

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**2N-65W-29 Alvin 16-29HZ Pad**

**ALVIN 27G-29HZ**

**Plan A**

**Plan: Permit Rev-2**

## **Standard Planning Report**

**10 September, 2015**

Project: WELD-NAD83-UTMFT13N

Site: 2N-65W-29 Alvin 16-29HZ Pad

Well: ALVIN 27G-29HZ

Wellbore: Plan A

Design: Permit Rev-2

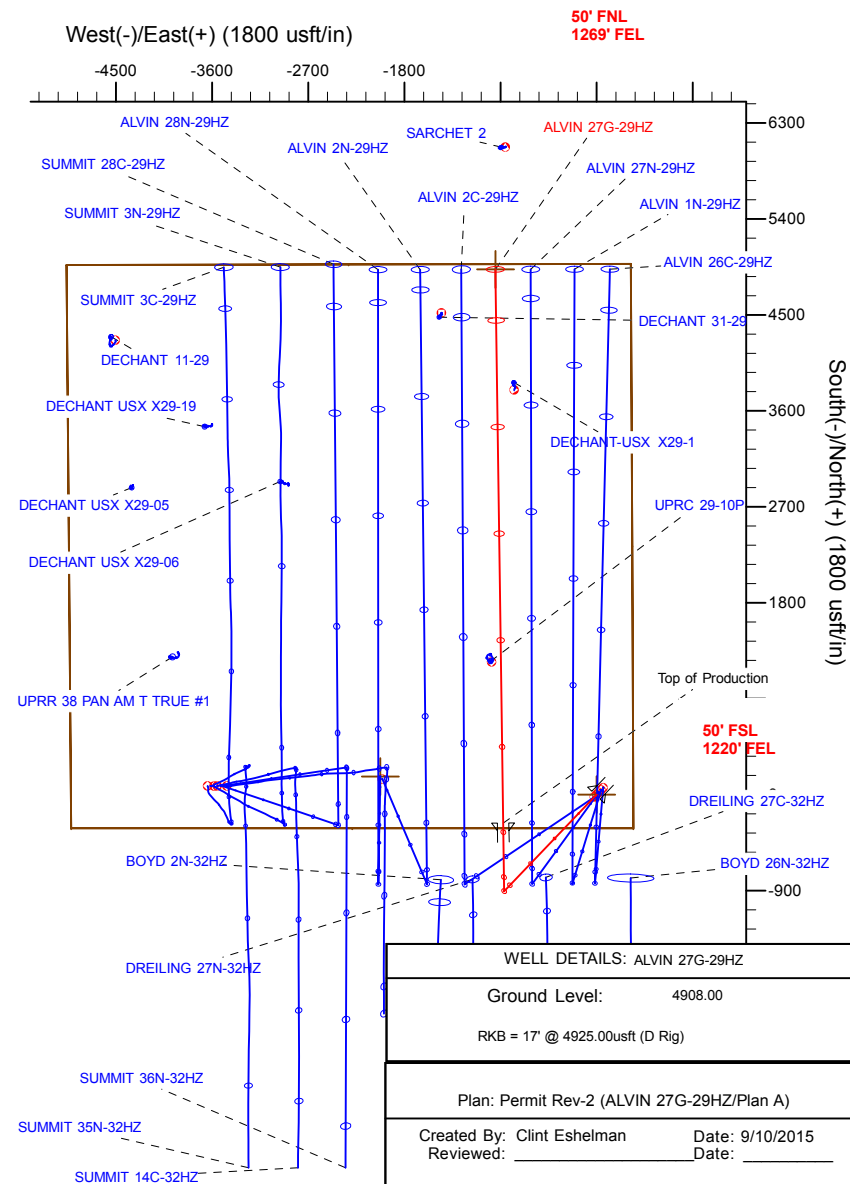
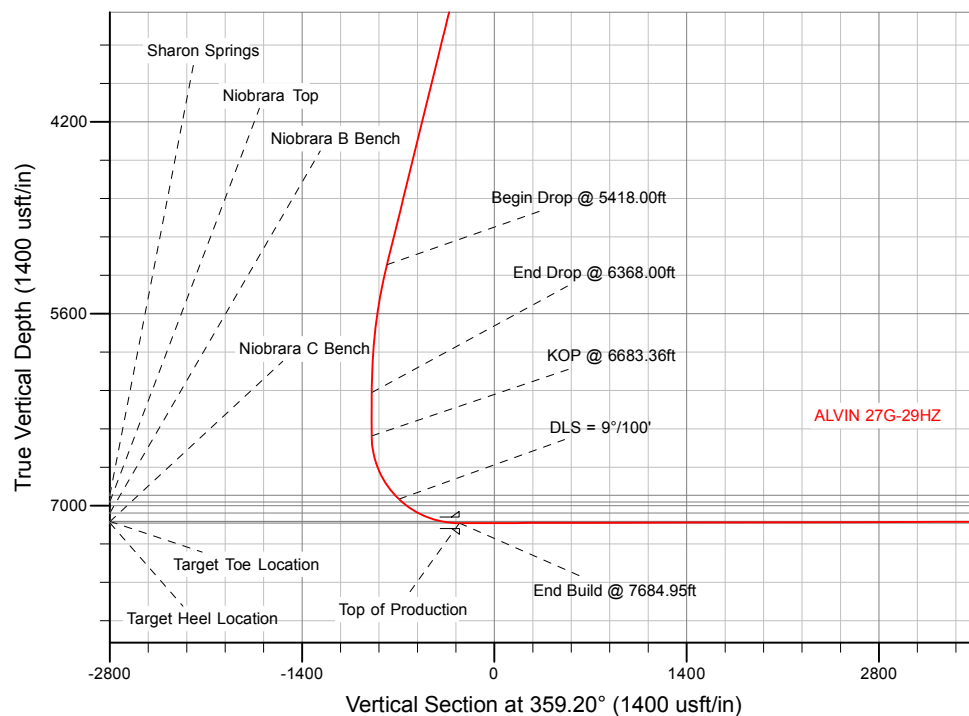
# US ROCKIES WATTENBERG PLANNING

