

HALLIBURTON

Sperry Drilling

END OF WELL REPORT

For

Anadarko Petroleum Corp.

Wardell 26N-29HZ

Sec. 29-T3N-R65W

Weld County, CO

Job #9484816

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SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET

OPERATOR:	Anadarko
WELL:	Wardell 26N-29HZ
FIELD:	
RIG:	Xtreme 22
LEGALS:	
COUNTY:	Weld
STATE:	Colorado
CAL. METHOD:	Min. Curv.
MAG. DECL. APPLIED:	8.71
VERTICAL SEC. DIR. :	12.220

SSDS Job Number :	9484812
Start Date of Job :	7/26/2012
End Date of Job :	8/4/2012
Lead Directional Driller:	Robbie Arnold / Chris Radley
	Rob Walker
Other SSDS DD's :	
SSDS MWD Engineers :	Clay Wass
	Mark Lorenc
	Cale Haas

	Main Hole =====>		1st Side Track =====>		2nd Side Track =====>		3rd Side Track =====>		4th Side Track =====>	
Gyro Survey		Tie On		Tie On		Tie On		Tie On		Tie On
First Survey Depth	116.00	Gyro								
Last Survey Depth	884.00									
KOP Depth/Sidetrack MD	6401.00	KOP		KOP-ST1		KOP-ST2		KOP-ST3		KOP-ST4
First Survey Depth	950.00	MWD		MWD		MWD		MWD		MWD
Last Survey Depth	11523.00	MWD		MWD		MWD		MWD		MWD
Bit Extrapolation to TD	11566.00	T.D.		T.D.		T.D.		T.D.		T.D.

The following Sperry Sun Drilling Services personnel listed below, do certify the above survey information to be accurate :

Print Name : Chris Radley

Print Name : Clay Wass

Print Name : Cale Haas

Sign Name : 

Sign Name : 

Sign Name : 

Print Name : Rob Walker

Print Name : Mark Lorenc

Print Name :

Sign Name : 

Sign Name : 

Sign Name :

Examples of Survey Types:

TieOn	Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
MWD	Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
ESS	Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
Gyro	Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)
SS	Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 29 T3N-R65W

Wardell 26N-29HZ

Plan A Rev 0

Design: Actual Field Surveys

Sperry Drilling Services Standard Report

13 August, 2012

Well Coordinates: 1,313,179.65 N, 3,228,413.52 E (40° 11' 24.66" N, 104° 40' 56.61" W)

Ground Level: 4,869.00 ft

Local Coordinate Origin:

Centered on Well Wardell 26N-29HZ

Viewing Datum:

RKB=16ft @ 4885.00ft (Xtreme 22)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

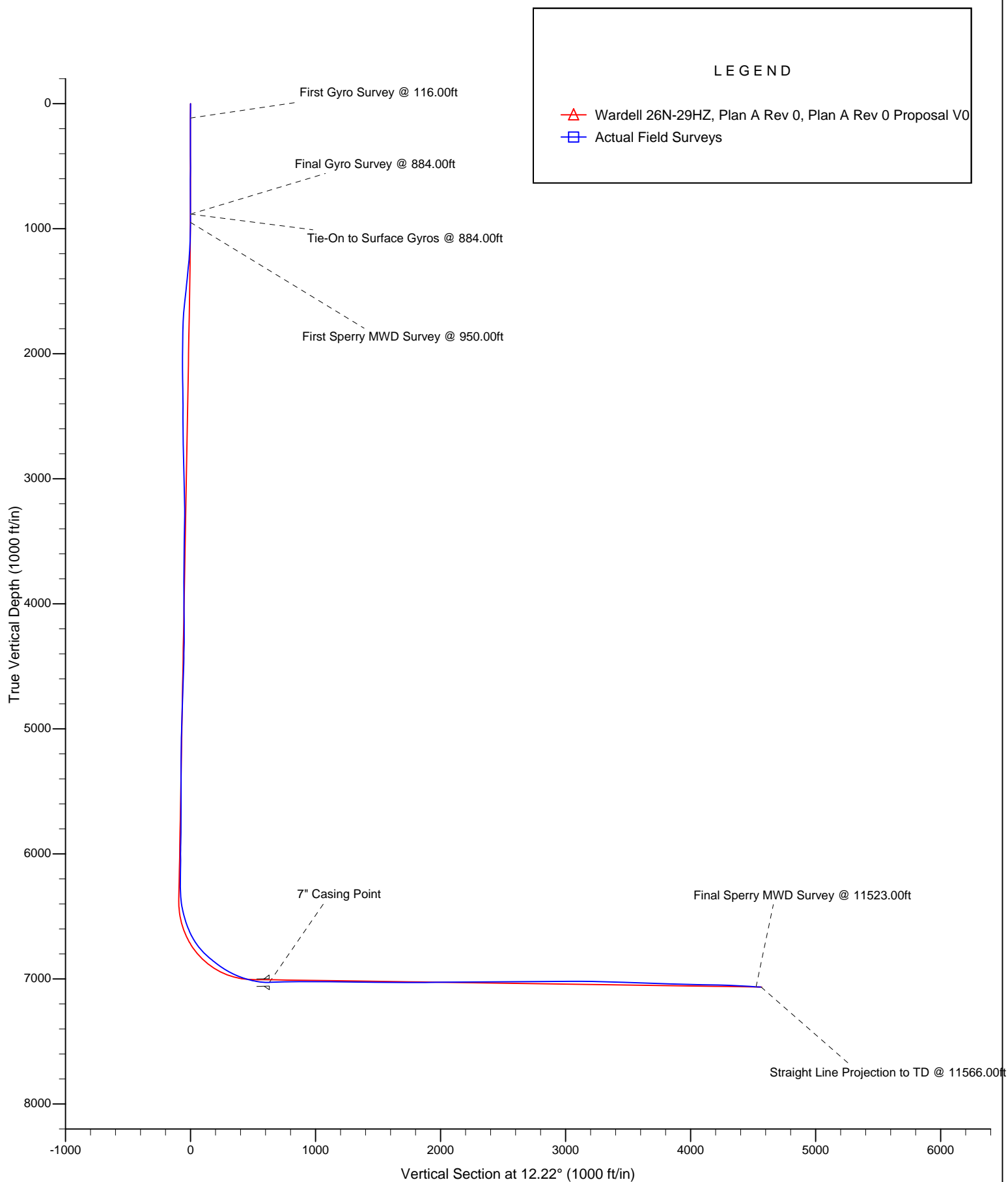
Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 29 T3N-R65W
Well: Wardell 26N-29HZ

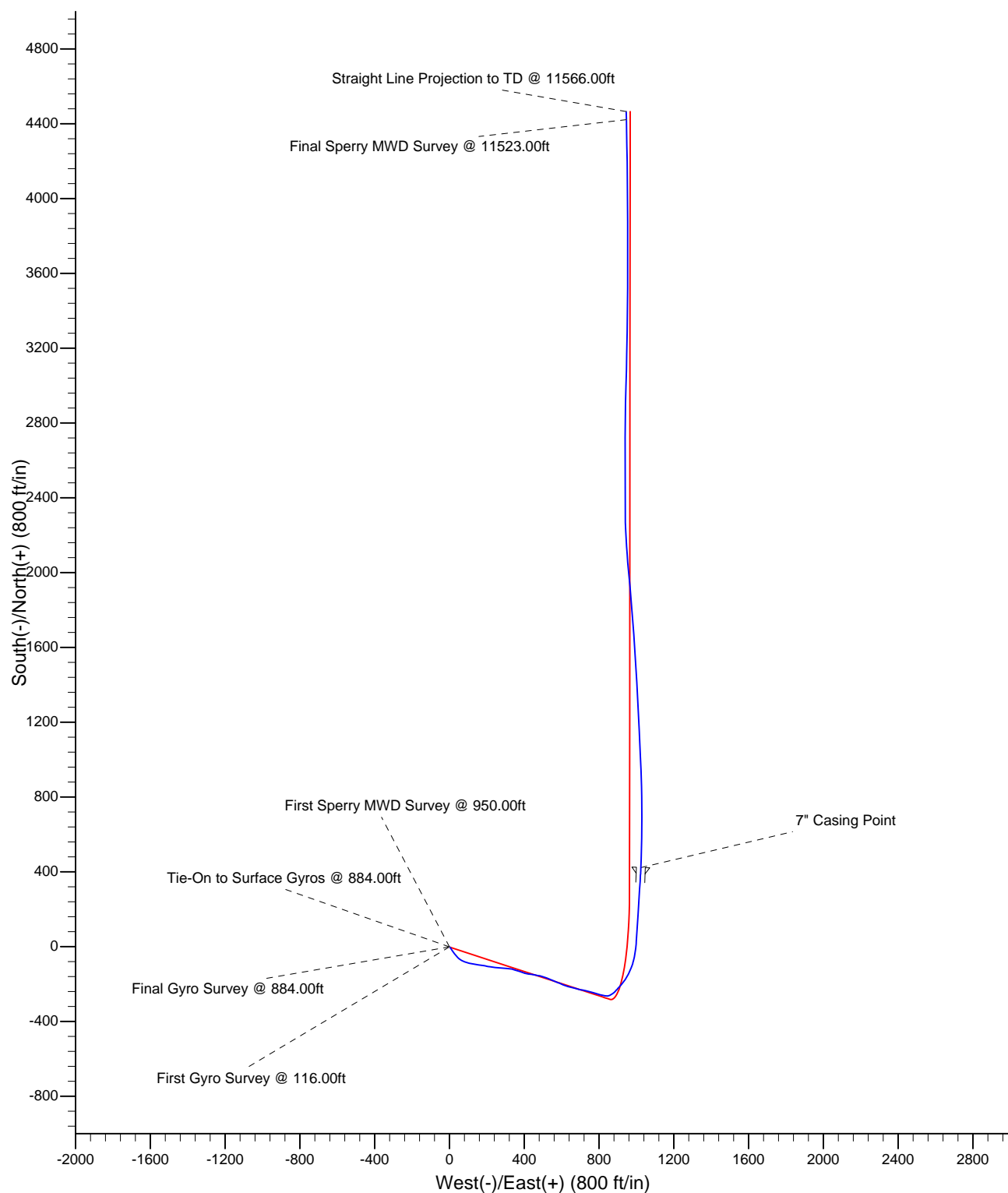
Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling



LEGEND

- Wardell 26N-29HZ, Plan A Rev 0, Plan A Rev 0 Proposal V0
- Actual Field Surveys



Design Report for Wardell 26N-29HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
116.00	0.33	111.57	116.00	-0.12	0.31	-0.05	0.28
First Gyro Survey @ 116.00ft							
216.00	0.13	76.47	216.00	-0.20	0.69	-0.05	0.24
316.00	0.20	219.13	316.00	-0.31	0.69	-0.16	0.31
416.00	0.22	15.19	416.00	-0.26	0.63	-0.12	0.41
516.00	0.09	275.37	516.00	-0.07	0.60	0.06	0.25
616.00	0.19	190.25	616.00	-0.22	0.49	-0.11	0.20
716.00	0.01	39.33	716.00	-0.38	0.47	-0.27	0.20
816.00	0.05	267.69	816.00	-0.38	0.43	-0.28	0.06
884.00	0.40	245.94	884.00	-0.47	0.19	-0.42	0.52
Final Gyro Survey @ 884.00ft - Tie-On to Surface Gyros @ 884.00ft							
950.00	0.18	89.98	950.00	-0.57	0.08	-0.54	0.86
First Sperry MWD Survey @ 950.00ft							
1,040.00	1.70	124.86	1,039.98	-1.33	1.32	-1.02	1.73
1,130.00	4.33	145.92	1,129.85	-4.91	4.32	-3.88	3.12
1,221.00	5.97	142.78	1,220.48	-11.52	9.10	-9.34	1.83
1,313.00	8.34	146.91	1,311.76	-20.92	15.64	-17.14	2.63
1,405.00	8.72	144.95	1,402.74	-32.22	23.29	-26.56	0.52
1,496.00	10.30	137.76	1,492.49	-43.89	32.72	-35.98	2.17
1,588.00	10.53	137.98	1,582.98	-56.23	43.88	-45.67	0.25
1,680.00	11.00	125.52	1,673.37	-67.58	56.65	-54.06	2.58
1,772.00	9.80	115.66	1,763.86	-76.07	70.85	-59.35	2.33
1,863.00	9.99	107.01	1,853.51	-81.73	85.38	-61.81	1.65
1,956.00	9.52	105.17	1,945.17	-86.10	100.52	-62.88	0.61
2,042.00	10.30	103.31	2,029.89	-89.73	114.86	-63.39	0.98
2,128.00	9.54	101.58	2,114.60	-92.93	129.33	-63.46	0.95
2,213.00	9.99	97.37	2,198.37	-95.29	143.54	-62.76	0.99
2,299.00	9.79	95.96	2,283.09	-97.01	158.21	-61.33	0.37
2,385.00	10.33	99.41	2,367.77	-99.03	173.09	-60.15	0.94
2,471.00	9.18	97.94	2,452.52	-101.24	187.49	-59.27	1.37
2,557.00	9.54	105.33	2,537.38	-104.07	201.16	-59.14	1.46
2,643.00	9.83	99.43	2,622.16	-107.16	215.27	-59.17	1.20
2,728.00	10.28	97.22	2,705.85	-109.30	229.96	-58.16	0.70
2,814.00	11.20	95.05	2,790.35	-111.00	245.89	-56.45	1.17
2,900.00	11.08	94.80	2,874.73	-112.42	262.44	-54.34	0.15
2,986.00	10.21	94.08	2,959.24	-113.66	278.28	-52.19	1.02
3,071.00	11.27	96.33	3,042.76	-115.11	294.05	-50.27	1.34
3,157.00	10.19	95.89	3,127.25	-116.82	309.97	-48.57	1.26
3,243.00	10.74	95.22	3,211.82	-118.33	325.52	-46.76	0.65
3,329.00	9.46	108.05	3,296.50	-121.25	340.22	-46.50	3.00
3,414.00	8.74	107.08	3,380.43	-125.31	353.04	-47.76	0.87
3,500.00	6.64	105.52	3,465.65	-128.56	364.07	-48.60	2.45
3,586.00	7.16	104.48	3,551.02	-131.23	374.05	-49.09	0.62
3,672.00	7.83	113.65	3,636.29	-134.92	384.61	-50.47	1.59
3,757.00	8.38	112.73	3,720.44	-139.63	395.63	-52.74	0.66
3,843.00	9.09	98.99	3,805.45	-143.12	408.12	-53.50	2.56
3,929.00	10.47	99.38	3,890.20	-145.45	422.54	-52.74	1.61
4,014.00	10.73	98.20	3,973.75	-147.84	437.99	-51.80	0.40
4,100.00	10.12	98.72	4,058.33	-150.13	453.38	-50.78	0.72

Design Report for Wardell 26N-29HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4,186.00	11.08	101.26	4,142.86	-152.89	468.96	-50.18	1.24
4,272.00	9.24	102.47	4,227.51	-155.99	483.80	-50.07	2.15
4,357.00	9.78	106.20	4,311.34	-159.48	497.40	-50.60	0.96
4,443.00	10.62	108.73	4,395.98	-164.06	511.92	-52.01	1.11
4,529.00	9.11	109.37	4,480.71	-168.86	525.85	-53.75	1.76
4,615.00	10.29	114.17	4,565.48	-174.27	539.28	-56.19	1.66
4,700.00	9.85	114.59	4,649.17	-180.40	552.82	-59.32	0.52
4,786.00	11.74	110.52	4,733.65	-186.53	567.70	-62.16	2.37
4,872.00	9.29	112.91	4,818.20	-192.30	582.29	-64.71	2.89
4,958.00	10.43	114.18	4,902.92	-198.19	595.79	-67.61	1.35
5,043.00	8.97	112.01	4,986.71	-203.83	608.95	-70.34	1.77
5,129.00	10.08	109.93	5,071.52	-208.90	622.24	-72.49	1.35
5,215.00	11.33	104.86	5,156.02	-213.64	637.48	-73.89	1.82
5,301.00	9.60	101.72	5,240.59	-217.26	652.67	-74.21	2.12
5,387.00	10.10	105.20	5,325.32	-220.69	666.97	-74.54	0.90
5,472.00	11.55	105.85	5,408.81	-224.97	682.35	-75.47	1.71
5,558.00	9.77	103.51	5,493.32	-229.03	697.73	-76.18	2.13
5,644.00	10.41	98.99	5,577.99	-231.95	712.50	-75.91	1.18
5,730.00	10.44	103.33	5,662.57	-234.96	727.75	-75.62	0.91
5,815.00	10.77	103.35	5,746.12	-238.57	742.97	-75.93	0.39
5,901.00	10.93	105.01	5,830.59	-242.54	758.67	-76.48	0.41
5,987.00	11.11	107.96	5,915.00	-247.20	774.43	-77.71	0.69
6,072.00	8.90	108.45	5,998.70	-251.81	788.45	-79.24	2.60
6,158.00	9.82	101.89	6,083.56	-255.42	801.94	-79.92	1.64
6,244.00	10.02	104.98	6,168.27	-258.87	816.35	-80.24	0.66
6,330.00	10.47	98.21	6,252.91	-261.92	831.31	-80.05	1.49
6,377.00	9.65	97.98	6,299.18	-263.08	839.44	-79.47	1.75
6,415.00	10.47	85.40	6,336.60	-263.24	846.03	-78.23	6.16
6,458.00	12.96	69.13	6,378.71	-261.21	854.44	-74.47	9.57
6,501.00	14.70	59.89	6,420.47	-256.75	863.66	-68.16	6.53
6,544.00	16.66	54.82	6,461.87	-250.46	873.42	-59.95	5.56
6,587.00	18.76	46.18	6,502.84	-242.12	883.45	-49.67	7.81
6,629.00	20.94	43.04	6,542.34	-231.96	893.45	-37.62	5.78
6,673.00	23.25	40.52	6,583.11	-219.61	904.46	-23.22	5.67
6,715.00	26.92	41.38	6,621.14	-206.17	916.13	-7.62	8.78
6,758.00	30.57	38.58	6,658.84	-190.31	929.39	10.69	9.05
6,799.00	33.05	33.36	6,693.68	-172.82	942.05	30.46	9.03
6,844.00	37.16	27.60	6,730.50	-150.51	955.10	55.03	11.72
6,887.00	41.69	23.19	6,763.71	-125.84	966.76	81.61	12.38
6,930.00	45.88	19.52	6,794.76	-98.13	977.55	110.98	11.39
6,973.00	48.14	12.92	6,824.09	-67.95	986.30	142.32	12.39
7,016.00	50.95	9.32	6,851.99	-35.86	992.58	175.02	9.12
7,059.00	53.95	5.50	6,878.20	-2.06	996.95	208.97	9.91
7,101.00	55.38	4.29	6,902.49	32.08	999.87	242.95	4.14
7,143.00	58.35	3.28	6,925.45	67.16	1,002.19	277.74	7.35
7,187.00	61.91	3.57	6,947.36	105.24	1,004.47	315.44	8.11
7,232.00	66.01	4.51	6,967.11	145.57	1,007.32	355.45	9.30
7,273.00	69.42	2.66	6,982.66	183.42	1,009.69	392.95	9.31
7,312.00	72.25	3.65	6,995.46	220.20	1,011.72	429.33	7.64
7,358.00	75.36	3.71	7,008.29	264.28	1,014.55	473.01	6.76
7,401.00	79.08	4.27	7,017.80	306.10	1,017.47	514.50	8.74

