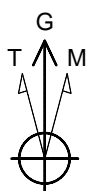


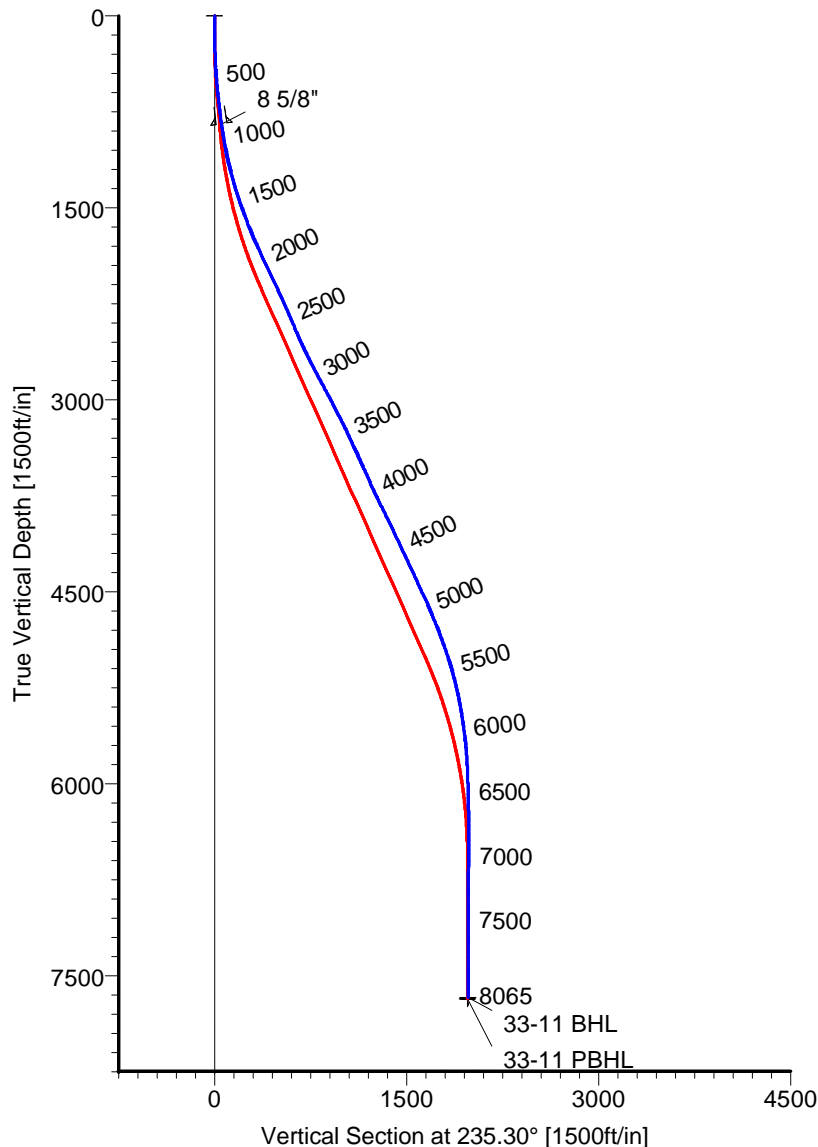
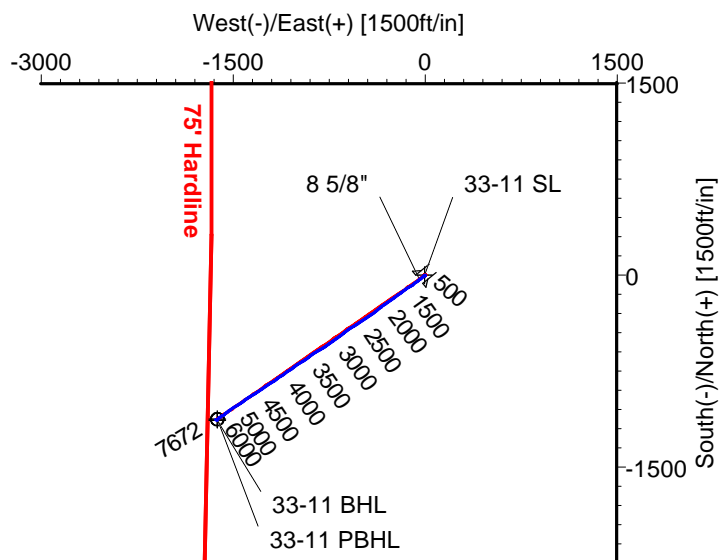
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Frico 11-11 Pad
Well: 33-11
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.56°
Magnetic North: 8.34°

