



Weatherford®

Weatherford International Ltd.

2000 Oil Drive

Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	SARCHET 36N-32HZ
State:	CO
County:	Weld
API Number:	512335593
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 6,274.00 feet
to the measured depth of 11,749.00 feet as accurate and true
to the best of my knowledge.

Signature

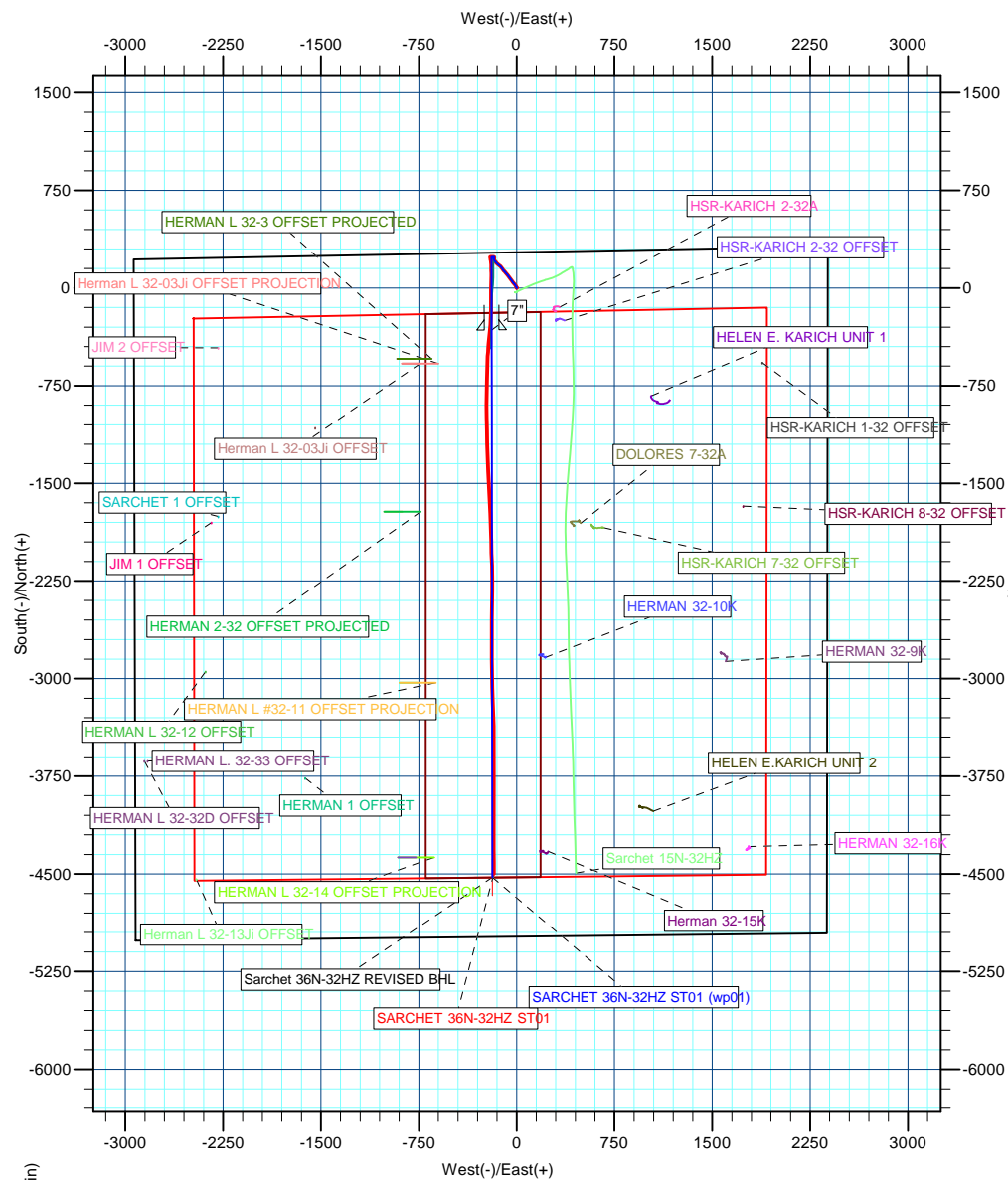
15-Oct-12

Date

John Morgan

Directional Planning

Weatherford - Rockies District



Azimuths to True North
Magnetic North: 8.69°
Magnetic Field
Strength: 52877.8nT
Dip Angle: 66.83°
Date: 10/4/2012
Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_SARCHET 28-32HZ Pad
Well: Sarchet 36N-32HZ
Wellbore: SARCHET 36N-32HZ ST01
Section:
SHL:
Design: SARCHET 36N-32HZ ST01 (wp01)
Latitude: 40.187794
Longitude: -104.800145
GL: 4914.00
KB: 25' RKB + 4914' GL @ 4939.00ft (H&P 307)

WELL DETAILS: Sarchet 36N-32HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4914.00 Latitude	Longitude	Slot
0.00	0.00	1312027.59	3195524.95	40.187794	-104.800145	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
6439.00	0.44	313.30	6424.17	238.21	-175.88	0.00	0.00	-230.79
6500.00	0.44	313.30	6485.17	238.53	-176.22	0.00	0.00	-231.10
6593.28	9.64	269.62	6578.00	238.73	-184.31	10.00	-45.53	-230.96
6689.70	0.00	0.00	6673.96	238.67	-192.40	10.00	180.00	-230.57
7589.69	90.00	179.92	7246.92	-334.27	-191.61	10.00	179.92	341.86
1779.80	90.00	179.92	7247.00	-4524.38	-185.82	0.00	0.00	4528.19

