

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

LEONARD 9C

ORIGINAL WELLBORE

28 March, 2017

Plan: PROPOSAL #1

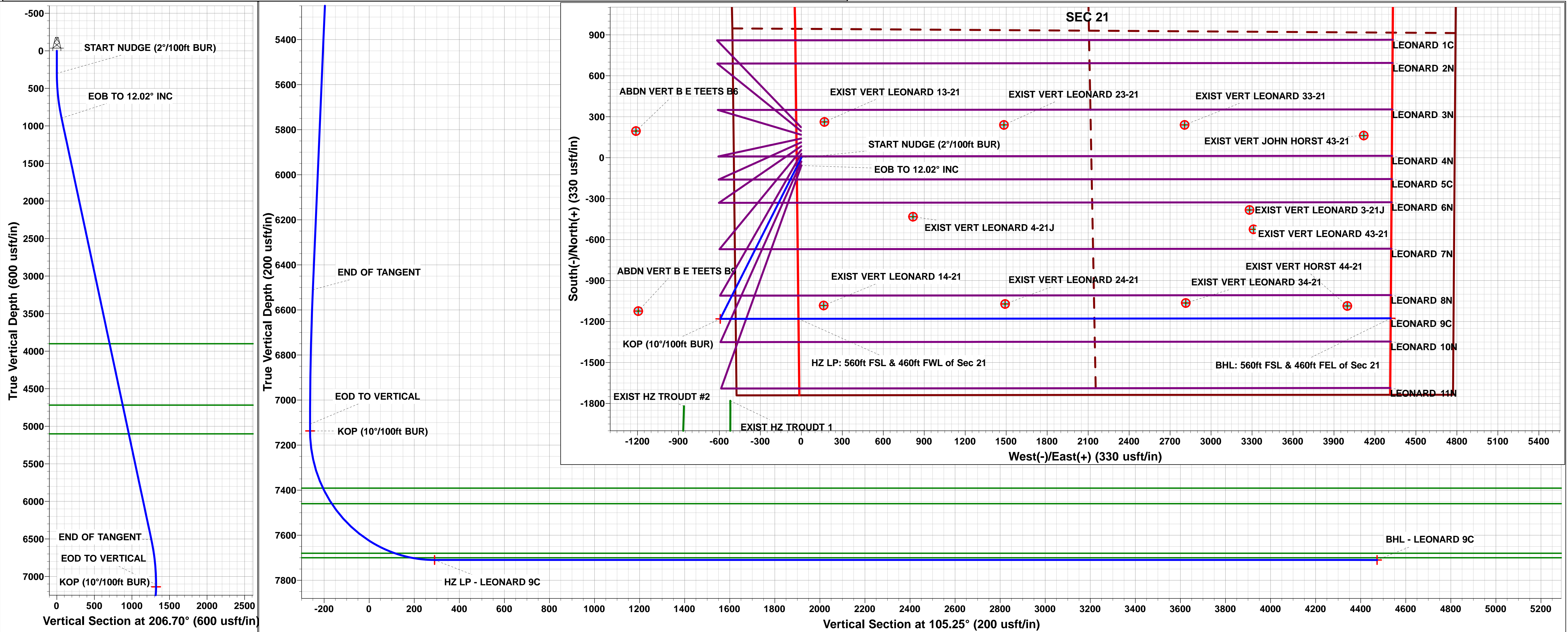
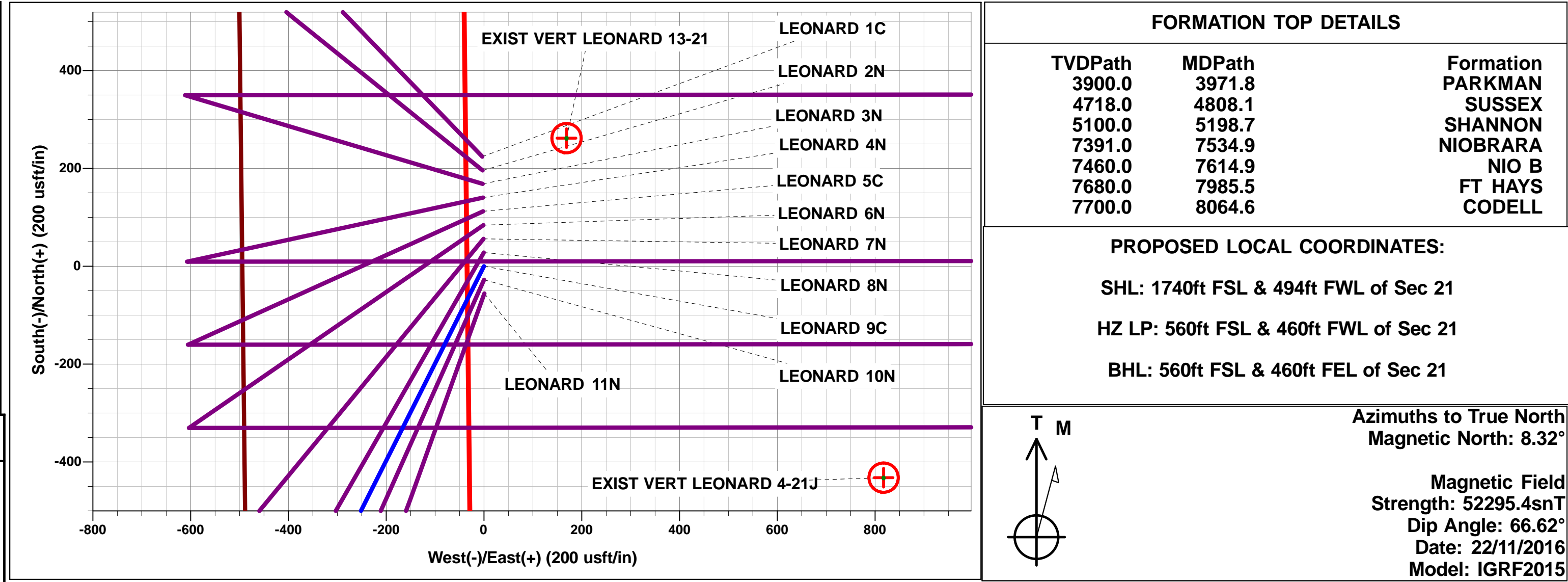




Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW SW SEC. 21 T2N R67W 6th P.M.
Well: LEONARD 9C
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1740ft FSL & 494ft FWL of Sec 21	
300.0	300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
896.8	901.2	12.02	206.70	-56.1	-28.2	-12.5	62.8	EOB TO 12.02° INC	
6510.2	6640.5	12.02	206.70	-1124.2	-565.5	-249.9	1258.4	END OF TANGENT	
7107.0	7241.7	0.00	0.00	-1180.4	-593.7	-262.4	1321.3	EOD TO VERTICAL	
7137.0	7271.7	0.00	0.00	-1180.4	-593.7	-262.4	1321.3	KOP (10°/100ft BUR)	
7710.0	8171.8	90.00	89.95	-1179.9	-20.7	290.4	1894.3	HZ LP: 560ft FSL & 460ft FWL of Sec 21	
7710.0	12507.7	90.00	89.95	-1176.3	4315.2	4472.6	6230.2	BHL: 560ft FSL & 460ft FEL of Sec 21	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - LEONARD 9C	7137.0	-1180.4	-593.7	40.118021	-104.905397
HZ LP - LEONARD 9C	7710.0	-1179.9	-20.7	40.118022	-104.903348
BHL - LEONARD 9C	7710.0	-1176.3	4315.2	40.118031	-104.887845



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 9C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 9C	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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

Well	LEONARD 9C		
Well Position	+N/-S	-224.1 usft	Northing:
	+E/-W	3.4 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	40.121261
		Longitude:	-104.903274
		Ground Level:	5,004.0 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	22/11/2016	8.32	66.62	52,295

Design	PROPOSAL #1			
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	105.25