Magnetic Field
Strength: 53191nT
Dip Angle: 66.97°
Date: 08/08/2010
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	847.26	850.00	8 5/8"	8.625

LEGEND

- 33-11, Original Hole, Plan #1
- Original Hole

TARGET DETAILS

Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape
33-11 SL	0.00	0.00	0.00	40°14'20.192N	104°38'02.188W	Point
33-11 BHL	7671.63	-1130.37	-1623.84	40°14'09.178N	104°38'23.268W	Point
33-11 PBHL	7680.00	-1123.88	-1623.08	40°14'09.242N	104°38'23.257W	Circle (Radius: 50)

Wellpath: (33-11/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: 33-11 Wellpath: Original Hole	Date: 10/10/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 08:49:37 Well: 33-11, Grid North 4779'GL+16'KB 4795.0 Well (0.00N,0.00E,235.30Azi) 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: 33-11 Well Position: +N/-S -15.97 ft +E/-W -0.97 ft Position Uncertainty: 0.00 ft	Slot Name: 33-11 Northing: 1331071.87 ft Easting : 3241782.08 ft Latitude: 40 14 20.192 N Longitude: 104 38 2.188 W
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Wellpath: Original Hole Current Datum: 4779'GL+16'KB Magnetic Data: 08/08/2010 Field Strength: 53191 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.90 deg Mag Dip Angle: 66.97 deg +N/-S ft +E/-W ft Direction deg
0.00	0.00

