

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

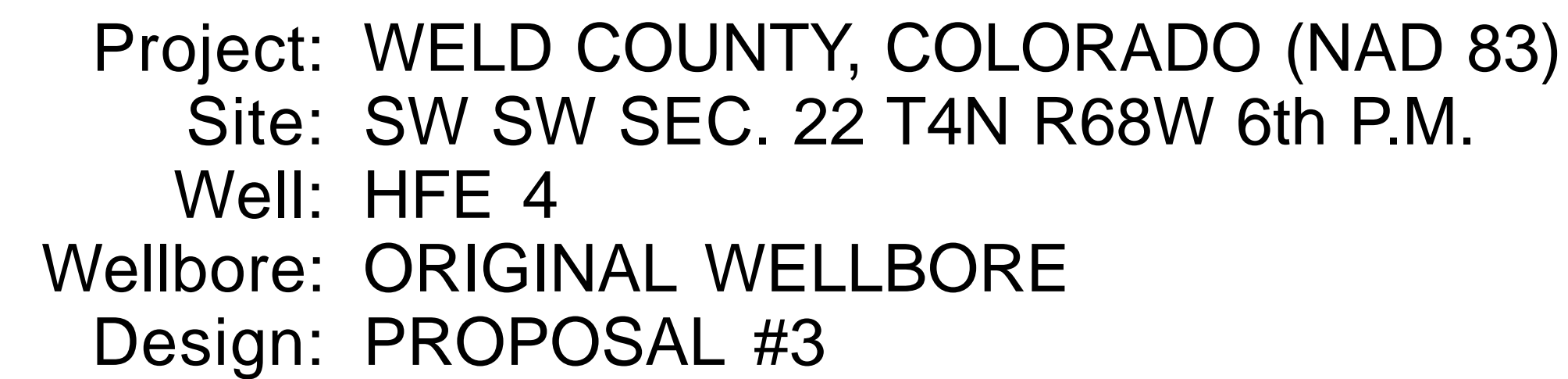
HFE 4

ORIGINAL WELLBORE

11 January, 2017

Plan: PROPOSAL #3





The figure is a geological map with a coordinate system where the horizontal axis is 'West(-)/East(+)' (200 usft/in) ranging from -1000 to 600, and the vertical axis is 'South(-)/North(+)' (200 usft/in) ranging from -400 to 600. The map displays several geological features and boundaries:

- EXIST DD MLD #13-22**: A horizontal line at approximately Y=100.
- EXIST DD HFE #14-22**: A horizontal line at approximately Y=0.
- EXIST DD HFE #24-22**: A horizontal line at approximately Y=-100.
- EXIST DD MLD #23-22**: A horizontal line at approximately Y=-200.
- HFE 1 through HFE 8**: Eight distinct geological features or boundaries, each labeled and color-coded (purple, green, blue, and red).
- FORMATION TOP DETAILS**: A table providing specific coordinates for the top of various geological formations.
- PROPOSED LOCAL COORDINATES**: A section detailing the proposed local coordinates for the map, including SHL, HZ LP, and BHL.
- Geographic Information**: A compass rose indicating True North (T) and Magnetic North (M), along with the magnetic field strength (52370.1nT), dip angle (66.75°), date (14/12/2016), and model (IGRF2015).

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3285.0	3327.7	PARKMAN
3925.0	4003.7	SUSSEX
4340.0	4442.1	SHANNON
6780.0	6997.4	SHARON SPRINGS
6830.0	7068.8	NIOBRARA
6970.0	7477.9	NIO C TOP

PROPOSED LOCAL COORDINATES:

