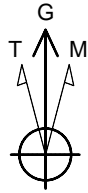


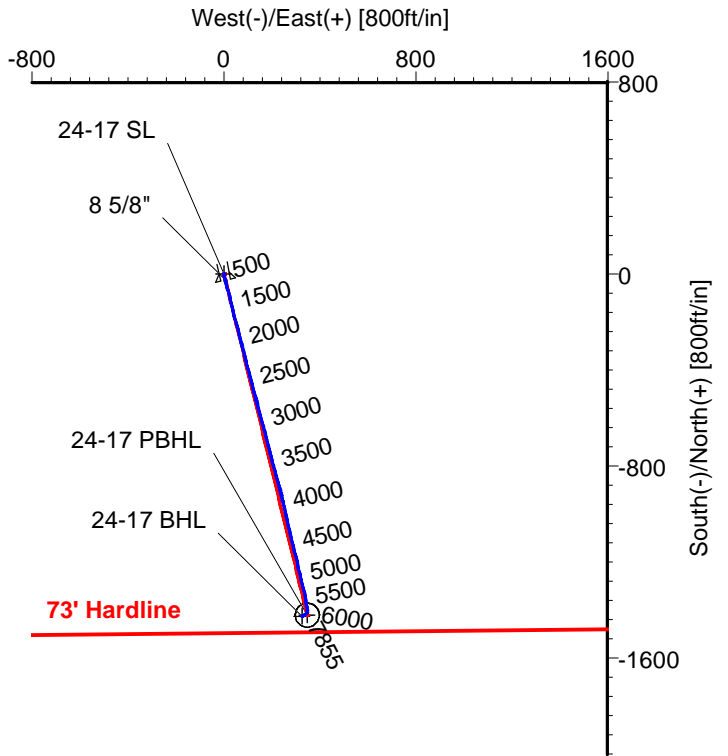
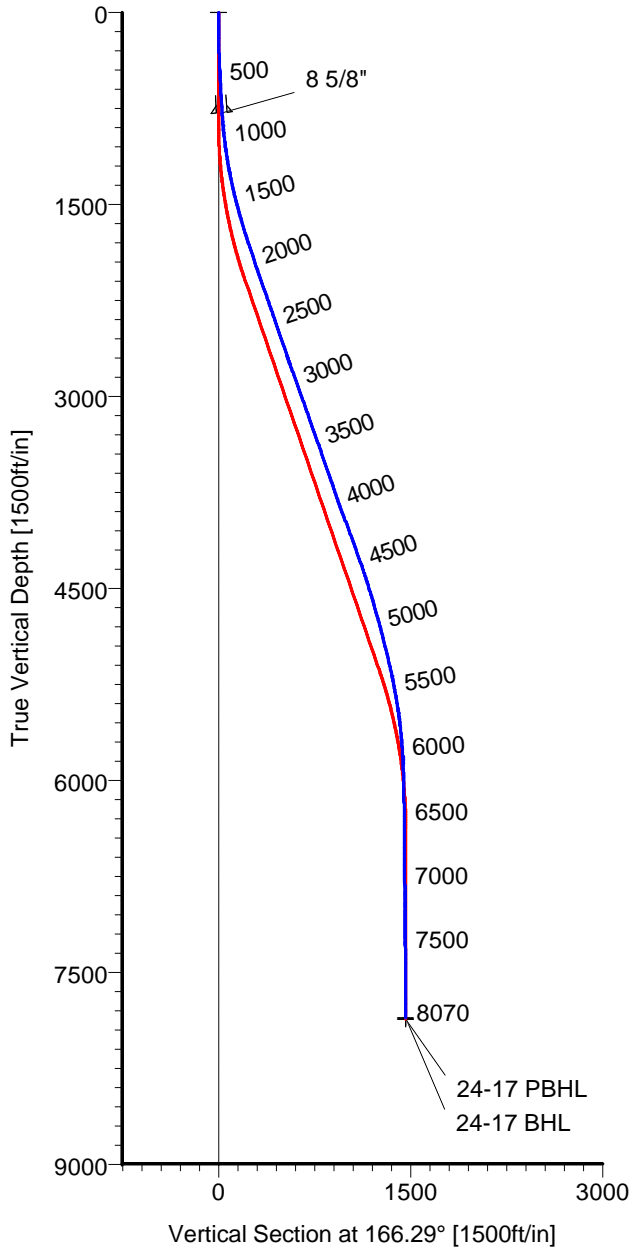
ANADARKO PETROLEUM

