

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

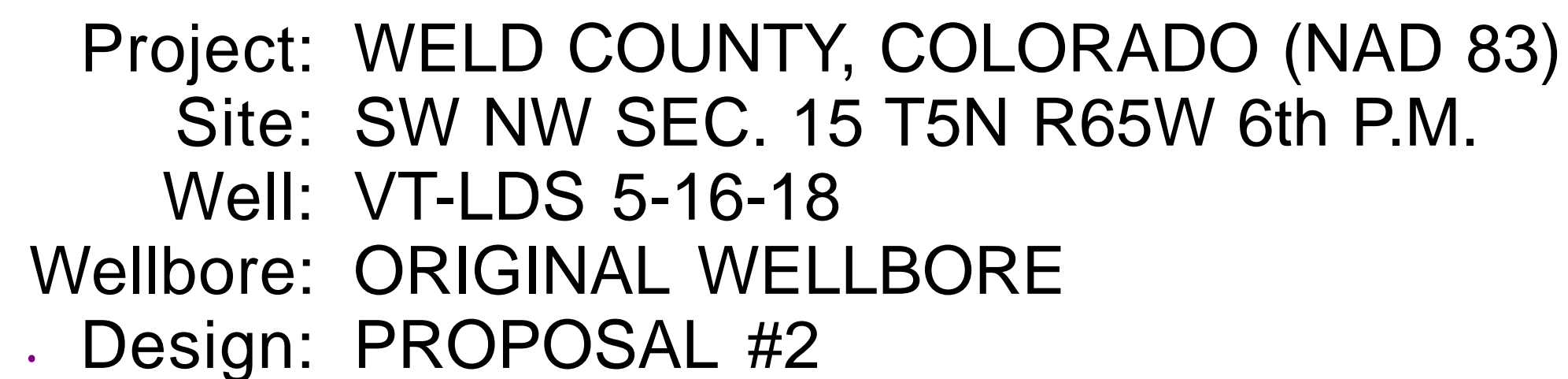
VT-LDS 5-16-18

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2





FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3583.0	3909.4	PARKMAN
4132.0	4535.6	SUSSEX
4823.0	5323.7	SHANNON
6703.0	7488.5	SHARON SPRINGS
6723.0	7519.2	NIOBRARA
6865.0	8003.7	NIO B TARGET

