

EXTRACTION OIL & GAS

Adams County

Sec 29-T1-R66W

PC 1S-66-2928-14CDH

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-14CDH
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 8.17°
Magnetic Field
Strength: 52115.8nT
Dip Angle: 66.47°
Date: 9/11/2017
Model: IGRF2015

WELL DETAILS: PC 1S-66-2928-14CDH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219420.99	3195118.69	39° 56' 0.924 N	104° 48' 15.120 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	1658.79	13.18	265.23	1653.00	-6.27	-75.15	2.00	265.23	-75.06	
4	6728.76	13.18	265.23	6589.50	-102.33	-1226.81	0.00	0.00	-1225.26	
5	7387.55	0.00	0.00	7242.50	-108.60	-1301.96	2.00	180.00	-1300.32	
6	7417.55	0.00	0.00	7272.50	-108.60	-1301.96	0.00	0.00	-1300.32	
7	8167.61	90.00	90.08	7750.00	-109.26	-824.46	12.00	90.08	-822.85	PC 14CDH LP
8	17763.85	90.00	90.08	7750.00	-122.30	8771.78	0.00	0.00	8772.63	PC 14CDH 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	BUILD 2"/100'
1658.79	13.18	265.23	1653.00	-6.27	-75.15	-75.06	75.42	HOLD 13.18" INC
6728.76	13.18	265.23	6589.50	-102.33	-1226.81	-1225.26	1231.07	DROP 2"/100'
7387.55	0.00	0.00	7242.50	-108.60	-1301.96	-1300.32	1306.48	HOLD VERTICAL
7417.55	0.00	0.00	7272.50	-108.60	-1301.96	-1300.32	1306.48	KOP, BUILD 12"/100'
8167.61	90.00	90.08	7750.00	-109.26	-824.46	-822.85	1783.98	LP @ 90° INC, 90.08° AZM HOLD
17763.85	90.00	90.08	7750.00	-122.30	8771.78	8772.63	11380.23	TD at 17763.85' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 14CDH LP	7750.00	-109.26	-824.46	1219305.26	3194295.11	39° 55' 59.844 N	104° 48' 25.704 W	Point
- plan hits target center								
PC 14CDH PBHL	7750.00	-122.30	8771.78	1219367.52	3203891.16	39° 55' 59.700 N	104° 46' 22.512 W	Point
- plan hits target center								

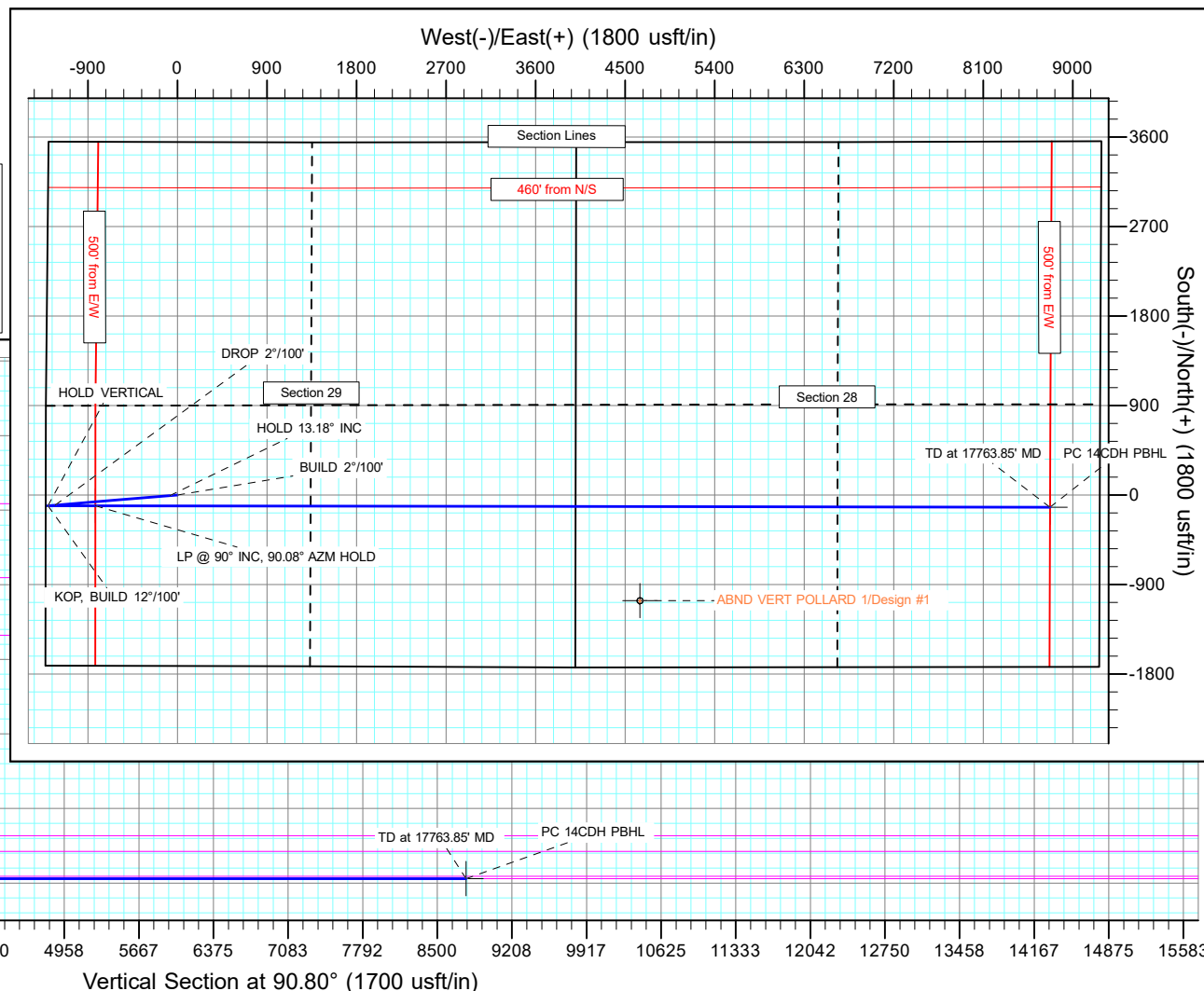
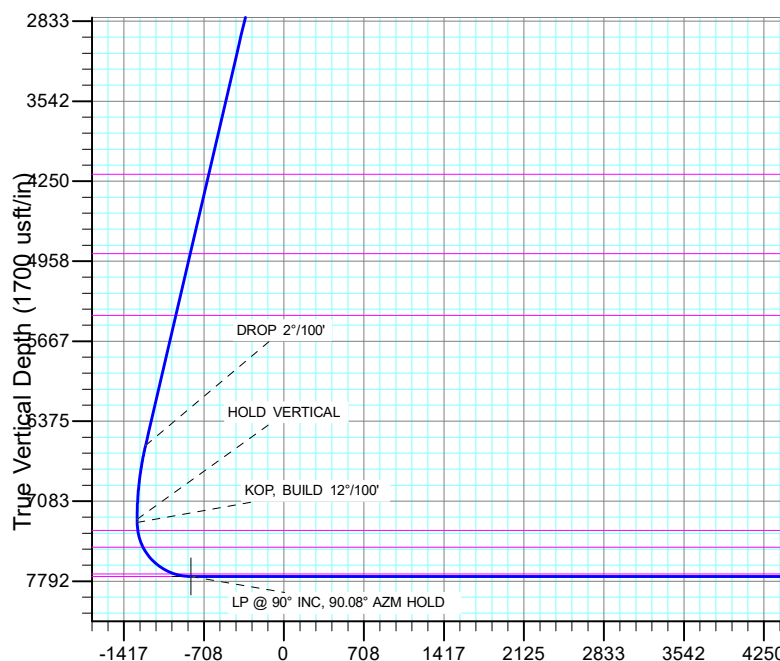
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4262.33	PARKMAN
4892.00	4985.36	SUSSEX
5437.00	5545.10	SHANNON
7342.00	7487.30	NIOBRARA
7491.00	7644.50	NIO B TARGET
7727.00	8018.80	FORT HAYS
7750.00	8167.61	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:
1719' FSL, 1325' FWL
Sec 29-T1S-R66W
LP:
1607' FSL, 500' FWL
Sec 29-T1S-R66W
BHL:
1607' FSL, 500' FEL
Sec 28-T1S-R66W



Vertical Section at 90.80° (1700 usft/in)

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-14CDH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Adams County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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-66-2928-14CDH					
