



Weatherford®

Weatherford
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	Haymaker 29N-9HZ
State:	Colorado
County:	Weld
API Number:	05-123-35660
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

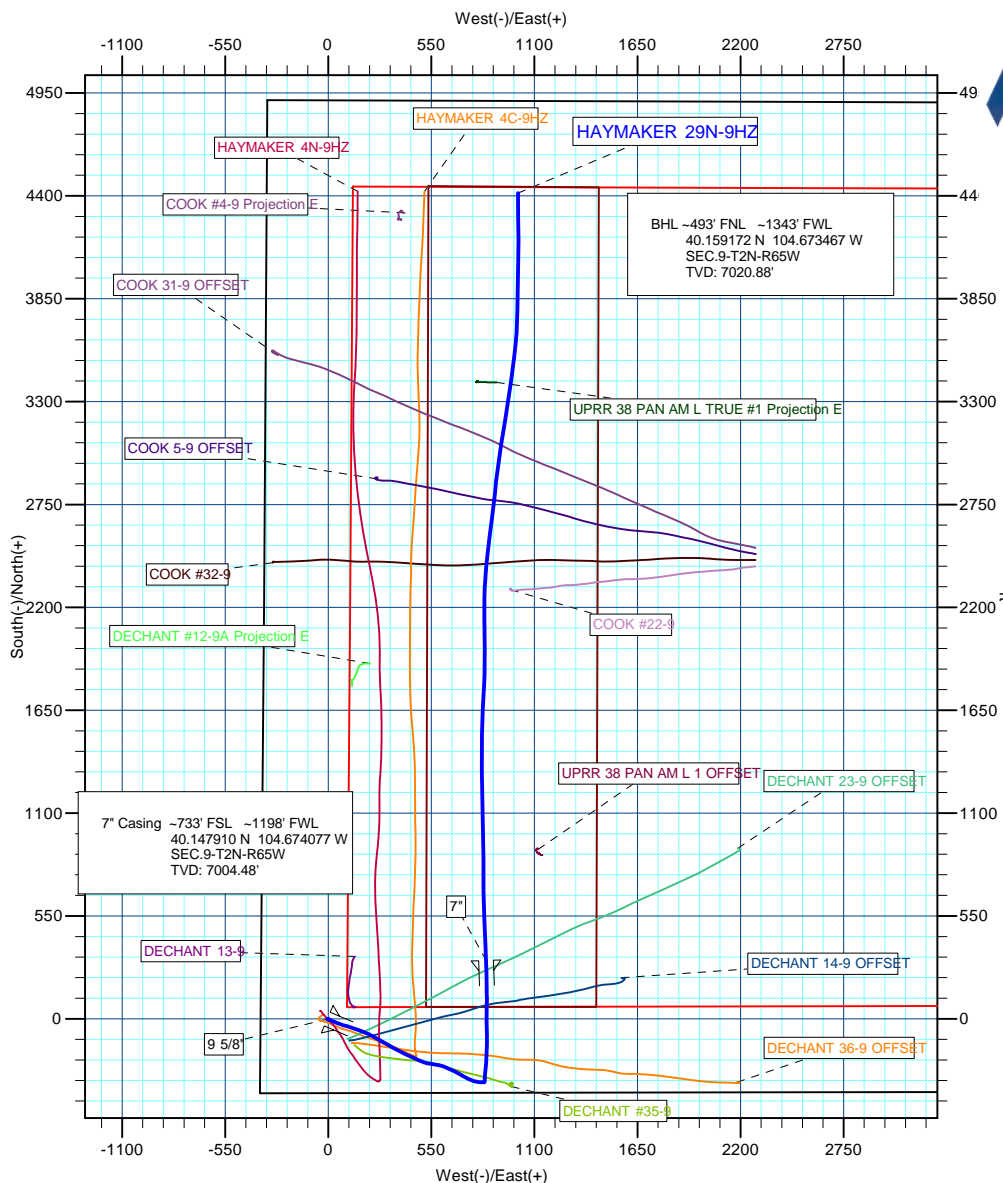
I, John R. Morgan, hereby certify the attached
directional survey run from the measure depth of 1,043.00 feet
to the measured depth of 11,537.00 feet as accurate and true
to the best of my knowledge.

Signature

27-Nov-12

Date

John Morgan
Directional Planning
Weatherford - Rockies District



Weatherford®

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_HAYMAKER 13-9HZ PAD
 Well: HAYMAKER 29N-9HZ
 Wellbore: HAYMAKER 29N-9HZ
 Section: SEC.9-T2N-R65W
 SHL: 398' FSL 362' FWL
 Design: HAYMAKER 29N-9HZ
 Latitude: 40.147054
 Longitude: -104.677089
 GL: 4897.00
 KB: WELL @ 4897.00ft (Original Well Elev)

Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 52886.0nT
Dip Angle: 66.82°
Date: 8/8/2012
Model: IGRF2010

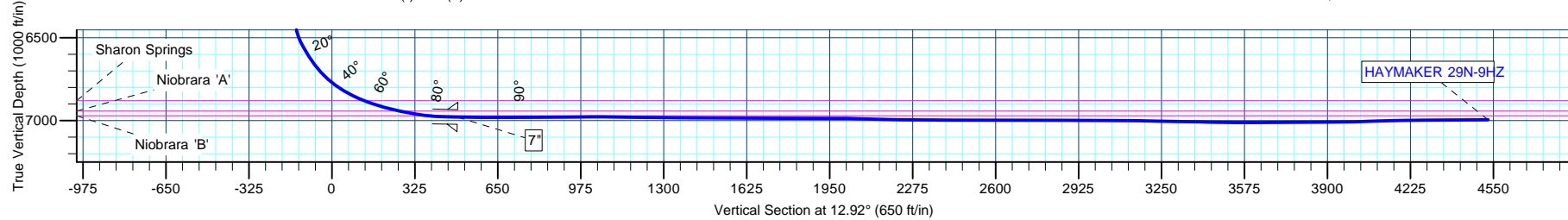
WELL DETAILS: HAYMAKER 29N-9HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4897.00 Latitude 40.147054	Longitude -104.677089	Slot
0.00	0.00	1297482.60	3230041.05			

