

# **EXTRACTION OIL & GAS**

**WELD COUNTY, COLORADO (NAD 83)**

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

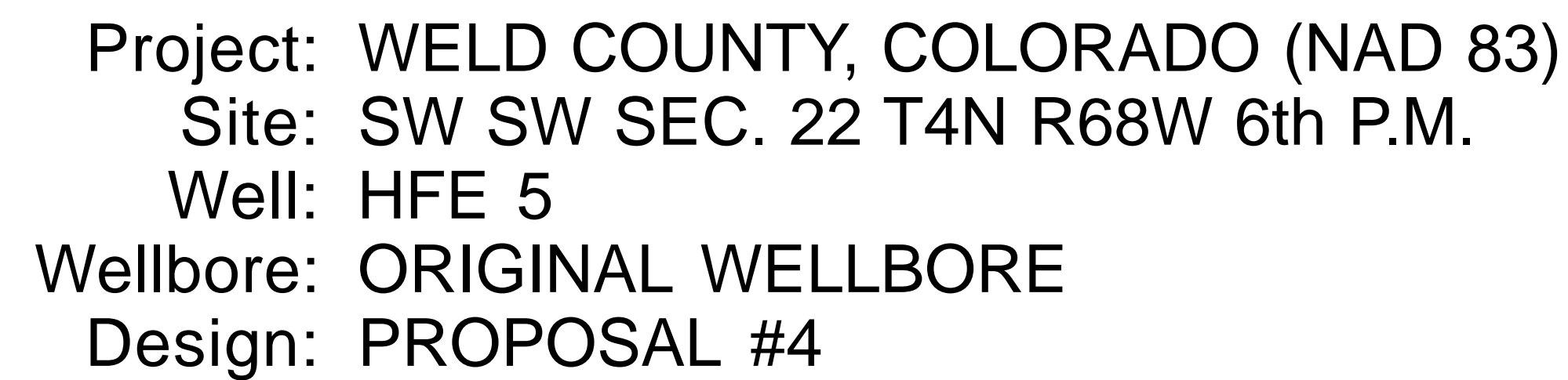
**HFE 5**

**ORIGINAL WELLBORE**

**31 May, 2017**

**Plan: PROPOSAL #4**





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 purple line segment.
- EXIST DD HFE #14-22:** A purple line segment.
- EXIST DD HFE #24-22:** A purple line segment.
- EXIST DD MLD #23-22:** A purple line segment.
- HFE 1, HFE 2, HFE 3, HFE 4, HFE 5, HFE 6, HFE 7, HFE 8:** Various colored lines (purple, green, blue) representing different geological features.

