

# **EXTRACTION OIL & GAS**

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

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

**HFE 2**

**ORIGINAL WELLBORE**

**05 July, 2017**

**Plan: PROPOSAL #4**

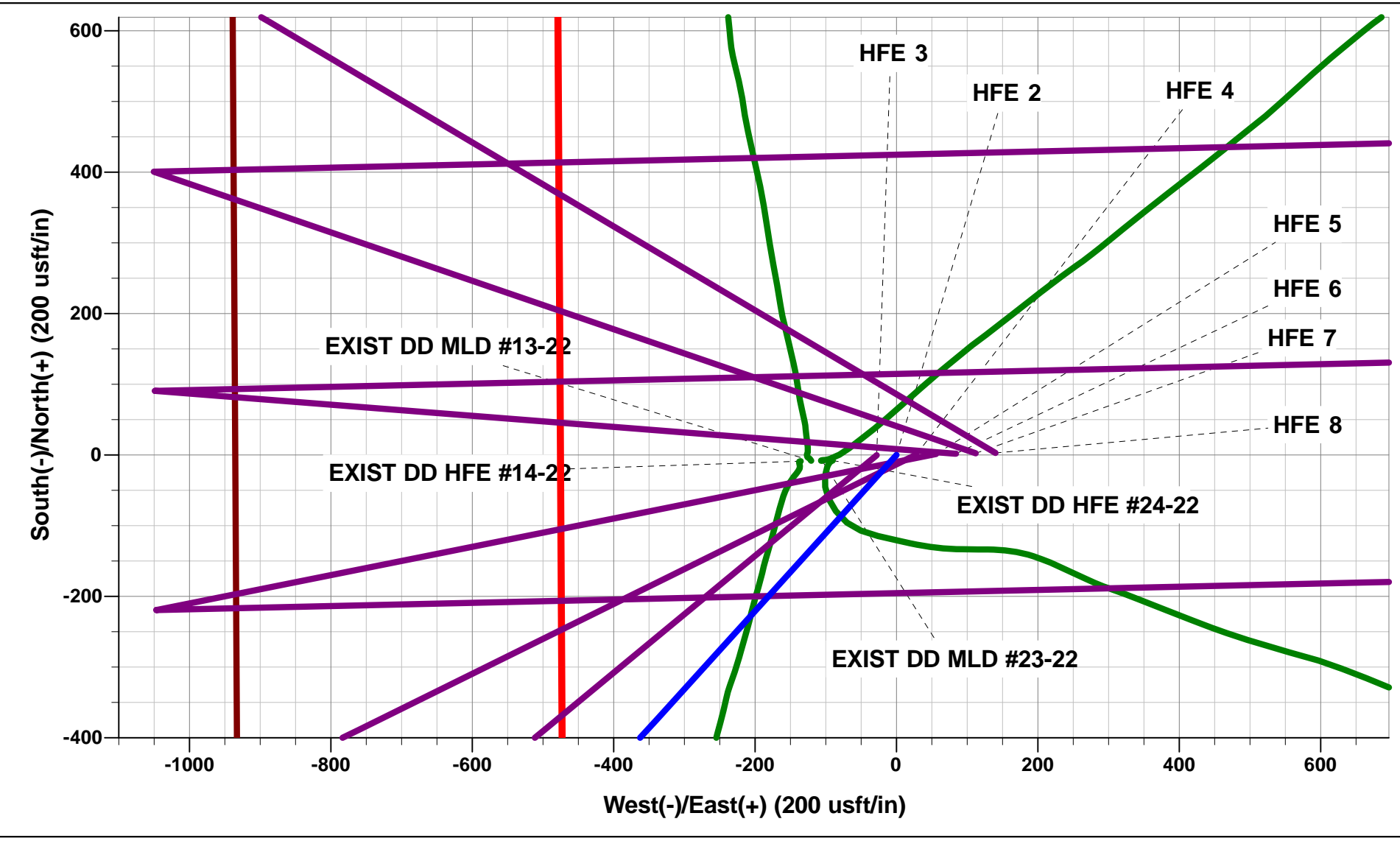




Project: WELD COUNTY, COLORADO (NAD 83)  
Site: NW NW SEC. 22 T4N R68W 6th P.M.  
Well: HFE 2  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #4

