

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 8-T11N-R61W**

**HARRY EAST 8S-20-9N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**31 August, 2017**



Project: Weld County  
Site: Sec 8-T11N-R61W  
Well: HARRY EAST 8S-20-9N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Weld County  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 7.94°  
Magnetic Field  
Strength: 52705.5nT  
Dip Angle: 67.36°  
Date: 8/11/2017  
Model: IGRF2015

#### WELL DETAILS: HARRY EAST 8S-20-9N

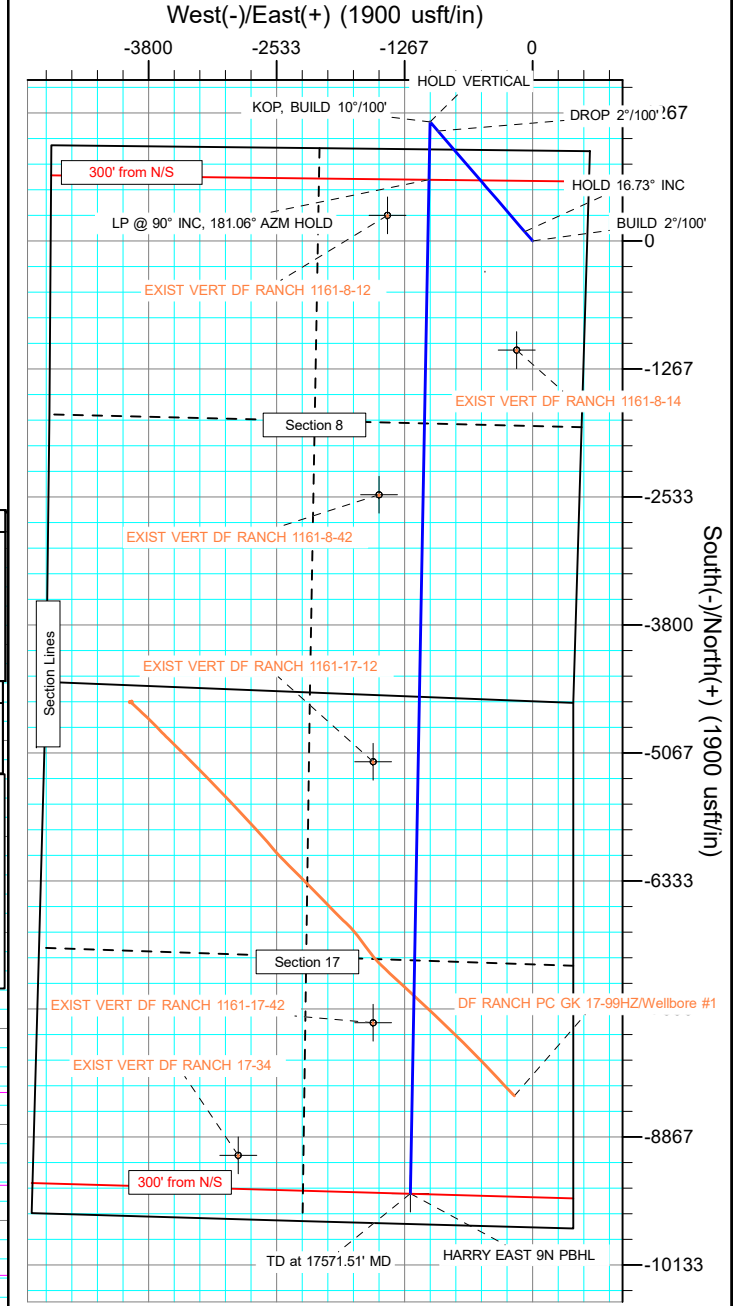
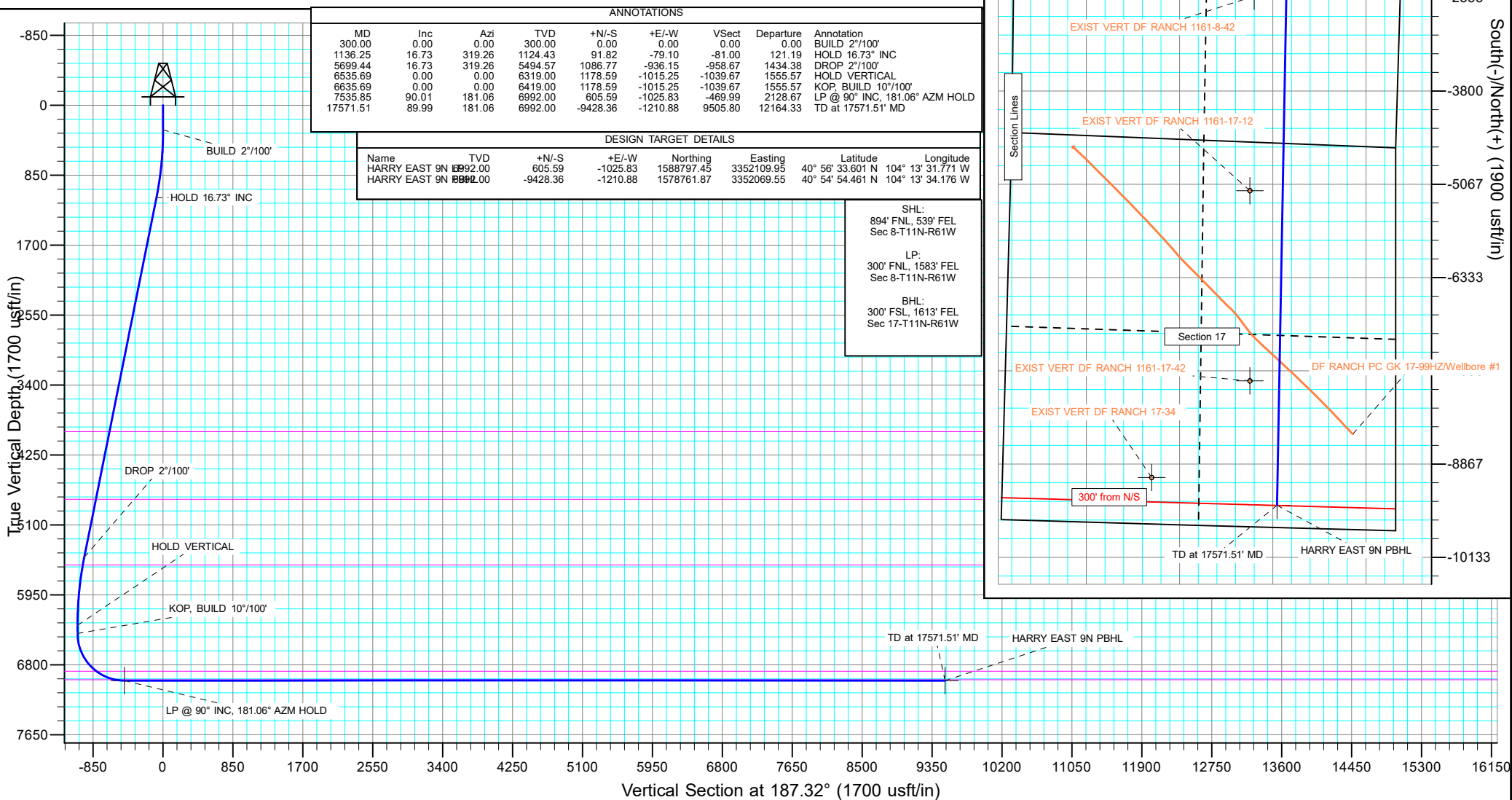
	+N/-S	+E/-W	Northing	Easting	5260.00	Latitude	Longitude	Slot
	0.00	0.00	1588206.71	3353144.40		40° 56' 27.618 N	104° 13' 18.404 W	

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1136.25	16.73	319.26	1124.43	91.82	-79.10	2.00	319.26	-81.00	
4	5699.44	16.73	319.26	5494.57	1086.77	-936.15	0.00	0.00	-958.67	
5	6535.69	0.00	0.00	6319.00	1178.59	-1015.25	2.00	180.00	-1039.67	
6	6635.69	0.00	0.00	6419.00	1178.59	-1015.25	0.00	0.00	-1039.67	
7	7535.85	90.01	181.06	6992.00	605.59	-1025.83	10.00	181.06	-469.99	HARRY EAST 9N LP
8	17571.51	89.99	181.06	6992.00	-9428.36	-1210.88	0.00	-172.44	9505.80	HARRY EAST 9N PBHL

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3967.00	4104.39	PARKMAN
4789.00	4962.70	SUSSEX
5587.00	5795.48	SHANNON
6879.00	7169.70	NIOBRARA
6982.00	7428.55	NIO B TARGET



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Weld County		
<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		

Site		Sec 8-T11N-R61W			
Site Position:		Northing:	1,589,102.71 usft	Latitude:	40° 56' 36.391 N
From:	Lat/Long	Easting:	3,353,696.82 usft	Longitude:	104° 13' 11.039 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.83

Well	HARRY EAST 8S-20-9N					
Well Position	+N/-S	-887.94 usft	Northing:	1,588,206.70 usft	Latitude:	40° 56' 27.618 N
	+E/-W	-565.28 usft	Easting:	3,353,144.41 usft	Longitude:	104° 13' 18.404 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,260.00 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	8/11/2017	7.94	67.36	52,705.48535430

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	187.32

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/31/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,571.47	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,136.25	16.73	319.26	1,124.43	91.82	-79.10	2.00	2.00	0.00	319.26	
