



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale:

1:240

True Vertical Depth

Company: Kerr McGee Oil & Gas LP

Well: Howard 28C-33HZ

Field: Weld County (Kerr-McGee)

Region: RMD Country: United States

Status: Final Print

Surface Location:

Latitude: 40° 1' 42.211" N

Longitude: 104° 53' 24.104" W

Other Services:

Directional
VSS

API Number: 051233693200

Section: 28

TWN: 1N

Range: 67W

Permanent Datum (P.D.): Ground Level Elevation: 4999.00 ft.

Log Measured From: Drill Floor 13.00 ft. Above P.D.

Depth Reference: Driller's Depth

Elevations: N/A

KB: 4999.00 ft.

DF: 4986.00 ft.

GL: 4986.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 7230 ft. Date From: 30/Oct/13 Dip Angle: 66.64° Azi Reference North: True

Bottom: 8193 ft. Date To: 01/Nov/13 Total Mag to Reference

Spud Date: 28/Oct/13 Field Strength: 52597.0 nT North Correction: 8.62°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13.500 in.	Surface	1037 ft.	9.625 in.	36.00 lb/ft	Surface	1027 ft.
8.750 in.	1037 ft.	8243 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based Mud	1029 ft.	7660 ft.	13.500 in.	1037 ft.	0.3° / 243.9°	0.4° / 262.6°
Water Based - Fresh	4076 ft.	8243 ft.	8.750 in.	7206 ft.	0.2° / 305.1°	82.8° / 179.6°
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/

Acquisition System

Software Version

Other

Advantage	2.20U4	Rig: / Contractor:	Xtreme 20	/ Ensign Drilling
PATS	6.4.1.34	Job No:	5769751	
		District: / Unit:	RMD	/ D&E

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Log Run Summary

LWD	BHA	Bit	Bit	Bit	Bit	Assembly	Logged Interval		Bit Depth Interval		Date / Time				Circ.
Run	Run	Run	Size	Type	Gauge	Type	Top	Bottom	From	To	Start		End		Time
No.	No.	No.	(in.)		(in.)		(ft.)	(ft.)	(ft.)	(ft.)					(hrs.)
1	3	2	8.750	PDC	2.500	Steerable	N/A	N/A	1027	3644	28/Oct/2013	15:15	19/Oct/2013	17:20	44.1
2	3	2	8.750	PDC	2.500	Steerable	7231	7606	7201	7659	29/Oct/2013	18:45	31/Oct/2013	16:00	33.6
3	3	3	8.750	PDC	2.500	Steerable	7608	8193	7659	8243	01/Nov/2013	00:34	01/Nov/2013	15:32	18.03

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
David Campbell	27 oct 2013	06 Nov 2013	Barry Combs	27 oct 2013	06 Nov 2013	Travis Wilcox	27 oct 2013	06 Nov 2013
Greg Dore	27 oct 2013	06 Nov 2013						

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (sg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
31/Oct/2013	06:07	2	4076	Water Based - Fresh	9.0	46	8.0	4.0	4 / 94	Active Mud Pit	1100	0.0
31/Oct/2013	06:07	2	7594	Water Based - Fresh	9.0	46	8.0	4.2	4 / 95	Active Mud Pit	1200	0.0
01/Nov/2013	00:22	3	1029	Water Based - Fresh	8.5	31	7.5	0.0	1 / 98	Active Mud Pit	1000	0.0
01/Nov/2013	00:23	3	2501	Water Based - Fresh	8.4	30	7.8	0.0	1 / 98	Active Mud Pit	1000	0.0
01/Nov/2013	00:28	3	5403	Water Based - Fresh	9.4	30	7.8	0.0	1 / 98	Active Mud Pit	1000	0.0
01/Nov/2013	00:28	3	7660	Water Based - Fresh	10.2	40	7.8	0.0	4 / 88	Active Mud Pit	1100	0.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	degF
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	klbf

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (m.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	12373456	Directional	56.67	6.750	0.000
1	SRIG	12600750	Gamma	53.29	6.750	0.000
2	DIR	12440860	Directional	55.95	6.750	0.000
2	SRIG	12606956	Gamma	52.58	6.750	0.000
3	DIR	12440860	Directional	53.26	6.750	0.000
3	SRIG	12606956	Gamma	49.89	6.750	0.000

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

1.) Depth measurements 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 runs 1 thru 3 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 1037 to 8244 feet MD (1037 to 7719 feet TVD).
5.) The interval from 1037 to 7230 feet MD (1037 to 7046 feet TVD) was not logged due to directional only services being provided through the straight-hole and nudge section for Baker Hughes runs 1 & 2 .

Remarks

Number	Measured	Hole	LWD	Remark
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Number	Measured	Note	Unit	Remark
	Depth (m.)	Section (in.)	Run No.	
1	7230	8.750	2	Begin logging due to directional only service provided thru vertical section.

