



Weatherford®

6 3/4 in. & 4 3/4 in.
WeatherfordMLWD™
Gamma Ray & Resistivity
1 in. & 5 in. TRUE VERTICAL DEPTH
RECORDED DATA

Company:		Anadarko	
Well:		Reigle 28N-4HZ	
Field:		Wattenburg	
Rig:		Xtreme 23	
County:		Weld	
Location		COMPANY	
		WELL	
		FIELD	
		RIG	
		COUNTY	
API #		Anadarko	
		Reigle 28N-4HZ	
		Wattenburg	
		Xtreme 23	
		Weld	
		STATE	
		Colorado	
		05-123-36138	
Latitude:		40.162028° N	x =3,232,556 ft
Longitude:		104.667910° W	y =1,302,961 ft
Other Services:		Mag Decl: 8.64° Mag Dip: 66.80°	
T Temperature and Directional			

Permanent Datum:		<u>Mean Sea Level</u>					
Log Measured From:	<u>Drill Floor</u>	Elev:	<u>4872 ft</u>	above perm. datum		K.B. Top Drive	
Depth Reference:	<u>Drillers Tally</u>	Total Depth:		<u>11469 ft</u>		G.L. 4858 ft	
Depth Logged:	6473 ft	to	11469 ft	Runs:	3	D.F. 4872 ft	
Date Logged:	26-Dec-12	to	30-Dec-12	Spud Date:	23-Dec-12	W.D. Land	
Borehole Record				Casing Record			
Hole Size	From	To	Size	Weight	From	To	
12.250 in.	0 ft	839 ft	9.625 in.	53.5 lb/ft	Surface	839 ft	
8.750 in.	839 ft	7364 ft	7.000 in.	26 lb/ft	Surface	7364 ft	
6.125 in.	7364 ft	11469 ft					

Borehole Deviation Record			Mud Record			
Hole Size	Min. Inc.	Max. Inc.	Type	Weight	From	To
8.750 in.	0.35°	84.95°	WBM	9.70 - 10.20 ppg	6525 ft	7364 ft
6.125 in.	87.47°	91.85°	WBM	9.30 ppg	7364 ft	11469 ft

All interpretations of log data are opinions based on inferences from electrical or other measurements. Weatherford International does not guarantee the accuracy or correctness of any interpretation or recommendation and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation or recommendation made by any of our employees or agents.

RUN SUMMARY							
M/LWD Run Number		2	3				
Bit Size	in.	8.750	6.125				
Bit Type		PDC	PDC				
Bit TFA	sq.in.	0.982	0.982				
Bit Start Depth	ft	6525	7364				
Bit End Depth	ft	7364	11469				
Top Log Interval	ft	6473	7386				
Bottom Log Interval	ft	7364	11469				
Begin Log Time	hrs	1:56	15:52				
Begin Log Date	DD-MMM-YY	26-Dec-12	29-Dec-12				
End Log Time	hrs	4:20	21:27				
End Log Date	DD-MMM-YY	27-Dec-12	30-Dec-12				
Drill or Wipe		Drill	Drill				
Flow Rate	gal/min	582	300				
Max AV / CV @ MWD	ft/min	445 / 332	491 / 364				
Min Inc @ Depth	deg @ ft	1.38 @ 6518	87.47 @ 10309				
Max Inc @ Depth	deg @ ft	84.95 @ 7364	91.85 @ 9797				
MUD DATA							
Depth	ft	7364	11469				
Fluid Type		WBM	WBM				
Mud Weight	ppg	10.20	9.30				
Plastic Viscosity	cP	10	10				
Solids / Sand	%	9.70 / 0.30	5.20 / 0.30				
NaCl Equiv. Chlorides	ppm	2392	2475				
pH		9.0	8.8				
Oil:Water Ratio	% Vol	1.1 : 98.9	1.6 : 98.4				
Rm @ Temperature	ohm-m @ deg F	N/A	1.80 @ 73				
Rmc @ Temperature	ohm-m @ deg F	N/A	1.75 @ 73				
Rmf @ Temperature	ohm-m @ deg F	N/A	1.20 @ 73				
KCl	% Vol	0	0				
Client Representative		R. McPeters	R. McPeters				
WeatherfordM/LWD Engineer		D. Palmer	S. Christy				

EQUIPMENT SUMMARY

M/LWD Run Number	2	3			
HEL Serial Number	CP20738PDYBR-T01	NW22474PDBB4.75			
MFR Serial Number	N/A	NW22475RBBK4.75			
SAGR Serial Number	N/A	NW22477JB4.75			
IDS Serial Number	N/A	NW22514BI4.75			
Sensor to Bit Offsets / Acquisition Rates					
Directional	ft / sec	58.73 / RT	55.46 / RT		
Gamma Ray	ft / sec	44.52 / 10	40.92 / 5		
Resistivity	ft / sec	N/A	76.54 / 5		
Other Information					
Total BHA Length	ft	2863.95	6183.69		
BHA Assembly Type		Steerable	Steerable		
Stabilizer Location	ft	N/A	36.09		
Stabilizer Location	ft	N/A	111.00		
Run Circulating Time	hr	29.21	35.15		
Run Drilling Time	hr	15.15	15.63		

MUD SUMMARY

Date and Time	Run	Bit Depth	Mud Weight	% K	Rm @ Temp	Rmf @ Temp	Rmc @ Temp	BHCT
27 Dec 12 @ 20:00	02	7364 ft	10.20 ppg	0	N/A	N/A	N/A	172 F
29 Dec 12 @ 20:00	03	11469 ft	9.30 ppg	0	1.80 @ 73 F	1.20 @ 73 F	1.75 @ 73 F	221 F

M/LWD RUN REMARKS

Run Number: 2 :: REAL TIME DATA LOG

WFT Services Provided:

Real Time Logging: Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

Borehole and Environmental Correction:

Collar O.D.: 6.750 in.

Gamma Ray: Collar O.D., collar I.D. and K1 factor.

Collar I.D.: 3.250 in.

