

Crew								
Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Adam Schlenz	2016-09-23	2016-09-28	Tad Byram	2016-09-23	2016-09-28			

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+ (%)
2016-09-25 13:30	2	5847.00	Water Based Mud	10.1	10	9.7	7.2	1.5/89	Active Pit	1500	0.00
2016-09-26 06:10	2	6298.00	Water Based Mud	10.5	10	9.2	7.0	1.5/87	Active Pit	1400	0.00
2016-09-27 10:00	3	10946.00	Water Based Mud	10.6	18	9.8	6.9	2.5/85	Active Pit	1200	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	NaviGamma	694	Gamma (single)	12.81	49.00	8.400	3.250
1	NaviGamma	694	Directional (mag)	16.18	52.37	8.400	3.250
1	NaviGamma	694	VSS	16.18	52.37	8.400	3.250
2	NaviGamma	12366173	Gamma (single)	10.70	41.55	6.750	3.250
2	NaviGamma	12366173	VSS	14.11	44.96	6.750	3.250
2	NaviGamma	12366173	Directional (mag)	14.11	44.96	6.750	3.250
3	NaviGamma	12366173	Gamma (single)	10.70	41.55	6.750	3.250
3	NaviGamma	12366173	VSS	14.11	44.96	6.750	3.250
3	NaviGamma	12366173	Directional (mag)	14.11	44.96	6.750	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform

Comments

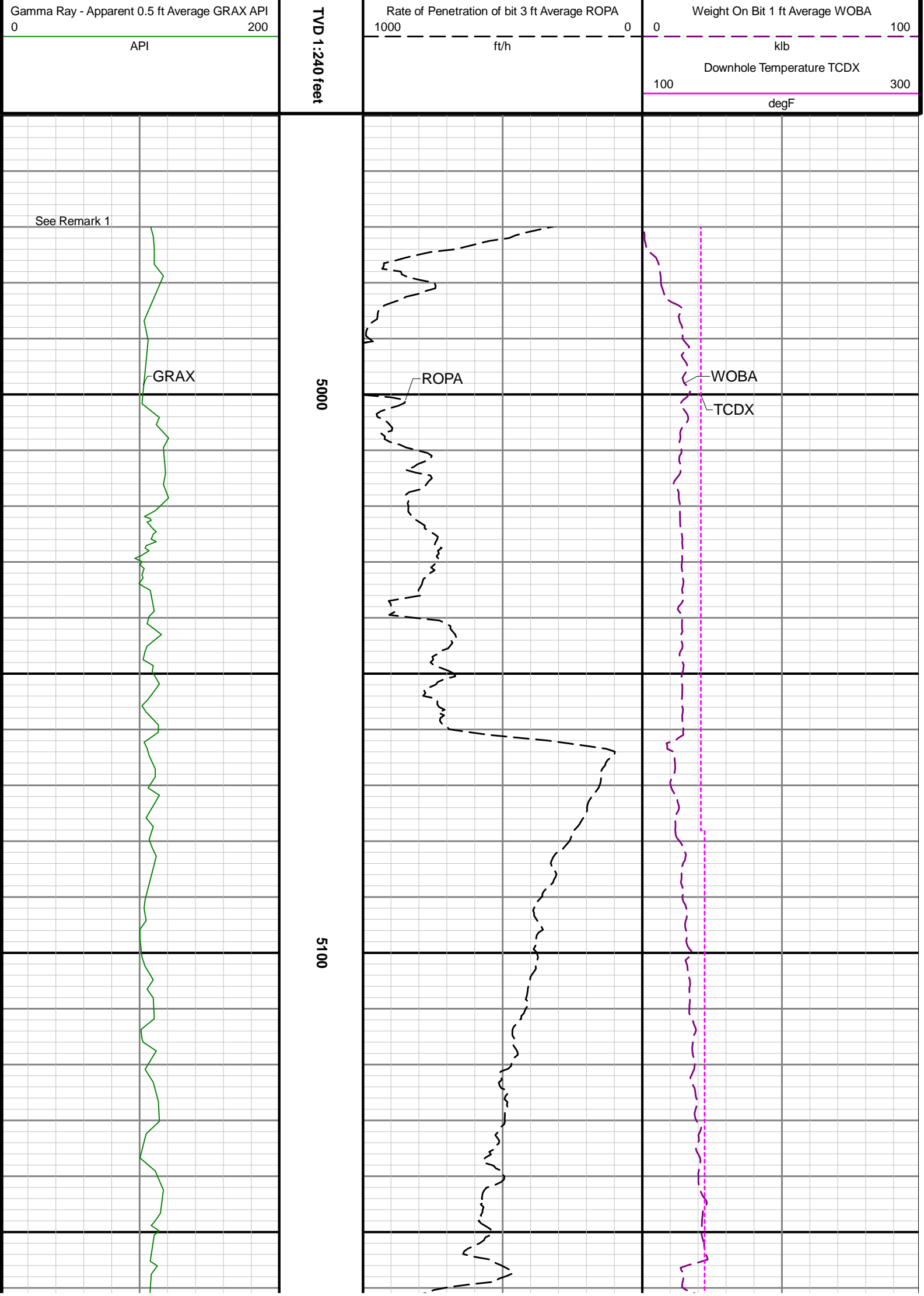
1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD run 1 utilized an 8.250 inch NaviGamma (Directional and Gamma Ray) tool behind a 13.500 inch bit and steerable assembly from 101 to 2090 feet MD (101 to 2078 feet TVD).
