

COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT:

Coal Assessment Report for the Brule lease, British Columbia

**BC Geological Survey
Coal Assessment Report
936**

TOTAL COST: \$1,865,180.76

AUTHOR(S): C.G. Cathyl-Huhn, P.Geo. and L. Avery, B.Sc.
SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): CX 9-5 / years 2002 through 2013
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):

YEARS OF WORK: 2002 to 2013

PROPERTY NAME: Brule

COAL LEASE (on which work was done): 417517

MINERAL INVENTORY MINFILE NUMBER: 93P 007

MINING DIVISION: Liard

NTS 93 P/5 BCGS: 093P.031 and 093P.041

LATITUDE: 55° 24' 16.20" North

LONGITUDE: 121° 51' 23.89" West (at centre of work)

UTM Zone: 10 **EASTING:** 572400 **NORTHING:** 6140400 (at centre of work)

OWNER: Walter Canadian Coal Partnership

MAILING ADDRESS: 800-688 West Hastings Street, Vancouver, B.C. V6B 1P1

OPERATOR: 0541237 B.C. Ltd. On Behalf of Brule Coal Partnership

MAILING ADDRESS: 800-688 West Hastings Street, Vancouver, B.C. V6B 1P1

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude)

Bituminous coal, Early Cretaceous, Minnes Group, Valanginian stage, Bickford Formation, Albian stage, Bullhead Group, Cadomin Formation, Gething Formation, Gaylard Member, synclines, anticlines, thrust faults

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

Coal Assessment Reports 486, 487, 488, 489, 490

Coal Assessment Report for the Brule lease, British Columbia, Canada

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation (at variable scale)	1471 ha	417517	\$2,500.00
GEOPHYSICAL (line-kilometres)			
Ground			
(Specify types)			
Airborne			
(Specify types)			
Borehole		417517	\$122,966.89
Gamma, Resistivity Density, Caliper	6859.98 m in 62	417517	
Resistivity	5505.55 m in 47	417517	
Caliper	5505.55 m in 47	417517	
Deviation	5526.40 m in 51	417517	
Dip			
Others (Neutron)	5355.62 m in 51		
DRILLING (total metres, number of holes, size, storage location)			
Core (size not known; cores entirely used up in analysis)	1 132.8 m	417517	\$27,933.15
Non-core	68 7205.59 m	417517	\$1,452,142.56
SAMPLING AND ANALYSES			
	Number of samples		
Proximate/washability	7	417517	\$10,574.86
Ultimate			
Petrographic			
Vitrinite reflectance			
Coking			
Wash tests (with proximate costs)			
PROSPECTING (scale/area)			
PREPARATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Road, local access (km)/trail	1065 (m)	417517	\$44,380.44
Trench (number/metres)			
Underground development (metres)			
Bulk sample(s)			
Other (Personnel)		417517	\$143,484.71

Coal quality analyses remain confidential under the terms of the Coal Act Regulation, and have been removed from the public version.

http://www.bclaws.ca/civix/document/id/complete/statreg/251_2004

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2 Objectives, situation, and details of work

This report discusses exploration done on the Brule coal lease, Tenure 417517, during the years 2001 to 2013 inclusive. Included within this report is an updated geological map, presenting results of a photogeological study conducted during the year 2013, as part of a regional-scale stratigraphic and structural study of a larger area. Geophysical logs are included (**Appendix A**) for boreholes drilled during this period. Work here-discussed was undertaken in support of Walter Canadian Coal Partnership's (WCCP's) operations within the Rocky Mountain Foothills of British Columbia.

2.1 Location, tenure, access and infrastructure

General location of the Brule lease, within the Brazion coalfield of northeastern British Columbia, is depicted in **Map 2-1**, and access routes are shown in **Map 2-2**. The Brazion coalfield is here informally defined as the entire outcrop area of Jurassic and Early Cretaceous coal-measures, lying between the valleys of the Pine and Sukunka rivers. north of the Pine River through to the west bank of the Sukunka River. The coalfield name has no formal standing as a toponymic entity, and it is used within this report for purposes of convenience.

In detail, the Brule property consists of a single Crown coal lease, Tenure No.417517, comprising 20 grid units (**Table 2-1**), covering a total area of 1471 hectares. The Brule lease is bounded to the southwest, south and southeast by WCCP's Burnt River coal licences, and to the northeast by WCCP's Dillon mining lease.

The Brule lease is situated within the Dawson Creek TSA (Timber Supply Area). Cutting of timber for mining purposes is subject to the terms of a *Free Use Permit* issued by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO). The property lies within Canfor's Tree Farm Licence (TFL) No.48, which mostly been harvested for the first time; the majority of the readily-accessible parts of the Brule lease are therefore covered by juvenile to immature second-growth forest, although areas close to Brule Mine's operating area are largely cleared of trees in preparation for soil removal prior mining.

2.1.1 Access details

Surface access for drilling and other exploratory works is regulated by the provincial government, subject to the *Coal Act Regulations* and the *Mines Act*.

Road access to Brule is available via two routes, of which the most convenient route is westward from the Sukunka River valley, and a somewhat more involved route is overland from the Pine River Valley, using Walter Energy's Falling Creek Connector Road (FCCR), which serves as a haulage-road between Brule Mine and Walter Energy's Willow Creek coal-washery and coal-loading facility.

To reach the property via road from the Sukunka River valley, access commences from the junction of highway BC-29 and the Sukunka Forest Service Road (FSR), which is maintained by the Sukunka Road Users Committee (a group of industrial users of the road). After travelling southward along the Sukunka FSR, following the eastern bank of Sukunka River, the junction with the Blind Creek Road is reached at kilometre 16.5 of the Sukunka FSR. Walter Energy holds tenure to the Blind Creek Road under a *Special Use Permit* (SUP) from MFLNRO.

The Blind Creek Road crosses Sukunka River on a recently-reconstructed wood-floored deck-girder bridge suitable for highway loads, and then winds steeply uphill atop the southern canyon wall of Blind Creek. A number of spur roads and trails branch southward from the Blind Creek Road.

The northeastern and southeastern portions of the Brule lease are well-served by active industrial roads: the FCCR in the northeast, and the Blind Creek Road in the southeast. The southeastern area is also served by branch-roads extended from the Blind Creek Road to serve natural-gas wellsites.

The southwestern portion of the property is served by a network of mostly-overgrown logging-roads and drillsite-access trails, passable only by all-terrain vehicles or motorbikes. Some parts of the lease are only accessible on foot, via seismic lines which cross the lease. On north- and east-facing slopes, undergrowth is generally thick, hampering cross-country travel.

Road access to all but the southeastern corner of the property requires passage through Brule Mine's main (southern) security gate, situated on Blind Creek Road south of its junction with Camp Road.

The municipal airport at Chetwynd is the closest operating fixed-wing airfield to the Brule. Helicopters may be chartered from the Chetwynd airport, or alternatively they may be hired from the Tumbler Ridge airport. With prior permission from the mine's management, helicopters may be landed at Brule Mine.

The closest railway service to Brule is at Walter Energy's Willow Creek coal-loading facility, situated on the southern bank of Pine River, west of Chetwynd. The most direct coal-haulage route to the railway is via the Falling Creek Connector Road.

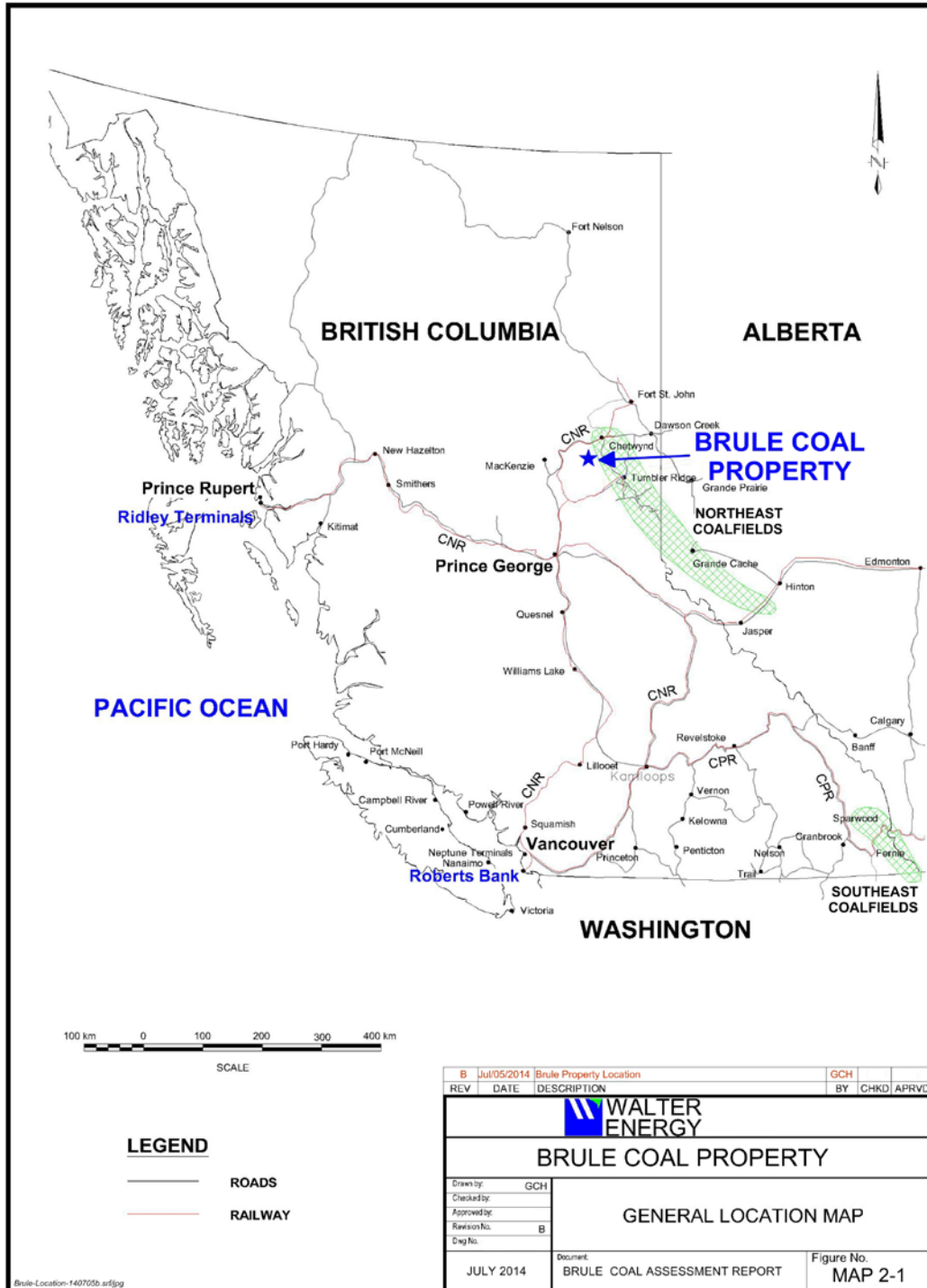
Electrical power is available from B.C. Hydro at the Sukunka substation, which feeds a cross-country sub-transmission line to a transformer-station within the Dillon lease. Power-distribution lines do not yet extend into the Brule lease *per se*, owing to the concentration of Brule Mine's facilities and buildings within the Dillon lease.

Telecommunications, including Internet access, are available via satellite and cellular telephone systems. Satellite access is excellent in upland areas, but unreliable in the heavily-wooded hillsides. Cellular coverage also likely to be inconsistent, owing to distance from transmitters, and to blocked line-of-sight in mountainous country.

Base-mapping for the Brule area is freely available from the provincial government's Base Map Online Store, which affords a facility for downloading representational shaded-relief topographic maps. Map-sheet 93P/5 (1:50,000) of the National Topographic System, and provincial base map sheets 093P.031 and 093P.041 (1:20,000) cover the property.

High-quality maps, based on LIDAR coverage and high-precision global positioning system (GPS) survey lines, have also been created by Brule Mine's surveying team; these maps cover the northern end of the Brule lease, and could be readily extended provided that LIDAR coverage was made available over a broader area.

Coal Assessment Report for the Brule lease, British Columbia, Canada



2.2 Physiography, climate and vegetation

The Brule mining lease occupies a deeply-dissected, otherwise rounded and rolling plateau, bounded to the northwest and north by the steep southern wall of the Mink Creek valley. Elevations range from 920 metres along an east-flowing tributary of Blind Creek, to 1425 metres atop Camp Ridge. Treeline is not encountered within the property, other than as a consequence of wildfire, mining-associated forest clearance, or logging.

The Brule area has a continental alpine climate, characterised by long, moderately cold, snowy winters and short, rainy summers. Snow and frost may occur in any month of the year. Winds are generally gusty and ongoing, with rare calm periods. Convective thunderstorms frequently occur during summer months, bringing intense rain-showers and occasional hail.

Immature second-growth coniferous forest covers most upland areas of the property, with more-abundant broadleaf trees along streams and creeks. South-facing slopes tend to be drier and less sparsely-treed. Soil cover is patchy, consisting mainly, of till, colluvium and alluvium, with pockets of peat and silt within poorly-drained upland areas.

2.3 Property description

The Brule coal property consists of one coal lease (**Map 2-2**), originally granted to Western Canadian Coal Corp. (WCC), a predecessor company to Walter Energy. **Table 2-1** presents details of the coal tenure at Brule, whose aggregate area is 1,471 hectares and whose annual rental cost is \$14,710.

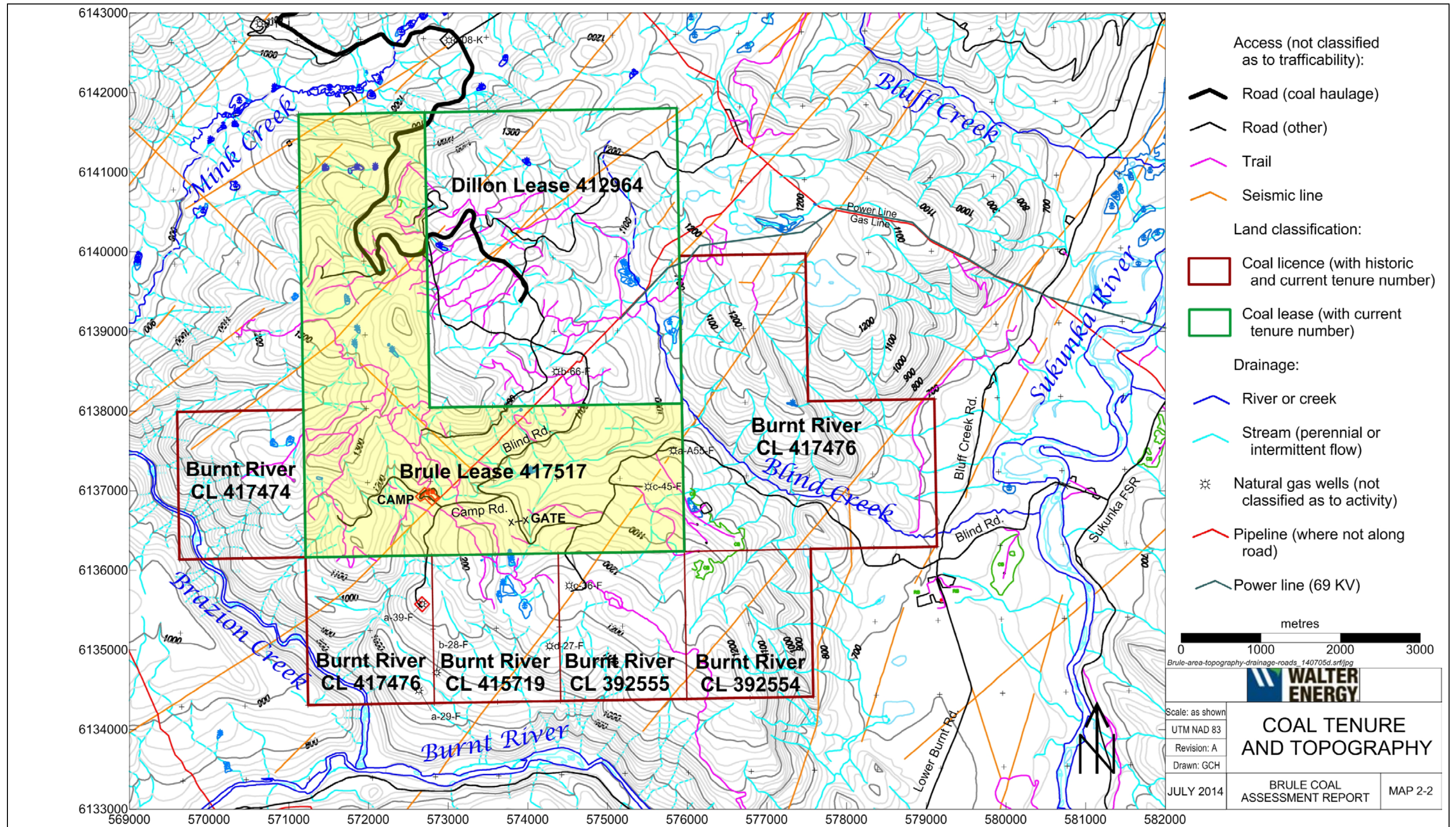
To maintain good status, coal leases require the payment of an area-based annual rental fee as prescribed by the provincial *Coal Act Regulation*.

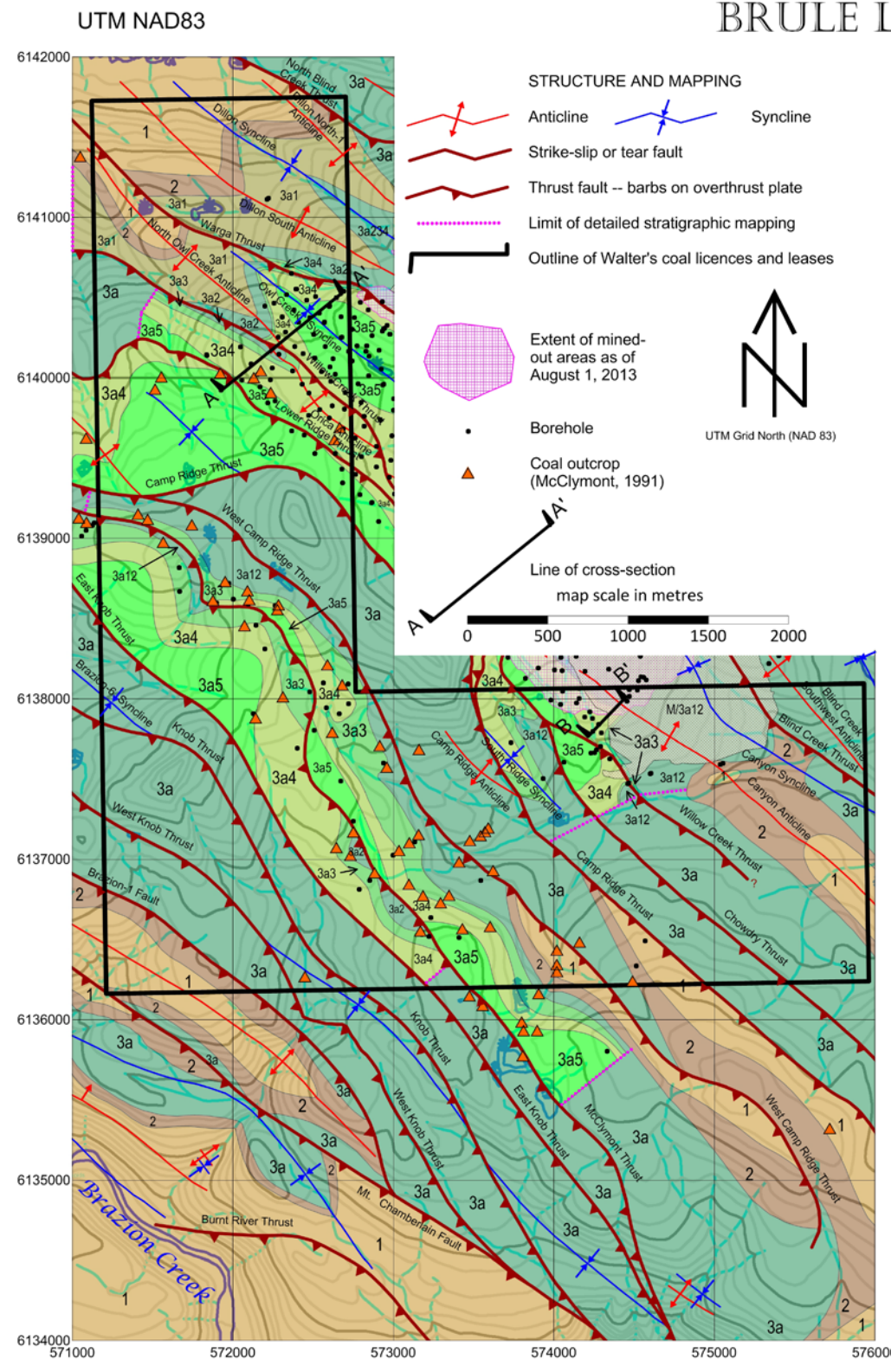
Table 2-1: Coal tenure at Brule

Tenure Numbers		Land description		Area in hectares (ha)	Dates		Annual rental at \$10/ha
Current	Historic	Blocks	Units		Issued on	Renew by	
417517	CL 3073 CL 3074 CL 3075, CL 3081, CL 3086	93P/05 Block F	45, 46, 47, 48, 49, 50, 55, 56, 57, 58, 59, 60,69, 70, 79, 80, 89, 90, 99, 100	1471	May 1, 2007	May 1, 2015	\$14,710
Totals		1 coal lease / 20 units		1471 ha			\$14,710

2.4 Summary of exploratory drilling

The Brule lease has been extensively drilled, with 133 boreholes known to have been put down (with a cumulative total depth of 11273.52 metres). Positions of these boreholes are shown within **Map 2-3** of this report. Roughly one-half of the drilling ('historic drilling') was done by Teck, and the other half of the drilling ('current drilling') by WCC and its successor companies.





- STRUCTURE AND MAPPING**
- Anticline
 - Syncline
 - Strike-slip or tear fault
 - Thrust fault -- barbs on overthrust plate
 - Limit of detailed stratigraphic mapping
 - Outline of Walter's coal licences and leases
 - Extent of mined-out areas as of August 1, 2013
 - Borehole
 - Coal outcrop (McClymont, 1991)
- STRATIGRAPHY**
- Mine dumps
 - BULLHEAD GROUP (Barremian to Aptian)**
 - Gething Formation -- siltstone, sandstone and conglomerate; minor bentonite and coal
 - Chamberlain Member -- sandstone and siltstone; minor coal
 - Bullmoose Member -- marine shale and siltstone; minor sandstone and bentonite
 - Bluesky Member -- pebbly glauconitic sandstone (not mapped separately at this scale)
 - Gaylard Member -- siltstone, sandstone and coal; lenses of conglomerate and pebbly sandstone; minor bentonite
 - Division 5 -- sandstone and siltstone; minor coal (Markers E and F)
 - Division 4 -- siltstone and sandstone; coal (Markers C and D; Seam 60 at top)
 - Division 3 -- siltstone and shale; coal (Lower Seam at base, Upper Seam at top)
 - Division 2 -- siltstone and sandstone; minor conglomerate and coal (Markers B, AA and A)
 - Division 1 -- sandstone, conglomerate and siltstone; minor coal
 - CADOMIN FORMATION** -- cliff-forming conglomerate and sandstone; minor siltstone and coal
 - MINNES GROUP (Tithonian to Valanginian)**
 - Bickford, Monach, Beattie Peaks and Monteith Formations -- sandstone, siltstone, shale, conglomerate, quartzite, ironstone and coal (not mapped separately at this scale)

Author: C.G. Cathyl-Huhn P. Geo. Lic. Geol. RMSME Date: 2014 July 11
 Grid system: UTM NAD83 Zone 10N in metres 100 km grid square: ES
 Scale: as shown on bar-scale Topography: TRIM-derived rasters
 Sources: compiled from work by B. McClymont (Teck Corporation, 1979 and 1981), J. Hughes (Gulf Canada, 1980), and D.J. Hunter and J.M. Cunningham (BCGSB, 1991)



REV	DATE	DESCRIPTION
D	July 10 2014	Coal outcrops from McClymont (1981)
Drawn by: GCH		
Scale: as shown		
Reference: Brule-lease-geology-140710d.srf		
Revision No. C		
JULY 2014		BRULE COAL ASSESSMENT REPORT
		MAP 2-3

GEOLOGY OF BRULE LEASE 417517

Table 2-2: Details of historic (years 1977 through 1981) boreholes

Borehole	See CAR	Position (UTM NAD83)		Collar (m)	Depth (m)	Orientation (deg.)		Drilling method	Core size (as on log)	
		Easting	Northing			Azimuth	Dip			
BR-2	487	572402.49	6137692.73	1247.9	177.09	000	-90	Core	NQ	1977
BR-4	487	572504.99	6137803.03	1244.7	78.35	000	-90	Core	NQ	1977
BR-5	488	572198.59	6138310.33	1336.6	128.65	000	-90	Core	NQ	1978
BR-6	488	571668.69	6138669.93	1293.9	77.12	000	-90	Core	NQ	1978
BR-7	488	572750.69	6137237.53	1186.3	75.89	000	-90	Core	NQ	1978
BR-8	488	574331.99	6135802.53	1235.4	148.17	000	-90	Core	NQ	1978
BR-9	488	573410	6136513	1217.4	107.29	000	-90	Core	NQ	1978
BR-10	488	573234.29	6136636.73	1185.2	93.9	000	-90	Core	NQ	1978
BR-11	488	572671.29	6137485.73	1219.5	62.79	000	-90	Core	NQ	1978
BR-12	488	572720.69	6137969.53	1250.5	54.57	000	-90	Core	NQ	1978
BR-13	488	572563.19	6138099.73	1270.1	76.21	000	-90	Core	NQ	1978
BR-14	488	572479.39	6138042.63	1261.8	67.16	000	-90	Core	NQ	1978
BR-19	488, 489	574157.8	6138063.73	1158.36	75.3	000	-90	Core	NQ	1980
BR-20	488	574456	6137985	1146.96	24.39	000	-90	Core	NQ	1978
BR-49	489	573982.89	6137993.43	1171.5	82.9	000	-90	Core	NQ	1980-08-11
BR-50	489	572683.79	6139345.03	1318.7	73.1	000	-90	Core	NQ	1980-08-14
BR-51	489	572622.69	6139598.43	1332.6	110.9	000	-90	Core	NQ	1980-08-18
BR-52	489	572700.59	6139906.73	1334.9	109.8	000	-90	Core	NQ	1980-08-21
BR-53	489	572619.79	6139825.83	1349	91.7	000	-90	Core	NQ	1980-08-23
BR-54	489	572431.19	6139960.73	1332.8	46	000	-90	Core	NQ	1980-08-24
BR-55	489	572263.99	6139855.23	1311.9	108.5	059	-70	Core	NQ	1980-08-26
BR-56	489	572368.49	6139668.73	1333.3	56.9	000	-90	Core	NQ	1980-08-28
BR-57	489	572636.59	6140022.23	1332.8	39.9	000	-90	Core	NQ	1980-08-30
BR-59	489	572154.69	6140021.63	1310.8	88.7	000	-90	Core	NQ	1980-09-04
BR-63	490	574230.71	6137662.8	1110.1	76	000	-90	Rotary		1981-06-30
BR-67	490	574053.08	6138047.66	1163.24	81	000	-90	Rotary		1981-07-05
BR-68	490	574469.41	6138015.29	1145.04	185	000	-90	Rotary		1981-07-07
BR-92	490	572605.99	6140069.62	1331.89	138.2	000	-90	Rotary		1981-08-15
BR-93	490	572470.24	6139765.41	1353.16	107	000	-90	Rotary		1981-08-17
BR-94	490	572244.73	6140061.81	1331.31	49	000	-90	Rotary		1981-08-17
BR-95	490	572056.34	6139986.44	1292.29	144	000	-90	Rotary		1981-08-19
BR-96	490	572045.54	6140194.23	1299.36	51	000	-90	Rotary		1981-08-20
BR-97	490	572216.72	6139844.36	1304.11	26	000	-90	Rotary		1981-08-21
BR-98	490	572435.89	6140152.55	1314.67	109	000	-90	Rotary		1981-09-10

Table 2-2: Details of historic (years 1977 through 1981) boreholes (concluded)

Borehole	See CAR	Position (UTM NAD83)		Collar (m)	Depth (m)	Orientation (deg.)		Drilling method	Core size (as on log)	
		Easting	Northing			Azimuth	Dip			
BR-111	490	571926.71	6139923.88	1236.08	93	000	-90	Rotary		1981-09-11
BR-112	490	572540.3	6139802.94	1358.93	91	000	-90	Rotary		1981-09-12
BW-4	488	572664	6137907	1244.5	39.93	000	-90	Core	AW	1978
BW-5	488	572999	6137026	1158.9	21.95	000	-90	Core	AW	1978
BW-6	488	573135	6137108	1148.5	32.3	000	-90	Core	AW	1978
BW-7	488	572786.89	6136812.63	1157.1	46.48	000	-90	Core	AW	1978
BW-8	488	572852.69	6136866.73	1160.8	38.1	000	-90	Core	AW	1978
BW-9	488	573223.09	6136518.13	1214.9	30.43	000	-90	Core	AW	1978
BW-10	488	573178	6136531	1208.9	21.95	000	-90	Core	AW	1978
BW-11	488	571664.79	6138816.03	1336.8	36.88	000	-90	Core	AX	1978-09-27
BW-12	488	572718.89	6138092.63	1263.2	38.7	000	-90	Core	AX	1978-09-30
BW-13	488	571899	6138598	1305.7	27.74	000	-90	Core	AW	1978
BW-14	488	572264	6138581	1361.3	28.35	000	-90	Core	AX	1978-09-27
BW-15	488	572937.39	6137600.53	1191.3	11.89	000	-90	Core	AW	1978
BW-16	488	572279	6138545	1361.8	12.65	000	-90	Core	AW	1978
BW-17	488	572095	6138591	1330.2	18.44	000	-90	Core	AX	1978-09-27
BW-18	488	572128	6137908	1301	15.85	000	-90	Core	AW	1978
BW-19	488	572143.29	6138458.43	1339.8	24.1	000	-90	Core	AX	1978-09-27
BW-20	488	571975.59	6138720.83	1322.8	16.46	000	-90	Core	AX	1978-09-27
BW-21	488	572001.79	6138621.63	1319	14.94	000	-90	Core	AW	1978
BW-30	488	572581.69	6137943.93	1238.4	26.21	000	-90	Core	AX	1978
BW-39	489	574239.59	6137876.83	1127.1	35.6	000	-90	Core	AX	1980-07-11
BW-53	489	574428.69	6138021.53	1145	20.3	000	-90	Core	NQ	1980-09-16
BW-59	489	574062	6137604	1100.2	17.6	000	-90	Core	AX	1981-06-25
BW-60	490	574253.46	6137664.76	1105.09	15.8	000	-90	Core	AX	1981-06-30
BW-61	490	573933	6137504	1107.88	9.3	000	-90	Core	AX	1981-07-01
BW-62	490	573732	6137727	1155.21	38.9	000	-90	Core	AX	1981-07-06
BW-63	490	574295	6137786	1107	17.5	000	-90	Core	AX	1981-07-09
BW-64	490	572500.99	6139995.63	1332	58.2	000	-90	Core	AX	1981-07-22
BW-65	490	572510.75	6140124.39	1323.38	13.1	000	-90	Core	AX	1981-07-23
Totals	64 boreholes			3935.13 metres				12 rotary, 52 core		1977 to 1981

2.4.1 Historic drilling

During the years 1977, 1978, 1980 and 1981, Teck drilled 64 boreholes (totalling 3935.13 metres' depth of drilling) within the current boundaries of the Brule lease. These boreholes are now regarded as being 'historic' with respect of the Brule lease, as they were drilled prior to WCC's ownership of the property, and they have been reported in various of Teck's Coal Assessment Reports, as cross-referenced in **Table 2-2**.

The majority of Teck's boreholes were cored, using a highly-mobile Winkie drilling rig. Teck also used a larger diamond-drill for a lesser number of their boreholes, and a rotary-drill for several others, as noted in **Table 2-2**.

2.4.2 Current drilling

During the years 2002, 2003, 2005, 2009, 2010 and 2013, 69 boreholes (totalling 7338.39 metres' depth of drilling) were been drilled within the boundaries of the Brule mining lease by WCC and successor companies. These boreholes follow upon the 64 boreholes which were drilled by Teck and allied firms, during the 1980s.

Table 2-3 presents positions, depths, orientations (if known) and other salient details of these boreholes. Blank entries in the table indicate that, despite a diligent search of historic records, information has not been found.

Documentation of the rationale for various years' drilling programmes is incomplete. However, annotations in borehole files indicate that the vast majority of the boreholes were air-rotary (non-coring) exploratory holes, meant to elucidate the lateral extent, pattern of splitting, and structural configuration of the three thick Gaylard coal beds previously-discovered by Teck.

In 2005, one borehole (BR2005-01C) was continuously cored, in order to collect rock samples for acid rock drainage (ARD) studies (Minnes, 2005, page 8-11). In 2013, eight boreholes (of the BM13-series), comprising paired deep and shallow holes, were drilled as hydrological test-holes in support of a revised mine-plan (the eight most recent boreholes (all within year-2013) were drilled as hydrological test-holes in support of mine planning (Bianchin, 2013).

Most of the current boreholes have been geophysically logged. Available logs and other salient borehole information are presented in **Appendix A** of the present report.

2.4.2.1 Cross-reference to coal intersections in boreholes

Tables 4-2 and **4-3**, referenced in **Section 4.2** of this report, present the geological context and correlated subsurface intersections of the Gaylard Member coals, as encountered by current boreholes within the Brule lease. Details of coal intersections within historic boreholes are presented within the Coal Assessment Reports produced by Teck, of which the most informative reports are Nos.488 (McClymont, 1979) and 490 (McClymont, 1981).

Table 2-3: Details of current (years 2002 through 2013) boreholes

Borehole	Position (UTM NAD83)		Collar (m)	Depth (m)	Orientation (deg.)		Drilling method	Bit size (cm) / Core size	Geophysical log(s)?	Completed (yyyy-mm-dd)
	Easting	Northing			Azimuth	Dip				
BR2002-12	572601.4	6140445.76	1280.33	91.2	307.5	-87	Rotary	14	Yes	2002
BR2002-13	572690.35	6140538.71	1286.33	29.3	020.3	-88	Rotary	14	Yes	2002
BR2002-14	572645.5	6140500.31	1283.96	73.51	020.3	-88	Rotary	14	Yes	2002
BR2003-3	574568.99	6136491.29	1147.49	228.59	000	-90	Rotary	14	Yes	2003-12-14
BR2003-4	574512.55	6136334.54	1164.64	219.66	000	-90	Rotary	14	Yes	2003-12-17
BR2003-5	573544.41	6136868.49	1120.81	76.42	000	-90	Rotary	14	Yes	2004-01-07
BR2004-18	572371.86	6140043.96	1336.95	54.53	145.3	-90	Rotary		Yes	2004
BR2004-19	572287.18	6140147.32	1337.15	55.2	127.8	-90	Rotary		Yes	2004
BR2004-20	572113.2	6140087.9	1314.88	73.01	013	-90	Rotary		Yes	2004
BR2004-21	572552.39	6140038.58	1330.81	85.67	198.6	-90	Rotary		Yes	2004
BR2004-22	572624.07	6140118.61	1335.21	125.35	156	-90	Rotary		Yes	2004
BR2004-23	574603.69	6138608.93	1330.81	165.55			Rotary		Yes	2004
BR2004-24	572569.87	6140348.28	1275.19	91.6	035.8	-90	Rotary		Yes	2004
BR2004-25	572407.88	6140345.15	1267.3	85.5	103	-90	Rotary		Yes	2004
BR2004-26	572199.18	6140448.24	1242.42	80.14	251.4	-90	Rotary		Yes	2004
BR2004-27	572335.42	6140519.34	1234.11	53.89			Rotary		Yes	2004
BR2004-28	572364.73	6140649.51	1223.56	81.13	040	-80	Rotary		Yes	2004
BR2004-29	572255.53	6140466.03	1238.83	64	166.8	-90	Rotary		Yes	2004-09-21
BR2004-33	572680.14	6140253.86	1307.59	203.24	144.3	-90	Rotary		Yes	2004
BR2005-01C	572511.6	6139528.58	1345.2	132.8	316.9	-90	Core		Yes	2005
BR-09-20	574279.72	6137840.89	1118.94	34.18	002.9	-87	Rotary		Yes	2009
BR-09-21	574242.87	6137796.7	1104.77	49.36	068.6	-88	Rotary		Yes	2009
BR-09-22	574224.46	6137918.42	1133.69	43.44	100.1	-90	Rotary		Yes	2009
BR-09-24	574191.13	6137885.44	1131.17	66.44	069.9	-90	Rotary		Yes	2009
BR-09-25	574156.44	6138001.05	1149.54	55.56			Rotary		Yes	2009
BR-09-26	574140.51	6137973.37	1141.76	60.4	296	-88	Rotary		Yes	2009
BR-09-30	574041.19	6137964.03	1155.28	58.92	257.9	-88	Rotary		Yes	2009
BR-09-31	574291.45	6137704.36	1095.77	66.34	33.9	-90	Rotary		Yes	2009
BR-09-32	574265.78	6137683.46	1102.91	122.08	240.6	-89	Rotary		Yes	2009
BR-09-33	574349.76	6137625.86	1088.12	70.98	295.4	-88	Rotary		Yes	2009
BR-10-01	572392.67	6140552.97	1239.83	141.83		-90	Rotary	11.43	Yes	2010-08-14
BR-10-02	572396.36	6140554.09	1239.97	107.62	049.9	-64.19	Rotary	11.43	Yes	2010-07-14
BR-10-03	572380.26	6140422.99	1248.9	163.48		-65	Rotary	11.43	Yes	2010-08-08
BR-10-04	572459.01	6140483.73	1247.16	170.17	043.1	-73.41	Rotary	11.43	Yes	2010-07-13
BR-10-05	572514.77	6140506.58	1246.84	92.5	034.8	-71.14	Rotary	11.43	Yes	2010-07-10

Table 2-3: Details of current (years 2002 through 2013) boreholes (concluded)

Borehole	Position (UTM NAD83)		Collar (m)	Depth (m)	Orientation (deg.)		Drilling method	Bit size (cm) / Core size	Geophysical log(s)?	Completed (yyyy-mm-dd)
	Easting	Northing			Azimuth	Dip				
BR-10-06	572477.83	6140374.8	1254.09	207.1	027.2	-72.87	Rotary	11.43	yes	2010-08-05
BR-10-07	572538.17	6140403.8	1259.89	183.14	037.6	-75.16	Rotary	11.43	yes	2010-07-26
BR-10-08	572503.34	6140270.18	1283.9	149.99	128.66	-60.06	Rotary	11.43	yes	2010-08-22
BR-10-09	572567.22	6140343.02	1271.84	214.6	042.7	-74.49	Rotary	11.43	yes	2010-07-31
BR-10-10	572675.29	6140379.37	1314.35	155.58	045.4	-51.44	Rotary	11.43	yes	2010-08-30
BR-10-11	572574.41	6140195.79	1313.86	174.32	222.6	-61.4	Rotary	11.43	yes	2010-09-02
BR-10-13	572720.66	6140166.11	1310.03	204.07	219.7	-61.03	Rotary	11.43	yes	2010-10-02
BR-10-16	572609.26	6139978.96	1331.31	129.54	215.9	-65.92	Rotary	11.4	yes	2010-10-11
BR-10-35	572308.24	6140381.08	1264.02	95.02	340	-56.8	Rotary	11.43	yes	2010-08-11
BR-10-35A	572308.19	6140378.27	1264.04	167.4	340	-56.8	Rotary	11.43	yes	2010-08-13
BR-10-36	572282.51	6140252.62	1309.36	83.82	234	-89.21	Rotary	11.43	yes	2010-08-18
BR-10-37	572329.15	6140285.55	1289.17	110.48	225.5	-79.34	Rotary	11.43	yes	2010-08-17
BR-10-38	572604.13	6140448.39	1280.11	202.69	032.5	-49.5	Rotary	11.43	yes	2010-08-21
BR-10-39	572385.98	6140195.88	1304.11	76.89	239.3	-57	Rotary	11.43	yes	2010-08-18
BR-10-40	572168.93	6139944.17	1303.3	101.17	043	-63	Rotary	11.43	yes	2010-10-13
BR-10-41	572232.97	6139986.64	1319.72	67.38	055.9	-70	Rotary	11.43	yes	2010-10-15
BR-10-42	572674.2	6140252	1304.1	232.99	327.3	-88	Rotary	11.43	yes	2010-08-31
BR-10-44	572473.86	6139903.41	1340.95	119.6	124.7	-88	Rotary		yes	2010
BR-10-47	572443.28	6139643.73	1340.73	156.63	044.5	-65	Rotary		yes	2010
BR-10-48	572601.25	6139748.88	1354.54	93.63	297	-89	Rotary		yes	2010
BR-10-49	572696.27	6139805.51	1341.45	115.86	319.7	-88	Rotary		yes	2010-10-19
BR-10-51	572689.34	6139682.38	1332.76	86.21	261.7	-88	Rotary		yes	2010
BR-10-53	572637.47	6139529.16	1330.12	136.14	075.7	-77	Rotary		yes	2010
BR-10-56	572678.66	6139432.12	1320.87	152.63	024.4	-75	Rotary		yes	2010-10-07
BM13-01A	572212.05	6141113.05	1145.83	102.55		-90	Rotary		yes	2013-03-08
BM13-01B	572222.34	6141118.13	1145.79	23.2		-90	Rotary		no	2013-03-15
BM13-02A	571837.64	6140140.85	1244.6	182.1		-90	Rotary		yes	2013-03-10
BM13-02B	571835.85	6140144.18	1244.64	51.2		-90	Rotary		no	2013-03-18
BM13-06A	574458.87	6137469.92	1050.18	53.7		-90	Rotary		yes	2013-03-18
BM13-06B	574466.66	6137476.13	1049.83	23.5		-90	Rotary		no	2013-03-19
BM13-07A	575052.41	6137597.52	1033.22	41.97		-90	Rotary		yes	2013-03-21
BM13-07B	575037.79	6137590.52	1033.96	23.8		-90	Rotary		no	2013-03-22
BM13-08A	574600.6	6137534.03	1048.42	28.8		-90	Rotary		yes	2013-03-22
BM13-08B	574604.35	6137534.43	1048.41	17.1		-90	Rotary		no	2013-03-22
Totals	69 boreholes			7338.39 metres			68 rotary, 1 core			2002 to 2013

2.5 Other historic work

As with most other coal properties within northeastern British Columbia, the Brule area attracted considerable attention as a coking-coal exploration play during the late 1970s and early 1980s. As industrial expenditures declined in the middle 1980s, academic and governmental investigators carried on with regional geological studies, including structural mapping. In recent years, the Burnt River has attracted some attention from the oil and gas industry, including widely-spaced seismic-reflection survey programmes and the drilling of a few deep exploratory wells in search of natural gas. **Table 2-4** presents a cross-reference to the most useful historic reports and maps.

Coal Assessment Reports 488 (McClymont, 1979) and 490 (McClymont, 1981) are particularly relevant, as they provide detailed geological maps for the area within and adjacent to the Brule lease. The 1981 map shows locations of numerous coal outcrops discovered by Teck's workers during their traversing of the property; these outcrops are noted on **Map 2-3** of the present report.

Table 2-4: Cross-references to previous mapping and stratigraphic studies

<i>Year of report</i>	<i>Report author(s) and venue of publication</i>	<i>Sponsoring organisation</i>	<i>Nature of work done</i>
1968	D.F. Stott, GSC Bulletin 152	Geological Survey of Canada	Regional geological report
1973	D.F. Stott, GSC Bulletin 219	Geological Survey of Canada	Regional geological report
1975	R.S. Versoza, Coal Assessment Report No.486	Brameda Resources Ltd.	Property studies
1977	R.S. Versoza, Coal Assessment Report No.477	Teck/Brameda	Property studies
1979	R.D. Gilchrist, Geological Fieldwork 1978	B.C. Geological Survey	Regional geological report
1979	B.I. McClymont, Coal Assessment Report No.488	Teck/Brameda	Property studies
1981	B.I. McClymont and J.H. Wright, Coal Assessment Report No.489	Teck/Brameda-Yukon	Property studies
1981	B.I. McClymont, Coal Assessment Report No. 490	Teck Corporation	Property studies
1984	M.E. McMechan, GSC Map 1858A	Geological Survey of Canada	Regional structural geology
1991	D.J. Hunter and J.M. Cunningham, Geological Fieldwork 1990	B.C. Geological Survey	Regional geological report
1991	D.J. Hunter and J.M. Cunningham, MEMPR Open-File Map 1991-4	B.C. Geological Survey	Structural mapping
1992	D.W. Gibson, GSC Bulletin 431	Geological Survey of Canada	Stratigraphic study (Gething Formation)
1992	D.W. Gibson, GSC Bulletin 440	Geological Survey of Canada	Stratigraphic study (Hulcross and Boulder Creek formations)
1998	D.F. Stott, GSC Bulletin 516	Geological Survey of Canada	Stratigraphic study (Minnes Group)
2003	A.S. Legun, MEMPR Geoscience Map 2003-2	B.C. Geological Survey	Regional structural geology

2.6 Other current work

A photogeological study, using *Google Earth* satellite imagery and archival aerial-photographs, was conducted in 2013 by Gwyneth Cathyl-Huhn P.Geo., as part of a broader regional study of the Brazion and Sukunka-Quintette coalfields. Substantial use was made of previous geological maps, including work by McClymont (1979; 1981), Hughes (1980), Hunter and Cunningham (1991a, b) and Legun (2003). **Map 2-3** presents the resultant compilation, incorporating a reassessment of the property-scale pattern of thrust-faults and associated folds, and a reassignment of formation and member contacts within the coal-measures.

Construction of a revised digital geological model covering Brule Mine, including the northern part of Brule mining lease, is currently being undertaken by Laura Avery and by Brule Mine's resident geologist, Francis Eshun P.Geo.

2.7 Summary of coal resources

Several historic coal-resource determinations, not meeting current Canadian standards of practice (thus non-compliant with Canada's *National Instrument 43-101*), were reported by Teck during the period of their ownership of the Brule property, although Teck's work covered a larger area comprising the current area of the Brule lease and the adjoining Dillon lease.

Following acquisition of the property now covered by the Brule lease, WCC and successor companies conducted additional exploration and engineering work, leading to a feasibility study for Brule Mine (Krapan, 2005) and to the compilation of 43-101-compliant estimates of coal resources, the most recent of which was published by Walter Energy in 2012 (Lortie and Allen, 2012), with an effective date of December 31, 2011.

As was the case with Teck's reports, the year-2011 coal-resource estimate does not distinguish between areas covered by the Brule mining lease (the subject of the current report) and the adjoining Dillon mining lease.

Table 2-5, given below, is derived from the 'Brule' entries in the year-2011 report (Lortie and Allen, *op.cit.*, page 65, their Table 16). The year-2011 report may be obtained via a document search under 'Walter Energy' at the System for Electronic Document Analysis and Retrieval (SEDAR) website, via www.sedar.com.

Table 2-5: Brule Mine coal resource estimates by seam, as of December 31, 2011

		Insitu (kilotonnes)		
		Seam	Measured	Indicated
Brule	Seam 60	6,428	0	0
	Upper Seam / Lower Seam	21,554	0	0
	Totals	27,982	0	0

The effective date of this estimate is December 31, 2011.

To reiterate, the coal-resource figures given above do not distinguish between coal within the Brule lease boundaries, and coal within the Dillon lease boundaries. Furthermore, coal production has occurred at Brule Mine since the effective date of the estimate, thus reducing the amount of coal in place (although as of the date of the present report, coal extraction has not yet proceeded across the Dillon/Brule lease boundary and into the Brule lease).

2.8 Acknowledgements and professional responsibility

Francis Eshun P.Geo., colliery geologist at Brule Mine, provided cross-sections from the mine's digital deposit model. These cross-sections were used as a starting-point for the construction of

the two cross-sections (**Figure 3-1**) incorporated within the present report. Thanks are also due to Preetpal Singh (at Walter Energy) for assistance with scanning and organisation of source materials, and for help with the assembly of this report into a coherent whole.

Gwyneth Cathyl-Huhn P.Geol. accepts overall professional responsibility for the contents of this report.

3 Geology

Regional and local geology of the Brazion coalfield and the Brule mining lease (**Map 2-3**) is known mainly from the extensive work of D.F. Stott (1960; 1963; 1968; 1972; 1973; 1974; 1981; 1998) and D. Gibson (1992), both from the Geological Survey of Canada, and B.McClymont (1979; 1981), from Teck.

As well, numerous other relevant coal-company reports are available as Coal Assessment Reports from the British Columbia Geological Survey Branch, as cited in **Section 7** of this report. Partial copies of reports are available for download via the Survey's website, but full copies (including maps, geophysical logs, and other illustrations) must generally be purchased from the Survey.

3.1 Regional Geology

The Brule coal property lies within the Brazion coalfield of northeastern British Columbia, part of the Foothills structural province of the Canadian Cordillera. All rocks exposed at the ground surface are of Early Cretaceous age, belonging to the Minnes (Tithonian to Valanginian stages) and Bullhead (Barremian to Aptian stages) groups.

Where not subsequently eroded, the total undeformed thickness of these rocks is 1560 to 1625 metres. Depth to Precambrian continental basement, including both Mesozoic and Palaeozoic rocks, is more substantial, in the range of 10 to 12 kilometres (McMechan, 1984), although some of this thickness is attributable to thrust-induced tectonic stacking of the strata, and to associated shortening across folds (McMechan, 1985).

The majority of sedimentary rocks within the Brazion coalfield are clastic in origin, ranging in grain-size from claystones and mudstones through pebble-conglomerates. Lesser amounts of biologically- and chemically-derived sedimentary rocks are present, comprising coals, banded and nodular ironstones, glauconite-rich sandstones and gritstones, and impure dolomites.

Volcanic rocks constitute a very small component of the Jurassic and Early Cretaceous strata, comprising very fine- to fine-grained tuffs, interpreted to have originated as wind-borne distal ash-fall deposits from contemporaneous volcanoes situated within the Coast Plutonic Complex, far to the southwest of the property. The volcanic rocks characteristically occur as very thin (at most a few decimetres) yet regionally-extensive bands, which are of use as markers for structural and stratigraphic correlations. No intrusive rocks are known to occur at Brule, nor within the coalfield in general.

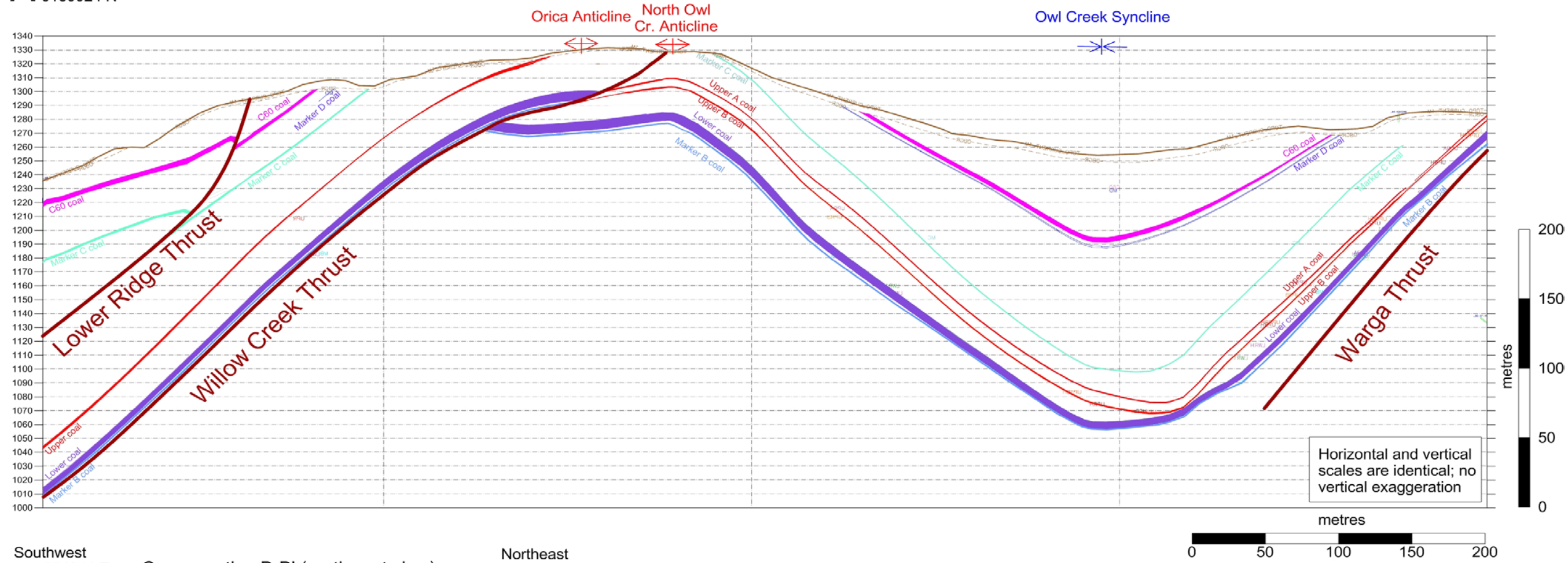
3.1.1 *Regional sedimentology and stratigraphy*

During much of the Early Cretaceous period, the Western Interior of North America was occupied by a shallow seaway, variably-designated by different authors as the Western Interior Sea, the Boreal Sea, or by analogies of formation names, such as the Clearwater Sea, Hulcross Sea or Moosebar Sea. Seaway depths, magnitude of accommodation space for sediments, and overall shoreline trends, were largely controlled by vertical movements within a block-faulted crystalline basement terrane of Precambrian age, the Peace River Arch (Stelck, 1975).

Southwest
A 571926 E
 6139924 N

Cross-section A-A' (northwest view)

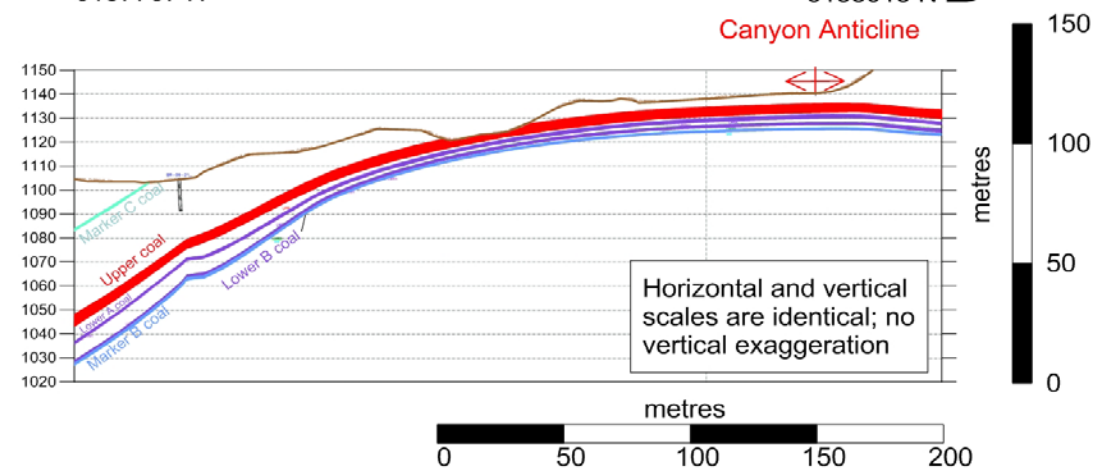
Northeast
 572693 E
 6140538 N **A'**



Southwest
B 574214 E
 6137767 N

Cross-section B-B' (northwest view)

Northeast
 574453 E
 6138013 N **B'**



Dwn: GCH	<h1>CROSS-SECTIONS</h1>	
Scale: as shown		
Ref.: Brule-CAR_2014- cross-sections-AA and BB_140714c		
JULY 2014	BRULE COAL ASSESSMENT REPORT	FIG. 3-1

During the latest Jurassic and earliest Cretaceous periods, sediments of the Minnes Group and the basal part of the Bullhead Group were derived from actively-eroding upland areas within the North American craton, particularly from the Peace River Arch. The receiving basin during this early time period lay to the west of the craton, within an actively-subsiding continental shelf which prograded westwards into the ancestral Pacific Ocean. Subsequently, slightly later within the Early Cretaceous period, sediments of the upper Bullhead Group were derived from actively-rising thrust-faulted tectonic forelands situated to the west and southwest of the seaway, synchronous with the docking of allochthonous tectonic terranes against the western margin of the North American craton.

3.1.2 *Regional tectonics*

The Brazion coalfield's structural geology is moderately complex, on a similar order of complexity as seen to the southeast at deeper structural levels near Sukunka Colliery (Wallis and Jordan, 1974). The overall structural style of the coal-measures is thin-skinned (Barss and Montandon, 1981), dominated by arcuate, northeast-verging, passively-folded, imbricate thrust-faults, with associated tight concentric folds. Thrusts characteristically overlap in *en echelon* manner, with displacement gradually transferring from one fault to another via trains of folds.

Thrusts range in scale from outcrop-scale mesoscopic features with stratigraphic displacements of a few decimetres to a few metres, to throughgoing faults and fault zones (such as the Willow Creek and Brazion-1 thrusts), whose stratigraphic offsets may locally be as great as several hundred metres.

Age relationships amongst the thrusts are inferred to be as are generally-observed within the Cordilleran fold-thrust belts of northwestern North America, with the oldest thrusts occupying stratigraphically-higher positions (generally to the southwest) of the stratigraphically-lower and younger thrusts.

3.2 **Structural geology at property scale**

In detail, the Brule lease occupies a series of tightly-compressed structural slices (informally referred to as structural 'plates', following general regional practice) bounded by, and stacked-up by northeastward-verging thrust-faults. Folds are concentric and cylindrical to conical in form. Near-isoclinal *en-echelon* folds are observed within the adjoining Dillon lease area, but *en echelon* folds have not yet been observed at Brule, but this deficit may be more a function of limited outcrop exposure than of local tectonics.

In some cases, structural shortening and consequent layer-parallel slip has been accommodated by intense shearing within coal beds. The most noteworthy horizons of internal shearing, as indicated by small-scale overthrusts and by 'breakouts' of caliper-logged boreholes, are the Marker D coal bed, close below the C60 coal bed, and the Marker B coal bed, close beneath the Lower Seam (refer to **Table 4-1** for the stratigraphic content of these coals). Shearing within Markers D and B may represent local- to property-scale horizons of tectonic detachment,

along which thrust faults have flattened (as suggested in Cross-Section A-A', within **Figure 3-1**, where the Willow Creek Thrust is depicted a bedding-parallel décollement horizon closely-associated with the Marker B coal bed).

Despite the pervasive faulting of the coal-measures, normal stratigraphic facing of the rocks is generally preserved. Overturned beds are rare, and may reflect slumping of near-surface weathered rocks down steep slopes, rather than intense tectonic conditions. At Dillon, immediately to the east of Brule, multiple structural 'horses' of overthrust coal have been locally encountered by boreholes; similar conditions may continue into the Brule portion of the Owl Creek Syncline, and also perhaps the Brule portion of the Dillon Syncline.

Thrust faults, as inferred from landforms and from limited ground-surface observations, in general display sinuous map traces. Thrusts are furthermore suspected to curve vertically, in consequence of structural refraction between weak and strong beds, and perhaps as well due to passive folding above later-formed structural ramps along deeper, younger thrusts.

Map 2-3 depicts the interpreted map-scale pattern of thrusts and folds within and adjacent to the Brule property. Some of the structures' names were first assigned by Teck Corporation's workers, others have been inherited from more detailed work by Walter Energy staff and consultants studying the Brule and Dillon mining areas, whilst yet others are newly-coined for the purposes of the regional geological study which underpins the present report.

Positional confidence of faults, folds and associated geological-unit contacts ranges from 'speculative' to 'approximate' within the Brule coal property, with the highest confidence being associated with the closely-drilled northern part of the lease.

4 Stratigraphic context of coals and rock-units at Brule

A generalised stratigraphic profile of the Jurassic-Cretaceous section at Brule is presented below as **Table 4-1**. Thicknesses of rock-units are estimates from regional stratigraphic trends, with the exception of the Gaylard Member, whose thickness is established by drilling.

Table 4-1: Table of formations, members and subdivisions

Group/Formation/ Member		Map- Unit	Lithology and thickness	Coal bed details	
Bullhead Group	Gething Fm.	Chamberlain Mb.	3d	sandstone and siltstone; minor conglomerate and coal	<i>completely removed by erosion at Brule</i>
		Bullmoose Mb.	3c	marine shale and siltstone; minor sandstone and tuff.	
		Bluesky Mb.	3b	glaucconitic pebbly sandstone, pebbly mudstone and conglomerate.	
	Gaylard Mb.	3a	3a5	Division 5 (beds above Seam 60): sandstone and siltstone, minor coal; 95 to 105 m thick.	minor coals: Markers G, F, and E
			3a4	Division 4 (beds above Upper Seam): siltstone and sandstone; coal; 45 to 75 m thick.	major coal: Seam 60 (at top); minor coals: Markers D, C.
			3a3	Division 3: siltstone and shale; coal; 8 to 35 m thick.	major coals: Upper Seam (at top) and Lower Seam (at base); minor coal (Marker M) locally present between Upper and Lower coals.
			3a2	Division 2 (beds below Lower Seam): siltstone and sandstone; minor conglomerate and coal; 105 m thick?	minor coals: Markers B (near top), AA and A (near base).
	3a1	Division 1: sandstone, conglomerate and siltstone; minor coal near base; 35 to 70 m thick.	basal section potentially contains coal; sparsely-drilled within property.		
Cadomin Fm.	2	gritty sandstone and conglomerate; minor siltstone; 25 to 35 m thick?			
Minnes Group	Bickford Fm. (formerly known as the Brenot Fm.)	1	1d	sandstone, siltstone, mudstone and coal; 285 to 300 m thick.	not yet drilled within property.
	Monach Fm.		1c	sandstone and quartzite; minor siltstone and conglomerate; 50 m thick.	
	Beattie Peaks Fm.		1b	sandstone, siltstone and shale; ironstone and coal; 300 m thick.	not yet drilled within property.
	Monteith Fm.		1a	sandstone, shale and conglomerate; quartzite; 600 m thick?	

The following discussion examines the major rock-units and associated coal beds within the Brule lease. For convenience, discussion follows the headings of ‘Younger rocks’ (**Section 4.1**), ‘Gething Formation coal-measures’ (**Section 4.2**) and ‘Older rocks’ (**Section 4.3**).

4.1 Younger rocks

Rocks younger than the Gething Formation appear to have been completely stripped away by erosion, within the Brule lease area. These younger rocks, comprising the basal part of the Fort St. John Group are however preserved close-by, beneath a major throughgoing thrust (the Bullmoose Thrust) within the headwaters of Blind Creek and Bluff Creek, 2 to 4 kilometres to the northeast of the Brule property.

Several kilometres of Fort St. John Group rocks are inferred to have originally overlain the Gething coal-measures throughout the Brule property, and to have therefore caused the deep burial of the Gething coals which resulted in their having reached a low-volatile bituminous rank at Brule.

4.2 Gething Formation coal-measures (map-unit 3)

The Gething Formation, of early Aptian to early Albian age within the Early Cretaceous (Gibson, 1992), comprises thin to thick interbeds of siltstone, sandstone, mudstone and coal, with lesser amounts of gritstone, pebble-conglomerate, ironstone and tuff. The Gething Formation includes beds formerly designated as the Dresser Formation by Hughes (1964); its current stratigraphic extent was established by Stott (1968).

The Gething Formation originated as a complex of non-marine to shallow-marine sedimentary deposits, laid down by meandering and braided streams and rivers within a widely-extensive belt of coastal deltas, of which two (the Gaylard and Chamberlain paleodeltas) extended into the southern part of the Brule/Burnt River area.

Coals of the Gething Formation at Brule, and their enclosing sedimentary rocks, were deposited between 111 and 123 million years ago (Gibson, *ibid.*), on the basis of regional plant-fossil and foraminiferal zonations.

Following upon suggestions made by coal-company geologists (Wallis and Jordan, 1974) and subsequent correlation by the British Columbia Geological Survey (Duff and Gilchrist, 1981), Gibson formally divided the Gething Formation into three members: the upper, non-marine to transitional Chamberlain Member, the middle marine Bullmoose Member, and the basal, non-marine to transitional Gaylard Member. A fourth member of the Gething Formation, the Bluesky Member, is also inferred to be present between the base of the Bullmoose Member and the top of the Gaylard Member.

The Chamberlain coals and their enclosing rocks, together with the underlying marine rocks of the Bullmoose and Bluesky members, have been completely removed by erosion at Brule, although they may be present nearby to the northeast.

4.2.1 Gaylard Member (map-unit 3a)

The Gaylard Member of the Gething Formation is inferred to be represented at Brule by approximately 330 metres of siltstone, sandstone, mudstone and minor ironstone, tuff, gritstone and conglomerate, accompanied by three thick coal beds (from top down, Seam C60, the Upper Seam, and the Lower Seam), locally several metres thick, and at least nine thinner coal beds (collectively termed the 'Marker' coals) which seldom exceed a metre. At Brule and Dillon, the Gaylard coal-measures may be usefully subdivided into five informal 'divisions', based mainly upon gross lithology and the presence of major coal beds. Stratigraphic details of these informal divisions are presented in **Tables 4-1** and **4-2**.

The Gaylard coal-measures are punctuated by bands of shallow-marine rocks. The thickest and most readily-recognised of these 'marine bands' at Brule comprises 2 to 9 metres of interbedded mudstone and siltstone with minor very thin bands of sandstone and tuff, designated as 'Marker CD,' within Division 4 of the Gaylard Member. Marker CD is of practical concern as being the most-extensive zone of potentially acid-generating (PAG) rocks recognised thus far at Brule. Marker CD can be readily recognised by its elevated natural gamma-radiation response on geophysical logs.

4.2.1.1 Gaylard lithologies

Siltstone is by far the predominant lithology within the Gaylard Member, characterised by variable levels of bioturbation from patchy to intense, occasionally with bands of nodular or massive (rarely mosaic-textured) ironstone, and ranging in texture from muddy to very sandy. Where they closely underlie coal beds, Gaylard Member siltstones are often rooty and somewhat carbonaceous, although immediate floors of coals generally grade upward to variably-carbonaceous mudstones.

Sandstones within the Gaylard Member range in texture from fine- to coarse-grained, rarely very coarse-grained to gritty or pebbly, and they are frequently cross-bedded. Channel-scours are characteristically found at the base of thicker sandstone units. The immediate basal portions of some channel-filling sandstones are sparsely- to moderately-bioturbated, suggesting the presence of basal salt-water wedges within their associated stream channels. Closely-spaced drilling demonstrates that the Gaylard sandstones vary rapidly in thickness between boreholes. Some of this variation may be due to channel-filling morphologies, whilst in other cases the tops of the sandstones may be bar-forms, draped in a variable thickness of fine-grained sedimentary rocks.

Mudstones within the Gaylard Member are generally silty, at times very much so, and variably-carbonaceous. Nodular ironstone is occasionally present within mudstone units, but the nodules appear to be randomly-disposed rather than concentrated into specific horizons. Glauconite is rarely, but notably, present within the finer mudstones, suggesting that such mudstones may host higher-order maximum flooding surfaces.

Coaly mudstones are characteristically present as thin (centimetre to decimetre-scale) partings within coal beds, or as lenses immediately overlying the tops of coal beds. Coaly mudstones are occasionally with elevated fusain contents in the immediately-underlying coals.

Table 4-2: Stratigraphic setting of Gaylard Member coals at Brule

Gaylard divisions	Coal beds	Lithology	Typical thickness of coal bed / Typical thickness of intervening strata
Division 5		fine- to coarse-grained sandstone and siltstone; minor gritstone and coal	65 metres?
	Marker G	coal – dull and bright, clean to dirty; numerous thin partings of carbonaceous to coaly mudstone.	0.5 to 1.5 metres
		variably-carbonaceous mudstone, siltstone and sandstone.	4 to 10 metres
	Marker F	coal – bright banded, clean; high gamma-ray response in immediate roof.	0.5 to 0.8 metres
		fine- to coarse-grained sandstone, variably-carbonaceous siltstone and mudstone.	20 to 25 metres
	Marker E	coal – dull and bright to bright banded; occasional bands of carbonaceous mudstone and mudstone/sandstone laminite; often a doublet of coals.	0.5 to 1.5 metres
Division 4		fine- to medium-grained sandstone, mudstone and carbonaceous mudstone; occasional ironstone bands near base.	10 to 15 metres
	Seam C60	coal – dull to bright banded, with numerous thin bands of carbonaceous to coaly mudstone and siltstone.	2.7 to 7.0 metres; splits to northeast
		carbonaceous mudstone; minor siltstone; locally thickens due to presence of sandstone.	0.1 to 20 metres; thickens northward
	Marker D	coal – dull to dull and bright, generally sheared; locally intensely-sheared and therefore inferred to host a bedding-parallel tectonic detachment zone.	0.5 to 2.0 metres; thickens to north
		siltstone; fine- to medium-grained sandstone, mudstone, minor carbonaceous mudstone and tuff.; includes Marker CD (possible marine band)	15 to 25 metres
	Marker C	coal – dull lustrous to bright, locally sheared.	0.5 to 1.0 metres; thins northward
		fine- to medium-grained sandstone; mudstone, minor siltstone; occasional bioturbated zones; with high gamma-log response in floor – <i>marine band?</i>	10 to 11 metres
Division 3	(unnamed)	coal – bright, with numerous thin bands of carbonaceous mudstone and siltstone.	0.4 metres
		fine- to medium-grained sandstone, mudstone; minor carbonaceous mudstone and siltstone, mainly as thin interbeds (point-bar structure?).	10 to 21 metres
	Upper Seam	coal – dull and bright to bright banded, hard, locally containing 0.3 to 1.2 m parting of variably-carbonaceous mudstone. Where split, the upper ply is Upper A , and the lower ply is Upper B .	0.5 to 4.0 metres ; thins and splits northward
		fine-grained sandstone and siltstone; carbonaceous mudstone.	nil to 25 metres; thickens northward
	Marker M	coal – dull and bright to bright banded.	0.5 metres; Z-split geometry: rising southward from Lower to Upper Seam
Division 2		fine-grained sandstone and siltstone; carbonaceous mudstone.	nil to 3 metres; thickens southward
	Lower Seam	coal – bright banded, moderately hard to hard, with well-developed cleat; locally containing parting of siltstone or variably-carbonaceous mudstone. Where split, the upper ply is Lower A , and the lower ply is Lower B .	2.0 to 11.0 metres; thins and splits southward
		soft, variably-carbonaceous mudstone; minor siltstone.	0.2 to 1.8 metres
	Marker B	coal and dirty coal -- dull and bright, soft to very soft; typically contains many very thin partings of carbonaceous mudstone; moderately to intensely sheared; therefore inferred to host a bedding-parallel tectonic detachment zone.	0.45 to 1.0 metres
Division 1		fine-grained sandstone, mudstone, minor siltstone.	10 to 15 metres
	Marker AA	coal – dull and bright to bright banded, typically dirty, hard.	0.5 to 1.5 metres
		mudstone, siltstone and channel-filling sandstone with lenses of gritstone and pebble-conglomerate; minor carbonaceous to coaly mudstone.	45 to 75 metres
	Marker A	coal – dull and bright to bright banded, hard, typically a doublet of coals, with a central parting of carbonaceous to coaly mudstone.	0.9 to 1.5 metres
Division 1		very fine- to medium-grained sandstone, mudstone and siltstone; minor carbonaceous mudstone; coals may be present near base; sandstones are locally cross-bedded, with channel-filling morphology.	35 to ?70 metres

Table 4-3: Gaylard Member coal bed intersections within current boreholes

Hole	Collar	Drift	comments	G-roof	G-floor	F-roof	F-floor	E-roof	E-floor	C60-roof	C60-floor	D-roof	D-floor	C-roof	C-floor	UPR-roof	UPR-floor	LWR-roof	LWR-floor	B-roof	B-floor	A-roof	A-floor	TD
BR2002-12	1280.33	2.43	(Marker D is split)					12.2	14.2	26.6	29.9	31.9	33.5											91.2
BR2002-13	1286.33	2.8	(Lower is split)															14.1	20.08	22.2	22.9			29.3
BR2002-14	1283.96	2.7	(Upper and Lower are split)													53.2	57.05	64.2	68.9	69.95	70.4			73.51
BR2003-3	1147.49	5	(coal is from below the A seam)																					228.59
BR2003-4	1164.64	3	(coal is from below the A seam)																					219.66
BR2003-5	1120.81	2.75	(coal is from below the A seam)																					76.42
BR2004-18	1336.95	3.05	(Lower is split)															33.3	41.65	43.45	43.9			54.53
BR2004-19	1337.15	1.52	(Lower is split)															31.4	40	41.8	42.25			55.2
BR2004-20	1314.88	1.52	(Lower is split)													33.5	33.8	61.1	66.3	67.6	68.05			73.01
BR2004-21	1330.81	3	(Upper is split)													72.25	75							85.67
BR2004-22	1335.21	6.4								64.5	67.6	69.1	70.2	121.5	123									125.35
BR2004-23	1330.81	6.4				50.95	51.55	73.5	75.5	90.9	95.7	98	99.8	140.5	142									165.55
BR2004-24	1275.19	6.4				39	39.99	62.2	63.6	72.6	76.75	82.8	84.2											91.6
BR2004-25	1267.3	6.4						17.2	18.5	30	33	34.1	34.7	75.28	75.8									85.5
BR2004-26	1242.42	7.62	(thin non-correlatable coals)																					80.14
BR2004-27	1234.11	16.74	(C60 is split)							26.4	32.5	32.5	33.1											53.89
BR2004-28	1223.56	7.62	(no coal)																					81.13
BR2004-29	1238.83	7.62	(possible C60)							44.6	53													64
BR2004-33	1307.59	6.4		11.2	12	76.95	77.55	87.2	88.3	100.2	103.95	100.6	108.2	164.3	165									203.24
BR2005-01C	1345.2	14	(Upper is split)			18.6	18.8	29.2	29.5	36.35	41.5	47.2	48.8	106.2	107	120.3	125							132.8
BR-09-20	1118.94	3	(Lower is split)													11.4	15.6	17.15	21.5	22.6	23.1			34.18
BR-09-21	1104.77	3	(Lower is split)													25.6	29.5	30.9	35.5	37	38.2			49.36
BR-09-22	1133.69	6	(Lower is split)													23.7	27.8	29	33.2	34.4	34.7			43.44
BR-09-24	1131.17	3	(Lower is split)											11.6	12.9	41.2	44.8	45.9	50.2	51.2	51.7			66.44
BR-09-25	1149.54	6	(Lower is split)											6.5	8.8	36.65	40.8	42.45	46.55	47.8	48.2			55.56
BR-09-26	1141.76	3	(Lower is split)											11.6	12.9	40.6	44.5	45.85	50.38	51.4	51.75			60.4
BR-09-30	1155.28	6	(C60 is split)							27.2	35.28	41.4	42.3											58.92
BR-09-31	1095.77	9	(Upper is split)											9.5	10.3	48.1	52.7	<i>fault @52.7m</i>						66.34
BR-09-32	1102.91	9	(Lower is split)											58.7	59.5	100.4	106.6	107.9	114.9	116.8	117.7			122.08
BR-09-33	1088.12	3												10.8	11.5	57.8	61.8	63.2	63.9	65.8	66.15			70.98
BR-10-01	1239.83		(Upper is split)							33.5	34	35.8	36.5	86.7	88.1	111.1	119.4	133.2	137.8	141	141.3			141.83
BR-10-02	1239.97	33.9	(Upper is split)											61.5	62.2	80.4	88	97.9	102.4	105.7	106.3			107.62
BR-10-03	1248.9		(Upper is split)							30.4	32.6	33.4	34.2	107.8	106	125.8	135	155.4	160.4	162.5	163			163.48
BR-10-04	1247.16	24.7	(Upper is split)											78.4	79.2	126.4	135	146.7	150.8	152.5	153.1			170.17
BR-10-05	1246.84	17.7	(Upper is split)											43.5	44.3	65.1	73.4	81.1	85.7	87.3	87.8			92.5
BR-10-06	1254.09	9.14	(Marker C is split, possible faulting?)							60	63.3	66.5	67.6	104.1	135									207.1

Table 4-3: Gaylard Member coal bed intersections within current boreholes (concluded)

Hole	Collar	Drift	comments	G-roof	G-floor	F-roof	F-floor	E-roof	E-floor	C60-roof	C60-floor	D-roof	D-floor	C-roof	C-floor	UPR-roof	UPR-floor	LWR-roof	LWR-floor	B-roof	B-floor	A-roof	A-floor	TD
BR-10-07	1259.89	3.4	(Upper is split)					38.2	39.6	51	54.1	58.4	59	103.8	104	152.8	159	170.3	175.1	176.8	177.3			183.14
BR-10-08	1283.9	2	(Upper is split)					25.4	28.9	38.6	41.2	44.1	44.8	93.7	94.5	115.2	119.2	136.8	142	143.8	144.3			149.99
BR-10-09	1271.84	11.1	(Upper is split)			42.45	43.6	63.7	64.9	73.9	76.8	79.1	79.8	142	143	190.6	194.6	205.7	210.5	211.6	212.2			214.6
BR-10-10	1314.35	2.3	(Upper is split)			31.3	33.2	43.6	45.2	54.4	56.7	58.1	58.7	95.4	96.1	119.3	122	126.6	131.5	132.4	132.8			155.58
BR-10-11	1313.86	1.3	(Upper is split)			22.8	23.8	45.1	46.3	57.8	60.4	62.5	63.5	108.4	109	131.8	135.2	151	156.1	157.6	158.3	166.9	167.8	174.32
BR-10-13	1310.03	6	(Upper is split)	8.5	8.8	57.6	57.9	75.5	76.6	86.2	89	90.6	91.8	143.1	144	164.8	167.5	190.3	195.8	198.2	198.6			204.07
BR-10-16	1331.31	2.4	(Upper is split)											39.5	40.3	63.8	66.2	81.1	86.6	87.9	88.4			129.54
BR-10-35	1264.02	14.5	(C60 is split)							37.55	40.2	49	49.9	76.3	77.2									95.02
BR-10-35A	1264.04	8.4	(C60 is split)							22.95	25.2	31.7	32.15	49	49.6	78.6	79.2	98.3	103	104.2	105	161	162.6	167.4
BR-10-36	1309.36	1.9														36.8	37.7	65.7	73	75.3	76			83.82
BR-10-37	1289.17	8.3										12.7	13.45	35.35	36.2	72.4	73.1	94.8	100.5	102.2	102.8			110.48
BR-10-38	1280.11	1.7	(Upper and Lower are split, Marker A or repeat Lower)							22.2	23	24.8	26.5	61.4	62.2	85.9	89.7	96.7	100.4	100.9	101.8	172.3	174.75	202.69
BR-10-39	1304.11	2	(Upper is split)											21.2	22	45.2	49.6	68.3	73.5	75	75.8			76.89
BR-10-40	1303.3	2.1								8.8	10.4			29.4	30	62.8	63.4	84.8	88.7	89.7	90.6			101.17
BR-10-41	1319.72	2.8														26.4	26.9	49.8	52.4	56.1	56.7			67.38
BR-10-42	1304.1	6.1	(Upper is split)			70.15	70.6	90.1	91.5	102.2	104.9	106	107.8	189.6	190	211.2	214	225	229.2					232.99
BR-10-44	1340.95	2.4	(Upper is split)													18.4	21.8	39.1	51.8	53.3	53.8	113.8	116.2	119.6
BR-10-47	1340.73	2.1	(Upper is split)							34.3	37.1	40.6	41.2	84.6	85.6	114.4	117.3	139.1	144.6	145.7	146.4			156.63
BR-10-48	1354.54	2.3	(Upper is split)											23.6	24.9	53.2	55.5	72.7	85.1	86.7	87.1			93.63
BR-10-49	1341.45	2.2	(Upper is split)													37.4	42.6	70.2	76.7	77.9	78.7			115.86
BR-10-51	1332.76	2.4	(Upper is split)											14.6	15.5	40.7	43.2	66.1	72.3	73.2	73.8			86.21
BR-10-53	1330.12	2.3	(Upper is split)							16.4	18.5	19	19.8	59.1	92.3	89.7	92.3	110.7	116.9	118.3	118.9			136.14
BR-10-56	1320.87	4.2	(Upper is split)							35.8	38.5	39.4	40.4	79.7	80.7	108.4	110.9	131.2	137	137.8	138.5			152.63
BM13-01A	1145.83		(coal too thin to correlate)																					102.55
BM13-01B	1145.79		(twin hole-no geophysics)																					23.2
BM13-02A	1244.6	4.9				31.34	33.6	38.3	39.5	48.32	52.75	55.9	56.75	99	99.6	111.47	114	117.45	122.95	123.5	124.3	131.8	132.7	182.1
BM13-02B	1244.64		(twin hole-no geophysics)																					51.2
BM13-06A	1050.18	5.2	(possible fold showing doubling coal)															11.15	21.78	24.5	27.5			53.7
BM13-06B	1049.83		(twin hole-no geophysics)																					23.5
BM13-07A	1033.22	5.2	(no coal)																					41.97
BM13-07B	1033.96		(twin hole-no geophysics)																					23.8
BM13-08A	1048.42	6.8	(no coal)																					28.8
BM13-08B	1048.41		(twin hole-no geophysics)																					17.1

Notes: All depths are given in meters, as measured downhole depths interpreted from geophysical logs. Depths given (thus) are for roof and floor of coaly rock zones regarded as being the lateral equivalents of the coals. C60 refers to seam 60, UPR refers to Upper seam, LWR refers to Lower seam. It is noted whether a coal bed was split within the coal zone, in these cases the recoverable coal would be less than the total thickness described above.



Plate 4-1: Marker A coal zone, warped into an asymmetric anticline overlying a bedding-parallel thrust fault. View is north-westward from an access road to Brule Mine's water-handling site SP-2. To the left, the overthrust rocks regain regional southwestward dip. Marker A is characteristically a doublet of coals, here mostly represented by rooted, variably-carbonaceous to coaly mudstones and impure 'dirty' coals. Colliery geologist Francis Eshun P.Geo. is the scale. [image RC1013/13]

Such mudstone beds also characteristically display elevated gamma-ray geophysical log responses, allowing the lateral tracing of coalbed splits into laterally-adjacent areas of minimal parting thickness.

Tuff bands (colloquially termed as ‘ash bands’) are occasionally present within the well-exposed sections of the Gaylard Member within the working-faces of Brule Mine, and are also assumed to be present within the Brule lease area. These bands of pyroclastic volcanic rock appear as distinctively white to very light grey, clay-rich, soft layers, ranging from a few millimetres to a decimetre thick, within their otherwise-unremarkable bounding strata.

4.2.1.2 Gaylard coals

As observed in borehole intersections, coals and associated coaly mudstones comprise 5% to 10% of the Gaylard section at Brule. Where observed in active working-faces at Brule Mine, the Gaylard Member coals range in texture from blocky and well-cleated to intensely-sheared and pulverised, locally forming finely-imbricate masses of ‘cornflakes’.

Three major coals are recognised at Brule: coal C60 (at the top of Division 4), the Upper Seam (at the top of Division 3) and the Lower Seam (at the base of Division 3). **Table 4-3** (above) presents correlations of Gaylard coals within current (year-2002 onward) boreholes at Brule. Depths given for roof and floor contacts are measured downhole depths as determined from borehole logs; these depths are therefore not true vertical depths, and should not be used for calculation of coal elevations relative to geodetic datum.

The Gaylard coals at Brule range in visual brightness from ‘dull’ and ‘dull banded’ to ‘dull and bright’, rarely to ‘bright banded’ within the Diessel/CSIRO visual coal classification generally used in Canadian coalfields. Some of the dull coal has an anomalous sub-metallic lustre, and it verges on ‘grey durain’ as is more characteristic of Carboniferous coals rather than Cretaceous coals. Banding is generally coarse, although it is often obscured by shearing. Within the Stopes macroscopic classification system, the Gaylard coals range from ‘durains’ to ‘clarains’. The Gaylard coals occasionally grade into black coaly mudstone at their upper contacts. Where shearing is pervasive within such contact horizons, it is difficult to visually distinguish sheared coal from sheared coaly rock, although coals are more likely to have a black streak and coaly rock a dark brown to brownish-black streak when tested upon a porcelain streak plate.

Coal beds locally split and pinch-out laterally; the pattern of splitting is rendered more difficult to decipher in those areas where faults travel along bedding within or adjacent to coal zones. Individual leaves of split coals sometimes retain a distinctive gamma-log response, increasing confidence in their lateral correlation away from areas of conjoint coal.

Drilling is sufficiently closely-spaced to confirm the existence of splits within the Gaylard coals at the northern end of the Brule lease (and to approximately map their morphology and internal topology), but insufficiently-so within the central and southern parts of the property, which are as yet relatively underexplored.

4.2.1.3 Gaylard-Cadomin contact relationship

The basal contact of the Gaylard Member with the underlying Cadomin Formation is abrupt to possibly-erosional at the local scale (Cant, 1996), and interfingering at regional scale (Stott,

1968; Gibson, 1992a), being drawn at the top of a coarse-grained, locally-pebbly, often-gritty bed of sandstone which may grade laterally into typical conglomerates of the Cadomin Formation. As noted below, the Gaylard-Cadomin contact has only been interested by one borehole at Brule, although three boreholes start within the Cadomin.

4.3 Older rocks

Along anticlinal crests, and also within the more deeply-eroded area of the Mink Creek and Brazion Creek valleys (at the northwestern and southwestern corners of the Brule property), rocks older than the Gething Formation are locally exposed. These rocks remain virtually-unexplored at the local scale, other than by the few natural-gas wells which have penetrated these formations at depth.

In order from top down, these older formations comprise the Cadomin Formation (the basal unit within the Bullhead Group), and the Bickford, Monach, Beattie Peaks and Monteith Formations (within the Minnes Group), ranging in age from Late Jurassic to Early Cretaceous.

At regional and property scale (as depicted on **Map 2-3**), all four of the constituent formations within the Minnes Group are mapped together as a single unit (map-unit 1); within **Table 4-1**, however, these formations are treated individually (as map-units 1d, 1c, 1b and 1a). In the following discussion, only the Cadomin and Bickford formations are examined in detail, as they have the closest stratigraphic and spatial association to the Gaylard coal-measures.

4.3.1 Cadomin Formation (map-unit 2)

The Cadomin Formation immediately underlies the Gething Formation, forming the basal part of the Bullhead Group (Stott, 1968). As such, the Cadomin Formation includes strata previously assigned to the Dresser Formation of the Crassier Group by Hughes (1964).

The Cadomin Formation comprises one or more thick beds of coarse-grained, gritty to pebbly sandstone and pebble-conglomerate (McLean, 1981) with occasional lenses of siltstone and pebbly gritstone, and rare thin lenses of dirty coal. The Cadomin Formation thus strongly resembles the basal sandstone unit (Division 1) of the Gaylard Member, and its distinction from the overlying Gaylard sandstones rests mainly upon the Cadomin Formation's greater lateral continuity. The top of Cadomin Formation has only definitely been reached by one coal-exploration borehole (Teck's BR-68, drilled in 1981) at Brule, where only the top 14 metres of the formation were drilled. Three other boreholes started within the Cadomin Formation, at some distance below its top.

At Brule, the Cadomin Formation is estimated to be 25 to 35 metres thick. Its basal contact with the underlying Bickford Formation – where not concealed by the characteristic talus formed along the Cadomin's outcrop – is erosional, with considerable local scour into the older sediments. Regionally, the base of the Cadomin marks a northeastward-deepening angular contact, cutting down into successively-older rocks of the Minnes Group (Stott, 1973).

4.3.2 Bickford Formation (map-unit 1d)

The Bickford Formation is the stratigraphically-highest and therefore youngest of the four formations which comprise the Minnes Group (Stott, 1981; 1998). The Bickford was previously designated by Hughes (1964) as the Brenot Formation, being the basal part of his now-superseded Crassier Group. The stratigraphic term 'Brenot' remained in local use by coal-industry workers until the earliest 1980s (Hughes, 1980; Stott, 1981).

The Bickford Formation consists of non-marine sandstone, siltstone, mudstone and coal. Within the Burnt River property, channel-filling conglomerates, up to 11 metres thick, occur near the top of the formation (Stott, 1998). The uppermost few metres of the formation, immediately beneath the base of the Cadomin Formation, is typically bleached and altered to a distinctively-soft, very light grey to white layer of clay-rich sediment.

Coals of potentially-mineable thickness are known to exist within the Bickford Formation elsewhere within the Brazion coalfield, the formation has yet to be drilled at Brule (other than in the aforementioned natural-gas wells), and its local coal potential is therefore unknown.

The basal contact of the Bickford Formation with the underlying Monach Formation is generally abrupt at local scale, but interfingering on a regional scale, being drawn at the top of the distinctive quartzitic sandstone beds of the Monach.

4.3.3 Monach Formation (map-unit 1c)

The Monach Formation comprises cliff-forming sandstone and quartzite, with lesser amounts of interbedded siltstone and conglomerate, and occasional thin coals, part of the Minnes Group (Stott, 1998). The coal content of the Monach Formation appears to be minimal, on a regional basis, and the formation's principal economic significance is as a marker bed in drilling and geological mapping.

4.3.4 Beattie Peaks Formation (map-unit 1b)

The Beattie Peaks Formation comprises sandstone, siltstone and shale, locally accompanied by minor ironstone and coal, originating as a regionally-extensive shallow-marine to deep-marine turbidite system (Stott, 1998). Coals of potentially-mineable thickness have been found within the Beattie Peaks Formation elsewhere within the Brazion coalfield, but these coals have not yet been traced into the Brule area.

4.3.5 Monteith Formation (map-unit 1a)

The Monteith Formation forms the basal unit of the Minnes Group (Stott, 1968). The Monteith comprises interbedded sandstone, shale and conglomerate, with lesser amounts of quartzite and occasional thin coals. No mineable coal is known from the Monteith Formation, within the Brazion coalfield, and owing to its great depth at Brule it is unlikely to be of local exploratory interest.

5 Reclamation

Technical records acquired by WCC from Teck, as part of the property acquisition, do not provide sufficient detail to assess past reclamation practice, although it may be presumed, from the senior author's contemporary experience in the 1970s and 1980s, that some form of roadway decommissioning (including installation of water bars?) was followed by seeding of a then-customary 'reclamation mix'.

A few attempts to relocate old boreholes in the field have been complicated by dense growth of grasses, shrubs and trees along the suspected alignment of former drillsite-access trails.

All of the year-2002 through year-2010 current boreholes, drilled on behalf of WCC and its successor companies, lie within the buffered facility footprint as shown within Brule Mine's five-year mine plan. Reclamation details of current boreholes have not yet been found in the technical files acquired by WCCP from WCC. Much of Brule's footprint has recently been cleared of vegetation and topsoil, in preparation for mining.

The four most recent-drilled current boreholes, hydrogeological test holes BM13-01A, BM13-01B, BM 13-02A and BM13-02B, were drilled in March of 2013 at two sites (as paired boreholes per site) along the cleared roadsides of the Falling Creek Connector Road, north of the buffered footprint (Bianchin, 2013). Minimal reclamation has been done at these sites, as access must be maintained to the boreholes, in support of water-level monitoring.

6 Statement of estimated costs

Estimated costs by activity and year are presented below as **Table 6-1**. To arrive at these costs, a search has been made of technical and financial records acquired from WCC and successor companies, as part of Walter Energy's ongoing examination of its Canadian coal properties. Cost data for certain years (after WCC's acquisition of the Brule lands) has not yet been found, despite a diligent search of records. Consequently, provincial average all-in per-metre costs for coal-exploration activities have been applied against the known yearly total metreage of drilling.

Road-building costs have only applied to boreholes drilled prior to 2009, inasmuch as the year-2009 and year-2010 boreholes are believed to have been drilled on existing roads or trails, and the year-2013 boreholes are known to have been drilled on the cleared roadside of the Falling Creek Connector Road.

Geophysical, geotechnical, laboratory and personnel costs were also broken-down on a per-metre basis, in order to arrive at estimated yearly costs. Laboratory work was only done on one borehole (BR2005-01C) in year-2005; the cost quoted for such work is likely to be lower than the actual total spent, as the borehole was intended to be used as the basis for ARD testing of a fully-cored section of rocks.

To reiterate, total metreage of drilling is known; unit costs and resultant total costs are estimates only, owing to lack of detailed records.

During year-2013, a regional photogeological compilation study was undertaken by the senior author (Gwyneth Cathyl-Huhn). No detailed cost and time records were kept of this activity, which covered the southern part of the Brazion coalfield (including the Brule lease) and the northern part of the Sukunka-Quintette coalfield. A reasonable estimate of labour costs may, however, be made: assuming five days at nine hours/day, and direct labour cost of \$55.58/hour, the 45 working hours would amount to \$2501.10, which may be rounded to \$2500 in keeping with the estimated nature of this cost.

Table 6-1: Estimated exploratory cost breakdown by activity, for Tenure 417517

Year	Boreholes	Number of holes	Metreages (m)		Estimated drilling costs (\$)		Estimated other costs (\$)					Totals
			Rotary	Core	Rotary	Core	Geophysical logging	Proximate analyses and washability tests	Road work	Personnel	Photogeological mapping	
2001												
2002	BR2002 and BS2002 series	3	194.01		39098.84		3406.82		4520.43	3975.26		56858.51
2003	BR2003 and BS2003 series	3	524.67		105736.75		9213.21		12224.81	10750.49		153765.04
2004	BR2004 and BRBS-2004 series	13	1218.81		245626.78		18495.25		24540.96	21581.30		310244.29
2005	BR2005 series	1		132.80			2331.97	10574.86	3094.24	2721.07		50664.53
2006												
2007						27933.15						
2008												
2009	BR09 series	10	627.7		126500.38		11022.41			12861.57		169334.63
2010	BR10 series	29	4092.48		824757.49		68875.76			80368.13		974001.38
2011												
2012												
2013	BM13 series	10	547.92		110422.32		9621.48			11226.88	2500	150312.38
Total			6869.87	132.80	1452142.56	27933.15	122966.89	10574.86	44380.44	143484.71	2500	1865180.76
<i>British Columbia average (per metre)</i>					201.53	210.34	17.56	79.63	23.30	20.49		

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8 Conclusions

The most recent historic exploration work at Brule had been done by Teck Corporation, as has previously been reported in Coal Assessment Reports Nos. 486, 487, 488, 489 and 490.

Substantial exploration work has subsequently been done on the property by Walter Canadian Coal Partnership (WCCP) and predecessor firms, resulting in the identification of potentially-mineable coal resources. The Brule lease closely adjoins the mine-workings of Brule Mine, which has been producing coal from the Gaylard coal-measures within the Dillon lease.

The present work on the Brule coal property, here reported as concerns the years 2001 through 2013 inclusive, comprises several drilling programmes and the compilation of a geological map. This work conducted by Western Canadian Coal and successor firms, as part of a broader examination of coal properties within the Brazion and Sukunka-Quintette coalfields of northeastern British Columbia, Canada.

The Brule coal property contains coal-measures of latest Jurassic to Early Cretaceous age, within the Minnes and Bullhead groups of sedimentary rocks. These rocks are deformed by numerous northeast-verging, arcuate, imbricate thrust faults and associated tight cylindrical to conical folds, consistent with the overall thin-skinned structural style of the Rocky Mountain Foothills of northeastern British Columbia.

Geological modelling is underway, to more-precisely define the coal resources at Brule, and to support an ongoing mine-planning exercise.

The Brule property merits further work, as recommended within **Section 9** of this report.

9 Recommendations

1. The Brule coal property should continue to be held in good standing.
2. A programme of field geological mapping should be undertaken within the well-exposed section of coal-measures along the Falling Creek Connector Road, within the northern end of the property.

Structure of the rocks should be mapped, and an effort made to identify sections of thrust-repeated strata suspected to be present in this area.

Exposed coals should be excavated to fresh material, and sampled for reflectance, petrography and proximate analysis, with the goal of better determining the local variability in coal-quality parameters, and establishing whether coking coal is likely to be present within or near this area.

3. A similar programme of mapping and sampling is recommended for the southwestern part of the property, where coals are known to outcrop, but minimal coal-quality data are available.
4. If results of work items 2) and 3) above are favourable, drill targets may then be identified and tested, with the aim of establishing whether commercially-significant quantities of saleable coal are present within practicable mining geometries.

10 Statements of qualifications

I, Laura Rose Avery B.Sc. B.Ed., do hereby certify that:

- a) I am currently employed on a full-time basis by Walter Canadian Coal Partnership, a subsidiary of Walter Energy, in their Northeast British Columbia office in Chetwynd, British Columbia.
- b) This certificate applies to the current report, titled *Coal Assessment Report for the Brule lease, British Columbia, Canada*, dated July 17, 2014.
- c) I am in the processes of applying for my Professional Engineers and Geoscientists of British Columbia status.
- d) I received my Bachelor of Science from Saint Mary's University in Halifax in 2006.
- e) I have worked in the coal industry for 2 years and 10 months.
- f) I have been pit geologist for the Brazion group since March 2012.
- g) I have been co-chair of the Joint Occupational Health, Safety and Environment Committee for both Brule and Willow for 2 years.

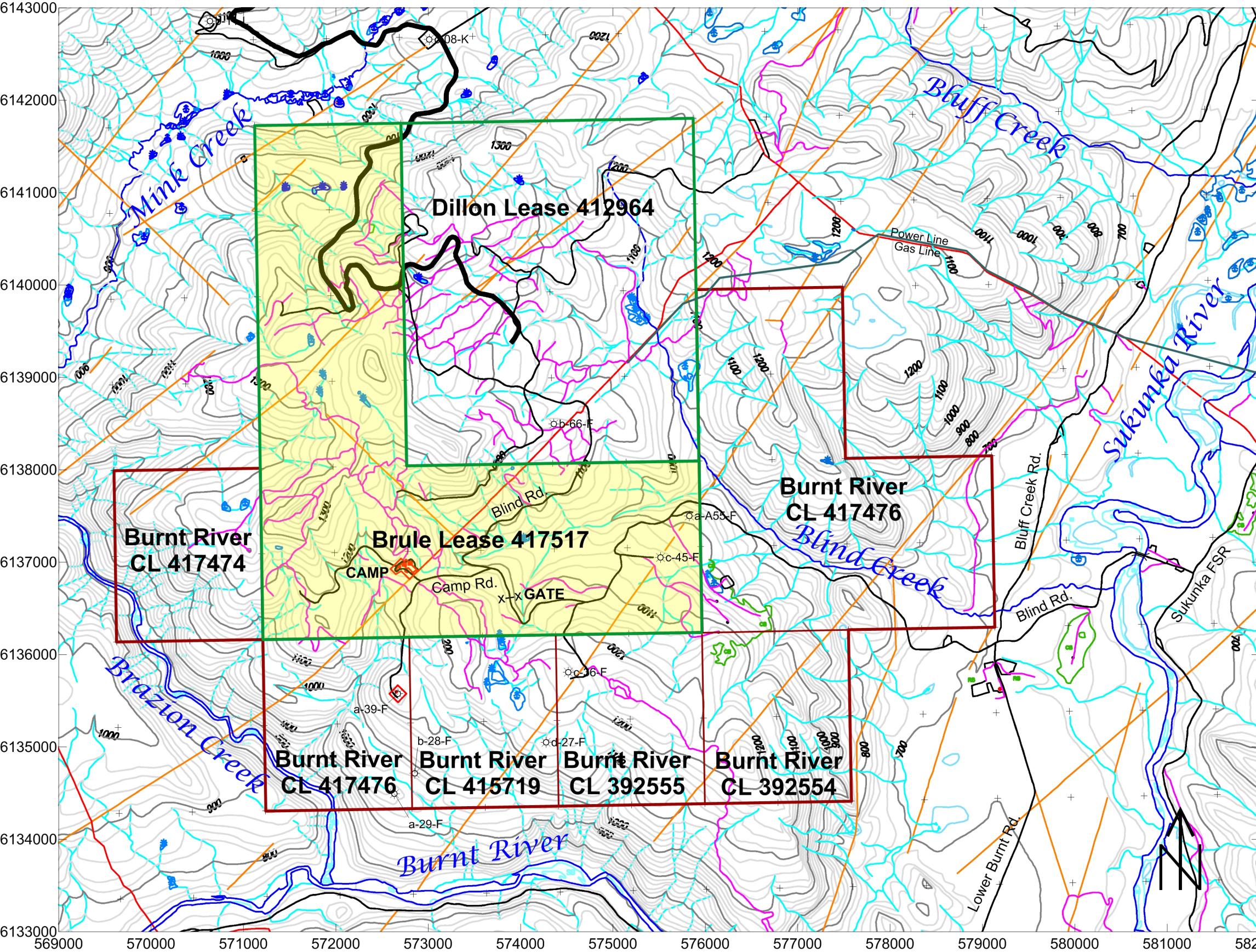
I, C.G. Cathyl-Huhn P.Geo.(BC) Lic.Geol.(WA) RMSME, do hereby certify that:

- a) I am currently employed on a full-time basis by Walter Canadian Coal Partnership, a subsidiary of Walter Energy, in their Northeast British Columbia office in Tumbler Ridge, British Columbia.
- b) This certificate applies to the current report, titled *Coal Assessment Report for the Brule lease, British Columbia, Canada*, dated July 17, 2014.
- c) I am a member (Professional Geoscientist, Licence No.20550) of the Association of Professional Engineers and Geoscientists of British Columbia, licenced as a geologist (Licence No.2089) in Washington State, and a founding Registered Member of the Society for Mining, Metallurgy and Exploration (SME, Member No.518350). I have worked as a colliery geologist in several countries for over 36 years since my graduation from university.
- d) I certify that by reason of my education, affiliation with professional associations, and past relevant work experience, having written numerous published and private geological reports and technical papers concerning coalfield geology, coal-mining geology and coal-resource estimation, that I am qualified as a Qualified Person as defined by Canadian *National Instrument 43-101* and a Competent Person as defined by the Australian *JORC Code*.
- e) My most recent visit to the Brule coal property was in the spring of 2014.
- f) I am principal author of this report, titled *Coal Assessment Report for the Brule coal property, British Columbia, Canada*, dated July 17, 2014, concerning the Brule coal property.
- g) As of the date of the writing of this report, I am not independent of Walter Canadian Coal Partnership and Walter Energy, pursuant to the tests in Section 1.4 of *National Instrument 43-101*.

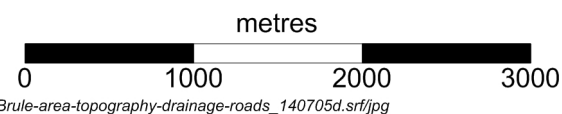
"original signed and sealed by"

Dated this 17th day of July, 2014.

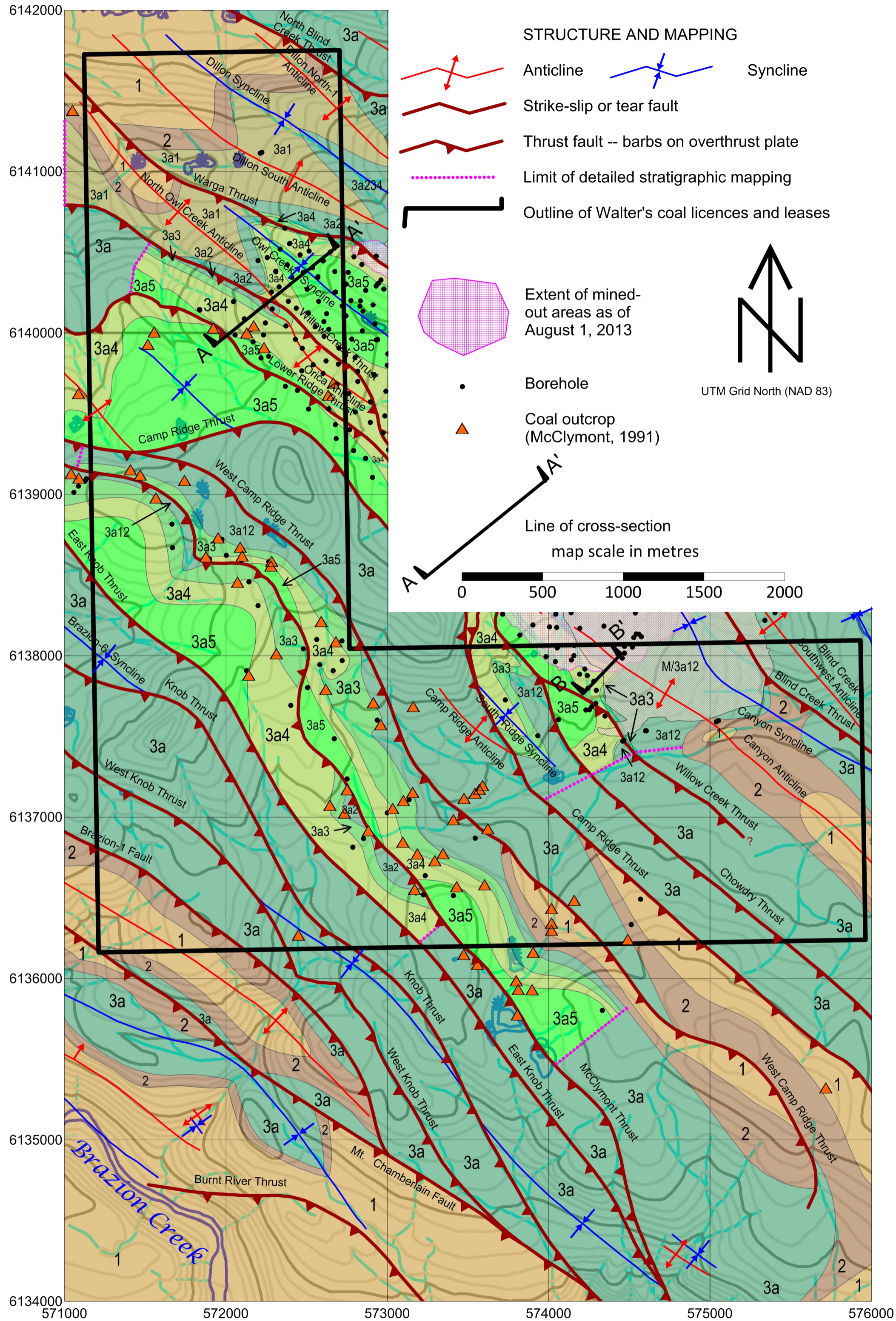
C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME



- Access (not classified as to trafficability):
- Road (coal haulage)
 - Road (other)
 - Trail
 - Seismic line
- Land classification:
- Coal licence (with historic and current tenure number)
 - Coal lease (with current tenure number)
- Drainage:
- River or creek
 - Stream (perennial or intermittent flow)
 - Natural gas wells (not classified as to activity)
 - Pipeline (where not along road)
 - Power line (69 KV)



Scale: as shown	COAL TENURE AND TOPOGRAPHY	
UTM NAD 83		
Revision: A		
Drawn: GCH		
JULY 2014	BRULE COAL ASSESSMENT REPORT	MAP 2-2



STRUCTURE AND MAPPING

- Anticline (red line with arrows pointing away)
- Syncline (blue line with arrows pointing towards)
- Strike-slip or tear fault (red line with arrows pointing in opposite directions)
- Thrust fault -- barbs on overthrust plate (red line with barbs on the upper plate)
- Limit of detailed stratigraphic mapping (dotted pink line)
- Outline of Walter's coal licences and leases (black outline)
- Extent of mined-out areas as of August 1, 2013 (shaded pink area)
- Borehole (black dot)
- Coal outcrop (McClymont, 1991) (orange triangle)

Line of cross-section map scale in metres

0 500 1000 1500 2000

UTM Grid North (NAD 83)

STRATIGRAPHY

- M Mine dumps
- BULLHEAD GROUP (Barremian to Aptian)**
 - 3 Gething Formation -- siltstone, sandstone and conglomerate; minor bentonite and coal
 - 3d Chamberlain Member -- sandstone and siltstone; minor coal
 - 3c Bullmoose Member -- marine shale and siltstone; minor sandstone and bentonite
 - 3b Bluesky Member -- pebbly glauconitic sandstone (not mapped separately at this scale)
 - 3a Gaylard Member -- siltstone, sandstone and coal; lenses of conglomerate and pebbly sandstone; minor bentonite
 - 3a5 Division 5 -- sandstone and siltstone; minor coal (Markers E and F)
 - 3a4 Division 4 -- siltstone and sandstone; coal (Markers C and D; Seam 60 at top)
 - 3a3 Division 3 -- siltstone and shale; coal (Lower Seam at base, Upper Seam at top)
 - 3a2 Division 2 -- siltstone and sandstone; minor conglomerate and coal (Markers B, AA and A)
 - 3a1 Division 1 -- sandstone, conglomerate and siltstone; minor coal
- 2 Cadomin Formation -- cliff-forming conglomerate and sandstone; minor siltstone and coal
- MINNES GROUP (Tithonian to Valanginian)**
 - 1 Bickford, Monach, Beattie Peaks and Monteith Formations -- sandstone, siltstone, shale, conglomerate, quartzite, ironstone and coal (not mapped separately at this scale)

Author: C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME Date: 2014 July 11
 Grid system: UTM NAD83 Zone 10N in metres 100 km grid square: ES
 Scale: as shown on bar-scale Topography: TRIM-derived rasters
 Sources: compiled from work by B.McClymont (Teck Corporation, 1979 and 1981), J.Hughes (Gulf Canada, 1980), and D.J.Hunter and J.M.Cunningham (BCGSB, 1991)

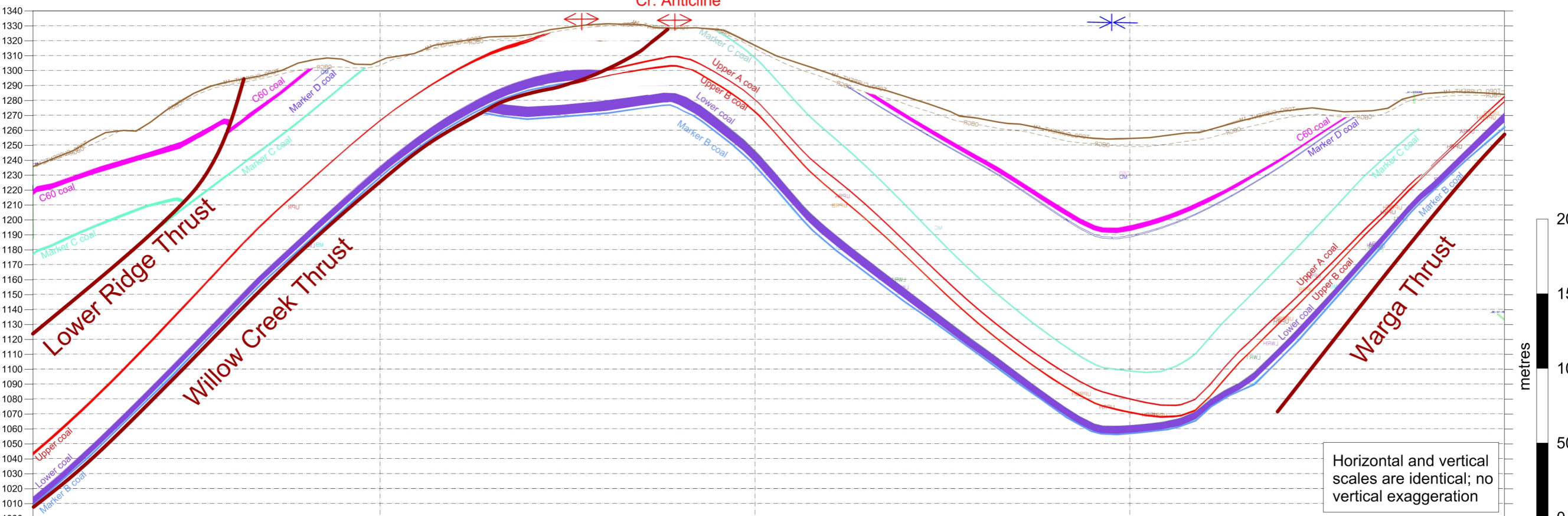


D	July 10 2014	Coal outcrops from McClymont (1981)			
REV	DATE	DESCRIPTION			
Drawn by:	GCH	GEOLOGY OF BRULE LEASE 417517			
Scale:	as shown				
Reference:	Brule-lease-geology-140710d.srf				
Revision No.	C				
JULY 2014		BRULE COAL ASSESSMENT REPORT	MAP 2-3		

Southwest
A 571926 E
6139924 N

Cross-section A-A' (northwest view)

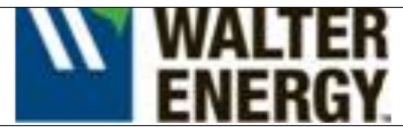
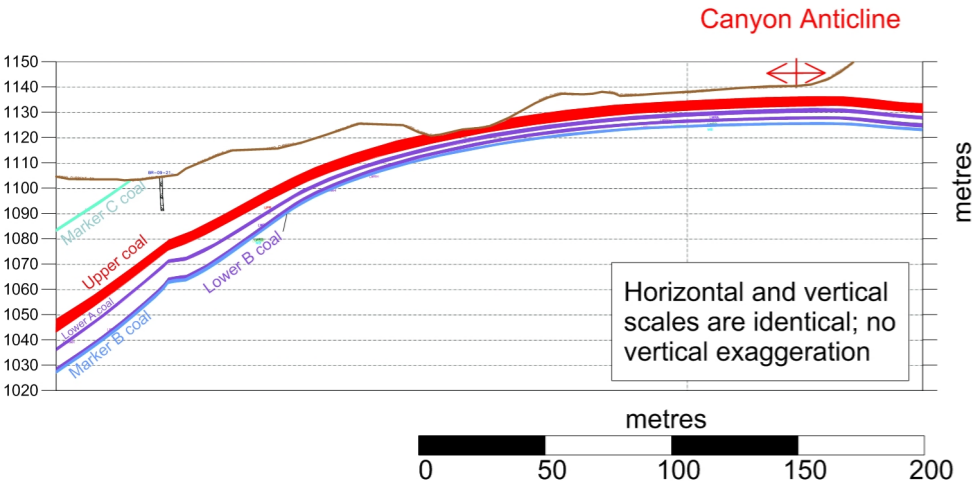
Northeast
572693 E
6140538 N A'



Southwest
B 574214 E
6137767 N

Cross-section B-B' (northwest view)

Northeast
574453 E
6138013 N B'



Dwn: GCH
Scale: as shown
Ref.:
Brule-CAR_2014-
cross-sections-AA
and BB_140714c

CROSS-SECTIONS

Appendix A: Drilling records and geophysical logs

Table A-1: Checklist of geophysical logs included in this report

Borehole	UTM NAD83 position		Borehole details		Logs run in each borehole, reaching depths as shown (in metres)										Comments
	Easting	Northing	Collar (m)	Depth (m)	Gamma-Res-Density	Gamma-Density(CPS)-Through Rods	Compensated Density-Gamma-Caliper-Res	Detailed Density-Gamma-Caliper-Res	Gamma-Density	Gamma-Neutron	Gamma-Neutron (Through Rods)	Gamma-Neutron (Log Scale)	Deviation		
BR2002-12	572601.4	6140445.76	1280.33	91.2	92.06					92.14			92		
BR2002-13	572690.35	6140538.71	1286.33	29.3	28					28.1			27.9		
BR2002-14	572645.5	6140500.31	1283.96	73.51	46.17					46.25			46.1	Values for 14x	
BR2003-3	574568.99	6136491.29	1147.49	228.59					228.59	227.87			228.6		
BR2003-4	574512.55	6136334.54	1164.64	219.66					219.66	218.88			219.7		
BR2003-5	573544.41	6136888.49	1120.81	76.42					76.42	72.3			76.5		
BR2004-18	572371.86	6140043.96	1336.95	54.53					54.53	54.47			50		
BR2004-19	572287.18	6140147.32	1337.15	55.2					55.2	55.22			50		
BR2004-20	572113.2	6140087.9	1314.88	73.01					73.01	71.78			71.8		
BR2004-21	572552.39	6140038.58	1330.81	85.67					85.67	85.79			85.8		
BR2004-22	572824.07	6140118.61	1335.21	125.35					125.35	125.31			125.3		
BR2004-23	574603.69	6138608.93	1330.81	165.55										Neither front page nor logs available for this hole	
BR2004-24	572569.87	6140348.28	1275.19	91.6					91.6	91.56			91.6		
BR2004-25	572407.88	6140345.15	1267.3	85.5					85.09	85.33			85.3		
BR2004-26	572199.18	6140448.24	1242.42	80.14					80.14	80.14			80	Gamma-Density-4 inch Resistivity Scale	
BR2004-27	572335.42	6140519.34	1234.11	53.89					53.89					no gamma density/neutron/ deviation logs	
BR2004-28	572364.73	6140649.51	1223.56	81.13						81.13				no gamma density/neutron/ deviation logs	
BR2004-29	572255.53	6140466.03	1238.83	64					64.32	64.28			53	Gamma-Density-4 inch Resistivity Scale	
BR2004-33	572660.14	6140253.86	1307.59	203.24									203.8	neutron/deviation log bottom not readable	
BR2005-01C	572511.6	6139528.58	1345.2	132.8									132.8	neutron not readable	
BR-09-20	574279.72	6137840.89	1118.94	34.18						34.35			34.18		
BR-09-21	574242.87	6137796.7	1104.77	49.36						49.53			49.36		
BR-09-22	574224.46	6137918.42	1133.69	43.44						43.62			43.44		
BR-09-24	574191.13	6137885.44	1131.17	66.44						66.63			66.44		
BR-09-25	574156.44	6138001.05	1149.54	55.56						55.94			55.56		
BR-09-26	574140.51	6137973.37	1141.76	60.4						60.58			60.4		
BR-09-30	574041.19	6137964.03	1155.28	58.92						58.92			58.92		
BR-09-31	574291.45	6137704.36	1095.77	66.34						66.51			66.34		
BR-09-32	574265.78	6137683.46	1102.91	122.08						122.26			122.08		
BR-09-33	574349.76	6137625.86	1088.12	70.98						71.16			71		
BR-10-01	572392.67	6140552.97	1239.83	141.83										GAM-GAMH Slim Tool value unreadable	
BR-10-02	572396.36	6140554.09	1239.97	107.62									107		
BR-10-03	572380.26	6140422.99	1248.9	163.48										GAM-GAMH Slim Tool value unreadable	
BR-10-04	572459.01	6140483.73	1247.16	170.17										no gamma density/neutron/ deviation logs	
BR-10-05	572514.77	6140506.58	1246.84	92.5									89	no geophysics available	

Table A-1: Checklist of geophysical logs included in this report (concluded)

Borehole	UTM NAD83 position		Borehole details		Logs run in each borehole, reaching depths as shown (in metres)										Comments
	Easting	Northing	Collar (m)	Depth (m)	Gamma-Res-Density	Gamma-Density/Through Rods	Compensated Density-Gamma-Caliper-Res	Detailed Density-Gamma-Caliper-Res	Gamma-Density	Gamma-Neutron	Gamma-Neutron (Through Rods)	Gamma-Neutron (Log Scale)	Deviation		
BR-10-06	572477.83	6140374.8	1254.09	207.1						207.1		207	GAM-GAMH Slim Tool value unreadable		
BR-10-07	572538.17	6140403.8	1259.89	183.14						183.14		175	GAM-GAMH Slim Tool value unreadable		
BR-10-08	572503.34	6140270.18	1283.9	149.99						149.99		149.26	GAM-GAMH Slim Tool value unreadable		
BR-10-09	572567.22	6140343.02	1271.84	214.6	215.22					214.6		204	GAM-GAMH Slim Tool value unreadable		
BR-10-10	572675.29	6140379.37	1314.35	155.58						155.58		155.26	GAM-GAMH Slim Tool value unreadable		
BR-10-11	572574.41	6140195.79	1313.86	174.32						173.97		174.14			
BR-10-13	572720.66	6140166.11	1310.03	204.07						204.07		204			
BR-10-16	572609.26	6139978.96	1331.31	129.54						125.19		125.24			
BR-10-35	572308.24	6140381.08	1264.02	95.02						95.02			no neutron/deviation logs available		
BR-10-35A	572308.19	6140378.27	1264.04	167.4						167.62		167.22			
BR-10-36	572282.51	6140252.62	1309.36	83.82						83		83			
BR-10-37	572329.15	6140285.55	1289.17	110.48	93.15					110.43		110.3	GAM-GAMH Slim Tool value		
BR-10-38	572804.13	6140448.39	1280.11	202.69	198.92					201.25		201.2	GAM-GAMH Slim Tool value		
BR-10-39	572385.98	6140195.88	1304.11	76.89						77.05		76.72			
BR-10-40	572168.93	6139944.17	1303.3	101.17						101.17		101.1			
BR-10-41	572232.97	6139986.64	1319.72	67.38						67.24		67.2			
BR-10-42	572674.2	6140252	1304.1	232.99	232.99					67.24		67.2			
BR-10-44	572473.86	6139903.41	1340.95	119.6						119.6		119.48	GAM-GAMH Slim Tool value		
BR-10-47	572443.28	6139643.73	1340.73	156.63						156.63		156.46			
BR-10-48	572601.25	6139748.88	1354.54	93.63						156.63		156.46			
BR-10-49	572696.27	6139805.51	1341.45	115.86						115.86		115.58	no geologs available		
BR-10-51	572689.34	6139682.38	1332.76	86.21						86.19		86.04	no geologs available		
BR-10-53	572637.47	6139529.16	1330.12	136.14						86.19		86.04	no geologs available		
BR-10-56	572678.66	6139432.12	1320.87	152.63						152.57		152.46	no geologs available		
BM13-01A	572212.05	6141113.05	1145.83	102.55						102.35		102.27	no geologs available		
BM13-01B	572222.34	6141118.13	1145.79	23.2									no geologs available		
BM13-02A	571837.64	6140140.85	1244.6	182.1						181.21		181.24	no gamma density/neutron/deviation logs		
BM13-02B	571835.85	6140144.18	1244.64	51.2						181.21		181.24	no gamma density/neutron/deviation logs		
BM13-06A	574458.87	6137469.92	1050.18	53.7						53.65		53.46	no gamma density/neutron/deviation logs		
BM13-06B	574466.66	6137476.13	1049.83	23.5						53.65		53.46	no gamma density/neutron/deviation logs		
BM13-07A	575052.41	6137597.52	1033.22	41.97						41.75		41.54	no gamma density/neutron/deviation logs		
BM13-07B	575037.79	6137590.52	1033.96	23.8						41.75		41.54	no gamma density/neutron/deviation logs		
BM13-08A	574600.6	6137534.03	1048.42	28.8						28.76		28.58	no gamma density/neutron/deviation logs		
BM13-08B	574604.35	6137534.43	1048.41	17.1						28.76		28.58	no gamma density/neutron/deviation logs		
				Totals:	1322.3 m	138.98 m	3976.95 m	3474.22 m	1421.75 m	5274.49 m	81.13 m	64.28 m	5475.4 m		



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2002-12

year drilled: 2002

**AREA: BURNT RIVER
Brule**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,698.41	6,140,240.13	572,601.40	6,140,445.76	1,280.33

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	92.40	ROTARY	GPS		

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	307.5	-87.20
2.50	307.5	-87.20
5.50	278.2	-88.90
7.00	308.4	-88.60
9.00	322.7	-88.40
11.00	328.4	-88.30
13.00	331.6	-87.80
15.00	334.4	-87.50
17.00	336.0	-87.30
19.00	336.6	-87.00
21.00	336.4	-87.10
23.00	335.0	-87.00
25.00	333.0	-86.60
27.00	329.3	-86.30
29.00	326.4	-86.20
31.00	326.7	-86.20
33.00	330.0	-85.90
35.00	333.6	-85.70
37.00	336.7	-84.80
39.00	339.4	-85.20
41.00	341.9	-84.60
43.00	344.5	-84.40
45.00	346.9	-84.10
47.00	349.3	-83.90
49.00	351.5	-83.30
51.00	353.8	-82.50
53.00	355.7	-82.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.43	2.43	OB	
2.43	6.10	3.67	SH	
6.10	12.20	6.10	SLT	
12.20	12.75	0.55	C	ME
12.75	13.70	0.95	SH	
13.70	14.20	0.50	C	ME
14.20	15.00	0.80	SLT	
15.00	16.40	1.40	SH	
16.40	18.20	1.80	SLT	
18.20	18.40	0.20	SH	
18.40	18.60	0.20	SLT	
18.60	18.90	0.30	SH	
18.90	25.85	6.95	SLT	
25.85	26.60	0.75	SH	
26.60	29.90	3.30	C	C60
29.90	31.90	2.00	SLT	
31.90	32.10	0.20	C	MD
32.10	32.35	0.25	P	MD
32.35	33.50	1.15	C	MD
33.50	35.25	1.75	SLT	
35.25	35.70	0.45	SH	
35.70	37.00	1.30	SLT	
37.00	37.30	0.30	SH	
37.30	37.65	0.35	SHC	
37.65	37.85	0.20	SLT	
37.85	38.25	0.40	SH	
38.25	42.60	4.35	SLT	
42.60	42.80	0.20	SHC	
42.80	45.40	2.60	SLT	
45.40	45.70	0.30	C	
45.70	47.10	1.40	SLT	
47.10	47.60	0.50	SH	
47.60	51.10	3.50	SLT	
51.10	51.65	0.55	SSA	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Page 1 of 2



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2002-12**

year drilled: 2002

AREA: **BURNT RIVER
Brule**

55.00	357.6	-81.80
57.00	359.6	-80.50
59.00	1.2	-80.60
61.00	2.7	-80.00
63.00	3.9	-80.00
65.00	4.9	-79.00
67.00	6.0	-78.10
69.00	7.0	-77.60
71.00	7.9	-77.40
73.00	8.9	-76.60
75.00	9.7	-75.90
77.00	10.4	-75.80
79.00	11.0	-75.20
81.00	11.4	-74.60
83.00	11.9	-74.80
85.00	12.0	-74.40
87.00	12.3	-73.30
89.00	12.5	-73.00
91.20	12.2	-73.00

51.65	52.60	0.95	SLT	
52.60	53.00	0.40	SH	
53.00	54.70	1.70	SLT	
54.70	55.50	0.80	C	
55.50	61.80	6.30	SLT	
61.80	62.30	0.50	SH	
62.30	64.65	2.35	SLT	
64.65	65.05	0.40	SH	
65.05	65.95	0.90	SLT	
65.95	66.20	0.25	SH	
66.20	76.30	10.10	SLT	
76.30	77.20	0.90	SH	
77.20	77.50	0.30	SLT	
77.50	77.80	0.30	SH	
77.80	78.70	0.90	SLT	
78.70	79.00	0.30	SH	
79.00	79.85	0.85	SLT	
79.85	80.30	0.45	C	MC
80.30	80.45	0.15	P	MC
80.45	80.60	0.15	C	MC
80.60	81.90	1.30	SLT	
81.90	83.40	1.50	SH	
83.40	88.50	5.10	SLT	
88.50	88.85	0.35	C	
88.85	92.40	3.55	SLT	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

DRILLER'S LOG REPORT



Western Canadian Coal

HOLE-ID: BR2002-12
 AREA: Burnt River / North Brale
 DRILLING CO. / RIG #: Murfit Mining Ltd
 DRILLER'S NAME: Doug Lemat
 HOLE TYPE: Rotary
 HOLE DIAMETER: _____
 DATE(S) DRILLED: April 6/2002
April 8/2002

FROM (metres)	TO (metres)	ROCK TYPE	COMMENTS / WATERFLOW
0.00	2.4384	OD	
2.4384	3.0488	Shale	
3.0488	6.0976	Shale	
6.0976	11.585	SS	
11.585	12.195	Shale	
12.195	12.805	Coal	
12.805	14.634	Shale	
14.634	18.293	SS	
18.293	19.207	Shale	
19.207	25.915	SS	
25.915	26.829	Shale	
26.829	30.183	Coal	
30.183	31.098	Shale	
31.098	33.851	Coal	
33.851	35.976	Shale	
35.976	36.585	Coal	
36.585	37.5	Shale	
37.5	49.695	Siltstone	
49.695	54.878	SS	
54.878	55.488	Coal	√
55.488	61.89	SS	April 6
61.89	80.183	Siltstone	√
80.183	80.793	SH Coal	√
80.793	92.378	Siltstone	April 8
			259 Coal St

SIGNED: DRILLER _____ SUPERVISOR E. Poppe DATE: June 7/02



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

North

AREA: Burnt River : Brule
 DH ID: BR-2002-1a
 BY: Ernest Popyk
 DATE: May 21/02

(1/2)

FROM	TO	LITH	FROM	TO	LITH
0.00	2.43	OB	42.80	45.40	SLT
2.43	6.10	SH	45.40	45.70	C
6.10	12.2	SLT	45.70	47.10	SLT
12.20	12.75	C-UPR	47.10	47.60	SH
12.75	13.70	SH	47.60	51.10	SLT
13.70	14.20	C-UPR	51.10	51.65	SSA
14.20	15.00	SLT	51.65	52.60	SLT
15.00	16.40	SH	52.60	53.00	SH
16.40	18.20	SLT	53.00	54.70	SLT
18.20	18.40	SH	54.70	55.50	C
18.40	18.60	SLT	55.50	61.80	SLT
18.60	18.90	SH	61.80	62.30	SH
18.90	25.85	SLT	62.30	64.65	SLT
25.85	26.60	SH	64.65	65.05	SH
26.60	29.90	LWR	65.05	65.95	SLT
29.90	31.90	SLT	65.95	66.20	SH
31.90	32.10	C-MB	66.20	76.30	SLT
32.10	32.35	P-MB	76.30	77.20	SH
32.35	33.50	C-MB	77.20	77.50	SLT
33.50	35.25	SLT	77.50	77.80	SH
35.25	35.70	SH	77.80	78.70	SLT
35.70	37.00	SLT	78.70	79.00	SH
37.00	37.30	SH	79.00	79.85	SLT
37.30	37.65	SHC	79.85	80.30	C
37.65	37.85	SLT	80.30	80.45	P
37.85	38.25	SH	80.45	80.60	C
38.25	42.60	SLT	80.60	81.90	SLT
42.60	42.80	SHC	81.90	83.40	SH

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE



Western Canadian Coal
 DRILLHOLE LITHOLOGY REPORT

North

AREA: Burnt River: Brake
 DH ID: BR-2002-12
 BY: Ernest Popyk
 DATE: May 21/62

(2/2)

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
83.40	88.50	SLT			
88.50	88.85	CT			
88.85	92.40	SLT			
	92.40				

- LITHOLOGICAL ABBREVIATIONS:**
 OB - OVERBURDEN
 C - COAL
 P - PARTING
 SHC - SHALEY COAL
 CGL - CONGLOMERATE
 SH - SHALE
 SLT - SILTSTONE
 SSA - ARGILLACEOUS SANDSTONE
 SSC - CLEAN SANDSTONE

WESTERN COAL

BR2002-12

SUKUNKA

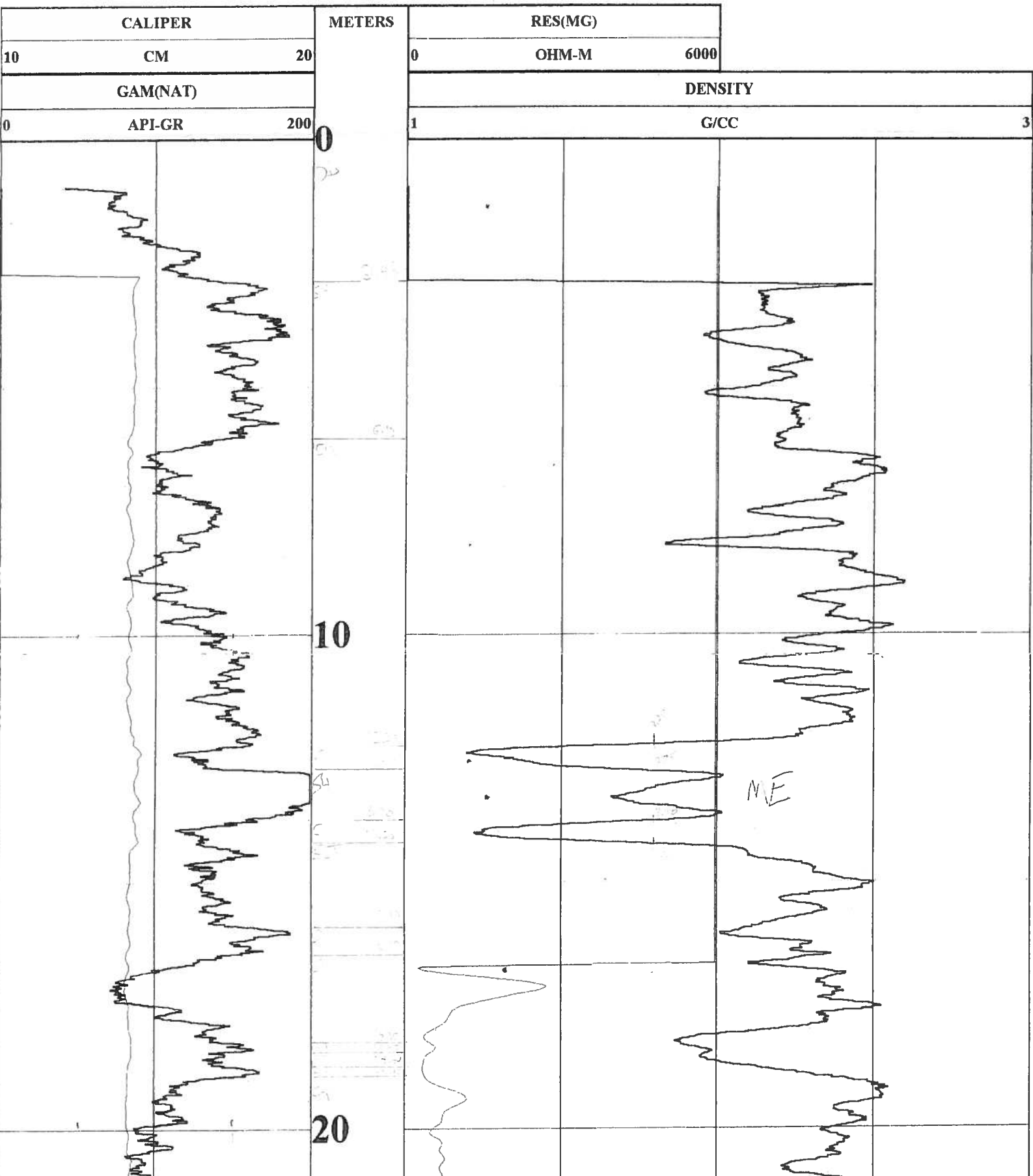
BRITISH COLUMBIA

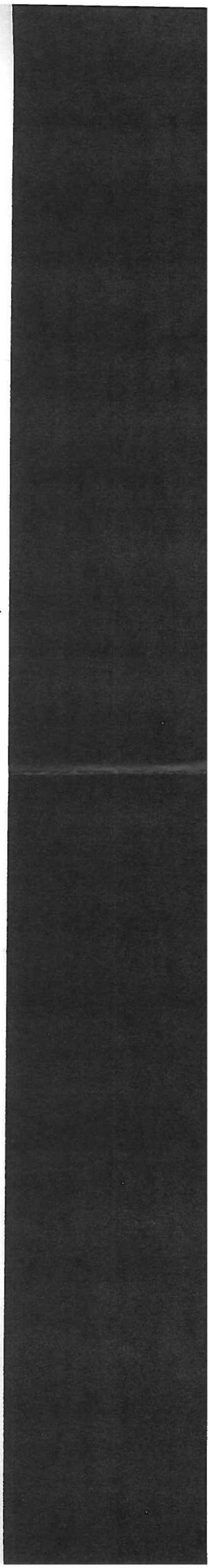
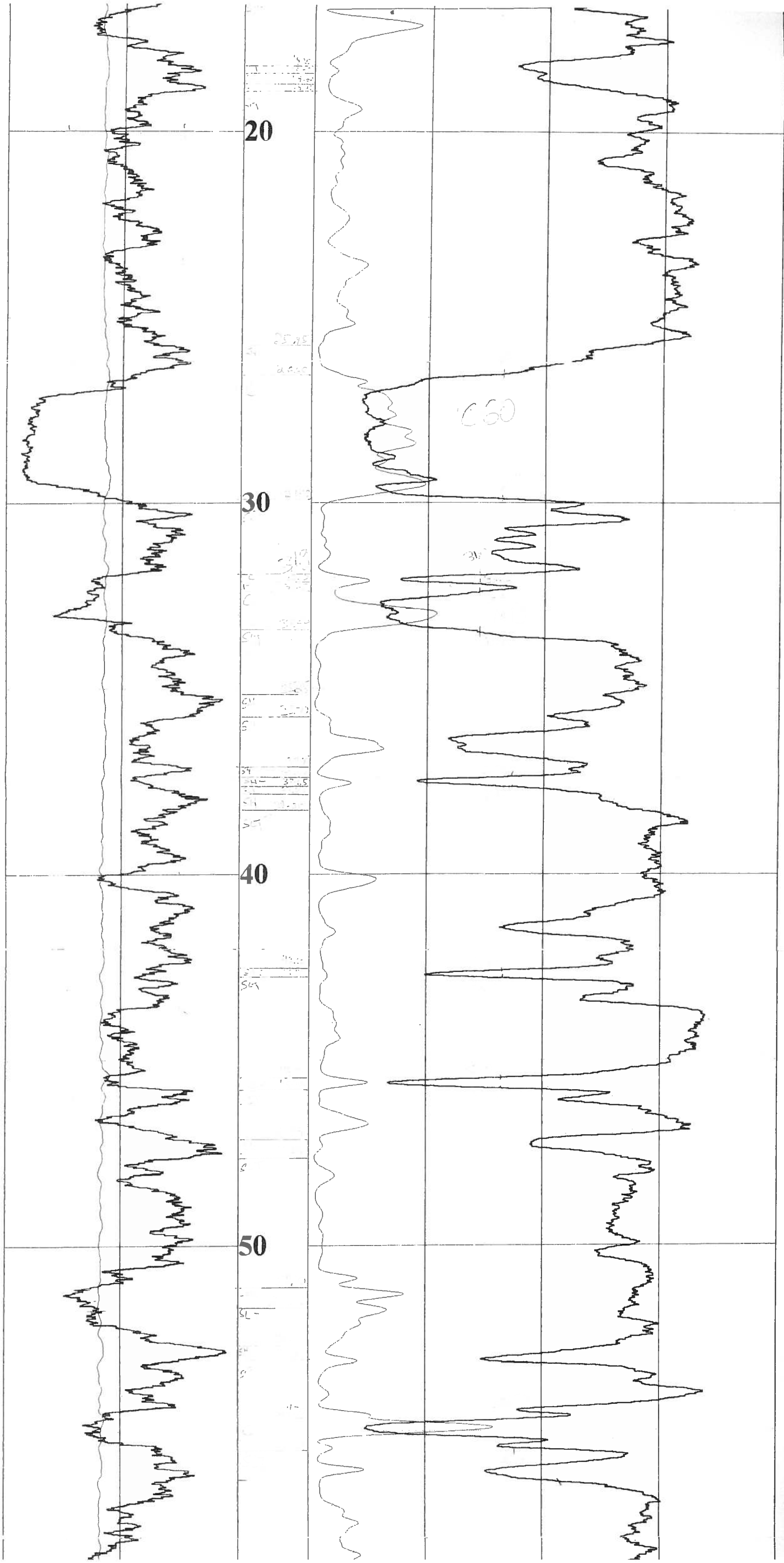
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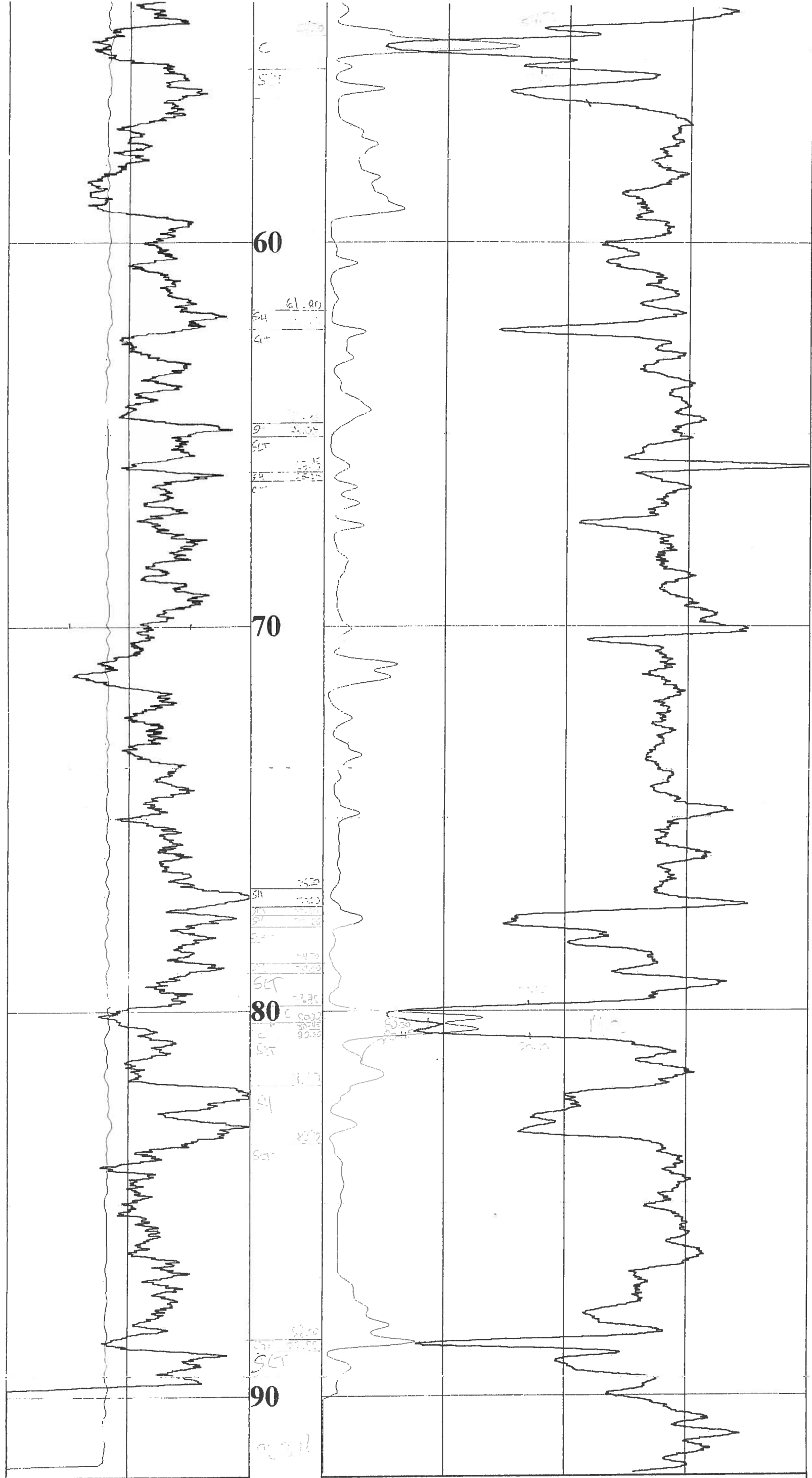
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WELL : BR2002-12
LOCATION/FIELD : SUKUNKA
COUNTY :
STATE : BRITISH COLUMBIA
LICENSE # :
UNIQUE WELL ID :
LONGITUDE :
LATITUDE :
SECTION : TOWNSHIP : RANGE :

DATE PERMANENT DATUM : 04/06/02
ELEVATION KB : GL
ELEVATION DF :
ELEVATION GL :
LOG MEASURED FROM : GL
DRL MEASURED FROM : GL
DEPTH DRILLER : 90
BIT SIZE : 14
CASING DRILLER : 3
CASING DIAMETER : 16
CASING THICKNESS : 2
CASING TYPE : STEEL
TYPE : 9033AA
DATE : 04/06/02
LOG BOTTOM : 92.06
LOG TOP : 0.98
BOREHOLE FLUID : WATER
MUD RES :
RM TEMPERATURE :
MAX TEMP : 0
MAGNETIC DECL : 22
MATRIX DENSITY : 2.71
NEUTRON MATRIX : LIMESTONE
MATRIX DELTA T : 140
ELECT CUTOFF : 20000
LOGGING UNIT : 005
WITNESSED BY : CGC-TULSA
RECORDED BY : T. NEAL

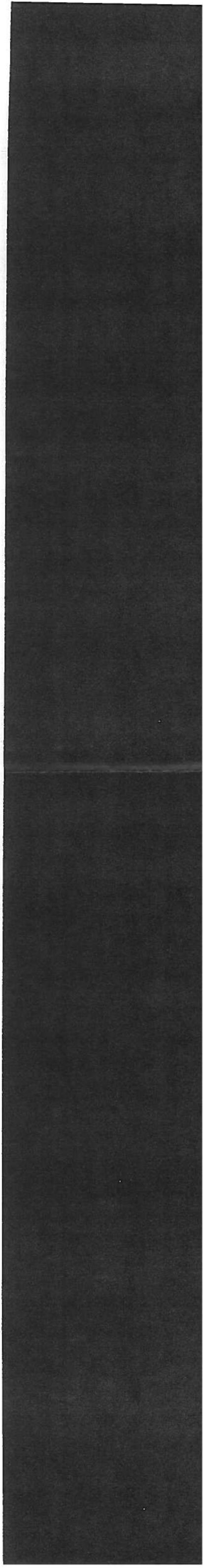
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







0	API-GR	200	1	G/CC	3
	GAM(NAT)			DENSITY	
10	CM	20	0	OHM-M	6000
	CALIPER			RES(MG)	
	METERS				





century-geo.com

GAMMA-NEUTRON

BR2002-12

OTHER SERVICES:
9033

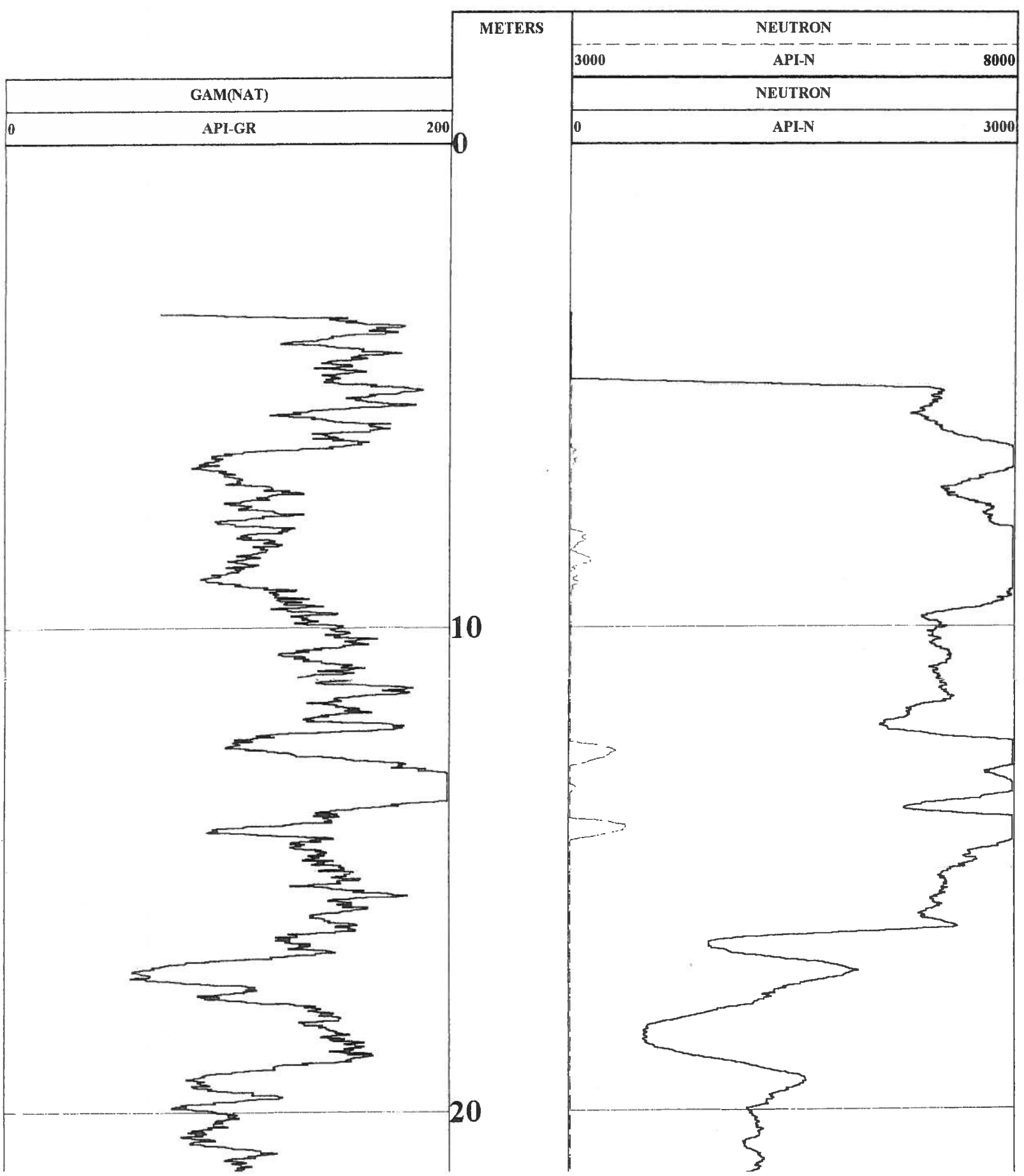
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WELL : BR2002-12
LOCATION/FIELD : SUKUNKA
COUNTY :
STATE : BRITISH COLUMBIA

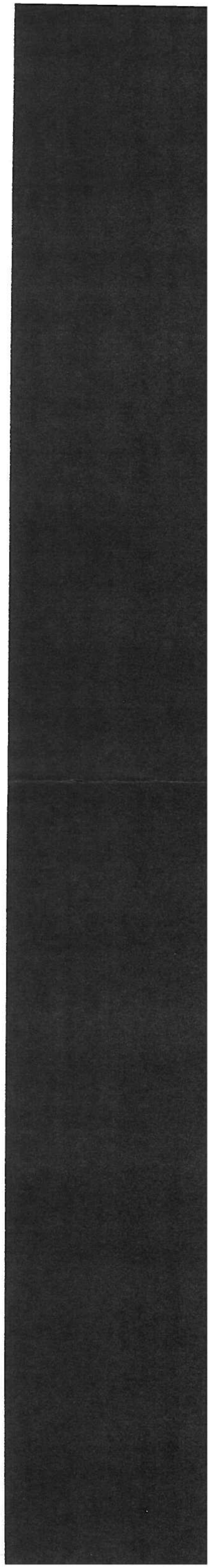
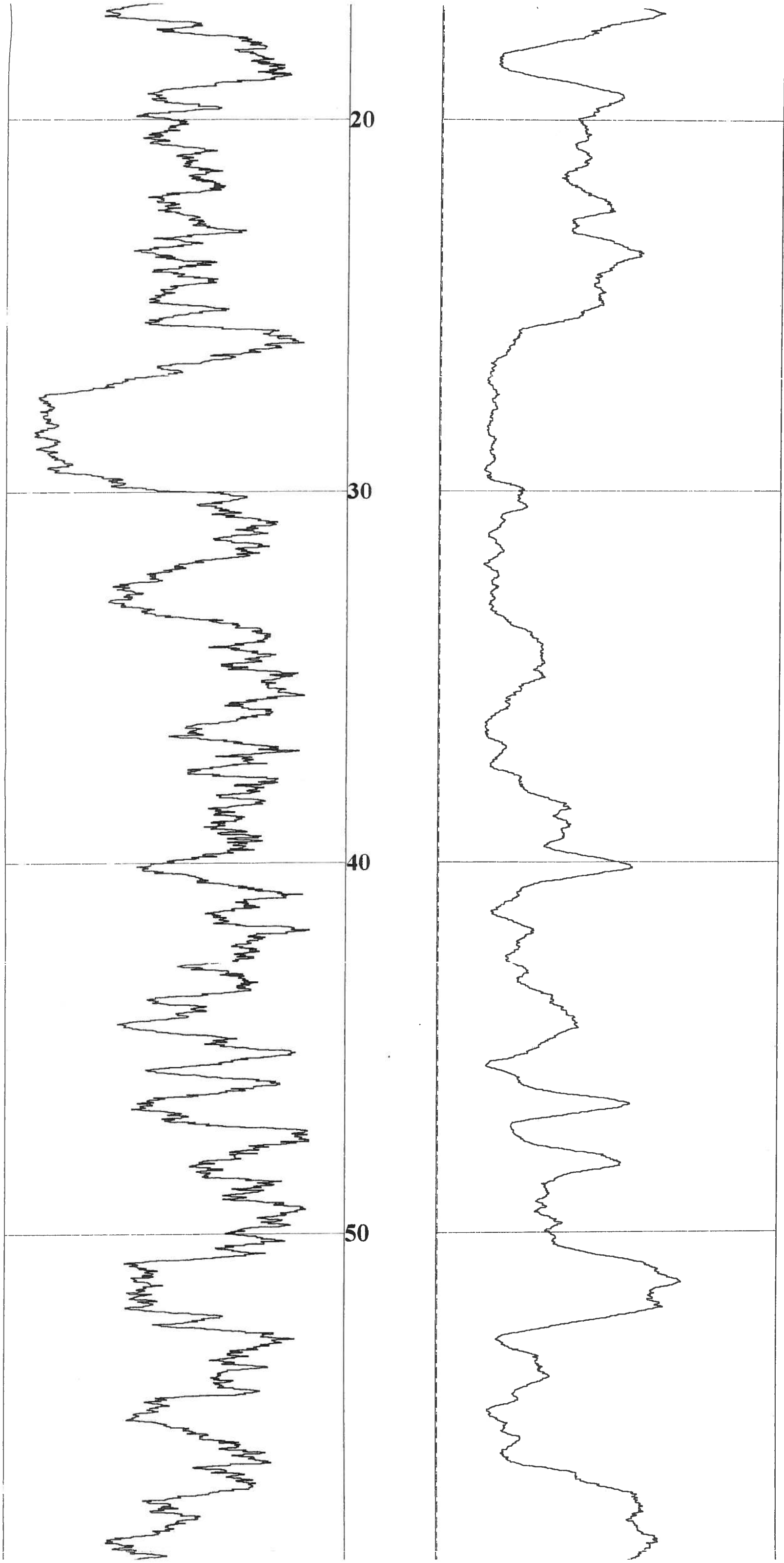
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TOWNSHIP :
RANGE :

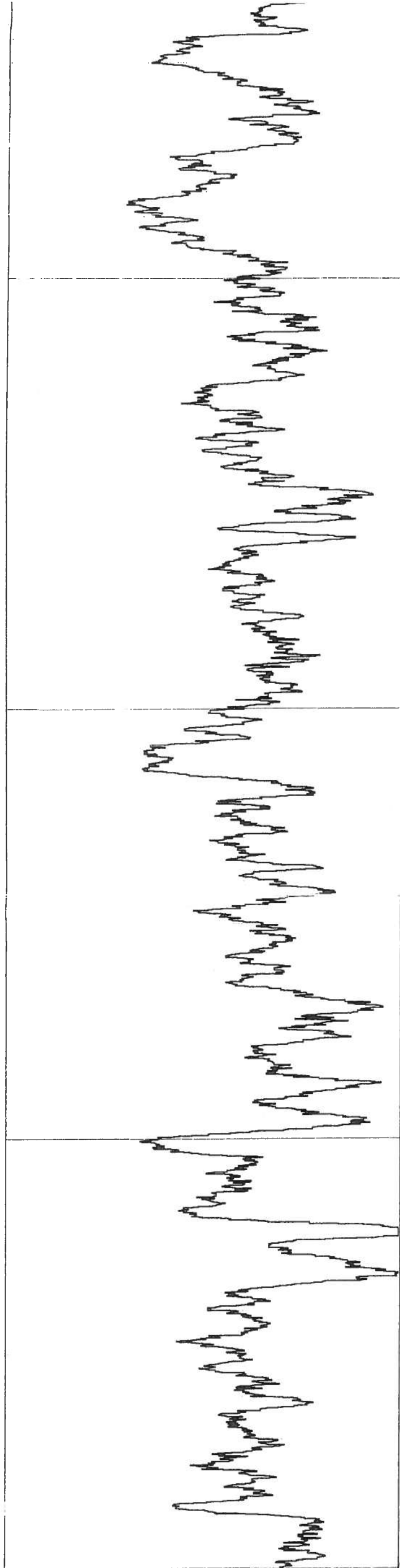
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MUD RES :
ELEVATION KB :
ELEVATION DF :
RM TEMPERATURE :
MAX TEMP : 0
MAGNETIC DECL. : 22
MATRIX DENSITY : 2.71
NEUTRON MATRIX : LIMESTONE
MATRIX DELTA T : 140
NEUTRON DRILLER :
BIT SIZE : 14
NEUTRON DRILLER :
BIT SIZE : 3
NEUTRON DRILLER :
BIT SIZE : 16
ELECT CUTOFF : 20000
LOGGING UNIT : 005
WITNESSED BY : CGC-TULSA
RECORDED BY : T. NEAL
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RECORDED BY : T. NEAL

ASING TYPE : STEEL
TYPE : 9057A
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EMARKS 2 :

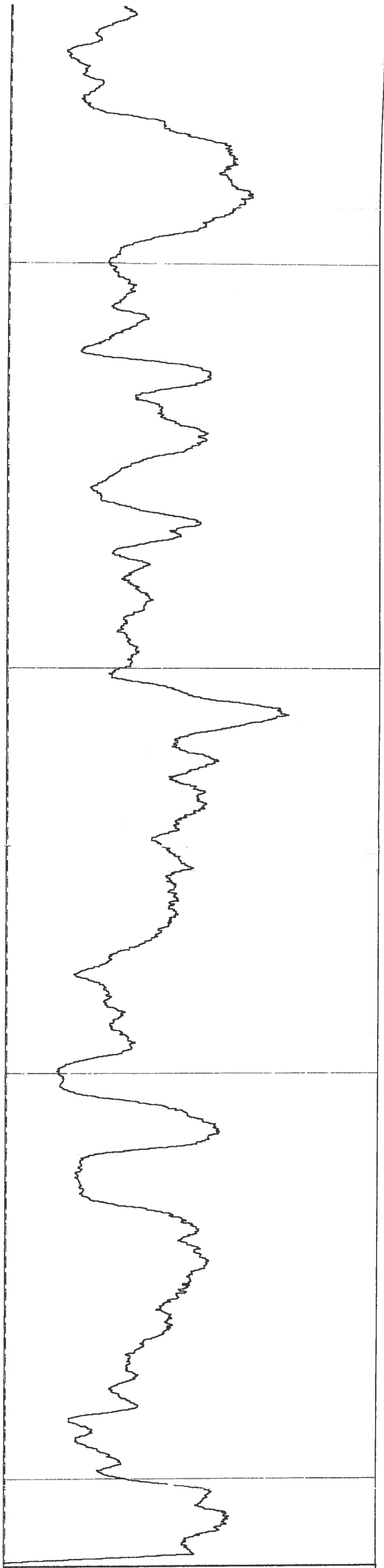
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







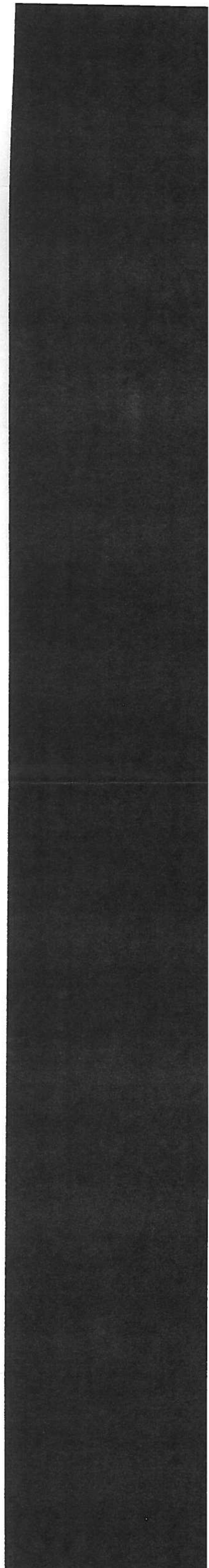
60
70
80
90



0 3000
API-N
NEUTRON
3000 8000
API-N
NEUTRON

0 200
API-GR
GAM(NAT)

METERS

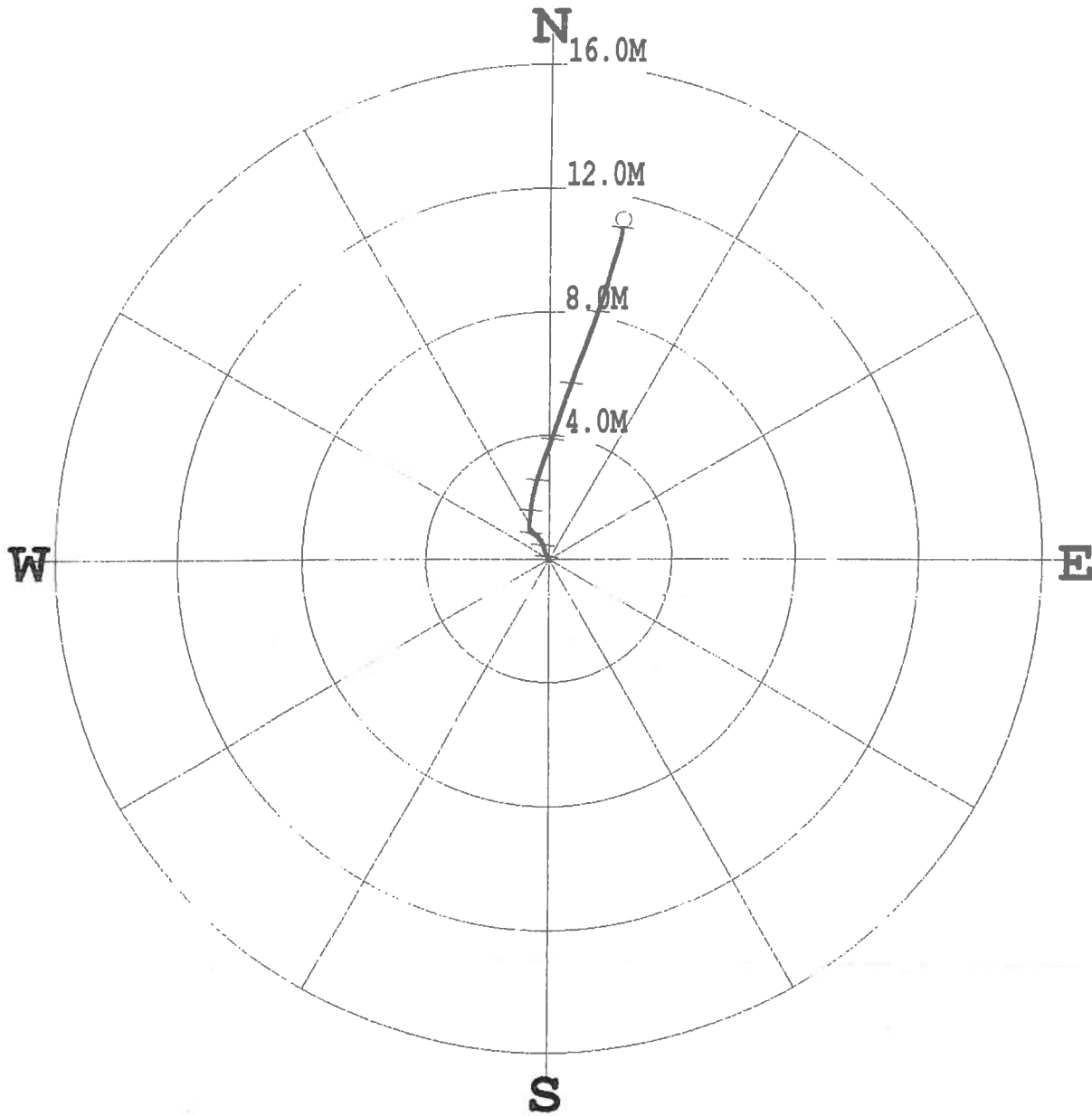


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL
 LOCATION: SUKUNKA
 HOLE ID: BR2002-12
 DATE OF LOG: 04/09/02
 PROBE: 9057A 1071



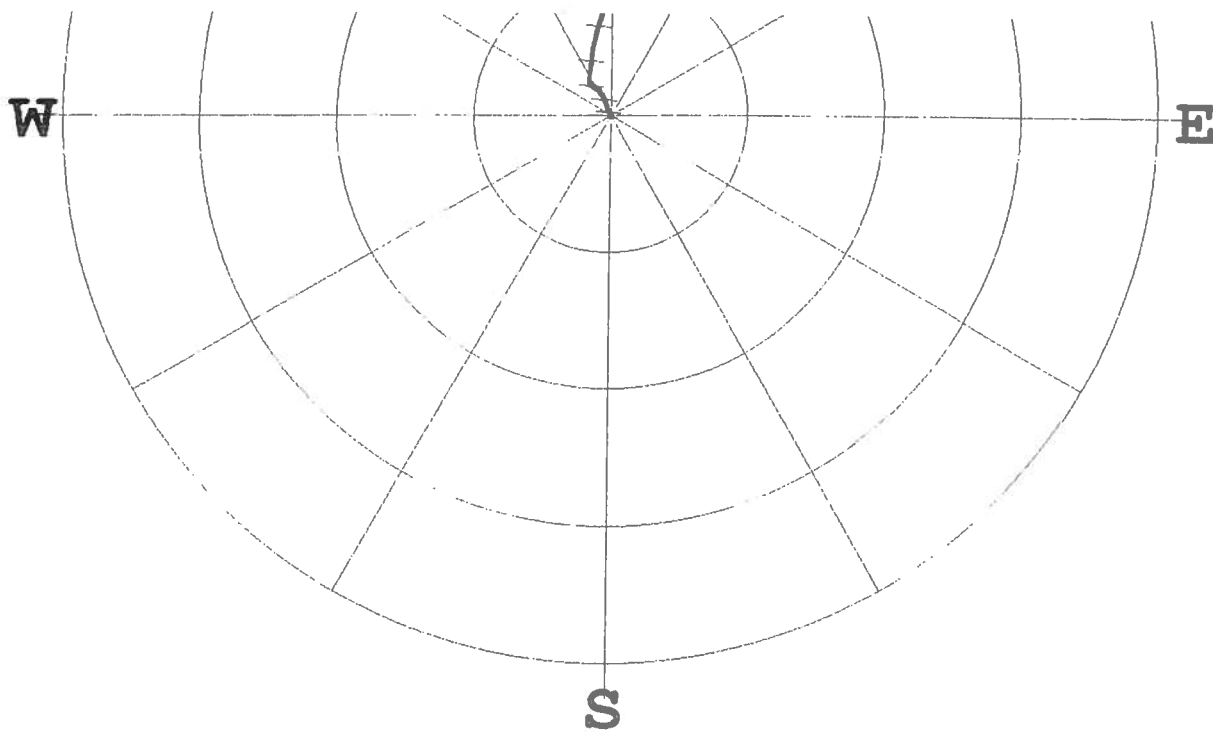
SCALE: 2 M/CM
 TRUE DEPTH: 90.83 M
 AZIMUTH: 12.2
 DISTANCE: 11.3 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT	: WESTERN COAL	HOLE ID.	: BR2002-12
FIELD OFFICE	: CGC-TULSA	DATE OF LOG	: 04/09/02
DATA FROM	:	PROBE	: 9057A , 1071
MAG. DECL.	: 22.000	DEPTH UNITS	: METERS
LOG: BR2002-12_04-09-02_12-19_9057A_.02_3.52_92.14_DEVI.log			

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
5.0	4.96	0.00	-0.00	0.0	307.5	2.8	307.5
5.5	5.52	0.00	-0.01	0.0	272.5	0.6	261.9
7.5	7.52	0.02	-0.03	0.0	301.8	1.2	323.4
9.5	9.52	0.06	-0.05	0.1	320.7	1.5	337.3
11.5	11.52	0.12	-0.08	0.1	327.4	1.8	339.4
13.5	13.52	0.17	-0.10	0.2	330.8	1.9	342.7
15.5	15.52	0.25	-0.12	0.3	333.9	2.5	342.5
17.5	17.51	0.33	-0.15	0.4	335.7	2.7	341.5
19.5	19.51	0.42	-0.18	0.5	336.5	2.7	334.1
21.5	21.51	0.51	-0.22	0.6	336.5	2.9	334.3
23.5	23.51	0.60	-0.27	0.7	335.5	2.8	321.3
25.5	25.50	0.68	-0.34	0.8	333.6	3.2	317.1
27.5	27.50	0.76	-0.43	0.9	330.1	3.5	301.6
29.5	29.50	0.83	-0.54	1.0	327.1	3.5	300.6
31.5	31.49	0.92	-0.62	1.1	326.0	3.9	351.7
33.5	33.49	1.06	-0.63	1.2	329.2	3.9	3.1
35.5	35.48	1.20	-0.62	1.4	332.7	4.4	7.2
37.5	37.48	1.35	-0.60	1.5	336.0	4.5	5.2
39.5	39.47	1.52	-0.59	1.6	338.8	4.7	4.5
41.5	41.46	1.69	-0.57	1.8	341.3	5.1	7.1
43.5	43.45	1.87	-0.54	2.0	343.9	5.5	8.9
45.5	45.44	2.07	-0.50	2.1	346.3	5.8	13.7
47.5	47.43	2.27	-0.45	2.3	348.7	6.2	13.6
49.5	49.42	2.49	-0.40	2.5	351.0	6.5	15.8
51.5	51.41	2.72	-0.33	2.7	353.1	6.9	17.9
53.5	53.39	2.96	-0.24	3.0	355.3	7.4	17.6
55.5	55.37	3.21	-0.16	3.2	357.2	7.9	18.8
57.5	57.35	3.48	-0.06	3.5	359.1	9.1	20.2
59.5	59.32	3.79	0.06	3.8	0.9	9.3	20.7
61.5	61.29	4.10	0.17	4.1	2.3	9.8	19.0



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL HOLE ID. : BR2002-12
 FIELD OFFICE : CGC-TULSA DATE OF LOG : 04/09/02
 DATA FROM : PROBE : 9057A , 1071
 MAG. DECL. : 22.000 DEPTH UNITS : METERS
 LOG: BR2002-12_04-09-02_12-19_9057A_.02_3.52_92.14_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
5.0	4.96	0.00	-0.00	0.0	307.5	2.8	307.5
5.5	5.52	0.00	-0.01	0.0	272.5	0.6	261.9
7.5	7.52	0.02	-0.03	0.0	301.8	1.2	323.4
9.5	9.52	0.06	-0.05	0.1	320.7	1.5	337.3
11.5	11.52	0.12	-0.08	0.1	327.4	1.8	339.4
13.5	13.52	0.17	-0.10	0.2	330.8	1.9	342.7
15.5	15.52	0.25	-0.12	0.3	333.9	2.5	342.5
17.5	17.51	0.33	-0.15	0.4	335.7	2.7	341.5
19.5	19.51	0.42	-0.16	0.5	336.5	2.7	334.1
21.5	21.51	0.51	-0.22	0.6	336.5	2.9	334.3
23.5	23.51	0.60	-0.27	0.7	335.5	2.8	321.3
25.5	25.50	0.68	-0.34	0.8	333.6	3.2	317.1
27.5	27.50	0.76	-0.43	0.9	330.1	3.5	301.6
29.5	29.50	0.83	-0.54	1.0	327.1	3.5	300.6
31.5	31.49	0.92	-0.62	1.1	326.0	3.9	351.7
33.5	33.49	1.06	-0.63	1.2	329.2	3.9	3.1
35.5	35.48	1.20	-0.62	1.4	332.7	4.4	7.2
37.5	37.48	1.35	-0.60	1.5	336.0	4.5	5.2
39.5	39.47	1.52	-0.59	1.6	338.8	4.7	4.5
41.5	41.46	1.69	-0.57	1.8	341.3	5.1	7.1
43.5	43.45	1.87	-0.54	2.0	343.9	5.5	8.9
45.5	45.44	2.07	-0.50	2.1	346.3	5.8	13.7
47.5	47.43	2.27	-0.45	2.3	348.7	6.2	13.6
49.5	49.42	2.49	-0.40	2.5	351.0	6.5	15.8
51.5	51.41	2.72	-0.33	2.7	353.1	6.9	17.9
53.5	53.39	2.96	-0.24	3.0	355.3	7.4	17.6
55.5	55.37	3.21	-0.16	3.2	357.2	7.9	18.8
57.5	57.35	3.48	-0.06	3.5	359.1	9.1	20.2
59.5	59.32	3.79	0.06	3.8	0.9	9.3	20.7
61.5	61.29	4.10	0.17	4.1	2.3	9.8	19.0
63.5	63.26	4.44	0.28	4.4	3.6	10.2	19.3
65.5	65.23	4.77	0.39	4.8	4.7	10.4	15.5
67.5	67.19	5.14	0.52	5.2	5.7	11.8	18.6
69.5	69.15	5.53	0.66	5.6	6.8	12.4	20.3
71.5	71.10	5.94	0.81	6.0	7.7	12.6	19.7
73.5	73.05	6.36	0.97	6.4	8.6	13.2	24.5
75.5	74.99	6.80	1.14	6.9	9.5	14.1	21.9
77.5	76.93	7.26	1.31	7.4	10.2	14.3	20.2
79.5	78.87	7.73	1.48	7.9	10.8	14.8	19.6
81.5	80.80	8.21	1.64	8.4	11.3	15.3	19.8
83.5	82.73	8.71	1.82	8.9	11.8	15.5	19.3
85.5	84.66	9.22	1.96	9.4	12.0	15.4	16.7
87.5	86.58	9.75	2.12	10.0	12.2	16.5	16.3
89.5	88.50	10.30	2.28	10.6	12.5	16.9	13.8
91.5	90.41	10.88	2.36	11.1	12.3	17.0	6.4
92.0	90.83	11.00	2.38	11.3	12.2	17.0	8.2



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2002-13**

year drilled: 2002

AREA: **BURNT RIVER
Brule**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,787.36	6,140,333.08	572,690.35	6,140,538.71	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	28.40	ROTARY	GPS		

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
comments:								

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	20.3	-88.20
1.85	20.3	-88.20
3.85	26.0	-88.30
5.00	33.0	-87.30
7.00	34.7	-87.20
9.00	35.6	-86.80
11.00	36.6	-87.00
13.00	38.1	-86.20
15.00	38.0	-85.60
17.00	37.1	-85.50
19.00	36.0	-85.40
21.00	34.4	-85.10
23.00	33.0	-85.00
25.00	31.4	-85.10
27.00	29.3	-85.10
28.20	29.3	-84.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.80	2.80	OB	
2.80	3.15	0.35	SLT	
3.15	3.90	0.75	C	UPRB
3.90	4.60	0.70	SLT	ULINT
4.60	6.35	1.75	SH	ULINT
6.35	11.55	5.20	SLT	ULINT
11.55	12.25	0.70	C	MMI
12.25	13.50	1.25	SLT	ULINT
13.50	13.80	0.30	SH	ULINT
13.80	14.10	0.30	SLT	ULINT
14.10	20.08	5.98	C	LWR
20.08	22.20	2.12	SLT	
22.20	22.90	0.70	SHC	MB
22.90	28.40	5.50	SLT	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Drillhole Information sheet

Western Canadian Coal

Western Canadian Coal

HOLE-ID: BR2002-13

drilled in: 2002

AREA:

**BURNT RIVER
NORTH BRULE**

Collar	<i>NAD27 DATUM</i>		<i>NAD83 DATUM</i>		
coordinates:	<i>EAST</i>	<i>NORTH</i>	<i>EAST</i>	<i>NORTH</i>	<i>ELEVATION</i>
	572,787.36	6,140,333.08	6,140,236.72	572,992.58	1,286.33

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	28.40	ROTARY	GPS		

Available

Logs

<i>gamma</i>	<i>density</i>	<i>caliper</i>	<i>neutron</i>	<i>strat</i>	<i>drillers</i>	<i>deviation</i>	<i>res</i>	<i>core</i>
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comments:

SURVEY SUMMARY

LITHOLOGY SUMMARY

DEPTH	AZ	INCL	FROM	TO	THICK	LITH	SEAM
0.00	20.3	-88.20	0.00	2.80	2.80	OB	
1.85	20.3	-88.20	2.80	3.15	0.35	SLT	
3.85	26.0	-88.30	3.15	3.90	0.75	C	UPR
5.00	33.0	-87.30	3.90	4.60	0.70	SLT	
7.00	34.7	-87.20	4.60	6.35	1.75	SH	
9.00	35.6	-86.80	6.35	11.55	5.20	SLT	
11.00	36.6	-87.00	11.55	12.25	0.70	C	MM
13.00	38.1	-86.20	12.25	13.50	1.25	SLT	
15.00	38.0	-85.60	13.50	13.80	0.30	SH	
17.00	37.1	-85.50	13.80	14.10	0.30	SLT	
19.00	36.0	-85.40	14.10	20.08	5.98	C	LWR
21.00	34.4	-85.10	20.08	22.20	2.12	SLT	
23.00	33.0	-85.00	22.20	22.90	0.70	SHC	MB
25.00	31.4	-85.10	22.90	28.40	5.50	SLT	
27.00	29.3	-85.10					
28.20	29.3	-84.40					

SAMPLE INFORMATION



Western Canadian Coal

DRILLER'S LOG REPORT



Western Canadian Coal

HOLE-ID: BR 2002-13

AREA: Burnt River / North Brule

DRILLING CO. / RIG #: Murphy Mining Ltd.

DRILLER'S NAME: Doug Lemaitre

HOLE TYPE: Rotary

HOLE DIAMETER: _____

DATE(S) DRILLED: April 9/2002

FROM (metres)	TO (metres)	ROCK TYPE	COMMENTS / WATERFLOW
0.00	1.2192	OB	
1.2192	1.5244	Shale	
1.5244	3.3537	Shale	
3.3537	3.9634	Coal	
3.9634	4.5732	Shale	
4.5732	11.89	Siltstone	
11.89	12.5	Coal	
12.5	14.329	Siltstone	
14.329	20.427	Coal	
20.427	22.256	Shale	
22.256	23.171	Coal	
23.171	28.351	Siltstone	

SIGNED: DRILLER _____ SUPERVISOR E.L. DATE: June 7/02



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

North

AREA: Burnt five Brale

DH ID: RR-002-13

BY: Ernest Paeyk

DATE: May 21/02

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	2.80	OB			
2.80	3.15	SLT			
3.15	3.90	C-UPR			
3.90	4.60	SLT			
4.60	6.35	SH			
6.35	11.55	SLT			
11.55	12.25	C-UPR			
12.25	13.50	SLT			
13.50	13.80	SH			
13.80	14.10	SLT			
14.10	20.08	C-LWR			
20.08	22.20	SLT			
22.20	22.30	SHC MB			
22.30	22.45	SH			
22.45	22.90	SHC MB			
22.90	28.40	SLT			

LITHOLOGICAL ABBREVIATIONS:
OB - OVERBURDEN
C - COAL
P - PARTING
SHC - SHALEY COAL
CGL - CONGLOMERATE
SH - SHALE
SLT - SILTSTONE
SSA - ARGILLACEOUS SANDSTONE
SSC - CLEAN SANDSTONE



GAMMA-RES-DENSITY

Picks

century-geo.com

BR2002-13

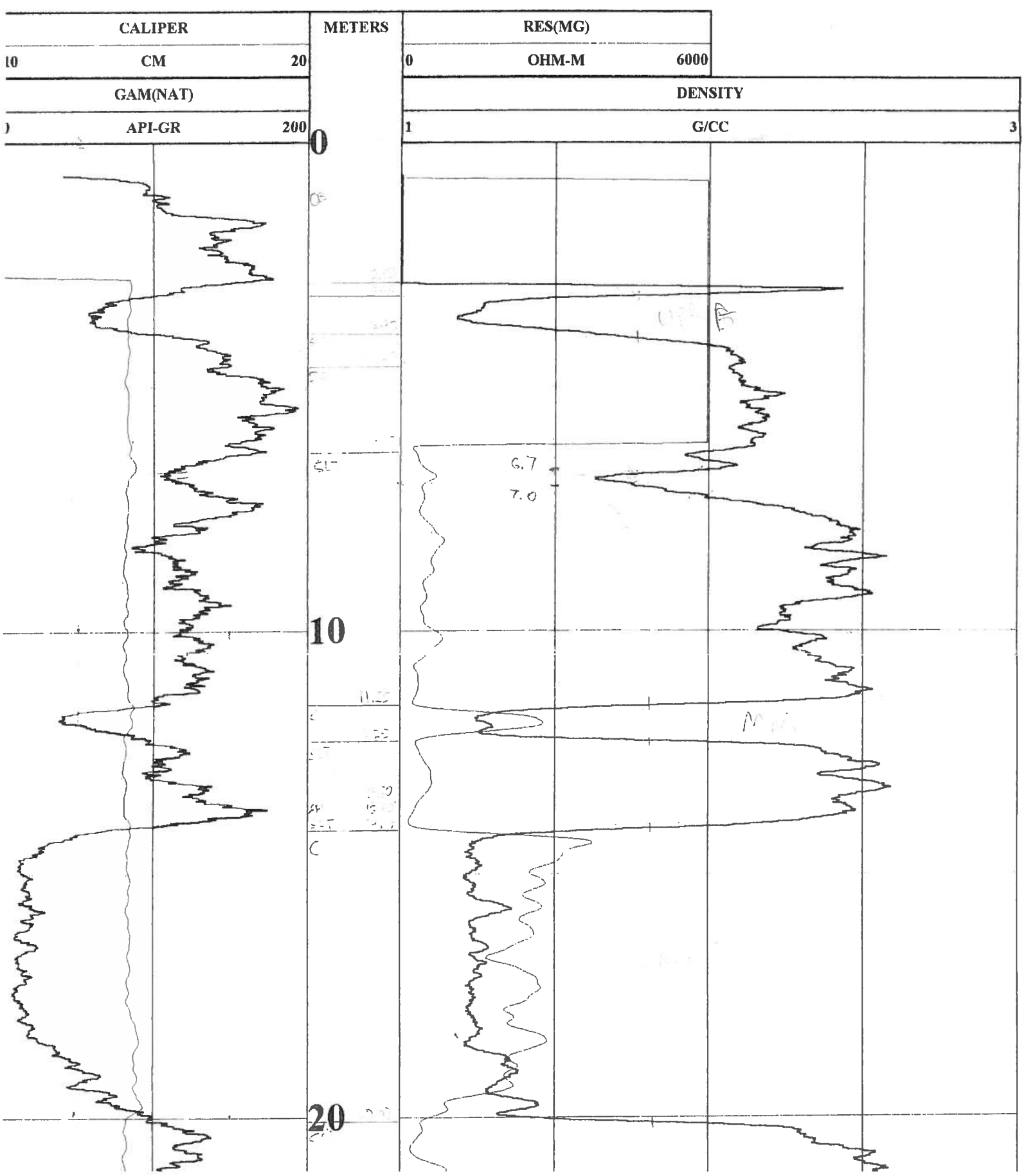
COMPANY : WESTERN COAL
 WELL : BR2002-13
 LOCATION/FIELD : SUKUNKA
 COUNTY :
 STATE : BRITISH COLUMBIA
 OTHER SERVICES: 9057

LICENSE # :
 UNIQUE WELL ID. :
 LONGITUDE :
 LATITUDE :
 SECTION :
 TOWNSHIP :
 RANGE :

DATE : 04/10/02
 PERMANENT DATUM : GL
 ELEVATION KB :
 ELEVATION DF :
 ELEVATION GL :
 LOG MEASURED FROM : GL
 DRL MEASURED FROM : GL
 DEPTH DRILLER : 28
 BIT SIZE : 14
 CASING DRILLER : 3
 CASING DIAMETER : 16
 CASING THICKNESS : 2
 CASING TYPE : STEEL
 TYPE : 9033AA
 LOG BOTTOM : 28.00
 LOG TOP : 0.70
 BOREHOLE FLUID : WATER
 MUD RES :
 RM TEMPERATURE :
 MAX TEMP : 0
 MAGNETIC DECL. : 22
 MATRIX DENSITY : 2.71
 NEUTRON MATRIX : LIMESTONE
 MATRIX DELTA T : 140
 ELECT CUTOFF : 20000
 LOGGING UNIT : 005
 WITNESSED BY : CGC-TULSA
 RECORDED BY : T. NEAL

REMARKS 1 :
 REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



-DENSITY

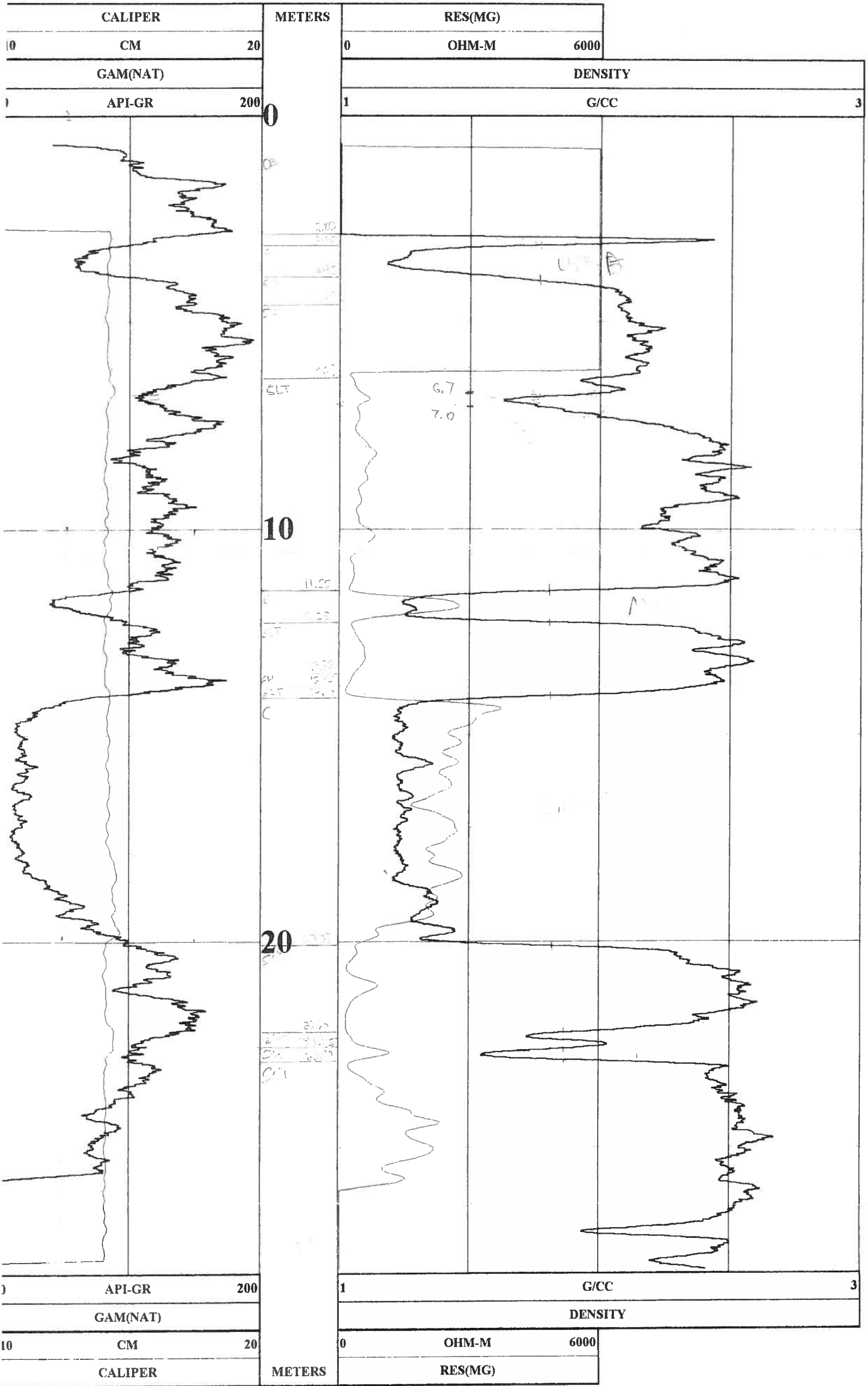
2-13

OTHER SERVICES:
9057

JMBIA

RANGE:

AND CONDITIONS





GAMMA-NEUTRON

century-geo.com

BR2002-13

OTHER SERVICES:
9033

COMPANY : WESTERN COAL
WELL : BR2002-13

LOCATION/FIELD : SUKUNKA

COUNTY : STATE : BRITISH COLUMBIA

LICENSE #

UNIQUE WELL ID.

LONGITUDE

ALTITUDE

SECTION : TOWNSHIP : RANGE:

DATE : 04/10/02
PERMANENT DATUM : GL
LOG BOTTOM : 28.10
LOG TOP : 1.95

ELEVATION KB :
ELEVATION DF :
BOREHOLE FLUID : WATER
MUD RES :

ELEVATION GL :
LOG MEASURED FROM : GL
RM TEMPERATURE :
MAX TEMP : 0

DRILL MEASURED FROM : GL
DEPTH DRILLER : 28
MAGNETIC DECL. : 22
MATRIX DENSITY : 2.71

BIT SIZE : 14
DRILLER : 3
NEUTRON MATRIX : LIMESTONE
MATRIX DELTA T : 140

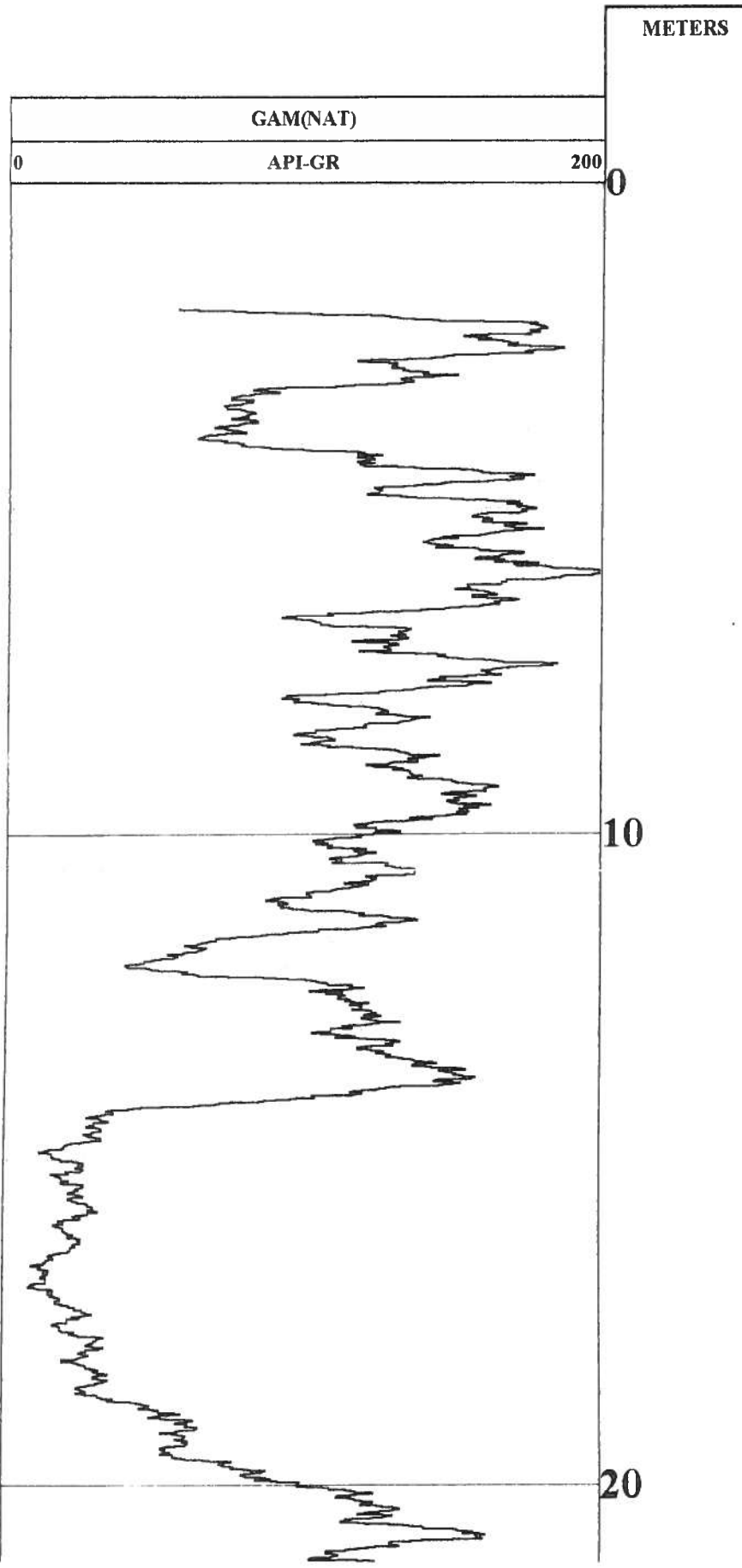
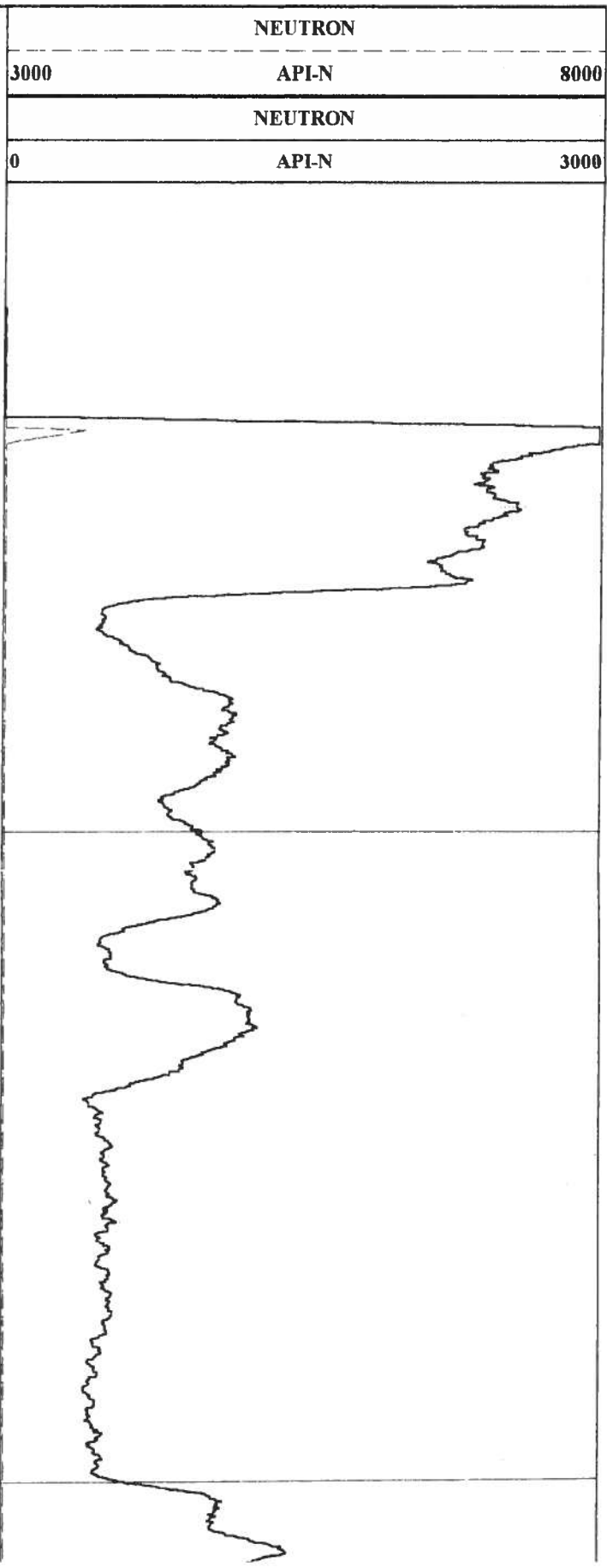
CASING DIAMETER : 16
CASING THICKNESS : .2
ELECT CUTOFF : 20000
LOGGING UNIT : 005

CASING TYPE : STEEL
TYPE : 9057A
WITNESSED BY : CGC-TULSA
RECORDED BY : T. NEAL

REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



NEUTRON

102-13

OTHER SERVICES:
9033

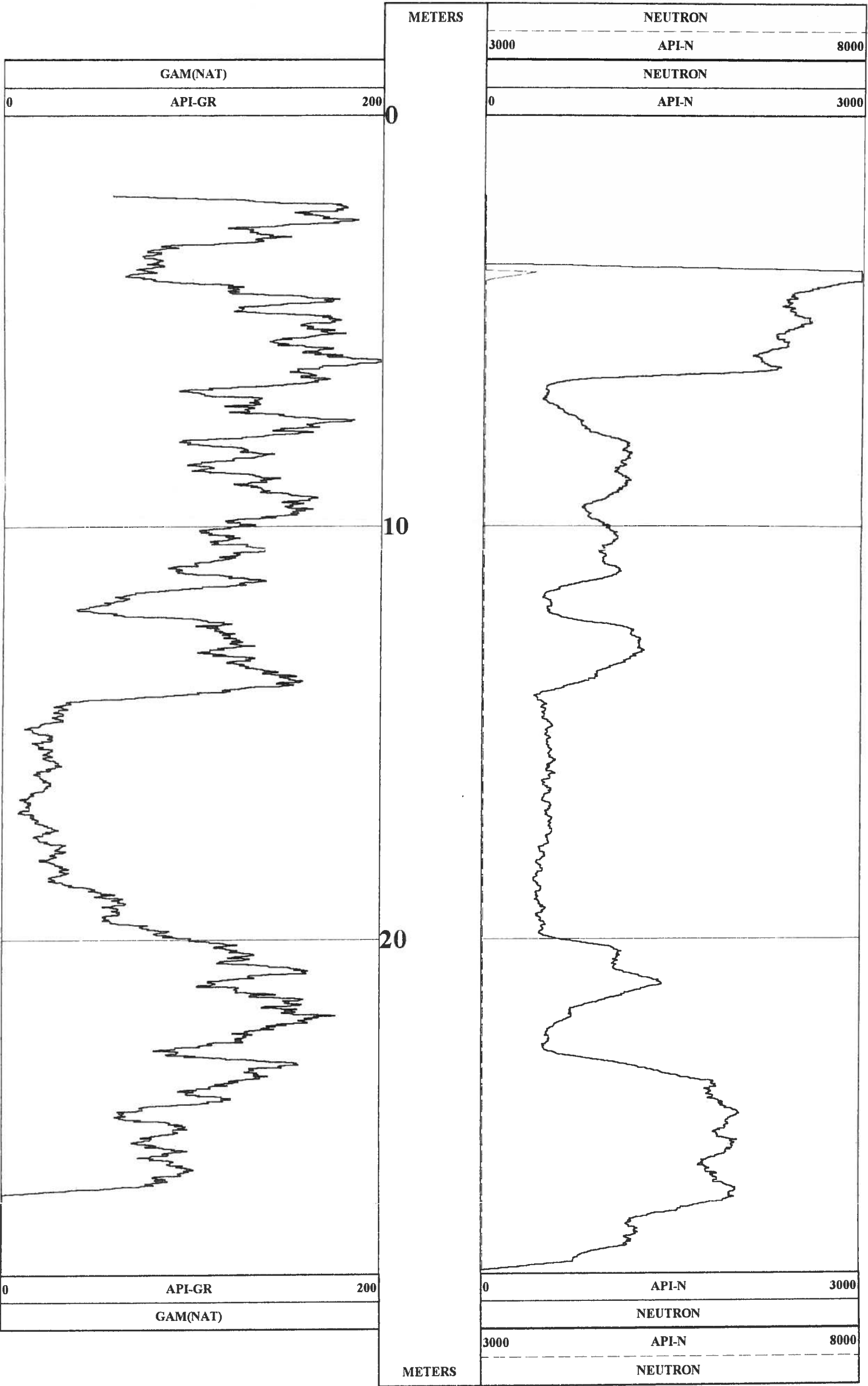
COLUMBIA

RANGE:

INE

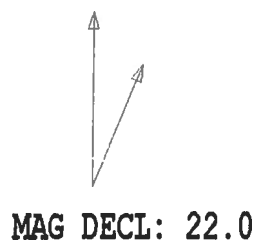
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RMS AND CONDITIONS

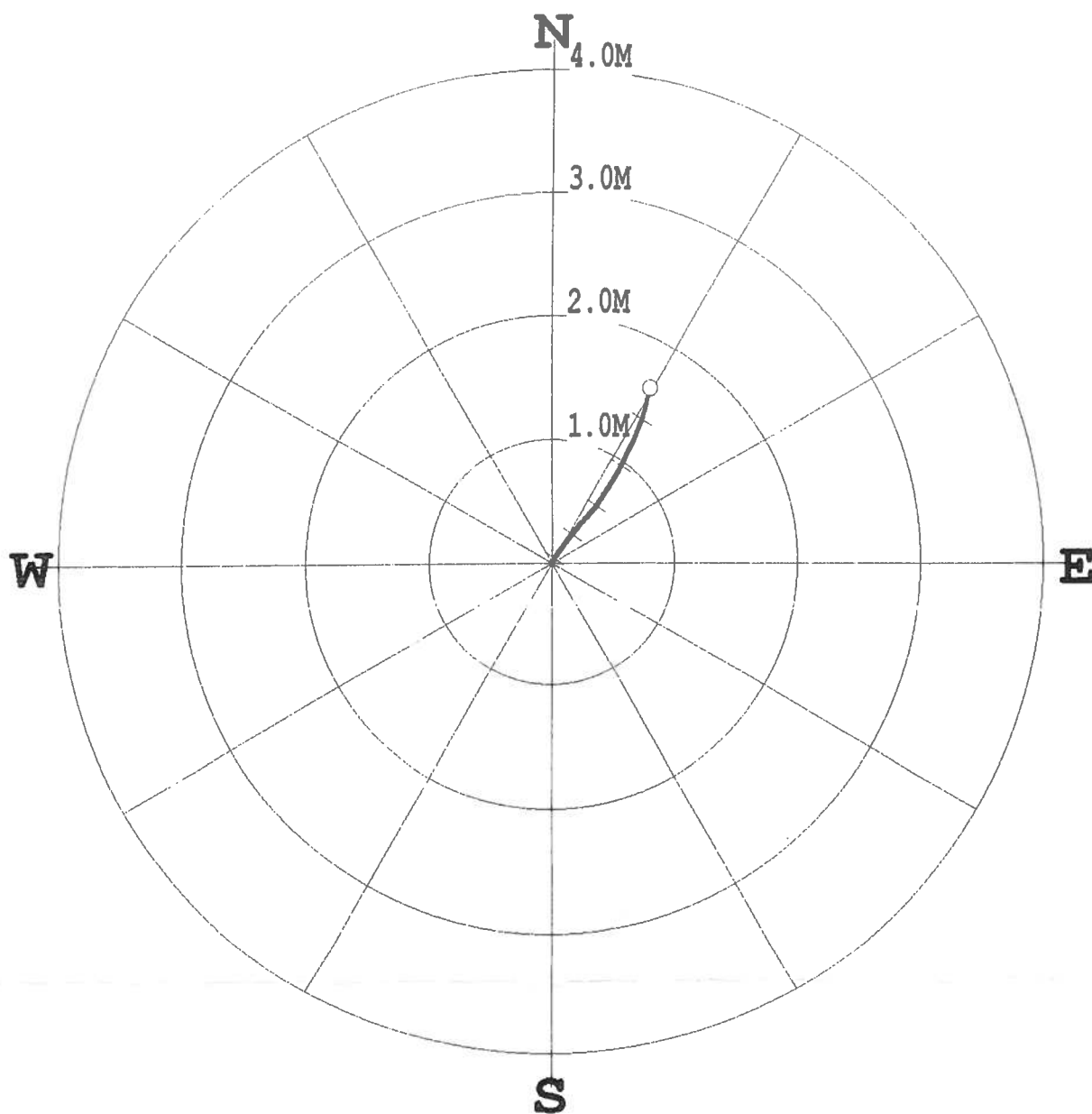


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL
 LOCATION: SUKUNKA
 HOLE ID: BR2002-13
 DATE OF LOG: 04/10/02
 PROBE: 9057A 1071



SCALE: 1 M/CM
 TRUE DEPTH: 27.85 M
 AZIMUTH: 29.3
 DISTANCE: 1.6 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



3.0	2.95	0.00	0.00	0.0	0.0	0.0	0.0
4.0	3.95	0.01	0.00	0.0	26.1	1.7	25.6
5.0	4.95	0.04	0.02	0.0	29.6	2.3	33.9
6.0	5.95	0.07	0.05	0.1	32.8	2.8	38.9
7.0	6.95	0.11	0.07	0.1	34.0	2.6	39.1
8.0	7.95	0.15	0.10	0.2	34.7	2.8	37.0
9.0	8.94	0.19	0.13	0.2	35.0	2.9	37.1
10.0	9.94	0.23	0.16	0.3	35.6	3.2	40.0
11.0	10.94	0.27	0.20	0.3	36.1	3.5	41.2
12.0	11.94	0.32	0.23	0.4	36.6	3.0	35.9
13.0	12.94	0.36	0.27	0.5	37.4	3.5	46.6
14.0	13.94	0.40	0.32	0.5	38.1	3.8	40.9
15.0	14.93	0.45	0.36	0.6	38.4	3.9	37.1
16.0	15.93	0.51	0.40	0.7	38.1	4.4	34.2
17.0	16.93	0.58	0.44	0.7	37.6	4.3	34.2
18.0	17.93	0.64	0.49	0.8	37.1	4.5	31.7
19.0	18.92	0.71	0.52	0.9	36.6	4.5	30.3
20.0	19.92	0.77	0.56	1.0	36.0	4.6	27.7
21.0	20.92	0.85	0.60	1.0	35.2	4.8	26.4
22.0	21.91	0.92	0.63	1.1	34.4	4.9	26.4
23.0	22.91	1.00	0.67	1.2	33.8	4.9	22.4
24.0	23.91	1.08	0.70	1.3	33.0	5.0	21.9
25.0	24.90	1.16	0.73	1.4	32.2	4.6	20.8
26.0	25.90	1.24	0.76	1.5	31.4	4.9	17.1
27.0	26.89	1.33	0.78	1.5	30.3	5.4	10.9
28.0	27.89	1.42	0.80	1.6	29.3	0.0	0.0
27.9	27.85	1.42	0.80	1.6	29.3	5.6	16.3



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2002-14**

year drilled: 2002

AREA:

**BURNT RIVER
Brule**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,742.27	6,140,294.67	572,947.90	6,140,500.30	1,283.96

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	73.30	ROTARY	GPS		

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comments:								

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	354.6	-87.90
1.95	354.6	-87.90
4.15	355.1	-87.70
5.40	355.4	-87.70
7.40	356.8	-87.10
9.40	357.5	-86.80
11.40	358.7	-86.60
13.40	359.6	-86.60
17.40	359.9	-86.80
19.40	358.9	-87.50
21.40	358.9	-86.20
23.40	0.9	-85.50
25.40	2.7	-85.00
27.40	3.7	-84.90
29.40	4.7	-84.40
31.40	5.2	-84.60
33.40	5.3	-84.50
35.40	5.4	-84.30
37.40	4.7	-85.00
39.40	5.6	-84.30
41.40	7.3	-84.20
43.40	9.1	-83.60
45.40	10.9	-82.10
47.40	12.6	-81.40
49.40	14.0	-81.70
51.40	15.1	-80.60
53.40	15.9	-79.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.70	2.70	OB	
2.70	3.70	1.00	SSA	
3.70	5.85	2.15	SLT	
5.85	6.80	0.95	SH	
6.80	13.40	6.60	SLT	
13.40	14.20	0.80	SSA	
14.20	16.80	2.60	SLT	
16.80	20.80	4.00	SSA	
20.80	22.00	1.20	SH	
22.00	22.50	0.50	SSA	
22.50	22.95	0.45	SH	
22.95	23.20	0.25	C	MC
23.20	23.40	0.20	P	MC
23.40	23.60	0.20	C	MC
23.60	23.90	0.30	SH	
23.90	24.25	0.35	SLT	
24.25	24.90	0.65	SH	
24.90	25.30	0.40	SLT	
25.30	25.90	0.60	SH	
25.90	26.90	1.00	SLT	
26.90	33.70	6.80	SSA	
33.70	34.00	0.30	SHC	
34.00	37.30	3.30	SLT	
37.30	39.05	1.75	SSA	
39.05	39.25	0.20	SLT	
39.25	39.45	0.20	SSA	
39.45	40.40	0.95	SH	
40.40	41.65	1.25	SLT	
41.65	41.95	0.30	SSA	
41.95	42.25	0.30	SLT	
42.25	42.45	0.20	SSA	
42.45	43.10	0.65	SLT	
43.10	45.00	1.90	SSA	
45.00	45.35	0.35	SLT	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2002-14**

year drilled: 2002

AREA:

BURNT RIVER
Brule

55.40	15.9	-79.40
57.40	17.3	-79.40
59.40	18.9	-78.60
61.40	20.2	-78.30
63.40	21.1	-76.80
65.40	21.9	-76.30
67.40	22.6	-76.00
69.40	23.1	-75.60
71.40	23.2	-75.40
72.85	23.0	-75.70

x

45.35	45.80	0.45	SSA	
45.80	46.20	0.40	SLT	
46.20	51.00	4.80	SSA	
51.00	52.50	1.50	SLT	
52.50	53.20	0.70	SH	
53.20	53.80	0.60	C	UPRA
53.80	55.90	2.10	SLT	UPT
55.90	57.05	1.15	C	UPRB
57.05	58.20	1.15	SH	ULINT
58.20	59.40	1.20	SSA	ULINT
59.40	59.70	0.30	SLT	ULINT
59.70	60.00	0.30	SSA	ULINT
60.00	61.40	1.40	SLT	ULINT
61.40	62.12	0.72	C	MMI
62.12	64.20	2.08	SLT	ULINT
64.20	68.20	4.00	C	LWR
68.20	68.60	0.40	P	LWR
68.60	68.90	0.30	C	LWR
68.90	69.95	1.05	SLT	
69.95	70.40	0.45	SHC	MB
70.40	73.30	2.90	SLT	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

DRILLER'S LOG REPORT



Western Canadian Coal

HOLE-ID: BR-2002-14x
 AREA: Braut River North Bunk
 DRILLING CO. / RIG #: Mar Pitt Mining LTD
 DRILLER'S NAME: Dave Leman
 HOLE TYPE: Rotary
 HOLE DIAMETER: -
 DATE(S) DRILLED: April 9/10/2002
April 20/2002

FROM (metres)	TO (metres)	ROCK TYPE	COMMENTS / WATERFLOW
0.00	0.3047	OB	↑
0.3047	1.5244	SS	↑
1.5244	6.0976	SS	↑
6.0976	8.2317	SH	↑
8.2317	9.7561	SLT	April 9/02
9.7561	13.72	SH	↑
13.72	22.256	SLT	↑
22.256	22.866	SH	↑
22.866	23.78	C	↑
23.78	25.00	SH	↑
25.00	25.61	C	↑
25.61	33.537	SS	↑
33.537	34.451	SH C	↑
34.451	41.463	ST	↑
41.463	42.378	SH coal ST	↑
42.378	46.341	SS	April 10/02
46.341	53.354	SS	↑
53.354	53.963	coal	↑
53.963	54.402	SH	↑
54.402	57.927	coal	↑
57.927	58.232	SH	↑
58.232	64.329	SS	↑
64.329	68.598	coal	↑
68.598	68.902	SH	↑
68.902	70.732	coal	↑
70.732	74.085	SS	April 20/02

SIGNED: DRILLER _____ SUPERVISOR Ernest DATE: _____



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

Northy

AREA: Burnt River Brale

DH ID: BR 2002-14x

BY: Ernest Popert

DATE: May 21/02

FROM	TO	LITH	FROM	TO	LITH
0	2.70	OB	41.65	41.95	SSA
2.70	3.70	SSA	41.95	42.25	SLT
3.70	5.85	SLT	42.25	42.45	SSA
5.85	6.80	SH	42.45	43.10	SLT
6.80	13.40	SLT	43.10	45.00	SSA
13.40	14.20	SSA	45.00	45.35	SLT
14.20	16.80	SLT	45.35	45.80	SSA
16.80	20.80	SSA	45.80	46.20	SLT
20.80	22.00	SH	46.20	51.00	SSA
22.00	22.50	SSA	51.00	52.50	SLT
22.50	22.95	SH	52.50	53.20	SH
22.95	23.20	CGL	53.20	53.80	C-UPR
23.20	23.40	P	53.80	55.90	SLT
23.40	23.60	C	55.90	57.05	C-LWR
23.60	23.90	SH	57.05	58.20	SH
23.90	24.25	SLT	58.20	59.40	SSA
24.25	24.90	SH	59.40	59.70	SLT
24.90	25.30	SLT	59.70	60.00	SSA
25.30	25.90	SH	60.00	61.40	SLT
25.90	26.90	SLT	61.40	62.12	C-UPR
26.90	33.70	SSA	62.12	64.20	SLT
33.70	34.00	SHC	64.20	68.20	C-LWR
34.00	37.30	SLT	68.20	68.60	P
37.30	39.05	SSA	68.60	68.90	C-LWR
39.05	39.25	SLT	68.90	69.95	SLT
39.25	39.45	SSA	69.95	70.40	SHC-MB
39.45	40.40	SH	70.40	74.085	SLT
40.40	41.65	SLT			

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN

C - COAL

P - PARTING

SHC - SHALEY COAL

CGL - CONGLOMERATE

SH - SHALE

SLT - SILTSTONE

SSA - ARGILLACEOUS SANDSTONE

SSC - CLEAN SANDSTONE



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River Dillon

DH ID: BR2002-14

BY: Ernest Pong K.