K1 Factor: 3.164

KCl Concentration: 0%

Run Number: 3 :: RECORDED DATA LOG

WFT Services Provided:

Recorded and Real Time Logging: Gamma Ray, Deep, Medium and Shallow Resistivity, and Temperature.

Directional Services: On demand Inclination and Azimuth.

Borehole and Environmental Correction:

Hole Size: 6.125 in.

Gamma Ray: Corrected for mud weight, hole size and KCl concentration.

Mud Weight: 9.30 ppg

Resistivities: Corrected for borehole temperature, hole size, drilling fluid resistivity
and dielectric correction.

Borehole Temperature: 212° F

Drilling Fluid Resistivity: 0.656 ohm-m

KCl Concentration: 0%

M/LWD LOG COMMENTS

Comment No. 2-1

Start of MWD Drilling Run 02

Weatherford International provided 6 3/4 in. Directional, Gamma Ray and Temperature for Run 02.

Run 02 started formation drilling December 26, 2012 at 01:56 at 6525 MD / 6478 TVD. Weatherford International logged the 8.750 in. borehole.

The WBM at the start of drilling was 10.20 ppg.

Comment No. 2-2

End of MWD Drilling Run 02

Run 02 ended drilling formation December 27, 2012 at 04:20 at 7364 MD / 7043 TVD.

The WBM at the end of drilling was 10.20 ppg.

Comment No. 3-1

RECORDED DATA LOG

Start of LWD Drilling Run 03

Weatherford International provided 4 3/4 in. Directional, Resistivity, Gamma Ray, and Temperature for Run 03.

Run 03 started formation drilling December 29, 2012 at 15:52 at 7364 MD / 7043 TVD. Weatherford International logged the 6.125 in. borehole.

The WBM at the start of drilling was 9.30 ppg.

Comment No. 3-2

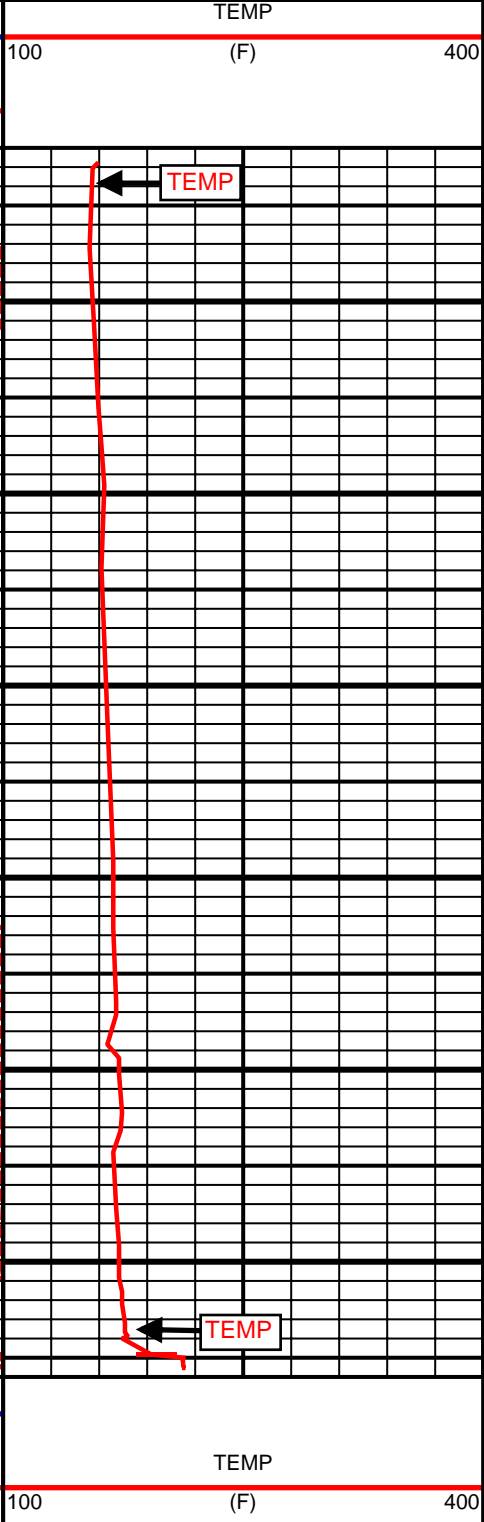
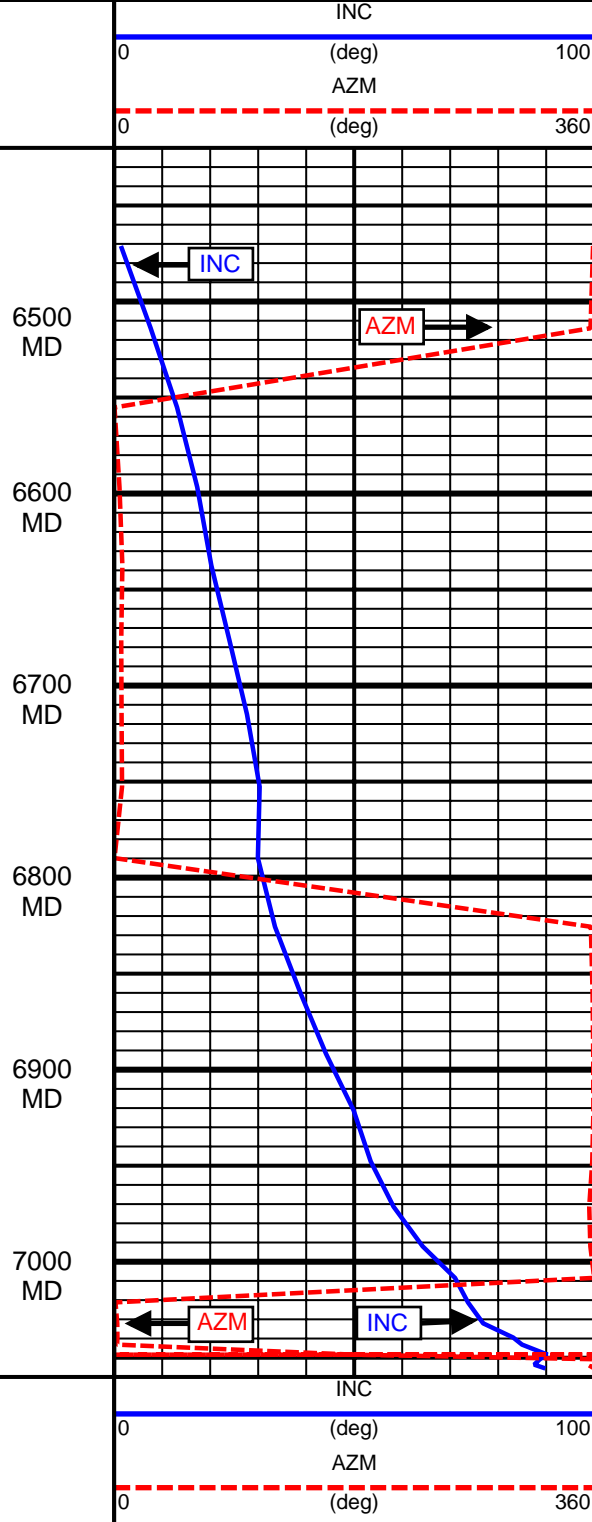
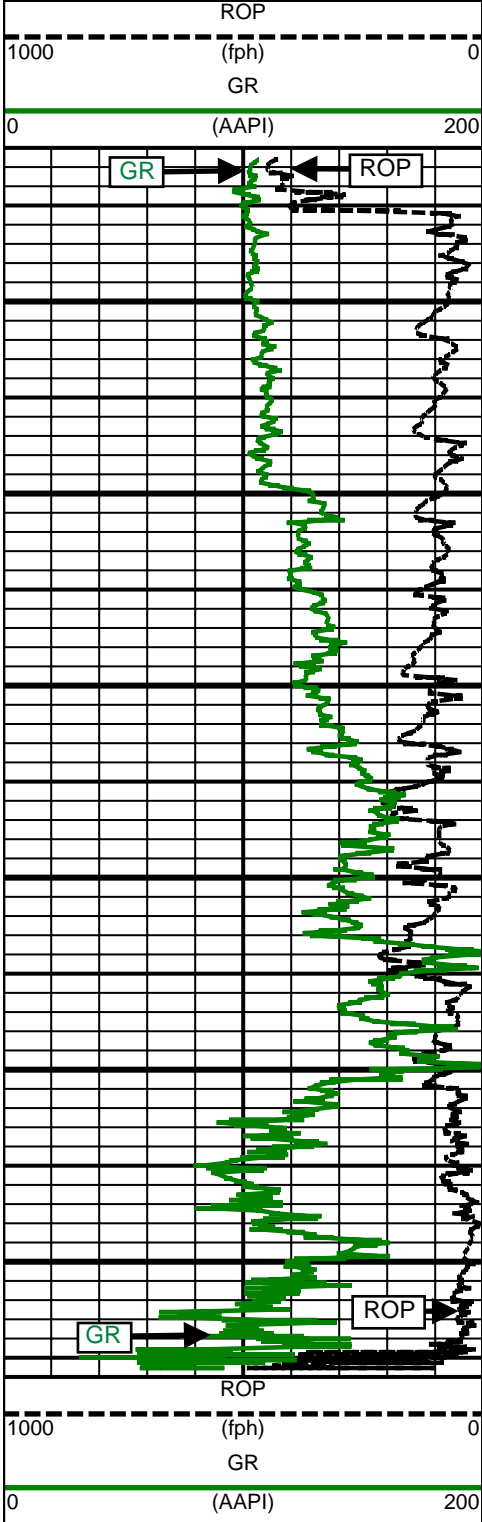
End of LWD Drilling Run 03