## 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	1580.00	0.00	0.00	1580.00	0.00	0.00	0.00	0.00	0.00	
3	2530.00	19.00	223.75	2512.68	-112.74	-107.93	2.00	223.75	-111.23	
4	5418.00	19.00	223.75	5243.34	-791.94	-758.12	0.00	0.00	-781.28	
5	6368.00	0.00	0.00	6176.03	-904.69	-866.05	2.00	180.00	-892.51	
6	6683.36	0.00	0.00	6491.39	-904.69	-866.05	0.00	0.00	-892.51	
7	7684.95	90.14	359.20	7128.00	-266.53	-874.97	9.00	359.20	-254.29	
8	12878.98	90.14	359.20	7115.00	4926.97	-947.56	0.00	0.00	4939.72	ALVIN 27G-29HZ_TOE

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
ALVIN 27G-29HZ_SHL	0.00	0.00	0.00	40.103100	-104.679549
ALVIN 27G-29HZ_TOE	7115.00	4926.97	-947.56	40.116630	-104.682938



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		2N-65W-29 Alvin 16-29HZ Pad			
Site Position:		Northing:	14,564,416.18 usft	Latitude:	40.103040
From:	Lat/Long	Easting:	1,730,003.62 usft	Longitude:	-104.679623
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	ALVIN 27G-29HZ					
Well Position	+N/-S	21.85 usft	Northing:	14,564,438.10 usft	Latitude:	40.103100
	+E/-W	20.69 usft	Easting:	1,730,024.24 usft	Longitude:	-104.679549
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,908.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/28/2015	8.31	66.70	52,602

<b>Design</b>	Permit Rev-2			
<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	359.20

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,580.00	0.00	0.00	1,580.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,530.00	19.00	223.75	2,512.68	-112.74	-107.93	2.00	2.00	0.00	223.75	
5,418.00	19.00	223.75	5,243.34	-791.94	-758.12	0.00	0.00	0.00	0.00	
6,368.00	0.00	0.00	6,176.03	-904.69	-866.05	2.00	-2.00	14.34	180.00	
6,683.36	0.00	0.00	6,491.39	-904.69	-866.05	0.00	0.00	0.00	0.00	
7,684.95	90.14	359.20	7,128.00	-266.53	-874.97	9.00	9.00	-0.08	359.20	
12,878.98	90.14	359.20	7,115.00	4,926.97	-947.56	0.00	0.00	0.00	0.00	ALVIN 27G-29HZ_TO