Survey Program for Definitive Wellpath				
Date: 10/10/2010	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
76.00	8020.00	Survey #1 (76.00-8020.00)	MWD	Std MWD
8065.00	8065.00	Survey #2 (8065.00-8065.00)	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
76.00	0.40	258.20	76.00	-0.05	-0.26	0.24	0.53	0.53	0.00	MWD
138.00	0.30	265.20	138.00	-0.11	-0.63	0.58	0.18	-0.16	11.29	MWD
198.00	0.50	262.40	198.00	-0.16	-1.05	0.95	0.33	0.33	-4.67	MWD
259.00	1.20	257.80	258.99	-0.33	-1.94	1.78	1.15	1.15	-7.54	MWD
319.00	1.80	251.80	318.97	-0.76	-3.45	3.26	1.03	1.00	-10.00	MWD
384.00	2.80	235.00	383.92	-1.99	-5.72	5.83	1.84	1.54	-25.85	MWD
475.00	4.60	219.10	474.73	-6.09	-9.84	11.56	2.26	1.98	-17.47	MWD
566.00	6.00	223.00	565.33	-12.40	-15.38	19.71	1.59	1.54	4.29	MWD
657.00	6.30	232.20	655.81	-18.94	-22.57	29.34	1.13	0.33	10.11	MWD
748.00	7.40	234.40	746.16	-25.41	-31.28	40.19	1.24	1.21	2.42	MWD
800.00	7.70	233.20	797.71	-29.45	-36.80	47.02	0.65	0.58	-2.31	MWD
862.00	7.70	230.40	859.15	-34.59	-43.32	55.31	0.61	0.00	-4.52	MWD
953.00	9.30	231.40	949.15	-43.06	-53.77	68.72	1.77	1.76	1.10	MWD
1043.00	10.60	230.70	1037.79	-52.84	-65.86	84.23	1.45	1.44	-0.78	MWD
1134.00	12.70	237.80	1126.92	-63.47	-80.80	102.56	2.79	2.31	7.80	MWD
1225.00	15.10	236.40	1215.25	-75.37	-99.14	124.41	2.66	2.64	-1.54	MWD
1316.00	16.00	236.00	1302.92	-88.94	-119.41	148.80	1.00	0.99	-0.44	MWD
1406.00	17.60	236.40	1389.07	-103.41	-141.03	174.81	1.78	1.78	0.44	MWD
1497.00	18.80	233.90	1475.52	-119.66	-164.34	203.23	1.57	1.32	-2.75	MWD
1588.00	20.90	235.70	1561.11	-137.45	-189.60	234.12	2.40	2.31	1.98	MWD
1679.00	21.10	233.90	1646.07	-156.25	-216.24	266.73	0.74	0.22	-1.98	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Frisco 11-11 Pad Well: 33-11 Wellpath: Original Hole	Date: 10/10/2010 Co-ordinate(NE) Reference: Well: 33-11, Grid North Vertical (TVD) Reference: 4779'GL+16'KB 4795.0 Section (VS) Reference: Well (0.00N,0.00E,235.30Azi) Survey Calculation Method: Minimum Curvature	Time: 08:49:37 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
1769.00	23.40	232.90	1729.36	-176.57	-243.59	300.78	2.59	2.56	-1.11	MWD
1860.00	25.20	235.70	1812.30	-198.39	-274.01	338.21	2.35	1.98	3.08	MWD
1951.00	25.20	232.50	1894.64	-221.11	-305.38	376.94	1.50	0.00	-3.52	MWD
2041.00	25.20	232.90	1976.07	-244.33	-335.87	415.22	0.19	0.00	0.44	MWD
2132.00	25.20	232.90	2058.41	-267.70	-366.77	453.93	0.00	0.00	0.00	MWD
2223.00	25.00	233.60	2140.82	-290.80	-397.70	492.51	0.39	-0.22	0.77	MWD
2313.00	24.60	237.10	2222.52	-312.26	-428.73	530.24	1.69	-0.44	3.89	MWD
2404.00	23.80	236.00	2305.53	-332.81	-459.86	567.54	1.01	-0.88	-1.21	MWD
2495.00	23.10	234.40	2389.01	-353.47	-489.60	603.75	1.04	-0.77	-1.76	MWD
2586.00	23.40	235.30	2472.62	-374.15	-518.97	639.66	0.51	0.33	0.99	MWD
2677.00	24.50	238.80	2555.79	-394.21	-549.97	676.57	1.97	1.21	3.85	MWD
2767.00	26.20	236.00	2637.12	-414.99	-582.40	715.07	2.31	1.89	-3.11	MWD
2858.00	27.30	232.90	2718.39	-438.82	-615.71	756.01	1.95	1.21	-3.41	MWD
2949.00	27.50	235.00	2799.18	-463.46	-649.56	797.87	1.08	0.22	2.31	MWD
3039.00	28.90	234.60	2878.50	-487.97	-684.31	840.40	1.57	1.56	-0.44	MWD
3130.00	28.30	234.60	2958.39	-513.21	-719.82	883.95	0.66	-0.66	0.00	MWD
3221.00	26.90	234.30	3039.03	-537.72	-754.12	926.11	1.55	-1.54	-0.33	MWD
3311.00	27.60	237.40	3119.05	-560.83	-788.22	967.30	1.76	0.78	3.44	MWD
3402.00	26.20	236.70	3200.20	-583.22	-822.77	1008.45	1.58	-1.54	-0.77	MWD
3493.00	24.50	238.10	3282.44	-604.22	-855.58	1047.38	1.98	-1.87	1.54	MWD
3584.00	25.30	237.80	3364.98	-624.55	-888.06	1085.66	0.89	0.88	-0.33	MWD
3674.00	24.30	232.50	3446.69	-646.08	-919.03	1123.37	2.71	-1.11	-5.89	MWD
3765.00	24.80	237.10	3529.47	-667.85	-949.91	1161.15	2.17	0.55	5.05	MWD
3856.00	23.90	236.40	3612.37	-688.41	-981.29	1198.66	1.04	-0.99	-0.77	MWD
3947.00	24.60	235.70	3695.34	-709.29	-1012.29	1236.03	0.83	0.77	-0.77	MWD
4037.00	26.20	235.30	3776.64	-731.16	-1044.10	1274.63	1.79	1.78	-0.44	MWD
4128.00	25.70	234.30	3858.46	-754.11	-1076.64	1314.45	0.73	-0.55	-1.10	MWD
4219.00	26.20	234.60	3940.29	-777.26	-1109.04	1354.27	0.57	0.55	0.33	MWD
4310.00	25.70	236.00	4022.11	-799.93	-1141.77	1394.08	0.87	-0.55	1.54	MWD
4401.00	25.20	237.10	4104.28	-821.49	-1174.40	1433.18	0.76	-0.55	1.21	MWD
4491.00	25.90	237.10	4185.48	-842.57	-1206.99	1471.98	0.78	0.78	0.00	MWD
4582.00	25.00	236.00	4267.65	-864.12	-1239.62	1511.07	1.12	-0.99	-1.21	MWD
4673.00	24.50	234.60	4350.29	-885.80	-1270.94	1549.16	0.85	-0.55	-1.54	MWD
4764.00	24.60	236.70	4433.07	-907.13	-1302.15	1586.97	0.97	0.11	2.31	MWD
4854.00	25.00	236.40	4514.77	-927.94	-1333.65	1624.71	0.47	0.44	-0.33	MWD
4945.00	24.30	237.10	4597.47	-948.75	-1365.39	1662.65	0.83	-0.77	0.77	MWD
5036.00	22.00	236.00	4681.14	-968.46	-1395.24	1698.41	2.57	-2.53	-1.21	MWD
5127.00	22.20	235.00	4765.46	-987.85	-1423.45	1732.65	0.47	0.22	-1.10	MWD
5217.00	20.60	238.10	4849.25	-1005.97	-1450.83	1765.47	2.18	-1.78	3.44	MWD
5308.00	18.80	236.70	4934.92	-1022.48	-1476.68	1796.12	2.04	-1.98	-1.54	MWD
5399.00	18.50	237.40	5021.14	-1038.31	-1501.09	1825.20	0.41	-0.33	0.77	MWD
5490.00	16.00	235.00	5108.04	-1053.29	-1523.53	1852.18	2.86	-2.75	-2.64	MWD
5581.00	14.10	235.30	5195.92	-1066.79	-1542.92	1875.81	2.09	-2.09	0.33	MWD
5672.00	12.50	232.90	5284.48	-1079.04	-1559.89	1896.73	1.86	-1.76	-2.64	MWD
5762.00	10.60	231.10	5372.65	-1090.12	-1574.10	1914.72	2.15	-2.11	-2.00	MWD
5853.00	9.20	235.70	5462.29	-1099.47	-1586.63	1930.34	1.77	-1.54	5.05	MWD
5944.00	7.60	236.00	5552.32	-1106.94	-1597.63	1943.64	1.76	-1.76	0.33	MWD
6035.00	6.70	237.40	5642.61	-1113.16	-1607.09	1954.96	1.01	-0.99	1.54	MWD
6126.00	4.60	234.90	5733.16	-1118.12	-1614.55	1963.91	2.32	-2.31	-2.75	MWD
6216.00	3.50	234.90	5822.93	-1121.78	-1619.75	1970.27	1.22	-1.22	0.00	MWD
6398.00	1.20	237.20	6004.77	-1126.00	-1625.89	1977.73	1.26	-1.26	1.26	MWD
6580.00	1.60	213.90	6186.72	-1129.14	-1628.91	1982.00	0.38	0.22	-12.80	MWD
6762.00	0.90	342.90	6368.69	-1129.89	-1630.75	1983.93	1.25	-0.38	70.88	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Frco 11-11 Pad
Well: 33-11
Wellpath: Original Hole

