



Gamma Ray

Plot Studio

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Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	8.500	PDC	3.00	AutoTrak Curve	1939.00	6310.00	19510.00	6322.00	2017-07-28 06:42	2017-07-28 23:17	15.23
2	1	8.500	PDC	3.00	AutoTrak Curve	6310.00	11088.00	6322.00	11100.00	2017-07-29 07:31	2017-07-30 00:29	15.97

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
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	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Steven Cano	2017-07-27	2017-07-30	Vu Ngo	2017-07-27	2017-07-30			

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2017-07-28 06:07	1	1951.00	Oil Based Mud	9.2	9	N/A	N/A	77.3/22.7	Active Pit	27000	0.00
2017-07-29 04:47	2	6322.00	Oil Based Mud	9.2	8	N/A	N/A	80.2/19.8	Active Pit	25000	0.00

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	ATC_SU	14169980	Near Bit Inclination	5.93	6.76	7.000	4.330
1	ATC_SU	14169980	Near Bit VSS	5.93	6.76	7.000	4.330
1	ATC_MWD	12141354	Gamma (single)	2.20	12.38	7.000	3.250
1	ATC_MWD	12141354	Directional (mag)	12.27	22.45	7.000	3.250
2	ATC_SU	14236901	Near Bit Inclination	5.93	6.76	7.000	4.330
2	ATC_SU	14236901	Near Bit VSS	5.93	6.76	7.000	4.330
2	ATC_MWD	14179564	Gamma (single)	2.20	12.38	7.000	3.250
2	ATC_MWD	14179564	Directional (mag)	12.27	22.45	7.000	3.250

Service and Tool Mnemonics

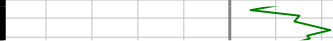
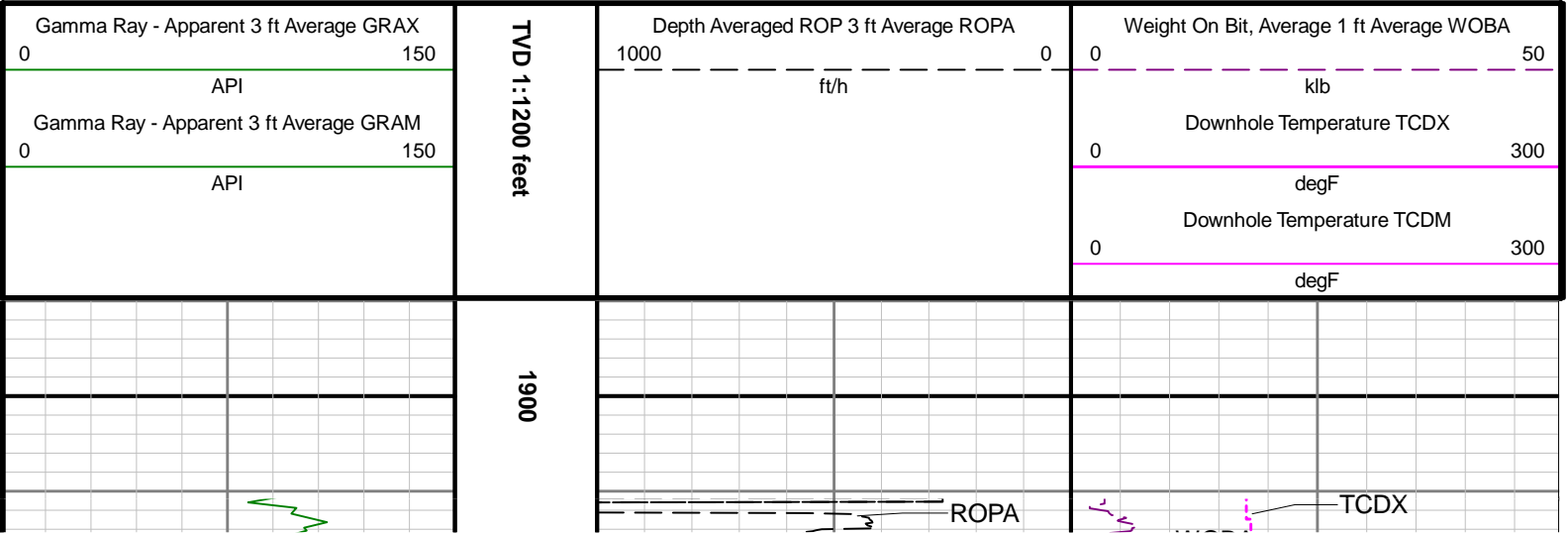
Mnemonic	Name	Description
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

