



Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Kunzman 35-5HZ Pad

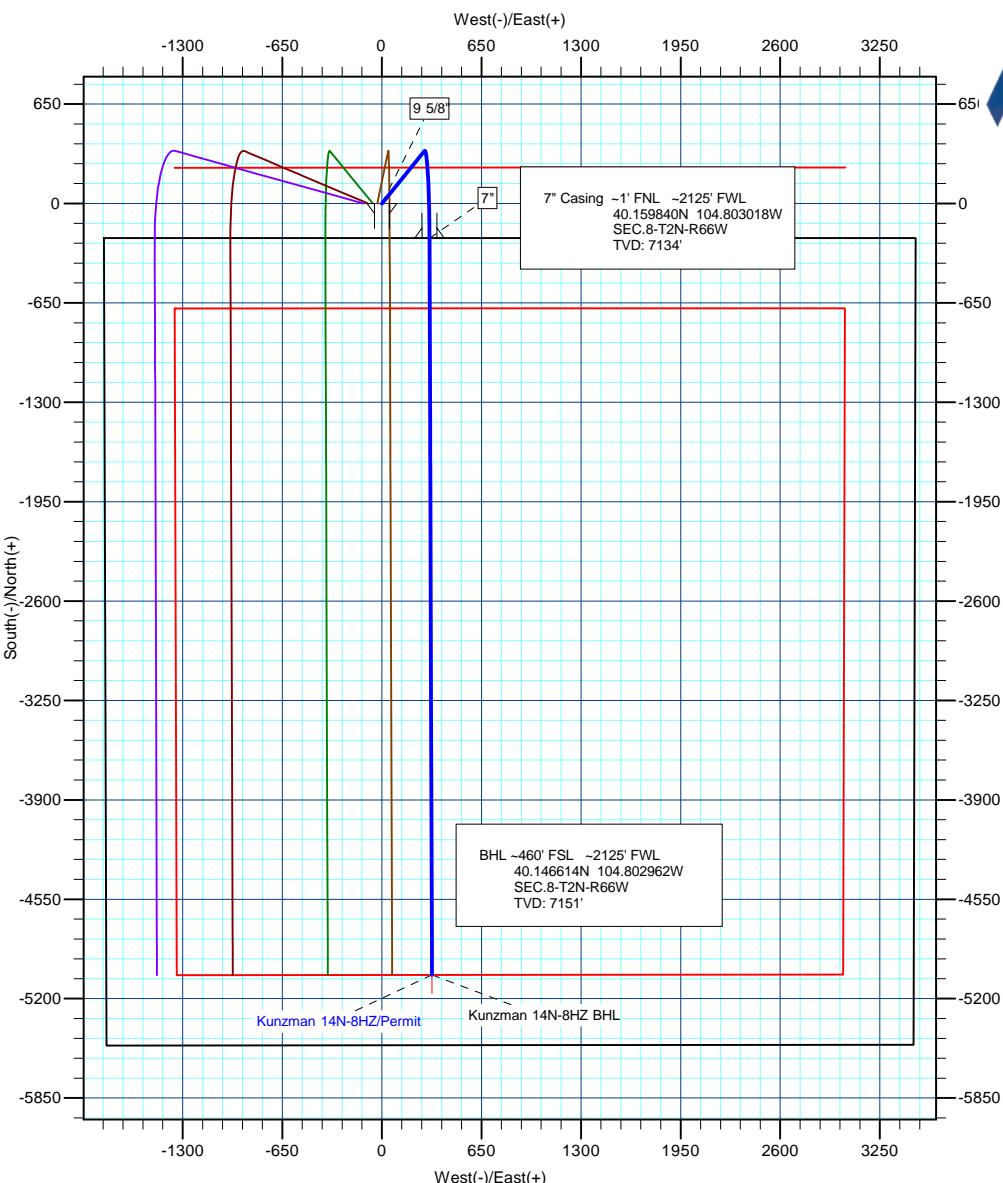
Kunzman 14N-8HZ

Wellbore #1

Plan: Permit

Standard Planning Report

06 March, 2013



Weatherford

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_Kunzman 35-5HZ Pad
 Well: Kunzman 14N-8HZ
 Wellbore: Wellbore #1
 Section: Sec. 5-T2N-R66W
 SHL: 226' FSL 1814' FWL SEC. 5
 Design: Permit
 Latitude: 40.160463
 Longitude: -104.804131
 GL: 4858.00
 KB: gl + rkb @ 4875.00ft