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

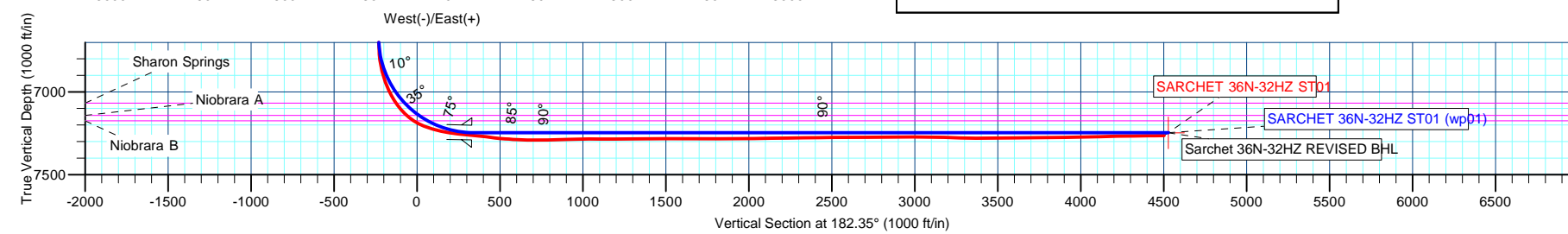
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sarchet 36N-32HZ REVISED BHL	7247.00	-4524.38	-185.82	40.175374	-104.800810	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
7068.00	7124.20	Sharon Springs
7142.00	7237.44	Niobrara A
7175.00	7299.53	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
7246.80	7578.00	7"	7"



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SARCHET 28-32HZ Pad

Sarchet 36N-32HZ

SARCHET 36N-32HZ ST01

Design: SARCHET 36N-32HZ ST01

Standard Survey Report

15 October, 2012

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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_SARCHET 28-32HZ Pad			
Site Position:		Northing:	1,312,027.61 usft	Latitude:	40.187794
From:	Lat/Long	Easting:	3,195,524.95 usft	Longitude:	-104.800145
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	Sarchet 36N-32HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,312,027.59 usft	Latitude:	40.187794
	+E/-W	0.00 ft	Easting:	3,195,524.95 usft	Longitude:	-104.800145
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,914.00 ft

Wellbore	SARCHET 36N-32HZ ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/4/2012	8.69	66.83	52,878

Design	SARCHET 36N-32HZ ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	6,154.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		319.05

Survey Program	Date	10/15/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	760.00	Survey #1 (Sarchet 36N-32HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
856.00	6,154.00	Survey #2 (Sarchet 36N-32HZ)	MWD	MWD - STANDARD	
6,274.00	11,803.00	Survey #1 (SARCHET 36N-32HZ ST01)	MWD	MWD - STANDARD	

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	
125.00	0.34	286.35	125.00	0.10	-0.36	0.31	0.27	0.27	0.00	
225.00	0.21	284.25	225.00	0.23	-0.82	0.71	0.13	-0.13	-2.10	
325.00	0.22	346.61	325.00	0.46	-1.04	1.03	0.22	0.01	62.36	
425.00	0.38	5.72	425.00	0.98	-1.05	1.43	0.19	0.16	19.11	
525.00	0.37	20.04	524.99	1.61	-0.91	1.81	0.09	-0.01	14.32	
625.00	0.43	31.24	624.99	2.24	-0.60	2.09	0.10	0.06	11.20	
725.00	0.40	30.59	724.99	2.86	-0.23	2.31	0.03	-0.03	-0.65	
760.00	0.41	34.05	759.99	3.07	-0.10	2.38	0.08	0.03	9.89	

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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)
856.00	0.38	19.86	855.99	3.65	0.20	2.63	0.11	-0.03	-14.78
948.00	2.00	327.62	947.96	5.30	-0.55	4.36	1.95	1.76	-56.78
1,039.00	3.97	332.70	1,038.84	9.44	-2.85	9.00	2.18	2.16	5.58
1,132.00	5.93	328.58	1,131.49	16.40	-6.83	16.86	2.14	2.11	-4.43
1,224.00	7.51	320.36	1,222.85	25.08	-13.14	27.56	2.01	1.72	-8.93
1,314.00	8.11	320.99	1,312.02	34.55	-20.89	39.79	0.67	0.67	0.70
1,405.00	7.67	321.68	1,402.16	44.30	-28.70	52.27	0.49	-0.48	0.76
1,501.00	8.07	323.93	1,497.25	54.77	-36.64	65.38	0.53	0.42	2.34
1,596.00	7.18	325.62	1,591.41	65.06	-43.92	77.92	0.97	-0.94	1.78
1,691.00	6.83	325.26	1,685.70	74.60	-50.49	89.44	0.37	-0.37	-0.38
1,786.00	5.51	323.60	1,780.15	82.92	-56.41	99.60	1.40	-1.39	-1.75
1,881.00	5.18	320.91	1,874.74	89.92	-61.82	108.43	0.44	-0.35	-2.83
1,976.00	4.67	321.59	1,969.39	96.27	-66.93	116.58	0.54	-0.54	0.72
2,071.00	4.55	313.80	2,064.08	101.91	-72.05	124.20	0.67	-0.13	-8.20
2,167.00	5.48	320.57	2,159.71	108.09	-77.71	132.57	1.15	0.97	7.05
2,261.00	5.14	318.31	2,253.31	114.70	-83.37	141.27	0.42	-0.36	-2.40
2,357.00	4.66	324.12	2,348.96	121.07	-88.51	149.45	0.72	-0.50	6.05
2,452.00	5.51	317.76	2,443.58	127.58	-93.84	157.86	1.07	0.89	-6.69
2,547.00	4.41	320.26	2,538.23	133.76	-99.24	166.07	1.18	-1.16	2.63
2,642.00	6.06	324.39	2,632.83	140.65	-104.50	174.71	1.78	1.74	4.35
2,737.00	7.29	322.59	2,727.18	149.51	-111.08	185.72	1.31	1.29	-1.89
2,832.00	7.75	321.59	2,821.36	159.32	-118.72	198.14	0.50	0.48	-1.05
2,928.00	7.59	311.75	2,916.51	168.61	-127.47	210.89	1.38	-0.17	-10.25
3,024.00	6.20	308.91	3,011.81	176.09	-136.23	222.29	1.49	-1.45	-2.96
3,118.00	5.42	312.37	3,105.33	182.27	-143.46	231.69	0.91	-0.83	3.68
3,213.00	5.15	312.48	3,199.93	188.17	-149.92	240.38	0.28	-0.28	0.12
3,308.00	4.62	316.74	3,294.58	193.84	-155.69	248.44	0.68	-0.56	4.48
3,403.00	5.51	319.84	3,389.21	200.11	-161.25	256.83	0.98	0.94	3.26
3,498.00	4.17	322.38	3,483.87	206.33	-166.30	264.84	1.43	-1.41	2.67
3,593.00	3.71	326.09	3,578.64	211.62	-170.13	271.33	0.55	-0.48	3.91
3,688.00	2.97	331.33	3,673.48	216.33	-173.02	276.79	0.84	-0.78	5.52
3,783.00	2.94	333.37	3,768.36	220.67	-175.30	281.56	0.12	-0.03	2.15
3,877.00	1.40	0.32	3,862.29	223.97	-176.37	284.75	1.92	-1.64	28.67
3,972.00	0.43	285.92	3,957.28	225.23	-176.71	285.93	1.42	-1.02	-78.32
4,067.00	0.22	245.99	4,052.27	225.25	-177.22	286.28	0.31	-0.22	-42.03
4,162.00	0.38	113.61	4,147.27	225.05	-177.09	286.05	0.58	0.17	-139.35
4,256.00	0.72	30.19	4,241.27	225.44	-176.51	285.96	0.82	0.36	-88.74
4,351.00	1.34	40.84	4,336.25	226.79	-175.48	286.31	0.68	0.65	11.21
4,446.00	0.35	9.71	4,431.24	227.92	-174.71	286.65	1.11	-1.04	-32.77
4,541.00	0.60	16.98	4,526.24	228.68	-174.51	287.10	0.27	0.26	7.65
4,636.00	0.82	39.26	4,621.23	229.68	-173.94	287.48	0.37	0.23	23.45
4,731.00	0.88	48.48	4,716.22	230.69	-172.96	287.60	0.16	0.06	9.71
4,826.00	1.19	44.01	4,811.21	231.89	-171.73	287.69	0.34	0.33	-4.71

