

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 29-T1-R66W**

**PC 1S-66-2928-2CDH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**12 September, 2017**



Project: Adams County  
Site: Sec 29-T1-R66W  
Well: PC 1S-66-2928-2CDH  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.17°  
Magnetic Field  
Strength: 52115.9nT  
Dip Angle: 66.47°  
Date: 9/11/2017  
Model: IGRF2015

#### WELL DETAILS: PC 1S-66-2928-2CDH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219474.46	3194969.64	39° 56' 1.464 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	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	1599.83	30.00	339.61	1532.25	359.67	-133.72	2.00	339.61	-10.77	
4	6539.48	30.00	339.61	5810.25	2674.46	-994.29	0.00	0.00	-80.06	
5	8039.31	0.00	0.00	7242.50	3034.13	-1128.01	2.00	180.00	-90.83	
6	8069.31	0.00	0.00	7272.50	3034.13	-1128.01	0.00	0.00	-90.83	
7	8819.37	90.00	89.97	7750.00	3034.40	-650.51	12.00	89.97	361.32	PC 2CDH LP
8	18405.96	90.00	89.97	7750.00	3039.64	8936.08	0.00	0.00	9438.90	PC 2CDH PBHL

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1599.83	30.00	339.61	1532.25	359.67	-133.72	-10.77	383.73	HOLD 30° INC
6539.48	30.00	339.61	5810.25	2674.46	-994.29	-80.06	2853.30	DROP 2°/100'
8039.31	0.00	0.00	7242.50	3034.13	-1128.01	-90.83	3237.03	HOLD VERTICAL
8069.31	0.00	0.00	7272.50	3034.13	-1128.01	-90.83	3237.03	KOP, BUILD 12°/100'
8819.37	90.00	89.97	7750.00	3034.40	-650.51	361.32	3714.53	LP @ 90° INC, 89.97° AZM HOLD
18405.96	90.00	89.97	7750.00	3039.64	8936.08	9438.90	13301.12	TD at 18405.96' MD

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 2CDH LP	7750.00	3034.40	-650.51	1222503.67	3194295.36	39° 56' 31.452 N	104° 48' 25.380 W	Point
- plan hits target center								
PC 2CDH PBHL	7750.00	3039.64	8936.08	1222584.07	3203881.61	39° 56' 31.488 N	104° 46' 22.296 W	Point
- plan hits target center								

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4666.33	PARKMAN
4892.00	5479.21	SUSSEX
5437.00	6108.50	SHANNON
7342.00	8139.06	NIOBRARA
7491.00	8296.26	NIO B TARGET
7727.00	8670.56	FORT HAYS
7750.00	8819.37	CODELL