SHL: 1126ft FSL & 963ft FWL of Sec 29

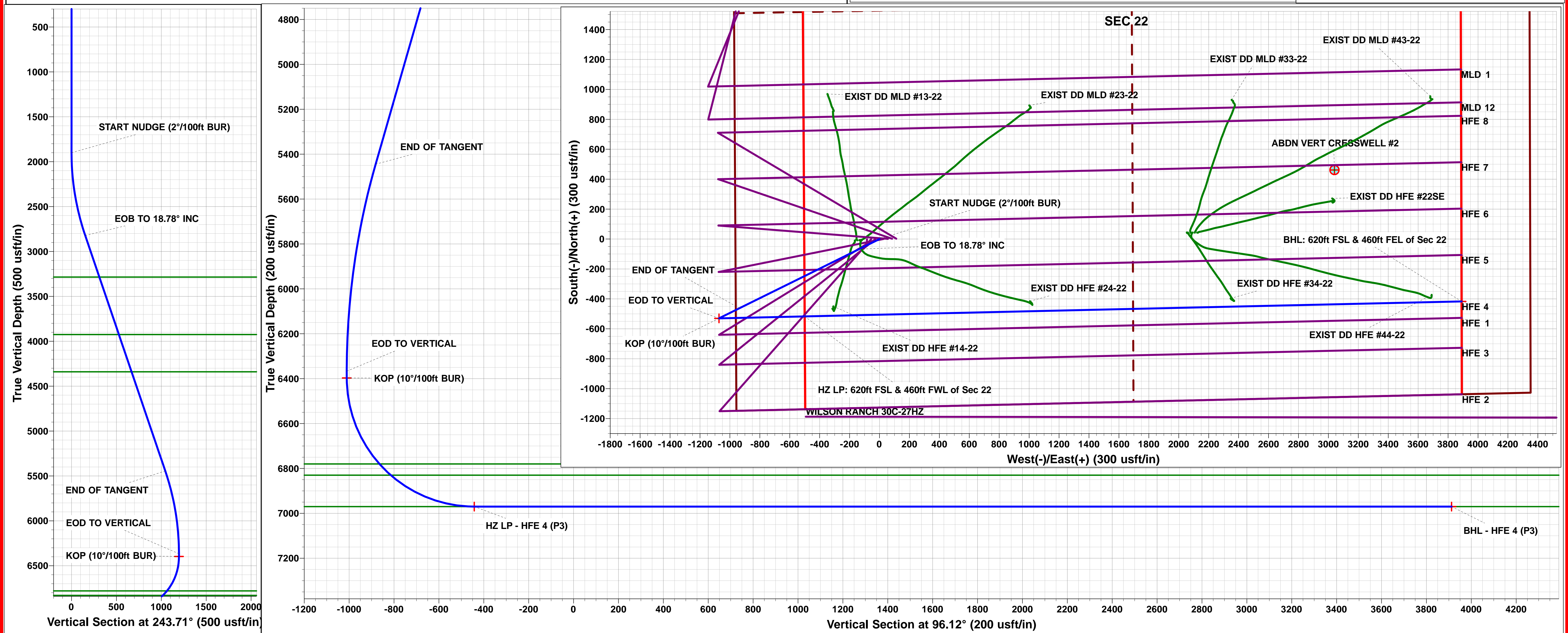
HZ LP: 620ft FSL & 460ft FWL of Sec 22

BHL: 620ft FSL & 460ft FEL of Sec 22

Geographic Information:

Azimuths to True North
Magnetic North: 8.38°

Magnetic Field
Strength: 52370.1nT
Dip Angle: 66.75°
Date: 14/12/2016
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 4
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 4	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 4		
Well Position	+N/-S	213.8 usft	Northing: 1,350,607.52 usfi
	+E/-W	-17.9 usft	Easting: 3,140,779.76 usfi
Position Uncertainty	0.0 usft	Wellhead Elevation:	usfi
		Latitude:	40.294718
		Longitude:	-104.995307
		Ground Level:	4,919.0 usft

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 (°)
	6,970.0	0.0	0.0	96.12

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	
1,900.0	0.00	0.00	1,900.0	-3,035.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,839.0	18.78	243.71	2,822.3	-2,112.7	-67.5	-136.7	2.00	2.00	0.00	243.71	
5,608.9	18.78	243.71	5,444.7	509.7	-462.5	-936.3	0.00	0.00	0.00	0.00	
6,547.9	0.00	0.00	6,367.0	1,432.0	-530.0	-1,073.0	2.00	-2.00	0.00	180.00	
6,577.9	0.00	0.00	6,397.0	1,462.0	-530.0	-1,073.0	0.00	0.00	0.00	0.00	KOP - HFE 4 (P3)
7,477.9	90.00	88.69	6,970.0	2,035.0	-516.9	-500.2	10.00	10.00	9.85	88.69	HZ LP - HFE 4 (P3)
11,869.1	90.00	88.69	6,970.0	2,035.0	-416.8	3,889.8	0.00	0.00	0.00	1.81	BHL - HFE 4 (P3)