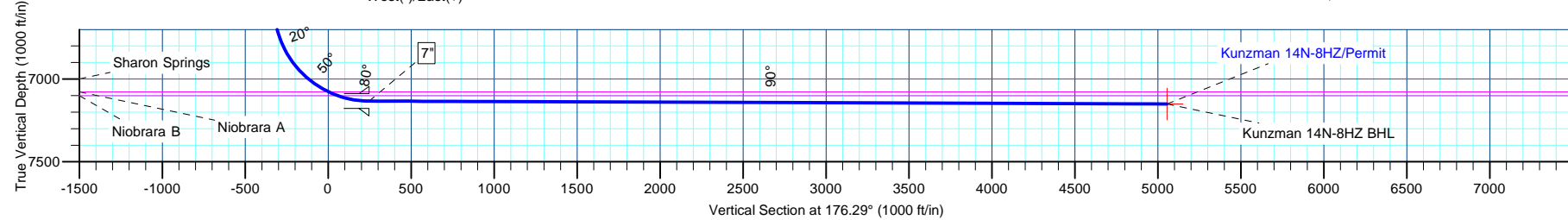
WELL DETAILS: Kunzman 14N-8HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4858.00 Latitude	40.160463 Longitude	Slot
0.00	0.00	1302062.95	3194489.50			

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation	
1000.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00	
1232.89	1233.15	4.66	39.04	7.37	5.97	-6.96	9.48	Start 5310.45 hold at 1233.15 MD	
6525.76	6543.60	4.66	39.04	342.70	277.87	-324.02	441.20	Start DLS 10.00 TFO 140.69	
7134.00	7477.69	89.80	179.81	-227.00	311.00	246.63	1017.96	Start 4817.97 hold at 7477.69 MD	
7151.00	12295.66	89.80	179.81	-5044.92	326.80	5055.49	5835.91	TD at 12295.66	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Kunzman 14N-8HZ BHL	7151.00	-5044.92	326.80	40.146614	-104.802962	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3928.00	3937.21	Parkman
4328.00	4338.54	Sussex
6999.00	7077.95	Sharon Springs
7078.00	7224.10	Niobrara A
7101.00	7284.16	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
839.00	839.00	9 5/8"	9-5/8
7134.00	7477.69	7"	7





Weatherford®

Andarko Petroleum Corporation

Planning Report



Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14N-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14N-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_Kunzman 35-5HZ Pad, Sec. 5-T2N-R66W			
Site Position:		Northing:	1,302,062.73 usft	Latitude:	40.160463
From:	Lat/Long	Easting:	3,194,459.59 usft	Longitude:	-104.804238
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	Kunzman 14N-8HZ					
Well Position	+N/-S	-0.01 ft	Northing:	1,302,062.95 usft	Latitude:	40.160463
	+E/-W	29.91 ft	Easting:	3,194,489.50 usft	Longitude:	-104.804131
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,858.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2012	8.72	66.81	52,886

Design	Permit				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	176.29	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
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	
1,233.15	4.66	39.04	1,232.89	7.37	5.97	2.00	2.00	0.00	39.04	
6,543.60	4.66	39.04	6,525.76	342.70	277.87	0.00	0.00	0.00	0.00	
7,477.69	89.80	179.81	7,134.00	-227.00	311.00	10.00	9.11	15.07	140.69	
12,295.66	89.80	179.81	7,151.00	-5,044.92	326.80	0.00	0.00	0.00	0.00	Kunzman 14N-8HZ B



