



Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Kunzman 35-5HZ Pad

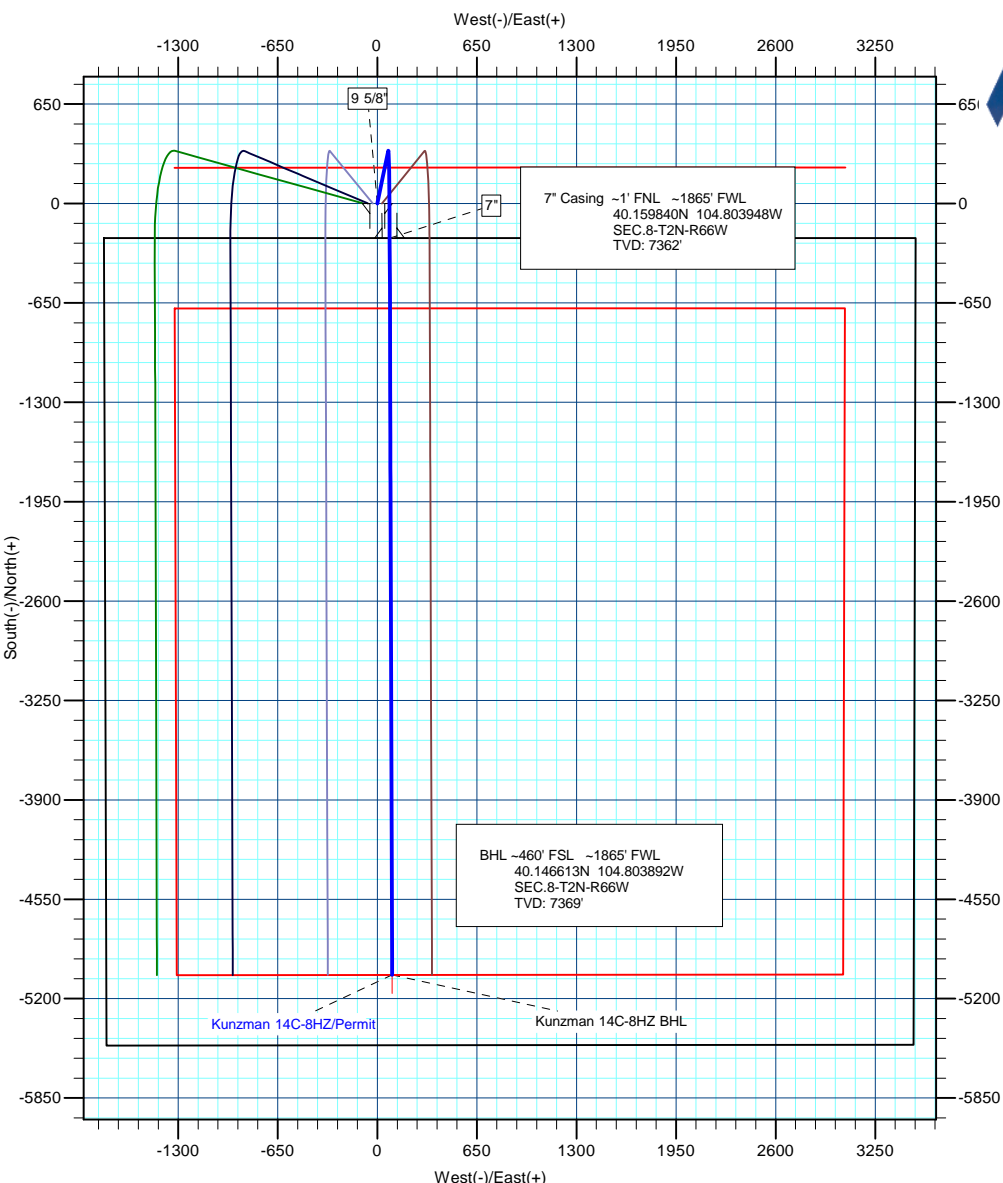
Kunzman 14C-8HZ

Wellbore #1

Plan: Permit

Standard Planning Report

06 March, 2013



Weatherford®

Project: COLORADO NORTHERN ZONE - 83
Site: WELD_Kunzman 35-5HZ Pad
Well: Kunzman 14C-8HZ
Wellbore: Wellbore #1
Section: Sec. 5-T2N-R66W
SHL: 226 FSL 1784' FWL SEC. 5
Design: Permit
Latitude: 40.160463
Longitude: -104.804238
GL: 4858.00
KB: rkb + gl @ 4875.00ft



