

EXTRACTION OIL & GAS

ADAMS COUNTY

Sec 25-T1S-R66W

ALMA WEST 35W-20-11

OWB

Plan: PROPOSAL 1

Standard Planning Report

08 February, 2022



WELL DETAILS: ALMA WEST 35W-20-11

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1218124.08	3218336.25	39.929500°N	104.721450°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	2076.40	39.53	220.06	1923.31	-501.41	-421.66	2.00	220.06	543.96	
4	8755.47	39.53	220.06	7074.96	-3754.86	-3157.63	0.00	0.00	4073.53	
5	9413.73	90.00	270.01	7361.00	-3935.42	-3680.38	10.00	57.04	4625.83	LP-ALMA W 35W-1
6	19388.42	90.00	270.01	7361.00	-3933.03	-13655.07	0.00	0.00	14210.20	PBHL-ALMA W 35W-1

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	Start Build 2.00
2076.40	39.53	220.06	1923.31	-501.41	-421.66	543.96	655.14	Start 6679.07 hold at 2076.40 MD
8755.47	39.53	220.06	7074.96	-3754.86	-3157.63	4073.53	4906.08	Start DLS 10.00 TFO 57.04
9413.73	90.00	270.01	7361.00	-3935.42	-3680.38	4625.83	5474.63	Start 9974.69 hold at 9413.73 MD
19388.42	90.00	270.01	7361.00	-3933.03	-13655.07	14210.20	15449.32	TD at 19388.42

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
LP-ALMA W 35W-11	7361.00	-3935.42	-3680.38	1214156.61	3214690.67	39.918696°N	104.734571°W	Point
- plan hits target center								
PBHL-ALMA W 35W-11	7361.00	-3933.03	-13655.07	1214071.42	3204716.61	39.918693°N	104.770132°W	Point
- plan hits target center								

FORMATION TOP DETAILS

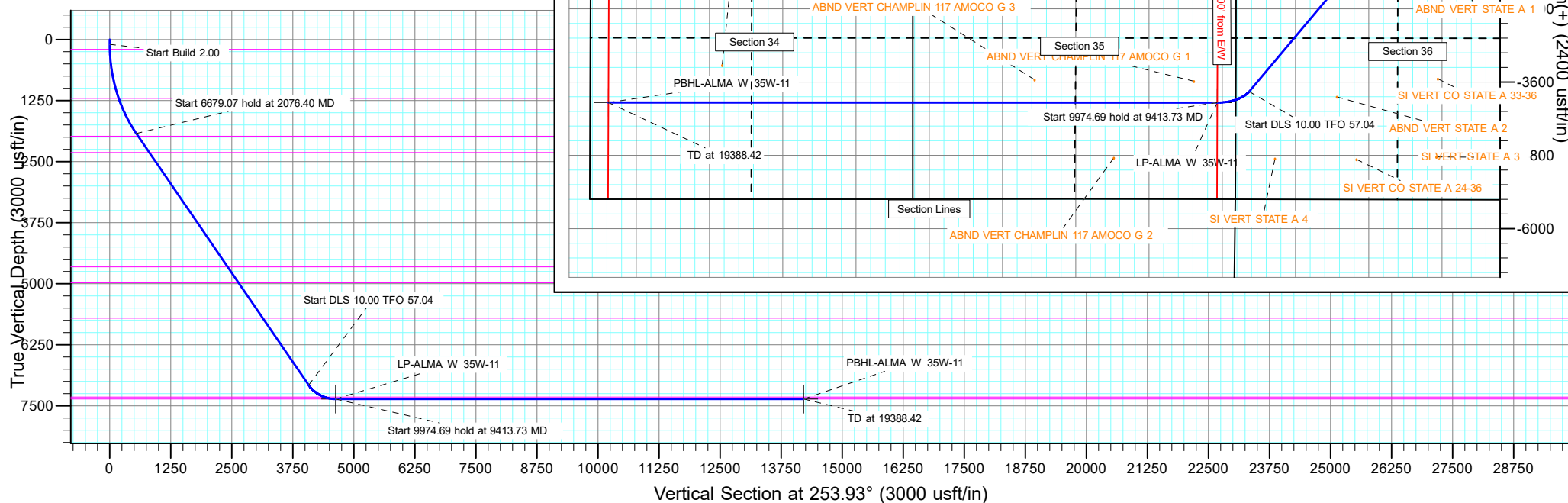
TVDPath	MDPath	Formation	Geodetic System: US State Plane 1983
204.00	204.02	Arapahoe	Datum: North American Datum 1983
1204.00	1233.33	Laramie-Fox Hills Formation	Ellipsoid: GRS 1980
1464.00	1521.63	Pierre Formation	Zone: Colorado Northern Zone
1979.00	2148.60	Upper Pierre aquifer	System Datum: Mean Sea Level
2314.00	2582.93	Base of Upper Pierre aquifer	
4654.00	5616.72	Larimer ("Parkman") sandstone	
4979.00	6038.08	Terry ("Sussex") sandstone	
5704.00	6978.03	Hygiene ("Shannon") sandstone	
7318.00	9170.49	Sharon Springs Member	
7361.00	9413.73	Niobrara Formation	