5,699.44	16.73	319.26	5,494.57	1,086.77	-936.15	0.00	0.00	0.00	0.00	
6,535.69	0.00	0.00	6,319.00	1,178.59	-1,015.25	2.00	-2.00	0.00	180.00	
6,635.69	0.00	0.00	6,419.00	1,178.59	-1,015.25	0.00	0.00	0.00	0.00	
7,535.85	90.01	181.06	6,992.00	605.59	-1,025.83	10.00	10.00	-19.88	181.06	HARRY EAST 9N LP
17,571.51	89.99	181.06	6,992.00	-9,428.36	-1,210.88	0.00	0.00	0.00	-172.44	HARRY EAST 9N PB

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BUILD 2°/100'</b>									
400.00	2.00	319.26	399.98	1.32	-1.14	-1.17	2.00	2.00	0.00
500.00	4.00	319.26	499.84	5.29	-4.55	-4.66	2.00	2.00	0.00
600.00	6.00	319.26	599.45	11.89	-10.24	-10.49	2.00	2.00	0.00
700.00	8.00	319.26	698.70	21.12	-18.20	-18.63	2.00	2.00	0.00
800.00	10.00	319.26	797.47	32.98	-28.41	-29.09	2.00	2.00	0.00
900.00	12.00	319.26	895.62	47.43	-40.86	-41.84	2.00	2.00	0.00
1,000.00	14.00	319.26	993.06	64.47	-55.54	-56.87	2.00	2.00	0.00
1,100.00	16.00	319.26	1,089.64	84.08	-72.43	-74.17	2.00	2.00	0.00
1,136.25	16.73	319.26	1,124.43	91.82	-79.10	-81.00	2.00	2.00	0.00
<b>HOLD 16.73° INC</b>									
1,200.00	16.73	319.26	1,185.48	105.72	-91.07	-93.26	0.00	0.00	0.00
1,300.00	16.73	319.26	1,281.25	127.52	-109.85	-112.49	0.00	0.00	0.00
1,400.00	16.73	319.26	1,377.02	149.33	-128.63	-131.73	0.00	0.00	0.00
1,500.00	16.73	319.26	1,472.79	171.13	-147.41	-150.96	0.00	0.00	0.00
1,600.00	16.73	319.26	1,568.56	192.94	-166.20	-170.19	0.00	0.00	0.00
1,700.00	16.73	319.26	1,664.33	214.74	-184.98	-189.43	0.00	0.00	0.00
1,800.00	16.73	319.26	1,760.10	236.54	-203.76	-208.66	0.00	0.00	0.00
1,900.00	16.73	319.26	1,855.87	258.35	-222.54	-227.90	0.00	0.00	0.00
2,000.00	16.73	319.26	1,951.63	280.15	-241.32	-247.13	0.00	0.00	0.00
2,100.00	16.73	319.26	2,047.40	301.95	-260.11	-266.36	0.00	0.00	0.00
2,200.00	16.73	319.26	2,143.17	323.76	-278.89	-285.60	0.00	0.00	0.00
2,300.00	16.73	319.26	2,238.94	345.56	-297.67	-304.83	0.00	0.00	0.00
2,400.00	16.73	319.26	2,334.71	367.37	-316.45	-324.07	0.00	0.00	0.00
2,500.00	16.73	319.26	2,430.48	389.17	-335.23	-343.30	0.00	0.00	0.00
2,600.00	16.73	319.26	2,526.25	410.97	-354.02	-362.53	0.00	0.00	0.00
2,700.00	16.73	319.26	2,622.02	432.78	-372.80	-381.77	0.00	0.00	0.00
2,800.00	16.73	319.26	2,717.79	454.58	-391.58	-401.00	0.00	0.00	0.00
2,900.00	16.73	319.26	2,813.56	476.38	-410.36	-420.23	0.00	0.00	0.00