Run 03 ended drilling formation December 30, 2012 at 21:27 at 11469 MD / 7051 TVD.

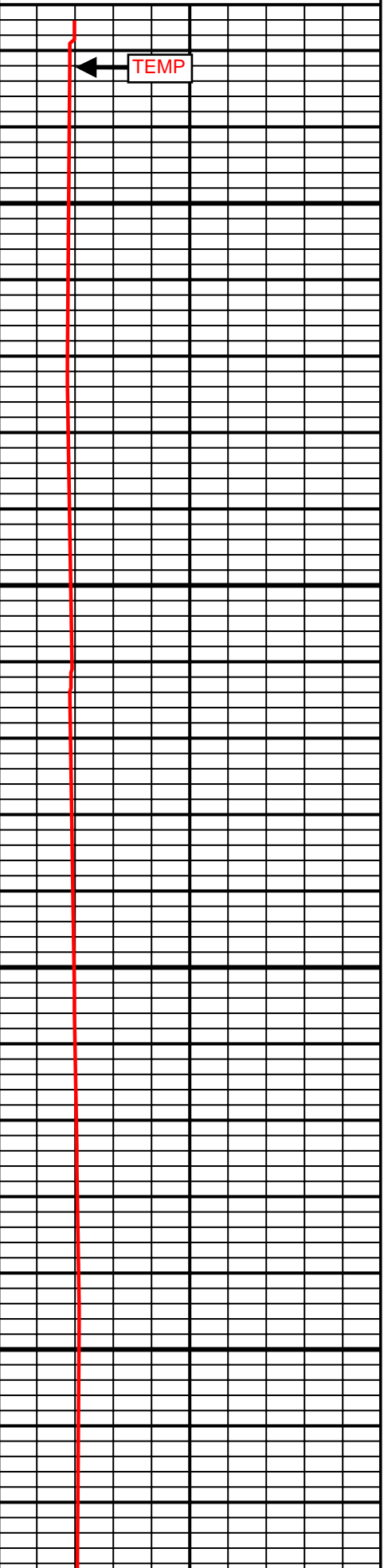
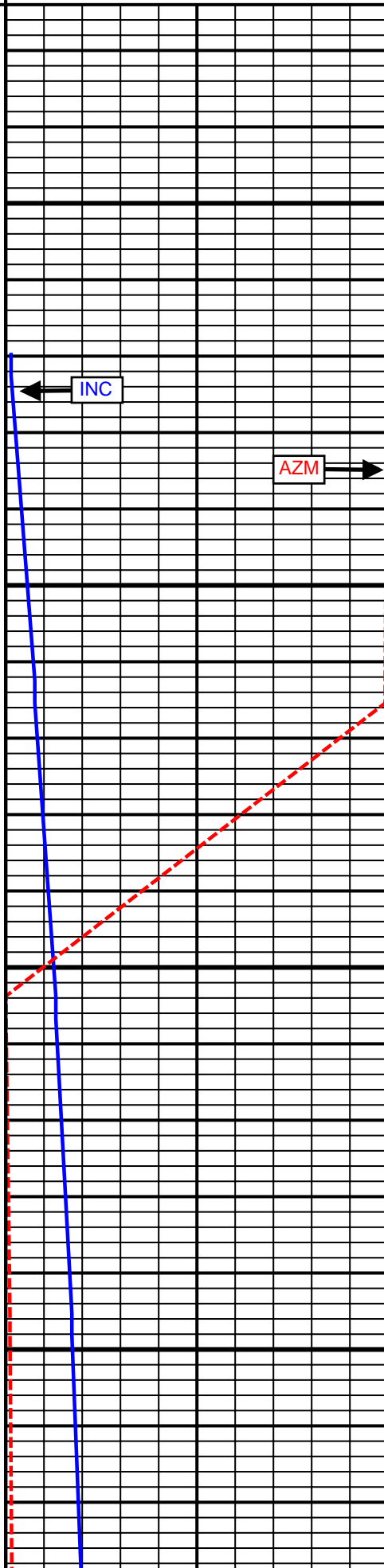
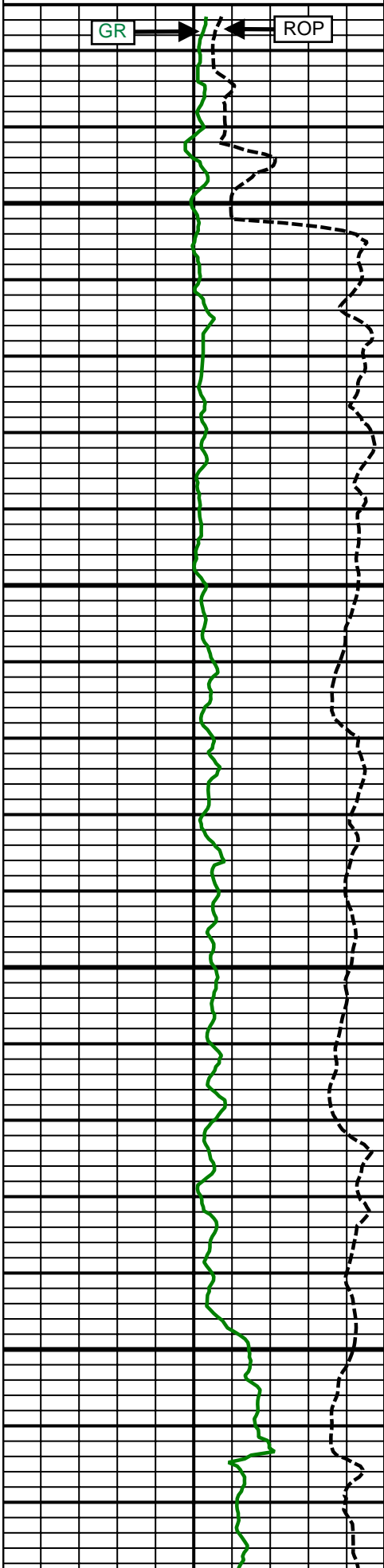
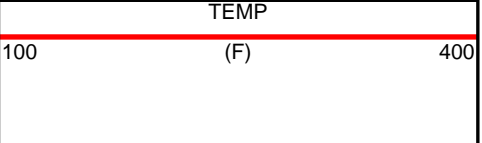
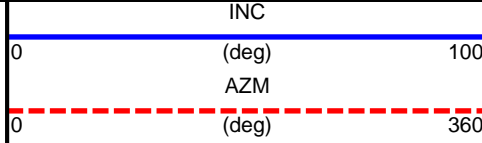
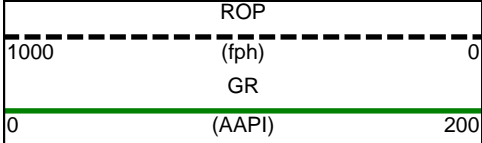
The WBM at the end of drilling was 9.30 ppg.

CURVE SPECIFICATIONS				
CURVE TYPE	MNEMONIC	UNITS	COMMENTS	CORRECTIONS
Rate of Penetration	ROP	fph	Rate of Penetration 3.0 ft window 0.5 ft Exponential Smoothing	None
Gamma Ray	GR	AAPI	Gamma Ray 3.0 ft window 0.5 ft Exponential Smoothing	See M/LWD Run Remarks
Inclination	INC	deg	Survey Inclination No Smoothing	None
Azimuth	AZM	deg	Survey Azimuth No Smoothing	
Temperature	TEMP	F	Temperature 3.0 ft window 0.5 ft Exponential Smoothing	