PROJECT DETAILS: ADAMS COUNTY

SHL:
237' FSL, 1926' FEL
Sec 25-T1S-R66W

LP*
1583' FSL, 300' FEL
Sec 35-T1S-R66W

BHL:
1586' FSL, 300' FWL
Sec 34-T1S-R66W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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		Using geodetic scale factor

Site		Sec 25-T1S-R66W			
Site Position:		Northing:	1,217,904.28 usft	Latitude:	39.928850°N
From:	Lat/Long	Easting:	3,220,262.11 usft	Longitude:	104.714590°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.51 °

Well	ALMA WEST 35W-20-11					
Well Position	+N/-S	236.85 usft	Northing:	1,218,124.08 usft	Latitude:	39.929500°N
	+E/-W	-1,923.89 usft	Easting:	3,218,336.25 usft	Longitude:	104.721450°W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,178.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/8/2022	7.71	66.26	51,639.76670995

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	253.93

Plan Survey Tool Program	Date	2/8/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,388.42	PROPOSAL 1 (OWB)	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	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,076.40	39.53	220.06	1,923.31	-501.41	-421.66	2.00	2.00	0.00	220.06	
8,755.47	39.53	220.06	7,074.96	-3,754.86	-3,157.63	0.00	0.00	0.00	0.00	
9,413.73	90.00	270.01	7,361.00	-3,935.42	-3,680.38	10.00	7.67	7.59	57.04	LP-ALMA W 35W-11
19,388.42	90.00	270.01	7,361.00	-3,933.03	-13,655.07	0.00	0.00	0.00	0.00	PBHL-ALMA W 35W-

