

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

SW SW SEC. 22 T4N R68W 6th P.M.

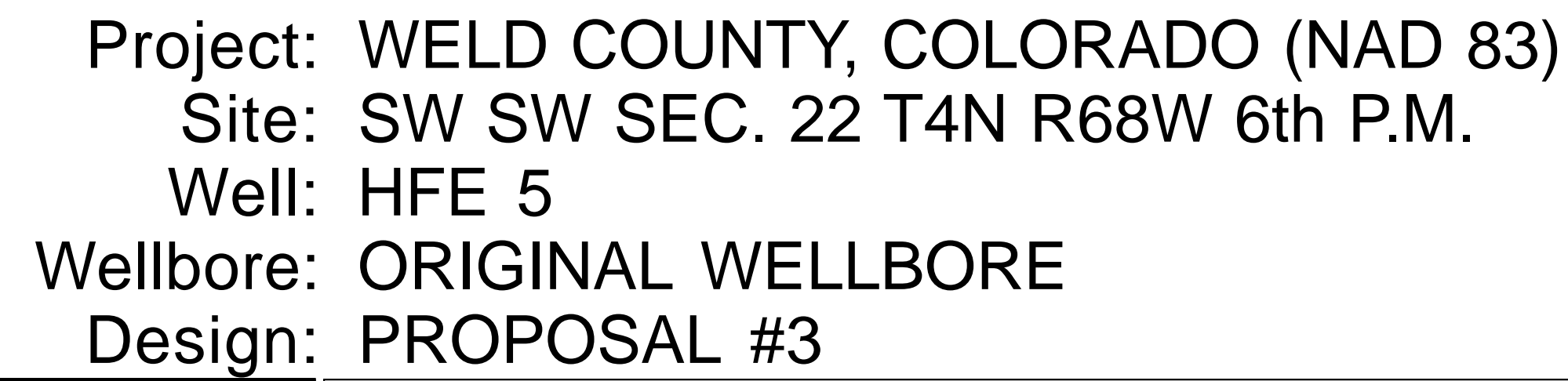
HFE 5

ORIGINAL WELLBORE

11 January, 2017

Plan: PROPOSAL #3





The figure consists of two main parts: a geological map on the left and a table of formation top details on the right.

Geological Map:

- Axes:** The vertical axis is labeled "South(-)/North(+) (200 usft/in)" and ranges from -400 to 600. The horizontal axis is labeled "West(-)/East(+) (200 usft/in)" and ranges from -1000 to 600.
- Formations:** Several geological formations are shown as colored lines:
 - EXIST DD MLD #13-22:** A purple line.
 - EXIST DD HFE #14-22:** A blue line.
 - EXIST DD HFE #24-22:** A green line.
 - EXIST DD MLD #23-22:** A blue line.
- HFE Lines:** Eight dashed lines labeled HFE 1 through HFE 8 are shown, representing magnetic field lines.
- Vertical Lines:** Two vertical lines are present: a red line at approximately -1000 and a black line at approximately -500.

FORMATION TOP DETAILS:

TVDPPath	MDPath	Formation
3285.0	3317.5	PARKMAN
3925.0	3986.2	SUSSEX
4340.0	4419.8	SHANNON
6780.0	6937.9	SHARON SPRINGS
6830.0	6991.8	NIOBRARA
6970.0	7159.1	NIO C TOP
7125.0	7431.0	FORT HAYS