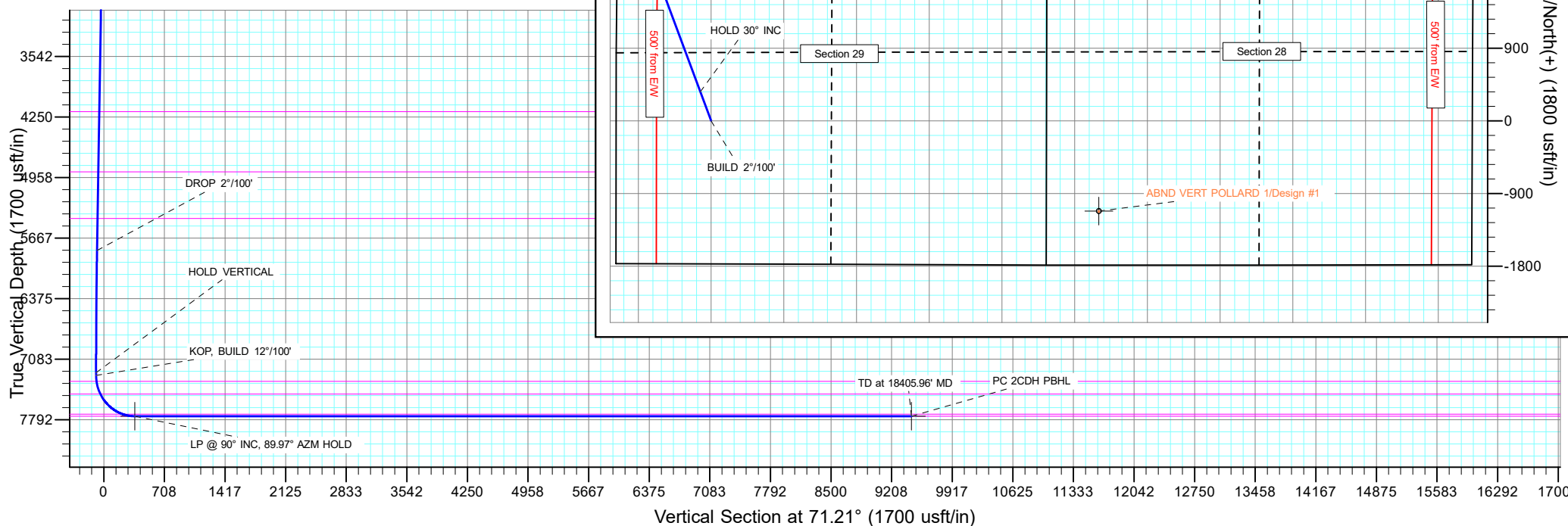
#### PROJECT DETAILS: Adams County

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

SHL:  
1775' FSL, 1175' FWL  
Sec 29-T1S-R66W

LP:  
460' FNL, 500' FWL  
Sec 29-T1S-R66W

BHL:  
460' FNL, 500' FEL  
Sec 28-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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-66-2928-2CDH					
Well Position	+N/-S	1,770.38 usft	Northing:	1,219,474.46 usft	Latitude:	39° 56' 1.464 N
	+E/-W	1,177.79 usft	Easting:	3,194,969.64 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	52,115.86585858

