

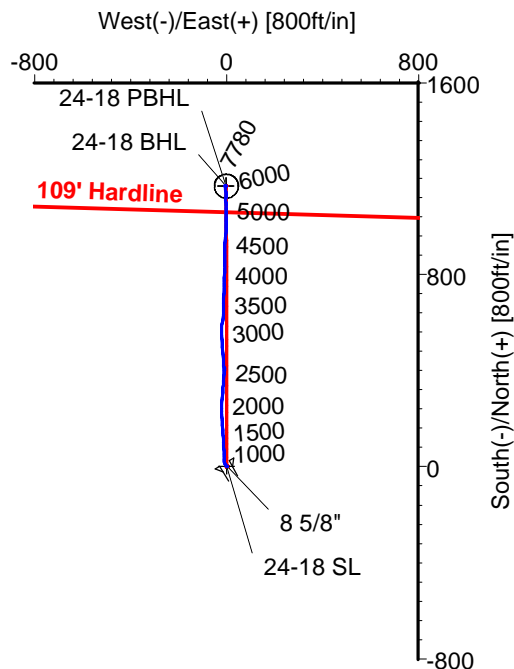
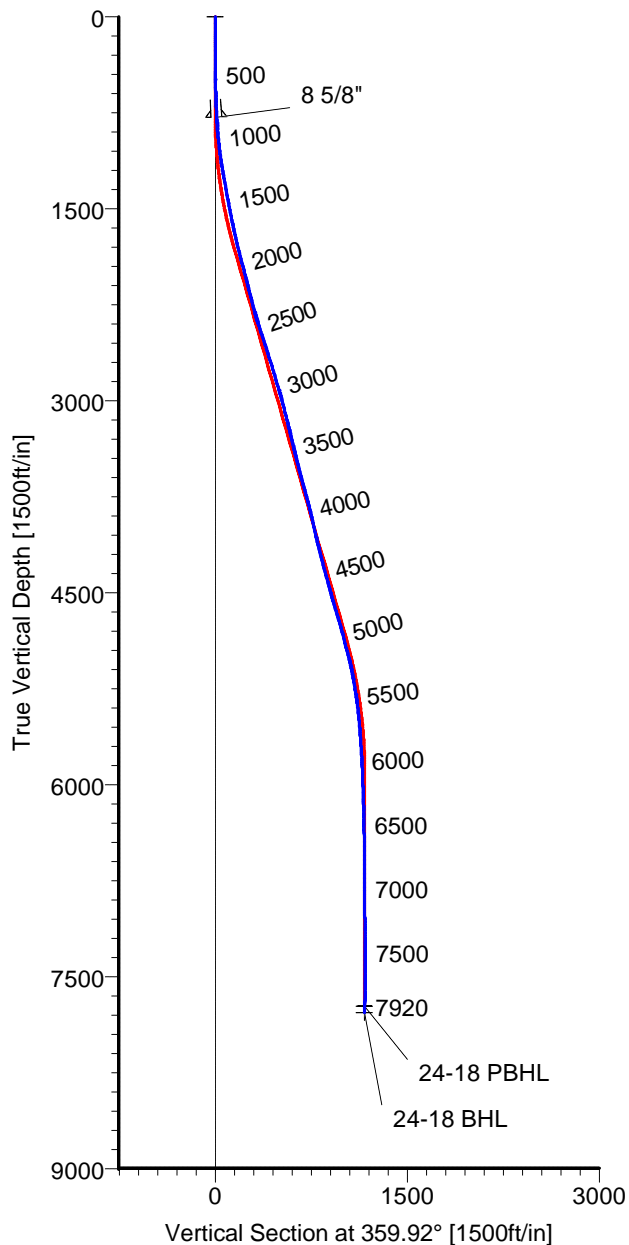
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Sekich 20-18 Pad
Well: 24-18
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.37°
Magnetic North: 8.60°

Magnetic Field
Strength: 53085nT
Dip Angle: 66.89°
Date: 03/21/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	784.70	785.00	8 5/8"	8.625

LEGEND

- 24-18, Original Hole, Plan #1
- Original Hole

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
24-18 SL	0.00	0.00	0.00	40°13'23.218N	104°55'40.199W	Point
24-18 PBHL	7729.00	1168.69	-1.63	40°13'34.767N	104°55'40.123W	Circle (Radius: 50)
24-18 BHL	7780.33	1169.66	-3.13	40°13'34.777N	104°55'40.142W	Point

Wellpath: (24-18/Original Hole)

Created By: Ivonne Gonzalez

Date: 03/24/2011

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.

