

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 29-T1-R66W**

**PC 1S-66-2928-5NH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**12 September, 2017**



Project: Adams County  
Site: Sec 29-T1-R66W  
Well: PC 1S-66-2928-5NH  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.17°  
Magnetic Field  
Strength: 52115.7nT  
Dip Angle: 66.47°  
Date: 9/11/2017  
Model: IGRF2015

WELL DETAILS: PC 1S-66-2928-5NH

5064.00								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		Slot	
0.00	0.00	1219390.68	3194970.29	39° 56' 0.636 N	104° 48' 17.028 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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1537.11	22.74	329.95	1507.48	192.79	-111.52	2.00	329.95	-67.24	
4	6284.75	22.74	329.95	5886.02	1781.51	-1030.54	0.00	0.00	-621.35	
5	7421.86	0.00	0.00	6993.50	1974.30	-1142.06	2.00	180.00	-688.59	
6	7451.86	0.00	0.00	7023.50	1974.30	-1142.06	0.00	0.00	-688.59	
7	8201.92	90.00	89.99	7501.00	1974.37	-664.56	12.00	89.99	-222.35	PC 5NH LP
8	17797.36	90.00	89.99	7501.00	1975.96	8930.88	0.00	0.00	9146.86	PC 5NH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1537.11	22.74	329.95	1507.48	192.79	-111.52	-67.24	222.73	HOLD 22.74° INC
6284.75	22.74	329.95	5886.02	1781.51	-1030.54	-621.35	2058.10	DROP 2°/100'
7421.86	0.00	0.00	6993.50	1974.30	-1142.06	-688.59	2280.82	HOLD VERTICAL
7451.86	0.00	0.00	7023.50	1974.30	-1142.06	-688.59	2280.82	KOP, BUILD 12°/100'
8201.92	90.00	89.99	7501.00	1974.37	-664.56	-222.35	2758.33	LP @ 90° INC, 89.99° AZM HOLD
17797.36	90.00	89.99	7501.00	1975.96	8930.88	9146.86	12353.77	TD at 17797.36° MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 5NH LP	7501.00	1974.37	-664.56	1221359.78	3194290.28	39° 56' 20.148 N	104° 48' 25.560 W	Point
- plan hits target center								
PC 5NH PBHL	7501.00	1975.96	8930.88	1221436.61	3203885.41	39° 56' 20.148 N	104° 46' 22.368 W	Point
- plan hits target center								

