



LWD MEMORY LOG

Gamma Ray

Company: Confluence Resources

Well: 70 Ranch 10-12-3L

Field: DJ Basin

County: Weld Country: United States

State: Colorado

Driller's Depth

State: Colorado

Country: United States

Status: Final Print

Surface Location:

Other Services:

API No: 05123501880000

Latitude: 040° 20' 05.208" N

Longitude: 104° 25' 44.580" W

Job ID: 109856864

SEC: 3 TWN: 4N RGE: 63W

Directional

Permanent Datum (P.D.):

Mean Sea Level

Elevation: 0.00 ft

Elev. KB: 4619.00 ft

Log Measured From:

Rig Floor

Above P.D.: 4619.00 ft

Elev. DF: 4619.00 ft

Elev. GL: 4596.00 ft

Dates

Interval

Magnetic Field Reference

From: 2019-06-02 Drilled (ft) 23.00 Logged (ft) 1549.00 Azi Reference North: True Dip Angle: (deg) 66.77

To: 2019-06-09 Top: 23.00 Bottom: 16659.00 Total Magnetic Field Strength: (nT) 52212

Spud: 2019-06-02 Bottom: 16659.00 Mag to Reference North Correction: (deg) 8.00

Borehole Record

Casing Record

Hole Size (in) From (ft) To (ft) Size (in) Weight (lb/ft) From (ft) To (ft)

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2019-06-07 03:00	2	9250.00	Diesel-Oil Based Mud	9.8	6	N/A	N/A	78/22	Active Pit	39000	0.00
2019-06-08 03:00	2	13200.00	Diesel-Oil Based Mud	9.9	7	N/A	N/A	78/22	Active Pit	39000	0.00
2019-06-09 03:00	2	16659.00	Diesel-Oil Based Mud	10.0	12	N/A	N/A	80/20	Active Pit	31000	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	NaviTrak	13249128	VSS	16.47	52.54	8.000	3.250
1	NaviTrak	13249128	Directional (mag)	16.47	52.54	8.000	3.250
2	AutoTrak Curve Steering Unit	14316005	Near Bit Inclination	5.93	6.73	7.000	4.330
2	AutoTrak Curve Steering Unit	14316005	Near Bit VSS	5.93	6.73	7.000	4.330
2	AutoTrak Curve MWD	14371850	Gamma (single)	2.76	12.90	7.000	3.250
2	AutoTrak Curve MWD	14371850	Directional (mag)	12.27	22.41	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional Module, NaviTrak Platform
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