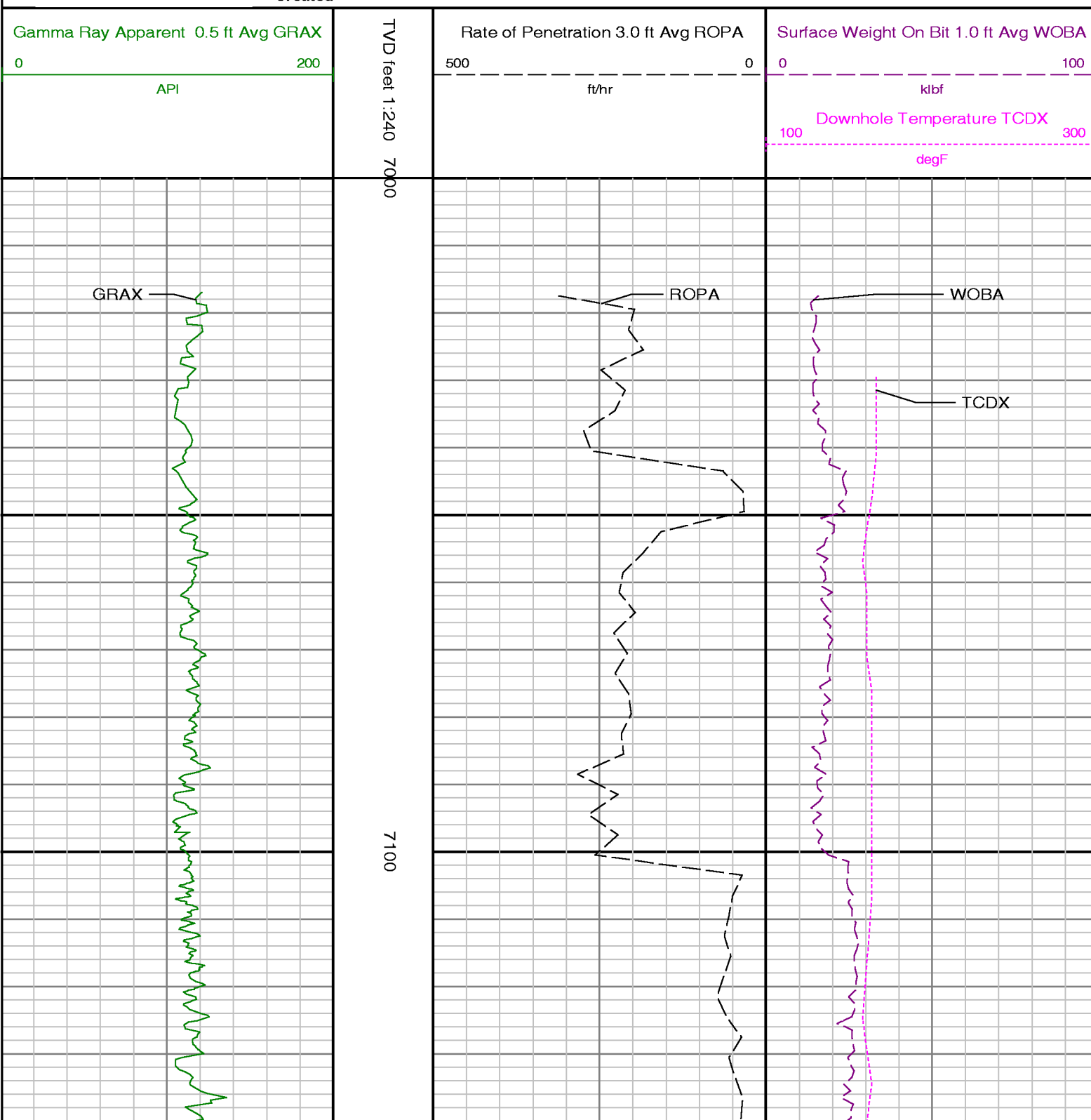


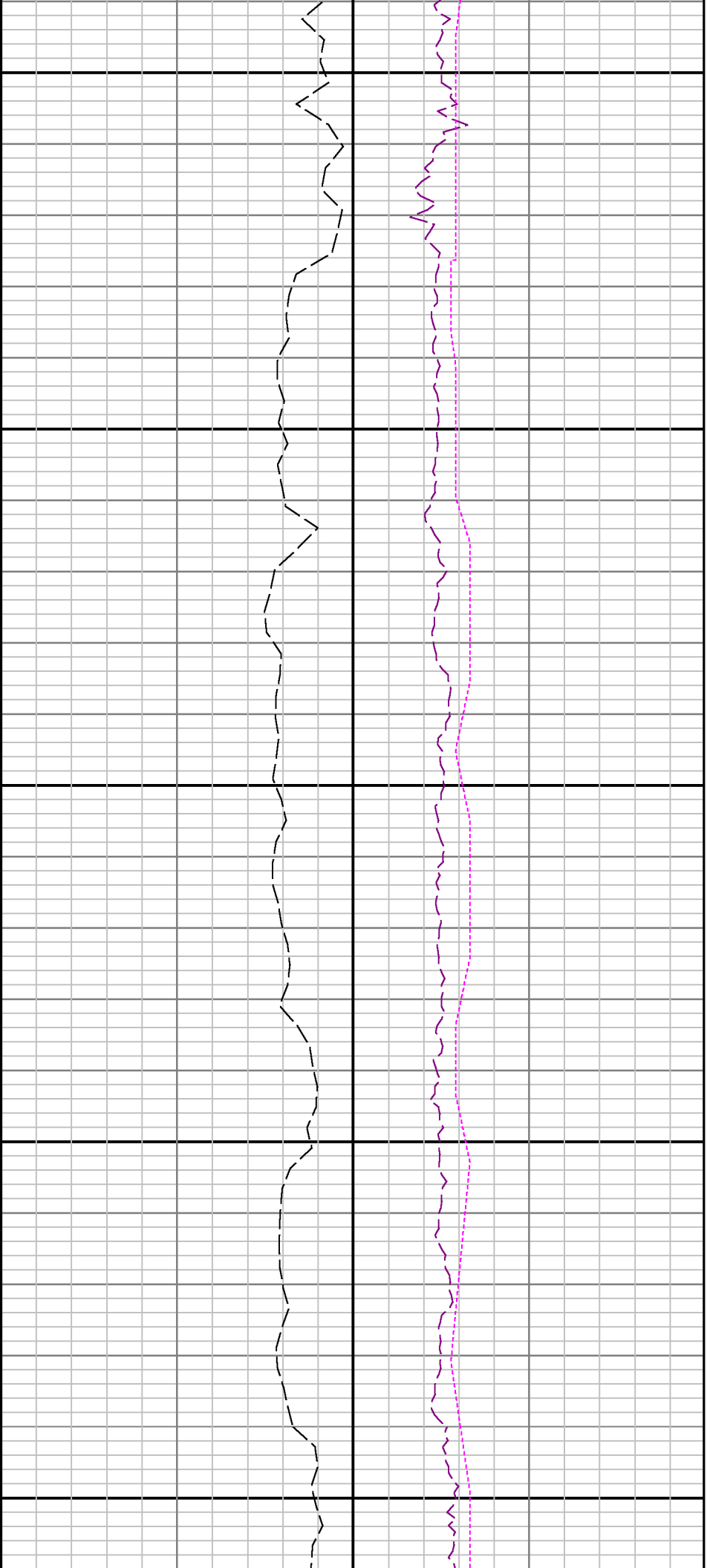
Company : Kerr McGee Oil & Gas LP

Well : Howard 28C-33HZ

