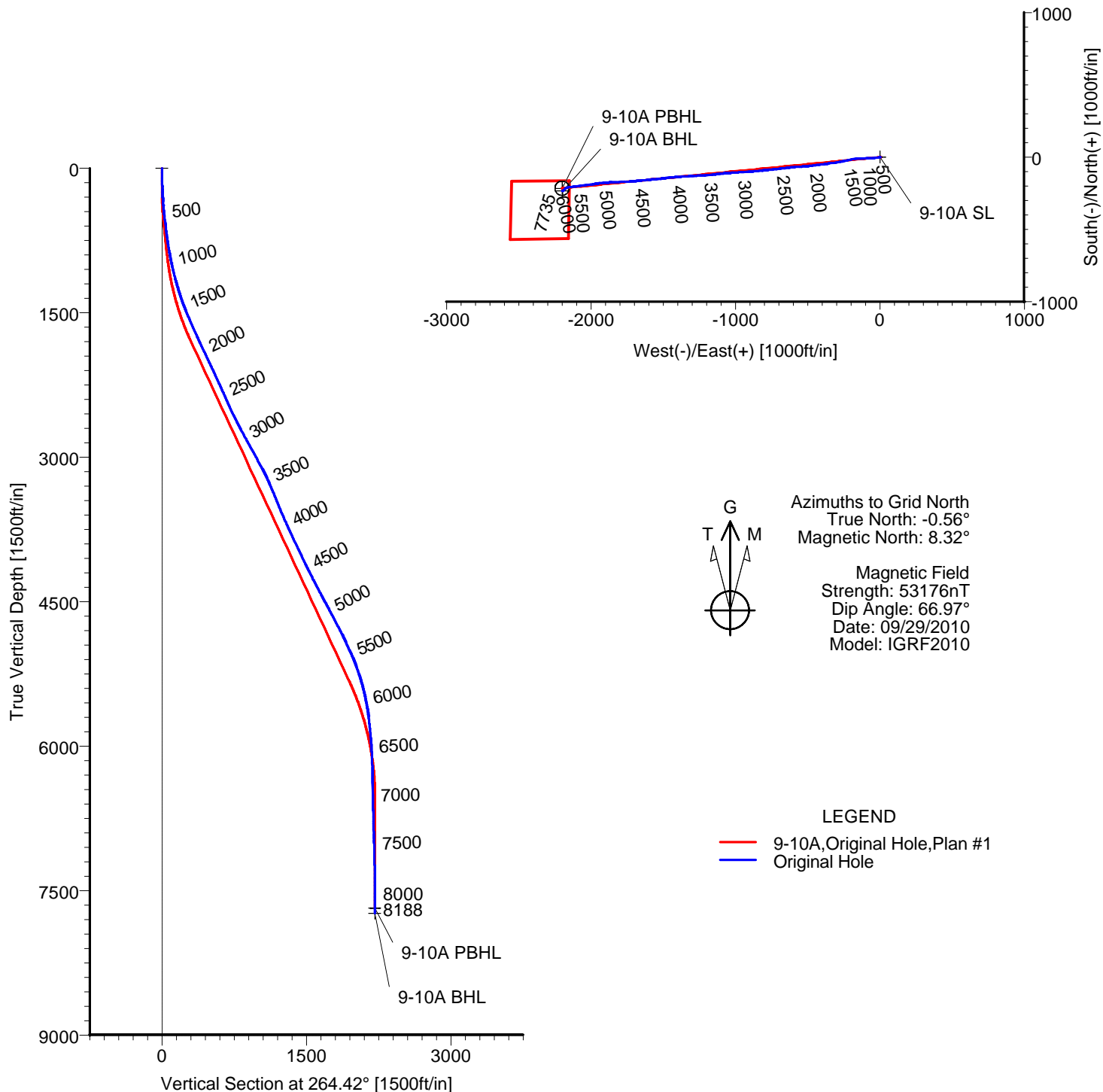


ANADARKO PETROLEUM

Field: Weld County, CO
Site: Frico 11-11 Pad
Well: 9-10A
Wellpath: Original Hole



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
9-10A SL	0.00	0.00	0.00	40°14'20.350N	104°38'02.173W	Point
9-10A PBHL	7680.00	-215.05	-2201.17	40°14'18.436N	104°38'30.583W	Circle (Radius: 50)
9-10A BHL	7734.74	-233.19	-2197.86	40°14'18.257N	104°38'30.543W	Point

Wellpath: (9-10A/Original Hole)