Well Position	+N/-S	1,715.75 usft	Northing:	1,219,420.99 usft	Latitude:	39° 56' 0.924 N
	+E/-W	1,326.42 usft	Easting:	3,195,118.69 usft	Longitude:	104° 48' 15.120 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,066.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/11/2017	8.17	66.47	52,115.82744033

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	90.80

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,763.85	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
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	
1,658.79	13.18	265.23	1,653.00	-6.27	-75.15	2.00	2.00	0.00	265.23	
6,728.76	13.18	265.23	6,589.50	-102.33	-1,226.81	0.00	0.00	0.00	0.00	
7,387.55	0.00	0.00	7,242.50	-108.60	-1,301.96	2.00	-2.00	0.00	180.00	
7,417.55	0.00	0.00	7,272.50	-108.60	-1,301.96	0.00	0.00	0.00	0.00	
8,167.61	90.00	90.08	7,750.00	-109.26	-824.46	12.00	12.00	12.01	90.08	PC 14CDH LP
17,763.86	90.00	90.08	7,750.00	-122.30	8,771.78	0.00	0.00	0.00	0.00	PC 14CDH PBHL

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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
BUILD 2°/100'									
1,100.00	2.00	265.23	1,099.98	-0.15	-1.74	-1.74	2.00	2.00	0.00
1,200.00	4.00	265.23	1,199.84	-0.58	-6.95	-6.95	2.00	2.00	0.00
1,300.00	6.00	265.23	1,299.45	-1.30	-15.64	-15.62	2.00	2.00	0.00
1,400.00	8.00	265.23	1,398.70	-2.32	-27.78	-27.75	2.00	2.00	0.00
1,500.00	10.00	265.23	1,497.47	-3.62	-43.37	-43.32	2.00	2.00	0.00
1,600.00	12.00	265.23	1,595.62	-5.20	-62.39	-62.31	2.00	2.00	0.00
1,658.79	13.18	265.23	1,653.00	-6.27	-75.15	-75.06	2.00	2.00	0.00
HOLD 13.18° INC									
1,700.00	13.18	265.23	1,693.12	-7.05	-84.51	-84.41	0.00	0.00	0.00
1,800.00	13.18	265.23	1,790.49	-8.94	-107.23	-107.09	0.00	0.00	0.00
1,900.00	13.18	265.23	1,887.86	-10.84	-129.95	-129.78	0.00	0.00	0.00
2,000.00	13.18	265.23	1,985.23	-12.73	-152.66	-152.47	0.00	0.00	0.00
2,100.00	13.18	265.23	2,082.59	-14.63	-175.38	-175.15	0.00	0.00	0.00
2,200.00	13.18	265.23	2,179.96	-16.52	-198.09	-197.84	0.00	0.00	0.00
2,300.00	13.18	265.23	2,277.33	-18.42	-220.81	-220.53	0.00	0.00	0.00
2,400.00	13.18	265.23	2,374.70	-20.31	-243.52	-243.21	0.00	0.00	0.00
2,500.00	13.18	265.23	2,472.06	-22.21	-266.24	-265.90	0.00	0.00	0.00
2,600.00	13.18	265.23	2,569.43	-24.10	-288.95	-288.59	0.00	0.00	0.00
2,700.00	13.18	265.23	2,666.80	-26.00	-311.67	-311.27	0.00	0.00	0.00
2,800.00	13.18	265.23	2,764.17	-27.89	-334.38	-333.96	0.00	0.00	0.00
