



EOW REPORT

Wool Head 20 State Com #510H

Lea County, New Mexico

11/12/2019 - 01/04/2020

API:30-025-46490





Plan Vs. Actual





Advance Energy Partners
Project: Lea County, NM (NAD 83 NME)
Site: (Wool Head)Sec20_T-21-S_R-33-E
Well: Wool Head 20 State Com #510H
Wellbore: OWB
Design: AWB
Lat: 32° 27' 29.102 N
Long: 103° 35' 19.676 W
Pad GL: 3726.0
KB: KB @ 3752.5usft (H&P 466)



WELL DETAILS: Wool Head 20 State Com #510H

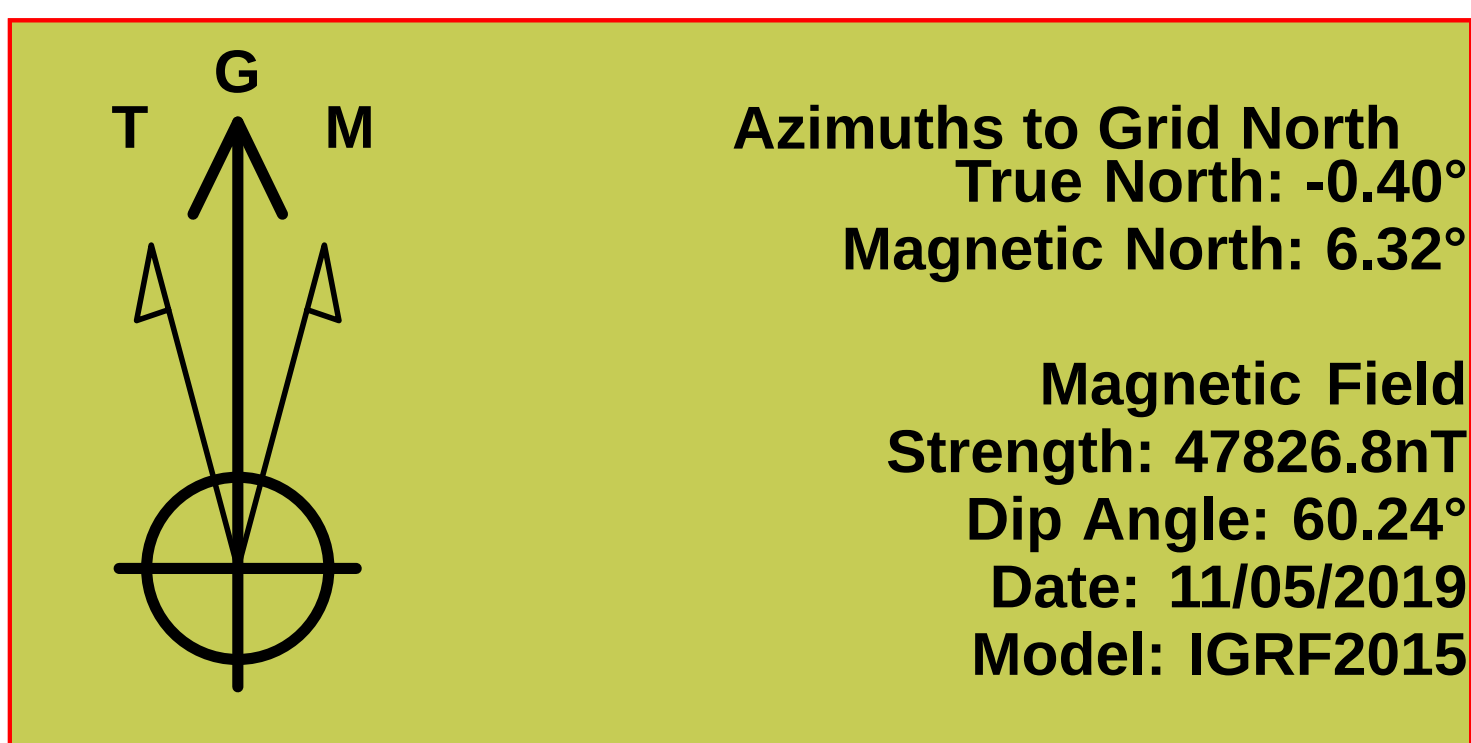
		3726.0		Latitude		Longitude	
+N/-S	+E/-W	Northing	Easting	32° 27' 29.102 N	103° 35' 19.676 W		
0.0	0.0	531182.70	770982.20				

SECTION DETAILS

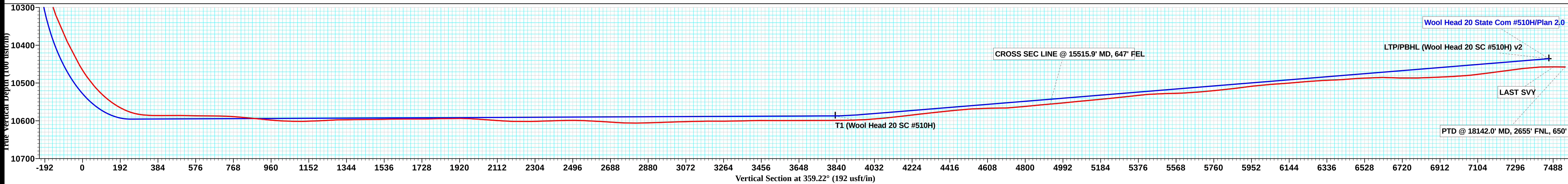
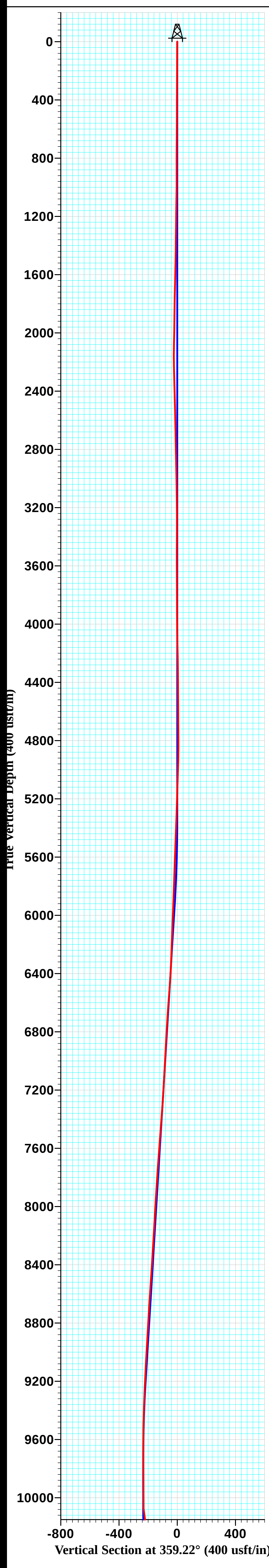
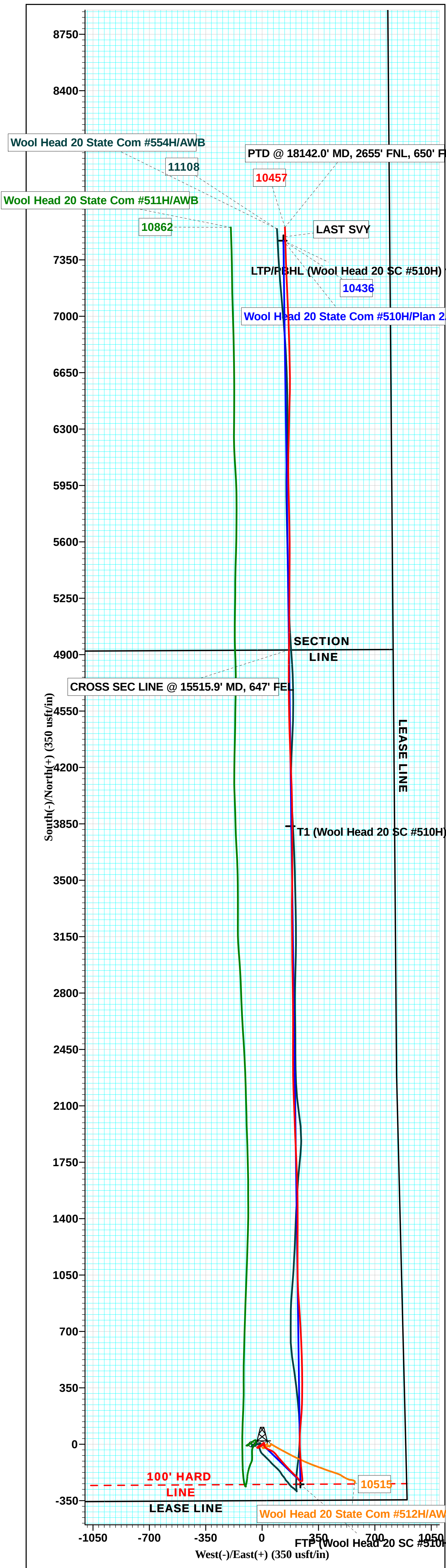
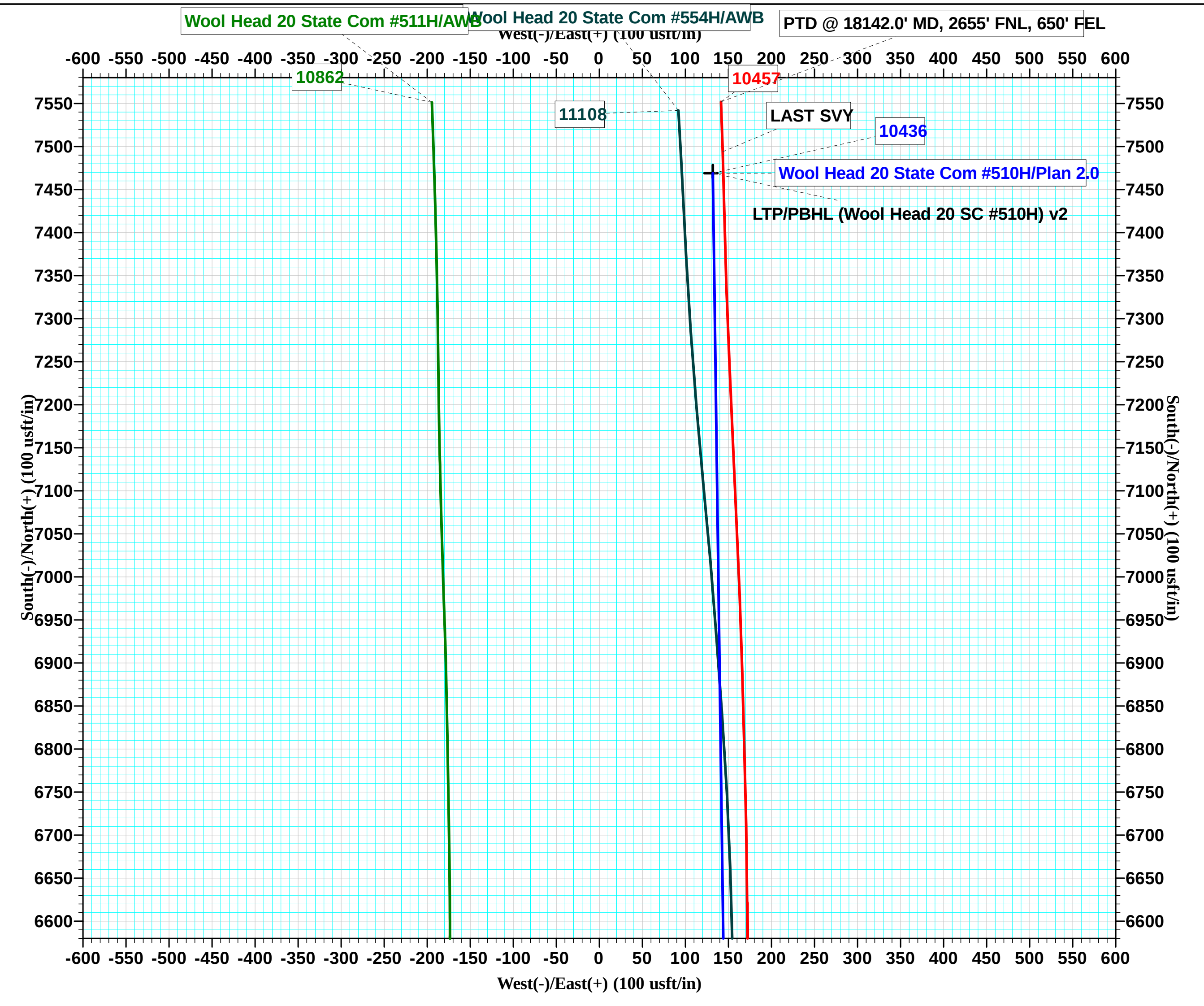
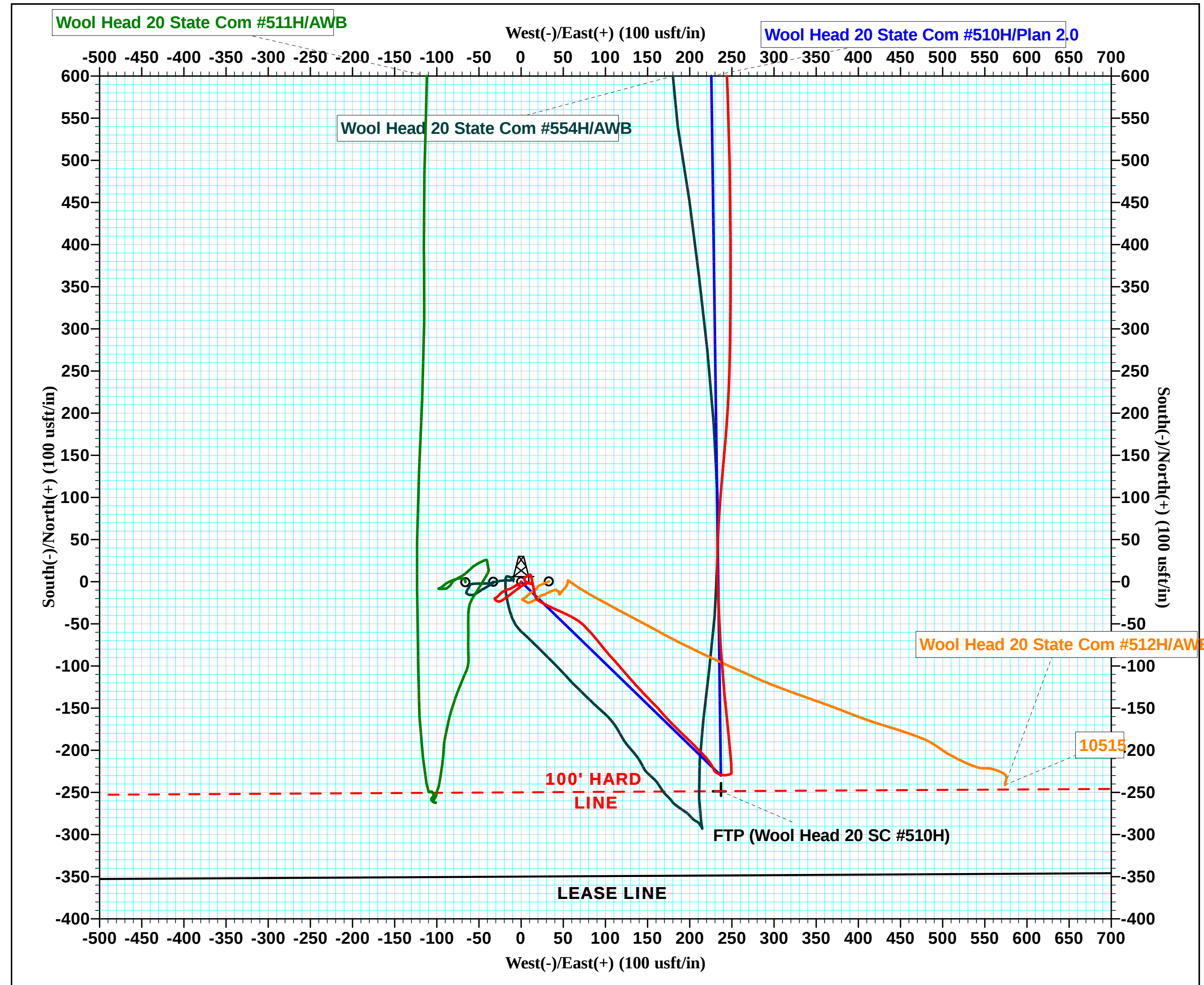
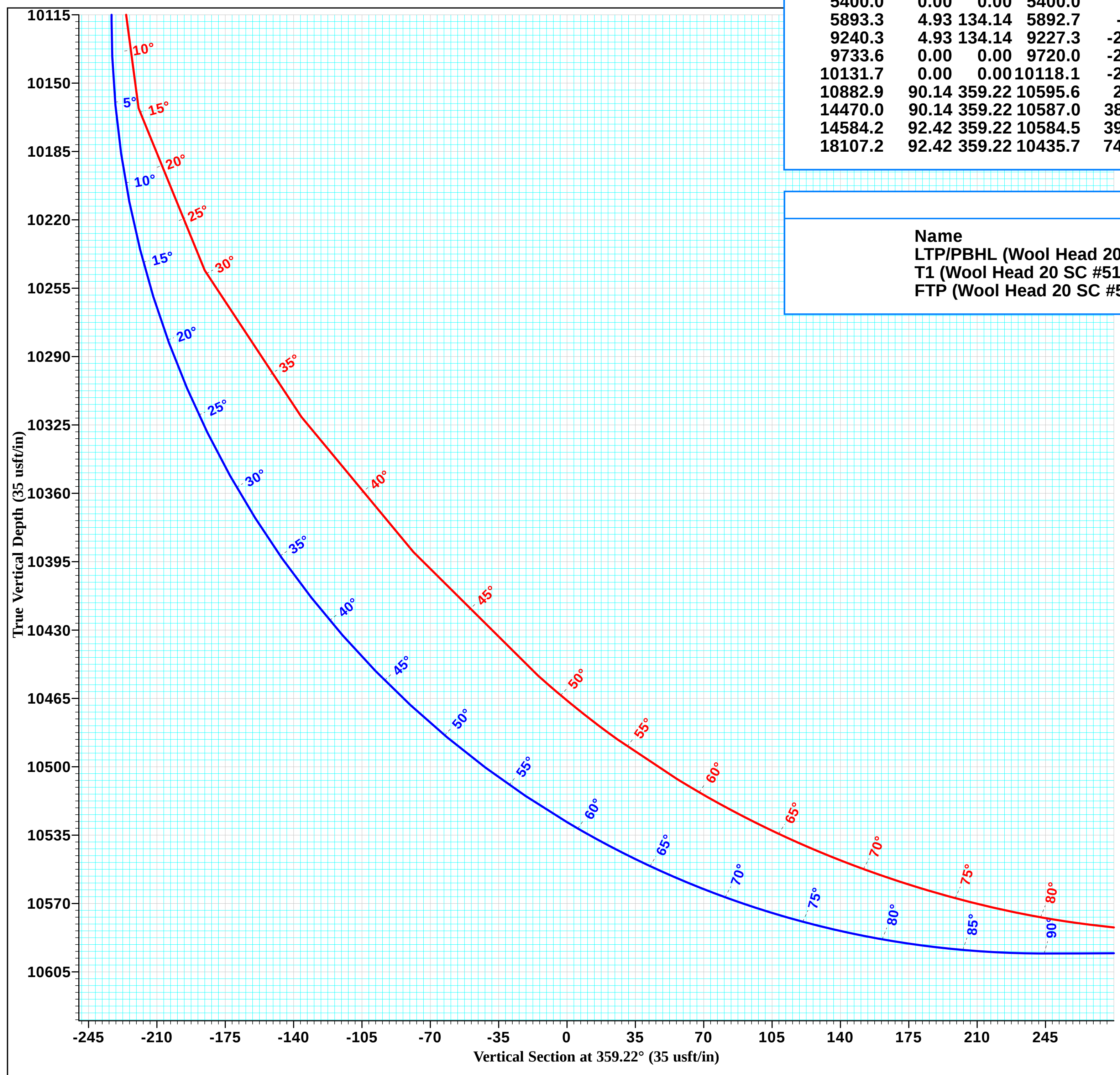
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSEct	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
5400.0	0.00	0.00	5400.0	0.0	0.0	0.00	0.00	0.0	NUDGE- Build 1.00
5893.3	4.93	134.14	5892.7	-14.8	15.2	1.00	134.14	-15.0	HOLD- 3347.0 at 5893.3 MD
9240.3	4.93	134.14	9227.3	-215.2	221.8	0.00	0.00	-218.2	DROP- -1.00
9733.6	0.00	0.00	9720.0	-230.0	237.0	1.00	180.00	-233.2	HOLD- 398.1 at 9733.6 MD
10131.7	0.00	0.00	10118.1	-230.0	237.0	0.00	0.00	-233.2	KOP- DLS 12.00 TFO 359.22
10882.9	90.14	359.22	10595.6	248.6	230.5	12.00	359.22	245.4	EOC- 3587.2 hold at 10882.9 MD
14470.0	90.14	359.22	10587.0	3835.4	181.4	0.00	0.00	3832.6	Start DLS 2.00 TFO 0.09
14584.2	92.42	359.22	10584.5	3949.5	179.8	2.00	0.09	3946.7	Start 3522.9 hold at 14584.2 MD
18107.2	92.42	359.22	10435.7	7469.0	131.9	0.00	0.00	7466.5	TD at 18107.2

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
LTP/PBHL (Wool Head 20 SC #510H) v2	10435.7	7469.0	131.9	538651.70	771114.10
T1 (Wool Head 20 SC #510H)	10587.0	3835.4	181.4	535018.10	771163.59
FTP (Wool Head 20 SC #510H)	10620.0	-248.7	237.1	530934.00	771219.30



To convert a Magnetic Direction to a Grid Direction, Add 6.32°





Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #510H
OWB**

Design: AWB

Distance to Plan

06 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Wool Head)Sec20_T-21-S_R-33-E		
Site Position:		Northing:	531,182.60 usft
From:	Map	Easting:	770,949.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 27' 29.104 N
		Longitude:	103° 35' 20.061 W
		Grid Convergence:	0.40 °

Well	Wool Head 20 State Com #510H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 27' 29.102 N
		Longitude:	103° 35' 19.676 W
		Ground Level:	3,726.0 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	11/05/2019	6.72
			Dip Angle (°)
			60.24
			Field Strength (nT)
			47,826.82441639

Design	AWB		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)
	0.0	0.0	0.0
			Direction (°)
			359.22

Survey Program	Date 01/06/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
238.0	18,142.0	Intrepid MWD (OWB)	MWD
			Description
			OWSG MWD - Standard

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
238.0	0.48	201.53	238.0	-0.9	238.0	1.0	-1.0	0.0	180.00	
424.0	0.62	241.87	424.0	-2.1	424.0	2.6	-2.4	1.1	154.03	
519.0	0.31	262.08	519.0	-2.4	519.0	3.3	-2.6	2.1	140.98	
614.0	0.66	228.68	614.0	-2.8	614.0	4.0	-4.0	0.2	177.44	
710.0	0.44	206.01	710.0	-3.4	710.0	4.9	-4.7	-1.6	-161.07	
804.0	0.88	224.29	804.0	-4.3	804.0	6.0	-6.0	0.1	179.45	
899.0	1.19	2.63	899.0	-3.8	899.0	6.0	4.1	4.4	47.36	
994.0	1.71	228.33	994.0	-3.8	994.0	6.8	-6.8	-0.9	-172.57	
1,084.0	1.45	238.88	1,083.9	-5.2	1,083.9	9.3	-9.3	0.6	176.19	
1,173.0	1.80	237.38	1,172.9	-6.5	1,172.9	11.8	-11.8	0.3	178.32	
1,263.0	1.85	244.33	1,262.8	-7.9	1,262.8	14.7	-14.5	1.9	172.39	
1,352.0	2.15	257.34	1,351.8	-8.8	1,351.8	17.7	-16.8	5.5	161.89	
1,442.0	2.37	244.59	1,441.7	-9.9	1,441.7	21.1	-21.1	1.3	176.55	
1,531.0	2.59	237.21	1,530.6	-11.8	1,530.6	25.0	-24.9	-1.7	-176.13	
1,620.0	1.89	223.67	1,619.6	-13.9	1,619.6	28.4	-27.2	-7.9	-163.75	
1,770.0	1.80	227.10	1,769.5	-17.2	1,769.5	33.1	-32.5	-6.2	-169.28	
1,892.0	1.36	244.77	1,891.4	-19.1	1,891.4	36.4	-36.1	4.6	172.75	
1,982.0	1.10	150.72	1,981.4	-20.3	1,981.4	37.5	-2.8	-37.4	-94.30	
2,071.0	2.37	127.08	2,070.4	-22.2	2,070.4	37.1	9.8	-35.7	-74.68	
2,160.0	2.15	86.83	2,159.3	-23.3	2,159.3	35.3	27.5	-22.1	-38.86	
2,250.0	2.64	55.89	2,249.2	-22.1	2,249.2	32.0	31.4	-5.7	-10.32	
2,340.0	2.59	53.17	2,339.1	-19.7	2,339.1	27.9	27.6	-4.3	-8.91	
2,429.0	2.55	53.78	2,428.1	-17.4	2,428.1	24.0	23.5	-4.6	-11.05	
2,519.0	2.42	55.10	2,518.0	-15.2	2,518.0	20.2	19.5	-5.1	-14.61	
2,609.0	2.15	52.73	2,607.9	-13.1	2,607.9	16.7	16.1	-4.4	-15.11	
2,699.0	1.98	50.27	2,697.8	-11.1	2,697.8	13.6	13.1	-3.7	-15.94	

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
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2,788.0	1.89	52.64	2,786.8	-9.3	2,786.8	10.7	9.9	-4.2	-23.03	
2,968.0	1.98	55.71	2,966.7	-5.8	2,966.7	5.8	3.6	-4.6	-51.95	
3,058.0	2.07	61.34	3,056.6	-4.2	3,056.6	4.7	-0.1	-4.7	-90.75	
3,147.0	2.20	63.80	3,145.6	-2.7	3,145.6	5.9	-3.6	-4.7	-127.47	
3,237.0	1.19	69.07	3,235.5	-1.6	3,235.5	7.8	-6.6	-4.2	-147.96	
3,327.0	0.57	136.31	3,325.5	-1.6	3,325.5	9.0	-7.2	5.4	143.28	
3,416.0	0.70	112.32	3,414.5	-2.2	3,414.5	9.9	-9.7	1.8	169.49	
3,506.0	0.97	100.28	3,504.5	-2.5	3,504.5	11.2	-11.2	-0.4	-178.06	
3,596.0	0.92	80.85	3,594.5	-2.6	3,594.5	12.6	-11.9	-4.3	-159.94	
3,686.0	0.26	309.72	3,684.5	-2.3	3,684.5	13.1	11.3	-6.6	-30.32	
3,775.0	1.19	281.59	3,773.5	-2.0	3,773.5	12.0	12.0	-0.6	-2.84	
3,865.0	1.36	281.95	3,863.5	-1.6	3,863.5	10.0	10.0	-0.7	-3.81	
3,955.0	1.41	286.34	3,953.4	-1.0	3,953.4	7.9	7.8	-1.4	-9.86	
4,045.0	1.27	294.25	4,043.4	-0.2	4,043.4	5.9	5.4	-2.3	-22.60	
4,134.0	1.80	334.24	4,132.4	1.4	4,132.4	4.6	0.5	-4.6	-83.19	
4,224.0	1.05	358.94	4,222.4	3.5	4,222.4	5.2	-3.5	-3.8	-132.89	
4,314.0	0.66	45.96	4,312.3	4.7	4,312.3	6.3	-6.3	0.6	174.56	
4,404.0	0.66	65.82	4,402.3	5.3	4,402.3	7.3	-6.7	2.9	156.83	
4,493.0	0.88	63.45	4,491.3	5.8	4,491.3	8.4	-8.0	2.6	162.24	
4,583.0	0.92	61.08	4,581.3	6.4	4,581.3	9.8	-9.5	2.2	166.97	
4,672.0	1.01	58.00	4,670.3	7.2	4,670.3	11.2	-11.1	1.6	171.56	
4,762.0	1.01	57.21	4,760.3	8.0	4,760.3	12.8	-12.7	1.5	173.35	
4,852.0	0.70	118.91	4,850.3	8.1	4,850.3	13.8	-5.6	12.6	114.15	
4,942.0	1.36	168.39	4,940.3	6.8	4,940.3	13.7	4.5	12.9	70.84	
5,031.0	1.85	166.37	5,029.2	4.4	5,029.2	13.1	1.5	13.0	83.28	
5,121.0	1.85	168.74	5,119.2	1.5	5,119.2	13.0	-0.8	13.0	93.67	
5,216.0	1.85	168.92	5,214.1	-1.5	5,214.1	13.6	-3.9	13.0	106.53	

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5,302.0	2.07	168.30	5,300.1	-4.4	5,300.1	14.7	-6.9	12.9	118.18	
5,391.0	2.02	167.51	5,389.0	-7.5	5,389.0	16.4	-10.3	12.8	128.73	
5,481.0	2.15	170.50	5,479.0	-10.7	5,479.2	18.1	-12.4	13.1	133.52	
5,571.0	2.24	167.78	5,568.9	-14.1	5,569.5	18.7	-14.9	11.3	142.69	
5,661.0	1.98	166.98	5,658.8	-17.3	5,659.8	18.1	-15.5	9.3	149.15	
5,750.0	2.42	142.64	5,747.8	-20.3	5,749.0	16.6	-16.6	0.7	177.50	
5,840.0	3.96	121.63	5,837.6	-23.5	5,839.2	15.3	-14.6	-4.6	-162.51	
5,930.0	5.05	117.15	5,927.4	-27.1	5,929.4	14.6	-14.1	-3.8	-165.03	
6,019.0	4.84	115.66	6,016.0	-30.6	6,018.3	14.5	-14.4	-1.8	-172.86	
6,109.0	4.88	113.20	6,105.7	-33.8	6,108.3	14.7	-14.7	0.2	179.27	
6,198.0	5.14	114.95	6,194.4	-37.1	6,197.2	15.5	-15.2	3.3	167.88	
6,288.0	4.84	116.80	6,284.0	-40.6	6,287.2	16.7	-15.5	6.2	158.27	
6,378.0	5.32	118.38	6,373.7	-44.4	6,377.2	18.2	-15.9	8.8	150.94	
6,467.0	6.07	128.58	6,462.2	-49.4	6,466.2	20.0	-15.2	13.0	139.58	
6,557.0	6.46	137.72	6,551.7	-56.2	6,556.1	21.6	-15.0	15.5	134.15	
6,647.0	4.88	137.10	6,641.3	-62.8	6,646.1	22.1	-16.4	14.9	137.75	
6,736.0	4.40	140.79	6,730.0	-68.3	6,735.1	21.4	-15.0	15.2	134.48	
6,827.0	4.35	141.41	6,820.7	-73.8	6,826.1	20.1	-14.0	14.4	134.05	
6,916.0	4.00	141.50	6,909.5	-78.9	6,915.1	18.6	-12.8	13.5	133.57	
7,006.0	3.91	139.65	6,999.3	-83.7	7,005.1	17.0	-11.8	12.2	133.88	
7,095.0	4.04	137.98	7,088.0	-88.4	7,094.1	15.5	-10.6	11.3	133.32	
7,185.0	3.91	138.16	7,177.8	-93.1	7,184.1	14.1	-9.1	10.8	130.22	
7,275.0	4.92	138.51	7,267.6	-98.4	7,274.1	13.2	-8.3	10.3	128.83	
7,365.0	5.93	139.21	7,357.1	-104.9	7,364.0	13.2	-8.9	9.7	132.58	
7,455.0	5.63	139.03	7,446.7	-111.8	7,454.0	13.7	-10.3	9.0	138.85	
7,544.0	5.76	138.51	7,535.3	-118.5	7,543.0	14.3	-11.6	8.3	144.42	
7,634.0	5.49	138.24	7,624.8	-125.2	7,633.0	14.9	-12.8	7.7	148.96	

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7,723.0	5.19	136.84	7,713.4	-131.4	7,722.0	15.2	-13.6	6.9	153.06	
7,903.0	4.92	135.26	7,892.7	-142.9	7,902.0	15.4	-14.1	6.0	157.02	
7,992.0	5.01	135.78	7,981.4	-148.5	7,991.0	15.3	-14.1	5.9	157.21	
8,082.0	4.79	138.51	8,071.1	-154.2	8,081.0	15.1	-13.8	6.2	155.81	
8,172.0	4.40	140.09	8,160.8	-159.7	8,171.0	14.4	-13.1	5.9	155.89	
8,261.0	3.74	136.05	8,249.6	-164.5	8,260.0	13.0	-12.2	4.5	159.93	
8,351.0	4.62	136.05	8,339.3	-169.3	8,350.0	11.8	-11.0	4.2	159.14	
8,441.0	5.85	134.29	8,428.9	-175.2	8,440.0	12.2	-11.6	3.7	162.21	
8,530.0	5.41	134.55	8,517.5	-181.4	8,529.0	13.2	-12.7	3.7	163.54	
8,620.0	5.41	133.76	8,607.1	-187.4	8,619.0	13.9	-13.5	3.6	165.19	
8,710.0	4.84	133.32	8,696.7	-193.0	8,709.0	14.2	-13.8	3.5	165.63	
8,799.0	4.70	137.01	8,785.4	-198.3	8,798.0	14.0	-13.3	4.3	162.18	
8,889.0	4.40	135.70	8,875.2	-203.5	8,888.0	13.3	-12.8	3.7	163.97	
8,978.0	4.44	135.26	8,963.9	-208.5	8,977.0	12.5	-12.0	3.4	164.20	
9,068.0	3.74	140.88	9,053.7	-213.3	9,066.9	11.1	-10.3	4.0	158.90	
9,158.0	3.52	145.45	9,143.5	-217.9	9,156.9	8.8	-8.1	3.5	156.50	
9,248.0	3.21	150.90	9,233.3	-222.4	9,246.9	6.0	-5.6	2.3	157.60	
9,337.0	2.33	160.57	9,322.2	-226.3	9,335.7	3.3	-3.2	0.6	170.10	
9,427.0	2.73	123.92	9,412.1	-229.3	9,425.7	1.9	-1.1	-1.6	-124.33	
9,517.0	2.46	113.37	9,502.0	-231.3	9,515.7	1.2	-0.9	-0.7	-144.55	
9,607.0	1.76	103.88	9,592.0	-232.4	9,605.6	1.8	-1.8	0.2	172.61	
9,697.0	2.07	89.29	9,681.9	-232.8	9,695.6	3.8	-3.8	0.3	174.77	
9,787.0	1.71	81.82	9,771.9	-232.6	9,785.5	6.7	-6.7	-0.3	-177.77	
9,877.0	1.36	79.27	9,861.9	-232.2	9,875.5	9.1	-9.1	-0.6	-176.11	
9,967.0	0.92	72.06	9,951.8	-231.8	9,965.5	10.9	-10.7	-1.9	-170.01	
10,090.0	0.84	54.66	10,074.8	-231.0	10,088.4	12.7	-11.5	-5.3	-155.26	
10,179.0	14.64	356.30	10,162.8	-219.4	10,177.6	17.1	-10.9	-13.1	-129.92	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
10,269.0	29.85	354.02	10,245.9	-185.5	10,269.7	30.7	-28.0	-12.6	-155.84	
10,359.0	37.19	354.37	10,320.9	-136.0	10,365.6	46.8	-45.9	-9.0	-168.86	
10,449.0	42.29	356.56	10,390.1	-78.6	10,465.9	55.3	-55.2	-3.8	-176.11	
10,539.0	48.22	357.44	10,453.4	-14.8	10,567.6	53.8	-53.8	-0.4	-179.61	
10,628.0	58.59	2.98	10,506.4	56.5	10,666.7	46.2	-46.2	0.5	179.37	
10,718.0	68.35	5.53	10,546.5	136.6	10,764.2	36.6	-35.9	-7.0	-168.99	
10,808.0	77.45	2.89	10,573.0	222.2	10,858.6	26.9	-22.1	-15.4	-145.14	
10,839.0	81.27	1.31	10,578.7	252.6	10,890.1	23.9	-16.8	-17.0	-134.70	
10,898.0	87.43	0.52	10,584.5	311.3	10,948.8	21.6	-10.9	-18.6	-120.30	
10,988.0	90.51	359.73	10,586.1	401.2	11,038.7	22.0	-9.1	-20.1	-114.28	
11,078.0	89.80	358.94	10,585.9	491.2	11,128.7	22.2	-9.1	-20.3	-114.15	
11,167.0	89.23	357.88	10,586.6	580.2	11,217.7	20.7	-8.1	-19.0	-113.12	
11,257.0	90.02	357.18	10,587.2	670.2	11,307.7	17.9	-7.3	-16.4	-114.11	
11,347.0	88.13	356.21	10,588.7	760.1	11,397.5	13.6	-5.6	-12.4	-114.42	
11,436.0	87.03	355.60	10,592.4	848.8	11,486.3	7.5	-1.7	-7.3	-102.84	
11,526.0	86.99	356.74	10,597.1	938.6	11,576.0	4.1	3.2	-2.5	-37.62	
11,616.0	88.66	359.20	10,600.6	1,028.5	11,665.9	6.9	6.9	-0.5	-4.48	
11,705.0	90.20	0.08	10,601.4	1,117.5	11,754.9	8.0	8.0	-1.2	-8.54	
11,795.0	91.78	359.82	10,599.9	1,207.5	11,844.9	7.0	6.6	-2.3	-19.53	
11,884.0	91.34	0.52	10,597.5	1,296.4	11,933.9	5.8	4.4	-3.8	-40.96	
11,974.0	89.63	359.99	10,596.7	1,386.4	12,023.8	6.7	3.9	-5.5	-54.74	
12,064.0	90.86	359.82	10,596.3	1,476.4	12,113.8	7.5	3.7	-6.5	-60.56	
12,154.0	90.15	358.50	10,595.5	1,566.4	12,203.8	7.2	3.1	-6.5	-64.25	
12,244.0	90.15	358.06	10,595.3	1,656.4	12,293.8	5.9	3.1	-5.0	-58.18	
12,333.0	90.07	357.62	10,595.1	1,745.3	12,382.8	4.2	3.1	-2.8	-42.23	
12,423.0	91.21	357.09	10,594.1	1,835.3	12,472.7	2.3	2.3	0.1	1.91	
12,513.0	89.41	357.79	10,593.6	1,925.2	12,562.7	3.5	2.1	2.9	54.18	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
12,602.0	88.00	358.23	10,595.6	2,014.2	12,651.6	6.4	4.3	4.7	47.87	
12,692.0	87.82	357.36	10,598.9	2,104.1	12,741.5	10.5	7.8	7.0	41.86	
12,782.0	88.84	358.06	10,601.5	2,194.0	12,831.5	14.1	10.6	9.3	41.31	
12,872.0	90.90	359.38	10,601.7	2,284.0	12,921.5	15.0	11.0	10.1	42.48	
12,961.0	91.08	359.64	10,600.2	2,373.0	13,010.4	13.7	9.7	9.7	44.82	
13,051.0	90.51	0.26	10,599.0	2,463.0	13,100.4	12.2	8.7	8.5	44.40	
13,140.0	88.92	0.17	10,599.4	2,552.0	13,189.4	11.6	9.3	7.0	36.67	
13,230.0	87.96	359.82	10,601.9	2,641.9	13,279.4	13.3	12.0	5.7	25.54	
13,320.0	88.18	359.46	10,604.9	2,731.9	13,369.3	16.1	15.3	5.1	18.39	
13,409.0	90.37	359.20	10,606.0	2,820.9	13,458.3	17.3	16.6	4.9	16.43	
13,499.0	91.16	358.76	10,604.8	2,910.9	13,548.3	16.5	15.6	5.3	18.64	
13,588.0	90.86	359.38	10,603.2	2,999.8	13,637.3	15.3	14.2	5.5	21.07	
13,678.0	90.95	359.46	10,601.8	3,089.8	13,727.3	14.0	13.0	5.2	21.63	
13,768.0	90.24	359.64	10,600.9	3,179.8	13,817.3	13.2	12.3	4.6	20.66	
13,858.0	89.67	359.46	10,601.0	3,269.8	13,907.3	13.3	12.6	4.1	18.10	
13,947.0	91.30	0.69	10,600.2	3,358.8	13,996.2	12.4	12.1	2.8	13.01	
14,037.0	90.07	0.43	10,599.1	3,448.8	14,086.2	11.2	11.2	0.7	3.47	
14,127.0	89.67	0.43	10,599.3	3,538.7	14,176.2	11.7	11.6	-1.2	-6.03	
14,217.0	90.46	359.82	10,599.2	3,628.7	14,266.2	12.0	11.7	-2.7	-12.74	
14,307.0	89.76	359.99	10,599.1	3,718.7	14,356.2	12.4	11.8	-3.7	-17.60	
14,397.0	90.33	0.17	10,599.0	3,808.7	14,446.2	13.0	11.9	-5.1	-23.13	
14,486.0	90.11	359.29	10,598.6	3,897.7	14,534.9	13.8	12.5	-5.9	-25.18	
14,576.0	92.18	359.38	10,596.8	3,987.7	14,624.6	15.4	14.1	-6.1	-23.28	
14,666.0	92.53	357.71	10,593.1	4,077.6	14,714.6	15.1	14.2	-5.0	-19.49	
14,755.0	93.80	357.36	10,588.2	4,166.4	14,803.6	13.3	13.0	-2.4	-10.50	
14,845.0	93.19	358.15	10,582.7	4,256.2	14,893.5	11.4	11.4	-0.1	-0.57	
14,935.0	93.41	357.97	10,577.6	4,346.1	14,983.5	10.1	10.0	1.7	9.69	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)
15,025.0	92.84	358.23	10,572.7	4,435.9	15,073.5	9.5	8.9	3.5	21.31
15,115.0	92.26	358.94	10,568.7	4,525.8	15,163.5	9.8	8.7	4.5	27.24
15,204.0	90.15	359.11	10,566.8	4,614.8	15,252.4	11.6	10.6	4.8	24.32
15,294.0	90.81	359.90	10,566.0	4,704.8	15,342.4	14.3	13.6	4.3	17.65
15,383.0	94.02	359.82	10,562.3	4,793.7	15,431.4	14.0	13.6	3.3	13.76
15,473.0	91.74	1.13	10,557.8	4,883.5	15,521.3	13.0	12.9	1.4	6.08
15,515.9	92.56	0.92	10,556.1	4,926.4	15,564.2	13.1	13.1	0.0	0.10
CROSS SEC LINE @ 15515.9' MD, 647' FEL									
15,563.0	93.45	0.69	10,553.7	4,973.4	15,611.3	12.7	12.6	-1.3	-5.80
15,652.0	92.48	0.52	10,549.1	5,062.3	15,700.3	12.3	11.8	-3.4	-16.26
15,742.0	93.10	359.82	10,544.7	5,152.1	15,790.2	12.2	11.2	-4.9	-23.78
15,832.0	92.70	0.69	10,540.1	5,242.0	15,880.2	12.3	10.4	-6.5	-32.09
15,922.0	93.54	0.26	10,535.2	5,331.9	15,970.2	12.6	9.3	-8.5	-42.37
16,011.0	92.84	0.17	10,530.3	5,420.7	16,059.2	12.9	8.1	-10.1	-51.02
16,101.0	90.15	0.78	10,527.9	5,510.6	16,149.1	15.4	9.6	-12.0	-51.46
16,190.0	91.43	359.38	10,526.7	5,599.6	16,238.1	18.1	12.1	-13.4	-47.82
16,280.0	92.66	358.85	10,523.5	5,689.6	16,328.1	18.3	12.7	-13.2	-46.13
16,370.0	92.70	358.50	10,519.3	5,779.5	16,418.1	17.4	12.3	-12.4	-45.16
16,460.0	93.80	358.67	10,514.2	5,869.3	16,508.1	15.8	11.0	-11.4	-45.97
16,549.0	93.80	358.67	10,508.3	5,958.1	16,597.0	13.7	8.8	-10.5	-49.93
16,639.0	91.96	0.08	10,503.8	6,048.0	16,687.0	13.5	8.1	-10.8	-52.87
16,729.0	92.31	0.96	10,500.4	6,137.9	16,777.0	15.4	8.6	-12.8	-56.07
16,819.0	92.84	1.57	10,496.4	6,227.8	16,866.9	18.0	8.4	-16.0	-62.36
16,909.0	91.25	1.22	10,493.2	6,317.6	16,956.9	21.4	8.9	-19.4	-65.26
16,998.0	91.25	1.05	10,491.2	6,406.6	17,045.8	24.8	10.8	-22.4	-64.33
17,088.0	93.19	1.84	10,487.7	6,496.4	17,135.7	28.1	11.1	-25.9	-66.72
17,210.0	89.10	359.38	10,485.3	6,618.3	17,257.6	32.0	13.7	-28.9	-64.53

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
17,300.0	89.14	358.59	10,486.7	6,708.3	17,347.5	34.2	18.9	-28.5	-56.40	
17,389.0	90.95	358.50	10,486.6	6,797.3	17,436.4	35.6	22.6	-27.4	-50.49	
17,479.0	91.30	358.41	10,484.8	6,887.3	17,526.4	36.0	24.7	-26.2	-46.78	
17,568.0	91.38	357.79	10,482.8	6,976.2	17,615.3	36.0	26.3	-24.5	-42.95	
17,658.0	92.88	357.27	10,479.4	7,066.1	17,705.3	34.6	26.8	-21.9	-39.24	
17,748.0	94.29	357.53	10,473.8	7,155.9	17,795.2	31.4	24.9	-19.0	-37.34	
17,837.0	93.54	357.44	10,467.7	7,244.7	17,884.1	27.9	22.6	-16.3	-35.81	
17,927.0	94.29	358.06	10,461.6	7,334.4	17,974.1	24.7	20.3	-14.0	-34.65	
18,017.0	90.81	358.76	10,457.6	7,424.3	18,064.1	23.8	20.1	-12.7	-32.36	
18,084.0	89.76	358.06	10,457.2	7,491.3	18,107.2	34.9	30.3	-17.3	-29.77	
LAST SVY										
18,142.0	89.76	358.06	10,457.5	7,549.3	18,107.2	86.2	74.9	-42.8	-29.77	
PTD @ 18142.0' MD, 2655' FNL, 650' FEL										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
15,515.9	10,556.1	4,929.1	166.5	CROSS SEC LINE @ 15515.9' MD, 647' FEL	
18,084.0	10,457.2	7,493.9	143.3	LAST SVY	
18,142.0	10,457.5	7,551.9	141.4	PTD @ 18142.0' MD, 2655' FNL, 650' FEL	

Checked By: _____	Approved By: _____	Date: _____
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Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #510H**

OWB

Design: AWB

Standard Survey Report

06 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Wool Head)Sec20_T-21-S_R-33-E				
Site Position:		Northing:	531,182.60 usft	Latitude:	32° 27' 29.104 N
From:	Map	Easting:	770,949.20 usft	Longitude:	103° 35' 20.061 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	Wool Head 20 State Com #510H					
Well Position	+N/-S	0.0 usft	Northing:	531,182.70 usft	Latitude:	32° 27' 29.102 N
	+E/-W	0.0 usft	Easting:	770,982.20 usft	Longitude:	103° 35' 19.676 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,726.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/05/2019	6.72	60.24	47,826.82441638

Design	AWB				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	359.22	

Survey Program	Date	01/06/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
238.0	18,142.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
238.0	0.48	201.53	238.0	-0.9	-0.4	-0.9	0.20	0.20	0.00
424.0	0.62	241.87	424.0	-2.1	-1.5	-2.1	0.22	0.08	21.69
519.0	0.31	262.08	519.0	-2.4	-2.2	-2.4	0.36	-0.33	21.27
614.0	0.66	228.68	614.0	-2.8	-2.9	-2.8	0.46	0.37	-35.16
710.0	0.44	206.01	710.0	-3.5	-3.5	-3.4	0.32	-0.23	-23.61
804.0	0.88	224.29	804.0	-4.3	-4.2	-4.3	0.51	0.47	19.45
899.0	1.19	2.63	899.0	-3.9	-4.6	-3.8	2.04	0.33	145.62
994.0	1.71	228.33	994.0	-3.8	-5.6	-3.8	2.82	0.55	-141.37
1,084.0	1.45	238.88	1,083.9	-5.3	-7.6	-5.2	0.43	-0.29	11.72

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,173.0	1.80	237.38	1,172.9	-6.6	-9.7	-6.5	0.40	0.39	-1.69
1,263.0	1.85	244.33	1,262.8	-8.0	-12.2	-7.9	0.25	0.06	7.72
1,352.0	2.15	257.34	1,351.8	-9.0	-15.2	-8.8	0.61	0.34	14.62
1,442.0	2.37	244.59	1,441.7	-10.2	-18.5	-9.9	0.61	0.24	-14.17
1,531.0	2.59	237.21	1,530.6	-12.1	-21.9	-11.8	0.44	0.25	-8.29
1,620.0	1.89	223.67	1,619.6	-14.2	-24.6	-13.9	0.98	-0.79	-15.21
1,770.0	1.80	227.10	1,769.5	-17.6	-28.0	-17.2	0.09	-0.06	2.29
1,892.0	1.36	244.77	1,891.4	-19.5	-30.7	-19.1	0.53	-0.36	14.48
1,982.0	1.10	150.72	1,981.4	-20.7	-31.2	-20.3	2.01	-0.29	-104.50
2,071.0	2.37	127.08	2,070.4	-22.6	-29.4	-22.2	1.61	1.43	-26.56
2,160.0	2.15	86.83	2,159.3	-23.6	-26.2	-23.3	1.76	-0.25	-45.22
2,250.0	2.64	55.89	2,249.2	-22.4	-22.8	-22.1	1.51	0.54	-34.38
2,340.0	2.59	53.17	2,339.1	-20.0	-19.5	-19.7	0.15	-0.06	-3.02
2,429.0	2.55	53.78	2,428.1	-17.6	-16.3	-17.4	0.05	-0.04	0.69
2,519.0	2.42	55.10	2,518.0	-15.3	-13.1	-15.2	0.16	-0.14	1.47
2,609.0	2.15	52.73	2,607.9	-13.2	-10.2	-13.1	0.32	-0.30	-2.63
2,699.0	1.98	50.27	2,697.8	-11.2	-7.7	-11.1	0.21	-0.19	-2.73
2,788.0	1.89	52.64	2,786.8	-9.3	-5.3	-9.3	0.14	-0.10	2.66
2,968.0	1.98	55.71	2,966.7	-5.8	-0.4	-5.8	0.08	0.05	1.71
3,058.0	2.07	61.34	3,056.6	-4.1	2.3	-4.2	0.24	0.10	6.26
3,147.0	2.20	63.80	3,145.6	-2.6	5.3	-2.7	0.18	0.15	2.76
3,237.0	1.19	69.07	3,235.5	-1.5	7.7	-1.6	1.13	-1.12	5.86
3,327.0	0.57	136.31	3,325.5	-1.5	8.9	-1.6	1.23	-0.69	74.71
3,416.0	0.70	112.32	3,414.5	-2.0	9.7	-2.2	0.33	0.15	-26.96
3,506.0	0.97	100.28	3,504.5	-2.4	10.9	-2.5	0.36	0.30	-13.38
3,596.0	0.92	80.85	3,594.5	-2.4	12.4	-2.6	0.36	-0.06	-21.59
3,686.0	0.26	309.72	3,684.5	-2.1	13.0	-2.3	1.23	-0.73	-145.70
3,775.0	1.19	281.59	3,773.5	-1.8	11.9	-2.0	1.09	1.04	-31.61
3,865.0	1.36	281.95	3,863.5	-1.4	9.9	-1.6	0.19	0.19	0.40
3,955.0	1.41	286.34	3,953.4	-0.9	7.8	-1.0	0.13	0.06	4.88
4,045.0	1.27	294.25	4,043.4	-0.2	5.9	-0.2	0.26	-0.16	8.79
4,134.0	1.80	334.24	4,132.4	1.5	4.4	1.4	1.31	0.60	44.93
4,224.0	1.05	358.94	4,222.4	3.6	3.7	3.5	1.06	-0.83	27.44
4,314.0	0.66	45.96	4,312.3	4.8	4.1	4.7	0.86	-0.43	52.24
4,404.0	0.66	65.82	4,402.3	5.4	4.9	5.3	0.25	0.00	22.07
4,493.0	0.88	63.45	4,491.3	5.9	6.0	5.8	0.25	0.25	-2.66
4,583.0	0.92	61.08	4,581.3	6.5	7.3	6.4	0.06	0.04	-2.63
4,672.0	1.01	58.00	4,670.3	7.3	8.5	7.2	0.12	0.10	-3.46
4,762.0	1.01	57.21	4,760.3	8.1	9.9	8.0	0.02	0.00	-0.88
4,852.0	0.70	118.91	4,850.3	8.3	11.0	8.1	1.02	-0.34	68.56
4,942.0	1.36	168.39	4,940.3	7.0	11.7	6.8	1.17	0.73	54.98
5,031.0	1.85	166.37	5,029.2	4.6	12.3	4.4	0.55	0.55	-2.27
5,121.0	1.85	168.74	5,119.2	1.7	12.9	1.5	0.09	0.00	2.63
5,216.0	1.85	168.92	5,214.1	-1.3	13.5	-1.5	0.01	0.00	0.19

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,302.0	2.07	168.30	5,300.1	-4.2	14.1	-4.4	0.26	0.26	-0.72	
5,391.0	2.02	167.51	5,389.0	-7.3	14.8	-7.5	0.06	-0.06	-0.89	
5,481.0	2.15	170.50	5,479.0	-10.5	15.4	-10.7	0.19	0.14	3.32	
5,571.0	2.24	167.78	5,568.9	-13.9	16.0	-14.1	0.15	0.10	-3.02	
5,661.0	1.98	166.98	5,658.8	-17.1	16.7	-17.3	0.29	-0.29	-0.89	
5,750.0	2.42	142.64	5,747.8	-20.1	18.2	-20.3	1.15	0.49	-27.35	
5,840.0	3.96	121.63	5,837.6	-23.2	22.0	-23.5	2.12	1.71	-23.34	
5,930.0	5.05	117.15	5,927.4	-26.7	28.2	-27.1	1.27	1.21	-4.98	
6,019.0	4.84	115.66	6,016.0	-30.1	35.1	-30.6	0.28	-0.24	-1.67	
6,109.0	4.88	113.20	6,105.7	-33.2	42.0	-33.8	0.24	0.04	-2.73	
6,198.0	5.14	114.95	6,194.4	-36.4	49.1	-37.1	0.34	0.29	1.97	
6,288.0	4.84	116.80	6,284.0	-39.8	56.2	-40.6	0.38	-0.33	2.06	
6,378.0	5.32	118.38	6,373.7	-43.5	63.2	-44.4	0.56	0.53	1.76	
6,467.0	6.07	128.58	6,462.2	-48.4	70.5	-49.4	1.41	0.84	11.46	
6,557.0	6.46	137.72	6,551.7	-55.1	77.6	-56.2	1.19	0.43	10.16	
6,647.0	4.88	137.10	6,641.3	-61.7	83.7	-62.8	1.76	-1.76	-0.69	
6,736.0	4.40	140.79	6,730.0	-67.1	88.4	-68.3	0.63	-0.54	4.15	
6,827.0	4.35	141.41	6,820.7	-72.5	92.8	-73.8	0.08	-0.05	0.68	
6,916.0	4.00	141.50	6,909.5	-77.6	96.8	-78.9	0.39	-0.39	0.10	
7,006.0	3.91	139.65	6,999.3	-82.4	100.7	-83.7	0.17	-0.10	-2.06	
7,095.0	4.04	137.98	7,088.0	-87.0	104.8	-88.4	0.20	0.15	-1.88	
7,185.0	3.91	138.16	7,177.8	-91.7	109.0	-93.1	0.15	-0.14	0.20	
7,275.0	4.92	138.51	7,267.6	-96.8	113.6	-98.4	1.12	1.12	0.39	
7,365.0	5.93	139.21	7,357.1	-103.2	119.2	-104.9	1.12	1.12	0.78	
7,455.0	5.63	139.03	7,446.7	-110.1	125.1	-111.8	0.33	-0.33	-0.20	
7,544.0	5.76	138.51	7,535.3	-116.7	130.9	-118.5	0.16	0.15	-0.58	
7,634.0	5.49	138.24	7,624.8	-123.3	136.8	-125.2	0.30	-0.30	-0.30	
7,723.0	5.19	136.84	7,713.4	-129.4	142.4	-131.4	0.37	-0.34	-1.57	
7,903.0	4.92	135.26	7,892.7	-140.9	153.4	-142.9	0.17	-0.15	-0.88	
7,992.0	5.01	135.78	7,981.4	-146.4	158.8	-148.5	0.11	0.10	0.58	
8,082.0	4.79	138.51	8,071.1	-152.0	164.0	-154.2	0.36	-0.24	3.03	
8,172.0	4.40	140.09	8,160.8	-157.5	168.7	-159.7	0.46	-0.43	1.76	
8,261.0	3.74	136.05	8,249.6	-162.2	172.9	-164.5	0.81	-0.74	-4.54	
8,351.0	4.62	136.05	8,339.3	-166.9	177.5	-169.3	0.98	0.98	0.00	
8,441.0	5.85	134.29	8,428.9	-172.7	183.3	-175.2	1.38	1.37	-1.96	
8,530.0	5.41	134.55	8,517.5	-178.8	189.5	-181.4	0.50	-0.49	0.29	
8,620.0	5.41	133.76	8,607.1	-184.7	195.6	-187.4	0.08	0.00	-0.88	
8,710.0	4.84	133.32	8,696.7	-190.3	201.4	-193.0	0.63	-0.63	-0.49	
8,799.0	4.70	137.01	8,785.4	-195.5	206.6	-198.3	0.38	-0.16	4.15	
8,889.0	4.40	135.70	8,875.2	-200.7	211.5	-203.5	0.35	-0.33	-1.46	
8,978.0	4.44	135.26	8,963.9	-205.6	216.4	-208.5	0.06	0.04	-0.49	
9,068.0	3.74	140.88	9,053.7	-210.3	220.7	-213.3	0.90	-0.78	6.24	
9,158.0	3.52	145.45	9,143.5	-214.9	224.1	-217.9	0.40	-0.24	5.08	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,248.0	3.21	150.90	9,233.3	-219.3	226.9	-222.4	0.49	-0.34	6.06
9,337.0	2.33	160.57	9,322.2	-223.2	228.7	-226.3	1.12	-0.99	10.87
9,427.0	2.73	123.92	9,412.1	-226.1	231.1	-229.3	1.82	0.44	-40.72
9,517.0	2.46	113.37	9,502.0	-228.1	234.6	-231.3	0.61	-0.30	-11.72
9,607.0	1.76	103.88	9,592.0	-229.2	237.7	-232.4	0.87	-0.78	-10.54
9,697.0	2.07	89.29	9,681.9	-229.5	240.7	-232.8	0.64	0.34	-16.21
9,787.0	1.71	81.82	9,771.9	-229.3	243.7	-232.6	0.48	-0.40	-8.30
9,877.0	1.36	79.27	9,861.9	-228.9	246.0	-232.2	0.40	-0.39	-2.83
9,967.0	0.92	72.06	9,951.8	-228.5	247.8	-231.8	0.51	-0.49	-8.01
10,090.0	0.84	54.66	10,074.8	-227.7	249.5	-231.0	0.23	-0.07	-14.15
10,179.0	14.64	356.30	10,162.8	-216.0	249.3	-219.4	15.97	15.51	-65.57
10,269.0	29.85	354.02	10,245.9	-182.2	246.2	-185.5	16.92	16.90	-2.53
10,359.0	37.19	354.37	10,320.9	-132.8	241.2	-136.0	8.16	8.16	0.39
10,449.0	42.29	356.56	10,390.1	-75.4	236.7	-78.6	5.88	5.67	2.43
10,539.0	48.22	357.44	10,453.4	-11.6	233.4	-14.8	6.63	6.59	0.98
10,628.0	58.59	2.98	10,506.4	59.7	233.9	56.5	12.67	11.65	6.22
10,718.0	68.35	5.53	10,546.5	139.9	239.9	136.6	11.14	10.84	2.83
10,808.0	77.45	2.89	10,573.0	225.6	246.2	222.2	10.49	10.11	-2.93
10,839.0	81.27	1.31	10,578.7	256.0	247.3	252.6	13.30	12.32	-5.10
10,898.0	87.43	0.52	10,584.5	314.7	248.2	311.3	10.53	10.44	-1.34
10,988.0	90.51	359.73	10,586.1	404.7	248.4	401.2	3.53	3.42	-0.88
11,078.0	89.80	358.94	10,585.9	494.6	247.4	491.2	1.18	-0.79	-0.88
11,167.0	89.23	357.88	10,586.6	583.6	244.9	580.2	1.35	-0.64	-1.19
11,257.0	90.02	357.18	10,587.2	673.5	241.0	670.2	1.17	0.88	-0.78
11,347.0	88.13	356.21	10,588.7	763.4	235.8	760.1	2.36	-2.10	-1.08
11,436.0	87.03	355.60	10,592.4	852.0	229.5	848.8	1.41	-1.24	-0.69
11,526.0	86.99	356.74	10,597.1	941.7	223.5	938.6	1.27	-0.04	1.27
11,616.0	88.66	359.20	10,600.6	1,031.6	220.3	1,028.5	3.30	1.86	2.73
11,705.0	90.20	0.08	10,601.4	1,120.6	219.7	1,117.5	1.99	1.73	0.99
11,795.0	91.78	359.82	10,599.9	1,210.6	219.6	1,207.5	1.78	1.76	-0.29
11,884.0	91.34	0.52	10,597.5	1,299.5	219.9	1,296.4	0.93	-0.49	0.79
11,974.0	89.63	359.99	10,596.7	1,389.5	220.3	1,386.4	1.99	-1.90	-0.59
12,064.0	90.86	359.82	10,596.3	1,479.5	220.2	1,476.4	1.38	1.37	-0.19
12,154.0	90.15	358.50	10,595.5	1,569.5	218.8	1,566.4	1.67	-0.79	-1.47
12,244.0	90.15	358.06	10,595.3	1,659.5	216.1	1,656.4	0.49	0.00	-0.49
12,333.0	90.07	357.62	10,595.1	1,748.4	212.8	1,745.3	0.50	-0.09	-0.49
12,423.0	91.21	357.09	10,594.1	1,838.3	208.6	1,835.3	1.40	1.27	-0.59
12,513.0	89.41	357.79	10,593.6	1,928.2	204.6	1,925.2	2.15	-2.00	0.78
12,602.0	88.00	358.23	10,595.6	2,017.1	201.5	2,014.2	1.66	-1.58	0.49
12,692.0	87.82	357.36	10,598.9	2,107.0	198.1	2,104.1	0.99	-0.20	-0.97
12,782.0	88.84	358.06	10,601.5	2,196.9	194.5	2,194.0	1.37	1.13	0.78
12,872.0	90.90	359.38	10,601.7	2,286.9	192.5	2,284.0	2.72	2.29	1.47
12,961.0	91.08	359.64	10,600.2	2,375.8	191.7	2,373.0	0.36	0.20	0.29

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,051.0	90.51	0.26	10,599.0	2,465.8	191.6	2,463.0	0.94	-0.63	0.69
13,140.0	88.92	0.17	10,599.4	2,554.8	191.9	2,552.0	1.79	-1.79	-0.10
13,230.0	87.96	359.82	10,601.9	2,644.8	191.9	2,641.9	1.14	-1.07	-0.39
13,320.0	88.18	359.46	10,604.9	2,734.7	191.4	2,731.9	0.47	0.24	-0.40
13,409.0	90.37	359.20	10,606.0	2,823.7	190.3	2,820.9	2.48	2.46	-0.29
13,499.0	91.16	358.76	10,604.8	2,913.7	188.7	2,910.9	1.00	0.88	-0.49
13,588.0	90.86	359.38	10,603.2	3,002.7	187.3	2,999.8	0.77	-0.34	0.70
13,678.0	90.95	359.46	10,601.8	3,092.7	186.4	3,089.8	0.13	0.10	0.09
13,768.0	90.24	359.64	10,600.9	3,182.6	185.7	3,179.8	0.81	-0.79	0.20
13,858.0	89.67	359.46	10,601.0	3,272.6	185.0	3,269.8	0.66	-0.63	-0.20
13,947.0	91.30	0.69	10,600.2	3,361.6	185.1	3,358.8	2.29	1.83	1.38
14,037.0	90.07	0.43	10,599.1	3,451.6	186.0	3,448.8	1.40	-1.37	-0.29
14,127.0	89.67	0.43	10,599.3	3,541.6	186.6	3,538.7	0.44	-0.44	0.00
14,217.0	90.46	359.82	10,599.2	3,631.6	186.8	3,628.7	1.11	0.88	-0.68
14,307.0	89.76	359.99	10,599.1	3,721.6	186.7	3,718.7	0.80	-0.78	0.19
14,397.0	90.33	0.17	10,599.0	3,811.6	186.8	3,808.7	0.66	0.63	0.20
14,486.0	90.11	359.29	10,598.6	3,900.6	186.4	3,897.7	1.02	-0.25	-0.99
14,576.0	92.18	359.38	10,596.8	3,990.6	185.3	3,987.7	2.30	2.30	0.10
14,666.0	92.53	357.71	10,593.1	4,080.5	183.1	4,077.6	1.89	0.39	-1.86
14,755.0	93.80	357.36	10,588.2	4,169.3	179.2	4,166.4	1.48	1.43	-0.39
14,845.0	93.19	358.15	10,582.7	4,259.0	175.7	4,256.2	1.11	-0.68	0.88
14,935.0	93.41	357.97	10,577.6	4,348.8	172.7	4,346.1	0.32	0.24	-0.20
15,025.0	92.84	358.23	10,572.7	4,438.6	169.7	4,435.9	0.70	-0.63	0.29
15,115.0	92.26	358.94	10,568.7	4,528.5	167.5	4,525.8	1.02	-0.64	0.79
15,204.0	90.15	359.11	10,566.8	4,617.5	166.0	4,614.8	2.38	-2.37	0.19
15,294.0	90.81	359.90	10,566.0	4,707.5	165.2	4,704.8	1.14	0.73	0.88
15,383.0	94.02	359.82	10,562.3	4,796.4	165.0	4,793.7	3.61	3.61	-0.09
15,473.0	91.74	1.13	10,557.8	4,886.3	165.7	4,883.5	2.92	-2.53	1.46
15,515.9	92.56	0.92	10,556.1	4,929.1	166.5	4,926.4	1.96	1.90	-0.49
CROSS SEC LINE @ 15515.9' MD, 647' FEL									
15,563.0	93.45	0.69	10,553.7	4,976.1	167.1	4,973.4	1.96	1.90	-0.49
15,652.0	92.48	0.52	10,549.1	5,065.0	168.1	5,062.3	1.11	-1.09	-0.19
15,742.0	93.10	359.82	10,544.7	5,154.9	168.4	5,152.1	1.04	0.69	-0.78
15,832.0	92.70	0.69	10,540.1	5,244.8	168.8	5,242.0	1.06	-0.44	0.97
15,922.0	93.54	0.26	10,535.2	5,334.7	169.5	5,331.9	1.05	0.93	-0.48
16,011.0	92.84	0.17	10,530.3	5,423.5	169.8	5,420.7	0.79	-0.79	-0.10
16,101.0	90.15	0.78	10,527.9	5,513.5	170.6	5,510.6	3.06	-2.99	0.68
16,190.0	91.43	359.38	10,526.7	5,602.5	170.7	5,599.6	2.13	1.44	-1.57
16,280.0	92.66	358.85	10,523.5	5,692.4	169.3	5,689.6	1.49	1.37	-0.59
16,370.0	92.70	358.50	10,519.3	5,782.3	167.2	5,779.5	0.39	0.04	-0.39
16,460.0	93.80	358.67	10,514.2	5,872.1	165.0	5,869.3	1.24	1.22	0.19
16,549.0	93.80	358.67	10,508.3	5,960.9	163.0	5,958.1	0.00	0.00	0.00
16,639.0	91.96	0.08	10,503.8	6,050.8	162.0	6,048.0	2.57	-2.04	1.57
16,729.0	92.31	0.96	10,500.4	6,140.7	162.8	6,137.9	1.05	0.39	0.98

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Well:	Wool Head 20 State Com #510H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,819.0	92.84	1.57	10,496.4	6,230.6	164.8	6,227.8	0.90	0.59	0.68	
16,909.0	91.25	1.22	10,493.2	6,320.5	167.0	6,317.6	1.81	-1.77	-0.39	
16,998.0	91.25	1.05	10,491.2	6,409.4	168.7	6,406.6	0.19	0.00	-0.19	
17,088.0	93.19	1.84	10,487.7	6,499.3	171.0	6,496.4	2.33	2.16	0.88	
17,210.0	89.10	359.38	10,485.3	6,621.3	172.3	6,618.3	3.91	-3.35	-2.02	
17,300.0	89.14	358.59	10,486.7	6,711.3	170.7	6,708.3	0.88	0.04	-0.88	
17,389.0	90.95	358.50	10,486.6	6,800.2	168.4	6,797.3	2.04	2.03	-0.10	
17,479.0	91.30	358.41	10,484.8	6,890.2	166.0	6,887.3	0.40	0.39	-0.10	
17,568.0	91.38	357.79	10,482.8	6,979.1	163.1	6,976.2	0.70	0.09	-0.70	
17,658.0	92.88	357.27	10,479.4	7,068.9	159.2	7,066.1	1.76	1.67	-0.58	
17,748.0	94.29	357.53	10,473.8	7,158.7	155.1	7,155.9	1.59	1.57	0.29	
17,837.0	93.54	357.44	10,467.7	7,247.4	151.2	7,244.7	0.85	-0.84	-0.10	
17,927.0	94.29	358.06	10,461.6	7,337.1	147.7	7,334.4	1.08	0.83	0.69	
18,017.0	90.81	358.76	10,457.6	7,427.0	145.2	7,424.3	3.94	-3.87	0.78	
18,084.0	89.76	358.06	10,457.2	7,493.9	143.3	7,491.3	1.88	-1.57	-1.04	
LAST SVY										
18,142.0	89.76	358.06	10,457.5	7,551.9	141.4	7,549.3	0.00	0.00	0.00	
PTD @ 18142.0' MD, 2655' FNL, 650' FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
LTP/PBHL (Wool Hea	0.00	0.00	10,435.7	7,469.0	131.9	538,651.70	771,114.10	32° 28' 42.998 N		103° 35' 17.528 W
- hit/miss target								- actual wellpath misses target center by 24.8usft at 18059.5usft MD (10457.2 TVD, 7469.4 N, 144.1 E)		
- Shape								- Point		
T1 (Wool Head 20 SC	0.00	0.00	10,587.0	3,835.4	181.4	535,018.10	771,163.59	32° 28' 7.041 N		103° 35' 17.247 W
- actual wellpath misses target center by 13.0usft at 14420.9usft MD (10598.9 TVD, 3835.5 N, 186.8 E)										
- Point										
FTP (Wool Head 20 S	0.00	0.00	10,620.0	-248.7	237.1	530,934.00	771,219.30	32° 27' 26.625 N		103° 35' 16.929 W
- actual wellpath misses target center by 284.1usft at 10488.0usft MD (10418.3 TVD, -48.6 N, 235.2 E)										
- Point										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
15,515.9	10,556.1	4,929.1	166.5	CROSS SEC LINE @ 15515.9' MD, 647' FEL	
18,084.0	10,457.2	7,493.9	143.3	LAST SVY	
18,142.0	10,457.5	7,551.9	141.4	PTD @ 18142.0' MD, 2655' FNL, 650' FEL	

Checked By: _____	Approved By: _____	Date: _____
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Anti-Collision Report



Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #510H**

**OWB
AWB**

Anticollision Report

06 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference	AWB		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 2,000.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program		Date	01/06/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
238.0	18,142.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
(Wool Head)Sec20_T-21-S_R-33-E						
Wool Head 20 State Com #511H - OWB - AWB	4,742.0	4,744.4	53.2	20.9	1.649	CC
Wool Head 20 State Com #511H - OWB - AWB	5,300.0	5,302.5	55.4	19.3	1.534	ES, SF
Wool Head 20 State Com #512H - OWB - AWB	1,024.7	1,025.3	27.1	20.7	4.254	CC
Wool Head 20 State Com #512H - OWB - AWB	5,600.0	5,599.2	42.5	4.3	1.113	Level 2, ES, SF
Wool Head 20 State Com #554H - OWB - AWB	4,644.9	4,644.4	17.8	-13.7	0.566	Level 1, CC, ES, SF

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #511H - OWB - AWB												Offset Site Error:	0.0 usft	
Survey Program: 238-MWD		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:				Offset Well Error:	0.0 usft
Reference		Measured	Vertical	Reference	Offset	Highside			Distance		Minimum	Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
0.0	0.0	2.0	2.0	0.0	0.0	-90.43	-0.5	-66.1	66.1					
100.0	100.0	102.0	102.0	0.1	0.2	68.32	-0.3	-66.1	66.0	65.7	0.29	224.164		
200.0	200.0	202.1	202.1	0.3	0.3	69.17	0.2	-66.0	65.7	65.1	0.63	103.803		
300.0	300.0	301.8	301.8	0.6	0.6	54.77	0.8	-66.0	65.4	64.2	1.21	54.194		
400.0	400.0	401.7	401.7	1.0	1.0	35.01	1.4	-66.5	65.2	63.3	1.92	33.990		
500.0	500.0	501.8	501.8	1.3	1.3	18.47	2.0	-66.9	64.9	62.2	2.63	24.640		
600.0	600.0	601.6	601.6	1.7	1.7	43.83	2.8	-67.2	64.6	61.3	3.34	19.326		
618.3	618.3	619.9	619.9	1.7	1.7	47.19	3.0	-67.3	64.6	61.1	3.48	18.596		
700.0	700.0	701.3	701.3	2.0	2.0	66.72	3.4	-67.9	64.9	60.8	4.06	15.985		
800.0	800.0	801.0	800.9	2.4	2.4	53.10	3.7	-69.2	65.6	60.8	4.77	13.757		
900.0	900.0	900.9	900.9	2.7	2.7	-85.22	4.0	-70.8	66.6	61.2	5.47	12.190		
1,000.0	999.9	1,000.7	1,000.6	3.1	3.1	47.94	4.1	-72.6	67.3	61.1	6.17	10.915		
1,000.5	1,000.4	1,001.2	1,001.1	3.1	3.1	47.94	4.1	-72.6	67.3	61.1	6.17	10.909		
1,100.0	1,099.9	1,100.4	1,100.4	3.4	3.4	39.28	3.7	-74.8	67.5	60.6	6.88	9.811		
1,200.0	1,199.9	1,200.4	1,200.3	3.8	3.8	39.09	3.0	-77.2	67.5	60.0	7.59	8.900		
1,300.0	1,299.8	1,300.2	1,300.0	4.2	4.2	28.96	2.2	-79.8	67.3	59.0	8.30	8.112		
1,400.0	1,399.7	1,399.7	1,399.4	4.5	4.5	28.81	1.0	-83.1	67.0	58.0	9.01	7.437		
1,400.3	1,400.0	1,399.9	1,399.7	4.5	4.5	28.81	1.0	-83.1	67.0	58.0	9.01	7.435		
1,500.0	1,499.7	1,499.7	1,499.4	4.9	4.9	39.22	-1.0	-87.1	67.2	57.5	9.73	6.912		
1,581.5	1,581.1	1,581.8	1,581.4	5.2	5.2	48.76	-2.8	-89.9	67.3	57.0	10.31	6.529		
1,600.0	1,599.6	1,600.4	1,600.0	5.2	5.2	51.50	-3.2	-90.4	67.2	56.7	10.45	6.432		
1,700.0	1,699.5	1,700.6	1,700.1	5.6	5.6	53.58	-5.5	-92.9	67.4	56.2	11.16	6.036		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #511H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
1,800.0	1,799.5	1,800.4	1,799.9	6.0	5.9	48.82	-7.2	-95.4	67.7	55.8	11.88	5.699		
1,900.0	1,899.4	1,900.9	1,900.4	6.3	6.3	39.66	-8.0	-97.7	67.8	55.2	12.59	5.384		
2,000.0	1,999.4	2,003.2	2,002.7	6.7	6.6	138.41	-8.4	-97.5	67.7	54.4	13.29	5.096		
2,100.0	2,099.4	2,104.7	2,104.1	7.0	7.0	167.61	-8.4	-94.1	67.5	53.5	13.95	4.835		
2,191.1	2,190.3	2,195.3	2,194.6	7.3	7.3	-151.94	-8.4	-90.4	67.0	52.5	14.56	4.603		
2,200.0	2,199.3	2,204.1	2,203.4	7.3	7.3	-148.59	-8.3	-90.1	67.1	52.5	14.62	4.588		
2,300.0	2,299.2	2,302.7	2,302.0	7.7	7.6	-133.07	-7.7	-87.8	68.2	52.9	15.29	4.459		
2,400.0	2,399.1	2,402.4	2,401.7	8.0	8.0	-133.98	-6.6	-86.8	70.5	54.5	15.96	4.415		
2,500.0	2,499.0	2,502.6	2,501.9	8.3	8.3	-136.74	-5.6	-85.5	72.5	55.9	16.64	4.357		
2,600.0	2,598.9	2,602.3	2,601.6	8.7	8.7	-136.12	-4.5	-84.3	74.3	57.0	17.32	4.292		
2,700.0	2,698.8	2,702.1	2,701.3	9.0	9.0	-134.33	-3.3	-83.4	76.1	58.1	18.00	4.230		
2,800.0	2,798.8	2,802.0	2,801.3	9.4	9.4	-137.51	-1.9	-82.6	77.9	59.2	18.69	4.170		
2,900.0	2,898.7	2,902.1	2,901.3	9.7	9.7	-139.82	-0.5	-81.8	79.8	60.5	19.38	4.120		
3,000.0	2,998.7	3,002.6	3,001.8	10.0	10.1	-143.58	0.8	-80.7	81.4	61.4	20.07	4.058		
3,100.0	3,098.6	3,103.1	3,102.3	10.4	10.4	-148.79	2.0	-78.8	82.7	62.0	20.76	3.985		
3,200.0	3,198.5	3,203.4	3,202.5	10.7	10.8	-152.53	3.4	-76.5	83.6	62.1	21.45	3.896		
3,300.0	3,298.5	3,303.5	3,302.6	11.1	11.1	169.46	4.8	-74.0	82.9	60.7	22.15	3.743		
3,400.0	3,398.5	3,403.5	3,402.6	11.4	11.5	159.82	6.1	-71.3	81.3	58.4	22.85	3.557		
3,500.0	3,498.5	3,503.1	3,502.1	11.8	11.8	176.22	7.6	-68.9	80.3	56.8	23.55	3.412		
3,600.0	3,598.5	3,603.0	3,601.9	12.1	12.1	-161.97	9.2	-66.7	80.1	55.8	24.25	3.302		
3,700.0	3,698.5	3,702.8	3,701.8	12.5	12.5	-17.24	10.9	-64.7	78.7	53.8	24.95	3.155		
3,800.0	3,798.5	3,802.6	3,801.6	12.8	12.9	-0.77	12.6	-62.9	75.7	50.0	25.65	2.951		
3,900.0	3,898.5	3,902.6	3,901.5	13.2	13.2	-1.28	14.2	-61.1	71.9	45.5	26.35	2.728		
4,000.0	3,998.4	4,002.5	4,001.4	13.5	13.6	-6.14	15.9	-59.2	68.0	41.0	27.05	2.515		
4,100.0	4,098.4	4,102.6	4,101.4	13.9	13.9	-37.12	17.6	-57.3	64.4	36.7	27.75	2.322		
4,200.0	4,198.4	4,202.8	4,201.6	14.2	14.3	-64.16	19.3	-55.0	61.0	32.6	28.45	2.144		
4,300.0	4,298.3	4,302.8	4,301.5	14.6	14.6	-109.91	20.8	-52.5	58.7	29.6	29.15	2.015		
4,400.0	4,398.3	4,402.9	4,401.6	14.9	15.0	-137.73	22.3	-49.9	57.4	27.5	29.85	1.921		
4,500.0	4,498.3	4,503.1	4,501.7	15.3	15.3	-134.81	23.8	-47.0	56.0	25.5	30.56	1.833		
4,600.0	4,598.3	4,603.2	4,601.8	15.6	15.7	-130.26	25.4	-43.5	54.3	23.1	31.26	1.738		
4,700.0	4,698.3	4,702.6	4,701.1	15.9	16.0	-127.83	25.9	-41.0	53.3	21.3	31.96	1.667		
4,742.0	4,740.3	4,744.4	4,742.9	16.1	16.2	-135.20	25.7	-40.5	53.2	20.9	32.25	1.649 CC		
4,800.0	4,798.3	4,802.1	4,800.7	16.3	16.4	-148.94	24.9	-40.3	53.3	20.7	32.65	1.633		
4,900.0	4,898.3	4,902.2	4,900.7	16.6	16.7	132.83	23.0	-40.2	53.9	20.6	33.34	1.616		
5,000.0	4,998.3	5,002.4	5,000.9	17.0	17.1	119.64	20.9	-39.8	54.1	20.1	34.04	1.590		
5,100.0	5,098.2	5,102.4	5,100.8	17.3	17.4	119.10	18.6	-39.3	54.6	19.8	34.73	1.571		
5,200.0	5,198.1	5,202.3	5,200.8	17.7	17.7	119.17	16.1	-38.9	55.0	19.6	35.42	1.553		
5,300.0	5,298.1	5,302.5	5,300.9	18.0	18.1	120.50	13.8	-38.4	55.4	19.3	36.12	1.534 ES, SF		
5,400.0	5,398.0	5,400.9	5,399.2	18.4	18.4	119.84	9.8	-39.7	57.3	20.5	36.80	1.556		
5,500.0	5,498.0	5,500.3	5,498.3	18.7	18.8	113.21	2.7	-43.9	61.0	23.5	37.48	1.627		
5,600.0	5,597.9	5,599.9	5,597.4	19.1	19.1	110.80	-5.3	-48.8	65.8	27.7	38.17	1.725		
5,700.0	5,697.8	5,699.8	5,696.9	19.4	19.5	118.96	-13.3	-53.6	71.1	32.2	38.86	1.829		
5,800.0	5,797.7	5,799.9	5,796.5	19.8	19.8	142.19	-20.7	-58.2	78.2	38.7	39.56	1.977		
5,900.0	5,897.5	5,901.0	5,897.3	20.2	20.1	149.07	-29.1	-61.5	87.6	47.3	40.28	2.174		
6,000.0	5,997.1	6,001.9	5,997.7	20.5	20.5	148.08	-39.2	-62.6	96.7	55.7	40.99	2.360		
6,100.0	6,096.7	6,101.7	6,096.9	20.9	20.9	147.12	-50.0	-62.7	105.4	63.8	41.69	2.529		
6,200.0	6,196.4	6,201.4	6,196.0	21.2	21.2	142.72	-60.5	-62.7	114.5	72.1	42.40	2.702		
6,300.0	6,296.0	6,300.3	6,294.3	21.6	21.6	138.34	-71.1	-62.8	123.8	80.7	43.09	2.873		
6,400.0	6,395.6	6,400.5	6,393.9	21.9	21.9	132.19	-82.2	-62.7	133.1	89.3	43.81	3.039		
6,500.0	6,495.0	6,499.4	6,492.3	22.3	22.3	120.38	-92.7	-62.4	142.0	97.5	44.51	3.190		
6,600.0	6,594.5	6,596.2	6,588.6	22.7	22.6	115.35	-102.1	-63.8	151.1	105.9	45.19	3.344		
6,700.0	6,694.1	6,694.2	6,686.1	23.0	23.0	113.79	-111.0	-67.2	160.9	115.0	45.88	3.507		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #511H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
6,800.0	6,793.8	6,794.1	6,785.6	23.4	23.3	111.74	-119.7	-70.9	169.9	123.3	46.60	3.646	
6,900.0	6,893.5	6,894.1	6,885.1	23.7	23.7	111.36	-128.5	-74.5	178.5	131.2	47.32	3.773	
7,000.0	6,993.3	6,994.5	6,985.1	24.1	24.1	112.78	-137.2	-77.7	186.8	138.7	48.05	3.887	
7,100.0	7,093.0	7,094.4	7,084.6	24.5	24.4	114.24	-145.9	-80.6	194.9	146.2	48.77	3.997	
7,200.0	7,192.8	7,195.1	7,184.9	24.8	24.8	113.70	-154.5	-83.3	202.9	153.4	49.50	4.098	
7,300.0	7,292.5	7,295.6	7,285.1	25.2	25.1	113.17	-162.9	-85.5	210.8	160.6	50.24	4.196	
7,400.0	7,392.0	7,396.0	7,385.1	25.6	25.5	113.20	-171.1	-87.3	218.9	168.0	50.97	4.295	
7,500.0	7,491.5	7,496.0	7,484.8	25.9	25.9	114.09	-179.1	-89.0	226.9	175.2	51.71	4.388	
7,600.0	7,591.0	7,596.5	7,584.9	26.3	26.2	115.04	-186.9	-90.5	234.7	182.3	52.44	4.476	
7,700.0	7,690.5	7,698.3	7,686.5	26.7	26.6	116.62	-194.4	-91.6	241.9	188.7	53.19	4.548	
7,800.0	7,790.1	7,798.4	7,786.3	27.0	27.0	117.97	-201.4	-92.0	248.3	194.4	53.92	4.606	
7,900.0	7,889.7	7,897.3	7,884.9	27.4	27.3	119.06	-208.6	-92.5	255.0	200.4	54.64	4.667	
8,000.0	7,989.4	7,996.1	7,983.5	27.8	27.7	118.47	-215.9	-93.4	262.1	206.7	55.36	4.734	
8,100.0	8,089.0	8,096.4	8,083.5	28.2	28.1	115.86	-223.3	-94.4	268.8	212.7	56.10	4.792	
8,200.0	8,188.7	8,195.6	8,182.4	28.5	28.4	115.84	-230.4	-95.6	275.1	218.3	56.82	4.842	
8,300.0	8,288.5	8,296.2	8,282.7	28.9	28.8	118.73	-237.1	-96.7	281.2	223.6	57.56	4.886	
8,400.0	8,388.1	8,394.1	8,380.5	29.3	29.2	119.96	-243.4	-97.9	288.0	229.8	58.27	4.943	
8,500.0	8,487.6	8,494.9	8,481.1	29.6	29.5	121.10	-249.5	-100.1	296.7	237.7	59.01	5.027	
8,600.0	8,587.2	8,596.4	8,582.4	30.0	29.9	122.27	-254.7	-101.2	303.9	244.2	59.75	5.086	
8,700.0	8,686.8	8,696.9	8,682.8	30.4	30.2	123.85	-257.5	-102.7	311.0	250.6	60.48	5.143	
8,800.0	8,786.4	8,795.6	8,781.5	30.8	30.6	121.14	-259.8	-104.2	317.6	256.4	61.20	5.189	
8,900.0	8,886.1	8,906.1	8,892.0	31.1	31.0	123.59	-261.3	-104.4	322.2	260.2	61.96	5.199	
9,000.0	8,985.8	9,007.1	8,993.0	31.5	31.3	123.75	-261.9	-102.6	324.8	262.2	62.68	5.182	
9,100.0	9,085.6	9,103.5	9,089.4	31.9	31.7	118.66	-262.4	-101.6	327.4	264.1	63.38	5.166	
9,200.0	9,185.4	9,202.1	9,188.0	32.2	32.0	114.21	-262.2	-101.2	329.8	265.7	64.08	5.146	
9,300.0	9,285.3	9,299.0	9,284.8	32.6	32.3	107.21	-262.0	-101.4	332.0	267.2	64.77	5.125	
9,400.0	9,385.2	9,396.8	9,382.7	33.0	32.7	130.19	-261.8	-102.6	334.7	269.2	65.46	5.113	
9,500.0	9,485.1	9,495.6	9,481.5	33.3	33.0	148.77	-261.3	-104.1	339.8	273.6	66.15	5.136	
9,600.0	9,585.0	9,595.0	9,580.8	33.7	33.3	160.00	-259.8	-106.0	344.9	278.1	66.84	5.160	
9,700.0	9,684.9	9,705.1	9,690.9	34.0	33.7	176.33	-257.4	-106.7	348.7	281.1	67.58	5.159	
9,800.0	9,784.9	9,809.6	9,795.3	34.4	34.1	-175.75	-255.1	-104.5	349.6	281.4	68.28	5.121	
9,900.0	9,884.8	9,901.3	9,887.0	34.7	34.4	-171.89	-253.2	-103.7	351.1	282.2	68.94	5.093	
10,000.0	9,984.8	9,999.0	9,984.7	35.1	34.7	-161.50	-251.6	-104.2	353.2	283.6	69.62	5.074	
10,100.0	10,084.8	10,099.0	10,084.7	35.4	35.1	-107.33	-250.3	-104.9	355.2	284.9	70.30	5.052	
10,200.0	10,183.0	10,195.9	10,181.6	35.7	35.4	-91.49	-249.2	-105.7	356.7	285.7	70.95	5.027	
10,300.0	10,272.4	10,284.7	10,270.3	36.0	35.7	-95.91	-248.9	-106.7	360.9	289.3	71.54	5.044	
10,400.0	10,353.0	10,365.7	10,351.3	36.2	36.0	-103.47	-249.2	-107.5	374.3	302.3	72.06	5.195	
10,500.0	10,426.8	10,439.6	10,425.2	36.4	36.2	-110.46	-249.7	-108.0	401.8	329.3	72.51	5.541	
10,600.0	10,491.1	10,502.3	10,488.0	36.6	36.5	-116.00	-249.7	-108.7	445.6	372.7	72.86	6.115	
10,700.0	10,539.6	10,629.0	10,613.8	36.9	36.9	-125.12	-239.3	-112.3	509.6	436.7	72.85	6.995	
10,800.0	10,571.2	10,970.1	10,883.5	37.1	37.7	-136.02	-42.8	-122.9	547.8	481.8	66.00	8.300	
10,900.0	10,584.6	11,329.8	11,009.5	37.4	38.7	-139.40	287.3	-115.5	558.5	498.7	59.85	9.333	
11,000.0	10,586.0	11,464.9	11,011.0	37.8	39.1	-139.30	422.3	-115.5	558.0	497.5	60.45	9.230	
11,100.0	10,586.0	11,581.2	11,008.1	38.2	39.6	-139.44	538.5	-113.2	553.7	492.6	61.09	9.064	
11,200.0	10,587.0	11,677.5	11,006.3	38.6	40.0	-139.72	634.8	-110.9	547.9	486.3	61.62	8.891	
11,300.0	10,587.6	11,783.8	11,002.2	39.2	40.6	-140.09	741.0	-107.9	539.5	477.2	62.28	8.662	
11,400.0	10,590.7	11,872.6	11,000.3	39.8	41.1	-140.39	829.7	-105.3	529.4	466.5	62.81	8.428	
11,500.0	10,595.8	11,973.2	11,000.5	40.4	41.8	-140.92	930.3	-101.6	518.7	455.3	63.40	8.181	
11,600.0	10,600.1	12,078.7	10,999.0	41.1	42.5	-141.25	1,035.6	-97.6	509.0	444.8	64.28	7.919	
11,700.0	10,601.5	12,164.0	10,998.2	41.9	43.1	-141.47	1,120.9	-94.7	504.7	439.6	65.06	7.757	
11,715.2	10,601.4	12,176.5	10,998.4	42.0	43.2	-141.52	1,133.3	-94.3	504.6	439.5	65.17	7.744	
11,800.0	10,599.7	12,248.1	11,000.9	42.7	43.8	-141.98	1,205.0	-92.1	506.6	440.9	65.65	7.716	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #511H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
11,900.0	10,597.1	12,354.3	11,006.5	43.6	44.7	-142.84	1,310.9	-88.6	511.1	444.7	66.33	7.704		
12,000.0	10,596.8	12,448.5	11,009.6	44.5	45.5	-143.26	1,405.0	-86.4	512.8	445.5	67.22	7.629		
12,100.0	10,595.9	12,558.4	11,011.1	45.4	46.6	-143.44	1,514.9	-86.6	514.5	446.0	68.50	7.511		
12,200.0	10,595.4	12,670.5	11,008.9	46.4	47.6	-143.55	1,626.9	-87.0	512.1	442.1	69.97	7.318		
12,300.0	10,595.2	12,766.0	11,005.2	47.4	48.6	-143.48	1,722.4	-88.5	508.1	436.7	71.36	7.120		
12,400.0	10,594.5	12,861.4	11,002.6	48.5	49.6	-143.51	1,817.7	-91.3	505.5	432.7	72.73	6.950		
12,500.0	10,593.5	12,961.5	10,999.8	49.6	50.7	-143.52	1,917.8	-94.0	502.9	428.7	74.19	6.778		
12,600.0	10,595.6	13,079.4	10,994.7	50.7	52.0	-143.01	2,035.5	-97.4	497.5	421.1	76.41	6.510		
12,700.0	10,599.2	13,164.7	10,990.2	51.9	53.0	-142.60	2,120.6	-99.5	489.5	411.4	78.12	6.266		
12,800.0	10,601.8	13,273.1	10,984.4	53.1	54.3	-142.09	2,228.9	-102.8	482.7	402.3	80.40	6.004		
12,863.0	10,602.1	13,319.4	10,982.6	53.8	54.8	-141.92	2,275.0	-104.1	480.9	399.6	81.30	5.915		
12,900.0	10,601.3	13,351.0	10,982.5	54.3	55.2	-141.87	2,306.6	-105.3	482.0	400.1	81.86	5.888		
13,000.0	10,599.6	13,444.4	10,982.8	55.5	56.3	-141.70	2,399.9	-109.4	485.9	402.3	83.62	5.811		
13,100.0	10,598.9	13,546.6	10,981.9	56.7	57.6	-141.13	2,501.9	-115.4	489.6	403.6	85.98	5.694		
13,200.0	10,600.9	13,664.2	10,977.6	58.0	59.1	-139.94	2,619.2	-122.9	489.5	400.3	89.22	5.486		
13,300.0	10,604.2	13,764.7	10,970.9	59.3	60.4	-138.77	2,719.4	-127.7	484.7	392.4	92.24	5.254		
13,393.0	10,605.7	13,848.7	10,968.2	60.5	61.5	-138.26	2,803.3	-131.0	483.1	388.7	94.40	5.117		
13,400.0	10,606.0	13,855.3	10,968.1	60.6	61.5	-138.21	2,809.9	-131.2	482.9	388.3	94.58	5.105		
13,500.0	10,604.8	13,942.7	10,967.5	61.9	62.7	-138.09	2,897.2	-134.5	484.7	388.3	96.37	5.030		
13,600.0	10,603.1	14,034.8	10,968.4	63.3	63.9	-137.94	2,989.1	-140.2	489.7	391.4	98.34	4.980		
13,700.0	10,601.5	14,144.2	10,968.0	64.6	65.4	-137.45	3,098.2	-148.1	494.9	393.8	101.10	4.895		
13,800.0	10,600.8	14,267.4	10,967.0	66.0	67.0	-137.30	3,221.4	-150.7	495.6	391.8	103.78	4.775		
13,900.0	10,600.9	14,366.9	10,964.9	67.4	68.4	-137.19	3,320.9	-150.6	493.5	387.6	105.96	4.658		
13,928.4	10,600.7	14,393.1	10,964.5	67.8	68.8	-137.16	3,347.1	-150.7	493.4	386.9	106.54	4.631		
14,000.0	10,599.3	14,461.1	10,964.1	68.8	69.7	-137.16	3,415.0	-150.8	494.7	386.7	107.98	4.582		
14,100.0	10,599.2	14,559.9	10,963.2	70.2	71.1	-136.95	3,513.8	-151.8	495.5	385.2	110.31	4.492		
14,200.0	10,599.3	14,650.0	10,961.5	71.6	72.3	-136.54	3,603.9	-154.4	496.3	383.6	112.72	4.403		
14,300.0	10,599.0	14,737.6	10,962.1	73.0	73.6	-136.27	3,691.4	-158.8	500.2	385.3	114.93	4.353		
14,400.0	10,599.0	14,846.6	10,963.5	74.4	75.1	-135.94	3,800.2	-164.0	504.7	387.0	117.73	4.287		
14,500.0	10,598.6	14,958.3	10,962.9	75.9	76.7	-135.72	3,911.9	-167.1	506.1	385.6	120.46	4.201		
14,600.0	10,595.9	15,067.1	10,958.5	77.3	78.3	-135.40	4,020.5	-171.0	506.8	383.5	123.31	4.110		
14,700.0	10,591.5	15,174.2	10,953.1	78.8	79.9	-135.50	4,127.4	-173.5	505.6	379.9	125.69	4.022		
14,800.0	10,585.4	15,279.8	10,949.8	80.3	81.4	-136.21	4,233.0	-172.4	504.0	376.8	127.15	3.964		
14,900.0	10,579.6	15,384.5	10,945.3	81.7	83.0	-136.77	4,337.6	-170.3	501.3	372.6	128.70	3.895		
15,000.0	10,573.9	15,488.8	10,940.1	83.2	84.5	-137.29	4,441.7	-168.1	498.1	367.8	130.28	3.823		
15,100.0	10,569.3	15,587.1	10,933.8	84.7	85.9	-137.43	4,539.8	-166.8	494.1	361.9	132.21	3.737		
15,200.0	10,566.8	15,672.8	10,930.7	86.2	87.2	-137.55	4,625.4	-165.3	490.7	356.8	133.94	3.664		
15,276.6	10,566.1	15,740.3	10,930.4	87.4	88.2	-137.73	4,692.9	-164.1	489.6	354.4	135.22	3.621		
15,300.0	10,565.9	15,761.2	10,930.4	87.7	88.5	-137.76	4,713.8	-163.9	489.6	354.0	135.64	3.610		
15,400.0	10,561.1	15,851.7	10,931.2	89.2	89.9	-138.08	4,804.3	-164.4	493.9	356.9	137.06	3.604		
15,500.0	10,556.8	15,948.0	10,931.5	90.7	91.3	-138.13	4,900.6	-167.2	500.2	361.0	139.22	3.593		
15,600.0	10,551.6	16,065.9	10,929.7	92.3	93.1	-138.04	5,018.4	-170.1	505.5	363.5	142.02	3.559		
15,700.0	10,546.9	16,170.2	10,928.5	93.8	94.7	-138.33	5,122.7	-169.5	508.3	364.4	143.96	3.531		
15,800.0	10,541.7	16,277.4	10,925.9	95.3	96.3	-138.66	5,229.8	-167.9	509.4	363.6	145.81	3.494		
15,900.0	10,536.6	16,375.3	10,922.2	96.8	97.8	-138.74	5,327.6	-167.2	510.6	362.7	147.90	3.452		
16,000.0	10,530.8	16,480.7	10,919.1	98.4	99.4	-139.06	5,433.0	-165.6	512.0	362.2	149.74	3.419		
16,100.0	10,527.9	16,571.8	10,917.5	99.9	100.8	-139.28	5,524.0	-162.9	511.4	359.9	151.45	3.377		
16,200.0	10,526.5	16,671.0	10,916.5	101.4	102.3	-139.57	5,623.2	-160.4	510.2	356.9	153.27	3.328		
16,258.4	10,524.5	16,728.0	10,915.5	102.3	103.2	-139.80	5,680.1	-159.5	509.7	355.6	154.18	3.306		
16,300.0	10,522.6	16,766.7	10,915.1	103.0	103.8	-140.00	5,718.8	-159.2	510.1	355.4	154.69	3.297		
16,400.0	10,517.8	16,868.2	10,913.6	104.5	105.3	-140.48	5,820.4	-158.9	510.9	354.8	156.12	3.272		
16,500.0	10,511.5	16,967.5	10,909.8	106.1	106.9	-140.76	5,919.6	-159.9	512.0	354.1	157.83	3.244		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #511H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Rule Assigned:		Distance		Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
16,600.0	10,505.4	17,047.9	10,907.7	107.7	108.1	-140.82	5,999.9	-163.3	516.0	356.7	159.35	3.238		
16,700.0	10,501.6	17,140.0	10,907.2	109.2	109.5	-140.55	6,091.9	-169.1	522.7	360.7	161.94	3.228		
16,800.0	10,497.3	17,262.5	10,905.4	110.8	111.5	-140.10	6,214.1	-174.7	528.9	363.3	165.66	3.193		
16,900.0	10,493.4	17,365.6	10,903.5	112.3	113.1	-140.06	6,317.2	-174.7	532.1	364.0	168.13	3.165		
17,000.0	10,491.2	17,464.1	10,903.2	113.9	114.6	-140.12	6,415.7	-173.7	534.3	364.0	170.30	3.137		
17,100.0	10,487.1	17,576.8	10,900.7	115.5	116.4	-140.01	6,528.4	-173.5	537.2	364.3	172.96	3.106		
17,200.0	10,485.2	17,682.0	10,894.9	117.0	118.0	-139.66	6,633.5	-173.8	535.3	359.2	176.09	3.040		
17,300.0	10,486.7	17,771.3	10,890.2	118.6	119.4	-139.28	6,722.5	-175.0	529.9	350.8	179.10	2.959		
17,400.0	10,486.4	17,865.2	10,887.2	120.2	120.9	-139.19	6,816.5	-176.6	527.1	345.6	181.58	2.903		
17,500.0	10,484.4	17,969.8	10,883.3	121.8	122.5	-139.12	6,920.9	-178.9	525.6	341.4	184.20	2.853		
17,600.0	10,481.8	18,077.7	10,876.5	123.3	124.2	-138.90	7,028.5	-182.5	522.5	335.2	187.31	2.790		
17,700.0	10,477.1	18,169.1	10,870.8	124.9	125.7	-138.99	7,119.7	-184.9	520.2	330.9	189.31	2.748		
17,701.3	10,477.0	18,170.2	10,870.8	125.0	125.7	-138.99	7,120.8	-184.9	520.2	330.8	189.33	2.747		
17,800.0	10,470.1	18,256.5	10,868.8	126.5	127.1	-139.45	7,207.1	-186.6	522.1	332.0	190.16	2.746		
17,900.0	10,463.5	18,350.5	10,869.5	128.1	128.6	-140.15	7,301.1	-187.8	525.8	335.2	190.63	2.758		
18,000.0	10,457.9	18,457.3	10,869.4	129.7	130.3	-140.67	7,407.8	-190.0	529.5	337.4	192.07	2.757		
18,100.0	10,457.3	18,568.6	10,865.4	131.3	132.0	-140.41	7,519.0	-193.4	527.3	332.0	195.28	2.700		
18,142.0	10,457.5	18,601.0	10,863.7	132.0	132.5	-140.29	7,551.4	-194.5	525.6	329.3	196.31	2.677		