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



**DIRECTIONAL
DRILLING SERVICES**

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Frico 11-11 Pad Well: 9-10A Wellpath: Original Hole	Date: 10/03/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 11:00:36 Well: 9-10A, Grid North 4779'GL+16'KB 4795.0 Well (0.00N,0.00E,264.42Azi) 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: Frico 11-11 Pad Centered on 9-10A Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4779.00 ft	Northing: 1331087.84 ft Easting: 3241783.05 ft Latitude: 40 14 20.350 N Longitude: 104 38 2.173 W North Reference: Grid Grid Convergence: 0.56 deg
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Well: 9-10A Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft	Slot Name: 9-10A Latitude: 40 14 20.350 N Longitude: 104 38 2.173 W
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Wellpath: Original Hole Current Datum: 4779'GL+16'KB Magnetic Data: 09/29/2010 Field Strength: 53176 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.88 deg Mag Dip Angle: 66.97 deg Direction deg
0.00	0.00

Survey Program for Definitive Wellpath			
Date: 10/03/2010	Validated: No	Version: 0	
Actual From ft	To ft	Survey	Toolcode Tool Name
46.00	8143.00	Survey #1 (46.00-8143.00)	MWD
8188.00	8188.00	Survey #2 (8188.00-8188.00)	Std MWD 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
46.00	0.70	244.80	46.00	-0.12	-0.25	0.26	1.52	1.52	0.00	MWD
107.00	0.90	244.80	106.99	-0.48	-1.02	1.07	0.33	0.33	0.00	MWD
173.00	1.60	252.90	172.98	-0.97	-2.37	2.46	1.09	1.06	12.27	MWD
228.00	2.10	266.60	227.95	-1.26	-4.11	4.22	1.21	0.91	24.91	MWD
289.00	2.60	256.10	288.90	-1.66	-6.57	6.70	1.08	0.82	-17.21	MWD
350.00	4.10	259.20	349.79	-2.40	-10.06	10.24	2.48	2.46	5.08	MWD
430.00	5.80	260.30	429.49	-3.62	-16.85	17.12	2.13	2.12	1.37	MWD
521.00	7.00	263.80	519.92	-4.99	-26.90	27.26	1.39	1.32	3.85	MWD
616.00	6.90	265.20	614.22	-6.09	-38.34	38.75	0.21	-0.11	1.47	MWD
702.00	7.70	264.80	699.53	-7.05	-49.23	49.68	0.93	0.93	-0.47	MWD
793.00	9.00	270.80	789.56	-7.50	-62.41	62.85	1.72	1.43	6.59	MWD
879.00	9.70	267.70	874.42	-7.70	-76.38	76.77	1.00	0.81	-3.60	MWD
970.00	11.80	269.10	963.82	-8.15	-93.35	93.70	2.33	2.31	1.54	MWD
1061.00	13.60	267.70	1052.59	-8.73	-113.34	113.65	2.01	1.98	-1.54	MWD
1151.00	14.30	267.00	1139.93	-9.73	-135.01	135.32	0.80	0.78	-0.78	MWD
1242.00	16.40	265.20	1227.68	-11.40	-159.04	159.40	2.37	2.31	-1.98	MWD
1333.00	18.20	259.90	1314.57	-14.96	-185.84	186.41	2.63	1.98	-5.82	MWD
1424.00	20.20	259.20	1400.50	-20.40	-215.26	216.23	2.21	2.20	-0.77	MWD
1515.00	22.90	258.90	1485.13	-26.75	-248.08	249.50	2.97	2.97	-0.33	MWD
1606.00	23.80	261.30	1568.68	-32.94	-283.60	285.46	1.44	0.99	2.64	MWD
1696.00	23.80	261.00	1651.03	-38.53	-319.49	321.72	0.13	0.00	-0.33	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Frico 11-11 Pad Well: 9-10A Wellpath: Original Hole	Date: 10/03/2010 Co-ordinate(NE) Reference: Well: 9-10A, Grid North Vertical (TVD) Reference: 4779'GL+16'KB 4795.0 Section (VS) Reference: Well (0.00N,0.00E,264.42Azi) Survey Calculation Method: Minimum Curvature	Time: 11:00:36 Page: 2 Db: Sybase
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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
1787.00	23.90	261.30	1734.26	-44.19	-355.85	358.46	0.17	0.11	0.33	MWD
1878.00	25.30	263.80	1817.00	-49.08	-393.40	396.31	1.92	1.54	2.75	MWD
1969.00	25.30	262.00	1899.27	-53.88	-431.99	435.18	0.85	0.00	-1.98	MWD
2060.00	25.70	262.70	1981.40	-59.10	-470.82	474.33	0.55	0.44	0.77	MWD
2150.00	25.30	265.50	2062.64	-63.09	-509.35	513.07	1.41	-0.44	3.11	MWD