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 4
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 4	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: 1126ft FSL & 963ft 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
START NUDGE (2°/100ft BUR)										
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
2,000.0	2.00	243.71	2,000.0	2,935.02	-0.8	-1.6	-1.5	2.00	2.00	0.00
2,100.0	4.00	243.71	2,099.8	2,835.16	-3.1	-6.3	-5.9	2.00	2.00	0.00
2,200.0	6.00	243.71	2,199.5	2,735.55	-7.0	-14.1	-13.3	2.00	2.00	0.00
2,300.0	8.00	243.71	2,298.7	2,636.30	-12.3	-25.0	-23.5	2.00	2.00	0.00
2,400.0	10.00	243.71	2,397.5	2,537.53	-19.3	-39.0	-36.7	2.00	2.00	0.00
2,500.0	12.00	243.71	2,495.6	2,439.38	-27.7	-56.1	-52.9	2.00	2.00	0.00
2,600.0	14.00	243.71	2,593.1	2,341.94	-37.7	-76.3	-71.8	2.00	2.00	0.00
2,700.0	16.00	243.71	2,689.6	2,245.36	-49.1	-99.5	-93.7	2.00	2.00	0.00
2,800.0	18.00	243.71	2,785.3	2,149.73	-62.1	-125.7	-118.4	2.00	2.00	0.00
EOB TO 18.78° INC										
2,839.0	18.78	243.71	2,822.3	2,112.72	-67.5	-136.7	-128.8	2.00	2.00	0.00
2,900.0	18.78	243.71	2,880.0	2,054.97	-76.2	-154.4	-145.4	0.00	0.00	0.00
3,000.0	18.78	243.71	2,974.7	1,960.29	-90.5	-183.2	-172.5	0.00	0.00	0.00
3,100.0	18.78	243.71	3,069.4	1,865.62	-104.8	-212.1	-199.7	0.00	0.00	0.00
3,200.0	18.78	243.71	3,164.1	1,770.94	-119.0	-240.9	-226.9	0.00	0.00	0.00
3,300.0	18.78	243.71	3,258.7	1,676.27	-133.3	-269.8	-254.1	0.00	0.00	0.00
PARKMAN										
3,327.7	18.78	243.71	3,285.0	1,650.00	-137.2	-277.8	-261.6	0.00	0.00	0.00
3,400.0	18.78	243.71	3,353.4	1,581.59	-147.5	-298.7	-281.3	0.00	0.00	0.00
3,500.0	18.78	243.71	3,448.1	1,486.91	-161.8	-327.5	-308.4	0.00	0.00	0.00
3,600.0	18.78	243.71	3,542.8	1,392.24	-176.0	-356.4	-335.6	0.00	0.00	0.00
3,700.0	18.78	243.71	3,637.4	1,297.56	-190.3	-385.3	-362.8	0.00	0.00	0.00
3,800.0	18.78	243.71	3,732.1	1,202.88	-204.6	-414.1	-390.0	0.00	0.00	0.00
3,900.0	18.78	243.71	3,826.8	1,108.21	-218.8	-443.0	-417.2	0.00	0.00	0.00
4,000.0	18.78	243.71	3,921.5	1,013.53	-233.1	-471.9	-444.3	0.00	0.00	0.00
SUSSEX										
4,003.7	18.78	243.71	3,925.0	1,010.00	-233.6	-472.9	-445.4	0.00	0.00	0.00
4,100.0	18.78	243.71	4,016.1	918.86	-247.3	-500.7	-471.5	0.00	0.00	0.00
4,200.0	18.78	243.71	4,110.8	824.18	-261.6	-529.6	-498.7	0.00	0.00	0.00
4,300.0	18.78	243.71	4,205.5	729.50	-275.8	-558.4	-525.9	0.00	0.00	0.00
4,400.0	18.78	243.71	4,300.2	634.83	-290.1	-587.3	-553.1	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 4