Comments

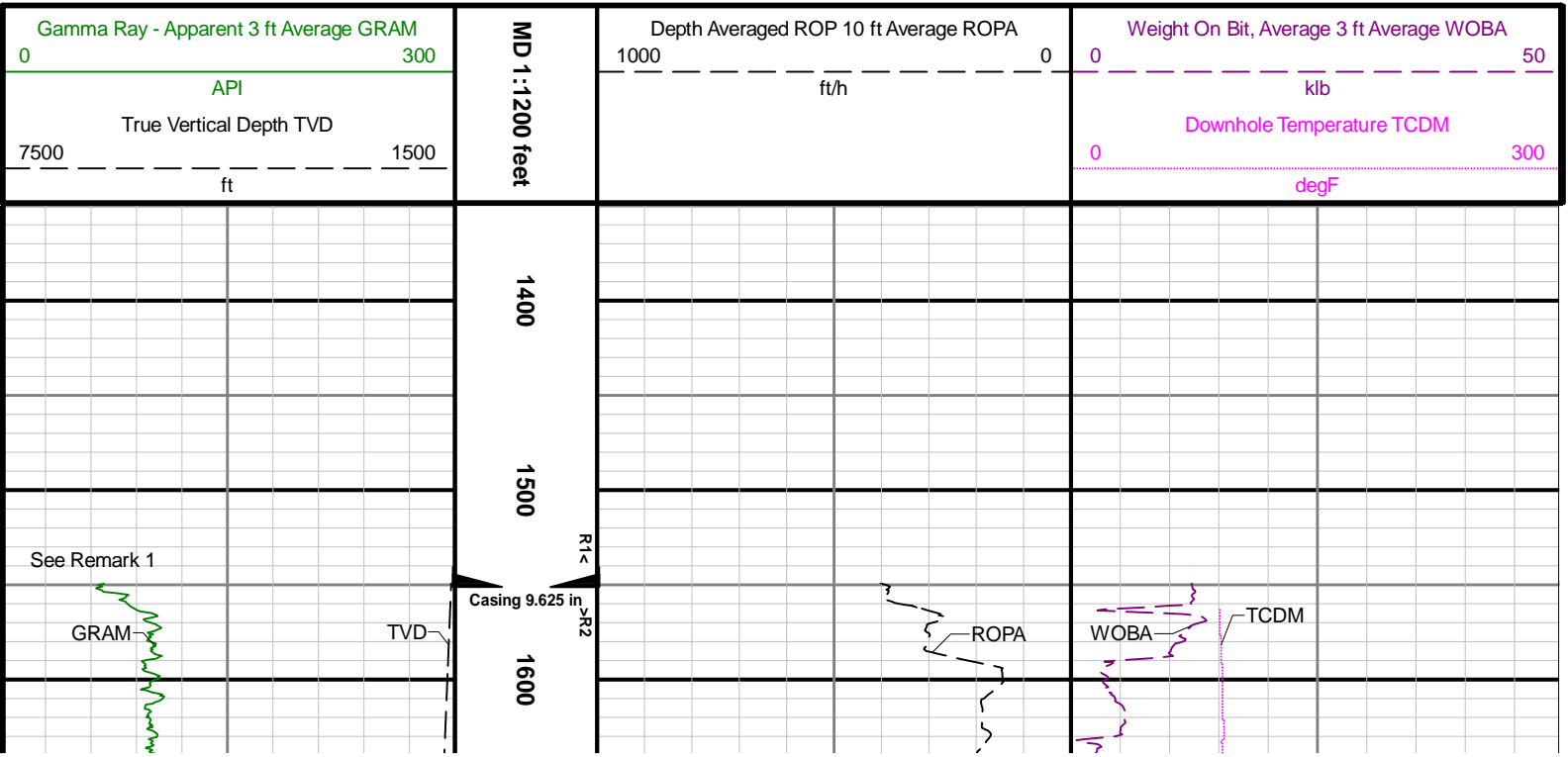
1	Depths measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified. These unverified depths are being used to represent logging data.
2	Baker Hughes, a GE company run 1 utilized 8 inch Directional-only with NaviTrak service behind a 13 ½ inch bit an 8 inch steerable assembly from 23 to 1562 feet MD (23 to 1562 feet TVD) therefore, no logging data was acquired for this run.
3	Baker Hughes, a GE company run 2 utilized 6 ¾ inch NaviGamma services (Gamma Ray and Directional) behind 8 ½ inch bit and rotary steerable assembly from 1562 to 16659 feet MD (1562 to 6411 feet TVD).
4	Gamma Ray Apparent (GRAM) is presented 0 to 300 API per customer request.