Field: Weld County, CO
Site: REI 17-17 Pad
Well: 24-17
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.53°
Magnetic North: 8.29°

Magnetic Field
Strength: 53096nT
Dip Angle: 66.93°
Date: 05/26/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	784.34	785.00	8 5/8"	8.625

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
24-17 SL	0.00	0.00	0.00	$40^{\circ}13'46.294\text{N}$	$104^{\circ}41'01.032\text{W}$	Point
24-17 BHL	7855.46	-1427.69	324.50	$40^{\circ}13'32.156\text{N}$	$104^{\circ}40'57.018\text{W}$	Point
24-17 PBHL	7863.00	-1421.53	346.79	$40^{\circ}13'32.214\text{N}$	$104^{\circ}40'56.730\text{W}$	Circle (Radius: 50)

Wellpath: (24-17/Original Hole)

Created By: Ivonne Gonzalez

Date: 06/22/2011

ARCHER DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067

Archer

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: REI 17-17 Pad Well: 24-17 Wellpath: Original Hole	Date: 06/22/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 07:24:42 Well: 24-17, Grid North 4898'GL+15'KB 4913.0 Well (0.00N,0.00E,166.29Azi) Minimum Curvature	Page: 1 Db: Sybase
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Field: Weld County, CO Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level	Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010
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Site: REI 17-17 Pad Centered on 27-17 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4898.00 ft	Northing: 1327540.32 ft Easting: 3227934.36 ft Latitude: 40 13 46.592 N Longitude: 104 41 1.169 W North Reference: Grid Grid Convergence: 0.53 deg
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Well: 24-17 Well Position: +N/-S -30.10 ft +E/-W 10.87 ft Position Uncertainty: 0.00 ft	Slot Name: 24-17 Well Position: +N/-S -30.10 ft +E/-W 10.87 ft Position Uncertainty: 0.00 ft
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Wellpath: Original Hole Current Datum: 4898'GL+15'KB Magnetic Data: 05/26/2011 Field Strength: 53096 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.82 deg Mag Dip Angle: 66.93 deg Direction: deg
--	---

Height 4913.00 ft +N/-S ft 0.00	0.00 0.00 0.00 166.29
--	--

Survey Program for Definitive Wellpath				
Date: 06/22/2011	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
49.00	8025.00	Survey #1 (49.00-8025.00)	MWD	Std MWD
8070.00	8070.00	Survey #2 (8070.00-8070.00)	Project	Projection

Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
49.00	0.70	154.00	49.00	-0.27	0.13	0.29	1.43	1.43	0.00	MWD
109.00	0.90	158.60	108.99	-1.04	0.46	1.12	0.35	0.33	7.67	MWD
198.00	0.70	177.60	197.98	-2.23	0.74	2.34	0.37	-0.22	21.35	MWD
289.00	1.60	189.20	288.97	-4.04	0.56	4.06	1.02	0.99	12.75	MWD
426.00	2.80	166.70	425.86	-9.19	1.03	9.17	1.06	0.88	-16.42	MWD
561.00	3.00	161.80	560.69	-15.75	2.89	15.99	0.24	0.15	-3.63	MWD
698.00	3.30	160.00	697.48	-22.86	5.36	23.48	0.23	0.22	-1.31	MWD
740.00	3.20	165.30	739.42	-25.13	6.07	25.85	0.75	-0.24	12.62	MWD
785.00	3.57	167.66	784.34	-27.72	6.69	28.51	0.88	0.83	5.24	8 5/8"
836.00	4.00	169.80	835.23	-31.02	7.34	31.87	0.88	0.84	4.20	MWD
927.00	6.00	166.30	925.88	-38.76	9.03	39.80	2.22	2.20	-3.85	MWD
1018.00	6.90	167.40	1016.30	-48.72	11.35	50.02	1.00	0.99	1.21	MWD
1108.00	8.60	162.50	1105.47	-60.41	14.55	62.14	2.02	1.89	-5.44	MWD
1200.00	9.90	165.30	1196.28	-74.62	18.63	76.91	1.49	1.41	3.04	MWD
1290.00	11.80	165.30	1284.66	-91.01	22.92	93.85	2.11	2.11	0.00	MWD
1381.00	12.80	166.30	1373.57	-109.80	27.67	113.24	1.12	1.10	1.10	MWD
1472.00	14.30	164.90	1462.04	-130.45	32.99	134.55	1.69	1.65	-1.54	MWD
1562.00	15.30	168.10	1549.05	-152.80	38.33	157.53	1.43	1.11	3.56	MWD
1654.00	16.50	166.00	1637.53	-177.36	44.00	182.73	1.45	1.30	-2.28	MWD
1744.00	16.90	165.30	1723.74	-202.41	50.41	208.59	0.50	0.44	-0.78	MWD
1835.00	18.50	165.60	1810.43	-229.19	57.36	236.25	1.76	1.76	0.33	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: REI 17-17 Pad
Well: 24-17
Wellpath: Original Hole