PROPOSED LOCAL COORDINATES

SHL: 1901ft FNL & 507ft FWL of Sec 15

LP: 2042ft FNL & 2189ft FWL of Sec 16

BHL: 2002ft FNL & 460ft FWL of Sec 18

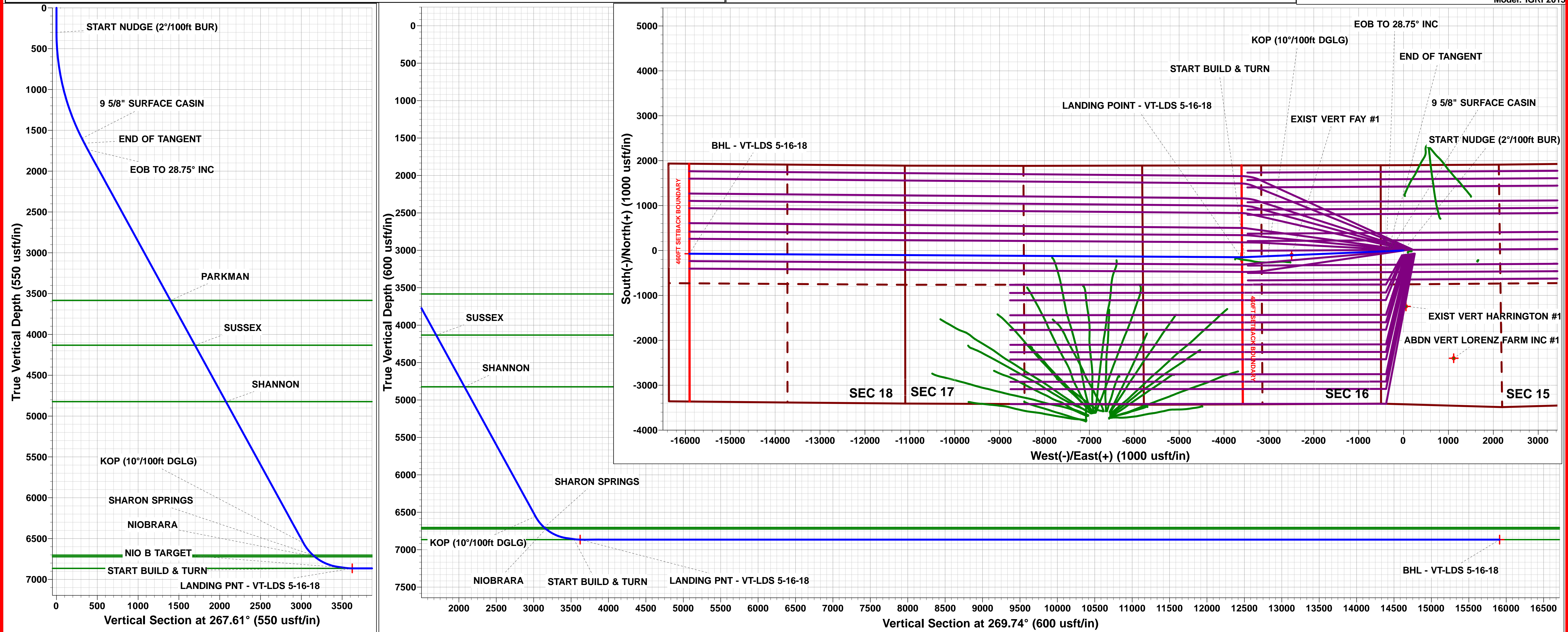
Magnetic Field

Strength: 52585.6sNT

Dip Angle: 66.91°

Date: 19/11/2015

Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 5-16-18
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 5-16-18	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 5-16-18		
Well Position	+N/-S	105.6 usft	Northing:
	+E/-W	33.4 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	19/11/2015	8.32	66.91	52,586

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	269.74

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	
300.0	0.00	0.00	300.0	-4,364.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,649.3	26.99	267.61	1,600.0	-3,064.0	-13.0	-311.7	2.00	2.00	0.00	267.61	
1,714.3	26.99	267.61	1,657.9	-3,006.1	-14.2	-341.1	0.00	0.00	0.00	0.00	
1,802.5	28.75	267.61	1,735.9	-2,928.1	-16.0	-382.3	2.00	2.00	0.00	0.00	
7,299.0	28.75	267.61	6,554.8	1,890.8	-126.2	-3,023.8	0.00	0.00	0.00	0.00	
7,832.7	82.12	267.61	6,846.7	2,182.7	-143.9	-3,447.2	10.00	10.00	0.00	0.00	
7,924.0	82.12	267.61	6,859.3	2,195.3	-147.6	-3,537.6	0.00	0.00	0.00	0.00	
8,007.5	90.00	270.36	6,865.0	2,201.0	-149.1	-3,620.7	10.00	9.45	3.30	19.30	LANDING PNT - V1
20,298.7	90.00	270.36	6,865.0	2,201.0	-71.4	-15,911.7	0.00	0.00	0.00	0.00	BHL - VT-LDS 5-16