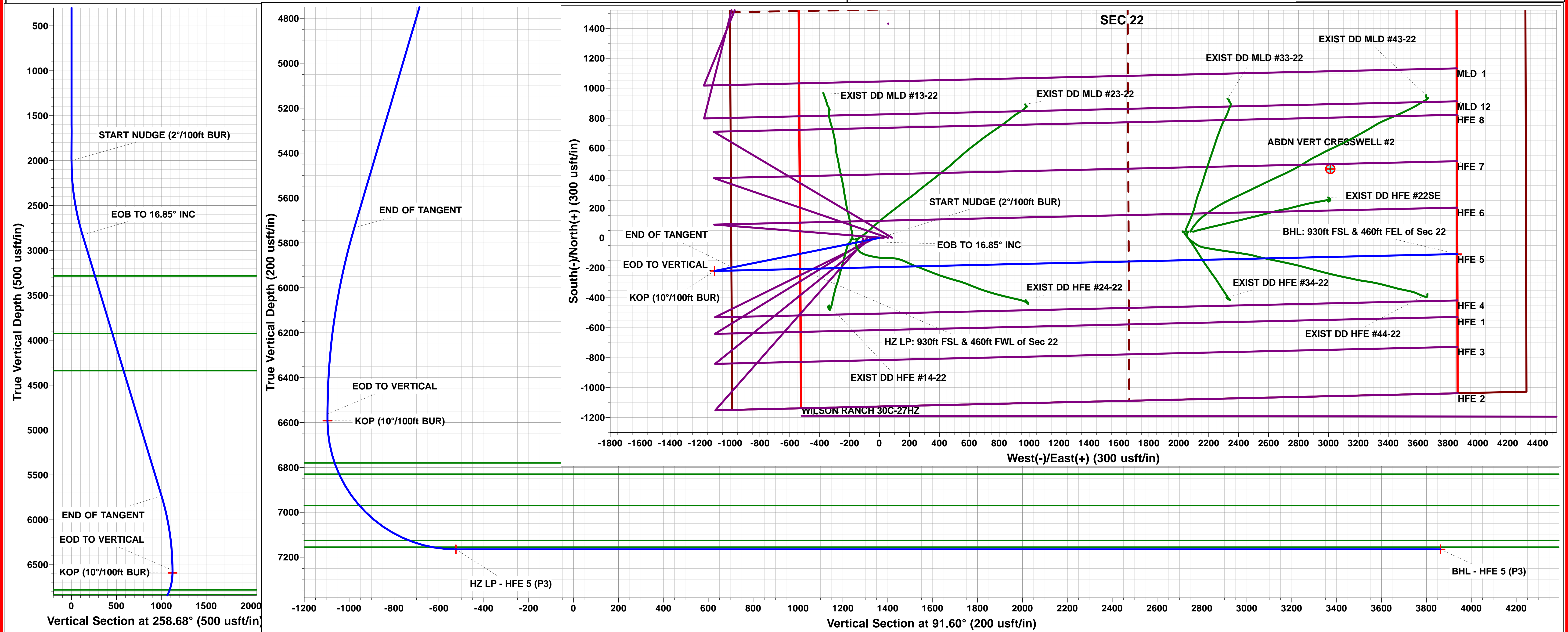
PROPOSED LOCAL COORDINATES:

- SHL: 1125ft FSL & 991ft FWL of Sec 29
- HZ LP: 930ft FSL & 460ft FWL of Sec 22
- BHL: 930ft FSL & 460ft FEL of Sec 22

Magnetic Field Information:

- Azimuths to True North:** Magnetic North: 8.38°
- Magnetic Field Strength:** 52370.1nT
- Dip Angle:** 66.75°
- Date:** 14/12/2016
- Model:** IGRF2016

Compass Rose: A diagram showing the relationship between True North (T) and Magnetic North (M).



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 5
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4935.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4935.0usft
Site:	SW SW SEC. 22 T4N R68W 6th P.M.	North Reference:	True
Well:	HFE 5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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 SW SEC. 22 T4N R68W 6th P.M.		
Site Position:		Northing:	1,350,393.80 usft
From:	Lat/Long	Easting:	3,140,798.83 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.294131
		Longitude:	-104.995243
		Grid Convergence:	0.33 °

Well	HFE 5		
Well Position	+N/-S	214.6 usft	Northing:
	+E/-W	10.0 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	14/12/2016	8.38	66.75	52,370

Design	PROPOSAL #3			
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	91.60

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	-4,935.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	-2,935.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,842.5	16.85	258.68	2,830.4	-2,104.6	-24.1	-120.6	2.00	2.00	0.00	258.68	
5,874.0	16.85	258.68	5,731.7	796.7	-196.6	-982.2	0.00	0.00	0.00	0.00	
6,716.4	0.00	0.00	6,562.1	1,627.1	-220.7	-1,102.8	2.00	-2.00	0.00	180.00	
6,746.4	0.00	0.00	6,592.1	1,657.1	-220.7	-1,102.8	0.00	0.00	0.00	0.00	KOP - HFE 5 (P3)
7,646.4	90.00	88.69	7,165.0	2,230.0	-207.6	-530.0	10.00	10.00	9.86	88.69	HZ LP - HFE 5 (P3)
12,038.6	90.00	88.69	7,165.0	2,230.0	-107.5	3,861.0	0.00	0.00	0.00	178.25	BHL - HFE 5 (P3)

