

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-66W-09 Highlands 2-9HZ Pad

HIGHLANDS 15N-9HZ

Plan A

Plan: Permit Rev-2

Standard Planning Report

05 October, 2015

Project: WELD-NAD83-UTMFT13N

Site: 1N-66W-09 Highlands 2-9HZ Pad

Well: HIGHLANDS 15N-9HZ

Wellbore: Plan A

Design: Permit Rev-2

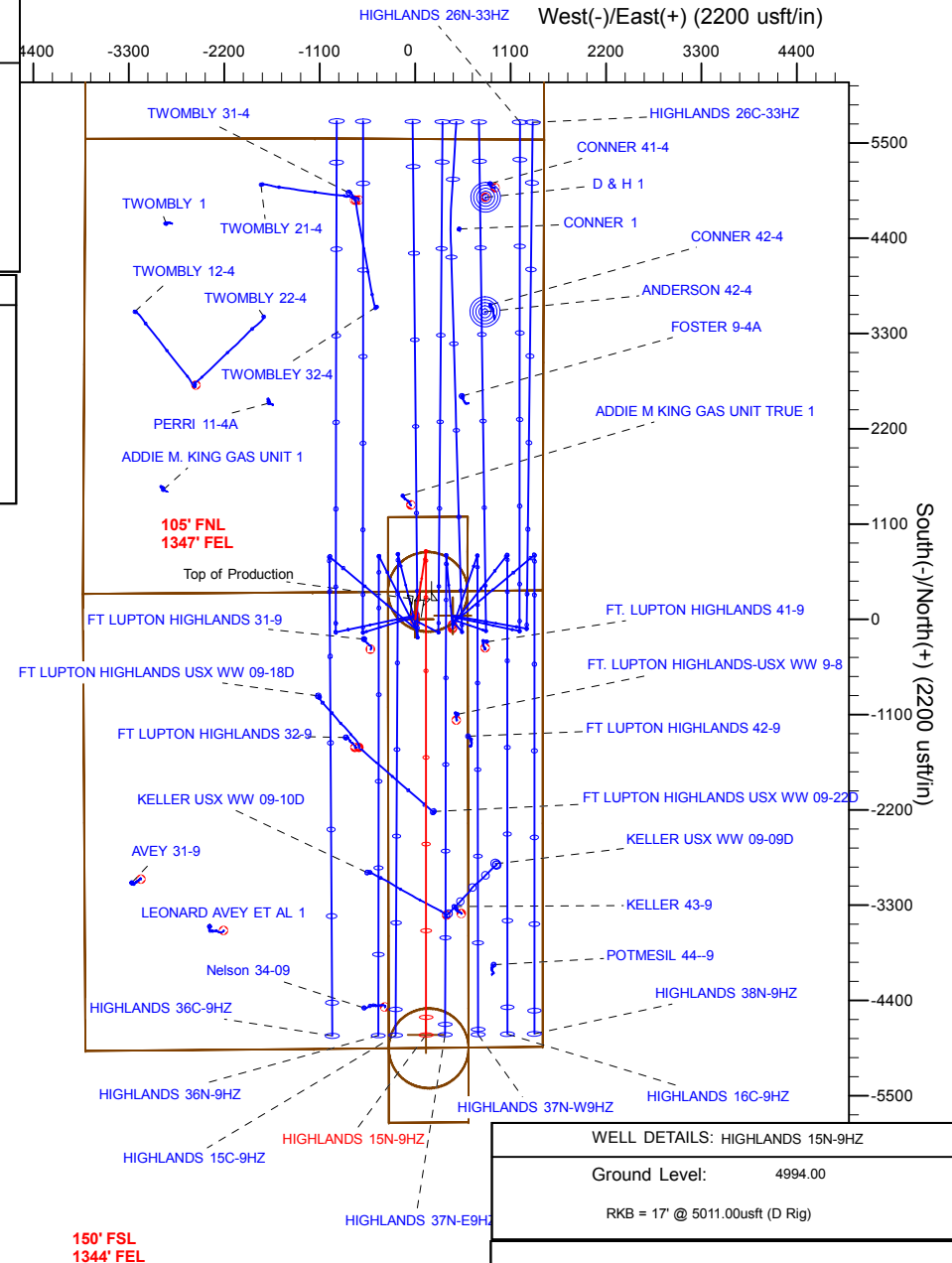
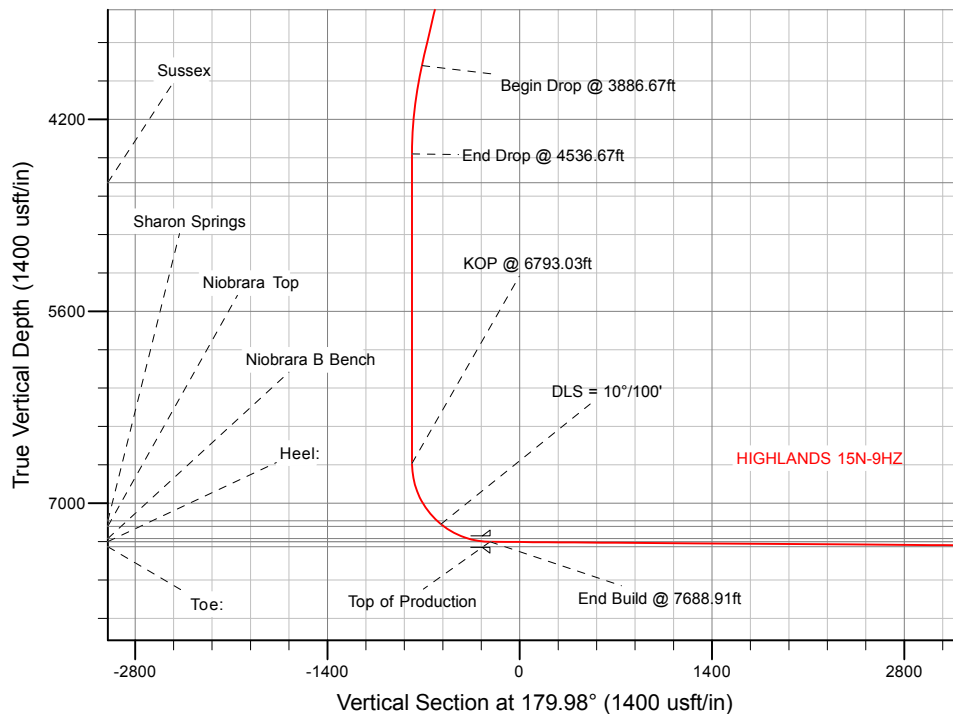
US ROCKIES WATTENBERG PLANNING

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1116.67	13.00	9.00	1109.25	96.69	15.31	1.50	9.00	-96.69	
4	3886.67	13.00	9.00	3808.25	712.14	112.79	0.00	0.00	-712.10	
5	4536.67	0.00	0.00	4452.69	784.66	124.28	2.00	180.00	-784.61	
6	6793.03	0.00	0.00	6709.05	784.66	124.28	0.00	0.00	-784.61	
7	7688.91	89.59	179.98	7282.00	215.81	124.44	10.00	179.98	-215.77	
8	12703.94	89.59	179.98	7318.00	-4799.08	125.91	0.00	0.00	4799.13	HIGHLANDS 15N-9HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HIGHLANDS 15N-9HZ_SHL	0.00	0.00	0.00	40.072127	-104.778003	Point
HIGHLANDS 15N-9HZ_TOE	7318.00	-4799.08	125.91	40.058948	-104.777553	Point