**FORMATION TOP DETAILS**

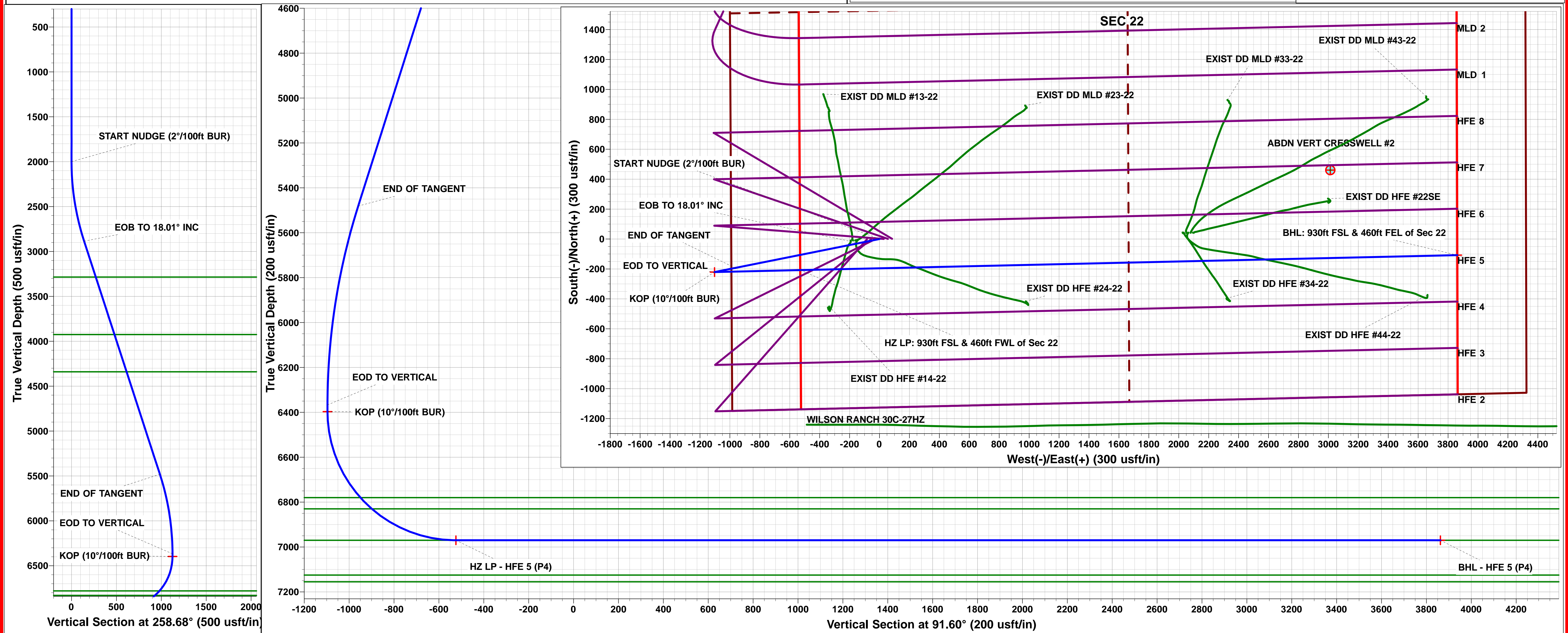
TVDPPath	MDPath	Formation
3285.0	3320.3	PARKMAN
3925.0	3993.3	SUSSEX
4340.0	4429.7	SHANNON
6780.0	6979.7	SHARON SPRINGS
6830.0	7051.1	NIOBRARA
6970.0	7460.3	NIO C TOP

**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: 8.33°
- Magnetic Field Strength: 52317.7snT
- Dip Angle: 66.74°
- Date: 31/05/2017
- Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 5
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4935.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4935.0usft
<b>Site:</b>	SW SW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #4		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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	Latitude:	40.294131
From:	Lat/Long	Easting:	3,140,798.83 usft	Longitude:	-104.995243
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft	Grid Convergence:	0.33 °

Well	HFE 5					
Well Position	+N/-S	214.6 usft	Northing:	1,350,608.41 usft	Latitude:	40.294720
	+E/-W	10.0 usft	Easting:	3,140,807.65 usft	Longitude:	-104.995207
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,919.0 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	31/05/2017	8.33	66.74	52,318

<b>Design</b>	PROPOSAL #4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	6,970.0	0.0	0.0	91.60

<b>Plan Sections</b>											
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	
2,900.6	18.01	258.68	2,885.8	-2,049.2	-27.5	-137.7	2.00	2.00	0.00	258.68	
5,629.8	18.01	258.68	5,481.3	546.3	-193.2	-965.1	0.00	0.00	0.00	0.00	
6,530.4	0.00	0.00	6,367.1	1,432.1	-220.7	-1,102.8	2.00	-2.00	0.00	180.00	
6,560.4	0.00	0.00	6,397.1	1,462.1	-220.7	-1,102.8	0.00	0.00	0.00	0.00	KOP - HFE 5 (P4)
7,460.3	90.00	88.69	6,970.0	2,035.0	-207.6	-530.0	10.00	10.00	9.86	88.69	HZ LP - HFE 5 (P4)
11,852.5	90.00	88.69	6,970.0	2,035.0	-107.5	3,861.0	0.00	0.00	0.00	178.25	BHL - HFE 5 (P4)