Design Report for Wardell 26N-29HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7,444.00	82.87	3.32	7,024.54	348.47	1,020.28	556.50	9.08
7,479.00	87.16	3.20	7,027.58	383.27	1,022.26	590.94	12.26
7,519.00	91.60	2.18	7,028.01	423.22	1,024.14	630.37	11.40
7" Casing Point							
7,524.00	92.16	2.05	7,027.85	428.21	1,024.32	635.29	11.40
7,610.00	92.41	1.76	7,024.42	514.10	1,027.18	719.84	0.45
7,696.00	90.31	0.60	7,022.38	600.05	1,028.95	804.21	2.79
7,781.00	90.00	0.18	7,022.15	685.04	1,029.53	887.41	0.61
7,867.00	90.25	359.82	7,021.96	771.04	1,029.53	971.46	0.51
7,953.00	89.32	357.99	7,022.29	857.02	1,027.89	1,055.14	2.39
8,039.00	89.13	357.96	7,023.45	942.96	1,024.85	1,138.49	0.22
8,124.00	89.51	356.97	7,024.46	1,027.87	1,021.09	1,220.68	1.25
8,210.00	89.38	357.29	7,025.29	1,113.76	1,016.78	1,303.72	0.40
8,296.00	90.06	357.23	7,025.71	1,199.66	1,012.67	1,386.80	0.79
8,381.00	89.38	357.35	7,026.13	1,284.56	1,008.65	1,468.93	0.81
8,467.00	89.32	357.74	7,027.10	1,370.48	1,004.97	1,552.12	0.46
8,553.00	89.32	356.91	7,028.12	1,456.38	1,000.96	1,635.22	0.97
8,639.00	89.94	356.00	7,028.68	1,542.21	995.64	1,717.99	1.28
8,724.00	89.88	355.58	7,028.81	1,626.98	989.40	1,799.52	0.50
8,810.00	90.74	355.94	7,028.35	1,712.74	983.04	1,881.99	1.08
8,896.00	90.74	355.07	7,027.24	1,798.47	976.30	1,964.35	1.01
8,981.00	90.74	354.93	7,026.14	1,883.14	968.89	2,045.53	0.16
9,067.00	90.12	354.91	7,025.49	1,968.80	961.28	2,127.64	0.72
9,153.00	90.31	355.21	7,025.17	2,054.48	953.87	2,209.81	0.41
9,239.00	90.43	356.42	7,024.61	2,140.25	947.60	2,292.31	1.41
9,324.00	90.31	357.34	7,024.07	2,225.12	942.97	2,374.28	1.09
9,410.00	89.94	358.74	7,023.88	2,311.06	940.03	2,457.66	1.68
9,496.00	90.56	0.63	7,023.50	2,397.06	939.56	2,541.60	2.31
9,582.00	90.87	0.61	7,022.43	2,483.05	940.49	2,625.84	0.36
9,667.00	90.56	0.35	7,021.37	2,568.04	941.20	2,709.06	0.48
9,753.00	90.43	359.59	7,020.63	2,654.03	941.15	2,793.10	0.90
9,839.00	89.69	359.82	7,020.54	2,740.03	940.71	2,877.05	0.90
9,925.00	90.93	359.87	7,020.07	2,826.03	940.48	2,961.05	1.44
10,010.00	89.94	1.85	7,019.42	2,911.01	941.75	3,044.38	2.60
10,096.00	89.81	1.26	7,019.61	2,996.98	944.09	3,128.89	0.70
10,182.00	88.89	1.89	7,020.59	3,082.94	946.45	3,213.41	1.30
10,268.00	88.95	1.07	7,022.21	3,168.89	948.67	3,297.89	0.96
10,353.00	88.08	0.76	7,024.41	3,253.85	950.03	3,381.21	1.09
10,439.00	87.59	1.37	7,027.66	3,339.78	951.63	3,465.52	0.91
10,525.00	88.09	0.19	7,030.90	3,425.71	952.80	3,549.75	1.49
10,610.00	88.02	0.58	7,033.79	3,510.65	953.37	3,632.90	0.47
10,696.00	88.09	359.81	7,036.71	3,596.60	953.66	3,716.96	0.90
10,782.00	87.84	0.32	7,039.76	3,682.55	953.76	3,800.98	0.66
10,868.00	88.95	0.13	7,042.17	3,768.51	954.09	3,885.07	1.31
10,954.00	89.26	359.62	7,043.51	3,854.50	953.91	3,969.07	0.69
11,039.00	89.32	358.92	7,044.57	3,939.49	952.82	4,051.90	0.83
11,125.00	88.64	359.70	7,046.10	4,025.47	951.79	4,135.72	1.20
11,211.00	88.33	359.57	7,048.37	4,111.43	951.24	4,219.62	0.39
11,296.00	87.65	359.42	7,051.35	4,196.38	950.49	4,302.48	0.82
11,382.00	87.15	359.37	7,055.25	4,282.29	949.58	4,386.25	0.58
11,468.00	86.72	358.43	7,059.85	4,368.15	947.94	4,469.82	1.20

Design Report for Wardell 26N-29HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
11,523.00	86.29	358.81	7,063.20	4,423.03	946.61	4,523.18	1.04
Final Sperry MWD Survey @ 11523.00ft							
11,566.00	86.29	358.81	7,065.99	4,465.93	945.72	4,564.92	0.00
Straight Line Projection to TD @ 11566.00ft							

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
116.00	116.00	-0.12	0.31	First Gyro Survey @ 116.00ft
884.00	884.00	-0.47	0.19	Final Gyro Survey @ 884.00ft
884.00	884.00	-0.47	0.19	Tie-On to Surface Gyros @ 884.00ft
950.00	950.00	-0.57	0.08	First Sperry MWD Survey @ 950.00ft
11,523.00	7,063.20	4,423.03	946.61	Final Sperry MWD Survey @ 11523.00ft
11,566.00	7,065.99	4,465.93	945.72	Straight Line Projection to TD @ 11566.00ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Wardell 26N-29HZ_BHL	12.22	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
116.00	884.00	Surface Gyros	NS-GYRO-MS
950.00	11,566.00	Sperry MWD Surveys	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,519.00	7,028.01	7" Casing Point	7	8-3/4

Design Report for Wardell 26N-29HZ - Actual Field Surveys**Targets**

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Wardell 26N-29HZ_! ! - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	,179.652638	,8,413.521633	40.190184	-104.682393
Wardell 26N-29HZ_! ! - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,179.652638	,8,413.521633	40.190184	-104.682393
Point 1			1,251.59	-371.97		1,312,819.25	3,229,668.43		
Point 2			1,251.45	2,271.85		1,315,462.85	3,229,643.92		
Point 3			1,252.34	4,928.01		1,318,118.79	3,229,620.32		
Point 4			-1,383.44	4,908.87		1,318,075.35	3,226,984.94		
Point 5			-4,019.22	4,889.58		1,318,031.76	3,224,349.56		
Point 6			-4,010.67	2,251.79		1,315,394.27	3,224,382.43		
Point 7			-4,002.17	-362.38		1,312,780.40	3,224,415.03		
Point 8			-1,375.55	-367.85		1,312,799.15	3,227,041.48		
Point 9			1,251.59	-371.97		1,312,819.25	3,229,668.43		
Wardell 26N-29HZ_I - actual wellpath misses target center by 21.35ft at 11565.55ft MD (7065.96 TVD, 4465.48 N, 945.73 E) - Point	0.00	0.00	7,065.00	4,465.99	967.05	,654.175652	,9,339.317798	40.202443	-104.678931
Wardell 26N-29HZ_! ! - actual wellpath hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	,179.652638	,8,413.521633	40.190184	-104.682393
Point 1			791.55	88.77		1,313,275.71	3,229,204.19		
Point 2			791.43	2,271.92		1,315,458.68	3,229,183.94		
Point 3			792.16	4,464.64		1,317,651.22	3,229,164.45		
Point 4			-1,380.08	4,448.86		1,317,615.41	3,226,992.54		
Point 5			-3,557.71	4,432.92		1,317,579.39	3,224,815.24		
Point 6			-3,550.66	2,253.28		1,315,400.00	3,224,842.39		
Point 7			-3,543.64	96.68		1,313,243.65	3,224,869.29		
Point 8			-1,374.71	92.17		1,313,259.14	3,227,038.08		
Point 9			791.55	88.77		1,313,275.71	3,229,204.19		

North Reference Sheet for Sec. 29 T3N-R65W - Wardell 26N-29HZ - Plan A Rev 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB=16ft @ 4885.00ft (Xtreme 22). Northing and Easting are relative to Wardell 26N-29HZ

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995740

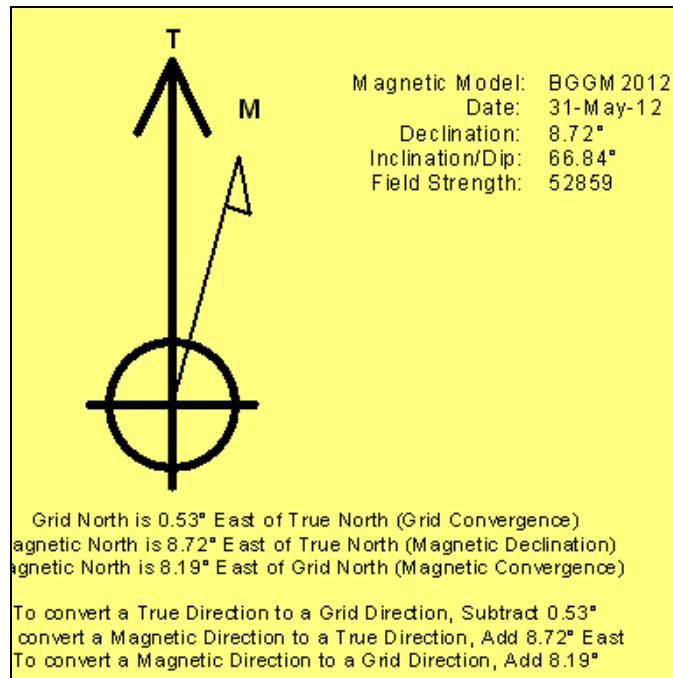
Grid Coordinates of Well: 1,313,179.652638 ft N, 3,228,413.521633 ft E

Geographical Coordinates of Well: 40° 11' 24.66" N, 104° 40' 56.61" W

Grid Convergence at Surface is: 0.53°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,566.00ft the Bottom Hole Displacement is 4,564.96ft in the Direction of 11.96° (True).

Magnetic Convergence at surface is: -8.19° (31 May 2012, , BGGM2012)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 29 T3N-R65W

Wardell 26N-29HZ

Plan A Rev 0

Design: Actual Field Surveys

Survey Report - Geographic

13 August, 2012

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Wardell 26N-29HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Site:	Sec. 29 T3N-R65W	MD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Well:	Wardell 26N-29HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Project	Weld County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sec. 29 T3N-R65W				
Site Position:		Northing:	1,313,179.460366ft	Latitude:	40.190185
From:	Lat/Long	Easting:	3,228,349.544428ft	Longitude:	-104.682622
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.53 °

Well	Wardell 26N-29HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,313,179.652638 ft	Latitude:	40.190184
	+E/-W	0.00 ft	Easting:	3,228,413.521633 ft	Longitude:	-104.682393
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,869.00 ft

Wellbore	Plan A Rev 0				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2012-05-31	8.72	66.84	52,859

Design	Actual Field Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	12.22	

Survey Program	Date	2012-08-13			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
116.00	884.00	Surface Gyros (Plan A Rev 0)	NS-GYRO-MS	North sensing gyrocompassing m/s	
950.00	11,566.00	Sperry MWD Surveys (Plan A Rev 0)	MWD	MWD - Standard	

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Wardell 26N-29HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Site:	Sec. 29 T3N-R65W	MD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Well:	Wardell 26N-29HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	13,179.652638	28,413.521633	40.190184	-104.682393
116.00	0.33	111.57	116.00	-0.12	0.31	13,179.532701	28,413.833400	40.190184	-104.682392
First Gyro Survey @ 116.00ft									
216.00	0.13	76.47	216.00	-0.20	0.69	13,179.456864	28,414.212208	40.190183	-104.682391
316.00	0.20	219.13	316.00	-0.31	0.69	13,179.348028	28,414.213365	40.190183	-104.682391
416.00	0.22	15.19	416.00	-0.26	0.63	13,179.397362	28,414.153070	40.190183	-104.682391
516.00	0.09	275.37	516.00	-0.07	0.60	13,179.589718	28,414.123405	40.190184	-104.682391
616.00	0.19	190.25	616.00	-0.22	0.49	13,179.432928	28,414.017152	40.190183	-104.682391
716.00	0.01	39.33	716.00	-0.38	0.47	13,179.276311	28,413.994623	40.190183	-104.682391
816.00	0.05	267.69	816.00	-0.38	0.43	13,179.280951	28,413.956513	40.190183	-104.682391
884.00	0.40	245.94	884.00	-0.47	0.19	13,179.180720	28,413.711049	40.190183	-104.682392
Final Gyro Survey @ 884.00ft - Tie-On to Surface Gyros @ 884.00ft									
950.00	0.18	89.98	950.00	-0.57	0.08	13,179.085855	28,413.605230	40.190182	-104.682393
First Sperry MWD Survey @ 950.00ft									
1,040.00	1.70	124.86	1,039.98	-1.33	1.32	13,178.334287	28,414.849027	40.190180	-104.682388
1,130.00	4.33	145.92	1,129.85	-4.91	4.32	13,174.784461	28,417.881590	40.190170	-104.682378
1,221.00	5.97	142.78	1,220.48	-11.52	9.10	13,168.214943	28,422.729955	40.190152	-104.682360
1,313.00	8.34	146.91	1,311.76	-20.92	15.64	13,158.874714	28,429.353703	40.190126	-104.682337
1,405.00	8.72	144.95	1,402.74	-32.22	23.29	13,147.646924	28,437.105008	40.190095	-104.682310
1,496.00	10.30	137.76	1,492.49	-43.89	32.72	13,136.063608	28,446.643232	40.190063	-104.682276
1,588.00	10.53	137.98	1,582.98	-56.23	43.88	13,123.833019	28,457.912345	40.190030	-104.682236
1,680.00	11.00	125.52	1,673.37	-67.58	56.65	13,112.605388	28,470.788812	40.189998	-104.682190
1,772.00	9.80	115.66	1,763.86	-76.07	70.85	13,104.246155	28,485.068904	40.189975	-104.682139
1,863.00	9.99	107.01	1,853.51	-81.73	85.38	13,098.717601	28,499.649343	40.189960	-104.682087
1,956.00	9.52	105.17	1,945.17	-86.10	100.52	13,094.485150	28,514.824979	40.189948	-104.682033
2,042.00	10.30	103.31	2,029.89	-89.73	114.86	13,090.986564	28,529.203496	40.189938	-104.681982
2,128.00	9.54	101.58	2,114.60	-92.93	129.33	13,087.919517	28,543.695585	40.189929	-104.681930
2,213.00	9.99	97.37	2,198.37	-95.29	143.54	13,085.691022	28,557.928632	40.189922	-104.681879
2,299.00	9.79	95.96	2,283.09	-97.01	158.21	13,084.110347	28,572.613187	40.189918	-104.681827
2,385.00	10.33	99.41	2,367.77	-99.03	173.09	13,082.227797	28,587.509771	40.189912	-104.681773
2,471.00	9.18	97.94	2,452.52	-101.24	187.49	13,080.152388	28,601.930609	40.189906	-104.681722
2,557.00	9.54	105.33	2,537.38	-104.07	201.16	13,077.446777	28,615.623489	40.189898	-104.681673
2,643.00	9.83	99.43	2,622.16	-107.16	215.27	13,074.490167	28,629.766202	40.189890	-104.681622
2,728.00	10.28	97.22	2,705.85	-109.30	229.96	13,072.483667	28,644.466971	40.189884	-104.681570
2,814.00	11.20	95.05	2,790.35	-111.00	245.89	13,070.931044	28,660.414231	40.189879	-104.681513
2,900.00	11.08	94.80	2,874.73	-112.42	262.44	13,069.657110	28,676.980372	40.189875	-104.681454
2,986.00	10.21	94.08	2,959.24	-113.66	278.28	13,068.569420	28,692.828158	40.189872	-104.681397
3,071.00	11.27	96.33	3,042.76	-115.11	294.05	13,067.263132	28,708.610281	40.189868	-104.681341
3,157.00	10.19	95.89	3,127.25	-116.82	309.97	13,065.702819	28,724.544609	40.189863	-104.681284
3,243.00	10.74	95.22	3,211.82	-118.33	325.52	13,064.336589	28,740.104354	40.189859	-104.681228
3,329.00	9.46	108.05	3,296.50	-121.25	340.22	13,061.553031	28,754.832055	40.189851	-104.681175
3,414.00	8.74	107.08	3,380.43	-125.31	353.04	13,057.610377	28,767.683163	40.189840	-104.681129
3,500.00	6.64	105.52	3,465.65	-128.56	364.07	13,054.462593	28,778.749967	40.189831	-104.681090
3,586.00	7.16	104.48	3,551.02	-131.23	374.05	13,051.884291	28,788.753930	40.189824	-104.681054
3,672.00	7.83	113.65	3,636.29	-134.92	384.61	13,048.291683	28,799.342929	40.189814	-104.681016
3,757.00	8.38	112.73	3,720.44	-139.63	395.63	13,043.677746	28,810.402050	40.189801	-104.680977
3,843.00	9.09	98.99	3,805.45	-143.12	408.12	13,040.309843	28,822.924590	40.189791	-104.680932
3,929.00	10.47	99.38	3,890.20	-145.45	422.54	13,038.107794	28,837.365034	40.189785	-104.680881
4,014.00	10.73	98.20	3,973.75	-147.84	437.99	13,035.863144	28,852.837436	40.189778	-104.680825
4,100.00	10.12	98.72	4,058.33	-150.13	453.38	13,033.717908	28,868.249513	40.189772	-104.680770
4,186.00	11.08	101.26	4,142.86	-152.89	468.96	13,031.102595	28,883.846937	40.189764	-104.680714
4,272.00	9.24	102.47	4,227.51	-155.99	483.80	13,028.135012	28,898.721879	40.189756	-104.680661
4,357.00	9.78	106.20	4,311.34	-159.48	497.40	13,024.772939	28,912.348992	40.189746	-104.680613
4,443.00	10.62	108.73	4,395.98	-164.06	511.92	13,020.324599	28,926.909523	40.189734	-104.680561
4,529.00	9.11	109.37	4,480.71	-168.86	525.85	13,015.650409	28,940.881259	40.189720	-104.680511