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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)
4,920.00	0.10	297.26	4,905.20	232.63	-171.13	287.86	1.30	-1.16	-113.56
5,015.00	0.25	6.26	5,000.20	232.87	-171.18	288.07	0.25	0.16	72.63
5,110.00	0.25	351.05	5,095.20	233.28	-171.19	288.39	0.07	0.00	-16.01
5,205.00	0.38	348.53	5,190.20	233.80	-171.28	288.84	0.14	0.14	-2.65
5,300.00	0.44	347.36	5,285.20	234.46	-171.42	289.44	0.06	0.06	-1.23
5,395.00	0.25	7.65	5,380.19	235.02	-171.48	289.89	0.23	-0.20	21.36
5,490.00	0.21	334.46	5,475.19	235.38	-171.52	290.20	0.14	-0.04	-34.94
5,585.00	0.16	284.02	5,570.19	235.57	-171.73	290.48	0.17	-0.05	-53.09
5,673.00	0.07	305.67	5,658.19	235.63	-171.89	290.63	0.11	-0.10	24.60
5,773.00	0.07	304.63	5,758.19	235.70	-171.99	290.75	0.00	0.00	-1.04
5,868.00	0.30	328.31	5,853.19	235.95	-172.17	291.05	0.25	0.24	24.93
5,964.00	0.38	309.13	5,949.19	236.36	-172.55	291.61	0.14	0.08	-19.98
6,059.00	0.64	306.47	6,044.19	236.88	-173.22	292.44	0.27	0.27	-2.80
6,154.00	0.56	284.15	6,139.18	237.31	-174.10	293.34	0.26	-0.08	-23.49
TIE ON									
6,274.00	0.45	290.72	6,259.18	237.62	-175.10	294.23	0.10	-0.09	5.48
FIRST MWD SURVEY									
6,348.00	0.41	310.15	6,333.17	237.89	-175.58	294.75	0.20	-0.05	26.26
6,443.00	0.50	299.89	6,428.17	238.32	-176.20	295.48	0.13	0.09	-10.80
6,474.00	1.89	273.35	6,459.16	238.41	-176.83	295.96	4.71	4.48	-85.61
6,506.00	5.35	270.33	6,491.10	238.45	-178.84	297.32	10.83	10.81	-9.44
6,538.00	8.97	272.43	6,522.84	238.57	-182.83	300.01	11.34	11.31	6.56
6,569.00	10.64	272.58	6,553.39	238.80	-188.10	303.64	5.39	5.39	0.48
6,601.00	8.70	272.28	6,584.93	239.03	-193.47	307.34	6.06	-6.06	-0.94
6,633.00	5.64	268.79	6,616.68	239.09	-197.47	310.00	9.65	-9.56	-10.91
6,664.00	4.28	262.83	6,647.56	238.91	-200.14	311.62	4.69	-4.39	-19.23
6,696.00	3.16	253.36	6,679.49	238.51	-202.17	312.64	3.98	-3.50	-29.59
6,728.00	1.70	222.60	6,711.46	237.91	-203.33	312.95	5.96	-4.56	-96.13
6,759.00	1.48	161.82	6,742.45	237.19	-203.52	312.53	5.22	-0.71	-196.06
6,791.00	3.70	159.90	6,774.42	235.83	-203.04	311.19	6.94	6.94	-6.00
6,823.00	7.57	162.40	6,806.26	232.85	-202.04	308.29	12.12	12.09	7.81
6,854.00	11.00	167.54	6,836.85	228.01	-200.79	303.81	11.37	11.06	16.58
6,886.00	13.96	171.62	6,868.09	221.21	-199.57	297.87	9.65	9.25	12.75
6,917.00	16.92	172.86	6,897.97	213.04	-198.46	290.97	9.61	9.55	4.00
6,949.00	19.56	173.23	6,928.36	203.09	-197.25	282.67	8.26	8.25	1.16
6,981.00	22.54	174.08	6,958.22	191.67	-195.98	273.21	9.36	9.31	2.66
7,012.00	24.85	176.59	6,986.60	179.26	-194.98	263.18	8.13	7.45	8.10
7,044.00	27.73	177.80	7,015.29	165.10	-194.30	252.04	9.15	9.00	3.78
7,076.00	31.21	178.98	7,043.15	149.37	-193.86	239.87	11.02	10.88	3.69
7,107.00	34.01	179.46	7,069.26	132.67	-193.64	227.11	9.07	9.03	1.55
7,139.00	37.48	178.14	7,095.23	113.98	-193.24	212.73	11.11	10.84	-4.13
7,171.00	41.60	178.62	7,119.90	93.62	-192.67	196.98	12.91	12.88	1.50
7,202.00	47.27	179.56	7,142.02	71.93	-192.33	180.38	18.41	18.29	3.03
7,234.00	53.09	181.21	7,162.51	47.36	-192.51	161.94	18.61	18.19	5.16