Survey Report

Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Sekich 20-18 Pad Well: 24-18 Wellpath: Original Hole	Date: 03/24/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 07:38:26 Well: 24-18, Grid North 4865'GL+13'KB 4878.0 Well (0.00N,0.00E,359.92Azi) 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: Sekich 20-18 Pad Centered on 24-18 Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4865.00 ft	Northing: 1324641.38 ft Easting: 3159775.41 ft Latitude: 40 13 23.218 N Longitude: 104 55 40.199 W North Reference: Grid Grid Convergence: 0.37 deg
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Well: 24-18 Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft	Slot Name: 24-18 Latitude: 40 13 23.218 N Longitude: 104 55 40.199 W
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Wellpath: Original Hole Current Datum: 4865'GL+13'KB Magnetic Data: 03/21/2011 Field Strength: 53085 nT Vertical Section: Depth From (TVD) ft	Height 4878.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.97 deg Mag Dip Angle: 66.89 deg +E/-W ft Direction deg
0.00	0.00	0.00 359.92

Survey Program for Definitive Wellpath				
Date: 03/24/2011	Validated: No	Version: 0		
Actual From ft	To ft	Survey	Toolcode	Tool Name
49.00	7875.00	Survey #1 (49.00-7875.00)	MWD	Std MWD
7920.00	7920.00	Survey #2 (7920.00-7920.00)	MWD	Std MWD

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
49.00	0.50	9.70	49.00	0.21	0.04	0.21	1.02	1.02	0.00	MWD
140.00	0.50	30.10	140.00	0.95	0.30	0.95	0.19	0.00	22.42	MWD
229.00	0.20	300.40	228.99	1.36	0.36	1.36	0.60	-0.34	-100.79	MWD
319.00	0.40	269.10	318.99	1.43	-0.09	1.43	0.28	0.22	-34.78	MWD
426.00	0.40	273.70	425.99	1.45	-0.83	1.45	0.03	0.00	4.30	MWD
516.00	2.10	325.40	515.97	2.83	-2.08	2.83	2.09	1.89	57.44	MWD
607.00	2.50	329.20	606.89	5.91	-4.05	5.91	0.47	0.44	4.18	MWD
698.00	2.80	328.50	697.80	9.51	-6.22	9.52	0.33	0.33	-0.77	MWD
740.00	2.60	328.20	739.75	11.19	-7.26	11.20	0.48	-0.48	-0.71	MWD
785.00	2.77	330.03	784.70	13.00	-8.34	13.01	0.43	0.38	4.08	8 5/8"
792.00	2.80	330.30	791.69	13.30	-8.51	13.31	0.43	0.39	3.79	MWD
883.00	4.80	351.70	882.49	19.00	-10.16	19.01	2.66	2.20	23.52	MWD
974.00	6.20	358.80	973.07	27.68	-10.82	27.69	1.71	1.54	7.80	MWD
1065.00	7.40	356.70	1063.43	38.44	-11.26	38.46	1.35	1.32	-2.31	MWD
1156.00	9.00	2.30	1153.50	51.40	-11.31	51.42	1.96	1.76	6.15	MWD
1246.00	10.00	356.00	1242.27	66.23	-11.57	66.25	1.60	1.11	-7.00	MWD
1337.00	10.60	356.70	1331.80	82.47	-12.60	82.49	0.67	0.66	0.77	MWD
1427.00	10.60	359.80	1420.26	99.01	-13.11	99.03	0.63	0.00	3.44	MWD
1519.00	10.90	354.60	1510.65	116.14	-13.96	116.16	1.10	0.33	-5.65	MWD
1609.00	11.30	358.40	1598.97	133.42	-15.00	133.44	0.93	0.44	4.22	MWD
1700.00	12.80	353.20	1687.96	152.35	-16.45	152.37	2.03	1.65	-5.71	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Sekich 20-18 Pad
Well: 24-18
Wellpath: Original Hole

