00	270.50	6,865.0	-2,201.00	1,159.4	-5,505.8	5,579.3	0.00	0.00	0.00
10,100.0	90.00	270.50	6,865.0	-2,201.00	1,160.2	-5,605.8	5,679.0	0.00	0.00	0.00
10,200.0	90.00	270.50	6,865.0	-2,201.00	1,161.1	-5,705.8	5,778.8	0.00	0.00	0.00
10,300.0	90.00	270.50	6,865.0	-2,201.00	1,162.0	-5,805.8	5,878.5	0.00	0.00	0.00
10,400.0	90.00	270.50	6,865.0	-2,201.00	1,162.8	-5,905.8	5,978.3	0.00	0.00	0.00
10,500.0	90.00	270.50	6,865.0	-2,201.00	1,163.7	-6,005.8	6,078.1	0.00	0.00	0.00
10,600.0	90.00	270.50	6,865.0	-2,201.00	1,164.6	-6,105.8	6,177.8	0.00	0.00	0.00
10,700.0	90.00	270.50	6,865.0	-2,201.00	1,165.4	-6,205.8	6,277.6	0.00	0.00	0.00
10,800.0	90.00	270.50	6,865.0	-2,201.00	1,166.3	-6,305.8	6,377.4	0.00	0.00	0.00
10,900.0	90.00	270.50	6,865.0	-2,201.00	1,167.2	-6,405.8	6,477.1	0.00	0.00	0.00
11,000.0	90.00	270.50	6,865.0	-2,201.00	1,168.1	-6,505.8	6,576.9	0.00	0.00	0.00
11,100.0	90.00	270.50	6,865.0	-2,201.00	1,168.9	-6,605.8	6,676.6	0.00	0.00	0.00
11,200.0	90.00	270.50	6,865.0	-2,201.00	1,169.8	-6,705.8	6,776.4	0.00	0.00	0.00
11,300.0	90.00	270.50	6,865.0	-2,201.00	1,170.7	-6,805.8	6,876.2	0.00	0.00	0.00
11,400.0	90.00	270.50	6,865.0	-2,201.00	1,171.5	-6,905.8	6,975.9	0.00	0.00	0.00
11,500.0	90.00	270.50	6,865.0	-2,201.00	1,172.4	-7,005.8	7,075.7	0.00	0.00	0.00
11,600.0	90.00	270.50	6,865.0	-2,201.00	1,173.3	-7,105.8	7,175.4	0.00	0.00	0.00
11,700.0	90.00	270.50	6,865.0	-2,201.00	1,174.2	-7,205.8	7,275.2	0.00	0.00	0.00
11,800.0	90.00	270.50	6,865.0	-2,201.00	1,175.0	-7,305.8	7,375.0	0.00	0.00	0.00
11,900.0	90.00	270.50	6,865.0	-2,201.00	1,175.9	-7,405.8	7,474.7	0.00	0.00	0.00
12,000.0	90.00	270.50	6,865.0	-2,201.00	1,176.8	-7,505.8	7,574.5	0.00	0.00	0.00
12,100.0	90.00	270.50	6,865.0	-2,201.00	1,177.6	-7,605.8	7,674.3	0.00	0.00	0.00
12,200.0	90.00	270.50	6,865.0	-2,201.00	1,178.5	-7,705.8	7,774.0	0.00	0.00	0.00
12,300.0	90.00	270.50	6,865.0	-2,201.00	1,179.4	-7,805.7	7,873.8	0.00	0.00	0.00
12,400.0	90.00	270.50	6,865.0	-2,201.00	1,180.2	-7,905.7	7,973.5	0.00	0.00	0.00
12,500.0	90.00	270.50	6,865.0	-2,201.00	1,181.1	-8,005.7	8,073.3	0.00	0.00	0.00
12,600.0	90.00	270.50	6,865.0	-2,201.00	1,182.0	-8,105.7	8,173.1	0.00	0.00	0.00
12,700.0	90.00	270.50	6,865.0	-2,201.00	1,182.9	-8,205.7	8,272.8	0.00	0.00	0.00
12,800.0	90.00	270.50	6,865.0	-2,201.00	1,183.7	-8,305.7	8,372.6	0.00	0.00	0.00
12,900.0	90.00	270.50	6,865.0	-2,201.00	1,184.6	-8,405.7	8,472.4	0.00	0.00	0.00
