

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_CANNON 26-3HZ PAD**

**CANNON 37C-3HZ**

**CANNON 37C-3HZ**

**Design: CANNON 37C-3HZ**

## **Standard Survey Report**

**13 September, 2012**

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	edmp

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

Site		WELD_CANNON 26-3HZ PAD			
Site Position:		Northing:	1,307,351.72 usft	Latitude:	40.173890
From:	Lat/Long	Easting:	3,239,832.54 usft	Longitude:	-104.641723
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well		CANNON 37C-3HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,307,311.69 usft	Latitude:	40.173779
	+E/-W	0.00 ft	Easting:	3,239,877.08 usft	Longitude:	-104.641565
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,840.00 ft

<b>Wellbore</b>	CANNON 37C-3HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/9/2012	8.64	66.85	52,913

<b>Design</b>	CANNON 37C-3HZ				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	-1.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	-1.00	0.00	0.00	177.74	

<b>Survey Program</b>	<b>Date</b>	9/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
99.00	749.00	Survey #1 (CANNON 37C-3HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
949.00	11,477.00	Survey #2 (CANNON 37C-3HZ)	MWD	MWD - STANDARD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
-1.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	
99.00	0.35	295.54	99.00	0.13	-0.28	-0.14	0.35	0.35	0.00	
199.00	0.07	238.64	199.00	0.23	-0.60	-0.26	0.32	-0.28	-56.90	
299.00	0.10	303.97	299.00	0.25	-0.73	-0.28	0.10	0.03	65.33	
399.00	0.10	288.26	399.00	0.32	-0.88	-0.36	0.03	0.00	-15.71	
499.00	0.26	45.17	499.00	0.51	-0.81	-0.54	0.32	0.16	116.91	
599.00	0.13	78.11	599.00	0.70	-0.53	-0.72	0.17	-0.13	32.94	
699.00	0.09	78.56	699.00	0.73	-0.35	-0.75	0.04	-0.04	0.45	
749.00	0.12	57.17	749.00	0.77	-0.26	-0.78	0.10	0.06	-42.78	
<b>TIE ON</b>										

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<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	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)
949.00	0.25	292.61	949.00	1.05	-0.49	-1.07	0.17	0.07	-62.28
FIRST MWD SURVEY									
1,039.00	0.56	310.60	1,038.99	1.41	-1.00	-1.45	0.37	0.34	19.99
1,130.00	1.93	9.37	1,129.97	3.21	-1.09	-3.26	1.88	1.51	64.58
1,221.00	4.06	17.55	1,220.84	7.80	0.13	-7.79	2.38	2.34	8.99
1,314.00	6.03	16.38	1,313.48	15.63	2.50	-15.51	2.12	2.12	-1.26
1,406.00	6.60	14.38	1,404.92	25.38	5.17	-25.16	0.66	0.62	-2.17
1,501.00	6.56	14.05	1,499.29	35.94	7.85	-35.60	0.06	-0.04	-0.35
1,596.00	6.59	5.01	1,593.67	46.63	9.64	-46.21	1.09	0.03	-9.52
1,691.00	6.13	1.30	1,688.09	57.13	10.23	-56.68	0.65	-0.48	-3.91
1,786.00	5.90	3.14	1,782.57	67.08	10.61	-66.61	0.32	-0.24	1.94
1,881.00	5.90	13.19	1,877.06	76.71	12.00	-76.17	1.09	0.00	10.58
1,975.00	5.43	13.92	1,970.61	85.73	14.17	-85.10	0.51	-0.50	0.78
2,070.00	4.87	10.40	2,065.22	94.06	15.98	-93.35	0.68	-0.59	-3.71
2,165.00	6.32	14.24	2,159.77	103.09	17.99	-102.30	1.58	1.53	4.04
2,260.00	5.36	12.02	2,254.27	112.50	20.20	-111.61	1.04	-1.01	-2.34
2,355.00	6.32	16.41	2,348.78	121.86	22.60	-120.87	1.11	1.01	4.62
2,449.00	5.40	14.73	2,442.29	131.10	25.19	-130.00	1.00	-0.98	-1.79
2,545.00	6.99	12.44	2,537.72	141.17	27.60	-139.97	1.68	1.66	-2.39
2,640.00	5.60	10.21	2,632.15	151.38	29.66	-150.09	1.49	-1.46	-2.35
2,734.00	4.69	3.87	2,725.77	159.73	30.74	-158.39	1.14	-0.97	-6.74
2,829.00	6.31	10.97	2,820.33	168.73	31.99	-167.33	1.85	1.71	7.47
2,924.00	5.98	9.76	2,914.78	178.73	33.82	-177.25	0.37	-0.35	-1.27
3,018.00	5.45	7.70	3,008.32	187.98	35.25	-186.44	0.60	-0.56	-2.19
3,113.00	6.16	19.46	3,102.83	197.26	37.56	-195.62	1.45	0.75	12.38
3,208.00	4.69	21.42	3,197.40	205.68	40.67	-203.91	1.56	-1.55	2.06
3,303.00	5.68	19.71	3,292.01	213.72	43.68	-211.83	1.05	1.04	-1.80
3,399.00	6.32	11.49	3,387.49	223.37	46.33	-221.37	1.11	0.67	-8.56
3,494.00	4.96	11.26	3,482.03	232.52	48.17	-230.44	1.43	-1.43	-0.24
3,589.00	3.65	356.56	3,576.76	239.57	48.80	-237.45	1.79	-1.38	-15.47
3,683.00	1.86	331.73	3,670.65	243.90	47.89	-241.82	2.25	-1.90	-26.41
3,777.00	0.80	261.11	3,764.63	245.14	46.52	-243.11	1.88	-1.13	-75.13
3,873.00	0.74	261.92	3,860.62	244.95	45.25	-242.97	0.06	-0.06	0.84
3,967.00	0.90	267.49	3,954.61	244.83	43.91	-242.91	0.19	0.17	5.93
4,062.00	0.38	142.99	4,049.61	244.55	43.35	-242.65	1.22	-0.55	-131.05
4,157.00	0.20	1.16	4,144.61	244.46	43.54	-242.55	0.58	-0.19	-149.30
4,252.00	0.69	320.96	4,239.60	245.07	43.19	-243.18	0.58	0.52	-42.32
4,346.00	1.09	328.14	4,333.59	246.27	42.36	-244.41	0.44	0.43	7.64
4,440.00	0.80	244.93	4,427.58	246.75	41.29	-244.93	1.35	-0.31	-88.52
4,535.00	1.09	268.83	4,522.57	246.46	39.79	-244.69	0.51	0.31	25.16
4,630.00	1.05	152.66	4,617.56	245.66	39.29	-243.92	1.91	-0.04	-122.28
4,724.00	0.97	145.03	4,711.55	244.25	40.14	-242.47	0.17	-0.09	-8.12
4,819.00	0.58	55.98	4,806.54	243.86	41.00	-242.05	1.18	-0.41	-93.74