<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	71.21

<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	18,405.94	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	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,599.83	30.00	339.61	1,532.25	359.67	-133.72	2.00	2.00	0.00	339.61	
6,539.48	30.00	339.61	5,810.25	2,674.46	-994.29	0.00	0.00	0.00	0.00	
8,039.31	0.00	0.00	7,242.50	3,034.13	-1,128.01	2.00	-2.00	0.00	180.00	
8,069.31	0.00	0.00	7,272.50	3,034.13	-1,128.01	0.00	0.00	0.00	0.00	
8,819.37	90.00	89.97	7,750.00	3,034.40	-650.51	12.00	12.00	11.99	89.97	PC 2CDH LP
18,405.96	90.00	89.97	7,750.00	3,039.64	8,936.08	0.00	0.00	0.00	0.00	PC 2CDH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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
<b>BUILD 2°/100'</b>									
200.00	2.00	339.61	199.98	1.64	-0.61	-0.05	2.00	2.00	0.00
300.00	4.00	339.61	299.84	6.54	-2.43	-0.20	2.00	2.00	0.00
400.00	6.00	339.61	399.45	14.71	-5.47	-0.44	2.00	2.00	0.00
500.00	8.00	339.61	498.70	26.13	-9.72	-0.78	2.00	2.00	0.00
600.00	10.00	339.61	597.47	40.79	-15.17	-1.22	2.00	2.00	0.00
700.00	12.00	339.61	695.62	58.68	-21.82	-1.76	2.00	2.00	0.00
800.00	14.00	339.61	793.06	79.76	-29.65	-2.39	2.00	2.00	0.00
900.00	16.00	339.61	889.64	104.02	-38.67	-3.11	2.00	2.00	0.00
1,000.00	18.00	339.61	985.27	131.42	-48.86	-3.93	2.00	2.00	0.00
1,100.00	20.00	339.61	1,079.82	161.94	-60.20	-4.85	2.00	2.00	0.00
1,200.00	22.00	339.61	1,173.17	195.53	-72.69	-5.85	2.00	2.00	0.00
1,300.00	24.00	339.61	1,265.21	232.15	-86.31	-6.95	2.00	2.00	0.00
1,400.00	26.00	339.61	1,355.84	271.76	-101.03	-8.14	2.00	2.00	0.00
1,500.00	28.00	339.61	1,444.94	314.31	-116.85	-9.41	2.00	2.00	0.00
1,599.83	30.00	339.61	1,532.25	359.67	-133.72	-10.77	2.00	2.00	0.00
<b>HOLD 30° INC</b>									
1,700.00	30.00	339.61	1,619.00	406.61	-151.17	-12.17	0.00	0.00	0.00
1,800.00	30.00	339.61	1,705.61	453.47	-168.59	-13.58	0.00	0.00	0.00
1,900.00	30.00	339.61	1,792.21	500.34	-186.01	-14.98	0.00	0.00	0.00
2,000.00	30.00	339.61	1,878.82	547.20	-203.43	-16.38	0.00	0.00	0.00
2,100.00	30.00	339.61	1,965.42	594.06	-220.86	-17.78	0.00	0.00	0.00
2,200.00	30.00	339.61	2,052.03	640.92	-238.28	-19.19	0.00	0.00	0.00
2,300.00	30.00	339.61	2,138.63	687.78	-255.70	-20.59	0.00	0.00	0.00
2,400.00	30.00	339.61	2,225.24	734.64	-273.12	-21.99	0.00	0.00	0.00
2,500.00	30.00	339.61	2,311.84	781.50	-290.54	-23.40	0.00	0.00	0.00
2,600.00	30.00	339.61	2,398.45	828.37	-307.96	-24.80	0.00	0.00	0.00
2,700.00	30.00	339.61	2,485.05	875.23	-325.39	-26.20	0.00	0.00	0.00
2,800.00	30.00	339.61	2,571.66	922.09	-342.81	-27.60	0.00	0.00	0.00
2,900.00	30.00	339.61	2,658.26	968.95	-360.23	-29.01	0.00	0.00	0.00
3,000.00	30.00	339.61	2,744.87	1,015.81	-377.65	-30.41	0.00	0.00	0.00
3,100.00	30.00	339.61	2,831.48	1,062.67	-395.07	-31.81	0.00	0.00	0.00
3,200.00	30.00	339.61	2,918.08	1,109.53	-412.50	-33.21	0.00	0.00	0.00
3,300.00	30.00	339.61	3,004.69	1,156.39	-429.92	-34.62	0.00	0.00	0.00
3,400.00	30.00	339.61	3,091.29	1,203.26	-447.34	-36.02	0.00	0.00	0.00