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Wardell 26N-29HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Site:	Sec. 29 T3N-R65W	MD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Well:	Wardell 26N-29HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,615.00	10.29	114.17	4,565.48	-174.27	539.28	13,010.371367	28,954.361212	40.189706	-104.680463
4,700.00	9.85	114.59	4,649.17	-180.40	552.82	13,004.362849	28,967.954021	40.189689	-104.680414
4,786.00	11.74	110.52	4,733.65	-186.53	567.70	12,998.372059	28,982.893792	40.189672	-104.680361
4,872.00	9.29	112.91	4,818.20	-192.30	582.29	12,992.737009	28,997.536139	40.189656	-104.680309
4,958.00	10.43	114.18	4,902.92	-198.19	595.79	12,986.970942	29,011.085238	40.189640	-104.680261
5,043.00	8.97	112.01	4,986.71	-203.83	608.95	12,981.457585	29,024.299273	40.189624	-104.680213
5,129.00	10.08	109.93	5,071.52	-208.90	622.24	12,976.502375	29,037.636489	40.189610	-104.680166
5,215.00	11.33	104.86	5,156.02	-213.64	637.48	12,971.911111	29,052.920255	40.189597	-104.680111
5,301.00	9.60	101.72	5,240.59	-217.26	652.67	12,968.427998	29,068.140431	40.189587	-104.680057
5,387.00	10.10	105.20	5,325.32	-220.69	666.97	12,965.126311	29,082.469612	40.189578	-104.680006
5,472.00	11.55	105.85	5,408.81	-224.97	682.35	12,960.990011	29,097.886875	40.189566	-104.679951
5,558.00	9.77	103.51	5,493.32	-229.03	697.73	12,957.075700	29,113.301440	40.189555	-104.679896
5,644.00	10.41	98.99	5,577.99	-231.95	712.50	12,954.293285	29,128.096653	40.189547	-104.679843
5,730.00	10.44	103.33	5,662.57	-234.96	727.75	12,951.423562	29,143.379532	40.189539	-104.679788
5,815.00	10.77	103.35	5,746.12	-238.57	742.97	12,947.954837	29,158.632556	40.189529	-104.679734
5,901.00	10.93	105.01	5,830.59	-242.54	758.67	12,944.132931	29,174.361021	40.189518	-104.679678
5,987.00	11.11	107.96	5,915.00	-247.20	774.43	12,939.612030	29,190.159932	40.189505	-104.679621
6,072.00	8.90	108.45	5,998.70	-251.81	788.45	12,935.135056	29,204.230587	40.189493	-104.679571
6,158.00	9.82	101.89	6,083.56	-255.42	801.94	12,931.643151	29,217.750520	40.189483	-104.679523
6,244.00	10.02	104.98	6,168.27	-258.87	816.35	12,928.331338	29,232.185023	40.189473	-104.679471
6,330.00	10.47	98.21	6,252.91	-261.92	831.31	12,925.419692	29,247.173798	40.189465	-104.679418
6,377.00	9.65	97.98	6,299.18	-263.08	839.44	12,924.338003	29,255.311719	40.189462	-104.679388
6,415.00	10.47	85.40	6,336.60	-263.24	846.03	12,924.233556	29,261.909281	40.189461	-104.679365
6,458.00	12.96	69.13	6,378.71	-261.21	854.44	12,926.342839	29,270.293318	40.189467	-104.679335
6,501.00	14.70	59.89	6,420.47	-256.75	863.66	12,930.883153	29,279.478378	40.189479	-104.679302
6,544.00	16.66	54.82	6,461.87	-250.46	873.42	12,937.261767	29,289.178606	40.189496	-104.679267
6,587.00	18.76	46.18	6,502.84	-242.12	883.45	12,945.694783	29,299.130680	40.189519	-104.679231
6,629.00	20.94	43.04	6,542.34	-231.96	893.45	12,955.949208	29,309.032900	40.189547	-104.679195
6,673.00	23.25	40.52	6,583.11	-219.61	904.46	12,968.399881	29,319.928469	40.189581	-104.679156
6,715.00	26.92	41.38	6,621.14	-206.17	916.13	12,981.946615	29,331.478512	40.189618	-104.679114
6,758.00	30.57	38.58	6,658.84	-190.31	929.39	12,997.925527	29,344.589907	40.189661	-104.679066
6,799.00	33.05	33.36	6,693.68	-172.82	942.05	13,015.535258	29,357.081641	40.189709	-104.679021
6,844.00	37.16	27.60	6,730.50	-150.51	955.10	13,037.962830	29,369.928415	40.189771	-104.678974
6,887.00	41.69	23.19	6,763.71	-125.84	966.76	13,062.739302	29,381.356075	40.189838	-104.678933
6,930.00	45.88	19.52	6,794.76	-98.13	977.55	13,090.545036	29,391.894421	40.189914	-104.678894
6,973.00	48.14	12.92	6,824.09	-67.95	986.30	13,120.799556	29,400.359266	40.189997	-104.678863
7,016.00	50.95	9.32	6,851.99	-35.86	992.58	13,152.951072	29,406.349580	40.190085	-104.678840
7,059.00	53.95	5.50	6,878.20	-2.06	996.95	13,186.783308	29,410.409737	40.190178	-104.678825
7,101.00	55.38	4.29	6,902.49	32.08	999.87	13,220.943636	29,413.015060	40.190272	-104.678814
7,143.00	58.35	3.28	6,925.45	67.16	1,002.19	13,256.051151	29,415.007485	40.190368	-104.678806
7,187.00	61.91	3.57	6,947.36	105.24	1,004.47	13,294.149434	29,416.936997	40.190473	-104.678798
7,232.00	66.01	4.51	6,967.11	145.57	1,007.32	13,334.494154	29,419.418677	40.190583	-104.678787
7,273.00	69.42	2.66	6,982.66	183.42	1,009.69	13,372.368923	29,421.433726	40.190687	-104.678779
7,312.00	72.25	3.65	6,995.46	220.20	1,011.72	13,409.162734	29,423.124450	40.190788	-104.678772
7,358.00	75.36	3.71	7,008.29	264.28	1,014.55	13,453.263242	29,425.552956	40.190909	-104.678762
7,401.00	79.08	4.27	7,017.80	306.10	1,017.47	13,495.112063	29,428.085986	40.191024	-104.678751
7,444.00	82.87	3.32	7,024.54	348.47	1,020.28	13,537.500777	29,430.503546	40.191140	-104.678741
7,479.00	87.16	3.20	7,027.58	383.27	1,022.26	13,572.319148	29,432.164737	40.191236	-104.678734
7,519.00	91.60	2.18	7,028.01	423.22	1,024.14	13,612.276140	29,433.672086	40.191346	-104.678727
7" Casing Point									
7,524.00	92.16	2.05	7,027.85	428.21	1,024.32	13,617.271295	29,433.810361	40.191359	-104.678727
7,610.00	92.41	1.76	7,024.42	514.10	1,027.18	13,703.174288	29,435.874875	40.191595	-104.678716
7,696.00	90.31	0.60	7,022.38	600.05	1,028.95	13,789.134561	29,436.852303	40.191831	-104.678710
7,781.00	90.00	0.18	7,022.15	685.04	1,029.53	13,874.130088	29,436.647163	40.192064	-104.678708
7,867.00	90.25	359.82	7,021.96	771.04	1,029.53	13,960.122355	29,435.854269	40.192300	-104.678708

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Wardell 26N-29HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Site:	Sec. 29 T3N-R65W	MD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Well:	Wardell 26N-29HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,953.00	89.32	357.99	7,022.29	857.02	1,027.89	14,046.078978	29,433.418367	40.192536	-104.678714
8,039.00	89.13	357.96	7,023.45	942.96	1,024.85	14,131.982040	29,429.587717	40.192772	-104.678725
8,124.00	89.51	356.97	7,024.46	1,027.87	1,021.09	14,216.849779	29,425.045959	40.193005	-104.678738
8,210.00	89.38	357.29	7,025.29	1,113.76	1,016.78	14,302.690743	29,419.948644	40.193241	-104.678753
8,296.00	90.06	357.23	7,025.71	1,199.66	1,012.67	14,388.545676	29,415.045961	40.193477	-104.678768
8,381.00	89.38	357.35	7,026.13	1,284.56	1,008.65	14,473.404809	29,410.244717	40.193710	-104.678783
8,467.00	89.32	357.74	7,027.10	1,370.48	1,004.97	14,559.278904	29,405.769368	40.193946	-104.678796
8,553.00	89.32	356.91	7,028.12	1,456.38	1,000.96	14,645.134079	29,400.964383	40.194182	-104.678810
8,639.00	89.94	356.00	7,028.68	1,542.21	995.64	14,730.910079	29,394.856060	40.194417	-104.678829
8,724.00	89.88	355.58	7,028.81	1,626.98	989.40	14,815.615678	29,387.835009	40.194650	-104.678851
8,810.00	90.74	355.94	7,028.35	1,712.74	983.04	14,901.312183	29,380.686632	40.194885	-104.678874
8,896.00	90.74	355.07	7,027.24	1,798.47	976.30	14,986.970257	29,373.157445	40.195121	-104.678898
8,981.00	90.74	354.93	7,026.14	1,883.14	968.89	15,071.564221	29,364.969825	40.195353	-104.678925
9,067.00	90.12	354.91	7,025.49	1,968.80	961.28	15,157.146089	29,356.565957	40.195588	-104.678952
9,153.00	90.31	355.21	7,025.17	2,054.48	953.87	15,242.750325	29,348.371030	40.195823	-104.678979
9,239.00	90.43	356.42	7,024.61	2,140.25	947.60	15,328.452457	29,341.305022	40.196059	-104.679001
9,324.00	90.31	357.34	7,024.07	2,225.12	942.97	15,413.273893	29,335.896748	40.196292	-104.679018
9,410.00	89.94	358.74	7,023.88	2,311.06	940.03	15,499.186654	29,332.163326	40.196528	-104.679028
9,496.00	90.56	0.63	7,023.50	2,397.06	939.56	15,585.168540	29,330.897714	40.196764	-104.679030
9,582.00	90.87	0.61	7,022.43	2,483.05	940.49	15,671.157965	29,331.035363	40.197000	-104.679026
9,667.00	90.56	0.35	7,021.37	2,568.04	941.20	15,756.147519	29,330.963735	40.197233	-104.679024
9,753.00	90.43	359.59	7,020.63	2,654.03	941.15	15,842.135915	29,330.125842	40.197469	-104.679024
9,839.00	89.69	359.82	7,020.54	2,740.03	940.71	15,928.122671	29,328.890215	40.197705	-104.679026
9,925.00	90.93	359.87	7,020.07	2,826.03	940.48	16,014.109953	29,327.864719	40.197941	-104.679026
10,010.00	89.94	1.85	7,019.42	2,911.01	941.75	16,099.097171	29,328.356858	40.198175	-104.679022
10,096.00	89.81	1.26	7,019.61	2,996.98	944.09	16,185.079098	29,329.897785	40.198411	-104.679013
10,182.00	88.89	1.89	7,020.59	3,082.94	946.45	16,271.054195	29,331.468566	40.198647	-104.679005
10,268.00	88.95	1.07	7,022.21	3,168.89	948.67	16,357.022655	29,332.896678	40.198882	-104.678997
10,353.00	88.08	0.76	7,024.41	3,253.85	950.03	16,441.987632	29,333.470202	40.199116	-104.678992
10,439.00	87.59	1.37	7,027.66	3,339.78	951.63	16,527.918144	29,334.275103	40.199352	-104.678986
10,525.00	88.09	0.19	7,030.90	3,425.71	952.80	16,613.850754	29,334.652487	40.199587	-104.678982
10,610.00	88.02	0.58	7,033.79	3,510.65	953.37	16,698.797728	29,334.440048	40.199821	-104.678980
10,696.00	88.09	359.81	7,036.71	3,596.60	953.66	16,784.742412	29,333.940099	40.200057	-104.678979
10,782.00	87.84	0.32	7,039.76	3,682.55	953.76	16,870.681350	29,333.245168	40.200292	-104.678979
10,868.00	88.95	0.13	7,042.17	3,768.51	954.09	16,956.641360	29,332.790114	40.200528	-104.678977
10,954.00	89.26	359.62	7,043.51	3,854.50	953.91	17,042.621227	29,331.809718	40.200764	-104.678978
11,039.00	89.32	358.92	7,044.57	3,939.49	952.82	17,127.590053	29,329.943398	40.200998	-104.678982
11,125.00	88.64	359.70	7,046.10	4,025.47	951.79	17,213.552156	29,328.115244	40.201234	-104.678986
11,211.00	88.33	359.57	7,048.37	4,111.43	951.24	17,299.507861	29,326.775030	40.201470	-104.678988
11,296.00	87.65	359.42	7,051.35	4,196.38	950.49	17,384.437608	29,325.243247	40.201703	-104.678990
11,382.00	87.15	359.37	7,055.25	4,282.29	949.58	17,470.328338	29,323.544155	40.201939	-104.678994
11,468.00	86.72	358.43	7,059.85	4,368.15	947.94	17,556.165818	29,321.104233	40.202174	-104.678999
11,523.00	86.29	358.81	7,063.20	4,423.03	946.61	17,611.030511	29,319.276201	40.202325	-104.679004
Final Sperry MWD Survey @ 11523.00ft									
11,566.00	86.29	358.81	7,065.99	4,465.93	945.72	17,653.919275	29,317.989594	40.202443	-104.679007
Straight Line Projection to TD @ 11566.00ft									

Halliburton Company

Survey Report - Geographic

Company:	Anadarko Petroleum Corp.	Local Co-ordinate Reference:	Well Wardell 26N-29HZ
Project:	Weld County, CO (NAD 83)	TVD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Site:	Sec. 29 T3N-R65W	MD Reference:	RKB=16ft @ 4885.00ft (Xtreme 22)
Well:	Wardell 26N-29HZ	North Reference:	True
Wellbore:	Plan A Rev 0	Survey Calculation Method:	Minimum Curvature
Design:	Actual Field Surveys	Database:	EDM 2003.16 Single User Db

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Wardell 26N-29HZ_SI	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	313,179.652638	228,413.521633	40.190184	-104.682393
Wardell 26N-29HZ_SI	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	313,179.652638	228,413.521633	40.190184	-104.682393
- Polygon										
Point 1				0.00	-371.97	1,251.59	1,312,819.25	3,229,668.43		
Point 2				0.00	2,271.85	1,251.45	1,315,462.85	3,229,643.92		
Point 3				0.00	4,928.01	1,252.34	1,318,118.79	3,229,620.32		
Point 4				0.00	4,908.87	-1,383.44	1,318,075.35	3,226,984.94		
Point 5				0.00	4,889.58	-4,019.22	1,318,031.76	3,224,349.56		
Point 6				0.00	2,251.79	-4,010.67	1,315,394.27	3,224,382.43		
Point 7				0.00	-362.38	-4,002.17	1,312,780.40	3,224,415.03		
Point 8				0.00	-367.85	-1,375.55	1,312,799.15	3,227,041.48		
Point 9				0.00	-371.97	1,251.59	1,312,819.25	3,229,668.43		
Wardell 26N-29HZ_BI	- actual wellpath misses target center by 21.35ft at 11565.55ft MD (7065.96 TVD, 4465.48 N, 945.73 E)	0.00	0.00	7,065.00	4,465.99	967.05	317,654.175652	229,339.317798	40.202443	-104.678931
Wardell 26N-29HZ_SI	- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	313,179.652638	228,413.521633	40.190184	-104.682393
- Polygon										
Point 1				0.00	88.77	791.55	1,313,275.71	3,229,204.19		
Point 2				0.00	2,271.92	791.43	1,315,458.68	3,229,183.94		
Point 3				0.00	4,464.64	792.16	1,317,651.22	3,229,164.45		
Point 4				0.00	4,448.86	-1,380.08	1,317,615.41	3,226,992.54		
Point 5				0.00	4,432.92	-3,557.71	1,317,579.39	3,224,815.24		
Point 6				0.00	2,253.28	-3,550.66	1,315,400.00	3,224,842.39		
Point 7				0.00	96.68	-3,543.64	1,313,243.65	3,224,869.29		
Point 8				0.00	92.17	-1,374.71	1,313,259.14	3,227,038.08		
Point 9				0.00	88.77	791.55	1,313,275.71	3,229,204.19		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,519.00	7,028.01	7" Casing Point	7	8-3/4

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
116.00	116.00	-0.12	0.31	First Gyro Survey @ 116.00ft
884.00	884.00	-0.47	0.19	Final Gyro Survey @ 884.00ft
884.00	884.00	-0.47	0.19	Tie-On to Surface Gyros @ 884.00ft
950.00	950.00	-0.57	0.08	First Sperry MWD Survey @ 950.00ft
11,523.00	7,063.20	4,423.03	946.61	Final Sperry MWD Survey @ 11523.00ft
11,566.00	7,065.99	4,465.93	945.72	Straight Line Projection to TD @ 11566.00ft

Checked By: _____ Approved By: _____ Date: _____

Section 2

Contents: Proposal Data

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 29 T3N-R65W

Wardell 26N-29HZ

Plan A Rev 0

Plan: Plan A Rev 0 Proposal

Sperry Drilling Services

Proposal Report

24 July, 2012

Well Coordinates: 1,313,179.65 N, 3,228,413.52 E (40° 11' 24.66" N, 104° 40' 56.61" W)

Ground Level: 4,869.00 ft

Local Coordinate Origin:

Centered on Well Wardell 26N-29HZ

Viewing Datum:

RKB=16ft @ 4885.00ft (Xtreme 22)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 29 T3N-R65W
 Well: Wardell 26N-29HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Proposal

Anadarko Petroleum Corp.

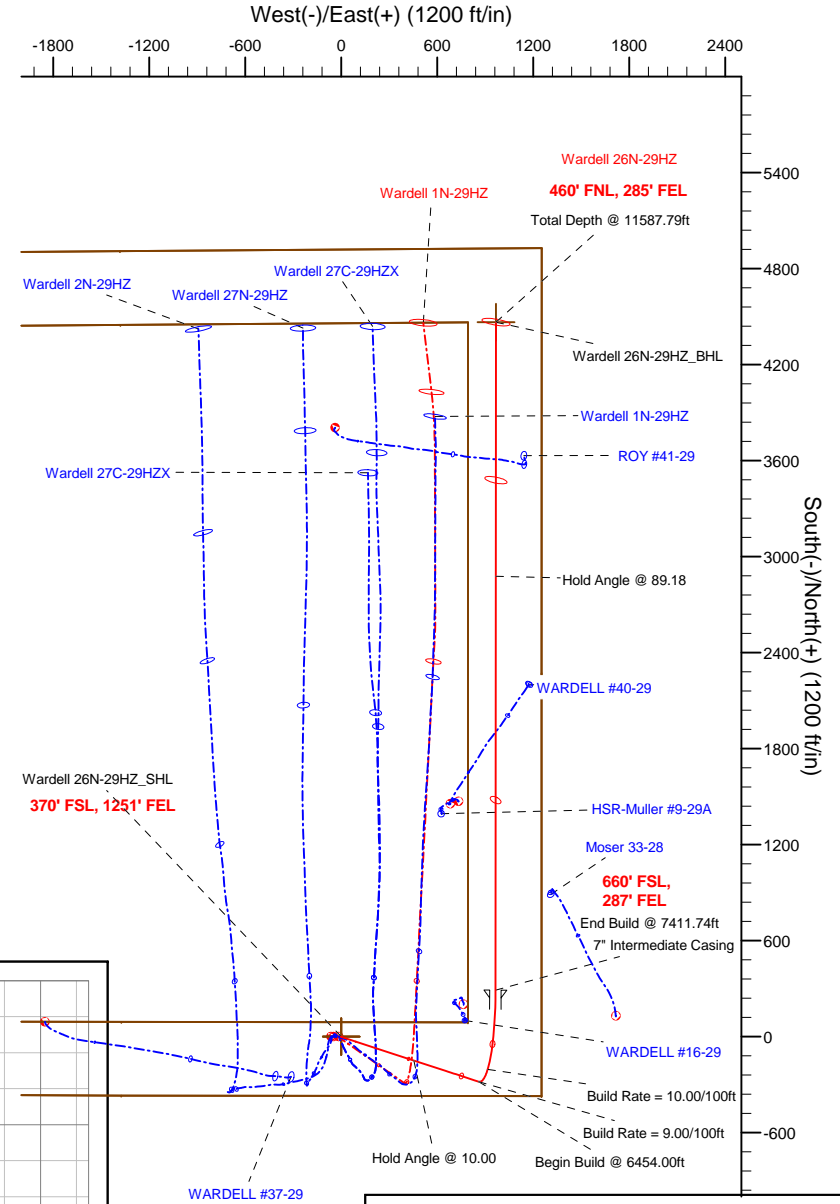
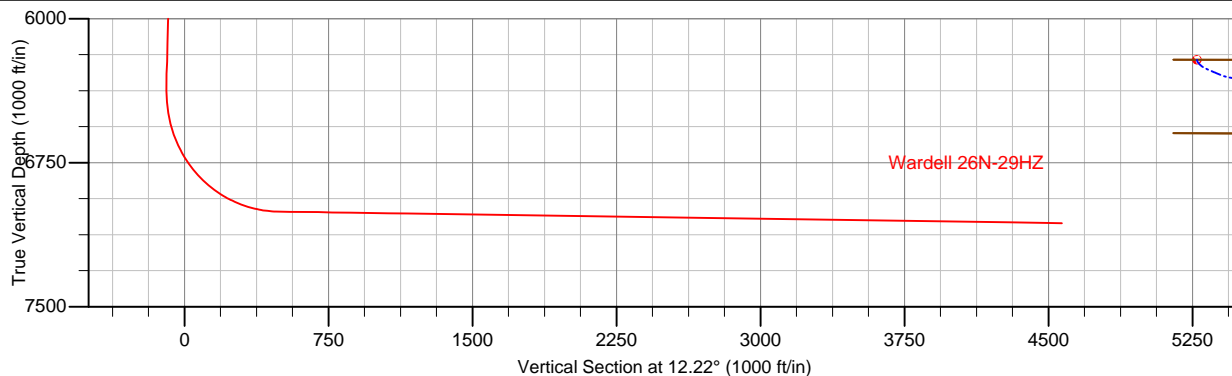
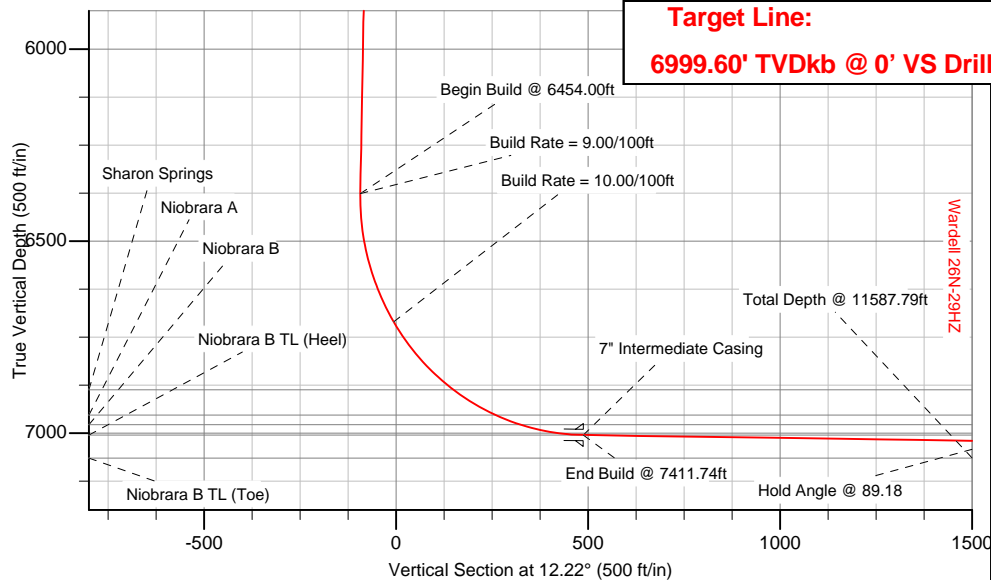
HALLIBURTON
 Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	884.00	0.40	245.94	884.00	-0.47	0.19	0.00	0.00	-0.42	
2	984.00	0.40	245.94	983.99	-0.76	-0.45	0.00	0.00	-0.84	
3	1499.02	10.00	108.00	1496.48	-15.35	40.54	2.00	-139.42	-6.42	
4	6454.00	10.00	108.00	6376.18	-281.23	858.86	0.00	0.00	-93.10	
5	6805.77	30.00	16.89	6710.25	-204.56	914.89	9.00	-107.74	-6.31	
6	7411.74	89.18	0.04	7005.00	290.37	963.78	10.00	-19.43	487.76	
7	11587.79	89.18	0.04	7065.00	4465.99	967.05	0.00	0.00	4569.49	Wardell 26N-29HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Wardell 26N-29HZ_Section Lines	0.00	0.00	0.00	40.190184	-104.682393	Polygon
Wardell 26N-29HZ_Setback Lines	0.00	0.00	0.00	40.190184	-104.682393	Polygon
Wardell 26N-29HZ_SHL	0.00	0.00	0.00	40.190184	-104.682393	Point
Wardell 26N-29HZ_BHL	7065.00	4465.99	967.05	40.202443	-104.678931	Point