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Site:	SW SW SEC. 22 T4N R68W 6th P.M.	North Reference:	True
Well:	HFE 5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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: 1125ft FSL & 991ft FWL of Sec 22										
0.0	0.00	0.00	0.0	4,935.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,835.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,735.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,635.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,535.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,435.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,335.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,235.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,135.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	4,035.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,935.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,835.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,735.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,635.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,535.00	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	3,435.00	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	3,335.00	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	3,235.00	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	3,135.00	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	3,035.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
2,000.0	0.00	0.00	2,000.0	2,935.00	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	258.68	2,100.0	2,835.02	-0.3	-1.7	-1.7	2.00	2.00	0.00
2,200.0	4.00	258.68	2,199.8	2,735.16	-1.4	-6.8	-6.8	2.00	2.00	0.00
2,300.0	6.00	258.68	2,299.5	2,635.55	-3.1	-15.4	-15.3	2.00	2.00	0.00
2,400.0	8.00	258.68	2,398.7	2,536.30	-5.5	-27.3	-27.2	2.00	2.00	0.00
2,500.0	10.00	258.68	2,497.5	2,437.53	-8.5	-42.7	-42.4	2.00	2.00	0.00
2,600.0	12.00	258.68	2,595.6	2,339.38	-12.3	-61.4	-61.0	2.00	2.00	0.00
2,700.0	14.00	258.68	2,693.1	2,241.94	-16.7	-83.4	-82.9	2.00	2.00	0.00
2,800.0	16.00	258.68	2,789.6	2,145.36	-21.8	-108.8	-108.2	2.00	2.00	0.00
EOB TO 16.85° INC										
2,842.5	16.85	258.68	2,830.4	2,104.59	-24.1	-120.6	-119.9	2.00	2.00	0.00
2,900.0	16.85	258.68	2,885.4	2,049.56	-27.4	-136.9	-136.1	0.00	0.00	0.00
3,000.0	16.85	258.68	2,981.1	1,953.85	-33.1	-165.4	-164.4	0.00	0.00	0.00
3,100.0	16.85	258.68	3,076.9	1,858.15	-38.8	-193.8	-192.6	0.00	0.00	0.00
3,200.0	16.85	258.68	3,172.6	1,762.44	-44.5	-222.2	-220.9	0.00	0.00	0.00
3,300.0	16.85	258.68	3,268.3	1,666.73	-50.2	-250.6	-249.1	0.00	0.00	0.00
PARKMAN										
3,317.5	16.85	258.68	3,285.0	1,650.00	-51.2	-255.6	-254.1	0.00	0.00	0.00
3,400.0	16.85	258.68	3,364.0	1,571.03	-55.8	-279.1	-277.4	0.00	0.00	0.00
3,500.0	16.85	258.68	3,459.7	1,475.32	-61.5	-307.5	-305.6	0.00	0.00	0.00
3,600.0	16.85	258.68	3,555.4	1,379.61	-67.2	-335.9	-333.9	0.00	0.00	0.00
3,700.0	16.85	258.68	3,651.1	1,283.90	-72.9	-364.3	-362.2	0.00	0.00	0.00
3,800.0	16.85	258.68	3,746.8	1,188.20	-78.6	-392.7	-390.4	0.00	0.00	0.00
3,900.0	16.85	258.68	3,842.5	1,092.49	-84.3	-421.2	-418.7	0.00	0.00	0.00
SUSSEX										
3,986.2	16.85	258.68	3,925.0	1,010.00	-89.2	-445.7	-443.0	0.00	0.00	0.00
4,000.0	16.85	258.68	3,938.2	996.78	-90.0	-449.6	-446.9	0.00	0.00	0.00
4,100.0	16.85	258.68	4,033.9	901.08	-95.7	-478.0	-475.2	0.00	0.00	0.00
4,200.0	16.85	258.68	4,129.6	805.37	-101.4	-506.4	-503.4	0.00	0.00	0.00
4,300.0	16.85	258.68	4,225.3	709.66	-107.0	-534.9	-531.7	0.00	0.00	0.00
4,400.0	16.85	258.68	4,321.0	613.96	-112.7	-563.3	-559.9	0.00	0.00	0.00