2,900.00	13.18	265.23	2,861.53	-29.79	-357.10	-356.65	0.00	0.00	0.00
3,000.00	13.18	265.23	2,958.90	-31.68	-379.81	-379.33	0.00	0.00	0.00
3,100.00	13.18	265.23	3,056.27	-33.58	-402.53	-402.02	0.00	0.00	0.00
3,200.00	13.18	265.23	3,153.64	-35.47	-425.24	-424.71	0.00	0.00	0.00
3,300.00	13.18	265.23	3,251.00	-37.37	-447.96	-447.39	0.00	0.00	0.00
3,400.00	13.18	265.23	3,348.37	-39.26	-470.67	-470.08	0.00	0.00	0.00
3,500.00	13.18	265.23	3,445.74	-41.15	-493.39	-492.77	0.00	0.00	0.00
3,600.00	13.18	265.23	3,543.11	-43.05	-516.10	-515.45	0.00	0.00	0.00
3,700.00	13.18	265.23	3,640.47	-44.94	-538.82	-538.14	0.00	0.00	0.00
3,800.00	13.18	265.23	3,737.84	-46.84	-561.53	-560.83	0.00	0.00	0.00
3,900.00	13.18	265.23	3,835.21	-48.73	-584.25	-583.51	0.00	0.00	0.00
4,000.00	13.18	265.23	3,932.58	-50.63	-606.96	-606.20	0.00	0.00	0.00
4,100.00	13.18	265.23	4,029.94	-52.52	-629.68	-628.89	0.00	0.00	0.00
4,200.00	13.18	265.23	4,127.31	-54.42	-652.39	-651.57	0.00	0.00	0.00
4,262.33	13.18	265.23	4,188.00	-55.60	-666.55	-665.71	0.00	0.00	0.00
PARKMAN									
4,300.00	13.18	265.23	4,224.68	-56.31	-675.11	-674.26	0.00	0.00	0.00
4,400.00	13.18	265.23	4,322.05	-58.21	-697.82	-696.95	0.00	0.00	0.00
4,500.00	13.18	265.23	4,419.41	-60.10	-720.54	-719.63	0.00	0.00	0.00
4,600.00	13.18	265.23	4,516.78	-62.00	-743.25	-742.32	0.00	0.00	0.00
4,700.00	13.18	265.23	4,614.15	-63.89	-765.97	-765.00	0.00	0.00	0.00

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Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	13.18	265.23	4,711.52	-65.79	-788.69	-787.69	0.00	0.00	0.00
4,900.00	13.18	265.23	4,808.88	-67.68	-811.40	-810.38	0.00	0.00	0.00
4,985.36	13.18	265.23	4,892.00	-69.30	-830.79	-829.74	0.00	0.00	0.00
SUSSEX									
5,000.00	13.18	265.23	4,906.25	-69.58	-834.12	-833.06	0.00	0.00	0.00
5,100.00	13.18	265.23	5,003.62	-71.47	-856.83	-855.75	0.00	0.00	0.00
5,200.00	13.18	265.23	5,100.99	-73.37	-879.55	-878.44	0.00	0.00	0.00
5,300.00	13.18	265.23	5,198.35	-75.26	-902.26	-901.12	0.00	0.00	0.00
5,400.00	13.18	265.23	5,295.72	-77.15	-924.98	-923.81	0.00	0.00	0.00
5,500.00	13.18	265.23	5,393.09	-79.05	-947.69	-946.50	0.00	0.00	0.00
5,545.10	13.18	265.23	5,437.00	-79.90	-957.94	-956.73	0.00	0.00	0.00
SHANNON									
5,600.00	13.18	265.23	5,490.46	-80.94	-970.41	-969.18	0.00	0.00	0.00
5,700.00	13.18	265.23	5,587.82	-82.84	-993.12	-991.87	0.00	0.00	0.00
5,800.00	13.18	265.23	5,685.19	-84.73	-1,015.84	-1,014.56	0.00	0.00	0.00
5,900.00	13.18	265.23	5,782.56	-86.63	-1,038.55	-1,037.24	0.00	0.00	0.00