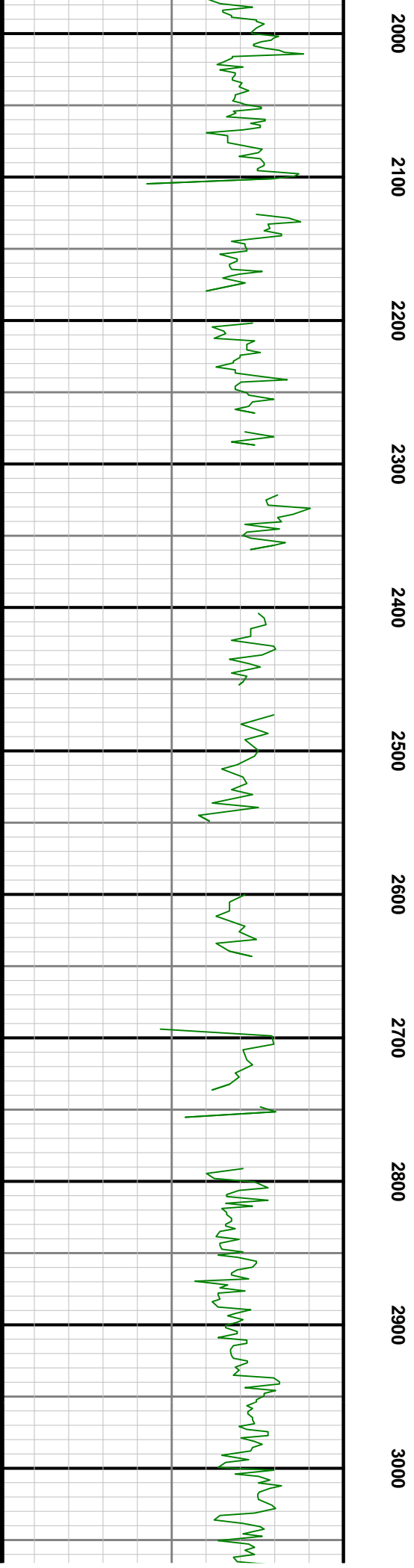
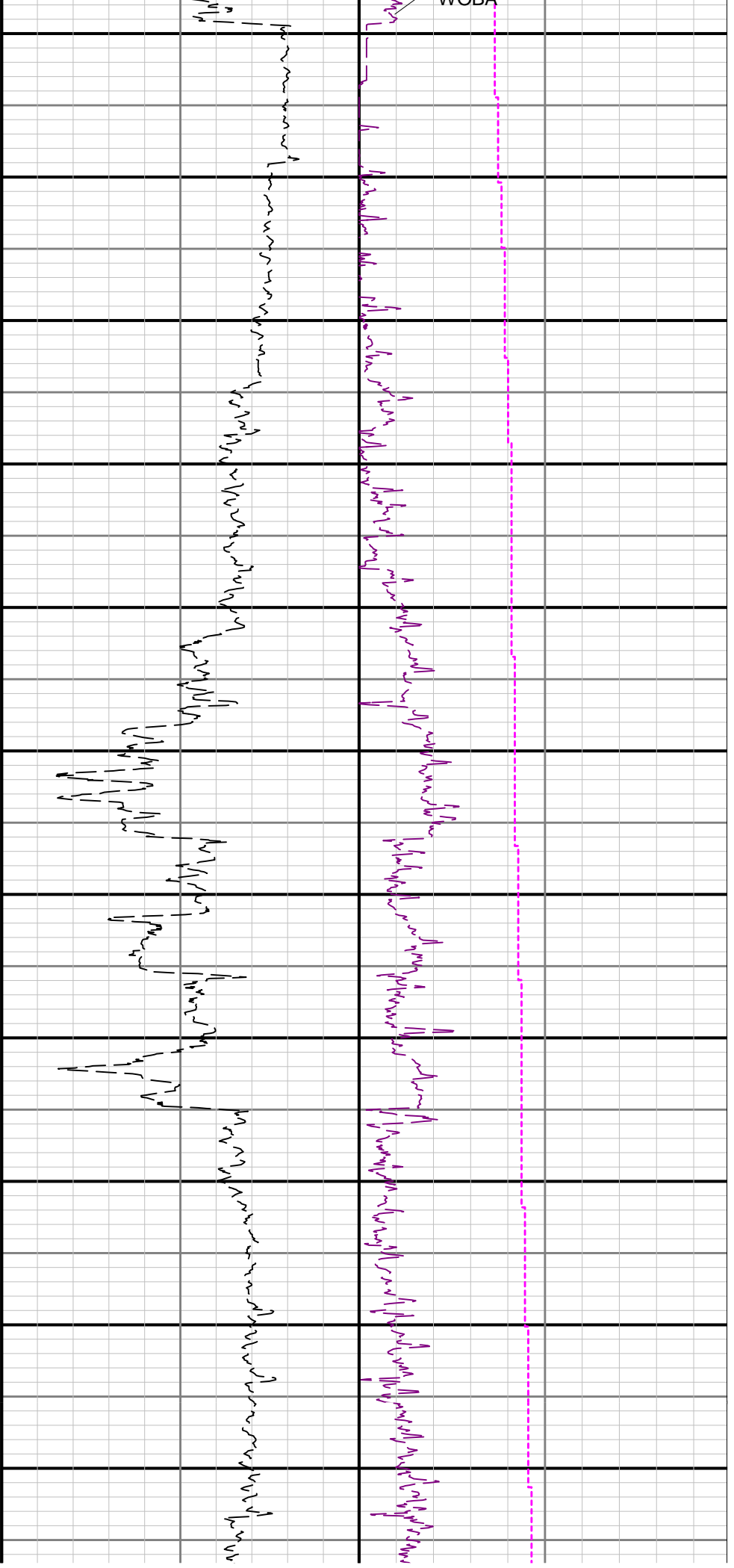
Comments