Weatherford®

Andarko Petroleum Corporation

Planning Report



Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14N-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14N-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
839.00	0.00	0.00	839.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	2.00	39.04	1,099.98	1.36	1.10	-1.28	2.00	2.00	0.00
1,200.00	4.00	39.04	1,199.84	5.42	4.40	-5.13	2.00	2.00	0.00
1,233.15	4.66	39.04	1,232.89	7.37	5.97	-6.96	2.00	2.00	0.00
Start 5310.45 hold at 1233.15 MD									
1,300.00	4.66	39.04	1,299.52	11.59	9.39	-10.95	0.00	0.00	0.00
1,400.00	4.66	39.04	1,399.19	17.90	14.51	-16.93	0.00	0.00	0.00
1,500.00	4.66	39.04	1,498.86	24.22	19.63	-22.90	0.00	0.00	0.00
1,600.00	4.66	39.04	1,598.53	30.53	24.75	-28.87	0.00	0.00	0.00
1,700.00	4.66	39.04	1,698.20	36.84	29.88	-34.84	0.00	0.00	0.00
1,800.00	4.66	39.04	1,797.87	43.16	35.00	-40.81	0.00	0.00	0.00
1,900.00	4.66	39.04	1,897.54	49.47	40.12	-46.78	0.00	0.00	0.00
2,000.00	4.66	39.04	1,997.20	55.79	45.24	-52.75	0.00	0.00	0.00
2,100.00	4.66	39.04	2,096.87	62.10	50.36	-58.72	0.00	0.00	0.00
2,200.00	4.66	39.04	2,196.54	68.42	55.48	-64.69	0.00	0.00	0.00
2,300.00	4.66	39.04	2,296.21	74.73	60.60	-70.66	0.00	0.00	0.00
2,400.00	4.66	39.04	2,395.88	81.05	65.72	-76.63	0.00	0.00	0.00
2,500.00	4.66	39.04	2,495.55	87.36	70.84	-82.60	0.00	0.00	0.00
2,600.00	4.66	39.04	2,595.22	93.68	75.96	-88.57	0.00	0.00	0.00
2,700.00	4.66	39.04	2,694.89	99.99	81.08	-94.54	0.00	0.00	0.00
2,800.00	4.66	39.04	2,794.56	106.31	86.20	-100.51	0.00	0.00	0.00
2,900.00	4.66	39.04	2,894.23	112.62	91.32	-106.48	0.00	0.00	0.00
3,000.00	4.66	39.04	2,993.89	118.93	96.44	-112.45	0.00	0.00	0.00
3,100.00	4.66	39.04	3,093.56	125.25	101.56	-118.42	0.00	0.00	0.00
3,200.00	4.66	39.04	3,193.23	131.56	106.68	-124.39	0.00	0.00	0.00
3,300.00	4.66	39.04	3,292.90	137.88	111.80	-130.36	0.00	0.00	0.00
3,400.00	4.66	39.04	3,392.57	144.19	116.92	-136.33	0.00	0.00	0.00
3,500.00	4.66	39.04	3,492.24	150.51	122.04	-142.30	0.00	0.00	0.00
3,600.00	4.66	39.04	3,591.91	156.82	127.16	-148.27	0.00	0.00	0.00
3,700.00	4.66	39.04	3,691.58	163.14	132.28	-154.24	0.00	0.00	0.00
3,800.00	4.66	39.04	3,791.25	169.45	137.40	-160.21	0.00	0.00	0.00
3,900.00	4.66	39.04	3,890.92	175.77	142.52	-166.19	0.00	0.00	0.00
3,937.21	4.66	39.04	3,928.00	178.11	144.42	-168.41	0.00	0.00	0.00
Parkman									
4,000.00	4.66	39.04	3,990.58	182.08	147.64	-172.16	0.00	0.00	0.00
4,100.00	4.66	39.04	4,090.25	188.39	152.76	-178.13	0.00	0.00	0.00
4,200.00	4.66	39.04	4,189.92	194.71	157.88	-184.10	0.00	0.00	0.00
4,300.00	4.66	39.04	4,289.59	201.02	163.00	-190.07	0.00	0.00	0.00
4,338.54	4.66	39.04	4,328.00	203.46	164.97	-192.37	0.00	0.00	0.00
Sussex									
4,400.00	4.66	39.04	4,389.26	207.34	168.12	-196.04	0.00	0.00	0.00

Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14N-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14N-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	4.66	39.04	4,488.93	213.65	173.24	-202.01	0.00	0.00	0.00
4,600.00	4.66	39.04	4,588.60	219.97	178.36	-207.98	0.00	0.00	0.00
4,700.00	4.66	39.04	4,688.27	226.28	183.48	-213.95	0.00	0.00	0.00
4,800.00	4.66	39.04	4,787.94	232.60	188.60	-219.92	0.00	0.00	0.00
4,900.00	4.66	39.04	4,887.61	238.91	193.72	-225.89	0.00	0.00	0.00
5,000.00	4.66	39.04	4,987.27	245.23	198.84	-231.86	0.00	0.00	0.00
5,100.00	4.66	39.04	5,086.94	251.54	203.96	-237.83	0.00	0.00	0.00
5,200.00	4.66	39.04	5,186.61	257.85	209.08	-243.80	0.00	0.00	0.00
5,300.00	4.66	39.04	5,286.28	264.17	214.20	-249.77	0.00	0.00	0.00
5,400.00	4.66	39.04	5,385.95	270.48	219.32	-255.74	0.00	0.00	0.00
5,500.00	4.66	39.04	5,485.62	276.80	224.44	-261.71	0.00	0.00	0.00
5,600.00	4.66	39.04	5,585.29	283.11	229.56	-267.68	0.00	0.00	0.00
5,700.00	4.66	39.04	5,684.96	289.43	234.68	-273.65	0.00	0.00	0.00
5,800.00	4.66	39.04	5,784.63	295.74	239.80	-279.62	0.00	0.00	0.00
5,900.00	4.66	39.04	5,884.30	302.06	244.92	-285.59	0.00	0.00	0.00
6,000.00	4.66	39.04	5,983.96	308.37	250.04	-291.56	0.00	0.00	0.00
6,100.00	4.66	39.04	6,083.63	314.69	255.16	-297.53	0.00	0.00	0.00
6,200.00	4.66	39.04	6,183.30	321.00	260.28	-303.50	0.00	0.00	0.00
6,300.00	4.66	39.04	6,282.97	327.31	265.40	-309.47	0.00	0.00	0.00
6,400.00	4.66	39.04	6,382.64	333.63	270.52	-315.44	0.00	0.00	0.00
6,500.00	4.66	39.04	6,482.31	339.94	275.64	-321.42	0.00	0.00	0.00
6,543.60	4.66	39.04	6,525.76	342.70	277.87	-324.02	0.00	0.00	0.00
Start DLS 10.00 TFO 140.69									
6,550.00	4.19	44.60	6,532.15	343.07	278.20	-324.36	10.00	-7.43	86.89
6,600.00	3.58	124.35	6,582.06	343.48	280.77	-324.62	10.00	-1.21	159.50
6,650.00	7.62	157.15	6,631.82	339.55	283.35	-320.52	10.00	8.08	65.61
6,700.00	12.38	166.24	6,681.05	331.28	285.91	-312.10	10.00	9.52	18.17
6,750.00	17.28	170.28	6,729.38	318.75	288.44	-299.44	10.00	9.79	8.08
6,800.00	22.22	172.57	6,776.42	302.05	290.92	-282.61	10.00	9.88	4.58
6,850.00	27.18	174.06	6,821.83	281.30	293.33	-261.75	10.00	9.92	2.98
6,900.00	32.15	175.12	6,865.27	256.67	295.64	-237.03	10.00	9.95	2.12
6,950.00	37.13	175.92	6,906.39	228.35	297.85	-208.62	10.00	9.96	1.60
7,000.00	42.11	176.55	6,944.89	196.54	299.94	-176.74	10.00	9.97	1.27
7,050.00	47.10	177.08	6,980.48	161.50	301.88	-141.64	10.00	9.97	1.05
7,077.95	49.89	177.33	6,999.00	140.59	302.90	-120.72	10.00	9.98	0.92
Sharon Springs									
7,100.00	52.09	177.52	7,012.88	123.48	303.67	-103.59	10.00	9.98	0.85
7,150.00	57.08	177.91	7,041.85	82.77	305.29	-62.87	10.00	9.98	0.78
7,200.00	62.07	178.26	7,067.16	39.70	306.73	-19.79	10.00	9.98	0.69
7,224.10	64.48	178.41	7,078.00	18.18	307.35	1.72	10.00	9.98	0.65
Niobrara A									
7,250.00	67.06	178.57	7,088.63	-5.42	307.97	25.32	10.00	9.98	0.62
7,284.16	70.47	178.77	7,101.00	-37.26	308.71	57.13	10.00	9.98	0.59
Niobrara B									
7,300.00	72.05	178.87	7,106.09	-52.25	309.02	72.12	10.00	9.99	0.57
7,350.00	77.05	179.14	7,119.40	-100.42	309.86	120.24	10.00	9.99	0.55
7,400.00	82.04	179.41	7,128.47	-149.57	310.48	169.33	10.00	9.99	0.53
7,450.00	87.03	179.67	7,133.23	-199.32	310.87	219.00	10.00	9.99	0.52
7,477.69	89.80	179.81	7,134.00	-227.00	311.00	246.63	10.00	9.99	0.52
Start 4817.97 hold at 7477.69 MD - 7"									
7,500.00	89.80	179.81	7,134.08	-249.31	311.07	268.90	0.00	0.00	0.00
7,600.00	89.80	179.81	7,134.43	-349.31	311.40	368.71	0.00	0.00	0.00
7,700.00	89.80	179.81	7,134.78	-449.31	311.73	468.52	0.00	0.00	0.00

Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14N-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14N-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,800.00	89.80	179.81	7,135.14	-549.31	312.06	568.33	0.00	0.00	0.00
7,900.00	89.80	179.81	7,135.49	-649.31	312.38	668.14	0.00	0.00	0.00
8,000.00	89.80	179.81	7,135.84	-749.31	312.71	767.95	0.00	0.00	0.00
8,100.00	89.80	179.81	7,136.20	-849.30	313.04	867.76	0.00	0.00	0.00
8,200.00	89.80	179.81	7,136.55	-949.30	313.37	967.57	0.00	0.00	0.00
8,300.00	89.80	179.81	7,136.90	-1,049.30	313.70	1,067.39	0.00	0.00	0.00
8,400.00	89.80	179.81	7,137.25	-1,149.30	314.02	1,167.20	0.00	0.00	0.00
8,500.00	89.80	179.81	7,137.61	-1,249.30	314.35	1,267.01	0.00	0.00	0.00
8,600.00	89.80	179.81	7,137.96	-1,349.30	314.68	1,366.82	0.00	0.00	0.00
8,700.00	89.80	179.81	7,138.31	-1,449.30	315.01	1,466.63	0.00	0.00	0.00
8,800.00	89.80	179.81	7,138.67	-1,549.30	315.34	1,566.44	0.00	0.00	0.00
8,900.00	89.80	179.81	7,139.02	-1,649.29	315.66	1,666.25	0.00	0.00	0.00
9,000.00	89.80	179.81	7,139.37	-1,749.29	315.99	1,766.06	0.00	0.00	0.00
9,100.00	89.80	179.81	7,139.72	-1,849.29	316.32	1,865.87	0.00	0.00	0.00
9,200.00	89.80	179.81	7,140.08	-1,949.29	316.65	1,965.68	0.00	0.00	0.00
9,300.00	89.80	179.81	7,140.43	-2,049.29	316.97	2,065.49	0.00	0.00	0.00
9,400.00	89.80	179.81	7,140.78	-2,149.29	317.30	2,165.30	0.00	0.00	0.00
9,500.00	89.80	179.81	7,141.14	-2,249.29	317.63	2,265.12	0.00	0.00	0.00
9,600.00	89.80	179.81	7,141.49	-2,349.29	317.96	2,364.93	0.00	0.00	0.00
9,700.00	89.80	179.81	7,141.84	-2,449.29	318.29	2,464.74	0.00	0.00	0.00
9,800.00	89.80	179.81	7,142.19	-2,549.28	318.61	2,564.55	0.00	0.00	0.00
9,900.00	89.80	179.81	7,142.55	-2,649.28	318.94	2,664.36	0.00	0.00	0.00
10,000.00	89.80	179.81	7,142.90	-2,749.28	319.27	2,764.17	0.00	0.00	0.00
10,100.00	89.80	179.81	7,143.25	-2,849.28	319.60	2,863.98	0.00	0.00	0.00
10,200.00	89.80	179.81	7,143.61	-2,949.28	319.93	2,963.79	0.00	0.00	0.00
10,300.00	89.80	179.81	7,143.96	-3,049.28	320.25	3,063.60	0.00	0.00	0.00
10,400.00	89.80	179.81	7,144.31	-3,149.28	320.58	3,163.41	0.00	0.00	0.00
10,500.00	89.80	179.81	7,144.66	-3,249.28	320.91	3,263.22	0.00	0.00	0.00