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-5,020.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	-4,720.0	0.0	0.0	0.00	0.00	0.00	0.00	
901.2	12.02	206.70	896.8	-4,123.2	-56.1	-28.2	2.00	2.00	0.00	206.70	
6,640.5	12.02	206.70	6,510.2	1,490.2	-1,124.2	-565.5	0.00	0.00	0.00	0.00	
7,241.7	0.00	0.00	7,107.0	2,087.0	-1,180.4	-593.7	2.00	-2.00	0.00	180.00	
7,271.7	0.00	0.00	7,137.0	2,117.0	-1,180.4	-593.7	0.00	0.00	0.00	0.00	KOP - LEONARD 9
8,171.8	90.00	89.95	7,710.0	2,690.0	-1,179.9	-20.7	10.00	10.00	9.99	89.95	HZ LP - LEONARD
12,507.7	90.00	89.95	7,710.0	2,690.0	-1,176.3	4,315.2	0.00	0.00	0.00	-100.03	BHL - LEONARD 9

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 9C	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SHL: 1740ft FSL & 494ft FWL of Sec 21										
0.0	0.00	0.00	0.0	5,020.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,920.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,820.00	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	4,720.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	2.00	206.70	400.0	4,620.02	-1.6	-0.8	-0.3	2.00	2.00	0.00
500.0	4.00	206.70	499.8	4,520.16	-6.2	-3.1	-1.4	2.00	2.00	0.00
600.0	6.00	206.70	599.5	4,420.55	-14.0	-7.1	-3.1	2.00	2.00	0.00
700.0	8.00	206.70	698.7	4,321.30	-24.9	-12.5	-5.5	2.00	2.00	0.00
800.0	10.00	206.70	797.5	4,222.53	-38.9	-19.6	-8.6	2.00	2.00	0.00
900.0	12.00	206.70	895.6	4,124.38	-55.9	-28.1	-12.4	2.00	2.00	0.00
EOB TO 12.02° INC										
901.2	12.02	206.70	896.8	4,123.22	-56.1	-28.2	-12.5	2.00	2.00	0.00
1,000.0	12.02	206.70	993.4	4,026.57	-74.5	-37.5	-16.6	0.00	0.00	0.00
1,100.0	12.02	206.70	1,091.2	3,928.76	-93.1	-46.8	-20.7	0.00	0.00	0.00
1,200.0	12.02	206.70	1,189.0	3,830.96	-111.8	-56.2	-24.8	0.00	0.00	0.00
1,300.0	12.02	206.70	1,286.8	3,733.15	-130.4	-65.6	-29.0	0.00	0.00	0.00
1,400.0	12.02	206.70	1,384.7	3,635.35	-149.0	-74.9	-33.1	0.00	0.00	0.00
1,500.0	12.02	206.70	1,482.5	3,537.54	-167.6	-84.3	-37.2	0.00	0.00	0.00
1,600.0	12.02	206.70	1,580.3	3,439.73	-186.2	-93.7	-41.4	0.00	0.00	0.00
1,700.0	12.02	206.70	1,678.1	3,341.93	-204.8	-103.0	-45.5	0.00	0.00	0.00
1,800.0	12.02	206.70	1,775.9	3,244.12	-223.4	-112.4	-49.7	0.00	0.00	0.00