3	Baker Hughes LWD runs 2 and 3 utilized a 6.750 inch NaviGamma (Directional and Gamma Ray) tool behind an 8.500 inch bit and steerable assembly from 2090 to 13927 feet MD (2078 to 5790 feet TVD).
4	Gamma Ray Apparent (GRAX) data is presented 0 to 200 API.
5	All surveys were corrected by Surcon Survey Management Services.

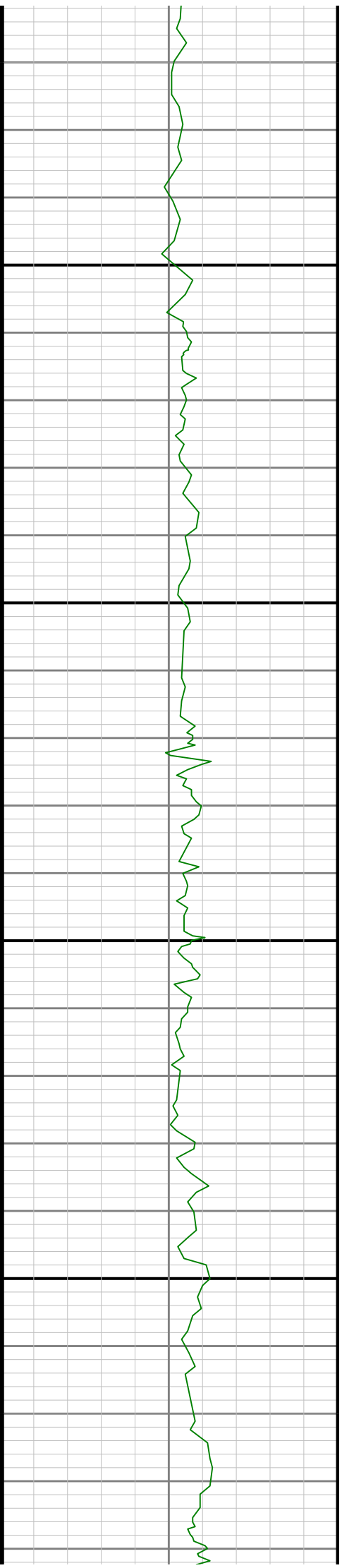
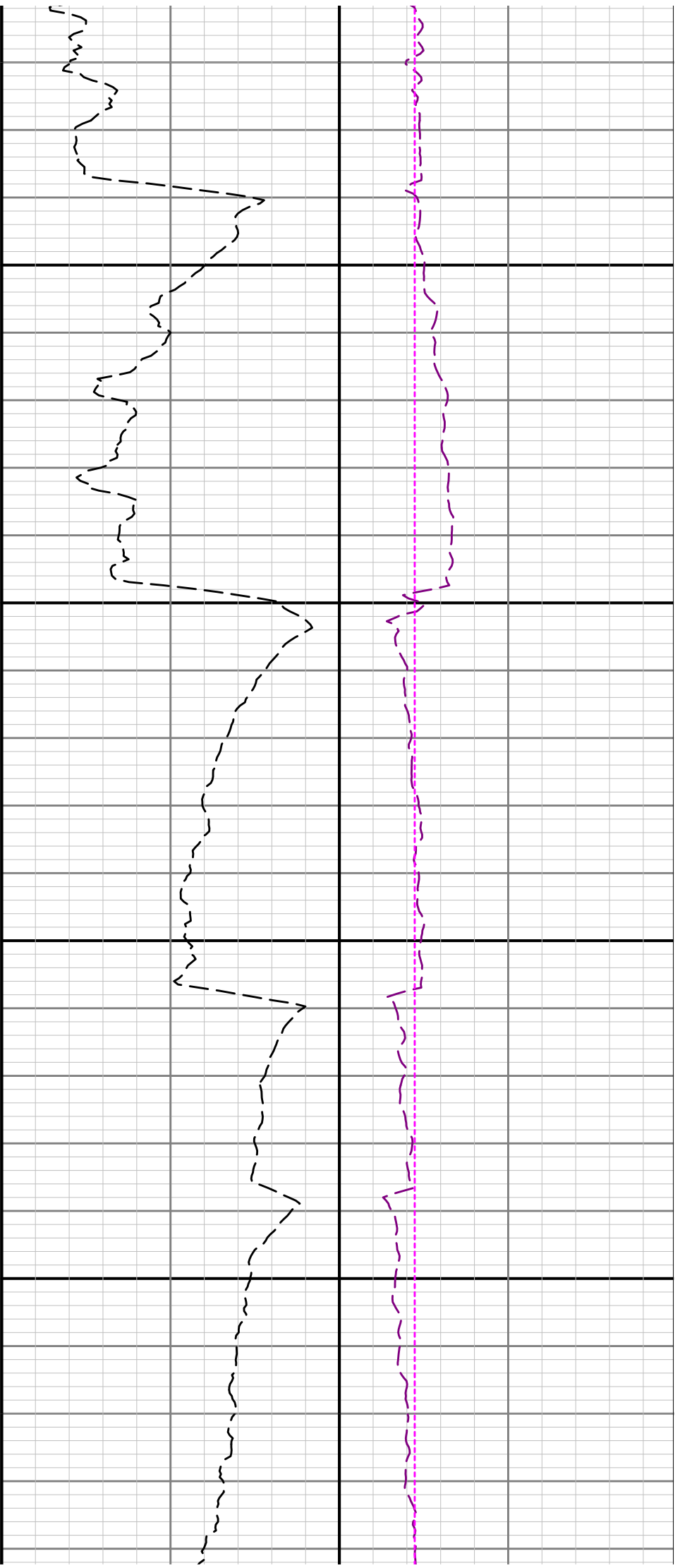
Remarks

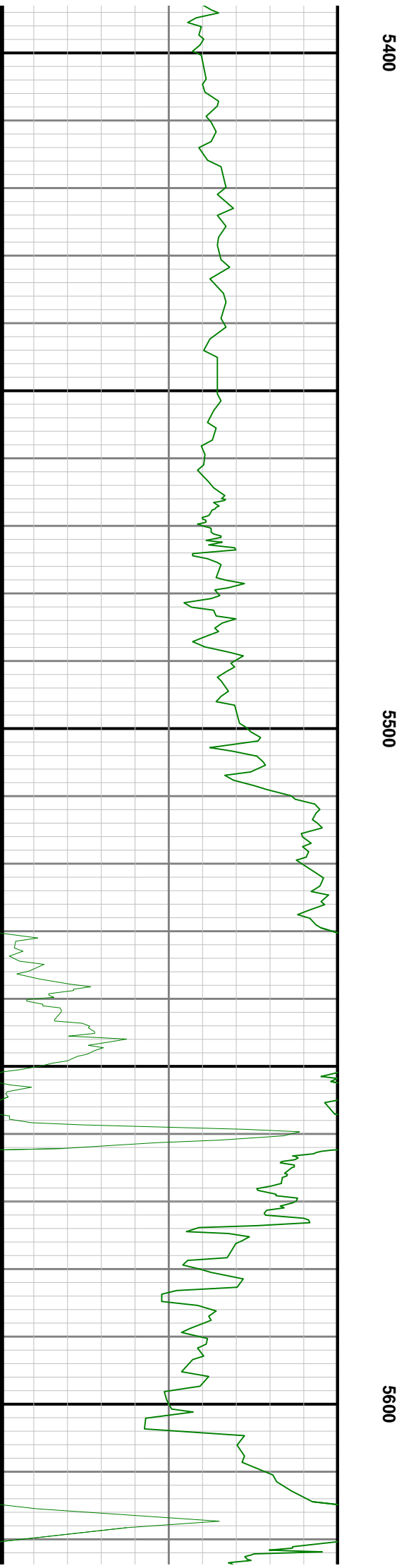
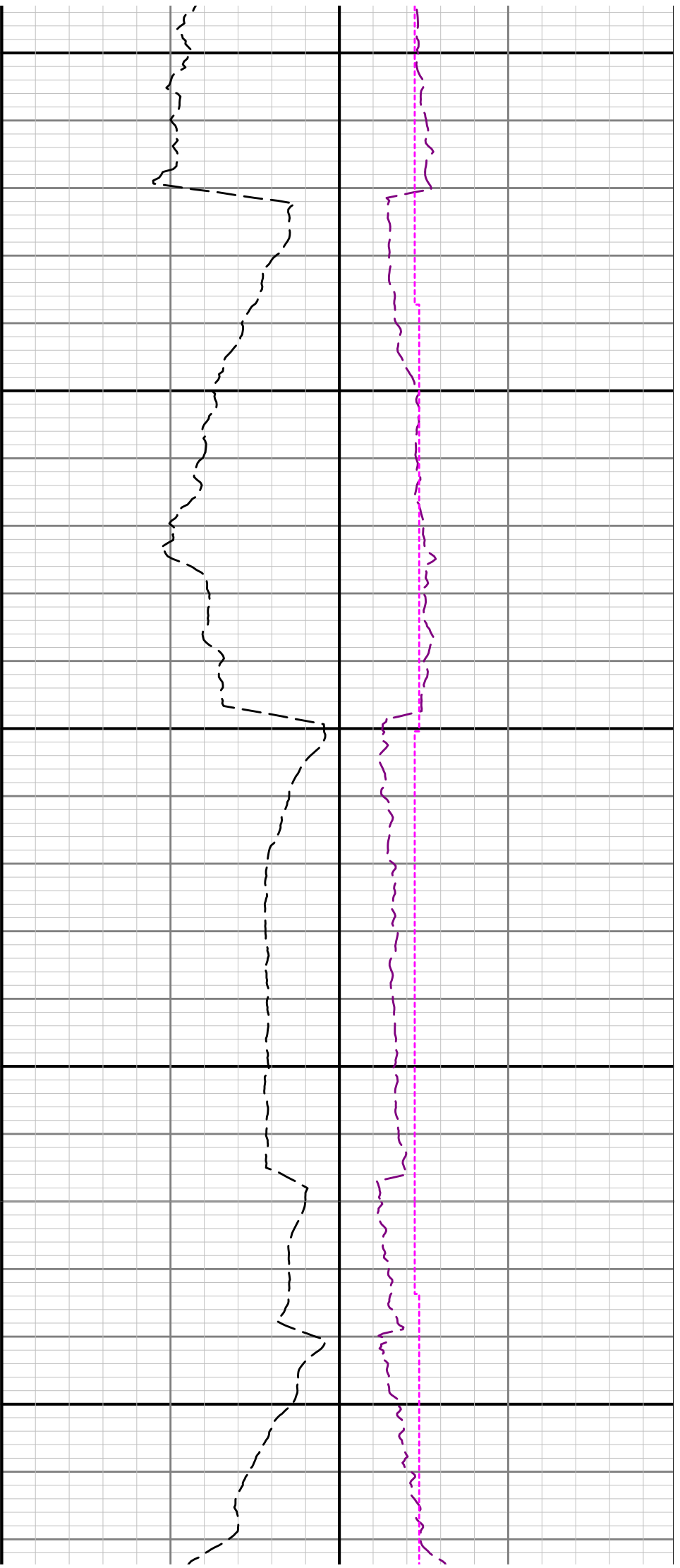
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	5000.00	8.500	2	Baker Hughes logging while drilling services began at 5000 feet MD (4969 feet TVD).