WELL DETAILS: Wardell 26N-29HZ

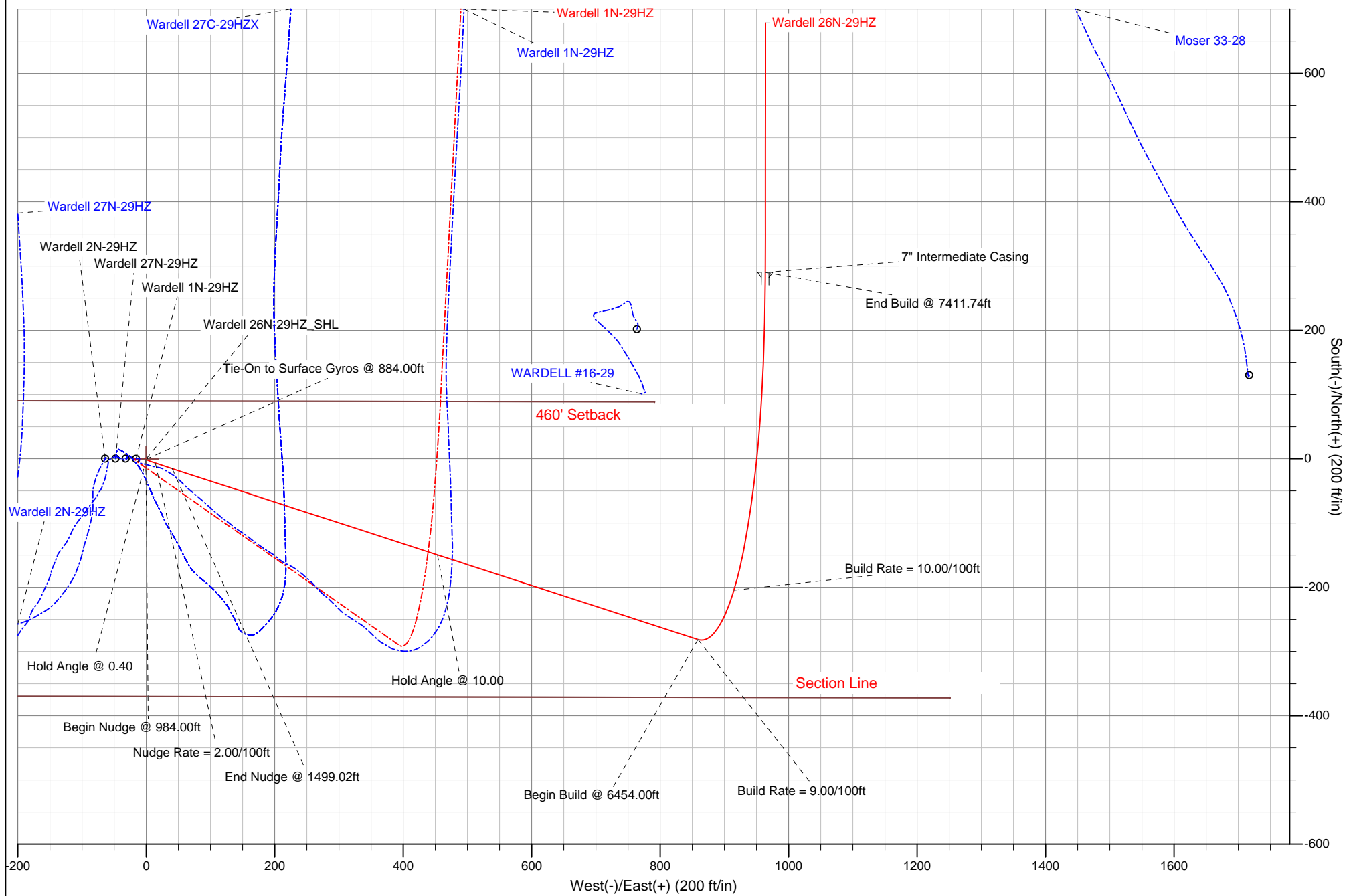
Ground Level: 4869.00 RKB=16ft @ 4885.00ft (Xtreme 22)

Plan: Plan A Rev 0 Proposal (Wardell 26N-29HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 07/23/2012
 Reviewed: _____ Date: _____

Project: Weld County, CO (NAD 83)
Site: Sec. 29 T3N-R65W
Well: Wardell 26N-29HZ
Wellbore: Plan A Rev 0
Design: Plan A Rev 0 Proposal

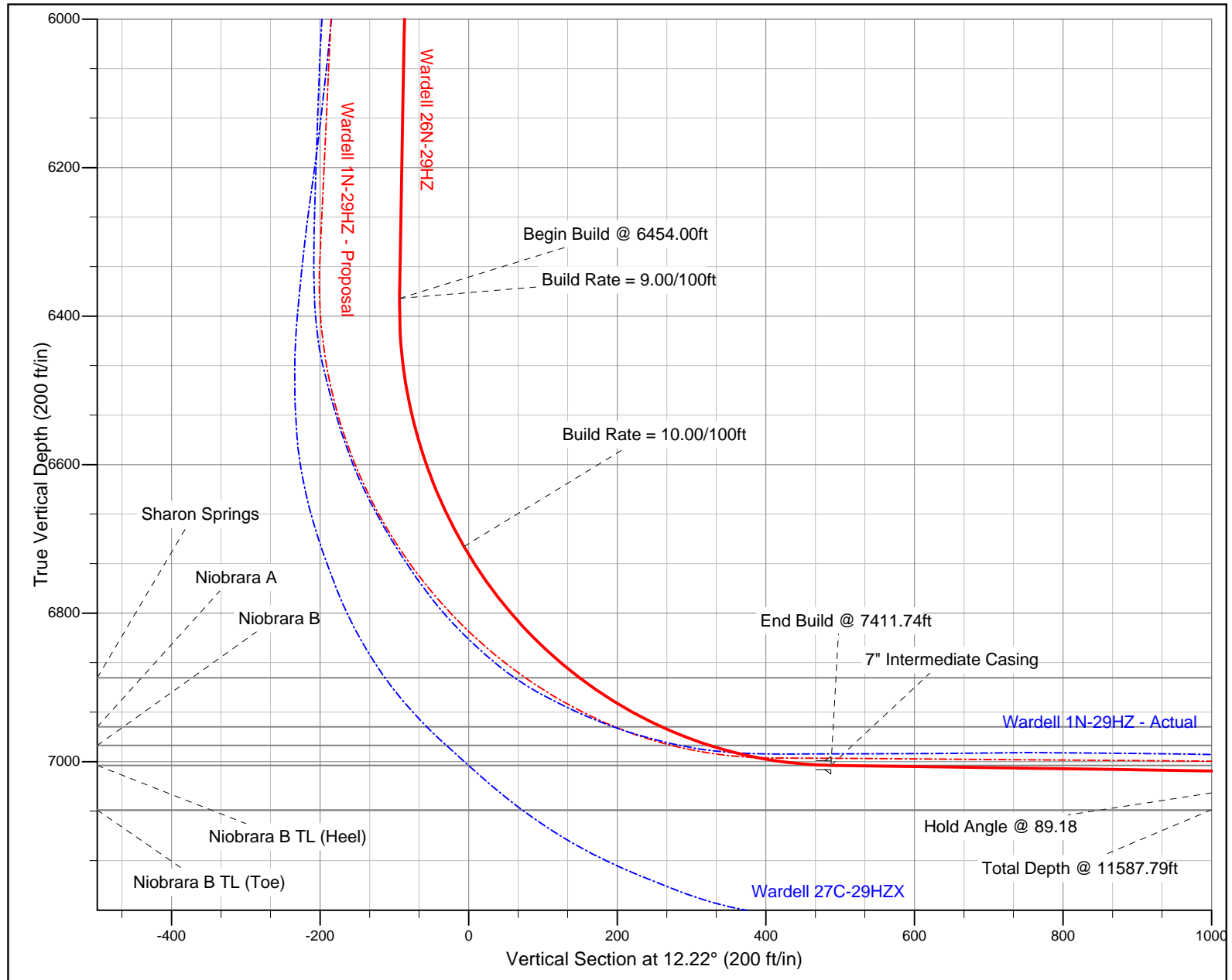
Anadarko Petroleum Corp.

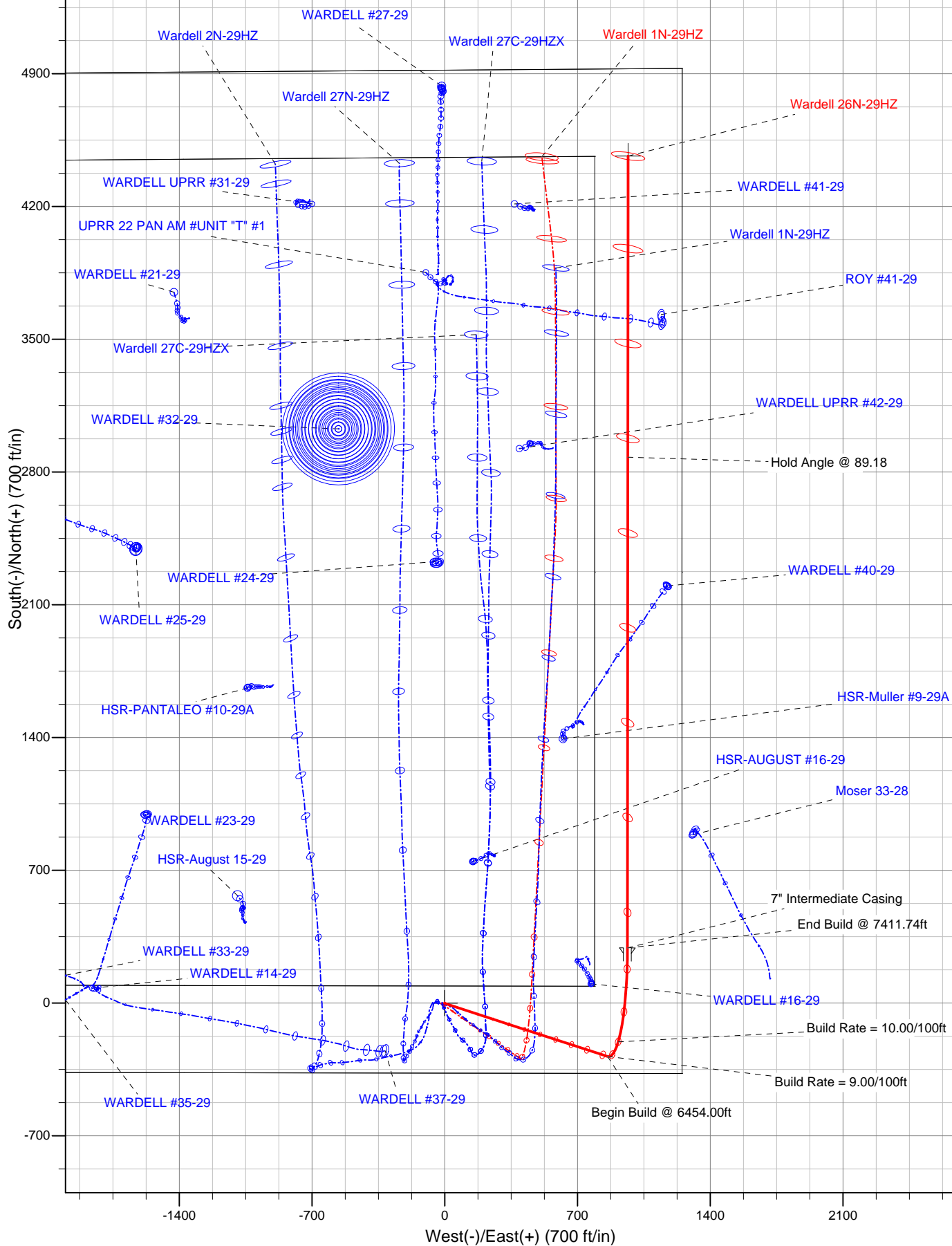


Project: Weld County, CO (NAD 83)
Site: Sec. 29 T3N-R65W
Well: Wardell 26N-29HZ
Wellbore: Plan A Rev 0
Design: Plan A Rev 0 Proposal

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling





Plan Report for Wardell 26N-29HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
884.00	0.40	245.94	884.00	-0.47	0.19	-0.42	0.00	0.00	0.00	0.00
Tie-On to Surface Gyros @ 884.00ft - Wardell 26N-29HZ_SHL - Wardell 26N-29HZ_Section Lines - Wardell 26N-29HZ_Setback Lir										
900.00	0.40	245.94	900.00	-0.52	0.08	-0.49	0.00	0.00	0.00	0.00
Hold Angle @ 0.40										
984.00	0.40	245.94	983.99	-0.76	-0.45	-0.84	0.00	0.00	0.00	0.00
Begin Nudge @ 984.00ft										
1,000.00	0.26	192.96	999.99	-0.82	-0.51	-0.91	2.00	-0.87	-331.14	-139.42
1,100.00	2.03	113.88	1,099.97	-1.76	1.06	-1.49	2.00	1.77	-79.08	-86.43
1,200.00	4.02	110.23	1,199.83	-3.69	5.97	-2.34	2.00	1.99	-3.65	-7.36
1,300.00	6.02	108.99	1,299.44	-6.61	14.23	-3.45	2.00	2.00	-1.23	-3.71
Nudge Rate = 2.00/100ft										
1,400.00	8.02	108.37	1,398.68	-10.51	25.81	-4.81	2.00	2.00	-0.62	-2.48
1,499.02	10.00	108.00	1,496.48	-15.35	40.54	-6.42	2.00	2.00	-0.37	-1.87
End Nudge @ 1499.02ft										
1,500.00	10.00	108.00	1,497.44	-15.40	40.71	-6.44	0.00	0.00	0.00	-1.50
1,600.00	10.00	108.00	1,595.92	-20.77	57.22	-8.19	0.00	0.00	0.00	0.00
1,700.00	10.00	108.00	1,694.40	-26.13	73.74	-9.94	0.00	0.00	0.00	0.00
1,800.00	10.00	108.00	1,792.88	-31.50	90.25	-11.69	0.00	0.00	0.00	0.00
1,900.00	10.00	108.00	1,891.37	-36.87	106.77	-13.44	0.00	0.00	0.00	0.00
2,000.00	10.00	108.00	1,989.85	-42.23	123.28	-15.18	0.00	0.00	0.00	0.00
2,100.00	10.00	108.00	2,088.33	-47.60	139.80	-16.93	0.00	0.00	0.00	0.00
2,200.00	10.00	108.00	2,186.81	-52.96	156.31	-18.68	0.00	0.00	0.00	0.00
2,300.00	10.00	108.00	2,285.29	-58.33	172.83	-20.43	0.00	0.00	0.00	0.00
2,400.00	10.00	108.00	2,383.77	-63.70	189.34	-22.18	0.00	0.00	0.00	0.00
2,500.00	10.00	108.00	2,482.25	-69.06	205.86	-23.93	0.00	0.00	0.00	0.00
2,600.00	10.00	108.00	2,580.73	-74.43	222.37	-25.68	0.00	0.00	0.00	0.00
2,700.00	10.00	108.00	2,679.21	-79.79	238.88	-27.43	0.00	0.00	0.00	0.00
2,800.00	10.00	108.00	2,777.69	-85.16	255.40	-29.18	0.00	0.00	0.00	0.00
2,900.00	10.00	108.00	2,876.17	-90.53	271.91	-30.93	0.00	0.00	0.00	0.00
3,000.00	10.00	108.00	2,974.65	-95.89	288.43	-32.68	0.00	0.00	0.00	0.00
3,100.00	10.00	108.00	3,073.13	-101.26	304.94	-34.43	0.00	0.00	0.00	0.00
3,200.00	10.00	108.00	3,171.62	-106.62	321.46	-36.18	0.00	0.00	0.00	0.00
3,300.00	10.00	108.00	3,270.10	-111.99	337.97	-37.93	0.00	0.00	0.00	0.00
3,400.00	10.00	108.00	3,368.58	-117.36	354.49	-39.68	0.00	0.00	0.00	0.00
3,500.00	10.00	108.00	3,467.06	-122.72	371.00	-41.43	0.00	0.00	0.00	0.00
3,600.00	10.00	108.00	3,565.54	-128.09	387.52	-43.17	0.00	0.00	0.00	0.00
3,700.00	10.00	108.00	3,664.02	-133.45	404.03	-44.92	0.00	0.00	0.00	0.00
3,800.00	10.00	108.00	3,762.50	-138.82	420.55	-46.67	0.00	0.00	0.00	0.00
3,900.00	10.00	108.00	3,860.98	-144.19	437.06	-48.42	0.00	0.00	0.00	0.00
4,000.00	10.00	108.00	3,959.46	-149.55	453.58	-50.17	0.00	0.00	0.00	0.00
Hold Angle @ 10.00										
4,029.99	10.00	108.00	3,989.00	-151.16	458.53	-50.70	0.00	0.00	0.00	0.00
Parkman										
4,100.00	10.00	108.00	4,057.94	-154.92	470.09	-51.92	0.00	0.00	0.00	0.00
4,200.00	10.00	108.00	4,156.42	-160.28	486.61	-53.67	0.00	0.00	0.00	0.00
4,300.00	10.00	108.00	4,254.90	-165.65	503.12	-55.42	0.00	0.00	0.00	0.00
4,400.00	10.00	108.00	4,353.38	-171.02	519.64	-57.17	0.00	0.00	0.00	0.00
4,500.00	10.00	108.00	4,451.87	-176.38	536.15	-58.92	0.00	0.00	0.00	0.00
4,600.00	10.00	108.00	4,550.35	-181.75	552.67	-60.67	0.00	0.00	0.00	0.00
4,621.99	10.00	108.00	4,572.00	-182.93	556.30	-61.05	0.00	0.00	0.00	0.00
Sussex										
4,700.00	10.00	108.00	4,648.83	-187.11	569.18	-62.42	0.00	0.00	0.00	0.00
4,800.00	10.00	108.00	4,747.31	-192.48	585.70	-64.17	0.00	0.00	0.00	0.00
4,900.00	10.00	108.00	4,845.79	-197.85	602.21	-65.92	0.00	0.00	0.00	0.00
5,000.00	10.00	108.00	4,944.27	-203.21	618.73	-67.67	0.00	0.00	0.00	0.00
5,100.00	10.00	108.00	5,042.75	-208.58	635.24	-69.42	0.00	0.00	0.00	0.00
5,200.00	10.00	108.00	5,141.23	-213.94	651.76	-71.16	0.00	0.00	0.00	0.00
5,300.00	10.00	108.00	5,239.71	-219.31	668.27	-72.91	0.00	0.00	0.00	0.00