Planning Report



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Well:	HFE 5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
SHANNON										
4,419.8	16.85	258.68	4,340.0	595.00	-113.9	-568.9	-565.5	0.00	0.00	0.00
4,500.0	16.85	258.68	4,416.8	518.25	-118.4	-591.7	-588.2	0.00	0.00	0.00
4,600.0	16.85	258.68	4,512.5	422.54	-124.1	-620.1	-616.4	0.00	0.00	0.00
4,700.0	16.85	258.68	4,608.2	326.83	-129.8	-648.5	-644.7	0.00	0.00	0.00
4,800.0	16.85	258.68	4,703.9	231.13	-135.5	-677.0	-672.9	0.00	0.00	0.00
4,900.0	16.85	258.68	4,799.6	135.42	-141.2	-705.4	-701.2	0.00	0.00	0.00
5,000.0	16.85	258.68	4,895.3	39.71	-146.9	-733.8	-729.4	0.00	0.00	0.00
5,100.0	16.85	258.68	4,991.0	-55.99	-152.5	-762.2	-757.7	0.00	0.00	0.00
5,200.0	16.85	258.68	5,086.7	-151.70	-158.2	-790.7	-785.9	0.00	0.00	0.00
5,300.0	16.85	258.68	5,182.4	-247.41	-163.9	-819.1	-814.2	0.00	0.00	0.00
5,400.0	16.85	258.68	5,278.1	-343.11	-169.6	-847.5	-842.4	0.00	0.00	0.00
5,500.0	16.85	258.68	5,373.8	-438.82	-175.3	-875.9	-870.7	0.00	0.00	0.00
5,600.0	16.85	258.68	5,469.5	-534.53	-181.0	-904.3	-899.0	0.00	0.00	0.00
5,700.0	16.85	258.68	5,565.2	-630.24	-186.7	-932.8	-927.2	0.00	0.00	0.00
5,800.0	16.85	258.68	5,660.9	-725.94	-192.4	-961.2	-955.5	0.00	0.00	0.00
END OF TANGENT										
5,874.0	16.85	258.68	5,731.8	-796.77	-196.6	-982.2	-976.4	0.00	0.00	0.00
5,900.0	16.33	258.68	5,756.7	-821.68	-198.0	-989.5	-983.6	2.00	-2.00	0.00
6,000.0	14.33	258.68	5,853.1	-918.12	-203.2	-1,015.4	-1,009.4	2.00	-2.00	0.00
6,100.0	12.33	258.68	5,950.4	-1,015.42	-207.7	-1,038.0	-1,031.8	2.00	-2.00	0.00
6,200.0	10.33	258.68	6,048.5	-1,113.47	-211.6	-1,057.3	-1,051.0	2.00	-2.00	0.00
6,300.0	8.33	258.68	6,147.1	-1,212.14	-214.8	-1,073.2	-1,066.8	2.00	-2.00	0.00
6,400.0	6.33	258.68	6,246.3	-1,311.32	-217.3	-1,085.7	-1,079.2	2.00	-2.00	0.00
6,500.0	4.33	258.68	6,345.9	-1,410.88	-219.1	-1,094.8	-1,088.3	2.00	-2.00	0.00
6,600.0	2.33	258.68	6,445.7	-1,510.71	-220.2	-1,100.5	-1,093.9	2.00	-2.00	0.00
6,700.0	0.33	258.68	6,545.7	-1,610.68	-220.7	-1,102.8	-1,096.2	2.00	-2.00	0.00
EOD TO VERTICAL										
6,716.4	0.00	258.68	6,562.1	-1,627.08	-220.7	-1,102.8	-1,096.2	2.00	-2.00	0.00
KOP (10°/100ft BUR)										
6,746.4	0.00	0.00	6,592.1	-1,657.08	-220.7	-1,102.8	-1,096.2	0.00	0.00	0.00
6,800.0	5.36	88.69	6,645.6	-1,710.60	-220.6	-1,100.3	-1,093.7	10.00	10.00	0.00
6,900.0	15.36	88.69	6,743.8	-1,808.84	-220.2	-1,082.3	-1,075.8	10.00	10.00	0.00
SHARON SPRINGS										
6,937.9	19.15	88.69	6,780.0	-1,845.00	-220.0	-1,071.1	-1,064.6	10.00	10.00	0.00
NIORARA										
6,991.8	24.54	88.69	6,830.0	-1,895.00	-219.5	-1,051.1	-1,044.6	10.00	10.00	0.00
7,000.0	25.36	88.69	6,837.5	-1,902.48	-219.4	-1,047.6	-1,041.1	10.00	10.00	0.00
7,100.0	35.36	88.69	6,923.7	-1,988.65	-218.3	-997.1	-990.7	10.00	10.00	0.00
NIO C TOP										
7,159.1	41.27	88.69	6,970.0	-2,035.00	-217.5	-960.5	-954.1	10.00	10.00	0.00
7,200.0	45.36	88.69	6,999.8	-2,064.75	-216.8	-932.5	-926.1	10.00	10.00	0.00
7,300.0	55.36	88.69	7,063.5	-2,128.47	-215.1	-855.6	-849.3	10.00	10.00	0.00
7,400.0	65.36	88.69	7,112.9	-2,177.85	-213.1	-768.8	-762.6	10.00	10.00	0.00
FORT HAYS										
7,431.0	68.46	88.69	7,125.0	-2,190.00	-212.4	-740.3	-734.1	10.00	10.00	0.00
7,500.0	75.37	88.69	7,146.4	-2,211.41	-210.9	-674.8	-668.6	10.00	10.00	0.00
CODELL										
7,539.1	79.28	88.69	7,155.0	-2,220.00	-210.1	-636.6	-630.5	10.00	10.00	0.00
7,600.0	85.37	88.69	7,163.1	-2,228.13	-208.7	-576.3	-570.3	10.00	10.00	0.00
HZ LP: 930ft FSL & 460ft FWL of Sec 22										
7,646.4	90.00	88.69	7,165.0	-2,230.00	-207.6	-530.0	-524.0	9.99	9.99	0.00

