

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 12-T1S-R66W**

**DUCK CLUB 12W-20-7N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**26 March, 2018**



Project: Adams County  
Site: Sec 12-T1S-R66W  
Well: DUCK CLUB 12W-20-7N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.12°  
Magnetic Field  
Strength: 52138.6nT  
Dip Angle: 66.51°  
Date: 10/10/2017  
Model: IGRF2015

WELL DETAILS: DUCK CLUB 12W-20-7N

5037.00							
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.00	0.00	1236127.99	3215515.79	39° 58' 44.364 N	104° 43' 51.420 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	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	2247.27	24.95	88.99	2208.23	4.70	267.21	2.00	88.99	-267.19	
4	5854.30	24.95	88.99	5478.77	31.45	1788.26	0.00	0.00	-1788.07	
5	7101.56	0.00	0.00	6687.00	36.15	2055.47	2.00	180.00	-2055.26	
6	7131.56	0.00	0.00	6717.00	36.15	2055.47	0.00	0.00	-2055.26	
7	8031.63	90.00	270.03	7290.00	36.48	1482.47	10.00	270.03	-1482.26	DC 7N - LP
8	17652.25	90.00	270.03	7290.00	41.41	-8138.15	0.00	-95.05	8138.26	DC 7N - PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	Start Build 2.00
2247.27	24.95	88.99	2208.23	4.70	267.21	-267.19	267.25	Start 3607.03 hold at 2247.27 MD
5854.30	24.95	88.99	5478.77	31.45	1788.26	-1788.07	1788.53	Start Drop -2.00
7101.56	0.00	0.00	6687.00	36.15	2055.47	-2055.26	2055.79	Start 30.00 hold at 7101.56 MD
7131.56	0.00	0.00	6717.00	36.15	2055.47	-2055.26	2055.79	Start DLS 10.00 TFO 270.03
8031.63	90.00	270.03	7290.00	36.48	1482.47	-1482.26	2628.79	Start DLS 0.00 TFO -95.05
17652.25	90.00	270.03	7290.00	41.41	-8138.15	8138.26	12249.41	TD at 17652.25

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
DC 7N - LP	7290.00	36.48	1482.47	1236177.33	3216997.89	39° 58' 44.724 N	104° 43' 32.376 W	Point
- plan hits target center								
DC 7N - PBHL	7290.00	41.41	-8138.15	1236098.82	3207377.59	39° 58' 44.760 N	104° 45' 35.964 W	Point
- plan hits target center								

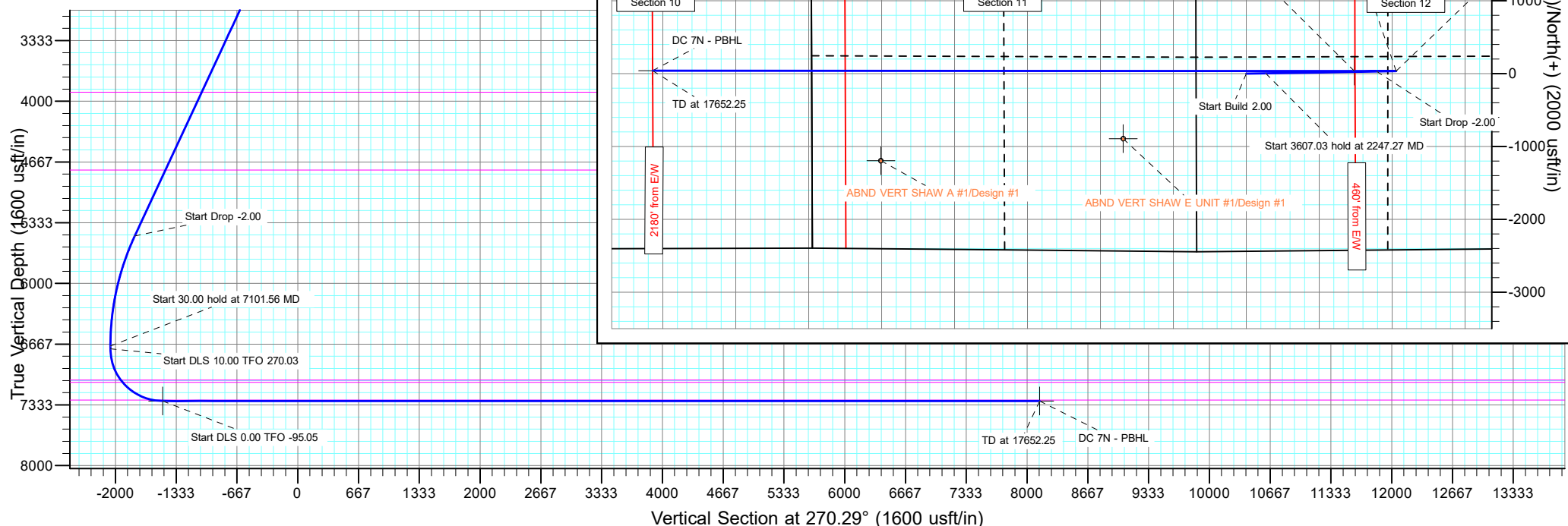
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3900.00	4113.09	PARKMAN
4755.00	5056.06	SUSSEX
7060.00	7499.29	SHARON SPRINGS
7086.00	7532.48	NIOBRARA
7280.00	7924.42	NIO B

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:  
2436' FSL, 687' FWL  
Sec 12-T1S-R66W  
LP:  
2460' FSL, 2171' FWL  
