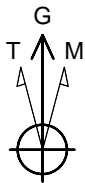


ANADARKO PETROLEUM

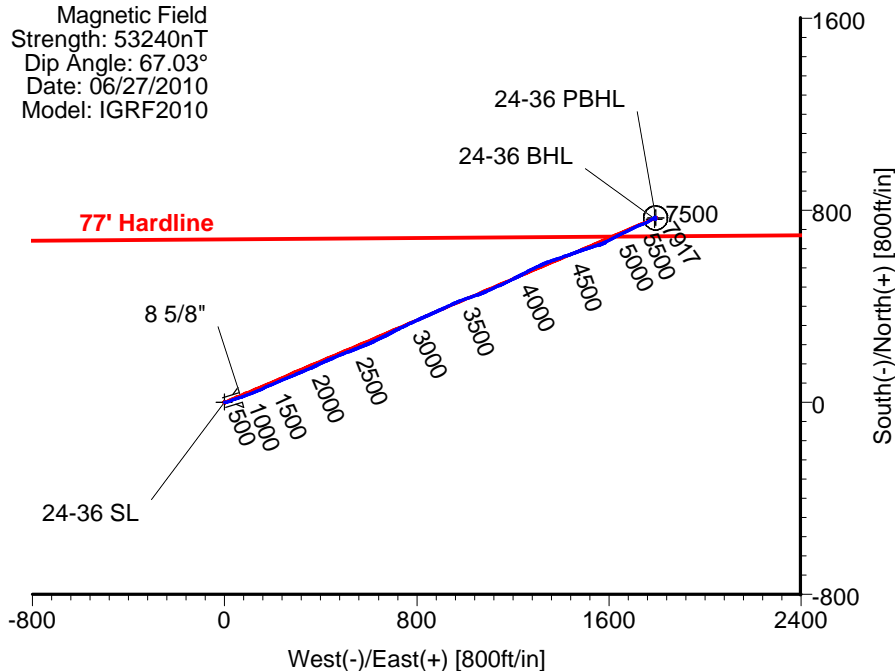
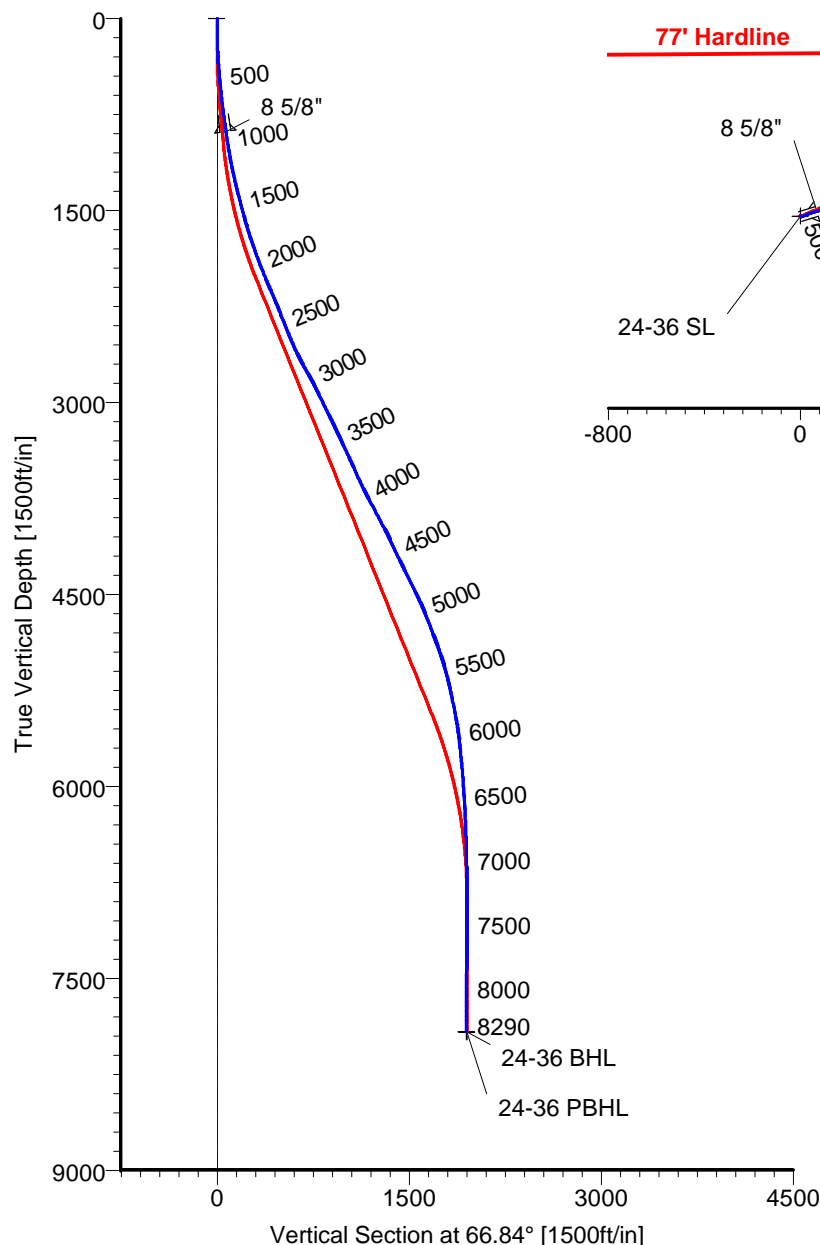