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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 5-16-18	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
START NUDGE (2°/100ft BUR)										
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	2.00	267.61	400.0	4,264.02	-0.1	-1.7	1.7	2.00	2.00	0.00
500.0	4.00	267.61	499.8	4,164.16	-0.3	-7.0	7.0	2.00	2.00	0.00
600.0	6.00	267.61	599.5	4,064.55	-0.7	-15.7	15.7	2.00	2.00	0.00
700.0	8.00	267.61	698.7	3,965.30	-1.2	-27.9	27.9	2.00	2.00	0.00
800.0	10.00	267.61	797.5	3,866.53	-1.8	-43.5	43.5	2.00	2.00	0.00
900.0	12.00	267.61	895.6	3,768.38	-2.6	-62.5	62.6	2.00	2.00	0.00
1,000.0	14.00	267.61	993.1	3,670.94	-3.5	-85.0	85.0	2.00	2.00	0.00
1,100.0	16.00	267.61	1,089.6	3,574.36	-4.6	-110.9	110.9	2.00	2.00	0.00
1,200.0	18.00	267.61	1,185.3	3,478.73	-5.8	-140.1	140.1	2.00	2.00	0.00
1,300.0	20.00	267.61	1,279.8	3,384.18	-7.2	-172.6	172.6	2.00	2.00	0.00
1,400.0	22.00	267.61	1,373.2	3,290.83	-8.7	-208.4	208.5	2.00	2.00	0.00
1,500.0	24.00	267.61	1,465.2	3,198.79	-10.3	-247.5	247.5	2.00	2.00	0.00
1,600.0	26.00	267.61	1,555.8	3,108.16	-12.1	-289.7	289.7	2.00	2.00	0.00
9 5/8" SURFACE CASIN										
1,649.3	26.99	267.61	1,600.0	3,064.04	-13.0	-311.7	311.7	2.00	2.00	0.00
1,700.0	26.99	267.61	1,645.1	3,018.86	-14.0	-334.6	334.7	0.00	0.00	0.00
END OF TANGENT										
1,714.3	26.99	267.61	1,657.9	3,006.11	-14.2	-341.1	341.2	0.00	0.00	0.00
1,800.0	28.70	267.61	1,733.7	2,930.34	-15.9	-381.1	381.2	2.00	2.00	0.00
EOB TO 28.75° INC										
1,802.5	28.75	267.61	1,735.9	2,928.15	-16.0	-382.3	382.4	2.00	2.00	0.00
1,900.0	28.75	267.61	1,821.3	2,842.67	-17.9	-429.2	429.2	0.00	0.00	0.00
2,000.0	28.75	267.61	1,909.0	2,754.99	-19.9	-477.2	477.3	0.00	0.00	0.00
2,100.0	28.75	267.61	1,996.7	2,667.32	-21.9	-525.3	525.4	0.00	0.00	0.00
2,200.0	28.75	267.61	2,084.4	2,579.65	-23.9	-573.3	573.4	0.00	0.00	0.00
2,300.0	28.75	267.61	2,172.0	2,491.97	-25.9	-621.4	621.5	0.00	0.00	0.00
2,400.0	28.75	267.61	2,259.7	2,404.30	-27.9	-669.5	669.6	0.00	0.00	0.00
2,500.0	28.75	267.61	2,347.4	2,316.63	-29.9	-717.5	717.6	0.00	0.00	0.00
2,600.0	28.75	267.61	2,435.0	2,228.96	-32.0	-765.6	765.7	0.00	0.00	0.00
2,700.0	28.75	267.61	2,522.7	2,141.28	-34.0	-813.6	813.8	0.00	0.00	0.00
2,800.0	28.75	267.61	2,610.4	2,053.61	-36.0	-861.7	861.8	0.00	0.00	0.00
2,900.0	28.75	267.61	2,698.1	1,965.94	-38.0	-909.7	909.9	0.00	0.00	0.00
3,000.0	28.75	267.61	2,785.7	1,878.27	-40.0	-957.8	958.0	0.00	0.00	0.00
3,100.0	28.75	267.61	2,873.4	1,790.59	-42.0	-1,005.9	1,006.0	0.00	0.00	0.00
3,200.0	28.75	267.61	2,961.1	1,702.92	-44.0	-1,053.9	1,054.1	0.00	0.00	0.00
3,300.0	28.75	267.61	3,048.8	1,615.25	-46.0	-1,102.0	1,102.2	0.00	0.00	0.00
3,400.0	28.75	267.61	3,136.4	1,527.58	-48.0	-1,150.0	1,150.2	0.00	0.00	0.00
3,500.0	28.75	267.61	3,224.1	1,439.90	-50.0	-1,198.1	1,198.3	0.00	0.00	0.00
3,600.0	28.75	267.61	3,311.8	1,352.23	-52.0	-1,246.1	1,246.4	0.00	0.00	0.00
3,700.0	28.75	267.61	3,399.4	1,264.56	-54.0	-1,294.2	1,294.4	0.00	0.00	0.00
3,800.0	28.75	267.61	3,487.1	1,176.88	-56.0	-1,342.3	1,342.5	0.00	0.00	0.00
3,900.0	28.75	267.61	3,574.8	1,089.21	-58.0	-1,390.3	1,390.6	0.00	0.00	0.00
PARKMAN										
3,909.4	28.75	267.61	3,583.0	1,081.00	-58.2	-1,394.8	1,395.1	0.00	0.00	0.00
4,000.0	28.75	267.61	3,662.5	1,001.54	-60.0	-1,438.4	1,438.6	0.00	0.00	0.00
4,100.0	28.75	267.61	3,750.1	913.87	-62.0	-1,486.4	1,486.7	0.00	0.00	0.00
4,200.0	28.75	267.61	3,837.8	826.19	-64.0	-1,534.5	1,534.8	0.00	0.00	0.00
4,300.0	28.75	267.61	3,925.5	738.52	-66.1	-1,582.5	1,582.8	0.00	0.00	0.00
4,400.0	28.75	267.61	4,013.2	650.85	-68.1	-1,630.6	1,630.9	0.00	0.00	0.00