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,580.00	0.00	0.00	1,580.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1580.00ft									
1,600.00	0.40	223.75	1,600.00	-0.05	-0.05	-0.05	2.00	2.00	0.00
1,700.00	2.40	223.75	1,699.96	-1.82	-1.74	-1.79	2.00	2.00	0.00
1,800.00	4.40	223.75	1,799.78	-6.10	-5.84	-6.02	2.00	2.00	0.00
1,800.22	4.40	223.75	1,800.00	-6.11	-5.85	-6.03	0.00	0.00	0.00
9 5/8"									
1,900.00	6.40	223.75	1,899.34	-12.90	-12.35	-12.72	2.00	2.00	0.00
2,000.00	8.40	223.75	1,998.50	-22.20	-21.25	-21.90	2.00	2.00	0.00
2,100.00	10.40	223.75	2,097.15	-34.00	-32.55	-33.54	2.00	2.00	0.00
2,200.00	12.40	223.75	2,195.17	-48.27	-46.21	-47.62	2.00	2.00	0.00
2,300.00	14.40	223.75	2,292.44	-65.01	-62.24	-64.14	2.00	2.00	0.00
2,400.00	16.40	223.75	2,388.85	-84.20	-80.60	-83.06	2.00	2.00	0.00
2,500.00	18.40	223.75	2,484.27	-105.80	-101.28	-104.37	2.00	2.00	0.00
2,530.00	19.00	223.75	2,512.68	-112.74	-107.93	-111.23	2.00	2.00	0.00
End Nudge @ 2530.00ft									
2,600.00	19.00	223.75	2,578.87	-129.21	-123.69	-127.47	0.00	0.00	0.00
2,700.00	19.00	223.75	2,673.42	-152.73	-146.20	-150.67	0.00	0.00	0.00
2,800.00	19.00	223.75	2,767.97	-176.24	-168.72	-173.87	0.00	0.00	0.00
2,900.00	19.00	223.75	2,862.53	-199.76	-191.23	-197.07	0.00	0.00	0.00
3,000.00	19.00	223.75	2,957.08	-223.28	-213.74	-220.27	0.00	0.00	0.00
3,100.00	19.00	223.75	3,051.63	-246.80	-236.26	-243.47	0.00	0.00	0.00
3,200.00	19.00	223.75	3,146.18	-270.31	-258.77	-266.68	0.00	0.00	0.00
3,300.00	19.00	223.75	3,240.73	-293.83	-281.28	-289.88	0.00	0.00	0.00
3,400.00	19.00	223.75	3,335.29	-317.35	-303.80	-313.08	0.00	0.00	0.00
3,500.00	19.00	223.75	3,429.84	-340.87	-326.31	-336.28	0.00	0.00	0.00
3,600.00	19.00	223.75	3,524.39	-364.39	-348.82	-359.48	0.00	0.00	0.00
3,700.00	19.00	223.75	3,618.94	-387.90	-371.34	-382.68	0.00	0.00	0.00
3,800.00	19.00	223.75	3,713.49	-411.42	-393.85	-405.88	0.00	0.00	0.00
3,900.00	19.00	223.75	3,808.04	-434.94	-416.36	-429.08	0.00	0.00	0.00
4,000.00	19.00	223.75	3,902.60	-458.46	-438.88	-452.29	0.00	0.00	0.00
4,100.00	19.00	223.75	3,997.15	-481.98	-461.39	-475.49	0.00	0.00	0.00
4,200.00	19.00	223.75	4,091.70	-505.49	-483.90	-498.69	0.00	0.00	0.00
4,300.00	19.00	223.75	4,186.25	-529.01	-506.42	-521.89	0.00	0.00	0.00
4,400.00	19.00	223.75	4,280.80	-552.53	-528.93	-545.09	0.00	0.00	0.00
4,500.00	19.00	223.75	4,375.36	-576.05	-551.45	-568.29	0.00	0.00	0.00
4,600.00	19.00	223.75	4,469.91	-599.56	-573.96	-591.49	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	19.00	223.75	4,564.46	-623.08	-596.47	-614.69	0.00	0.00	0.00
4,800.00	19.00	223.75	4,659.01	-646.60	-618.99	-637.90	0.00	0.00	0.00
4,900.00	19.00	223.75	4,753.56	-670.12	-641.50	-661.10	0.00	0.00	0.00
5,000.00	19.00	223.75	4,848.12	-693.64	-664.01	-684.30	0.00	0.00	0.00
5,100.00	19.00	223.75	4,942.67	-717.15	-686.53	-707.50	0.00	0.00	0.00
5,200.00	19.00	223.75	5,037.22	-740.67	-709.04	-730.70	0.00	0.00	0.00
5,300.00	19.00	223.75	5,131.77	-764.19	-731.55	-753.90	0.00	0.00	0.00
5,400.00	19.00	223.75	5,226.32	-787.71	-754.07	-777.10	0.00	0.00	0.00
5,418.00	19.00	223.75	5,243.34	-791.94	-758.12	-781.28	0.00	0.00	0.00
<b>Begin Drop @ 5418.00ft</b>									
5,500.00	17.36	223.75	5,321.25	-810.42	-775.81	-799.51	2.00	-2.00	0.00
5,600.00	15.36	223.75	5,417.19	-830.77	-795.29	-819.58	2.00	-2.00	0.00
5,700.00	13.36	223.75	5,514.06	-848.68	-812.44	-837.26	2.00	-2.00	0.00
5,800.00	11.36	223.75	5,611.74	-864.14	-827.24	-852.51	2.00	-2.00	0.00
5,900.00	9.36	223.75	5,710.10	-877.13	-839.67	-865.32	2.00	-2.00	0.00