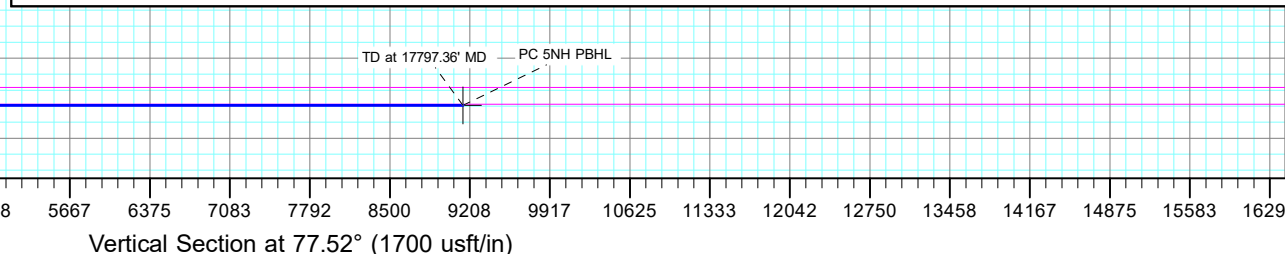
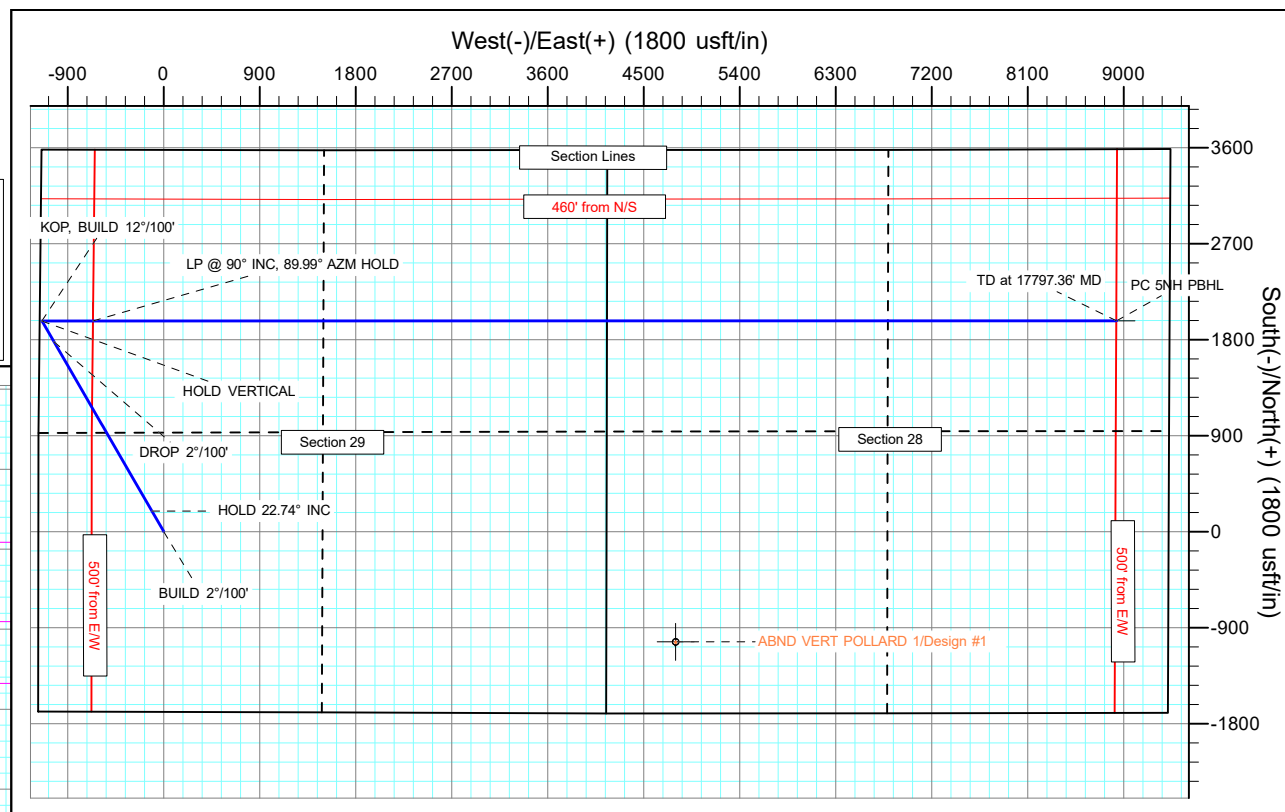
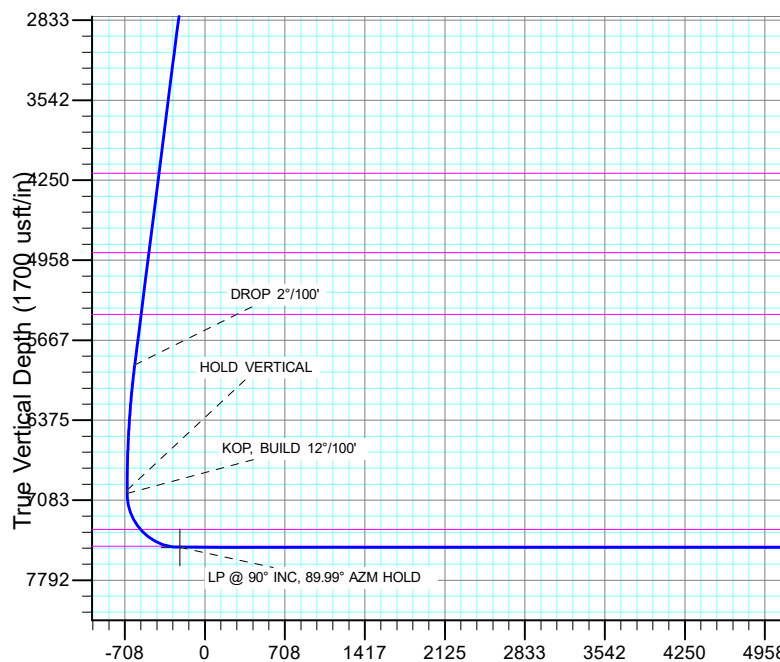
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4443.59	PARKMAN
4892.00	5206.94	SUSSEX
5437.00	5797.88	SHANNON
7342.00	7800.53	NIOBRARA
7491.00	8104.02	NIO B TARGET

PROJECT DETAILS: Adams County

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

SHL:  
1691' FSL, 1175' FWL  
Sec 29-T1S-R66W  
LP:  
1607' FNL, 500' FWL  
Sec 29-T1S-R66W  
BHL:  
1607' FNL, 500' FEL  
Sec 28-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Adams 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 29-T1-R66W			
Site Position:		Northing:	1,217,694.95 usft	Latitude:	39° 55' 43.968 N
From:	Lat/Long	Easting:	3,193,805.68 usft	Longitude:	104° 48' 32.148 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.45 °