6,000.00	13.18	265.23	5,879.93	-88.52	-1,061.27	-1,059.93	0.00	0.00	0.00
6,100.00	13.18	265.23	5,977.29	-90.42	-1,083.98	-1,082.62	0.00	0.00	0.00
6,200.00	13.18	265.23	6,074.66	-92.31	-1,106.70	-1,105.30	0.00	0.00	0.00
6,300.00	13.18	265.23	6,172.03	-94.21	-1,129.41	-1,127.99	0.00	0.00	0.00
6,400.00	13.18	265.23	6,269.40	-96.10	-1,152.13	-1,150.68	0.00	0.00	0.00
6,500.00	13.18	265.23	6,366.76	-98.00	-1,174.84	-1,173.36	0.00	0.00	0.00
6,600.00	13.18	265.23	6,464.13	-99.89	-1,197.56	-1,196.05	0.00	0.00	0.00
6,700.00	13.18	265.23	6,561.50	-101.79	-1,220.27	-1,218.74	0.00	0.00	0.00
6,728.76	13.18	265.23	6,589.50	-102.33	-1,226.81	-1,225.26	0.00	0.00	0.00
DROP 2°/100'									
6,800.00	11.75	265.23	6,659.06	-103.61	-1,242.13	-1,240.56	2.00	-2.00	0.00
6,900.00	9.75	265.23	6,757.30	-105.16	-1,260.72	-1,259.13	2.00	-2.00	0.00
7,000.00	7.75	265.23	6,856.13	-106.42	-1,275.88	-1,274.27	2.00	-2.00	0.00
7,100.00	5.75	265.23	6,955.43	-107.40	-1,287.59	-1,285.97	2.00	-2.00	0.00
7,200.00	3.75	265.23	7,055.09	-108.09	-1,295.84	-1,294.21	2.00	-2.00	0.00
7,300.00	1.75	265.23	7,154.96	-108.49	-1,300.63	-1,298.99	2.00	-2.00	0.00
7,387.55	0.00	0.00	7,242.50	-108.60	-1,301.96	-1,300.32	2.00	-2.00	0.00
HOLD VERTICAL									
7,400.00	0.00	0.00	7,254.95	-108.60	-1,301.96	-1,300.32	0.00	0.00	0.00
7,417.55	0.00	0.00	7,272.50	-108.60	-1,301.96	-1,300.32	0.00	0.00	0.00
KOP, BUILD 12°/100'									
7,425.00	0.89	90.08	7,279.95	-108.60	-1,301.90	-1,300.26	12.00	12.00	0.00
7,450.00	3.89	90.08	7,304.93	-108.60	-1,300.86	-1,299.22	12.00	12.00	0.00
7,475.00	6.89	90.08	7,329.81	-108.60	-1,298.51	-1,296.87	12.00	12.00	0.00
7,487.30	8.37	90.08	7,342.00	-108.61	-1,296.88	-1,295.23	12.00	12.00	0.00
NIORRARA									
7,500.00	9.89	90.08	7,354.54	-108.61	-1,294.86	-1,293.22	12.00	12.00	0.00
7,525.00	12.89	90.08	7,379.05	-108.62	-1,289.92	-1,288.28	12.00	12.00	0.00
7,550.00	15.89	90.08	7,403.26	-108.63	-1,283.71	-1,282.07	12.00	12.00	0.00
7,575.00	18.89	90.08	7,427.11	-108.64	-1,276.24	-1,274.60	12.00	12.00	0.00
7,600.00	21.89	90.08	7,450.54	-108.65	-1,267.53	-1,265.89	12.00	12.00	0.00
7,625.00	24.89	90.08	7,473.49	-108.66	-1,257.60	-1,255.96	12.00	12.00	0.00
7,644.50	27.23	90.08	7,491.00	-108.67	-1,249.04	-1,247.40	12.00	12.00	0.00
NIO B TARGET									
7,650.00	27.89	90.08	7,495.88	-108.68	-1,246.49	-1,244.85	12.00	12.00	0.00
7,675.00	30.89	90.08	7,517.66	-108.69	-1,234.22	-1,232.59	12.00	12.00	0.00