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 4	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										
4,442.1	18.78	243.71	4,340.0	595.00	-296.1	-599.5	-564.5	0.00	0.00	0.00
4,500.0	18.78	243.71	4,394.8	540.15	-304.4	-616.2	-580.2	0.00	0.00	0.00
4,600.0	18.78	243.71	4,489.5	445.47	-318.6	-645.0	-607.4	0.00	0.00	0.00
4,700.0	18.78	243.71	4,584.2	350.80	-332.9	-673.9	-634.6	0.00	0.00	0.00
4,800.0	18.78	243.71	4,678.9	256.12	-347.1	-702.8	-661.8	0.00	0.00	0.00
4,900.0	18.78	243.71	4,773.6	161.45	-361.4	-731.6	-689.0	0.00	0.00	0.00
5,000.0	18.78	243.71	4,868.2	66.77	-375.6	-760.5	-716.1	0.00	0.00	0.00
5,100.0	18.78	243.71	4,962.9	-27.91	-389.9	-789.4	-743.3	0.00	0.00	0.00
5,200.0	18.78	243.71	5,057.6	-122.58	-404.2	-818.2	-770.5	0.00	0.00	0.00
5,300.0	18.78	243.71	5,152.3	-217.26	-418.4	-847.1	-797.7	0.00	0.00	0.00
5,400.0	18.78	243.71	5,246.9	-311.94	-432.7	-876.0	-824.9	0.00	0.00	0.00
5,500.0	18.78	243.71	5,341.6	-406.61	-446.9	-904.8	-852.1	0.00	0.00	0.00
5,600.0	18.78	243.71	5,436.3	-501.29	-461.2	-933.7	-879.2	0.00	0.00	0.00
END OF TANGENT										
5,608.9	18.78	243.71	5,444.7	-509.71	-462.5	-936.3	-881.7	0.00	0.00	0.00
5,700.0	16.96	243.71	5,531.4	-596.42	-474.8	-961.3	-905.3	2.00	-2.00	0.00
5,800.0	14.96	243.71	5,627.6	-692.56	-487.0	-986.0	-928.5	2.00	-2.00	0.00
5,900.0	12.96	243.71	5,724.6	-789.60	-497.7	-1,007.6	-948.8	2.00	-2.00	0.00
6,000.0	10.96	243.71	5,822.4	-887.42	-506.9	-1,026.2	-966.3	2.00	-2.00	0.00
6,100.0	8.96	243.71	5,920.9	-985.91	-514.5	-1,041.7	-980.9	2.00	-2.00	0.00
6,200.0	6.96	243.71	6,019.9	-1,084.94	-520.7	-1,054.1	-992.6	2.00	-2.00	0.00
6,300.0	4.96	243.71	6,119.4	-1,184.40	-525.3	-1,063.4	-1,001.4	2.00	-2.00	0.00
6,400.0	2.96	243.71	6,219.2	-1,284.16	-528.3	-1,069.6	-1,007.2	2.00	-2.00	0.00
6,500.0	0.96	243.71	6,319.1	-1,384.09	-529.8	-1,072.6	-1,010.1	2.00	-2.00	0.00
EOD TO VERTICAL										
6,547.9	0.00	243.71	6,367.0	-1,431.99	-530.0	-1,073.0	-1,010.4	2.00	-2.00	0.00
KOP (10°/100ft BUR)										
6,577.9	0.00	0.00	6,397.0	-1,461.99	-530.0	-1,073.0	-1,010.4	0.00	0.00	0.00
6,600.0	2.21	88.69	6,419.1	-1,484.08	-530.0	-1,072.6	-1,010.0	9.99	9.99	0.00
6,700.0	12.21	88.69	6,518.2	-1,583.17	-529.7	-1,060.0	-997.6	10.00	10.00	0.00
6,800.0	22.21	88.69	6,613.6	-1,678.57	-529.0	-1,030.5	-968.3	10.00	10.00	0.00
6,900.0	32.21	88.69	6,702.4	-1,767.39	-528.0	-984.9	-923.0	10.00	10.00	0.00
SHARON SPRINGS										
6,997.4	41.94	88.69	6,780.0	-1,845.00	-526.7	-926.2	-864.8	10.00	10.00	0.00