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	89.48	0.3	32.9	32.9	32.6	0.29	112.749		
100.0	100.0	100.1	100.1	0.1	0.2	-112.22	0.2	32.8	32.9	32.1	0.63	51.915		
200.0	200.0	200.1	200.1	0.3	0.3	-112.74	0.0	32.5	32.7	32.1	0.63	51.915		
300.0	300.0	300.3	300.3	0.6	0.6	-129.21	-0.2	31.9	32.5	31.3	1.20	27.001		
387.7	387.7	388.0	388.0	0.9	0.9	-148.48	-0.4	31.1	32.3	30.5	1.83	17.643		
400.0	400.0	400.3	400.3	1.0	1.0	-150.70	-0.5	31.0	32.3	30.4	1.92	16.837		
500.0	500.0	500.2	500.2	1.3	1.3	-168.16	-0.8	30.2	32.4	29.7	2.63	12.290		
600.0	600.0	600.4	600.4	1.7	1.7	-143.87	-1.1	29.2	32.1	28.7	3.35	9.579		
700.0	700.0	700.4	700.4	2.0	2.0	-122.73	-1.6	28.0	31.5	27.5	4.07	7.754		
800.0	800.0	800.6	800.6	2.4	2.4	-137.37	-2.4	26.5	30.7	25.9	4.78	6.415		
900.0	900.0	900.8	900.7	2.7	2.8	87.22	-3.4	24.2	28.9	23.4	5.49	5.259		
1,000.0	999.9	1,000.8	1,000.7	3.1	3.1	-137.76	-4.5	21.4	27.2	21.0	6.19	4.387		
1,024.7	1,024.6	1,025.3	1,025.2	3.2	3.2	-140.18	-4.9	20.8	27.1	20.7	6.37	4.254 CC		
1,100.0	1,099.9	1,100.3	1,100.1	3.4	3.5	-147.79	-5.9	19.8	27.7	20.8	6.91	4.014		
1,200.0	1,199.9	1,200.2	1,200.1	3.8	3.8	-149.04	-7.3	19.2	29.7	22.1	7.62	3.893		
1,300.0	1,299.8	1,300.5	1,300.4	4.2	4.2	-160.24	-8.5	18.0	31.4	23.1	8.34	3.766		
1,400.0	1,399.7	1,401.0	1,400.8	4.5	4.6	-158.79	-10.4	15.6	32.6	23.5	9.06	3.594		
1,500.0	1,499.7	1,501.2	1,500.8	4.9	4.9	-147.51	-12.6	11.8	32.6	22.8	9.78	3.330		
1,600.0	1,599.6	1,600.9	1,600.5	5.2	5.3	-134.51	-15.5	8.5	32.6	22.1	10.50	3.102		
1,690.7	1,690.2	1,691.4	1,690.9	5.6	5.6	-132.44	-17.7	6.1	32.5	21.3	11.16	2.913		
1,700.0	1,699.5	1,700.7	1,700.2	5.6	5.6	-132.32	-17.9	5.9	32.4	21.1	11.22	2.884		
1,800.0	1,799.5	1,800.6	1,800.1	6.0	6.0	-138.32	-19.5	3.8	32.5	20.6	11.94	2.724		
1,900.0	1,899.4	1,900.6	1,900.0	6.3	6.4	-148.99	-20.3	1.8	32.7	20.0	12.66	2.579		
2,000.0	1,999.4	1,999.5	1,999.0	6.7	6.7	-52.15	-21.2	1.5	32.5	19.2	13.35	2.438		
2,011.8	2,011.2	2,011.2	2,010.7	6.7	6.7	-47.44	-21.4	1.7	32.5	19.1	13.42	2.423		
2,100.0	2,099.4	2,098.8	2,098.2	7.0	7.0	-25.82	-22.8	4.2	32.7	18.6	14.01	2.331		
2,200.0	2,199.3	2,198.9	2,198.3	7.3	7.4	20.89	-24.7	7.7	32.5	17.8	14.68	2.211		
2,300.0	2,299.2	2,299.0	2,298.3	7.7	7.7	41.76	-24.5	10.6	31.7	16.4	15.35	2.067		
2,400.0	2,399.1	2,399.0	2,398.2	8.0	8.0	44.76	-22.9	13.7	31.4	15.4	16.01	1.960		
2,500.0	2,499.0	2,499.1	2,498.2	8.3	8.4	45.46	-21.3	16.7	31.0	14.3	16.68	1.856		
2,600.0	2,598.9	2,599.1	2,598.2	8.7	8.7	48.67	-19.6	19.5	30.6	13.2	17.35	1.762		
2,700.0	2,698.8	2,699.2	2,698.2	9.0	9.0	51.95	-17.6	22.1	30.5	12.4	18.02	1.690		
2,800.0	2,798.8	2,799.3	2,798.3	9.4	9.4	50.22	-15.9	24.3	30.0	11.3	18.71	1.606		
2,841.0	2,839.8	2,840.1	2,839.1	9.5	9.5	50.47	-15.5	25.1	29.9	10.9	18.98	1.576		
2,900.0	2,898.7	2,899.0	2,898.0	9.7	9.7	51.91	-15.7	26.6	30.1	10.7	19.38	1.554		
3,000.0	2,998.7	2,999.2	2,998.1	10.0	10.0	50.32	-14.5	29.1	30.1	10.0	20.07	1.499 Level 3		
3,100.0	3,098.6	3,099.1	3,098.0	10.4	10.4	46.76	-13.2	31.6	29.6	8.9	20.76	1.427 Level 3		
3,170.2	3,168.8	3,169.2	3,168.1	10.6	10.6	44.84	-12.3	33.7	29.6	8.4	21.24	1.394 Level 3		
3,200.0	3,198.5	3,199.0	3,197.8	10.7	10.7	43.82	-11.9	34.6	29.5	8.1	21.44	1.375 Level 3		
3,300.0	3,298.5	3,298.9	3,297.7	11.1	11.1	2.78	-10.6	37.7	30.5	8.3	22.13	1.377 Level 3		
3,400.0	3,398.5	3,399.1	3,397.9	11.4	11.4	-11.92	-9.7	40.7	32.1	9.3	22.83	1.406 Level 3		
3,500.0	3,498.5	3,499.5	3,498.2	11.8	11.8	3.12	-10.1	42.1	32.2	8.7	23.53	1.368 Level 3		
3,600.0	3,598.5	3,599.4	3,598.1	12.1	12.1	25.65	-11.1	43.0	31.7	7.5	24.23	1.308 Level 3		
3,609.0	3,607.5	3,608.4	3,607.1	12.1	12.2	27.40	-11.1	43.0	31.7	7.4	24.29	1.305 Level 3		
3,700.0	3,698.5	3,699.5	3,698.2	12.5	12.5	170.22	-11.6	43.9	32.4	7.5	24.93	1.301 Level 3		
3,800.0	3,798.5	3,799.5	3,798.2	12.8	12.8	-174.50	-12.0	44.7	34.9	9.2	25.63	1.360 Level 3		
3,900.0	3,898.5	3,899.7	3,898.4	13.2	13.2	-176.49	-12.3	44.9	37.5	11.1	26.33	1.423 Level 3		
4,000.0	3,998.4	3,999.6	3,998.4	13.5	13.5	177.34	-12.6	45.0	40.1	13.0	27.03	1.482 Level 3		
4,100.0	4,098.4	4,099.6	4,098.3	13.9	13.9	145.77	-12.6	45.2	42.4	14.7	27.73	1.530		
4,200.0	4,198.4	4,199.5	4,198.2	14.2	14.2	122.16	-13.3	45.1	44.5	16.1	28.43	1.566		
4,300.0	4,298.3	4,299.4	4,298.1	14.6	14.6	78.84	-14.3	45.2	45.4	16.3	29.13	1.558		
4,400.0	4,398.3	4,399.4	4,398.1	14.9	14.9	51.63	-15.0	45.5	45.4	15.6	29.83	1.522		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
4,500.0	4,498.3	4,499.6	4,498.3	15.3	15.3	53.85	-14.7	46.1	45.0	14.4	30.53	1.473	Level 3
4,600.0	4,598.3	4,599.6	4,598.3	15.6	15.6	56.58	-13.4	46.8	44.2	12.9	31.22	1.414	Level 3
4,700.0	4,698.3	4,699.4	4,698.1	15.9	16.0	58.42	-11.9	48.1	43.7	11.8	31.91	1.369	Level 3
4,800.0	4,798.3	4,799.4	4,798.1	16.3	16.3	38.88	-10.5	49.3	43.2	10.6	32.61	1.325	Level 3
4,900.0	4,898.3	4,899.3	4,897.9	16.6	16.7	-40.42	-9.0	50.8	42.8	9.5	33.30	1.285	Level 3
5,000.0	4,998.3	4,999.3	4,997.9	17.0	17.0	-59.34	-7.3	52.3	42.2	8.2	34.00	1.242	Level 2
5,100.0	5,098.2	5,099.4	5,097.9	17.3	17.4	-67.21	-5.5	53.4	41.4	6.7	34.69	1.194	Level 2
5,200.0	5,198.1	5,199.3	5,197.8	17.7	17.7	-74.91	-3.5	54.4	41.1	5.7	35.39	1.160	Level 2
5,209.8	5,208.0	5,209.1	5,207.6	17.7	17.7	-75.58	-3.3	54.5	41.1	5.6	35.46	1.158	Level 2
5,300.0	5,298.1	5,299.2	5,297.8	18.0	18.1	-81.78	-1.6	55.2	41.2	5.1	36.08	1.142	Level 2
5,400.0	5,398.0	5,399.3	5,397.8	18.4	18.4	-88.20	-0.1	55.7	41.6	4.8	36.78	1.131	Level 2
5,500.0	5,498.0	5,499.5	5,498.0	18.7	18.7	-96.08	0.5	55.9	42.0	4.5	37.48	1.121	Level 2
5,600.0	5,597.9	5,599.2	5,597.8	19.1	19.1	-100.28	1.5	55.5	42.5	4.3	38.18	1.113	Level 2, ES, SF
5,700.0	5,697.8	5,698.4	5,696.9	19.4	19.4	-91.23	1.0	56.8	44.2	5.3	38.87	1.136	Level 2
5,800.0	5,797.7	5,797.5	5,795.7	19.8	19.8	-62.06	-3.2	62.5	46.5	7.0	39.56	1.176	Level 2
5,900.0	5,897.5	5,897.1	5,895.0	20.2	20.1	-50.04	-8.0	69.8	47.2	7.0	40.25	1.174	Level 2
5,993.6	5,990.7	5,990.5	5,987.9	20.5	20.5	-46.74	-12.4	77.0	47.3	6.4	40.90	1.156	Level 2
6,000.0	5,997.1	5,996.9	5,994.3	20.5	20.5	-46.71	-12.7	77.5	47.1	6.1	40.95	1.150	Level 2
6,100.0	6,096.7	6,096.7	6,093.6	20.9	20.9	-42.43	-17.5	85.9	47.3	5.7	41.64	1.136	Level 2
6,200.0	6,196.4	6,195.7	6,192.1	21.2	21.2	-41.42	-22.7	95.4	48.4	6.1	42.29	1.143	Level 2
6,300.0	6,296.0	6,294.8	6,290.2	21.6	21.6	-39.24	-29.2	107.3	51.7	8.8	42.93	1.206	Level 2
6,400.0	6,395.6	6,394.7	6,389.1	21.9	21.9	-39.68	-36.0	120.0	56.1	12.4	43.62	1.285	Level 3
6,500.0	6,495.0	6,494.5	6,487.8	22.3	22.3	-49.15	-42.9	132.9	60.6	16.3	44.32	1.368	Level 3
6,600.0	6,594.5	6,594.6	6,586.8	22.7	22.7	-54.82	-49.7	145.7	66.0	20.9	45.05	1.465	Level 3
6,700.0	6,694.1	6,694.8	6,686.1	23.0	23.0	-55.79	-56.3	157.9	72.3	26.5	45.79	1.578	
6,800.0	6,793.8	6,794.9	6,785.3	23.4	23.4	-56.99	-62.6	169.5	78.9	32.4	46.52	1.696	
6,900.0	6,893.5	6,893.4	6,882.9	23.7	23.8	-56.47	-68.7	181.1	86.1	38.9	47.17	1.825	
7,000.0	6,993.3	6,991.0	6,979.3	24.1	24.2	-53.32	-75.6	194.9	95.6	47.9	47.78	2.002	
7,100.0	7,093.0	7,090.3	7,077.2	24.5	24.5	-49.92	-83.0	210.0	106.3	57.8	48.48	2.192	
7,200.0	7,192.8	7,189.8	7,175.3	24.8	24.9	-48.96	-90.2	225.1	116.8	67.6	49.19	2.374	
7,300.0	7,292.5	7,290.0	7,274.2	25.2	25.3	-49.03	-96.8	239.9	126.2	76.3	49.94	2.527	
7,400.0	7,392.0	7,389.4	7,372.2	25.6	25.7	-49.74	-103.4	254.5	134.5	83.8	50.65	2.655	
7,500.0	7,491.5	7,489.3	7,470.8	25.9	26.1	-49.67	-110.0	269.2	142.8	91.4	51.39	2.778	
7,600.0	7,591.0	7,589.7	7,570.0	26.3	26.5	-49.59	-116.4	283.6	150.6	98.4	52.15	2.887	
7,700.0	7,690.5	7,690.1	7,669.3	26.7	26.9	-48.90	-122.2	297.5	158.1	105.2	52.91	2.989	
7,800.0	7,790.1	7,789.8	7,767.9	27.0	27.3	-48.24	-127.4	311.1	165.6	112.0	53.64	3.087	
7,900.0	7,889.7	7,889.2	7,866.3	27.4	27.6	-47.64	-132.4	324.7	173.3	119.0	54.37	3.188	
8,000.0	7,989.4	7,989.0	7,965.0	27.8	28.0	-48.67	-137.3	338.4	181.1	126.0	55.10	3.287	
8,100.0	8,089.0	8,088.8	8,063.7	28.2	28.4	-51.75	-142.2	352.1	189.2	133.3	55.84	3.388	
8,200.0	8,188.7	8,189.3	8,163.1	28.5	28.8	-52.11	-147.0	365.7	197.6	141.0	56.59	3.492	
8,300.0	8,288.5	8,290.5	8,263.4	28.9	29.2	-49.15	-151.9	378.7	205.8	148.4	57.36	3.587	
8,400.0	8,388.1	8,390.5	8,362.5	29.3	29.6	-48.21	-156.7	390.9	212.4	154.3	58.10	3.656	
8,500.0	8,487.6	8,491.6	8,462.7	29.6	30.0	-48.18	-161.4	403.4	217.9	159.1	58.87	3.702	
8,600.0	8,587.2	8,589.9	8,560.3	30.0	30.4	-48.20	-165.5	414.8	222.9	163.4	59.58	3.742	
8,700.0	8,686.8	8,687.1	8,656.6	30.4	30.8	-48.05	-169.6	427.6	229.7	169.4	60.27	3.811	
8,800.0	8,786.4	8,789.1	8,757.6	30.8	31.2	-51.92	-173.9	441.1	237.2	176.1	61.06	3.885	
8,900.0	8,886.1	8,886.5	8,854.0	31.1	31.6	-50.77	-178.0	453.7	244.8	183.1	61.75	3.965	
9,000.0	8,985.8	8,987.1	8,953.6	31.5	32.0	-51.61	-182.7	467.3	253.0	190.5	62.50	4.048	
9,100.0	9,085.6	9,092.0	9,057.6	31.9	32.4	-57.52	-187.7	480.0	260.7	197.3	63.33	4.116	
9,200.0	9,185.4	9,194.0	9,158.9	32.2	32.8	-62.56	-194.0	491.2	268.0	203.9	64.10	4.181	
9,300.0	9,285.3	9,294.4	9,258.4	32.6	33.2	-69.89	-201.0	501.3	275.3	210.5	64.83	4.247	
9,400.0	9,385.2	9,393.2	9,356.6	33.0	33.6	-47.05	-207.1	511.7	283.6	218.1	65.54	4.328	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Highside		Offset Wellbore Centre		Rule Assigned:		Distance		Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
9,500.0	9,485.1	9,495.9	9,458.5	33.3	34.0	-28.52	-212.3	522.0	289.7	223.4	66.29	4.370		
9,600.0	9,585.0	9,599.6	9,561.8	33.7	34.4	-17.32	-216.5	531.0	294.7	227.7	67.05	4.395		
9,700.0	9,684.9	9,701.1	9,663.0	34.0	34.7	-1.00	-219.5	538.8	299.0	231.2	67.77	4.412		
9,800.0	9,784.9	9,801.9	9,763.5	34.4	35.1	6.94	-221.2	546.2	303.0	234.5	68.48	4.425		
9,900.0	9,884.8	9,903.4	9,864.7	34.7	35.5	10.68	-221.3	552.9	307.1	237.9	69.20	4.438		
10,000.0	9,984.8	10,001.3	9,962.4	35.1	35.9	21.18	-222.5	559.8	312.4	242.5	69.88	4.470		
10,100.0	10,084.8	10,101.6	10,062.4	35.4	36.2	75.75	-224.9	567.0	318.2	247.6	70.58	4.508		
10,200.0	10,183.0	10,209.0	10,169.6	35.7	36.6	96.68	-228.5	573.5	325.5	254.3	71.23	4.570		
10,300.0	10,272.4	10,307.2	10,267.7	36.0	37.0	104.08	-231.8	575.6	337.5	265.8	71.70	4.708		
10,400.0	10,353.0	10,391.0	10,351.5	36.2	37.3	109.88	-234.8	575.5	359.9	287.7	72.12	4.990		
10,500.0	10,426.8	10,462.0	10,422.3	36.4	37.5	114.00	-237.4	574.7	393.1	320.5	72.59	5.415		
10,600.0	10,491.1	10,521.9	10,482.3	36.6	37.7	112.64	-239.8	574.2	439.0	366.0	73.07	6.008		
10,700.0	10,539.6	10,555.0	10,515.3	36.9	37.8	106.89	-241.1	574.0	496.1	422.6	73.47	6.752		
10,800.0	10,571.2	10,555.0	10,515.3	37.1	37.8	97.65	-241.1	574.0	567.0	493.4	73.61	7.702		
10,900.0	10,584.6	10,555.0	10,515.3	37.4	37.8	82.24	-241.1	574.0	649.7	575.9	73.77	8.807		
11,000.0	10,586.0	10,555.0	10,515.3	37.8	37.8	76.77	-241.1	574.0	737.4	663.5	73.95	9.972		
11,100.0	10,586.0	10,555.0	10,515.3	38.2	37.8	77.93	-241.1	574.0	828.4	754.3	74.09	11.181		
11,200.0	10,587.0	10,555.0	10,515.3	38.6	37.8	77.66	-241.1	574.0	922.0	847.8	74.20	12.425		
11,300.0	10,587.6	10,555.0	10,515.3	39.2	37.8	78.44	-241.1	574.0	1,017.2	942.9	74.29	13.691		
11,400.0	10,590.7	10,555.0	10,515.3	39.8	37.8	83.99	-241.1	574.0	1,113.8	1,039.4	74.36	14.978		
11,500.0	10,595.8	10,555.0	10,515.3	40.4	37.8	86.09	-241.1	574.0	1,211.1	1,136.7	74.42	16.273		
11,600.0	10,600.1	10,555.0	10,515.3	41.1	37.8	81.51	-241.1	574.0	1,308.3	1,233.8	74.48	17.565		
11,700.0	10,601.5	10,555.0	10,515.3	41.9	37.8	75.95	-241.1	574.0	1,404.9	1,330.3	74.54	18.847		
11,800.0	10,599.7	10,555.0	10,515.3	42.7	37.8	69.80	-241.1	574.0	1,501.6	1,427.0	74.60	20.129		
11,900.0	10,597.1	10,555.0	10,515.3	43.6	37.8	73.26	-241.1	574.0	1,598.5	1,523.9	74.65	21.414		
12,000.0	10,596.8	10,555.0	10,515.3	44.5	37.8	77.03	-241.1	574.0	1,696.0	1,621.3	74.70	22.705		
12,100.0	10,595.9	10,555.0	10,515.3	45.4	37.8	73.53	-241.1	574.0	1,793.8	1,719.1	74.74	24.001		
12,200.0	10,595.4	10,555.0	10,515.3	46.4	37.8	74.20	-241.1	574.0	1,892.2	1,817.5	74.78	25.304		
12,300.0	10,595.2	10,555.0	10,515.3	47.4	37.8	73.65	-241.1	574.0	1,991.0	1,916.2	74.82	26.611		

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	-90.17	-0.1	-33.0	33.0				
100.0	100.0	99.5	99.5	0.1	0.2	68.39	-0.2	-33.0	32.9	32.6	0.29	112.925	
200.0	200.0	199.5	199.5	0.3	0.3	68.65	-0.6	-33.0	32.8	32.1	0.63	51.842	
300.0	300.0	299.3	299.3	0.6	0.6	53.40	-1.1	-33.2	32.5	31.3	1.20	27.092	
400.0	400.0	399.4	399.3	1.0	1.0	32.64	-1.7	-33.8	32.4	30.5	1.91	16.941	
478.4	478.4	477.6	477.6	1.2	1.2	19.66	-2.5	-34.2	32.2	29.8	2.47	13.035	
500.0	500.0	499.2	499.2	1.3	1.3	14.09	-2.7	-34.4	32.2	29.6	2.63	12.262	
600.0	600.0	599.2	599.2	1.7	1.7	37.81	-3.3	-35.4	32.6	29.2	3.34	9.756	
700.0	700.0	699.0	699.0	2.0	2.0	60.21	-3.7	-36.5	33.0	29.0	4.05	8.153	
800.0	800.0	798.3	798.2	2.4	2.4	44.88	-5.0	-38.9	34.8	30.1	4.77	7.308	
900.0	900.0	898.9	898.7	2.7	2.7	-96.38	-6.7	-41.7	37.2	31.8	5.47	6.805	
1,000.0	999.9	999.1	998.9	3.1	3.1	35.44	-7.7	-43.3	37.7	31.5	6.18	6.106	
1,100.0	1,099.9	1,099.0	1,098.8	3.4	3.5	27.12	-8.3	-44.7	36.9	30.0	6.89	5.345	
1,200.0	1,199.9	1,198.9	1,198.8	3.8	3.8	27.04	-9.3	-46.3	35.9	28.3	7.61	4.716	
1,300.0	1,299.8	1,298.9	1,298.7	4.2	4.2	16.54	-10.5	-47.9	34.6	26.2	8.33	4.150	
1,400.0	1,399.7	1,398.8	1,398.6	4.5	4.5	16.27	-11.6	-49.7	32.8	23.8	9.05	3.630	
1,500.0	1,499.7	1,498.7	1,498.5	4.9	4.9	27.65	-12.8	-51.7	31.0	21.3	9.77	3.176	
1,600.0	1,599.6	1,598.7	1,598.5	5.2	5.3	41.57	-14.2	-53.9	29.8	19.3	10.49	2.843	
1,700.0	1,699.5	1,698.7	1,698.4	5.6	5.6	46.21	-15.2	-55.9	29.6	18.3	11.21	2.637	
1,712.6	1,712.1	1,711.3	1,711.0	5.7	5.7	45.91	-15.3	-56.2	29.5	18.2	11.30	2.615	
1,800.0	1,799.5	1,798.4	1,798.1	6.0	6.0	43.90	-15.9	-58.6	30.0	18.1	11.93	2.518	
1,900.0	1,899.4	1,898.5	1,898.1	6.3	6.3	37.33	-15.6	-61.4	30.8	18.2	12.64	2.437	
2,000.0	1,999.4	1,998.6	1,998.2	6.7	6.7	138.69	-14.6	-63.8	33.4	20.1	13.35	2.506	
2,100.0	2,099.4	2,099.0	2,098.6	7.0	7.0	169.94	-13.3	-65.0	37.9	23.9	14.03	2.704	
2,200.0	2,199.3	2,199.3	2,198.8	7.3	7.4	-145.77	-12.1	-64.8	41.6	26.9	14.70	2.833	
2,300.0	2,299.2	2,299.3	2,298.8	7.7	7.7	-130.94	-10.7	-64.3	44.6	29.2	15.36	2.901	
2,400.0	2,399.1	2,399.3	2,398.9	8.0	8.0	-132.26	-9.1	-63.5	47.1	31.1	16.02	2.940	
2,500.0	2,499.0	2,499.4	2,498.9	8.3	8.4	-135.49	-7.8	-62.5	49.4	32.7	16.69	2.962	
2,600.0	2,598.9	2,599.1	2,598.6	8.7	8.7	-135.09	-6.3	-61.6	51.6	34.3	17.36	2.975	
2,700.0	2,698.8	2,699.0	2,698.5	9.0	9.0	-133.33	-4.7	-61.1	53.8	35.8	18.04	2.985	
2,800.0	2,798.8	2,799.4	2,798.9	9.4	9.4	-136.86	-3.3	-60.3	55.6	36.9	18.72	2.970	
2,900.0	2,898.7	2,900.5	2,900.0	9.7	9.7	-139.88	-2.5	-58.0	55.9	36.5	19.39	2.885	
3,000.0	2,998.7	3,001.3	3,000.7	10.0	10.1	-144.79	-2.3	-54.1	54.8	34.7	20.06	2.732	
3,100.0	3,098.6	3,101.4	3,100.7	10.4	10.4	-151.34	-2.3	-49.2	52.9	32.2	20.74	2.552	
3,200.0	3,198.5	3,200.9	3,200.1	10.7	10.7	-156.45	-2.2	-44.8	51.7	30.2	21.44	2.410	
3,300.0	3,298.5	3,300.8	3,299.9	11.1	11.1	164.33	-2.1	-41.2	49.8	27.7	22.13	2.253	
3,400.0	3,398.5	3,400.5	3,399.5	11.4	11.4	154.17	-1.9	-37.7	47.2	24.4	22.82	2.068	
3,484.8	3,483.3	3,484.5	3,483.5	11.7	11.7	168.20	-1.7	-35.6	46.3	22.8	23.42	1.976	
3,500.0	3,498.5	3,499.6	3,498.6	11.8	11.8	169.98	-1.7	-35.4	46.3	22.8	23.52	1.968	
3,600.0	3,598.5	3,599.4	3,598.4	12.1	12.1	-168.91	-1.3	-34.5	47.0	22.7	24.22	1.939	
3,700.0	3,698.5	3,699.6	3,698.6	12.5	12.5	-25.47	-1.0	-33.4	46.3	21.4	24.91	1.858	
3,800.0	3,798.5	3,799.6	3,798.6	12.8	12.8	-10.12	-0.5	-31.9	43.3	17.7	25.60	1.693	
3,900.0	3,898.5	3,899.7	3,898.6	13.2	13.2	-11.94	0.0	-30.4	39.6	13.3	26.30	1.505	
4,000.0	3,998.4	3,999.8	3,998.7	13.5	13.5	-18.97	0.1	-28.4	35.2	8.2	26.99	1.305 Level 3	
4,100.0	4,098.4	4,099.8	4,098.7	13.9	13.9	-52.42	0.7	-25.9	30.8	3.1	27.69	1.111 Level 2	
4,200.0	4,198.4	4,199.9	4,198.8	14.2	14.2	-83.40	1.3	-22.9	26.7	-1.6	28.38	0.942 Level 1	
4,300.0	4,298.3	4,299.9	4,298.6	14.6	14.6	-133.64	1.5	-19.4	23.6	-5.5	29.08	0.812 Level 1	
4,400.0	4,398.3	4,399.8	4,398.5	14.9	14.9	-164.95	1.6	-16.1	21.4	-8.4	29.78	0.718 Level 1	
4,500.0	4,498.3	4,499.7	4,498.4	15.3	15.3	-166.00	1.6	-13.1	19.7	-10.8	30.47	0.647 Level 1	
4,600.0	4,598.3	4,599.7	4,598.3	15.6	15.6	-164.71	2.2	-10.0	18.1	-13.1	31.17	0.581 Level 1	
4,644.9	4,643.2	4,644.4	4,643.0	15.8	15.8	-163.70	2.6	-9.1	17.8	-13.7	31.49	0.566 Level 1, CC, ES, SF	
4,700.0	4,698.3	4,699.2	4,697.9	15.9	16.0	-162.33	3.0	-8.7	18.2	-13.6	31.88	0.572 Level 1	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB													Offset Site Error:	0.0 usft	
Survey Program: 238-MWD		Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:			Offset Well Error:		0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
4,800.0	4,798.3	4,799.0	4,797.6	16.3	16.3	179.88	3.7	-9.4	20.4	-12.2	32.57	0.626	Level 1		
4,900.0	4,898.3	4,898.9	4,897.6	16.6	16.7	107.79	4.4	-10.6	22.4	-10.9	33.27	0.672	Level 1		
5,000.0	4,998.3	4,998.9	4,997.5	17.0	17.0	101.19	4.7	-11.6	23.7	-10.3	33.97	0.697	Level 1		
5,100.0	5,098.2	5,098.7	5,097.3	17.3	17.3	108.04	5.2	-12.6	25.6	-9.1	34.67	0.738	Level 1		
5,200.0	5,198.1	5,198.7	5,197.2	17.7	17.7	114.88	5.9	-14.0	28.2	-7.1	35.37	0.798	Level 1		
5,300.0	5,298.1	5,298.4	5,297.0	18.0	18.0	120.71	6.2	-15.7	31.5	-4.5	36.07	0.874	Level 1		
5,400.0	5,398.0	5,398.5	5,397.1	18.4	18.4	125.32	6.3	-17.5	35.2	-1.6	36.77	0.957	Level 1		
5,500.0	5,498.0	5,499.6	5,498.1	18.7	18.7	122.23	2.6	-18.5	36.7	-0.8	37.48	0.979	Level 1		
5,600.0	5,597.9	5,599.7	5,598.0	19.1	19.1	121.44	-3.0	-18.7	37.0	-1.2	38.17	0.968	Level 1		
5,700.0	5,697.8	5,699.9	5,698.0	19.4	19.4	131.23	-8.0	-18.5	37.2	-1.7	38.87	0.956	Level 1		
5,800.0	5,797.7	5,800.4	5,798.3	19.8	19.8	151.95	-14.9	-17.8	38.4	-1.2	39.57	0.970	Level 1		
5,900.0	5,897.5	5,900.4	5,897.9	20.2	20.1	153.11	-24.4	-16.0	41.9	1.7	40.28	1.041	Level 2		
6,000.0	5,997.1	6,000.4	5,997.4	20.5	20.5	148.84	-33.6	-13.8	47.6	6.6	40.98	1.162	Level 2		
6,100.0	6,096.7	6,100.6	6,097.2	20.9	20.8	145.98	-42.6	-10.7	53.0	11.3	41.69	1.270	Level 3		
6,200.0	6,196.4	6,201.5	6,197.6	21.2	21.2	139.67	-51.7	-6.3	57.6	15.2	42.40	1.359	Level 3		
6,300.0	6,296.0	6,303.3	6,298.8	21.6	21.6	133.64	-60.0	1.1	59.4	16.3	43.08	1.379	Level 3		
6,400.0	6,395.6	6,403.0	6,397.8	21.9	21.9	126.39	-67.6	9.4	60.3	16.4	43.81	1.375	Level 3		
6,500.0	6,495.0	6,502.8	6,497.0	22.3	22.3	114.26	-75.4	17.2	61.3	16.7	44.54	1.375	Level 3		
6,600.0	6,594.5	6,602.9	6,596.5	22.7	22.6	108.83	-83.1	25.0	60.9	15.7	45.26	1.346	Level 3		
6,700.0	6,694.1	6,702.6	6,695.6	23.0	23.0	105.82	-90.3	32.5	59.7	13.8	45.99	1.299	Level 3		
6,800.0	6,793.8	6,802.4	6,795.0	23.4	23.4	102.18	-97.1	39.3	58.5	11.7	46.72	1.251	Level 3		
6,900.0	6,893.5	6,902.2	6,894.4	23.7	23.7	100.09	-104.0	45.9	57.1	9.7	47.45	1.204	Level 2		
7,000.0	6,993.3	7,002.1	6,993.8	24.1	24.1	99.57	-110.7	52.2	56.2	8.0	48.18	1.166	Level 2		
7,100.0	7,093.0	7,102.1	7,093.4	24.5	24.4	99.17	-117.5	58.3	55.6	6.7	48.91	1.137	Level 2		
7,200.0	7,192.8	7,202.4	7,193.3	24.8	24.8	96.51	-124.1	65.0	54.8	5.1	49.64	1.103	Level 2		
7,300.0	7,292.5	7,302.2	7,292.7	25.2	25.2	95.51	-130.2	71.1	54.2	3.8	50.37	1.075	Level 2		
7,400.0	7,392.0	7,402.3	7,392.4	25.6	25.5	96.64	-136.2	77.2	53.7	2.6	51.10	1.050	Level 2		
7,500.0	7,491.5	7,502.2	7,492.0	25.9	25.9	98.78	-141.9	83.4	53.0	1.1	51.83	1.022	Level 2		
7,600.0	7,591.0	7,602.2	7,591.7	26.3	26.3	101.80	-147.3	88.8	52.9	0.3	52.56	1.006	Level 2		
7,700.0	7,690.5	7,702.2	7,691.4	26.7	26.6	105.41	-152.1	94.3	52.6	-0.7	53.28	0.987	Level 1		
7,741.9	7,732.3	7,744.0	7,733.1	26.8	26.8	106.75	-154.2	96.5	52.6	-1.0	53.59	0.981	Level 1		
7,800.0	7,790.1	7,802.1	7,791.0	27.0	27.0	108.42	-157.0	99.6	52.6	-1.4	54.01	0.974	Level 1		
7,900.0	7,889.7	7,901.8	7,890.5	27.4	27.4	110.63	-162.3	104.8	53.0	-1.8	54.74	0.968	Level 1		
8,000.0	7,989.4	8,001.4	7,989.8	27.8	27.7	110.96	-168.0	109.5	54.1	-1.4	55.47	0.975	Level 1		
8,100.0	8,089.0	8,101.1	8,089.2	28.2	28.1	108.97	-174.1	113.7	55.4	-0.8	56.20	0.986	Level 1		
8,200.0	8,188.7	8,200.8	8,188.7	28.5	28.5	109.38	-180.0	117.2	56.9	-0.1	56.93	0.999	Level 1		
8,300.0	8,288.5	8,300.7	8,288.4	28.9	28.8	113.11	-184.9	119.9	58.7	1.0	57.66	1.018	Level 2		
8,400.0	8,388.1	8,401.3	8,388.8	29.3	29.2	115.86	-189.8	123.0	60.8	2.4	58.38	1.042	Level 2		
8,500.0	8,487.6	8,502.0	8,489.2	29.6	29.6	117.32	-196.4	128.1	62.5	3.4	59.11	1.058	Level 2		
8,600.0	8,587.2	8,602.0	8,588.8	30.0	29.9	118.00	-203.1	133.9	63.5	3.6	59.85	1.060	Level 2		
8,700.0	8,686.8	8,701.2	8,687.7	30.4	30.3	118.57	-209.8	139.0	65.0	4.4	60.59	1.072	Level 2		
8,800.0	8,786.4	8,800.6	8,786.8	30.8	30.7	115.17	-216.1	142.8	67.1	5.8	61.32	1.094	Level 2		
8,900.0	8,886.1	8,900.6	8,886.5	31.1	31.0	116.99	-222.0	145.9	69.4	7.4	62.06	1.119	Level 2		
9,000.0	8,985.8	9,002.2	8,987.9	31.5	31.4	116.47	-227.5	150.4	70.3	7.5	62.78	1.120	Level 2		
9,100.0	9,085.6	9,102.3	9,087.7	31.9	31.8	110.04	-232.8	156.2	69.0	5.5	63.52	1.087	Level 2		
9,200.0	9,185.4	9,201.2	9,186.3	32.2	32.1	104.33	-237.8	160.9	67.8	3.6	64.26	1.055	Level 2		
9,300.0	9,285.3	9,300.8	9,285.8	32.6	32.5	96.61	-242.1	163.9	67.4	2.4	64.99	1.036	Level 2		
9,386.9	9,372.0	9,387.7	9,372.5	32.9	32.8	114.84	-246.3	166.7	67.0	1.4	65.63	1.021	Level 2		
9,400.0	9,385.2	9,400.8	9,385.6	33.0	32.9	117.60	-246.9	167.1	66.6	0.9	65.73	1.013	Level 2		
9,500.0	9,485.1	9,501.3	9,486.0	33.3	33.2	134.19	-251.3	170.4	67.8	1.3	66.47	1.020	Level 2		
9,600.0	9,585.0	9,601.8	9,586.3	33.7	33.6	142.14	-255.8	174.8	68.2	1.0	67.21	1.015	Level 2		
9,613.1	9,598.1	9,614.9	9,599.3	33.7	33.7	143.92	-256.4	175.4	68.2	0.9	67.31	1.013	Level 2		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,700.0	9,684.9	9,700.8	9,685.0	34.0	34.0	154.25	-260.6	178.9	69.3	1.3	67.96	1.019	Level 2	
9,800.0	9,784.9	9,801.9	9,786.1	34.4	34.3	158.12	-264.9	183.2	70.5	1.8	68.69	1.026	Level 2	
9,900.0	9,884.8	9,902.1	9,886.0	34.7	34.7	157.42	-268.9	188.6	70.4	1.0	69.43	1.014	Level 2	
10,000.0	9,984.8	10,001.8	9,985.5	35.1	35.1	163.47	-272.2	193.7	70.1	-0.1	70.15	0.999	Level 1	
10,006.5	9,991.3	10,008.3	9,991.9	35.1	35.1	170.21	-272.4	194.0	70.0	-0.1	70.20	0.998	Level 1	
10,100.0	10,084.8	10,101.1	10,084.6	35.4	35.4	-146.65	-275.5	198.0	70.5	-0.3	70.86	0.995	Level 1	
10,200.0	10,183.0	10,198.1	10,181.6	35.7	35.8	-139.25	-279.0	201.3	83.7	12.3	71.47	1.172	Level 2	
10,300.0	10,272.4	10,286.7	10,270.0	36.0	36.1	-150.68	-281.8	204.1	122.5	50.6	71.89	1.704		
10,400.0	10,353.0	10,366.4	10,349.7	36.2	36.4	-160.86	-283.9	207.1	179.3	107.1	72.26	2.481		
10,500.0	10,426.8	10,438.5	10,421.7	36.4	36.7	-167.36	-285.4	209.7	246.6	174.0	72.64	3.395		
10,600.0	10,491.1	10,498.7	10,481.8	36.6	36.9	-175.51	-286.9	211.2	324.0	251.0	72.97	4.440		
10,700.0	10,539.6	10,545.4	10,528.5	36.9	37.0	176.31	-288.2	212.0	412.5	339.3	73.23	5.633		
10,800.0	10,571.2	10,575.4	10,558.5	37.1	37.1	-176.98	-289.0	212.6	508.0	434.6	73.40	6.922		
10,900.0	10,584.6	10,586.7	10,569.8	37.4	37.2	-112.08	-289.3	212.8	607.2	533.7	73.45	8.266		
11,000.0	10,586.0	10,585.7	10,568.8	37.8	37.2	-61.41	-289.3	212.8	707.0	633.6	73.45	9.626		
11,100.0	10,586.0	11,825.8	11,337.5	38.2	40.7	-176.05	479.1	195.9	754.7	709.2	45.44	16.608		
11,200.0	10,587.0	11,973.7	11,339.2	38.6	41.3	-175.00	625.7	177.3	755.6	709.5	46.17	16.366		
11,300.0	10,587.6	12,118.7	11,332.9	39.2	42.1	-175.54	770.5	177.4	750.3	703.3	47.02	15.958		
11,400.0	10,590.7	12,233.1	11,323.2	39.8	42.8	-176.33	884.4	180.3	738.0	690.4	47.65	15.489		
11,500.0	10,595.8	12,304.4	11,318.0	40.4	43.3	-177.03	955.4	185.2	724.9	677.2	47.68	15.201		
11,600.0	10,600.1	12,385.8	11,315.4	41.1	43.8	-177.71	1,036.4	191.5	716.7	668.7	47.97	14.941		
11,700.0	10,601.5	12,493.1	11,312.2	41.9	44.6	-178.26	1,143.6	198.1	712.2	663.5	48.62	14.647		
11,791.5	10,600.1	12,576.8	11,309.2	42.7	45.3	-178.62	1,227.0	202.5	710.1	661.0	49.11	14.459		
11,800.0	10,599.7	12,584.0	11,309.0	42.7	45.4	-178.65	1,234.2	202.8	710.3	661.1	49.15	14.450		
11,900.0	10,597.1	12,695.2	11,305.9	43.6	46.3	-178.93	1,345.3	207.0	710.0	660.0	49.98	14.206		
12,000.0	10,596.8	12,799.4	11,301.1	44.5	47.2	-179.29	1,449.3	211.5	705.7	654.9	50.77	13.901		
12,100.0	10,595.9	12,895.6	11,297.1	45.4	48.1	-179.79	1,545.3	216.9	702.4	650.9	51.47	13.647		
12,200.0	10,595.4	13,003.7	11,291.3	46.4	49.1	179.36	1,652.9	224.2	697.4	645.0	52.37	13.317		
12,300.0	10,595.2	13,081.2	11,287.9	47.4	49.9	178.54	1,730.1	231.3	693.6	640.7	52.89	13.114		
12,327.2	10,595.1	13,098.8	11,287.6	47.7	50.1	178.34	1,747.6	232.9	693.3	640.3	53.01	13.079		
12,400.0	10,594.5	13,146.0	11,288.0	48.5	50.6	177.82	1,794.6	237.2	694.8	641.4	53.40	13.012		
12,500.0	10,593.5	13,235.0	11,291.4	49.6	51.5	177.05	1,883.4	242.4	700.1	645.9	54.26	12.904		
12,600.0	10,595.6	13,374.8	11,296.1	50.7	53.0	177.45	2,022.5	232.6	701.8	646.2	55.61	12.620		
12,700.0	10,599.2	13,527.2	11,287.9	51.9	54.7	178.38	2,173.6	214.5	691.9	634.5	57.39	12.056		
12,800.0	10,601.8	13,621.5	11,280.4	53.1	55.8	178.58	2,267.4	209.2	681.3	623.0	58.30	11.685		
12,900.0	10,601.3	13,705.1	11,274.5	54.3	56.8	178.71	2,350.8	207.0	674.8	615.8	59.05	11.427		
12,968.4	10,600.2	13,747.9	11,273.0	55.1	57.3	178.74	2,393.5	206.5	673.6	614.2	59.37	11.345		
13,000.0	10,599.6	13,773.0	11,272.9	55.5	57.6	178.73	2,418.7	206.4	674.0	614.4	59.61	11.308		
13,100.0	10,598.9	13,874.8	11,272.8	56.7	58.8	178.81	2,520.4	205.9	674.5	613.8	60.71	11.110		
13,200.0	10,600.9	14,012.3	11,270.3	58.0	60.5	178.97	2,657.9	204.0	671.4	609.0	62.43	10.754		
13,300.0	10,604.2	14,133.0	11,259.2	59.3	62.1	178.94	2,778.1	203.2	658.6	594.6	63.94	10.300		
13,400.0	10,606.0	14,200.3	11,254.2	60.6	62.9	178.76	2,845.1	204.1	649.5	585.1	64.47	10.074		
13,466.0	10,605.5	14,245.4	11,252.8	61.5	63.5	178.58	2,890.2	205.3	648.1	583.2	64.88	9.989		
13,500.0	10,604.8	14,269.4	11,252.7	61.9	63.8	178.48	2,914.2	206.0	648.6	583.5	65.11	9.961		
13,600.0	10,603.1	14,348.9	11,254.3	63.3	64.9	178.18	2,993.7	208.1	652.4	586.5	65.98	9.889		
13,700.0	10,601.5	14,466.2	11,257.5	64.6	66.4	177.93	3,110.9	210.0	657.0	589.5	67.44	9.741		
13,800.0	10,600.8	14,589.7	11,255.7	66.0	68.1	177.89	3,234.4	209.4	656.1	587.1	69.04	9.504		
13,900.0	10,600.9	14,673.2	11,254.5	67.4	69.2	177.95	3,317.8	208.2	654.5	584.5	69.98	9.353		
13,944.7	10,600.5	14,730.3	11,253.7	68.0	70.0	178.07	3,375.0	207.0	654.2	583.5	70.73	9.249		
14,000.0	10,599.3	14,794.3	11,251.7	68.8	70.8	178.30	3,438.9	205.3	653.6	582.1	71.56	9.133		
14,100.0	10,599.2	14,901.6	11,247.2	70.2	72.3	178.62	3,546.1	202.3	649.5	576.5	72.93	8.905		
14,200.0	10,599.3	15,008.8	11,241.2	71.6	73.8	178.88	3,653.0	199.4	643.6	569.3	74.32	8.660		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program:		Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:			Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	+N/-S (usft)	+E/-W (usft)		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
14,300.0	10,599.0	15,106.8	11,236.2	73.0	75.2	179.25	3,750.8	195.0	638.7	563.2	75.56	8.453			
14,400.0	10,599.0	15,212.3	11,229.4	74.4	76.7	179.73	3,856.0	189.9	632.3	555.4	76.96	8.216			
14,500.0	10,598.6	15,325.1	11,221.2	75.9	78.3	-179.83	3,968.3	183.8	625.5	547.0	78.52	7.966			
14,600.0	10,595.9	15,420.0	11,213.4	77.3	79.7	-179.61	4,062.8	179.8	619.9	540.1	79.75	7.773			
14,684.7	10,592.1	15,486.7	11,209.1	78.6	80.7	-179.80	4,129.3	179.2	618.3	537.8	80.49	7.681			
14,700.0	10,591.5	15,498.7	11,208.6	78.8	80.8	-179.89	4,141.3	179.3	618.2	537.5	80.62	7.668			
14,800.0	10,585.4	15,599.7	11,204.3	80.3	82.3	179.53	4,242.2	181.3	620.1	538.2	81.90	7.571			
14,900.0	10,579.6	15,704.5	11,199.1	81.7	83.8	178.87	4,346.8	185.0	620.9	537.6	83.29	7.455			
15,000.0	10,573.9	15,795.3	11,194.4	83.2	85.1	178.16	4,437.4	189.7	621.7	537.2	84.47	7.360			
15,100.0	10,569.3	15,868.0	11,193.4	84.7	86.2	177.79	4,510.0	191.9	625.2	539.8	85.31	7.328			
15,200.0	10,566.8	15,958.0	11,195.2	86.2	87.5	177.58	4,600.0	192.8	629.7	543.2	86.49	7.280			
15,300.0	10,565.9	16,093.9	11,195.6	87.7	89.5	177.67	4,735.9	190.8	631.1	542.6	88.55	7.128			
15,400.0	10,561.1	16,216.9	11,188.1	89.2	91.4	178.20	4,858.5	184.8	629.3	539.1	90.28	6.971			
15,500.0	10,556.8	16,313.5	11,181.5	90.7	92.8	178.96	4,954.6	178.3	626.7	535.1	91.56	6.845			
15,600.0	10,551.6	16,420.4	11,174.0	92.3	94.4	179.68	5,061.1	171.5	624.8	531.7	93.06	6.713			
15,700.0	10,546.9	16,519.9	11,166.1	93.8	95.9	-179.84	5,160.1	166.8	621.5	527.0	94.47	6.579			
15,796.9	10,542.1	16,600.5	11,161.0	95.3	97.2	-179.52	5,240.5	163.8	620.2	524.7	95.54	6.491			
15,800.0	10,541.7	16,603.2	11,160.9	95.3	97.2	-179.54	5,243.2	163.7	620.5	524.9	95.58	6.492			
15,900.0	10,536.6	16,690.4	11,157.7	96.8	98.5	-179.31	5,330.3	162.1	621.9	525.2	96.75	6.428			
16,000.0	10,530.8	16,794.9	11,154.4	98.4	100.1	-179.10	5,434.8	160.1	624.6	526.3	98.27	6.356			
16,100.0	10,527.9	16,897.2	11,150.2	99.9	101.7	-178.80	5,536.9	157.8	623.4	523.6	99.77	6.248			
16,184.2	10,526.8	16,971.5	11,147.7	101.2	102.8	-178.65	5,611.2	156.0	621.7	520.9	100.79	6.168			
16,200.0	10,526.5	16,984.5	11,147.4	101.4	103.0	-178.64	5,624.1	155.7	621.8	520.8	100.96	6.158			
16,300.0	10,522.6	17,121.8	11,143.4	103.0	105.1	-178.58	5,761.3	152.4	623.4	520.3	103.12	6.046			
16,400.0	10,517.8	17,214.0	11,137.0	104.5	106.5	-178.63	5,853.3	150.6	621.3	516.9	104.38	5.952			
16,413.7	10,517.0	17,220.5	11,136.6	104.8	106.6	-178.64	5,859.8	150.5	621.2	516.8	104.44	5.948			
16,500.0	10,511.5	17,304.0	11,132.4	106.1	107.9	-178.75	5,943.2	149.8	622.3	516.8	105.58	5.894			
16,600.0	10,505.4	17,372.2	11,130.9	107.7	109.0	-178.92	6,011.3	150.3	626.2	519.9	106.30	5.891			
16,700.0	10,501.6	17,448.2	11,132.6	109.2	110.1	-179.06	6,087.3	151.7	632.1	525.0	107.13	5.900			
16,800.0	10,497.3	17,557.6	11,137.1	110.8	111.8	-179.19	6,196.6	154.8	640.6	531.8	108.78	5.888			
16,900.0	10,493.4	17,655.2	11,139.3	112.3	113.3	-179.09	6,294.1	156.1	646.7	536.5	110.18	5.869			
17,000.0	10,491.2	17,744.1	11,142.4	113.9	114.7	-178.97	6,383.0	156.6	652.4	541.1	111.37	5.858			
17,100.0	10,487.1	17,888.8	11,143.8	115.5	117.0	-178.56	6,527.6	155.3	657.6	543.7	113.93	5.772			
17,200.0	10,485.2	17,998.9	11,139.5	117.0	118.7	-178.31	6,637.6	152.8	655.7	540.0	115.65	5.669			
17,300.0	10,486.7	18,098.7	11,135.4	118.6	120.2	-178.13	6,737.2	148.9	650.2	533.0	117.17	5.549			
17,400.0	10,486.4	18,195.1	11,131.6	120.2	121.8	-177.83	6,833.4	143.1	646.6	527.9	118.65	5.449			
17,500.0	10,484.4	18,290.0	11,128.5	121.8	123.3	-177.46	6,928.0	136.2	645.5	525.4	120.14	5.373			
17,600.0	10,481.8	18,399.9	11,124.4	123.3	125.0	-177.05	7,037.5	127.4	644.5	522.5	121.99	5.283			
17,651.4	10,479.8	18,454.3	11,121.8	124.2	125.9	-176.81	7,091.6	122.4	644.3	521.4	122.92	5.242			
17,700.0	10,477.1	18,504.1	11,119.2	124.9	126.6	-176.60	7,141.1	117.6	644.6	520.8	123.75	5.208			
17,800.0	10,470.1	18,596.4	11,114.6	126.5	128.1	-176.31	7,232.9	110.2	646.8	521.6	125.21	5.166			
17,900.0	10,463.5	18,683.3	11,112.3	128.1	129.5	-176.08	7,319.6	103.9	650.9	524.4	126.50	5.145			
18,000.0	10,457.9	18,783.4	11,110.6	129.7	131.1	-175.90	7,419.6	98.5	655.0	526.9	128.09	5.113			
18,100.0	10,457.3	18,885.9	11,108.4	131.3	132.7	-175.67	7,521.9	93.0	653.6	523.9	129.78	5.036			
18,136.4	10,457.5	18,906.0	11,108.0	131.9	133.0	-175.62	7,541.9	91.9	652.9	523.0	129.95	5.025			
18,142.0	10,457.5	18,906.0	11,108.0	132.0	133.0	-175.62	7,541.9	91.9	653.0	523.1	129.88	5.027			

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3752.5usft (H&P 466)

Offset Depths are relative to Offset Datum

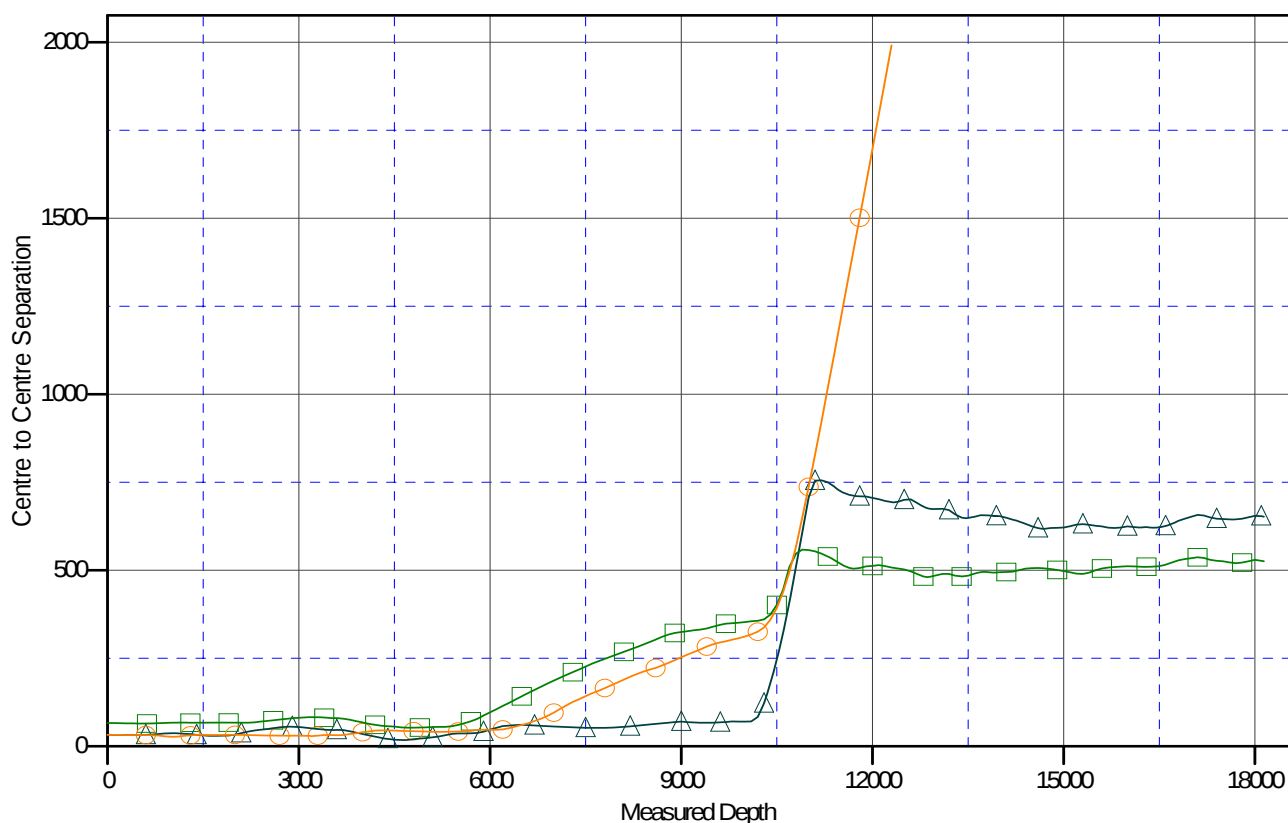
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Wool Head 20 State Com #510H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°

Ladder Plot



LEGEND

▲ Wool Head 20 State Com #554H, OW B, AWB V0
 ■ Wool Head 20 State Com #511H, OW B, AWB V0
 ● Wool Head 20 State Com #512H, OW B, AWB V0

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #510H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3752.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3752.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #510H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3752.5usft (H&P 466)

Offset Depths are relative to Offset Datum

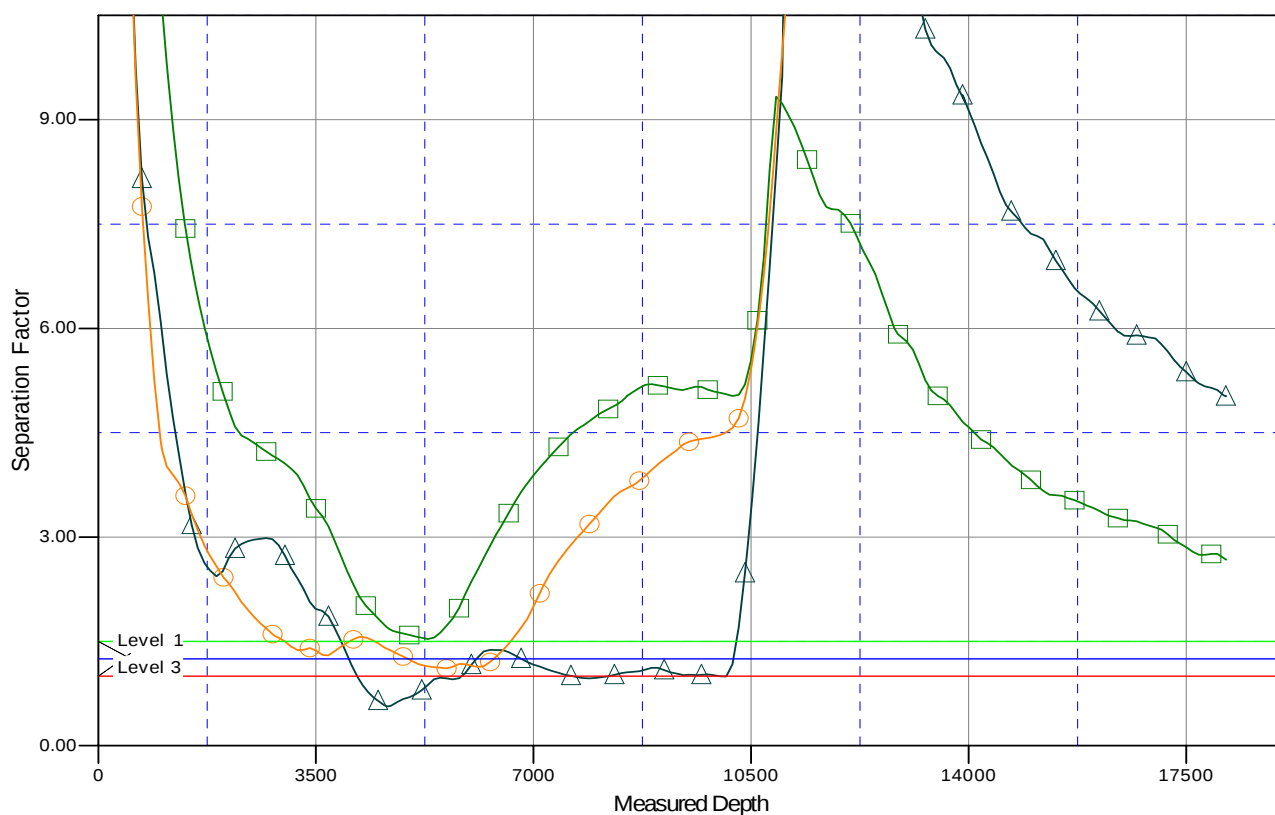
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Wool Head 20 State Com #510H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°

Separation Factor Plot



LEGEND

▲ Wool Head 20 State Com #554H, OW B, AWB V0
 ■ Wool Head 20 State Com #511H, OW B, AWB V0
 ● Wool Head 20 State Com #512H, OW B, AWB V0



Daily Reports





DAILY TOTALS		Assembly Totals									
Start Depth	145.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	1152.00	1	XSH96028			1,007.00	5.00	.00	5.00	1,007.00	201.40
Below Rot Hrs.	24.00										
Total Drilled:	1007.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1			
Avg. Total ROP:	201.40			WBM		Bit No: 1		17.5" Baker DP606S 9 5/8" 7/8, 5.9 ABH@ 1.50° 17" Nortrak Stab 8" UBHO 8" NMDC 8" NMDC X/O ED 54 B - 6 5/8 Reg P 30 Jts 5 1/2" HWDP			
Slide Footage:	0.00	WOB:	35	Weight:	8.4	Model	17.5" Baker				
Slide Hours	0.00	Rot Wt:	92	Visc:	28	SN.:	5294738				
Avg. Slide ROP:	NA	Pick UP:	95	Chlorides:	0	MFG.	Other				
Rotate Footage:	1007.00	Slack Off:	90	YP:	0	Type	PDC				
Rotary Hours	5.00	SPP:	3000	PV:	0	IADC					
Avg. Rot ROP:	201.40	Flow:	0 - 900	PH:	10	JETS	9-12				
Circ Hours	0.00	SPM:	279	GAS:	0	TFA:	0.994				
Ream Hours	0.00	Rot. RPM	70 - 70	SAND:	0	Hole ID:	17.5				
Rotary Hrs%:	100.00	Mot RPM:	-	WL:	0	Bit Hrs:					
Slide Hrs%:	.00	Incl. In:	0.48	SOLID:	0	Bit Ftg:					
Rotary Ftg%:	100.00	Azm. In:	201.53	BHT°:	0	Pumps					
Slide Ftg%:	.00	Incl. Out:	1.45	Flow T°:	92	Liner	0	0			
Cost Detail		Azm. Out:	238.88	Oil %:	0	Stroke	0	0			
Descr.	Price	Cost Breakdown				Effic.	95.00%	95.00%			
DAY RATE	8,350.00	Total Daily	\$17,620.00			Gal/Stk	0.00	0.00			
Mobilization Charges	7,500.00	Total Job	\$17,620.00			BBL/Stk	0.000	0.000			
Stabilizers	1,770.00										

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	18:15	18.25	145	145	0	.00	Other	Wait on Casing Ops, Walk Rig to 510H
18:15	18:45	0.50	145	145	0	.00	Change BHA	P/U BHA #1
18:45	19:00	0.25	145	145	0	.00	Other	Tag bottom
19:00	24:00	5.00	145	1152	1007	201.40	Drilling	Drilling - (WOB:35;GPM :900;RPM:70)



SDI Job #:	ID2387	Report Time:	2400	2 of 2
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From November 13, 2019 at 0000 to November 13, 2019 at 2400

DRILLING SUMMARY					Drilling Parameters						
Start Depth	1152.00	Rotary Hours	7.50	WOB	50	Pick UP	95	Slack Off	90	SPM	
End Depth	1838.00	Circulating Hours	0.58	RAB	92	SPP	3050	FlowRate	900 - 900	279	
Total Drilled:	686.00	Avg. Total ROP:	71.58	Mud Data							
Total Rotary Drilled:	586.00	Avg. Rotary ROP:	78.13	Type	WBM			PV	0	SOLID	0
Total Drilled Sliding:	100.00	Avg. Slide ROP:	48.00	Weight	8.4	GAS	0	YP	0	BHT°	0
Slide Hours:	2.08	Percent Rotary:	85.42	Viscosity	28	SAND	0	PH	10	Flow T°	92
Below Rotary Hrs.	24.00	Percent Slide:	14.58	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth		BHA # 1:17.5" Baker DP606S, 9 5/8" 7/8, 5.9 ABH@ 1.50°, 17" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O ED 54 B - 6 5/8 Reg P, 30 Jts 5 1/2" HWDP,			
Second Directional :	Jason Greer			Signature:							
MWD Operator1	Ben Wallace										
MWD Operator2	Micheal Walton										
Directional Company:	Intrepid DDS										
Geologist:											
Company Man:	TJ Nash							Daily Cost		\$8,350.00	
Incl. In:	1.45	Azm. In:	238.88	Incl. Out:	1.8	Azm. Out:	227.1	Cummulative Cost:		\$25,970.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
13-Nov-19	00:00	02:45	2.75	1152	1426	Drilling	Drilling - (WOB:35;GPM :900;RPM:70)
13-Nov-19	02:45	03:45	1.00	1426	1466	Sliding	Sliding - (WOB:38;GPM :900;TFO:70M))
13-Nov-19	03:45	05:15	1.50	1466	1591	Drilling	Drilling - (WOB:40;GPM :900;RPM:70)
13-Nov-19	05:15	06:20	1.08	1591	1651	Sliding	Sliding - (WOB:38;GPM :900;TFO:70M))
13-Nov-19	06:20	09:35	3.25	1651	1838	Drilling	Drilling - (WOB:50;GPM :900;RPM:70)
13-Nov-19	09:35	10:10	0.58	1838	1838	Circulating	Circ B/U
13-Nov-19	10:10	12:40	2.50	1838	1838	POOH	POOH
13-Nov-19	12:40	24:00	11.33	1838	1838	Other	R/B BHA, Casing Ops, Walk to 512H



SDI Job #: ID2387-1
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510H
Lead Directional : Bill Corley

Report Time: 2400 **3 of 3**
API JOB # 30-025-46490
WORK ORDER# ID2387
FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section NM0090
Company Man TJ Nash
2nd Dir Hand : James Merideth

From November 19, 2019 at 0000 to November 19, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	1838.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	1838.00	1	XSH96028	100.00	2.08	1,593.00	12.50	.58	15.17	1,693.00	111.63
Below Rot Hrs.	23.98	2	XSH80023	0.00	0.00	0.00	3.98	.00	3.98	0.00	0.00
Total Drilled:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 2			
Avg. Total ROP:	.00			Weight:		Model		12 3/4" Baker DP506WS 8" 7/8 5.9 FBH @ 1.5 w/ 11 12" Nortrak Stab 8" UBHO 8" NMDC 8" NMDC X/O (6 5/8 P x XH B) 18 - 6.5" D.C. X/O (ED54B x 4 1/2XH P) 30 Jts 5 1/2" HWDP			
Slide Footage:	0.00	WOB:		5301253							
Slide Hours	0.00	Rot Wt:		MFG.							
Avg. Slide ROP:	NA	Pick UP:		Type							
Rotate Footage:	0.00	Slack Off:		IADC							
Rotary Hours	3.98	SPP:		JETS							
Avg. Rot ROP:	.00	Flow:		TFA:							
Circ Hours	0.00	SPM:		Hole ID:							
Ream Hours	0.00	Rot. RPM		Bit Hrs:							
Rotary Hrs%:	100.00	Mot RPM:		Bit Ftg:							
Slide Hrs%:	.00	Incl. In:		Pumps							
Rotary Ftg%:	NA	Az. In:									
Slide Ftg%:	NA	Incl. Out:		Liner	0	0					
Cost Detail		Az. Out:		Stroke	0	0					
Descr.	Price			Effic.							
DAY RATE	8,150.00			95.00% 95.00%							
Motor Redress	3,900.00			Gal/Stk	0.00	0.00					
Stabilizers	2,006.00			BBL/Stk	0.000	0.000					
		Total Daily									
		Total Job									

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	17:15	17.25	1838	1838	0	.00	Other	Casing Ops, Walk to 510H, N/U and Test
17:15	18:30	1.25	1838	1838	0	.00	Change BHA	P/U BHA #2
18:30	20:00	1.50	1838	1838	0	.00	TIH	TIH T/ 1,779'
20:00	23:59	3.98	1838	1838	0	.00	Drilling Cement	Drill Float Equipment



SDI Job #: ID2387-1
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.
 WELL NAME: Wool Head 20 State Com 510H
 Lead Directional : Bill Corley

Report Time: 2400 4 of 4
 API JOB # 30-025-46490
 WORK ORDER# ID2387
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0090
 Company Man TJ Nash
 2nd Dir Hand : James Merideth

From November 20, 2019 at 0000 to November 20, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	1838.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	5281.00	2	XSH80013	152.00	2.42	3,291.00	17.08	.75	20.25	3,443.00	170.02
Below Rot Hrs.	23.98										
Total Drilled:	3443.00										
Avg. Total ROP:	176.56	Drilling Parameters		Mud Record		Bit Record		Current BHA # 2			
Slide Footage:	152.00										
Slide Hours	2.42	WOB:	60	Weight:	0	Bit No:	3	12 3/4" Baker DP506WS 8" 7/8 5.9 FBH @ 1.5 w/ 11 12" Nortrak Stab 8" UBHO 8" NMDC 8" NMDC X/O (6 5/8 P x XH B) 18 - 6.5" D.C. X/O (ED54B x 4 1/2XH P) 30 Jts 5 1/2" HWDP			
Avg. Slide ROP:	62.90	Rot Wt:	160	Visc:	0	Model	12 3/4" Baker				
Rotate Footage:	3291.00	Pick UP:	160	Chlorides:	0	SN.:	5301253				
Rotary Hours	17.08	Slack Off:	160	YP:	0	MFG.	BAKER				
Avg. Rot ROP:	192.64	SPP:	4130	YP:	0	Type	PDC				
Circ Hours	0.75	Flow:	400 - 900	PV:	0	IADC					
Ream Hours	0.00	SPM:	279	PH:	0	JETS	6-12				
Rotary Hrs%:	87.61	Rot. RPM	75 - 80	GAS:	0	TFA:	0.662				
Slide Hrs%:	12.39	Mot RPM:	80 - 80	SAND:	0	Hole ID:	12.25				
Rotary Ftg%:	95.59	Incl. In:	1.8	WL:	0	Bit Hrs:	19.50				
Slide Ftg%:	4.41	Incl. Out:	1.85	SOLID:	0	Bit Ftg:	3443.00				
Cost Detail		Azm. In:	227.1	BHT°:	0	Pumps					
Descr.	Price	Incl. Out:	1.85	Flow T°:	0	Liner	0	0			
DAY RATE	8,150.00	Azm. Out:	168.92	Oil %:	0	Stroke	0	0			
		Cost Breakdown				Effic.	95.00%	95.00%			
		Total Daily	\$8,150.00				Gal/Stk	0.00	0.00		
		Total Job	\$22,206.00				BBL/Stk	0.000	0.000		

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	01:30	1.50	1838	1838	0	.00	Other	Drilling - (WOB:40;GPM :400;RPM:30)
01:30	02:25	0.92	1838	1957	119	129.82	Drilling	Drilling - (WOB:40;GPM :900;RPM:75)
02:25	02:45	0.33	1957	1992	35	105.00	Sliding	Sliding - (WOB:38;GPM :900;TFO:90M))
02:45	03:30	0.75	1992	2146	154	205.33	Drilling	Drilling - (WOB:40;GPM :900;RPM:75)
03:30	03:45	0.25	2146	2174	28	112.00	Sliding	Sliding - (WOB:38;GPM :900;TFO:10M))
03:45	08:45	5.00	2174	3233	1059	211.80	Drilling	Drilling - (WOB:40;GPM :900;RPM:80)
08:45	09:00	0.25	3233	3258	25	100.00	Sliding	Sliding - (WOB:38;GPM :900;TFO:240M))
09:00	11:30	2.50	3258	3676	418	167.20	Drilling	Drilling - (WOB:45;GPM :900;RPM:80)
11:30	11:55	0.42	3676	3698	22	52.80	Sliding	Sliding - (WOB:25;GPM :900;TFO:260M))
11:55	14:15	2.33	3698	4210	512	219.43	Drilling	Drilling - (WOB:45;GPM :900;RPM:80)
14:15	14:45	0.50	4210	4232	22	44.00	Sliding	Sliding - (WOB:25;GPM :900;TFO:150M))
14:45	17:30	2.75	4232	4842	610	221.82	Drilling	Drilling - (WOB:55;GPM :900;RPM:80)
17:30	18:10	0.67	4842	4862	20	30.00	Sliding	Sliding - (WOB:25;GPM :900;TFO:190M))
18:10	21:00	2.83	4862	5281	419	147.88	Drilling	Drilling - (WOB:60;GPM :900;RPM:80)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
21:00	21:45	0.75	5281	5281	0	.00	Circulating	Circulating
21:45	23:59	2.23	5281	5281	0	.00	POOH	POOH T/ 3100



SDI Job #:	ID2387-2	Report Time:	2400	6 of 7
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From November 28, 2019 at 0000 to November 28, 2019 at 2400

DRILLING SUMMARY					Drilling Parameters						
Start Depth	5281.00	Rotary Hours	0.00	WOB	60	Pick UP	160	Slack Off	160	SPM	
End Depth	5281.00	Circulating Hours	0.00	RAB	160	SPP	4130	FlowRate	900 - 900	279	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	3.98	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Jason Greer			Size	Lb/ft	Set Depth		BHA # 2:12 3/4" Baker DP506WS, 8" 7/8 5.9 FBH @ 1.5 w/ 11 3/4" NBS, 12" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O (6 5/8 P x XH B) , 18 - 6.5" D.C., X/O (ED54B x 4 1/2XH P), 30 Jts 5 1/2" HWDP,			
Second Directional :	James Meredith			Signature:							
MWD Operator1	Michael Walton										
MWD Operator2	Joe Hatley										
Directional Company:	Intrepid DDS										
Geologist:											
Company Man:	TJ Nash							Daily Cost			
Incl. In:	0	Azm. In:	0	Incl. Out:	0	Azm. Out:	0	Cummulative Cost:			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
28-Nov-19	20:00	21:00	1.00	5281	5281	Other	Walk rig from 554 to 510H
28-Nov-19	21:00	23:59	2.98	5281	5281	Other	N/U & Tets BOP's



SDI Job #: ID2387-2
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.
 WELL NAME: Wool Head 20 State Com 510H
 Lead Directional : Jason Greer

Report Time: 2400 7 of 7
 API JOB # 30-025-46490
 WORK ORDER# ID2387
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0090
 Company Man TJ Nash
 2nd Dir Hand : James Meredith