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<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	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)
4,913.00	0.73	23.83	4,900.53	244.67	41.63	-242.83	0.42	0.16	-34.20
5,008.00	1.41	143.21	4,995.52	244.29	42.58	-242.41	1.98	0.72	125.66
5,103.00	1.00	164.58	5,090.50	242.55	43.50	-240.64	0.63	-0.43	22.49
5,198.00	0.63	178.44	5,185.49	241.23	43.73	-239.32	0.44	-0.39	14.59
5,292.00	0.49	213.29	5,279.49	240.38	43.53	-238.47	0.38	-0.15	37.07
5,387.00	0.51	230.60	5,374.49	239.77	42.98	-237.89	0.16	0.02	18.22
5,482.00	0.29	215.02	5,469.48	239.31	42.51	-237.44	0.26	-0.23	-16.40
5,576.00	0.20	286.27	5,563.48	239.16	42.22	-237.30	0.31	-0.10	75.80
5,672.00	0.22	241.79	5,659.48	239.12	41.89	-237.27	0.17	0.02	-46.33
5,767.00	0.73	187.99	5,754.48	238.43	41.65	-236.60	0.66	0.54	-56.63
5,863.00	0.97	200.01	5,850.47	237.06	41.29	-235.25	0.31	0.25	12.52
5,958.00	1.21	205.76	5,945.45	235.40	40.58	-233.62	0.28	0.25	6.05
6,052.00	0.56	185.90	6,039.44	234.05	40.10	-232.29	0.75	-0.69	-21.13
6,147.00	0.72	193.72	6,134.43	233.01	39.91	-231.25	0.19	0.17	8.23
6,242.00	0.91	191.80	6,229.42	231.69	39.61	-229.95	0.20	0.20	-2.02
6,337.00	1.22	209.70	6,324.41	230.08	38.96	-228.36	0.47	0.33	18.84
6,432.00	1.06	194.02	6,419.39	228.34	38.24	-226.65	0.37	-0.17	-16.51
6,459.00	1.11	197.83	6,446.39	227.85	38.10	-226.17	0.33	0.19	14.11
6,526.00	3.83	171.93	6,513.32	225.02	38.22	-223.33	4.29	4.06	-38.66
6,558.00	8.07	178.32	6,545.14	221.71	38.43	-220.02	13.39	13.25	19.97
6,590.00	11.85	178.17	6,576.65	216.18	38.60	-214.49	11.81	11.81	-0.47
6,621.00	14.64	179.45	6,606.82	209.08	38.74	-207.39	9.05	9.00	4.13
6,654.00	17.06	177.90	6,638.57	200.07	38.96	-198.38	7.44	7.33	-4.70
6,685.00	20.44	177.11	6,667.92	190.12	39.40	-188.42	10.93	10.90	-2.55
6,717.00	21.54	177.91	6,697.79	178.67	39.90	-176.95	3.55	3.44	2.50
6,749.00	20.72	177.59	6,727.64	167.14	40.35	-165.42	2.59	-2.56	-1.00
6,780.00	19.75	176.39	6,756.73	156.44	40.91	-154.70	3.40	-3.13	-3.87
6,812.00	20.49	175.45	6,786.77	145.46	41.69	-143.70	2.52	2.31	-2.94
6,843.00	23.52	178.41	6,815.51	133.86	42.30	-132.09	10.41	9.77	9.55
6,875.00	26.88	183.72	6,844.47	120.26	42.00	-118.50	12.65	10.50	16.59
6,907.00	30.00	185.38	6,872.60	105.07	40.78	-103.37	10.06	9.75	5.19
6,938.00	32.82	183.45	6,899.06	88.96	39.55	-87.33	9.66	9.10	-6.23
6,970.00	35.57	182.12	6,925.52	71.00	38.68	-69.42	8.91	8.59	-4.16
7,001.00	39.53	181.32	6,950.10	52.12	38.12	-50.57	12.87	12.77	-2.58
7,033.00	42.93	180.02	6,974.16	31.04	37.89	-29.51	10.96	10.63	-4.06
7,064.00	46.89	179.14	6,996.11	9.16	38.05	-7.64	12.93	12.77	-2.84
7,096.00	49.77	178.78	7,017.38	-14.74	38.49	16.25	9.04	9.00	-1.13
7,128.00	51.42	178.64	7,037.70	-39.46	39.04	40.97	5.17	5.16	-0.44
7,159.00	53.40	179.18	7,056.61	-64.02	39.51	65.53	6.53	6.39	1.74
7,191.00	57.02	179.81	7,074.86	-90.29	39.74	91.79	11.43	11.31	1.97
7,222.00	61.47	179.96	7,090.71	-116.93	39.79	118.41	14.36	14.35	0.48
7,254.00	66.47	179.77	7,104.75	-145.67	39.86	147.13	15.63	15.63	-0.59
7,285.00	70.39	180.66	7,116.14	-174.49	39.75	175.93	12.92	12.65	2.87
7,318.00	73.62	180.75	7,126.34	-205.87	39.36	207.27	9.79	9.79	0.27