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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
Start Build 2.00									
200.00	2.00	220.06	199.98	-1.34	-1.12	1.45	2.00	2.00	0.00
204.02	2.08	220.06	204.00	-1.45	-1.22	1.57	2.00	2.00	0.00
Arapahoe									
300.00	4.00	220.06	299.84	-5.34	-4.49	5.79	2.00	2.00	0.00
400.00	6.00	220.06	399.45	-12.01	-10.10	13.03	2.00	2.00	0.00
500.00	8.00	220.06	498.70	-21.34	-17.94	23.15	2.00	2.00	0.00
600.00	10.00	220.06	597.47	-33.31	-28.01	36.14	2.00	2.00	0.00
700.00	12.00	220.06	695.62	-47.91	-40.29	51.98	2.00	2.00	0.00
800.00	14.00	220.06	793.06	-65.13	-54.77	70.66	2.00	2.00	0.00
900.00	16.00	220.06	889.64	-84.94	-71.43	92.14	2.00	2.00	0.00
1,000.00	18.00	220.06	985.27	-107.31	-90.24	116.42	2.00	2.00	0.00
1,100.00	20.00	220.06	1,079.82	-132.23	-111.20	143.45	2.00	2.00	0.00
1,200.00	22.00	220.06	1,173.17	-159.65	-134.26	173.20	2.00	2.00	0.00
1,233.33	22.67	220.06	1,204.00	-169.35	-142.41	183.72	2.00	2.00	0.00
Laramie-Fox Hills Formation									
1,300.00	24.00	220.06	1,265.21	-189.56	-159.41	205.64	2.00	2.00	0.00
1,400.00	26.00	220.06	1,355.84	-221.90	-186.61	240.73	2.00	2.00	0.00
1,500.00	28.00	220.06	1,444.94	-256.65	-215.82	278.43	2.00	2.00	0.00
1,521.63	28.43	220.06	1,464.00	-264.47	-222.41	286.92	2.00	2.00	0.00
Pierre Formation									
1,600.00	30.00	220.06	1,532.39	-293.75	-247.03	318.68	2.00	2.00	0.00
1,700.00	32.00	220.06	1,618.11	-333.16	-280.17	361.44	2.00	2.00	0.00
1,800.00	34.00	220.06	1,701.97	-374.85	-315.22	406.66	2.00	2.00	0.00
1,900.00	36.00	220.06	1,783.88	-418.74	-352.14	454.28	2.00	2.00	0.00
2,000.00	38.00	220.06	1,863.74	-464.80	-390.87	504.25	2.00	2.00	0.00
2,076.40	39.53	220.06	1,923.31	-501.41	-421.66	543.96	2.00	2.00	0.00
Start 6679.07 hold at 2076.40 MD									
2,100.00	39.53	220.06	1,941.51	-512.91	-431.32	556.43	0.00	0.00	0.00
2,148.60	39.53	220.06	1,979.00	-536.58	-451.23	582.12	0.00	0.00	0.00
Upper Pierre aquifer									
2,200.00	39.53	220.06	2,018.64	-561.62	-472.29	609.28	0.00	0.00	0.00
2,300.00	39.53	220.06	2,095.77	-610.33	-513.25	662.13	0.00	0.00	0.00
2,400.00	39.53	220.06	2,172.91	-659.04	-554.21	714.97	0.00	0.00	0.00
2,500.00	39.53	220.06	2,250.04	-707.75	-595.18	767.82	0.00	0.00	0.00
2,582.93	39.53	220.06	2,314.00	-748.15	-629.15	811.64	0.00	0.00	0.00
Base of Upper Pierre aquifer									
2,600.00	39.53	220.06	2,327.17	-756.46	-636.14	820.66	0.00	0.00	0.00
2,700.00	39.53	220.06	2,404.30	-805.17	-677.10	873.51	0.00	0.00	0.00
2,800.00	39.53	220.06	2,481.43	-853.88	-718.07	926.35	0.00	0.00	0.00
2,900.00	39.53	220.06	2,558.56	-902.60	-759.03	979.20	0.00	0.00	0.00
3,000.00	39.53	220.06	2,635.69	-951.31	-799.99	1,032.04	0.00	0.00	0.00
3,100.00	39.53	220.06	2,712.83	-1,000.02	-840.96	1,084.89	0.00	0.00	0.00
3,200.00	39.53	220.06	2,789.96	-1,048.73	-881.92	1,137.73	0.00	0.00	0.00
3,300.00	39.53	220.06	2,867.09	-1,097.44	-922.88	1,190.58	0.00	0.00	0.00
3,400.00	39.53	220.06	2,944.22	-1,146.15	-963.85	1,243.42	0.00	0.00	0.00
3,500.00	39.53	220.06	3,021.35	-1,194.86	-1,004.81	1,296.27	0.00	0.00	0.00
3,600.00	39.53	220.06	3,098.48	-1,243.57	-1,045.77	1,349.11	0.00	0.00	0.00
3,700.00	39.53	220.06	3,175.61	-1,292.28	-1,086.74	1,401.96	0.00	0.00	0.00
3,800.00	39.53	220.06	3,252.74	-1,341.00	-1,127.70	1,454.80	0.00	0.00	0.00
3,900.00	39.53	220.06	3,329.88	-1,389.71	-1,168.66	1,507.65	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