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 5
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4935.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4935.0usft
<b>Site:</b>	SW SW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #4		

## 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)
<b>SHL: 1125ft FSL &amp; 991ft FWL of Sec 22</b>										
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
<b>START NUDGE (2°/100ft BUR)</b>										
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
2,900.0	18.00	258.68	2,885.3	2,049.73	-27.5	-137.5	-136.7	2.00	2.00	0.00
<b>EOB TO 18.01° INC</b>										
2,900.6	18.01	258.68	2,885.8	2,049.16	-27.6	-137.7	-136.8	1.89	1.89	0.00
3,000.0	18.01	258.68	2,980.4	1,954.63	-33.6	-167.8	-166.8	0.00	0.00	0.00
3,100.0	18.01	258.68	3,075.5	1,859.53	-39.7	-198.1	-196.9	0.00	0.00	0.00
3,200.0	18.01	258.68	3,170.6	1,764.43	-45.7	-228.4	-227.1	0.00	0.00	0.00
3,300.0	18.01	258.68	3,265.7	1,669.33	-51.8	-258.8	-257.2	0.00	0.00	0.00
<b>PARKMAN</b>										
3,320.3	18.01	258.68	3,285.0	1,650.00	-53.0	-264.9	-263.3	0.00	0.00	0.00
3,400.0	18.01	258.68	3,360.8	1,574.23	-57.9	-289.1	-287.4	0.00	0.00	0.00
3,500.0	18.01	258.68	3,455.9	1,479.13	-63.9	-319.4	-317.5	0.00	0.00	0.00
3,600.0	18.01	258.68	3,551.0	1,384.03	-70.0	-349.7	-347.6	0.00	0.00	0.00
3,700.0	18.01	258.68	3,646.1	1,288.94	-76.1	-380.0	-377.8	0.00	0.00	0.00
3,800.0	18.01	258.68	3,741.2	1,193.84	-82.1	-410.4	-407.9	0.00	0.00	0.00
3,900.0	18.01	258.68	3,836.3	1,098.74	-88.2	-440.7	-438.1	0.00	0.00	0.00
<b>SUSSEX</b>										
3,993.3	18.01	258.68	3,925.0	1,010.00	-93.9	-469.0	-466.2	0.00	0.00	0.00
4,000.0	18.01	258.68	3,931.4	1,003.64	-94.3	-471.0	-468.2	0.00	0.00	0.00
4,100.0	18.01	258.68	4,026.5	908.54	-100.3	-501.3	-498.3	0.00	0.00	0.00
4,200.0	18.01	258.68	4,121.6	813.44	-106.4	-531.6	-528.5	0.00	0.00	0.00
4,300.0	18.01	258.68	4,216.7	718.34	-112.5	-562.0	-558.6	0.00	0.00	0.00
4,400.0	18.01	258.68	4,311.8	623.24	-118.5	-592.3	-588.7	0.00	0.00	0.00

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<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4935.0usft
<b>Site:</b>	SW SW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #4		