3,000.00	16.73	319.26	2,909.33	498.19	-429.15	-439.47	0.00	0.00	0.00
3,100.00	16.73	319.26	3,005.10	519.99	-447.93	-458.70	0.00	0.00	0.00
3,200.00	16.73	319.26	3,100.87	541.80	-466.71	-477.94	0.00	0.00	0.00
3,300.00	16.73	319.26	3,196.64	563.60	-485.49	-497.17	0.00	0.00	0.00
3,400.00	16.73	319.26	3,292.41	585.40	-504.27	-516.40	0.00	0.00	0.00
3,500.00	16.73	319.26	3,388.18	607.21	-523.06	-535.64	0.00	0.00	0.00
3,600.00	16.73	319.26	3,483.95	629.01	-541.84	-554.87	0.00	0.00	0.00
3,700.00	16.73	319.26	3,579.72	650.82	-560.62	-574.11	0.00	0.00	0.00
3,800.00	16.73	319.26	3,675.49	672.62	-579.40	-593.34	0.00	0.00	0.00
3,900.00	16.73	319.26	3,771.26	694.42	-598.18	-612.57	0.00	0.00	0.00
4,000.00	16.73	319.26	3,867.03	716.23	-616.97	-631.81	0.00	0.00	0.00
4,100.00	16.73	319.26	3,962.80	738.03	-635.75	-651.04	0.00	0.00	0.00
4,104.39	16.73	319.26	3,967.00	738.99	-636.57	-651.88	0.00	0.00	0.00
<b>PARKMAN</b>									
4,200.00	16.73	319.26	4,058.57	759.83	-654.53	-670.27	0.00	0.00	0.00
4,300.00	16.73	319.26	4,154.34	781.64	-673.31	-689.51	0.00	0.00	0.00
4,400.00	16.73	319.26	4,250.11	803.44	-692.09	-708.74	0.00	0.00	0.00
4,500.00	16.73	319.26	4,345.88	825.25	-710.88	-727.98	0.00	0.00	0.00
4,600.00	16.73	319.26	4,441.65	847.05	-729.66	-747.21	0.00	0.00	0.00
4,700.00	16.73	319.26	4,537.42	868.85	-748.44	-766.44	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,800.00	16.73	319.26	4,633.19	890.66	-767.22	-785.68	0.00	0.00	0.00	
4,900.00	16.73	319.26	4,728.96	912.46	-786.00	-804.91	0.00	0.00	0.00	
4,962.70	16.73	319.26	4,789.00	926.13	-797.78	-816.97	0.00	0.00	0.00	
<b>SUSSEX</b>										
5,000.00	16.73	319.26	4,824.72	934.27	-804.79	-824.15	0.00	0.00	0.00	
5,100.00	16.73	319.26	4,920.49	956.07	-823.57	-843.38	0.00	0.00	0.00	
5,200.00	16.73	319.26	5,016.26	977.87	-842.35	-862.61	0.00	0.00	0.00	
5,300.00	16.73	319.26	5,112.03	999.68	-861.13	-881.85	0.00	0.00	0.00	
5,400.00	16.73	319.26	5,207.80	1,021.48	-879.91	-901.08	0.00	0.00	0.00	
5,500.00	16.73	319.26	5,303.57	1,043.28	-898.70	-920.31	0.00	0.00	0.00	
5,600.00	16.73	319.26	5,399.34	1,065.09	-917.48	-939.55	0.00	0.00	0.00	
5,699.44	16.73	319.26	5,494.57	1,086.77	-936.15	-958.67	0.00	0.00	0.00	
<b>DROP 2°/100'</b>										
5,795.48	14.80	319.26	5,587.00	1,106.54	-953.18	-976.11	2.00	-2.00	0.00	
<b>SHANNON</b>										