4,000.00	39.53	220.06	3,407.01	-1,438.42	-1,209.63	1,560.49	0.00	0.00	0.00	
4,100.00	39.53	220.06	3,484.14	-1,487.13	-1,250.59	1,613.34	0.00	0.00	0.00	
4,200.00	39.53	220.06	3,561.27	-1,535.84	-1,291.55	1,666.18	0.00	0.00	0.00	
4,300.00	39.53	220.06	3,638.40	-1,584.55	-1,332.52	1,719.03	0.00	0.00	0.00	
4,400.00	39.53	220.06	3,715.53	-1,633.26	-1,373.48	1,771.87	0.00	0.00	0.00	
4,500.00	39.53	220.06	3,792.66	-1,681.97	-1,414.44	1,824.72	0.00	0.00	0.00	
4,600.00	39.53	220.06	3,869.79	-1,730.68	-1,455.41	1,877.56	0.00	0.00	0.00	
4,700.00	39.53	220.06	3,946.93	-1,779.40	-1,496.37	1,930.41	0.00	0.00	0.00	
4,800.00	39.53	220.06	4,024.06	-1,828.11	-1,537.33	1,983.25	0.00	0.00	0.00	
4,900.00	39.53	220.06	4,101.19	-1,876.82	-1,578.30	2,036.10	0.00	0.00	0.00	
5,000.00	39.53	220.06	4,178.32	-1,925.53	-1,619.26	2,088.94	0.00	0.00	0.00	
5,100.00	39.53	220.06	4,255.45	-1,974.24	-1,660.22	2,141.79	0.00	0.00	0.00	
5,200.00	39.53	220.06	4,332.58	-2,022.95	-1,701.19	2,194.63	0.00	0.00	0.00	
5,300.00	39.53	220.06	4,409.71	-2,071.66	-1,742.15	2,247.48	0.00	0.00	0.00	
5,400.00	39.53	220.06	4,486.84	-2,120.37	-1,783.11	2,300.32	0.00	0.00	0.00	
5,500.00	39.53	220.06	4,563.98	-2,169.09	-1,824.08	2,353.17	0.00	0.00	0.00	
5,600.00	39.53	220.06	4,641.11	-2,217.80	-1,865.04	2,406.01	0.00	0.00	0.00	
5,616.72	39.53	220.06	4,654.00	-2,225.94	-1,871.89	2,414.85	0.00	0.00	0.00	
Larimer sandstone										
5,700.00	39.53	220.06	4,718.24	-2,266.51	-1,906.00	2,458.86	0.00	0.00	0.00	
5,800.00	39.53	220.06	4,795.37	-2,315.22	-1,946.97	2,511.70	0.00	0.00	0.00	
5,900.00	39.53	220.06	4,872.50	-2,363.93	-1,987.93	2,564.55	0.00	0.00	0.00	
6,000.00	39.53	220.06	4,949.63	-2,412.64	-2,028.89	2,617.39	0.00	0.00	0.00	
6,038.08	39.53	220.06	4,979.00	-2,431.19	-2,044.49	2,637.51	0.00	0.00	0.00	
Terry ("Sussex") sandstone										
6,100.00	39.53	220.06	5,026.76	-2,461.35	-2,069.86	2,670.24	0.00	0.00	0.00	
6,200.00	39.53	220.06	5,103.89	-2,510.06	-2,110.82	2,723.08	0.00	0.00	0.00	
6,300.00	39.53	220.06	5,181.03	-2,558.77	-2,151.78	2,775.93	0.00	0.00	0.00	
6,400.00	39.53	220.06	5,258.16	-2,607.49	-2,192.75	2,828.77	0.00	0.00	0.00	
6,500.00	39.53	220.06	5,335.29	-2,656.20	-2,233.71	2,881.62	0.00	0.00	0.00	
6,600.00	39.53	220.06	5,412.42	-2,704.91	-2,274.67	2,934.46	0.00	0.00	0.00	
6,700.00	39.53	220.06	5,489.55	-2,753.62	-2,315.64	2,987.31	0.00	0.00	0.00	
6,800.00	39.53	220.06	5,566.68	-2,802.33	-2,356.60	3,040.15	0.00	0.00	0.00	
6,900.00	39.53	220.06	5,643.81	-2,851.04	-2,397.56	3,093.00	0.00	0.00	0.00	
6,978.03	39.53	220.06	5,704.00	-2,889.05	-2,429.53	3,134.24	0.00	0.00	0.00	
Hygiene ("Shannon") sandstone										
7,000.00	39.53	220.06	5,720.94	-2,899.75	-2,438.53	3,145.84	0.00	0.00	0.00	
7,100.00	39.53	220.06	5,798.08	-2,948.46	-2,479.49	3,198.69	0.00	0.00	0.00	
7,200.00	39.53	220.06	5,875.21	-2,997.17	-2,520.45	3,251.53	0.00	0.00	0.00	
7,300.00	39.53	220.06	5,952.34	-3,045.89	-2,561.42	3,304.38	0.00	0.00	0.00	
7,400.00	39.53	220.06	6,029.47	-3,094.60	-2,602.38	3,357.22	0.00	0.00	0.00	
7,500.00	39.53	220.06	6,106.60	-3,143.31	-2,643.34	3,410.07	0.00	0.00	0.00	
7,600.00	39.53	220.06	6,183.73	-3,192.02	-2,684.31	3,462.92	0.00	0.00	0.00	
7,700.00	39.53	220.06	6,260.86	-3,240.73	-2,725.27	3,515.76	0.00	0.00	0.00	
7,800.00	39.53	220.06	6,338.00	-3,289.44	-2,766.23	3,568.61	0.00	0.00	0.00	