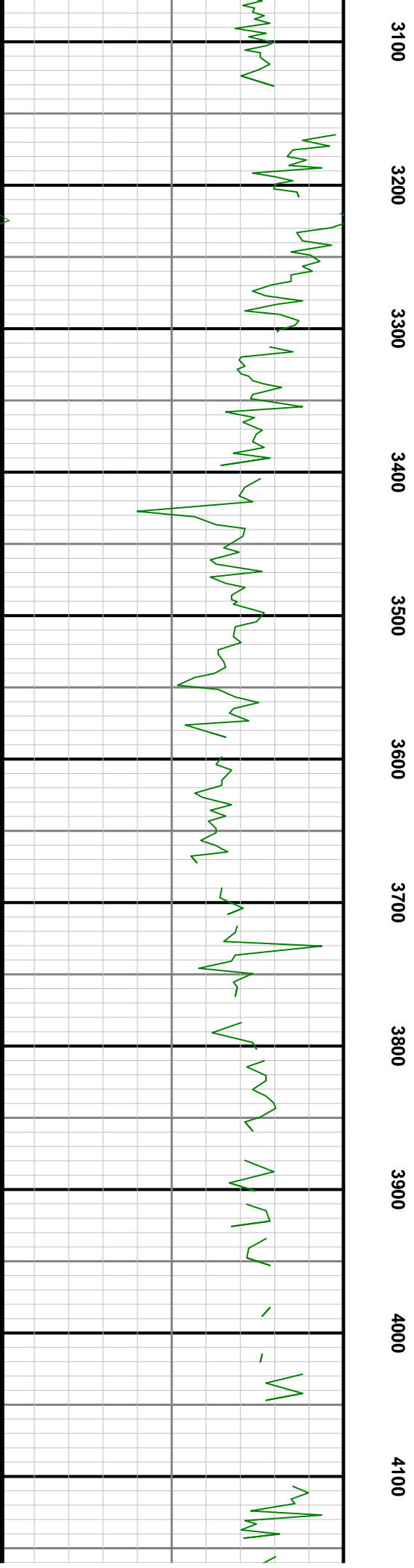
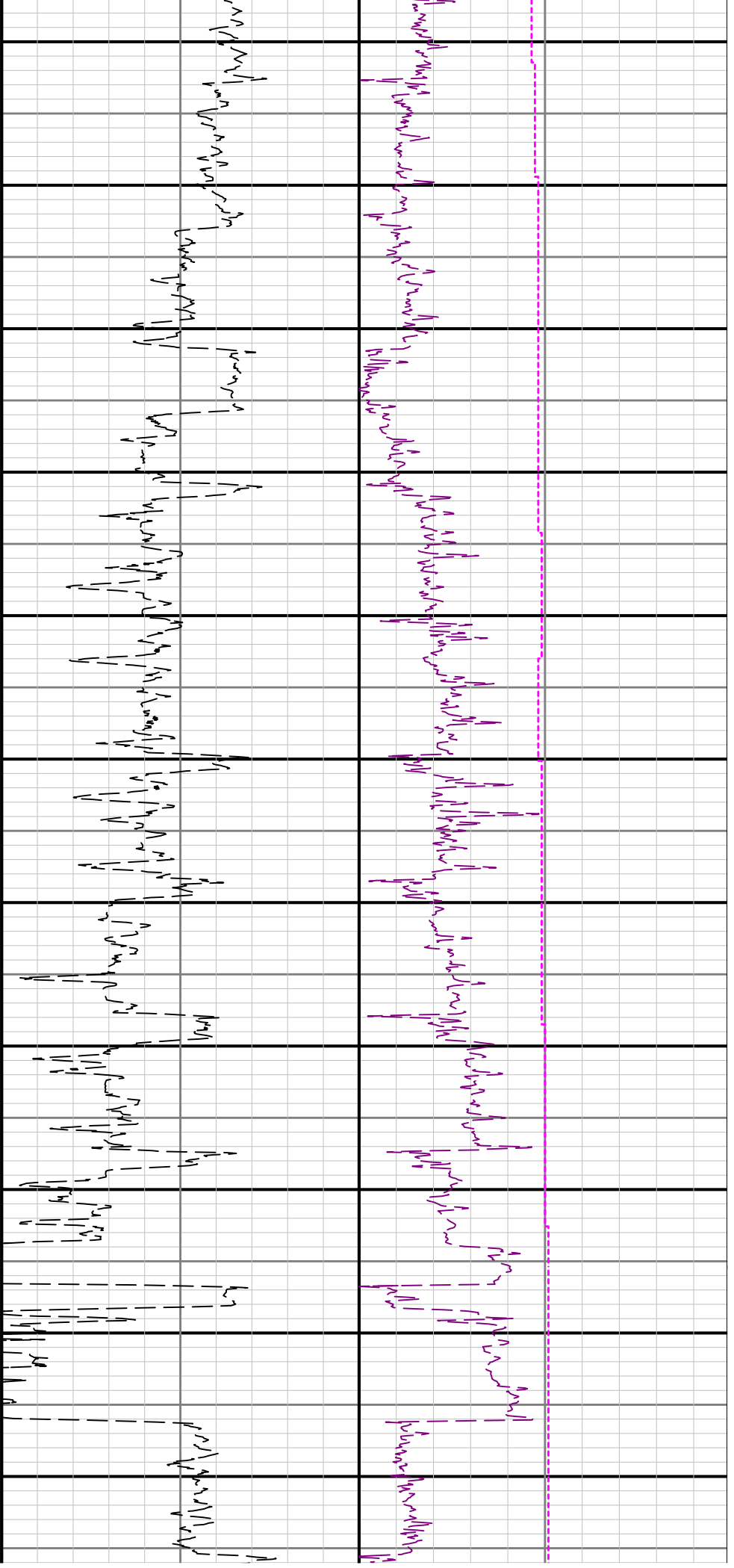
1	Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD run 1 and 2 utilized a 6 3/4 inch Navigamma service (Gamma Ray and Directional) behind a 8 1/2 inch bit and rotary steerable from 1951 to 11100 feet MD (1950 to 6085 feet TVD).
3	Realtime Gamma data is displayed for Run 1 due to issue obtaining memory data on the field. Gaps in gamma data are as a result of downlinking while drilling.