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: 1126ft FSL & 935ft FWL of Sec 22	
1800.0	1800.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
3024.0	3064.7	25.29	222.16	-203.6	-184.4	-126.2	274.7	EOB TO 25.29° INC	
5144.0	5409.5	25.29	222.16	-946.2	-856.8	-586.5	1276.5	END OF TANGENT	
6368.0	6674.2	0.00	0.00	-1149.8	-1041.2	-712.7	1551.1	EOD TO VERTICAL	
6398.0	6704.2	0.00	0.00	-1149.8	-1041.2	-712.7	1551.1	KOP (10°/100ft BUR)	
6971.0	7604.2	90.00	88.69	-1136.6	-468.4	-162.2	2124.1	HZ LP: 0ft FSL & 460ft FWL of Sec 22	
6971.0	11993.5	90.00	88.70	-1036.5	3919.8	4054.5	6513.4	BHL: 0ft FSL & 460ft FEL of Sec 22	

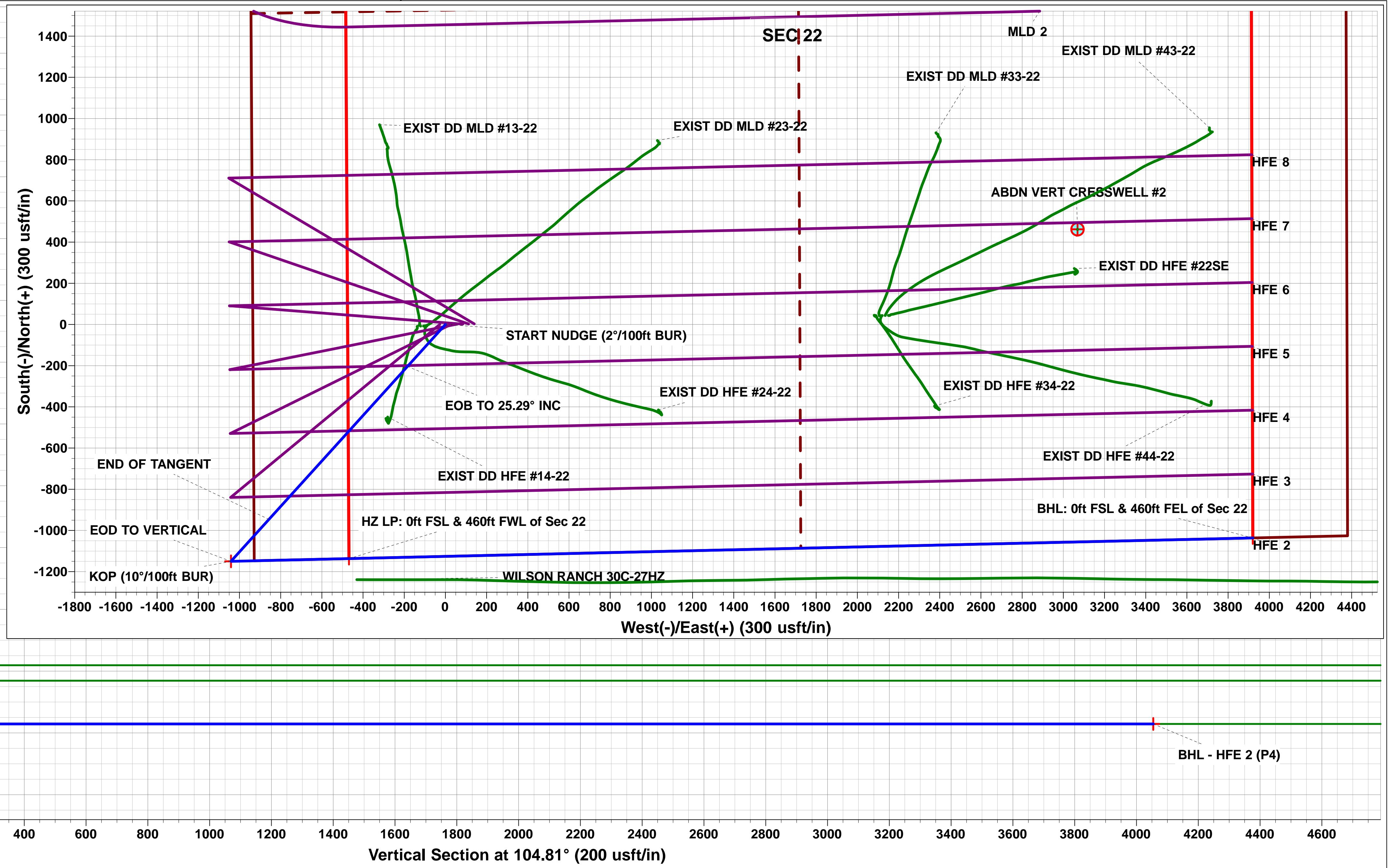