Date: 03/24/2011	Time: 07:38:26	Page: 2
Co-ordinate(NE) Reference:	Well: 24-18, Grid North	
Vertical (TVD) Reference:	4865'GL+13'KB 4878.0	
Section (VS) Reference:	Well (0.00N,0.00E,359.92Azi)	
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
1791.00	13.40	356.30	1776.60	172.88	-18.32	172.90	1.02	0.66	3.41	MWD
1881.00	14.30	357.40	1863.98	194.39	-19.50	194.42	1.04	1.00	1.22	MWD
1972.00	15.30	358.40	1951.96	217.62	-20.34	217.65	1.13	1.10	1.10	MWD
2063.00	14.80	358.80	2039.84	241.24	-20.92	241.27	0.56	-0.55	0.44	MWD
2154.00	14.30	5.50	2127.92	264.05	-20.09	264.08	1.93	-0.55	7.36	MWD
2244.00	13.90	4.40	2215.21	285.89	-18.19	285.92	0.53	-0.44	-1.22	MWD
2335.00	15.10	3.30	2303.31	308.62	-16.67	308.65	1.35	1.32	-1.21	MWD
2426.00	17.90	5.10	2390.56	334.39	-14.75	334.41	3.13	3.08	1.98	MWD
2517.00	18.70	3.30	2476.95	362.89	-12.66	362.90	1.08	0.88	-1.98	MWD
2608.00	18.10	0.50	2563.30	391.59	-11.70	391.60	1.17	-0.66	-3.08	MWD
2698.00	17.20	357.70	2649.07	418.86	-12.11	418.88	1.37	-1.00	-3.11	MWD
2789.00	17.20	355.30	2736.00	445.72	-13.75	445.73	0.78	0.00	-2.64	MWD
2880.00	16.50	355.60	2823.09	472.01	-15.85	472.03	0.78	-0.77	0.33	MWD
2971.00	16.70	356.70	2910.30	497.95	-17.59	497.97	0.41	0.22	1.21	MWD
3062.00	14.60	354.60	2997.92	522.42	-19.42	522.45	2.39	-2.31	-2.31	MWD
3152.00	14.40	356.30	3085.06	544.88	-21.21	544.91	0.52	-0.22	1.89	MWD
3243.00	14.30	0.50	3173.22	567.41	-21.85	567.44	1.15	-0.11	4.62	MWD
3334.00	13.40	8.30	3261.58	589.09	-20.23	589.12	2.28	-0.99	8.57	MWD
3425.00	14.10	12.80	3349.97	610.33	-16.25	610.35	1.40	0.77	4.95	MWD
3516.00	14.30	3.30	3438.21	632.36	-13.15	632.38	2.57	0.22	-10.44	MWD
3606.00	14.10	357.40	3525.46	654.41	-13.00	654.43	1.62	-0.22	-6.56	MWD
3697.00	15.30	0.20	3613.48	677.49	-13.46	677.51	1.53	1.32	3.08	MWD
3788.00	15.70	5.10	3701.18	701.76	-12.33	701.78	1.50	0.44	5.38	MWD
3879.00	14.80	2.30	3788.97	725.64	-10.77	725.66	1.28	-0.99	-3.08	MWD
3969.00	13.50	358.80	3876.24	747.63	-10.52	747.65	1.73	-1.44	-3.89	MWD
4060.00	12.50	357.00	3964.91	768.09	-11.26	768.10	1.19	-1.10	-1.98	MWD
4151.00	12.50	4.80	4053.76	787.74	-10.95	787.75	1.85	0.00	8.57	MWD
4242.00	14.40	4.40	4142.26	808.83	-9.26	808.85	2.09	2.09	-0.44	MWD
4333.00	14.10	359.50	4230.46	831.20	-8.49	831.21	1.37	-0.33	-5.38	MWD
4423.00	15.00	359.10	4317.57	853.81	-8.77	853.82	1.01	1.00	-0.44	MWD
4514.00	15.80	0.50	4405.30	877.97	-8.85	877.98	0.97	0.88	1.54	MWD
4605.00	14.80	0.90	4493.08	901.98	-8.56	901.99	1.10	-1.10	0.44	MWD
4696.00	16.50	3.70	4580.70	926.50	-7.54	926.51	2.04	1.87	3.08	MWD
4786.00	17.20	4.80	4666.84	952.52	-5.60	952.52	0.85	0.78	1.22	MWD
4877.00	16.20	2.30	4754.00	978.61	-3.96	978.61	1.35	-1.10	-2.75	MWD
4968.00	14.40	2.30	4841.77	1002.60	-3.00	1002.60	1.98	-1.98	0.00	MWD
5058.00	14.40	358.10	4928.95	1024.97	-2.92	1024.97	1.16	0.00	-4.67	MWD
5150.00	13.90	1.90	5018.16	1047.45	-2.94	1047.45	1.15	-0.54	4.13	MWD
5240.00	11.60	358.80	5105.93	1067.30	-2.77	1067.30	2.67	-2.56	-3.44	MWD
5331.00	9.70	357.00	5195.36	1084.11	-3.36	1084.11	2.12	-2.09	-1.98	MWD
5422.00	9.20	359.50	5285.13	1099.04	-3.82	1099.04	0.71	-0.55	2.75	MWD
5512.00	7.00	358.80	5374.22	1111.71	-4.00	1111.72	2.45	-2.44	-0.78	MWD
5603.00	5.80	3.00	5464.65	1121.85	-3.88	1121.85	1.41	-1.32	4.62	MWD
5694.00	4.60	3.30	5555.28	1130.09	-3.43	1130.09	1.32	-1.32	0.33	MWD
5875.00	3.50	357.40	5735.82	1142.85	-3.26	1142.85	0.65	-0.61	-3.26	MWD
6057.00	2.30	350.70	5917.59	1152.00	-4.10	1152.01	0.68	-0.66	-3.68	MWD
6238.00	1.90	344.70	6098.47	1158.48	-5.48	1158.49	0.25	-0.22	-3.31	MWD
6419.00	1.10	10.70	6279.41	1163.08	-5.95	1163.09	0.57	-0.44	14.36	MWD
6601.00	0.70	341.20	6461.38	1165.85	-5.98	1165.86	0.33	-0.22	-16.21	MWD
6782.00	0.50	340.10	6642.37	1167.64	-6.61	1167.65	0.11	-0.11	-0.61	MWD
6964.00	0.50	306.00	6824.37	1168.86	-7.52	1168.87	0.16	0.00	-18.74	MWD
7146.00	0.50	307.80	7006.36	1169.81	-8.79	1169.82	0.01	0.00	0.99	MWD
7328.00	0.40	94.40	7188.36	1170.25	-8.79	1170.26	0.47	-0.05	80.55	MWD