1,900.0	12.02	206.70	1,873.7	3,146.32	-242.0	-121.7	-53.8	0.00	0.00	0.00
2,000.0	12.02	206.70	1,971.5	3,048.51	-260.6	-131.1	-57.9	0.00	0.00	0.00
2,100.0	12.02	206.70	2,069.3	2,950.70	-279.2	-140.5	-62.1	0.00	0.00	0.00
2,200.0	12.02	206.70	2,167.1	2,852.90	-297.9	-149.8	-66.2	0.00	0.00	0.00
2,300.0	12.02	206.70	2,264.9	2,755.09	-316.5	-159.2	-70.3	0.00	0.00	0.00
2,400.0	12.02	206.70	2,362.7	2,657.28	-335.1	-168.5	-74.5	0.00	0.00	0.00
2,500.0	12.02	206.70	2,460.5	2,559.48	-353.7	-177.9	-78.6	0.00	0.00	0.00
2,600.0	12.02	206.70	2,558.3	2,461.67	-372.3	-187.3	-82.7	0.00	0.00	0.00
2,700.0	12.02	206.70	2,656.1	2,363.87	-390.9	-196.6	-86.9	0.00	0.00	0.00
2,800.0	12.02	206.70	2,753.9	2,266.06	-409.5	-206.0	-91.0	0.00	0.00	0.00
2,900.0	12.02	206.70	2,851.7	2,168.25	-428.1	-215.3	-95.2	0.00	0.00	0.00
3,000.0	12.02	206.70	2,949.6	2,070.45	-446.7	-224.7	-99.3	0.00	0.00	0.00
3,100.0	12.02	206.70	3,047.4	1,972.64	-465.4	-234.1	-103.4	0.00	0.00	0.00
3,200.0	12.02	206.70	3,145.2	1,874.83	-484.0	-243.4	-107.6	0.00	0.00	0.00
3,300.0	12.02	206.70	3,243.0	1,777.03	-502.6	-252.8	-111.7	0.00	0.00	0.00
3,400.0	12.02	206.70	3,340.8	1,679.22	-521.2	-262.1	-115.8	0.00	0.00	0.00
3,500.0	12.02	206.70	3,438.6	1,581.42	-539.8	-271.5	-120.0	0.00	0.00	0.00
3,600.0	12.02	206.70	3,536.4	1,483.61	-558.4	-280.9	-124.1	0.00	0.00	0.00
3,700.0	12.02	206.70	3,634.2	1,385.80	-577.0	-290.2	-128.2	0.00	0.00	0.00
3,800.0	12.02	206.70	3,732.0	1,288.00	-595.6	-299.6	-132.4	0.00	0.00	0.00
3,900.0	12.02	206.70	3,829.8	1,190.19	-614.2	-308.9	-136.5	0.00	0.00	0.00
PARKMAN										
3,971.8	12.02	206.70	3,900.0	1,120.00	-627.6	-315.7	-139.5	0.00	0.00	0.00
4,000.0	12.02	206.70	3,927.6	1,092.39	-632.8	-318.3	-140.7	0.00	0.00	0.00
4,100.0	12.02	206.70	4,025.4	994.58	-651.5	-327.7	-144.8	0.00	0.00	0.00
4,200.0	12.02	206.70	4,123.2	896.77	-670.1	-337.0	-148.9	0.00	0.00	0.00
4,300.0	12.02	206.70	4,221.0	798.97	-688.7	-346.4	-153.1	0.00	0.00	0.00
4,400.0	12.02	206.70	4,318.8	701.16	-707.3	-355.7	-157.2	0.00	0.00	0.00
4,500.0	12.02	206.70	4,416.6	603.35	-725.9	-365.1	-161.3	0.00	0.00	0.00
4,600.0	12.02	206.70	4,514.5	505.55	-744.5	-374.5	-165.5	0.00	0.00	0.00
4,700.0	12.02	206.70	4,612.3	407.74	-763.1	-383.8	-169.6	0.00	0.00	0.00