3,500.00	30.00	339.61	3,177.90	1,250.12	-464.76	-37.42	0.00	0.00	0.00
3,600.00	30.00	339.61	3,264.50	1,296.98	-482.18	-38.83	0.00	0.00	0.00
3,700.00	30.00	339.61	3,351.11	1,343.84	-499.60	-40.23	0.00	0.00	0.00
3,800.00	30.00	339.61	3,437.71	1,390.70	-517.03	-41.63	0.00	0.00	0.00
3,900.00	30.00	339.61	3,524.32	1,437.56	-534.45	-43.03	0.00	0.00	0.00
4,000.00	30.00	339.61	3,610.92	1,484.42	-551.87	-44.44	0.00	0.00	0.00
4,100.00	30.00	339.61	3,697.53	1,531.28	-569.29	-45.84	0.00	0.00	0.00
4,200.00	30.00	339.61	3,784.14	1,578.15	-586.71	-47.24	0.00	0.00	0.00
4,300.00	30.00	339.61	3,870.74	1,625.01	-604.14	-48.65	0.00	0.00	0.00
4,400.00	30.00	339.61	3,957.35	1,671.87	-621.56	-50.05	0.00	0.00	0.00
4,500.00	30.00	339.61	4,043.95	1,718.73	-638.98	-51.45	0.00	0.00	0.00
4,600.00	30.00	339.61	4,130.56	1,765.59	-656.40	-52.85	0.00	0.00	0.00
4,666.33	30.00	339.61	4,188.00	1,796.67	-667.96	-53.78	0.00	0.00	0.00
<b>PARKMAN</b>									
4,700.00	30.00	339.61	4,217.16	1,812.45	-673.82	-54.26	0.00	0.00	0.00
4,800.00	30.00	339.61	4,303.77	1,859.31	-691.24	-55.66	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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)	
4,900.00	30.00	339.61	4,390.37	1,906.18	-708.67	-57.06	0.00	0.00	0.00	
5,000.00	30.00	339.61	4,476.98	1,953.04	-726.09	-58.47	0.00	0.00	0.00	
5,100.00	30.00	339.61	4,563.58	1,999.90	-743.51	-59.87	0.00	0.00	0.00	
5,200.00	30.00	339.61	4,650.19	2,046.76	-760.93	-61.27	0.00	0.00	0.00	
5,300.00	30.00	339.61	4,736.80	2,093.62	-778.35	-62.67	0.00	0.00	0.00	
5,400.00	30.00	339.61	4,823.40	2,140.48	-795.77	-64.08	0.00	0.00	0.00	
5,479.21	30.00	339.61	4,892.00	2,177.60	-809.57	-65.19	0.00	0.00	0.00	
<b>SUSSEX</b>										
5,500.00	30.00	339.61	4,910.01	2,187.34	-813.20	-65.48	0.00	0.00	0.00	
5,600.00	30.00	339.61	4,996.61	2,234.20	-830.62	-66.88	0.00	0.00	0.00	
5,700.00	30.00	339.61	5,083.22	2,281.07	-848.04	-68.29	0.00	0.00	0.00	
5,800.00	30.00	339.61	5,169.82	2,327.93	-865.46	-69.69	0.00	0.00	0.00	
5,900.00	30.00	339.61	5,256.43	2,374.79	-882.88	-71.09	0.00	0.00	0.00	
6,000.00	30.00	339.61	5,343.03	2,421.65	-900.31	-72.49	0.00	0.00	0.00	
6,100.00	30.00	339.61	5,429.64	2,468.51	-917.73	-73.90	0.00	0.00	0.00	
6,108.50	30.00	339.61	5,437.00	2,472.49	-919.21	-74.02	0.00	0.00	0.00	
<b>SHANNON</b>										
6,200.00	30.00	339.61	5,516.24	2,515.37	-935.15	-75.30	0.00	0.00	0.00	
6,300.00	30.00	339.61	5,602.85	2,562.23	-952.57	-76.70	0.00	0.00	0.00	
6,400.00	30.00	339.61	5,689.45	2,609.09	-969.99	-78.11	0.00	0.00	0.00	
6,500.00	30.00	339.61	5,776.06	2,655.96	-987.41	-79.51	0.00	0.00	0.00	
6,539.48	30.00	339.61	5,810.25	2,674.46	-994.29	-80.06	0.00	0.00	0.00	
<b>DROP 2°/100'</b>										
6,600.00	28.79	339.61	5,862.98	2,702.30	-1,004.64	-80.90	2.00	-2.00	0.00	
6,700.00	26.79	339.61	5,951.45	2,745.99	-1,020.89	-82.20	2.00	-2.00	0.00	
6,800.00	24.79	339.61	6,041.48	2,786.76	-1,036.05	-83.42	2.00	-2.00	0.00	
6,900.00	22.79	339.61	6,132.98	2,824.56	-1,050.10	-84.56	2.00	-2.00	0.00	
7,000.00	20.79	339.61	6,225.84	2,859.35	-1,063.03	-85.60	2.00	-2.00	0.00	