From November 29, 2019 at 0000 to November 29, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	5281.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	8425.00	2	XSH80013	152.00	2.42	3,291.00	17.08	.75	20.25	3,443.00	170.02
Below Rot Hrs.	23.98	3	XSS70055	256.00	2.50	2,888.00	17.48	.00	19.98	3,144.00	0.00
Total Drilled:	3144.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 3			
Avg. Total ROP:	157.33			Brine		Bit No: 3		8 1/2" Reed TKC66 7" 7/8 8.5 FBH @ 1.83 8 1/4" Nortrak Stab UBHO NMDC NMDC X-O (4 1/2 IF P x 4 1/2 XH B) 18 - 6.5" D.C. X/O (ED54B x 4 1/2XH P) 30 jts -5 1/2 HWDP			
Slide Footage:	256.00	Weight:	9.2	Model	8 1/2" Reed						
Slide Hours	2.50	Visc:	29	SN.:	E267947						
Avg. Slide ROP:	102.40	Chlorides:	74000	MFG.	REED						
Rotate Footage:	2888.00	YP:	2	Type	PDC						
Rotary Hours	17.48	PV:	1	IADC							
Avg. Rot ROP:	165.19	PH:	10.1	JETS	6-15						
Circ Hours	0.00	GAS:	0	TFA:	1.035						
Ream Hours	0.00	SAND:	0	Hole ID:	8.5						
Rotary Hrs%:	87.49	WL:	0	Bit Hrs:	17.98						
Slide Hrs%:	12.51	SOLID:	5.3	Bit Ftg:	3144.00						
Rotary Ftg%:	91.86	BHT°:	92	Pumps							
Slide Ftg%:	8.14	Flow T°:	90	Liner	0	0					
Cost Detail		Oil %:	0	Stroke	0	0					
Descr.	Price	Cost Breakdown				Effic.	95.00%	95.00%			
DAY RATE	8,150.00	Total Daily				Gal/Stk	0.00	0.00			
Motor Redress	3,600.00	Total Job				BBL/Stk	0.000	0.000			
Stabilizers	1,357.00										

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:45	0.75	5281	5281	0	.00	Change BHA	P/U BHA # 3
00:45	02:30	1.75	5281	5281	0	.00	TIH	TIH T/ 2800
02:30	03:35	1.08	5281	5281	0	.00	Drilling Cement	Drill out DV tool- (WOB:60;GPM :900;RPM:80)
03:35	04:35	1.00	5281	5281	0	.00	TIH	TIH T/ 5175
04:35	05:30	0.92	5281	5281	0	.00	Drilling Cement	Drill Cement & FE - (WOB:60;GPM :900;RPM:80)
05:30	08:00	2.50	5281	5734	453	181.20	Drilling	Drilling - (WOB:35;GPM :648;RPM:30)
08:00	08:10	0.17	5734	5744	10	60.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:100M))
08:10	08:35	0.42	5744	5823	79	189.60	Drilling	Drilling - (WOB:35;GPM :648;RPM:30)
08:35	08:50	0.25	5823	5838	15	60.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:120M))
08:50	09:45	0.92	5838	5993	155	169.09	Drilling	Drilling - (WOB:35;GPM :648;RPM:30)
09:45	10:15	0.50	5993	5993	0	.00	Rig Service-Inhole	Rig Service-Inhole
10:15	11:40	1.42	5993	6361	368	259.76	Drilling	Drilling - (WOB:35; :648;RPM:30)
11:40	11:50	0.17	6361	6369	8	48.00	Sliding	Sliding - (WOB:30; :648;TFO:180))
11:50	12:15	0.42	6369	6456	87	208.80	Drilling	Drilling - (WOB:35;GPM :648;RPM:30)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
12:15	12:25	0.17	6456	6468	12	72.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:220M))
12:25	13:10	0.75	6468	6630	162	216.00	Sliding	Sliding - (WOB:35;GPM :648;TFO:180))
13:10	13:20	0.17	6630	6644	14	84.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:270M))
13:20	16:20	3.00	6644	7258	614	204.67	Drilling	Drilling - (WOB:35;GPM :648;RPM:30)
16:20	16:35	0.25	7258	7273	15	60.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:145M))
16:35	22:55	6.33	7273	8336	1063	167.84	Drilling	Drilling - (WOB:38;GPM :648;RPM:30)
22:55	23:30	0.58	8336	8356	20	34.29	Sliding	Sliding - (WOB:30;GPM :648;TFO:135M))
23:30	23:59	0.48	8356	8425	69	142.76	Drilling	Drilling - (WOB:38;GPM :648;RPM:30)



SDI Job #: ID2387-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510H
Lead Directional : Jason Greer

Report Time: 2400 **8 of 8**
API JOB # 30-025-46490
WORK ORDER# ID2387
FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section NM0090
Company Man TJ Nash
2nd Dir Hand : James Meredith

From November 30, 2019 at 0000 to November 30, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	8425.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	10054.00	3	XSS70055	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00
Below Rot Hrs.	23.98										
Total Drilled:	1629.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 4			
Avg. Total ROP:	94.43			Brine		Bit No:					
Slide Footage:	40.00	WOB: 42		Weight: 9.2		Model					
Slide Hours	0.92	Rot Wt: 265		Visc: 29		SN.:					
Avg. Slide ROP:	43.64	Pick UP: 300		Chlorides: 74000		MFG.					
Rotate Footage:	1589.00	Slack Off: 240		YP: 2		Type					
Rotary Hours	16.33	SPP: 2500		PV: 1		IADC					
Avg. Rot ROP:	97.29	Flow: 648 - 648		PH: 10.1		JETS					
Circ Hours	1.50	SPM: 201		GAS: 0		TFA:		Pumps			
Ream Hours	0.00	Rot. RPM 30 - 30		SAND: 0		Hole ID: N/A					
Rotary Hrs%:	94.69	Mot RPM: 30 - 30		WL: 0		Bit Hrs:					
Slide Hrs%:	5.31	Incl. In: 5.41		SOLID: 5.3		Bit Ftg:					
Rotary Ftg%:	97.54	Azm. In: 134.55		BHT°: 92							
Slide Ftg%:	2.46	Incl. Out: 0		Flow T°: 90		Liner		0	0		
Cost Detail		Azm. Out: 0		Oil %: 0		Stroke		0	0		
Descr.		Price									
DAY RATE		8,150.00									

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	08:30	8.50	8425	9321	896	105.41	Drilling	Drilling - (WOB:42; :648;RPM:30)
08:30	09:00	0.50	9321	9341	20	40.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:135M))
09:00	10:00	1.00	9341	9410	69	69.00	Drilling	Drilling - (WOB:42;GPM :648;RPM:30)
10:00	10:25	0.42	9410	9430	20	48.00	Sliding	Sliding - (WOB:30;GPM :648;TFO:60M))
10:25	17:15	6.83	9430	10054	624	91.32	Drilling	Drilling - (WOB:42;GPM :648;RPM:30)
17:15	18:45	1.50	10054	10054	0	.00	Circulating	Circulating
18:45	23:45	5.00	10054	10054	0	.00	Change BHA	Change Out Motor & R/B BHA
23:45	23:59	0.23	10054	10054	0	.00	Other	TIH W/ Bridge Plug



DAILY TOTALS	
Start Depth	10054.00
End Depth	10054.00
Below Rot Hrs.	0.00
Total Drilled:	0.00
Avg. Total ROP:	NA
Slide Footage:	0.00
Slide Hours	0.00
Avg. Slide ROP:	NA
Rotate Footage:	0.00
Rotary Hours	0.00
Avg. Rot ROP:	NA
Circ Hours	0.00
Ream Hours	0.00
Rotary Hrs%:	NA
Slide Hrs%:	NA
Rotary Ftg%:	NA
Slide Ftg%:	NA
Cost Detail	
Descr.	Price
DAY RATE	4,950.00

Assembly Totals									
BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
Drilling Parameters		Mud Record		Bit Record		Current BHA # 0			
		OBM		Bit No:					
WOB: 0		Weight: 9.5		Model					
Rot Wt: 0		Visc: 65		SN.:					
Pick UP: 0		Chlorides: 43000		MFG.					
Slack Off: 0		YP: 10		Type					
SPP: 0		PV: 14		IADC					
Flow: 0 - 0		PH: 0		JETS					
SPM: 0		GAS: 0		TFA:					
Rot. RPM -		SAND: 0.01		Hole ID: N/A					
Mot RPM: -		WL: 7.6		Bit Hrs:					
Incl. In: 0.92		SOLID: 9.8		Bit Ftg:					
Az. In: 72.06		BHT°: 85		Pumps					
Incl. Out: 0.92		Flow T°: 85		Liner	5.5	5.5			
Az. Out: 72.06		Oil %: 72		Stroke	11	11			
Cost Breakdown				Effic.	95.00%	95.00%			
Total Daily		\$4,950.00		Gal/Stk	3.22	3.22			
Total Job		\$4,950.00		BBL/Stk	0.077	0.077			

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	11:30	11.50	10054	10054	0	.00	Standby	Standby -Cont. Run Csng on 511H
11:30	19:00	7.50	10054	10054	0	.00	Standby	Standby-Cement casing on 511H
19:00	21:00	2.00	10054	10054	0	.00	Standby	Standby- Skid rig off 511H / Nipple Up
21:00	23:00	2.00	10054	10054	0	.00	Standby	Standby- Tst BOP's
23:00	24:00	1.00	10054	10054	0	.00	Standby	Standby- TIH to Retrieve Packer



SDI Job #: ID2387-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.
 WELL NAME: Wool Head 20 State Com 510H
 Lead Directional : James Meredith

Report Time: 2400 11 of 11
 API JOB # 30-025-46490
 WORK ORDER# ID2387
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0090
 Company Man Frank Calhoun
 2nd Dir Hand : Jason Mueller

From Wednesday, December 25, 2019 at 0000 to Wednesday, December 25, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	10054.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	10475.00	4	XSS67070	278.00	6.75	143.00	3.83	1.67	12.25	421.00	34.37
Below Rot Hrs.	21.50										
Total Drilled:	421.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 4			
Avg. Total ROP:	39.78	WOB: 35		OBM		Bit No: 4		8 1/2" Sec. GT64C w/ 6x18 6 3/4" 7/8 5.0 FBH @ 2.12 UBHO 6 3/4" NMDC 6 3/4" FLEX X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	278.00	Rot Wt: 235		Weight: 9.5		Model 8 1/2" Sec.					
Slide Hours	6.75	Pick UP: 275		Visc: 65		SN.: 13243076					
Avg. Slide ROP:	41.19	Slack Off: 230		Chlorides: 43000		MFG. Haliburton					
Rotate Footage:	143.00	SPP: 2760		YP: 10		Type PDC					
Rotary Hours	3.83	Flow: 0 - 600		PV: 14		IADC					
Avg. Rot ROP:	37.30	SPM: 186		PH: 0		JETS 6-18					
Circ Hours	1.67	Rot. RPM 20 - 30		GAS: 0		TFA: 1.49					
Ream Hours	0.00	Mot RPM: 0 - 0		SAND: 0.01		Hole ID: 8 1/2					
Rotary Hrs%:	36.22	Incl. In: 0.92		WL: 7.6		Bit Hrs: 10.58					
Slide Hrs%:	63.78	Incl. Out: 37.19		SOLID: 9.8		Bit Ftg: 421.00					
Rotary Ftg%:	33.97	Azm. In: 72.06		BHT°: 85		Pumps					
Slide Ftg%:	66.03	Incl. Out: 37.19		Flow T°: 85		Liner 5.5 5.5					
Cost Detail		Azm. Out: 354.37		Oil %: 72		Stroke 11 11					
Descr.	Price	Cost Breakdown				Effic. 95.00% 95.00%					
DAY RATE	8,150.00	Total Daily		\$21,760.00		Gal/Stk 3.22 3.22					
Motor re-dress	2,750.00	Total Job		\$26,710.00		BBL/Stk 0.077 0.077					
Motor reline	9,800.00										
NMDC	550.00										
OTHER	540.00										

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
19:40	20:20	0.67	10288	10318	30	45.00	Sliding	Sliding - (WOB:45;GPM :589;TFO:HS))
20:20	20:30	0.17	10318	10318	0	.00	Survey & Conn.	Survey & Conn.@10269' Inc 29.85° Azm 354.02°
20:30	20:55	0.42	10318	10336	18	43.20	Drilling	Drilling - (WOB:35;GPM :600;RPM:30)
20:55	21:30	0.58	10336	10363	27	46.29	Sliding	Sliding - (WOB:45;GPM :589;TFO:20))
21:30	21:55	0.42	10363	10383	20	48.00	Drilling	Drilling - (WOB:35;GPM :600;RPM:30)
21:55	22:30	0.58	10383	10408	25	42.86	Sliding	Sliding - (WOB:45;GPM :589;TFO:20))
22:30	22:40	0.17	10408	10408	0	.00	Survey & Conn.	Survey & Conn.@10359' Inc 37.19° Azm 354.37°
22:40	23:05	0.42	10408	10430	22	52.80	Drilling	Drilling - (WOB:35;GPM :600;RPM:30)
23:05	23:35	0.50	10430	10453	23	46.00	Sliding	Sliding - (WOB:45;GPM :600;TFO:0))
23:35	24:00	0.42	10453	10475	22	52.80	Drilling	Drilling - (WOB:35;GPM :600;RPM:30)



SDI Job #:	ID2387-3	Report Time:	2400	12 of 12
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Thursday, December 26, 2019 at 0000 to Thursday, December 26, 2019 at 2400

DRILLING SUMMARY					Drilling Parameters							
Start Depth	10475.00	Rotary Hours	3.67	WOB	0	Pick UP	290	Slack Off	235	SPM		
End Depth	10888.00	Circulating Hours	0.58	RAB	245	SPP	0	FlowRate	0 - 600	0		
Total Drilled:	413.00	Avg. Total ROP:	37.83	Mud Data								
Total Rotary Drilled:	106.00	Avg. Rotary ROP:	28.91	Type	OBM			PV	15	SOLID	9.9	
Total Drilled Sliding:	307.00	Avg. Slide ROP:	42.34	Weight	9.5	GAS	0	YP	10	BHT°	130	
Slide Hours:	7.25	Percent Rotary:	25.67	Viscosity	67	SAND	0.01	PH	0	Flow T°	85	
Below Rotary Hrs.	24.00	Percent Slide:	74.33	Chlorides	45000	WL	7.4			Oil %	71	
PERSONNEL				Casing					BHA			
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),					
Second Directional :	Jason Mueller			Signature:								
MWD Operator1	Michael Walton											
MWD Operator2	Justin Campos											
Directional Company:	Intrepid DDS											
Geologist:												
Company Man:	Frank Calhoun						Daily Cost		\$27,135.00			
Incl. In:	37.19	Azm. In:	354.37	Incl. Out:	0	Azm. Out:	0	Cummulative Cost:		\$53,845.00		

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
26-Dec-19	00:00	00:30	0.50	10475	10498	Sliding	Sliding - (WOB:45;GPM :600;TFO:0))
26-Dec-19	00:30	00:40	0.17	10498	10498	Survey & Conn.	Survey & Conn.@10449' Inc 42.29° Azm 356.56°
26-Dec-19	00:40	01:05	0.42	10498	10512	Drilling	Drilling - (WOB:37;GPM :600;RPM:30)
26-Dec-19	01:05	01:45	0.67	10512	10543	Sliding	Sliding - (WOB:45;GPM :600;TFO:0))
26-Dec-19	01:45	02:10	0.42	10543	10555	Drilling	Drilling - (WOB:37;GPM :600;RPM:30)
26-Dec-19	02:10	02:55	0.75	10555	10588	Sliding	Sliding - (WOB:45;GPM :600;TFO:20))
26-Dec-19	02:55	03:05	0.17	10588	10588	Survey & Conn.	Survey & Conn.@10539' Inc 48.22° Azm 357.44°
26-Dec-19	03:05	05:00	1.92	10588	10677	Sliding	Sliding - (WOB:45;GPM :600;TFO:20))
26-Dec-19	05:00	05:10	0.17	10677	10677	Survey & Conn.	Survey & Conn.@10628' Inc 58.59° Azm 2.98°
26-Dec-19	05:10	05:55	0.75	10677	10699	Drilling	Drilling - (WOB:40;GPM :600;RPM:30)
26-Dec-19	05:55	06:35	0.67	10699	10722	Sliding	Sliding - (WOB:52;GPM :600;TFO:0))
26-Dec-19	06:35	07:15	0.67	10722	10737	Drilling	Drilling - (WOB:40;GPM :600;RPM:25)
26-Dec-19	07:15	07:55	0.67	10737	10767	Sliding	Sliding - (WOB:52;GPM :600;TFO:20L))
26-Dec-19	07:55	08:00	0.08	10767	10767	Survey & Conn.	Survey & Conn.@10718' Inc 68.35° Azm 5.53°
26-Dec-19	08:00	08:30	0.50	10767	10782	Drilling	Drilling - (WOB:42;GPM :600;RPM:25)
26-Dec-19	08:30	09:20	0.83	10782	10812	Sliding	Sliding - (WOB:60;GPM :600;TFO:20L))
26-Dec-19	09:20	09:45	0.42	10812	10827	Drilling	Drilling - (WOB:42;GPM :600;RPM:25)

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
26-Dec-19	09:45	10:30	0.75	10827	10857	Sliding	Sliding - (WOB:58;GPM :600;TFO:20L))
26-Dec-19	10:30	10:35	0.08	10857	10857	Survey & Conn.	Survey & Conn.@10808' Inc 77.45° Azm 2.89°
26-Dec-19	10:35	11:05	0.50	10857	10870	Drilling	Drilling - (WOB:42;GPM :600;RPM:25)
26-Dec-19	11:05	11:35	0.50	10870	10888	Sliding	Sliding - (WOB:58;GPM :600;TFO:0))
26-Dec-19	11:35	11:40	0.08	10888	10888	Survey & Conn.	Survey & Conn.@10839' Inc 81.27° Azm 1.31°
26-Dec-19	11:40	12:15	0.58	10888	10888	Circulating	Circulating
26-Dec-19	12:15	18:00	5.75	10888	10888	POOH	POOH
26-Dec-19	18:00	18:30	0.50	10888	10888	POOH	L/D BHA #4
26-Dec-19	18:30	19:30	1.00	10888	10888	Change BHA	P/U & Tst BHA #5 - Good
26-Dec-19	19:30	24:00	4.50	10888	10888	TIH	TIH



SDI Job #:	ID2387-3	Report Time:	2400	13 of 13
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Friday, December 27, 2019 at 0000 to Friday, December 27, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters						
Start Depth	10888.00	Rotary Hours	14.75	WOB	48	Pick UP	300	Slack Off	230	SPM		
End Depth	12163.00	Circulating Hours	1.08	RAB	260	SPP	3225	FlowRate	0 - 650	201		
Total Drilled:	1275.00	Avg. Total ROP:	61.45	Mud Data								
Total Rotary Drilled:	1047.00	Avg. Rotary ROP:	70.98	Type	OBM			PV	15	SOLID	9.9	
Total Drilled Sliding:	228.00	Avg. Slide ROP:	38.00	Weight	9.5	GAS	0	YP	10	BHT°	130	
Slide Hours:	6.00	Percent Rotary:	82.12	Viscosity	67	SAND	0.01	PH	0	Flow T°	85	
Below Rotary Hrs.	24.00	Percent Slide:	17.88	Chlorides	45000	WL	7.4			Oil %	71	
PERSONNEL				Casing					BHA			
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth		BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),				
Second Directional :	Jason Greer			Signature:								
MWD Operator1	Michael Walton											
MWD Operator2	Justin Campos											
Directional Company:	Intrepid DDS											
Geologist:												
Company Man:	Frank Calhoun						Daily Cost	\$8,150.00				
Incl. In:	81.27	Azm. In:	1.31	Incl. Out:	90.86	Azm. Out:	359.82	Cummulative Cost:	\$61,995.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
27-Dec-19	00:00	01:35	1.58	10888	10888	TIH	TIH
27-Dec-19	01:35	02:40	1.08	10888	10888	Reaming	TIH
27-Dec-19	02:40	03:25	0.75	10888	10923	Sliding	Sliding - (WOB:40;GPM :600;TFO:0))
27-Dec-19	03:25	04:00	0.58	10923	10960	Drilling	Drilling - (WOB:33;GPM :600;RPM:35)
27-Dec-19	04:00	04:10	0.17	10960	10960	Survey & Conn.	Survey & Conn.@10898 _Inc 87.43° _Azm 0.52°
27-Dec-19	04:10	05:00	0.83	10960	11050	Drilling	Drilling - (WOB:40;GPM :648;RPM:60)
27-Dec-19	05:00	05:10	0.17	11050	11050	Survey & Conn.	@
27-Dec-19	05:10	05:15	0.08	11050	11060	Drilling	Drilling - (WOB:40;GPM :648;RPM:60)
27-Dec-19	05:15	05:50	0.58	11060	11078	Sliding	Sliding - (WOB:45;GPM :650;TFO:140L))
27-Dec-19	05:50	06:20	0.50	11078	11140	Drilling	Drilling - (WOB:40;GPM :648;RPM:60)
27-Dec-19	06:20	06:25	0.08	11140	11140	Survey & Conn.	@
27-Dec-19	06:25	06:40	0.25	11140	11152	Drilling	Drilling - (WOB:40;GPM :648;RPM:60)
27-Dec-19	06:40	07:30	0.83	11152	11172	Sliding	Sliding - (WOB:35;GPM :650;TFO:160L)) Hanging Up.
27-Dec-19	07:30	09:25	1.92	11172	11331	Drilling	Drilling - (WOB:42;GPM :648;RPM:60)
27-Dec-19	09:25	10:00	0.58	11331	11353	Sliding	Sliding - (WOB:42;GPM :650;TFO:180))
27-Dec-19	10:00	12:00	2.00	11353	11510	Drilling	Drilling - (WOB:42;GPM :648;RPM:60)
27-Dec-19	12:00	12:40	0.67	11510	11540	Sliding	Sliding - (WOB:45;GPM :650;TFO:90R))

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
27-Dec-19	12:40	13:35	0.92	11540	11600	Drilling	Drilling - (WOB:42;GPM :648;RPM:60)
27-Dec-19	13:35	13:45	0.17	11600	11600	Other	Swap Pumps
27-Dec-19	13:45	14:20	0.58	11600	11625	Sliding	Sliding - (WOB:48;GPM :650;TFO:45R))
27-Dec-19	14:20	18:10	3.83	11625	11859	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
27-Dec-19	18:10	18:50	0.67	11859	11881	Sliding	Sliding - (WOB:48;GPM :650;TFO:150L))
27-Dec-19	18:50	20:00	1.17	11881	11951	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
27-Dec-19	20:00	20:30	0.50	11951	11975	Sliding	Sliding - (WOB:48;GPM :650;TFO:160L))
27-Dec-19	20:30	23:10	2.67	11975	12131	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
27-Dec-19	23:10	24:00	0.83	12131	12163	Sliding	Sliding - (WOB:48;GPM :650;TFO:150L))



SDI Job #:	ID2387-3	Report Time:	2400	14 of 15
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Saturday, December 28, 2019 at 0000 to Saturday, December 28, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	12163.00	Rotary Hours	17.42	WOB	50	Pick UP	310	Slack Off	220	SPM			
End Depth	13290.00	Circulating Hours	0.00	RAB	260	SPP	2850	FlowRate	650 - 650	201			
Total Drilled:	1127.00	Avg. Total ROP:	49.18	Mud Data									
Total Rotary Drilled:	960.00	Avg. Rotary ROP:	55.12	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	167.00	Avg. Slide ROP:	30.36	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	5.50	Percent Rotary:	85.18	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	14.82	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Justin Campos												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun						Daily Cost	\$8,150.00					
Incl. In:	90.86	Azm. In:	359.82	Incl. Out:	87.96	Azm. Out:	359.82	Cummulative Cost:	\$70,145.00				

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
28-Dec-19	00:00	01:00	1.00	12163	12222	Drilling	Drilling - (WOB:45;GPM :650;RPM:60)
28-Dec-19	01:00	01:20	0.33	12222	12232	Sliding	Sliding - (WOB:48;GPM :650;TFO:150L))
28-Dec-19	01:20	03:40	2.33	12232	12311	Drilling	Drilling - (WOB:45;GPM :650;RPM:60)
28-Dec-19	03:40	04:20	0.67	12311	12339	Sliding	Sliding - (WOB:48;GPM :650;TFO:180))
28-Dec-19	04:20	07:10	2.83	12339	12497	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
28-Dec-19	07:10	08:15	1.08	12497	12532	Sliding	Sliding - (WOB:48;GPM :650;TFO:140R))
28-Dec-19	08:15	11:40	3.42	12532	12766	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
28-Dec-19	11:40	13:05	1.42	12766	12801	Sliding	Sliding - (WOB:60;GPM :650;TFO:65R))
28-Dec-19	13:05	13:45	0.67	12801	12844	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
28-Dec-19	13:45	14:50	1.08	12844	12844	Rig Service-Inhole	Rig Service-Inhole
28-Dec-19	14:50	16:25	1.58	12844	12946	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
28-Dec-19	16:25	17:30	1.08	12946	12976	Sliding	Sliding - (WOB:60;GPM :650;TFO:150R))
28-Dec-19	17:30	20:10	2.67	12976	13118	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
28-Dec-19	20:10	21:05	0.92	13118	13147	Sliding	Sliding - (WOB:60;GPM :650;TFO:180))
28-Dec-19	21:05	24:00	2.92	13147	13290	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)



SDI Job #:	ID2387-3	Report Time:	2400	15 of 15
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Sunday, December 29, 2019 at 0000 to Sunday, December 29, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	13290.00	Rotary Hours	18.50	WOB	42	Pick UP	310	Slack Off	220	SPM			
End Depth	14673.00	Circulating Hours	0.00	RAB	260	SPP	3250	FlowRate	650 - 650	201			
Total Drilled:	1383.00	Avg. Total ROP:	58.44	Mud Data									
Total Rotary Drilled:	1237.00	Avg. Rotary ROP:	66.86	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	146.00	Avg. Slide ROP:	28.26	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	5.17	Percent Rotary:	89.44	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	10.56	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Justin Campos												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun						Daily Cost		\$8,150.00				
Incl. In:	87.96	Azm. In:	359.82	Incl. Out:	92.53	Azm. Out:	357.71	Cummulative Cost:		\$78,295.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
29-Dec-19	00:00	01:20	1.33	13290	13387	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
29-Dec-19	01:20	02:00	0.67	13387	13410	Sliding	Sliding - (WOB:60;GPM :650;TFO:0))
29-Dec-19	02:00	04:15	2.25	13410	13566	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
29-Dec-19	04:15	05:05	0.83	13566	13591	Sliding	Sliding - (WOB:60;GPM :650;TFO:180))
29-Dec-19	05:05	07:30	2.42	13591	13752	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
29-Dec-19	07:30	08:20	0.83	13752	13779	Sliding	Sliding - (WOB:60;GPM :650;TFO:150R))
29-Dec-19	08:20	11:45	3.42	13779	14021	Drilling	Drilling - (WOB:45;GPM :650;RPM:60)
29-Dec-19	11:45	12:45	1.00	14021	14050	Sliding	Sliding - (WOB:60;GPM :650;TFO:180))
29-Dec-19	12:45	16:05	3.33	14050	14279	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
29-Dec-19	16:05	16:25	0.33	14279	14279	Rig Service-Inhole	Rig Service-Inhole
29-Dec-19	16:25	16:35	0.17	14279	14291	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
29-Dec-19	16:35	17:40	1.08	14291	14318	Sliding	Sliding - (WOB:62;GPM :650;TFO:180))
29-Dec-19	17:40	22:55	5.25	14318	14642	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
29-Dec-19	22:55	23:40	0.75	14642	14657	Sliding	Sliding - (WOB:62;GPM :650;TFO:180)
29-Dec-19	23:40	24:00	0.33	14657	14673	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)



SDI Job #:	ID2387-3	Report Time:	2400	16 of 16
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Monday, December 30, 2019 at 0000 to Monday, December 30, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	14673.00	Rotary Hours	15.67	WOB	50	Pick UP	320	Slack Off	160	SPM			
End Depth	15630.00	Circulating Hours	0.00	RAB	260	SPP	3150	FlowRate	650 - 748	201			
Total Drilled:	957.00	Avg. Total ROP:	39.88	Mud Data									
Total Rotary Drilled:	833.00	Avg. Rotary ROP:	53.17	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	124.00	Avg. Slide ROP:	14.88	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	8.33	Percent Rotary:	87.04	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	12.96	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Justin Campos / Dustin Loomis												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun							Daily Cost		\$8,150.00			
Incl. In:	92.53	Azm. In:	357.71	Incl. Out:	93.45	Azm. Out:	0.69	Cummulative Cost:		\$86,445.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
30-Dec-19	00:00	02:30	2.50	14673	14822	Drilling	Drilling - (WOB:45;GPM :650;RPM:60)
30-Dec-19	02:30	04:00	1.50	14822	14852	Sliding	Sliding - (WOB:65;GPM :650;TFO:150R))
30-Dec-19	04:00	07:00	3.00	14852	15010	Drilling	Drilling - (WOB:45;GPM :650;RPM:60)
30-Dec-19	07:00	09:05	2.08	15010	15045	Sliding	Sliding - (WOB:65;GPM :748;TFO:150R))
30-Dec-19	09:05	11:50	2.75	15045	15188	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
30-Dec-19	11:50	14:00	2.17	15188	15212	Sliding	Sliding - (WOB:65;GPM :748;TFO:150R))
30-Dec-19	14:00	17:25	3.42	15212	15401	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
30-Dec-19	17:25	20:00	2.58	15401	15436	Sliding	Sliding - (WOB:65;GPM :748;TFO:180))
30-Dec-19	20:00	24:00	4.00	15436	15630	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)



SDI Job #:	ID2387-3	Report Time:	2400	17 of 17
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Tuesday, December 31, 2019 at 0000 to Tuesday, December 31, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	15630.00	Rotary Hours	11.50	WOB	65	Pick UP	320	Slack Off	125	SPM			
End Depth	16461.00	Circulating Hours	0.00	RAB	260	SPP	3100	FlowRate	650 - 748	231			
Total Drilled:	831.00	Avg. Total ROP:	34.99	Mud Data									
Total Rotary Drilled:	684.00	Avg. Rotary ROP:	59.48	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	147.00	Avg. Slide ROP:	12.00	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	12.25	Percent Rotary:	82.31	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	17.69	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Dustin Loomis												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun							Daily Cost		\$8,150.00			
Incl. In:	93.45	Azm. In:	0.69	Incl. Out:	92.7	Azm. Out:	358.5	Cummulative Cost:		\$94,595.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
31-Dec-19	00:00	02:20	2.33	15630	15668	Sliding	Sliding - (WOB:65;GPM :748;TFO:160L))
31-Dec-19	02:20	04:30	2.17	15668	15804	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
31-Dec-19	04:30	04:45	0.25	15804	15804	Rig Service-Inhole	Rig Service-Inhole
31-Dec-19	04:45	05:00	0.25	15804	15809	Drilling	Drilling - (WOB:50;GPM :650;RPM:60)
31-Dec-19	05:00	08:25	3.42	15809	15844	Sliding	Sliding - (WOB:65;GPM :748;TFO:180))
31-Dec-19	08:25	10:45	2.33	15844	15990	Drilling	Drilling - (WOB:50;GPM :650;RPM:65)
31-Dec-19	10:45	13:15	2.50	15990	16028	Sliding	Sliding - (WOB:65;GPM :748;TFO:180))
31-Dec-19	13:15	14:25	1.17	16028	16085	Drilling	Drilling - (WOB:50;GPM :650;RPM:65)
31-Dec-19	14:25	15:50	1.42	16085	16096	Sliding	Sliding - (WOB:65;GPM :748;TFO:180))
31-Dec-19	15:50	18:40	2.83	16096	16279	Drilling	Drilling - (WOB:48;GPM :650;RPM:70)
31-Dec-19	18:40	20:50	2.17	16279	16300	Sliding	Sliding - (WOB:65;GPM :748;TFO:160L))
31-Dec-19	20:50	23:35	2.75	16300	16457	Drilling	Drilling - (WOB:48;GPM :650;RPM:75)
31-Dec-19	23:35	24:00	0.42	16457	16461	Sliding	Sliding - (WOB:65;GPM :748;TFO:160L))



SDI Job #:	ID2387-3	Report Time:	2400	18 of 18
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Wednesday, January 01, 2020 at 0000 to Wednesday, January 01, 2020 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	16461.00	Rotary Hours	9.50	WOB	48	Pick UP	340	Slack Off	125	SPM			
End Depth	17030.00	Circulating Hours	0.00	RAB	260	SPP	3650	FlowRate	630 - 748	231			
Total Drilled:	569.00	Avg. Total ROP:	23.71	Mud Data									
Total Rotary Drilled:	451.00	Avg. Rotary ROP:	47.47	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	118.00	Avg. Slide ROP:	8.14	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	14.50	Percent Rotary:	79.26	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	20.74	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth	BHA # 5: Baker D507TX, 7" 7/8 8.5 FBH @ 1.75 W/ SS, 8" Nortrac Stab, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN),						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Dustin Loomis												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun						Daily Cost		\$8,150.00				
Incl. In:	92.7	Azm. In:	358.5	Incl. Out:	93.8	Azm. Out:	358.67	Cummulative Cost:		\$102,745.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
1-Jan-20	00:00	03:15	3.25	16461	16487	Sliding	Sliding - (WOB:65;GPM :748;TFO:180))
1-Jan-20	03:15	05:40	2.42	16487	16580	Drilling	Drilling - (WOB:48;GPM :630;RPM:75)
1-Jan-20	05:40	09:00	3.33	16580	16604	Sliding	Sliding - (WOB:90;GPM :748;TFO:150R))
1-Jan-20	09:00	09:40	0.67	16604	16641	Drilling	Drilling - (WOB:48;GPM :630;RPM:75)
1-Jan-20	09:40	12:45	3.08	16641	16669	Sliding	Sliding - (WOB:90;GPM :748;TFO:150R))
1-Jan-20	12:45	15:25	2.67	16669	16803	Drilling	Drilling - (WOB:48;GPM :630;RPM:75)
1-Jan-20	15:25	20:15	4.83	16803	16843	Sliding	Sliding - (WOB:90;GPM :748;TFO:180))
1-Jan-20	20:15	24:00	3.75	16843	17030	Drilling	Drilling - (WOB:48;GPM :630;RPM:75)



SDI Job #:	ID2387-4	Report Time:	2400	19 of 19
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Thursday, January 02, 2020 at 0000 to Thursday, January 02, 2020 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	17030.00	Rotary Hours	3.25	WOB	90	Pick UP	340	Slack Off	90	SPM			
End Depth	17173.00	Circulating Hours	0.67	RAB	260	SPP	3900	FlowRate	630 - 748	231			
Total Drilled:	143.00	Avg. Total ROP:	19.28	Mud Data									
Total Rotary Drilled:	123.00	Avg. Rotary ROP:	37.85	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	20.00	Avg. Slide ROP:	4.80	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	4.17	Percent Rotary:	86.01	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	24.00	Percent Slide:	13.99	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth		BHA # 6:Baker D506TWX, 7" 7/8 8.5 FBH @ 1.83 W/SS, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN), 39 Stds 5 1/2 DP, X-O (ED 54 BX x 4 1/2 IF PN), Agitator, X-O (ED 54 BX x 4 1/2 IF PN),					
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Michael Walton												
MWD Operator2	Dustin Loomis												
Directional Company:	Intrepid DDS												
Geologist:													
Company Man:	Frank Calhoun						Daily Cost		\$8,150.00				
Incl. In:	91.25	Azm. In:	1.22	Incl. Out:	93.19	Azm. Out:	1.84	Cumulative Cost:		\$16,300.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
2-Jan-20	00:00	03:15	3.25	17030	17153	Drilling	Drilling - (WOB:52;GPM :630;RPM:75)
2-Jan-20	03:15	06:35	3.33	17153	17165	Sliding	Sliding - (WOB:90;GPM :748;TFO:180)
2-Jan-20	06:35	06:45	0.17	17165	17165	Reaming	Reaming
2-Jan-20	06:45	07:35	0.83	17165	17173	Sliding	Sliding - (WOB:90;GPM :748;TFO:180))
2-Jan-20	07:35	08:05	0.50	17173	17173	Circulating	Circulating
2-Jan-20	08:05	17:00	8.92	17173	17173	POOH	POOH T/ BHA
2-Jan-20	17:00	17:20	0.33	17173	17173	Change BHA	L/D BHA # 5 , P/U BHA # 6
2-Jan-20	17:20	21:00	3.67	17173	17173	TIH	TIH
2-Jan-20	21:00	22:00	1.00	17173	17173	Other	Slip and Cut Drilling Line
2-Jan-20	22:00	24:00	2.00	17173	17173	TIH	TIH



SDI Job #:	ID2387-4	Report Time:	2400	20 of 20
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Friday, January 03, 2020 at 0000 to Friday, January 03, 2020 at 2400

DRILLING SUMMARY						Drilling Parameters													
Start Depth		17173.00	Rotary Hours		14.83	WOB		50	Pick UP		350	Slack Off		90	SPM				
End Depth		17935.00	Circulating Hours		0.00	RAB		250	SPP		4900	FlowRate		748 - 748	231				
Total Drilled:		762.00	Avg. Total ROP:		40.46	Mud Data													
Total Rotary Drilled:		700.00	Avg. Rotary ROP:		47.19	Type	OBM				PV	15	SOLID		9.9				
Total Drilled Sliding:		62.00	Avg. Slide ROP:		15.50	Weight		9.5	GAS	0	YP	10	BHT°		130				
Slide Hours:		4.00	Percent Rotary:		91.86	Viscosity		67	SAND	0.01	PH	0	Flow T°		85				
Below Rotary Hrs.		24.00	Percent Slide:		8.14	Chlorides		45000	WL	7.4			Oil %		71				
PERSONNEL						Casing						BHA							
Lead Directional :		James Meredith				Size		Lb/ft		Set Depth		BHA # 6:Baker D506TWX, 7" 7/8 8.5 FBH @ 1.83 W/SS, UBHO, 6 3/4" NMDC, 6 3/4 NMDC, X-O (ED 54 BX x 4 1/2 IF PN), 39 Stds 5 1/2 DP, X-O (ED 54 BX x 4 1/2 IF PN), Agitator, X-O (ED 54 BX x 4 1/2 IF PN),							
Second Directional :		Jason Greer				Signature:													
MWD Operator1		Michael Walton																	
MWD Operator2		Dustin Loomis																	
Directional Company:		Intrepid DDS																	
Geologist:																			
Company Man:		Frank Calhoun										Daily Cost		\$8,150.00					
Incl. In:		93.19	Azm. In:		1.84	Incl. Out:		93.54	Azm. Out:		357.44	Cummulative Cost:		\$40,488.00					

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
3-Jan-20	00:00	05:10	5.17	17173	17173	TIH	TIH
3-Jan-20	05:10	05:45	0.58	17173	17183	Drilling	Drilling - (WOB:35;GPM :748;RPM:40)
3-Jan-20	05:45	07:10	1.42	17183	17213	Sliding	Sliding - (WOB:45;GPM :748;TFO:150L))
3-Jan-20	07:10	13:15	6.08	17213	17569	Drilling	Drilling - (WOB:50;GPM :748;RPM:75)
3-Jan-20	13:15	14:25	1.17	17569	17579	Sliding	Sliding - (WOB:75;GPM :748;TFO:20L))
3-Jan-20	14:25	20:00	5.58	17579	17811	Drilling	Drilling - (WOB:50;GPM :748;RPM:75)
3-Jan-20	20:00	21:25	1.42	17811	17833	Sliding	Sliding - (WOB:75;GPM :748;TFO:180))
3-Jan-20	21:25	24:00	2.58	17833	17935	Drilling	Drilling - (WOB:50;GPM :748;RPM:75)



SDI Job #:	ID2387-4	Report Time:	2400	21 of 21
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Saturday, January 04, 2020 at 0000 to Saturday, January 04, 2020 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	17935.00	Rotary Hours	3.50	WOB	50	Pick UP	350	Slack Off	90	SPM			
End Depth	18142.00	Circulating Hours	3.75	RAB	250	SPP	4900	FlowRate	748 - 748	231			
Total Drilled:	207.00	Avg. Total ROP:	46.00	Mud Data									
Total Rotary Drilled:	187.00	Avg. Rotary ROP:	53.43	Type	OBM			PV	15	SOLID	9.9		
Total Drilled Sliding:	20.00	Avg. Slide ROP:	20.00	Weight	9.5	GAS	0	YP	10	BHT°	130		
Slide Hours:	1.00	Percent Rotary:	90.34	Viscosity	67	SAND	0.01	PH	0	Flow T°	85		
Below Rotary Hrs.	16.75	Percent Slide:	9.66	Chlorides	45000	WL	7.4			Oil %	71		
PERSONNEL				Casing					BHA				
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth		BHA # 7					
Second Directional :	Jason Greer												
MWD Operator1	Michael Walton												
MWD Operator2	Dustin Loomis												
Directional Company:	Intrepid DDS						Signature:						
Geologist:													
Company Man:	Frank Calhoun												
Incl. In:	93.54	Azm. In:	357.44	Incl. Out:	89.76	Azm. Out:	358.06	Daily Cost		\$8,150.00			
								Cummulative Cost:		\$48,638.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
4-Jan-20	00:00	01:00	1.00	17935	17955	Sliding	Sliding - (WOB:75;GPM :748;TFO:180)
4-Jan-20	01:00	04:30	3.50	17955	18142	Drilling	Drilling - (WOB:50;GPM :748;RPM:75)
4-Jan-20	04:30	04:35	0.08	18142	18142	MWD Survey	MWD Survey@18084_Inc 89.76°_Azm 358.06°
4-Jan-20	04:35	08:15	3.67	18142	18142	Circulating	Circulating @ TD
4-Jan-20	08:15	16:00	7.75	18142	18142	POOH	POOH
4-Jan-20	16:00	16:45	0.75	18142	18142	Change BHA	L/D BHA # 6
4-Jan-20	16:45	24:00	7.25	18142	18142	Standby	Standby-Casing ops



SDI Job #:	ID2387-4	Report Time:	2400	22 of 22
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46490	
LOCATION:	Lea Co., New Mexico	WORK ORDER#	ID2387	
RIG NAME:	H&P 466 Flex3	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea Co.	AFE# & District	NM0090	
WELL NAME:	Wool Head 20 State Com 510H			

From Sunday, January 05, 2020 at 0000 to Sunday, January 05, 2020 at 2400

DRILLING SUMMARY					Drilling Parameters							
Start Depth	18142.00	Rotary Hours	0.00	WOB	50	Pick UP	350	Slack Off	90	SPM		
End Depth	18142.00	Circulating Hours	0.00	RAB	250	SPP	4900	FlowRate	748 - 748	231		
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data								
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type	OBM			PV	15	SOLID	9.9	
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	9.5	GAS	0	YP	10	BHT°	130	
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	67	SAND	0.01	PH	0	Flow T°	85	
Below Rotary Hrs.	24.00	Percent Slide:	NA	Chlorides	45000	WL	7.4			Oil %	71	
PERSONNEL				Casing					BHA			
Lead Directional :	James Meredith			Size	Lb/ft	Set Depth		BHA # 7				
Second Directional :	Jason Greer											
MWD Operator1	Michael Walton											
MWD Operator2	Dustin Loomis											
Directional Company:	Intrepid DDS											
Geologist:				Signature:								
Company Man:	Frank Calhoun											
Incl. In:	89.76	Azm. In:	358.06	Incl. Out:	89.76	Azm. Out:	358.06	Daily Cost		\$4,950.00		
								Cummulative Cost:		\$53,588.00		

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
5-Jan-20	00:00	24:00	24.00	18142	18142	Other	Casing ops.



BHA's



BHA # 1

Intrepid Directional



SDI Job #: ID2387 Work Order: ID2387 FIELD: Delaware Basin
 COMPANY: Advance Energy Partners ,LLC Sec-Twn-Rng: 20-21S-33E
 LOCATION: Lea Co., New Mexico PO #/ DISTRICT NM0090
 RIG NAME: H&P 466 Flex3 Lead DD: Bill Corley
 STATE: New Mexico Co. Man: TJ Nash
 COUNTY: Lea Co. BHA TYPE: Steerable Assembly
 WELL NAME: Wool Head 20 State Com 510H BHA WT: 58428 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 12-Nov-19 @ 18:45	9 5/8, 7/8 5.9 ABH@1.5° w/	SO/PU: 90 - 90 / 95-95
Date Out: 13-Nov-19 @ 13:30	MFG.: Intrepid	Rot Strg Wt: 92-92
Hrs In Hole: 18.75	PAD OD: 10.45	WOB: 35 - 50
Start Depth: 145.00	NB Stab: 14.5	TORQ: 19500 - 26000
End Depth: 1838.00	Bit to Bend: 8.75	SPP: 2700 - 3050
Total Drilled: 1693.00	Bent Hsg/Sub°: 1.5 / 1.5	Motor RPM: 149
Avg. Total ROP: 116.09	Lobe/Stage: 7/8 / 5.9	Rotary RPM: 70 - 70
Circ Hrs: Tot/Only 15.17 / .58	Rev/GAL: 0.166	Flow Rate: 900 - 900
Percent Slide: 5.91	Rotor Jet: 0	Avg Diff: 1100
Percent Hrs: 14.29	Prop BUR: 4	Stall Pres.: 1330
Slide Hours: 2.08	Act BUR: 4	Off Bot Pres.:
Total Sliding: 100.00		
Avg. Slide ROP: 48.00		
Percent Rotary: 94.09		
Percent Hrs: 85.71		
Rotary Hours: 12.50		
Total Rotary: 1593.00		
Avg. Rotary ROP: 127.44		
Reason POOH:		

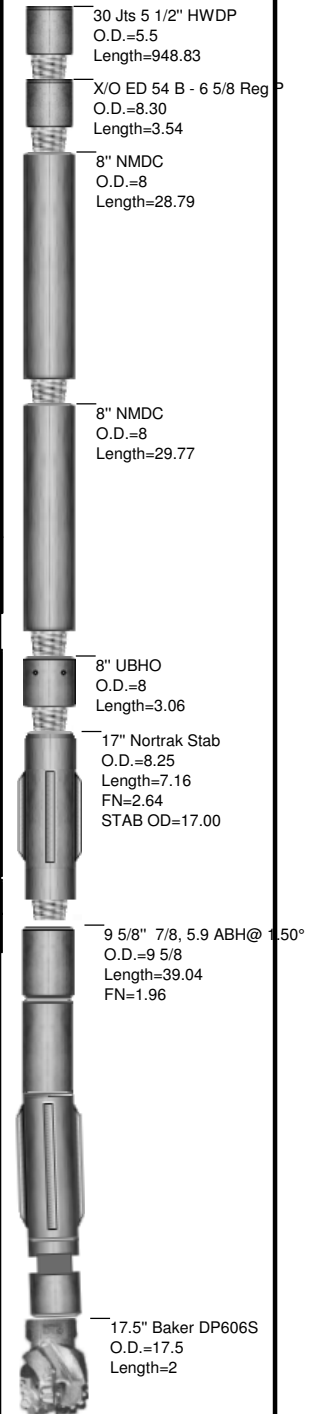
MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 68	Last Casing	O.D.
	GYRO: 0	DNSC: 145	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

9 5/8" MTR 7/8 5.9 ABH @ 1.50° w/ 14 1/2" NBS
 BTB - 8.75
 Flow: 400-900
 RPM: 66-150
 Max Diff: 1330 psi.
 Max Torq: 22,020
 RPG: 0.166
 Bit to Sensor: 68'
 Bit Runs - 8

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
17.5" Baker DP606S	5294732	3	17.5	2.00	2.00	6 5/8 REGP	BAKER
9 5/8" 7/8, 5.9 ABH@ 1.50°	XSH96028		9 5/8	39.04	41.04	6 5/8 REGB	Intrepid
17" Nortrak Stab	AWSS5143	2 7/8	8.25	7.16	48.20	6 5/8 REGB	Amega West
8" UBHO	BT801172	3 1/4	8	3.06	51.26	6 5/8 REGB	Intrepid
8" NMDC	BT801135	3 3/8	8	29.77	81.03	6 5/8 REGB	Intrepid
8" NMDC	BT80655	3 7/16	8	28.79	109.82	6 5/8 REGB	Intrepid
X/O ED 54 B - 6 5/8 Reg P	RENTAL	2.75	8.30	3.54	113.36	ED54B	Rig
30 Jts 5 1/2" HWDP	RIG	3.375	5.5	948.83	1062.19	ED54B	RIG



BHA # 2

Intrepid Directional



SDI Job #: ID2387-1 Work Order: ID2387 FIELD: Delaware Basin
 COMPANY: Advance Energy Partners ,LLC Sec-Twn-Rng: 20-21S-33E
 LOCATION: Lea Co., New Mexico PO #/ DISTRICT NM0090
 RIG NAME: H&P 466 Flex3 Lead DD: Bill Corley
 STATE: New Mexico Co. Man: TJ Nash
 COUNTY: Lea Co. BHA TYPE: Steerable Assembly
 WELL NAME: Wool Head 20 State Com 510H BHA WT: 111357 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 19-Nov-19 @ 18:30	8in. 7/8 5.9 FBH@1.5° w/ 11	SO/PU: 150 - 160 / 150-160
Date Out: 21-Nov-19 @ 01:30	MFG.: Intrepid	Rot Strg Wt: 150-160
Hrs In Hole: 30.97	PAD OD: 8 1/8	WOB: 25 - 60
Start Depth: 1838.00	NB Stab: 12	TORQ: 16000 - 23000
End Depth: 5281.00	Bit to Bend: 5.79	SPP: 3600 - 4130
Total Drilled: 3443.00	Bent Hsg/Sub°: 1.5 /	Motor RPM: 149
Avg. Total ROP: 176.56	Lobe/Stage: 7/8 / 5.9	Rotary RPM: 75 - 80
Circ Hrs: Tot/Only 20.25 / .75	Rev/GAL: 0.166	Flow Rate: 900 - 900
Percent Slide: 4.41	Rotor Jet: 0	Avg Diff: 700
Percent Hrs: 12.39	Prop BUR: 8	Stall Pres.: 1990
Slide Hours: 2.42	Act BUR: 8	Off Bot Pres.:
Total Sliding: 152.00		
Avg. Slide ROP: 62.90		
Percent Rotary: 95.59		
Percent Hrs: 87.61		
Rotary Hours: 17.08		
Total Rotary: 3291.00		
Avg. Rotary ROP: 192.64		
Reason POOH:		

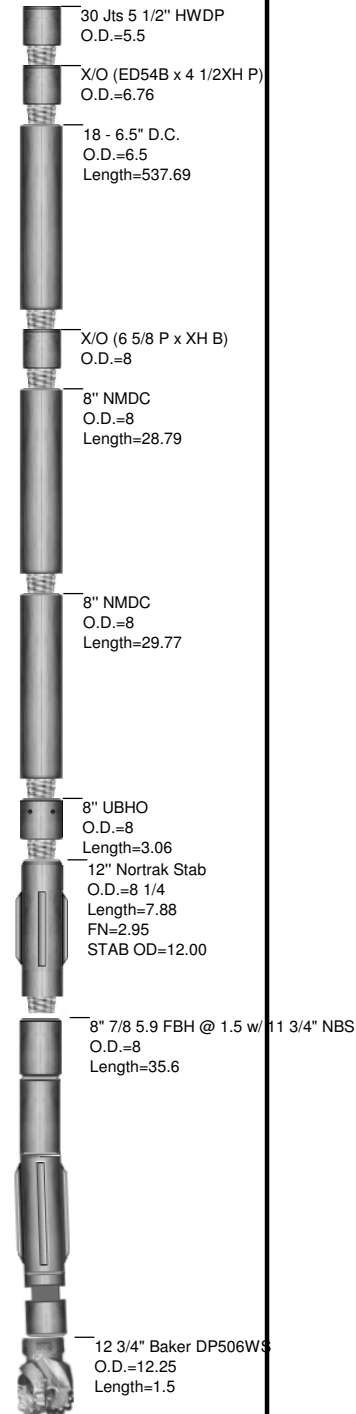
MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 65	Last Casing	O.D. 13 3/8
	GYRO: 0	DNSC: 1838	Sonic: 0	Shoe @:	1838 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

8" MTR 7/8 5.9 ABH @ 1.50° w/ 11 3/4" NBS
 BTB - 5.79
 Flow: 400-900
 RPM: 66-150
 Max Diff: 1330 psi.
 Max Torq: 22,020
 RPG: 0.166
 Bit to Sensor: 65'
 Bit Runs - 1

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
12 3/4" Baker DP506WS	5301253	3	12.25	1.50	1.50	6 5/8 REGP	BAKER
8" 7/8 5.9 FBH @ 1.5 w/ 11 3/4" NBS	XSH80013		8	35.60	37.10	6 5/8 REGB	Intrepid
12" Nortrak Stab	BT801184	2 3/4	8 1/4	7.88	44.98	6 5/8 REGB	BT
8" UBHO	BT801172	3 1/4	8	3.06	48.04	6 5/8 REGB	Intrepid
8" NMDC	BT801135	3 3/8	8	29.77	77.81	6 5/8 REGB	Intrepid
8" NMDC	BT80655	3 7/16	8	28.79	106.60	6 5/8 REGB	Intrepid
X/O (6 5/8 P x XH B)	BT80403	2.75	8	2.32	108.92	4 1/2 XHB	Intrepid
18 - 6.5" D.C.	Rig	3	6.5	537.69	646.61	4 1/2 XHB	RIG
X/O (ED54B x 4 1/2XH P)	BD15088	2.88	6.76	3.60	650.21	ED54B	Rig
30 Jts 5 1/2" HWDP	RIG	3.375	5.5	948.83	1599.04	ED54B	RIG



Well Information

BHA # 3



SDI Job #: ID2387-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
PO #/ DISTRICT NM0090
Lead DD: Jason Greer
Co. Man: TJ Nash
BHA TYPE: Steerable Assembly

WELL NAME: Wool Head 20 State Com 510H

BHA Summary Information

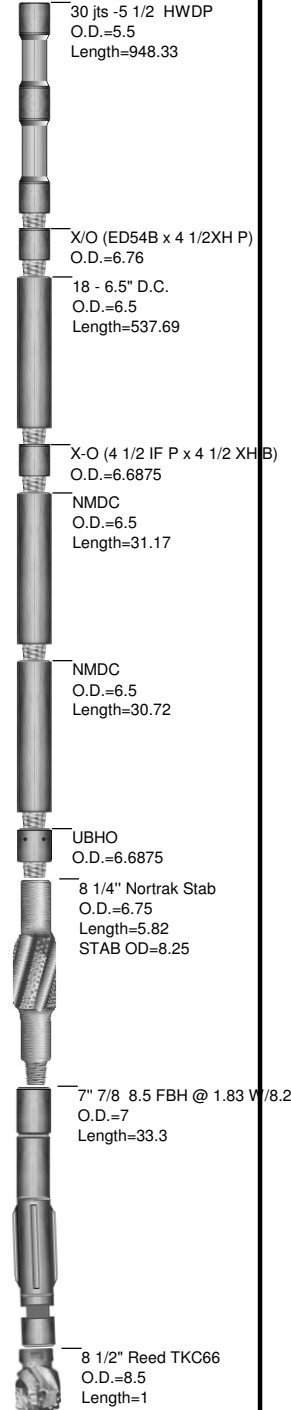
TIME IN - OUT				Rotary Hours		33.82		Start Depth		5281.00		RPM	Flow Rate		
Start Time		End Time		Circ Hrs Tot/Only		38.73 / 1.50		End Depth		10054.00					
29-Nov-19 @ 00:45		30-Nov-19 @ 23:45		Slide Hours		3.42		Percent Rotary:		93.80		0 -30	648 -648		
				Below Rotary Hrs.		46.98		Percent Slide:		6.20					
Total Drilled:				4773.00		Avg. Total ROP:		128.19		Incl.		Azimuth			
Total Rotary Drilled:				4477.00		Avg. Rotary ROP:		132.39		IN	OUT	IN OUT			
Total Drilled Sliding:				296.00		Avg. Slide ROP:		86.63		.0	.0	.00 .00			
SPP	0 -2800		Weights	SO	160 -240	PU	160 -300	RAB	160 -265	Reason POOH					
Bit Data					Motor Data					Mud Data					
REED		8 1/2" Reed TKC66				7in. 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS					Type	Brine			
Type Bit			PDC			Model: SuperHawk			Pad OD		WT 9.2 GAS 0 Solids 5.3				
TFA		1.035				MFG. Intrepid			7 1/8		Vis 29 SAND 0 T ° 90				
JETS		15	15	15	15	15	Bend ° 1.83		Stator/Rotor 7/8		PV 1 PH 10.1 Chlor 74000				
		15	0	0	0	0	Bit to Bend 4.03		Motor Diff		YP 2 WL 0 Oil % 0				
Bit Coding			IADC#				Rev/GAL 0.26				BHT° 92				
IR	OR	DL	Loc	BS	G	ODL	NB Stab 8.25		Pumps		PUMP1		PUMP1		
2	2						Rotor Jet 0		NAME						
Bit Drop:		332 PSI @ 648 GPM				Sensor Offsets			Type						
Comments					Sensor	63	Sonic	0	Liner		.00		.00		
					Gamma	0	DNsc	5281	Stroke		.00		.00		
					Restiv	0	GYRO	0	Efficiency		.00		.00		

7" MTR 7/8 8.5 FBH @ 1.83° w/ 8.25" NBS
 BTB - 4.03
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18,710
 RPG: 0.26
 Bit to Sensor: 63'
 Bit Runs = 0

BHA Detail

#	Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn
1	8 1/2" Reed TKC66	E267947	2.8125	8.5	1.00	1.00	4 1/2 REGP
2	7" 7/8 8.5 FBH @ 1.83 W/8.25 NBS	XSS70055		7	33.30	34.30	4 1/2 IFB
3	8 1/4" Nortrak Stab	BT675261	2.75	6.75	5.82	40.12	4 1/2 IFB
4	UBHO	X67UBO23	2.75	6.6875	3.54	43.66	4 1/2 IFB
5	NMDC	BT675004	3.25	6.5	30.72	74.38	4 1/2 IFB
6	NMDC	AMDC6021	3.25	6.5	31.17	105.55	4 1/2 IFB
7	X-O (4 1/2 IF P x 4 1/2 XH B)	BT6751494	2.75	6.6875	3.11	108.66	4 1/2 XHB
8	18 - 6.5" D.C.	Rig	2.625	6.5	537.69	646.35	4 1/2 XHB
9	X/O (ED54B x 4 1/2XH P)	BD15088	2.88	6.76	3.60	649.95	ED54B
10	30 jts -5 1/2 HWDP	HWDP-3.375-	3.375	5.5	948.33	1598.28	ED54B
11					0.00	1598.28	

Winsurv2 BHA Report - License:NP1553



BHA # 4

SDI Job #: ID2387-3 Work Order: ID2387
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.
 WELL NAME: Wool Head 20 State Com 510H

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 PO #/ DISTRICT NM0090
 Lead DD: James Meredith
 Co. Man: Frank Calhoun
 BHA TYPE: Building Assembly
 BHA WT: 7444 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 30-Nov-19 @ 23:45	6 3/4" 7/8 5.0 FBH @ 2.12° TS	SO/PU: 225 - 235 / 260-290
Date Out: 26-Dec-19 @ 19:30	MFG.: Intrepid	Rot Strg Wt: 235-245
Hrs In Hole: 40.23	PAD OD: 7 1/4	WOB: 0 - 60
Start Depth: 10054.00	NB Stab: 0	TORQ: 10.5 - 17
End Depth: 10888.00	Bit to Bend: 4.15	SPP: 0 - 2900
Total Drilled: 834.00	Bent Hsg/Sub°: 2.12 /	Motor RPM: 168 - 173
Avg. Total ROP: 38.79	Lobe/Stage: 7/8 / 5	Rotary RPM: 20 - 30
Circ Hrs: Tot/Only 23.75 / 2.25	Rev/GAL: 5.0 0.288	Flow Rate: 585 - 600
Percent Slide: 70.14	Rotor Jet: 0	Avg Diff: 450
Percent Hrs: 65.12	Prop BUR: 12.5	Stall Pres.: 1130
Slide Hours: 14.00	Act BUR: 14.5	Off Bot Pres.: 2300
Total Sliding: 585.00		
Avg. Slide ROP: 41.79		
Percent Rotary: 29.86		
Percent Hrs: 34.88		
Rotary Hours: 7.50		
Total Rotary: 249.00		
Avg. Rotary ROP: 33.20		
Reason POOH: BHA		

MWD Spacing	Gamma: 39	Restiv: 0	Sensor: 49	Last Casing	O.D. 9 5/8
	GYRO: 0	DNsc: 10054	Sonic: 0	Shoe @:	5271 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

6 3/4" 7/8 5.0 FBH @ 2.12° TS

BTB - 4.15

Flow: 300-600

RPM: 86-180

Max Diff: 1130 psi.

Max Torq: 10,460

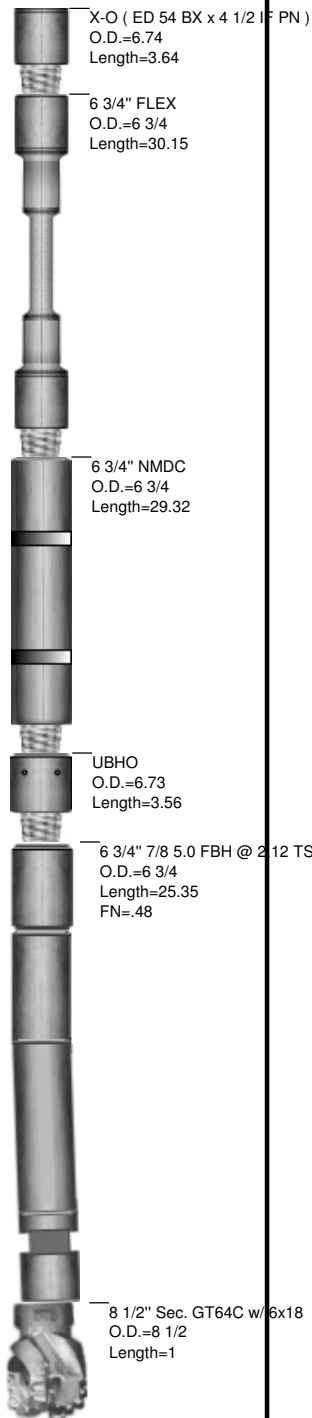
RPG: 0.288

Bit to Sensor: 49'

Bit to Gamma: 39' Bit Runs = 3

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
8 1/2" Sec. GT64C w/ 6x18	13243076		8 1/2	1.00	1.00	4 1/2 REGP	Haliburton
6 3/4" 7/8 5.0 FBH @ 2.12 TS.	XSS67070		6 3/4	25.35	26.35	4 1/2 IFB	Intrepid
UBHO	X67UB032	3.25	6.73	3.56	29.91	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT675922	3 1/4	6 3/4	29.32	59.23	4 1/2 IFB	BT
6 3/4" FLEX	BT675-112	3 1/4	6 3/4	30.15	89.38	4 1/2 IFB	Other
X-O (ED 54 BX x 4 1/2 IF PN)	BT15201	3	6.74	3.64	93.02	ED 54B	RIG



Well Information

BHA # 5



SDI Job #: ID2387-4
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
PO #/ DISTRICT NM0090
Lead DD: James Meredith
Co. Man: Frank Calhoun
BHA TYPE: Steerable Assembly

WELL NAME: Wool Head 20 State Com 510H

BHA Summary Information

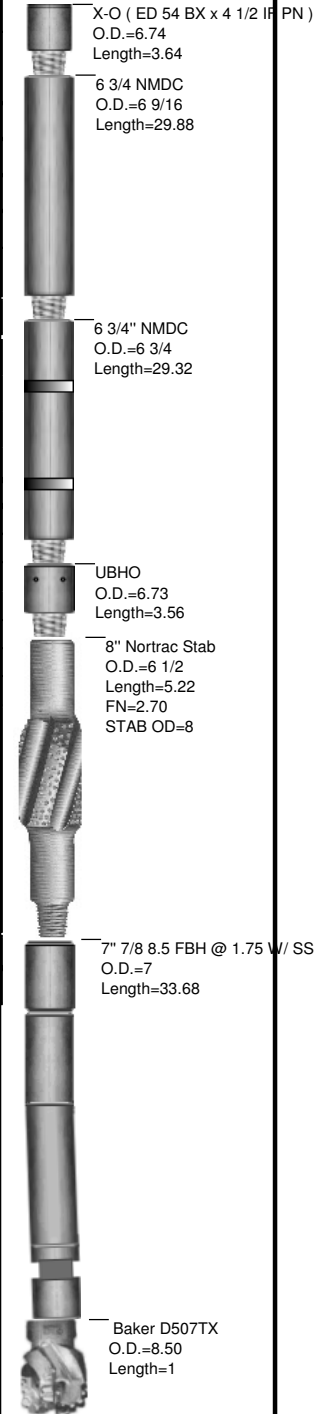
TIME IN - OUT			Rotary Hours		90.58		Start Depth		10888.00		RPM Range	Flow Rate
Start Time	End Time	Circ Hrs Tot/Only		148.25/ 1.75		End Depth		17173.00				
26-Dec-19 @ 19:30	02-Jan-20 @ 17:20	Slide Hours		55.92		Percent Rotary:		84.88		0 -75	600 -748	
		Below Rotary Hrs.		165.83		Percent Slide:		15.12				
Total Drilled:			6285.00		Avg. Total ROP:		42.90		Incl.		Azimuth	
Total Rotary Drilled:			5335.00		Avg. Rotary ROP:		58.90		IN OUT		IN OUT	
Total Drilled Sliding:			950.00		Avg. Slide ROP:		16.99		.0 .0		.00 .00	
SPP	2800 -3900	Weights	SO	90 -230	PU	300 -340	RAB	260 -260	Reason POOH			

Bit Data							Motor Data					Mud Data					
BAKER		Baker D507TX					7" 7/8 8.5 FBH @ 1.75° W/SS					Type	OBM				
Type Bit			PDC				Model: SuperHawk			Pad OD		WT 9.5 GAS 0 Solids 9.9					
TFA		2.107					MFG. Intrepid			7.25		Vis 67 SAND 0.01 T ° 85					
JETS		22	22	22	18	18	Bend ° 1.75		Stator/Rotor 7/8		PV 15 PH 0 Chlor 45000						
		18	18	0	0	0	Bit to Bend 4.15		Motor Diff		YP 10 WL 7.4 Oil % 71						
Bit Coding			IADC#				Rev/GAL 0.26						BHT° 130				
IR	OR	DL	Loc	BS	G	ODL	NB Stab 0				Pumps		PUMP1		PUMP1		
2	4						Rotor Jet 0										
Bit Drop:		110 PSI @ 748 GPM				Sensor Offsets											
Comments				Sensor	0	Sonic	0			Type		Triplex		Triplex			
				Gamma	0	DNSC	10888			Liner		5.50		5.50			
				Restiv	0	GYRO	0			Stroke		11.00		11.00			
										Efficiency		95.00		95.00			

7" 7/8 8.5 FBH @ 1.75° W/SS
 BTB - 4.15
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18,710
 RPG: 0.26
 Bit to Sensor: 62'
 Bit to Gamma: 52' Bit Runs = 1

BHA Detail

#	Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn
1	Baker D507TX	5304873		8.50	1.00	1.00	P
2	7" 7/8 8.5 FBH @ 1.75 W/ SS	XSS70053		7	33.68	34.68	4 1/2 IFB
3	8" Nortrac Stab	HH800NS02	2 7/8	6 1/2	5.22	39.90	4 1/2 IFB
4	UBHO	X67UB032	3.25	6.73	3.56	43.46	4 1/2 IFB
5	6 3/4" NMDC	BT675922	3 1/4	6 3/4	29.32	72.78	4 1/2 IFB
6	6 3/4 NMDC	BT67511	3 1/4	6 9/16	29.88	102.66	4 1/2 IFB
7	X-O (ED 54 BX x 4 1/2 IF PN)	BT15201	3	6.74	3.64	106.30	ED 54B



BHA # 1**Mud Motor Report**

SDI Job #: ID2387
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510 **Motor Failed?: NO**

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: Bill Corley
Co. Man: TJ Nash

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 12-Nov-19 @ 18:45 Date Out: 13-Nov-19 @ 13:30 Hrs In Hole: 18.75 Start Depth: 145.00 End Depth: 1838.00 Total Drilled: 1693.00 Avg. Total ROP: 116.09 Circ Hrs:Tot/Only 15.17 / .58 Percent Slide: 5.91 Percent Hrs: 14.29 Slide Hours: 2.08 Total Sliding: 100.00 Avg. Slide ROP: 48.00 Percent Rotary: 94.09 Percent Hrs: 85.71 Rot / Total Hrs: 12.50 / 14.58 Rotary Drilled: 1593.00 Avg. Rotary ROP: 127.44 Reason POOH:	Desc: 9 5/8, 7/8 5.9 ABH@1.5° w/ 14.5 MFG.: Intrepid BHA Circ/ All BHA: 15.17 / 15.17 Motor SN: XSH96028 PAD OD: 10.45 NB Stab: 14.5 Bit to Bend: 8.75 Bent Hsg / Sub: 1.5 / 1.5 ° Lobe/Stage: 7/8 / 5.9 Rev/GAL: 0.166 Rotor Jet: 0 Prop BUR: 4 Act BUR: 4 Stator Clearance: Lower Stab OD: 14.5 Upper Stab OD: 17 Extended Motor? NO Number of Stalls: 3 Stall Duration: 1	SO/PU: 90 - 90 95-95 Rot Wt: 92-92 WOB: 35 - 50 TORQ: 19500 - 26000 SPP: 2700 - 3050 Motor RPM: 149 Rotary RPM: 70 - 70 Flow Rate: 900 - 900 Avg Diff: 1100 Stall Pres.: 1330 Off Bot Pres.: Bit Record Other / 17.5" Baker DP606S Run #: 1 Type Bit: PDC IADC#: TFA: 0.994 JETS: 9-12 Bit Drop: 634 PSI @ 900 GPM Cond.:

Mud Data									
Type	WBM	WT:	8.4	Vis:	28	WL:	0	PV:	0
SAND	0	Chlor:	0	GAS	0	SOL:	0	Oil %:	0
				YP:	0	PH:	10	Bottom Hole T °:	0

Formation:**EXPANDED REASON PULLED:**

TD Surface Casing Point

BHA PERFORMANCE:

BHA performed well allowing for maximum rotation period

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Bit Graded 1-1

BHA # 2**Mud Motor Report**

SDI Job #: ID2387-1
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.
 WELL NAME: Wool Head 20 State Com 510

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 SD District
 Lead DD: Bill Corley
 Co. Man: TJ Nash

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 19-Nov-19 @ 18:30 Date Out: 21-Nov-19 @ 01:30 Hrs In Hole: 30.97 Start Depth: 1838.00 End Depth: 5281.00 Total Drilled: 3443.00 Avg. Total ROP: 176.56 Circ Hrs:Tot/Only 20.25 / .75 Percent Slide: 4.41 Percent Hrs: 12.39 Slide Hours: 2.42 Total Sliding: 152.00 Avg. Slide ROP: 62.90 Percent Rotary: 95.59 Percent Hrs: 87.61 Rot / Total Hrs: 17.08 / 19.50 Rotary Drilled: 3291.00 Avg. Rotary ROP: 192.64 Reason POOH:	Desc: 8in. 7/8 5.9 FBH@1.5° w/ 11 3/4 MFG.: Intrepid BHA Circ/ All BHA: 20.25 / 20.25 Motor SN: XSH80013 PAD OD: 8 1/8 NB Stab: 12 Bit to Bend: 5.79 Bent Hsg / Sub: 1.5 / Lobe/Stage: 7/8 / 5.9 Rev/GAL: 0.166 Rotor Jet: 0 Prop BUR: 8 Act BUR: 8 Stator Clearance: Lower Stab OD: 11.75 Upper Stab OD: 12 Extended Motor? NO Number of Stalls: 0 Stall Duration: 0	SO/PU: 150 - 160 150-160 Rot Wt: 150-160 WOB: 25 - 60 TORQ: 16000 - 23000 SPP: 3600 - 4130 Motor RPM: 149 Rotary RPM: 75 - 80 Flow Rate: 900 - 900 Avg Diff: 700 Stall Pres.: 1990 Off Bot Pres.: Bit Record BAKER / 12 3/4" Baker DP506WS Run #: 3 Type Bit: PDC IADC#: TFA: 0.662 JETS: 6-12 Bit Drop: 0 PSI @ 900 GPM Cond.:

Mud Data

Type	WT:	0	Vis:	0	WL:	0	PV:	0	Flow T °:	0	
SAND 0 Chlor:	0	GAS 0 SOL:	0	Oil %:	0	YP:	0	PH:	0	Bottom Hole T °:	0

Formation:**EXPANDED REASON PULLED:**

Section TD

BHA PERFORMANCE:

Very well build rates & tracked very well.

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor was tight but did not drain. Bit graded 2/3 with chipped , broken and missing cutters in all areas.

BHA # 3**Mud Motor Report**

SDI Job #: ID2387-2
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea Co., New Mexico
 RIG NAME: H&P 466 Flex3
 STATE: New Mexico
 COUNTY: Lea Co.

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 SD District
 Lead DD: Jason Greer
 Co. Man: TJ Nash

WELL NAME: Wool Head 20 State Com 510 **Motor Failed?: YES**

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 29-Nov-19 @ 00:45	Desc: 7in. 7/8 8.5 FBH @ 1.83 w/ 8 1/4	SO/PU: 160 - 240 160-300
Date Out: 30-Nov-19 @ 23:45	MFG.: Intrepid	Rot Wt: 160-265
Hrs In Hole: 46.98	BHA Circ/ All BHA: 38.73 / 38.73	WOB: 30 - 42
Start Depth: 5281.00	Motor SN: XSS70055	TORQ: 0 - 15000
End Depth: 10054.00	PAD OD: 7 1/8	SPP: 0 - 2800
Total Drilled: 4773.00	NB Stab: 8.25	Motor RPM: 168
Avg. Total ROP: 128.19	Bit to Bend: 4.03	Rotary RPM: 30 - 30
Circ Hrs:Tot/Only 38.73 / 1.50	Bent Hsg / Sub: 1.83 /	Flow Rate: 648 - 648
Percent Slide: 6.20	Lobe/Stage: 7/8 / 8.5	Avg Diff:
Percent Hrs: 9.18	Rev/GAL: 0.26	Stall Pres.:
Slide Hours: 3.42	Rotor Jet: 0	Off Bot Pres.:
Total Sliding: 296.00	Prop BUR: 10	Bit Record REED / 8 1/2" Reed TKC66 Run #: 3 Type Bit: PDC IADC#: TFA: 1.035 JETS: 6-15 Bit Drop: 332 PSI @ 648 GPM Cond.:
Avg. Slide ROP: 86.63	Act BUR: 14	
Percent Rotary: 93.80	Stator Clearance:	
Percent Hrs: 90.82	Lower Stab OD: 8.25	
Rot / Total Hrs: 33.82 / 37.23	Upper Stab OD: 8.25	
Rotary Drilled: 4477.00	Extended Motor? NO	
Avg. Rotary ROP: 132.39	Number of Stalls: 2	
Reason POOH:	Stall Duration: 1	

Mud Data

Type	Brine	WT:	9.2	Vis:	29	WL:	0	PV:	1	Flow T °:	90
SAND	0	Chlor:	74000	GAS	0	SOL:	5.3	Oil %:	0	YP:	2
								PH:	10.1	Bottom Hole T °:	92

Formation:**EXPANDED REASON PULLED:**

While drilling Ahead motor pressured up and held 1200 PSI above normal off bottom pressure with 200 GPM less than average. Circulated at 400 GPM for 35 min pressure fell off to normal. Decision was made to POOH.

BHA PERFORMANCE:

BHA tracked very well.

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Upon POOH we discovered flat pieces of metal in the bit jets. Motor was tight and drained well but whgen we first started draining the motor acted as if it wanted to lock up , popped loud and then turned freely to drain.

BHA # 4**Mud Motor Report**

SDI Job #: ID2387-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: James Meredith
Co. Man: Frank Calhoun

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 30-Nov-19 @ 23:45 Date Out: 26-Dec-19 @ 19:30 Hrs In Hole: 40.23 Start Depth: 10054.00 End Depth: 10888.00 Total Drilled: 834.00 Avg. Total ROP: 38.79 Circ Hrs:Tot/Only 23.75 / 2.25 Percent Slide: 70.14 Percent Hrs: 65.12 Slide Hours: 14.00 Total Sliding: 585.00 Avg. Slide ROP: 41.79 Percent Rotary: 29.86 Percent Hrs: 34.88 Rot / Total Hrs: 7.50 / 21.50 Rotary Drilled: 249.00 Avg. Rotary ROP: 33.20 Reason POOH: BHA	Desc: 6 3/4" 7/8 5.0 FBH @ 2.12° TS MFG.: Intrepid BHA Circ/ All BHA: 23.75 / 23.75 Motor SN: XSS67070 PAD OD: 7 1/4 NB Stab: 0 Bit to Bend: 4.15 Bent Hsg / Sub: 2.12 / ° Lobe/Stage: 7/8 5.0 / 5 Rev/GAL: 0.288 Rotor Jet: 0 Prop BUR: 12.5 Act BUR: 14.5 Stator Clearance: Lower Stab OD: Upper Stab OD: Extended Motor? NO Number of Stalls: 0 Stall Duration:	SO/PU: 225 - 235 / 260-290 Rot Wt: 235-245 WOB: 0 - 60 TORQ: 10.5 - 17 SPP: 0 - 2900 Motor RPM: 168 - 173 Rotary RPM: 20 - 30 Flow Rate: 585 - 600 Avg Diff: 450 Stall Pres.: 1130 Off Bot Pres.: 2300
		Bit Record
		Haliburton / 8 1/2" Sec. GT64C w/ 6x18 Run #: 4 Type Bit: PDC IADC#: TFA: 1.49 JETS: 6-18 Bit Drop: 142 PSI @ 600 GPM Cond.: 1-1-CT-S-X-1-WT-BHA- Fair

Mud Data

Type OBM **WT:** 9.5 **Vis:** 65 **WL:** 7.6 **PV:** 14 **Flow T °:** 85
SAND: 0.01 **Chlor:** 43000 **GAS:** 0 **SOL:** 9.8 **Oil %:** 72 **YP:** 10 **PH:** 0 **Bottom Hole T °:** 85

Formation:**EXPANDED REASON PULLED:**

Low ROP & Pick up Lateral Assembly

BHA PERFORMANCE:

Very Good & Consistant Yeilds, Fair ROP

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor Looked & Drained Good @ Surface

BHA # 5**Mud Motor Report**

SDI Job #: ID2387-4
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: James Meredith
Co. Man: Frank Calhoun

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 26-Dec-19 @ 19:30 Date Out: 02-Jan-20 @ 17:20 Hrs In Hole: 165.83 Start Depth: 10888.00 End Depth: 17173.00 Total Drilled: 6285.00 Avg. Total ROP: 42.90 Circ Hrs:Tot/Only 148.25 / 1.75 Percent Slide: 15.12 Percent Hrs: 38.17 Slide Hours: 55.92 Total Sliding: 950.00 Avg. Slide ROP: 16.99 Percent Rotary: 84.88 Percent Hrs: 61.83 Rot / Total Hrs: 90.58 / 146.50 Rotary Drilled: 5335.00 Avg. Rotary ROP: 58.90 Reason POOH:	Desc: 7" 7/8 8.5 FBH @ 1.75° W/SS MFG.: Intrepid BHA Circ/ All BHA: 148.25 / 148.25 Motor SN: XSS70053 PAD OD: 7.25 NB Stab: 0 Bit to Bend: 4.15 Bent Hsg / Sub: 1.75 / Lobe/Stage: 7/8 / 8.5 Rev/GAL: 0.26 Rotor Jet: 0 Prop BUR: 10 Act BUR: 9 Stator Clearance: Lower Stab OD: N/A Upper Stab OD: Extended Motor? NO Number of Stalls: 0 Stall Duration:	SO/PU: 90 - 230 / 300-340 Rot Wt: 260-260 WOB: 33 - 90 TORQ: 0 - 37000 SPP: 2800 - 3900 Motor RPM: 156 - 194 Rotary RPM: 35 - 75 Flow Rate: 600 - 748 Avg Diff: Stall Pres.: Off Bot Pres.:
		Bit Record BAKER / Baker D507TX Run #: 5 Type Bit: PDC IADC#: TFA: 2.107 JETS: 4-18,3-22 Bit Drop: 110 PSI @ 748 GPM Cond.:

Mud Data

Type OBM **WT:** 9.5 **Vis:** 67 **WL:** 7.4 **PV:** 15 **Flow T °:** 85
SAND: 0.01 **Chlor:** 45000 **GAS:** 0 **SOL:** 9.9 **Oil %:** 71 **YP:** 10 **PH:** 0 **Bottom Hole T °:** 130

Formation:**EXPANDED REASON PULLED:**

Having issues with weight transfer while sliding Avg Slide ROP was 5' FPH Rocking pipe 27k Tq. The decision was made to pooh when we statrted seeing 3-400 PSI pressure spikes with no TF reaction. Motor was holding 2-300 PSI diff off bottom.

BHA PERFORMANCE:

We ran an 8" Stab on top of the motor to help control the build in rotation. The results were the same as a slick assembly. Excessive sliding required to control well bore placement.

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor had 1/2 In. Squat & drained well. We discovered two large pieces of rubber in the bit. Bit graded 2/4 starting to ring out in the middle row.



SDI Job #: ID2387
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Country
WELL NAME: Wool Head 20 State Com 510H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District

MOTOR INFORMATION

Desc: 9 5/8, 7/8 5.9 ABH@1.5° w/ 14.5 NBS
Bent Hsg/Sub: 1.5 / 1.5 Bit to Bend: 8.75
PAD OD: 10.45 NB Stab: 14.5

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	12-Nov	Drilling	19:00	24:00	5.00	145	1152	1007	35	201.4	70	19500	900	3000		0.00	0.00	0.00	
1	13-Nov	Drilling	00:00	02:45	2.75	1152	1426	274	35	99.6	70	20000	900	3000		0.00	0.00	0.00	
1	13-Nov	Sliding	02:45	03:45	1.00	1426	1466	40	38	40.0	0	20000	900	2700	70M	0.00	0.00	0.00	
1	13-Nov	Drilling	03:45	05:15	1.50	1466	1591	125	40	83.3	70	21000	900	3050		0.00	0.00	0.00	
1	13-Nov	Sliding	05:15	06:20	1.08	1591	1651	60	38	55.4	70	21000	900	3050	60M	0.00	0.00	0.00	
1	13-Nov	Drilling	06:20	09:35	3.25	1651	1838	187	50	57.5	70	26000	900	3050		0.00	0.00	0.00	

Total Drilled:	1693	Avg. Total ROP:	116.09	DEPTH% - TIME %
Total Rotary Drilled:	1593	Avg. Rotary ROP:	127.44	Percent Rotary: 94.09 - 85.71
Total Drilled Sliding:	100	Avg. Slide ROP:	48.00	Percent Slide: 5.91 - 14.29



SDI Job #: ID2387-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Lea Co.
WELL NAME: Wool Head 20 State Com 510H
Survey File:

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section /NM0090

MOTOR INFORMATION

Desc: 6 3/4" 7/8 5.0 FBH @ 2.12° TS
Bent Hsg/Sub: 2.12 0 **Bit to Bend:** 4.15
PAD OD: 7 1/4 **NB Stab:**

Slide Report for BHA # 4 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
4	25-Dec	1.58	10054	10090	36	38	29.1	20	11	585	2500	2050	450		10090	0.84	54.66	0.23	0.00	0.00	5	Drilling
					123									-61	10090	0.84	54.66	0.23			6	Survey & Conn.
			10090	10100	10	38	29.1	20	11	585	2500	2050			10100	2.22	84.82	15.97			0	Drilling
4	25-Dec	1.00	10100	10139	39	45	39.0			585	2500	2050	450	355M	10139	8.35	218.84	15.97	0.00	0.00	0	Sliding
4	25-Dec	2.42	10139	10179	40	45	30.2	0	0	589	2640	2200	440	355M	10179	20.77	130.32	15.97	0.00	0.00	5	Sliding
					89									-4	10179	14.64	356.30	15.97			6	Survey & Conn.
			10179	10212	33	45	30.2	0	0	589	2640	2200		355M	10212	19.66	355.55	16.92	16.92		4	Sliding
4	25-Dec	1.00	10212	10269	57	45	61.0	0	0	589	2640	2200	440	HS	10269	33.35	353.50	16.92	16.92	0.00	5	Sliding
					90									2	10269	29.85	354.02	16.92			6	Survey & Conn.
			10269	10273	4	45	61.0	0	0	589	2640	2200		HS	10273	30.31	354.04	8.16			0	Sliding
4	25-Dec	0.58	10273	10288	15	30	25.7	30	10.5	600	2760	2380	380	HS	10288	30.65	354.06	8.16	0.00	0.00	0	Drilling
4	25-Dec	0.67	10288	10318	30	45	45.0	0	0	589	2760	2380	380	HS	10318	34.39	354.24	8.16	0.00	0.00	0	Sliding
4	25-Dec	0.42	10318	10336	18	35	43.2	30	12.5	600	2760	2380	380		10336	35.12	354.27	8.16	0.00	0.00	0	Drilling
4	25-Dec	0.58	10336	10359	23	45	46.3	0	0	589	2760	2380	380	20	10359	41.73	354.59	8.16	0.00	0.00	5	Sliding
					90									16	10359	37.19	354.37	8.16			6	Survey & Conn.
			10359	10363	4	45	46.3	0	0	589	2760	2380		20	10363	37.57	354.53	5.88			0	Sliding
4	25-Dec	0.42	10363	10383	20	35	48.0	30	12.5	600	2760	2380	380		10383	37.82	354.64	5.88	0.00	0.00	0	Drilling
4	25-Dec	0.58	10383	10408	25	45	42.9	0	0	589	2760	2380	380	20	10408	40.42	355.76	5.88	0.00	0.00	0	Sliding
4	25-Dec	0.42	10408	10430	22	35	52.8	30	12.5	600	2760	2380	380		10430	40.93	355.98	5.88	0.00	0.00	0	Drilling
4	25-Dec	0.50	10430	10449	19	45	46.0	0	0	600	2760	2380	380		10449	45.52	357.95	5.88	0.00	0.00	5	Sliding
					90									6	10449	42.29	356.56	5.88			6	Survey & Conn.
			10449	10453	4	45	46.0	0	0	600	2760	2380		6~Cal	10453	42.69	356.62	6.63			0	Sliding
4	25-Dec	0.42	10453	10475	22	35	52.8	30	12.5	600	2760	2380	380		10475	43.05	356.67	6.63	0.00	0.00	0	Drilling
4	26-Dec	0.50	10475	10498	23	45	46.0	0	0	600	2760	2380	380	20	10498	45.50	357.04	6.63	0.00	0.00	0	Sliding
4	26-Dec	0.42	10498	10512	14	37	33.6	30	12.5	600	2760	2380	380		10512	46.10	357.12	6.63	0.00	0.00	0	Drilling

Slide Report for BHA # 4 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
4	26-Dec	0.67	10512	10539	27	45	46.5	0	0	600	2760	2380	380	20	10539	51.43	357.92	6.63	0.00	0.00	5	Sliding
					90									25	10539	48.22	357.44	6.63			6	Survey & Conn.
			10539	10543	4	45	46.5	0	0	600	2760	2380		20	10543	48.70	340.87	12.67			0	Sliding
4	26-Dec	0.42	10543	10555	12	37	28.8	30	12.5	600	2760	2380	380		10555	49.74	305.42	12.67	0.00	0.00	0	Drilling
4	26-Dec	0.75	10555	10588	33	45	44.0	0	0	600	2760	2380	380	20	10588	53.96	161.21	12.67	0.00	0.00	0	Sliding
4	26-Dec	1.92	10588	10628	40	45	46.4	30	12.5	600	2760	2380	380	20	10628	63.29	202.20	12.67	0.00	0.00	5	Sliding
					89									14	10628	58.59	2.98	12.67			6	Survey & Conn.
			10628	10677	49	45	46.4	30	12.5	600	2760	2380		20	10677	64.92	4.63	11.14			0	Sliding
4	26-Dec	0.75	10677	10699	22	40	29.3	30	12.5	600	2760	2380	380		10699	65.90	4.89	11.14	0.00	0.00	0	Drilling
4	26-Dec	0.67	10699	10718	19	52	34.5			600	2825	2375	450		10718	68.35	5.53	11.14	0.00	0.00	5	Sliding
					90									-16	10718	68.35	5.53	11.14			6	Survey & Conn.
			10718	10722	4	52	34.5	0	0	600	2825	2375		-16~Cal	10722	68.90	5.37	10.49			0	Sliding
4	26-Dec	0.67	10722	10737	15	40	22.5	25	15	600	2825	2375	450		10737	69.35	5.24	10.49	0.00	0.00	0	Drilling
4	26-Dec	0.67	10737	10767	30	52	45.0			600	2875	2375	500	20L	10767	73.74	3.97	10.49	0.00	0.00	0	Sliding
4	26-Dec	0.50	10767	10782	15	42	30.0	25	15	600	2825	2375	450		10782	74.65	3.70	10.49	0.00	0.00	0	Drilling
4	26-Dec	0.83	10782	10808	26	60	36.0			600	2900	2375	525	20L	10808	77.45	2.89	10.49	0.00	0.00	5	Sliding
					90									-22	10808	77.45	2.89	10.49			6	Survey & Conn.
			10808	10812	4	60	36.0	0	0	600	2900	2375		20L	10812	78.31	2.53	13.30			0	Sliding
4	26-Dec	0.42	10812	10827	15	42	36.0	25	17	600	2825	2375	450		10827	78.69	2.38	13.30	0.00	0.00	0	Drilling
4	26-Dec	0.75	10827	10839	12	58	40.0		0	600	2875	2375	500	20L	10839	81.27	1.31	13.30	0.00	0.00	5	Sliding
					31									-24	10839	81.27	1.31	13.30			6	Survey & Conn.
			10839	10857	18	58	40.0	0	0	600	2875	2375		20L	10857	83.37	162.37	10.43			0	Sliding
4	26-Dec	0.50	10857	10870	13	42	26.0	25	17	600	2825	2375	450		10870	83.84	198.16	10.43	0.00	0.00	0	Drilling
4	26-Dec	0.50	10870	10888	18	58	36.0			600	2800	2375	425		10888	85.94	359.22	10.43	0.00	0.00	5	Sliding
					49										10888	85.94	359.22	10.43			6	Survey & Conn.