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
885.97	886.00	0.76	280.76	-2.51	-4.51	-3.45	7.35	LAST GYRO SURVEY
885.97	886.00	0.76	280.76	-2.51	-4.51	-3.45	7.35	TIE ON TO SURFACE GYRO
921.97	922.00	0.69	292.96	-2.38	-4.94	-3.42	7.80	SET 9-5/8" CASING
1017.96	1018.00	0.69	331.34	-1.65	-5.75	-2.89	9.02	FIRST WFT MWD SURVEY
6979.48	7450.89	88.69	357.89	311.89	842.20	492.29	1574.51	SET 7" CASING
6996.35	11512.00	90.49	359.70	4360.41	1012.83	4476.48	5634.85	LAST WFT MWD SURVEY
6995.88	11566.00	90.50	359.70	4414.41	1012.55	4529.05	5688.85	PROJECTION TO TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HAYMAKER 29N-9HZ REVISED BHL 2	6992.00	4442.00	1004.00	40.159248	-104.673497	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3949.00	3996.96	Parkman
4448.00	4506.11	Sussex
6880.00	7056.12	Sharon Springs
6943.00	7213.63	Niobrara 'A'
6971.00	7329.52	Niobrara 'B'

CASING DETAILS			
TVD	MD	Name	Size
921.97	922.00	9 5/8"	9-5/8
6979.48	7450.89	7"	7





Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_HAYMAKER 13-9HZ PAD

HAYMAKER 29N-9HZ

HAYMAKER 29N-9HZ

Design: HAYMAKER 29N-9HZ

Standard Survey Report

27 November, 2012

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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_HAYMAKER 13-9HZ PAD, SEC.9-T2N-R65W			
Site Position:		Northing:	1,297,482.61 usft	Latitude:	40.147054
From:	Lat/Long	Easting:	3,230,041.05 usft	Longitude:	-104.677089
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	HAYMAKER 29N-9HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,297,482.60 usft	Latitude:	40.147054
	+E/-W	0.00 ft	Easting:	3,230,041.05 usft	Longitude:	-104.677089
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,897.00 ft

Wellbore	HAYMAKER 29N-9HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/8/2012	8.64	66.82	52,886

Design	HAYMAKER 29N-9HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	25.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	25.00	0.00	0.00	12.92	

Survey Program	Date	11/20/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	911.00	Survey #1 (HAYMAKER 29N-9HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
1,043.00	11,591.00	Survey #3 (HAYMAKER 29N-9HZ)	MWD+IFR	MWD + IFR CORRECTION	

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)	
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	
125.00	0.38	127.52	125.00	-0.20	0.26	-0.14	0.38	0.38	0.00	
225.00	0.32	178.17	225.00	-0.68	0.53	-0.55	0.30	-0.06	50.65	
325.00	0.51	240.59	325.00	-1.18	0.16	-1.12	0.46	0.19	62.42	
425.00	0.37	186.61	424.99	-1.72	-0.27	-1.74	0.42	-0.14	-53.98	
525.00	0.55	228.16	524.99	-2.36	-0.66	-2.45	0.37	0.18	41.55	
625.00	0.68	250.80	624.98	-2.88	-1.58	-3.16	0.27	0.13	22.64	
725.00	0.58	278.36	724.98	-3.00	-2.64	-3.51	0.32	-0.10	27.56	
825.00	0.53	291.21	824.97	-2.76	-3.57	-3.49	0.13	-0.05	12.85	
911.00	0.76	280.76	910.97	-2.51	-4.51	-3.45	0.30	0.27	-12.15	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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)
LAST GYRO SURVEY - TIE ON TO SURFACE GYRO									
947.00	0.69	292.96	946.97	-2.38	-4.94	-3.42	0.47	-0.20	33.90
SET 9-5/8" CASING									
1,043.00	0.69	331.34	1,042.96	-1.65	-5.75	-2.89	0.47	0.00	39.98
FIRST WFT MWD SURVEY									
1,134.00	1.51	103.61	1,133.95	-1.45	-4.84	-2.49	2.24	0.90	145.35
1,228.00	3.88	113.08	1,227.84	-2.99	-0.71	-3.07	2.56	2.52	10.07
1,320.00	5.87	105.79	1,319.50	-5.49	6.68	-3.85	2.26	2.16	-7.92
1,412.00	7.84	116.93	1,410.84	-9.61	16.80	-5.61	2.57	2.14	12.11
1,507.00	9.79	113.36	1,504.72	-15.75	29.99	-8.64	2.13	2.05	-3.76
1,602.00	11.02	110.53	1,598.16	-22.13	45.91	-11.31	1.40	1.29	-2.98
1,696.00	10.99	110.36	1,690.43	-28.40	62.72	-13.66	0.05	-0.03	-0.18
1,791.00	10.30	107.33	1,783.79	-34.08	79.32	-15.49	0.93	-0.73	-3.19
1,886.00	9.43	104.96	1,877.39	-38.62	94.95	-16.42	1.01	-0.92	-2.49
1,981.00	10.15	107.90	1,971.00	-43.20	110.43	-17.42	0.92	0.76	3.09
2,075.00	10.76	111.02	2,063.44	-48.90	126.51	-19.38	0.89	0.65	3.32
2,170.00	11.72	107.99	2,156.62	-55.06	143.96	-21.48	1.19	1.01	-3.19
2,265.00	9.77	107.01	2,249.95	-60.40	160.85	-22.91	2.06	-2.05	-1.03
2,359.00	10.43	108.37	2,342.49	-65.41	176.55	-24.28	0.75	0.70	1.45
2,454.00	12.18	114.62	2,435.65	-72.30	193.82	-27.13	2.25	1.84	6.58
2,549.00	9.99	113.17	2,528.87	-79.71	210.51	-30.63	2.32	-2.31	-1.53
2,644.00	10.13	119.77	2,622.41	-87.10	225.34	-34.52	1.22	0.15	6.95
2,738.00	11.80	120.73	2,714.70	-96.12	240.78	-39.86	1.79	1.78	1.02
2,834.00	9.51	118.97	2,809.03	-104.98	256.16	-45.05	2.41	-2.39	-1.83
2,929.00	11.44	118.81	2,902.45	-113.32	271.28	-49.80	2.03	2.03	-0.17
3,024.00	11.44	116.37	2,995.56	-122.05	287.97	-54.58	0.51	0.00	-2.57
3,119.00	12.47	118.31	3,088.50	-131.10	305.45	-59.49	1.16	1.08	2.04
3,214.00	10.38	117.62	3,181.61	-139.93	322.06	-64.38	2.20	-2.20	-0.73
3,309.00	10.18	121.34	3,275.09	-148.26	336.81	-69.21	0.73	-0.21	3.92
3,405.00	11.45	122.26	3,369.38	-157.76	352.12	-75.05	1.34	1.32	0.96
3,499.00	10.83	120.25	3,461.61	-167.19	367.64	-80.77	0.78	-0.66	-2.14
3,594.00	11.54	116.54	3,554.80	-175.93	383.85	-85.66	1.06	0.75	-3.91
3,689.00	12.68	115.60	3,647.69	-184.68	401.75	-90.19	1.22	1.20	-0.99
3,784.00	9.77	112.93	3,740.86	-192.33	418.58	-93.88	3.11	-3.06	-2.81
3,879.00	10.95	116.20	3,834.31	-199.46	434.10	-97.36	1.39	1.24	3.44
3,973.00	13.07	113.26	3,926.25	-207.60	451.88	-101.31	2.35	2.26	-3.13
4,068.00	11.95	114.01	4,018.99	-215.84	470.73	-105.14	1.19	-1.18	0.79
4,163.00	11.69	114.26	4,111.98	-223.80	488.49	-108.92	0.28	-0.27	0.26
4,258.00	10.48	112.01	4,205.21	-230.99	505.28	-112.18	1.35	-1.27	-2.37
4,353.00	12.12	102.57	4,298.37	-236.40	523.02	-113.48	2.60	1.73	-9.94
4,448.00	11.50	100.17	4,391.36	-240.24	542.08	-112.97	0.83	-0.65	-2.53
4,542.00	9.89	96.37	4,483.72	-242.79	559.33	-111.60	1.87	-1.71	-4.04
4,638.00	10.48	101.68	4,578.21	-245.47	576.07	-110.47	1.15	0.61	5.53