7,100.00	18.79	339.61	6,319.93	2,891.08	-1,074.83	-86.55	2.00	-2.00	0.00	
7,200.00	16.79	339.61	6,415.14	2,919.71	-1,085.47	-87.40	2.00	-2.00	0.00	
7,300.00	14.79	339.61	6,511.37	2,945.21	-1,094.95	-88.17	2.00	-2.00	0.00	
7,400.00	12.79	339.61	6,608.48	2,967.54	-1,103.25	-88.84	2.00	-2.00	0.00	
7,500.00	10.79	339.61	6,706.37	2,986.69	-1,110.37	-89.41	2.00	-2.00	0.00	
7,600.00	8.79	339.61	6,804.91	3,002.62	-1,116.30	-89.89	2.00	-2.00	0.00	
7,700.00	6.79	339.61	6,903.98	3,015.32	-1,121.02	-90.27	2.00	-2.00	0.00	
7,800.00	4.79	339.61	7,003.47	3,024.77	-1,124.53	-90.55	2.00	-2.00	0.00	
7,900.00	2.79	339.61	7,103.24	3,030.96	-1,126.83	-90.73	2.00	-2.00	0.00	
8,000.00	0.79	339.61	7,203.19	3,033.88	-1,127.92	-90.82	2.00	-2.00	0.00	
8,039.31	0.00	0.00	7,242.50	3,034.13	-1,128.01	-90.83	2.00	-2.00	0.00	
<b>HOLD VERTICAL</b>										
8,069.31	0.00	0.00	7,272.50	3,034.13	-1,128.01	-90.83	0.00	0.00	0.00	
<b>KOP, BUILD 12°/100'</b>										
8,075.00	0.68	89.97	7,278.19	3,034.13	-1,127.98	-90.80	12.00	12.00	0.00	
8,100.00	3.68	89.97	7,303.17	3,034.13	-1,127.02	-89.90	12.00	12.00	0.00	
8,125.00	6.68	89.97	7,328.06	3,034.13	-1,124.77	-87.76	12.00	12.00	0.00	
8,139.06	8.37	89.97	7,342.00	3,034.13	-1,122.93	-86.01	12.00	12.00	0.00	
<b>NIORARA</b>										
8,150.00	9.68	89.97	7,352.81	3,034.13	-1,121.21	-84.39	12.00	12.00	0.00	
8,175.00	12.68	89.97	7,377.33	3,034.14	-1,116.36	-79.80	12.00	12.00	0.00	
8,200.00	15.68	89.97	7,401.56	3,034.14	-1,110.24	-74.00	12.00	12.00	0.00	
8,225.00	18.68	89.97	7,425.44	3,034.14	-1,102.85	-67.01	12.00	12.00	0.00	
8,250.00	21.68	89.97	7,448.91	3,034.15	-1,094.23	-58.84	12.00	12.00	0.00	
8,275.00	24.68	89.97	7,471.89	3,034.15	-1,084.39	-49.52	12.00	12.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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)	
8,296.26	27.23	89.97	7,491.00	3,034.16	-1,075.09	-40.71	12.00	12.00	0.00	
<b>NIO B TARGET</b>										
8,300.00	27.68	89.97	7,494.32	3,034.16	-1,073.36	-39.08	12.00	12.00	0.00	
8,325.00	30.68	89.97	7,516.14	3,034.17	-1,061.17	-27.54	12.00	12.00	0.00	
8,350.00	33.68	89.97	7,537.30	3,034.17	-1,047.86	-14.93	12.00	12.00	0.00	
8,375.00	36.68	89.97	7,557.73	3,034.18	-1,033.46	-1.30	12.00	12.00	0.00	
8,400.00	39.68	89.97	7,577.38	3,034.19	-1,018.01	13.33	12.00	12.00	0.00	
8,425.00	42.68	89.97	7,596.20	3,034.20	-1,001.55	28.92	12.00	12.00	0.00	
8,450.00	45.68	89.97	7,614.12	3,034.21	-984.13	45.41	12.00	12.00	0.00	
8,475.00	48.68	89.97	7,631.11	3,034.22	-965.79	62.78	12.00	12.00	0.00	
8,500.00	51.68	89.97	7,647.12	3,034.23	-946.59	80.96	12.00	12.00	0.00	
8,525.00	54.68	89.97	7,662.10	3,034.24	-926.58	99.90	12.00	12.00	0.00	
8,550.00	57.68	89.97	7,676.02	3,034.25	-905.82	119.57	12.00	12.00	0.00	
8,575.00	60.68	89.97	7,688.82	3,034.27	-884.35	139.90	12.00	12.00	0.00	
8,600.00	63.68	89.97	7,700.49	3,034.28	-862.24	160.83	12.00	12.00	0.00	
8,625.00	66.68	89.97	7,710.98	3,034.29	-839.55	182.31	12.00	12.00	0.00	
8,650.00	69.68	89.97	7,720.28	3,034.30	-816.35	204.29	12.00	12.00	0.00	