Interval : 7000.00 - 7800.00 feet

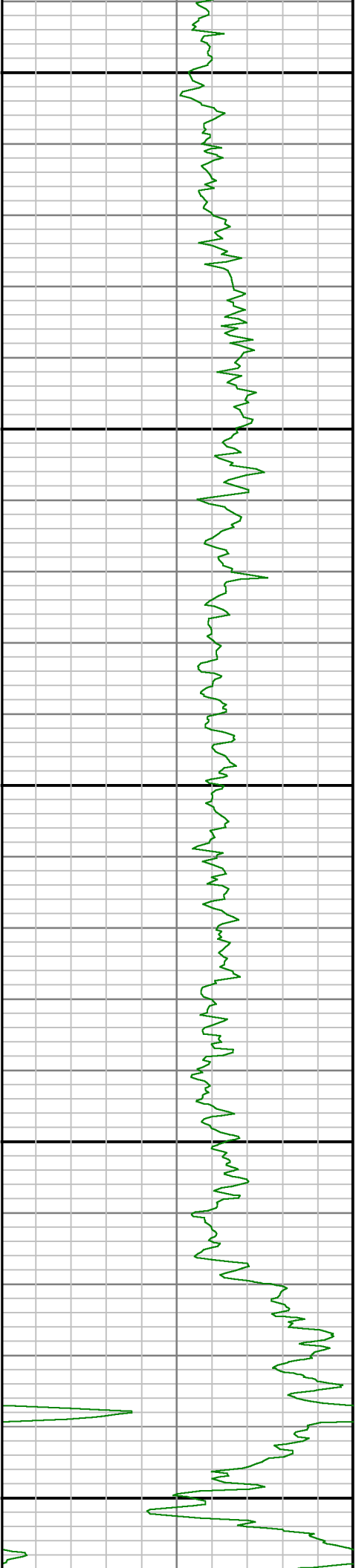
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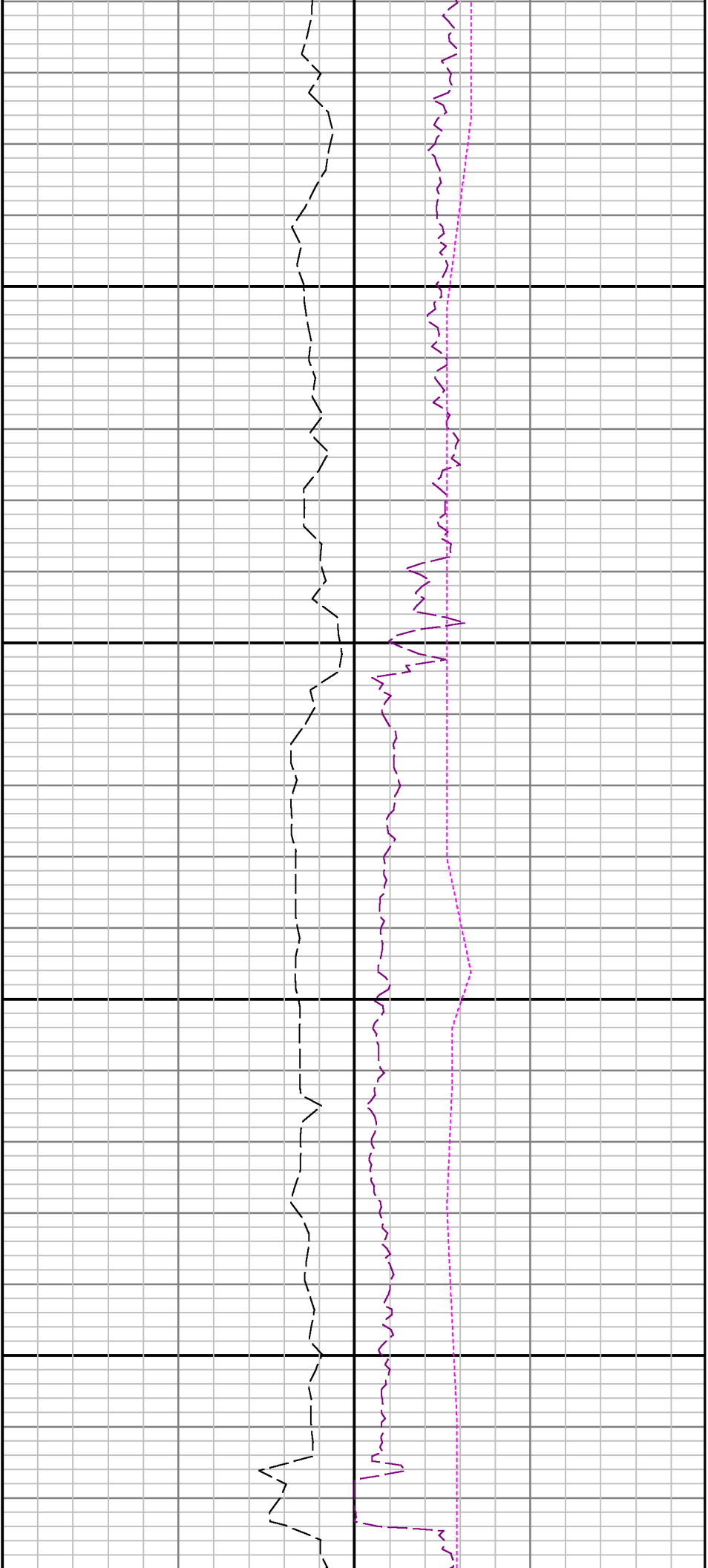