Sec 12-T1S-R66W  
BHL:  
2440' FSL, 2178' FEL  
Sec 10-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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 12-T1S-R66W			
Site Position:		Northing:	1,239,018.46 usft	Latitude:	39° 59' 12.990 N
From:	Lat/Long	Easting:	3,214,796.41 usft	Longitude:	104° 44' 0.340 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well	DUCK CLUB 12W-20-7N					
Well Position	+N/-S	-2,896.58 usft	Northing:	1,236,127.99 usft	Latitude:	39° 58' 44.364 N
	+E/-W	694.37 usft	Easting:	3,215,515.80 usft	Longitude:	104° 43' 51.420 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,037.00 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	10/10/2017	8.12	66.51	52,138.61942067

<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	270.29

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/26/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,652.25	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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,247.27	24.95	88.99	2,208.23	4.70	267.21	2.00	2.00	0.00	88.99	
5,854.30	24.95	88.99	5,478.77	31.45	1,788.26	0.00	0.00	0.00	0.00	
7,101.56	0.00	0.00	6,687.00	36.15	2,055.47	2.00	-2.00	0.00	180.00	
7,131.56	0.00	0.00	6,717.00	36.15	2,055.47	0.00	0.00	0.00	0.00	
8,031.63	90.00	270.03	7,290.00	36.48	1,482.47	10.00	10.00	-10.00	270.03	DC 7N - LP
17,652.25	90.00	270.03	7,290.00	41.41	-8,138.15	0.00	0.00	0.00	-95.05	DC 7N - PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	2.00	88.99	1,099.98	0.03	1.74	-1.74	2.00	2.00	0.00
1,200.00	4.00	88.99	1,199.84	0.12	6.98	-6.98	2.00	2.00	0.00
1,300.00	6.00	88.99	1,299.45	0.28	15.69	-15.69	2.00	2.00	0.00
1,400.00	8.00	88.99	1,398.70	0.49	27.88	-27.87	2.00	2.00	0.00
1,500.00	10.00	88.99	1,497.47	0.77	43.52	-43.51	2.00	2.00	0.00
1,600.00	12.00	88.99	1,595.62	1.10	62.59	-62.59	2.00	2.00	0.00
1,700.00	14.00	88.99	1,693.06	1.50	85.08	-85.07	2.00	2.00	0.00
1,800.00	16.00	88.99	1,789.64	1.95	110.96	-110.95	2.00	2.00	0.00
1,900.00	18.00	88.99	1,885.27	2.47	140.19	-140.18	2.00	2.00	0.00
2,000.00	20.00	88.99	1,979.82	3.04	172.74	-172.72	2.00	2.00	0.00
2,100.00	22.00	88.99	2,073.17	3.67	208.57	-208.55	2.00	2.00	0.00
2,200.00	24.00	88.99	2,165.21	4.36	247.64	-247.61	2.00	2.00	0.00
2,247.27	24.95	88.99	2,208.23	4.70	267.21	-267.19	2.00	2.00	0.00