2	6240.00	8.500	3	The interval from 6200 to 6240 feet MD (5786 to 5791 feet TVD) was logged more than 10 hours after being drilled due to a trip out of the hole for a wireline logging run and picking up a new BHA.
3	13927.00	8.500	3	The interval from 13885 to 13927 feet MD (5790 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

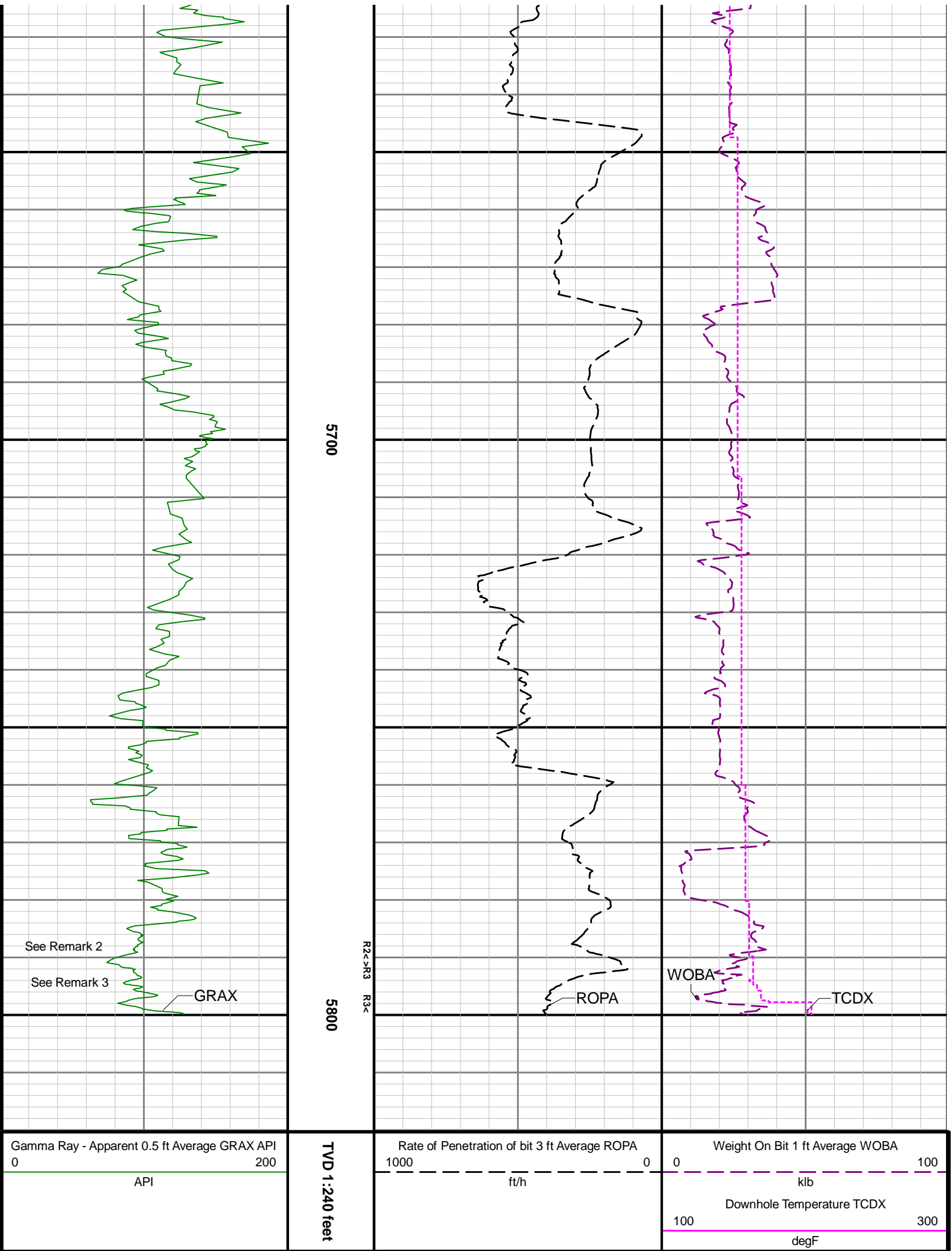
Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
GRAX	Gamma Ray - Apparent 0.5 ft Average	API
TCDX	Downhole Temperature	degF
WOBA	Weight On Bit, Average 1 ft Average	klb









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	21.00	0.00	0.00	N/A	0.00	0.00	21.00	0.00	0.00	0.00	0.00	0.00

	237.00	1.12	338.85	82.4	1.97	-0.76	236.99	-2.01	216.00	0.52	0.52	-9.79
	328.00	0.67	59.37	N/A	3.07	-0.62	327.98	-3.10	91.00	1.33	-0.49	88.48
	419.00	2.73	66.60	N/A	4.20	1.82	418.93	-4.09	91.00	2.27	2.26	7.95
	510.00	5.17	63.61	N/A	6.88	7.48	509.71	-6.46	91.00	2.69	2.68	-3.29
	601.00	7.58	57.90	N/A	11.90	16.24	600.14	-10.98	91.00	2.74	2.65	-6.27
	693.00	7.55	55.74	N/A	18.52	26.38	691.34	-17.04	92.00	0.31	-0.03	-2.35
	784.00	7.20	51.30	N/A	25.46	35.77	781.59	-23.44	91.00	0.73	-0.38	-4.88
	876.00	6.92	47.57	N/A	32.80	44.36	872.89	-30.30	92.00	0.58	-0.30	-4.05
	967.00	6.87	63.90	N/A	38.89	53.30	963.24	-35.89	91.00	2.15	-0.05	17.95
	1058.00	6.96	62.81	N/A	43.81	63.09	1053.58	-40.25	91.00	0.17	0.10	-1.20
	1150.00	7.04	65.58	N/A	48.68	73.18	1144.89	-44.56	92.00	0.38	0.09	3.01
	1241.00	7.45	63.01	N/A	53.67	83.51	1235.17	-48.97	91.00	0.57	0.45	-2.82
	1333.00	8.26	63.38	N/A	59.34	94.74	1326.30	-54.01	92.00	0.88	0.88	0.40
	1424.00	8.91	63.27	N/A	65.43	106.87	1416.28	-59.42	91.00	0.71	0.71	-0.12
	1516.00	8.63	67.59	N/A	71.27	119.62	1507.21	-64.55	92.00	0.78	-0.30	4.70
	1607.00	7.01	66.35	N/A	76.10	131.02	1597.36	-68.74	91.00	1.79	-1.78	-1.36
	1699.00	6.49	65.00	N/A	80.55	140.87	1688.72	-72.64	92.00	0.59	-0.57	-1.47
	1792.00	6.34	63.09	N/A	85.10	150.22	1781.14	-76.66	93.00	0.28	-0.16	-2.05
	1883.00	5.65	58.70	N/A	89.70	158.52	1871.64	-80.79	91.00	0.91	-0.76	-4.82
	1973.00	5.43	53.98	N/A	94.50	165.75	1961.22	-85.19	90.00	0.56	-0.24	-5.24
	2035.00	5.49	52.70	N/A	98.03	170.49	2022.94	-88.45	62.00	0.22	0.10	-2.06
	2216.00	5.73	47.50	N/A	109.38	184.03	2203.08	-99.03	181.00	0.31	0.13	-2.87
	2310.00	7.30	74.64	N/A	114.13	193.26	2296.49	-103.27	94.00	3.63	1.67	28.87
	2404.00	6.84	73.95	N/A	117.26	204.39	2389.77	-105.78	94.00	0.50	-0.49	-0.73