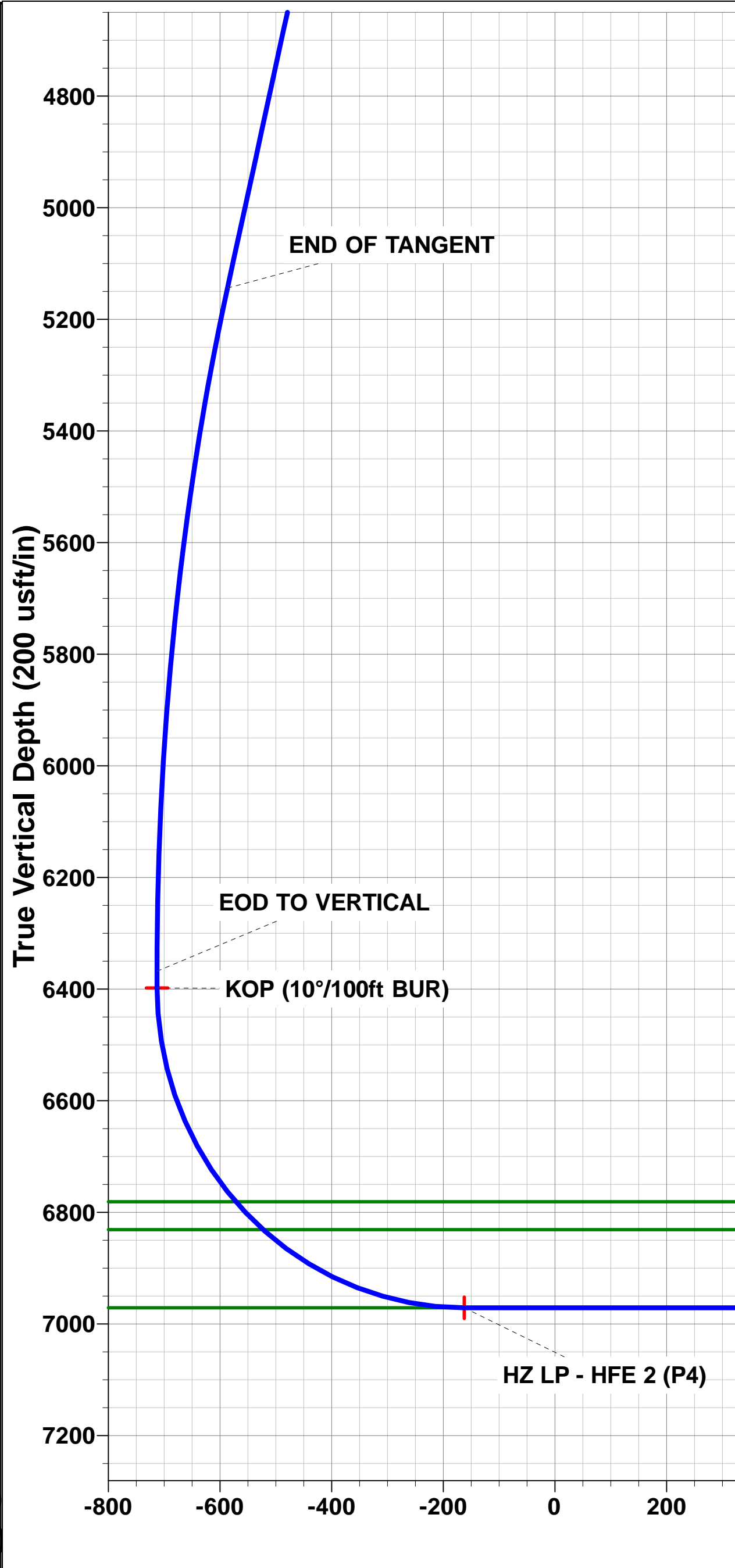
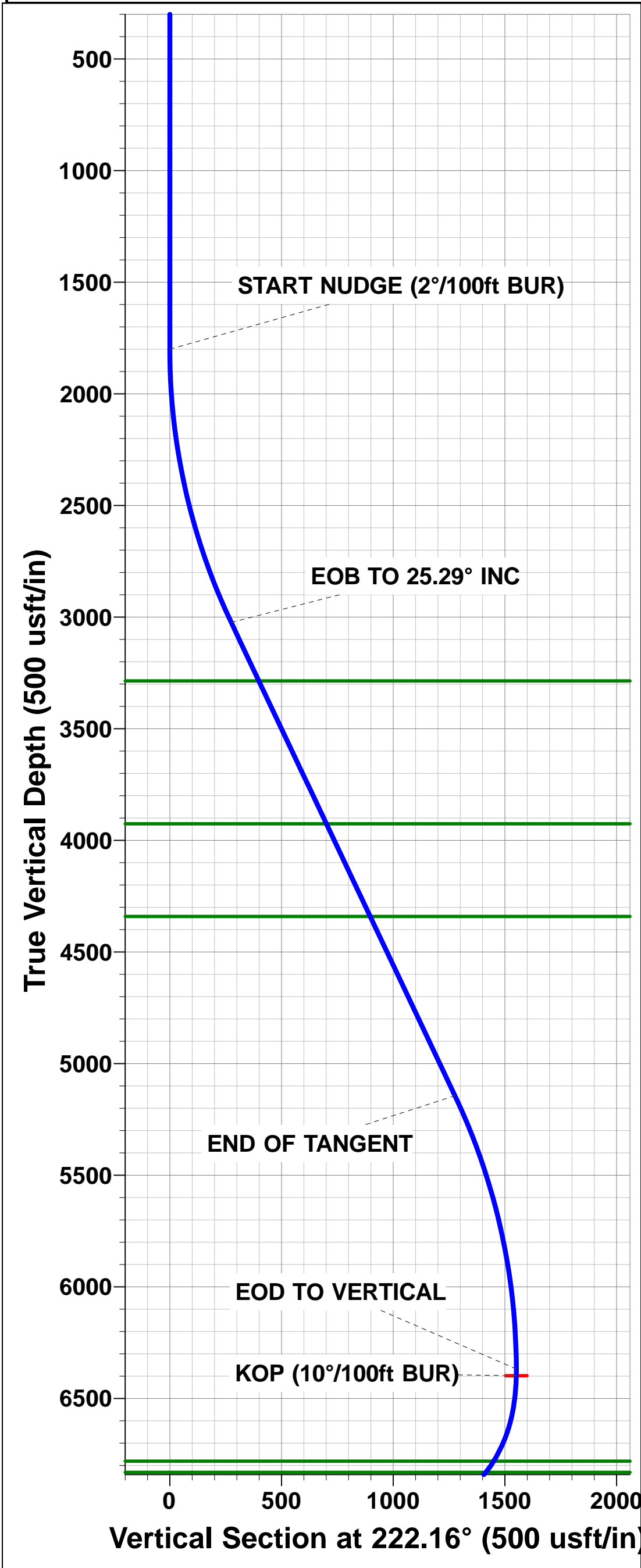
WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HFE 2 (P4)	6398.0	-1149.8	-1041.2	40.291560	-104.999140
HZ LP - HFE 2 (P4)	6971.0	-1136.6	-468.4	40.291596	-104.997087
BHL - HFE 2 (P4)	6971.0	-1036.5	3919.8	40.291870	-104.981357