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
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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)
7,265.00	59.99	182.39	7,179.59	21.53	-193.33	142.97	22.48	22.26	3.81
7,297.00	65.18	183.02	7,194.32	-6.83	-194.68	122.43	16.31	16.22	1.97
7,329.00	68.08	182.39	7,207.01	-36.17	-196.06	101.17	9.24	9.06	-1.97
7,360.00	71.12	181.22	7,217.82	-65.21	-196.97	79.84	10.42	9.81	-3.77
7,392.00	73.84	180.71	7,227.45	-95.72	-197.49	57.13	8.63	8.50	-1.59
7,424.00	76.53	180.06	7,235.63	-126.65	-197.69	33.90	8.63	8.41	-2.03
7,455.00	79.02	179.59	7,242.19	-156.94	-197.60	10.96	8.17	8.03	-1.52
7,487.00	81.79	180.23	7,247.53	-188.49	-197.55	-12.90	8.88	8.66	2.00
7,518.00	83.41	180.99	7,251.52	-219.23	-197.88	-35.90	5.76	5.23	2.45
7,541.00	84.12	182.16	7,254.02	-242.09	-198.51	-52.75	5.92	3.09	5.09
7,578.00	83.67	183.82	7,257.95	-278.83	-200.43	-79.24	4.62	-1.20	4.49
7 IN. CASING DEPTH									
7,634.00	83.01	186.34	7,264.45	-334.22	-205.35	-117.86	4.62	-1.19	4.50
7,729.00	83.88	185.21	7,275.29	-428.12	-214.85	-182.56	1.50	0.92	-1.19
7,824.00	85.56	183.30	7,284.03	-522.45	-221.86	-249.21	2.67	1.77	-2.01
7,919.00	87.78	181.19	7,289.55	-617.21	-225.58	-318.34	3.22	2.34	-2.22
8,013.00	90.18	180.72	7,291.23	-711.17	-227.14	-388.29	2.60	2.55	-0.50
8,108.00	91.42	181.66	7,289.90	-806.14	-229.11	-458.72	1.64	1.31	0.99
8,203.00	91.73	180.32	7,287.29	-901.09	-230.76	-529.36	1.45	0.33	-1.41
8,298.00	90.49	178.90	7,285.45	-996.06	-230.11	-601.52	1.98	-1.31	-1.49
8,392.00	89.69	178.60	7,285.30	-1,090.04	-228.06	-673.85	0.91	-0.85	-0.32
8,487.00	90.25	179.18	7,285.35	-1,185.02	-226.22	-746.79	0.85	0.59	0.61
8,582.00	90.49	177.59	7,284.74	-1,279.98	-223.54	-820.27	1.69	0.25	-1.67
8,676.00	90.93	177.49	7,283.57	-1,373.88	-219.51	-893.84	0.48	0.47	-0.11
8,771.00	89.88	177.44	7,282.90	-1,468.79	-215.30	-968.28	1.11	-1.11	-0.05
8,867.00	89.88	177.51	7,283.10	-1,564.69	-211.08	-1,043.49	0.07	0.00	0.07
8,961.00	89.69	176.83	7,283.45	-1,658.58	-206.43	-1,117.44	0.75	-0.20	-0.72
9,057.00	89.88	176.64	7,283.81	-1,754.42	-200.97	-1,193.41	0.28	0.20	-0.20
9,151.00	90.62	178.72	7,283.40	-1,848.34	-197.16	-1,266.84	2.35	0.79	2.21
9,246.00	90.49	178.64	7,282.48	-1,943.31	-194.97	-1,340.01	0.16	-0.14	-0.08
9,340.00	90.62	178.16	7,281.57	-2,037.27	-192.35	-1,412.70	0.53	0.14	-0.51
9,435.00	90.80	177.48	7,280.40	-2,132.19	-188.74	-1,486.76	0.74	0.19	-0.72
9,530.00	90.49	180.04	7,279.33	-2,227.15	-186.68	-1,559.83	2.71	-0.33	2.69
9,625.00	91.54	180.69	7,277.64	-2,322.13	-187.29	-1,631.18	1.30	1.11	0.68
9,719.00	90.25	181.08	7,276.17	-2,416.11	-188.74	-1,701.21	1.43	-1.37	0.41
9,814.00	90.62	180.99	7,275.45	-2,511.09	-190.45	-1,771.82	0.40	0.39	-0.09
9,910.00	90.12	180.35	7,274.83	-2,607.08	-191.58	-1,843.59	0.85	-0.52	-0.67
10,004.00	90.06	179.80	7,274.69	-2,701.08	-191.70	-1,914.50	0.59	-0.06	-0.59
10,099.00	90.49	179.71	7,274.23	-2,796.08	-191.29	-1,986.52	0.46	0.45	-0.09
10,193.00	91.17	179.24	7,272.87	-2,890.06	-190.43	-2,058.08	0.88	0.72	-0.50
10,288.00	89.88	178.92	7,272.00	-2,985.05	-188.91	-2,130.82	1.40	-1.36	-0.34
10,383.00	88.77	178.13	7,273.12	-3,080.01	-186.46	-2,204.14	1.43	-1.17	-0.83
10,478.00	87.90	178.11	7,275.88	-3,174.91	-183.35	-2,277.87	0.92	-0.92	-0.02