Planning Report



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Well:	VT-LDS 5-16-18	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	28.75	267.61	4,100.8	563.18	-70.1	-1,678.7	1,679.0	0.00	0.00	0.00
SUSSEX										
4,535.6	28.75	267.61	4,132.0	532.00	-70.8	-1,695.7	1,696.0	0.00	0.00	0.00
4,600.0	28.75	267.61	4,188.5	475.50	-72.1	-1,726.7	1,727.0	0.00	0.00	0.00
4,700.0	28.75	267.61	4,276.2	387.83	-74.1	-1,774.8	1,775.1	0.00	0.00	0.00
4,800.0	28.75	267.61	4,363.8	300.16	-76.1	-1,822.8	1,823.1	0.00	0.00	0.00
4,900.0	28.75	267.61	4,451.5	212.49	-78.1	-1,870.9	1,871.2	0.00	0.00	0.00
5,000.0	28.75	267.61	4,539.2	124.81	-80.1	-1,918.9	1,919.3	0.00	0.00	0.00
5,100.0	28.75	267.61	4,626.9	37.14	-82.1	-1,967.0	1,967.3	0.00	0.00	0.00
5,200.0	28.75	267.61	4,714.5	-50.53	-84.1	-2,015.1	2,015.4	0.00	0.00	0.00
5,300.0	28.75	267.61	4,802.2	-138.21	-86.1	-2,063.1	2,063.5	0.00	0.00	0.00
SHANNON										
5,323.7	28.75	267.61	4,823.0	-159.00	-86.6	-2,074.5	2,074.9	0.00	0.00	0.00
5,400.0	28.75	267.61	4,889.9	-225.88	-88.1	-2,111.2	2,111.5	0.00	0.00	0.00
5,500.0	28.75	267.61	4,977.6	-313.55	-90.1	-2,159.2	2,159.6	0.00	0.00	0.00
5,600.0	28.75	267.61	5,065.2	-401.22	-92.1	-2,207.3	2,207.7	0.00	0.00	0.00
5,700.0	28.75	267.61	5,152.9	-488.90	-94.1	-2,255.3	2,255.7	0.00	0.00	0.00
5,800.0	28.75	267.61	5,240.6	-576.57	-96.1	-2,303.4	2,303.8	0.00	0.00	0.00
5,900.0	28.75	267.61	5,328.2	-664.24	-98.1	-2,351.5	2,351.9	0.00	0.00	0.00
6,000.0	28.75	267.61	5,415.9	-751.91	-100.1	-2,399.5	2,399.9	0.00	0.00	0.00
6,100.0	28.75	267.61	5,503.6	-839.59	-102.2	-2,447.6	2,448.0	0.00	0.00	0.00
6,200.0	28.75	267.61	5,591.3	-927.26	-104.2	-2,495.6	2,496.1	0.00	0.00	0.00
6,300.0	28.75	267.61	5,678.9	-1,014.93	-106.2	-2,543.7	2,544.1	0.00	0.00	0.00
6,400.0	28.75	267.61	5,766.6	-1,102.60	-108.2	-2,591.7	2,592.2	0.00	0.00	0.00
6,500.0	28.75	267.61	5,854.3	-1,190.28	-110.2	-2,639.8	2,640.3	0.00	0.00	0.00
6,600.0	28.75	267.61	5,942.0	-1,277.95	-112.2	-2,687.9	2,688.3	0.00	0.00	0.00
6,700.0	28.75	267.61	6,029.6	-1,365.62	-114.2	-2,735.9	2,736.4	0.00	0.00	0.00
6,800.0	28.75	267.61	6,117.3	-1,453.30	-116.2	-2,784.0	2,784.5	0.00	0.00	0.00
6,900.0	28.75	267.61	6,205.0	-1,540.97	-118.2	-2,832.0	2,832.5	0.00	0.00	0.00
7,000.0	28.75	267.61	6,292.6	-1,628.64	-120.2	-2,880.1	2,880.6	0.00	0.00	0.00
7,100.0	28.75	267.61	6,380.3	-1,716.31	-122.2	-2,928.1	2,928.7	0.00	0.00	0.00
7,200.0	28.75	267.61	6,468.0	-1,803.99	-124.2	-2,976.2	2,976.7	0.00	0.00	0.00
KOP (10°/100ft DGLG)										
7,299.0	28.75	267.61	6,554.8	-1,890.78	-126.2	-3,023.8	3,024.3	0.00	0.00	0.00
7,300.0	28.85	267.61	6,555.7	-1,891.66	-126.2	-3,024.3	3,024.8	10.00	10.00	0.00
7,400.0	38.85	267.61	6,638.6	-1,974.60	-128.5	-3,079.8	3,080.4	10.00	10.00	0.00
SHARON SPRINGS										
7,488.5	47.70	267.61	6,703.0	-2,039.00	-131.1	-3,140.4	3,141.0	10.00	10.00	0.00
7,500.0	48.85	267.61	6,710.6	-2,046.63	-131.4	-3,149.0	3,149.5	10.00	10.00	0.00
NIOBRARA										
7,519.2	50.77	267.61	6,723.0	-2,059.00	-132.0	-3,163.6	3,164.2	10.00	10.00	0.00
7,600.0	58.85	267.61	6,769.5	-2,105.54	-134.8	-3,229.5	3,230.1	10.00	10.00	0.00
7,700.0	68.85	267.61	6,813.6	-2,149.56	-138.5	-3,319.1	3,319.7	10.00	10.00	0.00
7,800.0	78.85	267.61	6,841.3	-2,177.34	-142.5	-3,415.0	3,415.6	10.00	10.00	0.00
7,832.7	82.12	267.61	6,846.7	-2,182.74	-143.9	-3,447.2	3,447.8	10.00	10.00	0.00
7,900.0	82.12	267.61	6,856.0	-2,191.97	-146.6	-3,513.8	3,514.4	0.00	0.00	0.00
START BUILD & TURN										
7,924.0	82.12	267.61	6,859.3	-2,195.26	-147.6	-3,537.5	3,538.2	0.00	0.00	0.00
8,000.0	89.29	270.12	6,865.0	-2,200.95	-149.1	-3,613.3	3,613.9	10.00	9.44	3.30
NIO B TARGET										
8,003.7	89.29	270.12	6,865.0	-2,201.00	-149.1	-3,617.0	3,617.6	0.00	0.00	0.00
LANDING POINT - VT-LDS 5-16-18										
8,007.5	90.00	270.36	6,865.0	-2,201.00	-149.1	-3,620.8	3,621.4	19.91	18.81	6.52