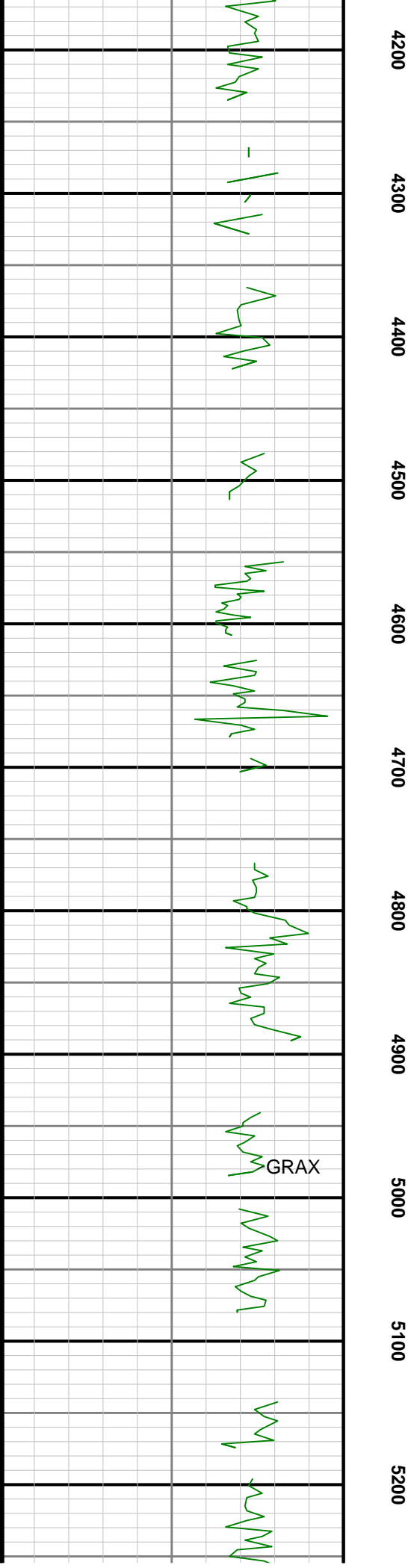
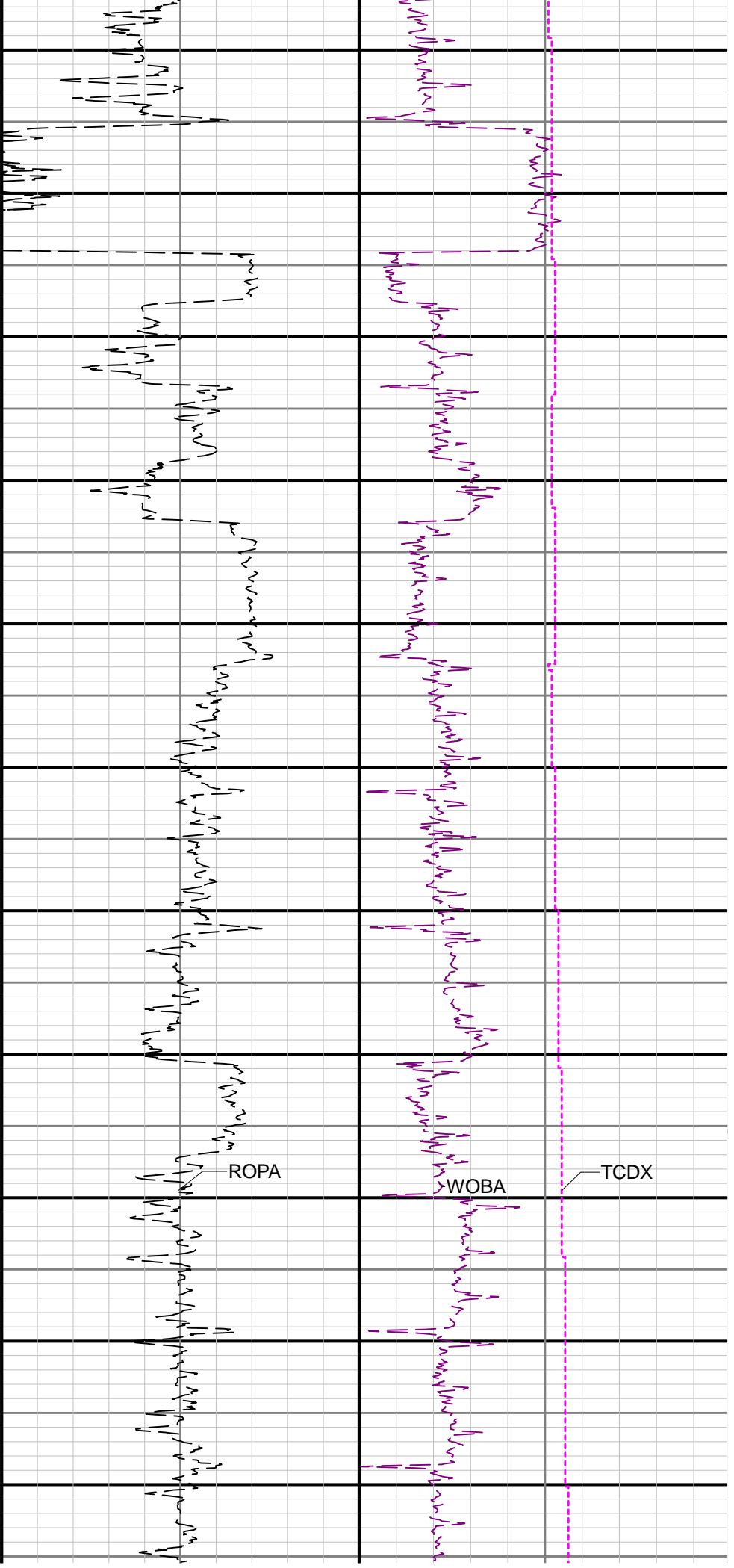
Remarks

