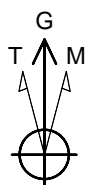


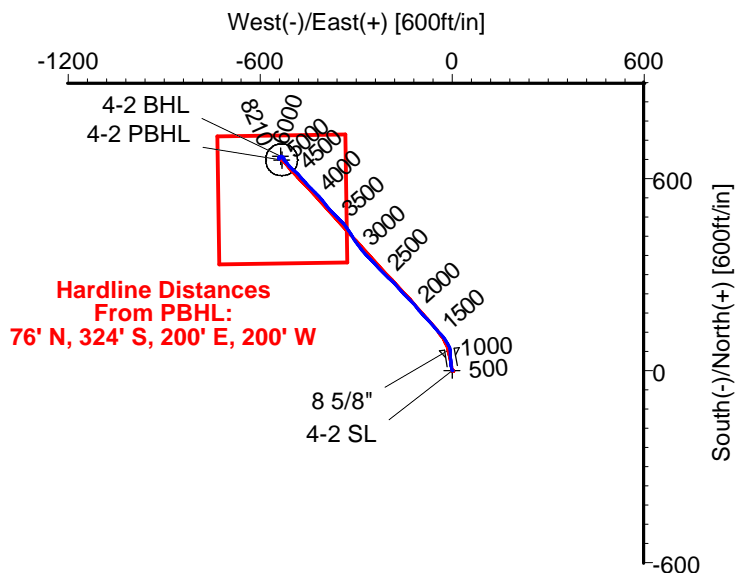
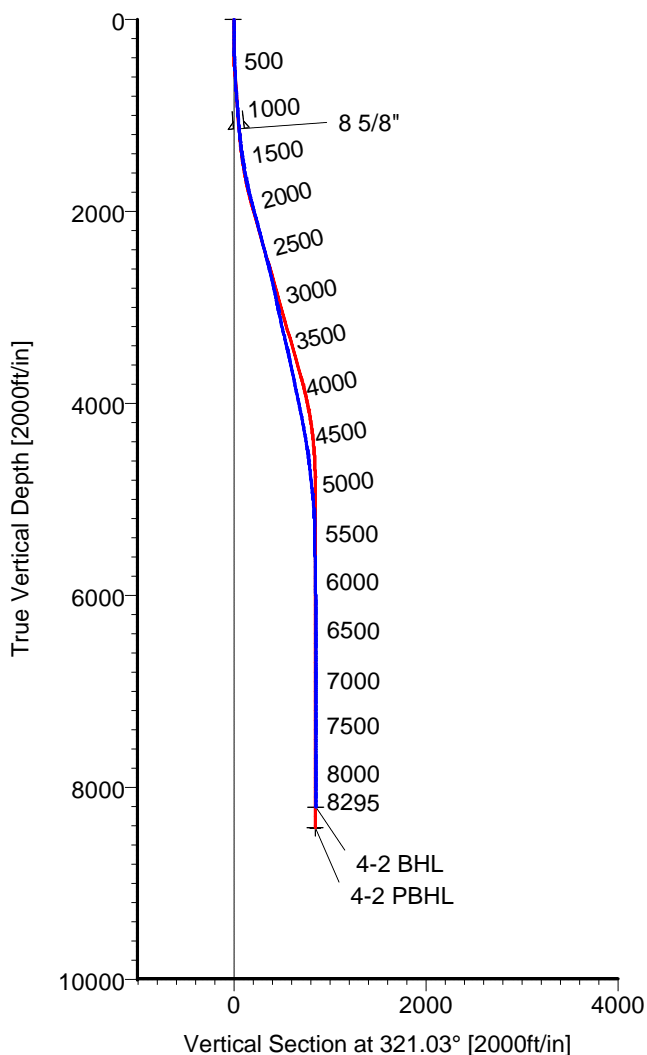
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Jesser 18-2 Pad
Well: Brown 4-2
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.49°
Magnetic North: 8.42°

Magnetic Field
Strength: 53064nT
Dip Angle: 66.82°
Date: 11/26/2010
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	1137.49	1140.00	8 5/8"	8.625