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7,349.00	76.81	179.88	7,134.25	-235.84	39.20	237.21	10.64	10.29	-2.81
7,381.00	79.31	178.95	7,140.87	-267.15	39.52	268.50	8.31	7.81	-2.91
7,412.00	80.51	178.14	7,146.30	-297.66	40.30	299.02	4.65	3.87	-2.61
7,444.00	82.63	178.26	7,150.99	-329.29	41.29	330.67	6.64	6.63	0.38
7,464.35	83.80	178.51	7,153.39	-349.49	41.86	350.87	5.90	5.77	1.24
7" INTERMEDIATE CASING									
7,560.00	89.32	179.69	7,159.13	-444.92	43.35	446.28	5.90	5.77	1.23
7,655.00	89.94	178.49	7,159.74	-539.90	44.86	541.25	1.42	0.65	-1.26
7,750.00	90.06	178.23	7,159.74	-634.86	47.58	636.25	0.30	0.13	-0.27
7,844.00	91.23	178.00	7,158.68	-728.81	50.67	730.24	1.27	1.24	-0.24
7,939.00	92.16	179.92	7,155.87	-823.74	52.40	825.17	2.24	0.98	2.02
8,034.00	91.48	179.59	7,152.85	-918.69	52.80	920.06	0.80	-0.72	-0.35
8,129.00	91.48	180.48	7,150.40	-1,013.66	52.74	1,014.95	0.94	0.00	0.94
8,224.00	90.74	180.71	7,148.56	-1,108.64	51.76	1,109.82	0.82	-0.78	0.24
8,319.00	90.06	180.02	7,147.90	-1,203.63	51.15	1,204.71	1.02	-0.72	-0.73
8,414.00	91.66	180.17	7,146.47	-1,298.62	50.99	1,299.62	1.69	1.68	0.16
8,509.00	90.55	179.19	7,144.64	-1,393.60	51.52	1,394.54	1.56	-1.17	-1.03
8,604.00	90.86	180.02	7,143.47	-1,488.59	52.18	1,489.48	0.93	0.33	0.87
8,699.00	90.43	180.34	7,142.40	-1,583.58	51.88	1,584.39	0.56	-0.45	0.34
8,794.00	91.97	181.22	7,140.41	-1,678.54	50.59	1,679.23	1.87	1.62	0.93
8,889.00	91.66	180.54	7,137.40	-1,773.49	49.13	1,774.04	0.79	-0.33	-0.72
8,983.00	92.46	182.96	7,134.02	-1,867.37	46.26	1,867.74	2.71	0.85	2.57
9,079.00	91.76	181.47	7,130.49	-1,963.23	42.55	1,963.38	1.71	-0.73	-1.55
9,174.00	91.36	181.51	7,127.90	-2,058.17	40.09	2,058.14	0.42	-0.42	0.04
9,268.00	90.86	181.32	7,126.08	-2,152.12	37.76	2,151.93	0.57	-0.53	-0.20
9,363.00	90.43	182.45	7,125.01	-2,247.06	34.64	2,246.67	1.27	-0.45	1.19
9,459.00	90.18	183.01	7,124.50	-2,342.95	30.07	2,342.31	0.64	-0.26	0.58
9,553.00	90.06	180.68	7,124.30	-2,436.89	27.04	2,436.06	2.48	-0.13	-2.48
9,648.00	89.20	181.04	7,124.92	-2,531.88	25.62	2,530.91	0.98	-0.91	0.38
9,743.00	90.12	179.56	7,125.48	-2,626.87	25.12	2,625.81	1.83	0.97	-1.56
9,837.00	91.05	179.30	7,124.52	-2,720.86	26.05	2,719.77	1.03	0.99	-0.28
9,933.00	90.74	178.73	7,123.02	-2,816.84	27.70	2,815.73	0.68	-0.32	-0.59
10,028.00	90.12	178.27	7,122.31	-2,911.80	30.19	2,910.72	0.81	-0.65	-0.48
10,123.00	91.66	177.80	7,120.83	-3,006.73	33.45	3,005.70	1.69	1.62	-0.49
10,218.00	90.86	177.97	7,118.74	-3,101.64	36.95	3,100.68	0.86	-0.84	0.18
10,314.00	87.59	174.29	7,120.04	-3,197.38	43.43	3,196.60	5.13	-3.41	-3.83
10,409.00	88.31	173.36	7,123.44	-3,291.77	53.64	3,291.32	1.24	0.76	-0.98
10,504.00	90.43	173.48	7,124.49	-3,386.13	64.52	3,386.04	2.24	2.23	0.13
10,599.00	91.85	174.89	7,122.60	-3,480.62	74.15	3,480.83	2.11	1.49	1.48
10,693.00	93.57	176.40	7,118.15	-3,574.24	81.28	3,574.66	2.43	1.83	1.61
10,788.00	93.21	176.48	7,112.53	-3,668.89	87.17	3,669.47	0.39	-0.38	0.08
10,883.00	91.66	175.30	7,108.50	-3,763.56	93.97	3,764.33	2.05	-1.63	-1.24
10,978.00	90.93	175.09	7,106.35	-3,858.20	101.93	3,859.21	0.80	-0.77	-0.22