8,670.56	72.14	89.97	7,727.00	3,034.32	-796.92	222.68	12.00	12.00	0.00	
<b>FORT HAYS</b>										
8,675.00	72.68	89.97	7,728.34	3,034.32	-792.69	226.69	12.00	12.00	0.00	
8,700.00	75.68	89.97	7,735.16	3,034.33	-768.64	249.46	12.00	12.00	0.00	
8,725.00	78.68	89.97	7,740.71	3,034.35	-744.26	272.54	12.00	12.00	0.00	
8,750.00	81.68	89.97	7,744.97	3,034.36	-719.63	295.87	12.00	12.00	0.00	
8,775.00	84.68	89.97	7,747.94	3,034.37	-694.81	319.37	12.00	12.00	0.00	
8,800.00	87.68	89.97	7,749.61	3,034.39	-669.87	342.99	12.00	12.00	0.00	
8,819.37	90.00	89.97	7,750.00	3,034.40	-650.51	361.32	12.00	12.00	0.00	
<b>LP @ 90° INC, 89.97° AZM HOLD - CODELL</b>										
8,900.00	90.00	89.97	7,750.00	3,034.44	-569.88	437.67	0.00	0.00	0.00	
9,000.00	90.00	89.97	7,750.00	3,034.50	-469.88	532.36	0.00	0.00	0.00	
9,100.00	90.00	89.97	7,750.00	3,034.55	-369.88	627.05	0.00	0.00	0.00	
9,200.00	90.00	89.97	7,750.00	3,034.61	-269.88	721.74	0.00	0.00	0.00	
9,300.00	90.00	89.97	7,750.00	3,034.67	-169.88	816.44	0.00	0.00	0.00	
9,400.00	90.00	89.97	7,750.00	3,034.72	-69.88	911.13	0.00	0.00	0.00	
9,500.00	90.00	89.97	7,750.00	3,034.78	30.12	1,005.82	0.00	0.00	0.00	
9,600.00	90.00	89.97	7,750.00	3,034.84	130.12	1,100.51	0.00	0.00	0.00	
9,700.00	90.00	89.97	7,750.00	3,034.89	230.12	1,195.20	0.00	0.00	0.00	
9,800.00	90.00	89.97	7,750.00	3,034.95	330.12	1,289.89	0.00	0.00	0.00	
9,900.00	90.00	89.97	7,750.00	3,035.00	430.12	1,384.58	0.00	0.00	0.00	
10,000.00	90.00	89.97	7,750.00	3,035.06	530.12	1,479.27	0.00	0.00	0.00	
10,100.00	90.00	89.97	7,750.00	3,035.12	630.12	1,573.96	0.00	0.00	0.00	
10,200.00	90.00	89.97	7,750.00	3,035.17	730.12	1,668.65	0.00	0.00	0.00	
10,300.00	90.00	89.97	7,750.00	3,035.23	830.12	1,763.34	0.00	0.00	0.00	
10,400.00	90.00	89.97	7,749.99	3,035.28	930.12	1,858.04	0.00	0.00	0.00	
10,500.00	90.00	89.97	7,749.99	3,035.34	1,030.12	1,952.73	0.00	0.00	0.00	
10,600.00	90.00	89.97	7,749.99	3,035.40	1,130.12	2,047.42	0.00	0.00	0.00	
10,700.00	90.00	89.97	7,749.99	3,035.45	1,230.12	2,142.11	0.00	0.00	0.00	
10,800.00	90.00	89.97	7,749.99	3,035.51	1,330.12	2,236.80	0.00	0.00	0.00	
10,900.00	90.00	89.97	7,749.99	3,035.56	1,430.12	2,331.49	0.00	0.00	0.00	
11,000.00	90.00	89.97	7,749.99	3,035.62	1,530.12	2,426.18	0.00	0.00	0.00	
11,100.00	90.00	89.97	7,749.99	3,035.68	1,630.12	2,520.87	0.00	0.00	0.00	
11,200.00	90.00	89.97	7,749.99	3,035.73	1,730.12	2,615.56	0.00	0.00	0.00	
11,300.00	90.00	89.97	7,749.99	3,035.79	1,830.12	2,710.25	0.00	0.00	0.00	
11,400.00	90.00	89.97	7,749.99	3,035.84	1,930.12	2,804.94	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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)	
11,500.00	90.00	89.97	7,749.99	3,035.90	2,030.12	2,899.64	0.00	0.00	0.00	
11,600.00	90.00	89.97	7,749.99	3,035.96	2,130.12	2,994.33	0.00	0.00	0.00	
11,700.00	90.00	89.97	7,749.99	3,036.01	2,230.12	3,089.02	0.00	0.00	0.00	
11,800.00	90.00	89.97	7,749.99	3,036.07	2,330.12	3,183.71	0.00	0.00	0.00	
11,900.00	90.00	89.97	7,749.99	3,036.12	2,430.12	3,278.40	0.00	0.00	0.00	