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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)
10,572.00	88.40	177.78	7,278.91	-3,268.80	-179.98	-2,350.99	0.64	0.53	-0.35
10,667.00	89.63	178.66	7,280.54	-3,363.74	-177.03	-2,424.63	1.59	1.29	0.93
10,762.00	90.99	180.11	7,280.03	-3,458.73	-176.01	-2,497.04	2.09	1.43	1.53
10,856.00	91.36	180.52	7,278.10	-3,552.71	-176.52	-2,567.69	0.59	0.39	0.44
10,951.00	90.31	180.16	7,276.72	-3,647.69	-177.09	-2,639.06	1.17	-1.11	-0.38
11,047.00	89.57	179.17	7,276.82	-3,743.69	-176.53	-2,711.94	1.29	-0.77	-1.03
11,142.00	90.71	179.66	7,276.59	-3,838.68	-175.56	-2,784.32	1.31	1.20	0.52
11,236.00	91.41	180.36	7,274.85	-3,932.67	-175.57	-2,855.30	1.05	0.74	0.74
11,331.00	91.42	180.84	7,272.50	-4,027.63	-176.57	-2,926.37	0.51	0.01	0.51
11,426.00	91.42	180.17	7,270.15	-4,122.60	-177.40	-2,997.55	0.71	0.00	-0.71
11,521.00	91.23	179.75	7,267.95	-4,217.57	-177.34	-3,069.33	0.49	-0.20	-0.44
11,616.00	90.18	179.27	7,266.78	-4,312.56	-176.53	-3,141.61	1.22	-1.11	-0.51
11,711.00	90.80	179.73	7,265.97	-4,407.55	-175.70	-3,213.90	0.81	0.65	0.48
11,749.00	90.68	180.01	7,265.48	-4,445.55	-175.61	-3,242.65	0.80	-0.32	0.74
LAST MWD SURVEY									
11,803.00	90.51	180.41	7,264.92	-4,499.55	-175.81	-3,283.31	0.80	-0.31	0.74
PROJECTION TO TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,154.00	6,139.18	237.31	-174.10	TIE ON
6,274.00	6,259.18	237.62	-175.10	FIRST MWD SURVEY
7,578.00	7,257.95	-278.83	-200.43	7 IN. CASING DEPTH
11,749.00	7,265.48	-4,445.55	-175.61	LAST MWD SURVEY
11,803.00	7,264.92	-4,499.55	-175.81	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SARCHET 28-32HZ Pad

Sarchet 36N-32HZ

SARCHET 36N-32HZ ST01

Design: SARCHET 36N-32HZ ST01

Survey Report - Geographic

15 October, 2012

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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_SARCHET 28-32HZ Pad						
Site Position:		Northing:	1,312,027.61	usft	Latitude:	40.187794		
From:	Lat/Long	Easting:	3,195,524.95	usft	Longitude:	-104.800145		
Position Uncertainty:	0.00	ft	Slot Radius:	13-3/16	"	Grid Convergence:	0.45	°

Well	Sarchet 36N-32HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,312,027.59 usft	Latitude:	40.187794
	+E/-W	0.00 ft	Easting:	3,195,524.95 usft	Longitude:	-104.800145
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,914.00 ft

Wellbore	SARCHET 36N-32HZ ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/4/2012	8.69	66.83	52,878

Design	SARCHET 36N-32HZ ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	6,154.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		319.05

Survey Program	Date	10/15/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
125.00	760.00	Survey #1 (Sarchet 36N-32HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
856.00	6,154.00	Survey #2 (Sarchet 36N-32HZ)	MWD	MWD - STANDARD	
6,274.00	11,803.00	Survey #1 (SARCHET 36N-32HZ ST01)	MWD	MWD - STANDARD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	1,312,027.59	3,195,524.95	40.187794	-104.800145	
125.00	0.34	286.35	125.00	0.10	-0.36	1,312,027.70	3,195,524.60	40.187794	-104.800147	
225.00	0.21	284.25	225.00	0.23	-0.82	1,312,027.82	3,195,524.13	40.187795	-104.800148	
325.00	0.22	346.61	325.00	0.46	-1.04	1,312,028.05	3,195,523.91	40.187795	-104.800149	
425.00	0.38	5.72	425.00	0.98	-1.05	1,312,028.57	3,195,523.89	40.187797	-104.800149	
525.00	0.37	20.04	524.99	1.61	-0.91	1,312,029.20	3,195,524.03	40.187798	-104.800149	
625.00	0.43	31.24	624.99	2.24	-0.60	1,312,029.83	3,195,524.33	40.187800	-104.800147	
725.00	0.40	30.59	724.99	2.86	-0.23	1,312,030.45	3,195,524.70	40.187802	-104.800146	
760.00	0.41	34.05	759.99	3.07	-0.10	1,312,030.66	3,195,524.83	40.187802	-104.800146	
856.00	0.38	19.86	855.99	3.65	0.20	1,312,031.25	3,195,525.13	40.187804	-104.800145	