Well	PC 1S-66-2928-5NH					
Well Position	+N/-S	1,686.60 usft	Northing:	1,219,390.68 usft	Latitude:	39° 56' 0.636 N
	+E/-W	1,177.79 usft	Easting:	3,194,970.30 usft	Longitude:	104° 48' 17.028 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,064.00 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	9/11/2017	8.17	66.47	52,115.74511292

<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	77.52

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/12/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,797.36	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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,537.11	22.74	329.95	1,507.48	192.79	-111.52	2.00	2.00	0.00	329.95	
6,284.75	22.74	329.95	5,886.02	1,781.51	-1,030.54	0.00	0.00	0.00	0.00	
7,421.86	0.00	0.00	6,993.50	1,974.30	-1,142.06	2.00	-2.00	0.00	180.00	
7,451.86	0.00	0.00	7,023.50	1,974.30	-1,142.06	0.00	0.00	0.00	0.00	
8,201.92	90.00	89.99	7,501.00	1,974.37	-664.56	12.00	12.00	12.00	89.99	PC 5NH LP
17,797.36	90.00	89.99	7,501.00	1,975.96	8,930.88	0.00	0.00	0.00	0.00	PC 5NH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
BUILD 2°/100'									
500.00	2.00	329.95	499.98	1.51	-0.87	-0.53	2.00	2.00	0.00
600.00	4.00	329.95	599.84	6.04	-3.49	-2.11	2.00	2.00	0.00
700.00	6.00	329.95	699.45	13.58	-7.86	-4.74	2.00	2.00	0.00
800.00	8.00	329.95	798.70	24.13	-13.96	-8.42	2.00	2.00	0.00
900.00	10.00	329.95	897.47	37.67	-21.79	-13.14	2.00	2.00	0.00
1,000.00	12.00	329.95	995.62	54.19	-31.35	-18.90	2.00	2.00	0.00
1,100.00	14.00	329.95	1,093.06	73.66	-42.61	-25.69	2.00	2.00	0.00
1,200.00	16.00	329.95	1,189.64	96.06	-55.57	-33.50	2.00	2.00	0.00
1,300.00	18.00	329.95	1,285.27	121.37	-70.21	-42.33	2.00	2.00	0.00
1,400.00	20.00	329.95	1,379.82	149.55	-86.51	-52.16	2.00	2.00	0.00
1,500.00	22.00	329.95	1,473.17	180.57	-104.45	-62.98	2.00	2.00	0.00
1,537.11	22.74	329.95	1,507.48	192.79	-111.52	-67.24	2.00	2.00	0.00
HOLD 22.74° INC									
1,600.00	22.74	329.95	1,565.49	213.84	-123.70	-74.58	0.00	0.00	0.00
1,700.00	22.74	329.95	1,657.71	247.30	-143.06	-86.25	0.00	0.00	0.00
1,800.00	22.74	329.95	1,749.94	280.77	-162.41	-97.93	0.00	0.00	0.00
1,900.00	22.74	329.95	1,842.16	314.23	-181.77	-109.60	0.00	0.00	0.00
2,000.00	22.74	329.95	1,934.39	347.69	-201.13	-121.27	0.00	0.00	0.00
2,100.00	22.74	329.95	2,026.61	381.16	-220.48	-132.94	0.00	0.00	0.00
2,200.00	22.74	329.95	2,118.84	414.62	-239.84	-144.61	0.00	0.00	0.00
2,300.00	22.74	329.95	2,211.06	448.08	-259.20	-156.28	0.00	0.00	0.00
2,400.00	22.74	329.95	2,303.29	481.54	-278.56	-167.95	0.00	0.00	0.00
2,500.00	22.74	329.95	2,395.51	515.01	-297.91	-179.62	0.00	0.00	0.00