LEGEND

- Brown 4-2, Original Hole, Plan #2
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
4-2 SL	0.00	0.00	0.00	40°05'02.660N	104°44'58.096W	Point
4-2 BHL	8209.79	669.22	-536.02	40°05'09.318N	104°45'04.920W	Point
4-2 PBHL	8417.00	658.89	-532.99	40°05'09.216N	104°45'04.882W	Circle (Radius: 50)

Wellpath: (Brown 4-2/Original Hole)

Created By: Ivonne Gonzalez

Date: 12/17/2010

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: Jesser 18-2 Pad Well: Brown 4-2 Wellpath: Original Hole	Date: 12/17/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 09:56:17 Well: Brown 4-2, Grid North 5144'GL+13'KB 5157.0 Well (0.00N,0.00E,321.03Azi) Minimum Curvature	Page: 1 Db: Adapti
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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

Site: Jesser 18-2 Pad Centered on Jesser 21-2 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 5144.00 ft	Northing: 1274364.19 ft Easting: 3210048.09 ft Latitude: 40 5 2.663 N Longitude: 104 44 57.581 W North Reference: Grid Grid Convergence: 0.49 deg
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Well: Brown 4-2 Well Position: +N/-S -0.65 ft +E/-W -40.05 ft Position Uncertainty: 0.00 ft	Slot Name: 4-2 Latitude: 40 5 2.660 N Longitude: 104 44 58.096 W
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Wellpath: Original Hole Current Datum: 5144'GL+13'KB Magnetic Data: 11/26/2010 Field Strength: 53064 nT Vertical Section: Depth From (TVD) ft	Height 5157.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.90 deg Mag Dip Angle: 66.82 deg +N/-S ft +E/-W ft Direction deg
0.00	0.00	0.00 321.03