2242.00	24.60	267.00	2146.05	-65.63	-548.07	551.85	1.03	-0.76	1.63	MWD
2333.00	24.60	265.90	2228.79	-67.98	-585.88	589.71	0.50	0.00	-1.21	MWD
2423.00	24.30	262.70	2310.73	-71.67	-622.93	626.95	1.51	-0.33	-3.56	MWD
2514.00	24.00	264.80	2393.76	-75.73	-659.93	664.17	1.00	-0.33	2.31	MWD
2605.00	25.20	263.00	2476.50	-79.76	-697.59	702.04	1.55	1.32	-1.98	MWD
2696.00	25.30	263.10	2558.81	-84.46	-736.13	740.85	0.12	0.11	0.11	MWD
2786.00	26.60	265.20	2639.74	-88.46	-775.30	780.23	1.77	1.44	2.33	MWD
2877.00	28.50	264.00	2720.41	-92.43	-817.20	822.31	2.18	2.09	-1.32	MWD
2968.00	28.90	264.10	2800.23	-96.96	-860.66	866.01	0.44	0.44	0.11	MWD
3063.00	29.40	266.60	2883.20	-100.70	-906.77	912.27	1.39	0.53	2.63	MWD
3149.00	28.50	266.60	2958.46	-103.17	-948.33	953.87	1.05	-1.05	0.00	MWD
3240.00	28.00	265.90	3038.62	-105.99	-991.31	996.92	0.66	-0.55	-0.77	MWD
3331.00	28.50	267.30	3118.78	-108.54	-1034.30	1039.95	0.91	0.55	1.54	MWD
3421.00	25.50	265.20	3198.96	-111.17	-1075.07	1080.78	3.50	-3.33	-2.33	MWD
3512.00	23.90	262.00	3281.64	-115.38	-1112.84	1118.79	2.29	-1.76	-3.52	MWD
3603.00	22.70	263.40	3365.22	-119.96	-1148.54	1154.76	1.45	-1.32	1.54	MWD
3694.00	21.80	265.50	3449.44	-123.30	-1182.83	1189.22	1.32	-0.99	2.31	MWD
3785.00	22.70	267.00	3533.67	-125.55	-1217.21	1223.65	1.17	0.99	1.65	MWD
3875.00	23.40	266.60	3616.48	-127.52	-1252.39	1258.86	0.80	0.78	-0.44	MWD
3966.00	23.90	267.00	3699.84	-129.55	-1288.84	1295.33	0.58	0.55	0.44	MWD
4057.00	25.30	266.60	3782.58	-131.67	-1326.66	1333.18	1.55	1.54	-0.44	MWD
4147.00	25.90	266.20	3863.74	-134.12	-1365.47	1372.04	0.69	0.67	-0.44	MWD
4238.00	25.70	265.90	3945.67	-136.84	-1404.99	1411.63	0.26	-0.22	-0.33	MWD
4329.00	25.30	263.40	4027.81	-140.49	-1443.98	1450.80	1.26	-0.44	-2.75	MWD
4420.00	25.50	263.40	4110.01	-144.98	-1482.76	1489.83	0.22	0.22	0.00	MWD
4511.00	27.30	264.50	4191.52	-149.23	-1522.99	1530.29	2.05	1.98	1.21	MWD
4602.00	26.40	264.50	4272.71	-153.17	-1563.90	1571.39	0.99	-0.99	0.00	MWD
4692.00	28.00	264.80	4352.75	-157.00	-1604.86	1612.52	1.78	1.78	0.33	MWD
4783.00	27.60	263.80	4433.25	-161.21	-1647.09	1654.96	0.68	-0.44	-1.10	MWD
4874.00	29.40	265.50	4513.22	-165.24	-1690.32	1698.38	2.17	1.98	1.87	MWD
4965.00	27.60	266.20	4593.19	-168.39	-1733.62	1741.78	2.01	-1.98	0.77	MWD
5056.00	27.80	268.00	4673.76	-170.53	-1775.87	1784.03	0.95	0.22	1.98	MWD
5147.00	28.00	267.30	4754.18	-172.28	-1818.41	1826.55	0.42	0.22	-0.77	MWD
5238.00	26.70	267.30	4835.01	-174.25	-1860.17	1868.30	1.43	-1.43	0.00	MWD
5328.00	24.10	265.50	4916.30	-176.64	-1898.69	1906.87	3.01	-2.89	-2.00	MWD
5419.00	25.20	263.40	4999.01	-180.32	-1936.46	1944.82	1.54	1.21	-2.31	MWD
5510.00	23.20	262.00	5082.01	-185.05	-1973.46	1982.10	2.29	-2.20	-1.54	MWD
5602.00	19.80	261.30	5167.60	-189.93	-2006.82	2015.78	3.71	-3.70	-0.76	MWD
5692.00	18.50	262.70	5252.61	-194.05	-2036.05	2045.27	1.53	-1.44	1.56	MWD
5783.00	15.80	262.40	5339.56	-197.52	-2062.66	2072.09	2.97	-2.97	-0.33	MWD
5874.00	13.70	264.50	5427.56	-200.19	-2085.67	2095.25	2.38	-2.31	2.31	MWD
5964.00	11.60	265.50	5515.37	-201.92	-2105.30	2114.95	2.35	-2.33	1.11	MWD
6055.00	9.50	263.10	5604.82	-203.54	-2121.87	2131.61	2.36	-2.31	-2.64	MWD
6146.00	6.70	258.50	5694.91	-205.50	-2134.53	2144.40	3.16	-3.08	-5.05	MWD
6238.00	6.20	265.90	5786.33	-206.93	-2144.75	2154.71	1.05	-0.54	8.04	MWD
6328.00	5.60	259.90	5875.85	-208.05	-2153.92	2163.94	0.96	-0.67	-6.67	MWD
6419.00	4.20	260.30	5966.52	-209.39	-2161.58	2171.69	1.54	-1.54	0.44	MWD
6509.00	3.00	249.70	6056.34	-210.76	-2167.03	2177.26	1.52	-1.33	-11.78	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Frisco 11-11 Pad
Well: 9-10A
Wellpath: Original Hole