Plan Report for Wardell 26N-29HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
5,400.00	10.00	108.00	5,338.19	-224.68	684.79	-74.66	0.00	0.00	0.00	0.00
5,500.00	10.00	108.00	5,436.67	-230.04	701.30	-76.41	0.00	0.00	0.00	0.00
5,600.00	10.00	108.00	5,535.15	-235.41	717.82	-78.16	0.00	0.00	0.00	0.00
5,700.00	10.00	108.00	5,633.63	-240.77	734.33	-79.91	0.00	0.00	0.00	0.00
5,800.00	10.00	108.00	5,732.12	-246.14	750.85	-81.66	0.00	0.00	0.00	0.00
5,900.00	10.00	108.00	5,830.60	-251.51	767.36	-83.41	0.00	0.00	0.00	0.00
6,000.00	10.00	108.00	5,929.08	-256.87	783.88	-85.16	0.00	0.00	0.00	0.00
6,100.00	10.00	108.00	6,027.56	-262.24	800.39	-86.91	0.00	0.00	0.00	0.00
6,200.00	10.00	108.00	6,126.04	-267.60	816.91	-88.66	0.00	0.00	0.00	0.00
6,300.00	10.00	108.00	6,224.52	-272.97	833.42	-90.41	0.00	0.00	0.00	0.00
6,400.00	10.00	108.00	6,323.00	-278.34	849.94	-92.16	0.00	0.00	0.00	0.00
6,454.00	10.00	108.00	6,376.18	-281.23	858.86	-93.10	0.00	0.00	0.00	0.00
Begin Build @ 6454.00ft - Build Rate = 9.00/100ft										
6,500.00	9.58	83.59	6,421.53	-282.04	866.46	-92.28	9.00	-0.92	-53.06	-107.74
6,600.00	13.82	42.98	6,519.59	-272.36	882.91	-79.33	9.00	4.24	-40.61	-83.68
6,700.00	21.23	25.58	6,614.94	-247.24	898.90	-51.40	9.00	7.41	-17.40	-43.82
6,800.00	29.51	17.24	6,705.25	-207.30	914.05	-9.16	9.00	8.28	-8.34	-27.18
6,805.77	30.00	16.89	6,710.26	-204.56	914.89	-6.31	9.00	8.48	-6.04	-19.62
Build Rate = 10.00/100ft										
6,900.00	39.00	11.93	6,787.85	-152.89	927.89	46.94	10.00	9.55	-5.27	-19.43
7,000.00	48.71	8.42	6,859.89	-84.77	939.92	116.07	10.00	9.70	-3.50	-15.32
7,042.91	52.90	7.23	6,887.00	-51.84	944.44	149.21	10.00	9.77	-2.77	-12.79
Sharon Springs										
7,100.00	58.49	5.84	6,919.17	-5.00	949.79	196.12	10.00	9.79	-2.44	-12.04
7,172.19	65.58	4.30	6,953.00	58.46	955.39	259.33	10.00	9.82	-2.14	-11.25
Niobrara A										
7,200.00	68.31	3.75	6,963.89	83.99	957.19	284.66	10.00	9.84	-1.96	-10.52
7,242.03	72.45	2.96	6,978.00	123.50	959.50	323.77	10.00	9.84	-1.88	-10.31
Niobrara B										
7,300.00	78.16	1.93	6,992.70	179.50	961.89	379.00	10.00	9.85	-1.78	-10.04
7,400.00	88.02	0.24	7,004.72	278.63	963.75	476.28	10.00	9.86	-1.69	-9.78
7,411.42	89.15	0.05	7,005.00	290.05	963.78	487.45	10.00	9.86	-1.66	-9.58
Niobrara B TL (Heel)										
7,411.74	89.18	0.04	7,005.00	290.37	963.78	487.76	10.00	9.86	-1.66	-9.57
End Build @ 7411.74ft - 7" Intermediate Casing										
7,500.00	89.18	0.04	7,006.27	378.62	963.85	574.03	0.00	0.00	0.00	-9.57
7,600.00	89.18	0.04	7,007.71	478.61	963.93	671.77	0.00	0.00	0.00	0.00
7,700.00	89.18	0.04	7,009.15	578.60	964.01	769.51	0.00	0.00	0.00	0.00
7,800.00	89.18	0.04	7,010.58	678.59	964.09	867.25	0.00	0.00	0.00	0.00
7,900.00	89.18	0.04	7,012.02	778.58	964.16	964.99	0.00	0.00	0.00	0.00
8,000.00	89.18	0.04	7,013.46	878.57	964.24	1,062.73	0.00	0.00	0.00	0.00
8,100.00	89.18	0.04	7,014.89	978.56	964.32	1,160.47	0.00	0.00	0.00	0.00
8,200.00	89.18	0.04	7,016.33	1,078.55	964.40	1,258.22	0.00	0.00	0.00	0.00
8,300.00	89.18	0.04	7,017.77	1,178.54	964.48	1,355.96	0.00	0.00	0.00	0.00
8,400.00	89.18	0.04	7,019.20	1,278.53	964.56	1,453.70	0.00	0.00	0.00	0.00
8,500.00	89.18	0.04	7,020.64	1,378.52	964.63	1,551.44	0.00	0.00	0.00	0.00
8,600.00	89.18	0.04	7,022.08	1,478.51	964.71	1,649.18	0.00	0.00	0.00	0.00
8,700.00	89.18	0.04	7,023.51	1,578.50	964.79	1,746.92	0.00	0.00	0.00	0.00
8,800.00	89.18	0.04	7,024.95	1,678.48	964.87	1,844.66	0.00	0.00	0.00	0.00
8,900.00	89.18	0.04	7,026.39	1,778.47	964.95	1,942.41	0.00	0.00	0.00	0.00
9,000.00	89.18	0.04	7,027.82	1,878.46	965.03	2,040.15	0.00	0.00	0.00	0.00
9,100.00	89.18	0.04	7,029.26	1,978.45	965.10	2,137.89	0.00	0.00	0.00	0.00
9,200.00	89.18	0.04	7,030.70	2,078.44	965.18	2,235.63	0.00	0.00	0.00	0.00
9,300.00	89.18	0.04	7,032.13	2,178.43	965.26	2,333.37	0.00	0.00	0.00	0.00
9,400.00	89.18	0.04	7,033.57	2,278.42	965.34	2,431.11	0.00	0.00	0.00	0.00
9,500.00	89.18	0.04	7,035.01	2,378.41	965.42	2,528.85	0.00	0.00	0.00	0.00
9,600.00	89.18	0.04	7,036.44	2,478.40	965.50	2,626.60	0.00	0.00	0.00	0.00
9,700.00	89.18	0.04	7,037.88	2,578.39	965.57	2,724.34	0.00	0.00	0.00	0.00

Plan Report for Wardell 26N-29HZ - Plan A Rev 0 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
9,800.00	89.18	0.04	7,039.32	2,678.38	965.65	2,822.08	0.00	0.00	0.00	0.00
9,900.00	89.18	0.04	7,040.75	2,778.37	965.73	2,919.82	0.00	0.00	0.00	0.00
10,000.00	89.18	0.04	7,042.19	2,878.36	965.81	3,017.56	0.00	0.00	0.00	0.00
Hold Angle @ 89.18										
10,100.00	89.18	0.04	7,043.63	2,978.35	965.89	3,115.30	0.00	0.00	0.00	0.00
10,200.00	89.18	0.04	7,045.06	3,078.34	965.97	3,213.04	0.00	0.00	0.00	0.00
10,300.00	89.18	0.04	7,046.50	3,178.33	966.04	3,310.78	0.00	0.00	0.00	0.00
10,400.00	89.18	0.04	7,047.94	3,278.32	966.12	3,408.53	0.00	0.00	0.00	0.00
10,500.00	89.18	0.04	7,049.37	3,378.31	966.20	3,506.27	0.00	0.00	0.00	0.00
10,600.00	89.18	0.04	7,050.81	3,478.30	966.28	3,604.01	0.00	0.00	0.00	0.00
10,700.00	89.18	0.04	7,052.25	3,578.29	966.36	3,701.75	0.00	0.00	0.00	0.00
10,800.00	89.18	0.04	7,053.68	3,678.28	966.44	3,799.49	0.00	0.00	0.00	0.00
10,900.00	89.18	0.04	7,055.12	3,778.27	966.51	3,897.23	0.00	0.00	0.00	0.00
11,000.00	89.18	0.04	7,056.56	3,878.26	966.59	3,994.97	0.00	0.00	0.00	0.00
11,100.00	89.18	0.04	7,057.99	3,978.25	966.67	4,092.72	0.00	0.00	0.00	0.00
11,200.00	89.18	0.04	7,059.43	4,078.24	966.75	4,190.46	0.00	0.00	0.00	0.00
11,300.00	89.18	0.04	7,060.87	4,178.23	966.83	4,288.20	0.00	0.00	0.00	0.00
11,400.00	89.18	0.04	7,062.30	4,278.22	966.91	4,385.94	0.00	0.00	0.00	0.00
11,500.00	89.18	0.04	7,063.74	4,378.21	966.99	4,483.68	0.00	0.00	0.00	0.00
11,587.79	89.18	0.04	7,065.00	4,465.99	967.05	4,569.49	0.00	0.00	0.00	0.00
Total Depth @ 11587.79ft - Wardell 26N-29HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
884.00	884.00	-0.47	0.19	Tie-On to Surface Gyros @ 884.00ft
900.00	900.00	-0.52	0.08	Hold Angle @ 0.40
984.00	983.99	-0.76	-0.45	Begin Nudge @ 984.00ft
1,300.00	1,299.44	-6.61	14.23	Nudge Rate = 2.00/100ft
1,499.02	1,496.48	-15.35	40.54	End Nudge @ 1499.02ft
4,000.00	3,959.46	-149.55	453.58	Hold Angle @ 10.00
6,454.00	6,376.18	-281.23	858.86	Begin Build @ 6454.00ft
6,454.00	6,376.18	-281.23	858.86	Build Rate = 9.00/100ft
6,805.77	6,710.26	-204.56	914.89	Build Rate = 10.00/100ft
7,411.74	7,005.00	290.37	963.78	End Build @ 7411.74ft
10,000.00	7,042.19	2,878.36	965.81	Hold Angle @ 89.18
11,587.79	7,065.00	4,465.99	967.05	Total Depth @ 11587.79ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
Target	Wardell 26N-29HZ_BHL	12.22	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
116.00	884.00	Surface Gyros	NS-GYRO-MS
884.00	11,587.76	Plan A Rev 0 Proposal	MWD

Plan Report for Wardell 26N-29HZ - Plan A Rev 0 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,411.74	7,005.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,029.99	3,989.00	Parkman		0.00	
4,621.99	4,572.00	Sussex		0.00	
7,042.91	6,887.00	Sharon Springs		0.00	
7,172.19	6,953.00	Niobrara A		0.00	
7,242.03	6,978.00	Niobrara B		0.00	
7,411.42	7,005.00	Niobrara B TL (Heel)		0.00	
11,587.79	7,065.00	Niobrara B TL (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Wardell 26N-29HZ_SHL	0.00	0.00	0.00	Point
Wardell 26N-29HZ_Section Lines	0.00	0.00	0.00	Polygon
Wardell 26N-29HZ_BHL	7,065.00	4,465.99	967.05	Point
Wardell 26N-29HZ_Setback Lines	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 29 T3N-R65W - Wardell 26N-29HZ - Plan A Rev 0

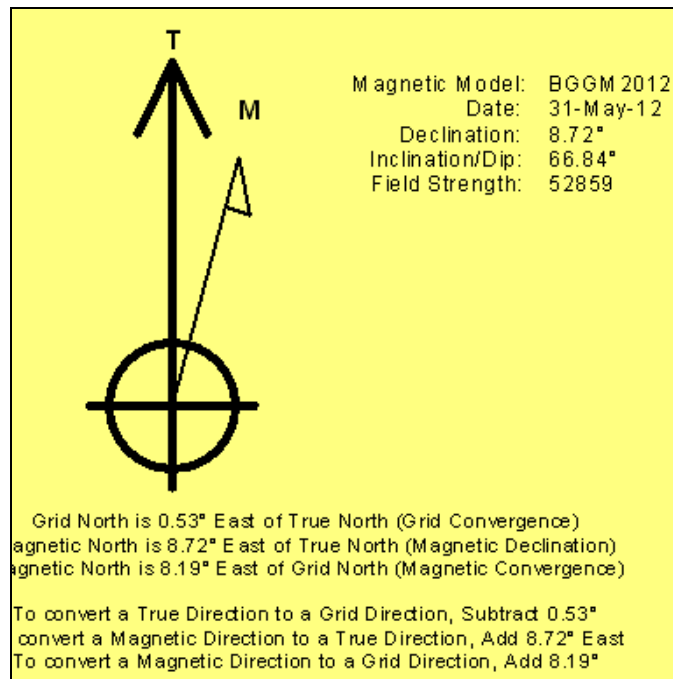
All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to RKB=16ft @ 4885.00ft (Xtreme 22). Northing and Easting are relative to Wardell 26N-29HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995740

Grid Coordinates of Well: 1,313,179.652638 ft N, 3,228,413.521633 ft E
Geographical Coordinates of Well: 40° 11' 24.66" N, 104° 40' 56.61" W
Grid Convergence at Surface is: 0.53°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,587.79ft
the Bottom Hole Displacement is 4,569.49ft in the Direction of 12.22° (True).

Magnetic Convergence at surface is: -8.19° (31 May 2012, , BGGM2012)



Section 3

Contents: BHA Reports, BHA Schematics, Motor Performance Reports, &
Survey & Drilling Parameters.

WELL INFORMATION

BHA Report

IADC Rig BHA#

Run# 0100

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

Date In : 07/27/2012 MD In (ft) : 930 TVD In (ft) : 930 Date Out : 07/31/2012 MD Out (ft) : 7530 TVD Out (ft) : 7028

BIT DATA

Bit Number	: 1	Nozzles	: 5x18
Bit Size (in)	: 8.750	TFA (in2)	: 1.2425
Manufacturer	: Baker	Dull Grade In	: NEW
Model	: DP505F	Dull Grade Out	: 1-1-WC-A--O-NA-BHA
Serial Number	: 7032305		

MOTOR DATA

Motor Number	: 1	Bend (deg)	: 1.83
OD (in)	: 6.750	Nozzles (32nd)	: 0.0
Manufacturer	: Sperry Drilling	Avg Diff Press	: 347.04
Model	: SperryDrill	Cumul Cir Hrs	: 69.72
Serial Number	: 675-1226		

COMPONENT DATA

Item #	Description	Serial Number	OD (in)	ID (in)	Gauge (in)	Weight (lbpf)	Top Connection	Length (ft)	Bit - Center Blade (ft)
1	PDC	7032305	6.500	1.500	8.750	107.07	P 4-1/2" REG	1.00	
2	6 3/4" SperryDrill Lobe 6/7 - 5.0 stg	675-1226	6.750	4.498		87.63	B 4-1/2" IF	27.10	
3	Flex Collar	11011410	6.570	2.875		93.41	B 4-1/2" IF	29.79	
4	Hang-off Sub	11404294	6.850	2.875		103.47	B 4-1/2" IF	6.24	
5	Flex Pony Collar	10941879	6.740	2.875		99.47	B 4-1/2" IF	20.13	
6	Flex Collar	10960565	6.840	2.875		103.10	B 4-1/2" IF	30.83	
7	X-Over Sub	11432719	6.625	3.000		93.39	B NC 38	3.49	
8	4" X 3.34" - 14# 6" X 3" XT-39		4.000	3.340		16.38		514.29	
9	4" X 2-9/16" SWDP #32.7 - NC40(FH)		4.000	2.563		32.70		1377.46	
Total:								2010.33	

PERFORMANCE Section A

Parameter	Min	Max	Avg	Activity	Hours	BHA Weight (klb)	
WOB (klb) :	5	24	13	Drilling :	61.25	in Air (Total) :	11.42
RPM (rpm) :	35	75	73	Reaming :	2.05	in Mud (Total) :	9.69
Flow (gpm) :	585	585	585	Circ-Other :	6.42	in Air (Bel Jars) :	
SPP (psig) :	1500	3150	2626	Total :	69.72	in Mud (Bel Jars) :	

Daily Activity Start and End Depths do not correlate with Drilling Activity. Cannot calculate Orient, Rot values.

BHA WEIGHT CALCULATION MESSAGE

Jar not found. Could not calculate weight below jars.

PERFORMANCE Section B

	In	Out	Distance (ft)	ROP (fph)	Build (°/100')	Turn (°/100')	DLS (°/100')
Inclination (deg)	0.05	92.26			n/a	n/a	9.00
Azimuth (deg)	163.34	359.63			-1.50	2.00	1.69
			6600	108	1.40	0.00	1.40

COMMENTS

OBJECTIVES

Drill vertical and curve section of well

RESULTS

BHA performed as expected although it did tend to drop at a average of 1.5 to 3 degrees per 100' in rotation. In the curve section build were less than expected due to stacking up and falling off of string weight causing us resulting in repeated motor stalls and causing tool face control to suffer. We drilled to a depth of 7530' MD tripped out of hole and L?D the BHA.

RECOMMENDATIONS

OTHER

WELL INFORMATION

BHA Report

IADC Rig BHA#

Run# 0200

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

Date In : 08/01/2012 **MD In (ft)** : 7530 **TVD In (ft)** : 7027 **Date Out** : 08/04/2012 **MD Out (ft)** : 11566 **TVD Out (ft)** : 4868

BIT DATA

Bit Number	: 2	Nozzles	: 5x15,2x10
Bit Size (in)	: 6.125	TFA (in2)	: 1.0163
Manufacturer	: Varel	Dull Grade In	: NEW
Model	: VM513H	Dull Grade Out	:
Serial Number	: 4004451		

MOTOR DATA

Motor Number	: 3	Bend (deg)	: 1.50
OD (in)	: 5.000	Nozzles (32nd)	: 0.0
Manufacturer	: Sperry Drilling	Avg Diff Press	: 445.21
Model	: GeoForce	Cumul Cir Hrs	: 47.38
Serial Number	: 500-224		

COMPONENT DATA

Item #	Description	Serial Number	OD (in)	ID (in)	Gauge (in)	Weight (lbpf)	Top Connection	Length (ft)	Bit - Center Blade (ft)
1	PDC	4004451	4.630	1.500	6.125	51.36	P 3-1/2" REG	1.00	
2	5" GeoForce Lobe 4/5 - 5.4 stg	500-224	5.000	3.120		52.94	B 3-1/2" IF	26.23	
3	Integral Blade	DR9233	4.750	2.250	5.875	46.84	B 3-1/2" IF	5.08	29.63
4	Pony Collar	DR10797	4.460	2.250		39.69	B 3-1/2" IF	10.32	
5	DM Collar	251668	4.680	2.250		45.07	B 3-1/2" IF	9.06	
6	4 3/4" ADR Collar	95325109	4.750	1.250		53.70	B 3-1/2" IF	27.31	
7	Inline Stabilizer (ILS)	1819646	4.760	2.500	5.875	43.92	B 3-1/2" IF	3.58	80.80
8	4 3/4" TM HOC	11293597	4.750	2.812		46.10	B NC 38	11.21	
9	8-Point Duradril Slide Reamer	10355-05	4.820	2.250	6.000	46.84		4.90	
	Stabilizer				6.000				96.28
10	X-Over Sub	118882901	4.750	2.250		46.84	B NC 38	3.92	
11	4" X 3.34" - 14# 6" X 3" NC 46 (IF)		4.000	3.340		16.38		4287.57	
12	4" X 2-9/16" SWDP #32.7 - NC40(FH)		4.000	2.563		32.70		1377.46	
Total:								5767.64	

WELL INFORMATION

BHA Report

IADC Rig BHA#

Run# 0200

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

Date In : 08/01/2012 MD In (ft) : 7530 TVD In (ft) : 7027 Date Out : 08/04/2012 MD Out (ft) : 11566 TVD Out (ft) : 4868

PERFORMANCE Section A

Parameter	Min	Max	Avg	Activity	Hours	BHA Weight (klb)	
WOB (klb) :	5	17	12	Drilling	: 40.13	in Air (Total) :	5.05
RPM (rpm) :	35	75	73	Reaming	: 1.00	in Mud (Total) :	
Flow (gpm) :	290	290	290	Circ-Other	: 6.25	in Air (Bel Jars) :	
SPP (psig) :	2170	3060	2471	Total	: 47.38	in Mud (Bel Jars) :	

BHA WEIGHT CALCULATION MESSAGE

Jar not found. Could not calculate weight below jars. Mud Weight not valid could not calculate BHA weight in mud.