13,000.0	90.00	270.50	6,865.0	-2,201.00	1,185.5	-8,505.7	8,572.1	0.00	0.00	0.00
13,100.0	90.00	270.50	6,865.0	-2,201.00	1,186.3	-8,605.7	8,671.9	0.00	0.00	0.00
13,200.0	90.00	270.50	6,865.0	-2,201.00	1,187.2	-8,705.7	8,771.6	0.00	0.00	0.00
13,300.0	90.00	270.50	6,865.0	-2,201.00	1,188.1	-8,805.7	8,871.4	0.00	0.00	0.00
13,400.0	90.00	270.50	6,865.0	-2,201.00	1,188.9	-8,905.7	8,971.2	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 1-16-18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	270.50	6,865.0	-2,201.00	1,189.8	-9,005.7	9,070.9	0.00	0.00	0.00
13,600.0	90.00	270.50	6,865.0	-2,201.00	1,190.7	-9,105.7	9,170.7	0.00	0.00	0.00
13,700.0	90.00	270.50	6,865.0	-2,201.00	1,191.6	-9,205.7	9,270.4	0.00	0.00	0.00
13,800.0	90.00	270.50	6,865.0	-2,201.00	1,192.4	-9,305.7	9,370.2	0.00	0.00	0.00
13,900.0	90.00	270.50	6,865.0	-2,201.00	1,193.3	-9,405.7	9,470.0	0.00	0.00	0.00
14,000.0	90.00	270.50	6,865.0	-2,201.00	1,194.2	-9,505.7	9,569.7	0.00	0.00	0.00
14,100.0	90.00	270.50	6,865.0	-2,201.00	1,195.0	-9,605.7	9,669.5	0.00	0.00	0.00
14,200.0	90.00	270.50	6,865.0	-2,201.00	1,195.9	-9,705.7	9,769.3	0.00	0.00	0.00
14,300.0	90.00	270.50	6,865.0	-2,201.00	1,196.8	-9,805.7	9,869.0	0.00	0.00	0.00
14,400.0	90.00	270.50	6,865.0	-2,201.00	1,197.6	-9,905.7	9,968.8	0.00	0.00	0.00
14,500.0	90.00	270.50	6,865.0	-2,201.00	1,198.5	-10,005.7	10,068.5	0.00	0.00	0.00
14,600.0	90.00	270.50	6,865.0	-2,201.00	1,199.4	-10,105.7	10,168.3	0.00	0.00	0.00
14,700.0	90.00	270.50	6,865.0	-2,201.00	1,200.3	-10,205.7	10,268.1	0.00	0.00	0.00
14,800.0	90.00	270.50	6,865.0	-2,201.00	1,201.1	-10,305.7	10,367.8	0.00	0.00	0.00
14,900.0	90.00	270.50	6,865.0	-2,201.00	1,202.0	-10,405.6	10,467.6	0.00	0.00	0.00
15,000.0	90.00	270.50	6,865.0	-2,201.00	1,202.9	-10,505.6	10,567.3	0.00	0.00	0.00
15,100.0	90.00	270.50	6,865.0	-2,201.00	1,203.7	-10,605.6	10,667.1	0.00	0.00	0.00
15,200.0	90.00	270.50	6,865.0	-2,201.00	1,204.6	-10,705.6	10,766.9	0.00	0.00	0.00
15,300.0	90.00	270.50	6,865.0	-2,201.00	1,205.5	-10,805.6	10,866.6	0.00	0.00	0.00
15,400.0	90.00	270.50	6,865.0	-2,201.00	1,206.4	-10,905.6	10,966.4	0.00	0.00	0.00
15,500.0	90.00	270.50	6,865.0	-2,201.00	1,207.2	-11,005.6	11,066.2	0.00	0.00	0.00
15,600.0	90.00	270.50	6,865.0	-2,201.00	1,208.1	-11,105.6	11,165.9	0.00	0.00	0.00
15,700.0	90.00	270.50	6,865.0	-2,201.00	1,209.0	-11,205.6	11,265.7	0.00	0.00	0.00
15,800.0	90.00	270.50	6,865.0	-2,201.00	1,209.8	-11,305.6	11,365.4	0.00	0.00	0.00