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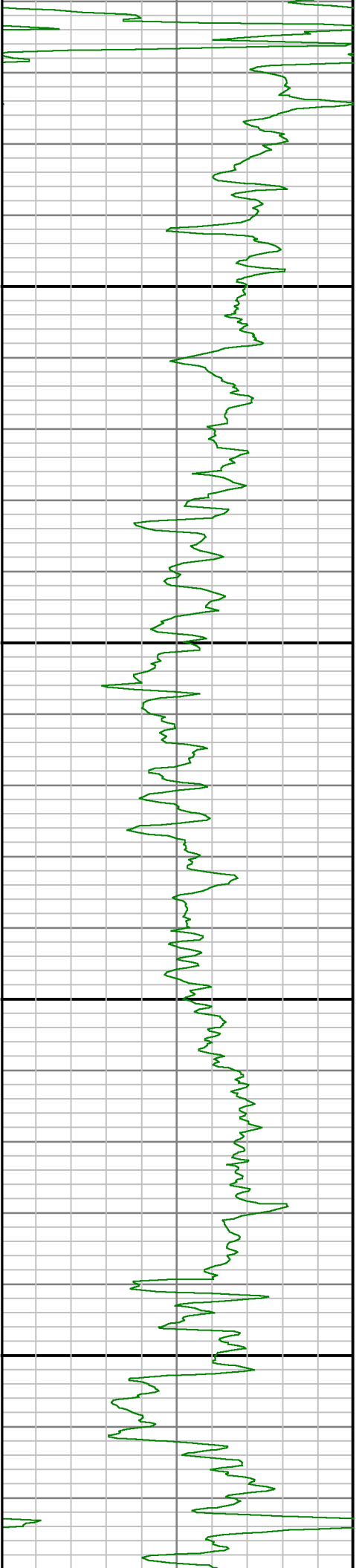
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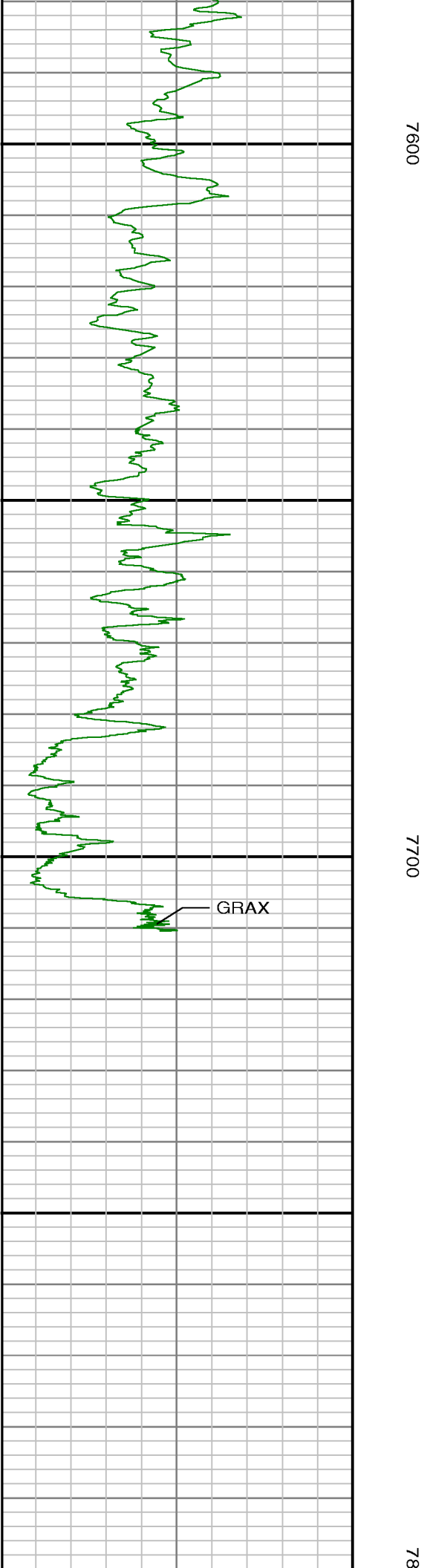
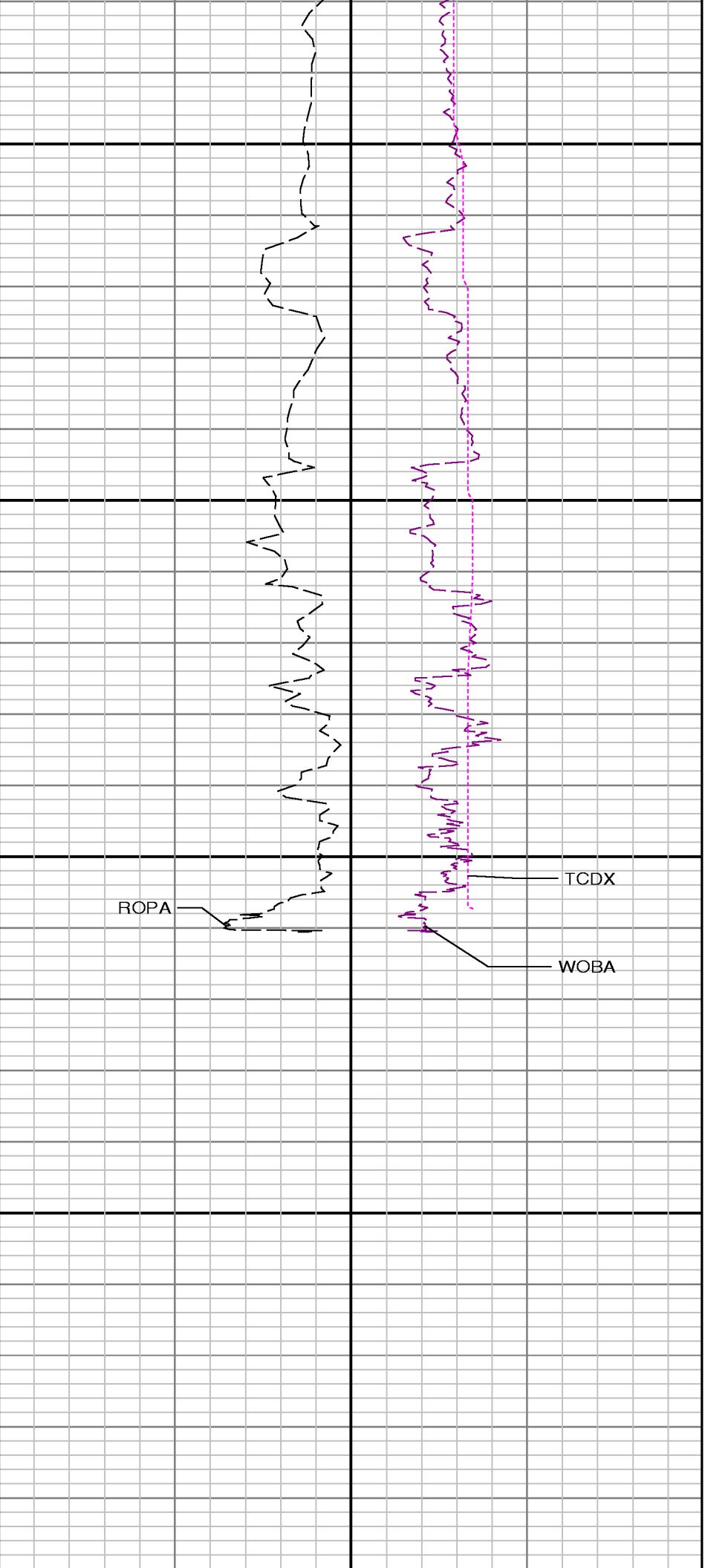