Start 3607.03 hold at 2247.27 MD									
2,300.00	24.95	88.99	2,256.05	5.09	289.45	-289.42	0.00	0.00	0.00
2,400.00	24.95	88.99	2,346.72	5.83	331.62	-331.59	0.00	0.00	0.00
2,500.00	24.95	88.99	2,437.39	6.57	373.79	-373.75	0.00	0.00	0.00
2,600.00	24.95	88.99	2,528.06	7.32	415.96	-415.91	0.00	0.00	0.00
2,700.00	24.95	88.99	2,618.73	8.06	458.13	-458.08	0.00	0.00	0.00
2,800.00	24.95	88.99	2,709.40	8.80	500.29	-500.24	0.00	0.00	0.00
2,900.00	24.95	88.99	2,800.07	9.54	542.46	-542.41	0.00	0.00	0.00
3,000.00	24.95	88.99	2,890.75	10.28	584.63	-584.57	0.00	0.00	0.00
3,100.00	24.95	88.99	2,981.42	11.02	626.80	-626.74	0.00	0.00	0.00
3,200.00	24.95	88.99	3,072.09	11.77	668.97	-668.90	0.00	0.00	0.00
3,300.00	24.95	88.99	3,162.76	12.51	711.14	-711.07	0.00	0.00	0.00
3,400.00	24.95	88.99	3,253.43	13.25	753.31	-753.23	0.00	0.00	0.00
3,500.00	24.95	88.99	3,344.10	13.99	795.48	-795.40	0.00	0.00	0.00
3,600.00	24.95	88.99	3,434.77	14.73	837.65	-837.56	0.00	0.00	0.00
3,700.00	24.95	88.99	3,525.44	15.47	879.81	-879.72	0.00	0.00	0.00
3,800.00	24.95	88.99	3,616.11	16.22	921.98	-921.89	0.00	0.00	0.00
3,900.00	24.95	88.99	3,706.78	16.96	964.15	-964.05	0.00	0.00	0.00
4,000.00	24.95	88.99	3,797.46	17.70	1,006.32	-1,006.22	0.00	0.00	0.00
4,100.00	24.95	88.99	3,888.13	18.44	1,048.49	-1,048.38	0.00	0.00	0.00
4,113.09	24.95	88.99	3,900.00	18.54	1,054.01	-1,053.90	0.00	0.00	0.00
PARKMAN									
4,200.00	24.95	88.99	3,978.80	19.18	1,090.66	-1,090.55	0.00	0.00	0.00
4,300.00	24.95	88.99	4,069.47	19.92	1,132.83	-1,132.71	0.00	0.00	0.00
4,400.00	24.95	88.99	4,160.14	20.66	1,175.00	-1,174.88	0.00	0.00	0.00
4,500.00	24.95	88.99	4,250.81	21.41	1,217.17	-1,217.04	0.00	0.00	0.00
4,600.00	24.95	88.99	4,341.48	22.15	1,259.33	-1,259.21	0.00	0.00	0.00
4,700.00	24.95	88.99	4,432.15	22.89	1,301.50	-1,301.37	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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	24.95	88.99	4,522.82	23.63	1,343.67	-1,343.53	0.00	0.00	0.00
4,900.00	24.95	88.99	4,613.50	24.37	1,385.84	-1,385.70	0.00	0.00	0.00
5,000.00	24.95	88.99	4,704.17	25.11	1,428.01	-1,427.86	0.00	0.00	0.00
5,056.06	24.95	88.99	4,755.00	25.53	1,451.65	-1,451.50	0.00	0.00	0.00
<b>SUSSEX</b>									
5,100.00	24.95	88.99	4,794.84	25.86	1,470.18	-1,470.03	0.00	0.00	0.00
5,200.00	24.95	88.99	4,885.51	26.60	1,512.35	-1,512.19	0.00	0.00	0.00