Azimuths to True North
Magnetic North: 8.72°

Magnetic Field
Strength: 52886.2snT
Dip Angle: 66.81°
Date: 7/17/2012
Model: IGRF2010

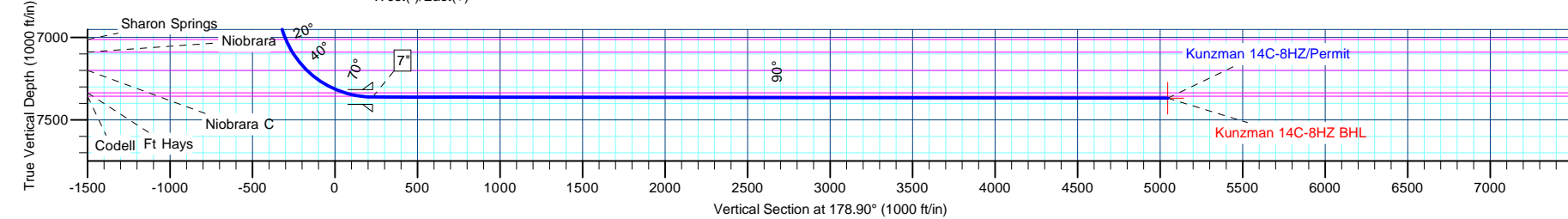
WELL DETAILS: Kunzman 14C-8HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4858.00 Latitude	Longitude	Slot
0.00	0.00	1302062.72	3194459.59	40.160463	-104.804238	

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	
1177.33	1177.44	3.55	11.72	5.38	1.12	-5.36	5.49	Start 5587.78 hold at 1177.44 MD	
6754.39	6765.22	3.55	11.72	344.05	71.37	-342.62	351.37	Start DLS 10.00 TFO 168.07	
7362.00	7699.11	89.92	179.81	-227.00	81.00	228.51	925.24	Start 4818.31 hold at 7699.11 MD	
7369.00	12517.43	89.92	179.81	-5045.28	96.72	5046.21	5743.55	TD at 12517.43	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Kunzman 14C-8HZ BHL	7369.00	-5045.28	96.72	40.146613	-104.803892	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3926.00	3931.39	Parkman
4325.00	4331.16	Sussex
7013.00	7030.00	Sharon Springs
7089.00	7115.61	Niobrara
7200.00	7258.21	Niobrara C
7336.00	7526.67	Ft Hays
7357.00	7624.19	Codell

CASING DETAILS			
TVD	MD	Name	Size
839.00	839.00	9 5/8"	9-5/8
7362.00	7699.11	7"	7





Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14C-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 14C-8HZ					
Well Position	+N/-S	-0.01 ft	Northing:	1,302,062.72 usft	Latitude:	40.160463
	+E/-W	0.00 ft	Easting:	3,194,459.59 usft	Longitude:	-104.804238
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) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	178.90

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,177.44	3.55	11.72	1,177.33	5.38	1.12	2.00	2.00	0.00	11.72	
6,765.22	3.55	11.72	6,754.39	344.05	71.37	0.00	0.00	0.00	0.00	
7,699.11	89.92	179.81	7,362.00	-227.00	81.00	10.00	9.25	18.00	168.07	
12,517.43	89.92	179.81	7,369.00	-5,045.28	96.72	0.00	0.00	0.00	0.00	Kunzman 14C-8HZ B