5,800.00	14.71	319.26	5,591.37	1,107.41	-953.94	-976.88	2.00	-2.00	0.00	
5,900.00	12.71	319.26	5,688.51	1,125.37	-969.41	-992.73	2.00	-2.00	0.00	
6,000.00	10.71	319.26	5,786.43	1,140.75	-982.66	-1,006.30	2.00	-2.00	0.00	
6,100.00	8.71	319.26	5,884.99	1,153.54	-993.67	-1,017.57	2.00	-2.00	0.00	
6,200.00	6.71	319.26	5,984.08	1,163.71	-1,002.43	-1,026.54	2.00	-2.00	0.00	
6,300.00	4.71	319.26	6,083.58	1,171.25	-1,008.93	-1,033.20	2.00	-2.00	0.00	
6,400.00	2.71	319.26	6,183.36	1,176.16	-1,013.15	-1,037.52	2.00	-2.00	0.00	
6,500.00	0.71	319.26	6,283.31	1,178.42	-1,015.10	-1,039.52	2.00	-2.00	0.00	
6,535.69	0.00	0.00	6,319.00	1,178.59	-1,015.25	-1,039.67	2.00	-2.00	0.00	
<b>HOLD VERTICAL</b>										
6,600.00	0.00	0.00	6,383.31	1,178.59	-1,015.25	-1,039.67	0.00	0.00	0.00	
6,635.69	0.00	0.00	6,419.00	1,178.59	-1,015.25	-1,039.67	0.00	0.00	0.00	
<b>KOP, BUILD 10°/100'</b>										
6,650.00	1.43	181.06	6,433.31	1,178.41	-1,015.25	-1,039.49	10.00	10.00	0.00	
6,700.00	6.43	181.06	6,483.18	1,174.99	-1,015.32	-1,036.09	10.00	10.00	0.00	
6,750.00	11.43	181.06	6,532.55	1,167.23	-1,015.46	-1,028.38	10.00	10.00	0.00	
6,800.00	16.43	181.06	6,581.07	1,155.20	-1,015.68	-1,016.41	10.00	10.00	0.00	
6,850.00	21.43	181.06	6,628.35	1,138.98	-1,015.98	-1,000.30	10.00	10.00	0.00	
6,900.00	26.43	181.06	6,674.04	1,118.71	-1,016.36	-980.14	10.00	10.00	0.00	
6,950.00	31.43	181.06	6,717.78	1,094.54	-1,016.80	-956.11	10.00	10.00	0.00	
7,000.00	36.43	181.06	6,759.26	1,066.64	-1,017.32	-928.38	10.00	10.00	0.00	
7,050.00	41.43	181.06	6,798.14	1,035.24	-1,017.90	-897.16	10.00	10.00	0.00	
7,100.00	46.43	181.06	6,834.14	1,000.57	-1,018.54	-862.69	10.00	10.00	0.00	
7,150.00	51.43	181.06	6,866.98	962.90	-1,019.23	-825.23	10.00	10.00	0.00	
7,169.71	53.40	181.06	6,879.00	947.29	-1,019.52	-809.71	10.00	10.00	0.00	
<b>NIOBRARA</b>										
7,200.00	56.43	181.06	6,896.41	922.50	-1,019.98	-785.07	10.00	10.00	0.00	
7,250.00	61.43	181.06	6,922.21	879.70	-1,020.77	-742.51	10.00	10.00	0.00	
7,300.00	66.43	181.06	6,944.18	834.81	-1,021.60	-697.88	10.00	10.00	0.00	
7,350.00	71.43	181.06	6,962.15	788.18	-1,022.46	-651.52	10.00	10.00	0.00	
7,400.00	76.43	181.06	6,975.99	740.15	-1,023.35	-603.78	10.00	10.00	0.00	
7,428.55	79.28	181.06	6,982.00	712.25	-1,023.86	-576.04	10.00	10.00	0.00	
<b>NIO B TARGET</b>										