5,300.00	24.95	88.99	4,976.18	27.34	1,554.52	-1,554.36	0.00	0.00	0.00
5,400.00	24.95	88.99	5,066.85	28.08	1,596.68	-1,596.52	0.00	0.00	0.00
5,500.00	24.95	88.99	5,157.52	28.82	1,638.85	-1,638.69	0.00	0.00	0.00
5,600.00	24.95	88.99	5,248.19	29.56	1,681.02	-1,680.85	0.00	0.00	0.00
5,700.00	24.95	88.99	5,338.86	30.31	1,723.19	-1,723.01	0.00	0.00	0.00
5,800.00	24.95	88.99	5,429.53	31.05	1,765.36	-1,765.18	0.00	0.00	0.00
5,854.30	24.95	88.99	5,478.77	31.45	1,788.26	-1,788.07	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,900.00	24.03	88.99	5,520.36	31.78	1,807.20	-1,807.01	2.00	-2.00	0.00
6,000.00	22.03	88.99	5,612.38	32.47	1,846.31	-1,846.12	2.00	-2.00	0.00
6,100.00	20.03	88.99	5,705.72	33.10	1,882.19	-1,882.00	2.00	-2.00	0.00
6,200.00	18.03	88.99	5,800.25	33.68	1,914.80	-1,914.60	2.00	-2.00	0.00
6,300.00	16.03	88.99	5,895.85	34.19	1,944.08	-1,943.88	2.00	-2.00	0.00
6,400.00	14.03	88.99	5,992.43	34.65	1,970.01	-1,969.81	2.00	-2.00	0.00
6,500.00	12.03	88.99	6,089.85	35.04	1,992.55	-1,992.35	2.00	-2.00	0.00
6,600.00	10.03	88.99	6,188.00	35.38	2,011.68	-2,011.48	2.00	-2.00	0.00
6,700.00	8.03	88.99	6,286.75	35.66	2,027.38	-2,027.17	2.00	-2.00	0.00
6,800.00	6.03	88.99	6,385.99	35.87	2,039.62	-2,039.41	2.00	-2.00	0.00
6,900.00	4.03	88.99	6,485.60	36.03	2,048.38	-2,048.17	2.00	-2.00	0.00
7,000.00	2.03	88.99	6,585.46	36.12	2,053.67	-2,053.46	2.00	-2.00	0.00
7,101.56	0.00	0.00	6,687.00	36.15	2,055.47	-2,055.26	2.00	-2.00	0.00
<b>Start 30.00 hold at 7101.56 MD</b>									
7,131.56	0.00	0.00	6,717.00	36.15	2,055.47	-2,055.26	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 270.03</b>									
7,150.00	1.84	270.03	6,735.43	36.15	2,055.17	-2,054.96	10.00	10.00	0.00
7,200.00	6.84	270.03	6,785.27	36.15	2,051.39	-2,051.18	10.00	10.00	0.00
7,250.00	11.84	270.03	6,834.60	36.16	2,043.27	-2,043.06	10.00	10.00	0.00
7,300.00	16.84	270.03	6,883.02	36.16	2,030.89	-2,030.68	10.00	10.00	0.00
7,350.00	21.84	270.03	6,930.18	36.17	2,014.34	-2,014.13	10.00	10.00	0.00
7,400.00	26.84	270.03	6,975.73	36.19	1,993.73	-1,993.52	10.00	10.00	0.00
7,450.00	31.84	270.03	7,019.30	36.20	1,969.24	-1,969.03	10.00	10.00	0.00
7,499.29	36.77	270.03	7,060.00	36.22	1,941.47	-1,941.26	10.00	10.00	0.00
<b>SHARON SPRINGS</b>									
7,500.00	36.84	270.03	7,060.57	36.22	1,941.04	-1,940.83	10.00	10.00	0.00