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Well:	LEONARD 9C	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	12.02	206.70	4,710.1	309.94	-781.7	-393.2	-173.8	0.00	0.00	0.00
SUSSEX										
4,808.1	12.02	206.70	4,718.0	302.00	-783.2	-393.9	-174.1	0.00	0.00	0.00
4,900.0	12.02	206.70	4,807.9	212.13	-800.3	-402.5	-177.9	0.00	0.00	0.00
5,000.0	12.02	206.70	4,905.7	114.32	-818.9	-411.9	-182.0	0.00	0.00	0.00
5,100.0	12.02	206.70	5,003.5	16.52	-837.6	-421.3	-186.2	0.00	0.00	0.00
SHANNON										
5,198.7	12.02	206.70	5,100.0	-80.00	-855.9	-430.5	-190.2	0.00	0.00	0.00
5,200.0	12.02	206.70	5,101.3	-81.29	-856.2	-430.6	-190.3	0.00	0.00	0.00
5,300.0	12.02	206.70	5,199.1	-179.09	-874.8	-440.0	-194.4	0.00	0.00	0.00
5,400.0	12.02	206.70	5,296.9	-276.90	-893.4	-449.3	-198.6	0.00	0.00	0.00
5,500.0	12.02	206.70	5,394.7	-374.71	-912.0	-458.7	-202.7	0.00	0.00	0.00
5,600.0	12.02	206.70	5,492.5	-472.51	-930.6	-468.1	-206.8	0.00	0.00	0.00
5,700.0	12.02	206.70	5,590.3	-570.32	-949.2	-477.4	-211.0	0.00	0.00	0.00
5,800.0	12.02	206.70	5,688.1	-668.13	-967.8	-486.8	-215.1	0.00	0.00	0.00
5,900.0	12.02	206.70	5,785.9	-765.93	-986.4	-496.1	-219.3	0.00	0.00	0.00
6,000.0	12.02	206.70	5,883.7	-863.74	-1,005.0	-505.5	-223.4	0.00	0.00	0.00
6,100.0	12.02	206.70	5,981.5	-961.54	-1,023.7	-514.9	-227.5	0.00	0.00	0.00
6,200.0	12.02	206.70	6,079.4	-1,059.35	-1,042.3	-524.2	-231.7	0.00	0.00	0.00
6,300.0	12.02	206.70	6,177.2	-1,157.16	-1,060.9	-533.6	-235.8	0.00	0.00	0.00
6,400.0	12.02	206.70	6,275.0	-1,254.96	-1,079.5	-542.9	-239.9	0.00	0.00	0.00
6,500.0	12.02	206.70	6,372.8	-1,352.77	-1,098.1	-552.3	-244.1	0.00	0.00	0.00
6,600.0	12.02	206.70	6,470.6	-1,450.57	-1,116.7	-561.7	-248.2	0.00	0.00	0.00
END OF TANGENT										
6,640.5	12.02	206.70	6,510.2	-1,490.22	-1,124.2	-565.5	-249.9	0.00	0.00	0.00
6,700.0	10.83	206.70	6,568.5	-1,548.51	-1,134.8	-570.8	-252.2	2.00	-2.00	0.00
6,800.0	8.83	206.70	6,667.0	-1,647.03	-1,150.0	-578.4	-255.6	2.00	-2.00	0.00
6,900.0	6.83	206.70	6,766.1	-1,746.09	-1,162.2	-584.6	-258.3	2.00	-2.00	0.00
7,000.0	4.83	206.70	6,865.6	-1,845.57	-1,171.3	-589.1	-260.3	2.00	-2.00	0.00
7,100.0	2.83	206.70	6,965.3	-1,945.34	-1,177.3	-592.1	-261.7	2.00	-2.00	0.00
7,200.0	0.83	206.70	7,065.3	-2,045.28	-1,180.1	-593.6	-262.3	2.00	-2.00	0.00
EOD TO VERTICAL										
7,241.7	0.00	0.00	7,107.0	-2,087.00	-1,180.4	-593.7	-262.4	2.00	-2.00	0.00
KOP (10°/100ft BUR)										
7,271.7	0.00	0.00	7,137.0	-2,117.00	-1,180.4	-593.7	-262.4	0.00	0.00	0.00
7,300.0	2.83	89.95	7,165.3	-2,145.27	-1,180.4	-593.0	-261.7	10.00	10.00	0.00
7,400.0	12.83	89.95	7,264.2	-2,244.21	-1,180.4	-579.4	-248.6	10.00	10.00	0.00
7,500.0	22.83	89.95	7,359.3	-2,339.29	-1,180.4	-548.8	-219.1	10.00	10.00	0.00
NIOBRARA										
7,534.9	26.31	89.95	7,391.0	-2,371.00	-1,180.3	-534.3	-205.1	10.00	10.00	0.00
7,600.0	32.83	89.95	7,447.6	-2,427.62	-1,180.3	-502.2	-174.1	10.00	10.00	0.00
NIO B										
7,614.9	34.31	89.95	7,460.0	-2,440.00	-1,180.3	-494.0	-166.2	10.00	10.00	0.00
7,700.0	42.83	89.95	7,526.5	-2,506.50	-1,180.3	-441.0	-115.0	10.00	10.00	0.00
7,800.0	52.82	89.95	7,593.6	-2,573.56	-1,180.2	-366.9	-43.6	10.00	10.00	0.00
7,900.0	62.82	89.95	7,646.7	-2,626.74	-1,180.1	-282.4	37.9	10.00	10.00	0.00
FT HAYS										
7,985.5	71.38	89.95	7,680.0	-2,660.00	-1,180.1	-203.7	113.9	10.00	10.00	0.00
8,000.0	72.82	89.95	7,684.4	-2,664.44	-1,180.1	-189.9	127.1	10.00	10.00	0.00
CODELL										
8,064.6	79.28	89.95	7,700.0	-2,680.00	-1,180.0	-127.3	187.5	10.00	10.00	0.00
8,100.0	82.82	89.95	7,705.5	-2,685.51	-1,180.0	-92.3	221.3	10.00	10.00	0.00