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3286.0	3354.5	PARKMAN
3926.0	4062.3	SUSSEX
4341.0	4521.3	SHANNON
6781.0	7123.6	SHARON SPRINGS
6831.0	7195.0	NIOBRARA
6971.0	7604.2	NIO C TOP

PROPOSED LOCAL COORDINATES:		
SHL: 1126ft FSL & 935ft FWL of Sec 29		
HZ LP: 0ft FSL & 460ft FWL of Sec 22		
BHL: 0ft FSL & 460ft FEL of Sec 22		

Azimuths to True North	
Magnetic North: 8.38°	
Magnetic Field	
Strength: 52370.1snT	
Dip Angle: 66.75°	
Date: 14/12/2016	
Model: IGRF2015	



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 2
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4936.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4936.0usft
<b>Site:</b>	NW NW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 2	<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

<b>Site</b>	NW NW SEC. 22 T4N R68W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,350,393.79 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,140,798.83 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.294131
		<b>Longitude:</b>	-104.995243
		<b>Grid Convergence:</b>	0.33 °

<b>Well</b>	HFE 2		
<b>Well Position</b>	<b>+N/-S</b>	213.1 usft	<b>Northing:</b>
	<b>+E/-W</b>	-46.0 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.294716
		<b>Longitude:</b>	-104.995408
		<b>Ground Level:</b>	4,920.0 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	14/12/2016	8.38	66.75	52,370

<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>
	6,971.0	0.0	0.0	104.81

<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	-4,936.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	-3,136.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,064.7	25.29	222.16	3,024.0	-1,912.0	-203.6	-184.4	2.00	2.00	0.00	222.16	
5,409.5	25.29	222.16	5,144.0	208.0	-946.2	-856.8	0.00	0.00	0.00	0.00	
6,674.2	0.00	0.00	6,368.0	1,432.0	-1,149.8	-1,041.2	2.00	-2.00	0.00	180.00	
6,704.2	0.00	0.00	6,398.0	1,462.0	-1,149.8	-1,041.2	0.00	0.00	0.00	0.00	KOP - HFE 2 (P4)
7,604.2	90.00	88.69	6,971.0	2,035.0	-1,136.6	-468.4	10.00	10.00	9.85	88.69	HZ LP - HFE 2 (P4)
11,993.5	90.00	88.70	6,971.0	2,035.0	-1,036.5	3,919.8	0.00	0.00	0.00	62.60	BHL - HFE 2 (P4)