7,532.48	40.09	270.03	7,086.00	36.23	1,920.84	-1,920.63	10.00	10.00	0.00
<b>NIOBRARA</b>									
7,550.00	41.84	270.03	7,099.23	36.23	1,909.36	-1,909.15	10.00	10.00	0.00
7,600.00	46.84	270.03	7,134.97	36.25	1,874.42	-1,874.21	10.00	10.00	0.00
7,650.00	51.84	270.03	7,167.54	36.28	1,836.50	-1,836.30	10.00	10.00	0.00
7,700.00	56.84	270.03	7,196.68	36.30	1,795.89	-1,795.69	10.00	10.00	0.00
7,750.00	61.84	270.03	7,222.17	36.32	1,752.90	-1,752.69	10.00	10.00	0.00
7,800.00	66.84	270.03	7,243.82	36.35	1,707.84	-1,707.64	10.00	10.00	0.00
7,850.00	71.84	270.03	7,261.45	36.38	1,661.07	-1,660.87	10.00	10.00	0.00
7,900.00	76.84	270.03	7,274.95	36.40	1,612.94	-1,612.74	10.00	10.00	0.00
7,924.42	79.28	270.03	7,280.00	36.42	1,589.05	-1,588.85	10.00	10.00	0.00
<b>NIO B</b>									

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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)	
7,950.00	81.84	270.03	7,284.20	36.43	1,563.82	-1,563.62	10.00	10.00	0.00	
8,000.00	86.84	270.03	7,289.13	36.46	1,514.08	-1,513.88	10.00	10.00	0.00	
8,031.63	90.00	270.03	7,290.00	36.48	1,482.47	-1,482.26	10.00	10.00	0.00	
Start DLS 0.00 TFO -95.05										
8,100.00	90.00	270.03	7,290.00	36.52	1,414.10	-1,413.90	0.00	0.00	0.00	
8,200.00	90.00	270.03	7,290.00	36.58	1,314.10	-1,313.90	0.00	0.00	0.00	
8,300.00	90.00	270.03	7,290.00	36.63	1,214.10	-1,213.90	0.00	0.00	0.00	
8,400.00	90.00	270.03	7,290.00	36.69	1,114.10	-1,113.90	0.00	0.00	0.00	
8,500.00	90.00	270.03	7,290.00	36.75	1,014.10	-1,013.90	0.00	0.00	0.00	
8,600.00	90.00	270.03	7,290.00	36.81	914.10	-913.90	0.00	0.00	0.00	
8,700.00	90.00	270.03	7,290.00	36.86	814.10	-813.90	0.00	0.00	0.00	
8,800.00	90.00	270.03	7,290.00	36.92	714.10	-713.90	0.00	0.00	0.00	
8,900.00	90.00	270.03	7,290.00	36.98	614.10	-613.90	0.00	0.00	0.00	
9,000.00	90.00	270.03	7,290.00	37.03	514.10	-513.90	0.00	0.00	0.00	
9,100.00	90.00	270.03	7,289.99	37.09	414.10	-413.91	0.00	0.00	0.00	
9,200.00	90.00	270.03	7,289.99	37.14	314.10	-313.91	0.00	0.00	0.00	
9,300.00	90.00	270.03	7,289.99	37.20	214.10	-213.91	0.00	0.00	0.00	
9,400.00	90.00	270.03	7,289.99	37.26	114.10	-113.91	0.00	0.00	0.00	
9,500.00	90.00	270.03	7,289.99	37.31	14.10	-13.91	0.00	0.00	0.00	
9,600.00	90.00	270.03	7,289.99	37.37	-85.90	86.09	0.00	0.00	0.00	
9,700.00	90.00	270.03	7,289.99	37.42	-185.90	186.09	0.00	0.00	0.00	