Total Drilled: 834 Avg. Total ROP: 38.79

DEPTH% - TIME %

Total Rotary Drilled: 249 Avg. Rotary ROP: 33.20

Percent Rotary: 29.86 - 34.88

Total Drilled Sliding: 585 Avg. Slide ROP: 41.79

Percent Slide: 70.14 - 65.12



SDI Job #: ID2387-4
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea Co., New Mexico
RIG NAME: H&P 466 Flex3
STATE: New Mexico
COUNTY: Country
WELL NAME: Wool Head 20 State Com 510H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District

MOTOR INFORMATION

Desc: 7" 7/8 8.5 FBH @ 1.75° W/SS
Bent Hsg/Sub: 1.7 / 0 **Bit to Bend:** 4.15
PAD OD: 7.25 **NB Stab:** N/A

Slide Report for BHA # 5

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
5	27-Dec	Sliding	02:40	03:25	0.75	10888	10923	35	40	46.7	0	0	600	2950		87.10	359.00	3.32	
5	27-Dec	Drilling	03:25	04:00	0.58	10923	10960	37	33	63.4	35	16000	600	2950		0.00	0.00	0.00	
5	27-Dec	Drilling	04:10	05:00	0.83	10960	11050	90	40	108.0	60	22000	648	3250		0.00	0.00	0.00	
5	27-Dec	Drilling	05:10	05:15	0.08	11050	11060	10	40	120.0	60	22000	648	3250		0.00	0.00	0.00	
5	27-Dec	Sliding	05:15	05:50	0.58	11060	11078	18	45	30.9			650	3250	140L	0.00	0.00	0.00	
5	27-Dec	Drilling	05:50	06:20	0.50	11078	11140	62	40	124.0	60	22000	648	3250		0.00	0.00	0.00	
5	27-Dec	Drilling	06:25	06:40	0.25	11140	11152	12	40	48.0	60	22000	648	3250		0.00	0.00	0.00	
5	27-Dec	Sliding	06:40	07:30	0.83	11152	11172	20	35	24.0			650	3050	160L	0.00	0.00	0.00	
5	27-Dec	Drilling	07:30	09:25	1.92	11172	11331	159	42	83.0	60	22000	648	3300		0.00	0.00	0.00	
5	27-Dec	Sliding	09:25	10:00	0.58	11331	11353	22	42	37.7			650	3200	180	0.00	0.00	0.00	
5	27-Dec	Drilling	10:00	12:00	2.00	11353	11510	157	42	78.5	60	22000	648	3250		0.00	0.00	0.00	
5	27-Dec	Sliding	12:00	12:40	0.67	11510	11540	30	45	45.0			650	3225	90R	0.00	0.00	0.00	
5	27-Dec	Drilling	12:40	13:35	0.92	11540	11600	60	42	65.5	60	22000	648	3225		0.00	0.00	0.00	
5	27-Dec	Sliding	13:45	14:20	0.58	11600	11625	25	48	42.9		0	650	3175	45R	0.00	0.00	0.00	
5	27-Dec	Drilling	14:20	18:10	3.83	11625	11859	234	42	61.0	60	22000	650	3225		0.00	0.00	0.00	
5	27-Dec	Sliding	18:10	18:50	0.67	11859	11881	22	48	33.0	60	22000	650	3225	150L	0.00	0.00	0.00	
5	27-Dec	Drilling	18:50	20:00	1.17	11881	11951	70	42	60.0	60	22000	650	3225		0.00	0.00	0.00	
5	27-Dec	Sliding	20:00	20:30	0.50	11951	11975	24	48	48.0	60	22000	650	3225	160L	0.00	0.00	0.00	
5	27-Dec	Drilling	20:30	23:10	2.67	11975	12131	156	42	58.5	60	22000	650	3225		0.00	0.00	0.00	
5	27-Dec	Sliding	23:10	24:00	0.83	12131	12163	32	48	38.4	60	22000	650	3225	150L	0.00	0.00	0.00	
5	28-Dec	Drilling	00:00	01:00	1.00	12163	12222	59	45	59.0	60	22000	650	3000		0.00	0.00	0.00	
5	28-Dec	Sliding	01:00	01:20	0.33	12222	12232	10	48	30.0	60	22000	650	3000	150L	0.00	0.00	0.00	
5	28-Dec	Drilling	01:20	03:40	2.33	12232	12311	79	45	33.9	60	22000	650	3000		0.00	0.00	0.00	
5	28-Dec	Sliding	03:40	04:20	0.67	12311	12339	28	48	42.0	60	22000	650	3000	180	0.00	0.00	0.00	
5	28-Dec	Drilling	04:20	07:10	2.83	12339	12497	158	50	55.8	60	22000	650	3000		0.00	0.00	0.00	
5	28-Dec	Sliding	07:10	08:15	1.08	12497	12532	35	48	32.3			650	2825	140R	0.00	0.00	0.00	

Slide Report for BHA # 5

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
5	28-Dec	Drilling	08:15	11:40	3.42	12532	12766	234	50	68.5	60	24000	650	3050		0.00	0.00	0.00	
5	28-Dec	Sliding	11:40	13:05	1.42	12766	12801	35	60	24.7			650	2850	65R	0.00	0.00	0.00	
5	28-Dec	Drilling	13:05	13:45	0.67	12801	12844	43	50	64.5	60	24000	650	2850		0.00	0.00	0.00	
5	28-Dec	Drilling	14:50	16:25	1.58	12844	12946	102	50	64.4	60	24000	650	3000		0.00	0.00	0.00	
5	28-Dec	Sliding	16:25	17:30	1.08	12946	12976	30	60	27.7			650	2850	150R	0.00	0.00	0.00	
5	28-Dec	Drilling	17:30	20:10	2.67	12976	13118	142	50	53.3	60	0	650	2850		0.00	0.00	0.00	
5	28-Dec	Sliding	20:10	21:05	0.92	13118	13147	29	60	31.6	60	0	650	2850	180	0.00	0.00	0.00	
5	28-Dec	Drilling	21:05	24:00	2.92	13147	13290	143	50	49.0	60	0	650	2850		0.00	0.00	0.00	
5	29-Dec	Drilling	00:00	01:20	1.33	13290	13387	97	50	72.8	60	0	650	2850		0.00	0.00	0.00	
5	29-Dec	Sliding	01:20	02:00	0.67	13387	13410	23	60	34.5	60	0	650	2850		0.00	0.00	0.00	
5	29-Dec	Drilling	02:00	04:15	2.25	13410	13566	156	50	69.3	60	0	650	2850		0.00	0.00	0.00	
5	29-Dec	Sliding	04:15	05:05	0.83	13566	13591	25	60	30.0	60	0	650	2850	180	0.00	0.00	0.00	
5	29-Dec	Drilling	05:05	07:30	2.42	13591	13752	161	50	66.6	60	26000	650	3000		0.00	0.00	0.00	
5	29-Dec	Sliding	07:30	08:20	0.83	13752	13779	27	60	32.4			650	2800	150R	0.00	0.00	0.00	
5	29-Dec	Drilling	08:20	11:45	3.42	13779	14021	242	45	70.8	60	27000	650	3225		0.00	0.00	0.00	
5	29-Dec	Sliding	11:45	12:45	1.00	14021	14050	29	60	29.0			650	3050	180	0.00	0.00	0.00	
5	29-Dec	Drilling	12:45	16:05	3.33	14050	14279	229	42	68.7	60	28000	650	3325		0.00	0.00	0.00	
5	29-Dec	Drilling	16:25	16:35	0.17	14279	14291	12	42	72.0	60	28000	650	3325		0.00	0.00	0.00	
5	29-Dec	Sliding	16:35	17:40	1.08	14291	14318	27	62	24.9			650	3250	180	0.00	0.00	0.00	
5	29-Dec	Drilling	17:40	22:55	5.25	14318	14642	324	42	61.7	60	28000	650	3250		0.00	0.00	0.00	
5	29-Dec	Sliding	22:55	23:40	0.75	14642	14657	15	62	20.0	60	28000	650	3250	180	0.00	0.00	0.00	
5	29-Dec	Drilling	23:40	24:00	0.33	14657	14673	16	42	48.0	60	28000	650	3250		0.00	0.00	0.00	
5	30-Dec	Drilling	00:00	02:30	2.50	14673	14822	149	50	59.6	60	28000	650	3250		0.00	0.00	0.00	
5	30-Dec	Sliding	02:30	04:00	1.50	14822	14852	30	65	20.0	60	28000	650	3250	150R	0.00	0.00	0.00	
5	30-Dec	Drilling	04:00	07:00	3.00	14852	15010	158	50	52.7	60	28000	650	3250		0.00	0.00	0.00	
5	30-Dec	Sliding	07:00	09:05	2.08	15010	15045	35	65	16.8			748	3750	150R	0.00	0.00	0.00	
5	30-Dec	Drilling	09:05	11:50	2.75	15045	15188	143	50	52.0	60	28000	650	3200		0.00	0.00	0.00	
5	30-Dec	Sliding	11:50	14:00	2.17	15188	15212	24	65	11.1	60	28000	748	3750	150R	0.00	0.00	0.00	
5	30-Dec	Drilling	14:00	17:25	3.42	15212	15401	189	50	55.3	60	30000	650	3150		0.00	0.00	0.00	
5	30-Dec	Sliding	17:25	20:00	2.58	15401	15436	35	65	13.5			748	3750	180	0.00	0.00	0.00	
5	30-Dec	Drilling	20:00	24:00	4.00	15436	15630	194	50	48.5	60	30000	650	3150		0.00	0.00	0.00	
5	31-Dec	Sliding	00:00	02:20	2.33	15630	15668	38	65	16.3	60	30000	748	3150	160L	0.00	0.00	0.00	
5	31-Dec	Drilling	02:20	04:30	2.17	15668	15804	136	50	62.8	60	30000	650	3150		0.00	0.00	0.00	
5	31-Dec	Drilling	04:45	05:00	0.25	15804	15809	5	50	20.0	60	30000	650	3150		0.00	0.00	0.00	
5	31-Dec	Sliding	05:00	08:25	3.42	15809	15844	35	65	10.2			748	3700	180	0.00	0.00	0.00	

Slide Report for BHA # 5

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
5	31-Dec	Drilling	08:25	10:45	2.33	15844	15990	146	50	62.6	65	30000	650	3200		0.00	0.00	0.00	
5	31-Dec	Sliding	10:45	13:15	2.50	15990	16028	38	65	15.2			748	3700	180	0.00	0.00	0.00	
5	31-Dec	Drilling	13:15	14:25	1.17	16028	16085	57	50	48.9	65	30000	650	3200		0.00	0.00	0.00	
5	31-Dec	Sliding	14:25	15:50	1.42	16085	16096	11	65	7.8			748	3600	180	0.00	0.00	0.00	
5	31-Dec	Drilling	15:50	18:40	2.83	16096	16279	183	48	64.6	70	32000	650	3100		0.00	0.00	0.00	
5	31-Dec	Sliding	18:40	20:50	2.17	16279	16300	21	65	9.7	0		748	3100	160L	0.00	0.00	0.00	
5	31-Dec	Drilling	20:50	23:35	2.75	16300	16457	157	48	57.1	75	36000	650	3100		0.00	0.00	0.00	
5	31-Dec	Sliding	23:35	24:00	0.42	16457	16461	4	65	9.6	0		748	3100	160L	0.00	0.00	0.00	
5	1-Jan	Sliding	00:00	03:15	3.25	16461	16487	26	65	8.0	0	0	748	3150	180	0.00	0.00	0.00	
5	1-Jan	Drilling	03:15	05:40	2.42	16487	16580	93	48	38.5	75	37000	630	3200		0.00	0.00	0.00	
5	1-Jan	Sliding	05:40	09:00	3.33	16580	16604	24	90	7.2			748	3600	150R	0.00	0.00	0.00	
5	1-Jan	Drilling	09:00	09:40	0.67	16604	16641	37	48	55.5	75	37000	630	3300		0.00	0.00	0.00	
5	1-Jan	Sliding	09:40	12:45	3.08	16641	16669	28	90	9.1			748	3650	150R	0.00	0.00	0.00	
5	1-Jan	Drilling	12:45	15:25	2.67	16669	16803	134	48	50.3	75	0	630	3650		0.00	0.00	0.00	
5	1-Jan	Sliding	15:25	20:15	4.83	16803	16843	40	90	8.3	75	0	748	3650	180	0.00	0.00	0.00	
5	1-Jan	Drilling	20:15	24:00	3.75	16843	17030	187	48	49.9	75	0	630	3650		0.00	0.00	0.00	
5	2-Jan	Drilling	00:00	03:15	3.25	17030	17153	123	52	37.8	75	36000	630	3650		0.00	0.00	0.00	
5	2-Jan	Sliding	03:15	06:35	3.33	17153	17165	12	90	3.6	75	36000	748	3650	180	0.00	0.00	0.00	
5	2-Jan	Sliding	06:45	07:35	0.83	17165	17173	8	90	9.6			748	3900	180	0.00	0.00	0.00	

Total Drilled: 6285 **Avg. Total ROP:** 42.90 **DEPTH% - TIME %**

Total Rotary Drilled: 5335 **Avg. Rotary ROP:** 58.90 **Percent Rotary:** 84.88 - 61.83

Total Drilled Sliding: 950 **Avg. Slide ROP:** 16.99 **Percent Slide:** 15.12 - 38.17



Final Logs





Intrepid-DDS
10314 TX-191
Midland, TX 79707

1" = 100'
MD FT

Gamma Ray

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
Country: USA
Rig: HP 466
AFE: NM0090
Job: ID2387

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State New Mexico
Country USA
Rig: HP 466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20
Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3752.5
Height of Reference: 26.5 Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 04:35

Disclaimer: Intrepid DDS uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

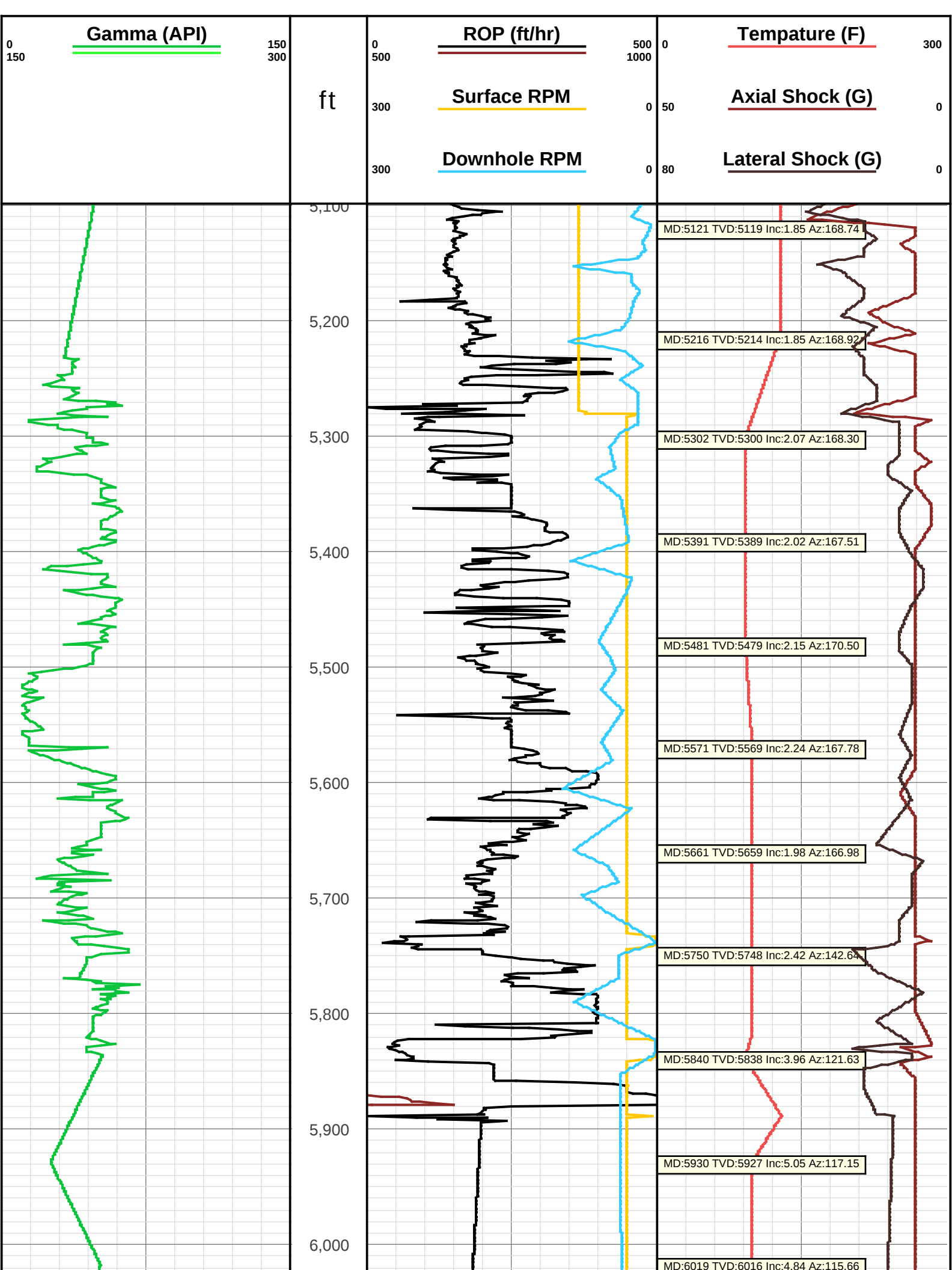
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

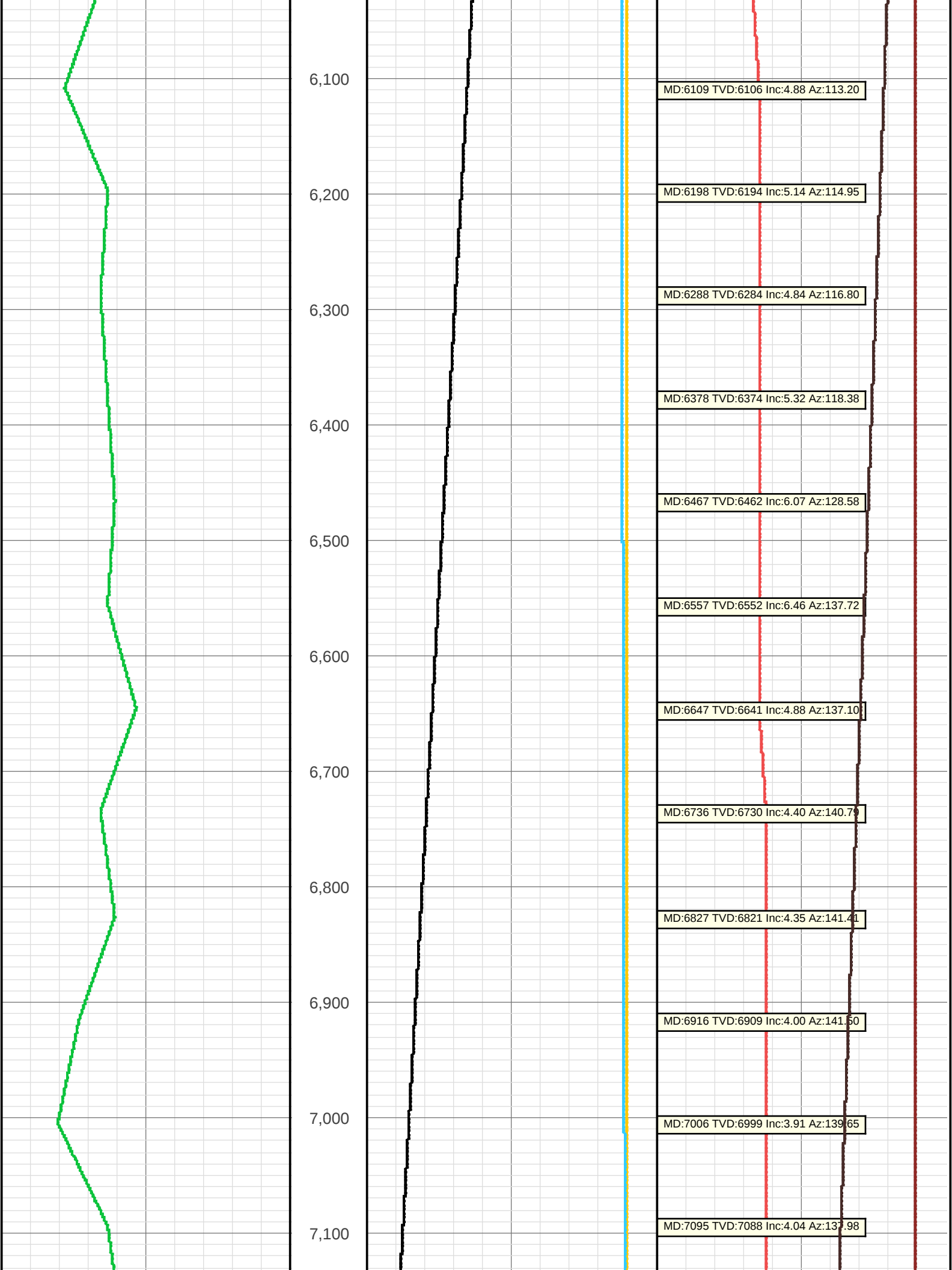
Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

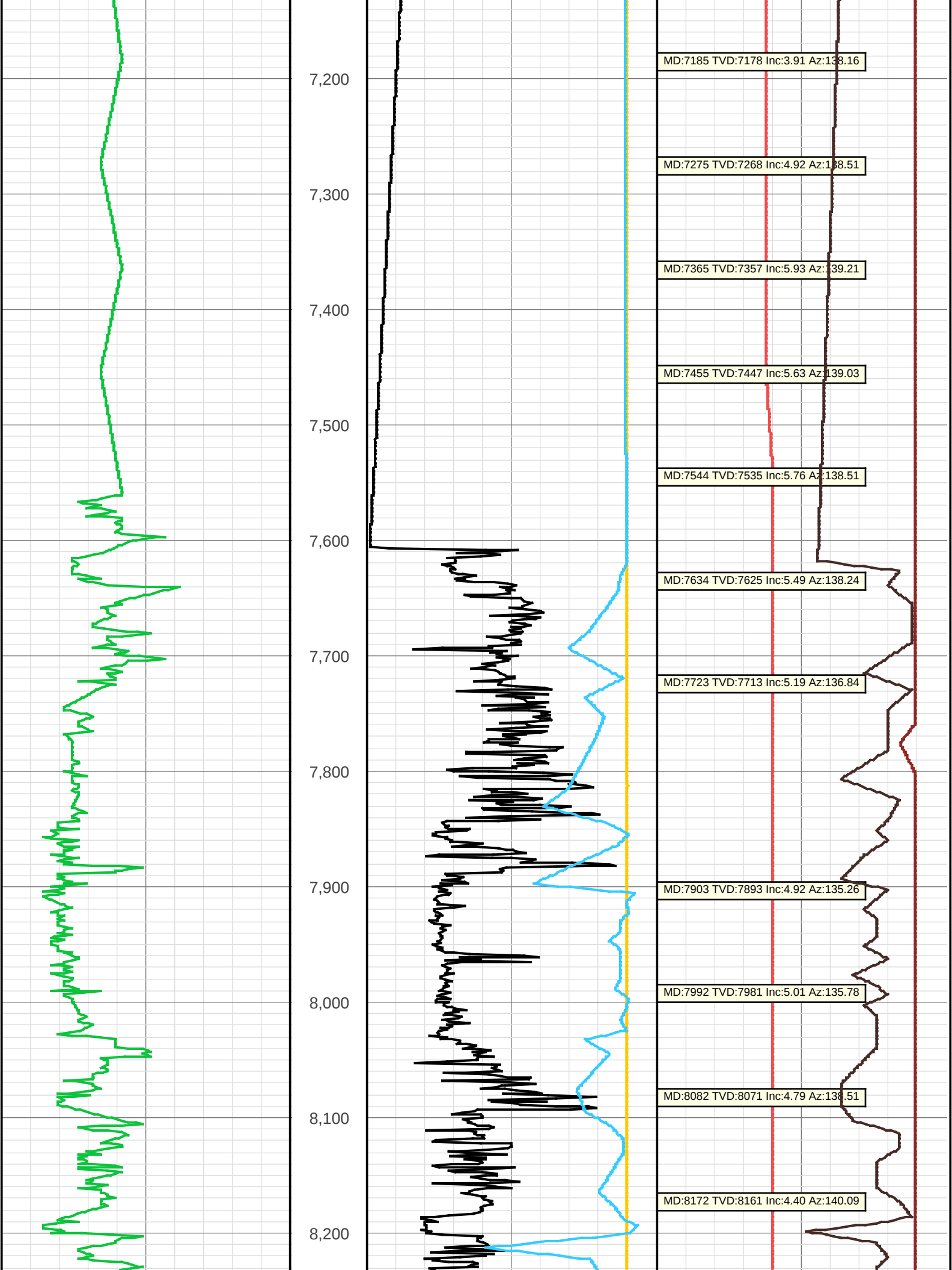
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

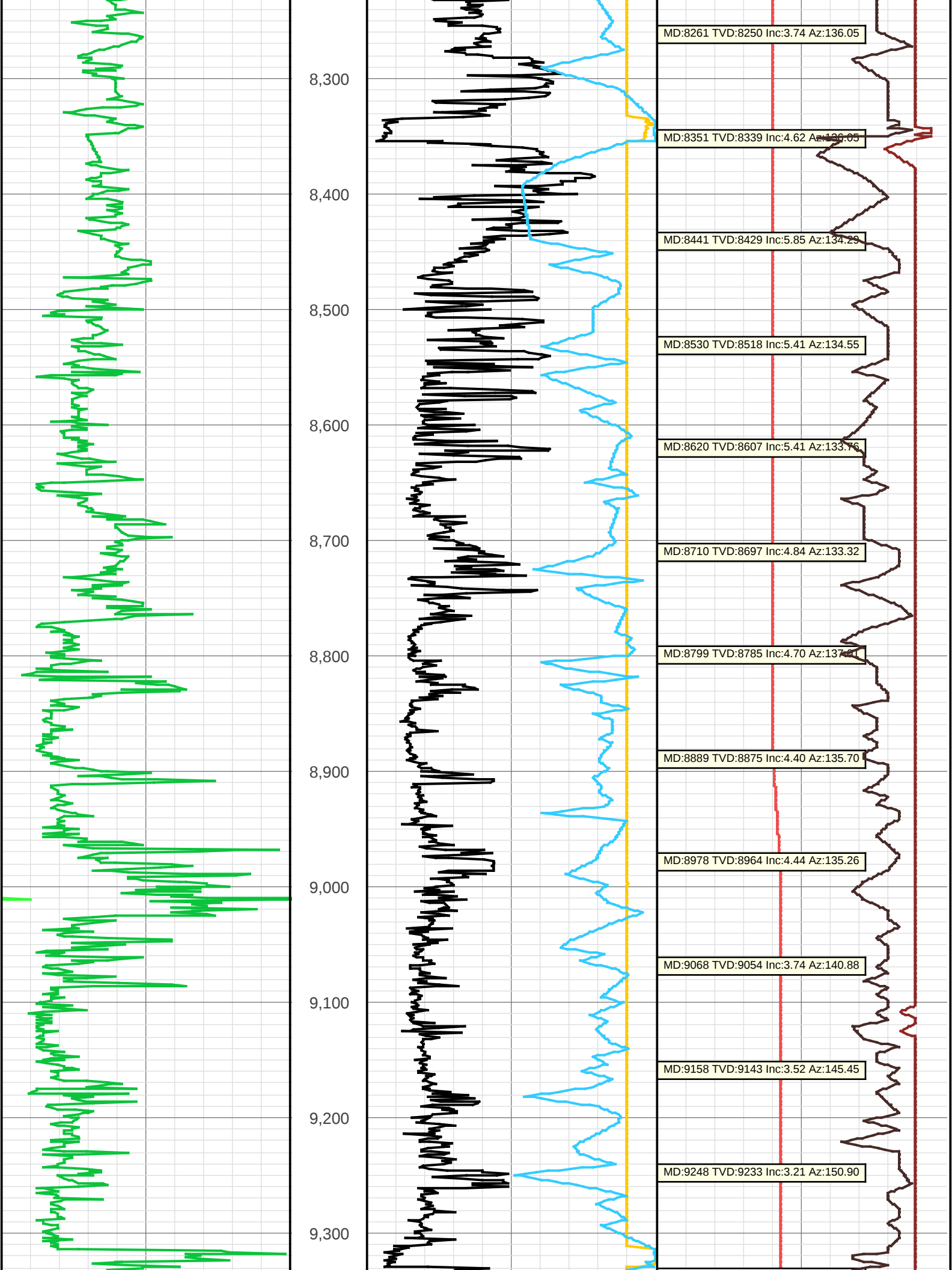
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

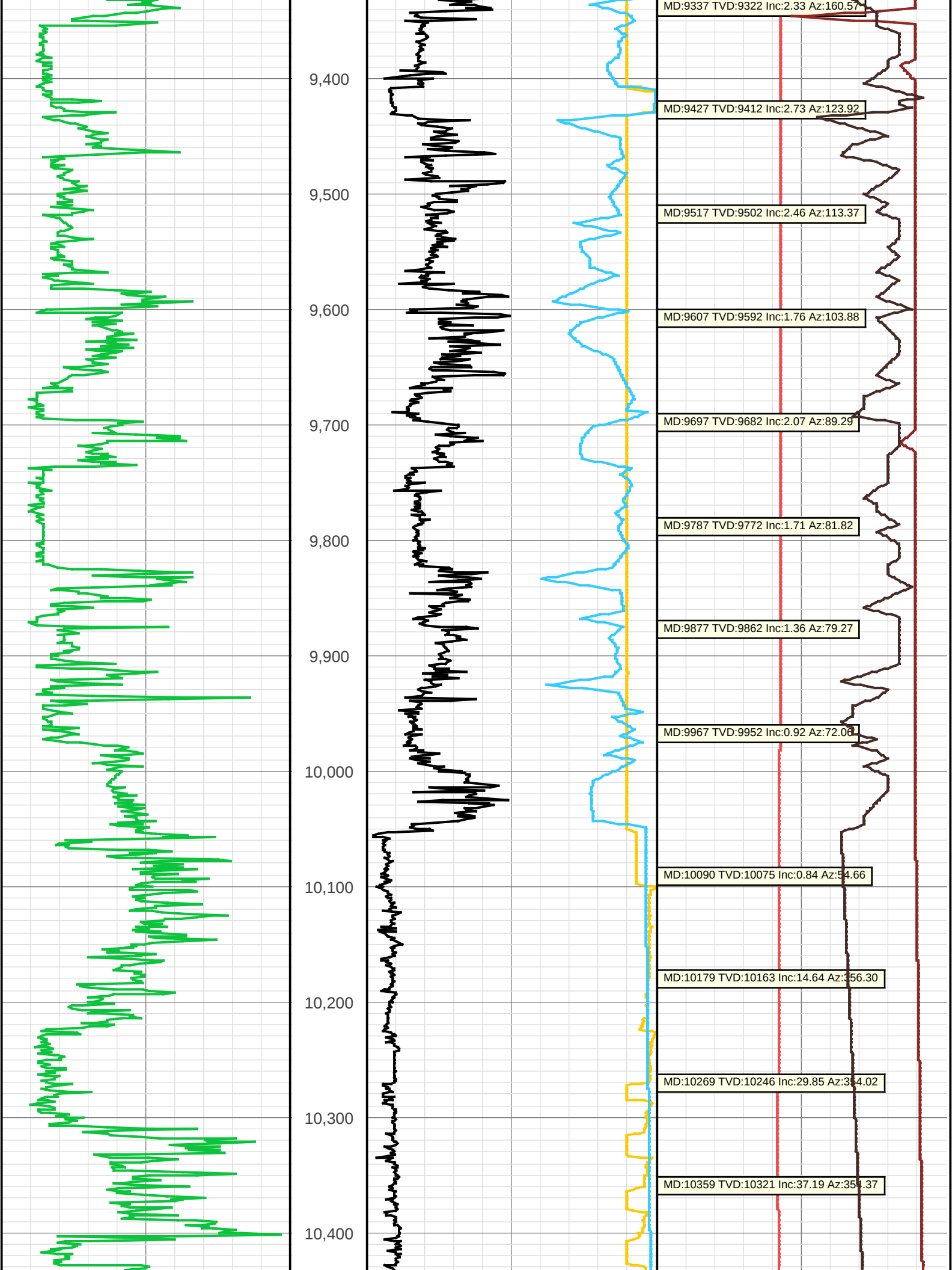
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

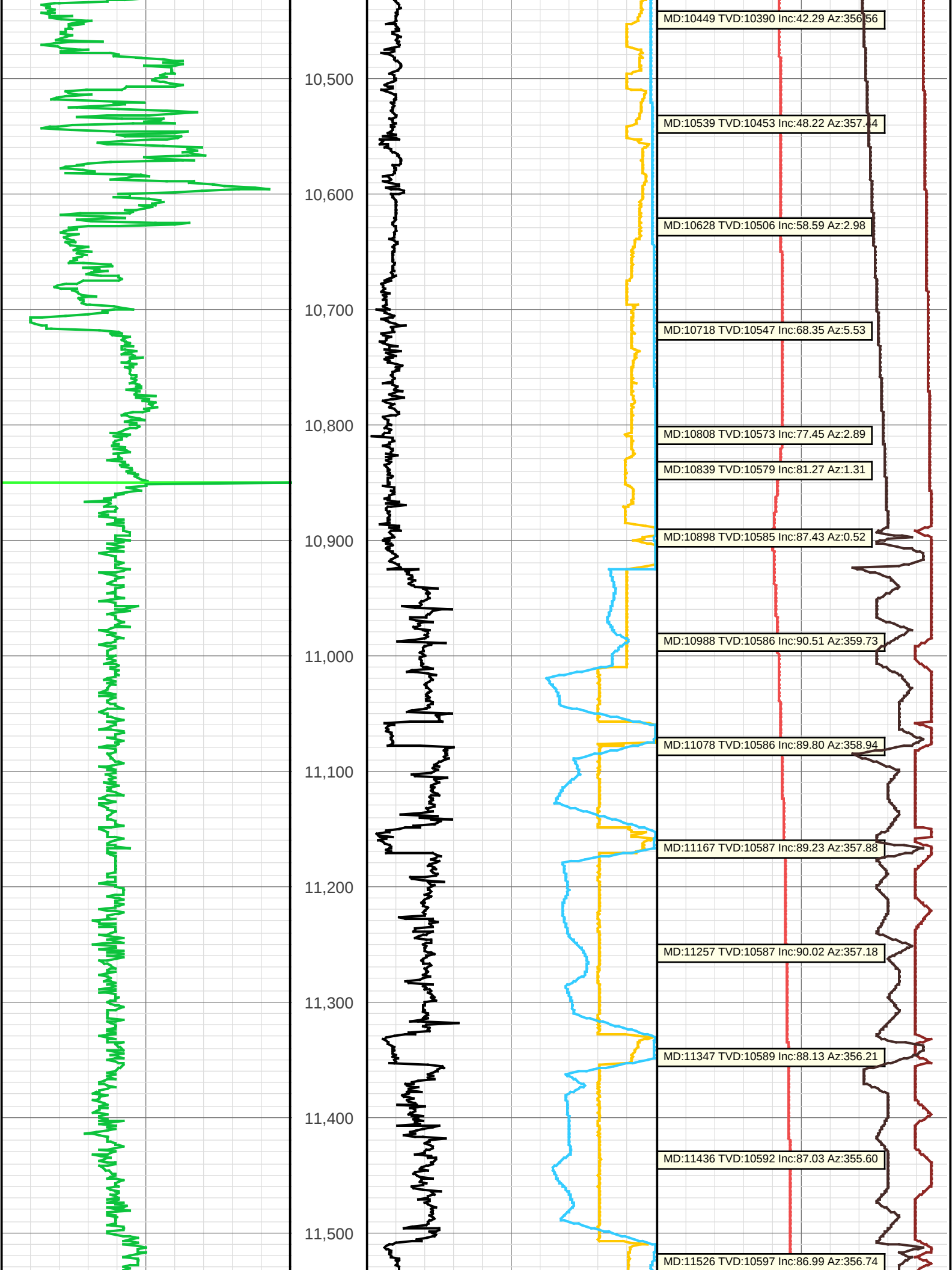


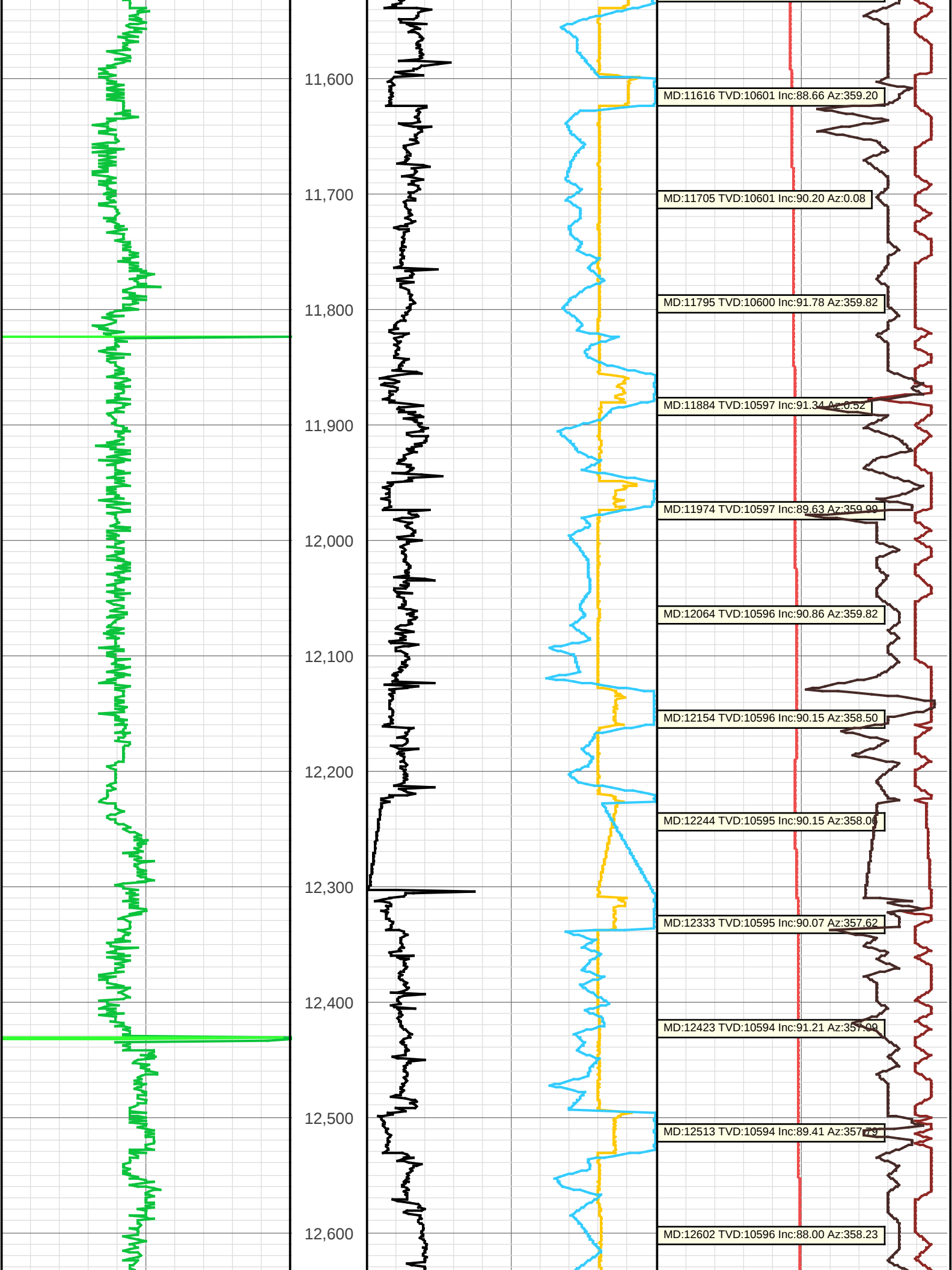


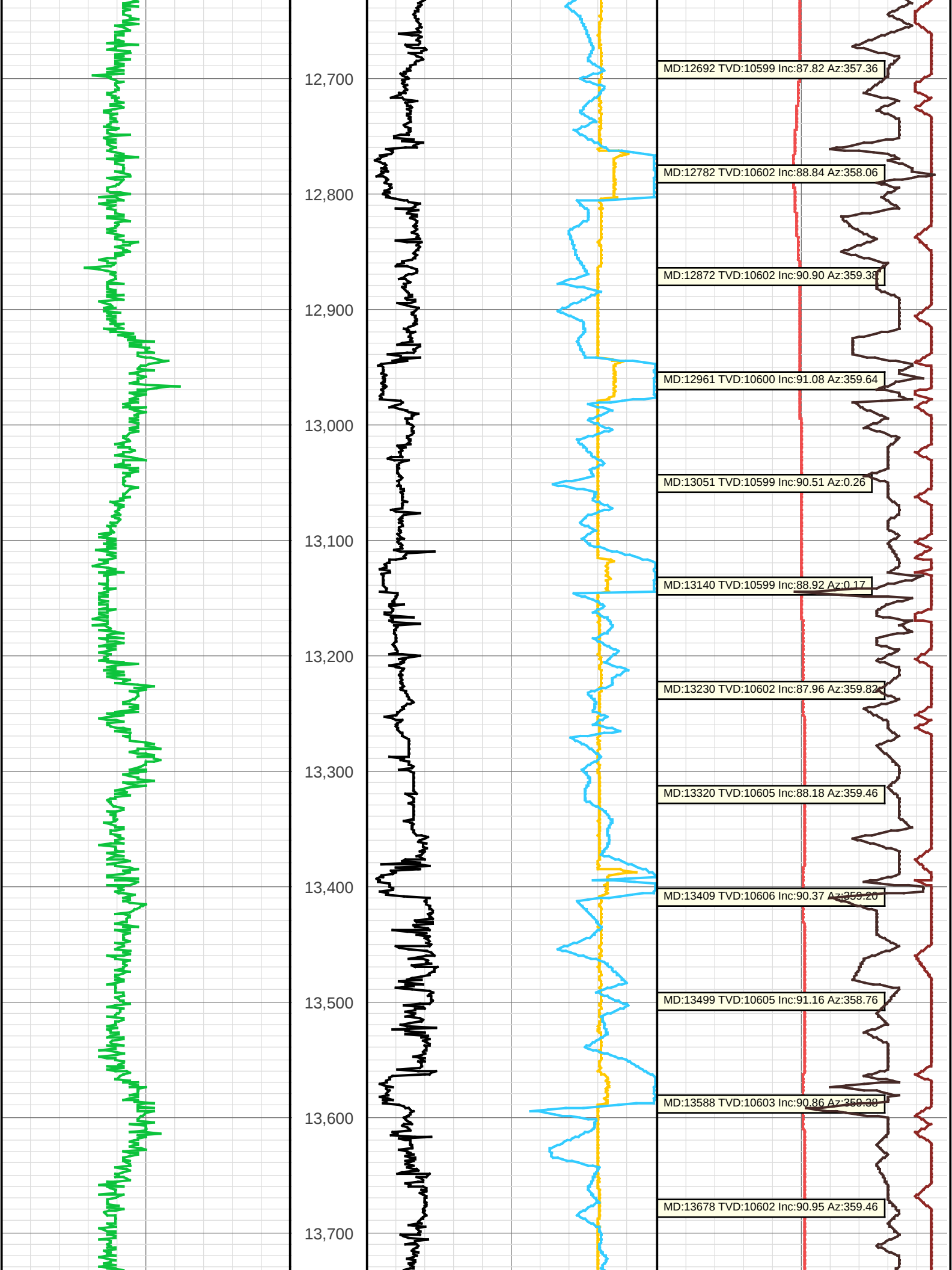


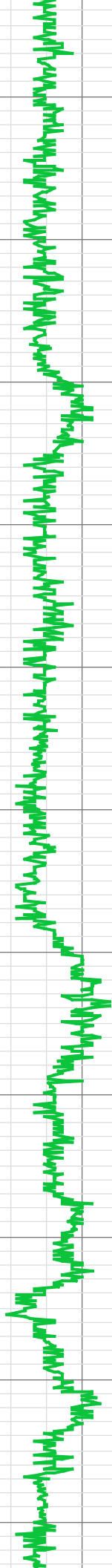












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MD:13768 TVD:10601 Inc:90.24 Az:359.64

MD:13858 TVD:10601 Inc:89.67 Az:359.46

MD:13947 TVD:10600 Inc:91.30 Az:0.69

MD:14037 TVD:10599 Inc:90.07 Az:0.43

MD:14127 TVD:10599 Inc:89.67 Az:0.43

MD:14217 TVD:10599 Inc:90.46 Az:359.92

MD:14307 TVD:10599 Inc:89.76 Az:359.99

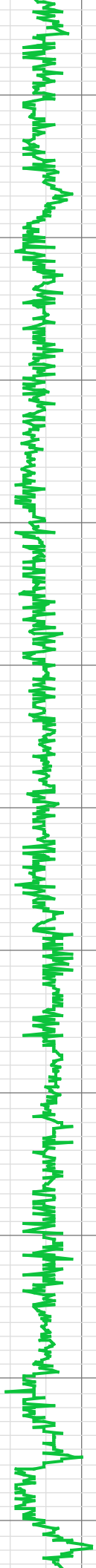
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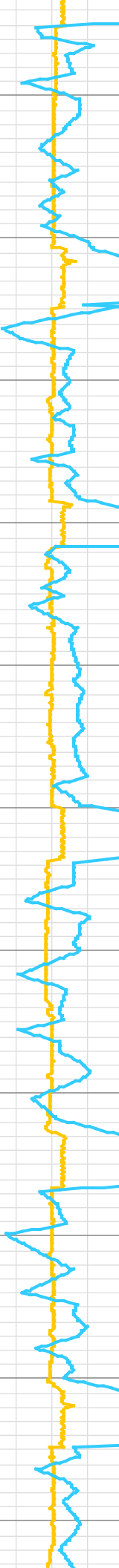
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MD:14666 TVD:10593 Inc:92.53 Az:357.71

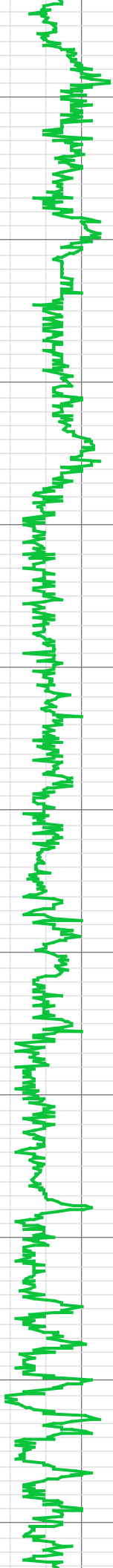
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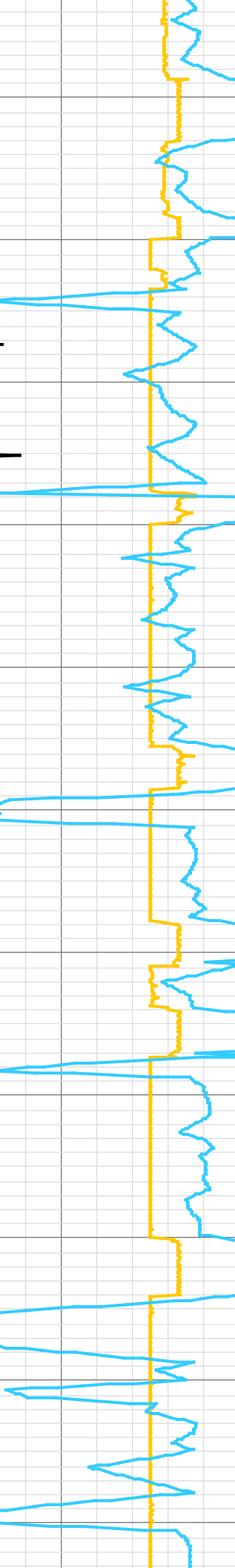
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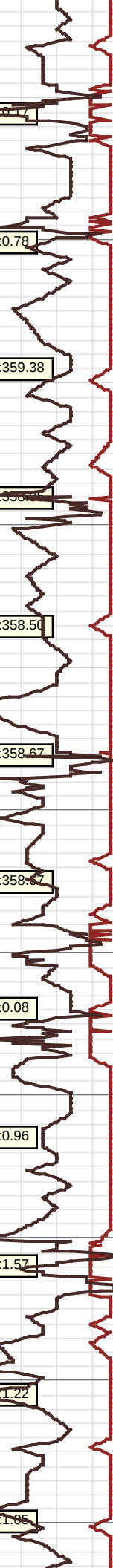
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MD:15115 TVD:10569 Inc:92.26 Az:358.94
MD:15204 TVD:10567 Inc:90.15 Az:359.11
MD:15294 TVD:10566 Inc:90.81 Az:359.90
MD:15383 TVD:10562 Inc:94.02 Az:359.82
MD:15473 TVD:10558 Inc:91.74 Az:1.13
MD:15563 TVD:10554 Inc:93.45 Az:0.69
MD:15652 TVD:10549 Inc:92.48 Az:0.52
MD:15742 TVD:10545 Inc:93.10 Az:359.82
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MD:15922 TVD:10535 Inc:93.54 Az:0.26

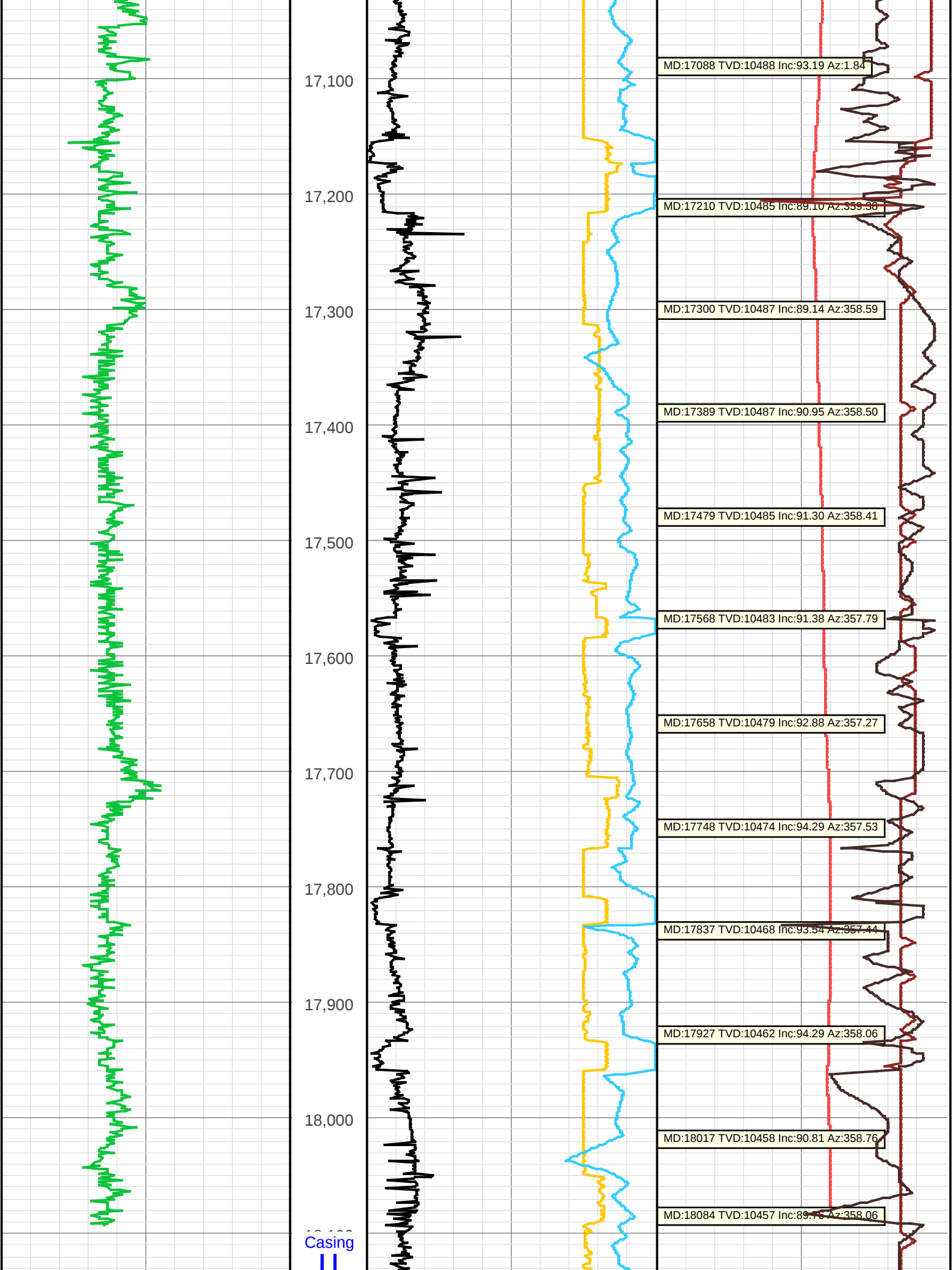


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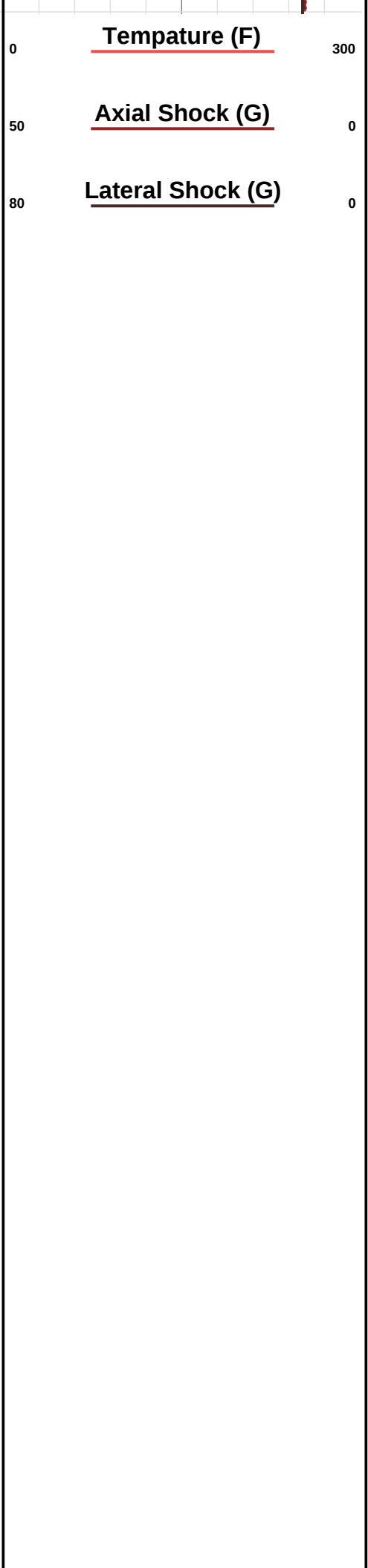
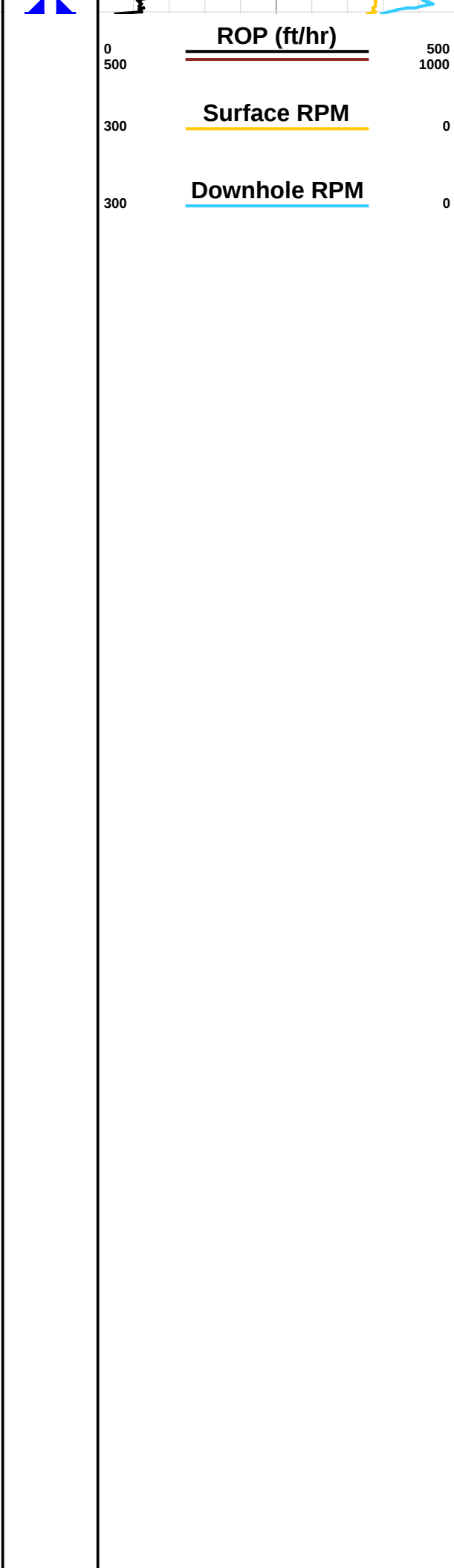
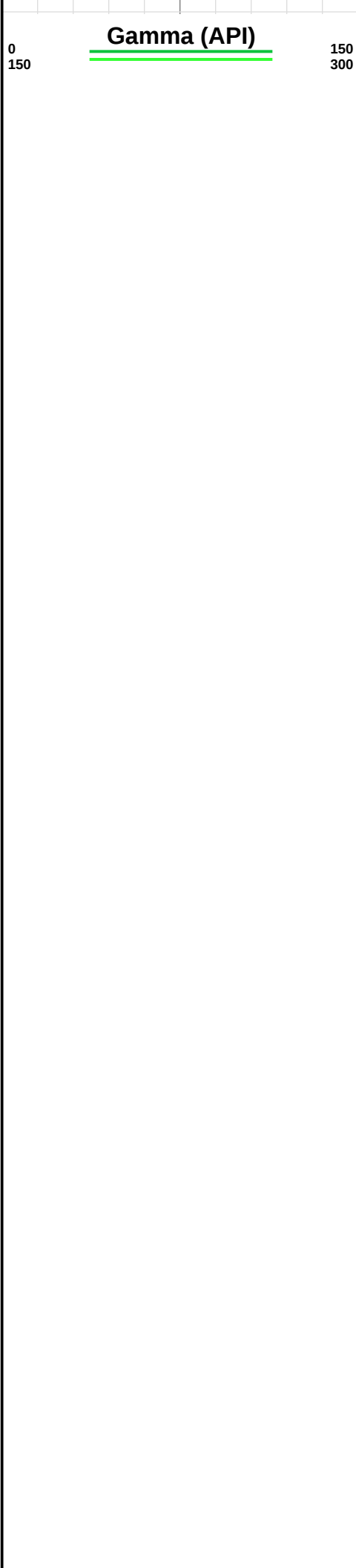


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MD:16101 TVD:10528 Inc:90.15 Az:0.78
MD:16190 TVD:10527 Inc:91.43 Az:359.38
MD:16280 TVD:10524 Inc:92.66 Az:356.41
MD:16370 TVD:10519 Inc:92.70 Az:358.50
MD:16460 TVD:10514 Inc:93.80 Az:358.67
MD:16549 TVD:10508 Inc:93.80 Az:358.67
MD:16639 TVD:10504 Inc:91.96 Az:0.08
MD:16729 TVD:10500 Inc:92.31 Az:0.96
MD:16819 TVD:10496 Inc:92.84 Az:1.57
MD:16909 TVD:10493 Inc:91.25 Az:1.22
MD:16998 TVD:10491 Inc:91.25 Az:1.05





Casing
=





Intrepid-DDS
10314 TX-191
Midland, TX 79707

1" = 100'
TVD FT

Gamma Ray

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
Country: USA
Rig: HP 466
AFE: NM0090
Job: ID2387

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State New Mexico
Country USA
Rig: HP 466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20
Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level
Log Measured From: Rotary Table
Height of Reference: 26.5
Kelly Bushing Elev: N/A
Drill Floor Elev: 3752.5
Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 04:35

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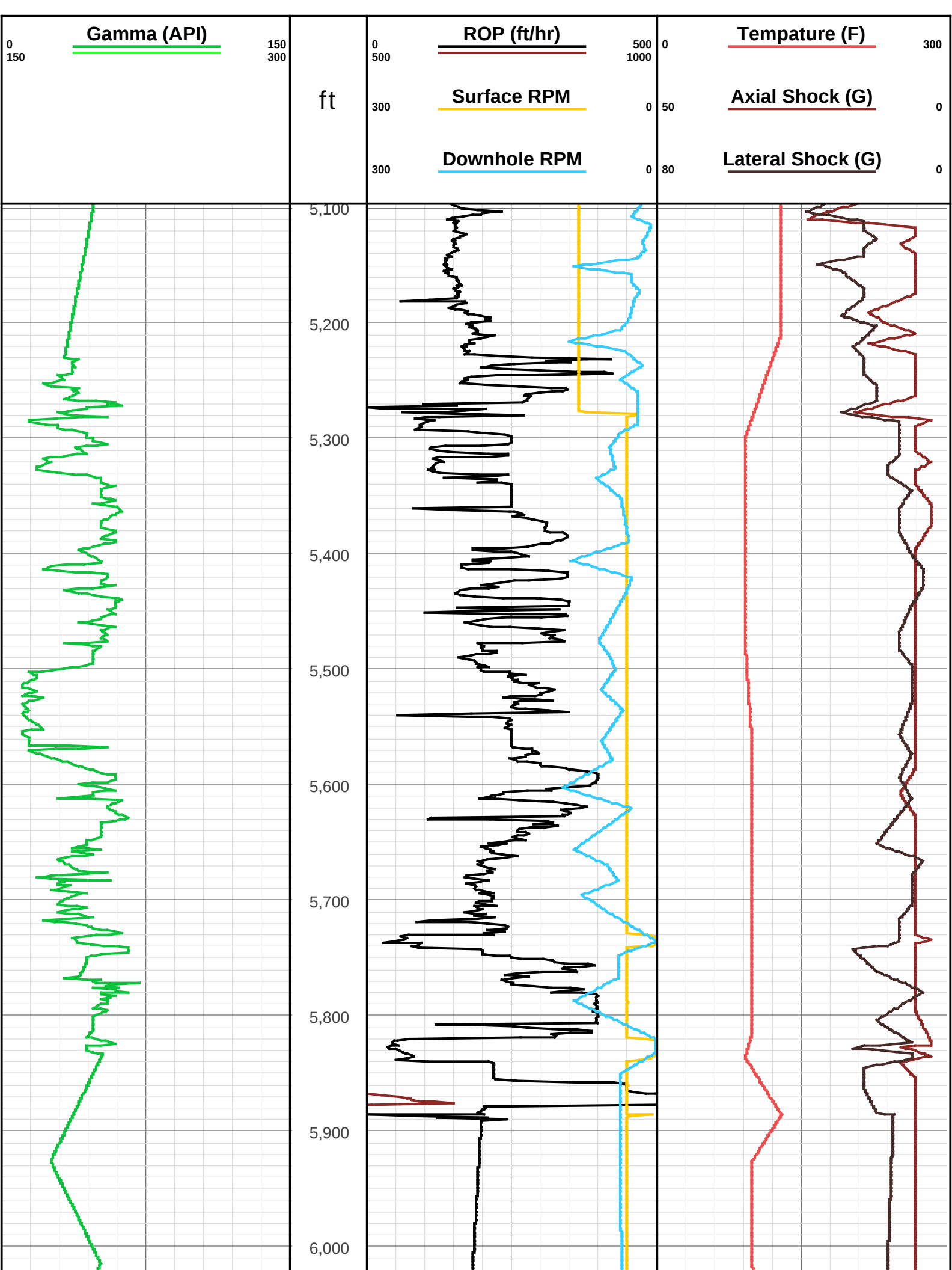
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

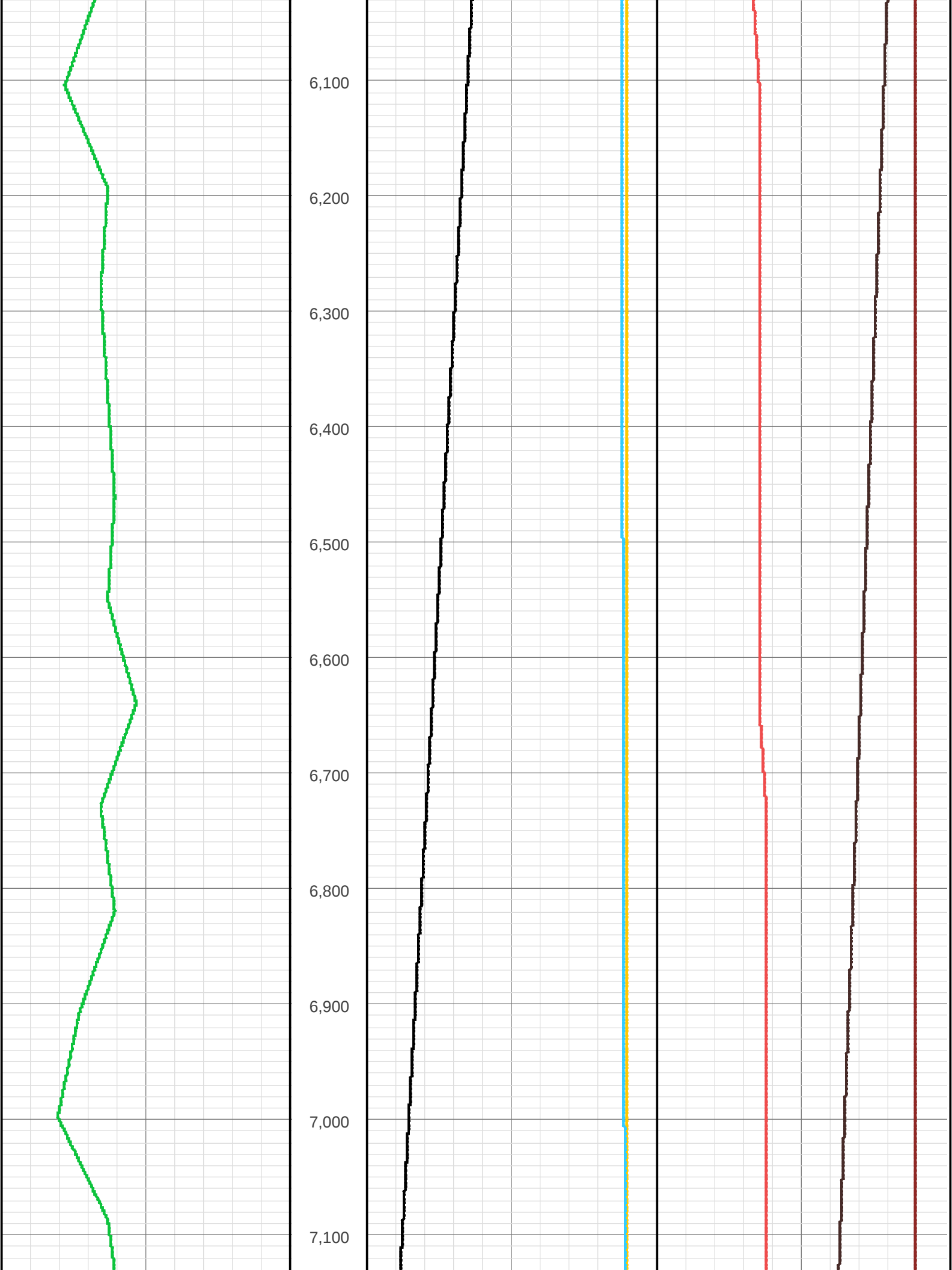
Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

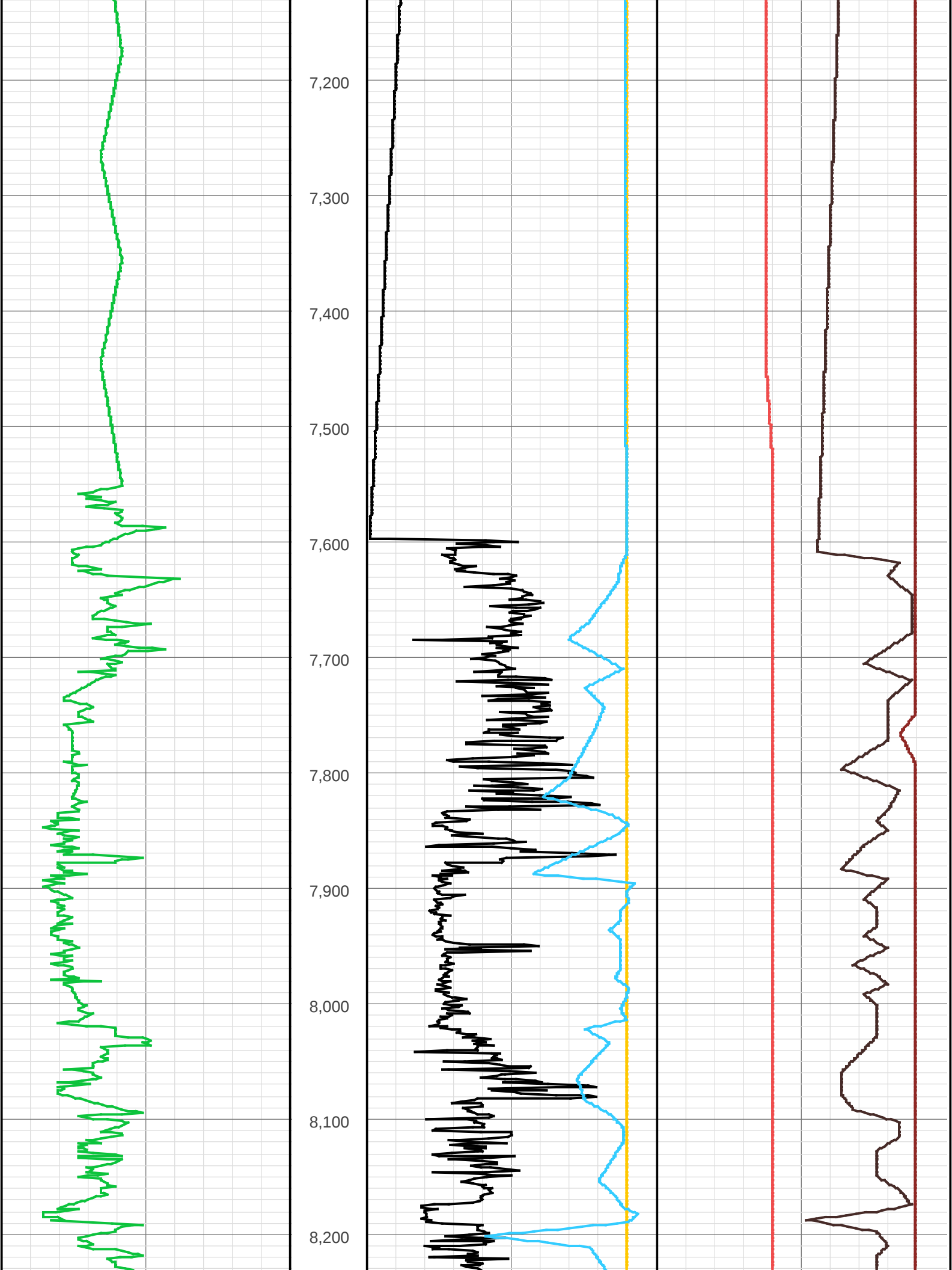
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

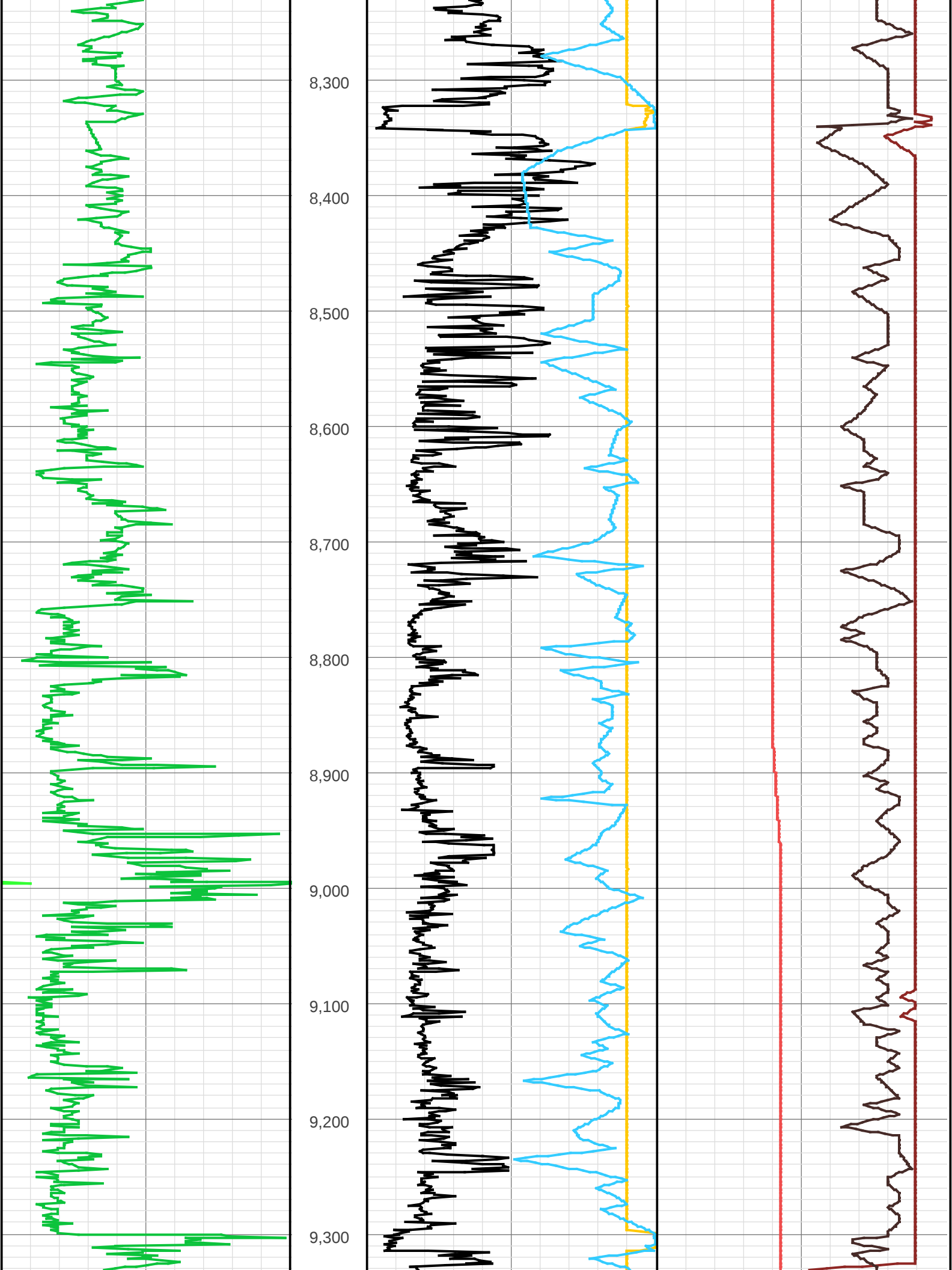
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

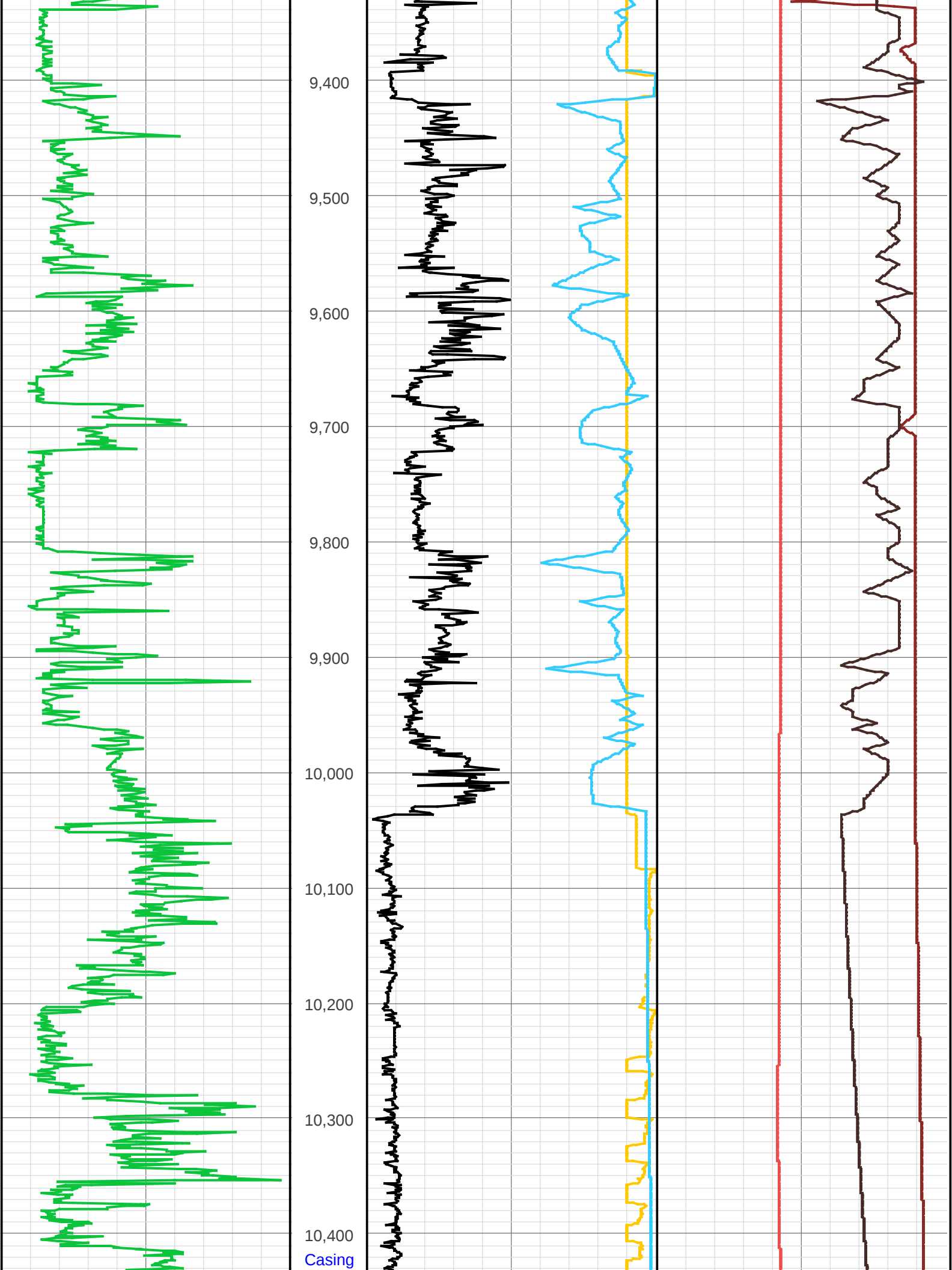
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

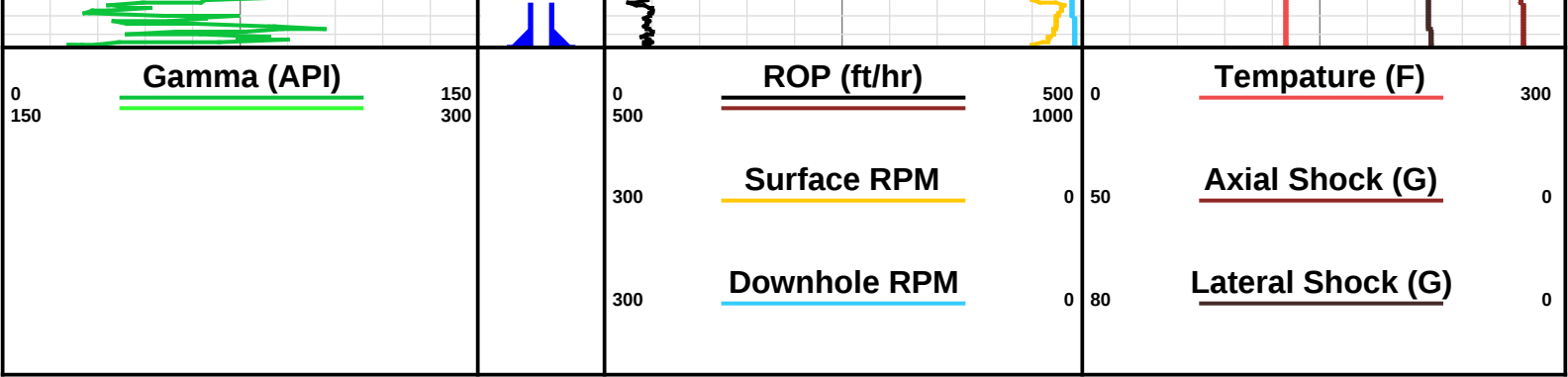














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10314 TX-191
Midland, TX 79707

2" = 100'
MD FT

Gamma Ray

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Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
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Rig: HP 466
AFE: NM0090
Job: ID2387

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Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
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Rig: HP 466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20
Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3752.5
Height of Reference: 26.5 Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 04:35

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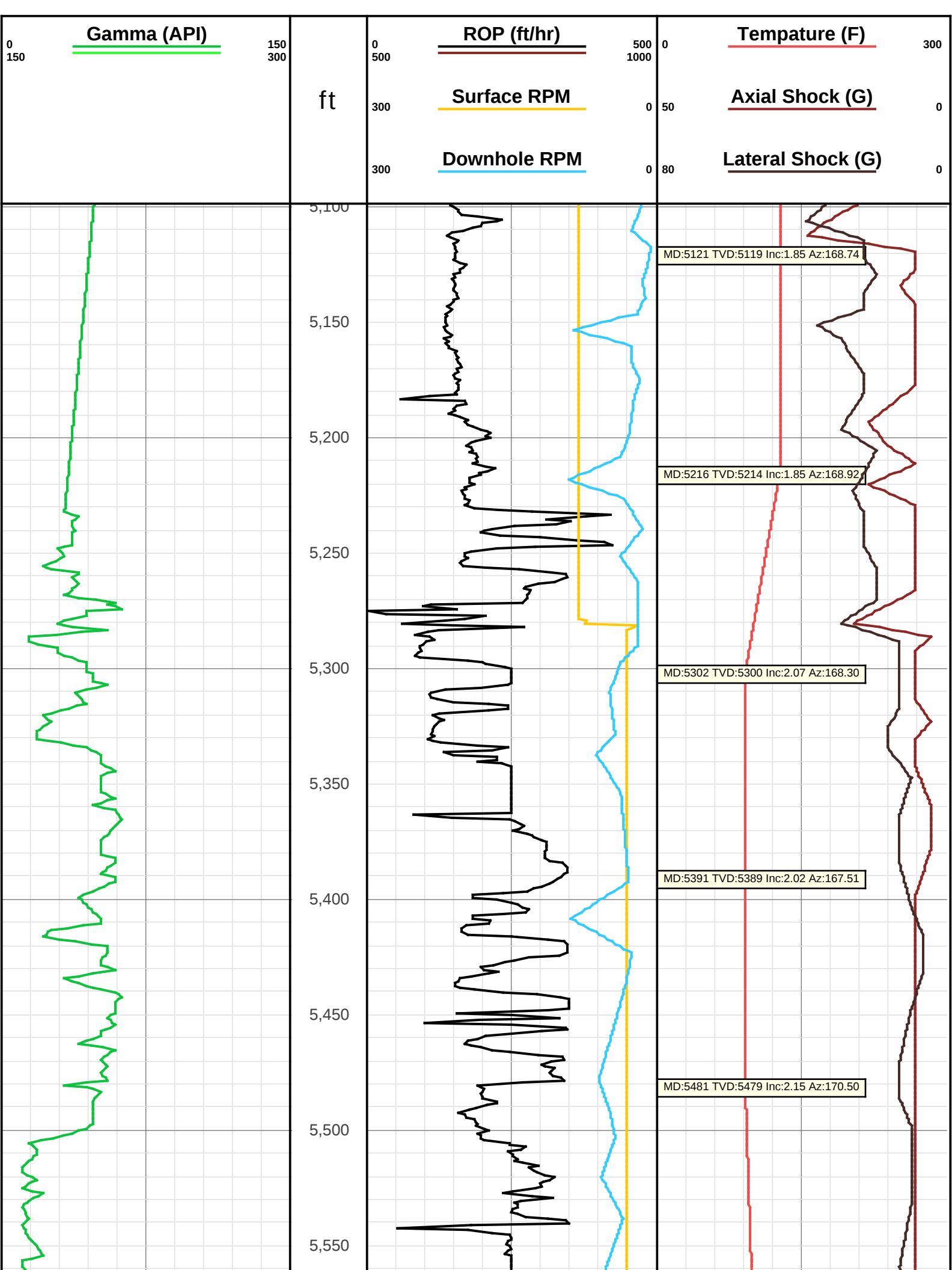
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