WELL DETAILS: HIGHLANDS 15N-9HZ

Ground Level: 4994.00

RKB = 17' @ 5011.00usft (D Rig)

Plan: Permit Rev-2 (HIGHLANDS 15N-9HZ/Plan A)

Created By: Clint Eshelman Date: 10/05/2015
Reviewed: _____ Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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

Site		1N-66W-09 Highlands 2-9HZ Pad			
Site Position:		Northing:	14,553,120.23 usft	Latitude:	40.072250
From:	Lat/Long	Easting:	1,702,521.87 usft	Longitude:	-104.778002
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.14 °

Well	HIGHLANDS 15N-9HZ					
Well Position	+N/-S	-44.79 usft	Northing:	14,553,075.44 usft	Latitude:	40.072127
	+E/-W	-0.28 usft	Easting:	1,702,521.70 usft	Longitude:	-104.778003
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,994.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/14/2015	8.32	66.65	52,544

Design	Permit Rev-2			
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	179.98

Plan Sections										
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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,116.67	13.00	9.00	1,109.25	96.69	15.31	1.50	1.50	0.00	9.00	
3,886.67	13.00	9.00	3,808.25	712.14	112.79	0.00	0.00	0.00	0.00	
4,536.67	0.00	0.00	4,452.69	784.66	124.28	2.00	-2.00	0.00	180.00	
6,793.03	0.00	0.00	6,709.05	784.66	124.28	0.00	0.00	0.00	0.00	
7,688.91	89.59	179.98	7,282.00	215.81	124.44	10.00	10.00	20.09	179.98	
12,703.94	89.59	179.98	7,318.00	-4,799.08	125.91	0.00	0.00	0.00	0.00	HIGHLANDS 15N-9H.

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	9.00	300.00	0.32	0.05	-0.32	1.50	1.50	0.00
400.00	2.25	9.00	399.96	2.91	0.46	-2.91	1.50	1.50	0.00
500.00	3.75	9.00	499.82	8.08	1.28	-8.08	1.50	1.50	0.00
600.00	5.25	9.00	599.51	15.83	2.51	-15.83	1.50	1.50	0.00
700.00	6.75	9.00	698.96	26.15	4.14	-26.15	1.50	1.50	0.00
800.00	8.25	9.00	798.10	39.04	6.18	-39.04	1.50	1.50	0.00
900.00	9.75	9.00	896.87	54.49	8.63	-54.49	1.50	1.50	0.00
1,000.00	11.25	9.00	995.19	72.49	11.48	-72.49	1.50	1.50	0.00
1,100.00	12.75	9.00	1,093.00	93.03	14.73	-93.02	1.50	1.50	0.00
1,116.67	13.00	9.00	1,109.25	96.69	15.31	-96.69	1.50	1.50	0.00
End Nudge @ 1116.67ft									
1,200.00	13.00	9.00	1,190.45	115.21	18.25	-115.20	0.00	0.00	0.00
1,300.00	13.00	9.00	1,287.88	137.43	21.77	-137.42	0.00	0.00	0.00
1,400.00	13.00	9.00	1,385.32	159.65	25.29	-159.64	0.00	0.00	0.00
1,481.77	13.00	9.00	1,465.00	177.81	28.16	-177.80	0.00	0.00	0.00
Fox Hills									
1,500.00	13.00	9.00	1,482.76	181.86	28.80	-181.85	0.00	0.00	0.00
1,600.00	13.00	9.00	1,580.20	204.08	32.32	-204.07	0.00	0.00	0.00
1,700.00	13.00	9.00	1,677.63	226.30	35.84	-226.29	0.00	0.00	0.00
1,800.00	13.00	9.00	1,775.07	248.52	39.36	-248.50	0.00	0.00	0.00
1,825.59	13.00	9.00	1,800.00	254.20	40.26	-254.19	0.00	0.00	0.00
9 5/8"									
1,900.00	13.00	9.00	1,872.51	270.74	42.88	-270.72	0.00	0.00	0.00
2,000.00	13.00	9.00	1,969.94	292.95	46.40	-292.94	0.00	0.00	0.00
2,100.00	13.00	9.00	2,067.38	315.17	49.92	-315.15	0.00	0.00	0.00
2,200.00	13.00	9.00	2,164.82	337.39	53.44	-337.37	0.00	0.00	0.00
2,300.00	13.00	9.00	2,262.25	359.61	56.96	-359.59	0.00	0.00	0.00
2,400.00	13.00	9.00	2,359.69	381.83	60.48	-381.81	0.00	0.00	0.00
2,500.00	13.00	9.00	2,457.13	404.04	63.99	-404.02	0.00	0.00	0.00
2,600.00	13.00	9.00	2,554.57	426.26	67.51	-426.24	0.00	0.00	0.00
2,700.00	13.00	9.00	2,652.00	448.48	71.03	-448.46	0.00	0.00	0.00
2,800.00	13.00	9.00	2,749.44	470.70	74.55	-470.67	0.00	0.00	0.00
2,900.00	13.00	9.00	2,846.88	492.92	78.07	-492.89	0.00	0.00	0.00
3,000.00	13.00	9.00	2,944.31	515.14	81.59	-515.11	0.00	0.00	0.00
3,100.00	13.00	9.00	3,041.75	537.35	85.11	-537.32	0.00	0.00	0.00
3,200.00	13.00	9.00	3,139.19	559.57	88.63	-559.54	0.00	0.00	0.00
3,300.00	13.00	9.00	3,236.62	581.79	92.15	-581.76	0.00	0.00	0.00
3,400.00	13.00	9.00	3,334.06	604.01	95.67	-603.97	0.00	0.00	0.00
3,500.00	13.00	9.00	3,431.50	626.23	99.18	-626.19	0.00	0.00	0.00
3,600.00	13.00	9.00	3,528.94	648.44	102.70	-648.41	0.00	0.00	0.00
3,700.00	13.00	9.00	3,626.37	670.66	106.22	-670.63	0.00	0.00	0.00
3,800.00	13.00	9.00	3,723.81	692.88	109.74	-692.84	0.00	0.00	0.00
3,886.67	13.00	9.00	3,808.26	712.14	112.79	-712.10	0.00	0.00	0.00
Begin Drop @ 3886.67ft									
3,900.00	12.73	9.00	3,821.25	715.07	113.26	-715.03	2.00	-2.00	0.00
4,000.00	10.73	9.00	3,919.16	735.15	116.44	-735.11	2.00	-2.00	0.00
4,100.00	8.73	9.00	4,017.71	751.85	119.08	-751.81	2.00	-2.00	0.00
4,200.00	6.73	9.00	4,116.80	765.14	121.19	-765.10	2.00	-2.00	0.00
4,300.00	4.73	9.00	4,216.29	775.01	122.75	-774.96	2.00	-2.00	0.00