Planning Report



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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
7,700.0	90.00	88.69	7,165.0	-2,230.00	-206.4	-476.4	-470.5	0.00	0.00	0.00
7,800.0	90.00	88.69	7,165.0	-2,229.99	-204.1	-376.4	-370.6	0.00	0.00	0.00
7,900.0	90.00	88.69	7,165.0	-2,229.99	-201.9	-276.4	-270.7	0.00	0.00	0.00
8,000.0	90.00	88.69	7,165.0	-2,229.98	-199.6	-176.5	-170.8	0.00	0.00	0.00
8,100.0	90.00	88.69	7,165.0	-2,229.98	-197.3	-76.5	-71.0	0.00	0.00	0.00
8,200.0	90.00	88.69	7,165.0	-2,229.97	-195.0	23.5	28.9	0.00	0.00	0.00
8,300.0	90.00	88.69	7,165.0	-2,229.97	-192.7	123.4	128.8	0.00	0.00	0.00
8,400.0	90.00	88.69	7,165.0	-2,229.97	-190.5	223.4	228.6	0.00	0.00	0.00
8,500.0	90.00	88.69	7,165.0	-2,229.96	-188.2	323.4	328.5	0.00	0.00	0.00
8,600.0	90.00	88.69	7,165.0	-2,229.96	-185.9	423.4	428.4	0.00	0.00	0.00
8,700.0	90.00	88.69	7,165.0	-2,229.96	-183.6	523.3	528.3	0.00	0.00	0.00
8,800.0	90.00	88.69	7,165.0	-2,229.96	-181.3	623.3	628.1	0.00	0.00	0.00
8,900.0	90.00	88.69	7,165.0	-2,229.95	-179.1	723.3	728.0	0.00	0.00	0.00
9,000.0	90.00	88.69	7,165.0	-2,229.95	-176.8	823.3	827.9	0.00	0.00	0.00
9,100.0	90.00	88.69	7,164.9	-2,229.95	-174.5	923.2	927.7	0.00	0.00	0.00
9,200.0	90.00	88.69	7,164.9	-2,229.95	-172.2	1,023.2	1,027.6	0.00	0.00	0.00
9,300.0	90.00	88.69	7,164.9	-2,229.95	-169.9	1,123.2	1,127.5	0.00	0.00	0.00
9,400.0	90.00	88.69	7,164.9	-2,229.94	-167.7	1,223.2	1,227.4	0.00	0.00	0.00
9,500.0	90.00	88.69	7,164.9	-2,229.94	-165.4	1,323.1	1,327.2	0.00	0.00	0.00
9,600.0	90.00	88.69	7,164.9	-2,229.94	-163.1	1,423.1	1,427.1	0.00	0.00	0.00
9,700.0	90.00	88.69	7,164.9	-2,229.94	-160.8	1,523.1	1,527.0	0.00	0.00	0.00
9,800.0	90.00	88.69	7,164.9	-2,229.94	-158.5	1,623.1	1,626.8	0.00	0.00	0.00
9,900.0	90.00	88.69	7,164.9	-2,229.94	-156.3	1,723.0	1,726.7	0.00	0.00	0.00
10,000.0	90.00	88.69	7,164.9	-2,229.94	-154.0	1,823.0	1,826.6	0.00	0.00	0.00
10,100.0	90.00	88.69	7,164.9	-2,229.94	-151.7	1,923.0	1,926.5	0.00	0.00	0.00
10,200.0	90.00	88.69	7,164.9	-2,229.94	-149.4	2,023.0	2,026.3	0.00	0.00	0.00
10,300.0	90.00	88.69	7,164.9	-2,229.94	-147.2	2,122.9	2,126.2	0.00	0.00	0.00
10,400.0	90.00	88.69	7,164.9	-2,229.95	-144.9	2,222.9	2,226.1	0.00	0.00	0.00
10,500.0	90.00	88.69	7,164.9	-2,229.95	-142.6	2,322.9	2,325.9	0.00	0.00	0.00