7,700.00	33.89	90.08	7,538.77	-108.71	-1,220.83	-1,219.20	12.00	12.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-14CDH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
7,725.00	36.89	90.08	7,559.14	-108.73	-1,206.35	-1,204.72	12.00	12.00	0.00
7,750.00	39.89	90.08	7,578.74	-108.75	-1,190.83	-1,189.20	12.00	12.00	0.00
7,775.00	42.89	90.08	7,597.49	-108.78	-1,174.30	-1,172.67	12.00	12.00	0.00
7,800.00	45.89	90.08	7,615.35	-108.80	-1,156.81	-1,155.18	12.00	12.00	0.00
7,825.00	48.89	90.08	7,632.27	-108.83	-1,138.42	-1,136.79	12.00	12.00	0.00
7,850.00	51.89	90.08	7,648.21	-108.85	-1,119.16	-1,117.53	12.00	12.00	0.00
7,875.00	54.89	90.08	7,663.12	-108.88	-1,099.09	-1,097.47	12.00	12.00	0.00
7,900.00	57.89	90.08	7,676.96	-108.91	-1,078.27	-1,076.65	12.00	12.00	0.00
7,925.00	60.89	90.08	7,689.68	-108.94	-1,056.76	-1,055.14	12.00	12.00	0.00
7,950.00	63.89	90.08	7,701.27	-108.97	-1,034.61	-1,032.99	12.00	12.00	0.00
7,975.00	66.89	90.08	7,711.68	-109.00	-1,011.88	-1,010.27	12.00	12.00	0.00
8,000.00	69.89	90.08	7,720.89	-109.04	-988.64	-987.03	12.00	12.00	0.00
8,018.80	72.14	90.08	7,727.00	-109.06	-970.87	-969.26	12.00	12.00	0.00
FORT HAYS									
8,025.00	72.89	90.08	7,728.86	-109.07	-964.95	-963.34	12.00	12.00	0.00
8,050.00	75.89	90.08	7,735.59	-109.10	-940.88	-939.27	12.00	12.00	0.00
8,075.00	78.89	90.08	7,741.05	-109.14	-916.49	-914.87	12.00	12.00	0.00
8,100.00	81.89	90.08	7,745.22	-109.17	-891.84	-890.23	12.00	12.00	0.00
8,125.00	84.89	90.08	7,748.10	-109.20	-867.01	-865.40	12.00	12.00	0.00
8,150.00	87.89	90.08	7,749.68	-109.24	-842.06	-840.46	12.00	12.00	0.00
8,167.61	90.00	90.08	7,750.00	-109.26	-824.46	-822.85	12.00	12.00	0.00
LP @ 90° INC, 90.08° AZM HOLD - CODELL									
8,200.00	90.00	90.08	7,750.00	-109.31	-792.06	-790.46	0.00	0.00	0.00
8,300.00	90.00	90.08	7,750.00	-109.45	-692.06	-690.47	0.00	0.00	0.00
8,400.00	90.00	90.08	7,750.00	-109.59	-592.06	-590.48	0.00	0.00	0.00
8,500.00	90.00	90.08	7,750.00	-109.73	-492.06	-490.49	0.00	0.00	0.00
8,600.00	90.00	90.08	7,750.00	-109.86	-392.06	-390.50	0.00	0.00	0.00
8,700.00	90.00	90.08	7,750.00	-110.00	-292.07	-290.50	0.00	0.00	0.00
8,800.00	90.00	90.08	7,750.00	-110.14	-192.07	-190.51	0.00	0.00	0.00
8,900.00	90.00	90.08	7,750.00	-110.28	-92.07	-90.52	0.00	0.00	0.00
9,000.00	90.00	90.08	7,749.99	-110.42	7.93	9.47	0.00	0.00	0.00
9,100.00	90.00	90.08	7,749.99	-110.56	107.93	109.47	0.00	0.00	0.00
9,200.00	90.00	90.08	7,749.99	-110.70	207.93	209.46	0.00	0.00	0.00
9,300.00	90.00	90.08	7,749.99	-110.84	307.93	309.45	0.00	0.00	0.00