# Anadarko Petroleum Corp

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	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)	
11,074.00	89.69	174.13	7,105.83	-3,953.77	110.94	3,955.06	1.63	-1.29	-1.00	
11,169.00	88.52	171.29	7,107.32	-4,047.98	122.99	4,049.68	3.23	-1.23	-2.99	
11,264.00	87.28	171.05	7,110.80	-4,141.79	137.57	4,143.99	1.33	-1.31	-0.25	
11,359.00	86.21	170.37	7,116.19	-4,235.39	152.88	4,238.12	1.33	-1.13	-0.72	
11,425.00	86.05	170.64	7,120.65	-4,300.33	163.74	4,303.45	0.47	-0.24	0.41	
LAST MWD SURVEY										
11,477.00	85.92	170.85	7,124.29	-4,351.53	172.08	4,354.93	0.47	-0.25	0.40	
PROJECTION TO TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
749.00	749.00	0.77	-0.26	TIE ON	
949.00	949.00	1.05	-0.49	FIRST MWD SURVEY	
7,464.35	7,153.39	-349.49	41.86	7" INTERMEDIATE CASING	
11,425.00	7,120.65	-4,300.33	163.74	LAST MWD SURVEY	
11,477.00	7,124.29	-4,351.53	172.08	PROJECTION TO TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_CANNON 26-3HZ PAD**

**CANNON 37C-3HZ**

**CANNON 37C-3HZ**

**Design: CANNON 37C-3HZ**

## **Survey Report - Geographic**

**13 September, 2012**

# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	edmp

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

Site		WELD_CANNON 26-3HZ PAD						
Site Position:		Northing:	1,307,351.72	usft	Latitude:	40.173890		
From:	Lat/Long	Easting:	3,239,832.54	usft	Longitude:	-104.641723		
Position Uncertainty:	0.00	ft	Slot Radius:	13-3/16	"	Grid Convergence:	0.55	°

Well		CANNON 37C-3HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,307,311.69 usft	Latitude:	40.173779
	+E/-W	0.00 ft	Easting:	3,239,877.08 usft	Longitude:	-104.641565
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,840.00 ft

<b>Wellbore</b>	CANNON 37C-3HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/9/2012	8.64	66.85	52,913

<b>Design</b>	CANNON 37C-3HZ				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	-1.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	-1.00	0.00	0.00	177.74	

<b>Survey Program</b>	<b>Date</b>	9/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
99.00	749.00	Survey #1 (CANNON 37C-3HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
949.00	11,477.00	Survey #2 (CANNON 37C-3HZ)	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
-1.00	0.00	0.00	-1.00	0.00	0.00	1,307,311.69	3,239,877.08	40.173779	-104.641565
99.00	0.35	295.54	99.00	0.13	-0.28	1,307,311.82	3,239,876.80	40.173779	-104.641566
199.00	0.07	238.64	199.00	0.23	-0.60	1,307,311.92	3,239,876.47	40.173780	-104.641567
299.00	0.10	303.97	299.00	0.25	-0.73	1,307,311.93	3,239,876.35	40.173780	-104.641568
399.00	0.10	288.26	399.00	0.32	-0.88	1,307,312.01	3,239,876.19	40.173780	-104.641568
499.00	0.26	45.17	499.00	0.51	-0.81	1,307,312.20	3,239,876.27	40.173780	-104.641568
599.00	0.13	78.11	599.00	0.70	-0.53	1,307,312.38	3,239,876.54	40.173781	-104.641567
699.00	0.09	78.56	699.00	0.73	-0.35	1,307,312.42	3,239,876.73	40.173781	-104.641566
749.00	0.12	57.17	749.00	0.77	-0.26	1,307,312.46	3,239,876.81	40.173781	-104.641566
TIE ON									



# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
949.00	0.25	292.61	949.00	1.05	-0.49	1,307,312.74	3,239,876.58	40.173782	-104.641567
<b>FIRST MWD SURVEY</b>									
1,039.00	0.56	310.60	1,038.99	1.41	-1.00	1,307,313.10	3,239,876.06	40.173783	-104.641569
1,130.00	1.93	9.37	1,129.97	3.21	-1.09	1,307,314.90	3,239,875.95	40.173788	-104.641569
1,221.00	4.06	17.55	1,220.84	7.80	0.13	1,307,319.49	3,239,877.13	40.173800	-104.641565
1,314.00	6.03	16.38	1,313.48	15.63	2.50	1,307,327.34	3,239,879.43	40.173822	-104.641556
1,406.00	6.60	14.38	1,404.92	25.38	5.17	1,307,337.12	3,239,882.01	40.173849	-104.641547
1,501.00	6.56	14.05	1,499.29	35.94	7.85	1,307,347.70	3,239,884.58	40.173878	-104.641537
1,596.00	6.59	5.01	1,593.67	46.63	9.64	1,307,358.41	3,239,886.27	40.173907	-104.641531
1,691.00	6.13	1.30	1,688.09	57.13	10.23	1,307,368.92	3,239,886.76	40.173936	-104.641529
1,786.00	5.90	3.14	1,782.57	67.08	10.61	1,307,378.87	3,239,887.04	40.173963	-104.641527
1,881.00	5.90	13.19	1,877.06	76.71	12.00	1,307,388.51	3,239,888.33	40.173990	-104.641522
1,975.00	5.43	13.92	1,970.61	85.73	14.17	1,307,397.55	3,239,890.42	40.174014	-104.641515
2,070.00	4.87	10.40	2,065.22	94.06	15.98	1,307,405.90	3,239,892.15	40.174037	-104.641508
2,165.00	6.32	14.24	2,159.77	103.09	17.99	1,307,414.95	3,239,894.07	40.174062	-104.641501
2,260.00	5.36	12.02	2,254.27	112.50	20.20	1,307,424.38	3,239,896.19	40.174088	-104.641493
2,355.00	6.32	16.41	2,348.78	121.86	22.60	1,307,433.76	3,239,898.50	40.174114	-104.641484
2,449.00	5.40	14.73	2,442.29	131.10	25.19	1,307,443.03	3,239,901.00	40.174139	-104.641475
2,545.00	6.99	12.44	2,537.72	141.17	27.60	1,307,453.12	3,239,903.31	40.174167	-104.641467
2,640.00	5.60	10.21	2,632.15	151.38	29.66	1,307,463.35	3,239,905.28	40.174195	-104.641459
2,734.00	4.69	3.87	2,725.77	159.73	30.74	1,307,471.71	3,239,906.27	40.174218	-104.641455
2,829.00	6.31	10.97	2,820.33	168.73	31.99	1,307,480.72	3,239,907.44	40.174242	-104.641451
2,924.00	5.98	9.76	2,914.78	178.73	33.82	1,307,490.74	3,239,909.17	40.174270	-104.641444
3,018.00	5.45	7.70	3,008.32	187.98	35.25	1,307,500.00	3,239,910.51	40.174295	-104.641439
3,113.00	6.16	19.46	3,102.83	197.26	37.56	1,307,509.30	3,239,912.72	40.174321	-104.641431
3,208.00	4.69	21.42	3,197.40	205.68	40.67	1,307,517.75	3,239,915.76	40.174344	-104.641420
3,303.00	5.68	19.71	3,292.01	213.72	43.68	1,307,525.83	3,239,918.68	40.174366	-104.641409
3,399.00	6.32	11.49	3,387.49	223.37	46.33	1,307,535.50	3,239,921.25	40.174392	-104.641399
3,494.00	4.96	11.26	3,482.03	232.52	48.17	1,307,544.67	3,239,923.00	40.174417	-104.641393
3,589.00	3.65	356.56	3,576.76	239.57	48.80	1,307,551.72	3,239,923.55	40.174437	-104.641391
3,683.00	1.86	331.73	3,670.65	243.90	47.89	1,307,556.04	3,239,922.61	40.174449	-104.641394
3,777.00	0.80	261.11	3,764.63	245.14	46.52	1,307,557.27	3,239,921.23	40.174452	-104.641399
3,873.00	0.74	261.92	3,860.62	244.95	45.25	1,307,557.07	3,239,919.95	40.174451	-104.641403
3,967.00	0.90	267.49	3,954.61	244.83	43.91	1,307,556.94	3,239,918.61	40.174451	-104.641408
4,062.00	0.38	142.99	4,049.61	244.55	43.35	1,307,556.65	3,239,918.06	40.174450	-104.641410
4,157.00	0.20	1.16	4,144.61	244.46	43.54	1,307,556.57	3,239,918.25	40.174450	-104.641409
4,252.00	0.69	320.96	4,239.60	245.07	43.19	1,307,557.17	3,239,917.89	40.174452	-104.641411
4,346.00	1.09	328.14	4,333.59	246.27	42.36	1,307,558.36	3,239,917.05	40.174455	-104.641414
4,440.00	0.80	244.93	4,427.58	246.75	41.29	1,307,558.84	3,239,915.98	40.174456	-104.641417
4,535.00	1.09	268.83	4,522.57	246.46	39.79	1,307,558.52	3,239,914.48	40.174456	-104.641423
4,630.00	1.05	152.66	4,617.56	245.66	39.29	1,307,557.72	3,239,913.98	40.174453	-104.641425
4,724.00	0.97	145.03	4,711.55	244.25	40.14	1,307,556.32	3,239,914.85	40.174450	-104.641422
4,819.00	0.58	55.98	4,806.54	243.86	41.00	1,307,555.93	3,239,915.71	40.174448	-104.641419
4,913.00	0.73	23.83	4,900.53	244.67	41.63	1,307,556.75	3,239,916.34	40.174451	-104.641416
5,008.00	1.41	143.21	4,995.52	244.29	42.58	1,307,556.38	3,239,917.29	40.174450	-104.641413
5,103.00	1.00	164.58	5,090.50	242.55	43.50	1,307,554.65	3,239,918.23	40.174445	-104.641410
5,198.00	0.63	178.44	5,185.49	241.23	43.73	1,307,553.34	3,239,918.47	40.174441	-104.641409
5,292.00	0.49	213.29	5,279.49	240.38	43.53	1,307,552.48	3,239,918.28	40.174439	-104.641410
5,387.00	0.51	230.60	5,374.49	239.77	42.98	1,307,551.87	3,239,917.73	40.174437	-104.641411
5,482.00	0.29	215.02	5,469.48	239.31	42.51	1,307,551.40	3,239,917.27	40.174436	-104.641413
5,576.00	0.20	286.27	5,563.48	239.16	42.22	1,307,551.25	3,239,916.98	40.174436	-104.641414
5,672.00	0.22	241.79	5,659.48	239.12	41.89	1,307,551.20	3,239,916.66	40.174435	-104.641415
5,767.00	0.73	187.99	5,754.48	238.43	41.65	1,307,550.52	3,239,916.42	40.174434	-104.641416
5,863.00	0.97	200.01	5,850.47	237.06	41.29	1,307,549.14	3,239,916.07	40.174430	-104.641418
5,958.00	1.21	205.76	5,945.45	235.40	40.58	1,307,547.48	3,239,915.37	40.174425	-104.641420

# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,052.00	0.56	185.90	6,039.44	234.05	40.10	1,307,546.12	3,239,914.91	40.174422	-104.641422
6,147.00	0.72	193.72	6,134.43	233.01	39.91	1,307,545.08	3,239,914.73	40.174419	-104.641422
6,242.00	0.91	191.80	6,229.42	231.69	39.61	1,307,543.76	3,239,914.45	40.174415	-104.641424
6,337.00	1.22	209.70	6,324.41	230.08	38.96	1,307,542.13	3,239,913.81	40.174411	-104.641426
6,432.00	1.06	194.02	6,419.39	228.34	38.24	1,307,540.40	3,239,913.11	40.174406	-104.641428
6,459.00	1.11	197.83	6,446.39	227.85	38.10	1,307,539.90	3,239,912.97	40.174405	-104.641429
6,526.00	3.83	171.93	6,513.32	225.02	38.22	1,307,537.07	3,239,913.12	40.174397	-104.641429
6,558.00	8.07	178.32	6,545.14	221.71	38.43	1,307,533.77	3,239,913.36	40.174388	-104.641428
6,590.00	11.85	178.17	6,576.65	216.18	38.60	1,307,528.24	3,239,913.59	40.174372	-104.641427
6,621.00	14.64	179.45	6,606.82	209.08	38.74	1,307,521.14	3,239,913.80	40.174353	-104.641427
6,654.00	17.06	177.90	6,638.57	200.07	38.96	1,307,512.13	3,239,914.10	40.174328	-104.641426
6,685.00	20.44	177.11	6,667.92	190.12	39.40	1,307,502.19	3,239,914.64	40.174301	-104.641424
6,717.00	21.54	177.91	6,697.79	178.67	39.90	1,307,490.74	3,239,915.24	40.174270	-104.641422
6,749.00	20.72	177.59	6,727.64	167.14	40.35	1,307,479.22	3,239,915.81	40.174238	-104.641421
6,780.00	19.75	176.39	6,756.73	156.44	40.91	1,307,468.52	3,239,916.47	40.174208	-104.641419
6,812.00	20.49	175.45	6,786.77	145.46	41.69	1,307,457.55	3,239,917.36	40.174178	-104.641416
6,843.00	23.52	178.41	6,815.51	133.86	42.30	1,307,445.96	3,239,918.08	40.174147	-104.641414
6,875.00	26.88	183.72	6,844.47	120.26	42.00	1,307,432.35	3,239,917.92	40.174109	-104.641415
6,907.00	30.00	185.38	6,872.60	105.07	40.78	1,307,417.15	3,239,916.84	40.174067	-104.641419
6,938.00	32.82	183.45	6,899.06	88.96	39.55	1,307,401.03	3,239,915.77	40.174023	-104.641424
6,970.00	35.57	182.12	6,925.52	71.00	38.68	1,307,383.07	3,239,915.07	40.173974	-104.641427
7,001.00	39.53	181.32	6,950.10	52.12	38.12	1,307,364.18	3,239,914.70	40.173922	-104.641429
7,033.00	42.93	180.02	6,974.16	31.04	37.89	1,307,343.09	3,239,914.66	40.173864	-104.641430
7,064.00	46.89	179.14	6,996.11	9.16	38.05	1,307,321.22	3,239,915.04	40.173804	-104.641429
7,096.00	49.77	178.78	7,017.38	-14.74	38.49	1,307,297.32	3,239,915.71	40.173739	-104.641428
7,128.00	51.42	178.64	7,037.70	-39.46	39.04	1,307,272.61	3,239,916.50	40.173671	-104.641426
7,159.00	53.40	179.18	7,056.61	-64.02	39.51	1,307,248.06	3,239,917.21	40.173603	-104.641424