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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)
4,733.00	9.77	98.94	4,671.73	-248.47	592.50	-109.72	0.90	-0.75	-2.88
4,828.00	11.25	106.79	4,765.14	-252.40	609.33	-109.79	2.16	1.56	8.26
4,923.00	12.08	117.92	4,858.19	-259.74	626.99	-112.99	2.52	0.87	11.72
5,018.00	10.75	112.38	4,951.31	-267.77	643.97	-117.02	1.81	-1.40	-5.83
5,114.00	11.07	112.66	5,045.58	-274.73	660.75	-120.05	0.34	0.33	0.29
5,209.00	10.62	118.08	5,138.88	-282.36	676.89	-123.88	1.17	-0.47	5.71
5,304.00	10.98	120.27	5,232.20	-291.04	692.43	-128.87	0.57	0.38	2.31
5,399.00	8.23	116.77	5,325.86	-298.67	706.32	-133.20	2.96	-2.89	-3.68
5,494.00	8.70	115.68	5,419.82	-304.84	718.86	-136.41	0.52	0.49	-1.15
5,589.00	7.43	124.68	5,513.89	-311.45	730.39	-140.28	1.88	-1.34	9.47
5,683.00	8.13	121.49	5,607.02	-318.38	741.06	-144.65	0.87	0.74	-3.39
5,778.00	9.46	115.24	5,700.90	-325.22	753.85	-148.45	1.72	1.40	-6.58
5,873.00	9.40	108.19	5,794.62	-330.97	768.28	-150.83	1.22	-0.06	-7.42
5,967.00	9.73	101.14	5,887.32	-334.90	783.37	-151.29	1.29	0.35	-7.50
6,062.00	6.88	94.47	5,981.32	-336.90	796.92	-150.20	3.16	-3.00	-7.02
6,157.00	6.96	94.39	6,075.62	-337.78	808.33	-148.51	0.08	0.08	-0.08
6,252.00	5.57	93.27	6,170.05	-338.48	818.67	-146.89	1.47	-1.46	-1.18
6,347.00	4.30	95.47	6,264.70	-339.09	826.82	-145.65	1.35	-1.34	2.32
6,442.00	2.03	89.57	6,359.55	-339.41	832.05	-144.80	2.41	-2.39	-6.21
6,453.00	1.78	84.31	6,370.54	-339.40	832.41	-144.70	2.77	-2.27	-47.82
6,473.00	1.68	88.05	6,390.53	-339.35	833.02	-144.53	0.75	-0.50	18.70
6,505.00	1.97	42.12	6,422.52	-338.93	833.85	-143.93	4.53	0.91	-143.53
6,537.00	5.45	13.06	6,454.45	-337.04	834.57	-141.93	12.03	10.88	-90.81
6,569.00	9.79	2.37	6,486.16	-332.84	835.02	-137.73	14.21	13.56	-33.41
6,600.00	13.52	358.52	6,516.52	-326.58	835.04	-131.63	12.28	12.03	-12.42
6,632.00	16.12	357.90	6,547.45	-318.40	834.78	-123.71	8.14	8.13	-1.94
6,663.00	19.57	2.93	6,576.96	-308.91	834.89	-114.44	12.18	11.13	16.23
6,695.00	23.35	6.40	6,606.73	-297.25	835.87	-102.86	12.46	11.81	10.84
6,727.00	24.01	7.31	6,636.04	-284.49	837.40	-90.08	2.36	2.06	2.84
6,758.00	23.07	6.03	6,664.46	-272.20	838.84	-77.77	3.45	-3.03	-4.13
6,790.00	25.50	4.49	6,693.63	-259.09	840.04	-64.73	7.85	7.59	-4.81
6,822.00	29.03	2.65	6,722.07	-244.47	840.94	-50.27	11.34	11.03	-5.75
6,854.00	33.42	3.45	6,749.42	-227.91	841.83	-33.93	13.78	13.72	2.50
6,886.00	36.65	3.86	6,775.62	-209.58	843.00	-15.80	10.12	10.09	1.28
6,917.00	40.69	3.91	6,799.82	-190.25	844.32	3.32	13.03	13.03	0.16
6,950.00	44.02	2.98	6,824.20	-168.06	845.65	25.25	10.27	10.09	-2.82
6,982.00	48.10	0.73	6,846.41	-145.04	846.38	47.85	13.72	12.75	-7.03
7,013.00	51.69	359.64	6,866.37	-121.34	846.45	70.97	11.89	11.58	-3.52
7,045.00	55.16	359.24	6,885.44	-95.64	846.19	95.96	10.89	10.84	-1.25
7,076.00	58.67	359.24	6,902.36	-69.68	845.85	121.19	11.32	11.32	0.00
7,107.00	61.66	359.39	6,917.78	-42.79	845.53	147.33	9.65	9.65	0.48
7,139.00	64.65	359.84	6,932.23	-14.24	845.34	175.11	9.43	9.34	1.41
7,170.00	67.41	0.17	6,944.82	14.08	845.34	202.72	8.96	8.90	1.06
7,202.00	70.15	0.37	6,956.40	43.91	845.48	231.82	8.58	8.56	0.63