12,000.00	90.00	89.97	7,749.99	3,036.18	2,530.12	3,373.09	0.00	0.00	0.00	
12,100.00	90.00	89.97	7,749.99	3,036.24	2,630.12	3,467.78	0.00	0.00	0.00	
12,200.00	90.00	89.97	7,749.99	3,036.29	2,730.12	3,562.47	0.00	0.00	0.00	
12,300.00	90.00	89.97	7,749.99	3,036.35	2,830.12	3,657.16	0.00	0.00	0.00	
12,400.00	90.00	89.97	7,749.99	3,036.40	2,930.12	3,751.85	0.00	0.00	0.00	
12,500.00	90.00	89.97	7,749.99	3,036.46	3,030.12	3,846.54	0.00	0.00	0.00	
12,600.00	90.00	89.97	7,749.99	3,036.52	3,130.12	3,941.23	0.00	0.00	0.00	
12,700.00	90.00	89.97	7,749.99	3,036.57	3,230.12	4,035.93	0.00	0.00	0.00	
12,800.00	90.00	89.97	7,749.99	3,036.63	3,330.12	4,130.62	0.00	0.00	0.00	
12,900.00	90.00	89.97	7,749.99	3,036.68	3,430.12	4,225.31	0.00	0.00	0.00	
13,000.00	90.00	89.97	7,749.99	3,036.74	3,530.12	4,320.00	0.00	0.00	0.00	
13,100.00	90.00	89.97	7,749.99	3,036.80	3,630.12	4,414.69	0.00	0.00	0.00	
13,200.00	90.00	89.97	7,749.99	3,036.85	3,730.12	4,509.38	0.00	0.00	0.00	
13,300.00	90.00	89.97	7,749.98	3,036.91	3,830.12	4,604.07	0.00	0.00	0.00	
13,400.00	90.00	89.97	7,749.98	3,036.96	3,930.12	4,698.76	0.00	0.00	0.00	
13,500.00	90.00	89.97	7,749.98	3,037.02	4,030.12	4,793.45	0.00	0.00	0.00	
13,600.00	90.00	89.97	7,749.98	3,037.08	4,130.12	4,888.14	0.00	0.00	0.00	
13,700.00	90.00	89.97	7,749.98	3,037.13	4,230.12	4,982.83	0.00	0.00	0.00	
13,800.00	90.00	89.97	7,749.98	3,037.19	4,330.12	5,077.53	0.00	0.00	0.00	
13,900.00	90.00	89.97	7,749.98	3,037.24	4,430.12	5,172.22	0.00	0.00	0.00	
14,000.00	90.00	89.97	7,749.98	3,037.30	4,530.12	5,266.91	0.00	0.00	0.00	
14,100.00	90.00	89.97	7,749.98	3,037.36	4,630.12	5,361.60	0.00	0.00	0.00	
14,200.00	90.00	89.97	7,749.98	3,037.41	4,730.12	5,456.29	0.00	0.00	0.00	
14,300.00	90.00	89.97	7,749.98	3,037.47	4,830.12	5,550.98	0.00	0.00	0.00	
14,400.00	90.00	89.97	7,749.98	3,037.52	4,930.12	5,645.67	0.00	0.00	0.00	
14,500.00	90.00	89.97	7,749.98	3,037.58	5,030.12	5,740.36	0.00	0.00	0.00	
14,600.00	90.00	89.97	7,749.98	3,037.64	5,130.12	5,835.05	0.00	0.00	0.00	
14,700.00	90.00	89.97	7,749.98	3,037.69	5,230.12	5,929.74	0.00	0.00	0.00	
14,800.00	90.00	89.97	7,749.98	3,037.75	5,330.12	6,024.43	0.00	0.00	0.00	
14,900.00	90.00	89.97	7,749.98	3,037.81	5,430.12	6,119.12	0.00	0.00	0.00	
15,000.00	90.00	89.97	7,749.98	3,037.86	5,530.12	6,213.82	0.00	0.00	0.00	
15,100.00	90.00	89.97	7,749.98	3,037.92	5,630.12	6,308.51	0.00	0.00	0.00	
15,200.00	90.00	89.97	7,749.98	3,037.97	5,730.12	6,403.20	0.00	0.00	0.00	
15,300.00	90.00	89.97	7,749.98	3,038.03	5,830.12	6,497.89	0.00	0.00	0.00	
15,400.00	90.00	89.97	7,749.98	3,038.09	5,930.12	6,592.58	0.00	0.00	0.00	
15,500.00	90.00	89.97	7,749.98	3,038.14	6,030.12	6,687.27	0.00	0.00	0.00	
15,600.00	90.00	89.97	7,749.98	3,038.20	6,130.12	6,781.96	0.00	0.00	0.00	
15,700.00	90.00	89.97	7,749.98	3,038.25	6,230.12	6,876.65	0.00	0.00	0.00	
15,800.00	90.00	89.97	7,749.98	3,038.31	6,330.12	6,971.34	0.00	0.00	0.00	
15,900.00	90.00	89.97	7,749.98	3,038.37	6,430.12	7,066.03	0.00	0.00	0.00	
16,000.00	90.00	89.97	7,749.98	3,038.42	6,530.12	7,160.72	0.00	0.00	0.00	