7,000.0	42.21	88.69	6,781.9	-1,846.94	-526.6	-924.5	-863.1	10.00	10.00	0.00
NIOBRARA										
7,068.8	49.08	88.69	6,830.0	-1,895.00	-525.5	-875.3	-814.4	10.00	10.00	0.00
7,100.0	52.21	88.69	6,849.8	-1,914.79	-524.9	-851.2	-790.4	10.00	10.00	0.00
7,200.0	62.20	88.69	6,903.9	-1,968.89	-523.0	-767.3	-707.2	10.00	10.00	0.00
7,300.0	72.20	88.69	6,942.6	-2,007.58	-520.9	-675.2	-615.9	10.00	10.00	0.00
7,400.0	82.20	88.69	6,964.7	-2,029.70	-518.7	-577.9	-519.3	10.00	10.00	0.00
HZ LP: 620ft FSL & 460ft FWL of Sec 22 - NIO C TOP										
7,477.9	90.00	88.69	6,970.0	-2,035.00	-516.9	-500.2	-442.3	10.00	10.00	0.00
7,500.0	90.00	88.69	6,970.0	-2,035.00	-516.4	-478.1	-420.4	0.00	0.00	0.00
7,600.0	90.00	88.69	6,970.0	-2,035.01	-514.2	-378.2	-321.2	0.00	0.00	0.00
7,700.0	90.00	88.69	6,970.0	-2,035.01	-511.9	-278.2	-222.1	0.00	0.00	0.00
7,800.0	90.00	88.69	6,970.0	-2,035.01	-509.6	-178.2	-122.9	0.00	0.00	0.00
7,900.0	90.00	88.69	6,970.0	-2,035.02	-507.3	-78.2	-23.7	0.00	0.00	0.00
8,000.0	90.00	88.69	6,970.0	-2,035.02	-505.0	21.7	75.4	0.00	0.00	0.00
8,100.0	90.00	88.69	6,970.0	-2,035.03	-502.8	121.7	174.6	0.00	0.00	0.00
8,200.0	90.00	88.69	6,970.0	-2,035.03	-500.5	221.7	273.7	0.00	0.00	0.00
8,300.0	90.00	88.69	6,970.0	-2,035.03	-498.2	321.7	372.9	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 4
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 4	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)
8,400.0	90.00	88.69	6,970.0	-2,035.03	-495.9	421.6	472.1	0.00	0.00	0.00
8,500.0	90.00	88.69	6,970.0	-2,035.04	-493.6	521.6	571.2	0.00	0.00	0.00
8,600.0	90.00	88.69	6,970.0	-2,035.04	-491.4	621.6	670.4	0.00	0.00	0.00
8,700.0	90.00	88.69	6,970.0	-2,035.04	-489.1	721.6	769.6	0.00	0.00	0.00
8,800.0	90.00	88.69	6,970.0	-2,035.04	-486.8	821.5	868.7	0.00	0.00	0.00
8,900.0	90.00	88.69	6,970.0	-2,035.05	-484.5	921.5	967.9	0.00	0.00	0.00
9,000.0	90.00	88.69	6,970.0	-2,035.05	-482.2	1,021.5	1,067.0	0.00	0.00	0.00
9,100.0	90.00	88.69	6,970.0	-2,035.05	-479.9	1,121.5	1,166.2	0.00	0.00	0.00
9,200.0	90.00	88.69	6,970.1	-2,035.05	-477.7	1,221.4	1,265.4	0.00	0.00	0.00
9,300.0	90.00	88.69	6,970.1	-2,035.05	-475.4	1,321.4	1,364.5	0.00	0.00	0.00
9,400.0	90.00	88.69	6,970.1	-2,035.05	-473.1	1,421.4	1,463.7	0.00	0.00	0.00
9,500.0	90.00	88.69	6,970.1	-2,035.05	-470.8	1,521.3	1,562.9	0.00	0.00	0.00
9,600.0	90.00	88.69	6,970.1	-2,035.05	-468.5	1,621.3	1,662.0	0.00	0.00	0.00
9,700.0	90.00	88.69	6,970.1	-2,035.05	-466.3	1,721.3	1,761.2	0.00	0.00	0.00
9,800.0	90.00	88.69	6,970.1	-2,035.05	-464.0	1,821.3	1,860.3	0.00	0.00	0.00