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Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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)
7,233.00	72.54	0.56	6,966.32	73.28	845.72	260.50	7.73	7.71	0.61
7,265.00	73.27	0.22	6,975.72	103.86	845.93	290.36	2.50	2.28	-1.06
7,297.00	75.37	359.56	6,984.37	134.67	845.87	320.37	6.86	6.56	-2.06
7,328.00	78.61	358.88	6,991.35	164.87	845.46	349.71	10.67	10.45	-2.19
7,360.00	81.72	359.12	6,996.81	196.39	844.91	380.31	9.75	9.72	0.75
7,391.00	84.12	359.23	7,000.64	227.15	844.46	410.19	7.75	7.74	0.35
7,428.00	88.11	358.47	7,003.14	264.05	843.72	445.99	10.98	10.78	-2.05
7,475.89	88.69	357.89	7,004.48	311.89	842.20	492.29	1.71	1.21	-1.22
SET 7" CASING									
7,544.00	89.51	357.06	7,005.55	379.93	839.20	557.93	1.71	1.21	-1.22
7,638.00	89.65	357.63	7,006.24	473.82	834.84	648.47	0.62	0.15	0.61
7,733.00	90.26	358.16	7,006.31	568.76	831.36	740.23	0.85	0.64	0.56
7,828.00	90.35	358.86	7,005.81	663.72	828.89	832.24	0.74	0.09	0.74
7,923.00	91.50	0.27	7,004.28	758.71	828.16	924.65	1.92	1.21	1.48
8,018.00	90.00	359.99	7,003.03	853.69	828.38	1,017.28	1.61	-1.58	-0.29
8,113.00	88.77	358.51	7,004.05	948.68	827.14	1,109.58	2.03	-1.29	-1.56
8,208.00	89.03	358.69	7,005.88	1,043.63	824.82	1,201.62	0.33	0.27	0.19
8,303.00	88.94	358.33	7,007.56	1,138.58	822.35	1,293.61	0.39	-0.09	-0.38
8,398.00	89.29	359.04	7,009.03	1,233.55	820.17	1,385.69	0.83	0.37	0.75
8,493.00	89.75	359.66	7,009.82	1,328.54	819.09	1,478.03	0.81	0.48	0.65
8,589.00	89.74	0.63	7,010.25	1,424.53	819.33	1,571.65	1.01	-0.01	1.01
8,683.00	89.57	0.97	7,010.81	1,518.52	820.64	1,663.56	0.40	-0.18	0.36
8,778.00	89.56	2.04	7,011.54	1,613.49	823.14	1,756.67	1.13	-0.01	1.13
8,873.00	89.74	3.09	7,012.12	1,708.39	827.39	1,850.12	1.12	0.19	1.11
8,967.00	90.25	2.58	7,012.12	1,802.27	832.04	1,942.67	0.77	0.54	-0.54
9,063.00	88.03	0.25	7,013.57	1,898.22	834.41	2,036.72	3.35	-2.31	-2.43
9,158.00	87.78	0.04	7,017.04	1,993.15	834.65	2,129.31	0.34	-0.26	-0.22
9,252.00	87.72	358.49	7,020.73	2,087.07	833.45	2,220.58	1.65	-0.06	-1.65
9,347.00	88.77	0.35	7,023.64	2,182.02	832.48	2,312.90	2.25	1.11	1.96
9,442.00	91.23	1.68	7,023.64	2,276.99	834.17	2,405.85	2.94	2.59	1.40
9,537.00	90.44	4.15	7,022.25	2,371.85	839.00	2,499.39	2.73	-0.83	2.60
9,631.00	89.51	5.96	7,022.30	2,465.48	847.28	2,592.50	2.16	-0.99	1.93
9,726.00	89.38	7.39	7,023.22	2,559.83	858.32	2,686.93	1.51	-0.14	1.51
9,821.00	89.63	7.06	7,024.04	2,654.07	870.27	2,781.46	0.44	0.26	-0.35
9,917.00	89.81	6.93	7,024.51	2,749.36	881.96	2,876.94	0.23	0.19	-0.14
10,012.00	90.00	5.98	7,024.66	2,843.75	892.64	2,971.34	1.02	0.20	-1.00
10,107.00	89.38	8.05	7,025.18	2,938.03	904.24	3,065.83	2.27	-0.65	2.18
10,202.00	88.70	7.47	7,026.77	3,032.15	917.07	3,160.43	0.94	-0.72	-0.61
10,297.00	88.52	9.76	7,029.07	3,126.04	931.29	3,255.13	2.42	-0.19	2.41
10,392.00	87.66	9.11	7,032.24	3,219.71	946.86	3,349.90	1.13	-0.91	-0.68
10,486.00	88.77	8.31	7,035.17	3,312.57	961.08	3,443.60	1.46	1.18	-0.85
10,581.00	89.01	8.00	7,037.01	3,406.60	974.56	3,538.25	0.41	0.25	-0.33
10,676.00	90.80	7.03	7,037.17	3,500.78	986.98	3,632.82	2.14	1.88	-1.02