Field: Weld County, CO
 Site: Bernhardt State 11-36 Pad
 Well: 24-36
 Wellpath: Original Hole
 Plan: Plan #1



Azimuths to Grid North
 True North: -0.42°
 Magnetic North: 8.61°

Magnetic Field
 Strength: 53240nT
 Dip Angle: 67.03°
 Date: 06/27/2010
 Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	888.41	890.00	8 5/8"	8.625

LEGEND

- 24-36, Original Hole, Plan #1
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
24-36 SL	0.00	0.00	0.00	40°21'15.154N	104°50'36.591W	Point
24-36 BHL	7917.06	761.97	1791.80	40°21'22.552N	104°50'13.373W	Point
24-36 PBHL	7921.00	767.91	1795.14	40°21'22.611N	104°50'13.329W	Circle (Radius: 50)

Wellpath: (24-36/Original Hole)

ALLIS-CHALMERS DIRECTIONAL DRILLING SERVICES

911 Regional Park Drive Houston, Texas 77060

Phone: 713-934-9600 Fax: 713-934-9067

Created By: Ivonne Gonzalez

Date: 06/30/2010



DIRECTIONAL
DRILLING SERVICES

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM		Date: 06/30/2010		Time: 09:10:16		Page: 1	
Field: Weld County, CO		Co-ordinate(NE) Reference: Well: 24-36, Grid North					
Site: Bernhardt State 11-36 Pad		Vertical (TVD) Reference: 4834'GL+13'KB 4847.0					
Well: 24-36		Section (VS) Reference: Well (0.00N,0.00E,66.84Azi)					
Wellpath: Original Hole		Survey Calculation Method: Minimum Curvature				Db: Adapti	

Field: Weld County, CO	
Map System: US State Plane Coordinate System 1983	Map Zone: Colorado, Northern Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: Bernhardt State 11-36 Pad	
Site Position:	Northing: 1372588.45 ft
From: Geographic	Easting: 3182964.45 ft
Position Uncertainty: 0.00 ft	Latitude: 40 21 15.444 N
Ground Level: 4834.00 ft	Longitude: 104 50 36.672 W
	North Reference: Grid
	Grid Convergence: 0.42 deg

Well: 24-36		Slot Name: 24-36	
Well Position: +N/-S -29.27 ft	Northing: 1372559.18 ft	Latitude: 40 21 15.154 N	
+E/-W 6.48 ft	Easting: 3182970.93 ft	Longitude: 104 50 36.591 W	
Position Uncertainty: 0.00 ft			