1 Inch - True Vertical Depth

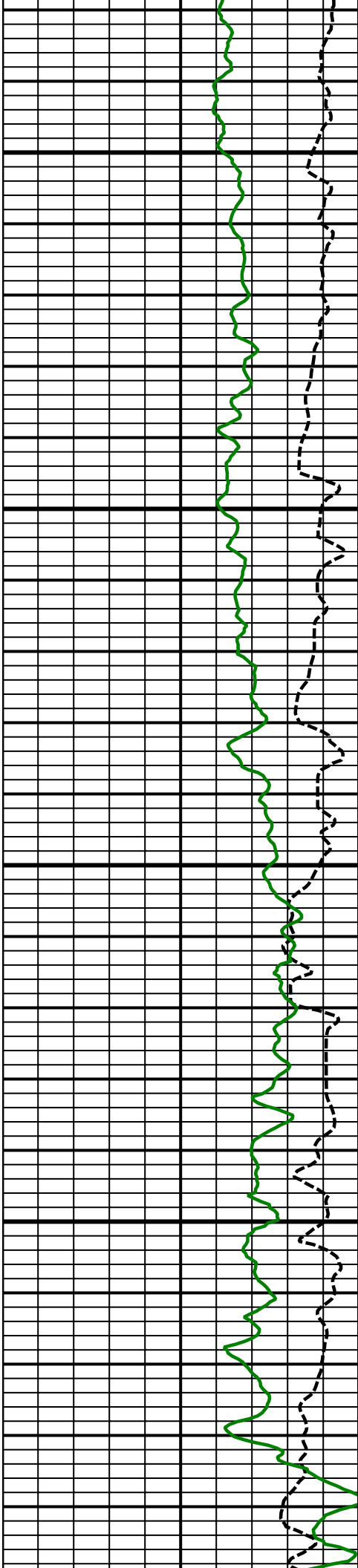


5 Inch - True Vertical Depth



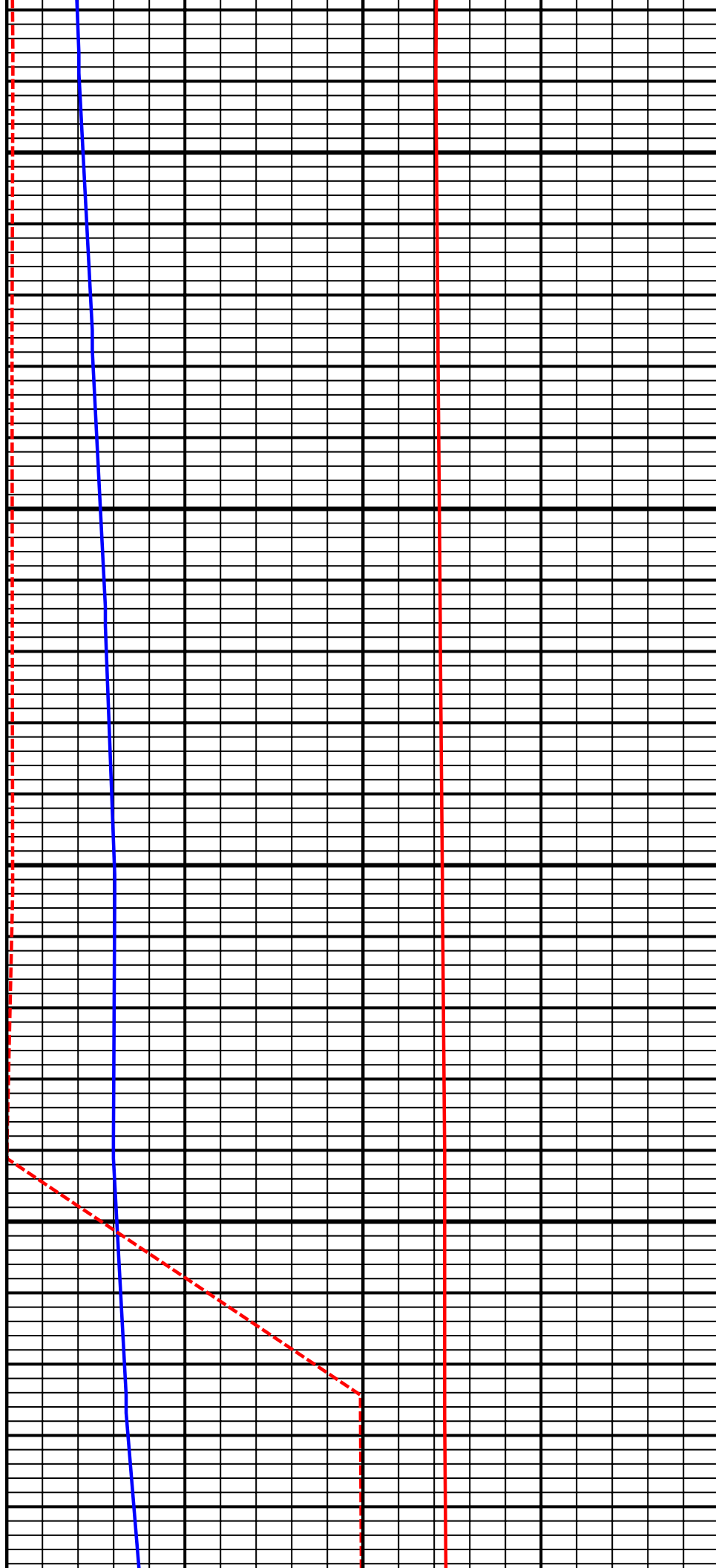
6500
TVD

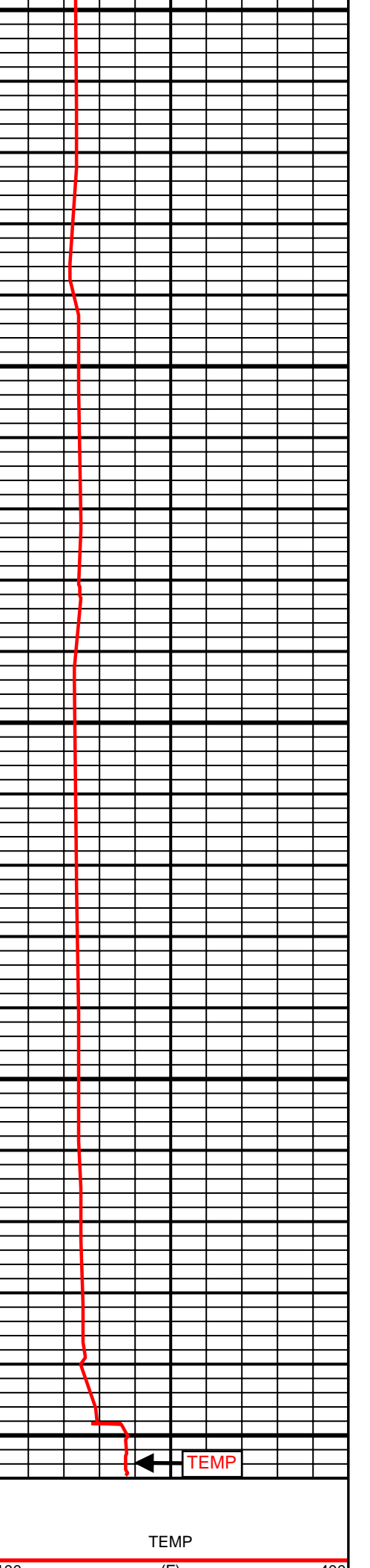
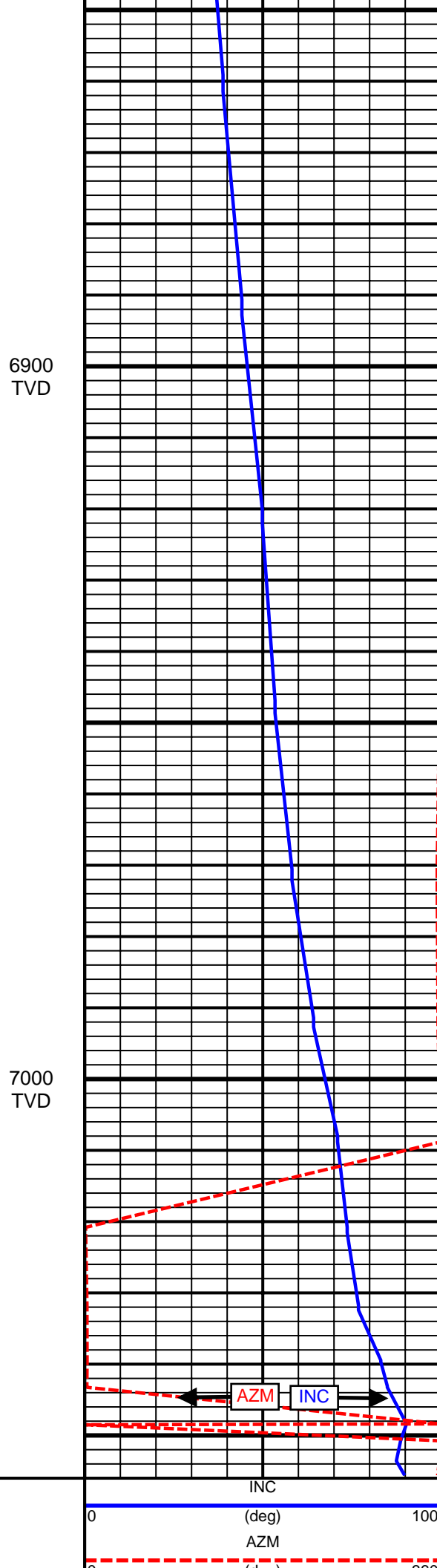
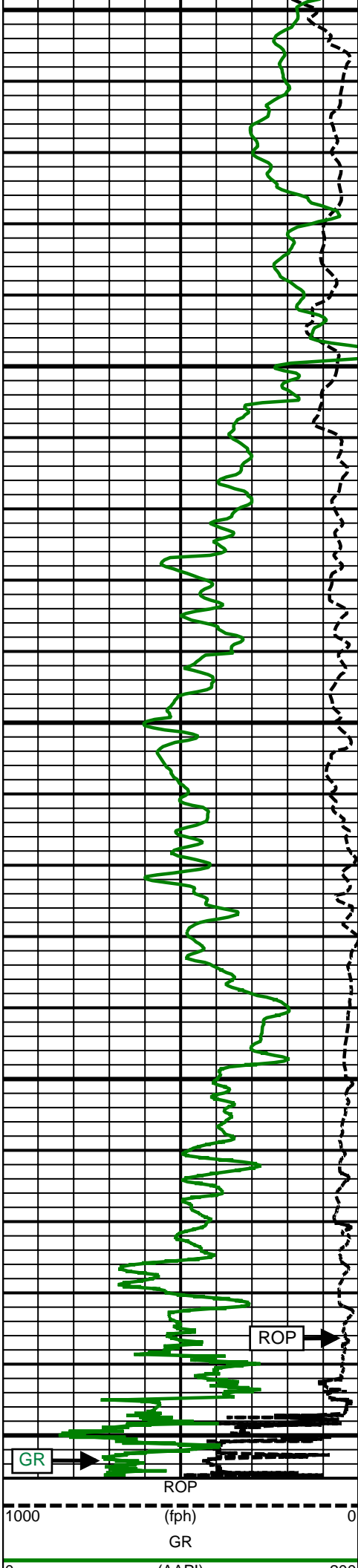
6600
TVD



6700
TVD

6800
TVD





0	(AAPI)	200	0	(deg)	360	100	(F)	400
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SURVEY						
Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
True North	355.03 deg	52771 nT	66.80 deg	8.64 deg	0.00 deg	8.64 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	839.00 ft	0.74 deg	325.01 deg	838.99 ft	-2.37 ft	-0.60 ft