DATE: (Monday) June 3/2002

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	2.70	O.B.			
2.70	11.00	SLT			
11.00	11.90	CBN			

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN

C - COAL

P - PARTING

SHC - SHALEY COAL

CGL - CONGLOMERATE

SH - SHALE

SLT - SILTSTONE

SSA - ARGILLACEOUS SANDSTONE

SSC - CLEAN SANDSTONE



GAMMA-RES-DENSITY

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BR2002-14

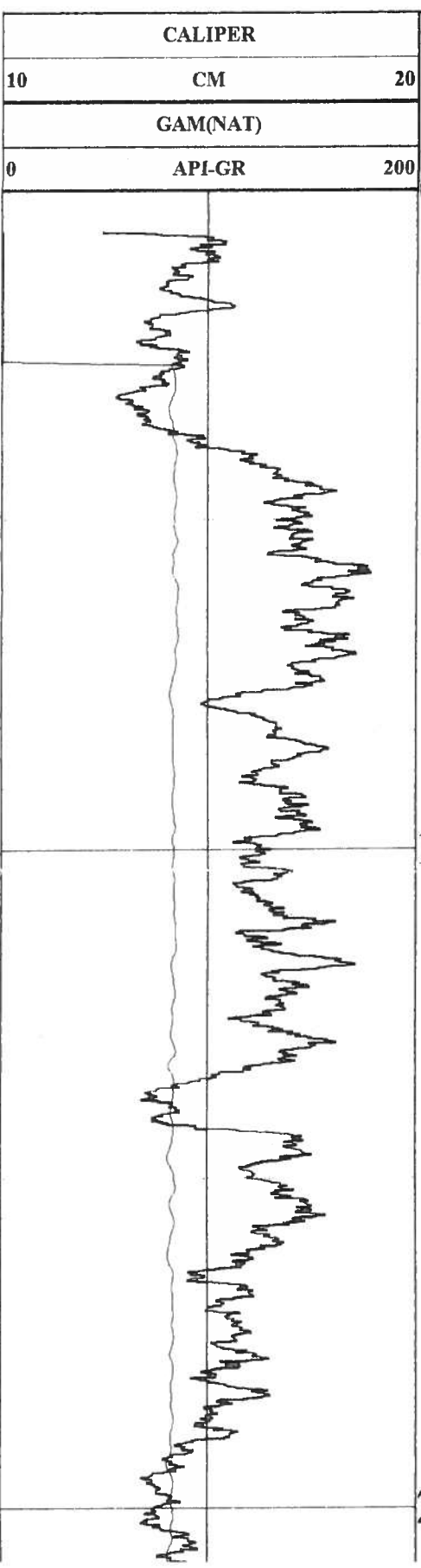
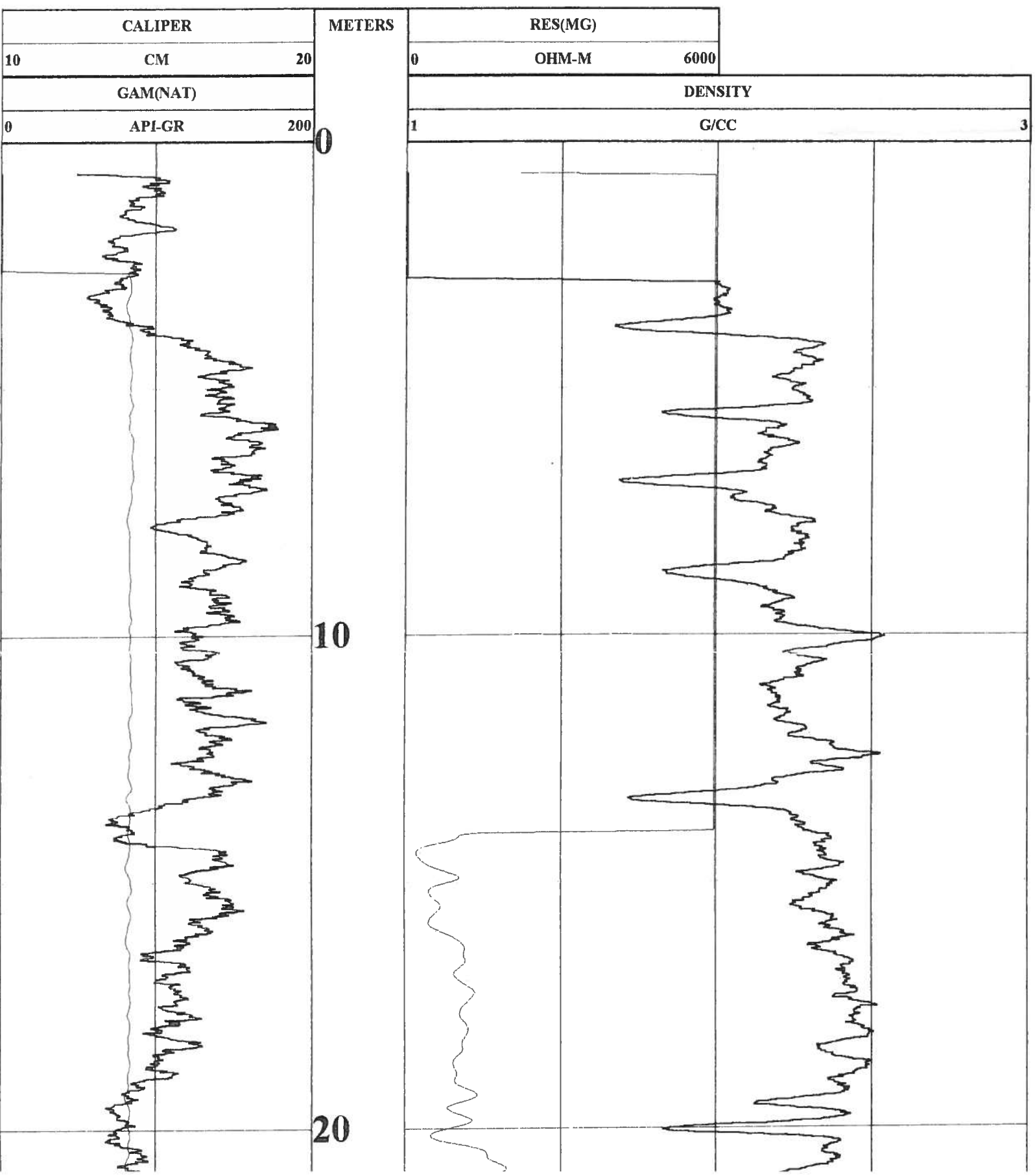
COMPANY : WESTERN COAL
 WELL : BR2002-14
 LOCATION/FIELD : SUKUNIKA
 COUNTY :
 STATE : BRITISH COLUMBIA
 OTHER SERVICES: 9057

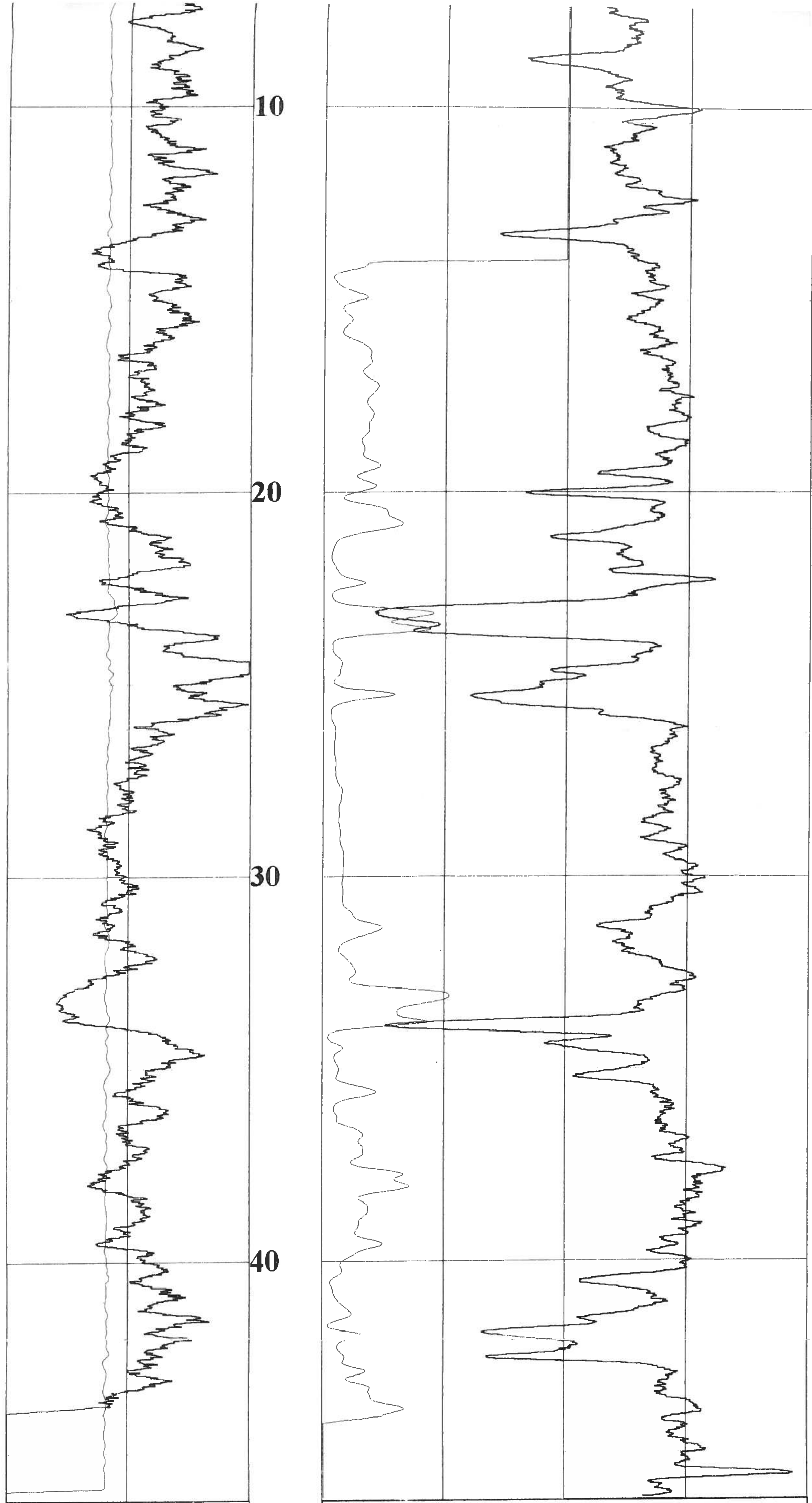
LICENSE # :
 UNIQUE WELL ID. :
 LONGITUDE :
 LATITUDE :
 SECTION :
 TOWNSHIP :
 RANGE :

DATE PERMANENT DATUM : 04/11/02
 LOG BOTTOM : 46.17
 LOG TOP : 0.64
 ELEVATION KB :
 ELEVATION DF :
 BOREHOLE FLUID : WATER
 MUD RES :
 ELEVATION GL :
 RM TEMPERATURE :
 LOG MEASURED FROM : GL
 MAX TEMP : 0
 DRL MEASURED FROM : GL
 MAGNETIC DECL. : 22
 DEPTH DRILLER : 46
 MATRIX DENSITY : 2.71
 BIT SIZE : 14
 CASING DRILLER : 3
 NEUTRON MATRIX : LIMESTONE
 MATRIX DELTA T : 140
 CASING DIAMETER : 16
 ELECT CUTOFF : 20000
 CASING THICKNESS : 2
 LOGGING UNIT : 005
 CASING TYPE : STEEL
 WITNESSED BY : CGC-TULSA
 TYPE : 9033AA
 RECORDED BY : T. NEAL

REMARKS 1 :
 REMARKS 2 :

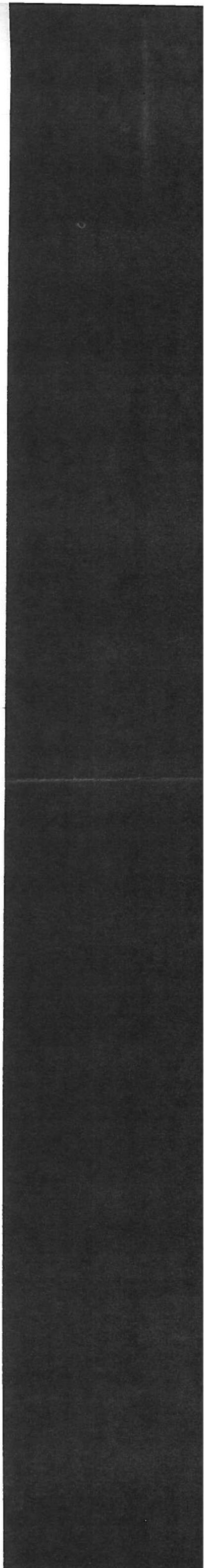
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





0	API-GR	200
	GAM(NAT)	
10	CM	20
	CALIPER	METERS

1	G/CC	3
	DENSITY	
0	OHM-M	6000
	RES(MG)	





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GAMMA-RES-DENSITY

Picks
BR2002-14X

COMPANY : WESTERN COAL

WELL : BR2002-14X

LOCATION/FIELD : SUKUNKA

COUNTY : STATE

BRITISH COLUMBIA

OTHER SERVICES:
9057

LICENSE #

UNIQUE WELL ID.

LONGITUDE

LATITUDE

TOWNSHIP

RANGE:

DATE PERMANENT DATUM : 04/20/02

LOG BOTTOM : 73.43

ELEVATION KB

LOG TOP : 0.76

ELEVATION DF

BOREHOLE FLUID : WATER

ELEVATION GL

MUD RES

LOG MEASURED FROM: GL

RM TEMPERATURE: 0

DRL MEASURED FROM: GL

MAX TEMP

DEPTH DRILLER : 74

MAGNETIC DECL. : 22

BIT SIZE : 14

MATRIX DENSITY : 2.71

CASING DRILLER : 3

NEUTRON MATRIX MATRIX DELTA T : 140

CASING DIAMETER : 16

LIMESTONE

CASING THICKNESS : 2

ELECT CUTTOFF : 20000

CASING TYPE : STEEL

LOGGING UNIT : 005

TYPE : 9033AA

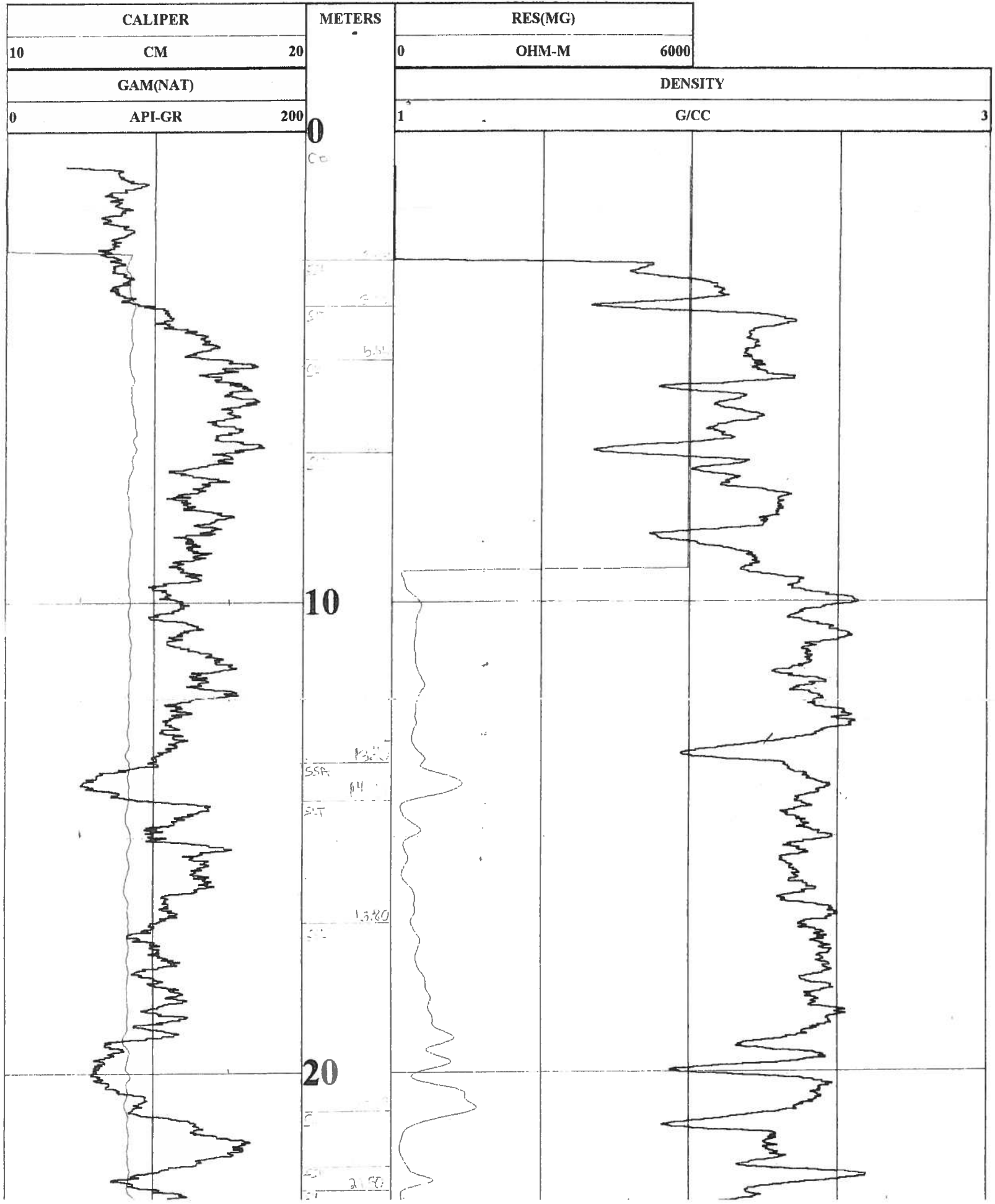
WITNESSED BY : CGC-TULSA

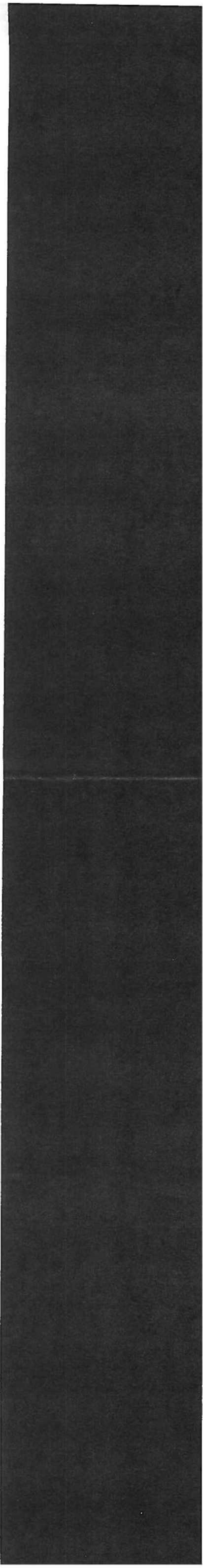
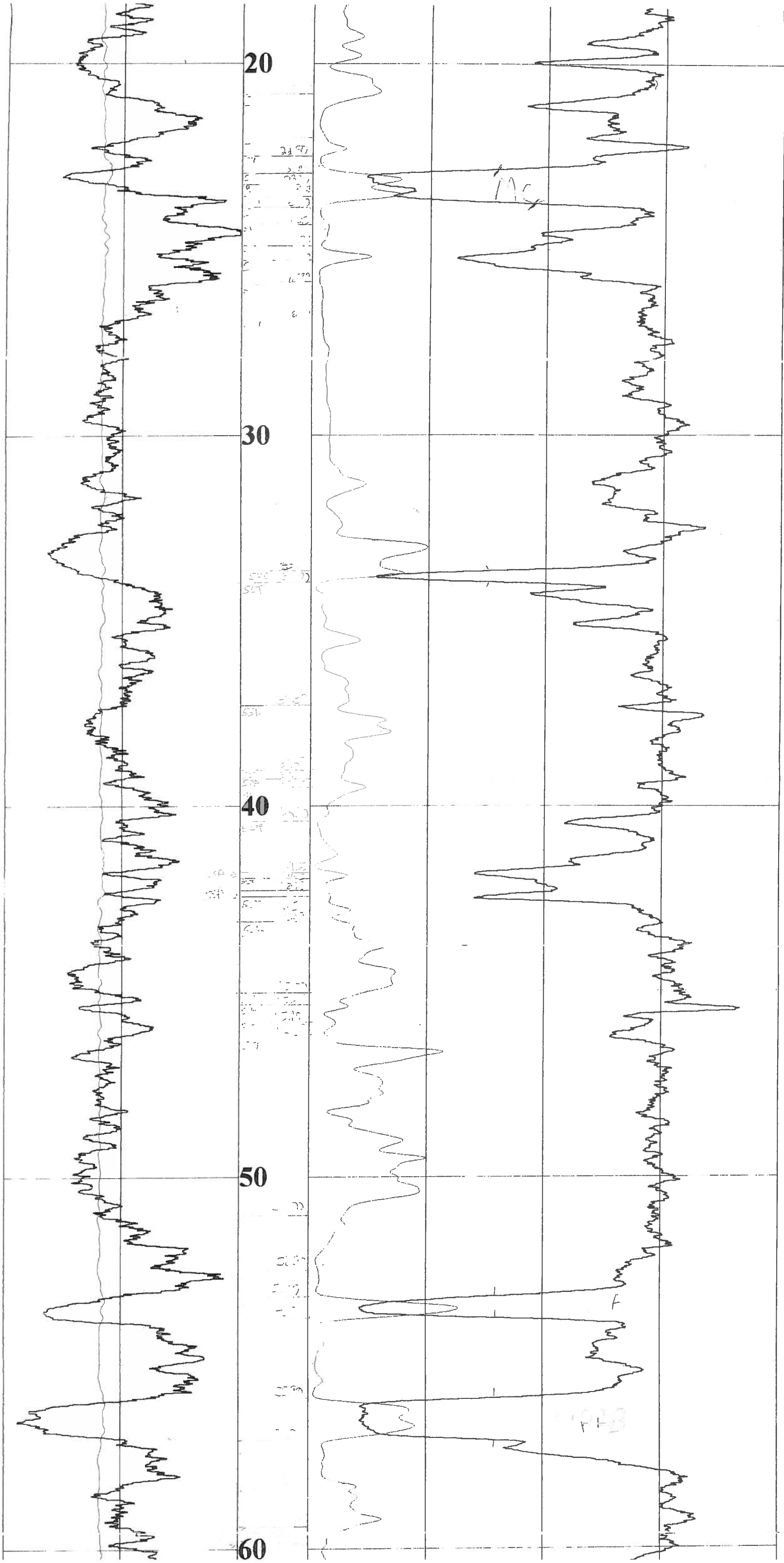
RECORDED BY : T. NEAL

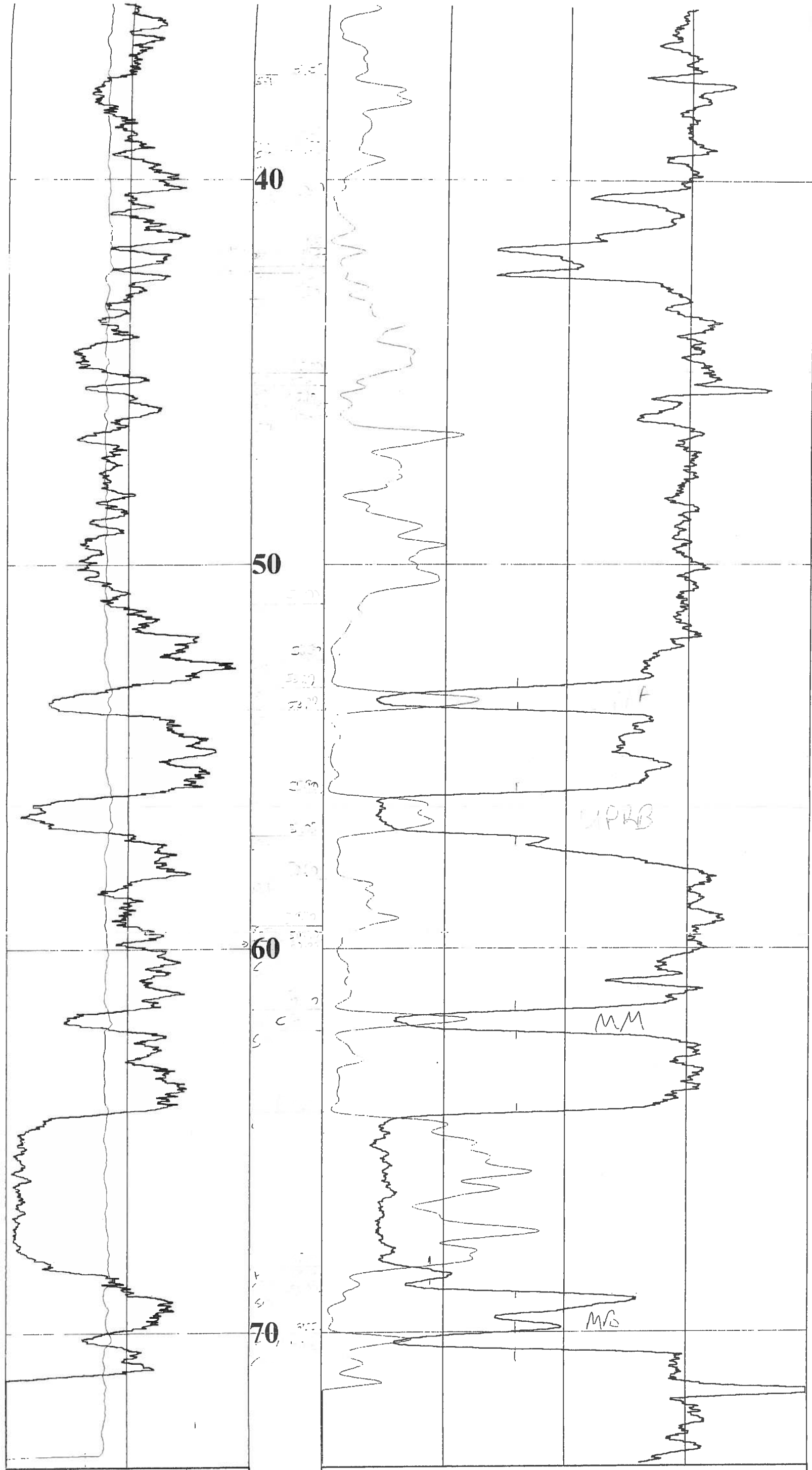
REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

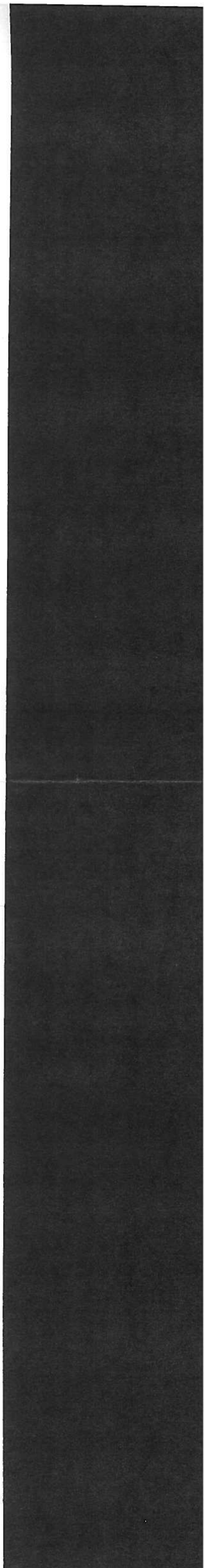






0	100	200
API-GR		
GAM(NAT)		
10	CM	20
CALIPER		
METERS		

1	G/CC	3
DENSITY		
0	OHM-M	6000
RES(MG)		





GAMMA-NEUTRON

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BR2002-14

COMPANY : WESTERN COAL

WELL : BR2002-14

LOCATION/FIELD : SUKUNKA

COUNTY : STATE : BRITISH COLUMBIA

LICENSE #

UNIQUE WELL ID.

LONGITUDE

LATITUDE

SECTION

TOWNSHIP

RANGE:

OTHER SERVICES:
9033

DATE PERMANENT DATUM : 04/10/02

ELEVATION KB

ELEVATION DF

ELEVATION GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

DEPTH DRILLER : 46

BIT SIZE : 14

CASING DRILLER : 3

CASING DIAMETER : 16

CASING THICKNESS : 2

CASING TYPE : STEEL

TYPE : 9057A

LOG BOTTOM : 46.25

LOG TOP : 1.99

BOREHOLE FLUID : WATER

MUD RES

RM TEMPERATURE: 0

MAX TEMP

MAGNETIC DECL. : 22

MATRIX DENSITY : 2.71

NEUTRON MATRIX : LIMESTONE

MATRIX DELTA T : 140

ELECT CUTOFF : 20000

LOGGING UNIT : 005

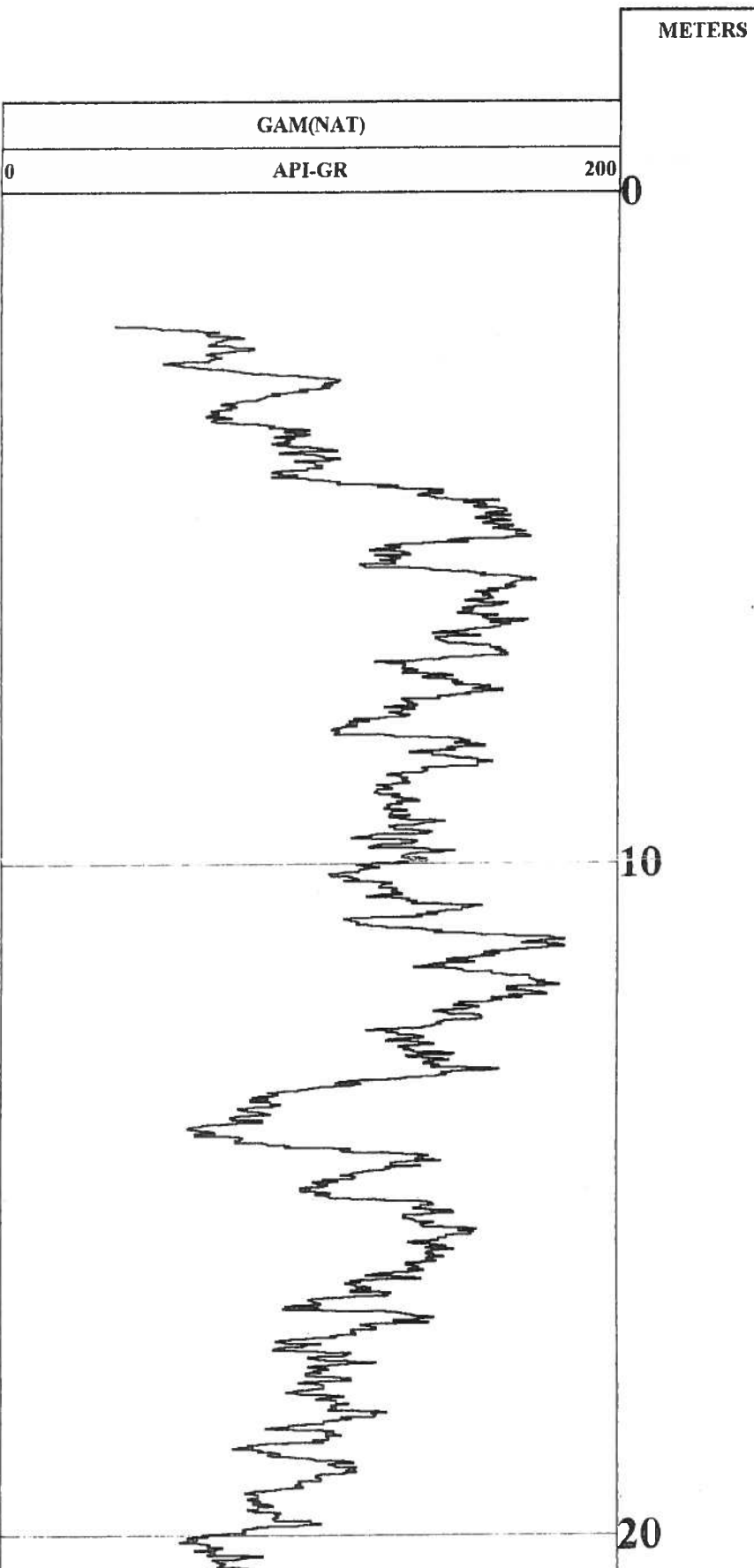
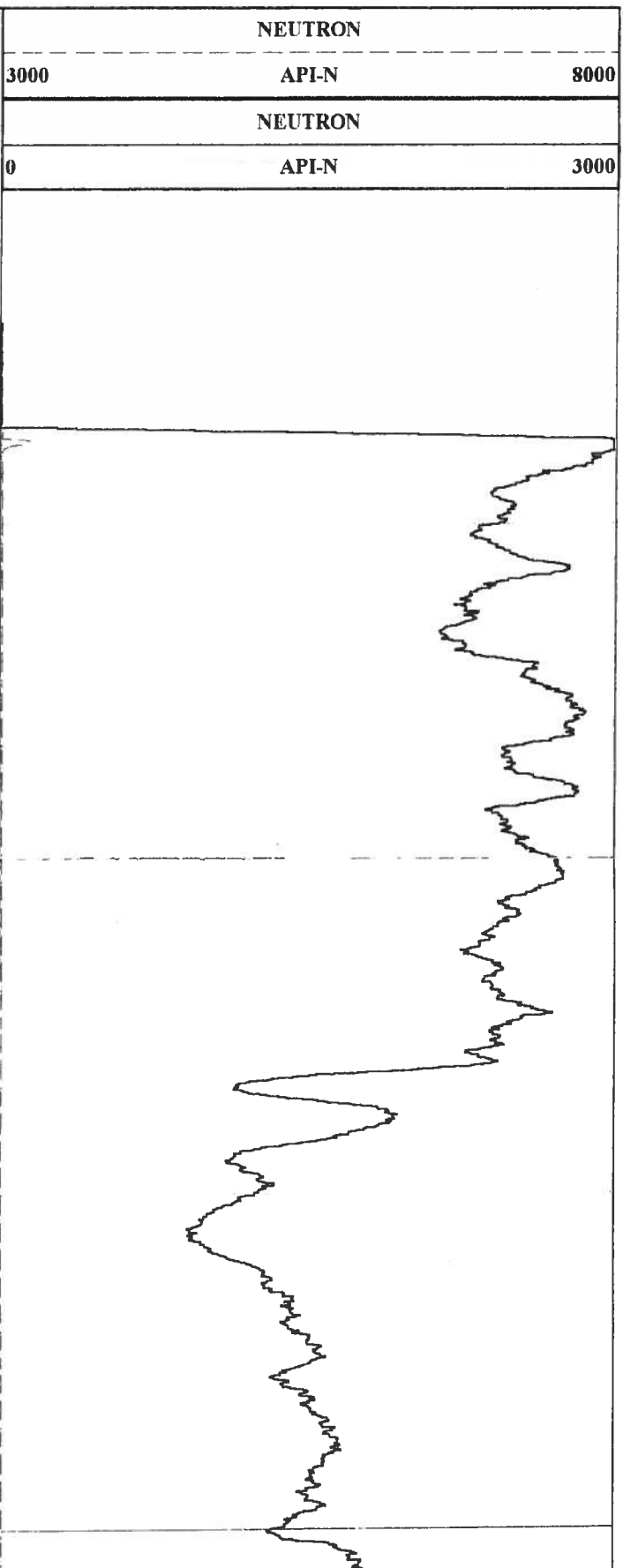
WITNESSED BY : CGC-TULSA

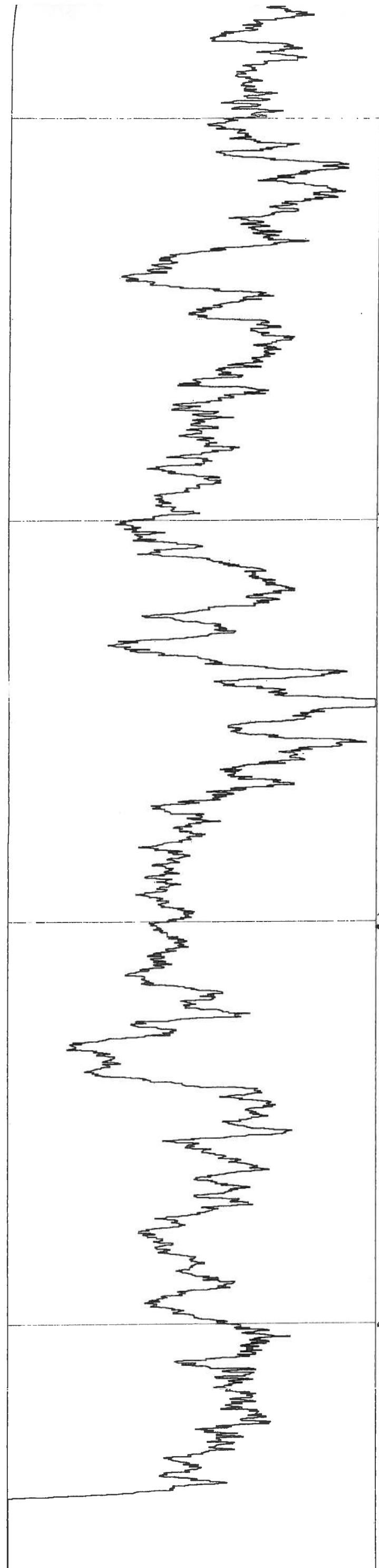
RECORDED BY : T. NEAL

REMARKS 1

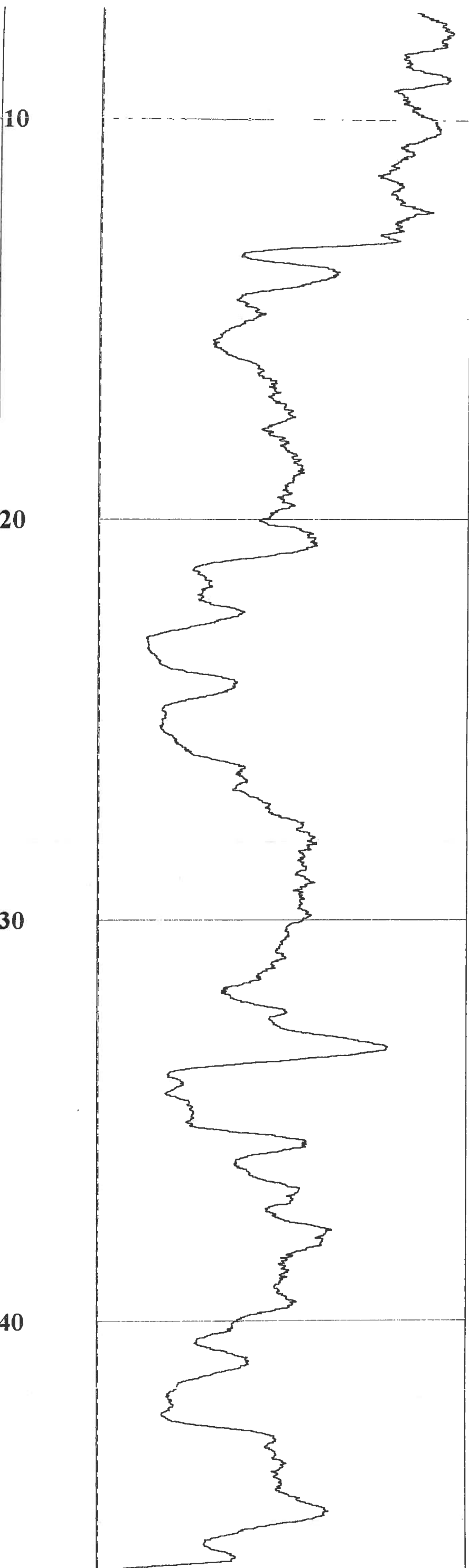
REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



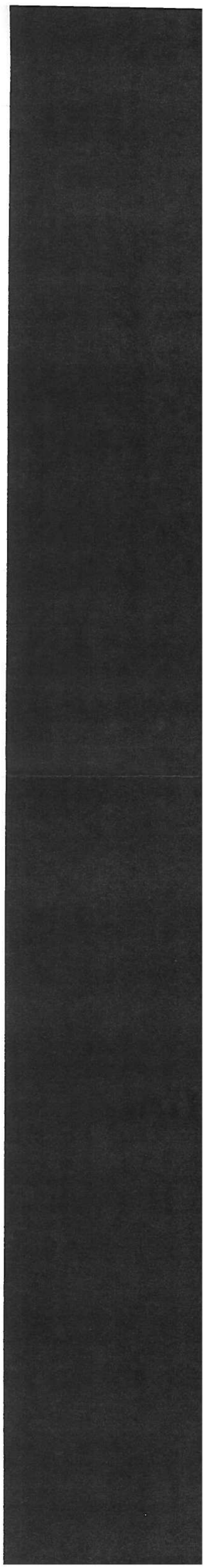


0	API-GR	200
	GAM(NAT)	



0	API-N	3000
	NEUTRON	
3000	API-N	8000
	NEUTRON	

METERS





GAMMA-NEUTRON

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BR2002-14X

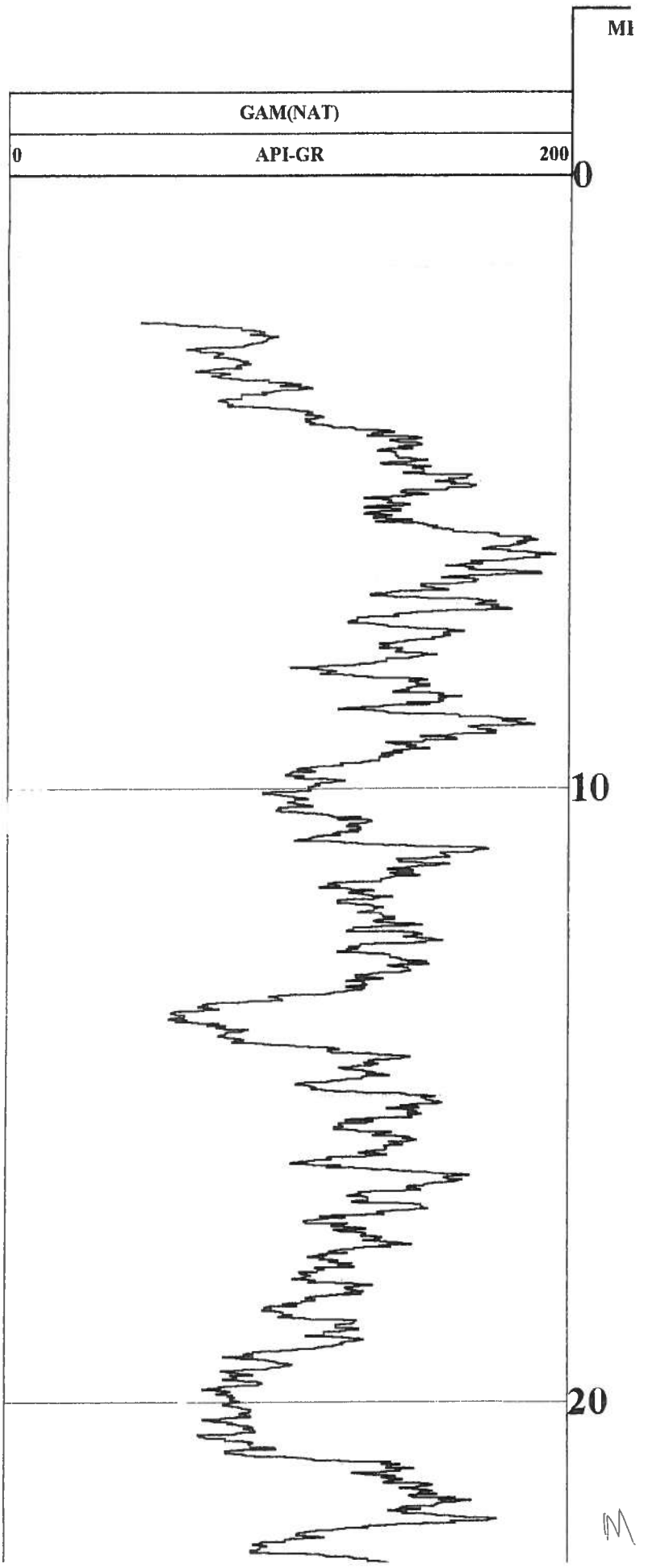
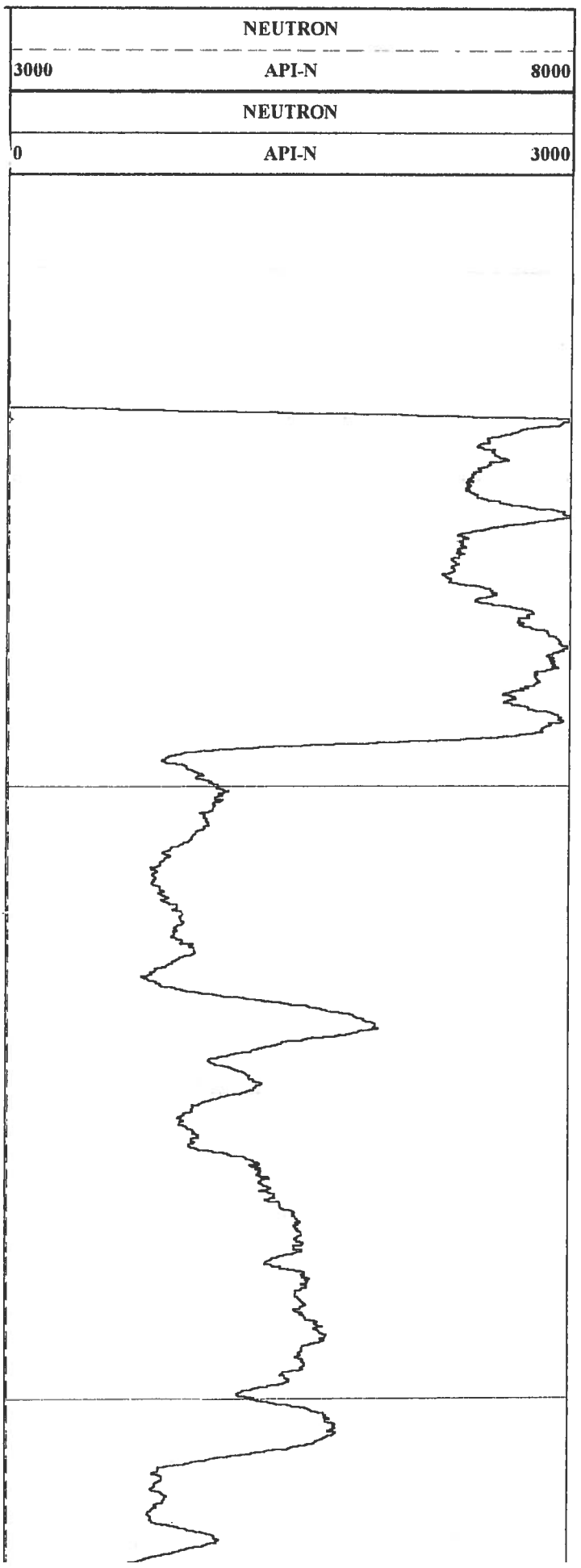
COMPANY : WESTERN COAL
 WELL : BR2002-14x
 LOCATION/FIELD : SUKUNKA
 COUNTY :
 STATE : BRITISH COLUMBIA
 OTHER SERVICES: 9033

LICENSE # :
 UNIQUE WELL ID. :
 LONGITUDE :
 LATITUDE :
 SECTION :
 TOWNSHIP :
 RANGE :

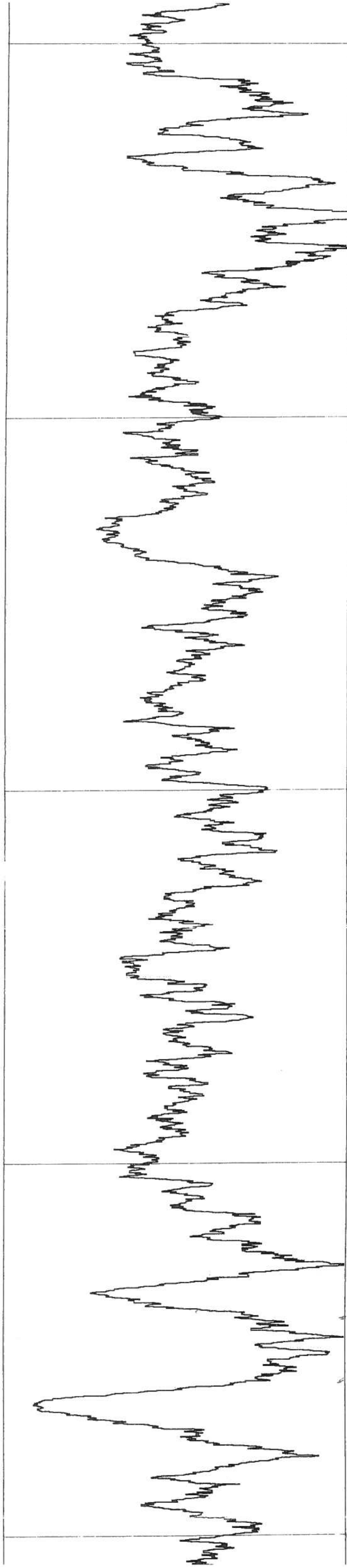
DATE : 04/20/02
 PERMANENT DATUM : GL
 LOG BOTTOM : 73.51
 LOG TOP : 2.39
 ELEVATION KB :
 BOREHOLE FLUID : WATER
 ELEVATION DF :
 MUD RES :
 ELEVATION GL :
 RM TEMPERATURE :
 LOG MEASURED FROM: GL
 MAX TEMP : 0
 DRL MEASURED FROM: GL
 MAGNETIC DECL. : 22
 DEPTH DRILLER : 74
 MATRIX DENSITY : 2.71
 BIT SIZE : 14
 NEUTRON MATRIX : LIMESTONE
 CASING DRILLER : 3
 MATRIX DELTA T : 140
 CASING DIAMETER : 16
 ELECT CUTOFF : 20000
 CASING THICKNESS : .2
 LOGGING UNIT : 005
 CASING TYPE : STEEL
 WITNESSED BY : CGC-TULSA
 TYPE : 9057A
 RECORDED BY : T. NEAL

REMARKS 1 :
 REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



MC



20

MC

30

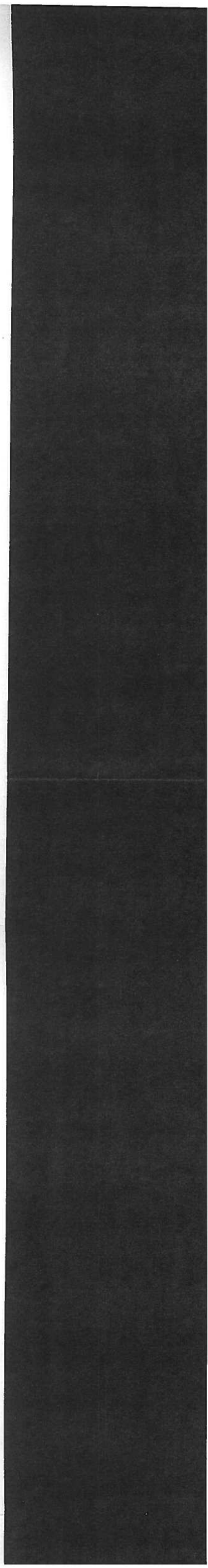
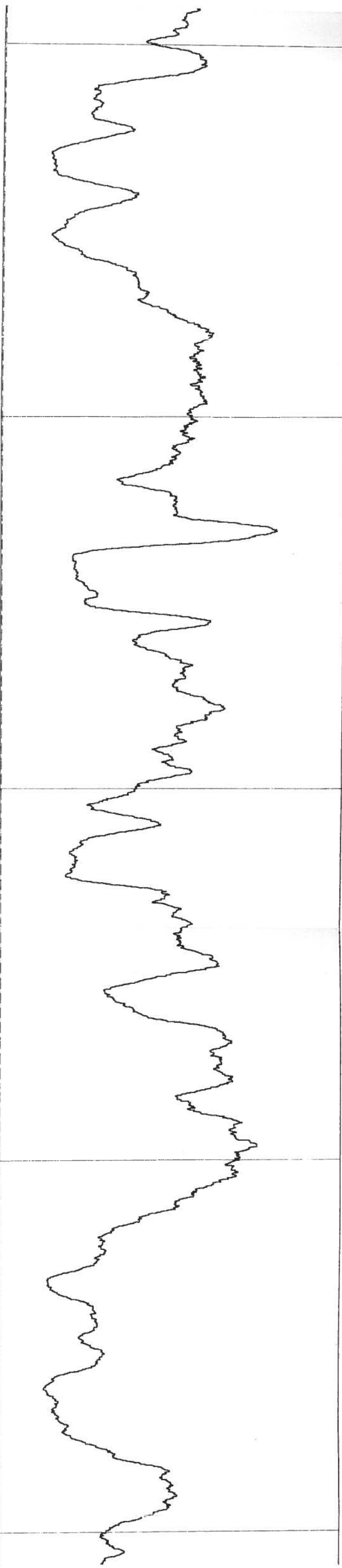
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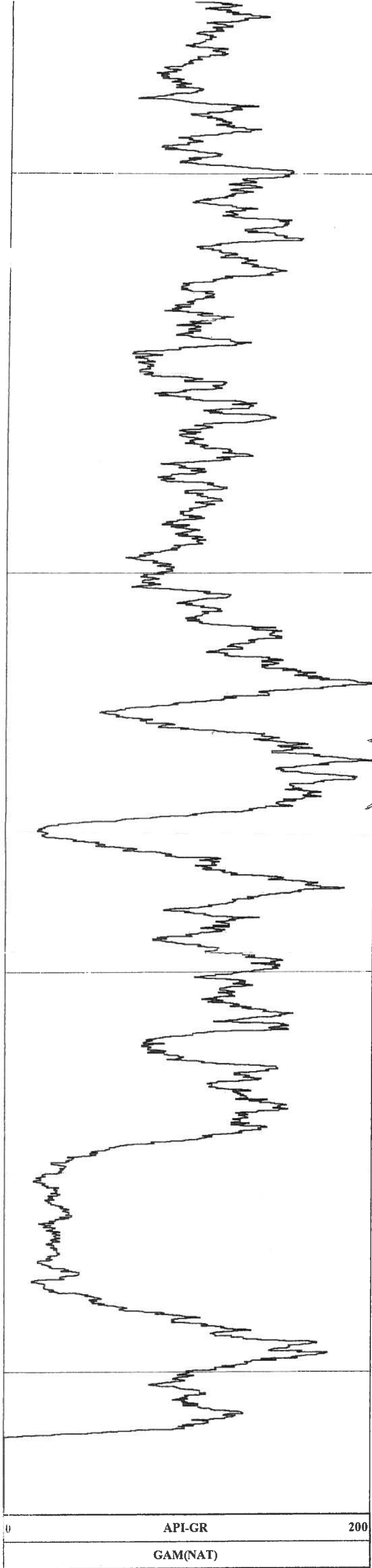
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UPRA

UPRB

60





40

50

60

70

UPRA

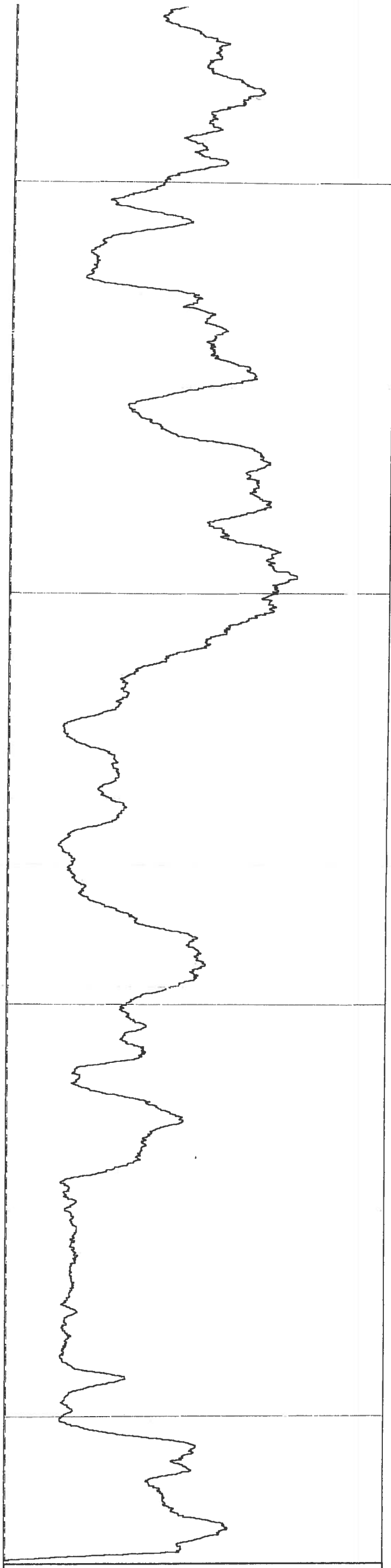
UPRB

UPR

0 API-GR 200

GAM(NAT)

METERS

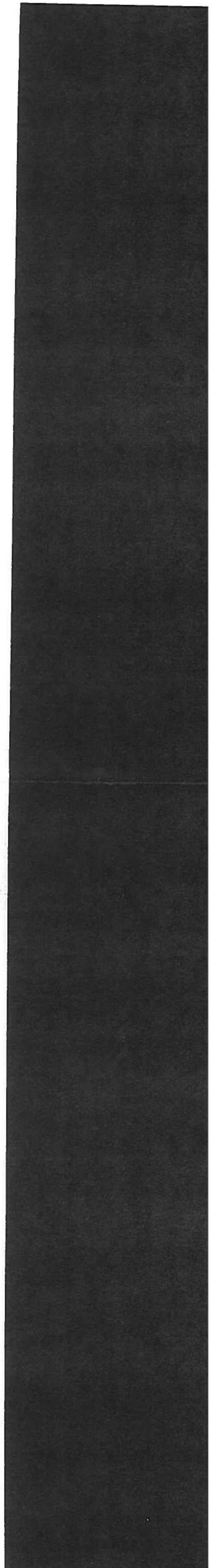


0 API-N 3000

NEUTRON

3000 API-N 8000

NEUTRON

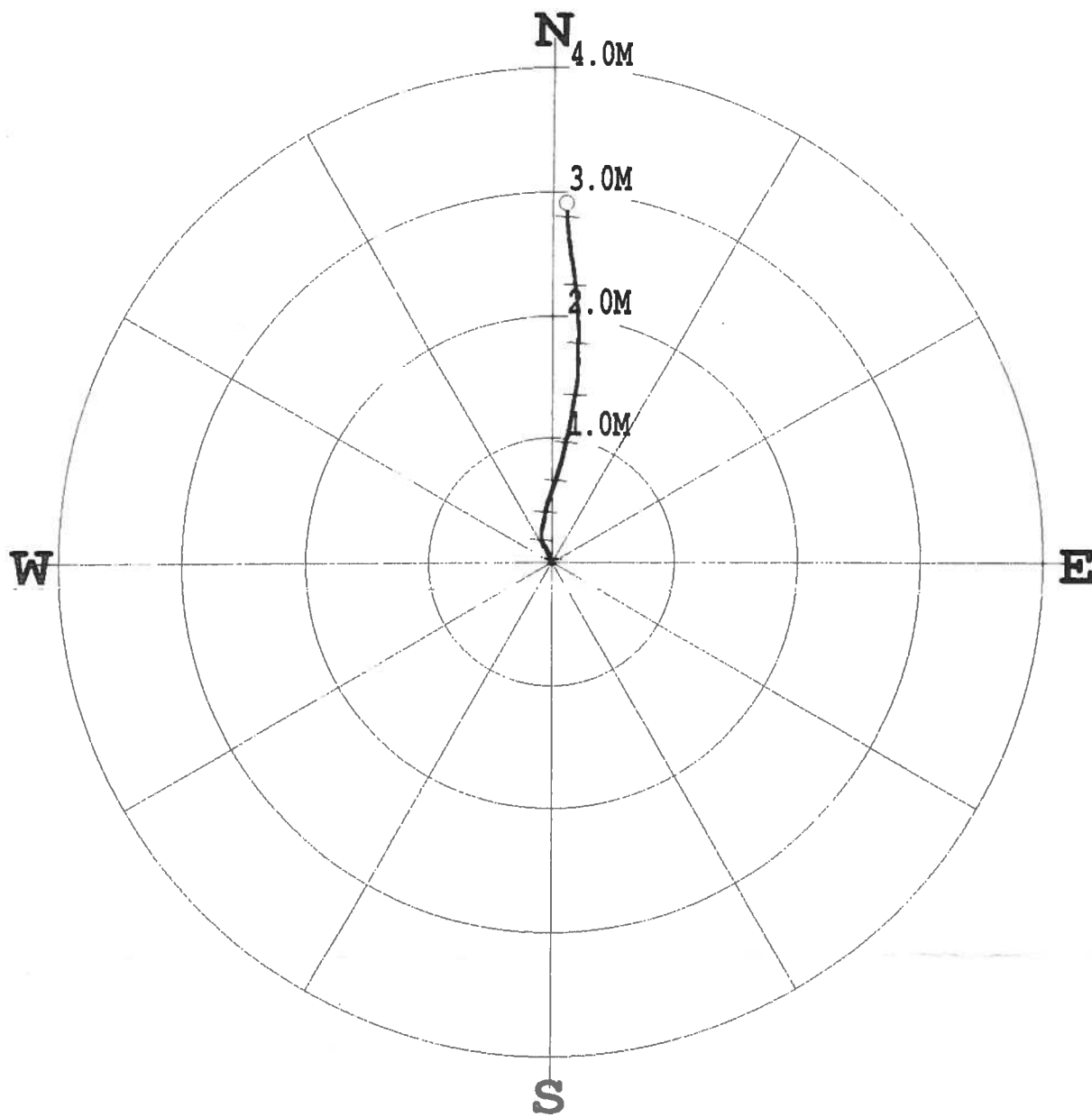


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL
 LOCATION: SUKUNKA
 HOLE ID: BR2002-14
 DATE OF LOG: 04/10/02
 PROBE: 9057A 1071



SCALE: 1 M/CM
 TRUE DEPTH: 45.95 M
 AZIMUTH: 2.3
 DISTANCE: 2.9 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE

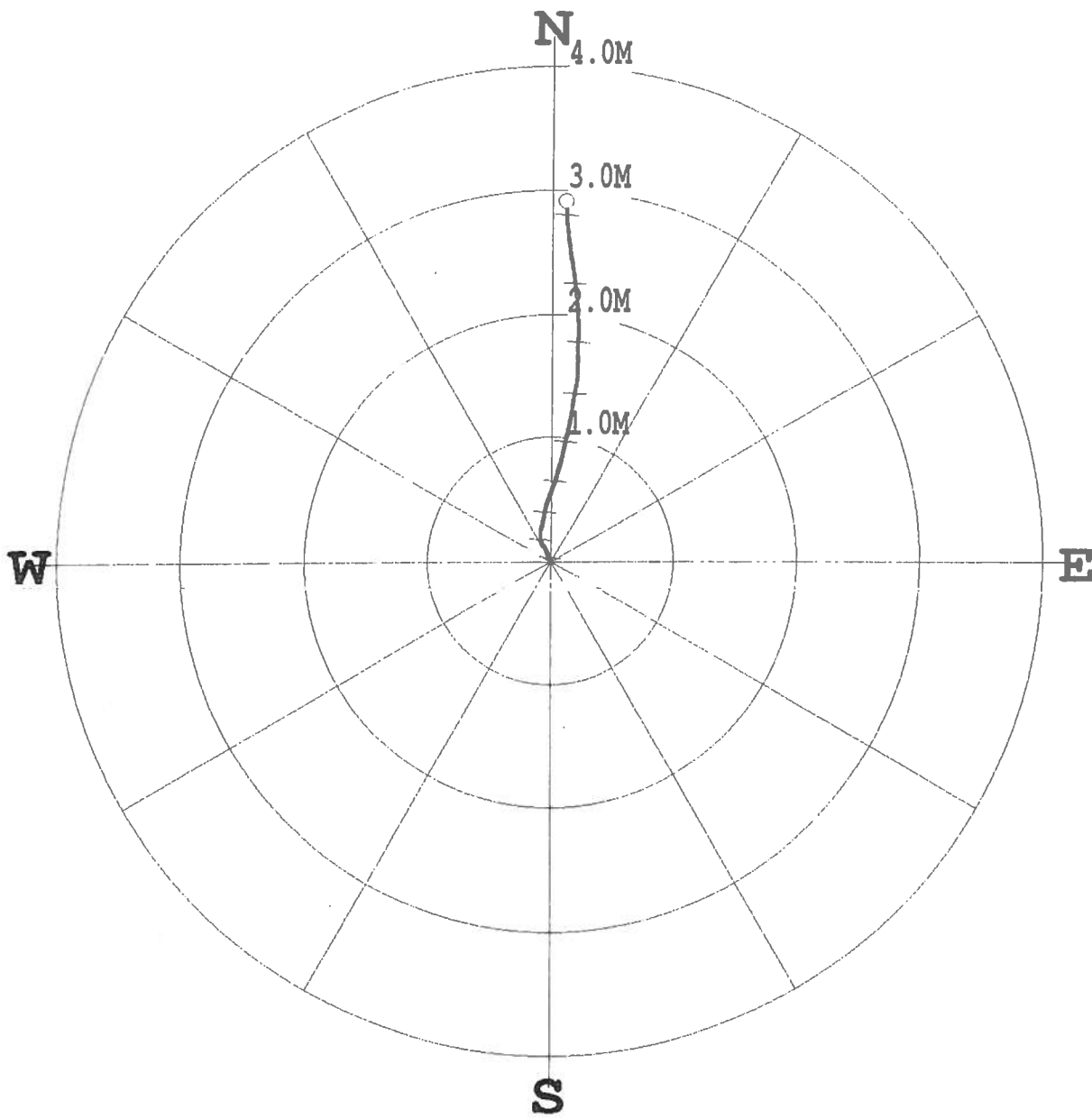


3.0	2.99	0.00	0.00	0.0	0.0	0.0	0.0
4.0	3.99	0.01	-0.00	0.0	347.6	1.3	340.6
5.0	4.99	0.03	-0.01	0.0	343.0	1.5	340.1
6.0	5.99	0.06	-0.02	0.1	341.5	1.6	338.5
7.0	6.99	0.08	-0.03	0.1	339.1	1.7	341.7
8.0	7.99	0.11	-0.05	0.1	336.6	2.0	324.8
9.0	8.99	0.14	-0.07	0.2	334.2	2.1	331.3
10.0	9.99	0.18	-0.08	0.2	335.6	2.4	346.1
11.0	10.99	0.22	-0.08	0.2	338.8	2.5	360.0
12.0	11.99	0.26	-0.08	0.3	343.1	2.4	9.9
13.0	12.98	0.30	-0.07	0.3	347.0	2.9	16.9
14.0	13.98	0.35	-0.06	0.4	350.5	3.0	14.4
15.0	14.98	0.40	-0.05	0.4	352.9	3.1	9.9
16.0	15.98	0.45	-0.04	0.5	355.0	2.8	18.0
17.0	16.98	0.50	-0.02	0.5	357.4	3.2	18.6
18.0	17.98	0.56	-0.00	0.6	359.6	3.3	17.3
19.0	18.98	0.61	0.01	0.6	1.3	3.0	20.1
20.0	19.97	0.66	0.03	0.7	2.8	3.1	19.3
21.0	20.97	0.71	0.05	0.7	3.9	3.1	13.6
22.0	21.97	0.77	0.07	0.8	4.9	3.6	17.6
23.0	22.97	0.83	0.08	0.8	5.7	3.9	12.9
24.0	23.97	0.90	0.10	0.9	6.3	4.0	13.1
25.0	24.96	0.97	0.12	1.0	6.8	4.4	13.3
26.0	25.96	1.04	0.13	1.1	7.3	4.4	14.0
27.0	26.96	1.12	0.15	1.1	7.6	4.4	10.2
28.0	27.95	1.19	0.16	1.2	7.7	4.5	8.5
29.0	28.95	1.27	0.17	1.3	7.7	4.6	8.3
30.0	29.95	1.35	0.19	1.4	7.9	4.8	10.9
31.0	30.94	1.44	0.20	1.5	8.0	4.8	5.9
32.0	31.94	1.52	0.21	1.5	7.9	4.8	3.2
33.0	32.94	1.60	0.21	1.6	7.6	4.9	0.2
34.0	33.93	1.69	0.21	1.7	7.2	5.0	358.4
35.0	34.93	1.78	0.21	1.8	6.8	5.1	2.2
36.0	35.93	1.87	0.21	1.9	6.6	5.3	2.9
37.0	36.92	1.95	0.21	2.0	6.2	5.0	0.1
38.0	37.92	2.05	0.21	2.1	5.8	5.3	356.6
39.0	38.91	2.14	0.20	2.1	5.3	5.6	352.4
40.0	39.91	2.24	0.19	2.2	4.8	6.0	354.7

DATE OF LOG: 04/10/02
 PROBE: 9057A 1071

MAG DECL: 22.0

DISTANCE: 2.9 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



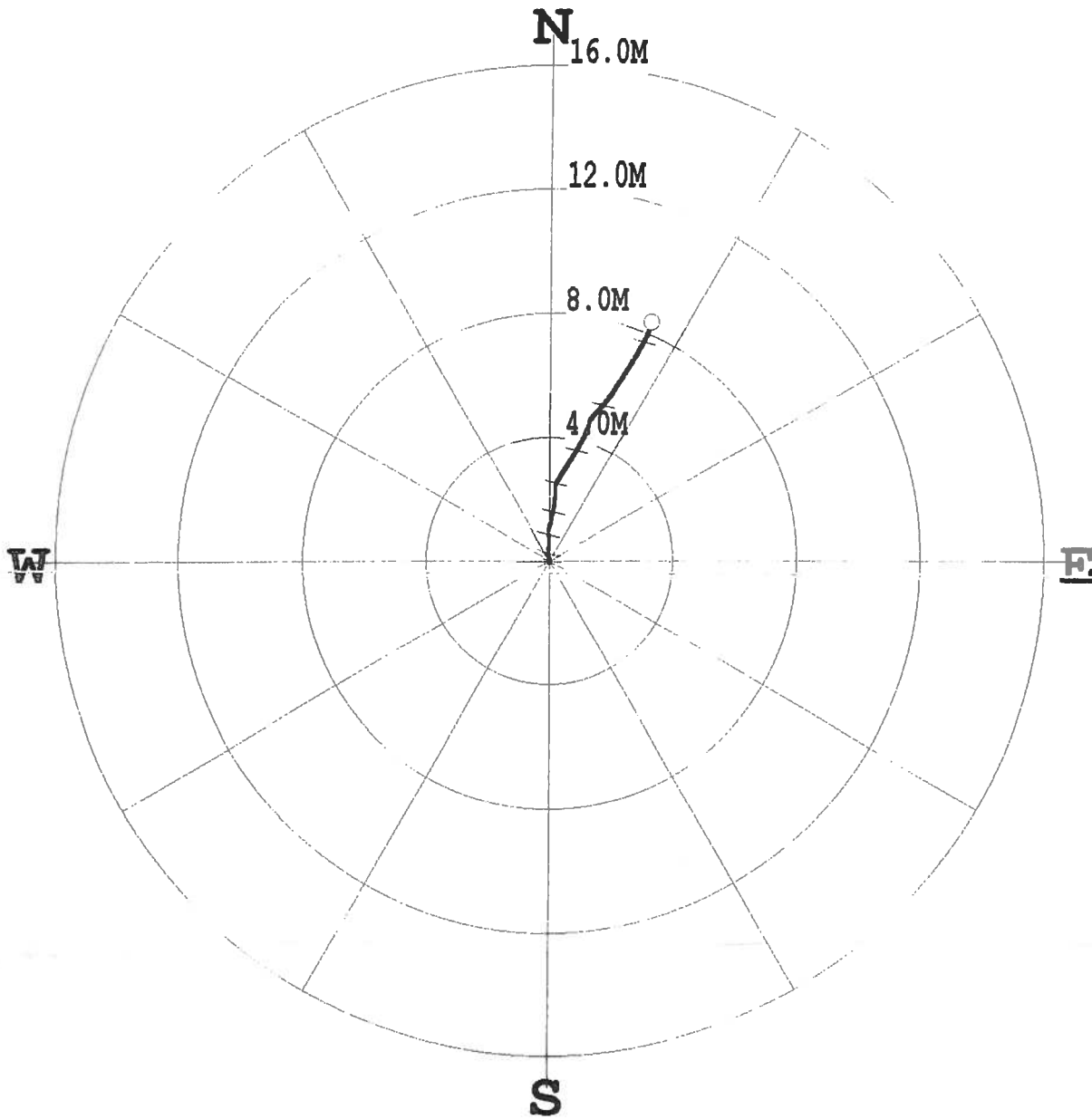
3.0	2.99	0.00	0.00	0.0	0.0	0.0	0.0
4.0	3.99	0.01	-0.00	0.0	347.6	1.3	340.6
5.0	4.99	0.03	-0.01	0.0	343.0	1.5	340.1
6.0	5.99	0.06	-0.02	0.1	341.5	1.6	338.5
7.0	6.99	0.08	-0.03	0.1	339.1	1.7	341.7
8.0	7.99	0.11	-0.05	0.1	336.6	2.0	324.8
9.0	8.99	0.14	-0.07	0.2	334.2	2.1	331.3
10.0	9.99	0.18	-0.08	0.2	335.6	2.4	346.1
11.0	10.99	0.22	-0.08	0.2	338.8	2.5	360.0
12.0	11.99	0.26	-0.08	0.3	343.1	2.4	9.9
13.0	12.98	0.30	-0.07	0.3	347.0	2.9	16.9
14.0	13.98	0.35	-0.06	0.4	350.5	3.0	14.4
15.0	14.98	0.40	-0.05	0.4	352.9	3.1	9.9
16.0	15.98	0.45	-0.04	0.5	355.0	2.8	18.0
17.0	16.98	0.50	-0.02	0.5	357.4	3.2	18.6
18.0	17.98	0.56	-0.00	0.6	359.6	3.3	17.3
19.0	18.98	0.61	0.01	0.6	1.3	3.0	20.1
20.0	19.97	0.66	0.03	0.7	2.8	3.1	19.3
21.0	20.97	0.71	0.05	0.7	3.9	3.1	13.6
22.0	21.97	0.77	0.07	0.8	4.9	3.6	17.6
23.0	22.97	0.83	0.08	0.8	5.7	3.9	12.9
24.0	23.97	0.90	0.10	0.9	6.3	4.0	13.1
25.0	24.96	0.97	0.12	1.0	6.8	4.4	13.3
26.0	25.96	1.04	0.13	1.1	7.3	4.4	14.0
27.0	26.96	1.12	0.15	1.1	7.6	4.4	10.2
28.0	27.95	1.19	0.16	1.2	7.7	4.5	8.5
29.0	28.95	1.27	0.17	1.3	7.7	4.6	8.3
30.0	29.95	1.35	0.19	1.4	7.9	4.8	10.9
31.0	30.94	1.44	0.20	1.5	8.0	4.8	5.9
32.0	31.94	1.52	0.21	1.5	7.9	4.8	3.2
33.0	32.94	1.60	0.21	1.6	7.6	4.9	0.2
34.0	33.93	1.69	0.21	1.7	7.2	5.0	358.4
35.0	34.93	1.78	0.21	1.8	6.8	5.1	2.2
36.0	35.93	1.87	0.21	1.9	6.6	5.3	2.9
37.0	36.92	1.95	0.21	2.0	6.2	5.0	0.1
38.0	37.92	2.05	0.21	2.1	5.8	5.3	356.6
39.0	38.91	2.14	0.20	2.1	5.3	5.6	352.4
40.0	39.91	2.24	0.19	2.2	4.8	6.0	354.7
41.0	40.90	2.34	0.18	2.4	4.3	6.2	352.7
42.0	41.90	2.45	0.16	2.5	3.7	6.0	350.0
43.0	42.89	2.56	0.14	2.6	3.2	6.4	352.3
44.0	43.89	2.67	0.13	2.7	2.8	6.5	354.5
45.0	44.88	2.78	0.12	2.8	2.5	6.8	356.5
46.0	45.87	2.90	0.11	2.9	2.3	7.2	359.9
46.1	45.95	2.91	0.11	2.9	2.3	7.3	2.3

PLAN VIEW COMPU-LOG DEVIATION

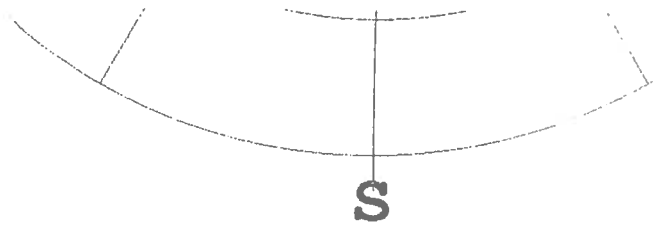
CLIENT: WESTERN COAL
 LOCATION: SUKUNKA
 HOLE ID: BR2002-14x
 DATE OF LOG: 04/20/02
 PROBE: 9057A 1071



SCALE: 2 M/CM
 TRUE DEPTH: 72.61 M
 AZIMUTH: 23.0
 DISTANCE: 8.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



3.4	3.39	0.00	0.00	0.0	0.0	0.0	0.0
4.4	4.39	0.02	-0.00	0.0	355.1	2.3	355.1
5.4	5.39	0.06	-0.01	0.1	354.0	2.3	349.3
6.4	6.39	0.10	-0.01	0.1	355.4	2.3	357.0
7.4	7.39	0.14	-0.01	0.1	356.7	2.7	359.6
8.4	8.39	0.19	-0.01	0.2	356.8	2.9	359.6
9.4	9.38	0.24	-0.01	0.2	357.1	3.1	358.2
10.4	10.38	0.30	-0.01	0.3	357.5	3.2	1.0
11.4	11.38	0.35	-0.01	0.4	357.9	3.0	1.5
12.4	12.38	0.41	-0.01	0.4	358.7	3.4	7.4
13.4	13.38	0.47	-0.01	0.5	359.3	3.7	2.6
14.4	14.38	0.53	-0.00	0.5	359.6	3.4	2.7
15.4	15.37	0.59	-0.00	0.6	359.7	3.4	1.9
16.4	16.37	0.66	-0.00	0.7	360.0	3.8	3.6
17.4	17.37	0.72	0.00	0.7	0.1	3.6	358.3
18.4	18.37	0.79	-0.00	0.8	359.9	3.7	356.1
19.4	19.37	0.83	-0.01	0.8	359.4	2.7	349.0
20.4	20.37	0.88	-0.02	0.9	358.9	2.5	340.1
21.4	21.36	0.92	-0.03	0.9	358.1	2.7	353.3
22.4	22.36	0.98	-0.02	1.0	358.9	3.8	11.8
23.4	23.36	1.04	-0.00	1.0	359.8	4.0	16.7
24.4	24.36	1.11	0.02	1.1	0.9	4.5	15.3
25.4	25.36	1.19	0.04	1.2	1.9	4.8	15.5
26.4	26.35	1.27	0.06	1.3	2.7	5.0	12.5
27.4	27.35	1.35	0.08	1.4	3.2	5.0	9.5
28.4	28.34	1.44	0.09	1.4	3.7	5.1	12.0
29.4	29.34	1.53	0.11	1.5	4.2	5.3	15.0
30.4	30.34	1.62	0.13	1.6	4.7	5.6	11.4
31.4	31.33	1.72	0.15	1.7	5.0	5.4	7.3
32.4	32.33	1.81	0.16	1.8	5.2	5.4	7.7
33.4	33.32	1.90	0.17	1.9	5.2	5.5	6.2
34.4	34.32	2.00	0.18	2.0	5.3	5.5	9.4
35.4	35.31	2.09	0.20	2.1	5.4	5.7	8.6
36.4	36.31	2.19	0.21	2.2	5.4	5.7	3.2
37.4	37.30	2.28	0.21	2.3	5.1	5.1	351.5
38.4	38.30	2.37	0.19	2.4	4.7	5.0	356.5
39.4	39.30	2.46	0.21	2.5	4.8	5.2	20.4
40.4	40.20	2.54	0.25	2.6	5.6	5.7	28.6



3.4	3.39	0.00	0.00	0.0	0.0	0.0	0.0
4.4	4.39	0.02	-0.00	0.0	355.1	2.3	355.1
5.4	5.39	0.06	-0.01	0.1	354.0	2.3	349.3
6.4	6.39	0.10	-0.01	0.1	355.4	2.3	357.0
7.4	7.39	0.14	-0.01	0.1	357.2	2.7	359.6
8.4	8.39	0.19	-0.01	0.2	356.8	2.9	359.6
9.4	9.38	0.24	-0.01	0.2	357.1	3.1	358.2
10.4	10.38	0.30	-0.01	0.3	357.5	3.2	1.0
11.4	11.38	0.35	-0.01	0.4	357.9	3.0	1.5
12.4	12.38	0.41	-0.01	0.4	358.7	3.4	7.4
13.4	13.38	0.47	-0.01	0.5	359.3	3.7	2.6
14.4	14.38	0.53	-0.00	0.5	359.6	3.4	2.7
15.4	15.37	0.59	-0.00	0.6	359.7	3.4	1.9
16.4	16.37	0.66	-0.00	0.7	360.0	3.8	3.6
17.4	17.37	0.72	0.00	0.7	0.1	3.6	358.3
18.4	18.37	0.77	0.00	0.7	359.0	3.2	356.1
19.4	19.37	0.83	-0.01	0.8	359.4	2.7	349.0
20.4	20.37	0.88	-0.02	0.9	358.9	2.5	340.1
21.4	21.36	0.92	-0.03	0.9	358.1	2.7	353.3
22.4	22.36	0.98	-0.02	1.0	358.9	3.8	11.8
23.4	23.36	1.04	-0.00	1.0	359.8	4.0	16.7
24.4	24.36	1.11	0.02	1.1	0.9	4.5	15.3
25.4	25.36	1.19	0.04	1.2	1.9	4.8	15.5
26.4	26.35	1.27	0.06	1.3	2.7	5.0	12.5
27.4	27.35	1.35	0.08	1.4	3.2	5.0	9.5
28.4	28.34	1.44	0.09	1.4	3.7	5.1	12.0
29.4	29.34	1.53	0.11	1.5	4.2	5.3	15.0
30.4	30.34	1.62	0.13	1.6	4.7	5.6	11.4
31.4	31.33	1.72	0.15	1.7	5.0	5.4	7.3
32.4	32.33	1.81	0.16	1.8	5.2	5.4	7.7
33.4	33.32	1.90	0.17	1.9	5.2	5.5	6.2
34.4	34.32	2.00	0.18	2.0	5.3	5.5	9.4
35.4	35.31	2.09	0.20	2.1	5.4	5.7	8.6
36.4	36.31	2.19	0.21	2.2	5.4	5.7	3.2
37.4	37.30	2.28	0.21	2.3	5.1	5.1	351.5
38.4	38.30	2.37	0.19	2.4	4.7	5.0	356.5
39.4	39.30	2.46	0.21	2.5	4.8	5.2	20.4
40.4	40.29	2.54	0.25	2.6	5.6	5.7	28.6
41.4	41.29	2.63	0.30	2.6	6.5	5.8	30.2
42.4	42.28	2.72	0.35	2.7	7.3	5.8	29.8
43.4	43.27	2.81	0.41	2.8	8.2	6.3	34.1
44.4	44.27	2.90	0.46	2.9	9.1	6.4	30.7
45.4	45.26	3.00	0.53	3.0	10.0	7.0	34.4
46.4	46.25	3.11	0.60	3.2	10.9	7.9	28.1
47.4	47.24	3.22	0.67	3.3	11.8	7.9	33.8
48.4	48.23	3.35	0.75	3.4	12.6	8.6	30.9
49.4	49.22	3.48	0.82	3.6	13.3	8.7	29.5
50.4	50.21	3.60	0.90	3.7	14.0	8.3	30.5
51.4	51.20	3.73	0.97	3.9	14.5	8.6	28.0
52.4	52.19	3.87	1.04	4.0	15.1	9.4	27.7
53.4	53.17	4.02	1.12	4.2	15.5	9.7	25.4
54.4	54.16	4.18	1.19	4.3	15.9	10.1	24.0
55.4	55.14	4.35	1.26	4.5	16.1	10.5	19.5
56.4	56.13	4.52	1.29	4.7	15.9	10.6	5.0
57.4	57.11	4.66	1.37	4.9	16.4	10.0	41.9
58.4	58.10	4.79	1.49	5.0	17.3	10.6	43.0
59.4	59.08	4.93	1.61	5.2	18.1	10.8	41.8
60.4	60.06	5.08	1.74	5.4	18.9	11.4	39.3
61.4	61.04	5.22	1.86	5.5	19.6	11.3	39.2

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL HOLE ID. : BR2002-14x
 FIELD OFFICE : CGC-TULSA DATE OF LOG : 04/20/02
 DATA FROM : PROBE : 9057A , 1071
 MAG. DECL. : 22.000 DEPTH UNITS : METERS
 LOG: BR2002-14x_04-20-02_18-50_9057A_.02_2.39_73.51_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
62.4	62.02	5.38	1.98	5.7	20.2	11.7	37.0
63.4	63.00	5.56	2.10	5.9	20.7	12.7	31.9
64.4	63.97	5.75	2.22	6.2	21.1	13.2	34.1
65.4	64.95	5.95	2.34	6.4	21.5	13.3	31.5
66.4	65.92	6.14	2.47	6.6	21.9	13.7	30.7
67.4	66.89	6.34	2.59	6.9	22.2	13.9	33.8
68.4	67.86	6.55	2.72	7.1	22.6	14.0	32.6
69.4	68.80	6.80	2.88	7.4	23.0	14.2	32.1
70.4	69.77	7.02	3.00	7.6	23.1	14.4	28.3
71.4	70.73	7.25	3.11	7.9	23.2	14.5	24.0
72.4	71.70	7.48	3.21	8.1	23.2	14.6	20.9
73.4	72.67	7.71	3.27	8.4	23.0	0.0	0.0
74.4	73.64	7.94	3.37	8.7	23.0	14.2	11.1



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2003-3

year drilled: 2003

AREA:

Burnt River
Burn

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	574,666.00	6,136,285.65	574,568.99	6,136,491.28	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	228.59	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
8.10	0.0	-90.00
13.70	26.9	-89.40
19.70	31.3	-88.80
25.70	34.0	-88.70
31.70	34.8	-88.50
37.70	35.0	-87.80
43.70	34.7	-87.40
49.70	34.2	-87.20
55.70	33.6	-87.30
61.70	33.6	-87.20
67.70	33.7	-86.70
73.70	33.7	-86.80
79.70	33.9	-86.70
85.70	34.1	-86.90
91.70	34.3	-86.70
97.70	34.6	-87.00
103.70	35.2	-86.10
109.70	36.0	-84.60
115.70	37.5	-82.70
121.70	39.9	-80.80
127.70	42.4	-78.70
133.70	44.7	-76.80
139.70	46.3	-75.30
145.70	47.6	-75.00
151.70	48.7	-76.30
157.70	49.8	-73.90
163.70	51.0	-72.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	5.00	5.00	OB	
5.00	5.85	0.85	SLT	
5.85	7.25	1.40	SH	
7.25	8.30	1.05	SLT	
8.30	9.70	1.40	SH	
9.70	11.60	1.90	SLT	
11.60	13.85	2.25	SSA	
13.85	21.00	7.15	SH	
21.00	21.40	0.40	SLT	
21.40	24.35	2.95	SH	
24.35	25.69	1.34	SLT	
25.69	26.50	0.81	SS	
26.50	29.85	3.35	SLT	
29.85	30.80	0.95	SH	
30.80	31.20	0.40	SLT	
31.20	40.00	8.80	SH	
40.00	42.35	2.35	SLT	
42.35	43.75	1.40	SS	
43.75	45.25	1.50	SSA	
45.25	50.20	4.95	SH	
50.20	51.30	1.10	SLT	
51.30	52.20	0.90	SSA	
52.20	53.30	1.10	SLT	
53.30	55.20	1.90	SH	
55.20	67.60	12.40	SLT	
67.60	68.60	1.00	SH	
68.60	70.30	1.70	SLT	
70.30	72.40	2.10	SSA	
72.40	76.50	4.10	SS	
76.50	82.50	6.00	SLT	
82.50	83.75	1.25	C	
83.75	86.35	2.60	SH	
86.35	89.55	3.20	SLT	
89.55	91.55	2.00	SH	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2003-3**

year drilled: 2003

AREA:

Burnt River
Burn

169.70	52.3	-71.50
175.70	53.9	-70.80
181.70	55.6	-70.50
187.70	58.1	-67.50
193.70	61.4	-65.80
199.70	64.9	-61.10
205.70	68.7	-59.80
211.70	72.8	-59.30
217.70	77.0	-56.60
223.70	81.0	-52.70
228.60	84.5	-52.50

91.55	92.30	0.75	SSA	
92.30	93.38	1.08	SS	
93.38	97.40	4.02	SLT	
97.40	99.00	1.60	C	
99.00	99.35	0.35	P	
99.35	100.55	1.20	C	
100.50	101.30	0.80	P	
101.30	102.30	1.00	C	
102.30	102.85	0.55	SH	
102.85	104.00	1.15	SLT	
104.00	104.70	0.70	SSA	
104.70	105.50	0.80	SS	
105.50	107.10	1.60	SLT	
107.10	108.60	1.50	SH	
108.60	116.20	7.60	SLT	
116.20	119.80	3.60	SH	
119.80	122.60	2.80	SLT	
122.60	124.55	1.95	SSA	
124.55	129.20	4.65	C	UPR
129.20	130.00	0.80	SH	
130.00	140.80	10.80	SLT	
140.80	142.60	1.80	SH	
142.60	145.80	3.20	C	LWR
145.80	146.70	0.90	SLT	
146.70	147.75	1.05	C	MB
147.75	150.00	2.25	SLT	
150.00	154.80	4.80	SSA	
154.80	165.50	10.70	SLT	
165.50	172.25	6.75	SH	
172.25	187.60	15.35	SLT	
187.60	193.18	5.58	SH	
193.18	201.10	7.92	SLT	
201.10	203.35	2.25	SH	
203.35	205.00	1.65	C	
205.00	209.00	4.00	SH	
209.00	211.00	2.00	C	
211.00	212.70	1.70	SH	
212.70	216.35	3.65	C	
216.35	220.70	4.35	SSA	
220.70	226.20	5.50	SLT	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River - Dillon
DH ID: R22003-3
BY: K. Brown
DATE: November 30, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	5.00	OB	72.40	76.50	SS
5.00	5.85	SLT	76.50	82.50	SLT
5.85	7.25	SH	82.50	83.75	C
7.25	8.30	SLT	83.75	86.35	SH
8.30	9.70	SH	86.35	89.55	SLT
9.70	11.60	SLT	89.55	91.55	SH
11.60	13.85	SSA	91.55	92.30	SSA
13.85	21.00	SH	92.30	93.38	SS
21.00	21.40	SLT	93.38	97.40	SLT
21.40	24.35	SH	97.40	99.00	C
24.35	25.69	SLT	99.00	99.35	P/SH
25.69	26.50	SS	99.35	100.55	C
26.50	29.85	SLT	100.55	101.30	P/SH
29.85	30.80	SH	101.30	102.30	C
30.80	31.20	SLT	102.30	102.85	SH
31.20	40.00	SH	102.85	104.00	SLT
40.00	42.35	SLT	104.00	104.70	SSA
42.35	43.75	SS	104.70	105.50	SS
43.75	45.25	CSA	105.50	107.10	SLT
45.25	50.20	SH	107.10	108.60	SH
50.20	51.30	SLT	108.60	116.20	SLT
51.30	52.20	SSA	116.20	119.30	SH
52.20	53.30	SLT	119.30	122.6	SLT
53.30	55.20	SH	122.6	124.55	SSA
55.20	67.60	SLT	124.55	129.20	UPR
67.60	68.60	SH	129.20	130.00	SH
68.60	70.20	SLT	130.00	140.20	SLT
70.20	72.40	SSA	140.20	142.60	SH

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE

Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Bunt River-Dillon
DH ID: BR2003-3
BY: R. Brown
DATE: November 30, 2004

FROM	TO	LITH	FROM	TO	LITH
142.60	145.80	LWR			
145.80	146.70	SLT			
146.70	147.75	MB			
147.75	150.00	SLT			
150.00	154.80	SSA			
154.80	165.80	SLT			
165.80	172.25	SH			
172.25	187.60	SLT			
187.60	193.18	SH			
193.18	201.10	SLT			
201.10	203.35	SH			
203.35	205.00	C			
205.00	209.0	SH			
209.00	211.00	C			
211.00	212.70	SH			
212.70	216.35	C			
216.35	220.70	SSA			
220.70	226.20	SLT			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:
 OB - OVERBURDEN
 C - COAL
 P - PARTING
 SHC - SHALEY COAL
 CGL - CONGLOMERATE
 SH - SHALE
 SLT - SILTSTONE
 SSA - ARGILLACEOUS SANDSTONE
 SSC - CLEAN SANDSTONE
 SS/SH - INTERBEDDED SANDSTONE AND SHALE



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GAMMA-DENSITY

BR-2003-03

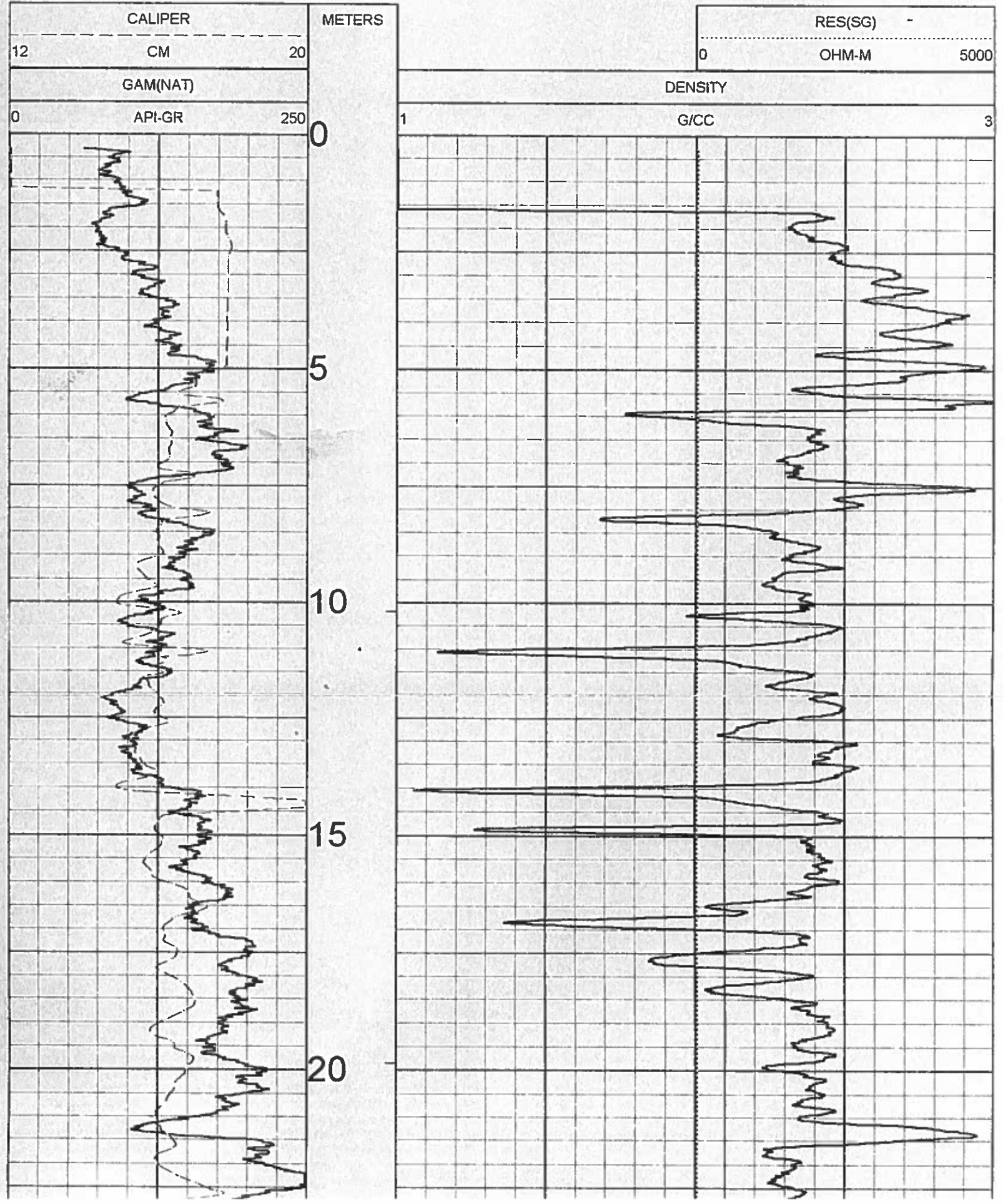
COMPANY	WESTERN COAL CORP.	OTHER SERVICES
WELL	BR-2003-03	9138
LOCATION/FIELD	BURNT RIVER	9055
COUNTY	TUMBLER STATE	9067
	BRITISH COLUMBIA	

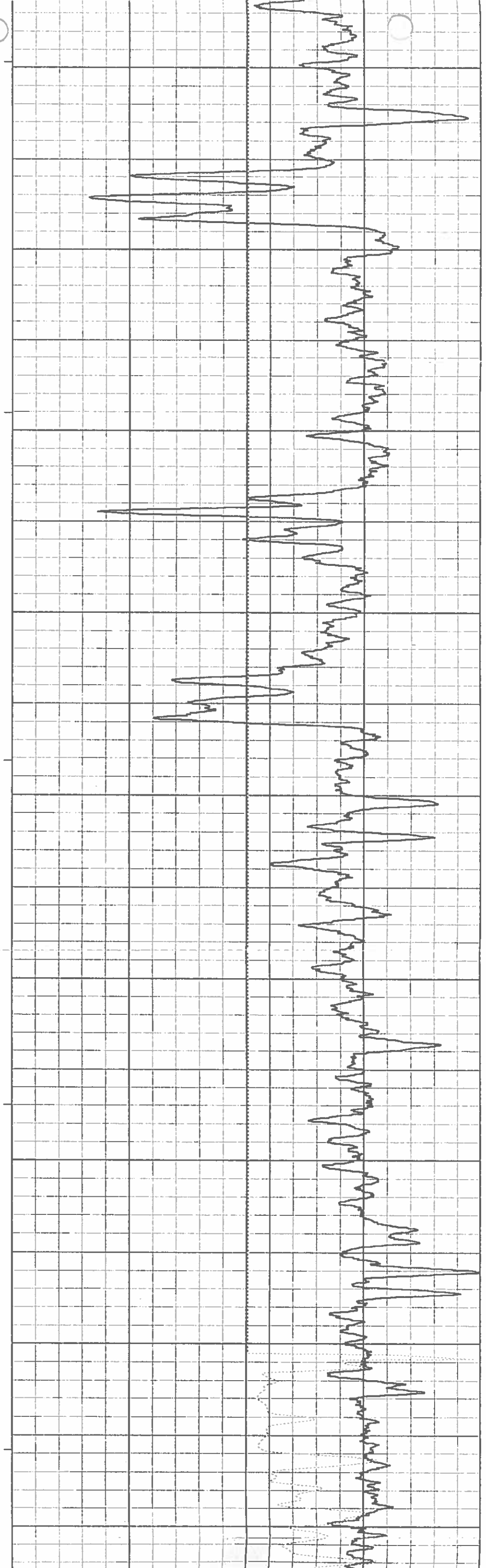
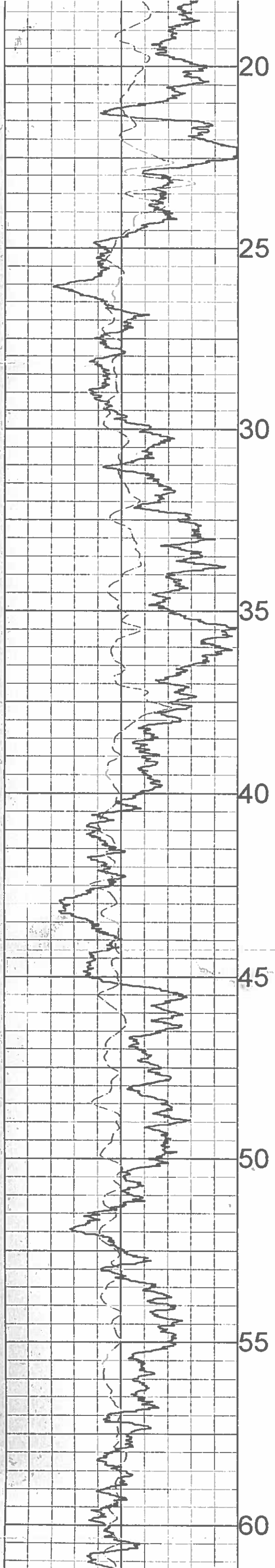
DATE	12/14/03	LOG BOTTOM	228.59
PERMANENT DATUM		LOG TOP	0.30
ELEVATION KB		BOREHOLE FLUID	Water
ELEVATION DF		MUD RES	0
ELEVATION GL		RM TEMPERATURE	0
LOG MEASURED FROM	GL	MAX TEMP	0

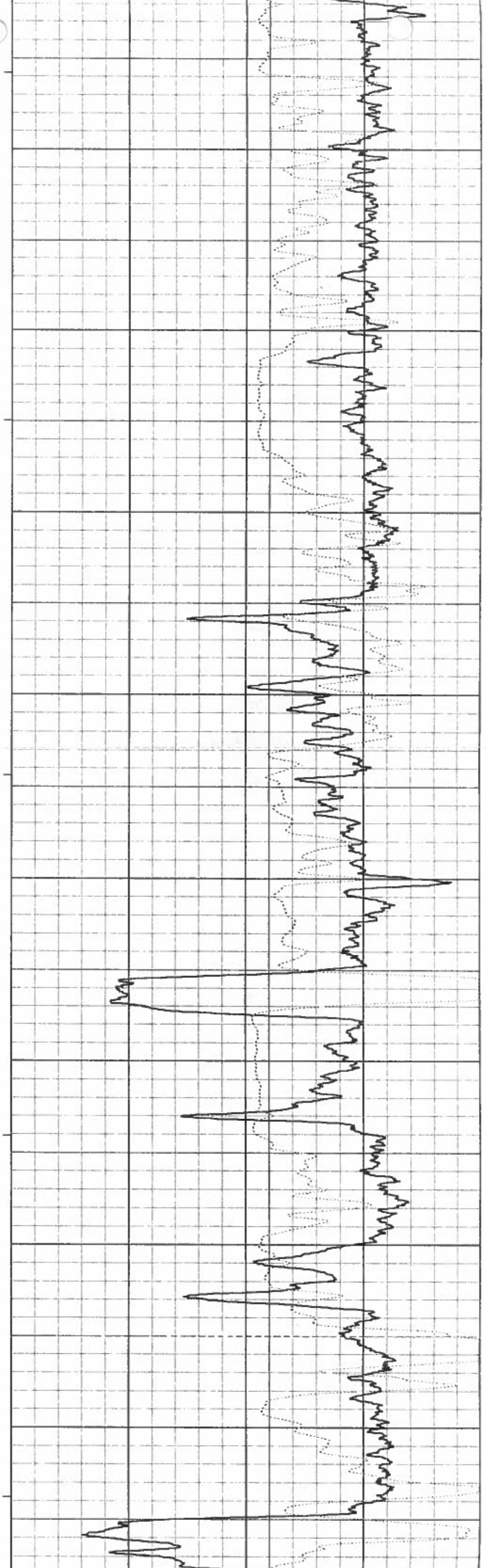
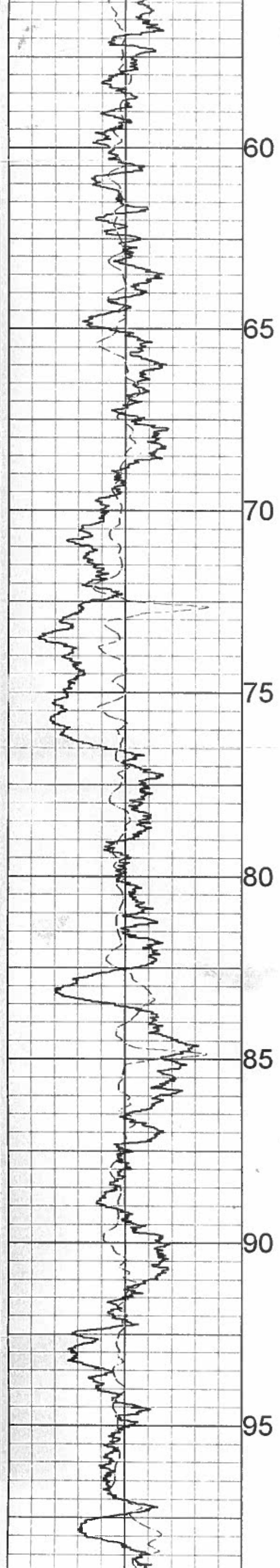
DRILL MEASURED FROM	GL	MAGNETIC DECL.	21
DEPTH DRILLER	229	MATRIX DENSITY	2.71
BIT SIZE	14	NEUTRON MATRIX	limestone
CASING DRILLER	6	MATRIX DELTA T	140
CASING DIAMETER	17	ELECT CUTTOFF	20000
CASING THICKNESS	6	LOGGING UNIT	106
CASING TYPE	STEEL	WITNESSED BY	Tulsa
	9138AA	RECORDED BY	T. NEAL

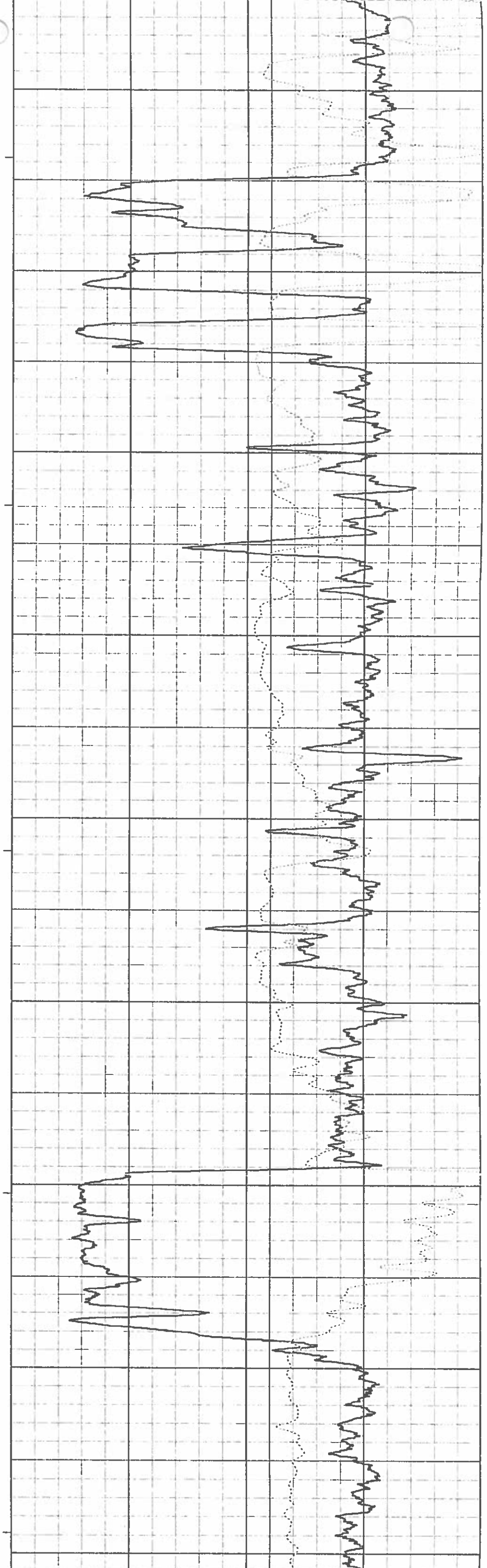
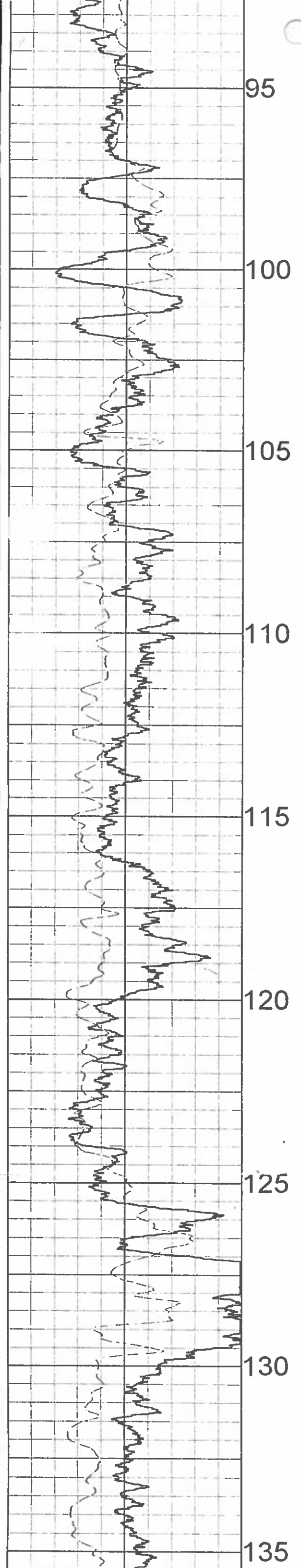
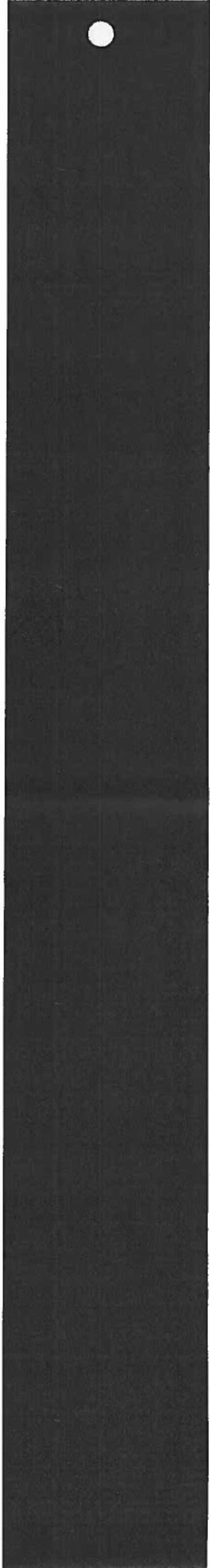
REMARKS 1
REMARKS 2

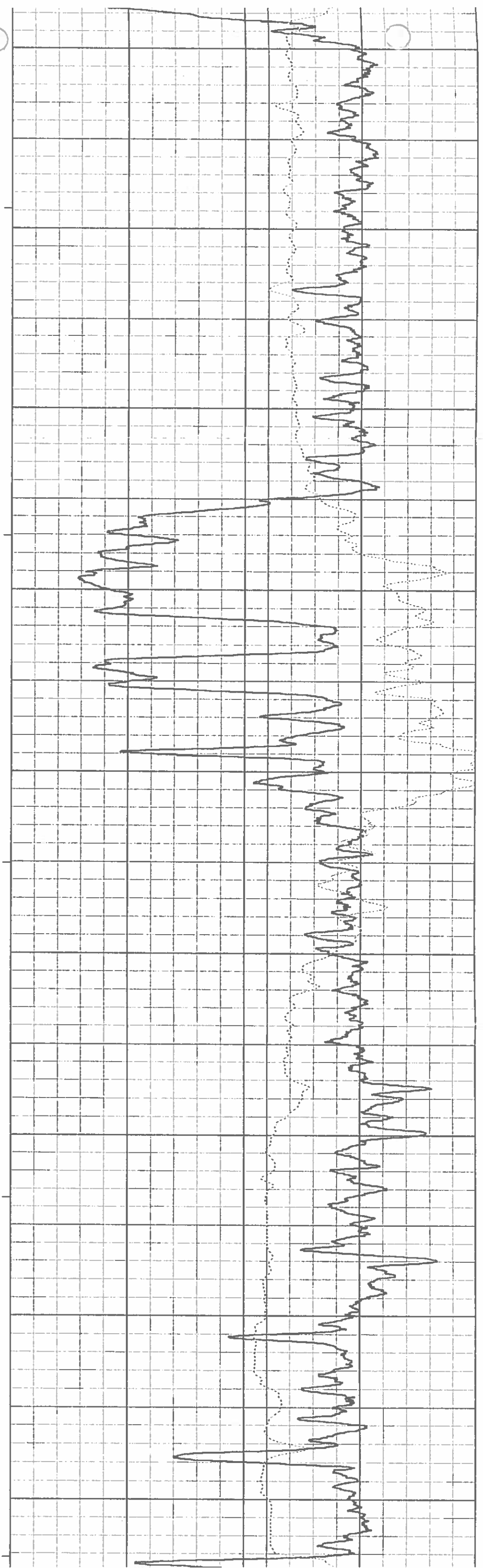
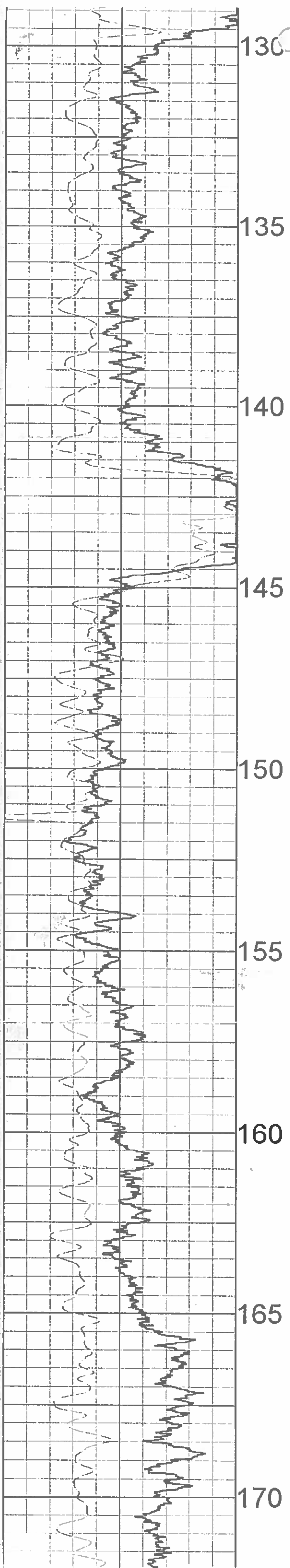
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

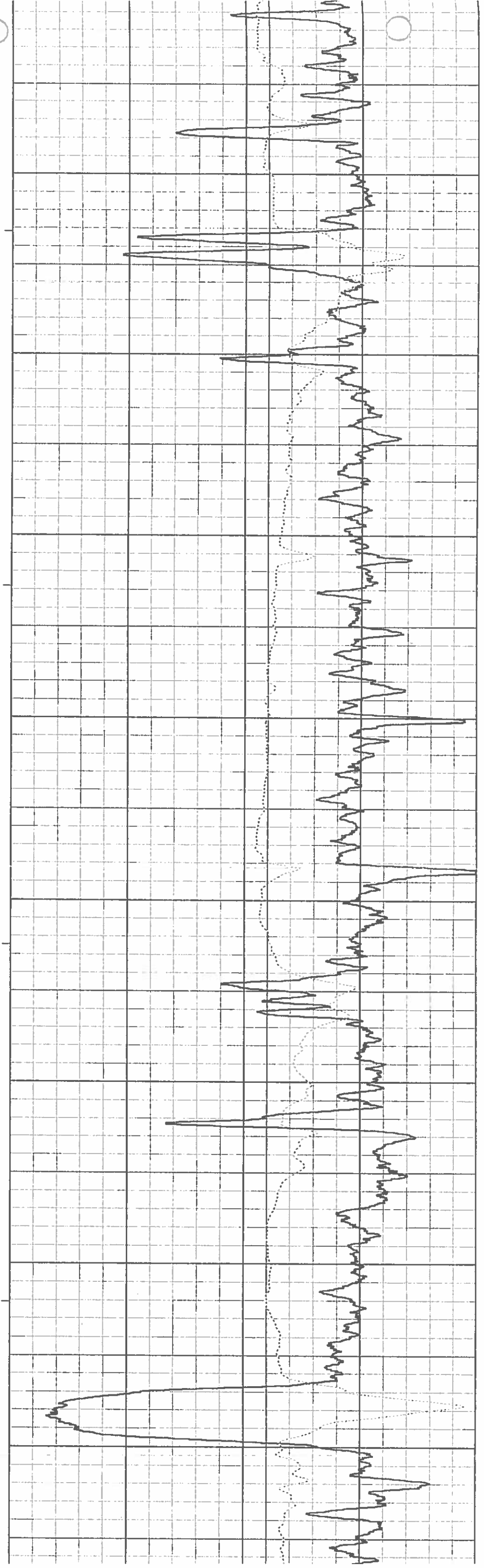
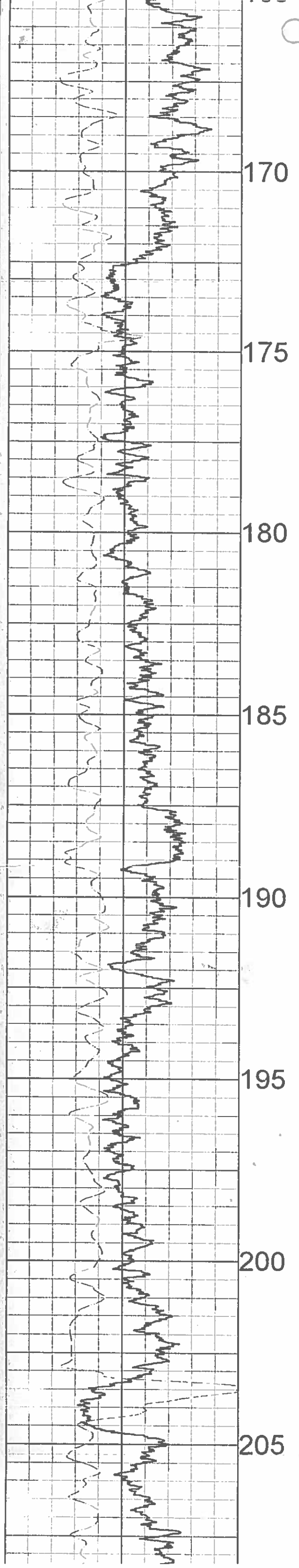


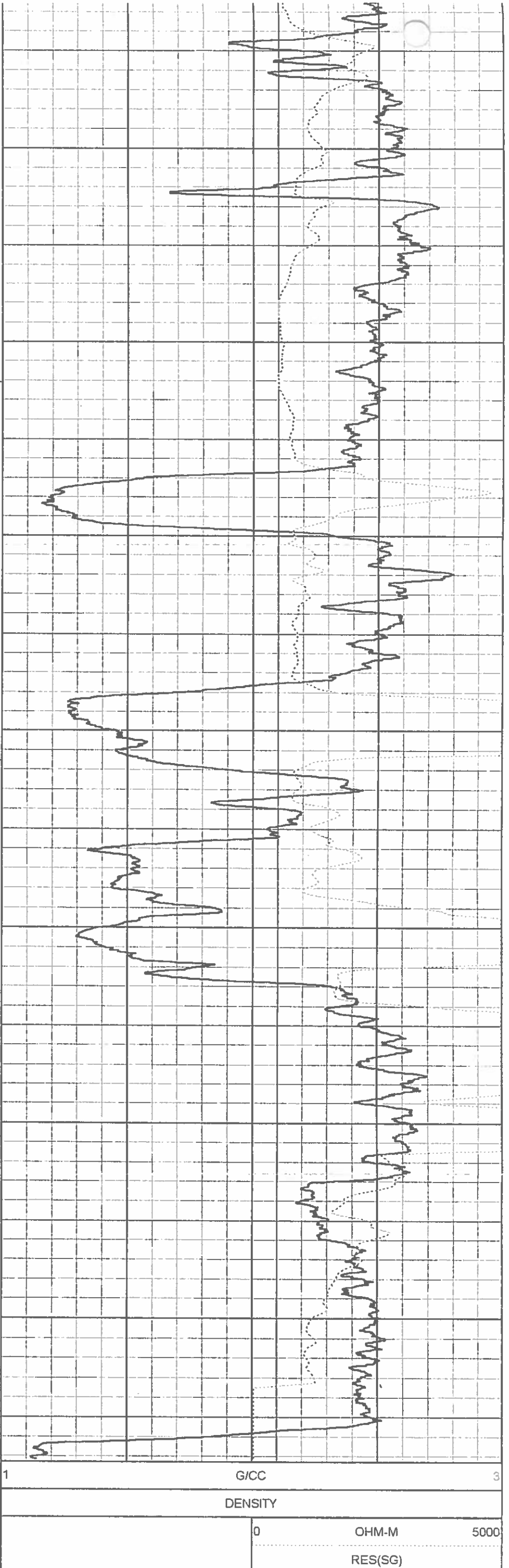
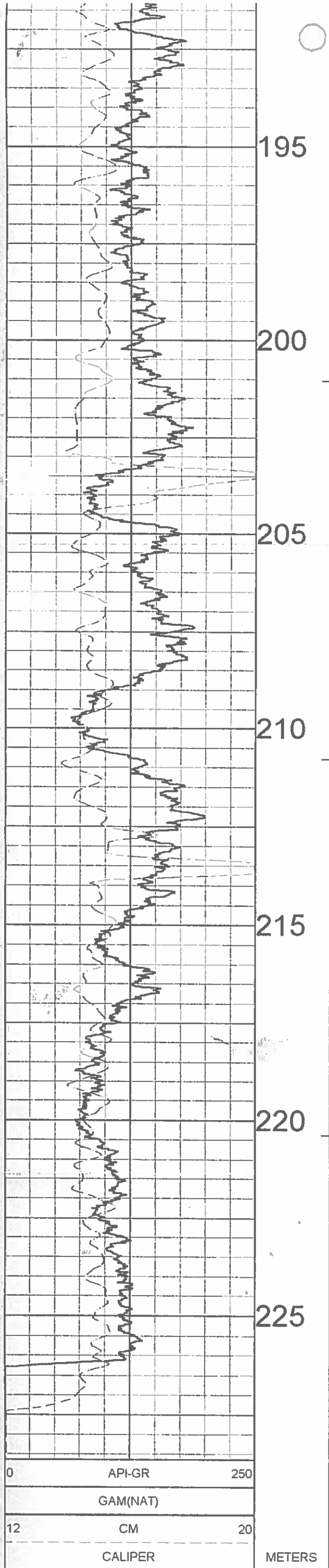














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GAMMA-NEUTRON

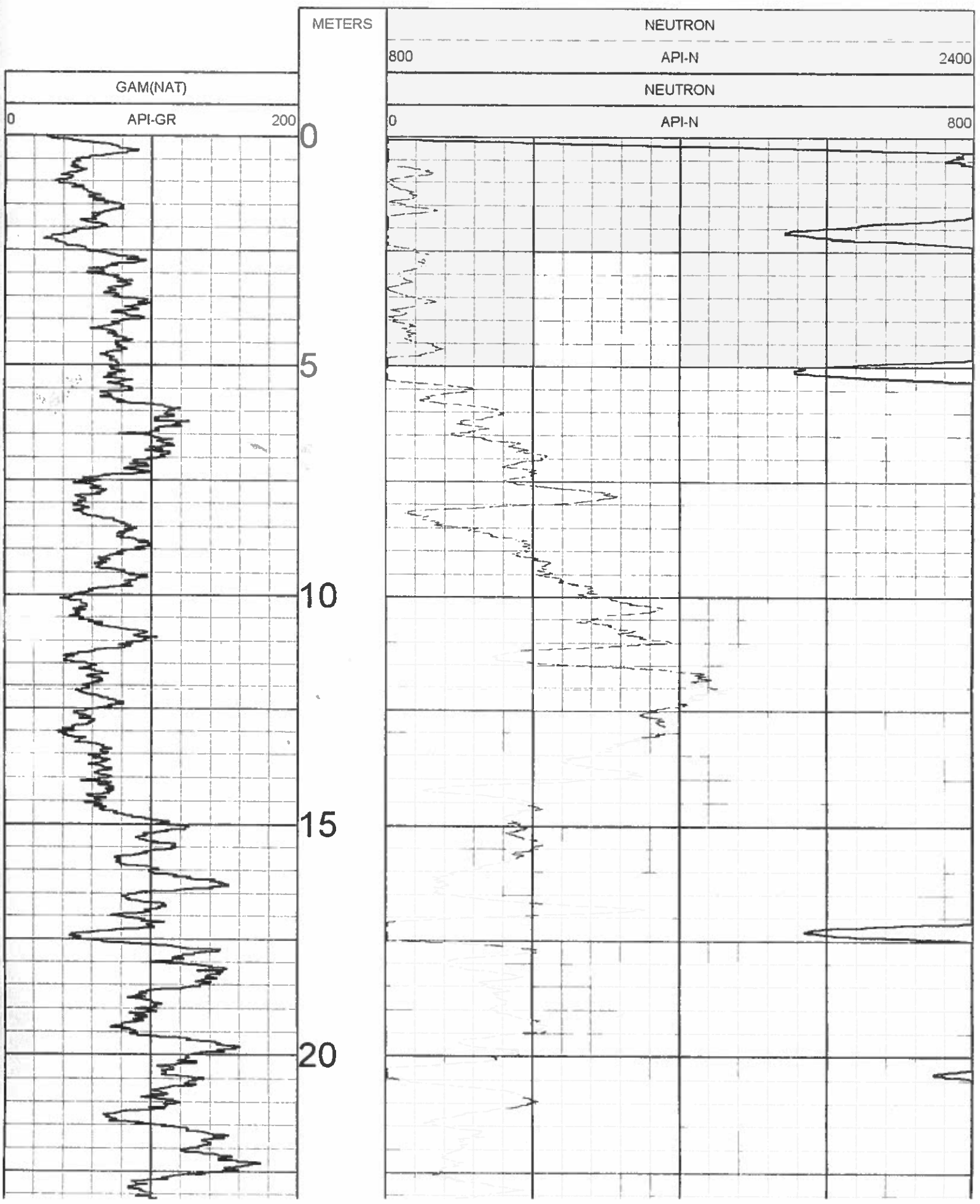
BR-2003-03

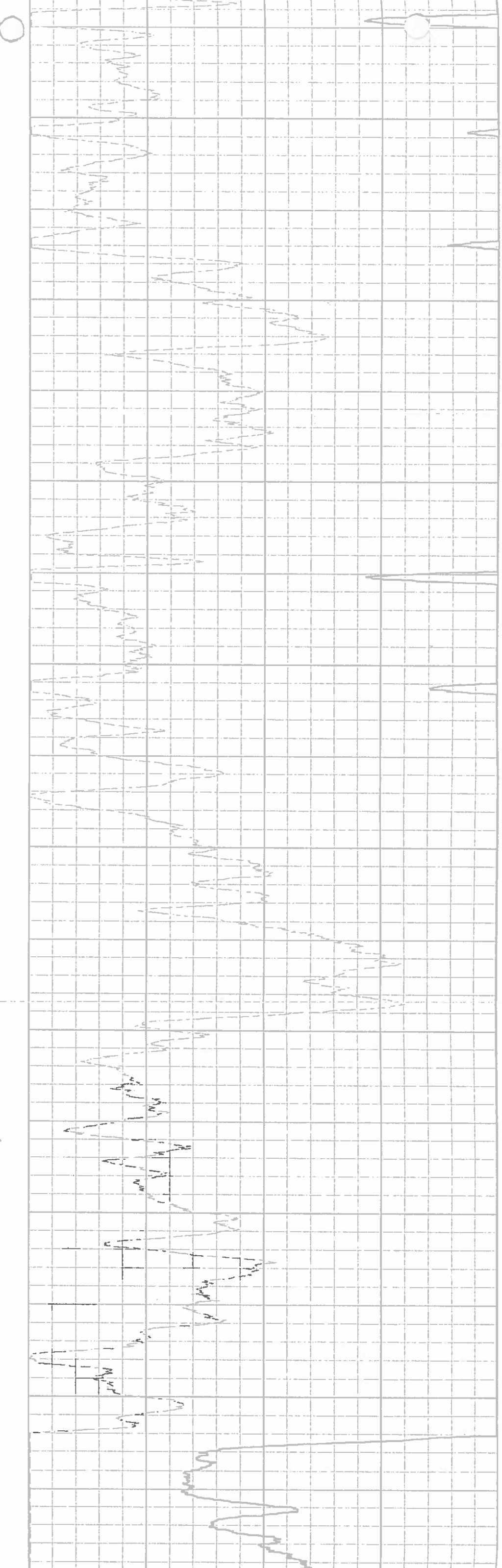
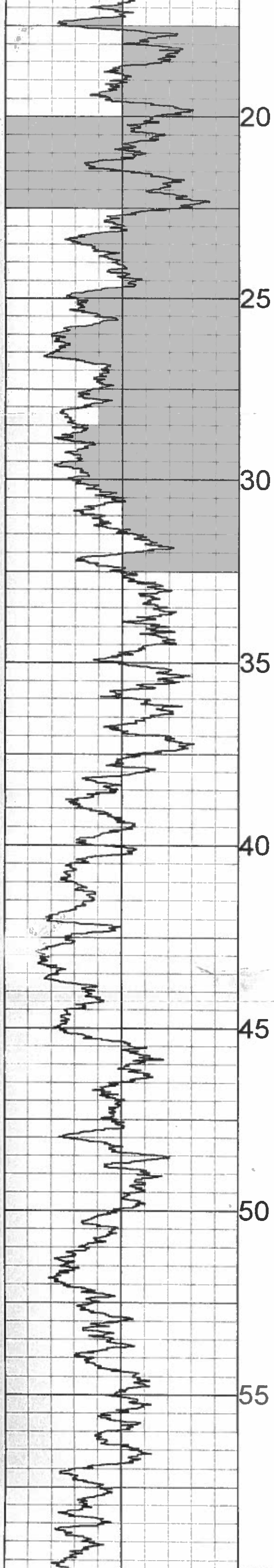
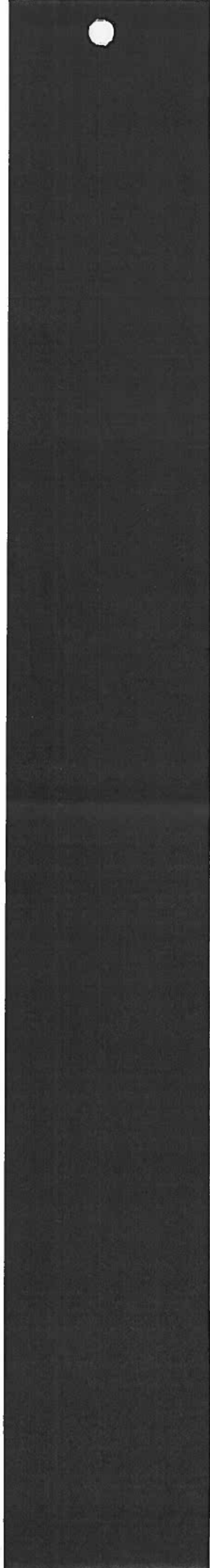
COMPANY	: WESTERN COAL CORP.	OTHER SERVICES		
WELL	: BR-2003-03	9138		
LOCATION/FIELD	: BURNT RIVER	9055		
COUNTY	: TUMBLER	STATE	: BRITISH COLUMBIA	9067

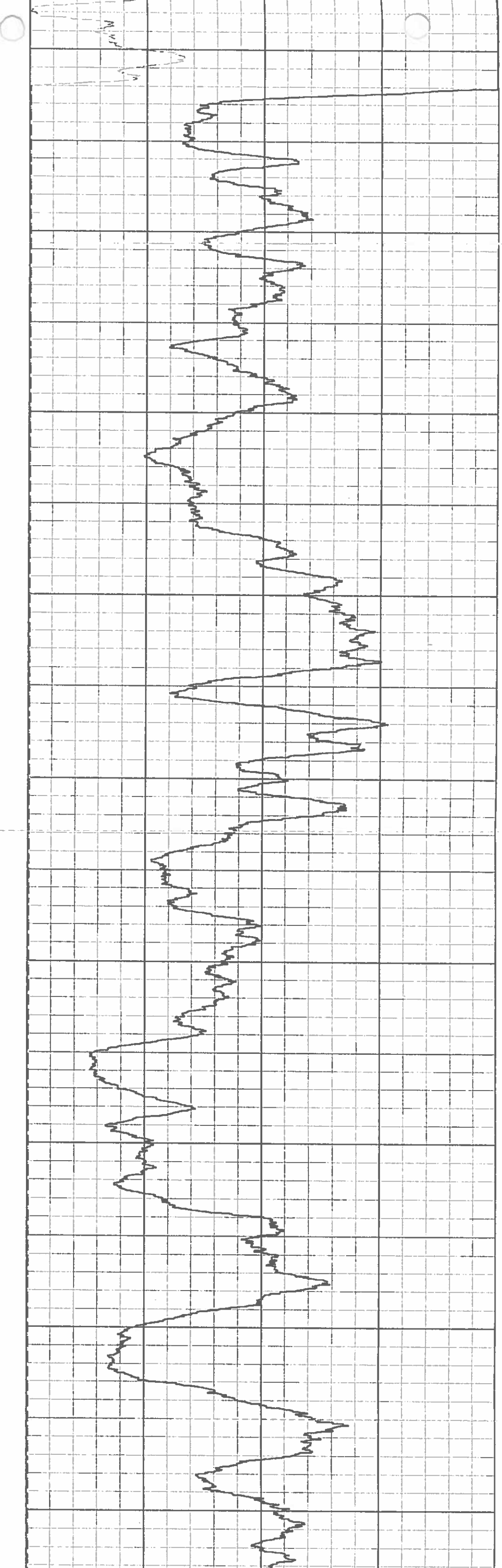
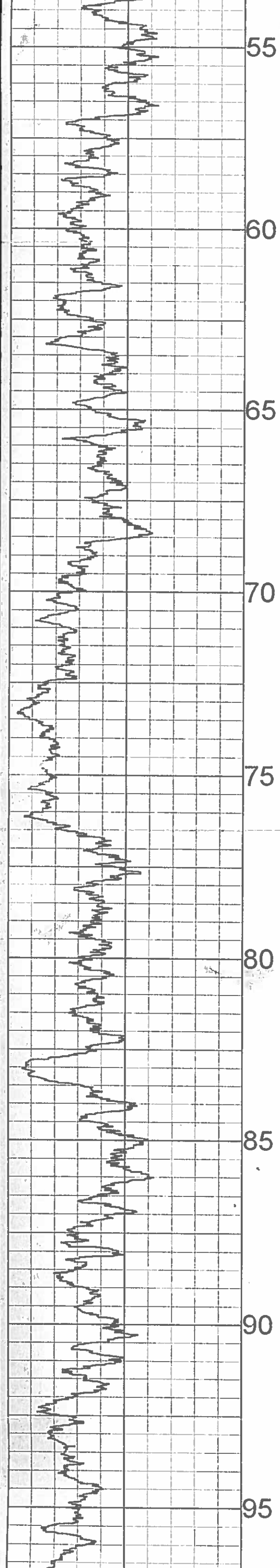
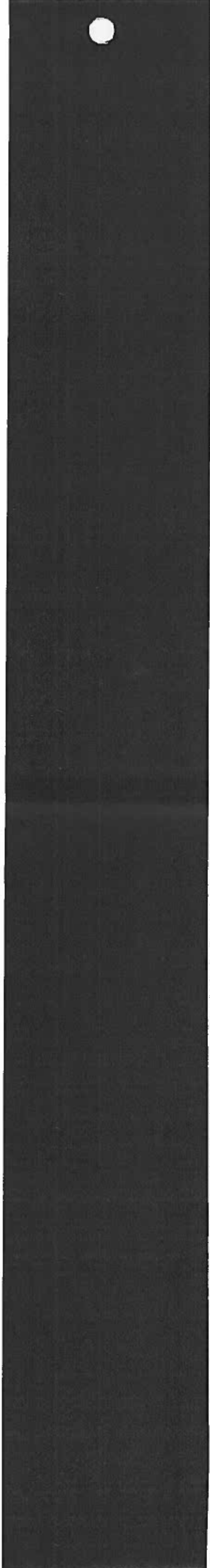
LICENSE #	:
UNIQUE WELL ID	:
LONGITUDE	:
LATITUDE	:
SECTION	:
TOWNSHIP	:
RANGE	:

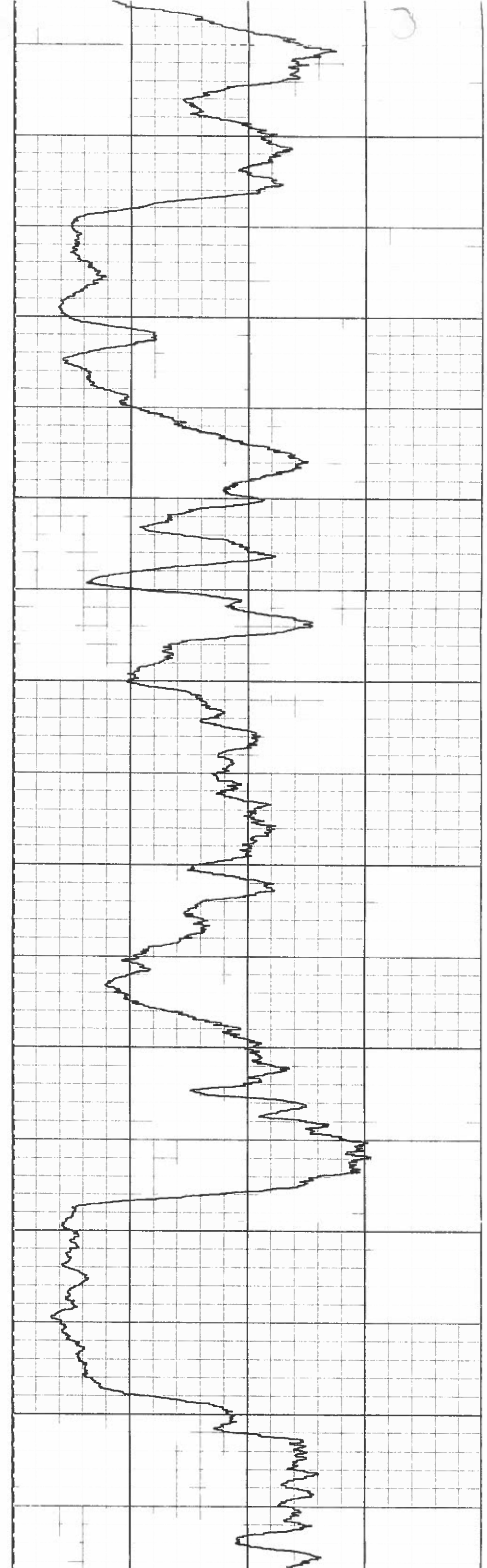
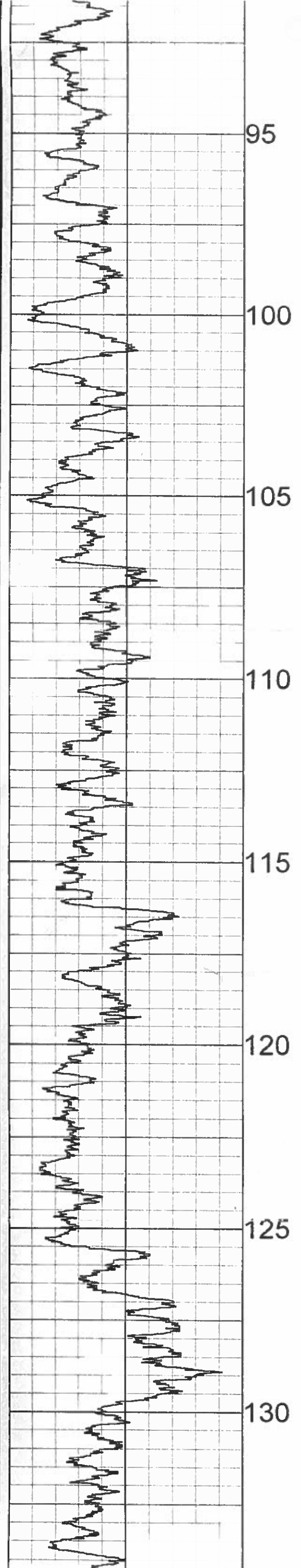
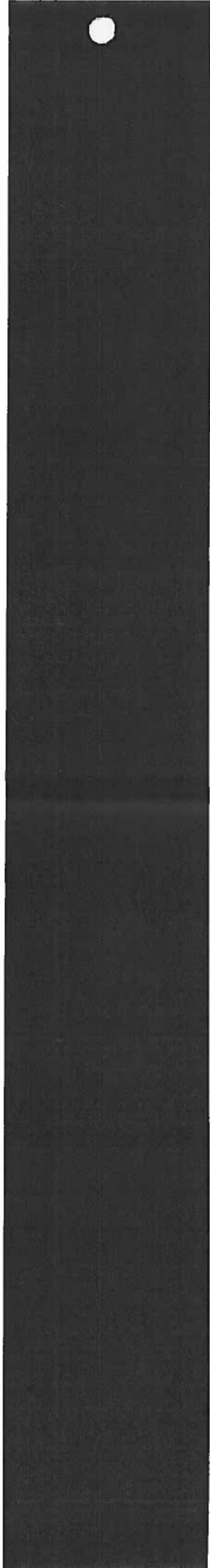
DATE PERMANENT DATUM	: 12/14/03	LOG BOTTOM	: 227.87
ELEVATION KB	:	LOG TOP	: -0.50
ELEVATION DF	:	BOREHOLE FLUID	: Water
ELEVATION GL	:	MUD RES	: 0
MEASURED FROM: GL	:	RM TEMPERATURE	: 0
MEASURED FROM: GL	:	MAX TEMP	: 0
DRL MEASURED FROM	: GL	MAGNETIC DECL.	: 21
DEPTH DRILLER	: 229	MATRIX DENSITY	: 2.71
BIT SIZE	: 14	NEUTRON MATRIX	: limestone
CASING DRILLER	: 6	MATRIX DELTA T	: 140
CASING DIAMETER	: 17.	ELECT CUTOFF	: 20000
CASING THICKNESS	: 6	LOGGING UNIT	: 106
CASING TYPE	: STEEL	WITNESSED BY	: Tulsa
TYPE	: 9067A	RECORDED BY	: T NEAL

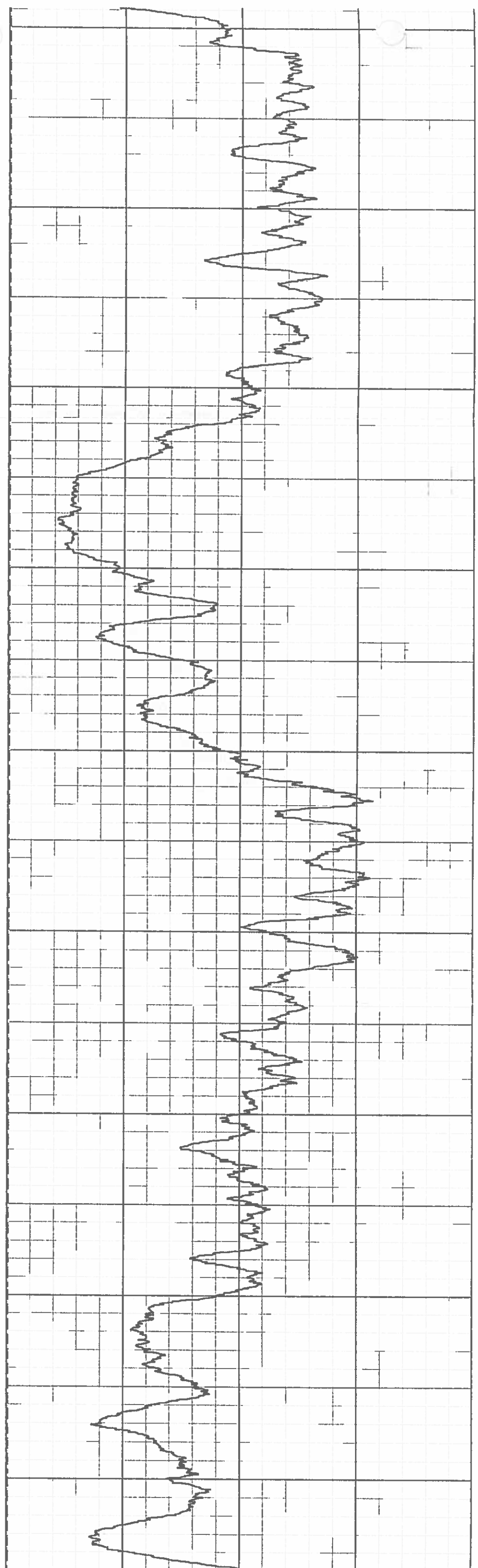
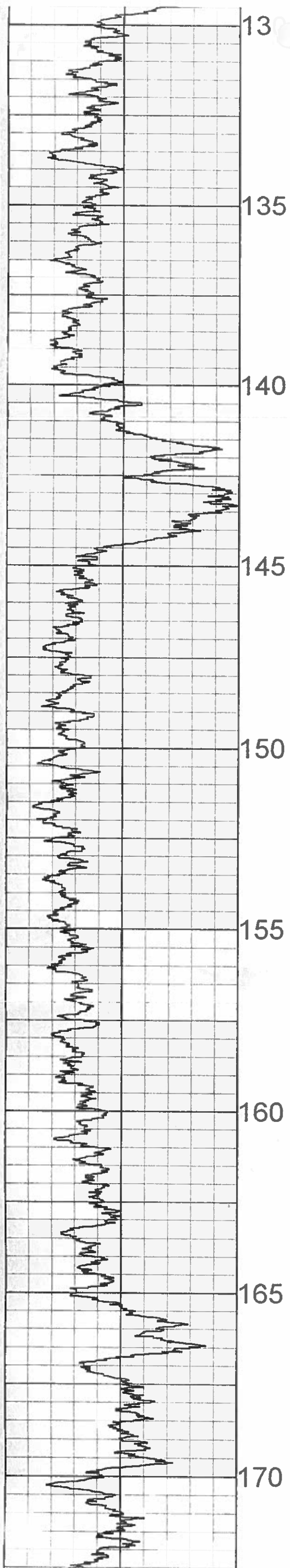
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

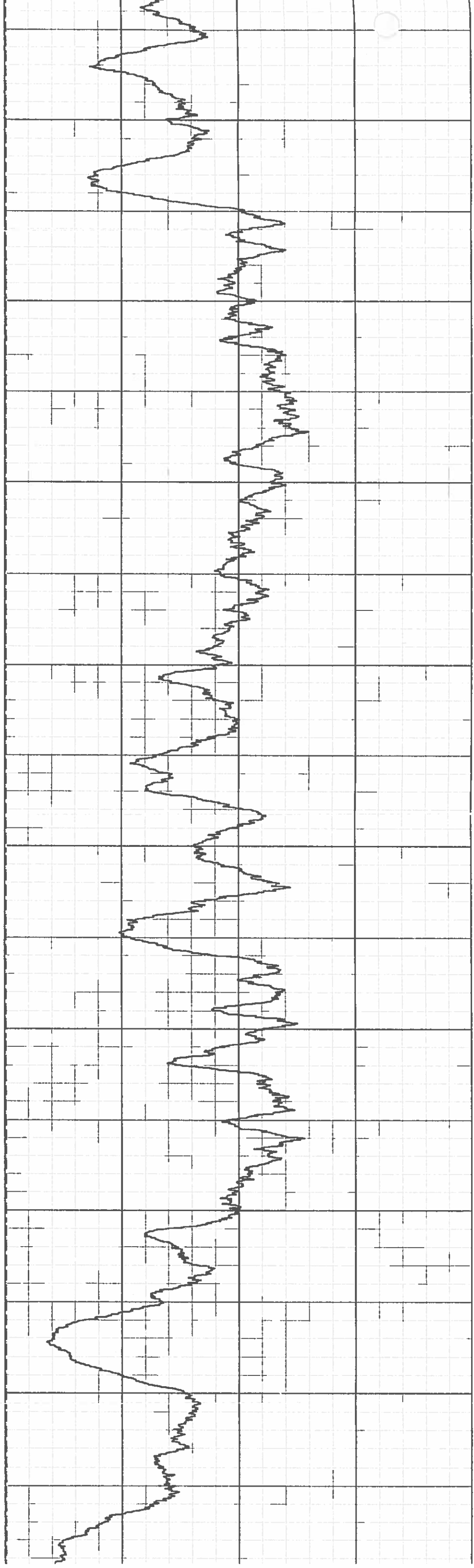
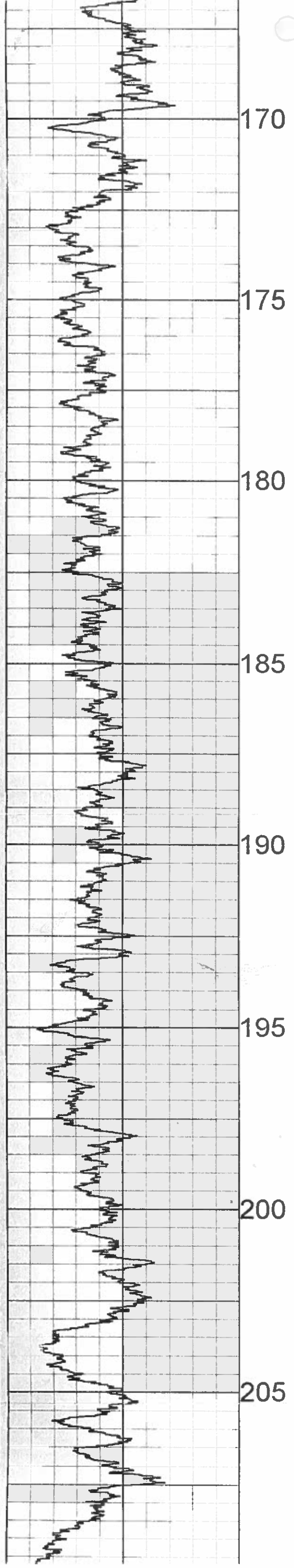


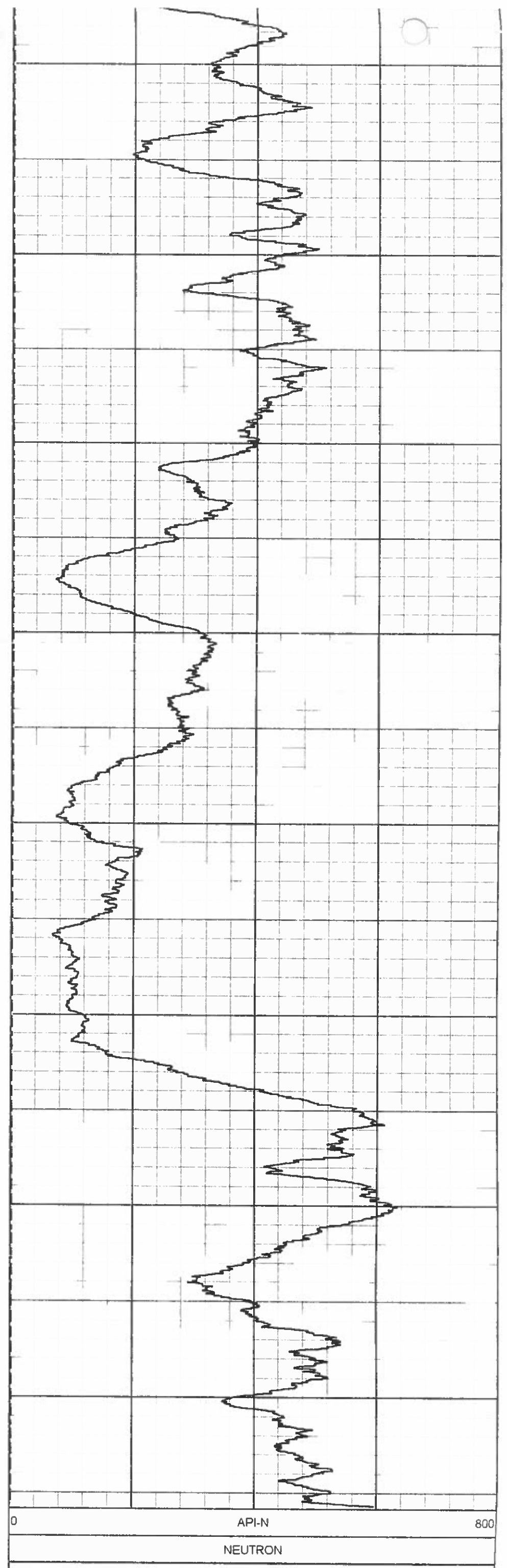
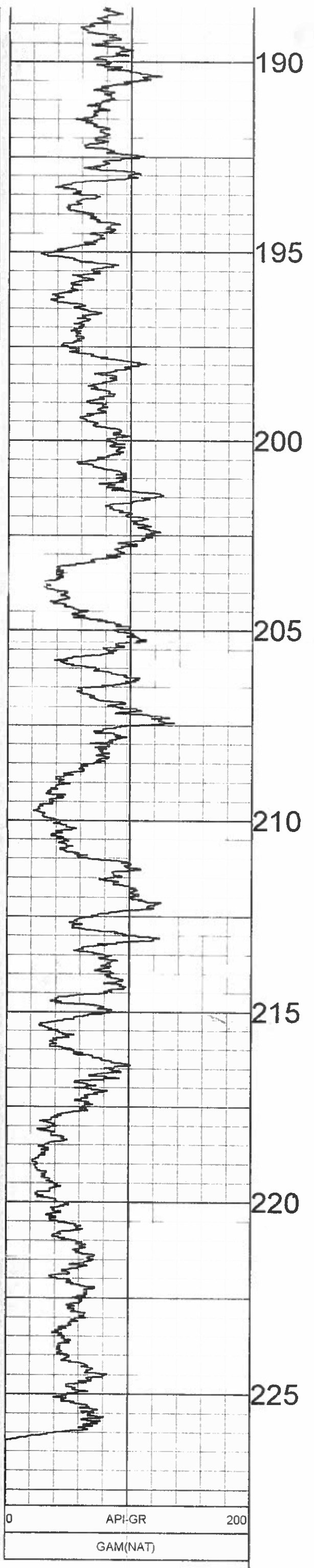












0 API-GR 200
GAM(NAT)

0 API-N 800
NEUTRON

800 API-N 2400
NEUTRON

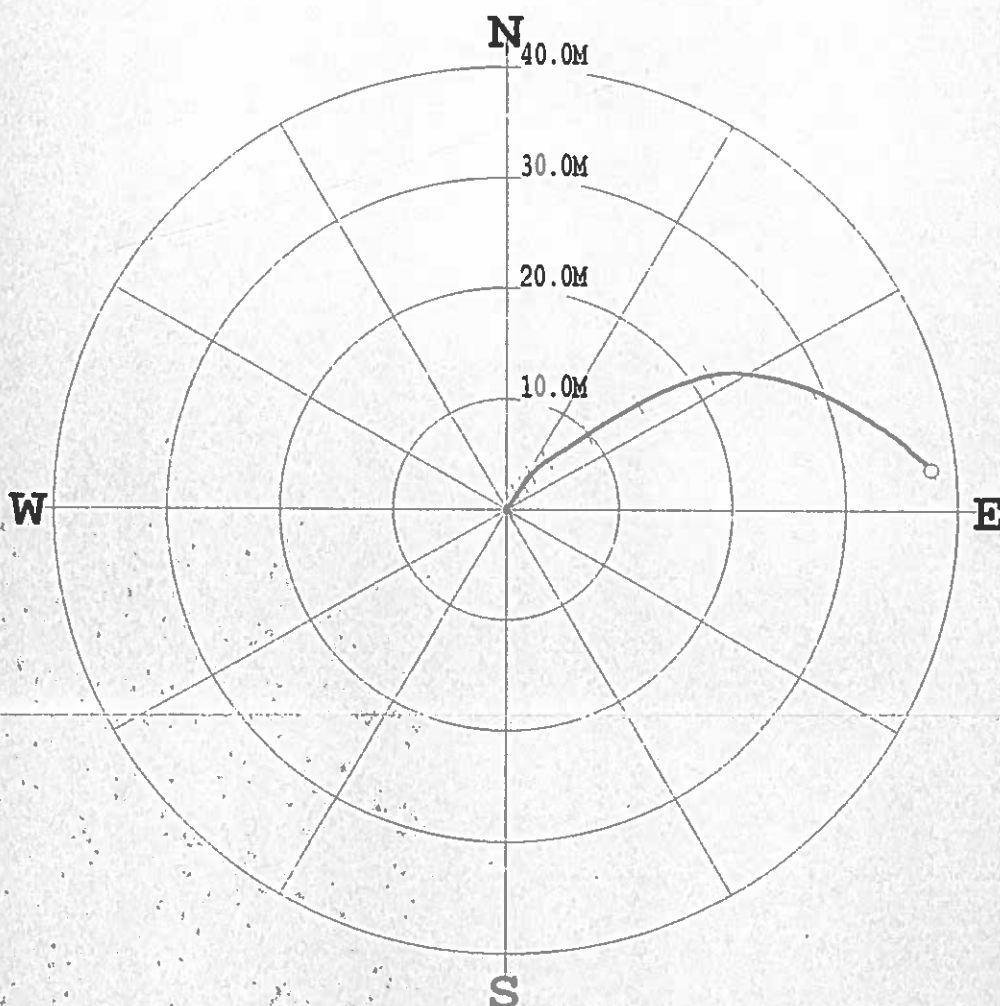
METERS

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORP.
 LOCATION: BURNT RIVER
 HOLE ID: BR-2003-03
 DATE OF LOG: 12/14/03
 PROBE: 9055A 33



SCALE: 5 M/CM
 TRUE DEPTH: 220.03 M
 AZIMUTH: 84.5
 DISTANCE: 37.7 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



*** ** *L* COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-03
 FIELD OFFICE : Tulsa DATE OF LOG : 12/14/03
 DATA FROM : PROBE : 9055A 33
 MAG. DECL. : .21.000 DEPTH UNITS : METERS
 LOG: BR-2003-03_12-14-03_14-58_9055A_02_7.70_229.57_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
8.1	8.08	0.00	0.00	0.0	0.0	0.0	0.0
9.7	9.70	0.01	0.00	0.0	19.9	0.4	23.9
11.7	11.70	0.03	0.01	0.0	24.6	0.6	29.0
13.7	13.70	0.05	0.02	0.1	26.9	0.6	21.2
15.7	15.70	0.07	0.04	0.1	28.1	0.9	23.8
17.7	17.70	0.10	0.06	0.1	29.6	1.1	33.6
19.7	19.70	0.13	0.08	0.2	31.3	1.2	33.8
21.7	21.70	0.16	0.10	0.2	32.4	1.3	36.5
23.7	23.70	0.20	0.13	0.2	33.4	1.7	39.4
25.7	25.70	0.24	0.16	0.3	34.0	1.3	32.0
27.7	27.70	0.28	0.19	0.3	34.3	1.4	34.5
29.7	29.70	0.31	0.21	0.4	34.5	1.4	31.1
31.7	31.70	0.35	0.24	0.4	34.8	1.5	35.9
33.7	33.69	0.40	0.28	0.5	34.8	1.9	39.8
35.7	35.69	0.45	0.31	0.5	35.1	1.4	43.1
37.7	37.69	0.50	0.35	0.6	35.0	2.2	46.1
39.7	39.69	0.56	0.39	0.7	34.9	1.9	25.7
41.7	41.69	0.62	0.43	0.8	34.8	2.1	34.1
43.7	43.69	0.69	0.48	0.8	34.7	2.6	34.4
45.7	45.69	0.76	0.52	0.9	34.5	2.2	47.9
47.7	47.69	0.82	0.56	1.0	34.5	2.4	25.9
49.7	49.68	0.89	0.61	1.1	34.2	2.8	33.5
51.7	51.68	0.98	0.66	1.2	34.0	2.9	32.1
53.7	53.68	1.06	0.71	1.3	33.8	3.0	32.8
55.7	55.68	1.15	0.76	1.4	33.6	2.7	41.4
57.7	57.67	1.23	0.82	1.5	33.7	2.9	32.1
59.7	59.67	1.32	0.88	1.6	33.7	2.4	33.8
61.7	61.67	1.40	0.93	1.7	33.6	2.8	30.5
63.7	63.67	1.49	0.99	1.8	33.6	3.1	34.1
65.7	65.66	1.58	1.05	1.9	33.6	3.0	42.8
67.7	67.66	1.67	1.11	2.0	33.7	3.3	33.6
69.7	69.66	1.76	1.17	2.1	33.6	3.1	33.8
71.7	71.65	1.84	1.23	2.2	33.7	2.9	31.6
73.7	73.65	1.93	1.29	2.3	33.7	3.2	39.3
75.7	75.65	2.02	1.35	2.4	33.8	3.1	34.7
77.7	77.64	2.11	1.41	2.5	33.9	3.1	40.0
79.7	79.64	2.20	1.48	2.6	33.9	3.3	34.0
81.7	81.64	2.28	1.54	2.8	34.0	3.2	35.9
83.7	83.64	2.37	1.60	2.9	34.1	3.2	37.4
85.7	85.63	2.46	1.67	3.0	34.1	3.1	37.8

59.7	59.67	1.82	0.88	1.6	33.7	2.4	33.5
61.7	61.67	1.80	0.93	1.7	33.6	2.8	33.5
63.7	63.67	1.9	0.99	1.8	33.6	3.1	34.1
65.7	65.66	1.58	1.05	1.9	33.6	3.0	42.8
67.7	67.66	1.67	1.11	2.0	33.7	3.3	33.6
69.7	69.66	1.76	1.17	2.1	33.6	3.1	33.6
71.7	71.65	1.84	1.23	2.2	33.7	2.9	31.6
73.7	73.65	1.93	1.29	2.3	33.7	3.2	39.3
75.7	75.65	2.02	1.35	2.4	33.8	3.1	34.7
77.7	77.64	2.11	1.41	2.5	33.9	3.1	40.0
79.7	79.64	2.20	1.48	2.6	33.9	3.3	34.0
81.7	81.64	2.28	1.54	2.8	34.0	3.2	35.9
83.7	83.64	2.37	1.60	2.9	34.1	3.2	37.4
85.7	85.63	2.46	1.67	3.0	34.1	3.1	37.8
87.7	87.63	2.55	1.73	3.1	34.2	3.2	37.4
89.7	89.63	2.64	1.79	3.2	34.2	2.9	38.6
91.7	91.62	2.72	1.86	3.3	34.3	3.3	36.9
93.7	93.62	2.81	1.93	3.4	34.4	3.1	37.3
95.7	95.62	2.89	1.99	3.5	34.5	2.9	36.2
97.7	97.62	2.98	2.05	3.6	34.6	3.0	39.8
99.7	99.61	3.06	2.12	3.7	34.8	3.3	40.6
101.7	101.61	3.15	2.20	3.8	35.0	3.5	41.3
103.7	103.60	3.25	2.29	4.0	35.2	3.9	53.2
105.7	105.60	3.35	2.39	4.1	35.5	4.3	30.9
107.7	107.59	3.47	2.49	4.3	35.7	4.9	43.8

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-03
 FIELD OFFICE : Tulsa DATE OF LOG : 12/14/03
 DATA FROM : PROBE : 9055A , 33
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-03_12-14-03_14-58_9055A_.02_7.70_228.57_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
109.7	109.59	3.60	2.62	4.4	36.0	5.4	41.9
111.7	111.57	3.74	2.76	4.6	36.4	5.8	50.9
113.7	113.56	3.88	2.92	4.9	36.9	6.4	43.3
115.7	115.55	4.04	3.10	5.1	37.5	7.3	54.8
117.7	117.53	4.20	3.31	5.3	38.2	8.0	53.8
119.7	119.51	4.37	3.54	5.6	39.0	8.4	56.1
121.7	121.49	4.54	3.79	5.9	39.9	9.2	61.0
123.7	123.46	4.73	4.07	6.2	40.7	9.5	58.9
125.7	125.43	4.93	4.37	6.6	41.5	10.9	54.5
127.7	127.39	5.14	4.69	7.0	42.4	11.3	58.4
129.7	129.35	5.35	5.03	7.3	43.2	12.2	55.9
131.7	131.30	5.59	5.40	7.8	44.0	13.2	52.9
133.7	133.25	5.83	5.77	8.2	44.7	13.2	48.7
135.7	135.19	6.10	6.15	8.7	45.2	17.5	51.8
137.7	137.14	6.36	6.55	9.1	45.8	15.9	54.7
139.7	139.07	6.64	6.95	9.6	46.3	14.7	55.8
141.7	141.01	6.92	7.37	10.1	46.8	14.7	56.4
143.7	142.94	7.23	7.81	10.6	47.2	14.5	57.9
145.7	144.87	7.52	8.24	11.2	47.6	15.0	57.4
147.7	146.80	7.81	8.66	11.7	48.0	14.5	57.0
149.7	148.74	8.06	9.07	12.1	48.4	14.1	56.9
151.7	150.68	8.32	9.47	12.6	48.7	13.7	59.3
153.7	152.63	8.56	9.88	13.1	49.1	14.6	59.9
155.7	154.57	8.81	10.30	13.6	49.5	14.5	59.3
157.7	156.50	9.07	10.75	14.1	49.8	16.1	57.2
159.7	158.42	9.34	11.22	14.6	50.2	16.3	61.1
161.7	160.34	9.62	11.71	15.2	50.6	15.6	61.2
163.7	162.25	9.91	12.22	15.7	51.0	17.9	61.4
165.7	164.16	10.19	12.76	16.3	51.4	18.3	62.2
167.7	166.06	10.47	13.32	16.9	51.8	18.3	64.4
169.7	167.96	10.73	13.89	17.6	52.3	18.5	66.2
171.7	169.85	10.97	14.48	18.2	52.9	19.7	70.0
173.7	171.74	11.23	15.09	18.8	53.3	18.4	70.1
175.7	173.63	11.45	15.71	19.4	53.9	19.2	72.3
177.7	175.52	11.66	16.33	20.1	54.5	19.8	70.6
179.7	177.41	11.87	16.95	20.7	55.0	19.2	72.1
181.7	179.29	12.04	17.61	21.3	55.6	19.5	77.9
183.7	181.16	12.18	18.29	22.0	56.3	21.1	80.0
185.7	183.02	12.28	19.02	22.6	57.1	22.2	84.6
187.7	184.87	12.31	19.77	23.3	58.1	22.5	91.0
189.7	186.71	12.31	20.57	24.0	59.1	23.9	91.7
191.7	188.53	12.24	21.39	24.6	60.2	24.5	97.2
193.7	190.35	12.13	22.21	25.3	61.4	24.2	101.8
195.7	192.16	12.00	23.05	26.0	62.5	25.3	100.6
197.7	193.96	11.94	23.90	26.7	63.6	26.5	103.4
199.7	195.75	11.60	24.76	27.3	64.9	28.9	96.3
201.7	197.52	11.34	25.65	28.0	66.1	28.5	105.5
203.7	199.28	11.05	26.54	28.7	67.4	28.8	105.4
205.7	201.03	10.70	27.45	29.5	68.7	30.2	109.5
207.7	202.75	10.29	28.37	30.2	70.1	30.4	116.1
209.7	204.46	9.83	29.29	30.9	71.5	32.3	108.6

***** COMPU-LOG - VERTICAL DEVIATION *****

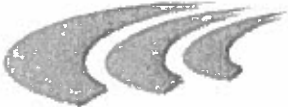
CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-03
 FIELD OFFICE : Tulsa DATE OF LOG : 12/14/03
 DATA FROM : PROBE : 9055A , 33
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-03_12-14-03_14-58_9055A_.02_7.70_228.57_DEVI.log

113.7	113.56	3.88	2.92	4.9	36.9	6.4	53.2
115.7	115.55	4.04	3.10	5.1	37.5	7.3	54.6
117.7	117.53	4.20	3.31	5.3	38.2	8.0	55.8
119.7	119.51	4.37	3.54	5.6	39.0	8.4	56.1
121.7	121.49	4.54	3.79	5.9	39.9	9.2	57.0
123.7	123.46	4.73	4.07	6.2	40.7	9.5	58.9
125.7	125.43	4.93	4.37	6.6	41.5	10.9	54.5
127.7	127.39	5.14	4.69	7.0	42.4	11.3	58.4
129.7	129.35	5.35	5.03	7.3	43.2	12.2	55.9
131.7	131.30	5.59	5.40	7.8	44.0	13.2	58.9
133.7	133.25	5.83	5.77	8.2	44.7	13.2	48.7
135.7	135.19	6.10	6.15	8.7	45.2	17.5	51.8
137.7	137.14	6.36	6.55	9.1	45.9	15.9	54.7
139.7	139.07	6.64	6.95	9.6	46.3	14.7	55.8
141.7	141.01	6.92	7.37	10.1	46.9	14.7	56.4
143.7	142.94	7.23	7.81	10.6	47.2	14.5	57.9
145.7	144.87	7.52	8.24	11.2	47.6	15.0	57.4
147.7	146.80	7.81	8.66	11.7	48.0	14.5	57.0
149.7	148.74	8.06	9.07	12.1	48.4	14.1	56.9
151.7	150.68	8.32	9.47	12.6	48.7	13.7	59.3
153.7	152.63	8.56	9.88	13.1	49.1	14.6	59.9
155.7	154.57	8.81	10.30	13.6	49.5	14.5	59.3
157.7	156.50	9.07	10.75	14.1	49.8	16.1	57.2
159.7	158.42	9.34	11.22	14.6	50.2	16.3	61.1
161.7	160.34	9.62	11.71	15.2	50.6	15.6	61.2
163.7	162.25	9.91	12.22	15.7	51.0	17.9	61.4
165.7	164.16	10.19	12.76	16.3	51.4	18.3	62.2
167.7	166.06	10.47	13.32	16.9	51.8	18.3	64.4
169.7	167.96	10.73	13.89	17.6	52.3	18.5	66.2
171.7	169.85	10.97	14.48	18.2	52.9	18.7	70.0
173.7	171.74	11.23	15.09	18.8	53.3	18.4	70.1
175.7	173.63	11.45	15.71	19.4	53.9	19.2	72.3
177.7	175.52	11.66	16.33	20.1	54.5	18.8	70.6
179.7	177.41	11.87	16.95	20.7	55.0	19.2	72.1
181.7	179.29	12.04	17.61	21.3	55.6	19.5	77.9
183.7	181.16	12.18	18.29	22.0	56.3	21.1	80.0
185.7	183.02	12.28	19.02	22.6	57.1	22.2	84.6
187.7	184.87	12.31	19.77	23.3	58.1	22.5	91.0
189.7	186.71	12.31	20.57	24.0	59.1	23.9	91.7
191.7	188.53	12.24	21.39	24.6	60.2	24.5	97.2
193.7	190.35	12.13	22.21	25.3	61.4	24.2	101.8
195.7	192.16	12.00	23.05	26.0	62.5	25.3	100.6
197.7	193.96	11.84	23.90	26.7	63.6	26.5	103.4
199.7	195.75	11.60	24.76	27.3	64.9	28.9	96.3
201.7	197.52	11.34	25.65	28.0	66.1	28.5	105.5
203.7	199.28	11.05	26.54	28.7	67.4	28.8	105.4
205.7	201.03	10.70	27.45	29.5	68.7	30.2	109.5
207.7	202.75	10.29	28.37	30.2	70.1	30.4	116.1
209.7	204.46	9.83	29.29	30.9	71.5	32.3	108.6

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-03
 FIELD OFFICE : Tulsa DATE OF LOG : 12/14/03
 DATA FROM : PROBE : 9055A , 33
 AG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-03_12-14-03_14-58_9055A_02_7.70_228.57_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGR
211.7	206.16	9.32	30.19	31.6	72.8	30.7	122.6
213.7	207.85	8.80	31.08	32.3	74.2	33.3	122.5
215.7	209.52	8.21	31.96	33.0	75.6	33.2	116.1
217.7	211.19	7.60	32.84	33.7	77.0	33.4	122.4
219.7	212.85	6.98	33.72	34.4	78.3	34.5	130.0
221.7	214.49	6.32	34.65	35.2	79.7	35.0	122.5
223.7	216.11	5.60	35.52	36.0	81.0	37.3	114.9
225.7	217.73	4.81	36.37	36.7	82.5	35.9	140.0
227.7	219.33	3.99	37.17	37.4	83.9	38.4	110.2
228.6	220.00	3.64	37.53	37.7	84.5	37.5	132.2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2003-4	year drilled: 2003	AREA: Burnt River Burn
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	574,609.56	6,136,128.91	574,512.55	6,136,334.54	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	219.66	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
7.80	0.0	-90.00
13.40	277.8	-88.80
19.40	276.3	-89.80
25.40	274.7	-89.60
31.40	274.9	-89.70
37.40	281.1	-89.60
43.40	291.6	-89.20
49.40	302.5	-89.00
55.40	315.0	-88.80
61.40	327.1	-88.30
67.40	339.6	-87.70
73.40	350.0	-87.90
79.40	359.0	-87.60
85.40	5.5	-87.20
91.40	10.6	-87.00
97.40	14.5	-87.10
103.40	17.6	-87.10
109.40	19.9	-86.60
115.40	21.9	-86.70
121.40	23.5	-86.90
127.40	25.3	-86.90
133.40	27.0	-86.30
139.40	28.8	-86.40
145.40	30.2	-85.60
151.40	31.8	-86.60
157.40	33.2	-85.40
163.40	34.6	-85.20

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	5.30	5.30	OB	
5.30	5.80	0.50	SLT	
5.80	8.08	2.28	SH	
8.08	9.50	1.42	SLT	
9.50	13.60	4.10	SH	
13.60	14.58	0.98	SLT	
14.58	15.80	1.22	SSA	
15.80	21.10	5.30	SH	
21.10	21.80	0.70	SSA	
21.80	29.00	7.20	SH	
29.00	29.80	0.80	SLT	
29.80	37.25	7.45	SH	
37.25	39.60	2.35	SSA	
39.60	41.90	2.30	SLT	
41.90	43.10	1.20	SH	
43.10	44.35	1.25	SLT	
44.35	49.60	5.25	SH	
49.60	51.60	2.00	SLT	
51.60	56.35	4.75	SH	
56.35	65.30	8.95	SLT	
65.30	69.05	3.75	SH	
69.05	74.80	5.75	SLT	
74.80	80.80	6.00	SH	
80.80	81.80	1.00	SLT	
81.80	82.50	0.70	SH	
82.50	83.70	1.20	SLT	
83.70	86.75	3.05	SH	
86.75	87.70	0.95	SLT	
87.70	89.30	1.60	SSA	
89.30	90.65	1.35	SH	
90.65	97.60	6.95	SLT	
97.60	101.85	4.25	SH	
101.85	103.20	1.35	SLT	
103.20	110.20	7.00	SH	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2003-4**

year drilled: 2003

AREA:

Burnt River
Burn

169.40	35.8	-84.30
175.40	36.7	-84.20
181.40	37.7	-85.00
187.40	38.5	-84.90
193.40	39.2	-85.70
199.40	40.0	-84.20
205.40	40.7	-83.70
211.40	41.7	-83.00
217.40	43.2	-81.80
219.70	44.0	-81.20

110.20	111.50	1.30	SLT
111.50	112.30	0.80	SSA
112.30	113.05	0.75	SLT
113.05	114.60	1.55	SH
114.60	115.50	0.90	SLT
115.50	120.55	5.05	SH
120.55	121.80	1.25	SLT
121.80	122.60	0.80	SH
122.60	124.30	1.70	C
124.30	124.75	0.45	P
124.75	124.80	0.05	C
124.80	128.60	3.80	SH
128.60	129.60	1.00	SSA
129.60	130.15	0.55	SS
130.15	131.10	0.95	SH
131.10	132.15	1.05	SLT
132.15	135.60	3.45	SHC
135.60	137.65	2.05	SSA
137.65	138.60	0.95	SLT
138.60	139.65	1.05	SSA
139.65	143.90	4.25	SHC
143.90	158.50	14.60	SH
158.50	170.30	11.80	SLT
170.30	176.35	6.05	SSA
176.35	178.10	1.75	SLT
178.10	180.15	2.05	SSA
180.15	180.60	0.45	SLT
180.60	184.65	4.05	SH
184.65	187.60	2.95	SLT
187.60	188.25	0.65	SSA
188.25	190.20	1.95	SLT
190.20	193.05	2.85	SSA
193.05	194.05	1.00	SH
194.05	194.35	0.30	C
194.35	197.05	2.70	SH
197.05	198.00	0.95	SLT
198.00	200.55	2.55	SSA
200.55	201.85	1.30	SH
201.85	202.25	0.40	C
202.25	213.10	10.85	SH
213.10	215.60	2.50	SLT
215.60	217.20	1.60	SH

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River - Dillon
DH ID: RD 2002-4
BY: R. Brown
DATE: November 30, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	5.00	OB	113.00	122.00	SH
5.00	8.35	SHC	122.50	124.30	SHC
8.35	9.50	SLT	124.30	124.80	SH
9.50	14.80	SH	124.80	128.80	SHC
14.80	15.00	SLT	128.80	130.20	SSA
15.00	15.40	C	130.20	131.10	SH
15.40	20.60	SH	131.10	132.15	SLT
20.60	21.30	C	132.15	135.55	SH
21.30	29.00	SH	135.55	140.00	SSA
29.00	30.00	SLT	140.00	141.35	SHC
30.00	37.25	SH	141.35	142.00	SH
37.25	41.05	SLT	142.00	144.00	SHC
41.05	43.05	SH	144.00	152.00	SH
43.05	43.75	SLT	152.00	190.25	SLT
43.75	47.00	SH	190.25	193.10	SSA
47.00	47.60	SLT	193.10	197.00	SH
47.60	50.35	SH	197.00	198.00	SLT
50.35	65.15	SLT	198.00	200.6	SSA
65.15	68.6	SH	200.6	201.6	SH
68.60	74.80	SLT	201.6	202.30	C
74.80	80.80	SH	202.30	213.10	SH
80.80	83.70	SLT	213.10	214.80	SLT
83.70	87.20	SH	214.80	217.20	SH
87.20	89.70	SLT	F.O.H.		
89.70	90.70	SH			
90.70	97.65	SLT			
97.65	110.15	SH			
110.15	113.00	SLT			

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



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GAMMA-DENSITY

BR-2003-04

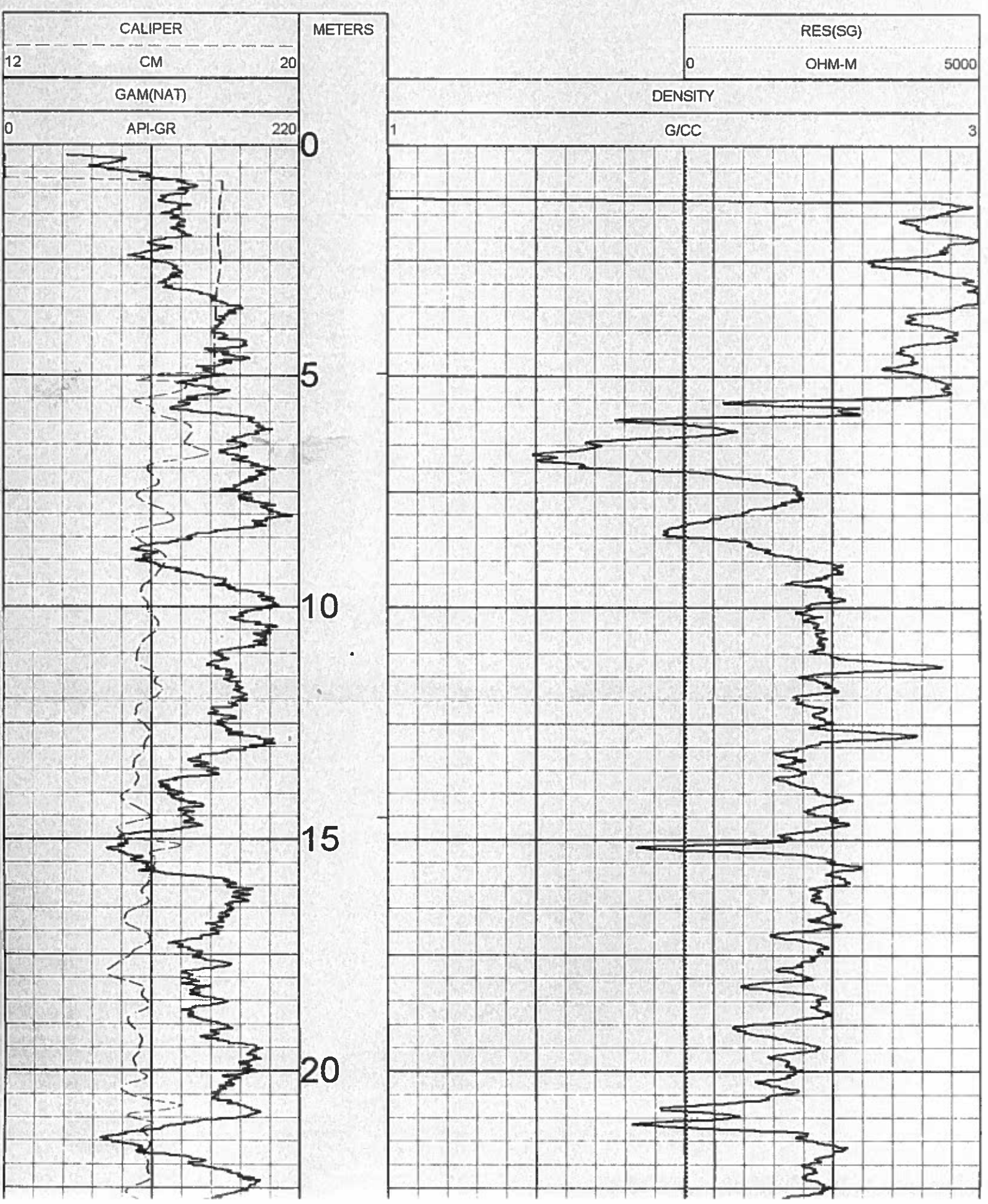
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WELL	: BR-2003-04		9055
LOCATION/FIELD	: BURNT RIVER		9067
COUNTY	: TUMBLER STATE	BRITISH COLUMBIA	

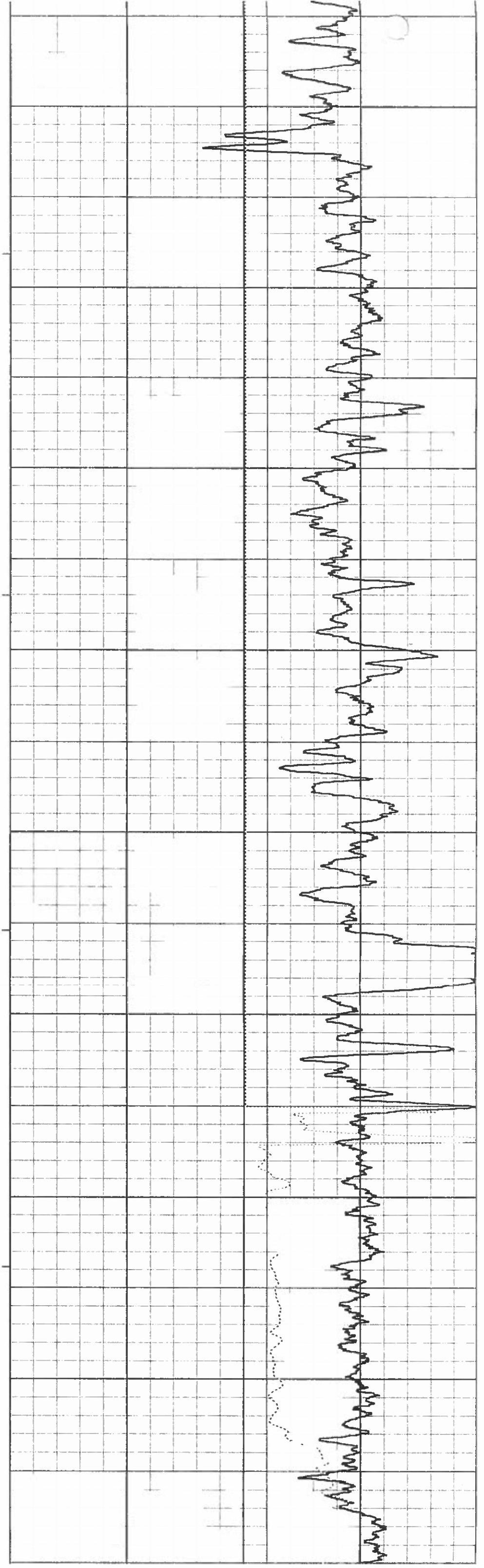
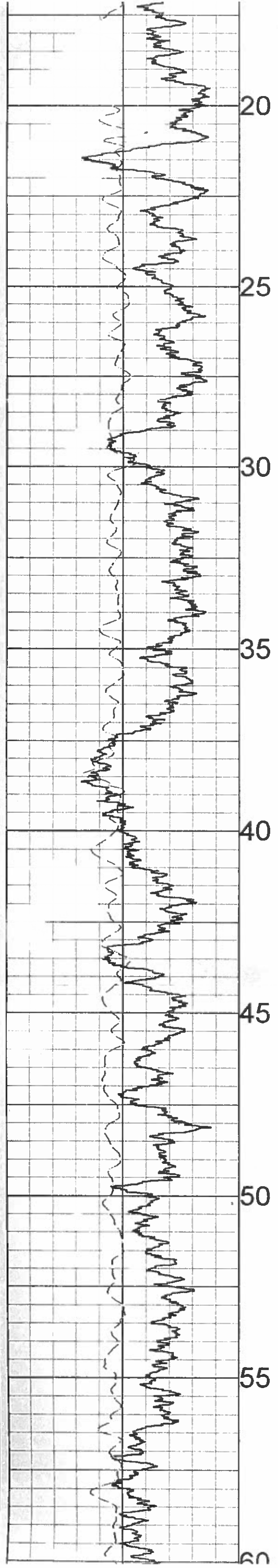
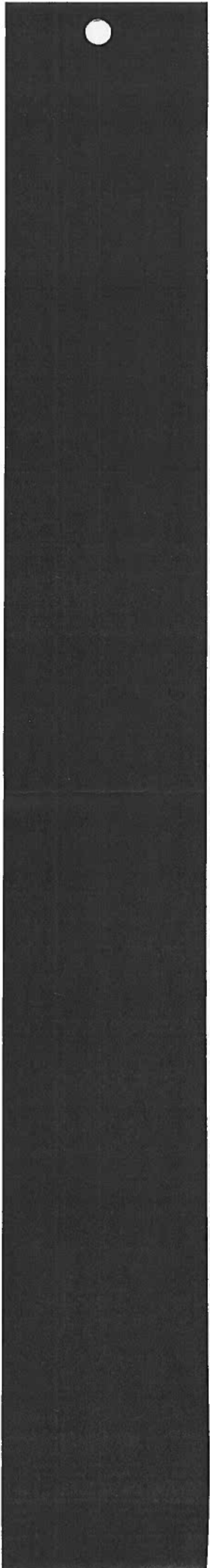
LICENSE # :
 UNIQUE WELL ID :
 LONGITUDE :
 LATITUDE :
 SECTION : TOWNSHIP : RANGE :

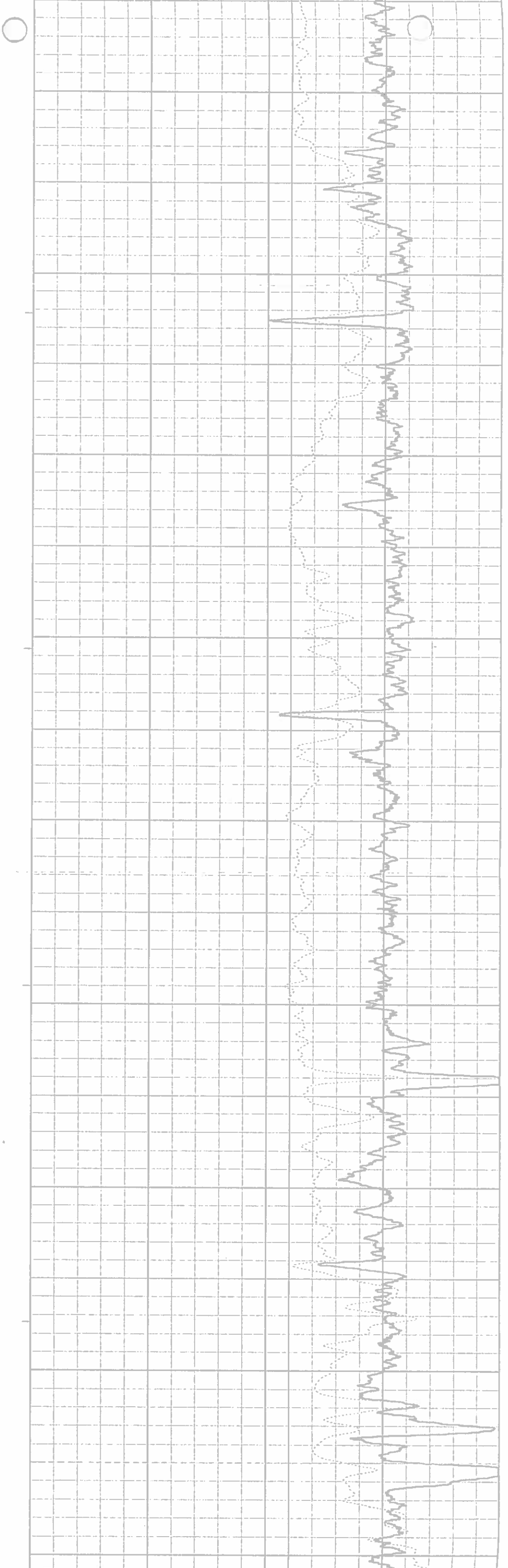
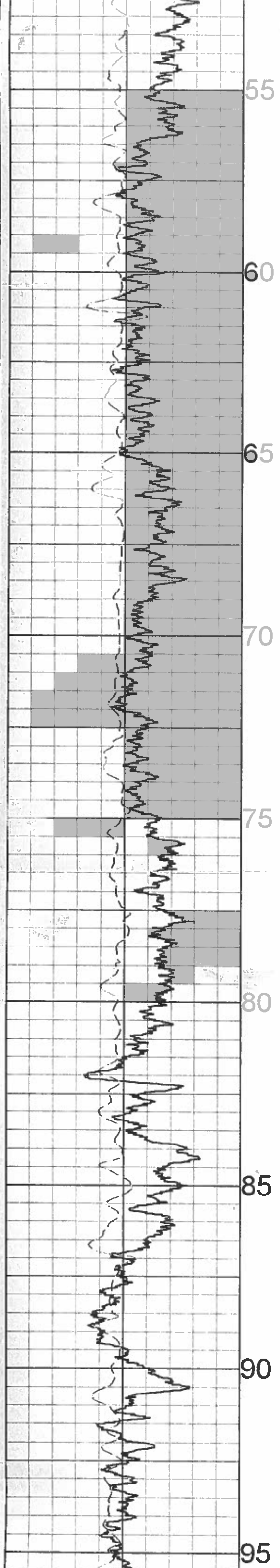
DATE PERMANENT DATUM : 12/17/03 LOG BOTTOM : 219.66
 LOG TOP : 0.22
 ELEVATION KB : BOREHOLE FLUID : Water
 ELEVATION DF : MUD RES : 0
 ELEVATION GL : RM TEMPERATURE : 0
 LOG MEASURED FROM : GL MAX TEMP : 0

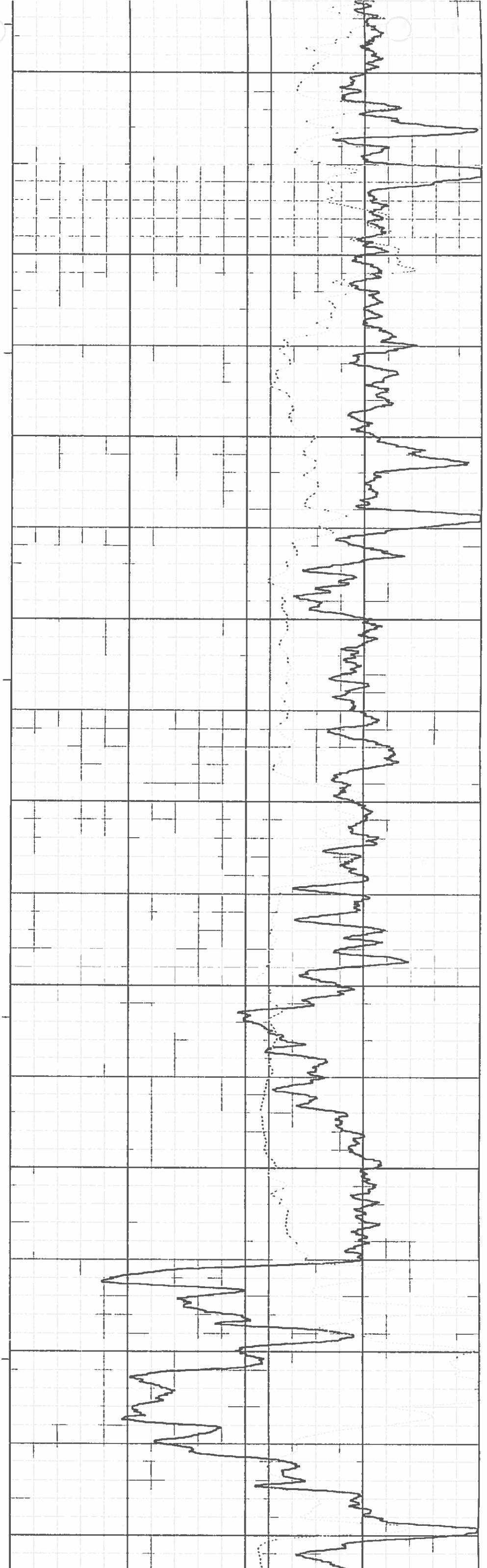
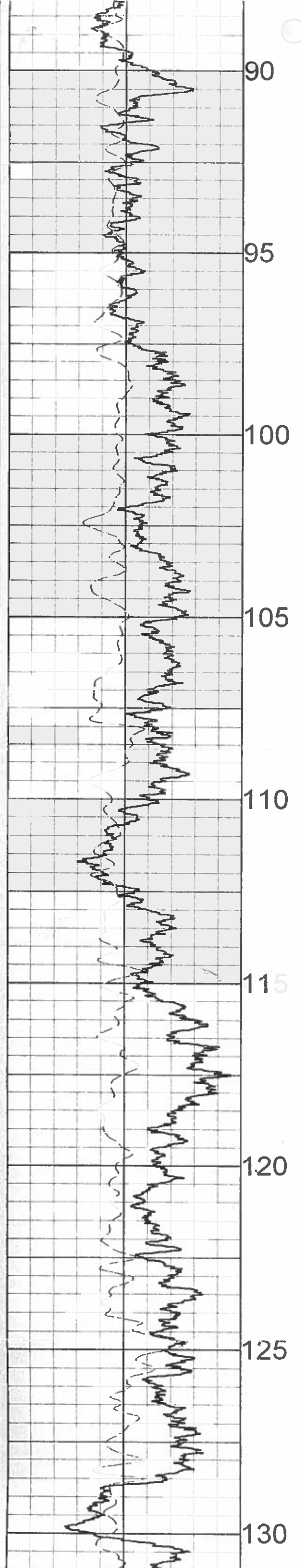
DRL MEASURED FROM : GL MAGNETIC DECL. : 21
 DEPTH DRILLER : 220 MATRIX DENSITY : 2.71
 BIT SIZE : 14 NEUTRON MATRIX : limestone
 CASING DRILLER : 6 MATRIX DELTA T : 140
 CASING DIAMETER : 17 ELECT CUTOFF : 20000
 CASING THICKNESS : 6 LOGGING UNIT : 106
 CASING TYPE : STEEL WITNESSED BY : Tulsa
 TYPE : 9138AA RECORDED BY : T. NEAL

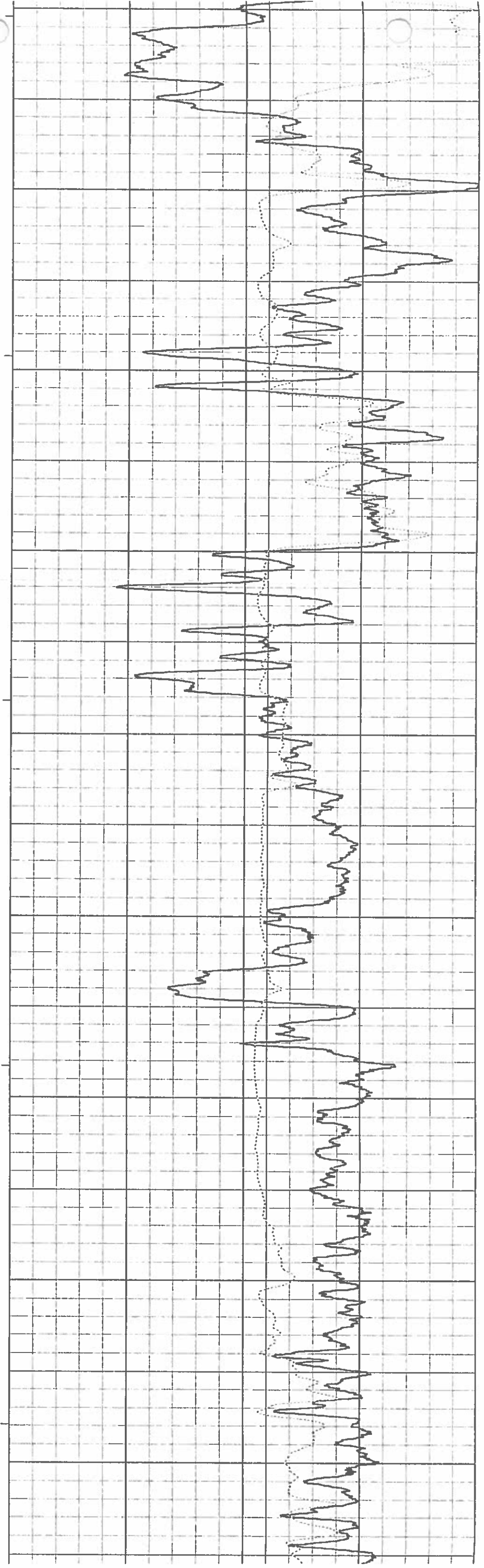
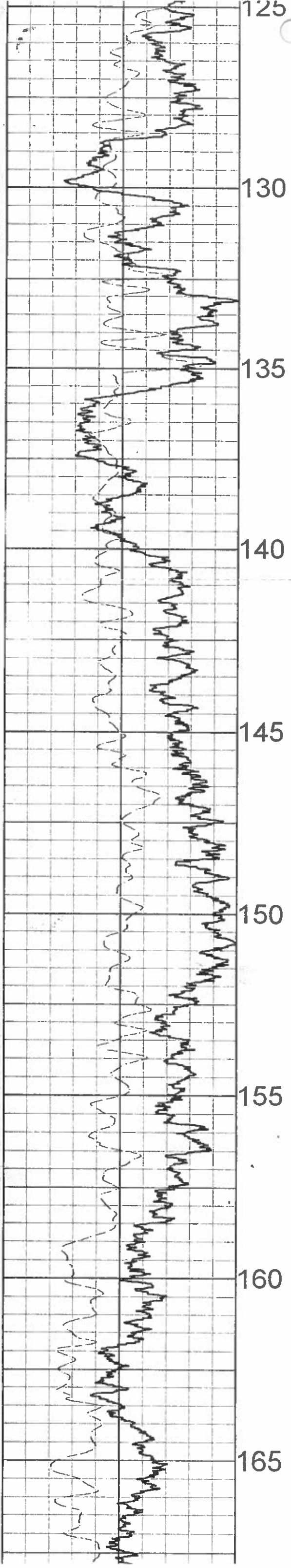
REMARKS 1 :
 REMARKS 2 :
 ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

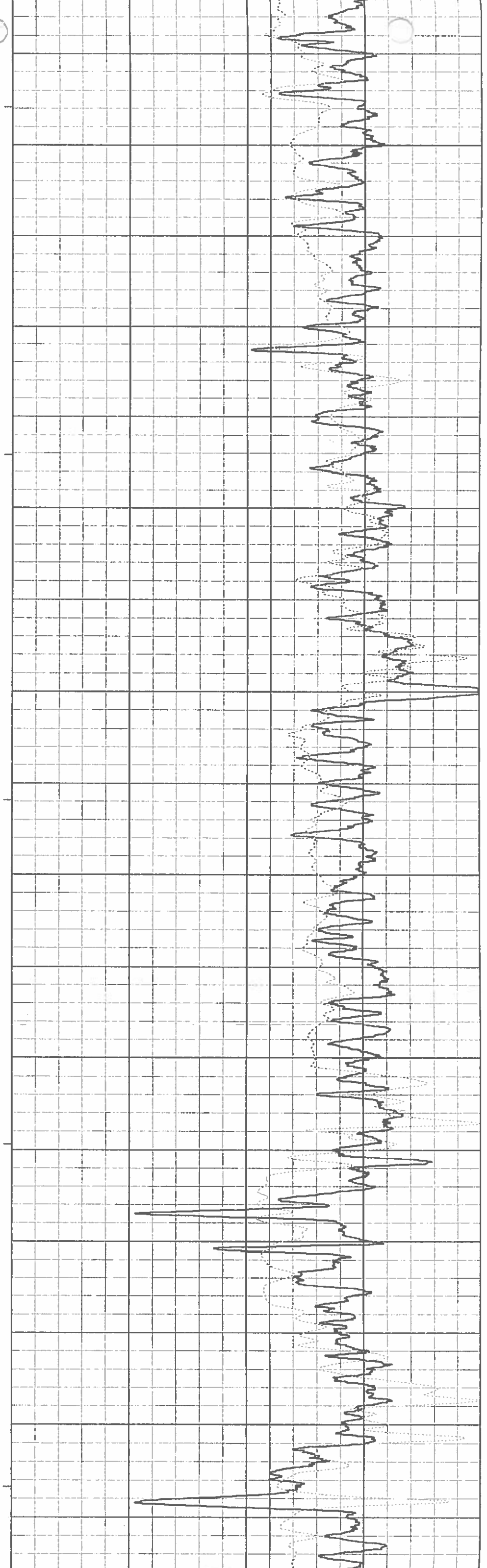
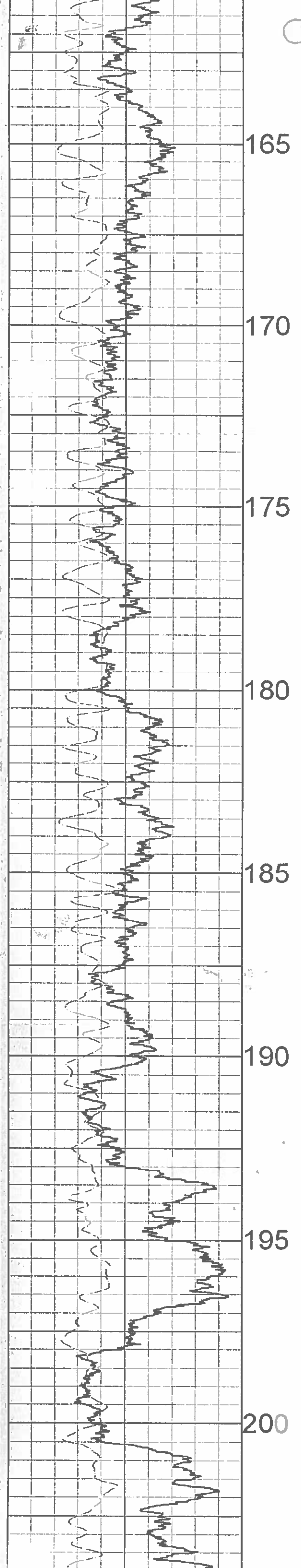


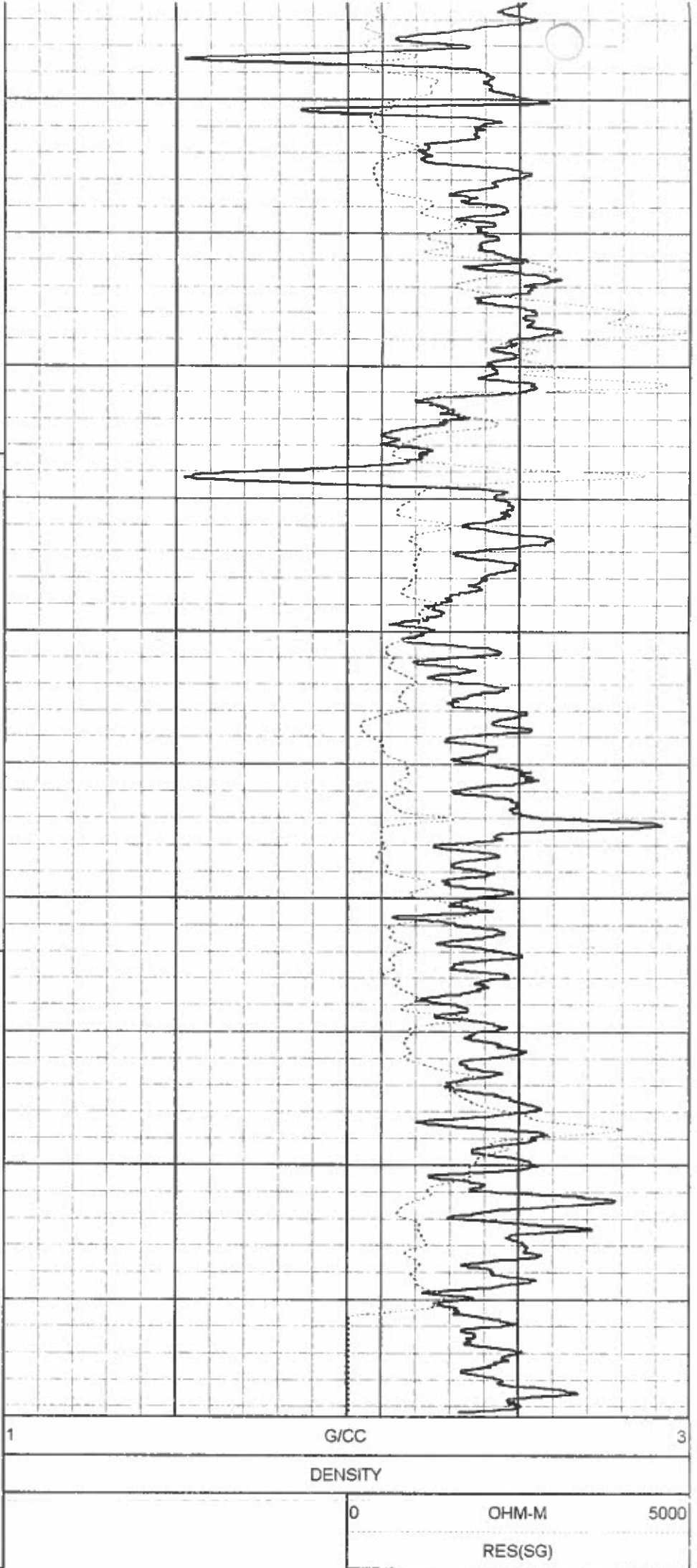
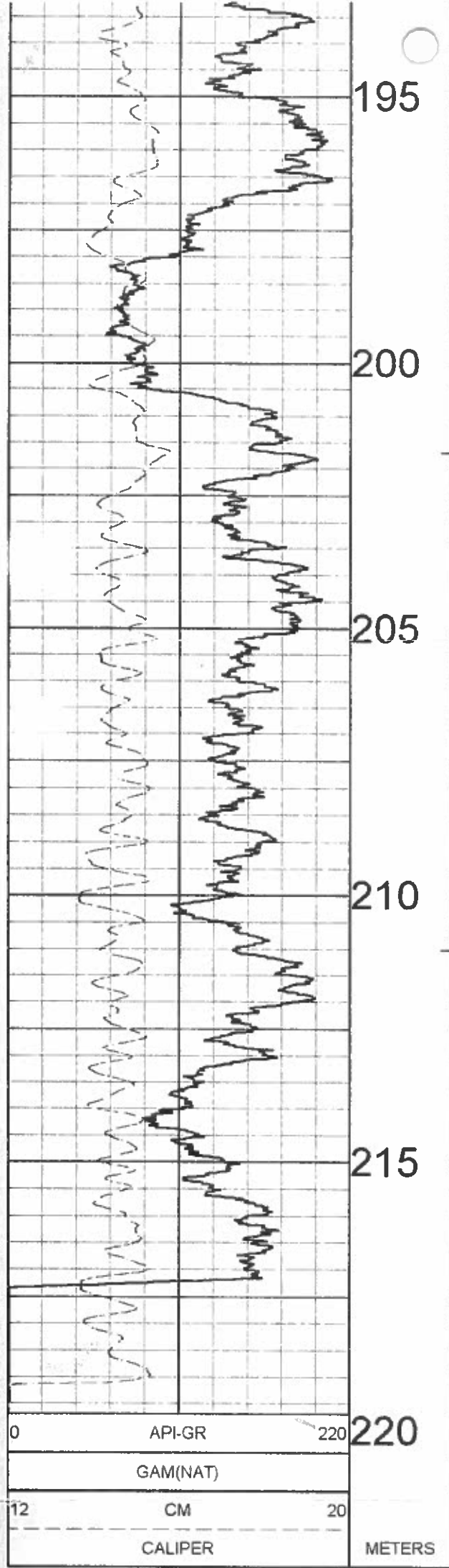