Planning Report



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Well:	VT-LDS 5-16-18	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)
8,100.0	90.00	270.36	6,865.0	-2,201.00	-148.5	-3,713.3	3,713.9	0.00	0.00	0.00
8,200.0	90.00	270.36	6,865.0	-2,201.00	-147.9	-3,813.2	3,813.9	0.00	0.00	0.00
8,300.0	90.00	270.36	6,865.0	-2,201.00	-147.2	-3,913.2	3,913.9	0.00	0.00	0.00
8,400.0	90.00	270.36	6,865.0	-2,201.00	-146.6	-4,013.2	4,013.9	0.00	0.00	0.00
8,500.0	90.00	270.36	6,865.0	-2,201.00	-146.0	-4,113.2	4,113.9	0.00	0.00	0.00
8,600.0	90.00	270.36	6,865.0	-2,201.00	-145.3	-4,213.2	4,213.9	0.00	0.00	0.00
8,700.0	90.00	270.36	6,865.0	-2,201.00	-144.7	-4,313.2	4,313.8	0.00	0.00	0.00
8,800.0	90.00	270.36	6,865.0	-2,201.00	-144.1	-4,413.2	4,413.8	0.00	0.00	0.00
8,900.0	90.00	270.36	6,865.0	-2,201.00	-143.5	-4,513.2	4,513.8	0.00	0.00	0.00
9,000.0	90.00	270.36	6,865.0	-2,201.00	-142.8	-4,613.2	4,613.8	0.00	0.00	0.00
9,100.0	90.00	270.36	6,865.0	-2,201.00	-142.2	-4,713.2	4,713.8	0.00	0.00	0.00
9,200.0	90.00	270.36	6,865.0	-2,201.00	-141.6	-4,813.2	4,813.8	0.00	0.00	0.00
9,300.0	90.00	270.36	6,865.0	-2,201.00	-140.9	-4,913.2	4,913.8	0.00	0.00	0.00
9,400.0	90.00	270.36	6,865.0	-2,201.00	-140.3	-5,013.2	5,013.8	0.00	0.00	0.00
9,500.0	90.00	270.36	6,865.0	-2,201.00	-139.7	-5,113.2	5,113.8	0.00	0.00	0.00
9,600.0	90.00	270.36	6,865.0	-2,201.00	-139.0	-5,213.2	5,213.8	0.00	0.00	0.00
9,700.0	90.00	270.36	6,865.0	-2,201.00	-138.4	-5,313.2	5,313.8	0.00	0.00	0.00
9,800.0	90.00	270.36	6,865.0	-2,201.00	-137.8	-5,413.2	5,413.8	0.00	0.00	0.00
9,900.0	90.00	270.36	6,865.0	-2,201.00	-137.1	-5,513.2	5,513.8	0.00	0.00	0.00
10,000.0	90.00	270.36	6,865.0	-2,201.00	-136.5	-5,613.2	5,613.8	0.00	0.00	0.00
10,100.0	90.00	270.36	6,865.0	-2,201.00	-135.9	-5,713.2	5,713.8	0.00	0.00	0.00
10,200.0	90.00	270.36	6,865.0	-2,201.00	-135.2	-5,813.2	5,813.8	0.00	0.00	0.00
10,300.0	90.00	270.36	6,865.0	-2,201.00	-134.6	-5,913.2	5,913.8	0.00	0.00	0.00
10,400.0	90.00	270.36	6,865.0	-2,201.00	-134.0	-6,013.2	6,013.7	0.00	0.00	0.00
10,500.0	90.00	270.36	6,865.0	-2,201.00	-133.3	-6,113.2	6,113.7	0.00	0.00	0.00
10,600.0	90.00	270.36	6,865.0	-2,201.00	-132.7	-6,213.2	6,213.7	0.00	0.00	0.00
10,700.0	90.00	270.36	6,865.0	-2,201.00	-132.1	-6,313.2	6,313.7	0.00	0.00	0.00
10,800.0	90.00	270.36	6,865.0	-2,201.00	-131.4	-6,413.2	6,413.7	0.00	0.00	0.00
10,900.0	90.00	270.36	6,865.0	-2,201.00	-130.8	-6,513.2	6,513.7	0.00	0.00	0.00
11,000.0	90.00	270.36	6,865.0	-2,201.00	-130.2	-6,613.2	6,613.7	0.00	0.00	0.00
11,100.0	90.00	270.36	6,865.0	-2,201.00	-129.5	-6,713.2	6,713.7	0.00	0.00	0.00
11,200.0	90.00	270.36	6,865.0	-2,201.00	-128.9	-6,813.2	6,813.7	0.00	0.00	0.00
11,300.0	90.00	270.36	6,865.0	-2,201.00	-128.3	-6,913.2	6,913.7	0.00	0.00	0.00