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
4,400.00	2.73	9.00	4,316.08	781.44	123.77	-781.39	2.00	-2.00	0.00
4,500.00	0.73	9.00	4,416.03	784.43	124.24	-784.38	2.00	-2.00	0.00
4,536.67	0.00	0.00	4,452.70	784.66	124.28	-784.61	2.00	-2.00	0.00
End Drop @ 4536.67ft									
4,600.00	0.00	0.00	4,516.03	784.66	124.28	-784.61	0.00	0.00	0.00
4,700.00	0.00	0.00	4,616.03	784.66	124.28	-784.61	0.00	0.00	0.00
4,745.97	0.00	0.00	4,662.00	784.66	124.28	-784.61	0.00	0.00	0.00
Sussex									
4,800.00	0.00	0.00	4,716.03	784.66	124.28	-784.61	0.00	0.00	0.00
4,900.00	0.00	0.00	4,816.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,000.00	0.00	0.00	4,916.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,100.00	0.00	0.00	5,016.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,200.00	0.00	0.00	5,116.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,300.00	0.00	0.00	5,216.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,400.00	0.00	0.00	5,316.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,500.00	0.00	0.00	5,416.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,600.00	0.00	0.00	5,516.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,700.00	0.00	0.00	5,616.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,800.00	0.00	0.00	5,716.03	784.66	124.28	-784.61	0.00	0.00	0.00
5,900.00	0.00	0.00	5,816.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,000.00	0.00	0.00	5,916.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,100.00	0.00	0.00	6,016.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,200.00	0.00	0.00	6,116.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,300.00	0.00	0.00	6,216.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,400.00	0.00	0.00	6,316.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,500.00	0.00	0.00	6,416.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,600.00	0.00	0.00	6,516.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,700.00	0.00	0.00	6,616.03	784.66	124.28	-784.61	0.00	0.00	0.00
6,793.03	0.00	0.00	6,709.06	784.66	124.28	-784.61	0.00	0.00	0.00
KOP @ 6793.03ft									
6,800.00	0.70	179.98	6,716.03	784.61	124.28	-784.57	10.00	10.00	0.00
6,900.00	10.70	179.98	6,815.41	774.70	124.28	-774.66	10.00	10.00	0.00
7,000.00	20.70	179.98	6,911.55	747.68	124.29	-747.64	10.00	10.00	0.00
7,100.00	30.70	179.98	7,001.55	704.37	124.30	-704.33	10.00	10.00	0.00
7,200.00	40.70	179.98	7,082.66	646.10	124.32	-646.05	10.00	10.00	0.00
7,264.06	47.10	179.98	7,128.79	601.70	124.33	-601.66	10.00	10.00	0.00
Sharon Springs									
7,300.00	50.70	179.98	7,152.41	574.62	124.34	-574.58	10.00	10.00	0.00
DLS = 10°/100'									
7,328.30	53.53	179.98	7,169.79	552.29	124.35	-552.25	10.00	10.00	0.00
Niobrara Top									
7,400.00	60.70	179.98	7,208.70	492.12	124.36	-492.07	10.00	10.00	0.00
7,500.00	70.70	179.98	7,249.80	401.10	124.39	-401.05	10.00	10.00	0.00
7,527.02	73.40	179.98	7,258.13	375.39	124.40	-375.35	10.00	10.00	0.00
Niobrara B Bench									
7,600.00	80.70	179.98	7,274.47	304.32	124.42	-304.27	10.00	10.00	0.00
7,688.91	89.59	179.98	7,282.00	215.82	124.44	-215.77	10.00	10.00	0.00
End Build @ 7688.91ft - Heel: - Top of Production									
7,700.00	89.59	179.98	7,282.07	204.73	124.45	-204.68	0.00	0.00	0.00
7,800.00	89.59	179.98	7,282.79	104.73	124.48	-104.69	0.00	0.00	0.00
7,900.00	89.59	179.98	7,283.51	4.73	124.51	-4.69	0.00	0.00	0.00
8,000.00	89.59	179.98	7,284.23	-95.27	124.54	95.31	0.00	0.00	0.00
8,100.00	89.59	179.98	7,284.95	-195.26	124.56	195.31	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
8,200.00	89.59	179.98	7,285.66	-295.26	124.59	295.30	0.00	0.00	0.00
8,300.00	89.59	179.98	7,286.38	-395.26	124.62	395.30	0.00	0.00	0.00
8,400.00	89.59	179.98	7,287.10	-495.26	124.65	495.30	0.00	0.00	0.00
8,500.00	89.59	179.98	7,287.82	-595.25	124.68	595.30	0.00	0.00	0.00
8,600.00	89.59	179.98	7,288.54	-695.25	124.71	695.29	0.00	0.00	0.00
8,700.00	89.59	179.98	7,289.25	-795.25	124.74	795.29	0.00	0.00	0.00
8,800.00	89.59	179.98	7,289.97	-895.25	124.77	895.29	0.00	0.00	0.00
8,900.00	89.59	179.98	7,290.69	-995.24	124.80	995.29	0.00	0.00	0.00
9,000.00	89.59	179.98	7,291.41	-1,095.24	124.83	1,095.28	0.00	0.00	0.00
9,100.00	89.59	179.98	7,292.13	-1,195.24	124.86	1,195.28	0.00	0.00	0.00
9,200.00	89.59	179.98	7,292.84	-1,295.24	124.89	1,295.28	0.00	0.00	0.00
9,300.00	89.59	179.98	7,293.56	-1,395.23	124.92	1,395.28	0.00	0.00	0.00
9,400.00	89.59	179.98	7,294.28	-1,495.23	124.95	1,495.27	0.00	0.00	0.00
9,500.00	89.59	179.98	7,295.00	-1,595.23	124.97	1,595.27	0.00	0.00	0.00
9,600.00	89.59	179.98	7,295.72	-1,695.22	125.00	1,695.27	0.00	0.00	0.00
9,700.00	89.59	179.98	7,296.43	-1,795.22	125.03	1,795.27	0.00	0.00	0.00
9,800.00	89.59	179.98	7,297.15	-1,895.22	125.06	1,895.26	0.00	0.00	0.00