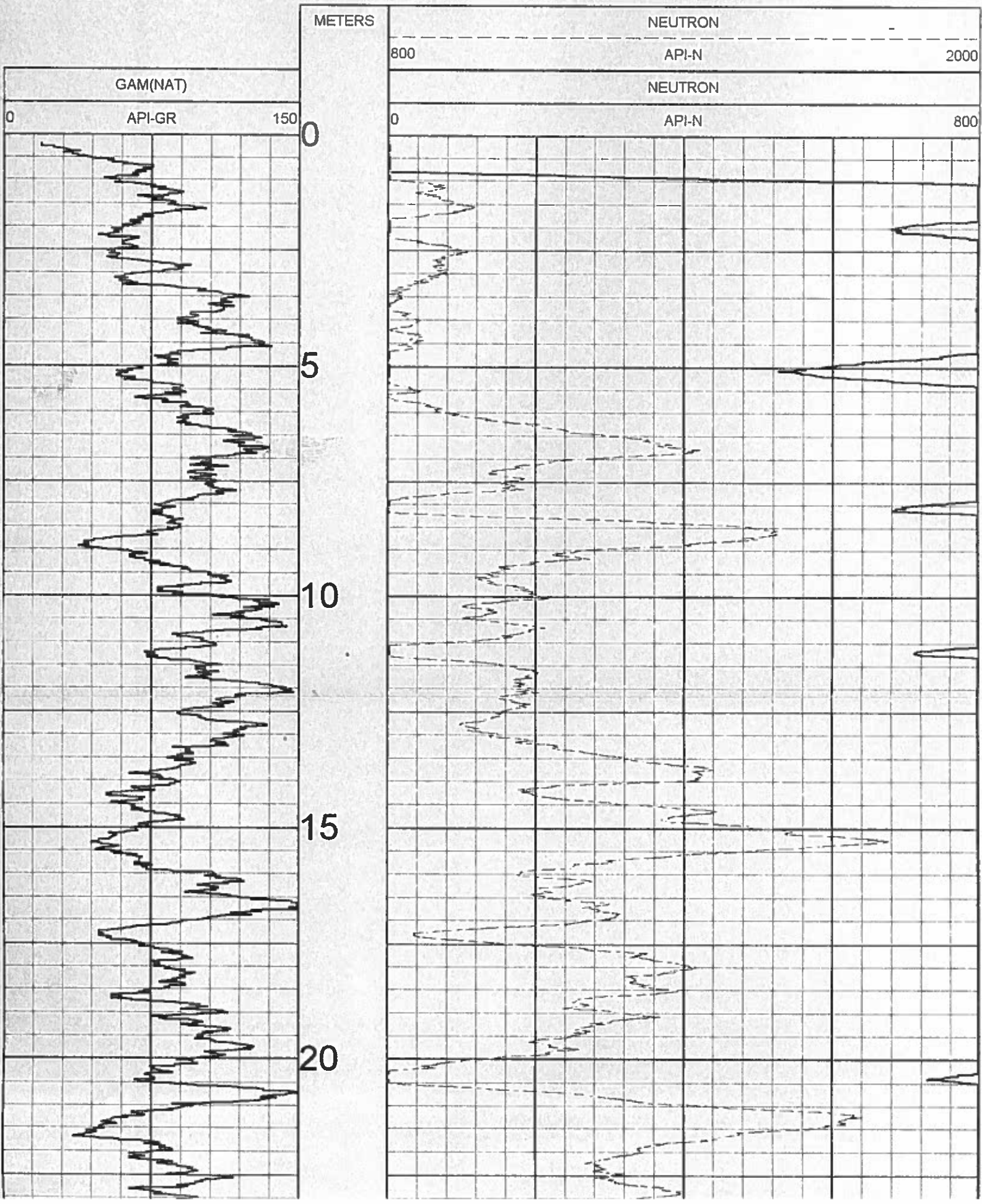


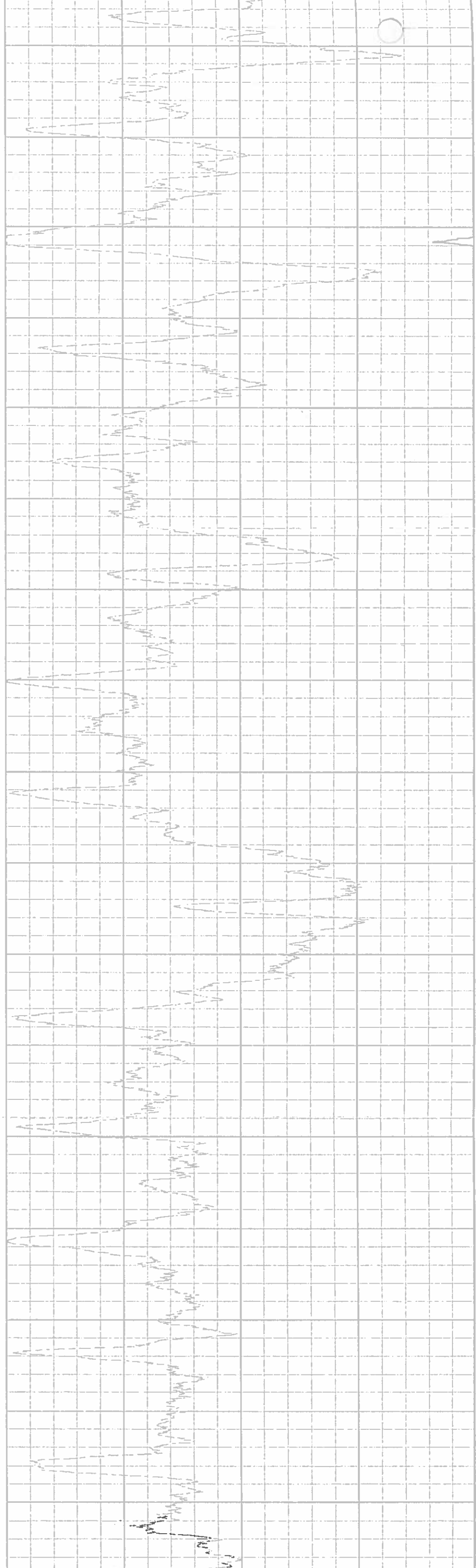
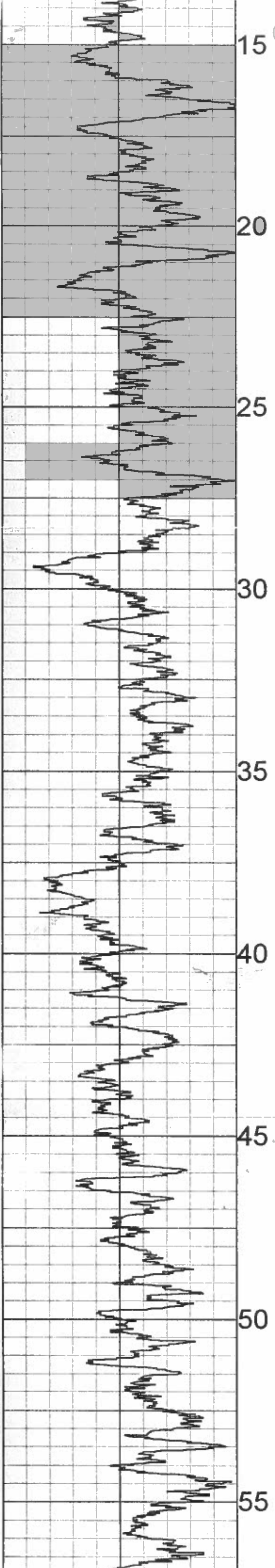
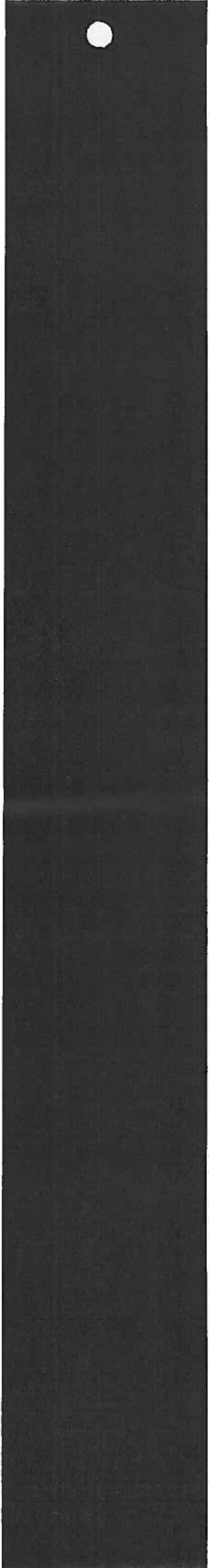
GAMMA-NEUTRON

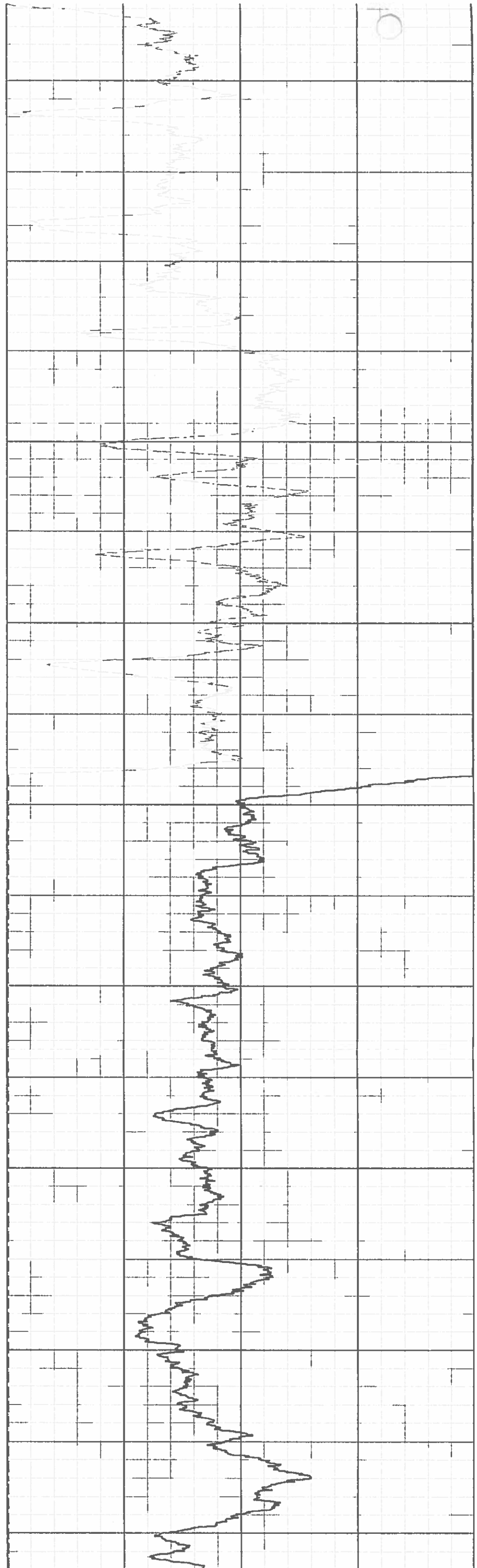
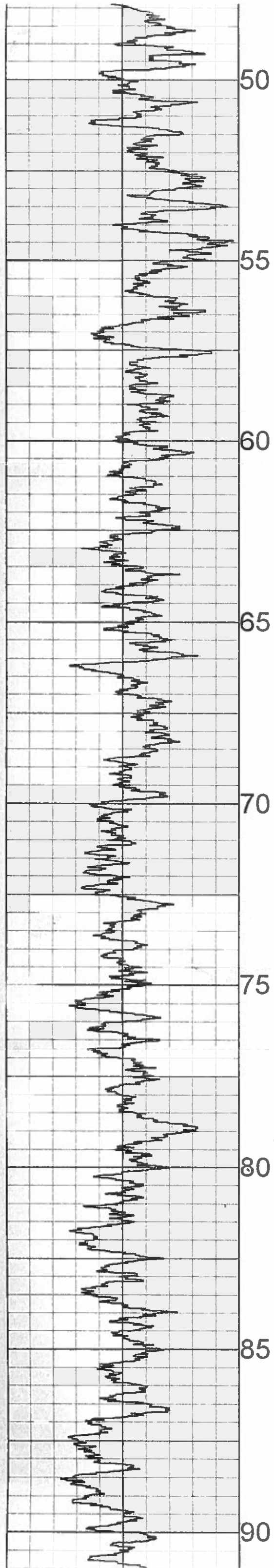
BR-2003-04

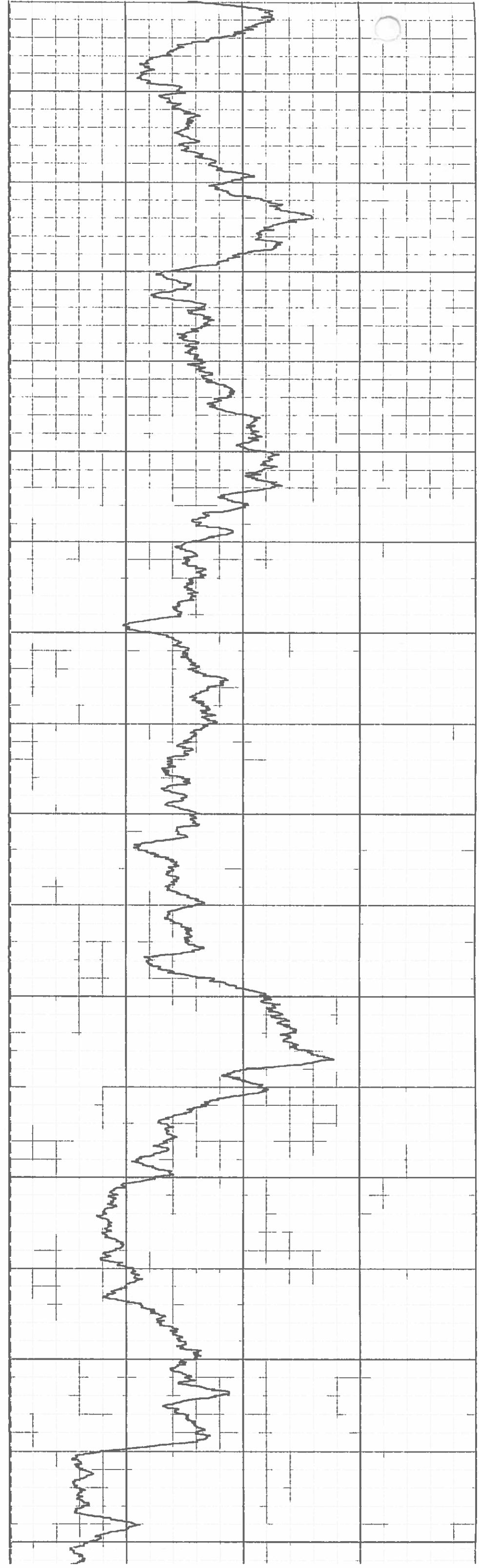
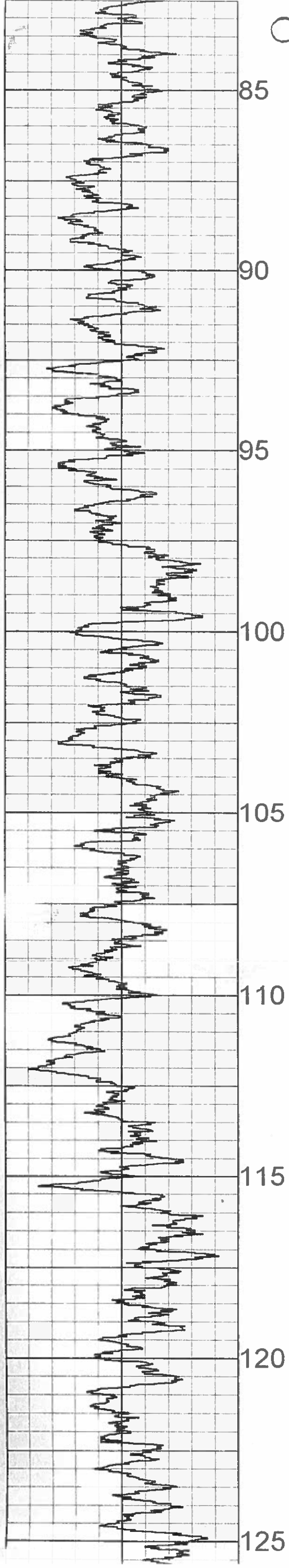
COMPANY	: WESTERN COAL CORP.	OTHER SERVICES	9138
WELL	: BR-2003-04		9055
LOCATION/FIELD	: BURNT RIVER		9067
COUNTY	: TUMBLER	STATE	: BRITISH COLUMBIA
LICENSE #	:		
UNIQUE WELL ID	:		
LONGITUDE	:		
LATITUDE	:		
SECTION	:	TOWNSHIP	: RANGE
DATE PERMANENT DATUM	: 12/17/03	LOG BOTTOM	: 218.88
ELEVATION KB	:	LOG TOP	: 0.20
ELEVATION DF	:	BOREHOLE FLUID	: Water
ELEVATION GL	:	MUD RES	: 0
LOG MEASURED FROM	: GL	RM TEMPERATURE	: 0
URL MEASURED FROM	: GL	MAX TEMP	: 0
DEPTH DRILLER	: 220	MAGNETIC DECL.	: 21
BIT SIZE	: 14	MATRIX DENSITY	: 2.71
CASING DRILLER	: 6	NEUTRON MATRIX	: limestone
CASING DIAMETER	: 17	MATRIX DELTA T	: 140
CASING THICKNESS	: 6	ELECT CUTOFF	: 20000
CASING TYPE	: STEEL	LOGGING UNIT	: 106
	: 9067A	WITNESSED BY	: Tulsa
		RECORDED BY	: T. NEAL
REMARKS 1	:		
REMARKS 2	:		

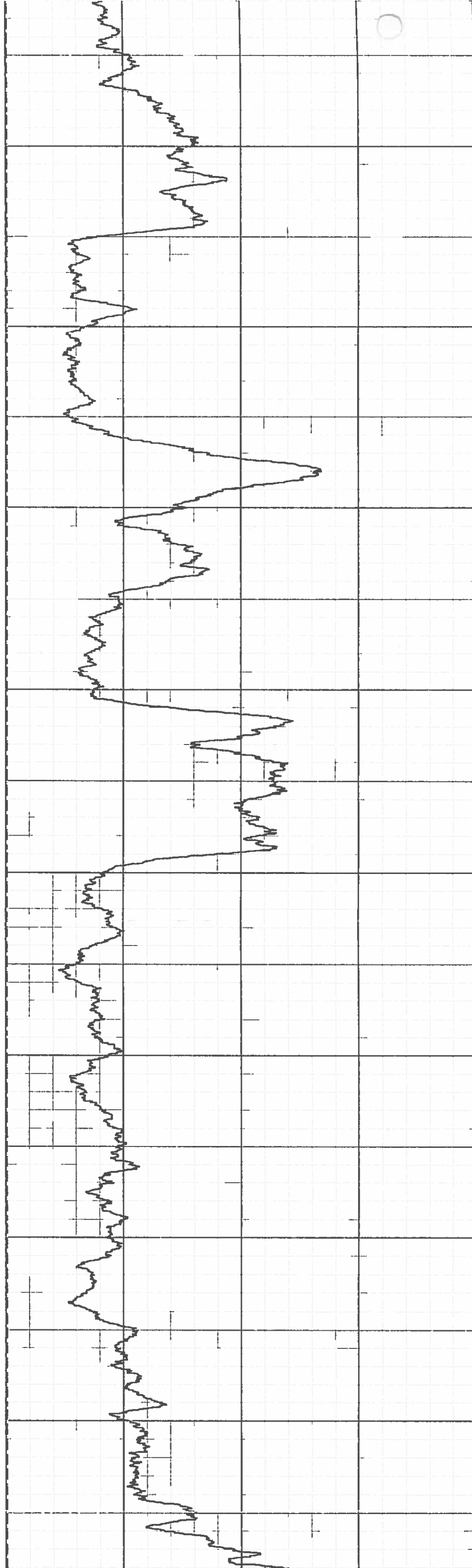
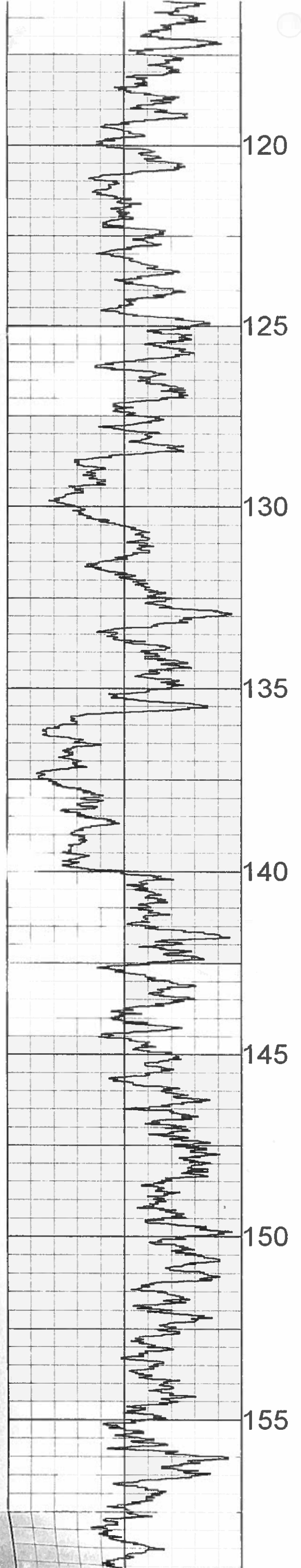
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

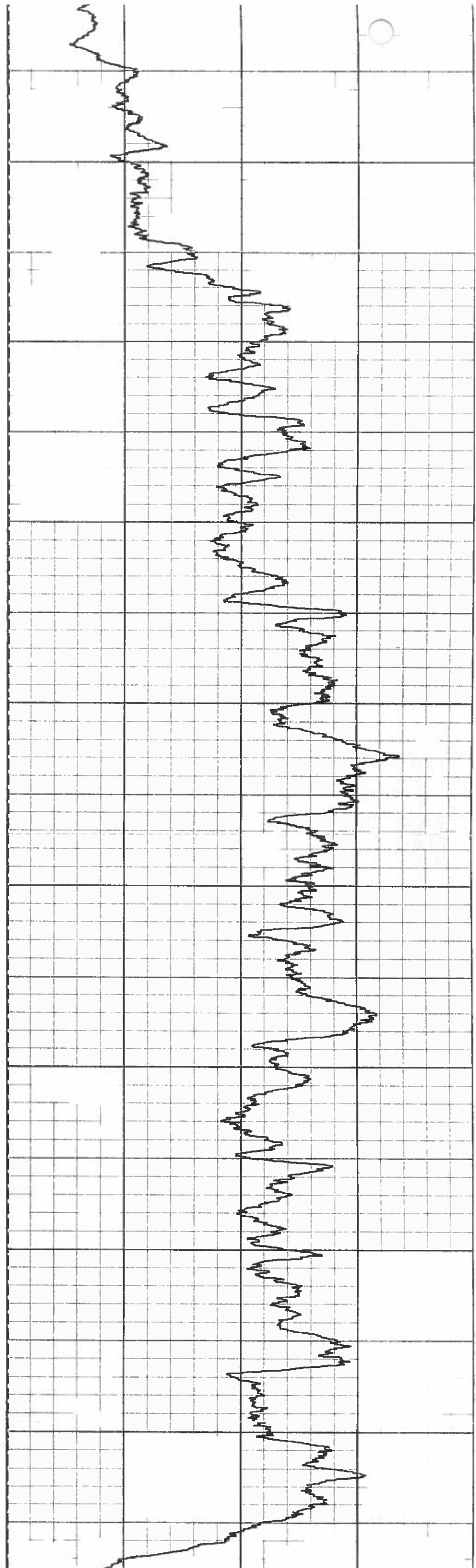
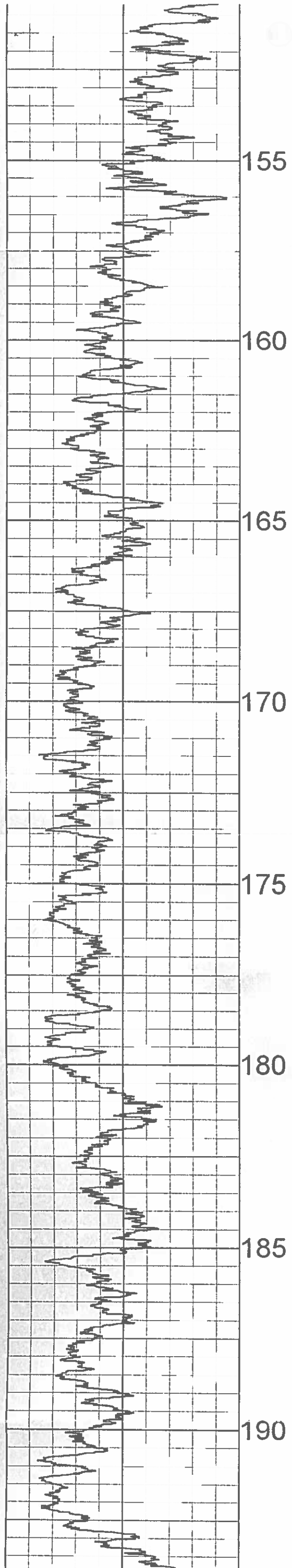


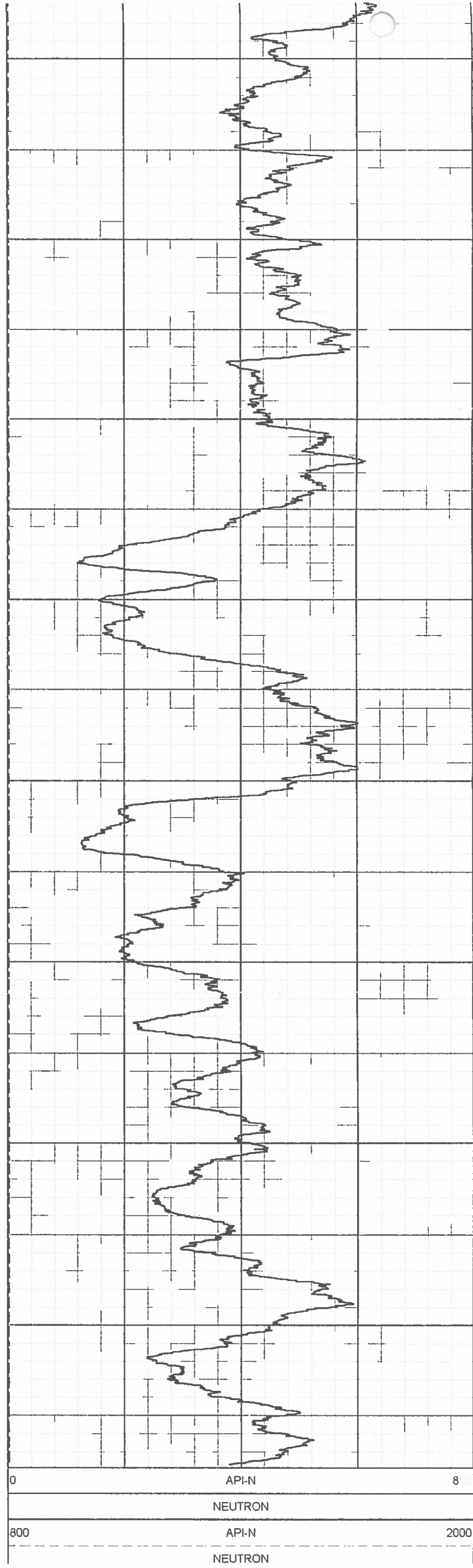
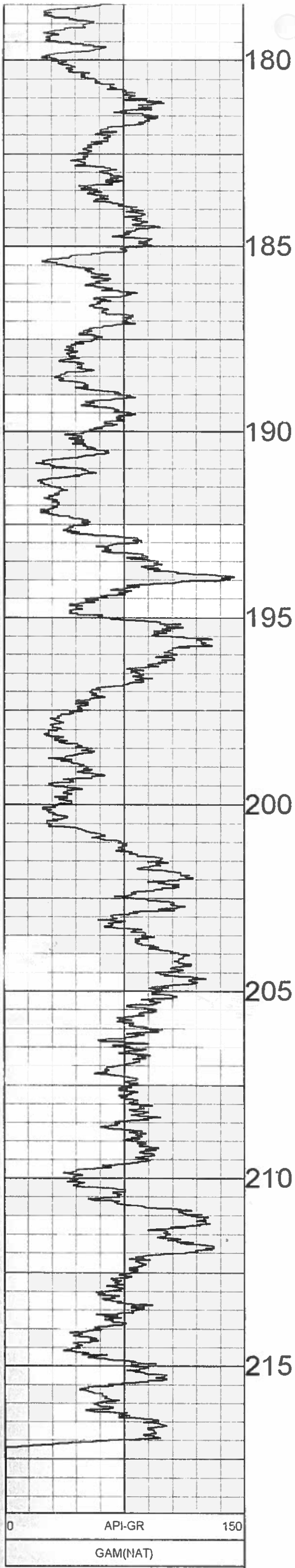










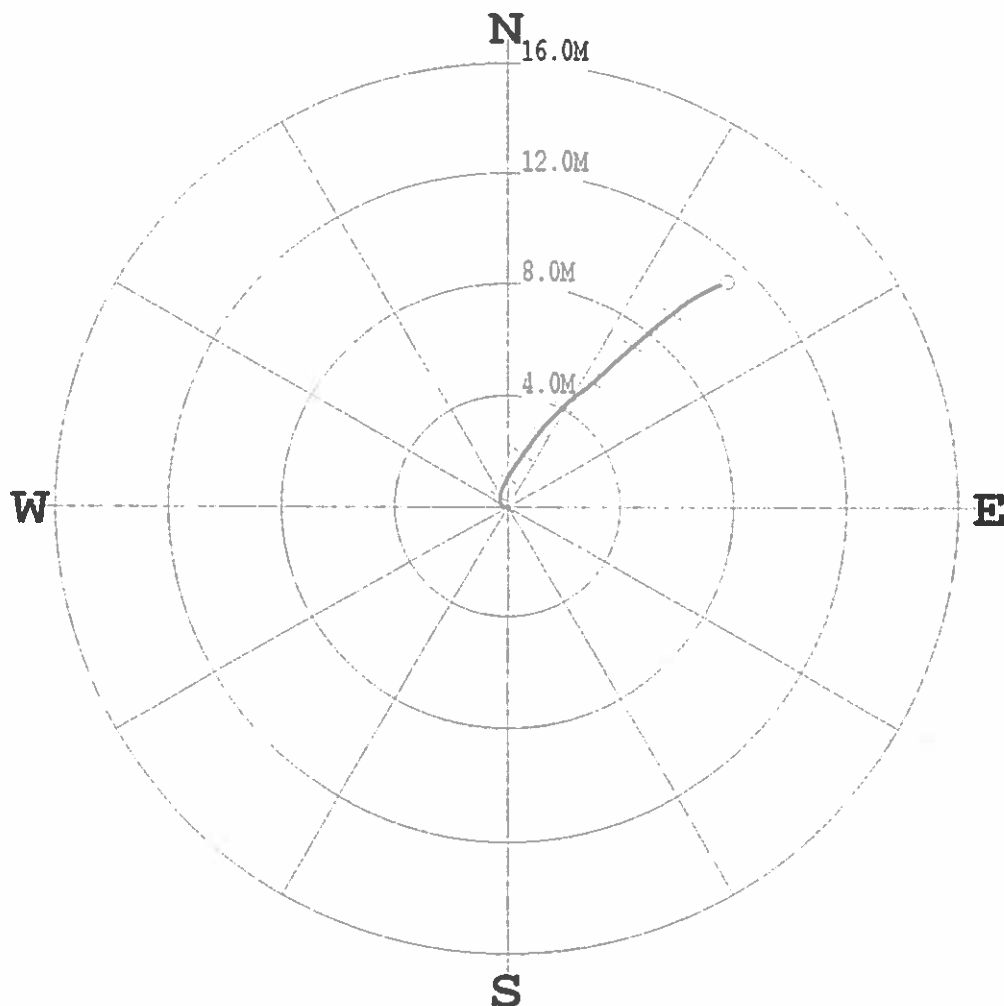


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORP.
 LOCATION: BURNT RIVER
 HOLE ID: BR-2003-04
 DATE OF LOG: 12/17/03
 PROBE: 9055A 33



SCALE: 2 M/CM
 TRUE DEPTH: 219.19 M
 AZIMUTH: 44.1
 DISTANCE: 11.2 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-04
 FIELD OFFICE : Tulsa DATE OF LOG : 12/17/03
 DATA FROM : PROBE : 9055A , 33
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-04_12-17-03_13-02_9055A_02_7.36_219.66_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
7.8	7.78	0.00	0.00	0.0	0.0	0.0	0.0
9.4	9.36	0.00	-0.01	0.0	274.9	0.8	298.8
11.4	11.36	0.01	-0.04	0.0	281.6	0.8	267.8
13.4	13.36	0.01	-0.05	0.1	277.8	1.2	299.8
15.4	15.36	0.01	-0.07	0.1	276.5	0.1	27.2
17.4	17.36	0.01	-0.08	0.1	276.5	0.3	281.9
19.4	19.36	0.01	-0.09	0.1	276.3	0.2	276.5
21.4	21.36	0.01	-0.10	0.1	275.4	0.2	205.9
23.4	23.36	0.01	-0.12	0.1	273.6	0.4	264.0
25.4	25.36	0.01	-0.14	0.1	274.7	0.4	292.2
27.4	27.36	0.01	-0.15	0.1	274.6	0.2	248.8
29.4	29.36	0.01	-0.15	0.2	274.6	0.3	346.1
31.4	31.36	0.01	-0.16	0.2	274.9	0.3	292.8
33.4	33.36	0.02	-0.17	0.2	275.4	0.2	298.5
35.4	35.36	0.02	-0.18	0.2	277.8	0.4	299.1
37.4	37.36	0.04	-0.19	0.2	281.1	0.4	354.4
39.4	39.36	0.05	-0.20	0.2	284.3	0.5	326.1
41.4	41.36	0.07	-0.21	0.2	287.8	0.7	319.4
43.4	43.36	0.09	-0.22	0.2	291.6	0.8	326.7
45.4	45.36	0.11	-0.24	0.3	294.9	0.7	344.1
47.4	47.36	0.13	-0.25	0.3	298.5	0.9	343.3
49.4	49.36	0.16	-0.26	0.3	302.5	1.0	347.4
51.4	51.36	0.20	-0.26	0.3	306.9	1.0	350.5
53.4	53.36	0.23	-0.27	0.4	310.8	1.2	354.6
55.4	55.36	0.27	-0.27	0.4	315.0	1.2	356.3
57.4	57.36	0.31	-0.27	0.4	318.9	1.3	4.5
59.4	59.36	0.36	-0.27	0.5	323.3	1.5	9.8
61.4	61.36	0.41	-0.26	0.5	327.1	1.7	12.8
63.4	63.36	0.47	-0.25	0.5	331.5	1.5	22.7
65.4	65.36	0.52	-0.24	0.6	335.4	1.6	28.1
67.4	67.36	0.59	-0.22	0.6	339.6	2.3	13.0
69.4	69.36	0.66	-0.19	0.7	343.7	2.0	16.7
71.4	71.36	0.73	-0.17	0.7	347.1	1.8	26.1
73.4	73.36	0.79	-0.14	0.8	350.0	2.1	28.6
75.4	75.36	0.87	-0.10	0.9	353.3	2.6	31.2
77.4	77.34	0.95	-0.06	1.0	356.2	2.6	28.9
79.4	79.34	1.03	-0.02	1.0	359.0	2.4	25.6
81.4	81.34	1.10	0.02	1.1	1.2	2.6	33.1
83.4	83.34	1.18	0.07	1.2	3.4	2.9	26.6
85.4	85.34	1.27	0.12	1.3	5.5	2.8	29.9
87.4	87.33	1.35	0.17	1.4	7.3	2.8	32.9

59.4	59.36	0.36	-0.27	0.5	323.3	1.5	19.8
61.4	61.35	0.1	-0.26	0.5	327.1	1.7	19.9
63.4	63.35	0.47	-0.25	0.5	331.5	1.5	22.7
65.4	65.35	0.52	-0.24	0.6	335.4	1.6	25.1
67.4	67.35	0.59	-0.22	0.6	339.6	2.3	13.0
69.4	69.35	0.66	-0.19	0.7	343.7	2.0	16.7
71.4	71.35	0.73	-0.17	0.7	347.1	1.8	26.1
73.4	73.35	0.79	-0.14	0.8	350.0	2.1	29.6
75.4	75.35	0.87	-0.10	0.9	353.3	2.6	31.2
77.4	77.34	0.95	-0.06	1.0	356.2	2.6	26.3
79.4	79.34	1.03	-0.02	1.0	359.0	2.4	25.6
81.4	81.34	1.10	0.02	1.1	1.2	2.6	33.1
83.4	83.34	1.18	0.07	1.2	3.4	2.9	26.6
85.4	85.34	1.27	0.12	1.3	5.5	2.8	29.9
87.4	87.33	1.35	0.17	1.4	7.3	2.8	32.9
89.4	89.33	1.43	0.23	1.5	9.0	2.9	35.3
91.4	91.33	1.52	0.28	1.5	10.6	3.0	33.3
93.4	93.33	1.60	0.34	1.6	12.1	3.1	32.0
95.4	95.32	1.68	0.40	1.7	13.3	3.1	33.7
97.4	97.32	1.76	0.45	1.8	14.5	2.9	32.2
99.4	99.32	1.85	0.52	1.9	15.7	3.2	36.4
101.4	101.32	1.93	0.58	2.0	16.7	3.0	38.2
103.4	103.31	2.01	0.64	2.1	17.6	2.9	35.3
105.4	105.31	2.10	0.70	2.2	18.5	2.9	33.2
107.4	107.31	2.18	0.76	2.3	19.2	2.7	34.7

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-04
FIELD OFFICE : Tulsa DATE OF LOG : 12/17/03
DATA FROM : PROBE : 9055A 33
MAG. DECL. : 21.000 DEPTH UNITS : METERS
LOG: BR-2003-04_12-17-03_13-02_9055A_02_7.36_219.66_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZINUTH	SANG	SANGE
109.4	109.30	2.27	0.82	2.4	19.9	3.4	33.9
111.4	111.30	2.35	0.88	2.5	20.6	2.9	31.4
113.4	113.30	2.43	0.95	2.6	21.3	3.0	31.7
115.4	115.30	2.51	1.01	2.7	21.9	3.3	43.5
117.4	117.29	2.60	1.08	2.8	22.5	3.1	32.7
119.4	119.29	2.68	1.14	2.9	23.0	3.0	33.8
121.4	121.29	2.77	1.21	3.0	23.5	3.1	36.1
123.4	123.28	2.85	1.28	3.1	24.1	3.0	42.7
125.4	125.28	2.93	1.35	3.2	24.7	3.2	41.3
127.4	127.28	3.01	1.42	3.3	25.3	3.1	45.4
129.4	129.28	3.08	1.50	3.4	26.0	3.2	47.1
131.4	131.27	3.16	1.58	3.5	26.5	3.4	39.4
133.4	133.27	3.26	1.67	3.7	27.0	3.7	37.3
135.4	135.26	3.36	1.76	3.8	27.6	3.8	44.2
137.4	137.26	3.45	1.85	3.9	28.3	3.5	45.2
139.4	139.26	3.54	1.94	4.0	28.8	3.6	45.8
141.4	141.25	3.63	2.03	4.2	29.3	3.6	39.3
143.4	143.25	3.72	2.12	4.3	29.7	3.4	27.2
145.4	145.24	3.80	2.21	4.4	30.2	4.4	49.1
147.4	147.24	3.90	2.31	4.5	30.7	3.7	44.7
149.4	149.23	3.98	2.41	4.7	31.2	3.5	56.4
151.4	151.23	4.05	2.51	4.8	31.8	3.4	48.0
153.4	153.23	4.13	2.61	4.9	32.3	3.3	50.0
155.4	155.22	4.22	2.71	5.0	32.8	5.1	56.9
157.4	157.22	4.30	2.82	5.1	33.2	4.6	35.7
159.4	159.21	4.41	2.94	5.3	33.7	4.6	37.1
161.4	161.20	4.53	3.08	5.5	34.2	5.3	56.4
163.4	163.20	4.64	3.20	5.6	34.6	4.8	49.5
165.4	165.19	4.77	3.34	5.8	35.0	5.7	49.8
167.4	167.19	4.89	3.48	6.0	35.4	5.8	46.1
169.4	169.17	5.03	3.63	6.2	35.8	5.7	40.5
171.4	171.16	5.17	3.76	6.4	36.1	5.6	46.8
173.4	173.15	5.31	3.91	6.6	36.4	6.0	48.7
175.4	175.14	5.44	4.06	6.8	36.7	5.8	50.6
177.4	177.13	5.58	4.22	7.0	37.1	6.1	44.6
179.4	179.11	5.72	4.37	7.2	37.4	6.6	43.7
181.4	181.10	5.85	4.52	7.4	37.7	5.0	47.0
183.4	183.10	5.96	4.66	7.6	38.0	5.7	53.8
185.4	185.09	6.09	4.79	7.7	38.2	5.2	40.4
187.4	187.08	6.20	4.93	7.9	38.5	5.1	54.5
189.4	189.07	6.30	5.06	8.1	38.8	4.6	50.5
191.4	191.07	6.40	5.18	8.2	39.0	4.6	49.3
193.4	193.06	6.51	5.30	8.4	39.2	4.3	53.6
195.4	195.05	6.61	5.43	8.6	39.4	5.5	54.3
197.4	197.04	6.73	5.59	8.8	39.7	5.6	47.1
199.4	199.03	6.85	5.74	8.9	40.0	5.8	48.2
201.4	201.02	6.98	5.90	9.1	40.2	5.4	49.9
203.4	203.01	7.10	6.04	9.3	40.4	5.9	55.1
205.4	205.00	7.22	6.20	9.5	40.7	6.3	56.6
207.4	206.99	7.35	6.37	9.7	40.9	6.1	54.6
209.4	208.98	7.47	6.55	9.9	41.3	6.6	53.7

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *


CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-04
FIELD OFFICE : Tulsa DATE OF LOG : 12/17/03
DATA FROM : PROBE : 9055A 33
MAG. DECL. : 21.000 DEPTH UNITS : METERS

113.4	113.30	2.43	0.95	2.6	21.3	3.0	21.7
115.4	115.30	2.41	1.01	2.7	21.9	3.3	22.3
117.4	117.29	2.60	1.08	2.8	22.5	3.1	32.7
119.4	119.29	2.68	1.14	2.9	23.0	3.0	33.8
121.4	121.29	2.77	1.21	3.0	23.5	3.1	36.1
123.4	123.28	2.85	1.28	3.1	24.1	3.0	42.7
125.4	125.28	2.93	1.35	3.2	24.7	3.2	41.3
127.4	127.28	3.01	1.42	3.3	25.3	3.1	45.4
129.4	129.28	3.09	1.50	3.4	26.0	3.2	47.1
131.4	131.27	3.16	1.58	3.5	26.5	3.4	39.4
133.4	133.27	3.26	1.67	3.7	27.0	3.7	37.3
135.4	135.26	3.36	1.76	3.8	27.6	3.8	44.2
137.4	137.26	3.45	1.85	3.9	28.3	3.5	45.2
139.4	139.26	3.54	1.94	4.0	28.8	3.6	45.9
141.4	141.25	3.63	2.03	4.2	29.3	3.6	39.3
143.4	143.25	3.72	2.12	4.3	29.7	3.4	27.2
145.4	145.24	3.80	2.21	4.4	30.2	4.4	49.1
147.4	147.24	3.90	2.31	4.5	30.7	3.7	44.7
149.4	149.23	3.98	2.41	4.7	31.2	3.5	56.4
151.4	151.23	4.05	2.51	4.8	31.8	3.4	48.0
153.4	153.23	4.13	2.61	4.9	32.3	3.3	50.0
155.4	155.22	4.22	2.71	5.0	32.8	5.1	56.9
157.4	157.22	4.30	2.82	5.1	33.2	4.6	35.7
159.4	159.21	4.41	2.94	5.3	33.7	4.6	37.1
161.4	161.20	4.53	3.08	5.5	34.2	5.3	56.4
163.4	163.20	4.64	3.20	5.6	34.6	4.8	49.5
165.4	165.19	4.77	3.34	5.8	35.0	5.0	49.8
167.4	167.18	4.89	3.48	6.0	35.4	5.8	46.1
169.4	169.17	5.03	3.63	6.2	35.8	5.7	40.5
171.4	171.16	5.17	3.76	6.4	36.1	5.6	46.8
173.4	173.15	5.31	3.91	6.6	36.4	6.0	48.7
175.4	175.14	5.44	4.06	6.8	36.7	5.8	50.6
177.4	177.13	5.58	4.22	7.0	37.1	6.1	44.6
179.4	179.11	5.72	4.37	7.2	37.4	6.6	43.7
181.4	181.10	5.85	4.52	7.4	37.7	5.0	47.0
183.4	183.10	5.96	4.66	7.6	38.0	5.7	53.8
185.4	185.09	6.09	4.79	7.7	38.2	5.2	40.4
187.4	187.08	6.20	4.93	7.9	38.5	5.1	54.5
189.4	189.07	6.30	5.06	8.1	38.8	4.6	50.5
191.4	191.07	6.40	5.18	8.2	39.0	4.6	49.3
193.4	193.06	6.51	5.30	8.4	39.2	4.3	53.6
195.4	195.05	6.61	5.43	8.6	39.4	5.5	54.3
197.4	197.04	6.73	5.59	8.8	39.7	5.6	47.1
199.4	199.03	6.85	5.74	8.9	40.0	5.8	48.0
201.4	201.02	6.98	5.90	9.1	40.2	5.4	49.9
203.4	203.01	7.10	6.04	9.3	40.4	3.9	55.1
205.4	205.00	7.22	6.20	9.5	40.7	6.3	56.6
207.4	206.99	7.35	6.37	9.7	40.9	6.1	54.6
209.4	208.98	7.47	6.55	9.9	41.3	6.6	53.7

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-04
 FIELD OFFICE : Tulsa DATE OF LOG : 12/17/03
 DATA FROM : PROBE : 9055A , 33
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-04_12-17-03_13-02_9055A_02_7.36_219.66_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
211.4	210.97	7.58	6.75	10.2	41.7	7.0	61.1
213.4	212.95	7.69	6.97	10.4	42.2	6.9	64.0
215.4	214.93	7.81	7.20	10.6	42.7	7.3	65.5
217.4	216.91	7.93	7.46	10.9	43.2	8.2	63.6
219.4	218.89	8.03	7.74	11.2	44.0	8.9	68.2
219.7	219.15	8.04	7.78	11.2	44.0	8.8	67.9

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2003-5	year drilled: 2003	AREA: Burnt River Burn
--------------------------	--------------------	----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	573,641.42	6,136,662.86	573,544.41	6,136,868.49	1,120.81

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	76.42	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
3.60	81.0	-90.00
9.60	286.7	-89.50
15.60	281.1	-89.70
21.60	286.0	-89.50
27.60	301.1	-89.70
33.60	323.5	-88.90
39.60	344.6	-88.70
45.60	0.4	-88.00
51.60	10.6	-87.60
57.60	17.2	-87.60
63.60	21.3	-87.50
69.60	24.2	-87.30
75.60	26.0	-86.90
76.50	26.3	-86.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.05	3.05	OB	
3.05	5.50	2.45	SH	
5.50	6.35	0.85	SLT	
6.35	10.00	3.65	SH	
10.00	11.10	1.10	SLT	
11.10	17.00	5.90	SH	
17.00	19.35	2.35	C	
19.35	23.40	4.05	SLT	
23.40	26.00	2.60	SH	
26.00	31.05	5.05	SLT	
31.05	32.55	1.50	SH	
32.55	33.50	0.95	C	
33.50	36.05	2.55	SLT	
36.05	38.05	2.00	SH	
38.05	38.60	0.55	C	
38.60	39.35	0.75	P	
39.35	40.05	0.70	C	
40.05	43.85	3.80	SLT	
43.85	45.10	1.25	SH	
45.10	48.85	3.75	SSA	
48.85	50.10	1.25	SLT	
50.10	50.70	0.60	C	
50.70	52.30	1.60	SLT	
52.30	53.30	1.00	C	
53.30	56.30	3.00	SH	
56.30	57.05	0.75	SLT	
57.05	57.65	0.60	SH	
57.65	61.50	3.85	SLT	
61.50	64.00	2.50	SHC	
64.00	65.20	1.20	SLT	
65.20	67.50	2.30	SSA	
67.50	70.60	3.10	SH	
70.60	74.00	3.40	SSA	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	
HOLE-ID: BR2003-5	year drilled: 2003	AREA: Burnt River Burn

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006
 Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Bunt River-Dillon
 DH ID: B22003-5
 BY: R. P. [unclear]
 DATE: November 30, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	3.05	OB	61.50	64.00	SHC
3.05	5.50	SH	64.00	65.20	SLT
5.50	6.35	SLT	65.20	67.50	SSA
6.35	10.00	SH	67.50	70.6	SH
10.00	11.10	SLT	70.60	74.00	SSA
11.10	17.00	SH			
17.00	19.35	C			
19.35	23.40	SLT			
23.40	26.00	SH			
26.00	31.05	SLT			
31.05	32.35	SH			
32.35	32.5	C			
32.5	36.05	SLT			
36.05	38.05	SH			
38.05	38.60	C			
38.60	39.35	P			
39.35	40.05	C			
40.05	43.85	SLT			
43.85	45.10	SH			
45.10	48.85	SSA			
48.85	50.10	SLT			
50.10	50.70	C			
50.70	52.3	SLT			
52.3	53.3	C			
53.3	56.30	SH			
56.30	57.05	SLT			
57.05	57.65	SH			
57.65	61.50	SLT			

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



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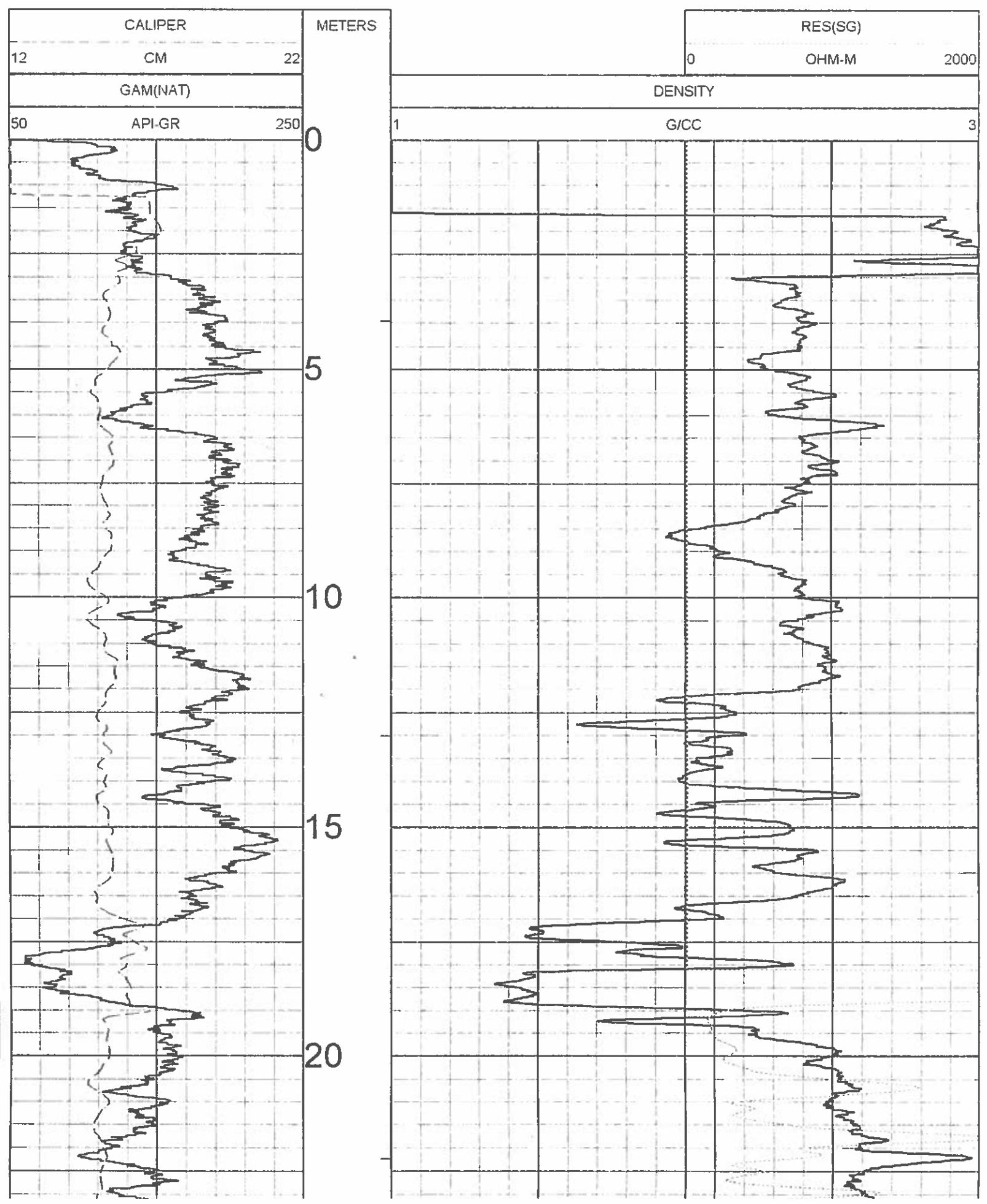
GAMMA-DENSITY

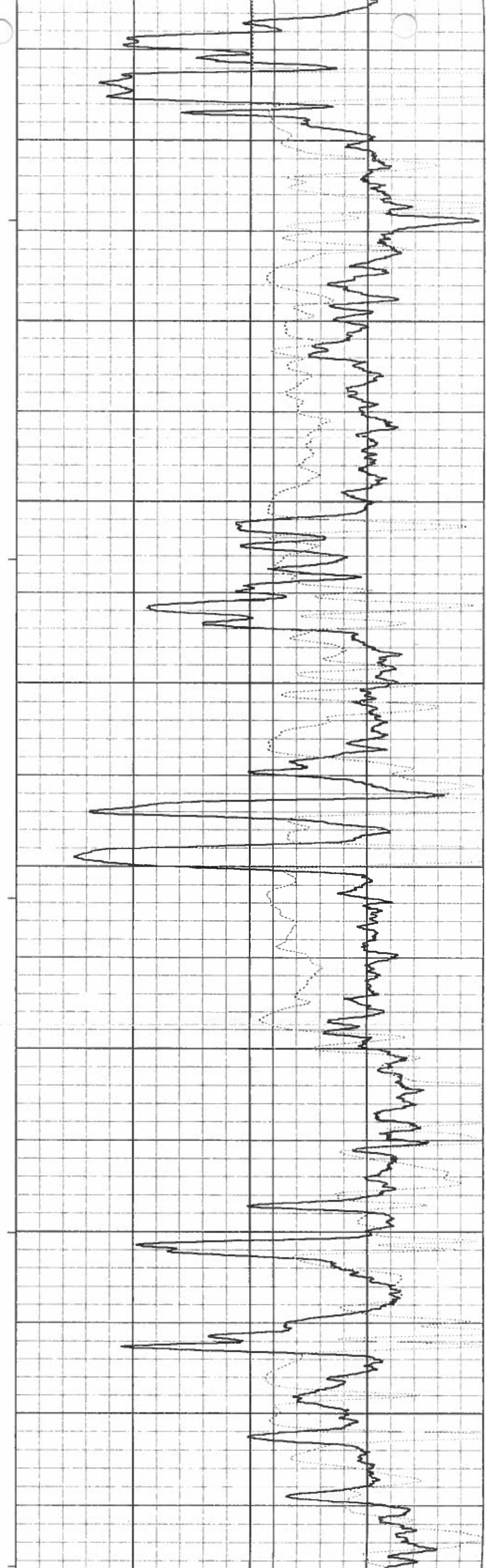
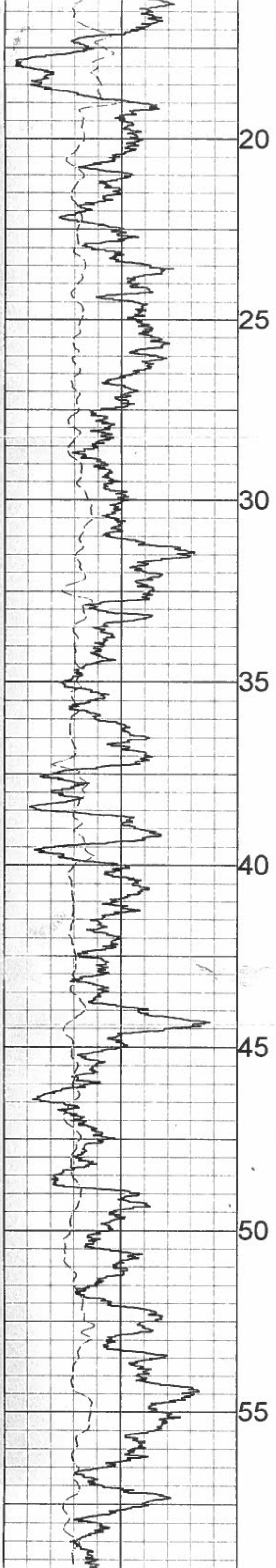
BR-2003-05

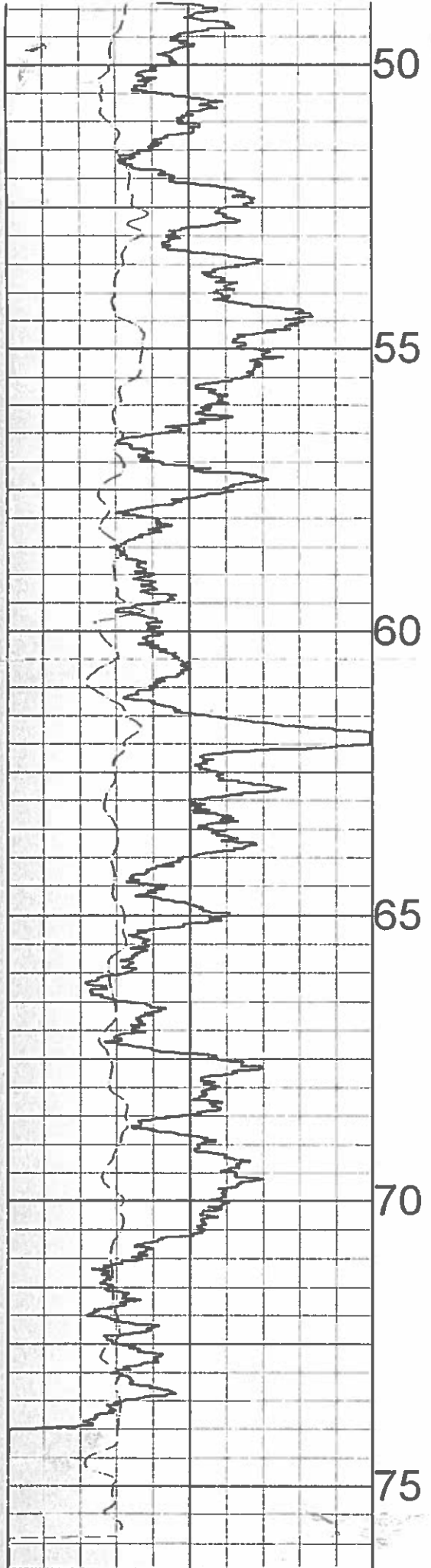
COMPANY	WESTERN COAL CORP	OTHER SERVICES
WELL	BR-2003-05	9055
LOCATION/FIELD	BURNT RIVER	0012
COUNTY	CHEWYND STATE	9067
	BRITISH COLUMBIA	

DATE PERMANENT DATUM	01/07/04	LOG BOTTOM	76.42
ELEVATION KB		LOG TOP	-0.42
ELEVATION DF		BOREHOLE FLUID	Water
ELEVATION GL		MUD RES	0
MEASURED FROM GL		RM TEMPERATURE	0
MEASURED FROM GL		MAX TEMP	0
DRL MEASURED FROM	GL	MAGNETIC DECL	21
DEPTH DRILLER	78	MATRIX DENSITY	2.71
BIT SIZE	14	NEUTRON MATRIX	limestone
CASING DRILLER	3	MATRIX DELTA T	140
CASING DIAMETER	17	ELECT CUTOFF	20000
CASING THICKNESS	6	LOGGING UNIT	106
CASING TYPE	STEEL	WITNESSED BY	Tulsa
	9138AA	RECORDED BY	T NEAL

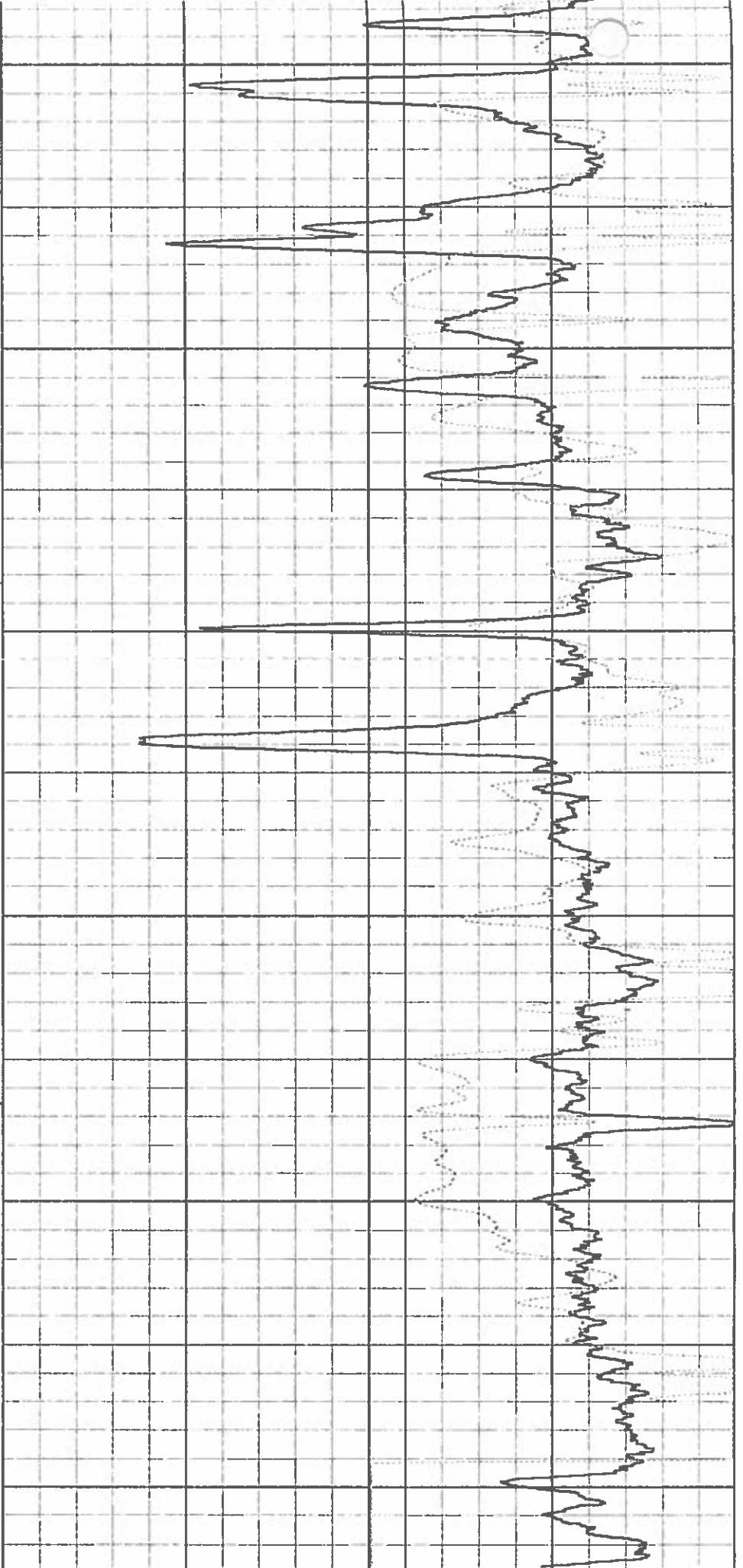
REMARKS 1
REMARKS 2
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







50	API-GR	250
GAM(NAT)		
12	CM	22
CALIPER		METERS



1	G/CC	3
DENSITY		
0	OHM-M	2000
RES(SG)		



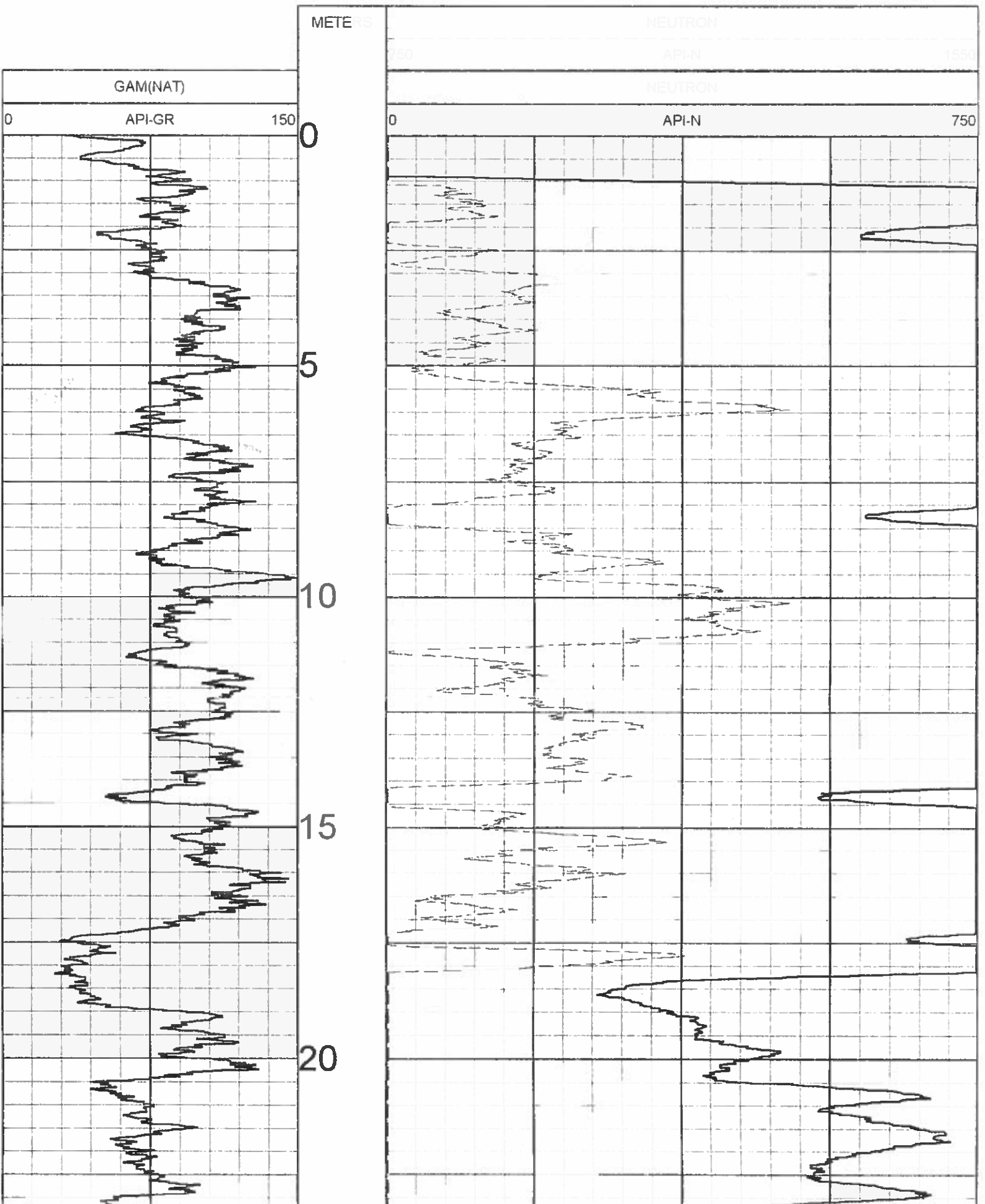
century-geo.com

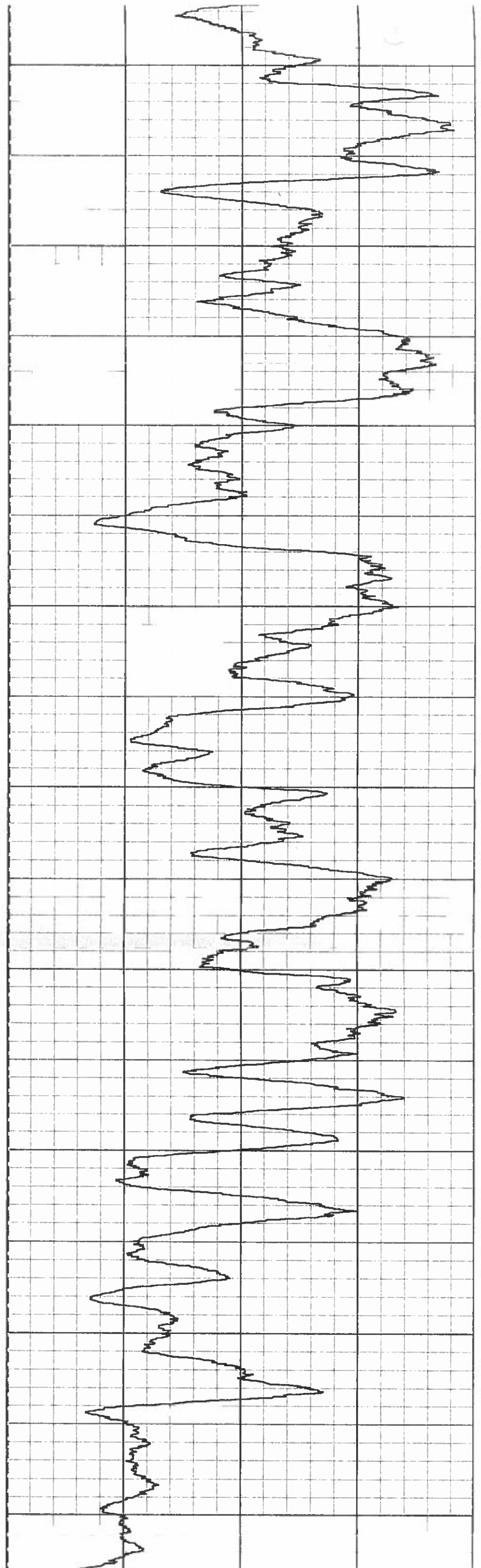
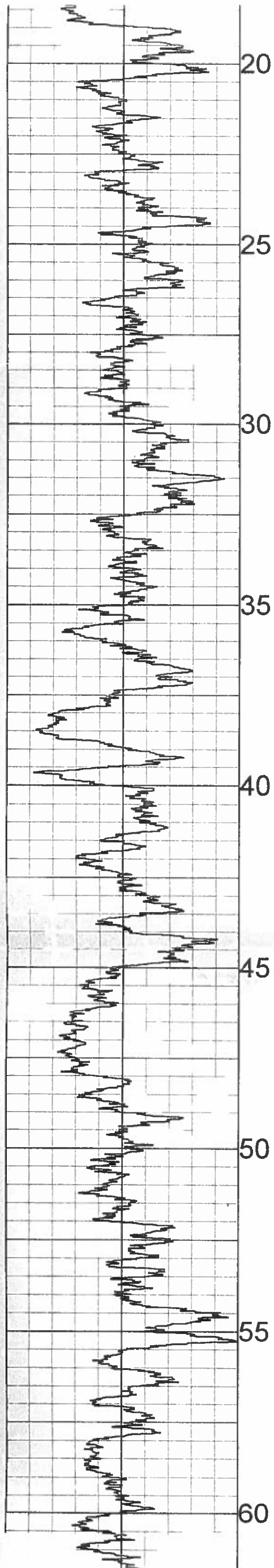
GAMMA-NEUTRON

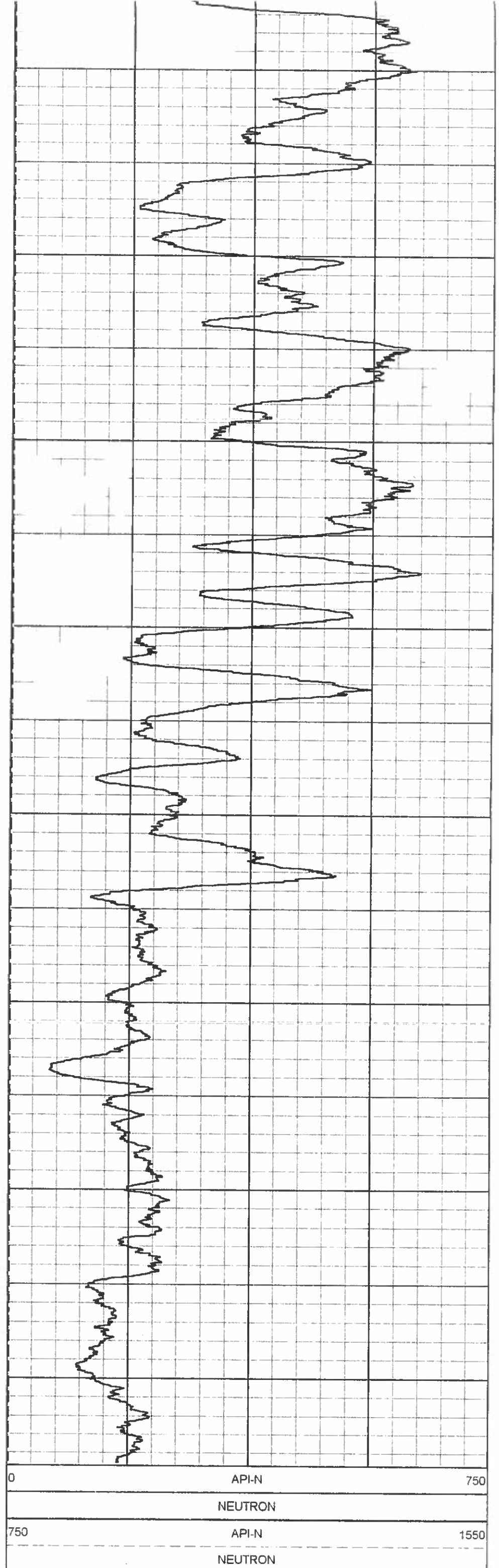
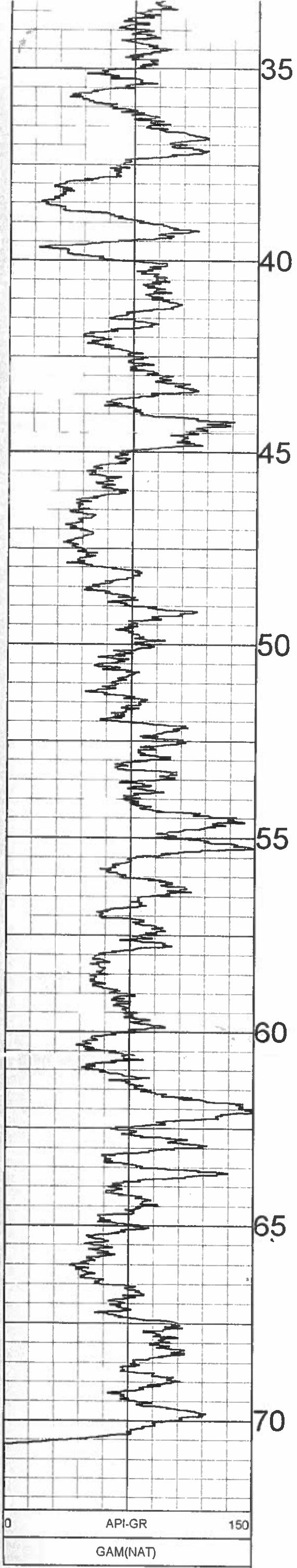
BR-2003-05

COMPANY	: WESTERN COAL CORP	OTHER SERVICES
WELL	: BR-2003-05	9138
LOCATION/FIELD	: BURNT RIVER	9055
COUNTY	: CHEWVND STATE	0012
LICENSE #		
UNIQUE WELL ID		
LONGITUDE		
LATITUDE		
SECTION	: TOWNSHIP	: RANGE
DATE	: 01/07/04	LOG BOTTOM
PERMANENT DATUM		LOG TOP
ELEVATION KB		BOREHOLE FLUID
ELEVATION DF		MUD RES
ELEVATION GL		RM TEMPERATURE
MEASURED FROM GL		MAX TEMP
DRL MEASURED FROM	: GL	MAGNETIC DECL
DEPTH DRILLER	: 78	MATRIX DENSITY
BIT SIZE	: 14	NEUTRON MATRIX
CASING DRILLER	: 3	MATRIX DELTA T
CASING DIAMETER	: 17	ELECT CUTOFF
CASING THICKNESS	: 6	LOGGING UNIT
CASING TYPE	: STEEL	WITNESSED BY
	: 9067A	RECORDED BY
		: Tulsa
		: T NEAL
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







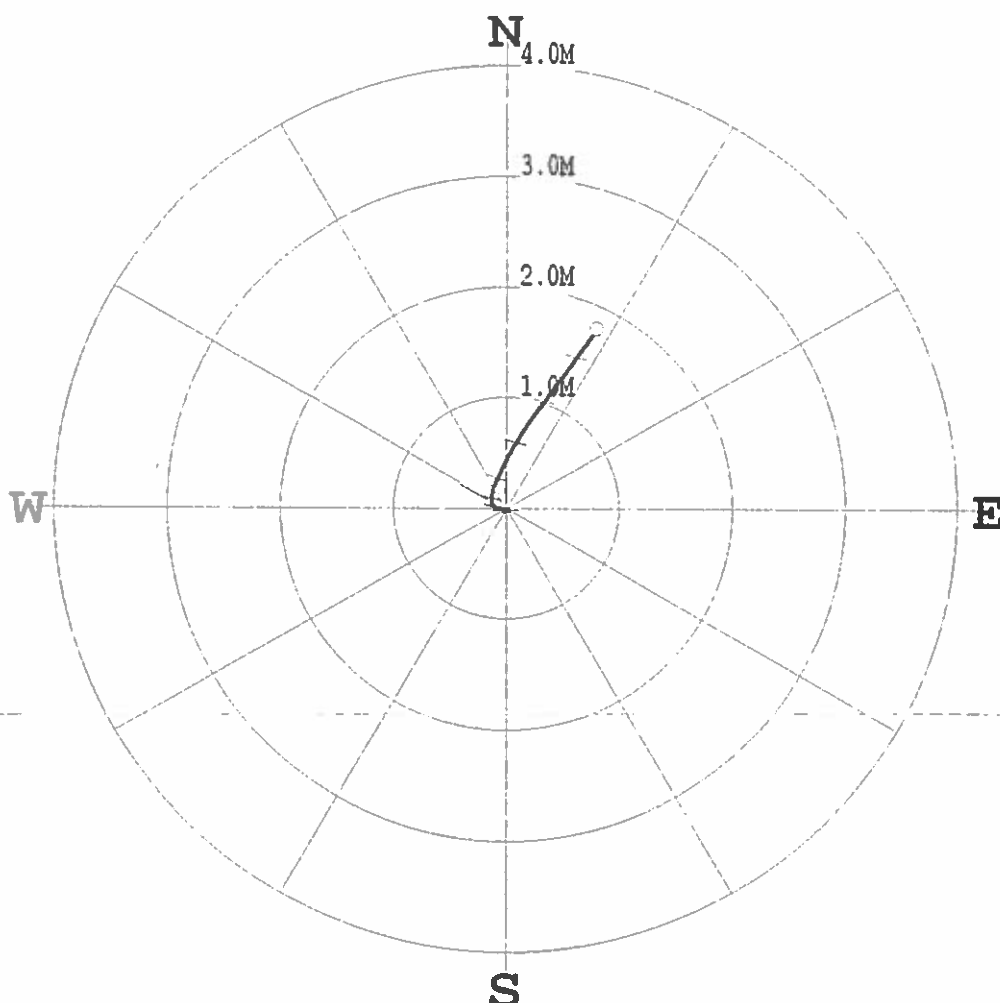
METERS

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORP.
 LOCATION: BURNT RIVER
 HOLE ID: BR-2003-05
 DATE OF LOG: 01/07/04
 PROBE: 9055A 33


 MAG DECL: 21.0

SCALE: 1 M/CM
 TRUE DEPTH: 76.40 M
 AZIMUTH: 26.3
 DISTANCE: 1.8 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP. HOLE ID. : BR-2003-05
 FIELD OFFICE : Tulsa DATE OF LOG : 01/07/04
 DATA FROM : PROBE : 9055A , 33
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-2003-05_01-07-04_22-41_9055A_02_3.52_76.46_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
3.6	3.60	0.00	0.02	0.0	81.0	-999999.0	-999633.0
5.6	5.60	0.01	0.02	0.0	74.0	1.0	288.5
7.6	7.60	0.01	-0.01	0.0	301.7	0.9	267.6
9.6	9.60	0.01	-0.04	0.0	286.7	0.5	288.3
11.6	11.60	0.01	-0.06	0.1	282.6	0.7	267.3
13.6	13.60	0.02	-0.07	0.1	281.9	0.3	298.9
15.6	15.60	0.02	-0.08	0.1	281.1	0.3	267.5
17.6	17.60	0.02	-0.09	0.1	282.0	0.4	294.8
19.6	19.60	0.02	-0.10	0.1	283.8	0.4	289.6
21.6	21.60	0.03	-0.11	0.1	286.0	0.5	266.4
23.6	23.60	0.04	-0.12	0.1	289.5	0.4	338.3
25.6	25.60	0.05	-0.12	0.1	294.0	0.5	353.9
27.6	27.60	0.08	-0.12	0.1	301.1	0.3	23.5
29.6	29.60	0.10	-0.13	0.2	308.0	0.7	356.2
31.6	31.60	0.13	-0.13	0.2	315.0	1.1	7.9
33.6	33.60	0.16	-0.12	0.2	323.5	1.1	12.1
35.6	35.60	0.20	-0.11	0.2	332.1	1.5	22.0
37.6	37.60	0.24	-0.09	0.3	338.6	1.0	26.2
39.6	39.60	0.28	-0.08	0.3	344.6	1.3	29.8
41.6	41.60	0.32	-0.06	0.3	350.2	1.4	30.4
43.6	43.60	0.38	-0.03	0.4	355.7	2.0	26.7
45.6	45.60	0.45	0.00	0.4	0.4	2.0	19.4
47.6	47.60	0.52	0.04	0.5	4.6	2.4	31.7
49.6	49.59	0.59	0.02	0.6	7.9	2.2	28.1
51.6	51.59	0.65	0.12	0.7	10.6	2.4	26.1
53.6	53.59	0.73	0.17	0.7	13.2	2.6	33.7
55.6	55.59	0.81	0.22	0.8	15.4	2.6	34.1
57.6	57.59	0.88	0.27	0.9	17.2	2.4	37.6
59.6	59.58	0.95	0.33	1.0	19.0	2.7	42.9
61.6	61.58	1.03	0.38	1.1	20.2	2.8	34.3
63.6	63.58	1.11	0.43	1.2	21.3	2.5	28.5
65.6	65.58	1.18	0.49	1.3	22.6	2.7	37.1
67.6	67.57	1.26	0.55	1.4	23.5	2.8	35.7
69.6	69.57	1.35	0.61	1.5	24.2	2.7	35.2
71.6	71.57	1.43	0.66	1.6	24.8	2.4	37.4
73.6	73.57	1.50	0.71	1.7	25.5	2.9	36.8
75.6	75.56	1.58	0.77	1.8	26.0	3.1	30.6
76.5	76.36	1.62	0.80	1.8	26.3	3.3	35.9

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-18	year drilled: 2004	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,371.86	6,140,043.96	1,336.95

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
145	-90	54.53				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	145.3	-90.00
10.00	145.3	-89.60
12.00	161.2	-89.30
14.00	158.9	-89.50
16.00	156.7	-89.60
18.00	149.6	-89.50
20.00	144.5	-89.60
22.00	136.5	-89.30
24.00	127.8	-89.20
26.00	118.3	-89.20
28.00	109.4	-88.80
30.00	103.9	-88.60
32.00	99.6	-88.50
34.00	96.0	-88.40
36.00	93.4	-88.70
38.00	91.6	-89.10
40.00	90.2	-88.80
42.00	88.9	-88.10
44.00	87.8	-89.30
46.00	86.9	-89.60
48.00	85.9	-89.80
52.00	86.4	-89.40
54.00	88.5	-89.30
54.43	89.0	-89.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.05	3.05		
33.30	41.65	8.35		
41.65	43.45	1.80		
43.45	43.90	0.45		

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

<i>HOLE-ID: BR2004-18</i>	year drilled: 2004	<i>AREA:</i>
----------------------------------	--------------------	--------------

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Brule.
DH ID: B22004-18
BY: R. Brown
DATE: November 9, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	3.05	OB			
3.05	4.73	SH			
4.73	12.35	SLT			
12.35	13.0	SSA			
13.0	20.25	SLT			
20.25	20.9	SH			
20.9	21.25	SLT			
21.25	22.25	SH			
22.25	25.55	SLT			
25.55	28.00	SH			
28.00	31.3	Lower Seam			
31.3	33.3	SH			
33.3	41.65	Lower Seam			
41.65	43.45	SH			
43.45	43.9	MB			
43.9	46.6	SH			
46.6	47.4	SLT			
47.4	51.0	SH			
51.0	52.0	SLT			
E.O.H.					

- LITHOLOGICAL ABBREVIATIONS:**
OB - OVERBURDEN
C - COAL
P - PARTING
SHC - SHALEY COAL
CGL - CONGLOMERATE
SH - SHALE
SLT - SILTSTONE
SSA - ARGILLACEOUS SANDSTONE
SSC - CLEAN SANDSTONE
SS/SH - INTERBEDDED SANDSTONE AND SHALE



GAMMA - DENSITY

century-geo.com

BR2004-18

COMPANY : WESTERN CANADIAN COAL CORP
 WELL : BR2004-18
 FIELD : BURNT RIVER
 MUNICIPALITY : TUMBLER RIDGE
 PROVINCE : BRITISH COLUMBIA

LOCATION :
 SECTION :
 TOWNSHIP :
 RANGE :
 API NO :
 UNIQUE WELL ID :

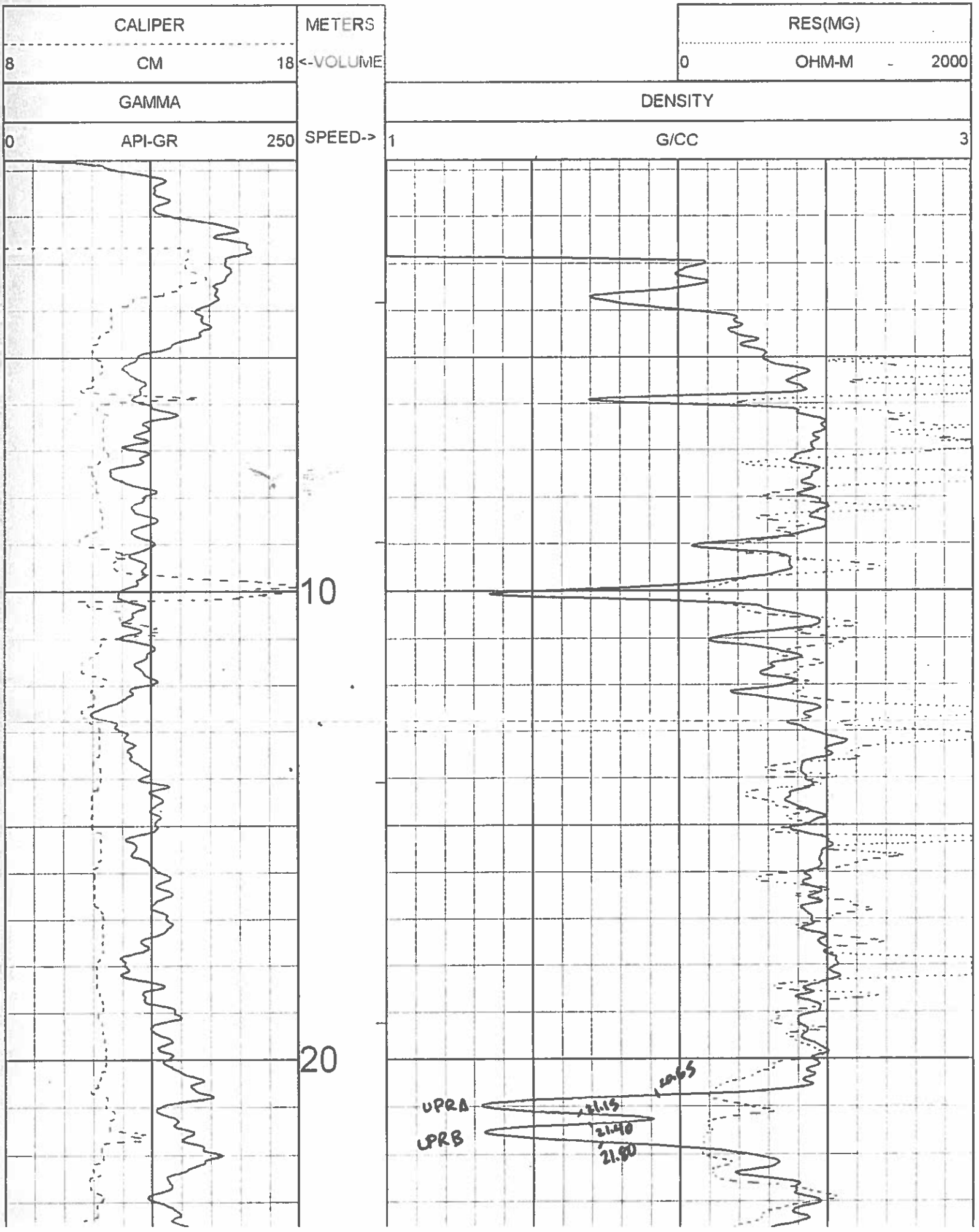
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 LOG MEASURED FROM : GL
 DRL MEASURED FROM : GL

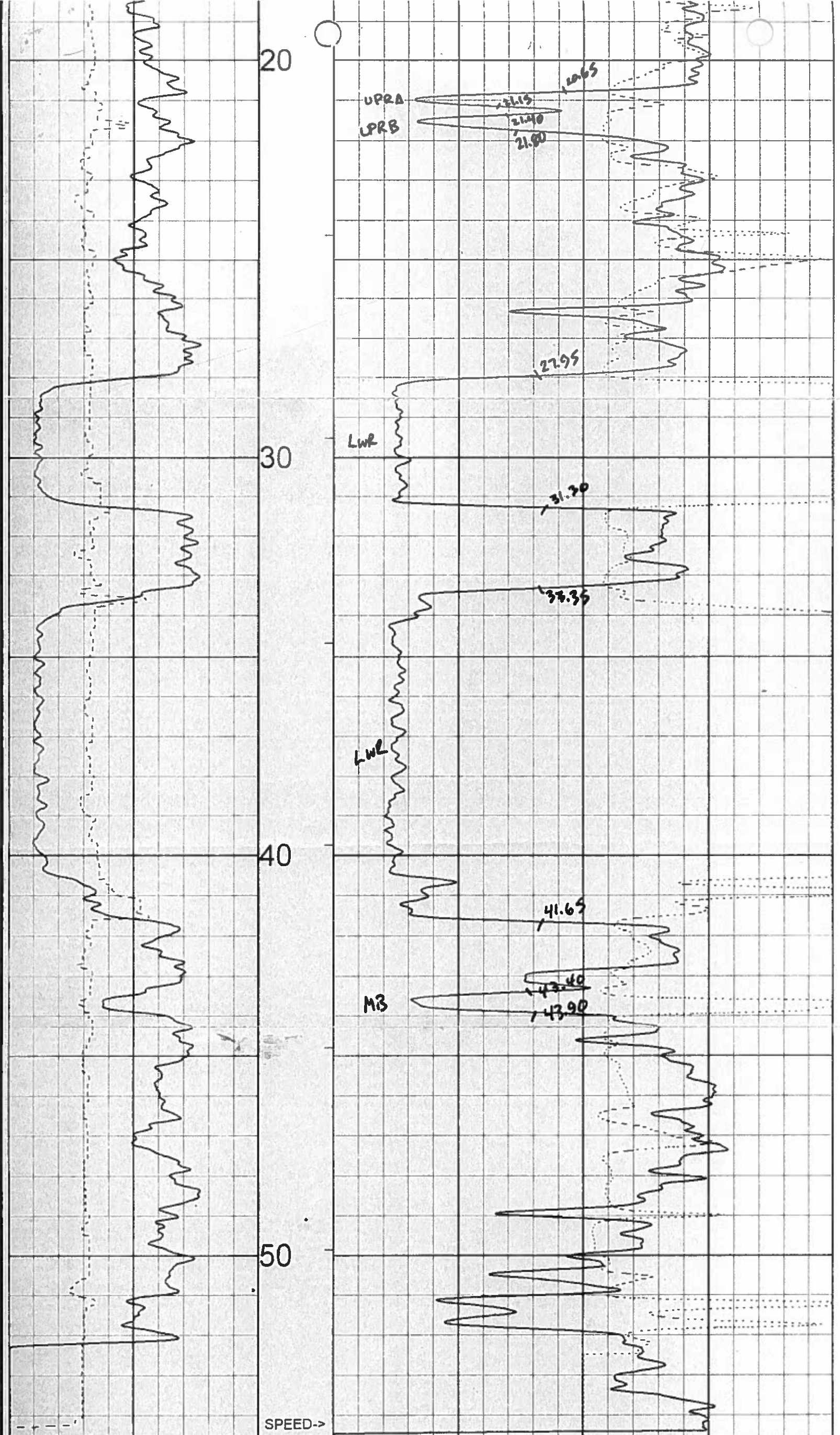
DATE : 08/03/04
 RUN NO : 2
 DEPTH DRILLER : 56 383
 BIT SIZE : 12 1
 LOG TOP : 0 78
 LOG BOTTOM : 54 53
 CASING OD : 14
 CASING BOTTOM : 2 438
 CASING TYPE : STEEL
 BOREHOLE FLUID : WATER
 RM TEMPERATURE :
 MUD RES :

ELEVATION KB :
 ELEVATION DF :
 ELEVATION GL :

OTHER SERVICES : 9055
 WITNESSED BY : RON PARENT
 RECORDED BY : R HECK
 REMARKS 1 :
 REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





0	API-GR	250	1	G/CC	3
GAMMA			DENSITY		
8	CM	18	0	OHM-M	2000
CALIPER			RES(MG)		
SPEED->			<-VOLUME		
METERS					

TOOL CALIBRATION BR2004-18 08/03/04 15:04
 TOOL 0033AA
 SERIAL NUMBER 450

DATE	TIME	SENSOR	STANDARD	RESPONSE
------	------	--------	----------	----------



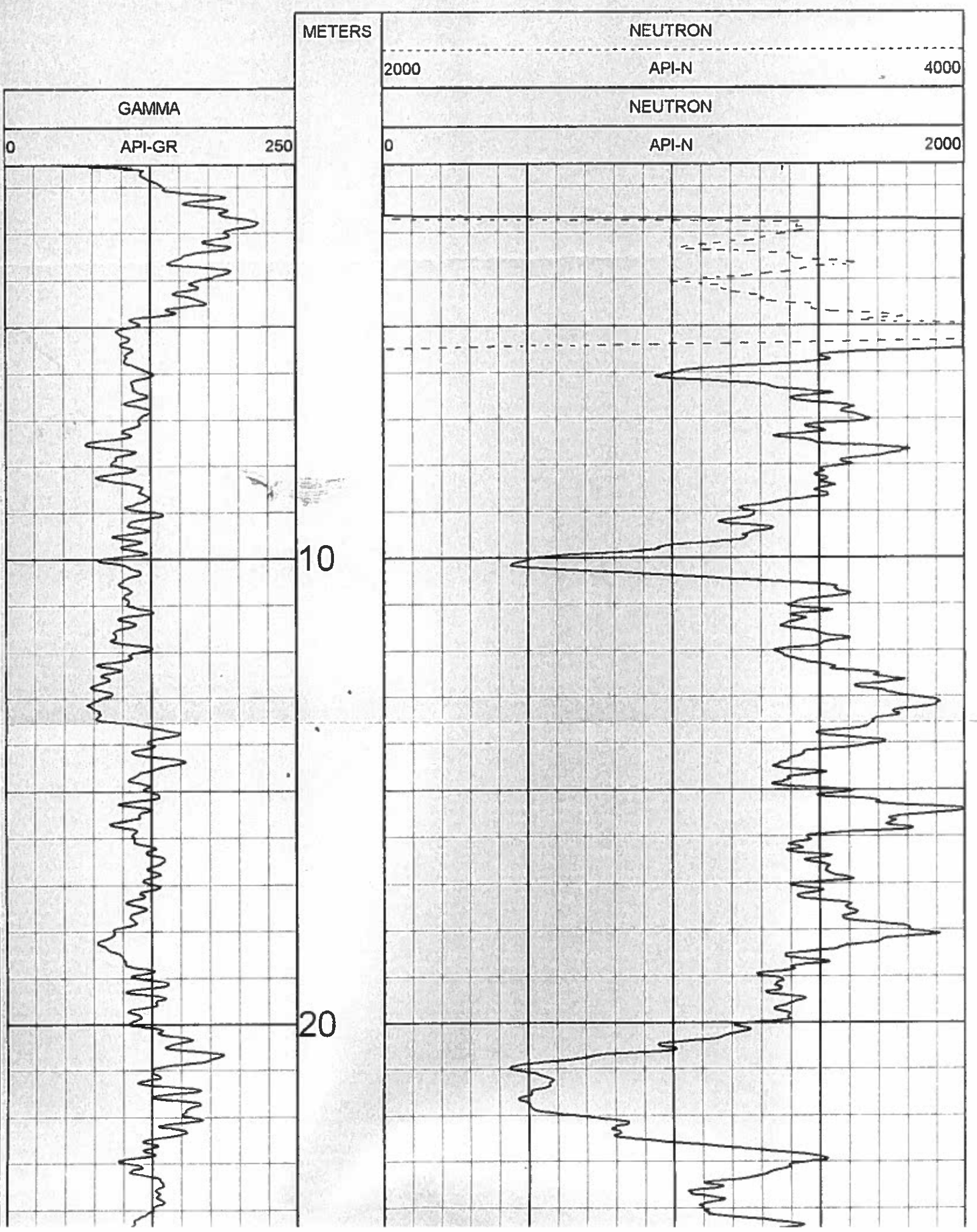
GAMMA - NEUTRON

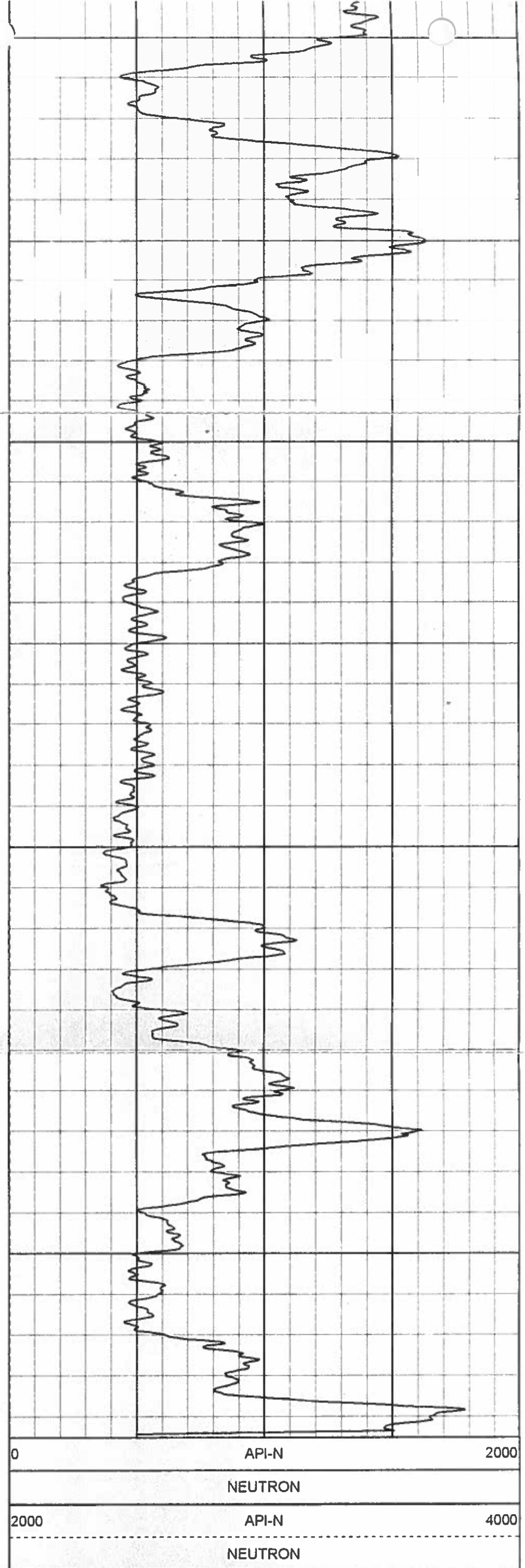
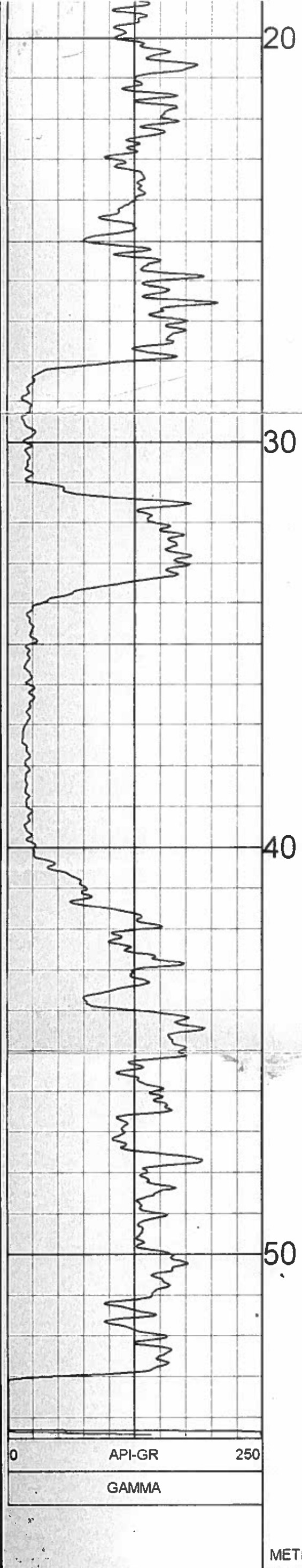
BR2004-18

century-geo.com

COMPANY	: WESTERN CANADIAN COAL CORP	OTHER SERVICES	
WELL	: BR2004-18		
FIELD	: BURNT RIVER		9033
MUNICIPALITY	: TUMBLER RIDGE		
PROVINCE	: BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO.			
UNIQUE WELL ID			
PERMANENT DATUM	: GL	ELEVATION KB	
LOG MEASURED FROM	: GL	ELEVATION DF	
DRL MEASURED FROM	: GL	ELEVATION GL	
DATE	: 08/03/04		
RUN NO	: 1		
DEPTH DRILLER	: 56.388		
BH SIZE	: 12.1		
LOG TOP	: 1.51		
LOG BOTTOM	: 54.47		
CASING OD	: 14		
CASING BOTTOM	: 2.438		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	: RON PARENT		
RECORDED BY	: R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS






TOOL CALIBRATION BR2004-18 08/03/04 14:40
 TOOL 9055A
 SERIAL NUMBER 80

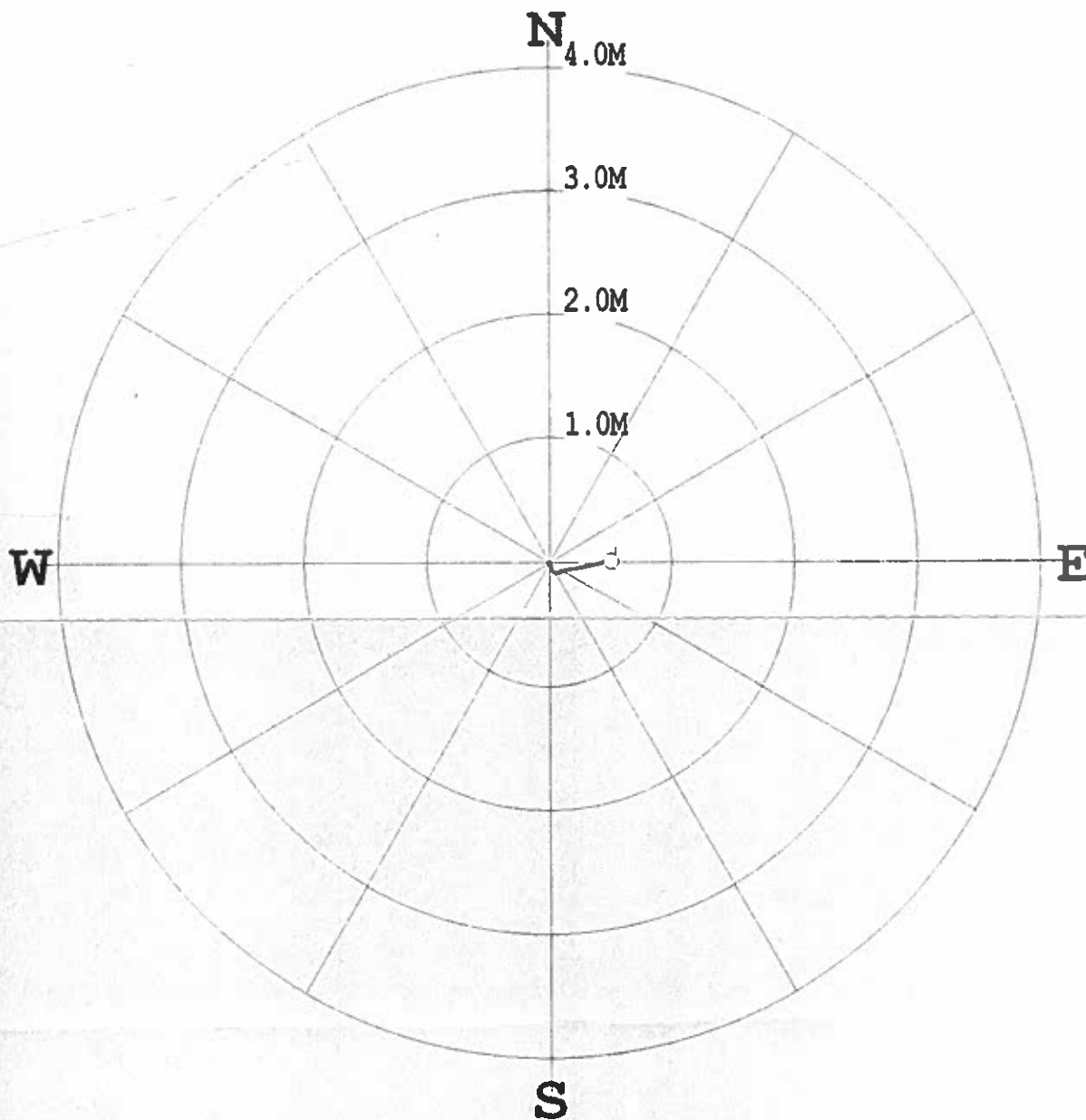
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004-18
 DATE OF LOG: 08/03/04
 PROBE: 9055A 80


 MAG DECL: 21.0

SCALE: 1 M/CM
 TRUE DEPTH: 54.47 M
 AZIMUTH: 89.1
 DISTANCE: 0.5 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-18
 FIELD OFFICE : DATE OF LOG : 08/03/04
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR2004-18_08-03-04_14-40_9055A_02_10.00_54.47_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.0	10.02	-0.00	0.00	0.0	145.3	0.4	145.3
12.0	12.00	-0.03	0.01	0.0	161.2	0.7	156.6
14.0	14.00	-0.05	0.02	0.1	158.9	0.5	152.8
16.0	16.00	-0.06	0.03	0.1	156.7	0.4	141.6
18.0	18.00	-0.07	0.04	0.1	149.6	0.5	111.7
20.0	20.00	-0.08	0.05	0.1	144.5	0.4	91.0
22.0	22.00	-0.07	0.07	0.1	136.5	0.7	92.9
24.0	24.00	-0.07	0.09	0.1	127.8	0.8	81.4
26.0	26.00	-0.06	0.11	0.1	118.3	0.8	72.1
28.0	28.00	-0.05	0.15	0.2	109.4	1.2	79.1
30.0	30.00	-0.04	0.18	0.2	103.9	1.4	94.1
32.0	32.00	-0.04	0.23	0.2	99.6	1.5	79.0
34.0	34.00	-0.03	0.27	0.3	96.0	1.6	76.8
36.0	36.00	-0.02	0.32	0.3	93.4	1.3	62.0
38.0	38.00	-0.01	0.37	0.4	91.6	0.9	77.1
40.0	40.00	-0.00	0.42	0.4	90.2	1.2	76.7
42.0	41.99	0.01	0.46	0.5	88.9	1.9	78.6
44.0	43.99	0.02	0.50	0.5	87.8	0.7	77.5
46.0	45.99	0.03	0.52	0.5	86.9	0.4	43.7
48.0	47.99	0.03	0.53	0.5	86.4	0.1	61.3
50.0	49.99	0.04	0.53	0.5	85.9	0.2	268.9

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-19	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,287.18	6,140,147.32	1,337.15

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
128	-90	55.20				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	127.8	-90.00
10.00	127.8	-88.70
12.00	127.5	-88.70
14.00	132.0	-89.10
16.00	134.9	-89.30
18.00	135.6	-89.10
20.00	135.0	-89.60
22.00	134.0	-89.90
24.00	130.7	-89.80
26.00	127.6	-89.50
28.00	122.6	-89.00
30.00	116.1	-89.20
32.00	111.5	-89.20
34.00	109.2	-89.40
36.00	108.0	-89.20
38.00	106.1	-89.20
40.00	104.4	-89.50
42.00	103.6	-89.70
44.00	104.2	-89.40
46.00	105.9	-89.30
48.00	109.3	-88.90
50.00	115.1	-88.80
52.00	125.7	-87.80
54.00	140.6	-87.30
55.17	149.3	-86.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	1.52	1.52		
9.90	10.40	0.50		
13.10	13.40	0.30		
31.40	40.00	8.60		
40.00	41.80	1.80		
41.80	42.25	0.45		

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 2

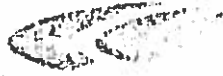
 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

<i>HOLE-ID: BR2004-19</i>	year drilled: 2004	<i>AREA:</i>
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RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Brule.
 DH ID: BR2004-19
 BY: R. Brown
 DATE: November 9, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	1.52	OB			
1.52	5.00	SLT			
5.00	5.4	SH			
5.4	12.6	SLT			
12.6	13.25	SSA			
13.25	17.85	SLT			
17.85	19.90	SH			
19.90	20.40	Upper "A" Seam			
20.40	23.10	SH			
23.10	23.40	Upper "B" Seam			
23.40	29.60	SH			
29.60	30.15	Lower Seam			
30.15	31.40	SH/(P)			
31.40	40.0	Lower Seam			
40.0	41.80	SH			
41.80	42.25	MB			
42.25	44.00	SH			
44.00	44.75	SLT			
44.75	49.85	SH			
49.85	50.60	MB			
50.60	52.7	SH			
E.O.H.					

- LITHOLOGICAL ABBREVIATIONS:**
 OB - OVERBURDEN
 C - COAL
 P - PARTING
 SHC - SHALEY COAL
 CGL - CONGLOMERATE
 SH - SHALE
 SLT - SILTSTONE
 SSA - ARGILLACEOUS SANDSTONE
 SSC - CLEAN SANDSTONE
 SS/SH - INTERBEDDED SANDSTONE AND SHALE

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BR2004-19

COMPANY WESTERN CANADIAN COAL CORP

OTHER SERVICES:
9055
9033

WELL BR2004-19

FIELD BURNT RIVER

MUNICIPALITY TUMBLER RIDGE

PROVINCE BRITISH COLUMBIA

LOCATION

SECTION

TOWNSHIP

RANGE

API NO

UNIQUE WELL ID

PERMANENT DATUM GL

ELEVATION KB:

LOG MEASURED FROM GL

ELEVATION DF:

DRL MEASURED FROM GL

ELEVATION GL:

DATE 08/03/04

RUN NO 2

DEPTH DRILLER 66 388

PIPE SIZE 12 1

LOG TOP 0 80

LOG BOTTOM 55 20

CASING OD 14

CASING BOTTOM 2 438

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE

MUD RES

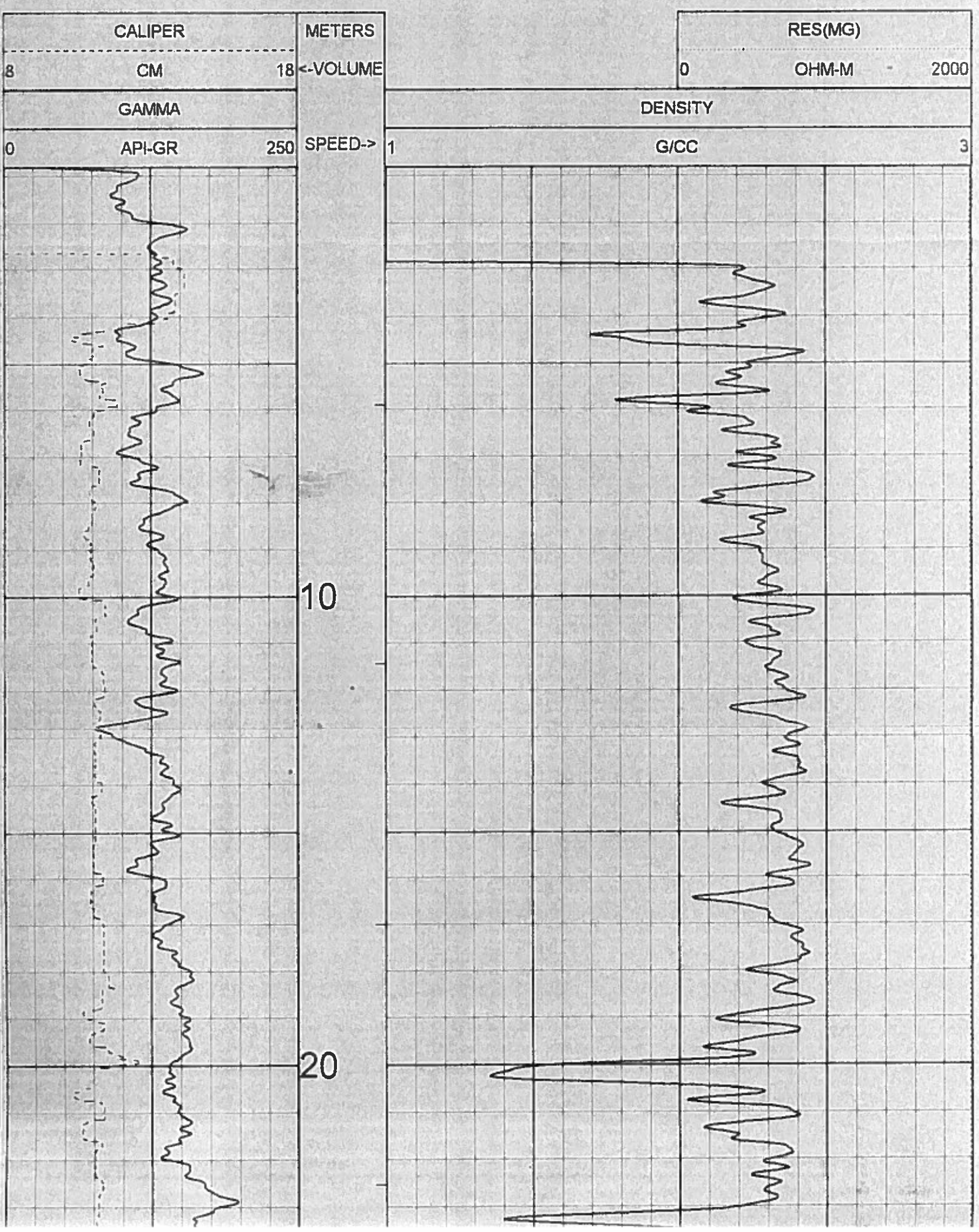
WITNESSED BY RON PARENT

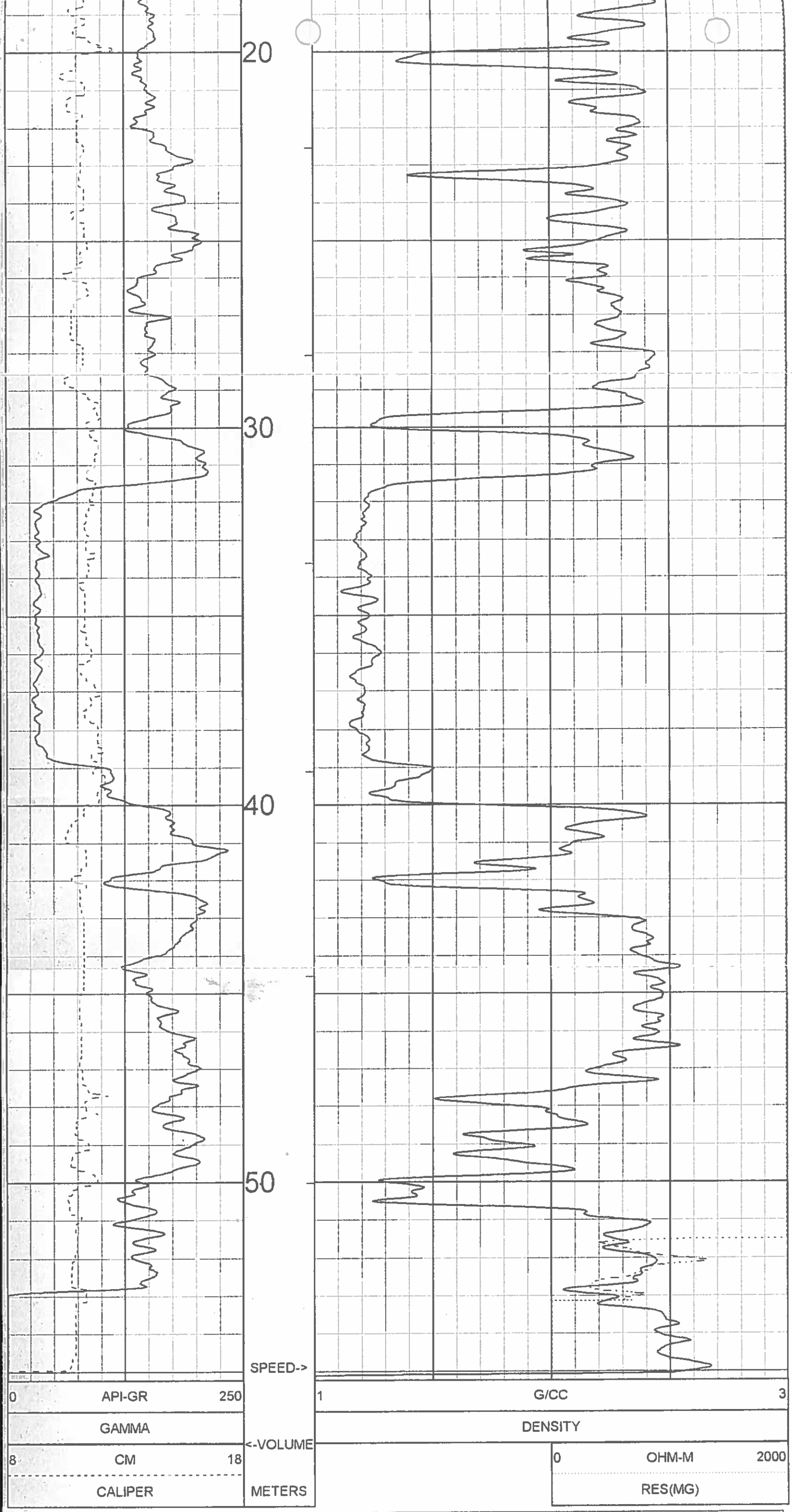
RECORDED BY R HECK

REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





TOOL CALIBRATION BR2004-19 08/03/04 18:14
 TOOL 0033AA
 SERIAL NUMBER 450



GAMMA - NEUTRON

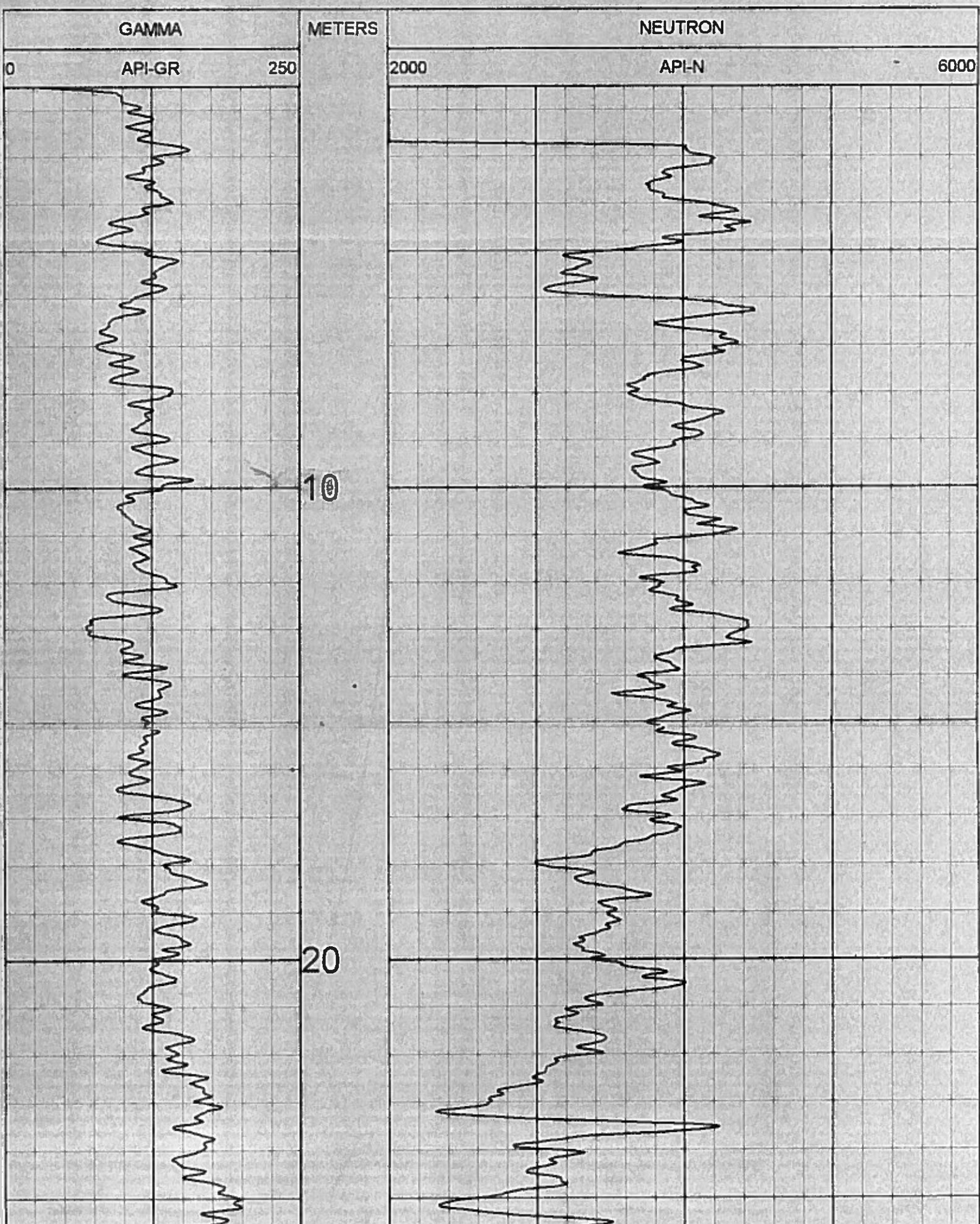
century-geo.com

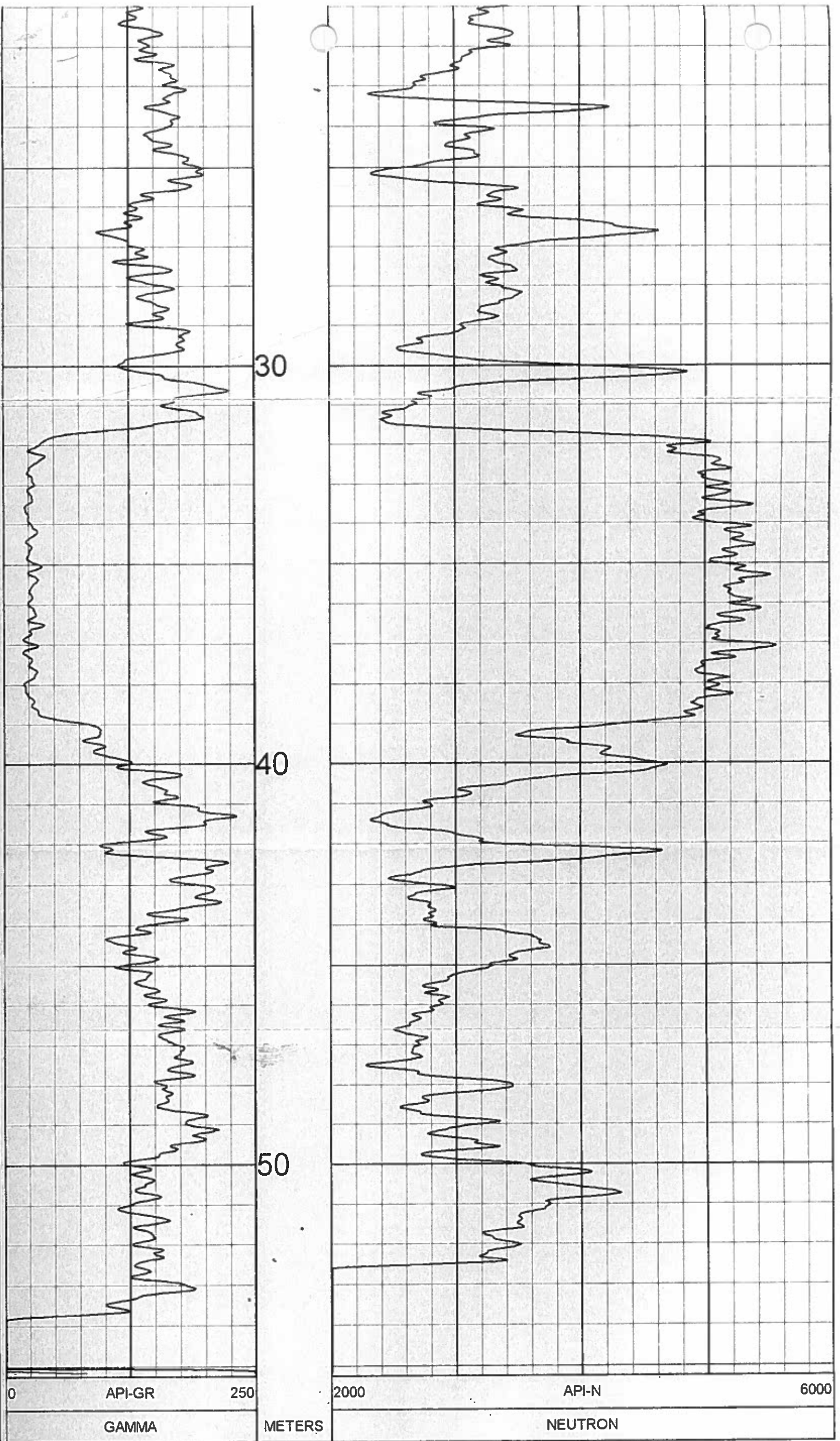
BR2004-19

OTHER SERVICES
9055

COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES	9055
WELL	BR2004-19		
FIELD	BURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	08/03/04		
RUN NO	1		
DEPTH DRILLER	56388		
PIPE SIZE	12.1		
L.S. TOP	1.49		
LOG BOTTOM	55.22		
CASING OD	14		
GASING BOTTOM	2.438		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





TOOL CALIBRATION BR2004-19 08/03/04 17:49
 TOOL 9055A
 SERIAL NUMBER 80

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROS11	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]

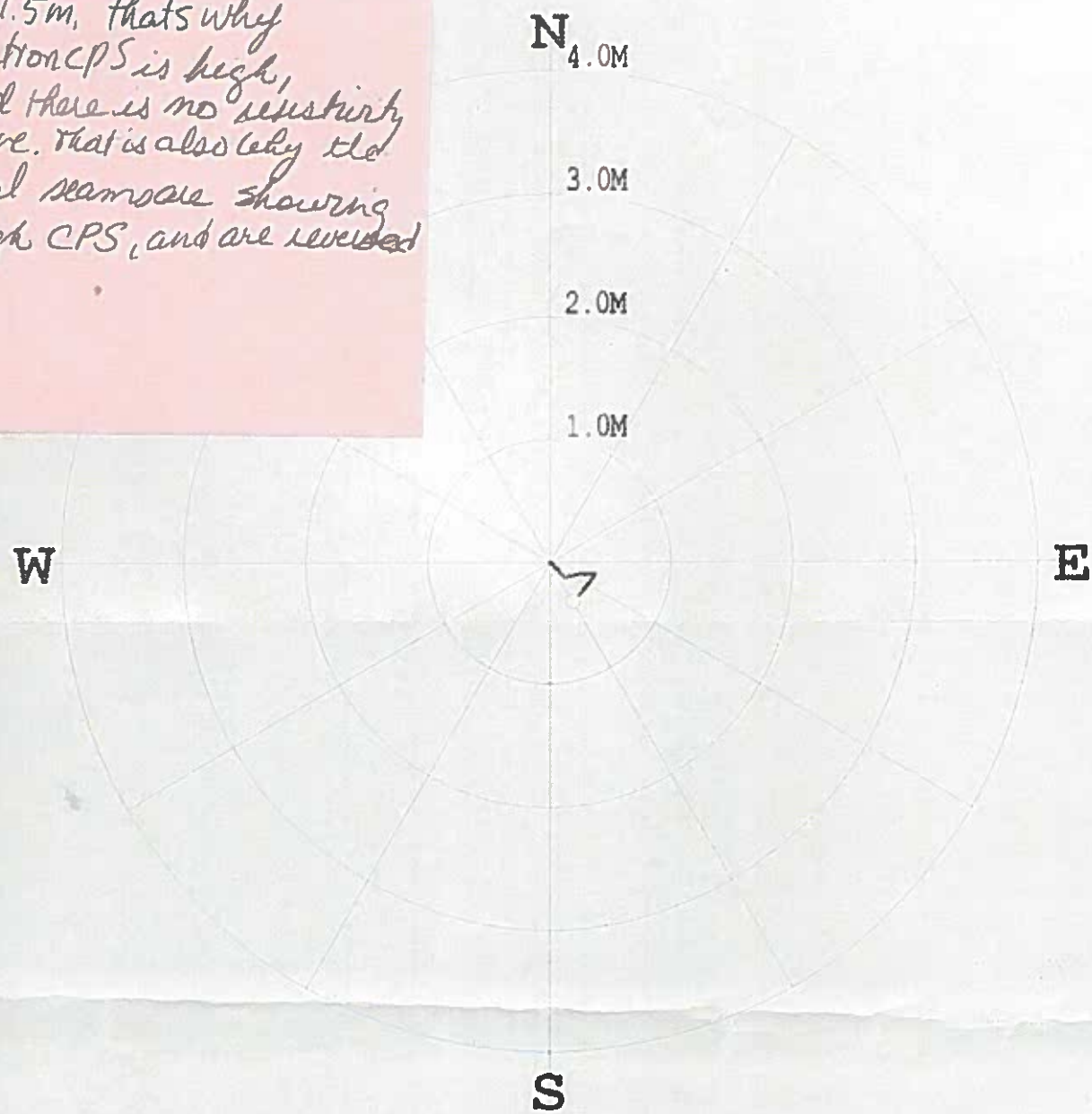
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004-19
 DATE OF LOG: 08/03/04
 PROBE: 9055A 80

SCALE: 1 M/CM
 TRUE DEPTH: 55.21 M
 AZIMUTH: 149.6
 DISTANCE: 0.4 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE

MAG DECL: 21.0

*Fluid level in hole @
 51.5m, thats why
 Neutron CPS is high,
 and there is no resistivity
 curve. That is also why the
 Coal seams are showing
 high CPS, and are recorded*



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-19
 FIELD OFFICE : DATE OF LOG : 08/03/04
 DATA FROM : PROBE : 9055A , 80
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR2004-19_08-03-04_17-49_9055A_02_10.00_55.22_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	RANG	SANGB
10.0	10.02	-0.00	0.00	0.0	127.8	1.3	127.8
12.0	12.00	-0.03	0.04	0.0	127.5	1.3	121.1
14.0	14.00	-0.06	0.06	0.1	132.0	0.9	141.5
16.0	16.00	-0.08	0.08	0.1	134.9	0.7	156.3
18.0	18.00	-0.10	0.10	0.1	139.6	0.9	126.3
20.0	20.00	-0.11	0.11	0.2	145.0	0.4	144.1
22.0	22.00	-0.12	0.12	0.2	144.0	0.1	33.7
24.0	24.00	-0.12	0.14	0.2	130.7	0.2	89.4
26.0	26.00	-0.12	0.15	0.2	127.0	0.1	76.0
28.0	28.00	-0.11	0.18	0.2	123.6	1.0	81.2
30.0	30.00	-0.10	0.21	0.2	116.1	0.6	56.3
32.0	32.00	-0.09	0.24	0.3	111.5	0.8	86.9
34.0	34.00	-0.09	0.26	0.3	109.2	0.7	92.7
36.0	36.00	-0.10	0.29	0.3	108.0	0.6	82.6
38.0	38.00	-0.09	0.32	0.3	106.1	0.6	85.7
40.0	40.00	-0.09	0.35	0.4	104.4	0.5	93.4
42.0	42.00	-0.09	0.37	0.4	103.6	0.2	85.8
44.0	44.00	-0.09	0.37	0.4	101.2	0.0	166.7
46.0	46.00	-0.10	0.36	0.4	109.9	0.7	192.6
48.0	48.00	-0.12	0.35	0.4	109.3	1.1	213.8
50.0	50.00	-0.15	0.33	0.4	115.1	1.3	209.7

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-20	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,113.20	6,140,087.90	1,314.88

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
13	-90	73.01				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	13.0	-90.00
15.00	13.1	-85.90
17.00	15.1	-86.10
19.00	17.6	-85.30
21.00	19.7	-85.30
23.00	21.2	-85.30
25.00	23.0	-84.90
27.00	24.4	-85.30
29.00	25.5	-84.60
31.00	26.6	-84.00
33.00	28.0	-83.40
35.00	29.0	-83.40
37.00	30.0	-83.10
39.00	31.1	-82.20
41.00	32.1	-82.10
43.00	33.2	-81.90
45.00	33.9	-81.70
47.00	34.6	-81.20
49.00	35.3	-80.50
51.00	36.1	-80.20
53.00	36.7	-78.90
55.00	37.2	-80.70
57.00	37.8	-79.50
59.00	38.3	-79.30
61.00	38.7	-79.80
63.00	39.1	-79.60
65.00	39.5	-78.30

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	1.52	1.52		
33.50	33.80	0.30		
61.10	66.30	5.20		
66.30	67.60	1.30		
67.60	68.05	0.45		

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 2

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-20	year drilled: 2004	AREA:
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67.00	39.8	-78.10
69.00	40.2	-77.70
71.00	40.5	-77.90
71.11	40.6	-76.80

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Brule.

DH ID: BR2004-20

BY: R. Brown

DATE: November 9, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	1.52	OB	61.1	66.3	Lower Seam
1.52	2.1	SS	66.3	67.6	SH
2.1	2.25	SLT	67.6	68.05	MB
2.25	2.85	SH	68.05	69.00	SH
2.85	3.7	SLT	69.0	69.4	SLT
3.7	5.00	SH	69.4	70.6	SH
5.00	5.80	SLT	E.O.H.		
5.80	6.15	SH			
6.15	13.45	SLT			
13.45	14.45	SSA			
14.45	15.8	SH			
15.8	17.05	SLT			
17.05	18.8	SH			
18.8	21.75	SLT			
21.75	26.00	SS			
26.00	29.2	SLT			
29.2	30.5	SH			
30.5	31.0	SLT			
31.0	32.9	SH			
32.9	33.5	SLT			
33.5	33.8	Upper Seam			
33.8	35.55	SH			
35.55	39.45	SLT			
39.45	40.45	SSA			
40.45	58.25	SLT			
58.25	59.1	SH			
59.1	59.3	SLT			
59.3	61.1	SH			

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN

C - COAL

P - PARTING

SHC - SHALEY COAL

CGL - CONGLOMERATE

SH - SHALE

SLT - SILTSTONE

SSA - ARGILLACEOUS SANDSTONE

SSC - CLEAN SANDSTONE

SS/SH - INTERBEDDED SANDSTONE AND SHALE



GAMMA - DENSITY

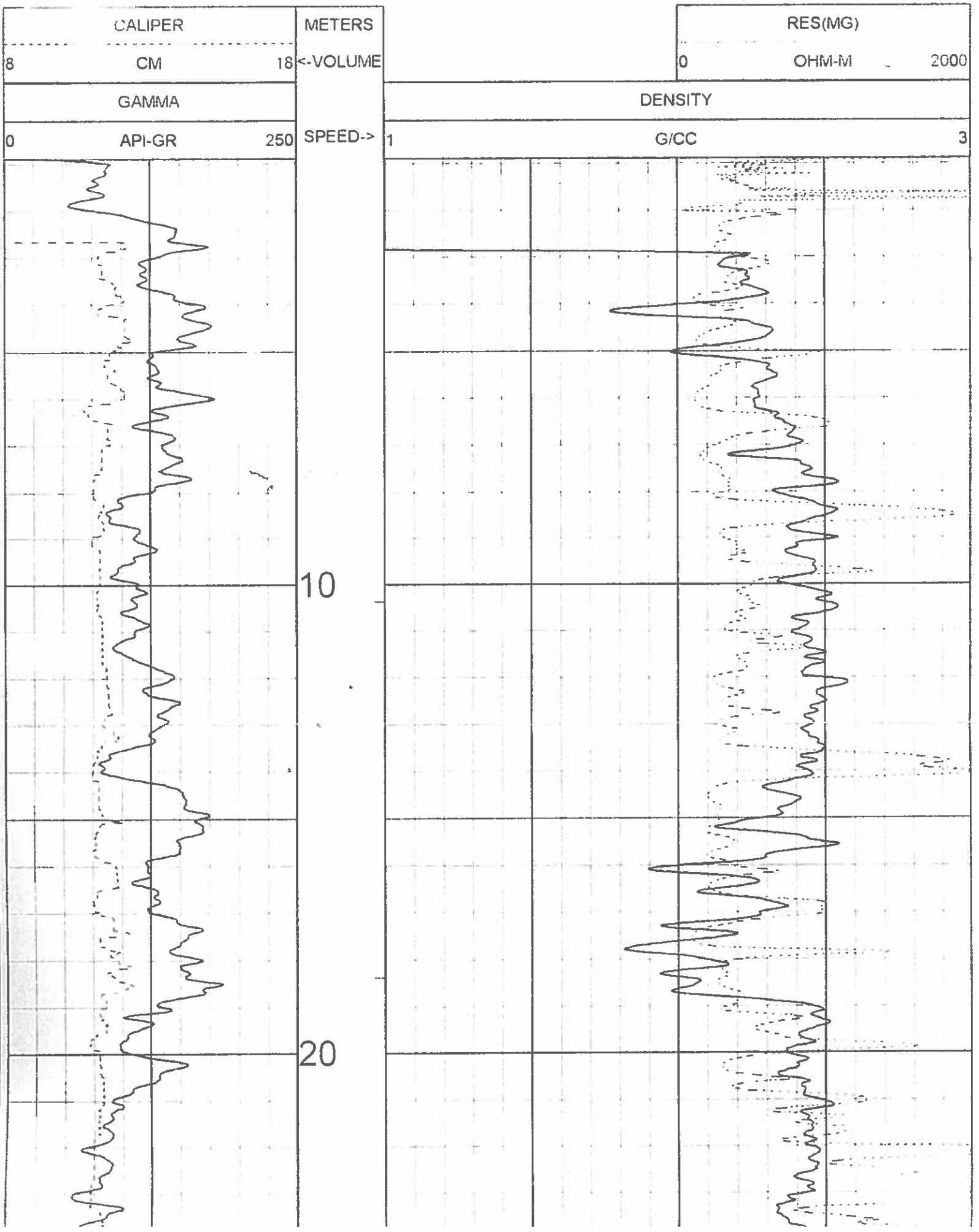
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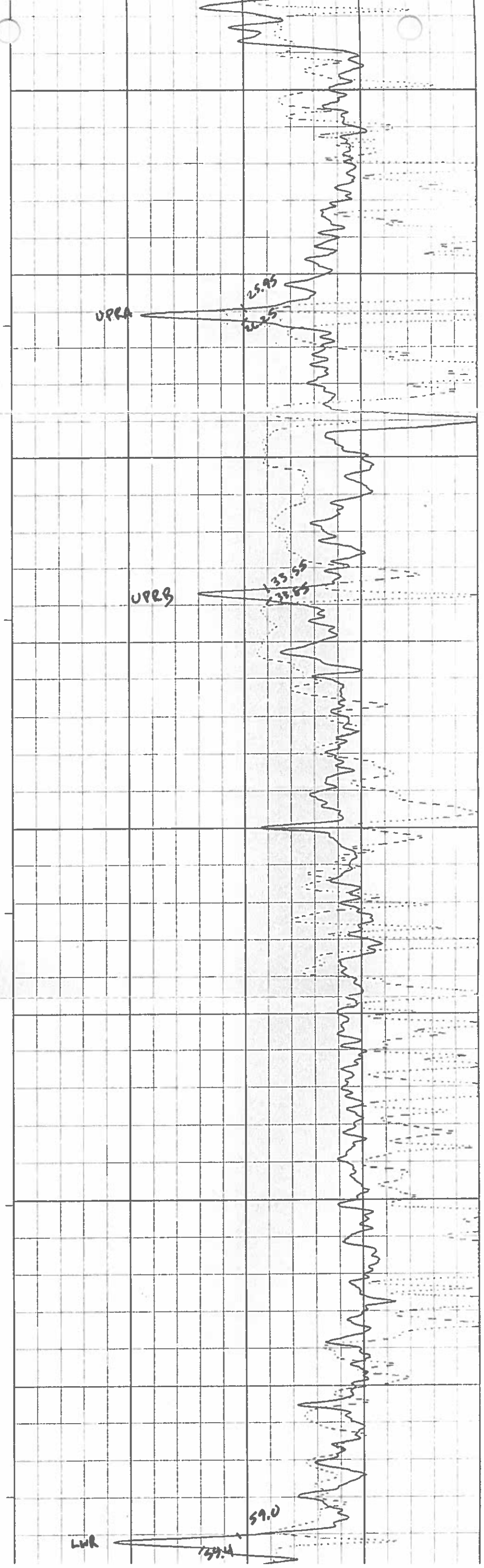
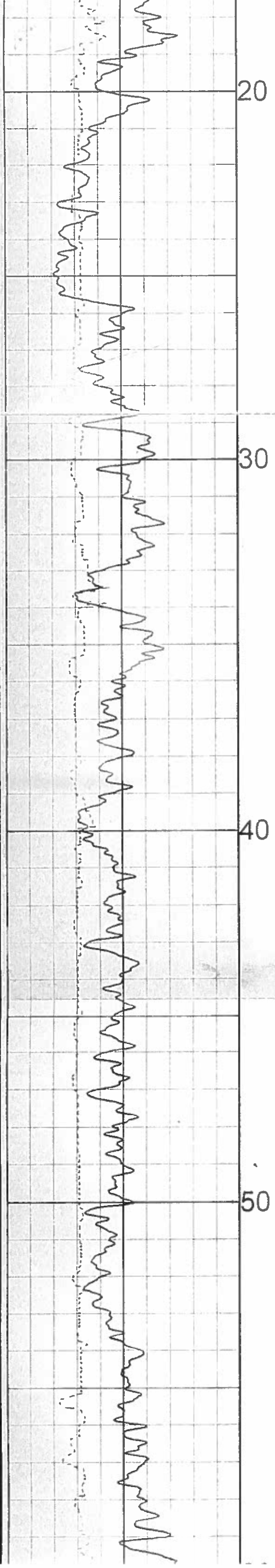
BR2004-20

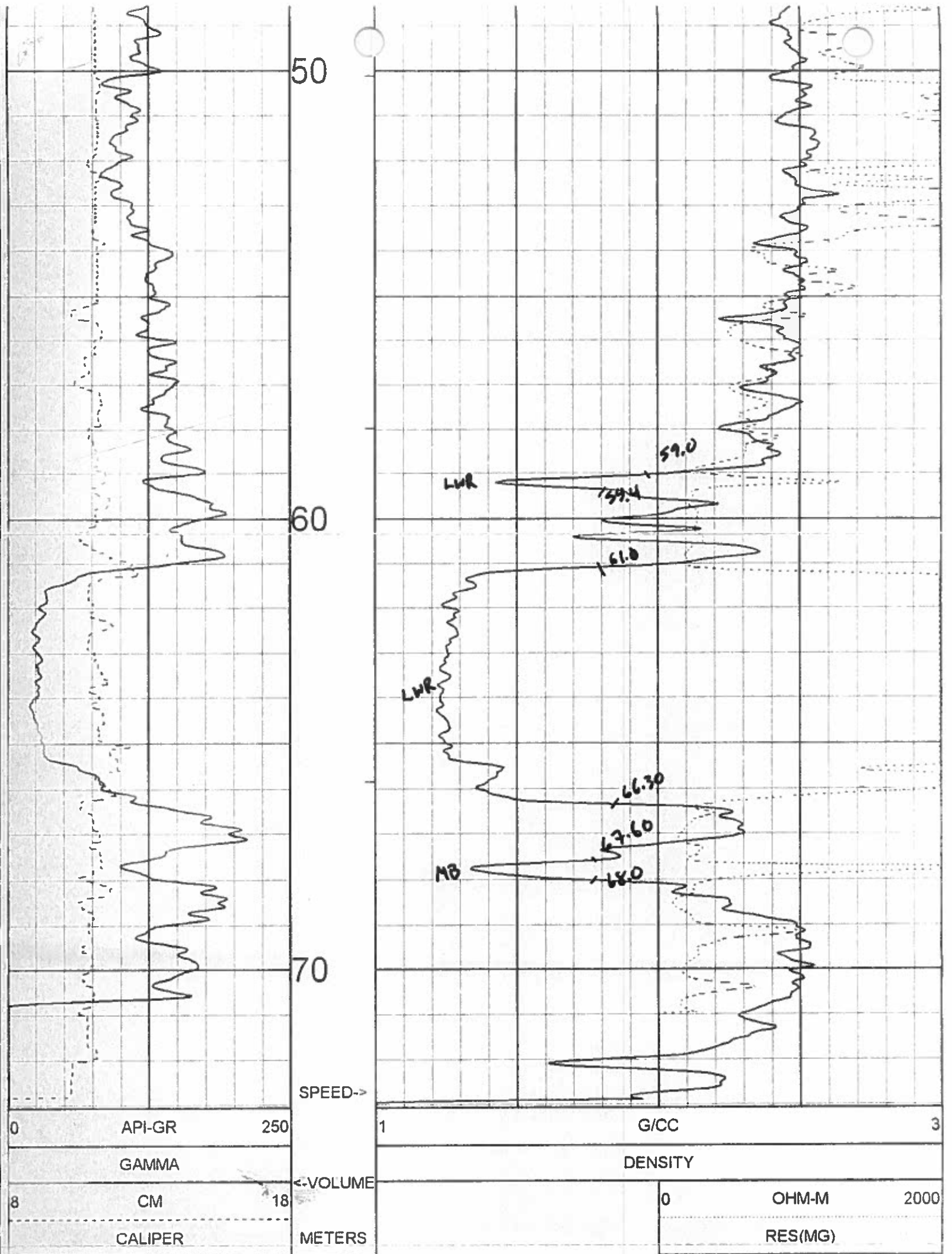
OTHER SERVICES
3056

COMPANY	WESTERN CANADIAN COAL CORP	BR2004-20	OTHER SERVICES 3056
WELL	BR2004-20		
FIELD	BURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT SURFACE	GL	ELEVATION KB	
LOG MEASURED	GL	ELEVATION DF	
DRL HEAR	GL	ELEVATION GI	
DATE	03/05/04		
RUN	2		
DEPTH ENDLIER	71.628		
LOG SIZE	12.065		
LOG TOP	0.38		
LOG BOTTOM	71.01		
CASING ID	44		
CASING HO	134		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON FARR		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED UNDER STANDARD CONDITIONS







TOOL CALIBRATION BR2004-20 08/05/04 10:32
 TOOL 0033AA
 SERIAL NUMBER 450

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	00:35:04	GAMMA	7.000 [API-GR]	1.00 [CPS]
	Jul27,04	00:35:04	GAMMA	250.000 [API-GR]	360.00 [CPS]
2	Jul27,04	00:36:13	DENSITY	1.106 [G/CC]	6075.00 [CPS]
	Jul27,04	00:36:13	DENSITY	2.612 [G/CC]	1136.00 [CPS]
3	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
4	Jul26,04	18:40:49	CALIPER	9.000 [INCH]	704.00 [CPS]
	Jul26,04	18:40:49	CALIPER	17.000 [INCH]	1945.00 [CPS]
5	Jul27,04	00:35:12	DENSITYI	Default [CPS]	Default [CPS]
	Jul27,04	00:35:12	DENSITYI	Default [CPS]	Default [CPS]
6	Jul26,04	17:33:25	CALIPERL	Default [CPS]	Default [CPS]
	Jul26,04	17:33:25	CALIPERL	Default [CPS]	Default [CPS]

BR2004-20

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OTHER SERVICES
9033

COMPANY WESTERN CANADIAN COAL CORP
WELL BR2004-20
FIELD BURNT RIVER
MUNICIPALITY TUMBLER RIDGE
PROVINCE BRITISH COLUMBIA

LOCATION
SECTION
TOWNSHIP
RANGE
API NO
UNIQUE WELL ID

PERMANENT DATUM GL ELEVATION KB
LOG MEASURED FROM GL ELEVATION DF
DRL MEASURED FROM GL ELEVATION GL

DATE 08/05/04

RUN NO 1

DEPTH DRILLER 71 628

BIT SIZE 12.065

3 TOP 1.59

LOG BOTTOM 71 78

CASING OD 14

CASING BOTTOM 2 134

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE

MUD RES

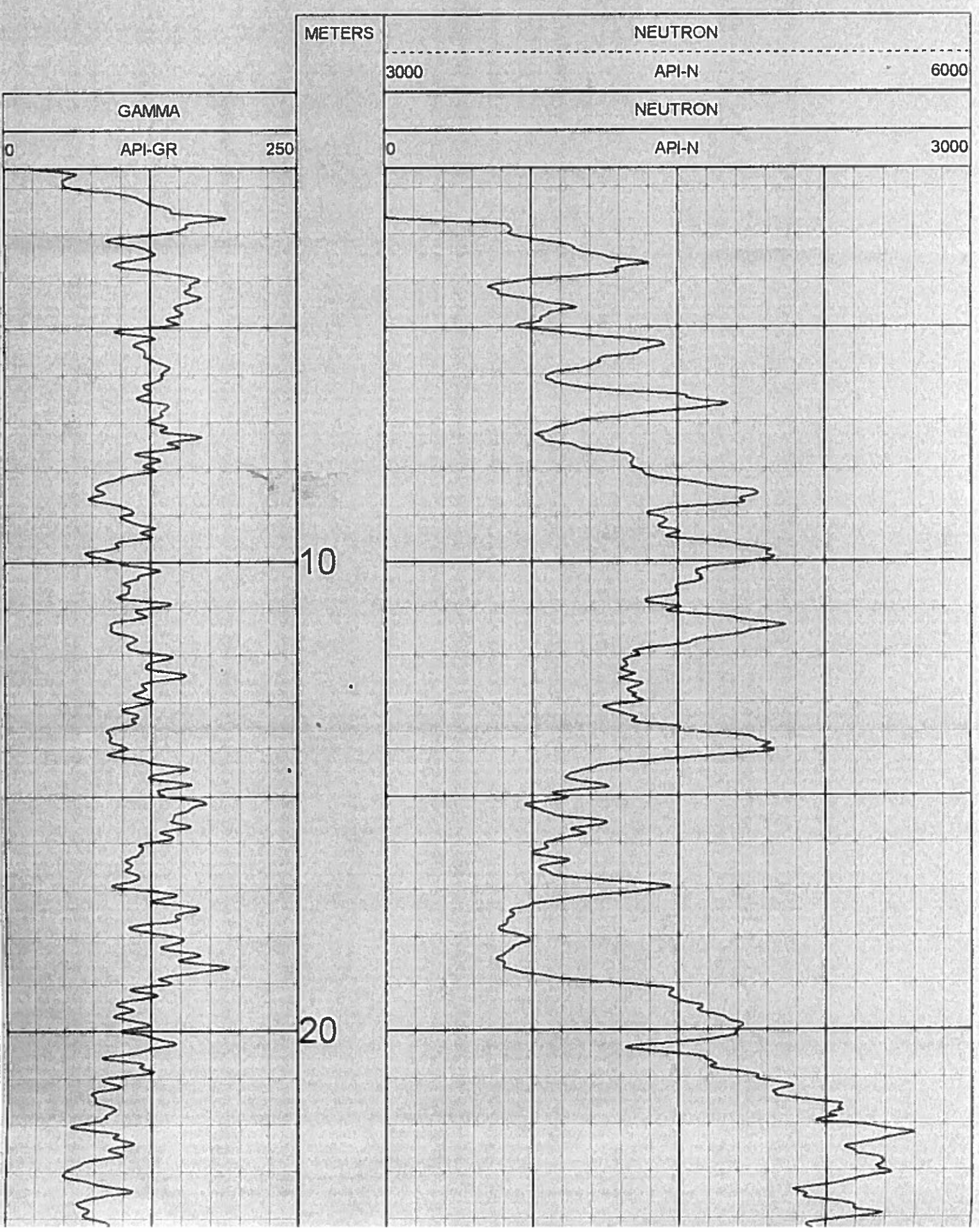
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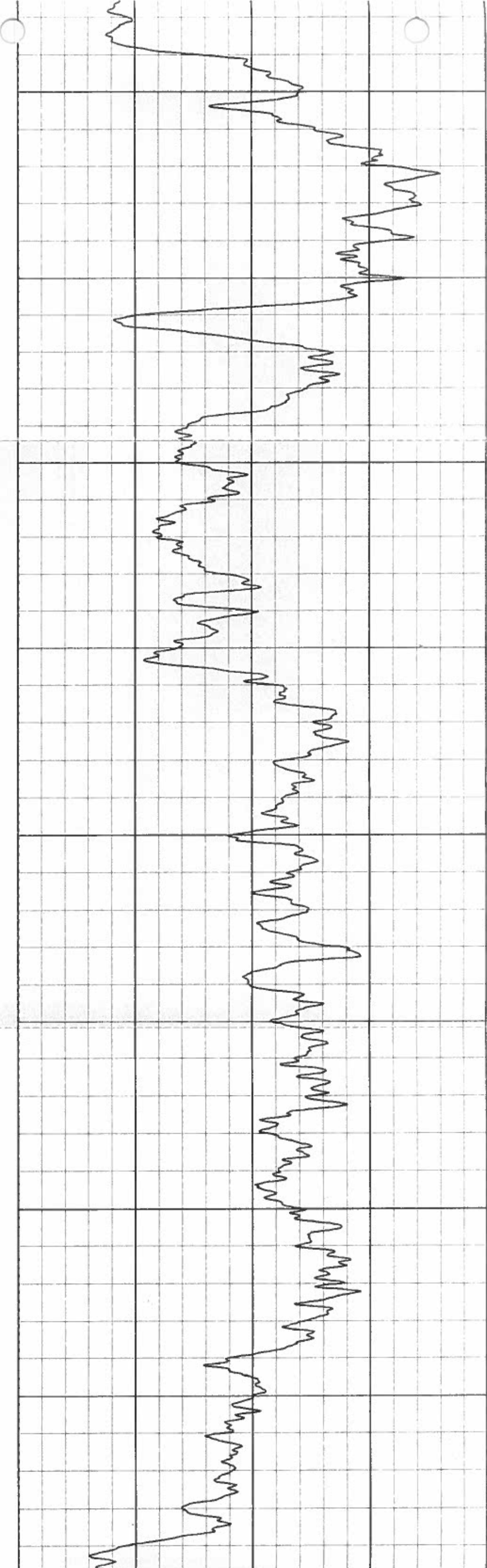
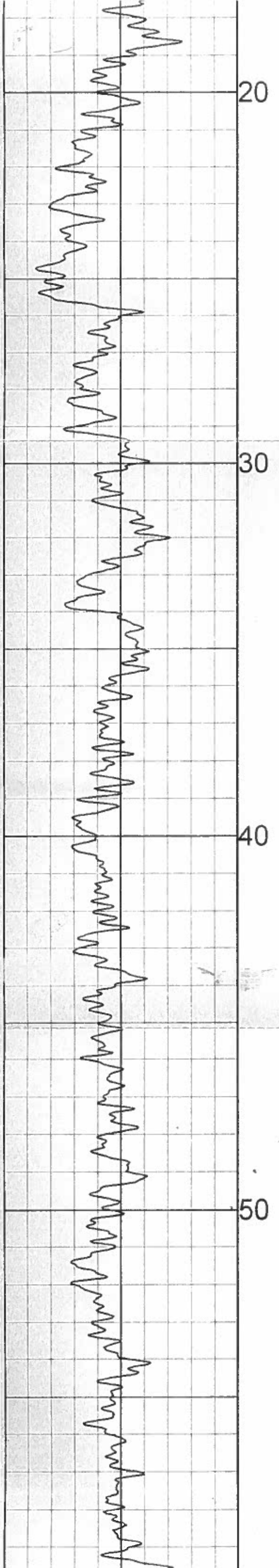
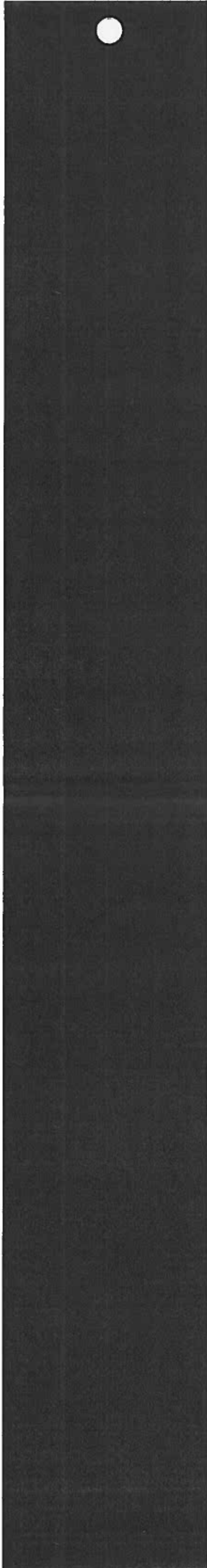
RECORDED BY R HECK

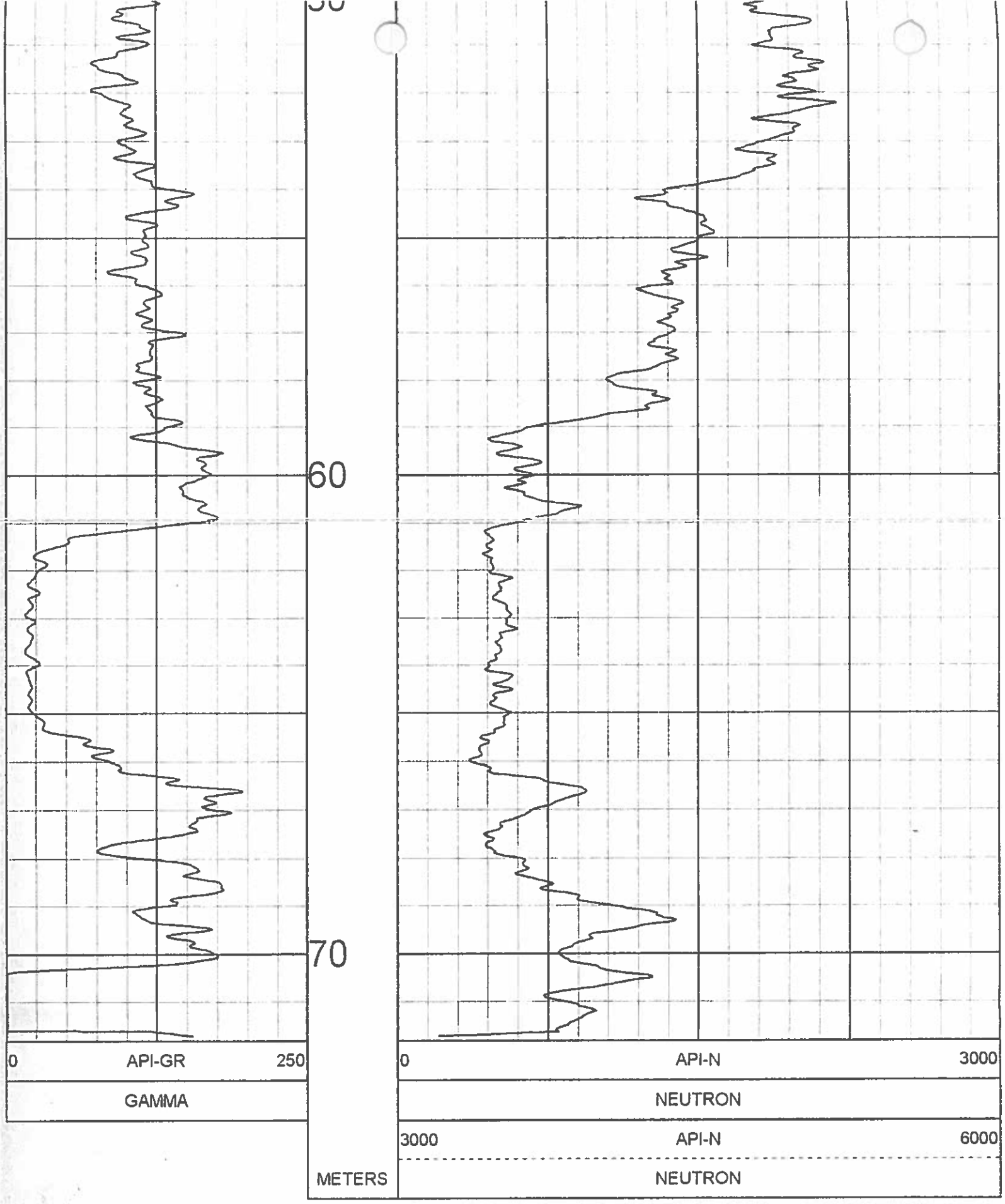
REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

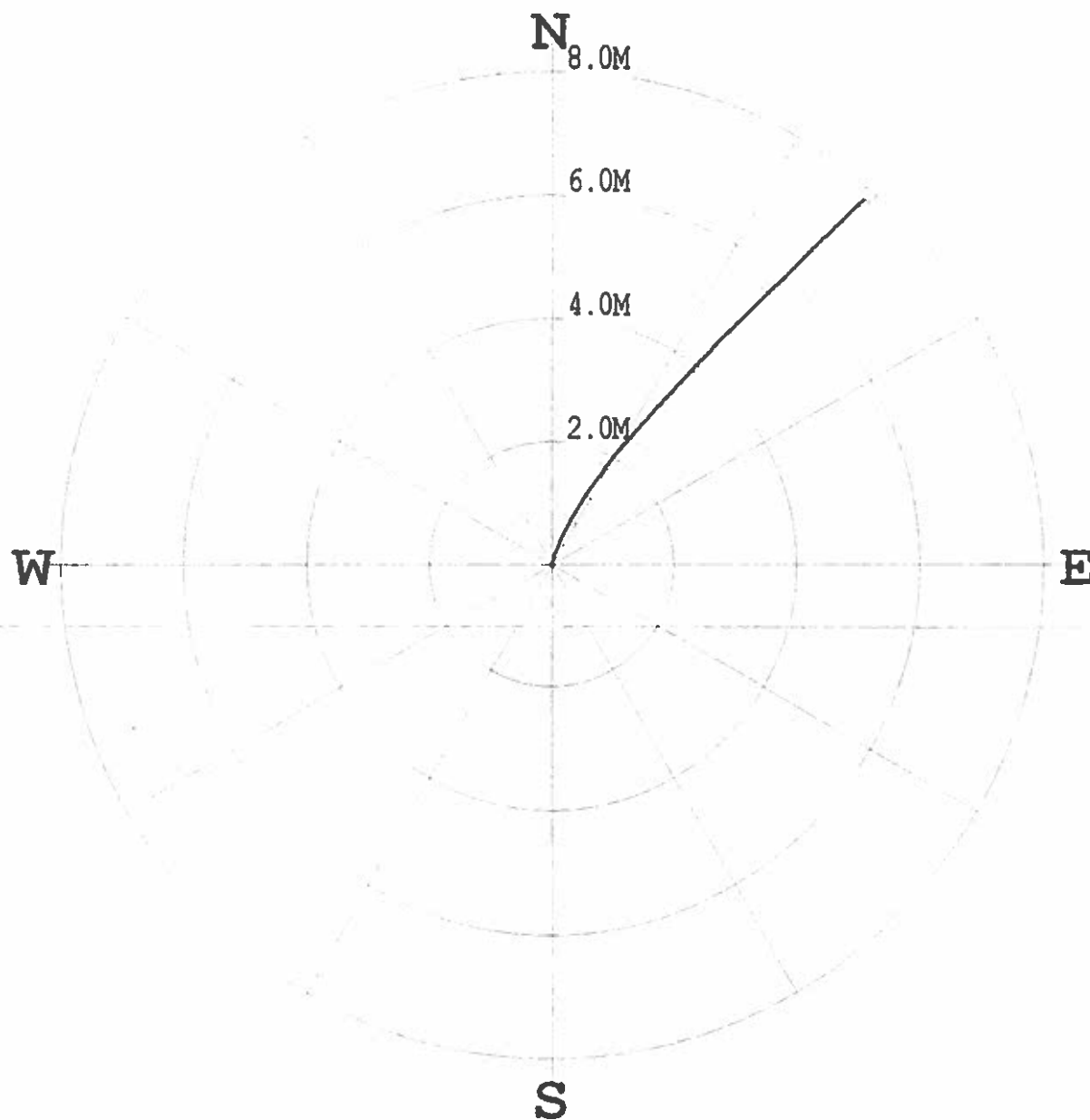






TOOL CALIBRATION BR2004-20.08/05/04 10:02
 TOOL 9055A
 SERIAL NUMBER 80

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRO	271.000 [API-N]	185.00 [CPS]
6	Feb20,02	17:17:55	TEMP	51.000 [DEG F]	1104.00 [CPS]
	Feb20,02	17:17:55	TEMP	95.200 [DEG F]	450.00 [CPS]



CLIENT : WESTERN CANADIAN CO HOLE NO. : BR1004-00
 FIELD OFFICE : DATE OF LOG : 08/05/04
 DATA FROM : INSTR : 9075A
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR1004-00_08-05-04_10-0_9075A_02_19.50_71.78_LEVI.100

CABLE DEPTH	TRUE DEPTH	DEPTH DEC.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGW
15.0	15.00	0.00	0.00	0.0	15.1	4.1	15.1
17.0	16.99	0.01	0.04	0.1	15.1	3.9	15.0
19.0	18.98	0.02	0.08	0.3	17.6	4.7	15.3
21.0	20.98	0.02	0.16	0.5	19.7	4.7	15.7
23.0	22.97	0.03	0.22	0.6	21.2	4.7	14.8
25.0	24.97	0.03	0.31	0.8	23.0	5.1	14.6
27.0	26.96	0.04	0.40	1.0	24.2	4.7	15.0
29.0	28.95	0.04	0.50	1.2	25.5	5.4	14.9
31.0	30.94	0.06	0.59	1.4	27.0	5.7	13.9
33.0	32.93	0.07	0.71	1.6	28.0	5.0	14.4
35.0	34.92	0.08	0.87	1.8	29.1	5.0	15.0
37.0	36.91	0.09	1.04	2.0	30.0	5.9	15.0
39.0	38.90	0.10	1.17	2.2	31.1	3.8	15.0
41.0	40.89	0.11	1.33	2.4	31.1	3.9	14.1
43.0	42.88	0.12	1.50	2.6	32.0	5.1	14.1
45.0	44.87	0.13	1.68	2.8	32.9	5.3	14.1
47.0	46.86	0.14	1.87	3.0	34.0	5.5	14.1
49.0	48.85	0.15	2.07	3.2	35.0	5.5	14.1
51.0	50.84	0.16	2.28	3.4	35.1	5.5	14.1
53.0	52.83	0.17	2.50	3.6	35.7	5.5	14.1
55.0	54.82	0.18	2.74	3.8	37.1	5.5	14.1
57.0	56.81	0.19	3.00	4.0	37.4	5.5	14.1
59.0	58.80	0.20	3.28	4.2	38.3	5.5	14.1
61.0	60.79	0.21	3.58	4.4	38.9	5.5	14.1
63.0	62.78	0.22	3.90	4.6	39.9	5.5	14.1
65.0	64.77	0.23	4.24	4.8	40.1	5.5	14.1
67.0	66.76	0.24	4.60	5.0	40.0	5.5	14.1
69.0	68.75	0.25	4.97	5.2	40.0	5.5	14.1
71.0	70.74	0.26	5.36	5.4	40.0	5.5	14.1
71.8	71.11	0.26	5.10	5.4	40.0	5.5	14.1

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-21	year drilled: 2004	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,552.39	6,140,038.58	1,330.81

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
199	-90	85.67				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	198.6	-90.00
10.00	198.6	-87.10
12.00	193.5	-87.00
14.00	193.9	-86.40
16.00	195.5	-86.70
18.00	196.7	-86.20
20.00	198.1	-86.30
22.00	200.5	-86.30
24.00	203.5	-86.10
26.00	206.1	-85.30
28.00	208.7	-85.00
30.00	210.3	-84.70
32.00	211.8	-84.60
34.00	213.2	-84.80
36.00	214.5	-84.40
38.00	215.8	-84.00
40.00	217.3	-83.50
42.00	218.4	-83.60
44.00	220.8	-83.30
46.00	220.8	-83.30
48.00	221.7	-83.10
50.00	222.8	-82.70
52.00	223.4	-82.90
54.00	224.1	-82.60
56.00	224.5	-82.30
58.00	225.1	-81.90
60.00	225.3	-81.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.05	3.05		
23.80	24.30	0.50		
45.50	46.75	1.25		
72.25	72.95	0.70		
72.95	74.10	1.15		
74.10	75.00	0.90		

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-21	year drilled: 2004	AREA:
---------------------------	--------------------	-------

62.00	225.9	-81.10
64.00	226.4	-81.40
68.00	226.8	-80.80
70.00	227.0	-79.90
72.00	227.5	-78.90
74.00	228.1	-79.40
76.00	220.4	-77.70
78.00	228.6	-78.70
80.00	229.2	-78.40
82.00	229.4	-77.90
84.00	229.6	-78.30
85.67	229.8	-78.20

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014 Reviewed: October 11, 2002
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Page 2 of 2



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Brude.

DH ID: BR2004-21

BY: R. Brown

DATE: November 11, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	3.05	OB	51.1	52.55	SH
3.05	3.25	SH	52.55	57.8	SLT
3.25	7.15	SLT	57.8	58.5	SH
7.15	7.90	SH	58.5	61.2	SSA
7.90	8.20	C	61.2	62.2	SLT
8.20	8.6	SLT/P	62.2	65.20	SH
8.6	9.05	C	65.20	71.45	SLT
9.05	10.55	SH	71.45	72.25	SH
10.55	10.9	C	72.25	72.95	Upper Seam A
10.9	12.58	SH	72.95	74.1	SH
12.58	16.3	SLT	74.1	75.0	Upper Seam B
16.3	17.08	SSA	75.0	76.51	SH
17.08	17.79	SLT	76.51	83.3	SLT
17.79	19.70	SSA	E.O.H.		
19.70	21.00	SLT			
21.00	23.4	SH			
23.4	23.8	SLT			
23.8	24.3	C			
24.3	28.65	SH			
28.65	38.13	SLT			
38.13	38.7	SH			
38.7	39.2	SLT			
39.2	40.1	SH			
40.1	40.5	SLT			
40.5	45.5	SH			
45.5	46.75	C			
46.75	49.5	SH			
49.5	51.1	SLT			

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN

C - COAL

P - PARTING

SHC - SHALEY COAL

CGL - CONGLOMERATE

SH - SHALE

SLT - SILTSTONE

SSA - ARGILLACEOUS SANDSTONE

SSC - CLEAN SANDSTONE

SS/SH - INTERBEDDED SANDSTONE AND SHALE



GAMMA - DENSITY

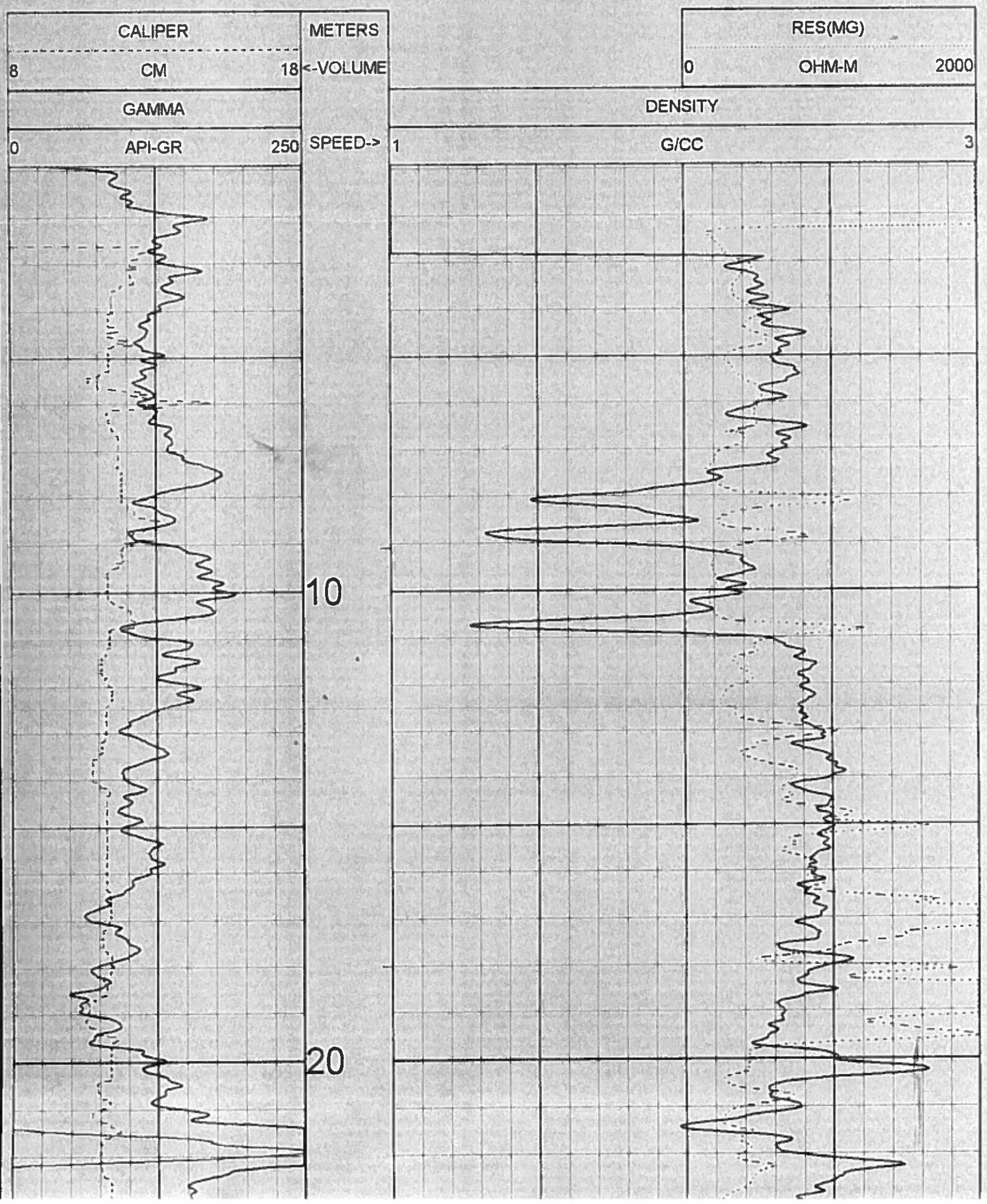
century-geo.com

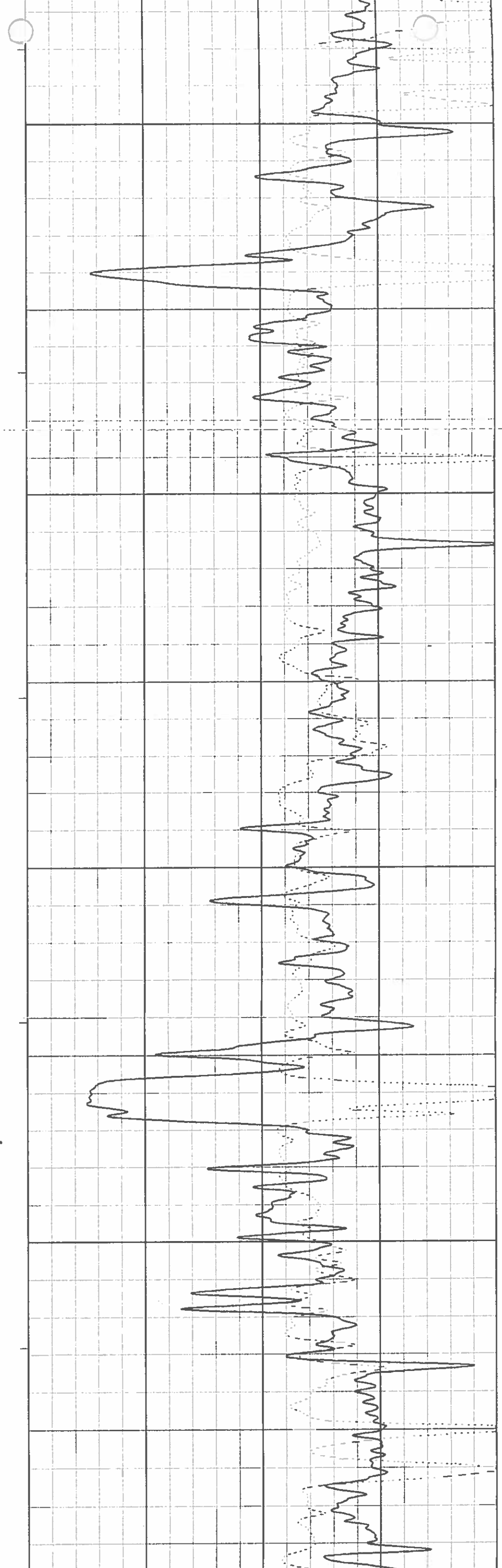
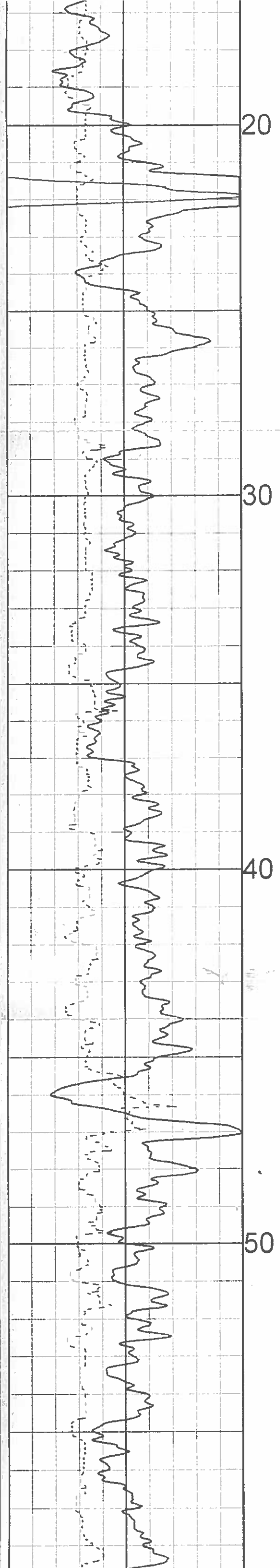
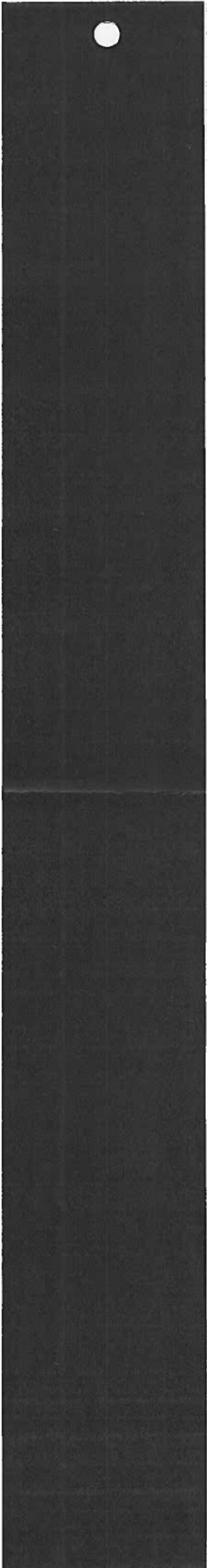
BR 2004-21

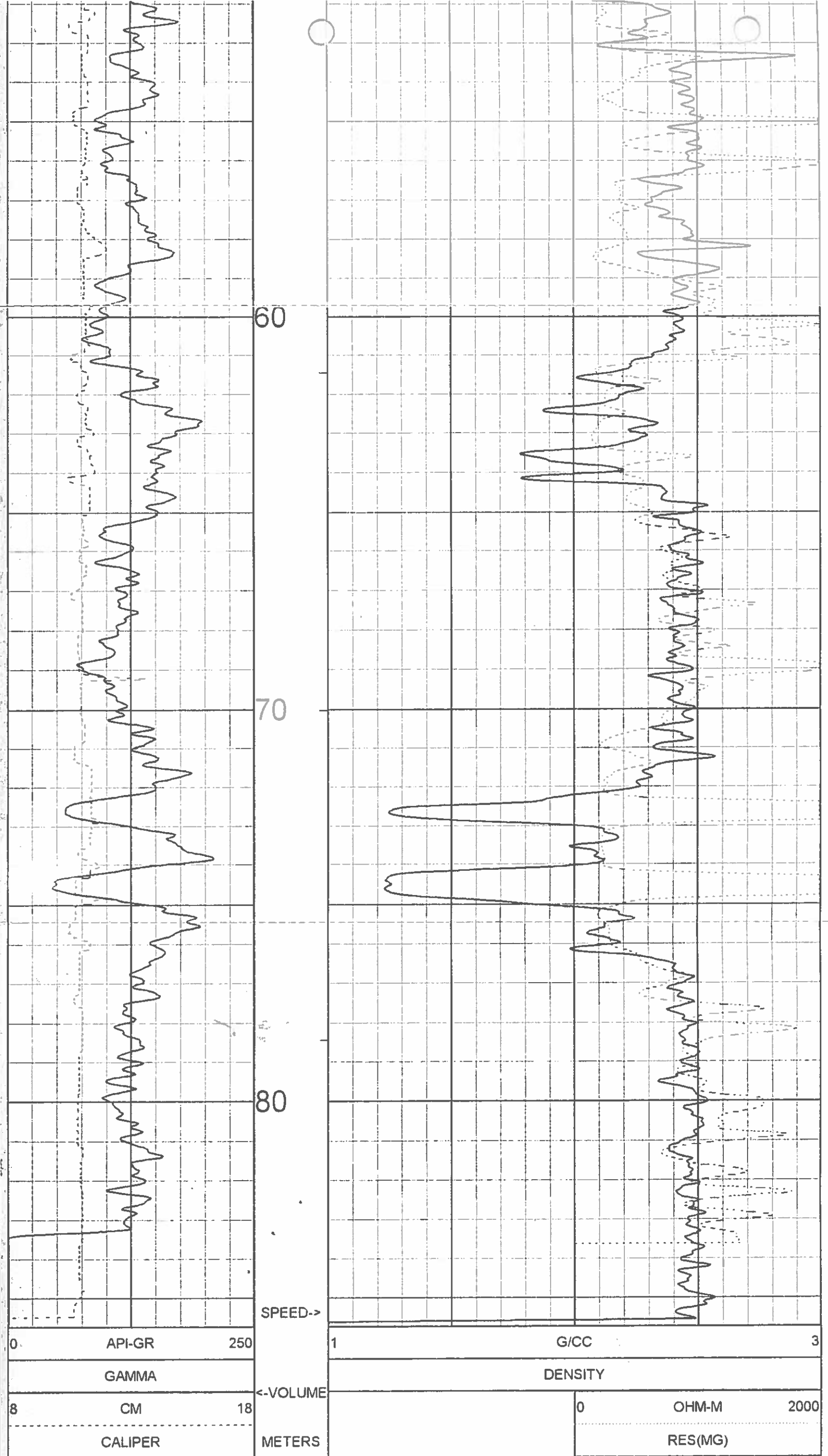
OTHER SERVICES
9055

COMPANY	WESTERN CANADIAN COAL CORP	WELL	BR 2004-21
FIELD	BURNT RIVER	MUNICIPALITY	TUMBLER RIDGE
PROVINCE	BRITISH COLUMBIA	LOCATION	
SECTION		TOWNSHIP	
RANGE		PERMANENT DATUM	GL
API NO		LOG MEASURED FROM	GL
UNIQUE WELL ID		DRL MEASURED FROM	GL
DATE	08/11/04	ELEVATION KB	
RUN NO	1	ELEVATION DF	
DEPTH DRILLER	86.87	ELEVATION GL	
BIT SIZE	12.1		
LOG TOP	0.90		
LOG BOTTOM	85.67		
CASING OD	14		
CASING BOTTOM	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR 2004-21 08/11/04 12:02
 TOOL 0033AA
 SERIAL NUMBER 450

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	00:35:04	GAMMA	7.000 [API-GR]	1.00 [CPS]
	Jul27,04	00:35:04	GAMMA	250.000 [API-GR]	360.00 [CPS]
2	Jul27,04	00:36:13	DENSITY	1.106 [G/CC]	6075.00 [CPS]
	Jul27,04	00:36:13	DENSITY	2.612 [G/CC]	1136.00 [CPS]
3	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]



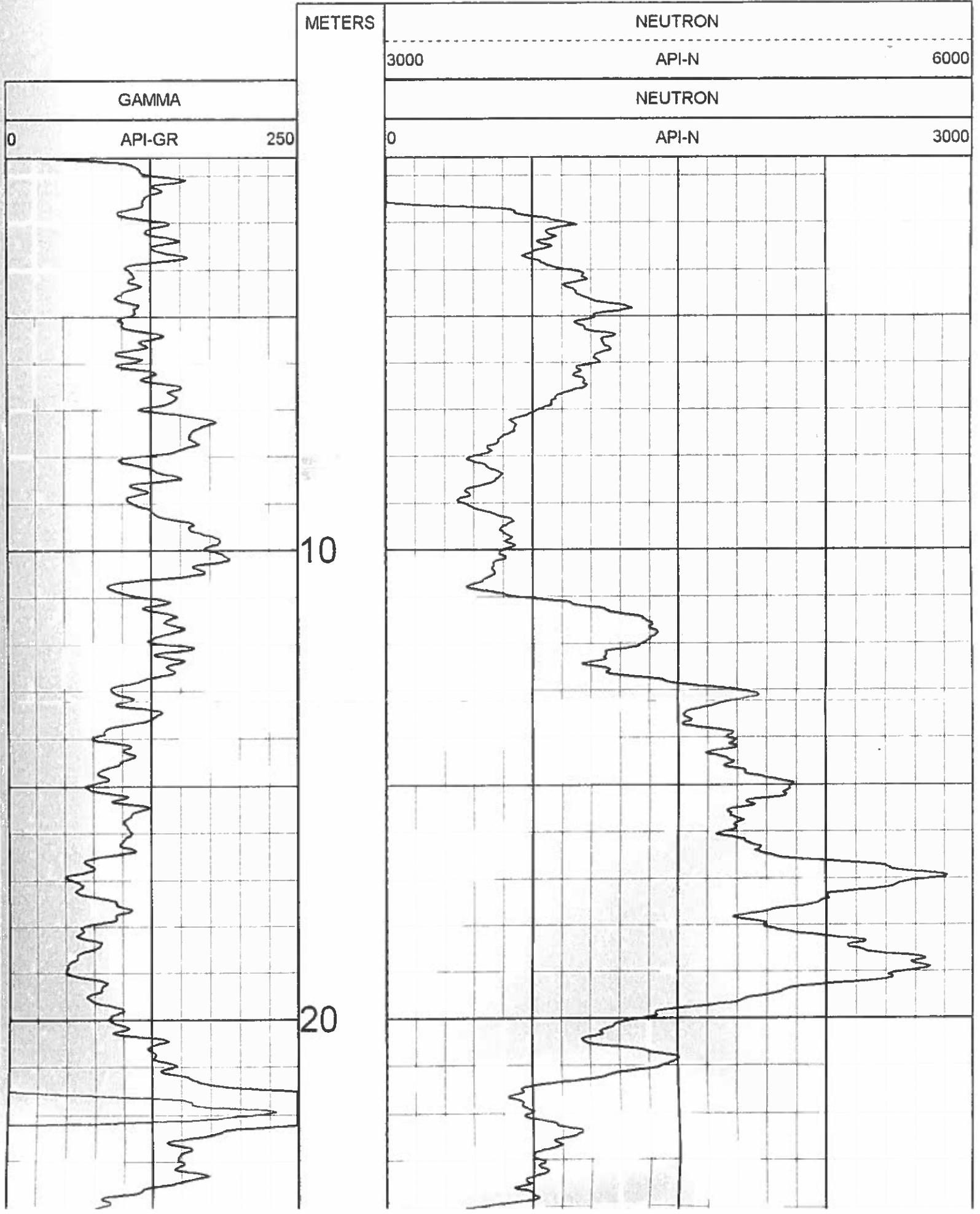
GAMMA - NEUTRON

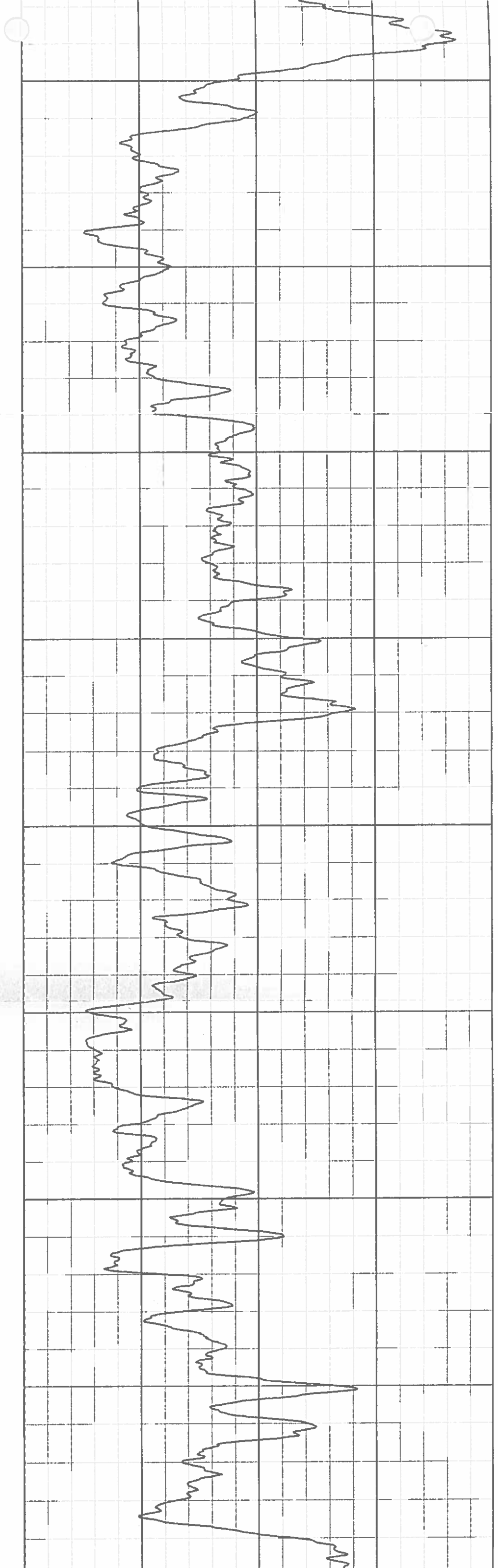
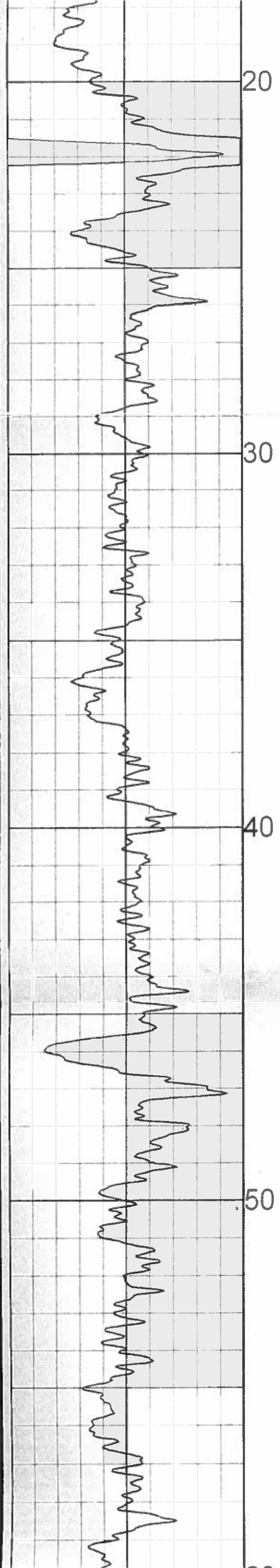
BR 2004-21

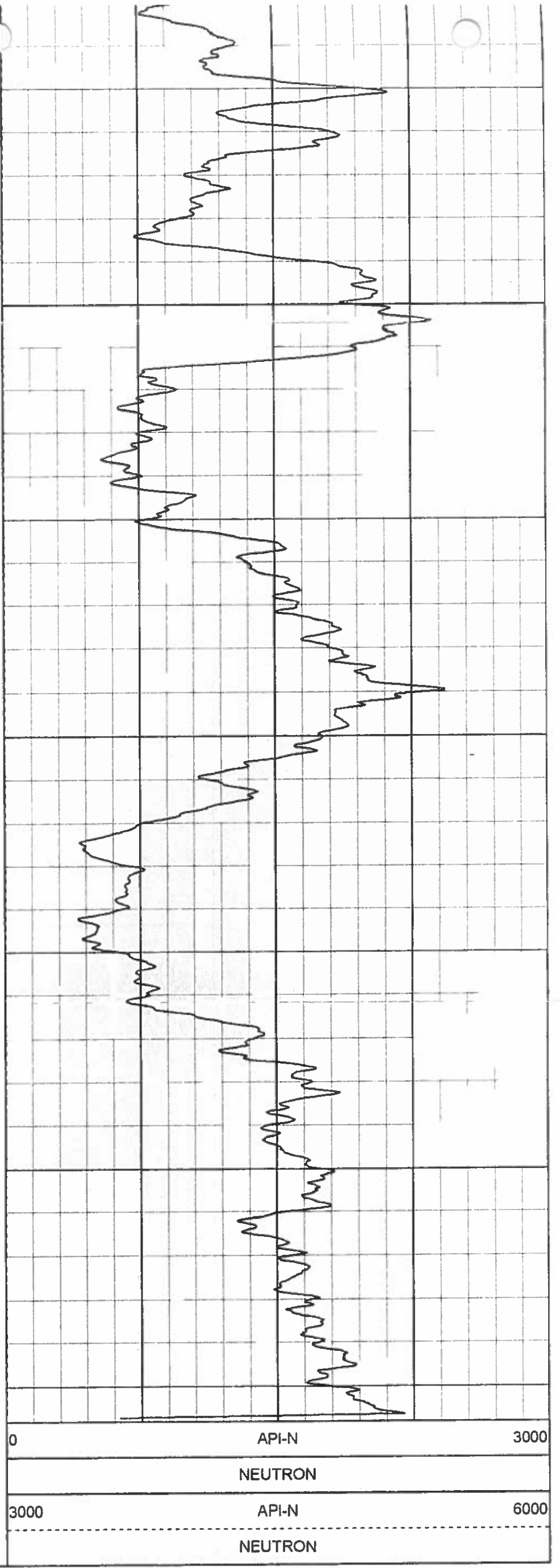
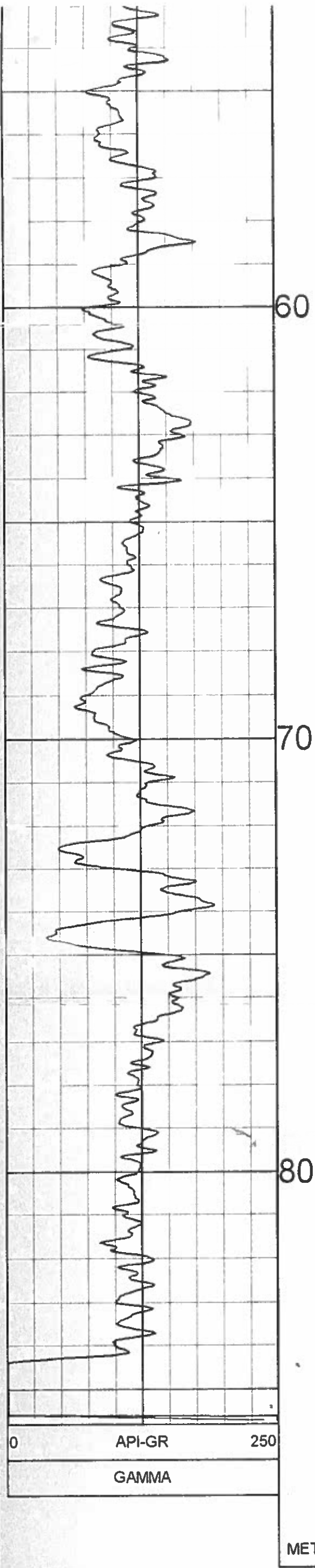
century-geo.com

COMPANY	WESTERN CANADIAN COAL CORP		OTHER SERVICES
WELL	BR 004-21		9033
FIELD	BURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	08/11/04		
RUN NO	2		
DEPTH DRILLER	86 87		
PIT SIZE	12 1		
JG TOP	1 61		
LOG BOTTOM	85 79		
CASING OD	14		
CASING BOTTOM	3 048		
CASING TYF	STEEL		
BOREHOLE LIUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR 2004-21 08/11/04 12:47
TOOL 9055A
SERIAL NUMBER 80

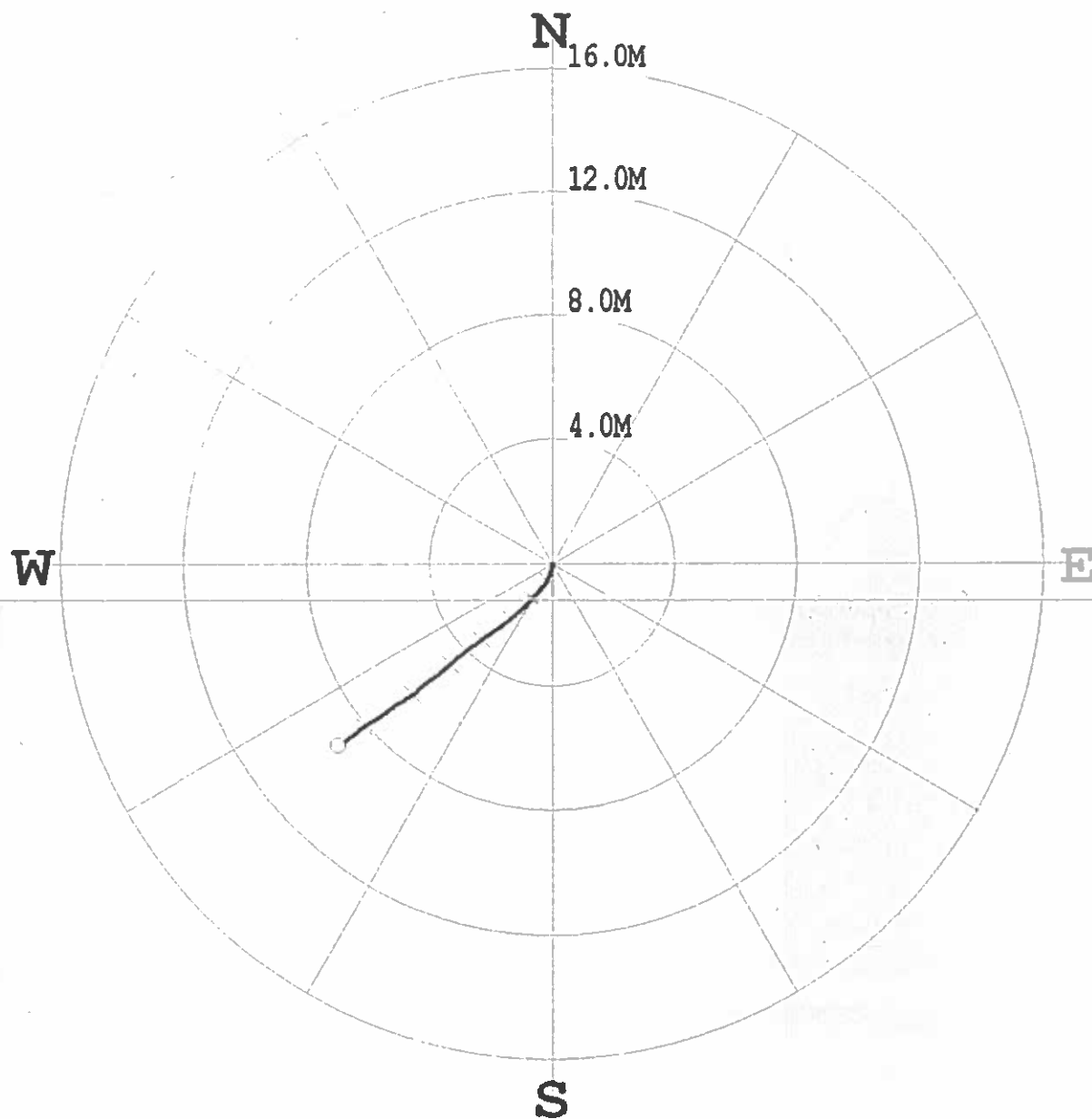
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR 2004-21
 DATE OF LOG: 08/11/04
 PROBE: 9055A 80

MAG DECL: 21.6

SCALE: 2 M/CM
 TRUE DEPTH: 85.13 M
 AZIMUTH: 229.8
 DISTANCE: 9.1 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR 2004-21
 FIELD OFFICE : DATE OF LOG : 08/11/04
 DATA FROM : PROBE : 9055A , 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-21_08-11-04_12-47_9055A_02_10.00_85.79_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.0	10.02	-0.00	-0.00	0.0	198.6	2.9	198.6
12.0	12.00	-0.10	-0.02	0.1	193.5	3.0	173.2
14.0	13.99	-0.20	-0.05	0.2	193.3	3.6	206.9
16.0	15.99	-0.31	-0.09	0.3	195.5	3.3	208.6
18.0	17.99	-0.43	-0.13	0.4	196.7	3.8	202.0
20.0	19.98	-0.54	-0.18	0.6	198.1	3.7	204.6
22.0	21.98	-0.65	-0.24	0.7	200.5	3.7	223.5
24.0	23.97	-0.76	-0.33	0.8	203.5	3.9	196.4
26.0	25.97	-0.87	-0.43	1.0	206.1	4.7	220.1
28.0	27.96	-1.00	-0.55	1.1	208.7	5.0	230.4
30.0	29.95	-1.14	-0.67	1.3	210.3	5.3	217.6
32.0	31.94	-1.27	-0.79	1.5	211.6	5.4	229.1
34.0	33.94	-1.40	-0.92	1.7	213.2	5.2	226.8
36.0	35.93	-1.53	-1.05	1.9	214.5	5.6	230.3
38.0	37.92	-1.66	-1.20	2.0	215.8	6.0	241.6
40.0	39.90	-1.79	-1.37	2.3	217.3	6.5	227.0
42.0	41.89	-1.93	-1.53	2.5	219.4	6.4	242.7
44.0	43.88	-2.07	-1.71	2.7	219.6	6.6	234.1
46.0	45.87	-2.20	-1.90	2.9	220.8	6.7	222.2
48.0	47.85	-2.34	-2.08	3.1	221.7	6.9	239.6

S

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR 2004-21
 FIELD OFFICE : DATE OF LOG : 08/11/04
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-21_08-11-04_12-47_9055A_02_10.00_85.79_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
10.0	10.02	-0.00	-0.00	0.0	198.6	2.9	198.6
12.0	12.00	-0.10	-0.02	0.1	193.5	3.0	173.2
14.0	13.99	-0.20	-0.05	0.2	193.9	3.6	206.9
16.0	15.99	-0.31	-0.09	0.3	195.5	3.3	208.6
18.0	17.99	-0.43	-0.13	0.4	196.7	3.8	202.0
20.0	19.98	-0.54	-0.18	0.6	199.1	3.7	204.6
22.0	21.98	-0.65	-0.24	0.7	200.5	3.7	223.5
24.0	23.97	-0.76	-0.33	0.8	203.5	3.9	198.4
26.0	25.97	-0.87	-0.43	1.0	206.1	4.7	220.1
28.0	27.96	-1.00	-0.55	1.1	208.7	5.0	230.4
30.0	29.95	-1.14	-0.67	1.3	210.3	5.3	217.6
32.0	31.94	-1.27	-0.79	1.5	211.6	5.4	229.1
34.0	33.94	-1.40	-0.92	1.7	213.2	5.2	226.8
36.0	35.93	-1.53	-1.05	1.9	214.5	5.6	230.3
38.0	37.92	-1.66	-1.20	2.0	215.8	6.0	241.6
40.0	39.90	-1.79	-1.37	2.3	217.3	6.5	227.0
42.0	41.89	-1.93	-1.53	2.5	218.4	6.4	242.7
44.0	43.88	-2.07	-1.71	2.7	219.6	6.6	234.1
46.0	45.87	-2.20	-1.90	2.9	220.8	6.7	222.2
48.0	47.85	-2.34	-2.08	3.1	221.7	6.9	239.6
50.0	49.84	-2.47	-2.29	3.4	222.8	7.3	247.9
52.0	51.82	-2.62	-2.48	3.6	223.4	7.1	226.4
54.0	53.81	-2.76	-2.67	3.8	224.1	7.4	241.2
56.0	55.79	-2.92	-2.87	4.1	224.5	7.7	218.7
58.0	57.77	-3.08	-3.09	4.4	225.1	8.1	217.1
60.0	59.75	-3.26	-3.30	4.6	225.3	8.1	235.0
62.0	61.73	-3.44	-3.51	4.9	225.6	8.4	227.8
64.0	63.71	-3.63	-3.74	5.2	225.9	8.9	226.5
66.0	65.68	-3.80	-4.00	5.5	226.4	8.6	222.4
68.0	67.66	-3.98	-4.24	5.8	226.8	9.2	232.5
70.0	69.63	-4.20	-4.50	6.2	227.0	10.1	234.5
72.0	71.60	-4.39	-4.79	6.5	227.5	11.1	217.7
74.0	73.56	-4.57	-5.10	6.8	228.1	10.6	237.4
76.0	75.53	-4.76	-5.39	7.2	228.4	12.3	216.1
78.0	77.49	-5.01	-5.69	7.6	228.6	11.3	236.2
80.0	79.45	-5.20	-6.03	8.0	229.2	11.6	238.6
82.0	81.41	-5.44	-6.35	8.4	229.4	12.1	224.6
84.0	83.37	-5.69	-6.67	8.8	229.6	11.7	227.0
85.8	85.09	-5.87	-6.96	9.1	229.8	11.8	235.5

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-22	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,624.07	6,140,118.61	1,335.21

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
156	-90	125.35				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	156.0	-90.00
7.00	156.3	-88.40
9.00	187.1	-88.20
11.00	202.0	-88.00
13.00	210.2	-88.10
15.00	216.4	-87.40
17.00	220.4	-87.90
19.00	224.4	-87.80
21.00	225.5	-87.80
23.00	227.0	-87.30
25.00	228.2	-87.10
27.00	229.4	-87.40
29.00	230.5	-87.50
31.00	231.7	-86.60
33.00	233.3	-86.40
35.00	234.8	-86.10
37.00	235.9	-86.20
39.00	237.1	-86.60
41.00	238.2	-86.50
43.00	239.5	-86.60
45.00	240.7	-87.00
47.00	241.6	-87.10
49.00	242.6	-87.00
51.00	243.3	-86.70
53.00	244.1	-86.30
55.00	244.9	-85.90
57.00	245.5	-85.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40		
64.50	67.60	3.10		
69.10	70.20	1.10		
98.70	99.30	0.60		
121.50	122.55	1.05		

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 3

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-22	year drilled: 2004	AREA:
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59.00	246.1	-85.70
61.00	246.7	-85.30
63.00	247.4	-85.60
65.00	247.9	-85.10
67.00	248.2	-84.90
69.00	248.3	-84.00
71.00	248.4	-83.90
73.00	248.5	-84.10
75.00	248.7	-84.00
77.00	248.8	-83.00
79.00	249.3	-83.20
81.00	249.3	-83.00
83.00	249.3	-83.10
85.00	249.2	-83.50
87.00	249.0	-82.90
89.00	249.2	-82.80
91.00	248.9	-81.50
93.00	248.5	-82.20
95.00	248.1	-82.90
97.00	247.8	-81.80
99.00	247.6	-81.80
101.00	247.5	-81.90
103.00	247.0	-81.60
105.00	246.6	-80.60
107.00	246.3	-81.40
109.00	246.1	-81.30
111.00	245.7	-81.00
113.00	245.3	-81.40
115.00	244.8	-80.40
117.00	244.2	-80.40
119.00	244.1	-80.20
121.00	243.7	-80.30
123.00	243.3	-80.30
125.00	242.9	-80.80
125.35	242.9	-80.70

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 2 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

<i>HOLE-ID: BR2004-22</i>	year drilled: 2004	<i>AREA:</i>
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Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 3 of 3



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-22**

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,721.08	6,139,912.98	572,624.07	6,140,118.61	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
243	-90	125.35	Rotary			11-Aug-2004

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: Survey NAD83

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	156.0	-90.00
7.00	156.3	-88.40
9.00	187.1	-88.20
11.00	202.0	-88.00
13.00	210.2	-88.10
15.00	216.4	-87.40
17.00	220.4	-87.90
19.00	224.4	-87.80
21.00	225.5	-87.80
23.00	227.0	-87.30
25.00	228.2	-87.10
27.00	229.4	-87.40
29.00	230.5	-87.50
31.00	231.7	-86.60
33.00	233.3	-86.40
35.00	234.8	-86.10
37.00	235.9	-86.20
39.00	237.1	-86.60
41.00	238.2	-86.50
43.00	239.5	-86.60
45.00	240.7	-87.00
47.00	241.6	-87.10
49.00	242.6	-87.00
51.00	243.3	-86.70
53.00	244.1	-86.30
55.00	244.9	-85.90
57.00	245.5	-85.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40	OB	
6.40	7.20	0.80	SS	
7.20	7.45	0.25	SLT	
7.45	8.05	0.60	SS	
8.05	8.70	0.65	SSA	
8.70	12.00	3.30	SS	
12.00	13.10	1.10	SSA	
13.10	14.55	1.45	SLT	
14.55	17.85	3.30	SS	
17.85	18.50	0.65	SLT	
18.50	19.45	0.95	SSA	
19.45	20.65	1.20	SLT	
20.65	21.20	0.55	SSA	
21.20	21.62	0.42	SLT	
21.62	24.00	2.38	SS	
24.00	24.85	0.85	SSA	
24.85	25.45	0.60	SLT	
25.45	27.49	2.04	SH	
27.49	30.15	2.66	SLT	
30.15	33.38	3.23	SH	
33.38	34.20	0.82	SSA	
34.20	34.73	0.53	SLT	
34.73	36.00	1.27	SH	
36.00	39.47	3.47	SLT	
39.47	40.19	0.72	SSA	
40.19	43.50	3.31	SLT	
43.50	44.90	1.40	SSA	
44.90	47.70	2.80	SLT	
47.70	49.30	1.60	SSA	
49.30	52.55	3.25	SLT	
52.55	53.20	0.65	SH	
53.20	54.55	1.35	SLT	
54.55	55.65	1.10	SH	
55.65	56.45	0.80	SLT	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-22

year drilled: 2004

AREA:

Burnt River
Brule


59.00	246.1	-85.70
61.00	246.7	-85.30
63.00	247.4	-85.60
65.00	247.9	-85.10
67.00	248.2	-84.90
69.00	248.3	-84.00
71.00	248.4	-83.90
73.00	248.5	-84.10
75.00	248.7	-84.00
77.00	248.8	-83.00
79.00	249.3	-83.20
81.00	249.3	-83.00
83.00	249.3	-83.10
85.00	249.2	-83.50
87.00	249.0	-82.90
89.00	249.2	-82.80
91.00	248.9	-81.50
93.00	248.5	-82.20
95.00	248.1	-82.90
97.00	247.8	-81.80
99.00	247.6	-81.80
101.00	247.5	-81.90
103.00	247.0	-81.60
105.00	246.6	-80.60
107.00	246.3	-81.40
109.00	246.1	-81.30
111.00	245.7	-81.00
113.00	245.3	-81.40
115.00	244.8	-80.40
117.00	244.2	-80.40
119.00	244.1	-80.20
121.00	243.7	-80.30
123.00	243.3	-80.30
125.00	242.9	-80.80
125.35	242.9	-80.70

56.45	60.25	3.80	SH	
60.25	61.80	1.55	SLT	
61.80	62.70	0.90	SH	
62.70	63.70	1.00	SLT	
63.70	64.60	0.90	SH	
64.60	67.60	3.00	C	C60
67.60	69.10	1.50	SH	
69.10	70.20	1.10	C	MD
70.20	73.20	3.00	SH	
73.20	76.65	3.45	SLT	
76.65	79.40	2.75	SH	
79.40	79.70	0.30	C	
79.70	80.35	0.65	SH	
80.35	80.70	0.35	C	
80.70	82.25	1.55	SH	
82.25	82.55	0.30	C	
82.55	83.80	1.25	SLT	
83.80	89.28	5.48	SS	
89.28	90.05	0.77	SSA	
90.05	90.85	0.80	SS	
90.85	91.15	0.30	SLT	
91.15	91.75	0.60	SS	
91.75	93.55	1.80	SSA	
93.55	94.75	1.20	SLT	
94.75	97.50	2.75	SSA	
97.50	98.70	1.20	SH	
98.70	99.30	0.60	C	
99.30	101.00	1.70	SH	
101.00	102.00	1.00	SLT	
102.00	104.40	2.40	SSA	
104.40	106.80	2.40	SLT	
106.80	108.45	1.65	SSA	
108.45	109.65	1.20	SLT	
109.65	112.78	3.13	SH	
112.78	114.60	1.82	SLT	
114.60	114.80	0.20	C	
114.80	115.38	0.58	SS	
115.38	117.69	2.31	SLT	
117.69	119.00	1.31	SSA	
119.00	121.60	2.60	SH	
121.60	122.50	0.90	C	MC
122.50	123.00	0.50	SH	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-22	year drilled: 2004	AREA: Burnt River Brule
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Date issued: Monday, April 03, 2006
Reviewed: October 11, 2002