9,800.00	90.00	270.03	7,289.99	37.48	-285.90	286.09	0.00	0.00	0.00	
9,900.00	90.00	270.03	7,289.99	37.53	-385.90	386.09	0.00	0.00	0.00	
10,000.00	90.00	270.03	7,289.99	37.59	-485.90	486.09	0.00	0.00	0.00	
10,100.00	90.00	270.03	7,289.99	37.64	-585.90	586.08	0.00	0.00	0.00	
10,200.00	90.00	270.03	7,289.99	37.70	-685.90	686.08	0.00	0.00	0.00	
10,300.00	90.00	270.03	7,289.99	37.75	-785.90	786.08	0.00	0.00	0.00	
10,400.00	90.00	270.03	7,289.99	37.81	-885.90	886.08	0.00	0.00	0.00	
10,500.00	90.00	270.03	7,289.99	37.86	-985.90	986.08	0.00	0.00	0.00	
10,600.00	90.00	270.03	7,289.99	37.92	-1,085.90	1,086.08	0.00	0.00	0.00	
10,700.00	90.00	270.03	7,289.99	37.97	-1,185.90	1,186.08	0.00	0.00	0.00	
10,800.00	90.00	270.03	7,289.99	38.02	-1,285.90	1,286.08	0.00	0.00	0.00	
10,900.00	90.00	270.03	7,289.99	38.08	-1,385.90	1,386.08	0.00	0.00	0.00	
11,000.00	90.00	270.03	7,289.99	38.13	-1,485.90	1,486.07	0.00	0.00	0.00	
11,100.00	90.00	270.03	7,289.99	38.19	-1,585.90	1,586.07	0.00	0.00	0.00	
11,200.00	90.00	270.03	7,289.99	38.24	-1,685.90	1,686.07	0.00	0.00	0.00	
11,300.00	90.00	270.03	7,289.99	38.29	-1,785.90	1,786.07	0.00	0.00	0.00	
11,400.00	90.00	270.03	7,289.99	38.35	-1,885.90	1,886.07	0.00	0.00	0.00	
11,500.00	90.00	270.03	7,289.99	38.40	-1,985.90	1,986.07	0.00	0.00	0.00	
11,600.00	90.00	270.03	7,289.99	38.45	-2,085.90	2,086.07	0.00	0.00	0.00	
11,700.00	90.00	270.03	7,289.99	38.50	-2,185.90	2,186.07	0.00	0.00	0.00	
11,800.00	90.00	270.03	7,289.99	38.56	-2,285.90	2,286.07	0.00	0.00	0.00	
11,900.00	90.00	270.03	7,289.99	38.61	-2,385.90	2,386.07	0.00	0.00	0.00	
12,000.00	90.00	270.03	7,289.99	38.66	-2,485.90	2,486.06	0.00	0.00	0.00	
12,100.00	90.00	270.03	7,289.99	38.71	-2,585.90	2,586.06	0.00	0.00	0.00	
12,200.00	90.00	270.03	7,289.99	38.77	-2,685.90	2,686.06	0.00	0.00	0.00	
12,300.00	90.00	270.03	7,289.99	38.82	-2,785.90	2,786.06	0.00	0.00	0.00	
12,400.00	90.00	270.03	7,289.99	38.87	-2,885.90	2,886.06	0.00	0.00	0.00	
12,500.00	90.00	270.03	7,289.99	38.92	-2,985.90	2,986.06	0.00	0.00	0.00	
12,600.00	90.00	270.03	7,289.99	38.97	-3,085.90	3,086.06	0.00	0.00	0.00	
12,700.00	90.00	270.03	7,289.99	39.03	-3,185.90	3,186.06	0.00	0.00	0.00	
12,800.00	90.00	270.03	7,289.99	39.08	-3,285.90	3,286.06	0.00	0.00	0.00	
12,900.00	90.00	270.03	7,289.99	39.13	-3,385.90	3,386.06	0.00	0.00	0.00	