2,600.00	22.74	329.95	2,487.74	548.47	-317.27	-191.29	0.00	0.00	0.00
2,700.00	22.74	329.95	2,579.96	581.93	-336.63	-202.97	0.00	0.00	0.00
2,800.00	22.74	329.95	2,672.19	615.40	-355.98	-214.64	0.00	0.00	0.00
2,900.00	22.74	329.95	2,764.42	648.86	-375.34	-226.31	0.00	0.00	0.00
3,000.00	22.74	329.95	2,856.64	682.32	-394.70	-237.98	0.00	0.00	0.00
3,100.00	22.74	329.95	2,948.87	715.79	-414.06	-249.65	0.00	0.00	0.00
3,200.00	22.74	329.95	3,041.09	749.25	-433.41	-261.32	0.00	0.00	0.00
3,300.00	22.74	329.95	3,133.32	782.71	-452.77	-272.99	0.00	0.00	0.00
3,400.00	22.74	329.95	3,225.54	816.18	-472.13	-284.66	0.00	0.00	0.00
3,500.00	22.74	329.95	3,317.77	849.64	-491.49	-296.34	0.00	0.00	0.00
3,600.00	22.74	329.95	3,409.99	883.10	-510.84	-308.01	0.00	0.00	0.00
3,700.00	22.74	329.95	3,502.22	916.57	-530.20	-319.68	0.00	0.00	0.00
3,800.00	22.74	329.95	3,594.44	950.03	-549.56	-331.35	0.00	0.00	0.00
3,900.00	22.74	329.95	3,686.67	983.49	-568.91	-343.02	0.00	0.00	0.00
4,000.00	22.74	329.95	3,778.89	1,016.96	-588.27	-354.69	0.00	0.00	0.00
4,100.00	22.74	329.95	3,871.12	1,050.42	-607.63	-366.36	0.00	0.00	0.00
4,200.00	22.74	329.95	3,963.35	1,083.88	-626.99	-378.03	0.00	0.00	0.00
4,300.00	22.74	329.95	4,055.57	1,117.34	-646.34	-389.71	0.00	0.00	0.00
4,400.00	22.74	329.95	4,147.80	1,150.81	-665.70	-401.38	0.00	0.00	0.00
4,443.59	22.74	329.95	4,188.00	1,165.40	-674.14	-406.46	0.00	0.00	0.00
PARKMAN									
4,500.00	22.74	329.95	4,240.02	1,184.27	-685.06	-413.05	0.00	0.00	0.00
4,600.00	22.74	329.95	4,332.25	1,217.73	-704.41	-424.72	0.00	0.00	0.00
4,700.00	22.74	329.95	4,424.47	1,251.20	-723.77	-436.39	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<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	22.74	329.95	4,516.70	1,284.66	-743.13	-448.06	0.00	0.00	0.00	
4,900.00	22.74	329.95	4,608.92	1,318.12	-762.49	-459.73	0.00	0.00	0.00	
5,000.00	22.74	329.95	4,701.15	1,351.59	-781.84	-471.40	0.00	0.00	0.00	
5,100.00	22.74	329.95	4,793.37	1,385.05	-801.20	-483.08	0.00	0.00	0.00	
5,200.00	22.74	329.95	4,885.60	1,418.51	-820.56	-494.75	0.00	0.00	0.00	
5,206.94	22.74	329.95	4,892.00	1,420.84	-821.90	-495.56	0.00	0.00	0.00	
SUSSEX										
5,300.00	22.74	329.95	4,977.82	1,451.98	-839.92	-506.42	0.00	0.00	0.00	
5,400.00	22.74	329.95	5,070.05	1,485.44	-859.27	-518.09	0.00	0.00	0.00	
5,500.00	22.74	329.95	5,162.27	1,518.90	-878.63	-529.76	0.00	0.00	0.00	
5,600.00	22.74	329.95	5,254.50	1,552.37	-897.99	-541.43	0.00	0.00	0.00	
5,700.00	22.74	329.95	5,346.73	1,585.83	-917.34	-553.10	0.00	0.00	0.00	
5,797.88	22.74	329.95	5,437.00	1,618.58	-936.29	-564.53	0.00	0.00	0.00	
SHANNON										
5,800.00	22.74	329.95	5,438.95	1,619.29	-936.70	-564.77	0.00	0.00	0.00	