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Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Bunt River: Bhole.
DH ID: BR2004-22
BY: B. Brown
DATE: November 10, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	6.40	OB	47.7	49.3	SSA
6.40	7.20	SS	49.3	52.55	SLT
7.20	7.45	SLT	52.55	53.2	SH
7.45	8.05	SS	53.2	54.55	SLT
8.05	8.70	SSA	54.55	55.65	SH
8.70	12.00	SS	55.65	56.45	SLT
12.00	13.1	SSA	56.45	60.25	SH
13.1	14.55	SLT	60.25	61.8	SLT
14.55	17.85	SS	61.8	62.7	SH
17.85	18.5	SLT	62.7	63.7	SLT
18.5	19.45	SSA	63.7	64.60	SH
19.45	20.65	SLT	64.60	67.60	Seam C-60
20.65	21.2	SSA	67.60	69.10	SH
21.2	21.62	SLT	69.10	70.20	MD
21.62	24.0	SS	70.20	73.20	SH
24.0	24.85	SSA	73.20	76.65	SLT
24.85	25.45	SLT	76.65	79.4	SH
25.45	27.49	SH	79.4	79.7	Coal
27.49	30.15	SLT	79.7	80.35	SH
30.15	33.38	SH	80.35	80.7	Coal
33.38	34.2	SSA	80.7	82.25	SH
34.2	34.73	SLT	82.25	82.55	Coal.
34.73	36.00	SH	82.55	83.8	SLT
36.00	39.47	SLT	83.8	89.28	SS
39.47	40.19	SSA	89.28	90.05	SSA
40.19	43.5	SLT	90.05	90.85	SS
43.5	44.9	SSA	90.85	91.15	SLT
44.9	47.7	SLT	91.15	91.75	SS

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River : Brule

DH ID: BR2009-22

BY: R. Brown

DATE: November 19, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
91.75	93.55	SSA			
93.55	94.75	SLT			
94.75	97.50	SSA			
97.50	98.70	SH			
98.70	99.30	Coal.			
99.30	101.0	SH			
101.0	102.0	SLT			
102.0	104.4	SSA			
104.4	106.8	SLT			
106.8	108.45	SSA			
108.45	109.65	SLT			
109.65	112.78	SH			
112.78	114.60	SLT			
114.60	114.80	Coal.			
114.80	115.38	SS			
115.38	117.69	SLT			
117.69	119.00	SSA			
119.00	121.60	SH			
121.60	122.5	MC			
122.5	123.0	SH			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN

C - COAL

P - PARTING

SHC - SHALEY COAL

CGL - CONGLOMERATE

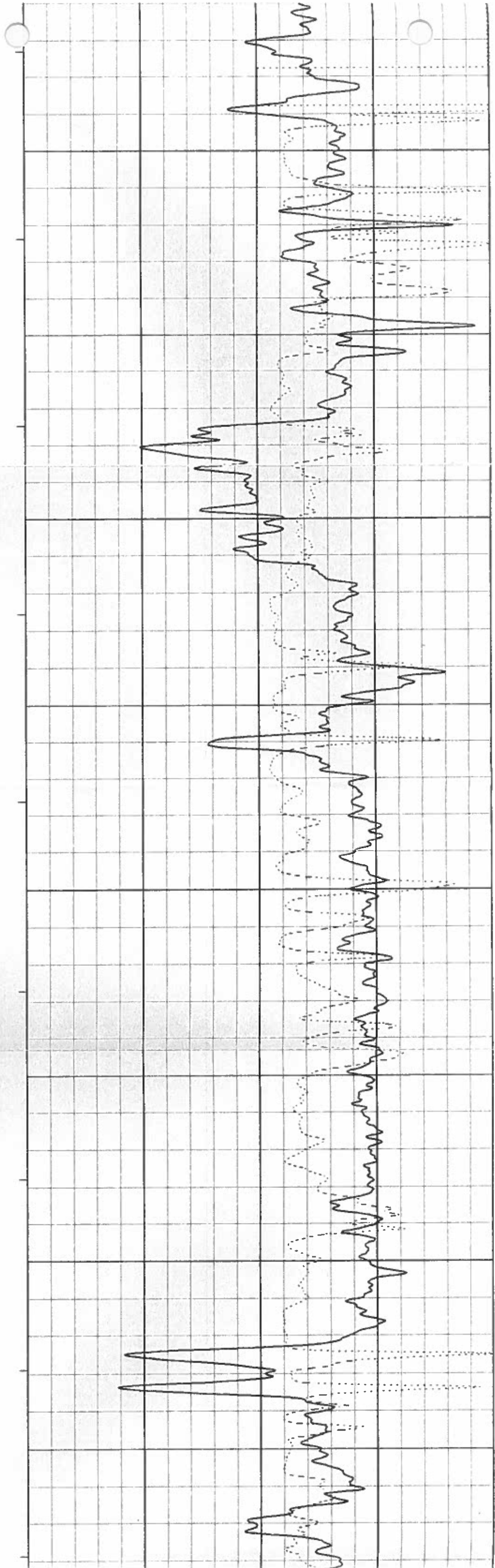
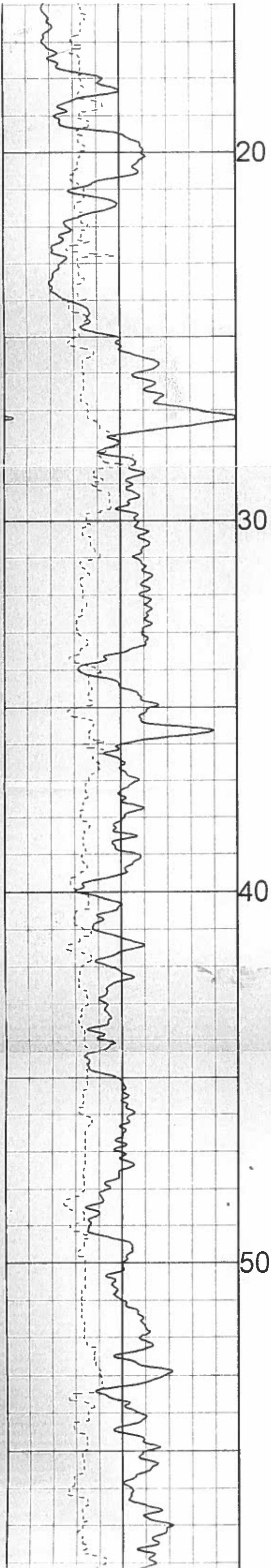
SH - SHALE

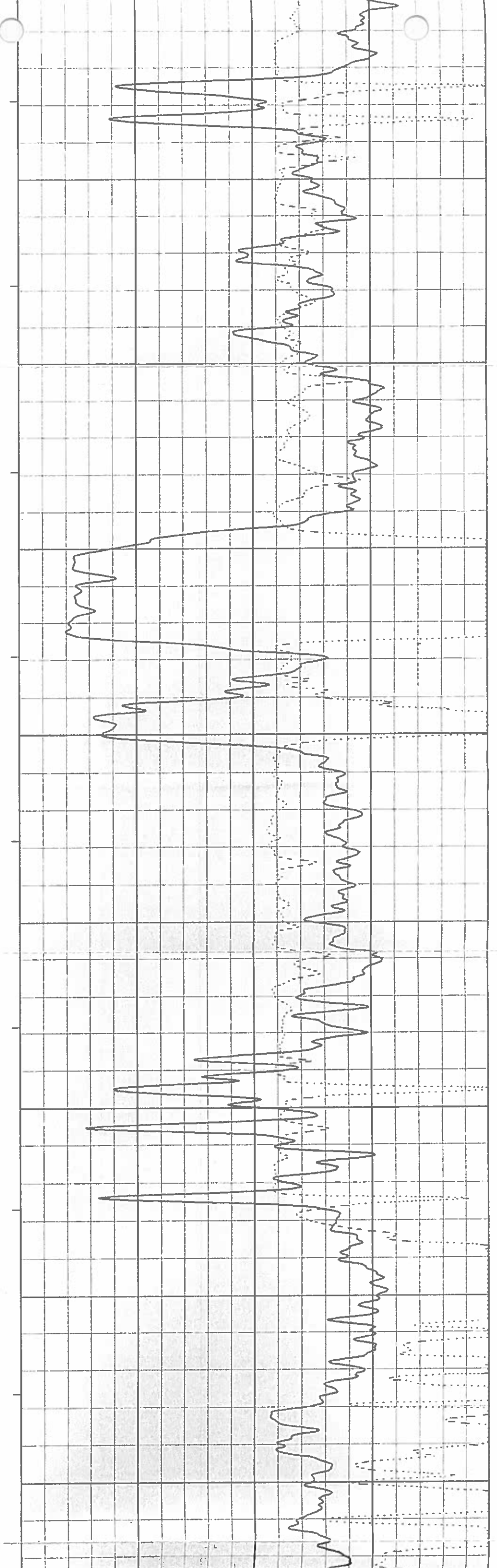
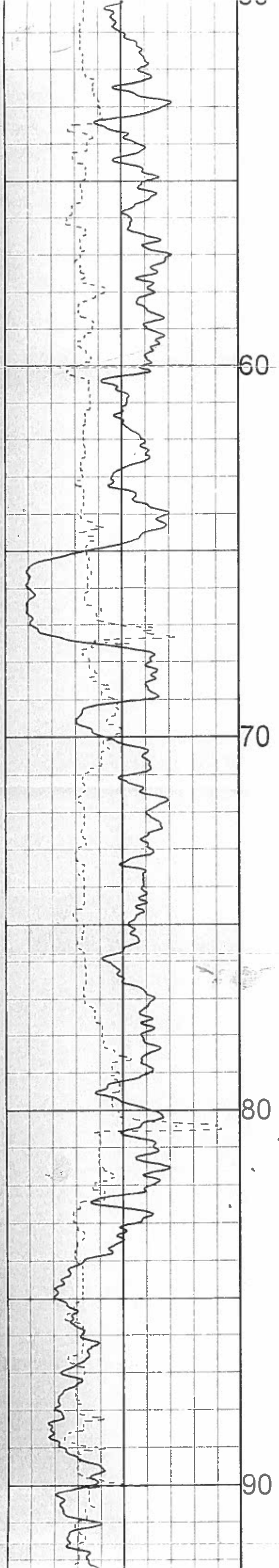
SLT - SILTSTONE

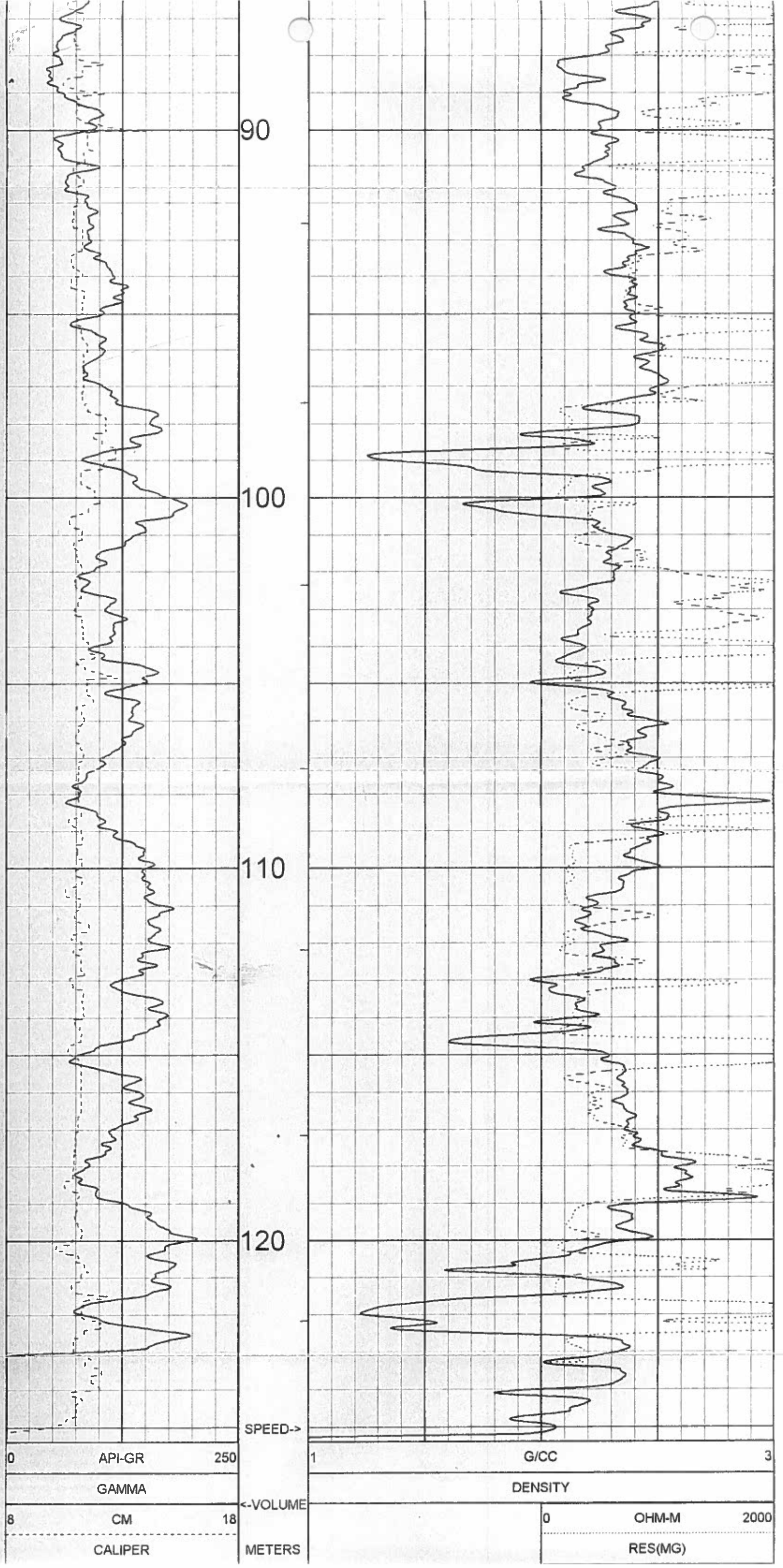
SSA - ARGILLACEOUS SANDSTONE

SSC - CLEAN SANDSTONE

SS/SH - INTERBEDDED SANDSTONE AND SHALE







90

100

110

120

SPEED->

0 API-GR 250

GAMMA

8 CM 18

CALIPER METERS

1 G/CC 3

DENSITY

0 OHM-M 2000

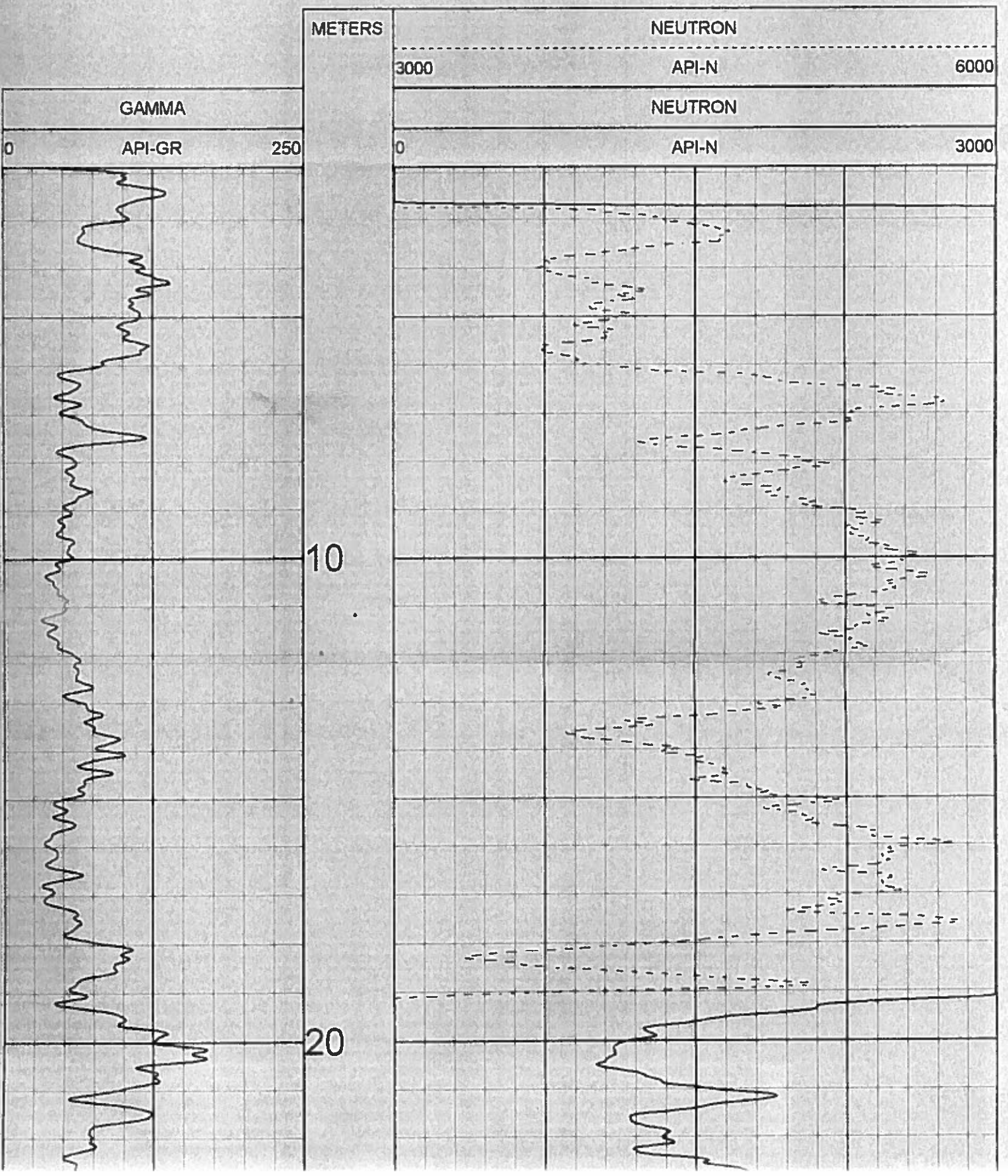
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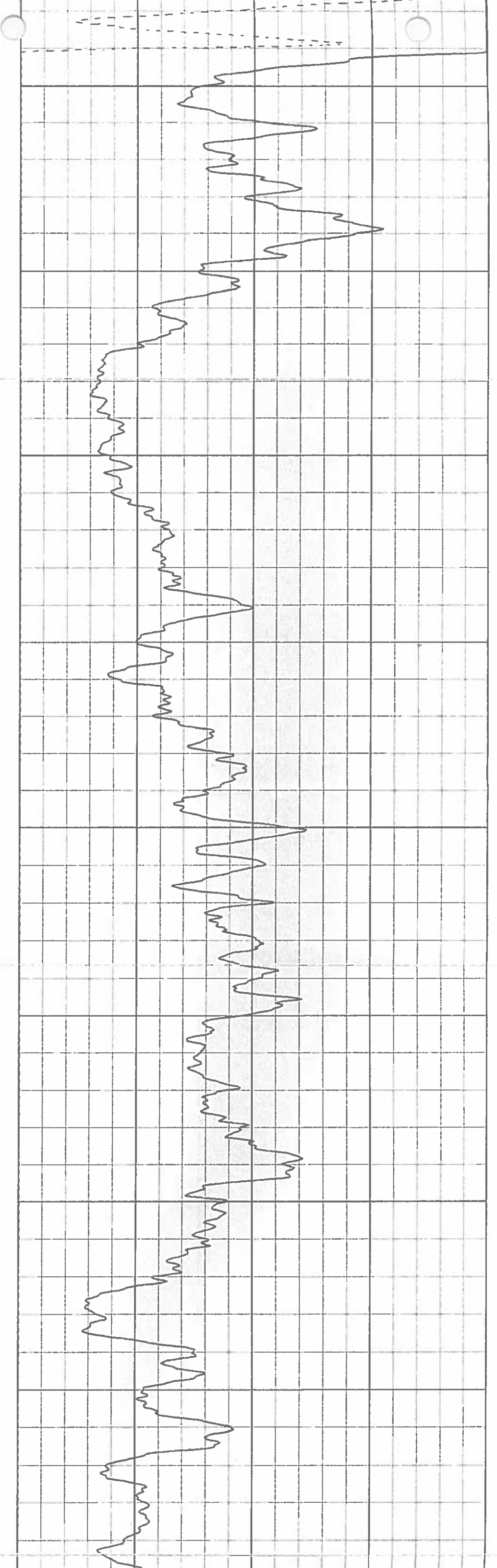
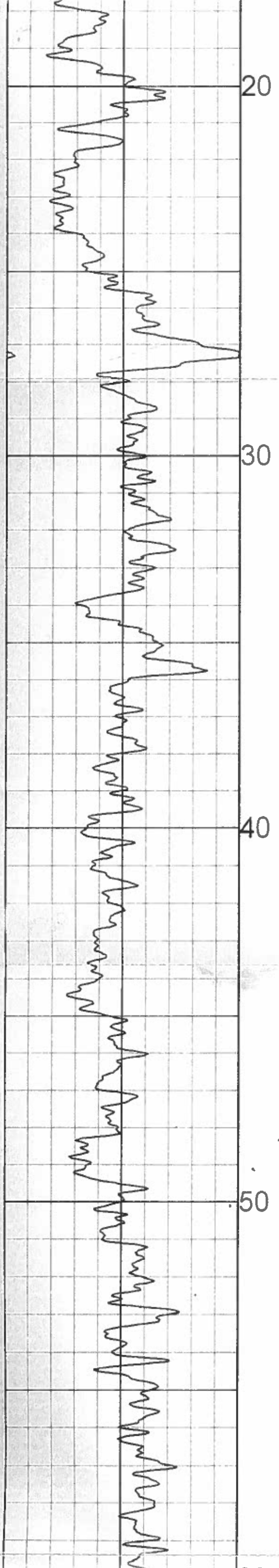
century-geo.com

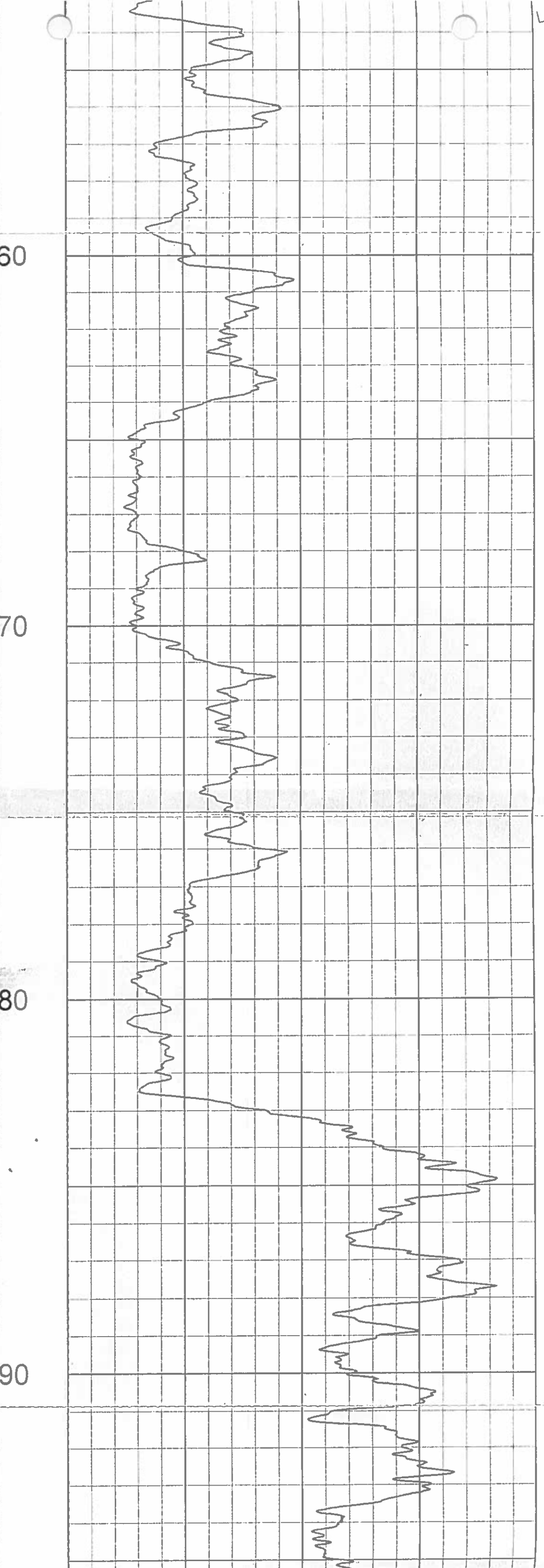
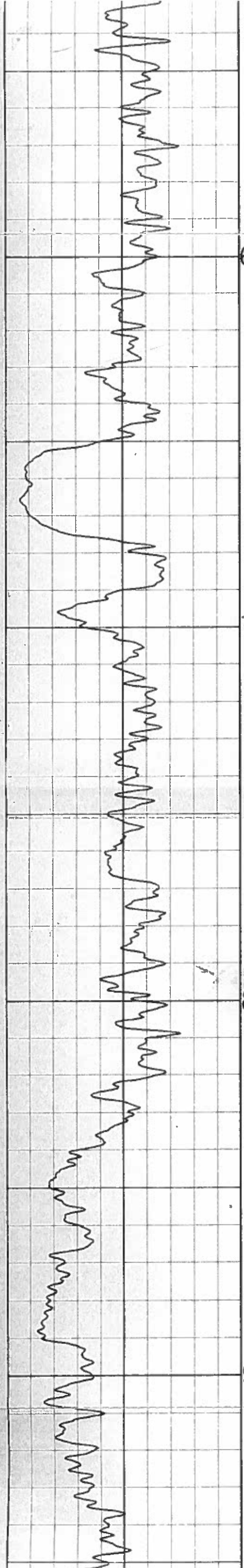
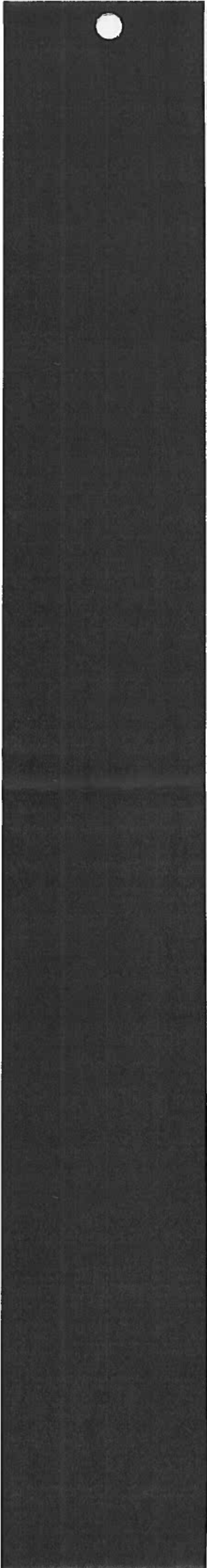
BR2004-22

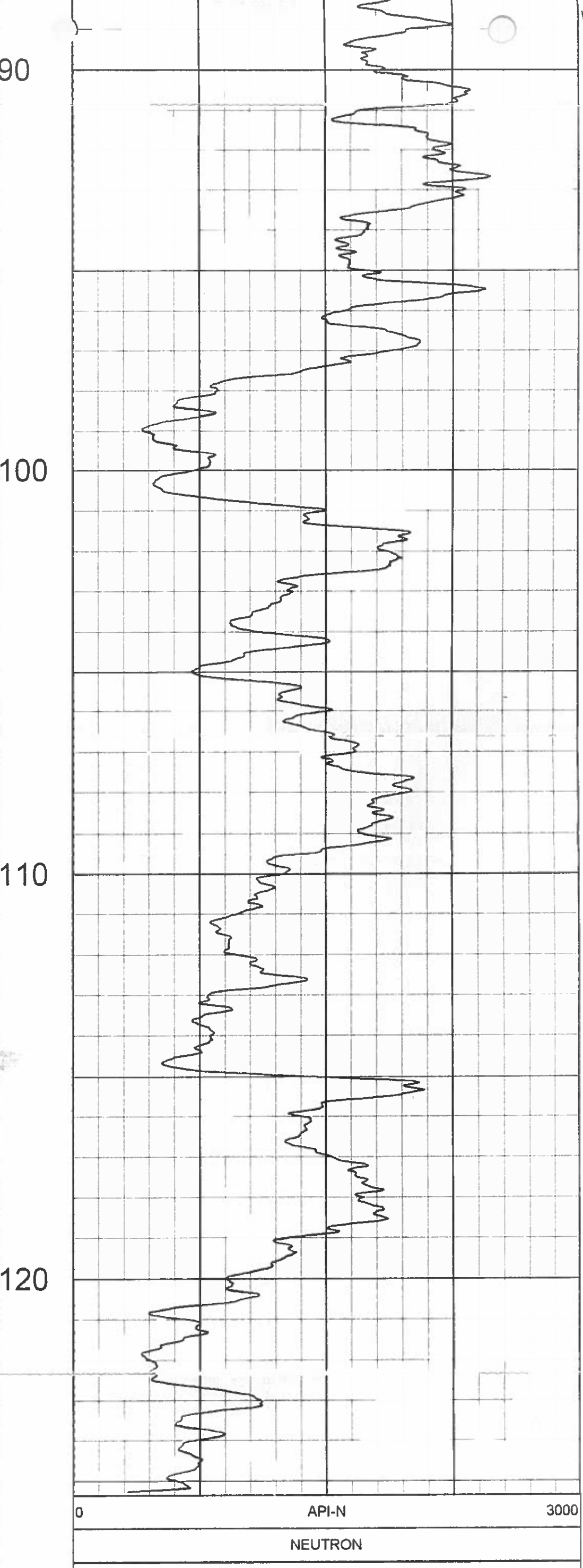
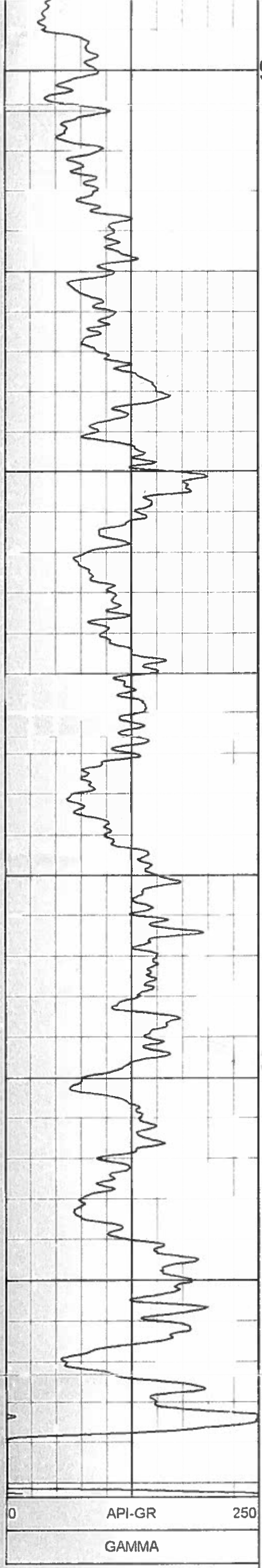
COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES	9033
WELL	BR2004-22		
FIELD	BURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO.			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	08/11/04		
RUN NO	2		
DEPTH DRILLER	128.016		
BIT SIZE	12.1		
LOG TOP	1.87		
LOG BOTTOM	125.31		
CASING OD	14		
CASING BOTTOM	2.134		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R. HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS









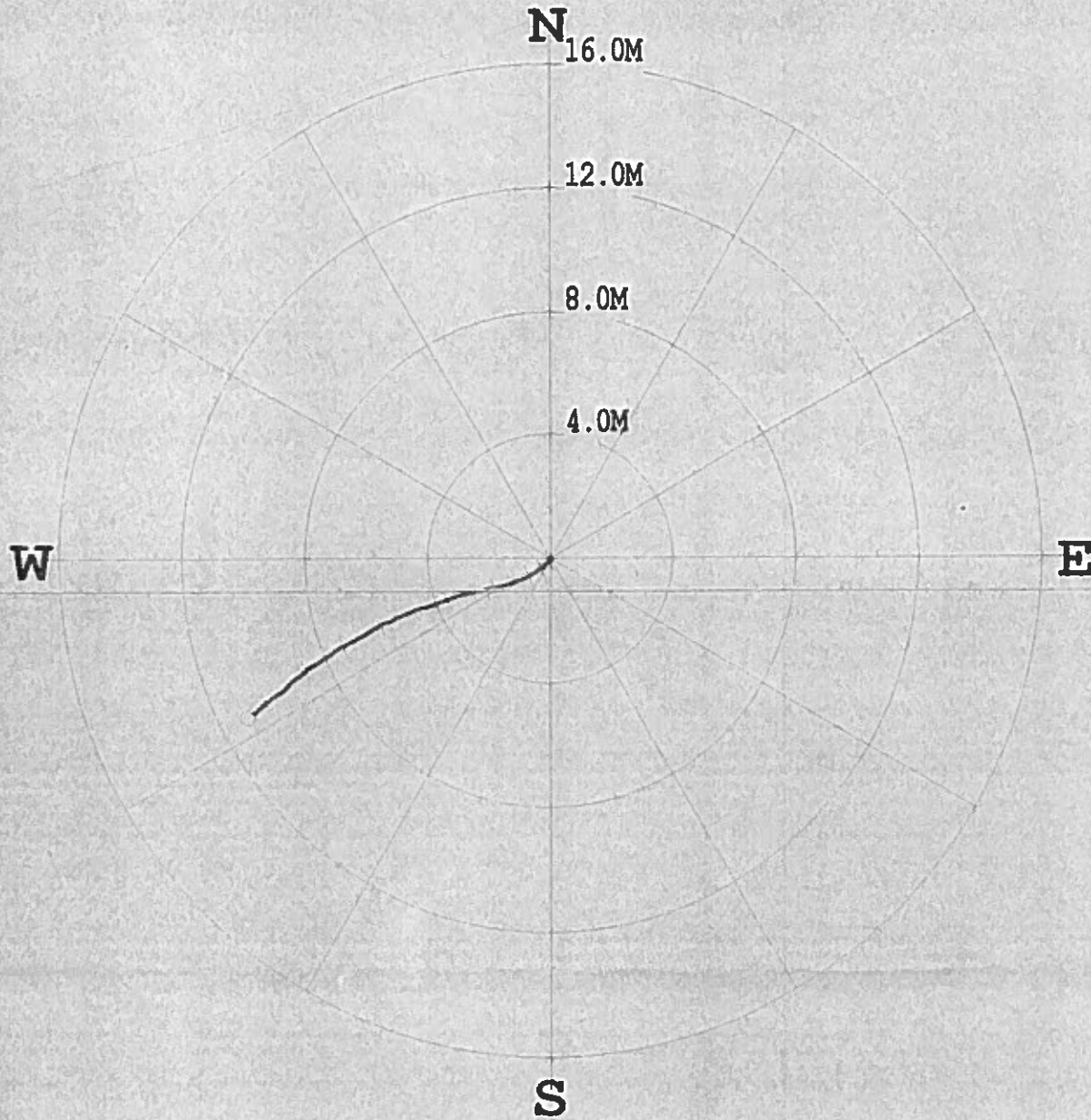
METERS

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004-22
 DATE OF LOG: 08/11/04
 PROBE: 9055A 80

↑
 ↓
 ↗
 ↘
 MAG DECL: 21.6

SCALE: 2 M/CM
 TRUE DEPTH: 124.61 M
 AZIMUTH: 242.9
 DISTANCE: 11.1 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-22
 FIELD OFFICE : DATE OF LOG : 08/11/04
 DATA FROM : PROBE : 9055A , 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-22_08-11-04_10-35_9055A_02_5.00_125.31_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
5.0	4.98	0.00	0.02	0.0	81.0	-999999.0	-999639.0
7.0	6.97	-0.04	0.02	0.0	156.8	1.6	207.8
9.0	8.96	-0.09	-0.01	0.1	187.1	1.8	233.2
11.0	10.96	-0.13	-0.05	0.1	202.0	2.0	233.3
13.0	12.96	-0.17	-0.10	0.2	210.2	1.9	234.0
15.0	14.96	-0.21	-0.15	0.3	216.4	2.6	247.1
17.0	16.96	-0.25	-0.21	0.3	220.4	2.1	236.5
19.0	18.96	-0.29	-0.28	0.4	224.4	2.2	232.3
21.0	20.96	-0.34	-0.34	0.5	225.5	2.2	250.7
23.0	22.96	-0.38	-0.41	0.6	227.0	2.7	245.7
25.0	24.95	-0.44	-0.49	0.7	228.2	2.9	237.2
27.0	26.95	-0.49	-0.57	0.8	229.4	2.6	233.5
29.0	28.95	-0.54	-0.66	0.9	230.5	2.5	221.7
31.0	30.94	-0.59	-0.75	1.0	231.7	3.4	242.7
33.0	32.94	-0.64	-0.86	1.1	233.3	3.6	246.0
35.0	34.94	-0.70	-0.99	1.2	234.8	3.9	248.1
37.0	36.93	-0.75	-1.10	1.3	235.9	3.8	250.1
39.0	38.93	-0.79	-1.22	1.5	237.1	3.4	234.0
41.0	40.92	-0.83	-1.34	1.6	238.2	3.5	262.3

***** COMPU-LOG - VERTICAL DEVIATION *****


CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-22
 FIELD OFFICE : DATE OF LOG : 08/11/04
 DATA FROM : PROBE : 9055A , 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-22_08-11-04_10-35_9055A_02_5.00_125.31_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
5.0	4.98	0.00	0.02	0.0	81.0	-999999.0	-999639.0
7.0	6.97	-0.04	0.02	0.0	156.3	1.6	207.8
9.0	8.96	-0.09	-0.01	0.1	187.1	1.8	233.2
11.0	10.96	-0.13	-0.05	0.1	202.0	2.0	233.3
13.0	12.96	-0.17	-0.10	0.2	210.2	1.9	234.0
15.0	14.96	-0.21	-0.15	0.3	216.4	2.6	247.1
17.0	16.96	-0.25	-0.21	0.3	220.4	2.1	236.5
19.0	18.96	-0.29	-0.28	0.4	224.4	2.2	232.3
21.0	20.96	-0.34	-0.34	0.5	225.5	2.2	250.7
23.0	22.96	-0.38	-0.41	0.6	227.0	2.7	245.7
25.0	24.95	-0.44	-0.49	0.7	228.2	2.9	237.2
27.0	26.95	-0.49	-0.57	0.8	229.4	2.6	233.5
29.0	28.95	-0.54	-0.66	0.9	230.5	2.5	221.7
31.0	30.94	-0.59	-0.75	1.0	231.7	3.4	242.7
33.0	32.94	-0.64	-0.86	1.1	233.3	3.6	246.0
35.0	34.94	-0.69	-0.99	1.2	234.8	3.9	248.1
37.0	36.93	-0.75	-1.10	1.3	235.9	3.8	250.1
39.0	38.93	-0.79	-1.22	1.5	237.1	3.4	234.0
41.0	40.92	-0.83	-1.34	1.6	238.2	3.5	262.3
43.0	42.92	-0.88	-1.46	1.7	239.5	3.4	266.3
45.0	44.92	-0.88	-1.57	1.8	240.7	3.0	261.2
47.0	46.91	-0.91	-1.68	1.9	241.6	2.9	268.3
49.0	48.91	-0.93	-1.79	2.0	242.6	3.0	251.5
51.0	50.91	-0.95	-1.90	2.1	243.4	3.3	261.5
53.0	52.90	-0.98	-2.02	2.2	244.1	3.7	263.8
55.0	54.90	-1.01	-2.15	2.4	244.9	4.1	251.7
57.0	56.89	-1.04	-2.28	2.5	245.5	4.4	264.2
59.0	58.89	-1.06	-2.43	2.7	246.1	4.3	261.9
61.0	60.88	-1.11	-2.59	2.8	246.7	4.7	254.4
63.0	62.88	-1.14	-2.74	3.0	247.4	4.4	248.0
65.0	64.87	-1.18	-2.90	3.1	247.9	4.9	235.0
67.0	66.86	-1.23	-3.07	3.3	248.2	5.1	237.1
69.0	68.85	-1.29	-3.25	3.5	248.3	6.0	260.9
71.0	70.84	-1.36	-3.44	3.7	248.4	6.1	244.5
73.0	72.83	-1.43	-3.63	3.9	248.5	5.9	250.9
75.0	74.82	-1.49	-3.83	4.1	248.7	6.0	270.6
77.0	76.80	-1.57	-4.04	4.3	248.8	7.0	245.1
79.0	78.79	-1.62	-4.27	4.6	249.3	6.8	252.8
81.0	80.78	-1.70	-4.49	4.8	249.3	7.0	238.0
83.0	82.76	-1.78	-4.72	5.0	249.3	6.9	254.6
85.0	84.75	-1.87	-4.94	5.3	249.2	6.5	241.9
87.0	86.73	-1.97	-5.16	5.5	249.0	7.1	255.8
89.0	88.72	-2.05	-5.39	5.8	249.2	7.2	247.3
91.0	90.70	-2.17	-5.62	6.0	248.9	8.5	221.0
93.0	92.68	-2.30	-5.84	6.3	248.5	7.8	231.6
95.0	94.66	-2.45	-6.08	6.6	248.1	7.1	222.2
97.0	96.64	-2.58	-6.33	6.8	247.8	8.2	241.3
99.0	98.62	-2.71	-6.58	7.1	247.6	8.2	242.4
101.0	100.60	-2.83	-6.83	7.4	247.5	8.1	243.1
103.0	102.58	-3.00	-7.06	7.7	247.0	8.4	227.8
105.0	104.55	-3.16	-7.31	8.0	246.6	9.4	240.2

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-22
 FIELD OFFICE : DATE OF LOG : 08/11/04
 DATA FROM : PROBE : 9055A , 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-22_08-11-04_10-35_9055A_02_5.00_125.31_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
107.0	106.53	-3.32	-7.56	8.3	246.3	8.6	242.3
109.0	108.51	-3.46	-7.81	8.5	246.1	8.7	251.8
111.0	110.49	-3.63	-8.03	8.8	245.7	9.0	227.6
113.0	112.46	-3.81	-8.29	9.1	245.3	8.6	255.8
115.0	114.43	-4.00	-8.53	9.4	244.8	9.6	224.3
117.0	116.41	-4.24	-8.78	9.8	244.2	9.6	239.5
119.0	118.38	-4.40	-9.06	10.1	244.1	9.8	217.2
121.0	120.35	-4.60	-9.32	10.4	243.7	9.7	227.0
123.0	122.32	-4.82	-9.58	10.7	243.3	9.7	218.1
125.0	124.29	-5.02	-9.82	11.1	242.9	9.2	229.0
125.3	124.57	-5.05	-9.88	11.1	242.9	9.2	235.3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-24	year drilled: 2004	AREA:
---------------------------	--------------------	--------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,569.87	6,140,348.28	1,275.19

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
35.8	-90	91.60				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	35.8	-90.00
15.00	35.8	-87.40
17.00	35.9	-87.50
19.00	36.1	-87.50
21.00	35.9	-87.30
23.00	34.8	-86.40
25.00	34.9	-86.50
27.00	35.5	-85.60
29.00	36.2	-85.30
31.00	36.9	-84.50
33.00	37.8	-83.80
35.00	38.5	-83.10
37.00	39.0	-82.60
39.00	39.4	-83.20
41.00	39.7	-82.70
43.00	39.6	-82.70
45.00	39.2	-83.00
47.00	39.1	-82.70
49.00	38.8	-82.60
51.00	38.5	-83.00
53.00	38.3	-83.30
55.00	38.2	-83.30
57.00	38.0	-83.00
59.00	37.8	-82.80
61.00	37.7	-83.20
63.00	37.5	-82.50
65.00	37.3	-83.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40		
72.60	76.75	4.15		
82.75	84.20	1.45		

Date issued: Friday, June 06, 2014
 Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-24**

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,666.88	6,140,142.65	572,569.87	6,140,348.28	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
36.4	-90	91.60	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
comments:	Survey NAD83							

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	35.8	-90.00
15.00	35.8	-87.40
17.00	35.9	-87.50
19.00	36.1	-87.50
21.00	35.9	-87.30
23.00	34.8	-86.40
25.00	34.9	-86.50
27.00	35.5	-85.60
29.00	36.2	-85.30
31.00	36.9	-84.50
33.00	37.8	-83.80
35.00	38.5	-83.10
37.00	39.0	-82.60
39.00	39.4	-83.20
41.00	39.7	-82.70
43.00	39.6	-82.70
45.00	39.2	-83.00
47.00	39.1	-82.70
49.00	38.8	-82.60
51.00	38.5	-83.00
53.00	38.3	-83.30
55.00	38.2	-83.30
57.00	38.0	-83.00
59.00	37.8	-82.80
61.00	37.7	-83.20
63.00	37.5	-82.50
65.00	37.3	-83.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40	OB	
6.40	8.55	2.15	SLT	
8.55	11.20	2.65	SSA	
11.20	13.20	2.00	SLT	
13.20	15.10	1.90	SSA	
15.10	18.19	3.09	SS	
18.19	20.10	1.91	SSA	
20.10	22.55	2.45	SS	
22.55	23.25	0.70	SLT	
23.25	25.80	2.55	SSA	
25.80	31.45	5.65	SS	
31.45	37.40	5.95	SSA	
37.40	39.30	1.90	SH	
39.30	44.83	5.53	SLT	
44.83	49.40	4.57	SH	
49.40	50.15	0.75	SLT	
50.15	50.65	0.50	SH	
50.65	56.00	5.35	SLT	
56.00	57.15	1.15	SSA	
57.15	60.75	3.60	SLT	
60.75	62.15	1.40	SH	
62.15	62.60	0.45	C	
62.60	63.00	0.40	P	
63.00	63.60	0.60	C	
63.60	65.58	1.98	SH	
65.58	71.78	6.20	SLT	
71.78	72.60	0.82	SH	
72.60	76.75	4.15	C	C60
76.75	77.50	0.75	P	
77.50	80.00	2.50	C	C60
80.00	82.30	2.30	SH	
82.30	82.55	0.25	C	MD
82.55	82.75	0.20	P	
82.75	84.20	1.45	C	MD

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-24**

year drilled: 2004

AREA:

Burnt River
Brule

67.00	37.1	-83.00
69.00	36.9	-82.90
71.00	36.9	-82.80
73.00	36.7	-82.50
75.00	36.7	-82.80
77.00	36.6	-82.70
79.00	36.5	-82.30
81.00	36.5	-81.80
83.00	36.4	-81.30
85.00	36.4	-81.90
87.00	36.3	-82.60
89.00	36.3	-81.90
91.00	36.4	-81.60
91.60	36.4	-50.00

84.20	85.30	1.10	SH	
85.30	87.60	2.30	SLT	
87.60	89.20	1.60	SH	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2008

Reviewed: October 11, 2002



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River:Brule
DH ID: BR2004-24
BY: R. Brown
DATE: November 11, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	6.40	OB	76.75	77.5	P
6.40	8.55	SLT	77.5	80.0	C60
8.55	11.20	SSA	80.0	82.3	SH
11.20	13.20	SLT	82.3	82.55	MD
13.20	15.10	SSA	82.55	82.75	P
15.10	18.19	SS	82.75	84.2	MD
18.19	20.10	SSA	84.2	85.30	SH
20.10	22.55	SS	85.30	87.60	SLT
22.55	23.25	SLT	87.60	89.20	SH
23.25	25.80	SSA			
25.80	31.45	SS	E.O.H.		
31.45	37.40	SSA			
37.40	39.30	SH			
39.30	44.83	SLT			
44.83	49.40	SH			
49.40	50.15	SLT			
50.15	50.65	SH			
50.65	56.00	SLT			
56.00	57.15	SSA			
57.15	60.75	SLT			
60.75	62.15	SH			
62.15	62.6	C			
62.6	63.0	P			
63.0	63.6	C			
63.6	65.58	SH			
65.58	71.78	SLT			
71.78	72.6	SH			
72.6	76.75	C60			

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE

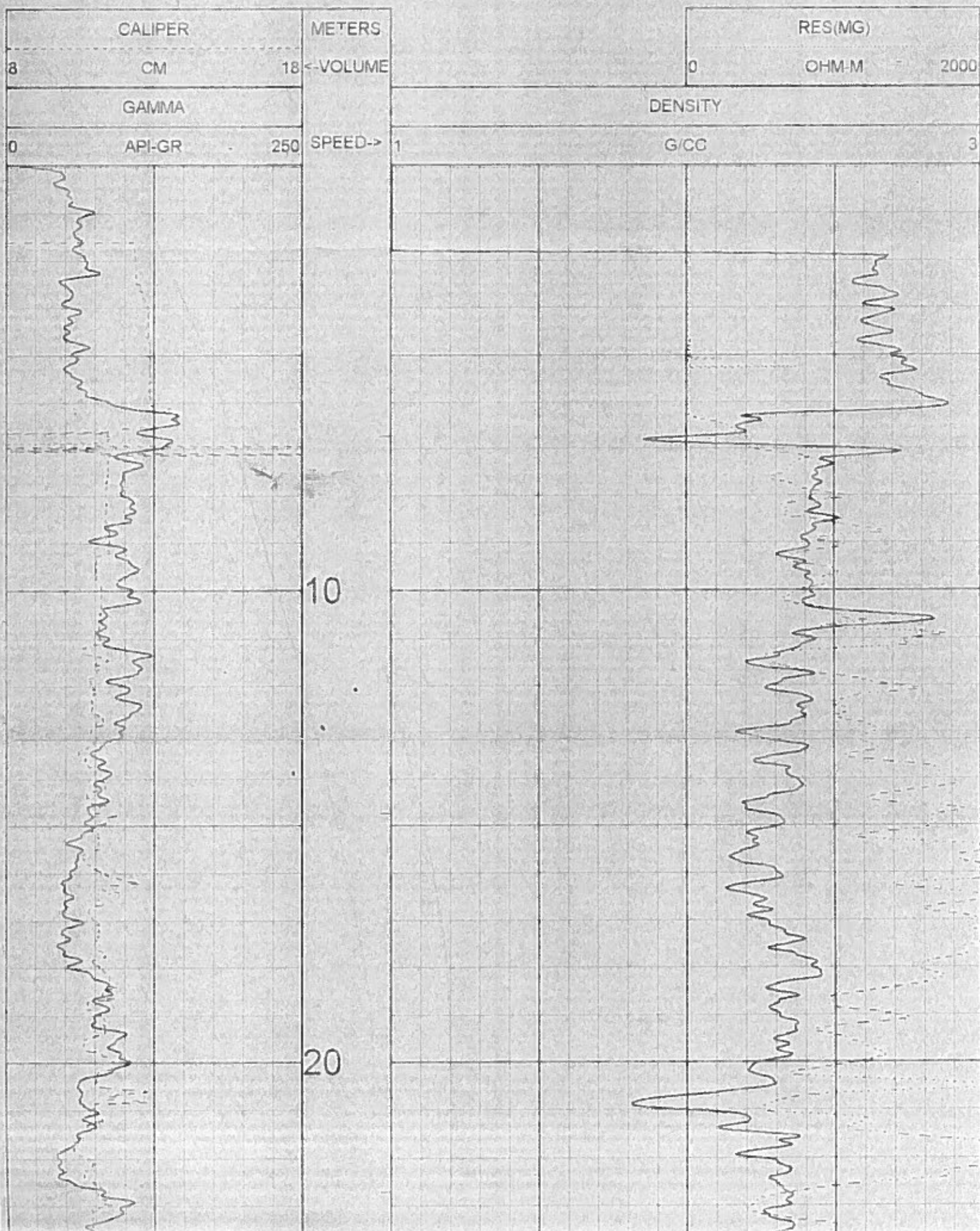
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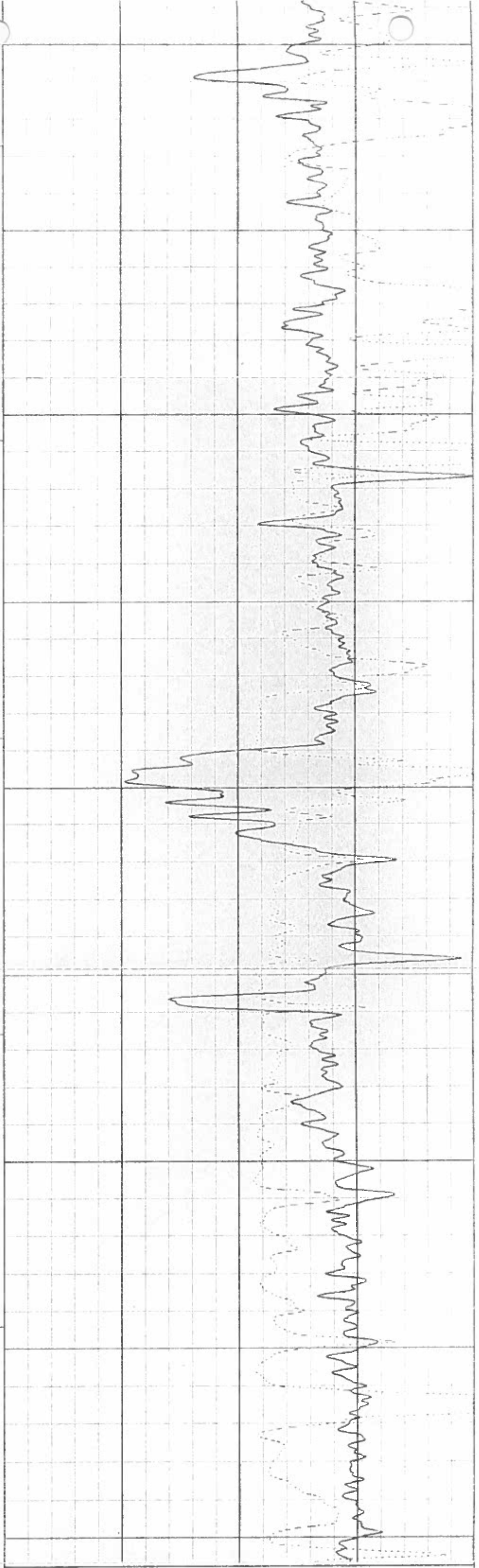
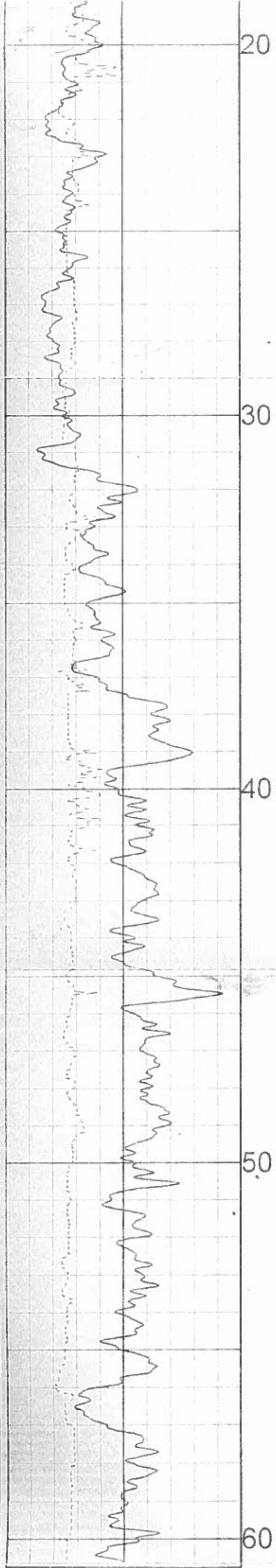
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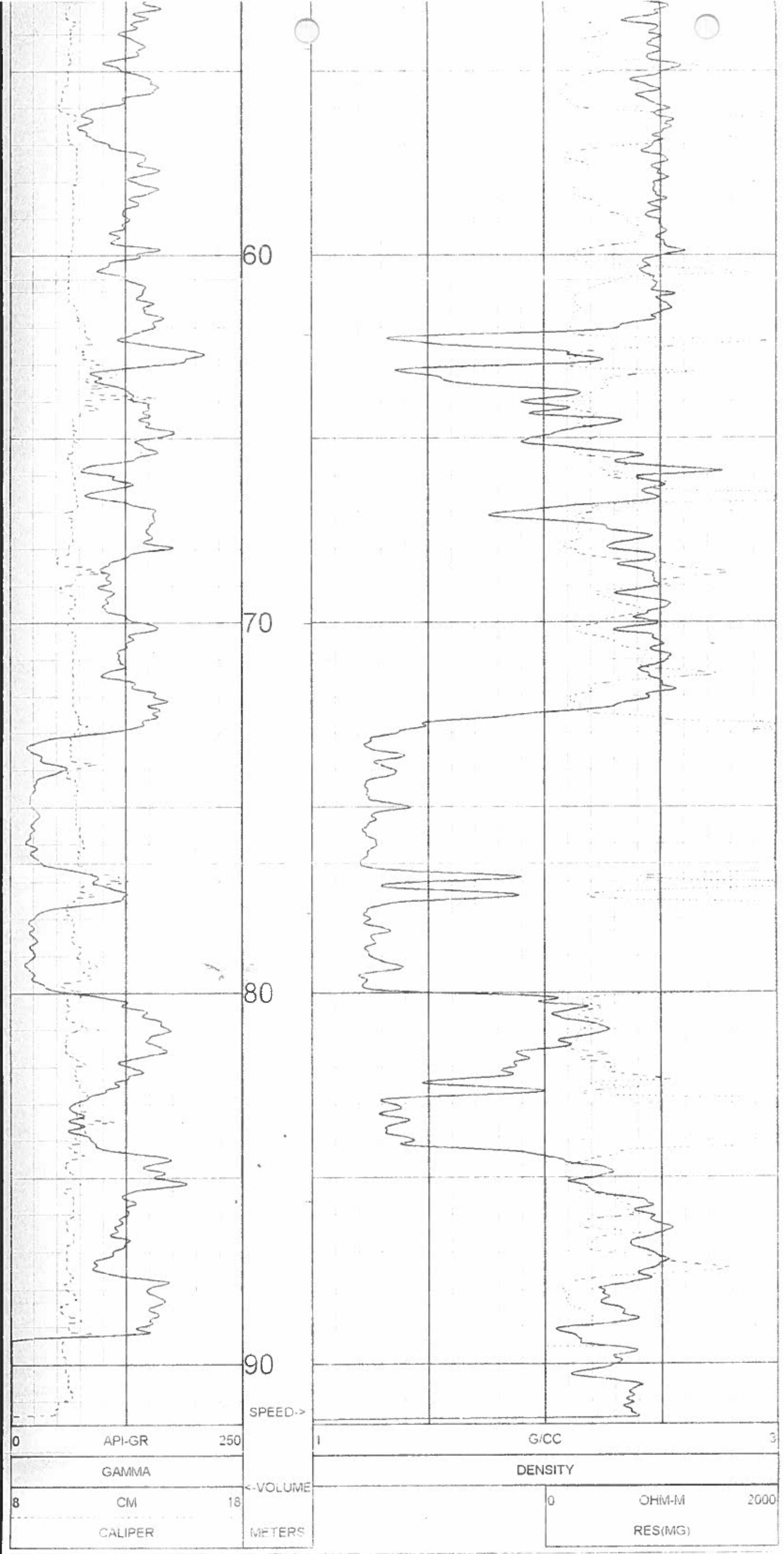
OTHER SERVICES
9055

COMPANY	WESTERN CANADIAN COAL CORP	WELL	BR2004-24
FIELD	BURNT RIVER	MUNICIPALITY	TUMBLER RIDGE
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	09/05/04		
RUN NO	2		
DEPTH DRILLER	94.49		
LOG SIZE	11.43		
LOG TOP	0.94		
LOG BOTTOM	91.50		
CASING OD	14		
CASING BOTTOM	6.40		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







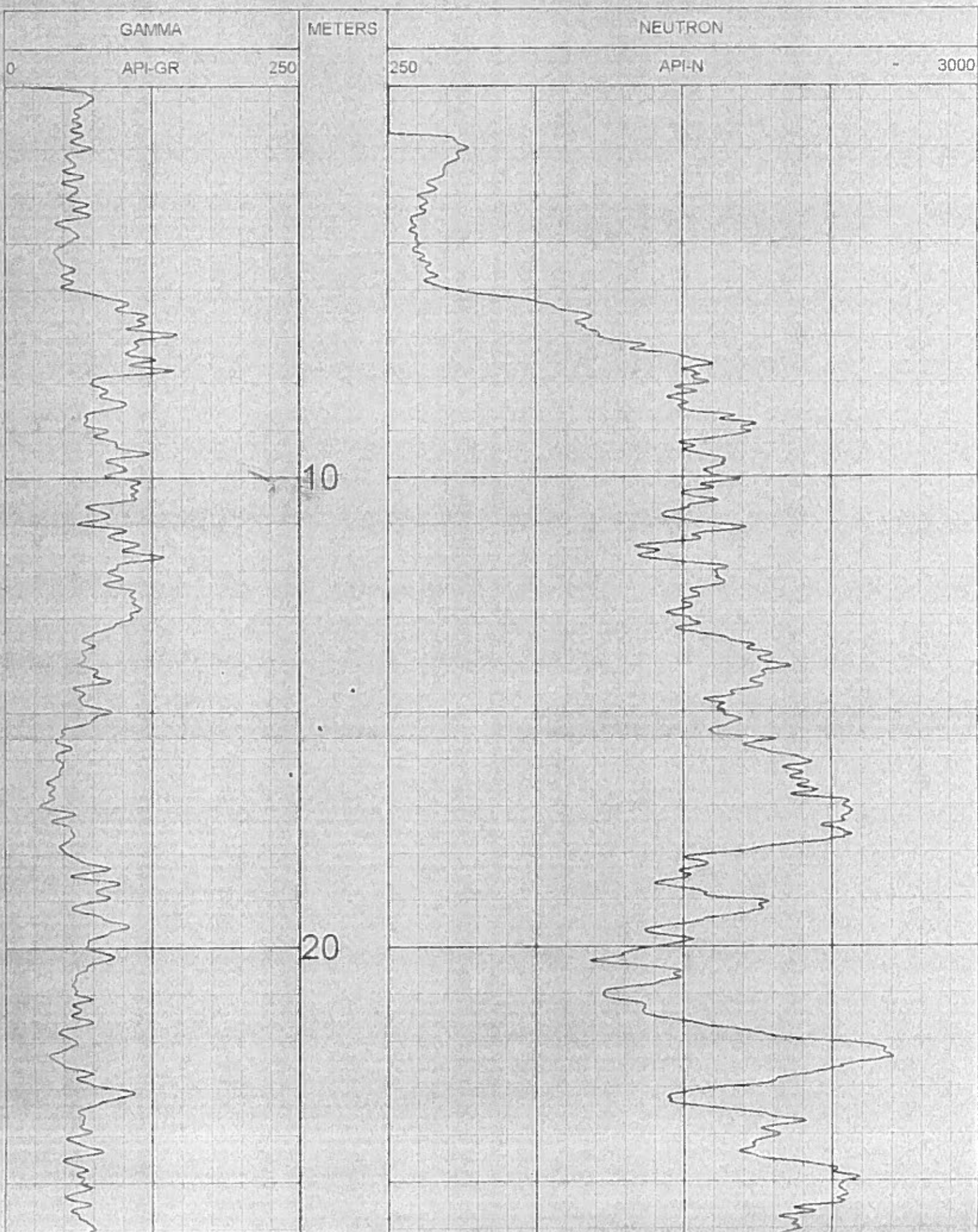
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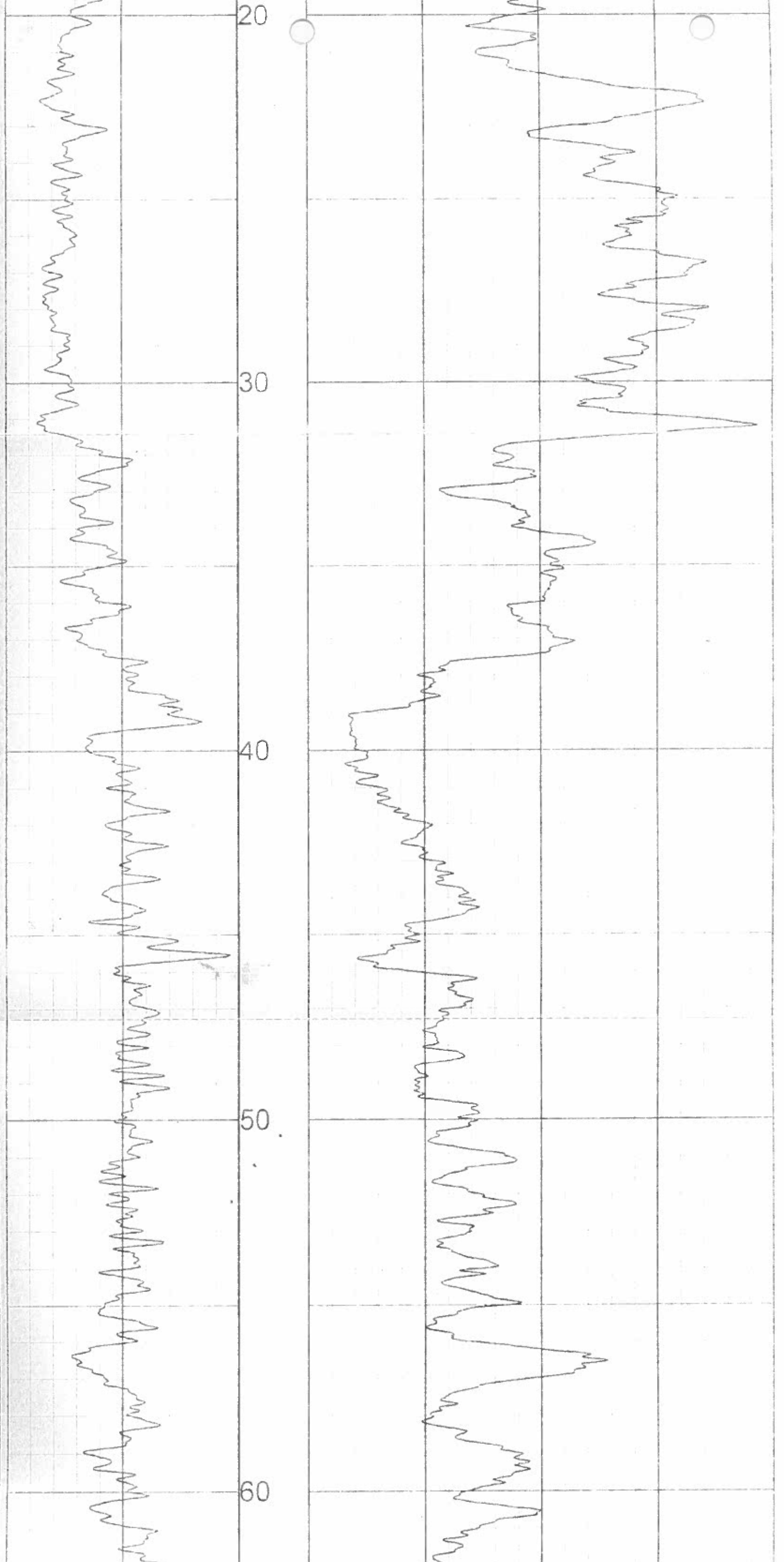
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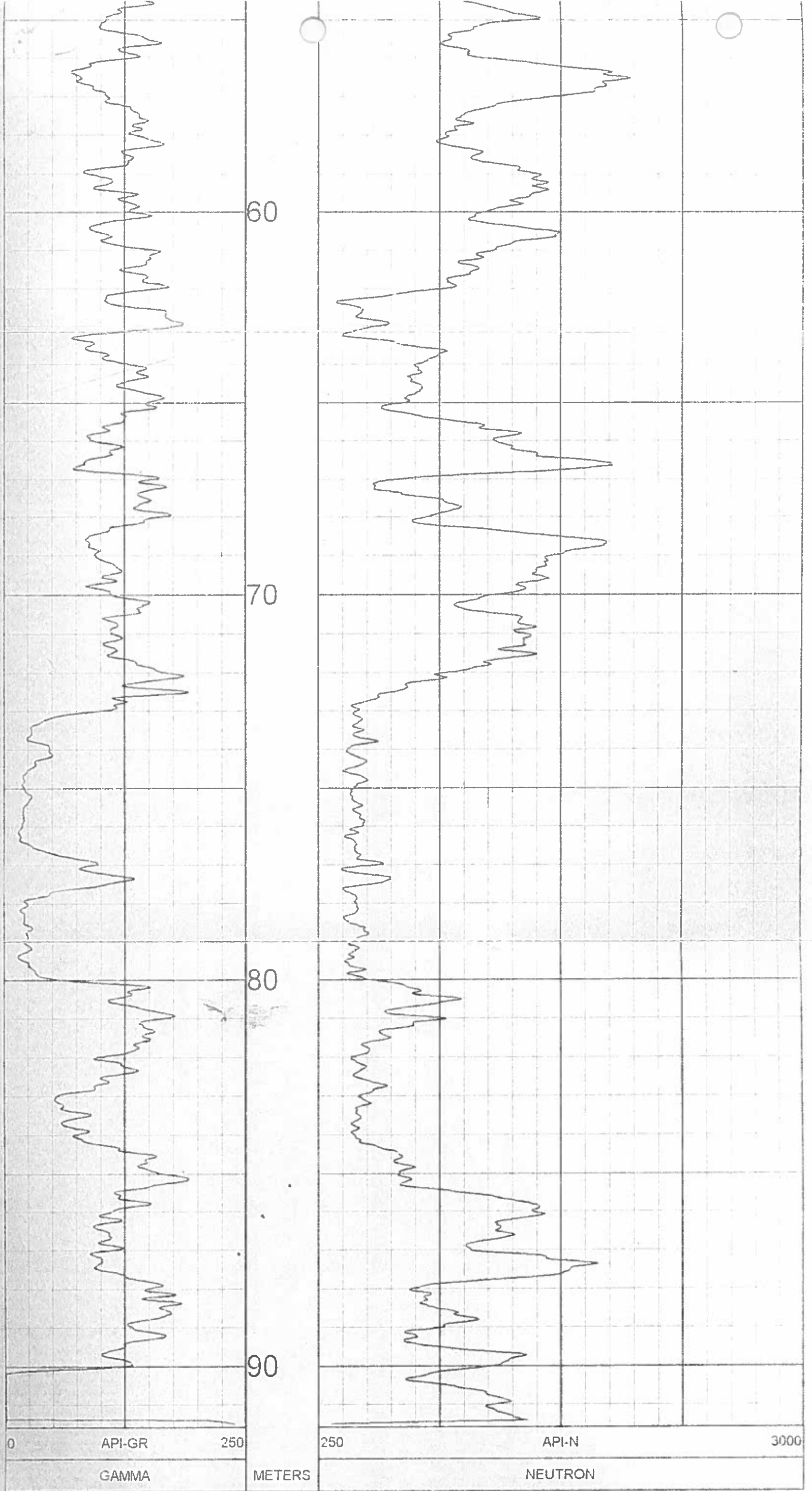
OTHER SERVICES
9033

COMPANY	WESTERN CANADIAN COAL CORP	WELL	BR2004-24
FIELD	BURNT RIVER	MUNICIPALITY	TUMBLER RIDGE
PROVINCE	BRITISH COLUMBIA	LOCATION	
SECTION		TOWNSHIP	
RANGE		API NO	
PERMANENT DATUM	GL	ELEVATION/KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	09/05/04		
RUN NO	1		
DEPTH DRILLER	94.49		
LOG SIZE	11.43		
LOG TOP	1.97		
LOG BOTTOM	91.56		
CASING OD	14		
CASING BOTTOM	6.40		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	RON PARENT		
RECORDED BY	R. HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







0 API-GR 250 250 API-N 3000

GAMMA METERS NEUTRON

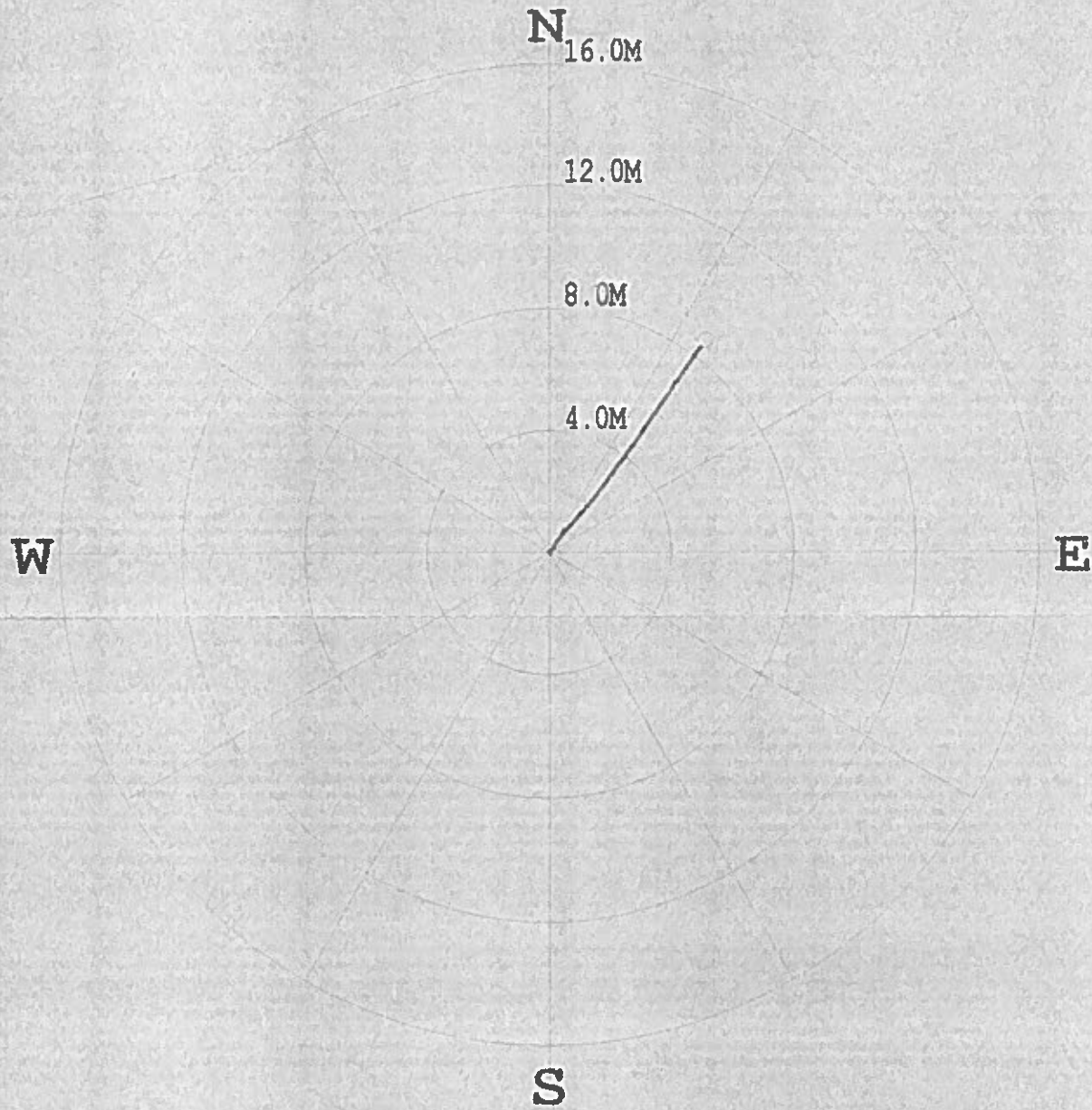
TOOL CALIBRATION BR2004-24 09/05/04 12.22						
TOOL 9055A						
SERIAL NUMBER 80						
	DATE	TIME	SENSOR	STANDARD	RESPONSE	
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	Jul27.04	07:52:42	GAMMA	250 000	[API-GR I	240 00 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOBE ID: BR2004-24
 DATE OF LOG: 09/05/04
 PROBE: 9055A 80

SCALE: 2 M/CM
 TRUE DEPTH: 91.04 M
 AZIMUTH: 36.4
 DISTANCE: 8.6 M
 + = 10 M INCR
 = BOTTOM OF HOLE

MAG DECL: 21.6




COMPU-LOG - VERTICAL DEVIATION

CLIENT : WESTERN CANADIAN CO HOBE ID. : BR2004-24
 FIELD OFFICE : DATE OF LOG : 09/05/04
 DISTN FROM : PROBE : 9055A 80
 MAG. DECL. : 21.6 DEPTH UNITS : METERS
 LOG: BR2004-24 09-05-04 15-24 9055A 02 15.60 51.58 DEVL 10g

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGP
15.0	15.00	0.00	0.00	0.0	32.8	0.0	35.8
17.0	17.00	0.07	0.05	0.1	35.3	1.5	30.7
19.0	19.00	0.14	0.11	0.2	36.1	2.5	22.0
21.0	20.99	0.22	0.15	0.3	35.8	3.5	33.1
23.0	22.99	0.31	0.21	0.4	34.8	3.5	24.1
25.0	24.99	0.40	0.28	0.5	34.3	3.5	29.5
27.0	26.98	0.51	0.37	0.6	35.5	4.4	41.6
29.0	28.98	0.64	0.47	0.8	36.3	4.8	38.3
31.0	30.97	0.78	0.58	1.0	36.9	5.6	32.2
33.0	32.96	0.93	0.72	1.2	37.6	6.2	39.8
35.0	34.95	1.09	0.87	1.4	38.5	6.9	43.7
37.0	36.94	1.27	1.04	1.6	39.0	7.4	46.8
39.0	38.93	1.46	1.23	1.9	39.4	6.9	46.8
41.0	40.92	1.64	1.46	2.1	39.9	7.3	40.6
43.0	42.91	1.83	1.72	2.4	40.3	7.8	36.4
45.0	44.90	2.01	1.97	2.6	39.2	7.0	34.1
47.0	46.89	2.24	2.24	2.9	39.1	7.3	36.7
49.0	48.88	2.44	2.54	3.1	38.8	8.4	33.5
51.0	50.87	2.68	2.81	3.4	38.5	7.0	35.3
53.0	52.86	2.95	3.09	3.8	38.3	6.7	36.2

CLIENT : WESTERN CANADIAN OIL & GAS LTD. : BR2004-24
 FIELD OFFICE : DATE LOG : 09/05/04
 DATA FROM : FILE : 9075A : 88
 MAG. DECL. : 51.000 DEPTH UNITS : METERS
 LOG: BR2004-24_09-05-04_11-11.WETA_02.13.00_01.50.LEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANG
15.0	15.00	0.00	0.00	0.0	35.9	2.0	35.8
17.0	17.00	0.00	0.00	0.1	35.9	2.5	35.7
19.0	19.00	0.14	0.11	0.2	36.1	3.0	35.5
21.0	20.99	0.28	0.15	0.3	35.9	3.5	35.3
23.0	22.99	0.41	0.21	0.4	34.8	4.0	35.1
25.0	24.99	0.50	0.28	0.5	34.9	4.5	34.9
27.0	26.99	0.51	0.37	0.6	35.5	4.1	34.8
29.0	28.99	0.54	0.47	0.7	36.2	4.4	34.7
31.0	30.99	0.78	0.58	1.0	35.9	5.0	34.5
33.0	32.98	0.97	0.72	1.2	37.8	5.2	34.5
35.0	34.98	1.09	0.87	1.4	38.3	5.8	34.3
37.0	36.97	1.27	1.03	1.6	39.0	6.4	34.2
39.0	38.96	1.46	1.19	1.9	39.4	7.0	34.1
41.0	40.95	1.64	1.36	2.1	39.7	7.6	34.0
43.0	42.94	1.84	1.52	2.4	39.6	8.2	33.9
45.0	44.93	2.04	1.67	2.6	39.2	8.8	33.8
47.0	46.92	2.24	1.82	2.9	39.1	9.4	33.7
49.0	48.91	2.44	1.97	3.1	38.3	10.0	33.5
51.0	50.90	2.65	2.11	3.4	38.8	10.6	33.4
53.0	52.89	2.85	2.26	3.7	39.4	11.2	33.2
55.0	54.88	3.04	2.40	4.0	39.7	11.8	33.1
57.0	56.87	3.24	2.55	4.3	39.7	12.4	33.0
59.0	58.86	3.44	2.70	4.6	39.5	13.0	32.9
61.0	60.85	3.63	2.85	4.9	39.5	13.6	32.8
63.0	62.84	3.83	3.00	5.2	39.5	14.2	32.7
65.0	64.83	4.04	3.15	5.5	39.3	14.8	32.6
67.0	66.82	4.24	3.30	5.8	39.1	15.4	32.5
69.0	68.81	4.45	3.44	6.1	38.6	16.0	32.4
71.0	70.80	4.65	3.59	6.4	38.9	16.6	32.4
73.0	72.79	4.85	3.72	6.7	38.7	17.2	32.3
75.0	74.78	5.06	3.86	7.0	38.7	17.8	32.2
77.0	76.77	5.28	4.01	7.3	38.6	18.4	32.1
79.0	78.76	5.48	4.16	7.6	38.5	19.0	32.0
81.0	80.75	5.69	4.31	7.9	38.3	19.6	31.9
83.0	82.74	5.90	4.45	8.2	38.3	20.2	31.8
85.0	84.73	6.10	4.60	8.5	38.4	20.8	31.7
87.0	86.72	6.41	4.71	8.8	38.3	21.4	31.6
89.0	88.71	6.64	4.83	9.1	38.3	22.0	31.5
91.0	90.70	6.87	4.95	9.4	38.4	22.6	31.4
91.6	91.00	6.93	5.11	9.5	37.4	22.7	40.0

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-25	year drilled: 2004	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,407.88	6,140,345.15	1,267.30

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
103	-90	85.50				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	103.0	-90.00
15.00	103.0	-87.00
17.00	103.7	-87.20
19.00	96.9	-87.20
21.00	106.4	-87.50
23.00	103.4	-87.50
25.00	100.1	-87.10
27.00	100.8	-87.60
29.00	97.6	-87.30
31.00	102.1	-87.40
33.00	106.7	-87.20
35.00	105.6	-87.40
37.00	102.1	-87.40
39.00	102.0	-87.40
41.00	105.9	-87.30
43.00	107.4	-86.80
45.00	114.3	-87.60
47.00	115.9	-87.40
49.00	112.6	-87.50
51.00	100.7	-87.60
53.00	107.4	-86.50
55.00	124.6	-87.80
57.00	125.6	-87.70
59.00	126.1	-88.00
61.00	123.8	-88.10
63.00	131.6	-87.90
65.00	122.4	-88.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40		
30.00	33.00	3.00		
34.10	34.70	0.60		
75.28	75.80	0.52		

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 2



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-25

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,504.89	6,140,139.52	572,407.88	6,140,345.15	1,267.30

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MMDD/YY)
118	-90	85.50	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

comments: Survey NAD83

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	103.0	-90.00
15.00	103.0	-87.00
17.00	103.7	-87.20
19.00	96.9	-87.20
21.00	106.4	-87.50
23.00	103.4	-87.50
25.00	100.1	-87.10
27.00	100.8	-87.60
29.00	97.6	-87.30
31.00	102.1	-87.40
33.00	106.7	-87.20
35.00	105.6	-87.40
37.00	102.1	-87.40
39.00	102.0	-87.40
41.00	105.9	-87.30
43.00	107.4	-86.80
45.00	114.3	-87.60
47.00	115.9	-87.40
49.00	112.6	-87.50
51.00	100.7	-87.60
53.00	107.4	-86.50
55.00	124.6	-87.80
57.00	125.6	-87.70
59.00	126.1	-88.00
61.00	123.8	-88.10
63.00	131.6	-87.90
65.00	122.4	-88.10


LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.40	6.40	OB	
6.40	7.50	1.10	SSA	
7.50	12.85	5.35	SLT	
12.85	14.00	1.15	SH	
14.00	15.65	1.65	SLT	
15.65	18.10	2.45	SH	
18.10	19.20	1.10	SLT	
19.20	20.00	0.80	SH	
20.00	21.00	1.00	SLT	
21.00	23.10	2.10	SH	
23.10	26.90	3.80	SLT	
26.90	28.00	1.10	SH	
28.00	28.50	0.50	SLT	
28.50	30.00	1.50	SH	
30.00	33.00	3.00	C	C60
33.00	34.10	1.10	SH	
34.10	34.70	0.60	C	MD
34.70	46.75	12.05	SH	
46.75	48.18	1.43	SLT	
48.18	50.40	2.22	SS	
50.40	57.58	7.18	SLT	
57.58	59.60	2.02	SH	
59.60	62.40	2.80	SLT	
62.40	63.30	0.90	SH	
63.30	65.00	1.70	SLT	
65.00	65.90	0.90	SH	
65.90	66.30	0.40	C	R1
66.30	69.80	3.50	SH	
69.80	70.25	0.45	SLT	
70.25	74.00	3.75	SH	
74.00	75.20	1.20	SSA	
75.20	75.80	0.60	C	R2
75.80	83.40	7.60	SH	

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Page 1 of 2

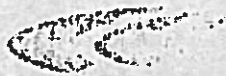
 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-25	year drilled: 2004	AREA: Burnt River Brule
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67.00	131.9	-88.10
69.00	157.1	-87.60
71.00	140.5	-87.60
73.00	124.8	-87.70
75.00	141.6	-88.20
77.00	141.0	-86.40
79.00	147.1	-87.50
81.00	144.7	-87.60
83.00	147.1	-87.70
85.00	156.3	-87.80
85.30	150.1	-87.80

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006
 Reviewed: October 11, 2002



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Bude
DH ID: BK2004-25
BY: R. Brown
DATE: November 15, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	6.40	OB	69.8	70.25	SLT
6.40	7.50	SSA	70.25	74.00	SH
7.50	12.85	SLT	74.00	75.20	SSA
12.85	14.00	SH	75.20	75.80	R2
14.00	15.65	SLT	75.80	83.40	SH
15.65	18.10	SH			
18.10	19.20	SLT			
19.20	20.00	SH			
20.00	21.00	SLT			
21.00	23.10	SH			
23.10	26.90	SLT			
26.90	28.00	SH			
28.00	28.50	SLT			
28.50	30.00	SH			
30.00	33.00	C60			
33.00	34.10	SH			
34.10	34.70	MD			
34.70	46.75	SH			
46.75	48.18	SLT			
48.18	50.4	SS			
50.4	57.58	SLT			
57.58	59.60	SH			
59.60	62.40	SLT			
62.40	63.30	SH			
63.30	65.00	SLT			
65.00	65.9	SH			
65.9	66.3	R1			
66.3	69.8	SH			

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



GAMMA - NEUTRON

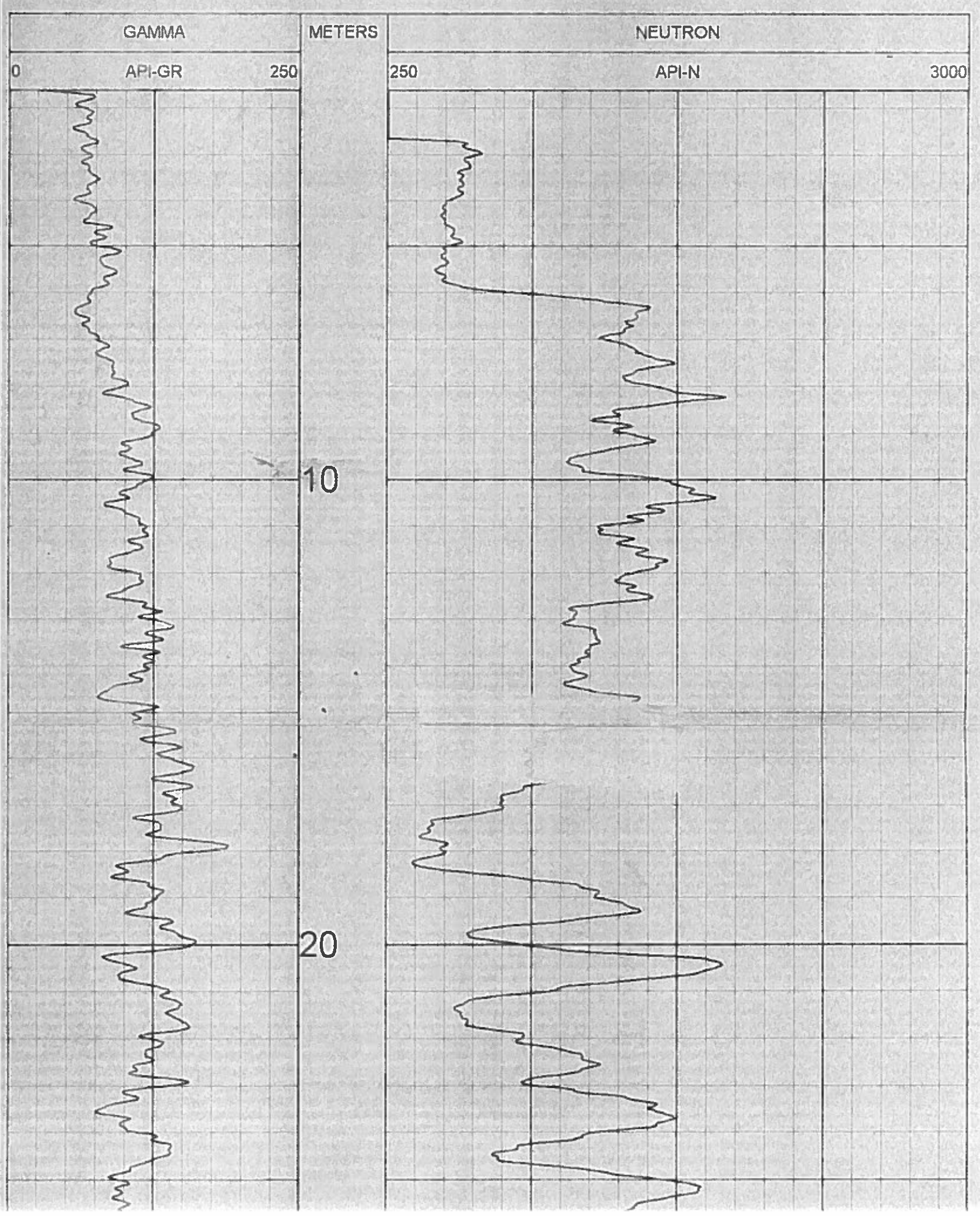
century-geo.com

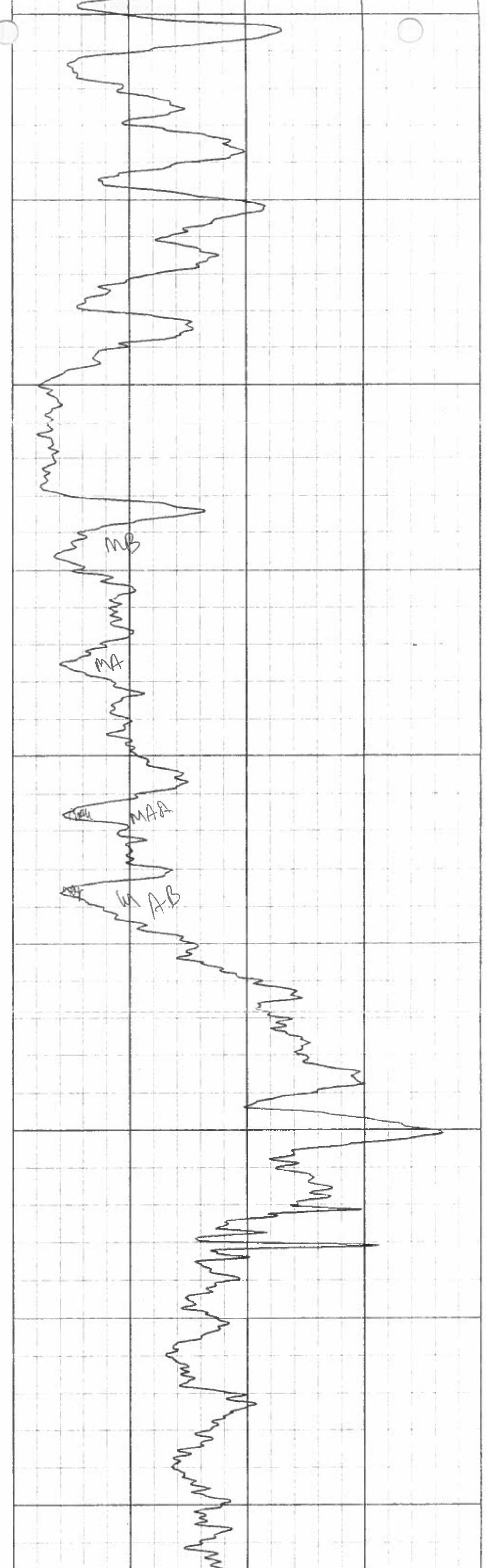
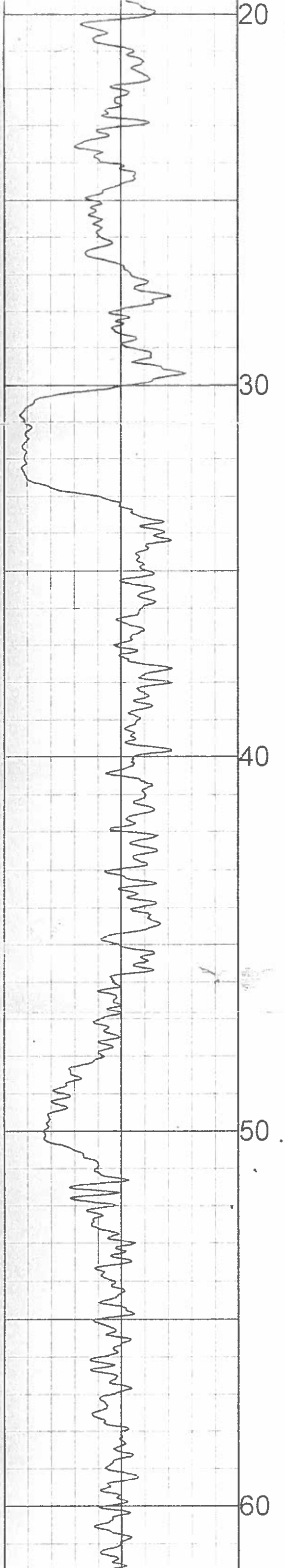
BR2004-25

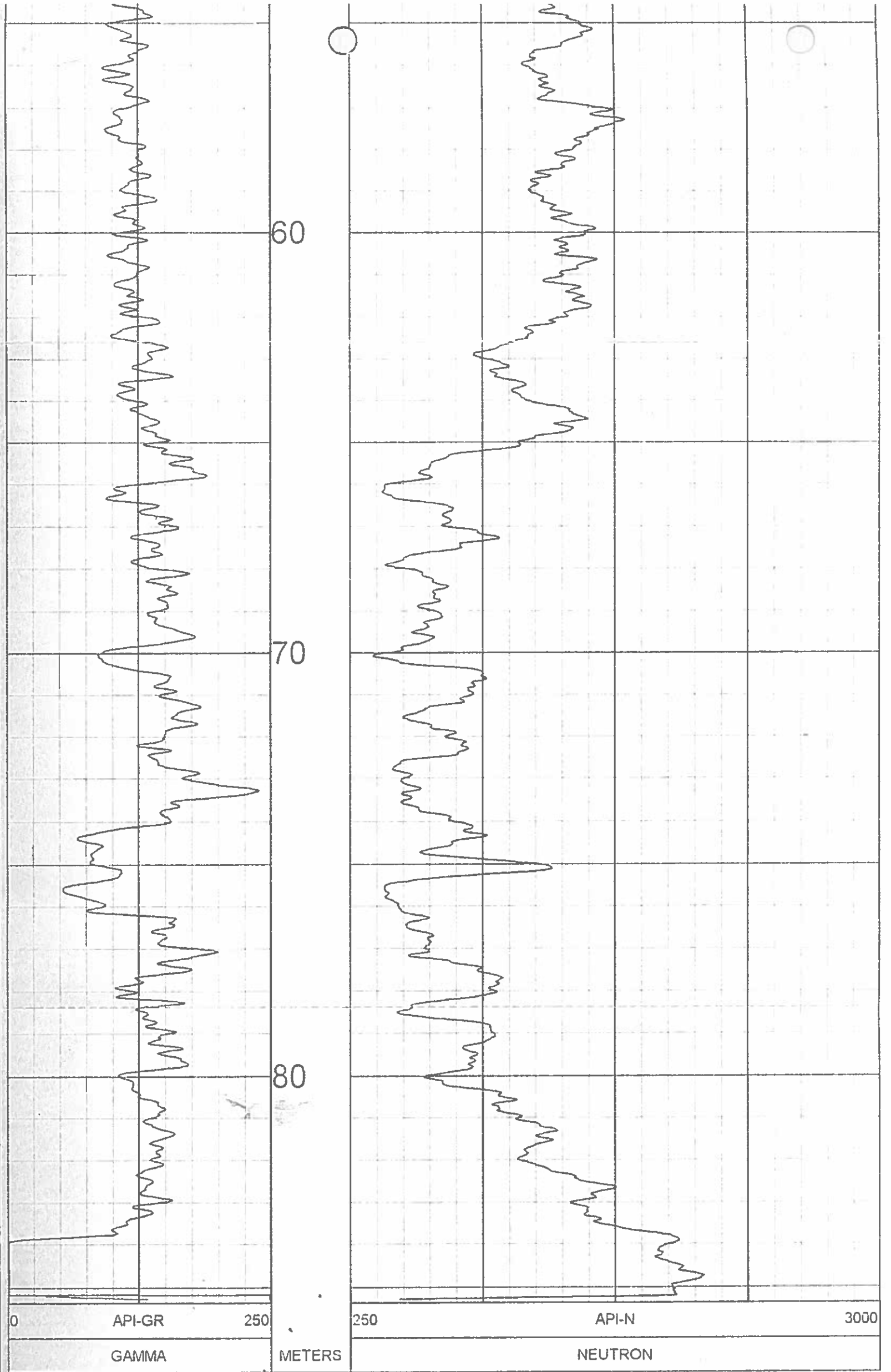
OTHER SERVICES
9033

COMPANY	WESTERN CANADIAN COAL CORP
WELL	BR2004-25
FIELD	BURNT RIVER
MUNICIPALITY	TUMBLER RIDGE
PROVINCE	BRITISH COLUMBIA
LOCATION	
SECTION	
TOWNSHIP	
RANGE	
API NO	
UNIQUE WELL ID	
PERMANENT DATUM	GL
LOG MEASURED FROM	GL
DIR. MEASURED FROM	GL
DATE	09/05/04
RUNNO	1
DEPTH DRILLER	88 392
LOG SIZE	12 1
LOG TOP	1 61
LOG BOTTOM	85 33
CASING OD	14
CASING BOTTOM	6 401
CASING TYPE	STEEL
BOREHOLE FLUID	WATER
RM TEMPERATURE	
MUD RES	
WITNESSED BY	RON PARENT
RECORDED BY	R HECK
REMARKS 1	
REMARKS 2	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004-25 09/05/04 13:40

TOOL 9055A

SERIAL NUMBER 80

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRO	271.000 [API-N]	185.00 [CPS]
6	Feb20,02	17:17:55	TEMP	51.000 [DEG F]	1104.00 [CPS]
	Feb20,02	17:17:55	TEMP	95.200 [DEG F]	450.00 [CPS]



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GAMMA - DENSITY (CPS) (THROUGH RODS)

BR2004-25

OTHER SERVICES
9055

COMPANY

WESTERN CANADIAN COAL CORP

WELL

BR2004-25

FIELD

BURNT RIVER

MUNICIPALITY

TUMBLER RIDGE

PROVINCE

BRITISH COLUMBIA

LOCATION

SECTION

TOWNSHIP

RANGE

API NO

UNIQUE WELL ID

PERMANENT DATUM

LOG MEASURED FROM

DRL MEASURED FROM

DATE

RUN NO

DEPTH DRILLER

LOG TOP

LOG BOTTOM

CASING OD

CASING BOTTOM

CASING TYPE

BOREHOLE FLUID

RM TEMPERATURE

MUD RES

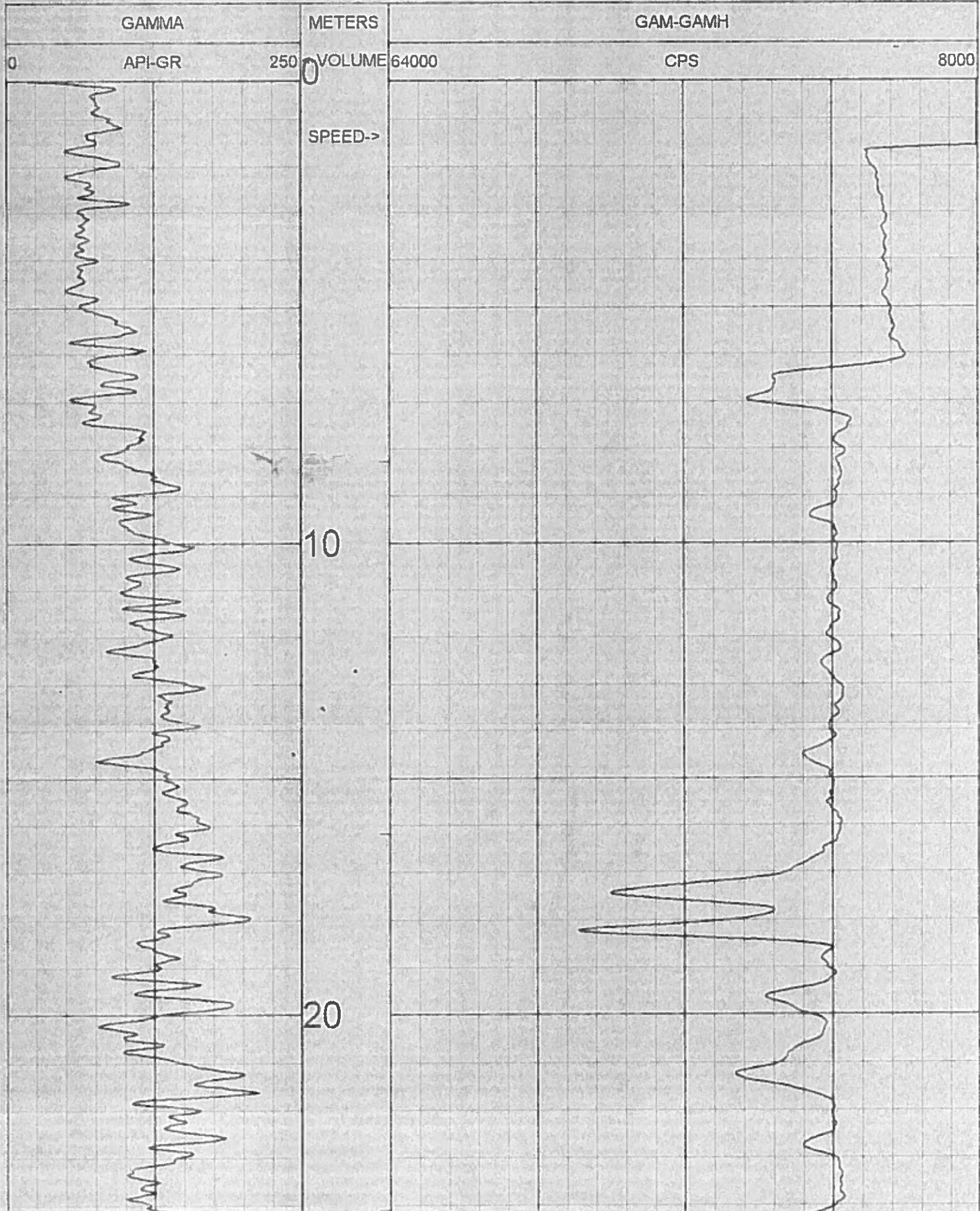
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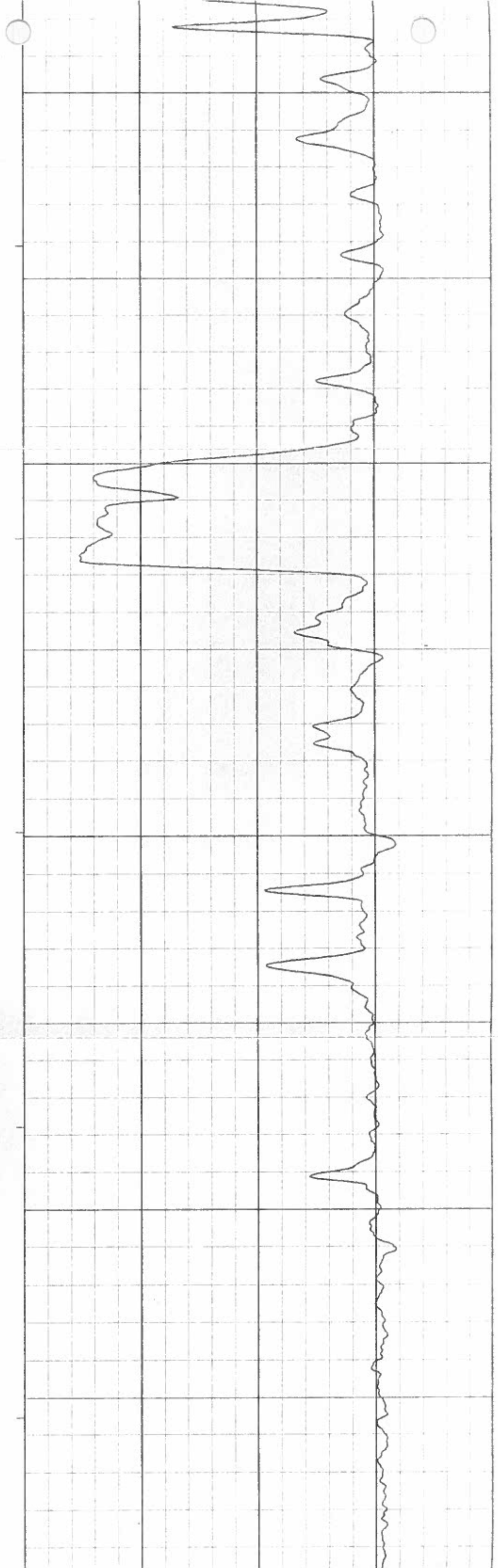
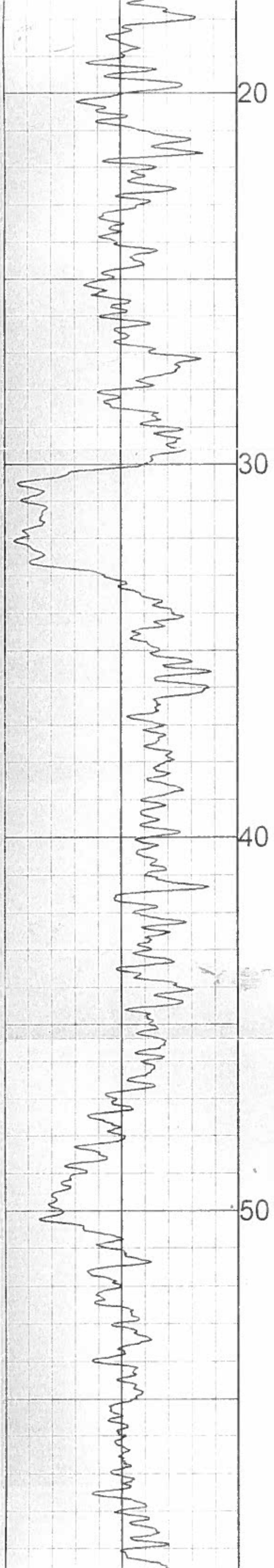
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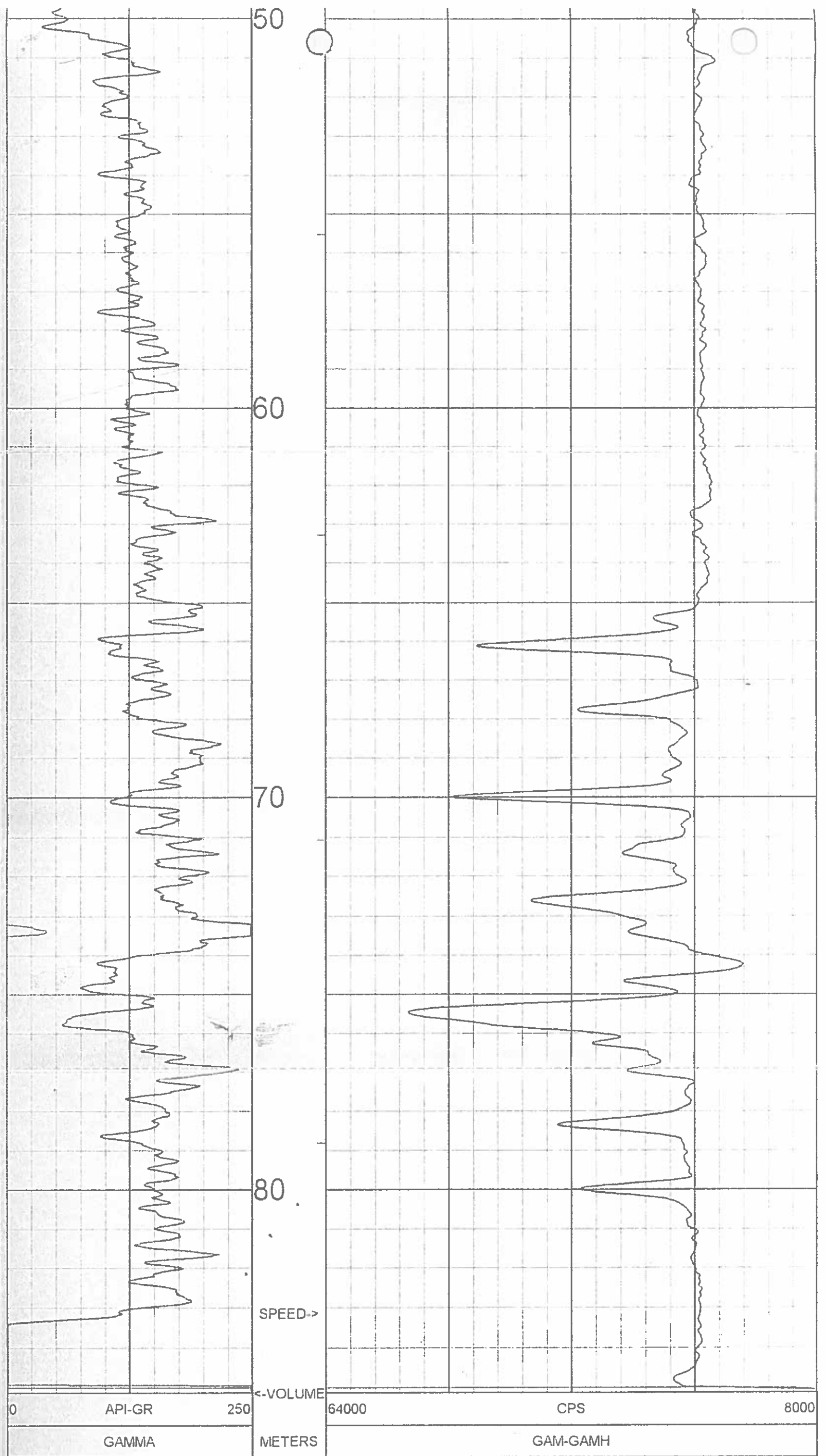
REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004-25 09/05/04 14:04
 TOOL 9068A
 SERIAL NUMBER 643

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jun29 04	02:14:02	GAMMA	3.000 [API-GR]	1.00 [CPS]
	Jun29,04	02:14:02	GAMMA	265.000 [API-GR]	81.00 [CPS]



GAMMA - DENSITY

century-geo.com

BR2004-25

COMPANY : WESTERN CANADIAN COAL CORP

WELL : BR2004-25

FIELD : BURNT RIVER

MUNICIPALITY : TUMBLER RIDGE

PROVINCE : BRITISH COLUMBIA

OTHER SERVICES
9065
9068

LOCATION

SECTION

TOWNSHIP

RANGE

API NO

UNIQUE WELL ID

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

ORL MEASURED FROM : GL

DATE : 09/05/04

DEPTH DRILLER : 88.392

BIT SIZE : 12.1

LOG TOP : 0.82

LOG BOTTOM : 64.02

CASING OD : 14

CASING BOTTOM : 6.401

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

BM TEMPERATURE

MUD RES

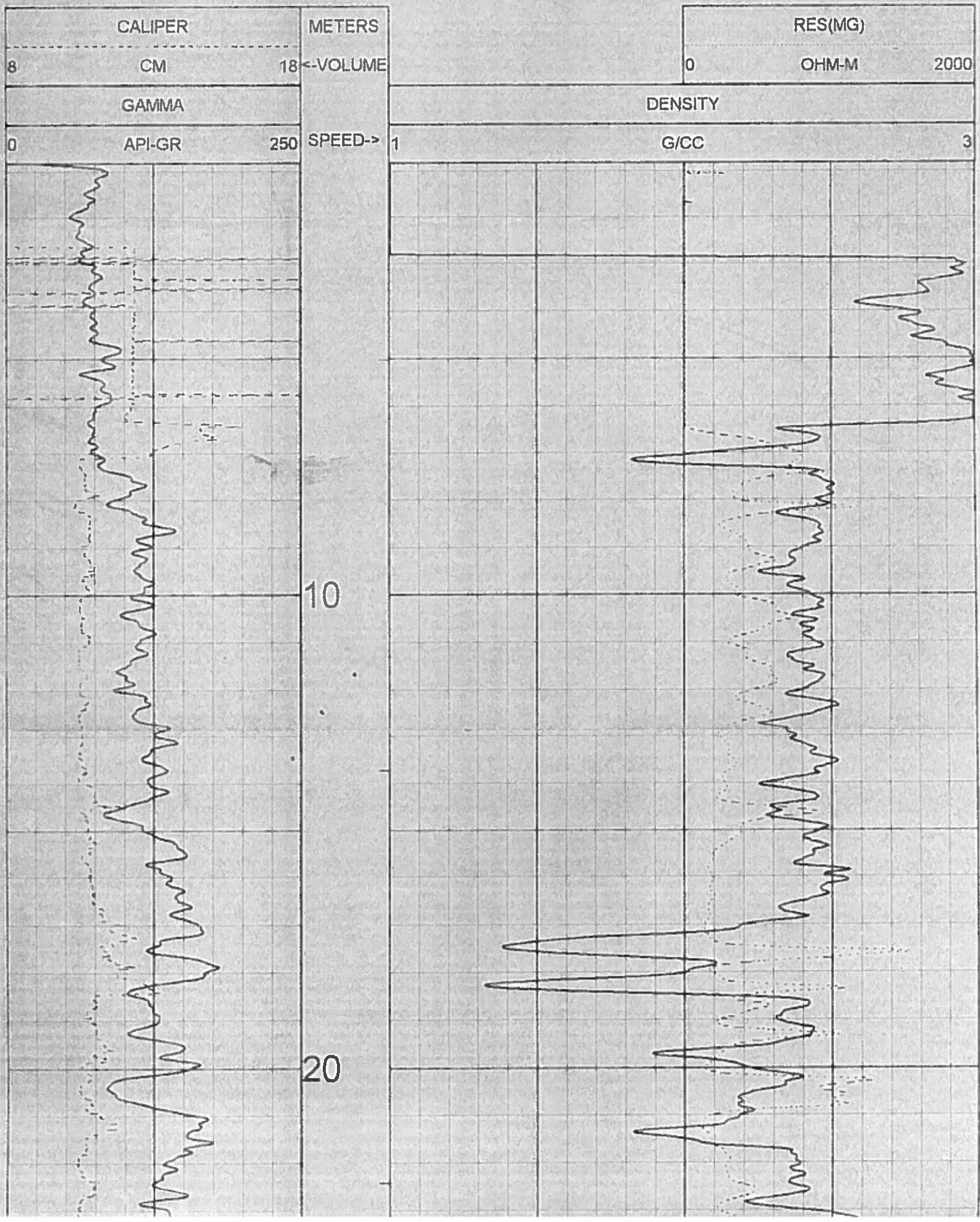
WITNESSED BY : RON PARENT

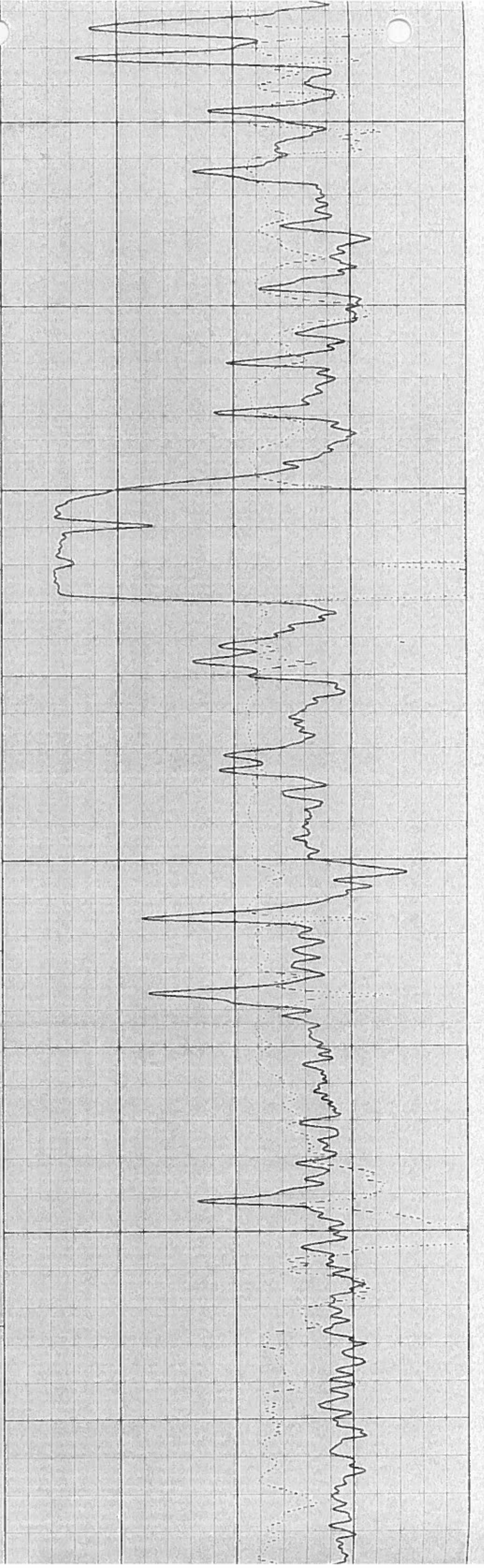
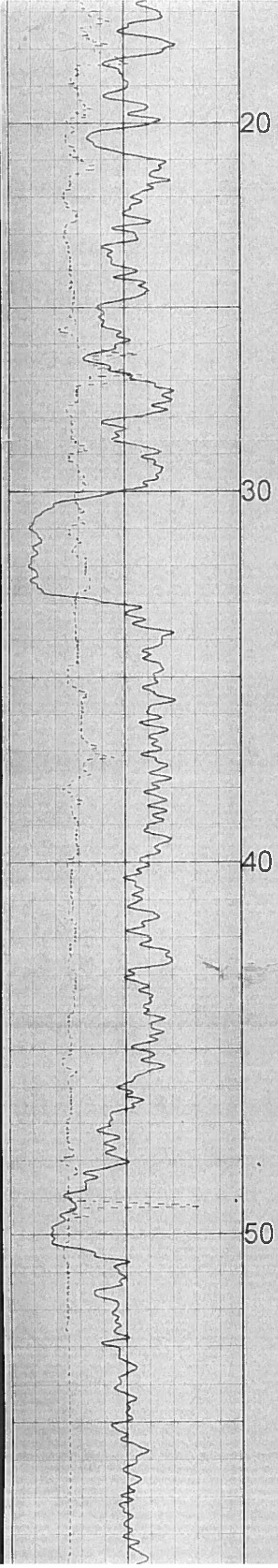
RECORDED BY : R. HECK

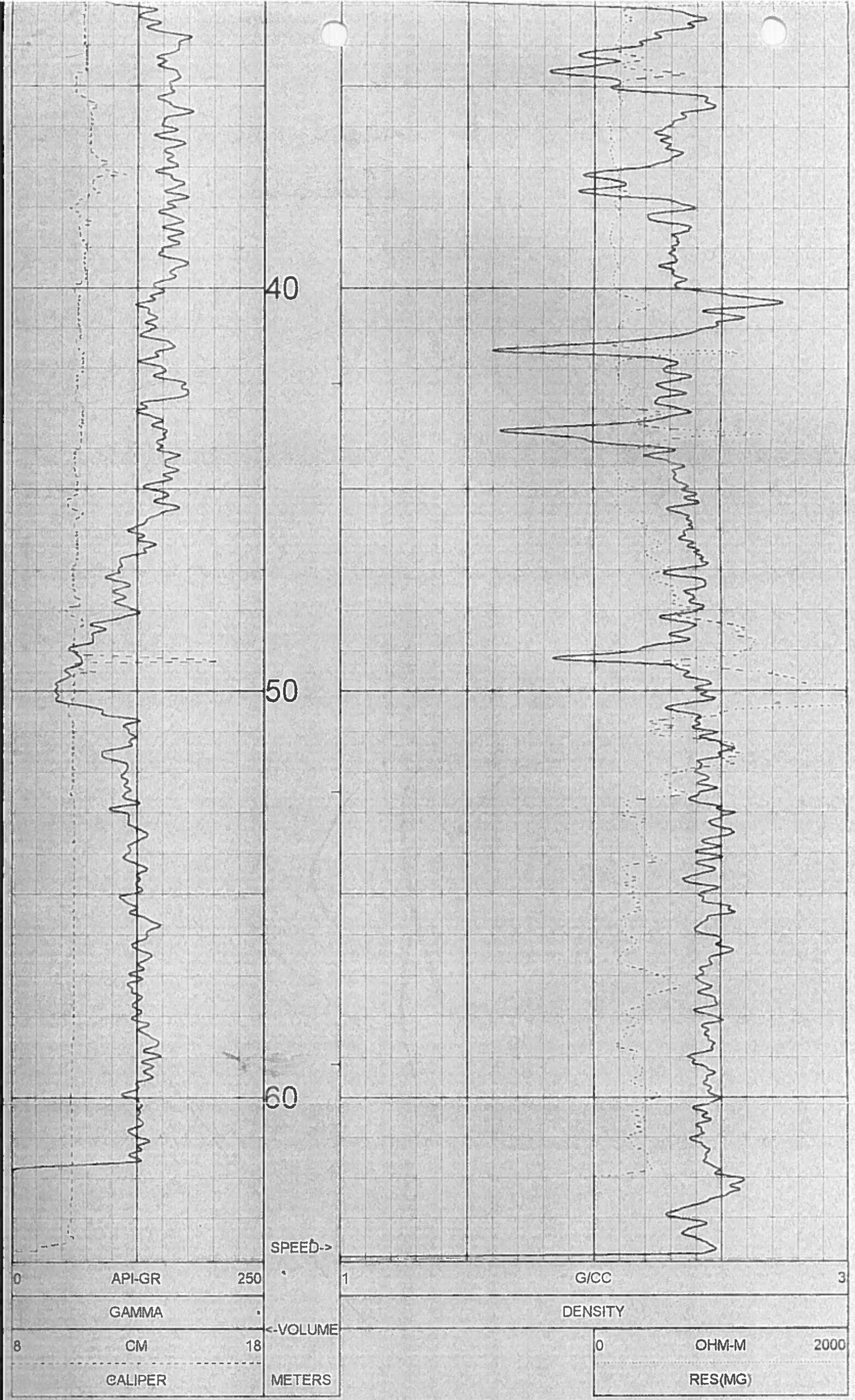
REMARKS 1

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004-25 09/05/04 14:37
 TOOL 0033AA
 SERIAL NUMBER 450

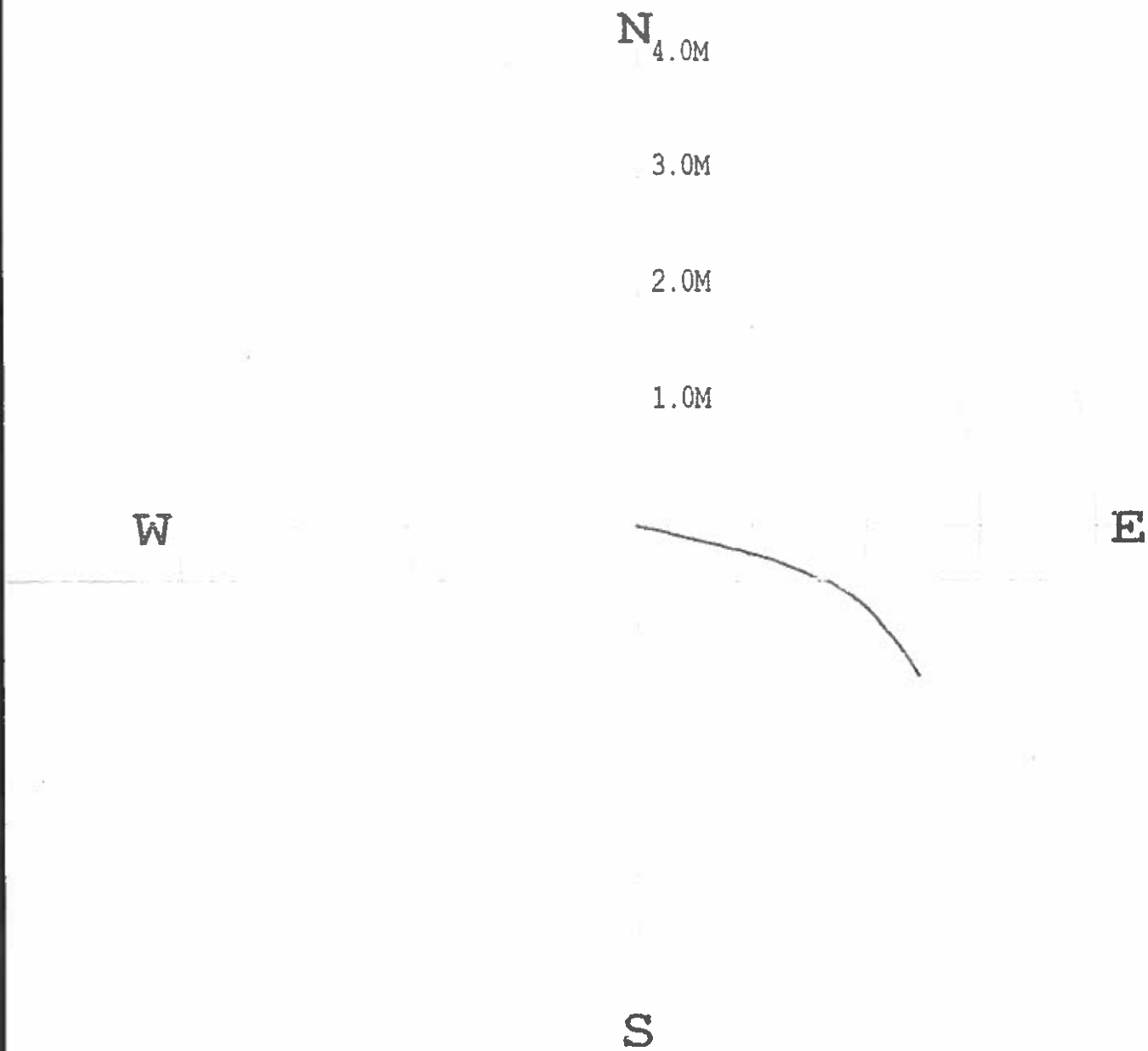
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	00:35:04	GAMMA	7.000 [API-GR]	1.00 [CPS]
	Jul27,04	00:35:04	GAMMA	250.000 [API-GR]	360.00 [CPS]
2	Jul27,04	00:36:13	DENSITY	1.106 [G/CC]	6075.00 [CPS]
	Jul27,04	00:36:13	DENSITY	2.612 [G/CC]	1136.00 [CPS]
3	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
4	Jul26,04	18:40:49	CALIPER	9.000 [INCH]	704.00 [CPS]
	Jul26,04	18:40:49	CALIPER	17.000 [INCH]	1945.00 [CPS]
5	Jul27,04	00:35:12	DENSITY	Default [CPS]	Default [CPS]
	Jul27,04	00:35:12	DENSITY	Default [CPS]	Default [CPS]
6	Jul26,04	17:33:25	CALIPER	Default [CPS]	Default [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
LOCATION: BURNT RIVER
HOLE ID: BR2004-25
DATE OF LOG: 09/05/04
PROBE: 9055A 80

MAG DECL: 21.6

SCALE: 1 M/CM
TRUE DEPTH: 85.27 M
AZIMUTH: 118.4
DISTANCE: 2.8 M
+ = 10 M INCR
= BOTTOM OF HOLE



DEPTH (M)	W (M)	E (M)	AZIMUTH (°)	LOG DATA
0.0	0.0	0.0	118.4	
1.0	0.0	0.0	118.4	
2.0	0.0	0.0	118.4	
3.0	0.0	0.0	118.4	
4.0	0.0	1.5	118.4	

S

COMPU-LOG - VERTICAL DEVIATION

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-25
FIELD OFFICE : DATE OF LOG : 09/05/04
DATA FROM : PROBE : 9055A 80
MAG. DECL. : 21.600 DEPTH UNITS : METERS
LOG: BR2004-25_09-05-04_13-40_9055A_02_15.00_65.33_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
15.0	15.02	-0.00	0.00	0.0	103.0	3.0	103.0
17.0	17.00	-0.02	0.09	0.1	103.3	2.9	103.7
19.0	19.00	-0.04	0.19	0.2	102.0	2.8	96.9
21.0	20.99	-0.06	0.29	0.3	102.8	2.5	106.4
23.0	21.99	-0.09	0.36	0.4	103.5	2.5	103.4
25.0	24.99	-0.11	0.45	0.5	103.7	2.9	100.1
27.0	26.99	-0.13	0.54	0.6	103.7	2.4	100.8
29.0	28.98	-0.15	0.63	0.6	103.6	2.7	97.6
31.0	30.98	-0.17	0.71	0.7	103.6	2.6	102.1
33.0	32.98	-0.20	0.81	0.8	103.8	2.8	106.7
35.0	34.98	-0.22	0.90	0.9	103.7	2.6	105.6
37.0	36.98	-0.25	0.99	1.0	104.0	2.6	102.1
39.0	38.97	-0.27	1.08	1.1	104.1	2.6	102.0
41.0	40.97	-0.29	1.16	1.2	104.2	2.7	105.9
43.0	42.97	-0.33	1.24	1.3	104.8	3.2	107.4
45.0	44.97	-0.36	1.32	1.4	105.3	2.4	114.3
47.0	46.97	-0.40	1.41	1.5	105.7	2.6	115.9
49.0	48.96	-0.43	1.48	1.5	106.2	2.5	112.6
51.0	50.96	-0.47	1.55	1.6	106.8	2.4	100.7
53.0	52.95	-0.48	1.63	1.7	106.5	3.3	107.4
55.0	54.95	-0.52	1.70	1.8	107.0	2.2	124.6
57.0	56.95	-0.56	1.77	1.9	107.6	2.3	125.6
59.0	58.95	-0.60	1.83	1.9	108.1	2.0	126.1
61.0	60.95	-0.64	1.89	2.0	108.7	1.9	123.8
63.0	62.95	-0.68	1.95	2.1	109.1	2.1	131.6
65.0	64.95	-0.72	2.00	2.1	109.9	1.9	122.4
67.0	66.94	-0.77	2.05	2.2	110.5	1.9	131.9
69.0	68.94	-0.81	2.09	2.2	111.3	2.4	157.1
71.0	70.94	-0.87	2.13	2.3	112.3	2.4	140.5
73.0	72.94	-0.93	2.19	2.4	113.1	2.3	124.8
75.0	74.94	-0.99	2.24	2.4	113.8	1.8	141.6
77.0	76.94	-1.06	2.29	2.5	114.7	3.6	141.0
79.0	78.93	-1.12	2.35	2.6	115.7	2.5	147.1
81.0	80.93	-1.20	2.40	2.7	116.6	2.4	144.7
83.0	82.93	-1.27	2.44	2.8	117.5	2.3	147.1
85.0	84.93	-1.34	2.49	2.8	118.3	2.2	156.3
85.3	85.23	-1.35	2.49	2.8	118.4	2.2	150.1

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-26	year drilled: 2004	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,199.18	6,140,448.24	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
251	-90	80.14				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
-----------	--

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	251.4	-90.00
15.00	251.4	-87.00
17.00	262.7	-87.10
19.00	266.6	-87.30
21.00	269.3	-87.20
23.00	271.2	-87.40
25.00	271.4	-87.10
27.00	271.8	-87.10
29.00	272.9	-86.80
31.00	275.6	-86.60
33.00	278.4	-86.40
35.00	280.9	-85.80
37.00	282.6	-86.10
39.00	283.6	-85.80
41.00	283.9	-86.20
43.00	284.8	-85.80
45.00	286.0	-85.60
47.00	287.2	-85.30
49.00	288.4	-85.40
51.00	289.3	-85.40
53.00	290.2	-85.10
55.00	290.8	-85.30
57.00	291.1	-85.40
59.00	291.5	-85.10
61.00	292.0	-85.40
63.00	292.5	-85.10
65.00	293.3	-85.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62		
11.90	12.70	0.80		
50.50	51.00	0.50		
62.70	63.20	0.50		
68.80	69.30	0.50		

Date issued: Friday, June 06, 2014
 Reviewed: October 11, 2002

Page 1 of 2



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-26**

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,296.19	6,140,242.61	572,199.18	6,140,448.24	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
296	-90	80.14	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: Survey NAD83

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	251.4	-90.00
15.00	251.4	-87.00
17.00	262.7	-87.10
19.00	266.6	-87.30
21.00	269.3	-87.20
23.00	271.2	-87.40
25.00	271.4	-87.10
27.00	271.8	-87.10
29.00	272.9	-86.80
31.00	275.6	-86.60
33.00	278.4	-86.40
35.00	280.9	-85.80
37.00	282.6	-86.10
39.00	283.6	-85.80
41.00	283.9	-86.20
43.00	284.8	-85.80
45.00	286.0	-85.60
47.00	287.2	-85.30
49.00	288.4	-85.40
51.00	292.0	-85.40
53.00	290.2	-85.10
55.00	290.8	-85.30
57.00	291.1	-85.40
59.00	291.5	-85.10
63.00	292.5	-85.10
65.00	293.3	-85.10
67.00	294.1	-84.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62	OB	
7.62	10.00	2.38	SLT	
10.00	11.90	1.90	SH	
11.90	12.75	0.85	C	
12.75	22.55	9.80	SH	
22.55	23.40	0.85	SLT	
23.40	26.75	3.35	SH	
26.75	29.00	2.25	SLT	
29.00	32.05	3.05	SH	
32.05	34.15	2.10	SLT	
34.15	34.70	0.55	SSA	
34.70	36.90	2.20	SLT	
36.90	41.60	4.70	SH	
41.60	47.40	5.80	SLT	
47.40	50.50	3.10	SH	
50.50	51.00	0.50	C	
51.00	56.00	5.00	SLT	
56.00	61.10	5.10	SSA	
61.10	63.15	2.05	SS	
63.15	64.90	1.75	SSA	
64.90	65.90	1.00	SLT	
65.90	67.00	1.10	SSA	
67.00	68.80	1.80	SLT	
68.80	69.25	0.45	C	
69.25	72.40	3.15	SH	
72.40	77.75	5.35	SLT	

Feb 2011

UPRA
62.7 ÷ 63.2

UPRB
68.8 ÷ 69.3

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-26

year drilled: 2004

AREA:

Burnt River
Brule

71.00	294.7	-84.60
73.00	295.4	-84.50
75.00	295.7	-84.40
77.00	295.8	-84.60
79.00	295.9	-84.60
80.14	296.1	-85.00

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River Brake.
DH ID: BR2004-26
BY: R. Brown
DATE: November 11, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	7.62	OB			
7.62	10.00	SLT			
10.00	11.9	SH			
11.90	12.75	C			
12.75	22.55	SH			
22.55	23.40	SLT			
23.40	26.75	SH			
26.75	29.00	SLT			
29.00	32.05	SH			
32.05	34.15	SLT			
34.15	34.70	SSA			
34.70	36.90	SLT			
36.90	41.60	SH			
41.60	47.40	SLT			
47.40	50.5	SH			
50.5	51.0	C			
51.0	56.0	SLT			
56.0	61.1	SSA			
61.1	63.15	SS			
63.15	64.9	SSA			
64.9	65.9	SLT			
65.9	67.0	SSA			
67.0	68.8	SLT			
68.8	69.25	C			
69.25	72.40	SH			
72.40	77.75	SLT			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



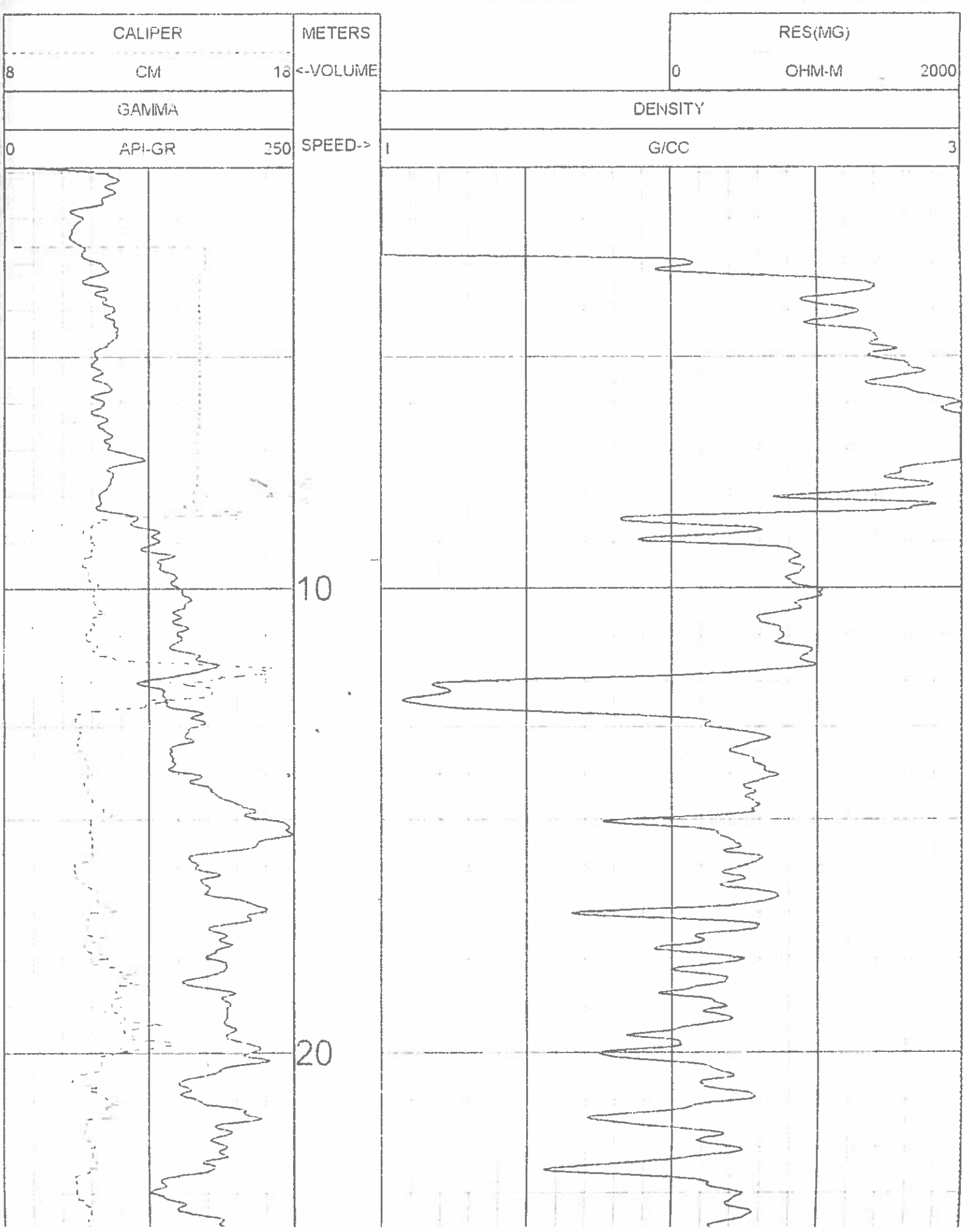
GAMMA - DENSITY

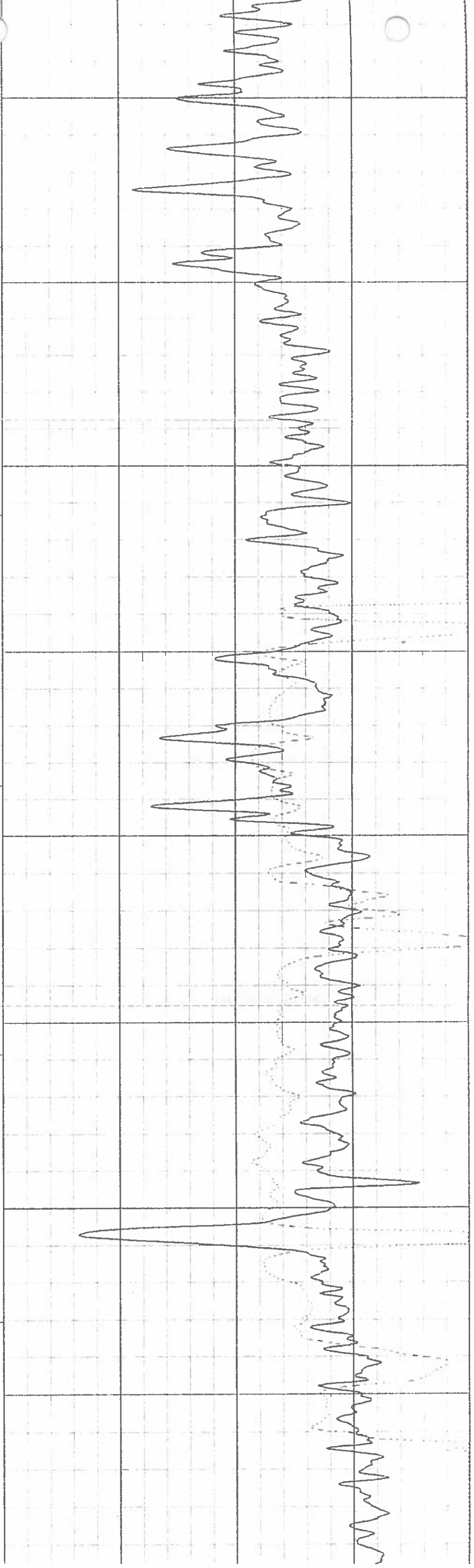
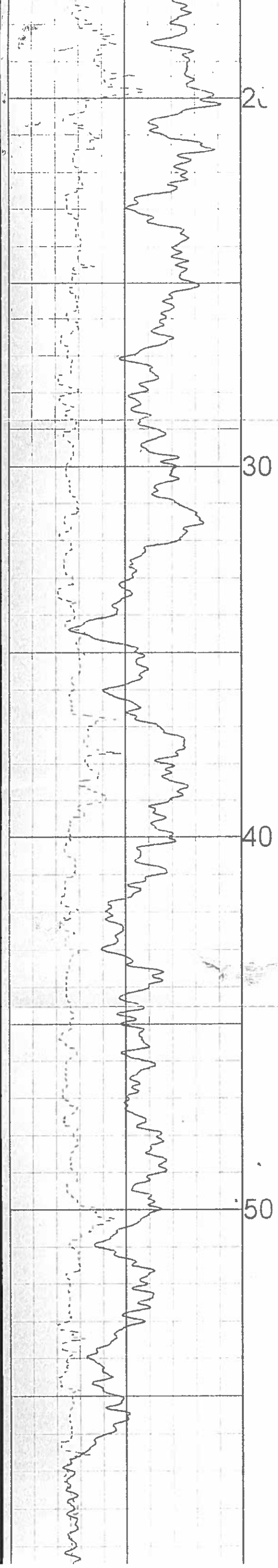
Century-geo.com

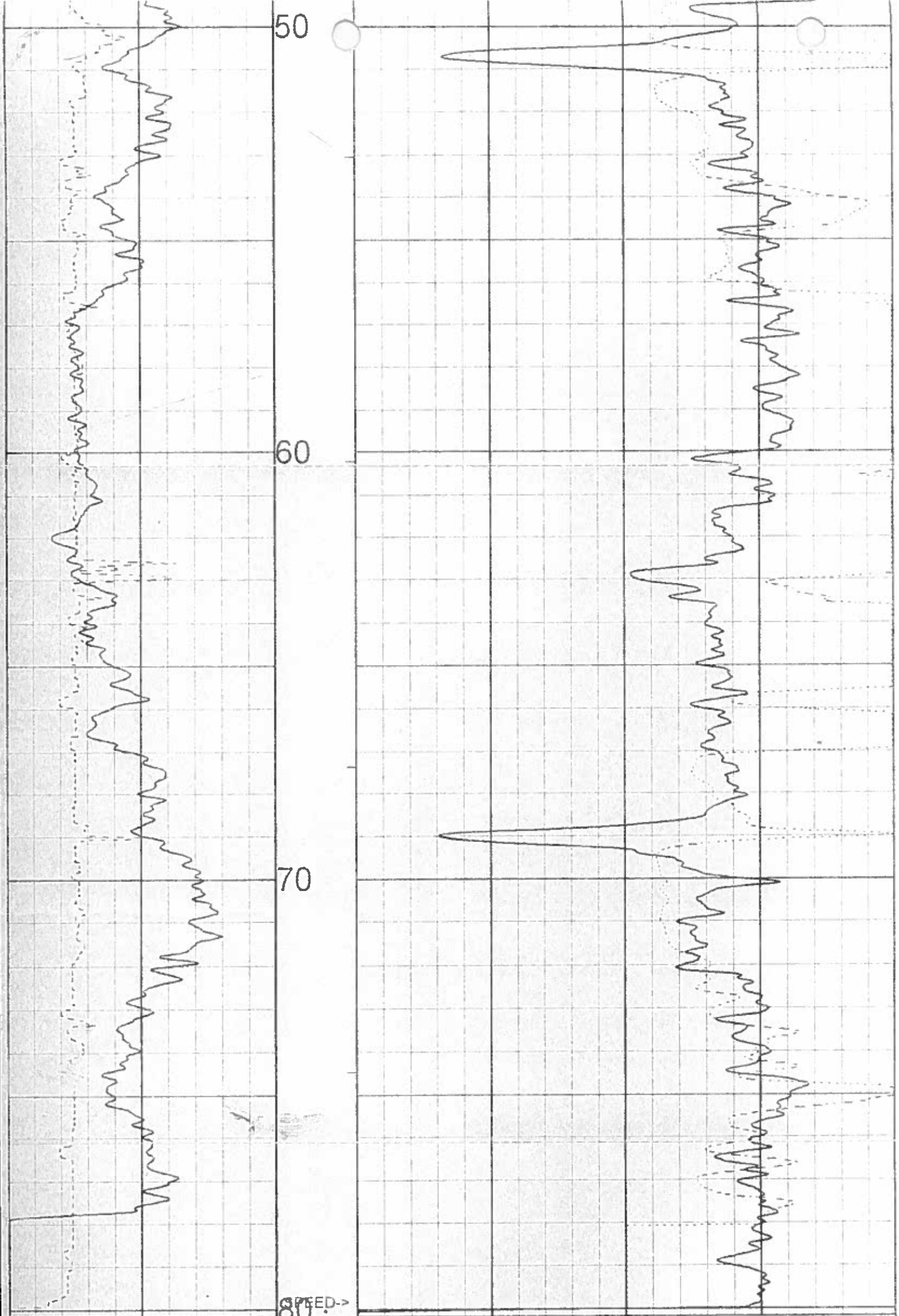
BR2004-26

COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES
WELL	BR2004-26	905L
FIELD	BURN RIVER	
MUNICIPALITY	TUMBLER RIDGE	
PROVINCE	BRITISH COLUMBIA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO		
UNIQUE WELL ID		
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION CL
DATE	09/09/04	
RUN NO	1	
D. CRIBLER	21.69	
PIPE SIZE	12.1	
LOG TOP	0.83	
LOG BOTTOM	40.14	
CASING TOP	7.62	
CASING BOTTOM	7.62	
CASING TYPE	STEEL	
BOREHOLE FLUID	MATER	
RM TEMPERATURE		
MUD RES		
WITNESSED BY	MATT MCJORNAN	
RECORDED BY	RILEY	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



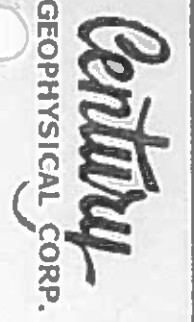




0	API-GR	250	1	G/CC	3
	GAMMA			DENSITY	
8	CM	18		OHM-M	2000
	CALIPER	METERS		RES(MG)	

TOOL CALIBRATION BR2004-26 09/05/04 16:48
 TOOL 0033AA
 SERIAL NUMBER 450

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	00:35:04	GAMMA	7.000 [API-GR]	1.00 [CPS]
	Jul27,04	00:35:04	GAMMA	250.000 [API-GR]	360.00 [CPS]
2	Jul27,04	00:36:13	DENSITY	1.106 [G/CC]	6075.00 [CPS]
	Jul27,04	00:36:13	DENSITY	2.612 [G/CC]	1136.00 [CPS]
3	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
	May21,04	16:07:27	RES(MG)	Default [CPS]	Default [CPS]
4	Jul26,04	18:40:49	CALIPER	9.000 [INCH]	704.00 [CPS]
	Jul26,04	18:40:49	CALIPER	17.000 [INCH]	1945.00 [CPS]
5	Jul27,04	00:35:12	DENSITY†	Default [CPS]	Default [CPS]
	Jul27,04	00:35:12	DENSITY†	Default [CPS]	Default [CPS]
6	Jul26,04	17:33:25	CALIPER‡	Default [CPS]	Default [CPS]
	Jul26,04	17:33:25	CALIPER‡	Default [CPS]	Default [CPS]



century-geo.com

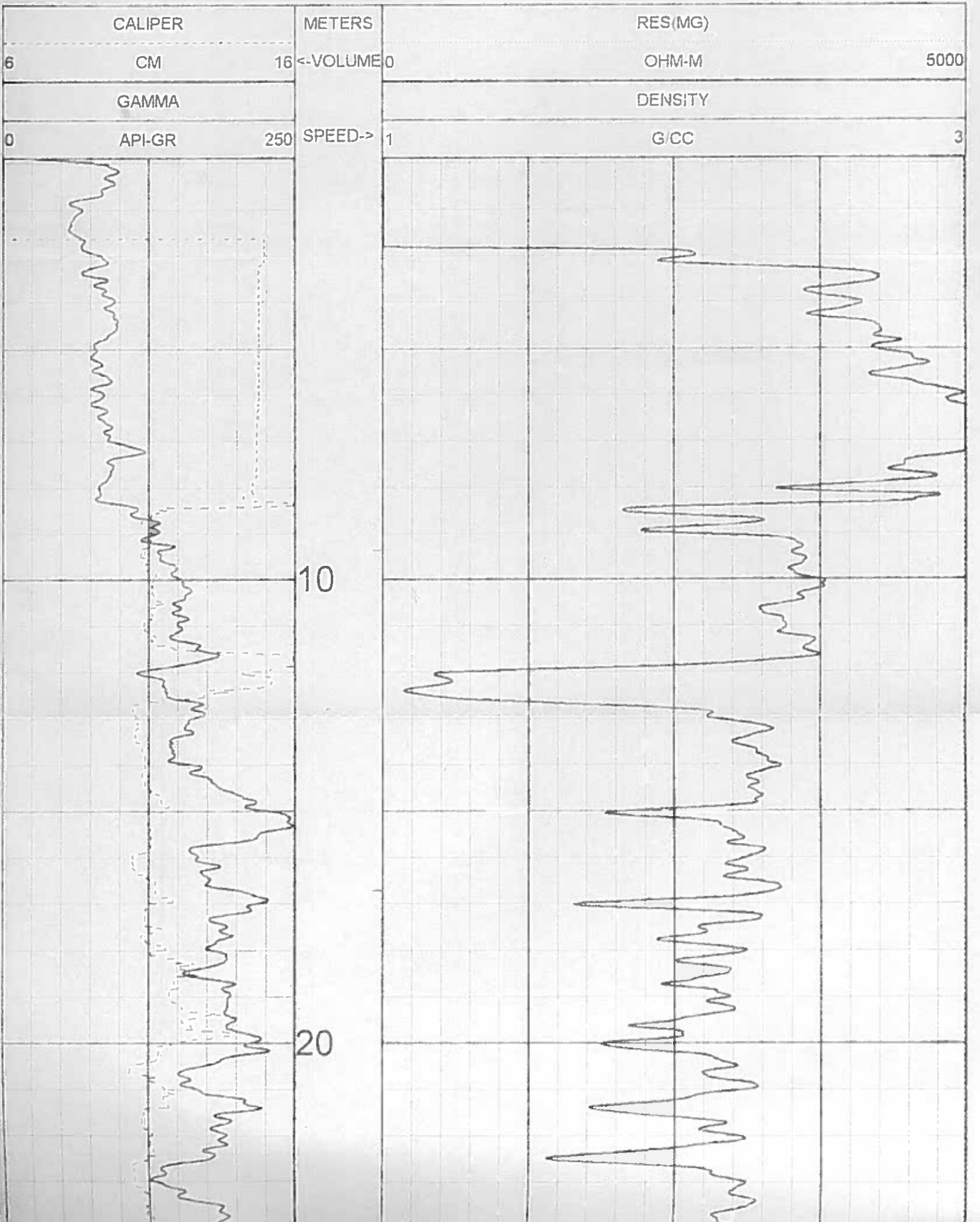
GAMMA - DENSITY 4 INCH RESISTIVITY SCALE

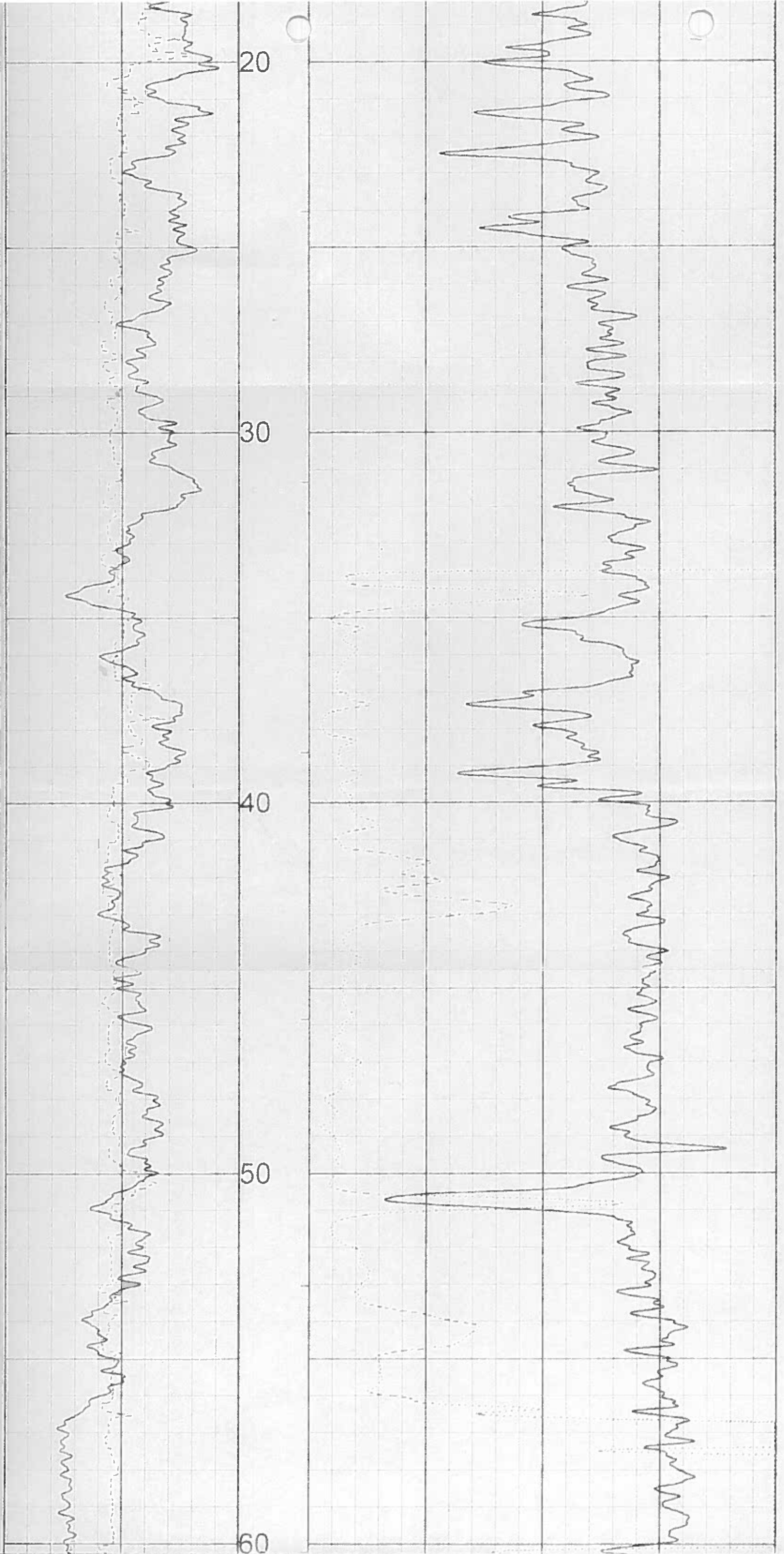
BR2004-26

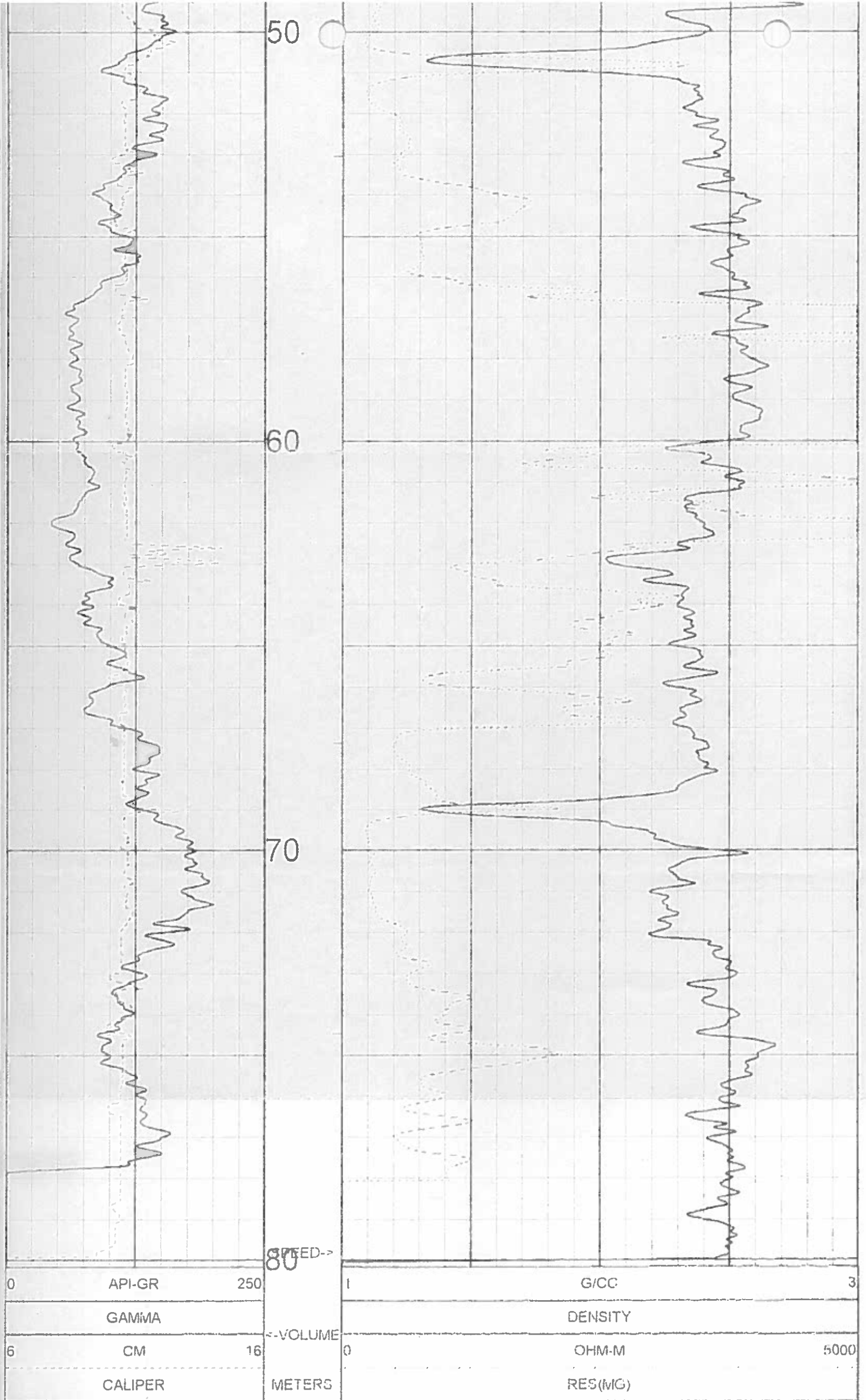
OTHER SERVICES
9055

COMPANY	WESTERN CANADIAN COAL CORP	WELL	BR2004-26
FIELD	BURNT RIVER	MUNICIPALITY	TUMBLER RIDGE
PROVINCE	BRITISH COLUMBIA	LOCATION	
SECTION		TOWNSHIP	
RANGE		API NO	
PERMANENT DATUM	GL	ELEVATION KB:	
LOG MEASURED FROM	CL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	09/05/04		
RUN NO.	2		
DEPTH DRILLER	: 81.69		
BIT SIZE	12.1		
LOG ODP	0.88		
LOG BOTTOM	80.14		
CASING OD	: 7.62		
CASING BOTTOM	7.62		
CASING TYPE	STEEL		
BORE-HOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	: MATT MOORMAN		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004-26 09/05/04 16:48
 TOOL 0033AA
 SERIAL NUMBER 450

DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04 00:35:04	GAMMA	7.000 [API-GR]	1.00 [CPS]
	Jul27,04 00:35:04	GAMMA	250.000 [API-GR]	360.00 [CPS]
2	Jul27,04 00:36:13	DENSITY	1.106 [G/CC]	6075.00 [CPS]
	Jul27,04 00:36:13	DENSITY	2.612 [G/CC]	1136.00 [CPS]
3	May21,04 16:07:27	RES(MG)	Default [CPS]	Default [CPS]
	May21,04 16:07:27	RES(MG)	Default [CPS]	Default [CPS]
4	Jul26,04 18:40:49	CALIPER	9.000 [INCH]	704.00 [CPS]
	Jul26,04 18:40:49	CALIPER	17.000 [INCH]	1945.00 [CPS]
5	Jul27,04 00:35:12	DENSITY†	Default [CPS]	Default [CPS]
	Jul27,04 00:35:12	DENSITY†	Default [CPS]	Default [CPS]
6	Jul26,04 17:33:25	CALIPERL	Default [CPS]	Default [CPS]
	Jul26,04 17:33:25	CALIPERL	Default [CPS]	Default [CPS]



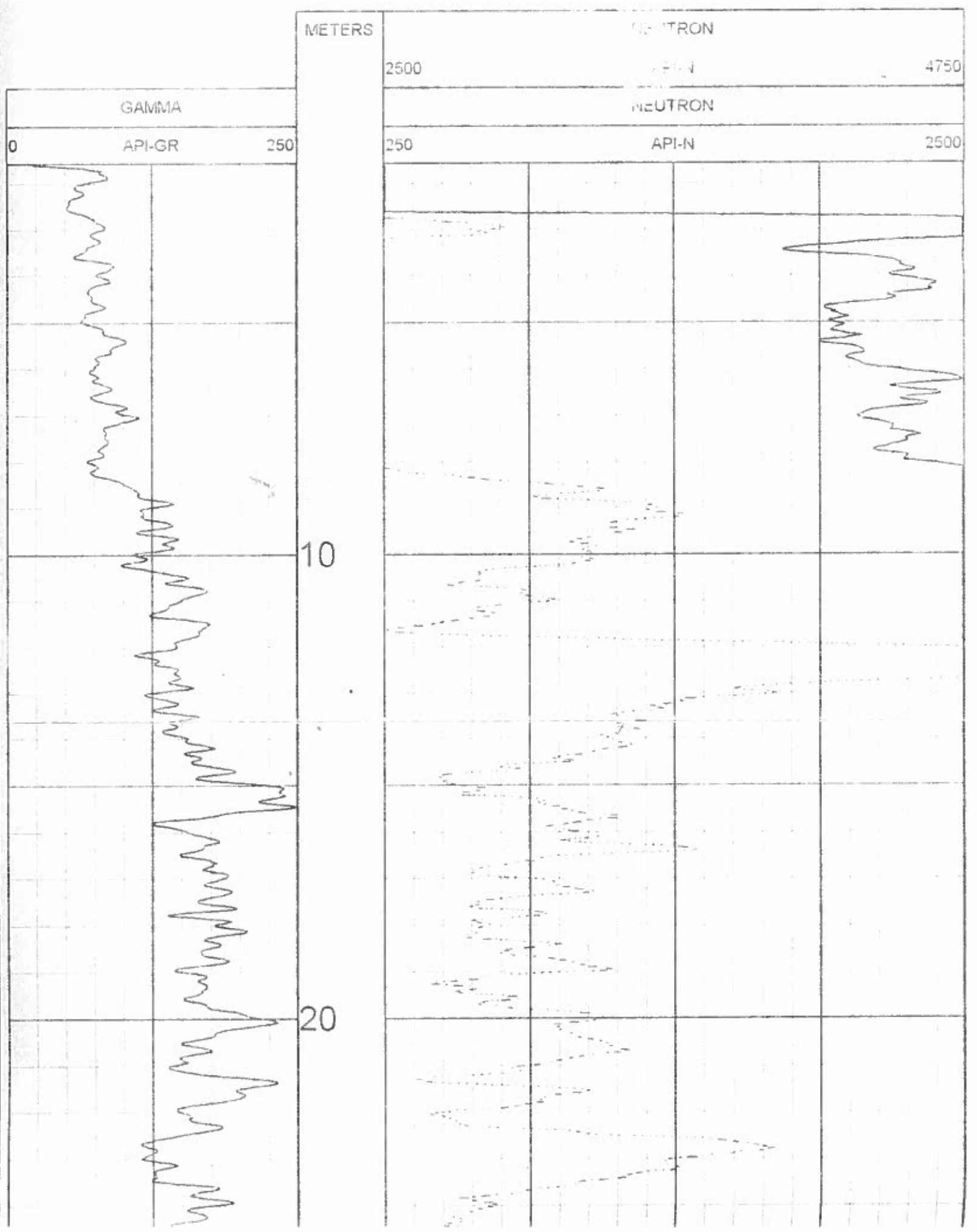
century-geo.com

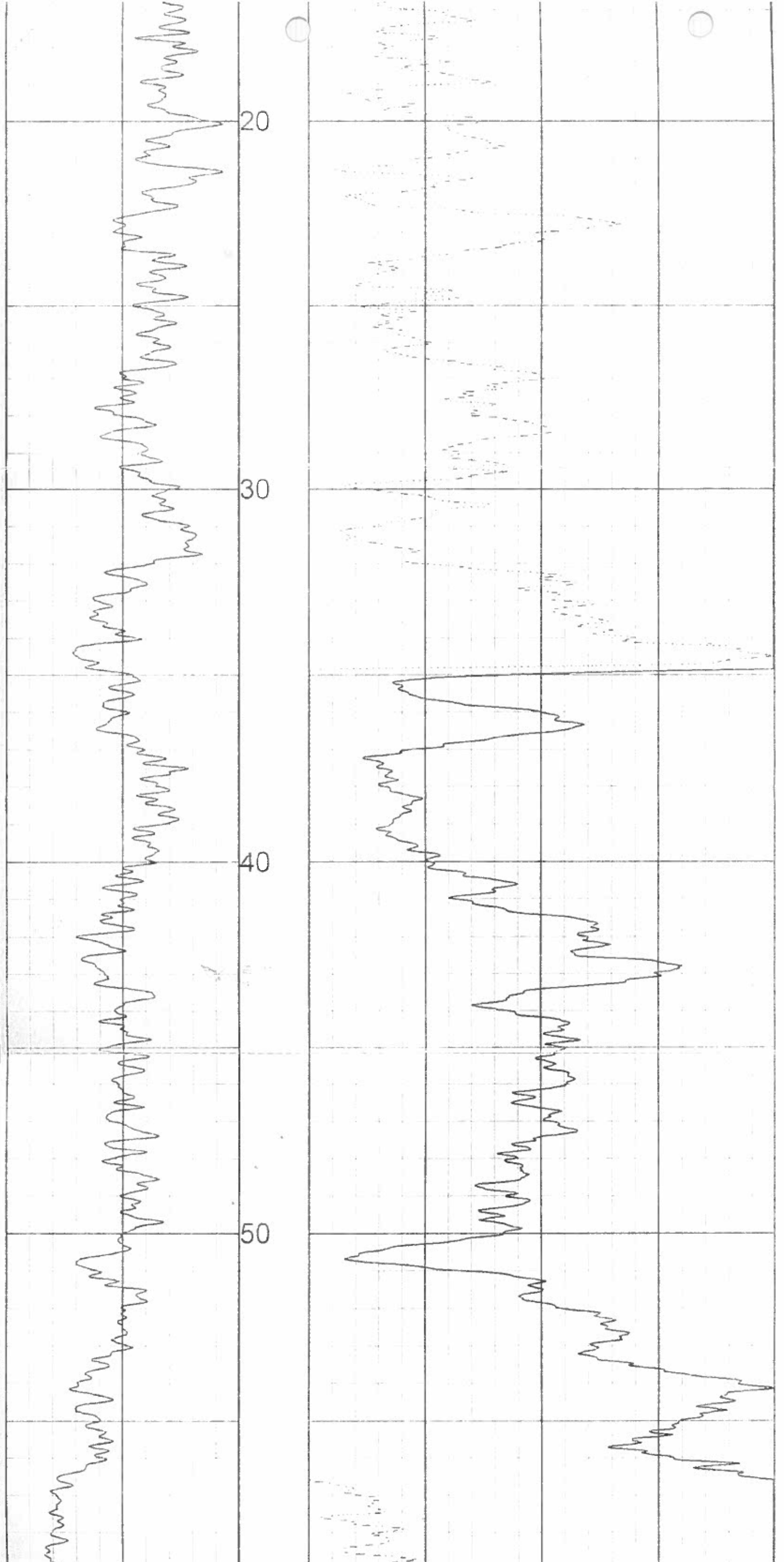
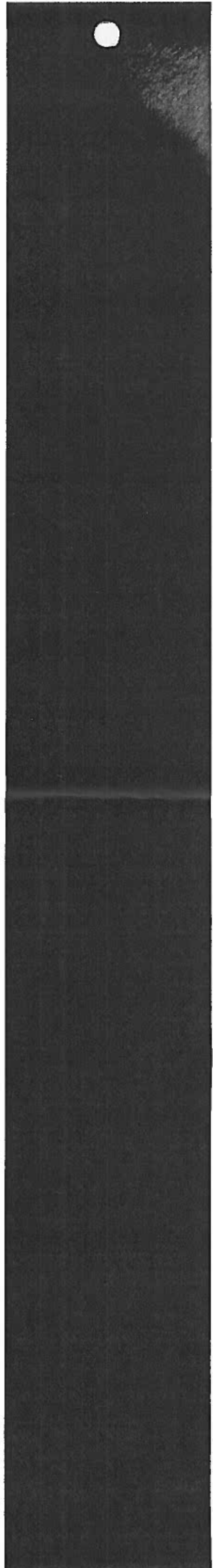
GAMMA - NEUTRON

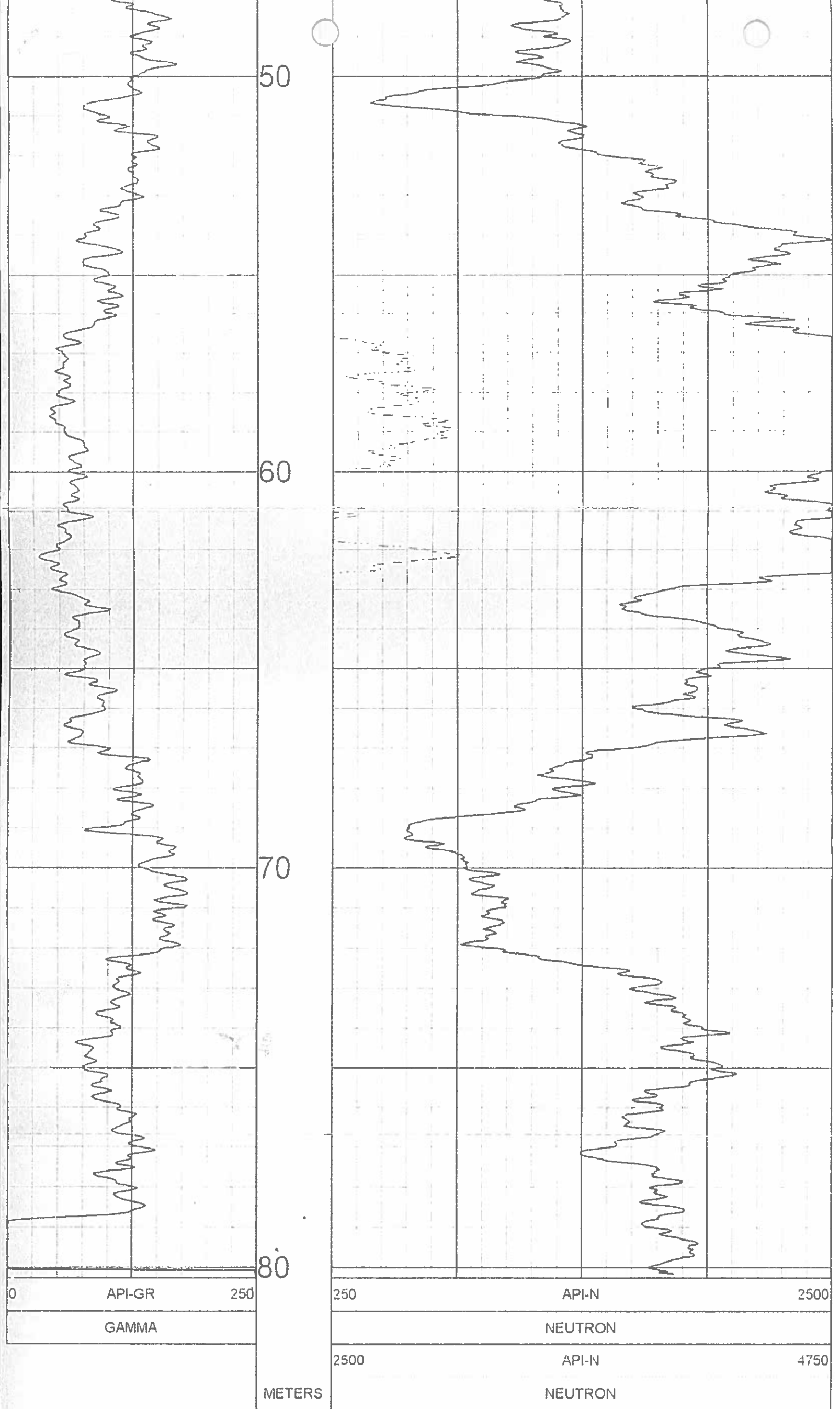
BR2004-26

COMPANY	WESTERN CANADIAN COAL COSP	OTHER SERVICES	3033
WELL	BR2004-26		
FIELD	GURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT DATUM	CG	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION OF	
DIR. MEASURED FROM	GL	ELEVATION OF	
DATE	09/09/01		
RUNNER			
DEPTH DRILLER			
DEPTH	4.1		
PERCENT OF			
LOG			
LOG BOTTOM	50.34		
CASING O.D.	7.50		
CASING BOTTOM	1.52		
CASING TYPE	STEEL		
LOGGING FLUID	WATER		
LOGGING TEMPERATURE			
MUD-LOG			
WELL LOG NO.	MM-100-0000		
LOG NUMBER	0000		
REVISION			
DATE			

ALL VALUES FROM LOG SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004-26 09/05/04 16 25
 TOOL 9055A
 SERIAL NUMBER 80

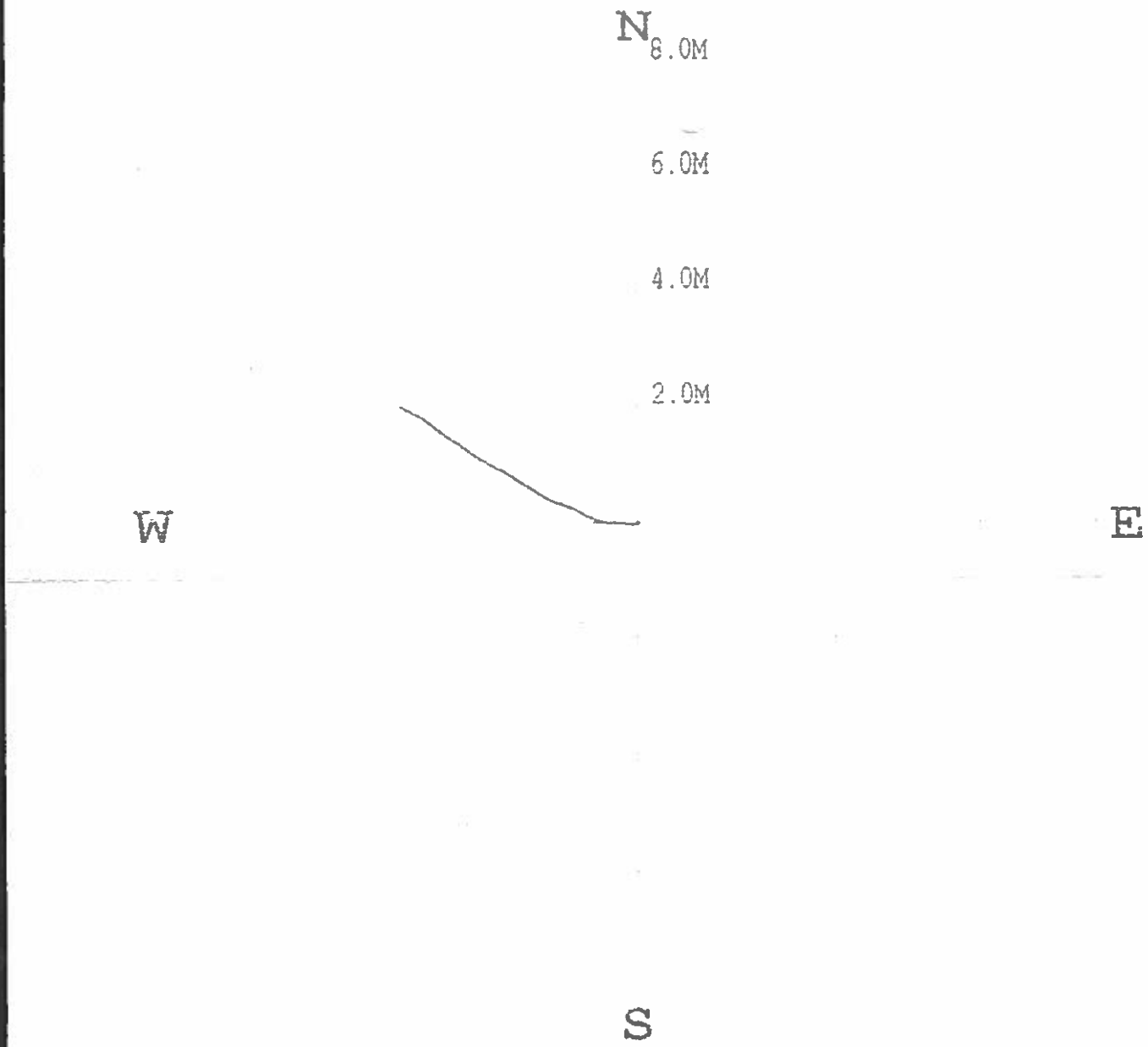
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRON	271.000 [API-N]	185.00 [CPS]

PLAN VIEW COMPU-LOG DEVIATION


CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004-26
 DATE OF LOG: 09/05/04
 PROBE: 9C55A 60

SCALE: 1 M/CM
 TRUE DEPTH: 80.05 M
 AZIMUTH: 296.1
 DISTANCE: 4.7 M
 + = 10 M INCR
 = BOTTOM OF HOLE

MAG DECL: 21.6



DEPTH (M)	W (M)	E (M)	ANGLE (DEG)	OTHER DATA
0.0	0.0	0.0	0.0	
1.0	0.1	0.0	90.0	
2.0	0.2	0.0	90.0	
3.0	0.3	0.0	90.0	
4.0	0.4	0.0	90.0	
5.0	0.5	0.0	90.0	
6.0	0.6	0.0	90.0	
7.0	0.7	0.0	90.0	
8.0	0.8	0.0	90.0	
9.0	0.9	0.0	90.0	
10.0	1.0	0.0	90.0	
11.0	1.1	0.0	90.0	
12.0	1.2	0.0	90.0	
13.0	1.3	0.0	90.0	
14.0	1.4	0.0	90.0	
15.0	1.5	0.0	90.0	
16.0	1.6	0.0	90.0	
17.0	1.7	0.0	90.0	
18.0	1.8	0.0	90.0	
19.0	1.9	0.0	90.0	
20.0	2.0	0.0	90.0	
21.0	2.1	0.0	90.0	
22.0	2.2	0.0	90.0	
23.0	2.3	0.0	90.0	
24.0	2.4	0.0	90.0	
25.0	2.5	0.0	90.0	
26.0	2.6	0.0	90.0	
27.0	2.7	0.0	90.0	
28.0	2.8	0.0	90.0	
29.0	2.9	0.0	90.0	
30.0	3.0	0.0	90.0	
31.0	3.1	0.0	90.0	
32.0	3.2	0.0	90.0	
33.0	3.3	0.0	90.0	
34.0	3.4	0.0	90.0	
35.0	3.5	0.0	90.0	
36.0	3.6	0.0	90.0	
37.0	3.7	0.0	90.0	
38.0	3.8	0.0	90.0	
39.0	3.9	0.0	90.0	
40.0	4.0	0.0	90.0	
41.0	4.1	0.0	90.0	
42.0	4.2	0.0	90.0	
43.0	4.3	0.0	90.0	
44.0	4.4	0.0	90.0	
45.0	4.5	0.0	90.0	
46.0	4.6	0.0	90.0	
47.0	4.7	0.0	90.0	
48.0	4.8	0.0	90.0	
49.0	4.9	0.0	90.0	
50.0	5.0	0.0	90.0	
51.0	5.1	0.0	90.0	
52.0	5.2	0.0	90.0	
53.0	5.3	0.0	90.0	
54.0	5.4	0.0	90.0	
55.0	5.5	0.0	90.0	
56.0	5.6	0.0	90.0	
57.0	5.7	0.0	90.0	
58.0	5.8	0.0	90.0	
59.0	5.9	0.0	90.0	
60.0	6.0	0.0	90.0	

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-27	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,335.42	6,140,519.34	1,234.11

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		53.89				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	16.74	16.74		
26.40	28.60	2.20		
28.60	32.50	3.90		
32.50	33.10	0.60		

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-27

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,432.43	6,140,313.71	572,335.42	6,140,519.34	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	150.00	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: Logged through rods. Survey NAD83

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	166.8	-90.00
15.00	166.8	-87.60
17.00	157.1	-87.70
19.00	154.1	-87.80
21.00	168.0	-87.90
23.00	161.0	-88.40
25.00	165.4	-88.60
27.00	158.7	-88.50
29.00	165.2	-89.00
31.00	151.5	-88.80
33.00	150.2	-89.00
35.00	135.3	-89.30
37.00	147.1	-89.20
39.00	148.2	-89.30
41.00	155.0	-89.40
43.00	168.0	-89.20
45.00	189.3	-89.20
47.00	201.0	-88.90
49.00	202.9	-89.10
51.00	206.9	-89.00
53.00	222.9	-88.80
55.00	225.5	-88.70
57.00	227.4	-88.80
59.00	231.9	-88.70
61.00	227.8	-88.60
63.00	242.1	-88.90

LITHOLOGY SUMMARY


FROM	TO	THICK	LITH	SEAM
0.00	16.74	16.74	OB	
16.74	18.05	1.31	SLT	
18.05	18.70	0.65	SH	
18.70	23.75	5.05	SLT	
23.75	24.80	1.05	SH	
24.80	26.40	1.60	SLT	
26.40	28.40	2.00	C	LWR
28.40	32.50	4.10	SH	
32.50	33.10	0.60	C	MB
33.10	38.00	4.90	SH	
38.00	39.10	1.10	SLT	
39.10	40.00	0.90	SH	
40.00	42.10	2.10	SLT	
42.10	46.35	4.25	SH	
46.35	48.15	1.80	SLT	
48.15	49.10	0.95	SH	
49.10	52.05	2.95	SLT	

Jan 2011

→ CGO
→ MD

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-27	year drilled: 2004	AREA:	Burnt River Brule
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SAMPLE INFORMATION

Date issued: Monday, April 03, 2006
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Bunt River: Brule.
DH ID: BE2004-27
BY: R. Brown
DATE: November 11, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	16.74	OB			
16.74	18.05	SLT			
18.05	18.70	SH			
18.70	23.75	SLT			
23.75	24.80	SH			
24.80	26.40	SLT			
26.40	28.40	Lower Seam			
28.40	32.50	SH			
32.50	33.10	MB			
33.10	38.00	SH			
38.00	39.10	SLT			
39.10	40.00	SH			
40.00	42.10	SLT			
42.10	46.35	SH			
46.35	48.15	SLT			
48.15	49.10	SH			
49.10	52.05	SLT			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:
OB - OVERBURDEN
C - COAL
P - PARTING
SHC - SHALEY COAL
CGL - CONGLOMERATE
SH - SHALE
SLT - SILTSTONE
SSA - ARGILLACEOUS SANDSTONE
SSC - CLEAN SANDSTONE
SS/SH - INTERBEDDED SANDSTONE AND SHALE



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-27**

year drilled: 2004

AREA: **Burnt River
Brule**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,432.43	6,140,313.71	572,335.42	6,140,519.34	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	150.00	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: Logged through rods. Survey NAD83

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	166.8	-90.00
15.00	166.8	-87.60
17.00	157.1	-87.70
19.00	154.1	-87.80
21.00	168.0	-87.90
23.00	161.0	-88.40
25.00	165.4	-88.60
27.00	158.7	-88.50
29.00	165.2	-89.00
31.00	151.5	-88.80
33.00	150.2	-89.00
35.00	135.3	-89.30
37.00	147.1	-89.20
39.00	148.2	-89.30
41.00	155.0	-89.40
43.00	168.0	-89.20
45.00	189.3	-89.20
47.00	201.0	-88.90
49.00	202.9	-89.10
51.00	206.9	-89.00
53.00	222.9	-88.80
55.00	225.5	-88.70
57.00	227.4	-88.80
59.00	231.9	-88.70
61.00	227.8	-88.60
63.00	242.1	-88.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	16.74	16.74	OB	
16.74	18.05	1.31	SLT	
18.05	18.70	0.65	SH	
18.70	23.75	5.05	SLT	
23.75	24.80	1.05	SH	
24.80	26.40	1.60	SLT	
26.40	28.40	2.00	C	LWR
28.40	32.50	4.10	SH	
32.50	33.10	0.60	C	MB
33.10	38.00	4.90	SH	
38.00	39.10	1.10	SLT	
39.10	40.00	0.90	SH	
40.00	42.10	2.10	SLT	
42.10	46.35	4.25	SH	
46.35	48.15	1.80	SLT	
48.15	49.10	0.95	SH	
49.10	52.05	2.95	SLT	


Jan 2011

→ CGO
→ MD

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Page 1 of 2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-27	year drilled: 2004	AREA: Burnt River Brule
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SAMPLE INFORMATION

Date issued: Monday, April 03, 2008 Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Bunt River: Brule.
DH ID: BE2004-27
BY: R. Brown
DATE: November 11, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	16.74	OB			
16.74	18.05	SLT			
18.05	18.70	SH			
18.70	23.75	SLT			
23.75	24.80	SH			
24.80	26.40	SLT			
26.40	28.40	Lower Seam			
28.40	32.50	SH			
32.50	33.10	MB			
33.10	38.00	SH			
38.00	39.10	SLT			
39.10	40.00	SH			
40.00	42.10	SLT			
42.10	46.35	SH			
46.35	48.15	SLT			
48.15	49.10	SH			
49.10	52.05	SLT			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
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- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



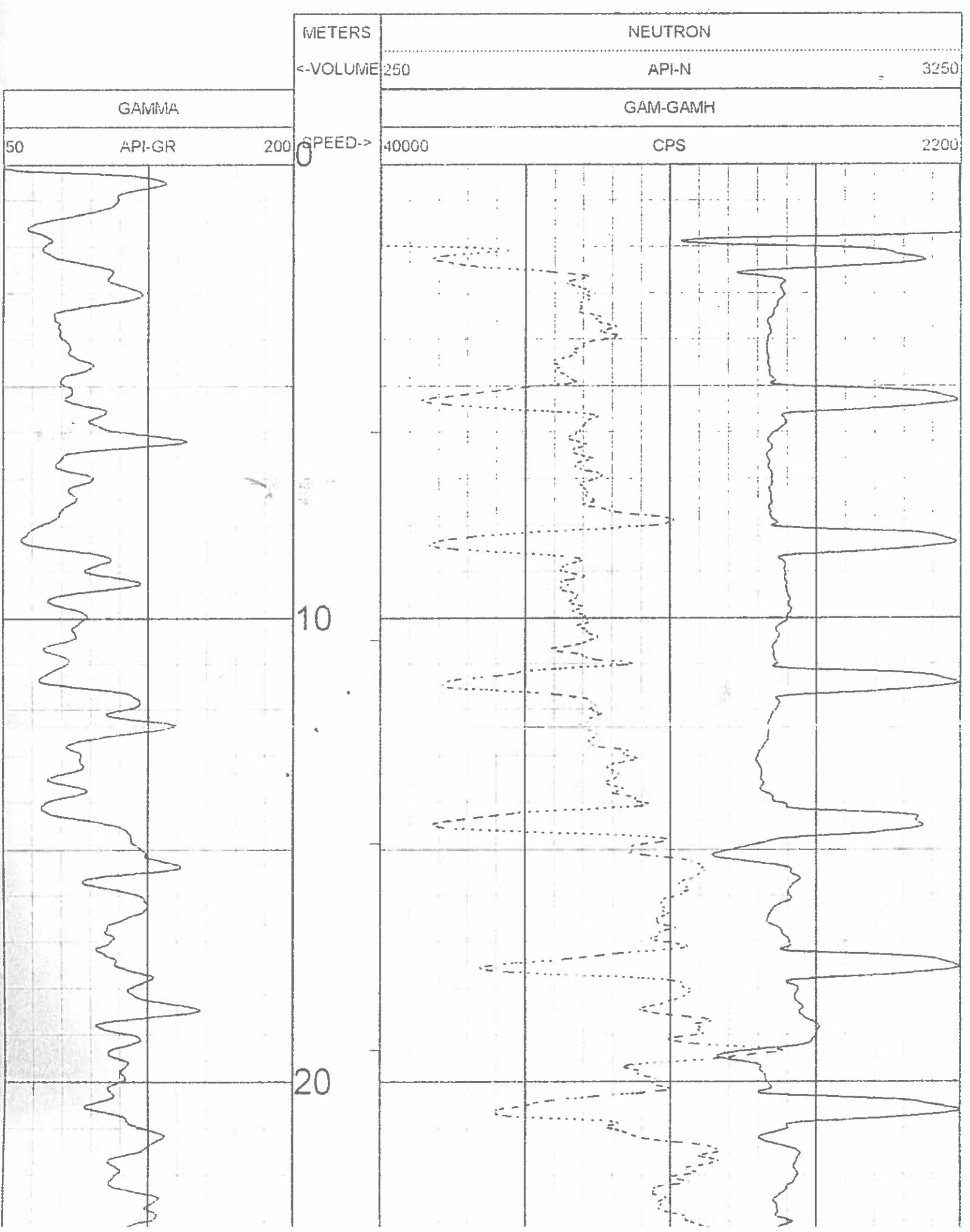
century-geo.com

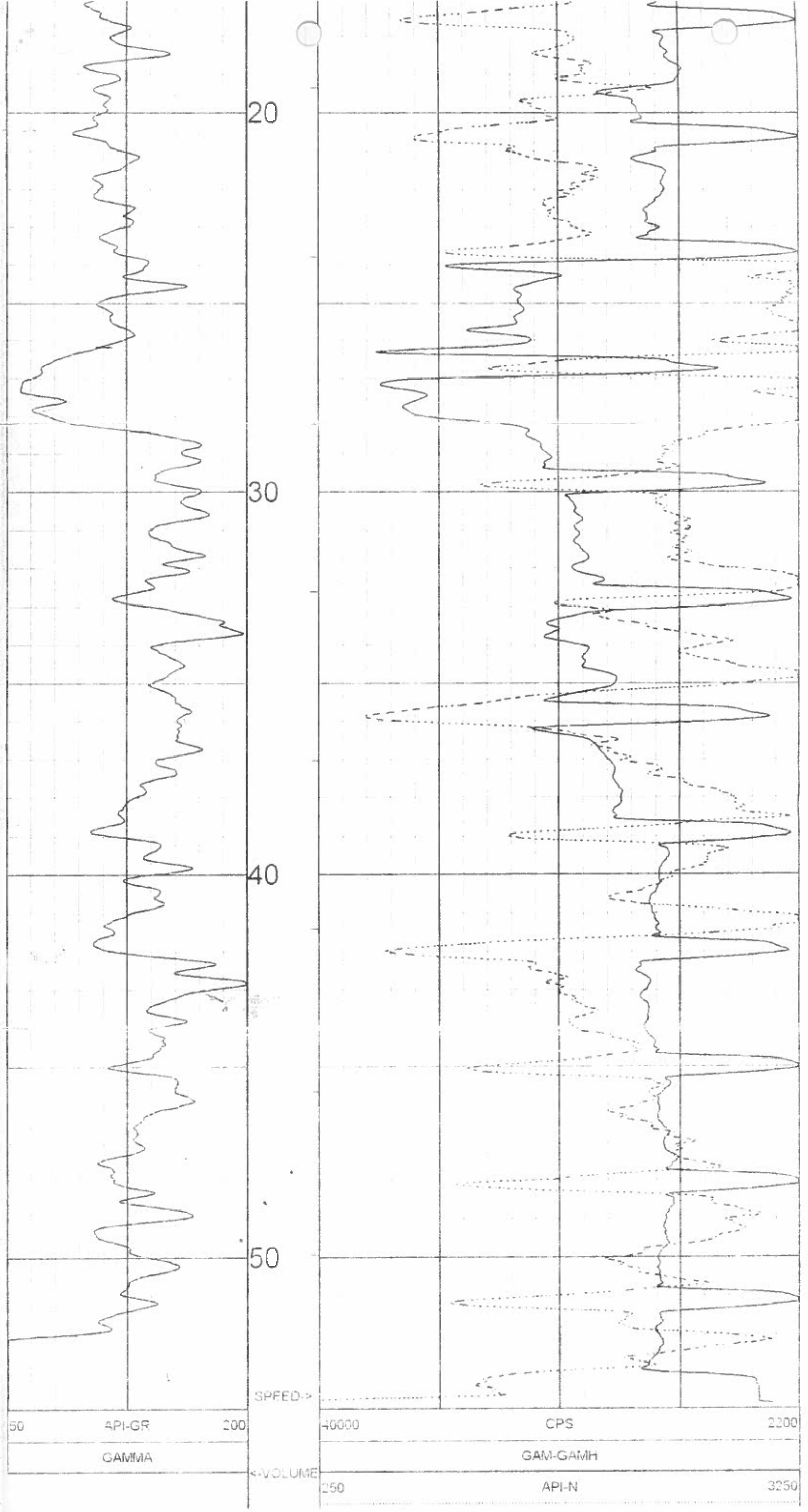
**GAMMA - DENSITY (CPS)
(THROUGH RODS)**


BR2004-27

COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES:
WELL	BR2004-27	9055
FIELD	BURNT RIVER	9033
MUNICIPALITY	TUMBLER RIDGE	
PROVINCE	BRITISH COLUMBIA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO		
UNIQUE WELL ID		
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION GL
DATE	09/12/04	
RUN NO	2	
DEPTH DRILLER	54.86	
BIT SIZE	12.1	
LOG OP	0.22	
LOG BOTTOM	53.89	
CASING OD	14	
CASING BOTTOM	17.07	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE		
MUD RES		
WITNESSED BY	RON PARENT	
RECORDED BY	R. HECK	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-28	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,364.73	6,140,649.51	1,223.56

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
40	-80	81.13				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	40.0	-80.00

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62		
53.60	54.40	0.80		
64.10	64.90	0.80		
68.20	69.10	0.90		
70.30	73.10	2.80		
73.80	74.20	0.40		
77.20	77.60	0.40		

RAW SAMPLE INFORMATION

Date issued: Friday, June 06, 2014
Reviewed: October 11, 2002

Page 1 of 1



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-28

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,461.74	6,140,443.88	572,364.73	6,140,649.51	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	150.00	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: Logged through rods. Survey NAD83

SURVEY SUMMARY

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62	OB	
7.62	8.65	1.03	SS	
8.65	10.40	1.75	SLT	
10.40	11.60	1.20	SS	
11.60	14.00	2.40	SLT	
14.00	14.70	0.70	SSA	
14.70	17.10	2.40	SLT	
17.10	19.60	2.50	SS	
19.60	24.40	4.80	SLT	
24.40	25.10	0.70	SSA	
25.10	26.70	1.60	SLT	
26.70	26.90	0.20	C	MA
26.90	28.25	1.35	SLT	
28.25	28.85	0.60	SS	
28.85	31.35	2.50	SLT	
31.35	32.70	1.35	SS	
32.70	32.90	0.20	C	MAA
32.90	35.60	2.70	SLT	
35.60	36.10	0.50	C	MAB
36.10	40.00	3.90	SH	
40.00	44.85	4.85	SLT	
44.85	45.70	0.85	SSA	
45.70	47.05	1.35	SLT	
47.05	48.65	1.60	SSA	
48.65	54.30	5.65	SS	
54.30	64.10	9.80	SLT	
64.10	65.00	0.90	SS	
65.00	66.85	1.85	SH	
66.85	73.00	6.15	SS	
73.00	73.70	0.70	SLT	
73.70	75.65	1.95	SS	
75.65	76.85	1.20	SH	
76.85	79.30	2.45	SLT	

Feb 2011

UPRB

53.6 ÷ 54.4

LWR

70.3 ÷ 73.1


MB

73.8 ÷ 74.2

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

Page 1 of 2

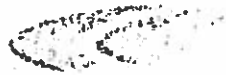
 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-28	year drilled: 2004	AREA: Burnt River Brule
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SAMPLE INFORMATION

Date issued: Monday, April 03, 2006
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River: Brule
DH ID: B22004-28
BY: R. Brown
DATE: November 11, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	7.62	OB	66.85	73.00	SS
7.62	8.65	SS	73.00	73.70	SLT
8.65	10.4	SLT	73.70	75.65	SS
10.4	11.6	SS	75.65	76.85	SH
11.6	14.00	SLT	76.85	79.30	SLT
14.00	14.70	SSA	E.O.H.		
14.70	17.10	SLT			
17.10	19.60	SS			
19.60	24.40	SLT			
24.40	25.10	SSA			
25.10	26.70	SLT			
26.70	26.90	MA			
26.90	28.25	SLT			
28.25	28.85	SS			
28.85	31.35	SLT			
31.35	32.7	SS			
32.7	32.9	MAA			
32.9	35.6	SLT			
35.6	36.1	MAB			
36.1	40.0	SH			
40.0	44.85	SLT			
44.85	45.70	SSA			
45.70	47.05	SLT			
47.05	48.65	SSA			
48.65	54.30	SS			
54.30	64.10	SLT			
64.10	65.00	SS			
65.00	66.85	SH			

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE



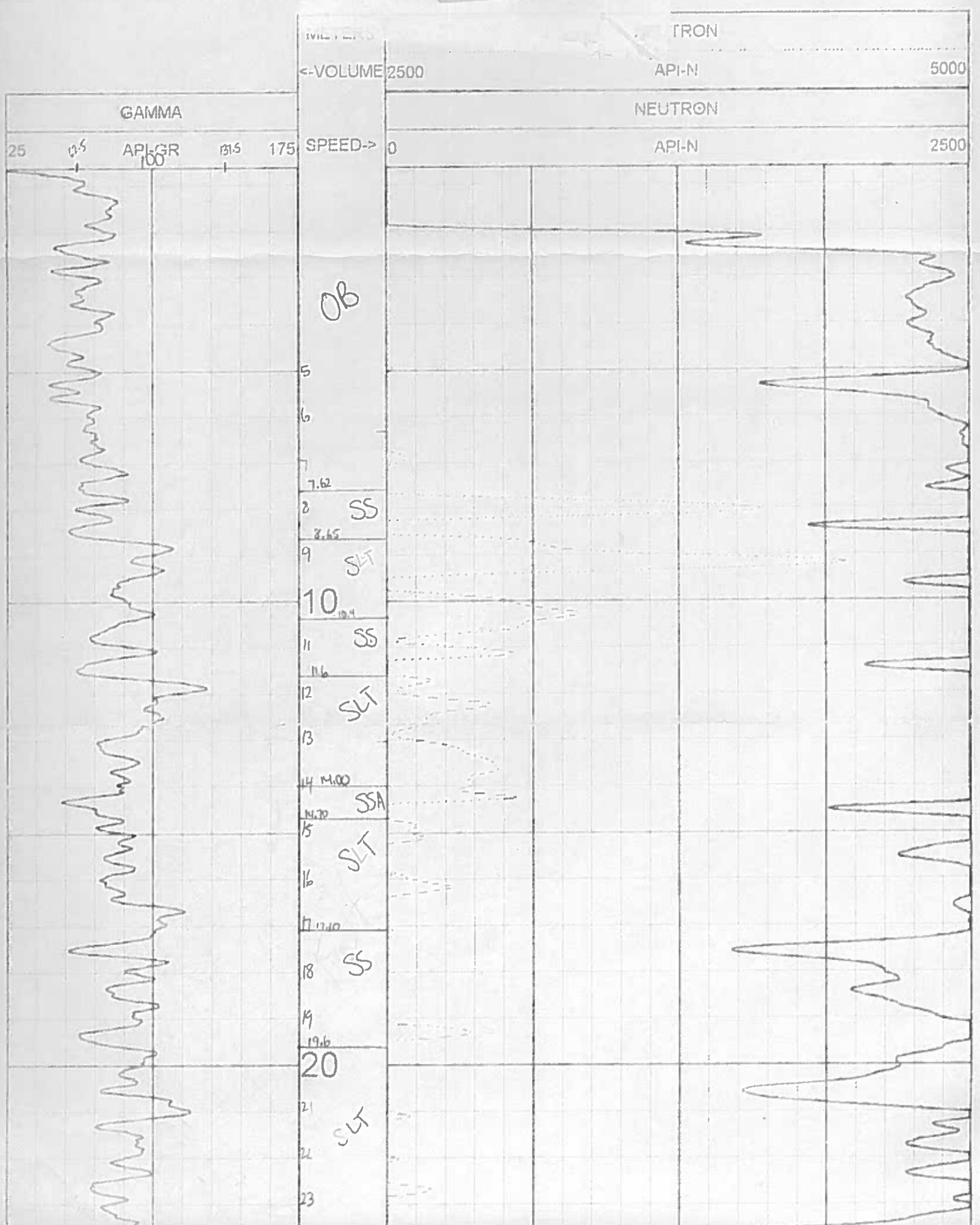
century-geo.com

Picks
GAMMA - NEUTRON
(THROUGH RODS)

BR2004-28

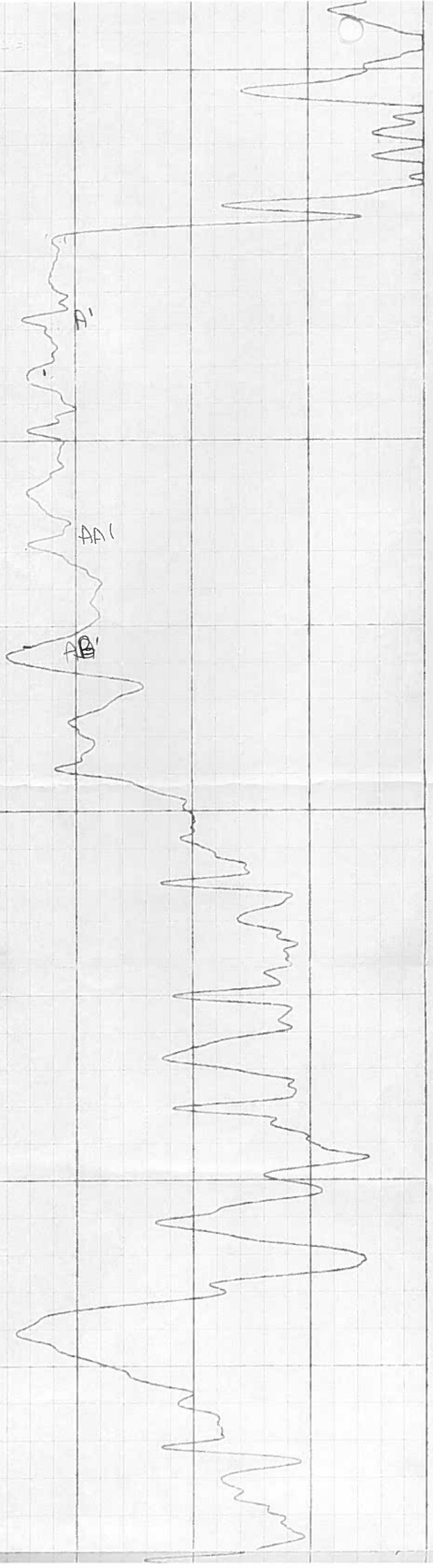
COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES	
WELL	BR2004-28	9068	
FIELD	SURFT RIVER	9067	
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
BRL MEASURED FROM	GL	ELEVATION GL	
DATE	09/16/04		
RUN NO	3		
DEPTH DRILLER	83.82		
BIT SIZE	12.1		
LOG TOP	0.62		
LOG BOTTOM	81.13		
CASING OD	14		
CASING BOTTOM	7.62		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	MATT MOORMAN		
RECORDED BY	R HECK		
REMARKS 1			
REMARKS 2			

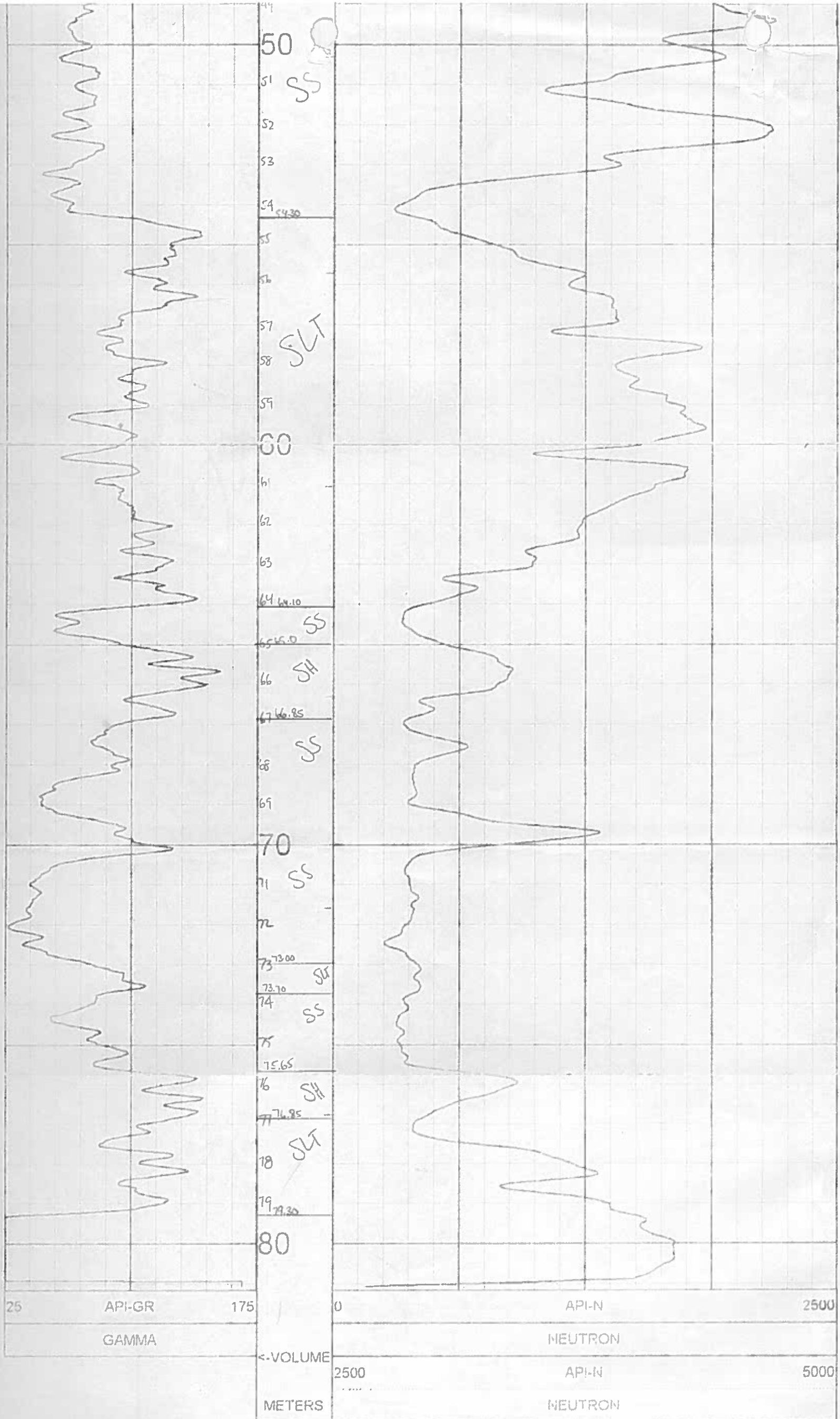
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS






19
19.6
20
21 SLT
22
23
24
24.40
25 SSA
25.10
26 SLT
26.7
27 MA
26.9
28 SLT
28.25
28.85
29
30 SH
31
31.35
32 SS
33 MA
33.9
34 SLT
35
36 MAB
35.6
36.1
37
38 SH
39
40 40.0
41 SLT
42
43
44
45 44.85
45.70
46 SLT
47 47.05
48 SSA
48.65
49
50
51 SS
52
53
54 49.20
55
56
57 SLT
58
59
60





TOOL CALIBRATION BR2004-28 09/16/04 09:43
 TOOL 9067A
 SERIAL NUMBER 523

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	02:34:43	GAMMA	3.000 [API-GR]	1.00 [CPS]
	Jul27,04	02:34:43	GAMMA	265.000 [API-GR]	83.00 [CPS]
2	May21,04	20:01:44	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	20:01:44	NEUTRON	272.000 [API-N]	121.00 [CPS]

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-29	year drilled: 2004	AREA:
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,255.53	6,140,466.03	1,238.83

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
167	-90	64.00				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	166.8	-90.00
15.00	166.8	-87.60
17.00	157.1	-87.70
19.00	154.1	-87.80
21.00	168.0	-87.90
23.00	161.0	-88.40
25.00	165.4	-88.60
27.00	158.7	-88.50
29.00	165.2	-89.00
31.00	151.5	-88.80
33.00	150.2	-89.00
35.00	135.3	-89.30
37.00	147.1	-89.20
39.00	148.2	-89.30
41.00	155.0	-89.40
43.00	168.0	-89.20
45.00	189.3	-89.20
47.00	201.0	-88.90
49.00	202.9	-89.10
51.00	206.9	-89.00
53.00	222.9	-88.80
55.00	225.5	-88.70
57.00	227.4	-88.80
59.00	231.9	-88.70
61.00	227.8	-88.60
63.00	242.1	-88.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62		
45.20	46.40	1.20		
47.50	48.20	0.70		
51.80	52.20	0.40		
57.40	57.90	0.50		

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 1 of 2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-29	year drilled: 2004	AREA: Burnt River Brule
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,352.54	6,140,260.40	572,255.53	6,140,466.03	1,238.83

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
180	-90	64.00	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: Survey NAD83

SURVEY SUMMARY


DEPTH	AZ	INCL
15.00	166.8	-87.60
21.00	162.6	-87.90
27.00	162.5	-88.50
33.00	160.6	-89.00
39.00	159.0	-89.30
45.00	159.8	-89.20
51.00	164.2	-89.00
57.00	171.6	-88.80
63.00	179.0	-88.90
64.30	180.4	-88.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	7.62	7.62	OB	
7.62	13.30	5.68	SLT	
13.30	13.50	0.20	C	MA
13.50	16.25	2.75	SH	
16.25	19.75	3.50	SLT	
19.75	20.80	1.05	SSA	
20.80	21.10	0.30	C	MAA
21.10	22.15	1.05	SSA	
22.15	23.30	1.15	SLT	
23.30	23.40	0.10	C	MAB
23.40	26.45	3.05	SSA	
26.45	39.10	12.65	SLT	
39.10	40.70	1.60	SSA	
40.70	43.10	2.40	SLT	
43.10	45.20	2.10	SH	
45.20	46.40	1.20	C	R1
46.40	47.40	1.00	SH	
47.40	48.10	0.70	C	R2
48.10	48.60	0.50	SH	
48.60	49.25	0.65	SLT	
49.25	50.00	0.75	SH	
50.00	50.82	0.82	C	R3
50.82	51.81	0.99	SH	
51.81	53.40	1.59	C	R4
53.40	54.60	1.20	SH	
54.60	55.10	0.50	SLT	
55.10	55.85	0.75	SH	
55.85	57.40	1.55	SLT	
57.40	58.00	0.60	C	R5
58.00	61.60	3.60	SH	