7,450.00	81.43	181.06	6,985.59	691.11	-1,024.25	-555.02	10.00	10.00	0.00	
7,500.00	86.42	181.06	6,990.88	641.41	-1,025.17	-505.61	10.00	10.00	0.00	
7,535.85	90.01	181.06	6,992.00	605.59	-1,025.83	-469.99	10.00	10.00	0.00	
<b>LP @ 90° INC, 181.06° AZM HOLD</b>										
7,600.00	90.01	181.06	6,991.99	541.45	-1,027.01	-406.23	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,700.00	90.01	181.06	6,991.97	441.47	-1,028.86	-306.82	0.00	0.00	0.00
7,800.00	90.01	181.06	6,991.96	341.49	-1,030.71	-207.42	0.00	0.00	0.00
7,900.00	90.01	181.06	6,991.94	241.51	-1,032.55	-108.02	0.00	0.00	0.00
8,000.00	90.01	181.06	6,991.92	141.52	-1,034.40	-8.61	0.00	0.00	0.00
8,100.00	90.01	181.06	6,991.91	41.54	-1,036.25	90.79	0.00	0.00	0.00
8,200.00	90.01	181.06	6,991.89	-58.44	-1,038.09	190.19	0.00	0.00	0.00
8,300.00	90.01	181.06	6,991.88	-158.43	-1,039.94	289.60	0.00	0.00	0.00
8,400.00	90.01	181.06	6,991.87	-258.41	-1,041.78	389.00	0.00	0.00	0.00
8,500.00	90.01	181.06	6,991.85	-358.39	-1,043.63	488.41	0.00	0.00	0.00
8,600.00	90.01	181.06	6,991.84	-458.37	-1,045.47	587.81	0.00	0.00	0.00
8,700.00	90.01	181.06	6,991.82	-558.36	-1,047.32	687.21	0.00	0.00	0.00
8,800.00	90.01	181.06	6,991.81	-658.34	-1,049.17	786.62	0.00	0.00	0.00
8,900.00	90.01	181.06	6,991.80	-758.32	-1,051.01	886.02	0.00	0.00	0.00
9,000.00	90.01	181.06	6,991.79	-858.31	-1,052.86	985.42	0.00	0.00	0.00
9,100.00	90.01	181.06	6,991.77	-958.29	-1,054.70	1,084.83	0.00	0.00	0.00
9,200.00	90.01	181.06	6,991.76	-1,058.27	-1,056.55	1,184.23	0.00	0.00	0.00
9,300.00	90.01	181.06	6,991.75	-1,158.26	-1,058.39	1,283.63	0.00	0.00	0.00
9,400.00	90.01	181.06	6,991.74	-1,258.24	-1,060.24	1,383.04	0.00	0.00	0.00
9,500.00	90.01	181.06	6,991.73	-1,358.22	-1,062.08	1,482.44	0.00	0.00	0.00
9,600.00	90.01	181.06	6,991.72	-1,458.20	-1,063.93	1,581.85	0.00	0.00	0.00
9,700.00	90.01	181.06	6,991.71	-1,558.19	-1,065.77	1,681.25	0.00	0.00	0.00
9,800.00	90.01	181.06	6,991.70	-1,658.17	-1,067.62	1,780.65	0.00	0.00	0.00
9,900.00	90.01	181.06	6,991.69	-1,758.15	-1,069.46	1,880.06	0.00	0.00	0.00
10,000.00	90.00	181.06	6,991.68	-1,858.14	-1,071.31	1,979.46	0.00	0.00	0.00
10,100.00	90.00	181.06	6,991.67	-1,958.12	-1,073.16	2,078.86	0.00	0.00	0.00
10,200.00	90.00	181.06	6,991.67	-2,058.10	-1,075.00	2,178.27	0.00	0.00	0.00
10,300.00	90.00	181.06	6,991.66	-2,158.09	-1,076.85	2,277.67	0.00	0.00	0.00