7400

7500





Gamma Ray Apparent 0.5 ft Avg GRAX	TVD feet 1:240	Rate of Penetration 3.0 ft Avg ROPA	Surface Weight On Bit 1.0 ft Avg WOBA
0200		5000	0100
API		ft/hr	klbf Downhole Temperature TCDX degF

ADVANTAGE Field Survey Listing												
Operator : Kerr McGee Oil & Gas LP Well :Howard 28C-33HZ Wellbore : Howard 28C-33HZ Orig Hole				Field : Weld County (Kerr-McGee) Rig : Xtreme 20				API No : 051233693200 Job :5769751				
Well Origin												
Latitude		40.0284 deg				Longitude		-104.8900 deg				
North Reference		True				Drill Depth Zero		NULL				
Vertical Datum is		Ground Level				Vertical Datum to DDZ		13.00 ft				
Vertical Section North		0.00 ft				Vertical Section East		0.00 ft				
Vertical Section Azimuth		179.7200 deg				Vertical Section Depth		0.00ft				
Grid Convergence		0.0000 deg				Magnetic Declination		8.6200 deg				
Total Correction		8.6200 deg				TVD Calculation Method		Minimal Curvature				
D-Row Calculation		Magcorr1				Local Magnetic Field		52597 nT				
Local Magnetic Dip Angle		66.6400 deg				Local Gravity Field		9.798 m/s^2				
Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
U	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00				
	16.00	0.0000	243.9400	0.00	0.00	16.00	0.00	0.00	16.00	0.00	0.00	-725.37
	116.00	0.3200	243.9400	-0.12	-0.25	116.00	0.12	0.28	100.00	0.32	0.32	0.00
	216.00	0.1600	307.9600	-0.16	-0.61	216.00	0.16	0.64	100.00	0.29	-0.16	64.02
	316.00	0.1200	23.7900	0.02	-0.68	316.00	-0.03	0.84	100.00	0.17	-0.04	75.83
	416.00	0.1400	356.7200	0.24	-0.64	416.00	-0.24	1.06	100.00	0.06	0.02	-27.07
	516.00	0.2400	352.1400	0.57	-0.68	516.00	-0.57	1.39	100.00	0.10	0.10	-4.58
	616.00	0.1200	290.9100	0.81	-0.81	616.00	-0.82	1.66	100.00	0.21	-0.12	-61.23
	716.00	0.0800	22.9300	0.92	-0.88	716.00	-0.92	1.79	100.00	0.15	-0.04	92.02
	816.00	0.2000	306.4300	1.08	-0.99	816.00	-1.09	1.99	100.00	0.20	0.12	-76.50
916.00	0.2200	285.1700	1.24	-1.32	916.00	-1.24	2.35	100.00	0.08	0.02	-21.26	
966.00	0.4300	262.6300	1.24	-1.59	966.00	-1.25	2.63	50.00	0.48	0.42	-45.08	
1090.00	0.3316	305.1140	1.39	-2.35	1089.99	-1.40	3.40	124.00	0.23	-0.08	34.26	
1183.00	1.2400	300.0500	2.04	-3.44	1182.98	-2.06	4.67	93.00	0.98	0.98	-5.45	
1401.00	6.1500	290.7300	7.36	-16.41	1400.46	-7.44	18.69	218.00	2.26	2.25	-4.28	
1495.00	7.3700	280.9100	10.29	-27.04	1493.81	-10.42	29.72	94.00	1.78	1.30	-10.45	
1560.00	8.7200	280.4900	11.97	-35.98	1558.17	-12.15	38.81	65.00	2.08	2.08	-0.65	
1652.00	11.2600	277.2400	14.37	-51.75	1648.77	-14.63	54.77	92.00	2.83	2.76	-3.53	
1744.00	11.1500	277.9700	16.74	-69.47	1739.02	-17.08	72.64	92.00	0.20	-0.12	0.79	
1835.00	12.6700	276.1000	19.02	-88.11	1828.05	-19.45	91.42	91.00	1.72	1.67	-2.05	
1927.00	14.2900	277.1400	21.50	-109.41	1917.52	-22.04	112.86	92.00	1.78	1.76	1.13	
2019.00	14.0800	275.1300	23.92	-131.82	2006.71	-24.56	135.41	92.00	0.58	-0.23	-2.18	
2111.00	15.4900	277.6100	26.54	-155.15	2095.67	-27.30	158.88	92.00	1.68	1.53	2.70	
2202.00	15.8200	277.9700	29.87	-179.47	2183.29	-30.75	183.43	91.00	0.38	0.36	0.40	
2294.00	15.6200	277.6600	33.26	-204.17	2271.85	-34.26	208.36	92.00	0.24	-0.22	-0.34	
2386.00	16.3900	282.8300	37.80	-229.10	2360.29	-38.91	233.70	92.00	1.76	0.84	5.62	
2479.00	16.2500	284.0900	43.88	-254.52	2449.54	-45.12	259.83	93.00	0.41	-0.15	1.35	
2570.00	16.1300	284.6200	50.17	-279.10	2536.93	-51.53	285.20	91.00	0.21	-0.13	0.58	
2662.00	15.9100	284.3300	56.51	-303.68	2625.36	-58.00	310.59	92.00	0.25	-0.24	-0.32	
2754.00	15.4100	284.7700	62.75	-327.72	2713.94	-64.35	335.43	92.00	0.56	-0.54	0.48	
2846.00	14.9300	286.2200	69.18	-350.92	2802.74	-70.89	359.50	92.00	0.67	-0.52	1.58	
2938.00	15.4400	283.5600	75.36	-374.20	2891.53	-77.19	383.59	92.00	0.94	0.55	-2.89	
3029.00	16.8100	283.7700	81.33	-398.76	2978.94	-83.28	408.87	91.00	1.51	1.51	0.23	
3121.00	16.2000	283.3200	87.46	-424.17	3067.15	-89.53	435.00	92.00	0.68	-0.66	-0.49	
3213.00	15.5600	283.9000	93.38	-448.64	3155.64	-95.57	460.17	92.00	0.72	-0.70	0.63	
3305.00	16.7200	281.3500	98.95	-473.59	3244.01	-101.26	485.74	92.00	1.48	1.26	-2.77	
3397.00	15.9600	281.2700	104.02	-498.97	3332.30	-106.46	511.63	92.00	0.83	-0.83	-0.09	
3579.00	14.6600	280.9500	113.29	-546.12	3507.83	-115.95	559.68	182.00	0.72	-0.71	-0.18	
3669.00	14.9500	279.8000	117.43	-568.74	3594.85	-120.20	582.68	90.00	0.46	0.32	-1.28	
3761.00	14.1300	277.8800	120.99	-591.56	3683.90	-123.88	605.77	92.00	1.03	-0.89	-2.09	