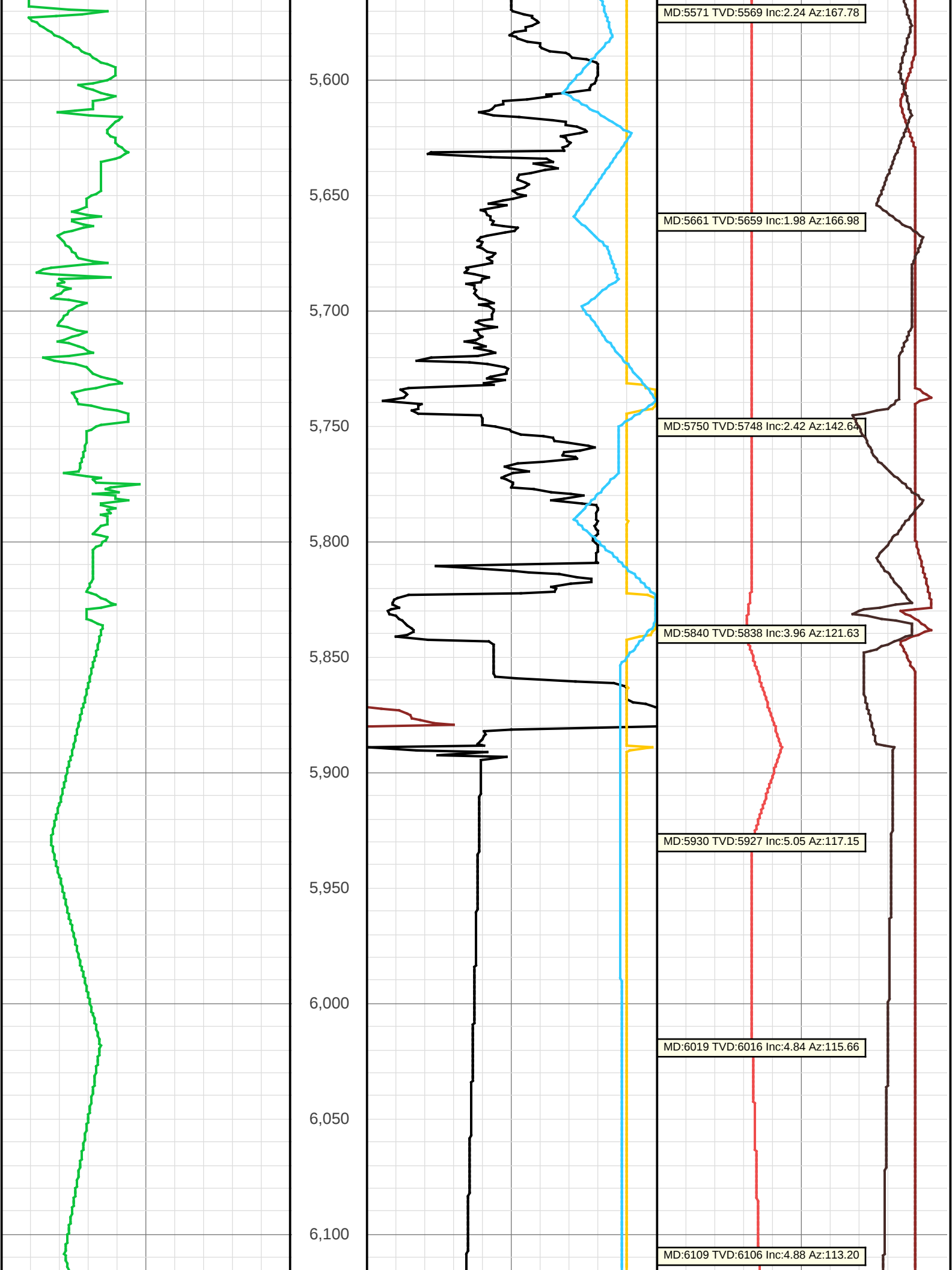
Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

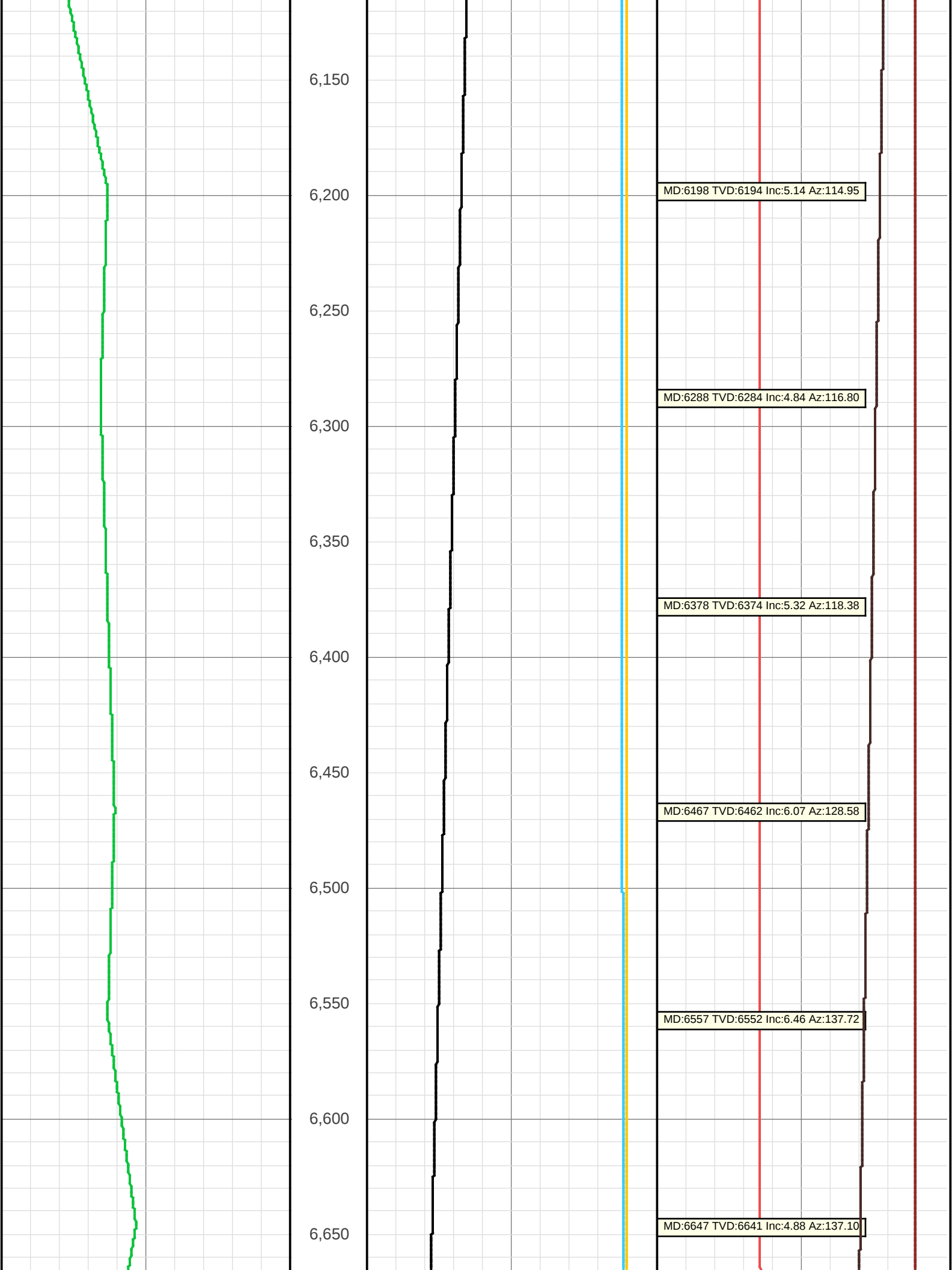
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

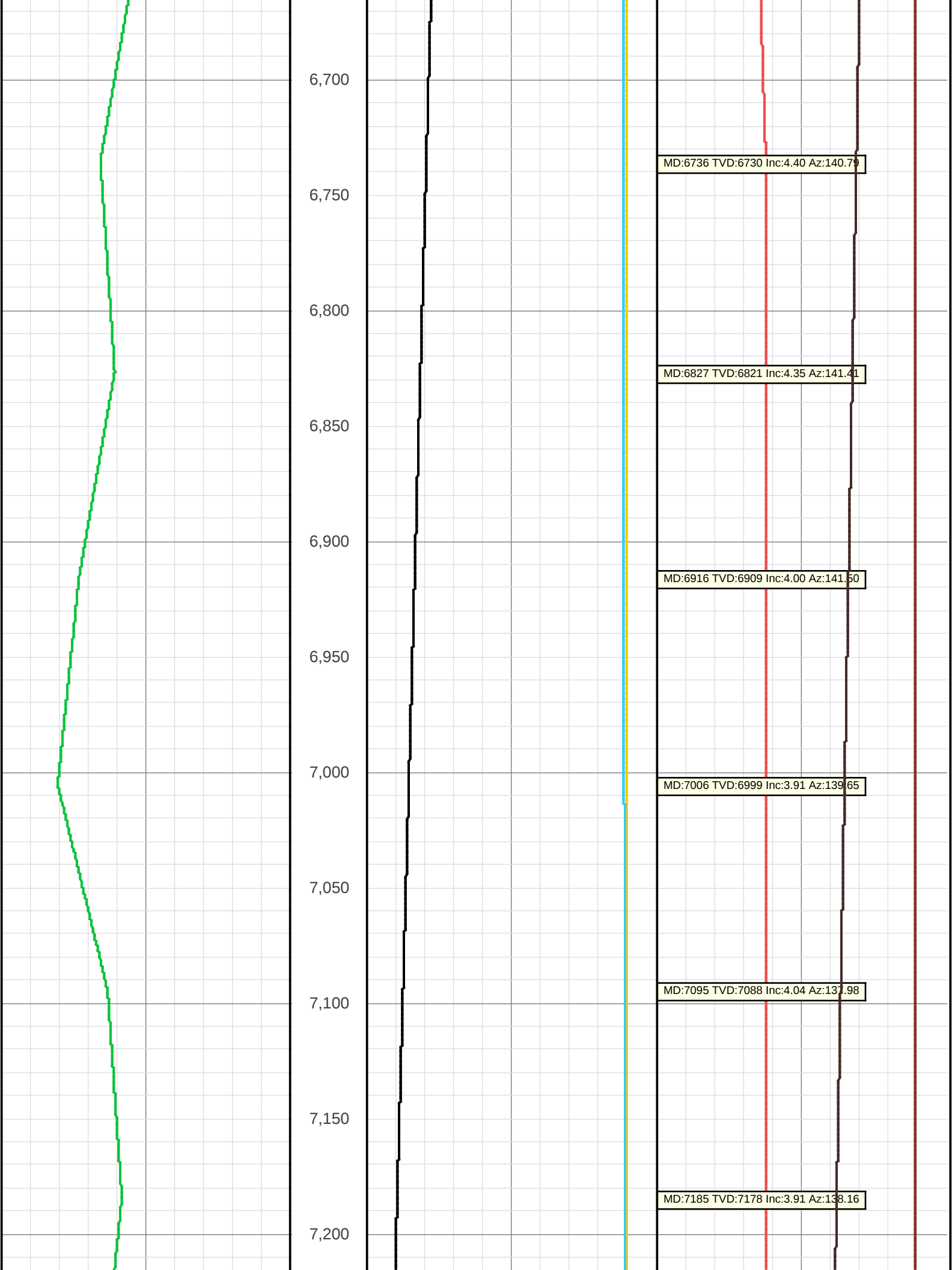
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

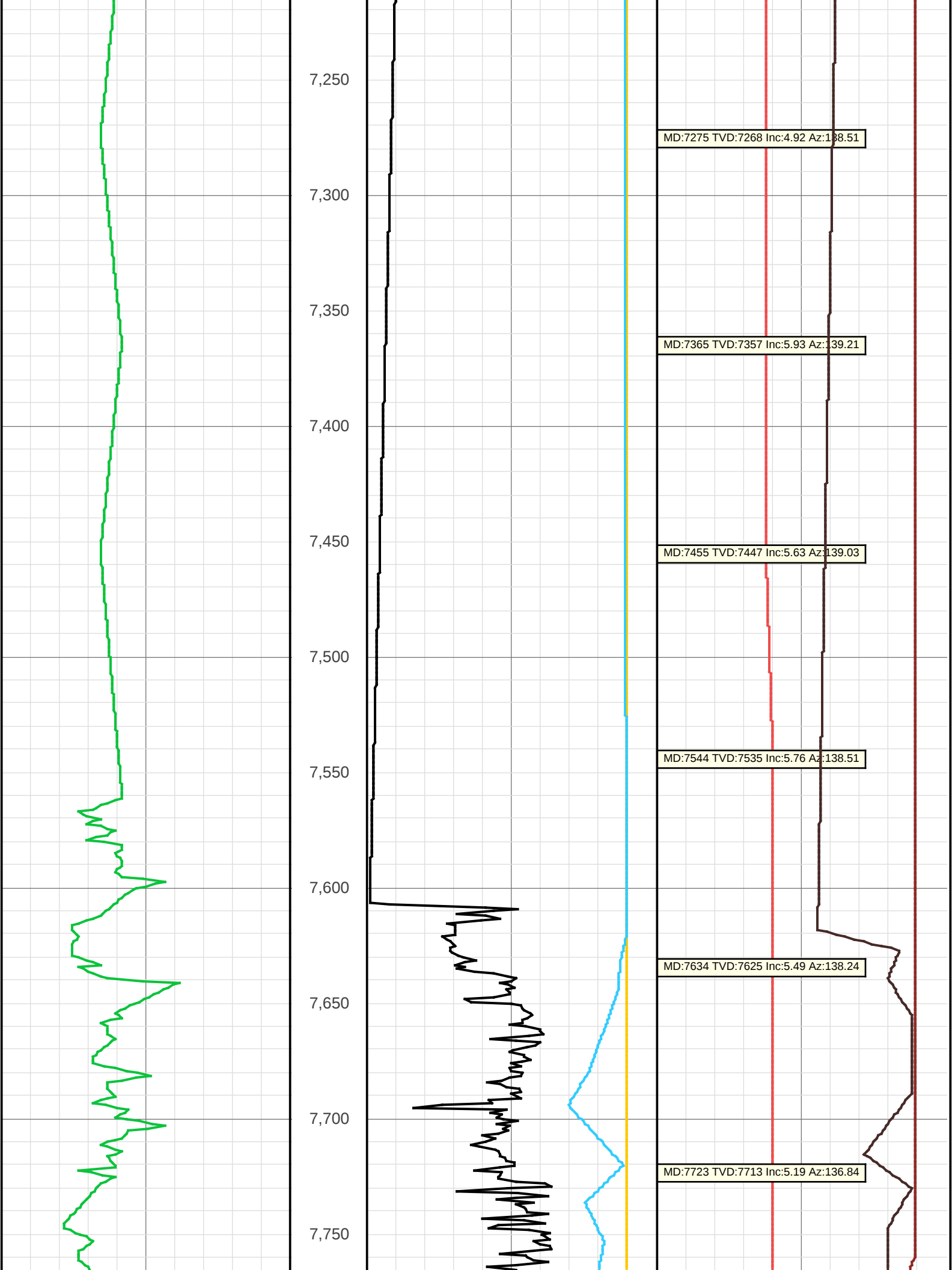
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

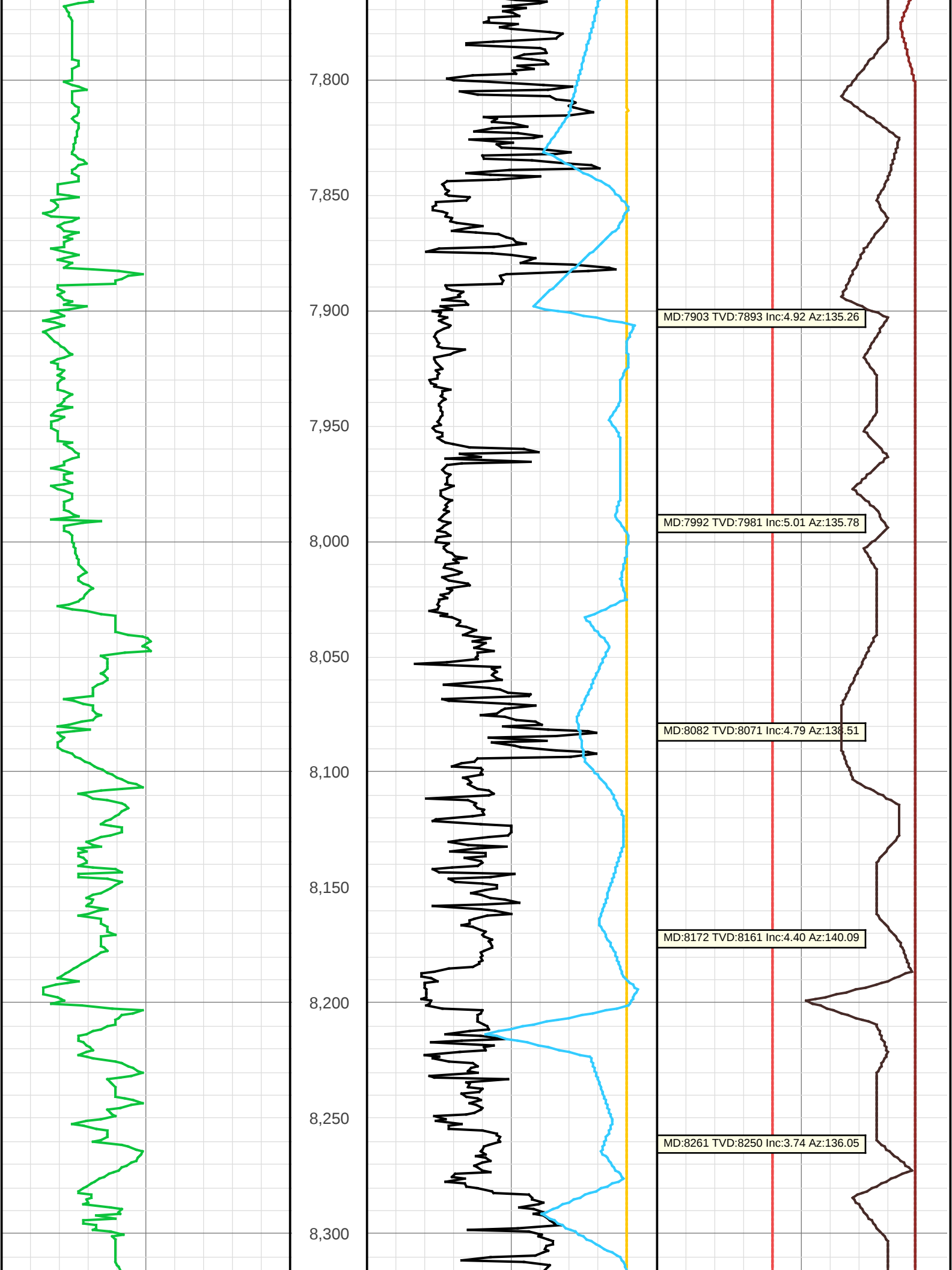


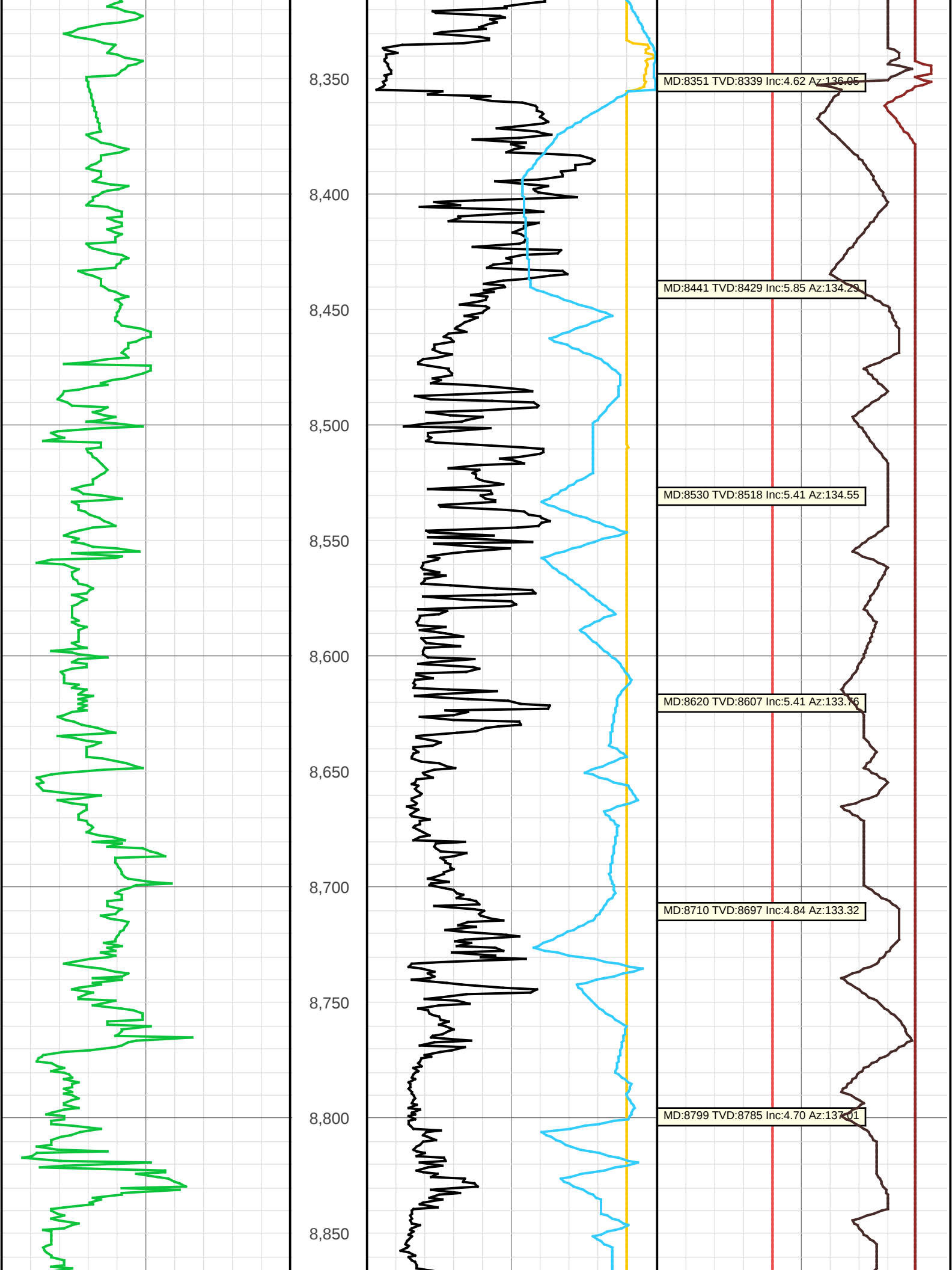


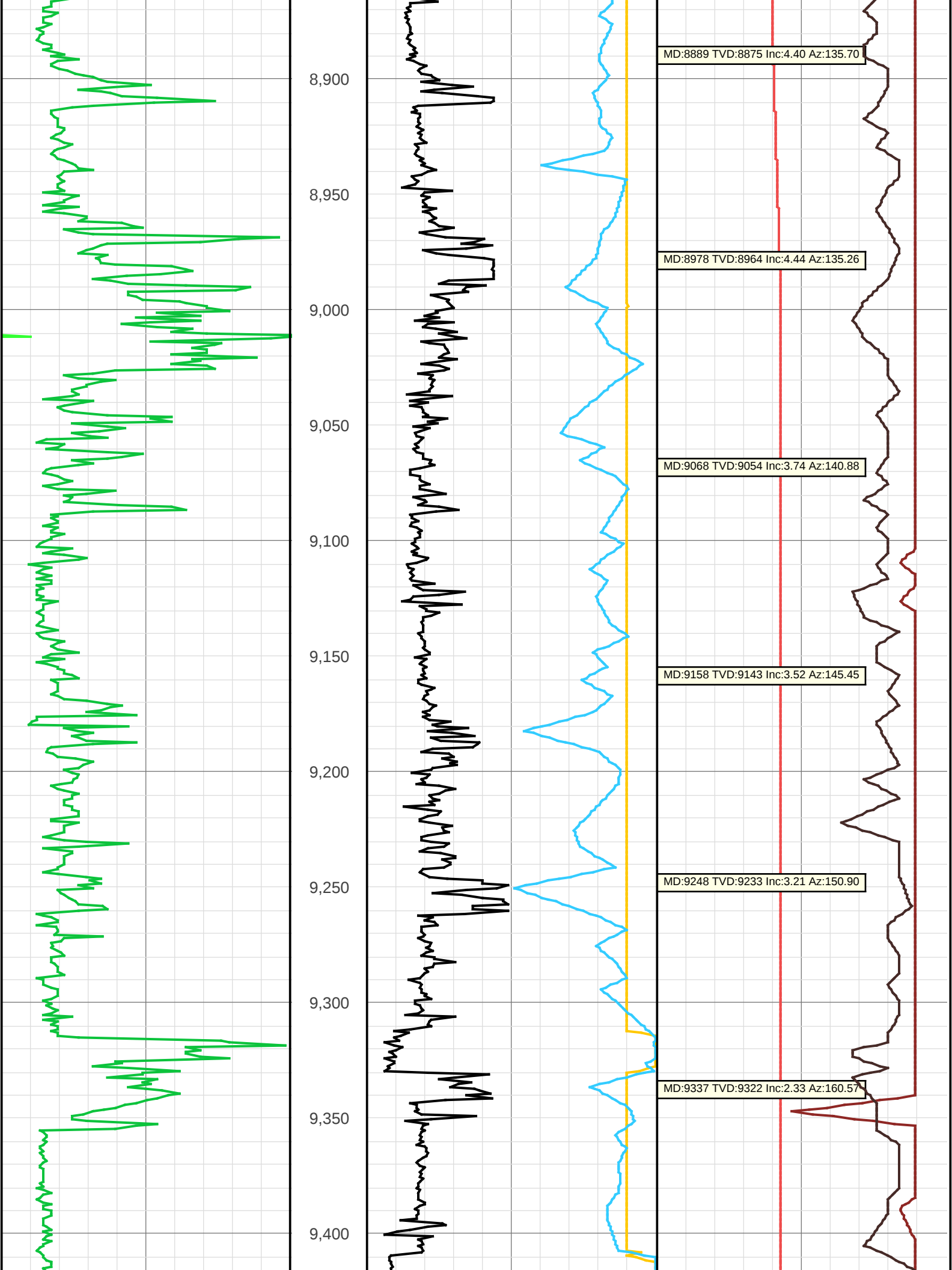


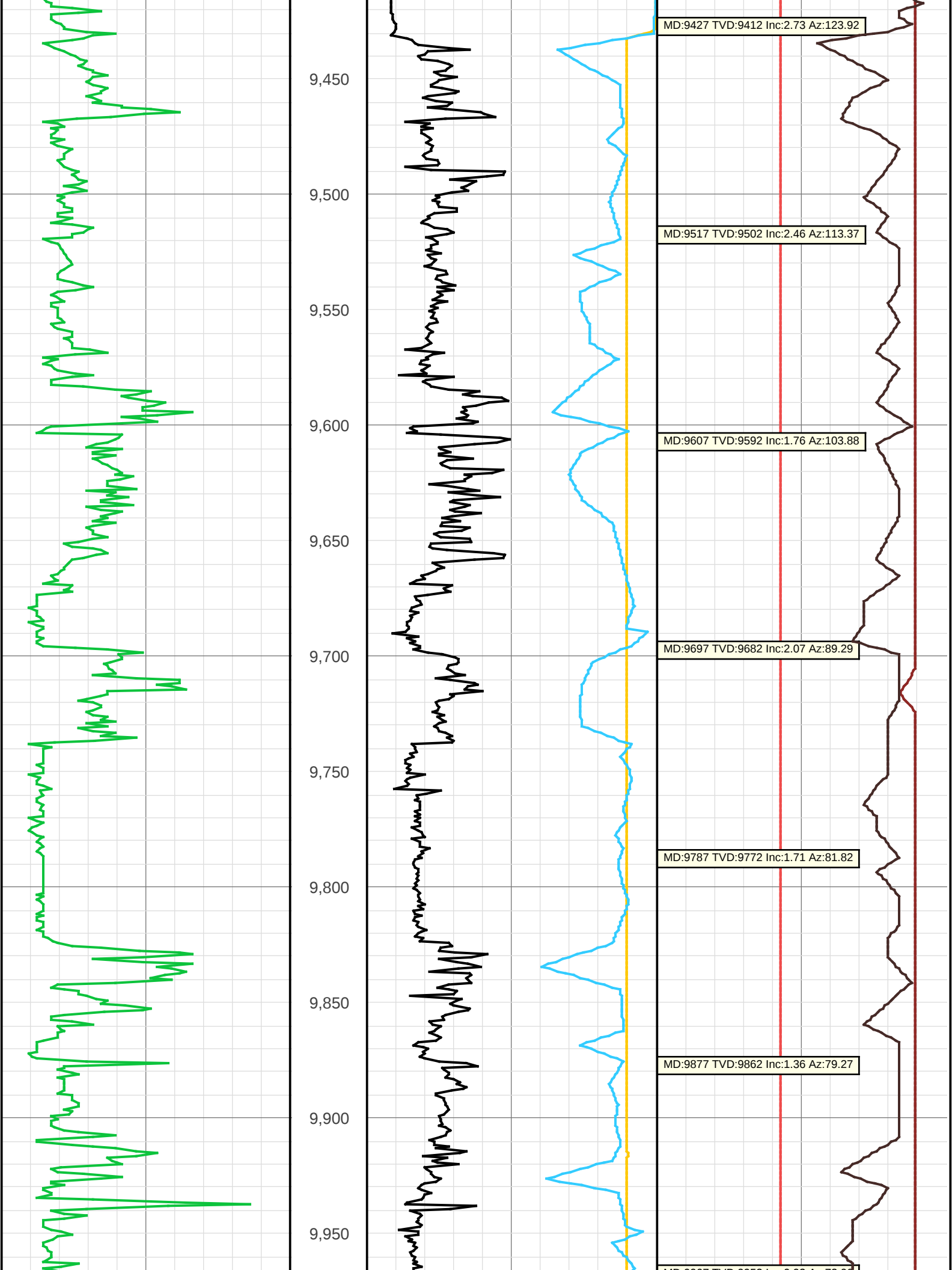


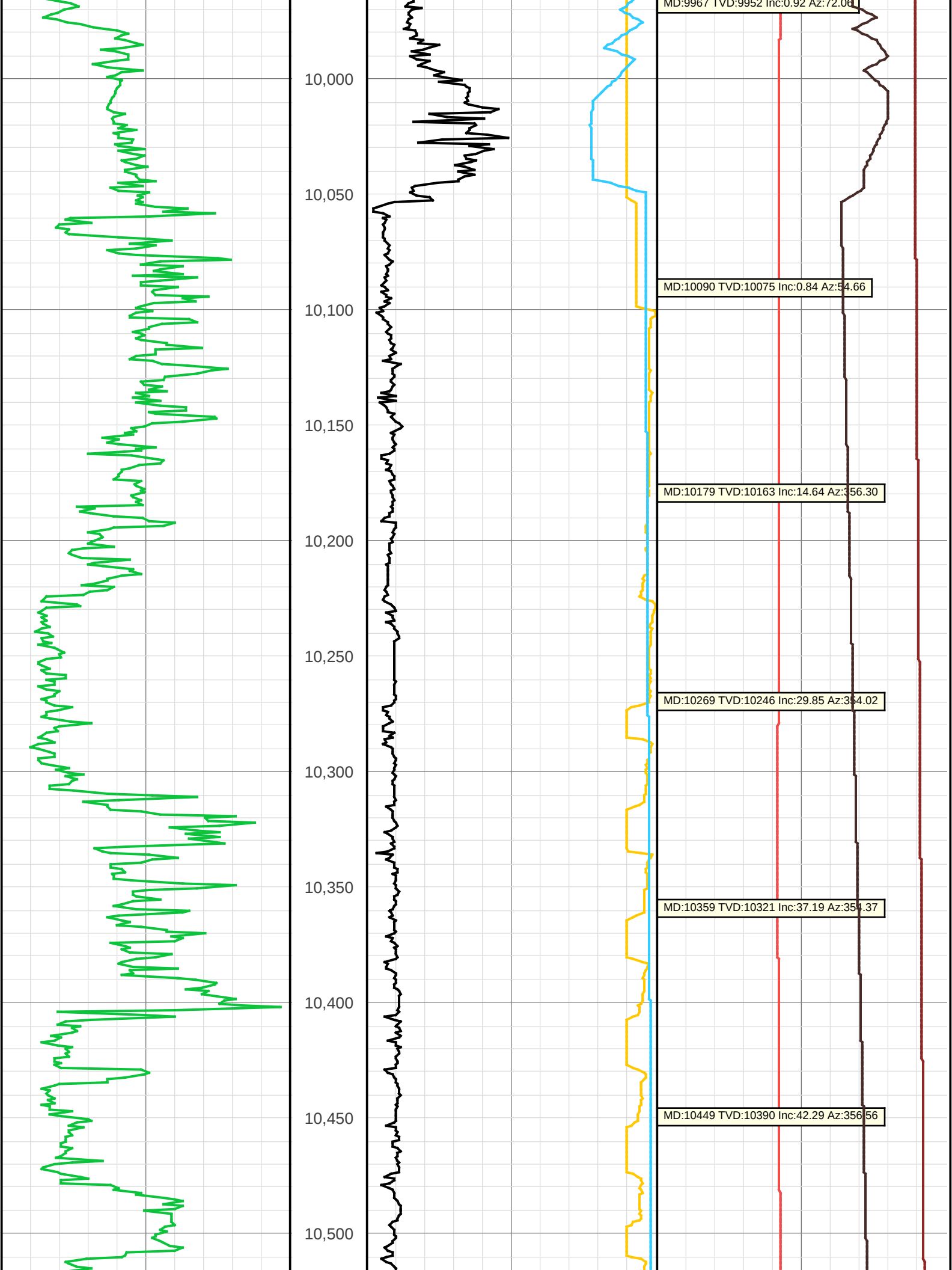


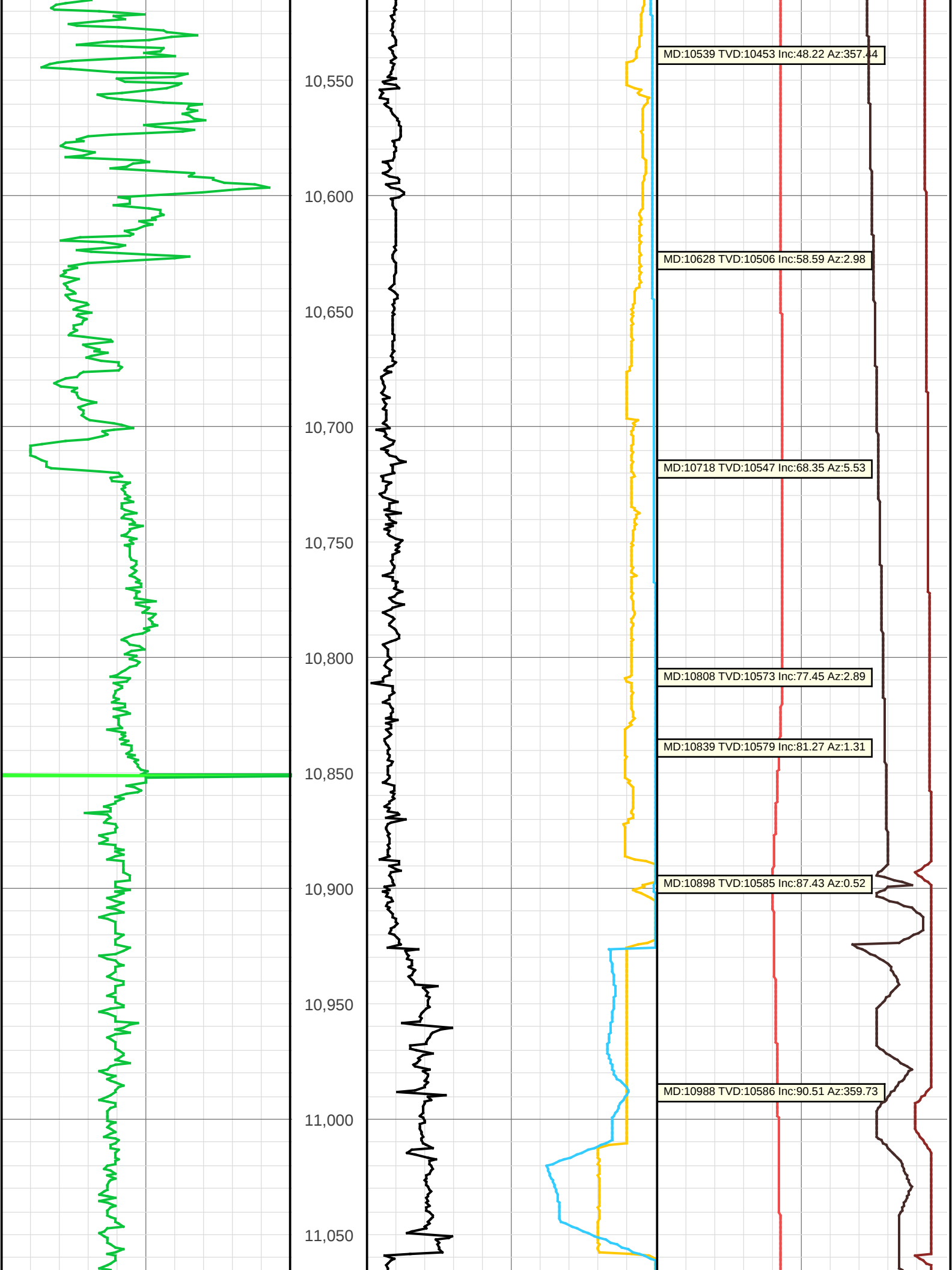


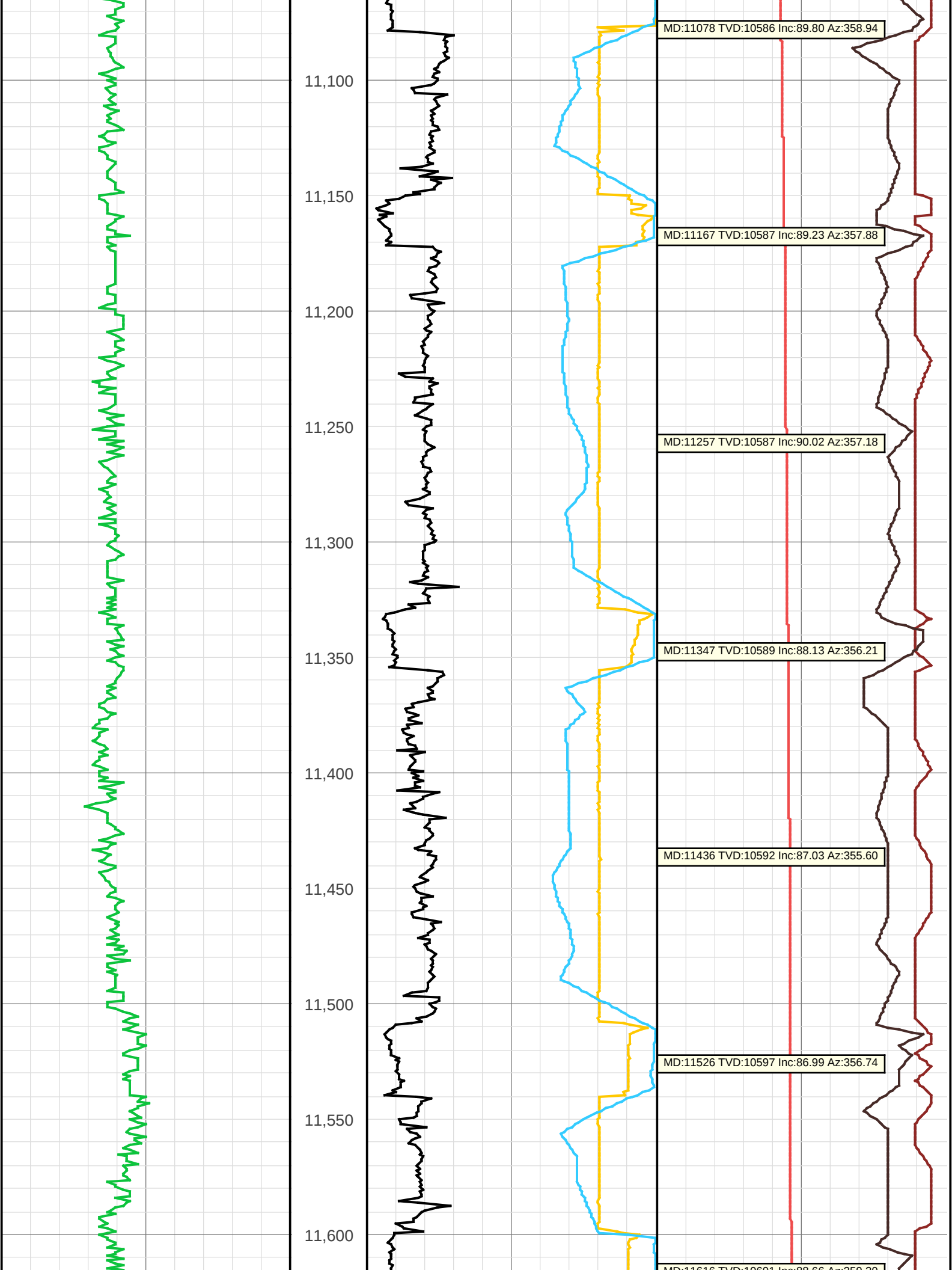


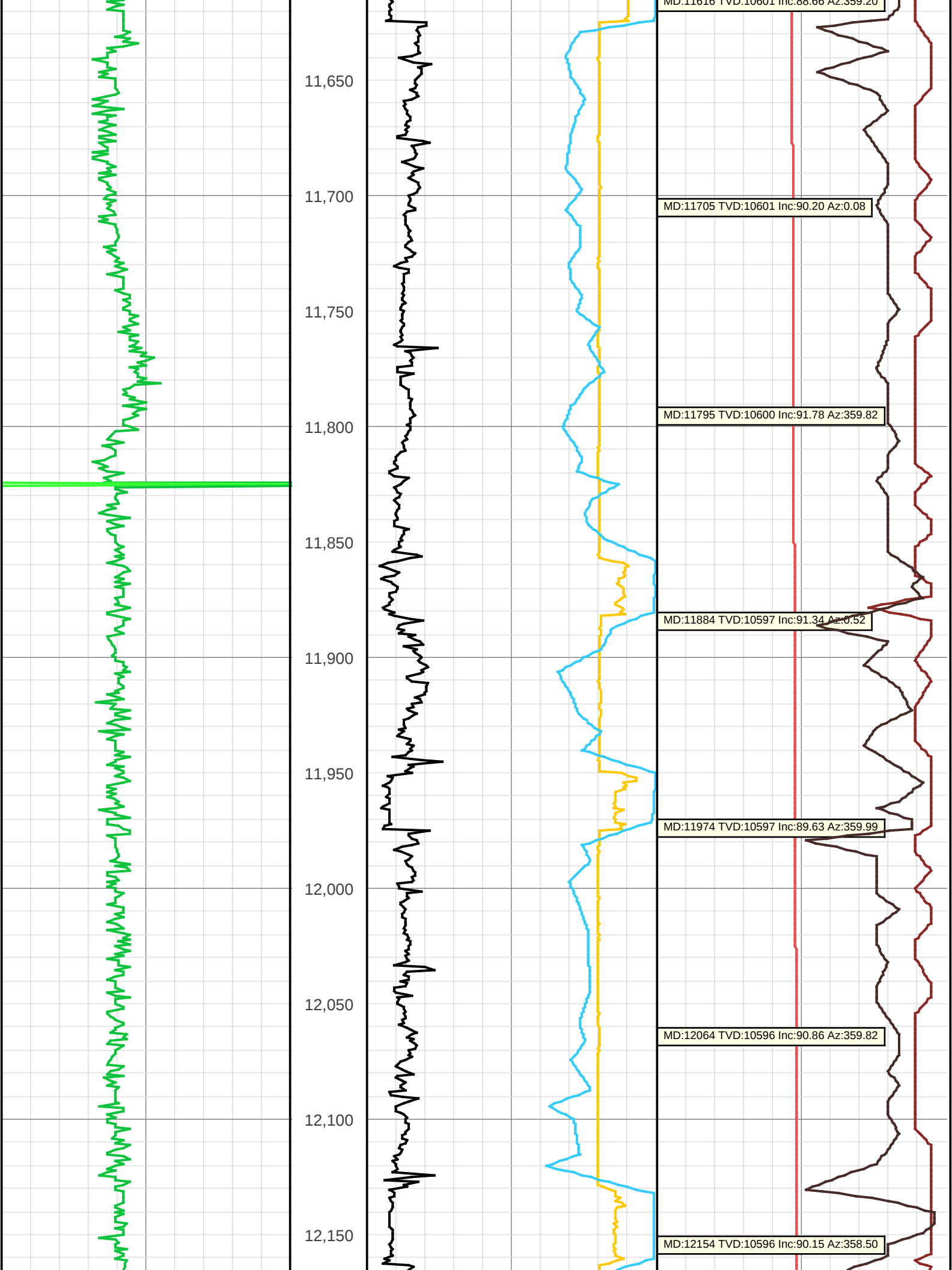


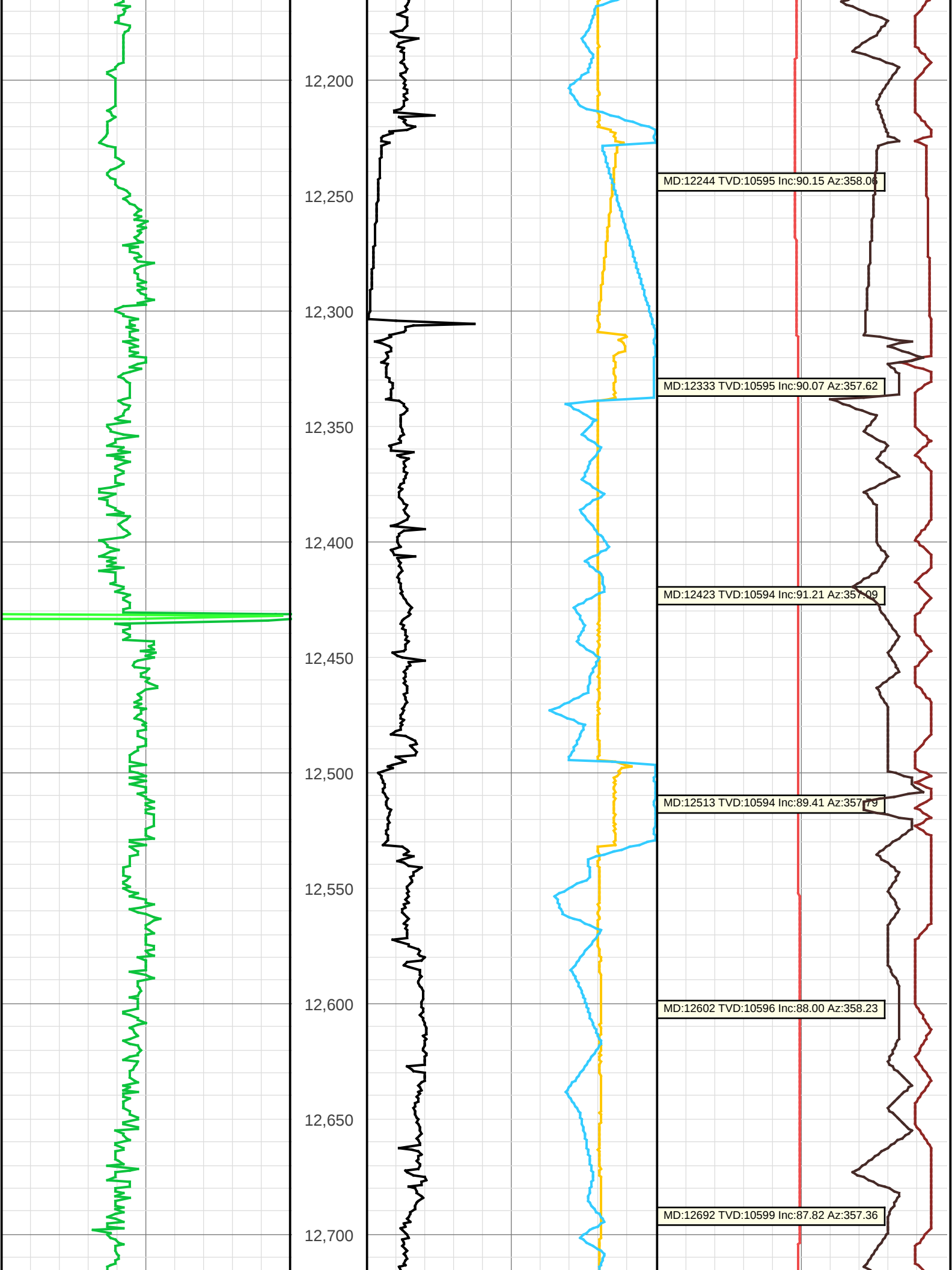


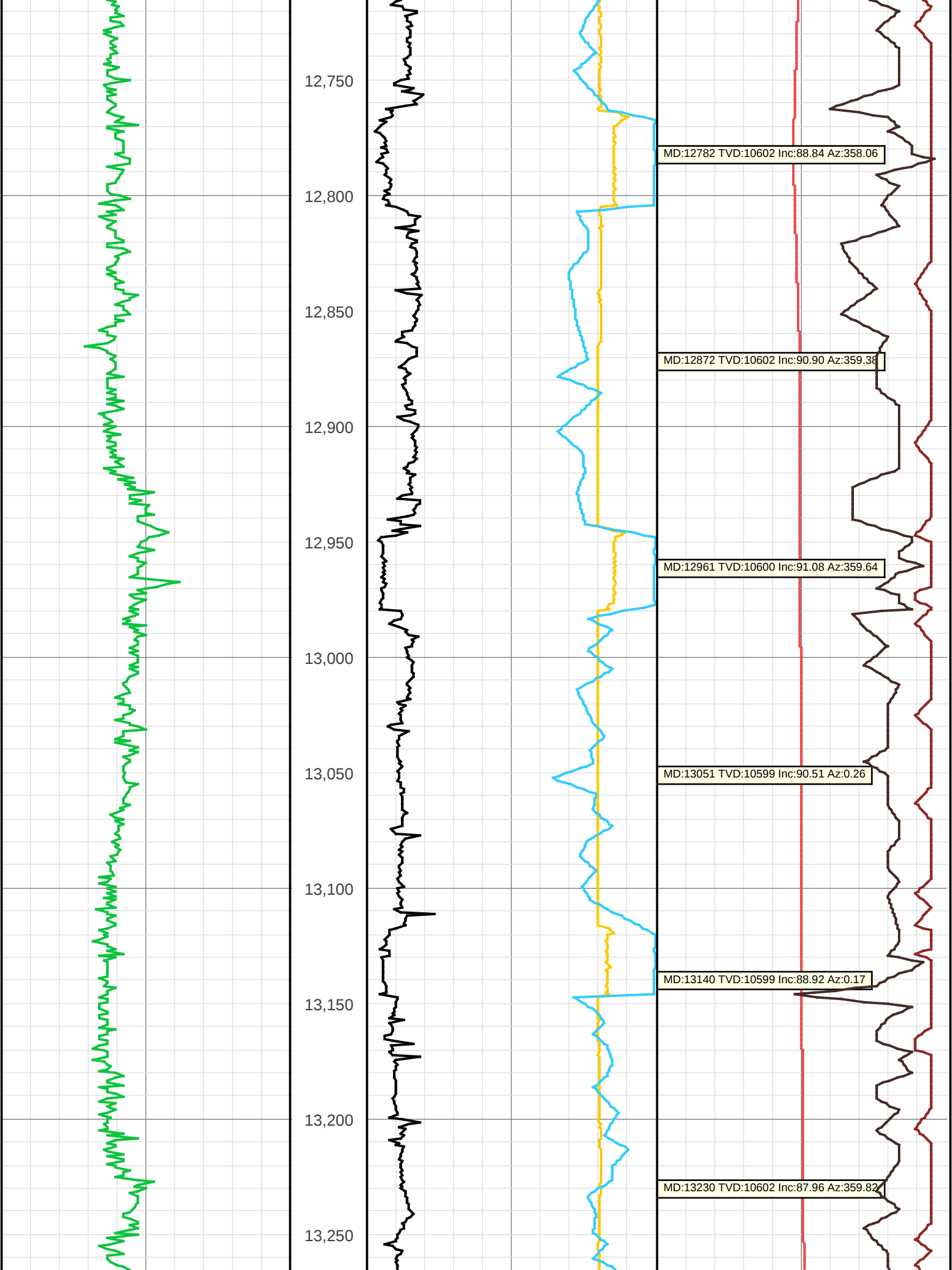


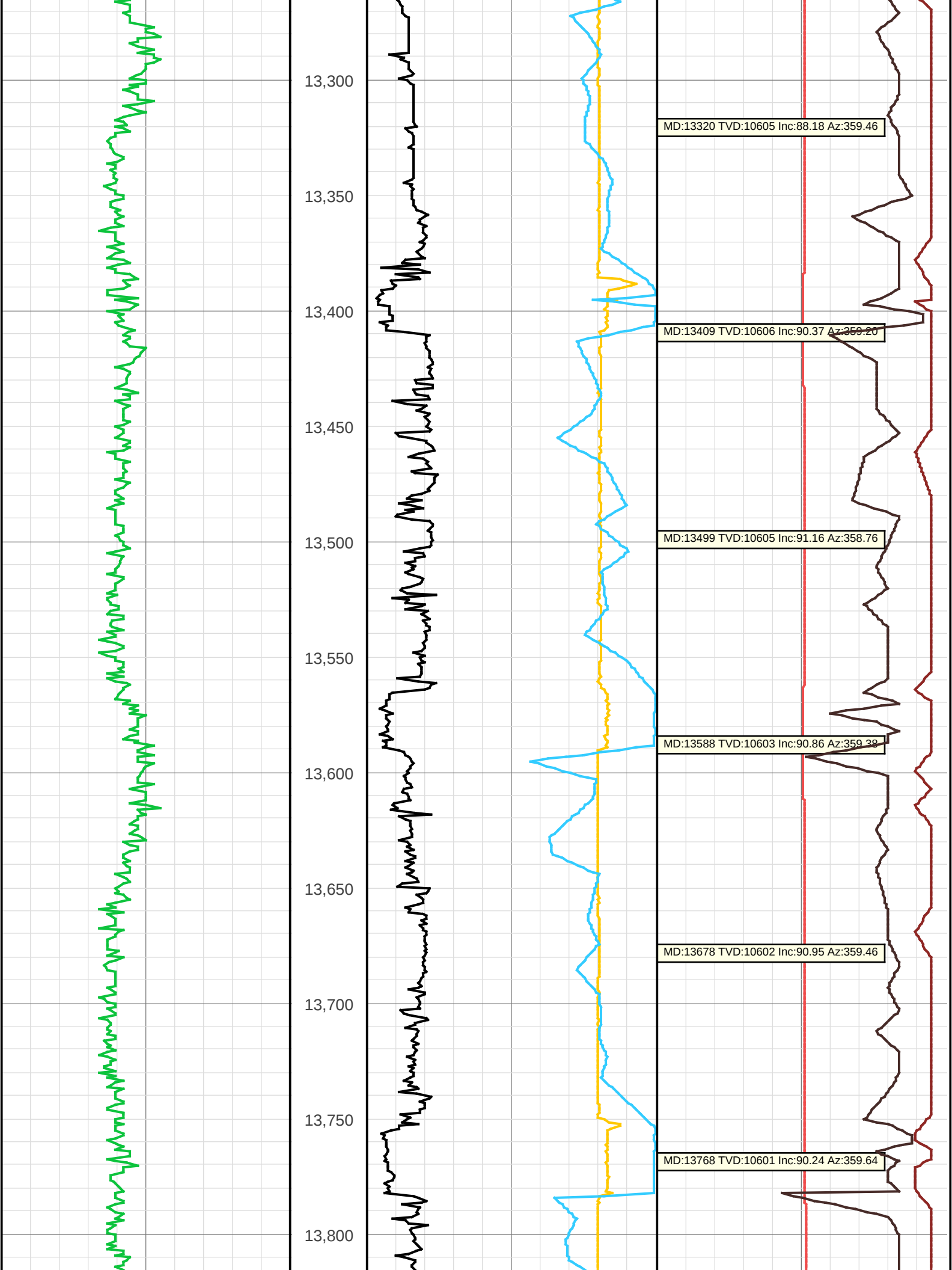


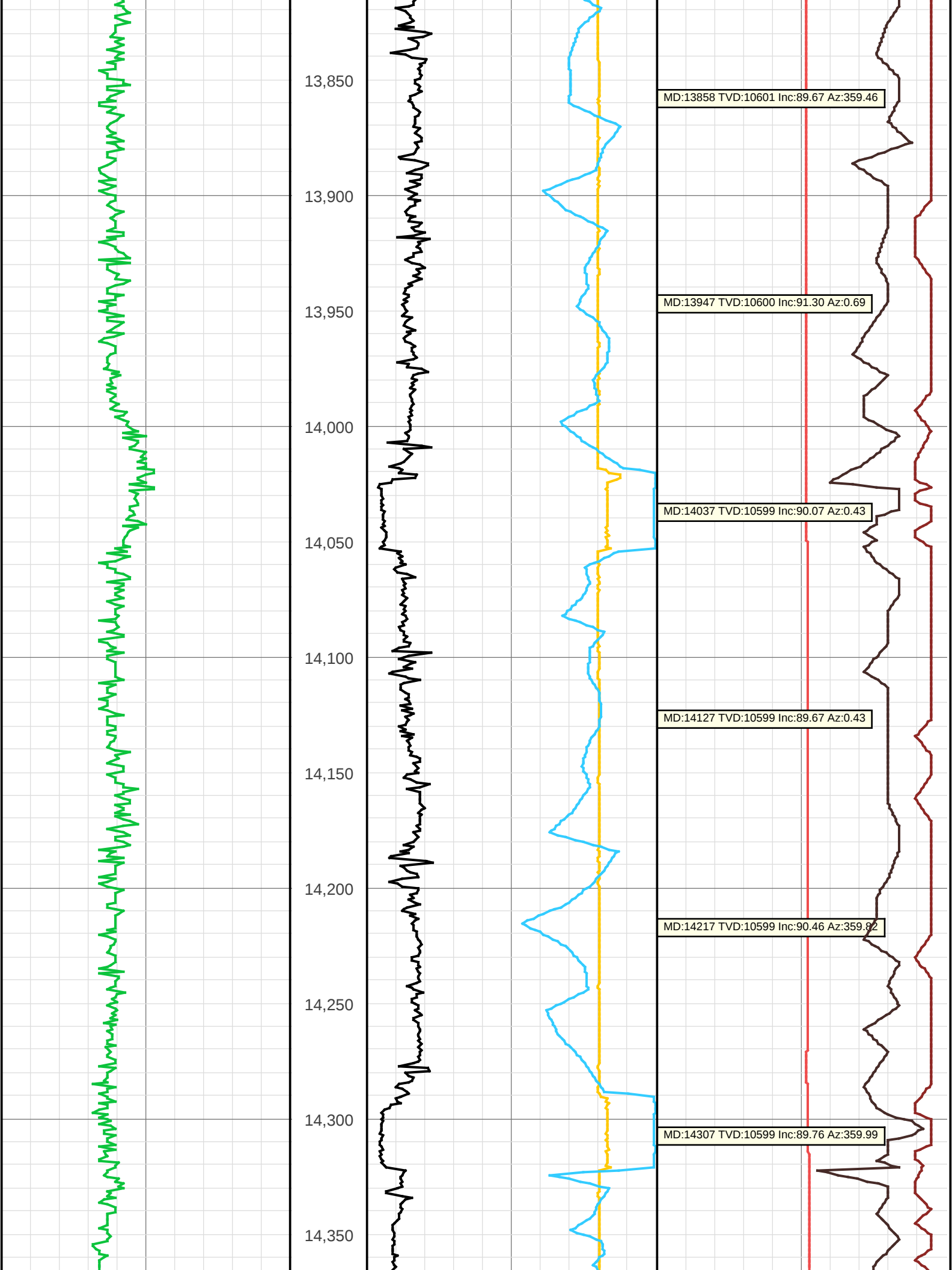


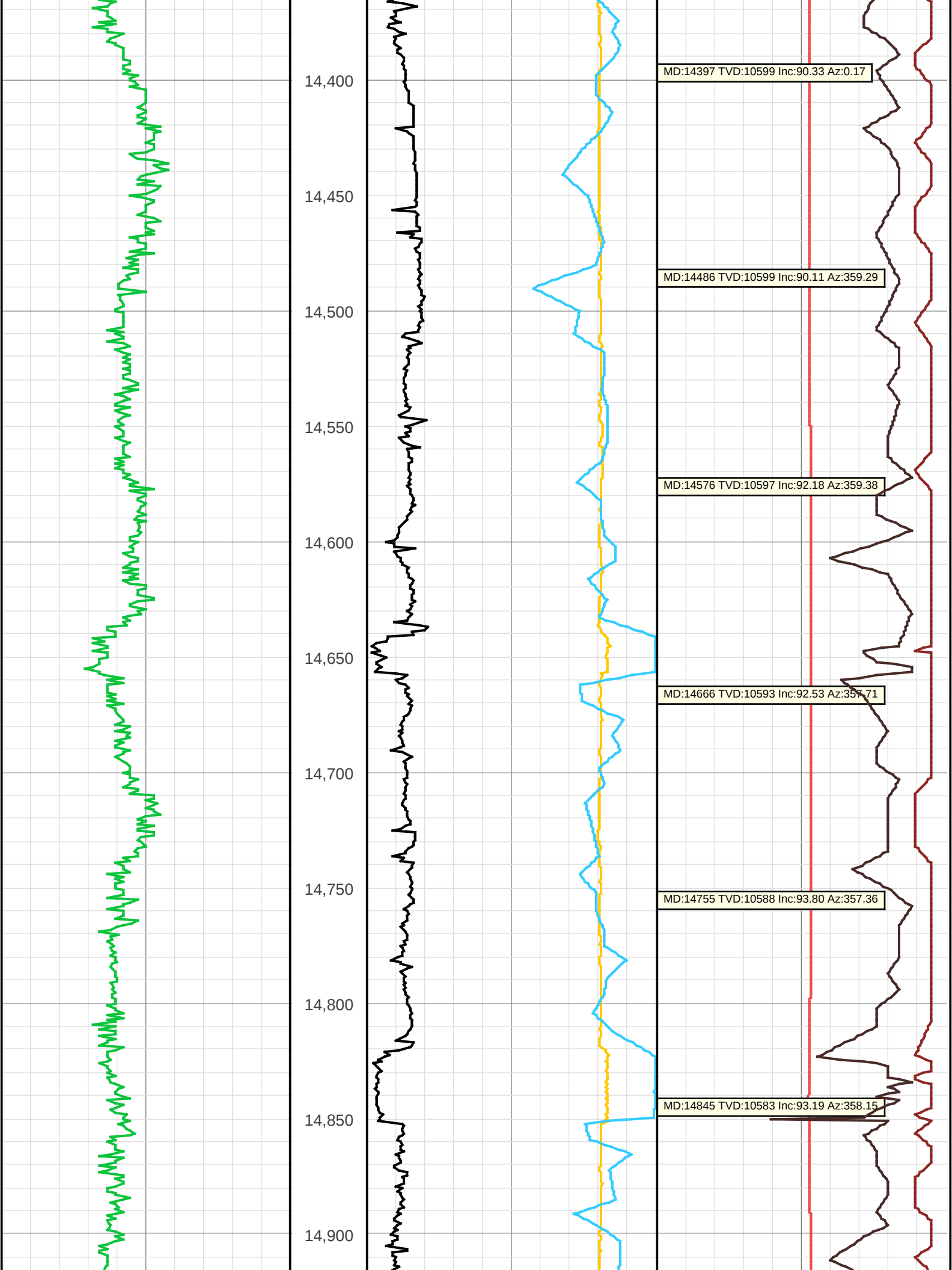


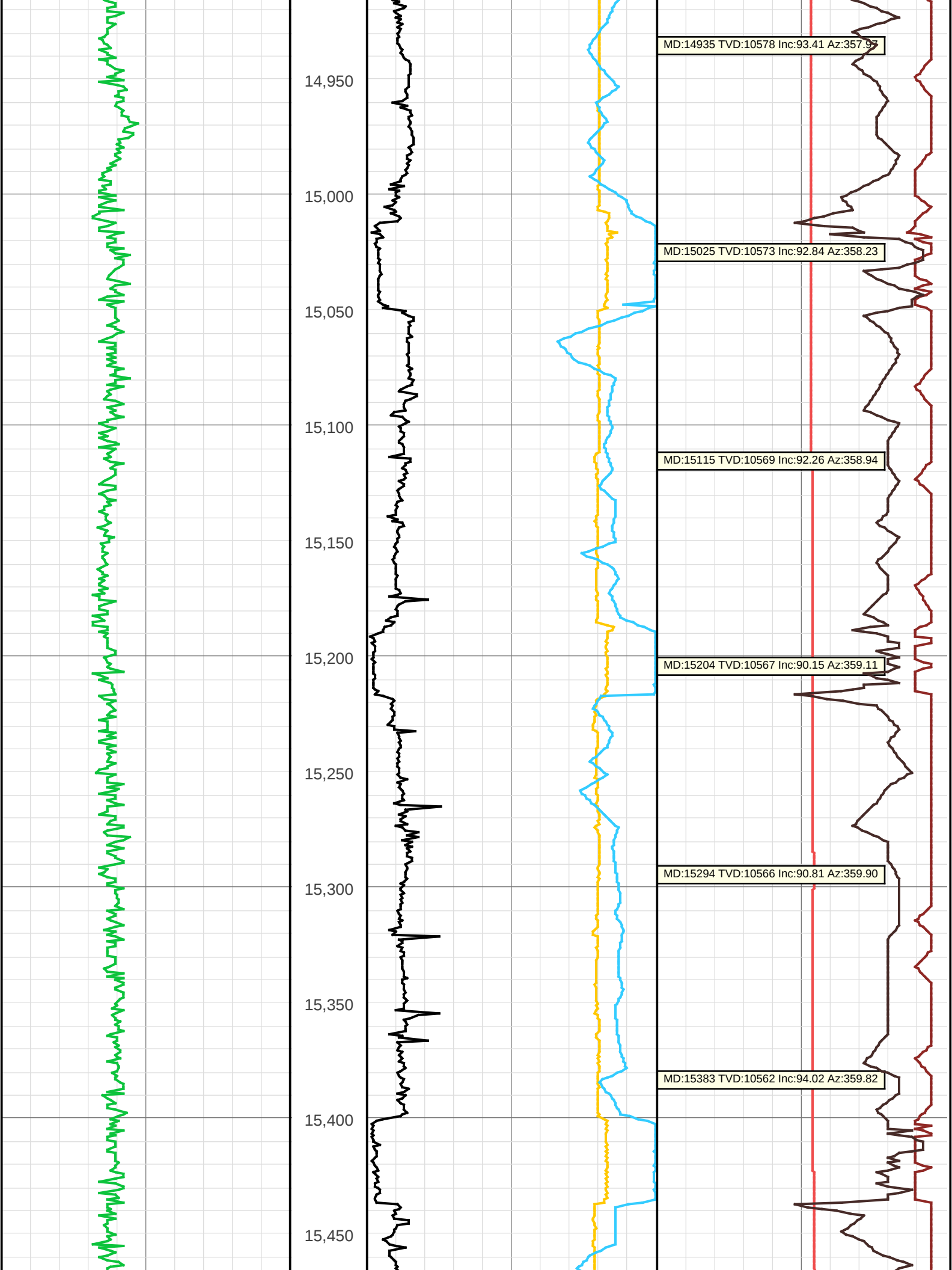


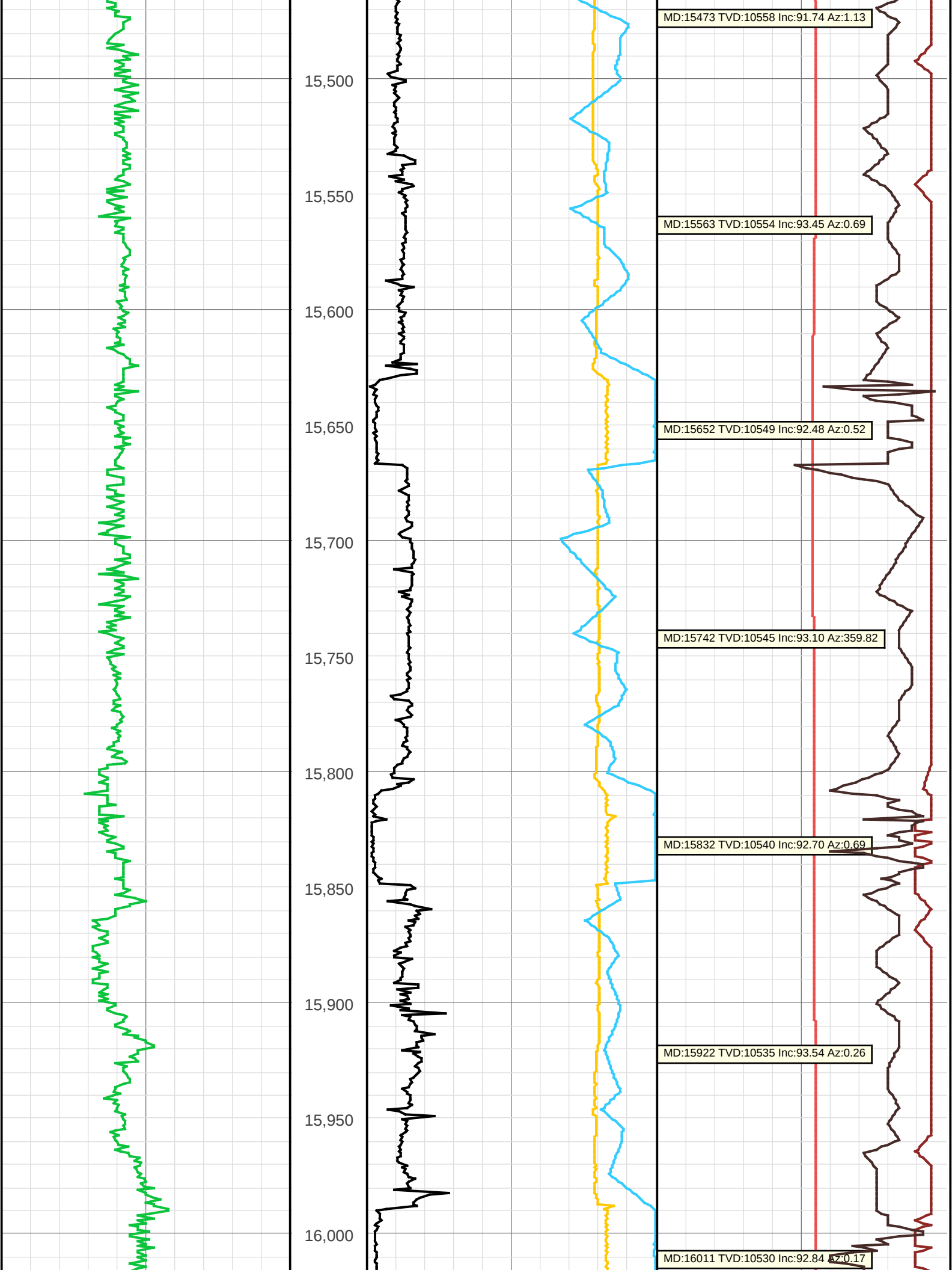


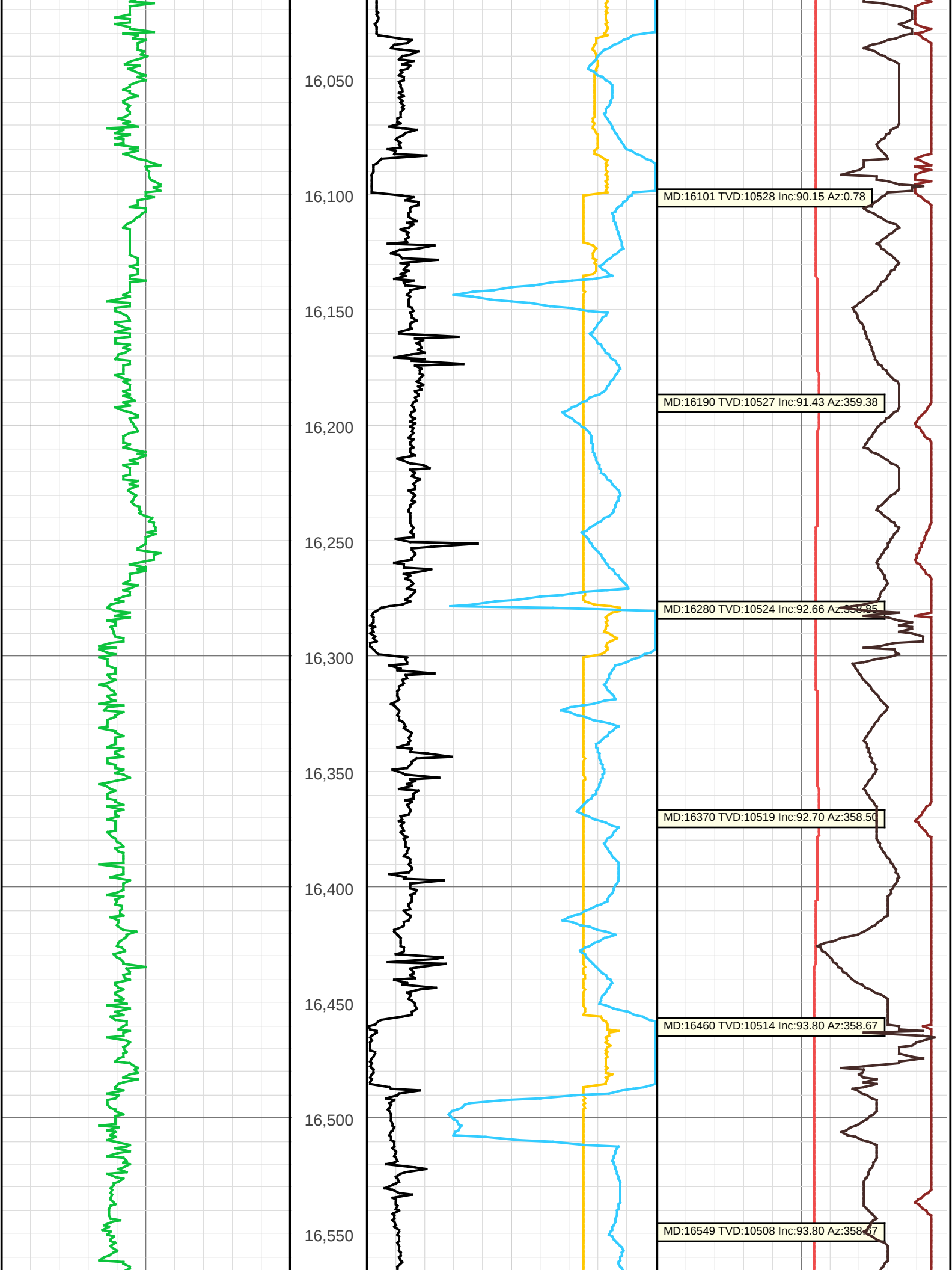


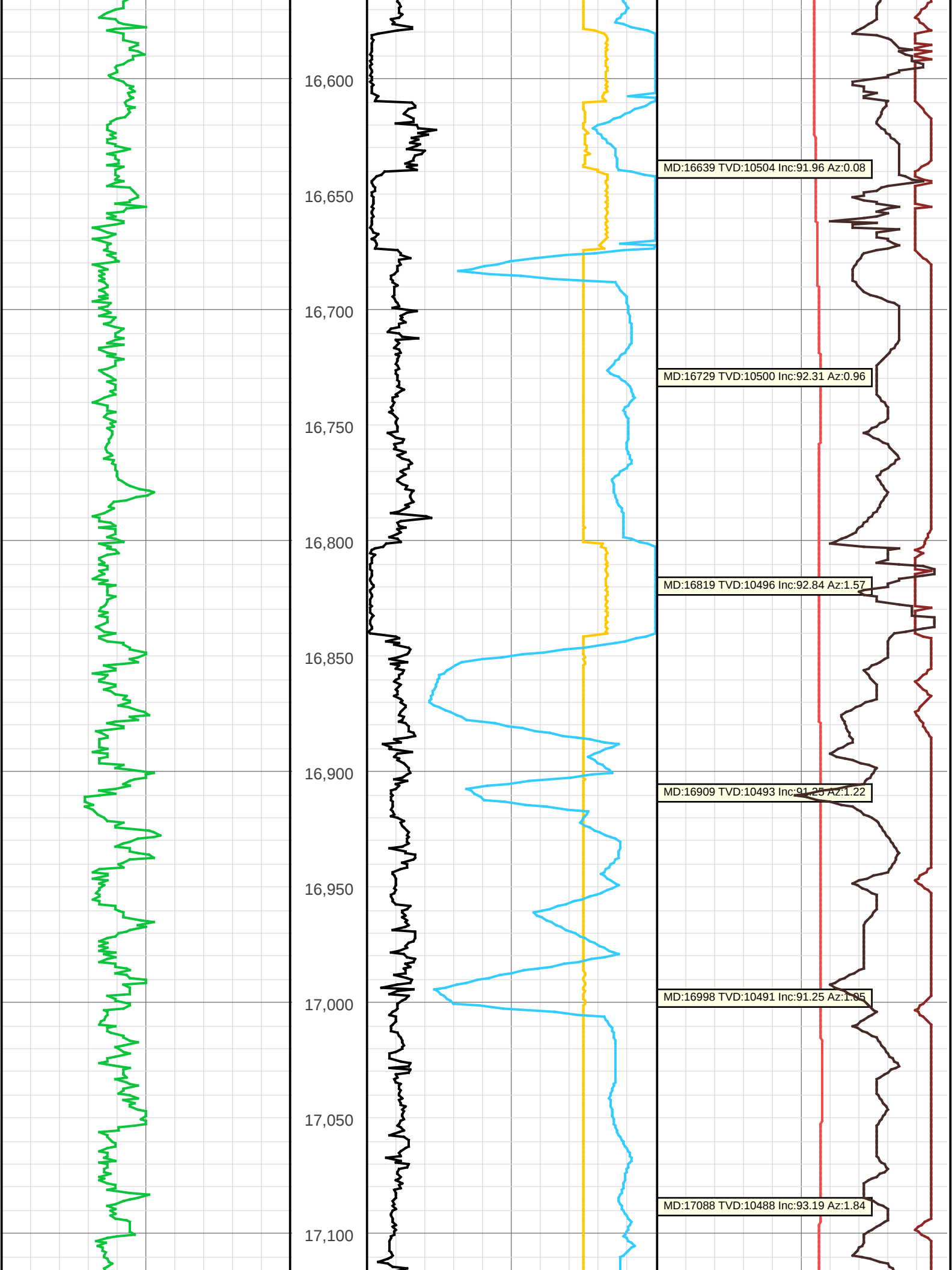


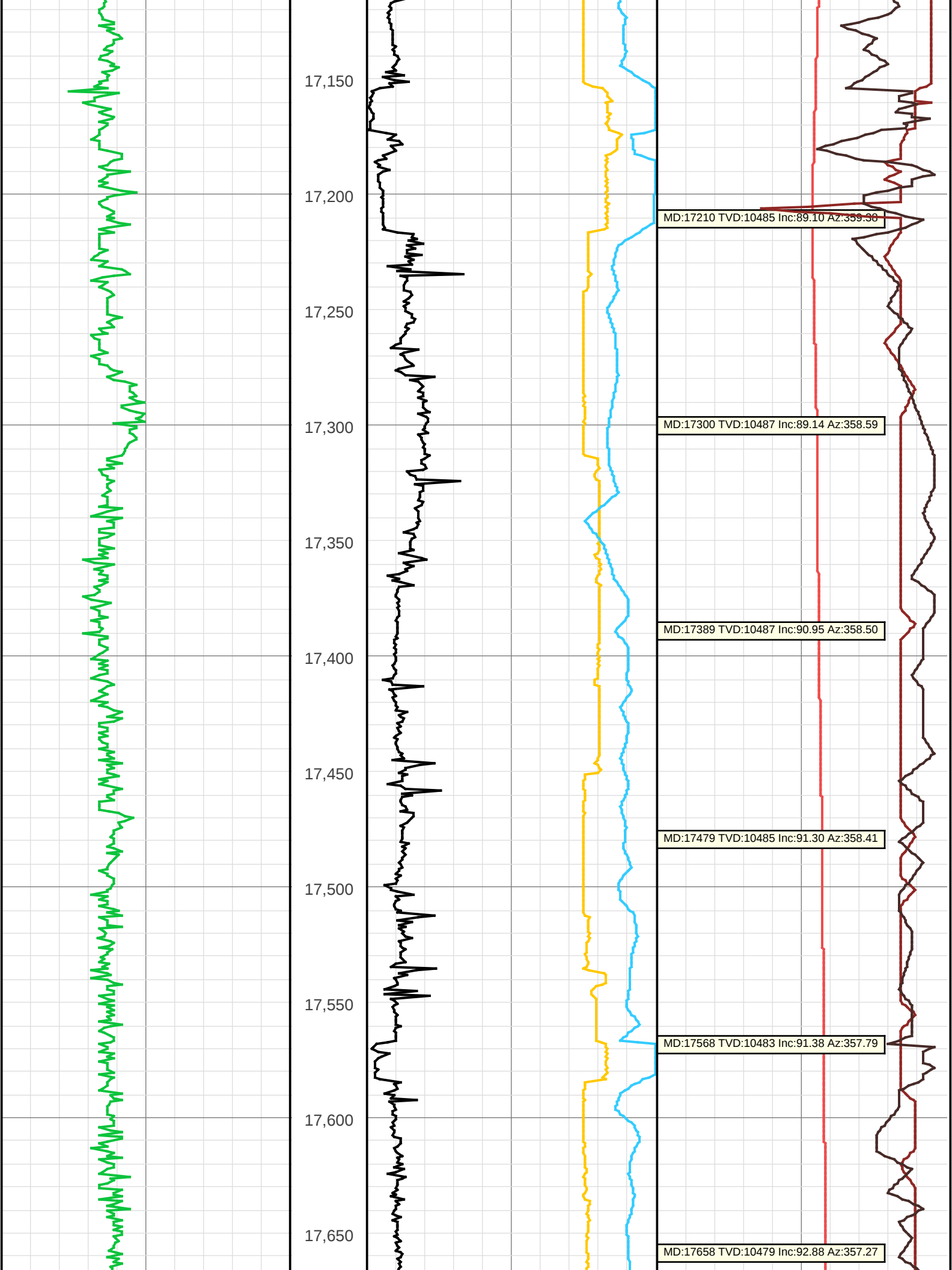


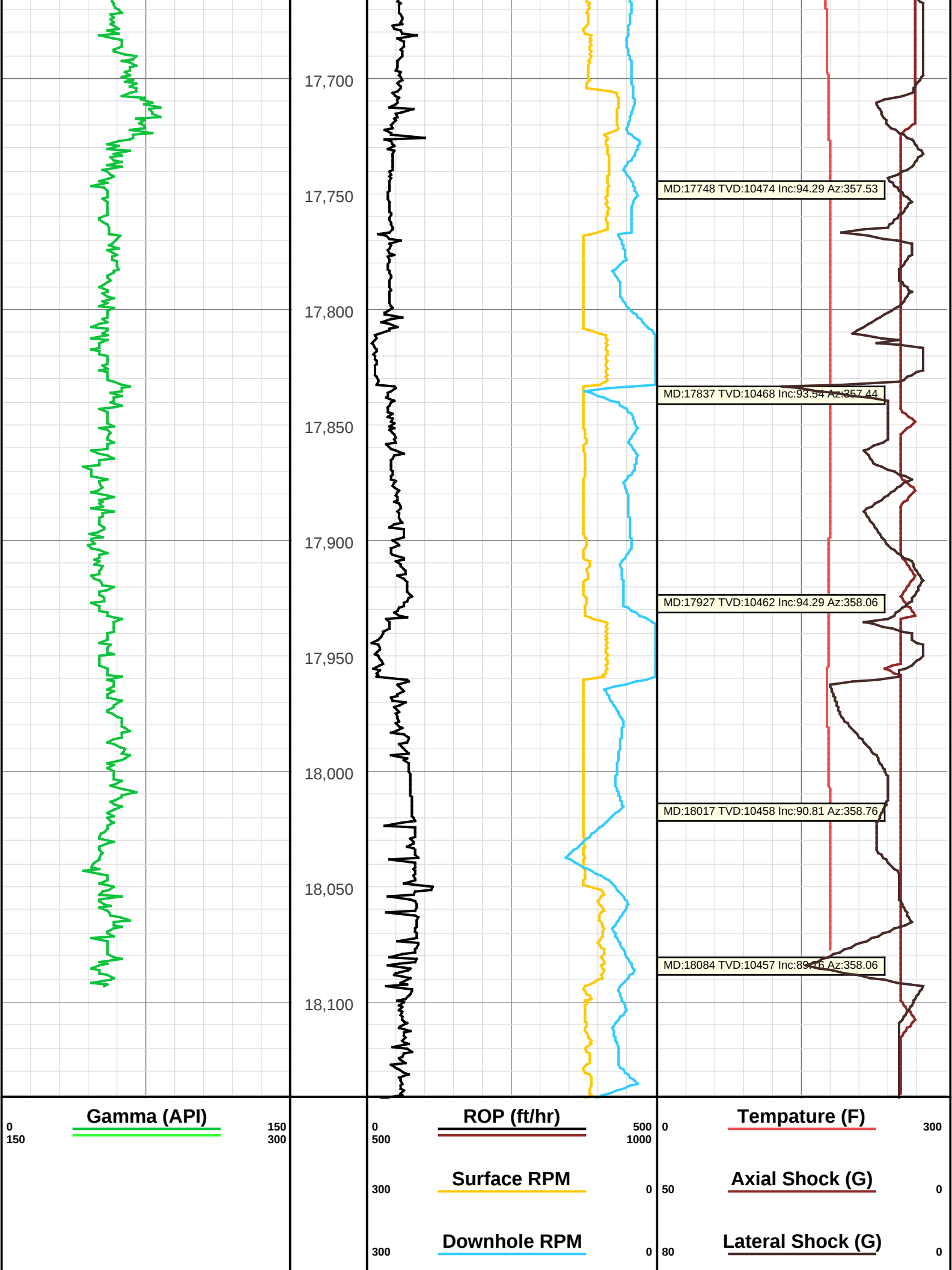












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Intrepid-DDS
10314 TX-191
Midland, TX 79707

2" = 100'
TVD FT

Gamma Ray

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
Country: USA
Rig: HP 466
AFE: NM0090
Job: ID2387

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State New Mexico
Country USA
Rig: HP 466

Well Location NAD 1927

Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20

Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3752.5
Height of Reference: 26.5 Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 04:35

Disclaimer: Intrepid DDS uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

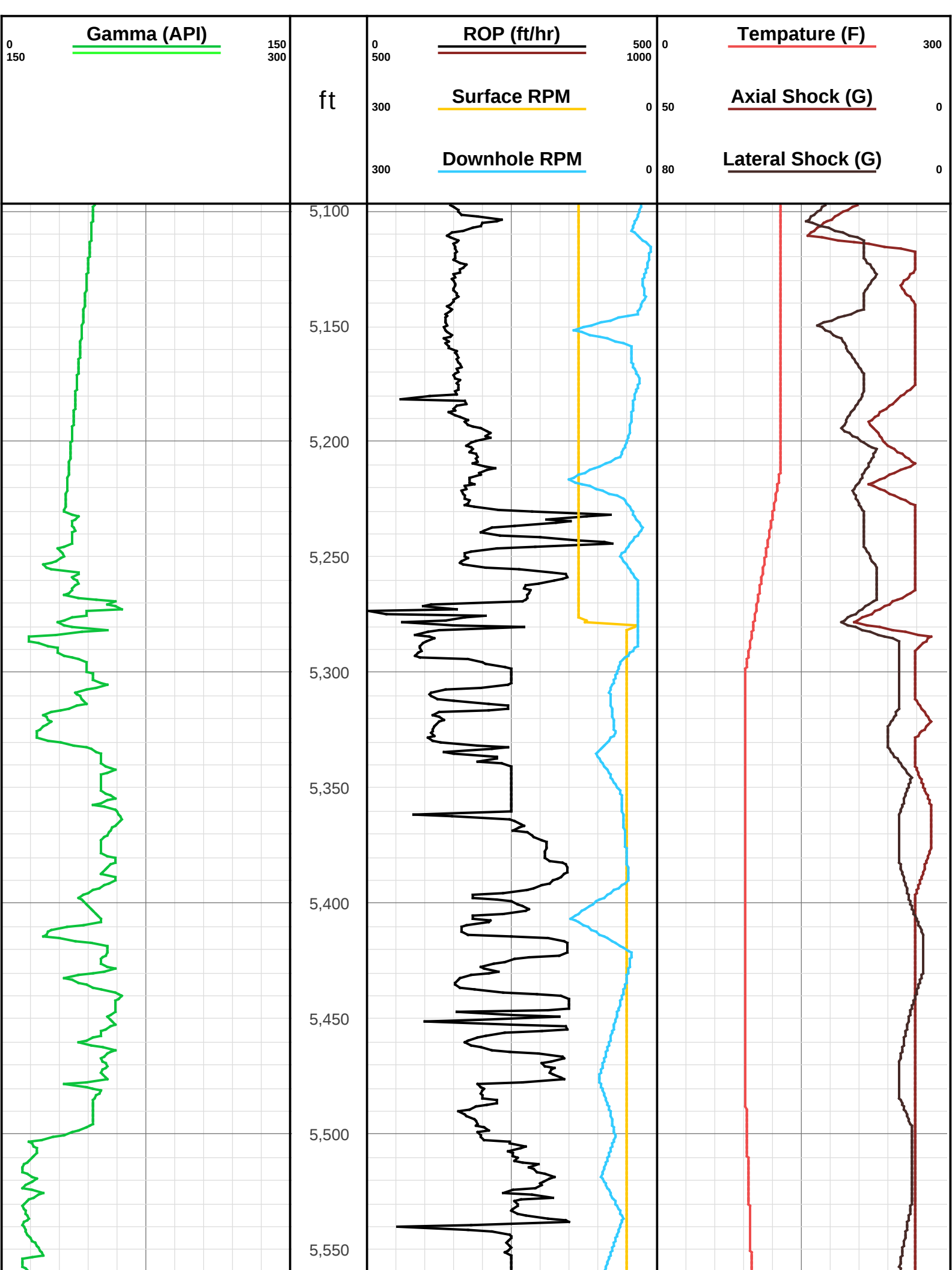
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