Weatherford®

Andarko Petroleum Corporation

Planning Report



Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14C-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	11.72	1,099.98	1.71	0.35	-1.70	2.00	2.00	0.00
1,177.44	3.55	11.72	1,177.33	5.38	1.12	-5.36	2.00	2.00	0.00
Start 5587.78 hold at 1177.44 MD									
1,200.00	3.55	11.72	1,199.84	6.75	1.40	-6.72	0.00	0.00	0.00
1,300.00	3.55	11.72	1,299.65	12.81	2.66	-12.75	0.00	0.00	0.00
1,400.00	3.55	11.72	1,399.46	18.87	3.91	-18.79	0.00	0.00	0.00
1,500.00	3.55	11.72	1,499.27	24.93	5.17	-24.83	0.00	0.00	0.00
1,600.00	3.55	11.72	1,599.08	30.99	6.43	-30.86	0.00	0.00	0.00
1,700.00	3.55	11.72	1,698.88	37.05	7.69	-36.90	0.00	0.00	0.00
1,800.00	3.55	11.72	1,798.69	43.11	8.94	-42.93	0.00	0.00	0.00
1,900.00	3.55	11.72	1,898.50	49.17	10.20	-48.97	0.00	0.00	0.00
2,000.00	3.55	11.72	1,998.31	55.23	11.46	-55.00	0.00	0.00	0.00
2,100.00	3.55	11.72	2,098.12	61.29	12.72	-61.04	0.00	0.00	0.00
2,200.00	3.55	11.72	2,197.93	67.35	13.97	-67.07	0.00	0.00	0.00
2,300.00	3.55	11.72	2,297.73	73.42	15.23	-73.11	0.00	0.00	0.00
2,400.00	3.55	11.72	2,397.54	79.48	16.49	-79.15	0.00	0.00	0.00
2,500.00	3.55	11.72	2,497.35	85.54	17.74	-85.18	0.00	0.00	0.00
2,600.00	3.55	11.72	2,597.16	91.60	19.00	-91.22	0.00	0.00	0.00
2,700.00	3.55	11.72	2,696.97	97.66	20.26	-97.25	0.00	0.00	0.00
2,800.00	3.55	11.72	2,796.78	103.72	21.52	-103.29	0.00	0.00	0.00
2,900.00	3.55	11.72	2,896.58	109.78	22.77	-109.32	0.00	0.00	0.00
3,000.00	3.55	11.72	2,996.39	115.84	24.03	-115.36	0.00	0.00	0.00
3,100.00	3.55	11.72	3,096.20	121.90	25.29	-121.40	0.00	0.00	0.00
3,200.00	3.55	11.72	3,196.01	127.96	26.55	-127.43	0.00	0.00	0.00
3,300.00	3.55	11.72	3,295.82	134.02	27.80	-133.47	0.00	0.00	0.00
3,400.00	3.55	11.72	3,395.62	140.09	29.06	-139.50	0.00	0.00	0.00
3,500.00	3.55	11.72	3,495.43	146.15	30.32	-145.54	0.00	0.00	0.00
3,600.00	3.55	11.72	3,595.24	152.21	31.58	-151.57	0.00	0.00	0.00
3,700.00	3.55	11.72	3,695.05	158.27	32.83	-157.61	0.00	0.00	0.00
3,800.00	3.55	11.72	3,794.86	164.33	34.09	-163.65	0.00	0.00	0.00
3,900.00	3.55	11.72	3,894.67	170.39	35.35	-169.68	0.00	0.00	0.00
3,931.39	3.55	11.72	3,926.00	172.29	35.74	-171.58	0.00	0.00	0.00
Parkman									
4,000.00	3.55	11.72	3,994.47	176.45	36.60	-175.72	0.00	0.00	0.00
4,100.00	3.55	11.72	4,094.28	182.51	37.86	-181.75	0.00	0.00	0.00
4,200.00	3.55	11.72	4,194.09	188.57	39.12	-187.79	0.00	0.00	0.00
4,300.00	3.55	11.72	4,293.90	194.63	40.38	-193.82	0.00	0.00	0.00
4,331.16	3.55	11.72	4,325.00	196.52	40.77	-195.70	0.00	0.00	0.00
Sussex									
4,400.00	3.55	11.72	4,393.71	200.69	41.63	-199.86	0.00	0.00	0.00

Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14C-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	3.55	11.72	4,493.52	206.75	42.89	-205.89	0.00	0.00	0.00
4,600.00	3.55	11.72	4,593.32	212.82	44.15	-211.93	0.00	0.00	0.00
4,700.00	3.55	11.72	4,693.13	218.88	45.41	-217.97	0.00	0.00	0.00
4,800.00	3.55	11.72	4,792.94	224.94	46.66	-224.00	0.00	0.00	0.00
4,900.00	3.55	11.72	4,892.75	231.00	47.92	-230.04	0.00	0.00	0.00
5,000.00	3.55	11.72	4,992.56	237.06	49.18	-236.07	0.00	0.00	0.00
5,100.00	3.55	11.72	5,092.36	243.12	50.44	-242.11	0.00	0.00	0.00
5,200.00	3.55	11.72	5,192.17	249.18	51.69	-248.14	0.00	0.00	0.00
5,300.00	3.55	11.72	5,291.98	255.24	52.95	-254.18	0.00	0.00	0.00
5,400.00	3.55	11.72	5,391.79	261.30	54.21	-260.22	0.00	0.00	0.00
5,500.00	3.55	11.72	5,491.60	267.36	55.46	-266.25	0.00	0.00	0.00
5,600.00	3.55	11.72	5,591.41	273.42	56.72	-272.29	0.00	0.00	0.00
5,700.00	3.55	11.72	5,691.21	279.49	57.98	-278.32	0.00	0.00	0.00
5,800.00	3.55	11.72	5,791.02	285.55	59.24	-284.36	0.00	0.00	0.00
5,900.00	3.55	11.72	5,890.83	291.61	60.49	-290.39	0.00	0.00	0.00
6,000.00	3.55	11.72	5,990.64	297.67	61.75	-296.43	0.00	0.00	0.00
6,100.00	3.55	11.72	6,090.45	303.73	63.01	-302.46	0.00	0.00	0.00
6,200.00	3.55	11.72	6,190.26	309.79	64.27	-308.50	0.00	0.00	0.00
6,300.00	3.55	11.72	6,290.06	315.85	65.52	-314.54	0.00	0.00	0.00
6,400.00	3.55	11.72	6,389.87	321.91	66.78	-320.57	0.00	0.00	0.00
6,500.00	3.55	11.72	6,489.68	327.97	68.04	-326.61	0.00	0.00	0.00
6,600.00	3.55	11.72	6,589.49	334.03	69.30	-332.64	0.00	0.00	0.00
6,700.00	3.55	11.72	6,689.30	340.09	70.55	-338.68	0.00	0.00	0.00
6,765.22	3.55	11.72	6,754.39	344.05	71.37	-342.62	0.00	0.00	0.00
Start DLS 10.00 TFO 168.07									
6,800.00	0.73	90.27	6,789.15	345.10	71.81	-343.66	10.00	-8.10	225.84
6,850.00	5.06	171.50	6,839.08	342.92	72.46	-341.46	10.00	8.65	162.46
6,900.00	10.03	175.67	6,888.63	336.39	73.12	-334.93	10.00	9.95	8.32
6,950.00	15.02	177.08	6,937.43	325.57	73.77	-324.09	10.00	9.98	2.83
7,000.00	20.02	177.80	6,985.09	310.53	74.43	-309.05	10.00	9.99	1.44
7,030.00	23.02	178.09	7,013.00	299.54	74.83	-298.05	10.00	9.99	0.96
Sharon Springs									
7,050.00	25.02	178.24	7,031.26	291.40	75.09	-289.91	10.00	10.00	0.77
7,100.00	30.01	178.54	7,075.60	268.32	75.73	-266.82	10.00	10.00	0.60
7,115.61	31.57	178.62	7,089.00	260.33	75.93	-258.83	10.00	10.00	0.49
Niobrara									
7,150.00	35.01	178.77	7,117.75	241.46	76.35	-239.95	10.00	10.00	0.43
7,200.00	40.01	178.94	7,157.39	211.03	76.96	-209.52	10.00	10.00	0.35
7,250.00	45.01	179.08	7,194.24	177.26	77.54	-175.74	10.00	10.00	0.28
7,258.21	45.83	179.10	7,200.00	171.42	77.63	-169.90	10.00	10.00	0.25
Niobrara C									
7,300.00	50.01	179.20	7,228.00	140.41	78.09	-138.88	10.00	10.00	0.23
7,350.00	55.01	179.30	7,258.42	100.75	78.61	-99.22	10.00	10.00	0.20
7,400.00	60.01	179.39	7,285.27	58.59	79.09	-57.07	10.00	10.00	0.18
7,450.00	65.01	179.47	7,308.35	14.25	79.53	-12.73	10.00	10.00	0.16
7,500.00	70.01	179.55	7,327.47	-31.93	79.93	33.45	10.00	10.00	0.15
7,526.67	72.67	179.59	7,336.00	-57.19	80.12	58.71	10.00	10.00	0.14
Ft Hays									
7,550.00	75.01	179.62	7,342.49	-79.60	80.27	81.12	10.00	10.00	0.14
7,600.00	80.01	179.68	7,353.31	-128.40	80.57	129.92	10.00	10.00	0.13
7,624.19	82.42	179.72	7,357.00	-152.30	80.69	153.82	10.00	10.00	0.13
Codell									
7,650.00	85.01	179.75	7,359.83	-177.95	80.81	179.47	10.00	10.00	0.13

Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14C-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)
7,699.11	89.92	179.81	7,362.00	-227.00	81.00	228.51	10.00	10.00	0.13
Start 4818.31 hold at 7699.11 MD - 7"									
7,800.00	89.92	179.81	7,362.15	-327.89	81.33	329.39	0.00	0.00	0.00
7,900.00	89.92	179.81	7,362.29	-427.89	81.66	429.37	0.00	0.00	0.00
8,000.00	89.92	179.81	7,362.44	-527.89	81.98	529.36	0.00	0.00	0.00
8,100.00	89.92	179.81	7,362.58	-627.89	82.31	629.35	0.00	0.00	0.00
8,200.00	89.92	179.81	7,362.73	-727.89	82.63	729.34	0.00	0.00	0.00
8,300.00	89.92	179.81	7,362.87	-827.89	82.96	829.32	0.00	0.00	0.00
8,400.00	89.92	179.81	7,363.02	-927.89	83.29	929.31	0.00	0.00	0.00
8,500.00	89.92	179.81	7,363.16	-1,027.88	83.61	1,029.30	0.00	0.00	0.00
8,600.00	89.92	179.81	7,363.31	-1,127.88	83.94	1,129.29	0.00	0.00	0.00
8,700.00	89.92	179.81	7,363.45	-1,227.88	84.27	1,229.27	0.00	0.00	0.00
8,800.00	89.92	179.81	7,363.60	-1,327.88	84.59	1,329.26	0.00	0.00	0.00
8,900.00	89.92	179.81	7,363.74	-1,427.88	84.92	1,429.25	0.00	0.00	0.00
9,000.00	89.92	179.81	7,363.89	-1,527.88	85.25	1,529.23	0.00	0.00	0.00
9,100.00	89.92	179.81	7,364.04	-1,627.88	85.57	1,629.22	0.00	0.00	0.00
9,200.00	89.92	179.81	7,364.18	-1,727.88	85.90	1,729.21	0.00	0.00	0.00
9,300.00	89.92	179.81	7,364.33	-1,827.88	86.22	1,829.20	0.00	0.00	0.00
9,400.00	89.92	179.81	7,364.47	-1,927.88	86.55	1,929.18	0.00	0.00	0.00
9,500.00	89.92	179.81	7,364.62	-2,027.88	86.88	2,029.17	0.00	0.00	0.00
9,600.00	89.92	179.81	7,364.76	-2,127.88	87.20	2,129.16	0.00	0.00	0.00
9,700.00	89.92	179.81	7,364.91	-2,227.88	87.53	2,229.15	0.00	0.00	0.00
9,800.00	89.92	179.81	7,365.05	-2,327.88	87.86	2,329.13	0.00	0.00	0.00
9,900.00	89.92	179.81	7,365.20	-2,427.88	88.18	2,429.12	0.00	0.00	0.00
10,000.00	89.92	179.81	7,365.34	-2,527.87	88.51	2,529.11	0.00	0.00	0.00
10,100.00	89.92	179.81	7,365.49	-2,627.87	88.84	2,629.09	0.00	0.00	0.00
10,200.00	89.92	179.81	7,365.63	-2,727.87	89.16	2,729.08	0.00	0.00	0.00
10,300.00	89.92	179.81	7,365.78	-2,827.87	89.49	2,829.07	0.00	0.00	0.00
10,400.00	89.92	179.81	7,365.92	-2,927.87	89.81	2,929.06	0.00	0.00	0.00
10,500.00	89.92	179.81	7,366.07	-3,027.87	90.14	3,029.04	0.00	0.00	0.00
10,600.00	89.92	179.81	7,366.21	-3,127.87	90.47	3,129.03	0.00	0.00	0.00
10,700.00	89.92	179.81	7,366.36	-3,227.87	90.79	3,229.02	0.00	0.00	0.00
10,800.00	89.92	179.81	7,366.51	-3,327.87	91.12	3,329.00	0.00	0.00	0.00