7,191.00	57.02	179.81	7,074.86	-90.29	39.74	1,307,221.79	3,239,917.69	40.173531	-104.641423
7,222.00	61.47	179.96	7,090.71	-116.93	39.79	1,307,195.16	3,239,918.00	40.173458	-104.641423
7,254.00	66.47	179.77	7,104.75	-145.67	39.86	1,307,166.41	3,239,918.35	40.173379	-104.641423
7,285.00	70.39	180.66	7,116.14	-174.49	39.75	1,307,137.59	3,239,918.51	40.173300	-104.641423
7,318.00	73.62	180.75	7,126.34	-205.87	39.36	1,307,106.21	3,239,918.43	40.173214	-104.641424
7,349.00	76.81	179.88	7,134.25	-235.84	39.20	1,307,076.24	3,239,918.56	40.173132	-104.641425
7,381.00	79.31	178.95	7,140.87	-267.15	39.52	1,307,044.94	3,239,919.18	40.173046	-104.641424
7,412.00	80.51	178.14	7,146.30	-297.66	40.30	1,307,014.44	3,239,920.25	40.172962	-104.641421
7,444.00	82.63	178.26	7,150.99	-329.29	41.29	1,306,982.82	3,239,921.55	40.172875	-104.641418
7,464.35	83.80	178.51	7,153.39	-349.49	41.86	1,306,962.62	3,239,922.32	40.172820	-104.641415
7" INTERMEDIATE CASING									
7,560.00	89.32	179.69	7,159.13	-444.92	43.35	1,306,867.22	3,239,924.74	40.172558	-104.641410
7,655.00	89.94	178.49	7,159.74	-539.90	44.86	1,306,772.25	3,239,927.16	40.172297	-104.641405
7,750.00	90.06	178.23	7,159.74	-634.86	47.58	1,306,677.32	3,239,930.80	40.172036	-104.641395
7,844.00	91.23	178.00	7,158.68	-728.81	50.67	1,306,583.41	3,239,934.80	40.171778	-104.641384
7,939.00	92.16	179.92	7,155.87	-823.74	52.40	1,306,488.50	3,239,937.45	40.171518	-104.641378
8,034.00	91.48	179.59	7,152.85	-918.69	52.80	1,306,393.56	3,239,938.77	40.171257	-104.641376
8,129.00	91.48	180.48	7,150.40	-1,013.66	52.74	1,306,298.59	3,239,939.63	40.170996	-104.641377
8,224.00	90.74	180.71	7,148.56	-1,108.64	51.76	1,306,203.61	3,239,939.57	40.170736	-104.641380
8,319.00	90.06	180.02	7,147.90	-1,203.63	51.15	1,306,108.62	3,239,939.88	40.170475	-104.641382
8,414.00	91.66	180.17	7,146.47	-1,298.62	50.99	1,306,013.63	3,239,940.64	40.170214	-104.641383
8,509.00	90.55	179.19	7,144.64	-1,393.60	51.52	1,305,918.66	3,239,942.09	40.169953	-104.641381
8,604.00	90.86	180.02	7,143.47	-1,488.59	52.18	1,305,823.69	3,239,943.67	40.169693	-104.641379
8,699.00	90.43	180.34	7,142.40	-1,583.58	51.88	1,305,728.69	3,239,944.29	40.169432	-104.641380
8,794.00	91.97	181.22	7,140.41	-1,678.54	50.59	1,305,633.72	3,239,943.91	40.169171	-104.641384
8,889.00	91.66	180.54	7,137.40	-1,773.49	49.13	1,305,538.77	3,239,943.37	40.168911	-104.641389
8,983.00	92.46	182.96	7,134.02	-1,867.37	46.26	1,305,444.86	3,239,941.42	40.168653	-104.641400
9,079.00	91.76	181.47	7,130.49	-1,963.23	42.55	1,305,348.97	3,239,938.64	40.168390	-104.641413