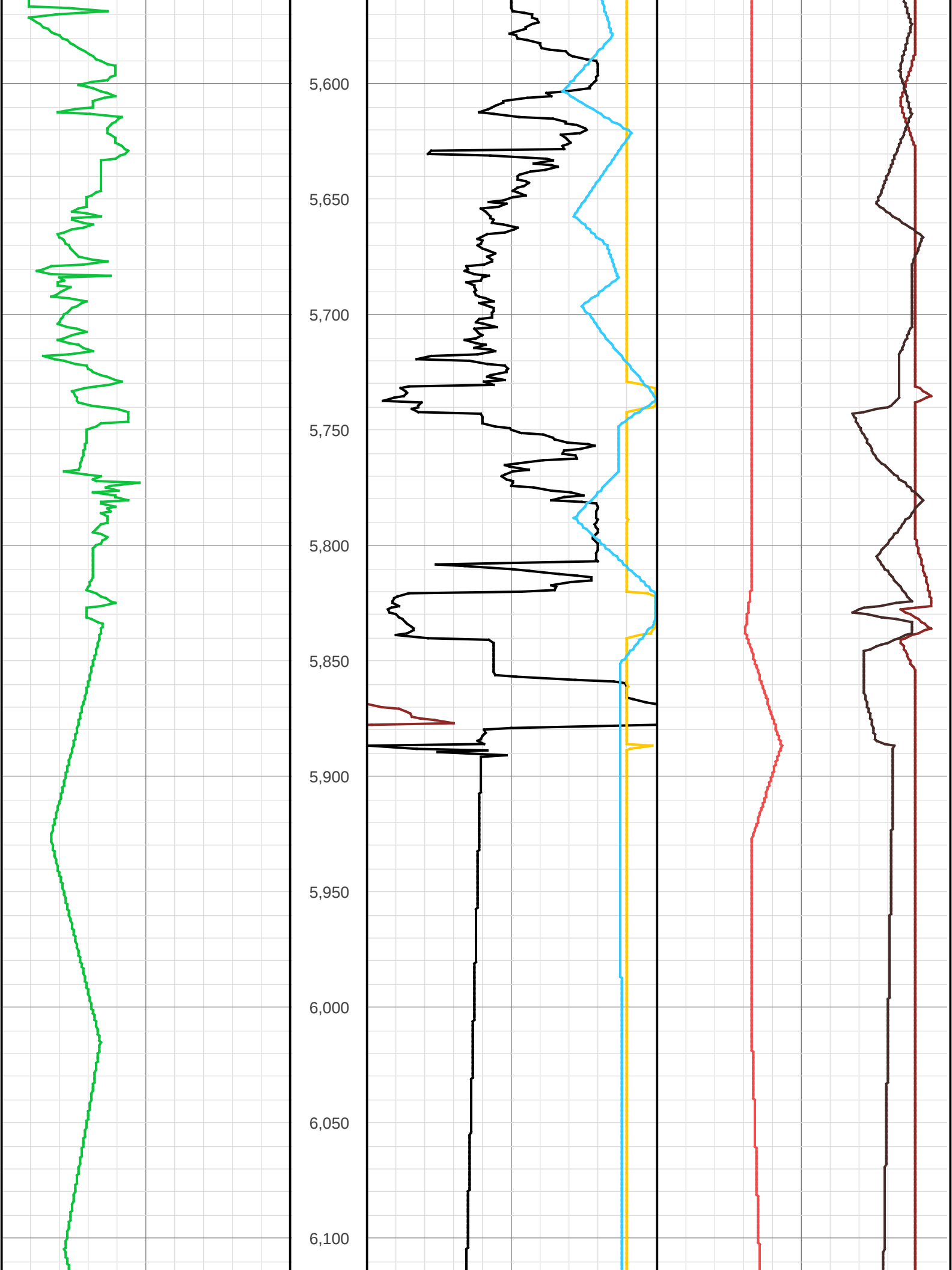
Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

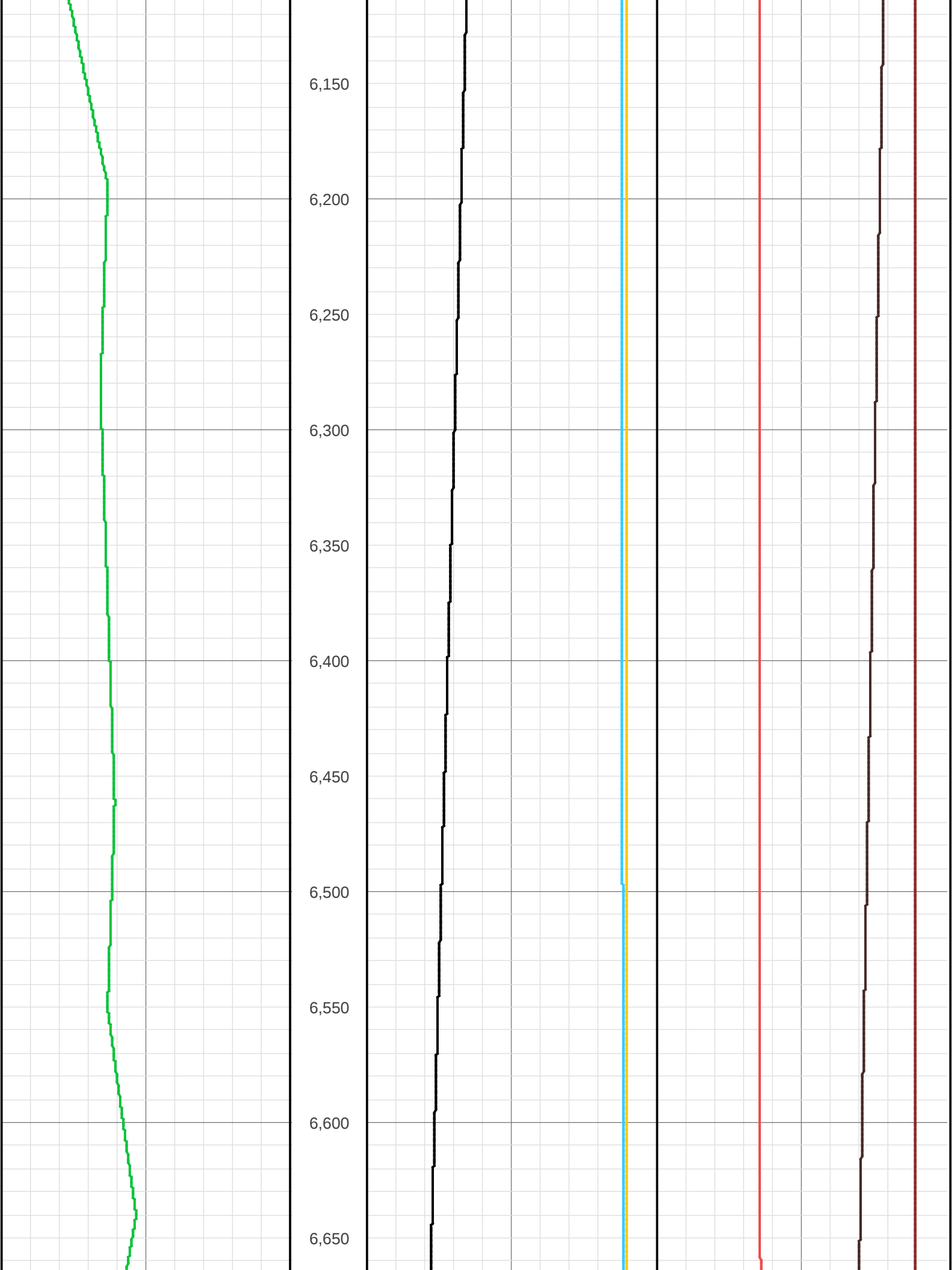
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

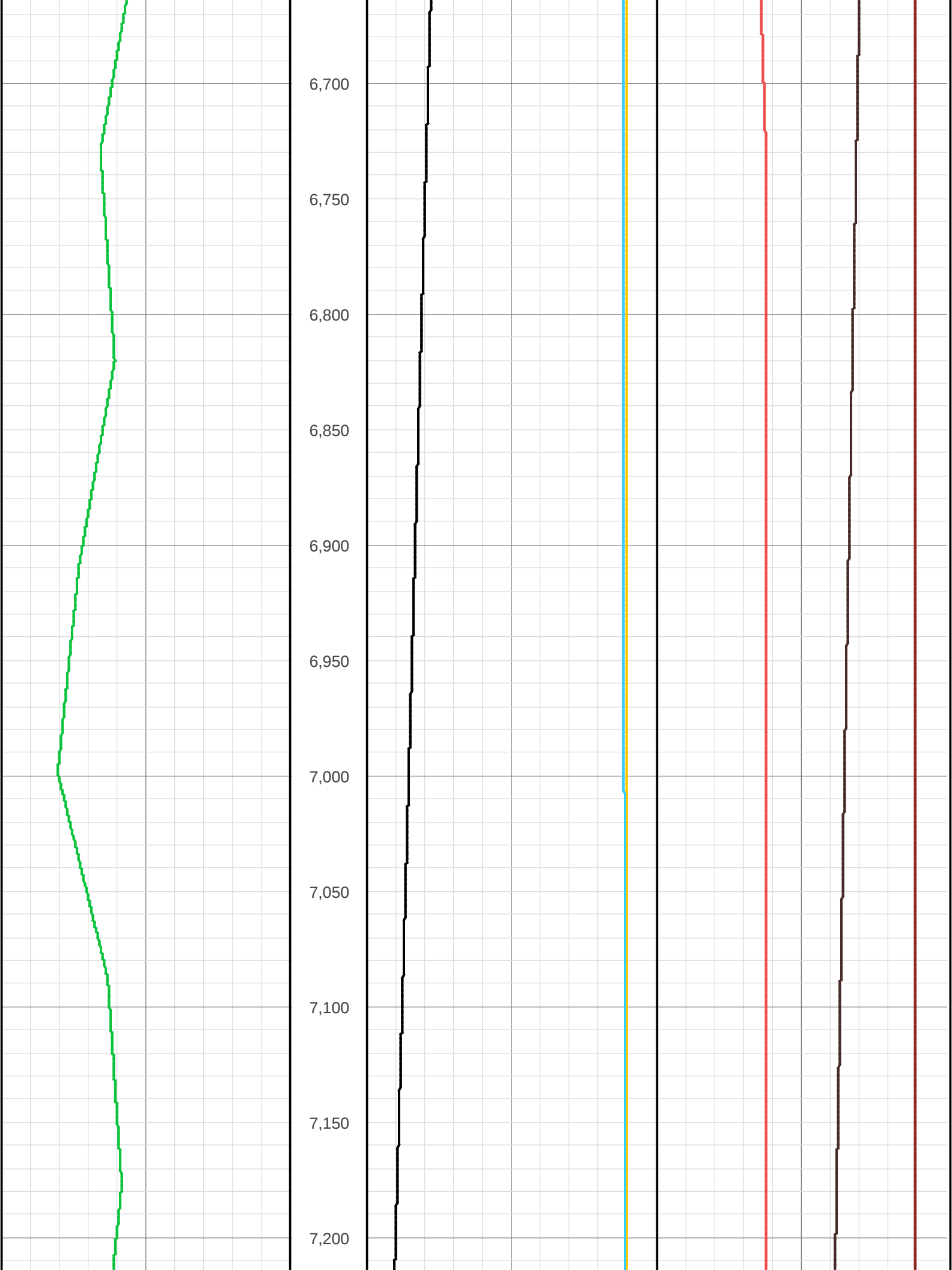
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

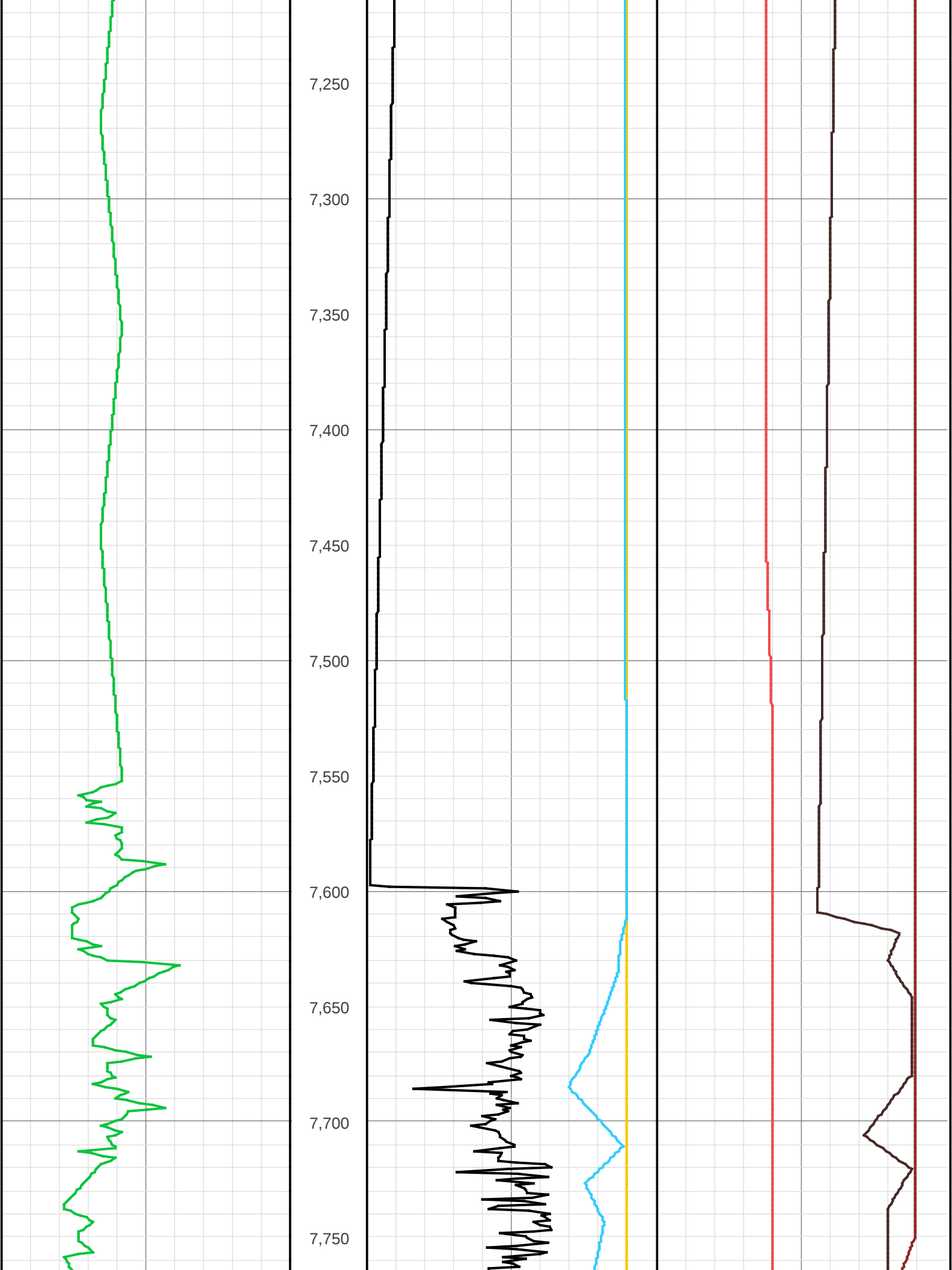
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

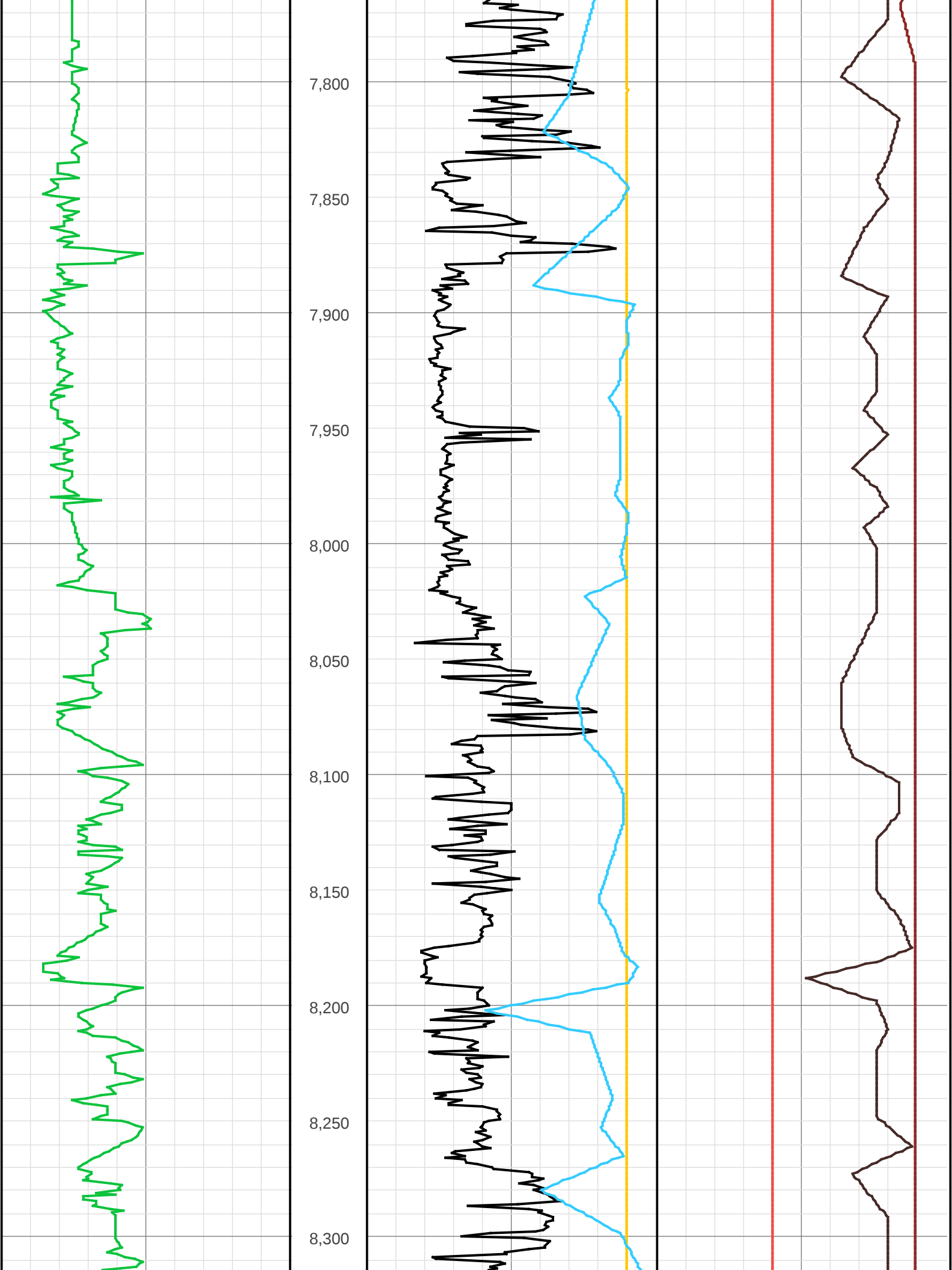


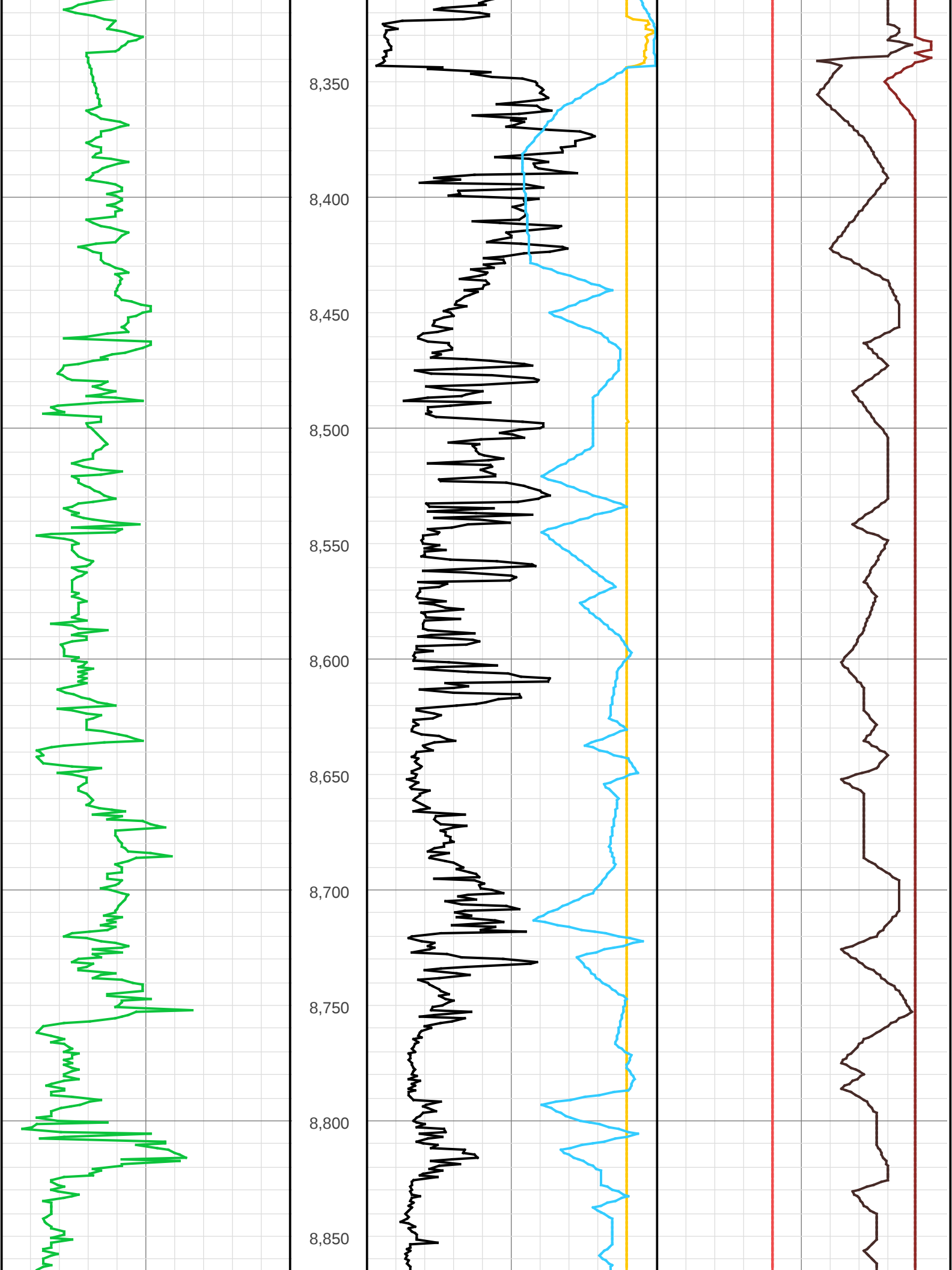


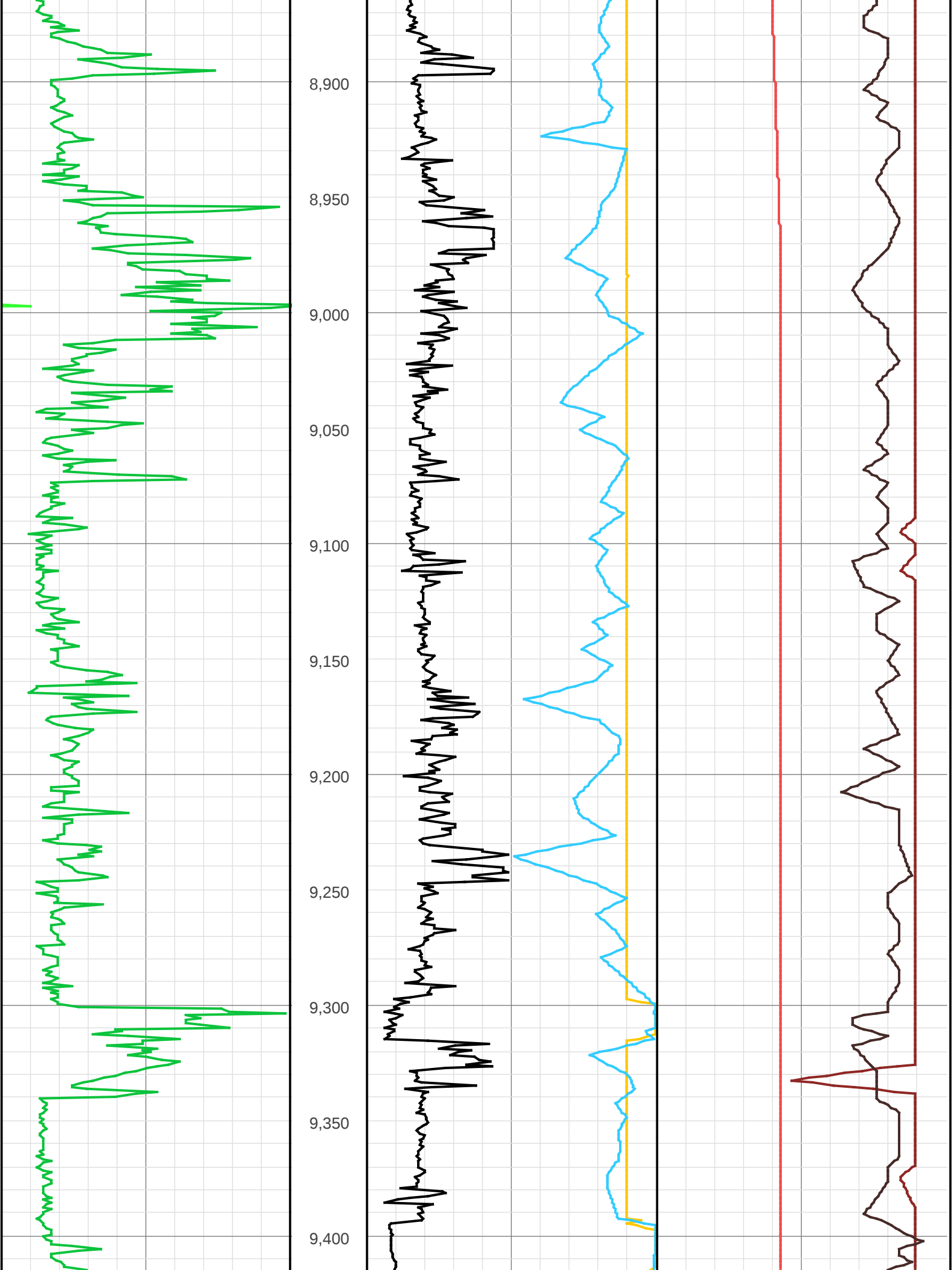


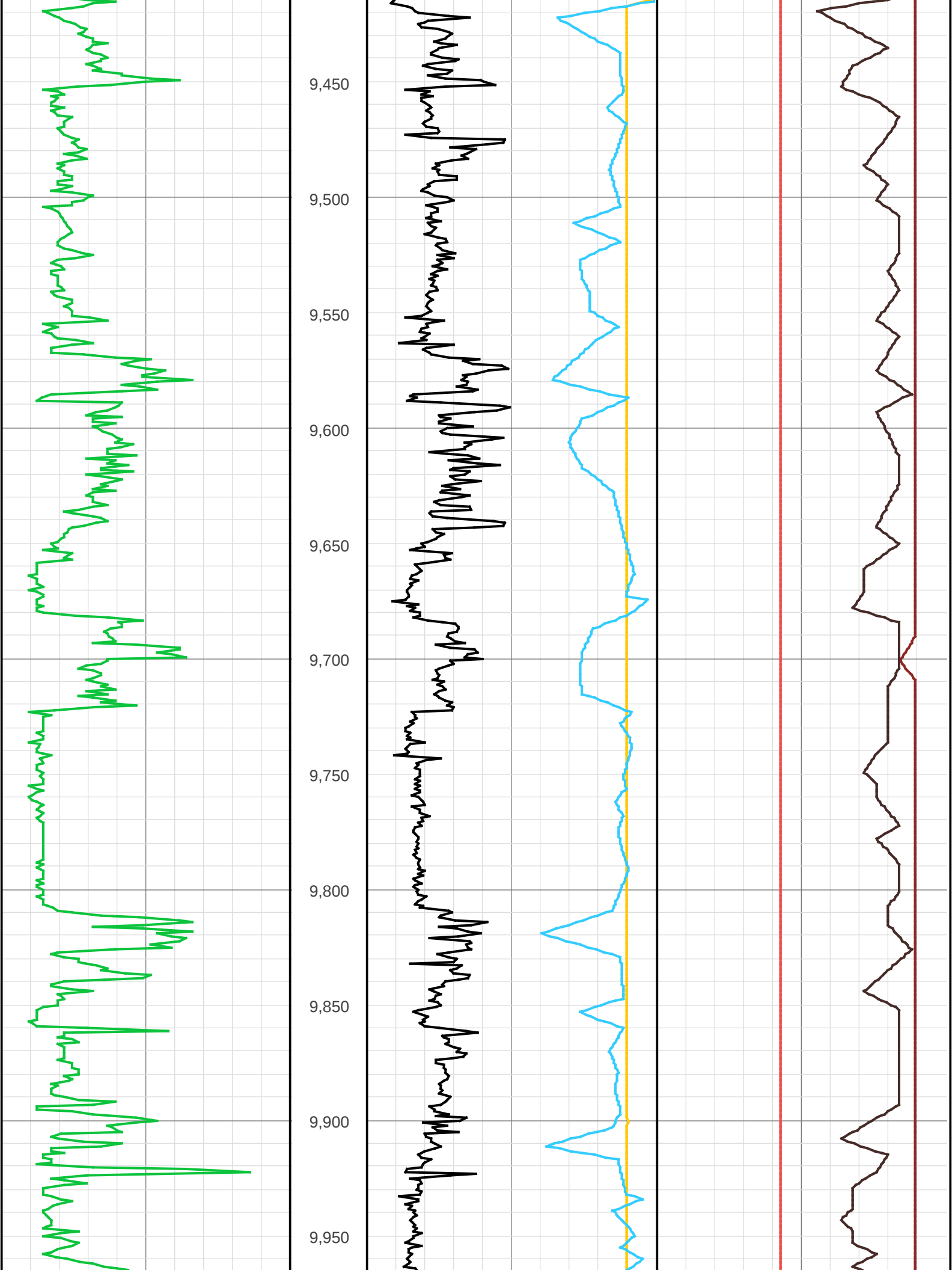


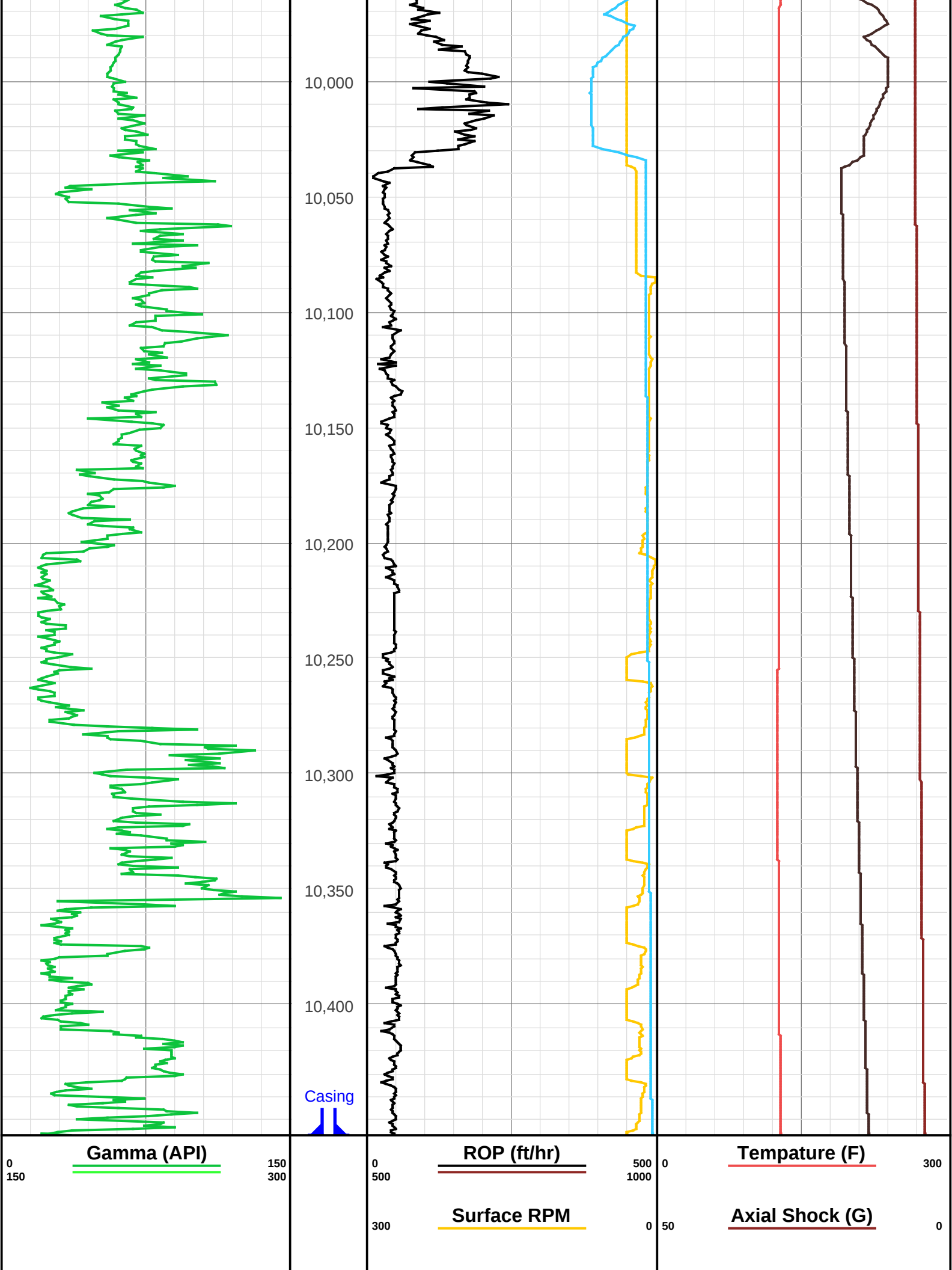












		300	<u>Downhole RPM</u>	0	80	<u>Lateral Shock (G)</u>	0
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Intrepid-DDS
10314 TX-191
Midland, TX 79707

5" = 100'
MD FT

Gamma Ray

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
Country: USA
Rig: HP 466
AFE: NM0090
Job: ID2387

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State New Mexico
Country USA
Rig: HP 466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20
Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3752.5
Height of Reference: 26.5 Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 15:14

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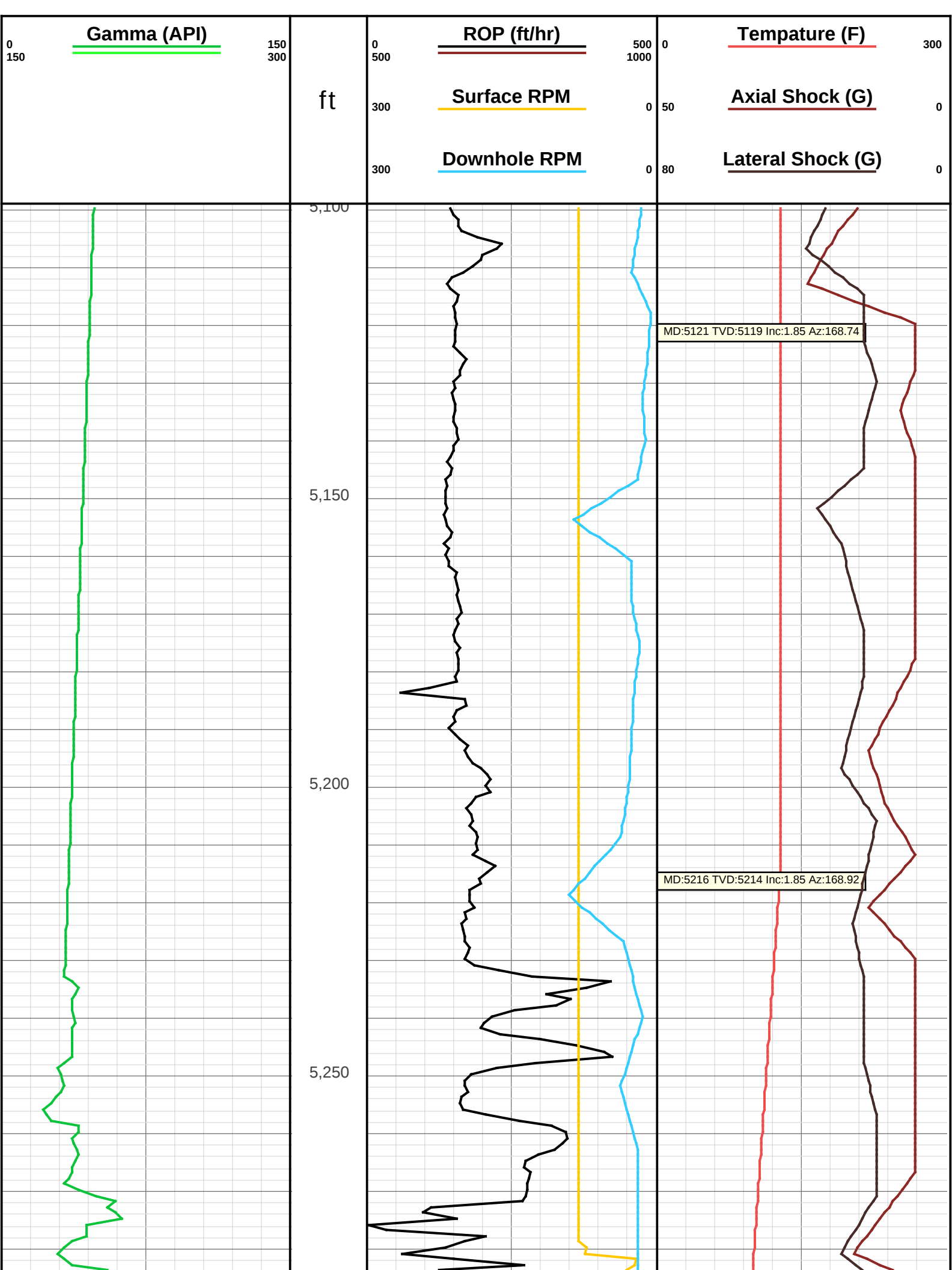
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

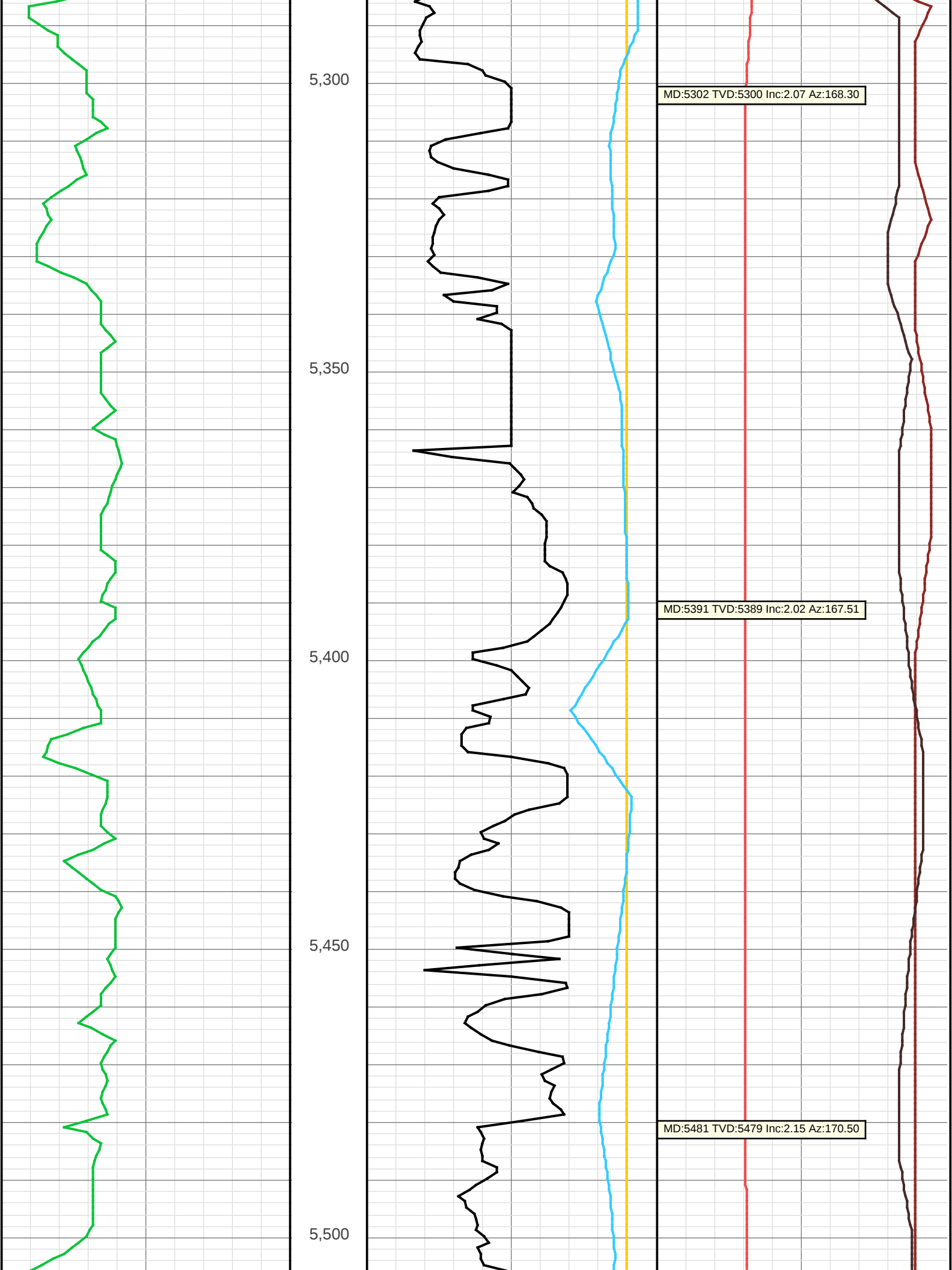
Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

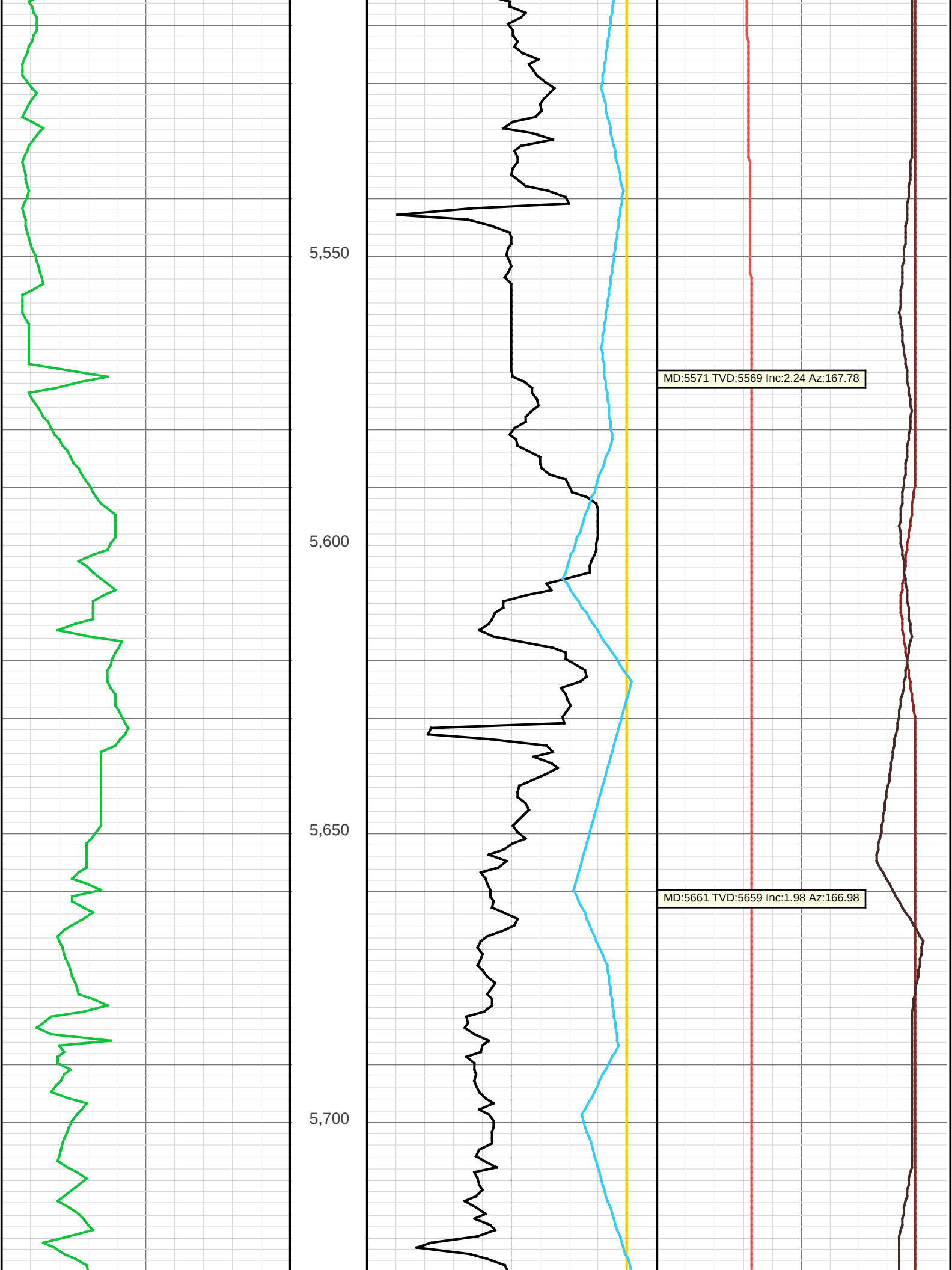
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

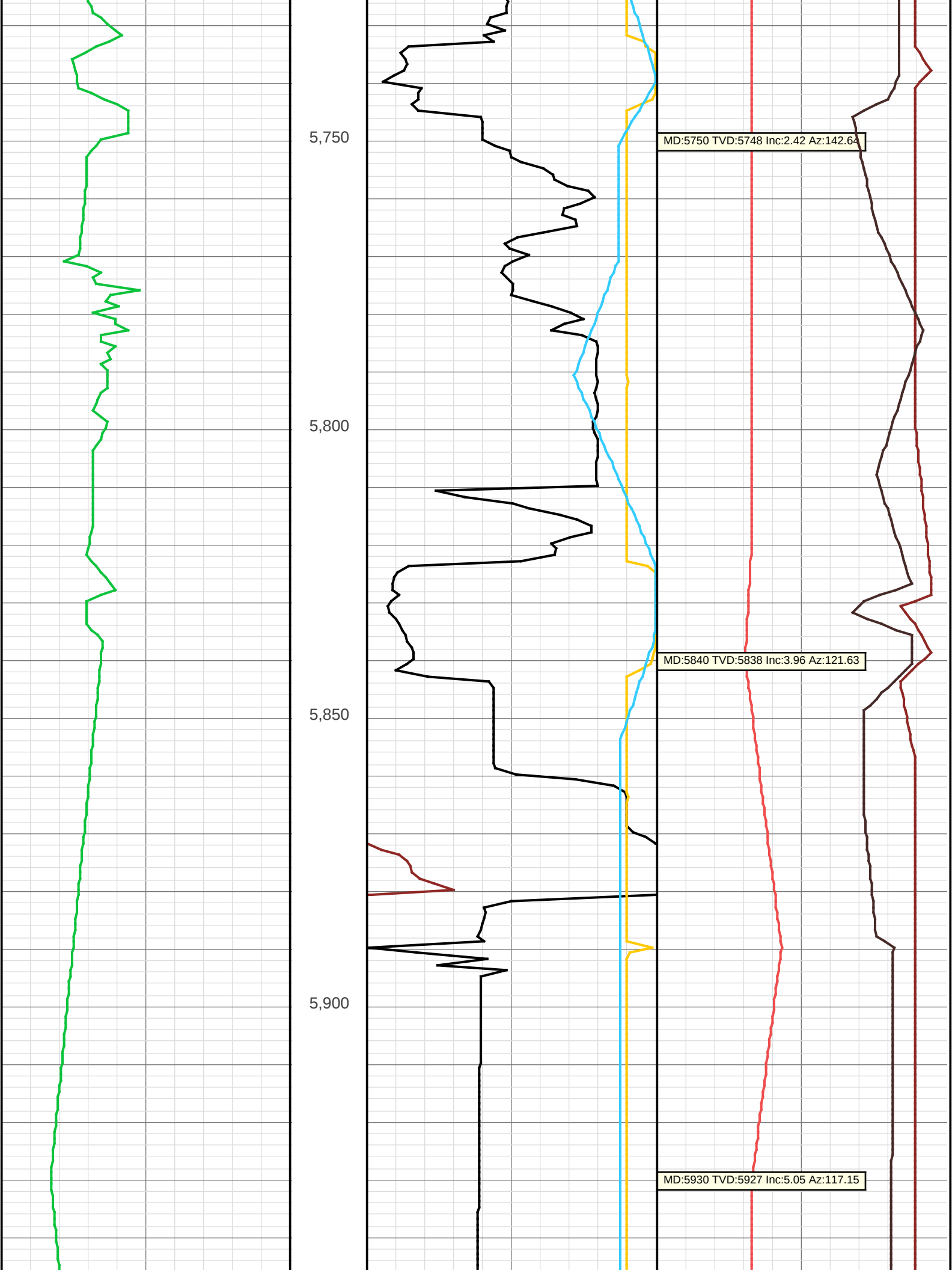
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

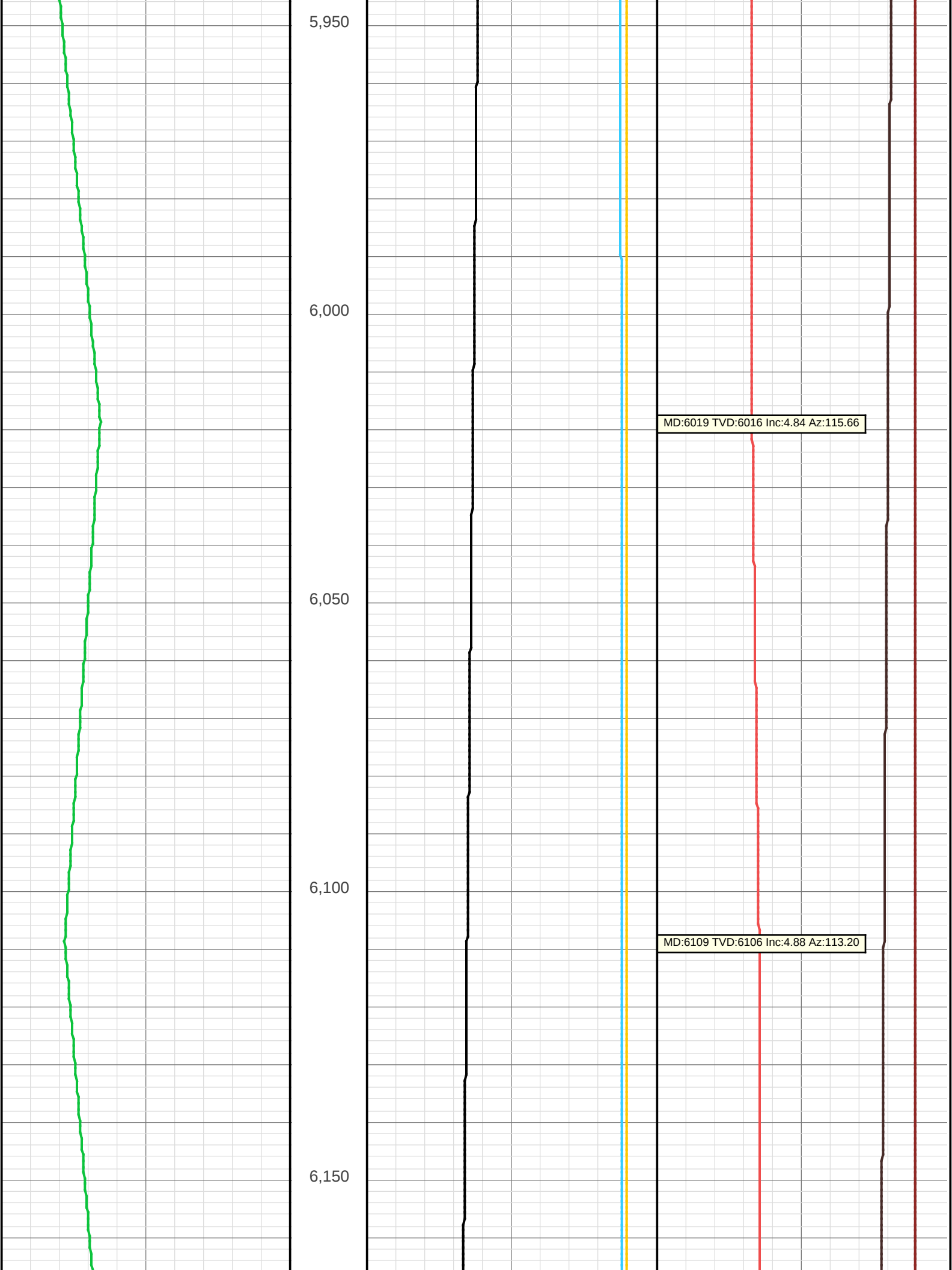
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