6,000.00	7.36	223.75	5,809.04	-887.64	-849.73	-875.69	2.00	-2.00	0.00
6,100.00	5.36	223.75	5,908.42	-895.64	-857.39	-883.58	2.00	-2.00	0.00
6,200.00	3.36	223.75	6,008.12	-901.13	-862.64	-889.00	2.00	-2.00	0.00
6,300.00	1.36	223.75	6,108.03	-904.10	-865.49	-891.93	2.00	-2.00	0.00
6,368.00	0.00	0.00	6,176.03	-904.69	-866.05	-892.51	2.00	-2.00	0.00
<b>End Drop @ 6368.00ft</b>									
6,400.00	0.00	0.00	6,208.03	-904.69	-866.05	-892.51	0.00	0.00	0.00
6,500.00	0.00	0.00	6,308.03	-904.69	-866.05	-892.51	0.00	0.00	0.00
6,600.00	0.00	0.00	6,408.03	-904.69	-866.05	-892.51	0.00	0.00	0.00
6,683.36	0.00	0.00	6,491.39	-904.69	-866.05	-892.51	0.00	0.00	0.00
<b>KOP @ 6683.36ft</b>									
6,700.00	1.50	359.20	6,508.02	-904.47	-866.05	-892.29	9.00	9.00	-4.81
6,800.00	10.50	359.20	6,607.37	-894.03	-866.20	-881.85	9.00	9.00	0.00
6,900.00	19.50	359.20	6,703.87	-868.18	-866.56	-856.00	9.00	9.00	0.00
7,000.00	28.50	359.20	6,795.13	-827.56	-867.13	-815.37	9.00	9.00	0.00
7,100.00	37.50	359.20	6,878.91	-773.16	-867.89	-760.97	9.00	9.00	0.00
7,160.37	42.93	359.20	6,925.00	-734.20	-868.43	-722.00	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,200.00	46.50	359.20	6,953.16	-706.33	-868.82	-694.13	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									
7,231.09	49.30	359.20	6,974.00	-683.26	-869.14	-671.06	9.00	9.00	0.00
<b>Niobrara Top</b>									
7,300.00	55.50	359.20	7,016.03	-628.70	-869.91	-616.49	9.00	9.00	0.00
7,375.49	62.29	359.20	7,055.00	-564.11	-870.81	-551.90	9.00	9.00	0.00
<b>Niobrara B Bench</b>									
7,400.00	64.50	359.20	7,065.98	-542.20	-871.12	-529.98	9.00	9.00	0.00
7,500.00	73.50	359.20	7,101.78	-448.95	-872.42	-436.72	9.00	9.00	0.00
7,570.34	79.83	359.20	7,118.00	-380.54	-873.37	-368.31	9.00	9.00	0.00
<b>Niobrara C Bench</b>									
7,600.00	82.50	359.20	7,122.56	-351.24	-873.78	-339.01	9.00	9.00	0.00
7,684.95	90.14	359.20	7,128.00	-266.54	-874.97	-254.30	9.00	9.00	0.00
<b>End Build @ 7684.95ft - Target Heel Location - Top of Production</b>									
7,700.00	90.14	359.20	7,127.97	-251.49	-875.18	-239.25	0.00	0.00	0.00
7,800.00	90.14	359.20	7,127.72	-151.50	-876.58	-139.25	0.00	0.00	0.00
7,900.00	90.14	359.20	7,127.47	-51.51	-877.97	-39.25	0.00	0.00	0.00
8,000.00	90.14	359.20	7,127.22	48.48	-879.37	60.75	0.00	0.00	0.00
8,100.00	90.14	359.20	7,126.96	148.47	-880.77	160.75	0.00	0.00	0.00
8,200.00	90.14	359.20	7,126.71	248.46	-882.17	260.75	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.00	90.14	359.20	7,126.46	348.45	-883.56	360.75	0.00	0.00	0.00
8,400.00	90.14	359.20	7,126.21	448.44	-884.96	460.75	0.00	0.00	0.00
8,500.00	90.14	359.20	7,125.96	548.43	-886.36	560.75	0.00	0.00	0.00
8,600.00	90.14	359.20	7,125.71	648.42	-887.76	660.75	0.00	0.00	0.00
8,700.00	90.14	359.20	7,125.46	748.41	-889.15	760.75	0.00	0.00	0.00
8,800.00	90.14	359.20	7,125.21	848.40	-890.55	860.75	0.00	0.00	0.00
8,900.00	90.14	359.20	7,124.96	948.39	-891.95	960.75	0.00	0.00	0.00
9,000.00	90.14	359.20	7,124.71	1,048.38	-893.35	1,060.75	0.00	0.00	0.00
9,100.00	90.14	359.20	7,124.46	1,148.37	-894.74	1,160.75	0.00	0.00	0.00
9,200.00	90.14	359.20	7,124.21	1,248.36	-896.14	1,260.75	0.00	0.00	0.00
9,300.00	90.14	359.20	7,123.96	1,348.35	-897.54	1,360.75	0.00	0.00	0.00
9,400.00	90.14	359.20	7,123.71	1,448.34	-898.94	1,460.75	0.00	0.00	0.00
9,500.00	90.14	359.20	7,123.46	1,548.33	-900.34	1,560.75	0.00	0.00	0.00
9,600.00	90.14	359.20	7,123.21	1,648.32	-901.73	1,660.75	0.00	0.00	0.00
9,700.00	90.14	359.20	7,122.96	1,748.31	-903.13	1,760.75	0.00	0.00	0.00
9,800.00	90.14	359.20	7,122.71	1,848.30	-904.53	1,860.75	0.00	0.00	0.00