5,900.00	22.74	329.95	5,531.18	1,652.76	-956.06	-576.44	0.00	0.00	0.00	
6,000.00	22.74	329.95	5,623.40	1,686.22	-975.42	-588.12	0.00	0.00	0.00	
6,100.00	22.74	329.95	5,715.63	1,719.68	-994.77	-599.79	0.00	0.00	0.00	
6,200.00	22.74	329.95	5,807.85	1,753.14	-1,014.13	-611.46	0.00	0.00	0.00	
6,284.75	22.74	329.95	5,886.02	1,781.51	-1,030.54	-621.35	0.00	0.00	0.00	
DROP 2°/100'										
6,300.00	22.44	329.95	5,900.09	1,786.58	-1,033.47	-623.12	2.00	-2.00	0.00	
6,400.00	20.44	329.95	5,993.17	1,818.21	-1,051.77	-634.15	2.00	-2.00	0.00	
6,500.00	18.44	329.95	6,087.47	1,847.01	-1,068.43	-644.20	2.00	-2.00	0.00	
6,600.00	16.44	329.95	6,182.87	1,872.95	-1,083.43	-653.24	2.00	-2.00	0.00	
6,700.00	14.44	329.95	6,279.25	1,895.99	-1,096.76	-661.28	2.00	-2.00	0.00	
6,800.00	12.44	329.95	6,376.51	1,916.11	-1,108.40	-668.30	2.00	-2.00	0.00	
6,900.00	10.44	329.95	6,474.52	1,933.27	-1,118.33	-674.28	2.00	-2.00	0.00	
7,000.00	8.44	329.95	6,573.16	1,947.46	-1,126.54	-679.23	2.00	-2.00	0.00	
7,100.00	6.44	329.95	6,672.32	1,958.67	-1,133.02	-683.14	2.00	-2.00	0.00	
7,200.00	4.44	329.95	6,771.86	1,966.87	-1,137.76	-686.00	2.00	-2.00	0.00	
7,300.00	2.44	329.95	6,871.68	1,972.06	-1,140.76	-687.81	2.00	-2.00	0.00	
7,400.00	0.44	329.95	6,971.64	1,974.23	-1,142.02	-688.57	2.00	-2.00	0.00	
7,421.86	0.00	0.00	6,993.50	1,974.30	-1,142.06	-688.59	2.00	-2.00	0.00	
HOLD VERTICAL										
7,451.86	0.00	0.00	7,023.50	1,974.30	-1,142.06	-688.59	0.00	0.00	0.00	
KOP, BUILD 12°/100'										
7,475.00	2.78	89.99	7,046.63	1,974.30	-1,141.50	-688.05	12.00	12.00	0.00	
7,500.00	5.78	89.99	7,071.56	1,974.30	-1,139.64	-686.23	12.00	12.00	0.00	
7,525.00	8.78	89.99	7,096.35	1,974.30	-1,136.47	-683.13	12.00	12.00	0.00	
7,550.00	11.78	89.99	7,120.95	1,974.30	-1,132.01	-678.78	12.00	12.00	0.00	
7,575.00	14.78	89.99	7,145.28	1,974.30	-1,126.27	-673.18	12.00	12.00	0.00	
7,600.00	17.78	89.99	7,169.27	1,974.30	-1,119.26	-666.33	12.00	12.00	0.00	
7,625.00	20.78	89.99	7,192.87	1,974.30	-1,111.01	-658.28	12.00	12.00	0.00	
7,650.00	23.77	89.99	7,216.00	1,974.31	-1,101.54	-649.03	12.00	12.00	0.00	
7,675.00	26.77	89.99	7,238.61	1,974.31	-1,090.86	-638.60	12.00	12.00	0.00	
7,700.00	29.77	89.99	7,260.62	1,974.31	-1,079.02	-627.04	12.00	12.00	0.00	
7,725.00	32.77	89.99	7,281.99	1,974.31	-1,066.05	-614.37	12.00	12.00	0.00	
7,750.00	35.77	89.99	7,302.64	1,974.31	-1,051.97	-600.63	12.00	12.00	0.00	
7,775.00	38.77	89.99	7,322.53	1,974.31	-1,036.83	-585.85	12.00	12.00	0.00	
7,800.00	41.77	89.99	7,341.61	1,974.32	-1,020.67	-570.07	12.00	12.00	0.00	
7,800.53	41.84	89.99	7,342.00	1,974.32	-1,020.32	-569.72	12.00	12.00	0.00	
NIOBRARA										