9,900.0	90.00	88.69	6,970.1	-2,035.05	-461.7	1,921.2	1,959.5	0.00	0.00	0.00
10,000.0	90.00	88.69	6,970.1	-2,035.05	-459.4	2,021.2	2,058.7	0.00	0.00	0.00
10,100.0	90.00	88.69	6,970.1	-2,035.05	-457.1	2,121.2	2,157.8	0.00	0.00	0.00
10,200.0	90.00	88.69	6,970.0	-2,035.05	-454.9	2,221.2	2,257.0	0.00	0.00	0.00
10,300.0	90.00	88.69	6,970.0	-2,035.05	-452.6	2,321.1	2,356.2	0.00	0.00	0.00
10,400.0	90.00	88.69	6,970.0	-2,035.05	-450.3	2,421.1	2,455.3	0.00	0.00	0.00
10,500.0	90.00	88.69	6,970.0	-2,035.05	-448.0	2,521.1	2,554.5	0.00	0.00	0.00
10,600.0	90.00	88.69	6,970.0	-2,035.04	-445.7	2,621.1	2,653.6	0.00	0.00	0.00
10,700.0	90.00	88.69	6,970.0	-2,035.04	-443.5	2,721.0	2,752.8	0.00	0.00	0.00
10,800.0	90.00	88.69	6,970.0	-2,035.04	-441.2	2,821.0	2,852.0	0.00	0.00	0.00
10,900.0	90.00	88.69	6,970.0	-2,035.04	-438.9	2,921.0	2,951.1	0.00	0.00	0.00
11,000.0	90.00	88.69	6,970.0	-2,035.03	-436.6	3,021.0	3,050.3	0.00	0.00	0.00
11,100.0	90.00	88.69	6,970.0	-2,035.03	-434.3	3,120.9	3,149.4	0.00	0.00	0.00
11,200.0	90.00	88.69	6,970.0	-2,035.03	-432.1	3,220.9	3,248.6	0.00	0.00	0.00
11,300.0	90.00	88.69	6,970.0	-2,035.02	-429.8	3,320.9	3,347.8	0.00	0.00	0.00
11,400.0	90.00	88.69	6,970.0	-2,035.02	-427.5	3,420.9	3,446.9	0.00	0.00	0.00
11,500.0	90.00	88.69	6,970.0	-2,035.02	-425.2	3,520.8	3,546.1	0.00	0.00	0.00
11,600.0	90.00	88.69	6,970.0	-2,035.01	-422.9	3,620.8	3,645.3	0.00	0.00	0.00
11,700.0	90.00	88.69	6,970.0	-2,035.01	-420.7	3,720.8	3,744.4	0.00	0.00	0.00
11,800.0	90.00	88.69	6,970.0	-2,035.00	-418.4	3,820.8	3,843.6	0.00	0.00	0.00
BHL: 620ft FSL & 460ft FEL of Sec 22										
11,869.1	90.00	88.69	6,970.0	-2,035.00	-416.8	3,889.8	3,912.1	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,327.7	3,285.0	PARKMAN			
4,003.7	3,925.0	SUSSEX			
4,442.1	4,340.0	SHANNON			
6,997.4	6,780.0	SHARON SPRINGS			
7,068.8	6,830.0	NIOBRARA			
7,477.9	6,970.0	NIO C TOP			

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HFE 4
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 4	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 1126ft FSL & 963ft FWL of Sec 22
1,900.0	1,900.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,839.0	2,822.3	-67.5	-136.7	EOB TO 18.78° INC
5,608.9	5,444.7	-462.5	-936.3	END OF TANGENT
6,547.9	6,367.0	-530.0	-1,073.0	EOD TO VERTICAL
6,577.9	6,397.0	-530.0	-1,073.0	KOP (10°/100ft BUR)
7,477.9	6,970.0	-516.9	-500.2	HZ LP: 620ft FSL & 460ft FWL of Sec 22
11,869.1	6,970.0	-416.8	3,889.8	BHL: 620ft FSL & 460ft FEL of Sec 22