9,900.00	90.14	359.20	7,122.46	1,948.29	-905.93	1,960.75	0.00	0.00	0.00
10,000.00	90.14	359.20	7,122.21	2,048.28	-907.32	2,060.75	0.00	0.00	0.00
10,100.00	90.14	359.20	7,121.96	2,148.27	-908.72	2,160.75	0.00	0.00	0.00
10,200.00	90.14	359.20	7,121.71	2,248.26	-910.12	2,260.75	0.00	0.00	0.00
10,300.00	90.14	359.20	7,121.46	2,348.25	-911.52	2,360.75	0.00	0.00	0.00
10,400.00	90.14	359.20	7,121.21	2,448.24	-912.91	2,460.75	0.00	0.00	0.00
10,500.00	90.14	359.20	7,120.96	2,548.23	-914.31	2,560.75	0.00	0.00	0.00
10,600.00	90.14	359.20	7,120.71	2,648.22	-915.71	2,660.74	0.00	0.00	0.00
10,700.00	90.14	359.20	7,120.46	2,748.21	-917.11	2,760.74	0.00	0.00	0.00
10,800.00	90.14	359.20	7,120.21	2,848.20	-918.50	2,860.74	0.00	0.00	0.00
10,900.00	90.14	359.20	7,119.95	2,948.19	-919.90	2,960.74	0.00	0.00	0.00
11,000.00	90.14	359.20	7,119.70	3,048.18	-921.30	3,060.74	0.00	0.00	0.00
11,100.00	90.14	359.20	7,119.45	3,148.17	-922.70	3,160.74	0.00	0.00	0.00
11,200.00	90.14	359.20	7,119.20	3,248.16	-924.09	3,260.74	0.00	0.00	0.00
11,300.00	90.14	359.20	7,118.95	3,348.15	-925.49	3,360.74	0.00	0.00	0.00
11,400.00	90.14	359.20	7,118.70	3,448.14	-926.89	3,460.74	0.00	0.00	0.00
11,500.00	90.14	359.20	7,118.45	3,548.13	-928.29	3,560.74	0.00	0.00	0.00
11,600.00	90.14	359.20	7,118.20	3,648.12	-929.68	3,660.74	0.00	0.00	0.00
11,700.00	90.14	359.20	7,117.95	3,748.11	-931.08	3,760.74	0.00	0.00	0.00
11,800.00	90.14	359.20	7,117.70	3,848.10	-932.48	3,860.74	0.00	0.00	0.00
11,900.00	90.14	359.20	7,117.45	3,948.09	-933.88	3,960.74	0.00	0.00	0.00
12,000.00	90.14	359.20	7,117.20	4,048.08	-935.28	4,060.74	0.00	0.00	0.00
12,100.00	90.14	359.20	7,116.95	4,148.07	-936.67	4,160.74	0.00	0.00	0.00
12,200.00	90.14	359.20	7,116.70	4,248.06	-938.07	4,260.74	0.00	0.00	0.00
12,300.00	90.14	359.20	7,116.45	4,348.05	-939.47	4,360.74	0.00	0.00	0.00
12,400.00	90.14	359.20	7,116.20	4,448.04	-940.87	4,460.74	0.00	0.00	0.00
12,500.00	90.14	359.20	7,115.95	4,548.03	-942.26	4,560.74	0.00	0.00	0.00
12,600.00	90.14	359.20	7,115.70	4,648.02	-943.66	4,660.74	0.00	0.00	0.00
12,700.00	90.14	359.20	7,115.45	4,748.01	-945.06	4,760.74	0.00	0.00	0.00
12,800.00	90.14	359.20	7,115.20	4,848.00	-946.46	4,860.74	0.00	0.00	0.00
12,878.98	90.14	359.20	7,115.00	4,926.97	-947.56	4,939.72	0.00	0.00	0.00
TD Well @ 12878.98ft - Target Toe Location									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
ALVIN 27G-29HZ_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,564,438.10	1,730,024.24	40.103100	-104.679549
2N-R65W-Sec. 29_Secti - plan misses target center by 2032.79usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-18.00	169.41	-2,025.64	14,564,600.21	1,727,998.00	40.103565	-104.686793
Point 1			-18.00	4,799.36	-2,936.59	14,569,388.96	1,725,044.14		
Point 2			-18.00	4,804.40	-295.69	14,569,403.52	1,727,685.00		
Point 3			-18.00	4,810.08	2,345.69	14,569,418.71	1,730,326.34		
Point 4			-18.00	2,162.85	2,357.93	14,566,771.54	1,730,348.12		
Point 5			-18.00	-485.01	2,369.84	14,564,123.74	1,730,369.57		
Point 6			-18.00	-484.09	-262.06	14,564,115.18	1,727,737.69		
Point 7			-18.00	-484.28	-2,893.43	14,564,105.51	1,725,106.33		
Point 8			-18.00	2,157.59	-2,914.92	14,566,747.29	1,725,075.33		
ALVIN 27G-29HZ_TOE - plan hits target center - Point	0.00	0.00	7,115.00	4,926.97	-947.56	14,569,361.62	1,729,058.93	40.116630	-104.682939
ALVIN 27G-29HZ_BHL - plan misses target center by 274.00usft at 12878.30usft MD (7115.00 TVD, 4926.28 N, -947.55 E) - Point	0.00	0.00	7,389.00	4,926.97	-947.56	14,569,361.62	1,729,058.93	40.116630	-104.682939