10,900.00	89.92	179.81	7,366.65	-3,427.87	91.45	3,428.99	0.00	0.00	0.00
11,000.00	89.92	179.81	7,366.80	-3,527.87	91.77	3,528.98	0.00	0.00	0.00
11,100.00	89.92	179.81	7,366.94	-3,627.87	92.10	3,628.97	0.00	0.00	0.00
11,200.00	89.92	179.81	7,367.09	-3,727.87	92.43	3,728.95	0.00	0.00	0.00
11,300.00	89.92	179.81	7,367.23	-3,827.87	92.75	3,828.94	0.00	0.00	0.00
11,400.00	89.92	179.81	7,367.38	-3,927.87	93.08	3,928.93	0.00	0.00	0.00
11,500.00	89.92	179.81	7,367.52	-4,027.87	93.40	4,028.92	0.00	0.00	0.00
11,600.00	89.92	179.81	7,367.67	-4,127.86	93.73	4,128.90	0.00	0.00	0.00
11,700.00	89.92	179.81	7,367.81	-4,227.86	94.06	4,228.89	0.00	0.00	0.00
11,800.00	89.92	179.81	7,367.96	-4,327.86	94.38	4,328.88	0.00	0.00	0.00
11,900.00	89.92	179.81	7,368.10	-4,427.86	94.71	4,428.86	0.00	0.00	0.00
12,000.00	89.92	179.81	7,368.25	-4,527.86	95.04	4,528.85	0.00	0.00	0.00
12,100.00	89.92	179.81	7,368.39	-4,627.86	95.36	4,628.84	0.00	0.00	0.00
12,200.00	89.92	179.81	7,368.54	-4,727.86	95.69	4,728.83	0.00	0.00	0.00
12,300.00	89.92	179.81	7,368.68	-4,827.86	96.02	4,828.81	0.00	0.00	0.00
12,400.00	89.92	179.81	7,368.83	-4,927.86	96.34	4,928.80	0.00	0.00	0.00
12,500.00	89.92	179.81	7,368.97	-5,027.86	96.67	5,028.79	0.00	0.00	0.00
12,517.43	89.92	179.81	7,369.00	-5,045.28	96.72	5,046.21	0.00	0.00	0.00
TD at 12517.43 - Kunzman 14C-8HZ BHL									



Database:	edmp	Local Co-ordinate Reference:	Well Kunzman 14C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4875.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4875.00ft
Site:	WELD_Kunzman 35-5HZ Pad	North Reference:	True
Well:	Kunzman 14C-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 14C-8HZ BHL	0.00	0.00	7,369.00	-5,045.28	96.72	1,297,018.36	3,194,595.90	40.146613	-104.803892
- 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	
7,699.11	7,362.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,931.39	3,926.00	Parkman				
4,331.16	4,325.00	Sussex				
7,030.00	7,013.00	Sharon Springs				
7,115.61	7,089.00	Niobrara				
7,258.21	7,200.00	Niobrara C				
7,526.67	7,336.00	Ft Hays				
7,624.19	7,357.00	Codell				

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	
1,177.44	1,177.33	5.38	1.12	Start 5587.78 hold at 1177.44 MD	
6,765.22	6,754.39	344.05	71.37	Start DLS 10.00 TFO 168.07	
7,699.11	7,362.00	-227.00	81.00	Start 4818.31 hold at 7699.11 MD	
12,517.43	7,369.00	-5,045.28	96.72	TD at 12517.43	