7,900.00	39.53	220.06	6,415.13	-3,338.15	-2,807.20	3,621.45	0.00	0.00	0.00	
8,000.00	39.53	220.06	6,492.26	-3,386.86	-2,848.16	3,674.30	0.00	0.00	0.00	
8,100.00	39.53	220.06	6,569.39	-3,435.57	-2,889.12	3,727.14	0.00	0.00	0.00	
8,200.00	39.53	220.06	6,646.52	-3,484.29	-2,930.09	3,779.99	0.00	0.00	0.00	
8,300.00	39.53	220.06	6,723.65	-3,533.00	-2,971.05	3,832.83	0.00	0.00	0.00	
8,400.00	39.53	220.06	6,800.78	-3,581.71	-3,012.01	3,885.68	0.00	0.00	0.00	
8,500.00	39.53	220.06	6,877.91	-3,630.42	-3,052.98	3,938.52	0.00	0.00	0.00	
8,600.00	39.53	220.06	6,955.05	-3,679.13	-3,093.94	3,991.37	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
8,700.00	39.53	220.06	7,032.18	-3,727.84	-3,134.90	4,044.21	0.00	0.00	0.00	
8,755.47	39.53	220.06	7,074.96	-3,754.86	-3,157.63	4,073.53	0.00	0.00	0.00	
Start DLS 10.00 TFO 57.04										
8,800.00	42.09	225.64	7,108.67	-3,776.15	-3,177.42	4,098.44	10.00	5.75	12.53	
8,850.00	45.25	231.25	7,144.85	-3,799.00	-3,203.27	4,129.60	10.00	6.33	11.22	
8,900.00	48.66	236.26	7,178.98	-3,820.55	-3,232.74	4,163.89	10.00	6.82	10.01	
8,950.00	52.27	240.75	7,210.81	-3,840.65	-3,265.62	4,201.05	10.00	7.21	8.99	
9,000.00	56.03	244.82	7,240.10	-3,859.14	-3,301.66	4,240.80	10.00	7.52	8.14	
9,050.00	59.91	248.54	7,266.63	-3,875.88	-3,340.58	4,282.83	10.00	7.76	7.44	
9,100.00	63.89	251.98	7,290.18	-3,890.75	-3,382.08	4,326.83	10.00	7.96	6.87	
9,150.00	67.94	255.18	7,310.58	-3,903.63	-3,425.86	4,372.46	10.00	8.11	6.41	
9,170.49	69.62	256.44	7,318.00	-3,908.31	-3,444.38	4,391.54	10.00	8.20	6.15	
Sharon Springs Member										
9,200.00	72.05	258.21	7,327.69	-3,914.42	-3,471.57	4,419.37	10.00	8.25	5.99	
9,250.00	76.21	261.10	7,341.36	-3,923.05	-3,518.87	4,467.20	10.00	8.32	5.78	
9,300.00	80.40	263.88	7,351.49	-3,929.44	-3,567.40	4,515.61	10.00	8.38	5.57	
9,350.00	84.62	266.60	7,358.01	-3,933.54	-3,616.78	4,564.20	10.00	8.42	5.44	
9,400.00	88.84	269.28	7,360.86	-3,935.33	-3,666.65	4,612.62	10.00	8.45	5.36	
9,413.73	90.00	270.01	7,361.00	-3,935.42	-3,680.38	4,625.83	10.00	8.45	5.34	
Start 9974.69 hold at 9413.73 MD - Niobrara Formation										
9,500.00	90.00	270.01	7,361.00	-3,935.40	-3,766.65	4,708.73	0.00	0.00	0.00	
9,600.00	90.00	270.01	7,361.00	-3,935.37	-3,866.65	4,804.81	0.00	0.00	0.00	
9,700.00	90.00	270.01	7,361.00	-3,935.35	-3,966.65	4,900.90	0.00	0.00	0.00	
9,800.00	90.00	270.01	7,361.00	-3,935.32	-4,066.65	4,996.99	0.00	0.00	0.00	
9,900.00	90.00	270.01	7,361.00	-3,935.30	-4,166.65	5,093.07	0.00	0.00	0.00	
10,000.00	90.00	270.01	7,361.00	-3,935.28	-4,266.65	5,189.16	0.00	0.00	0.00	
10,100.00	90.00	270.01	7,361.00	-3,935.25	-4,366.65	5,285.25	0.00	0.00	0.00	
10,200.00	90.00	270.01	7,361.00	-3,935.23	-4,466.65	5,381.33	0.00	0.00	0.00	
10,300.00	90.00	270.01	7,361.00	-3,935.21	-4,566.65	5,477.42	0.00	0.00	0.00	
10,400.00	90.00	270.01	7,361.00	-3,935.18	-4,666.65	5,573.51	0.00	0.00	0.00	
10,500.00	90.00	270.01	7,361.00	-3,935.16	-4,766.65	5,669.60	0.00	0.00	0.00	
10,600.00	90.00	270.01	7,361.00	-3,935.13	-4,866.65	5,765.68	0.00	0.00	0.00	
10,700.00	90.00	270.01	7,361.00	-3,935.11	-4,966.65	5,861.77	0.00	0.00	0.00	
10,800.00	90.00	270.01	7,361.00	-3,935.09	-5,066.65	5,957.86	0.00	0.00	0.00	
10,900.00	90.00	270.01	7,361.00	-3,935.06	-5,166.65	6,053.94	0.00	0.00	0.00	
11,000.00	90.00	270.01	7,361.00	-3,935.04	-5,266.65	6,150.03	0.00	0.00	0.00	