PERFORMANCE Section B

	In	Out	Distance (ft)	ROP (fph)	Build (°/100')	Turn (°/100')	DLS (°/100')
Inclination (deg)	93.41	123.30	Oriented : 278	36	n/a	n/a	0.00
Azimuth (deg)	3.03	2.08	Rotating : 3758	116	0.00	0.00	0.00
			Total : 4036	101	0.74	-0.02	0.74

COMMENTS

BHA performed as expected

OBJECTIVES
RESULTS

BHA performed as expected

RECOMMENDATIONS
OTHER

BHA Schematic

Anadark Petroleum Corp.

Wardell 26N-29HZ

IADC Rig BHA # :

Run # : 100

Drillstring : Drillstring

COMPONENT DATA

OD (in)	Length (ft)	Description
6.500	1.00	PDC (Gauge: 8.750 in)
6.750	27.10	6 3/4" SperryDrill Lobe 6/7 - 5.0 stg
6.570	29.79	Flex Collar
6.850	6.24	Hang-off Sub
6.740	20.13	Flex Pony Collar
6.840	30.83	Flex Collar
6.625	3.49	X-Over Sub
4.000	514.29	4" X 3.34" - 14# 6" X 3" XT-39
4.000	1377.46	4" X 2-9/16" SWDP #32.7 - NC40 (FH)

*Pos: Measured as distance from bottom of the component.

X-Over Sub



Flex Collar

Flex Pony Collar

Hang-off Sub

Flex Collar

6 3/4" SperryDrill Lobe
6/7 - 5.0 stg

PDC



BHA Schematic

Anadark Petroleum Corp.

Wardell 26N-29HZ

IADC Rig BHA # :

Run # : 200

Drillstring : Drillstring

COMPONENT DATA

OD (in)	Length (ft)	Description
4.630	1.00	PDC (Gauge: 6.125 in)
5.000	26.23	5" GeoForce Lobe 4/5 - 5.4 stg
4.750	5.08	Integral Blade (Gauge: 5.875 in, Pos*: 2.40 ft)
4.460	10.32	Pony Collar
4.680	9.06	DM Collar
4.750	27.31	4 3/4" ADR Collar
4.760	3.58	Inline Stabilizer (ILS) (Gauge: 5.875 in, Pos*: 1.80 ft)
4.750	11.21	4 3/4" TM HOC
4.820	4.90	8-Point Duradril Slide Reamer (Gauge: 6.000 in)
		Stabilizer (Gauge: 6.000 in, Pos*: 2.49 ft)
4.750	3.92	X-Over Sub
4.000	4287.57	4" X 3.34" - 14# 6" X 3" NC 46 (IF)
4.000	1377.46	4" X 2-9/16" SWDP #32.7 - NC40 (FH)

*Pos: Measured as distance from bottom of the component.

X-Over Sub

8-Point Duradril Slide Reamer

4 3/4" TM HOC

Inline Stabilizer (ILS)

4 3/4" ADR Collar

DM Collar

Pony Collar

Integral Blade

5" GeoForce Lobe 4/5 - 5.4 stg

PDC



WELL INFORMATION

Motor Performance
Report

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

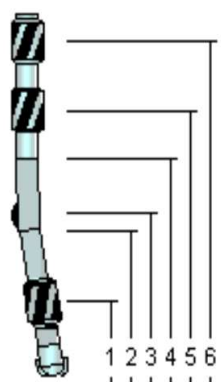
Job Number : CA-XX-0009484812

SUMMARY

BHA Number	:		Depth In/Out (ft)	:	930.00 / 7530.00
Run Number	:	0100	Date In/Out	:	07/27/2012 / 07/31/2012
Bit Number	:	1	Hole Size (in)	:	8.75

MOTOR CONFIGURATION

	DFB (ft)	Component	Yes/No	Type	Value
Upper Stab		Sleeve Stab	No		
Lower Stab	4.10	Bent Housing	Yes	Fixed	1.83° bend
Motor Top		Bent Housing Pad	No		
Pad Bend	28.10	Motor Top	Yes		
		Lower String Stab	No		
Sleeve Tool		Upper String Stab	No		



MOTOR PARAMETERS

Serial Number	:	675-1226	Lobe Config	:	6:7
Motor Run #	:	1	Stat Elastomer	:	Nitrile
OD (in)	:	6.75	ID (in)	:	4.5
			Short Brg Pack	:	Yes
Flex Collar Used	:	No			
Rotor Nozzle (32nd)	:	0.0			
			Arr		Ret
			Pick Up Sub	:	Yes No
			Bit Box Protr	:	Yes No

MOTOR RUN DATA

Directional Driller(s) : Robbie Arnold, Rob Walker
 Application Details :

Max Dogleg While Rotating	(°/100')	: 12.20	RPM	:	75.00	Motor Stalled	:	Yes
Max Dogleg Overpulled In	(°/100')	: 12.20	Force (klb)	:	90.00	Float Valve	:	Yes
Max Dogleg Pushed Through	(°/100')	: 12.20	Force (klb)	:	65.00	DP Filter	:	Yes

Inc Start/End	(deg)	: 0.052 / 92.26	Interval Oriented / Rot.	(ft)	: 1607.00 / 4958.00
Hole Azimuth Start / End	(deg)	: 163.342 / 359.63	Directional Perf Ori / Rot	(°/100')	: 9.00 / 1.69
Jarring Occurred	:				

HOURS

Existing Hrs	: 0.00	Circ Hrs	: 6.42	Total Hrs This Run	: 69.72
Drilling Hrs	: 61.25	Reaming Hrs	: 2.05	New Cumulative Hrs	: 69.72

DRILLING DATA

	Diff Press (psig)	RPM	Rotn Torque (ft-lb)	Drag Up/Down (klb)	WOB (klb)	ROP Oriented (fph)	ROP Rotated (fph)
Avg	347.04	73	9375.00	136.00 / 102.00	13.32	0	0
Max	200.00	75	10000.00	180.00 / 145.00	24.00	375	850

PRE-RUN TESTS

Motor Tested Pre-Run	: Yes	with Bit/MWD	: Yes / Yes
Dump Sub Operating	: No	Brg Play	:
Flow 1 (gpm)	: 450.00	Pressure 1 (psig)	: 700.00
Flow 2 (gpm)	:	Pressure 2 (psig)	:
Driveshaft Rotation Observed	: No		
Bearing Leakage Observed	: No		

POST-RUN TESTS

Motor Tested Post-Run	: Yes	with Bit/MWD	: Yes / No
Dump Sub Operating	: No	Brg Play	: 1.00
Flow 1 (gpm)	:	Pressure 1 (psig)	:
Flow 2 (gpm)	:	Pressure 2 (psig)	:
Driveshaft Rotation Observed	: No	Fluid Flushed	: No
Bearing Leakage Observed	: No	Fluid Used	:
DriveShaft Rotated to Drain Mud	: Yes		

MUD DATA

Type	: Fresh Water	Mud Wt (ppg)	: 9.90
Name	: Freshwater gel	pH	:
% Oil / Water	: /	% Solid	: 9.60
DH Temp Avg / Max (degF)	: 0.00 / 0.00	% Sand	: 0.10
SPP Start / End (gpm)	: 1500.00 / 3150.00	PV (cP)	: 17.00
Flow Rate Avg / Max (gpm)	: 585.00 / 585.00	YP (lbf2)	: 19.00
Chloride Content (ppm)	:		
Lithology	:		
Principal Formation Name(s)	:		

BIT DATA

Bit Number	: 1	Nozzles	: 5x18
Bit Size (in)	: 8.750	TFA (in2)	: 1.2425
Manufacturer	: Baker	Gauge Length (in)	: 3.000
Model	: DP505F	Dull Grade In	: NEW
Serial Number	: 7032305	Dull Grade Out	: 1-1-WC-A--O-NA-BHA
Existing Bit Hrs	: 0.00	Existing Ream Hrs	: 0.00
Cum Drilling Hrs	: 61.25	Cum Ream Hrs	: 2.05

PERFORMANCE

Service Interrupt	: No	Trip For Failure	: No
LIH	: No	Service Interrupt Hrs	:
Problem Date	: 07/31/2012		

COMMENTS

BHA performed as expected although it did tend to drop at a average of 1.5 to 3 degrees per 100' in rotation. In the curve section build were less than expected due to stacking up and falling off of string weight causing us resulting in repeated motor stalls and causing tool face control to suffer. We drilled to a depth of 7530' MD tripped out of hole and L/D the BHA.

WELL INFORMATION

Motor Performance
Report

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812

SUMMARY

BHA Number : **Depth In/Out (ft)** : 7530.00 / 11566.00
Run Number : 0200 **Date In/Out** : 08/01/2012 / 08/04/2012
Bit Number : 2 **Hole Size (in)** : 6.13

MOTOR CONFIGURATION

	DFB (ft)	Component	Yes/No	Type	Value
Upper Stab		Sleeve Stab	No		
Lower Stab	6.12	Bent Housing	Yes	Fixed	1.50° bend
Motor Top		Bent Housing Pad	No		
Pad	27.23	Motor Top	Yes		
Bend	29.63	Lower String Stab	Yes	Int	Gauge 5.88 in
Sleeve Tool	80.80	Upper String Stab	Yes	Reg	Gauge 5.88 in

MOTOR PARAMETERS

Serial Number : 500-224 **Lobe Config** : 4:5
Motor Run # : 3 **Stat Elastomer** : Nitrile
OD (in) : 5 **ID (in)** : 3.12 **Short Brg Pack** : Yes
Flex Collar Used : No **Arr** **Ret**
Rotor Nozzle (32nd) : 0.0 **Pick Up Sub** : Yes No
Bit Box Protr : Yes No

WELL INFORMATION

Motor Performance Report

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812

SUMMARY

BHA Number :	Depth In/Out (ft) :	7530.00 / 11566.00
Run Number : 0200	Date In/Out :	08/01/2012 / 08/04/2012
Bit Number : 2	Hole Size (in) :	6.13

MOTOR RUN DATA

Directional Driller(s) : Robbie Arnold, Rob Walker, Chris Radley
Application Details : Horizontal

Max Dogleg While Rotating	(°/100') : 1.50	RPM : 75.00	Motor Stalled : No
Max Dogleg Overpulled In	(°/100') : 100.00	Force (klb) :	Float Valve : Yes
Max Dogleg Pushed Through	(°/100') :	Force (klb) :	DP Filter : Yes

Inc Start/End	(deg) : 93.411 / 123.303	Interval Oriented / Rot. (ft) :	278.00 / 3758.00
Hole Azimuth Start / End	(deg) : 3.026 / 2.081	Directional Perf Ori / Rot (°/100') :	0.00 / 0.00
Jarring Occurred	:		

HOURS

Existing Hrs : 0.00	Circ Hrs : 6.25	Total Hrs This Run : 47.38
Drilling Hrs : 40.13	Reaming Hrs : 1.00	New Cumulative Hrs : 47.38

DRILLING DATA

	Diff Press (psig)	RPM	Rotn Torque (ft-lb)	Drag Up/Down (klb)	WOB (klb)	ROP Oriented (fph)	ROP Rotated (fph)
Avg	445.21	73	7472.22	134.63 / 67.74	11.63	36	116
Max	610.00	75	13500.00	230.00 / 120.00	17.00	60	220

WELL INFORMATION

Motor Performance
Report

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812

SUMMARY

BHA Number :	Depth In/Out (ft) :	7530.00 / 11566.00
Run Number : 0200	Date In/Out :	08/01/2012 / 08/04/2012
Bit Number : 2	Hole Size (in) :	6.13

PRE-RUN TESTS

Motor Tested Pre-Run :	Yes	with Bit/MWD :	Yes / No
Dump Sub Operating :	No	Brg Play :	0.00
Flow 1 (gpm) :	250.00	Pressure 1 (psig) :	1500.00
Flow 2 (gpm) :		Pressure 2 (psig) :	
Driveshaft Rotation Observed :	Yes		
Bearing Leakage Observed :	No		

POST-RUN TESTS

Motor Tested Post-Run :	No	with Bit/MWD :	No / No
Dump Sub Operating :	No	Brg Play :	3.00
Flow 1 (gpm) :		Pressure 1 (psig) :	
Flow 2 (gpm) :		Pressure 2 (psig) :	
Driveshaft Rotation Observed :	Yes	Fluid Flushed :	No
Bearing Leakage Observed :	Yes	Fluid Used :	
DriveShaft Rotated to Drain Mud :	Yes		

MUD DATA

Type :		Mud Wt (ppg) :	
Name :		pH :	
% Oil / Water :	/	% Solid :	
DH Temp Avg / Max (degF) :	252.40 / 282.00	% Sand :	
SPP Start / End (gpm) :	2170.00 / 3060.00	PV (cP) :	
Flow Rate Avg / Max (gpm) :	290.00 / 290.00	YP (lbf2) :	
Chloride Content (ppm) :			
Lithology :			
Principal Formation Name(s) :	Niobrara		

WELL INFORMATION

Motor Performance Report

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812

SUMMARY

BHA Number :	Depth In/Out (ft) :	7530.00 / 11566.00
Run Number : 0200	Date In/Out :	08/01/2012 / 08/04/2012
Bit Number : 2	Hole Size (in) :	6.13

BIT DATA

Bit Number :	2	Nozzles :	5x15,2x10
Bit Size (in) :	6.125	TFA (in2) :	1.0163
Manufacturer :	Varel	Gauge Length (in) :	2.500
Model :	VM513H	Dull Grade In :	NEW
Serial Number :	4004451	Dull Grade Out :	
Existing Bit Hrs :	0.00	Existing Ream Hrs :	0.00
Cum Drilling Hrs :	40.13	Cum Ream Hrs :	1.00

PERFORMANCE

Service Interrupt :	No	Trip For Failure :	No
LIH :	No	Service Interrupt Hrs :	
Problem Date :	08/04/2012		

COMMENTS

BHA performed as expected.

WELL INFORMATION

Motor Performance Report

Customer : Anadark Petroleum Corp.**Well Name** : Wardell 26N-29HZ**Job Number** : CA-XX-0009484812

SUMMARY

BHA Number :
Run Number : 0200
Bit Number : 2**Depth In/Out (ft)** : 7530.00 / 11566.00
Date In/Out : 08/01/2012 / 08/04/2012
Hole Size (in) : 6.13

WELL INFORMATION
Drilling Activity

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812
Rig Name : Xtreme 22
Field Name : Wattenburg
Country : United States