Date: 06/22/2011

Time: 07:24:42

Page: 2

Co-ordinate(NE) Reference: Well: 24-17, Grid North

Vertical (TVD) Reference: 4898'GL+15'KB 4913.0

Section (VS) Reference: Well (0.00N,0.00E,166.29Azi)

Survey Calculation Method: Minimum Curvature

Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1926.00	18.70	165.30	1896.67	-257.28	64.65	265.28	0.24	0.22	-0.33	MWD
2017.00	18.30	166.00	1982.97	-285.26	71.81	294.15	0.50	-0.44	0.77	MWD
2107.00	19.50	164.90	2068.12	-313.47	79.14	323.30	1.39	1.33	-1.22	MWD
2198.00	19.70	166.30	2153.84	-343.04	86.73	353.82	0.56	0.22	1.54	MWD
2289.00	19.20	164.90	2239.65	-372.39	94.26	384.12	0.75	-0.55	-1.54	MWD
2380.00	18.90	165.30	2325.67	-401.09	101.90	413.81	0.36	-0.33	0.44	MWD
2471.00	18.70	166.30	2411.81	-429.52	109.09	443.13	0.42	-0.22	1.10	MWD
2562.00	18.80	165.60	2497.98	-457.89	116.19	472.38	0.27	0.11	-0.77	MWD
2652.00	18.80	164.60	2583.18	-485.92	123.65	501.38	0.36	0.00	-1.11	MWD
2743.00	18.50	166.00	2669.40	-514.07	131.04	530.48	0.59	-0.33	1.54	MWD
2834.00	20.50	165.30	2755.18	-543.49	138.57	560.85	2.21	2.20	-0.77	MWD
2925.00	19.70	164.60	2840.64	-573.69	146.69	592.11	0.92	-0.88	-0.77	MWD
3015.00	19.70	164.60	2925.37	-602.94	154.75	622.44	0.00	0.00	0.00	MWD
3106.00	19.50	164.20	3011.10	-632.34	162.96	652.95	0.26	-0.22	-0.44	MWD
3197.00	19.70	165.30	3096.82	-661.79	170.98	683.46	0.46	0.22	1.21	MWD
3288.00	19.40	166.30	3182.58	-691.31	178.45	713.91	0.49	-0.33	1.10	MWD
3379.00	19.90	165.60	3268.28	-720.99	185.89	744.51	0.61	0.55	-0.77	MWD
3469.00	19.40	166.00	3353.04	-750.33	193.31	774.77	0.58	-0.56	0.44	MWD
3560.00	19.00	163.90	3438.98	-779.23	201.08	804.69	0.88	-0.44	-2.31	MWD
3651.00	19.00	164.20	3525.02	-807.72	209.22	834.29	0.11	0.00	0.33	MWD
3742.00	19.00	164.60	3611.06	-836.25	217.18	863.90	0.14	0.00	0.44	MWD
3833.00	18.30	167.00	3697.28	-864.46	224.33	892.99	1.14	-0.77	2.64	MWD
3923.00	18.80	164.90	3782.61	-892.22	231.29	921.62	0.93	0.56	-2.33	MWD
4014.00	20.10	166.30	3868.41	-921.57	238.81	951.92	1.52	1.43	1.54	MWD
4105.00	21.30	167.00	3953.54	-952.87	246.23	984.08	1.35	1.32	0.77	MWD
4196.00	20.80	167.70	4038.46	-984.76	253.39	1016.76	0.61	-0.55	0.77	MWD
4287.00	20.40	167.00	4123.65	-1016.00	260.40	1048.77	0.52	-0.44	-0.77	MWD
4377.00	19.20	167.00	4208.32	-1045.71	267.26	1079.26	1.33	-1.33	0.00	MWD
4468.00	19.20	166.30	4294.26	-1074.83	274.17	1109.18	0.25	0.00	-0.77	MWD
4559.00	18.50	166.70	4380.38	-1103.41	281.04	1138.58	0.78	-0.77	0.44	MWD
4650.00	17.20	166.30	4467.00	-1130.54	287.54	1166.48	1.43	-1.43	-0.44	MWD
4741.00	16.90	165.60	4554.00	-1156.42	294.02	1193.16	0.40	-0.33	-0.77	MWD
4831.00	15.70	166.70	4640.38	-1180.94	300.07	1218.41	1.38	-1.33	1.22	MWD
4922.00	15.80	168.40	4727.96	-1205.06	305.40	1243.11	0.52	0.11	1.87	MWD
5013.00	14.80	166.30	4815.74	-1228.49	310.64	1267.11	1.26	-1.10	-2.31	MWD
5104.00	13.70	164.60	4903.94	-1250.17	316.26	1289.51	1.29	-1.21	-1.87	MWD
5194.00	13.90	168.10	4991.34	-1271.02	321.32	1310.96	0.95	0.22	3.89	MWD
5285.00	13.20	166.30	5079.81	-1291.81	326.03	1332.28	0.90	-0.77	-1.98	MWD
5376.00	12.30	166.00	5168.56	-1311.31	330.84	1352.36	0.99	-0.99	-0.33	MWD
5467.00	10.60	169.10	5257.75	-1328.94	334.76	1370.42	1.99	-1.87	3.41	MWD
5558.00	9.50	169.50	5347.35	-1344.54	337.72	1386.27	1.21	-1.21	0.44	MWD
5648.00	9.00	170.20	5436.18	-1358.78	340.27	1400.71	0.57	-0.56	0.78	MWD
5739.00	6.90	168.40	5526.30	-1371.15	342.58	1413.28	2.32	-2.31	-1.98	MWD
5830.00	6.30	168.40	5616.70	-1381.40	344.68	1423.73	0.66	-0.66	0.00	MWD
5920.00	4.90	168.10	5706.27	-1390.00	346.47	1432.51	1.56	-1.56	-0.33	MWD
6011.00	3.90	182.50	5797.00	-1396.89	347.13	1439.36	1.63	-1.10	15.82	MWD
6102.00	1.80	177.20	5887.88	-1401.41	347.07	1443.74	2.32	-2.31	-5.82	MWD
6192.00	1.20	189.90	5977.85	-1403.75	346.98	1445.99	0.76	-0.67	14.11	MWD
6374.00	1.40	191.60	6159.80	-1407.81	346.20	1449.75	0.11	0.11	0.93	MWD
6556.00	0.40	71.40	6341.79	-1409.78	346.36	1451.70	0.90	-0.55	-66.04	MWD
6737.00	0.40	207.10	6522.79	-1410.14	346.67	1452.13	0.41	0.00	74.97	MWD
6919.00	1.10	215.50	6704.77	-1412.13	345.36	1453.75	0.39	0.38	4.62	MWD
7100.00	1.40	237.00	6885.73	-1414.75	342.50	1455.62	0.30	0.17	11.88	MWD