## 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)
<b>SHANNON</b>										
4,429.7	18.01	258.68	4,340.0	595.00	-120.3	-601.3	-597.7	0.00	0.00	0.00
4,500.0	18.01	258.68	4,406.9	528.14	-124.6	-622.6	-618.9	0.00	0.00	0.00
4,600.0	18.01	258.68	4,502.0	433.04	-130.7	-652.9	-649.0	0.00	0.00	0.00
4,700.0	18.01	258.68	4,597.1	337.94	-136.7	-683.2	-679.2	0.00	0.00	0.00
4,800.0	18.01	258.68	4,692.2	242.84	-142.8	-713.6	-709.3	0.00	0.00	0.00
4,900.0	18.01	258.68	4,787.3	147.74	-148.9	-743.9	-739.4	0.00	0.00	0.00
5,000.0	18.01	258.68	4,882.4	52.64	-154.9	-774.2	-769.6	0.00	0.00	0.00
5,100.0	18.01	258.68	4,977.5	-42.46	-161.0	-804.5	-799.7	0.00	0.00	0.00
5,200.0	18.01	258.68	5,072.6	-137.56	-167.1	-834.8	-829.9	0.00	0.00	0.00
5,300.0	18.01	258.68	5,167.7	-232.66	-173.1	-865.1	-860.0	0.00	0.00	0.00
5,400.0	18.01	258.68	5,262.8	-327.76	-179.2	-895.5	-890.1	0.00	0.00	0.00
5,500.0	18.01	258.68	5,357.9	-422.86	-185.3	-925.8	-920.3	0.00	0.00	0.00
5,600.0	18.01	258.68	5,453.0	-517.96	-191.3	-956.1	-950.4	0.00	0.00	0.00
<b>END OF TANGENT</b>										
5,629.8	18.01	258.68	5,481.3	-546.30	-193.2	-965.1	-959.4	0.00	0.00	0.00
5,700.0	16.61	258.68	5,548.3	-613.31	-197.2	-985.6	-979.7	2.00	-2.00	0.00
5,800.0	14.61	258.68	5,644.6	-709.62	-202.5	-1,012.0	-1,006.0	2.00	-2.00	0.00
5,900.0	12.61	258.68	5,741.8	-806.81	-207.1	-1,035.1	-1,028.9	2.00	-2.00	0.00
6,000.0	10.61	258.68	5,839.8	-904.76	-211.1	-1,054.8	-1,048.5	2.00	-2.00	0.00
6,100.0	8.61	258.68	5,938.4	-1,003.35	-214.4	-1,071.2	-1,064.8	2.00	-2.00	0.00
6,200.0	6.61	258.68	6,037.5	-1,102.47	-217.0	-1,084.1	-1,077.7	2.00	-2.00	0.00
6,300.0	4.61	258.68	6,137.0	-1,201.98	-218.9	-1,093.7	-1,087.2	2.00	-2.00	0.00
6,400.0	2.61	258.68	6,236.8	-1,301.78	-220.1	-1,099.9	-1,093.3	2.00	-2.00	0.00
6,500.0	0.61	258.68	6,336.7	-1,401.74	-220.7	-1,102.6	-1,096.1	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
6,530.4	0.00	0.00	6,367.1	-1,432.14	-220.7	-1,102.8	-1,096.2	2.00	-2.00	0.00
<b>KOP (10°/100ft BUR)</b>										