Date issued: Monday, April 03, 2006
 Reviewed: October 11, 2002

Page 1 of 2

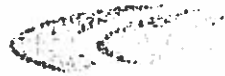
 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

<i>HOLE-ID: BR2004-29</i>	year drilled: 2004	<i>AREA:</i>	Burnt River Brule
---------------------------	--------------------	--------------	----------------------

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006
Reviewed: October 11, 2002

Page 2 of 2



Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burcat River: Brule
DH ID: BR2004-29
BY: R. Brown
DATE: November 12, 2004

FROM	TO	LITH	FROM	TO	LITH
0.00	7.62	OB	57.40	58.00	R5?
7.62	13.30	SLT	58.00	61.60	SH
13.30	13.50	MAA	E.O.H.		
13.50	16.25	SH			
16.25	19.75	SLT			
19.75	20.8	SSA			
20.8	21.1	MAA			
21.1	22.15	SSA			
22.15	23.30	SLT			
23.30	23.40	MAB			
23.40	26.45	SSA			
26.45	39.10	SLT			
39.10	40.70	SSA			
40.70	43.10	SLT			
43.10	45.20	SH			
45.2	46.4	R1			
46.4	47.40	SH			
47.40	48.10	R2			
48.10	48.60	SH			
48.60	49.25	SLT			
49.25	50.00	SH			
50.00	50.82	R3			
50.82	51.81	SH			
51.81	53.40	R4			
53.40	54.60	SH			
54.60	55.10	SLT			
55.10	55.85	SH			
55.85	57.40	SLT			

LITHOLOGICAL ABBREVIATIONS:

OB - OVERBURDEN
C - COAL
P - PARTING
SHC - SHALEY COAL
CGL - CONGLOMERATE
SH - SHALE
SLT - SILTSTONE
SSA - ARGILLACEOUS SANDSTONE
SSC - CLEAN SANDSTONE
SS/SH - INTERBEDDED SANDSTONE AND SHALE

R1 → R5 are coal as
apart of "Road Coal
Zone"

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BR2004 - 29

COMPANY: WESTERN CANADIAN COAL CORP
 WELL: BR2004 - 29
 FIELD: BURNT RIVER
 MUNICIPALITY: TUMBLER RIDGE
 PROVINCE: BRITISH COLUMBIA

OTHER SERVICES
 9055
 9034

LOCATION:
 SECTION:
 TOWNSHIP:
 RANGE:
 API NO:
 UNIQUE WELL ID:

PERMANENT DATUM: GL ELEVATION KB
 LOG MEASURED FROM: GL ELEVATION DF
 BRL MEASURED FROM: GL ELEVATION/GI

DATE: 09/21/04

RUN NO: 3

DEPTH DRILLER: 66 53

BIT SIZE: 12 1

G TOP: 0 42

LOG BOTTOM: 64 32

CASING OD: 7 62

CASING BOTTOM: 7 62

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE:

MUD RES:

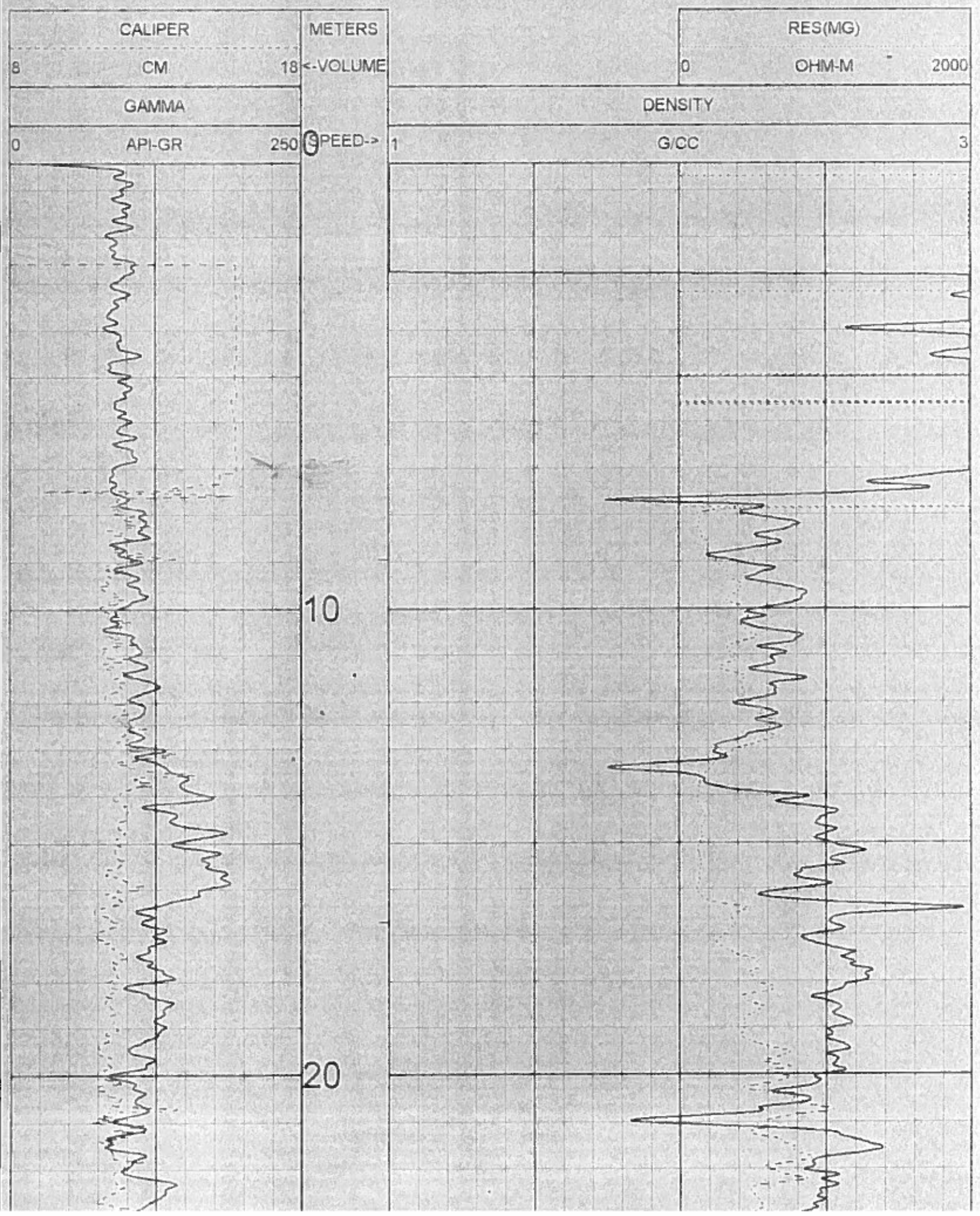
WITNESSED BY: MATT MOORMAN

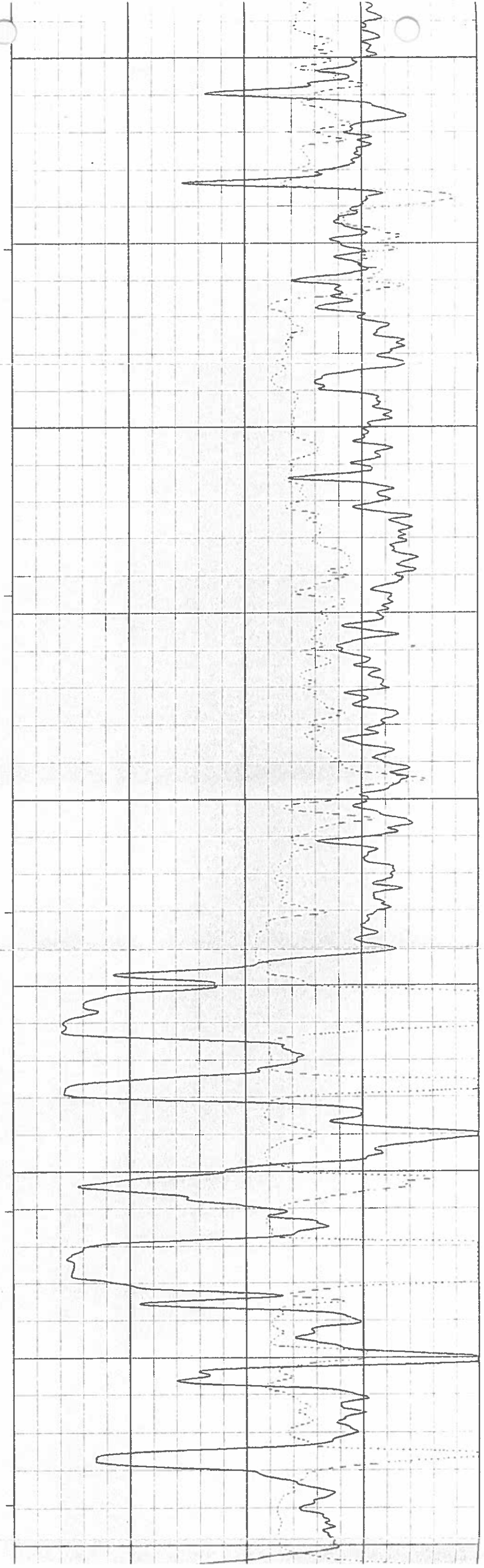
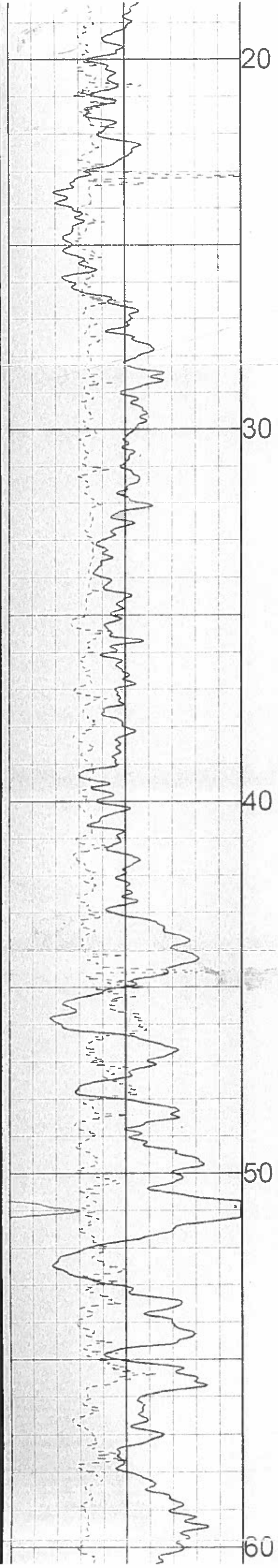
RECORDED BY: R HECK

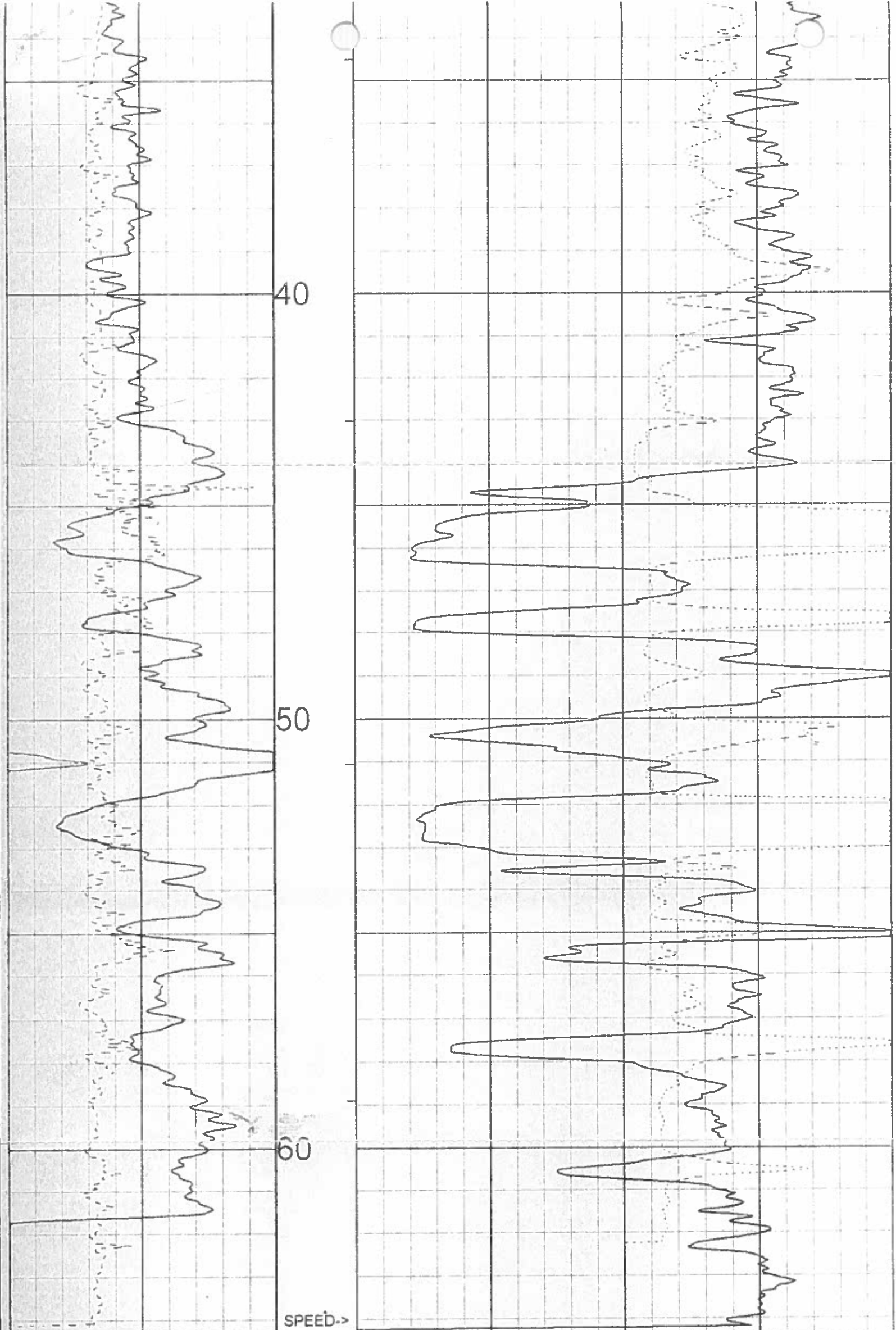
REMARKS 1:

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







0	API-GR	250	1	G/CC	3
	GAMMA			DENSITY	
8	CM	18		OHM-M	2000
	CALIPER	METERS		RES(MG)	

TOOL CALIBRATION BR2004 - 29 09/21/04 10:39
 TOOL 9034AA
 SERIAL NUMBER 480

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep14,04	19:13:24	GAMMA	0.000 [API-GR]	1.00 [CPS]
	Sep14,04	19:13:24	GAMMA	325.000 [API-GR]	513.00 [CPS]
2	Sep08,04	18:16:53	DENSITY	1.106 [G/CC]	5992.00 [CPS]
	Sep08,04	18:16:53	DENSITY	2.612 [G/CC]	1318.00 [CPS]
3	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
4	Sep10,04	18:34:28	CALIPER	7.620 [CM]	57391.00 [CPS]
	Sep10,04	18:34:28	CALIPER	17.780 [CM]	105259.00 [CPS]
5	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
6	Sep08,04	17:51:14	CALIPERL	Default [CPS]	Default [CPS]



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**GAMMA - DENSITY
4 INCH RESISTIVITY SCALE**

BR2004 - 29

COMPANY: WESTERN CANADIAN COAL CORP

WELL: BR2004 - 29

FIELD: BURNT RIVER

MUNICIPALITY: TUMBLER RIDGE

PROVINCE: BRITISH COLUMBIA

OTHER SERVICES:
9055
9034

LOCATION:

SECTION:

TOWNSHIP:

RANGE:

API NO:

UNIQUE WELL ID:

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 09/21/04

RUN NO: 2

DEPTH DRILLER: 65.53

BIT SIZE: 121

LOG OP: 0.42

LOG BOTTOM: 64.32

CASING OD:

CASING BOTTOM: 7.62

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE:

MUD RES:

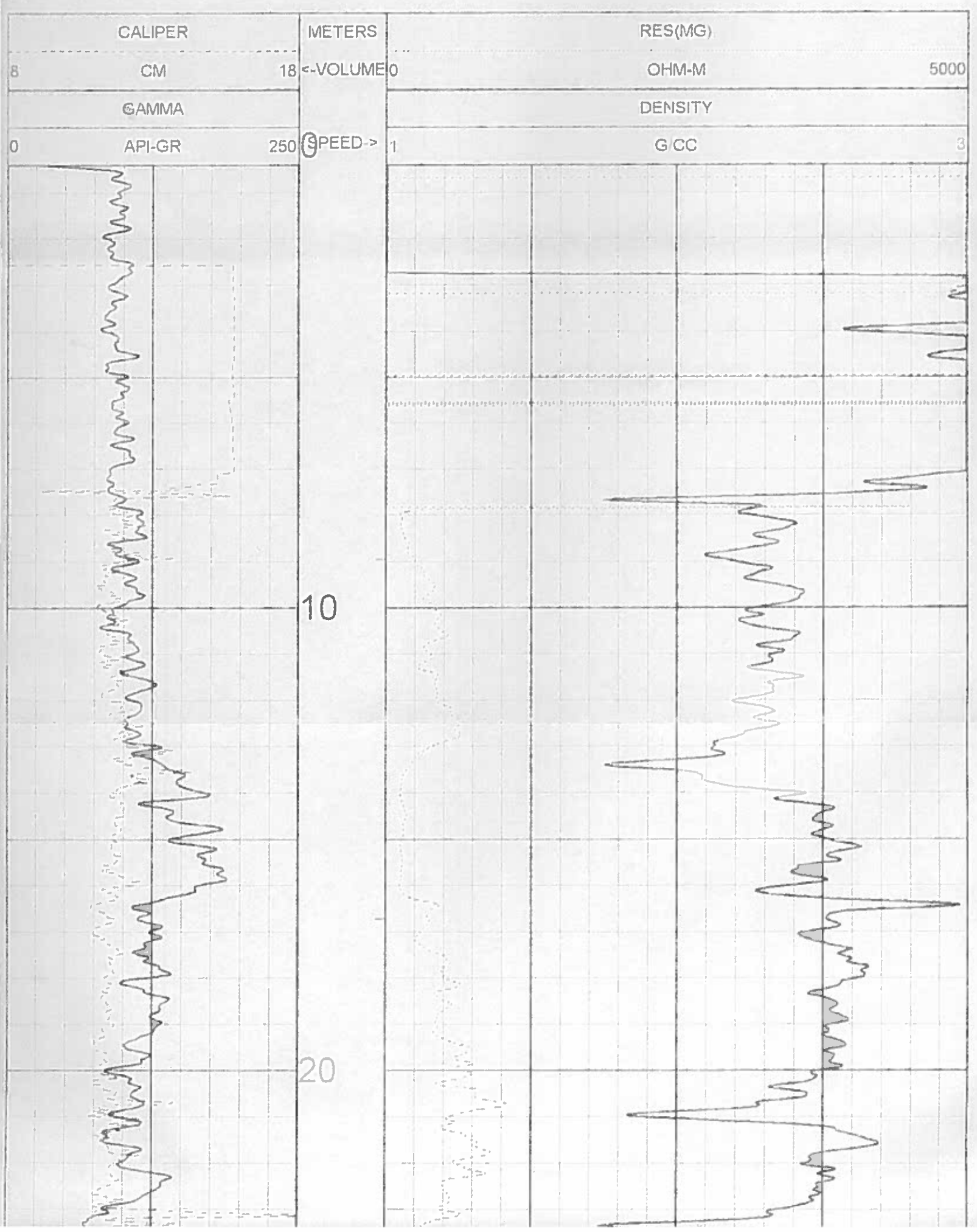
WITNESSED BY: MATT MOORMAN

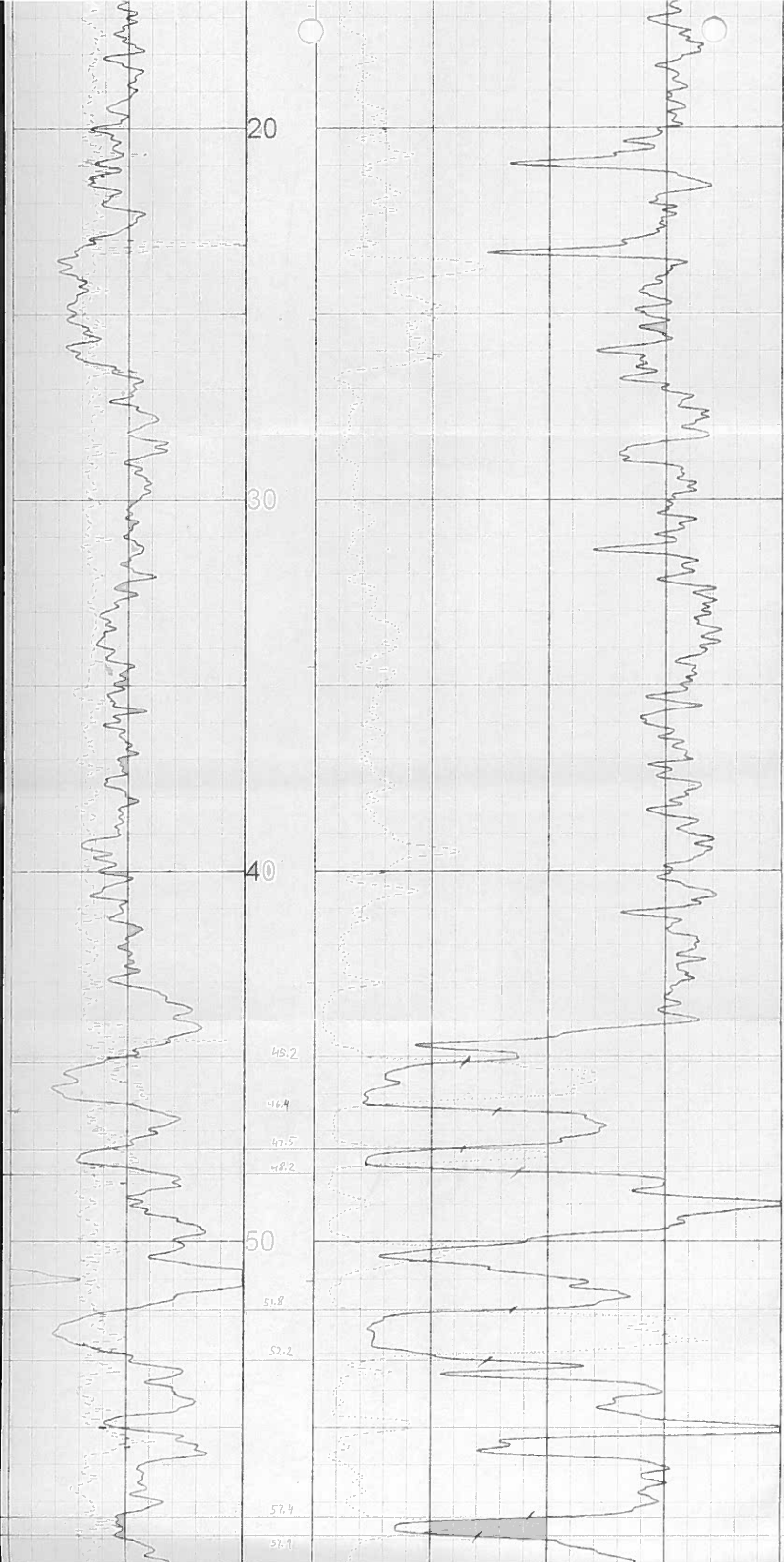
RECORDED BY: R. HECK

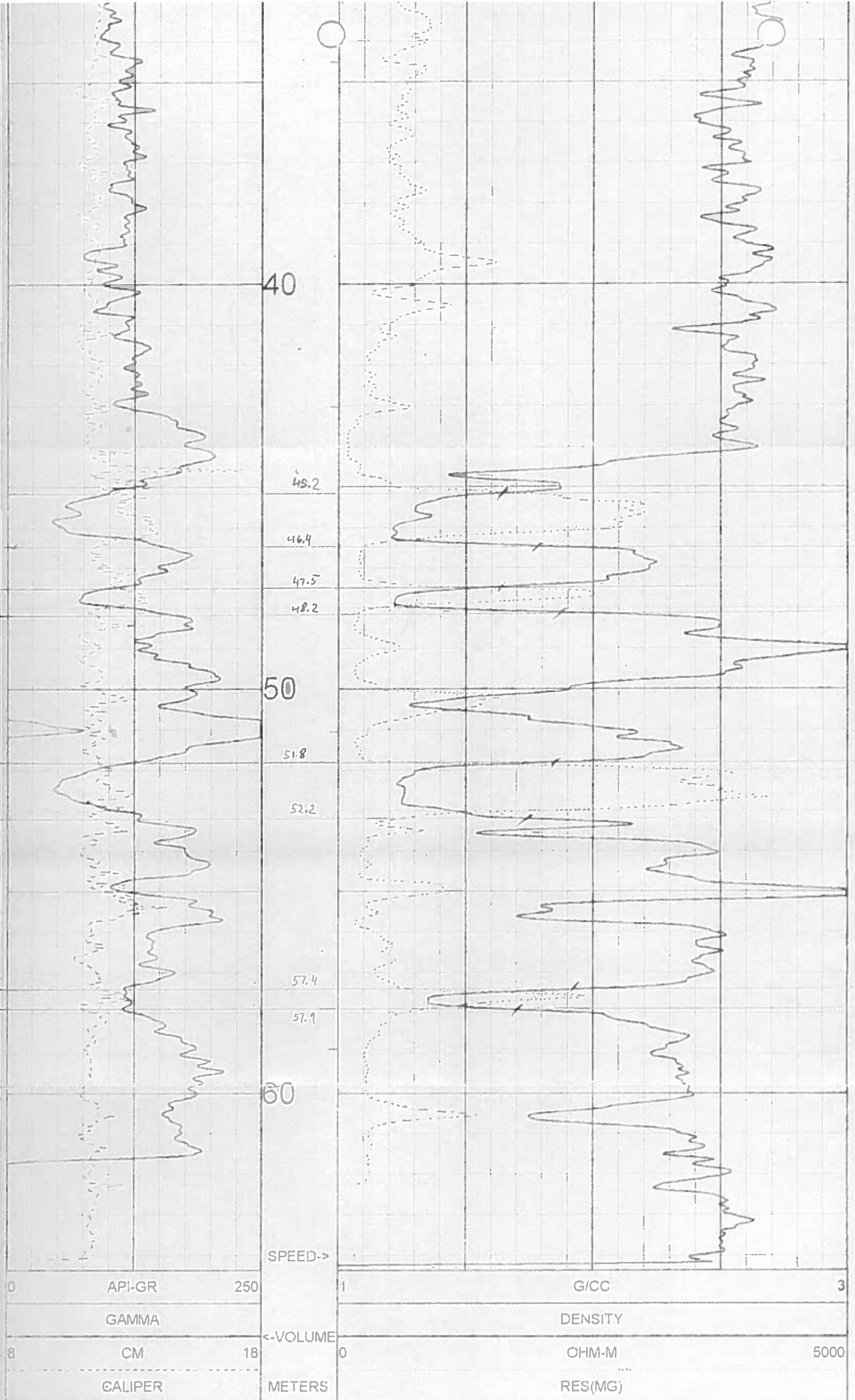
REMARKS 1:

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004 - 29 09/21/04 10:39
 TOOL 9034AA
 SERIAL NUMBER 480

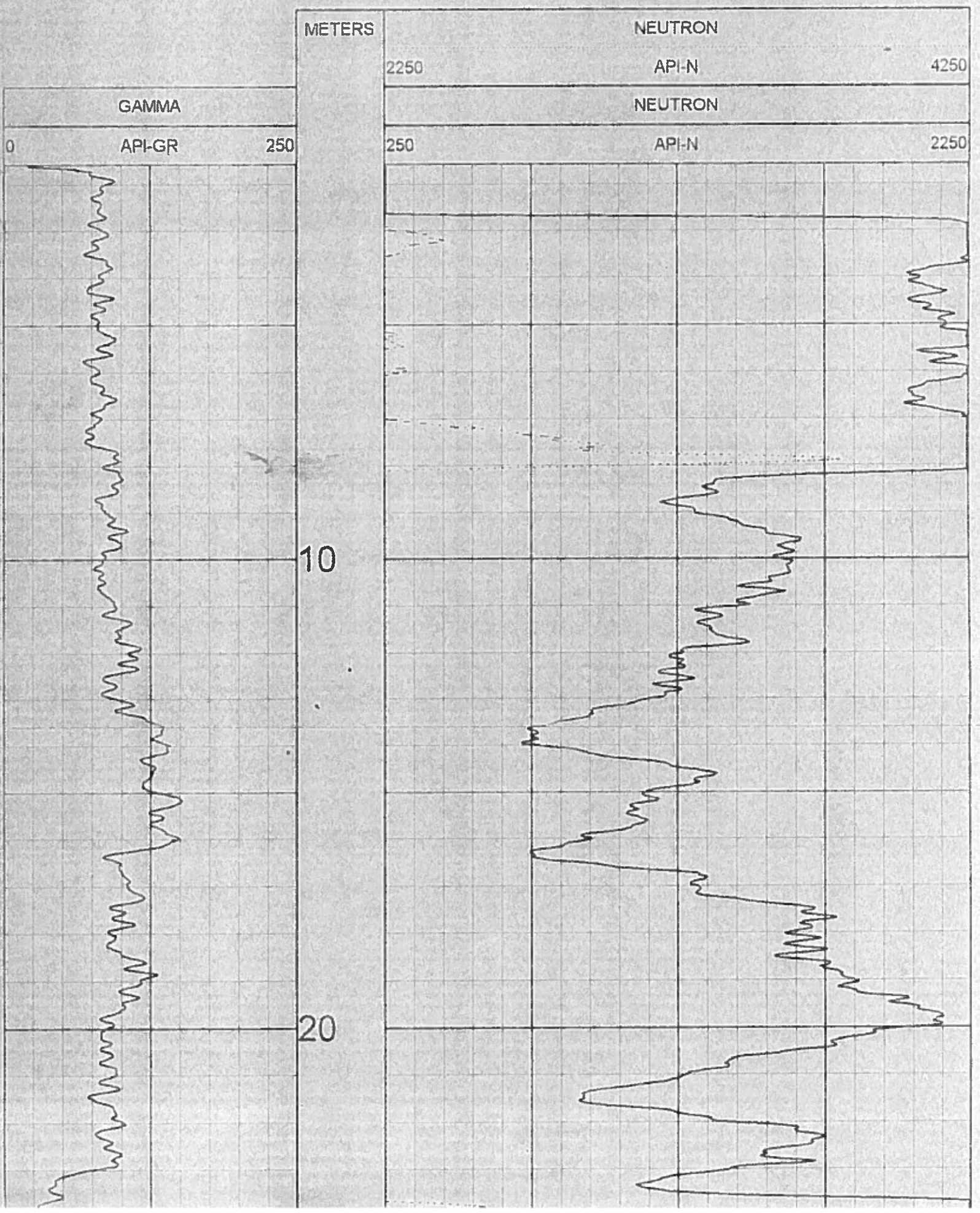
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep14,04	19:13:24	GAMMA	0.000 [API-GR	1.00 [CPS
	Sep14,04	19:13:24	GAMMA	325.000 [API-GR	513.00 [CPS
2	Sep08,04	18:16:53	DENSITY	1.106 [G/CC	5992.00 [CPS
	Sep08,04	18:16:53	DENSITY	2.612 [G/CC	1318.00 [CPS
3	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
4	Sep10,04	18:34:28	CALIPER	7.620 [CM	57391.00 [CPS]
	Sep10,04	18:34:28	CALIPER	17.780 [CM	105259.00 [CPS]
5	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
6	Sep08,04	17:51:14	CALIPERL	Default [CPS]	Default [CPS]

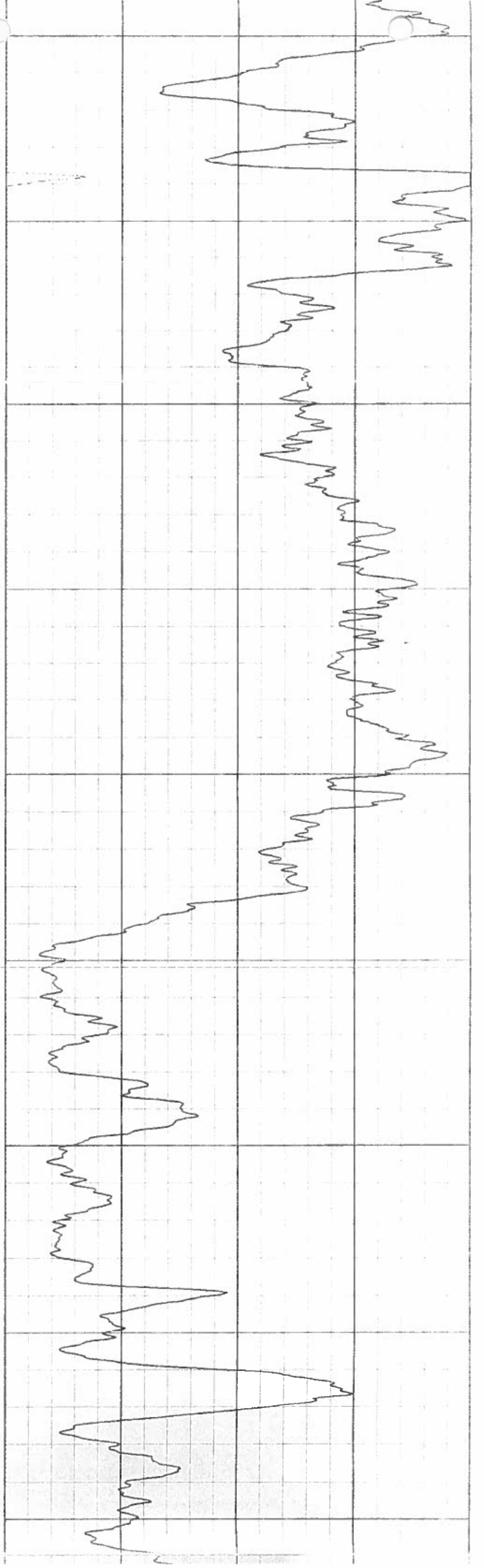
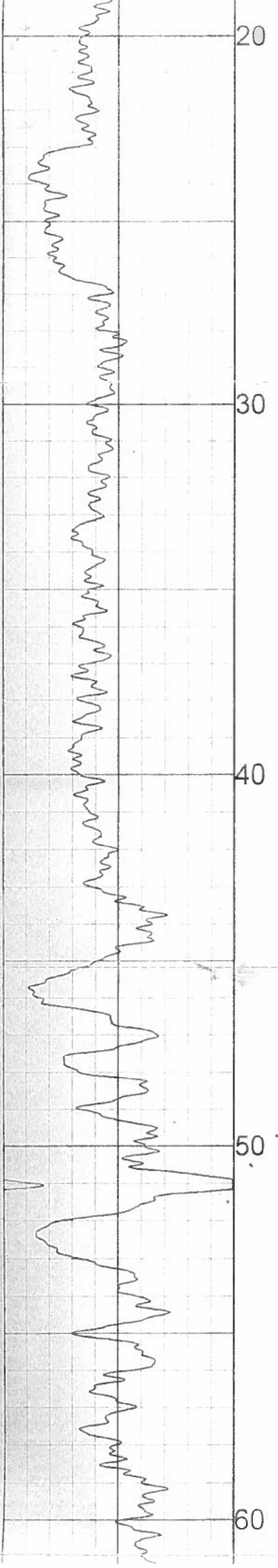
century-geo.com

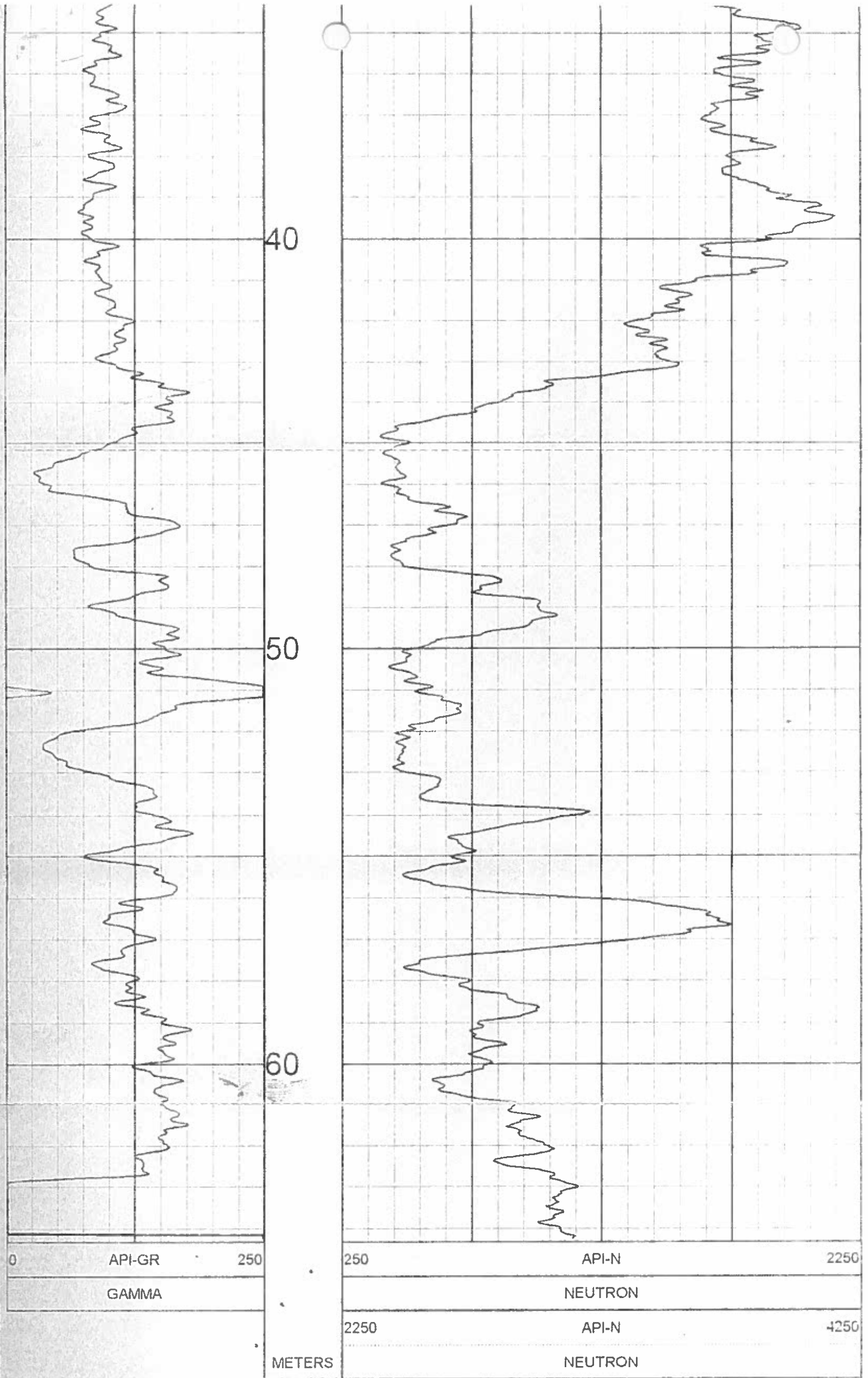
BR2004 - 29

COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES	9055 9034
WELL	BR2004 - 29		
FIELD	BURNT RIVER		
MUNICIPALITY	TUMBLER RIDGE		
PROVINCE	BRITISH COLUMBIA		
LOCATION			
SECTION			
TOWNSHIP			
RANGE			
API NO.			
UNIQUE WELL ID			
PERMANENT DATUM	GL	ELEVATION KB	
LOG MEASURED FROM	GL	ELEVATION DF	
DRL MEASURED FROM	GL	ELEVATION GL	
DATE	09/21/04		
RUN NO	1		
DEPTH DRILLER	65.53		
BIT SIZE	12.1		
LOG TOP	1.53		
LOG BOTTOM	64.28		
CASING OD			
CASING BOTTOM	7.62		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE			
MUD RES			
WITNESSED BY	MATT MOORMAN		
RECORDED BY	R. HECK		
REMARKS 1			
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







TOOL CALIBRATION BR2004 - 29 09/21/04 09:56

TOOL 9055A

SERIAL NUMBER 80

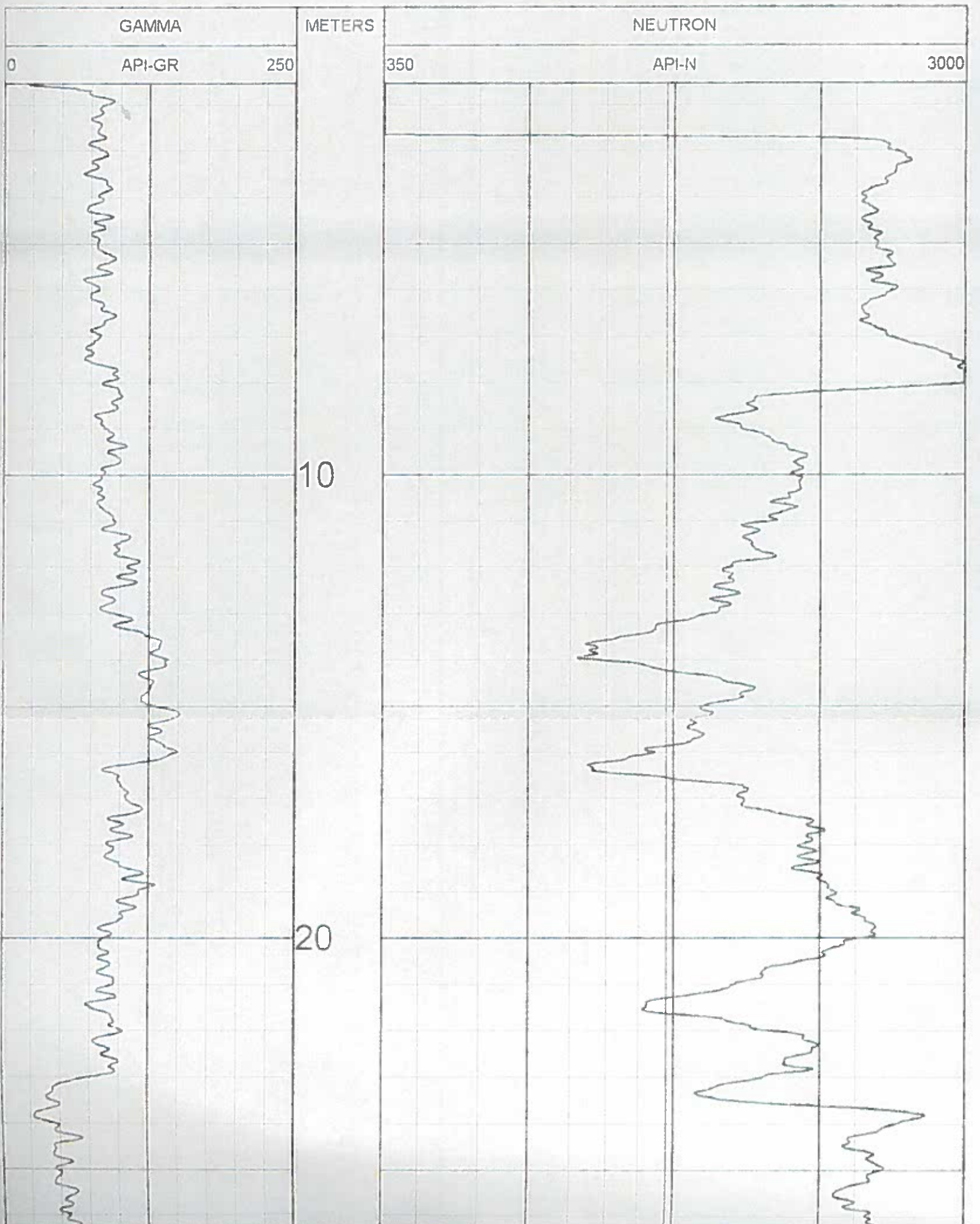
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRO	271.000 [API-N]	185.00 [CPS]
6	Feb20,02	17:17:55	TEMP	51.000 [DEG F]	1104.00 [CPS]
	Feb20,02	17:17:55	TEMP	95.200 [DEG F]	450.00 [CPS]

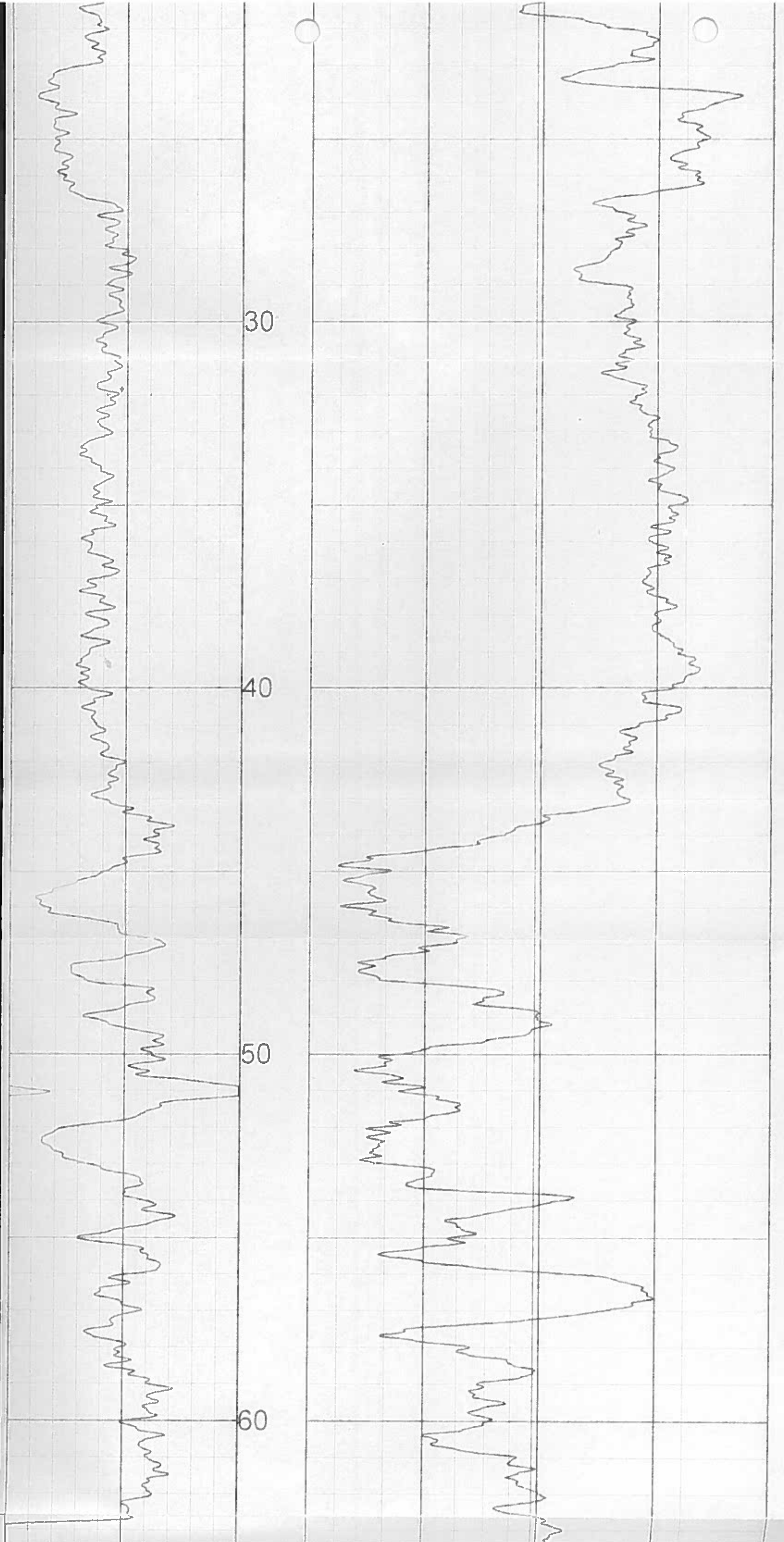
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BR2004 - 29

COMPANY	WESTERN CANADIAN COAL CORP	OTHER SERVICES
WELL	BR2004 - 29	9055
FIELD	BURWT RIVER	9034
MUNICIPALITY	TUMBLER RIDGE	
PROVINCE	BRITISH COLUMBIA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO		
UNIQUE WELL ID		
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION CL
DATE	09/21/04	
RUN NO	1	
DEPTH DRILLER	65.53	
BIT SIZE	12 1/4	
LOG OP	1.53	
LOG BOTTOM	64.26	
CASING OD		
CASING BOTTOM	7.62	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE		
MUD RES		
WITNESSED BY	MATT MOORMAN	
RECORDED BY	R HECK	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



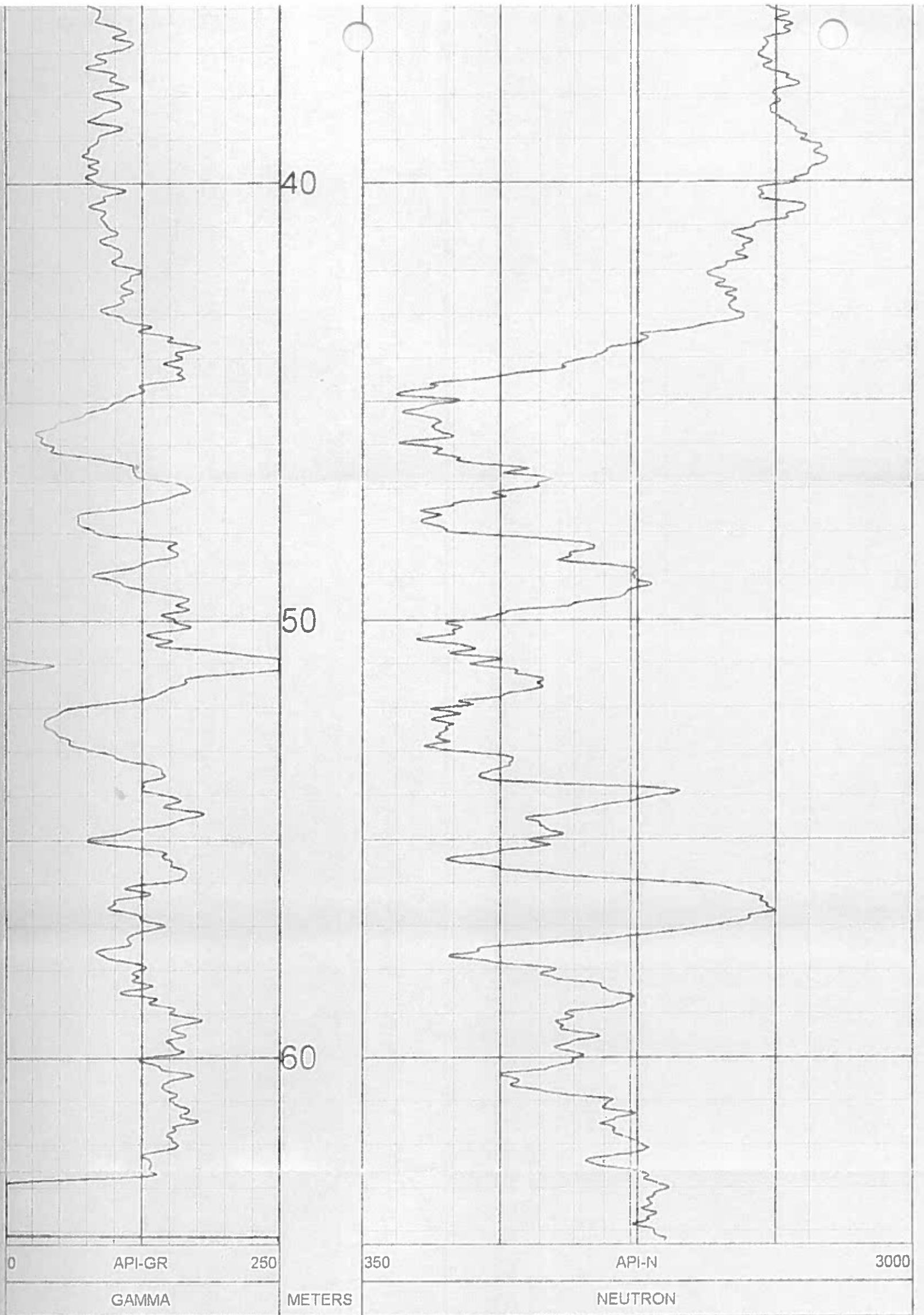


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TOOL CALIBRATION BR2004 - 29 09/21/04 09:56

TOOL 9055A

SERIAL NUMBER 80

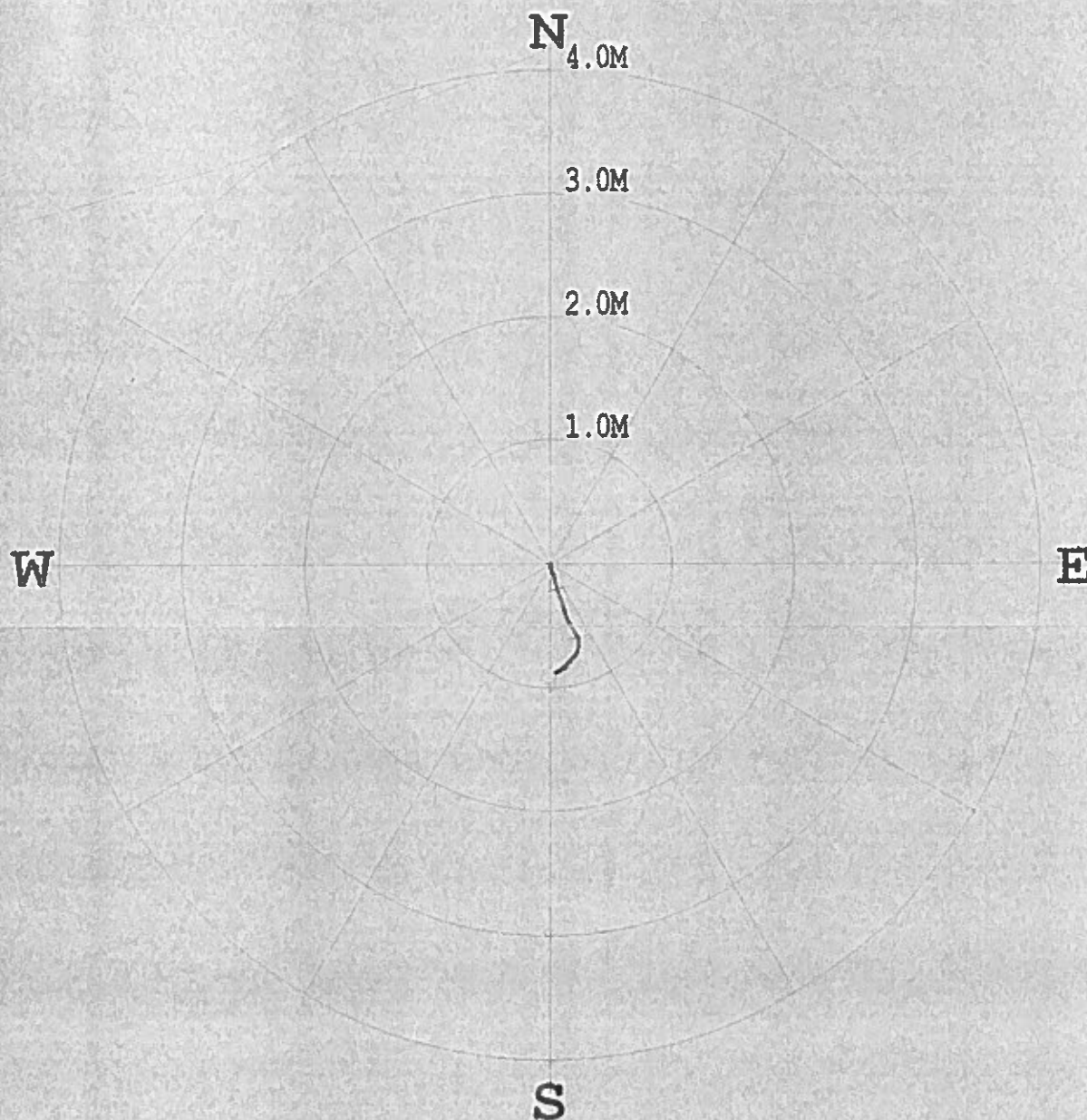
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27 04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27 04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRO	271.000 [API-N]	185.00 [CPS]
6	Feb20,02	17:17:55	TEMP	51.000 [DEG F]	1104.00 [CPS]
	Feb20,02	17:17:55	TEMP	95.200 [DEG F]	450.00 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004 - 29
 DATE OF LOG: 09/21/04
 PROBE: 9055A 80

SCALE: 1 M/CM
 TRUE DEPTH: 64.27 M
 AZIMUTH: 180.4
 DISTANCE: 0.9 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE


MAG DECL: 21.6



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004 - 29
 FIELD OFFICE : DATE OF LOG : 09/21/04
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-29_09-21-04_09-56_9055A_02_15.00_84.28_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
15.0	15.02	-0.00	0.00	0.0	166.8	2.4	166.8
17.0	17.00	-0.07	0.02	0.1	163.0	2.3	157.1
19.0	19.00	-0.16	0.05	0.2	162.5	2.2	154.1
21.0	21.00	-0.23	0.07	0.2	162.5	2.1	169.0
23.0	22.99	-0.20	0.09	0.3	162.3	1.6	164.0
25.0	24.99	-0.34	0.11	0.4	162.0	1.4	165.4
27.0	26.99	-0.39	0.12	0.4	162.5	1.5	158.7
29.0	28.99	-0.43	0.14	0.5	162.2	1.0	165.2
31.0	30.99	-0.47	0.16	0.5	161.3	1.2	151.5
33.0	32.99	-0.51	0.18	0.5	160.6	1.0	150.2
35.0	34.99	-0.53	0.19	0.6	159.9	0.7	135.3
37.0	36.99	-0.56	0.21	0.6	159.4	0.8	147.1
39.0	38.99	-0.58	0.22	0.6	159.0	0.7	148.2
41.0	40.99	-0.59	0.23	0.6	158.8	0.6	155.0
43.0	42.99	-0.61	0.24	0.7	159.0	0.9	158.0
45.0	44.99	-0.64	0.24	0.7	159.8	0.8	189.3
47.0	46.99	-0.67	0.24	0.7	160.9	1.1	201.0
49.0	48.99	-0.70	0.22	0.7	162.3	0.9	202.9
51.0	50.99	-0.73	0.21	0.8	164.2	1.0	206.9
53.0	52.99	-0.76	0.18	0.8	165.6	1.2	222.9

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-33	year drilled: 2004	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,680.14	6,140,253.86	1,307.59

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
144	-90	203.24				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	144.3	-90.00
15.00	144.3	-88.40
17.00	146.7	-88.60
19.00	147.8	-89.20
21.00	151.9	-89.20
23.00	154.9	-89.00
25.00	155.0	-88.50
27.00	153.8	-88.80
29.00	152.4	-88.80
33.00	154.5	-88.50
35.00	155.6	-88.60
37.00	156.6	-88.70
39.00	156.4	-88.60
41.00	155.9	-88.40
43.00	155.5	-88.60
45.00	154.8	-88.60
47.00	154.9	-88.30
49.00	153.6	-87.80
51.00	151.7	-87.90
53.00	149.5	-88.40
55.00	147.2	-87.60
57.00	144.9	-87.90
59.00	142.0	-87.30
61.00	138.5	-87.00
63.00	133.9	-86.50
65.00	129.3	-86.40
67.00	125.3	-86.20

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.10	6.10		
100.20	103.95	3.75		
106.30	108.20	1.90		
164.25	165.25	1.00		
188.00	189.00	1.00		
191.30	192.00	0.70		

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 1 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2004-33	year drilled: 2004	AREA:
---------------------------	--------------------	-------

161.00	142.0	-86.70
163.00	142.1	-86.30
165.00	142.2	-86.50
167.00	142.1	-86.30
169.00	142.0	-86.70
171.00	141.9	-87.60
173.00	141.7	-86.80
175.00	141.5	-87.10
177.00	141.2	-87.50
179.00	140.9	-87.50
181.00	140.5	-87.60
183.00	140.2	-87.90
185.00	139.7	-87.20
187.00	139.3	-87.00
189.00	138.9	-87.30
191.00	138.4	-87.70
193.00	137.9	-87.30
195.00	137.4	-87.40
197.00	139.8	-87.50
199.00	136.2	-86.40
201.00	136.5	-87.30
203.00	134.9	-86.50
203.24	134.9	-86.20

RAW SAMPLE INFORMATION

Date issued: Monday, June 09, 2014 Reviewed: October 11, 2002
--

Page 3 of 3



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR2004-33

year drilled: 2004

AREA:

Burnt River
Brule

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,777.04	6,140,048.24	572,680.03	6,140,253.87	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90					

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
15.00	144.3	-88.40
21.00	151.9	-89.20
27.00	153.8	-88.80
33.00	154.5	-88.50
39.00	156.4	-88.60
45.00	154.8	-88.60
51.00	151.7	-87.90
57.00	144.9	-87.90
63.00	133.9	-86.50
69.00	121.3	-86.10
75.00	111.6	-86.80
81.00	106.3	-86.90
87.00	107.5	-85.80
93.00	113.9	-85.20
99.00	118.1	-86.50
105.00	122.4	-86.90
111.00	126.8	-87.00
117.00	130.9	-87.00
123.00	134.6	-87.50
129.00	137.2	-87.60
135.00	138.3	-88.00
141.00	139.0	-88.00
147.00	139.6	-87.30
153.00	140.7	-86.60
159.00	141.7	-86.90
165.00	142.2	-86.50
171.00	141.9	-87.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.10	6.10	OB	
6.10	9.58	3.48	SH	
9.58	10.30	0.72	SLT	
10.30	11.20	0.90	SH	
11.20	12.00	0.80	C	
12.00	14.00	2.00	SH	
14.00	14.70	0.70	C	
14.70	15.50	0.80	SH	
15.50	16.85	1.35	SLT	
16.85	18.40	1.55	SH	
18.40	21.00	2.60	SLT	
21.00	22.15	1.15	SH	
22.15	24.10	1.95	SLT	
24.10	25.60	1.50	SH	
25.60	26.05	0.45	SLT	
26.05	26.72	0.67	SH	
26.72	36.25	9.53	SLT	
36.25	39.00	2.75	SSA	
39.00	40.05	1.05	SLT	
40.05	63.35	23.30	SS	
63.35	64.30	0.95	SLT	
64.30	66.20	1.90	SH	
66.20	71.70	5.50	SLT	
71.70	73.00	1.30	SHC	
73.00	82.00	9.00	SH	
82.00	87.50	5.50	SLT	
87.50	89.40	1.90	SHC	
89.40	93.40	4.00	SLT	
93.40	95.40	2.00	SH	
95.40	99.20	3.80	SLT	
99.20	100.20	1.00	SH	
100.20	103.95	3.75	C	C60
103.95	106.30	2.35	SH	
106.30	108.20	1.90	C	MD

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2004-33**

year drilled: 2004

AREA:

Burnt River
Brule

177.00	141.2	-87.50
183.00	140.2	-87.90
189.00	138.9	-87.30
195.00	137.4	-87.40
201.00	135.6	-87.30
203.30	134.9	-87.20

108.20	112.10	3.90	SH	
112.10	114.40	2.30	SLT	
114.40	119.25	4.85	SH	
119.25	121.38	2.13	SLT	
121.38	123.95	2.57	SH	
123.95	130.35	6.40	SLT	
130.35	133.15	2.80	SH	
133.15	138.45	5.30	SLT	
138.45	141.10	2.65	SH	
141.10	142.45	1.35	SLT	
142.45	145.20	2.75	SH	
145.20	147.40	2.20	SLT	
147.40	148.00	0.60	SH	
148.00	149.10	1.10	SLT	
149.10	151.15	2.05	SH	
151.15	156.05	4.90	SLT	
156.05	157.80	1.75	SSA	
157.80	159.82	2.02	SLT	
159.82	161.10	1.28	SH	
161.10	162.50	1.40	SLT	
162.50	164.25	1.75	C	MC
164.25	168.55	4.30	SH	
168.55	179.00	10.45	SLT	
179.00	189.15	10.15	SH	
189.15	191.25	2.10	SLT	
191.25	192.00	0.75	C	MC
192.00	195.50	3.50	SH	
195.50	200.55	5.05	SLT	

SAMPLE INFORMATION

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002

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Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River - Bnule
DH ID: BR2004-33
BY: R. Brown
DATE: December 1, 2004

<u>FROM</u>	<u>TO</u>	<u>LITH</u>	<u>FROM</u>	<u>TO</u>	<u>LITH</u>
0.00	6.10	OB	93.40	95.40	SH
6.10	9.58	SH	95.40	99.20	SLT
9.58	10.30	SLT	99.20	100.20	SH
10.30	11.20	SH	100.20	103.95	(C-60)
11.20	12.00	C	103.95	106.30	SH
12.00	14.00	SH	106.30	108.20	(MD)
14.00	14.70	(C)	108.20	112.10	SH
14.70	15.50	SH	112.10	114.40	SLT
15.50	16.85	SLT	114.40	119.25	SH
16.85	18.40	SH	119.25	121.38	SLT
18.40	21.00	SLT	121.38	123.95	SH
21.00	22.15	SH	123.95	130.35	SLT
22.15	24.10	SLT	130.35	133.15	SH
24.10	25.60	SH	133.15	138.45	SLT
25.60	26.05	SLT	138.45	141.10	SH
26.05	26.72	SH	141.10	142.45	SLT
26.72	36.25	SLT	142.45	145.20	SH
36.25	39.00	SSA	145.20	147.40	SLT
39.00	40.05	SLT	147.40	148.00	SH
40.05	63.35	SS	148.00	149.10	SLT
63.35	64.30	SLT	149.10	151.15	SH
64.30	66.20	SH	151.15	156.05	SLT
66.20	71.70	SLT	156.05	157.80	SSA
71.70	73.00	SHC	157.80	159.82	SLT
73.00	82.00	SH	159.82	161.10	SH
82.00	87.5	SLT	161.10	162.50	SLT
87.50	89.40	SHC	162.50	164.25	(MD)
89.40	93.40	SLT	164.25	168.55	SH

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE
- SS/SH - INTERBEDDED SANDSTONE AND SHALE

Western Canadian Coal
DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River - Brule
DH ID: B22004-33
BY: R. Brown
DATE: December 1, 2004

179.00 FLT ←

FROM	TO	LITH	FROM	TO	LITH
168.55	179.00	SLT			
179.00	189.15	SH			
189.15	191.25	SLT			
191.25	192.00	(MC)			
192.00	195.50	SH			
195.50	200.55	SLT			
E.O.H.					

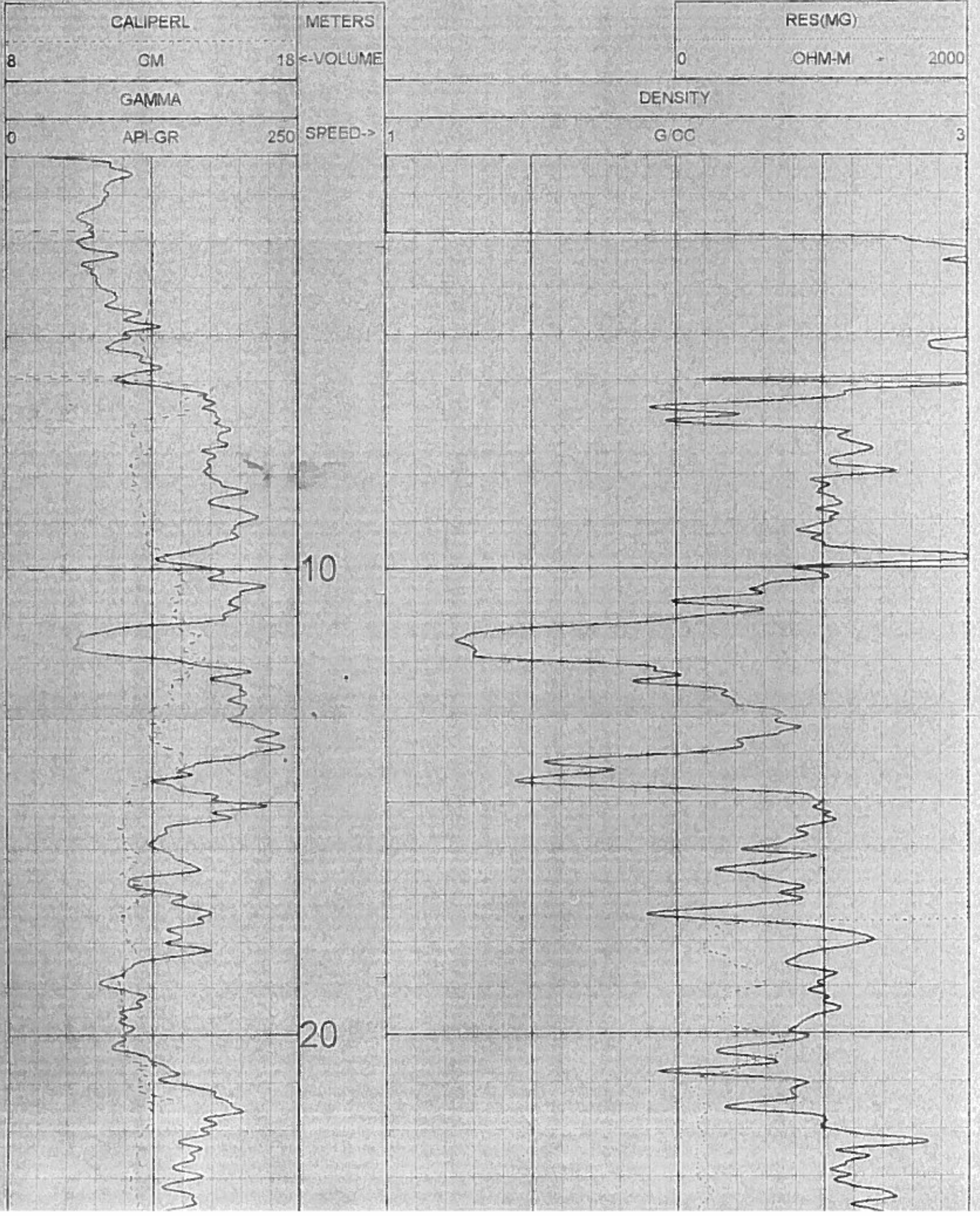
- LITHOLOGICAL ABBREVIATIONS:**
OB - OVERBURDEN
C - COAL
P - PARTING
SHC - SHALEY COAL
CGL - CONGLOMERATE
SH - SHALE
SLT - SILTSTONE
SSA - ARGILLACEOUS SANDSTONE
SSC - CLEAN SANDSTONE
SS/SH - INTERBEDDED SANDSTONE AND SHALE

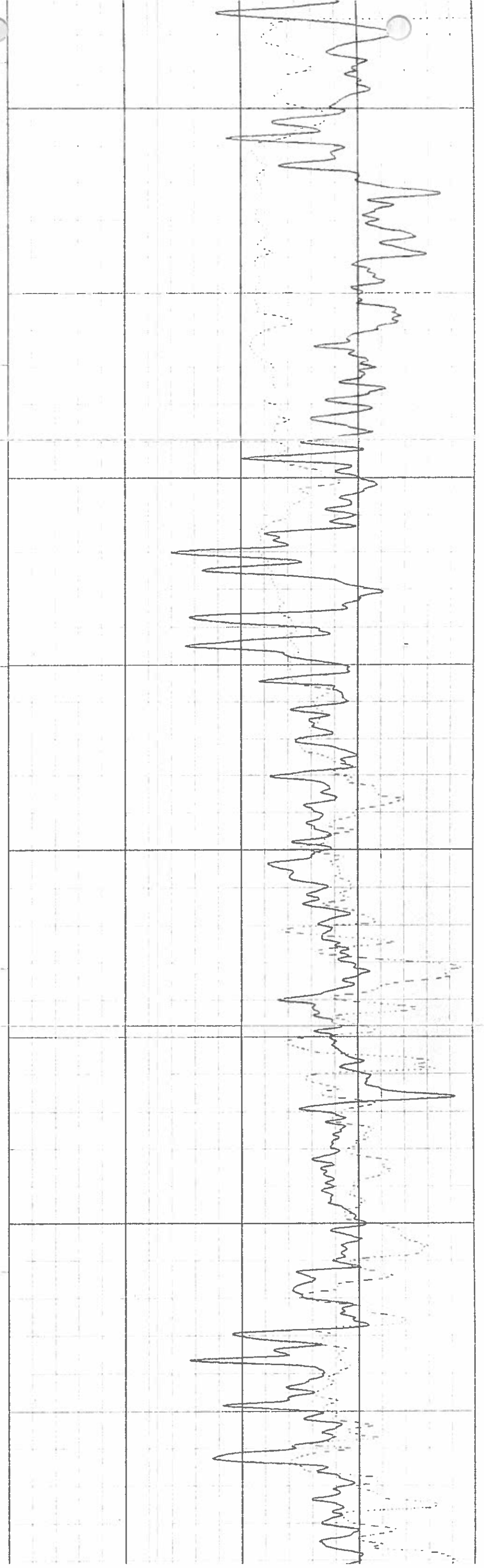
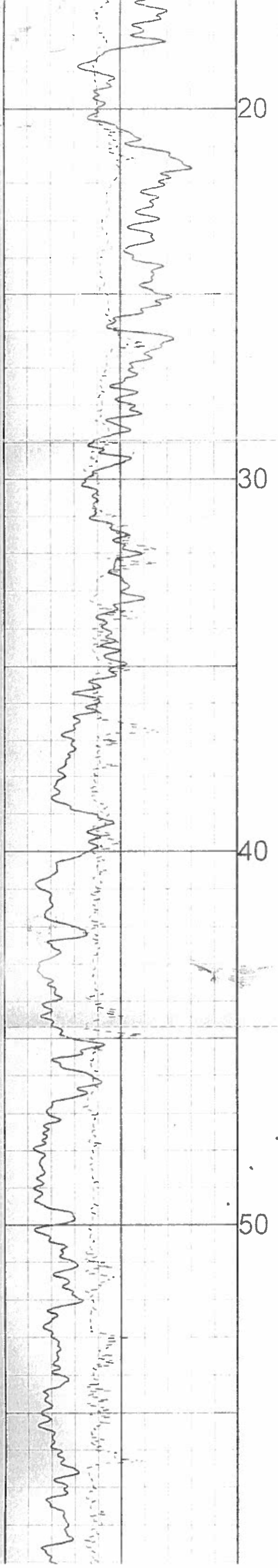
century-geo.com

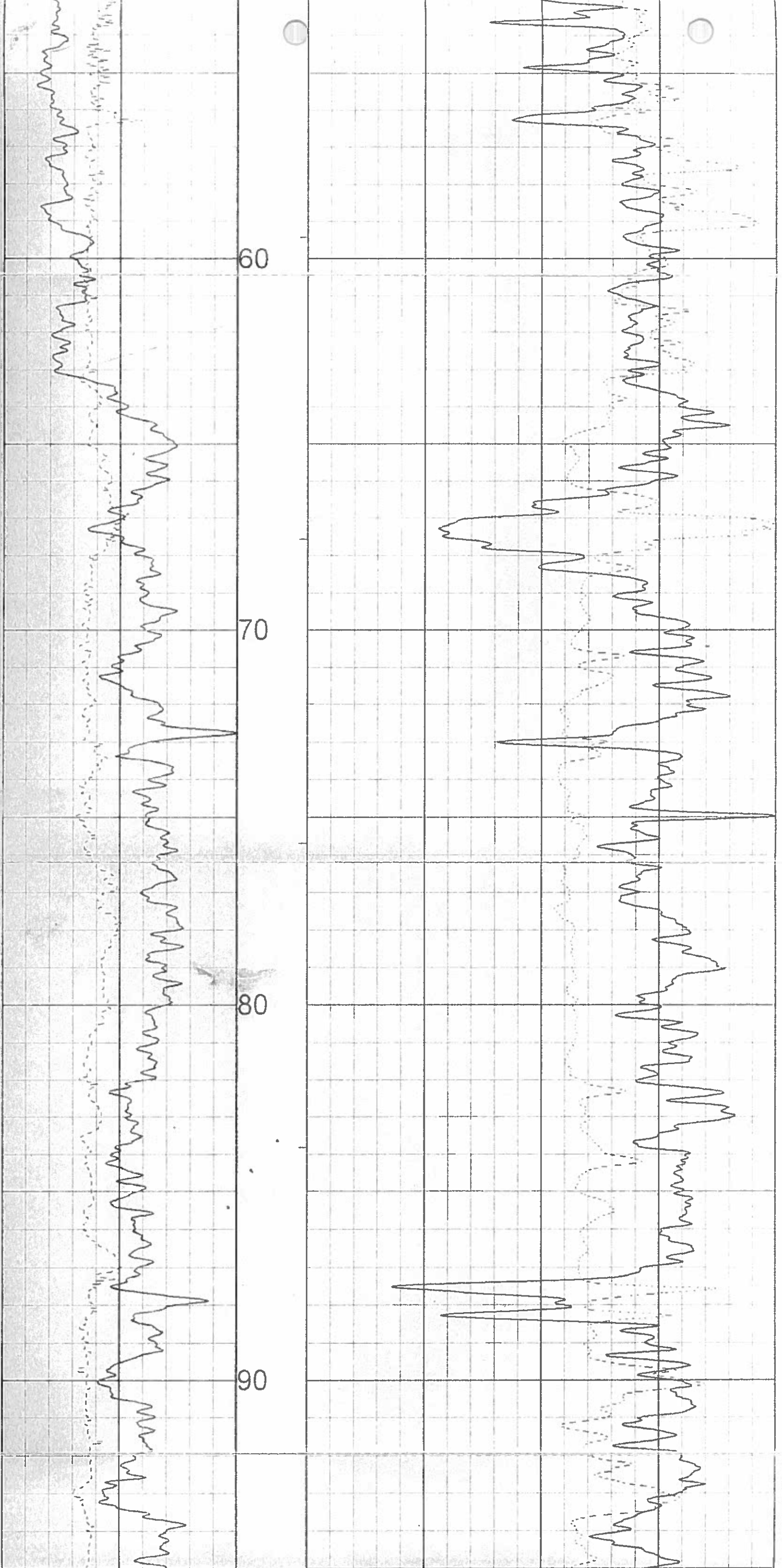
BR2004-33

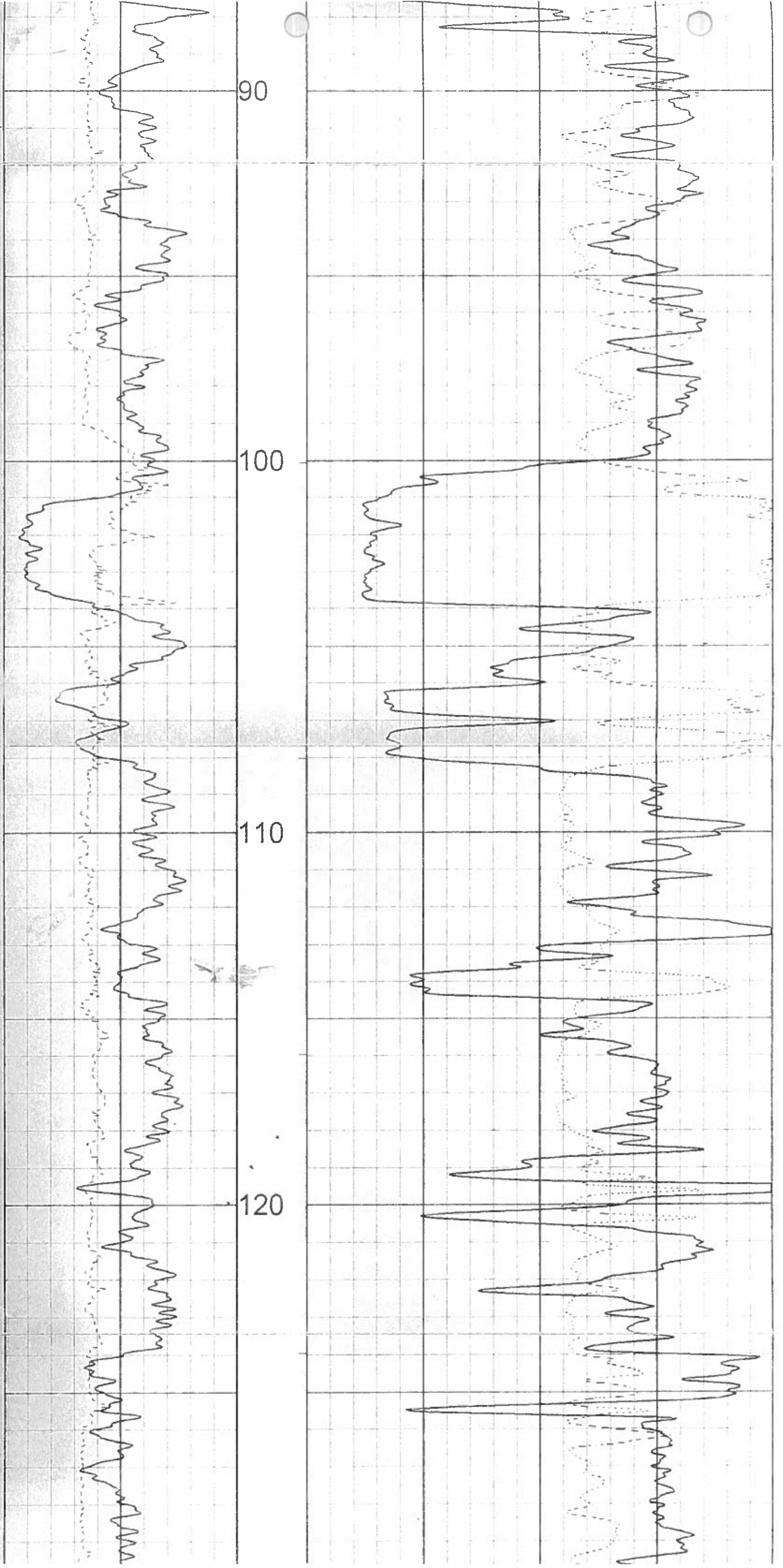
COMPANY	WESTERN CANADIAN COAL CORP.	OTHER SERVICES
WELL	BR2004-33	9095
FIELD	BURNT RIVER	9034
MUNICIPALITY	TUMBLER RIDGE	
PROVINCE	BRITISH COLUMBIA	
LOCATION		
SECTION		
TOWNSHIP		
RANGE		
API NO.		
UNIQUE WELL ID		
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRIL MEASURED FROM	GL	ELEVATION GL
DATE	11/04/04	
RUN/NO	2	
DEPTH DRILLER	204 22	
BIT SIZE	12 1/4	
LOG BOTTOM	1-17	
CASING OD	203 24	
CASING BOTTOM	14	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE		
MUD RES		
WITNESSED BY	MATT MOORMAN	
RECORDED BY	R HECK	
REMARKS 1		
REMARKS 2		

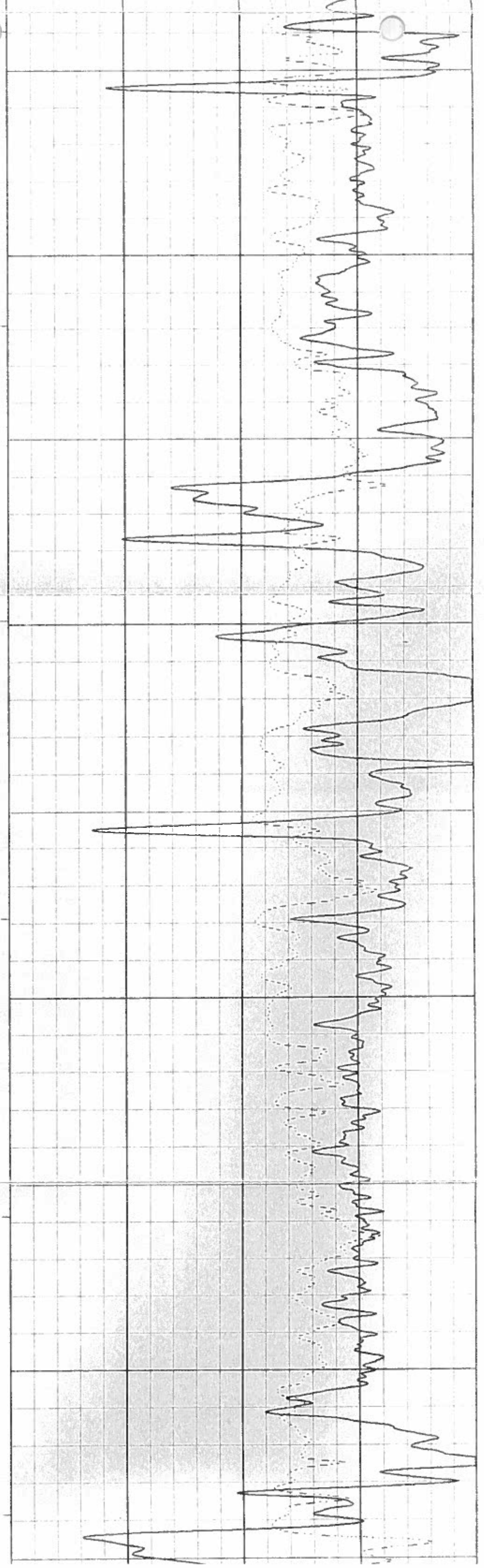
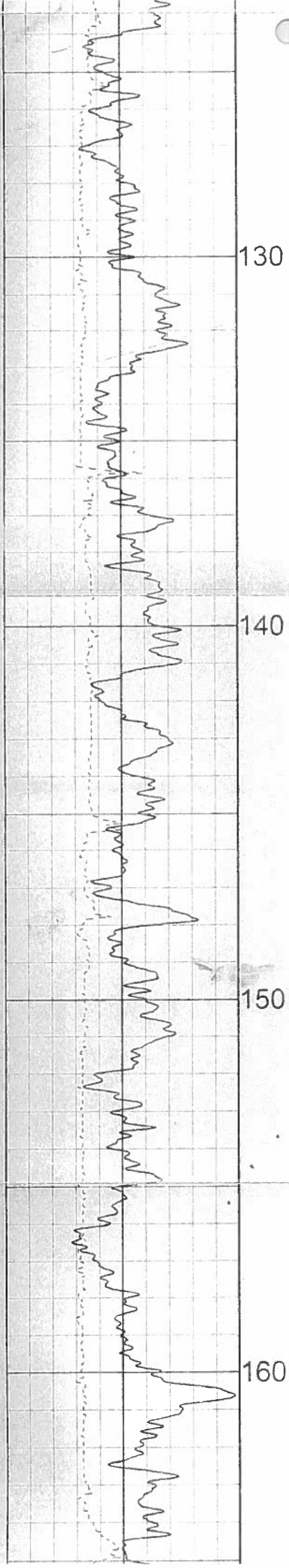
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

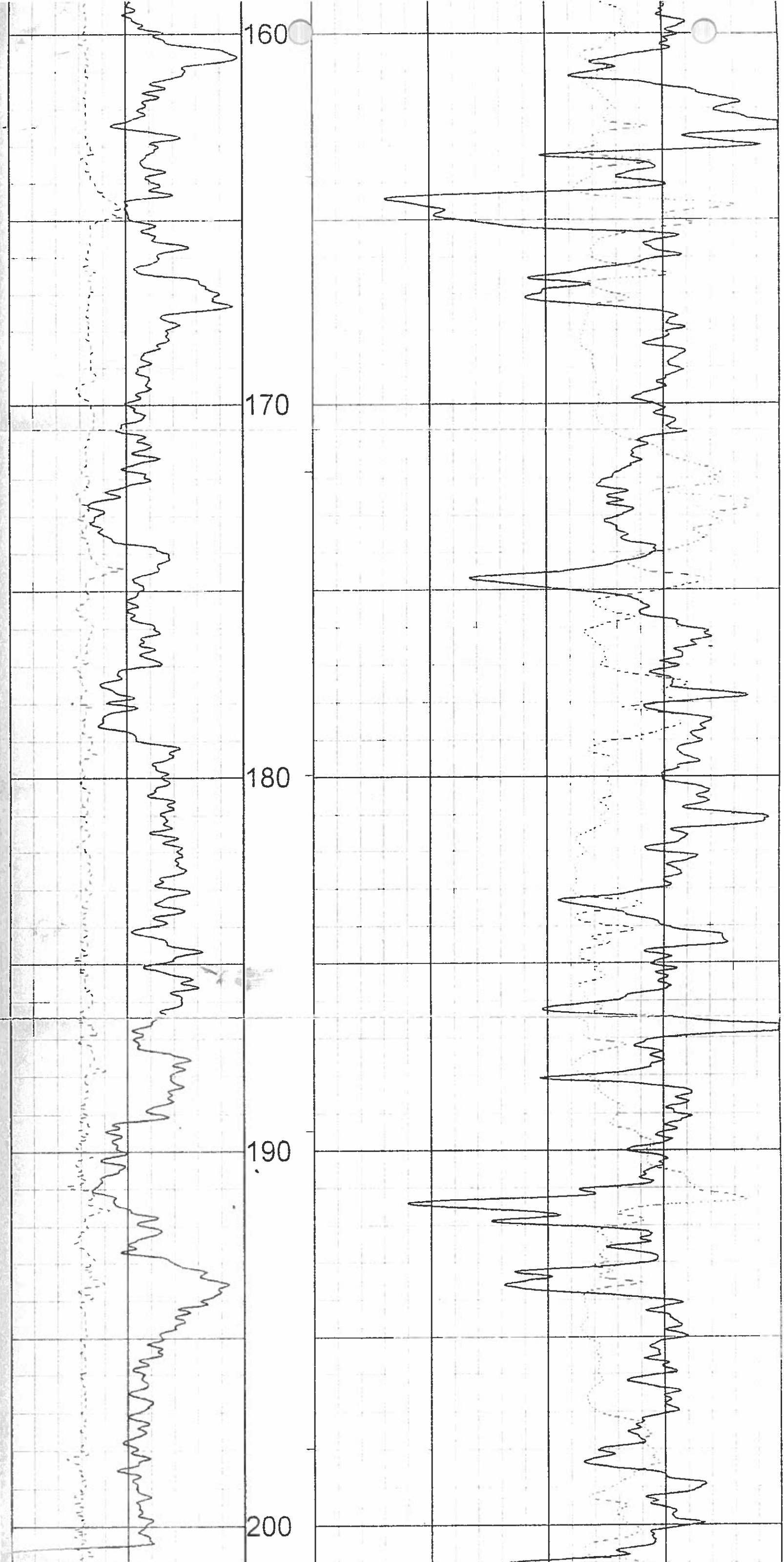


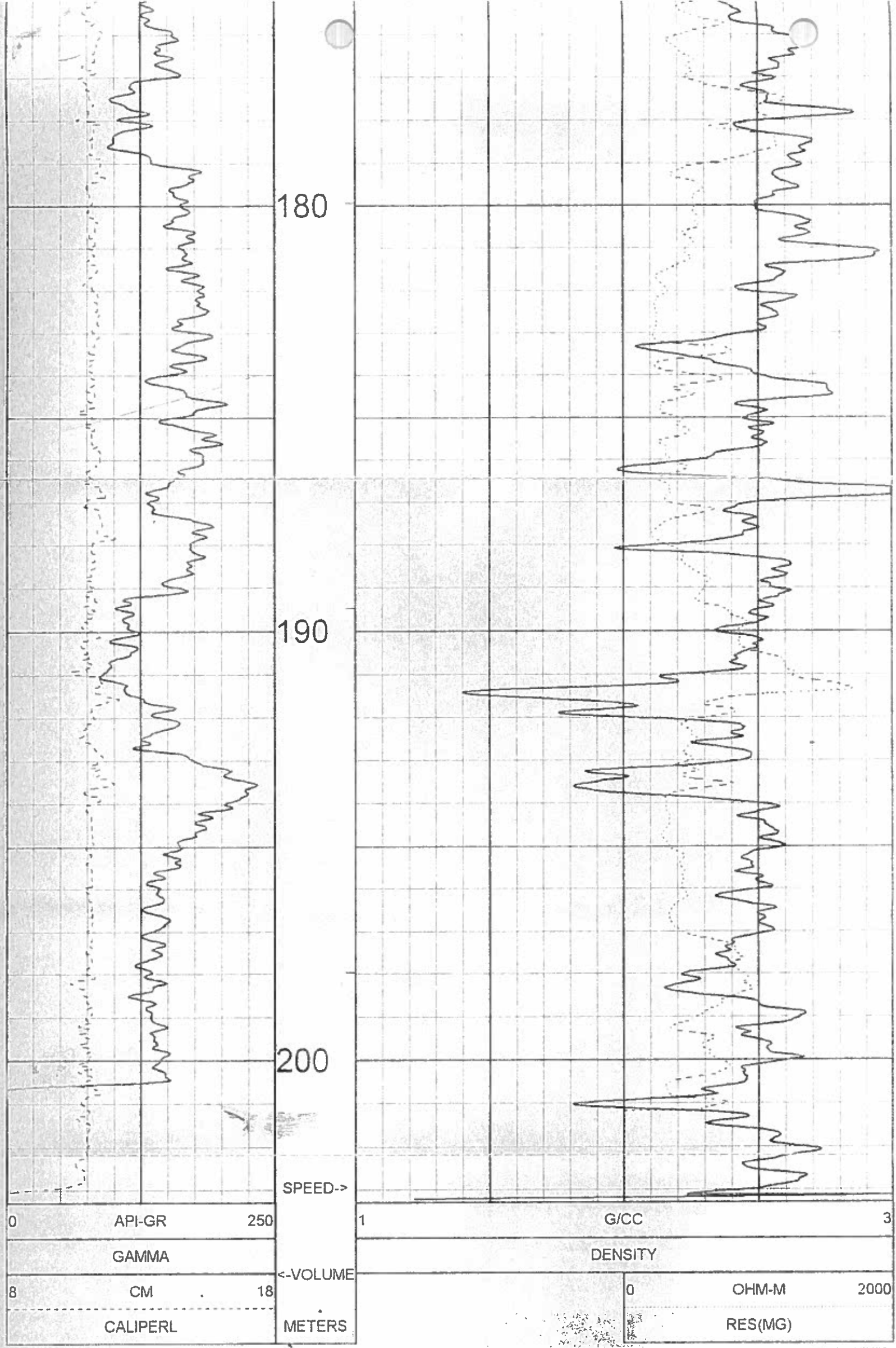










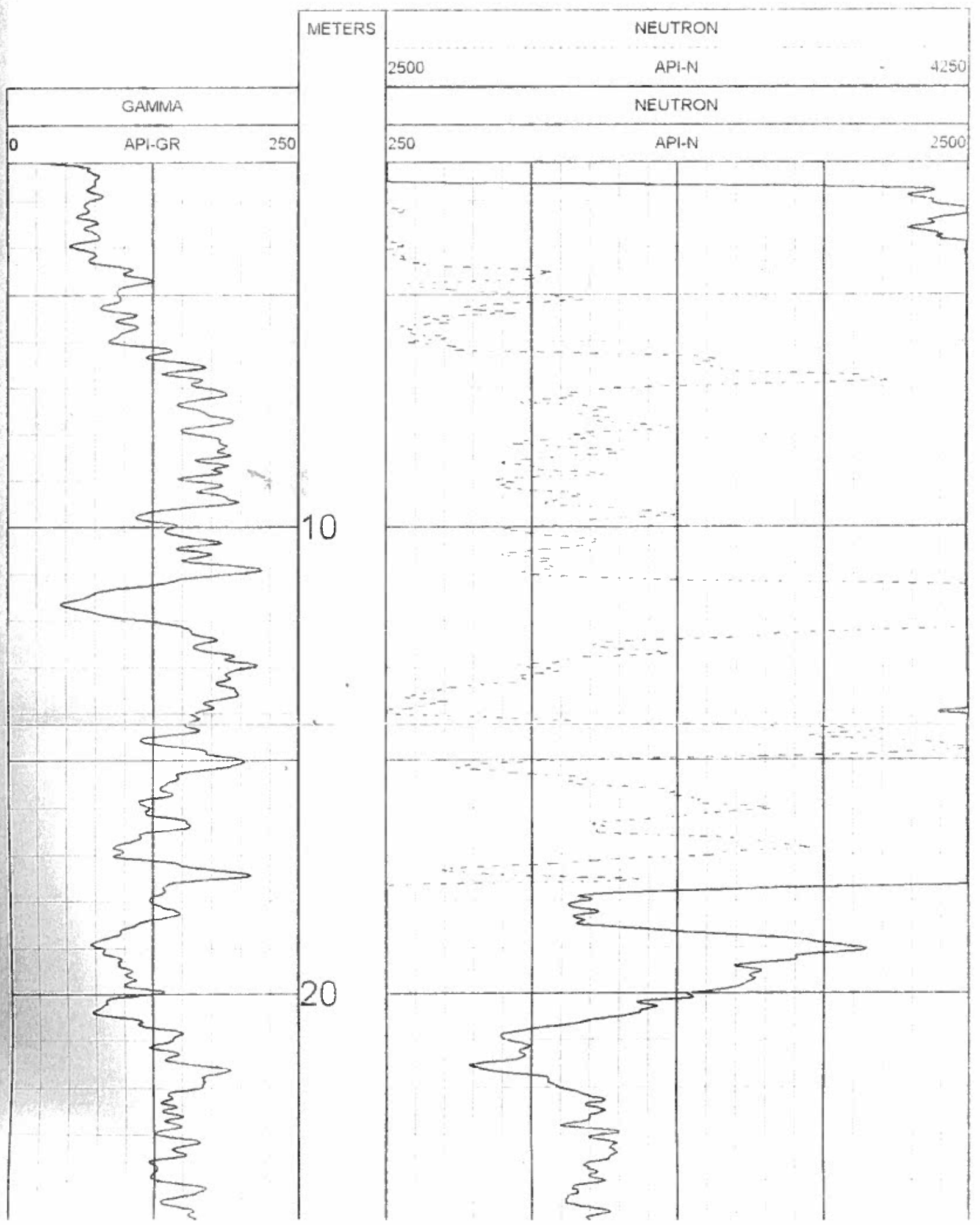


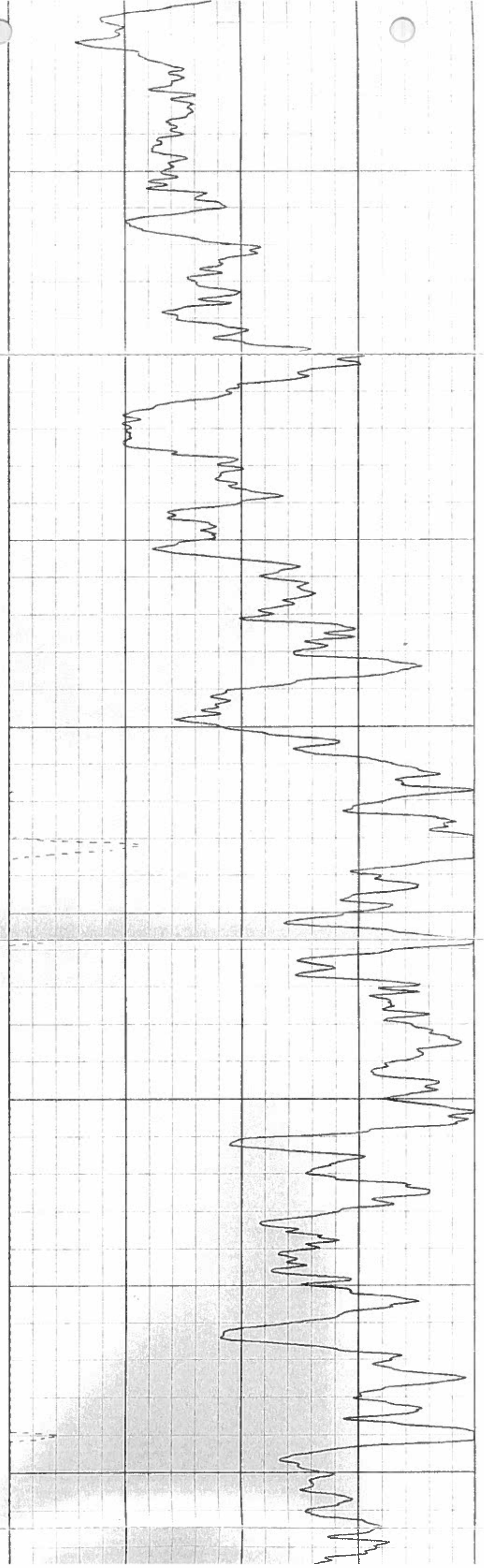
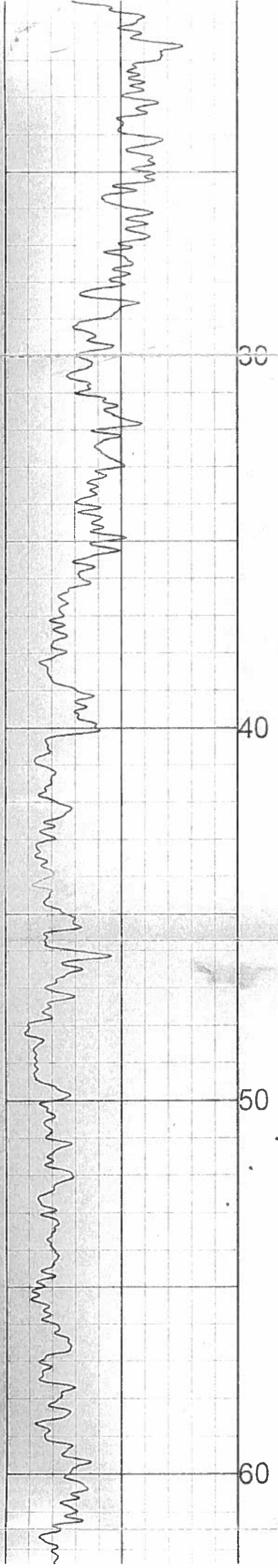
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 TOOL 9034AA1
 SERIAL NUMBER 480

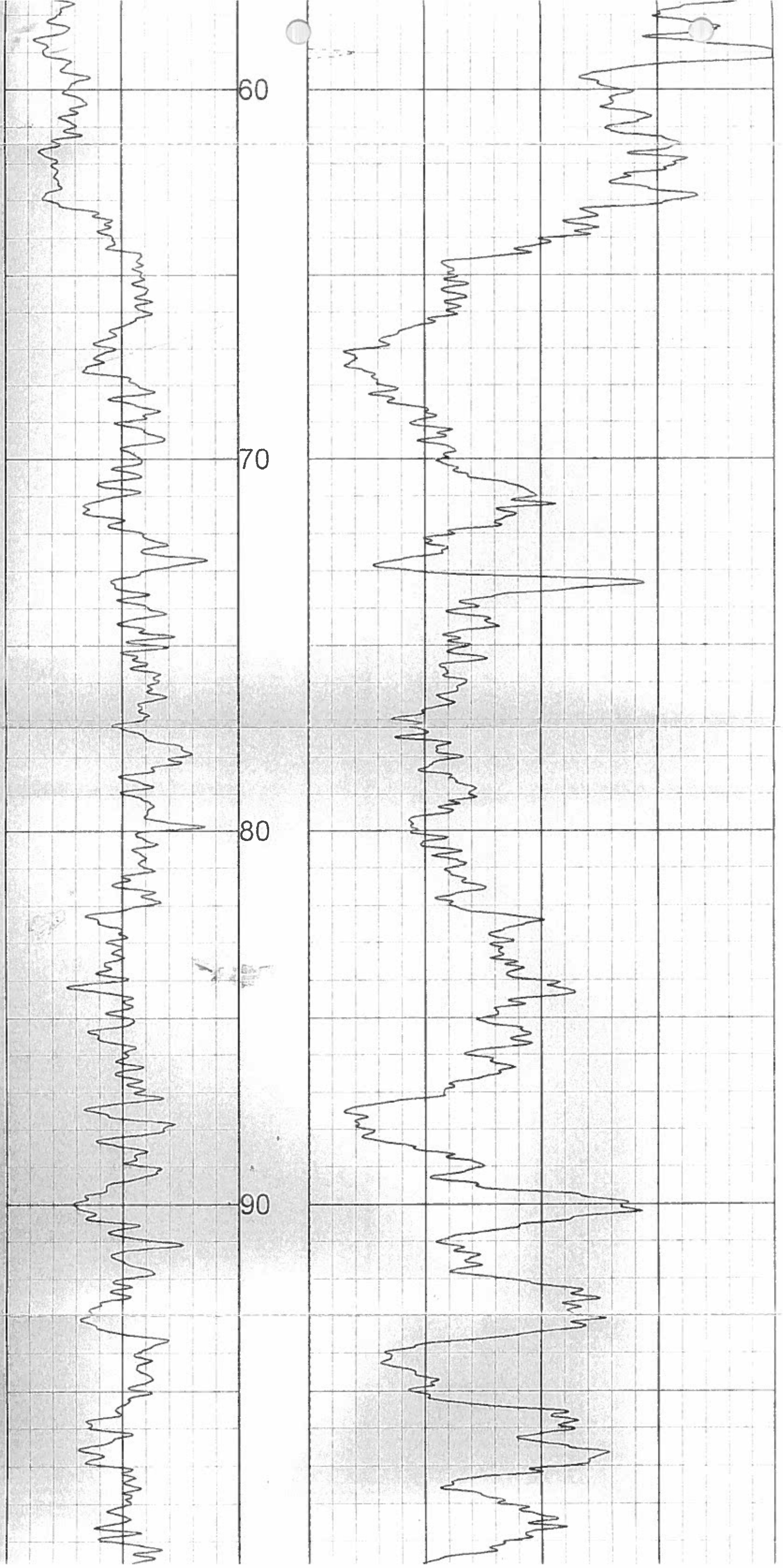
	DATE	TIME	SENSOR	STANDARD	RESPONSE
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	Sep14,04	19:13:24	GAMMA	325.000 [API-GR]	513.00 [CPS]
2	Oct15,04	19:49:41	DENSITY	1.106 [G/CC]	5585.00 [CPS]
	Oct15,04	19:49:41	DENSITY	2.612 [G/CC]	1229.00 [CPS]
3	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
	Sep10,04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
4	Sep10,04	18:34:28	CALIPER	7.620 [CM]	57391.00 [CPS]
	Sep10,04	18:34:28	CALIPER	17.780 [CM]	105259.00 [CPS]
5	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
	Sep08,04	17:51:14	DENSITY†	Default [CPS]	Default [CPS]
6	Sep29,04	17:18:08	CALIPERL	10.160 [CM]	55176.50 [CPS]
	Sep29,04	17:18:08	CALIPERL	22.860 [CM]	86091.70 [CPS]

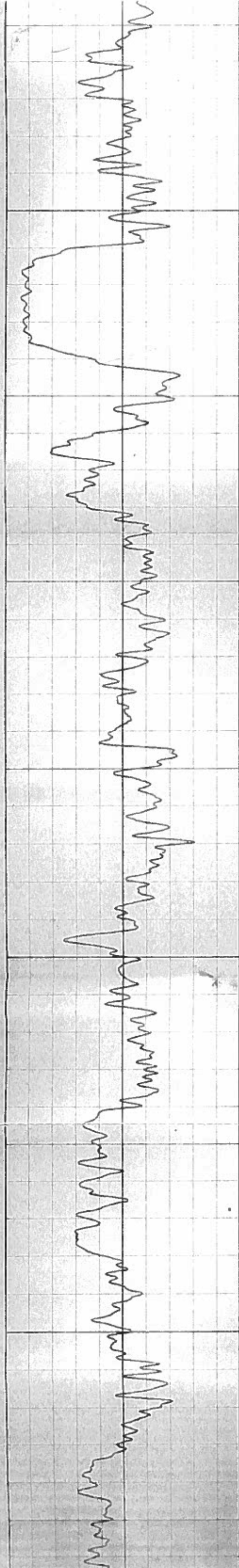
COMPANY	WESTERN CANADIAN OIL CORP	OTHER SERVICES
WELL	BR2004-33	9066
FIELD	SUNRISE RIVER	3034
WELL HEAD TV	10000 RDS	
PROV/LOC	BRITISH COLUMBIA	
SECTION		
TOOLSONE		
RANGE		
APPROX		
UTMZONE		
UTM EARTH		
UTM DATUM	GL	ELEVATION KF
UTM NORTHING FROM	GL	ELEVATION CF
UTM EASTING FROM	GL	ELEVATION GL
CASE	TR2004	
WELL NO		
DEPTH FROM TV	200.0	
BIT DIA	12.75	
LOG BOTTOM	200.0	
CASING DIA	14	
CASING BOTTOM	140.0	
CASING TYPE	STEEL	
BOREHOLE LOG	WATER	
RM TIME VALUE		
MUONES		
WIRE SPEED	MATT MOONMAN	
RECORDED BY	R HECK	
REMARKS 1		
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







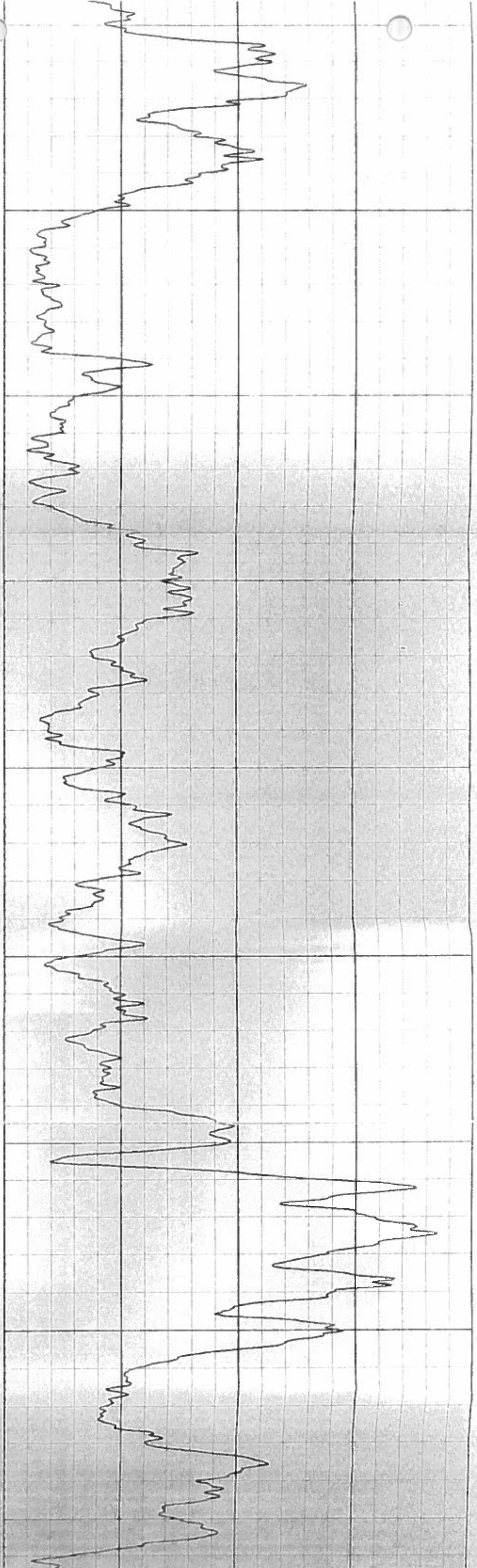


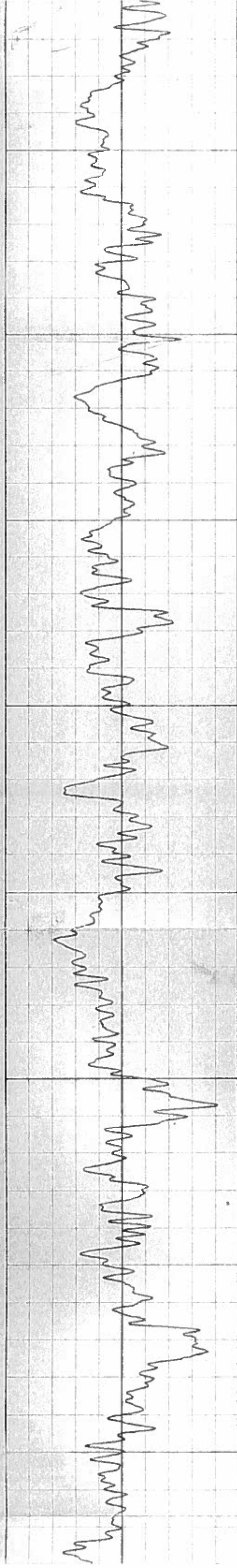
100

110

120

130



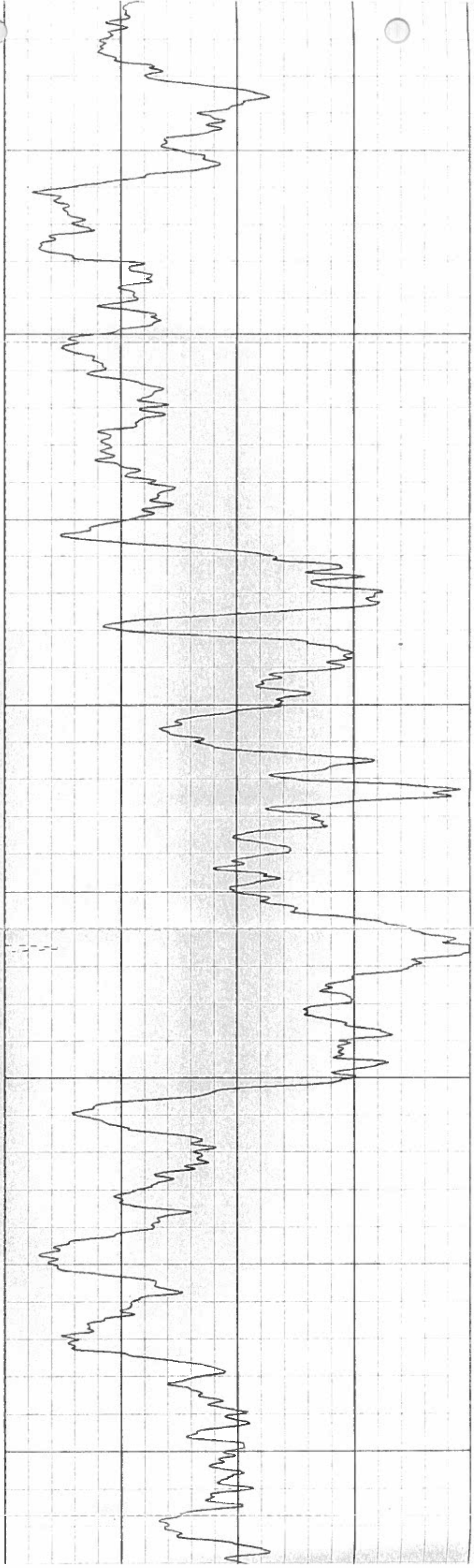


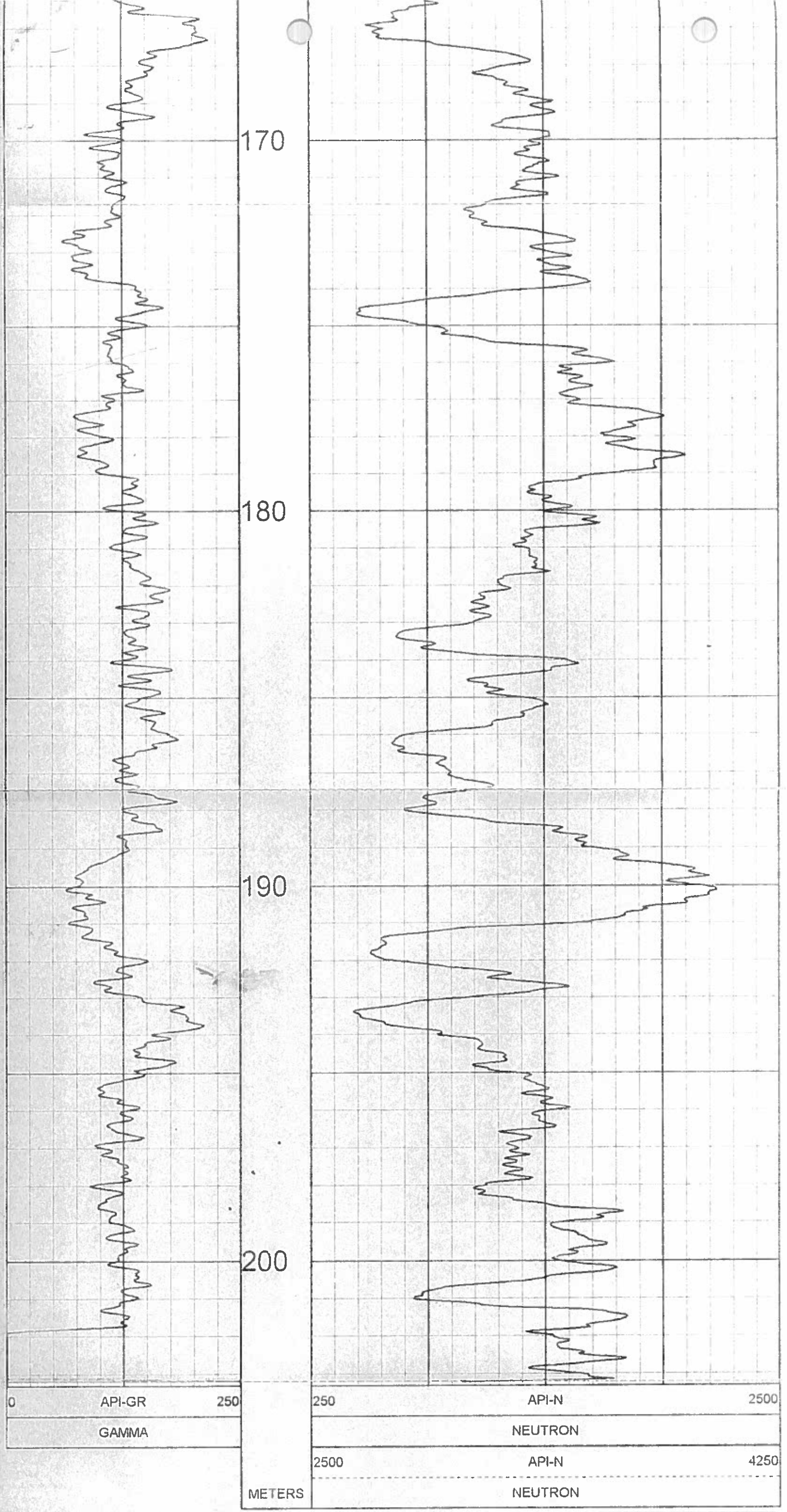
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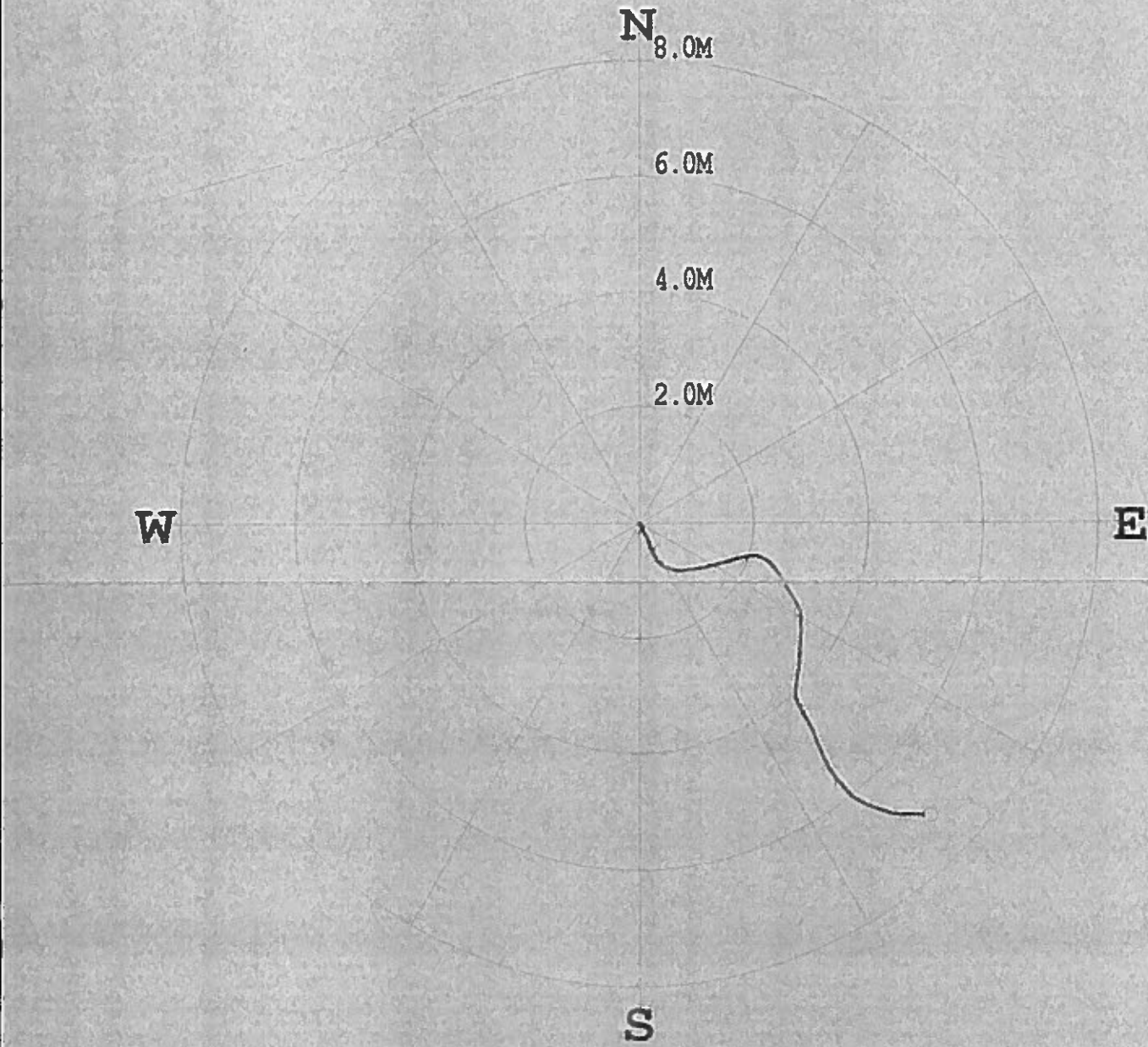


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR2004-33
 DATE OF LOG: 11/04/04
 PROBE: 9055A 80

MAG DECL: 21.6

SCALE: 1 M/CM
 TRUE DEPTH: 203.07 M
 AZIMUTH: 134.8
 DISTANCE: 7.2 M
 + = 20 M INCR
 = BOTTOM OF HOLE



COMPU-LOG - VERTICAL DEVIATION

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-33
 FIELD OFFICE : DATE OF LOG : 11/04/04
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2004-33 11-04-04 11-42 9055A 02 15.60 203.30 DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
15.0	15.07	-0.00	0.00	0.0	144.3	1.6	144.3
17.0	17.00	-0.05	0.02	0.1	146.7	1.4	138.1
19.0	19.00	-0.08	0.05	0.1	147.8	0.8	138.1
21.0	21.00	-0.11	0.05	0.1	151.9	0.6	136.8
23.0	23.00	-0.13	0.06	0.1	154.9	1.0	136.8
25.0	25.00	-0.18	0.08	0.2	155.0	1.5	136.8
27.0	27.00	-0.31	0.11	0.2	158.8	1.2	159.7
29.0	29.00	-0.25	0.13	0.3	152.4	1.2	155.5
31.0	31.00	-0.28	0.14	0.3	153.1	1.1	150.2
33.0	33.00	-0.33	0.15	0.4	154.5	2.5	159.4
35.0	35.00	-0.37	0.17	0.4	155.6	1.4	175.4
37.0	37.00	-0.43	0.18	0.5	156.8	1.3	148.7
39.0	39.00	-0.47	0.20	0.5	156.4	1.4	149.9
41.0	41.00	-0.51	0.23	0.6	158.4	1.6	154.6
43.0	43.00	-0.57	0.26	0.6	155.9	1.4	159.9
45.0	45.00	-0.62	0.28	0.7	154.8	1.4	164.5
47.0	47.00	-0.65	0.31	0.7	154.9	1.7	149.9
49.0	49.00	-0.70	0.35	0.8	153.5	2.2	126.6
51.0	51.00	-0.74	0.40	0.8	151.7	2.1	130.1
53.0	53.00	-0.79	0.45	0.9	149.5	1.6	123.1


Table with columns for depth, true depth, north deviation, east deviation, distance, azimuth, SANG, and SANGB. Data points range from 29.0 to 81.0 meters depth.

Table with columns for depth, true depth, north deviation, east deviation, distance, azimuth, SANG, and SANGB. Data points range from 83.0 to 115.0 meters depth.

CCMEU-LOG - VERTICAL DEVIATION

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR2004-33
FIELD OFFICE : DATE OF LOG : 11/04/04
DATA FROM : PROBE : 9055A 80
MAG. DECL. : 21.800 DEPTH UNITS : METERS
LOG: BR2004-33_11-04-04_11-42_9055A_02_15.00_203.30_DEVI.LOG

Table with columns for TABLE DEPTH, TRUE DEPTH, NORTH DEV., EAST DEV., DISTANCE, AZIMUTH, SANG, and SANGB. Data points range from 117.0 to 203.3 meters depth.

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2005-1C	year drilled: 2005	AREA:
---------------------------	--------------------	-------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,511.60	6,139,528.58	1,345.20

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
317	-90	132.80				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

comments:	
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SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	316.9	-90.00
15.00	316.9	-89.40
16.00	320.6	-89.50
17.00	319.5	-89.60
18.00	316.9	-89.50
19.00	319.8	-89.40
20.00	321.0	-89.30
21.00	322.3	-89.20
22.00	323.3	-89.40
23.00	324.5	-89.40
24.00	325.6	-89.50
25.00	326.5	-89.50
26.00	327.1	-89.60
27.00	327.5	-89.60
28.00	327.3	-89.70
29.00	327.4	-89.70
30.00	327.7	-89.50
31.00	328.2	-89.50
32.00	328.0	-89.80
33.00	327.5	-89.80
34.00	327.5	-89.80
35.00	328.3	-89.70
36.00	328.8	-89.60
37.00	328.5	-89.50
38.00	327.8	-89.60
39.00	326.9	-89.60
40.00	325.8	-89.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	14.00	14.00		
36.50	41.50	5.00		
47.20	48.80	1.60		
106.20	107.30	1.10		
120.50	121.70	1.20		
124.50	125.00	0.50		

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 1 of 4


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2005-1C	year drilled: 2005	AREA:
---------------------------	--------------------	-------

86.00	358.8	-89.70
87.00	359.0	-89.60
88.00	359.9	-89.60
89.00	0.8	-89.60
90.00	1.9	-89.10
91.00	2.9	-89.30
92.00	3.8	-89.20
93.00	5.3	-88.70
94.00	7.5	-88.70
95.00	9.7	-88.80
96.00	11.6	-88.30
97.00	14.7	-88.20
98.00	18.6	-88.30
99.00	23.7	-88.00
100.00	30.9	-88.10
101.00	40.5	-88.20
102.00	52.4	-88.10
103.00	65.3	-88.20
104.00	77.1	-88.20
105.00	87.0	-88.40
106.00	95.4	-88.30
107.00	101.6	-88.60
108.00	105.2	-88.60
109.00	108.3	-89.00
110.00	110.6	-89.20
111.00	112.8	-89.00
112.00	114.9	-89.20
113.00	116.7	-89.20
114.00	118.0	-89.30
115.00	118.7	-89.20
116.00	119.1	-89.10
117.00	119.3	-89.00
118.00	119.1	-88.50
119.00	118.3	-88.40
120.00	117.2	-88.10
121.00	115.5	-87.60
122.00	113.4	-87.30
123.00	110.9	-87.00
124.00	108.0	-86.10
125.00	105.4	-86.20
126.00	102.7	-85.90
127.00	100.2	-85.70
128.00	97.9	-85.50
129.00	96.0	-85.70
130.00	94.3	-85.80

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 3 of 4

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR2005-1C	year drilled: 2005	AREA: Burnt River Brule
---------------------------	--------------------	-----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	572,608.61	6,139,622.95	572,511.60	6,139,528.58	1,345.20

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
0	-90	130.00	DIAMOND			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
15.00	316.9	-89.40
25.00	326.5	-89.50
35.00	328.3	-89.70
45.00	322.1	-89.80
55.00	317.7	-90.00
65.00	323.4	-89.70
75.00	343.6	-89.00
85.00	358.5	-89.60
95.00	9.7	-88.80
105.00	87.0	-88.40
115.00	118.7	-89.20
125.00	105.4	-86.20
132.80	90.7	-85.00

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.11	6.11	OB	
6.11	10.40	4.29	SH	
10.40	28.60	18.20	SLT	
28.60	29.55	0.95	C	
29.55	31.58	2.03	SH	
31.58	36.60	5.02	SLT	
36.60	38.19	1.59	C	C60
38.19	38.38	0.19	P	
38.38	41.65	3.27	C	C60
41.65	47.00	5.35	SH	
47.00	48.60	1.60	C	MD
48.60	52.95	4.35	SH	
52.95	67.93	14.98	SLT	
67.93	72.80	4.87	SH	
72.80	75.34	2.54	SLT	
75.34	81.40	6.06	SH	
81.40	86.67	5.27	SLT	
86.67	87.15	0.48	C	
87.15	106.20	19.05	SH	
106.20	107.20	1.00	C	
107.20	112.34	5.14	SH	
112.34	118.60	6.26	SLT	
118.60	120.46	1.86	SH	
120.46	121.60	1.14	C	MC
121.60	124.50	2.90	SSA	
124.50	124.90	0.40	C	
124.90	130.00	5.10	SLT	

SAMPLE INFORMATION

FROM	TO	SEAM	SAMP_ID	ASH %	VM %	FC %	S %	RM %	FSI	BTU/LB	CV	SG
36.50	36.60	C60	16243	85.39	8.08	5.77	0.18	0.76				

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR2005-1C**

year drilled: 2005

AREA:

Burnt River
Brule

36.60	38.62	C60	16244	8.07	20.01	71.41	0.49	0.51				
38.62	38.81	C60	16245	74.46	8.18	16.51	0.15	0.85				
38.81	41.67	C60	16246	50.17	12.32	36.80	0.34	0.71				
41.67	41.77	C60	16247	71.17	8.86	19.17	0.28	0.80				
46.67	46.77	MD	16250	90.05	5.58	3.39	0.04	0.98				
46.77	48.65	MD	9276	15.53	15.98	68.10	0.55	0.39				

Date issued: Monday, April 03, 2006

Reviewed: October 11, 2002



Western Canadian Coal

DRILLHOLE LITHOLOGY REPORT

AREA: Burnt River-Bnld
 DH ID: PR2005-1C
 BY: R Brown
 DATE: March 28, 2005

FROM	TO	LITH	FROM	TO	LITH
0.00	6.11	OB			
6.11	10.40	SH			
10.40	22.60	SLT			
22.60	29.55	C			
29.55	31.58	SH			
31.58	36.6	SLT			
36.6	38.19	CGL ?			
38.19	38.38	P			
38.38	41.65	CGL ?			
41.65	47.00	SH			
47.00	48.60	ML ?			
48.60	52.95	SH			
52.95	67.93	SLT			
67.93	72.80	SH			
72.80	75.34	SLT			
75.34	81.40	SH			
81.40	86.67	SLT			
86.67	87.15	C			
87.15	106.20	SH			
106.20	107.20	C			
107.20	112.34	SH			
112.34	118.60	SLT			
118.60	120.46	SH			
120.46	121.60	MLC ?			
121.60	124.50	SSA			
124.50	124.90	C			
124.90	130.10	SLT			
E.O.H.					

LITHOLOGICAL ABBREVIATIONS:

- OB - OVERBURDEN
- C - COAL
- P - PARTING
- SHC - SHALEY COAL
- CGL - CONGLOMERATE
- SH - SHALE
- SLT - SILTSTONE
- SSA - ARGILLACEOUS SANDSTONE
- SSC - CLEAN SANDSTONE

CORE DESCRIPTION, Continued

logged by PAQV12
Jan 28, 2005

Hole No: ER2005-1C

Page 1 of 12

Box No.	Driller's Coring Info (ft and m)		Interval (m)	Length (m)	Lori (m)	Sample	Lithology Code	Description	BCN	Core Quality
	From	To								
								6.71 Packing		
								6.86 open hole		
								6.86 Rock 1		
24	7.31		6.86	8.28	1.43		CLST	High Carbon CLSTM with Coaly stringers		blk
30	9.14									int
34	10.36		8.28	9.18	0.90		CLST	as above from 0.26m to 0.7m with Coaly stringers. 0.20 m at the bottom		Sublky
			9.18	9.55	0.37			SLST. medium gray		Solid
			9.55	10.37	1.42			TOP OF DE-XR SLST medium gray ft. to A.D. 10 0.28m to 0.32m consists of hard wh white sand & coaly stringers		Int

CORE DESCRIPTION, Continued

Hole No: BR 2005-1C Page 2 of 12

Box No.	Drillere Coring Info (ft and m) From To	Cored Rec'd %	Interval (m) From To	Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
2	40 12.19		10.97-11.31	0.34				From 0.97m to 1.22m large lenticles CLST in with coal stringers The rest of core is intact	43	Intact
	45 13.71		11.31-12.49		1.18			SILT, as above it is broken and rounded, by the bit. The section called This zone gravel seam because it is 100% broken Rock loss		Very
			12.49-13.27	0.78				SILT as above, broken and partly rounded by the bit		Very
			13.27-13.61	0.34				SILT as above with coal stringers		Intact
								Top of Box 3		

CORE DESCRIPTION, Continued

Hole No: BR-2005-12

Page 3 of 12

Box No.	Driller's Conting Info (ft and m)	Concd Rec'd %	Interval (m)	Length (m)	Lost (m)	Sample	Lithology Code	Description	BCN	Core Quality
3	52 15.85		13.61	13.95	0.34		SLSI	SILST as above		in tact
	56 17.06		13.95	15.35	1.40		SLSI	SILST as above	42	solid
	62 18.26		15.35	16.52	1.21		SLSI	Rock Loss		
			16.56	16.96	0.40		SLSI	SILST as above		subn
			16.96	17.73	0.82		SLSI	Rock Loss		
			17.78	18.40	0.62		SLSI	SILST, medium gray		
			18.40	18.53	0.13			High Carbon, clystn		Solid
								Top of box 4		

CORE DESCRIPTION, Continued

Hole No: BR-2005-1c

Page 5 of 12

Box No.	Driller's Coring Info (ft and m)		Interval (m)		Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
	From	To	From	To							
5	82 24.99		21.44	24.49	3.05			SILST	SILSTs medium gray, fine grained		ENTRCP
6			24.49	27.54	3.05			SILST	SILSTs above	43	
	92 28.04		27.54	27.78	0.24				Rock loss		
7			27.78	29.25	1.47			CLYST	CLYST medium gray 0.20 m on the top 0.15 m, 0.83 m from top, High Carbonaceous CLYST with coal streaks		BTM

TOP of box 7

TOP of box 6

TOP of box 5

CORE DESCRIPTION, Continued

Hole No: BR-2005-1C Page 6 of

Box No.	Driller's Coring Info (ft and m)		Interval (m)		Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
	From	To	From	To							
7			29.25	29.45	0.20			CLYST	Coal, crushed full bedded?		Crushed
			29.45	30.70	1.25			CLYST	0.55m High Carbon CLYST m broken subparallel to bedding The rest, CLYST m, Very broken Polished and slickensided surfaces. Rock loss	44	Bkn/Vb
			30.70	31.11		0.41			<u>TOP of box 8</u>		
			31.11	33.74	2.63			SILST	SILST m, medium gray, fine grained		Bkn
			33.74	34.16	0.42			SILST	<u>1. TOP of box 9.</u> SILST, as above		Solid
			34.16	36.46	2.30			SILST	SILST m - as above	45	SWBkn

230

CORE DESCRIPTION, Continued

Hole No: BR-2005-1c

Page 7 of

Box No.	Driller's Coreg Info (ft and m)	Corel Rec'd %	Interval (m) From To	Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
								<u>TOP of box 10</u>		
			36.46	36.60	0.14		CLYSTM	CLAYSTM, m. s. m. pool		FACT
10	128 37.18		36.60	36.72	0.12		Coal	Coal, dull, lump size heavy, bright		bkm
			36.72	36.88	0.16		Coal	Coal, very lumpy, mostly dull coal mixed with bright coal		CRUSHED
			36.88	37.02	0.14		Coal	Coal, dull probably CLAYSTM coal		bkm
			37.02	37.17	0.15		Coal	Coal, bright		bkm
			37.17	37.95	0.18		Coal	Coal, mix of dull and bright		CRUSHED
			37.95	38.42	0.47		Coal	Coal, bright		bkm
			38.42	38.62	0.20		Coal	Coal, bright		CRUSHED

2.02

CORE DESCRIPTION, Continued

Hole No: BR-2005-1C

Page 8 of

Bore No.	Driller's Coring Info (ft and m)		Interval (m)		Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
	From	To	From	To							
10			38.62	38.81	0.19			CLYSTM	High Carbon CLYSTM with Coal stringers Upper Contact Slit-ended, Lower CONTACT blk		satblk
			38.81	38.85	0.04			Coal	Coal, Buryat		
			38.85	39.30	0.45				Coal loss <u>Top of box 11</u>		Crushed
			39.30	39.40	0.10			Coal	Coal berry		Solid
			39.40	39.54	0.14			Coal	Coal mixture of dull and Buryat		Crushed
			39.54	41.67	2.13			CLYSTM	Coal loss		
			41.67	41.82	0.15			CLYSTM	High Carbon CLYSTM with Coal stringers		vblk
			41.82	43.35	1.53			CLYSTM	Carbonous CLYSTM, blk and Polished on the surface		blk

~~141~~
~~42.98~~

CORE DESCRIPTION, Continued

Hole No: BR2005-1C

Page 9 of

Box No.	Driller's Coring Info (ft and m)		Interval (m)		Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
	From	To	From	To							
11			43.35	44.35	1.00			CLYsM	CLYsM medium gray, 0.40 m from top high carbonaceous with coal stringers.		blen
			<u>TOP of box 12</u>								
12			44.35	46.27	1.92			CLYsM	CLYsM as above from 0.95 to the end of run sampled and broken as shears considered.		Sublen
			<u>TOP of box 13</u>								
			46.27	46.77	0.50			CLYsM	TOP of core broken and shared		blen
			<u>TOP of box 13</u>								
13			46.77	47.00	0.23			CLYsM	CLYsM 19.50 down		solid
			47.00	47.62	0.62			Coal	Coal Banght		ashed

CORE DESCRIPTION, Continued

Hole No: BK2005-1C

Page 16 of

Box No.	Drillers Coring Info (ft and m)		Cored Rec'd %	Interval (m)		Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
	From	To		From	To							
13	49.19	62		47.92	49.35	0.70	0.88		SLS	CLYSTM mixed clay on top of from high Carbon.		Subslm
14	52.02	172		49.35	50.27	0.92			SLS	SILST as above		
				50.27	52.32	2.05			SILST	SILST, as above		Intfct
				52.32	53.08	0.76			SILST	SILST, as above		Stabslm
<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> <p>TOP of box 14</p> </div>												

CORE DESCRIPTION, Continued

Hole No: BR2005-1C

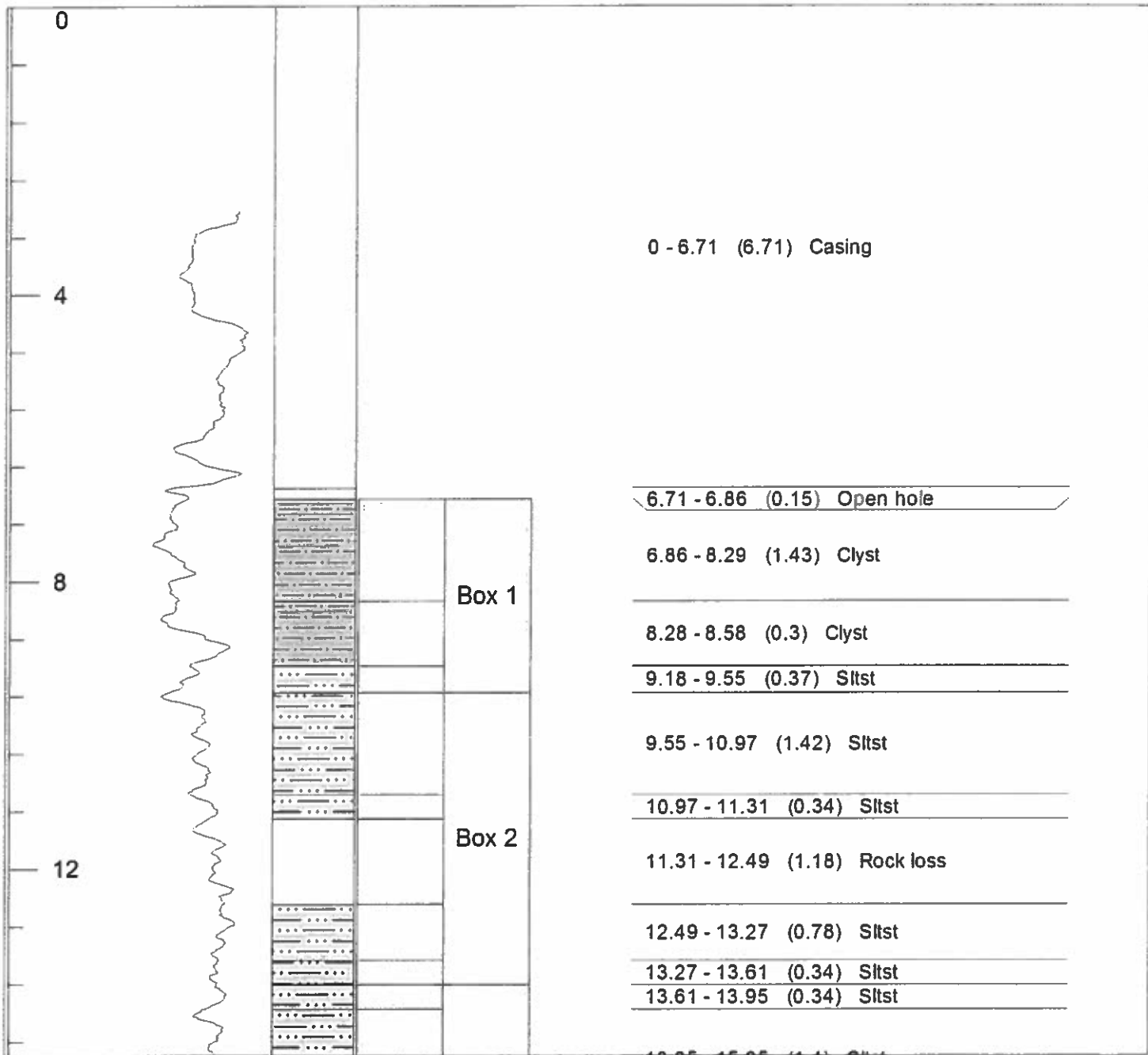
Page 12 of

Box No.	Driller's Coring Info (ft and m) From To Cored Rec'd %	Interval (m) From To	Length m	Lost m	Sample	Lithology Code	Description	BCN	Core Quality
		5885	6077	1.88		SLST	SLST as above		
		6077	6141.064			SS1	SS1, fine grained, medium gray , 4 veins of white SLSTs at 20' NCA along the core		
	20' / 6.56						End of Cores		
							TOP of box 17		

**WESTERN CANADIAN COAL
BURNT RIVER -2005**

DRILLHOLE: BR 2005 - 1C

Depth (m)	DENSITY	Lithology	Sample No	Box No	Sample Interval From - To (Length) Lithology
	1.20 1.70 2.20 2.70				



CO-ORDINATES
NORTHING:
EASTING:
ELEVATION:

DRILLED BY:
LOGGED BY:
GEOPHYSICAL LOGGING BY:

**WESTERN CANADIAN COAL
BURNT RIVER -2005**

DRILLHOLE: BR 2005 - 1C

Depth (m)	DENSITY 1.20 1.70 2.20 2.70	Lithology	Sample No	Box No	Sample Interval From - To (Length) Lithology
					13.95 - 15.35 (1.4) Slst
16				Box 3	15.35 - 16.55 (1.2) Rock loss
				Box 3	16.56 - 16.96 (0.4) Slst
					16.96 - 17.78 (0.82) Rock loss
					17.78 - 18.4 (0.62) Slst
					18.4 - 18.53 (0.13) Cyst
					18.53 - 18.6 (0.07) Cyst
					18.6 - 18.7 (0.1) Coal
					18.7 - 18.8 (0.1) Cyst
					18.8 - 19.4 (0.6) Cyst
20				Box 4	19.4 - 20.6 (1.2) Slst
					20.6 - 21.44 (0.84) Slst
24				Box 5	21.44 - 24.49 (3.05) Slst
					24.49 - 27.54 (3.05) Slst
28				Box 6	27.54 - 27.78 (0.24) Rock Loss
					27.78 - 29.25 (1.47) Cyst

CO-ORDINATES

NORTHING:

EASTING:

ELEVATION:

DRILLED BY:

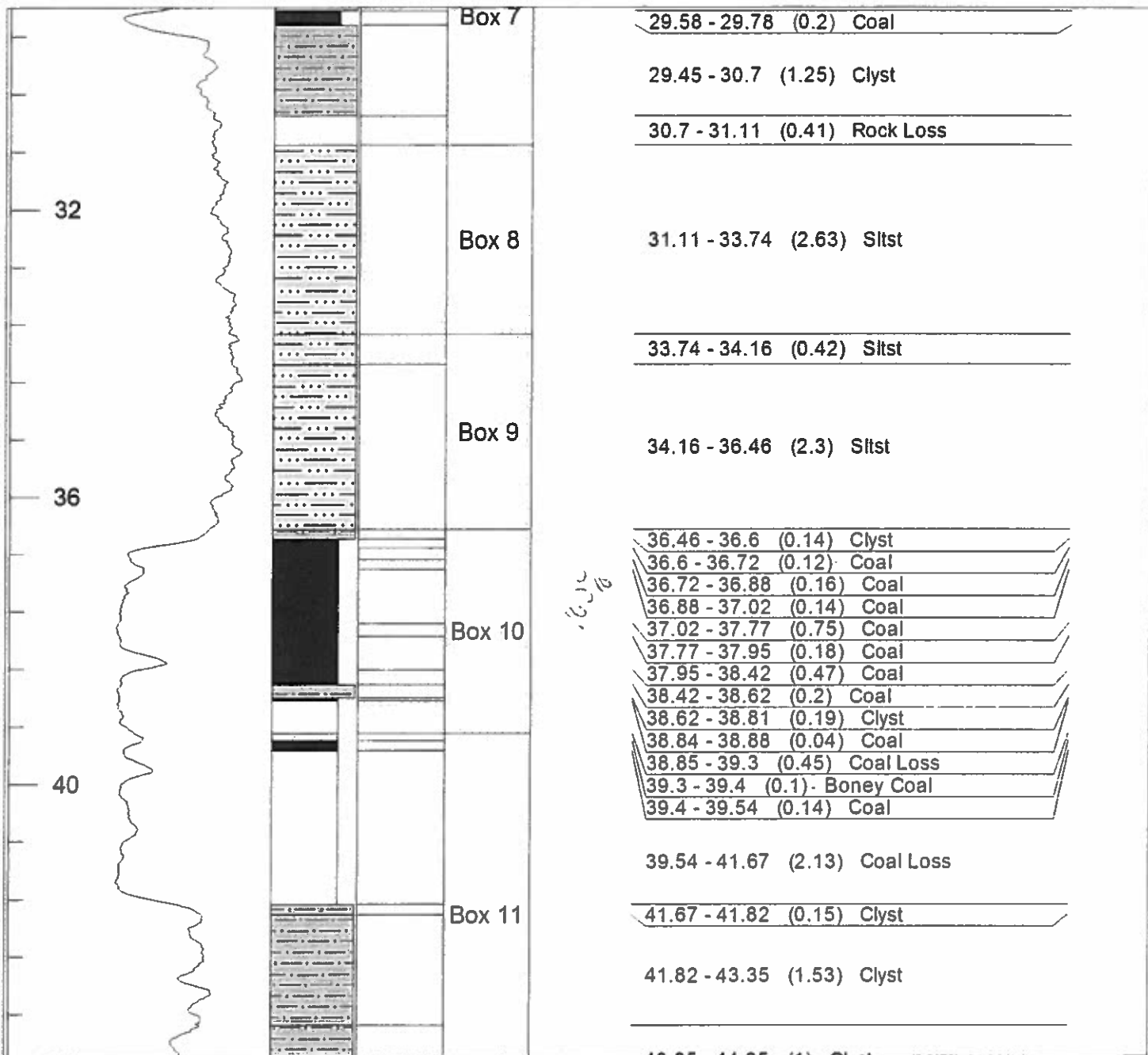
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GEOPHYSICAL LOGGING BY:

**WESTERN CANADIAN COAL
BURNT RIVER -2005**

DRILLHOLE: BR 2005 - 1C

Depth (m)	DENSITY 1.20 1.70 2.20 2.70	Lithology	Sample No	Box No	Sample Interval
					From - To (Length) Lithology



CO-ORDINATES	DRILLED BY:
NORTHING:	LOGGED BY:
EASTING:	GEOPHYSICAL LOGGING BY:
ELEVATION:	

**WESTERN CANADIAN COAL
BURNT RIVER -2005**

DRILLHOLE: **BR 2005 - 1C**

Depth (m)	DENSITY 1.20 1.70 2.20 2.70	Lithology	Sample No	Box No	Sample Interval From - To (Length) Lithology
44					43.35 - 44.35 (1) Clyst
				Box 12	44.35 - 46.27 (1.92) Clyst
					46.27 - 46.77 (0.5) Clyst
					46.77 - 47 (0.23) Clyst
					47 - 47.62 (0.62) Coal
					47.62 - 47.77 (0.15) Coal
48				Box 13	47.77 - 48.65 (0.88) Coal Loss
					48.65 - 49.35 (0.7) Clyst
					49.35 - 50.27 (0.92) Sltst
				Box 14	50.27 - 52.32 (2.05) Sltst
52					52.32 - 53.08 (0.76) Sltst
				Box 15	53.08 - 55.26 (2.18) Sltst
					55.26 - 55.93 (0.67) Sltst
56				Box 16	55.93 - 58.19 (2.26) Sltst

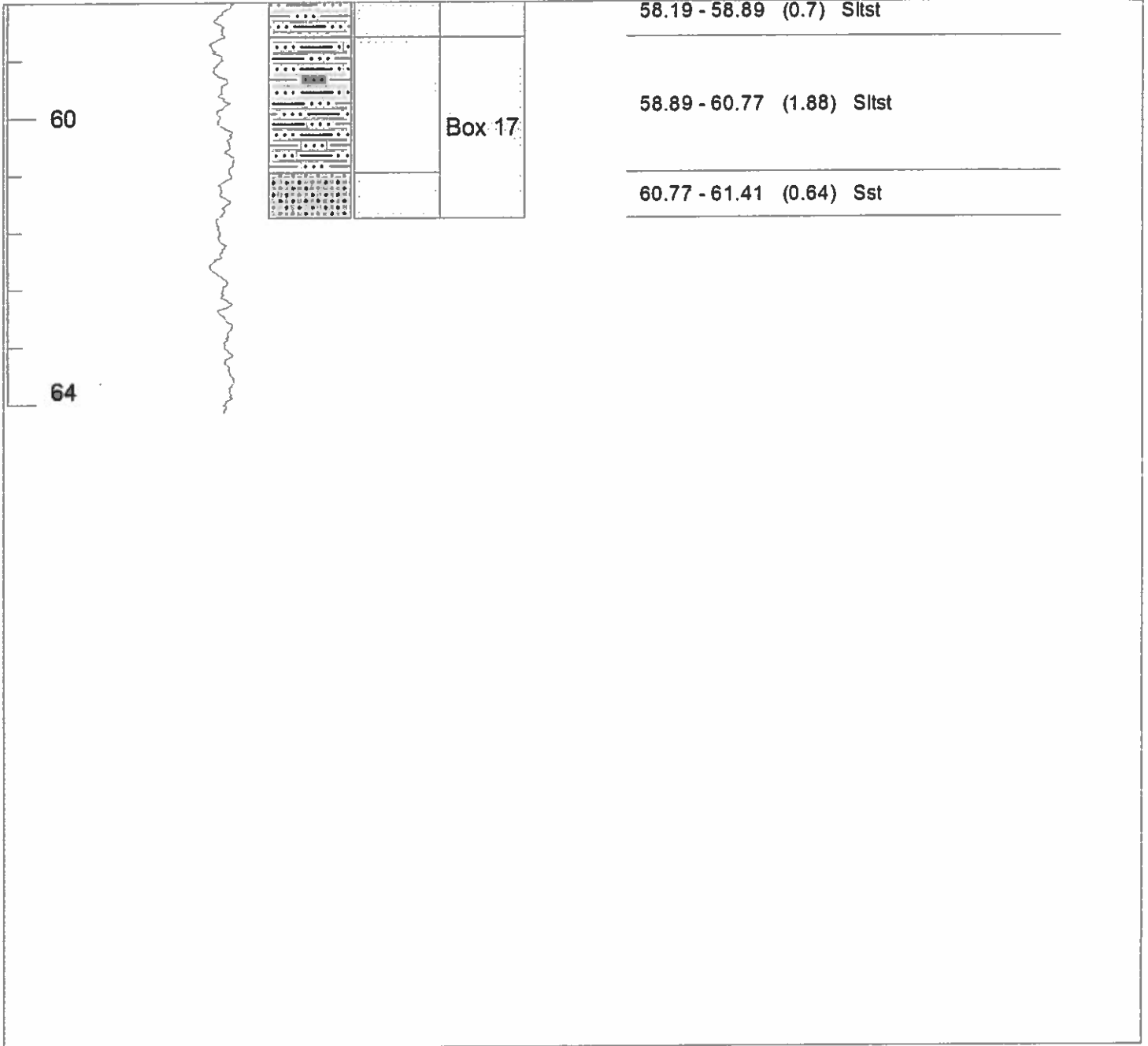
CO-ORDINATES
NORTHING:
EASTING:
ELEVATION:

DRILLED BY:
LOGGED BY:
GEOPHYSICAL LOGGING BY:

**WESTERN CANADIAN COAL
BURNT RIVER -2005**

DRILLHOLE: BR 2005 - 1C

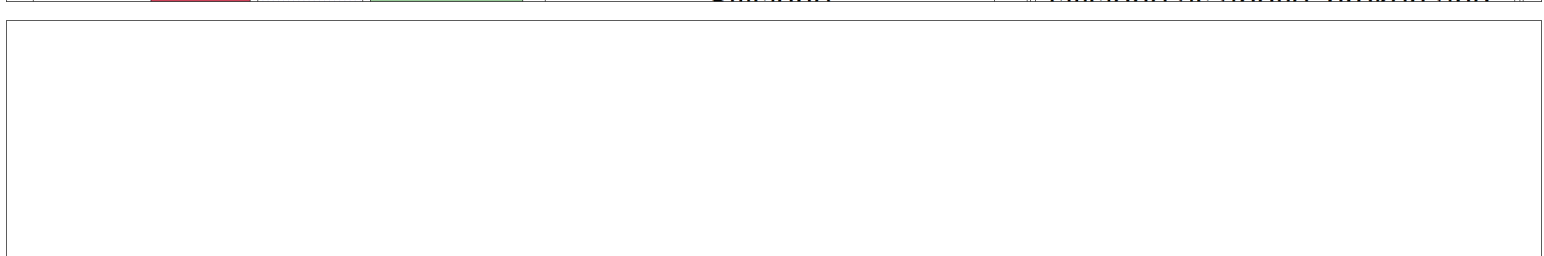
Depth (m)	DENSITY 1.20 1.70 2.20 2.70	Lithology	Sample No	Box No	Sample Interval From - To (Length) Lithology
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<p>CO-ORDINATES NORTHING: EASTING: ELEVATION:</p>	<p>DRILLED BY: LOGGED BY: GEOPHYSICAL LOGGING BY:</p> <p style="text-align: center;">5 of 5</p> <p style="text-align: right;">B. Holmlund 25/03/05</p>
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BR2005-1C
Logged by Parviz
Jan 28, 2005

Depth	Sample ID	Box No.	Lithology	From - To (Length)	Lithology	Description
0				0 - 6.71 (6.71)	Casing	
4				6.71 - 6.86 (0.15)	Open hole	
8		Box 1		6.86 - 8.29 (1.43)	Claystone	High carbon claystone with coaly stringers
				8.28 - 8.58 (0.3)	Claystone	As above from 0.26m to 0.71m with coaly stringers. 0.20m at the bottom siltstone
				9.18 - 9.55 (0.37)	Siltstone	siltstone medium gray
				9.55 - 10.97 (1.42)	Siltstone	siltstone medium gray at the 0.28m and 0.32m joints heled with white stuff, coaly stringers. From 0.97 to 1.22 m high carbon claystone with coal stringers, broken. The rest of core is intact
12		Box 2		10.97 - 11.31 (0.34)	Siltstone	
				11.31 - 12.49 (1.18)	Rock loss	
				12.49 - 13.27 (0.78)	Siltstone	siltstone, as above it is rounded by the bit. The driller called this zone gravel seam because it is
				13.27 - 13.61 (0.34)	Siltstone	to
				13.61 - 13.95 (0.34)	Rock loss	



BR2005-1C

Logged by Parviz

Jan 28, 2005

Depth	Sample ID	Box No.	Lithology	From - To (Length) Lithology	Description
16		Box 3	Siltstone	13.95 - 15.35 (1.4) Siltstone	siltstone as above, broken and partly rounded by the bit
			Rock loss	15.35 - 16.55 (1.2) Rock loss	siltstone as above with coaly stringers
			Siltstone	16.56 - 16.96 (0.4) Siltstone	siltstone as above
			Rock loss	16.96 - 17.78 (0.82) Rock loss	siltstone as above
		Box 4	Siltstone	17.78 - 18.4 (0.62) Siltstone	siltstone, medium gray
			Claystone	18.4 - 18.53 (0.13) Claystone	High carbon claystone
			Claystone	18.53 - 18.6 (0.07) Claystone	high carbon claystone
			Coal	18.6 - 18.7 (0.1) Coal	Very broken dull coal mixed with pieces of broken carbonaceous claystone
			Claystone	18.7 - 18.8 (0.1) Claystone	coal loss
			Claystone	18.8 - 19.4 (0.6) Claystone	claystone, dark gray upper contact smooth, clear. 43° to NC, 0.24m bottom of core very broken to crushed
Box 5	Siltstone	19.4 - 20.6 (1.2) Siltstone	0.20m high carbonaceous claystone with coal stringers. The rest dark gray claystone		
	Siltstone	20.6 - 21.44 (0.84) Siltstone	siltstone, medium gray		
Box 6	Siltstone	21.44 - 24.49 (3.05) Siltstone	siltstone, medium gray, fined grained		
	Siltstone	24.49 - 27.54 (3.05) Siltstone	siltstone as above		
28			Rock Loss	27.54 - 27.78 (0.24) Rock Loss	Rock loss
			Claystone	27.78 - 29.25 (1.47) Claystone	claystone, medium gray, 0.02m on the top vbroken, 0.83m from top, high carbonaceous claystone

BR2005-1C

Logged by Parviz

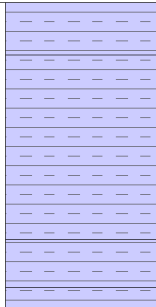
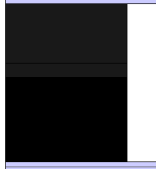
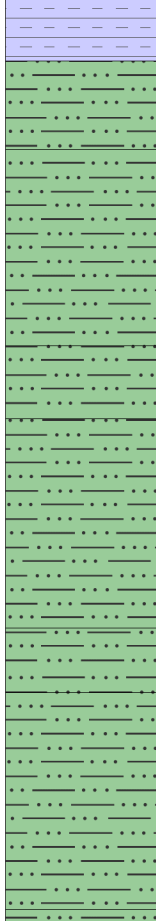
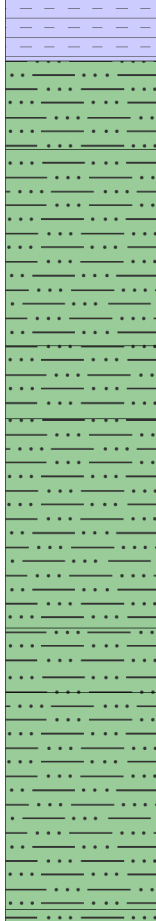
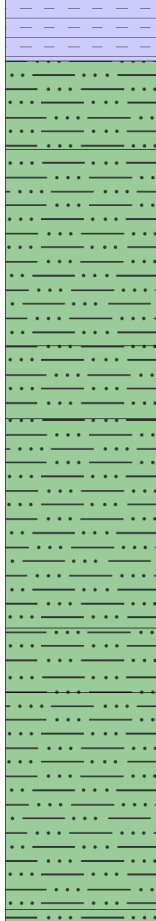
Jan 28, 2005

Depth	Sample ID	Box No.	Lithology	From - To (Length) Lithology	Description				
32		Box 7		29.58 - 29.78 (0.2) Coal	with coal stringers				
				29.45 - 30.7 (1.25) Claystone	Coal crushed, dull banded? claystone 0.55 m high				
		Box 8		30.7 - 31.11 (0.41) Rock Loss	carbonaceous claystone, broken sub parallel to bedding. The rest, claystone is very broken, polished and slickensided on surface				
				31.11 - 33.74 (2.63) Siltstone	Rock loss				
				33.74 - 34.16 (0.42) Siltstone	siltstone, medium gray, fined grained				
				34.16 - 36.46 (2.3) Siltstone	siltstone as above				
				36		Box 9		36.46 - 36.6 (0.14) Claystone	siltstone as above
								36.6 - 36.72 (0.12) Coal	claystone, medium gray
						Box 10		36.72 - 36.88 (0.16) Coal	coal, dull, lumps are heavy, high ash
								36.88 - 37.02 (0.14) Coal	coal very broken, mostly dull
37.02 - 37.77 (0.75) Coal	coal mixed with bright coal								
37.77 - 37.95 (0.18) Coal	coal, dull probably high ash coal								
37.95 - 38.42 (0.47) Coal	coal, bright								
38.42 - 38.62 (0.2) Coal	coal, mix of dull and bright								
38.62 - 38.81 (0.19) Claystone	coal, bright								
38.81 - 38.84 (0.03) Claystone	coal, bright								
40		Box 11		38.84 - 38.88 (0.04) Coal	high carbon claystone with coal stringers, upper contact				
				38.85 - 39.3 (0.45) Coal Loss	slickensided, lower contact broken				
				39.3 - 39.4 (0.1) Boney Coal	broken				
				39.4 - 39.54 (0.14) Coal	coal bright				
				39.54 - 41.67 (2.13) Coal Loss	coal loss				
				41.67 - 41.82 (0.15) Claystone	coal bony				
					coal, mix of dull and bright				
					coal loss				
					high carbon claystone with				

BR2005-1C

Logged by Parviz

Jan 28, 2005

Depth	Sample ID	Box No.	Lithology	From - To (Length) Lithology	Description
44		Box 12		Claystone 41.82 - 43.35 (1.53)	high carbon claystone with coal stringers carboneous claystone, broken and polished on the surface claystone medium gray, 0.40 m from top high carboneous with coal stringers claystone as above from 0.95 to the end of run samples are broken and slickensided
	Claystone 43.35 - 44.35 (1) Claystone				
	Claystone 44.35 - 46.27 (1.92)				
	Claystone 46.27 - 46.77 (0.5)				
		Box 13		Claystone 46.77 - 47 (0.23) Claystone	claystone as above, 0.20 m from top, 0.30 m of core broken and sheared claystone as above coal bright coal, dull mixed with high carbon claystone Coal Loss
48	Coal 47 - 47.62 (0.62) Coal				
	Coal 47.62 - 47.77 (0.15) Coal				
	Coal 47.77 - 48.65 (0.88) Coal				
	Loss 48.65 - 49.35 (0.7)				
		Box 14		Claystone 49.35 - 50.27 (0.92)	claystone, medium gray, 0.10m on the top of run high carbon siltstone, as above siltstone as above siltstone as above
	Siltstone 50.27 - 52.32 (2.05)				
52	Siltstone 52.32 - 53.08 (0.76)				
	Siltstone 53.08 - 55.26 (2.18)				
		Box 15		Siltstone 55.26 - 55.93 (0.67)	siltstone as above, some irregular white infilling at 0.30 from the top
56	Siltstone 55.93 - 58.19 (2.26)				
		Box 16		Siltstone	siltstone as above

BR2005-1C
Logged by Parviz
Jan 28, 2005

Depth	Sample ID	Box No.	Lithology	From - To (Length)	Lithology	Description
				58.19 - 58.89 (0.7)	Siltstone	siltstone as above
60		Box 17		58.89 - 60.77 (1.88)	Siltstone	siltstone as above
				60.77 - 61.41 (0.64)	Sandstone	sst, fined grained, medium gray, 4 veins of white stuff at 20°CA along the Core
64						





GEOPHYSICAL CORP.

GAMMA - DENSITY
4 INCH RESISTIVITY SCALE

BR 2005 - 1C

century-geo.com

COMPANY: WESTERN CANADIAN COAL CORP.
WELL: BR 2005 1C
FIELD: BURNT RIVER
MUNICIPALITY: TUMBLER RIDGE
PROVINCE: BRITISH COLUMBIA

OTHER SERVICES:
9077
9969
9055

LOCATION:
SECTION:
TOWNSHIP:
RANGE:
API NO:
UNIQUE WELL ID:

PERMANENT DATUM: G.L.
LOS MEASURED FROM: G.L.
DR. MEASURED FROM: G.L.
ELEVATION IN:
ELEVATION OF:
ELEVATION G.L.:

DATE: 07/31/05

RUNNING: 4

DEPTH GRILLER: 132.59

LOG SIZE: 11.43

LOG TOP: 6.84

LOG BOTTOM: 12.53

CASING O.D.: 14.39cm

CASING BOTTOM: 6.14m

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

TEMPERATURE:

MUD RES:

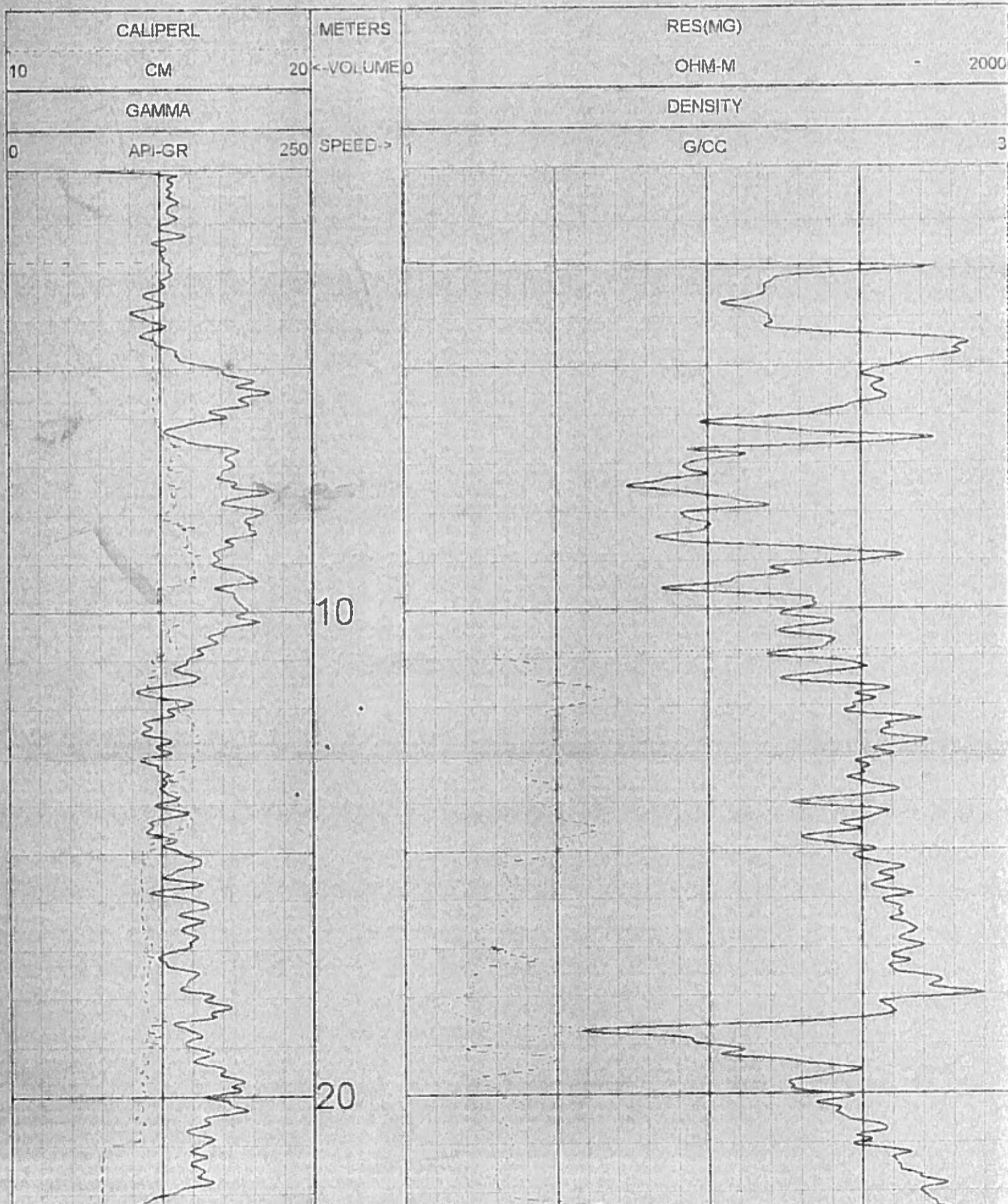
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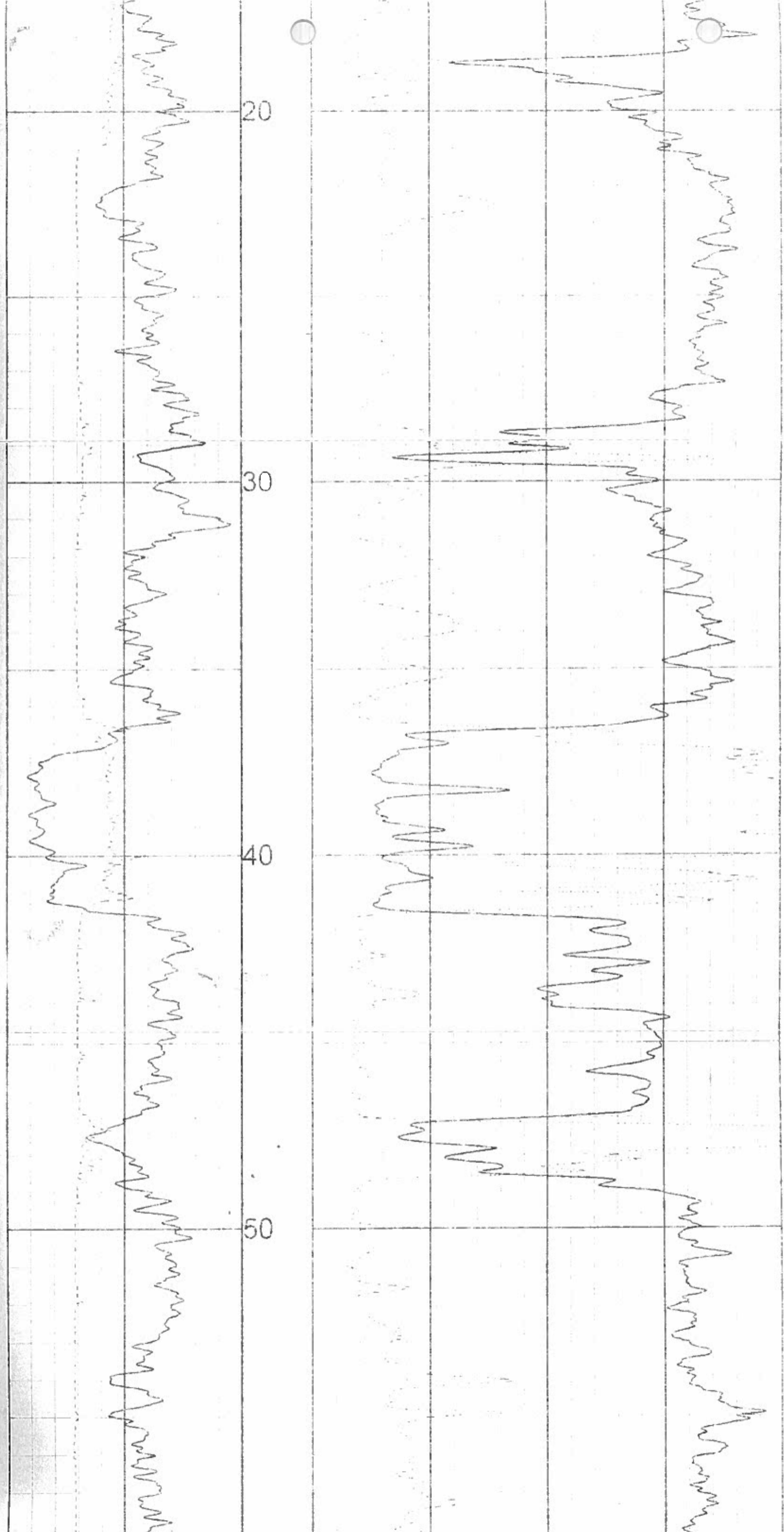
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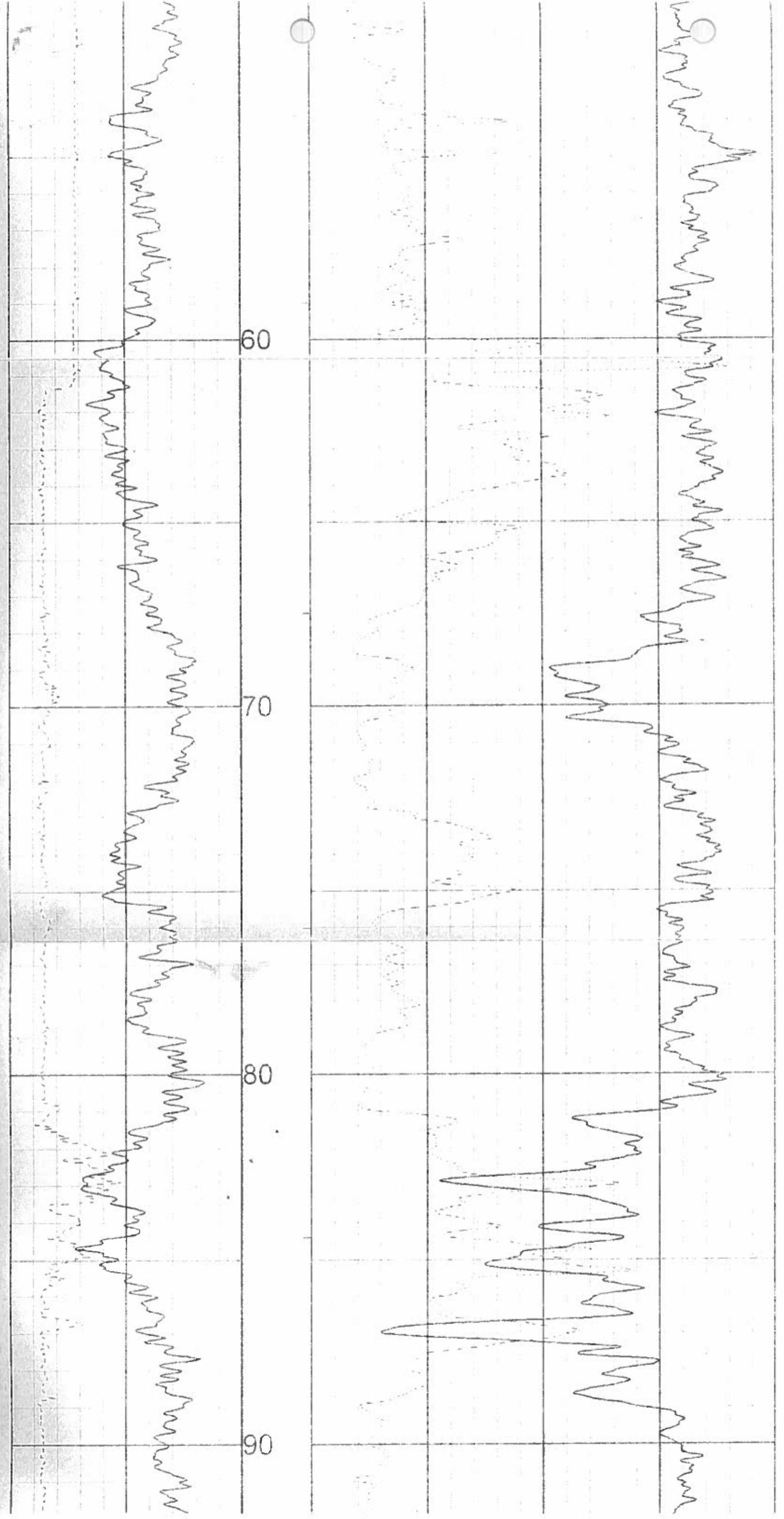
REMARKS 1: 11.40 cm from TD to 61.6m

REMARKS 2: 11.97 cm from 61.57m to SURFACE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





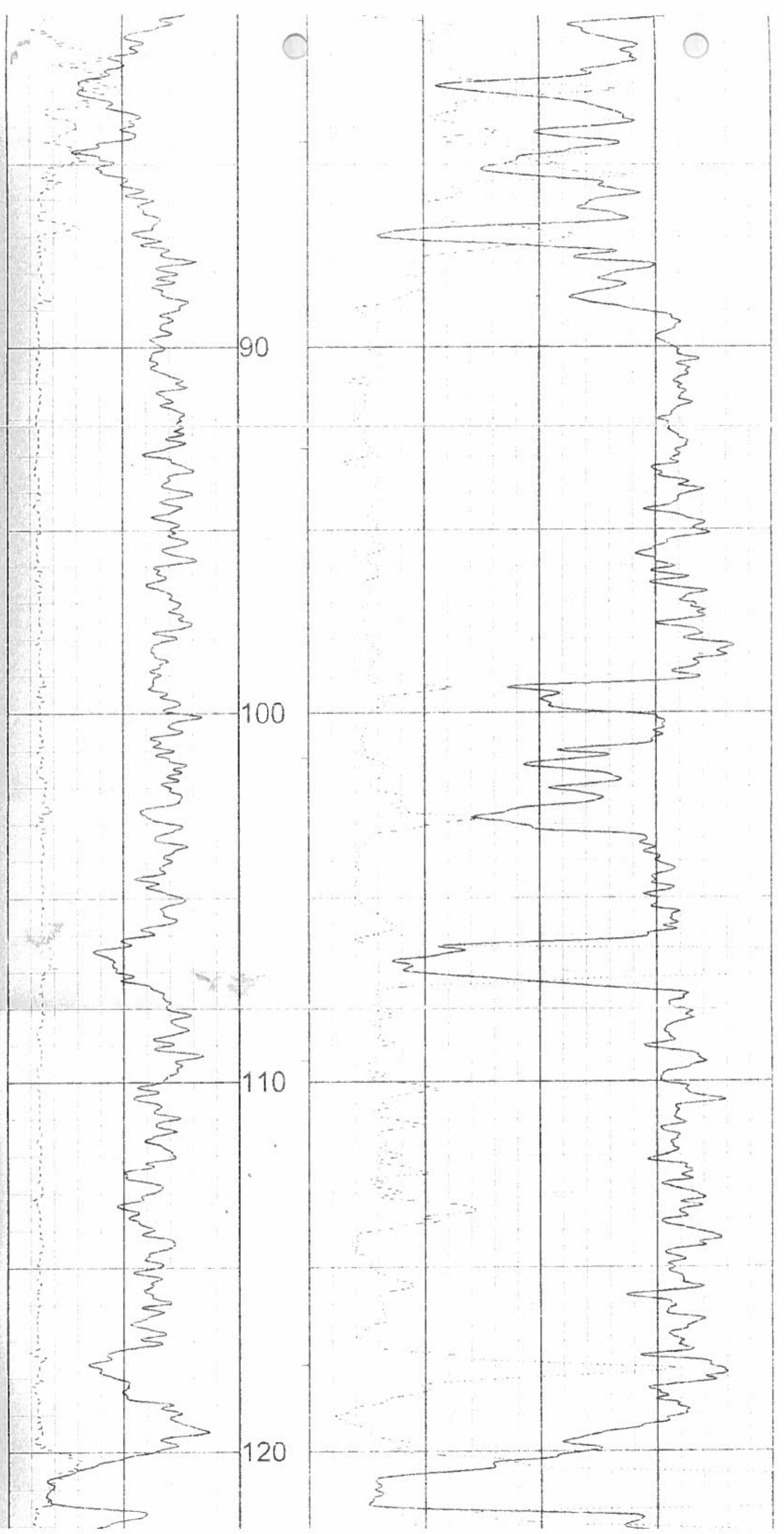


60

70

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90

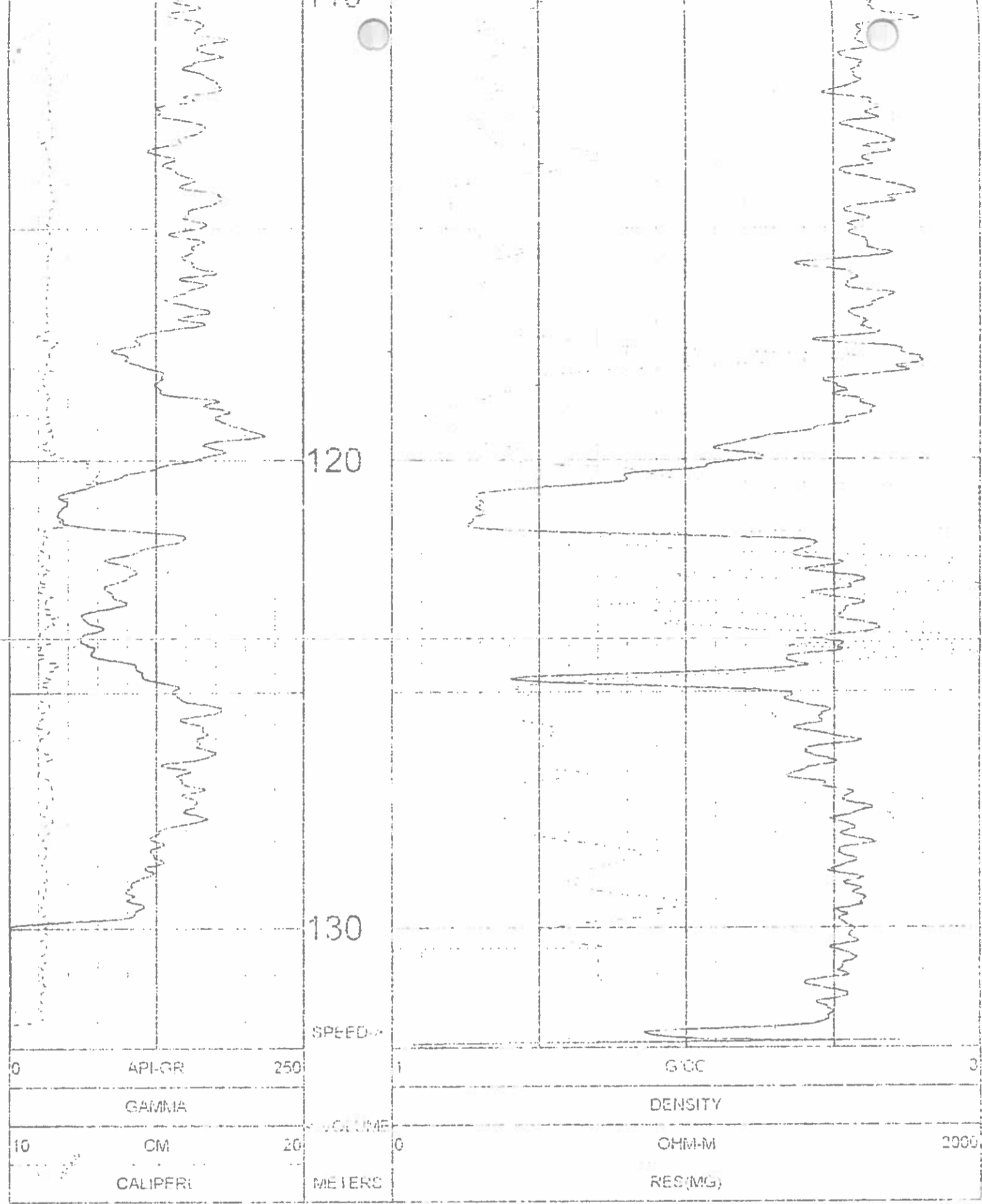


90

100

110

120



TOOL CALIBRATION BR 2005 - IC 01 31 05 11 43
 TOOL 9034AA1
 SERIAL NUMBER 480

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Sep 14, 04	19:13:24	GAMMA	0.000 [API-GR]	1.00 [CPS]
	Sep 14, 04	19:13:24	GAMMA	325.000 [API-GR]	513.00 [CPS]
2	Oct 15, 04	19:49:41	DENSITY	1.106 [G/CC]	5585.00 [CPS]
	Oct 15, 04	19:49:41	DENSITY	2.612 [G/CC]	1229.00 [CPS]
3	Sep 10, 04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
	Sep 10, 04	18:27:11	RES(MG)	Default [CPS]	Default [CPS]
4	Sep 10, 04	18:34:28	CALIPER	7.620 [CM]	57391.00 [CPS]
	Sep 10, 04	18:34:28	CALIPER	17.780 [CM]	105259.00 [CPS]
5	Sep 08, 04	17:51:14	DENSITY	Default [CPS]	Default [CPS]
	Sep 08, 04	17:51:14	DENSITY	Default [CPS]	Default [CPS]
6	Sep 29, 04	17:18:08	CALIPER	10.160 [CM]	55176.50 [CPS]
	Sep 29, 04	17:18:08	CALIPER	22.860 [CM]	86091.70 [CPS]



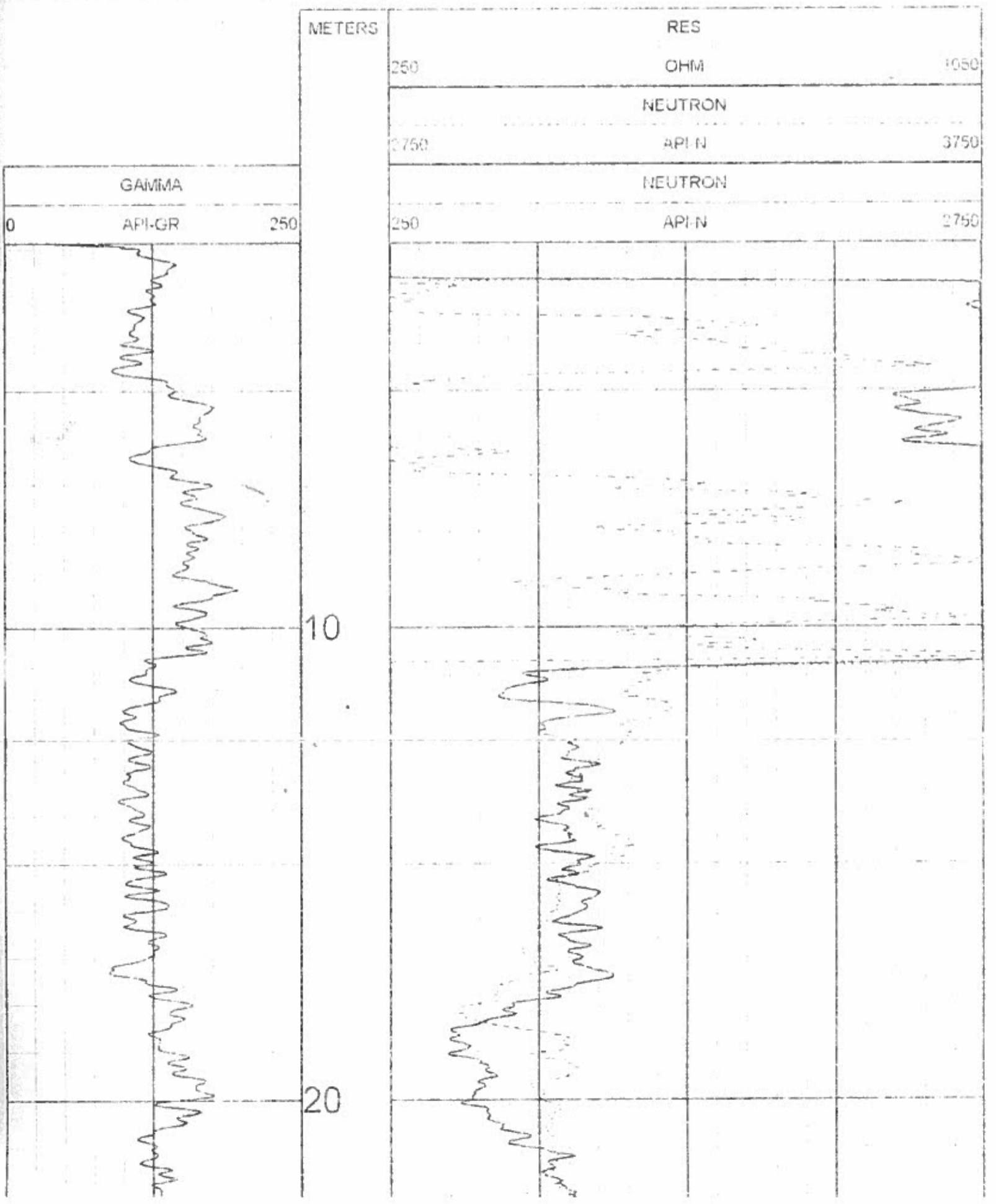
Century-geo.com

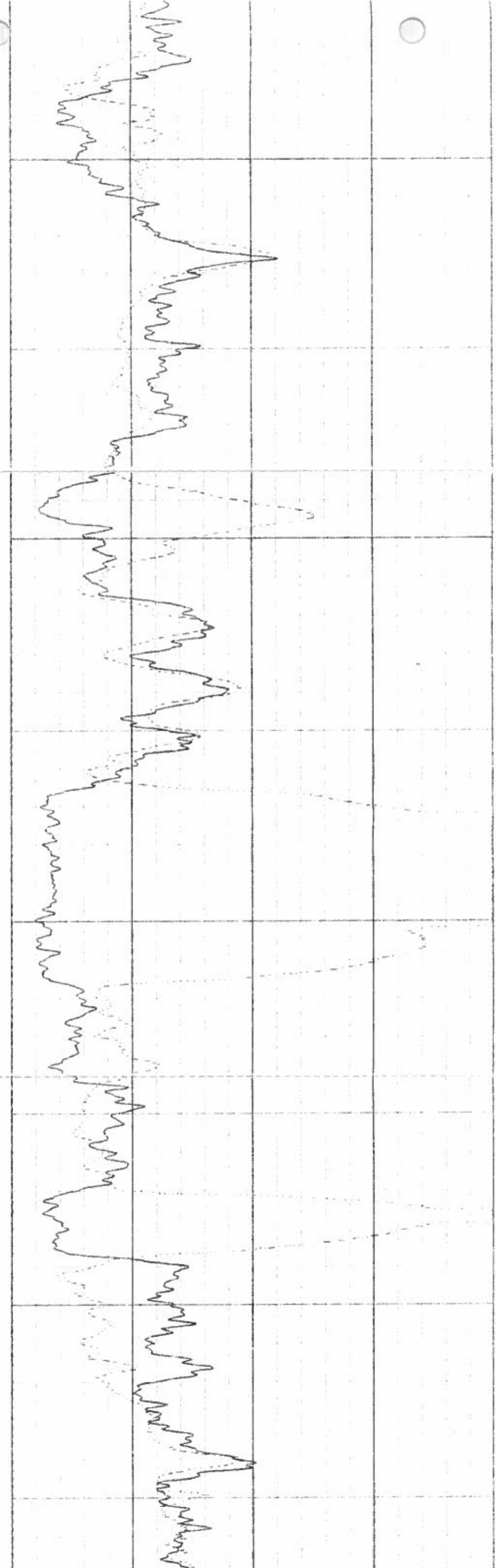
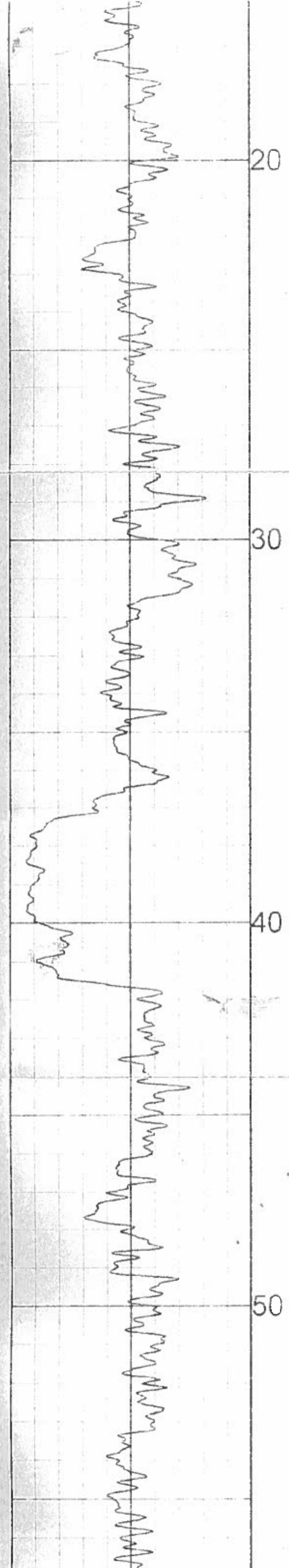
BR 2005 - 1C

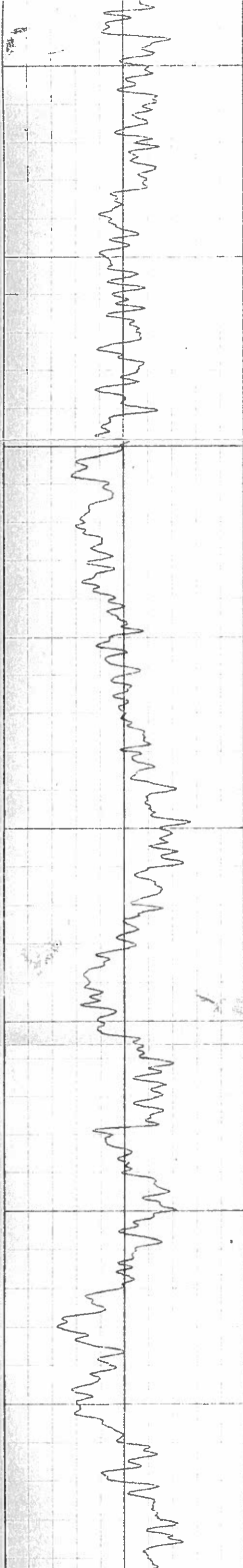
GAMMA - NEUTRON - RES

COMPANY	WESTERN CANADIAN COAL 2004	OTHER SERVICES	99%
WELL	52-10-1-15	90%	
FIELD	WOLF RIVER	90%	
MANAGER	DAVID BIRN DSE	90%	
OPERATOR	CANTON COL. INC.	90%	
DATE			
TIME			
LOCATION			
DEPTH			
REMARKS			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





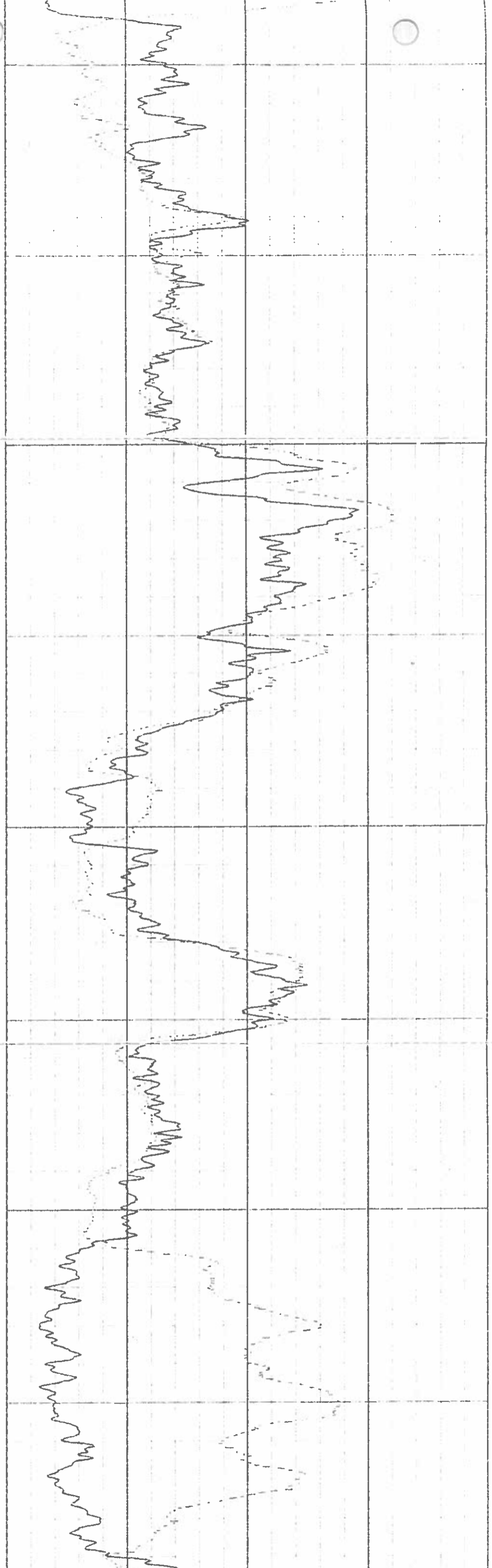


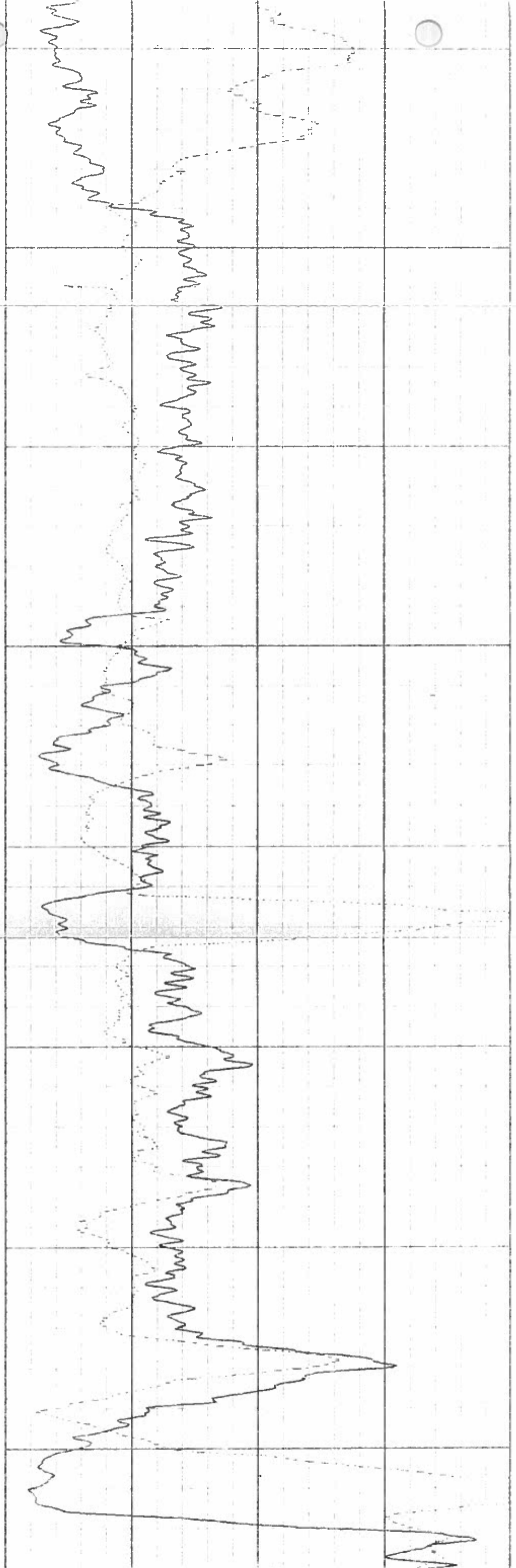
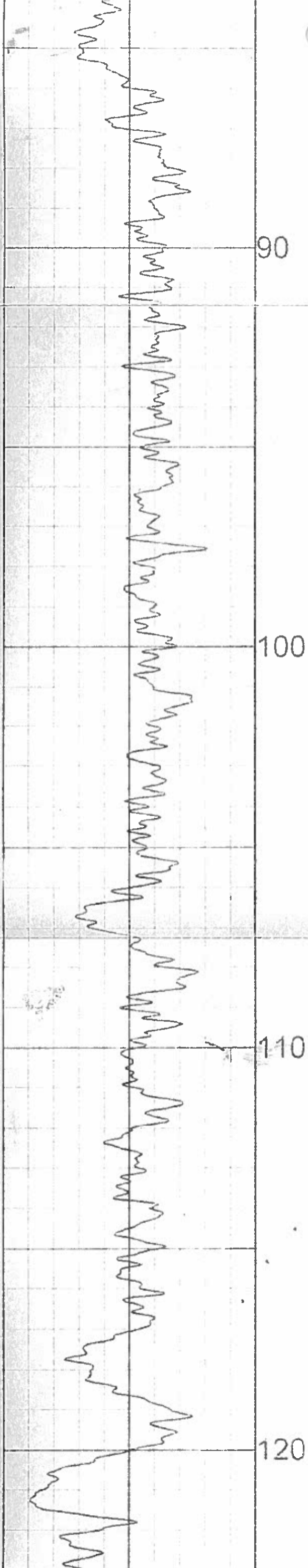
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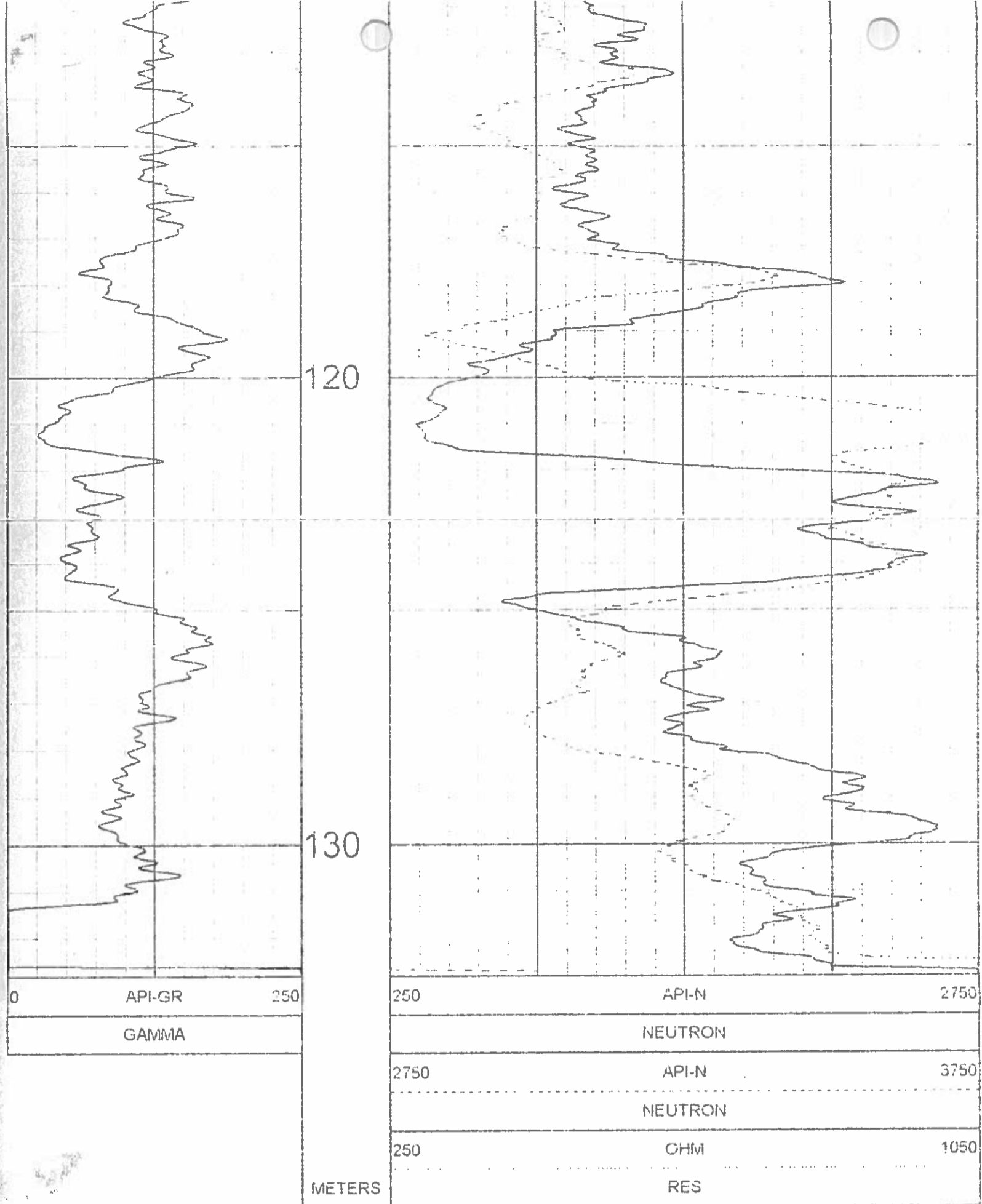
60

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80







TOOL CALIBRATION DR 2005 - IC 01/31/05 11:11
 TOOL 9055A
 SERIAL NUMBER 80

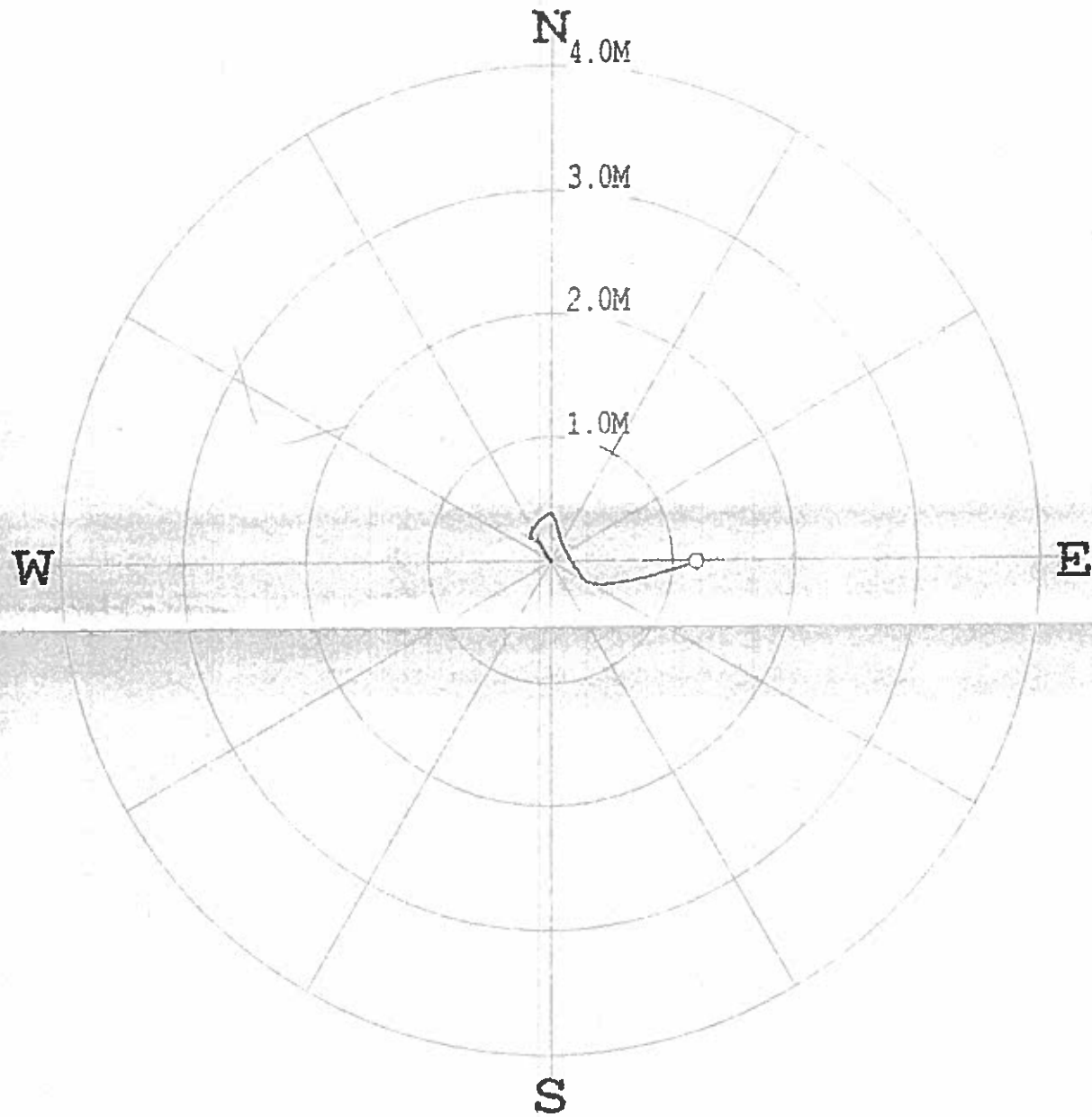
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul27,04	07:52:42	GAMMA	15.000 [API-GR]	1.00 [CPS]
	Jul27,04	07:52:42	GAMMA	250.000 [API-GR]	240.00 [CPS]
2	May24,99	13:14:46	POROSIT	185.000 [CPS]	
3	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
	May24,99	13:14:46	RES	Default [CPS]	Default [CPS]
4	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
	May24,99	13:14:46	SP	Default [CPS]	Default [CPS]
5	May21,04	19:23:23	NEUTRON	Default [CPS]	Default [CPS]
	May21,04	19:23:23	NEUTRO	271.000 [API-N]	185.00 [CPS]
6	Feb20,02	17:17:55	TEMP	51.000 [DEG F]	1104.00 [CPS]
	Feb20,02	17:17:55	TEMP	95.200 [DEG F]	450.00 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN CANADIAN COAL CORP
 LOCATION: BURNT RIVER
 HOLE ID: BR 2005 - 1C
 DATE OF LOG: 01/31/05
 PROBE: 9055A 80

MAG DECL: 21.6

SCALE: 1 M/CM
 TRUE DEPTH: 132.74 M
 AZIMUTH: 90.6
 DISTANCE: 1.2 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE



COMPU-LOG - VERTICAL DEVIATION			
CLIENT	: WESTERN CANADIAN CO	HOLE ID.	: BR 2005 - 1C
FIELD OFFICE	:	DATE OF LOG	: 01/31/05
DATA FROM	:	PROBE	: 9055A 80
MAG. DECL.	: 21.600	DEPTH UNITS	: METERS
LOG: BR2005-1C_01-31-05_11-11_9055A_02_15.00_132.77_DEVI.log			
TRUE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.
DISTANCE	AZIMUTH	SANG	SANG