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 2
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4936.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4936.0usft
<b>Site:</b>	NW NW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 2	<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: 1126ft FSL &amp; 935ft FWL of Sec 22</b>										
0.0	0.00	0.00	0.0	4,936.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,836.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,736.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,636.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,536.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,436.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,336.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,236.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,136.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	4,036.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,936.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,836.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,736.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,636.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,536.00	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	3,436.00	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	3,336.00	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	3,236.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
1,800.0	0.00	0.00	1,800.0	3,136.00	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	2.00	222.16	1,900.0	3,036.02	-1.3	-1.2	-0.8	2.00	2.00	0.00
2,000.0	4.00	222.16	1,999.8	2,936.16	-5.2	-4.7	-3.2	2.00	2.00	0.00
2,100.0	6.00	222.16	2,099.5	2,836.55	-11.6	-10.5	-7.2	2.00	2.00	0.00
2,200.0	8.00	222.16	2,198.7	2,737.30	-20.7	-18.7	-12.8	2.00	2.00	0.00
2,300.0	10.00	222.16	2,297.5	2,638.53	-32.3	-29.2	-20.0	2.00	2.00	0.00
2,400.0	12.00	222.16	2,395.6	2,540.38	-46.4	-42.0	-28.8	2.00	2.00	0.00
2,500.0	14.00	222.16	2,493.1	2,442.94	-63.1	-57.1	-39.1	2.00	2.00	0.00
2,600.0	16.00	222.16	2,589.6	2,346.36	-82.3	-74.5	-51.0	2.00	2.00	0.00
2,700.0	18.00	222.16	2,685.3	2,250.73	-103.9	-94.1	-64.4	2.00	2.00	0.00
2,800.0	20.00	222.16	2,779.8	2,156.18	-128.1	-116.0	-79.4	2.00	2.00	0.00
2,900.0	22.00	222.16	2,873.2	2,062.83	-154.6	-140.0	-95.8	2.00	2.00	0.00
3,000.0	24.00	222.16	2,965.2	1,970.79	-183.6	-166.2	-113.8	2.00	2.00	0.00
<b>EOB TO 25.29° INC</b>										
3,064.7	25.29	222.16	3,024.0	1,911.98	-203.6	-184.4	-126.2	2.00	2.00	0.00
3,100.0	25.29	222.16	3,055.9	1,880.07	-214.8	-194.5	-133.1	0.00	0.00	0.00
3,200.0	25.29	222.16	3,146.3	1,789.65	-246.4	-223.2	-152.8	0.00	0.00	0.00
3,300.0	25.29	222.16	3,236.8	1,699.24	-278.1	-251.8	-172.4	0.00	0.00	0.00
<b>PARKMAN</b>										
3,354.5	25.29	222.16	3,286.0	1,650.00	-295.4	-267.5	-183.1	0.00	0.00	0.00
3,400.0	25.29	222.16	3,327.2	1,608.83	-309.8	-280.5	-192.0	0.00	0.00	0.00
3,500.0	25.29	222.16	3,417.6	1,518.41	-341.4	-309.2	-211.6	0.00	0.00	0.00
3,600.0	25.29	222.16	3,508.0	1,428.00	-373.1	-337.9	-231.3	0.00	0.00	0.00
3,700.0	25.29	222.16	3,598.4	1,337.59	-404.8	-366.6	-250.9	0.00	0.00	0.00
3,800.0	25.29	222.16	3,688.8	1,247.18	-436.5	-395.2	-270.5	0.00	0.00	0.00
3,900.0	25.29	222.16	3,779.2	1,156.76	-468.1	-423.9	-290.2	0.00	0.00	0.00
4,000.0	25.29	222.16	3,869.6	1,066.35	-499.8	-452.6	-309.8	0.00	0.00	0.00
<b>SUSSEX</b>										
4,062.3	25.29	222.16	3,926.0	1,010.00	-519.5	-470.5	-322.0	0.00	0.00	0.00
4,100.0	25.29	222.16	3,960.1	975.94	-531.5	-481.3	-329.4	0.00	0.00	0.00
4,200.0	25.29	222.16	4,050.5	885.53	-563.1	-510.0	-349.1	0.00	0.00	0.00
4,300.0	25.29	222.16	4,140.9	795.11	-594.8	-538.6	-368.7	0.00	0.00	0.00
4,400.0	25.29	222.16	4,231.3	704.70	-626.5	-567.3	-388.3	0.00	0.00	0.00
4,500.0	25.29	222.16	4,321.7	614.29	-658.1	-596.0	-407.9	0.00	0.00	0.00