6,560.4	0.00	0.00	6,397.1	-1,462.14	-220.7	-1,102.8	-1,096.2	0.00	0.00	0.00
6,600.0	3.96	88.69	6,436.7	-1,501.71	-220.7	-1,101.4	-1,094.9	10.01	10.01	0.00
6,700.0	13.97	88.69	6,535.4	-1,600.36	-220.3	-1,085.9	-1,079.3	10.00	10.00	0.00
6,800.0	23.97	88.69	6,629.8	-1,694.81	-219.6	-1,053.4	-1,046.9	10.00	10.00	0.00
6,900.0	33.97	88.69	6,717.2	-1,782.19	-218.5	-1,005.1	-998.6	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
6,979.7	41.94	88.69	6,780.0	-1,845.00	-217.4	-956.1	-949.7	10.00	10.00	0.00
7,000.0	43.97	88.69	6,794.8	-1,859.84	-217.0	-942.3	-935.9	10.00	10.00	0.00
<b>NIORARA</b>										
7,051.1	49.08	88.69	6,830.0	-1,895.00	-216.2	-905.2	-898.8	10.00	10.00	0.00
7,100.0	53.97	88.69	6,860.4	-1,925.40	-215.3	-867.0	-860.6	10.00	10.00	0.00
7,200.0	63.97	88.69	6,911.9	-1,976.89	-213.4	-781.4	-775.2	10.00	10.00	0.00
7,300.0	73.97	88.69	6,947.7	-2,012.73	-211.2	-688.2	-682.1	10.00	10.00	0.00
7,400.0	83.97	88.69	6,966.8	-2,031.83	-209.0	-590.2	-584.1	10.00	10.00	0.00
<b>HZ LP: 930ft FSL &amp; 460ft FWL of Sec 22 - NIO C TOP</b>										
7,460.3	90.00	88.69	6,970.0	-2,035.00	-207.6	-530.0	-524.0	10.00	10.00	0.00
7,500.0	90.00	88.69	6,970.0	-2,035.00	-206.7	-490.3	-484.4	0.00	0.00	0.00
7,600.0	90.00	88.69	6,970.0	-2,034.99	-204.5	-390.4	-384.5	0.00	0.00	0.00
7,700.0	90.00	88.69	6,970.0	-2,034.99	-202.2	-290.4	-284.6	0.00	0.00	0.00
7,800.0	90.00	88.69	6,970.0	-2,034.98	-199.9	-190.4	-184.8	0.00	0.00	0.00
7,900.0	90.00	88.69	6,970.0	-2,034.98	-197.6	-90.4	-84.9	0.00	0.00	0.00
8,000.0	90.00	88.69	6,970.0	-2,034.97	-195.3	9.5	15.0	0.00	0.00	0.00
8,100.0	90.00	88.69	6,970.0	-2,034.97	-193.1	109.5	114.8	0.00	0.00	0.00
8,200.0	90.00	88.69	6,970.0	-2,034.97	-190.8	209.5	214.7	0.00	0.00	0.00
8,300.0	90.00	88.69	6,970.0	-2,034.96	-188.5	309.5	314.6	0.00	0.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 5
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4935.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4935.0usft
<b>Site:</b>	SW SW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #4		