10,600.0	90.00	88.69	7,164.9	-2,229.95	-140.3	2,422.9	2,425.8	0.00	0.00	0.00
10,700.0	90.00	88.69	7,165.0	-2,229.95	-138.0	2,522.8	2,525.7	0.00	0.00	0.00
10,800.0	90.00	88.69	7,165.0	-2,229.95	-135.8	2,622.8	2,625.6	0.00	0.00	0.00
10,900.0	90.00	88.69	7,165.0	-2,229.96	-133.5	2,722.8	2,725.4	0.00	0.00	0.00
11,000.0	90.00	88.69	7,165.0	-2,229.96	-131.2	2,822.7	2,825.3	0.00	0.00	0.00
11,100.0	90.00	88.69	7,165.0	-2,229.96	-128.9	2,922.7	2,925.2	0.00	0.00	0.00
11,200.0	90.00	88.69	7,165.0	-2,229.96	-126.6	3,022.7	3,025.0	0.00	0.00	0.00
11,300.0	90.00	88.69	7,165.0	-2,229.97	-124.4	3,122.7	3,124.9	0.00	0.00	0.00
11,400.0	90.00	88.69	7,165.0	-2,229.97	-122.1	3,222.6	3,224.8	0.00	0.00	0.00
11,500.0	90.00	88.69	7,165.0	-2,229.98	-119.8	3,322.6	3,324.7	0.00	0.00	0.00
11,600.0	90.00	88.69	7,165.0	-2,229.98	-117.5	3,422.6	3,424.5	0.00	0.00	0.00
11,700.0	90.00	88.69	7,165.0	-2,229.98	-115.2	3,522.6	3,524.4	0.00	0.00	0.00
11,800.0	90.00	88.69	7,165.0	-2,229.99	-113.0	3,622.5	3,624.3	0.00	0.00	0.00
11,900.0	90.00	88.69	7,165.0	-2,229.99	-110.7	3,722.5	3,724.2	0.00	0.00	0.00
12,000.0	90.00	88.69	7,165.0	-2,230.00	-108.4	3,822.5	3,824.0	0.00	0.00	0.00
BHL: 930ft FSL & 460ft FEL of Sec 22										
12,038.6	90.00	88.69	7,165.0	-2,230.00	-107.5	3,861.0	3,862.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 5
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4935.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4935.0usft
Site:	SW SW SEC. 22 T4N R68W 6th P.M.	North Reference:	True
Well:	HFE 5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,317.5	3,285.0	PARKMAN				
3,986.2	3,925.0	SUSSEX				
4,419.8	4,340.0	SHANNON				
6,937.9	6,780.0	SHARON SPRINGS				
6,991.8	6,830.0	NIOBRARA				
7,159.1	6,970.0	NIO C TOP				
7,431.0	7,125.0	FORT HAYS				
7,539.1	7,155.0	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: 1125ft FSL & 991ft FWL of Sec 22
2,000.0	2,000.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,842.5	2,830.4	-24.1	-120.6	EOB TO 16.85° INC
5,874.0	5,731.8	-196.6	-982.2	END OF TANGENT
6,716.4	6,562.1	-220.7	-1,102.8	EOD TO VERTICAL
6,746.4	6,592.1	-220.7	-1,102.8	KOP (10°/100ft BUR)
7,646.4	7,165.0	-207.6	-530.0	HZ LP: 930ft FSL & 460ft FWL of Sec 22
12,038.6	7,165.0	-107.5	3,861.0	BHL: 930ft FSL & 460ft FEL of Sec 22