11,400.0	90.00	270.36	6,865.0	-2,201.00	-127.6	-7,013.2	7,013.7	0.00	0.00	0.00
11,500.0	90.00	270.36	6,865.0	-2,201.00	-127.0	-7,113.2	7,113.7	0.00	0.00	0.00
11,600.0	90.00	270.36	6,865.0	-2,201.00	-126.4	-7,213.2	7,213.7	0.00	0.00	0.00
11,700.0	90.00	270.36	6,865.0	-2,201.00	-125.7	-7,313.2	7,313.7	0.00	0.00	0.00
11,800.0	90.00	270.36	6,865.0	-2,201.00	-125.1	-7,413.2	7,413.7	0.00	0.00	0.00
11,900.0	90.00	270.36	6,865.0	-2,201.00	-124.5	-7,513.2	7,513.7	0.00	0.00	0.00
12,000.0	90.00	270.36	6,865.0	-2,201.00	-123.8	-7,613.2	7,613.7	0.00	0.00	0.00
12,100.0	90.00	270.36	6,865.0	-2,201.00	-123.2	-7,713.2	7,713.6	0.00	0.00	0.00
12,200.0	90.00	270.36	6,865.0	-2,201.00	-122.6	-7,813.2	7,813.6	0.00	0.00	0.00
12,300.0	90.00	270.36	6,865.0	-2,201.00	-122.0	-7,913.2	7,913.6	0.00	0.00	0.00
12,400.0	90.00	270.36	6,865.0	-2,201.00	-121.3	-8,013.2	8,013.6	0.00	0.00	0.00
12,500.0	90.00	270.36	6,865.0	-2,201.00	-120.7	-8,113.2	8,113.6	0.00	0.00	0.00
12,600.0	90.00	270.36	6,865.0	-2,201.00	-120.1	-8,213.2	8,213.6	0.00	0.00	0.00
12,700.0	90.00	270.36	6,865.0	-2,201.00	-119.4	-8,313.2	8,313.6	0.00	0.00	0.00
12,800.0	90.00	270.36	6,865.0	-2,201.00	-118.8	-8,413.2	8,413.6	0.00	0.00	0.00
12,900.0	90.00	270.36	6,865.0	-2,201.00	-118.2	-8,513.2	8,513.6	0.00	0.00	0.00
13,000.0	90.00	270.36	6,865.0	-2,201.00	-117.5	-8,613.2	8,613.6	0.00	0.00	0.00
13,100.0	90.00	270.36	6,865.0	-2,201.00	-116.9	-8,713.2	8,713.6	0.00	0.00	0.00
13,200.0	90.00	270.36	6,865.0	-2,201.00	-116.3	-8,813.1	8,813.6	0.00	0.00	0.00
13,300.0	90.00	270.36	6,865.0	-2,201.00	-115.6	-8,913.1	8,913.6	0.00	0.00	0.00
13,400.0	90.00	270.36	6,865.0	-2,201.00	-115.0	-9,013.1	9,013.6	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 5-16-18
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 5-16-18	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	270.36	6,865.0	-2,201.00	-114.4	-9,113.1	9,113.6	0.00	0.00	0.00
13,600.0	90.00	270.36	6,865.0	-2,201.00	-113.7	-9,213.1	9,213.6	0.00	0.00	0.00
13,700.0	90.00	270.36	6,865.0	-2,201.00	-113.1	-9,313.1	9,313.6	0.00	0.00	0.00
13,800.0	90.00	270.36	6,865.0	-2,201.00	-112.5	-9,413.1	9,413.5	0.00	0.00	0.00
13,900.0	90.00	270.36	6,865.0	-2,201.00	-111.8	-9,513.1	9,513.5	0.00	0.00	0.00
14,000.0	90.00	270.36	6,865.0	-2,201.00	-111.2	-9,613.1	9,613.5	0.00	0.00	0.00
14,100.0	90.00	270.36	6,865.0	-2,201.00	-110.6	-9,713.1	9,713.5	0.00	0.00	0.00
14,200.0	90.00	270.36	6,865.0	-2,201.00	-109.9	-9,813.1	9,813.5	0.00	0.00	0.00
14,300.0	90.00	270.36	6,865.0	-2,201.00	-109.3	-9,913.1	9,913.5	0.00	0.00	0.00
14,400.0	90.00	270.36	6,865.0	-2,201.00	-108.7	-10,013.1	10,013.5	0.00	0.00	0.00
14,500.0	90.00	270.36	6,865.0	-2,201.00	-108.0	-10,113.1	10,113.5	0.00	0.00	0.00
14,600.0	90.00	270.36	6,865.0	-2,201.00	-107.4	-10,213.1	10,213.5	0.00	0.00	0.00