9,900.00	89.59	179.98	7,297.87	-1,995.22	125.09	1,995.26	0.00	0.00	0.00
10,000.00	89.59	179.98	7,298.59	-2,095.21	125.12	2,095.26	0.00	0.00	0.00
10,100.00	89.59	179.98	7,299.31	-2,195.21	125.15	2,195.26	0.00	0.00	0.00
10,200.00	89.59	179.98	7,300.02	-2,295.21	125.18	2,295.25	0.00	0.00	0.00
10,300.00	89.59	179.98	7,300.74	-2,395.21	125.21	2,395.25	0.00	0.00	0.00
10,400.00	89.59	179.98	7,301.46	-2,495.20	125.24	2,495.25	0.00	0.00	0.00
10,500.00	89.59	179.98	7,302.18	-2,595.20	125.27	2,595.25	0.00	0.00	0.00
10,600.00	89.59	179.98	7,302.90	-2,695.20	125.30	2,695.24	0.00	0.00	0.00
10,700.00	89.59	179.98	7,303.61	-2,795.20	125.33	2,795.24	0.00	0.00	0.00
10,800.00	89.59	179.98	7,304.33	-2,895.19	125.36	2,895.24	0.00	0.00	0.00
10,900.00	89.59	179.98	7,305.05	-2,995.19	125.38	2,995.23	0.00	0.00	0.00
11,000.00	89.59	179.98	7,305.77	-3,095.19	125.41	3,095.23	0.00	0.00	0.00
11,100.00	89.59	179.98	7,306.48	-3,195.19	125.44	3,195.23	0.00	0.00	0.00
11,200.00	89.59	179.98	7,307.20	-3,295.18	125.47	3,295.23	0.00	0.00	0.00
11,300.00	89.59	179.98	7,307.92	-3,395.18	125.50	3,395.22	0.00	0.00	0.00
11,400.00	89.59	179.98	7,308.64	-3,495.18	125.53	3,495.22	0.00	0.00	0.00
11,500.00	89.59	179.98	7,309.36	-3,595.18	125.56	3,595.22	0.00	0.00	0.00
11,600.00	89.59	179.98	7,310.07	-3,695.17	125.59	3,695.22	0.00	0.00	0.00
11,700.00	89.59	179.98	7,310.79	-3,795.17	125.62	3,795.21	0.00	0.00	0.00
11,800.00	89.59	179.98	7,311.51	-3,895.17	125.65	3,895.21	0.00	0.00	0.00
11,900.00	89.59	179.98	7,312.23	-3,995.17	125.68	3,995.21	0.00	0.00	0.00
12,000.00	89.59	179.98	7,312.95	-4,095.16	125.71	4,095.21	0.00	0.00	0.00
12,100.00	89.59	179.98	7,313.66	-4,195.16	125.74	4,195.20	0.00	0.00	0.00
12,200.00	89.59	179.98	7,314.38	-4,295.16	125.77	4,295.20	0.00	0.00	0.00
12,300.00	89.59	179.98	7,315.10	-4,395.16	125.79	4,395.20	0.00	0.00	0.00
12,400.00	89.59	179.98	7,315.82	-4,495.15	125.82	4,495.20	0.00	0.00	0.00
12,500.00	89.59	179.98	7,316.54	-4,595.15	125.85	4,595.19	0.00	0.00	0.00
12,600.00	89.59	179.98	7,317.25	-4,695.15	125.88	4,695.19	0.00	0.00	0.00
12,700.00	89.59	179.98	7,317.97	-4,795.14	125.91	4,795.19	0.00	0.00	0.00
12,703.93	89.59	179.98	7,318.00	-4,799.07	125.91	4,799.12	0.00	0.00	0.00
Toe:									
12,703.94	89.59	179.98	7,318.00	-4,799.08	125.91	4,799.13	0.00	0.00	0.00
TD Well @ 12703.94ft									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)		
HIGHLANDS 15N-9HZ_ - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,553,075.44	1,702,521.70	40.072127	-104.778003
Point 1			0.00	783.80	601.39	14,553,860.74	1,703,121.13		
Point 2			0.00	-136.19	606.13	14,552,940.77	1,703,128.17		
Point 3			0.00	-997.21	607.73	14,552,079.75	1,703,131.92		
Point 4			0.00	-2,351.15	610.12	14,550,725.82	1,703,137.68		
Point 5			0.00	-3,648.62	612.58	14,549,428.36	1,703,143.38		
Point 6			0.00	-4,486.06	614.16	14,548,590.93	1,703,147.05		
Point 7			0.00	-4,946.08	615.03	14,548,130.91	1,703,149.07		
Point 8			0.00	-5,406.10	615.26	14,547,670.89	1,703,150.44		
Point 9			0.00	-5,807.43	615.46	14,547,269.57	1,703,151.64		
Point 10			0.00	-5,813.40	-304.53	14,547,261.30	1,702,231.67		
Point 11			0.00	-5,414.67	-304.73	14,547,660.03	1,702,230.48		
Point 12			0.00	-4,950.59	-304.96	14,548,124.11	1,702,229.09		
Point 13			0.00	-4,494.65	-305.82	14,548,580.04	1,702,227.09		
Point 14			0.00	-3,652.23	-307.42	14,549,422.46	1,702,223.39		
Point 15			0.00	-2,349.81	-309.88	14,550,724.87	1,702,217.68		
Point 16			0.00	-1,008.93	-312.25	14,552,065.74	1,702,211.97		
Point 17			0.00	-143.99	-313.86	14,552,930.67	1,702,208.20		
Point 18			0.00	316.02	-314.71	14,553,390.68	1,702,206.20		
Point 19			0.00	776.05	-313.41	14,553,850.71	1,702,206.36		
Point 20			0.00	1,179.07	-312.24	14,554,253.73	1,702,206.52		
Point 21			0.00	1,184.48	607.78	14,554,261.44	1,703,126.52		
Point 22			0.00	783.80	601.39	14,553,860.74	1,703,121.13		
HIGHLANDS 15N-9HZ_ - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,553,075.44	1,702,521.70	40.072127	-104.778003
HIGHLANDS 15N-9HZ_ - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,553,075.44	1,702,521.70	40.072127	-104.778003
Point 1			0.00	-4,490.37	156.19	14,548,585.48	1,702,689.09		
Point 2			0.00	-4,490.82	175.33	14,548,585.07	1,702,708.23		
Point 3			0.00	-4,492.06	194.42	14,548,583.88	1,702,727.32		
Point 4			0.00	-4,494.09	213.45	14,548,581.90	1,702,746.36		
Point 5			0.00	-4,496.91	232.38	14,548,579.13	1,702,765.30		
Point 6			0.00	-4,500.53	251.17	14,548,575.55	1,702,784.10		
Point 7			0.00	-4,504.91	269.81	14,548,571.22	1,702,802.75		
Point 8			0.00	-4,510.07	288.24	14,548,566.11	1,702,821.19		
Point 9			0.00	-4,516.00	306.43	14,548,560.22	1,702,839.39		
Point 10			0.00	-4,522.67	324.38	14,548,553.60	1,702,857.36		
Point 11			0.00	-4,530.08	342.02	14,548,546.23	1,702,875.02		