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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)	
10,770.00	90.00	6.31	7,036.51	3,594.14	997.90	3,726.26	1.14	-0.85	-0.77	
10,866.00	91.11	3.15	7,035.58	3,689.79	1,005.81	3,821.26	3.49	1.16	-3.29	
10,960.00	89.63	0.48	7,034.97	3,783.73	1,008.79	3,913.49	3.25	-1.57	-2.84	
11,055.00	92.53	1.16	7,033.18	3,878.69	1,010.15	4,006.35	3.14	3.05	0.72	
11,149.00	92.83	1.39	7,028.79	3,972.57	1,012.24	4,098.32	0.40	0.32	0.24	
11,244.00	92.10	0.93	7,024.70	4,067.46	1,014.16	4,191.24	0.91	-0.77	-0.48	
11,339.00	89.47	359.39	7,023.40	4,162.44	1,014.42	4,283.87	3.21	-2.77	-1.62	
11,434.00	91.42	359.58	7,022.66	4,257.43	1,013.57	4,376.27	2.06	2.05	0.20	
11,528.00	90.12	359.59	7,021.40	4,351.41	1,012.89	4,467.72	1.38	-1.38	0.01	
11,537.00	90.49	359.70	7,021.35	4,360.41	1,012.83	4,476.48	4.29	4.11	1.22	
LAST WFT MWD SURVEY										
11,591.00	90.50	359.70	7,020.88	4,414.41	1,012.55	4,529.05	0.02	0.02	0.00	
PROJECTION TO TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
911.00	910.97	-2.51	-4.51	LAST GYRO SURVEY	
911.00	910.97	-2.51	-4.51	TIE ON TO SURFACE GYRO	
947.00	946.97	-2.38	-4.94	SET 9-5/8" CASING	
1,043.00	1,042.96	-1.65	-5.75	FIRST WFT MWD SURVEY	
7,475.89	7,004.48	311.89	842.20	SET 7" CASING	
11,537.00	7,021.35	4,360.41	1,012.83	LAST WFT MWD SURVEY	
11,591.00	7,020.88	4,414.41	1,012.55	PROJECTION TO TD	

Checked By: _____	Approved By: _____	Date: _____
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Weatherford®

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_HAYMAKER 13-9HZ PAD

HAYMAKER 29N-9HZ

HAYMAKER 29N-9HZ

Design: HAYMAKER 29N-9HZ

Survey Report - Geographic

27 November, 2012

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

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_HAYMAKER 13-9HZ PAD, SEC.9-T2N-R65W			
Site Position:		Northing:	1,297,482.61 usft	Latitude:	40.147054
From:	Lat/Long	Easting:	3,230,041.05 usft	Longitude:	-104.677089
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	HAYMAKER 29N-9HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,297,482.60 usft	Latitude:	40.147054
	+E/-W	0.00 ft	Easting:	3,230,041.05 usft	Longitude:	-104.677089
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,897.00 ft

Wellbore	HAYMAKER 29N-9HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/8/2012	8.64	66.82	52,886

Design	HAYMAKER 29N-9HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	25.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	25.00	0.00	0.00	12.92	

Survey Program	Date	11/20/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	911.00	Survey #1 (HAYMAKER 29N-9HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
1,043.00	11,591.00	Survey #3 (HAYMAKER 29N-9HZ)	MWD+IFR	MWD + IFR CORRECTION	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
25.00	0.00	0.00	25.00	0.00	0.00	1,297,482.60	3,230,041.05	40.147054	-104.677089
125.00	0.38	127.52	125.00	-0.20	0.26	1,297,482.40	3,230,041.32	40.147054	-104.677088
225.00	0.32	178.17	225.00	-0.68	0.53	1,297,481.92	3,230,041.59	40.147052	-104.677087
325.00	0.51	240.59	325.00	-1.18	0.16	1,297,481.42	3,230,041.22	40.147051	-104.677089
425.00	0.37	186.61	424.99	-1.72	-0.27	1,297,480.88	3,230,040.80	40.147049	-104.677090
525.00	0.55	228.16	524.99	-2.36	-0.66	1,297,480.23	3,230,040.41	40.147048	-104.677092
625.00	0.68	250.80	624.98	-2.88	-1.58	1,297,479.71	3,230,039.50	40.147046	-104.677095
725.00	0.58	278.36	724.98	-3.00	-2.64	1,297,479.58	3,230,038.44	40.147046	-104.677099
825.00	0.53	291.21	824.97	-2.76	-3.57	1,297,479.81	3,230,037.50	40.147046	-104.677102
911.00	0.76	280.76	910.97	-2.51	-4.51	1,297,480.05	3,230,036.57	40.147047	-104.677105
LAST GYRO SURVEY - TIE ON TO SURFACE GYRO									