14,700.0	90.00	270.36	6,865.0	-2,201.00	-106.8	-10,313.1	10,313.5	0.00	0.00	0.00
14,800.0	90.00	270.36	6,865.0	-2,201.00	-106.1	-10,413.1	10,413.5	0.00	0.00	0.00
14,900.0	90.00	270.36	6,865.0	-2,201.00	-105.5	-10,513.1	10,513.5	0.00	0.00	0.00
15,000.0	90.00	270.36	6,865.0	-2,201.00	-104.9	-10,613.1	10,613.5	0.00	0.00	0.00
15,100.0	90.00	270.36	6,865.0	-2,201.00	-104.2	-10,713.1	10,713.5	0.00	0.00	0.00
15,200.0	90.00	270.36	6,865.0	-2,201.00	-103.6	-10,813.1	10,813.5	0.00	0.00	0.00
15,300.0	90.00	270.36	6,865.0	-2,201.00	-103.0	-10,913.1	10,913.5	0.00	0.00	0.00
15,400.0	90.00	270.36	6,865.0	-2,201.00	-102.3	-11,013.1	11,013.5	0.00	0.00	0.00
15,500.0	90.00	270.36	6,865.0	-2,201.00	-101.7	-11,113.1	11,113.4	0.00	0.00	0.00
15,600.0	90.00	270.36	6,865.0	-2,201.00	-101.1	-11,213.1	11,213.4	0.00	0.00	0.00
15,700.0	90.00	270.36	6,865.0	-2,201.00	-100.5	-11,313.1	11,313.4	0.00	0.00	0.00
15,800.0	90.00	270.36	6,865.0	-2,201.00	-99.8	-11,413.1	11,413.4	0.00	0.00	0.00
15,900.0	90.00	270.36	6,865.0	-2,201.00	-99.2	-11,513.1	11,513.4	0.00	0.00	0.00
16,000.0	90.00	270.36	6,865.0	-2,201.00	-98.6	-11,613.1	11,613.4	0.00	0.00	0.00
16,100.0	90.00	270.36	6,865.0	-2,201.00	-97.9	-11,713.1	11,713.4	0.00	0.00	0.00
16,200.0	90.00	270.36	6,865.0	-2,201.00	-97.3	-11,813.1	11,813.4	0.00	0.00	0.00
16,300.0	90.00	270.36	6,865.0	-2,201.00	-96.7	-11,913.1	11,913.4	0.00	0.00	0.00
16,400.0	90.00	270.36	6,865.0	-2,201.00	-96.0	-12,013.1	12,013.4	0.00	0.00	0.00
16,500.0	90.00	270.36	6,865.0	-2,201.00	-95.4	-12,113.1	12,113.4	0.00	0.00	0.00
16,600.0	90.00	270.36	6,865.0	-2,201.00	-94.8	-12,213.1	12,213.4	0.00	0.00	0.00
16,700.0	90.00	270.36	6,865.0	-2,201.00	-94.1	-12,313.1	12,313.4	0.00	0.00	0.00
16,800.0	90.00	270.36	6,865.0	-2,201.00	-93.5	-12,413.1	12,413.4	0.00	0.00	0.00
16,900.0	90.00	270.36	6,865.0	-2,201.00	-92.9	-12,513.1	12,513.4	0.00	0.00	0.00
17,000.0	90.00	270.36	6,865.0	-2,201.00	-92.2	-12,613.1	12,613.4	0.00	0.00	0.00
17,100.0	90.00	270.36	6,865.0	-2,201.00	-91.6	-12,713.1	12,713.4	0.00	0.00	0.00
17,200.0	90.00	270.36	6,865.0	-2,201.00	-91.0	-12,813.1	12,813.3	0.00	0.00	0.00
17,300.0	90.00	270.36	6,865.0	-2,201.00	-90.3	-12,913.1	12,913.3	0.00	0.00	0.00
17,400.0	90.00	270.36	6,865.0	-2,201.00	-89.7	-13,013.1	13,013.3	0.00	0.00	0.00
17,500.0	90.00	270.36	6,865.0	-2,201.00	-89.1	-13,113.1	13,113.3	0.00	0.00	0.00
17,600.0	90.00	270.36	6,865.0	-2,201.00	-88.4	-13,213.1	13,213.3	0.00	0.00	0.00
17,700.0	90.00	270.36	6,865.0	-2,201.00	-87.8	-13,313.1	13,313.3	0.00	0.00	0.00
17,800.0	90.00	270.36	6,865.0	-2,201.00	-87.2	-13,413.1	13,413.3	0.00	0.00	0.00
17,900.0	90.00	270.36	6,865.0	-2,201.00	-86.5	-13,513.1	13,513.3	0.00	0.00	0.00
18,000.0	90.00	270.36	6,865.0	-2,201.00	-85.9	-13,613.1	13,613.3	0.00	0.00	0.00