3846.00	14.4900	280.4800	124.34	-612.30	3766.26	-127.33	626.77	85.00	0.87	0.42	3.06
3931.00	14.9900	280.2800	128.24	-633.57	3848.47	-131.33	648.40	85.00	0.59	0.59	-0.24
4017.00	15.7300	280.6600	132.38	-655.97	3931.39	-135.58	671.18	86.00	0.87	0.86	0.44
4102.00	15.3300	279.8600	136.44	-678.36	4013.29	-139.75	693.94	85.00	0.53	-0.47	-0.94
4187.00	15.0000	284.2500	141.07	-700.09	4095.33	-144.49	716.16	85.00	1.41	-0.39	5.16
4272.00	15.2800	280.7300	145.86	-721.76	4177.38	-149.39	738.35	85.00	1.13	0.33	-4.14
4357.00	16.2300	280.6000	150.13	-744.44	4259.19	-153.77	761.43	85.00	1.12	1.12	-0.15
4443.00	17.1900	282.2900	155.05	-768.67	4341.56	-158.80	786.15	86.00	1.25	1.12	1.97
4528.00	17.8600	280.9900	160.21	-793.74	4422.61	-164.08	811.75	85.00	0.91	0.79	-1.53
4613.00	16.4700	280.1300	164.81	-818.40	4503.82	-168.81	836.83	85.00	1.66	-1.64	-1.01

Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	4698.00	16.3700	281.9200	169.40	-841.98	4585.36	-173.52	860.86	85.00	0.61	-0.12	2.11
	4784.00	16.2300	281.5900	174.32	-865.61	4667.90	-178.55	884.99	86.00	0.20	-0.16	-0.38
	4869.00	17.5700	283.0300	179.60	-889.75	4749.23	-183.95	909.70	85.00	1.65	1.58	1.69
	4954.00	16.9700	282.2900	185.13	-914.37	4830.40	-189.60	934.93	85.00	0.75	-0.71	-0.87
	5039.00	16.4800	282.8200	190.45	-938.24	4911.80	-195.03	959.39	85.00	0.60	-0.58	0.62
	5124.00	15.5400	282.7100	195.63	-961.11	4993.50	-200.32	982.84	85.00	1.11	-1.11	-0.13
	5209.00	15.9500	280.8700	200.34	-983.68	5075.31	-205.14	1005.90	85.00	0.76	0.48	-2.16
	5295.00	16.1400	282.4300	205.14	-1006.96	5157.96	-210.06	1029.67	86.00	0.55	0.22	1.81
	5380.00	16.3700	282.7200	210.32	-1030.18	5239.57	-215.35	1053.46	85.00	0.29	0.27	0.34
	5465.00	16.9000	281.1600	215.35	-1053.99	5321.01	-220.50	1077.79	85.00	0.82	0.62	-1.84
	5550.00	15.8800	280.8000	219.92	-1077.53	5402.55	-225.18	1101.78	85.00	1.21	-1.20	-0.42
	5635.00	15.4300	282.6400	224.57	-1099.99	5484.40	-229.94	1124.71	85.00	0.79	-0.53	2.16
	5720.00	15.8100	283.1100	229.67	-1122.30	5566.26	-235.15	1147.60	85.00	0.47	0.45	0.55
	5806.00	16.1300	280.8700	234.58	-1145.44	5648.94	-240.18	1171.25	86.00	0.81	0.37	-2.60
	5891.00	15.7700	281.8000	239.17	-1168.35	5730.67	-244.88	1194.61	85.00	0.52	-0.42	1.09
	5976.00	16.2900	281.9400	244.00	-1191.32	5812.37	-249.82	1218.08	85.00	0.61	0.61	0.16
	6061.00	16.2800	280.1100	248.56	-1214.71	5893.96	-254.49	1241.92	85.00	0.60	-0.01	-2.15
	6146.00	14.6100	277.5600	252.06	-1237.07	5975.88	-258.10	1264.55	85.00	2.12	-1.96	-3.00
	6232.00	12.8700	274.6400	254.26	-1257.37	6059.42	-260.40	1284.96	86.00	2.18	-2.02	-3.40
	6317.00	13.2300	278.8800	256.53	-1276.41	6142.23	-262.76	1304.15	85.00	1.20	0.42	4.99
	6402.00	12.3100	283.7600	260.19	-1294.82	6225.13	-266.51	1322.92	85.00	1.67	-1.08	5.74
	6487.00	10.5400	279.2300	263.59	-1311.30	6308.44	-269.99	1339.74	85.00	2.33	-2.08	-5.33
	6572.00	10.2600	286.6400	267.00	-1326.23	6392.05	-273.48	1355.05	85.00	1.61	-0.33	8.72
	6657.00	9.1500	284.9200	270.91	-1340.01	6475.83	-277.46	1369.38	85.00	1.35	-1.31	-2.02
	6742.00	7.2400	288.4200	274.34	-1351.62	6559.96	-280.95	1381.49	85.00	2.32	-2.25	4.12
	6827.00	6.4800	283.4600	277.15	-1361.37	6644.35	-283.80	1391.63	85.00	1.13	-0.89	-5.84
	6912.00	5.2300	284.0100	279.21	-1369.79	6728.91	-285.90	1400.30	85.00	1.47	-1.47	0.65
	6997.00	3.3800	291.6500	281.07	-1375.88	6813.66	-287.79	1406.67	85.00	2.27	-2.18	8.99
	7082.00	2.0200	298.4900	282.71	-1379.53	6898.57	-289.45	1410.67	85.00	1.64	-1.60	8.05
	7166.00	1.0600	297.8400	283.78	-1381.52	6982.54	-290.53	1412.93	84.00	1.14	-1.14	-0.77
	7252.00	0.2400	102.9800	284.11	-1382.04	7068.53	-290.86	1413.55	86.00	1.50	-0.95	192.02
	7295.00	2.2700	167.9000	283.26	-1381.78	7111.52	-290.00	1414.44	43.00	5.07	4.72	150.98
	7337.00	4.7200	181.2100	280.71	-1381.64	7153.44	-287.46	1416.99	42.00	6.11	5.83	31.69
	7380.00	8.6600	182.1800	275.71	-1381.80	7196.14	-282.46	1422.00	43.00	9.17	9.16	2.26
	7422.00	12.4300	181.6400	268.03	-1382.05	7237.42	-274.78	1429.68	42.00	8.98	8.98	-1.29
	7465.00	16.9300	179.6100	257.14	-1382.14	7279.01	-263.89	1440.57	43.00	10.53	10.47	-4.72
	7507.00	20.7700	178.6300	243.57	-1381.92	7318.75	-250.32	1454.14	42.00	9.17	9.14	-2.33
	7550.00	24.5100	179.4900	227.02	-1381.66	7358.43	-233.77	1470.69	43.00	8.73	8.70	2.00
	7593.00	27.6900	179.9900	208.11	-1381.58	7397.04	-214.86	1489.60	43.00	7.41	7.40	1.16
	7633.00	30.7600	181.4900	188.58	-1381.84	7431.94	-195.34	1509.13	40.00	7.89	7.67	3.75
	7678.00	33.1500	180.1500	164.77	-1382.17	7470.12	-171.53	1532.94	45.00	5.54	5.31	-2.98
	7721.00	38.6000	181.2400	139.59	-1382.50	7504.95	-146.34	1558.13	43.00	12.76	12.67	2.53
	7763.00	43.9700	180.2800	111.89	-1382.85	7536.50	-118.64	1585.83	42.00	12.87	12.79	-2.29
	7806.00	48.6500	180.1300	80.80	-1382.96	7566.19	-87.56	1616.92	43.00	10.89	10.88	-0.35
	7848.00	53.2600	181.2700	48.20	-1383.37	7592.64	-54.96	1649.53	42.00	11.18	10.98	2.71
	7891.00	57.7900	179.4300	12.76	-1383.57	7616.98	-19.52	1684.96	43.00	11.11	10.53	-4.28
	7933.00	62.6500	178.6700	-23.68	-1382.96	7637.83	16.92	1721.41	42.00	11.68	11.57	-1.81
	7976.00	65.0200	177.8700	-62.25	-1381.79	7656.79	55.49	1760.00	43.00	5.76	5.51	-1.86
	8019.00	68.1300	179.0600	-101.68	-1380.74	7673.89	94.94	1799.45	43.00	7.67	7.23	2.77
	8062.00	72.1400	179.4200	-142.11	-1380.21	7688.49	135.37	1839.88	43.00	9.36	9.33	0.84

Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	8104.00	77.3900	179.9900	-182.62	-1380.00	7699.53	175.88	1880.39	42.00	12.57	12.50	1.36
	8147.00	81.4700	179.7300	-224.88	-1379.90	7707.41	218.14	1922.65	43.00	9.51	9.49	-0.60
	8189.00	82.8100	179.6400	-266.49	-1379.67	7713.16	259.74	1964.25	42.00	3.20	3.19	-0.21
	8243.00	89.2600	181.1300	-320.33	-1380.03	7716.89	313.58	2018.09	54.00	12.26	11.94	2.76
	8328.00	90.2400	181.1700	-405.31	-1381.74	7717.26	398.55	2103.09	85.00	1.15	1.15	0.05
	8413.00	89.9000	180.8700	-490.29	-1383.25	7717.16	483.53	2188.09	85.00	0.53	-0.40	-0.35
	8499.00	90.9200	180.7700	-576.28	-1384.48	7716.54	569.51	2274.09	86.00	1.19	1.19	-0.12
	8669.00	91.0800	180.2700	-746.25	-1386.02	7713.57	739.47	2444.06	170.00	0.31	0.09	-0.29
	8754.00	90.8000	179.3300	-831.24	-1385.73	7712.18	824.45	2529.05	85.00	1.15	-0.33	-1.11