13,000.00	90.00	270.03	7,289.99	39.18	-3,485.90	3,486.05	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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	270.03	7,289.99	39.23	-3,585.90	3,586.05	0.00	0.00	0.00
13,200.00	90.00	270.03	7,289.99	39.28	-3,685.90	3,686.05	0.00	0.00	0.00
13,300.00	90.00	270.03	7,289.99	39.33	-3,785.90	3,786.05	0.00	0.00	0.00
13,400.00	90.00	270.03	7,289.99	39.38	-3,885.90	3,886.05	0.00	0.00	0.00
13,500.00	90.00	270.03	7,289.99	39.43	-3,985.90	3,986.05	0.00	0.00	0.00
13,600.00	90.00	270.03	7,289.99	39.48	-4,085.90	4,086.05	0.00	0.00	0.00
13,700.00	90.00	270.03	7,289.99	39.53	-4,185.90	4,186.05	0.00	0.00	0.00
13,800.00	90.00	270.03	7,289.99	39.58	-4,285.90	4,286.05	0.00	0.00	0.00
13,900.00	90.00	270.03	7,289.99	39.63	-4,385.90	4,386.04	0.00	0.00	0.00
14,000.00	90.00	270.03	7,289.99	39.68	-4,485.90	4,486.04	0.00	0.00	0.00
14,100.00	90.00	270.03	7,289.99	39.73	-4,585.90	4,586.04	0.00	0.00	0.00
14,200.00	90.00	270.03	7,289.99	39.78	-4,685.90	4,686.04	0.00	0.00	0.00
14,300.00	90.00	270.03	7,289.99	39.83	-4,785.90	4,786.04	0.00	0.00	0.00
14,400.00	90.00	270.03	7,289.99	39.88	-4,885.90	4,886.04	0.00	0.00	0.00
14,500.00	90.00	270.03	7,289.99	39.93	-4,985.90	4,986.04	0.00	0.00	0.00
14,600.00	90.00	270.03	7,289.99	39.98	-5,085.90	5,086.04	0.00	0.00	0.00
14,700.00	90.00	270.03	7,289.99	40.03	-5,185.90	5,186.04	0.00	0.00	0.00
14,800.00	90.00	270.03	7,289.99	40.08	-5,285.90	5,286.04	0.00	0.00	0.00
14,900.00	90.00	270.03	7,289.99	40.12	-5,385.90	5,386.03	0.00	0.00	0.00
15,000.00	90.00	270.03	7,289.99	40.17	-5,485.90	5,486.03	0.00	0.00	0.00
15,100.00	90.00	270.03	7,289.99	40.22	-5,585.90	5,586.03	0.00	0.00	0.00
15,200.00	90.00	270.03	7,289.99	40.27	-5,685.90	5,686.03	0.00	0.00	0.00
15,300.00	90.00	270.03	7,289.99	40.32	-5,785.90	5,786.03	0.00	0.00	0.00
15,400.00	90.00	270.03	7,289.99	40.37	-5,885.90	5,886.03	0.00	0.00	0.00
15,500.00	90.00	270.03	7,289.99	40.41	-5,985.90	5,986.03	0.00	0.00	0.00
15,600.00	90.00	270.03	7,289.99	40.46	-6,085.90	6,086.03	0.00	0.00	0.00
15,700.00	90.00	270.03	7,289.99	40.51	-6,185.90	6,186.03	0.00	0.00	0.00
15,800.00	90.00	270.03	7,289.99	40.56	-6,285.90	6,286.02	0.00	0.00	0.00
15,900.00	90.00	270.03	7,289.99	40.60	-6,385.90	6,386.02	0.00	0.00	0.00
16,000.00	90.00	270.03	7,289.99	40.65	-6,485.90	6,486.02	0.00	0.00	0.00