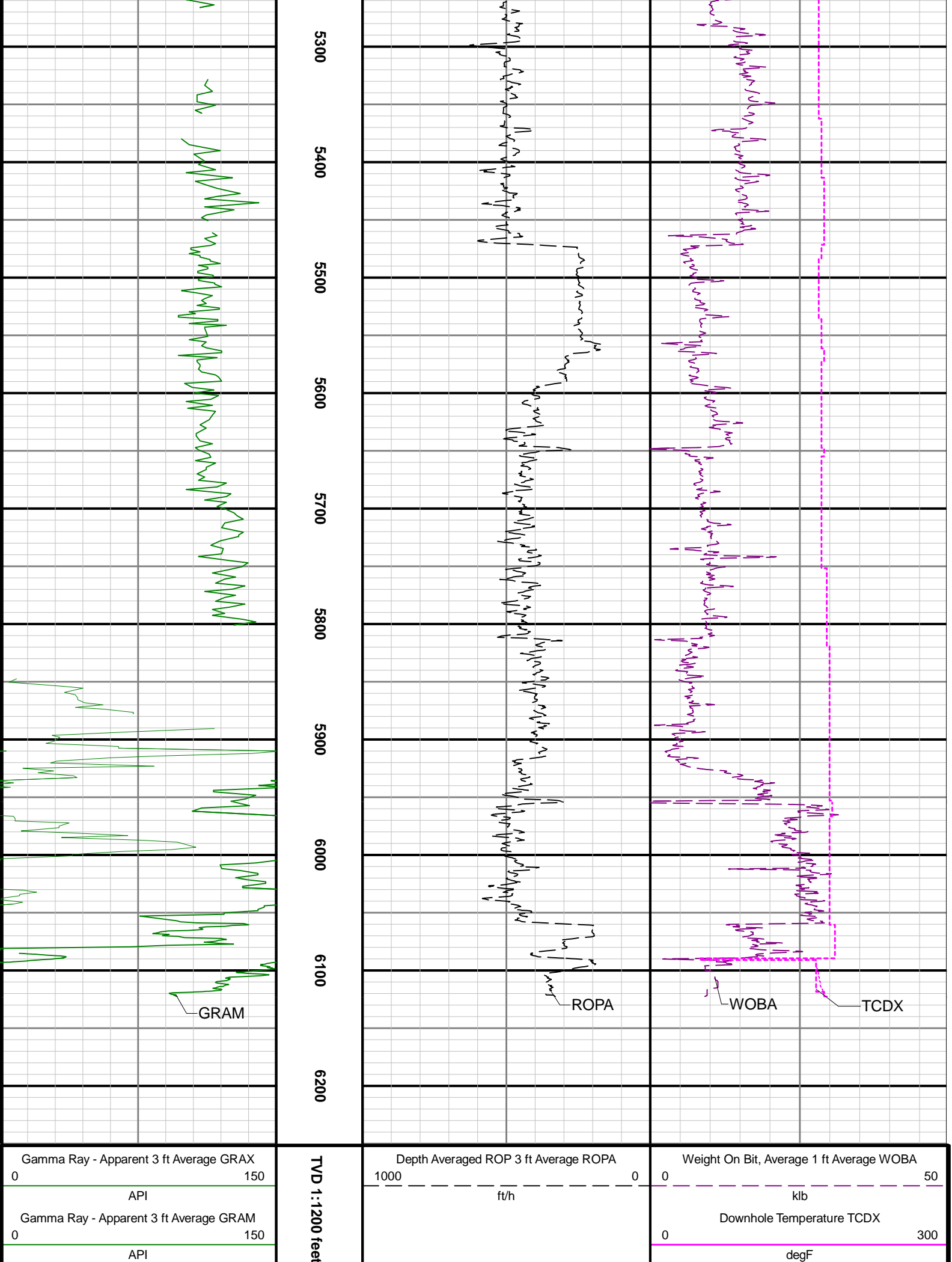
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
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			Downhole Temperature TCDM	
			0	300
			degF	

Directional Survey Summary				
Latitude: 6° 41' 00" N		Longitude: 103° 00' 00" E		
North Reference: Grid		Drill Depth Zero: Rig Floor		
Vertical Datum is: Ground Level		Vertical Datum to DDZ: (ft) 4907.00		
Vertical Section North: (m) 0.00		Vertical Section East: (m) 0.00		
Vertical Section Azimuth: (deg) 262.86				
Grid Convergence: (deg) -0.99		Magnetic Declination: (deg) 7.73		
Total Correction: (deg) 6.74		TVD Calculation Method: Minimum Curvature		
Magnetic Correction: Off		Local Magnetic Field: (nT) 52590		
Local Magnetic Dip Angle: (deg) 67.06		Local Gravity Field: (m/s2) 9.801		