11,100.00	90.00	270.01	7,361.00	-3,935.01	-5,366.65	6,246.12	0.00	0.00	0.00	
11,200.00	90.00	270.01	7,361.00	-3,934.99	-5,466.65	6,342.20	0.00	0.00	0.00	
11,300.00	90.00	270.01	7,361.00	-3,934.97	-5,566.65	6,438.29	0.00	0.00	0.00	
11,400.00	90.00	270.01	7,361.00	-3,934.94	-5,666.65	6,534.38	0.00	0.00	0.00	
11,500.00	90.00	270.01	7,361.00	-3,934.92	-5,766.65	6,630.46	0.00	0.00	0.00	
11,600.00	90.00	270.01	7,361.00	-3,934.89	-5,866.65	6,726.55	0.00	0.00	0.00	
11,700.00	90.00	270.01	7,361.00	-3,934.87	-5,966.65	6,822.64	0.00	0.00	0.00	
11,800.00	90.00	270.01	7,361.00	-3,934.85	-6,066.65	6,918.72	0.00	0.00	0.00	
11,900.00	90.00	270.01	7,361.00	-3,934.82	-6,166.65	7,014.81	0.00	0.00	0.00	
12,000.00	90.00	270.01	7,361.00	-3,934.80	-6,266.65	7,110.90	0.00	0.00	0.00	
12,100.00	90.00	270.01	7,361.00	-3,934.78	-6,366.65	7,206.98	0.00	0.00	0.00	
12,200.00	90.00	270.01	7,361.00	-3,934.75	-6,466.65	7,303.07	0.00	0.00	0.00	
12,300.00	90.00	270.01	7,361.00	-3,934.73	-6,566.65	7,399.16	0.00	0.00	0.00	
12,400.00	90.00	270.01	7,361.00	-3,934.70	-6,666.65	7,495.25	0.00	0.00	0.00	
12,500.00	90.00	270.01	7,361.00	-3,934.68	-6,766.65	7,591.33	0.00	0.00	0.00	
12,600.00	90.00	270.01	7,361.00	-3,934.66	-6,866.65	7,687.42	0.00	0.00	0.00	
12,700.00	90.00	270.01	7,361.00	-3,934.63	-6,966.65	7,783.51	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
12,800.00	90.00	270.01	7,361.00	-3,934.61	-7,066.65	7,879.59	0.00	0.00	0.00	
12,900.00	90.00	270.01	7,361.00	-3,934.58	-7,166.65	7,975.68	0.00	0.00	0.00	
13,000.00	90.00	270.01	7,361.00	-3,934.56	-7,266.65	8,071.77	0.00	0.00	0.00	
13,100.00	90.00	270.01	7,361.00	-3,934.54	-7,366.65	8,167.85	0.00	0.00	0.00	
13,200.00	90.00	270.01	7,361.00	-3,934.51	-7,466.65	8,263.94	0.00	0.00	0.00	
13,300.00	90.00	270.01	7,361.00	-3,934.49	-7,566.65	8,360.03	0.00	0.00	0.00	
13,400.00	90.00	270.01	7,361.00	-3,934.46	-7,666.65	8,456.11	0.00	0.00	0.00	
13,500.00	90.00	270.01	7,361.00	-3,934.44	-7,766.65	8,552.20	0.00	0.00	0.00	
13,600.00	90.00	270.01	7,361.00	-3,934.42	-7,866.65	8,648.29	0.00	0.00	0.00	
13,700.00	90.00	270.01	7,361.00	-3,934.39	-7,966.65	8,744.37	0.00	0.00	0.00	
13,800.00	90.00	270.01	7,361.00	-3,934.37	-8,066.65	8,840.46	0.00	0.00	0.00	
13,900.00	90.00	270.01	7,361.00	-3,934.35	-8,166.65	8,936.55	0.00	0.00	0.00	
14,000.00	90.00	270.01	7,361.00	-3,934.32	-8,266.65	9,032.64	0.00	0.00	0.00	
14,100.00	90.00	270.01	7,361.00	-3,934.30	-8,366.65	9,128.72	0.00	0.00	0.00	
14,200.00	90.00	270.01	7,361.00	-3,934.27	-8,466.65	9,224.81	0.00	0.00	0.00	
14,300.00	90.00	270.01	7,361.00	-3,934.25	-8,566.65	9,320.90	0.00	0.00	0.00	
14,400.00	90.00	270.01	7,361.00	-3,934.23	-8,666.65	9,416.98	0.00	0.00	0.00	
14,500.00	90.00	270.01	7,361.00	-3,934.20	-8,766.65	9,513.07	0.00	0.00	0.00	
14,600.00	90.00	270.01	7,361.00	-3,934.18	-8,866.65	9,609.16	0.00	0.00	0.00	
14,700.00	90.00	270.01	7,361.00	-3,934.15	-8,966.65	9,705.24	0.00	0.00	0.00	
14,800.00	90.00	270.01	7,361.00	-3,934.13	-9,066.65	9,801.33	0.00	0.00	0.00	
14,900.00	90.00	270.01	7,361.00	-3,934.11	-9,166.65	9,897.42	0.00	0.00	0.00	
15,000.00	90.00	270.01	7,361.00	-3,934.08	-9,266.65	9,993.50	0.00	0.00	0.00	
15,100.00	90.00	270.01	7,361.00	-3,934.06	-9,366.65	10,089.59	0.00	0.00	0.00	
15,200.00	90.00	270.01	7,361.00	-3,934.03	-9,466.65	10,185.68	0.00	0.00	0.00	
15,300.00	90.00	270.01	7,361.00	-3,934.01	-9,566.65	10,281.76	0.00	0.00	0.00	