10,400.00	90.00	181.06	6,991.65	-2,258.07	-1,078.69	2,377.07	0.00	0.00	0.00
10,500.00	90.00	181.06	6,991.64	-2,358.05	-1,080.53	2,476.48	0.00	0.00	0.00
10,600.00	90.00	181.06	6,991.64	-2,458.03	-1,082.38	2,575.88	0.00	0.00	0.00
10,700.00	90.00	181.06	6,991.63	-2,558.02	-1,084.22	2,675.28	0.00	0.00	0.00
10,800.00	90.00	181.06	6,991.62	-2,658.00	-1,086.07	2,774.69	0.00	0.00	0.00
10,900.00	90.00	181.06	6,991.62	-2,757.98	-1,087.91	2,874.09	0.00	0.00	0.00
11,000.00	90.00	181.06	6,991.61	-2,857.97	-1,089.76	2,973.50	0.00	0.00	0.00
11,100.00	90.00	181.06	6,991.61	-2,957.95	-1,091.60	3,072.90	0.00	0.00	0.00
11,200.00	90.00	181.06	6,991.60	-3,057.93	-1,093.45	3,172.30	0.00	0.00	0.00
11,300.00	90.00	181.06	6,991.60	-3,157.92	-1,095.29	3,271.71	0.00	0.00	0.00
11,400.00	90.00	181.06	6,991.59	-3,257.90	-1,097.14	3,371.11	0.00	0.00	0.00
11,500.00	90.00	181.06	6,991.59	-3,357.88	-1,098.98	3,470.51	0.00	0.00	0.00
11,600.00	90.00	181.06	6,991.59	-3,457.86	-1,100.83	3,569.92	0.00	0.00	0.00
11,700.00	90.00	181.06	6,991.58	-3,557.85	-1,102.67	3,669.32	0.00	0.00	0.00
11,800.00	90.00	181.06	6,991.58	-3,657.83	-1,104.51	3,768.72	0.00	0.00	0.00
11,900.00	90.00	181.06	6,991.58	-3,757.81	-1,106.36	3,868.13	0.00	0.00	0.00
12,000.00	90.00	181.06	6,991.58	-3,857.80	-1,108.20	3,967.53	0.00	0.00	0.00
12,100.00	90.00	181.06	6,991.57	-3,957.78	-1,110.05	4,066.93	0.00	0.00	0.00
12,200.00	90.00	181.06	6,991.57	-4,057.76	-1,111.89	4,166.34	0.00	0.00	0.00
12,300.00	90.00	181.06	6,991.57	-4,157.75	-1,113.74	4,265.74	0.00	0.00	0.00
12,400.00	90.00	181.06	6,991.57	-4,257.73	-1,115.58	4,365.14	0.00	0.00	0.00
12,500.00	90.00	181.06	6,991.57	-4,357.71	-1,117.42	4,464.55	0.00	0.00	0.00
12,600.00	90.00	181.06	6,991.57	-4,457.69	-1,119.27	4,563.95	0.00	0.00	0.00
12,700.00	90.00	181.06	6,991.57	-4,557.68	-1,121.11	4,663.36	0.00	0.00	0.00
12,800.00	90.00	181.06	6,991.57	-4,657.66	-1,122.95	4,762.76	0.00	0.00	0.00
12,900.00	90.00	181.06	6,991.57	-4,757.64	-1,124.80	4,862.16	0.00	0.00	0.00
13,000.00	90.00	181.06	6,991.57	-4,857.63	-1,126.64	4,961.57	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,100.00	90.00	181.06	6,991.58	-4,957.61	-1,128.49	5,060.97	0.00	0.00	0.00
13,200.00	90.00	181.06	6,991.58	-5,057.59	-1,130.33	5,160.37	0.00	0.00	0.00
13,300.00	90.00	181.06	6,991.58	-5,157.58	-1,132.17	5,259.78	0.00	0.00	0.00