Tie-In / Projection	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Temperature (degF)	North (ft)	East (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Course Length (ft)	Dog Leg Severity (deg/100ft)	Build Rate (deg/100ft)	Turn Rate (deg/100ft)
Tie-In	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	84.00	0.19	285.15	N/A	0.04	-0.13	84.00	0.13	84.00	0.23	0.23	-89.11
	178.00	0.08	246.05	N/A	0.05	-0.34	178.00	0.34	94.00	0.15	-0.12	-41.60
	269.00	0.11	4.56	N/A	0.11	-0.40	269.00	0.38	91.00	0.18	0.03	130.23
	362.00	0.18	261.76	N/A	0.18	-0.53	362.00	0.51	93.00	0.25	0.08	-110.54
	457.00	0.07	218.30	N/A	0.11	-0.72	457.00	0.70	95.00	0.15	-0.12	-45.75
	550.00	0.36	252.90	N/A	-0.02	-1.03	550.00	1.03	93.00	0.33	0.31	37.20
	643.00	0.58	224.60	N/A	-0.44	-1.64	643.00	1.68	93.00	0.34	0.24	-30.43
	737.00	0.13	124.37	N/A	-0.84	-1.89	736.99	1.98	94.00	0.66	-0.48	-106.63
	831.00	0.38	274.90	N/A	-0.87	-2.11	830.99	2.20	94.00	0.53	0.27	160.14
	925.00	0.24	63.97	N/A	-0.76	-2.24	924.99	2.32	94.00	0.64	-0.15	158.59
	1019.00	0.32	248.71	N/A	-0.77	-2.31	1018.99	2.39	94.00	0.60	0.09	-186.45
	1112.00	0.11	80.74	N/A	-0.85	-2.47	1111.99	2.55	93.00	0.46	-0.23	-180.61
	1206.00	0.05	205.31	N/A	-0.87	-2.39	1205.99	2.48	94.00	0.15	-0.06	132.52
	1300.00	0.08	264.42	N/A	-0.91	-2.48	1299.99	2.57	94.00	0.07	0.03	62.88
	1395.00	0.12	228.30	N/A	-0.99	-2.62	1394.99	2.72	95.00	0.08	0.04	-38.02
	1489.00	0.08	161.76	N/A	-1.11	-2.67	1488.99	2.79	94.00	0.12	-0.04	-70.79
	1584.00	0.12	339.29	N/A	-1.08	-2.68	1583.99	2.80	95.00	0.21	0.04	186.87
	1678.00	0.12	300.13	N/A	-0.94	-2.80	1677.99	2.90	94.00	0.09	0.00	-41.66
	1773.00	0.15	221.37	N/A	-0.99	-2.97	1772.99	3.07	95.00	0.18	0.03	-82.91
	1868.00	0.14	233.88	N/A	-1.15	-3.15	1867.99	3.27	95.00	0.03	-0.01	13.17
	1936.00	0.10	304.58	N/A	-1.16	-3.26	1935.99	3.38	68.00	0.21	-0.06	103.97
	1972.00	0.94	35.91	N/A	-0.91	-3.12	1971.99	3.21	36.00	2.63	2.33	253.69
	2066.00	1.27	158.73	N/A	-1.25	-2.29	2065.98	2.42	94.00	2.07	0.35	130.66
	2161.00	3.68	173.27	N/A	-5.26	-1.55	2160.89	2.19	95.00	2.60	2.54	15.31
	2255.00	5.13	196.38	N/A	-12.29	-2.38	2254.61	3.89	94.00	2.41	1.54	24.59
	2350.00	6.43	206.40	N/A	-21.13	-5.94	2349.13	8.52	95.00	1.73	1.37	10.55
	2444.00	7.05	201.93	N/A	-31.20	-10.44	2442.48	14.23	94.00	0.86	0.66	-4.76
	2539.00	7.25	187.05	N/A	-42.55	-13.35	2536.75	18.54	95.00	1.96	0.21	-15.66
	2633.00	7.96	172.08	N/A	-54.89	-13.18	2629.93	19.90	94.00	2.23	0.76	-15.93
	2728.00	8.36	157.84	N/A	-67.80	-9.67	2723.98	18.02	95.00	2.16	0.42	-14.99
	2822.00	6.99	135.97	N/A	-78.24	-3.12	2817.15	12.82	94.00	3.40	-1.46	-23.27
	2917.00	6.75	149.98	N/A	-87.24	3.70	2911.48	7.18	95.00	1.78	-0.25	14.75
	3011.00	7.26	171.61	N/A	-97.90	7.33	3004.79	4.90	94.00	2.84	0.54	23.01
	3106.00	7.32	184.16	N/A	-109.87	7.76	3099.03	5.95	95.00	1.67	0.06	13.21
	3200.00	7.88	193.30	N/A	-122.12	5.85	3192.21	9.38	94.00	1.42	0.60	9.72
	3295.00	7.86	193.89	N/A	-134.76	2.79	3286.31	13.98	95.00	0.09	-0.02	0.62
	3390.00	7.67	194.41	N/A	-147.21	-0.35	3380.44	18.64	95.00	0.21	-0.20	0.55
	3484.00	7.72	196.26	N/A	-159.34	-3.68	3473.60	23.45	94.00	0.27	0.05	1.97
	3579.00	7.86	198.19	N/A	-171.64	-7.49	3567.72	28.77	95.00	0.31	0.15	2.03
	3673.00	7.87	198.45	N/A	-183.85	-11.53	3660.84	34.30	94.00	0.04	0.01	0.28
	3768.00	7.87	197.40	N/A	-196.23	-15.54	3754.94	39.81	95.00	0.15	0.00	-1.11
	3863.00	7.61	199.01	N/A	-208.38	-19.53	3849.08	45.28	95.00	0.36	-0.27	1.69
	3957.00	7.81	196.97	N/A	-220.37	-23.42	3942.23	50.63	94.00	0.36	0.21	-2.17
	4052.00	7.84	187.42	N/A	-232.97	-26.14	4036.35	54.90	95.00	1.37	0.03	-10.05
	4147.00	7.60	188.56	N/A	-245.61	-27.92	4130.48	58.23	95.00	0.30	-0.25	1.20
	4241.00	7.83	196.73	N/A	-257.89	-30.68	4223.64	62.50	94.00	1.19	0.24	8.69
	4336.00	7.76	205.80	N/A	-269.86	-35.34	4317.76	68.61	95.00	1.30	-0.07	9.55
	4430.00	7.10	214.16	N/A	-280.38	-41.36	4410.97	75.89	94.00	1.35	-0.70	8.89
	4525.00	8.00	226.75	N/A	-289.77	-49.47	4505.16	85.11	95.00	1.98	0.95	13.25
	4619.00	7.37	222.83	N/A	-298.67	-58.34	4598.31	95.01	94.00	0.87	-0.67	-4.17
	4713.00	7.20	211.85	N/A	-308.10	-65.55	4691.56	103.33	94.00	1.49	-0.18	-11.68
	4808.00	7.83	206.65	N/A	-318.94	-71.59	4785.74	110.68	95.00	0.98	0.66	-5.47
	4903.00	7.83	196.47	N/A	-330.93	-76.33	4879.86	116.87	95.00	1.46	0.00	-10.72
	4997.00	7.33	199.38	N/A	-342.44	-79.34	4973.98	124.39	94.00	2.93	2.48	6.49