15,400.00	90.00	270.01	7,361.00	-3,933.99	-9,666.65	10,377.85	0.00	0.00	0.00	
15,500.00	90.00	270.01	7,361.00	-3,933.96	-9,766.65	10,473.94	0.00	0.00	0.00	
15,600.00	90.00	270.01	7,361.00	-3,933.94	-9,866.65	10,570.02	0.00	0.00	0.00	
15,700.00	90.00	270.01	7,361.00	-3,933.92	-9,966.65	10,666.11	0.00	0.00	0.00	
15,800.00	90.00	270.01	7,361.00	-3,933.89	-10,066.65	10,762.20	0.00	0.00	0.00	
15,900.00	90.00	270.01	7,361.00	-3,933.87	-10,166.65	10,858.29	0.00	0.00	0.00	
16,000.00	90.00	270.01	7,361.00	-3,933.84	-10,266.65	10,954.37	0.00	0.00	0.00	
16,100.00	90.00	270.01	7,361.00	-3,933.82	-10,366.65	11,050.46	0.00	0.00	0.00	
16,200.00	90.00	270.01	7,361.00	-3,933.80	-10,466.65	11,146.55	0.00	0.00	0.00	
16,300.00	90.00	270.01	7,361.00	-3,933.77	-10,566.65	11,242.63	0.00	0.00	0.00	
16,400.00	90.00	270.01	7,361.00	-3,933.75	-10,666.65	11,338.72	0.00	0.00	0.00	
16,500.00	90.00	270.01	7,361.00	-3,933.72	-10,766.65	11,434.81	0.00	0.00	0.00	
16,600.00	90.00	270.01	7,361.00	-3,933.70	-10,866.65	11,530.89	0.00	0.00	0.00	
16,700.00	90.00	270.01	7,361.00	-3,933.68	-10,966.65	11,626.98	0.00	0.00	0.00	
16,800.00	90.00	270.01	7,361.00	-3,933.65	-11,066.65	11,723.07	0.00	0.00	0.00	
16,900.00	90.00	270.01	7,361.00	-3,933.63	-11,166.65	11,819.15	0.00	0.00	0.00	
17,000.00	90.00	270.01	7,361.00	-3,933.60	-11,266.65	11,915.24	0.00	0.00	0.00	
17,100.00	90.00	270.01	7,361.00	-3,933.58	-11,366.65	12,011.33	0.00	0.00	0.00	
17,200.00	90.00	270.01	7,361.00	-3,933.56	-11,466.65	12,107.41	0.00	0.00	0.00	
17,300.00	90.00	270.01	7,361.00	-3,933.53	-11,566.65	12,203.50	0.00	0.00	0.00	
17,400.00	90.00	270.01	7,361.00	-3,933.51	-11,666.65	12,299.59	0.00	0.00	0.00	
17,500.00	90.00	270.01	7,361.00	-3,933.49	-11,766.65	12,395.67	0.00	0.00	0.00	
17,600.00	90.00	270.01	7,361.00	-3,933.46	-11,866.65	12,491.76	0.00	0.00	0.00	
17,700.00	90.00	270.01	7,361.00	-3,933.44	-11,966.65	12,587.85	0.00	0.00	0.00	
17,800.00	90.00	270.01	7,361.00	-3,933.41	-12,066.65	12,683.94	0.00	0.00	0.00	
17,900.00	90.00	270.01	7,361.00	-3,933.39	-12,166.65	12,780.02	0.00	0.00	0.00	
18,000.00	90.00	270.01	7,361.00	-3,933.37	-12,266.65	12,876.11	0.00	0.00	0.00	
18,100.00	90.00	270.01	7,361.00	-3,933.34	-12,366.65	12,972.20	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
18,200.00	90.00	270.01	7,361.00	-3,933.32	-12,466.65	13,068.28	0.00	0.00	0.00	
18,300.00	90.00	270.01	7,361.00	-3,933.29	-12,566.65	13,164.37	0.00	0.00	0.00	
18,400.00	90.00	270.01	7,361.00	-3,933.27	-12,666.65	13,260.46	0.00	0.00	0.00	
18,500.00	90.00	270.01	7,361.00	-3,933.25	-12,766.65	13,356.54	0.00	0.00	0.00	
18,600.00	90.00	270.01	7,361.00	-3,933.22	-12,866.65	13,452.63	0.00	0.00	0.00	
18,700.00	90.00	270.01	7,361.00	-3,933.20	-12,966.65	13,548.72	0.00	0.00	0.00	
18,800.00	90.00	270.01	7,361.00	-3,933.17	-13,066.65	13,644.80	0.00	0.00	0.00	
18,900.00	90.00	270.01	7,361.00	-3,933.15	-13,166.65	13,740.89	0.00	0.00	0.00	
19,000.00	90.00	270.01	7,361.00	-3,933.13	-13,266.65	13,836.98	0.00	0.00	0.00	
19,100.00	90.00	270.01	7,361.00	-3,933.10	-13,366.65	13,933.06	0.00	0.00	0.00	
19,200.00	90.00	270.01	7,361.00	-3,933.08	-13,466.65	14,029.15	0.00	0.00	0.00	
19,300.00	90.00	270.01	7,361.00	-3,933.05	-13,566.65	14,125.24	0.00	0.00	0.00	
19,388.42	90.00	270.01	7,361.00	-3,933.03	-13,655.07	14,210.20	0.00	0.00	0.00	
TD at 19388.42										