	2499.00	6.36	74.09	N/A	120.27	214.89	2484.14	-108.20	95.00	0.51	-0.51	0.15
	2594.00	6.05	71.26	N/A	123.32	224.69	2578.59	-110.70	95.00	0.46	-0.33	-2.98
	2688.00	9.46	79.06	N/A	126.38	236.97	2671.71	-113.08	94.00	3.79	3.63	8.30
	2783.00	8.79	77.29	N/A	129.45	251.72	2765.51	-115.34	95.00	0.76	-0.71	-1.86
	2877.00	8.14	75.00	N/A	132.76	265.15	2858.49	-117.89	94.00	0.78	-0.69	-2.44
	2971.00	7.58	59.89	N/A	137.59	276.95	2951.61	-122.06	94.00	2.27	-0.60	-16.07
	3065.00	6.49	53.00	N/A	143.90	286.55	3044.91	-127.83	94.00	1.46	-1.16	-7.33
	3159.00	5.67	49.21	N/A	150.13	294.31	3138.38	-133.62	94.00	0.97	-0.87	-4.03
	3254.00	6.39	62.79	N/A	155.61	302.57	3232.86	-138.64	95.00	1.68	0.76	14.29
	3348.00	6.25	61.62	N/A	160.44	311.72	3326.29	-142.95	94.00	0.20	-0.15	-1.24
	3442.00	6.45	56.06	N/A	165.82	320.60	3419.71	-147.83	94.00	0.69	0.21	-5.91
	3537.00	6.40	55.90	N/A	171.76	329.41	3514.11	-153.28	95.00	0.06	-0.05	-0.17
	3725.00	5.83	55.85	N/A	183.00	345.99	3701.04	-163.59	188.00	0.30	-0.30	-0.03
	3819.00	7.28	59.57	N/A	188.69	355.08	3794.43	-168.77	94.00	1.61	1.54	3.96
	3914.00	6.15	56.53	N/A	194.55	364.51	3888.77	-174.10	95.00	1.25	-1.19	-3.20
	4008.00	5.89	56.91	N/A	199.96	372.75	3982.25	-179.04	94.00	0.28	-0.28	0.40
	4103.00	7.35	59.25	N/A	205.73	382.06	4076.62	-184.29	95.00	1.56	1.54	2.46
	4197.00	6.79	62.98	N/A	211.33	392.18	4169.90	-189.32	94.00	0.77	-0.60	3.97
	4291.00	6.40	66.13	N/A	215.97	401.92	4263.28	-193.42	94.00	0.57	-0.41	3.35
	4385.00	5.69	69.54	N/A	219.72	411.08	4356.76	-196.65	94.00	0.85	-0.76	3.63
	4479.00	5.28	74.44	N/A	222.51	419.61	4450.33	-198.97	94.00	0.66	-0.44	5.21
	4573.00	5.50	64.47	N/A	225.61	427.84	4543.92	-201.61	94.00	1.02	0.23	-10.61
	4667.00	6.61	49.63	N/A	231.06	436.03	4637.40	-206.59	94.00	2.03	1.18	-15.79
	4762.00	5.69	45.37	N/A	237.91	443.55	4731.85	-213.02	95.00	1.08	-0.97	-4.48
	4856.00	3.34	8.05	N/A	243.90	447.25	4825.57	-218.79	94.00	3.88	-2.50	-39.70
	4951.00	0.97	322.97	N/A	247.28	447.15	4920.50	-222.17	95.00	2.89	-2.49	-47.45
	5045.00	0.54	353.51	N/A	248.35	446.62	5014.49	-223.28	94.00	0.61	-0.46	32.49
	5139.00	6.17	195.40	N/A	243.92	445.23	5108.32	-218.92	94.00	7.10	5.99	-168.20
	5233.00	11.40	192.49	N/A	229.97	441.87	5201.19	-205.18	94.00	5.58	5.56	-3.10
	5327.00	18.86	187.71	N/A	205.81	437.82	5291.87	-181.28	94.00	8.04	7.94	-5.09
	5422.00	27.99	189.91	N/A	168.55	431.91	5378.95	-144.41	95.00	9.65	9.61	2.32
	5516.00	34.93	188.63	N/A	120.16	424.07	5459.08	-96.52	94.00	7.42	7.38	-1.36