9,400.00	90.00	90.08	7,749.99	-110.98	407.93	409.44	0.00	0.00	0.00
9,500.00	90.00	90.08	7,749.99	-111.12	507.93	509.43	0.00	0.00	0.00
9,600.00	90.00	90.08	7,749.99	-111.25	607.93	609.43	0.00	0.00	0.00
9,700.00	90.00	90.08	7,749.99	-111.39	707.93	709.42	0.00	0.00	0.00
9,800.00	90.00	90.08	7,749.99	-111.53	807.93	809.41	0.00	0.00	0.00
9,900.00	90.00	90.08	7,749.99	-111.67	907.93	909.40	0.00	0.00	0.00
10,000.00	90.00	90.08	7,749.99	-111.81	1,007.93	1,009.39	0.00	0.00	0.00
10,100.00	90.00	90.08	7,749.99	-111.95	1,107.93	1,109.39	0.00	0.00	0.00
10,200.00	90.00	90.08	7,749.99	-112.09	1,207.93	1,209.38	0.00	0.00	0.00
10,300.00	90.00	90.08	7,749.99	-112.23	1,307.93	1,309.37	0.00	0.00	0.00
10,400.00	90.00	90.08	7,749.99	-112.37	1,407.93	1,409.36	0.00	0.00	0.00
10,500.00	90.00	90.08	7,749.98	-112.51	1,507.93	1,509.36	0.00	0.00	0.00
10,600.00	90.00	90.08	7,749.98	-112.64	1,607.93	1,609.35	0.00	0.00	0.00
10,700.00	90.00	90.08	7,749.98	-112.78	1,707.93	1,709.34	0.00	0.00	0.00
10,800.00	90.00	90.08	7,749.98	-112.92	1,807.93	1,809.33	0.00	0.00	0.00
10,900.00	90.00	90.08	7,749.98	-113.06	1,907.93	1,909.32	0.00	0.00	0.00
11,000.00	90.00	90.08	7,749.98	-113.20	2,007.93	2,009.32	0.00	0.00	0.00
11,100.00	90.00	90.08	7,749.98	-113.34	2,107.93	2,109.31	0.00	0.00	0.00
11,200.00	90.00	90.08	7,749.98	-113.48	2,207.93	2,209.30	0.00	0.00	0.00
11,300.00	90.00	90.08	7,749.98	-113.62	2,307.93	2,309.29	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-14CDH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)	
11,400.00	90.00	90.08	7,749.98	-113.76	2,407.93	2,409.28	0.00	0.00	0.00	
11,500.00	90.00	90.08	7,749.98	-113.89	2,507.93	2,509.28	0.00	0.00	0.00	
11,600.00	90.00	90.08	7,749.98	-114.03	2,607.93	2,609.27	0.00	0.00	0.00	
11,700.00	90.00	90.08	7,749.98	-114.17	2,707.93	2,709.26	0.00	0.00	0.00	
11,800.00	90.00	90.08	7,749.98	-114.31	2,807.93	2,809.25	0.00	0.00	0.00	
11,900.00	90.00	90.08	7,749.97	-114.45	2,907.93	2,909.24	0.00	0.00	0.00	
12,000.00	90.00	90.08	7,749.97	-114.59	3,007.93	3,009.24	0.00	0.00	0.00	
12,100.00	90.00	90.08	7,749.97	-114.73	3,107.93	3,109.23	0.00	0.00	0.00	
12,200.00	90.00	90.08	7,749.97	-114.87	3,207.93	3,209.22	0.00	0.00	0.00	
12,300.00	90.00	90.08	7,749.97	-115.01	3,307.93	3,309.21	0.00	0.00	0.00	
12,400.00	90.00	90.08	7,749.97	-115.15	3,407.93	3,409.21	0.00	0.00	0.00	
12,500.00	90.00	90.08	7,749.97	-115.28	3,507.93	3,509.20	0.00	0.00	0.00	
12,600.00	90.00	90.08	7,749.97	-115.42	3,607.93	3,609.19	0.00	0.00	0.00	