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
947.00	0.69	292.96	946.97	-2.38	-4.94	1,297,480.17	3,230,036.14	40.147048	-104.677107
SET 9-5/8" CASING									
1,043.00	0.69	331.34	1,042.96	-1.65	-5.75	1,297,480.90	3,230,035.32	40.147050	-104.677110
FIRST WFT MWD SURVEY									
1,134.00	1.51	103.61	1,133.95	-1.45	-4.84	1,297,481.11	3,230,036.22	40.147050	-104.677107
1,228.00	3.88	113.08	1,227.84	-2.99	-0.71	1,297,479.61	3,230,040.37	40.147046	-104.677092
1,320.00	5.87	105.79	1,319.50	-5.49	6.68	1,297,477.17	3,230,047.78	40.147039	-104.677065
1,412.00	7.84	116.93	1,410.84	-9.61	16.80	1,297,473.15	3,230,057.94	40.147028	-104.677029
1,507.00	9.79	113.36	1,504.72	-15.75	29.99	1,297,467.13	3,230,071.19	40.147011	-104.676982
1,602.00	11.02	110.53	1,598.16	-22.13	45.91	1,297,460.89	3,230,087.17	40.146993	-104.676925
1,696.00	10.99	110.36	1,690.43	-28.40	62.72	1,297,454.78	3,230,104.04	40.146976	-104.676865
1,791.00	10.30	107.33	1,783.79	-34.08	79.32	1,297,449.25	3,230,120.69	40.146960	-104.676806
1,886.00	9.43	104.96	1,877.39	-38.62	94.95	1,297,444.86	3,230,136.36	40.146948	-104.676750
1,981.00	10.15	107.90	1,971.00	-43.20	110.43	1,297,440.42	3,230,151.88	40.146935	-104.676694
2,075.00	10.76	111.02	2,063.44	-48.90	126.51	1,297,434.88	3,230,168.01	40.146920	-104.676637
2,170.00	11.72	107.99	2,156.62	-55.06	143.96	1,297,428.88	3,230,185.52	40.146903	-104.676574
2,265.00	9.77	107.01	2,249.95	-60.40	160.85	1,297,423.70	3,230,202.45	40.146888	-104.676514
2,359.00	10.43	108.37	2,342.49	-65.41	176.55	1,297,418.83	3,230,218.20	40.146874	-104.676458
2,454.00	12.18	114.62	2,435.65	-72.30	193.82	1,297,412.10	3,230,235.54	40.146856	-104.676396
2,549.00	9.99	113.17	2,528.87	-79.71	210.51	1,297,404.84	3,230,252.29	40.146835	-104.676336
2,644.00	10.13	119.77	2,622.41	-87.10	225.34	1,297,397.59	3,230,267.19	40.146815	-104.676283
2,738.00	11.80	120.73	2,714.70	-96.12	240.78	1,297,388.72	3,230,282.71	40.146790	-104.676228
2,834.00	9.51	118.97	2,809.03	-104.98	256.16	1,297,380.00	3,230,298.17	40.146766	-104.676173
2,929.00	11.44	118.81	2,902.45	-113.32	271.28	1,297,371.80	3,230,313.37	40.146743	-104.676119
3,024.00	11.44	116.37	2,995.56	-122.05	287.97	1,297,363.23	3,230,330.15	40.146719	-104.676059
3,119.00	12.47	118.31	3,088.50	-131.10	305.45	1,297,354.34	3,230,347.70	40.146694	-104.675997
3,214.00	10.38	117.62	3,181.61	-139.93	322.06	1,297,345.66	3,230,364.40	40.146670	-104.675937
3,309.00	10.18	121.34	3,275.09	-148.26	336.81	1,297,337.47	3,230,379.23	40.146647	-104.675884
3,405.00	11.45	122.26	3,369.38	-157.76	352.12	1,297,328.11	3,230,394.62	40.146621	-104.675830
3,499.00	10.83	120.25	3,461.61	-167.19	367.64	1,297,318.83	3,230,410.22	40.146595	-104.675774
3,594.00	11.54	116.54	3,554.80	-175.93	383.85	1,297,310.24	3,230,426.52	40.146571	-104.675716
3,689.00	12.68	115.60	3,647.69	-184.68	401.75	1,297,301.65	3,230,444.50	40.146547	-104.675652
3,784.00	9.77	112.93	3,740.86	-192.33	418.58	1,297,294.16	3,230,461.40	40.146526	-104.675592
3,879.00	10.95	116.20	3,834.31	-199.46	434.10	1,297,287.18	3,230,476.99	40.146507	-104.675536
3,973.00	13.07	113.26	3,926.25	-207.60	451.88	1,297,279.21	3,230,494.84	40.146484	-104.675473
4,068.00	11.95	114.01	4,018.99	-215.84	470.73	1,297,271.14	3,230,513.77	40.146462	-104.675405
4,163.00	11.69	114.26	4,111.98	-223.80	488.49	1,297,263.35	3,230,531.60	40.146440	-104.675342
4,258.00	10.48	112.01	4,205.21	-230.99	505.28	1,297,256.31	3,230,548.45	40.146420	-104.675282
4,353.00	12.12	102.57	4,298.37	-236.40	523.02	1,297,251.06	3,230,566.25	40.146405	-104.675218
4,448.00	11.50	100.17	4,391.36	-240.24	542.08	1,297,247.40	3,230,585.34	40.146395	-104.675150
4,542.00	9.89	96.37	4,483.72	-242.79	559.33	1,297,245.01	3,230,602.61	40.146388	-104.675088
4,638.00	10.48	101.68	4,578.21	-245.47	576.07	1,297,242.48	3,230,619.38	40.146380	-104.675029
4,733.00	9.77	98.94	4,671.73	-248.47	592.50	1,297,239.63	3,230,635.83	40.146372	-104.674970
4,828.00	11.25	106.79	4,765.14	-252.40	609.33	1,297,235.86	3,230,652.70	40.146361	-104.674910
4,923.00	12.08	117.92	4,858.19	-259.74	626.99	1,297,228.69	3,230,670.42	40.146341	-104.674846
5,018.00	10.75	112.38	4,951.31	-267.77	643.97	1,297,220.82	3,230,687.48	40.146319	-104.674786
5,114.00	11.07	112.66	5,045.58	-274.73	660.75	1,297,214.02	3,230,704.32	40.146300	-104.674726
5,209.00	10.62	118.08	5,138.88	-282.36	676.89	1,297,206.53	3,230,720.53	40.146279	-104.674668
5,304.00	10.98	120.27	5,232.20	-291.04	692.43	1,297,198.00	3,230,736.15	40.146255	-104.674612
5,399.00	8.23	116.77	5,325.86	-298.67	706.32	1,297,190.50	3,230,750.11	40.146234	-104.674563
5,494.00	8.70	115.68	5,419.82	-304.84	718.86	1,297,184.44	3,230,762.71	40.146217	-104.674518
5,589.00	7.43	124.68	5,513.89	-311.45	730.39	1,297,177.94	3,230,774.30	40.146199	-104.674477
5,683.00	8.13	121.49	5,607.02	-318.38	741.06	1,297,171.11	3,230,785.03	40.146180	-104.674438
5,778.00	9.46	115.24	5,700.90	-325.22	753.85	1,297,164.39	3,230,797.88	40.146161	-104.674393
5,873.00	9.40	108.19	5,794.62	-330.97	768.28	1,297,158.77	3,230,812.37	40.146145	-104.674341