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										
PBHL-ALMA W 35W-11	0.00	0.00	7,361.00	-3,933.03	-13,655.07	1,214,071.42	3,204,716.61	39.918693°N	104.770132°W	
- plan hits target center										
- Point										
LP-ALMA W 35W-11	0.00	0.00	7,361.00	-3,935.42	-3,680.38	1,214,156.61	3,214,690.67	39.918696°N	104.734571°W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
204.02	204.00	Arapahoe				
1,233.33	1,204.00	Laramie-Fox Hills Formation				
1,521.63	1,464.00	Pierre Formation				
2,148.60	1,979.00	Upper Pierre aquifer				
2,582.93	2,314.00	Base of Upper Pierre aquifer				
5,616.72	4,654.00	Larimer sandstone				
6,038.08	4,979.00	Terry ("Sussex") sandstone				
6,978.03	5,704.00	Hygiene ("Shannon") sandstone				
9,170.49	7,318.00	Sharon Springs Member				
9,413.73	7,361.00	Niobrara Formation				

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well ALMA WEST 35W-20-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 28' @ 5206.00usft
Project:	ADAMS COUNTY	MD Reference:	KB 28' @ 5206.00usft
Site:	Sec 25-T1S-R66W	North Reference:	True
Well:	ALMA WEST 35W-20-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	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	Start Build 2.00
2,076.40	1,923.31	-501.41	-421.66	Start 6679.07 hold at 2076.40 MD
8,755.47	7,074.96	-3,754.86	-3,157.63	Start DLS 10.00 TFO 57.04
9,413.73	7,361.00	-3,935.42	-3,680.38	Start 9974.69 hold at 9413.73 MD
19,388.42	7,361.00	-3,933.03	-13,655.07	TD at 19388.42