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR 2005 - 1C
 FIELD OFFICE : DATE OF LOG : 01/31/05
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2005-1C_01-31-05_11-11_9055A_02_15.00_132.77_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
15.0	15.02	0.00	-0.30	0.0	316.9	0.6	316.9
17.0	17.00	0.01	-0.01	0.0	319.5	0.4	312.2
19.0	19.00	0.03	-0.02	0.0	319.6	0.6	322.4
21.0	21.00	0.05	-0.04	0.1	322.2	0.8	326.9
23.0	23.00	0.07	-0.05	0.1	324.5	0.6	324.6
25.0	25.00	0.08	-0.06	0.1	326.5	0.5	347.6
27.0	27.00	0.10	-0.06	0.1	327.5	0.4	322.3
29.0	29.00	0.11	-0.07	0.1	327.4	0.3	337.7
31.0	31.00	0.12	-0.07	0.1	328.2	0.5	354.3
33.0	33.00	0.12	-0.09	0.1	327.5	0.2	323.6
35.0	35.00	0.13	-0.08	0.2	329.5	0.3	346.3
37.0	37.00	0.14	-0.09	0.2	328.5	0.5	302.5
39.0	39.00	0.15	-0.10	0.2	326.9	0.4	304.3
41.0	41.00	0.16	-0.11	0.2	324.7	0.4	280.4
43.0	43.00	0.16	-0.12	0.2	323.0	0.3	289.3
45.0	45.00	0.17	-0.12	0.2	322.1	0.2	308.3
47.0	47.00	0.17	-0.14	0.2	321.4	0.4	294.1
49.0	49.00	0.19	-0.15	0.2	320.2	0.2	293.2
51.0	51.00	0.19	-0.16	0.2	319.2	0.2	266.8
53.0	53.00	0.19	-0.16	0.2	319.3	0.2	234.4
55.0	55.00	0.19	-0.17	0.2	317.7	0.6	140.8
57.0	57.00	0.19	-0.17	0.3	317.4	0.6	116.2
59.0	59.00	0.19	-0.17	0.3	318.4	0.2	32.3
61.0	61.00	0.19	-0.18	0.3	319.8	0.2	3.2
63.0	63.00	0.20	-0.16	0.3	321.3	0.5	2.0
65.0	65.00	0.20	-0.16	0.3	323.4	0.3	323.2
67.0	67.00	0.20	-0.16	0.3	325.4	0.7	17.6
69.0	69.00	0.20	-0.15	0.4	329.6	0.8	39.9
71.0	71.00	0.20	-0.15	0.4	334.3	1.0	37.4
73.0	73.00	0.20	-0.12	0.3	338.9	0.8	42.7
75.0	75.00	0.20	-0.10	0.3	343.6	1.0	46.6
77.0	77.00	0.24	-0.07	0.4	347.7	0.5	50.4
79.0	79.00	0.24	-0.06	0.4	351.1	0.7	61.2
81.0	81.00	0.24	-0.04	0.4	354.6	0.7	59.3
83.0	83.00	0.24	-0.00	0.4	356.6	0.5	45.0
85.0	85.00	0.24	-0.01	0.4	358.5	0.4	57.3
87.0	87.00	0.24	-0.01	0.4	359.0	0.4	86.2
89.0	89.00	0.24	0.01	0.4	0.8	0.4	123.2
91.0	91.00	0.27	0.02	0.4	2.9	0.7	158.8
93.0	93.00	0.24	0.03	0.3	5.2	1.3	147.8
95.0	95.00	0.20	0.05	0.3	9.7	1.2	158.4
97.0	97.00	0.24	0.05	0.2	14.7	1.8	169.5
99.0	98.99	0.18	0.58	0.2	23.7	2.0	164.2
101.0	100.99	0.12	0.10	0.2	40.5	1.8	160.0
103.0	102.99	0.06	0.13	0.1	65.2	1.8	151.2
105.0	104.99	0.01	0.16	0.2	87.0	1.6	145.6
107.0	106.99	-0.04	0.19	0.2	101.5	1.4	138.7
109.0	109.99	-0.07	0.22	0.2	109.3	1.0	147.1
111.0	110.99	-0.10	0.24	0.3	112.8	1.0	160.4
113.0	112.99	-0.12	0.25	0.3	116.7	0.8	143.1
115.0	114.99	-0.15	0.27	0.3	118.7	0.8	128.0

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN CANADIAN CO HOLE ID. : BR 2005 - 1C
 FIELD OFFICE : DATE OF LOG : 01/31/05
 DATA FROM : PROBE : 9055A 80
 MAG. DECL. : 21.600 DEPTH UNITS : METERS
 LOG: BR2005-1C_01-31-05_11-11_9055A_02_15.00_132.77_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
117.0	116.99	-0.16	0.23	0.3	119.3	1.0	137.1
119.0	118.99	-0.18	0.33	0.4	118.3	1.6	113.5
121.0	120.99	-0.19	0.39	0.4	115.5	2.4	91.6
123.0	122.99	-0.18	0.48	0.5	110.9	3.0	92.4
125.0	124.98	-0.19	0.61	0.6	105.4	3.9	80.7
127.0	126.98	-0.14	0.75	0.8	100.2	4.3	80.5
129.0	128.97	-0.09	0.91	0.9	96.0	4.3	70.6
131.0	130.96	-0.05	1.05	1.1	91.8	4.4	74.5
132.8	132.70	-0.01	1.18	1.2	90.7	5.0	32.0



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-09-20

year drilled: 2009

AREA: BURNT RIVER

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,279.72	6,137,840.89	1,118.94

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
2.9	-87	34.18	Rotary			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	7.9	-87.10
6.00	11.3	-86.90
7.00	12.9	-86.60
8.00	13.9	-86.60
9.00	14.7	-86.60
10.00	15.2	-86.50
11.00	15.7	-86.30
12.00	15.8	-86.30
13.00	16.0	-86.20
14.00	16.2	-86.20
15.00	16.5	-85.80
16.00	17.0	-85.60
17.00	17.5	-85.40
18.00	18.0	-85.10
19.00	18.7	-84.70
20.00	19.3	-84.40
21.00	20.0	-84.00
22.00	20.8	-83.70
23.00	21.5	-83.00
24.00	22.1	-82.50
25.00	22.7	-82.00
26.00	23.6	-81.00
27.00	24.5	-80.50
28.00	25.3	-80.40
29.00	26.1	-80.10
30.00	26.7	-80.10
31.00	27.3	-79.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.00	3.00		
11.40	15.60	4.20		
17.15	18.20	1.05		
18.20	18.50	0.30		
20.30	21.20	0.90		
21.20	21.50	0.30		
22.60	23.10	0.50		

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-20	year drilled: 2009	AREA:
--------------------------	--------------------	-------

32.00	27.8	-80.00
33.00	28.3	-79.90
34.00	28.7	-79.70
34.18	28.8	-79.60

RAW SAMPLE INFORMATION

Date issued: Friday, May 18, 2012 Reviewed: October 11, 2002

Page 2 of 2



**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-20**

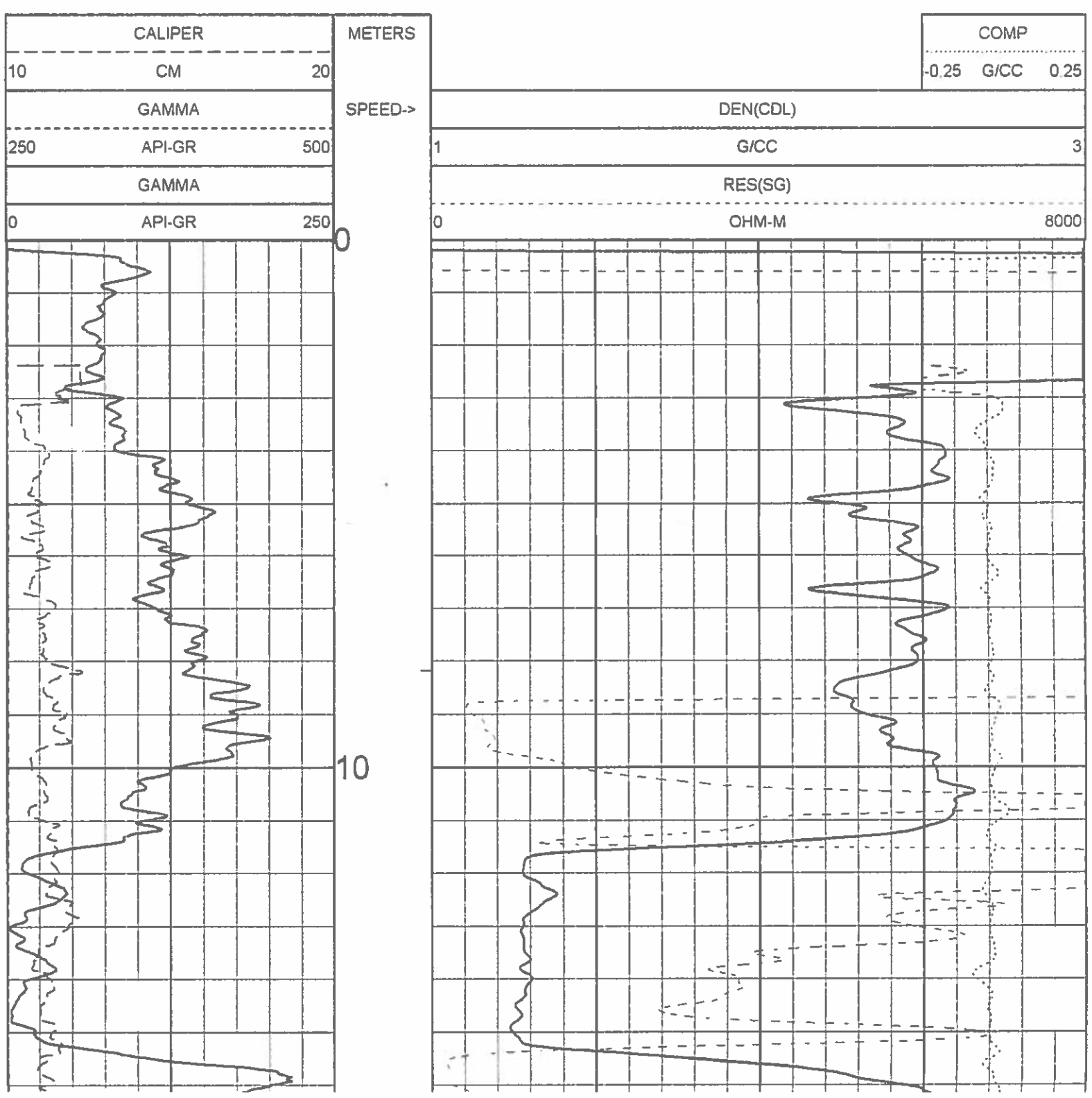
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR-09-20		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	35.05	LOGGER TD	
PT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.18	DEPARTURE TIME	
LOG BOTTOM	34.29	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

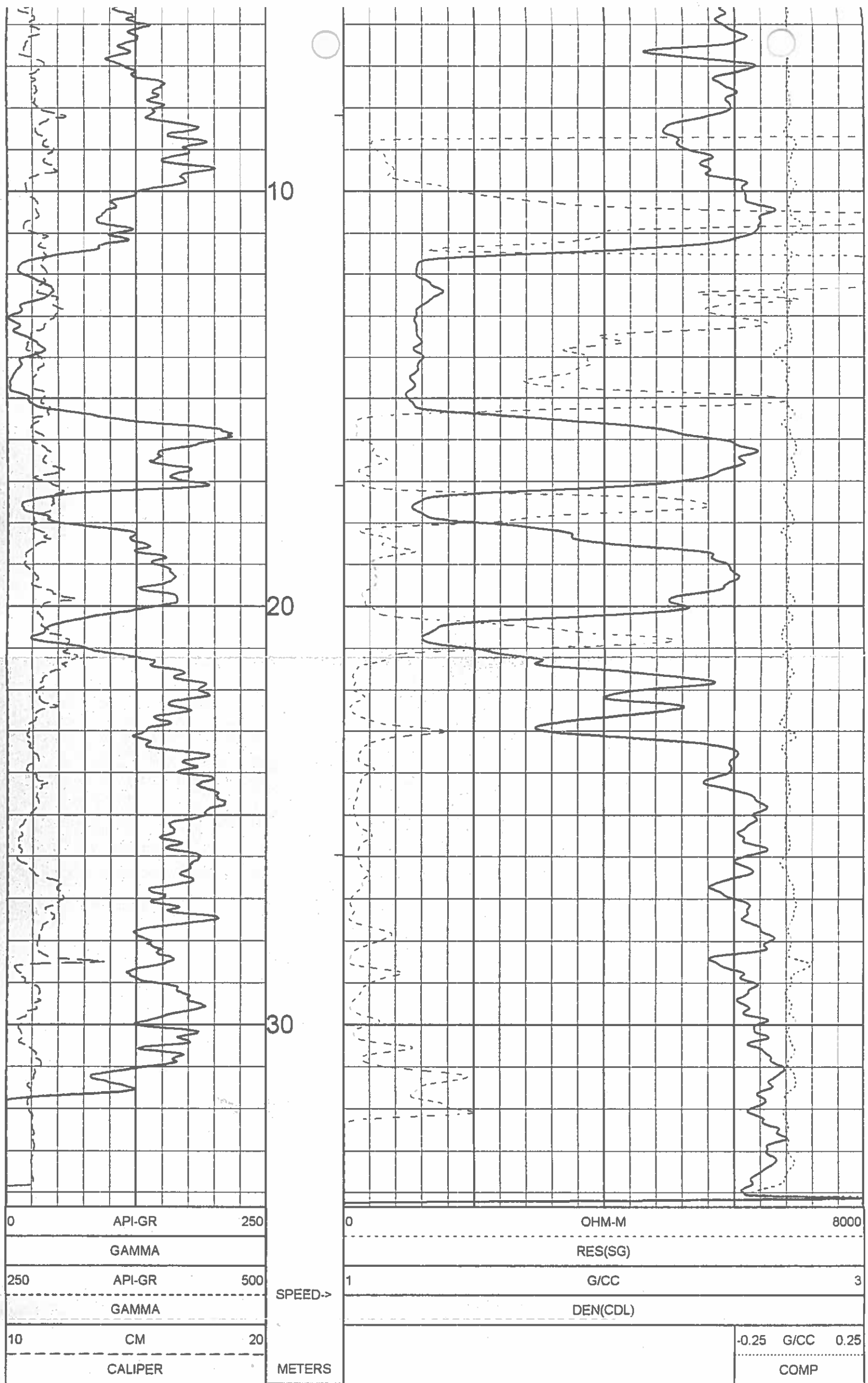
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR-09-20 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C.0 11/25/2009 VERSION = 3.64HR





1:100 BULK DENSITY BR-09-20 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C.0 11/25/2009		VERSION = 3.64HR

TOOL CALIBRATION BR-09-20 12/21/09 11:20
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	11:19:47	GAMMA	0.000 [API-GR]	3.000 [CPS]

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-20		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	35.05	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.18	DEPARTURE TIME	
LOG BOTTOM	34.29	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-20 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

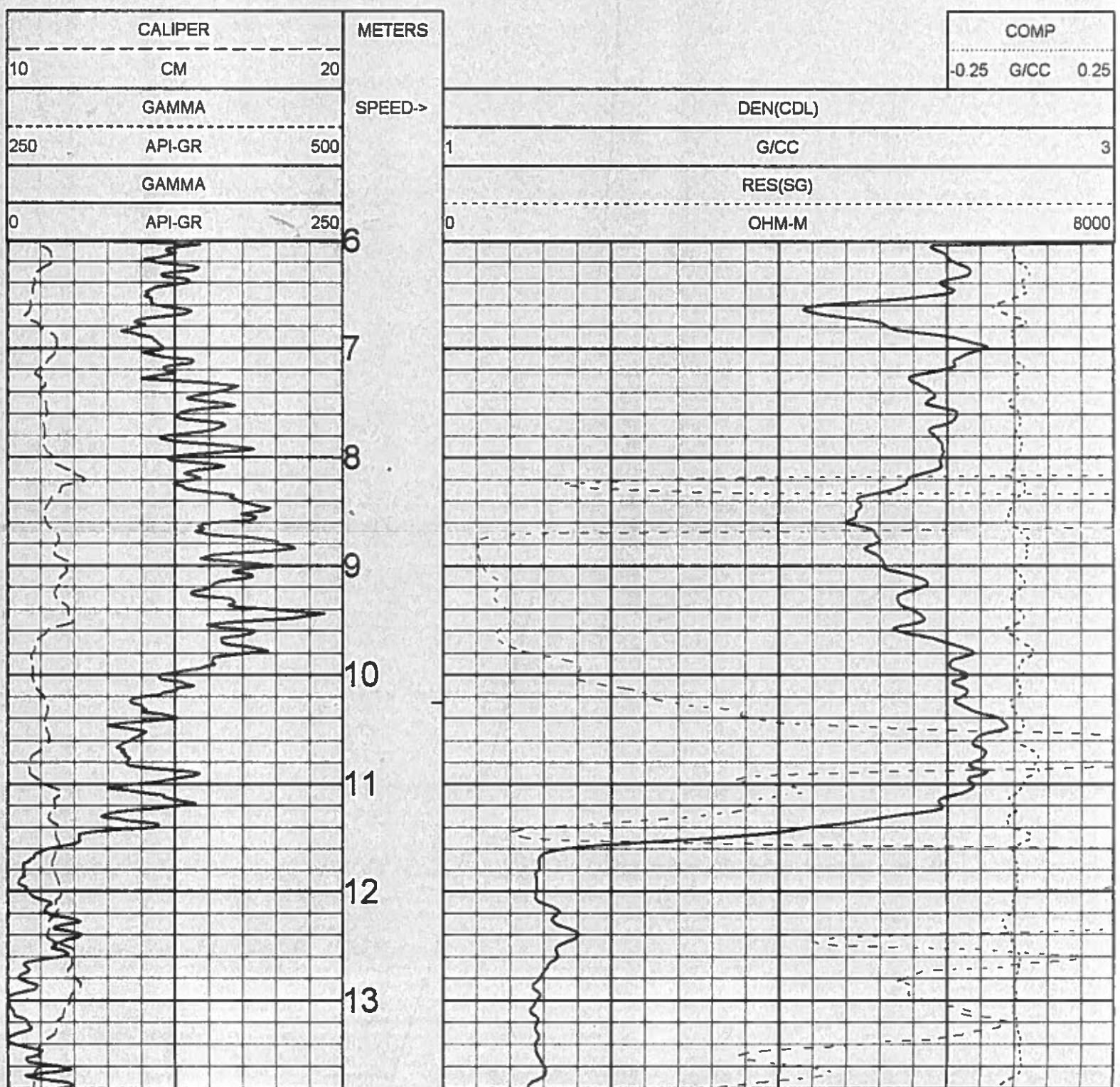
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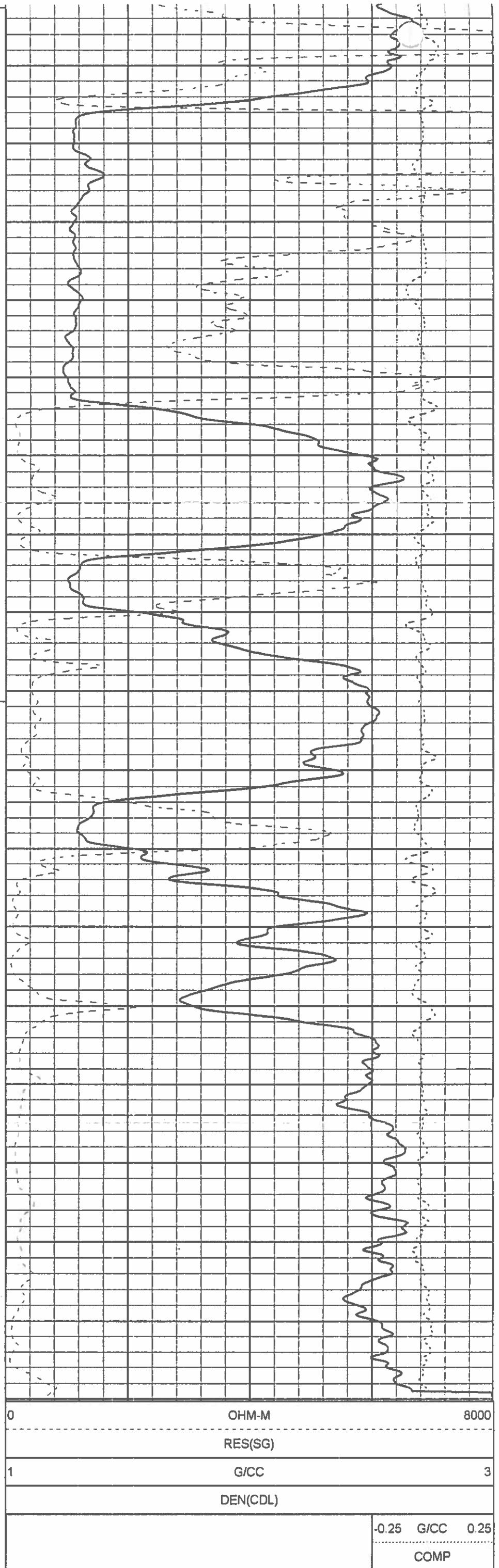
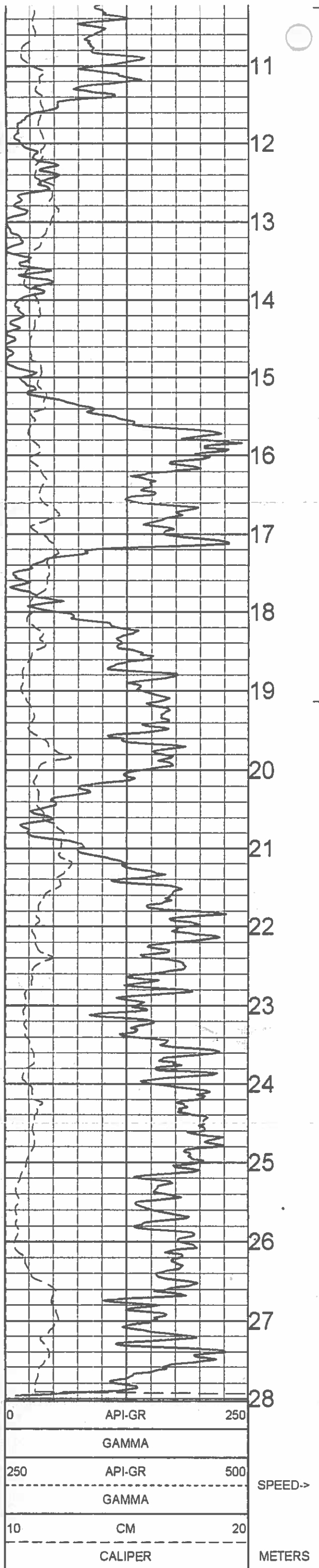
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008

VERSION = 3.64HR







GAMMA - NEUTRON

BR-09-20

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:
WELL	BR-09-20	DENSITY
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID	N/A	
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION GL
DATE	12/21/09	RIG NUMBER
DEPTH DRILLER	35.05	LOGGER TD
BIT SIZE	11.43	ARRIVAL TIME
LOG TOP	1.76	DEPARTURE TIME
LOG BOTTOM	34.35	CIRC STOPPED
CASING LOGGER	3.048	
CASING DRILLER	3.048	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WITNESSED BY	G. HOLMLUND	
RECORDED BY	J. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR-09-20 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

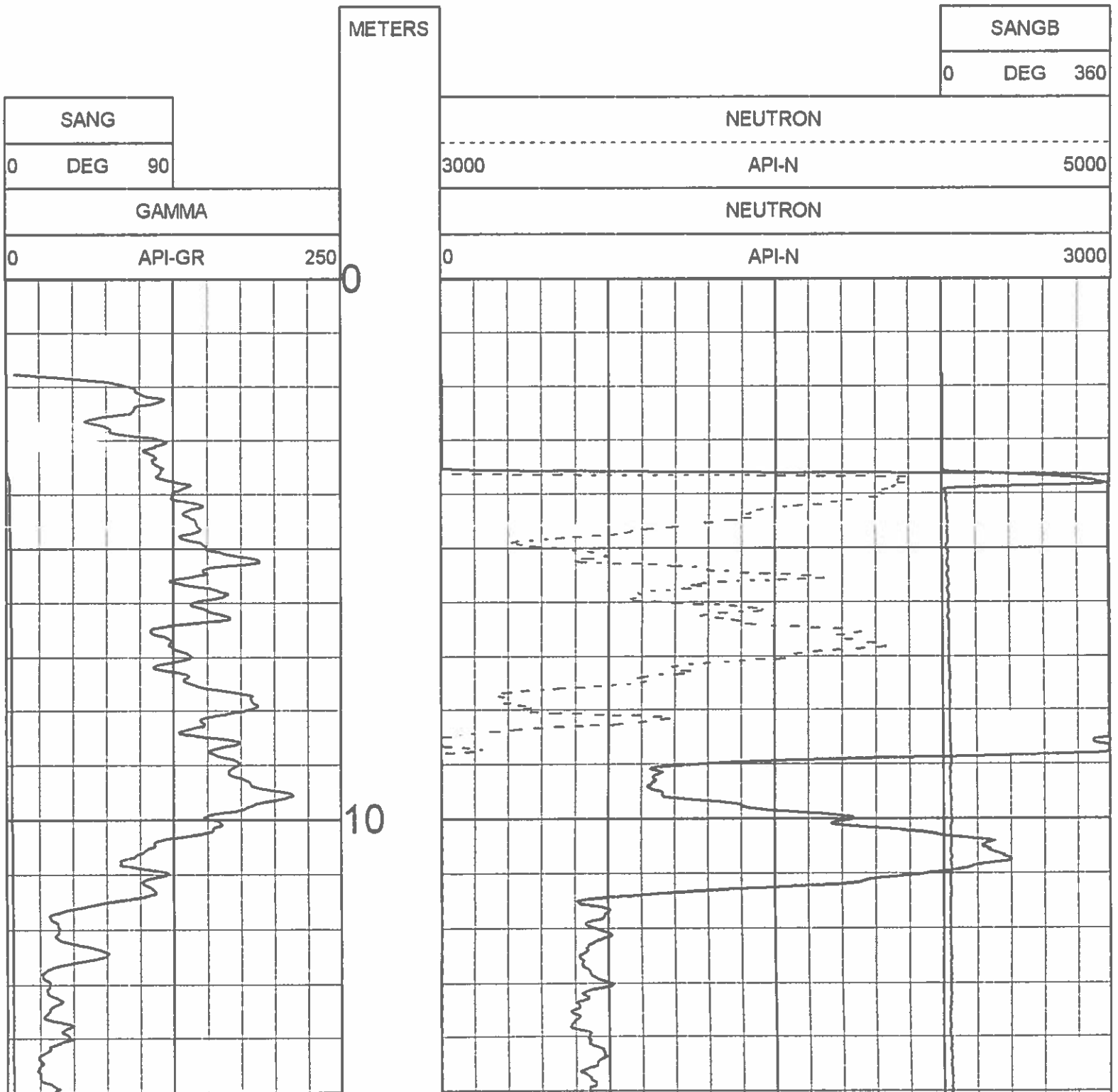
MAGNETIC DECL : 21.0

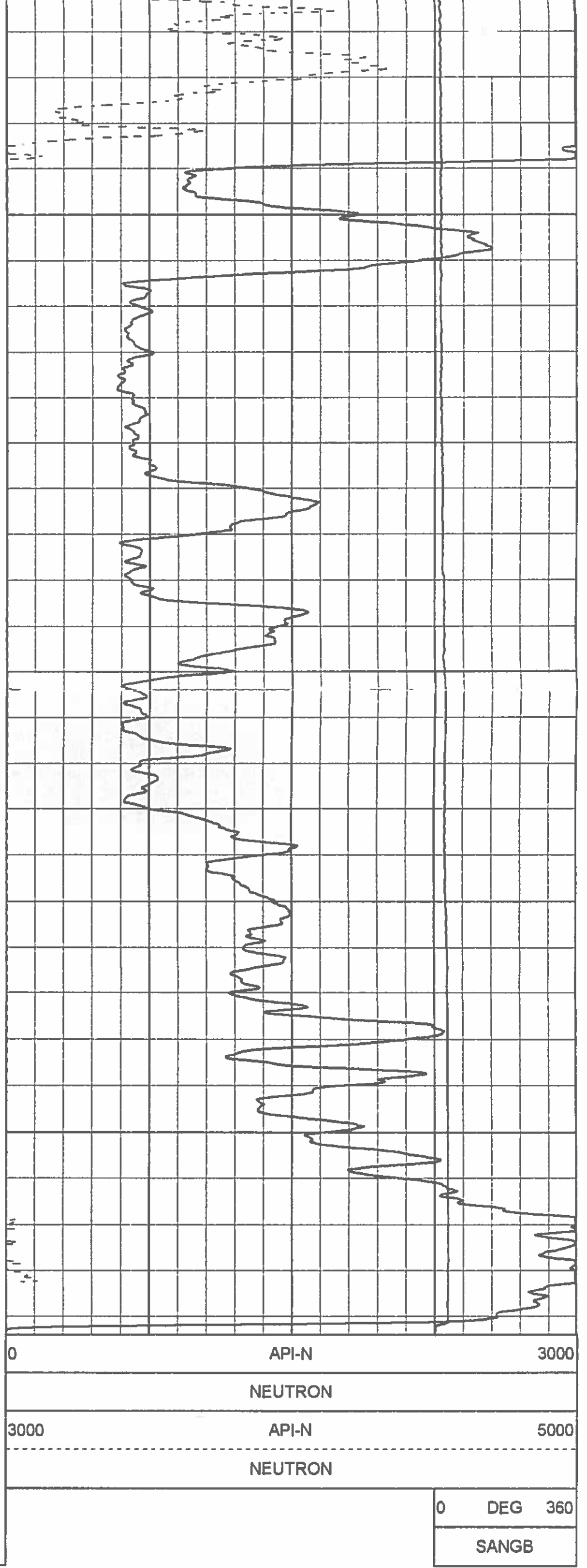
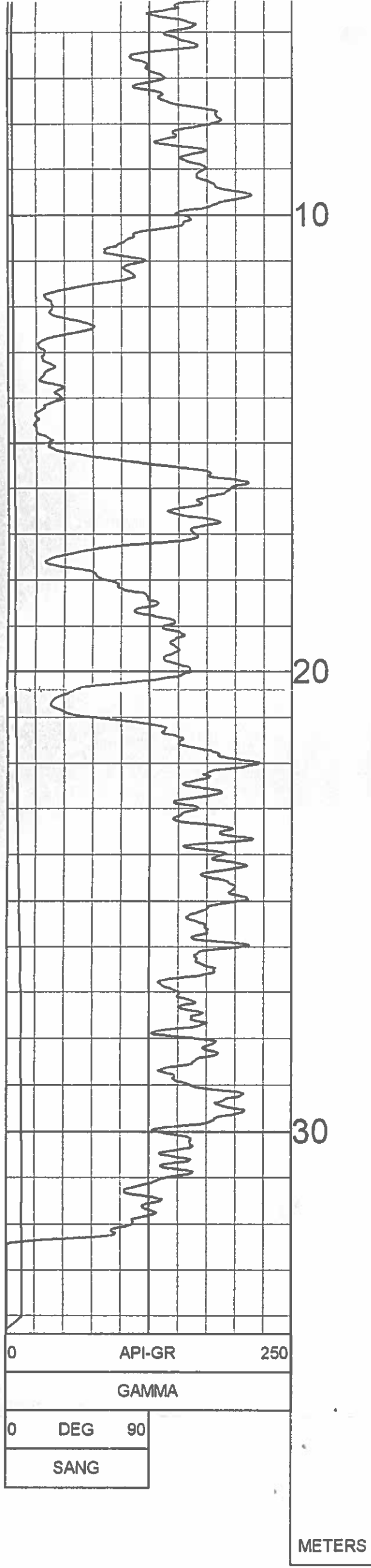
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 03/08/2008

VERSION = 3.64HR





▲ 1:100 NEUTRON BR-09-20 12/21/09 ▲

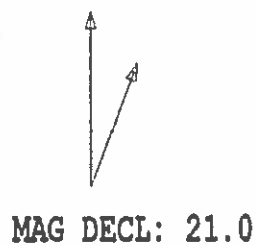
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 03/08/2008		VERSION = 3.64HR

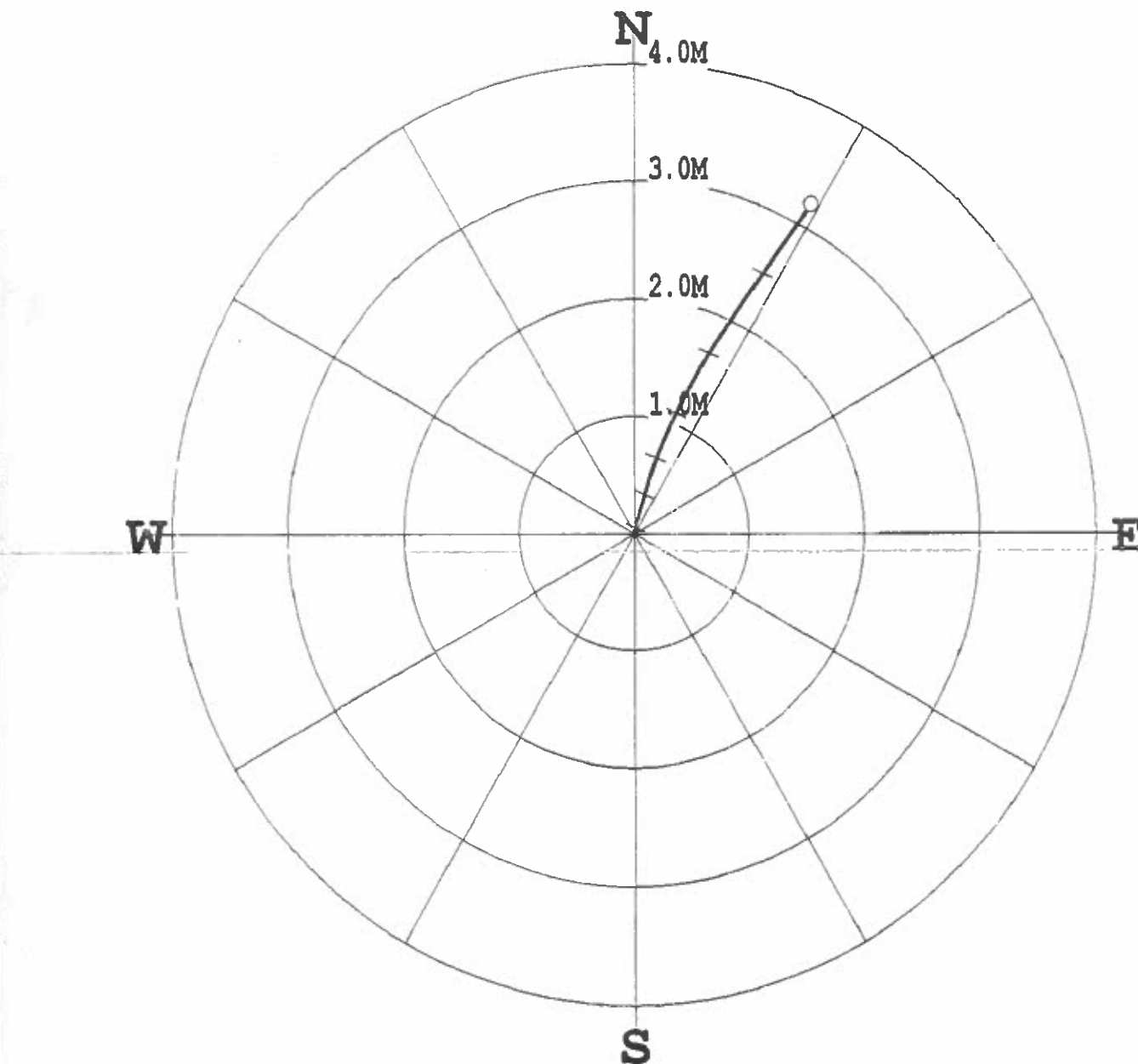
TOOL CALIBRATION BR-09-20 12/21/09 11:36
 TOOL 9057A TM VERSION 2

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-20
 DATE OF LOG: 12/21/09
 PROBE: 9057A 4429



SCALE: 1 M/CM
 TRUE DEPTH: 33.98 M
 AZIMUTH: 28.8
 DISTANCE: 3.2 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR-09-20
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/21/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-20_12-21-09_11-36_9057A_.02_1.76_34.35_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
3.00	3.00	0.00	0.00	0.0	0.0	0.0	0.0
4.00	4.00	0.01	-0.00	0.0	341.8	2.4	12.6
5.00	5.00	0.05	0.01	0.1	7.9	2.9	10.5
6.00	6.00	0.10	0.02	0.1	11.3	3.1	14.3
7.00	7.00	0.16	0.04	0.2	12.9	3.4	15.8
8.00	7.99	0.21	0.05	0.2	13.9	3.4	17.0
9.00	8.99	0.27	0.07	0.3	14.7	3.4	18.8
10.00	9.99	0.33	0.09	0.3	15.2	3.5	18.9
11.00	10.99	0.39	0.11	0.4	15.7	3.7	17.9
12.00	11.99	0.45	0.13	0.5	15.8	3.7	17.9
13.00	12.98	0.51	0.15	0.5	16.0	3.8	17.7
14.00	13.98	0.58	0.17	0.6	16.2	3.8	16.8
15.00	14.98	0.64	0.19	0.7	16.5	4.2	20.0
16.00	15.98	0.71	0.22	0.7	17.0	4.4	23.1
17.00	16.97	0.79	0.25	0.8	17.5	4.6	23.4
18.00	17.97	0.86	0.28	0.9	18.0	4.9	26.5
19.00	18.97	0.94	0.32	1.0	18.7	5.3	26.4
20.00	19.96	1.03	0.36	1.1	19.3	5.6	26.3
21.00	20.96	1.12	0.41	1.2	20.0	6.0	28.8
22.00	21.95	1.21	0.46	1.3	20.8	6.3	28.3
23.00	22.94	1.31	0.51	1.4	21.5	7.0	30.7
24.00	23.94	1.41	0.57	1.5	22.1	7.5	29.9
25.00	24.93	1.53	0.64	1.7	22.7	8.0	32.1
26.00	25.92	1.65	0.72	1.8	23.6	9.0	34.6
27.00	26.90	1.78	0.81	2.0	24.5	9.5	34.0
28.00	27.89	1.92	0.91	2.1	25.3	9.6	35.5
29.00	28.88	2.06	1.01	2.3	26.1	9.9	35.3
30.00	29.86	2.19	1.10	2.5	26.7	9.9	35.3
31.00	30.85	2.34	1.21	2.6	27.3	10.3	35.5
32.00	31.83	2.48	1.31	2.8	27.8	10.0	36.1
33.00	32.81	2.62	1.41	3.0	28.3	10.1	34.6
34.00	33.80	2.77	1.52	3.2	28.7	10.3	35.1
34.18	33.98	2.80	1.54	3.2	28.8	10.4	34.6

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-21	year drilled: 2009	AREA: BURNT RIVER
--------------------------	--------------------	-------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,242.87	6,137,796.70	1,104.77

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
68.6	-88	49.36	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	2.9	-87.40
6.00	9.3	-87.60
7.00	14.4	-87.20
8.00	17.4	-86.90
9.00	19.5	-86.90
10.00	21.2	-86.20
11.00	22.8	-86.00
12.00	24.1	-85.80
13.00	25.2	-85.50
14.00	26.2	-84.90
15.00	27.3	-84.10
16.00	28.3	-84.10
17.00	29.5	-84.10
18.00	30.6	-83.90
19.00	31.8	-83.20
20.00	32.7	-84.00
21.00	33.5	-84.50
22.00	34.2	-84.10
23.00	34.9	-84.20
24.00	35.4	-84.20
25.00	35.9	-83.80
26.00	36.4	-83.10
27.00	36.9	-83.20
28.00	37.4	-83.40
29.00	37.9	-83.20
30.00	38.1	-82.70
31.00	38.3	-81.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.00	3.00		
25.60	29.50	3.90		
30.90	32.00	1.10		
34.25	35.00	0.75		
35.00	35.50	0.50		
37.00	38.20	1.20		

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-21	year drilled: 2009	AREA:
--------------------------	--------------------	-------

32.00	38.5	-82.00
33.00	38.6	-80.70
34.00	38.7	-80.20
35.00	38.8	-80.60
36.00	38.8	-80.10
37.00	38.7	-79.10
38.00	38.7	-78.60
39.00	38.7	-78.40
40.00	38.8	-77.60
41.00	38.8	-77.20
42.00	38.8	-77.00
43.00	38.8	-77.50
44.00	38.8	-77.10
45.00	38.8	-76.90
46.00	38.7	-77.00
47.00	38.7	-77.10
48.00	38.7	-77.00
49.00	38.6	-76.80
49.36	38.6	-76.70

RAW SAMPLE INFORMATION

Date issued: Friday, May 18, 2012 Reviewed: October 11, 2002

Page 2 of 2

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-21		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	50.29	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
G TOP	0.22	DEPARTURE TIME	
LOG BOTTOM	49.53	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR-09-21 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

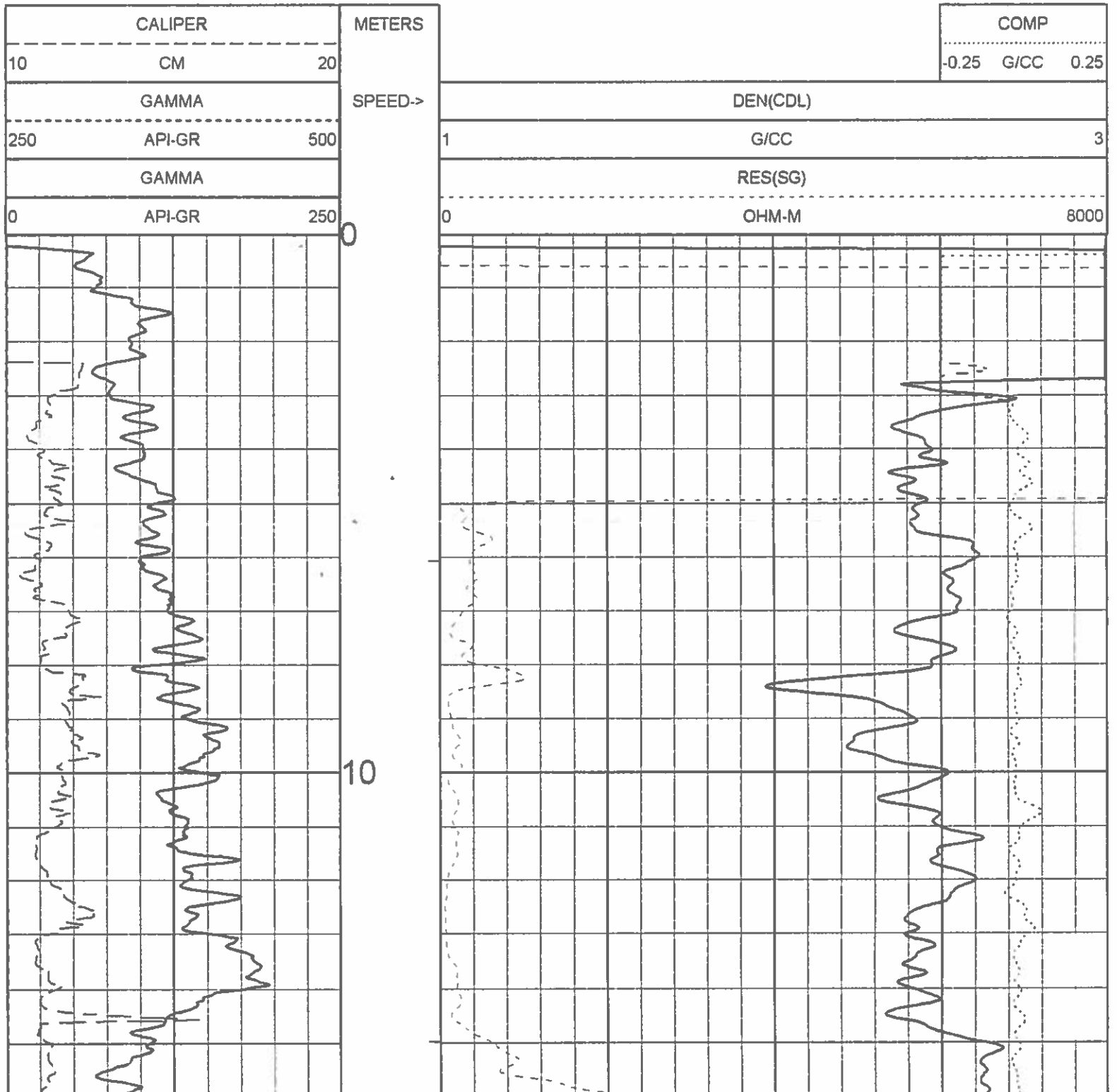
MAGNETIC DECL : 21.0

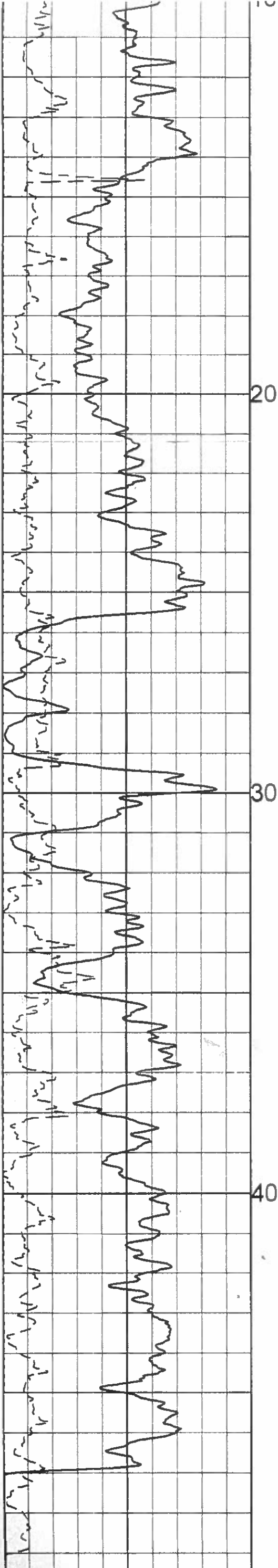
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008

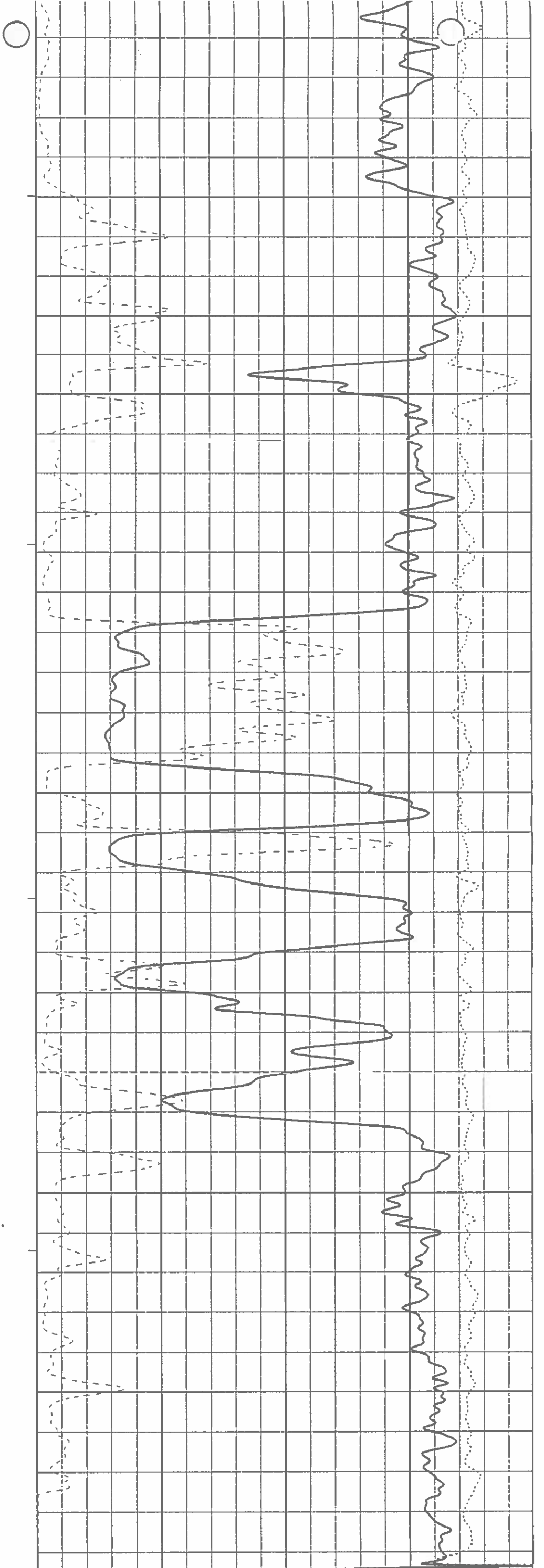
VERSION = 3.64HR





0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	

SPEED->



0	OHM-M	8000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-21

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-21		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	50 29	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.22	DEPARTURE TIME	
LOG BOTTOM	49.53	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	J. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-21 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

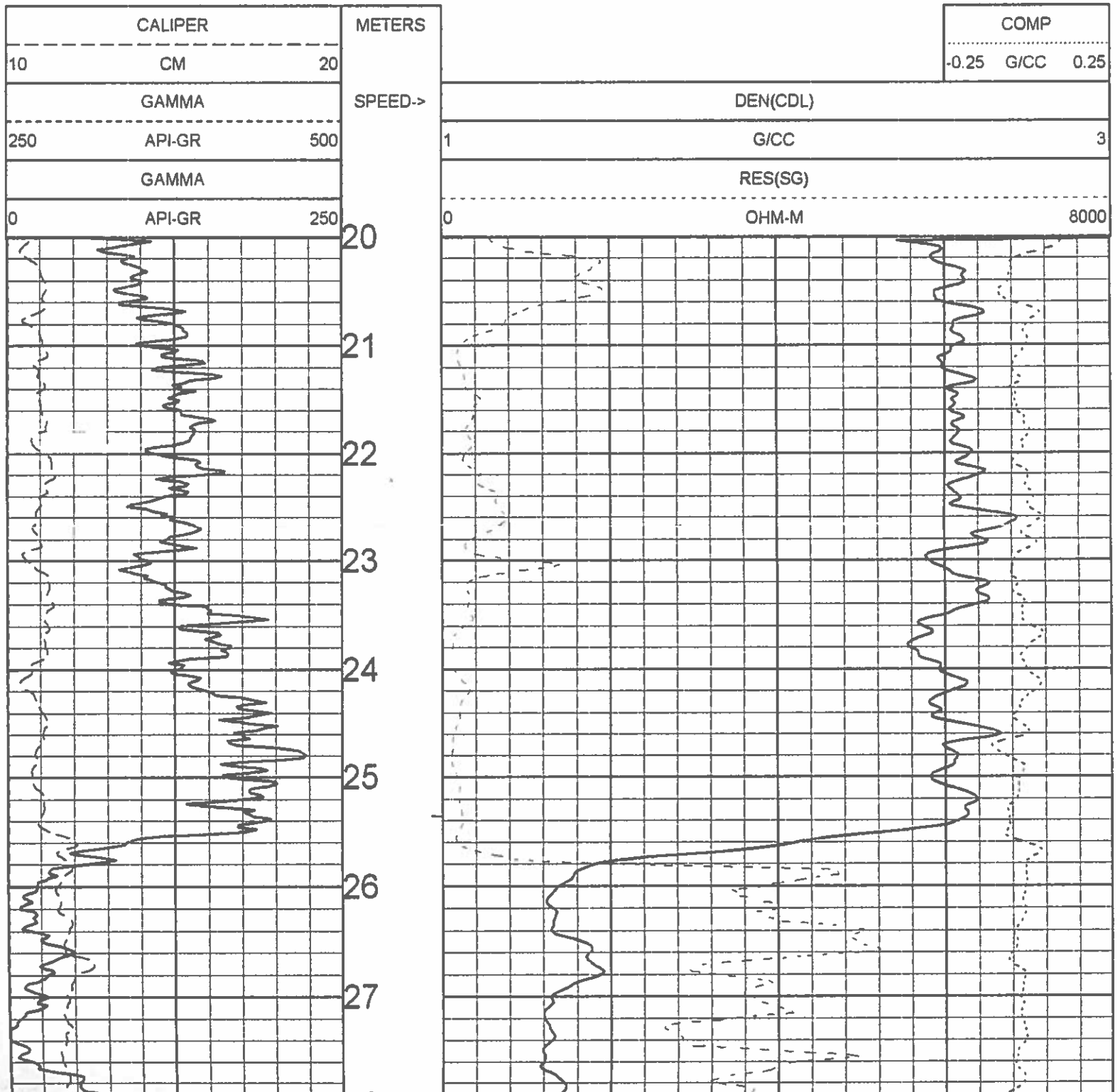
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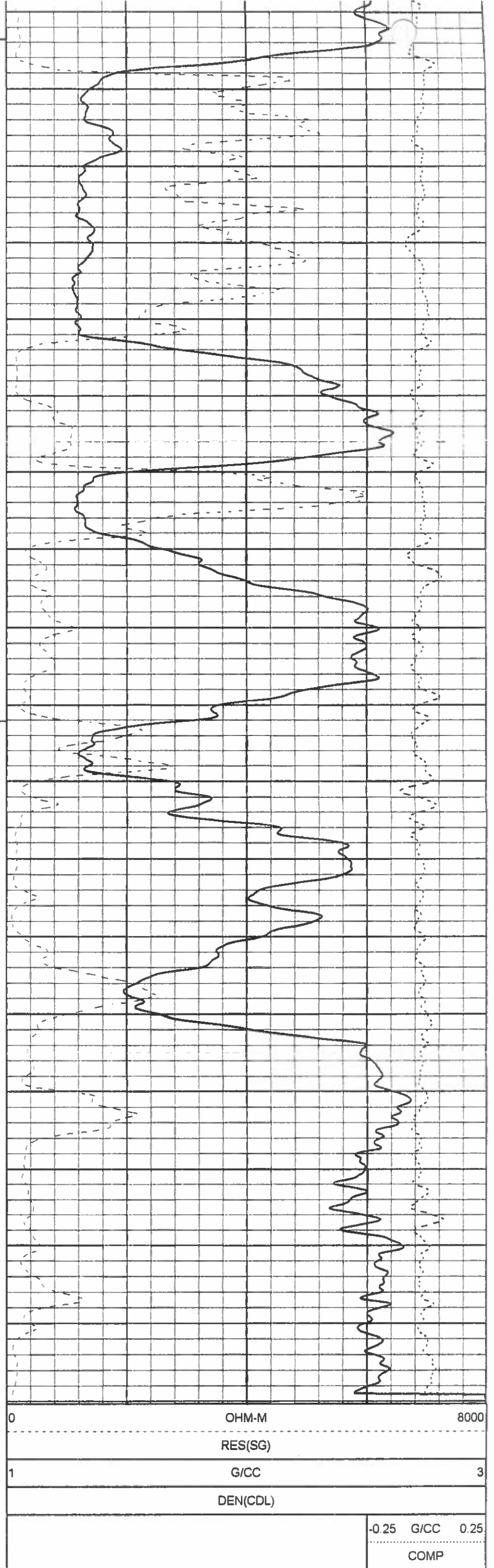
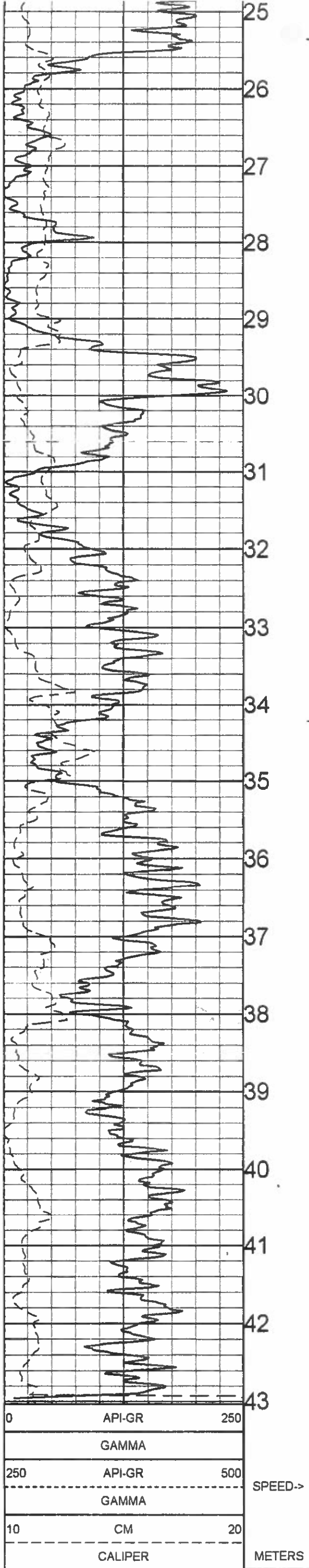
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008

VERSION = 3.64HR





COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-21	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	50 29	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	1.85	DEPARTURE TIME	
LOG BOTTOM	48.53	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR-09-21 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

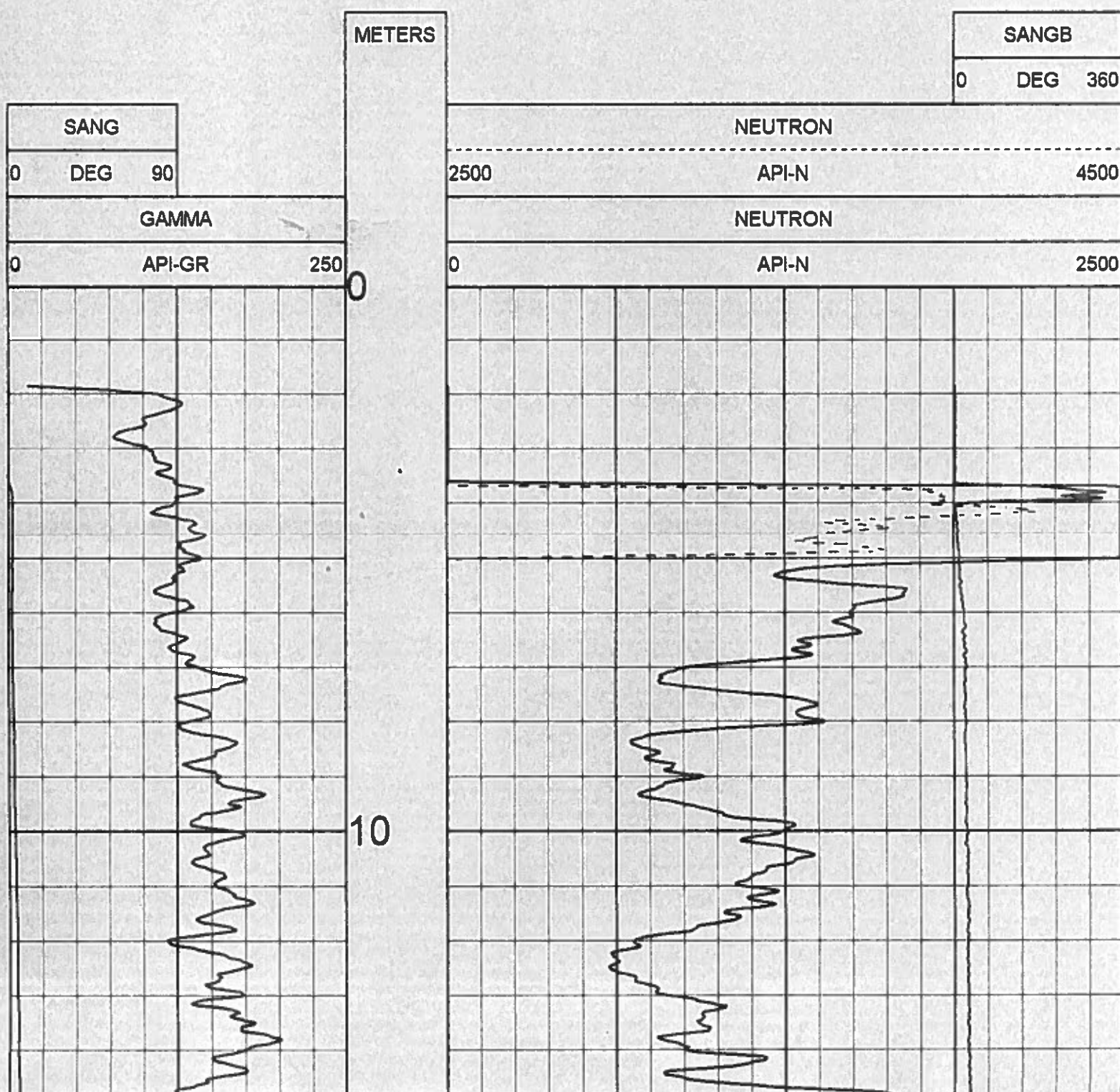
MAGNETIC DECL : 21.0

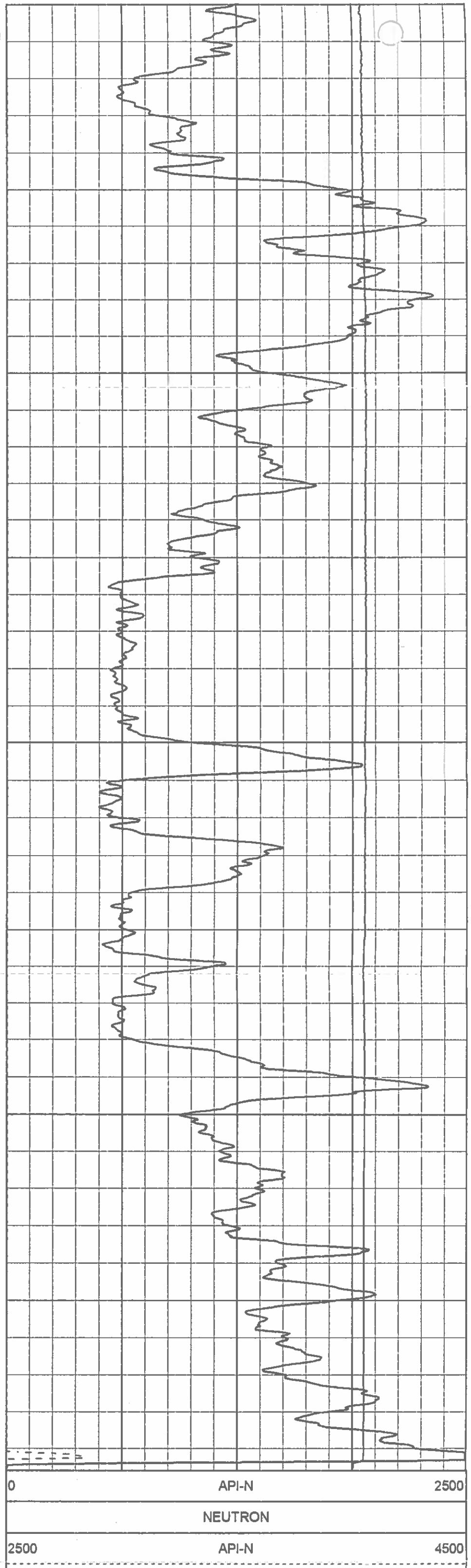
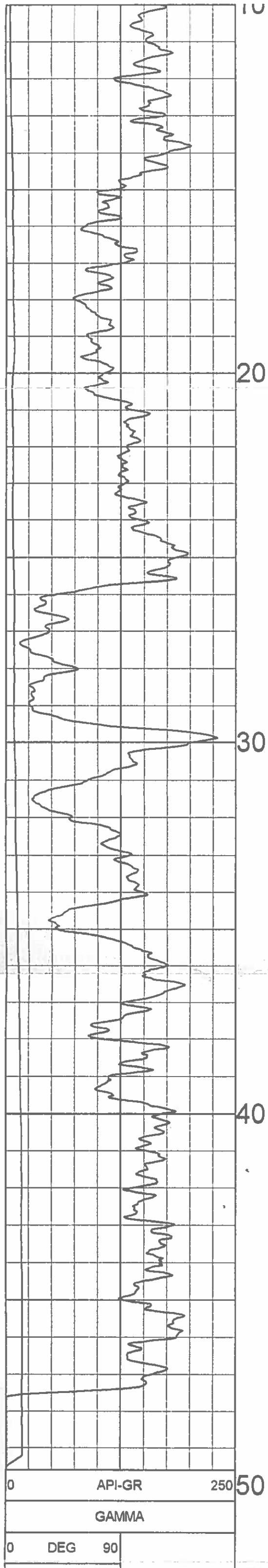
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009

VERSION = 3.64HR

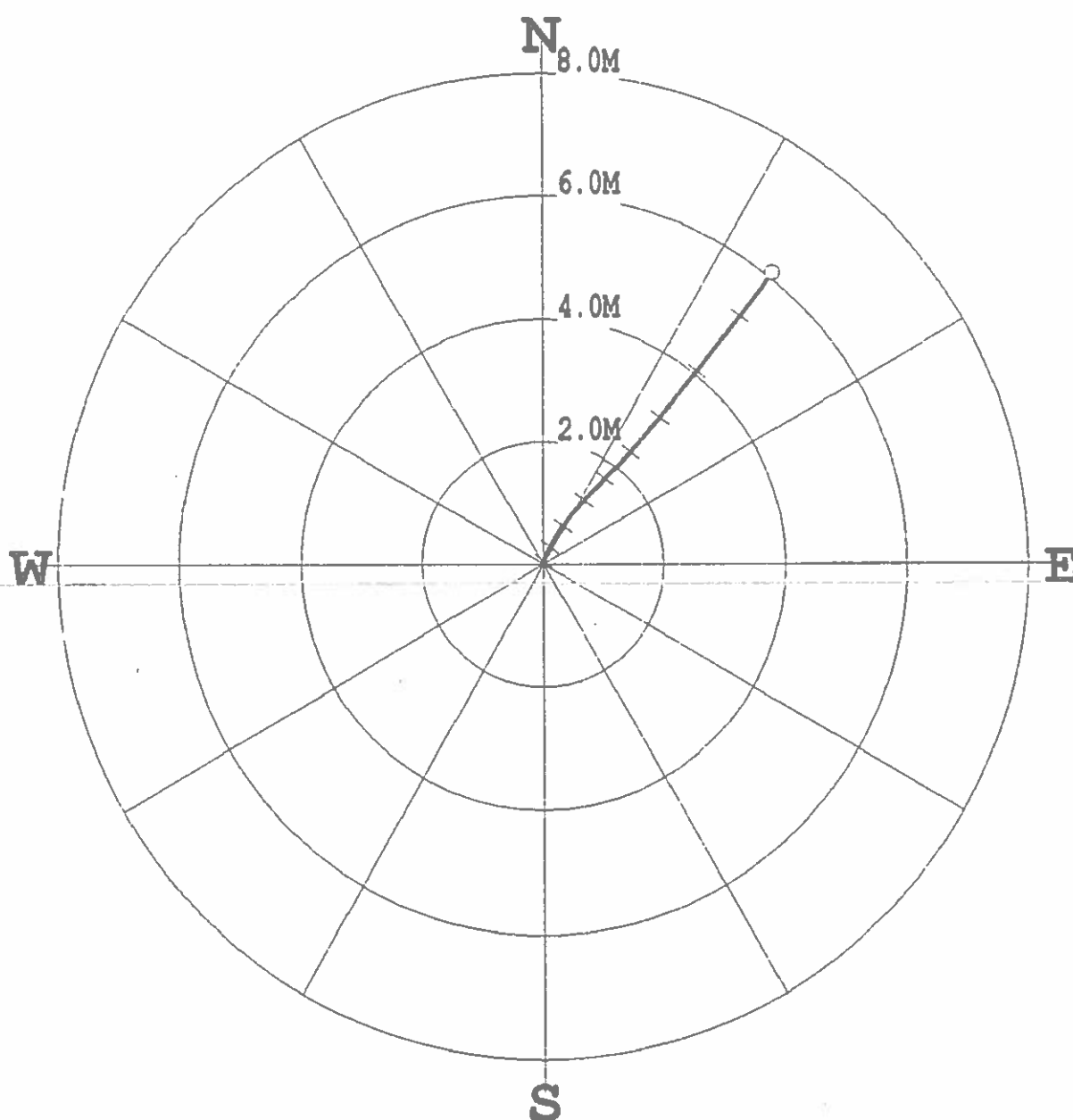




DATE OF LOG: 12/21/09
 PROBE: 9057A 4429

MAG DECL: 21.0


DISTANCE: U.I.M.
 + = 5 M INCP
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-21
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/21/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-21_12-21-09_11-50_9057A_.02_1.85_49.53_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.00	2.99	0.00	0.00	0.0	0.0	0.0	0.0
4.00	3.99	0.01	-0.01	0.0	321.3	2.7	3.0
5.00	4.99	0.05	0.00	0.1	2.9	2.6	15.8
6.00	5.99	0.09	0.01	0.1	9.3	2.4	24.6
7.00	6.99	0.13	0.03	0.1	14.4	2.8	29.3
8.00	7.99	0.18	0.06	0.2	17.4	3.1	27.1
9.00	8.98	0.23	0.08	0.2	19.5	3.1	27.6
10.00	9.98	0.29	0.11	0.3	21.2	3.8	28.8
11.00	10.98	0.34	0.14	0.4	22.8	4.0	30.8
12.00	11.98	0.41	0.18	0.4	24.1	4.2	30.4
13.00	12.97	0.47	0.22	0.5	25.2	4.5	34.1
14.00	13.97	0.55	0.27	0.6	26.2	5.1	30.6
15.00	14.96	0.63	0.33	0.7	27.3	5.9	30.2
16.00	15.96	0.71	0.38	0.8	28.3	5.9	37.3
17.00	16.95	0.80	0.45	0.9	29.5	5.9	37.2
18.00	17.95	0.88	0.52	1.0	30.6	6.1	40.0
19.00	18.94	0.96	0.59	1.1	31.8	6.8	43.0
20.00	19.94	1.04	0.67	1.2	32.7	6.0	41.2
21.00	20.93	1.11	0.74	1.3	33.5	5.5	45.9
22.00	21.93	1.18	0.81	1.4	34.2	5.9	44.6
23.00	22.92	1.26	0.88	1.5	34.9	5.8	42.5
24.00	23.92	1.33	0.95	1.6	35.4	5.8	42.9
25.00	24.91	1.40	1.02	1.7	35.9	6.2	42.3
26.00	25.90	1.49	1.10	1.8	36.4	6.9	42.6
27.00	26.90	1.57	1.18	2.0	36.9	6.8	45.6
28.00	27.89	1.65	1.27	2.1	37.4	6.6	43.1
29.00	28.88	1.74	1.35	2.2	37.9	6.8	44.5
30.00	29.88	1.82	1.43	2.3	38.1	7.3	38.7
31.00	30.87	1.92	1.52	2.4	38.3	8.1	42.1
32.00	31.86	2.03	1.61	2.6	38.5	8.0	40.4
33.00	32.85	2.13	1.70	2.7	38.6	9.3	39.8
34.00	33.83	2.25	1.80	2.9	38.7	9.8	40.6
35.00	34.82	2.38	1.91	3.1	38.8	9.4	41.0
36.00	35.81	2.51	2.01	3.2	38.8	9.9	37.9
37.00	36.79	2.65	2.12	3.4	38.7	10.9	37.1
38.00	37.77	2.80	2.24	3.6	38.7	11.4	39.4
39.00	38.75	2.95	2.37	3.8	38.7	11.6	39.0
40.00	39.73	3.11	2.50	4.0	38.8	12.4	39.5
41.00	40.71	3.28	2.64	4.2	38.8	12.8	39.2
42.00	41.68	3.45	2.78	4.4	38.8	13.0	38.2
43.00	42.66	3.63	2.92	4.7	38.8	12.5	38.6
44.00	43.63	3.80	3.06	4.9	38.8	12.9	37.5
45.00	44.61	3.98	3.19	5.1	38.8	13.1	38.7
46.00	45.58	4.16	3.33	5.3	38.7	13.0	37.7
47.00	46.56	4.33	3.47	5.6	38.7	12.9	37.5
48.00	47.53	4.51	3.61	5.8	38.7	13.0	38.2
49.00	48.50	4.69	3.74	6.0	38.6	13.2	37.7
49.36	48.85	4.75	3.79	6.1	38.6	13.3	37.2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-22	year drilled: 2009	AREA: BURNT RIVER
--------------------------	--------------------	-------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,224.46	6,137,918.42	1,133.69

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
100	-90	43.44	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	68.6	-88.30
8.00	70.7	-88.30
9.00	73.6	-88.10
10.00	75.8	-87.80
11.00	77.4	-87.50
12.00	78.6	-87.60
13.00	80.3	-87.50
14.00	82.1	-87.30
15.00	83.2	-87.20
16.00	84.4	-86.90
17.00	85.0	-87.00
18.00	85.3	-86.70
19.00	85.5	-87.00
20.00	86.0	-86.20
21.00	86.1	-85.90
22.00	86.0	-86.10
23.00	85.8	-86.40
24.00	85.5	-85.50
25.00	85.1	-84.90
26.00	84.7	-85.10
27.00	84.2	-84.60
28.00	83.5	-84.40
29.00	82.6	-84.00
30.00	81.8	-83.70
31.00	80.9	-83.00
32.00	79.9	-82.70
33.00	78.9	-82.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.00	6.00		
23.70	27.80	4.10		
29.00	30.15	1.15		
32.00	32.80	0.80		
32.80	33.20	0.40		
34.40	34.70	0.30		

Date issued: Friday, May 18, 2012
Reviewed: October 11, 2002

Page 1 of 2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-22	year drilled: 2009	AREA:
--------------------------	--------------------	-------

34.00	77.8	-82.50
35.00	76.8	-81.80
36.00	75.7	-81.70
37.00	74.6	-81.30
38.00	73.4	-80.20
39.00	72.1	-79.60
40.00	70.8	-79.20
41.00	69.7	-79.20
42.00	68.6	-78.40
43.00	67.6	-78.20
43.44	67.1	-78.30

RAW SAMPLE INFORMATION

Date issued: Friday, May 18, 2012 Reviewed: October 11, 2002

Page 2 of 2



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-22

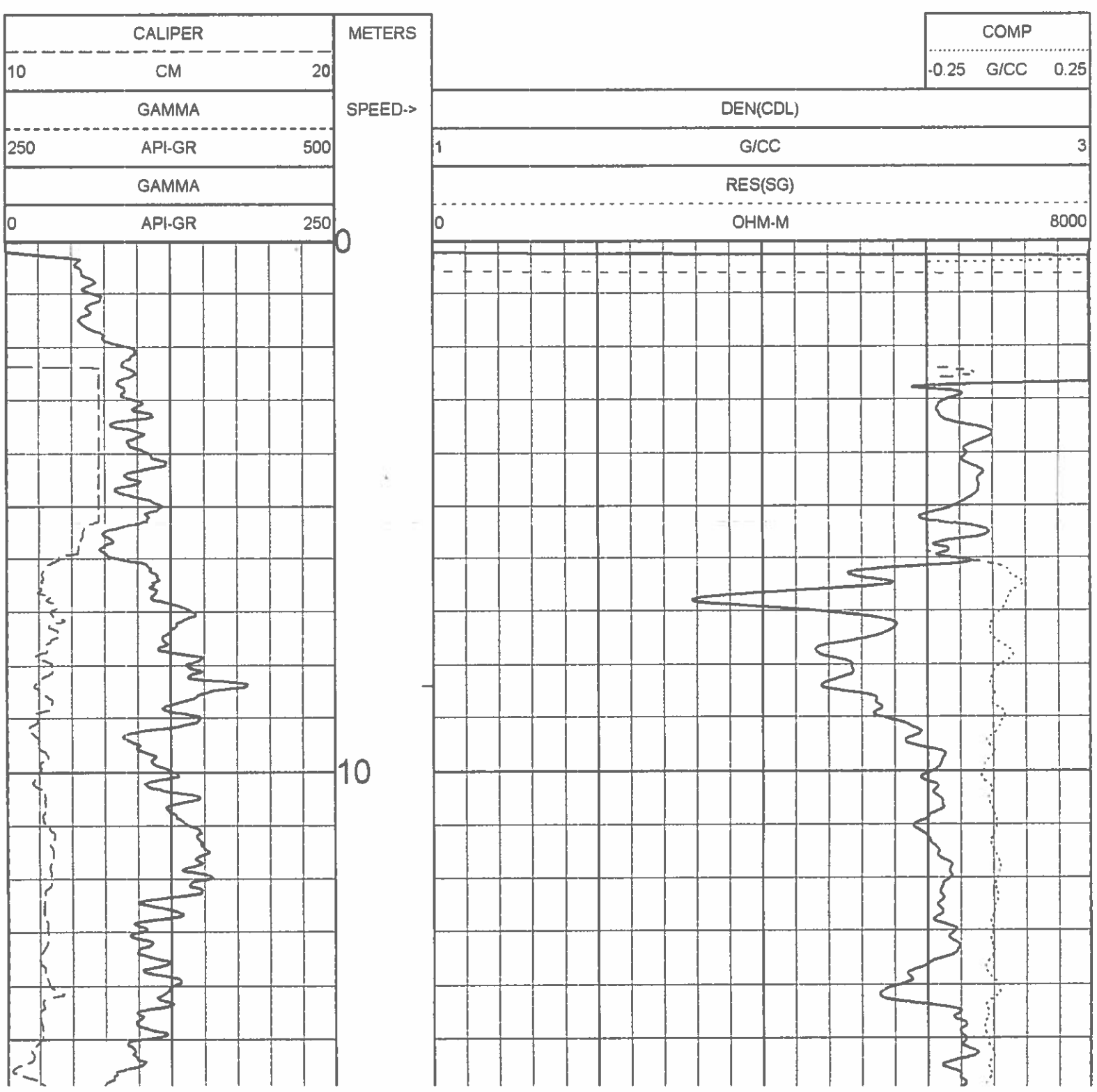
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-22		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	44 19	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
JOG TOP	0.20	DEPARTURE TIME	
LOG BOTTOM	43.62	CIRC STOPPED	N/A
CASING LOGGER	6.096		
CASING DRILLER	6.096		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

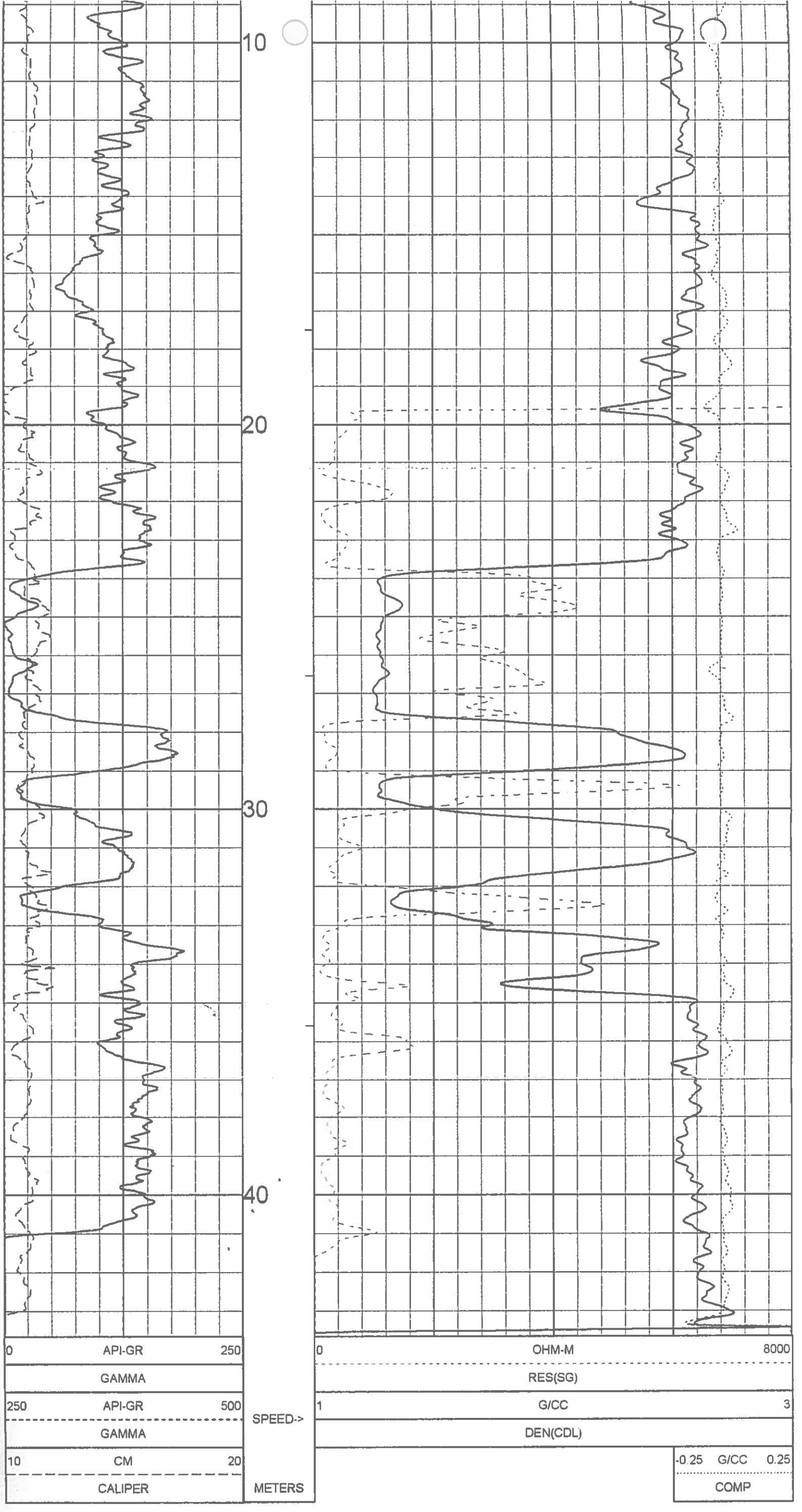
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR-09-22 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008 VERSION = 3.64HR





1:100 BULK DENSITY BR-09-22 12/21/09

LOG PARAMETERS



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-22**

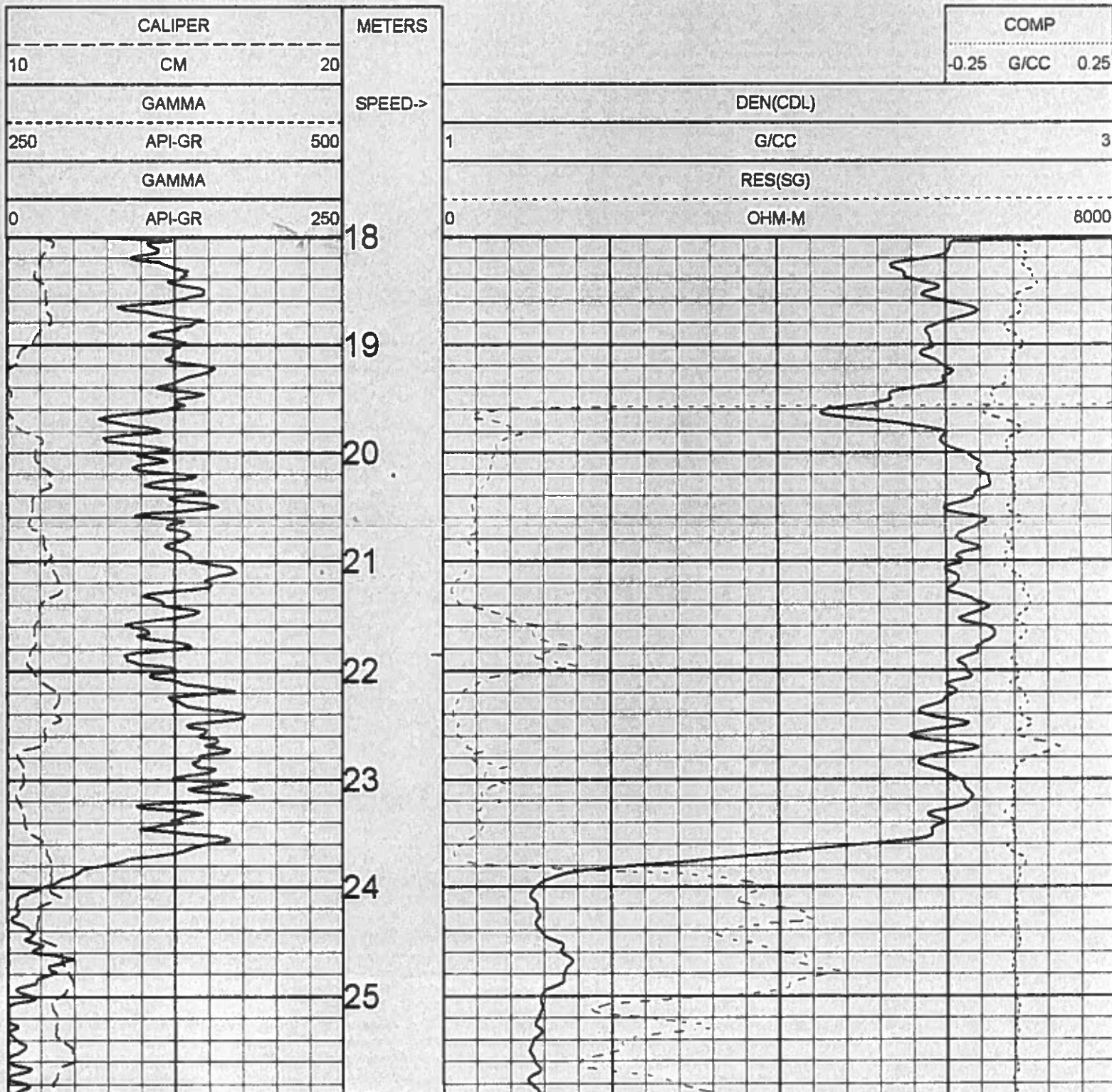
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-22		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	44.19	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.20	DEPARTURE TIME	
LOG BOTTOM	43.82	CIRC STOPPED	N/A
CASING LOGGER	8.098		
CASING DRILLER	8.098		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

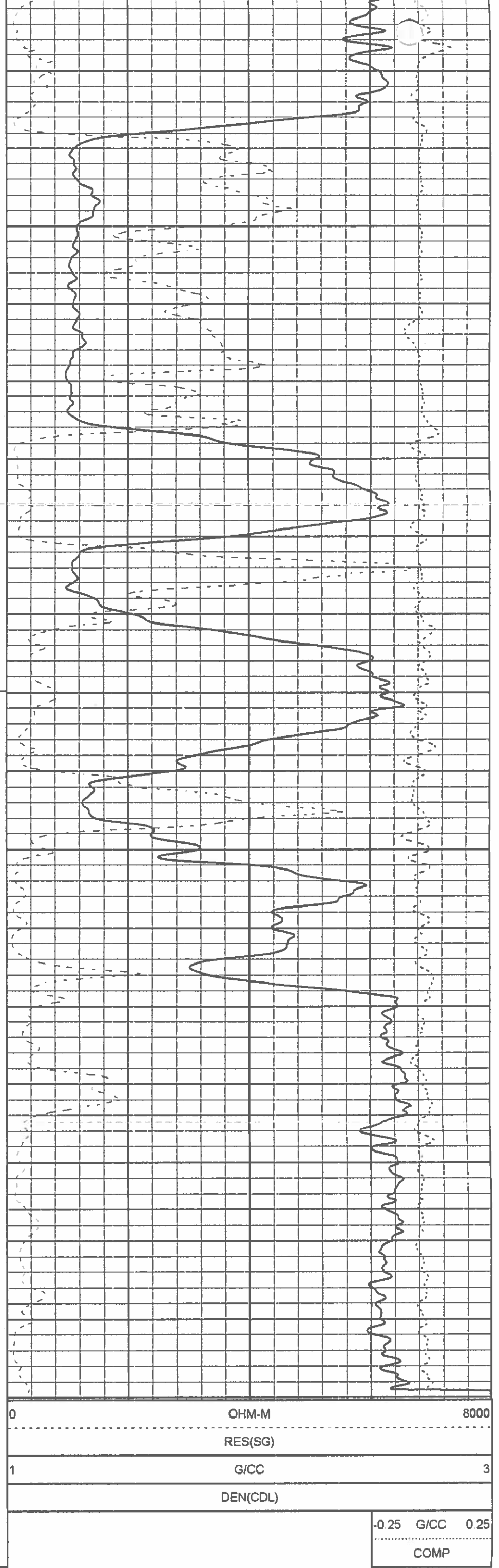
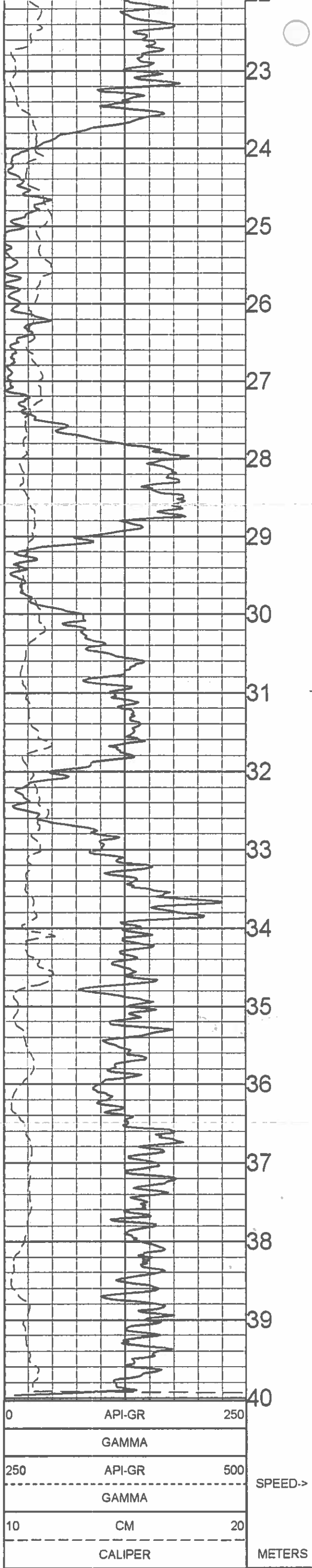
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-22 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR





COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-22	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/20/09	RIG NUMBER	
DEPTH DRILLER	44 19	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	4.74	DEPARTURE TIME	
LOG BOTTOM	43.62	CIRC STOPPED	N/A
CASING LOGGER	8.086		
CASING DRILLER	8.086		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR-09-22 12/20/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

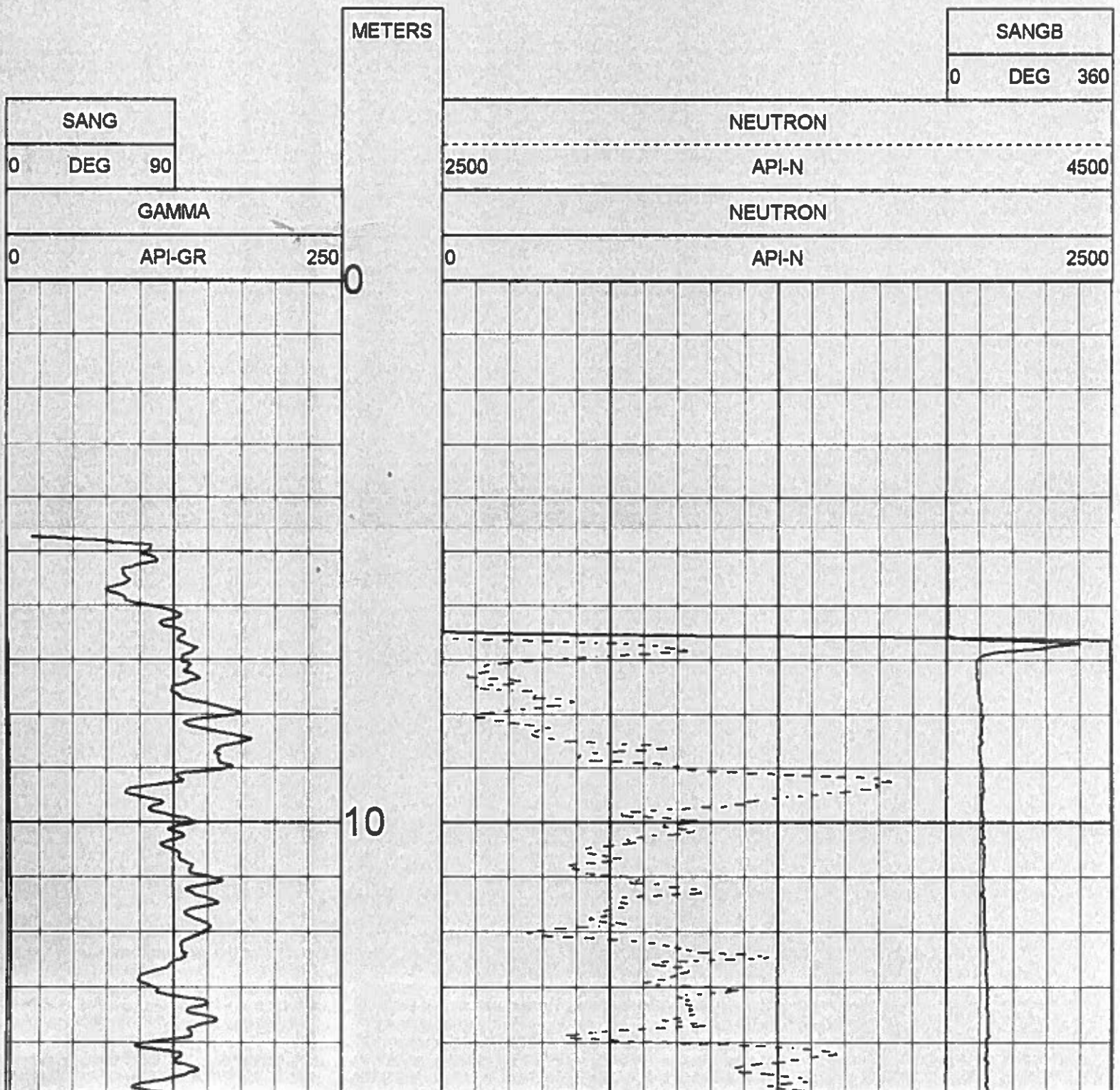
MAGNETIC DECL : 21.0

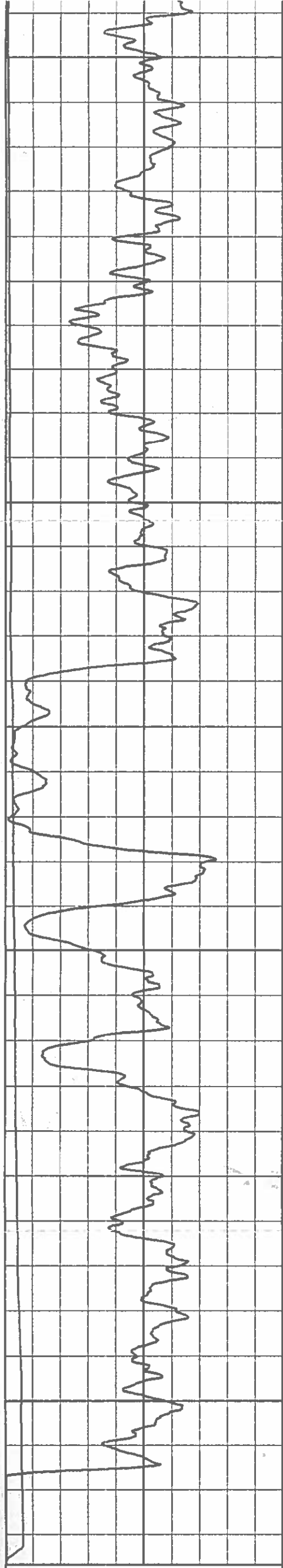
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 8057 NEUTRON.0 12/22/2009

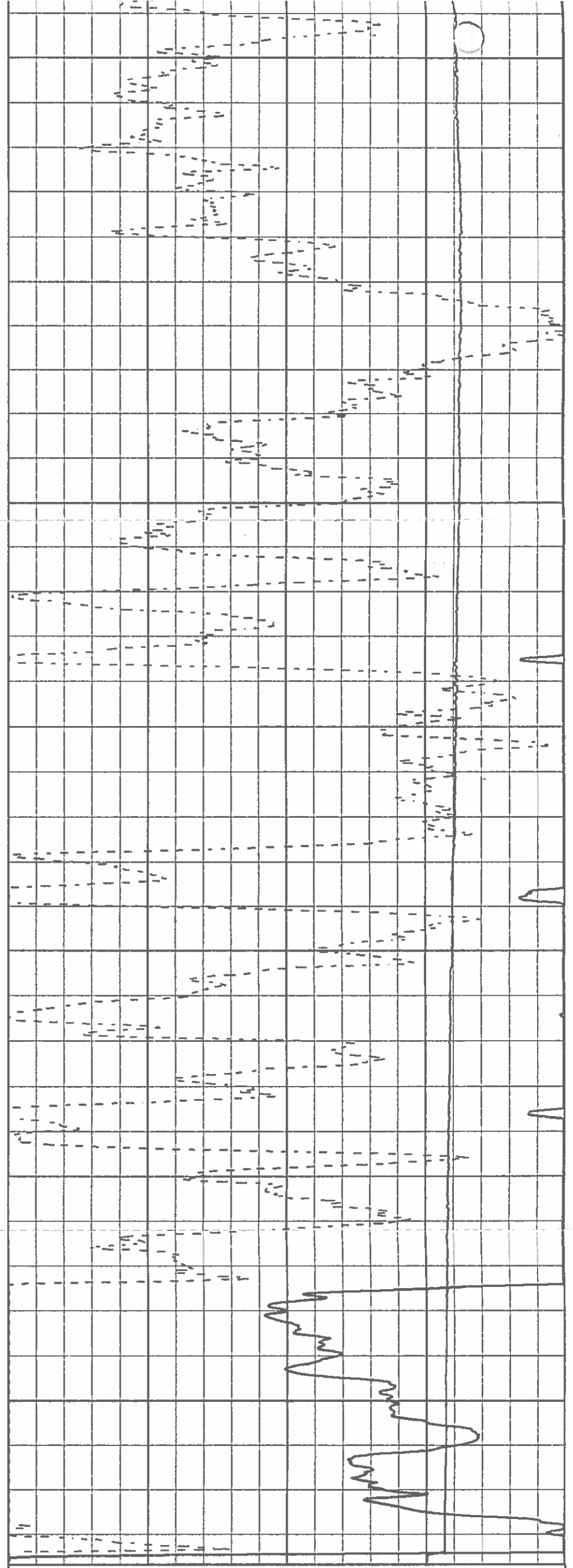
VERSION = 3.64HR





0	API-GR	250
GAMMA		
0	DEG	90
SANG		

METERS



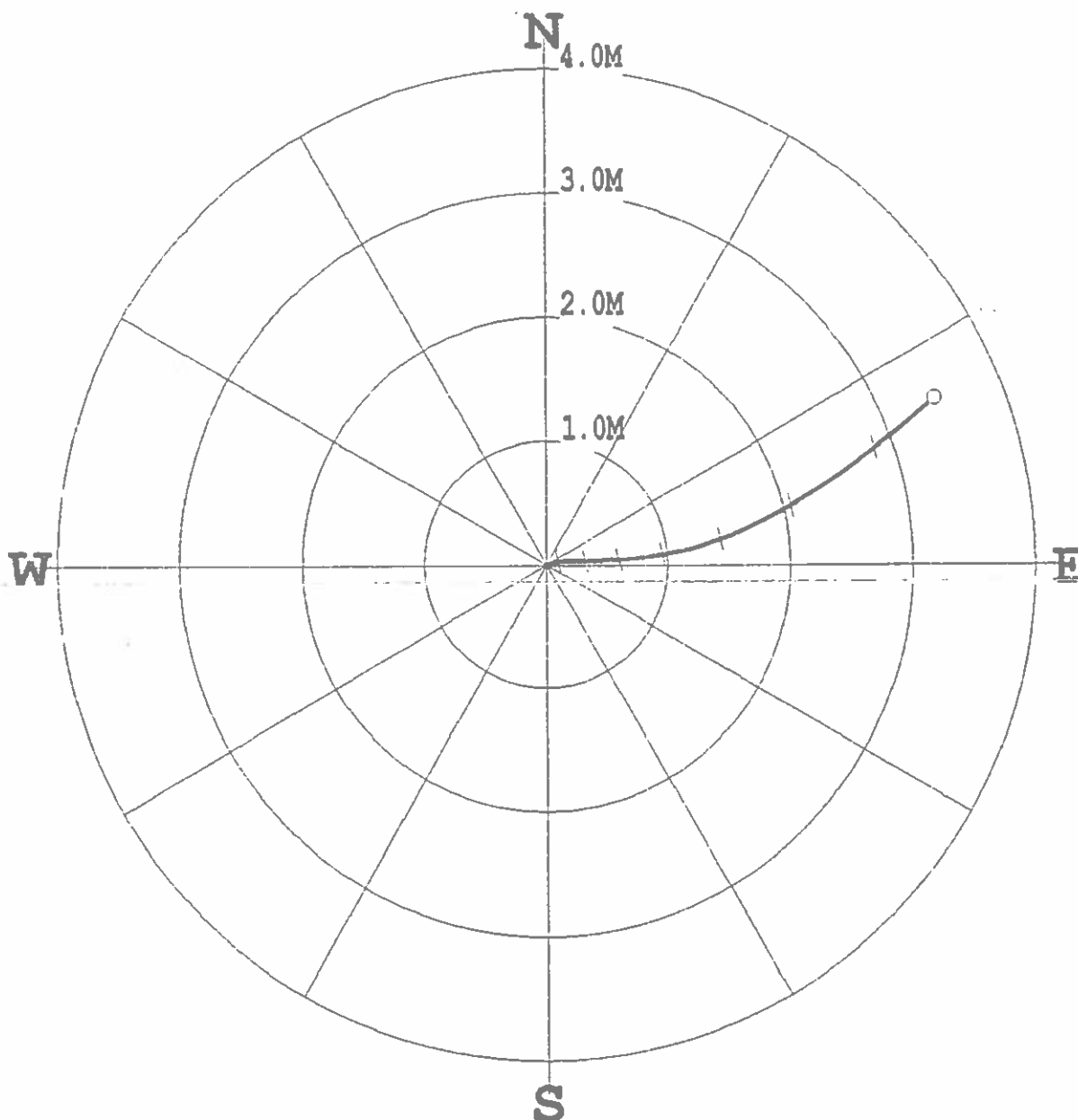
0	API-N	2500
NEUTRON		
2500	API-N	4500
NEUTRON		

0	DEG	360
SANGB		

DATE OF LOG: 12/20/09
 PROBE: 9057A 4429

MAG DECL: 21.0

DISTANCE: 3.5 M
 + = 5 M INC.
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-22
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-22_12-20-09_13-19_9057A_02_4.74_43.62_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
6.00	6.00	0.00	0.00	0.0	0.0	0.0	0.0
7.00	7.00	0.00	0.00	0.0	68.6	1.7	72.7
8.00	8.00	0.01	0.03	0.0	70.7	1.7	76.8
9.00	9.00	0.02	0.06	0.1	73.6	1.9	78.1
10.00	10.00	0.02	0.10	0.1	75.8	2.2	76.6
11.00	11.00	0.03	0.14	0.1	77.4	2.5	83.3
12.00	12.00	0.04	0.18	0.2	78.6	2.4	83.8
13.00	13.00	0.04	0.22	0.2	80.3	2.5	89.1
14.00	13.99	0.04	0.27	0.3	82.1	2.7	88.3
15.00	14.99	0.04	0.31	0.3	83.2	2.8	88.2
16.00	15.99	0.04	0.37	0.4	84.4	3.1	90.1
17.00	16.99	0.04	0.42	0.4	85.0	3.0	89.4
18.00	17.99	0.04	0.48	0.5	85.3	3.3	86.4
19.00	18.99	0.04	0.53	0.5	85.5	3.0	89.2
20.00	19.99	0.04	0.59	0.6	86.0	3.8	90.8
21.00	20.98	0.05	0.66	0.7	86.1	4.1	86.9
22.00	21.98	0.05	0.73	0.7	86.0	3.9	87.1
23.00	22.98	0.06	0.79	0.8	85.8	3.6	82.2
24.00	23.98	0.07	0.86	0.9	85.5	4.5	90.8
25.00	24.97	0.08	0.95	1.0	85.1	5.1	79.7
26.00	25.97	0.10	1.04	1.0	84.7	4.9	80.1
27.00	26.96	0.12	1.13	1.1	84.2	5.4	79.0
28.00	27.96	0.14	1.22	1.2	83.5	5.6	72.1
29.00	28.95	0.17	1.32	1.3	82.6	6.0	72.0
30.00	29.95	0.20	1.42	1.4	81.8	6.3	70.4
31.00	30.94	0.24	1.53	1.5	80.9	7.0	65.1
32.00	31.93	0.29	1.64	1.7	79.9	7.3	66.7
33.00	32.93	0.34	1.75	1.8	78.9	7.3	64.8
34.00	33.92	0.40	1.86	1.9	77.8	7.5	60.5
35.00	34.91	0.47	1.99	2.0	76.8	8.2	59.2
36.00	35.90	0.54	2.11	2.2	75.7	8.3	62.8
37.00	36.89	0.62	2.24	2.3	74.6	8.7	59.5
38.00	37.87	0.71	2.37	2.5	73.4	9.8	54.7
39.00	38.86	0.81	2.51	2.6	72.1	10.4	54.0
40.00	39.84	0.92	2.66	2.8	70.8	10.8	52.4
41.00	40.82	1.04	2.81	3.0	69.7	10.8	52.6
42.00	41.81	1.16	2.96	3.2	68.6	11.6	52.2
43.00	42.78	1.29	3.11	3.4	67.6	11.8	49.4
43.44	43.22	1.34	3.18	3.5	67.1	11.7	49.8



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-09-24

year drilled: 2009

**AREA: BURNT RIVER
BRULE**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,191.13	6,137,885.44	1,131.17

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
69.9	-90	66.44	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	100.1	-89.50
6.00	99.4	-89.50
7.00	99.0	-89.40
8.00	99.4	-89.70
9.00	97.8	-89.50
10.00	95.1	-89.30
11.00	92.7	-89.00
12.00	89.8	-88.90
13.00	87.2	-88.60
14.00	85.1	-88.20
15.00	83.1	-88.40
16.00	81.4	-88.20
17.00	79.4	-88.10
18.00	77.3	-87.30
19.00	75.3	-87.10
20.00	73.3	-87.10
21.00	71.5	-86.40
22.00	69.8	-86.30
23.00	67.9	-85.40
24.00	66.1	-84.90
25.00	64.5	-84.50
26.00	63.1	-83.90
27.00	61.7	-83.50
28.00	60.3	-82.90
29.00	59.3	-82.50
30.00	58.1	-81.80
31.00	57.1	-81.20

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.00	3.00		
11.60	12.90	1.30		
41.20	44.80	3.60		
45.90	47.00	1.10		
48.85	49.70	0.85		
49.70	50.20	0.50		
51.20	51.70	0.50		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	
<i>HOLE-ID: BR-09-24</i>	year drilled: 2009	AREA: BURNT RIVER BRULE

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 3 of 3



**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-24**

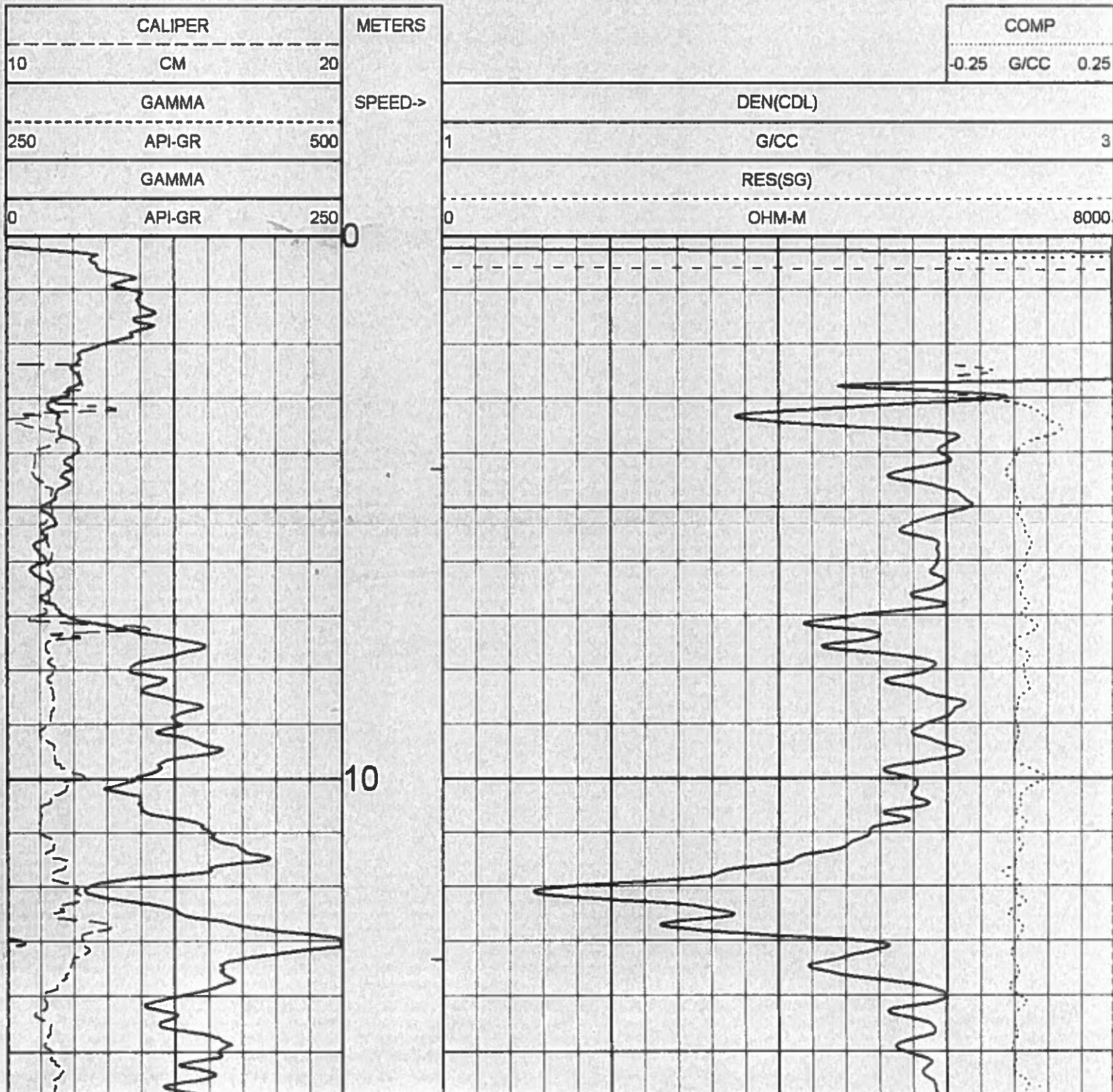
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-24		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	88 58	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.22	DEPARTURE TIME	
LOG BOTTOM	86.70	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

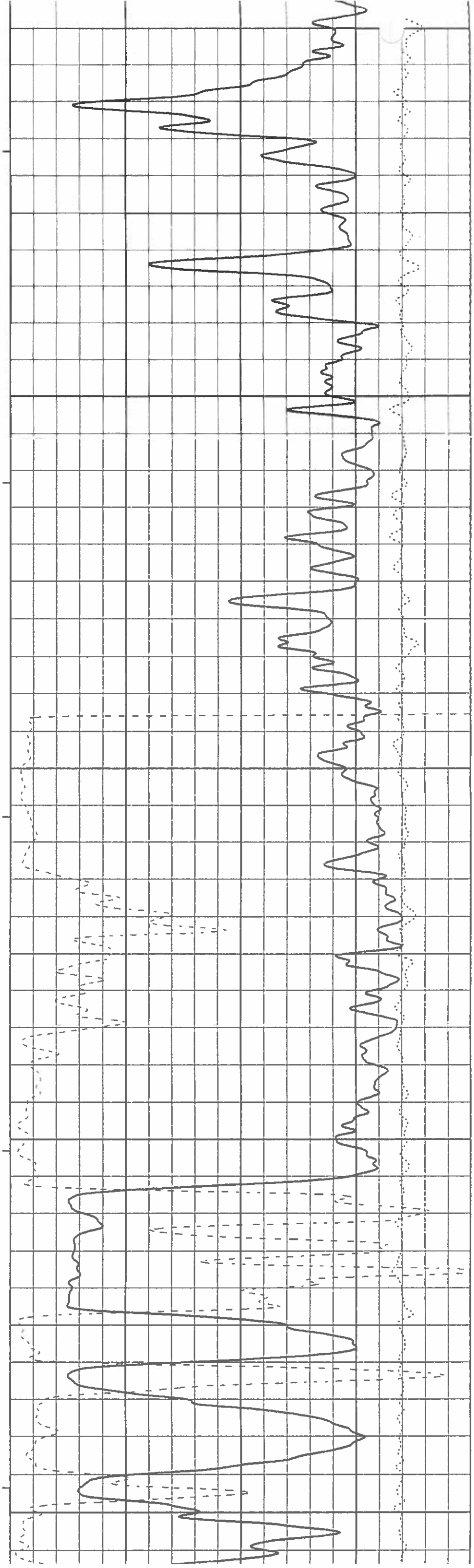
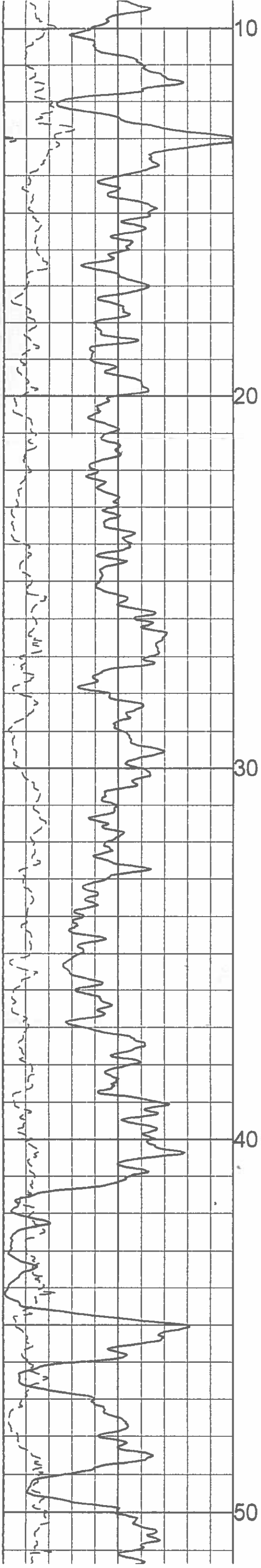
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

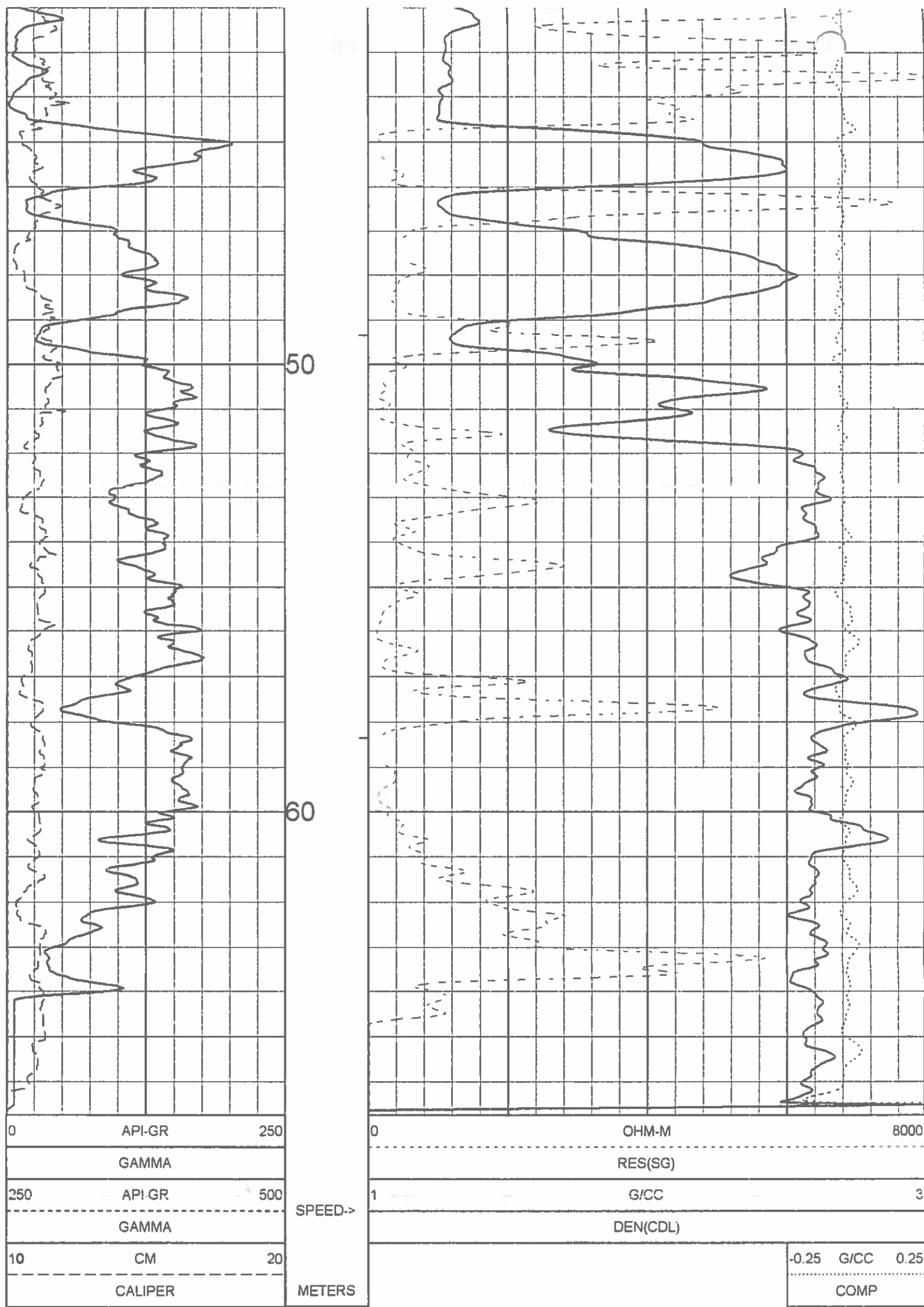
1:100 BULK DENSITY BR-09-24 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008 VERSION = 3.64HR







▲ 1:100 BULK DENSITY BR-09-24 12/21/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-24 12/21/09 10:42
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	12:24:08	GAMMA	Default [CPS]	Default [CPS]
	Dec22,09	12:24:08	GAMMA	500.000 [API-GR]	540.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442384.000 [CPS]
4	Nov26,09	16:04:40	DEN(LS)	1.000 [G/CC]	25597.000 [CPS]
	Nov26,09	16:04:40	DEN(LS)	2.320 [G/CC]	2589.000 [CPS]
5	Nov27,09	14:25:02	DEN(SS)	1.000 [G/CC]	55428.000 [CPS]
	Nov27,09	14:25:02	DEN(SS)	2.320 [G/CC]	21443.000 [CPS]
6	Nov20,09	16:59:10	CALIPERL	8.900 [MM]	108573.000 [CPS]
	Nov20,09	16:59:10	CALIPERL	20.100 [MM]	227640.000 [CPS]



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-24**

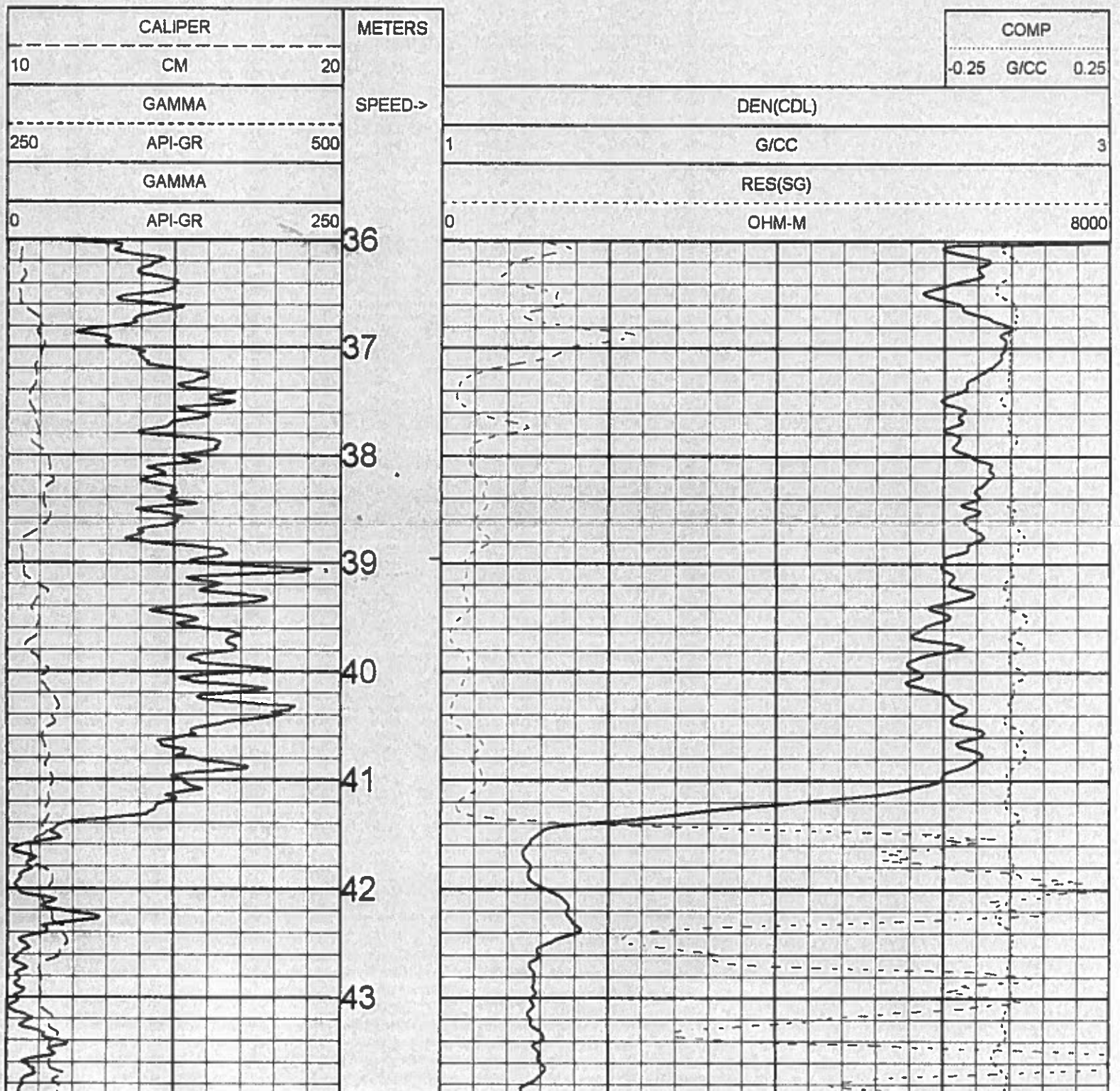
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-24		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	88.58	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.22	DEPARTURE TIME	
LOG BOTTOM	86.70	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

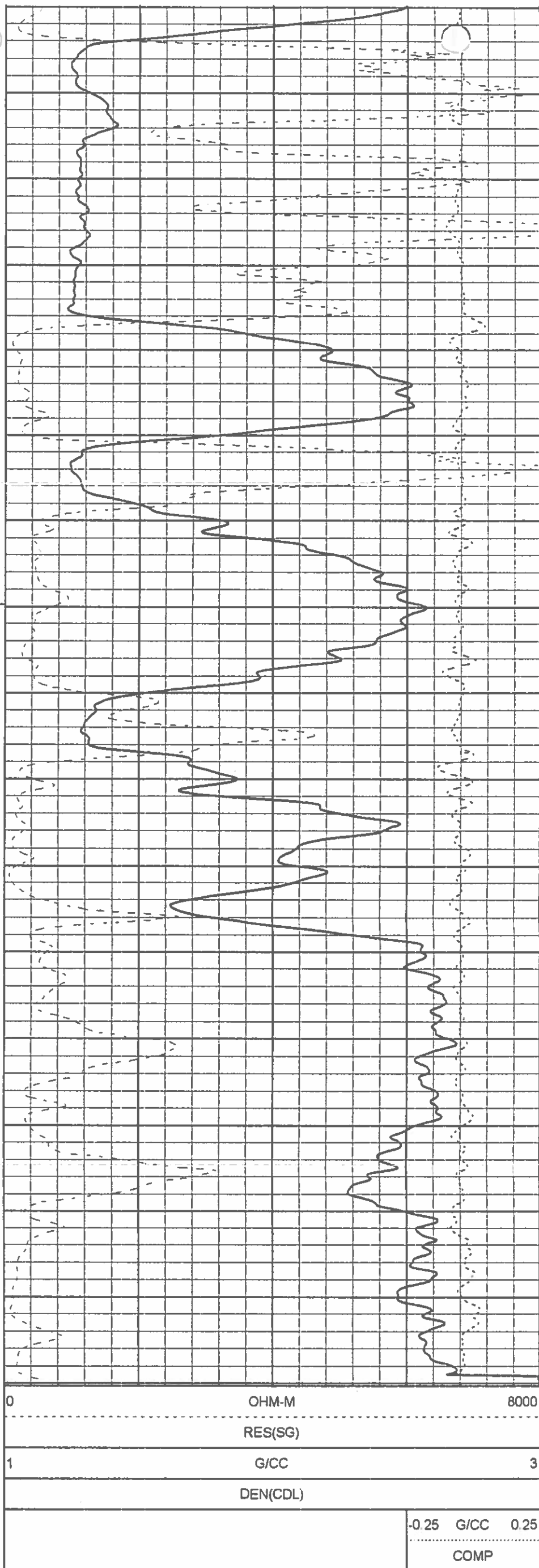
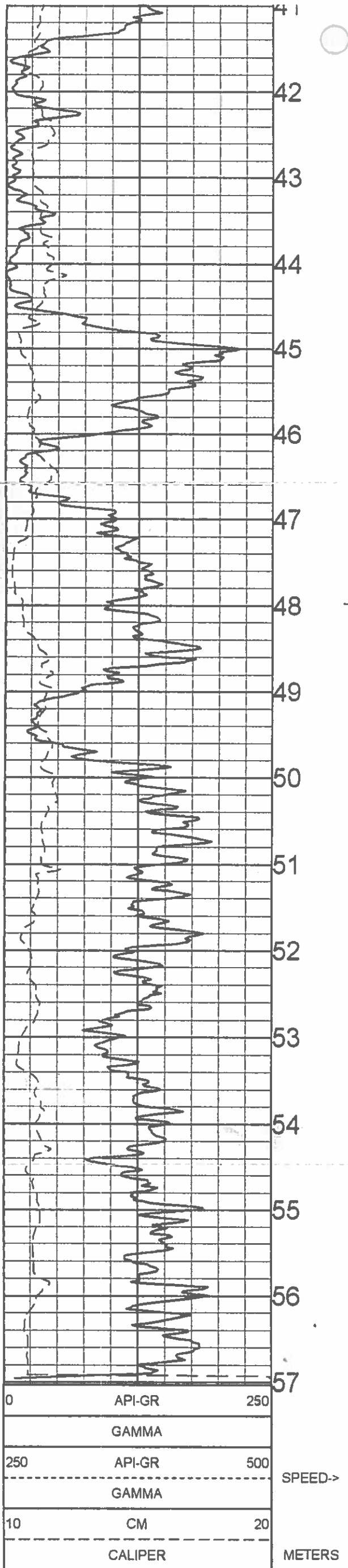
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-24 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008 VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR-09-24 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-24	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/20/09	RIG NUMBER	
DEPTH DRILLER	88.58	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
OG TOP	2.36	DEPARTURE TIME	
LOG BOTTOM	86.63	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WTNESSED BY	G. HOLMLUND		
RECORDED BY	J. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR-09-24 12/20/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

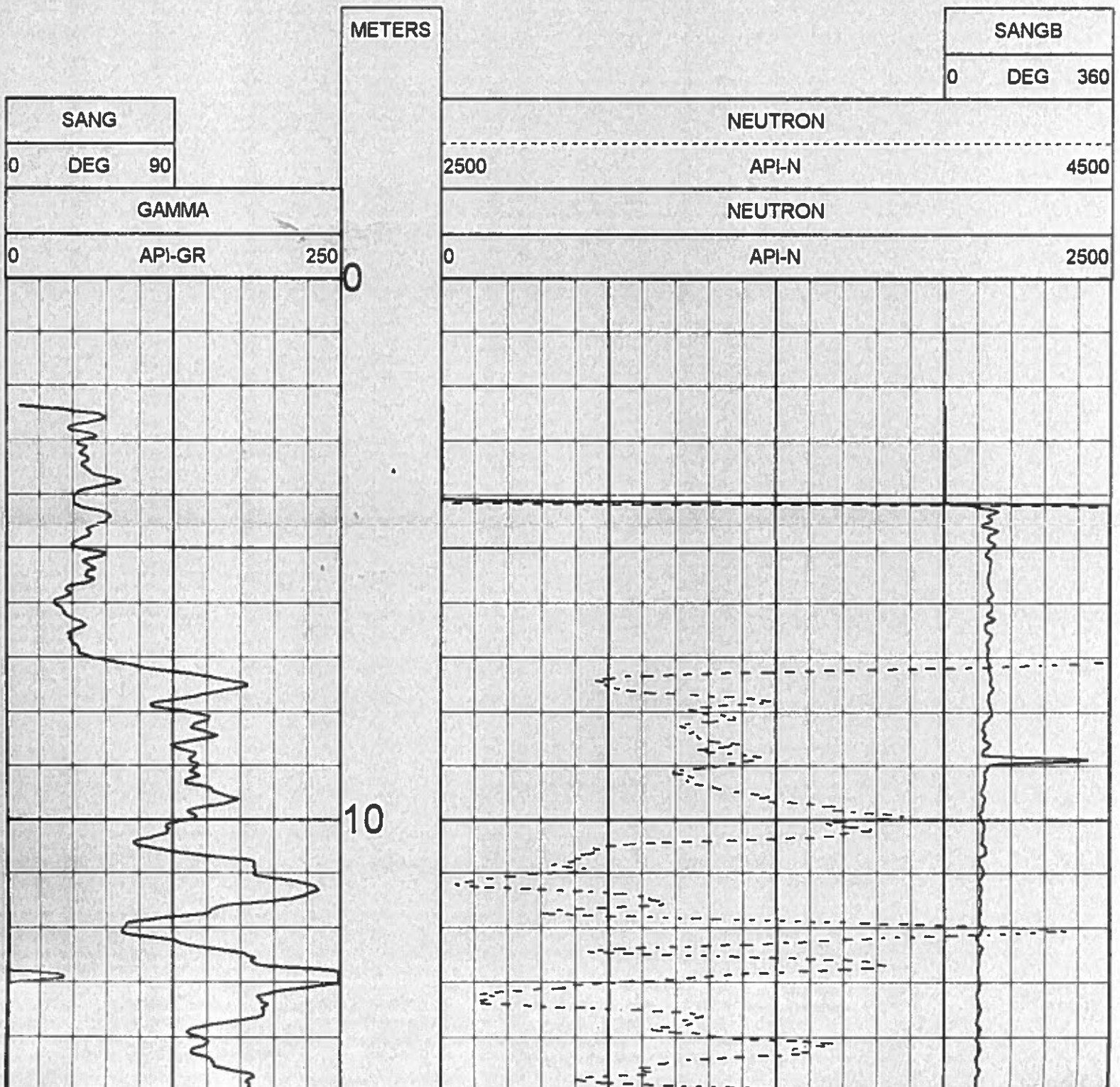
MAGNETIC DECL : 21.0

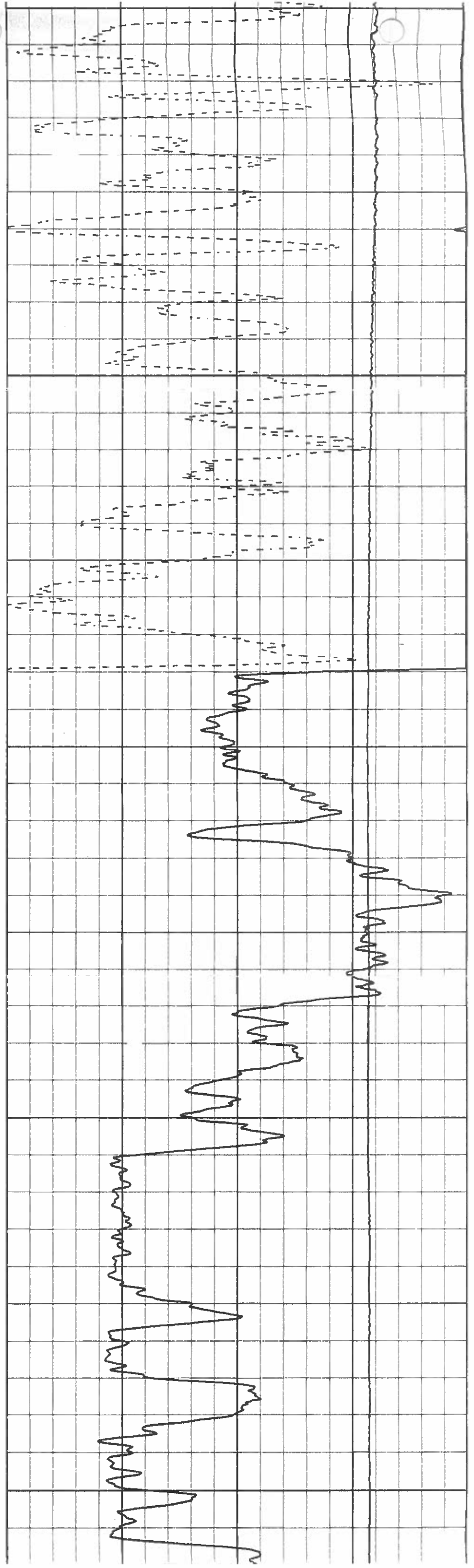
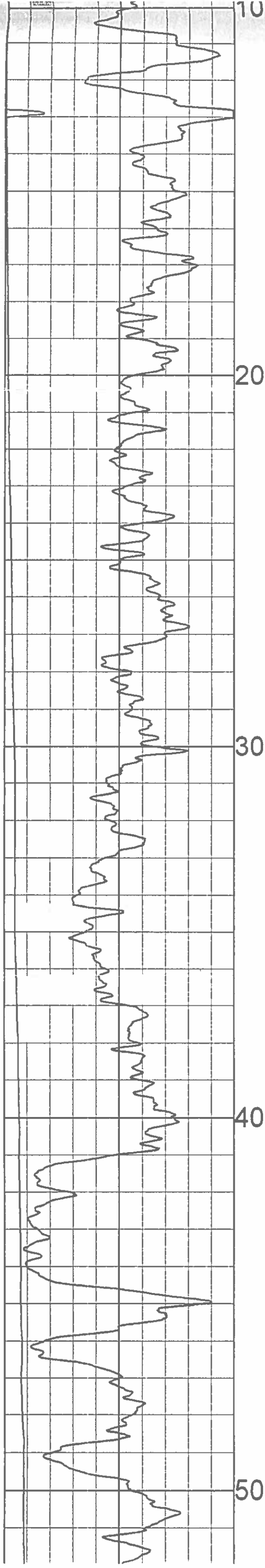
ELECT. CUTOFF : 99999

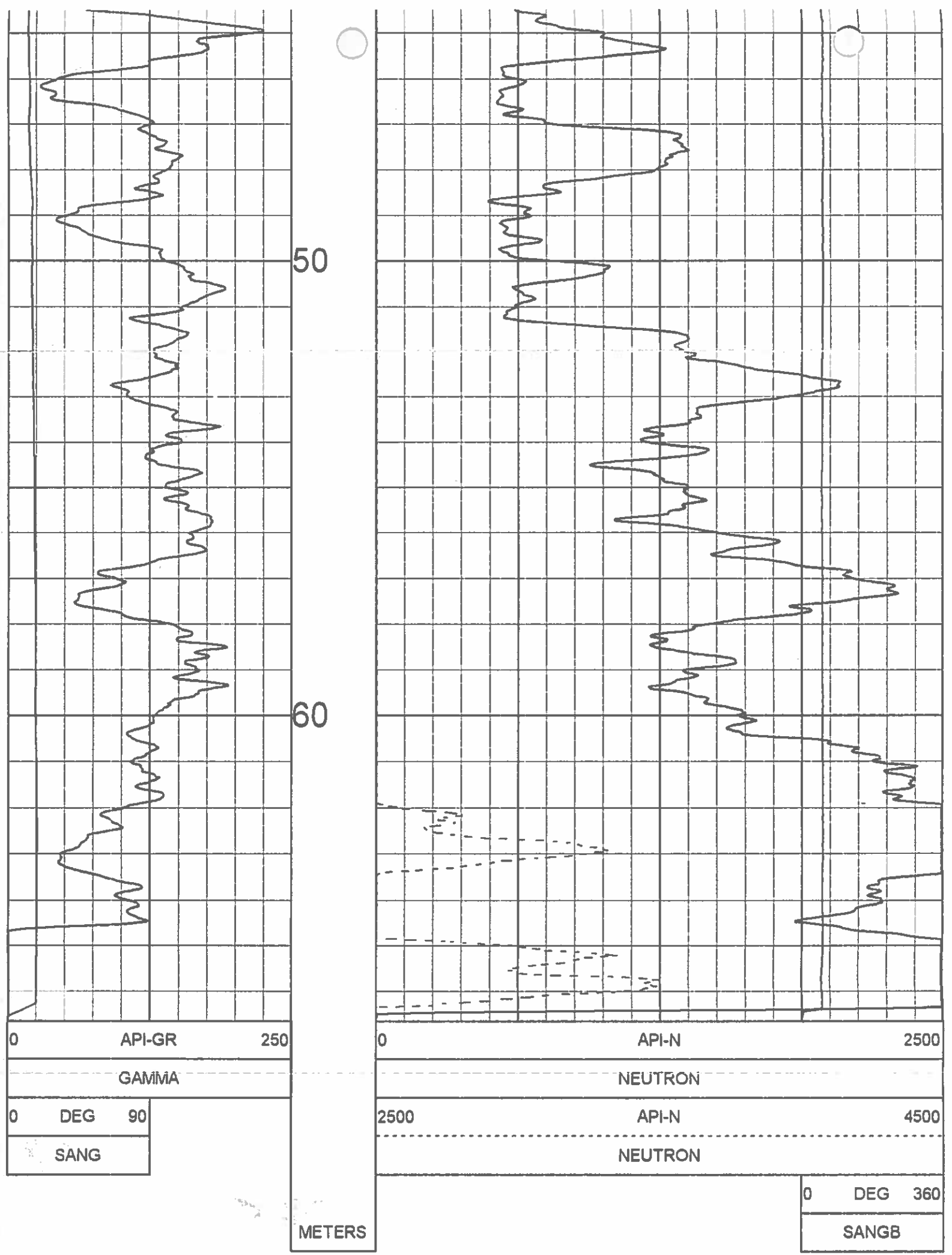
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009

VERSION = 3.64HR







▲ 1:100 NEUTRON BR-09-24 12/20/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009		VERSION = 3.64HR

TOOL CALIBRATION BR-09-24 12/20/09 11:44
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

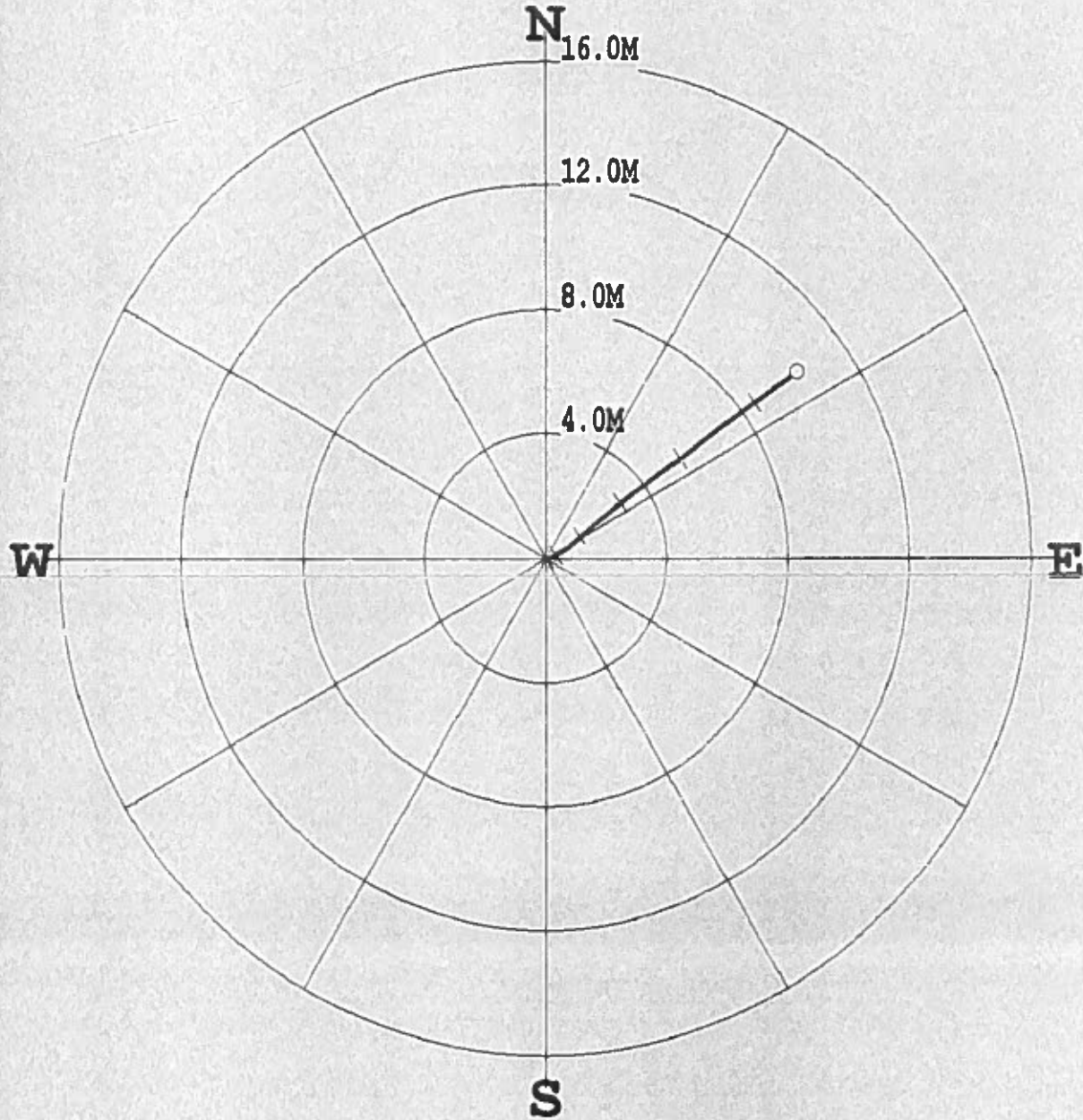
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec11,09	15:10:40	GAMMA	0.000 [API-GR]	3.000 [CPS]
	Dec11,09	15:10:40	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Dec11,09	15:10:33	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Dec11,09	15:10:33	NEUTRON	271.000 [API-N]	172.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16N)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64N)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-24
 DATE OF LOG: 12/20/09
 PROBE: 9057A 4429



SCALE: 2 M/CM
 TRUE DEPTH: 65.21 M
 AZIMUTH: 54.1
 DISTANCE: 10.2 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR-09-24
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-24_12-20-09_11-44_9057A_.02_2.36_66.63_DEVI.log


CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	4.00	0.00	0.00	0.0	0.0	0.0	0.0
5.00	5.00	-0.00	0.00	0.0	100.1	0.5	112.9
6.00	6.00	-0.00	0.01	0.0	99.4	0.5	95.2
7.00	7.00	-0.00	0.02	0.0	99.0	0.6	96.3
8.00	8.00	-0.00	0.03	0.0	99.4	0.3	103.7
9.00	9.00	-0.00	0.03	0.0	97.8	0.5	100.5
10.00	10.00	-0.00	0.05	0.0	95.1	0.7	84.0
11.00	11.00	-0.00	0.06	0.1	92.7	1.0	87.1
12.00	12.00	0.00	0.08	0.1	89.8	1.1	85.1
13.00	13.00	0.00	0.10	0.1	87.2	1.4	78.6
14.00	14.00	0.01	0.12	0.1	85.1	1.8	77.3
15.00	15.00	0.02	0.15	0.2	83.1	1.6	68.6
16.00	16.00	0.03	0.18	0.2	81.4	1.8	70.7
17.00	17.00	0.04	0.21	0.2	79.4	1.9	69.9
18.00	18.00	0.06	0.25	0.3	77.3	2.7	70.4
19.00	19.00	0.08	0.29	0.3	75.3	2.9	61.9
20.00	19.99	0.10	0.34	0.4	73.3	2.9	63.9
21.00	20.99	0.13	0.39	0.4	71.5	3.6	58.7
22.00	21.99	0.17	0.45	0.5	69.8	3.7	56.4
23.00	22.99	0.21	0.51	0.5	67.9	4.6	53.7
24.00	23.98	0.26	0.58	0.6	66.1	5.1	56.0
25.00	24.98	0.31	0.65	0.7	64.5	5.5	53.2
26.00	25.97	0.37	0.74	0.8	63.1	6.1	51.0
27.00	26.97	0.44	0.82	0.9	61.7	6.5	48.5
28.00	27.96	0.52	0.91	1.0	60.3	7.1	50.4
29.00	28.95	0.60	1.01	1.2	59.3	7.5	48.8
30.00	29.94	0.69	1.11	1.3	58.1	8.2	46.9
31.00	30.93	0.79	1.22	1.5	57.1	8.8	49.9
32.00	31.92	0.89	1.34	1.6	56.5	8.6	49.0
33.00	32.91	0.98	1.45	1.8	55.9	9.0	50.8
34.00	33.90	1.08	1.57	1.9	55.4	8.9	48.8
35.00	34.88	1.18	1.69	2.1	55.1	9.0	54.8
36.00	35.87	1.27	1.82	2.2	55.0	9.4	52.5
37.00	36.86	1.38	1.96	2.4	54.9	10.5	51.4

S

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-24
FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
DATA FROM : N/A PROBE : 9057A , 4429
MAG. DECL. : 21.000 DEPTH UNITS : METERS
LOG: BR-09-24_12-20-09_11-44_9057A_.02_2.36_66.63_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	4.00	0.00	0.00	0.0	0.0	0.0	0.0
5.00	5.00	-0.00	0.00	0.0	100.1	0.5	112.9
6.00	6.00	-0.00	0.01	0.0	99.4	0.5	95.2
7.00	7.00	-0.00	0.02	0.0	99.0	0.6	96.3
8.00	8.00	-0.00	0.03	0.0	99.4	0.3	103.7
9.00	9.00	-0.00	0.03	0.0	97.8	0.5	100.5
10.00	10.00	-0.00	0.05	0.0	95.1	0.7	84.0
11.00	11.00	-0.00	0.06	0.1	92.7	1.0	87.1
12.00	12.00	0.00	0.08	0.1	89.8	1.1	85.1
13.00	13.00	0.00	0.10	0.1	87.2	1.4	78.6
14.00	14.00	0.01	0.12	0.1	85.1	1.8	77.3
15.00	15.00	0.02	0.15	0.2	83.1	1.6	68.6
16.00	16.00	0.03	0.18	0.2	81.4	1.8	70.7
17.00	17.00	0.04	0.21	0.2	79.4	1.9	69.9
18.00	18.00	0.06	0.25	0.3	77.3	2.7	70.4
19.00	19.00	0.08	0.29	0.3	75.3	2.9	61.9
20.00	19.99	0.10	0.34	0.4	73.3	2.9	63.9
21.00	20.99	0.13	0.39	0.4	71.5	3.6	58.7
22.00	21.99	0.17	0.45	0.5	69.8	3.7	56.4
23.00	22.99	0.21	0.51	0.5	67.9	4.6	53.7
24.00	23.98	0.26	0.58	0.6	66.1	5.1	56.0
25.00	24.98	0.31	0.65	0.7	64.5	5.5	53.2
26.00	25.97	0.37	0.74	0.8	63.1	6.1	51.0
27.00	26.97	0.44	0.82	0.9	61.7	6.5	48.5
28.00	27.96	0.52	0.91	1.0	60.3	7.1	50.4
29.00	28.95	0.60	1.01	1.2	59.3	7.5	48.8
30.00	29.94	0.69	1.11	1.3	58.1	8.2	46.9
31.00	30.93	0.79	1.22	1.5	57.1	8.8	49.9
32.00	31.92	0.89	1.34	1.6	56.5	8.6	49.0
33.00	32.91	0.98	1.45	1.8	55.9	9.0	50.8
34.00	33.90	1.08	1.57	1.9	55.4	8.9	48.8
35.00	34.88	1.18	1.69	2.1	55.1	9.0	54.8
36.00	35.87	1.27	1.82	2.2	55.0	9.4	52.5
37.00	36.86	1.38	1.96	2.4	54.9	10.5	51.4
38.00	37.84	1.49	2.11	2.6	54.7	11.1	51.1
39.00	38.82	1.62	2.26	2.8	54.4	11.2	48.0
40.00	39.80	1.74	2.42	3.0	54.2	12.0	50.1
41.00	40.78	1.88	2.58	3.2	53.9	11.8	50.0
42.00	41.76	2.01	2.74	3.4	53.8	12.4	51.7
43.00	42.73	2.14	2.92	3.6	53.8	12.7	54.4
44.00	43.71	2.26	3.10	3.8	53.9	13.3	55.3
45.00	44.68	2.40	3.29	4.1	53.9	13.1	54.6
46.00	45.65	2.53	3.48	4.3	53.9	14.6	53.2
47.00	46.62	2.68	3.67	4.5	53.9	13.4	52.0
48.00	47.59	2.81	3.87	4.8	54.0	14.6	54.2
49.00	48.56	2.97	4.08	5.0	54.0	15.4	53.4
50.00	49.52	3.12	4.30	5.3	54.0	15.5	55.0
51.00	50.49	3.27	4.51	5.6	54.1	15.6	54.2
52.00	51.45	3.43	4.73	5.8	54.1	16.1	53.5
53.00	52.41	3.60	4.96	6.1	54.0	16.7	53.9
54.00	53.37	3.77	5.19	6.4	54.0	16.8	53.7
55.00	54.32	3.94	5.42	6.7	54.0	16.9	52.8
56.00	55.28	4.12	5.66	7.0	54.0	17.2	53.1
57.00	56.23	4.29	5.90	7.3	54.0	17.4	55.0
58.00	57.19	4.47	6.15	7.6	54.0	17.6	54.7
59.00	58.14	4.64	6.39	7.9	54.0	17.5	54.6
60.00	59.09	4.82	6.64	8.2	54.0	17.9	53.4
61.00	60.05	5.00	6.89	8.5	54.0	18.2	54.9
62.00	60.99	5.18	7.15	8.8	54.1	18.1	56.3
63.00	61.94	5.36	7.41	9.1	54.1	18.7	55.1
64.00	62.89	5.55	7.67	9.5	54.1	18.5	54.1
65.00	63.84	5.73	7.93	9.8	54.1	18.3	55.8
66.00	64.79	5.91	8.18	10.1	54.2	18.6	52.4
66.44	65.21	5.99	8.29	10.2	54.1	18.4	53.9

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-25	year drilled: 2009	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,156.44	6,138,001.05	1,149.54

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		55.56	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	69.9	-89.80
8.00	49.6	-89.90
9.00	48.4	-89.70
10.00	51.4	-89.60
11.00	53.5	-89.60
12.00	55.2	-89.60
13.00	58.1	-89.40
14.00	60.2	-89.40
15.00	61.7	-89.10
16.00	62.6	-88.90
17.00	63.2	-88.70
18.00	64.2	-88.00
19.00	65.4	-88.10
20.00	66.1	-87.70
21.00	66.5	-87.50
22.00	66.3	-87.40
23.00	66.1	-87.20
24.00	65.5	-86.90
25.00	65.1	-86.90
26.00	64.7	-87.20
27.00	64.2	-87.00
28.00	63.7	-86.60
29.00	63.3	-86.80
30.00	62.9	-87.00
31.00	62.4	-87.50
32.00	61.5	-87.40
33.00	60.8	-87.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.00	6.00		
6.50	8.80	2.30		
36.65	40.80	4.15		
42.45	43.65	1.20		
45.40	46.00	0.60		
46.00	46.55	0.55		
47.80	48.20	0.40		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002



**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-25**

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES: NEUTRON
WELL	BR-09-25	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	12/21/09	RIG NUMBER
DEPTH DRILLER	56 38	LOGGER TD
BIT SIZE	11.43	ARRIVAL TIME
LOG TOP	0.19	DEPARTURE TIME
LOG BOTTOM	55.94	CIRC STOPPED
CASING LOGGER	6.096	
CASING DRILLER	6.096	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WITNESSED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR-09-25 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

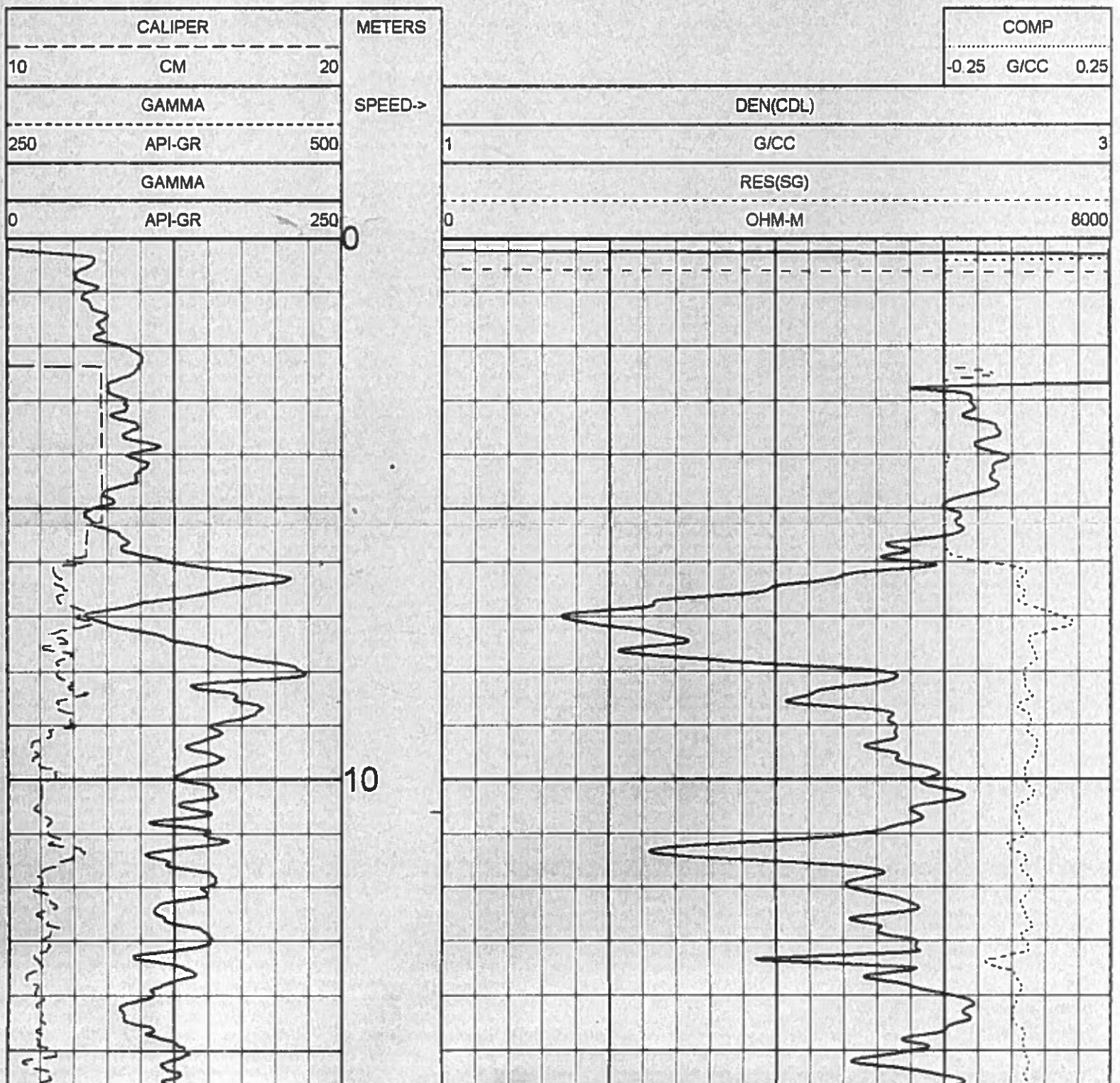
MAGNETIC DECL : 21.0

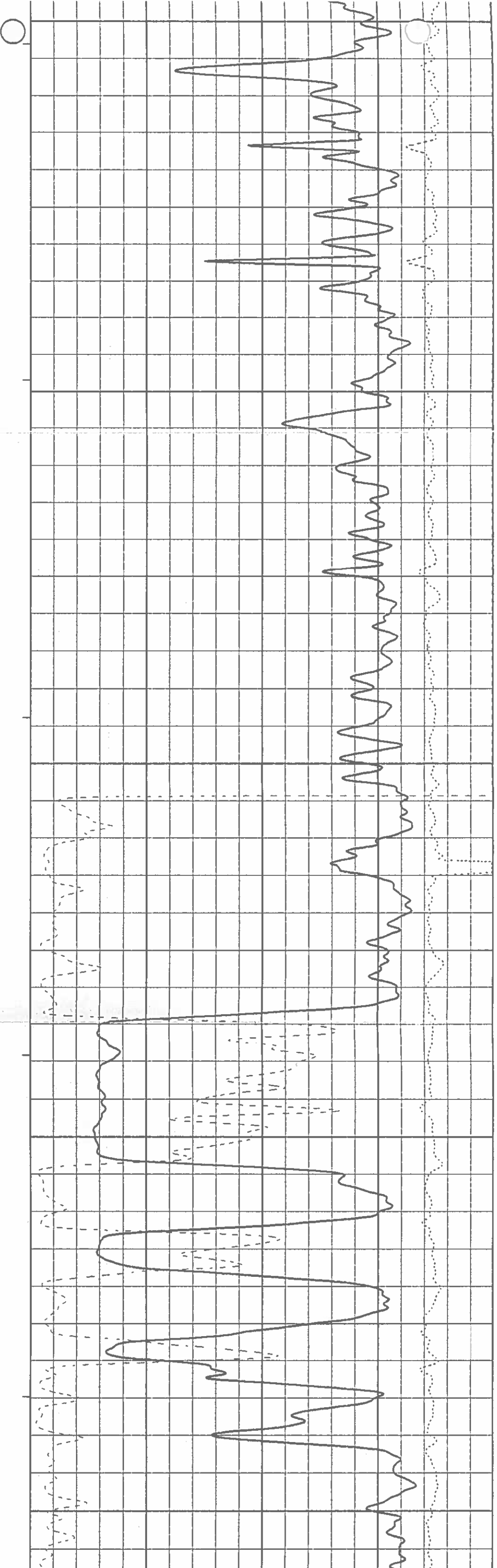
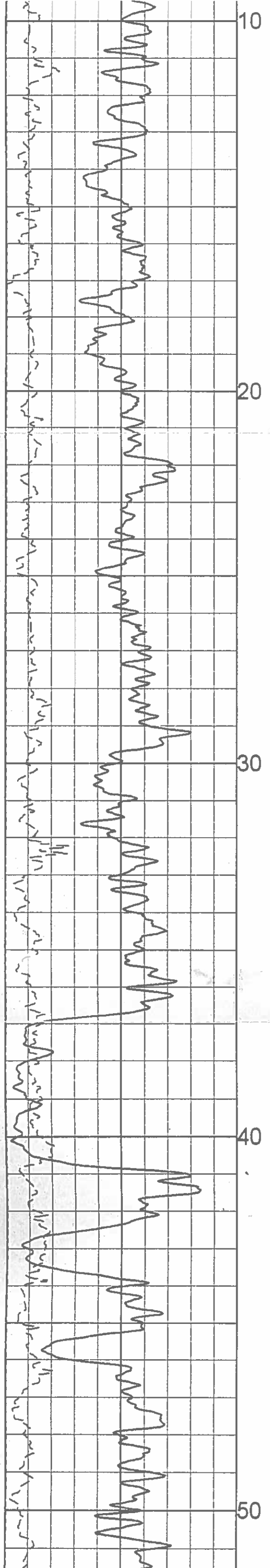
ELECT. CUTOFF : 99999

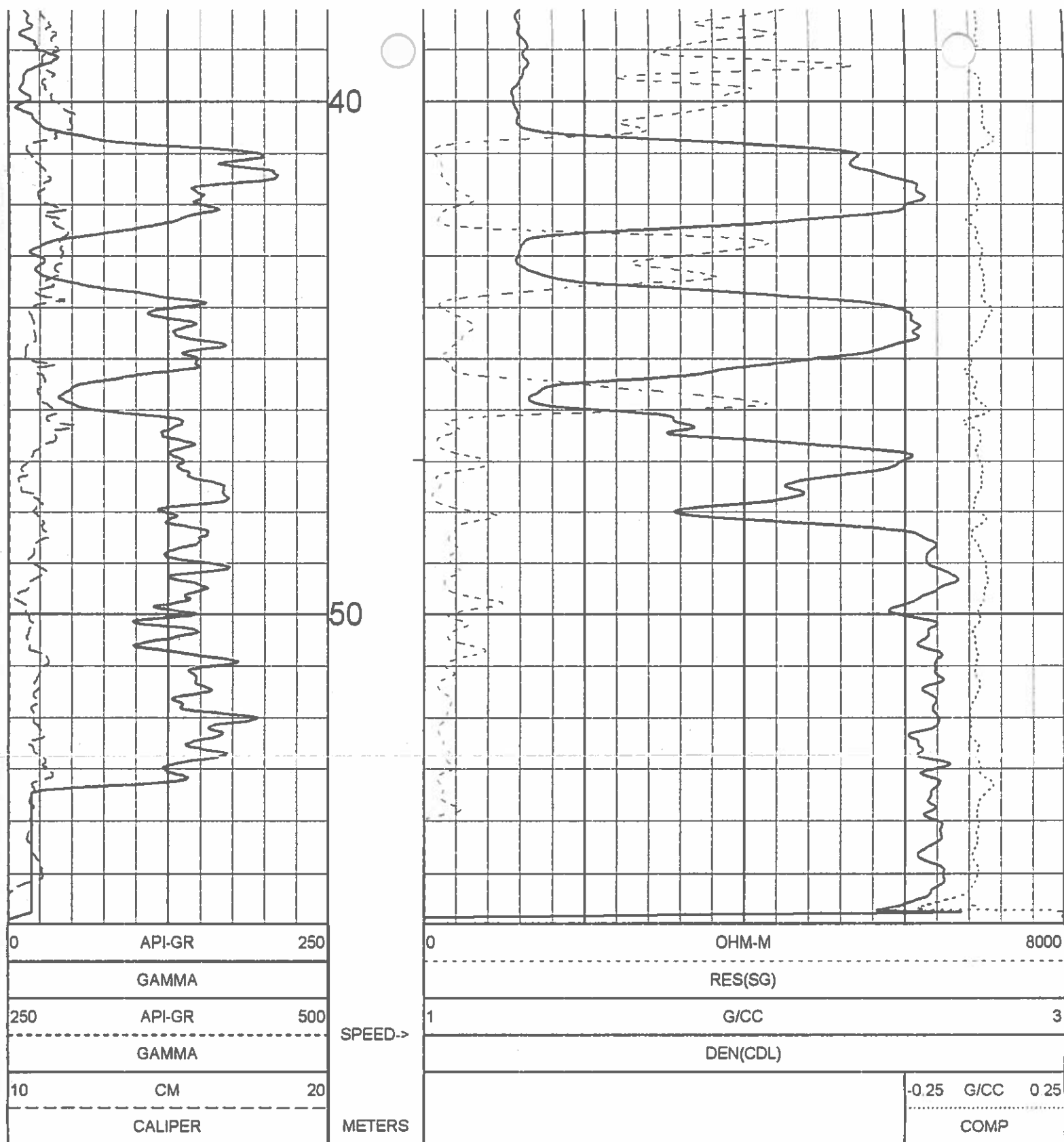
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008

VERSION = 3.64HR







1:100 BULK DENSITY BR-09-25 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21:0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008 VERSION = 3.64HR

TOOL CALIBRATION BR-09-25 12/21/09 10:00
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	12:38:00	GAMMA	Default [CPS]	Default [CPS]
	Dec22,09	12:38:00	GAMMA	500.000 [API-GR]	540.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]
4	Nov26,09	16:04:40	DEN(LS)	1.000 [G/CC]	25597.000 [CPS]
	Nov26,09	16:04:40	DEN(LS)	2.320 [G/CC]	2589.000 [CPS]
5	Nov27,09	14:25:02	DEN(SS)	1.000 [G/CC]	55428.000 [CPS]
	Nov27,09	14:25:02	DEN(SS)	2.320 [G/CC]	21443.000 [CPS]
6	Nov20,09	16:59:10	CALIPERL	8.900 [MM]	108573.000 [CPS]
	Nov20,09	16:59:10	CALIPERL	20.100 [MM]	227640.000 [CPS]
7	Jul15,09	09:26:23	CURRENT	30.300 [UA]	5018.010 [CPS]
	Jul15,09	09:26:23	CURRENT	232.200 [UA]	21687.004 [CPS]
8	Nov17,08	13:24:14	F	Default [CPS]	
9	Nov17,08	13:21:11	X	Default [CPS]	



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-25**

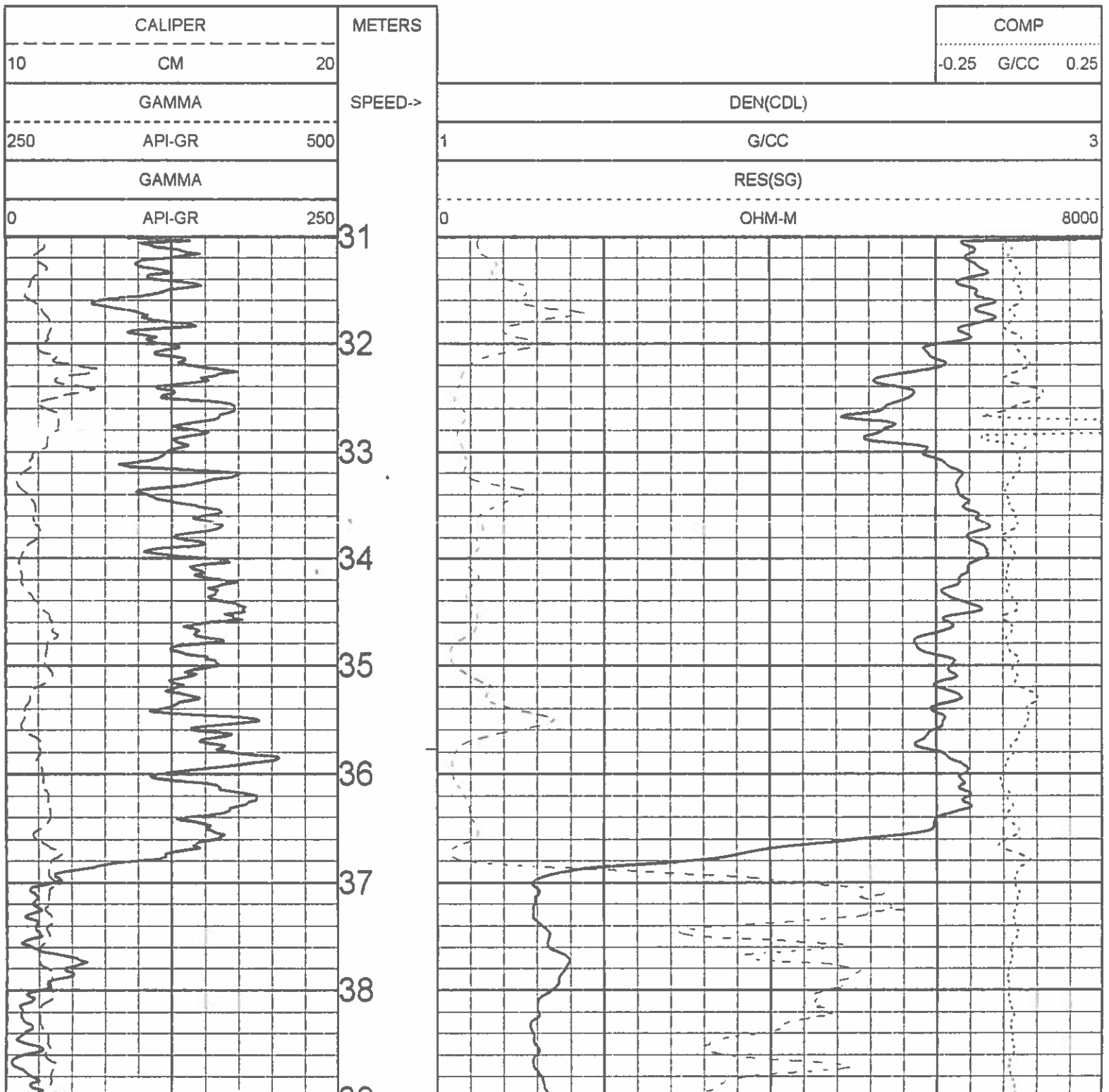
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-25		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	56 38	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	0.19	DEPARTURE TIME	
LOG BOTTOM	55.94	CIRC STOPPED	N/A
CASING LOGGER	6.096		
CASING DRILLER	6.096		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	J. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

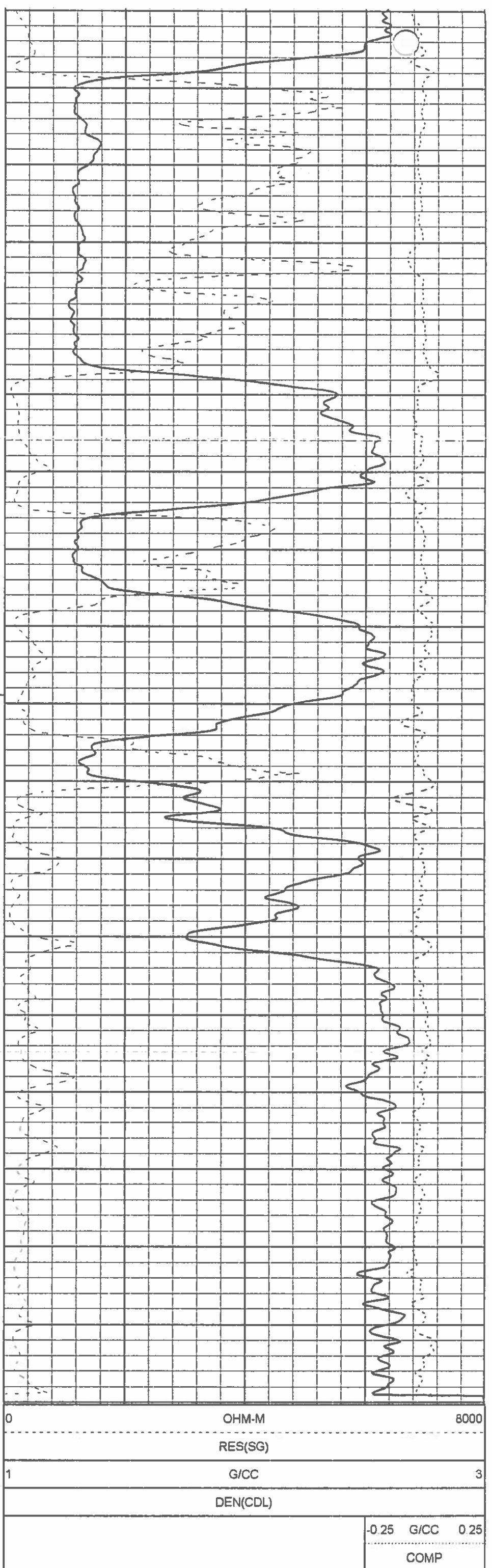
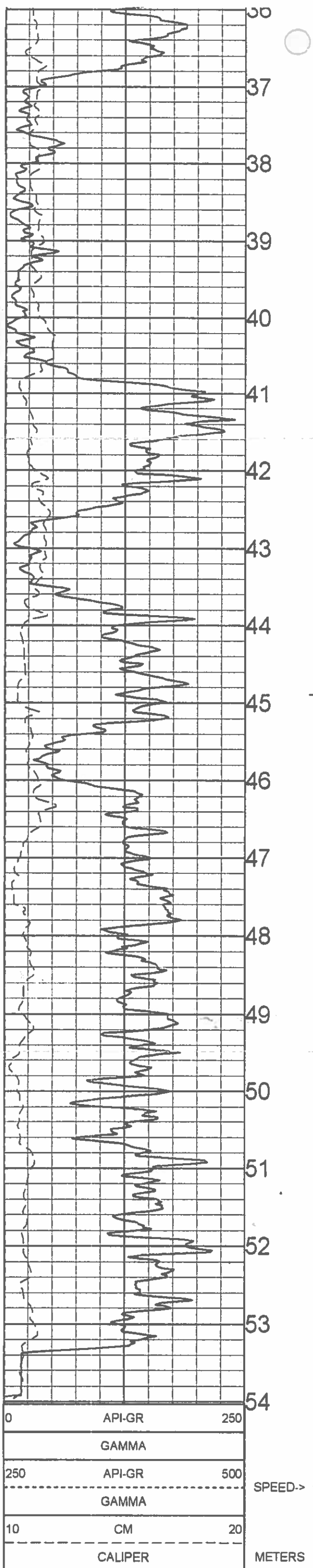
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-25 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR





COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:
WELL	BR-09-25	DENSITY
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION GL
DATE	12/20/09	RIG NUMBER
DEPTH DRILLER	58.38	LOGGER TD
BIT SIZE	11.43	ARRIVAL TIME
LOG TOP	5.03	DEPARTURE TIME
LOG BOTTOM	55.74	CIRC STOPPED
CASING LOGGER	8.098	
CASING DRILLER	8.098	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WTNESSED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

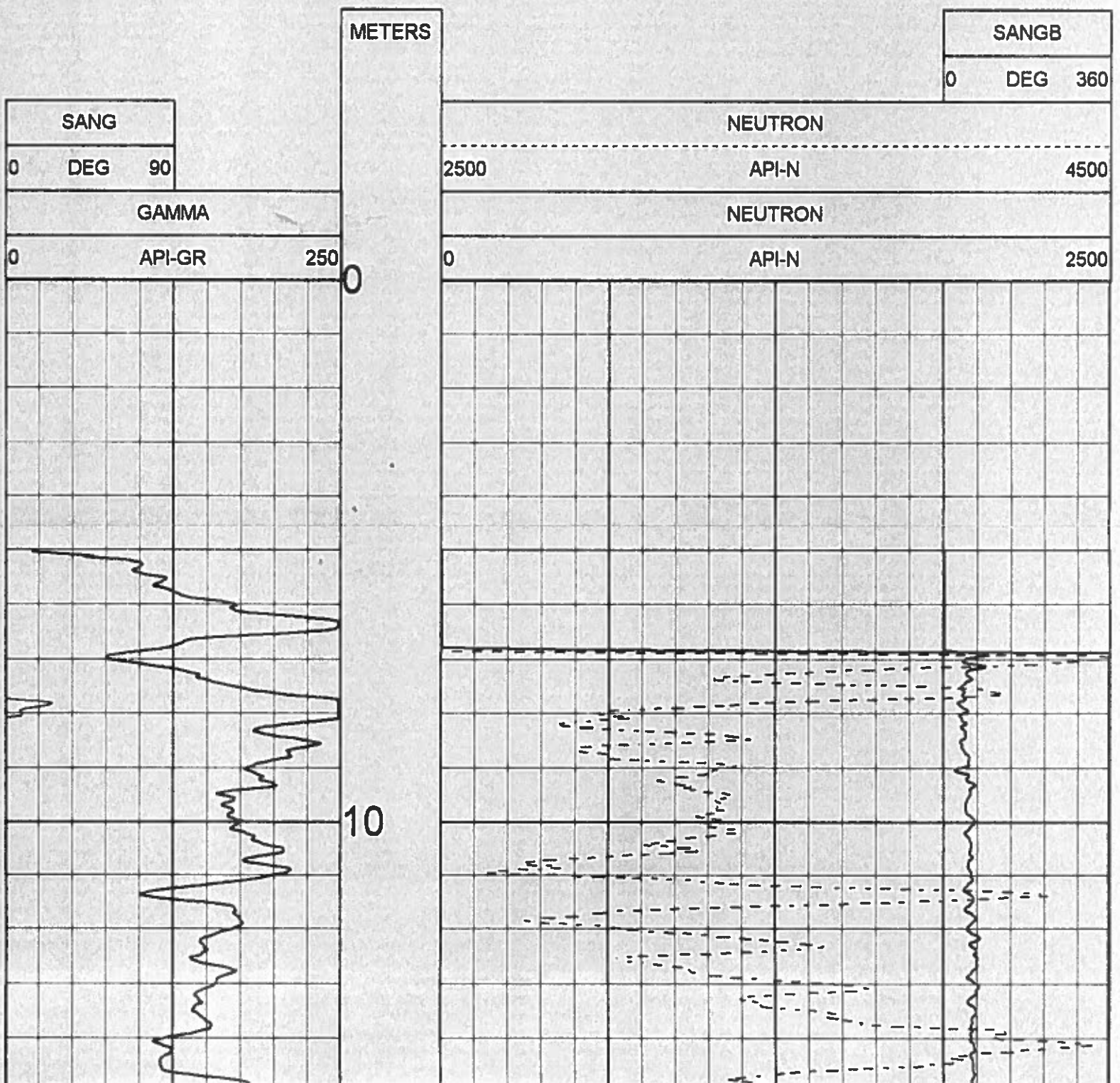
1:100 NEUTRON BR-09-25 12/20/09

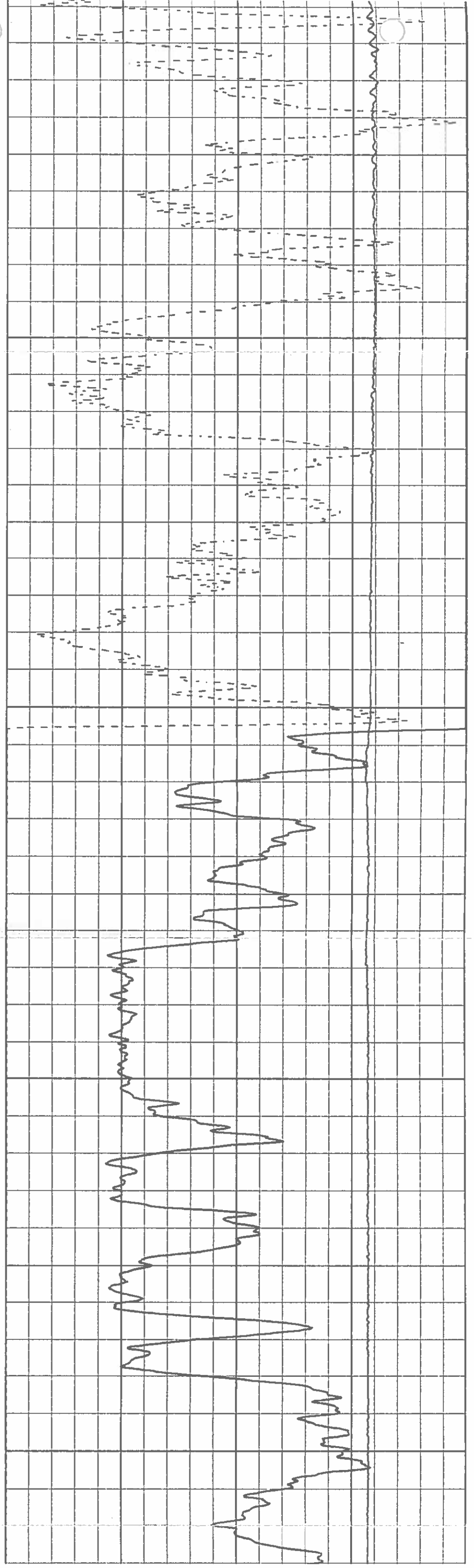
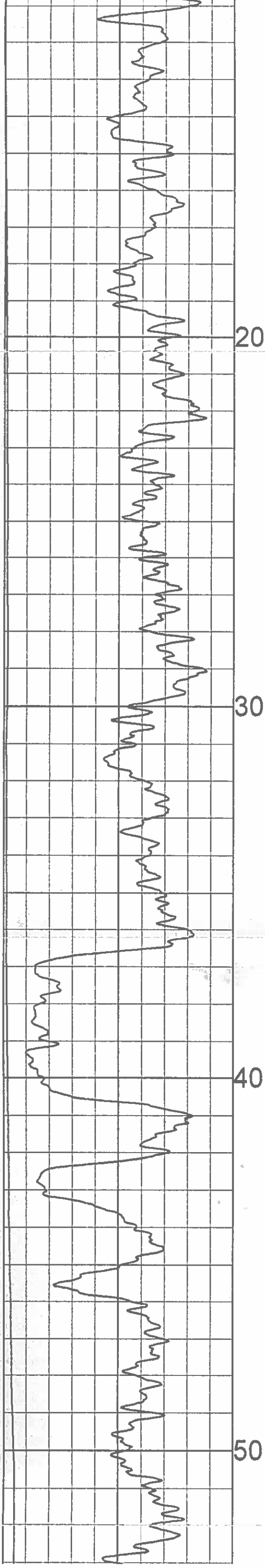
LOG PARAMETERS

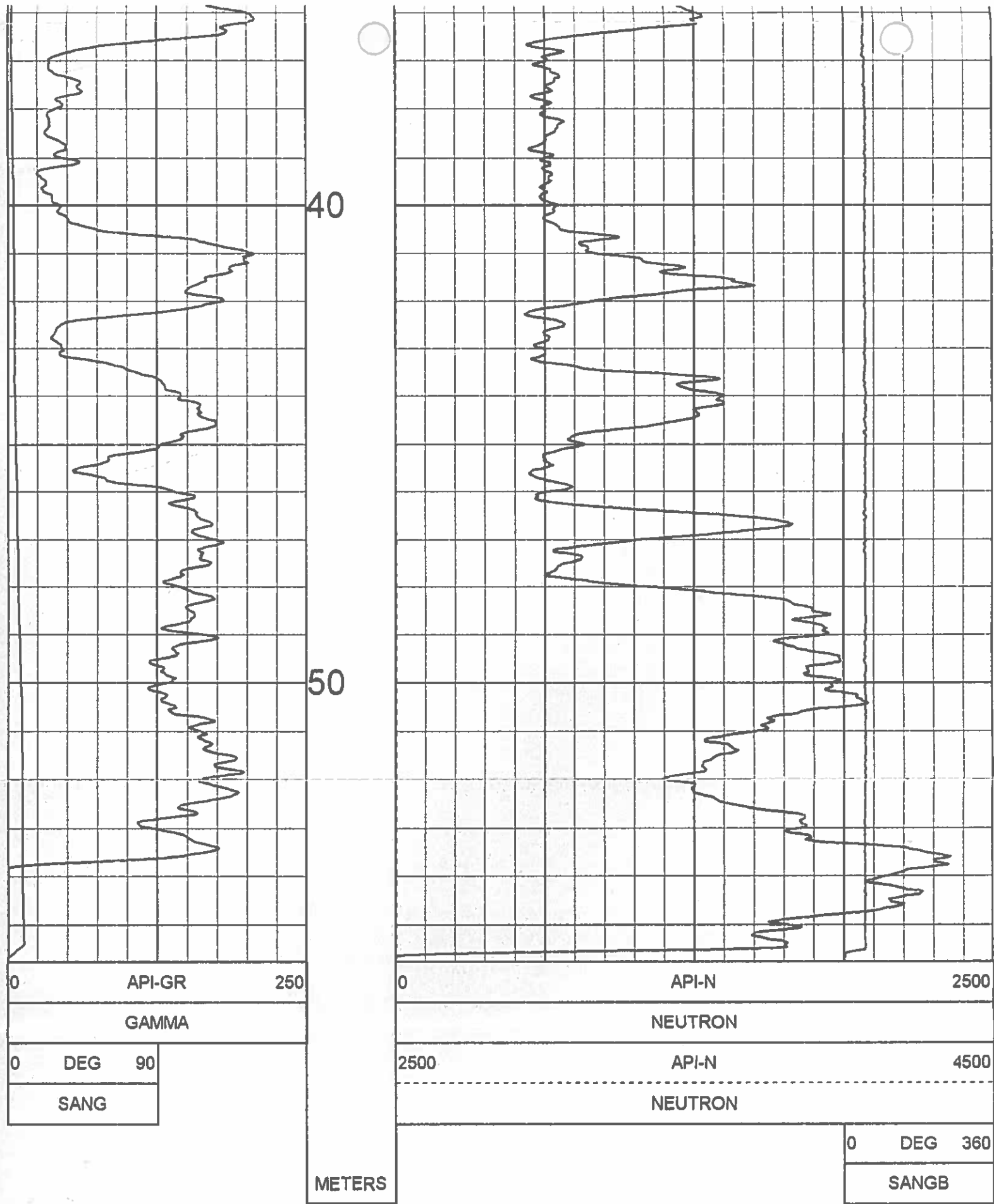
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9057 NEUTRON 0 12/22/2009

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 89999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR







▲ 1:100 NEUTRON BR-09-25 12/20/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009		VERSION = 3.64HR

TOOL CALIBRATION BR-09-25 12/20/09 11:25
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

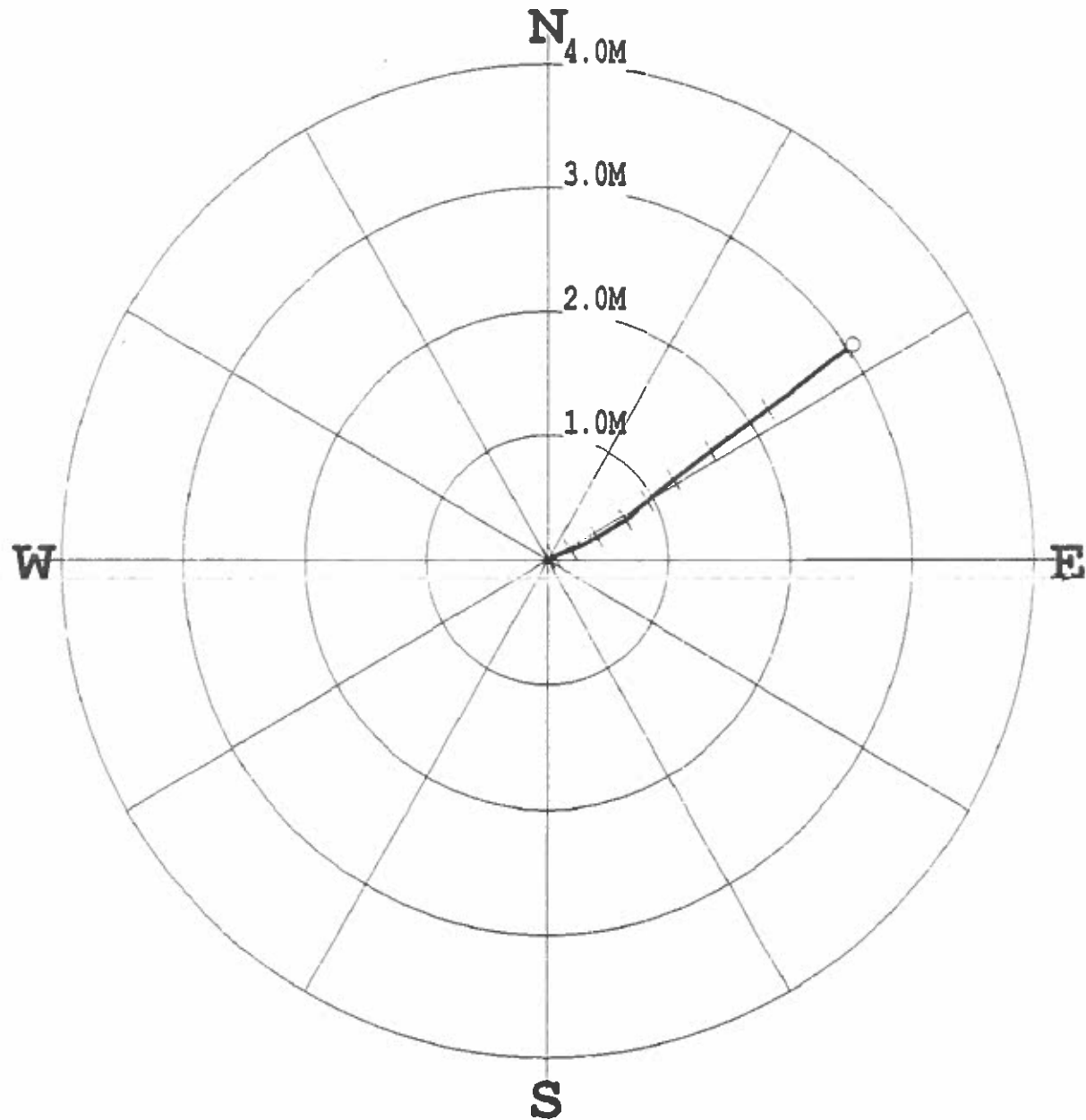
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec11,09	15:10:40	GAMMA	0.000 [API-GR]	3.000 [CPS]
	Dec11,09	15:10:40	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Dec11,09	15:10:33	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Dec11,09	15:10:33	NEUTRC	271.000 [API-N]	172.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-25
 DATE OF LOG: 12/20/09
 PROBE: 9057A 4429



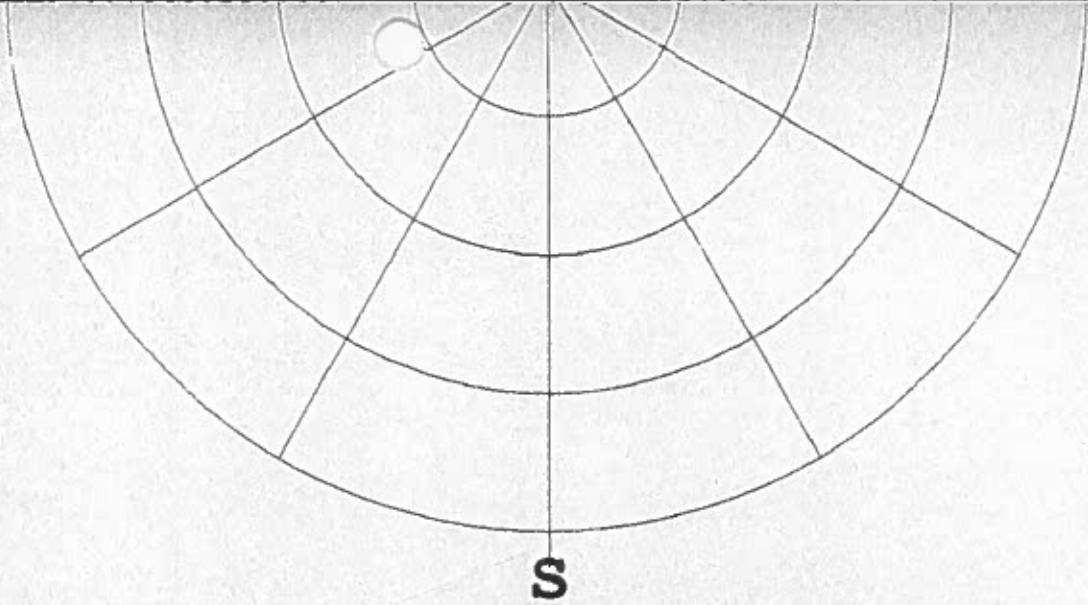
SCALE: 1 M/CM
 TRUE DEPTH: 55.40 M
 AZIMUTH: 55.4
 DISTANCE: 3.0 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-25
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-25_12-20-09_11-25_9057A_.02_5.03_55.74_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
6.88	6.87	-0.00	0.00	0.0	112.0	0.1	112.0
7.00	6.99	0.00	0.00	0.0	69.9	0.2	50.2
8.00	7.99	0.00	0.00	0.0	49.6	0.1	31.6
9.00	8.99	0.01	0.01	0.0	48.4	0.3	21.8
10.00	9.99	0.01	0.01	0.0	51.4	0.4	71.0
11.00	10.99	0.01	0.02	0.0	53.5	0.4	59.1
12.00	11.99	0.02	0.02	0.0	55.2	0.4	53.7
13.00	12.99	0.02	0.03	0.0	58.1	0.6	69.4
14.00	13.99	0.02	0.04	0.0	60.2	0.6	60.6
15.00	14.99	0.03	0.05	0.1	61.7	0.9	64.4
16.00	15.99	0.04	0.07	0.1	62.6	1.1	63.7
17.00	16.99	0.04	0.09	0.1	63.2	1.3	64.1
18.00	17.99	0.06	0.12	0.1	64.2	2.0	68.3
19.00	18.99	0.07	0.15	0.2	65.4	1.9	70.6
20.00	19.99	0.08	0.19	0.2	66.1	2.3	67.3
21.00	20.99	0.10	0.22	0.2	66.5	2.5	69.6
22.00	21.99	0.12	0.27	0.3	66.3	2.6	62.0
23.00	22.98	0.14	0.31	0.3	66.1	2.8	66.6
24.00	23.98	0.16	0.35	0.4	65.5	3.1	62.9
25.00	24.98	0.19	0.40	0.4	65.1	3.1	61.1
26.00	25.98	0.21	0.45	0.5	64.7	2.8	61.1
27.00	26.98	0.24	0.49	0.5	64.2	3.0	62.3
28.00	27.98	0.27	0.54	0.6	63.7	3.4	55.5
29.00	28.98	0.30	0.59	0.7	63.3	3.2	60.1
30.00	29.97	0.33	0.63	0.7	62.9	3.0	64.3
31.00	30.97	0.35	0.67	0.8	62.4	2.5	47.5
32.00	31.97	0.38	0.70	0.8	61.5	2.6	44.9
33.00	32.97	0.41	0.74	0.8	60.8	2.6	49.3
34.00	33.97	0.44	0.77	0.9	60.3	2.7	51.4
35.00	34.97	0.47	0.82	0.9	59.9	3.1	52.4
36.00	35.97	0.50	0.86	1.0	59.5	2.8	52.9
37.00	36.97	0.54	0.89	1.0	59.0	2.9	51.3
38.00	37.96	0.57	0.93	1.1	58.6	3.2	54.9
39.00	38.96	0.60	0.98	1.2	58.4	3.5	53.0
40.00	39.96	0.64	1.03	1.2	58.1	3.7	52.7



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-25
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-25_12-20-09_11-25_9057A_.02_5.03_55.74_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
6.88	6.87	-0.00	0.00	0.0	112.0	0.1	112.0
7.00	6.99	0.00	0.00	0.0	69.9	0.2	50.2
8.00	7.99	0.00	0.00	0.0	49.6	0.1	31.6
9.00	8.99	0.01	0.01	0.0	48.4	0.3	21.8
10.00	9.99	0.01	0.01	0.0	51.4	0.4	71.0
11.00	10.99	0.01	0.02	0.0	53.5	0.4	59.1
12.00	11.99	0.02	0.02	0.0	55.2	0.4	53.7
13.00	12.99	0.02	0.03	0.0	58.1	0.6	69.4
14.00	13.99	0.02	0.04	0.0	60.2	0.6	60.6
15.00	14.99	0.03	0.05	0.1	61.7	0.9	64.4
16.00	15.99	0.04	0.07	0.1	62.6	1.1	63.7
17.00	16.99	0.04	0.09	0.1	63.2	1.3	64.1
18.00	17.99	0.06	0.12	0.1	64.2	2.0	68.3
19.00	18.99	0.07	0.15	0.2	65.4	1.9	70.6
20.00	19.99	0.08	0.19	0.2	66.1	2.3	67.3
21.00	20.99	0.10	0.22	0.2	66.5	2.5	69.6
22.00	21.99	0.12	0.27	0.3	66.3	2.6	62.0
23.00	22.98	0.14	0.31	0.3	66.1	2.8	66.6
24.00	23.98	0.16	0.35	0.4	65.5	3.1	62.9
25.00	24.98	0.19	0.40	0.4	65.1	3.1	61.1
26.00	25.98	0.21	0.45	0.5	64.7	2.8	61.1
27.00	26.98	0.24	0.49	0.5	64.2	3.0	62.3
28.00	27.98	0.27	0.54	0.6	63.7	3.4	55.5
29.00	28.98	0.30	0.59	0.7	63.3	3.2	60.1
30.00	29.97	0.33	0.63	0.7	62.9	3.0	64.3
31.00	30.97	0.35	0.67	0.8	62.4	2.5	47.5
32.00	31.97	0.38	0.70	0.8	61.5	2.6	44.9
33.00	32.97	0.41	0.74	0.8	60.8	2.6	49.3
34.00	33.97	0.44	0.77	0.9	60.3	2.7	51.4
35.00	34.97	0.47	0.82	0.9	59.9	3.1	52.4
36.00	35.97	0.50	0.86	1.0	59.5	2.8	52.9
37.00	36.97	0.54	0.89	1.0	59.0	2.9	51.3
38.00	37.96	0.57	0.93	1.1	58.6	3.2	54.9
39.00	38.96	0.60	0.98	1.2	58.4	3.5	53.0
40.00	39.96	0.64	1.03	1.2	58.1	3.7	52.7
41.00	40.96	0.68	1.08	1.3	57.8	4.1	51.7
42.00	41.96	0.73	1.14	1.4	57.5	4.1	54.4
43.00	42.95	0.77	1.20	1.4	57.3	4.6	53.1
44.00	43.95	0.82	1.27	1.5	57.1	4.8	54.5
45.00	44.95	0.87	1.34	1.6	56.9	5.1	56.6
46.00	45.94	0.93	1.41	1.7	56.7	6.0	51.6
47.00	46.94	0.99	1.50	1.8	56.6	6.1	58.3
48.00	47.93	1.06	1.59	1.9	56.4	6.5	53.9
49.00	48.92	1.13	1.69	2.0	56.3	7.6	53.9
50.00	49.91	1.21	1.80	2.2	56.1	7.8	55.0
51.00	50.90	1.29	1.92	2.3	56.0	8.8	53.1
52.00	51.89	1.39	2.05	2.5	55.8	8.9	52.7
53.00	52.88	1.48	2.17	2.6	55.7	9.3	52.8
54.00	53.86	1.58	2.30	2.8	55.5	9.1	53.3
55.00	54.85	1.68	2.43	3.0	55.4	9.6	52.8
55.56	55.40	1.73	2.51	3.1	55.4	10.2	53.5



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-09-26

year drilled: 2009

AREA:

BURNT RIVER
BRULE

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,140.51	6,137,973.37	1,141.76

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
296	-88	60.40	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	296.0	-88.40
5.00	298.2	-88.60
6.00	298.5	-88.10
7.00	298.2	-87.90
8.00	296.4	-87.90
9.00	293.6	-87.60
10.00	292.1	-87.90
11.00	291.6	-88.30
12.00	292.1	-88.40
13.00	292.9	-88.50
14.00	293.9	-88.30
15.00	294.9	-88.40
16.00	296.7	-88.50
17.00	299.3	-88.20
18.00	302.0	-88.00
19.00	305.1	-88.00
20.00	308.2	-87.60
21.00	311.6	-87.20
22.00	315.1	-87.20
23.00	318.1	-87.10
24.00	321.8	-86.70
25.00	325.7	-86.10
26.00	329.4	-86.00
27.00	332.9	-85.90
28.00	336.3	-85.30
29.00	339.4	-85.20
30.00	342.6	-84.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.00	3.00		
11.60	12.90	1.30		
40.60	44.50	3.90		
45.85	47.20	1.35		
49.08	49.80	0.72		
49.80	50.38	0.58		
51.40	51.75	0.35		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002



**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-26**

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-26		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	82.48	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.21	DEPARTURE TIME	
LOG BOTTOM	80.52	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WTNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

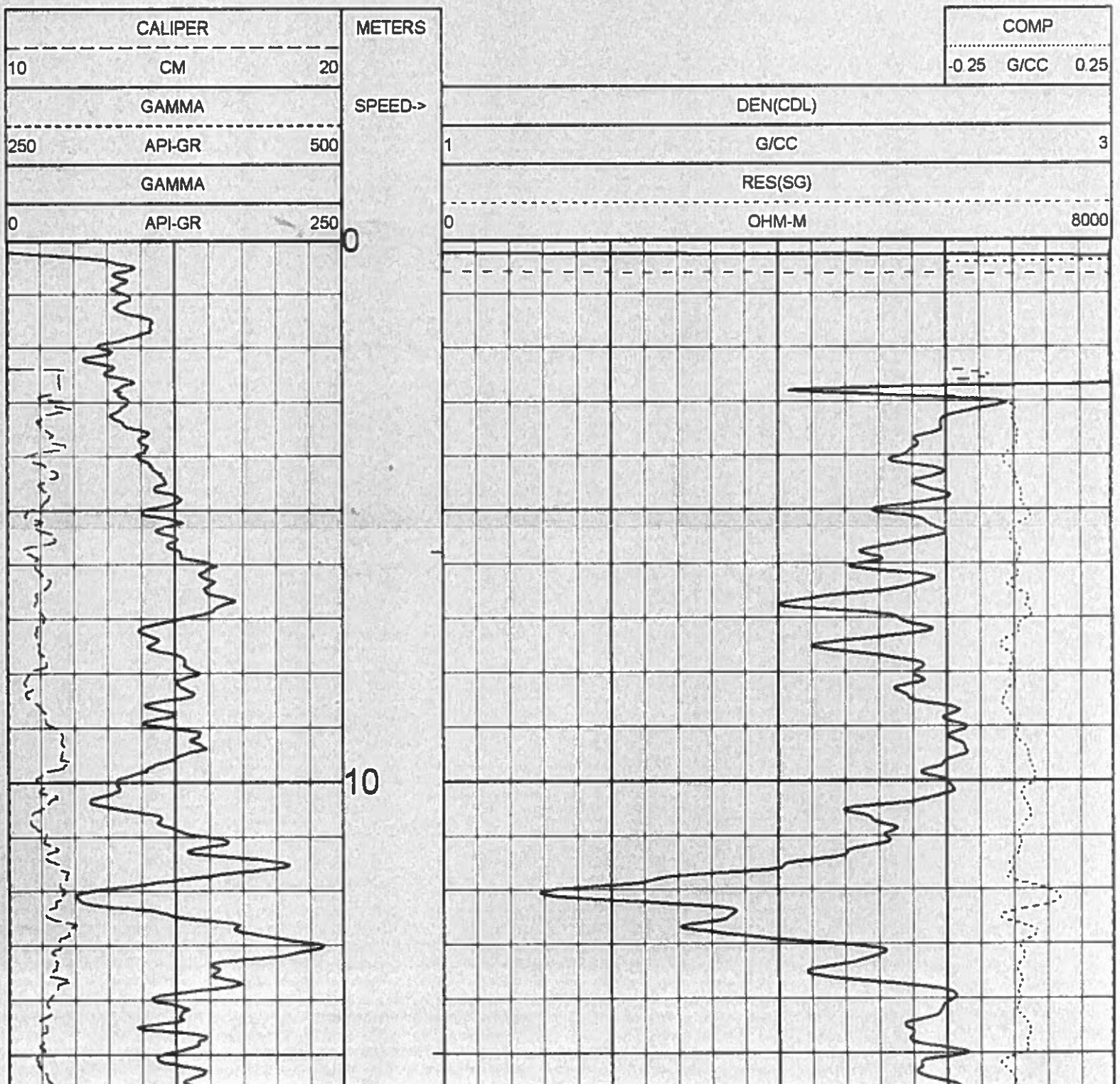
1:100 BULK DENSITY BR-09-26 12/21/09

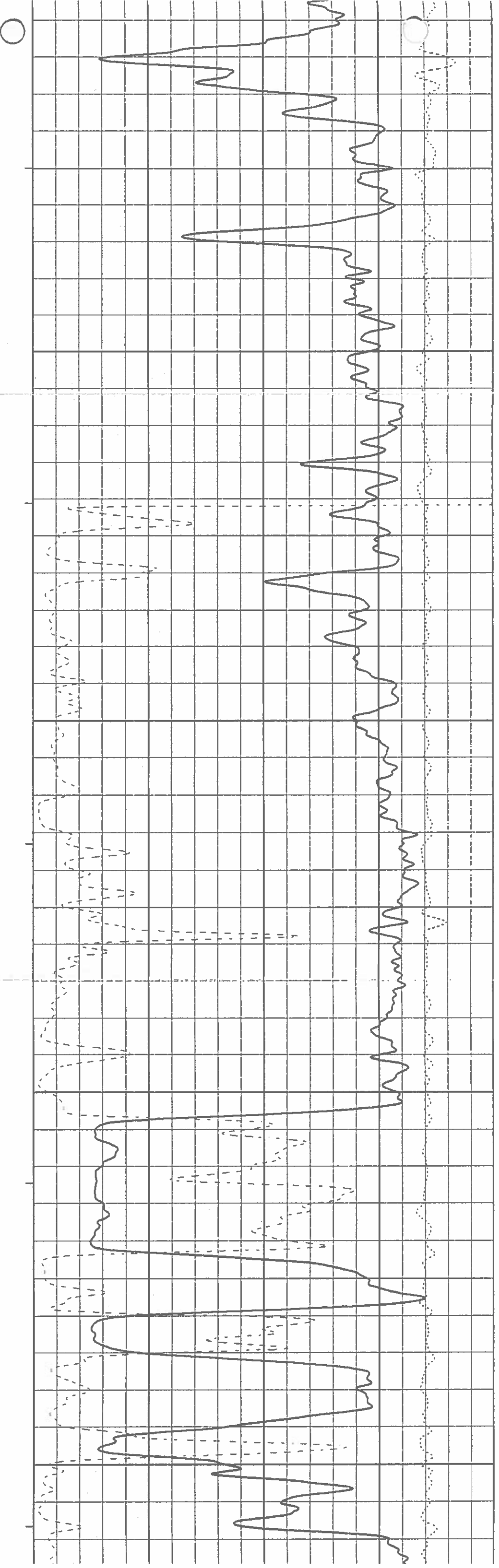
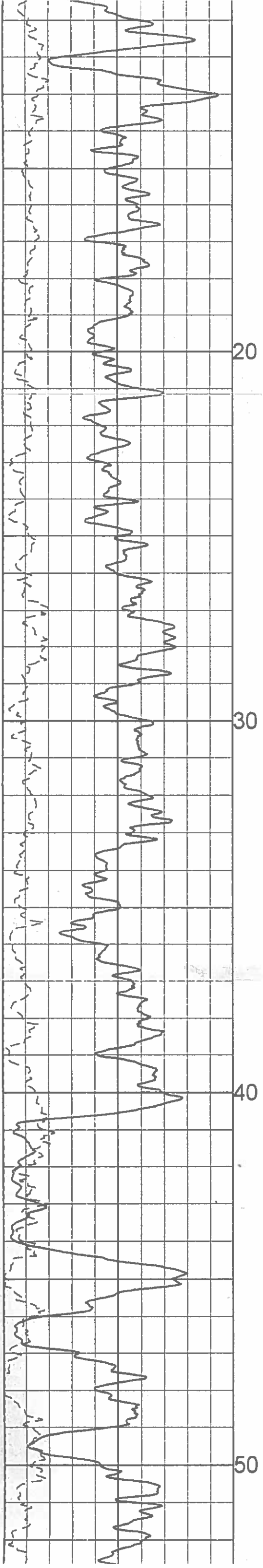
LOG PARAMETERS

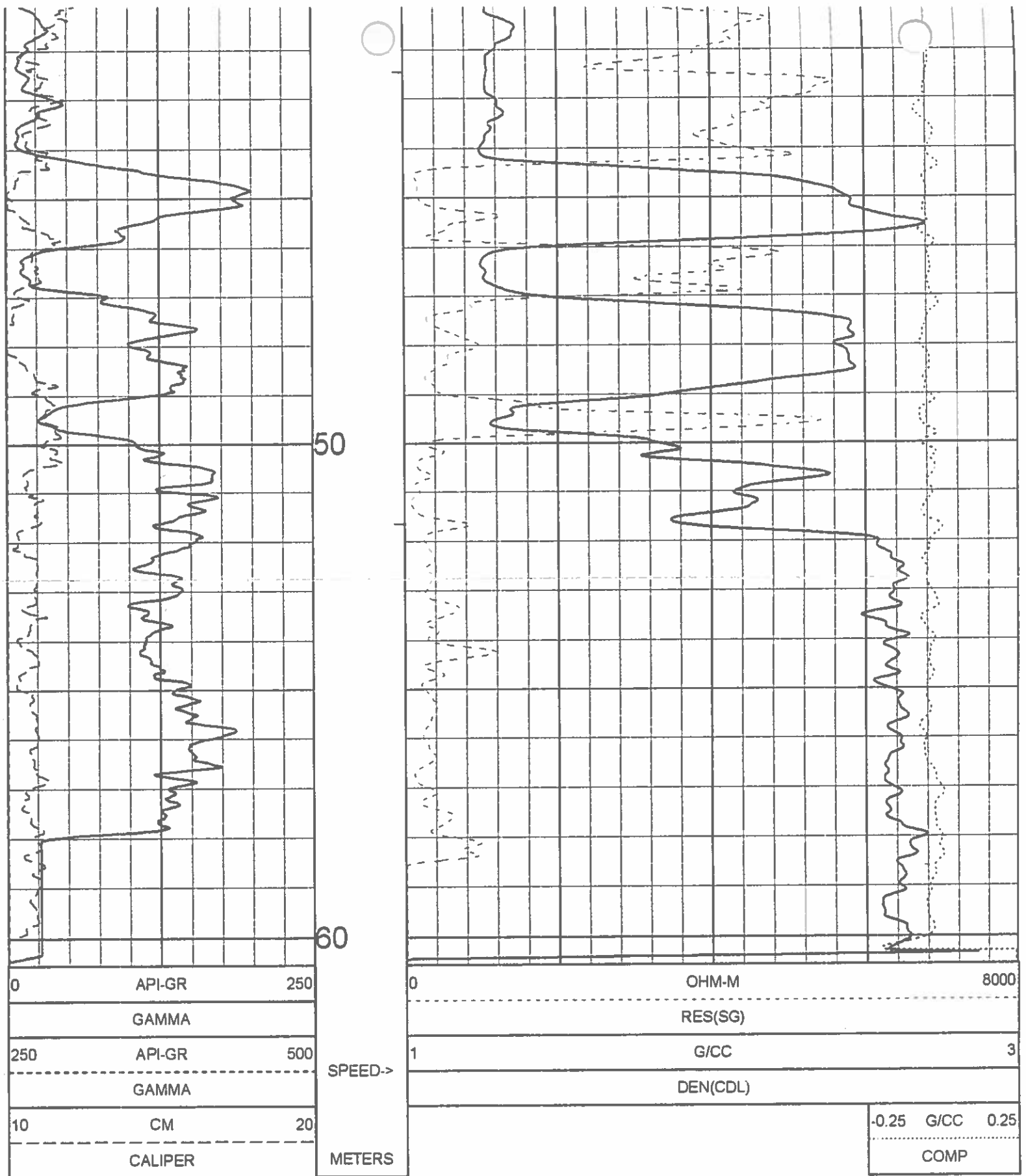
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3 64HR







▲ 1:100 BULK DENSITY BR-09-26 12/21/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008 VERSION = 3.64HR

TOOL CALIBRATION BR-09-26 12/21/09 10:19
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	12:57:13	GAMMA	Default [CPS]	Default [CPS]
	Dec22,09	12:57:13	GAMMA	500.000 [API-GR]	540.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]
4	Nov26,09	16:04:40	DEN(LS)	1.000 [G/CC]	25597.000 [CPS]
	Nov26,09	16:04:40	DEN(LS)	2.320 [G/CC]	2589.000 [CPS]
5	Nov27,09	14:25:02	DEN(SS)	1.000 [G/CC]	55428.000 [CPS]
	Nov27,09	14:25:02	DEN(SS)	2.320 [G/CC]	21443.000 [CPS]
6	Nov20,09	16:59:10	CALIPERL	8.900 [MM]	108573.000 [CPS]
	Nov20,09	16:59:10	CALIPERL	20.100 [MM]	227640.000 [CPS]
7	Jul15,09	09:26:23	CURRENT	30.300 [UA]	5018.010 [CPS]
	Jul15,09	09:26:23	CURRENT	232.200 [UA]	21887.004 [CPS]
8	Nov17,08	13:24:14	F	Default [CPS]	
9	Nov17,08	13:21:11	X	Default [CPS]	