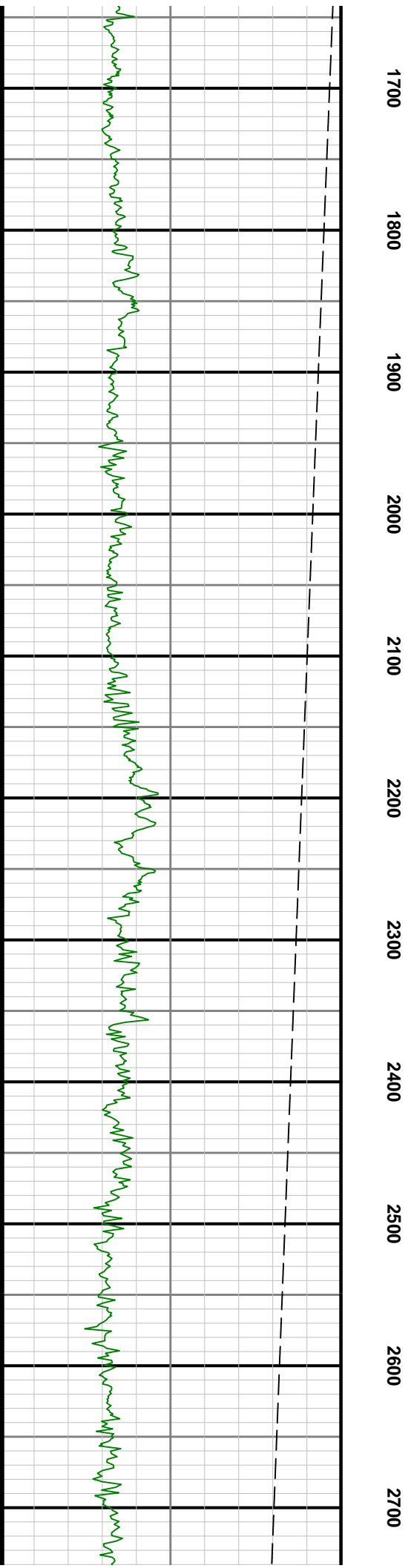
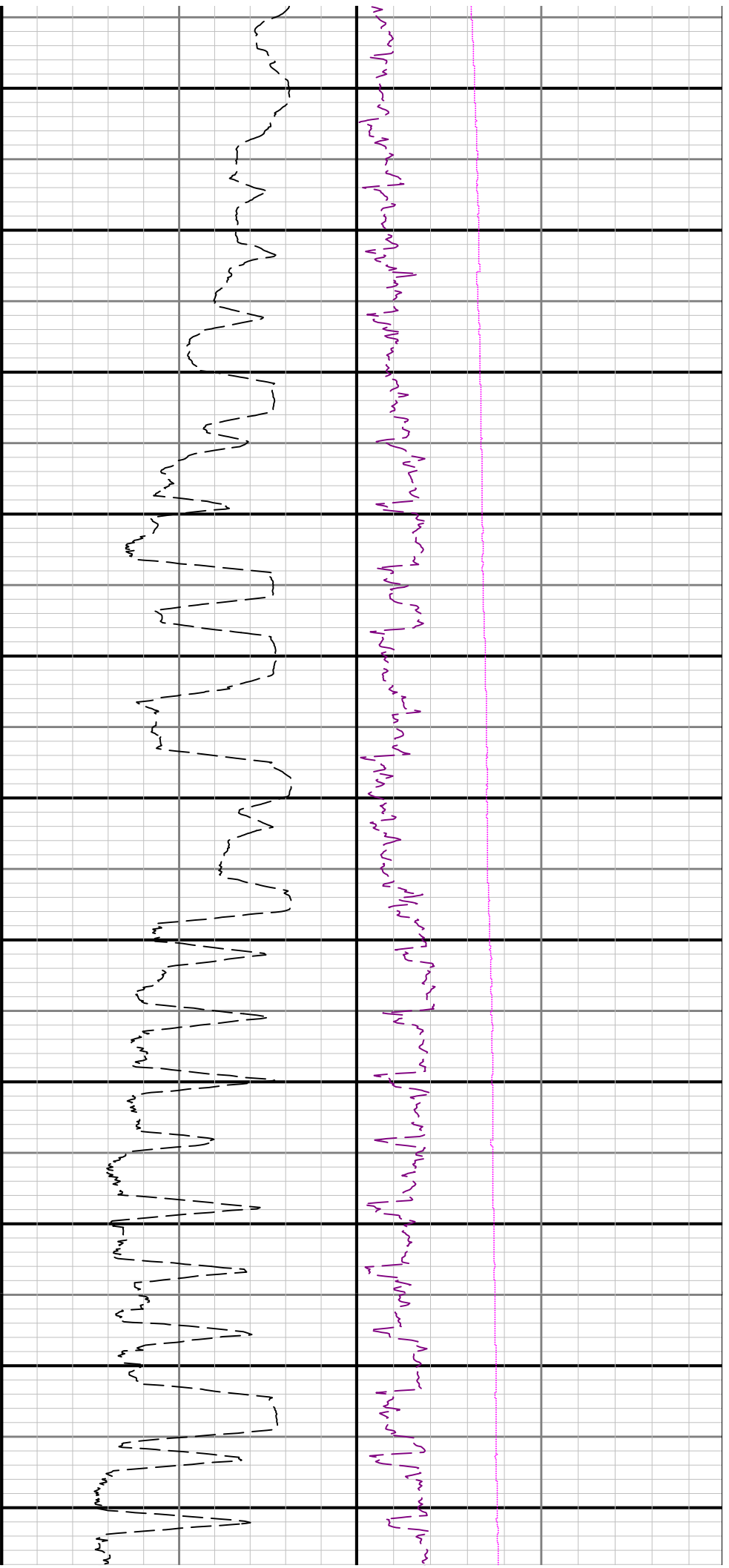
Remarks