12,700.00	90.00	90.08	7,749.97	-115.56	3,707.93	3,709.18	0.00	0.00	0.00	
12,800.00	90.00	90.08	7,749.97	-115.70	3,807.93	3,809.17	0.00	0.00	0.00	
12,900.00	90.00	90.08	7,749.97	-115.84	3,907.93	3,909.17	0.00	0.00	0.00	
13,000.00	90.00	90.08	7,749.97	-115.98	4,007.93	4,009.16	0.00	0.00	0.00	
13,100.00	90.00	90.08	7,749.97	-116.12	4,107.93	4,109.15	0.00	0.00	0.00	
13,200.00	90.00	90.08	7,749.97	-116.26	4,207.93	4,209.14	0.00	0.00	0.00	
13,300.00	90.00	90.08	7,749.97	-116.40	4,307.93	4,309.13	0.00	0.00	0.00	
13,400.00	90.00	90.08	7,749.96	-116.54	4,407.93	4,409.13	0.00	0.00	0.00	
13,500.00	90.00	90.08	7,749.96	-116.67	4,507.93	4,509.12	0.00	0.00	0.00	
13,600.00	90.00	90.08	7,749.96	-116.81	4,607.93	4,609.11	0.00	0.00	0.00	
13,700.00	90.00	90.08	7,749.96	-116.95	4,707.93	4,709.10	0.00	0.00	0.00	
13,800.00	90.00	90.08	7,749.96	-117.09	4,807.93	4,809.10	0.00	0.00	0.00	
13,900.00	90.00	90.08	7,749.96	-117.23	4,907.93	4,909.09	0.00	0.00	0.00	
14,000.00	90.00	90.08	7,749.96	-117.37	5,007.93	5,009.08	0.00	0.00	0.00	
14,100.00	90.00	90.08	7,749.96	-117.51	5,107.93	5,109.07	0.00	0.00	0.00	
14,200.00	90.00	90.08	7,749.96	-117.65	5,207.93	5,209.06	0.00	0.00	0.00	
14,300.00	90.00	90.08	7,749.96	-117.79	5,307.93	5,309.06	0.00	0.00	0.00	
14,400.00	90.00	90.08	7,749.96	-117.93	5,407.93	5,409.05	0.00	0.00	0.00	
14,500.00	90.00	90.08	7,749.96	-118.06	5,507.93	5,509.04	0.00	0.00	0.00	
14,600.00	90.00	90.08	7,749.96	-118.20	5,607.93	5,609.03	0.00	0.00	0.00	
14,700.00	90.00	90.08	7,749.96	-118.34	5,707.93	5,709.02	0.00	0.00	0.00	
14,800.00	90.00	90.08	7,749.96	-118.48	5,807.93	5,809.02	0.00	0.00	0.00	
14,900.00	90.00	90.08	7,749.95	-118.62	5,907.93	5,909.01	0.00	0.00	0.00	
15,000.00	90.00	90.08	7,749.95	-118.76	6,007.93	6,009.00	0.00	0.00	0.00	
15,100.00	90.00	90.08	7,749.95	-118.90	6,107.93	6,108.99	0.00	0.00	0.00	
15,200.00	90.00	90.08	7,749.95	-119.04	6,207.93	6,208.99	0.00	0.00	0.00	
15,300.00	90.00	90.08	7,749.95	-119.18	6,307.93	6,308.98	0.00	0.00	0.00	
15,400.00	90.00	90.08	7,749.95	-119.31	6,407.93	6,408.97	0.00	0.00	0.00	
15,500.00	90.00	90.08	7,749.95	-119.45	6,507.93	6,508.96	0.00	0.00	0.00	
15,600.00	90.00	90.08	7,749.95	-119.59	6,607.93	6,608.95	0.00	0.00	0.00	
15,700.00	90.00	90.08	7,749.95	-119.73	6,707.93	6,708.95	0.00	0.00	0.00	
15,800.00	90.00	90.08	7,749.95	-119.87	6,807.93	6,808.94	0.00	0.00	0.00	
15,900.00	90.00	90.08	7,749.95	-120.01	6,907.93	6,908.93	0.00	0.00	0.00	
16,000.00	90.00	90.08	7,749.95	-120.15	7,007.93	7,008.92	0.00	0.00	0.00	