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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	
948.00	2.00	327.62	947.96	5.30	-0.55	1,312,032.89	3,195,524.36	40.187809	-104.800147	
1,039.00	3.97	332.70	1,038.84	9.44	-2.85	1,312,037.01	3,195,522.03	40.187820	-104.800155	
1,132.00	5.93	328.58	1,131.49	16.40	-6.83	1,312,043.94	3,195,517.99	40.187839	-104.800170	
1,224.00	7.51	320.36	1,222.85	25.08	-13.14	1,312,052.57	3,195,511.61	40.187863	-104.800192	
1,314.00	8.11	320.99	1,312.02	34.55	-20.89	1,312,061.97	3,195,503.79	40.187889	-104.800220	
1,405.00	7.67	321.68	1,402.16	44.30	-28.70	1,312,071.66	3,195,495.91	40.187916	-104.800248	
1,501.00	8.07	323.93	1,497.25	54.77	-36.64	1,312,082.07	3,195,487.88	40.187944	-104.800276	
1,596.00	7.18	325.62	1,591.41	65.06	-43.92	1,312,092.31	3,195,480.52	40.187973	-104.800302	
1,691.00	6.83	325.26	1,685.70	74.60	-50.49	1,312,101.80	3,195,473.88	40.187999	-104.800326	
1,786.00	5.51	323.60	1,780.15	82.92	-56.41	1,312,110.06	3,195,467.89	40.188022	-104.800347	
1,881.00	5.18	320.91	1,874.74	89.92	-61.82	1,312,117.02	3,195,462.42	40.188041	-104.800367	
1,976.00	4.67	321.59	1,969.39	96.27	-66.93	1,312,123.34	3,195,457.26	40.188058	-104.800385	
2,071.00	4.55	313.80	2,064.08	101.91	-72.05	1,312,128.93	3,195,452.10	40.188074	-104.800403	
2,167.00	5.48	320.57	2,159.71	108.09	-77.71	1,312,135.07	3,195,446.39	40.188091	-104.800423	
2,261.00	5.14	318.31	2,253.31	114.70	-83.37	1,312,141.63	3,195,440.68	40.188109	-104.800444	
2,357.00	4.66	324.12	2,348.96	121.07	-88.51	1,312,147.96	3,195,435.49	40.188126	-104.800462	
2,452.00	5.51	317.76	2,443.58	127.58	-93.84	1,312,154.42	3,195,430.11	40.188144	-104.800481	
2,547.00	4.41	320.26	2,538.23	133.76	-99.24	1,312,160.57	3,195,424.66	40.188161	-104.800500	
2,642.00	6.06	324.39	2,632.83	140.65	-104.50	1,312,167.41	3,195,419.35	40.188180	-104.800519	
2,737.00	7.29	322.59	2,727.18	149.51	-111.08	1,312,176.22	3,195,412.70	40.188204	-104.800543	
2,832.00	7.75	321.59	2,821.36	159.32	-118.72	1,312,185.97	3,195,404.98	40.188231	-104.800570	
2,928.00	7.59	311.75	2,916.51	168.61	-127.47	1,312,195.19	3,195,396.16	40.188257	-104.800602	
3,024.00	6.20	308.91	3,011.81	176.09	-136.23	1,312,202.60	3,195,387.33	40.188277	-104.800633	
3,118.00	5.42	312.37	3,105.33	182.27	-143.46	1,312,208.73	3,195,380.05	40.188294	-104.800659	
3,213.00	5.15	312.48	3,199.93	188.17	-149.92	1,312,214.58	3,195,373.55	40.188311	-104.800682	
3,308.00	4.62	316.74	3,294.58	193.84	-155.69	1,312,220.20	3,195,367.74	40.188326	-104.800703	
3,403.00	5.51	319.84	3,389.21	200.11	-161.25	1,312,226.43	3,195,362.12	40.188343	-104.800722	
3,498.00	4.17	322.38	3,483.87	206.33	-166.30	1,312,232.61	3,195,357.03	40.188360	-104.800741	
3,593.00	3.71	326.09	3,578.64	211.62	-170.13	1,312,237.86	3,195,353.16	40.188375	-104.800754	
3,688.00	2.97	331.33	3,673.48	216.33	-173.02	1,312,242.55	3,195,350.23	40.188388	-104.800765	
3,783.00	2.94	333.37	3,768.36	220.67	-175.30	1,312,246.87	3,195,347.92	40.188400	-104.800773	
3,877.00	1.40	0.32	3,862.29	223.97	-176.37	1,312,250.17	3,195,346.82	40.188409	-104.800777	
3,972.00	0.43	285.92	3,957.28	225.23	-176.71	1,312,251.42	3,195,346.47	40.188412	-104.800778	
4,067.00	0.22	245.99	4,052.27	225.25	-177.22	1,312,251.44	3,195,345.97	40.188412	-104.800780	
4,162.00	0.38	113.61	4,147.27	225.05	-177.09	1,312,251.24	3,195,346.09	40.188412	-104.800779	
4,256.00	0.72	30.19	4,241.27	225.44	-176.51	1,312,251.63	3,195,346.67	40.188413	-104.800777	
4,351.00	1.34	40.84	4,336.25	226.79	-175.48	1,312,253.00	3,195,347.68	40.188417	-104.800773	
4,446.00	0.35	9.71	4,431.24	227.92	-174.71	1,312,254.13	3,195,348.45	40.188420	-104.800771	
4,541.00	0.60	16.98	4,526.24	228.68	-174.51	1,312,254.89	3,195,348.64	40.188422	-104.800770	
4,636.00	0.82	39.26	4,621.23	229.68	-173.94	1,312,255.90	3,195,349.21	40.188425	-104.800768	
4,731.00	0.88	48.48	4,716.22	230.69	-172.96	1,312,256.92	3,195,350.17	40.188427	-104.800764	
4,826.00	1.19	44.01	4,811.21	231.89	-171.73	1,312,258.12	3,195,351.40	40.188431	-104.800760	
4,920.00	0.10	297.26	4,905.20	232.63	-171.13	1,312,258.86	3,195,352.00	40.188433	-104.800758	
5,015.00	0.25	6.26	5,000.20	232.87	-171.18	1,312,259.11	3,195,351.94	40.188433	-104.800758	
5,110.00	0.25	351.05	5,095.20	233.28	-171.19	1,312,259.52	3,195,351.93	40.188434	-104.800758	
5,205.00	0.38	348.53	5,190.20	233.80	-171.28	1,312,260.03	3,195,351.83	40.188436	-104.800758	
5,300.00	0.44	347.36	5,285.20	234.46	-171.42	1,312,260.69	3,195,351.68	40.188438	-104.800759	
5,395.00	0.25	7.65	5,380.19	235.02	-171.48	1,312,261.25	3,195,351.63	40.188439	-104.800759	
5,490.00	0.21	334.46	5,475.19	235.38	-171.52	1,312,261.62	3,195,351.58	40.188440	-104.800759	
5,585.00	0.16	284.02	5,570.19	235.57	-171.73	1,312,261.80	3,195,351.37	40.188441	-104.800760	
5,673.00	0.07	305.67	5,658.19	235.63	-171.89	1,312,261.86	3,195,351.21	40.188441	-104.800761	
5,773.00	0.07	304.63	5,758.19	235.70	-171.99	1,312,261.93	3,195,351.11	40.188441	-104.800761	
5,868.00	0.30	328.31	5,853.19	235.95	-172.17	1,312,262.18	3,195,350.93	40.188442	-104.800762	
5,964.00	0.38	309.13	5,949.19	236.36	-172.55	1,312,262.59	3,195,350.55	40.188443	-104.800763	
6,059.00	0.64	306.47	6,044.19	236.88	-173.22	1,312,263.10	3,195,349.87	40.188444	-104.800765	