Date:	10/03/2010	Time:	11:00:36	Page:	3
Co-ordinate(NE) Reference:	Well: 9-10A, Grid North				
Vertical (TVD) Reference:	4779'GL+16'KB 4795.0				
Section (VS) Reference:	Well (0.00N,0.00E,264.42Azi)				
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
6600.00	2.10	249.40	6147.25	-212.17	-2170.83	2181.17	0.99	-0.99	-0.33	MWD
6691.00	1.60	236.00	6238.20	-213.47	-2173.44	2183.90	0.72	-0.55	-14.73	MWD
6827.00	1.40	227.60	6374.15	-215.65	-2176.24	2186.90	0.22	-0.15	-6.18	MWD
6963.00	1.40	216.70	6510.11	-218.10	-2178.46	2189.35	0.20	0.00	-8.01	MWD
7099.00	1.60	229.00	6646.07	-220.68	-2180.89	2192.01	0.28	0.15	9.04	MWD
7235.00	1.40	225.50	6782.02	-223.09	-2183.51	2194.85	0.16	-0.15	-2.57	MWD
7371.00	2.60	236.60	6917.94	-225.95	-2187.27	2198.87	0.92	0.88	8.16	MWD
7507.00	1.90	233.90	7053.83	-228.98	-2191.66	2203.54	0.52	-0.51	-1.99	MWD
7643.00	1.40	226.20	7189.77	-231.46	-2194.68	2206.79	0.40	-0.37	-5.66	MWD
7779.00	0.90	253.60	7325.75	-232.91	-2196.91	2209.15	0.54	-0.37	20.15	MWD
7916.00	0.30	301.40	7462.74	-233.03	-2198.25	2210.49	0.54	-0.44	34.89	MWD
8052.00	0.10	157.60	7598.74	-232.95	-2198.51	2210.74	0.28	-0.15	-105.74	MWD
8133.26	0.36	106.24	7680.00	-233.09	-2198.23	2210.48	0.38	0.32	-63.20	9-10A PBHL
8143.00	0.40	104.90	7689.74	-233.11	-2198.17	2210.42	0.38	0.37	-13.77	MWD
8188.00	0.40	104.90	7734.74	-233.19	-2197.86	2210.12	0.00	0.00	0.00	9-10A BHL

Targets

Name	Description	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->				
								Deg	Min	Sec	Deg	Min	Sec		
9-10A SL			0.00	0.00	0.00	1331087.84	3241783.05	40	14	20.350	N	104	38	2.173	W
9-10A PBHL			7680.00	-215.05	-2201.17	1330872.79	3239581.88	40	14	18.436	N	104	38	30.583	W
-Circle (Radius: 50)															
9-10A BHL			7734.74	-233.19	-2197.86	1330854.65	3239585.19	40	14	18.257	N	104	38	30.543	W