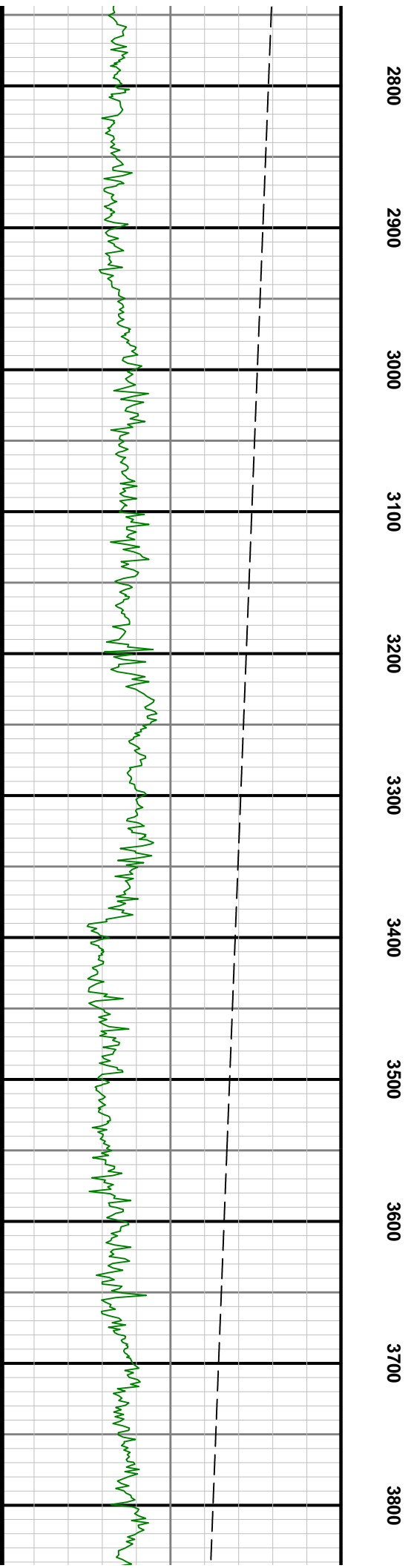
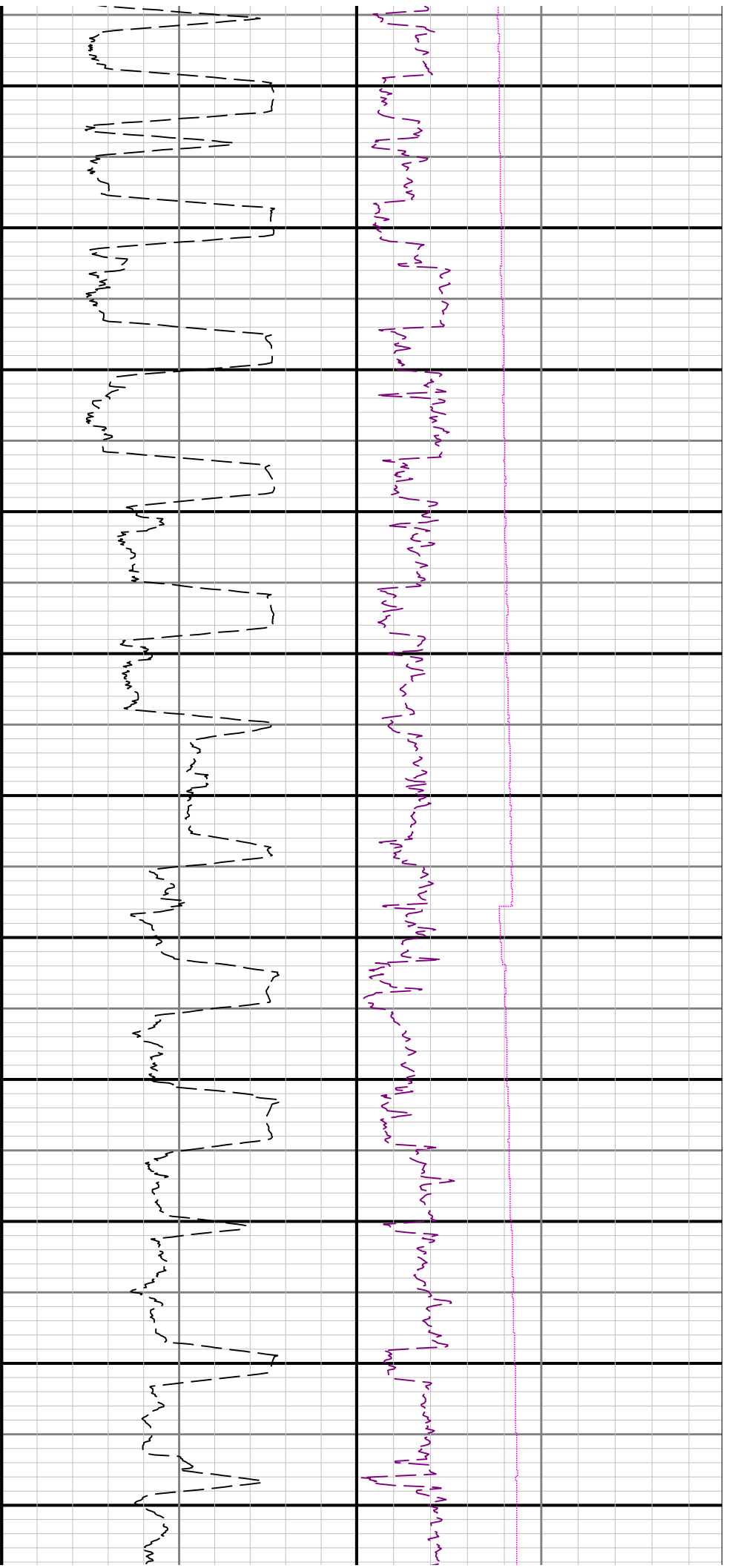
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	1562.00	8.500	2	Baker Hughes logging services began at 1549 feet MD (1549 feet TVD) per customer request.
2	16656.00	8.500	2	The interval from 16646 to 16659 feet MD 6411 feet TVD) was not logged due to sensor to bit offset at well TD.