16,100.00	90.00	270.03	7,289.99	40.70	-6,585.90	6,586.02	0.00	0.00	0.00
16,200.00	90.00	270.03	7,289.99	40.74	-6,685.90	6,686.02	0.00	0.00	0.00
16,300.00	90.00	270.03	7,289.99	40.79	-6,785.90	6,786.02	0.00	0.00	0.00
16,400.00	90.00	270.03	7,289.99	40.84	-6,885.90	6,886.02	0.00	0.00	0.00
16,500.00	90.00	270.03	7,289.99	40.88	-6,985.90	6,986.02	0.00	0.00	0.00
16,600.00	90.00	270.03	7,289.99	40.93	-7,085.90	7,086.02	0.00	0.00	0.00
16,700.00	90.00	270.03	7,290.00	40.98	-7,185.90	7,186.01	0.00	0.00	0.00
16,800.00	90.00	270.03	7,290.00	41.02	-7,285.90	7,286.01	0.00	0.00	0.00
16,900.00	90.00	270.03	7,290.00	41.07	-7,385.90	7,386.01	0.00	0.00	0.00
17,000.00	90.00	270.03	7,290.00	41.12	-7,485.90	7,486.01	0.00	0.00	0.00
17,100.00	90.00	270.03	7,290.00	41.16	-7,585.90	7,586.01	0.00	0.00	0.00
17,200.00	90.00	270.03	7,290.00	41.21	-7,685.90	7,686.01	0.00	0.00	0.00
17,300.00	90.00	270.03	7,290.00	41.25	-7,785.90	7,786.01	0.00	0.00	0.00
17,400.00	90.00	270.03	7,290.00	41.30	-7,885.90	7,886.01	0.00	0.00	0.00
17,500.00	90.00	270.03	7,290.00	41.34	-7,985.90	7,986.01	0.00	0.00	0.00
17,600.00	90.00	270.03	7,290.00	41.39	-8,085.90	8,086.01	0.00	0.00	0.00
17,652.25	90.00	270.03	7,290.00	41.41	-8,138.15	8,138.26	0.00	0.00	0.00
TD at 17652.25									

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-7N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-7N	<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)		
DC 7N - PBHL	0.00	0.00	7,290.00	41.41	-8,138.15	1,236,098.82	3,207,377.59	39° 58' 44.760 N	104° 45' 35.964 W
- plan hits target center									
- Point									
DC 7N - LP	0.00	0.00	7,290.00	36.48	1,482.47	1,236,177.33	3,216,997.89	39° 58' 44.724 N	104° 43' 32.376 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,113.09	3,900.00	PARKMAN				
5,056.06	4,755.00	SUSSEX				
7,499.29	7,060.00	SHARON SPRINGS				
7,532.48	7,086.00	NIOBRARA				
7,924.42	7,280.00	NIO B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
2,247.27	2,208.23	4.70	267.21	Start 3607.03 hold at 2247.27 MD	
5,854.30	5,478.77	31.45	1,788.26	Start Drop -2.00	
7,101.56	6,687.00	36.15	2,055.47	Start 30.00 hold at 7101.56 MD	
7,131.56	6,717.00	36.15	2,055.47	Start DLS 10.00 TFO 270.03	
8,031.63	7,290.00	36.48	1,482.47	Start DLS 0.00 TFO -95.05	
17,652.25	7,290.00	41.41	-8,138.15	TD at 17652.25	