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 9C	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
HZ LP: 560ft FSL & 460ft FWL of Sec 21										
8,171.8	90.00	89.95	7,710.0	-2,690.00	-1,179.9	-20.7	290.4	10.00	10.00	0.00
8,200.0	90.00	89.95	7,710.0	-2,690.00	-1,179.9	7.5	317.6	0.00	0.00	0.00
8,300.0	90.00	89.95	7,710.0	-2,690.00	-1,179.8	107.5	414.0	0.00	0.00	0.00
8,400.0	90.00	89.95	7,710.0	-2,690.00	-1,179.8	207.5	510.5	0.00	0.00	0.00
8,500.0	90.00	89.95	7,710.0	-2,690.00	-1,179.7	307.5	606.9	0.00	0.00	0.00
8,600.0	90.00	89.95	7,710.0	-2,690.00	-1,179.6	407.5	703.4	0.00	0.00	0.00
8,700.0	90.00	89.95	7,710.0	-2,690.00	-1,179.5	507.5	799.9	0.00	0.00	0.00
8,800.0	90.00	89.95	7,710.0	-2,690.00	-1,179.4	607.5	896.3	0.00	0.00	0.00
8,900.0	90.00	89.95	7,710.0	-2,690.00	-1,179.3	707.5	992.8	0.00	0.00	0.00
9,000.0	90.00	89.95	7,710.0	-2,690.00	-1,179.3	807.5	1,089.2	0.00	0.00	0.00
9,100.0	90.00	89.95	7,710.0	-2,690.00	-1,179.2	907.5	1,185.7	0.00	0.00	0.00
9,200.0	90.00	89.95	7,710.0	-2,689.99	-1,179.1	1,007.5	1,282.1	0.00	0.00	0.00
9,300.0	90.00	89.95	7,710.0	-2,689.99	-1,179.0	1,107.5	1,378.6	0.00	0.00	0.00
9,400.0	90.00	89.95	7,710.0	-2,689.99	-1,178.9	1,207.5	1,475.1	0.00	0.00	0.00
9,500.0	90.00	89.95	7,710.0	-2,689.99	-1,178.9	1,307.5	1,571.5	0.00	0.00	0.00
9,600.0	90.00	89.95	7,710.0	-2,689.99	-1,178.8	1,407.5	1,668.0	0.00	0.00	0.00
9,700.0	90.00	89.95	7,710.0	-2,689.99	-1,178.7	1,507.5	1,764.4	0.00	0.00	0.00
9,800.0	90.00	89.95	7,710.0	-2,689.99	-1,178.6	1,607.5	1,860.9	0.00	0.00	0.00
9,900.0	90.00	89.95	7,710.0	-2,689.99	-1,178.5	1,707.5	1,957.4	0.00	0.00	0.00
10,000.0	90.00	89.95	7,710.0	-2,689.99	-1,178.4	1,807.5	2,053.8	0.00	0.00	0.00
10,100.0	90.00	89.95	7,710.0	-2,689.99	-1,178.4	1,907.5	2,150.3	0.00	0.00	0.00
10,200.0	90.00	89.95	7,710.0	-2,689.99	-1,178.3	2,007.5	2,246.7	0.00	0.00	0.00
10,300.0	90.00	89.95	7,710.0	-2,689.99	-1,178.2	2,107.5	2,343.2	0.00	0.00	0.00
10,400.0	90.00	89.95	7,710.0	-2,689.99	-1,178.1	2,207.5	2,439.6	0.00	0.00	0.00
10,500.0	90.00	89.95	7,710.0	-2,689.99	-1,178.0	2,307.5	2,536.1	0.00	0.00	0.00
10,600.0	90.00	89.95	7,710.0	-2,689.99	-1,177.9	2,407.5	2,632.6	0.00	0.00	0.00
10,700.0	90.00	89.95	7,710.0	-2,689.99	-1,177.8	2,507.5	2,729.0	0.00	0.00	0.00
10,800.0	90.00	89.95	7,710.0	-2,689.99	-1,177.8	2,607.5	2,825.5	0.00	0.00	0.00