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,967.00	9.73	101.14	5,887.32	-334.90	783.37	1,297,154.98	3,230,827.49	40.146135	-104.674287
6,062.00	6.88	94.47	5,981.32	-336.90	796.92	1,297,153.11	3,230,841.06	40.146129	-104.674239
6,157.00	6.96	94.39	6,075.62	-337.78	808.33	1,297,152.33	3,230,852.48	40.146127	-104.674198
6,252.00	5.57	93.27	6,170.05	-338.48	818.67	1,297,151.73	3,230,862.83	40.146125	-104.674161
6,347.00	4.30	95.47	6,264.70	-339.09	826.82	1,297,151.20	3,230,870.98	40.146123	-104.674132
6,442.00	2.03	89.57	6,359.55	-339.41	832.05	1,297,150.92	3,230,876.21	40.146122	-104.674113
6,453.00	1.78	84.31	6,370.54	-339.40	832.41	1,297,150.94	3,230,876.58	40.146122	-104.674112
6,473.00	1.68	88.05	6,390.53	-339.35	833.02	1,297,150.99	3,230,877.18	40.146122	-104.674109
6,505.00	1.97	42.12	6,422.52	-338.93	833.85	1,297,151.42	3,230,878.01	40.146124	-104.674106
6,537.00	5.45	13.06	6,454.45	-337.04	834.57	1,297,153.32	3,230,878.71	40.146129	-104.674104
6,569.00	9.79	2.37	6,486.16	-332.84	835.02	1,297,157.52	3,230,879.13	40.146140	-104.674102
6,600.00	13.52	358.52	6,516.52	-326.58	835.04	1,297,163.78	3,230,879.08	40.146158	-104.674102
6,632.00	16.12	357.90	6,547.45	-318.40	834.78	1,297,171.96	3,230,878.75	40.146180	-104.674103
6,663.00	19.57	2.93	6,576.96	-308.91	834.89	1,297,181.45	3,230,878.77	40.146206	-104.674103
6,695.00	23.35	6.40	6,606.73	-297.25	835.87	1,297,193.11	3,230,879.64	40.146238	-104.674099
6,727.00	24.01	7.31	6,636.04	-284.49	837.40	1,297,205.89	3,230,881.06	40.146273	-104.674094
6,758.00	23.07	6.03	6,664.46	-272.20	838.84	1,297,218.20	3,230,882.38	40.146307	-104.674089
6,790.00	25.50	4.49	6,693.63	-259.09	840.04	1,297,231.31	3,230,883.46	40.146343	-104.674084
6,822.00	29.03	2.65	6,722.07	-244.47	840.94	1,297,245.95	3,230,884.22	40.146383	-104.674081
6,854.00	33.42	3.45	6,749.42	-227.91	841.83	1,297,262.51	3,230,884.96	40.146428	-104.674078
6,886.00	36.65	3.86	6,775.62	-209.58	843.00	1,297,280.86	3,230,885.96	40.146479	-104.674074
6,917.00	40.69	3.91	6,799.82	-190.25	844.32	1,297,300.19	3,230,887.10	40.146532	-104.674069
6,950.00	44.02	2.98	6,824.20	-168.06	845.65	1,297,322.39	3,230,888.22	40.146593	-104.674064
6,982.00	48.10	0.73	6,846.41	-145.04	846.38	1,297,345.42	3,230,888.74	40.146656	-104.674062
7,013.00	51.69	359.64	6,866.37	-121.34	846.45	1,297,369.12	3,230,888.59	40.146721	-104.674061
7,045.00	55.16	359.24	6,885.44	-95.64	846.19	1,297,394.81	3,230,888.09	40.146791	-104.674062
7,076.00	58.67	359.24	6,902.36	-69.68	845.85	1,297,420.78	3,230,887.51	40.146863	-104.674064
7,107.00	61.66	359.39	6,917.78	-42.79	845.53	1,297,447.66	3,230,886.94	40.146937	-104.674065
7,139.00	64.65	359.84	6,932.23	-14.24	845.34	1,297,476.20	3,230,886.48	40.147015	-104.674065
7,170.00	67.41	0.17	6,944.82	14.08	845.34	1,297,504.52	3,230,886.22	40.147093	-104.674065
7,202.00	70.15	0.37	6,956.40	43.91	845.48	1,297,534.35	3,230,886.09	40.147175	-104.674065
7,233.00	72.54	0.56	6,966.32	73.28	845.72	1,297,563.72	3,230,886.05	40.147255	-104.674064
7,265.00	73.27	0.22	6,975.72	103.86	845.93	1,297,594.31	3,230,885.98	40.147339	-104.674063
7,297.00	75.37	359.56	6,984.37	134.67	845.87	1,297,625.11	3,230,885.63	40.147424	-104.674063
7,328.00	78.61	358.88	6,991.35	164.87	845.46	1,297,655.30	3,230,884.94	40.147507	-104.674065
7,360.00	81.72	359.12	6,996.81	196.39	844.91	1,297,686.82	3,230,884.10	40.147593	-104.674067
7,391.00	84.12	359.23	7,000.64	227.15	844.46	1,297,717.57	3,230,883.37	40.147678	-104.674068
7,428.00	88.11	358.47	7,003.14	264.05	843.72	1,297,754.46	3,230,882.29	40.147779	-104.674071
7,475.89	88.69	357.89	7,004.48	311.89	842.20	1,297,802.29	3,230,880.32	40.147910	-104.674077
SET 7" CASING									
7,544.00	89.51	357.06	7,005.55	379.93	839.20	1,297,870.30	3,230,876.69	40.148097	-104.674087
7,638.00	89.65	357.63	7,006.24	473.82	834.84	1,297,964.15	3,230,871.46	40.148355	-104.674103
7,733.00	90.26	358.16	7,006.31	568.76	831.36	1,298,059.05	3,230,867.09	40.148615	-104.674115
7,828.00	90.35	358.86	7,005.81	663.72	828.89	1,298,153.98	3,230,863.74	40.148876	-104.674124
7,923.00	91.50	0.27	7,004.28	758.71	828.16	1,298,248.95	3,230,862.14	40.149137	-104.674127
8,018.00	90.00	359.99	7,003.03	853.69	828.38	1,298,343.94	3,230,861.47	40.149398	-104.674126
8,113.00	88.77	358.51	7,004.05	948.68	827.14	1,298,438.91	3,230,859.35	40.149658	-104.674130
8,208.00	89.03	358.69	7,005.88	1,043.63	824.82	1,298,533.84	3,230,856.15	40.149919	-104.674139
8,303.00	88.94	358.33	7,007.56	1,138.58	822.35	1,298,628.76	3,230,852.80	40.150180	-104.674147
8,398.00	89.29	359.04	7,009.03	1,233.55	820.17	1,298,723.70	3,230,849.73	40.150440	-104.674155
8,493.00	89.75	359.66	7,009.82	1,328.54	819.09	1,298,818.67	3,230,847.78	40.150701	-104.674159
8,589.00	89.74	0.63	7,010.25	1,424.53	819.33	1,298,914.67	3,230,847.13	40.150965	-104.674158
8,683.00	89.57	0.97	7,010.81	1,518.52	820.64	1,299,008.67	3,230,847.57	40.151223	-104.674153
8,778.00	89.56	2.04	7,011.54	1,613.49	823.14	1,299,103.65	3,230,849.18	40.151483	-104.674145
8,873.00	89.74	3.09	7,012.12	1,708.39	827.39	1,299,198.59	3,230,852.55	40.151744	-104.674129