	4997.00	7.92	190.36	N/A	-343.44	-119.31	4972.96	121.36	94.00	0.99	0.10	-6.48
	5092.00	8.02	184.39	N/A	-356.49	-81.00	5067.06	124.68	95.00	0.88	0.11	-6.31
	5186.00	7.86	188.14	N/A	-369.39	-82.41	5160.16	127.68	94.00	0.58	-0.17	3.99
	5281.00	7.88	194.27	N/A	-382.13	-84.93	5254.27	131.77	95.00	0.88	0.02	6.45
	5375.00	7.78	194.52	N/A	-394.53	-88.12	5347.39	136.47	94.00	0.11	-0.11	0.27
	5470.00	7.84	192.32	N/A	-407.09	-91.11	5441.51	141.00	95.00	0.32	0.06	-2.32
	5564.00	10.38	230.62	N/A	-418.74	-99.03	5534.40	150.31	94.00	6.83	2.70	40.74
	5659.00	18.26	253.17	N/A	-428.50	-119.94	5626.44	172.27	95.00	10.02	8.29	23.74
	5754.00	25.69	256.21	N/A	-437.73	-154.23	5714.48	207.45	95.00	7.91	7.82	3.20
	5848.00	32.67	258.65	N/A	-447.59	-198.95	5796.50	253.04	94.00	7.53	7.43	2.60
	5943.00	39.99	259.13	N/A	-458.41	-254.15	5872.98	309.15	95.00	7.71	7.71	0.51
	6037.00	47.80	259.81	N/A	-470.28	-318.18	5940.67	374.16	94.00	8.32	8.31	0.72
	6132.00	54.85	259.85	N/A	-483.37	-391.13	6000.00	448.18	95.00	7.42	7.42	0.04
	6226.00	61.13	262.83	N/A	-495.29	-469.89	6049.81	527.81	94.00	7.20	6.68	3.17
	6319.00	69.99	264.27	N/A	-504.76	-553.94	6088.25	612.38	93.00	9.63	9.53	1.55
	6414.00	79.51	266.02	N/A	-512.47	-645.16	6113.21	703.85	95.00	10.18	10.02	1.84
	6508.00	89.20	269.46	N/A	-516.13	-738.50	6122.45	796.93	94.00	10.93	10.31	3.66
	6602.00	90.83	270.28	N/A	-516.35	-832.50	6122.42	890.22	94.00	1.94	1.73	0.87
	6697.00	90.62	269.20	N/A	-516.78	-927.49	6121.22	984.53	95.00	1.16	-0.22	-1.14
	6791.00	90.77	268.93	N/A	-518.31	-1021.47	6120.08	1077.97	94.00	0.33	0.16	-0.29
	6886.00	90.83	267.38	N/A	-521.37	-1116.41	6118.75	1172.55	95.00	1.63	0.06	-1.63
	7075.00	90.37	267.42	N/A	-529.94	-1305.20	6116.78	1360.95	189.00	0.24	-0.24	0.02
	7169.00	90.43	266.61	N/A	-534.84	-1399.07	6116.12	1454.70	94.00	0.86	0.06	-0.86
	7264.00	90.46	266.99	N/A	-540.14	-1493.92	6115.38	1549.47	95.00	0.40	0.03	0.40
	7359.00	90.37	267.00	N/A	-545.12	-1588.79	6114.69	1644.22	95.00	0.10	-0.09	0.01
	7453.00	90.28	267.36	N/A	-549.74	-1682.67	6114.16	1737.95	94.00	0.39	-0.10	0.38
	7548.00	90.40	266.19	N/A	-555.09	-1777.52	6113.60	1832.73	95.00	1.24	0.13	-1.23
	7642.00	90.28	266.66	N/A	-560.95	-1871.33	6113.04	1926.55	94.00	0.52	-0.13	0.50
	7737.00	90.40	268.61	N/A	-564.87	-1966.25	6112.48	2021.21	95.00	2.06	0.13	2.05
	7831.00	90.37	269.21	N/A	-566.66	-2060.23	6111.84	2114.68	94.00	0.64	-0.03	0.64
	7926.00	90.43	270.71	N/A	-566.72	-2155.22	6111.18	2208.95	95.00	1.58	0.06	1.58
	8020.00	90.40	271.35	N/A	-565.03	-2249.20	6110.50	2301.99	94.00	0.68	-0.03	0.68