Wellpath: Original Hole		Drilled From: Surface	
Current Datum: 4834'GL+13'KB	Height: 4847.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 06/27/2010		Above System Datum: Mean Sea Level	
Field Strength: 53240 nT		Declination: 9.04 deg	
Vertical Section: Depth From (TVD)	+N/-S	+E/-W	Direction
ft	ft	ft	deg
0.00	0.00	0.00	66.84

Survey Program for Definitive Wellpath			
Date: 06/30/2010	Validated: No	Version: 0	
Actual From	To	Survey	Tool Name
ft	ft		
46.00	8245.00	Survey #1 (46.00-8245.00)	MWD
8290.00	8290.00	Survey #2 (8290.00-8290.00)	Project

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
46.00	0.40	90.60	46.00	0.00	0.16	0.15	0.87	0.87	0.00	MWD
168.00	1.80	101.10	167.97	-0.38	2.47	2.12	1.15	1.15	8.61	MWD
288.00	2.80	86.00	287.88	-0.53	7.24	6.45	0.97	0.83	-12.58	MWD
427.00	5.40	68.10	426.51	2.14	16.70	16.19	2.06	1.87	-12.88	MWD
562.00	5.80	67.00	560.87	7.18	28.87	29.37	0.31	0.30	-0.81	MWD
694.00	7.20	71.30	692.02	12.44	42.85	44.28	1.12	1.06	3.26	MWD
830.00	7.40	75.10	826.92	17.42	59.38	61.45	0.38	0.15	2.79	MWD
890.00	8.20	72.44	886.36	19.70	67.19	69.53	1.46	1.33	-4.43	8 5/8"
920.00	8.60	71.30	916.04	21.07	71.36	73.89	1.46	1.35	-3.81	MWD
1010.00	9.20	69.20	1004.96	25.78	84.46	87.79	0.76	0.67	-2.33	MWD
1097.00	10.60	69.20	1090.66	31.09	98.44	102.74	1.61	1.61	0.00	MWD
1188.00	11.80	64.20	1179.93	38.12	114.64	120.39	1.70	1.32	-5.49	MWD
1278.00	13.00	66.30	1267.83	46.19	132.20	139.71	1.42	1.33	2.33	MWD
1369.00	14.40	67.70	1356.23	54.60	152.04	161.26	1.58	1.54	1.54	MWD
1458.00	14.60	65.30	1442.40	63.48	172.47	183.54	0.71	0.22	-2.70	MWD
1549.00	15.00	65.60	1530.38	73.14	193.61	206.78	0.45	0.44	0.33	MWD
1639.00	16.70	69.20	1616.96	82.55	216.31	231.34	2.18	1.89	4.00	MWD
1729.00	17.80	65.60	1702.91	92.82	240.93	258.02	1.70	1.22	-4.00	MWD
1819.00	19.50	67.00	1788.18	104.37	267.29	286.80	1.95	1.89	1.56	MWD
1907.00	20.30	68.10	1870.93	115.81	294.97	316.75	1.00	0.91	1.25	MWD
1997.00	21.80	67.40	1954.92	128.05	324.89	349.07	1.69	1.67	-0.78	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM	Date: 06/30/2010	Time: 09:10:16	Page: 2
Field: Weld County, CO	Co-ordinate(NE) Reference: Well: 24-36, Grid North		
Site: Bernhardt State 11-36 Pad	Vertical (TVD) Reference: 4834'GL+13'KB 4847.0		
Well: 24-36	Section (VS) Reference: Well (0.00N,0.00E,66.84Azi)		
Wellpath: Original Hole	Survey Calculation Method: Minimum Curvature		Db: Adapti