13,400.00	90.00	181.06	6,991.58	-5,257.56	-1,134.02	5,359.18	0.00	0.00	0.00
13,500.00	90.00	181.06	6,991.59	-5,357.54	-1,135.86	5,458.58	0.00	0.00	0.00
13,600.00	90.00	181.06	6,991.59	-5,457.52	-1,137.70	5,557.99	0.00	0.00	0.00
13,700.00	90.00	181.06	6,991.59	-5,557.51	-1,139.55	5,657.39	0.00	0.00	0.00
13,800.00	90.00	181.06	6,991.60	-5,657.49	-1,141.39	5,756.79	0.00	0.00	0.00
13,900.00	90.00	181.06	6,991.60	-5,757.47	-1,143.23	5,856.20	0.00	0.00	0.00
14,000.00	90.00	181.06	6,991.61	-5,857.46	-1,145.08	5,955.60	0.00	0.00	0.00
14,100.00	90.00	181.06	6,991.61	-5,957.44	-1,146.92	6,055.00	0.00	0.00	0.00
14,200.00	90.00	181.06	6,991.62	-6,057.42	-1,148.76	6,154.41	0.00	0.00	0.00
14,300.00	90.00	181.06	6,991.62	-6,157.41	-1,150.61	6,253.81	0.00	0.00	0.00
14,400.00	90.00	181.06	6,991.63	-6,257.39	-1,152.45	6,353.21	0.00	0.00	0.00
14,500.00	90.00	181.06	6,991.64	-6,357.37	-1,154.29	6,452.62	0.00	0.00	0.00
14,600.00	90.00	181.06	6,991.64	-6,457.35	-1,156.14	6,552.02	0.00	0.00	0.00
14,700.00	90.00	181.06	6,991.65	-6,557.34	-1,157.98	6,651.42	0.00	0.00	0.00
14,800.00	90.00	181.06	6,991.66	-6,657.32	-1,159.82	6,750.83	0.00	0.00	0.00
14,900.00	90.00	181.06	6,991.66	-6,757.30	-1,161.67	6,850.23	0.00	0.00	0.00
15,000.00	90.00	181.06	6,991.67	-6,857.29	-1,163.51	6,949.63	0.00	0.00	0.00
15,100.00	90.00	181.06	6,991.68	-6,957.27	-1,165.35	7,049.04	0.00	0.00	0.00
15,200.00	89.99	181.06	6,991.69	-7,057.25	-1,167.19	7,148.44	0.00	0.00	0.00
15,300.00	89.99	181.06	6,991.70	-7,157.24	-1,169.04	7,247.84	0.00	0.00	0.00
15,400.00	89.99	181.06	6,991.71	-7,257.22	-1,170.88	7,347.25	0.00	0.00	0.00
15,500.00	89.99	181.06	6,991.72	-7,357.20	-1,172.72	7,446.65	0.00	0.00	0.00
15,600.00	89.99	181.06	6,991.73	-7,457.18	-1,174.56	7,546.05	0.00	0.00	0.00
15,700.00	89.99	181.06	6,991.74	-7,557.17	-1,176.41	7,645.46	0.00	0.00	0.00
15,800.00	89.99	181.06	6,991.75	-7,657.15	-1,178.25	7,744.86	0.00	0.00	0.00
15,900.00	89.99	181.06	6,991.76	-7,757.13	-1,180.09	7,844.26	0.00	0.00	0.00
16,000.00	89.99	181.06	6,991.77	-7,857.12	-1,181.93	7,943.67	0.00	0.00	0.00
16,100.00	89.99	181.06	6,991.79	-7,957.10	-1,183.78	8,043.07	0.00	0.00	0.00
16,200.00	89.99	181.06	6,991.80	-8,057.08	-1,185.62	8,142.47	0.00	0.00	0.00
16,300.00	89.99	181.06	6,991.81	-8,157.07	-1,187.46	8,241.88	0.00	0.00	0.00
16,400.00	89.99	181.06	6,991.82	-8,257.05	-1,189.30	8,341.28	0.00	0.00	0.00