Well Head							
Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	NS (ft)	EW (ft)	VSect (ft)	Dogleg (deg/100ft)
942.00	0.49	76.68	941.99	-1.72	-0.55	-1.67	1.00
1033.00	0.44	64.42	1032.98	-1.48	0.14	-1.49	0.12
1124.00	2.10	295.38	1123.96	-0.62	-1.05	-0.52	2.64
1214.00	4.15	279.22	1213.83	0.61	-5.76	1.11	2.46
1305.00	5.92	275.87	1304.47	1.62	-13.67	2.80	1.97
1396.00	6.21	260.84	1394.97	1.32	-23.20	3.32	1.77
1493.00	6.31	264.36	1491.39	-0.04	-33.69	2.87	0.41
1586.00	6.43	258.50	1583.82	-1.58	-43.88	2.22	0.71
1679.00	7.20	245.05	1676.17	-5.08	-54.26	-0.36	1.90
1773.00	7.02	243.55	1769.44	-10.12	-64.75	-4.48	0.28
1866.00	7.38	225.13	1861.72	-16.87	-74.07	-10.39	2.50
1959.00	8.31	220.12	1953.85	-26.22	-82.63	-18.97	1.24
2053.00	7.77	206.74	2046.94	-37.09	-89.87	-29.17	2.07
2146.00	7.00	206.63	2139.16	-47.77	-95.24	-39.34	0.83
2239.00	7.61	215.79	2231.41	-57.84	-101.38	-48.84	1.41
2332.00	6.86	218.92	2323.67	-67.15	-108.47	-57.50	0.91
2426.00	7.38	210.09	2416.95	-76.74	-115.03	-66.49	1.29
2519.00	8.96	210.47	2509.00	-88.15	-121.69	-77.28	1.70
2612.00	7.94	211.22	2600.99	-99.89	-128.70	-88.37	1.10
2706.00	8.47	212.91	2694.03	-111.25	-135.82	-99.07	0.62
2800.00	9.46	209.84	2786.88	-123.77	-143.43	-110.88	1.17
2885.00	9.14	209.69	2870.76	-135.69	-150.25	-122.16	0.38
2970.00	8.26	210.18	2954.78	-146.83	-156.66	-132.71	1.04
3055.00	9.05	215.24	3038.82	-157.57	-163.59	-142.81	1.29
3141.00	8.16	220.00	3123.85	-167.77	-171.41	-152.29	1.32
3226.00	7.71	213.71	3208.04	-177.14	-178.46	-161.01	1.15
3312.00	8.60	210.73	3293.17	-187.46	-184.94	-170.74	1.15
3397.00	9.68	212.38	3377.09	-198.96	-192.02	-181.58	1.31
3483.00	9.10	216.34	3461.93	-210.55	-199.92	-192.43	1.01
3568.00	7.73	220.17	3546.02	-220.33	-207.59	-201.52	1.74
3654.00	8.51	222.43	3631.15	-229.45	-215.61	-209.90	0.98
3738.00	7.91	220.04	3714.29	-238.46	-223.53	-218.20	0.82
3824.00	8.80	210.86	3799.38	-248.64	-230.71	-227.71	1.86
3909.00	8.25	210.34	3883.44	-259.48	-237.12	-237.96	0.65
3995.00	9.61	207.97	3968.40	-271.15	-243.61	-249.02	1.64
4080.00	9.22	207.36	4052.26	-283.46	-250.06	-260.73	0.47
4165.00	8.15	209.14	4136.28	-294.77	-256.13	-271.47	1.30
4251.00	7.08	211.84	4221.52	-304.60	-261.89	-280.76	1.31
4336.00	8.84	208.39	4305.70	-314.80	-267.76	-290.41	2.14
4421.00	8.94	210.09	4389.68	-326.26	-274.18	-301.28	0.33
4507.00	9.44	211.87	4474.57	-338.03	-281.25	-312.39	0.67
4592.00	9.70	218.52	4558.39	-349.55	-289.39	-323.16	1.34

4677.00	9.69	219.08	4642.18	-360.70	-298.36	-333.50	0.11
4763.00	8.16	222.87	4727.14	-370.80	-307.08	-342.80	1.90
4848.00	6.52	228.01	4811.44	-378.45	-314.77	-349.75	2.08
4934.00	7.20	220.36	4896.82	-385.82	-321.89	-356.48	1.32
5019.00	7.99	216.31	4981.08	-394.64	-328.84	-364.67	1.12
5105.00	9.91	207.18	5066.03	-406.04	-335.76	-375.43	2.77
5190.00	8.16	205.48	5149.97	-417.99	-341.69	-386.82	2.08
5276.00	7.59	208.39	5235.16	-428.50	-347.02	-396.83	0.81
5361.00	8.95	208.21	5319.28	-439.27	-352.82	-407.05	1.60
5447.00	9.80	205.87	5404.13	-451.75	-359.17	-418.93	1.08
5532.00	8.09	214.18	5488.09	-463.21	-365.69	-429.78	2.52
5617.00	8.41	213.29	5572.21	-473.35	-372.46	-439.30	0.41
5703.00	7.52	219.99	5657.39	-482.92	-379.53	-448.22	1.49
5788.00	5.82	217.44	5741.81	-490.60	-385.72	-455.34	2.03
5874.00	4.51	216.46	5827.46	-496.78	-390.38	-461.10	1.53
5959.00	3.59	212.85	5912.24	-501.71	-393.81	-465.70	1.12
6044.00	2.04	200.08	5997.14	-505.36	-395.78	-469.18	1.96
6130.00	1.36	165.78	6083.10	-507.79	-396.05	-471.57	1.39
6215.00	0.66	183.44	6168.09	-509.26	-395.83	-473.05	0.89
6301.00	0.73	158.45	6254.08	-510.26	-395.66	-474.07	0.36
6386.00	0.70	170.43	6339.08	-511.28	-395.38	-475.10	0.18
6462.00	0.35	176.72	6415.07	-511.97	-395.29	-475.80	0.47
6518.00	1.38	359.06	6471.07	-511.46	-395.29	-475.29	3.09
6561.00	7.58	357.15	6513.92	-508.11	-395.44	-471.94	14.42
6603.00	13.07	0.22	6555.22	-500.59	-395.56	-464.44	13.13
6646.00	17.29	3.88	6596.71	-489.35	-395.11	-453.28	10.06
6689.00	20.21	6.02	6637.43	-475.58	-393.89	-439.67	6.98
6731.00	23.98	5.25	6676.33	-459.86	-392.35	-424.14	9.00
6774.00	27.66	5.50	6715.03	-441.22	-390.59	-405.72	8.56
6817.00	30.30	5.86	6752.65	-420.49	-388.53	-385.25	6.15
6860.00	29.91	0.16	6789.85	-398.97	-387.39	-363.91	6.71
6902.00	33.50	357.37	6825.58	-376.92	-387.90	-341.89	9.23
6945.00	38.81	358.78	6860.29	-351.57	-388.73	-316.57	12.50
6987.00	44.12	359.18	6891.75	-323.77	-389.22	-288.84	12.66
7030.00	49.84	359.37	6921.08	-292.35	-389.61	-257.50	13.31
7073.00	53.43	358.54	6947.76	-258.65	-390.23	-223.87	8.48
7115.00	58.18	356.19	6971.36	-223.96	-391.85	-189.17	12.22
7158.00	64.26	357.08	6992.05	-186.35	-394.05	-151.52	14.26
7201.00	70.99	359.93	7008.42	-146.63	-395.06	-111.86	16.81
7243.00	73.70	0.85	7021.15	-106.62	-394.79	-72.01	6.78
7286.00	76.86	2.25	7032.08	-65.05	-393.66	-30.70	7.99
7329.00	83.13	2.40	7039.55	-22.76	-391.94	11.28	14.59
7364.00	84.95	2.15	7043.18	12.02	-390.56	45.81	5.25
7491.00	90.35	359.47	7048.39	138.84	-388.78	172.00	4.75
7576.00	90.37	358.93	7047.85	223.83	-389.96	256.78	0.64
7661.00	90.00	359.83	7047.58	308.83	-390.88	341.53	1.14
7747.00	90.56	359.16	7047.16	394.82	-391.64	427.27	1.02
7832.00	90.62	0.26	7046.28	479.82	-392.07	511.98	1.30
7918.00	89.88	0.83	7045.91	565.81	-391.25	597.58	1.09
8003.00	88.46	357.92	7047.14	650.78	-392.18	682.31	3.81
8088.00	90.74	359.10	7047.73	735.75	-394.39	767.15	3.02
8174.00	91.67	0.35	7045.92	821.72	-394.80	852.84	1.81
8259.00	90.86	1.97	7044.05	906.68	-393.08	937.33	2.13
8345.00	90.74	1.74	7042.85	992.63	-390.30	1022.71	0.30
8430.00	89.38	1.54	7042.76	1077.59	-387.86	1107.14	1.62
8516.00	89.94	0.67	7043.27	1163.57	-386.21	1192.66	1.20
8601.00	90.25	359.84	7043.13	1248.57	-385.83	1277.30	1.04
8687.00	90.25	0.59	7042.75	1334.57	-385.50	1362.95	0.87
8772.00	90.43	359.70	7042.25	1419.57	-385.29	1447.61	1.07
8857.00	89.75	1.36	7042.11	1504.56	-384.50	1532.21	2.11
8943.00	88.89	0.39	7043.13	1590.54	-383.19	1617.76	1.51