Point 12			0.00	-4,538.23	359.34	14,548,538.12	1,702,892.36		
Point 13			0.00	-4,547.08	376.31	14,548,529.32	1,702,909.35		
Point 14			0.00	-4,556.63	392.89	14,548,519.81	1,702,925.96		
Point 15			0.00	-4,566.87	409.07	14,548,509.61	1,702,942.16		
Point 16			0.00	-4,577.77	424.80	14,548,498.75	1,702,957.92		
Point 17			0.00	-4,589.31	440.06	14,548,487.24	1,702,973.21		
Point 18			0.00	-4,601.49	454.84	14,548,475.10	1,702,988.02		
Point 19			0.00	-4,614.25	469.09	14,548,462.38	1,703,002.30		
Point 20			0.00	-4,627.61	482.81	14,548,449.05	1,703,016.05		
Point 21			0.00	-4,641.53	495.94	14,548,435.16	1,703,029.22		
Point 22			0.00	-4,655.97	508.50	14,548,420.76	1,703,041.81		
Point 23			0.00	-4,670.93	520.44	14,548,405.83	1,703,053.79		
Point 24			0.00	-4,686.37	531.75	14,548,390.41	1,703,065.14		
Point 25			0.00	-4,702.28	542.40	14,548,374.53	1,703,075.83		
Point 26			0.00	-4,718.60	552.39	14,548,358.24	1,703,085.86		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Point 27	0.00	-4,735.33	561.69	14,548,341.53	1,703,095.20
Point 28	0.00	-4,752.43	570.28	14,548,324.45	1,703,103.83
Point 29	0.00	-4,769.87	578.15	14,548,307.03	1,703,111.75
Point 30	0.00	-4,787.63	585.30	14,548,289.29	1,703,118.94
Point 31	0.00	-4,805.67	591.69	14,548,271.26	1,703,125.38
Point 32	0.00	-4,823.96	597.33	14,548,252.99	1,703,131.06
Point 33	0.00	-4,842.46	602.21	14,548,234.50	1,703,135.99
Point 34	0.00	-4,861.16	606.30	14,548,215.81	1,703,140.12
Point 35	0.00	-4,880.01	609.63	14,548,196.97	1,703,143.50
Point 36	0.00	-4,898.98	612.16	14,548,178.00	1,703,146.08
Point 37	0.00	-4,918.04	613.90	14,548,158.95	1,703,147.87
Point 38	0.00	-4,937.16	614.85	14,548,139.83	1,703,148.86
Point 39	0.00	-4,956.30	615.00	14,548,120.69	1,703,149.06
Point 40	0.00	-4,975.43	614.36	14,548,101.56	1,703,148.47
Point 41	0.00	-4,994.51	612.92	14,548,082.48	1,703,147.08
Point 42	0.00	-5,013.53	610.68	14,548,063.45	1,703,144.88
Point 43	0.00	-5,032.42	607.67	14,548,044.55	1,703,141.92
Point 44	0.00	-5,051.18	603.86	14,548,025.78	1,703,138.16
Point 45	0.00	-5,069.76	599.27	14,548,007.19	1,703,133.61
Point 46	0.00	-5,088.13	593.93	14,547,988.81	1,703,128.32
Point 47	0.00	-5,106.28	587.81	14,547,970.64	1,703,122.25
Point 48	0.00	-5,124.14	580.95	14,547,952.77	1,703,115.43
Point 49	0.00	-5,141.71	573.35	14,547,935.18	1,703,107.87
Point 50	0.00	-5,158.94	565.03	14,547,917.93	1,703,099.60
Point 51	0.00	-5,175.82	556.00	14,547,901.03	1,703,090.61
Point 52	0.00	-5,192.31	546.28	14,547,884.51	1,703,080.93
Point 53	0.00	-5,208.37	535.88	14,547,868.43	1,703,070.57
Point 54	0.00	-5,223.99	524.81	14,547,852.78	1,703,059.54
Point 55	0.00	-5,239.13	513.11	14,547,837.61	1,703,047.88
Point 56	0.00	-5,253.78	500.78	14,547,822.93	1,703,035.58
Point 57	0.00	-5,267.90	487.87	14,547,808.78	1,703,022.71
Point 58	0.00	-5,281.47	474.37	14,547,795.17	1,703,009.24
Point 59	0.00	-5,294.46	460.32	14,547,782.15	1,702,995.23
Point 60	0.00	-5,306.87	445.74	14,547,769.70	1,702,980.68
Point 61	0.00	-5,318.65	430.66	14,547,757.88	1,702,965.63
Point 62	0.00	-5,329.80	415.10	14,547,746.69	1,702,950.09
Point 63	0.00	-5,340.29	399.09	14,547,736.16	1,702,934.11
Point 64	0.00	-5,350.10	382.66	14,547,726.31	1,702,917.70
Point 65	0.00	-5,359.23	365.83	14,547,717.14	1,702,900.90
Point 66	0.00	-5,367.64	348.65	14,547,708.69	1,702,883.74
Point 67	0.00	-5,375.33	331.12	14,547,700.96	1,702,866.23
Point 68	0.00	-5,382.29	313.29	14,547,693.95	1,702,848.41
Point 69	0.00	-5,388.50	295.19	14,547,687.70	1,702,830.33
Point 70	0.00	-5,393.94	276.83	14,547,682.21	1,702,811.98
Point 71	0.00	-5,398.63	258.28	14,547,677.47	1,702,793.45
Point 72	0.00	-5,402.54	239.54	14,547,673.52	1,702,774.72
Point 73	0.00	-5,405.66	220.66	14,547,670.35	1,702,755.84
Point 74	0.00	-5,408.00	201.67	14,547,667.96	1,702,736.86
Point 75	0.00	-5,409.54	182.58	14,547,666.37	1,702,717.77
Point 76	0.00	-5,410.29	163.46	14,547,665.58	1,702,698.66
Point 77	0.00	-5,410.24	144.32	14,547,665.58	1,702,679.52
Point 78	0.00	-5,409.40	125.21	14,547,666.37	1,702,660.40
Point 79	0.00	-5,407.76	106.13	14,547,667.96	1,702,641.32
Point 80	0.00	-5,405.33	87.15	14,547,670.35	1,702,622.33
Point 81	0.00	-5,402.11	68.28	14,547,673.52	1,702,603.45
Point 82	0.00	-5,398.11	49.56	14,547,677.47	1,702,584.73
Point 83	0.00	-5,393.33	31.03	14,547,682.21	1,702,566.18
Point 84	0.00	-5,387.80	12.71	14,547,687.69	1,702,547.85
Point 85	0.00	-5,381.49	-5.37	14,547,693.96	1,702,529.75
Point 86	0.00	-5,374.45	-23.16	14,547,700.95	1,702,511.95
Point 87	0.00	-5,366.67	-40.65	14,547,708.69	1,702,494.44
Point 88	0.00	-5,358.17	-57.79	14,547,717.15	1,702,477.28
Point 89	0.00	-5,348.96	-74.57	14,547,726.31	1,702,460.47
Point 90	0.00	-5,339.07	-90.95	14,547,736.16	1,702,444.07