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Sekich 20-18 Pad
Well: 24-18
Wellpath: Original Hole

Date: 03/24/2011	Time: 07:38:26	Page: 3
Co-ordinate(NE) Reference:	Well: 24-18, Grid North	
Vertical (TVD) Reference:	4865'GL+13'KB 4878.0	
Section (VS) Reference:	Well (0.00N,0.00E,359.92Azi)	
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
7509.00	0.70	68.10	7369.35	1170.61	-7.13	1170.62	0.21	0.17	-14.53	MWD
7690.00	0.50	110.90	7550.34	1170.74	-5.37	1170.75	0.26	-0.11	23.65	MWD
7868.67	0.69	118.12	7729.00	1169.96	-3.69	1169.96	0.12	0.11	4.04	24-18 PBHL
7875.00	0.70	118.30	7735.33	1169.92	-3.62	1169.92	0.12	0.11	2.88	MWD
7920.00	0.70	118.30	7780.33	1169.66	-3.13	1169.66	0.00	0.00	0.00	24-18 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
24-18 SL			0.00	0.00	0.00	1324641.38	3159775.41	40	13	23.218 N	104	55	40.199 W
24-18 PBHL			7729.00	1168.69	-1.63	1325810.07	3159773.77	40	13	34.767 N	104	55	40.123 W
-Circle (Radius: 50)													
24-18 BHL			7780.33	1169.66	-3.13	1325811.04	3159772.28	40	13	34.777 N	104	55	40.142 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
785.00	784.70	8.625	9.875	8 5/8"