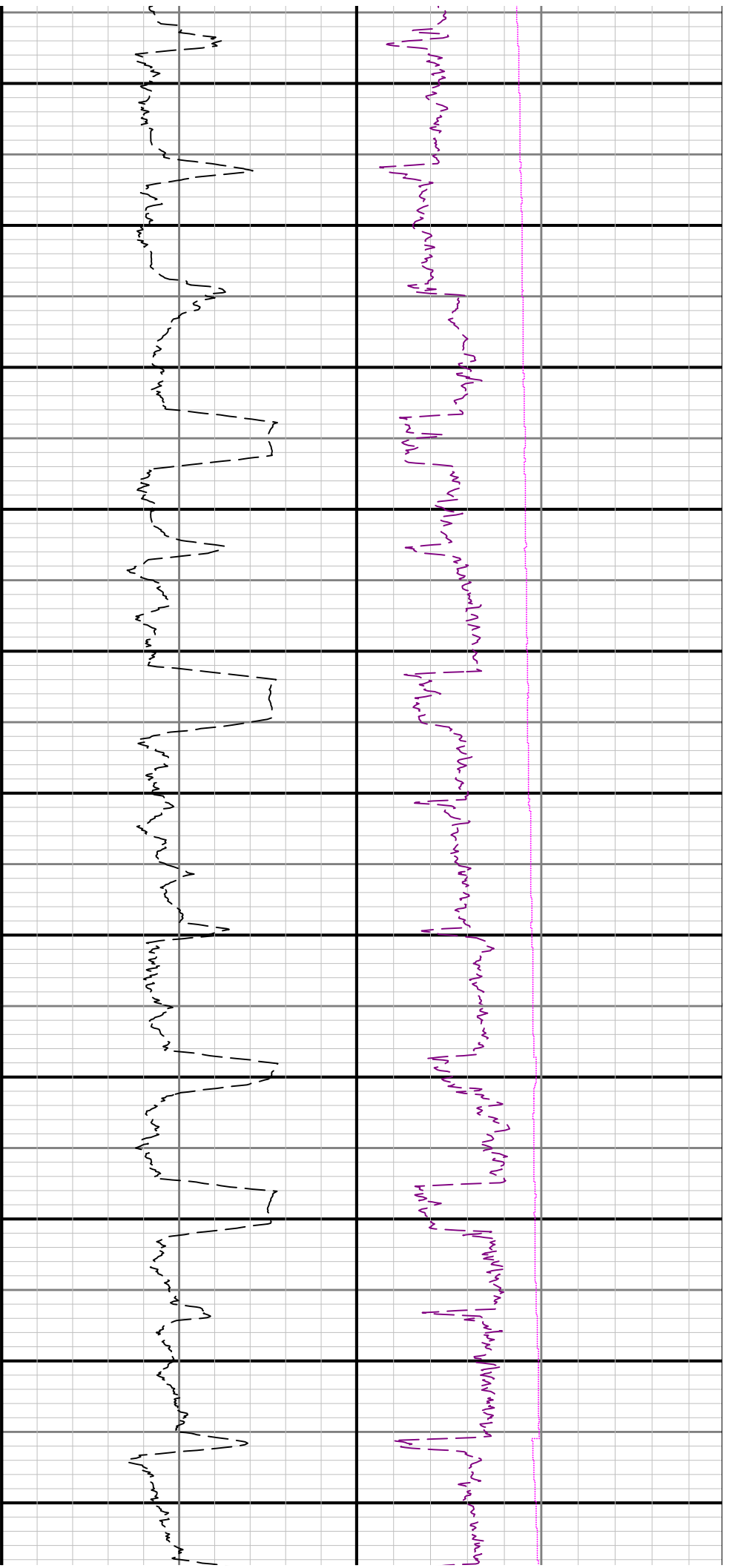
Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 10 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 3 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 3 ft Average	API
TCDM	Directional Real-Time Survey Temperature	degF









3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900