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Point 91	0.00	-5,328.50	-106.91	14,547,746.69	1,702,428.08			
Point 92	0.00	-5,317.27	-122.42	14,547,757.88	1,702,412.54			
Point 93	0.00	-5,305.41	-137.44	14,547,769.71	1,702,397.49			
Point 94	0.00	-5,292.93	-151.96	14,547,782.15	1,702,382.94			
Point 95	0.00	-5,279.87	-165.93	14,547,795.18	1,702,368.94			
Point 96	0.00	-5,266.24	-179.37	14,547,808.77	1,702,355.47			
Point 97	0.00	-5,252.05	-192.21	14,547,822.93	1,702,342.59			
Point 98	0.00	-5,237.34	-204.47	14,547,837.61	1,702,330.29			
Point 99	0.00	-5,222.14	-216.09	14,547,852.78	1,702,318.64			
Point 100	0.00	-5,206.47	-227.08	14,547,868.42	1,702,307.61			
Point 101	0.00	-5,190.35	-237.40	14,547,884.52	1,702,297.25			
Point 102	0.00	-5,173.82	-247.04	14,547,901.02	1,702,287.57			
Point 103	0.00	-5,156.89	-255.99	14,547,917.93	1,702,278.57			
Point 104	0.00	-5,139.62	-264.22	14,547,935.18	1,702,270.30			
Point 105	0.00	-5,122.02	-271.74	14,547,952.76	1,702,262.74			
Point 106	0.00	-5,104.12	-278.50	14,547,970.64	1,702,255.93			
Point 107	0.00	-5,085.94	-284.53	14,547,988.81	1,702,249.86			
Point 108	0.00	-5,067.54	-289.78	14,548,007.20	1,702,244.56			
Point 109	0.00	-5,048.94	-294.28	14,548,025.78	1,702,240.02			
Point 110	0.00	-5,030.16	-297.99	14,548,044.55	1,702,236.26			
Point 111	0.00	-5,011.25	-300.91	14,548,063.46	1,702,233.29			
Point 112	0.00	-4,992.23	-303.06	14,548,082.47	1,702,231.09			
Point 113	0.00	-4,973.13	-304.40	14,548,101.57	1,702,229.71			
Point 114	0.00	-4,954.00	-304.95	14,548,120.70	1,702,229.11			
Point 115	0.00	-4,934.86	-304.70	14,548,139.84	1,702,229.31			
Point 116	0.00	-4,915.76	-303.65	14,548,158.94	1,702,230.31			
Point 117	0.00	-4,896.70	-301.82	14,548,178.01	1,702,232.10			
Point 118	0.00	-4,877.75	-299.19	14,548,196.96	1,702,234.68			
Point 119	0.00	-4,858.91	-295.77	14,548,215.81	1,702,238.05			
Point 120	0.00	-4,840.24	-291.59	14,548,234.49	1,702,242.18			
Point 121	0.00	-4,821.76	-286.61	14,548,252.98	1,702,247.12			
Point 122	0.00	-4,803.49	-280.88	14,548,271.27	1,702,252.80			
Point 123	0.00	-4,785.49	-274.40	14,548,289.28	1,702,259.24			
Point 124	0.00	-4,767.77	-267.17	14,548,307.02	1,702,266.42			
Point 125	0.00	-4,750.37	-259.20	14,548,324.44	1,702,274.35			
Point 126	0.00	-4,733.31	-250.53	14,548,341.52	1,702,282.98			
Point 127	0.00	-4,716.62	-241.15	14,548,358.24	1,702,292.32			
Point 128	0.00	-4,700.35	-231.08	14,548,374.53	1,702,302.35			
Point 129	0.00	-4,684.49	-220.35	14,548,390.42	1,702,313.04			
Point 130	0.00	-4,669.11	-208.96	14,548,405.83	1,702,324.39			
Point 131	0.00	-4,654.21	-196.94	14,548,420.76	1,702,336.37			
Point 132	0.00	-4,639.83	-184.32	14,548,435.17	1,702,348.95			
Point 133	0.00	-4,625.98	-171.11	14,548,449.05	1,702,362.13			
Point 134	0.00	-4,612.69	-157.33	14,548,462.37	1,702,375.88			
Point 135	0.00	-4,600.00	-143.02	14,548,475.10	1,702,390.15			
Point 136	0.00	-4,587.89	-128.19	14,548,487.25	1,702,404.95			
Point 137	0.00	-4,576.43	-112.86	14,548,498.75	1,702,420.26			
Point 138	0.00	-4,565.61	-97.07	14,548,509.60	1,702,436.02			
Point 139	0.00	-4,555.45	-80.85	14,548,519.81	1,702,452.21			
Point 140	0.00	-4,545.98	-64.21	14,548,529.32	1,702,468.83			
Point 141	0.00	-4,537.21	-47.20	14,548,538.13	1,702,485.82			
Point 142	0.00	-4,529.16	-29.84	14,548,546.22	1,702,503.16			
Point 143	0.00	-4,521.83	-12.16	14,548,553.60	1,702,520.82			
Point 144	0.00	-4,515.25	5.82	14,548,560.22	1,702,538.78			
Point 145	0.00	-4,509.41	24.04	14,548,566.11	1,702,556.99			
Point 146	0.00	-4,504.35	42.49	14,548,571.21	1,702,575.43			
Point 147	0.00	-4,500.05	61.14	14,548,575.56	1,702,594.06			
Point 148	0.00	-4,496.53	79.96	14,548,579.13	1,702,612.88			
Point 149	0.00	-4,493.81	98.91	14,548,581.89	1,702,631.82			
Point 150	0.00	-4,491.87	117.94	14,548,583.88	1,702,650.84			
Point 151	0.00	-4,490.72	137.05	14,548,585.08	1,702,669.95			
Point 152	0.00	-4,490.37	156.19	14,548,585.48	1,702,689.09			
HIGHLANDS 15N-9HZ	0.00	0.00	0.00	0.00	14,553,075.44	1,702,521.70	40.072127	-104.778003