9028.00	89.75	0.50	7044.14	1675.53	-382.53	1702.37	1.02
9114.00	90.25	0.06	7044.14	1761.53	-382.11	1788.01	0.77
9199.00	90.99	358.99	7043.22	1846.52	-382.81	1872.74	1.53
9284.00	90.18	0.34	7042.35	1931.51	-383.31	1957.46	1.85
9370.00	90.18	1.50	7042.08	2017.50	-381.93	2043.00	1.35
9455.00	88.70	2.67	7042.92	2102.44	-378.84	2127.35	2.22
9541.00	88.58	2.43	7044.96	2188.33	-375.01	2212.59	0.31
9626.00	88.21	1.55	7047.34	2273.24	-372.06	2296.93	1.12
9712.00	90.25	0.77	7048.49	2359.21	-370.32	2382.42	2.54
9797.00	91.85	0.46	7046.94	2444.19	-369.41	2467.00	1.92
9883.00	91.36	1.88	7044.53	2530.13	-367.65	2552.47	1.75
9968.00	90.12	2.84	7043.43	2615.05	-364.15	2636.77	1.84
10053.00	88.15	0.90	7044.71	2699.99	-361.38	2721.14	3.25
10139.00	87.53	0.40	7047.95	2785.92	-360.41	2806.67	0.93
10224.00	88.70	359.00	7050.75	2870.87	-360.85	2891.34	2.15
10309.00	87.47	358.33	7053.59	2955.80	-362.83	2976.12	1.65
10394.00	89.81	356.70	7055.61	3040.69	-366.51	3061.01	3.35
10480.00	90.68	357.52	7055.24	3126.57	-370.85	3146.95	1.39
10565.00	91.23	0.73	7053.82	3211.54	-372.15	3231.71	3.83
10650.00	89.81	1.27	7053.05	3296.52	-370.67	3316.24	1.79
10736.00	90.25	0.02	7053.01	3382.51	-369.70	3401.82	1.54
10821.00	91.54	0.45	7051.68	3467.50	-369.35	3486.46	1.60
10907.00	91.05	2.39	7049.73	3553.45	-367.22	3571.90	2.33
10992.00	91.42	1.91	7047.90	3638.37	-364.03	3656.23	0.71
11078.00	88.77	2.49	7047.76	3724.30	-360.73	3741.55	3.15
11163.00	89.57	0.98	7048.99	3809.25	-358.16	3825.95	2.01
11248.00	90.43	359.24	7048.99	3894.24	-357.99	3910.61	2.28
11334.00	89.69	359.47	7048.90	3980.24	-358.96	3996.37	0.90
11411.00	89.08	0.62	7049.73	4057.23	-358.90	4073.07	1.69
Projected to Total Depth:							
11469.00	89.08	0.62	7050.66	4115.22	-358.27	4130.78	0.00

Weatherford surveys from 942 ft MD to 11411 ft MD.

TD at 11469 ft MD.

The total correction is 8.64 deg relative to True North.



Weatherford®

Final Print

COMPANY	<u>Anadarko</u>		
WELL	<u>Reigle 28N-4HZ</u>		
FIELD	<u>Wattenburg</u>		
RIG	<u>Xtreme 23</u>		
LOC.	<u>Colorado</u>	COUNTY	<u>Weld</u>