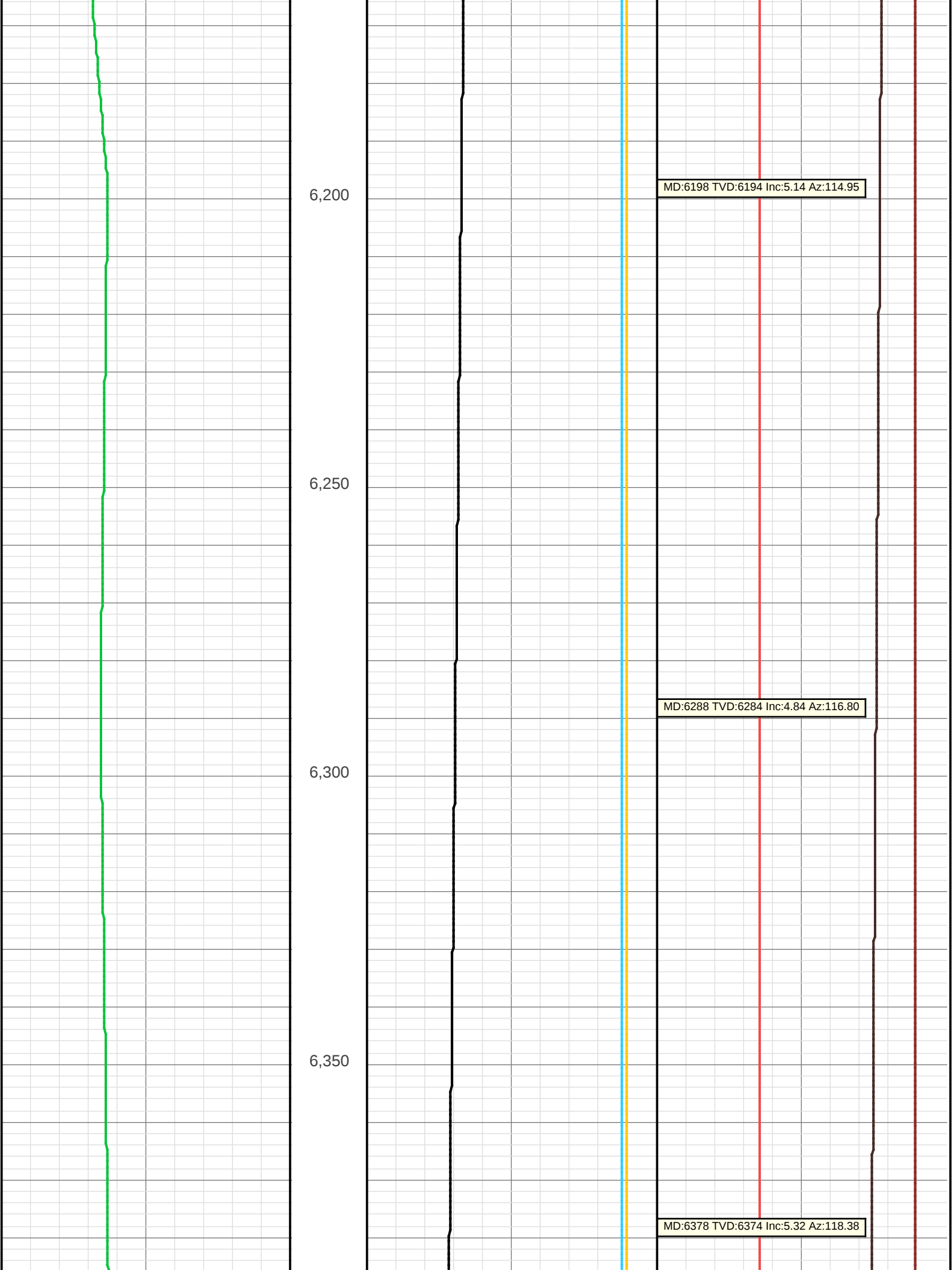


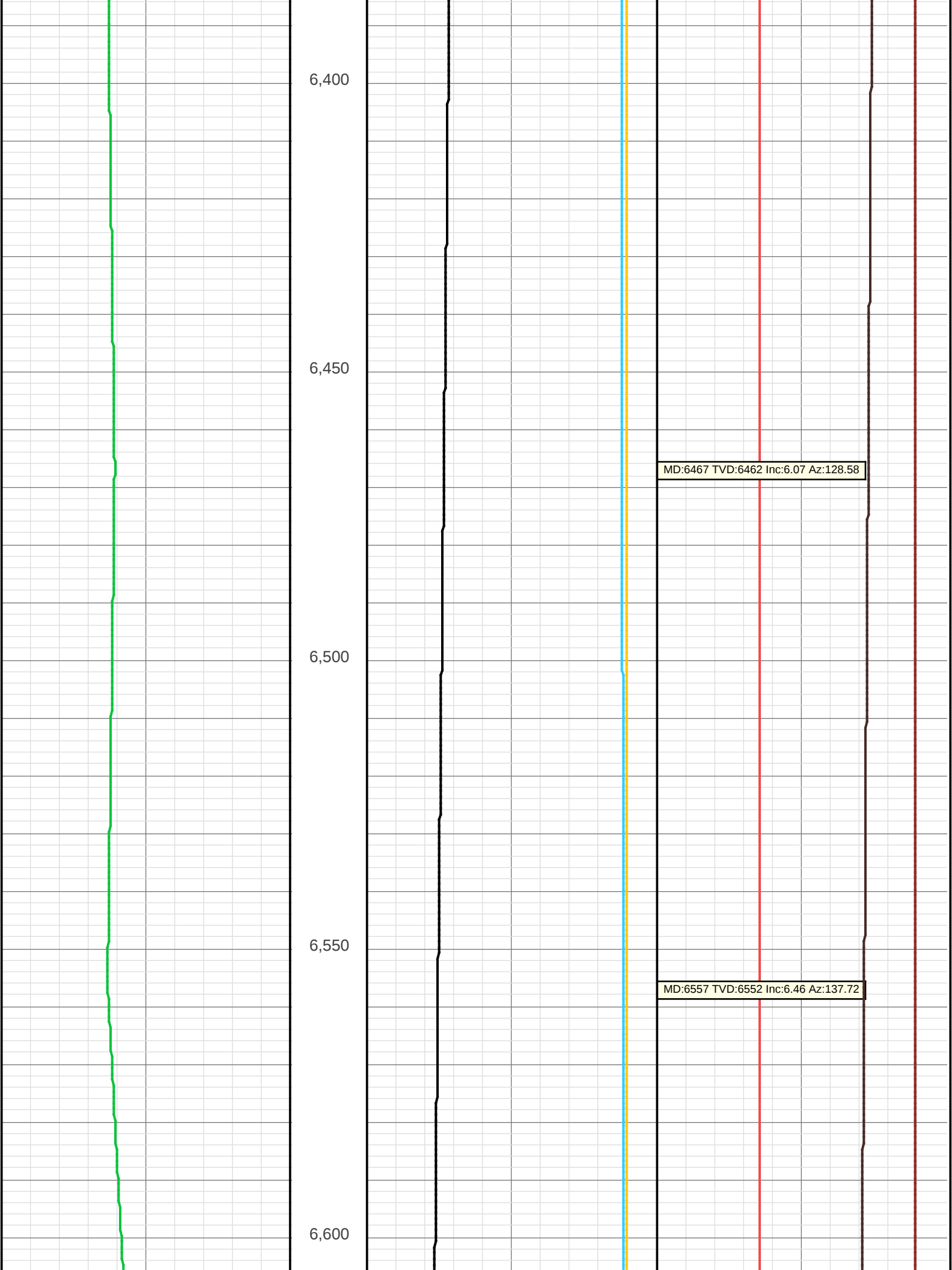


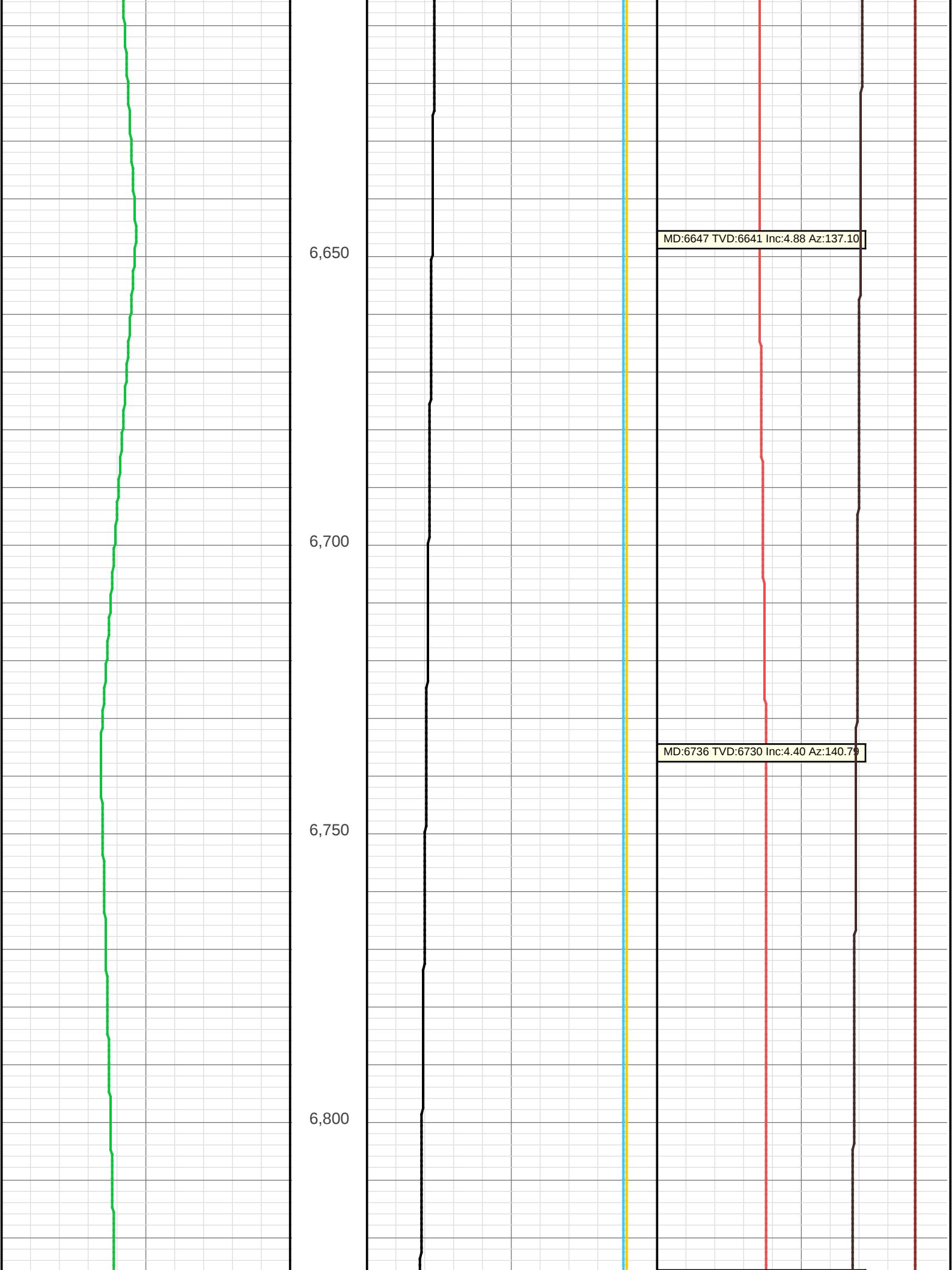


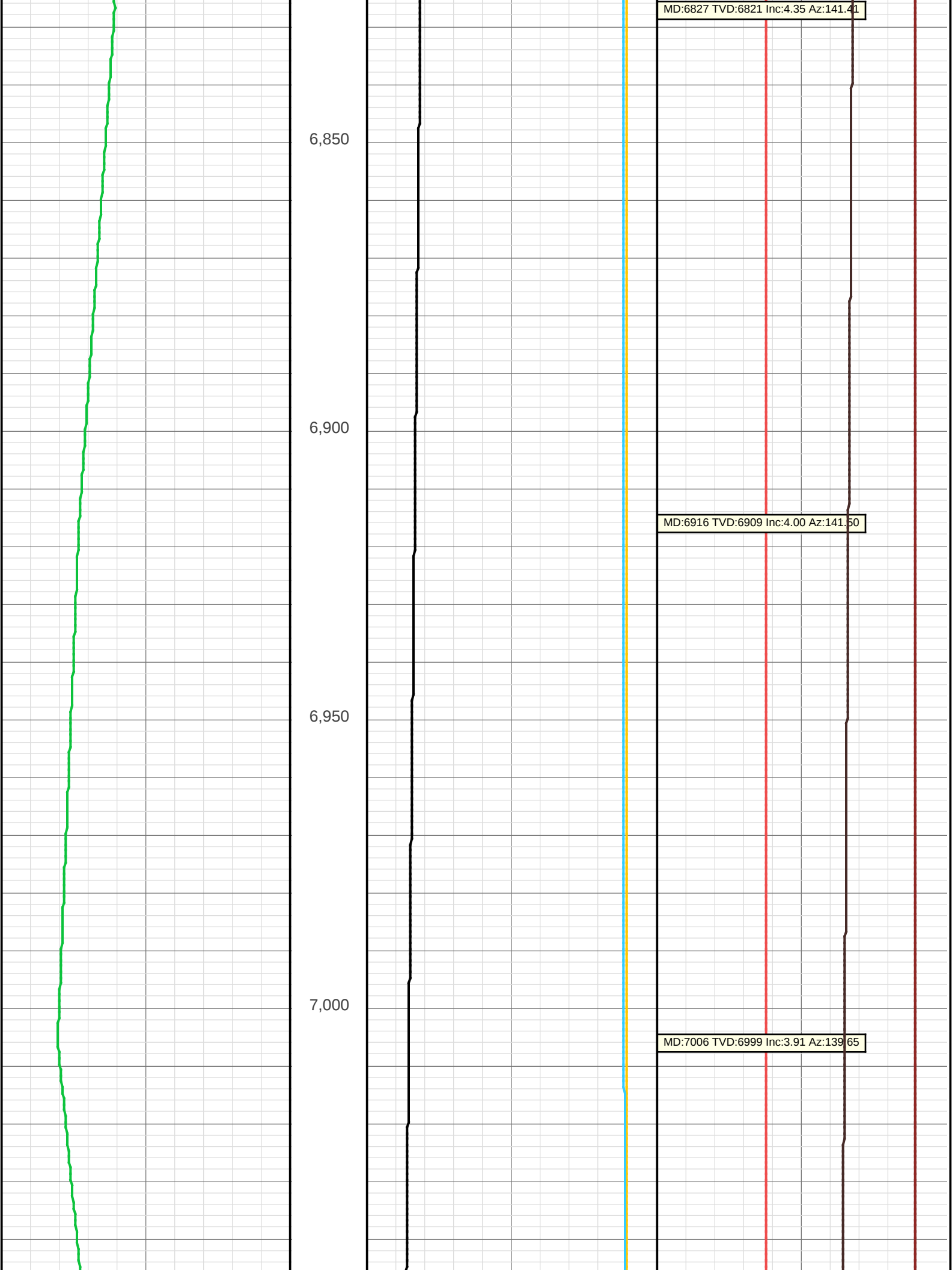


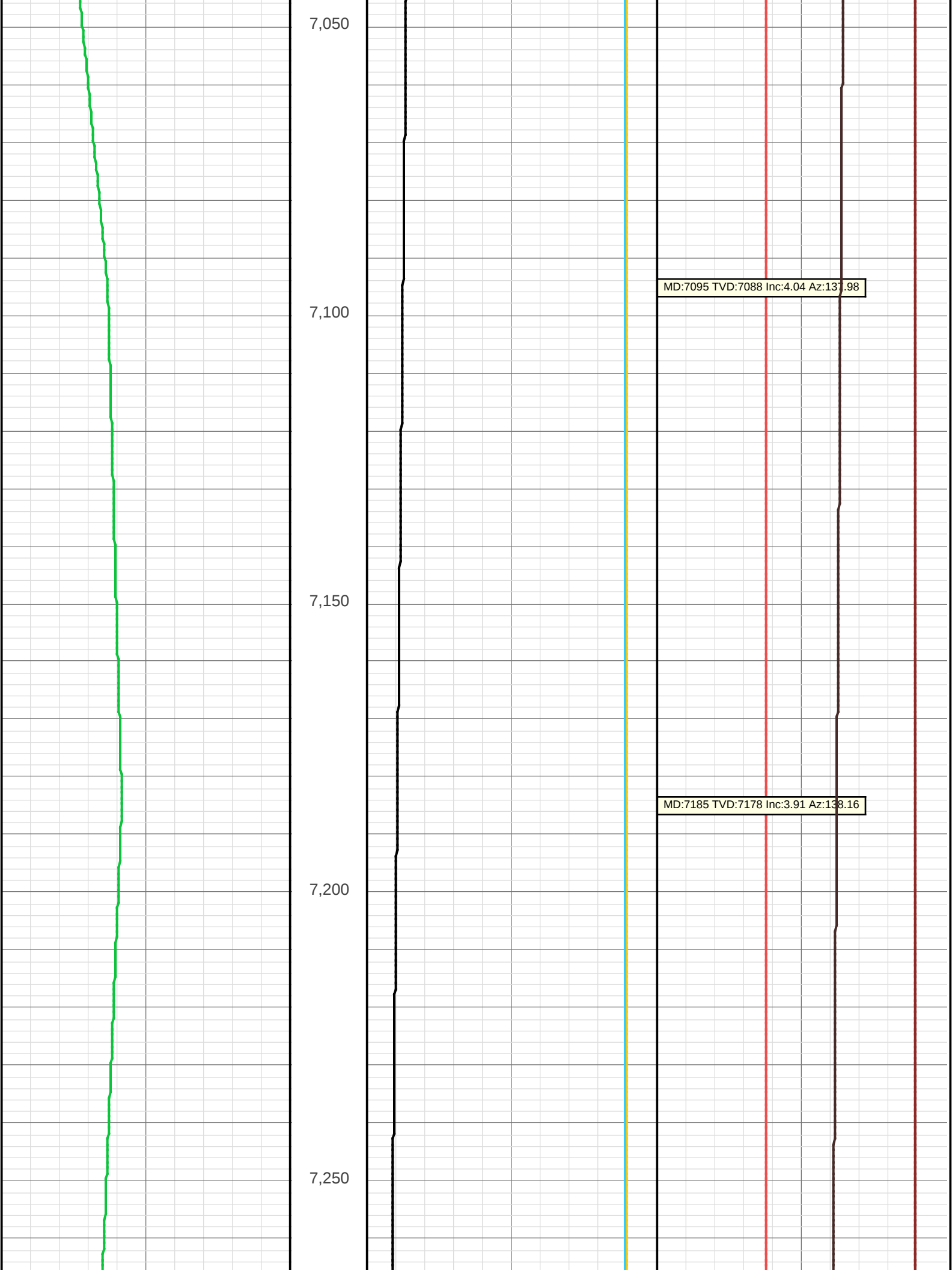


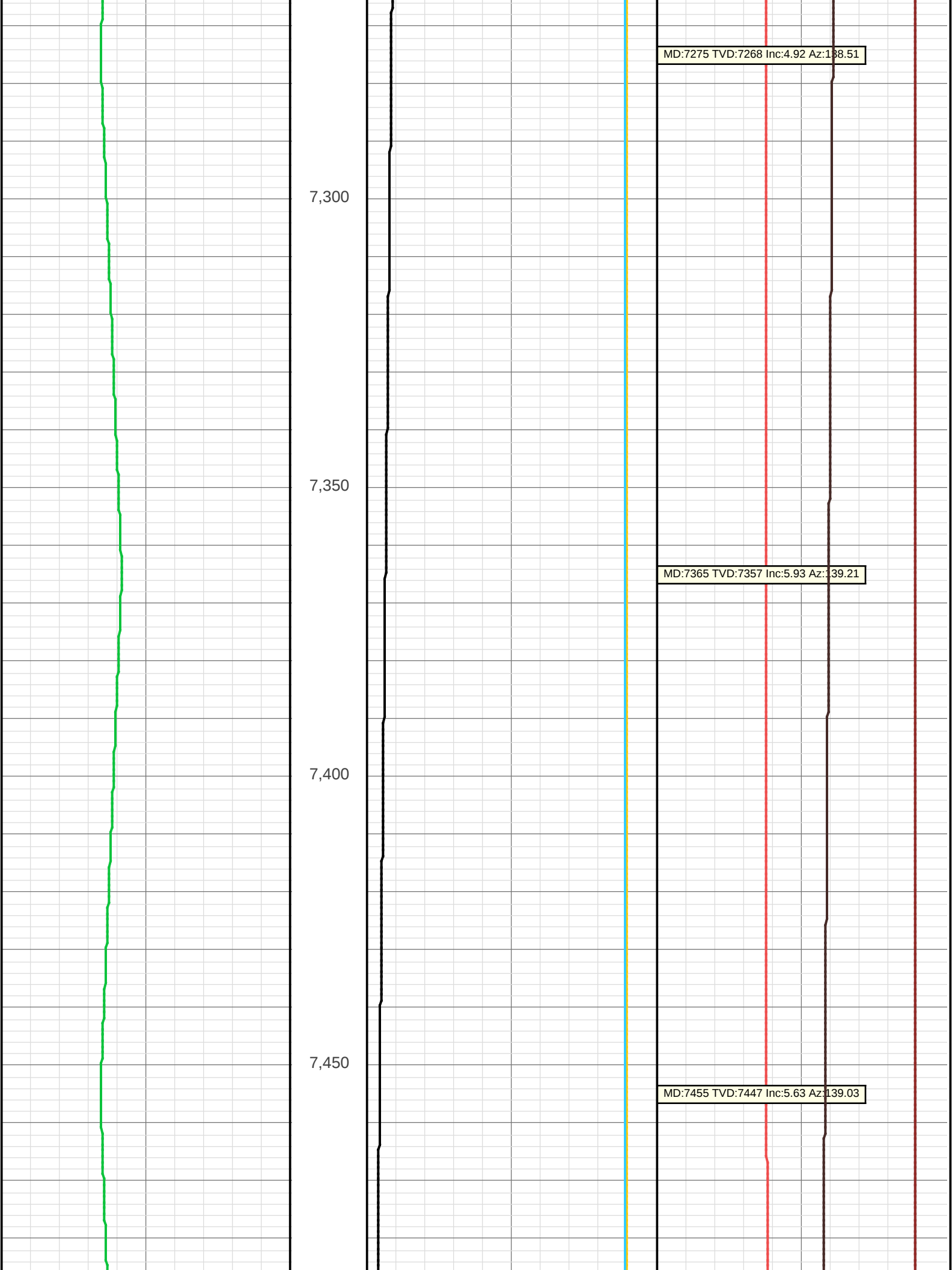


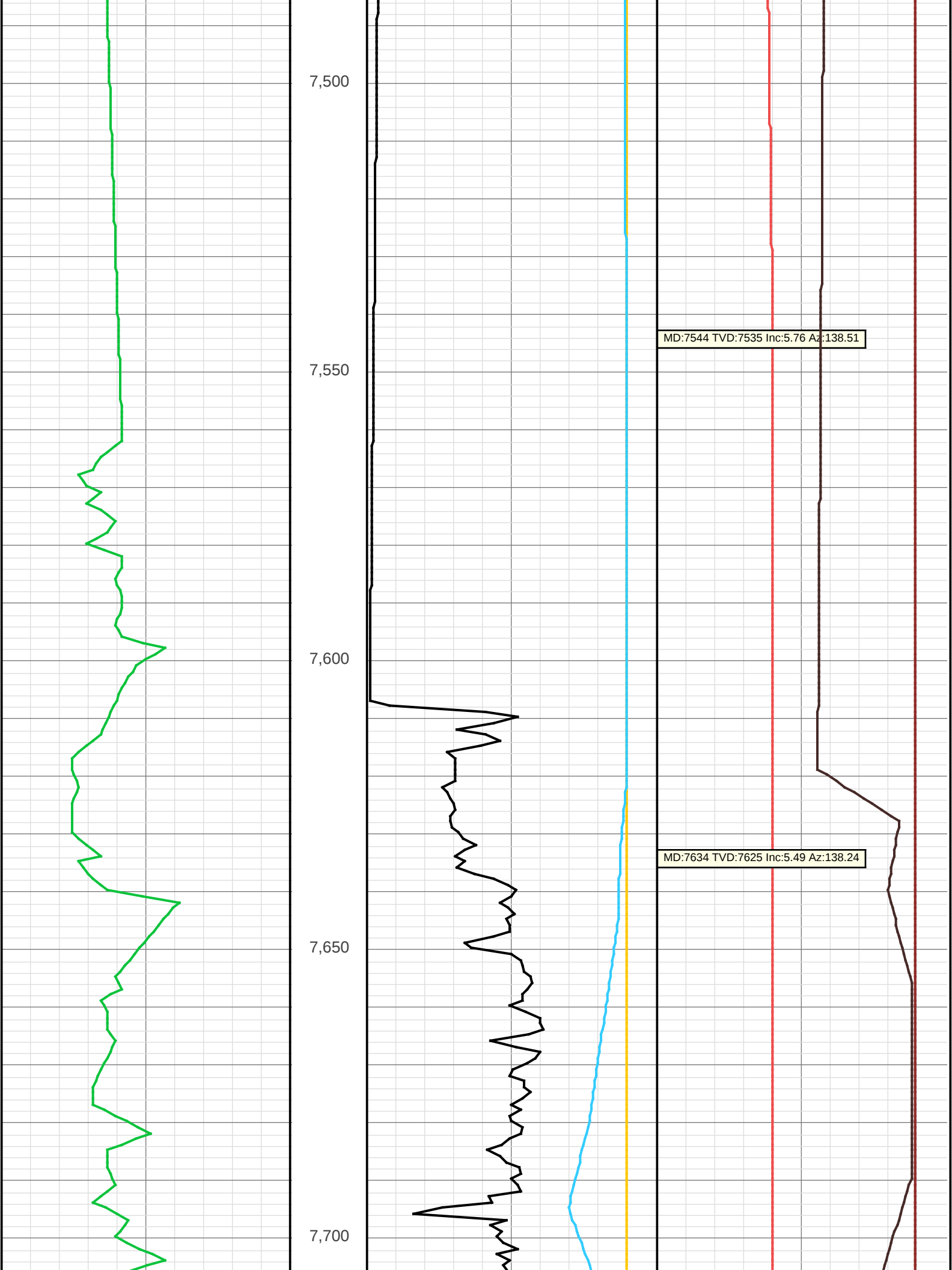


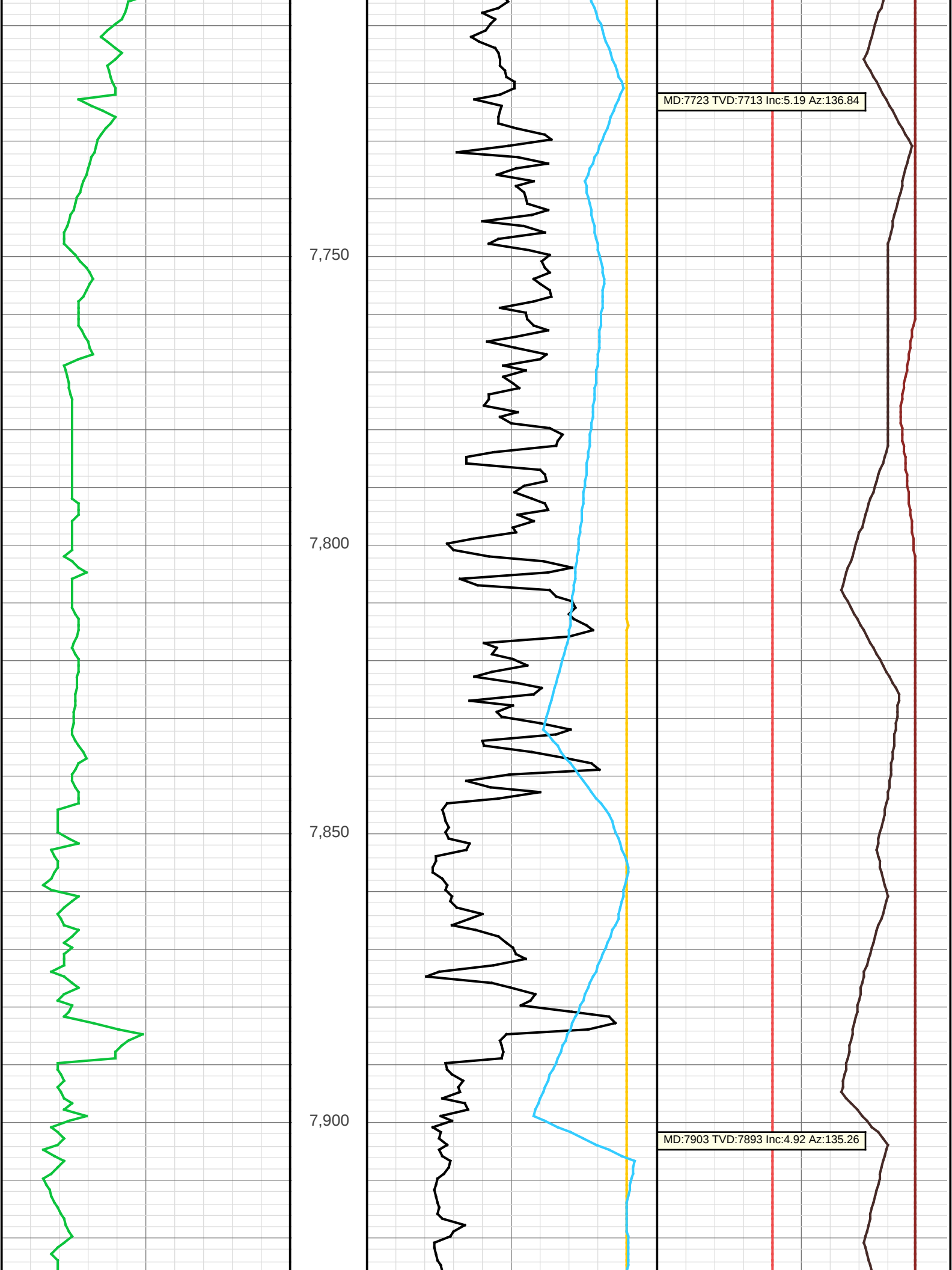


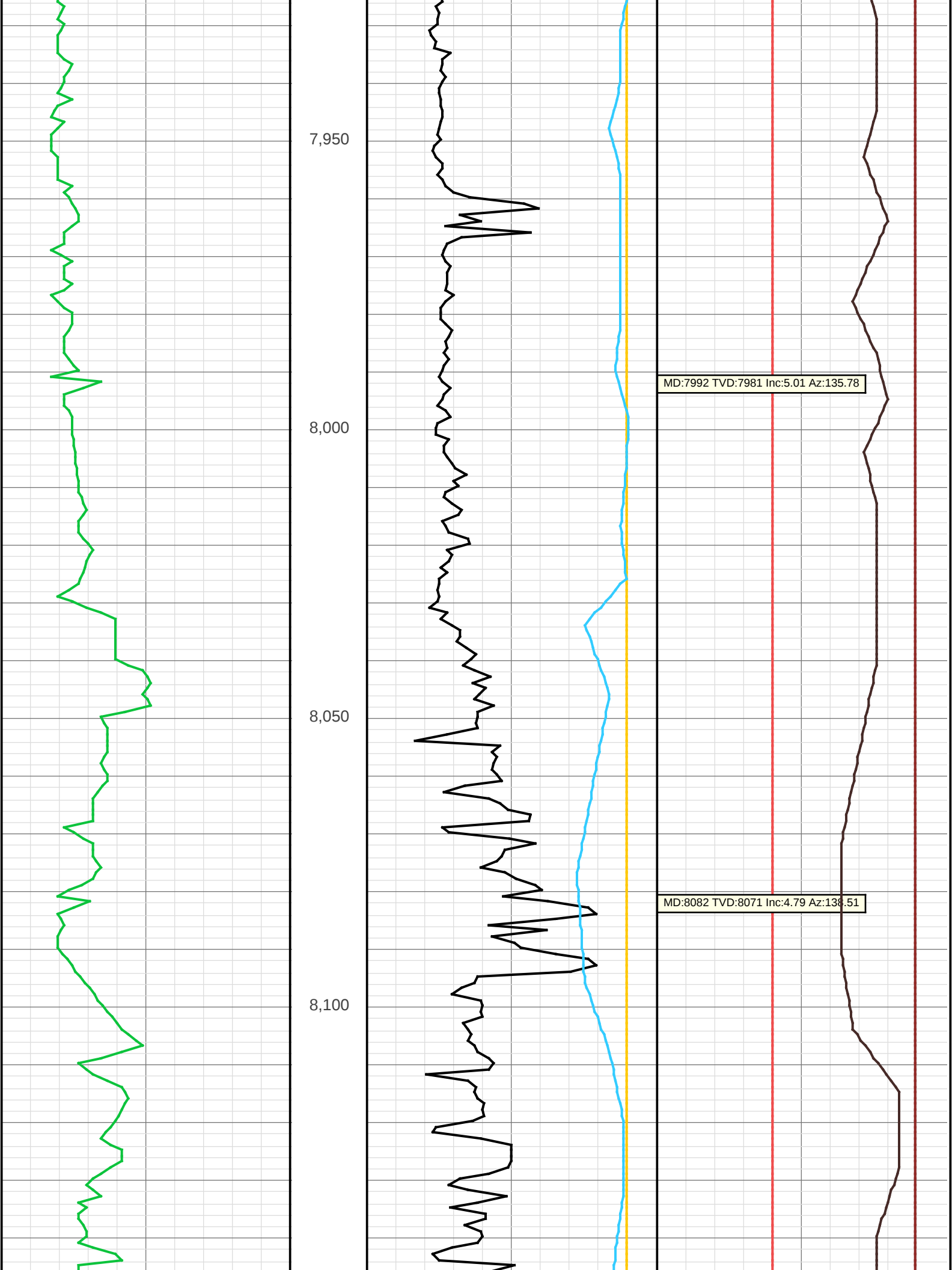


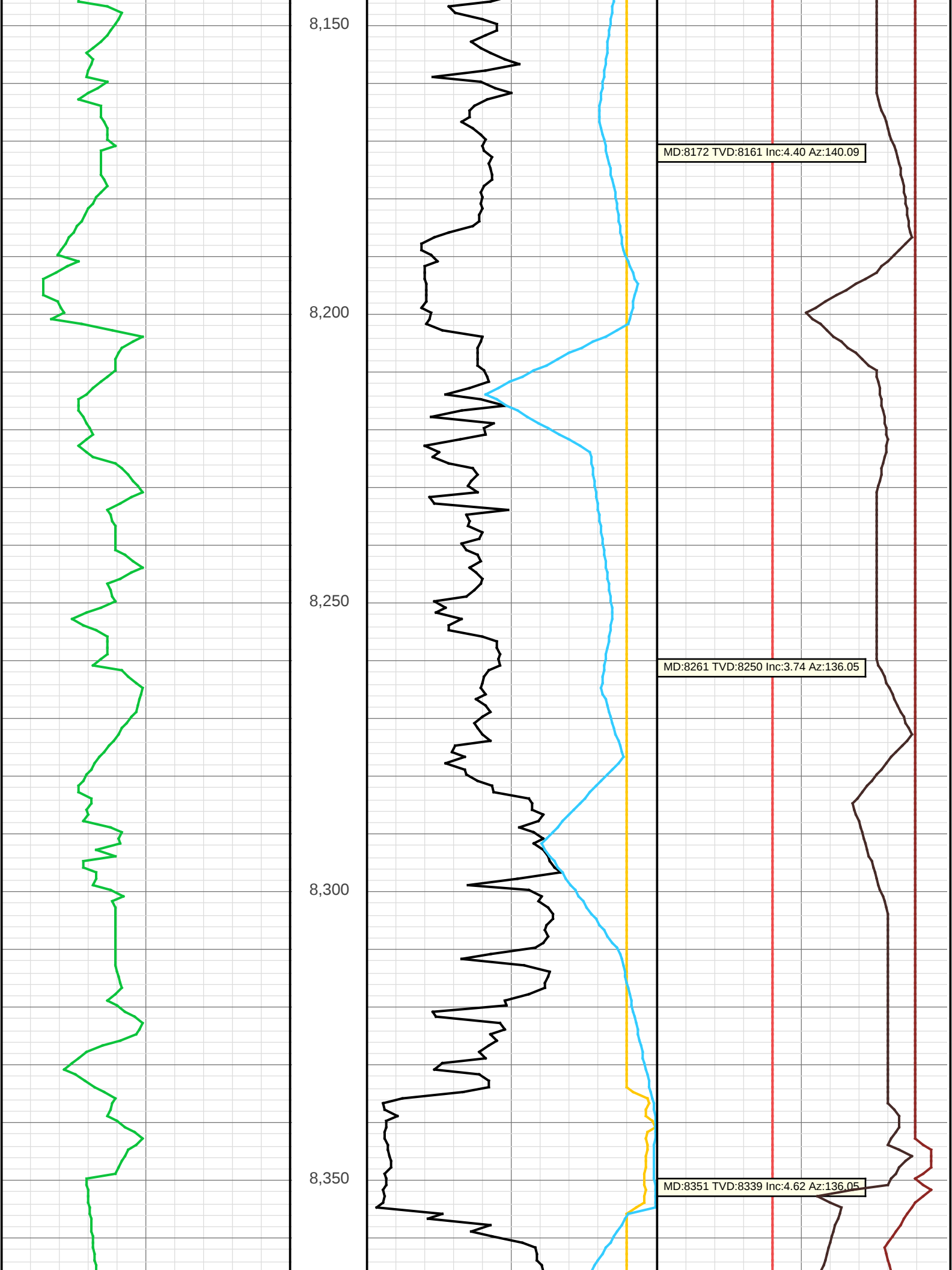


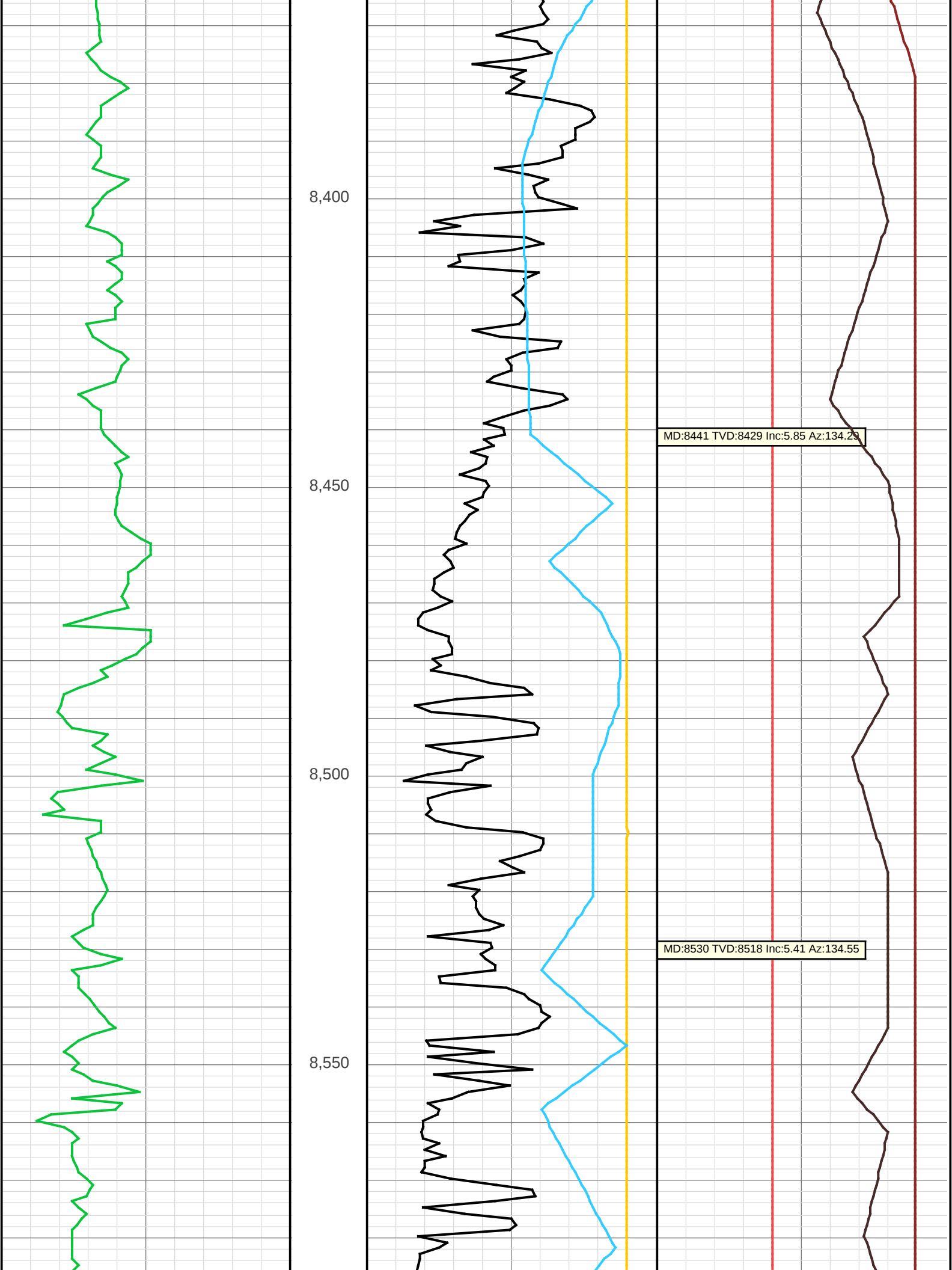


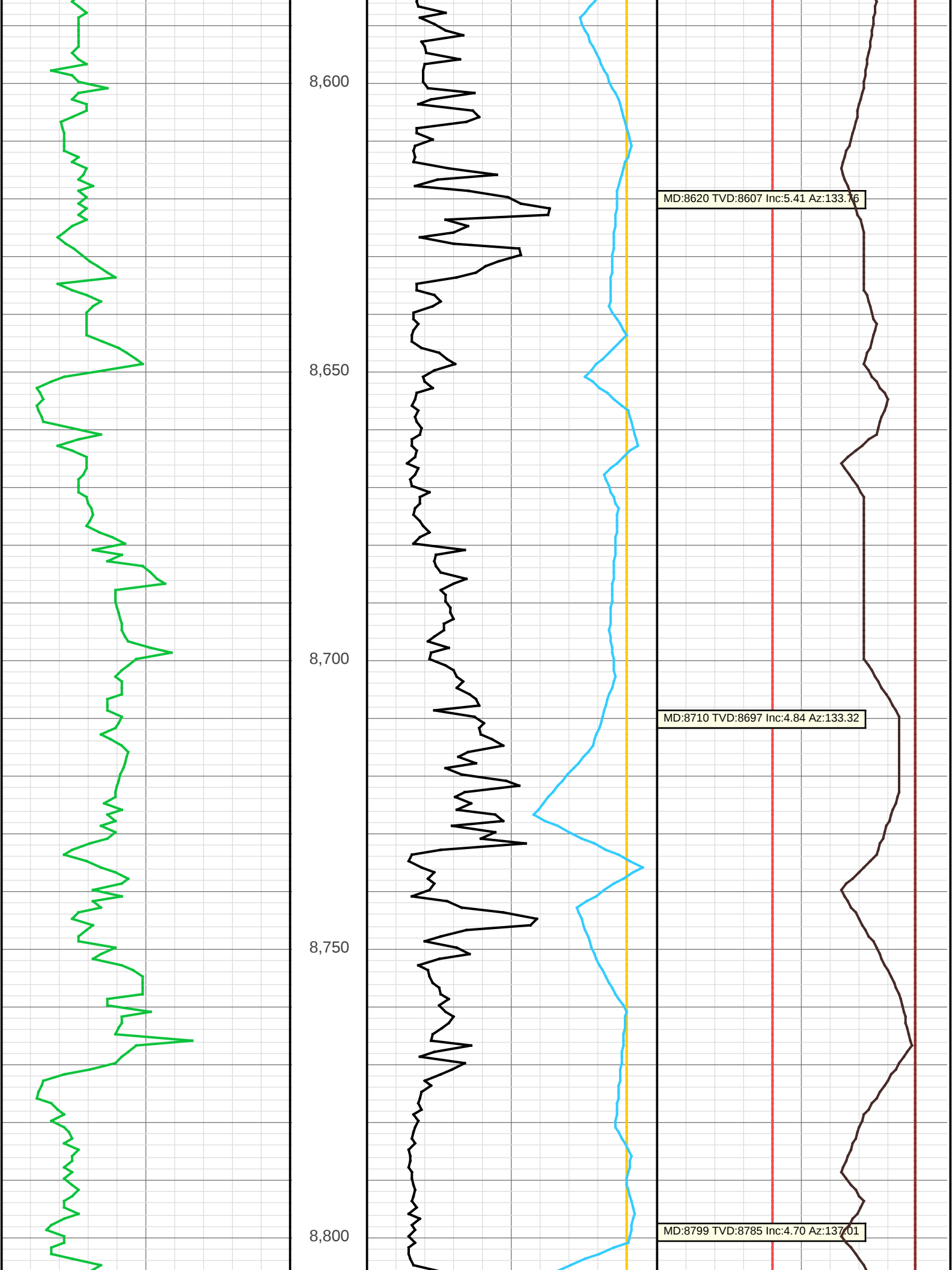


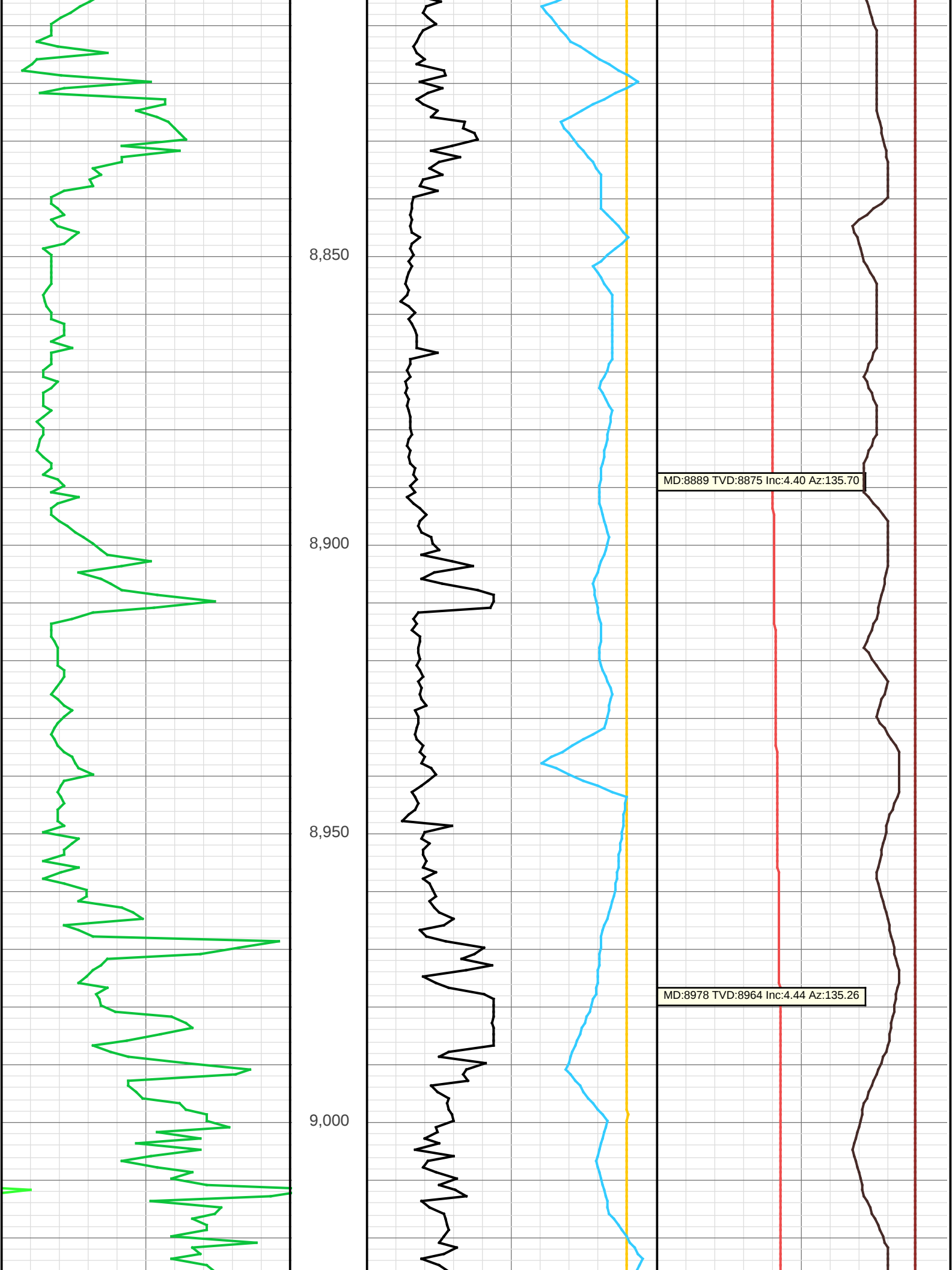


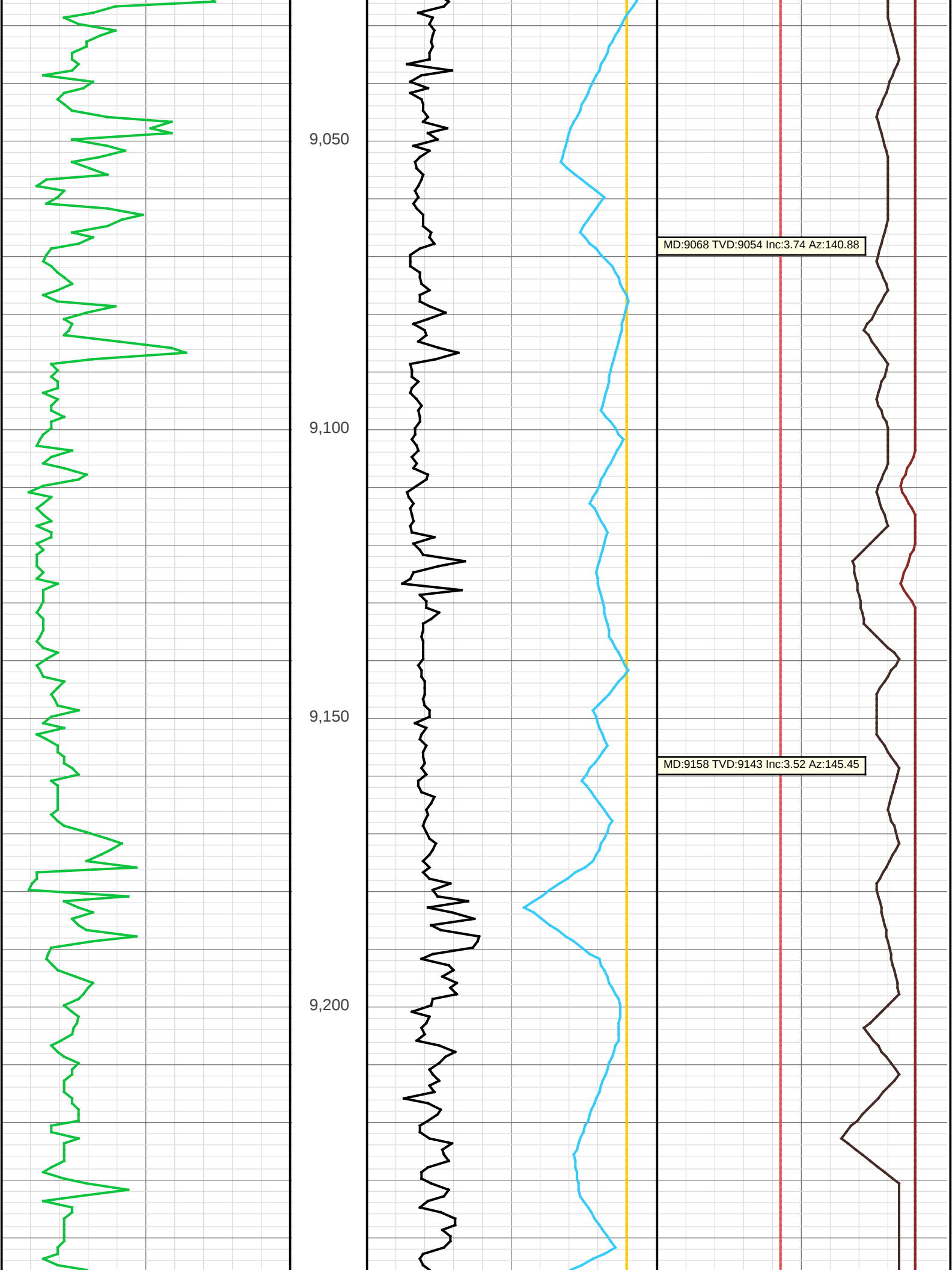


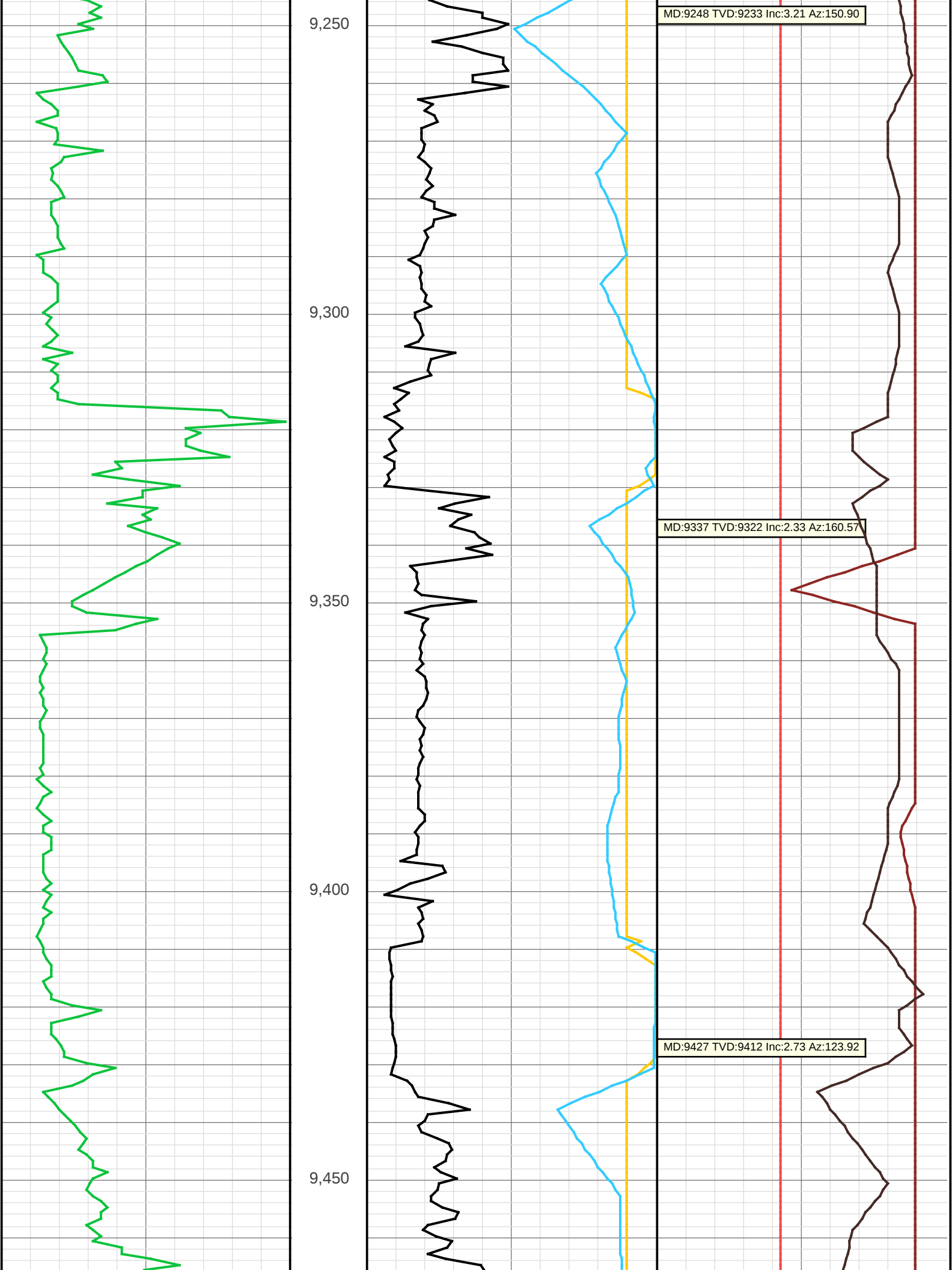


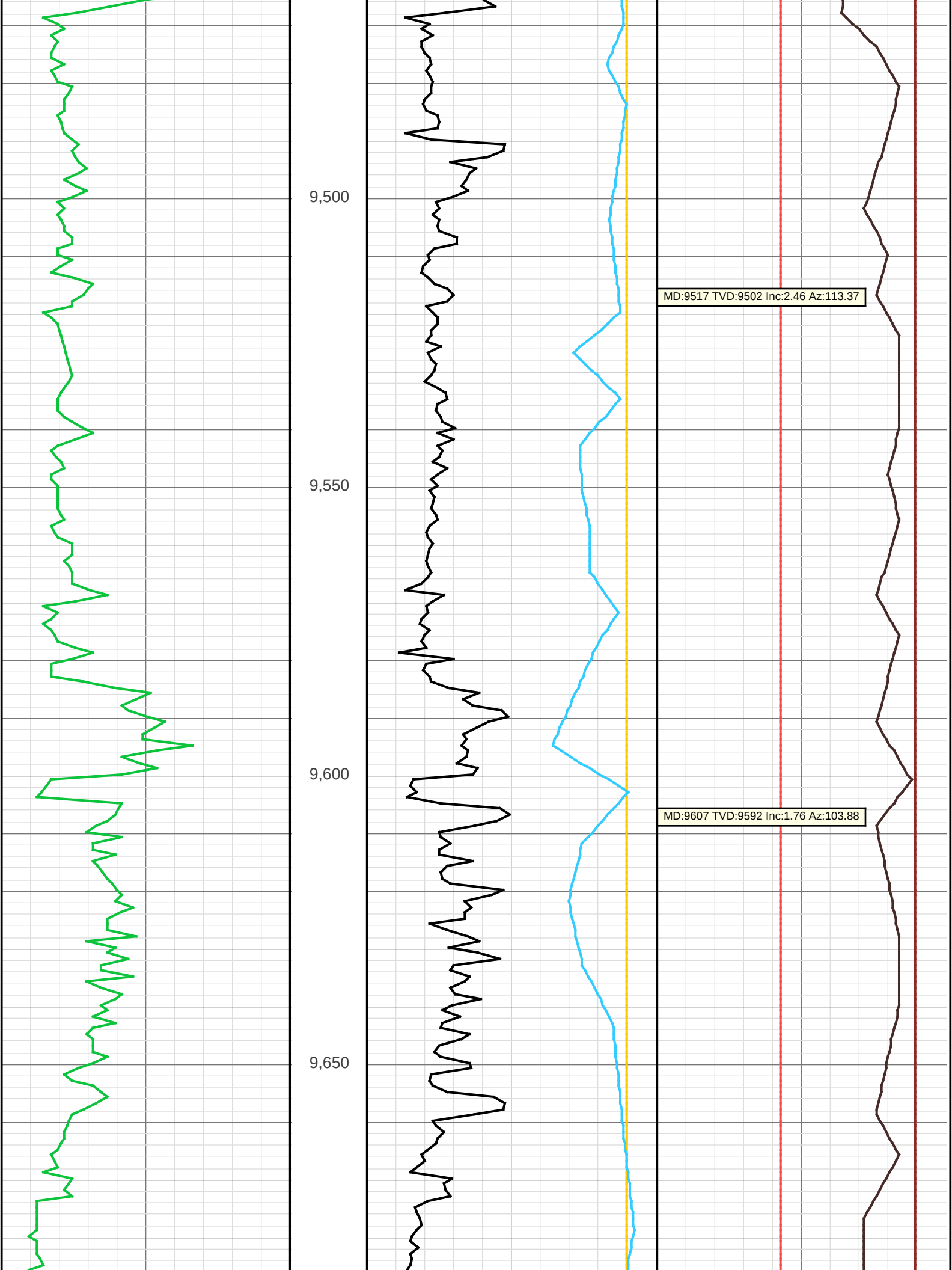


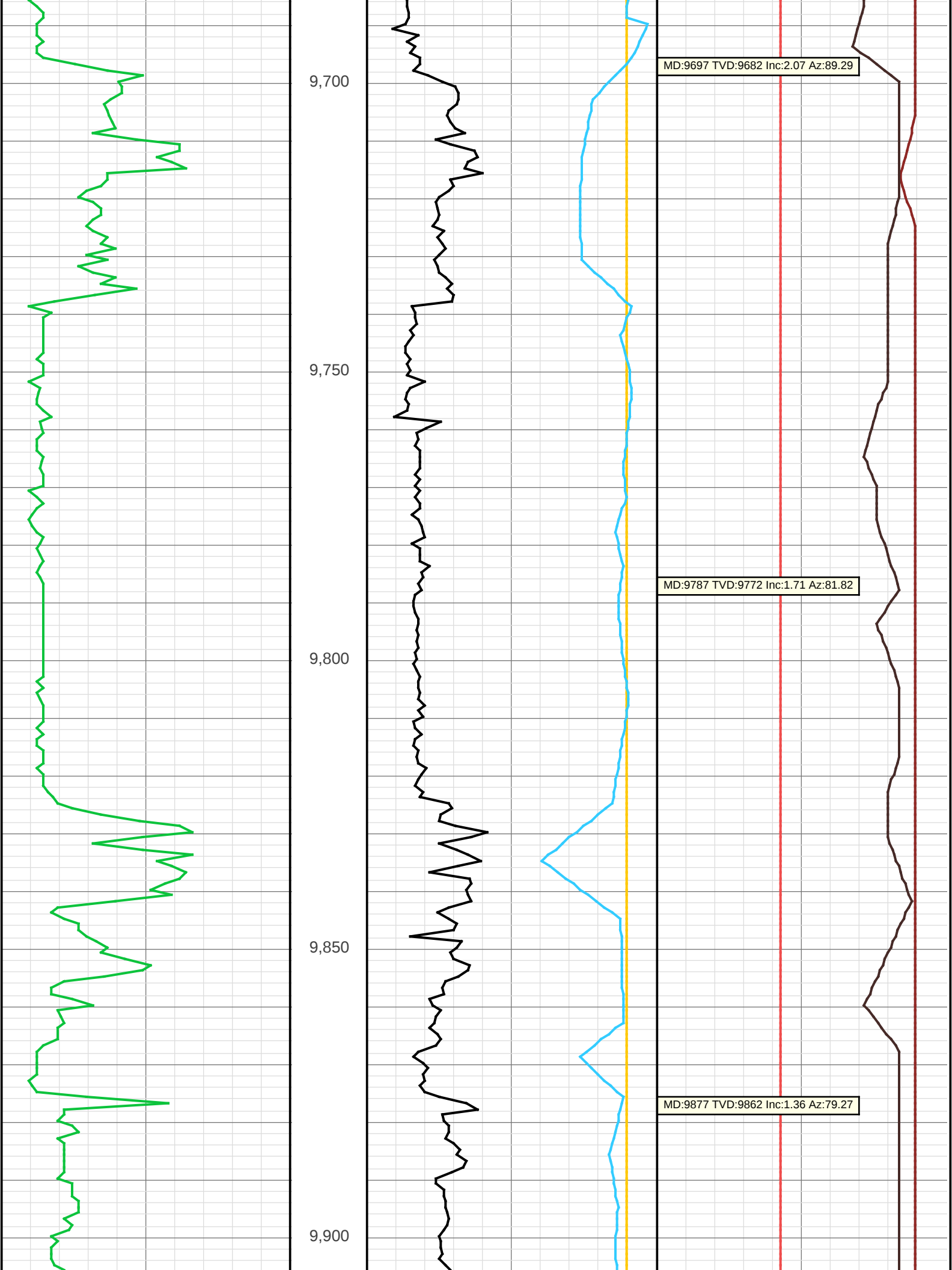


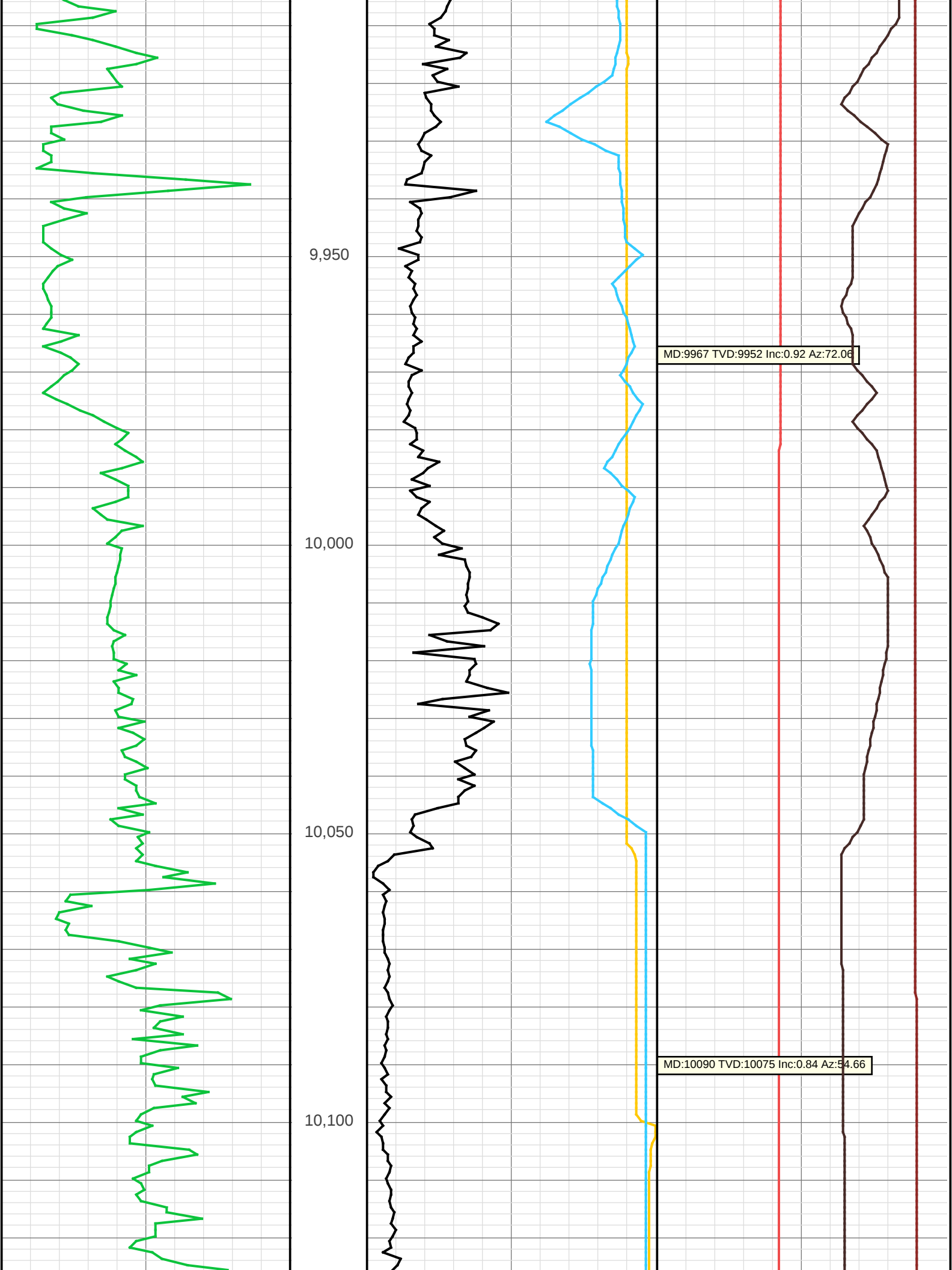


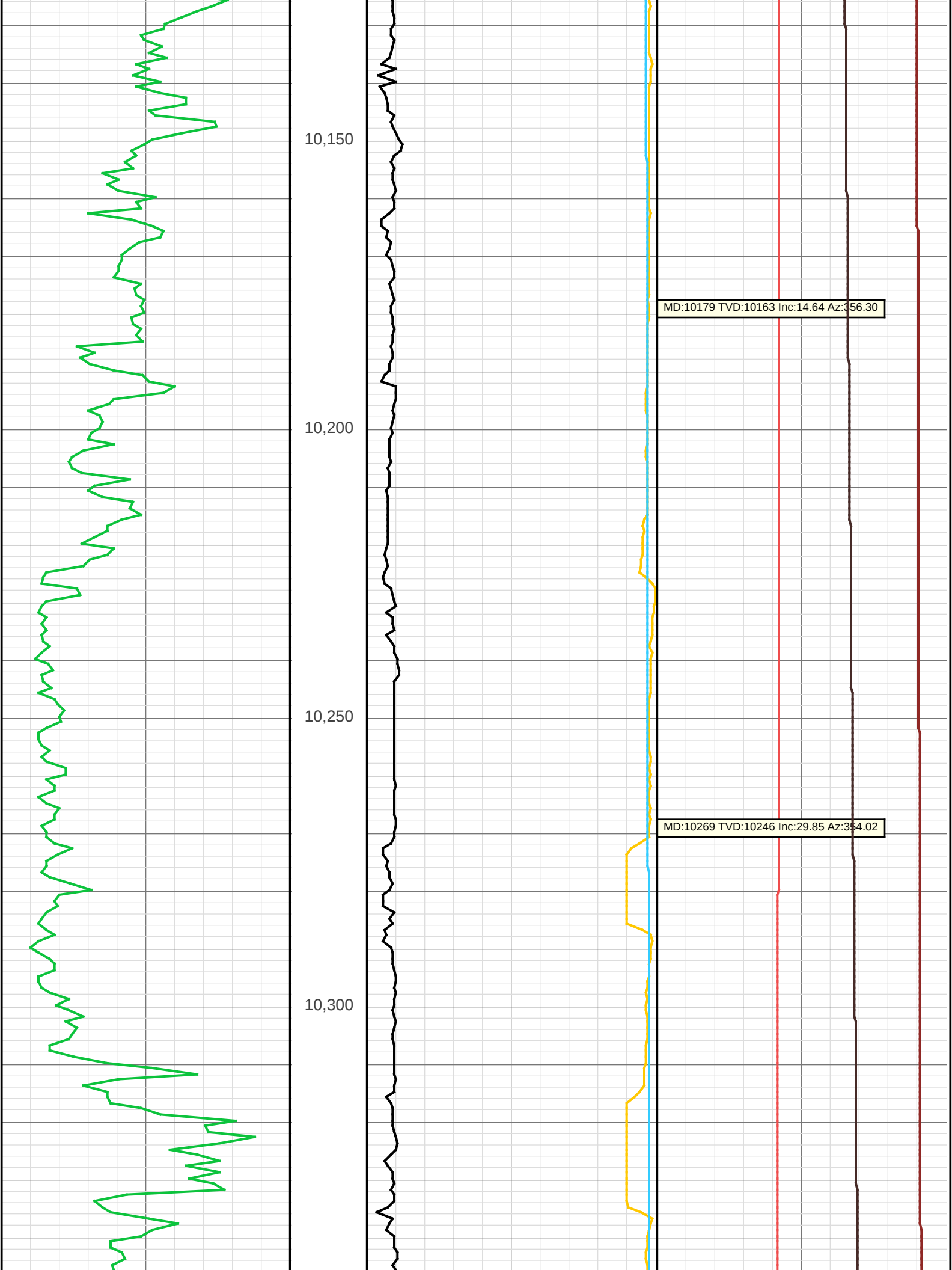


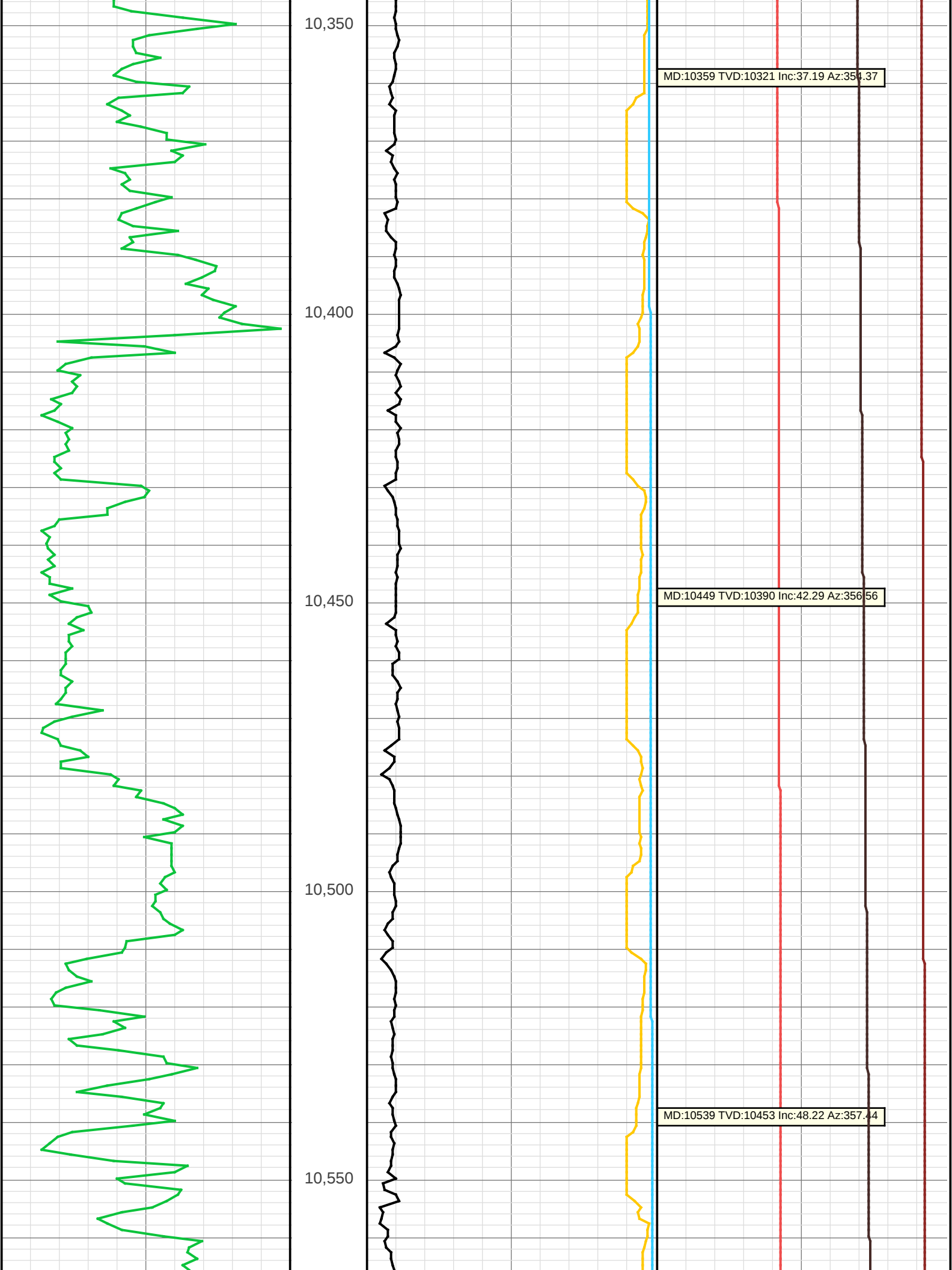


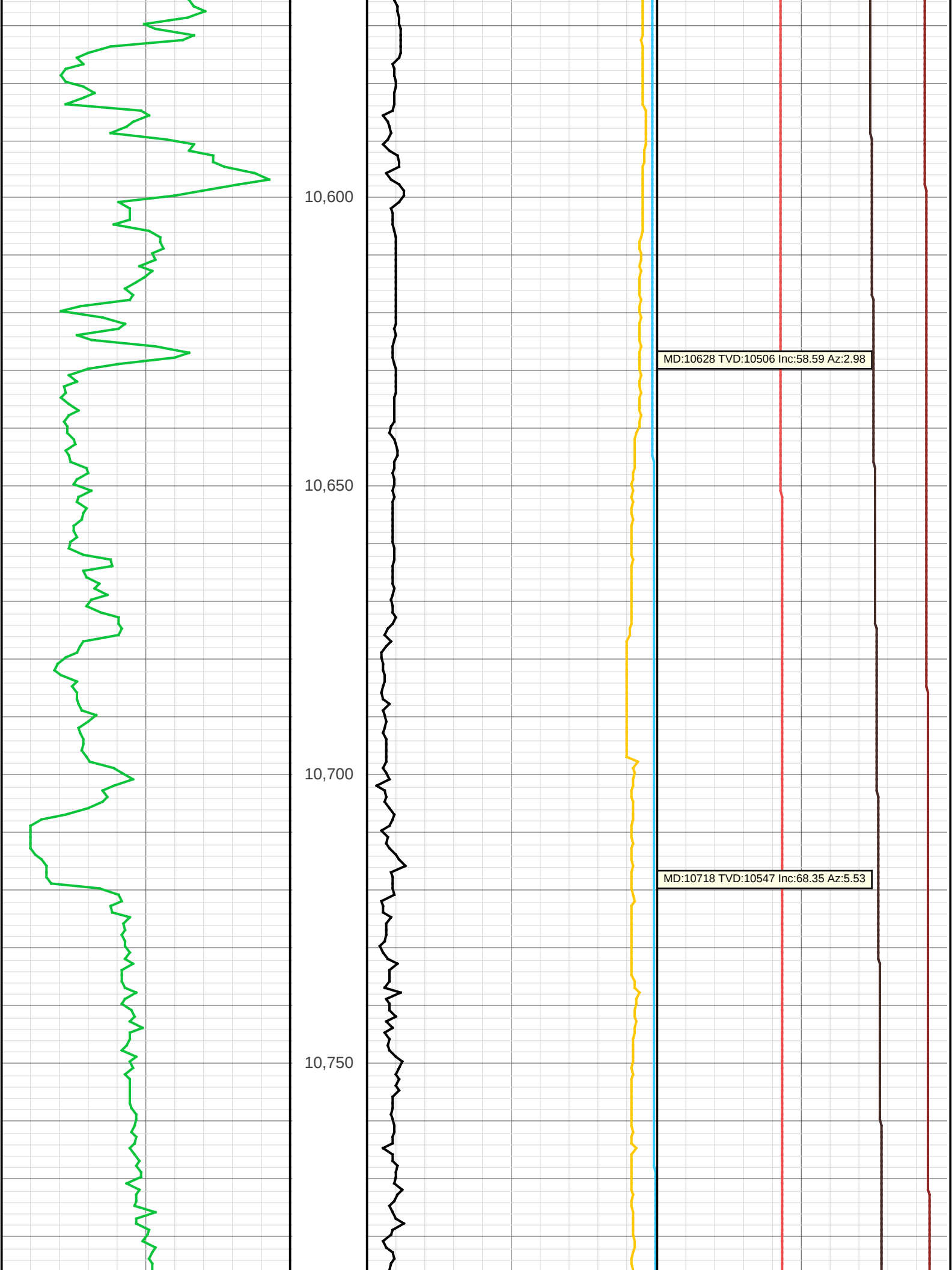


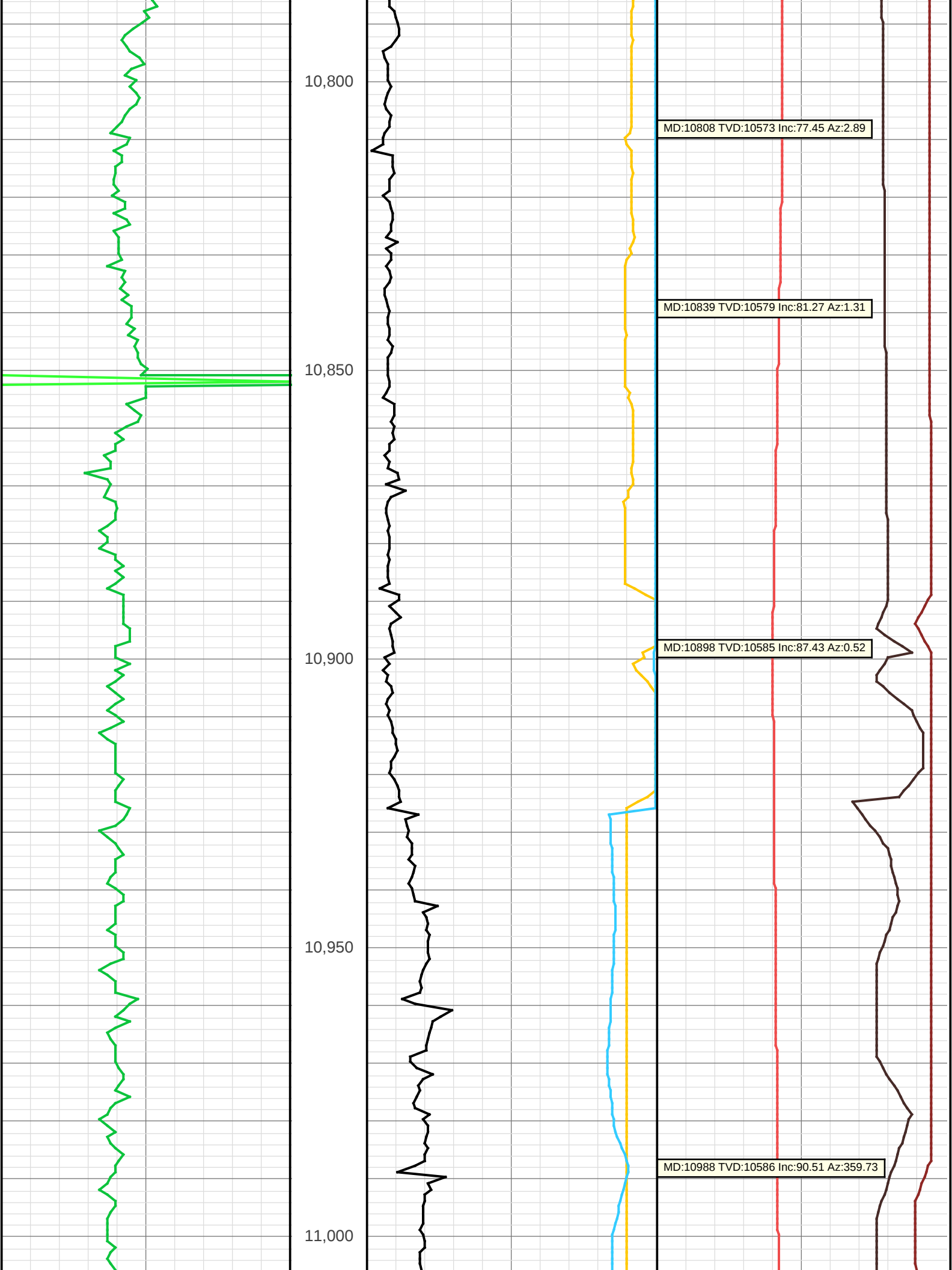


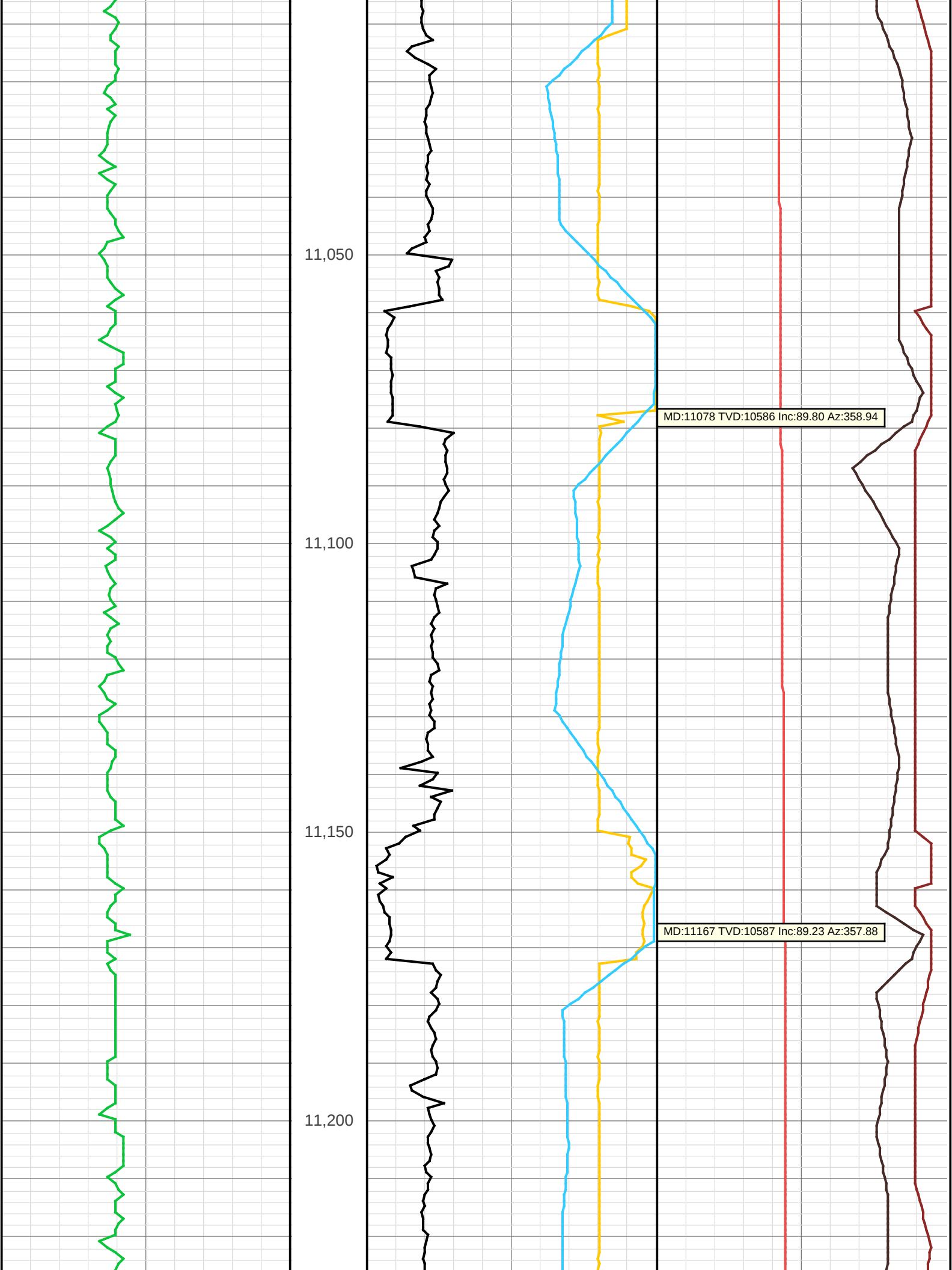


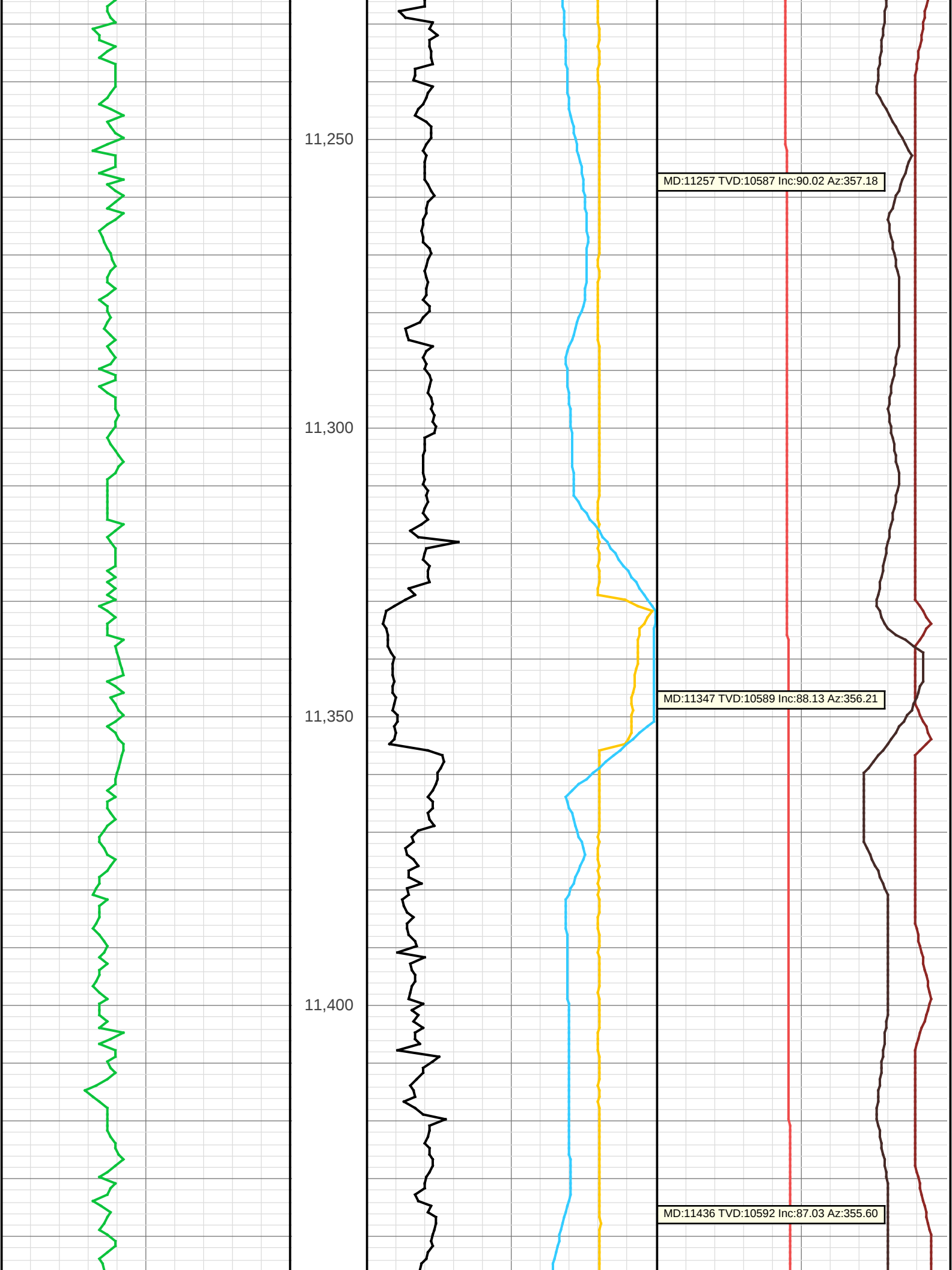


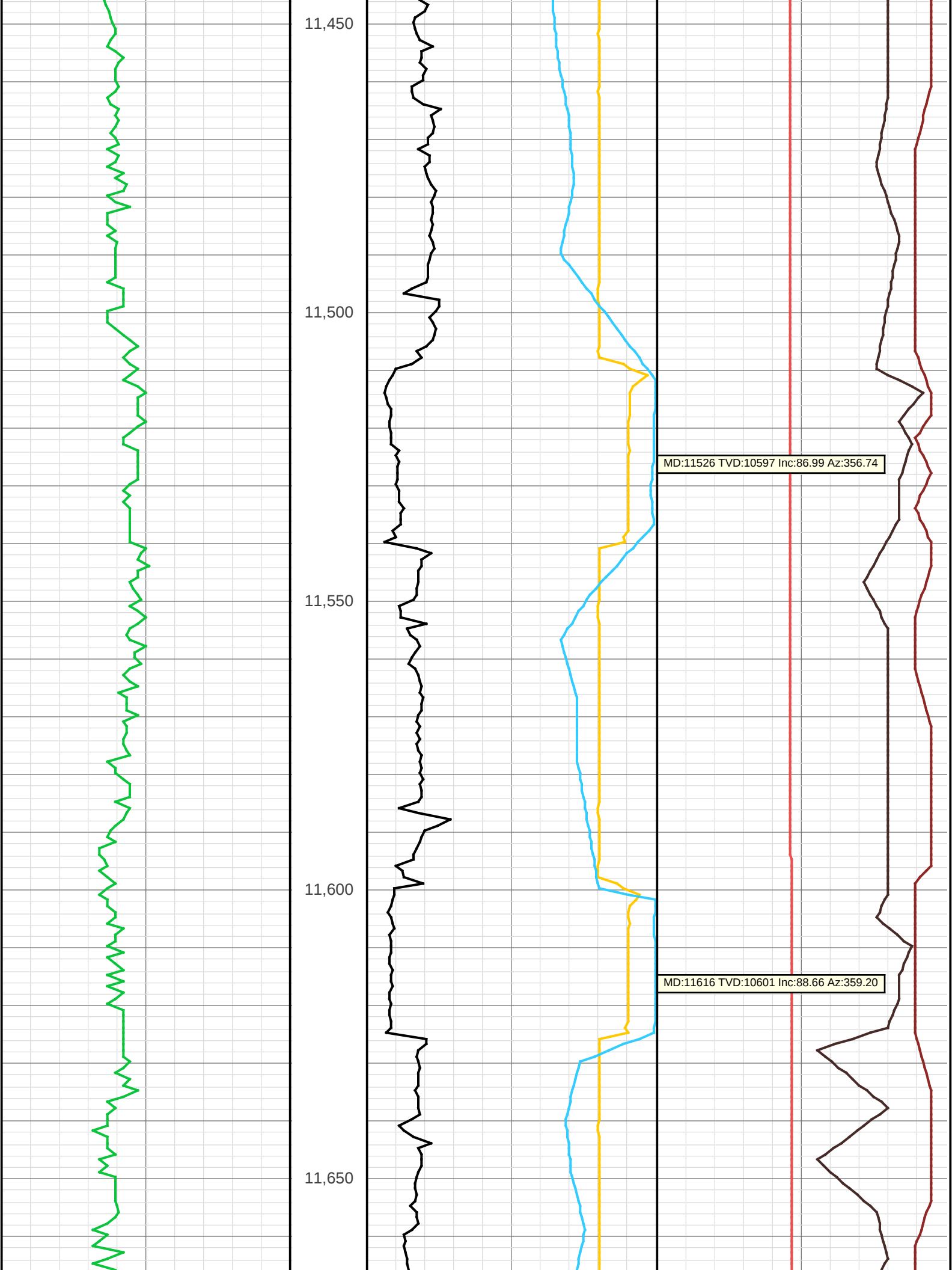


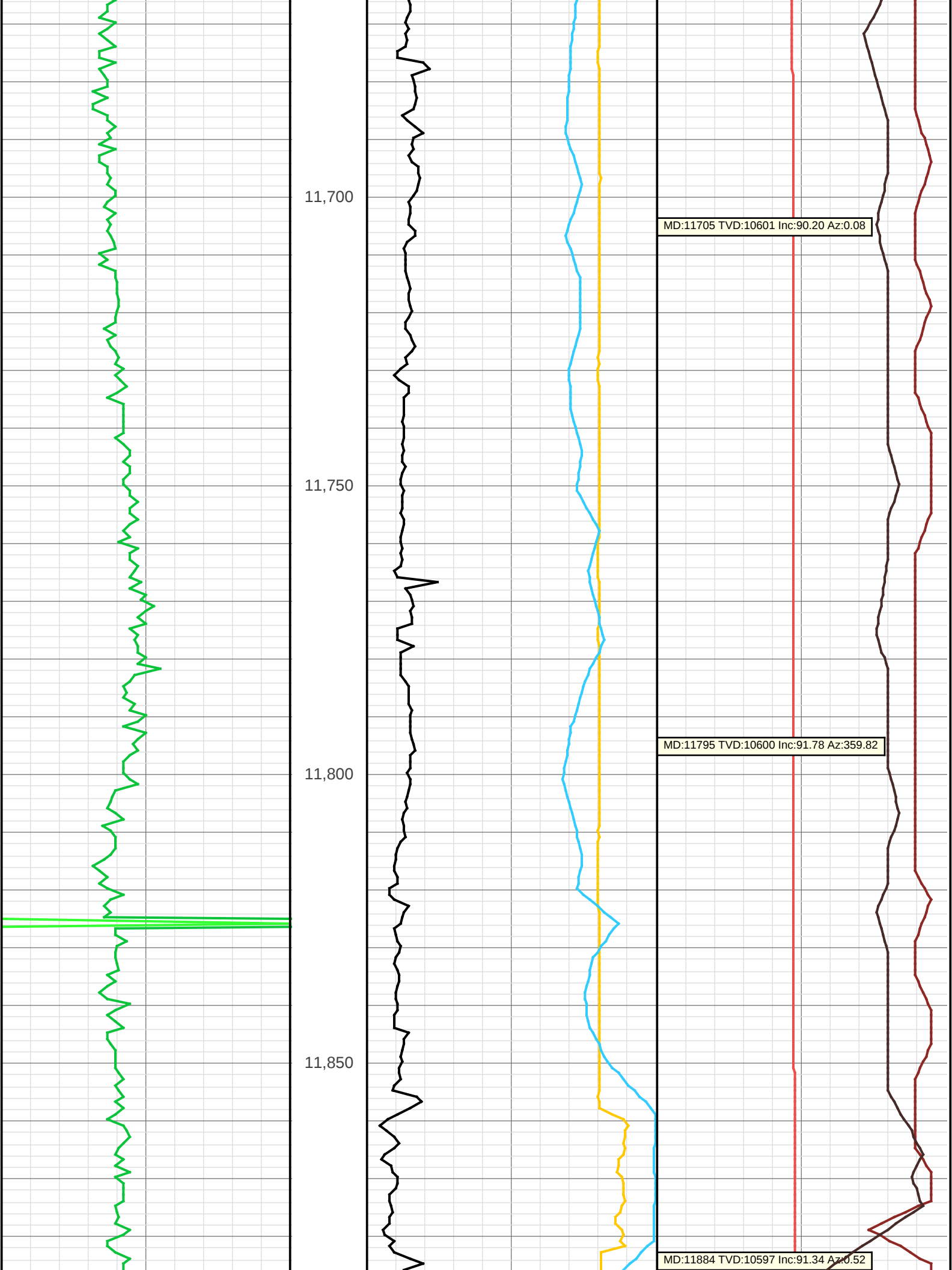


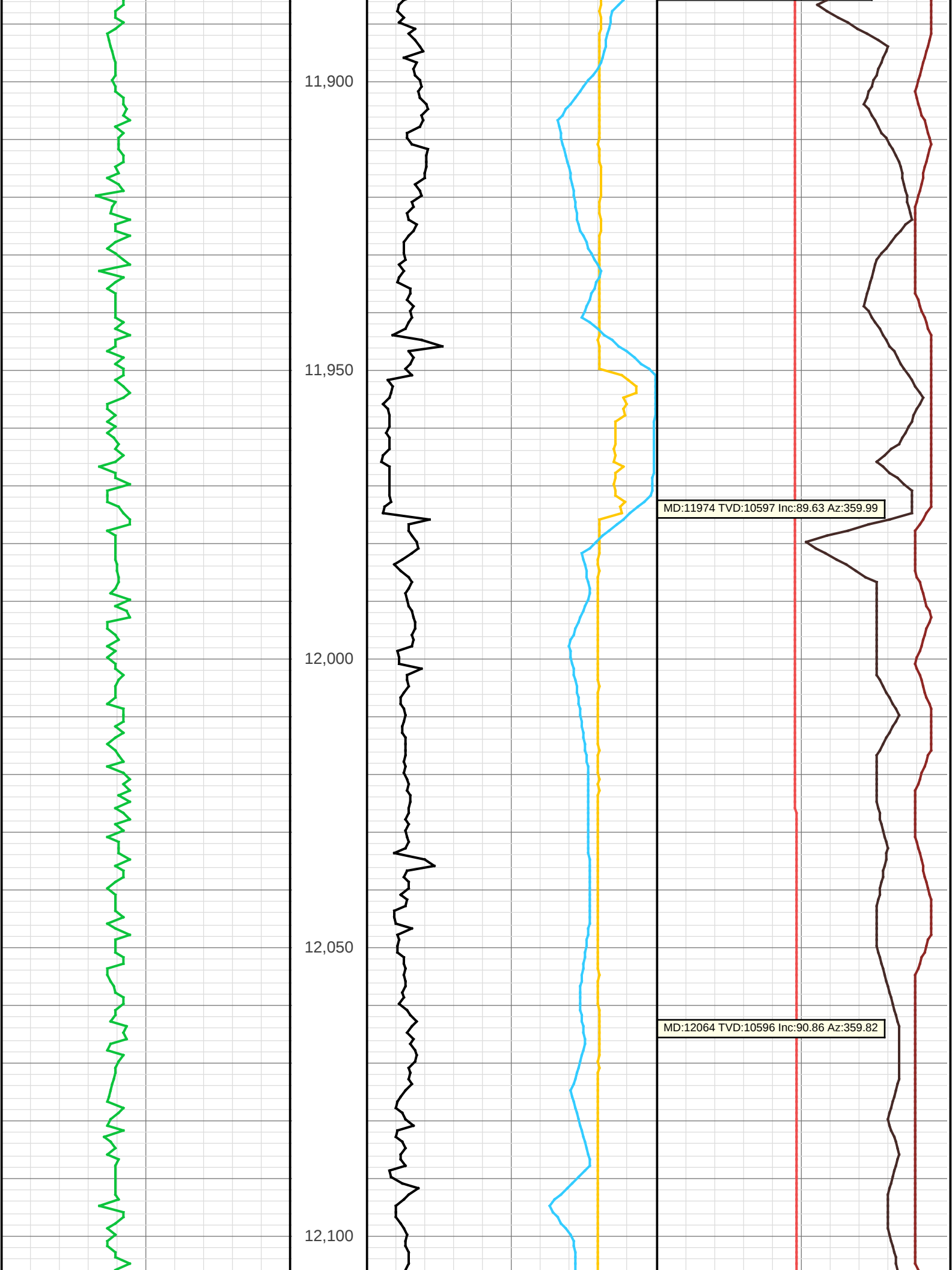


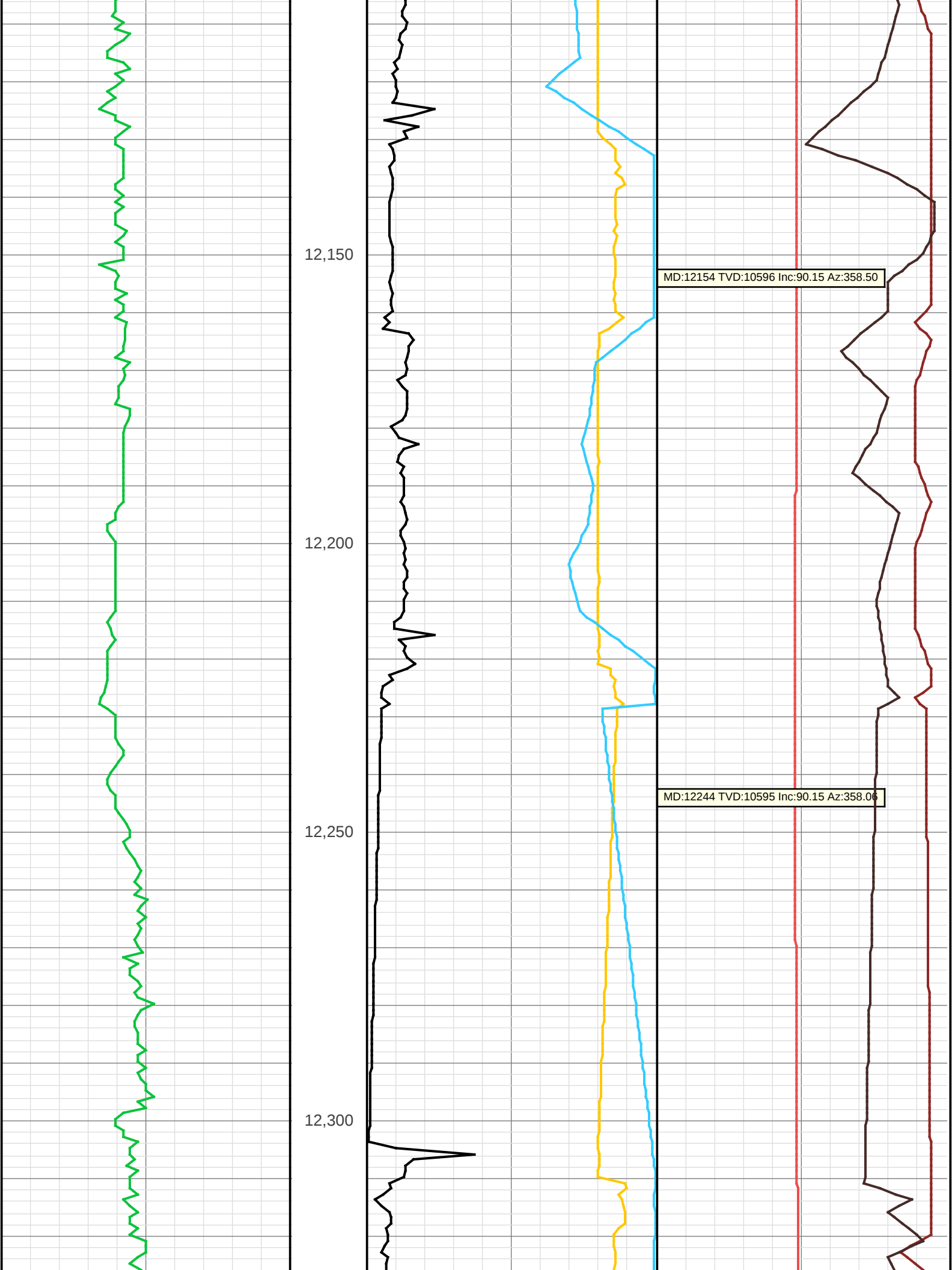


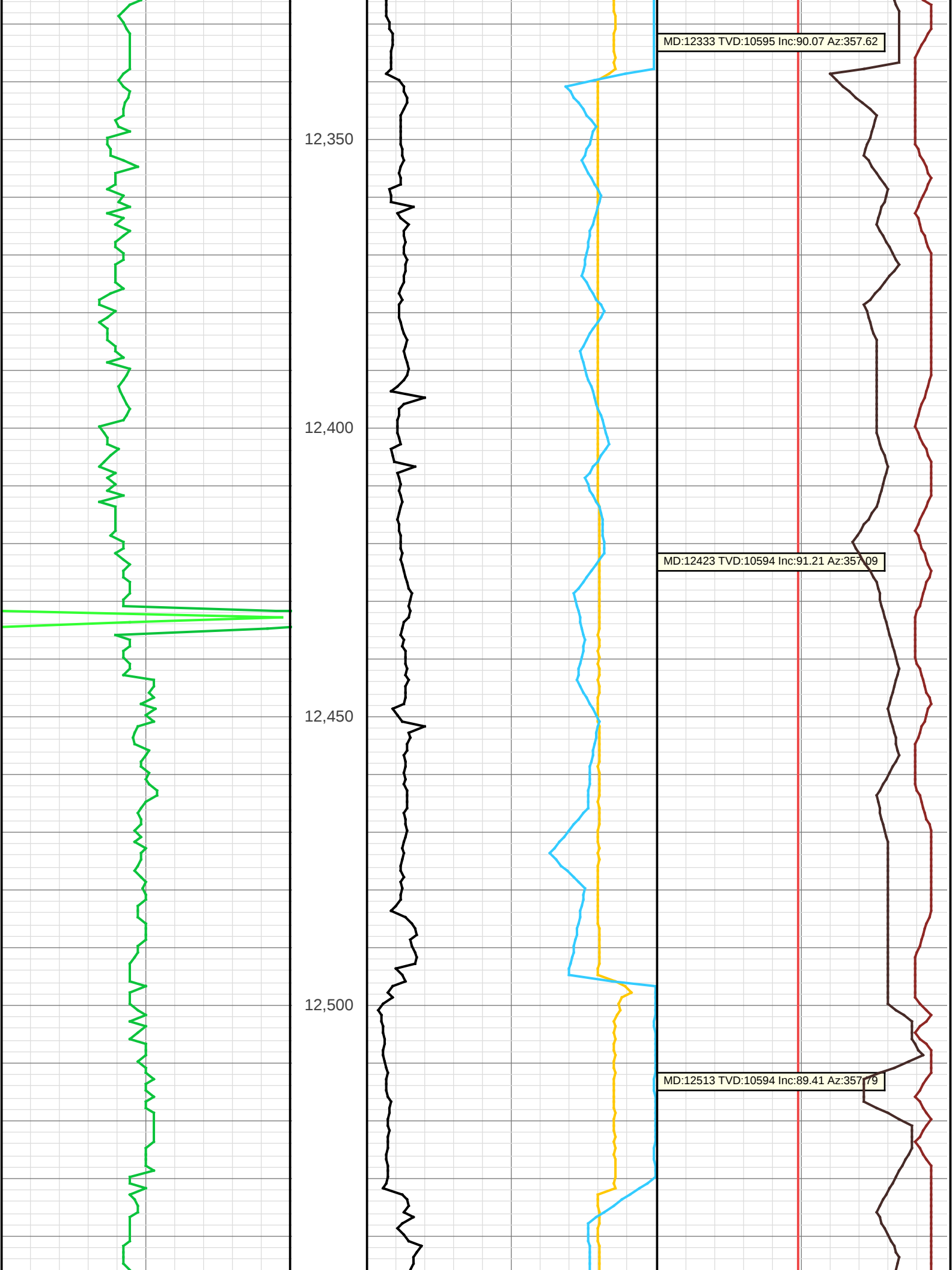


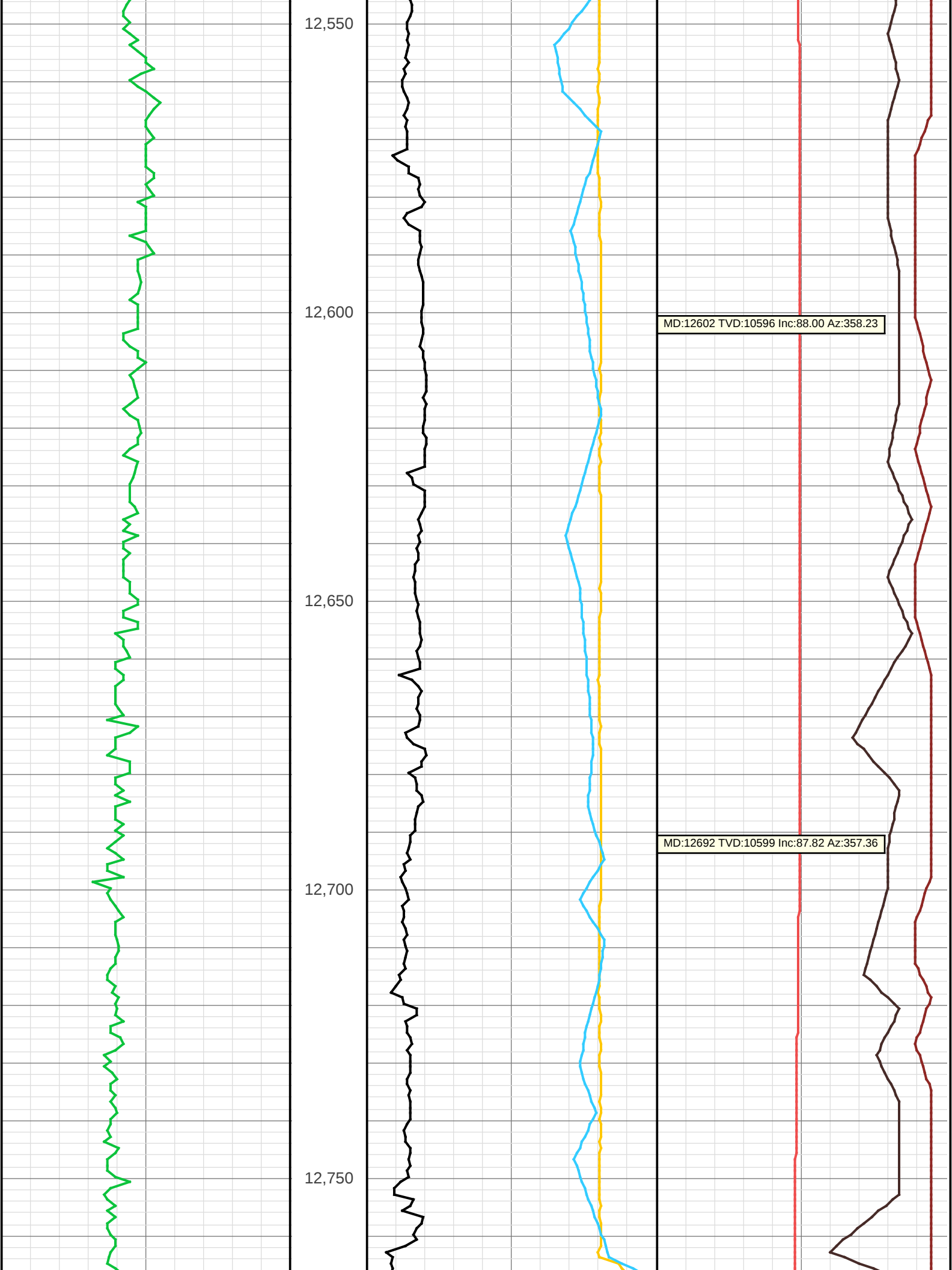


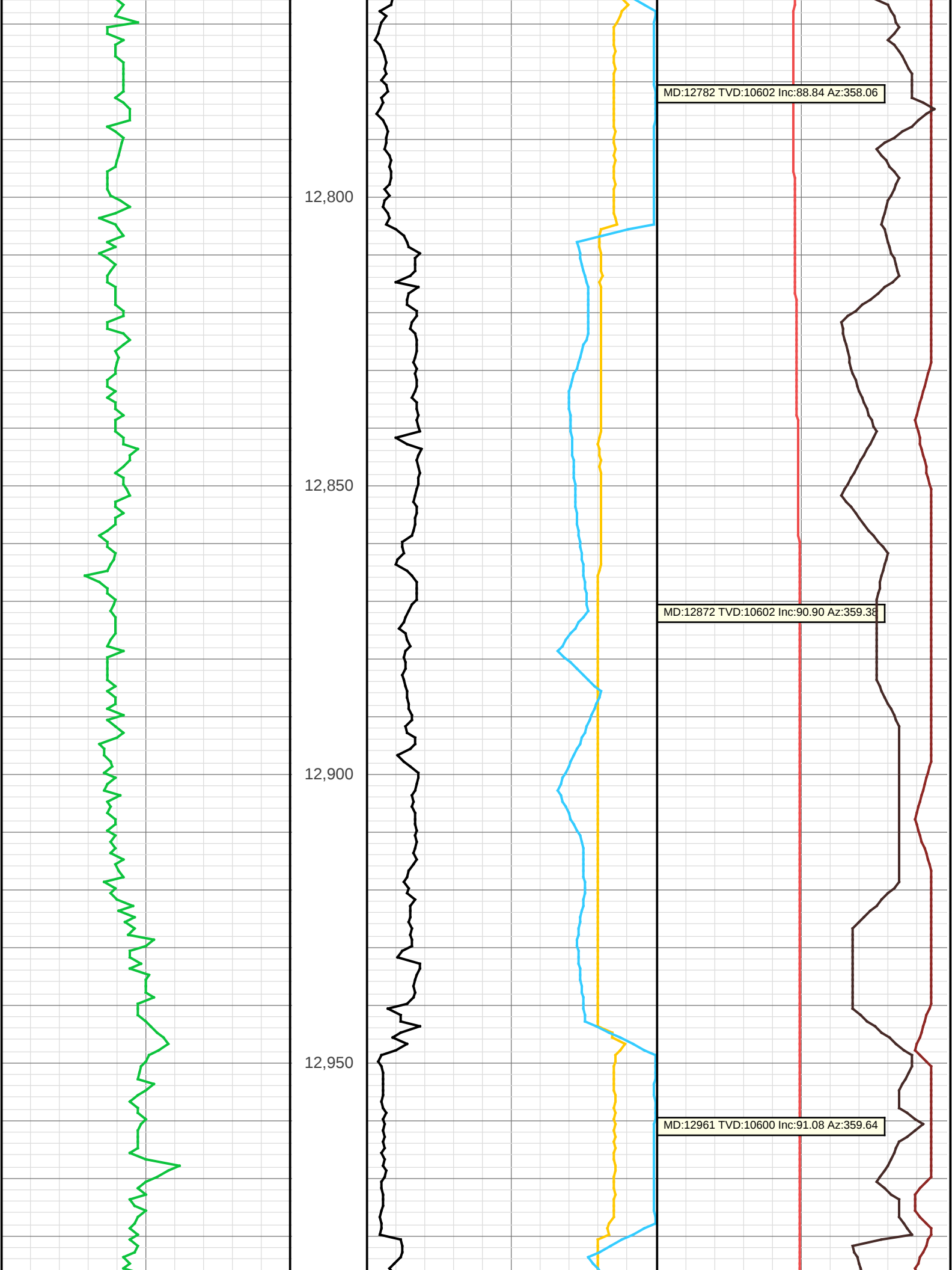


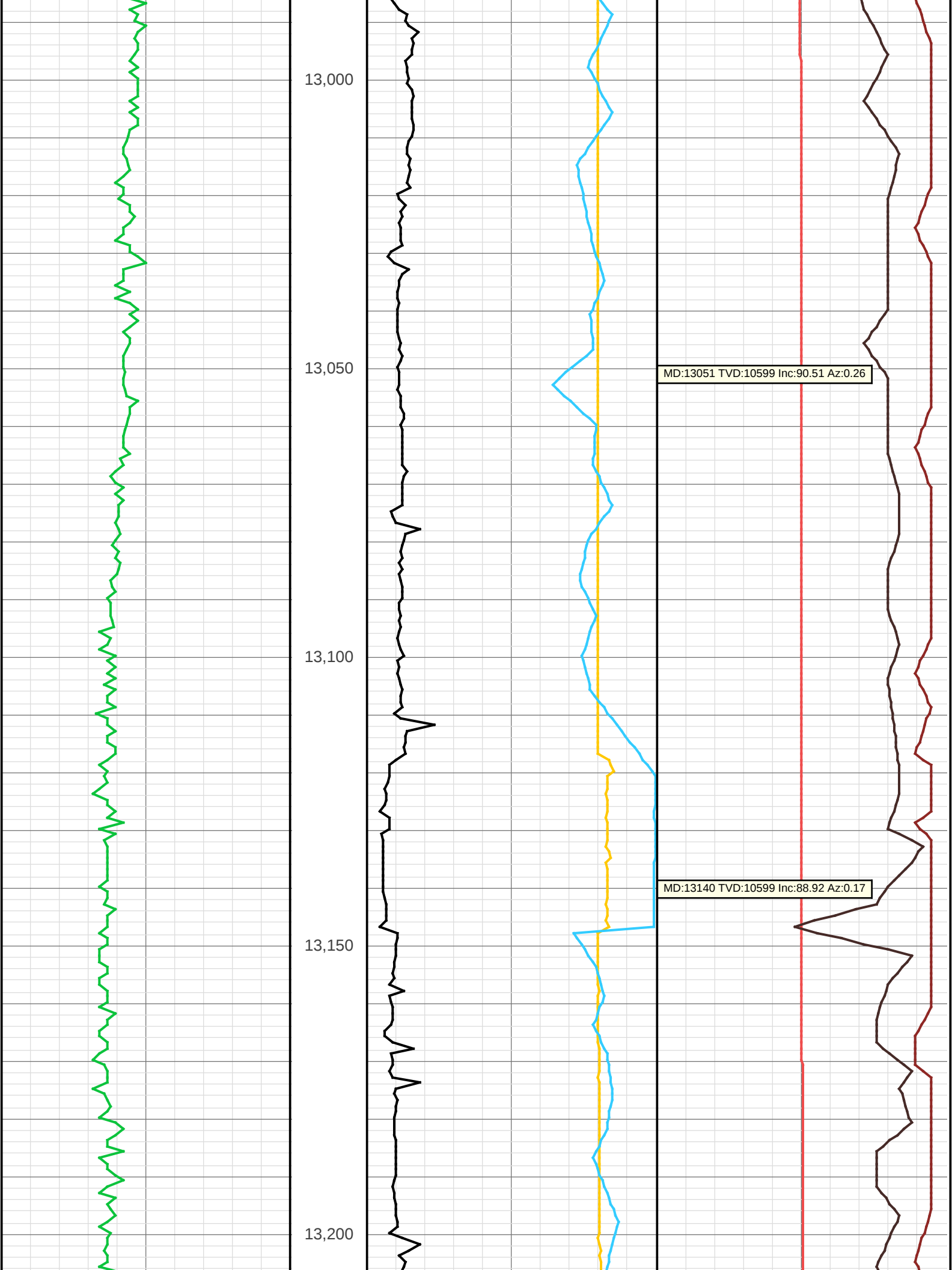


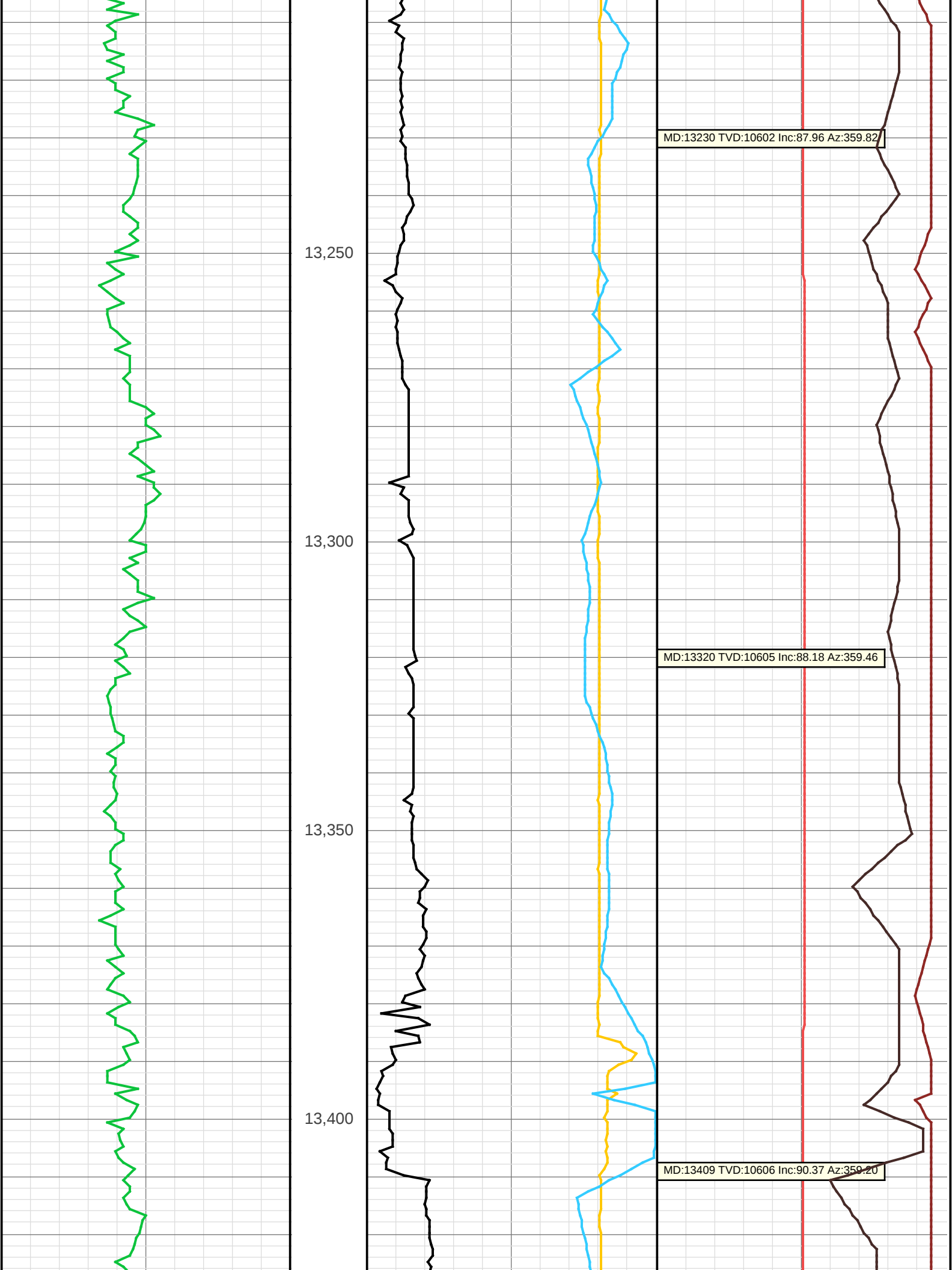


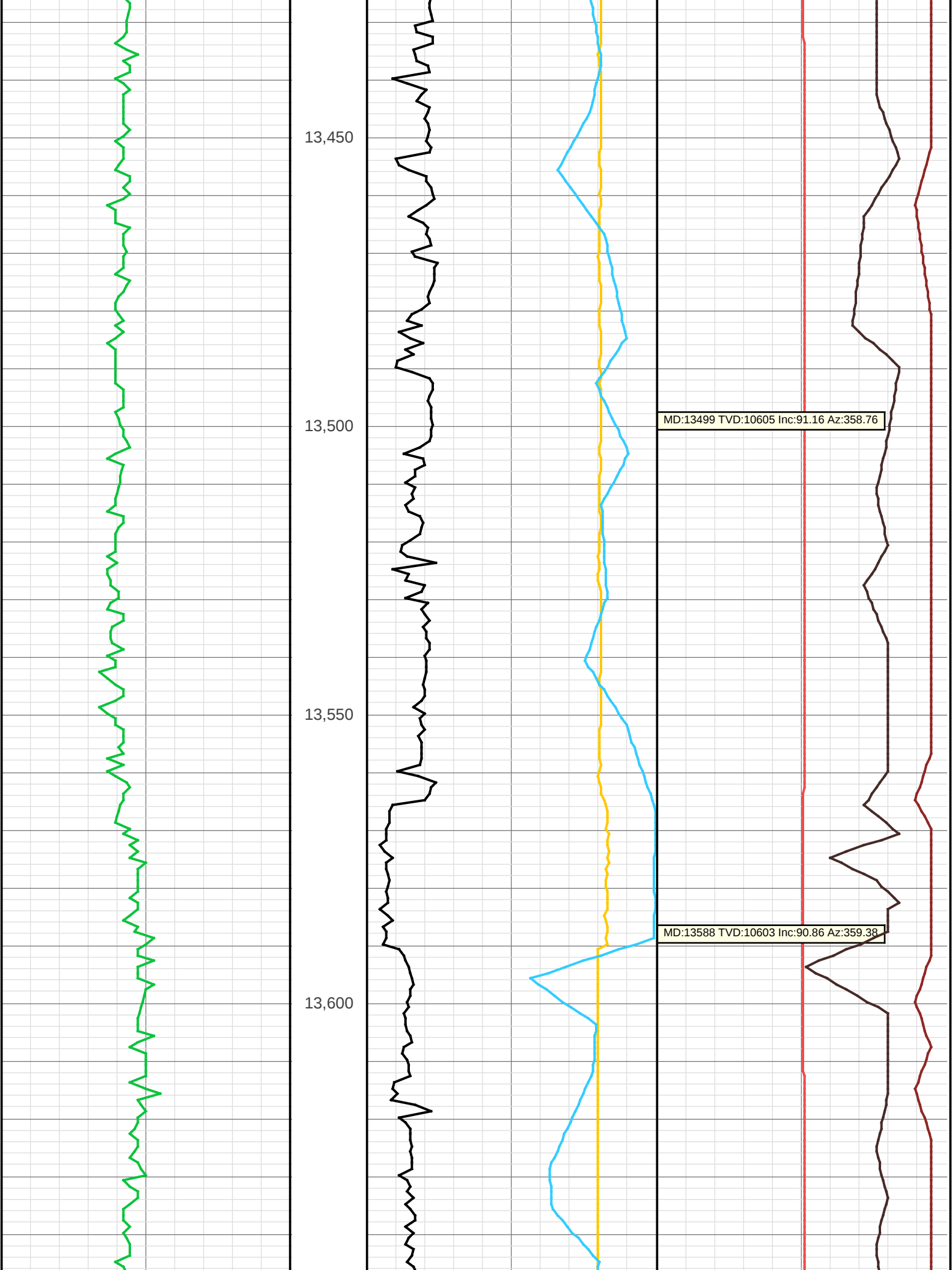


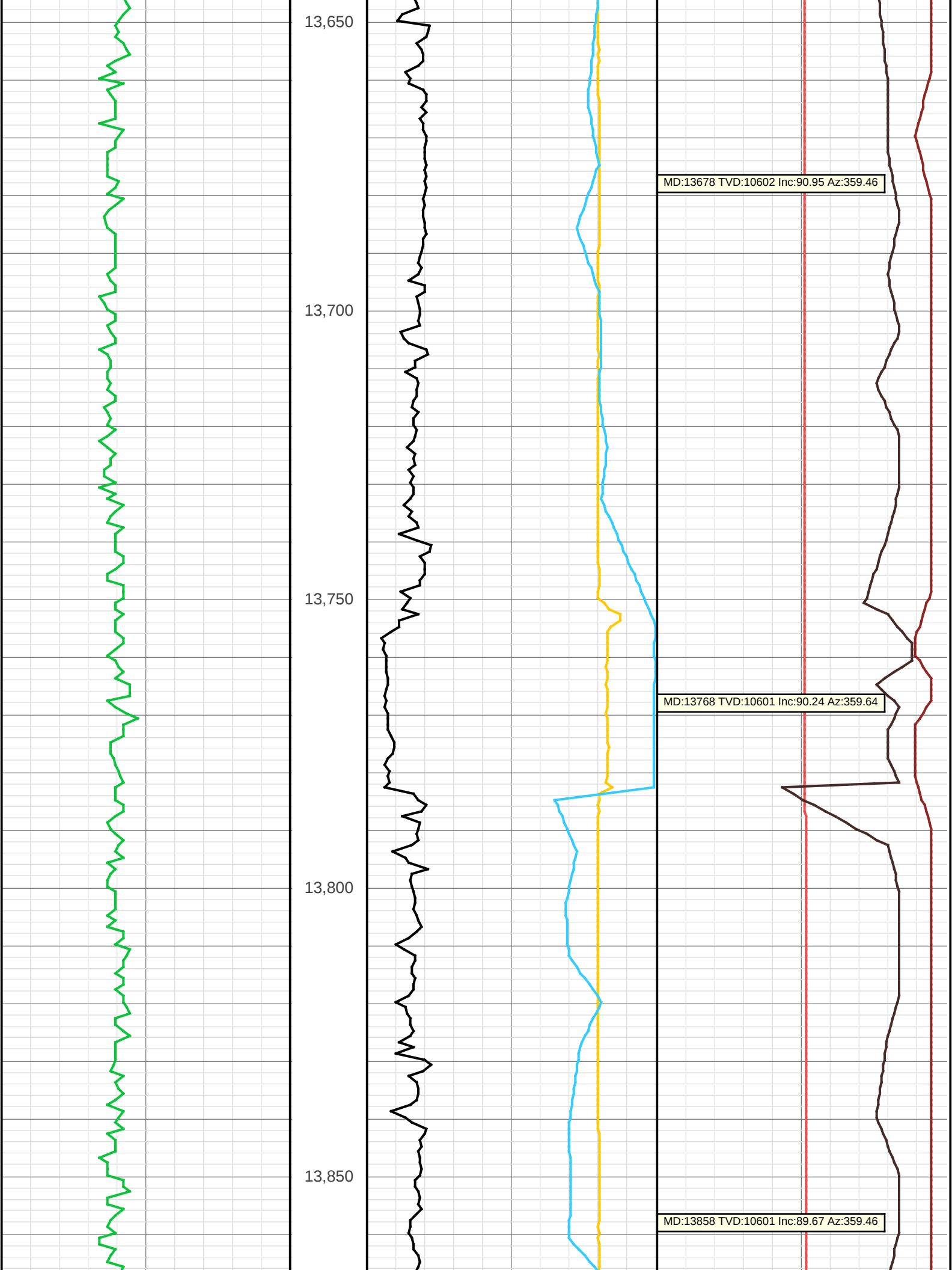


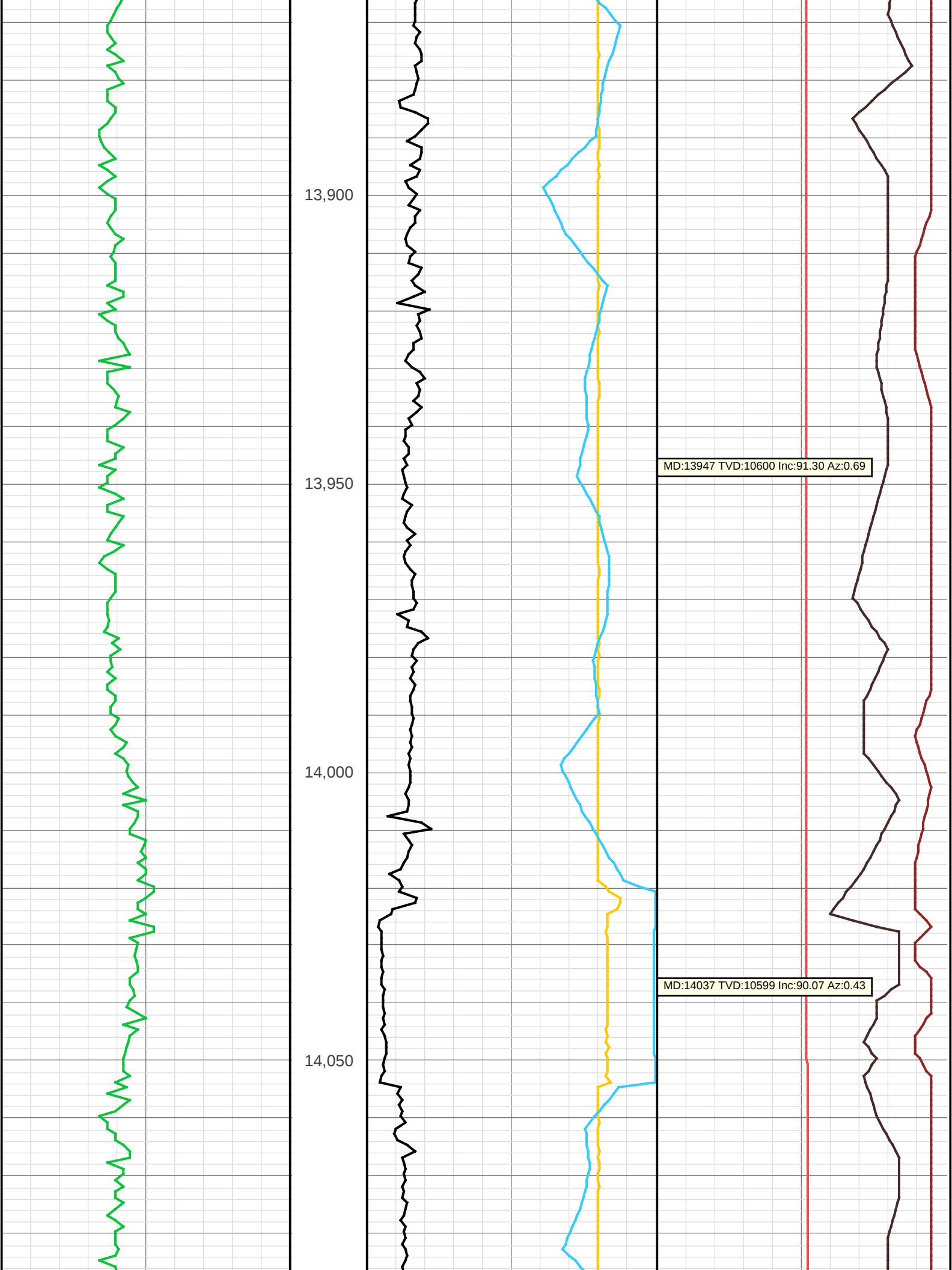


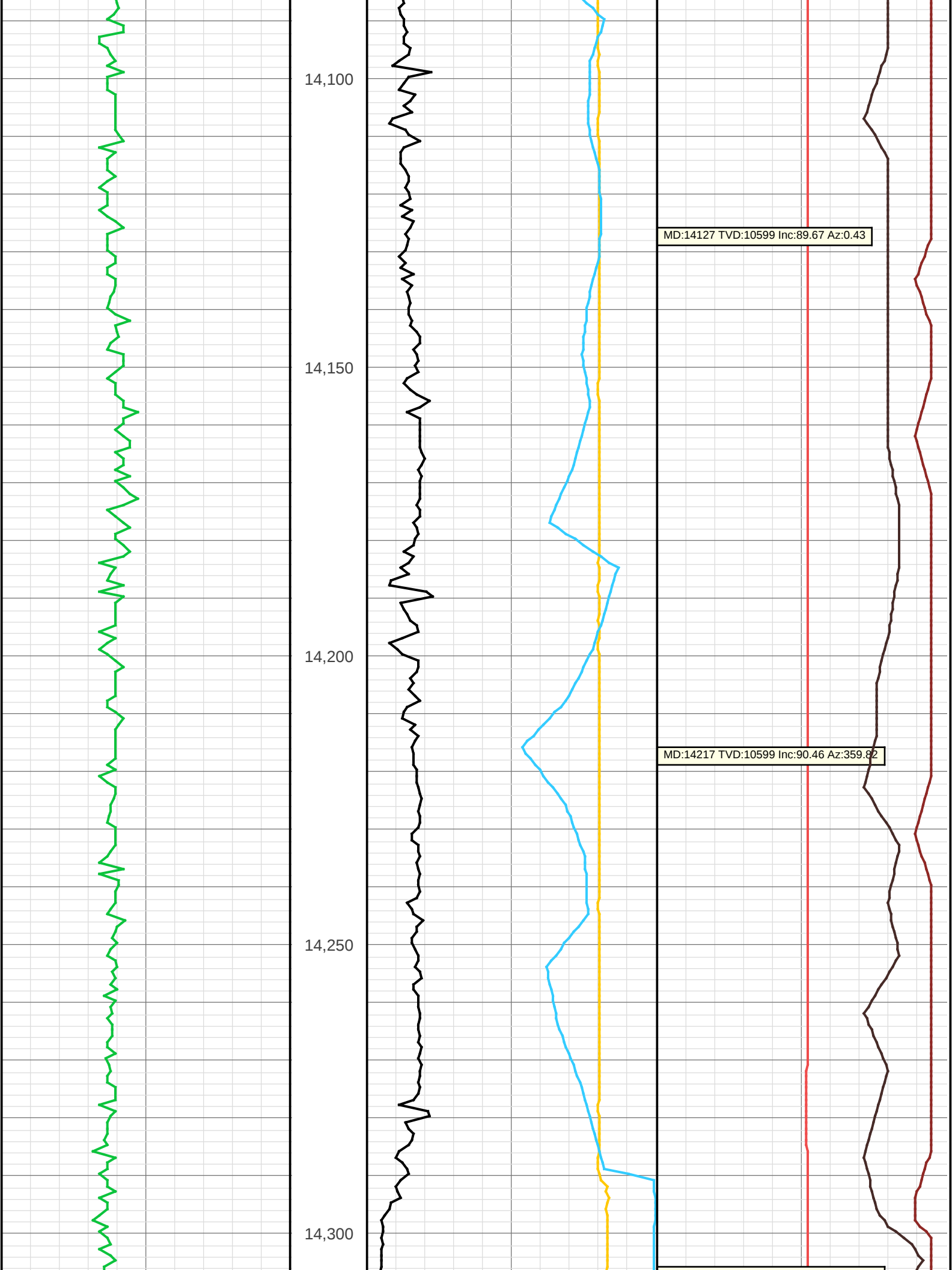


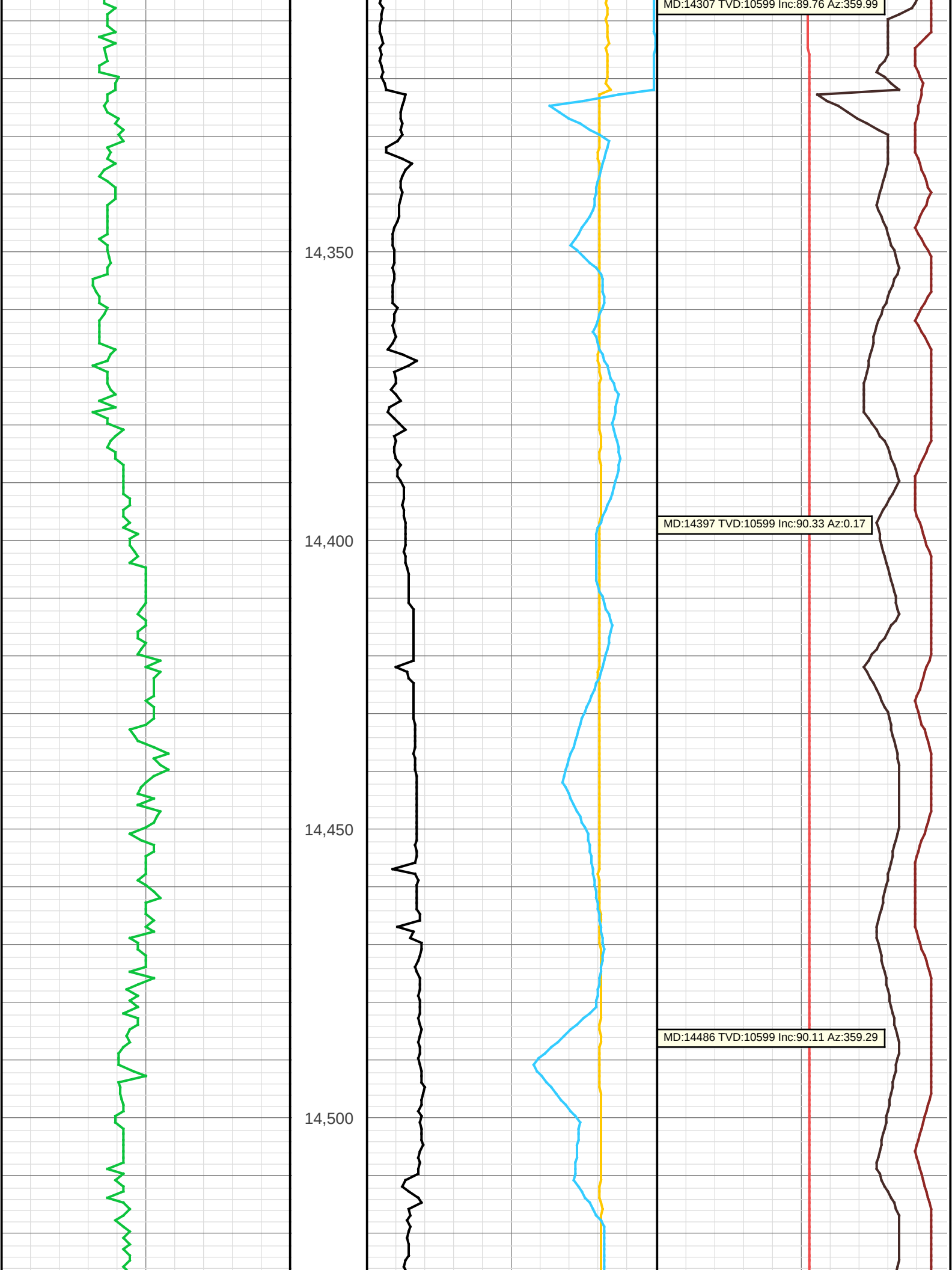


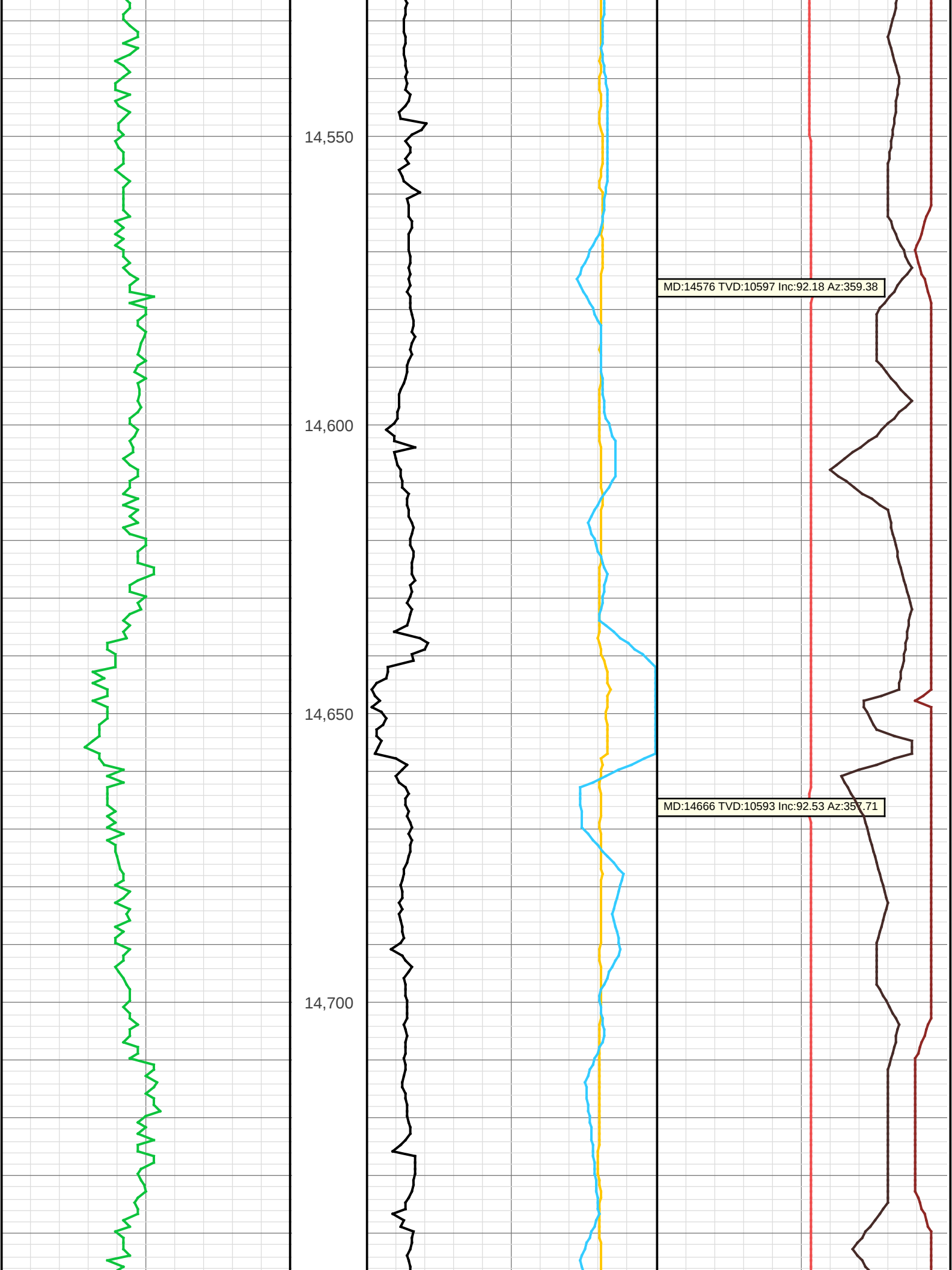


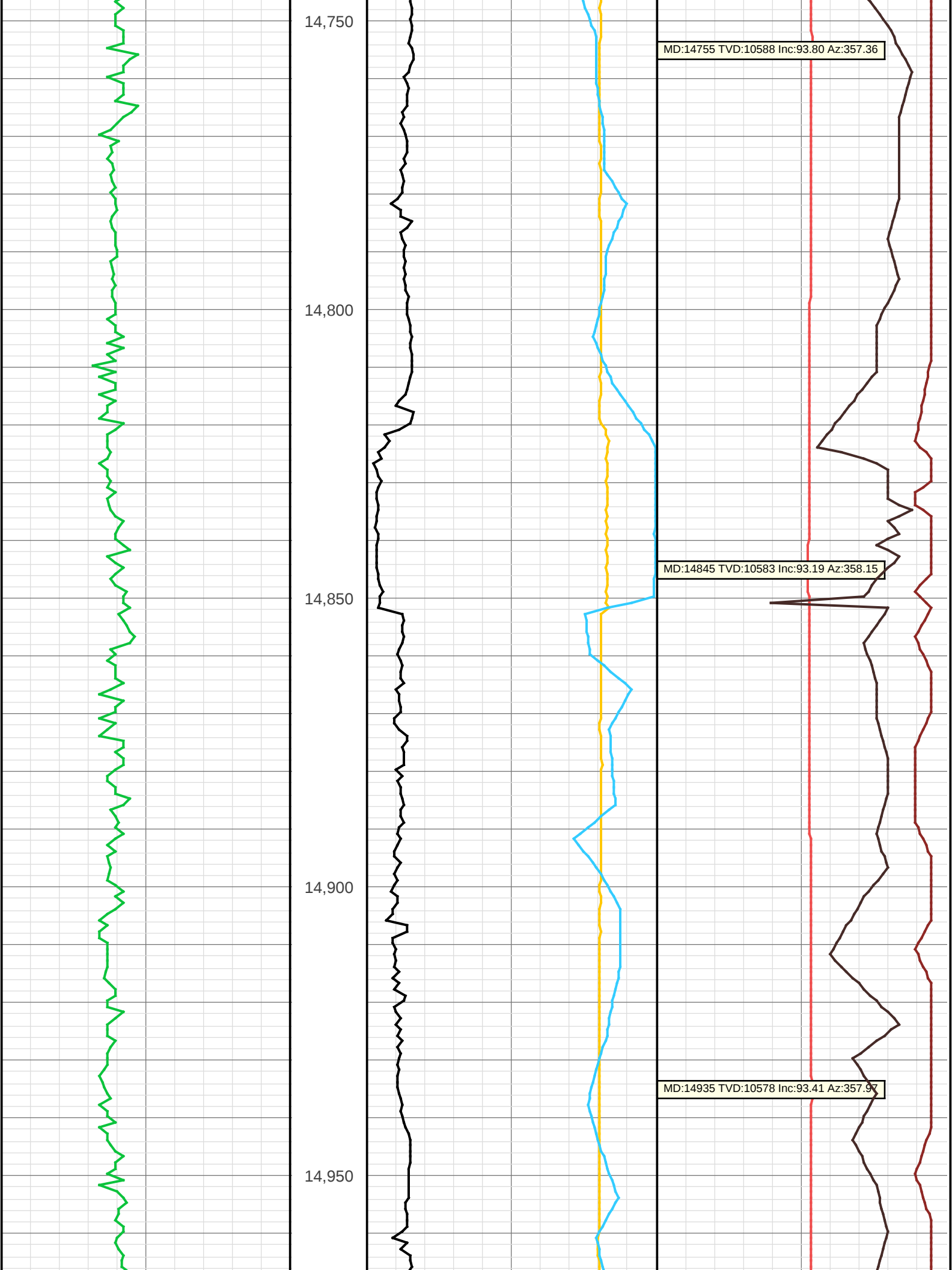


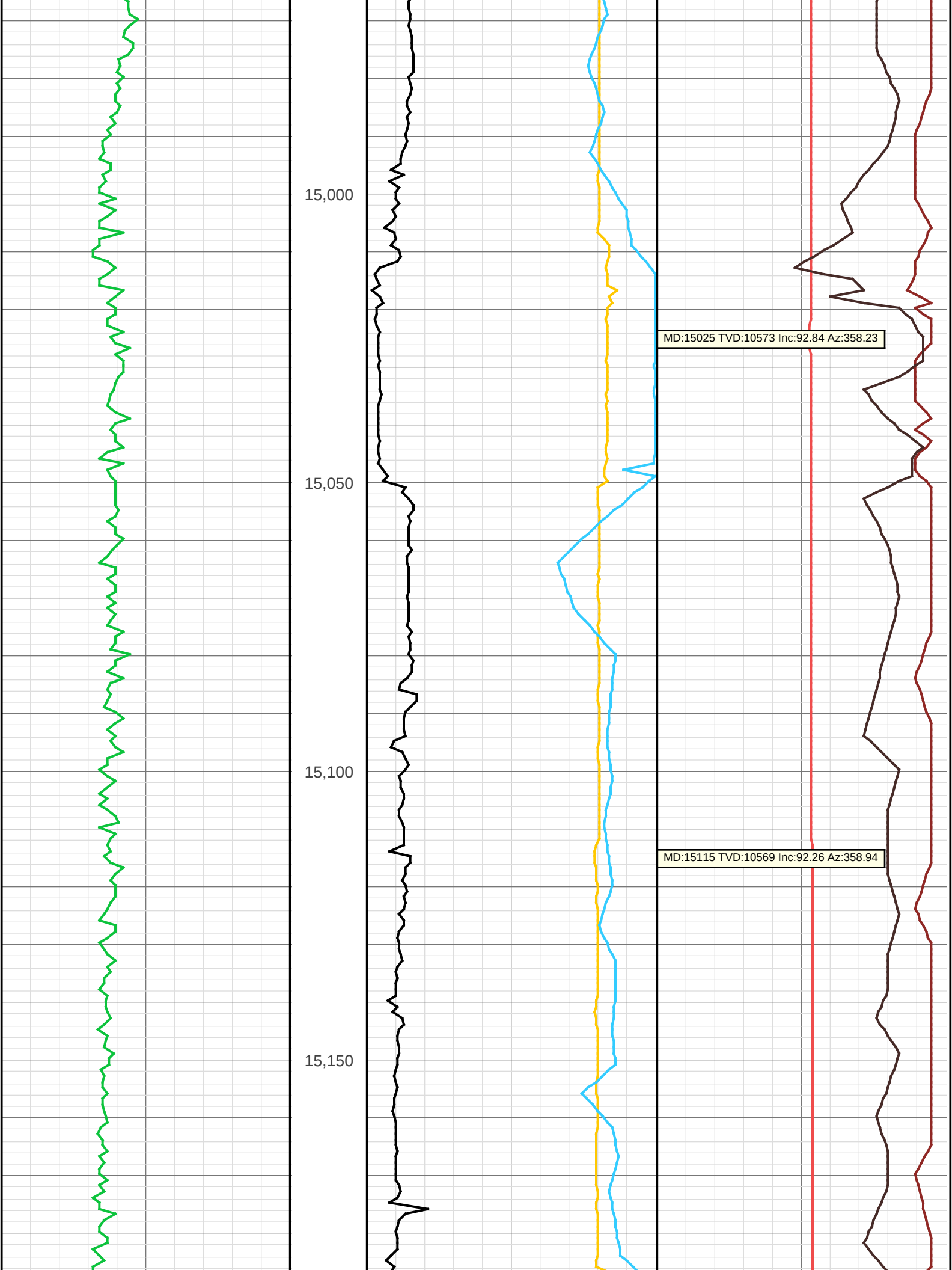


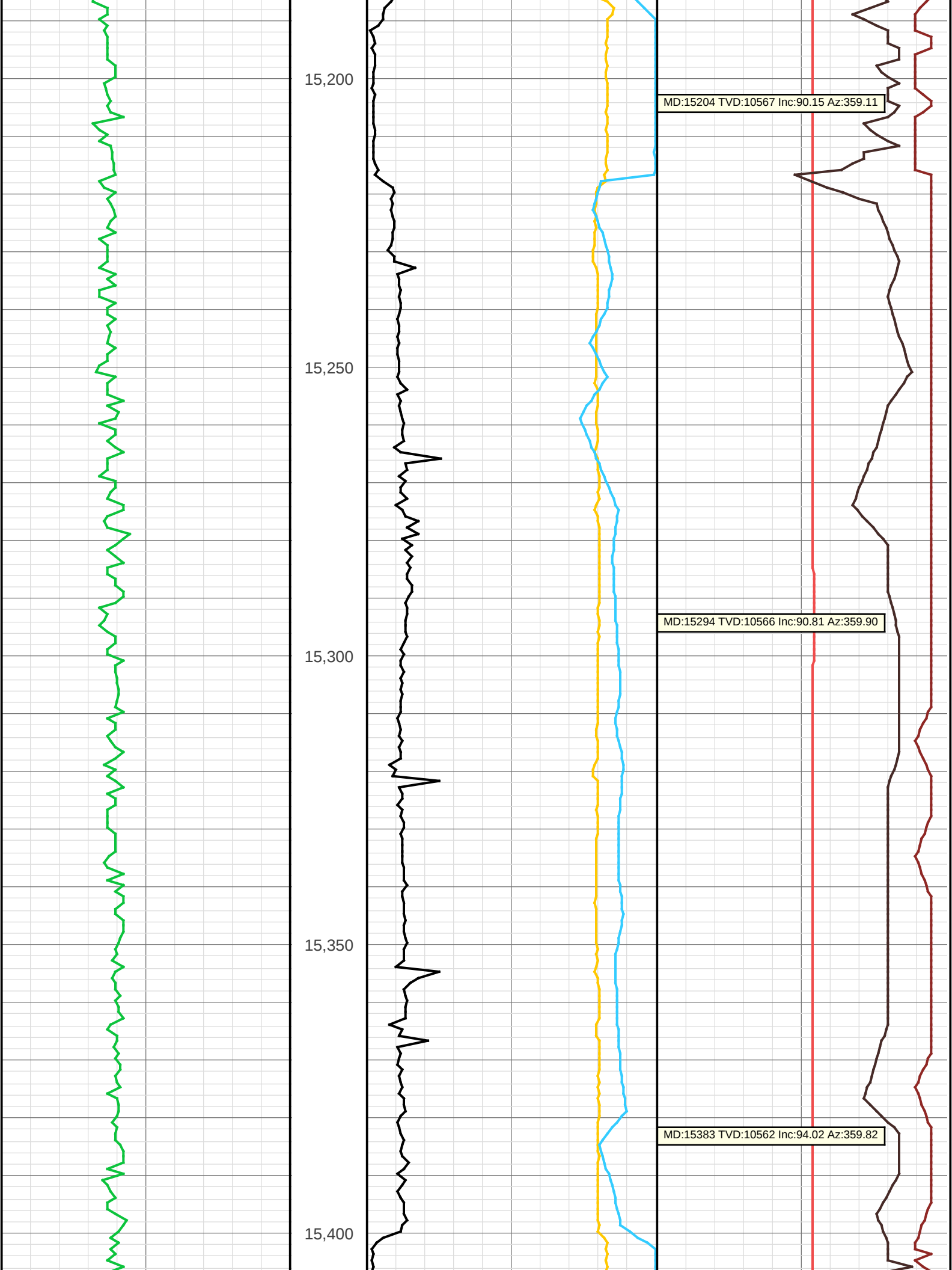


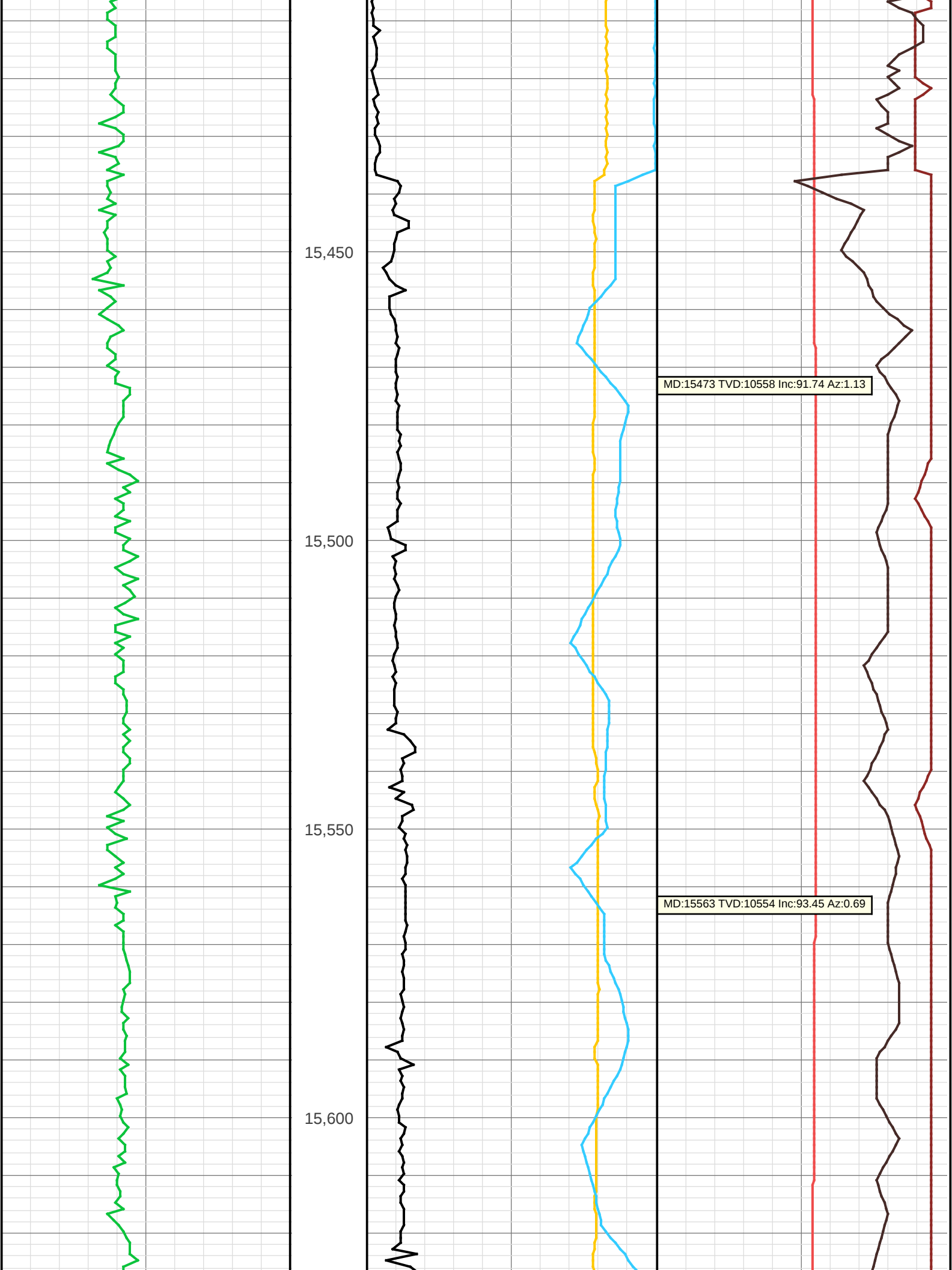


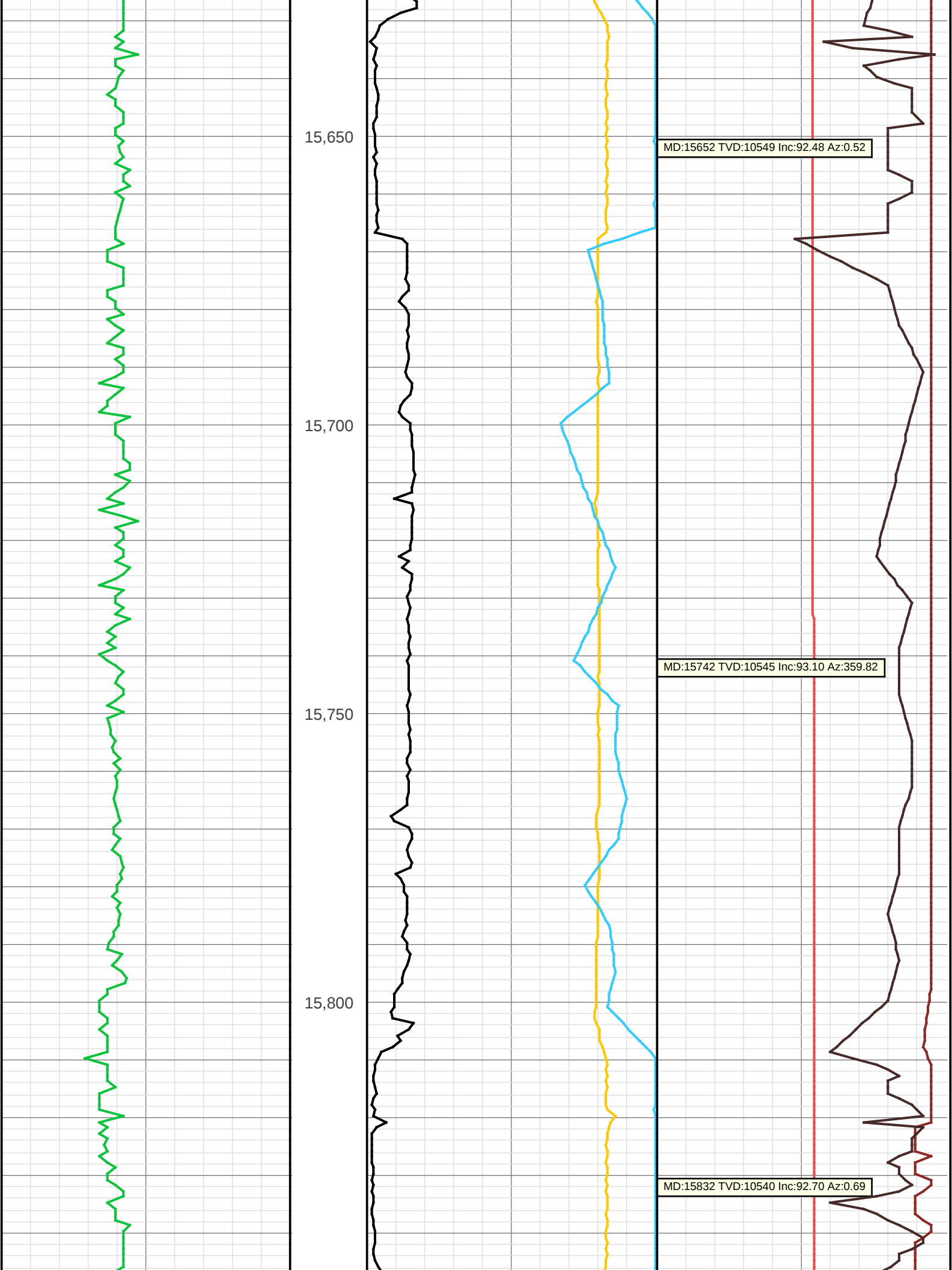


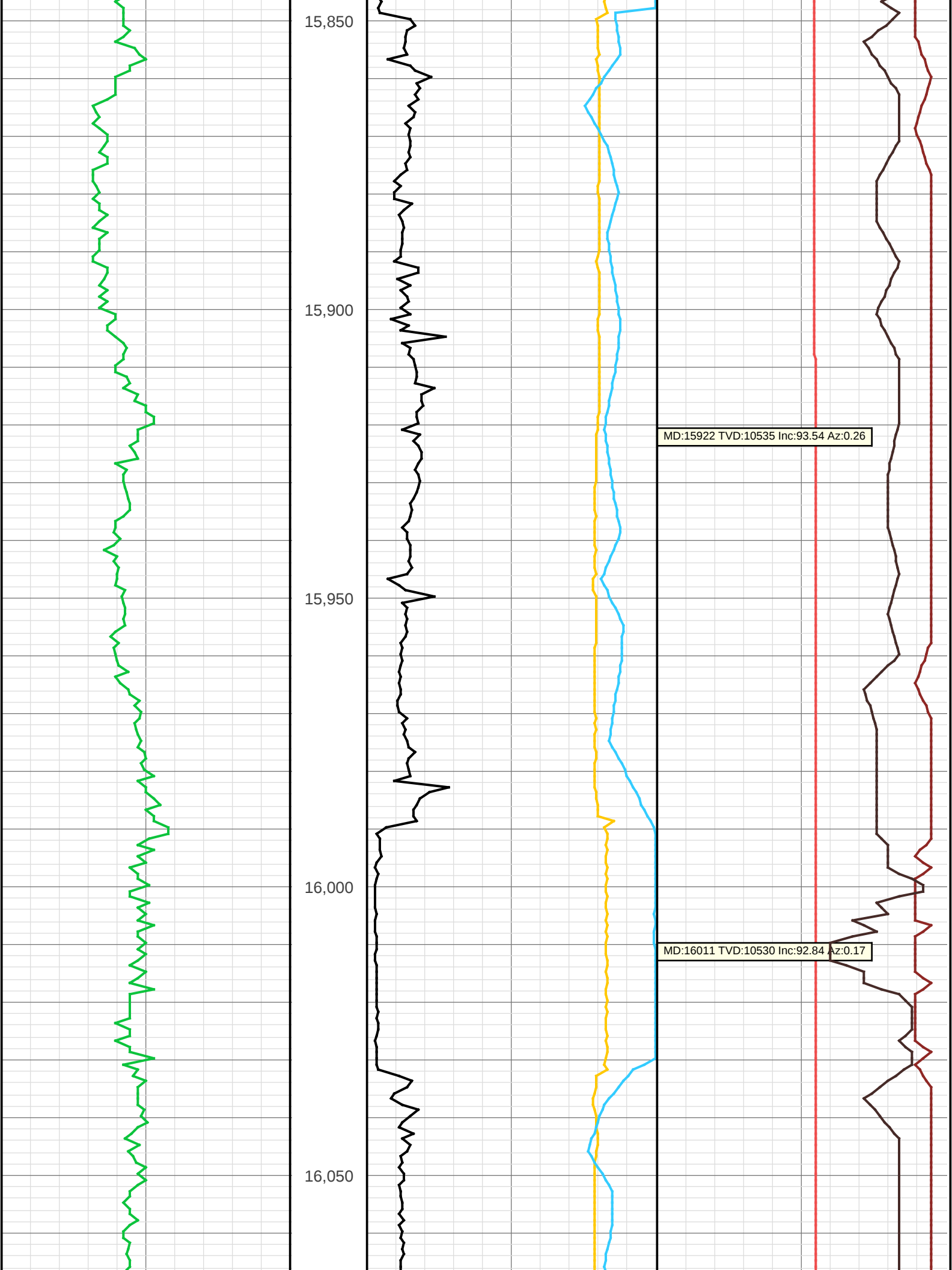


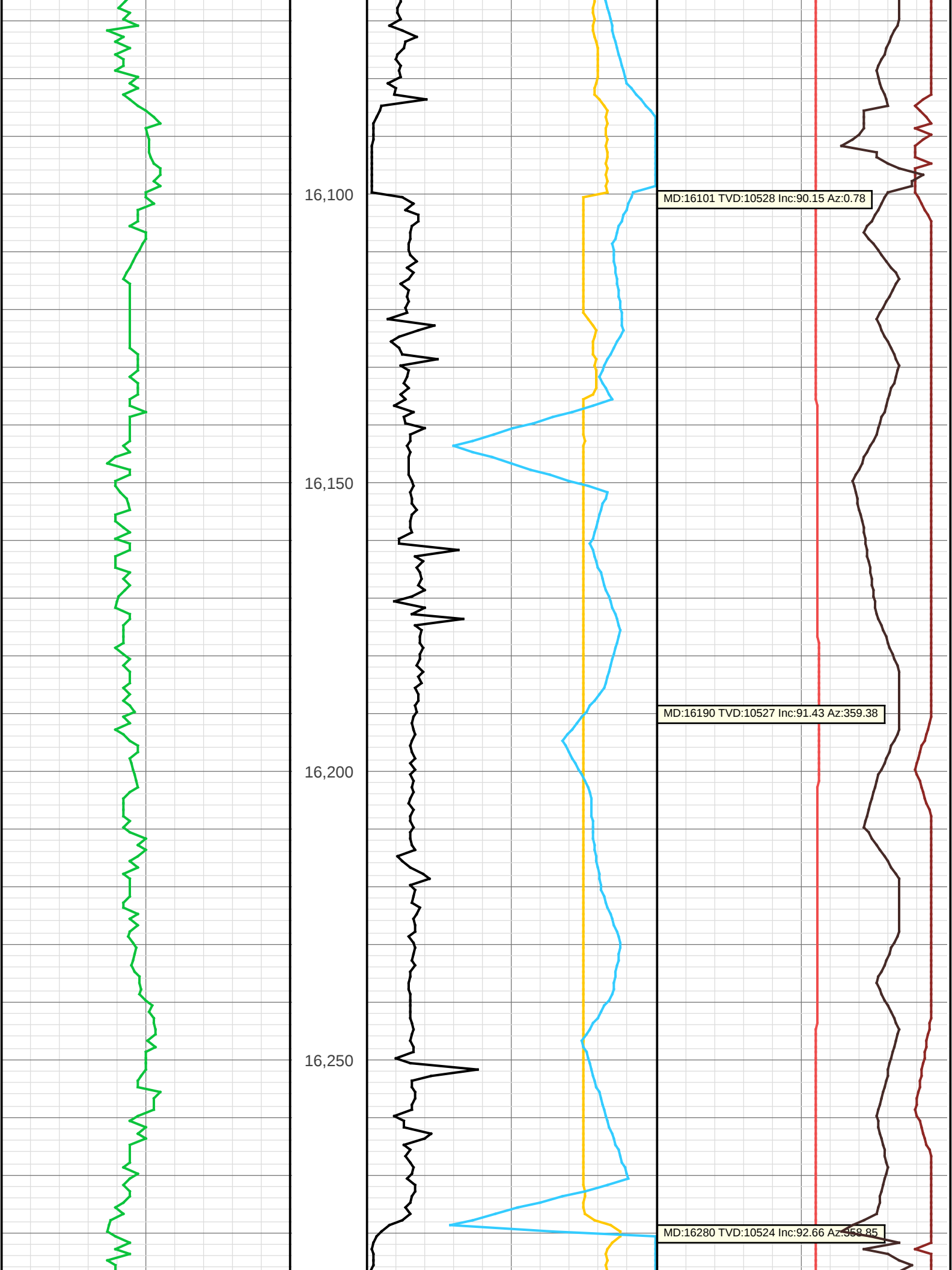


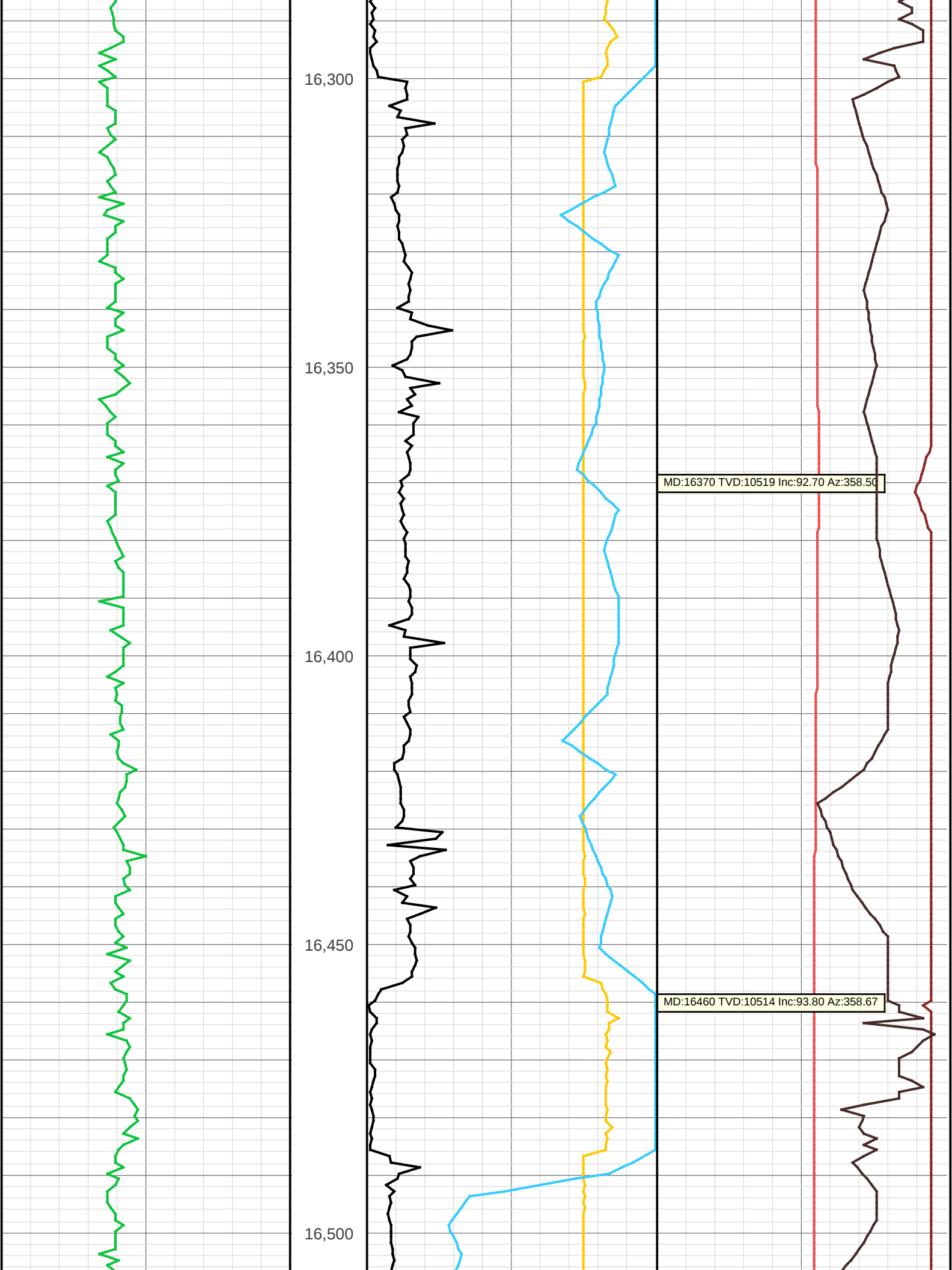


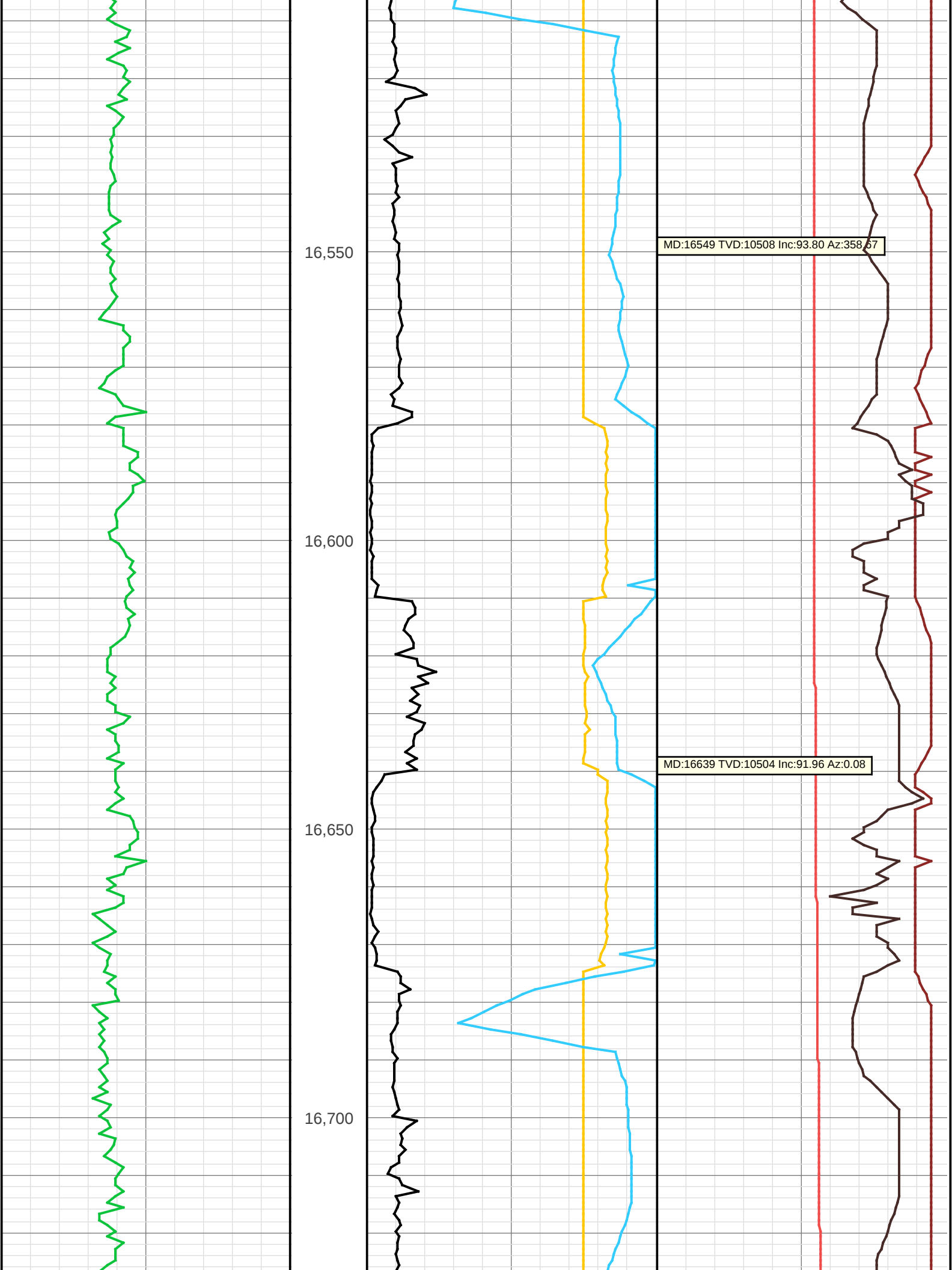


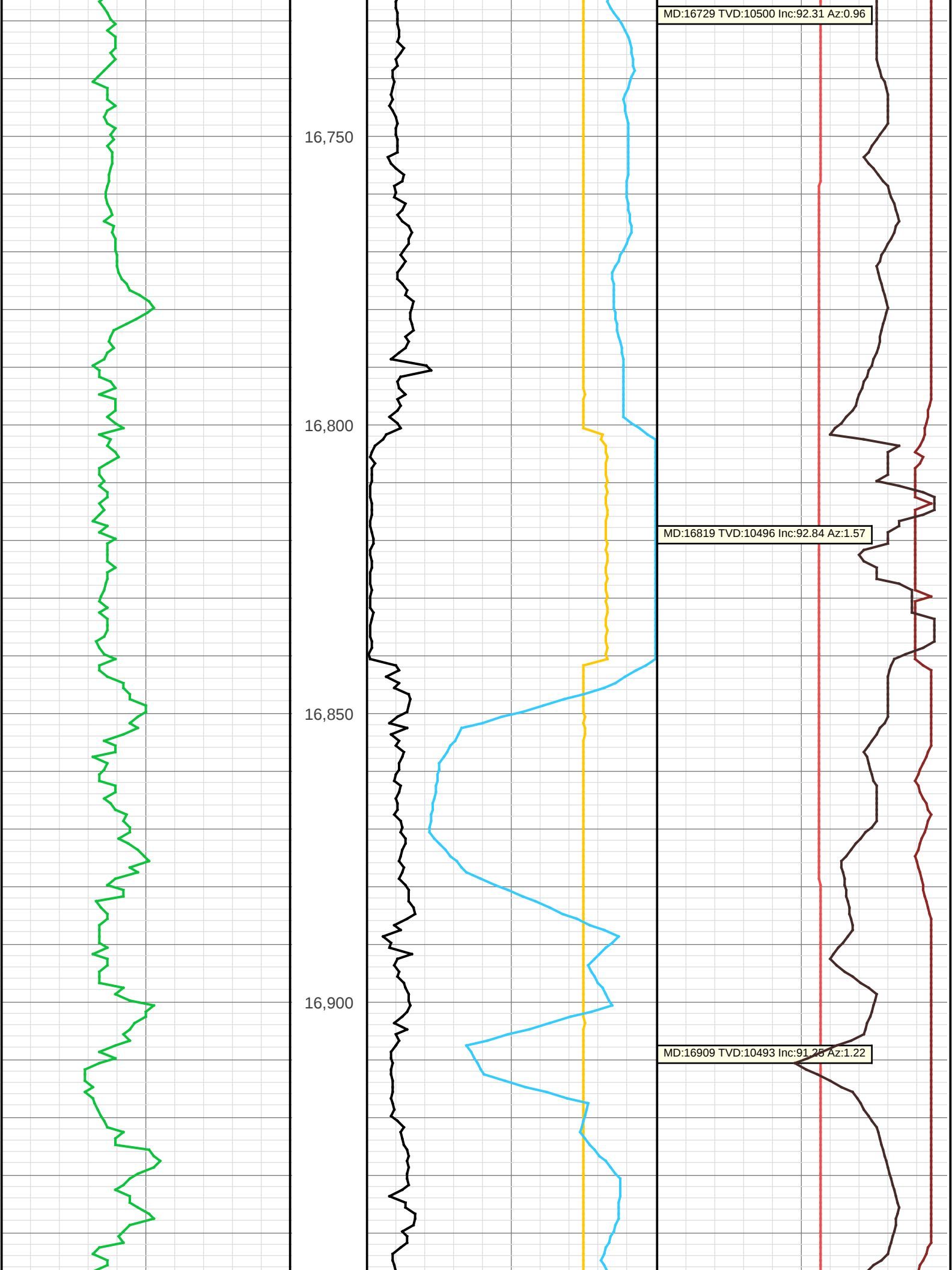


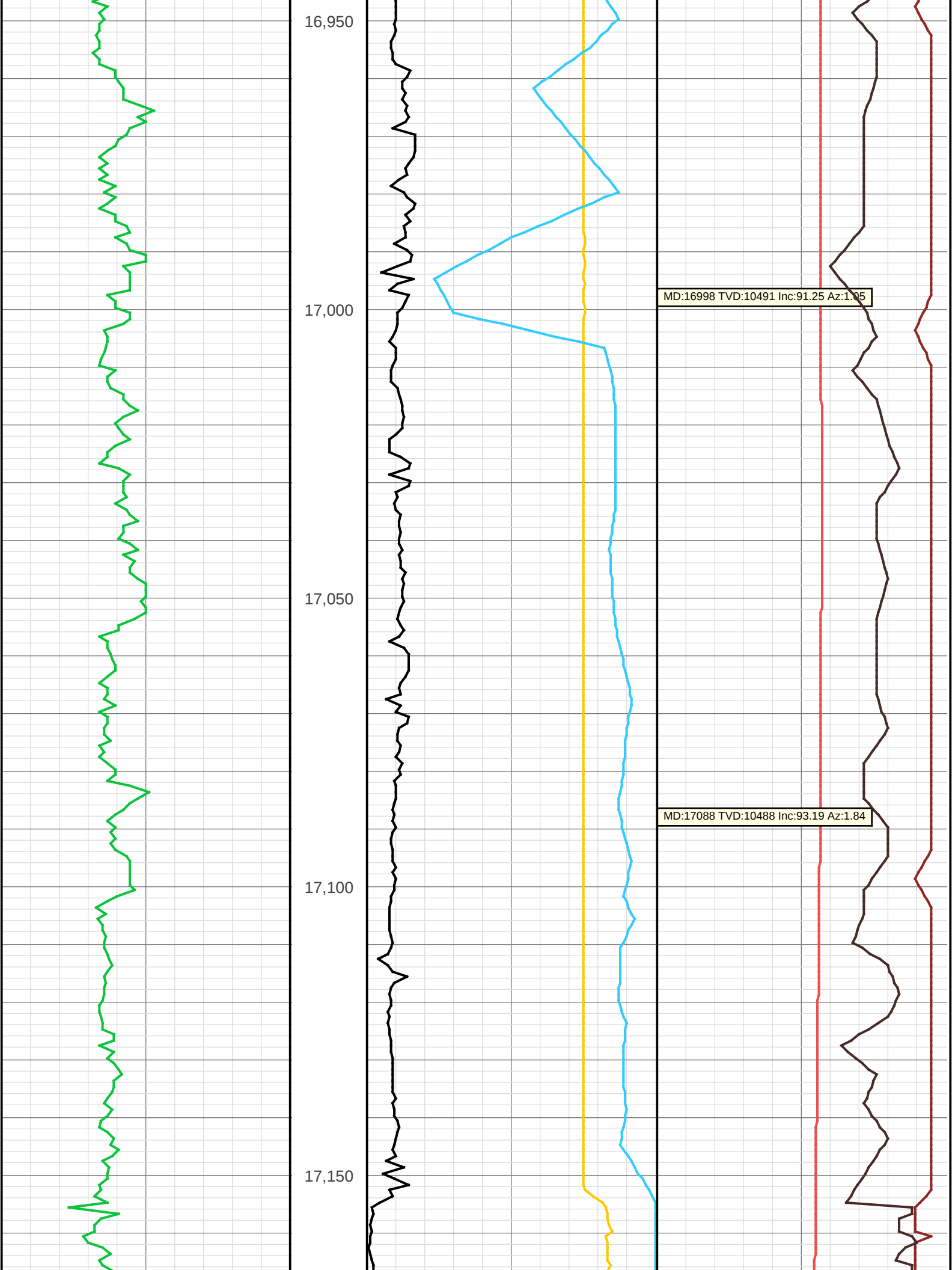


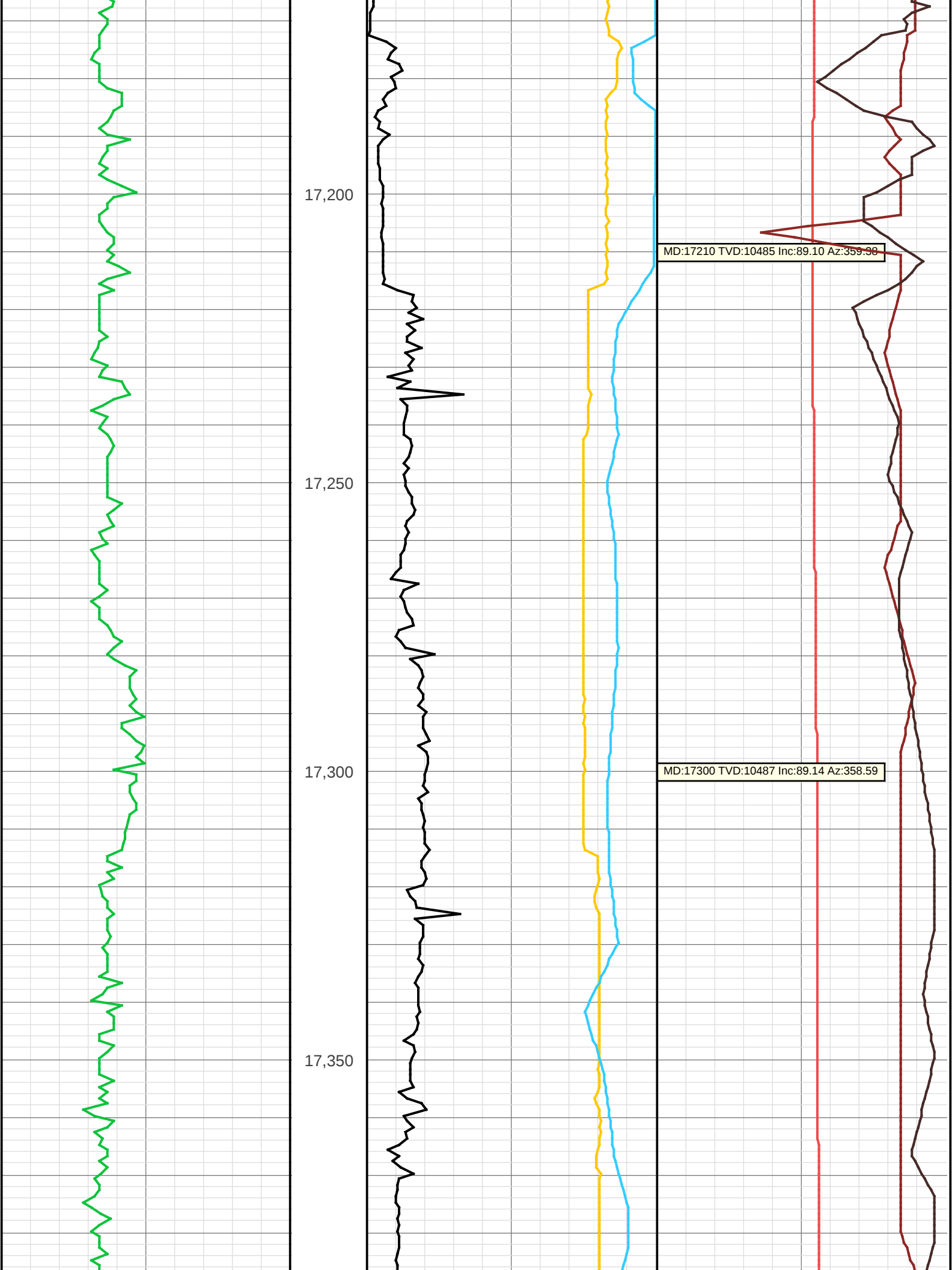


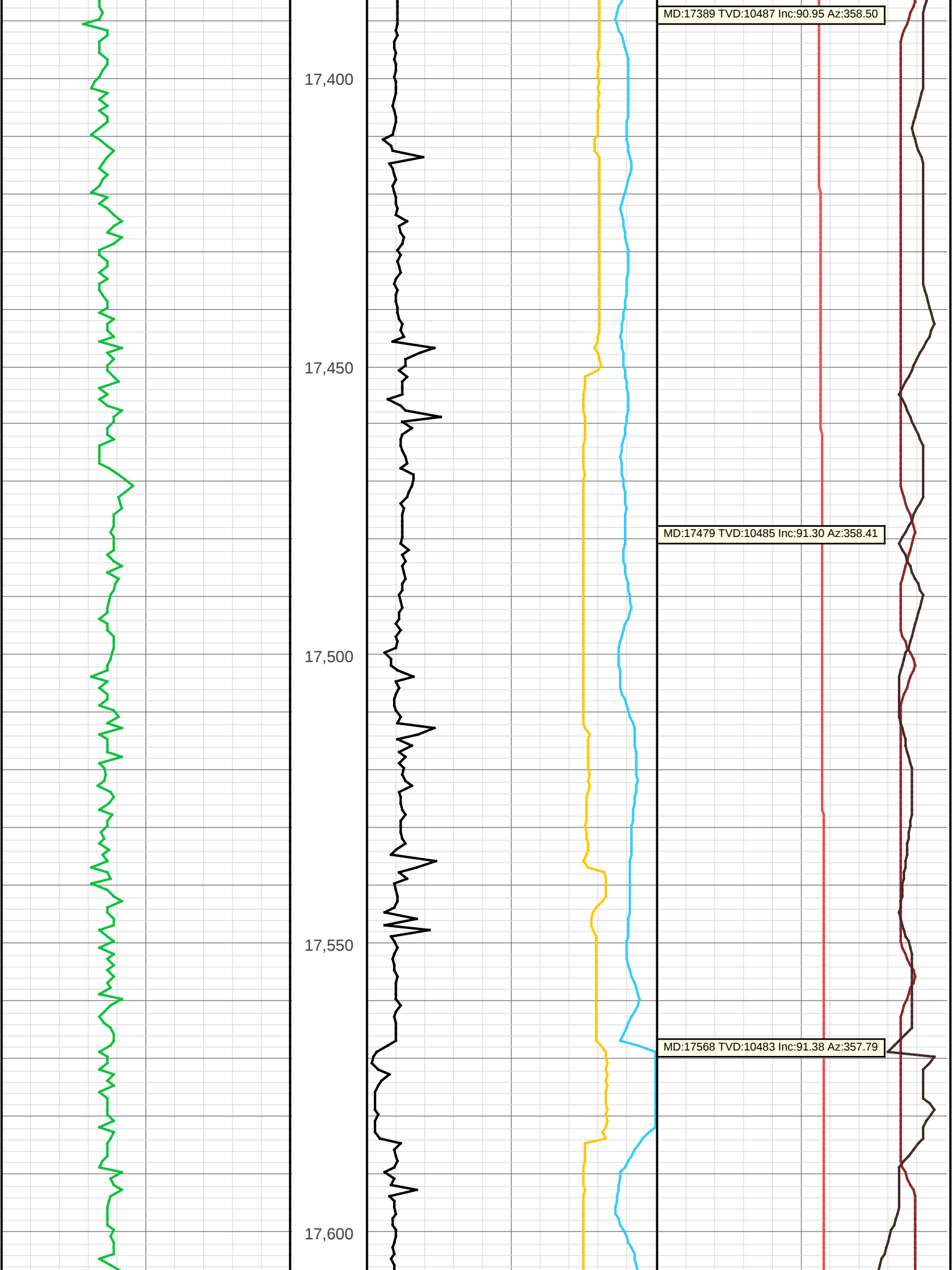


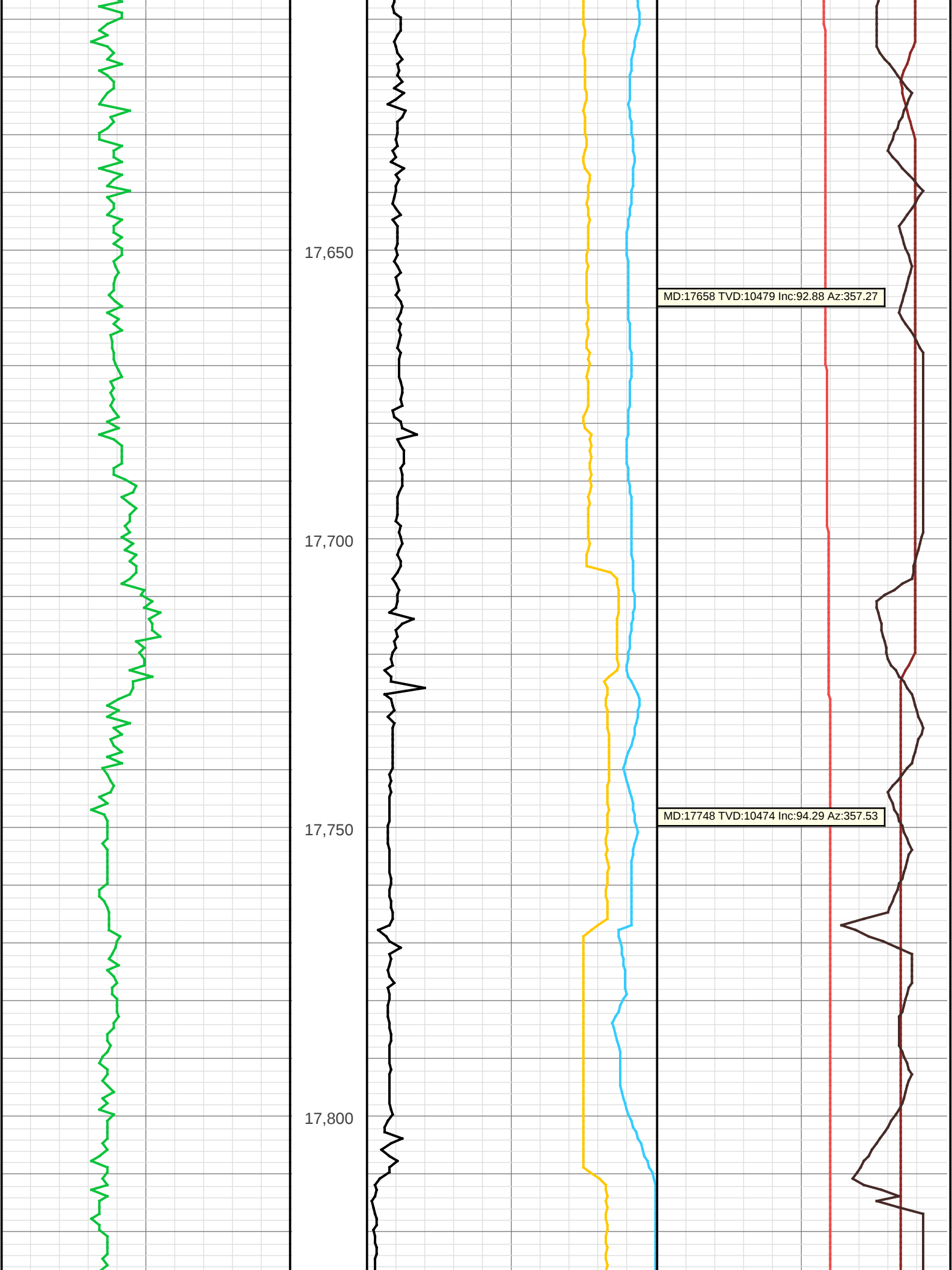


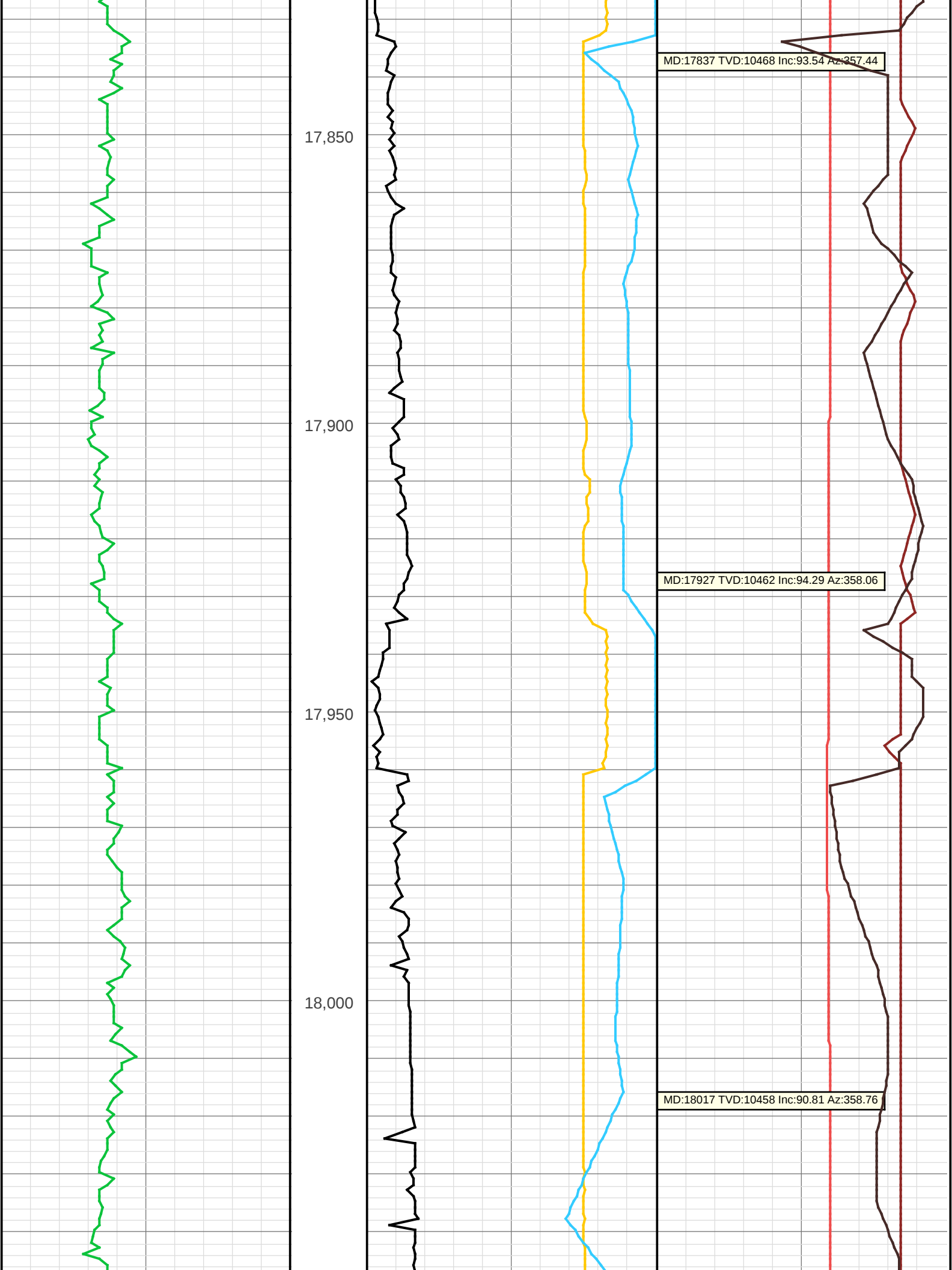


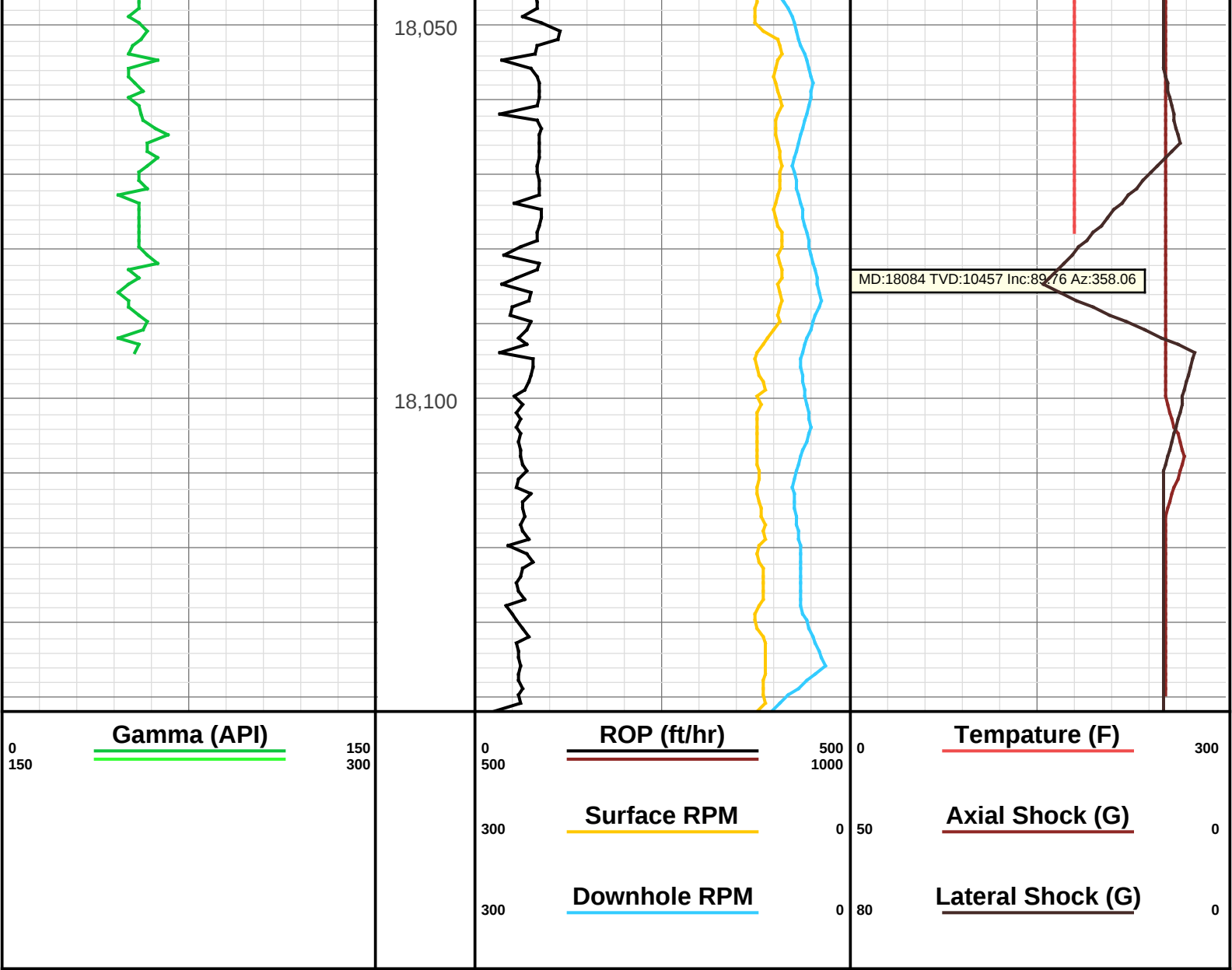














Intrepid-DDS
10314 TX-191