DETAILED DENSITY GAMMA - CALIPER - RES. BR-09-26

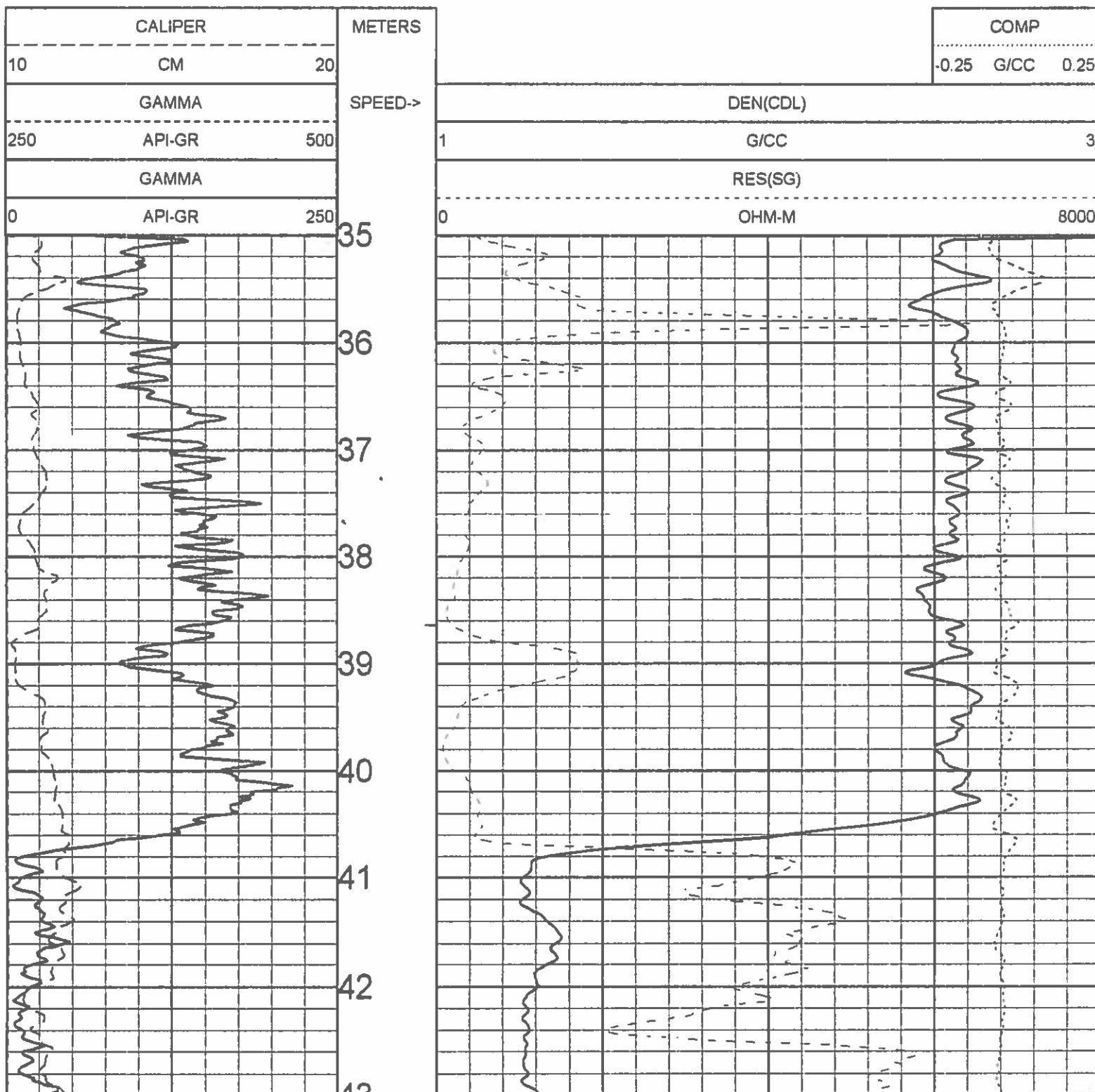
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-26	NEUTRON	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	62.48	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.21	DEPARTURE TIME	
LOG BOTTOM	60.52	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

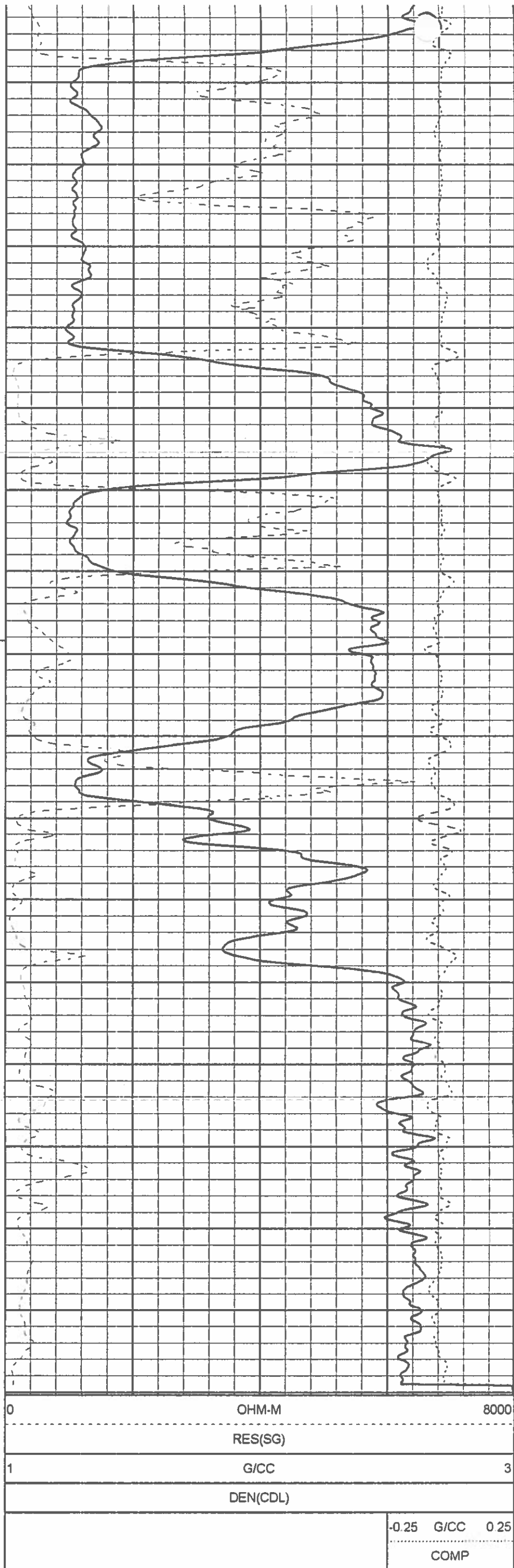
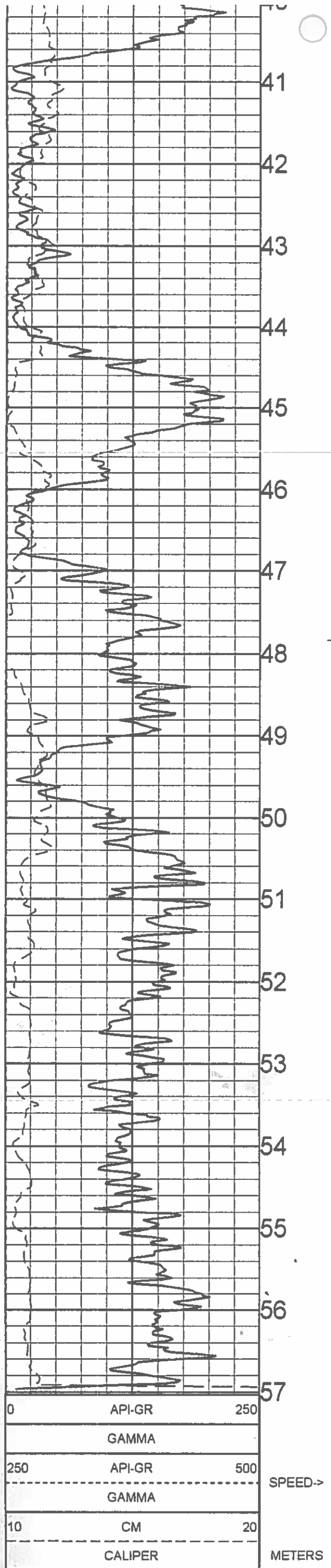
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-26 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008 VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR-09-26 12/21/09



LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

-0.25 G/CC 0.25
COMP



GAMMA - NEUTRON

BR-09-26

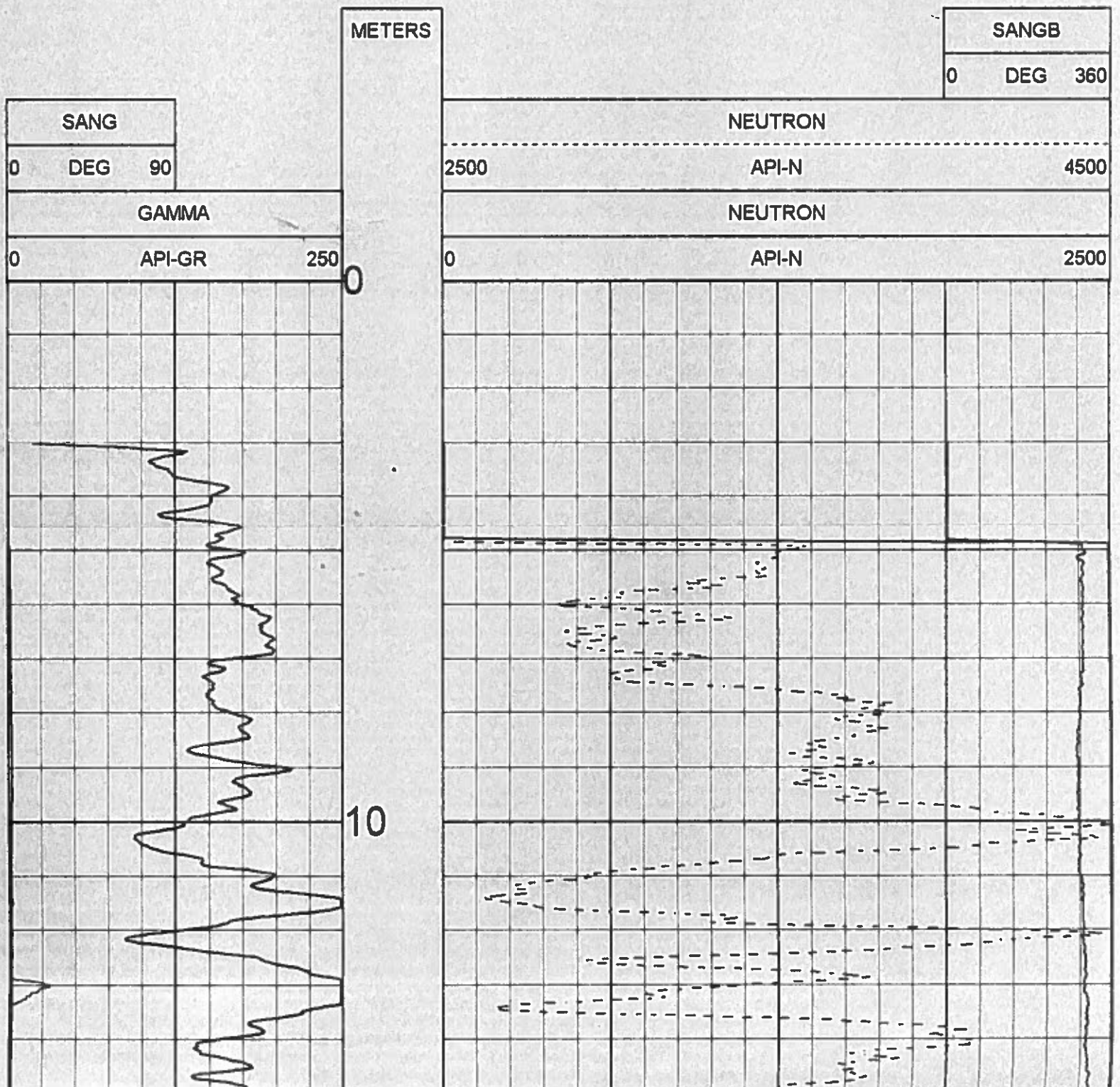
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-26	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/20/09	RIG NUMBER	
DEPTH DRILLER	82.48	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
OG TOP	3.02	DEPARTURE TIME	
LOG BOTTOM	80.58	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

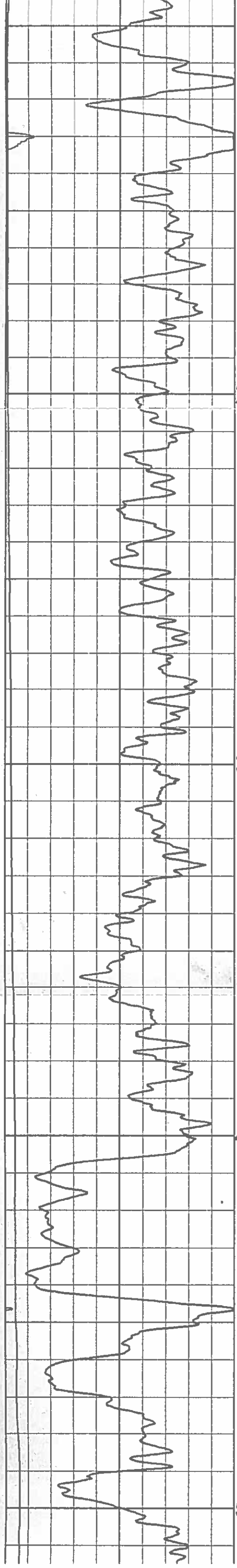
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR-09-26 12/20/09

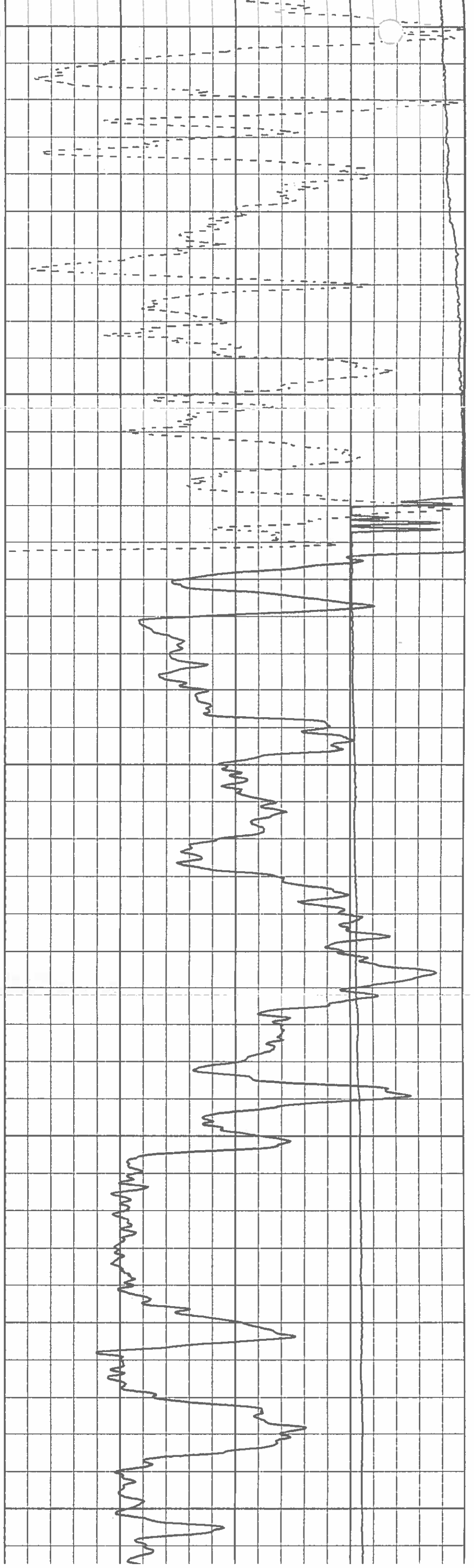
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009 VERSION = 3.64HR

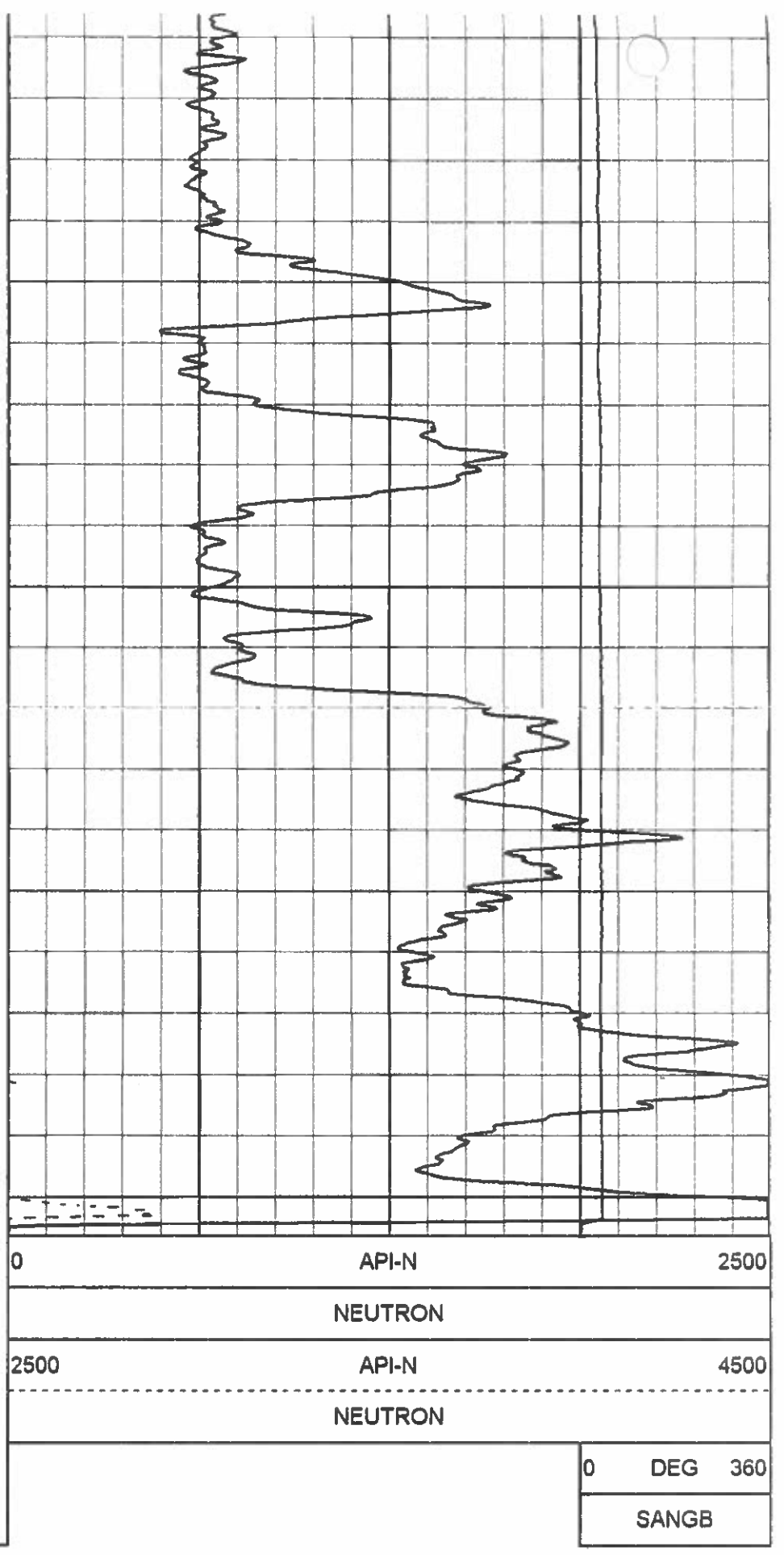
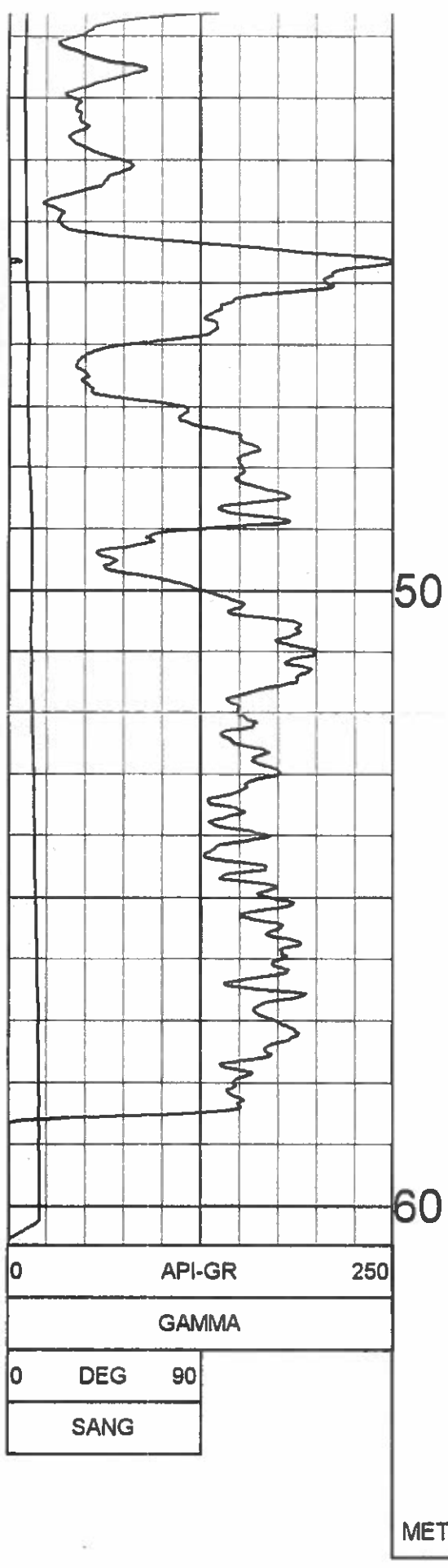




10
20
30
40
50



10
20
30
40
50



▲ 1:100 NEUTRON BR-09-26 12/20/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009		VERSION = 3 64HR

TOOL CALIBRATION BR-09-26 12/20/09 10:02
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

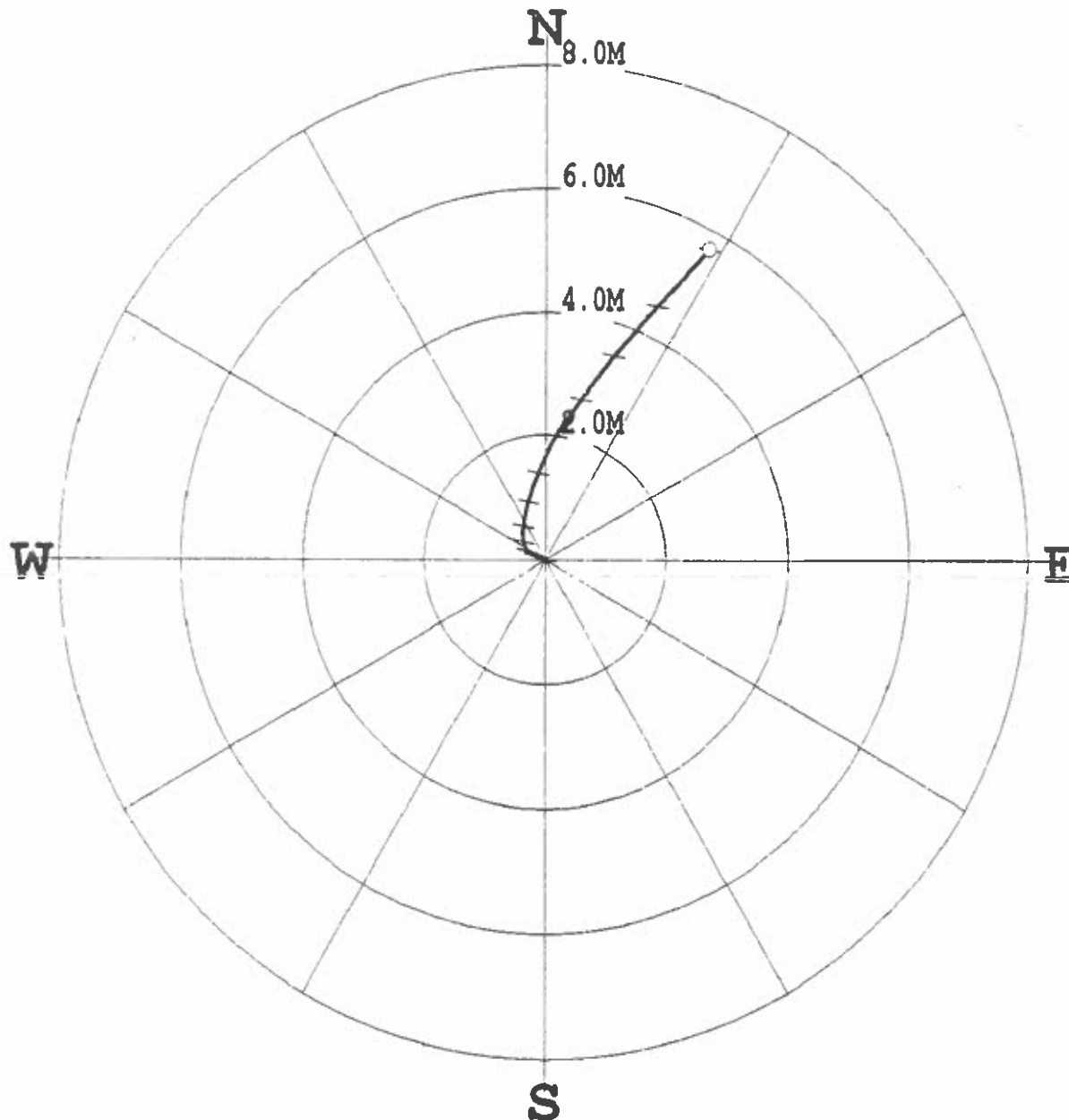
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec11,09	15:10:40	GAMMA	0.000 [API-GR]	3.000 [CPS]
	Dec11,09	15:10:40	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Dec11,09	15:10:33	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Dec11,09	15:10:33	NEUTRON	271.000 [API-N]	172.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16N)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64N)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-26
 DATE OF LOG: 12/20/09
 PROBE: 9057A 4429



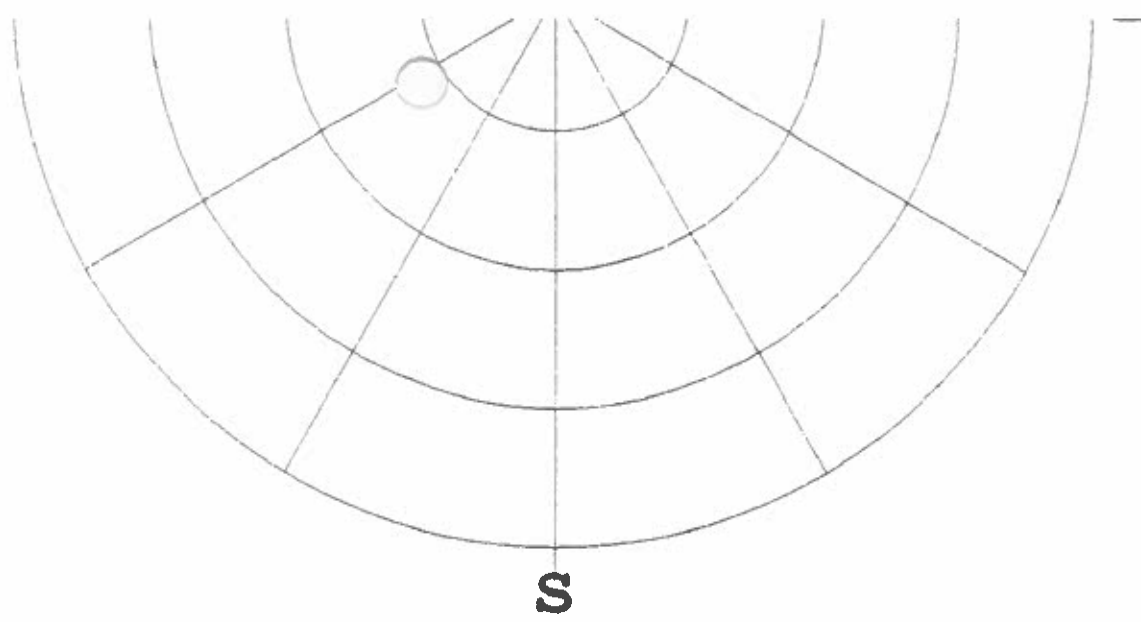
SCALE: 1 M/CM
 TRUE DEPTH: 59.89 M
 AZIMUTH: 28.1
 DISTANCE: 5.7 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-26
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-26_12-20-09_10-02_9057A_.02_3.02_60.58_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.88	4.88	0.00	-0.00	0.0	296.0	1.6	296.0
5.00	5.00	0.00	-0.00	0.0	298.2	1.4	297.6
6.00	6.00	0.02	-0.03	0.0	298.5	1.9	298.3
7.00	7.00	0.03	-0.06	0.1	298.2	2.1	297.1
8.00	8.00	0.05	-0.09	0.1	296.4	2.1	289.3
9.00	9.00	0.06	-0.13	0.1	293.6	2.4	282.5
10.00	10.00	0.07	-0.17	0.2	292.1	2.1	291.5
11.00	11.00	0.08	-0.20	0.2	291.6	1.7	290.8
12.00	12.00	0.09	-0.23	0.2	292.1	1.6	301.1
13.00	13.00	0.11	-0.25	0.3	292.9	1.5	298.8
14.00	13.99	0.12	-0.27	0.3	293.9	1.7	299.1
15.00	14.99	0.14	-0.30	0.3	294.9	1.6	308.8
16.00	15.99	0.16	-0.31	0.4	296.7	1.5	328.4
17.00	16.99	0.18	-0.33	0.4	299.3	1.8	329.0
18.00	17.99	0.21	-0.34	0.4	302.0	2.0	341.1
19.00	18.99	0.25	-0.35	0.4	305.1	2.0	340.6
20.00	19.99	0.28	-0.36	0.5	308.2	2.4	346.9
21.00	20.99	0.33	-0.37	0.5	311.6	2.8	356.1
22.00	21.99	0.38	-0.38	0.5	315.1	2.8	349.4
23.00	22.99	0.42	-0.38	0.6	318.1	2.9	359.4
24.00	23.99	0.48	-0.38	0.6	321.8	3.3	7.5
25.00	24.98	0.54	-0.37	0.7	325.7	3.9	6.6
26.00	25.98	0.61	-0.36	0.7	329.4	4.0	9.6
27.00	26.98	0.68	-0.35	0.8	332.9	4.1	11.2
28.00	27.98	0.76	-0.33	0.8	336.3	4.7	10.6
29.00	28.97	0.84	-0.31	0.9	339.4	4.8	13.7
30.00	29.97	0.92	-0.29	1.0	342.6	5.2	18.7
31.00	30.97	1.01	-0.26	1.0	345.6	5.4	24.6
32.00	31.96	1.10	-0.23	1.1	348.1	5.7	16.6
33.00	32.96	1.20	-0.20	1.2	350.5	5.8	20.1
34.00	33.95	1.29	-0.16	1.3	352.8	6.0	24.0
35.00	34.94	1.39	-0.12	1.4	355.0	6.3	22.3
36.00	35.94	1.50	-0.08	1.5	357.0	6.8	22.0
37.00	36.93	1.61	-0.03	1.6	359.1	7.6	27.5
38.00	37.92	1.73	0.03	1.7	1.0	7.8	24.7



S

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-26
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-26_12-20-09_10-02_9057A_02_3.02_60.58_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.88	4.88	0.00	-0.00	0.0	296.0	1.6	296.0
5.00	5.00	0.00	-0.00	0.0	298.2	1.4	297.6
6.00	6.00	0.02	-0.03	0.0	298.5	1.9	298.3
7.00	7.00	0.03	-0.06	0.1	298.2	2.1	297.1
8.00	8.00	0.05	-0.09	0.1	296.4	2.1	289.3
9.00	9.00	0.06	-0.13	0.1	293.6	2.4	282.5
10.00	10.00	0.07	-0.17	0.2	292.1	2.1	291.5
11.00	11.00	0.08	-0.20	0.2	291.6	1.7	290.9
12.00	12.00	0.09	-0.23	0.2	292.1	1.6	301.1
13.00	13.00	0.11	-0.25	0.3	292.9	1.5	298.8
14.00	13.99	0.12	-0.27	0.3	293.9	1.7	299.1
15.00	14.99	0.14	-0.30	0.3	294.9	1.6	308.8
16.00	15.99	0.16	-0.31	0.4	296.7	1.5	328.4
17.00	16.99	0.18	-0.33	0.4	299.3	1.8	329.0
18.00	17.99	0.21	-0.34	0.4	302.0	2.0	341.1
19.00	18.99	0.25	-0.35	0.4	305.1	2.0	340.6
20.00	19.99	0.28	-0.36	0.5	308.2	2.4	346.9
21.00	20.99	0.33	-0.37	0.5	311.6	2.8	356.1
22.00	21.99	0.38	-0.38	0.5	315.1	2.8	349.4
23.00	22.99	0.42	-0.38	0.6	318.1	2.9	359.4
24.00	23.99	0.48	-0.38	0.6	321.8	3.3	7.5
25.00	24.98	0.54	-0.37	0.7	325.7	3.9	6.6
26.00	25.98	0.61	-0.36	0.7	329.4	4.0	9.6
27.00	26.98	0.68	-0.35	0.8	332.9	4.1	11.2
28.00	27.98	0.76	-0.33	0.8	336.3	4.7	10.6
29.00	28.97	0.84	-0.31	0.9	339.4	4.8	13.7
30.00	29.97	0.92	-0.29	1.0	342.6	5.2	18.7
31.00	30.97	1.01	-0.26	1.0	345.6	5.4	24.6
32.00	31.96	1.10	-0.23	1.1	348.1	5.7	16.6
33.00	32.96	1.20	-0.20	1.2	350.5	5.8	20.1
34.00	33.95	1.29	-0.16	1.3	352.8	6.0	24.0
35.00	34.94	1.39	-0.12	1.4	355.0	6.3	22.3
36.00	35.94	1.50	-0.08	1.5	357.0	6.8	22.0
37.00	36.93	1.61	-0.03	1.6	359.1	7.6	27.5
38.00	37.92	1.73	0.03	1.7	1.0	7.8	24.7
39.00	38.91	1.85	0.09	1.9	2.8	8.1	30.8
40.00	39.90	1.98	0.16	2.0	4.8	8.3	31.0
41.00	40.89	2.10	0.24	2.1	6.5	8.3	31.9
42.00	41.88	2.22	0.32	2.2	8.1	8.2	33.5
43.00	42.87	2.34	0.40	2.4	9.7	8.5	35.9
44.00	43.86	2.46	0.48	2.5	11.1	8.7	37.8
45.00	44.85	2.57	0.57	2.6	12.5	8.5	41.2
46.00	45.84	2.70	0.67	2.8	13.9	9.6	35.5
47.00	46.82	2.84	0.76	2.9	15.0	9.2	37.3
48.00	47.81	2.96	0.86	3.1	16.3	9.9	39.6
49.00	48.79	3.11	0.98	3.3	17.5	11.4	37.9
50.00	49.77	3.27	1.10	3.4	18.6	11.2	38.2
51.00	50.75	3.42	1.22	3.6	19.6	11.1	39.7
52.00	51.73	3.56	1.35	3.8	20.7	11.5	42.8
53.00	52.71	3.72	1.49	4.0	21.8	12.2	41.7
54.00	53.69	3.88	1.63	4.2	22.8	12.6	42.3
55.00	54.66	4.04	1.78	4.4	23.8	13.3	44.8
56.00	55.64	4.21	1.94	4.6	24.7	13.8	42.2
57.00	56.61	4.39	2.10	4.9	25.6	14.3	40.9
58.00	57.57	4.58	2.27	5.1	26.4	14.7	41.6
59.00	58.54	4.77	2.44	5.4	27.1	14.7	43.1
60.00	59.51	4.95	2.62	5.6	27.9	15.0	44.1
60.40	59.89	5.03	2.69	5.7	28.1	15.0	43.9



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-09-30

year drilled: 2009

AREA:

**BURNT RIVER
BRULE**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,041.19	6,137,964.03	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
258	-88	58.92	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	257.9	-88.20
7.00	257.9	-88.20
8.00	257.9	-88.20
9.00	272.6	-88.10
10.00	293.0	-87.90
11.00	308.2	-87.10
12.00	318.8	-87.60
13.00	327.6	-87.40
14.00	334.1	-87.30
15.00	337.6	-87.40
16.00	340.4	-87.20
17.00	343.6	-86.80
18.00	346.0	-87.00
19.00	347.6	-87.00
20.00	349.0	-87.00
21.00	350.4	-86.70
22.00	351.4	-86.70
23.00	352.4	-86.60
24.00	353.6	-86.30
25.00	355.0	-85.90
26.00	356.6	-85.80
27.00	358.3	-85.50
28.00	0.2	-85.50
29.00	2.1	-85.40
30.00	4.0	-84.50
31.00	6.0	-84.20
32.00	7.8	-84.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.00	6.00		
27.20	35.28	8.08		
41.40	42.30	0.90		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-30

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR-09-30		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/08/09	RIG NUMBER	
DEPTH DRILLER	59.43	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.21	DEPARTURE TIME	
LOG BOTTOM	58.82	CIRC STOPPED	N/A
CASING LOGGER	6.096		
CASING DRILLER	6.096		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

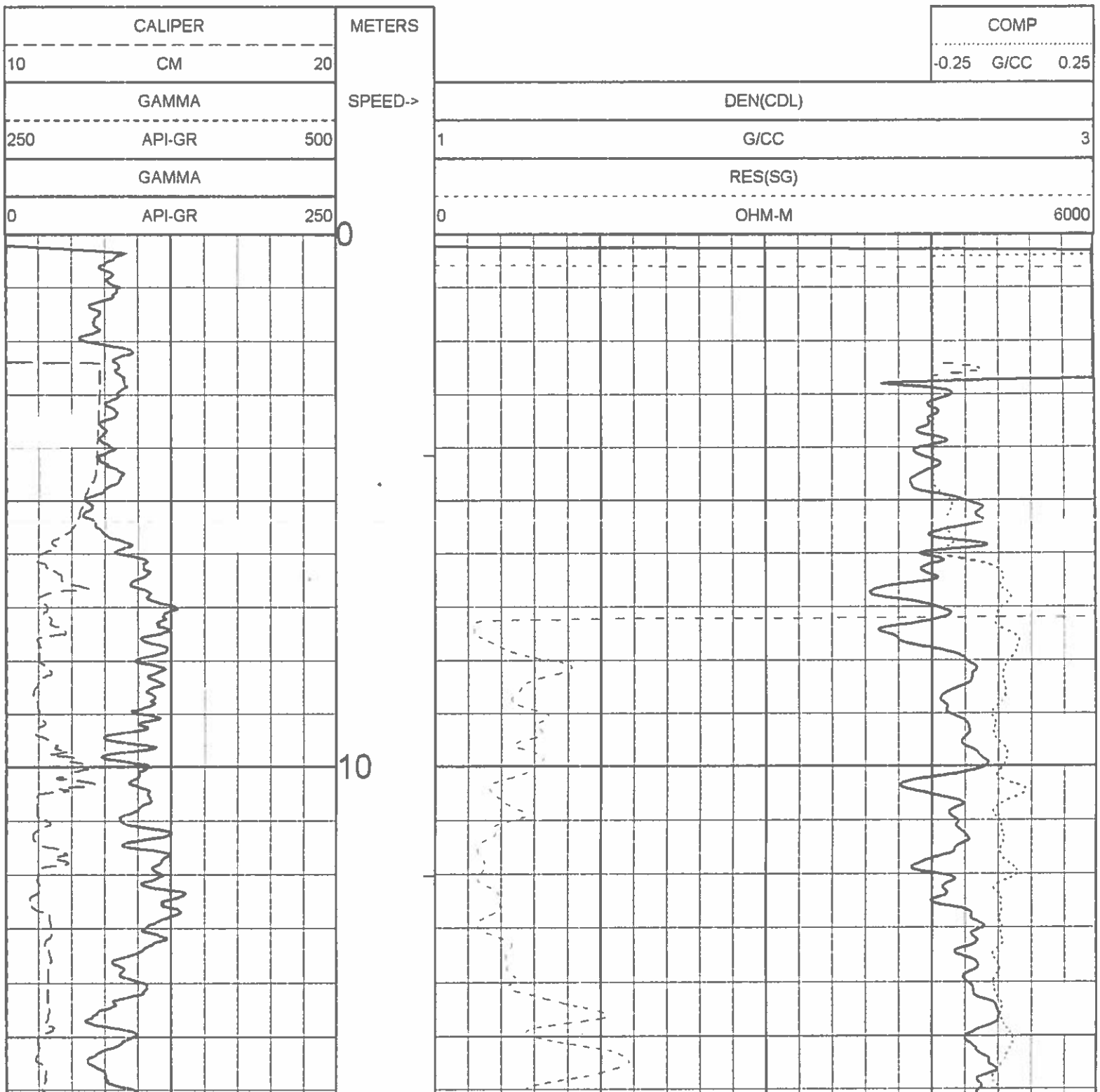
1:100 BULK DENSITY BR-09-30 12/08/09

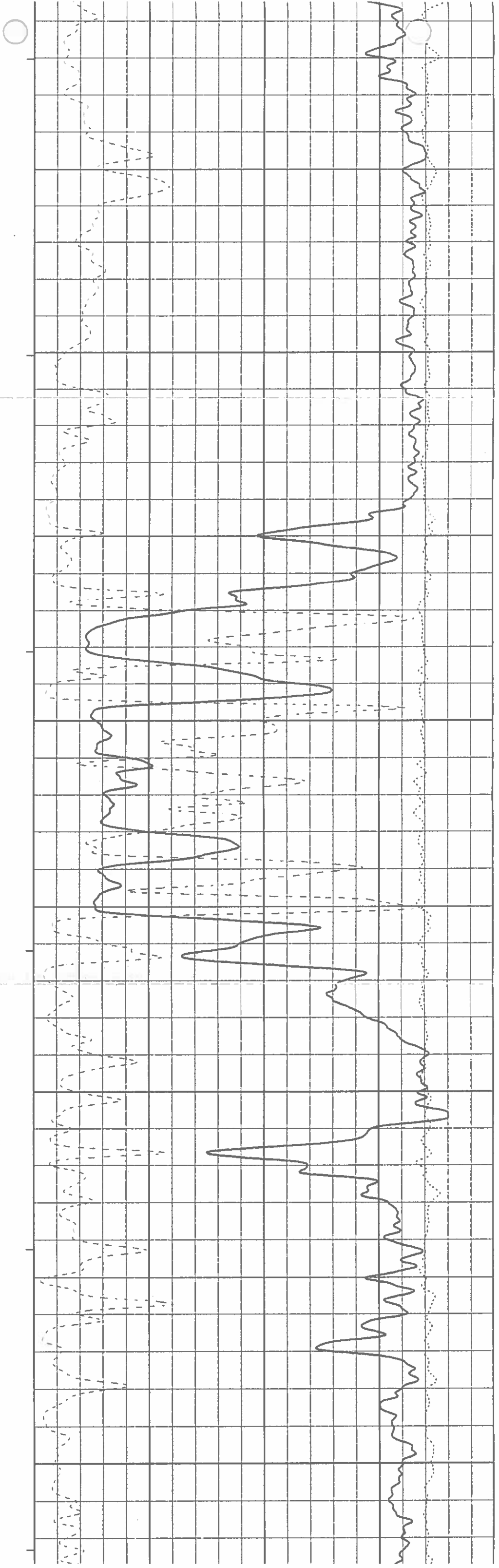
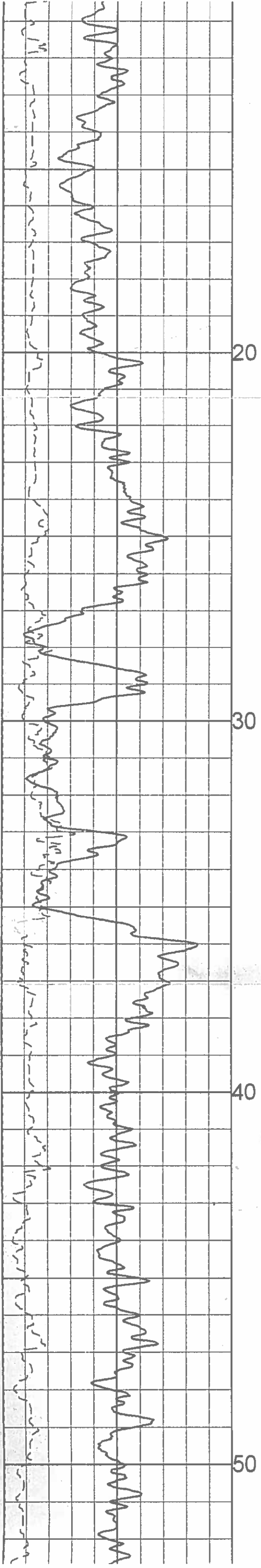
LOG PARAMETERS

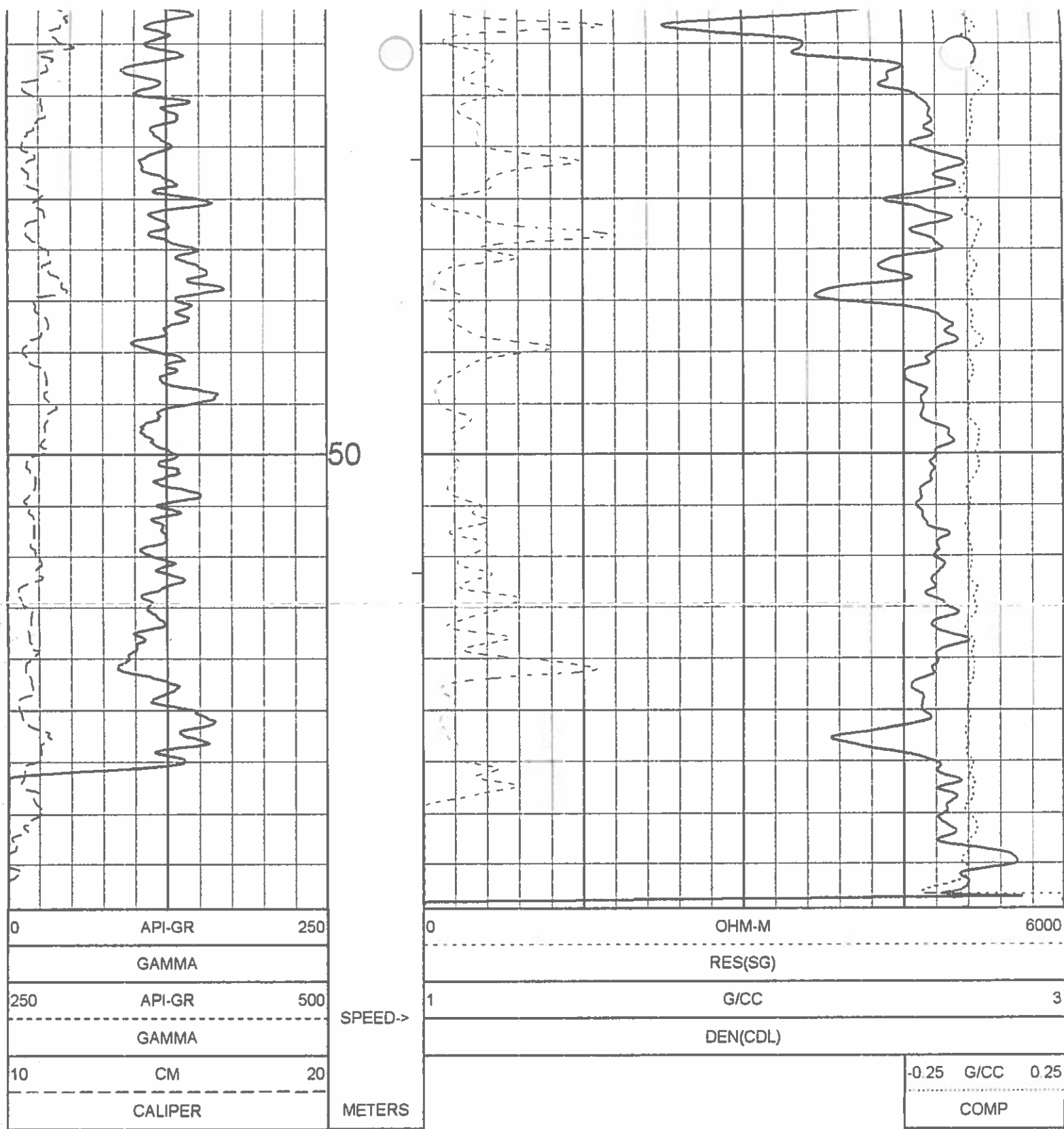
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR







▲ 1:100 BULK DENSITY BR-09-30 12/08/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-30 12/08/09 15:33
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec02,09	12:30:16	GAMMA	0.000 [API-GR]	20.000 [CPS]
	Dec02,09	12:30:16	GAMMA	250.000 [API-GR]	380.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]
4	Nov26,09	16:04:40	DEN(LS)	1.000 [G/CC]	25597.000 [CPS]
	Nov26,09	16:04:40	DEN(LS)	2.320 [G/CC]	2589.000 [CPS]
5	Nov27,09	14:25:02	DEN(SS)	1.000 [G/CC]	55428.000 [CPS]
	Nov27,09	14:25:02	DEN(SS)	2.320 [G/CC]	21443.000 [CPS]
6	Nov20,09	16:59:10	CALIPERL	8.900 [MM]	108573.000 [CPS]
	Nov20,09	16:59:10	CALIPERL	20.100 [MM]	227640.000 [CPS]
7	Jul15,09	09:26:23	CURRENT	30.300 [UA]	5018.010 [CPS]
	Jul15,09	09:26:23	CURRENT	232.200 [UA]	21887.004 [CPS]
8	Nov17,08	13:24:14	F	Default [CPS]	
9	Nov17,08	13:21:11	X	Default [CPS]	



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-30**

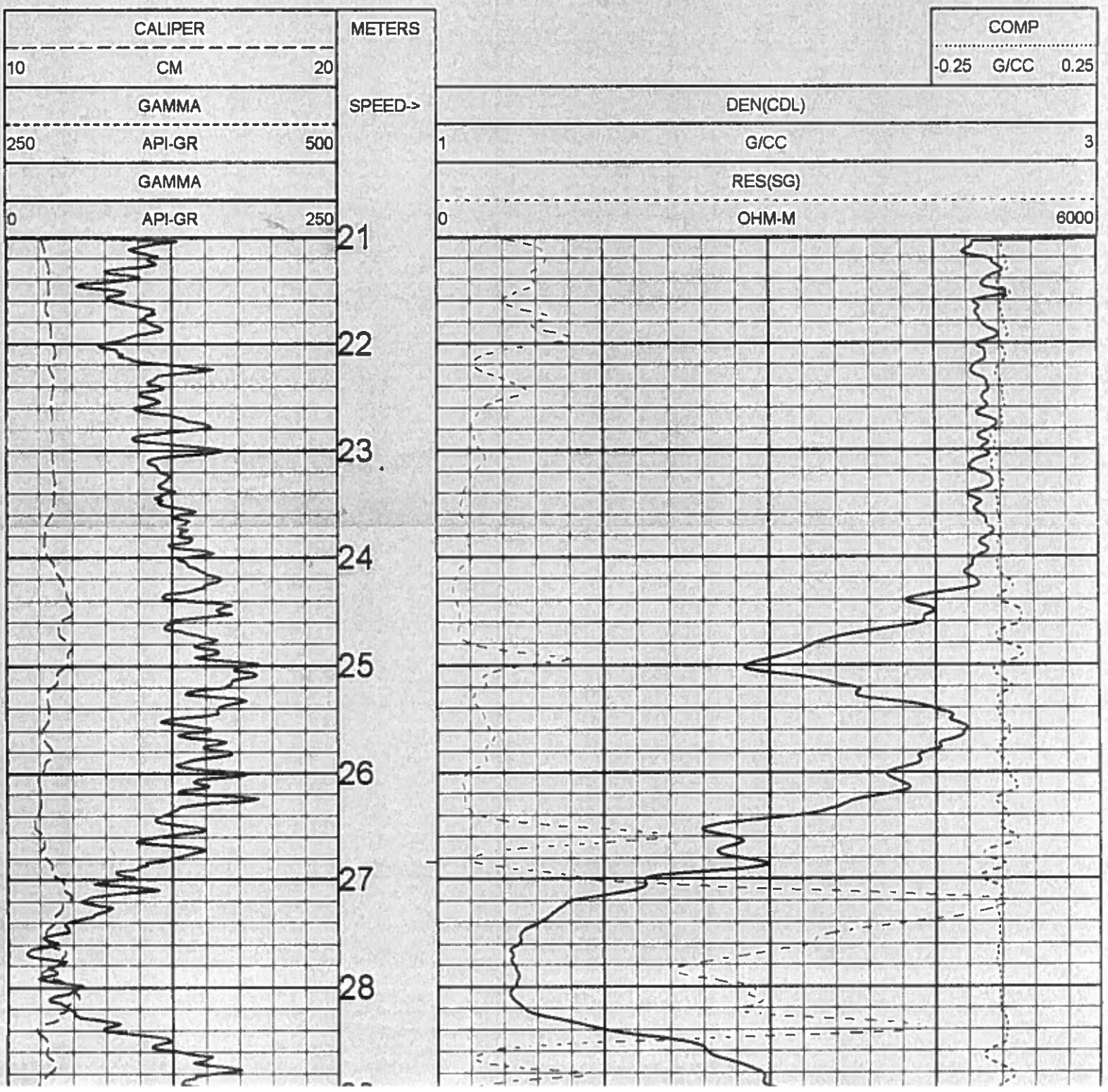
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES: NEUTRON
WELL	BR-09-30	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	12/08/09	RIG NUMBER
DEPTH DRILLER	59.43	LOGGER TD
BIT SIZE	11.43	ARRIVAL TIME
OG TOP	0.21	DEPARTURE TIME
LOG BOTTOM	58.82	CIRC STOPPED
CASING LOGGER	8.098	
CASING DRILLER	8.098	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WITNESSED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2		

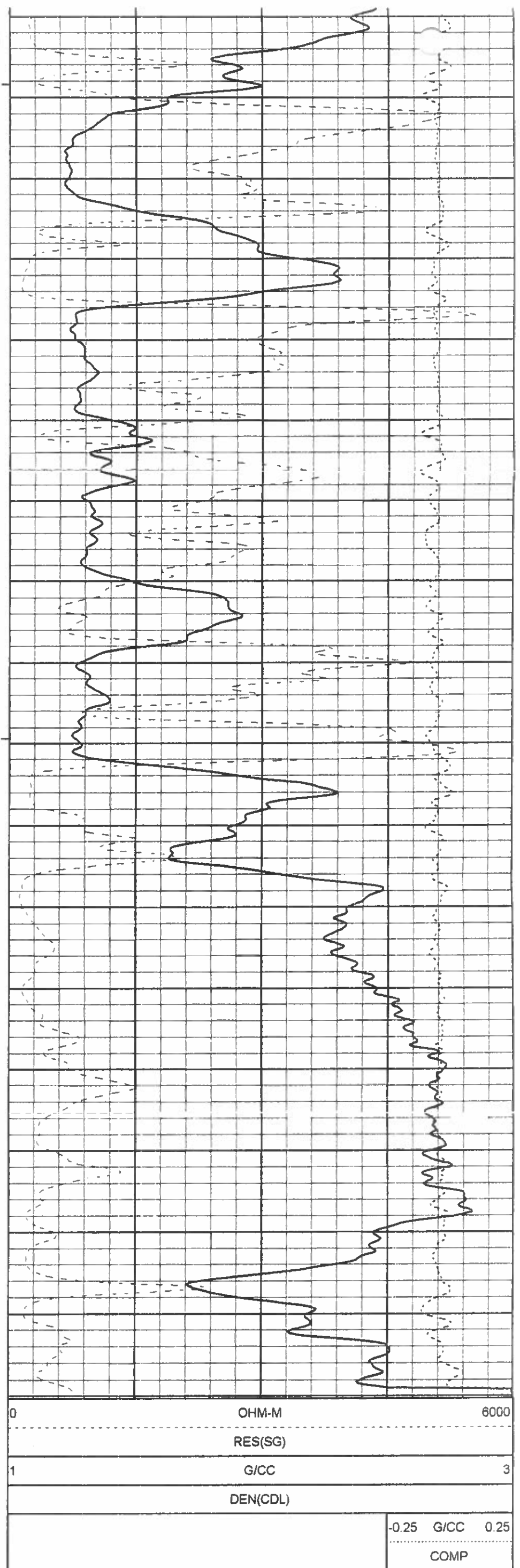
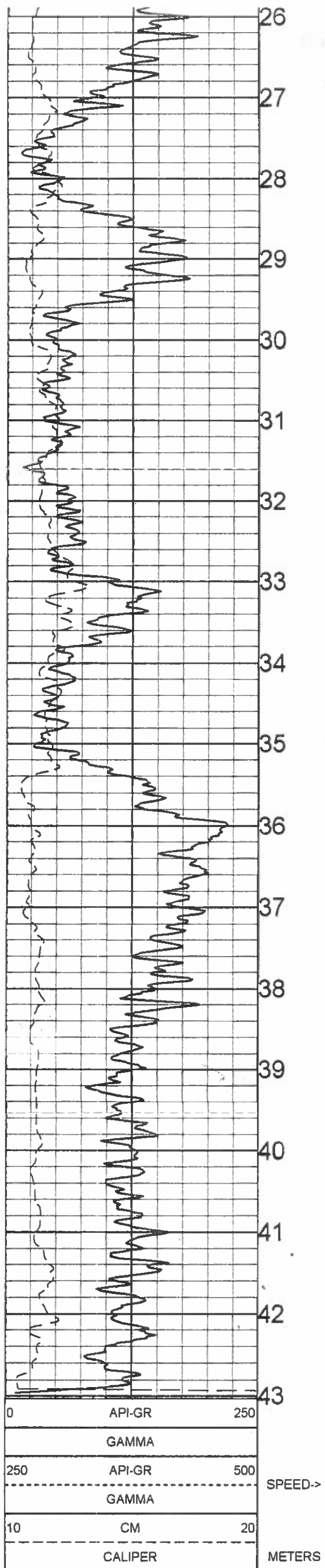
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-30 12/08/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.84HR





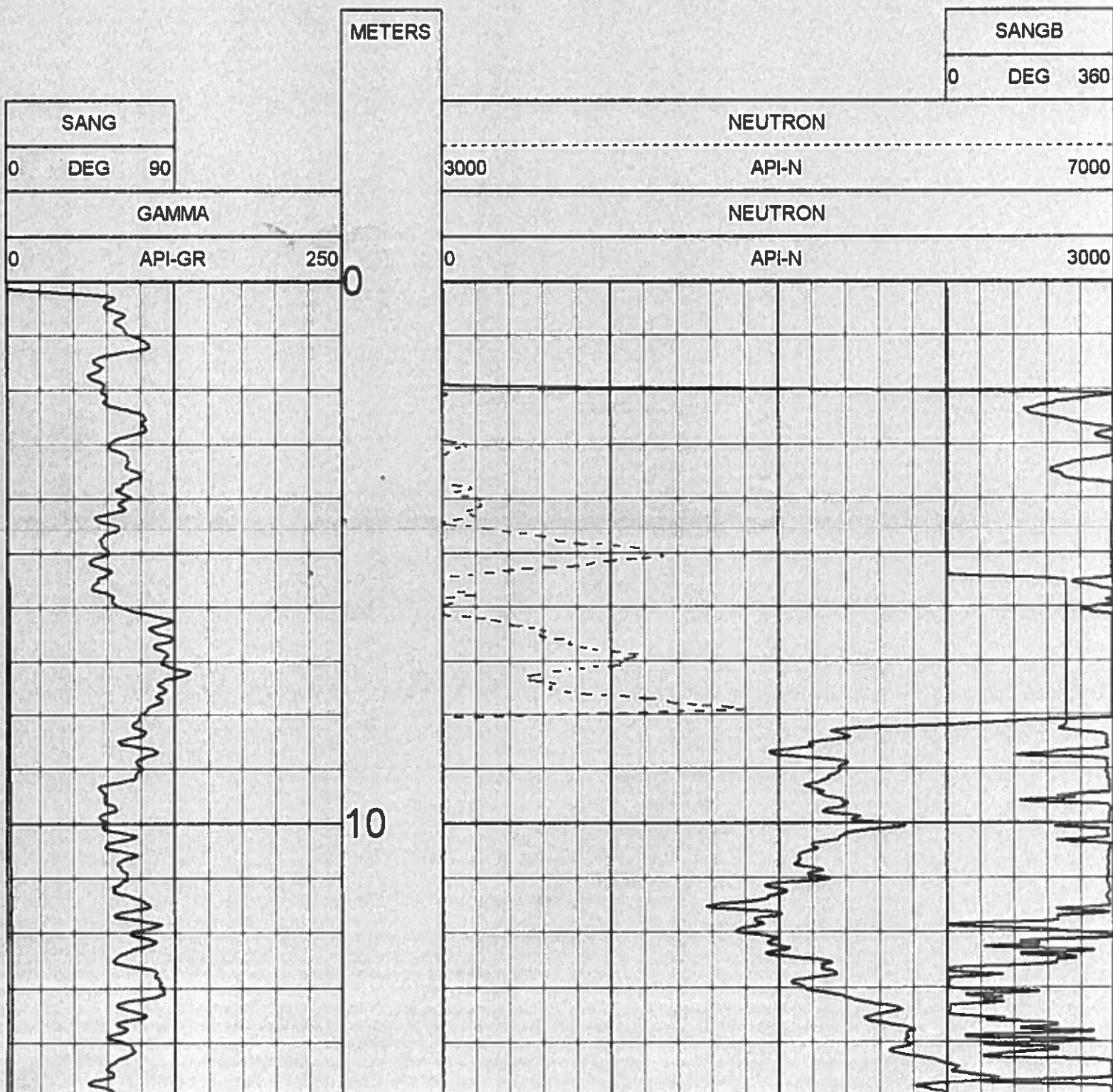
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR-09-30	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/08/09	RIG NUMBER	
DEPTH DRILLER	59.43	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
OG TOP	0.13	DEPARTURE TIME	
LOG BOTTOM	58.92	CIRC STOPPED	N/A
CASING LOGGER	8.096		
CASING DRILLER	8.096		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	J. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

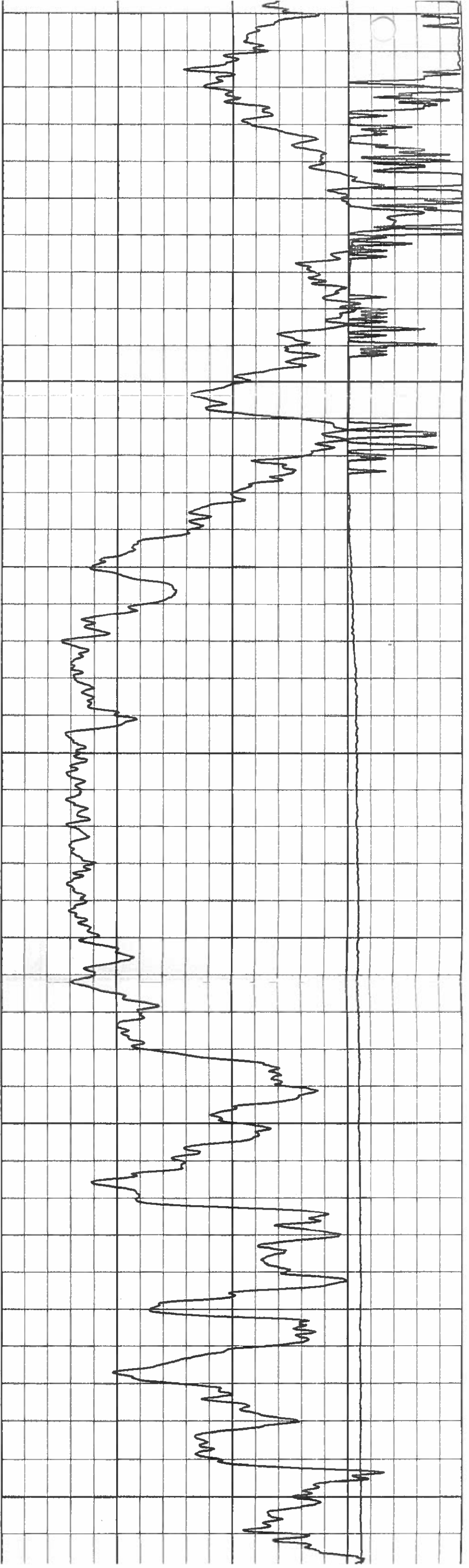
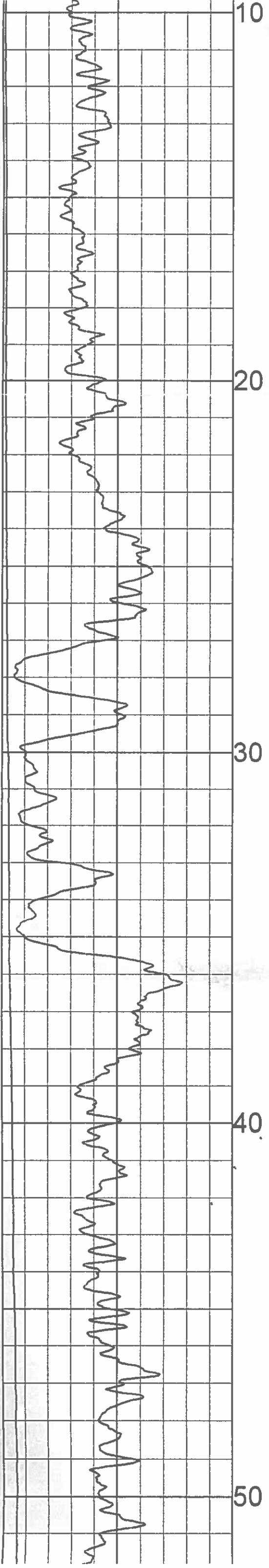
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

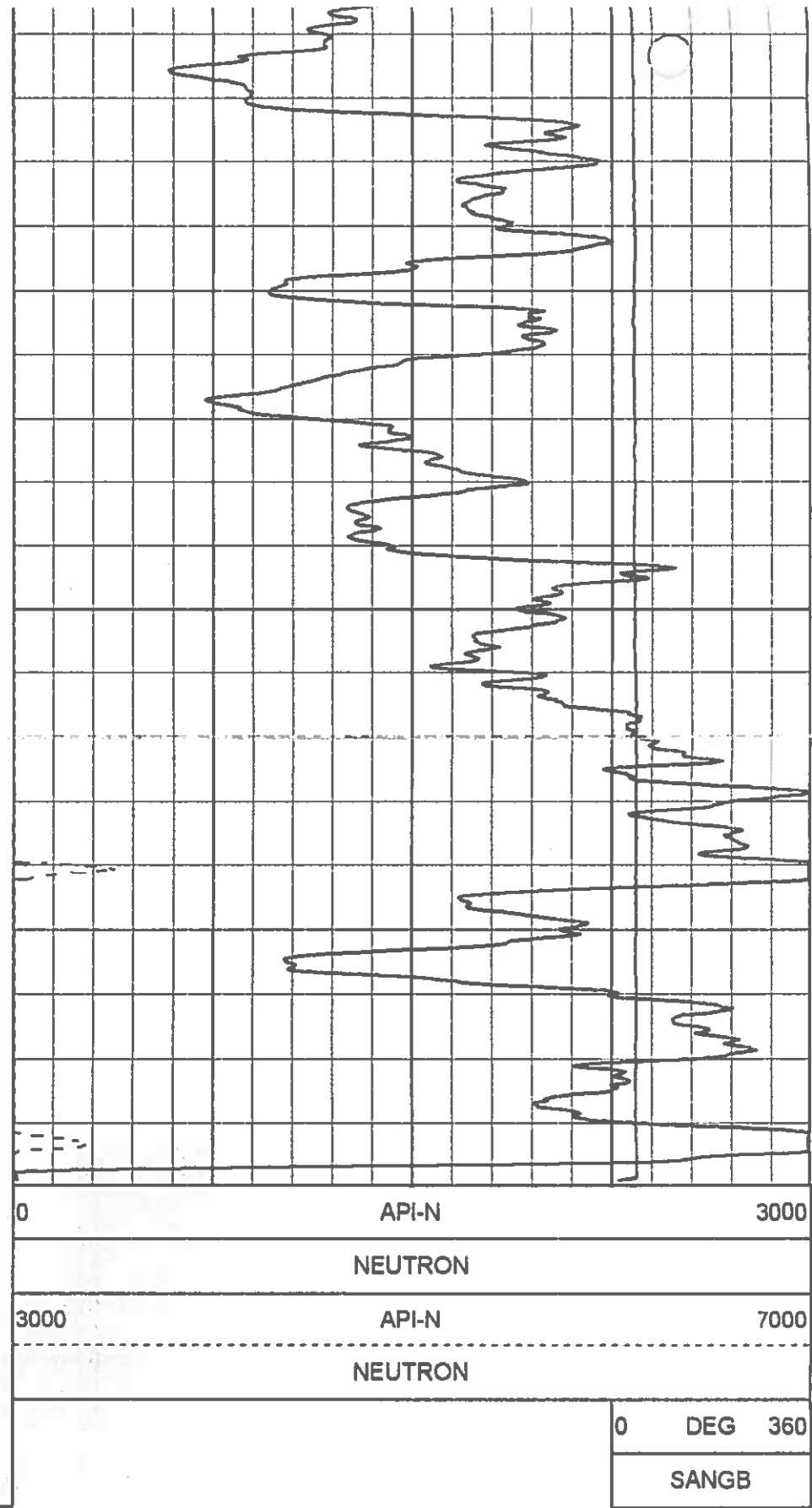
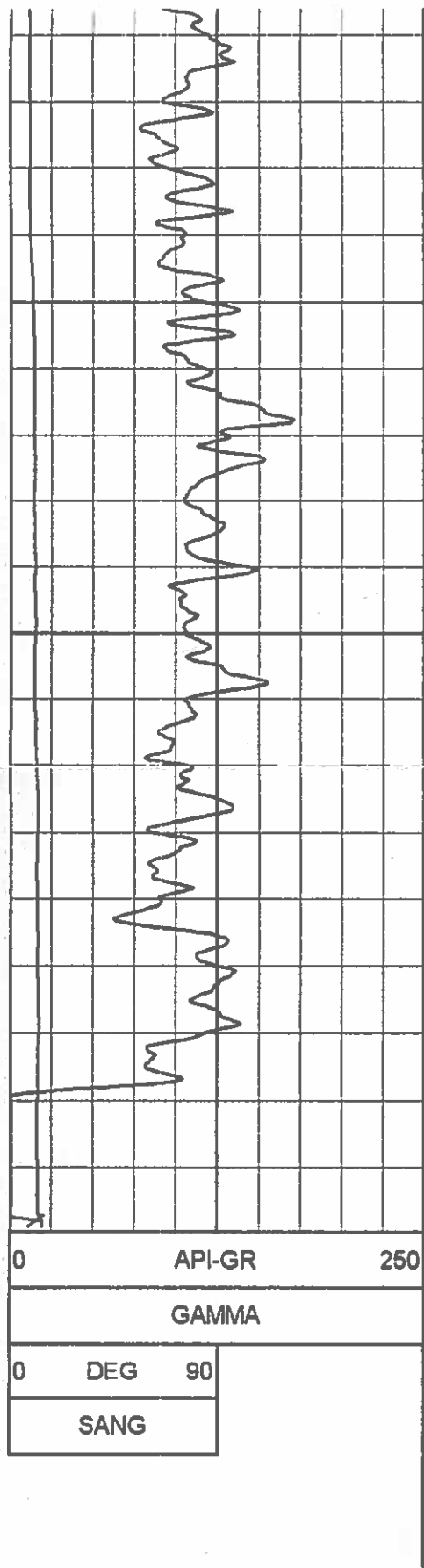
1:100 NEUTRON BR-09-30 12/08/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON:0 03/08/2008 VERSION = 3.64HR







▲ 1:100 NEUTRON BR-09-30 12/08/09 ▲

LOG PARAMETERS

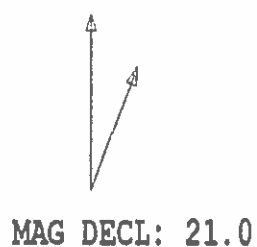
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 03/08/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-30 12/08/09 15:05
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4400

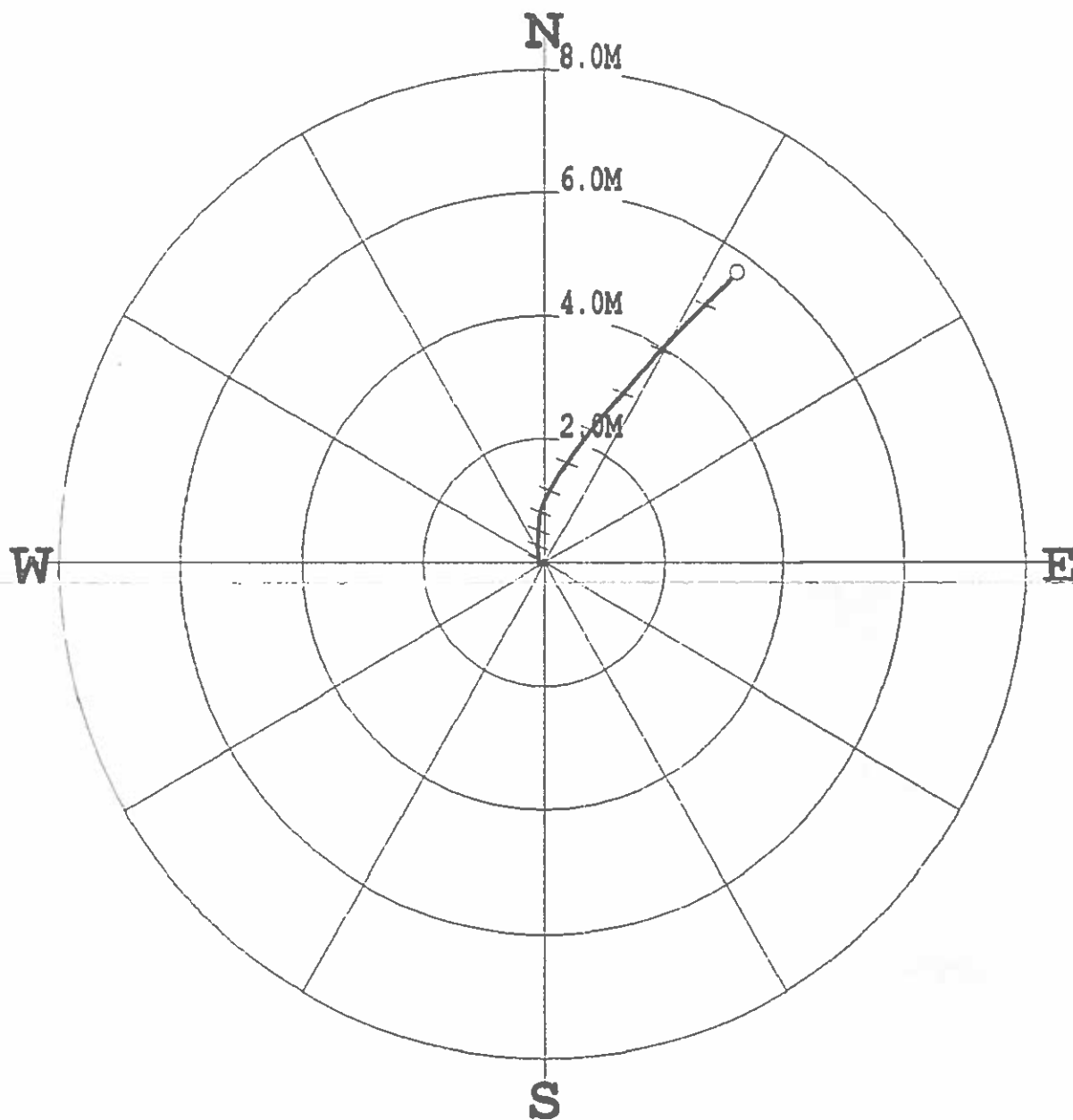
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,09	11:53:17	GAMMA	Default [CPS]	Default [CPS]
	Oct06,09	11:53:17	GAMMA	300.000 [API-GR]	320.000 [CPS]
2	Nov23,09	12:35:15	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Nov23,09	12:35:15	NEUTRC	271.000 [API-N]	103.000 [CPS]
3	Apr30,08	14:00:26	SP	0.000 [MV]	325214.000 [CPS]
	Apr30,08	14:00:26	SP	97.000 [MV]	278080.000 [CPS]
4	Jul14,09	13:15:50	RES(16N)	0.000 [OHM-M]	5177.000 [CPS]
	Jul14,09	13:15:50	RES(16)	1995.000 [OHM-M]	422358.000 [CPS]
5	Jul14,09	13:15:56	RES(64N)	0.000 [OHM-M]	4854.000 [CPS]
	Jul14,09	13:15:56	RES(64)	1991.000 [OHM-M]	418079.000 [CPS]
6	Jun14,07	07:14:28	TEMP	63.400 [DEG F]	353180.000 [CPS]
	Jun14,07	07:14:28	TEMP	98.300 [DEG F]	387606.000 [CPS]
7	Jul14,09	13:16:02	RES	0.000 [OHM]	4821.000 [CPS]
	Jul14,09	13:16:02	RES	989.000 [OHM]	161008.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-30
 DATE OF LOG: 12/08/09
 PROBE: 9057A 4400



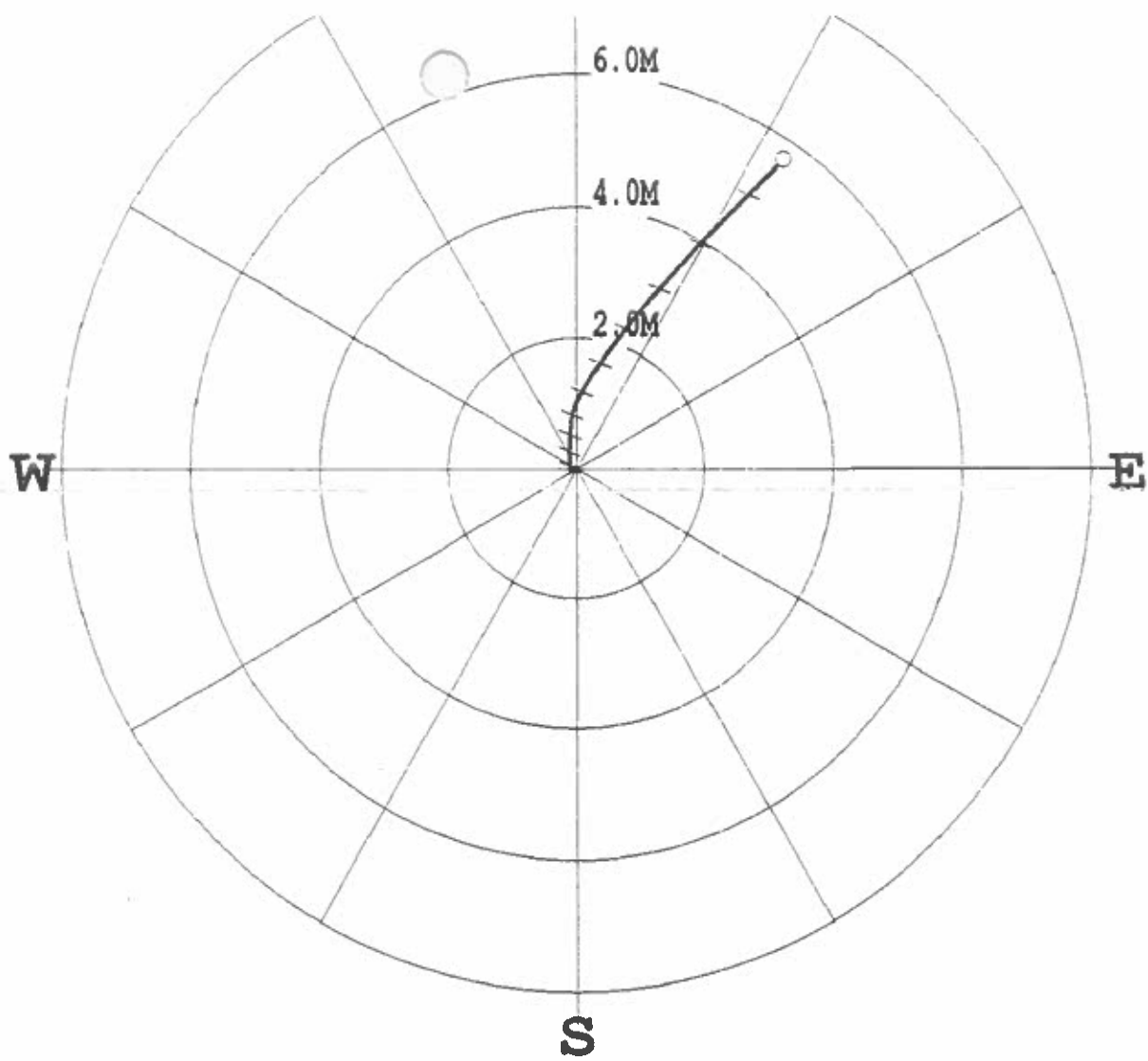
SCALE: 1 M/CM
 TRUE DEPTH: 58.46 M
 AZIMUTH: 34.4
 DISTANCE: 5.7 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-30
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/08/09
 DATA FROM : N/A PROBE : 9057A , 4400
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-30_12-08-09_15-05_9057A_.02_0.13_58.92_DEVI.log


CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
6.00	5.99	-0.00	-0.02	0.0	257.9	1.8	257.9
7.00	6.99	-0.01	-0.05	0.0	257.9	1.8	257.9
8.00	7.99	-0.02	-0.08	0.1	257.9	1.8	257.9
9.00	8.99	0.00	-0.09	0.1	272.6	1.9	353.8
10.00	9.99	0.04	-0.10	0.1	293.0	2.1	341.0
11.00	10.99	0.08	-0.11	0.1	308.2	2.9	352.8
12.00	11.99	0.13	-0.11	0.2	318.8	2.4	358.8
13.00	12.98	0.17	-0.11	0.2	327.6	2.6	0.9
14.00	13.98	0.22	-0.11	0.2	334.1	2.7	356.2
15.00	14.98	0.27	-0.11	0.3	337.6	2.6	351.1
16.00	15.98	0.31	-0.11	0.3	340.4	2.8	2.6
17.00	16.98	0.37	-0.11	0.4	343.6	3.2	4.1
18.00	17.98	0.42	-0.11	0.4	346.0	3.0	1.8
19.00	18.98	0.47	-0.10	0.5	347.6	3.0	1.2
20.00	19.98	0.52	-0.10	0.5	349.0	3.0	4.4
21.00	20.97	0.58	-0.10	0.6	350.4	3.3	5.4
22.00	21.97	0.63	-0.10	0.6	351.4	3.3	1.5
23.00	22.97	0.69	-0.09	0.7	352.4	3.4	3.4
24.00	23.97	0.75	-0.08	0.8	353.6	3.7	7.7
25.00	24.97	0.82	-0.07	0.8	355.0	4.1	13.3
26.00	25.96	0.89	-0.05	0.9	356.6	4.2	17.0
27.00	26.96	0.96	-0.03	1.0	358.3	4.5	20.6
28.00	27.96	1.03	0.00	1.0	0.2	4.5	25.9
29.00	28.96	1.10	0.04	1.1	2.1	4.6	27.8
30.00	29.95	1.17	0.08	1.2	4.0	5.5	25.0
31.00	30.95	1.25	0.13	1.3	6.0	5.8	29.6
32.00	31.94	1.34	0.18	1.4	7.8	5.4	27.9
33.00	32.94	1.43	0.24	1.5	9.4	6.0	28.7
34.00	33.93	1.52	0.30	1.5	11.1	6.6	35.2
35.00	34.92	1.61	0.36	1.7	12.7	6.4	34.7
36.00	35.92	1.70	0.43	1.8	14.2	6.9	35.1
37.00	36.91	1.80	0.50	1.9	15.6	7.2	39.3
38.00	37.90	1.91	0.58	2.0	17.0	7.8	37.8
39.00	38.89	2.02	0.67	2.1	18.4	8.3	36.5
40.00	39.88	2.13	0.76	2.3	19.6	8.3	36.5
41.00	40.87	2.25	0.85	2.4	20.7	8.7	38.0



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-30
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/08/09
 DATA FROM : N/A PROBE : 9057A , 4400
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-30_12-08-09_15-05_9057A_.02_0.13_58.92_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
6.00	5.99	-0.00	-0.02	0.0	257.9	1.8	257.9
7.00	6.99	-0.01	-0.05	0.0	257.9	1.8	257.9
8.00	7.99	-0.02	-0.08	0.1	257.9	1.8	257.9
9.00	8.99	0.00	-0.09	0.1	272.6	1.9	353.8
10.00	9.99	0.04	-0.10	0.1	293.0	2.1	341.0
11.00	10.99	0.08	-0.11	0.1	308.2	2.9	352.8
12.00	11.99	0.13	-0.11	0.2	318.8	2.4	358.8
13.00	12.98	0.17	-0.11	0.2	327.6	2.6	0.9
14.00	13.98	0.22	-0.11	0.2	334.1	2.7	356.2
15.00	14.98	0.27	-0.11	0.3	337.6	2.6	351.1
16.00	15.98	0.31	-0.11	0.3	340.4	2.8	2.6
17.00	16.98	0.37	-0.11	0.4	343.6	3.2	4.1
18.00	17.98	0.42	-0.11	0.4	346.0	3.0	1.8
19.00	18.98	0.47	-0.10	0.5	347.6	3.0	1.2
20.00	19.98	0.52	-0.10	0.5	349.0	3.0	4.4
21.00	20.97	0.58	-0.10	0.6	350.4	3.3	5.4
22.00	21.97	0.63	-0.10	0.6	351.4	3.3	1.5
23.00	22.97	0.69	-0.09	0.7	352.4	3.4	3.4
24.00	23.97	0.75	-0.08	0.8	353.6	3.7	7.7
25.00	24.97	0.82	-0.07	0.8	355.0	4.1	13.3
26.00	25.96	0.89	-0.05	0.9	356.6	4.2	17.0
27.00	26.96	0.96	-0.03	1.0	358.3	4.5	20.6
28.00	27.96	1.03	0.00	1.0	0.2	4.5	25.9
29.00	28.96	1.10	0.04	1.1	2.1	4.6	27.8
30.00	29.95	1.17	0.08	1.2	4.0	5.5	25.0
31.00	30.95	1.25	0.13	1.3	6.0	5.8	29.6
32.00	31.94	1.34	0.18	1.4	7.8	5.4	27.9
33.00	32.94	1.43	0.24	1.5	9.4	6.0	28.7
34.00	33.93	1.52	0.30	1.5	11.1	6.6	35.2
35.00	34.92	1.61	0.36	1.7	12.7	6.4	34.7
36.00	35.92	1.70	0.43	1.8	14.2	6.9	35.1
37.00	36.91	1.80	0.50	1.9	15.6	7.2	39.3
38.00	37.90	1.91	0.58	2.0	17.0	7.8	37.8
39.00	38.89	2.02	0.67	2.1	18.4	8.3	36.5
40.00	39.88	2.13	0.76	2.3	19.6	8.3	36.5
41.00	40.87	2.25	0.85	2.4	20.7	8.7	38.0
42.00	41.86	2.36	0.95	2.5	21.8	9.1	41.2
43.00	42.85	2.48	1.05	2.7	22.9	8.9	40.8
44.00	43.83	2.60	1.15	2.8	24.0	8.7	41.2
45.00	44.82	2.72	1.27	3.0	25.0	10.2	40.9
46.00	45.80	2.85	1.39	3.2	25.9	10.8	42.0
47.00	46.79	2.99	1.51	3.4	26.8	10.5	42.5
48.00	47.77	3.13	1.64	3.5	27.6	10.4	43.5
49.00	48.75	3.27	1.76	3.7	28.3	11.1	42.2
50.00	49.73	3.42	1.90	3.9	29.0	11.9	41.8
51.00	50.71	3.55	2.03	4.1	29.7	10.9	44.7
52.00	51.69	3.69	2.17	4.3	30.4	12.3	44.7
53.00	52.67	3.84	2.32	4.5	31.2	12.3	45.7
54.00	53.65	3.98	2.47	4.7	31.8	11.8	47.2
55.00	54.63	4.13	2.62	4.9	32.4	12.0	45.9
56.00	55.60	4.27	2.78	5.1	33.0	12.6	47.0
57.00	56.58	4.42	2.93	5.3	33.5	12.1	46.0
58.00	57.56	4.57	3.08	5.5	34.0	12.3	45.4
58.92	58.42	4.70	3.22	5.7	34.4	12.6	46.7

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-31	year drilled: 2009	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,291.45	6,137,704.36	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
33.9	-90	66.34	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	33.9	-89.90
12.00	32.1	-89.70
13.00	31.2	-89.30
14.00	31.5	-89.10
15.00	34.2	-88.80
16.00	35.4	-88.40
17.00	35.6	-88.40
18.00	35.5	-87.90
19.00	35.5	-87.80
20.00	35.6	-87.30
21.00	36.1	-87.30
22.00	36.6	-86.80
23.00	37.1	-86.50
24.00	37.5	-86.40
25.00	37.9	-85.50
26.00	38.3	-85.50
27.00	38.6	-84.70
28.00	38.7	-84.30
29.00	38.8	-83.70
30.00	38.9	-83.20
31.00	38.7	-82.20
32.00	38.4	-82.30
33.00	37.9	-81.50
34.00	37.5	-80.50
35.00	37.2	-80.20
36.00	37.0	-80.60
37.00	36.8	-79.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	9.00	9.00		
9.50	10.30	0.80		
48.10	52.70	4.60		
52.70	52.80	0.10		

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 1 of 2



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-31

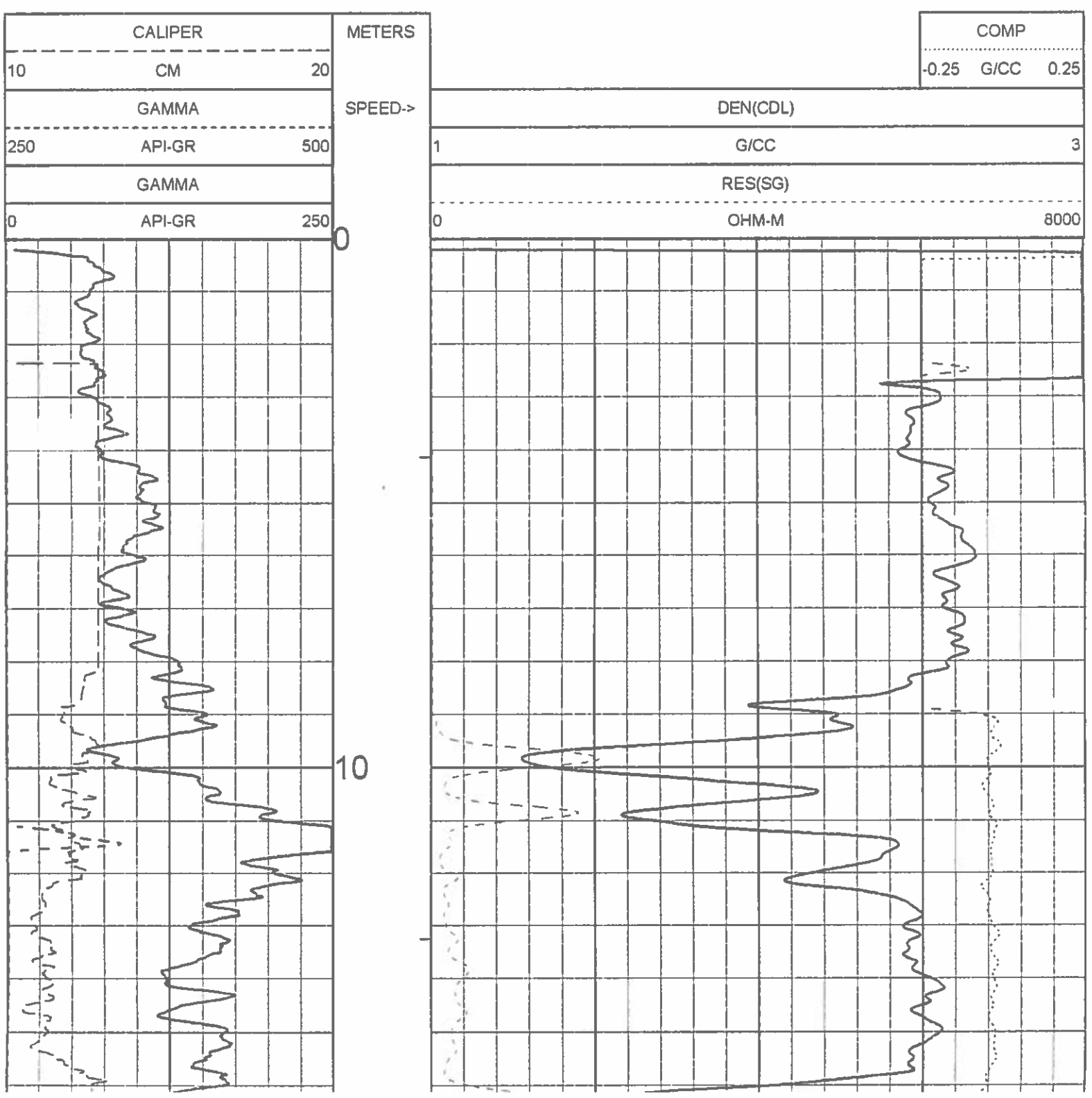
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-31		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	68 58	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.20	DEPARTURE TIME	
LOG BOTTOM	66.49	CIRC STOPPED	N/A
CASING LOGGER	9.144		
CASING DRILLER	9.144		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WTNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

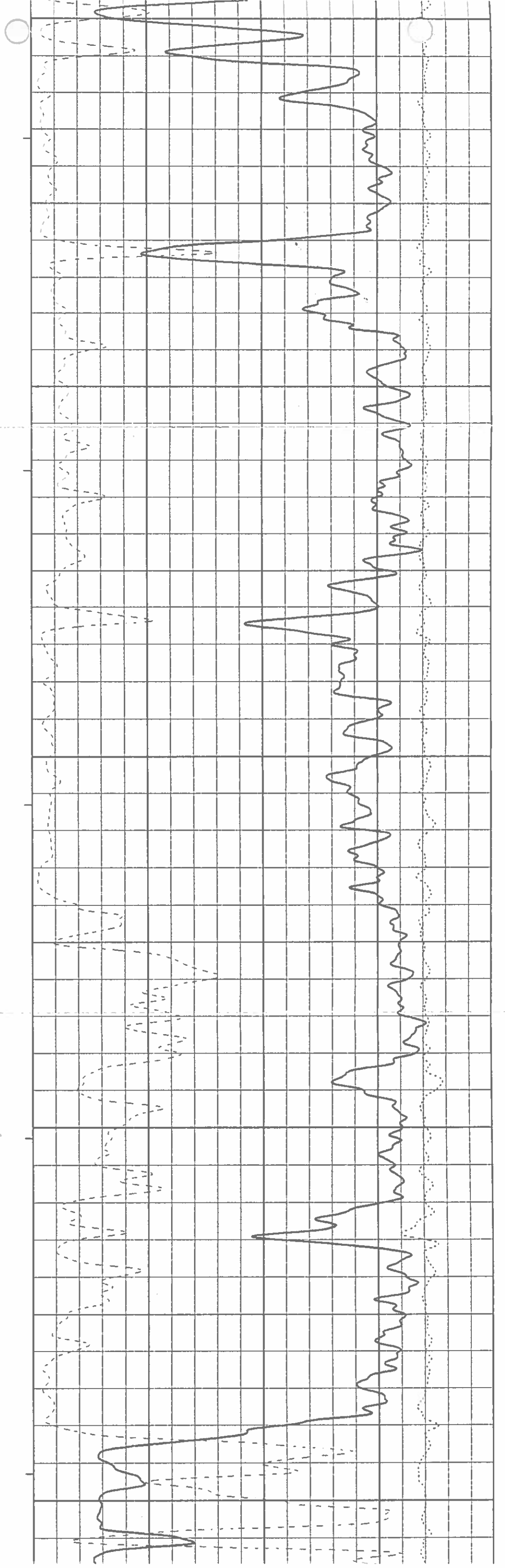
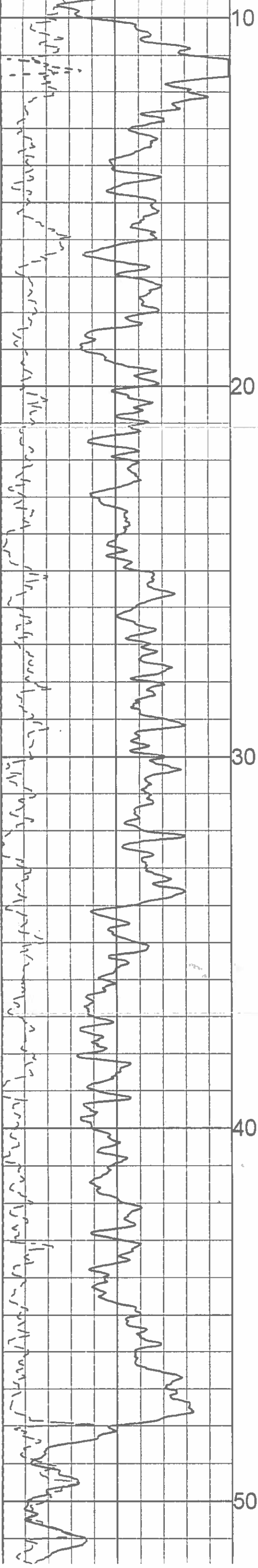
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

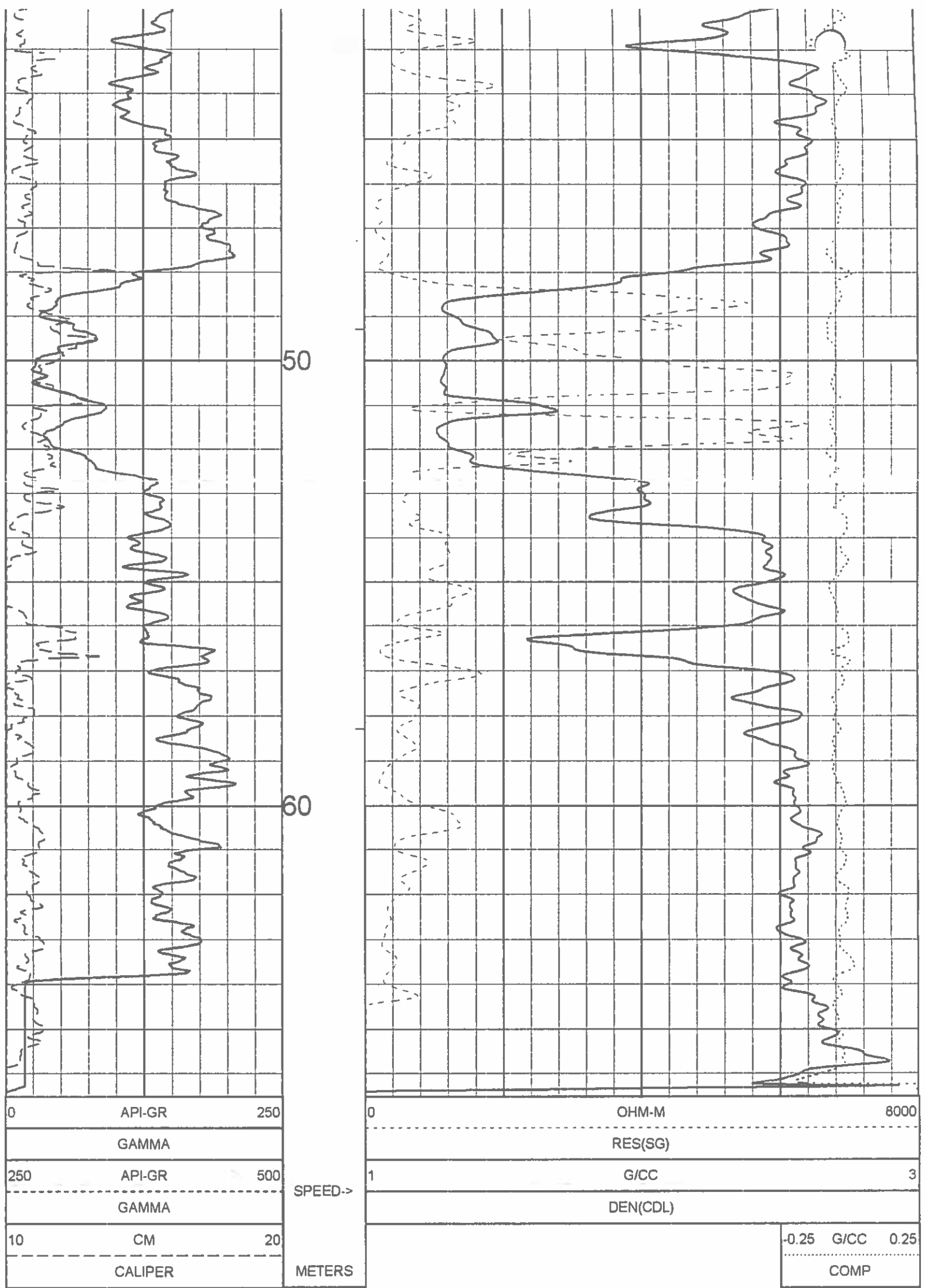
1:100 BULK DENSITY BR-09-31 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008 VERSION = 3.64HR







1:100 BULK DENSITY BR-09-31 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-31 12/21/09 09:36
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	13:13:19	GAMMA	0.000 [API-GR]	1.000 [CPS]
	Dec22,09	13:13:19	GAMMA	500.000 [API-GR]	540.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]
4	Nov26,09	16:04:40	DEN(LS)	1.000 [G/CC]	25597.000 [CPS]
	Nov26,09	16:04:40	DEN(LS)	2.320 [G/CC]	2589.000 [CPS]
5	Nov27,09	14:25:02	DEN(SS)	1.000 [G/CC]	55428.000 [CPS]
	Nov27,09	14:25:02	DEN(SS)	2.320 [G/CC]	21443.000 [CPS]
6	Nov20,09	16:59:10	CALIPERL	8.900 [MM]	108573.000 [CPS]
	Nov20,09	16:59:10	CALIPERL	20.100 [MM]	227640.000 [CPS]
7	Jul15,09	09:26:23	CURRENT	30.300 [UA]	5018.010 [CPS]



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-31**

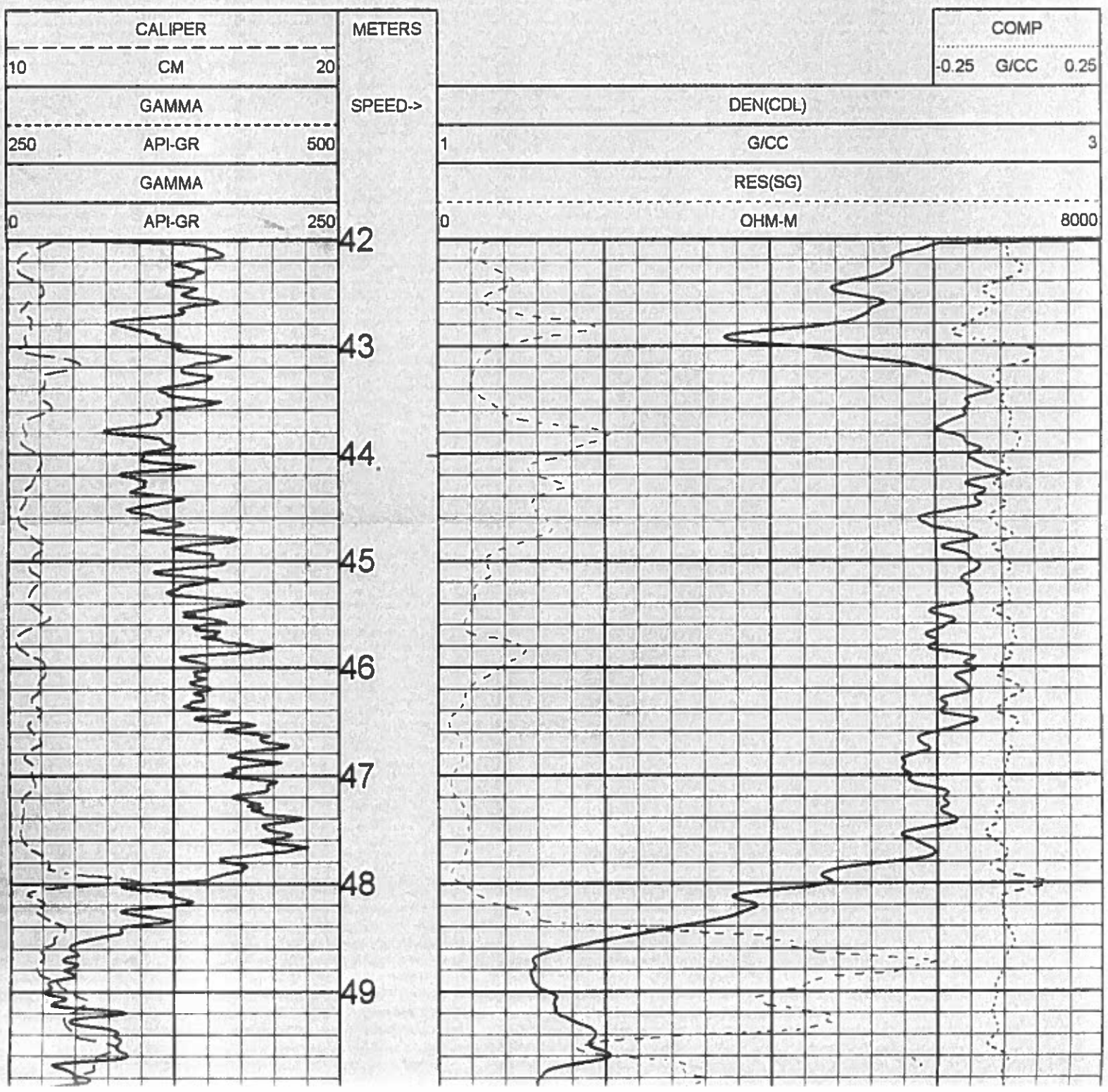
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-31		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
ORL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	88 58	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
OG TOP	0.20	DEPARTURE TIME:	
LOG BOTTOM	86.49	CIRC STOPPED	N/A
CASING LOGGER	9.144		
CASING DRILLER	9.144		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

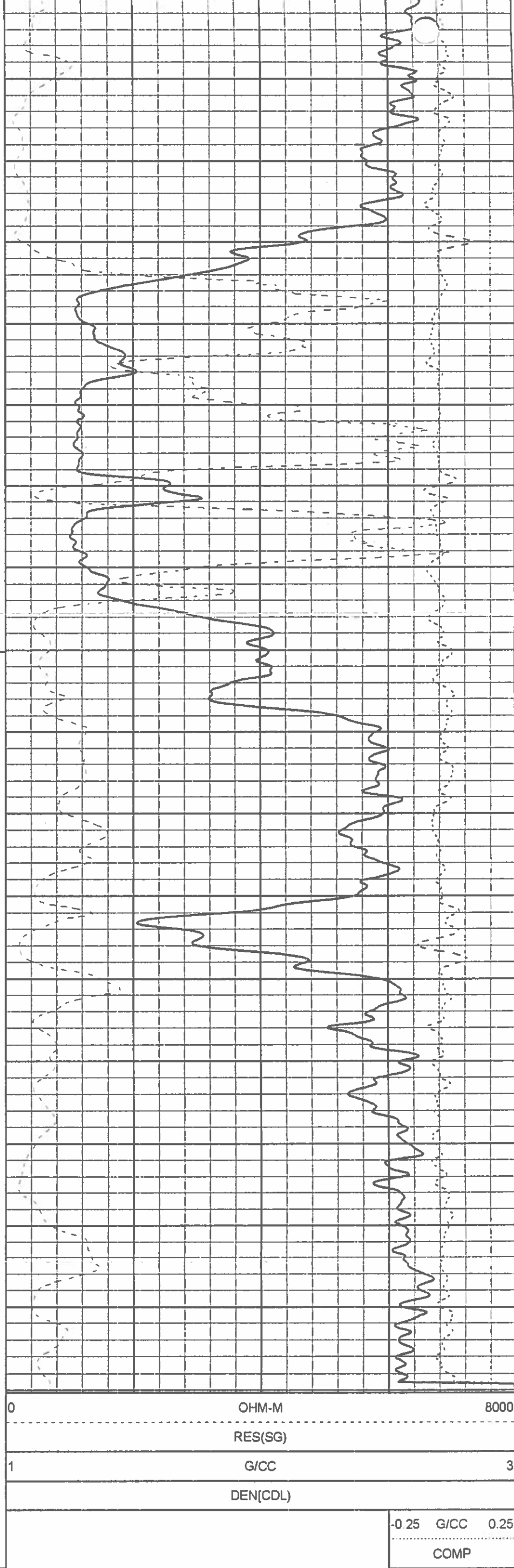
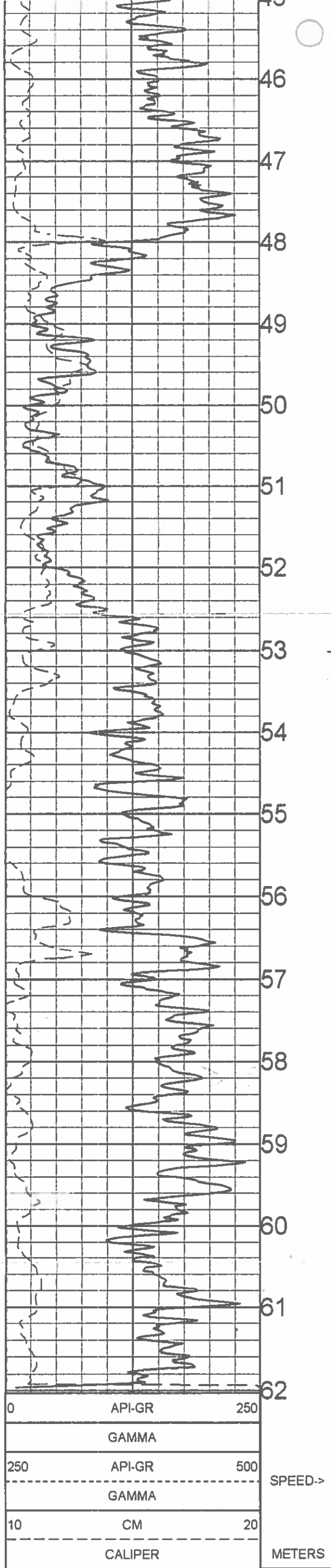
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR-09-31 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65.	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR







GAMMA - NEUTRON

BR-09-31

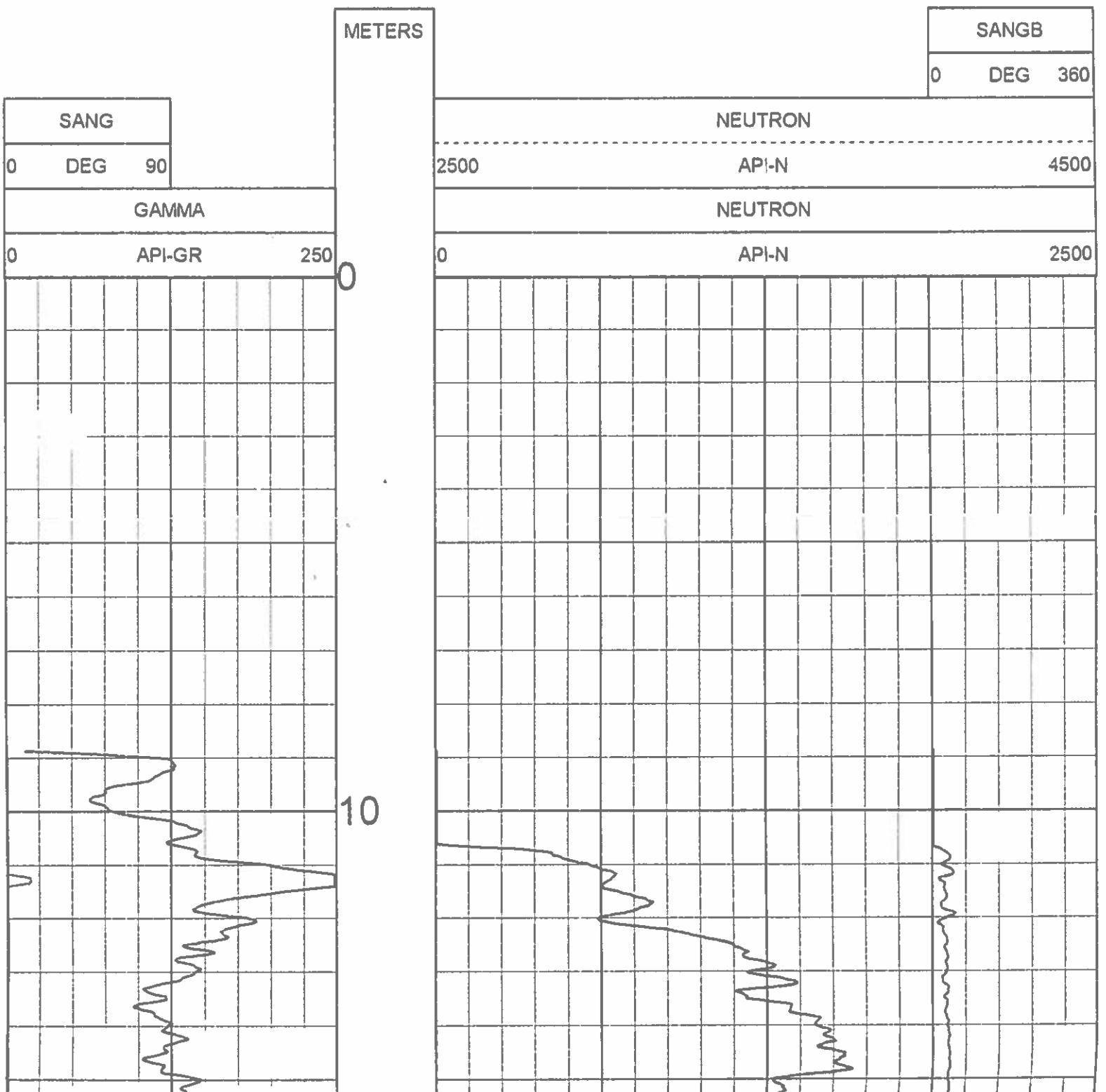
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:
WELL	BR-09-31	DENSITY
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION GL
DATE	12/20/09	RIG NUMBER
DEPTH DRILLER	88.58	LOGGER TD
RIT SIZE	11.43	ARRIVAL TIME
3 TOP	8.87	DEPARTURE TIME
LOG BOTTOM	86.51	CIRC STOPPED
CASING LOGGER	9.144	
CASING DRILLER	9.144	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WITNESSED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2		

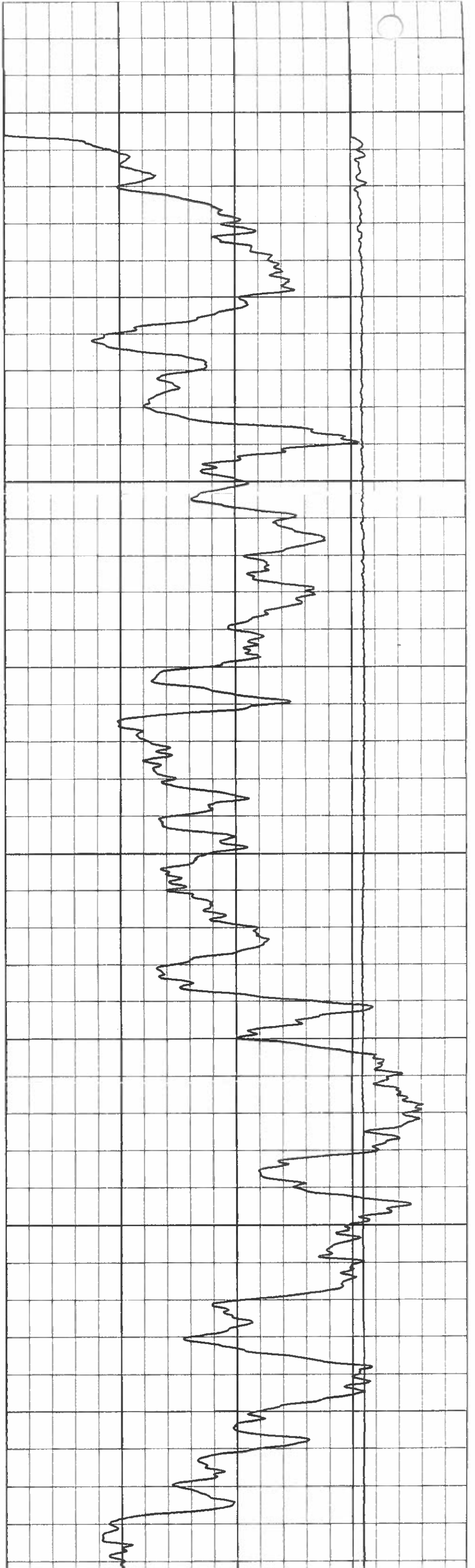
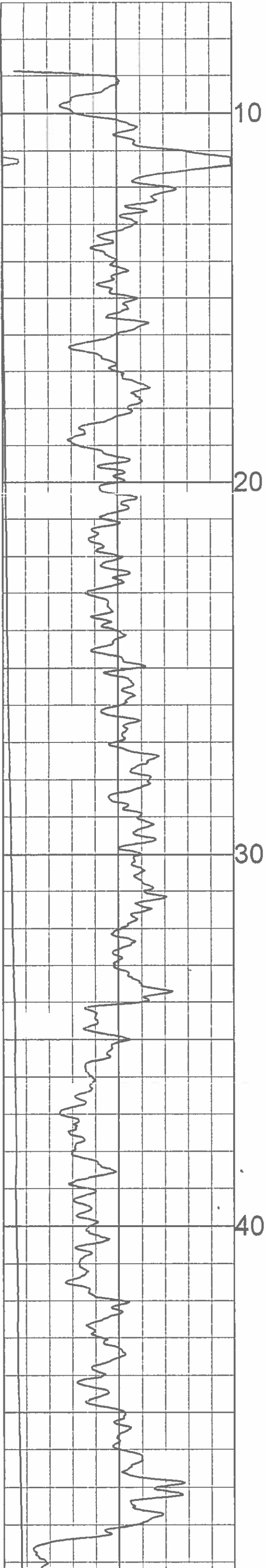
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

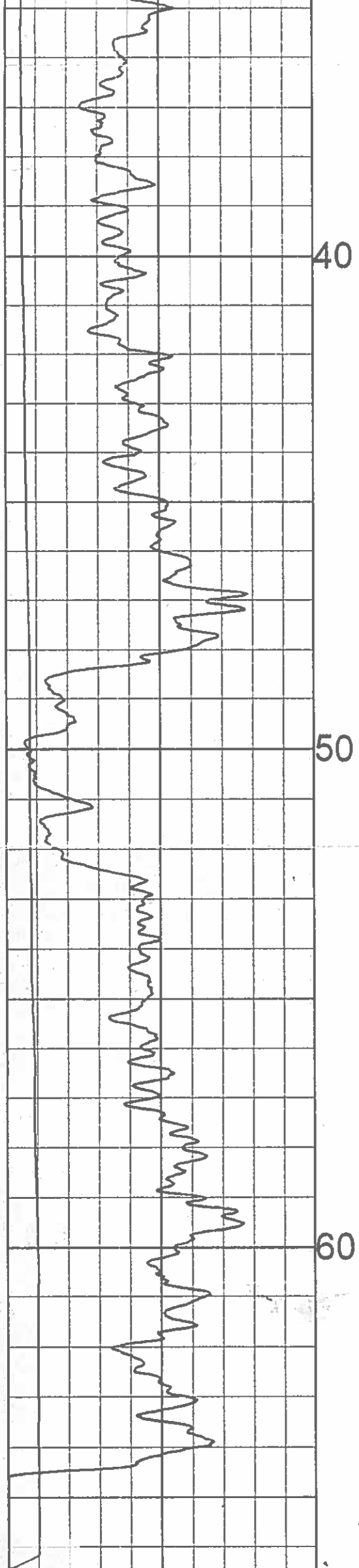
1:100 NEUTRON BR-09-31 12/20/09

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009 VERSION = 3.64HR

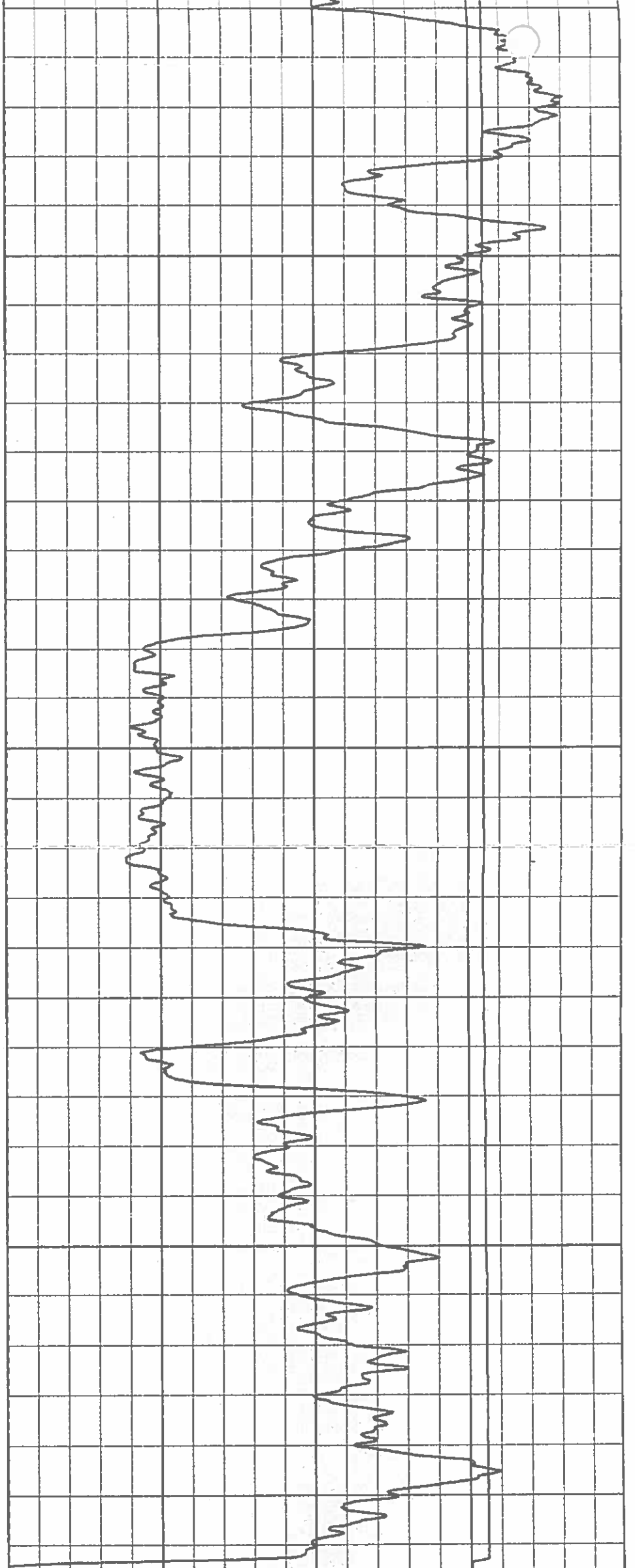






0	API-GR	250
GAMMA		
0	DEG	90
SANG		

METERS



0	API-N	2500
NEUTRON		
2500	API-N	4500
NEUTRON		

0	DEG	360
SANGB		

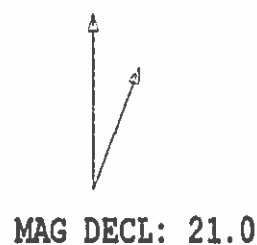
1:100 NEUTRON BR-09-31 12/20/09

LOG PARAMETERS

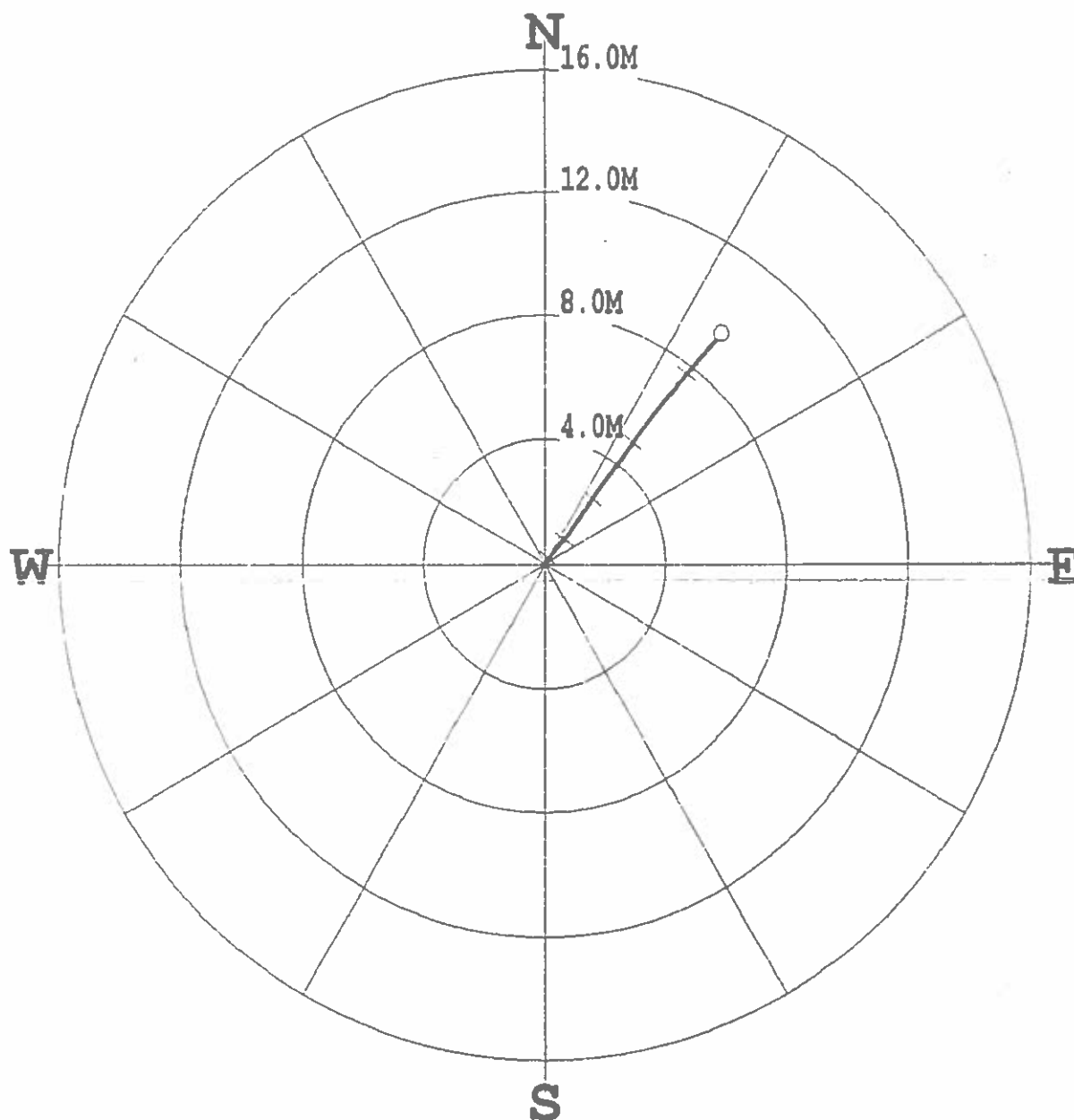
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009		VERSION = 3.64HR

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-31
 DATE OF LOG: 12/20/09
 PROBE: 9057A 4429



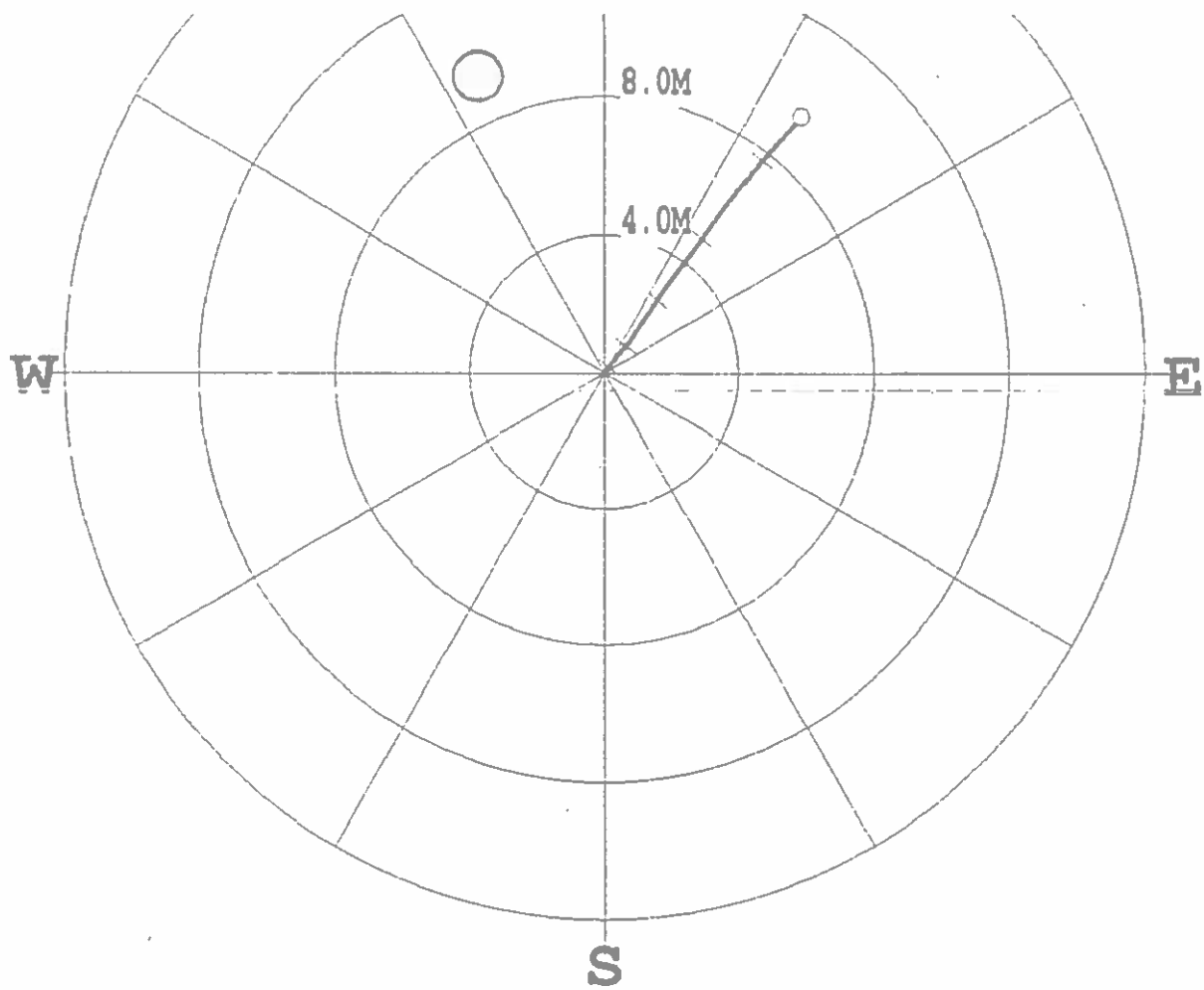
SCALE: 2 M/CM
 TRUE DEPTH: 65.25 M
 AZIMUTH: 38.3
 DISTANCE: 9.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-31
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-31_12-20-09_12-54_9057A_02_8.87_66.51_DEVI.log


CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.00	10.01	0.00	0.00	0.0	0.0	0.0	0.0
11.00	11.01	0.00	0.00	0.0	33.9	0.1	29.8
12.00	12.01	0.00	0.00	0.0	32.1	0.3	51.1
13.00	13.01	0.01	0.01	0.0	31.2	0.7	40.8
14.00	14.01	0.02	0.01	0.0	31.5	0.9	35.2
15.00	15.01	0.04	0.02	0.0	34.2	1.2	38.3
16.00	16.01	0.06	0.04	0.1	35.4	1.6	38.3
17.00	17.01	0.08	0.06	0.1	35.6	1.6	36.4
18.00	18.01	0.11	0.08	0.1	35.5	2.1	31.0
19.00	19.01	0.14	0.10	0.2	35.5	2.2	37.4
20.00	20.01	0.17	0.12	0.2	35.6	2.7	37.8
21.00	21.01	0.21	0.16	0.3	36.1	2.7	41.6
22.00	22.00	0.26	0.19	0.3	36.6	3.2	40.1
23.00	23.00	0.30	0.23	0.4	37.1	3.5	38.2
24.00	24.00	0.36	0.27	0.4	37.5	3.6	36.5
25.00	25.00	0.41	0.32	0.5	37.9	4.5	42.3
26.00	25.99	0.47	0.37	0.6	38.3	4.5	44.7
27.00	26.99	0.54	0.43	0.7	38.6	5.3	38.6
28.00	27.99	0.61	0.49	0.8	38.7	5.7	38.5
29.00	28.98	0.69	0.56	0.9	38.8	6.3	39.2
30.00	29.97	0.78	0.63	1.0	38.9	6.8	38.5
31.00	30.97	0.88	0.70	1.1	38.7	7.8	32.3
32.00	31.96	0.99	0.78	1.3	38.4	7.7	35.9
33.00	32.95	1.11	0.86	1.4	37.9	8.5	33.2
34.00	33.93	1.23	0.95	1.6	37.5	9.5	34.6
35.00	34.92	1.37	1.04	1.7	37.2	9.8	34.8
36.00	35.91	1.51	1.14	1.9	37.0	9.4	33.5
37.00	36.89	1.65	1.23	2.1	36.8	10.3	33.8
38.00	37.88	1.79	1.34	2.2	36.8	10.5	35.8
39.00	38.86	1.94	1.44	2.4	36.7	9.6	35.3
40.00	39.84	2.08	1.54	2.6	36.6	10.6	34.6
41.00	40.83	2.23	1.65	2.8	36.4	11.5	35.3
42.00	41.81	2.40	1.76	3.0	36.4	11.4	35.1
43.00	42.79	2.56	1.88	3.2	36.3	11.8	36.4
44.00	43.77	2.72	2.00	3.4	36.4	11.7	38.7
45.00	44.74	2.88	2.13	3.6	36.5	12.4	38.0



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-31
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-31_12-20-09_12-54_9057A_02_8.87_66.51_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.00	10.01	0.00	0.00	0.0	0.0	0.0	0.0
11.00	11.01	0.00	0.00	0.0	33.9	0.1	29.8
12.00	12.01	0.00	0.00	0.0	32.1	0.3	51.1
13.00	13.01	0.01	0.01	0.0	31.2	0.7	40.8
14.00	14.01	0.02	0.01	0.0	31.5	0.9	35.2
15.00	15.01	0.04	0.02	0.0	34.2	1.2	38.3
16.00	16.01	0.06	0.04	0.1	35.4	1.6	38.3
17.00	17.01	0.08	0.06	0.1	35.6	1.6	36.4
18.00	18.01	0.11	0.08	0.1	35.5	2.1	31.0
19.00	19.01	0.14	0.10	0.2	35.5	2.2	37.4
20.00	20.01	0.17	0.12	0.2	35.6	2.7	37.8
21.00	21.01	0.21	0.16	0.3	36.1	2.7	41.6
22.00	22.00	0.26	0.19	0.3	36.6	3.2	40.1
23.00	23.00	0.30	0.23	0.4	37.1	3.5	38.2
24.00	24.00	0.36	0.27	0.4	37.5	3.6	36.5
25.00	25.00	0.41	0.32	0.5	37.9	4.5	42.3
26.00	25.99	0.47	0.37	0.6	38.3	4.5	44.7
27.00	26.99	0.54	0.43	0.7	38.6	5.3	38.6
28.00	27.99	0.61	0.49	0.8	38.7	5.7	38.5
29.00	28.98	0.69	0.56	0.9	38.8	6.3	39.2
30.00	29.97	0.78	0.63	1.0	38.9	6.8	38.5
31.00	30.97	0.88	0.70	1.1	38.7	7.8	32.3
32.00	31.96	0.99	0.78	1.3	38.4	7.7	35.9
33.00	32.95	1.11	0.86	1.4	37.9	8.5	33.2
34.00	33.93	1.23	0.95	1.6	37.5	9.5	34.6
35.00	34.92	1.37	1.04	1.7	37.2	9.8	34.8
36.00	35.91	1.51	1.14	1.9	37.0	9.4	33.5
37.00	36.89	1.65	1.23	2.1	36.8	10.3	33.8
38.00	37.88	1.79	1.34	2.2	36.8	10.5	35.8
39.00	38.86	1.94	1.44	2.4	36.7	9.6	35.3
40.00	39.84	2.08	1.54	2.6	36.6	10.6	34.6
41.00	40.83	2.23	1.65	2.8	36.4	11.5	35.3
42.00	41.81	2.40	1.76	3.0	36.4	11.4	35.1
43.00	42.79	2.56	1.88	3.2	36.3	11.8	36.4
44.00	43.77	2.72	2.00	3.4	36.4	11.7	38.7
45.00	44.74	2.88	2.13	3.6	36.5	12.4	38.0
46.00	45.72	3.06	2.26	3.8	36.5	12.7	36.5
47.00	46.69	3.24	2.40	4.0	36.5	13.3	36.3
48.00	47.67	3.43	2.54	4.3	36.5	13.7	35.8
49.00	48.64	3.63	2.68	4.5	36.5	14.1	37.5
50.00	49.61	3.82	2.83	4.8	36.5	14.2	37.0
51.00	50.57	4.02	2.98	5.0	36.6	14.0	37.4
52.00	51.54	4.21	3.13	5.2	36.6	14.3	37.7
53.00	52.51	4.41	3.28	5.5	36.6	14.8	37.2
54.00	53.48	4.62	3.44	5.8	36.6	15.0	37.0
55.00	54.44	4.82	3.59	6.0	36.7	15.5	37.9
56.00	55.40	5.04	3.77	6.3	36.8	16.3	39.5
57.00	56.36	5.26	3.94	6.6	36.9	16.2	39.2
58.00	57.32	5.47	4.12	6.9	37.0	16.7	39.7
59.00	58.28	5.70	4.31	7.1	37.1	17.5	39.3
60.00	59.23	5.94	4.51	7.5	37.2	18.1	39.7
61.00	60.18	6.17	4.72	7.8	37.4	18.2	41.5
62.00	61.13	6.41	4.92	8.1	37.5	18.0	41.4
63.00	62.08	6.64	5.13	8.4	37.7	18.0	42.6
64.00	63.03	6.87	5.34	8.7	37.8	18.5	42.1
65.00	63.98	7.10	5.55	9.0	38.0	18.4	43.2
66.00	64.93	7.33	5.77	9.3	38.2	18.6	42.8
66.34	65.25	7.41	5.84	9.4	38.3	18.5	43.5

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-32	year drilled: 2009	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,265.78	6,137,683.46	1,102.91

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
241	-89	122.08	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	240.6	-88.80
12.00	229.1	-88.40
13.00	226.8	-88.30
14.00	225.8	-88.50
15.00	225.4	-88.50
16.00	225.1	-88.50
17.00	224.9	-88.60
18.00	224.7	-88.80
19.00	224.5	-88.90
20.00	224.5	-88.50
21.00	224.4	-88.70
22.00	224.3	-88.80
23.00	223.9	-88.80
24.00	223.4	-88.80
25.00	223.1	-89.10
26.00	222.4	-88.90
27.00	221.9	-89.20
28.00	221.2	-89.60
29.00	220.4	-89.40
30.00	218.8	-89.00
31.00	216.9	-89.10
32.00	214.6	-88.90
33.00	211.7	-88.60
34.00	208.1	-88.20
35.00	204.1	-88.00
36.00	199.8	-87.80
37.00	195.0	-87.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	9.00	9.00		
58.70	59.50	0.80		
100.40	106.60	6.20		
107.90	108.90	1.00		
114.00	114.90	0.90		
116.80	117.70	0.90		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-32	year drilled: 2009	AREA: BURNT RIVER BRULE
--------------------------	--------------------	--------------------------------------

83.00	111.1	-81.00
84.00	110.6	-81.10
85.00	110.1	-80.70
86.00	109.7	-81.10
87.00	109.3	-81.00
88.00	108.8	-80.90
89.00	108.4	-81.00
90.00	108.1	-80.90
91.00	107.7	-80.50
92.00	107.3	-80.10
93.00	107.0	-80.00
94.00	106.7	-80.20
95.00	106.3	-79.60
96.00	106.0	-79.20
97.00	105.7	-79.00
98.00	105.4	-79.10
99.00	105.1	-79.10
100.00	104.8	-78.60
101.00	104.5	-78.70
102.00	104.2	-78.70
103.00	103.9	-78.70
104.00	103.6	-78.90
105.00	103.3	-78.70
106.00	103.0	-78.20
107.00	102.7	-78.40
108.00	102.4	-78.50
109.00	102.1	-78.50
110.00	101.8	-78.40
111.00	101.5	-78.40
112.00	101.2	-78.30
113.00	100.9	-77.60
114.00	100.6	-77.30
115.00	100.2	-77.40
116.00	99.9	-77.10
117.00	99.5	-76.80
118.00	99.2	-76.90
119.00	98.9	-76.90
120.00	98.6	-76.70
121.00	98.2	-76.40
122.00	97.8	-76.10
122.08	97.8	-75.70

RAW SAMPLE INFORMATION

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 3 of 4



**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-09-32**

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-32		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	123.44	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
G TOP	0.87	DEPARTURE TIME	
LOG BOTTOM	122.86	CIRC STOPPED	N/A
CASING LOGGER	9.144		
CASING DRILLER	9.144		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

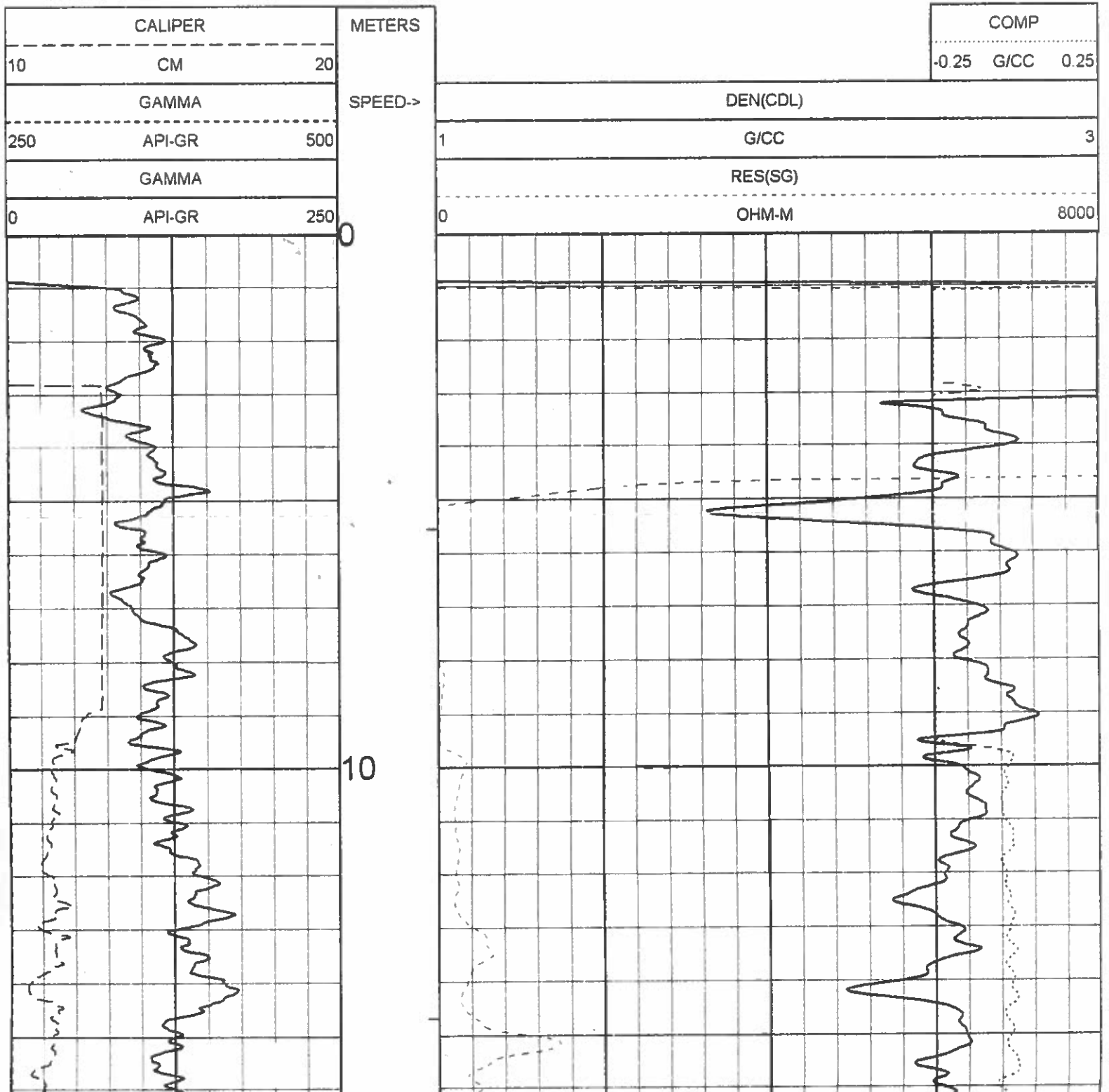
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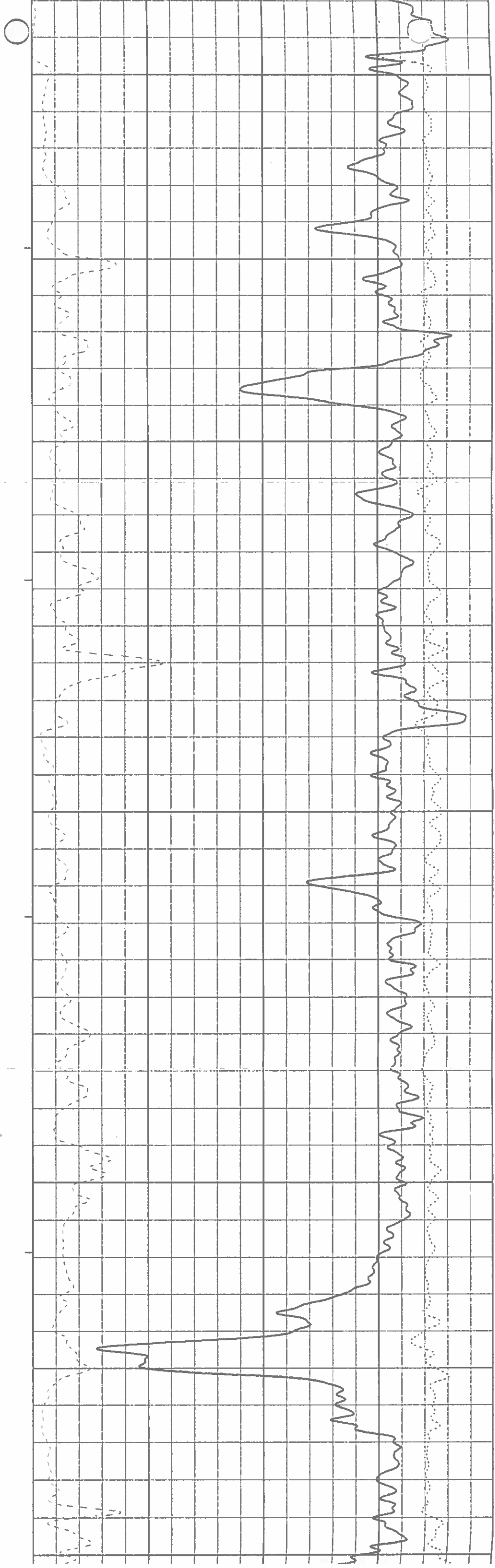
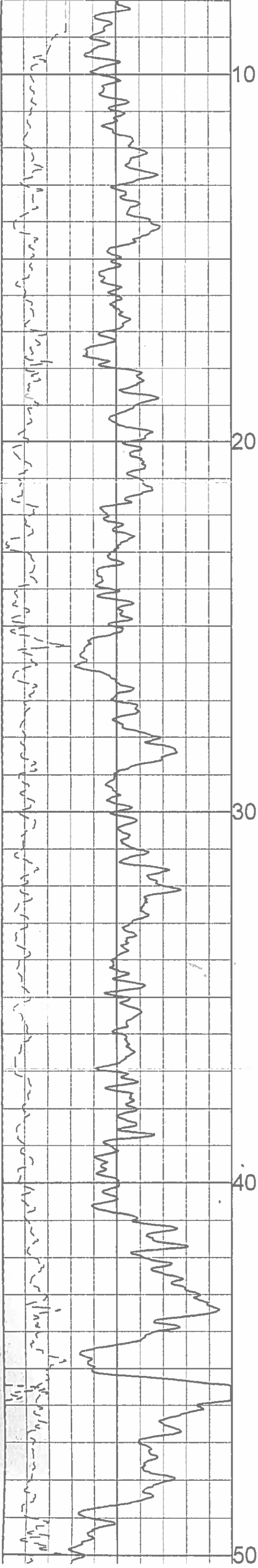
LOG PARAMETERS

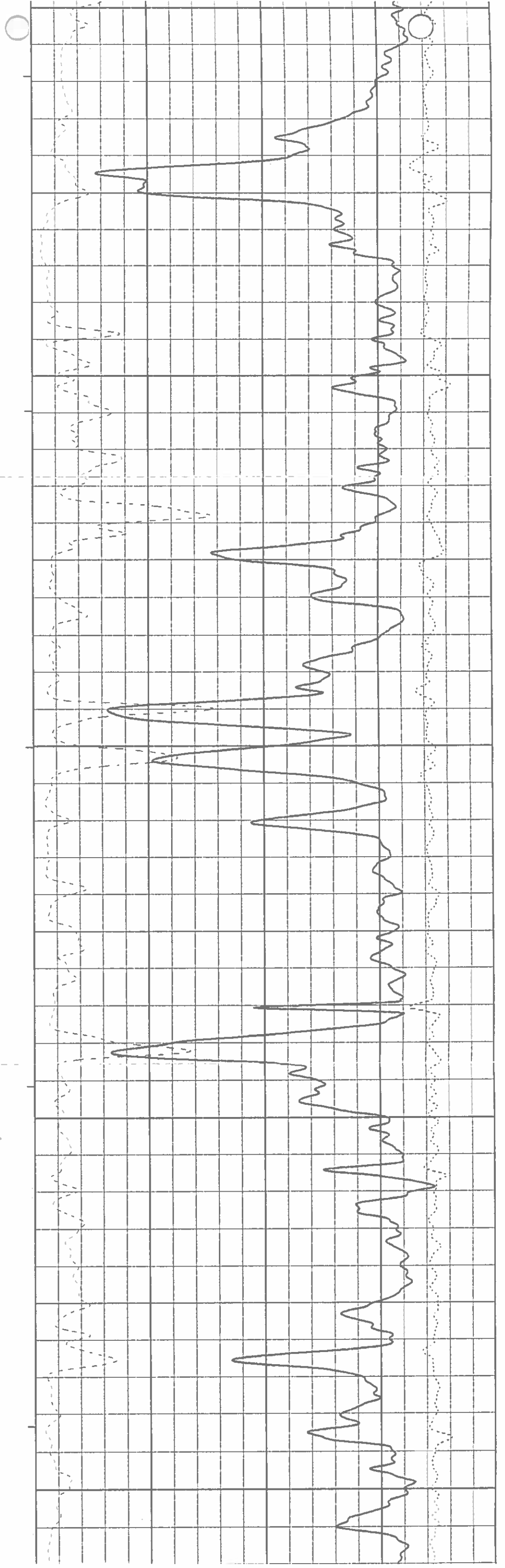
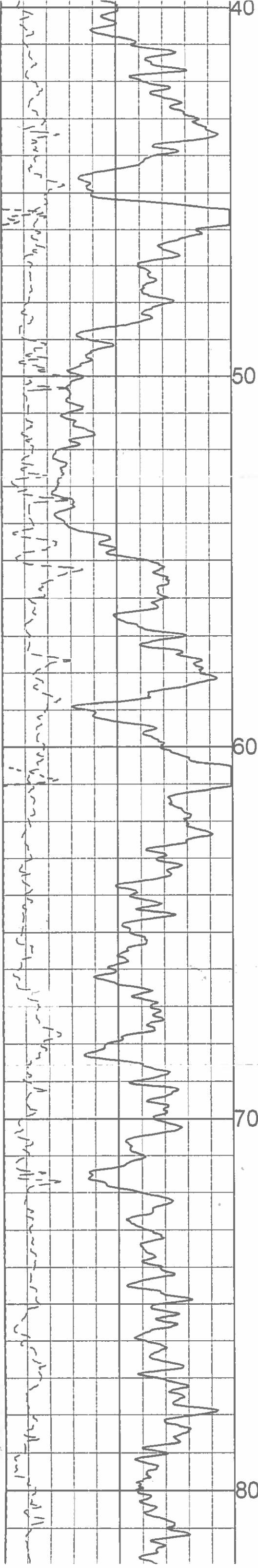
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MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C DENSITY 0 03/11/2008

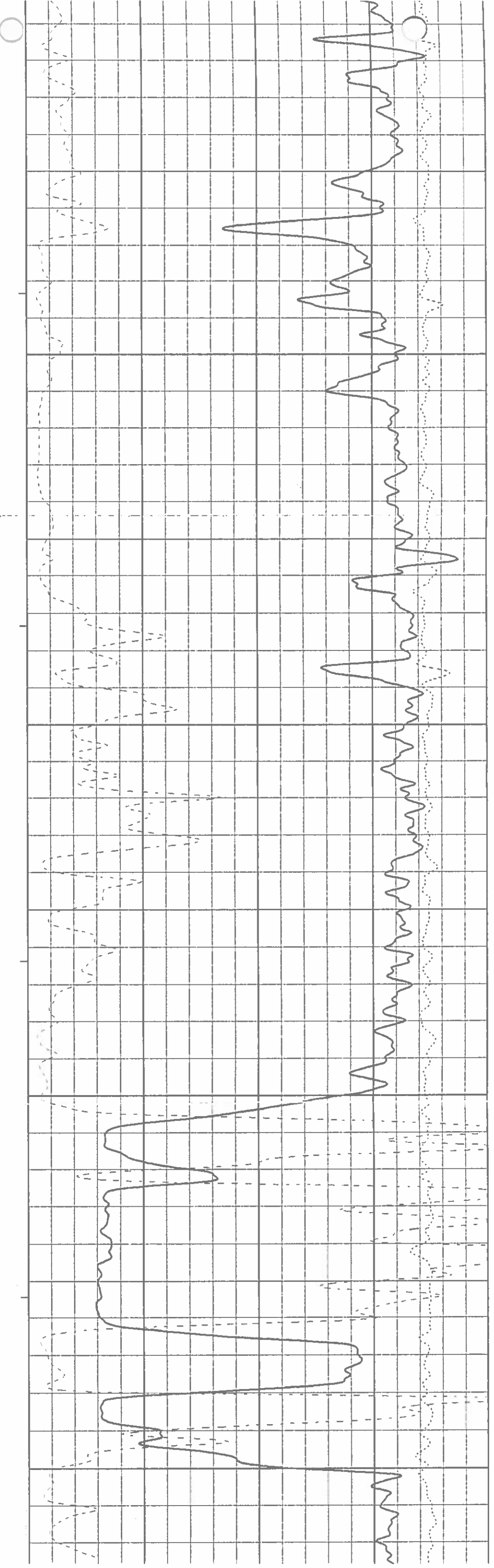
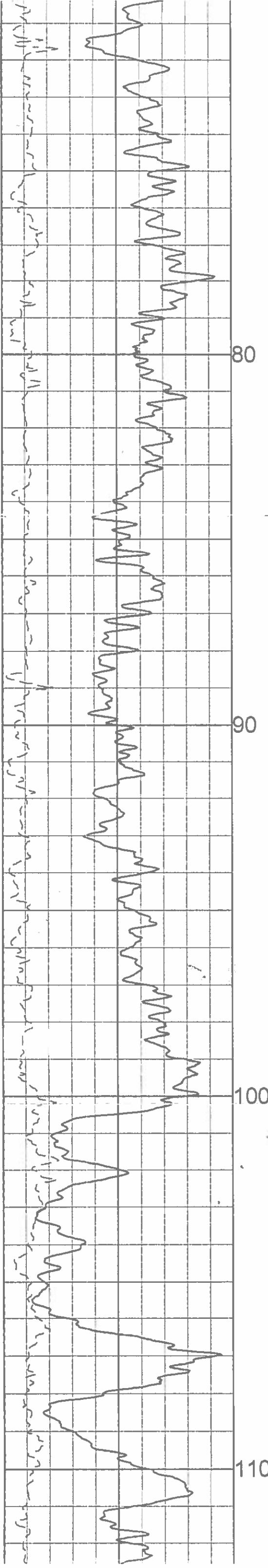
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ELECT. CUTOFF : 99999

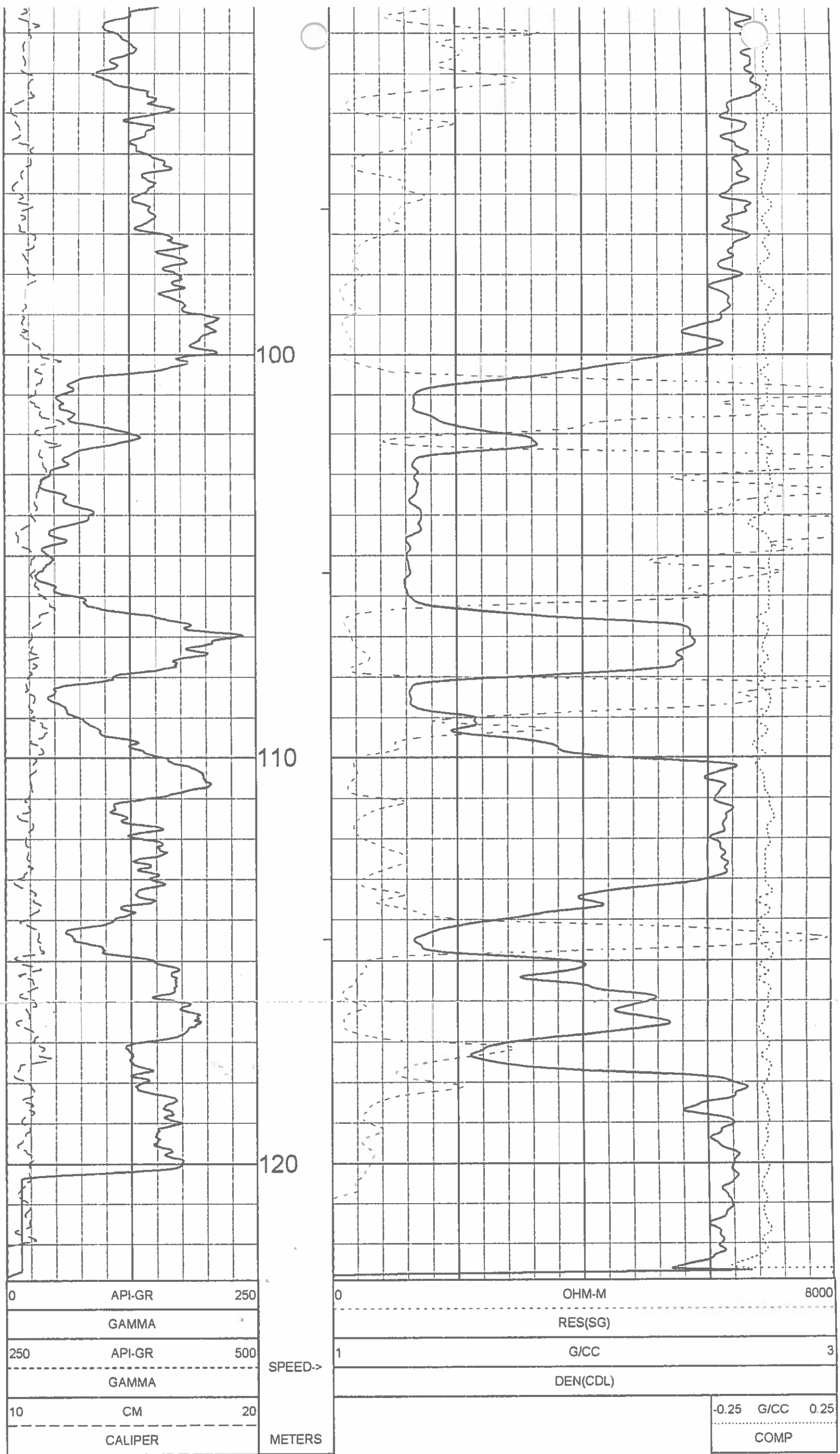
MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR











▲ 1:100 BULK DENSITY BR-09-32 12/21/09 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE - 9239C DENSITY.0 03/11/2006		VERSION = 3 64HR



DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-09-32

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-32		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	:12/21/09	RIG NUMBER	
DEPTH DRILLER	:123.44	LOGGER TO	
BIT SIZE	:11.43	ARRIVAL TIME	
LOG TOP	:0.87	DEPARTURE TIME	
LOG BOTTOM	:122.86	CIRC STOPPED	N/A
CASING LOGGER	9.144		
CASING DRILLER	9.144		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

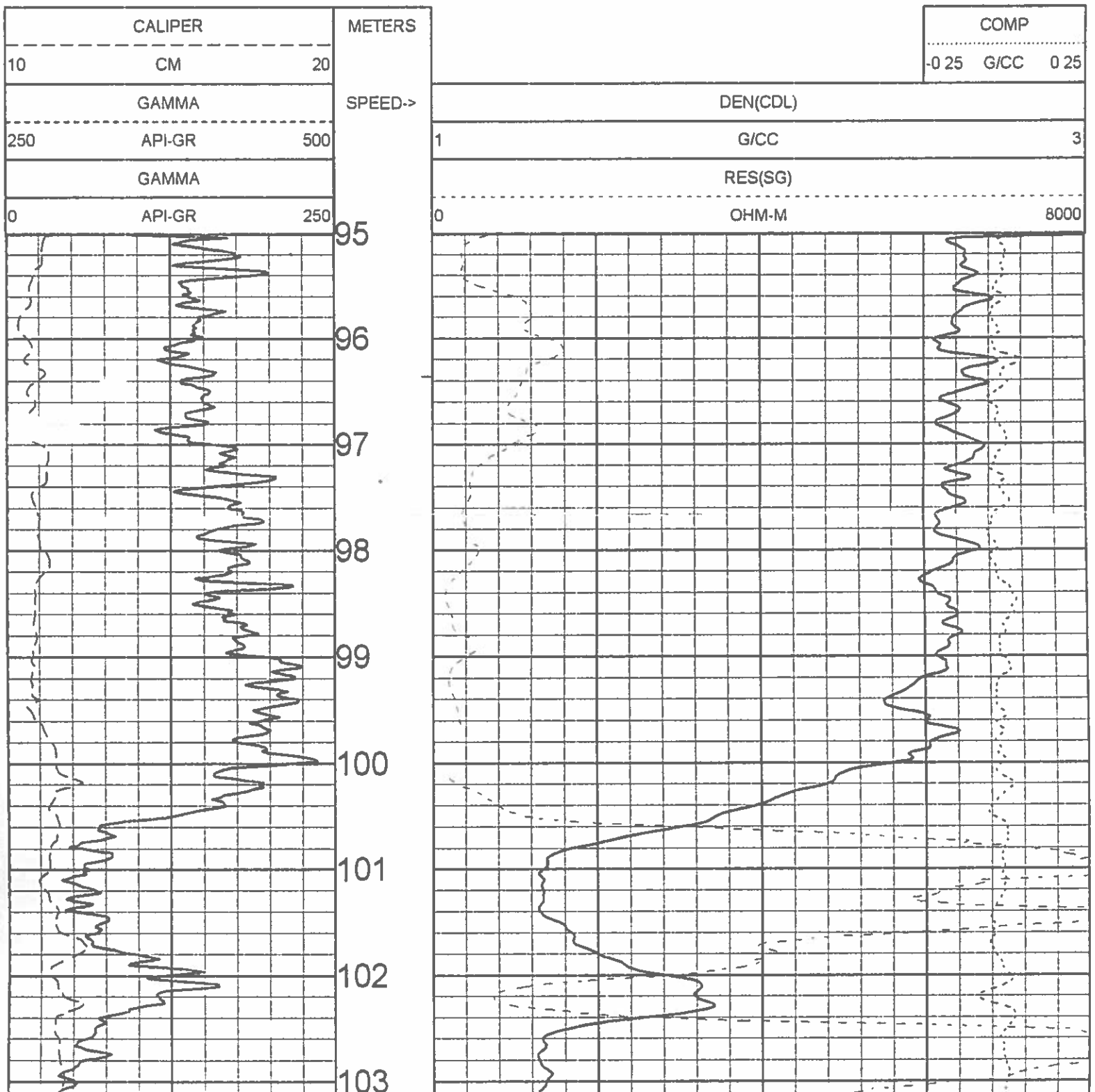
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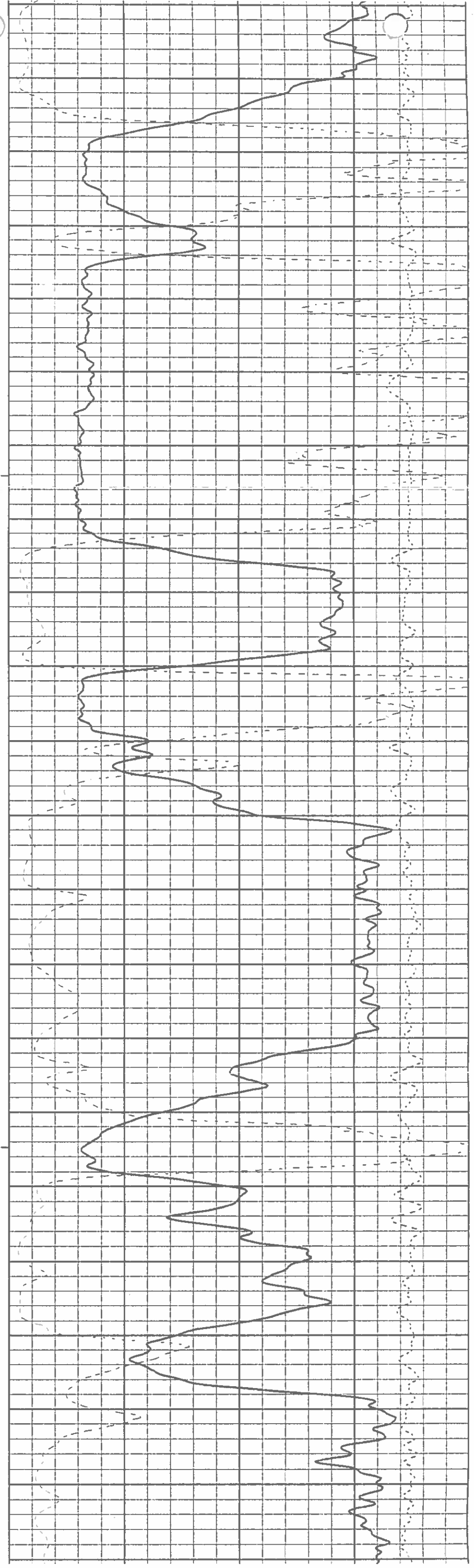
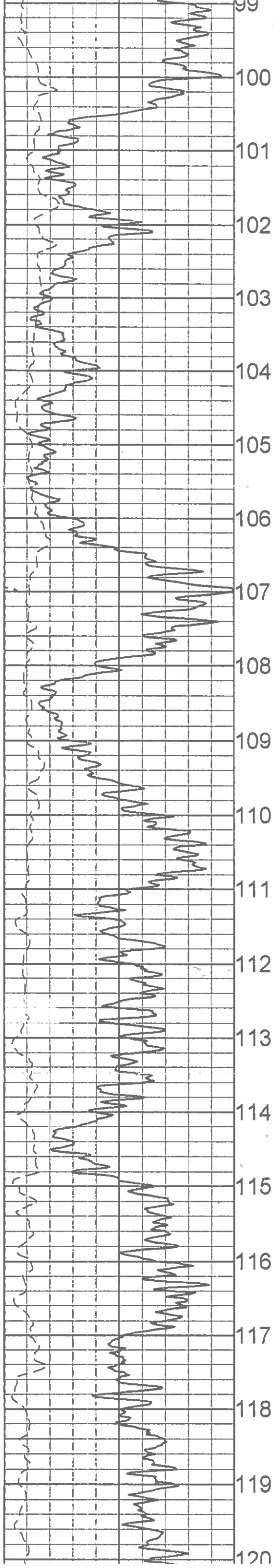
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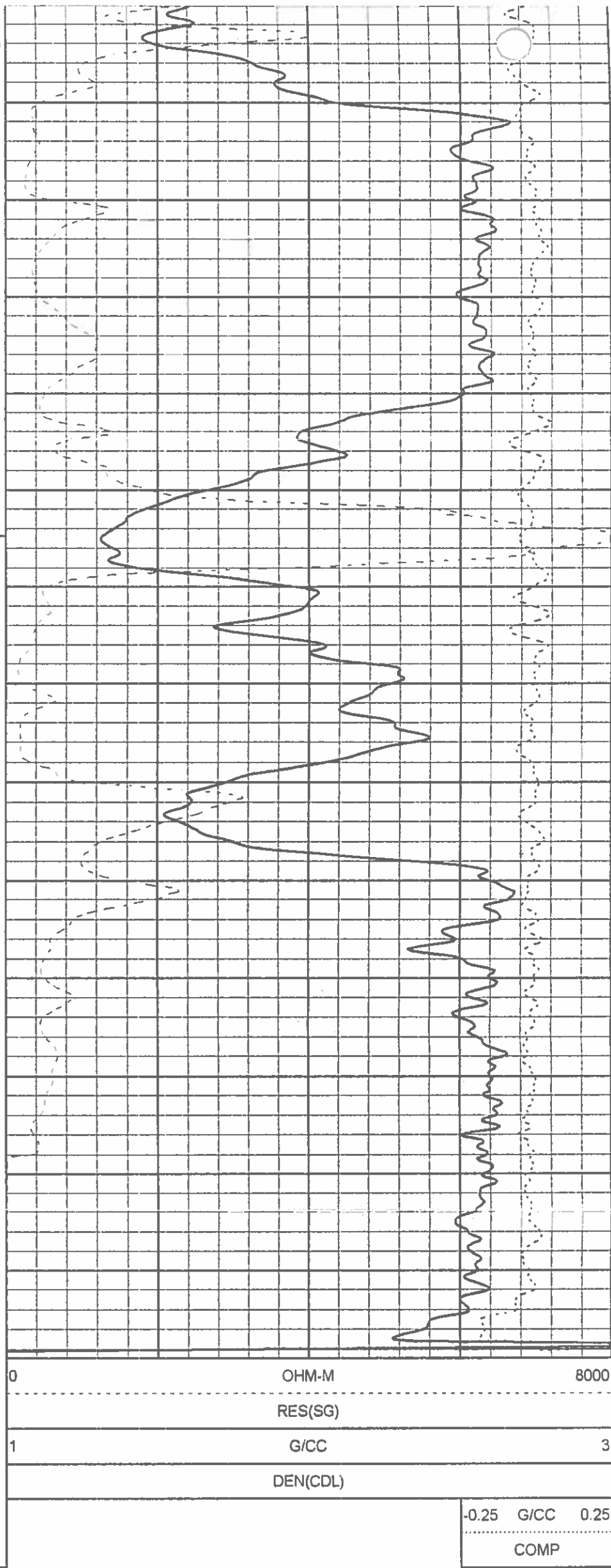
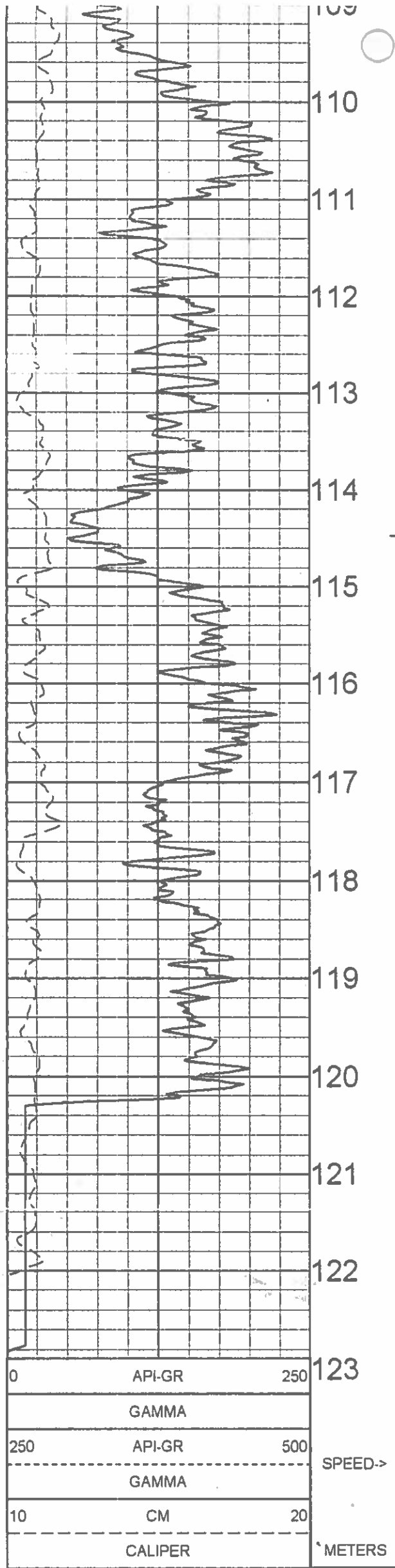
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED 0 03/20/2008

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR







1:50 BULK DENSITY EXPANDED BR-09-32 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-32 12/21/09 08:56
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22.09	13:29:29	GAMMA	0.000 [API-GR]	1.000 [CPS]
	Dec22.09	13:29:29	GAMMA	500.000 [API-GR]	600.000 [CPS]
2	Jul15.09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15.09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]



GAMMA - NEUTRON

BR-09-32

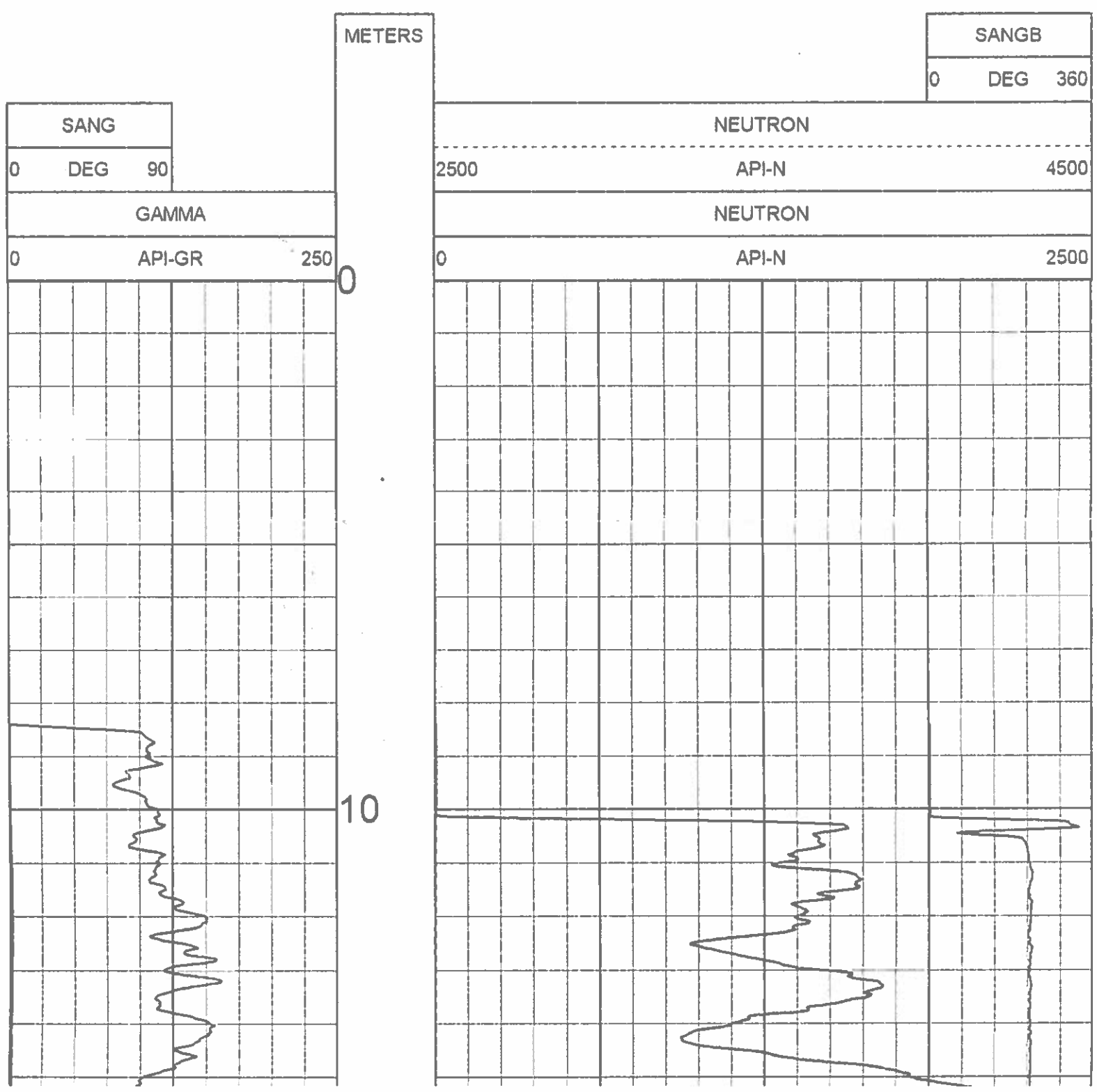
COMPANY		WESTERN COAL CORPORATION		OTHER SERVICES	
WELL		BR-09-32		DENSITY	
FIELD		BRULE			
COUNTRY		CANADA			
PROVINCE		BRITISH COLUMBIA			
LOCATION		BRULE			
SECTION		N/A			
TOWNSHIP		N/A			
RANGE		N/A			
LICENCE NO.		N/A			
UNIQUE WELL ID		N/A			
PERMANENT DATUM		GL		ELEVATION KB	
LOG MEASURED FROM GL				ELEVATION DF	
DRL MEASURED FROM GL				ELEVATION GL	
DATE		12/20/09		RIG NUMBER	
DEPTH DRILLER		123 44		LOGGER TD	
BIT SIZE		11 43		ARRIVAL TIME	
LOG TOP		8.39		DEPARTURE TIME	
LOG BOTTOM		122.26		CIRC STOPPED	
CASING LOGGER		9 144			
CASING DRILLER		9 144			
CASING TYPE		STEEL			
BOREHOLE FLUID		WATER			
RM TEMPERATURE		N/A			
MUD RES		N/A			
MUD WEIGHT		1.00			
WITNESSED BY		G HOLMLUND			
RECORDED BY		T NEAL			
REMARKS 1		VERTICAL			
REMARKS 2					

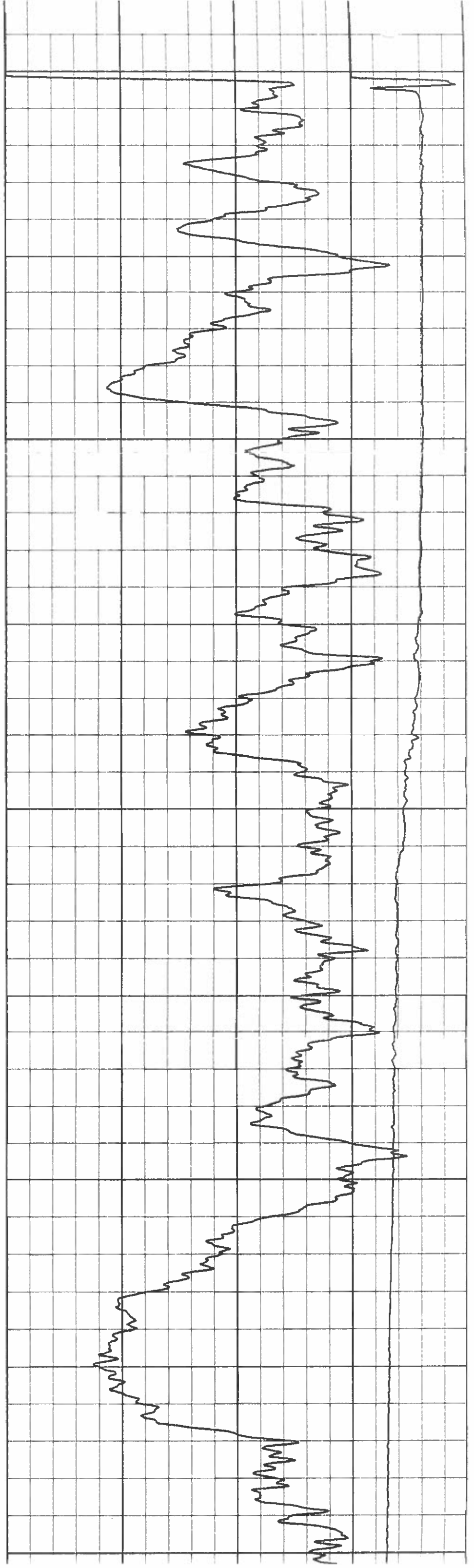
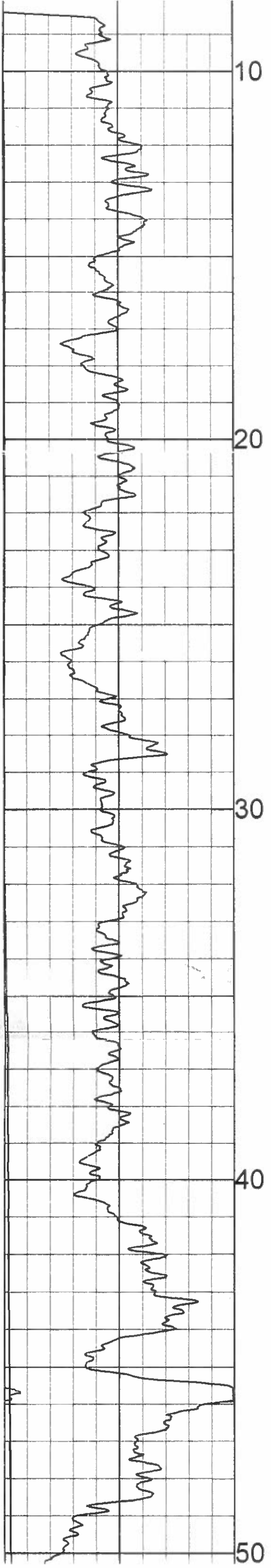
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

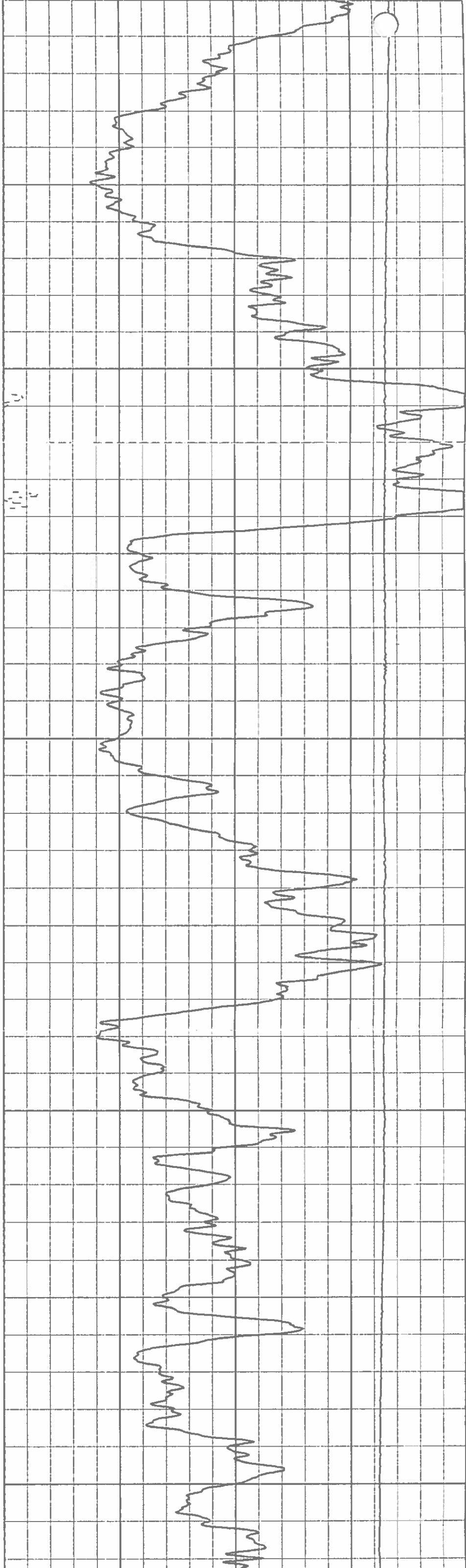
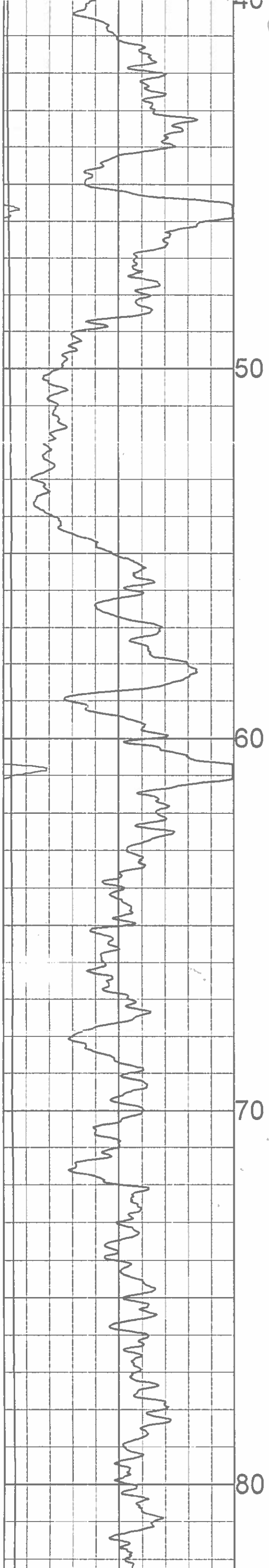
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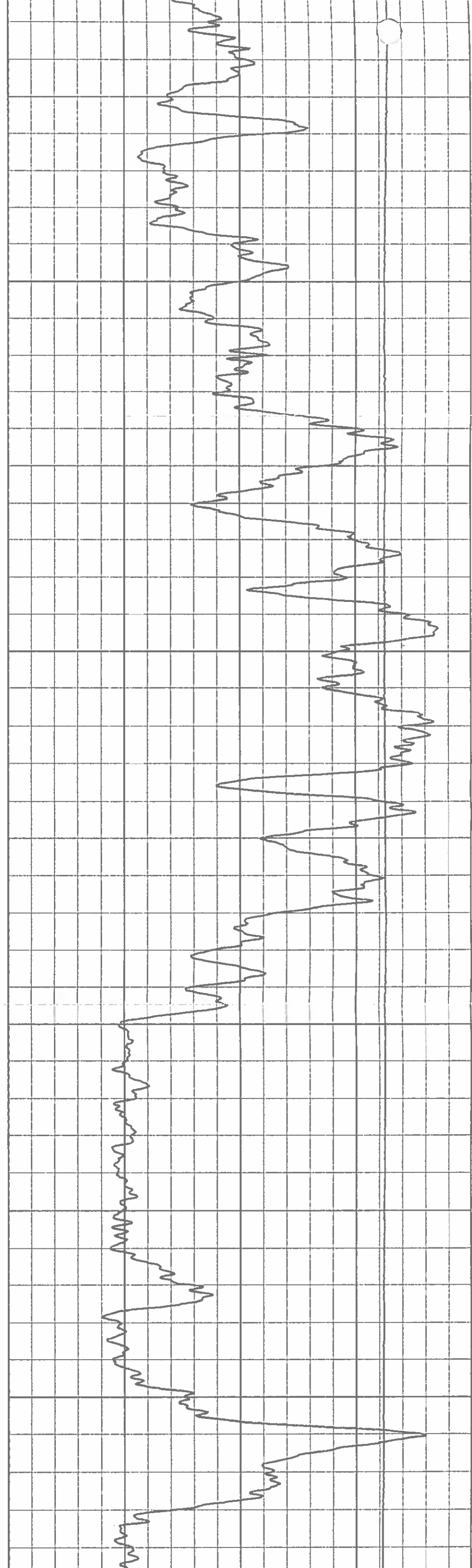
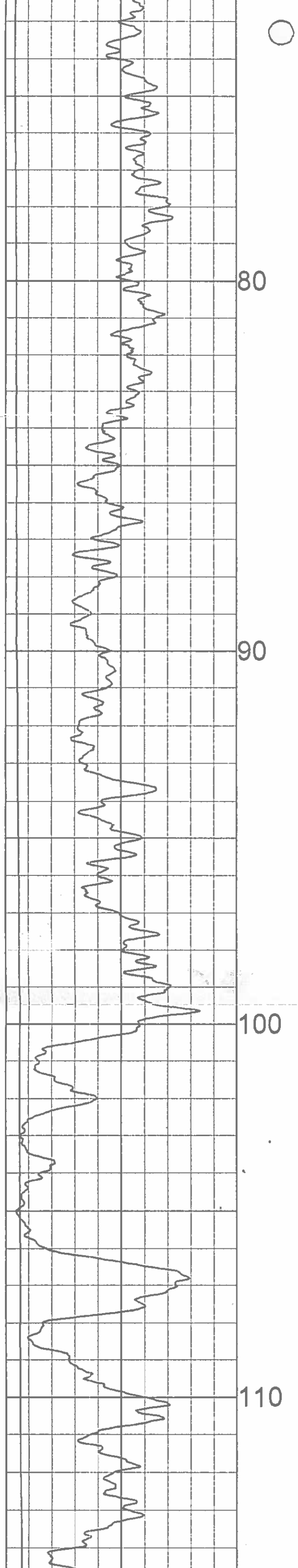
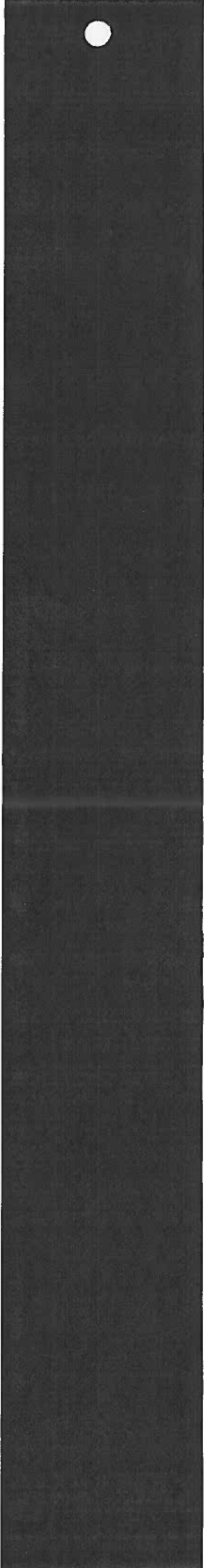
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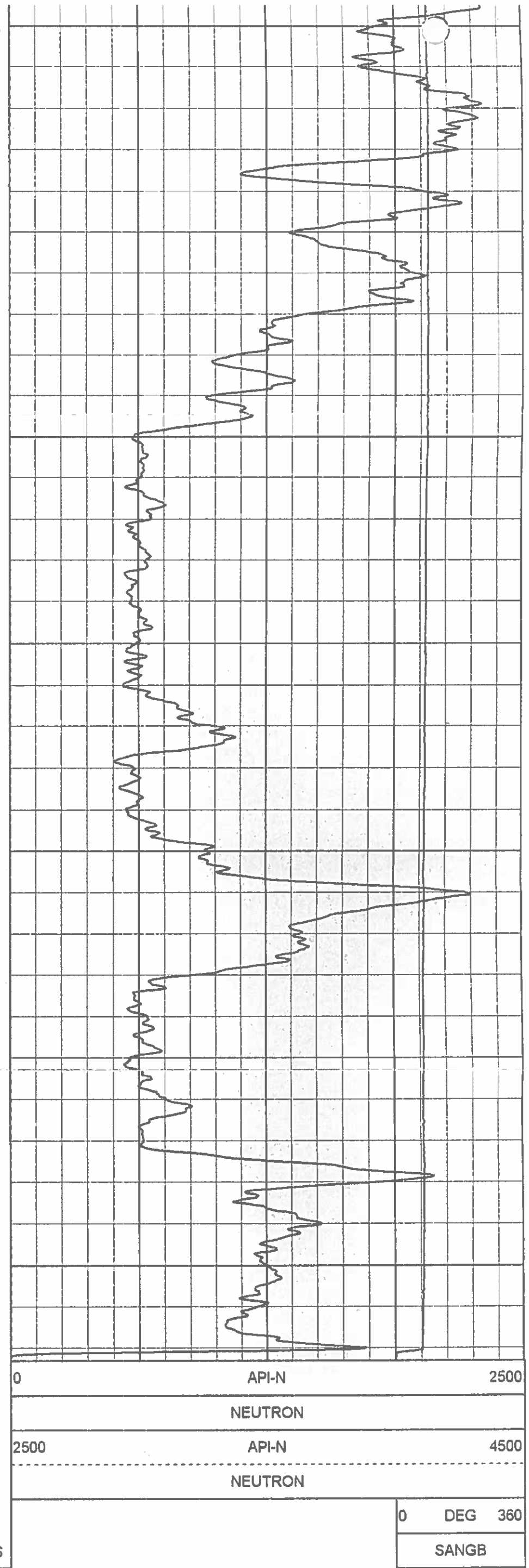
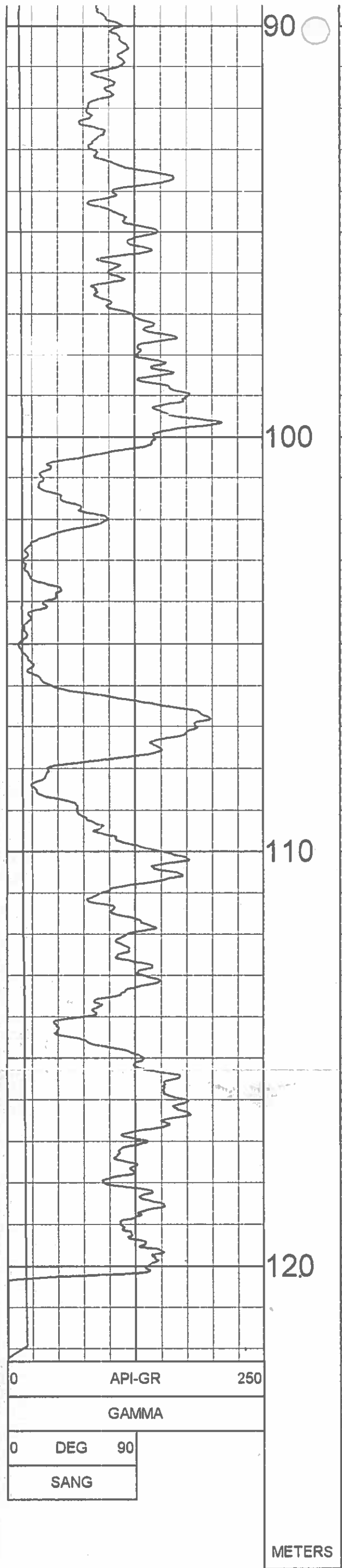
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11 43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009 VERSION = 3.64HR











1:100 NEUTRON BR-09-32 12/20/09

LOG PARAMETERS

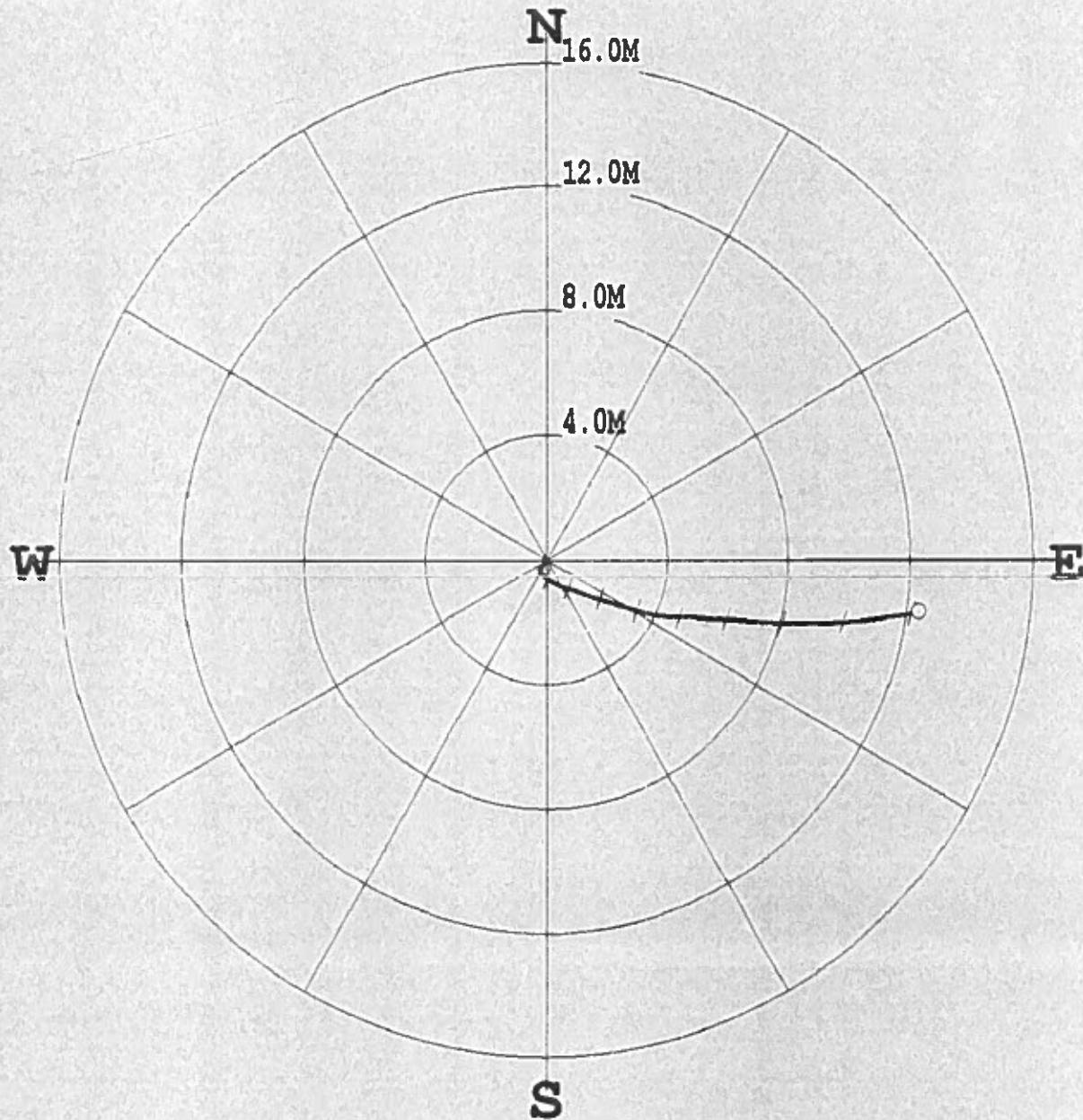
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-32
 DATE OF LOG: 12/20/09
 PROBE: 9057A 4429



SCALE: 2 M/CM
 TRUE DEPTH: 121.01 M
 AZIMUTH: 97.8
 DISTANCE: 12.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-32
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/20/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-32_12-20-09_12-18_9057A_.02_8.39_122.26_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.22	10.21	0.00	-0.00	0.0	311.1	1.4	311.1
11.00	10.99	-0.00	-0.01	0.0	240.6	1.2	222.9
12.00	11.99	-0.02	-0.03	0.0	229.1	1.6	225.3
13.00	12.99	-0.04	-0.05	0.1	226.8	1.7	224.2
14.00	13.99	-0.06	-0.07	0.1	225.8	1.5	222.5
15.00	14.99	-0.08	-0.09	0.1	225.4	1.5	222.0
16.00	15.99	-0.10	-0.10	0.1	225.1	1.5	226.3
17.00	16.99	-0.12	-0.12	0.2	224.9	1.4	220.2
18.00	17.99	-0.14	-0.14	0.2	224.7	1.2	222.7
19.00	18.99	-0.15	-0.15	0.2	224.5	1.1	221.3
20.00	19.99	-0.17	-0.17	0.2	224.5	1.5	226.7
21.00	20.99	-0.19	-0.18	0.3	224.4	1.3	222.0
22.00	21.99	-0.20	-0.20	0.3	224.3	1.2	217.9
23.00	22.99	-0.22	-0.21	0.3	223.9	1.2	221.9
24.00	23.99	-0.23	-0.22	0.3	223.4	1.2	212.5
25.00	24.99	-0.25	-0.23	0.3	223.1	0.9	210.1
26.00	25.99	-0.26	-0.24	0.4	222.4	1.1	207.9
27.00	26.99	-0.28	-0.25	0.4	221.9	0.8	199.0
28.00	27.99	-0.29	-0.25	0.4	221.2	0.4	191.4
29.00	28.99	-0.29	-0.25	0.4	220.4	0.6	163.6
30.00	29.99	-0.31	-0.25	0.4	218.8	1.0	161.4
31.00	30.99	-0.32	-0.24	0.4	216.9	0.9	163.1
32.00	31.99	-0.34	-0.23	0.4	214.6	1.1	143.9
33.00	32.98	-0.36	-0.22	0.4	211.7	1.4	140.5
34.00	33.98	-0.38	-0.20	0.4	208.1	1.8	141.5
35.00	34.98	-0.41	-0.18	0.4	204.1	2.0	142.3
36.00	35.98	-0.43	-0.16	0.5	199.8	2.2	130.8
37.00	36.98	-0.46	-0.12	0.5	195.0	2.6	131.1
38.00	37.98	-0.50	-0.09	0.5	190.0	2.9	131.2
39.00	38.98	-0.53	-0.05	0.5	185.0	3.4	128.7
40.00	39.98	-0.57	-0.00	0.6	180.2	3.6	129.3
41.00	40.98	-0.61	0.05	0.6	175.5	3.5	126.4
42.00	41.97	-0.64	0.10	0.6	171.1	3.8	122.3
43.00	42.97	-0.68	0.16	0.7	166.9	3.9	120.0
44.00	43.97	-0.71	0.22	0.7	162.8	4.1	117.5

14.00	13.99	-0.06	-0.07	0.1	225.8	1.5	222.5
15.00	14.99	-0.06	-0.09	0.1	225.4	1.5	222.0
16.00	15.99	-0.11	-0.10	0.1	225.1	1.5	226.3
17.00	16.99	-0.12	-0.12	0.2	224.9	1.4	220.2
18.00	17.99	-0.14	-0.14	0.2	224.7	1.2	222.7
19.00	18.99	-0.15	-0.15	0.2	224.5	1.1	221.3
20.00	19.99	-0.17	-0.17	0.2	224.5	1.5	226.7
21.00	20.99	-0.19	-0.18	0.3	224.4	1.3	222.0
22.00	21.99	-0.20	-0.20	0.3	224.3	1.2	217.9
23.00	22.99	-0.22	-0.21	0.3	223.9	1.2	221.9
24.00	23.99	-0.23	-0.22	0.3	223.4	1.2	212.5
25.00	24.99	-0.25	-0.23	0.3	223.1	0.9	210.1
26.00	25.99	-0.26	-0.24	0.4	222.4	1.1	207.9
27.00	26.99	-0.28	-0.25	0.4	221.9	0.8	199.0
28.00	27.99	-0.29	-0.25	0.4	221.2	0.4	191.4
29.00	28.99	-0.29	-0.25	0.4	220.4	0.6	163.6
30.00	29.99	-0.31	-0.25	0.4	218.8	1.0	161.4
31.00	30.99	-0.32	-0.24	0.4	216.9	0.9	163.1
32.00	31.99	-0.34	-0.23	0.4	214.6	1.1	143.9
33.00	32.98	-0.36	-0.22	0.4	211.7	1.4	140.5
34.00	33.98	-0.38	-0.20	0.4	208.1	1.8	141.5
35.00	34.98	-0.41	-0.18	0.4	204.1	2.0	142.3
36.00	35.98	-0.43	-0.16	0.5	199.8	2.2	130.8
37.00	36.98	-0.46	-0.12	0.5	195.0	2.6	131.1
38.00	37.98	-0.50	-0.09	0.5	190.0	2.9	131.2
39.00	38.98	-0.53	-0.05	0.5	185.0	3.4	128.7
40.00	39.98	-0.57	-0.00	0.6	180.2	3.6	129.3
41.00	40.98	-0.61	0.05	0.6	175.5	3.5	126.4
42.00	41.97	-0.64	0.10	0.6	171.1	3.8	122.3
43.00	42.97	-0.68	0.16	0.7	166.9	3.9	120.0
44.00	43.97	-0.71	0.22	0.7	162.8	4.1	117.5
45.00	44.97	-0.74	0.28	0.8	159.0	4.3	116.9
46.00	45.96	-0.78	0.36	0.9	155.4	4.7	114.7
47.00	46.96	-0.81	0.43	0.9	151.9	4.9	109.9
48.00	47.96	-0.84	0.51	1.0	148.7	5.2	112.5
49.00	48.95	-0.88	0.60	1.1	145.7	5.2	109.2
50.00	49.95	-0.91	0.68	1.1	142.9	5.4	107.7
51.00	50.94	-0.94	0.78	1.2	140.4	5.8	107.7
52.00	51.94	-0.97	0.88	1.3	138.0	6.3	108.0
53.00	52.93	-1.01	0.98	1.4	136.0	6.3	113.7
54.00	53.92	-1.05	1.08	1.5	134.0	6.4	110.8
55.00	54.92	-1.09	1.19	1.6	132.3	6.4	109.3
56.00	55.91	-1.12	1.30	1.7	130.9	6.6	108.5
57.00	56.91	-1.16	1.41	1.8	129.6	6.5	110.2
58.00	57.90	-1.20	1.51	1.9	128.5	6.4	119.8
59.00	58.89	-1.24	1.62	2.0	127.4	6.6	110.2
60.00	59.89	-1.27	1.73	2.1	126.3	6.7	106.5
61.00	60.88	-1.30	1.84	2.3	125.3	6.7	106.3
62.00	61.87	-1.33	1.95	2.4	124.4	6.7	105.9
63.00	62.87	-1.37	2.06	2.5	123.6	6.6	108.2
64.00	63.86	-1.40	2.17	2.6	122.9	7.2	105.7
65.00	64.85	-1.44	2.29	2.7	122.1	7.2	105.7
66.00	65.84	-1.48	2.42	2.8	121.5	7.4	109.0
67.00	66.83	-1.52	2.55	3.0	120.8	7.7	107.5
68.00	67.82	-1.56	2.67	3.1	120.3	7.3	106.2
69.00	68.82	-1.59	2.79	3.2	119.7	7.3	105.0
70.00	69.81	-1.63	2.91	3.3	119.2	7.4	105.6
71.00	70.80	-1.66	3.04	3.5	118.7	7.6	104.8
72.00	71.79	-1.70	3.17	3.6	118.2	8.0	104.8
73.00	72.78	-1.73	3.31	3.7	117.6	8.0	102.8
74.00	73.77	-1.76	3.45	3.9	117.1	8.1	100.2
75.00	74.76	-1.78	3.59	4.0	116.5	8.2	99.1
76.00	75.75	-1.80	3.72	4.1	115.8	8.2	97.0
77.00	76.74	-1.82	3.87	4.3	115.2	8.2	97.2
78.00	77.73	-1.83	4.01	4.4	114.5	8.4	92.3
79.00	78.72	-1.83	4.16	4.5	113.8	8.3	91.1
80.00	79.71	-1.84	4.31	4.7	113.1	8.8	90.0
81.00	80.70	-1.84	4.46	4.8	112.4	8.7	90.9
82.00	81.68	-1.84	4.61	5.0	111.8	8.7	91.6
83.00	82.67	-1.84	4.76	5.1	111.1	9.0	91.2
84.00	83.66	-1.85	4.92	5.3	110.6	8.9	93.8
85.00	84.65	-1.86	5.07	5.4	110.1	9.3	94.5
86.00	85.64	-1.87	5.23	5.6	109.7	8.9	94.6
87.00	86.62	-1.88	5.38	5.7	109.3	9.0	93.9
88.00	87.61	-1.89	5.54	5.9	108.8	9.1	92.6
89.00	88.60	-1.90	5.70	6.0	108.4	9.0	93.9
90.00	89.59	-1.91	5.85	6.2	108.1	9.1	92.7
91.00	90.57	-1.92	6.01	6.3	107.7	9.5	94.1
92.00	91.56	-1.93	6.19	6.5	107.3	9.9	94.7
93.00	92.54	-1.94	6.36	6.6	107.0	10.0	94.1
94.00	93.53	-1.95	6.53	6.8	106.7	9.8	94.3
95.00	94.51	-1.97	6.71	7.0	106.3	10.4	92.3
96.00	95.50	-1.98	6.89	7.2	106.0	10.8	93.5
97.00	96.48	-1.99	7.08	7.4	105.7	11.0	94.9
98.00	97.46	-2.00	7.27	7.5	105.4	10.9	92.8
99.00	98.44	-2.02	7.46	7.7	105.1	10.9	92.4
100.00	99.42	-2.02	7.65	7.9	104.8	11.4	93.0
101.00	100.40	-2.03	7.85	8.1	104.5	11.3	91.7
102.00	101.38	-2.04	8.04	8.3	104.2	11.3	91.8
103.00	102.37	-2.04	8.24	8.5	103.9	11.3	91.0
104.00	103.35	-2.04	8.43	8.7	103.6	11.1	90.9
105.00	104.33	-2.04	8.63	8.9	103.3	11.3	90.5
106.00	105.31	-2.04	8.82	9.1	103.0	11.8	89.0
107.00	106.29	-2.03	9.02	9.2	102.7	11.6	88.6
108.00	107.27	-2.03	9.22	9.4	102.4	11.5	89.9
109.00	108.25	-2.02	9.42	9.6	102.1	11.5	86.7
110.00	109.23	-2.01	9.62	9.8	101.8	11.6	86.8
111.00	110.21	-2.00	9.82	10.0	101.5	11.6	86.7
112.00	111.19	-1.99	10.03	10.2	101.2	11.7	85.1
113.00	112.16	-1.97	10.23	10.4	100.9	12.4	86.2
114.00	113.14	-1.95	10.45	10.6	100.6	12.7	84.1
115.00	114.11	-1.93	10.67	10.8	100.2	12.6	82.9
116.00	115.09	-1.90	10.89	11.1	99.9	12.9	82.5
117.00	116.06	-1.86	11.11	11.3	99.5	13.2	81.6
118.00	117.04	-1.83	11.33	11.5	99.2	13.1	82.7
119.00	118.01	-1.81	11.56	11.7	98.9	13.1	82.7
120.00	118.99	-1.77	11.78	11.9	98.6	13.3	81.7
121.00	119.96	-1.73	12.01	12.1	98.2	13.6	78.1
122.00	120.93	-1.69	12.25	12.4	97.8	13.9	78.7
122.08	121.01	-1.68	12.27	12.4	97.8	14.3	76.7

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-33	year drilled: 2009	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	574,349.76	6,137,625.86	1,088.12

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
295	-88	70.98	Rotary			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	295.4	-88.50
4.00	308.3	-88.70
5.00	325.4	-89.10
6.00	334.2	-88.90
7.00	343.4	-88.50
8.00	348.7	-88.50
9.00	352.9	-88.40
10.00	0.0	-87.90
11.00	6.9	-87.50
12.00	12.6	-87.10
13.00	17.9	-86.60
14.00	22.3	-86.40
15.00	25.9	-85.40
16.00	28.7	-85.10
17.00	31.0	-84.60
18.00	33.1	-83.60
19.00	34.8	-83.20
20.00	36.3	-83.20
21.00	37.4	-82.40
22.00	38.3	-81.60
23.00	39.1	-81.60
24.00	39.6	-81.50
25.00	40.0	-81.30
26.00	40.3	-80.60
27.00	40.5	-80.10
28.00	40.6	-80.40
29.00	40.6	-78.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.00	3.00		
10.80	11.50	0.70		
57.80	61.80	4.00		
63.20	63.90	0.70		
65.80	66.15	0.35		

Date issued: Monday, June 09, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-09-33	year drilled: 2009	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

RAW SAMPLE INFORMATION

Date issued: Monday, June 09, 2014
Reviewed: October 11, 2002

Page 3 of 3

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-33		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	71.62	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.20	DEPARTURE TIME:	
LOG BOTTOM	71.08	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