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
2088.00	22.00	66.30	2039.35	141.40	356.09	383.01	0.50	0.22	-1.21	MWD
2177.00	24.00	63.90	2121.28	156.06	387.61	417.76	2.48	2.25	-2.70	MWD
2266.00	23.20	66.70	2202.83	170.96	419.97	453.36	1.55	-0.90	3.15	MWD
2356.00	21.00	67.00	2286.22	184.28	451.10	487.22	2.45	-2.44	0.33	MWD
2446.00	21.80	67.00	2370.01	197.11	481.33	520.06	0.89	0.89	0.00	MWD
2536.00	22.20	70.20	2453.46	209.40	512.71	553.75	1.40	0.44	3.56	MWD
2627.00	23.80	67.70	2537.23	222.19	545.88	589.27	2.06	1.76	-2.75	MWD
2717.00	25.50	68.40	2619.02	236.21	580.69	626.80	1.92	1.89	0.78	MWD
2805.00	28.50	65.30	2697.42	251.96	617.39	666.73	3.76	3.41	-3.52	MWD
2895.00	30.10	63.90	2775.91	270.86	657.17	710.74	1.93	1.78	-1.56	MWD
2985.00	27.30	61.40	2854.85	290.68	695.56	753.83	3.38	-3.11	-2.78	MWD
3076.00	26.20	65.40	2936.11	309.03	732.16	794.69	2.32	-1.21	4.40	MWD
3166.00	26.00	63.50	3016.94	326.10	767.88	834.25	0.95	-0.22	-2.11	MWD
3256.00	26.90	65.30	3097.52	343.41	804.03	874.30	1.34	1.00	2.00	MWD
3347.00	24.30	67.00	3179.58	359.34	839.97	913.61	2.97	-2.86	1.87	MWD
3437.00	26.60	65.30	3260.84	374.99	875.33	952.27	2.68	2.56	-1.89	MWD
3528.00	24.30	65.60	3343.00	391.24	910.89	991.36	2.53	-2.53	0.33	MWD
3618.00	25.20	64.60	3424.74	407.11	945.07	1029.02	1.10	1.00	-1.11	MWD
3708.00	24.60	69.20	3506.38	421.98	979.89	1066.89	2.25	-0.67	5.11	MWD
3798.00	24.60	71.60	3588.21	434.55	1015.18	1104.27	1.11	0.00	2.67	MWD
3889.00	25.50	70.90	3670.65	446.94	1051.66	1142.69	1.04	0.99	-0.77	MWD
3979.00	28.20	66.30	3750.95	461.83	1089.45	1183.29	3.78	3.00	-5.11	MWD
4069.00	28.00	65.60	3830.34	479.10	1128.16	1225.67	0.43	-0.22	-0.78	MWD
4159.00	27.80	64.20	3909.88	496.97	1166.30	1267.76	0.76	-0.22	-1.56	MWD
4249.00	28.30	64.20	3989.31	515.39	1204.40	1310.04	0.56	0.56	0.00	MWD
4340.00	24.60	61.80	4070.77	533.73	1240.53	1350.47	4.23	-4.07	-2.64	MWD
4430.00	25.50	63.50	4152.31	551.23	1274.37	1388.47	1.28	1.00	1.89	MWD
4520.00	25.90	64.20	4233.40	568.43	1309.41	1427.45	0.56	0.44	0.78	MWD
4610.00	26.80	69.90	4314.06	583.96	1346.17	1467.35	2.98	1.00	6.33	MWD
4701.00	26.20	72.00	4395.51	597.22	1384.54	1507.84	1.22	-0.66	2.31	MWD
4792.00	26.40	71.30	4477.09	609.91	1422.81	1548.02	0.41	0.22	-0.77	MWD
4882.00	24.60	68.40	4558.32	623.22	1459.18	1586.70	2.43	-2.00	-3.22	MWD
4972.00	22.30	73.40	4640.89	635.00	1492.97	1622.40	3.38	-2.56	5.56	MWD
5063.00	21.00	72.30	4725.47	644.89	1525.05	1655.78	1.50	-1.43	-1.21	MWD
5153.00	20.60	73.40	4809.60	654.32	1555.59	1687.56	0.62	-0.44	1.22	MWD
5243.00	20.70	61.90	4893.85	666.34	1584.80	1719.15	4.50	0.11	-12.78	MWD