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well HAYMAKER 29N-9HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Site:	WELD_HAYMAKER 13-9HZ PAD	MD Reference:	25' RKB + 4897' GL @ 4922.00ft (H&P 307)
Well:	HAYMAKER 29N-9HZ	North Reference:	True
Wellbore:	HAYMAKER 29N-9HZ	Survey Calculation Method:	Minimum Curvature
Design:	HAYMAKER 29N-9HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,967.00	90.25	2.58	7,012.12	1,802.27	832.04	1,299,292.51	3,230,856.33	40.152001	-104.674113
9,063.00	88.03	0.25	7,013.57	1,898.22	834.41	1,299,388.47	3,230,857.81	40.152265	-104.674104
9,158.00	87.78	0.04	7,017.04	1,993.15	834.65	1,299,483.41	3,230,857.17	40.152525	-104.674103
9,252.00	87.72	358.49	7,020.73	2,087.07	833.45	1,299,577.31	3,230,855.09	40.152783	-104.674108
9,347.00	88.77	0.35	7,023.64	2,182.02	832.48	1,299,672.24	3,230,853.25	40.153044	-104.674111
9,442.00	91.23	1.68	7,023.64	2,276.99	834.17	1,299,767.23	3,230,854.05	40.153305	-104.674105
9,537.00	90.44	4.15	7,022.25	2,371.85	839.00	1,299,862.13	3,230,858.00	40.153565	-104.674088
9,631.00	89.51	5.96	7,022.30	2,465.48	847.28	1,299,955.83	3,230,865.41	40.153822	-104.674058
9,726.00	89.38	7.39	7,023.22	2,559.83	858.32	1,300,050.28	3,230,875.58	40.154081	-104.674019
9,821.00	89.63	7.06	7,024.04	2,654.07	870.27	1,300,144.63	3,230,886.65	40.154340	-104.673976
9,917.00	89.81	6.93	7,024.51	2,749.36	881.96	1,300,240.01	3,230,897.46	40.154601	-104.673934
10,012.00	90.00	5.98	7,024.66	2,843.75	892.64	1,300,334.51	3,230,907.26	40.154860	-104.673896
10,107.00	89.38	8.05	7,025.18	2,938.03	904.24	1,300,428.89	3,230,917.99	40.155119	-104.673854
10,202.00	88.70	7.47	7,026.77	3,032.15	917.07	1,300,523.12	3,230,929.94	40.155378	-104.673808
10,297.00	88.52	9.76	7,029.07	3,126.04	931.29	1,300,617.14	3,230,943.29	40.155635	-104.673757
10,392.00	87.66	9.11	7,032.24	3,219.71	946.86	1,300,710.95	3,230,957.99	40.155893	-104.673702
10,486.00	88.77	8.31	7,035.17	3,312.57	961.08	1,300,803.94	3,230,971.35	40.156147	-104.673651
10,581.00	89.01	8.00	7,037.01	3,406.60	974.56	1,300,898.08	3,230,983.95	40.156406	-104.673603
10,676.00	90.80	7.03	7,037.17	3,500.78	986.98	1,300,992.37	3,230,995.50	40.156664	-104.673558
10,770.00	90.00	6.31	7,036.51	3,594.14	997.90	1,301,085.83	3,231,005.55	40.156920	-104.673519
10,866.00	91.11	3.15	7,035.58	3,689.79	1,005.81	1,301,181.56	3,231,012.58	40.157183	-104.673491
10,960.00	89.63	0.48	7,034.97	3,783.73	1,008.79	1,301,275.52	3,231,014.68	40.157441	-104.673480
11,055.00	92.53	1.16	7,033.18	3,878.69	1,010.15	1,301,370.49	3,231,015.16	40.157702	-104.673475
11,149.00	92.83	1.39	7,028.79	3,972.57	1,012.24	1,301,464.38	3,231,016.38	40.157959	-104.673468
11,244.00	92.10	0.93	7,024.70	4,067.46	1,014.16	1,301,559.28	3,231,017.42	40.158220	-104.673461
11,339.00	89.47	359.39	7,023.40	4,162.44	1,014.42	1,301,654.26	3,231,016.80	40.158480	-104.673460
11,434.00	91.42	359.58	7,022.66	4,257.43	1,013.57	1,301,749.24	3,231,015.07	40.158741	-104.673463
11,528.00	90.12	359.59	7,021.40	4,351.41	1,012.89	1,301,843.21	3,231,013.52	40.158999	-104.673465
11,537.00	90.49	359.70	7,021.35	4,360.41	1,012.83	1,301,852.21	3,231,013.38	40.159024	-104.673466
LAST WFT MWD SURVEY									
11,591.00	90.50	359.70	7,020.88	4,414.41	1,012.55	1,301,906.21	3,231,012.59	40.159172	-104.673467
PROJECTION TO TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
911.00	910.97	-2.51	-4.51	LAST GYRO SURVEY
911.00	910.97	-2.51	-4.51	TIE ON TO SURFACE GYRO
947.00	946.97	-2.38	-4.94	SET 9-5/8" CASING
1,043.00	1,042.96	-1.65	-5.75	FIRST WFT MWD SURVEY
7,475.89	7,004.48	311.89	842.20	SET 7" CASING
11,537.00	7,021.35	4,360.41	1,012.83	LAST WFT MWD SURVEY
11,591.00	7,020.88	4,414.41	1,012.55	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____