16,100.00	90.00	89.97	7,749.98	3,038.48	6,630.12	7,255.42	0.00	0.00	0.00	
16,200.00	90.00	89.97	7,749.97	3,038.53	6,730.12	7,350.11	0.00	0.00	0.00	
16,300.00	90.00	89.97	7,749.97	3,038.59	6,830.12	7,444.80	0.00	0.00	0.00	
16,400.00	90.00	89.97	7,749.97	3,038.65	6,930.12	7,539.49	0.00	0.00	0.00	
16,500.00	90.00	89.97	7,749.97	3,038.70	7,030.12	7,634.18	0.00	0.00	0.00	
16,600.00	90.00	89.97	7,749.97	3,038.76	7,130.12	7,728.87	0.00	0.00	0.00	
16,700.00	90.00	89.97	7,749.97	3,038.81	7,230.12	7,823.56	0.00	0.00	0.00	
16,800.00	90.00	89.97	7,749.97	3,038.87	7,330.12	7,918.25	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<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)	
16,900.00	90.00	89.97	7,749.97	3,038.93	7,430.12	8,012.94	0.00	0.00	0.00	
17,000.00	90.00	89.97	7,749.97	3,038.98	7,530.12	8,107.63	0.00	0.00	0.00	
17,100.00	90.00	89.97	7,749.97	3,039.04	7,630.12	8,202.32	0.00	0.00	0.00	
17,200.00	90.00	89.97	7,749.97	3,039.09	7,730.12	8,297.02	0.00	0.00	0.00	
17,300.00	90.00	89.97	7,749.97	3,039.15	7,830.12	8,391.71	0.00	0.00	0.00	
17,400.00	90.00	89.97	7,749.97	3,039.21	7,930.12	8,486.40	0.00	0.00	0.00	
17,500.00	90.00	89.97	7,749.97	3,039.26	8,030.12	8,581.09	0.00	0.00	0.00	
17,600.00	90.00	89.97	7,749.97	3,039.32	8,130.12	8,675.78	0.00	0.00	0.00	
17,700.00	90.00	89.97	7,749.97	3,039.37	8,230.12	8,770.47	0.00	0.00	0.00	
17,800.00	90.00	89.97	7,749.97	3,039.43	8,330.12	8,865.16	0.00	0.00	0.00	
17,900.00	90.00	89.97	7,749.97	3,039.49	8,430.12	8,959.85	0.00	0.00	0.00	
18,000.00	90.00	89.97	7,749.97	3,039.54	8,530.12	9,054.54	0.00	0.00	0.00	
18,100.00	90.00	89.97	7,749.97	3,039.60	8,630.12	9,149.23	0.00	0.00	0.00	
18,200.00	90.00	89.97	7,749.97	3,039.65	8,730.12	9,243.92	0.00	0.00	0.00	
18,300.00	90.00	89.97	7,749.97	3,039.71	8,830.12	9,338.61	0.00	0.00	0.00	
18,405.96	90.00	89.97	7,750.00	3,039.64	8,936.08	9,438.90	0.00	0.00	0.00	
TD at 18405.96' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PC 2CDH LP	0.00	0.00	7,750.00	3,034.40	-650.51	1,222,503.66	3,194,295.36	39° 56' 31.452 N		104° 48' 25.380 W
- hit/miss target										
- Shape										
- Point										
PC 2CDH PBHL	0.00	0.00	7,750.00	3,039.64	8,936.08	1,222,584.07	3,203,881.61	39° 56' 31.488 N		104° 46' 22.296 W
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,666.33	4,188.00	PARKMAN				
5,479.21	4,892.00	SUSSEX				
6,108.50	5,437.00	SHANNON				
8,139.06	7,342.00	NIOBRARA				
8,296.26	7,491.00	NIO B TARGET				
8,670.56	7,727.00	FORT HAYS				
8,819.37	7,750.00	CODELL				



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-2CDH
<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-66-2928-2CDH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.00	100.00	0.00	0.00	BUILD 2°/100'
1,599.83	1,532.25	359.67	-133.72	HOLD 30° INC
6,539.48	5,810.25	2,674.46	-994.29	DROP 2°/100'
8,039.31	7,242.50	3,034.13	-1,128.01	HOLD VERTICAL
8,069.31	7,272.50	3,034.13	-1,128.01	KOP, BUILD 12°/100'
8,819.37	7,750.00	3,034.40	-650.51	LP @ 90° INC, 89.97° AZM HOLD
18,405.96	7,750.00	3,039.64	8,936.08	TD at 18405.96' MD