## 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	-2,034.96	-186.2	409.4	414.5	0.00	0.00	0.00
8,500.0	90.00	88.69	6,970.0	-2,034.96	-183.9	509.4	514.3	0.00	0.00	0.00
8,600.0	90.00	88.69	6,970.0	-2,034.96	-181.7	609.4	614.2	0.00	0.00	0.00
8,700.0	90.00	88.69	6,970.0	-2,034.95	-179.4	709.4	714.1	0.00	0.00	0.00
8,800.0	90.00	88.69	6,970.0	-2,034.95	-177.1	809.3	813.9	0.00	0.00	0.00
8,900.0	90.00	88.69	6,969.9	-2,034.95	-174.8	909.3	913.8	0.00	0.00	0.00
9,000.0	90.00	88.69	6,969.9	-2,034.95	-172.5	1,009.3	1,013.7	0.00	0.00	0.00
9,100.0	90.00	88.69	6,969.9	-2,034.95	-170.3	1,109.3	1,113.6	0.00	0.00	0.00
9,200.0	90.00	88.69	6,969.9	-2,034.94	-168.0	1,209.2	1,213.4	0.00	0.00	0.00
9,300.0	90.00	88.69	6,969.9	-2,034.94	-165.7	1,309.2	1,313.3	0.00	0.00	0.00
9,400.0	90.00	88.69	6,969.9	-2,034.94	-163.4	1,409.2	1,413.2	0.00	0.00	0.00
9,500.0	90.00	88.69	6,969.9	-2,034.94	-161.1	1,509.1	1,513.0	0.00	0.00	0.00
9,600.0	90.00	88.69	6,969.9	-2,034.94	-158.9	1,609.1	1,612.9	0.00	0.00	0.00
9,700.0	90.00	88.69	6,969.9	-2,034.94	-156.6	1,709.1	1,712.8	0.00	0.00	0.00
9,800.0	90.00	88.69	6,969.9	-2,034.94	-154.3	1,809.1	1,812.7	0.00	0.00	0.00
9,900.0	90.00	88.69	6,969.9	-2,034.94	-152.0	1,909.0	1,912.5	0.00	0.00	0.00
10,000.0	90.00	88.69	6,969.9	-2,034.94	-149.7	2,009.0	2,012.4	0.00	0.00	0.00
10,100.0	90.00	88.69	6,969.9	-2,034.94	-147.5	2,109.0	2,112.3	0.00	0.00	0.00
10,200.0	90.00	88.69	6,969.9	-2,034.95	-145.2	2,209.0	2,212.2	0.00	0.00	0.00
10,300.0	90.00	88.69	6,969.9	-2,034.95	-142.9	2,308.9	2,312.0	0.00	0.00	0.00
10,400.0	90.00	88.69	6,969.9	-2,034.95	-140.6	2,408.9	2,411.9	0.00	0.00	0.00
10,500.0	90.00	88.69	6,970.0	-2,034.95	-138.4	2,508.9	2,511.8	0.00	0.00	0.00
10,600.0	90.00	88.69	6,970.0	-2,034.95	-136.1	2,608.9	2,611.6	0.00	0.00	0.00
10,700.0	90.00	88.69	6,970.0	-2,034.96	-133.8	2,708.8	2,711.5	0.00	0.00	0.00
10,800.0	90.00	88.69	6,970.0	-2,034.96	-131.5	2,808.8	2,811.4	0.00	0.00	0.00
10,900.0	90.00	88.69	6,970.0	-2,034.96	-129.2	2,908.8	2,911.3	0.00	0.00	0.00
11,000.0	90.00	88.69	6,970.0	-2,034.96	-127.0	3,008.8	3,011.1	0.00	0.00	0.00
11,100.0	90.00	88.69	6,970.0	-2,034.97	-124.7	3,108.7	3,111.0	0.00	0.00	0.00
11,200.0	90.00	88.69	6,970.0	-2,034.97	-122.4	3,208.7	3,210.9	0.00	0.00	0.00
11,300.0	90.00	88.69	6,970.0	-2,034.97	-120.1	3,308.7	3,310.7	0.00	0.00	0.00
11,400.0	90.00	88.69	6,970.0	-2,034.98	-117.8	3,408.7	3,410.6	0.00	0.00	0.00
11,500.0	90.00	88.69	6,970.0	-2,034.98	-115.6	3,508.6	3,510.5	0.00	0.00	0.00
11,600.0	90.00	88.69	6,970.0	-2,034.99	-113.3	3,608.6	3,610.4	0.00	0.00	0.00
11,700.0	90.00	88.69	6,970.0	-2,034.99	-111.0	3,708.6	3,710.2	0.00	0.00	0.00
11,800.0	90.00	88.69	6,970.0	-2,035.00	-108.7	3,808.6	3,810.1	0.00	0.00	0.00
<b>BHL: 930ft FSL &amp; 460ft FEL of Sec 22</b>										
<b>11,852.5</b>	<b>90.00</b>	<b>88.69</b>	<b>6,970.0</b>	<b>-2,035.00</b>	<b>-107.5</b>	<b>3,861.0</b>	<b>3,862.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,320.3	3,285.0	PARKMAN			
3,993.3	3,925.0	SUSSEX			
4,429.7	4,340.0	SHANNON			
6,979.7	6,780.0	SHARON SPRINGS			
7,051.1	6,830.0	NIOBRARA			
7,460.3	6,970.0	NIO C TOP			

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 5
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4935.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4935.0usft
<b>Site:</b>	SW SW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #4		

## 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)
2,900.6	2,885.8	-27.6	-137.7	EOB TO 18.01° INC
5,629.8	5,481.3	-193.2	-965.1	END OF TANGENT
6,530.4	6,367.1	-220.7	-1,102.8	EOD TO VERTICAL
6,560.4	6,397.1	-220.7	-1,102.8	KOP (10°/100ft BUR)
7,460.3	6,970.0	-207.6	-530.0	HZ LP: 930ft FSL & 460ft FWL of Sec 22
11,852.5	6,970.0	-107.5	3,861.0	BHL: 930ft FSL & 460ft FEL of Sec 22