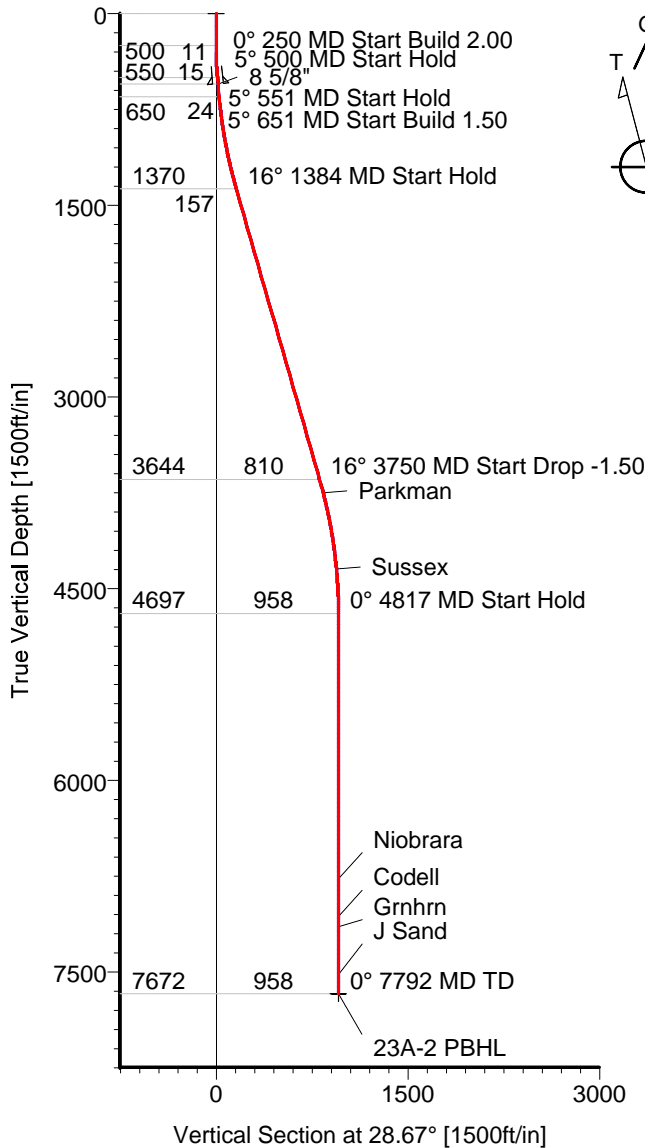


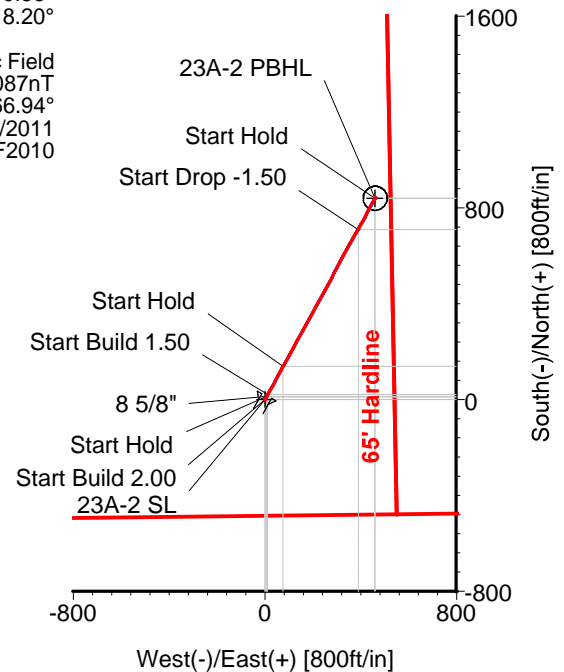
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Jepsen 14-2 Pad
Well: 23A-2
Wellpath: Original Hole
Plan: Plan #1



Azimuths to Grid North
True North: -0.56°
Magnetic North: 8.20°

Magnetic Field
Strength: 53087nT
Dip Angle: 66.94°
Date: 08/20/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	550.00	550.51	8 5/8"	8.625

FORMATION TOP DETAILS

No.	TVDPATH	MDPATH	Formation
1	3752.00	3861.84	Parkman
2	4347.00	4466.26	Sussex
3	6772.00	6891.76	Niobrara
4	7067.00	7186.76	Codell
5	7147.00	7266.76	Grnhm
6	7522.00	7641.76	J Sand