15,900.0	90.00	270.50	6,865.0	-2,201.00	1,210.7	-11,405.6	11,465.2	0.00	0.00	0.00
16,000.0	90.00	270.50	6,865.0	-2,201.00	1,211.6	-11,505.6	11,565.0	0.00	0.00	0.00
16,100.0	90.00	270.50	6,865.0	-2,201.00	1,212.4	-11,605.6	11,664.7	0.00	0.00	0.00
16,200.0	90.00	270.50	6,865.0	-2,201.00	1,213.3	-11,705.6	11,764.5	0.00	0.00	0.00
16,300.0	90.00	270.50	6,865.0	-2,201.00	1,214.2	-11,805.6	11,864.2	0.00	0.00	0.00
16,400.0	90.00	270.50	6,865.0	-2,201.00	1,215.1	-11,905.6	11,964.0	0.00	0.00	0.00
16,500.0	90.00	270.50	6,865.0	-2,201.00	1,215.9	-12,005.6	12,063.8	0.00	0.00	0.00
16,600.0	90.00	270.50	6,865.0	-2,201.00	1,216.8	-12,105.6	12,163.5	0.00	0.00	0.00
16,700.0	90.00	270.50	6,865.0	-2,201.00	1,217.7	-12,205.6	12,263.3	0.00	0.00	0.00
16,800.0	90.00	270.50	6,865.0	-2,201.00	1,218.5	-12,305.6	12,363.1	0.00	0.00	0.00
16,900.0	90.00	270.50	6,865.0	-2,201.00	1,219.4	-12,405.6	12,462.8	0.00	0.00	0.00
17,000.0	90.00	270.50	6,865.0	-2,201.00	1,220.3	-12,505.6	12,562.6	0.00	0.00	0.00
17,100.0	90.00	270.50	6,865.0	-2,201.00	1,221.1	-12,605.6	12,662.3	0.00	0.00	0.00
17,200.0	90.00	270.50	6,865.0	-2,201.00	1,222.0	-12,705.6	12,762.1	0.00	0.00	0.00
17,300.0	90.00	270.50	6,865.0	-2,201.00	1,222.9	-12,805.6	12,861.9	0.00	0.00	0.00
17,400.0	90.00	270.50	6,865.0	-2,201.00	1,223.8	-12,905.6	12,961.6	0.00	0.00	0.00
17,500.0	90.00	270.50	6,865.0	-2,201.00	1,224.6	-13,005.5	13,061.4	0.00	0.00	0.00
17,600.0	90.00	270.50	6,865.0	-2,201.00	1,225.5	-13,105.5	13,161.1	0.00	0.00	0.00
17,700.0	90.00	270.50	6,865.0	-2,201.00	1,226.4	-13,205.5	13,260.9	0.00	0.00	0.00
17,800.0	90.00	270.50	6,865.0	-2,201.00	1,227.2	-13,305.5	13,360.7	0.00	0.00	0.00
17,900.0	90.00	270.50	6,865.0	-2,201.00	1,228.1	-13,405.5	13,460.4	0.00	0.00	0.00
18,000.0	90.00	270.50	6,865.0	-2,201.00	1,229.0	-13,505.5	13,560.2	0.00	0.00	0.00
18,100.0	90.00	270.50	6,865.0	-2,201.00	1,229.8	-13,605.5	13,660.0	0.00	0.00	0.00
18,200.0	90.00	270.50	6,865.0	-2,201.00	1,230.7	-13,705.5	13,759.7	0.00	0.00	0.00
18,300.0	90.00	270.50	6,865.0	-2,201.00	1,231.6	-13,805.5	13,859.5	0.00	0.00	0.00
18,400.0	90.00	270.50	6,865.0	-2,201.00	1,232.5	-13,905.5	13,959.2	0.00	0.00	0.00
18,500.0	90.00	270.50	6,865.0	-2,201.00	1,233.3	-14,005.5	14,059.0	0.00	0.00	0.00
18,600.0	90.00	270.50	6,865.0	-2,201.00	1,234.2	-14,105.5	14,158.8	0.00	0.00	0.00
18,700.0	90.00	270.50	6,865.0	-2,201.00	1,235.1	-14,205.5	14,258.5	0.00	0.00	0.00