18,100.0	90.00	270.36	6,865.0	-2,201.00	-85.3	-13,713.1	13,713.3	0.00	0.00	0.00
18,200.0	90.00	270.36	6,865.0	-2,201.00	-84.6	-13,813.0	13,813.3	0.00	0.00	0.00
18,300.0	90.00	270.36	6,865.0	-2,201.00	-84.0	-13,913.0	13,913.3	0.00	0.00	0.00
18,400.0	90.00	270.36	6,865.0	-2,201.00	-83.4	-14,013.0	14,013.3	0.00	0.00	0.00
18,500.0	90.00	270.36	6,865.0	-2,201.00	-82.7	-14,113.0	14,113.3	0.00	0.00	0.00
18,600.0	90.00	270.36	6,865.0	-2,201.00	-82.1	-14,213.0	14,213.3	0.00	0.00	0.00
18,700.0	90.00	270.36	6,865.0	-2,201.00	-81.5	-14,313.0	14,313.3	0.00	0.00	0.00
18,800.0	90.00	270.36	6,865.0	-2,201.00	-80.8	-14,413.0	14,413.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 5-16-18
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 5-16-18	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	270.36	6,865.0	-2,201.00	-80.2	-14,513.0	14,513.2	0.00	0.00	0.00
19,000.0	90.00	270.36	6,865.0	-2,201.00	-79.6	-14,613.0	14,613.2	0.00	0.00	0.00
19,100.0	90.00	270.36	6,865.0	-2,201.00	-79.0	-14,713.0	14,713.2	0.00	0.00	0.00
19,200.0	90.00	270.36	6,865.0	-2,201.00	-78.3	-14,813.0	14,813.2	0.00	0.00	0.00
19,300.0	90.00	270.36	6,865.0	-2,201.00	-77.7	-14,913.0	14,913.2	0.00	0.00	0.00
19,400.0	90.00	270.36	6,865.0	-2,201.00	-77.1	-15,013.0	15,013.2	0.00	0.00	0.00
19,500.0	90.00	270.36	6,865.0	-2,201.00	-76.4	-15,113.0	15,113.2	0.00	0.00	0.00
19,600.0	90.00	270.36	6,865.0	-2,201.00	-75.8	-15,213.0	15,213.2	0.00	0.00	0.00
19,700.0	90.00	270.36	6,865.0	-2,201.00	-75.2	-15,313.0	15,313.2	0.00	0.00	0.00
19,800.0	90.00	270.36	6,865.0	-2,201.00	-74.5	-15,413.0	15,413.2	0.00	0.00	0.00
19,900.0	90.00	270.36	6,865.0	-2,201.00	-73.9	-15,513.0	15,513.2	0.00	0.00	0.00
20,000.0	90.00	270.36	6,865.0	-2,201.00	-73.3	-15,613.0	15,613.2	0.00	0.00	0.00
20,100.0	90.00	270.36	6,865.0	-2,201.00	-72.6	-15,713.0	15,713.2	0.00	0.00	0.00
20,200.0	90.00	270.36	6,865.0	-2,201.00	-72.0	-15,813.0	15,813.2	0.00	0.00	0.00
BHL - VT-LDS 5-16-18										
20,298.7	90.00	270.36	6,865.0	-2,201.00	-71.4	-15,911.7	15,911.8	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,909.4	3,583.0	PARKMAN			
4,535.6	4,132.0	SUSSEX			
5,323.7	4,823.0	SHANNON			
7,488.5	6,703.0	SHARON SPRINGS			
7,519.2	6,723.0	NIOBRARA			
8,003.7	6,865.0	NIO B TARGET			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.0	300.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,649.3	1,600.0	-13.0	-311.7	9 5/8" SURFACE CASIN
1,714.3	1,657.9	-14.2	-341.1	END OF TANGENT
1,802.5	1,735.9	-16.0	-382.3	EOB TO 28.75° INC
7,299.0	6,554.8	-126.2	-3,023.8	KOP (10°/100ft DGLG)
7,924.0	6,859.3	-147.6	-3,537.5	START BUILD & TURN
8,007.5	6,865.0	-149.1	-3,620.8	LANDING POINT - VT-LDS 5-16-18
20,298.7	6,865.0	-71.4	-15,911.7	BHL - VT-LDS 5-16-18