5334.00	18.80	62.80	4979.50	680.62	1612.03	1749.81	2.11	-2.09	0.99	MWD
5424.00	16.00	62.80	5065.37	692.92	1635.97	1776.65	3.11	-3.11	0.00	MWD
5514.00	14.40	62.50	5152.22	703.76	1656.93	1800.18	1.78	-1.78	-0.33	MWD
5604.00	12.60	67.40	5239.73	712.70	1675.92	1821.16	2.37	-2.00	5.44	MWD
5694.00	11.20	64.60	5327.80	720.22	1692.88	1839.71	1.68	-1.56	-3.11	MWD
5785.00	11.30	63.50	5417.05	727.99	1708.84	1857.44	0.26	0.11	-1.21	MWD
5875.00	9.50	66.70	5505.57	734.86	1723.56	1873.68	2.10	-2.00	3.56	MWD
6010.00	6.30	64.90	5639.27	742.41	1740.50	1892.22	2.38	-2.37	-1.33	MWD
6145.00	5.80	72.00	5773.52	747.66	1753.70	1906.42	0.67	-0.37	5.26	MWD
6281.00	4.40	64.20	5908.98	752.05	1764.93	1918.48	1.15	-1.03	-5.74	MWD
6415.00	3.50	52.60	6042.66	756.78	1772.81	1927.58	0.89	-0.67	-8.66	MWD
6551.00	3.50	49.10	6178.41	762.02	1779.24	1935.55	0.16	0.00	-2.57	MWD
6685.00	2.30	48.40	6312.23	766.48	1784.34	1942.00	0.90	-0.90	-0.52	MWD
6820.00	1.60	61.10	6447.15	769.19	1788.02	1946.45	0.61	-0.52	9.41	MWD
6953.00	0.90	67.70	6580.12	770.48	1790.61	1949.34	0.54	-0.53	4.96	MWD
7087.00	0.50	89.20	6714.11	770.89	1792.17	1950.93	0.35	-0.30	16.04	MWD
7219.00	0.70	126.40	6846.10	770.42	1793.40	1951.87	0.32	0.15	28.18	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Bernhardt State 11-36 Pad Well: 24-36 Wellpath: Original Hole	Date: 06/30/2010 Time: 09:10:16 Page: 3 Co-ordinate(NE) Reference: Well: 24-36, Grid North Vertical (TVD) Reference: 4834'GL+13'KB 4847.0 Section (VS) Reference: Well (0.00N,0.00E,66.84Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
7351.00	0.70	175.30	6978.10	769.14	1794.11	1952.03	0.44	0.00	37.05	MWD
7486.00	0.50	190.10	7113.09	767.74	1794.07	1951.44	0.19	-0.15	10.96	MWD
7663.00	0.50	192.20	7290.08	766.22	1793.78	1950.57	0.01	0.00	1.19	MWD
7842.00	0.30	176.40	7469.08	764.99	1793.64	1949.96	0.13	-0.11	-8.83	MWD
8023.00	0.50	193.30	7650.07	763.75	1793.49	1949.33	0.13	0.11	9.34	MWD
8202.00	0.70	236.10	7829.06	762.38	1792.40	1947.80	0.27	0.11	23.91	MWD
8245.00	0.40	235.40	7872.06	762.15	1792.06	1947.39	0.70	-0.70	-1.63	MWD
8290.00	0.40	235.40	7917.06	761.97	1791.80	1947.08	0.00	0.00	0.00	24-36 BHL

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----><--- Longitude --->			Deg	Min	Sec	Deg	Min	Sec
24-36 SL		0.00	0.00	0.00	1372559.183182970.93		40	21	15.154	N	104	50	36.591	W	
24-36 BHL		7917.06	761.97	1791.80	1373321.153184762.73		40	21	22.552	N	104	50	13.373	W	
24-36 PBHL		7921.00	767.91	1795.14	1373327.093184766.07		40	21	22.611	N	104	50	13.329	W	
-Circle (Radius: 50)															

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
890.00	886.36	8.625	9.875	8 5/8"