10,600.00	89.80	179.81	7,145.02	-3,349.28	321.24	3,363.04	0.00	0.00	0.00
10,700.00	89.80	179.81	7,145.37	-3,449.27	321.56	3,462.85	0.00	0.00	0.00
10,800.00	89.80	179.81	7,145.72	-3,549.27	321.89	3,562.66	0.00	0.00	0.00
10,900.00	89.80	179.81	7,146.08	-3,649.27	322.22	3,662.47	0.00	0.00	0.00
11,000.00	89.80	179.81	7,146.43	-3,749.27	322.55	3,762.28	0.00	0.00	0.00
11,100.00	89.80	179.81	7,146.78	-3,849.27	322.88	3,862.09	0.00	0.00	0.00
11,200.00	89.80	179.81	7,147.13	-3,949.27	323.20	3,961.90	0.00	0.00	0.00
11,300.00	89.80	179.81	7,147.49	-4,049.27	323.53	4,061.71	0.00	0.00	0.00
11,400.00	89.80	179.81	7,147.84	-4,149.27	323.86	4,161.52	0.00	0.00	0.00
11,500.00	89.80	179.81	7,148.19	-4,249.26	324.19	4,261.33	0.00	0.00	0.00
11,600.00	89.80	179.81	7,148.55	-4,349.26	324.52	4,361.14	0.00	0.00	0.00
11,700.00	89.80	179.81	7,148.90	-4,449.26	324.84	4,460.96	0.00	0.00	0.00
11,800.00	89.80	179.81	7,149.25	-4,549.26	325.17	4,560.77	0.00	0.00	0.00
11,900.00	89.80	179.81	7,149.60	-4,649.26	325.50	4,660.58	0.00	0.00	0.00
12,000.00	89.80	179.81	7,149.96	-4,749.26	325.83	4,760.39	0.00	0.00	0.00
12,100.00	89.80	179.81	7,150.31	-4,849.26	326.15	4,860.20	0.00	0.00	0.00
12,200.00	89.80	179.81	7,150.66	-4,949.26	326.48	4,960.01	0.00	0.00	0.00
12,295.66	89.80	179.81	7,151.00	-5,044.92	326.80	5,055.49	0.00	0.00	0.00
TD at 12295.66 - Kunzman 14N-8HZ BHL									



Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14N-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14N-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Kunzman 14N-8HZ BHL	0.00	0.00	7,151.00	-5,044.92	326.80	1,297,020.76	3,194,855.87	40.146614	-104.802962
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
839.00	839.00	9 5/8"	9-5/8	12-1/4	
7,477.69	7,134.00	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,937.21	3,928.00	Parkman				
4,338.54	4,328.00	Sussex				
7,077.95	6,999.00	Sharon Springs				
7,224.10	7,078.00	Niobrara A				
7,284.16	7,101.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,233.15	1,232.89	7.37	5.97	Start 5310.45 hold at 1233.15 MD	
6,543.60	6,525.76	342.70	277.87	Start DLS 10.00 TFO 140.69	
7,477.69	7,134.00	-227.00	311.00	Start 4817.97 hold at 7477.69 MD	
12,295.66	7,151.00	-5,044.92	326.80	TD at 12295.66	