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<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)	
7,825.00	44.77	89.99	7,359.81	1,974.32	-1,003.54	-553.34	12.00	12.00	0.00	
7,850.00	47.77	89.99	7,377.08	1,974.32	-985.47	-535.70	12.00	12.00	0.00	
7,875.00	50.77	89.99	7,393.39	1,974.32	-966.53	-517.20	12.00	12.00	0.00	
7,900.00	53.77	89.99	7,408.69	1,974.33	-946.76	-497.90	12.00	12.00	0.00	
7,925.00	56.77	89.99	7,422.93	1,974.33	-926.21	-477.84	12.00	12.00	0.00	
7,950.00	59.77	89.99	7,436.07	1,974.33	-904.95	-457.08	12.00	12.00	0.00	
7,975.00	62.77	89.99	7,448.09	1,974.34	-883.03	-435.67	12.00	12.00	0.00	
8,000.00	65.77	89.99	7,458.94	1,974.34	-860.51	-413.68	12.00	12.00	0.00	
8,025.00	68.77	89.99	7,468.60	1,974.34	-837.46	-391.17	12.00	12.00	0.00	
8,050.00	71.77	89.99	7,477.04	1,974.35	-813.93	-368.20	12.00	12.00	0.00	
8,075.00	74.77	89.99	7,484.23	1,974.35	-789.99	-344.82	12.00	12.00	0.00	
8,100.00	77.77	89.99	7,490.16	1,974.35	-765.70	-321.11	12.00	12.00	0.00	
8,104.02	78.25	89.99	7,491.00	1,974.35	-761.77	-317.27	12.00	12.00	0.00	
NIO B TARGET										
8,125.00	80.77	89.99	7,494.82	1,974.36	-741.14	-297.13	12.00	12.00	0.00	
8,150.00	83.77	89.99	7,498.18	1,974.36	-716.37	-272.95	12.00	12.00	0.00	
8,175.00	86.77	89.99	7,500.24	1,974.36	-691.46	-248.62	12.00	12.00	0.00	
8,201.92	90.00	89.99	7,501.00	1,974.37	-664.56	-222.35	12.00	12.00	0.00	
LP @ 90° INC, 89.99° AZM HOLD										
8,300.00	90.00	89.99	7,501.00	1,974.38	-566.48	-126.58	0.00	0.00	0.00	
8,400.00	90.00	89.99	7,501.00	1,974.39	-466.48	-28.94	0.00	0.00	0.00	
8,500.00	90.00	89.99	7,501.00	1,974.41	-366.48	68.70	0.00	0.00	0.00	
8,600.00	90.00	89.99	7,501.00	1,974.42	-266.48	166.34	0.00	0.00	0.00	
8,700.00	90.00	89.99	7,501.00	1,974.44	-166.48	263.98	0.00	0.00	0.00	
8,800.00	90.00	89.99	7,501.00	1,974.45	-66.48	361.63	0.00	0.00	0.00	
8,900.00	90.00	89.99	7,501.00	1,974.46	33.52	459.27	0.00	0.00	0.00	
9,000.00	90.00	89.99	7,501.00	1,974.48	133.52	556.91	0.00	0.00	0.00	
9,100.00	90.00	89.99	7,501.00	1,974.49	233.52	654.55	0.00	0.00	0.00	
9,200.00	90.00	89.99	7,501.00	1,974.51	333.52	752.19	0.00	0.00	0.00	
9,300.00	90.00	89.99	7,501.00	1,974.52	433.52	849.83	0.00	0.00	0.00	
9,400.00	90.00	89.99	7,501.00	1,974.53	533.52	947.48	0.00	0.00	0.00	
9,500.00	90.00	89.99	7,501.00	1,974.55	633.52	1,045.12	0.00	0.00	0.00	
9,600.00	90.00	89.99	7,501.00	1,974.56	733.52	1,142.76	0.00	0.00	0.00	
9,700.00	90.00	89.99	7,501.00	1,974.58	833.52	1,240.40	0.00	0.00	0.00	
9,800.00	90.00	89.99	7,501.00	1,974.59	933.52	1,338.04	0.00	0.00	0.00	
9,900.00	90.00	89.99	7,501.00	1,974.60	1,033.52	1,435.69	0.00	0.00	0.00	
10,000.00	90.00	89.99	7,500.99	1,974.62	1,133.52	1,533.33	0.00	0.00	0.00	
10,100.00	90.00	89.99	7,500.99	1,974.63	1,233.52	1,630.97	0.00	0.00	0.00	
10,200.00	90.00	89.99	7,500.99	1,974.64	1,333.52	1,728.61	0.00	0.00	0.00	
10,300.00	90.00	89.99	7,500.99	1,974.66	1,433.52	1,826.25	0.00	0.00	0.00	
10,400.00	90.00	89.99	7,500.99	1,974.67	1,533.52	1,923.89	0.00	0.00	0.00	
10,500.00	90.00	89.99	7,500.99	1,974.69	1,633.52	2,021.54	0.00	0.00	0.00	
10,600.00	90.00	89.99	7,500.99	1,974.70	1,733.52	2,119.18	0.00	0.00	0.00	
10,700.00	90.00	89.99	7,500.99	1,974.71	1,833.52	2,216.82	0.00	0.00	0.00	
10,800.00	90.00	89.99	7,500.99	1,974.73	1,933.52	2,314.46	0.00	0.00	0.00	