North Ref : True
Declination (deg) : 8.72
Vert Sec Dir (deg) : 12.22

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (ʹ100ʹ)	Build Rate (ʹ100ʹ)	Turn Rate (ʹ10 0ʹ)	Slide/Rotate		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
844.0	0.40	245.94	844.00	0.00	-0.47	0.19	0.00	0.00	0.00										100	
950.0	0.18	89.98	950.00	-0.60	-0.62	0.02	0.54	-0.21	0.00										100	
1040.0	1.70	124.86	1039.98	-1.09	-1.38	1.26	1.73	1.69	0.00										100	
1130.0	4.33	145.92	1129.85	-3.95	-4.96	4.26	3.12	2.92	0.00										100	
1221.0	5.97	142.78	1220.48	-9.40	-11.58	9.04	1.83	1.80	0.00										100	
1313.0	8.34	146.91	1311.76	-17.20	-20.98	15.58	2.63	2.58	4.50										100	
1405.0	8.72	144.95	1402.74	-26.63	-32.27	23.23	0.52	0.41	-2.13										100	
1496.0	10.30	137.76	1492.49	-36.04	-43.94	32.66	2.18	1.74	-7.90										100	
1588.0	10.53	137.98	1582.98	-45.73	-56.28	43.82	0.24	0.24	0.25										100	
1680.0	11.00	125.52	1673.37	-54.11	-67.62	56.58	2.58	0.51	-13.55										100	
1772.0	9.80	115.66	1763.87	-59.40	-76.11	70.79	2.33	-1.30	-10.72										100	
1863.0	9.99	107.01	1853.52	-61.86	-81.77	85.31	1.64	0.20	-9.50										100	
1956.0	9.52	105.17	1945.17	-62.93	-86.14	100.45	0.60	-0.50	-1.98										100	
2042.0	10.30	103.31	2029.89	-63.44	-89.78	114.79	0.98	0.91	-2.17										100	
2128.0	9.54	101.58	2114.61	-63.51	-92.98	129.26	0.95	-0.88	-2.01										100	
2213.0	9.99	97.37	2198.37	-62.81	-95.33	143.47	0.99	0.53	-4.96										100	
2299.0	9.79	95.96	2283.10	-61.38	-97.05	158.14	0.36	-0.23	-1.64										100	
2385.0	10.33	99.41	2367.77	-60.20	-99.07	173.03	0.94	0.62	4.02										100	
2471.0	9.18	97.94	2452.53	-59.31	-101.28	187.43	1.37	-1.34	-1.71										100	
2557.0	9.54	105.33	2537.39	-59.19	-104.11	201.09	1.46	0.42	8.59										100	
2643.0	9.83	99.43	2622.16	-59.22	-107.20	215.21	1.20	0.34	-6.86										100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS ($\%100'$)	Build Rate ($\%100'$)	Turn Rate ($\%10\ 0'$)	Slide/Rotate		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
2728.0	10.28	97.22	2705.86	-58.20	-109.34	229.89	0.70	0.53	-2.61										100	
2814.0	11.20	95.05	2790.35	-56.49	-111.04	245.83	1.16	1.06	-2.52										100	
2900.0	11.08	94.80	2874.73	-54.38	-112.47	262.38	0.15	-0.14	-0.29										100	
2986.0	10.21	94.08	2959.25	-52.24	-113.70	278.22	1.02	-1.01	-0.84										100	
3071.0	11.27	96.33	3042.76	-50.32	-115.15	294.00	1.34	1.24	2.65										100	
3157.0	10.19	95.89	3127.25	-48.61	-116.86	309.92	1.25	-1.25	-0.51										100	
3243.0	10.74	95.22	3211.82	-46.80	-118.37	325.47	0.65	0.64	-0.77										100	
3329.0	9.46	108.05	3296.50	-46.54	-121.29	340.17	3.00	-1.49	14.91										100	
3414.0	8.74	107.08	3380.43	-47.80	-125.35	352.98	0.87	-0.85	-1.15										100	
3500.0	6.64	105.52	3465.65	-48.63	-128.60	364.02	2.45	-2.43	-1.81										100	
3586.0	7.16	104.48	3551.03	-49.13	-131.27	374.00	0.62	0.61	-1.21										100	
3672.0	7.83	113.65	3636.29	-50.50	-134.96	384.56	1.59	0.77	10.66										100	
3757.0	8.38	112.73	3720.45	-52.78	-139.67	395.57	0.67	0.65	-1.07										100	
3843.0	9.09	98.99	3805.46	-53.54	-143.16	408.06	2.55	0.82	-15.98										100	
3929.0	10.47	99.38	3890.21	-52.77	-145.49	422.47	1.61	1.60	0.45										100	
4014.0	10.73	98.20	3973.76	-51.83	-147.88	437.92	0.40	0.31	-1.39										100	
4100.0	10.12	98.72	4058.34	-50.81	-150.17	453.32	0.72	-0.71	0.61										100	
4186.0	11.08	101.26	4142.87	-50.21	-152.93	468.89	1.24	1.12	2.95										100	
4272.0	9.24	102.47	4227.52	-50.10	-156.03	483.74	2.16	-2.14	1.41										100	
4357.0	9.78	106.20	4311.35	-50.63	-159.52	497.33	0.97	0.65	4.39										100	
4443.0	10.62	108.73	4395.99	-52.04	-164.10	511.86	1.10	0.97	2.94										100	
4529.0	9.11	109.37	4480.71	-53.79	-168.90	525.79	1.76	-1.76	0.75										100	
4615.0	10.29	114.17	4565.48	-56.22	-174.31	539.22	1.67	1.38	5.59										100	
4700.0	9.85	114.59	4649.17	-59.35	-180.44	552.76	0.53	-0.52	0.50										100	
4786.0	11.74	110.52	4733.65	-62.19	-186.57	567.64	2.37	2.20	-4.74										100	
4872.0	9.29	112.91	4818.20	-64.74	-192.34	582.23	2.90	-2.85	2.78										100	
4958.0	10.43	114.18	4902.93	-67.64	-198.23	595.72	1.36	1.33	1.48										100	
5043.0	8.97	112.01	4986.71	-70.37	-203.87	608.89	1.77	-1.72	-2.55										100	
5129.0	10.08	109.93	5071.52	-72.52	-208.94	622.18	1.35	1.29	-2.43										100	
5215.0	11.33	104.86	5156.03	-73.91	-213.68	637.42	1.82	1.46	-5.89										100	
5301.0	9.60	101.72	5240.59	-74.24	-217.30	652.61	2.12	-2.02	-3.65										100	
5387.0	10.10	105.20	5325.33	-74.57	-220.73	666.91	0.91	0.58	4.05										100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (φ 100')	Build Rate (φ 100')	Turn Rate (φ 10 0')	Slide/Rotate		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
5472.0	11.55	105.85	5408.81	-75.50	-225.01	682.29	1.71	1.70	0.76										100	
5558.0	9.77	103.51	5493.33	-76.20	-229.07	697.67	2.12	-2.06	-2.72										100	
5644.0	10.41	98.99	5578.00	-75.93	-231.99	712.44	1.18	0.74	-5.25										100	
5730.0	10.44	103.33	5662.58	-75.64	-235.00	727.70	0.91	0.04	5.05										100	
5815.0	10.77	103.35	5746.13	-75.95	-238.61	742.92	0.38	0.38	0.02										100	
5901.0	10.93	105.01	5830.59	-76.51	-242.57	758.60	0.41	0.19	1.93										100	
5987.0	11.11	107.96	5915.01	-77.73	-247.24	774.36	0.69	0.21	3.43										100	
6072.0	8.90	108.45	5998.71	-79.26	-251.84	788.38	2.60	-2.60	0.58										100	
6158.0	9.82	101.89	6083.56	-79.94	-255.46	801.87	1.64	1.07	-7.63										100	
6244.0	10.02	104.98	6168.28	-80.26	-258.91	816.28	0.66	0.23	3.59										100	
6330.0	10.47	98.21	6252.91	-80.08	-261.96	831.24	1.49	0.52	-7.87										100	
6377.0	9.65	97.98	6299.19	-79.49	-263.11	839.37	1.74	-1.74	-0.49										100	
6415.0	10.47	85.40	6336.61	-78.25	-263.28	845.96	6.15	2.15	-33.11										100	
6458.0	12.96	69.13	6378.72	-74.49	-261.25	854.36	9.56	5.79	-37.82										100	
6501.0	14.70	59.89	6420.48	-68.18	-256.79	863.59	6.53	4.04	-21.51										100	
6544.0	16.66	54.82	6461.88	-59.97	-250.50	873.35	5.57	4.57	-11.79										100	
6587.0	18.76	46.18	6502.85	-49.69	-242.16	883.38	7.81	4.88	-20.09										100	
6629.0	20.94	43.04	6542.35	-37.65	-232.00	893.37	5.77	5.18	-7.46										100	
6673.0	23.25	40.52	6583.12	-23.25	-219.65	904.38	5.69	5.26	-5.72										100	
6715.0	26.92	41.38	6621.15	-7.64	-206.21	916.06	8.77	8.73	2.05										100	
6758.0	30.57	38.58	6658.85	10.66	-190.35	929.32	9.06	8.50	-6.51										100	
6799.0	33.05	33.36	6693.69	30.44	-172.86	941.97	9.03	6.04	-12.73										100	
6844.0	37.16	27.60	6730.51	55.00	-150.55	955.03	11.72	9.13	-12.81										100	
6887.0	41.69	23.19	6763.72	81.58	-125.88	966.68	12.38	10.53	-10.26										100	
6930.0	45.88	19.52	6794.77	110.95	-98.18	977.48	11.39	9.74	-8.54										100	
6973.0	48.14	12.92	6824.10	142.29	-68.00	986.22	12.40	5.27	-15.35										100	
7016.0	50.95	9.32	6852.01	174.99	-35.90	992.50	9.12	6.53	-8.36										100	
7059.0	53.95	5.50	6878.22	208.94	-2.11	996.88	9.91	6.97	-8.88										100	
7101.0	55.38	4.29	6902.51	242.93	32.03	999.80	4.14	3.41	-2.89										100	
7143.0	58.35	3.28	6925.46	277.71	67.12	1002.11	7.34	7.07	-2.39										100	
7187.0	61.91	3.57	6947.37	315.41	105.20	1004.40	8.11	8.09	0.66										100	
7232.0	66.01	4.51	6967.13	355.42	145.52	1007.25	9.30	9.11	2.09										100	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth	Incl Angle	Azi Dir	Vertical Depth	Vertical Section	Coordinates		DLS	Build Rate	Turn Rate	Slide/Rotate		Tool Face		RPM	WOB	Flow Rate	Stand Pipe	ROP	Comment	
					N/S	E/W				From	To									
(ft)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(%100')	(%100')	(%10 0')	(ft)	(ft)	(deg)			(klb)	(gpm)	(psig)	(fph)	Run	
7273.0	69.42	2.66	6982.67	392.92	183.37	1009.61	9.32	8.33	-4.52										100	
7312.0	72.25	3.65	6995.47	429.30	220.15	1011.65	7.64	7.25	2.55										100	
7358.0	75.36	3.71	7008.30	472.98	264.23	1014.48	6.76	6.76	0.12										100	
7401.0	79.08	4.27	7017.81	514.47	306.06	1017.40	8.75	8.66	1.31										100	
7444.0	82.87	3.32	7024.56	556.47	348.42	1020.21	9.07	8.81	-2.21										100	
7479.0	87.16	3.20	7027.60	590.91	383.23	1022.20	12.26	12.26	-0.33										100	
7524.0	92.16	2.05	7027.87	635.26	428.16	1024.26	11.41	11.12	-2.57										100	

WARRANTY

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WELL INFORMATION
Drilling Activity

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812
Rig Name : Xtreme 22
Field Name : Wattenburg
Country : United States

North Ref : True
Declination (deg) : 8.72
Vert Sec Dir (deg) : 12.22

SURVEY										STEERING				DRILLING PARAMETERS						
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (°100')	Build Rate (°100')	Turn Rate (°10 0')	Slide/Rotate		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
844.0	0.40	245.94	844.00	0.00	-0.47	0.19	0.00	0.00	0.00										200	
7610.0	92.41	1.76	7024.44	719.80	514.05	1027.11	0.44	0.29	-0.33										200	
7696.0	90.31	0.60	7022.40	804.18	600.00	1028.88	2.79	-2.44	-1.35										200	
7781.0	90.00	0.18	7022.17	887.38	684.99	1029.46	0.61	-0.36	-0.48										200	
7867.0	90.25	359.82	7021.99	971.43	770.99	1029.47	0.51	0.29	-0.42										200	
7953.0	89.32	357.99	7022.31	1055.11	856.97	1027.82	2.39	-1.08	-2.13										200	
8039.0	89.13	357.96	7023.47	1138.46	942.91	1024.78	0.22	-0.22	-0.03										200	
8124.0	89.51	356.97	7024.48	1220.65	1027.82	1021.02	1.25	0.44	-1.17										200	
8210.0	89.38	357.29	7025.32	1303.68	1113.71	1016.71	0.40	-0.14	0.38										200	
8296.0	90.06	357.23	7025.73	1386.76	1199.61	1012.60	0.79	0.79	-0.07										200	
8381.0	89.38	357.35	7026.15	1468.89	1284.51	1008.58	0.81	-0.80	0.15										200	
8467.0	89.32	357.74	7027.12	1552.08	1370.43	1004.89	0.45	-0.07	0.45										200	
8553.0	89.32	356.91	7028.14	1635.18	1456.33	1000.88	0.96	0.00	-0.96										200	
8639.0	89.94	356.00	7028.70	1717.95	1542.16	995.57	1.28	0.72	-1.06										200	
8724.0	89.88	355.58	7028.83	1799.48	1626.93	989.33	0.50	-0.07	-0.50										200	
8810.0	90.74	355.94	7028.37	1881.95	1712.69	982.97	1.09	1.01	0.42										200	
8896.0	90.74	355.07	7027.26	1964.31	1798.42	976.24	1.01	0.00	-1.01										200	
8981.0	90.74	354.93	7026.16	2045.49	1883.09	968.83	0.16	0.00	-0.16										200	
9067.0	90.12	354.91	7025.51	2127.60	1968.75	961.22	0.72	-0.72	-0.03										200	
9153.0	90.31	355.21	7025.18	2209.77	2054.43	953.82	0.41	0.22	0.35										200	
9239.0	90.43	356.42	7024.63	2292.27	2140.20	947.55	1.42	0.14	1.41										200	

SURVEY										STEERING					DRILLING PARAMETERS					
Measured Depth (ft)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (ft)	Vertical Section (ft)	Coordinates		DLS (ʹ100ʹ)	Build Rate (ʹ100ʹ)	Turn Rate (ʹ10 0ʹ)	Slide/Rotate		Tool Face (deg)		RPM	WOB (klb)	Flow Rate (gpm)	Stand Pipe (psig)	ROP (fph)	Comment	
					N/S (ft)	E/W (ft)				From (ft)	To (ft)								Run	
9324.0	90.31	357.34	7024.08	2374.24	2225.07	942.93	1.09	-0.15	1.08										200	
9410.0	89.94	358.74	7023.89	2457.62	2311.02	939.99	1.68	-0.43	1.63										200	
9496.0	90.56	0.63	7023.52	2541.56	2397.01	939.52	2.32	0.72	2.20										200	
9582.0	90.87	0.61	7022.45	2625.80	2483.00	940.45	0.36	0.36	-0.03										200	
9667.0	90.56	0.35	7021.40	2709.02	2567.99	941.17	0.47	-0.36	-0.31										200	
9753.0	90.43	359.59	7020.66	2793.05	2653.98	941.12	0.90	-0.14	-0.89										200	
9839.0	89.69	359.82	7020.56	2877.01	2739.98	940.68	0.90	-0.86	0.26										200	
9925.0	90.93	359.87	7020.10	2961.01	2825.98	940.45	1.44	1.43	0.07										200	
10010.0	89.94	1.85	7019.46	3044.34	2910.96	941.73	2.60	-1.16	2.33										200	
10096.0	89.81	1.26	7019.65	3128.85	2996.93	944.07	0.71	-0.14	-0.69										200	
10182.0	88.89	1.89	7020.62	3213.37	3082.89	946.43	1.30	-1.08	0.73										200	
10268.0	88.95	1.07	7022.24	3297.84	3168.85	948.65	0.96	0.07	-0.96										200	
10353.0	88.08	0.76	7024.44	3381.17	3253.81	950.01	1.08	-1.02	-0.36										200	
10439.0	87.59	1.37	7027.69	3465.48	3339.73	951.61	0.91	-0.58	0.71										200	
10525.0	88.09	0.19	7030.94	3549.71	3425.66	952.78	1.49	0.58	-1.37										200	
10610.0	88.02	0.58	7033.83	3632.85	3510.61	953.35	0.47	-0.08	0.46										200	
10696.0	88.09	359.81	7036.75	3716.92	3596.56	953.65	0.90	0.08	-0.89										200	
10782.0	87.84	0.32	7039.81	3800.94	3682.50	953.75	0.66	-0.29	0.59										200	
10868.0	88.95	0.13	7042.22	3885.03	3768.46	954.09	1.31	1.29	-0.23										200	
10954.0	89.26	359.62	7043.57	3969.03	3854.45	953.90	0.69	0.36	-0.59										200	
11039.0	89.32	358.92	7044.62	4051.86	3939.44	952.82	0.83	0.07	-0.82										200	
11125.0	88.64	359.70	7046.15	4135.67	4025.42	951.79	1.20	-0.79	0.91										200	
11211.0	88.33	359.57	7048.42	4219.58	4111.39	951.24	0.39	-0.36	-0.16										200	
11296.0	87.65	359.42	7051.40	4302.44	4196.33	950.50	0.82	-0.80	-0.17										200	
11382.0	87.15	359.37	7055.30	4386.21	4282.24	949.59	0.58	-0.58	-0.06										200	
11468.0	86.72	358.43	7059.89	4469.77	4368.10	947.94	1.21	-0.50	-1.10										200	
11523.0	86.29	358.81	7063.25	4523.13	4422.98	946.62	1.05	-0.79	0.70										200	
11566.0	86.29	358.81	7066.03	4564.87	4465.88	945.73	0.01	0.01	0.00										200	

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Section 4

Contents: Daily Morning Reports

WELL INFORMATION

Daily Drilling Report

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

CURRENT STATUS Report # 1

Date : 07/27/2012

Total Depth (ft) : 2522.00

Depth Last 24 (ft) : 1592.00

Hole Size (in) : 8.750

Casing Depth (ft) : 930.00

Casing Diameter (in) : 9.625

Casing ID (in) : 9.063

Customer Reps :

Customer Reps :

SDS Reps : Robbie Arnold

SDS Reps : Rob Walker

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct (deg)	Formation Name	MD Top (ft)	TVD Top (ft)
2471.00	9.18	97.94	2452.53	212.91	0.00			

BHA SUMMARY

Well:9484812 Run:0100 - 2010.33 ft;Bit, Motor, Collar, Sub, Collar, Collar, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)
Freshwater Gel	9.30	31.00	2.00	2	2.00	3.00			

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH
			5.00	0.10			

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	05:00	5.00			14	Nipple up BOP
05:00	09:30	4.50			15	Test Bop
09:30	11:00	1.50		100	6c	P/U bha
11:00	13:45	2.75	930.00	100	6a	Trip in
13:45	15:30	1.75	930.00	100	21	Drill casing equipment and cement
15:30	15:55	0.42	1004.00	100	2a	Rotate

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
15:55	16:05	0.17	1004.00	100	10	Survey
16:05	16:11	0.10	1016.00	100	2b	Slide 12' @ 110 M
16:11	16:17	0.10	1091.00	100	2a	Rotate
16:17	16:31	0.23	1091.00	100	10	Conn/Survey
16:31	16:37	0.10	1103.00	100	2b	Slide 12' @ 110M
16:37	16:47	0.17	1181.00	100	2a	Rotate
16:47	16:58	0.18	1181.00	100	10	Conn/Survey
16:58	17:05	0.12	1189.00	100	2b	Slide 8' @ 110M
17:05	17:22	0.28	1272.00	100	2a	ROtate
17:22	17:40	0.30	1272.00	100	10	Connection / Survey
17:40	17:48	0.13	1280.00	100	2b	Slide 8' @ HS
17:48	17:54	0.10	1364.00	100	2a	Rotate
17:54	18:05	0.18	1364.00	100	10	Connection / Survey
18:05	18:15	0.17	1456.00	100	2a	Rotate
18:15	18:22	0.12	1456.00	100	10	Connection / Survey
18:22	18:31	0.15	1464.00	100	2b	SLide 8' @ 45L
18:31	18:39	0.13	1574.00	100	2a	Rotate
18:39	18:48	0.15	1574.00	100	10	Connection / Survey
18:48	18:56	0.13	1639.00	100	2a	Rotate
18:56	19:06	0.17	1639.00	100	10	Connection / Survey
19:06	19:15	0.15	1649.00	100	2b	Slide 8' @ 90L
19:15	19:22	0.12	1731.00	100	2a	Rotate
19:22	19:32	0.17	1731.00	100	10	Connection / Survey
19:32	19:40	0.13	1739.00	100	2b	Slide 8' @ 120L
19:40	19:48	0.13	1823.00	100	2a	Rotate
19:48	19:58	0.17	1823.00	100	10	Connection / Survey
19:58	20:05	0.12	1831.00	100	2b	Slide 8' @ 80L
20:05	20:12	0.12	1915.00	100	2a	Rotate
20:12	20:23	0.18	1915.00	100	10	Connection / Survey
20:23	20:35	0.20	2007.00	100	2a	Rotate
20:35	20:45	0.17	2007.00	100	10	Connection / Survey
20:45	20:57	0.20	2015.00	100	2b	SLide 8' @ HS
20:57	21:13	0.27	2092.00	100	2a	Rotate
21:13	21:31	0.30	2092.00	100	7	Install Rotating Head
21:31	21:39	0.13	2092.00	100	10	Connection / Survey
21:39	21:50	0.18	2178.00	100	2a	Rotate
21:50	21:55	0.08	2178.00	100	10	Connection / Survey
21:55	22:06	0.18	2186.00	100	2b	Slide 8' @ HS
22:06	22:13	0.12	2264.00	100	2a	Rotate
22:13	22:25	0.20	2264.00	100	10	Connection / Survey
22:25	22:34	0.15	2350.00	100	2a	Rotate
22:34	22:46	0.20	2350.00	100	10	Connection / Survey
22:46	22:52	0.10	2359.00	100	2b	Slide 9' @ 30R

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
22:52	23:00	0.13	2436.00	100	2a	Rotate
23:00	23:45	0.75	2436.00	100	7	Rig Service
23:45	00:00	0.25	2522.00	100	2a	Rotate

COMMENTS

WELL INFORMATION

Daily Drilling Report

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

CURRENT STATUS Report # 2

Date : 07/28/2012

Total Depth (ft) : 6123.00

Depth Last 24 (ft) : 3601.00

Hole Size (in) : 8.750

Casing Depth (ft) : 930.00

Casing Diameter (in) : 9.625

Casing ID (in) : 9.063

Customer Reps :

Customer Reps :

SDS Reps : Robbie Arnold

SDS Reps : Rob Walker

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct (deg)	Formation Name	MD Top (ft)	TVD Top (ft)
6072.00	8.90	108.45	5998.70	827.48	0.00			

BHA SUMMARY

Well:9484812 Run:0100 - 2010.33 ft;Bit, Motor, Collar, Sub, Collar, Collar, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:10	0.17	2522.00	100	10	Connection / Survey
00:10	00:16	0.10	2532.00	100	2b	Slide 10' @ 30R
00:16	00:28	0.20	2608.00	100	2a	Rotate
00:28	00:40	0.20	2608.00	100	10	Connection / Survey
00:40	00:54	0.23	2618.00	100	2b	Slide 10' @ 30L
00:54	01:04	0.17	2694.00	100	2a	Rotate

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
01:04	01:11	0.12	2694.00	100	10	Connection / Survey
01:11	01:21	0.17	2704.00	100	2b	Slide 10' @ HS
01:21	01:32	0.18	2779.00	100	2a	Rotate
01:32	01:40	0.13	2779.00	100	10	Connection / Survey
01:40	01:48	0.13	2789.00	100	2b	Slide 10' @ HS
01:48	01:58	0.17	2865.00	100	2a	Rotate
01:58	02:08	0.17	2865.00	100	10	Connection / Survey
02:08	02:18	0.17	2951.00	100	2a	Rotate
02:18	02:27	0.15	2951.00	100	10	Connection / Survey
02:27	02:37	0.17	3037.00	100	2a	Rotate
02:37	02:51	0.23	3037.00	100	10	Connection / Survey
02:51	03:05	0.23	3047.00	100	2b	Slide 10' @ 30R
03:05	03:18	0.22	3122.00	100	2a	Rotate
03:18	03:28	0.17	3122.00	100	10	Connection / Survey
03:28	03:38	0.17	3208.00	100	2a	Rotate
03:38	03:55	0.28	3208.00	100	10	Connection / Survey
03:55	04:02	0.12	3218.00	100	2b	Slide 10' @ 30R
04:02	04:15	0.22	3294.00	100	2a	Rotate
04:15	04:25	0.17	3294.00	100	10	Connection / Survey
04:25	04:39	0.23	3304.00	100	2b	Slide 10' @ 80R
04:39	04:48	0.15	3380.00	100	2a	Rotate
04:48	04:58	0.17	3380.00	100	10	Connection / Survey
04:58	05:17	0.32	3465.00	100	2a	Rotate
05:17	05:23	0.10	3465.00	100	10	Conn/Survey
05:23	05:34	0.18	3475.00	100	2b	Slide 10' @ 30L
05:34	05:46	0.20	3551.00	100	2a	Rotate
05:46	05:55	0.15	3551.00	100	10	Conn/Survey
05:55	06:08	0.22	3563.00	100	2b	Slide 12' @ HS
06:08	06:22	0.23	3637.00	100	2a	Rotate
06:22	06:28	0.10	3637.00	100	10	Conn/Survey
06:28	06:35	0.12	3649.00	100	2b	Slide 12' @ 10R
06:35	06:46	0.18	3723.00	100	2a	Rotate
06:46	06:54	0.13	3723.00	100	10	Conn/Survey
06:54	07:01	0.12	3735.00	100	2b	Slide 12' @ 30L
07:01	07:17	0.27	3808.00	100	2a	Rotate
07:17	07:26	0.15	3808.00	100	10	Conn/Survey
07:26	07:38	0.20	3823.00	100	2b	Slide 15' @ 30L
07:38	07:49	0.18	3894.00	100	2a	Rotate
07:49	07:56	0.12	3894.00	100	10	Conn/Survey
07:56	08:02	0.10	3906.00	100	2b	Slide 12' @ HS
08:02	08:13	0.18	3980.00	100	2a	Rotate
08:13	08:21	0.13	3980.00	100	10	Conn/Survey
08:21	08:26	0.08	3986.00	100	2b	Slide 6' @ 20R