	8840.00	90.6200	180.1900	-917.23	-1385.37	7711.11	910.45	2615.04	86.00	1.02	-0.21	1.00
	8925.00	89.4400	178.8400	-1002.22	-1384.65	7711.07	995.44	2700.04	85.00	2.11	-1.39	-1.59
	9010.00	89.8100	178.8300	-1087.20	-1382.92	7711.63	1080.43	2785.04	85.00	0.44	0.44	-0.01
	9095.00	89.6200	178.2800	-1172.17	-1380.78	7712.05	1165.41	2870.04	85.00	0.68	-0.22	-0.65
	9265.00	90.8000	178.8200	-1342.11	-1376.47	7711.43	1335.37	3040.03	170.00	0.76	0.69	0.32
	9350.00	90.0900	178.8900	-1427.09	-1374.78	7710.77	1420.36	3125.03	85.00	0.84	-0.84	0.08
	9435.00	90.0600	179.8800	-1512.09	-1373.86	7710.65	1505.36	3210.03	85.00	1.17	-0.04	1.16
	9521.00	89.0400	179.7200	-1598.08	-1373.56	7711.33	1591.35	3296.02	86.00	1.20	-1.19	-0.19
	9606.00	89.9300	180.4500	-1683.08	-1373.69	7712.09	1676.35	3381.02	85.00	1.35	1.05	0.86
	9691.00	89.5900	179.4200	-1768.08	-1373.59	7712.45	1761.34	3466.02	85.00	1.28	-0.40	-1.21
	9776.00	88.8200	177.7600	-1853.04	-1371.50	7713.63	1846.31	3551.00	85.00	2.15	-0.91	-1.95
	9861.00	90.1500	178.7700	-1937.99	-1368.93	7714.39	1931.28	3636.00	85.00	1.96	1.56	1.19
	9946.00	88.9800	177.9700	-2022.95	-1366.51	7715.04	2016.25	3720.99	85.00	1.67	-1.38	-0.94
	10032.00	90.6700	179.6500	-2108.93	-1364.72	7715.30	2102.24	3806.99	86.00	2.77	1.97	1.95
	10117.00	90.0600	178.9200	-2193.92	-1363.66	7714.76	2187.23	3891.98	85.00	1.12	-0.72	-0.86
	10202.00	88.9500	178.6400	-2278.90	-1361.85	7715.49	2272.21	3976.98	85.00	1.35	-1.31	-0.33
	10287.00	89.8100	179.7300	-2363.88	-1360.65	7716.41	2357.20	4061.97	85.00	1.63	1.01	1.28
	10372.00	88.3500	178.4500	-2448.86	-1359.30	7717.78	2442.18	4146.96	85.00	2.28	-1.72	-1.51
	10458.00	88.9700	178.5800	-2534.80	-1357.07	7719.79	2528.14	4232.93	86.00	0.74	0.72	0.15
	10542.00	90.6700	179.1600	-2618.78	-1355.41	7720.05	2612.13	4316.93	84.00	2.14	2.02	0.69
	10628.00	88.4900	179.3000	-2704.77	-1354.26	7720.68	2698.12	4402.92	86.00	2.54	-2.53	0.16
	10713.00	89.4100	179.4300	-2789.75	-1353.31	7722.24	2783.10	4487.91	85.00	1.09	1.08	0.15
	10798.00	90.6100	179.9800	-2874.74	-1352.88	7722.23	2868.10	4572.91	85.00	1.55	1.41	0.65
	10883.00	90.9900	179.7600	-2959.73	-1352.68	7721.04	2953.09	4657.90	85.00	0.52	0.45	-0.26
	10968.00	91.6300	179.3500	-3044.71	-1352.02	7719.10	3038.07	4742.87	85.00	0.89	0.75	-0.48
	11054.00	90.2700	179.2700	-3130.69	-1350.99	7717.67	3124.05	4828.86	86.00	1.58	-1.58	-0.09
	11139.00	91.4200	178.7100	-3215.67	-1349.49	7716.42	3209.03	4913.85	85.00	1.50	1.35	-0.66
	11224.00	90.8900	178.7700	-3300.63	-1347.62	7714.70	3294.00	4998.83	85.00	0.63	-0.62	0.07
	11309.00	90.1800	179.2600	-3385.61	-1346.16	7713.91	3378.99	5083.83	85.00	1.01	-0.84	0.58
	11394.00	89.7800	178.7200	-3470.60	-1344.66	7713.94	3463.98	5168.83	85.00	0.79	-0.47	-0.64
	11479.00	89.1000	179.5200	-3555.58	-1343.36	7714.77	3548.97	5253.82	85.00	1.24	-0.80	0.94
	11564.00	87.9900	179.9800	-3640.55	-1342.99	7716.93	3633.94	5338.79	85.00	1.41	-1.31	0.54
	11650.00	88.1100	179.3800	-3726.50	-1342.51	7719.86	3719.89	5424.74	86.00	0.71	0.14	-0.70
	11735.00	88.2400	178.7100	-3811.44	-1341.09	7722.56	3804.84	5509.70	85.00	0.80	0.15	-0.79
	11820.00	91.2000	180.8100	-3896.43	-1340.73	7722.98	3889.83	5594.68	85.00	4.27	3.48	2.47
	11905.00	91.7800	180.0000	-3981.40	-1341.33	7720.77	3974.79	5679.65	85.00	1.17	0.68	-0.95
	11990.00	90.2100	179.3900	-4066.38	-1340.88	7719.29	4059.78	5764.64	85.00	1.98	-1.85	-0.72
	12076.00	90.6400	179.3300	-4152.37	-1339.92	7718.65	4145.77	5850.63	86.00	0.50	0.50	-0.07
	12161.00	89.8400	179.4400	-4237.36	-1339.01	7718.30	4230.77	5935.63	85.00	0.95	-0.94	0.13
	12246.00	88.5100	179.6700	-4322.35	-1338.35	7719.52	4315.76	6020.62	85.00	1.59	-1.56	0.27
	12331.00	88.9200	180.1600	-4407.33	-1338.22	7721.43	4400.74	6105.60	85.00	0.75	0.48	0.58
Tie	MD ft	Incl deg	Azim deg	North ft	East ft	TVD ft	VS ft	Incr VS ft	Crs Len ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft
	12416.00	91.2000	180.2700	-4492.32	-1338.54	7721.34	4485.73	6190.60	85.00	2.69	2.68	0.13
	12501.00	90.3600	180.6400	-4577.31	-1339.22	7720.18	4570.71	6275.59	85.00	1.08	-0.99	0.44
	12587.00	88.2400	180.3000	-4663.30	-1339.92	7721.23	4656.69	6361.58	86.00	2.50	-2.47	-0.40
	12672.00	89.6500	180.8400	-4748.28	-1340.77	7722.80	4741.67	6446.56	85.00	1.78	1.66	0.64
	12757.00	89.9000	180.5000	-4833.27	-1341.76	7723.13	4826.66	6531.56	85.00	0.50	0.29	-0.40
	12842.00	88.6700	179.6100	-4918.26	-1341.84	7724.19	4911.64	6616.55	85.00	1.79	-1.45	-1.05
	12987.00	89.6600	178.1900	-5063.21	-1339.06	7726.30	5056.61	6761.53	145.00	1.19	0.68	-0.98
	Projection to TD: 13042.00	89.6600	178.1900	-5118.18	-1337.32	7726.63	5111.59	6816.53	55.00	0.00	0.00	0.00