ARCHER

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: REI 17-17 Pad Well: 24-17 Wellpath: Original Hole	Date: 06/22/2011 Co-ordinate(NE) Reference: Well: 24-17, Grid North Vertical (TVD) Reference: 4898'GL+15'KB 4913.0 Section (VS) Reference: Well (0.00N,0.00E,166.29Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
---	---

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7282.00	1.60	233.50	7067.66	-1417.47	338.59	1457.33	0.12	0.11	-1.92	MWD
7464.00	1.60	231.40	7249.59	-1420.57	334.56	1459.39	0.03	0.00	-1.15	MWD
7646.00	1.20	232.80	7431.54	-1423.31	331.06	1461.22	0.22	-0.22	0.77	MWD
7827.00	1.20	235.20	7612.50	-1425.53	327.99	1462.65	0.03	0.00	1.33	MWD
8009.00	0.90	240.50	7794.47	-1427.32	325.19	1463.73	0.17	-0.16	2.91	MWD
8025.00	0.70	242.30	7810.47	-1427.43	324.99	1463.79	1.26	-1.25	11.25	MWD
8070.00	0.70	242.30	7855.46	-1427.69	324.50	1463.92	0.00	0.00	0.00	24-17 BHL

Targets

Name	Description		TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->				
	Dip.	Dir.						Deg	Min	Sec	Deg	Min	Sec		
24-17 SL			0.00	0.00	0.00	1327510.22	3227945.23	40	13	46.294	N	104	41	1.032	W
24-17 BHL			7855.46	-1427.69	324.50	1326082.53	3228269.73	40	13	32.156	N	104	40	57.018	W
24-17 PBHL			7863.00	-1421.53	346.79	1326088.69	3228292.02	40	13	32.214	N	104	40	56.730	W
-Circle (Radius: 50)															

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
785.00	784.34	8.625	9.875	8 5/8"