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

- plan hits target center						
- Polygon						
Point 1	0.00	779.92	146.42	14,553,855.73	1,702,666.17	
Point 2	0.00	779.47	165.55	14,553,855.32	1,702,685.31	
Point 3	0.00	778.23	184.66	14,553,854.13	1,702,704.42	
Point 4	0.00	776.20	203.68	14,553,852.15	1,702,723.44	
Point 5	0.00	773.37	222.62	14,553,849.37	1,702,742.39	
Point 6	0.00	769.76	241.41	14,553,845.80	1,702,761.19	
Point 7	0.00	765.38	260.04	14,553,841.47	1,702,779.83	
Point 8	0.00	760.21	278.48	14,553,836.35	1,702,798.28	
Point 9	0.00	754.29	296.67	14,553,830.47	1,702,816.49	
Point 10	0.00	747.62	314.61	14,553,823.85	1,702,834.44	
Point 11	0.00	740.21	332.26	14,553,816.48	1,702,852.11	
Point 12	0.00	732.06	349.58	14,553,808.37	1,702,869.45	
Point 13	0.00	723.21	366.54	14,553,799.56	1,702,886.43	
Point 14	0.00	713.65	383.13	14,553,790.05	1,702,903.05	
Point 15	0.00	703.42	399.30	14,553,779.86	1,702,919.24	
Point 16	0.00	692.52	415.04	14,553,769.00	1,702,935.01	
Point 17	0.00	680.97	430.30	14,553,757.48	1,702,950.30	
Point 18	0.00	668.80	445.08	14,553,745.35	1,702,965.11	
Point 19	0.00	656.03	459.33	14,553,732.62	1,702,979.39	
Point 20	0.00	642.67	473.04	14,553,719.29	1,702,993.14	
Point 21	0.00	628.76	486.18	14,553,705.41	1,703,006.31	
Point 22	0.00	614.31	498.73	14,553,690.99	1,703,018.90	
Point 23	0.00	599.36	510.67	14,553,676.07	1,703,030.87	
Point 24	0.00	583.91	521.99	14,553,660.65	1,703,042.23	
Point 25	0.00	568.02	532.64	14,553,644.79	1,703,052.92	
Point 26	0.00	551.69	542.63	14,553,628.48	1,703,062.95	
Point 27	0.00	534.96	551.92	14,553,611.78	1,703,072.28	
Point 28	0.00	517.86	560.51	14,553,594.70	1,703,080.92	
Point 29	0.00	500.42	568.39	14,553,577.28	1,703,088.84	
Point 30	0.00	482.66	575.53	14,553,559.54	1,703,096.02	
Point 31	0.00	464.61	581.93	14,553,541.50	1,703,102.47	
Point 32	0.00	446.33	587.56	14,553,523.24	1,703,108.14	
Point 33	0.00	427.82	592.45	14,553,504.74	1,703,113.08	
Point 34	0.00	409.13	596.54	14,553,486.06	1,703,117.22	
Point 35	0.00	390.28	599.86	14,553,467.22	1,703,120.58	
Point 36	0.00	371.30	602.40	14,553,448.24	1,703,123.17	
Point 37	0.00	352.25	604.14	14,553,429.20	1,703,124.96	
Point 38	0.00	333.12	605.09	14,553,410.07	1,703,125.96	
Point 39	0.00	313.98	605.23	14,553,390.93	1,703,126.15	
Point 40	0.00	294.86	604.60	14,553,371.81	1,703,125.56	
Point 41	0.00	275.78	603.15	14,553,352.73	1,703,124.16	
Point 42	0.00	256.76	600.92	14,553,333.70	1,703,121.98	
Point 43	0.00	237.86	597.90	14,553,314.79	1,703,119.00	
Point 44	0.00	219.11	594.10	14,553,296.03	1,703,115.25	
Point 45	0.00	200.52	589.51	14,553,277.43	1,703,110.71	
Point 46	0.00	182.15	584.16	14,553,259.05	1,703,105.40	
Point 47	0.00	164.01	578.05	14,553,240.89	1,703,099.34	
Point 48	0.00	146.15	571.18	14,553,223.02	1,703,092.51	
Point 49	0.00	128.58	563.59	14,553,205.43	1,703,084.97	
Point 50	0.00	111.34	555.27	14,553,188.17	1,703,076.69	
Point 51	0.00	94.47	546.24	14,553,171.28	1,703,067.70	
Point 52	0.00	77.98	536.51	14,553,154.76	1,703,058.01	
Point 53	0.00	61.92	526.11	14,553,138.67	1,703,047.65	
Point 54	0.00	46.30	515.05	14,553,123.03	1,703,036.63	
Point 55	0.00	31.16	503.35	14,553,107.86	1,703,024.97	
Point 56	0.00	16.51	491.02	14,553,093.18	1,703,012.68	
Point 57	0.00	2.39	478.11	14,553,079.03	1,702,999.80	
Point 58	0.00	-11.18	464.60	14,553,065.42	1,702,986.33	
Point 59	0.00	-24.18	450.56	14,553,052.39	1,702,972.32	
Point 60	0.00	-36.58	435.98	14,553,039.95	1,702,957.77	
Point 61	0.00	-48.37	420.90	14,553,028.12	1,702,942.72	
Point 62	0.00	-59.51	405.34	14,553,016.94	1,702,927.19	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Point 63	0.00	-70.00	389.32	14,553,006.41	1,702,911.19
Point 64	0.00	-79.82	372.90	14,552,996.55	1,702,894.80
Point 65	0.00	-88.94	356.07	14,552,987.39	1,702,877.99
Point 66	0.00	-97.35	338.88	14,552,978.94	1,702,860.82
Point 67	0.00	-105.05	321.36	14,552,971.19	1,702,843.32
Point 68	0.00	-112.00	303.53	14,552,964.20	1,702,825.51
Point 69	0.00	-118.21	285.42	14,552,957.95	1,702,807.41
Point 70	0.00	-123.66	267.07	14,552,952.45	1,702,789.08
Point 71	0.00	-128.35	248.52	14,552,947.71	1,702,770.54
Point 72	0.00	-132.25	229.78	14,552,943.77	1,702,751.81
Point 73	0.00	-135.37	210.90	14,552,940.60	1,702,732.94
Point 74	0.00	-137.71	191.91	14,552,938.21	1,702,713.95
Point 75	0.00	-139.25	172.82	14,552,936.62	1,702,694.87
Point 76	0.00	-140.00	153.70	14,552,935.83	1,702,675.75
Point 77	0.00	-139.95	134.56	14,552,935.83	1,702,656.61
Point 78	0.00	-139.11	115.44	14,552,936.62	1,702,637.49
Point 79	0.00	-137.47	96.37	14,552,938.21	1,702,618.41
Point 80	0.00	-135.04	77.38	14,552,940.60	1,702,599.42
Point 81	0.00	-131.82	58.52	14,552,943.77	1,702,580.55
Point 82	0.00	-127.83	39.80	14,552,947.71	1,702,561.82
Point 83	0.00	-123.05	21.27	14,552,952.45	1,702,543.28
Point 84	0.00	-117.51	2.94	14,552,957.94	1,702,524.93
Point 85	0.00	-111.21	-15.13	14,552,964.20	1,702,506.85
Point 86	0.00	-104.17	-32.92	14,552,971.19	1,702,489.04
Point 87	0.00	-96.38	-50.41	14,552,978.94	1,702,471.53
Point 88	0.00	-87.88	-67.56	14,552,987.39	1,702,454.36
Point 89	0.00	-78.68	-84.34	14,552,996.55	1,702,437.56
Point 90	0.00	-68.78	-100.71	14,553,006.41	1,702,421.16
Point 91	0.00	-58.21	-116.68	14,553,016.94	1,702,405.17
Point 92	0.00	-46.99	-132.18	14,553,028.12	1,702,389.64
Point 93	0.00	-35.12	-147.20	14,553,039.96	1,702,374.59
Point 94	0.00	-22.65	-161.72	14,553,052.39	1,702,360.04
Point 95	0.00	-9.58	-175.70	14,553,065.42	1,702,346.02
Point 96	0.00	4.05	-189.13	14,553,079.02	1,702,332.56
Point 97	0.00	18.24	-201.98	14,553,093.18	1,702,319.68
Point 98	0.00	32.95	-214.23	14,553,107.86	1,702,307.39
Point 99	0.00	48.15	-225.85	14,553,123.03	1,702,295.73
Point 100	0.00	63.82	-236.84	14,553,138.67	1,702,284.70
Point 101	0.00	79.94	-247.16	14,553,154.77	1,702,274.34
Point 102	0.00	96.47	-256.80	14,553,171.27	1,702,264.66
Point 103	0.00	113.39	-265.75	14,553,188.17	1,702,255.67
Point 104	0.00	130.67	-273.99	14,553,205.43	1,702,247.38
Point 105	0.00	148.28	-281.50	14,553,223.02	1,702,239.83
Point 106	0.00	166.17	-288.27	14,553,240.89	1,702,233.02
Point 107	0.00	184.34	-294.29	14,553,259.05	1,702,226.95
Point 108	0.00	202.74	-299.55	14,553,277.43	1,702,221.65
Point 109	0.00	221.35	-304.04	14,553,296.03	1,702,217.11
Point 110	0.00	240.12	-307.75	14,553,314.79	1,702,213.35
Point 111	0.00	259.04	-310.68	14,553,333.71	1,702,210.37
Point 112	0.00	278.06	-312.82	14,553,352.72	1,702,208.19
Point 113	0.00	297.15	-314.16	14,553,371.81	1,702,206.80
Point 114	0.00	316.28	-314.71	14,553,390.94	1,702,206.20
Point 115	0.00	335.42	-314.47	14,553,410.08	1,702,206.39
Point 116	0.00	354.54	-313.42	14,553,429.20	1,702,207.40
Point 117	0.00	373.58	-311.58	14,553,448.24	1,702,209.19
Point 118	0.00	392.54	-308.95	14,553,467.21	1,702,211.77
Point 119	0.00	411.38	-305.54	14,553,486.06	1,702,215.13
Point 120	0.00	430.05	-301.35	14,553,504.74	1,702,219.28
Point 121	0.00	448.53	-296.38	14,553,523.23	1,702,224.20
Point 122	0.00	466.79	-290.65	14,553,541.51	1,702,229.89
Point 123	0.00	484.80	-284.16	14,553,559.53	1,702,236.33
Point 124	0.00	502.52	-276.93	14,553,577.27	1,702,243.52
Point 125	0.00	519.93	-268.97	14,553,594.70	1,702,251.43
Point 126	0.00	536.98	-260.29	14,553,611.77	1,702,260.07