16,500.00	89.99	181.06	6,991.84	-8,357.03	-1,191.15	8,440.68	0.00	0.00	0.00
16,600.00	89.99	181.06	6,991.85	-8,457.02	-1,192.99	8,540.09	0.00	0.00	0.00
16,700.00	89.99	181.06	6,991.86	-8,557.00	-1,194.83	8,639.49	0.00	0.00	0.00
16,800.00	89.99	181.06	6,991.88	-8,656.98	-1,196.67	8,738.89	0.00	0.00	0.00
16,900.00	89.99	181.06	6,991.89	-8,756.96	-1,198.51	8,838.30	0.00	0.00	0.00
17,000.00	89.99	181.06	6,991.91	-8,856.95	-1,200.36	8,937.70	0.00	0.00	0.00
17,100.00	89.99	181.06	6,991.92	-8,956.93	-1,202.20	9,037.10	0.00	0.00	0.00
17,200.00	89.99	181.06	6,991.94	-9,056.91	-1,204.04	9,136.51	0.00	0.00	0.00
17,300.00	89.99	181.06	6,991.95	-9,156.90	-1,205.88	9,235.91	0.00	0.00	0.00
17,400.00	89.99	181.06	6,991.97	-9,256.88	-1,207.72	9,335.31	0.00	0.00	0.00
17,500.00	89.99	181.06	6,991.99	-9,356.86	-1,209.56	9,434.72	0.00	0.00	0.00
17,571.51	89.99	181.06	6,992.00	-9,428.36	-1,210.88	9,505.80	0.00	0.00	0.00
TD at 17571.51' MD									

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well HARRY EAST 8S-20-9N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5285.00usft
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB 25' @ 5285.00usft
<b>Site:</b>	Sec 8-T11N-R61W	<b>North Reference:</b>	True
<b>Well:</b>	HARRY EAST 8S-20-9N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
HARRY EAST 9N PBHL	0.00	0.00	6,992.00	-9,428.36	-1,210.88	1,578,761.86	3,352,069.56	40° 54' 54.461 N	104° 13' 34.176 W
- plan hits target center									
- Point									
HARRY EAST 9N LP	0.00	0.00	6,992.00	605.59	-1,025.83	1,588,797.44	3,352,109.96	40° 56' 33.601 N	104° 13' 31.771 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth					
(usft)	(usft)	Name	Lithology	Dip	Dip Direction	
				(°)	(°)	
4,104.39	3,967.00	PARKMAN				
4,962.70	4,789.00	SUSSEX				
5,795.48	5,587.00	SHANNON				
7,169.71	6,879.00	NIOBRARA				
7,428.55	6,982.00	NIO B TARGET				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
		(usft)	(usft)		
300.00	300.00	0.00	0.00	BUILD 2°/100'	
1,136.25	1,124.43	91.82	-79.10	HOLD 16.73° INC	
5,699.44	5,494.57	1,086.77	-936.15	DROP 2°/100'	
6,535.69	6,319.00	1,178.59	-1,015.25	HOLD VERTICAL	
6,635.69	6,419.00	1,178.59	-1,015.25	KOP, BUILD 10°/100'	
7,535.85	6,992.00	605.59	-1,025.83	LP @ 90° INC, 181.06° AZM HOLD	
17,571.51	6,992.00	-9,428.36	-1,210.88	TD at 17571.51' MD	