16,100.00	90.00	90.08	7,749.95	-120.29	7,107.93	7,108.91	0.00	0.00	0.00	
16,200.00	90.00	90.08	7,749.95	-120.43	7,207.93	7,208.91	0.00	0.00	0.00	
16,300.00	90.00	90.08	7,749.95	-120.57	7,307.93	7,308.90	0.00	0.00	0.00	
16,400.00	90.00	90.08	7,749.94	-120.70	7,407.93	7,408.89	0.00	0.00	0.00	
16,500.00	90.00	90.08	7,749.94	-120.84	7,507.93	7,508.88	0.00	0.00	0.00	
16,600.00	90.00	90.08	7,749.94	-120.98	7,607.93	7,608.87	0.00	0.00	0.00	
16,700.00	90.00	90.08	7,749.94	-121.12	7,707.93	7,708.87	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-14CDH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-14CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
16,800.00	90.00	90.08	7,749.94	-121.26	7,807.93	7,808.86	0.00	0.00	0.00
16,900.00	90.00	90.08	7,749.94	-121.40	7,907.93	7,908.85	0.00	0.00	0.00
17,000.00	90.00	90.08	7,749.94	-121.54	8,007.93	8,008.84	0.00	0.00	0.00
17,100.00	90.00	90.08	7,749.94	-121.68	8,107.93	8,108.84	0.00	0.00	0.00
17,200.00	90.00	90.08	7,749.94	-121.82	8,207.93	8,208.83	0.00	0.00	0.00
17,300.00	90.00	90.08	7,749.94	-121.96	8,307.93	8,308.82	0.00	0.00	0.00
17,400.00	90.00	90.08	7,749.94	-122.09	8,407.93	8,408.81	0.00	0.00	0.00
17,500.00	90.00	90.08	7,749.94	-122.23	8,507.93	8,508.80	0.00	0.00	0.00
17,600.00	90.00	90.08	7,749.94	-122.37	8,607.93	8,608.80	0.00	0.00	0.00
17,700.00	90.00	90.08	7,749.94	-122.51	8,707.93	8,708.79	0.00	0.00	0.00
17,763.86	90.00	90.08	7,750.00	-122.30	8,771.78	8,772.63	0.00	0.00	0.00
TD at 17763.85' 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 14CDH LP	0.00	0.00	7,750.00	-109.26	-824.46	1,219,305.26	3,194,295.11	39° 55' 59.844 N	104° 48' 25.704 W
- plan hits target center									
- Point									
PC 14CDH PBHL	0.00	0.00	7,750.00	-122.30	8,771.78	1,219,367.52	3,203,891.16	39° 55' 59.700 N	104° 46' 22.512 W
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,262.33	4,188.00	PARKMAN			
4,985.36	4,892.00	SUSSEX			
5,545.10	5,437.00	SHANNON			
7,487.30	7,342.00	NIOBRARA			
7,644.50	7,491.00	NIO B TARGET			
8,018.80	7,727.00	FORT HAYS			
8,167.61	7,750.00	CODELL			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.00	1,000.00	0.00	0.00	BUILD 2°/100'
1,658.79	1,653.00	-6.27	-75.15	HOLD 13.18° INC
6,728.76	6,589.50	-102.33	-1,226.81	DROP 2°/100'
7,387.55	7,242.50	-108.60	-1,301.96	HOLD VERTICAL
7,417.55	7,272.50	-108.60	-1,301.96	KOP, BUILD 12°/100'
8,167.61	7,750.00	-109.26	-824.46	LP @ 90° INC, 90.08° AZM HOLD
17,763.86	7,750.00	-122.30	8,771.78	TD at 17763.85' MD