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
08:26	08:37	0.18	4065.00	100	2a	Rotate
08:37	08:43	0.10	4065.00	100	10	Conn/Survey
08:43	08:57	0.23	4151.00	100	2a	Rotate
08:57	09:10	0.22	4151.00	100	10	Conn/Survey
09:10	09:17	0.12	4161.00	100	2b	Slide 10' @ 30R
09:17	09:29	0.20	4237.00	100	2a	Rotate
09:29	09:40	0.18	4237.00	100	10	Conn/Survey
09:40	09:53	0.22	4323.00	100	2a	Rotate
09:53	10:02	0.15	4323.00	100	10	Conn/Survey
10:02	10:12	0.17	4338.00	100	2b	Slide 15' @ 40R
10:12	10:25	0.22	4408.00	100	2a	Rotate
10:25	10:32	0.12	4408.00	100	10	Conn/survey
10:32	10:39	0.12	4420.00	100	2b	Slide 12' @ 30R
10:39	10:51	0.20	4494.00	100	2a	Rotate
10:51	10:57	0.10	4494.00	100	90	Repair drillpipe screen
10:57	11:05	0.13	4494.00	100	10	Conn/Survey
11:05	11:17	0.20	4580.00	100	2a	Rotate
11:17	11:26	0.15	4580.00	100	10	Conn/Survey
11:26	11:37	0.18	4594.00	100	2b	Slide 15' @ HS
11:37	11:53	0.27	4666.00	100	2a	Rotate
11:53	12:02	0.15	4666.00	100	10	Conn/Survey
12:02	12:15	0.22	4676.00	100	2b	Slide 10' @ HS
12:15	12:25	0.17	4751.00	100	2a	Rotate
12:25	12:33	0.13	4751.00	100	10	Conn/Survey
12:33	12:41	0.13	4766.00	100	2b	Slide 15' @ HS
12:41	12:51	0.17	4837.00	100	2a	Rotate
12:51	13:00	0.15	4837.00	100	10	Conn/Survey
13:00	13:16	0.27	4923.00	100	2a	Rotate
13:16	13:25	0.15	4923.00	100	10	Conn/survey
13:25	13:37	0.20	4938.00	100	2b	Slide 15' @ 30L
13:37	13:47	0.17	5009.00	100	2a	Rotate
13:47	14:00	0.22	5009.00	100	10	Conn/Survey
14:00	14:12	0.20	5024.00	100	2b	Slide 15' @ 20L
14:12	14:22	0.17	5094.00	100	2a	Rotate
14:22	14:52	0.50	5094.00	100	7	Service rig
14:52	15:00	0.13	5094.00	100	10	Conn/Survey
15:00	15:04	0.07	5114.00	100	2b	Slide 20' @ 30L
15:04	15:15	0.18	5180.00	100	2a	Rotate
15:15	15:40	0.42	5180.00	100	5	Trouble shoot electricity on MWD unit
15:40	15:50	0.17	5180.00	100	10	Conn/Survey
15:50	16:02	0.20	5200.00	100	2b	Slide 20' @ 30L
16:02	16:18	0.27	5266.00	100	2a	Rotate
16:18	16:28	0.17	5266.00	100	10	Conn/Survey

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
16:28	16:41	0.22	5352.00	100	2a	Rotate
16:41	16:48	0.12	5352.00	100	10	Conn/Survey
16:48	16:57	0.15	5367.00	100	2b	SLide 15' @ 30R
16:57	17:15	0.30	5438.00	100	2a	Rotate
17:15	17:25	0.17	5438.00	100	10	Connection / Survey
17:25	17:54	0.48	5453.00	100	2b	Slide 15' @ 30L
17:54	18:06	0.20	5523.00	100	2a	Rotate
18:06	18:16	0.17	5523.00	100	10	Connection / Survey
18:16	18:33	0.28	5609.00	100	2a	Rotate
18:33	18:44	0.18	5609.00	100	10	Connection / Survey
18:44	19:03	0.32	5624.00	100	2b	Slide 15' @ 20L
19:03	19:15	0.20	5695.00	100	2a	Rotate
19:15	19:25	0.17	5695.00	100	10	Connection / Survey
19:25	19:48	0.38	5710.00	100	2b	Slide 15' @ 20R
19:48	20:00	0.20	5781.00	100	2a	Rotate
20:00	20:11	0.18	5781.00	100	10	Connection / Survey
20:11	20:33	0.37	5796.00	100	2b	Slide 15' @ 20R
20:33	20:45	0.20	5866.00	100	2a	Rotate
20:45	20:54	0.15	5866.00	100	10	Connection / Survey
20:54	21:35	0.68	5881.00	100	2b	Slide 15' @ 30R
21:35	21:53	0.30	5952.00	100	2a	Rotate
21:53	22:03	0.17	5952.00	100	10	Connection / Survey
22:03	22:32	0.48	5967.00	100	2b	Slide 15' @ HS
22:32	22:47	0.25	6038.00	100	2a	Rotate
22:47	22:57	0.17	6038.00	100	10	Connection / Survey
22:57	23:15	0.30	6123.00	100	2a	Rotate
23:15	23:45	0.50	6123.00	100	7	Rig Service
23:45	00:00	0.25	6123.00	100	10	Connection / Survey

COMMENTS

WELL INFORMATION

Daily Drilling Report

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

CURRENT STATUS Report # 4

Date : 07/30/2012

Total Depth (ft) : 7398.00

Depth Last 24 (ft) : 331.00

Hole Size (in) : 8.750

Casing Depth (ft) : 930.00

Casing Diameter (in) : 9.625

Casing ID (in) : 9.063

Customer Reps :

Customer Reps :

SDS Reps : Robbie Arnold

SDS Reps : Rob Walker

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct (deg)	Formation Name	MD Top (ft)	TVD Top (ft)
7358.00	75.36	3.71	7008.29	1048.14	0.00			

BHA SUMMARY

Well:9484812 Run:0100 - 2010.33 ft;Bit, Motor, Collar, Sub, Collar, Collar, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)
Freshwater gel	9.90	42.00	17.00	19	5.00	11.00			

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH
			9.60	0.10			

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	00:22	0.37	7067.00	100	7	Rig Service
00:22	00:35	0.22	7067.00	100	10	Connection / Survey
00:35	01:57	1.37	7110.00	100	2b	Slide 43' @ 20L
01:57	02:10	0.22	7110.00	100	10	Survey
02:10	04:10	2.00	7152.00	100	2b	Slide 43' @ 45L
04:10	04:22	0.20	7152.00	100	10	Connection / Survey

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
04:22	06:55	2.55	7196.00	100	2b	Slide 43' @ 30L
06:55	07:12	0.28	7196.00	100	10	Survey
07:12	08:39	1.45	7238.00	100	2b	Slide 43' @ HS
08:39	08:50	0.18	7238.00	100	10	Conn/Survey
08:50	10:23	1.55	7287.00	100	2b	Slide 43' @ 20L
10:23	10:28	0.08	7287.00	100	10	Survey
10:28	11:40	1.20	7287.00	100	5	Pump repair
11:40	12:35	0.92	7308.00	100	2b	Slide 21' @ HS
12:35	13:25	0.83	7308.00	100	5	Pump Repair
13:25	13:50	0.42	7324.00	100	2b	Slide 16' @ HS
13:50	14:00	0.17	7324.00	100	10	Conn/Survey
14:00	16:30	2.50	7364.00	100	2b	Slide 30' @ HS
16:30	16:40	0.17	7364.00	100	10	Survey
16:40	21:11	4.52	7394.00	100	2b	Slide HS
21:11	23:45	2.57	7394.00	100	6d	10 STD Wiper Trip
23:45	00:00	0.25	7398.00	100	2b	Slide

COMMENTS

09:00 - Needing 14's to land As per DE continue drilling landing low is ok verses tripping for bigger bend
 14:00= As per DE continue drilling maximize buildrate much as possible . unless build dropped all the way out below a 4

WELL INFORMATION

Daily Drilling Report

Customer : Anadark Petroleum Corp.

Well Name : Wardell 26N-29HZ

Job Number : CA-XX-0009484812

CURRENT STATUS Report # 5

Date : 07/31/2012

Total Depth (ft) : 7530.00

Depth Last 24 (ft) : 132.00

Hole Size (in) : 8.750

Casing Depth (ft) : 930.00

Casing Diameter (in) : 9.625

Casing ID (in) : 9.063

Customer Reps :

Customer Reps :

SDS Reps : Robbie Arnold

SDS Reps : Rob Walker

SDS Reps :

LAST SURVEY
LAST FORMATION TOP

Depth (ft)	Inc (deg)	Azi (deg)	TVD (ft)	Displ (ft)	Direct (deg)	Formation Name	MD Top (ft)	TVD Top (ft)
7479.00	87.16	3.20	7027.59	1091.48	0.00			

BHA SUMMARY

Well:9484812 Run:0100 - 2010.33 ft;Bit, Motor, Collar, Sub, Collar, Collar, Sub, Drill Pipe, Drill Pipe

MUD DATA

Type	Weight (ppg)	FV (spqt)	PV (cP)	YP (lbf2)	Gels 10 sec	10 Min	30 sec	30 min	(lbf2)

Flowline	Weight Out (ppg)	FV Out (spqt)	Solids (%)	Sand (%)	Oil (%)	Fluid Loss (mptm)	pH

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
00:00	01:00	1.00	7409.00	100	2b	Slide
01:00	01:15	0.25	7409.00	100	10	Connection / Survey
01:15	03:40	2.42	7452.00	100	2b	SLide 43' @ 20L
03:40	03:50	0.17	7452.00	100	10	Survey
03:50	05:14	1.40	7495.00	100	2b	Slide 43' @ -20
05:14	05:31	0.28	7495.00	100	10	Survey

TIME BREAKDOWN

From	To	Hours	TMD (ft)	Run	Activity	Activity Description
05:31	06:30	0.98	7530.00	100	2b	Slide 35' @ 35L
06:30	06:40	0.17	7530.00	100	10	Survey
06:40	08:42	2.03	7530.00	100	33b	Circulate 2 Sweeps
08:42	13:30	4.80	7530.00	100	6e	Trip out
13:30	15:30	2.00	7530.00	100	6c	L/D BHA
15:30	00:00	8.50	7530.00	100	12	Run 7" casing

COMMENTS

Section 5

Contents: Graphics

WELL INFORMATION

End of Well Report

Customer : Anadark Petroleum Corp.
Well Name : Wardell 26N-29HZ
Job Number : CA-XX-0009484812
Rig Name : Xtreme 22
Field Name : Wattenburg
Country : United States

DIRECTIONAL DRILLERS

Driller 1 : Chris Radley
Driller 2 : Robbie Arnold

Driller 3 : Rob Walker
Driller 4 :

JOB OBJECTIVES

JOB SUMMARY

BHA SUMMARY

BHA CHART

Run #	Bit #	Motor #	Hole Size (in)	MD In (ft)	MD Out (ft)	TVD In (ft)	TVD Out (ft)	Inc In (deg)	Inc Out (deg)	Azi In (deg)	Azi Out (deg)	Time Drilling (hr)	Time Circ (hr)
0100	1	1	8.750	930.00	7530.00	930.00	7027.64	0.08	92.18	112.11	2.03	61.25	6.42
0200	2	3		7530.00	11566.00	7027.64	7066.03	92.18	86.29	2.03	358.81	40.13	6.25

MOTOR / ROTARY STEERABLE RUN SUMMARY

MOTOR / ROTARY STEERABLE CHART

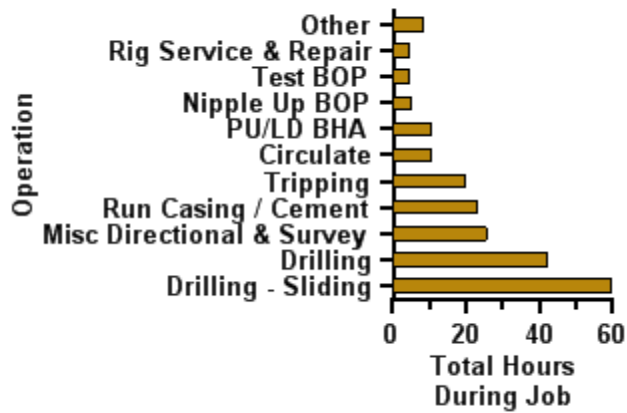
Motor #	Manufacturer	Model	Lobe	OD (in)	Gauge (in)	Bend (deg)	DLS (Ori) (°/100')	DLS (Rot) (°/100')	ROP (Ori) (fph)	ROP (Rot) (fph)
1	Sperry Drilling	SperryDrill	6:7	6.750		1.83	0.00	0.00	0.00	0.00
3	Sperry Drilling	GeoForce	4:5	5.000		1.50	0.00	0.00	0.00	0.00

BIT RUN SUMMARY

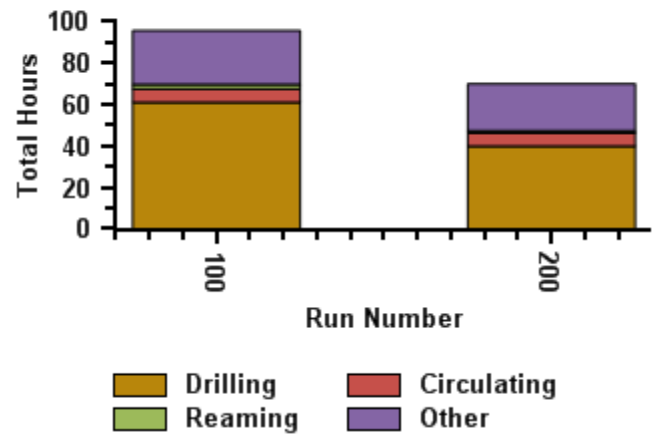
BIT CHART

Bit #	Manufacturer	Style	Gauge (in)	Gauge Length (in)	Nozzles	TFA (in2)	Dull Grades I O D L B G O R	Footage (ft)	Time Drilling (hr)	ROP (fph)
1	Baker	DP505F	8.750	3.000	5x18	1.243	1-1-WC-A--O-NA-BHA	0.00	61.25	0.00
2	Varel	VM513H	6.125	2.500	5x15,2x10	1.016		0.00	40.13	0.00

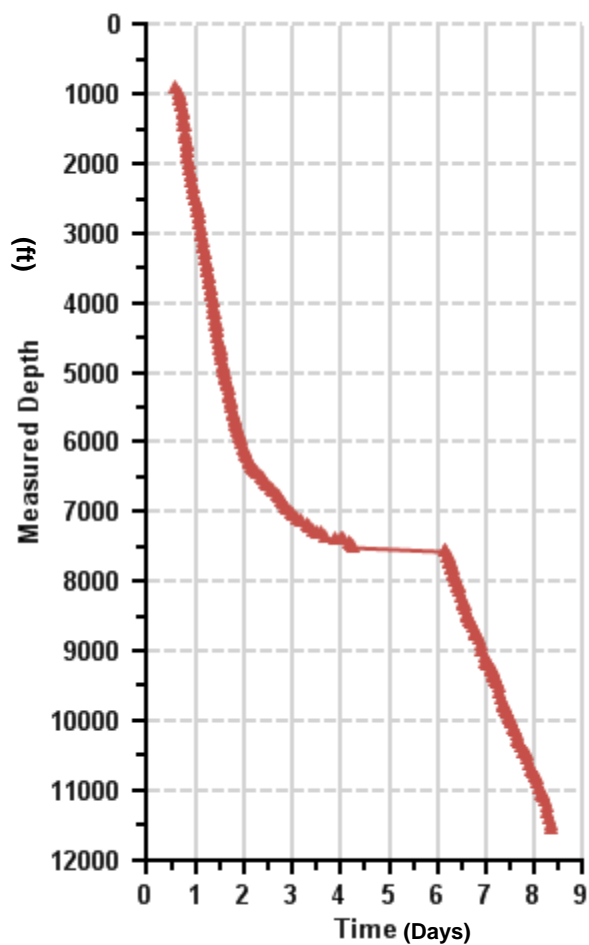
HOURS BY OPERATION



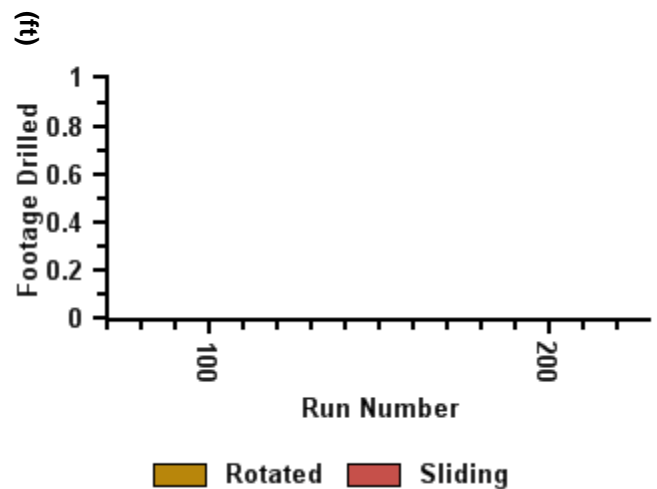
HOURS PER RUN



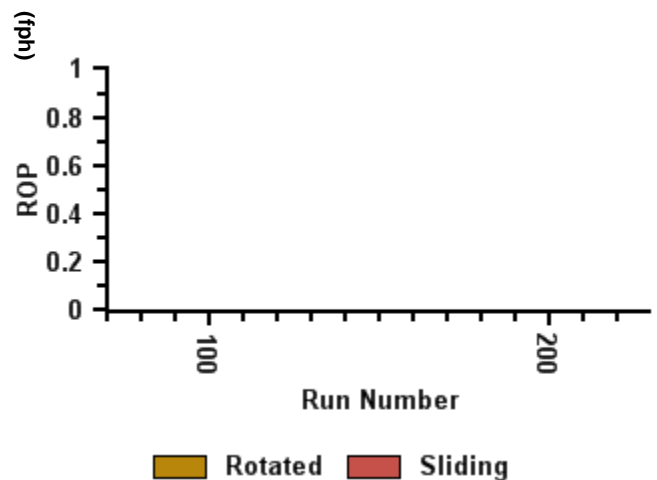
DAY vs DEPTH



FOOTAGE PER RUN



AVERAGE ROP PER RUN



SURFACE HOLE SECTION**INTERMEDIATE HOLE SECTION 1****INTERMEDIATE HOLE SECTION 2****PRODUCTION HOLE SECTION**

CA-XX-0009484812

MD (ft)	Formation Name MD/TVD (ft)	Inclination (deg) ——— DLS (#/100) ——— Inc	Bit Data	Drilling Parameters	Motor	BHA Stabilizers	Comments	Run # @ MD (ft)
930.00		0 25 50 75 100						#100 @ 930.0
1430.00			DP505F 5x18 0.0 fph 61.25 hr		6.750" SperryDrill 6/7 1.83 deg			
1930.00								
2430.00								
2930.00								
3430.00								
3930.00			VM513H 5x15,2x10 0.0 fph 40.13 hr		5.000" GeoForce 4/5 1.5 deg	5.875 in@ 29.6 ft 5.875 in@ 80.8 ft 6.000 in@ 96.3 ft	BHA performed as expected	#200 @ 7530.0
4430.00								
4930.00								
5430.00								
5930.00								
6430.00								
6930.00								
7430.00								
7930.00								
8430.00								
8930.00								
9430.00								
9930.00								
10430.00								
10930.00								
11430.00								
11930.00		0 3.8 7.5 11.3 15 DLS						