**Database:** EDM 5000.1 Single User Db  
**Company:** EXTRACTION OIL & GAS  
**Project:** WELD COUNTY, COLORADO (NAD 83)  
**Site:** NW NW SEC. 22 T4N R68W 6th P.M.  
**Well:** HFE 2  
**Wellbore:** ORIGINAL WELLBORE  
**Design:** PROPOSAL #4

**Local Co-ordinate Reference:** Well HFE 2  
**TVD Reference:** KB-EST @ 4936.0usft  
**MD Reference:** KB-EST @ 4936.0usft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

## 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>										
4,521.3	25.29	222.16	4,341.0	595.00	-664.9	-602.1	-412.1	0.00	0.00	0.00
4,600.0	25.29	222.16	4,412.1	523.88	-689.8	-624.7	-427.6	0.00	0.00	0.00
4,700.0	25.29	222.16	4,502.5	433.46	-721.5	-653.4	-447.2	0.00	0.00	0.00
4,800.0	25.29	222.16	4,593.0	343.05	-753.2	-682.0	-466.8	0.00	0.00	0.00
4,900.0	25.29	222.16	4,683.4	252.64	-784.8	-710.7	-486.5	0.00	0.00	0.00
5,000.0	25.29	222.16	4,773.8	162.22	-816.5	-739.4	-506.1	0.00	0.00	0.00
5,100.0	25.29	222.16	4,864.2	71.81	-848.2	-768.1	-525.7	0.00	0.00	0.00
5,200.0	25.29	222.16	4,954.6	-18.60	-879.8	-796.8	-545.4	0.00	0.00	0.00
5,300.0	25.29	222.16	5,045.0	-109.01	-911.5	-825.4	-565.0	0.00	0.00	0.00
5,400.0	25.29	222.16	5,135.4	-199.43	-943.2	-854.1	-584.6	0.00	0.00	0.00
<b>END OF TANGENT</b>										
5,409.5	25.29	222.16	5,144.0	-208.02	-946.2	-856.8	-586.5	0.00	0.00	0.00
5,500.0	23.48	222.16	5,226.4	-290.44	-973.9	-881.9	-603.7	2.00	-2.00	0.00
5,600.0	21.48	222.16	5,318.8	-382.83	-1,002.2	-907.6	-621.2	2.00	-2.00	0.00
5,700.0	19.48	222.16	5,412.5	-476.50	-1,028.2	-931.1	-637.3	2.00	-2.00	0.00
5,800.0	17.48	222.16	5,507.3	-571.34	-1,051.7	-952.4	-651.9	2.00	-2.00	0.00
5,900.0	15.48	222.16	5,603.2	-667.23	-1,072.7	-971.4	-664.9	2.00	-2.00	0.00
6,000.0	13.48	222.16	5,700.0	-764.04	-1,091.2	-988.2	-676.4	2.00	-2.00	0.00
6,100.0	11.48	222.16	5,797.7	-861.67	-1,107.3	-1,002.7	-686.3	2.00	-2.00	0.00
6,200.0	9.48	222.16	5,896.0	-960.00	-1,120.7	-1,014.9	-694.7	2.00	-2.00	0.00
6,300.0	7.48	222.16	5,994.9	-1,058.90	-1,131.7	-1,024.8	-701.5	2.00	-2.00	0.00
6,400.0	5.48	222.16	6,094.3	-1,158.26	-1,140.0	-1,032.4	-706.7	2.00	-2.00	0.00
6,500.0	3.48	222.16	6,193.9	-1,257.94	-1,145.8	-1,037.6	-710.2	2.00	-2.00	0.00
6,600.0	1.48	222.16	6,293.8	-1,357.85	-1,149.1	-1,040.6	-712.2	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
6,674.2	0.00	0.00	6,368.0	-1,432.04	-1,149.8	-1,041.2	-712.7	2.00	-2.00	0.00
6,700.0	0.00	0.00	6,393.8	-1,457.84	-1,149.8	-1,041.2	-712.7	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
6,704.2	0.00	0.00	6,398.0	-1,462.04	-1,149.8	-1,041.2	-712.7	0.00	0.00	0.00
6,800.0	9.58	88.69	6,493.4	-1,557.39	-1,149.6	-1,033.2	-705.0	10.00	10.00	0.00
6,900.0	19.58	88.69	6,590.0	-1,654.05	-1,149.0	-1,008.1	-680.8	10.00	10.00	0.00
7,000.0	29.58	88.69	6,680.9	-1,744.87	-1,148.0	-966.5	-640.9	10.00	10.00	0.00
7,100.0	39.58	88.69	6,763.1	-1,827.10	-1,146.7	-909.9	-586.5	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
7,123.6	41.94	88.69	6,781.0	-1,845.00	-1,146.4	-894.4	-571.6	10.00	10.00	0.00
<b>NIOBRARA</b>										
7,195.0	49.08	88.69	6,831.0	-1,895.00	-1,145.2	-843.5	-522.7	10.00	10.00	0.00
7,200.0	49.58	88.69	6,834.2	-1,898.23	-1,145.1	-839.8	-519.1	10.00	10.00	0.00
7,300.0	59.58	88.69	6,892.1	-1,956.12	-1,143.3	-758.4	-440.9	10.00	10.00	0.00
7,400.0	69.58	88.69	6,935.0	-1,998.99	-1,141.2	-668.2	-354.3	10.00	10.00	0.00
7,500.0	79.58	88.69	6,961.5	-2,025.55	-1,139.0	-572.0	-261.8	10.00	10.00	0.00
7,600.0	89.58	88.69	6,971.0	-2,034.98	-1,136.7	-472.6	-166.3	10.00	10.00	0.00
<b>HZ LP: 0ft FSL &amp; 460ft FWL of Sec 22 - NIO C TOP</b>										
7,604.2	90.00	88.69	6,971.0	-2,035.00	-1,136.6	-468.4	-162.3	10.00	10.00	0.00
7,700.0	90.00	88.69	6,971.0	-2,035.01	-1,134.4	-372.6	-70.2	0.00	0.00	0.00
7,800.0	90.00	88.69	6,971.0	-2,035.01	-1,132.1	-272.6	25.8	0.00	0.00	0.00
7,900.0	90.00	88.69	6,971.0	-2,035.02	-1,129.8	-172.7	121.9	0.00	0.00	0.00
8,000.0	90.00	88.69	6,971.0	-2,035.02	-1,127.5	-72.7	218.0	0.00	0.00	0.00
8,100.0	90.00	88.69	6,971.0	-2,035.03	-1,125.2	27.3	314.0	0.00	0.00	0.00
8,200.0	90.00	88.69	6,971.0	-2,035.04	-1,123.0	127.3	410.1	0.00	0.00	0.00
8,300.0	90.00	88.69	6,971.0	-2,035.04	-1,120.7	227.2	506.2	0.00	0.00	0.00
8,400.0	90.00	88.69	6,971.0	-2,035.04	-1,118.4	327.2	602.2	0.00	0.00	0.00