18,800.0	90.00	270.50	6,865.0	-2,201.00	1,235.9	-14,305.5	14,358.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 1-16-18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 1-16-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
18,900.0	90.00	270.50	6,865.0	-2,201.00	1,236.8	-14,405.5	14,458.0	0.00	0.00	0.00
19,000.0	90.00	270.50	6,865.0	-2,201.00	1,237.7	-14,505.5	14,557.8	0.00	0.00	0.00
19,100.0	90.00	270.50	6,865.0	-2,201.00	1,238.6	-14,605.5	14,657.6	0.00	0.00	0.00
19,200.0	90.00	270.50	6,865.0	-2,201.00	1,239.4	-14,705.5	14,757.3	0.00	0.00	0.00
19,300.0	90.00	270.50	6,865.0	-2,201.00	1,240.3	-14,805.5	14,857.1	0.00	0.00	0.00
19,400.0	90.00	270.50	6,865.0	-2,201.00	1,241.2	-14,905.5	14,956.9	0.00	0.00	0.00
19,500.0	90.00	270.50	6,865.0	-2,201.00	1,242.0	-15,005.5	15,056.6	0.00	0.00	0.00
19,600.0	90.00	270.50	6,865.0	-2,201.00	1,242.9	-15,105.5	15,156.4	0.00	0.00	0.00
19,700.0	90.00	270.50	6,865.0	-2,201.00	1,243.8	-15,205.5	15,256.1	0.00	0.00	0.00
19,800.0	90.00	270.50	6,865.0	-2,201.00	1,244.6	-15,305.5	15,355.9	0.00	0.00	0.00
19,900.0	90.00	270.50	6,865.0	-2,201.00	1,245.5	-15,405.5	15,455.7	0.00	0.00	0.00
20,000.0	90.00	270.50	6,865.0	-2,201.00	1,246.4	-15,505.5	15,555.4	0.00	0.00	0.00
20,100.0	90.00	270.50	6,865.0	-2,201.00	1,247.3	-15,605.5	15,655.2	0.00	0.00	0.00
20,200.0	90.00	270.50	6,865.0	-2,201.00	1,248.1	-15,705.4	15,754.9	0.00	0.00	0.00
20,300.0	90.00	270.50	6,865.0	-2,201.00	1,249.0	-15,805.4	15,854.7	0.00	0.00	0.00
20,400.0	90.00	270.50	6,865.0	-2,201.00	1,249.9	-15,905.4	15,954.5	0.00	0.00	0.00
20,500.0	90.00	270.50	6,865.0	-2,201.00	1,250.7	-16,005.4	16,054.2	0.00	0.00	0.00
BHL - VT-LDS 1-16-18										
20,550.2	90.00	270.50	6,865.0	-2,201.00	1,251.2	-16,055.6	16,104.3	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,907.4	3,583.0	PARKMAN			
4,577.7	4,132.0	SUSSEX			
5,421.2	4,823.0	SHANNON			
7,795.3	6,703.0	SHARON SPRINGS			
7,830.0	6,723.0	NIOBRARA			
8,261.5	6,865.0	NIO B TARGET			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.0	900.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,607.2	1,600.0	26.5	-82.7	9 5/8" SURFACE CASING
1,672.2	1,663.1	31.3	-97.8	END OF TANGENT
2,715.0	2,606.2	162.9	-508.5	EOT TO 35° INC
7,424.0	6,463.6	986.8	-3,080.8	KOP (10°/100ft DGLG)
7,875.4	6,749.1	1,092.3	-3,410.5	START BUILD & TURN
8,262.2	6,865.0	1,144.2	-3,768.1	LANDING PNT - VT-LDS 1-16-18
20,550.2	6,865.0	1,251.2	-16,055.6	BHL - VT-LDS 1-16-18