Ground Elevation = 4772'

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
23A-2 SL	0.00	0.00	0.00	40°14'54.398N	104°37'55.859W	Point
23A-2 PBHL	7672.00	840.27	459.47	40°15'02.657N	104°37'49.827W	Circle (Radius: 50)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	28.67	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	28.67	250.00	0.00	0.00	0.00	28.67	0.00	
3	500.00	5.00	28.67	499.68	9.56	5.23	2.00	28.67	10.90	
4	550.51	5.00	28.67	550.00	13.43	7.34	0.00	0.00	15.30	
5	650.51	5.00	28.67	649.62	21.07	11.52	0.00	0.00	24.02	
6	1383.84	16.00	28.67	1369.57	138.15	75.54	1.50	0.00	157.45	
7	3750.24	16.00	28.67	3644.29	710.45	388.47	0.00	0.00	809.72	
8	4816.91	0.00	28.67	4697.15	840.27	459.47	1.50	180.00	957.69	
9	7791.76	0.00	28.67	7672.00	840.27	459.47	0.00	0.00	957.69	23A-2 PBHL

Plan: Plan #1 (23A-2/Original Hole)

Created By: Ivonne Gonzalez

Date: 05/13/2011

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.

Planning Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Jepsen 14-2 Pad Well: 23A-2 Wellpath: Original Hole	Date: 05/13/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 12:48:38 Well: 23A-2, Grid North 4772'GL+15'KB 4787.0 Well (0.00N,0.00E,28.67Azi) Plan #1	Page: 1
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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: Jepsen 14-2 Pad	
Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4772.00 ft	Northing: 1334521.81 ft Easting: 3242238.56 ft Latitude: 40 14 54.240 N Longitude: 104 37 55.866 W North Reference: Grid Grid Convergence: 0.56 deg

Well: 23A-2	Slot Name: 23A-2
Well Position: +N/-S 15.96 ft +E/-W 0.41 ft Position Uncertainty: 0.00 ft	Northing: 1334537.77 ft Easting : 3242238.97 ft Latitude: 40 14 54.398 N Longitude: 104 37 55.859 W

Wellpath: Original Hole Current Datum: 4772'GL+15'KB Magnetic Data: 08/20/2011 Field Strength: 53087 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.76 deg Mag Dip Angle: 66.94 deg +N/-S ft +E/-W ft Direction deg
0.00	0.00 0.00 28.67

Plan: Plan #1 Principal: Yes	Date Composed: 05/06/2011 Version: 1 Tied-to: From Surface
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Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	28.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	28.67	250.00	0.00	0.00	0.00	0.00	0.00	28.67	
500.00	5.00	28.67	499.68	9.56	5.23	2.00	2.00	0.00	28.67	
550.51	5.00	28.67	550.00	13.43	7.34	0.00	0.00	0.00	0.00	
650.51	5.00	28.67	649.62	21.07	11.52	0.00	0.00	0.00	0.00	
1383.84	16.00	28.67	1369.57	138.15	75.54	1.50	1.50	0.00	0.00	
3750.24	16.00	28.67	3644.29	710.45	388.47	0.00	0.00	0.00	0.00	
4816.91	0.00	28.67	4697.15	840.27	459.47	1.50	-1.50	0.00	180.00	
7791.76	0.00	28.67	7672.00	840.27	459.47	0.00	0.00	0.00	0.00	23A-2 PBHL

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
250.00	0.00	28.67	250.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD
300.00	1.00	28.67	300.00	0.38	0.21	0.44	2.00	2.00	0.00	MWD
400.00	3.00	28.67	399.93	3.44	1.88	3.93	2.00	2.00	0.00	MWD
500.00	5.00	28.67	499.68	9.56	5.23	10.90	2.00	2.00	0.00	MWD
550.51	5.00	28.67	550.00	13.43	7.34	15.30	0.00	0.00	0.00	8 5/8"
600.00	5.00	28.67	599.30	17.21	9.41	19.62	0.00	0.00	0.00	MWD
650.51	5.00	28.67	649.62	21.07	11.52	24.02	0.00	0.00	0.00	MWD
700.00	5.74	28.67	698.89	25.14	13.75	28.65	1.50	1.50	0.00	MWD
800.00	7.24	28.67	798.25	35.06	19.17	39.96	1.50	1.50	0.00	MWD
900.00	8.74	28.67	897.27	47.26	25.84	53.86	1.50	1.50	0.00	MWD
1000.00	10.24	28.67	995.90	61.73	33.75	70.35	1.50	1.50	0.00	MWD
1100.00	11.74	28.67	1094.06	78.46	42.90	89.42	1.50	1.50	0.00	MWD
1200.00	13.24	28.67	1191.69	97.44	53.28	111.05	1.50	1.50	0.00	MWD

Allis-Chalmers Energy, Inc.