Date: 10/10/2010 **Time:** 08:49:37 **Page:** 3

Co-ordinate(NE) Reference: Well: 33-11, Grid North

Vertical (TVD) Reference: 4779'GL+16'KB 4795.0

Section (VS) Reference: Well (0.00N,0.00E,235.30Azi)

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
6944.00	0.50	4.30	6550.68	-1127.73	-1631.11	1983.00	0.26	-0.22	11.76	MWD
7125.00	0.20	8.60	6731.67	-1126.63	-1631.01	1982.29	0.17	-0.17	2.38	MWD
7307.00	0.50	103.50	6913.67	-1126.50	-1630.19	1981.54	0.30	0.16	52.14	MWD
7488.00	0.50	120.00	7094.67	-1127.08	-1628.73	1980.68	0.08	0.00	9.12	MWD
7670.00	0.70	119.60	7276.66	-1128.03	-1627.08	1979.86	0.11	0.11	-0.22	MWD
7851.00	0.50	107.00	7457.65	-1128.80	-1625.36	1978.89	0.13	-0.11	-6.96	MWD
8020.00	0.70	148.80	7626.64	-1129.90	-1624.12	1978.49	0.28	0.12	24.73	MWD
8065.00	0.70	148.80	7671.63	-1130.37	-1623.84	1978.53	0.00	0.00	0.00	33-11 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
33-11 SL			0.00	0.00	0.00	1331071.87	3241782.08	40	14	20.192 N	104	38	2.188 W
33-11 BHL			7671.63	-1130.37	-1623.84	1329941.50	3240158.24	40	14	9.178 N	104	38	23.268 W
33-11 PBHL			7680.00	-1123.88	-1623.08	1329948.00	3240158.99	40	14	9.242 N	104	38	23.257 W
-Circle (Radius: 50)													