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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
6,154.00	0.56	284.15	6,139.18	237.31	-174.10	1,312,263.52	3,195,348.99	40.188445	-104.800768
TIE ON									
6,274.00	0.45	290.72	6,259.18	237.62	-175.10	1,312,263.82	3,195,347.98	40.188446	-104.800772
FIRST MWD SURVEY									
6,348.00	0.41	310.15	6,333.17	237.89	-175.58	1,312,264.09	3,195,347.50	40.188447	-104.800774
6,443.00	0.50	299.89	6,428.17	238.32	-176.20	1,312,264.51	3,195,346.88	40.188448	-104.800776
6,474.00	1.89	273.35	6,459.16	238.41	-176.83	1,312,264.60	3,195,346.25	40.188449	-104.800778
6,506.00	5.35	270.33	6,491.10	238.45	-178.84	1,312,264.63	3,195,344.23	40.188449	-104.800785
6,538.00	8.97	272.43	6,522.84	238.57	-182.83	1,312,264.71	3,195,340.25	40.188449	-104.800800
6,569.00	10.64	272.58	6,553.39	238.80	-188.10	1,312,264.90	3,195,334.97	40.188450	-104.800819
6,601.00	8.70	272.28	6,584.93	239.03	-193.47	1,312,265.09	3,195,329.60	40.188450	-104.800838
6,633.00	5.64	268.79	6,616.68	239.09	-197.47	1,312,265.12	3,195,325.61	40.188450	-104.800852
6,664.00	4.28	262.83	6,647.56	238.91	-200.14	1,312,264.92	3,195,322.94	40.188450	-104.800862
6,696.00	3.16	253.36	6,679.49	238.51	-202.17	1,312,264.50	3,195,320.91	40.188449	-104.800869
6,728.00	1.70	222.60	6,711.46	237.91	-203.33	1,312,263.89	3,195,319.75	40.188447	-104.800873
6,759.00	1.48	161.82	6,742.45	237.19	-203.52	1,312,263.17	3,195,319.57	40.188445	-104.800874
6,791.00	3.70	159.90	6,774.42	235.83	-203.04	1,312,261.81	3,195,320.06	40.188441	-104.800872
6,823.00	7.57	162.40	6,806.26	232.85	-202.04	1,312,258.84	3,195,321.08	40.188433	-104.800868
6,854.00	11.00	167.54	6,836.85	228.01	-200.79	1,312,254.02	3,195,322.37	40.188420	-104.800864
6,886.00	13.96	171.62	6,868.09	221.21	-199.57	1,312,247.22	3,195,323.65	40.188401	-104.800860
6,917.00	16.92	172.86	6,897.97	213.04	-198.46	1,312,239.06	3,195,324.82	40.188379	-104.800856
6,949.00	19.56	173.23	6,928.36	203.09	-197.25	1,312,229.12	3,195,326.11	40.188352	-104.800851
6,981.00	22.54	174.08	6,958.22	191.67	-195.98	1,312,217.71	3,195,327.46	40.188320	-104.800847
7,012.00	24.85	176.59	6,986.60	179.26	-194.98	1,312,205.31	3,195,328.56	40.188286	-104.800843
7,044.00	27.73	177.80	7,015.29	165.10	-194.30	1,312,191.16	3,195,329.36	40.188247	-104.800841
7,076.00	31.21	178.98	7,043.15	149.37	-193.86	1,312,175.43	3,195,329.92	40.188204	-104.800839
7,107.00	34.01	179.46	7,069.26	132.67	-193.64	1,312,158.73	3,195,330.27	40.188158	-104.800838
7,139.00	37.48	178.14	7,095.23	113.98	-193.24	1,312,140.04	3,195,330.82	40.188107	-104.800837
7,171.00	41.60	178.62	7,119.90	93.62	-192.67	1,312,119.69	3,195,331.55	40.188051	-104.800835
7,202.00	47.27	179.56	7,142.02	71.93	-192.33	1,312,098.00	3,195,332.06	40.187992	-104.800834
7,234.00	53.09	181.21	7,162.51	47.36	-192.51	1,312,073.44	3,195,332.07	40.187924	-104.800834
7,265.00	59.99	182.39	7,179.59	21.53	-193.33	1,312,047.60	3,195,331.45	40.187853	-104.800837
7,297.00	65.18	183.02	7,194.32	-6.83	-194.68	1,312,019.22	3,195,330.33	40.187775	-104.800842
7,329.00	68.08	182.39	7,207.01	-36.17	-196.06	1,311,989.88	3,195,329.18	40.187695	-104.800847
7,360.00	71.12	181.22	7,217.82	-65.21	-196.97	1,311,960.83	3,195,328.50	40.187615	-104.800850
7,392.00	73.84	180.71	7,227.45	-95.72	-197.49	1,311,930.32	3,195,328.23	40.187531	-104.800852
7,424.00	76.53	180.06	7,235.63	-126.65	-197.69	1,311,899.39	3,195,328.26	40.187446	-104.800853
7,455.00	79.02	179.59	7,242.19	-156.94	-197.60	1,311,869.10	3,195,328.60	40.187363	-104.800853
7,487.00	81.79	180.23	7,247.53	-188.49	-197.55	1,311,837.55	3,195,328.89	40.187277	-104.800852
7,518.00	83.41	180.99	7,251.52	-219.23	-197.88	1,311,806.81	3,195,328.81	40.187192	-104.800854
7,541.00	84.12	182.16	7,254.02	-242.09	-198.51	1,311,783.95	3,195,328.36	40.187129	-104.800856
7,578.00	83.67	183.82	7,257.95	-278.83	-200.43	1,311,747.20	3,195,326.73	40.187029	-104.800863
7 IN. CASING DEPTH									
7,634.00	83.01	186.34	7,264.45	-334.22	-205.35	1,311,691.76	3,195,322.24	40.186877	-104.800880
7,729.00	83.88	185.21	7,275.29	-428.12	-214.85	1,311,597.79	3,195,313.49	40.186619	-104.800914
7,824.00	85.56	183.30	7,284.03	-522.45	-221.86	1,311,503.41	3,195,307.22	40.186360	-104.800939
7,919.00	87.78	181.19	7,289.55	-617.21	-225.58	1,311,408.63	3,195,304.25	40.186100	-104.800953
8,013.00	90.18	180.72	7,291.23	-711.17	-227.14	1,311,314.65	3,195,303.43	40.185842	-104.800958
8,108.00	91.42	181.66	7,289.90	-806.14	-229.11	1,311,219.67	3,195,302.21	40.185581	-104.800965
8,203.00	91.73	180.32	7,287.29	-901.09	-230.76	1,311,124.72	3,195,301.32	40.185320	-104.800971
8,298.00	90.49	178.90	7,285.45	-996.06	-230.11	1,311,029.75	3,195,302.71	40.185060	-104.800969
8,392.00	89.69	178.60	7,285.30	-1,090.04	-228.06	1,310,935.79	3,195,305.50	40.184802	-104.800962
8,487.00	90.25	179.18	7,285.35	-1,185.02	-226.22	1,310,840.83	3,195,308.09	40.184541	-104.800955
8,582.00	90.49	177.59	7,284.74	-1,279.98	-223.54	1,310,745.89	3,195,311.52	40.184280	-104.800945
8,676.00	90.93	177.49	7,283.57	-1,373.88	-219.51	1,310,652.02	3,195,316.30	40.184023	-104.800931