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 2
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4936.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4936.0usft
<b>Site:</b>	NW NW SEC. 22 T4N R6W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 2	<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)
8,500.0	90.00	88.69	6,971.0	-2,035.05	-1,116.1	427.2	698.3	0.00	0.00	0.00
8,600.0	90.00	88.69	6,971.1	-2,035.05	-1,113.8	527.2	794.4	0.00	0.00	0.00
8,700.0	90.00	88.69	6,971.1	-2,035.06	-1,111.5	627.1	890.4	0.00	0.00	0.00
8,800.0	90.00	88.69	6,971.1	-2,035.06	-1,109.2	727.1	986.5	0.00	0.00	0.00
8,900.0	90.00	88.69	6,971.1	-2,035.06	-1,106.9	827.1	1,082.6	0.00	0.00	0.00
9,000.0	90.00	88.69	6,971.1	-2,035.06	-1,104.7	927.1	1,178.6	0.00	0.00	0.00
9,100.0	90.00	88.69	6,971.1	-2,035.07	-1,102.4	1,027.0	1,274.7	0.00	0.00	0.00
9,200.0	90.00	88.69	6,971.1	-2,035.07	-1,100.1	1,127.0	1,370.8	0.00	0.00	0.00
9,300.0	90.00	88.69	6,971.1	-2,035.07	-1,097.8	1,227.0	1,466.9	0.00	0.00	0.00
9,400.0	90.00	88.69	6,971.1	-2,035.07	-1,095.5	1,327.0	1,562.9	0.00	0.00	0.00
9,500.0	90.00	88.69	6,971.1	-2,035.07	-1,093.2	1,426.9	1,659.0	0.00	0.00	0.00
9,600.0	90.00	88.69	6,971.1	-2,035.07	-1,090.9	1,526.9	1,755.1	0.00	0.00	0.00
9,700.0	90.00	88.69	6,971.1	-2,035.07	-1,088.7	1,626.9	1,851.1	0.00	0.00	0.00
9,800.0	90.00	88.69	6,971.1	-2,035.07	-1,086.4	1,726.8	1,947.2	0.00	0.00	0.00
9,900.0	90.00	88.69	6,971.1	-2,035.07	-1,084.1	1,826.8	2,043.3	0.00	0.00	0.00
10,000.0	90.00	88.69	6,971.1	-2,035.07	-1,081.8	1,926.8	2,139.3	0.00	0.00	0.00
10,100.0	90.00	88.69	6,971.1	-2,035.07	-1,079.5	2,026.8	2,235.4	0.00	0.00	0.00
10,200.0	90.00	88.69	6,971.1	-2,035.07	-1,077.3	2,126.7	2,331.5	0.00	0.00	0.00
10,300.0	90.00	88.69	6,971.1	-2,035.07	-1,075.0	2,226.7	2,427.5	0.00	0.00	0.00
10,400.0	90.00	88.69	6,971.1	-2,035.07	-1,072.7	2,326.7	2,523.6	0.00	0.00	0.00
10,500.0	90.00	88.70	6,971.1	-2,035.07	-1,070.4	2,426.7	2,619.7	0.00	0.00	0.00
10,600.0	90.00	88.70	6,971.1	-2,035.06	-1,068.2	2,526.6	2,715.7	0.00	0.00	0.00
10,700.0	90.00	88.70	6,971.1	-2,035.06	-1,065.9	2,626.6	2,811.8	0.00	0.00	0.00
10,800.0	90.00	88.70	6,971.1	-2,035.06	-1,063.6	2,726.6	2,907.9	0.00	0.00	0.00
10,900.0	90.00	88.70	6,971.1	-2,035.06	-1,061.3	2,826.6	3,004.0	0.00	0.00	0.00
11,000.0	90.00	88.70	6,971.1	-2,035.05	-1,059.1	2,926.5	3,100.0	0.00	0.00	0.00
11,100.0	90.00	88.70	6,971.0	-2,035.05	-1,056.8	3,026.5	3,196.1	0.00	0.00	0.00
11,200.0	90.00	88.70	6,971.0	-2,035.04	-1,054.5	3,126.5	3,292.2	0.00	0.00	0.00
11,300.0	90.00	88.70	6,971.0	-2,035.04	-1,052.2	3,226.5	3,388.2	0.00	0.00	0.00
11,400.0	90.00	88.70	6,971.0	-2,035.04	-1,050.0	3,326.4	3,484.3	0.00	0.00	0.00
11,500.0	90.00	88.70	6,971.0	-2,035.03	-1,047.7	3,426.4	3,580.4	0.00	0.00	0.00
11,600.0	90.00	88.70	6,971.0	-2,035.02	-1,045.4	3,526.4	3,676.5	0.00	0.00	0.00
11,700.0	90.00	88.70	6,971.0	-2,035.02	-1,043.2	3,626.4	3,772.5	0.00	0.00	0.00
11,800.0	90.00	88.70	6,971.0	-2,035.01	-1,040.9	3,726.3	3,868.6	0.00	0.00	0.00
11,900.0	90.00	88.70	6,971.0	-2,035.01	-1,038.6	3,826.3	3,964.7	0.00	0.00	0.00
<b>BHL: 0ft FSL &amp; 460ft FEL of Sec 22</b>										
<b>11,993.5</b>	<b>90.00</b>	<b>88.70</b>	<b>6,971.0</b>	<b>-2,035.00</b>	<b>-1,036.5</b>	<b>3,919.8</b>	<b>4,054.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,354.5	3,286.0	PARKMAN				
4,062.3	3,926.0	SUSSEX				
4,521.3	4,341.0	SHANNON				
7,123.6	6,781.0	SHARON SPRINGS				
7,195.0	6,831.0	NIOBRARA				
7,604.2	6,971.0	NIO C TOP				

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well HFE 2
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4936.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4936.0usft
<b>Site:</b>	NW NW SEC. 22 T4N R68W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	HFE 2	<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: 1126ft FSL & 935ft FWL of Sec 22
1,800.0	1,800.0	0.0	0.0	START NUDGE (2°/100ft BUR)
3,064.7	3,024.0	-203.6	-184.4	EOB TO 25.29° INC
5,409.5	5,144.0	-946.2	-856.8	END OF TANGENT
6,674.2	6,368.0	-1,149.8	-1,041.2	EOD TO VERTICAL
6,704.2	6,398.0	-1,149.8	-1,041.2	KOP (10°/100ft BUR)
7,604.2	6,971.0	-1,136.6	-468.4	HZ LP: 0ft FSL & 460ft FWL of Sec 22
11,993.5	6,971.0	-1,036.5	3,919.8	BHL: 0ft FSL & 460ft FEL of Sec 22