# Anadarko Petroleum Corp

## Survey Report - Geographic

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well CANNON 37C-3HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Site:</b>	WELD_CANNON 26-3HZ PAD	<b>MD Reference:</b>	25' RKB + 4840' GL @ 4865.00ft (H&P 307)
<b>Well:</b>	CANNON 37C-3HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	CANNON 37C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	CANNON 37C-3HZ	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,174.00	91.36	181.51	7,127.90	-2,058.17	40.09	1,305,254.02	3,239,937.09	40.168129	-104.641422
9,268.00	90.86	181.32	7,126.08	-2,152.12	37.76	1,305,160.04	3,239,935.68	40.167871	-104.641430
9,363.00	90.43	182.45	7,125.01	-2,247.06	34.64	1,305,065.08	3,239,933.47	40.167611	-104.641441
9,459.00	90.18	183.01	7,124.50	-2,342.95	30.07	1,304,969.15	3,239,929.83	40.167347	-104.641458
9,553.00	90.06	180.68	7,124.30	-2,436.89	27.04	1,304,875.18	3,239,927.71	40.167089	-104.641469
9,648.00	89.20	181.04	7,124.92	-2,531.88	25.62	1,304,780.18	3,239,927.20	40.166829	-104.641474
9,743.00	90.12	179.56	7,125.48	-2,626.87	25.12	1,304,685.19	3,239,927.63	40.166568	-104.641475
9,837.00	91.05	179.30	7,124.52	-2,720.86	26.05	1,304,591.22	3,239,929.47	40.166310	-104.641472
9,933.00	90.74	178.73	7,123.02	-2,816.84	27.70	1,304,495.26	3,239,932.05	40.166046	-104.641466
10,028.00	90.12	178.27	7,122.31	-2,911.80	30.19	1,304,400.33	3,239,935.46	40.165786	-104.641457
10,123.00	91.66	177.80	7,120.83	-3,006.73	33.45	1,304,305.43	3,239,939.63	40.165525	-104.641446
10,218.00	90.86	177.97	7,118.74	-3,101.64	36.95	1,304,210.56	3,239,944.05	40.165265	-104.641433
10,314.00	87.59	174.29	7,120.04	-3,197.38	43.43	1,304,114.89	3,239,951.46	40.165002	-104.641410
10,409.00	88.31	173.36	7,123.44	-3,291.77	53.64	1,304,020.60	3,239,962.58	40.164743	-104.641373
10,504.00	90.43	173.48	7,124.49	-3,386.13	64.52	1,303,926.35	3,239,974.38	40.164484	-104.641334
10,599.00	91.85	174.89	7,122.60	-3,480.62	74.15	1,303,831.96	3,239,984.92	40.164224	-104.641300
10,693.00	93.57	176.40	7,118.15	-3,574.24	81.28	1,303,738.42	3,239,992.95	40.163967	-104.641274
10,788.00	93.21	176.48	7,112.53	-3,668.89	87.17	1,303,643.83	3,239,999.76	40.163707	-104.641253
10,883.00	91.66	175.30	7,108.50	-3,763.56	93.97	1,303,549.23	3,240,007.48	40.163448	-104.641229
10,978.00	90.93	175.09	7,106.35	-3,858.20	101.93	1,303,454.67	3,240,016.35	40.163188	-104.641201
11,074.00	89.69	174.13	7,105.83	-3,953.77	110.94	1,303,359.19	3,240,026.29	40.162925	-104.641168
11,169.00	88.52	171.29	7,107.32	-4,047.98	122.99	1,303,265.10	3,240,039.25	40.162667	-104.641125
11,264.00	87.28	171.05	7,110.80	-4,141.79	137.57	1,303,171.44	3,240,054.73	40.162409	-104.641073
11,359.00	86.21	170.37	7,116.19	-4,235.39	152.88	1,303,077.99	3,240,070.95	40.162152	-104.641018
11,425.00	86.05	170.64	7,120.65	-4,300.33	163.74	1,303,013.15	3,240,082.44	40.161974	-104.640979
LAST MWD SURVEY									
11,477.00	85.92	170.85	7,124.29	-4,351.53	172.08	1,302,962.04	3,240,091.28	40.161834	-104.640950
PROJECTION TO TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
749.00	749.00	0.77	-0.26	TIE ON
949.00	949.00	1.05	-0.49	FIRST MWD SURVEY
7,464.35	7,153.39	-349.49	41.86	7" INTERMEDIATE CASING
11,425.00	7,120.65	-4,300.33	163.74	LAST MWD SURVEY
11,477.00	7,124.29	-4,351.53	172.08	PROJECTION TO TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_