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Sarchet 36N-32HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Site:	WELD_SARCHET 28-32HZ Pad	MD Reference:	25' RKB + 4914' GL @ 4939.00ft (H&P 307)
Well:	Sarchet 36N-32HZ	North Reference:	True
Wellbore:	SARCHET 36N-32HZ ST01	Survey Calculation Method:	Minimum Curvature
Design:	SARCHET 36N-32HZ ST01	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
8,771.00	89.88	177.44	7,282.90	-1,468.79	-215.30	1,310,557.16	3,195,321.25	40.183762	-104.800916
8,867.00	89.88	177.51	7,283.10	-1,564.69	-211.08	1,310,461.29	3,195,326.23	40.183499	-104.800901
8,961.00	89.69	176.83	7,283.45	-1,658.58	-206.43	1,310,367.44	3,195,331.61	40.183241	-104.800884
9,057.00	89.88	176.64	7,283.81	-1,754.42	-200.97	1,310,271.65	3,195,337.84	40.182978	-104.800865
9,151.00	90.62	178.72	7,283.40	-1,848.34	-197.16	1,310,177.76	3,195,342.38	40.182720	-104.800851
9,246.00	90.49	178.64	7,282.48	-1,943.31	-194.97	1,310,082.81	3,195,345.32	40.182459	-104.800843
9,340.00	90.62	178.16	7,281.57	-2,037.27	-192.35	1,309,988.88	3,195,348.69	40.182202	-104.800834
9,435.00	90.80	177.48	7,280.40	-2,132.19	-188.74	1,309,893.99	3,195,353.05	40.181941	-104.800821
9,530.00	90.49	180.04	7,279.33	-2,227.15	-186.68	1,309,799.04	3,195,355.86	40.181680	-104.800813
9,625.00	91.54	180.69	7,277.64	-2,322.13	-187.29	1,309,704.06	3,195,356.00	40.181420	-104.800816
9,719.00	90.25	181.08	7,276.17	-2,416.11	-188.74	1,309,610.08	3,195,355.29	40.181162	-104.800821
9,814.00	90.62	180.99	7,275.45	-2,511.09	-190.45	1,309,515.08	3,195,354.32	40.180901	-104.800827
9,910.00	90.12	180.35	7,274.83	-2,607.08	-191.58	1,309,419.09	3,195,353.96	40.180637	-104.800831
10,004.00	90.06	179.80	7,274.69	-2,701.08	-191.70	1,309,325.09	3,195,354.58	40.180379	-104.800831
10,099.00	90.49	179.71	7,274.23	-2,796.08	-191.29	1,309,230.10	3,195,355.73	40.180118	-104.800830
10,193.00	91.17	179.24	7,272.87	-2,890.06	-190.43	1,309,136.12	3,195,357.34	40.179860	-104.800827
10,288.00	89.88	178.92	7,272.00	-2,985.05	-188.91	1,309,041.16	3,195,359.61	40.179600	-104.800821
10,383.00	88.77	178.13	7,273.12	-3,080.01	-186.46	1,308,946.22	3,195,362.81	40.179339	-104.800813
10,478.00	87.90	178.11	7,275.88	-3,174.91	-183.35	1,308,851.34	3,195,366.67	40.179079	-104.800801
10,572.00	88.40	177.78	7,278.91	-3,268.80	-179.98	1,308,757.48	3,195,370.78	40.178821	-104.800789
10,667.00	89.63	178.66	7,280.54	-3,363.74	-177.03	1,308,662.57	3,195,374.48	40.178560	-104.800779
10,762.00	90.99	180.11	7,280.03	-3,458.73	-176.01	1,308,567.59	3,195,376.25	40.178299	-104.800775
10,856.00	91.36	180.52	7,278.10	-3,552.71	-176.52	1,308,473.61	3,195,376.47	40.178041	-104.800777
10,951.00	90.31	180.16	7,276.72	-3,647.69	-177.09	1,308,378.62	3,195,376.66	40.177781	-104.800779
11,047.00	89.57	179.17	7,276.82	-3,743.69	-176.53	1,308,282.63	3,195,377.98	40.177517	-104.800777
11,142.00	90.71	179.66	7,276.59	-3,838.68	-175.56	1,308,187.65	3,195,379.70	40.177256	-104.800774
11,236.00	91.41	180.36	7,274.85	-3,932.67	-175.57	1,308,093.67	3,195,380.42	40.176998	-104.800774
11,331.00	91.42	180.84	7,272.50	-4,027.63	-176.57	1,307,998.70	3,195,380.18	40.176738	-104.800777
11,426.00	91.42	180.17	7,270.15	-4,122.60	-177.40	1,307,903.73	3,195,380.09	40.176477	-104.800780
11,521.00	91.23	179.75	7,267.95	-4,217.57	-177.34	1,307,808.76	3,195,380.91	40.176216	-104.800780
11,616.00	90.18	179.27	7,266.78	-4,312.56	-176.53	1,307,713.78	3,195,382.47	40.175956	-104.800777
11,711.00	90.80	179.73	7,265.97	-4,407.55	-175.70	1,307,618.80	3,195,384.05	40.175695	-104.800774
11,749.00	90.68	180.01	7,265.48	-4,445.55	-175.61	1,307,580.81	3,195,384.43	40.175590	-104.800774
LAST MWD SURVEY									
11,803.00	90.51	180.41	7,264.92	-4,499.55	-175.81	1,307,526.81	3,195,384.66	40.175442	-104.800774
PROJECTION TO TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,154.00	6,139.18	237.31	-174.10	TIE ON
6,274.00	6,259.18	237.62	-175.10	FIRST MWD SURVEY
7,578.00	7,257.95	-278.83	-200.43	7 IN. CASING DEPTH
11,749.00	7,265.48	-4,445.55	-175.61	LAST MWD SURVEY
11,803.00	7,264.92	-4,499.55	-175.81	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____