10,900.00	90.00	89.99	7,500.99	1,974.74	2,033.52	2,412.10	0.00	0.00	0.00	
11,000.00	90.00	89.99	7,500.99	1,974.76	2,133.52	2,509.74	0.00	0.00	0.00	
11,100.00	90.00	89.99	7,500.99	1,974.77	2,233.52	2,607.39	0.00	0.00	0.00	
11,200.00	90.00	89.99	7,500.99	1,974.78	2,333.52	2,705.03	0.00	0.00	0.00	
11,300.00	90.00	89.99	7,500.99	1,974.80	2,433.52	2,802.67	0.00	0.00	0.00	
11,400.00	90.00	89.99	7,500.99	1,974.81	2,533.52	2,900.31	0.00	0.00	0.00	
11,500.00	90.00	89.99	7,500.99	1,974.83	2,633.52	2,997.95	0.00	0.00	0.00	
11,600.00	90.00	89.99	7,500.99	1,974.84	2,733.52	3,095.60	0.00	0.00	0.00	
11,700.00	90.00	89.99	7,500.99	1,974.85	2,833.52	3,193.24	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<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)
11,800.00	90.00	89.99	7,500.99	1,974.87	2,933.52	3,290.88	0.00	0.00	0.00
11,900.00	90.00	89.99	7,500.99	1,974.88	3,033.52	3,388.52	0.00	0.00	0.00
12,000.00	90.00	89.99	7,500.99	1,974.90	3,133.52	3,486.16	0.00	0.00	0.00
12,100.00	90.00	89.99	7,500.99	1,974.91	3,233.52	3,583.80	0.00	0.00	0.00
12,200.00	90.00	89.99	7,500.99	1,974.92	3,333.52	3,681.45	0.00	0.00	0.00
12,300.00	90.00	89.99	7,500.99	1,974.94	3,433.52	3,779.09	0.00	0.00	0.00
12,400.00	90.00	89.99	7,500.99	1,974.95	3,533.52	3,876.73	0.00	0.00	0.00
12,500.00	90.00	89.99	7,500.99	1,974.97	3,633.52	3,974.37	0.00	0.00	0.00
12,600.00	90.00	89.99	7,500.99	1,974.98	3,733.52	4,072.01	0.00	0.00	0.00
12,700.00	90.00	89.99	7,500.99	1,974.99	3,833.52	4,169.65	0.00	0.00	0.00
12,800.00	90.00	89.99	7,500.99	1,975.01	3,933.52	4,267.30	0.00	0.00	0.00
12,900.00	90.00	89.99	7,500.99	1,975.02	4,033.52	4,364.94	0.00	0.00	0.00
13,000.00	90.00	89.99	7,500.99	1,975.03	4,133.52	4,462.58	0.00	0.00	0.00
13,100.00	90.00	89.99	7,500.99	1,975.05	4,233.52	4,560.22	0.00	0.00	0.00
13,200.00	90.00	89.99	7,500.99	1,975.06	4,333.52	4,657.86	0.00	0.00	0.00
13,300.00	90.00	89.99	7,500.98	1,975.08	4,433.52	4,755.51	0.00	0.00	0.00
13,400.00	90.00	89.99	7,500.98	1,975.09	4,533.52	4,853.15	0.00	0.00	0.00
13,500.00	90.00	89.99	7,500.98	1,975.10	4,633.52	4,950.79	0.00	0.00	0.00
13,600.00	90.00	89.99	7,500.98	1,975.12	4,733.52	5,048.43	0.00	0.00	0.00
13,700.00	90.00	89.99	7,500.98	1,975.13	4,833.52	5,146.07	0.00	0.00	0.00
13,800.00	90.00	89.99	7,500.98	1,975.15	4,933.52	5,243.71	0.00	0.00	0.00
13,900.00	90.00	89.99	7,500.98	1,975.16	5,033.52	5,341.36	0.00	0.00	0.00
14,000.00	90.00	89.99	7,500.98	1,975.17	5,133.52	5,439.00	0.00	0.00	0.00
14,100.00	90.00	89.99	7,500.98	1,975.19	5,233.52	5,536.64	0.00	0.00	0.00
14,200.00	90.00	89.99	7,500.98	1,975.20	5,333.52	5,634.28	0.00	0.00	0.00
14,300.00	90.00	89.99	7,500.98	1,975.22	5,433.52	5,731.92	0.00	0.00	0.00
14,400.00	90.00	89.99	7,500.98	1,975.23	5,533.52	5,829.56	0.00	0.00	0.00
14,500.00	90.00	89.99	7,500.98	1,975.24	5,633.52	5,927.21	0.00	0.00	0.00
14,600.00	90.00	89.99	7,500.98	1,975.26	5,733.52	6,024.85	0.00	0.00	0.00
14,700.00	90.00	89.99	7,500.98	1,975.27	5,833.52	6,122.49	0.00	0.00	0.00
14,800.00	90.00	89.99	7,500.98	1,975.29	5,933.52	6,220.13	0.00	0.00	0.00
14,900.00	90.00	89.99	7,500.98	1,975.30	6,033.52	6,317.77	0.00	0.00	0.00
15,000.00	90.00	89.99	7,500.98	1,975.31	6,133.52	6,415.42	0.00	0.00	0.00