	8115.00	90.49	272.05	N/A	-562.22	-2344.16	6109.76	2395.86	95.00	0.74	0.09	0.74
	8209.00	90.46	271.51	N/A	-559.30	-2438.11	6108.98	2488.72	94.00	0.58	-0.03	-0.57
	8304.00	90.46	271.74	N/A	-556.60	-2533.07	6108.22	2582.61	95.00	0.24	0.00	0.24
	8399.00	90.43	270.23	N/A	-554.97	-2628.05	6107.48	2676.65	95.00	1.59	-0.03	-1.59
	8493.00	90.34	268.97	N/A	-555.63	-2722.04	6106.85	2769.99	94.00	1.34	-0.10	-1.34
	8588.00	90.49	268.70	N/A	-557.56	-2817.02	6106.16	2864.48	95.00	0.33	0.16	-0.28
	8682.00	90.43	267.99	N/A	-560.27	-2910.98	6105.41	2958.04	94.00	0.76	-0.06	-0.76
	8777.00	90.49	266.85	N/A	-564.55	-3005.88	6104.64	3052.74	95.00	1.20	0.06	-1.20
	8871.00	90.80	266.00	N/A	-570.41	-3099.69	6103.59	3146.55	94.00	0.96	0.33	-0.90
	8966.00	90.89	265.00	N/A	-577.86	-3194.38	6102.19	3241.44	95.00	1.06	0.09	-1.05
	9060.00	90.55	265.25	N/A	-585.85	-3288.03	6101.00	3335.35	94.00	0.45	-0.36	0.27
	9249.00	90.71	266.54	N/A	-599.38	-3476.53	6098.93	3524.07	189.00	0.69	0.08	0.68
	9344.00	90.71	267.58	N/A	-604.25	-3571.40	6097.75	3618.81	95.00	1.09	0.00	1.09
	9438.00	90.52	267.14	N/A	-608.58	-3665.29	6096.74	3712.51	94.00	0.51	-0.20	-0.47
	9533.00	90.55	267.14	N/A	-613.32	-3760.17	6095.85	3807.25	95.00	0.03	0.03	0.00
	9628.00	90.52	268.99	N/A	-616.53	-3855.11	6094.97	3901.85	95.00	1.95	-0.03	1.95
	9722.00	90.62	269.12	N/A	-618.08	-3949.09	6094.03	3995.29	94.00	0.17	0.11	0.14
	9817.00	90.83	269.64	N/A	-619.11	-4044.08	6092.83	4089.67	95.00	0.59	0.22	0.55
	9911.00	90.40	270.85	N/A	-618.70	-4138.07	6091.82	4182.88	94.00	1.37	-0.46	1.29
	10006.00	90.34	271.42	N/A	-616.82	-4233.05	6091.21	4276.89	95.00	0.60	-0.06	0.60
	10101.00	90.28	270.33	N/A	-615.37	-4328.04	6090.69	4370.96	95.00	1.15	-0.06	-1.15
	10195.00	90.12	269.65	N/A	-615.39	-4422.03	6090.36	4464.23	94.00	0.74	-0.17	-0.72
	10290.00	90.18	267.63	N/A	-617.64	-4517.00	6090.11	4558.74	95.00	2.13	0.06	-2.13
	10385.00	90.40	266.47	N/A	-622.53	-4611.87	6089.63	4653.49	95.00	1.24	0.23	-1.22
	10479.00	90.09	265.80	N/A	-628.87	-4705.66	6089.23	4747.33	94.00	0.79	-0.33	-0.71
	10574.00	90.18	265.13	N/A	-636.38	-4800.36	6089.01	4842.23	95.00	0.71	0.09	-0.71
	10669.00	90.43	265.26	N/A	-644.34	-4895.03	6088.50	4937.15	95.00	0.30	0.26	0.14
	10763.00	90.18	267.74	N/A	-650.07	-4988.84	6088.00	5030.95	94.00	2.65	-0.27	2.64
	10858.00	90.40	268.01	N/A	-653.60	-5083.77	6087.52	5125.59	95.00	0.37	0.23	0.28
	10952.00	90.62	267.88	N/A	-656.97	-5177.71	6086.68	5219.22	94.00	0.27	0.23	-0.14
	11076.00	90.31	266.26	N/A	-663.30	-5301.54	6085.68	5342.87	124.00	1.33	-0.25	-1.31
Projection	11100.00	90.31	266.26	N/A	-664.87	-5325.49	6085.55	5366.83	24.00	0.00	0.00	0.00