	5610.00	42.89	188.25	N/A	61.80	415.43	5532.17	-38.73	94.00	8.47	8.47	-0.40
	5705.00	51.87	182.08	N/A	-7.71	409.42	5596.46	30.34	95.00	10.58	9.45	-6.49
	5799.00	56.65	179.17	N/A	-83.97	408.64	5651.36	106.44	94.00	5.67	5.09	-3.10
	5893.00	66.81	178.45	N/A	-166.63	410.38	5695.83	189.07	94.00	10.83	10.81	-0.77
	5987.00	72.25	177.20	N/A	-254.59	413.74	5728.69	277.08	94.00	5.92	5.79	-1.33
	6082.00	72.36	177.09	N/A	-344.99	418.25	5757.56	367.59	95.00	0.16	0.12	-0.12
	6176.00	78.14	178.84	N/A	-435.79	421.46	5781.49	458.43	94.00	6.41	6.15	1.86
	6211.00	82.43	179.20	N/A	-470.28	422.05	5787.39	492.89	35.00	12.30	12.26	1.03
	6306.00	89.45	178.62	N/A	-564.96	423.85	5794.11	587.53	95.00	7.41	7.39	-0.61
	6400.00	89.01	178.28	N/A	-658.92	426.39	5795.38	681.49	94.00	0.59	-0.47	-0.36
	6494.00	88.80	178.12	N/A	-752.85	429.35	5797.17	775.44	94.00	0.28	-0.22	-0.17
	6588.00	91.05	177.64	N/A	-846.78	432.82	5797.30	869.42	94.00	2.45	2.39	-0.51
	6683.00	90.92	177.90	N/A	-941.70	436.52	5795.66	964.39	95.00	0.31	-0.14	0.27
	6777.00	90.46	177.69	N/A	-1035.62	440.13	5794.53	1058.37	94.00	0.54	-0.49	-0.22
	6870.00	90.15	178.26	N/A	-1128.56	443.42	5794.04	1151.35	93.00	0.70	-0.33	0.61
	6965.00	89.66	179.74	N/A	-1223.54	445.08	5794.19	1246.28	95.00	1.64	-0.52	1.56
	7059.00	89.57	180.40	N/A	-1317.54	444.96	5794.82	1340.13	94.00	0.71	-0.10	0.70
	7153.00	89.38	179.21	N/A	-1411.53	445.28	5795.69	1434.00	94.00	1.28	-0.20	-1.27
	7247.00	89.66	179.64	N/A	-1505.53	446.23	5796.47	1527.90	94.00	0.55	0.30	0.46
	7341.00	90.68	177.54	N/A	-1599.49	448.54	5796.19	1621.85	94.00	2.48	1.09	-2.23
	7435.00	90.31	177.01	N/A	-1693.38	453.01	5795.38	1715.84	94.00	0.69	-0.39	-0.56

	7530.00	90.18	176.24	N/A	-1788.21	458.60	5794.98	1810.84	95.00	0.82	-0.14	-0.81
	7624.00	90.62	178.65	N/A	-1882.11	462.79	5794.32	1904.82	94.00	2.61	0.47	2.56
	7718.00	90.12	177.62	N/A	-1976.06	465.85	5793.71	1998.79	94.00	1.22	-0.53	-1.10
	7812.00	90.28	180.09	N/A	-2070.03	467.73	5793.39	2092.73	94.00	2.63	0.17	2.63
	7907.00	89.78	182.46	N/A	-2165.00	465.61	5793.34	2187.44	95.00	2.55	-0.53	2.49
	8000.00	89.88	183.67	N/A	-2257.86	460.64	5793.61	2279.88	93.00	1.31	0.11	1.30
	8094.00	89.57	183.06	N/A	-2351.70	455.13	5794.06	2373.27	94.00	0.73	-0.33	-0.65
	8189.00	89.88	182.15	N/A	-2446.60	450.81	5794.52	2467.79	95.00	1.01	0.33	-0.96
	8283.00	90.34	183.40	N/A	-2540.49	446.26	5794.34	2561.28	94.00	1.42	0.49	1.33
	8377.00	89.17	180.52	N/A	-2634.42	443.04	5794.74	2654.89	94.00	3.31	-1.24	-3.06