Survey Program for Definitive Wellpath				
Date: 12/17/2010	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
80.00	8250.00	Survey #1 (80.00-8250.00)	MWD	Std MWD
8295.00	8295.00	Survey #2 (8295.00-8295.00)	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
80.00	0.70	339.00	80.00	0.46	-0.18	0.46	0.87	0.87	0.00	MWD
202.00	0.90	351.70	201.99	2.10	-0.58	2.00	0.22	0.16	10.41	MWD
322.00	1.80	340.10	321.95	4.80	-1.36	4.59	0.78	0.75	-9.67	MWD
430.00	3.00	349.90	429.86	9.18	-2.43	8.67	1.17	1.11	9.07	MWD
520.00	4.00	356.30	519.69	14.63	-3.05	13.29	1.19	1.11	7.11	MWD
611.00	4.20	358.40	610.45	21.13	-3.34	18.53	0.27	0.22	2.31	MWD
747.00	4.20	355.20	746.09	31.07	-3.90	26.61	0.17	0.00	-2.35	MWD
884.00	5.50	351.10	882.60	42.56	-5.34	36.44	0.98	0.95	-2.99	MWD
975.00	5.10	355.60	973.21	50.90	-6.32	43.55	0.63	-0.44	4.95	MWD
1065.00	5.50	358.70	1062.82	59.20	-6.73	50.26	0.55	0.44	3.44	MWD
1095.00	5.30	355.90	1092.69	62.02	-6.86	52.53	1.10	-0.67	-9.33	MWD
1195.00	5.60	343.60	1192.24	71.31	-8.57	60.83	1.20	0.30	-12.30	MWD
1286.00	7.00	336.60	1282.69	80.66	-12.02	70.27	1.75	1.54	-7.69	MWD
1377.00	7.20	330.20	1372.99	90.69	-17.06	81.24	0.90	0.22	-7.03	MWD
1468.00	8.60	321.80	1463.13	100.99	-24.10	93.67	1.99	1.54	-9.23	MWD
1559.00	10.20	315.00	1552.91	112.04	-34.01	108.49	2.14	1.76	-7.47	MWD
1650.00	10.90	319.00	1642.37	124.23	-45.35	125.10	1.11	0.77	4.40	MWD
1740.00	12.80	316.90	1730.45	137.93	-57.74	143.55	2.16	2.11	-2.33	MWD
1831.00	14.40	317.20	1818.89	153.59	-72.32	164.90	1.76	1.76	0.33	MWD
1922.00	15.00	319.00	1906.92	170.78	-87.74	187.96	0.83	0.66	1.98	MWD
2012.00	15.00	318.30	1993.85	188.27	-103.12	211.23	0.20	0.00	-0.78	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Jessor 18-2 Pad Well: Brown 4-2 Wellpath: Original Hole	Date: 12/17/2010 Co-ordinate(NE) Reference: Well: Brown 4-2, Grid North Vertical (TVD) Reference: 5144'GL+13'KB 5157.0 Section (VS) Reference: Well (0.00N,0.00E,321.03Azi) 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
2103.00	15.10	318.60	2081.73	205.95	-118.80	234.84	0.14	0.11	0.33	MWD
2194.00	15.30	315.80	2169.55	223.45	-135.01	258.64	0.84	0.22	-3.08	MWD
2285.00	14.80	315.10	2257.42	240.29	-151.58	282.15	0.58	-0.55	-0.77	MWD
2376.00	14.80	320.00	2345.41	257.43	-167.26	305.34	1.38	0.00	5.38	MWD
2466.00	14.80	313.70	2432.43	274.18	-182.96	328.23	1.79	0.00	-7.00	MWD
2557.00	15.00	313.70	2520.37	290.34	-199.87	351.44	0.22	0.22	0.00	MWD
2648.00	13.00	313.40	2608.66	305.51	-215.83	373.27	2.20	-2.20	-0.33	MWD
2739.00	13.40	315.50	2697.26	320.07	-230.65	393.91	0.69	0.44	2.31	MWD
2830.00	12.80	318.30	2785.89	335.12	-244.75	414.47	0.96	-0.66	3.08	MWD
2920.00	11.80	316.50	2873.82	349.24	-257.72	433.60	1.19	-1.11	-2.00	MWD
3011.00	10.90	315.10	2963.04	362.08	-270.19	451.44	1.03	-0.99	-1.54	MWD
3102.00	12.70	322.90	3052.12	376.15	-282.30	470.00	2.64	1.98	8.57	MWD
3192.00	12.80	325.70	3139.90	392.28	-293.89	489.82	0.70	0.11	3.11	MWD
3283.00	12.70	326.00	3228.66	408.90	-305.16	509.83	0.13	-0.11	0.33	MWD
3374.00	13.20	325.70	3317.34	425.78	-316.61	530.15	0.55	0.55	-0.33	MWD
3465.00	13.40	326.00	3405.90	443.10	-328.36	551.01	0.23	0.22	0.33	MWD
3555.00	12.70	319.00	3493.58	459.22	-340.69	571.29	1.92	-0.78	-7.78	MWD
3646.00	11.80	315.00	3582.51	473.34	-353.83	590.54	1.36	-0.99	-4.40	MWD
3737.00	11.80	315.10	3671.59	486.51	-366.98	609.05	0.02	0.00	0.11	MWD