10,900.0	90.00	89.95	7,710.0	-2,689.99	-1,177.7	2,707.5	2,921.9	0.00	0.00	0.00
11,000.0	90.00	89.95	7,710.0	-2,689.99	-1,177.6	2,807.5	3,018.4	0.00	0.00	0.00
11,100.0	90.00	89.95	7,710.0	-2,689.99	-1,177.5	2,907.5	3,114.8	0.00	0.00	0.00
11,200.0	90.00	89.95	7,710.0	-2,689.99	-1,177.4	3,007.5	3,211.3	0.00	0.00	0.00
11,300.0	90.00	89.95	7,710.0	-2,689.99	-1,177.3	3,107.5	3,307.8	0.00	0.00	0.00
11,400.0	90.00	89.95	7,710.0	-2,689.99	-1,177.2	3,207.5	3,404.2	0.00	0.00	0.00
11,500.0	90.00	89.95	7,710.0	-2,689.99	-1,177.2	3,307.5	3,500.7	0.00	0.00	0.00
11,600.0	90.00	89.95	7,710.0	-2,690.00	-1,177.1	3,407.5	3,597.1	0.00	0.00	0.00
11,700.0	90.00	89.95	7,710.0	-2,690.00	-1,177.0	3,507.5	3,693.6	0.00	0.00	0.00
11,800.0	90.00	89.95	7,710.0	-2,690.00	-1,176.9	3,607.5	3,790.0	0.00	0.00	0.00
11,900.0	90.00	89.95	7,710.0	-2,690.00	-1,176.8	3,707.5	3,886.5	0.00	0.00	0.00
12,000.0	90.00	89.95	7,710.0	-2,690.00	-1,176.7	3,807.5	3,983.0	0.00	0.00	0.00
12,100.0	90.00	89.95	7,710.0	-2,690.00	-1,176.6	3,907.5	4,079.4	0.00	0.00	0.00
12,200.0	90.00	89.95	7,710.0	-2,690.00	-1,176.6	4,007.5	4,175.9	0.00	0.00	0.00
12,300.0	90.00	89.95	7,710.0	-2,690.00	-1,176.5	4,107.5	4,272.3	0.00	0.00	0.00
12,400.0	90.00	89.95	7,710.0	-2,690.00	-1,176.4	4,207.5	4,368.8	0.00	0.00	0.00
12,500.0	90.00	89.95	7,710.0	-2,690.00	-1,176.3	4,307.5	4,465.2	0.00	0.00	0.00
BHL: 560ft FSL & 460ft FEL of Sec 21										
12,507.7	90.00	89.95	7,710.0	-2,690.00	-1,176.3	4,315.2	4,472.6	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 9C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5020.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 9C	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,971.8	3,900.0	PARKMAN			
4,808.1	4,718.0	SUSSEX			
5,198.7	5,100.0	SHANNON			
7,534.9	7,391.0	NIOBRARA			
7,614.9	7,460.0	NIO B			
7,985.5	7,680.0	FT HAYS			
8,064.6	7,700.0	CODELL			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 1740ft FSL & 494ft FWL of Sec 21
300.0	300.0	0.0	0.0	START NUDGE (2°/100ft BUR)
901.2	896.8	-56.1	-28.2	EOB TO 12.02° INC
6,640.5	6,510.2	-1,124.2	-565.5	END OF TANGENT
7,241.7	7,107.0	-1,180.4	-593.7	EOD TO VERTICAL
7,271.7	7,137.0	-1,180.4	-593.7	KOP (10°/100ft BUR)
8,171.8	7,710.0	-1,179.9	-20.7	HZ LP: 560ft FSL & 460ft FWL of Sec 21
12,507.7	7,710.0	-1,176.3	4,315.2	BHL: 560ft FSL & 460ft FEL of Sec 21