	8471.00	89.14	181.19	N/A	-2728.40	441.64	5796.13	2748.65	94.00	0.71	-0.03	0.71
	8566.00	88.86	180.82	N/A	-2823.37	439.97	5797.78	2843.38	95.00	0.49	-0.29	-0.39
	8661.00	88.98	178.08	N/A	-2918.34	440.89	5799.58	2938.25	95.00	2.89	0.13	-2.88
	8755.00	91.23	179.24	N/A	-3012.31	443.08	5799.40	3032.20	94.00	2.69	2.39	1.23
	8845.00	90.37	178.37	N/A	-3102.28	444.96	5798.15	3122.14	90.00	1.36	-0.96	-0.97
	8935.00	90.55	177.64	N/A	-3192.22	448.09	5797.42	3212.11	90.00	0.84	0.20	-0.81
	9027.00	90.83	178.19	N/A	-3284.15	451.44	5796.32	3304.09	92.00	0.67	0.30	0.60
	9118.00	90.25	179.90	N/A	-3375.13	452.96	5795.46	3395.01	91.00	1.98	-0.64	1.88
	9209.00	89.88	178.84	N/A	-3466.12	453.96	5795.35	3485.92	91.00	1.23	-0.41	-1.16
	9299.00	89.75	178.71	N/A	-3556.10	455.88	5795.65	3575.87	90.00	0.20	-0.14	-0.14
	9391.00	91.26	179.51	N/A	-3648.08	457.31	5794.83	3667.79	92.00	1.86	1.64	0.87
	9483.00	91.17	178.86	N/A	-3740.05	458.62	5792.88	3759.69	92.00	0.71	-0.10	-0.71
	9574.00	91.11	178.41	N/A	-3831.01	460.79	5791.07	3850.63	91.00	0.50	-0.07	-0.49
	9666.00	89.75	180.23	N/A	-3922.99	461.88	5790.38	3942.53	92.00	2.47	-1.48	1.98
	9757.00	89.60	180.54	N/A	-4013.99	461.27	5790.90	4033.36	91.00	0.38	-0.16	0.34
	9848.00	89.51	180.61	N/A	-4104.98	460.35	5791.61	4124.16	91.00	0.13	-0.10	0.08
	9939.00	89.29	181.31	N/A	-4195.96	458.83	5792.56	4214.92	91.00	0.81	-0.24	0.77
	10031.00	90.86	180.43	N/A	-4287.95	457.43	5792.44	4306.68	92.00	1.96	1.71	-0.96
	10122.00	90.92	180.43	N/A	-4378.94	456.75	5791.02	4397.49	91.00	0.07	0.07	0.00
	10214.00	90.31	179.88	N/A	-4470.93	456.50	5790.04	4489.33	92.00	0.89	-0.66	-0.60
	10306.00	90.58	180.33	N/A	-4562.93	456.33	5789.32	4581.18	92.00	0.57	0.29	0.49
	10398.00	90.12	180.32	N/A	-4654.92	455.81	5788.76	4673.01	92.00	0.50	-0.50	-0.01
	10491.00	92.22	180.60	N/A	-4747.90	455.06	5786.86	4765.80	93.00	2.28	2.26	0.30
	10582.00	92.40	180.22	N/A	-4838.82	454.41	5783.19	4856.54	91.00	0.46	0.20	-0.42
	10672.00	92.19	180.23	N/A	-4928.75	454.06	5779.59	4946.31	90.00	0.23	-0.23	0.01
	10763.00	89.38	179.09	N/A	-5019.73	454.60	5778.34	5037.18	91.00	3.33	-3.09	-1.25
	10854.00	89.20	178.77	N/A	-5110.70	456.30	5779.47	5128.12	91.00	0.40	-0.20	-0.35
	10946.00	88.49	177.45	N/A	-5202.63	459.33	5781.33	5220.07	92.00	1.63	-0.77	-1.43
	11037.00	90.55	178.81	N/A	-5293.57	462.30	5782.09	5311.04	91.00	2.71	2.26	1.49
	11128.00	89.66	178.58	N/A	-5384.55	464.37	5781.92	5401.99	91.00	1.01	-0.98	-0.25
	11220.00	89.35	177.95	N/A	-5476.50	467.16	5782.72	5493.95	92.00	0.76	-0.34	-0.68