15,100.00	90.00	89.99	7,500.98	1,975.33	6,233.52	6,513.06	0.00	0.00	0.00
15,200.00	90.00	89.99	7,500.98	1,975.34	6,333.52	6,610.70	0.00	0.00	0.00
15,300.00	90.00	89.99	7,500.98	1,975.36	6,433.52	6,708.34	0.00	0.00	0.00
15,400.00	90.00	89.99	7,500.98	1,975.37	6,533.52	6,805.98	0.00	0.00	0.00
15,500.00	90.00	89.99	7,500.98	1,975.38	6,633.52	6,903.62	0.00	0.00	0.00
15,600.00	90.00	89.99	7,500.98	1,975.40	6,733.52	7,001.27	0.00	0.00	0.00
15,700.00	90.00	89.99	7,500.98	1,975.41	6,833.52	7,098.91	0.00	0.00	0.00
15,800.00	90.00	89.99	7,500.98	1,975.42	6,933.52	7,196.55	0.00	0.00	0.00
15,900.00	90.00	89.99	7,500.98	1,975.44	7,033.52	7,294.19	0.00	0.00	0.00
16,000.00	90.00	89.99	7,500.98	1,975.45	7,133.52	7,391.83	0.00	0.00	0.00
16,100.00	90.00	89.99	7,500.98	1,975.47	7,233.52	7,489.47	0.00	0.00	0.00
16,200.00	90.00	89.99	7,500.98	1,975.48	7,333.52	7,587.12	0.00	0.00	0.00
16,300.00	90.00	89.99	7,500.98	1,975.49	7,433.52	7,684.76	0.00	0.00	0.00
16,400.00	90.00	89.99	7,500.98	1,975.51	7,533.52	7,782.40	0.00	0.00	0.00
16,500.00	90.00	89.99	7,500.98	1,975.52	7,633.52	7,880.04	0.00	0.00	0.00
16,600.00	90.00	89.99	7,500.98	1,975.54	7,733.52	7,977.68	0.00	0.00	0.00
16,700.00	90.00	89.99	7,500.97	1,975.55	7,833.52	8,075.33	0.00	0.00	0.00
16,800.00	90.00	89.99	7,500.97	1,975.56	7,933.52	8,172.97	0.00	0.00	0.00
16,900.00	90.00	89.99	7,500.97	1,975.58	8,033.52	8,270.61	0.00	0.00	0.00
17,000.00	90.00	89.99	7,500.97	1,975.59	8,133.52	8,368.25	0.00	0.00	0.00
17,100.00	90.00	89.99	7,500.97	1,975.61	8,233.52	8,465.89	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-5NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-5NH	<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)	
17,200.00	90.00	89.99	7,500.97	1,975.62	8,333.52	8,563.53	0.00	0.00	0.00	
17,300.00	90.00	89.99	7,500.97	1,975.63	8,433.52	8,661.18	0.00	0.00	0.00	
17,400.00	90.00	89.99	7,500.97	1,975.65	8,533.52	8,758.82	0.00	0.00	0.00	
17,500.00	90.00	89.99	7,500.97	1,975.66	8,633.52	8,856.46	0.00	0.00	0.00	
17,600.00	90.00	89.99	7,500.97	1,975.68	8,733.52	8,954.10	0.00	0.00	0.00	
17,700.00	90.00	89.99	7,500.97	1,975.69	8,833.52	9,051.74	0.00	0.00	0.00	
17,797.36	90.00	89.99	7,501.00	1,975.96	8,930.88	9,146.86	0.00	0.00	0.00	
TD at 17797.36' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
PC 5NH PBHL	0.00	0.00	7,501.00	1,975.96	8,930.88	1,221,436.60	3,203,885.41	39° 56' 20.148 N		104° 46' 22.368 W
- plan hits target center										
- Point										
PC 5NH LP	0.00	0.00	7,501.00	1,974.37	-664.56	1,221,359.77	3,194,290.28	39° 56' 20.148 N		104° 48' 25.560 W
- plan hits target center										
- Point										

Formations							
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)		
4,443.59	4,188.00	PARKMAN					
5,206.94	4,892.00	SUSSEX					
5,797.88	5,437.00	SHANNON					
7,800.53	7,342.00	NIOBRARA					
8,104.02	7,491.00	NIO B TARGET					

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
400.00	400.00	0.00	0.00	BUILD 2°/100'	
1,537.11	1,507.48	192.79	-111.52	HOLD 22.74° INC	
6,284.75	5,886.02	1,781.51	-1,030.54	DROP 2°/100'	
7,421.86	6,993.50	1,974.30	-1,142.06	HOLD VERTICAL	
7,451.86	7,023.50	1,974.30	-1,142.06	KOP, BUILD 12°/100'	
8,201.92	7,501.00	1,974.37	-664.56	LP @ 90° INC, 89.99° AZM HOLD	
17,797.36	7,501.00	1,975.96	8,930.88	TD at 17797.36' MD	