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,800.22	1,800.00	9 5/8"	9-5/8	13-1/2	
7,684.95	7,128.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,160.37	6,925.00	Sharon Springs		0.00		
7,231.09	6,974.00	Niobrara Top		0.00		
7,375.49	7,055.00	Niobrara B Bench		0.00		
12,878.98	7,115.00	Target Toe Location		0.00		
7,570.34	7,118.00	Niobrara C Bench		0.00		
7,684.95	7,128.00	Target Heel Location		0.00		

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well ALVIN 27G-29HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4925.00usft (D Rig)
<b>Site:</b>	2N-65W-29 Alvin 16-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	ALVIN 27G-29HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,580.00	1,580.00	0.00	0.00	Begin Nudge @ 1580.00ft
2,530.00	2,512.68	-112.74	-107.93	End Nudge @ 2530.00ft
5,418.00	5,243.34	-791.94	-758.12	Begin Drop @ 5418.00ft
6,368.00	6,176.03	-904.69	-866.05	End Drop @ 6368.00ft
6,683.36	6,491.39	-904.69	-866.05	KOP @ 6683.36ft
7,200.00	6,953.16	-706.33	-868.82	DLS = 9°/100'
7,684.95	7,128.00	-266.54	-874.97	End Build @ 7684.95ft
12,878.98	7,115.00	4,926.97	-947.56	TD Well @ 12878.98ft