	11311.00	89.91	178.61	N/A	-5567.46	469.89	5783.30	5584.92	91.00	0.95	0.62	0.73
	11403.00	90.46	178.52	N/A	-5659.43	472.19	5783.01	5676.88	92.00	0.61	0.60	-0.10
	11494.00	90.77	179.98	N/A	-5750.41	473.38	5782.03	5767.79	91.00	1.64	0.34	1.60
	11589.00	91.48	182.51	N/A	-5845.36	471.32	5780.16	5862.48	95.00	2.77	0.75	2.66
	11684.00	91.69	182.24	N/A	-5940.25	467.39	5777.54	5957.00	95.00	0.36	0.22	-0.28
	11778.00	91.14	182.00	N/A	-6034.15	463.91	5775.22	6050.57	94.00	0.64	-0.59	-0.26
	11873.00	90.34	182.22	N/A	-6129.08	460.41	5773.99	6145.16	95.00	0.87	-0.84	0.23
	11967.00	90.34	182.23	N/A	-6223.01	456.76	5773.43	6238.74	94.00	0.01	0.00	0.01
	12062.00	90.40	182.02	N/A	-6317.94	453.24	5772.82	6333.34	95.00	0.23	0.06	-0.22
	12156.00	90.09	181.80	N/A	-6411.89	450.11	5772.42	6426.96	94.00	0.40	-0.33	-0.23
	12250.00	89.69	182.10	N/A	-6505.83	446.91	5772.60	6520.59	94.00	0.53	-0.43	0.32
	12345.00	88.74	180.94	N/A	-6600.79	444.39	5773.90	6615.26	95.00	1.58	-1.00	-1.22
	12439.00	89.17	180.38	N/A	-6694.76	443.31	5775.61	6709.03	94.00	0.75	0.46	-0.60
	12533.00	88.86	180.71	N/A	-6788.74	442.41	5777.23	6802.82	94.00	0.48	-0.33	0.35
	12627.00	89.08	181.02	N/A	-6882.72	440.99	5778.92	6896.57	94.00	0.40	0.23	0.33
	12721.00	89.42	180.45	N/A	-6976.70	439.79	5780.15	6990.35	94.00	0.71	0.36	-0.61
	12816.00	89.60	179.63	N/A	-7071.70	439.72	5780.96	7085.19	95.00	0.88	0.19	-0.86
	12910.00	89.48	179.48	N/A	-7165.69	440.45	5781.71	7179.08	94.00	0.20	-0.13	-0.16
	13004.00	89.57	179.34	N/A	-7259.68	441.42	5782.49	7272.99	94.00	0.18	0.10	-0.15
	13098.00	89.51	179.28	N/A	-7353.67	442.55	5783.25	7366.89	94.00	0.09	-0.06	-0.06
	13193.00	89.82	179.07	N/A	-7448.66	443.92	5783.80	7461.81	95.00	0.39	0.33	-0.22
	13287.00	89.66	179.02	N/A	-7542.65	445.49	5784.23	7555.74	94.00	0.18	-0.17	-0.05
	13381.00	89.29	179.16	N/A	-7636.63	446.98	5785.09	7649.66	94.00	0.42	-0.39	0.15
	13475.00	88.55	179.15	N/A	-7730.60	448.37	5786.86	7743.57	94.00	0.79	-0.79	-0.01
	13570.00	90.25	180.08	N/A	-7825.59	449.00	5787.86	7838.45	95.00	2.04	1.79	0.98
	13664.00	90.46	180.54	N/A	-7919.59	448.49	5787.28	7932.27	94.00	0.54	0.22	0.49
	13758.00	89.32	179.89	N/A	-8013.59	448.14	5787.46	8026.11	94.00	1.40	-1.21	-0.69
	13852.00	89.07	179.70	N/A	-8107.58	448.48	5788.78	8119.97	94.00	0.33	-0.27	-0.20
	13879.00	89.17	179.41	N/A	-8134.57	448.69	5789.19	8146.94	27.00	1.14	0.37	-1.07
Projection	13927.00	89.17	179.41	N/A	-8182.56	449.18	5789.89	8194.88	48.00	0.00	0.00	0.00