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Point 127				0.00	553.67	-250.91	14,553,628.49	1,702,269.41		
Point 128				0.00	569.95	-240.84	14,553,644.79	1,702,279.44		
Point 129				0.00	585.79	-230.11	14,553,660.66	1,702,290.13		
Point 130				0.00	601.18	-218.72	14,553,676.08	1,702,301.48		
Point 131				0.00	616.07	-206.71	14,553,691.00	1,702,313.45		
Point 132				0.00	630.46	-194.08	14,553,705.42	1,702,326.05		
Point 133				0.00	644.31	-180.88	14,553,719.30	1,702,339.21		
Point 134				0.00	657.59	-167.09	14,553,732.61	1,702,352.97		
Point 135				0.00	670.30	-152.78	14,553,745.36	1,702,367.25		
Point 136				0.00	682.39	-137.95	14,553,757.49	1,702,382.05		
Point 137				0.00	693.86	-122.62	14,553,768.99	1,702,397.35		
Point 138				0.00	704.68	-106.83	14,553,779.85	1,702,413.11		
Point 139				0.00	714.83	-90.61	14,553,790.04	1,702,429.31		
Point 140				0.00	724.31	-73.98	14,553,799.57	1,702,445.91		
Point 141				0.00	733.08	-56.96	14,553,808.38	1,702,462.91		
Point 142				0.00	741.13	-39.60	14,553,816.47	1,702,480.25		
Point 143				0.00	748.46	-21.93	14,553,823.85	1,702,497.90		
Point 144				0.00	755.04	-3.95	14,553,830.47	1,702,515.87		
Point 145				0.00	760.87	14.28	14,553,836.35	1,702,534.08		
Point 146				0.00	765.94	32.73	14,553,841.46	1,702,552.52		
Point 147				0.00	770.24	51.38	14,553,845.81	1,702,571.16		
Point 148				0.00	773.75	70.20	14,553,849.37	1,702,589.97		
Point 149				0.00	776.48	89.15	14,553,852.14	1,702,608.91		
Point 150				0.00	778.43	108.18	14,553,854.14	1,702,627.94		
Point 151				0.00	779.57	127.28	14,553,855.33	1,702,647.04		
Point 152				0.00	779.92	146.42	14,553,855.73	1,702,666.17		
1N-R66W-Sec. 9_Sectio	0.00	0.00	-4.00	41.52	432.50		14,553,118.04	1,702,954.10	40.072241	-104.776457
- plan misses target center by 434.51usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1			-4.00	253.35	-4,263.62		14,553,360.75	1,698,689.86		
Point 2			-4.00	267.15	-1,613.58		14,553,381.16	1,701,339.86		
Point 3			-4.00	291.93	1,036.30		14,553,412.55	1,703,989.67		
Point 4			-4.00	-2,391.57	1,036.43		14,550,729.06	1,703,996.49		
Point 5			-4.00	-4,977.25	1,037.01		14,548,143.39	1,704,003.52		
Point 6			-4.00	-5,003.23	-1,600.13		14,548,110.83	1,701,366.45		
Point 7			-4.00	-5,026.24	-4,232.74		14,548,081.26	1,698,733.91		
Point 8			-4.00	-2,386.19	-4,247.76		14,550,721.26	1,698,712.30		
2N-R66W-Sec. 33_Secti	0.00	0.00	-4.00	41.52	432.50		14,553,118.04	1,702,954.10	40.072241	-104.776457
- plan misses target center by 434.51usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1			-4.00	10,785.65	-4,244.56		14,563,893.07	1,698,682.65		
Point 2			-4.00	10,777.00	-1,599.15		14,563,891.02	1,701,328.07		
Point 3			-4.00	10,793.76	1,039.95		14,563,914.36	1,703,967.12		
Point 4			-4.00	8,144.84	1,047.58		14,561,265.47	1,703,981.36		
Point 5			-4.00	5,495.36	1,053.49		14,558,616.01	1,703,993.88		
Point 6			-4.00	5,511.34	-1,587.18		14,558,625.40	1,701,353.18		
Point 7			-4.00	5,504.32	-4,231.68		14,558,611.79	1,698,708.70		
Point 8			-4.00	8,144.86	-4,238.06		14,561,252.30	1,698,695.74		
1N-R66W-Sec. 4_Sectio	0.00	0.00	-4.00	41.52	432.50		14,553,118.04	1,702,954.10	40.072241	-104.776457
- plan misses target center by 434.51usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1			-4.00	5,504.32	-4,231.68		14,558,611.79	1,698,708.70		
Point 2			-4.00	5,511.34	-1,587.18		14,558,625.40	1,701,353.18		
Point 3			-4.00	5,495.36	1,053.49		14,558,616.01	1,703,993.88		
Point 4			-4.00	2,927.51	1,045.03		14,556,048.15	1,703,991.82		
Point 5			-4.00	291.93	1,036.30		14,553,412.55	1,703,989.67		
Point 6			-4.00	279.34	-288.76		14,553,396.66	1,702,664.64		
Point 7			-4.00	267.15	-1,613.58		14,553,381.16	1,701,339.86		
Point 8			-4.00	253.35	-4,263.62		14,553,360.75	1,698,689.86		
Point 9			-4.00	2,905.01	-4,247.54		14,556,012.44	1,698,699.33		
HIGHLANDS 15N-9HZ_	0.00	0.00	7,318.00	-4,799.08	125.91		14,548,276.69	1,702,659.58	40.058948	-104.777553
- plan hits target center										

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HIGHLANDS 15N-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (D Rig)
Site:	1N-66W-09 Highlands 2-9HZ Pad	North Reference:	True
Well:	HIGHLANDS 15N-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

- Point

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,825.59	1,800.00	9 5/8"	9-5/8	13-1/2
7,688.91	7,282.00	Top of Production	5-1/2	7-7/8

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,481.77	1,465.00	Fox Hills		0.00	
4,745.97	4,662.00	Sussex		0.00	
7,264.06	7,128.79	Sharon Springs		0.00	
7,328.30	7,169.79	Niobrara Top		0.00	
7,527.02	7,258.13	Niobrara B Bench		0.00	
7,688.91	7,282.00	Heel:		0.00	
12,703.93	7,318.00	Toe:		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,116.67	1,109.25	96.69	15.31	End Nudge @ 1116.67ft
3,886.67	3,808.26	712.14	112.79	Begin Drop @ 3886.67ft
4,536.67	4,452.70	784.66	124.28	End Drop @ 4536.67ft
6,793.03	6,709.06	784.66	124.28	KOP @ 6793.03ft
7,300.00	7,152.41	574.62	124.34	DLS = 10°/100'
7,688.91	7,282.00	215.82	124.44	End Build @ 7688.91ft
12,703.94	7,318.00	-4,799.08	125.91	TD Well @ 12703.94ft