Midland, TX 79707

5" = 100'
TVD FT

Gamma Ray

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State: New Mexico
Country: USA
Rig: HP 466
AFE: NM0090
Job: ID2387

Company: AEP
Well: Wool Head 20 State Com #510H
Field: Delaware Basin
API: 30-025-46490
County: Lea
State New Mexico
Country USA
Rig: HP 466

Well Location NAD 1927

Latitude: 32° 27' 29.102 N Longitude: 103° 35' 19.676 W
Y: 531182.70 X: 770982.20

Section: 20 Township: 21-S Range: 33-E

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3752.5
Height of Reference: 26.5 Ground Level Elev: 3726

Depth Drilled: 100.0 to: 18142.0
Depth Logged: 5100.0 to: 18142.0
Date Logged: 12 Nov 2019 20:01 to: 04 Jan 2020 04:35

Disclaimer: Intrepid DDS uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13 3/8	0	1838
12 1/4	1838	5216	9 5/8	0	5216
8 1/2	5216	18142	7.0	0	18142

Run Data							
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06	
Start Date	12 Nov 2019	19 Nov 2019	29 Nov 2019	25 Dec 2019	26 Dec 2019	2 Jan 2020	
Start Time	18:30	18:00	12:15	02:45	19:00	17:30	
End Date	13 Nov 2019	20 Nov 2019	30 Nov 2019	26 Dec 2019	2 Jan 2020	4 Jan 2020	
End Time	12:30	24:00	17:45	18:00	16:30	16:00	
Depth In	100	1838	5281	10131	10888	17173	
Depth Out	1838	5281	10054	10888	17173	18142	
Log Top			5281	10001	10849	17121	
Log Bottom			10001	10849	17121	18094	
Hole Size	17.5	12.25	8.5	8.5	8.5	8.5	

Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Directional Sensor SN	20081-R	20081-R	20125-R	20129-R	20081-R	20129-R		
Directional Offset	68	65	63	49	62	58		
Gamma Sensor SN	N/A	N/A	904-R	691-R	889-R	691-R		
Gamma Offset			53	39	52	48		
Gamma Corr. Factor	1.0	1.0	3.682	3.91	3.94	3.91		

Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
Mud Type	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based		
Mud Density (lb/gal)	9.3	10.6	9.2	9.6	9.5	9.7		
Funnel Visc. (s/qt)	36	1	29	14	12	60		
Plastic Visc. (cP)	5	1	1	11	11	14		
pH	8.1	10	10	N/A	N/A	N/A		
Chlor. Whole Mud (mg/L)	2700	71,000	74000	44,000	47,000	46,000		
API Filtrate (cm3/30)	N/A	99/1	99/2	N/A	N/A	N/A		
Max MWD Temp (F)	142.0	134.9	392.0	130.8	171.4	182.0		

Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 06		
MWD Operator 1	Ben Wallace	Michael Walton	Michael Walton	Michael Walton	Michael Walton	Michael Walton		
MWD Operator 2	Mike Walton	Joseph Hatley	Jospeh Hatley	Justin Campos	Justin Campos	Dustin Loomis		
MWD Operator 3								