3827.00	11.80	318.60	3759.69	499.94	-379.56	627.40	0.80	0.00	3.89	MWD
3918.00	12.00	322.50	3848.74	514.42	-391.47	646.15	0.91	0.22	4.29	MWD
4009.00	12.10	319.00	3937.73	529.12	-403.49	665.14	0.81	0.11	-3.85	MWD
4100.00	11.80	316.20	4026.76	543.04	-416.18	683.94	0.72	-0.33	-3.08	MWD
4191.00	11.10	314.40	4115.95	555.88	-428.88	701.92	0.86	-0.77	-1.98	MWD
4281.00	10.70	316.90	4204.33	568.05	-440.78	718.85	0.69	-0.44	2.78	MWD
4372.00	10.20	318.30	4293.82	580.23	-451.91	735.33	0.62	-0.55	1.54	MWD
4463.00	9.50	317.90	4383.47	591.82	-462.31	750.88	0.77	-0.77	-0.44	MWD
4554.00	9.20	318.30	4473.26	602.82	-472.18	765.64	0.34	-0.33	0.44	MWD
4645.00	7.20	317.90	4563.33	612.48	-480.85	778.60	2.20	-2.20	-0.44	MWD
4735.00	6.00	309.10	4652.73	619.64	-488.28	788.84	1.74	-1.33	-9.78	MWD
4826.00	6.50	312.00	4743.19	626.08	-495.80	798.58	0.65	0.55	3.19	MWD
4917.00	6.50	314.40	4833.61	633.13	-503.30	808.78	0.30	0.00	2.64	MWD
5008.00	6.20	319.30	4924.05	640.46	-510.19	818.81	0.68	-0.33	5.38	MWD
5099.00	4.90	320.40	5014.62	647.18	-515.87	827.61	1.43	-1.43	1.21	MWD
5190.00	4.40	318.30	5105.32	652.78	-520.67	834.98	0.58	-0.55	-2.31	MWD
5281.00	2.10	308.80	5196.17	656.44	-524.29	840.10	2.59	-2.53	-10.44	MWD
5371.00	1.20	339.00	5286.13	658.35	-525.92	842.60	1.36	-1.00	33.56	MWD
5462.00	0.90	351.30	5377.12	659.94	-526.37	844.13	0.41	-0.33	13.52	MWD
5598.00	0.90	9.30	5513.10	662.05	-526.35	845.76	0.21	0.00	13.24	MWD
5734.00	1.10	339.00	5649.08	664.33	-526.65	847.71	0.41	0.15	-22.28	MWD
5871.00	1.40	322.20	5786.05	666.88	-528.15	850.64	0.34	0.22	-12.26	MWD
6007.00	0.40	295.10	5922.03	668.39	-529.59	852.73	0.78	-0.74	-19.93	MWD
6143.00	1.20	286.60	6058.02	669.00	-531.39	854.33	0.59	0.59	-6.25	MWD
6279.00	1.80	273.60	6193.97	669.54	-534.89	856.95	0.50	0.44	-9.56	MWD
6461.00	1.40	198.10	6375.92	667.61	-538.43	857.67	1.09	-0.22	-41.48	MWD
6642.00	1.20	192.80	6556.87	663.66	-539.54	855.30	0.13	-0.11	-2.93	MWD
6824.00	0.40	232.50	6738.85	661.41	-540.46	854.14	0.51	-0.44	21.81	MWD
7006.00	0.00	142.20	6920.85	661.02	-540.97	854.15	0.22	-0.22	0.00	MWD
7187.00	0.90	354.50	7101.84	662.44	-541.10	855.34	0.50	0.50	0.00	MWD
7369.00	0.50	342.20	7283.83	664.62	-541.48	857.27	0.23	-0.22	-6.76	MWD
7550.00	0.40	355.90	7464.82	666.00	-541.77	858.53	0.08	-0.06	7.57	MWD
7731.00	0.70	60.60	7645.82	667.17	-540.85	858.86	0.35	0.17	35.75	MWD
7913.00	0.50	56.00	7827.81	668.16	-539.22	858.61	0.11	-0.11	-2.53	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Jesser 18-2 Pad
Well: Brown 4-2
Wellpath: Original Hole

Date:	12/17/2010	Time:	09:56:17	Page:	3
Co-ordinate(NE) Reference:	Well: Brown 4-2, Grid North				
Vertical (TVD) Reference:	5144'GL+13'KB 5157.0				
Section (VS) Reference:	Well (0.00N,0.00E,.321.03Azi)				
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
8095.00	0.40	89.80	8009.80	668.61	-537.93	858.14	0.15	-0.05	18.57	MWD
8250.00	0.70	65.90	8164.79	669.00	-536.53	857.56	0.24	0.19	-15.42	MWD
8295.00	0.70	65.90	8209.79	669.22	-536.02	857.42	0.00	0.00	0.00	4-2 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
4-2 SL			0.00	0.00	0.00	1274363.54	3210008.04	40	5	2.660 N	104	44	58.096 W
4-2 BHL			8209.79	669.22	-536.02	1275032.76	3209472.02	40	5	9.318 N	104	45	4.920 W
4-2 PBHL			8417.00	658.89	-532.99	1275022.43	3209475.05	40	5	9.216 N	104	45	4.882 W
-Circle (Radius: 50)													