Planning Report

Company: ANADARKO PETROLEUM	Date: 05/13/2011	Time: 12:48:38	Page: 2
Field: Weld County, CO	Co-ordinate(NE) Reference:	Well: 23A-2, Grid North	
Site: Jepsen 14-2 Pad	Vertical (TVD) Reference:	4772'GL+15'KB 4787.0	
Well: 23A-2	Section (VS) Reference:	Well (0.00N,0.00E,28.67Azi)	
Wellpath: Original Hole	Plan:	Plan #1	

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
1300.00	14.74	28.67	1288.72	118.65	64.88	135.23	1.50	1.50	0.00	MWD
1383.84	16.00	28.67	1369.57	138.15	75.54	157.45	1.50	1.50	0.00	MWD
1400.00	16.00	28.67	1385.10	142.06	77.68	161.91	0.00	0.00	0.00	MWD
1500.00	16.00	28.67	1481.22	166.24	90.90	189.47	0.00	0.00	0.00	MWD
1600.00	16.00	28.67	1577.35	190.43	104.13	217.03	0.00	0.00	0.00	MWD
1700.00	16.00	28.67	1673.48	214.61	117.35	244.60	0.00	0.00	0.00	MWD
1800.00	16.00	28.67	1769.60	238.79	130.57	272.16	0.00	0.00	0.00	MWD
1900.00	16.00	28.67	1865.73	262.98	143.80	299.73	0.00	0.00	0.00	MWD
2000.00	16.00	28.67	1961.85	287.16	157.02	327.29	0.00	0.00	0.00	MWD
2100.00	16.00	28.67	2057.98	311.35	170.25	354.85	0.00	0.00	0.00	MWD
2200.00	16.00	28.67	2154.11	335.53	183.47	382.42	0.00	0.00	0.00	MWD
2300.00	16.00	28.67	2250.23	359.72	196.69	409.98	0.00	0.00	0.00	MWD
2400.00	16.00	28.67	2346.36	383.90	209.92	437.54	0.00	0.00	0.00	MWD
2500.00	16.00	28.67	2442.49	408.08	223.14	465.11	0.00	0.00	0.00	MWD
2600.00	16.00	28.67	2538.61	432.27	236.37	492.67	0.00	0.00	0.00	MWD
2700.00	16.00	28.67	2634.74	456.45	249.59	520.24	0.00	0.00	0.00	MWD
2800.00	16.00	28.67	2730.86	480.64	262.81	547.80	0.00	0.00	0.00	MWD
2900.00	16.00	28.67	2826.99	504.82	276.04	575.36	0.00	0.00	0.00	MWD
3000.00	16.00	28.67	2923.12	529.01	289.26	602.93	0.00	0.00	0.00	MWD
3100.00	16.00	28.67	3019.24	553.19	302.49	630.49	0.00	0.00	0.00	MWD
3200.00	16.00	28.67	3115.37	577.38	315.71	658.05	0.00	0.00	0.00	MWD
3300.00	16.00	28.67	3211.49	601.56	328.93	685.62	0.00	0.00	0.00	MWD
3400.00	16.00	28.67	3307.62	625.74	342.16	713.18	0.00	0.00	0.00	MWD
3500.00	16.00	28.67	3403.75	649.93	355.38	740.75	0.00	0.00	0.00	MWD
3600.00	16.00	28.67	3499.87	674.11	368.61	768.31	0.00	0.00	0.00	MWD
3700.00	16.00	28.67	3596.00	698.30	381.83	795.87	0.00	0.00	0.00	MWD
3750.24	16.00	28.67	3644.29	710.45	388.47	809.72	0.00	0.00	0.00	MWD
3800.00	15.25	28.67	3692.21	722.21	394.91	823.12	1.50	-1.50	0.00	MWD
3861.84	14.33	28.67	3752.00	736.06	402.48	838.91	1.50	-1.50	0.00	Parkman
3900.00	13.75	28.67	3789.02	744.18	406.92	848.17	1.50	-1.50	0.00	MWD
4000.00	12.25	28.67	3886.46	763.92	417.72	870.67	1.50	-1.50	0.00	MWD
4100.00	10.75	28.67	3984.45	781.42	427.28	890.61	1.50	-1.50	0.00	MWD
4200.00	9.25	28.67	4082.92	796.66	435.62	907.98	1.50	-1.50	0.00	MWD
4300.00	7.75	28.67	4181.82	809.63	442.71	922.77	1.50	-1.50	0.00	MWD
4400.00	6.25	28.67	4281.07	820.33	448.56	934.96	1.50	-1.50	0.00	MWD
4466.26	5.26	28.67	4347.00	826.16	451.75	941.61	1.50	-1.50	0.00	Sussex
4500.00	4.75	28.67	4380.61	828.75	453.16	944.55	1.50	-1.50	0.00	MWD
4600.00	3.25	28.67	4480.36	834.87	456.51	951.53	1.50	-1.50	0.00	MWD
4700.00	1.75	28.67	4580.26	838.71	458.61	955.90	1.50	-1.50	0.00	MWD
4800.00	0.25	28.67	4680.24	840.24	459.45	957.65	1.50	-1.50	0.00	MWD
4816.91	0.00	28.67	4697.15	840.27	459.47	957.69	1.50	-1.50	0.00	MWD
4900.00	0.00	28.67	4780.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5000.00	0.00	28.67	4880.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5100.00	0.00	28.67	4980.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5200.00	0.00	28.67	5080.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5300.00	0.00	28.67	5180.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5400.00	0.00	28.67	5280.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5500.00	0.00	28.67	5380.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5600.00	0.00	28.67	5480.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5700.00	0.00	28.67	5580.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5800.00	0.00	28.67	5680.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
5900.00	0.00	28.67	5780.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6000.00	0.00	28.67	5880.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD

Allis-Chalmers Energy, Inc.

Planning Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Jepsen 14-2 Pad Well: 23A-2 Wellpath: Original Hole	Date: 05/13/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 12:48:38 Well: 23A-2, Grid North 4772'GL+15'KB 4787.0 Well (0.00N,0.00E,28.67Azi) Plan #1	Page: 3
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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
6100.00	0.00	28.67	5980.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6200.00	0.00	28.67	6080.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6300.00	0.00	28.67	6180.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6400.00	0.00	28.67	6280.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6500.00	0.00	28.67	6380.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6600.00	0.00	28.67	6480.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6700.00	0.00	28.67	6580.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6800.00	0.00	28.67	6680.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
6891.76	0.00	28.67	6772.00	840.27	459.47	957.69	0.00	0.00	0.00	Niobrara
6900.00	0.00	28.67	6780.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7000.00	0.00	28.67	6880.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7100.00	0.00	28.67	6980.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7186.76	0.00	28.67	7067.00	840.27	459.47	957.69	0.00	0.00	0.00	Codell
7200.00	0.00	28.67	7080.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7266.76	0.00	28.67	7147.00	840.27	459.47	957.69	0.00	0.00	0.00	Grnhm
7300.00	0.00	28.67	7180.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7400.00	0.00	28.67	7280.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7500.00	0.00	28.67	7380.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7600.00	0.00	28.67	7480.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7641.76	0.00	28.67	7522.00	840.27	459.47	957.69	0.00	0.00	0.00	J Sand
7700.00	0.00	28.67	7580.24	840.27	459.47	957.69	0.00	0.00	0.00	MWD
7791.76	0.00	28.67	7672.00	840.27	459.47	957.69	0.00	0.00	0.00	23A-2 PBHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
23A-2 SL			0.00	0.00	0.00	1334537.77	3242238.97	40	14	54.398 N	104	37	55.859 W
23A-2 PBHL			7672.00	840.27	459.47	1335378.05	3242698.43	40	15	2.657 N	104	37	49.827 W
-Circle (Radius: 50)													
-Plan hit target													

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
550.51	550.00	8.625	9.875	8 5/8"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
3861.84	3752.00	Parkman		0.00	0.00
4466.26	4347.00	Sussex		0.00	0.00
6891.76	6772.00	Niobrara		0.00	0.00
7186.76	7067.00	Codell		0.00	0.00
7266.76	7147.00	Grnhm		0.00	0.00
7641.76	7522.00	J Sand		0.00	0.00