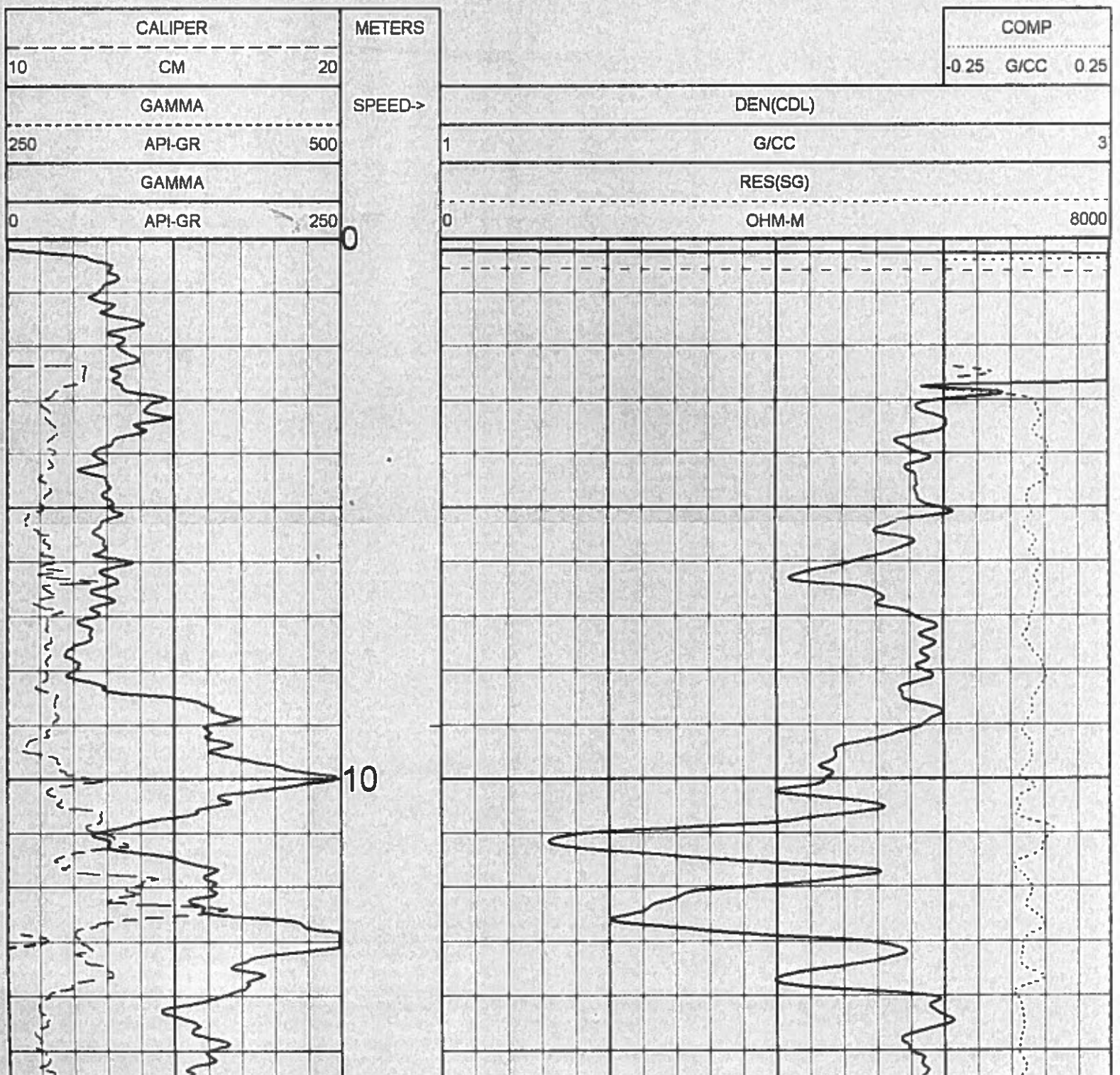
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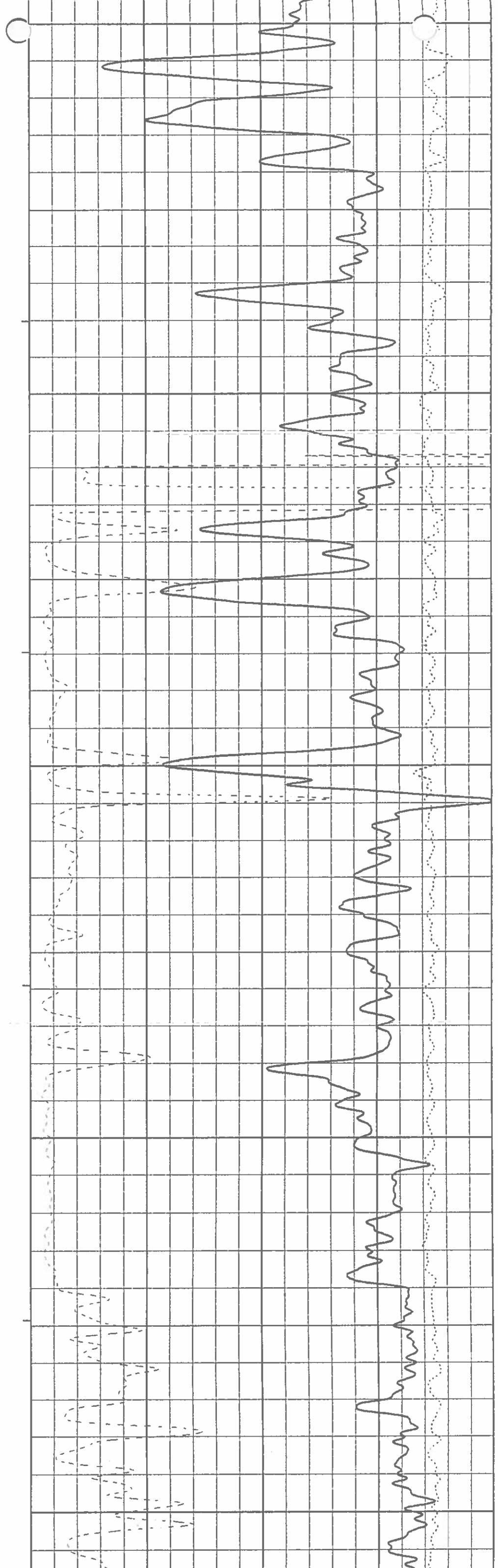
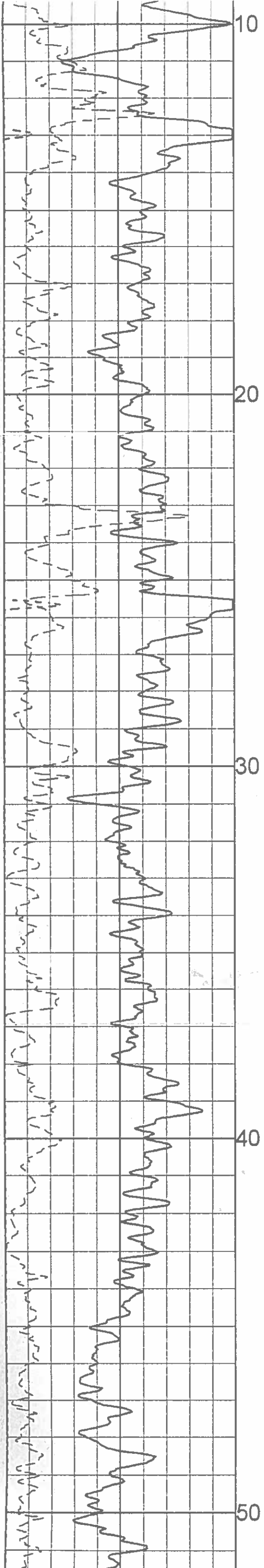
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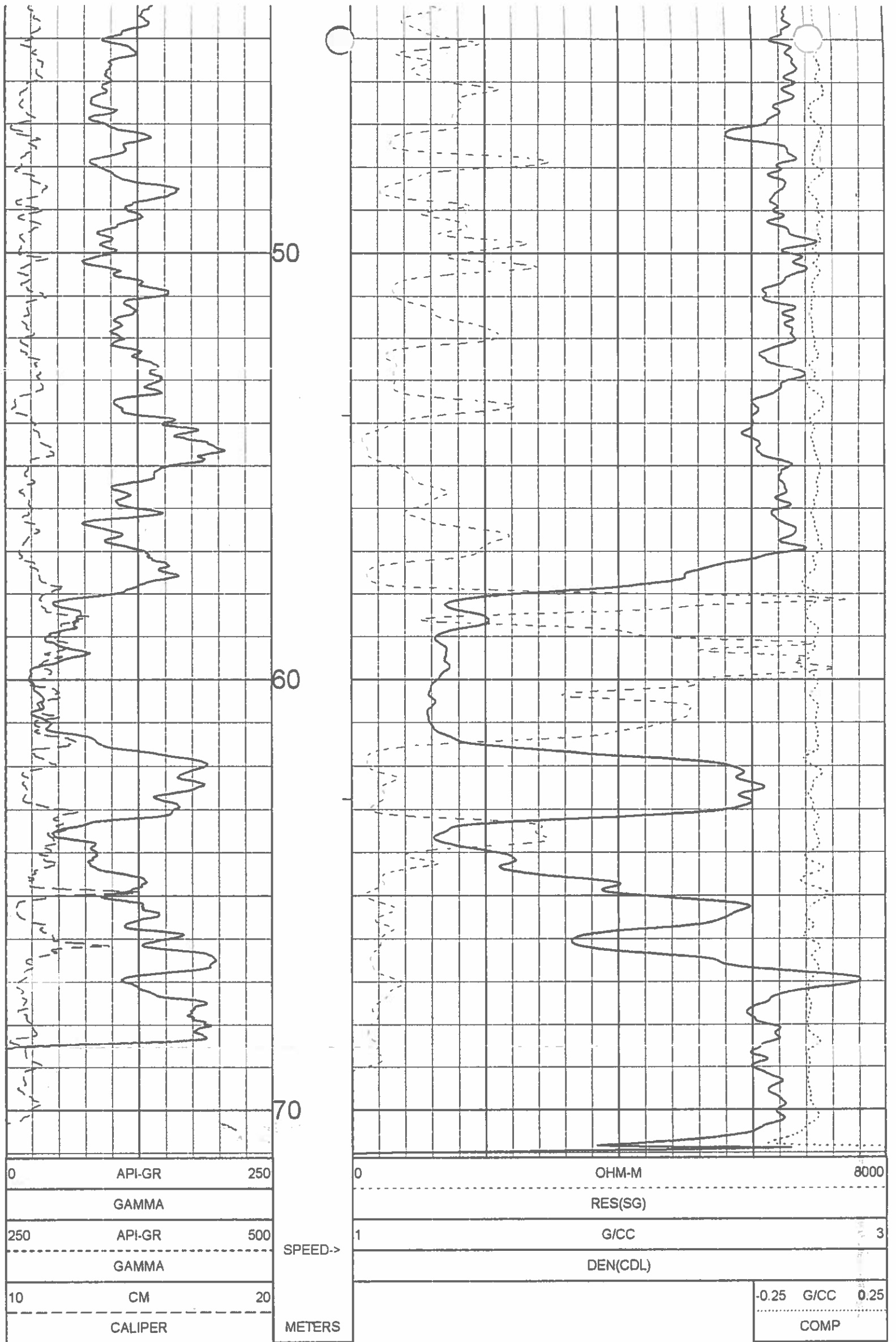
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MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008

NEUTRON MATRIX : SANDSTONE
ELECT CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR







1:100 BULK DENSITY BR-09-33 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 03/11/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-33 12/21/09 15:28					
TOOL 9239C TM VERSION 2023					
SERIAL NUMBER 449					
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22 09	13:52:39	GAMMA	0.000 [API-GR]	10.000 [G/CC]
	Dec22 09	13:52:39	GAMMA	500.000 [API-GR]	600.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]

DETAILED DENSITY GAMMA - CALIPER - RES. BR-09-33

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR-09-33		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	71 82	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	0.20	DEPARTURE TIME	
LOG BOTTOM	71 08	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

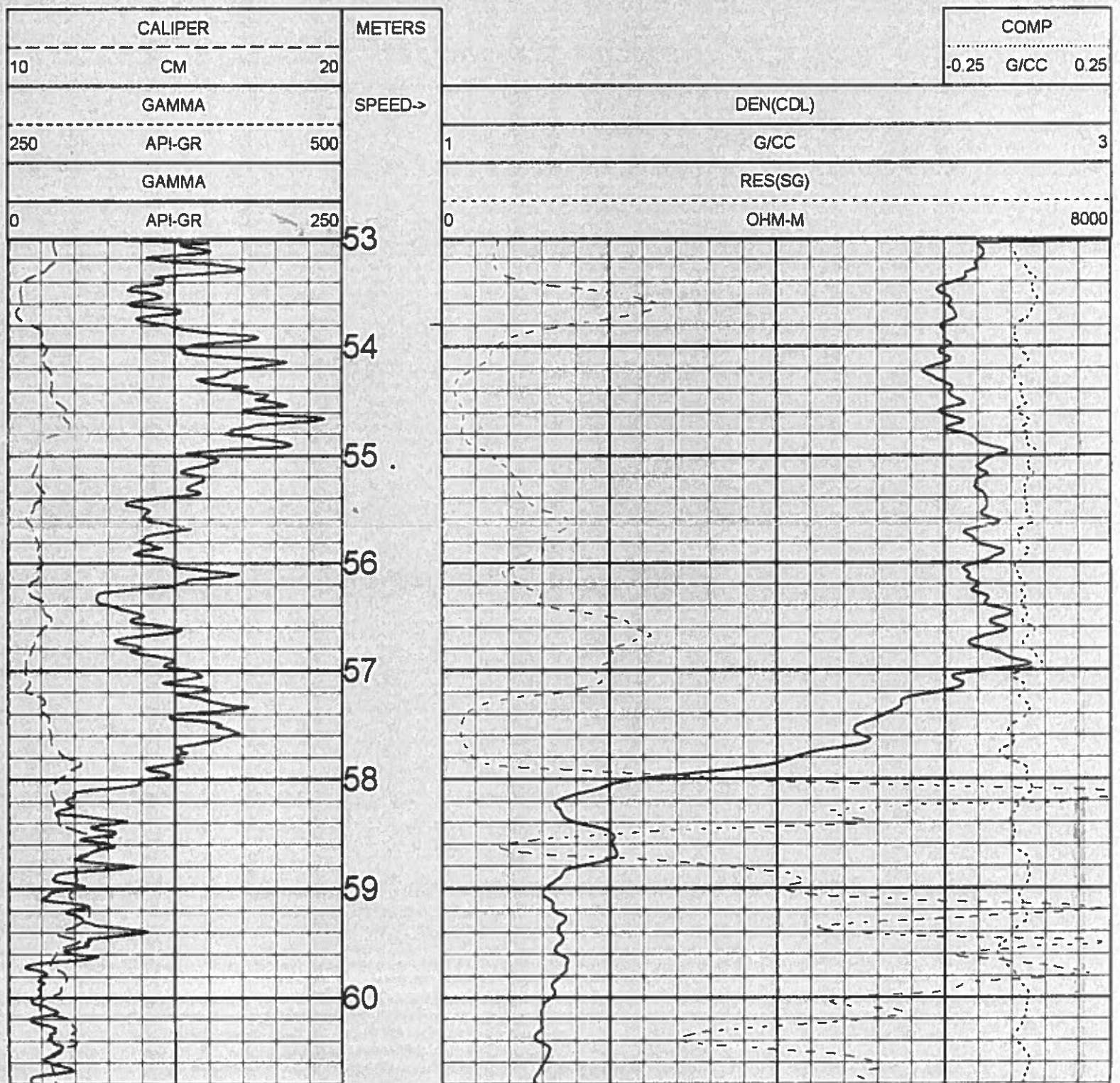
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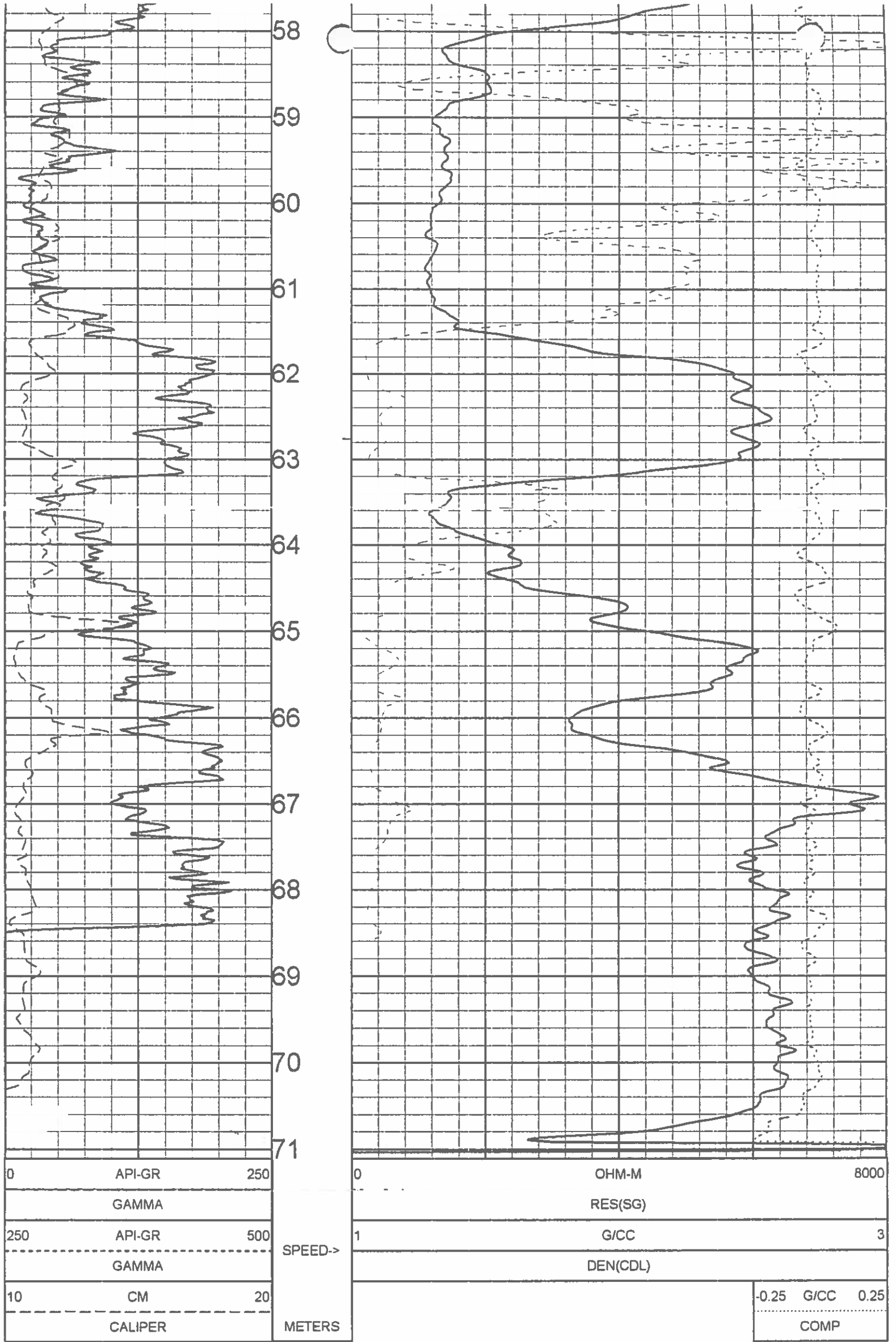
LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008

NEUTRON MATRIX : SANDSTONE
ELECT CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR-09-33 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 03/20/2008		VERSION = 3.64HR

TOOL CALIBRATION BR-09-33 12/21/09 15:28
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 449

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec22,09	13:52:39	GAMMA	0.000 [API-GR]	10.000 [CPS]
	Dec22,09	13:52:39	GAMMA	500.000 [API-GR]	600.000 [CPS]
2	Jul15,09	09:24:56	VOLTAGE	30.300 [MV]	7501.000 [CPS]
	Jul15,09	09:24:56	VOLTAGE	232.200 [MV]	34383.000 [CPS]
3	Nov20,09	17:24:23	CALIPER	8.900 [MM]	155640.000 [CPS]
	Nov20,09	17:24:23	CALIPER	20.100 [MM]	442364.000 [CPS]
4	Nov20,09	17:24:23	DEN(CDL)	1.000 [G/CC]	25507.000 [CPS]

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	DENSITY
WELL	BR-09-33		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM GL		ELEVATION DF	N/A
DRL MEASURED FROM GL		ELEVATION GL	N/A
DATE	12/21/09	RIG NUMBER	
DEPTH DRILLER	71 82	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	2.02	DEPARTURE TIME	
LOG BOTTOM	71.18	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G HOLMLUND		
RECORDED BY	T NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

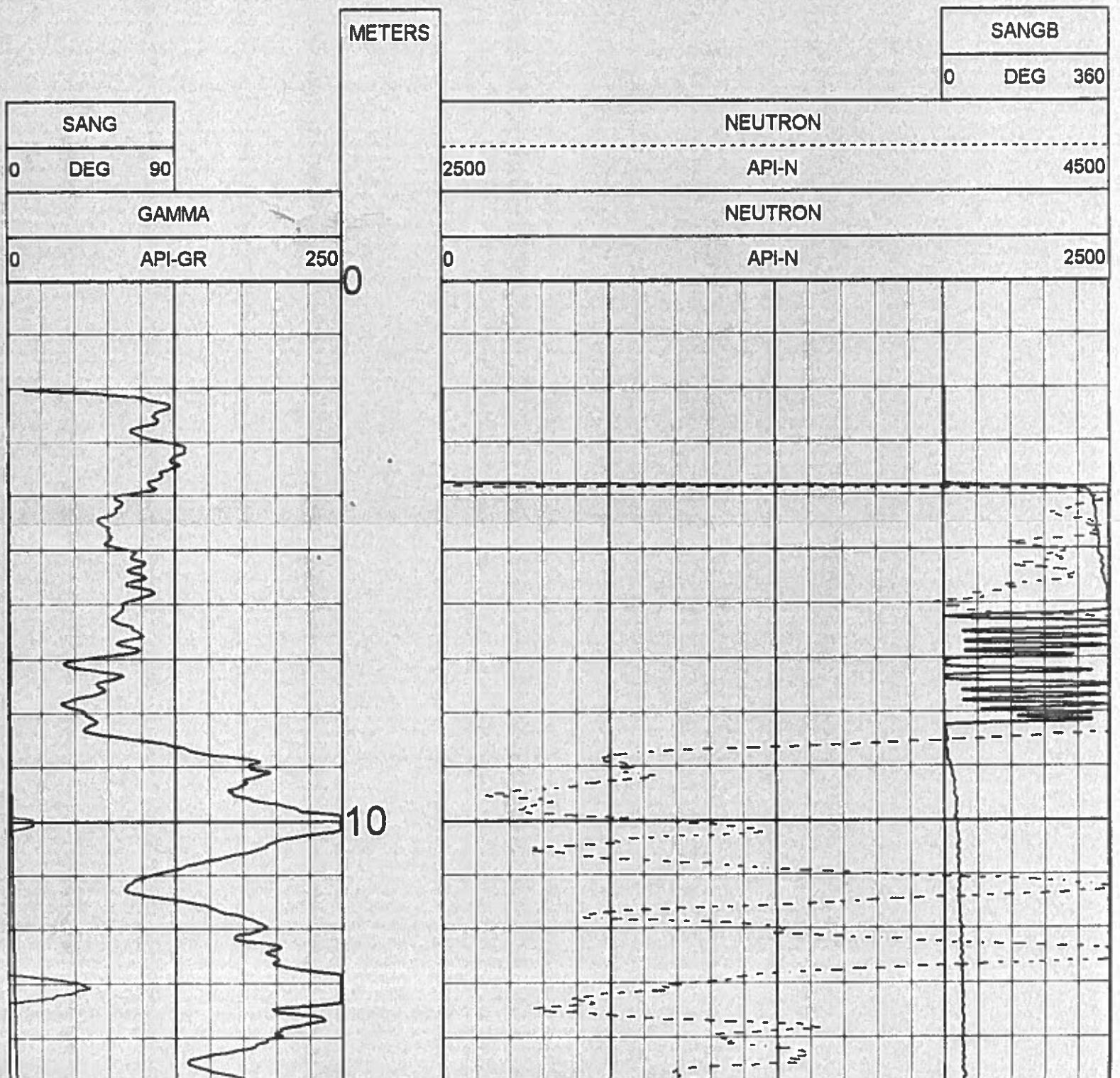
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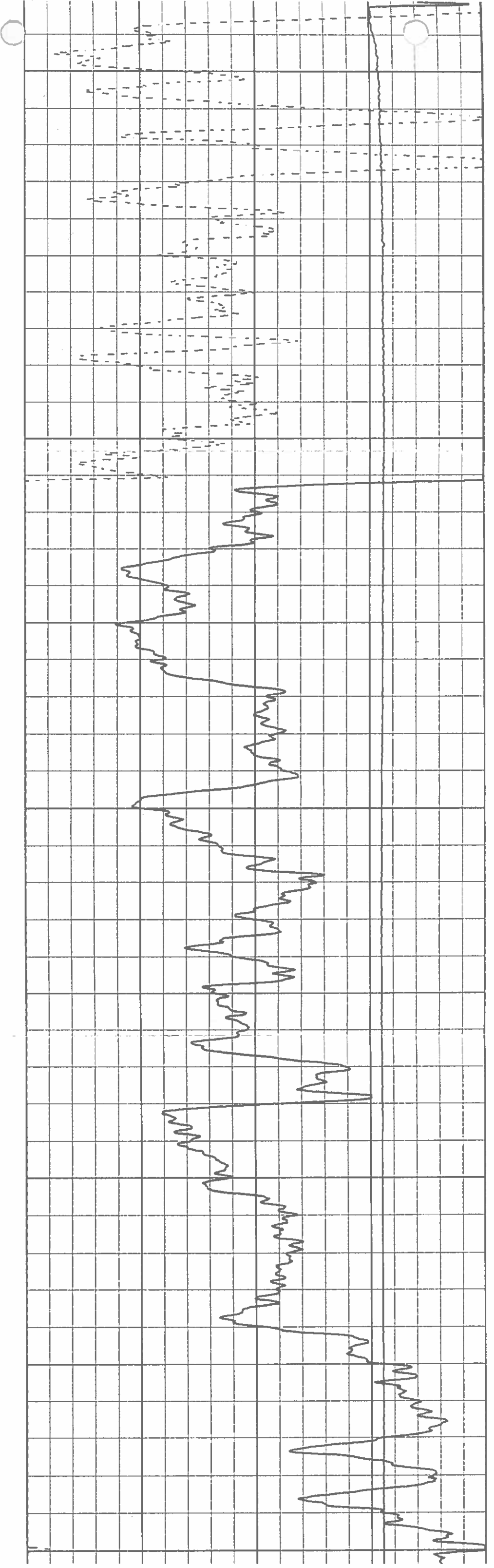
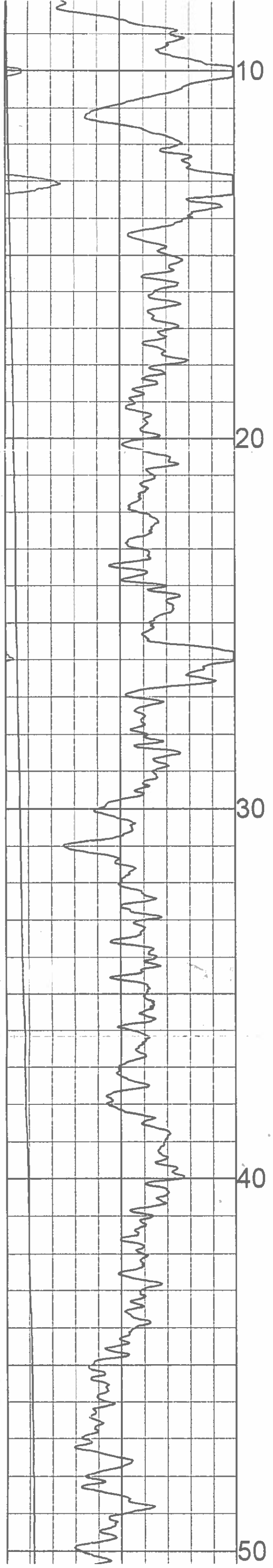
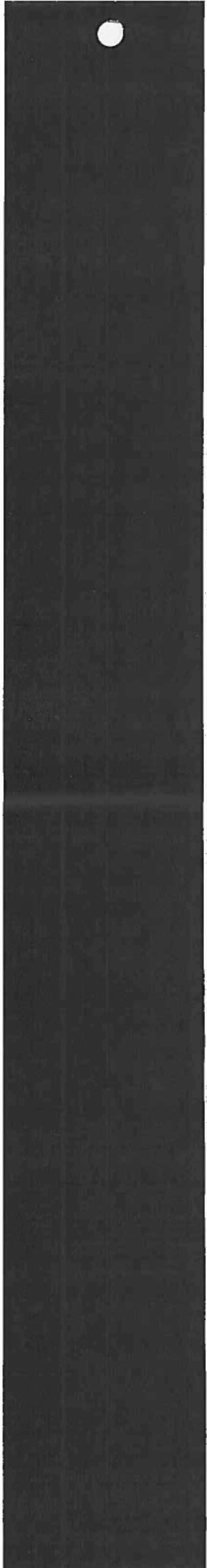
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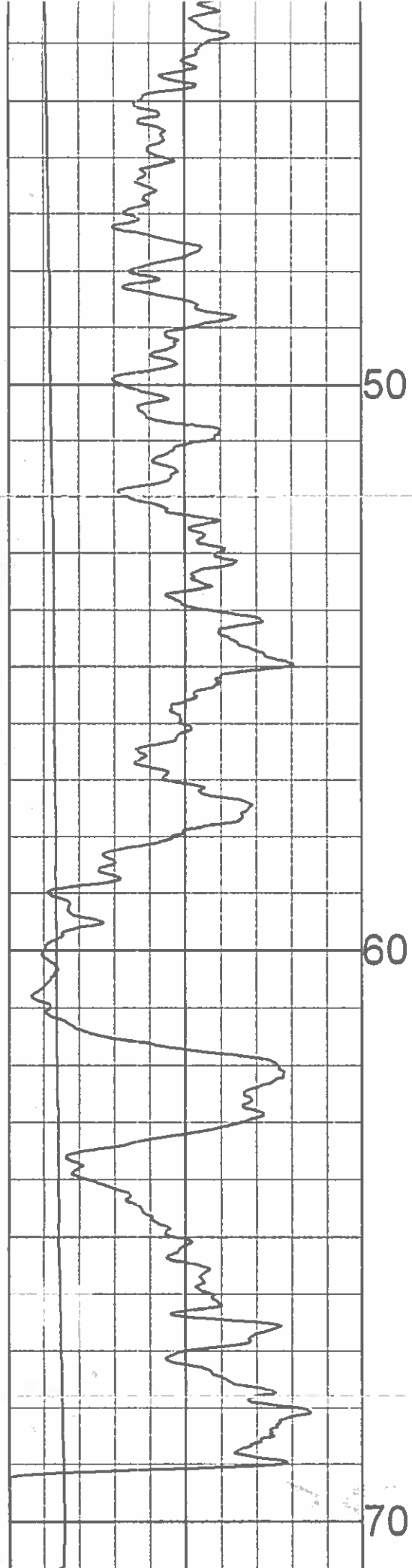
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 MAGNETIC DECL : 21.0
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009

NEUTRON MATRIX : SANDSTONE
 ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
 BIT SIZE : 11.43
 VERSION = 3.64HR

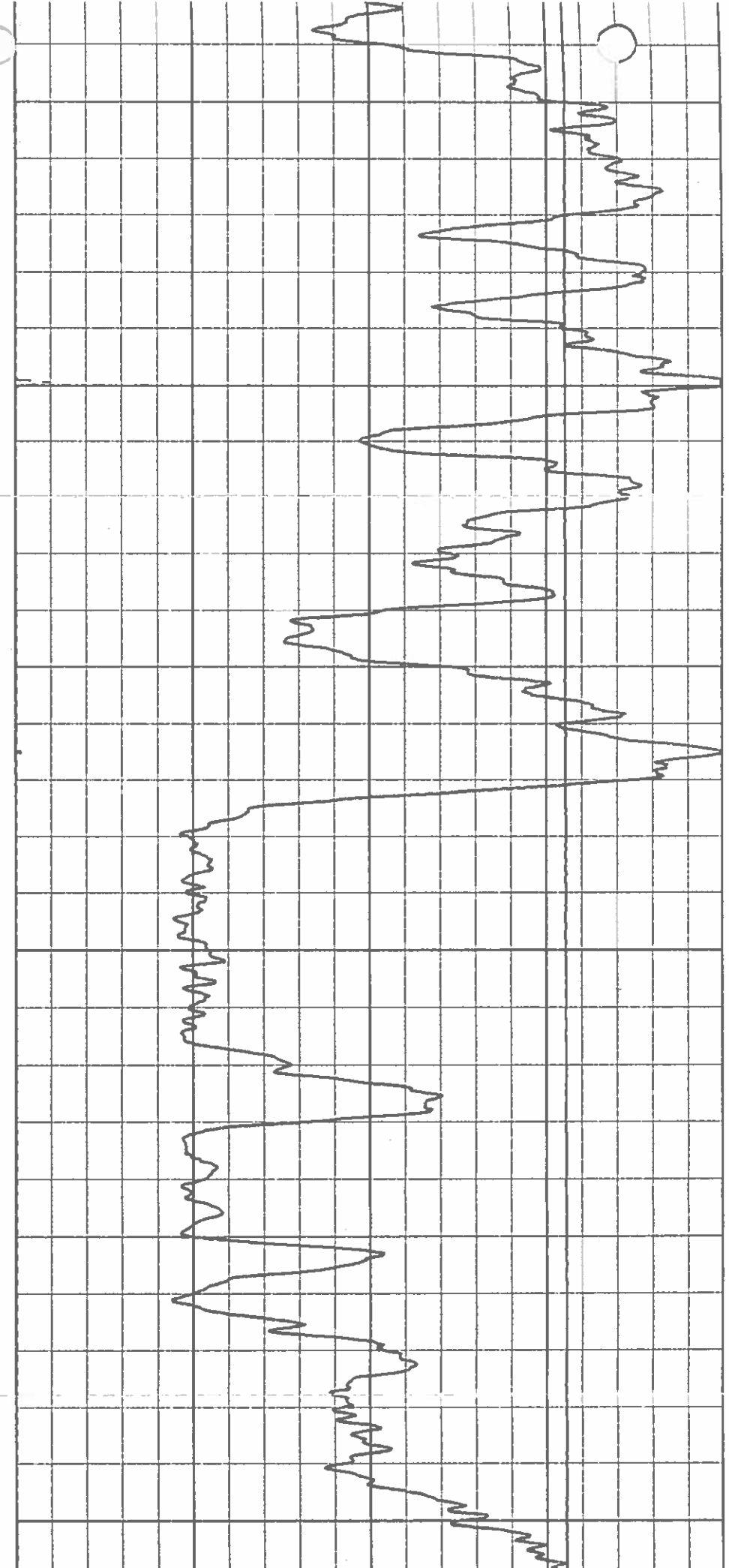






0	API-GR	250
GAMMA		
0	DEG	90
SANG		

METERS



0	API-N	2500
NEUTRON		
2500	API-N	4500
NEUTRON		

0	DEG	360
SANGB		

1:100 NEUTRON BR-09-33 12/21/09

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 12/22/2009		VERSION = 3.64HR

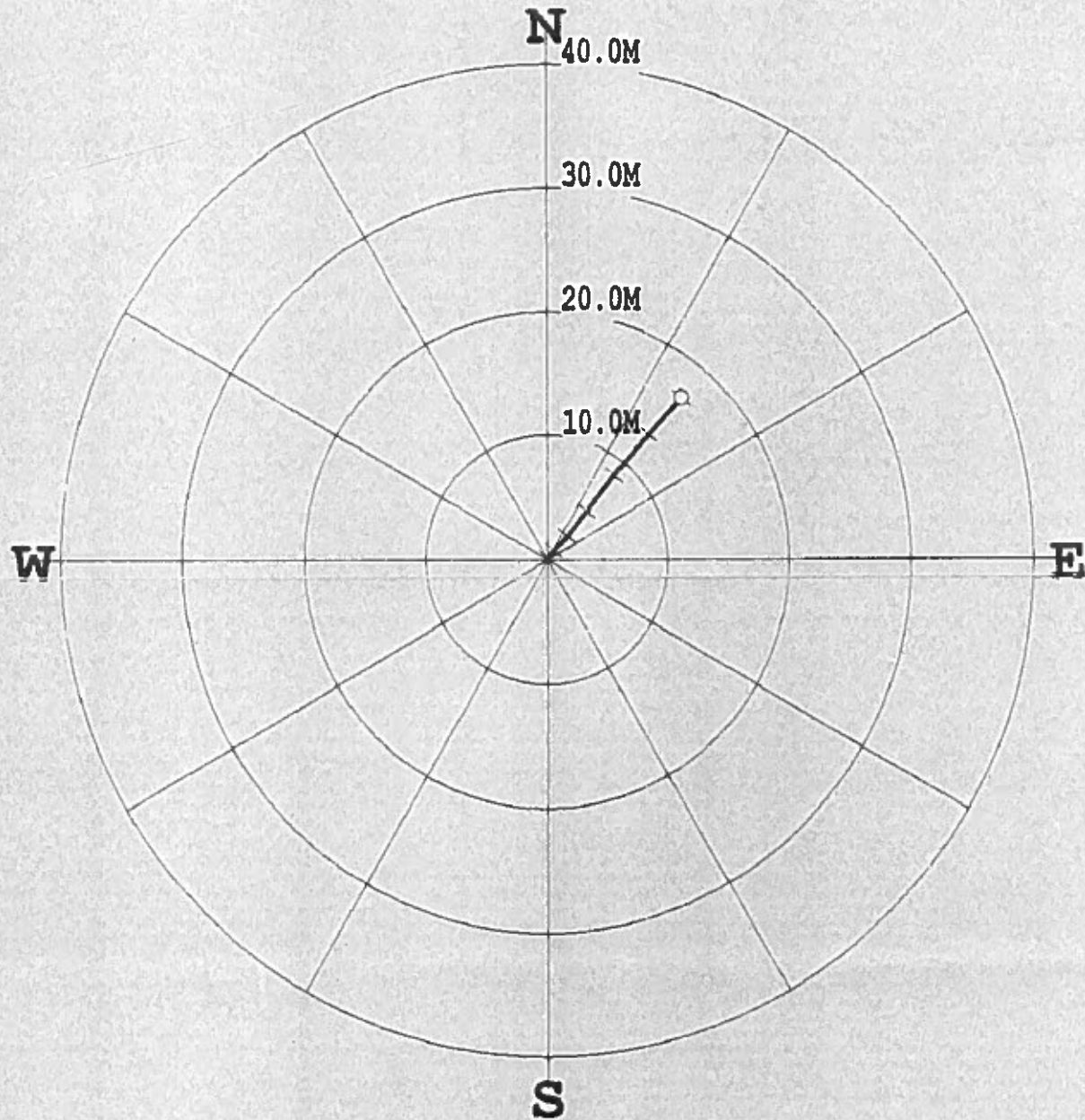
TOOL CALIBRATION BR-09-33-12/21/09 15:46				
TOOL 9057A TM VERSION 2				
SERIAL NUMBER 4429				
DATE	TIME	SENSOR	STANDARD	RESPONSE

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR-09-33
 DATE OF LOG: 12/21/09
 PROBE: 9057A 4429


 MAG DECL: 21.0

SCALE: 5 M/CM
 TRUE DEPTH: 67.97 M
 AZIMUTH: 40.4
 DISTANCE: 17.1 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR-09-33
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/21/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-33_12-21-09_15-46_9057A_.02_2.02_71.16_DEVI.log


CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.86	3.86	0.00	-0.00	0.0	295.4	1.5	295.4
4.00	4.00	0.00	-0.00	0.0	308.3	1.3	316.6
5.00	5.00	0.02	-0.01	0.0	325.4	0.9	334.9
6.00	6.00	0.03	-0.02	0.0	334.2	1.1	352.5
7.00	7.00	0.06	-0.02	0.1	343.4	1.5	358.4
8.00	8.00	0.08	-0.02	0.1	348.7	1.5	1.6
9.00	9.00	0.11	-0.01	0.1	352.9	1.6	15.3
10.00	10.00	0.14	-0.00	0.1	360.0	2.1	28.6
11.00	11.00	0.17	0.02	0.2	6.9	2.5	29.3
12.00	12.00	0.21	0.05	0.2	12.6	2.9	40.8
13.00	12.99	0.25	0.08	0.3	17.9	3.4	38.8
14.00	13.99	0.30	0.12	0.3	22.3	3.6	42.0
15.00	14.99	0.35	0.17	0.4	25.9	4.6	46.2
16.00	15.99	0.41	0.23	0.5	28.7	4.9	42.1
17.00	16.98	0.48	0.29	0.6	31.0	5.4	39.4
18.00	17.98	0.55	0.36	0.7	33.1	6.4	45.4
19.00	18.97	0.63	0.44	0.8	34.8	6.8	46.4
20.00	19.96	0.72	0.53	0.9	36.3	6.8	45.6
21.00	20.96	0.81	0.62	1.0	37.4	7.6	45.8
22.00	21.95	0.90	0.71	1.1	38.3	8.4	44.7
23.00	22.94	1.00	0.82	1.3	39.1	8.4	46.9
24.00	23.92	1.11	0.92	1.4	39.6	8.5	43.9
25.00	24.91	1.22	1.02	1.6	40.0	8.7	46.0
26.00	25.90	1.34	1.13	1.8	40.3	9.4	42.9
27.00	26.89	1.46	1.25	1.9	40.5	9.9	43.0
28.00	27.87	1.59	1.36	2.1	40.6	9.6	42.9
29.00	28.85	1.73	1.48	2.3	40.6	11.1	39.8
30.00	29.83	1.88	1.61	2.5	40.6	11.3	39.3
31.00	30.81	2.04	1.74	2.7	40.5	12.1	38.8
32.00	31.79	2.20	1.87	2.9	40.4	12.5	38.7
33.00	32.77	2.37	2.01	3.1	40.2	12.8	39.2
34.00	33.74	2.55	2.15	3.3	40.1	13.0	38.4
35.00	34.71	2.73	2.29	3.6	40.0	13.8	39.0
36.00	35.68	2.93	2.44	3.8	39.9	14.6	39.1
37.00	36.65	3.13	2.60	4.1	39.8	14.8	38.9

S

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR-09-33
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 12/21/09
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR-09-33_12-21-09_15-46_9057A_02_2.02_71.16_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.86	3.86	0.00	-0.00	0.0	295.4	1.5	295.4
4.00	4.00	0.00	-0.00	0.0	308.3	1.3	316.6
5.00	5.00	0.02	-0.01	0.0	325.4	0.9	334.9
6.00	6.00	0.03	-0.02	0.0	334.2	1.1	352.5
7.00	7.00	0.06	-0.02	0.1	343.4	1.5	358.4
8.00	8.00	0.08	-0.02	0.1	348.7	1.5	1.6
9.00	9.00	0.11	-0.01	0.1	352.9	1.6	15.3
10.00	10.00	0.14	-0.00	0.1	360.0	2.1	28.6
11.00	11.00	0.17	0.02	0.2	6.9	2.5	29.3
12.00	12.00	0.21	0.05	0.2	12.6	2.9	40.8
13.00	12.99	0.25	0.08	0.3	17.9	3.4	38.8
14.00	13.99	0.30	0.12	0.3	22.3	3.6	42.0
15.00	14.99	0.35	0.17	0.4	25.9	4.6	46.2
16.00	15.99	0.41	0.23	0.5	28.7	4.9	42.1
17.00	16.98	0.48	0.29	0.6	31.0	5.4	39.4
18.00	17.98	0.55	0.36	0.7	33.1	6.4	45.4
19.00	18.97	0.63	0.44	0.8	34.8	6.8	46.4
20.00	19.96	0.72	0.53	0.9	36.3	6.8	45.6
21.00	20.96	0.81	0.62	1.0	37.4	7.6	45.8
22.00	21.95	0.90	0.71	1.1	38.3	8.4	44.7
23.00	22.94	1.00	0.82	1.3	39.1	8.4	46.9
24.00	23.92	1.11	0.92	1.4	39.6	8.5	43.9
25.00	24.91	1.22	1.02	1.6	40.0	8.7	46.0
26.00	25.90	1.34	1.13	1.8	40.3	9.4	42.9
27.00	26.89	1.46	1.25	1.9	40.5	9.9	43.0
28.00	27.87	1.59	1.36	2.1	40.6	9.6	42.9
29.00	28.85	1.73	1.48	2.3	40.6	11.1	39.8
30.00	29.83	1.88	1.61	2.5	40.6	11.3	39.3
31.00	30.81	2.04	1.74	2.7	40.5	12.1	38.8
32.00	31.79	2.20	1.87	2.9	40.4	12.5	38.7
33.00	32.77	2.37	2.01	3.1	40.2	12.8	39.2
34.00	33.74	2.55	2.15	3.3	40.1	13.0	38.4
35.00	34.71	2.73	2.29	3.6	40.0	13.8	39.0
36.00	35.68	2.93	2.44	3.8	39.9	14.6	39.1
37.00	36.65	3.13	2.60	4.1	39.8	14.8	38.9
38.00	37.61	3.34	2.77	4.3	39.7	16.2	38.8
39.00	38.57	3.55	2.94	4.6	39.7	16.5	38.9
40.00	39.53	3.78	3.13	4.9	39.6	17.4	38.5
41.00	40.48	4.02	3.31	5.2	39.5	17.9	38.6
42.00	41.43	4.26	3.50	5.5	39.5	17.7	38.2
43.00	42.39	4.50	3.70	5.8	39.4	18.6	38.3
44.00	43.33	4.76	3.90	6.2	39.3	19.6	38.1
45.00	44.27	5.02	4.11	6.5	39.3	20.2	39.6
46.00	45.21	5.29	4.33	6.8	39.3	20.4	39.5
47.00	46.15	5.56	4.55	7.2	39.3	20.7	39.5
48.00	47.08	5.84	4.77	7.5	39.3	20.8	38.5
49.00	48.01	6.12	5.00	7.9	39.3	21.4	38.8
50.00	48.94	6.41	5.23	8.3	39.2	21.6	39.7
51.00	49.87	6.69	5.47	8.6	39.3	22.0	39.5
52.00	50.80	6.98	5.71	9.0	39.3	22.9	39.3
53.00	51.72	7.28	5.96	9.4	39.3	23.4	41.0
54.00	52.64	7.58	6.22	9.8	39.4	23.2	40.8
55.00	53.55	7.88	6.48	10.2	39.4	23.3	41.1
56.00	54.47	8.18	6.74	10.6	39.5	23.5	40.8
57.00	55.39	8.48	7.00	11.0	39.5	23.9	41.2
58.00	56.30	8.79	7.27	11.4	39.6	24.1	42.0
59.00	57.21	9.09	7.54	11.8	39.7	24.4	41.8
60.00	58.13	9.40	7.82	12.2	39.7	24.7	41.6
61.00	59.04	9.71	8.09	12.6	39.8	24.5	42.1
62.00	59.94	10.02	8.37	13.1	39.9	24.9	41.9
63.00	60.85	10.34	8.66	13.5	39.9	26.0	41.8
64.00	61.75	10.66	8.94	13.9	40.0	25.5	42.0
65.00	62.66	10.98	9.23	14.3	40.1	25.8	41.9
66.00	63.55	11.30	9.53	14.8	40.1	26.4	42.0
67.00	64.45	11.63	9.83	15.2	40.2	26.8	42.6
68.00	65.34	11.97	10.14	15.7	40.3	27.7	40.8
69.00	66.22	12.31	10.45	16.1	40.3	28.0	41.7
70.00	67.10	12.66	10.76	16.6	40.4	28.5	41.2
71.00	67.99	13.01	11.08	17.1	40.4	0.0	0.0
70.98	67.97	13.01	11.08	17.1	40.4	28.3	42.2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-01	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,392.67	6,140,552.97	1,239.83

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		141.83	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: slim tool

SURVEY SUMMARY

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	20.11	20.11		
33.50	34.00	0.50		
35.80	36.50	0.70		
86.70	88.10	1.40		
111.10	111.90	0.80		
111.90	118.50	6.60		
118.50	119.40	0.90		
130.70	131.30	0.60		
133.20	137.00	3.80		
137.00	137.80	0.80		
141.00	141.30	0.30		

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 1 of 1

PICKS - Run 11/2011



GAM-GAMH
SLIM TOOL
BR10-01

COMPANY WESTERN COAL CORPORATION

OTHER SERVICES

WELL SR10-01
FIELD BRULE
COUNTRY CANADA
PROV. ALBERTA
LOCAL. 24 NORTH

ELEVATION NO

ELEVATION OF

ELEVATION ON

RIG NUMBER

LOGGER

ARRIVAL TIME

DEPARTURE TIME

CIRC STOPPED

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

INCESSOR, SUBJECT TO SIA, REGISTRATION NUMBER

1:100 GAM-GAMH BR10-01 08/14/10

LOG PARAMETERS

MATRIX DENSITY 2.65

NEUTRON MATRIX SANDSTONE

MATRIX DELTA T 177

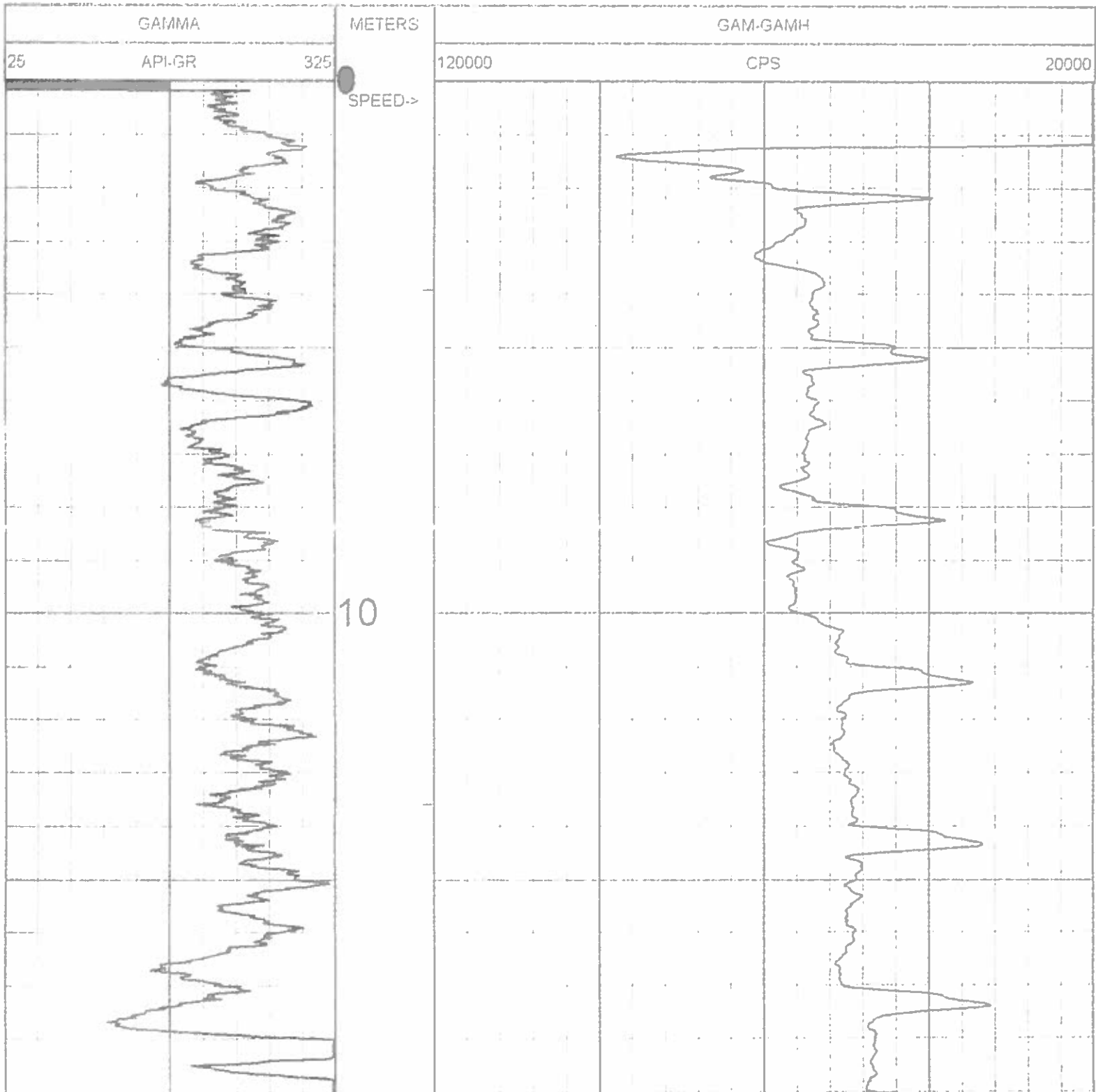
MAGNETIC DECL 21.0

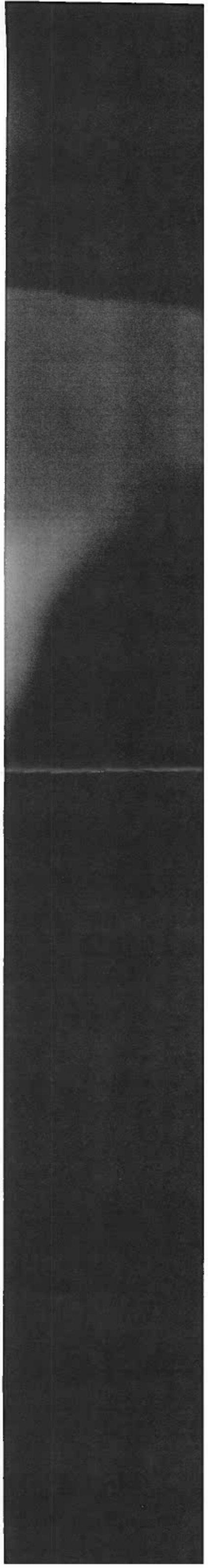
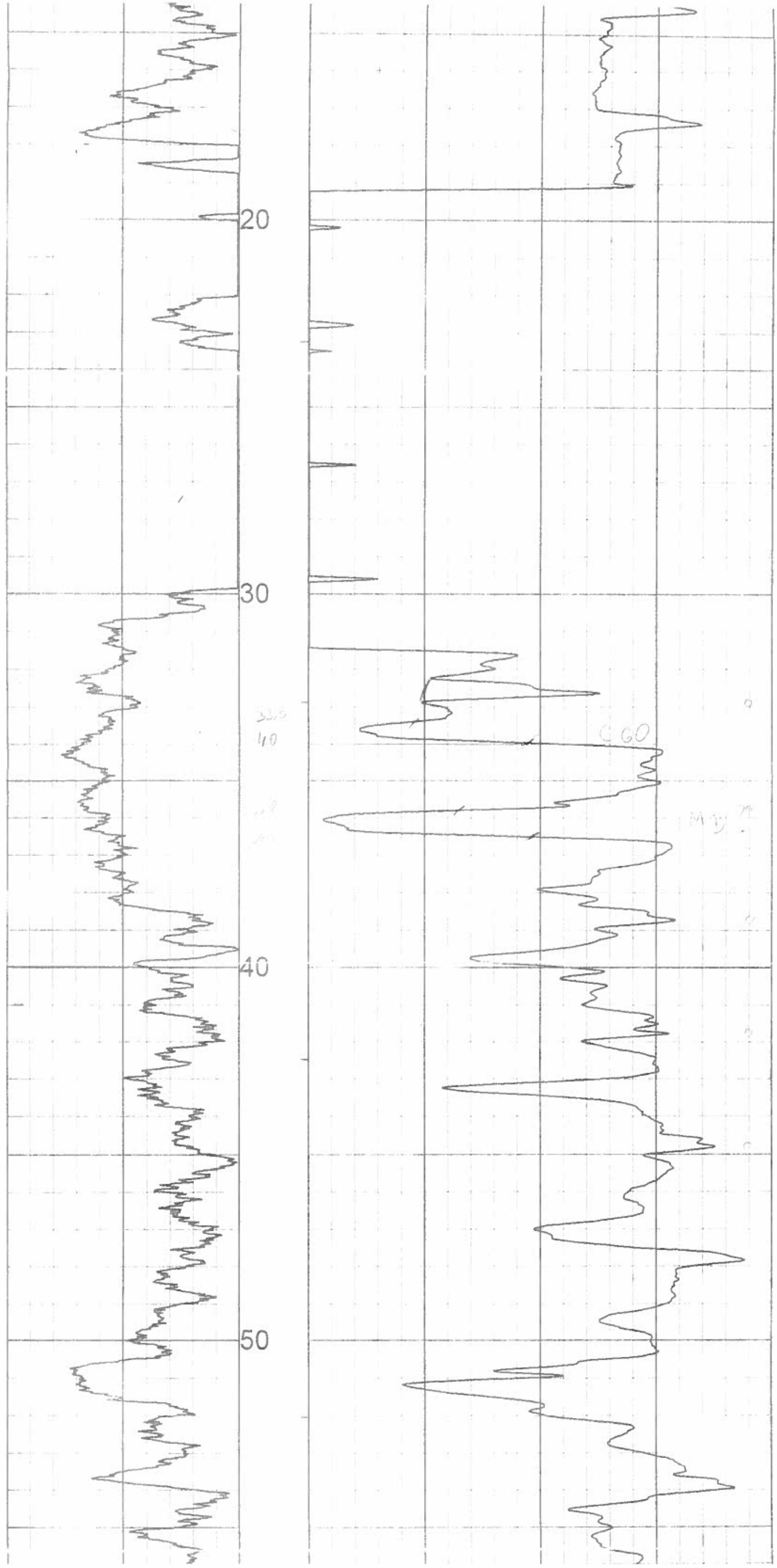
ELECT CUTOFF 99999

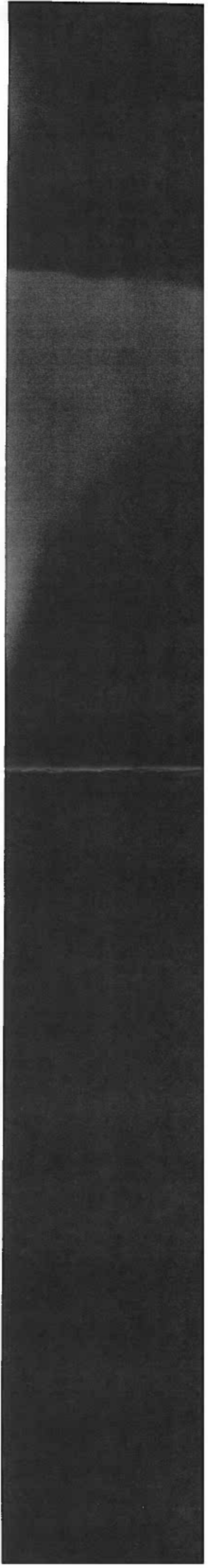
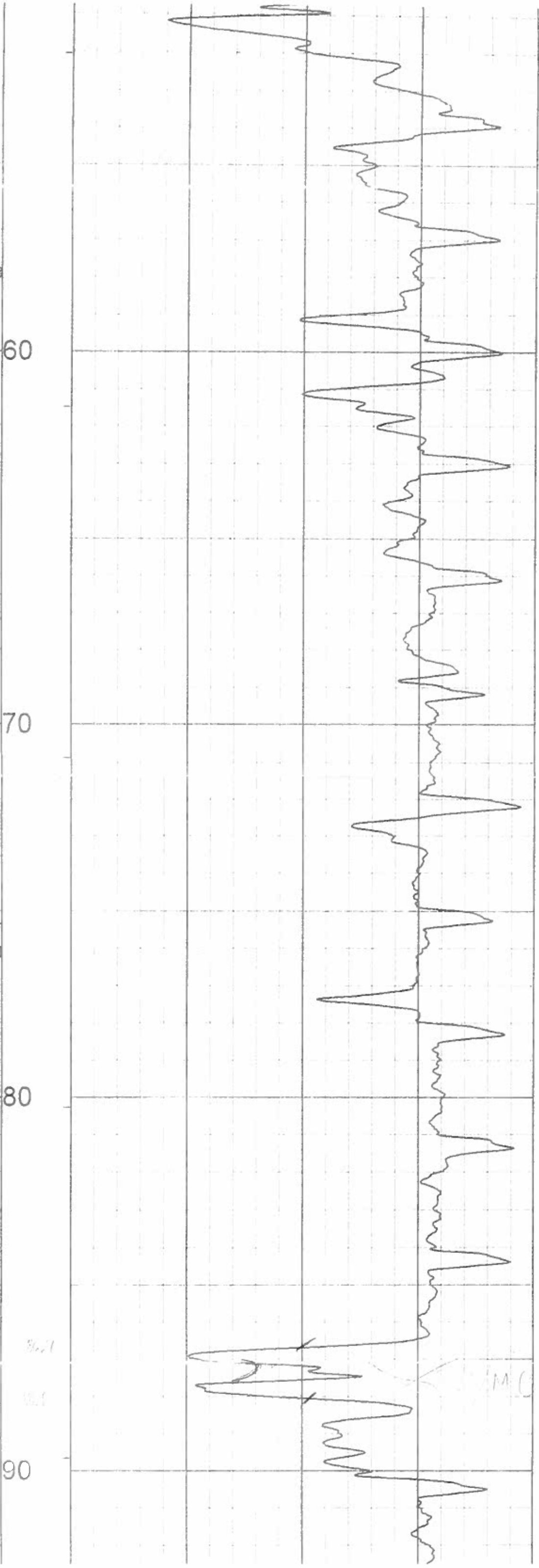
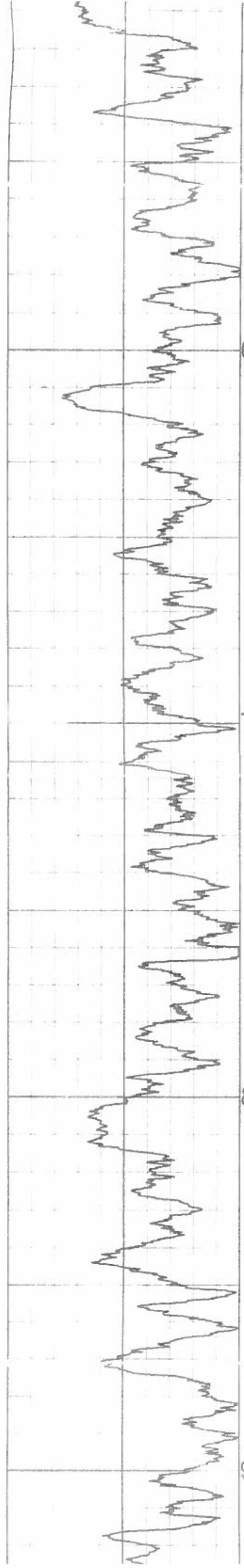
BIT SIZE 11.43

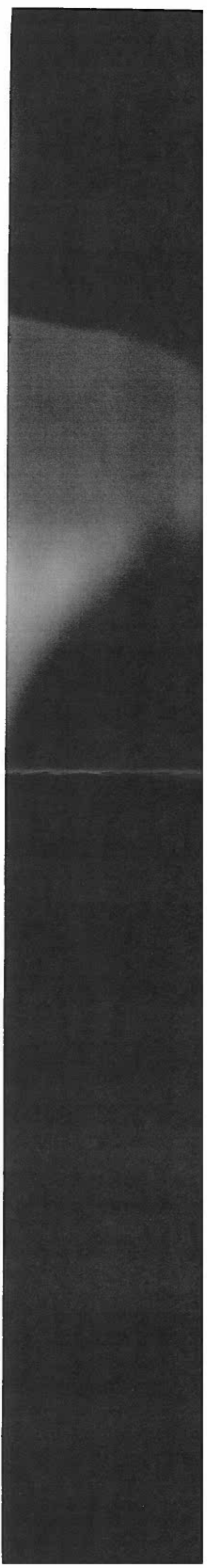
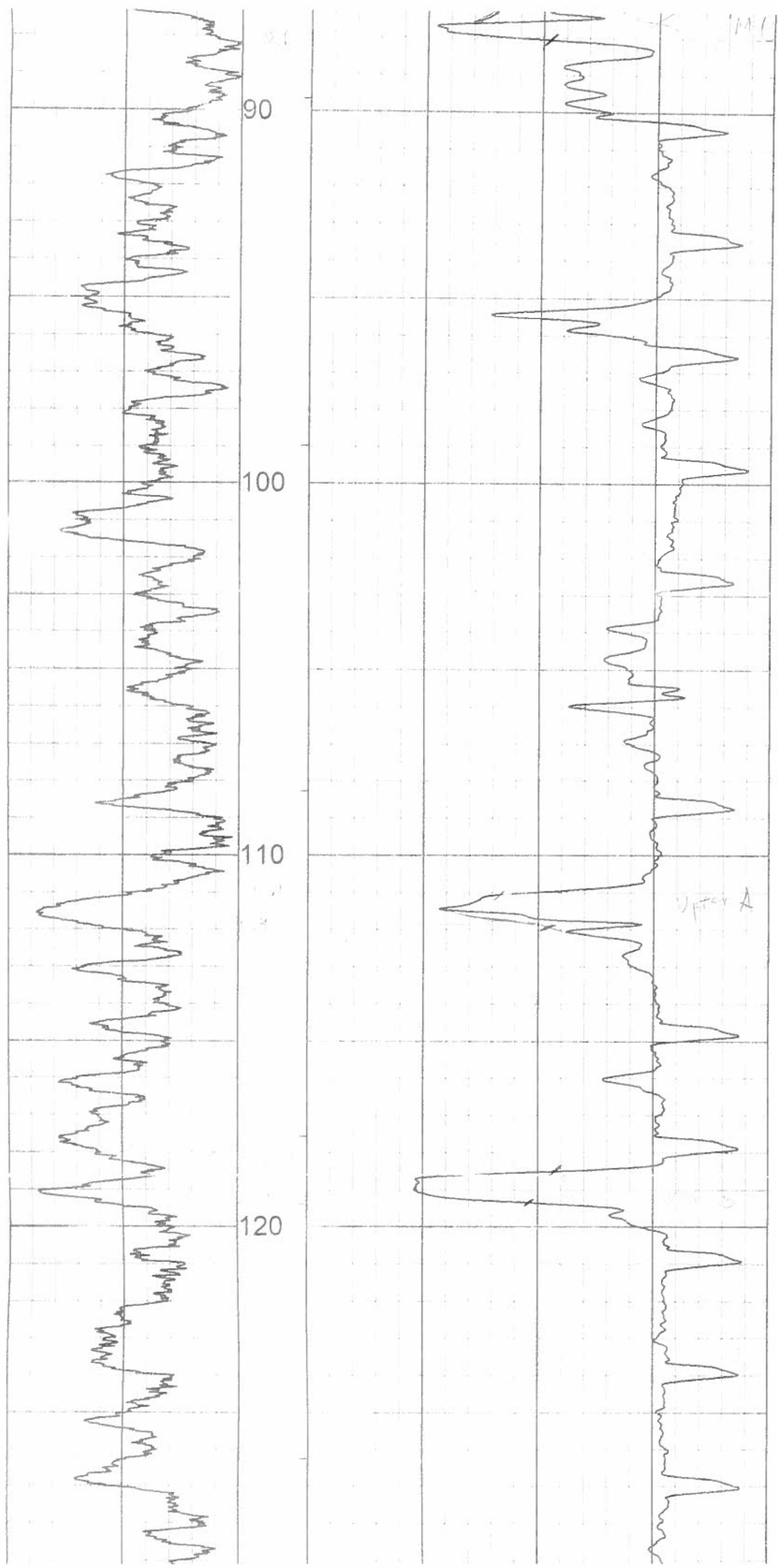
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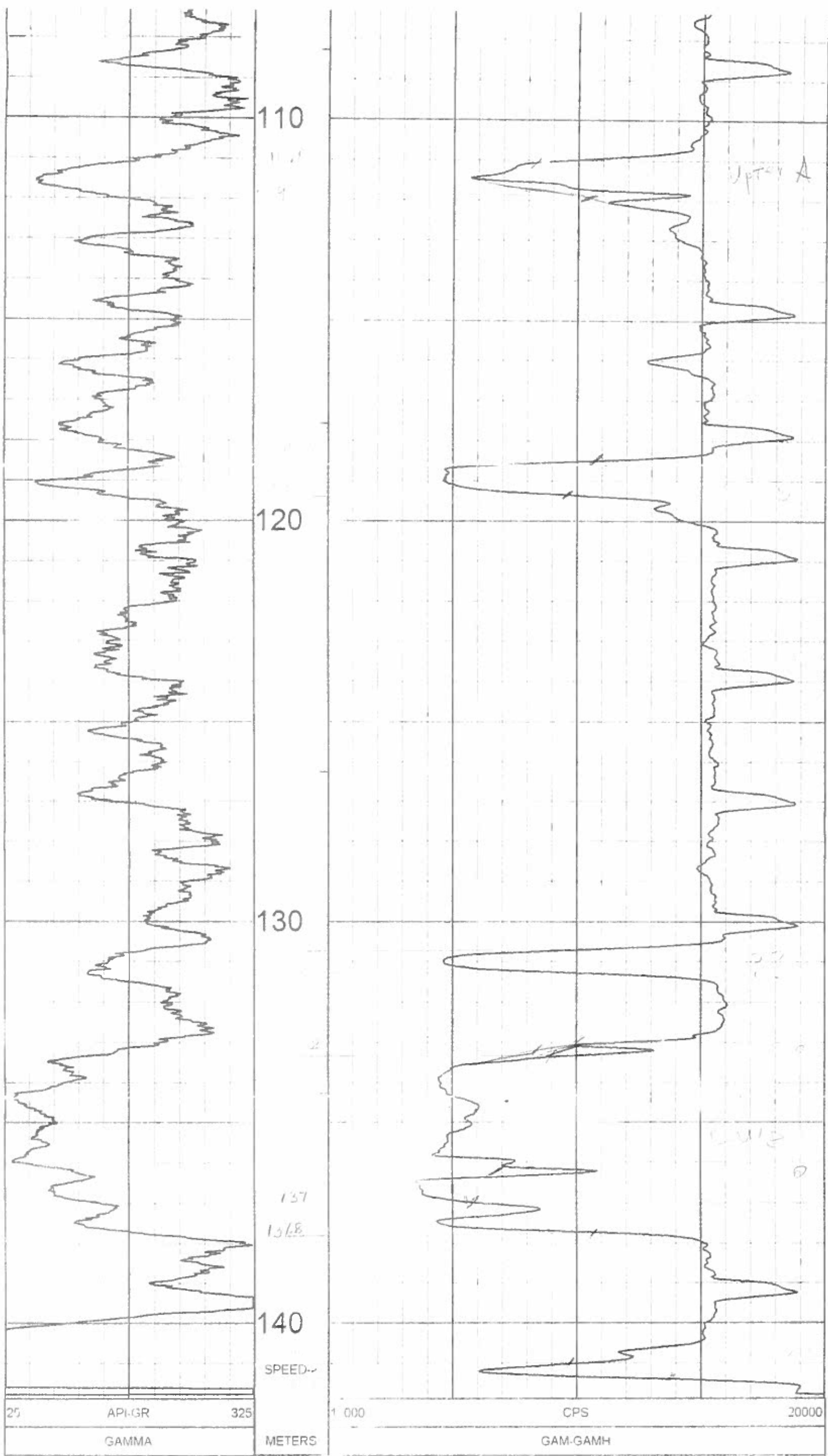
VERSION = 3.64HR











▲ 1:100 GAM-GAMH BR10-01 08/14/10 ▲

LOG PAK/METERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL 21.0	ELECT CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9068A 0 07/14/2010		VERSION = 3.64HR



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-02

year drilled: 2010

**AREA: BURNT RIVER
BRULE**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,396.36	6,140,554.09	1,239.97

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
40.1	-58	107.62	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: slim tool

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	40.1	-57.90
37.00	43.1	-57.50
38.00	44.8	-57.50
39.00	46.4	-57.00
40.00	46.8	-57.70
41.00	47.1	-57.90
42.00	47.3	-57.30
43.00	47.2	-57.10
44.00	47.2	-56.50
45.00	47.3	-56.20
46.00	47.2	-55.90
47.00	47.2	-56.50
48.00	47.6	-56.10
49.00	47.8	-55.90
50.00	48.0	-55.80
51.00	48.2	-56.10
52.00	48.3	-55.50
53.00	48.3	-53.40
54.00	48.3	-52.90
55.00	48.4	-54.80
56.00	48.5	-54.60
57.00	48.5	-54.90
58.00	48.5	-54.70
59.00	48.5	-55.30
60.00	48.7	-54.90
61.00	48.8	-54.50
62.00	48.8	-54.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	33.90	33.90		
61.50	62.20	0.70		
80.40	81.50	1.10		
81.50	87.00	5.50		
87.00	88.00	1.00		
95.60	96.40	0.80		
97.90	101.60	3.70		
101.60	102.40	0.80		
105.70	106.30	0.60		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-02**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

63.00	48.8	-54.20
64.00	48.9	-53.40
65.00	48.9	-53.70
66.00	49.0	-53.90
67.00	49.1	-53.30
68.00	49.3	-51.60
69.00	49.4	-53.30
70.00	49.6	-52.10
71.00	49.7	-52.50
72.00	49.8	-52.60
73.00	50.0	-52.80
74.00	50.1	-52.30
75.00	50.2	-52.20
76.00	50.3	-50.60
77.00	50.4	-50.90
78.00	50.5	-50.60
79.00	50.6	-50.40
80.00	50.7	-49.80
81.00	50.8	-49.60
82.00	50.9	-49.10
83.00	51.0	-48.30
84.00	51.0	-48.10
85.00	51.0	-47.70
86.00	51.0	-47.80
87.00	51.0	-49.20
88.00	51.0	-48.10
89.00	51.0	-47.00
90.00	51.0	-49.00
91.00	51.0	-46.70
92.00	50.9	-47.20
93.00	50.9	-47.60
94.00	50.8	-47.00
95.00	50.8	-48.20
96.00	50.7	-46.00
97.00	50.6	-46.30
98.00	50.6	-46.10
99.00	50.5	-46.10
100.00	50.4	-47.20
101.00	50.3	-46.30
102.00	50.3	-46.50
103.00	50.2	-45.30
104.00	50.1	-45.50
105.00	50.0	-44.30
106.00	49.9	-44.70
106.88	49.9	-45.10

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-02	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	--------------------------------------

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014 Reviewed: October 11, 2002

Page 3 of 3



**DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-02**

COMPANY: WESTERN COAL CORPORATION
 WELL: BR10-02
 FIELD: BRULE
 COUNTRY: CANADA
 PROVINCE: BRITISH COLUMBIA

LOCATION: BRULE NORTH
 SECTION: N/A
 TOWNSHIP: N/A
 RANGE: N/A
 LICENCE NO.: N/A
 UNIQUE WELL ID: N/A

PERMANENT DATUM: GL
 LOG MEASURED FROM: GL
 DRL MEASURED FROM: GL

DATE: 07/14/10
 DEPTH DRILLER: 108.2
 BIT SIZE: 11.43
 LOG TOP: -0.84
 LOG BOTTOM: 106.86
 CASING LOGGER: 38.1
 CASING DRILLER: 38.1
 CASING TYPE: STEEL
 BOREHOLE FLUID: WATER
 RM TEMPERATURE: N/A
 MUD RES: N/A
 MUD WEIGHT: 1.00

WITNESSED BY: G. HOLMLUND
 RECORDED BY: T. NEAL
 REMARKS 1: 60 DEGREE
 REMARKS 2:

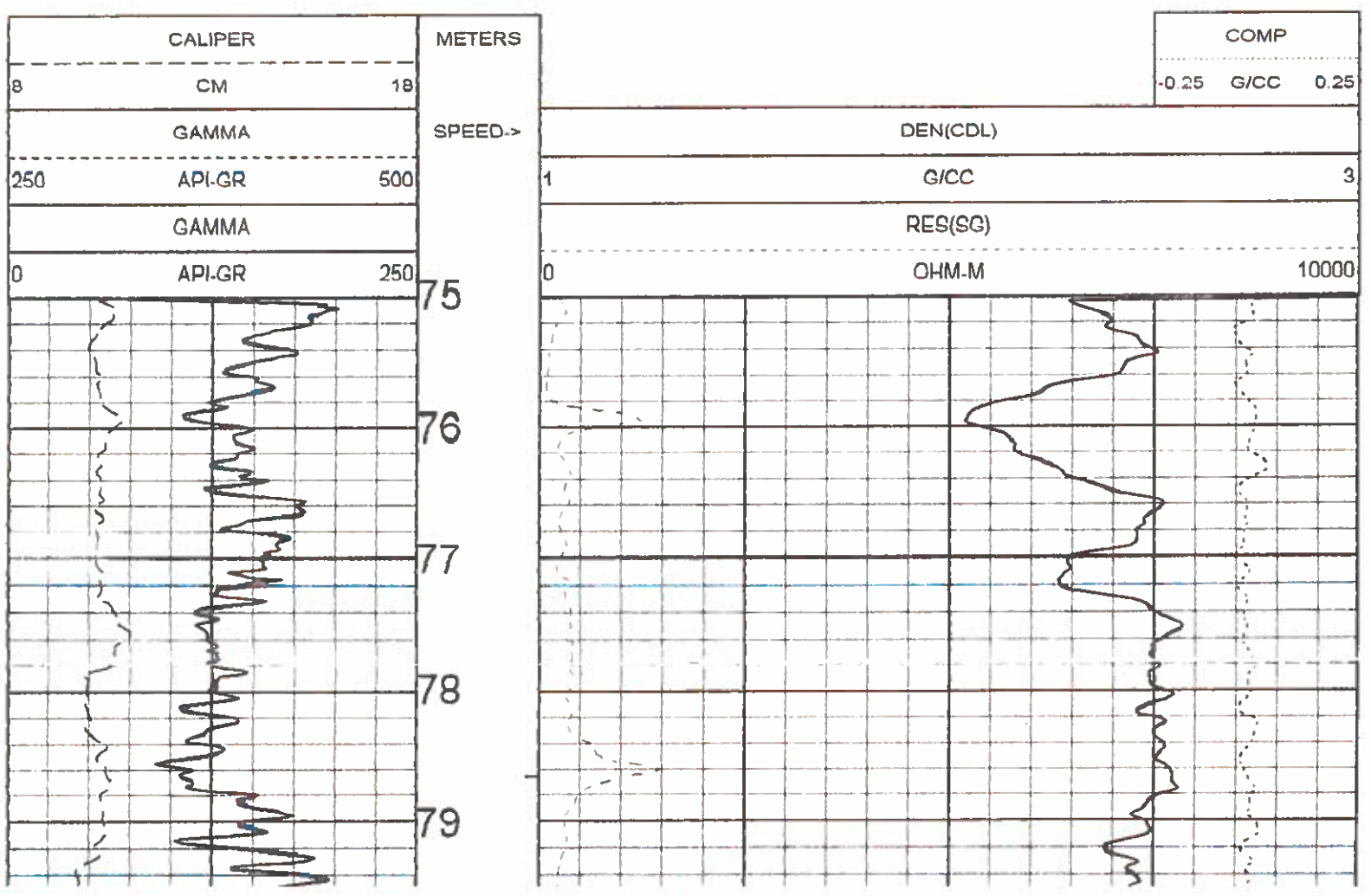
ELEVATION KB: N/A
 ELEVATION DF: N/A
 ELEVATION GL: N/A
 RIG NUMBER:
 LOGGER TD:
 ARRIVAL TIME:
 DEPARTURE TIME:
 CIRC STOPPED: N/A

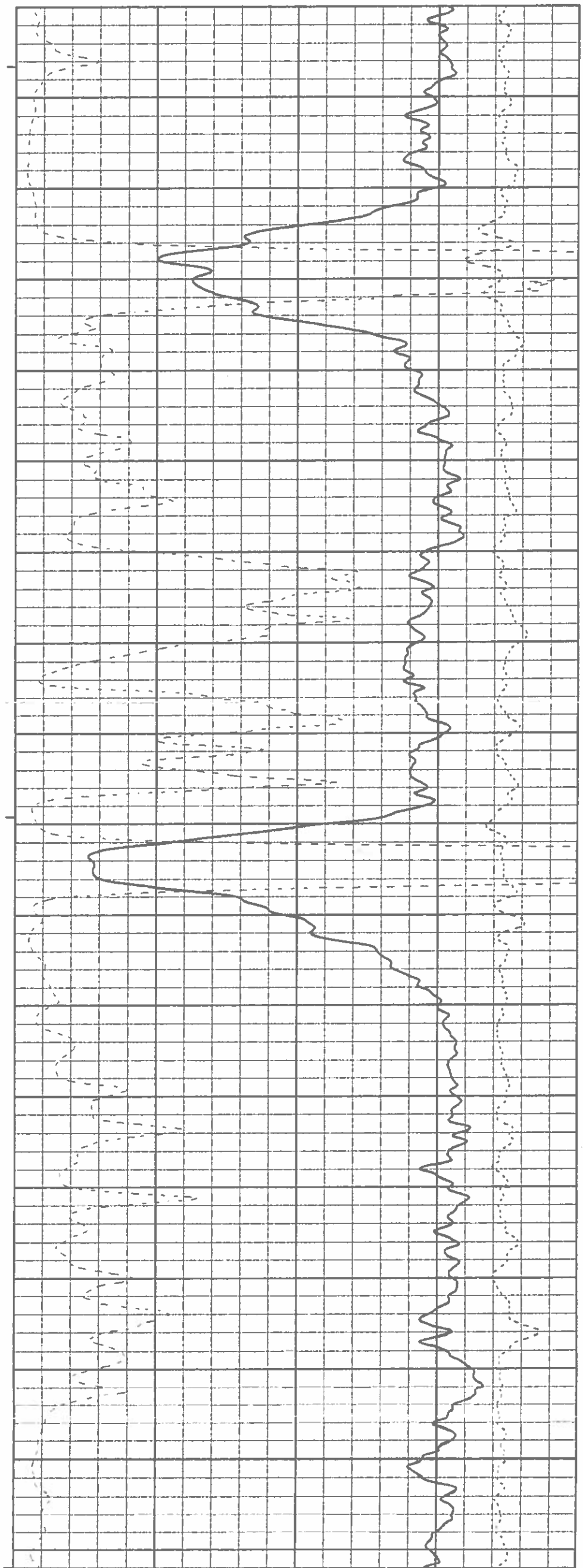
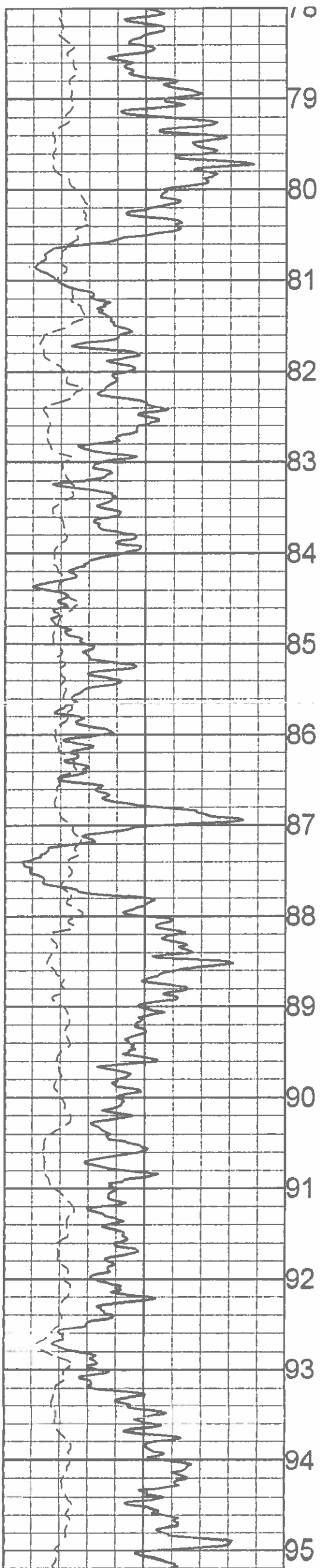
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

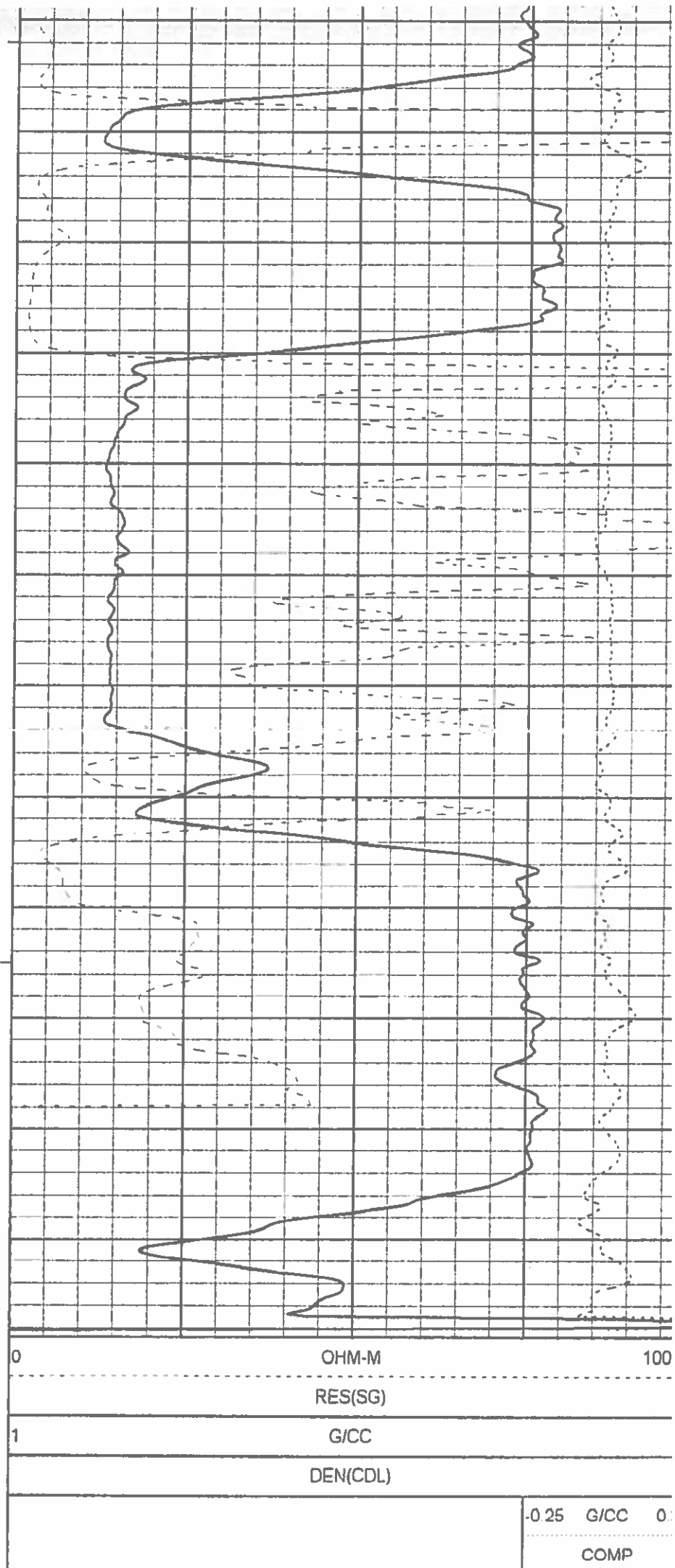
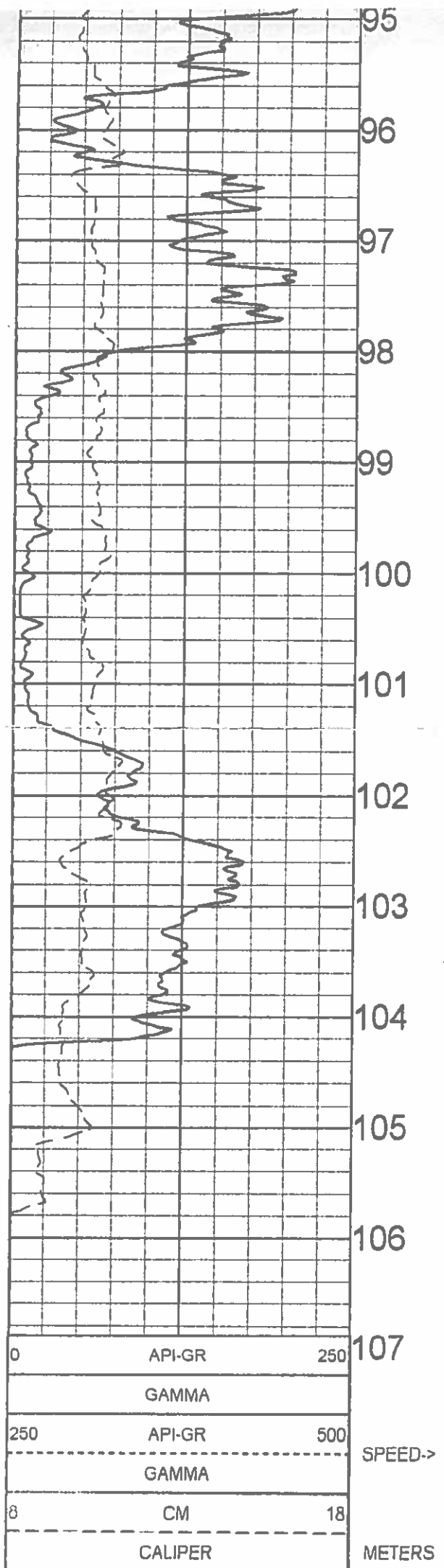
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LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/06/2010 VERSION = 3.64HR







1:50 BULK DENSITY EXPANDED BR10-02 07/14/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0


ELECT. CUTOFF : 99999

BIT SIZE : 11 43

PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/06/2010

VERSION = 3.64HR

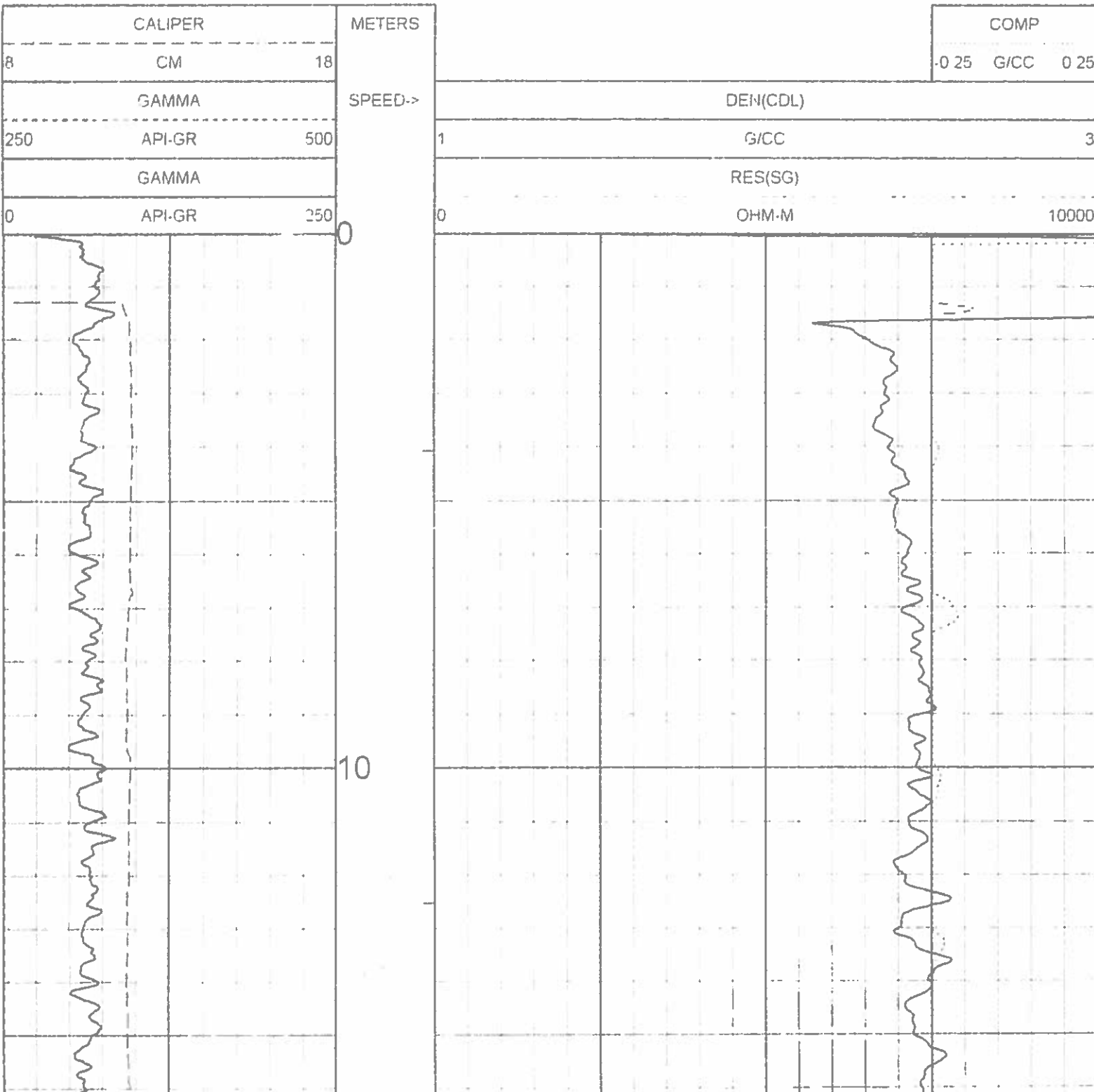
PICKS - Jan 11/2011

		COMPENSATED DENSITY GAMMA - CALIPER - RES. BR10-02	
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR10-02		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/14/10	RIG NUMBER	
DEPTH DRILLER	103.7	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	6.24	DEPARTURE TIME	
LOG BOTTOM	106.56	CIRC STOPPED	N/A
CASING LOGGER	38.1		
CASING DRILLER	38.1		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MAUD WEIGHT	1.00		
WITNESSED BY	G HOLMUND		
RECORDED BY	T NEAL		
REMARKS 1	60 DEGREE		
REMARKS 2			

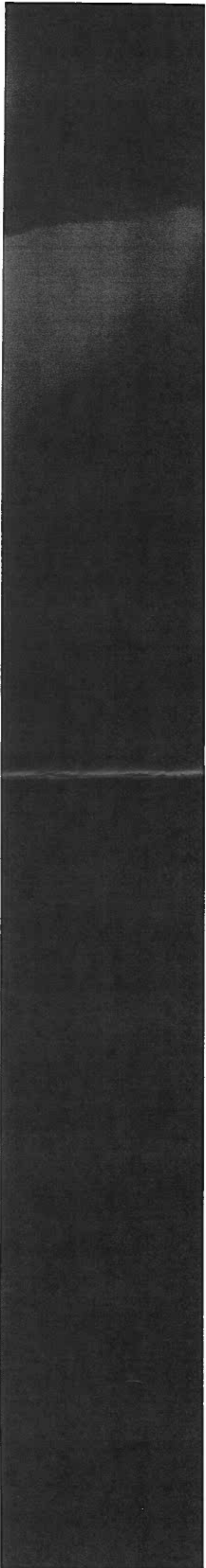
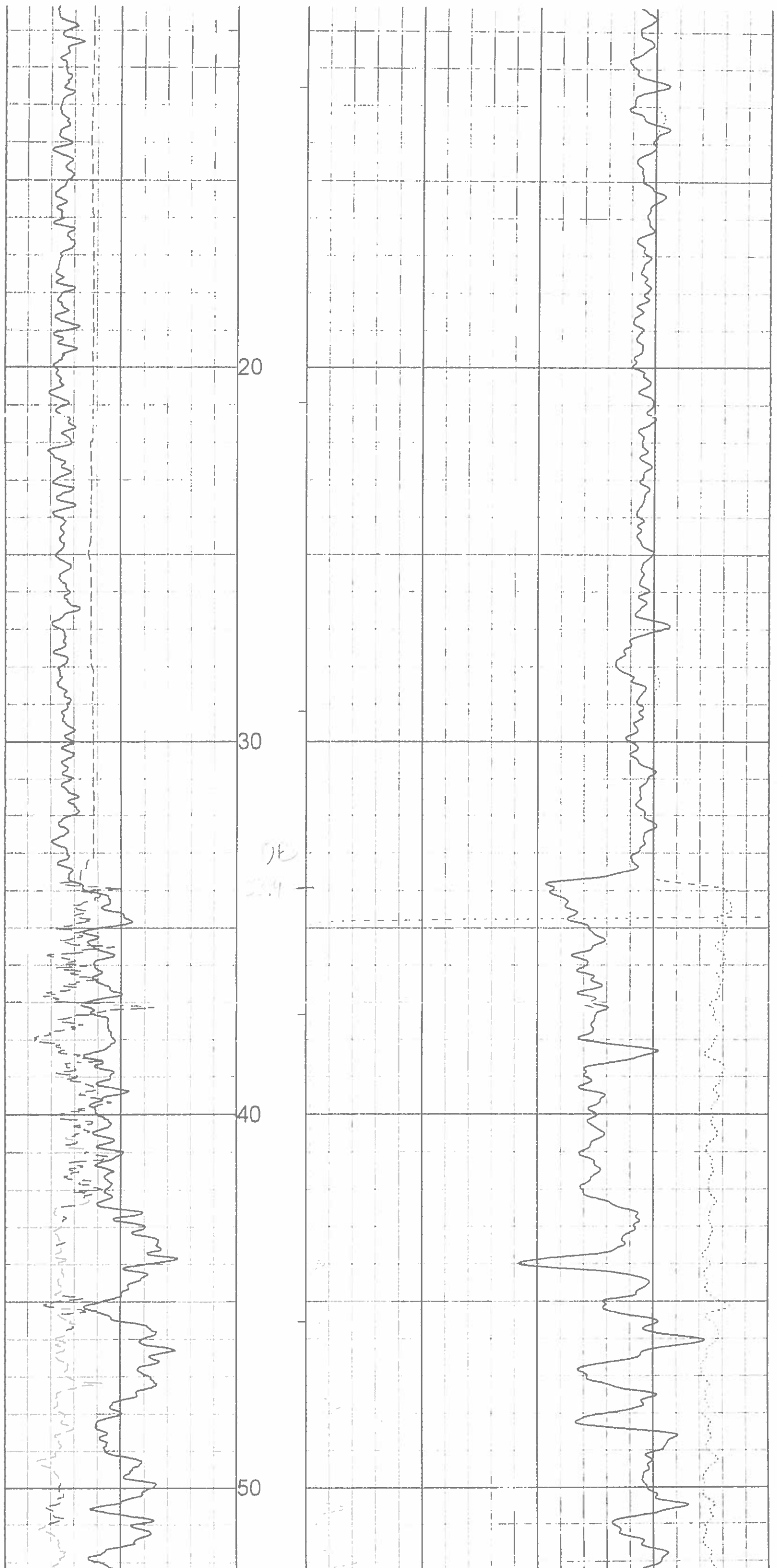
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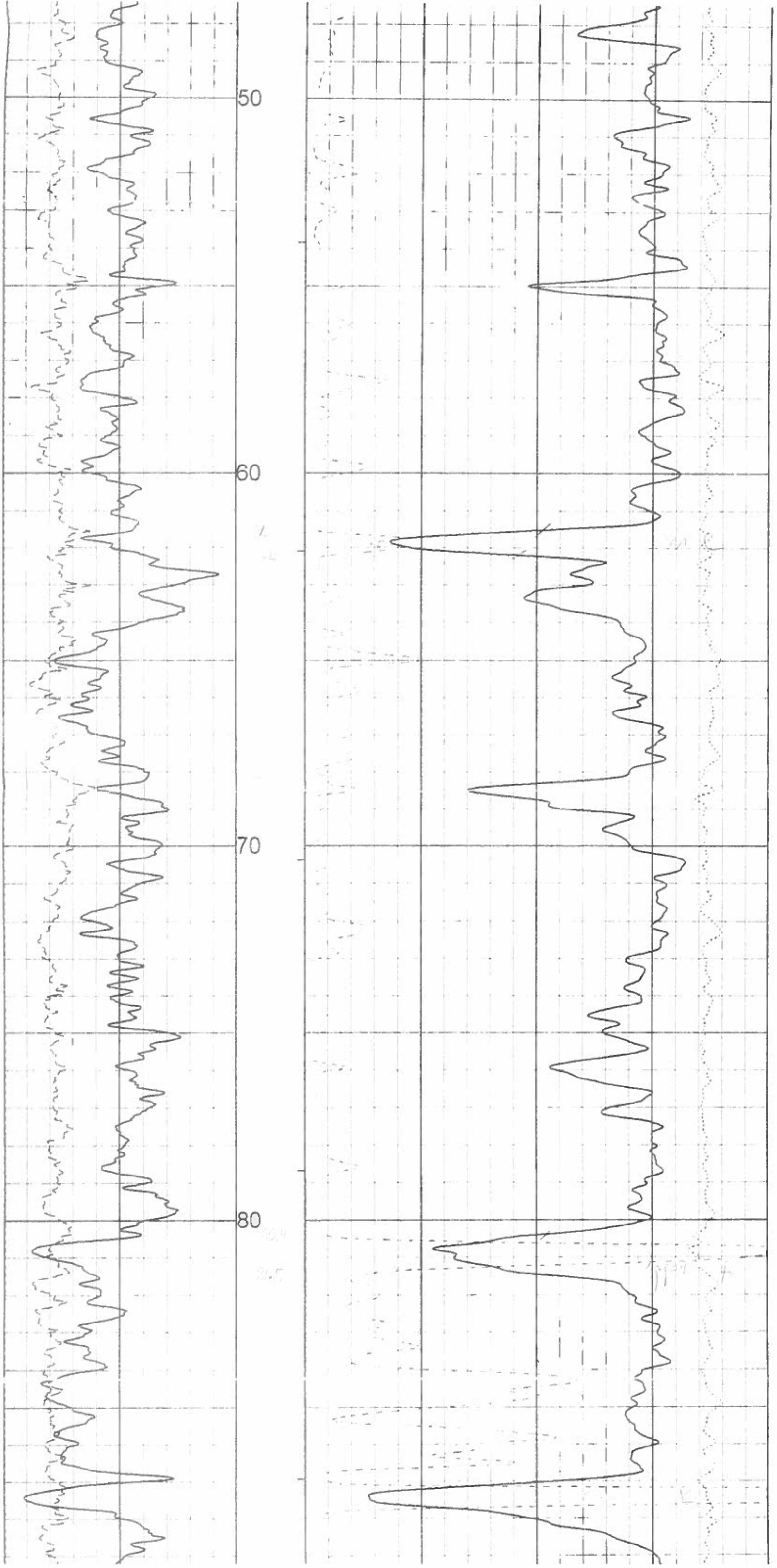
LOG PARAMETERS

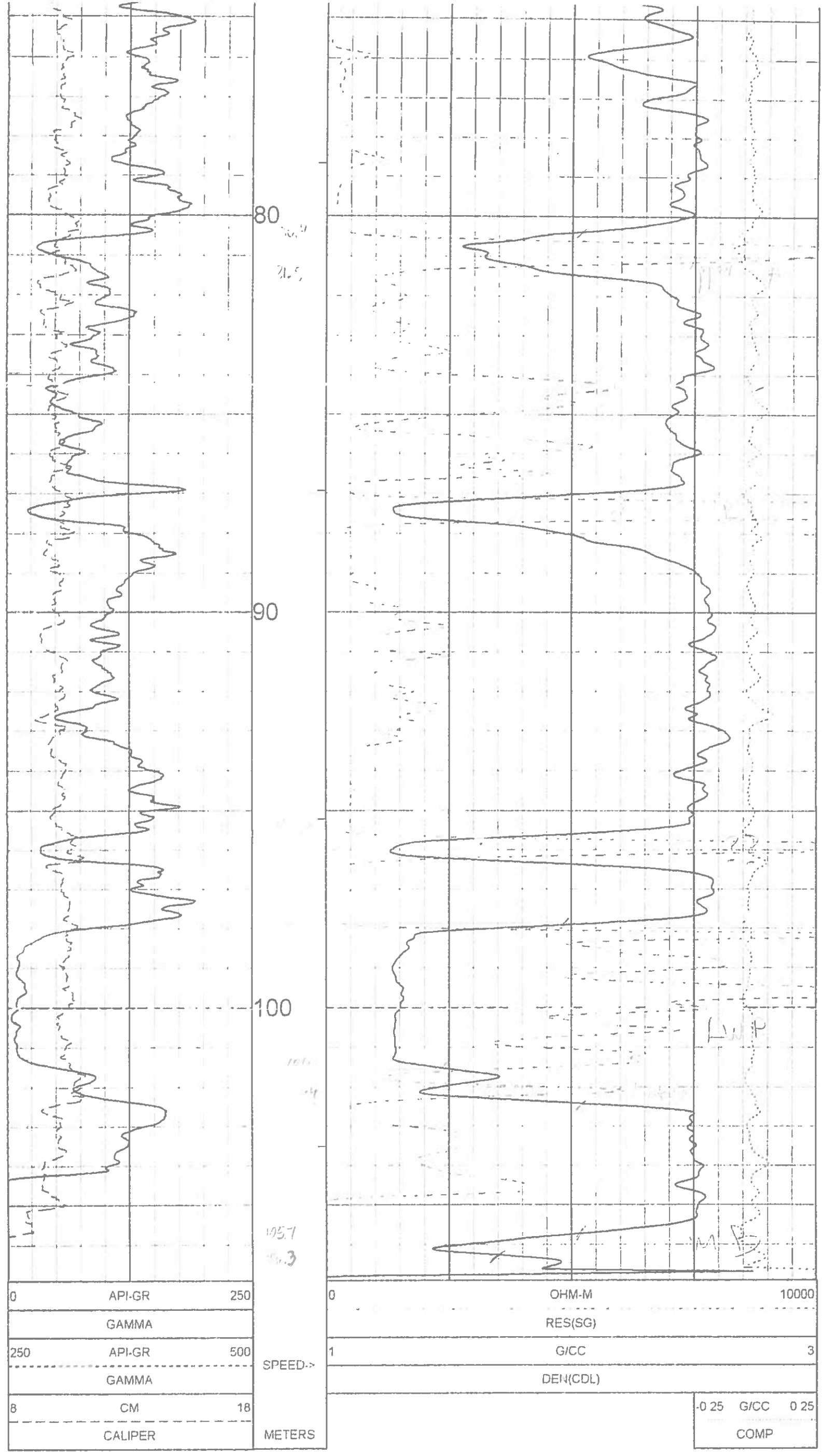
MATRIX DENSITY	2.65	NEUTRON MATRIX	SANDSTONE	MATRIX DELTA T	177
MAGNETIC DECL	21.0	ELECT CUTOFF	99999	BIT SIZE	11.43
PRESENTATION NAME/DATE	= 9239C DENSITY 0 07/10/2010			VERSION	= 3.64HR



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
8	CM	18
	CALIPER	

SPEED->
METERS

0	OHM-M	10000
	RES(SG)	
1	GICC	3
	DEN(CDL)	
	-0.25 G/CC	0.25
	COMP	

1:100 BULK DENSITY BR10-02 07/14/10

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL 21.0	ELECT CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C.DENSITY 0 07/10/2010		VERSION = 3.64HR

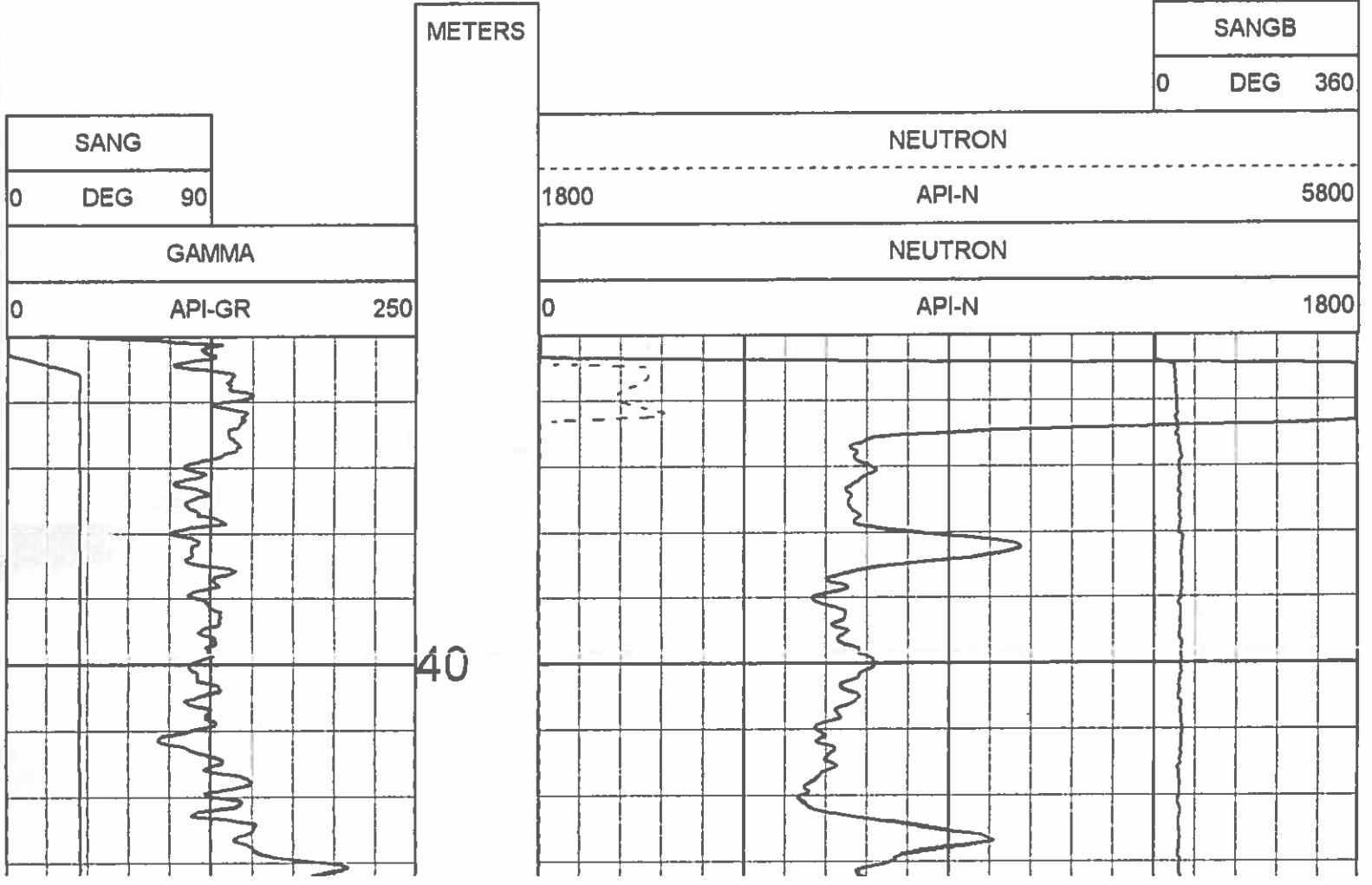
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR10-02	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/14/10	RIG NUMBER	
DEPTH DRILLER	:108 2	LOGGER TD	
BIT SIZE	:11 43	ARRIVAL TIME	
LOG TOP	:33 62	DEPARTURE TIME	
LOG BOTTOM	:107 06	CIRC STOPPED	N/A
CASING LOGGER	:38 1		
CASING DRILLER	:38 1		
CASING TYPE	:STEEL		
BOREHOLE FLUID	:WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	:1 00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	:60 DEGREE		
REMARKS 2	:		

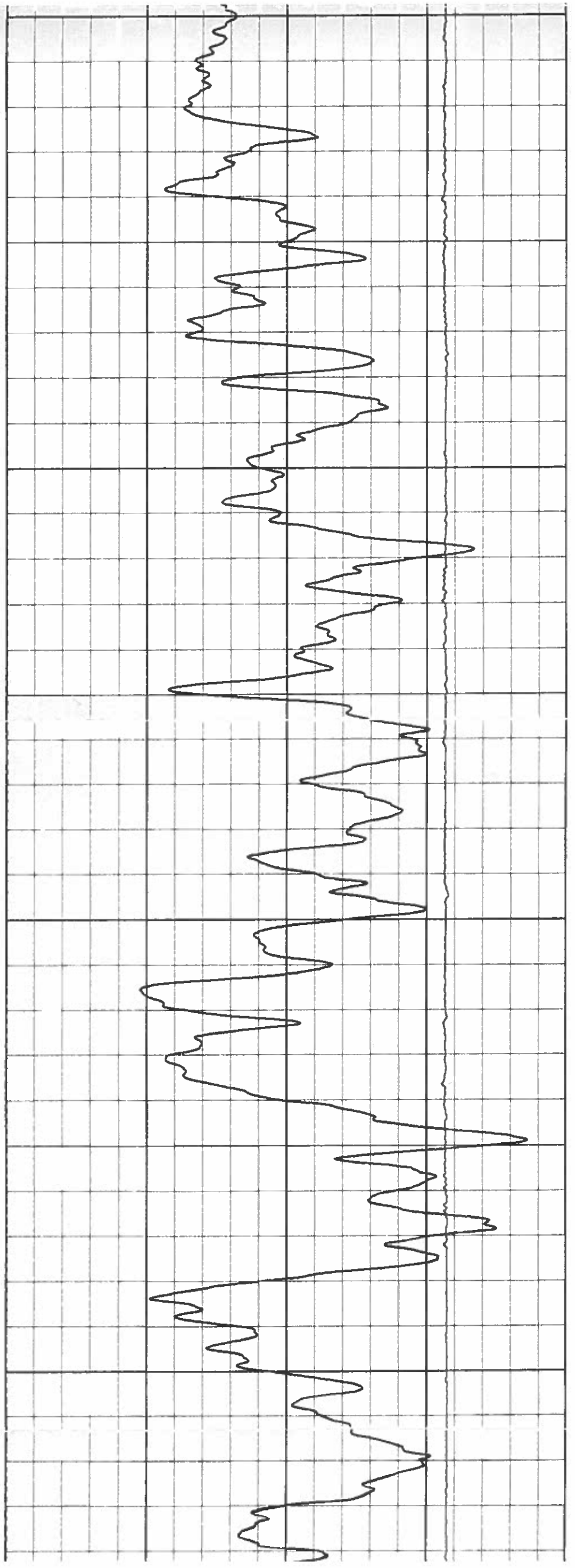
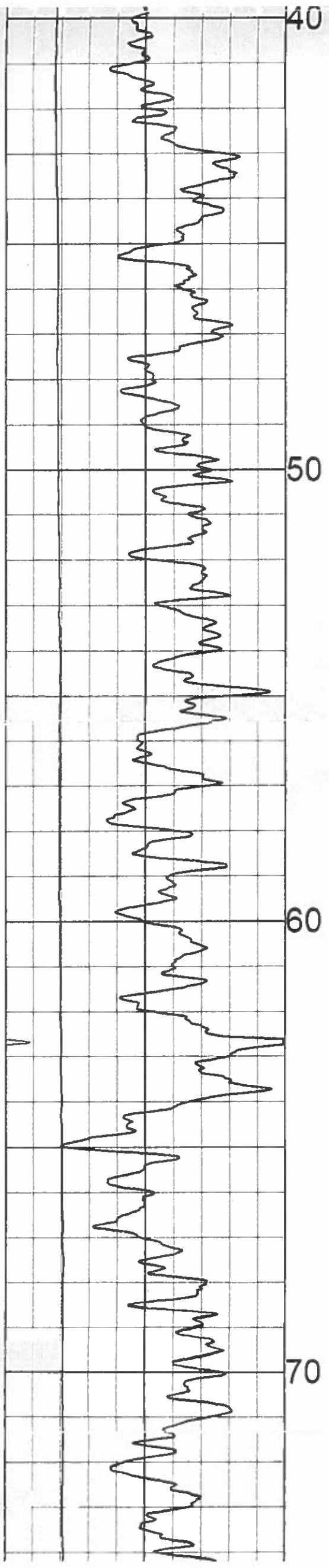
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

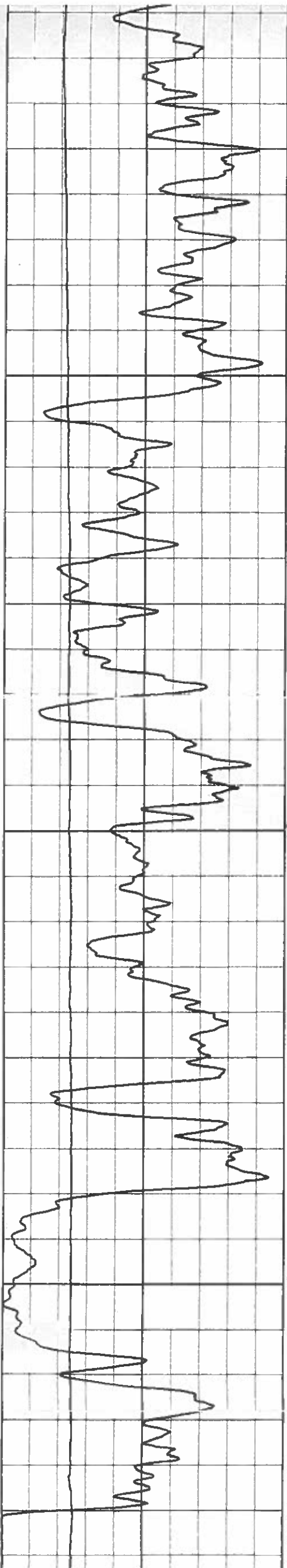
1:100 NEUTRON BR10-02 07/14/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010 VERSION = 3.64HE



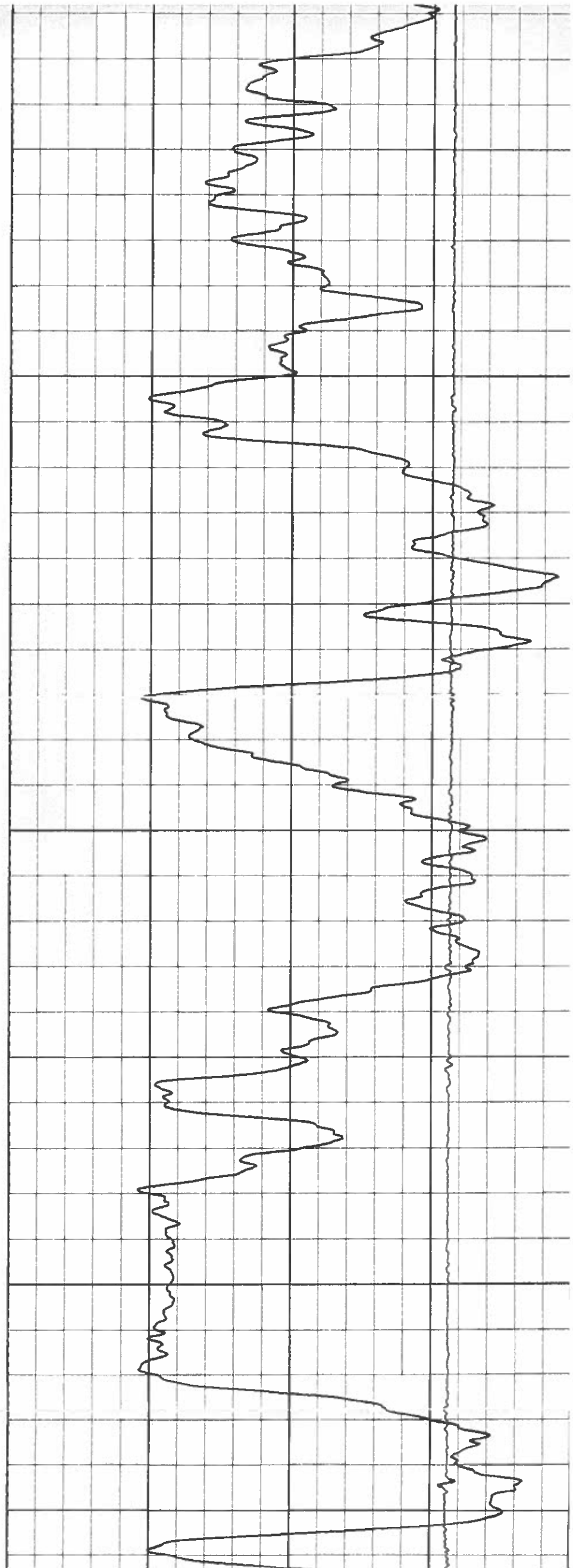


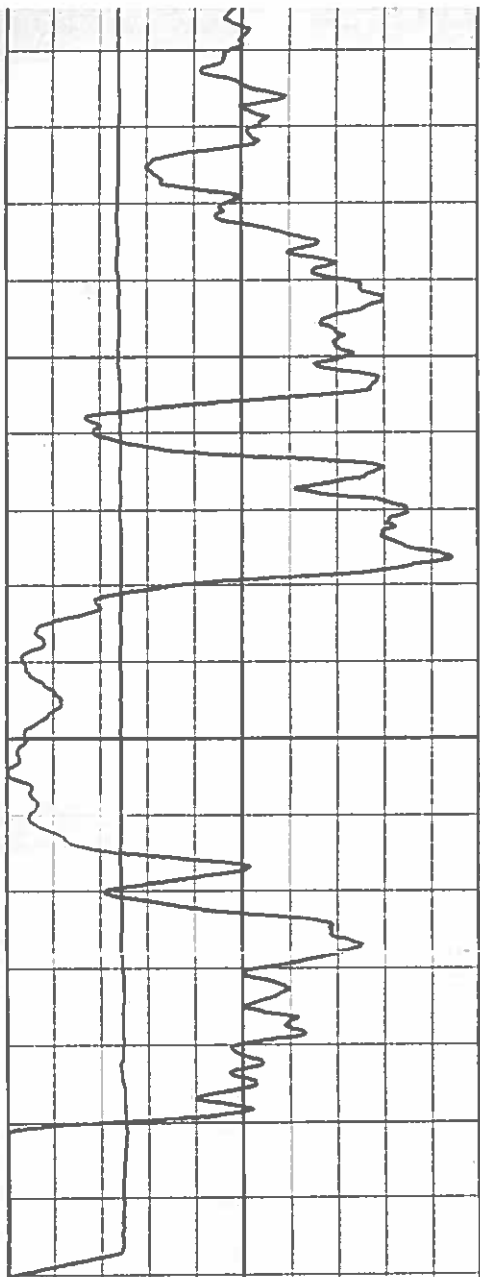


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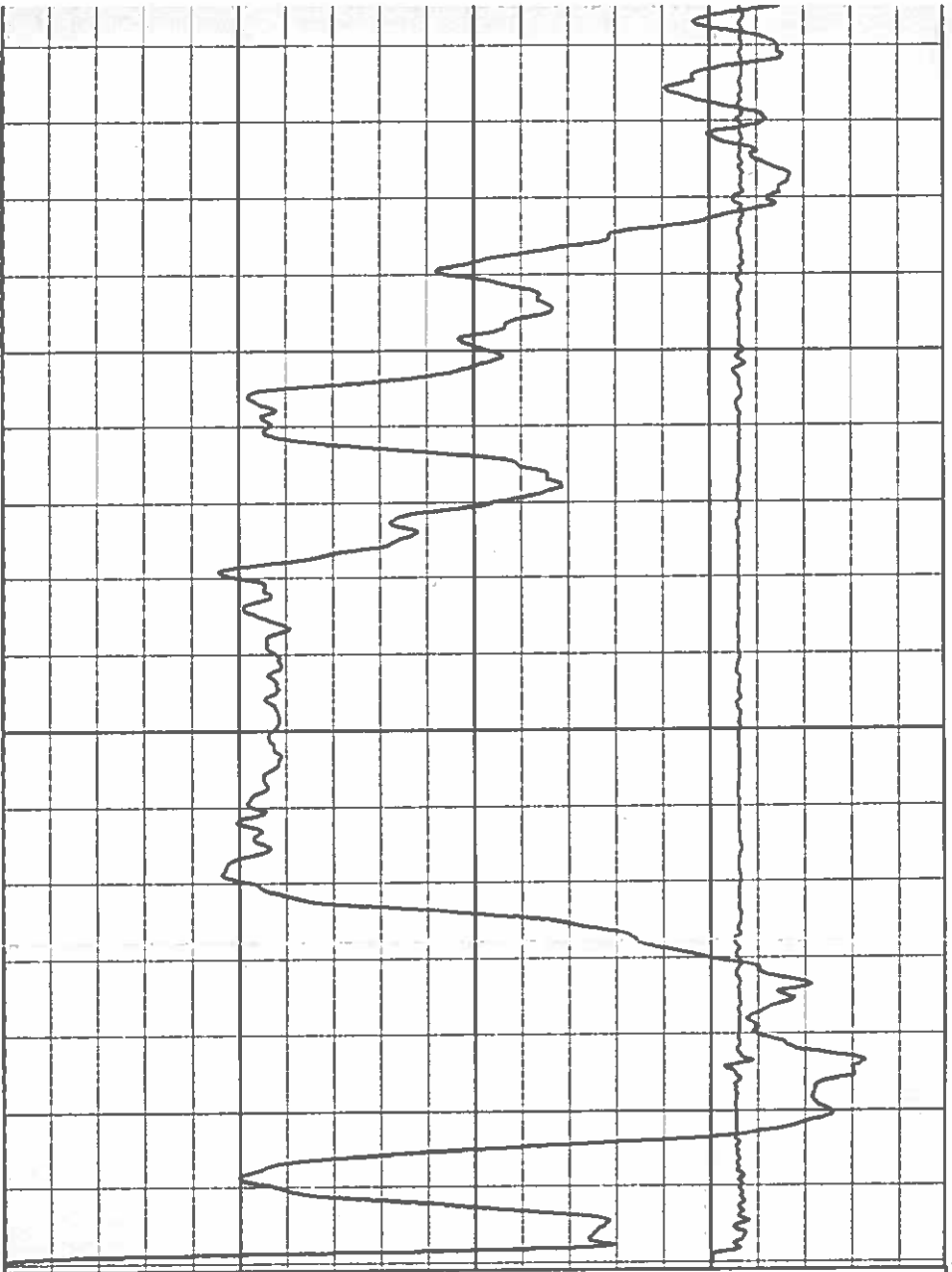
90

100





100



0 API-GR 250

GAMMA

0 DEG 90

SANG

0 API-N 1800

NEUTRON

1800 API-N 5800

NEUTRON

0 DEG 360

SANGB

METERS

1:100 NEUTRON BR10-02 07/14/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

VERSION = 3.64HE

TOOL CALIBRATION BR10-02 07/14/10 14:18

TOOL 9057A TM VERSION 2

SERIAL NUMBER 1071

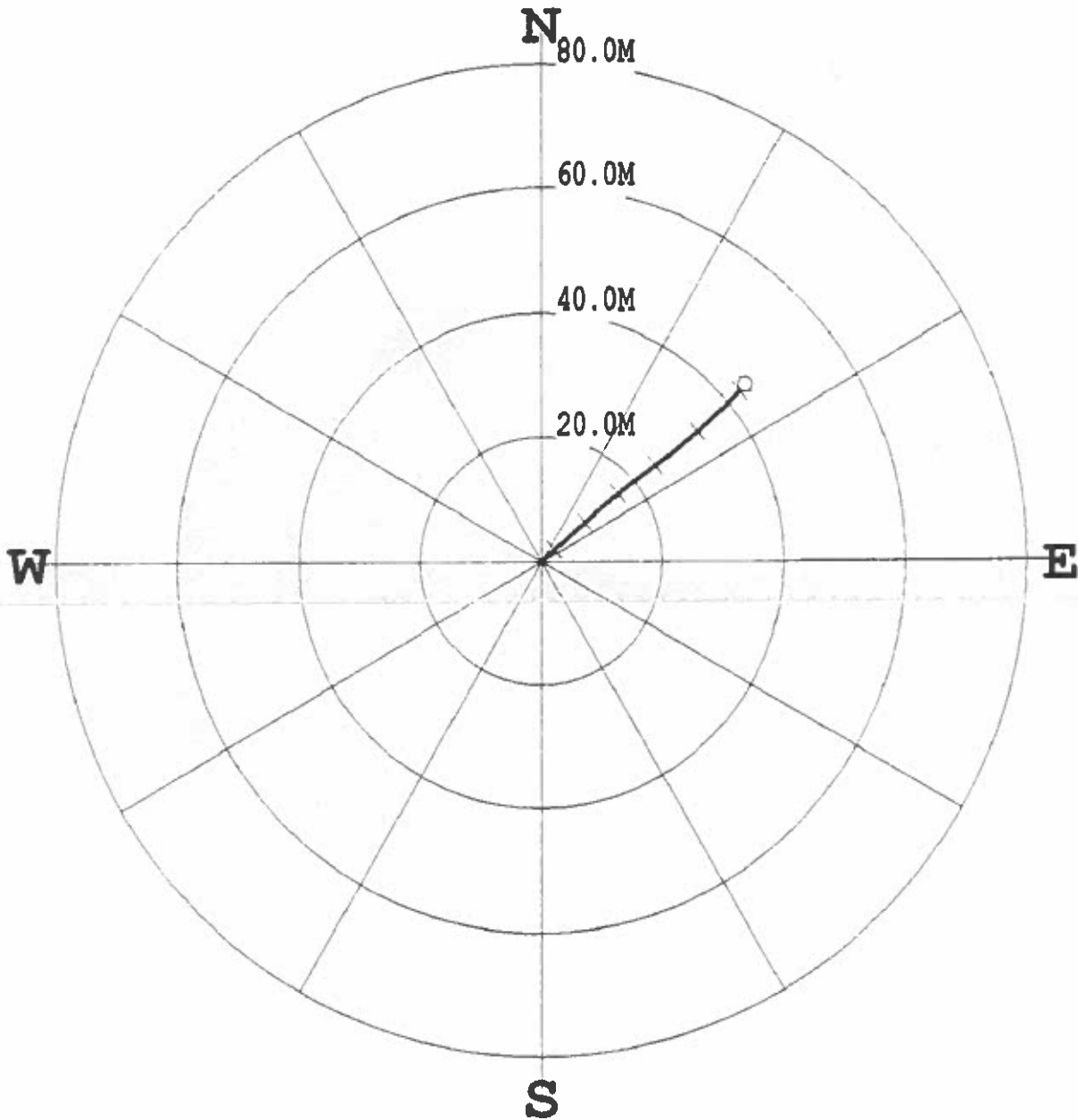
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	Jun11,10	12:37:08	GAMMA	545.000 [API-GR]	420.000 [CPS]
2	Jun11,10	13:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	13:36:01	NEUTRC	271.000 [API-N]	697.000 [CPS]
3	May19,08	07:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	07:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	07:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	07:55:04	RES(16N)	1953.000 [OHM-M]	101843.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-02
 DATE OF LOG: 07/14/10
 PROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 91.40 M
 AZIMUTH: 49.9
 DISTANCE: 44.0 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE




* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-02
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 07/14/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-02_07-14-10_14-18_9057A_.02_33.62_107.06_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
36.00	35.91	0.23	0.19	0.3	40.1	32.1	42.4
37.00	36.76	0.61	0.57	0.8	43.1	32.5	45.5
38.00	37.60	0.97	0.96	1.4	44.8	32.5	47.4
39.00	38.44	1.31	1.38	1.9	46.4	33.0	48.0
40.00	39.29	1.67	1.78	2.4	46.8	32.3	51.0
41.00	40.13	2.03	2.18	3.0	47.1	32.1	50.8
42.00	40.97	2.39	2.58	3.5	47.3	32.7	46.2
43.00	41.81	2.76	2.98	4.1	47.2	32.9	49.3
44.00	42.65	3.13	3.38	4.6	47.2	33.5	45.3
45.00	43.48	3.50	3.78	5.2	47.3	33.8	53.1
46.00	44.31	3.88	4.19	5.7	47.2	34.1	47.1
47.00	45.15	4.25	4.60	6.3	47.2	33.5	49.9
48.00	45.98	4.59	5.03	6.8	47.6	33.9	50.2
49.00	46.81	4.95	5.46	7.4	47.8	34.1	50.0
50.00	47.64	5.31	5.89	7.9	48.0	34.2	50.5
51.00	48.47	5.66	6.32	8.5	48.2	33.9	54.2

43.00	41.81	2.76	2.98	4.1	47.2	32.9	49.3
44.00	42.65	3.13	3.38	4.6	47.2	33.5	45.3
45.00	43.48	3.50	3.78	5.2	47.3	33.8	53.1
46.00	44.31	3.88	4.19	5.7	47.2	34.1	47.1
47.00	45.15	4.25	4.60	6.3	47.2	33.5	49.9
48.00	45.98	4.59	5.03	6.8	47.6	33.9	50.2
49.00	46.81	4.95	5.46	7.4	47.8	34.1	50.0
50.00	47.64	5.31	5.89	7.9	48.0	34.2	50.5
51.00	48.47	5.66	6.32	8.5	48.2	33.9	54.2
52.00	49.30	6.02	6.76	9.1	48.3	34.5	49.8
53.00	50.12	6.40	7.17	9.6	48.3	36.6	44.9
54.00	50.94	6.78	7.60	10.2	48.3	37.1	44.8
55.00	51.76	7.14	8.05	10.8	48.4	35.2	56.5
56.00	52.57	7.52	8.49	11.3	48.5	35.4	46.1
57.00	53.39	7.90	8.92	11.9	48.5	35.1	47.2
58.00	54.21	8.27	9.36	12.5	48.5	35.3	51.8
59.00	55.03	8.65	9.79	13.1	48.5	34.7	47.9
60.00	55.85	9.00	10.24	13.6	48.7	35.1	52.0
61.00	56.66	9.37	10.69	14.2	48.8	35.5	50.6
62.00	57.48	9.75	11.13	14.8	48.8	35.6	51.7
63.00	58.29	10.12	11.58	15.4	48.8	35.8	50.9
64.00	59.10	10.50	12.02	16.0	48.9	36.6	48.8
65.00	59.90	10.88	12.48	16.6	48.9	36.3	50.3
66.00	60.71	11.26	12.93	17.1	49.0	36.1	54.8
67.00	61.51	11.61	13.41	17.7	49.1	36.7	53.3
68.00	62.31	11.97	13.90	18.3	49.3	38.4	55.1
69.00	63.10	12.33	14.39	18.9	49.4	36.7	51.8
70.00	63.90	12.68	14.88	19.6	49.6	37.9	55.8
71.00	64.69	13.04	15.38	20.2	49.7	37.5	54.9
72.00	65.48	13.39	15.87	20.8	49.8	37.4	54.1
73.00	66.28	13.74	16.36	21.4	50.0	37.2	54.7
74.00	67.08	14.09	16.86	22.0	50.1	37.7	55.9
75.00	67.87	14.45	17.36	22.6	50.2	37.8	53.6
76.00	68.65	14.81	17.86	23.2	50.3	39.4	56.8
77.00	69.43	15.17	18.37	23.8	50.4	39.1	52.9
78.00	70.20	15.54	18.88	24.5	50.5	39.4	53.8
79.00	70.97	15.92	19.40	25.1	50.6	39.6	55.4
80.00	71.74	16.30	19.92	25.7	50.7	40.2	53.0
81.00	72.50	16.68	20.44	26.4	50.8	40.4	52.6
82.00	73.26	17.05	20.97	27.0	50.9	40.9	55.7
83.00	74.01	17.44	21.50	27.7	51.0	41.7	54.2
84.00	74.76	17.83	22.04	28.4	51.0	41.9	53.8
85.00	75.50	18.25	22.56	29.0	51.0	42.3	48.5
86.00	76.25	18.68	23.07	29.7	51.0	42.2	46.5
87.00	76.99	19.11	23.57	30.3	51.0	40.8	57.2
88.00	77.74	19.52	24.10	31.0	51.0	41.9	52.7
89.00	78.48	19.94	24.62	31.7	51.0	43.0	48.0
90.00	79.22	20.37	25.13	32.4	51.0	41.0	56.4
91.00	79.95	20.81	25.65	33.0	51.0	43.3	53.0
92.00	80.68	21.26	26.17	33.7	50.9	42.8	35.8
93.00	81.41	21.70	26.69	34.4	50.9	42.4	42.7
94.00	82.14	22.14	27.20	35.1	50.8	43.0	53.8
95.00	82.87	22.61	27.70	35.8	50.8	41.8	57.1
96.00	83.59	23.07	28.21	36.4	50.7	44.0	46.5
97.00	84.32	23.55	28.71	37.1	50.6	43.7	42.0
98.00	85.04	24.03	29.21	37.8	50.6	43.9	45.9
99.00	85.76	24.51	29.70	38.5	50.5	43.9	45.8
100.00	86.48	24.99	30.20	39.2	50.4	42.8	53.9
101.00	87.20	25.47	30.70	39.9	50.3	43.7	43.5
102.00	87.92	25.94	31.20	40.6	50.3	43.5	48.3
103.00	88.64	26.43	31.70	41.3	50.2	44.7	45.2
104.00	89.35	26.93	32.20	42.0	50.1	44.5	45.3
105.00	90.07	27.43	32.66	42.7	50.0	45.7	39.4
106.00	90.77	27.94	33.15	43.3	49.9	45.3	57.6
107.00	91.52	28.34	33.60	44.0	49.9	0.0	0.0
106.88	91.40	28.34	33.60	44.0	49.9	44.9	50.0

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-03	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	------------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,380.26	6,140,422.99	1,248.90

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		163.48	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments: slim tool

SURVEY SUMMARY

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	12.19	12.19		
30.40	32.60	2.20		
33.40	34.20	0.80		
104.80	105.50	0.70		
125.80	126.20	0.40		
126.20	134.30	8.10		
134.30	135.00	0.70		
153.90	154.30	0.40		
155.40	159.70	4.30		
159.70	160.40	0.70		
162.50	163.00	0.50		

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 1 of 1



GAM-GAMH
SLIM TOOL
BR10-03

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES
WELL	BR10-03	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE NORTH	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	07/20/10	RIG NUMBER
DEPTH DRILLER	:143.25	LOGGER TD
BIT SIZE	:11.43	ARRIVAL TIME
LOG TOP	:-0.61	DEPARTURE TIME
LOG BOTTOM	:138.80	CIRC STOPPED
CASING LOGGER	:12.19	
CASING DRILLER	:12.19	
CASING TYPE	:STEEL	
BOREHOLE FLUID	:WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	:1.00	
WITNESSED BY	:G. HOLMLUND	
RECORDED BY	:T. NEAL	
REMARKS 1	:65 DEGREE	
REMARKS 2	:	

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 GAM-GAMH BR10-03 07/20/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

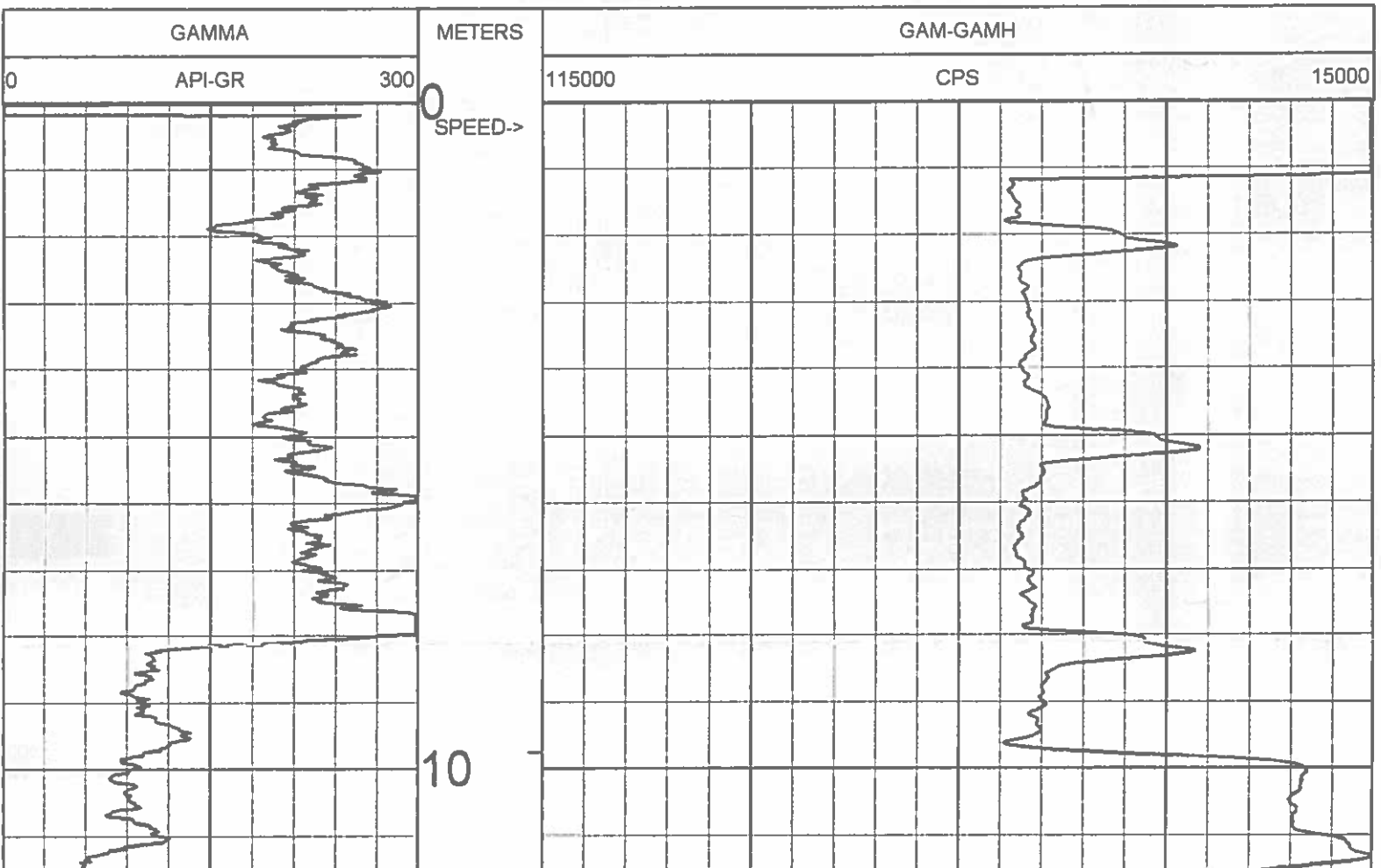
MAGNETIC DECL : 21.0

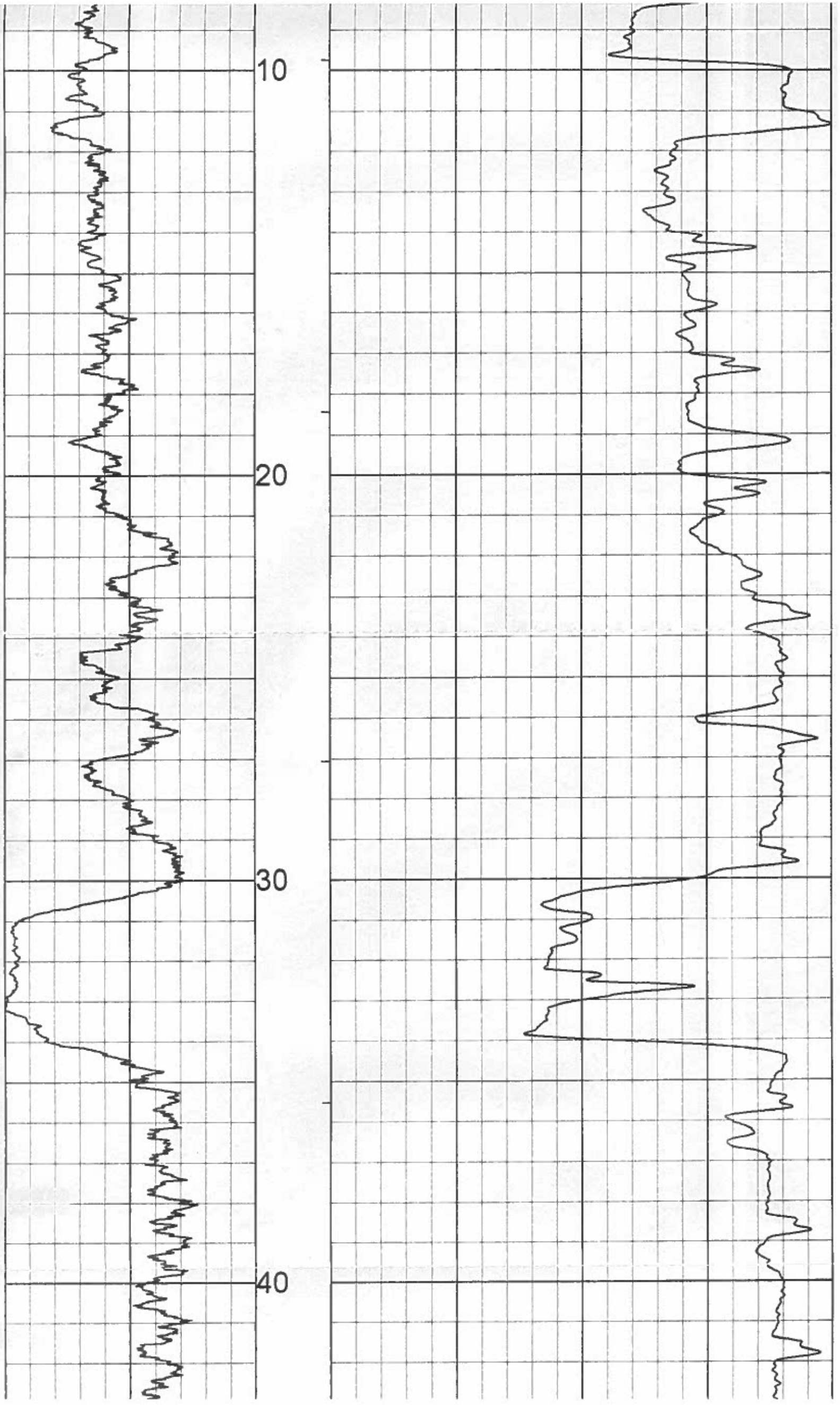
ELECT. CUTOFF : 99999

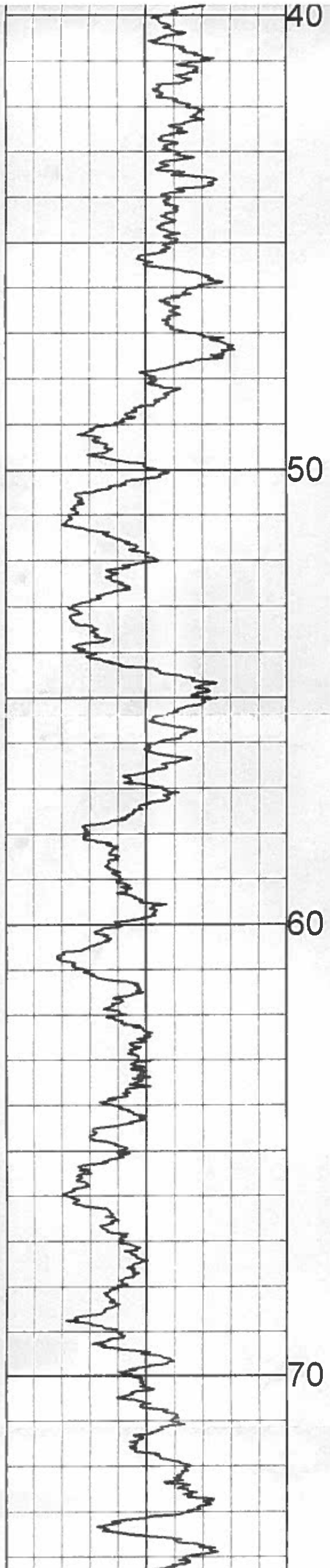
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9068A.0 07/14/2010

VERSION = 3.64HR





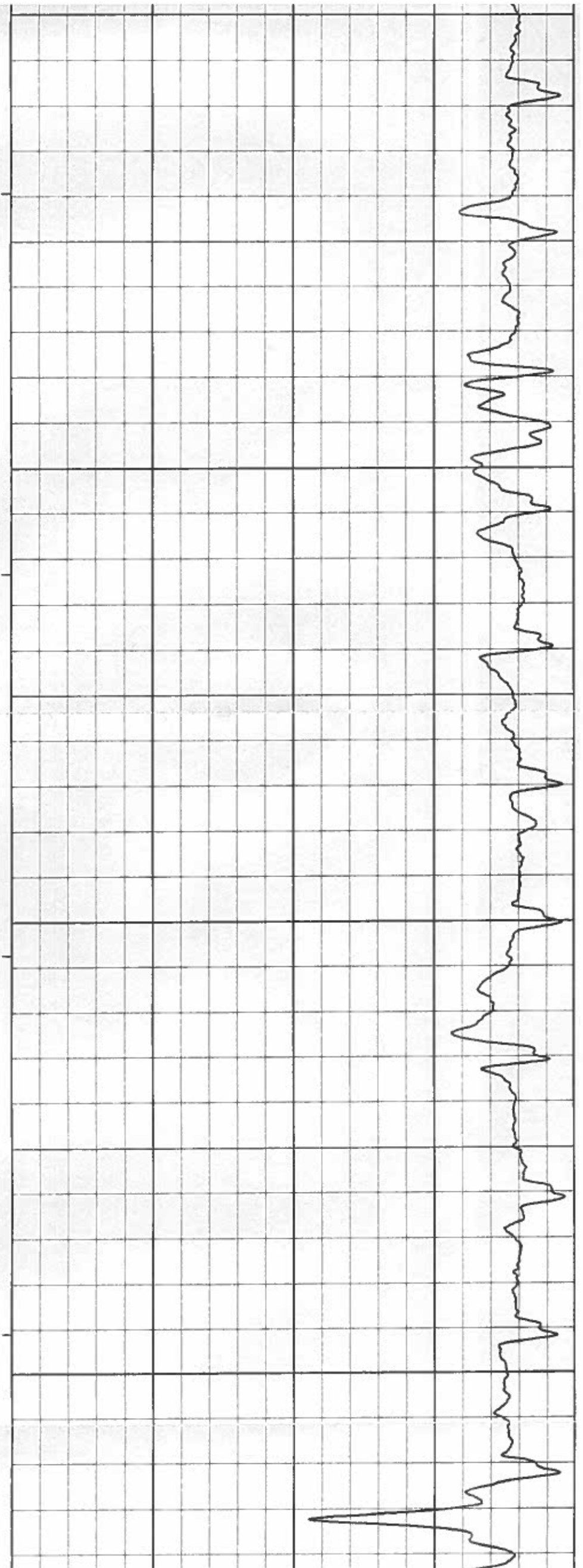


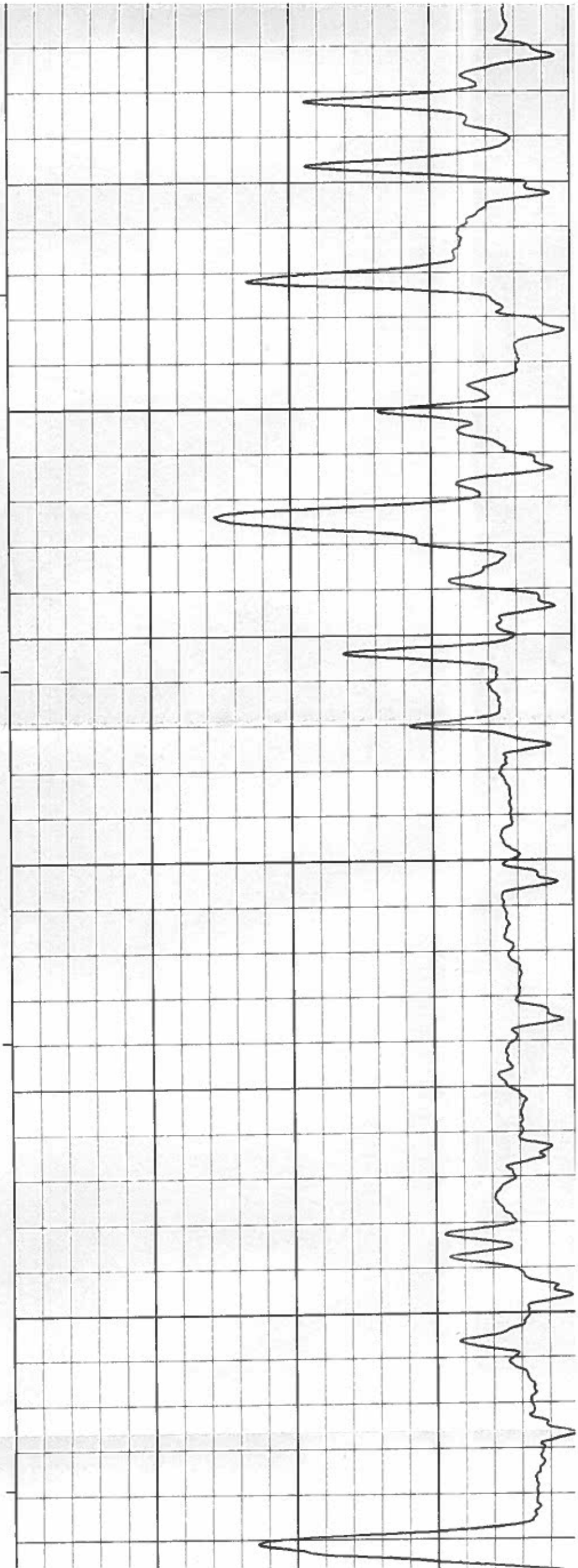
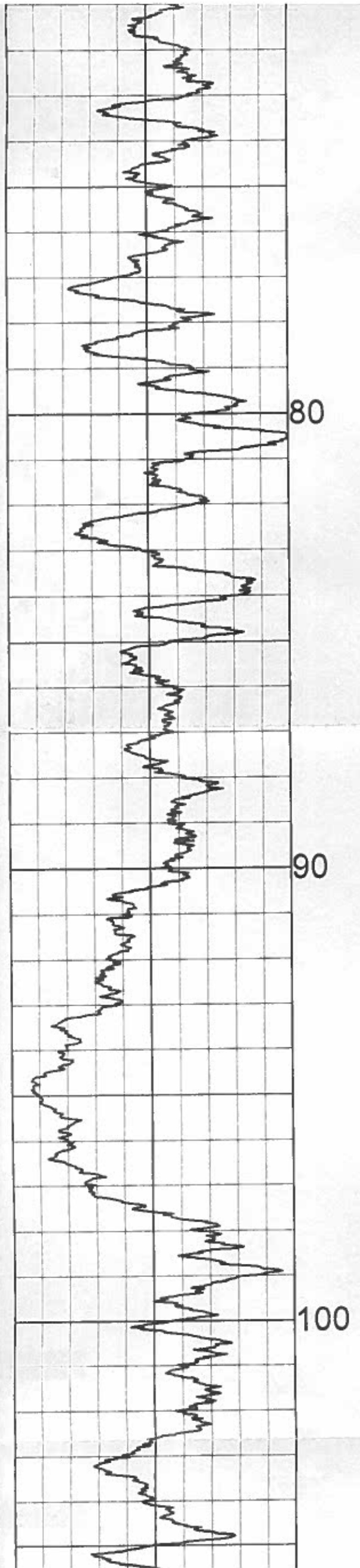
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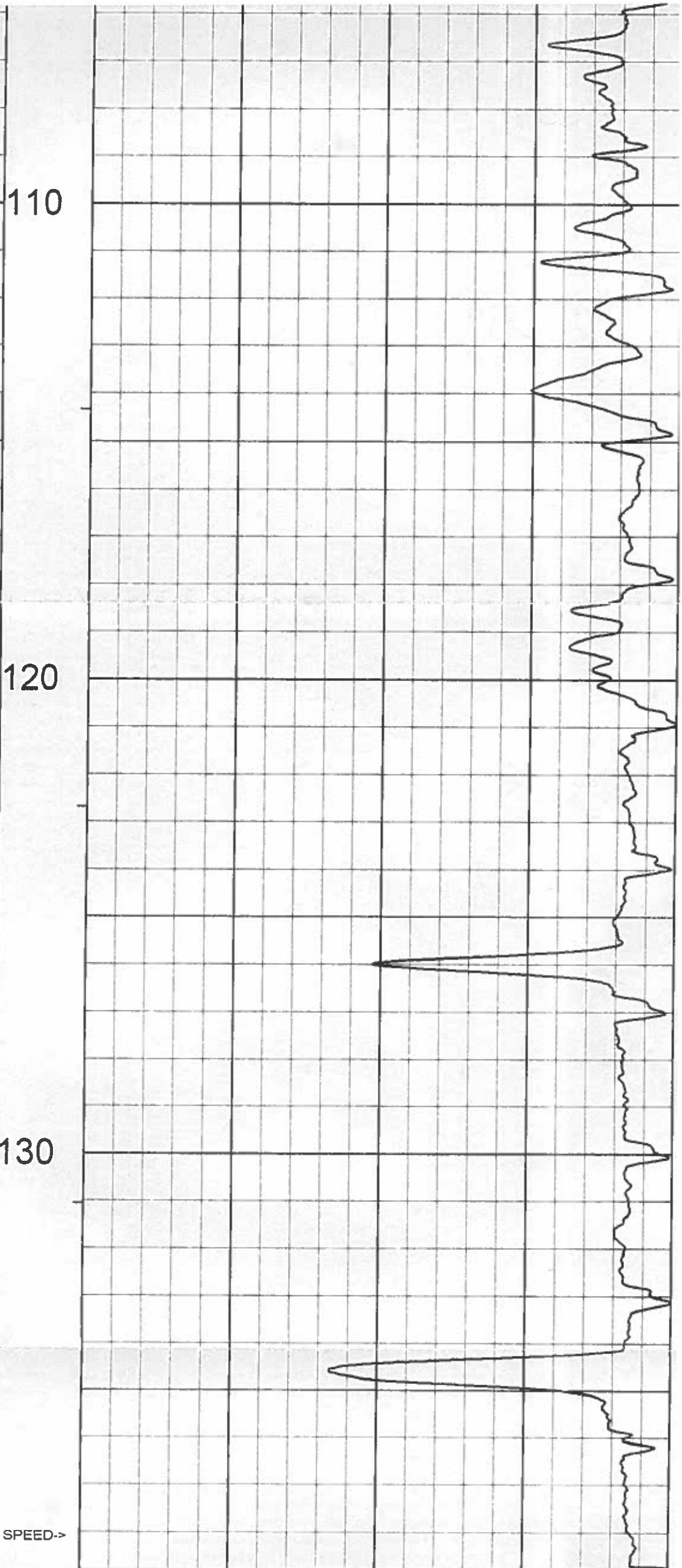
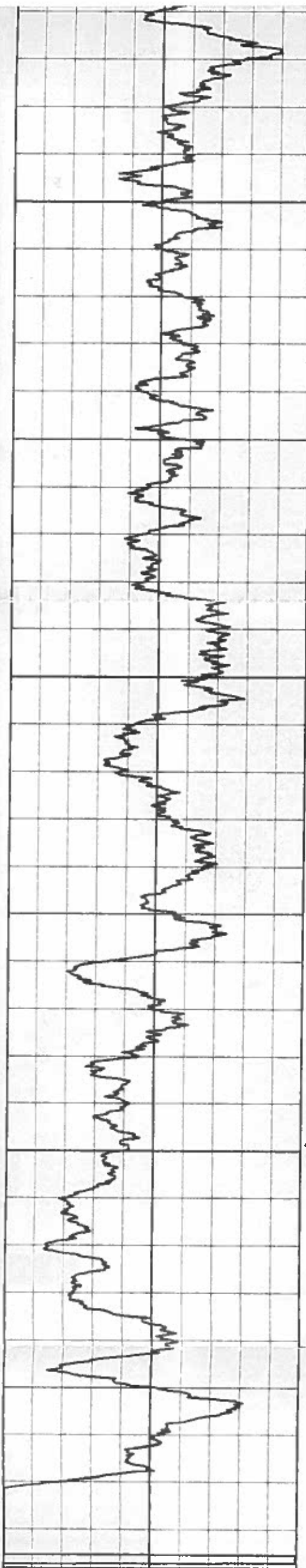
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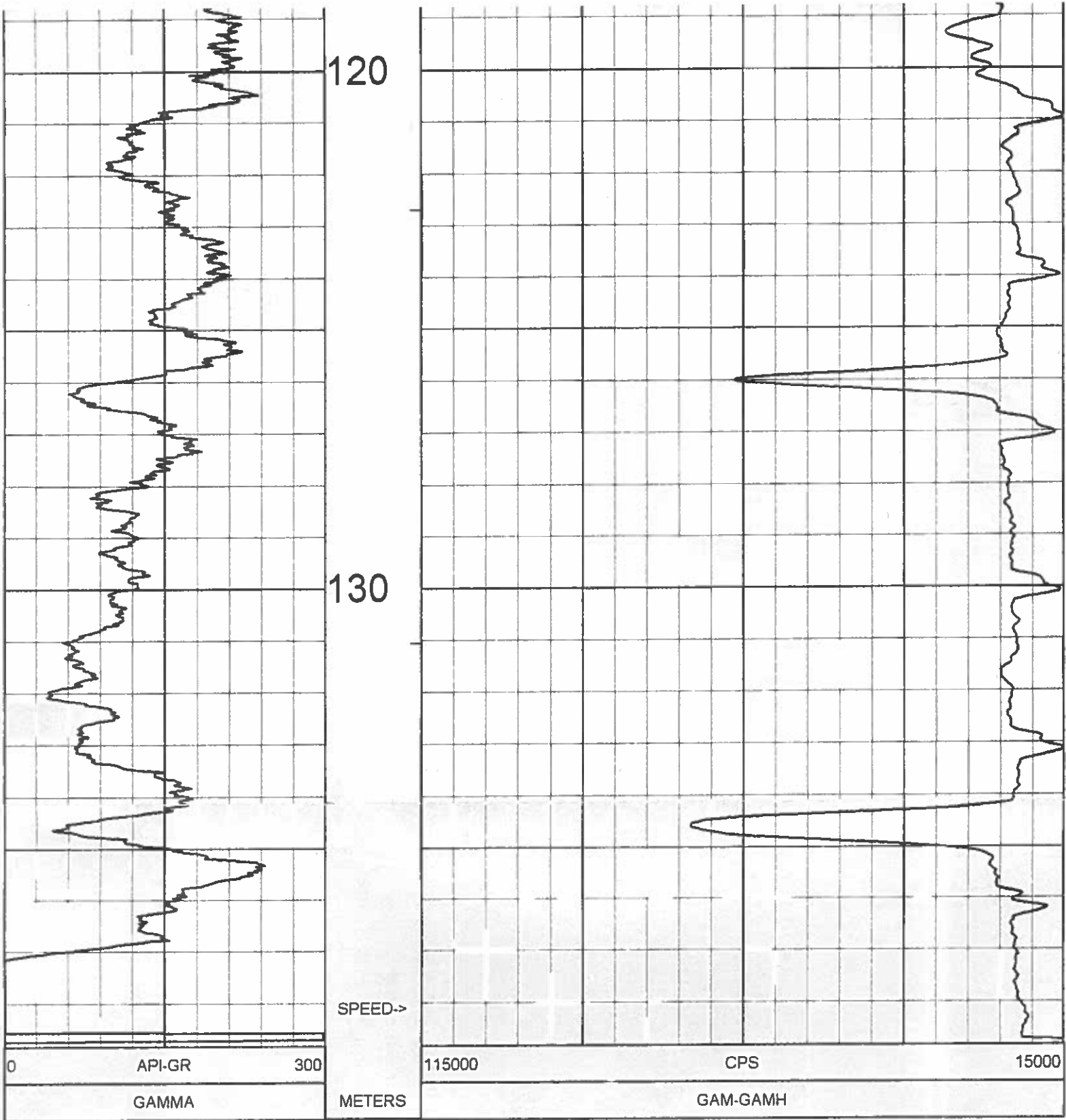






0 API-GR 300
GAMMA

SPEED-> 115000 CPS 150000
METERS GAM-GAMH



1:100 GAM-GAMH BR10-03 07/20/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9068A.0 07/14/2010


VERSION = 3.64HR

TOOL CALIBRATION BR10-03 07/20/10 11:20

TOOL 9068A TM VERSION 1

SERIAL NUMBER 643

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May22,10	08:32:25	GAMMA	Default [CPS]	Default [CPS]
	May22,10	08:32:25	GAMMA	545.000 [API-GR]	100.000 [CPS]

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-05	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,514.77	6,140,506.58	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
28.6	-72	92.50	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	28.6	-71.60
21.00	29.9	-71.80
22.00	30.5	-71.80
23.00	30.8	-71.40
24.00	30.8	-71.20
25.00	31.0	-71.60
26.00	30.9	-71.40
27.00	30.9	-71.30
28.00	30.8	-71.20
29.00	30.7	-71.30
30.00	30.7	-70.90
31.00	30.8	-70.60
32.00	30.9	-70.90
33.00	31.0	-70.50
34.00	31.1	-70.30
35.00	31.1	-70.20
36.00	31.2	-70.20
37.00	31.3	-70.00
38.00	31.3	-70.00
39.00	31.4	-69.80
40.00	31.4	-70.10
41.00	31.4	-70.00
42.00	31.5	-69.20
43.00	31.5	-69.00
44.00	31.6	-68.80
45.00	31.6	-68.70
46.00	31.7	-69.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	17.70	17.70		
18.70	19.40	0.70		
43.50	44.30	0.80		
65.10	65.70	0.60		
65.70	72.40	6.70		
72.40	73.40	1.00		
79.50	80.20	0.70		
81.10	84.90	3.80		
84.90	85.70	0.80		
87.30	87.80	0.50		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

Page 1 of 3



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-05**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

47.00	31.7	-68.70
48.00	31.8	-68.70
49.00	31.9	-67.90
50.00	31.9	-68.40
51.00	32.0	-67.90
52.00	32.1	-68.10
53.00	32.2	-67.60
54.00	32.3	-67.30
55.00	32.3	-67.50
56.00	32.4	-67.80
57.00	32.4	-67.60
58.00	32.5	-67.10
59.00	32.5	-66.70
60.00	32.6	-65.50
61.00	32.7	-65.40
62.00	32.8	-65.50
63.00	32.8	-65.90
64.00	32.9	-65.20
65.00	32.9	-64.50
66.00	33.0	-64.40
67.00	33.1	-64.70
68.00	33.2	-64.20
69.00	33.2	-64.20
70.00	33.3	-64.50
71.00	33.4	-64.40
72.00	33.4	-63.80
73.00	33.5	-63.20
74.00	33.5	-63.10
75.00	33.6	-63.00
76.00	33.6	-62.00
77.00	33.7	-61.70
78.00	33.7	-61.60
79.00	33.8	-60.90
80.00	33.8	-60.70
81.00	33.8	-61.10
82.00	33.9	-60.50
83.00	33.9	-60.70
84.00	34.0	-60.60
85.00	34.0	-60.40
86.00	34.1	-59.80
87.00	34.2	-59.10
88.00	34.3	-59.50
89.00	34.5	-58.90
90.00	34.5	-59.20
91.00	34.7	-57.30

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-05	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	--------------------------------------

92.00	34.8	-57.10
92.50	34.8	-57.10

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 3 of 3

DETAILED DENSITY GAMMA - CALIPER - RES. BR10-05

COMPANY : WESTERN COAL CORPORATION

WELL : BR10-05

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

LOCATION : BRULE NORTH

SECTION : N/A

TOWNSHIP : N/A

RANGE : N/A

LICENCE NO. : N/A

UNIQUE WELL ID. : N/A

OTHER SERVICES:
NEUTRON

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

DATE : 07/10/10

DEPTH DRILLER : 92

BIT SIZE : 11.43

LOG TOP : 0.22

LOG BOTTOM : 92.36

CASING LOGGER : 19.81

CASING DRILLER : 19.81

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

RM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

WITNESSED BY : G. HOLMLUND

RECORDED BY : T. NEAL

REMARKS 1 : 70 DEGREE

REMARKS 2 :

ELEVATION KB : N/A
ELEVATION DF : N/A
ELEVATION GL : N/A
RIG NUMBER :
LOGGER TD :
ARRIVAL TIME :
DEPARTURE TIME :
CIRC STOPPED : N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-05 07/10/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

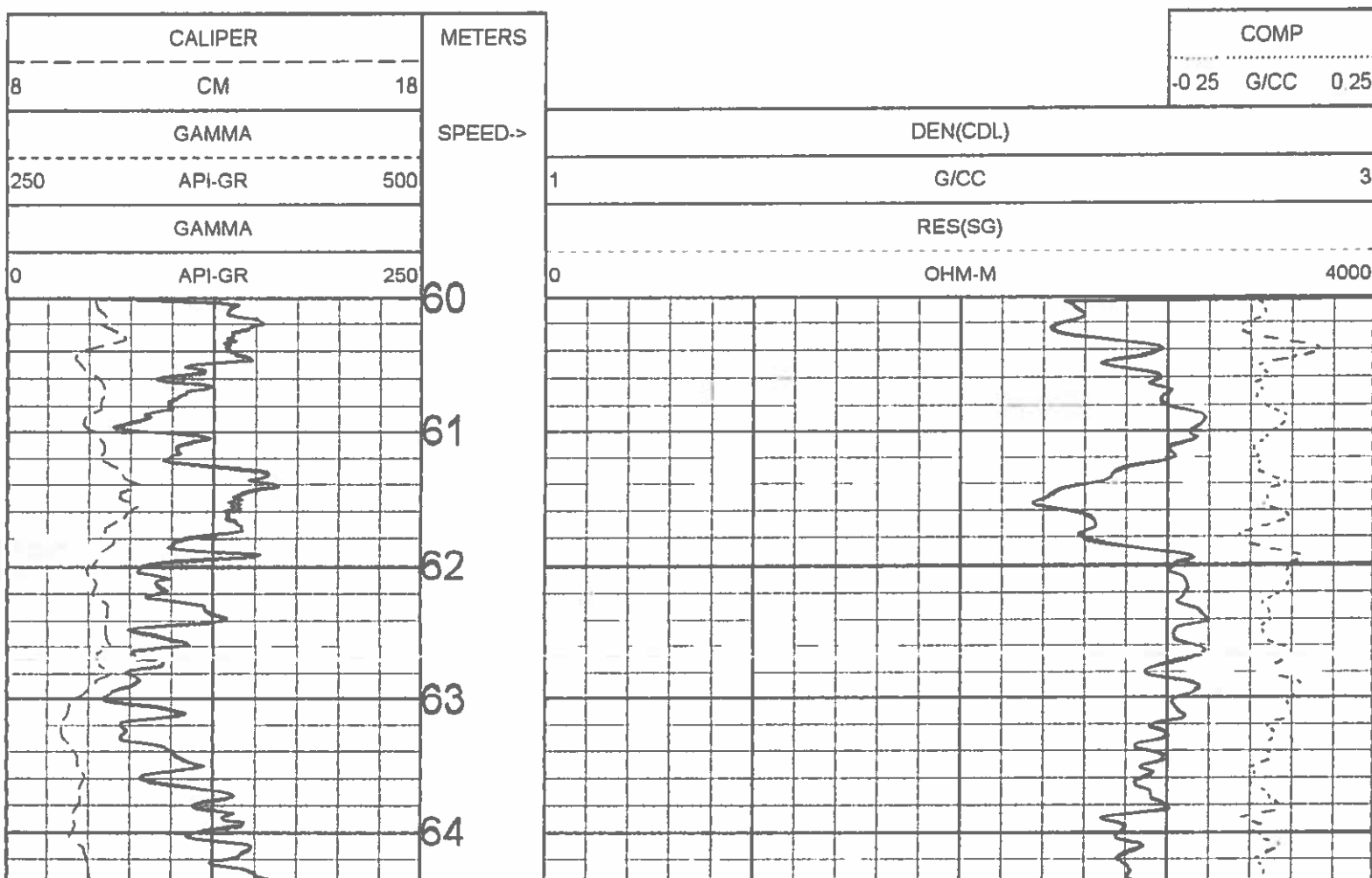
MAGNETIC DECL : 21.0

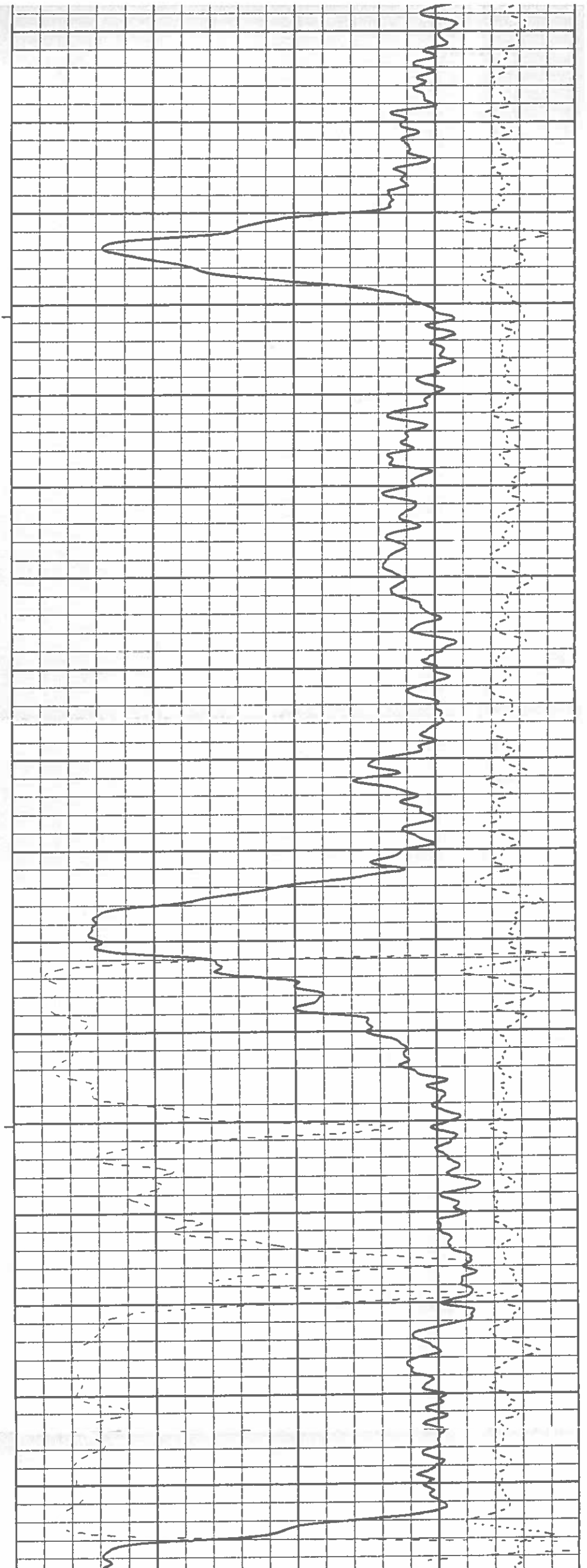
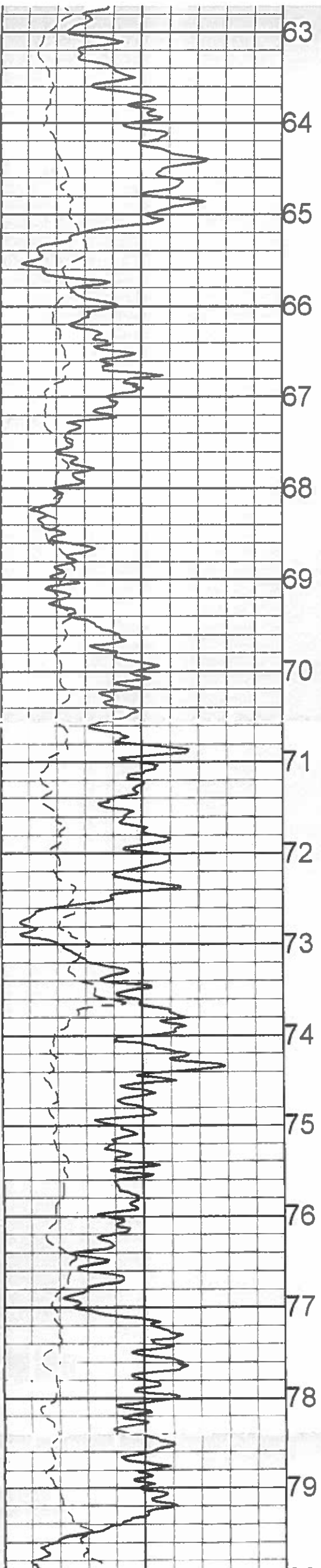
ELECT. CUTOFF : 99999

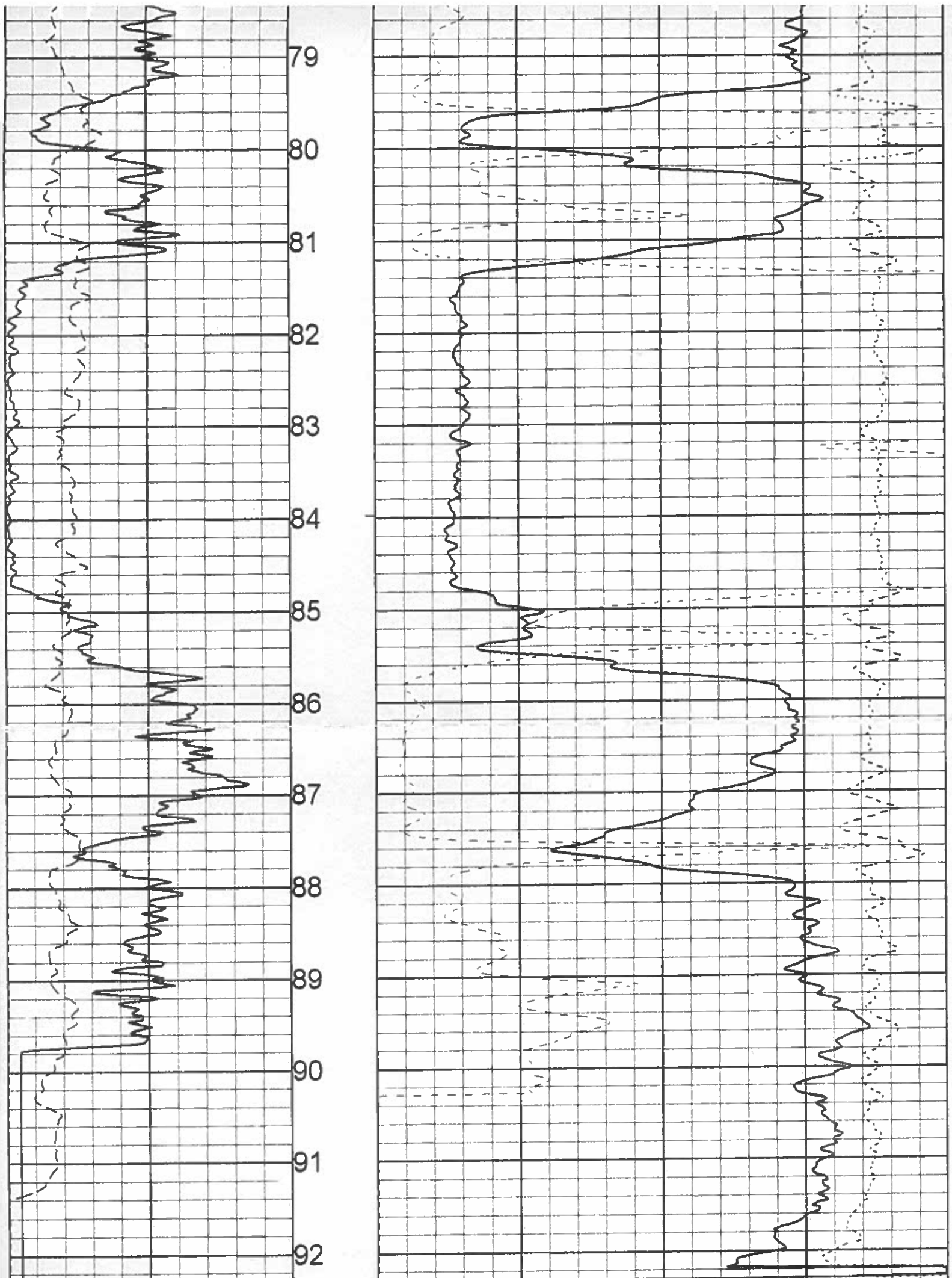
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/06/2010

VERSION = 3.64HR





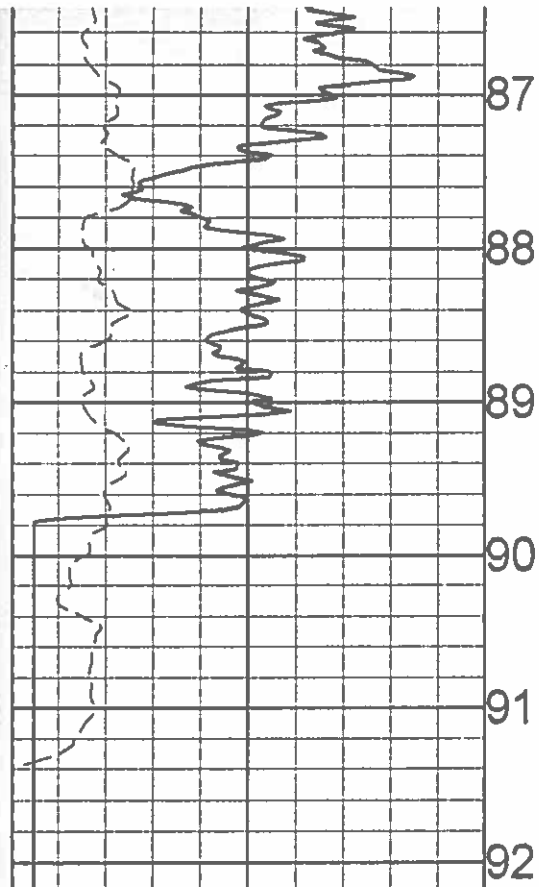


0	API-GR	250
	GAMMA	
	API-GR	500
	GAMMA	
8	CM	18
	CALIPER	

SPEED-> METERS

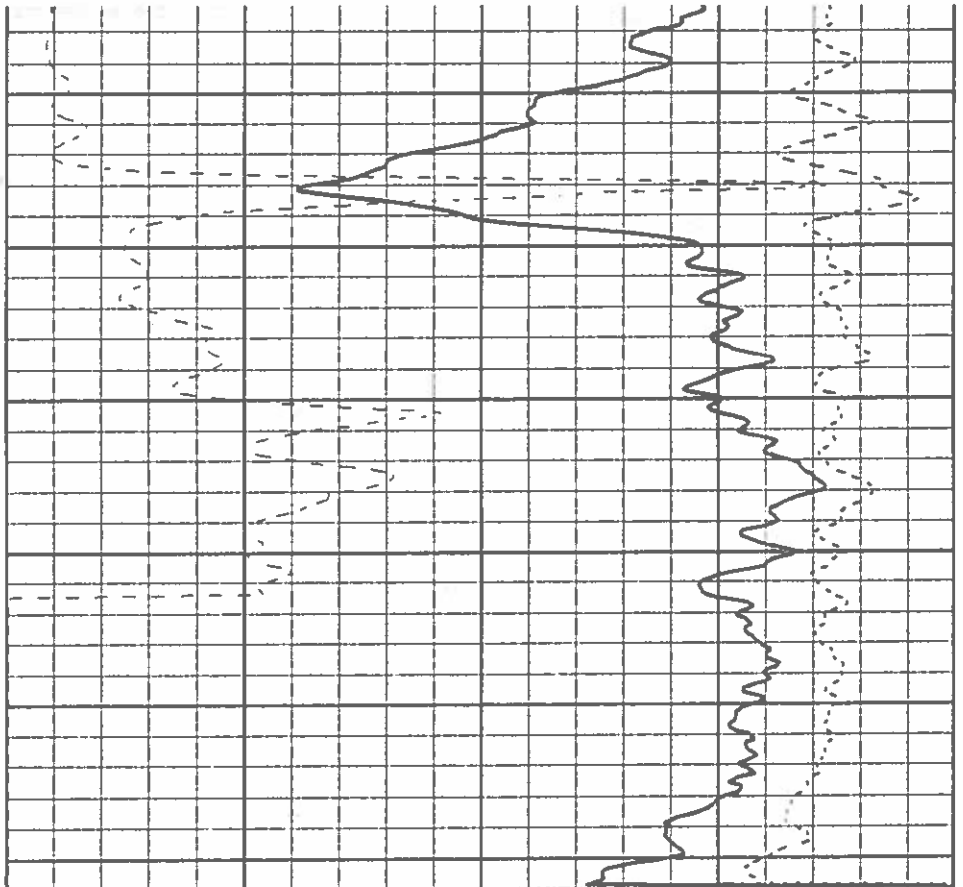
0	OHM-M	4000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	

-0.25 G/CC 0.25
COMP



0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
8	CM	18
	CALIPER	

SPEED->
METERS



0	OHM-M	4000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
		-0.25 G/CC 0.25
		COMP

1:50 BULK DENSITY EXPANDED BR10-05 07/10/10


LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/06/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-05 07/10/10 11:19
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 957

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul10,10	12:02:41	GAMMA	0.000 [API-GR]	-2.000 [CPS]
	Jul10,10	12:02:41	GAMMA	545.000 [API-GR]	501.000 [CPS]
2	Jun11,10	10:10:27	VOLTAGE	31.300 [MV]	8340.000 [CPS]
	Jun11,10	10:10:27	VOLTAGE	240.800 [MV]	35818.000 [CPS]
3	Jun11,10	09:38:42	CALIPER	8.890 [MM]	137560.000 [CPS]
	Jun11,10	09:38:42	CALIPER	15.240 [MM]	284114.000 [CPS]
4	Jun11,10	09:30:15	DEN(LS)	1.620 [G/CC]	14973.000 [CPS]
	Jun11,10	09:30:15	DEN(LS)	2.612 [G/CC]	2121.000 [CPS]
5	Jul10,10	12:08:16	DEN(SS)	1.590 [G/CC]	70570.000 [CPS]
	Jun11,10	09:32:10	DEN(SS)	2.580 [G/CC]	30114.000 [CPS]
6	Jun11,10	09:45:54	CALIPERL	12.700 [MM]	142036.000 [CPS]
	Jun11,10	09:45:54	CALIPERL	22.800 [MM]	256447.000 [CPS]
7	Jun11,10	10:18:09	CURRENT	31.300 [UA]	7970.000 [CPS]
	Jun11,10	10:18:09	CURRENT	240.800 [UA]	23909.000 [CPS]
8	Dec14,09	16:14:58	F	Default [CPS]	
9	Dec14,09	16:14:58	X	Default [CPS]	

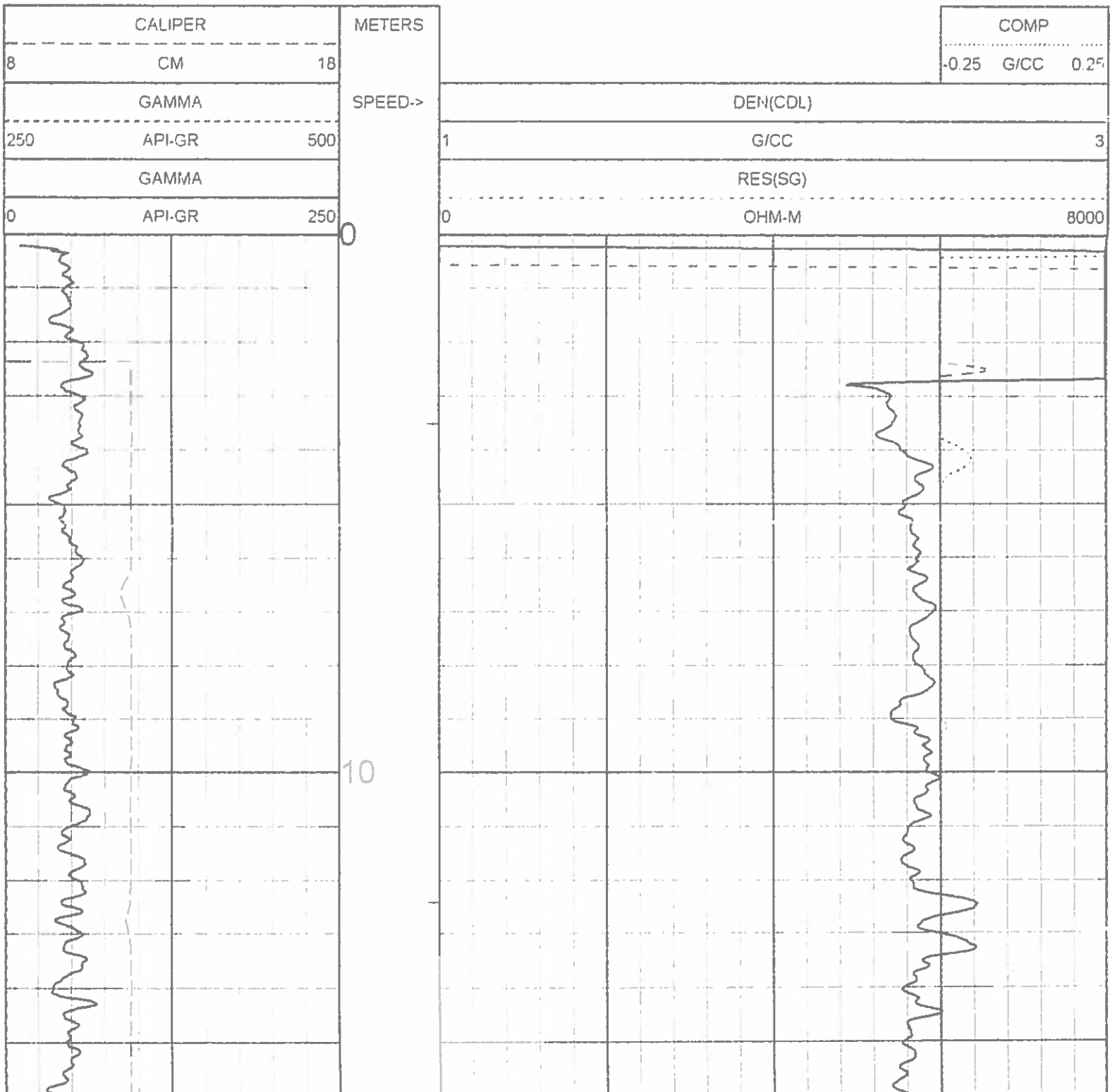
Picks Jan 11/2011

		COMPENSATED DENSITY GAMMA - CALIPER - RES. BR10-05	
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES NEUTRON	
WELL	BR10-05		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/10/10	RIG NUMBER	
DEPTH DRILLER	92	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.22	DEPARTURE TIME	
LOG BOTTOM	92.36	CIRC STOPPED	N/A
CASING LOGGER	19.31		
CASING DRILLER	19.81		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMUND		
RECORDED BY	I. NEAL		
REMARKS 1	70 DEGREE		
REMARKS 2			

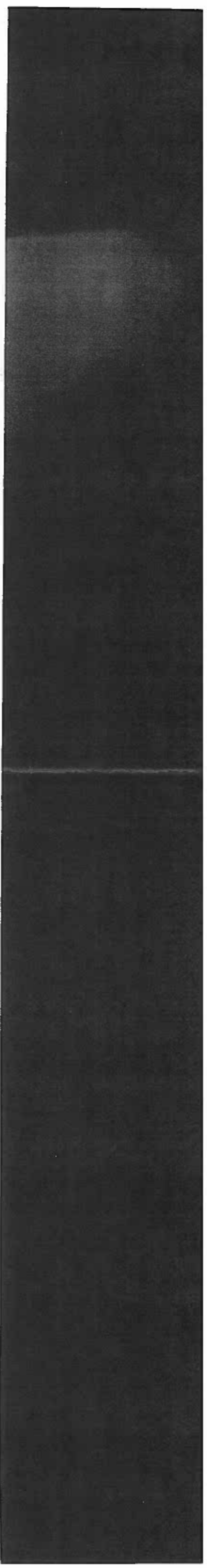
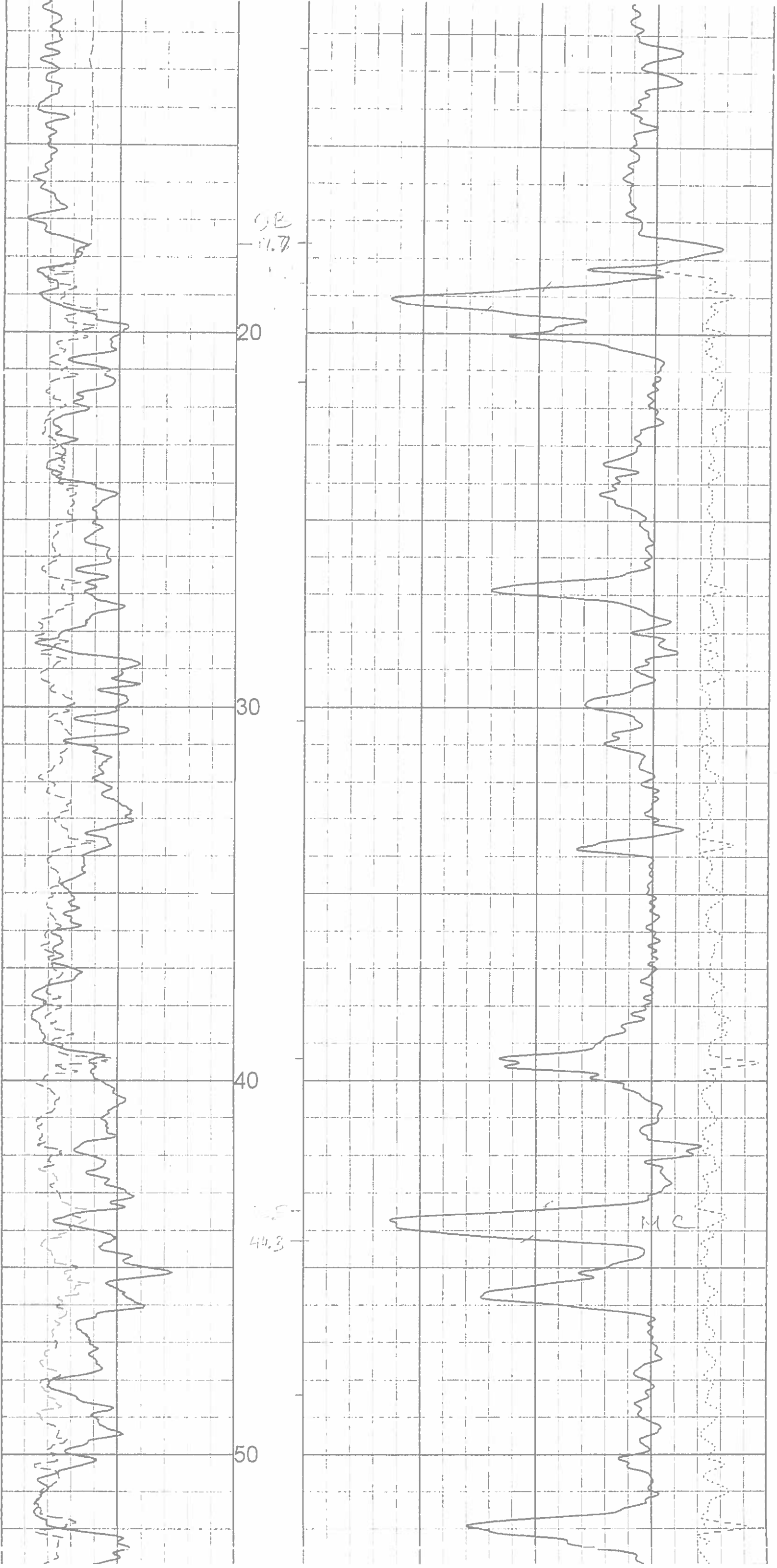
1:100 BULK DENSITY BR10-05 07/10/10

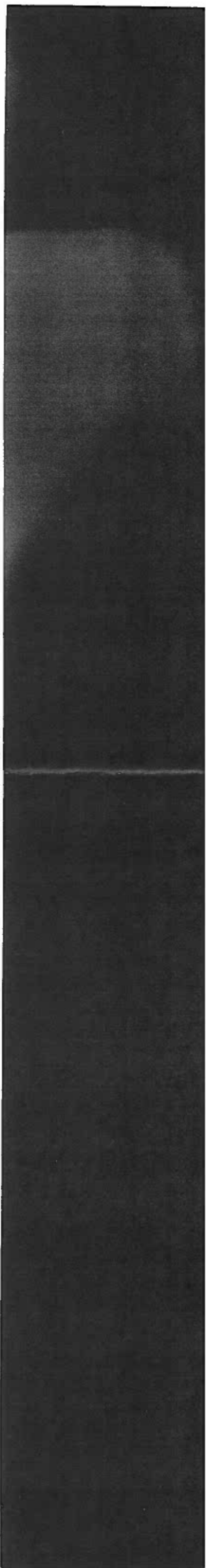
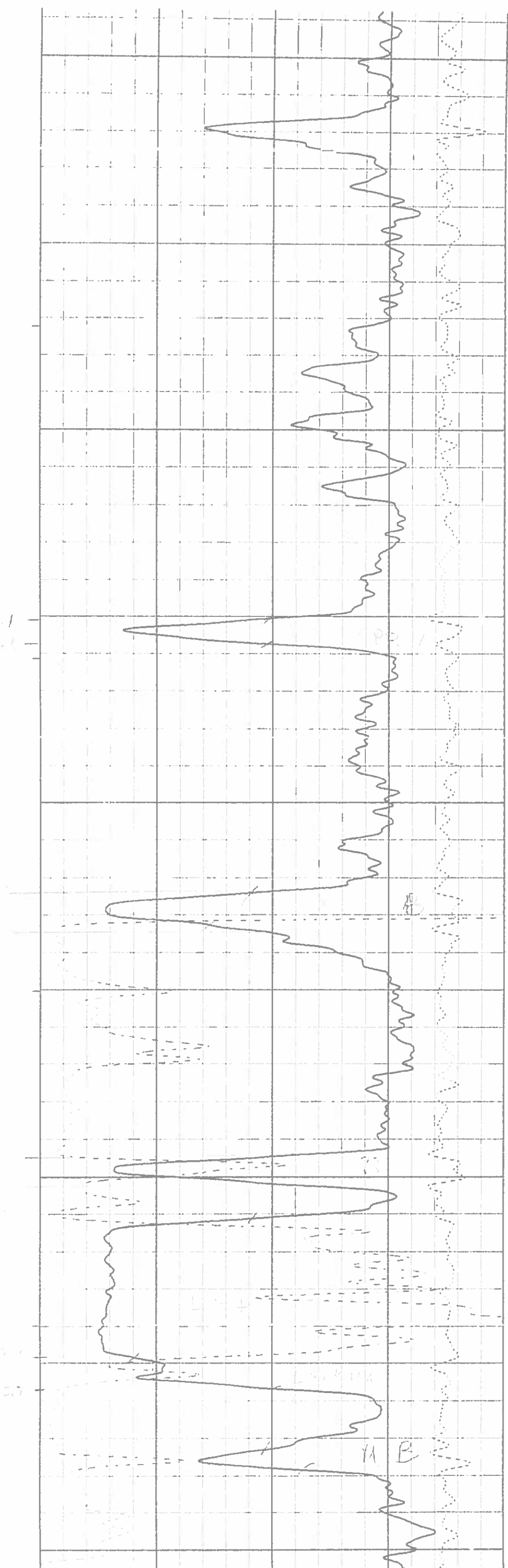
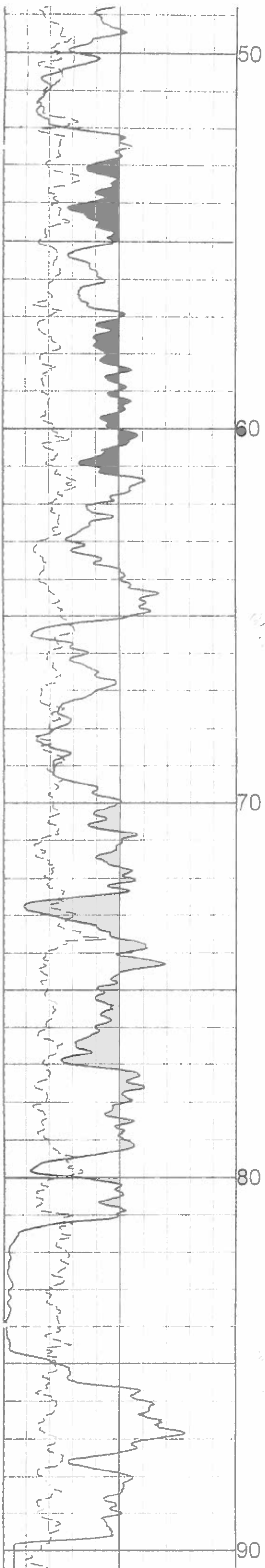
LOG PARAMETERS

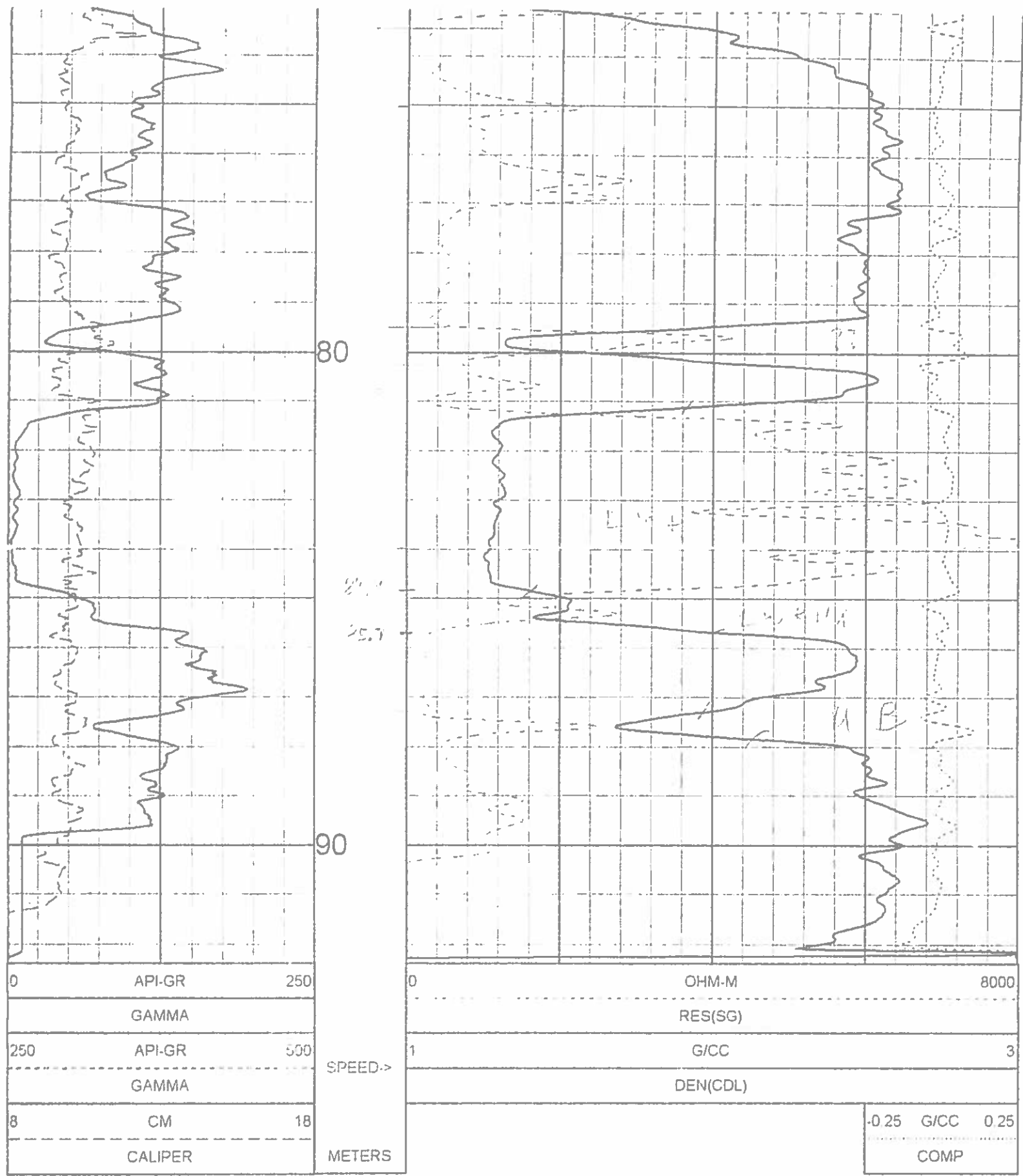
MATRIX DENSITY 2.65 NEUTRON MATRIX SANDSTONE MATRIX DELTA T 177
MAGNETIC DECL 21.0 ELECT CUTOFF 99999 BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 07/06/2010 VERSION = 3.64HR



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







▲ 1:100 BULK DENSITY BR10-05 07/10/10 ▲

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL 21.0	ELECT CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 07/06/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-05 07/10/10 11:19
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 957

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul10,10	12:02:41	GAMMA	0.000 [API-GR]	-2.000 [CPS]
	Jul10,10	12:02:41	GAMMA	545.000 [API-GR]	501.000 [CPS]
2	Jun11,10	10:10:27	VOLTAGE	31.300 [MV]	8340.000 [CPS]
	Jun11,10	10:10:27	VOLTAGE	240.800 [MV]	35818.000 [CPS]
3	Jun11,10	09:38:42	CALIPER	8.890 [MM]	137560.000 [CPS]
	Jun11,10	09:38:42	CALIPER	15.240 [MM]	284114.000 [CPS]
4	Jun11,10	09:30:15	DEN(LS)	1.620 [G/CC]	14973.000 [CPS]
	Jun11,10	09:30:15	DEN(LS)	2.612 [G/CC]	2121.000 [CPS]
5	Jul10,10	12:08:16	DEN(SS)	1.590 [G/CC]	70570.000 [CPS]
	Jun11,10	09:32:10	DEN(SS)	2.580 [G/CC]	30114.000 [CPS]
6	Jun11,10	09:45:54	CALIPERL	12.700 [MM]	142036.000 [CPS]
	Jun11,10	09:45:54	CALIPERL	22.800 [MM]	256447.000 [CPS]
7	Jun11,10	10:18:09	CURRENT	31.300 [UA]	7970.000 [CPS]
	Jun11,10	10:18:09	CURRENT	240.800 [UA]	23909.000 [CPS]
8	Dec14,09	16:14:58	F	Default [CPS]	
9	Dec14,09	16:14:58	X	Default [CPS]	

GAMMA - NEUTRON

BR10-05

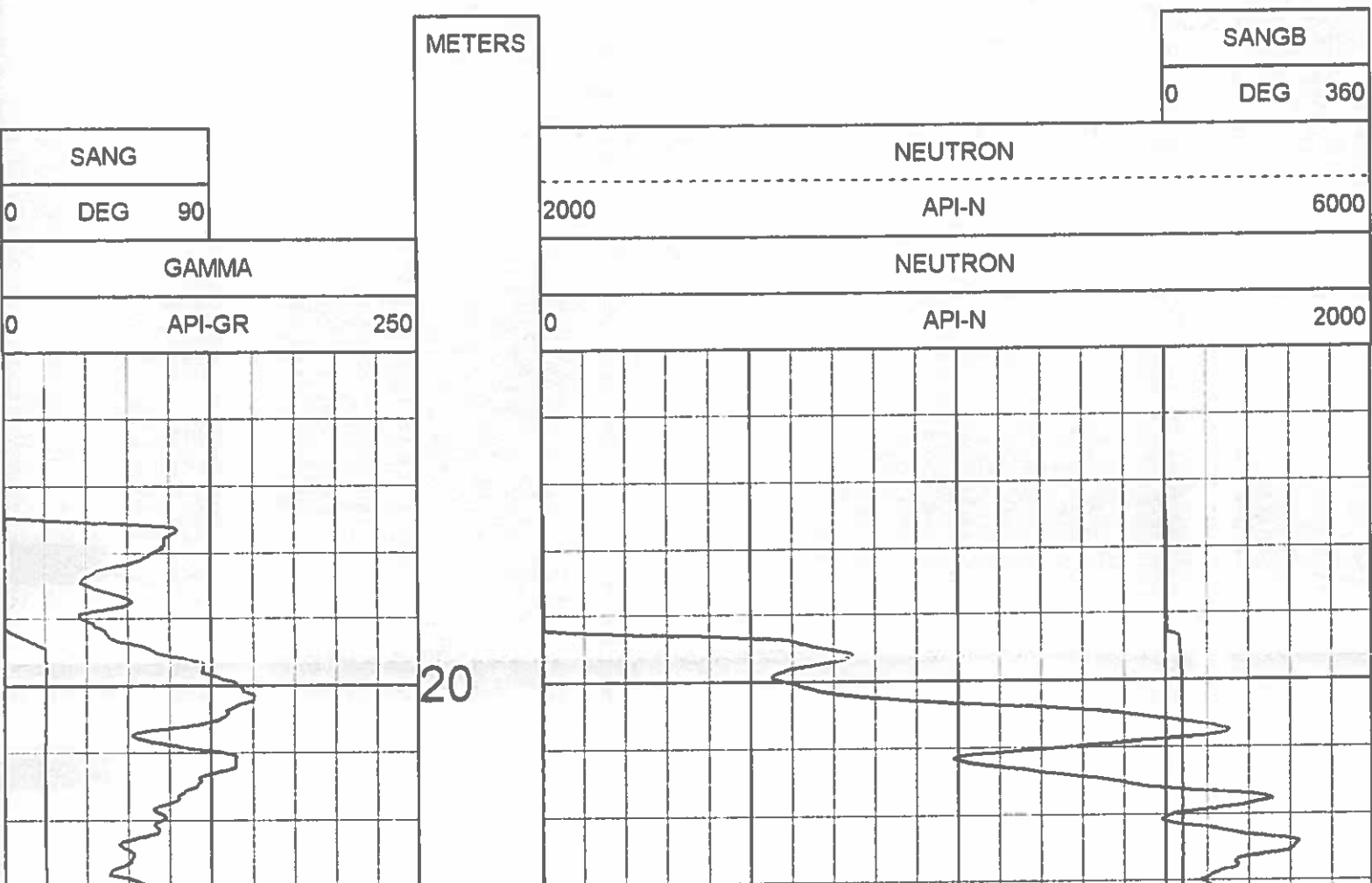
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	
WELL	BR10-05	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/10/10	RIG NUMBER	
DEPTH DRILLER	92	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	17.45	DEPARTURE TIME	
LOG BOTTOM	92.48	CIRC STOPPED	N/A
CASING LOGGER	19.81		
CASING DRILLER	19.81		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	70 DEGREE		
REMARKS 2			

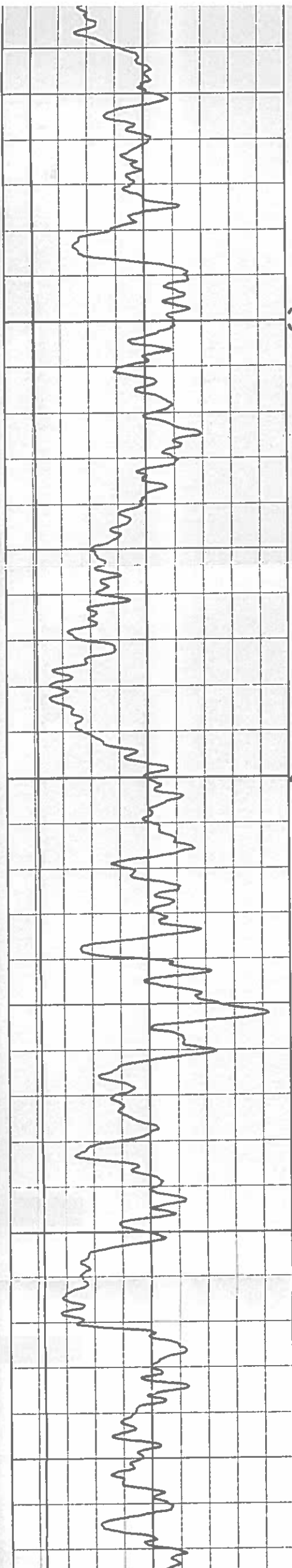
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-05 07/10/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010 VERSION = 3.64HR

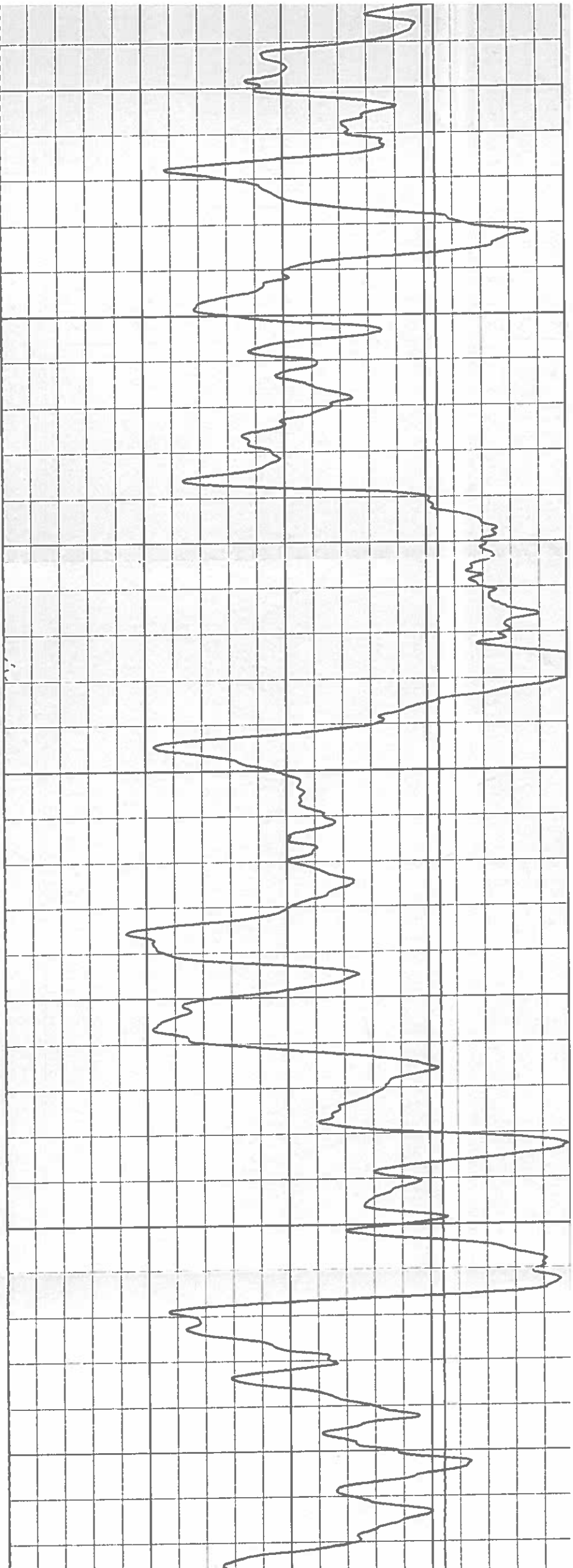


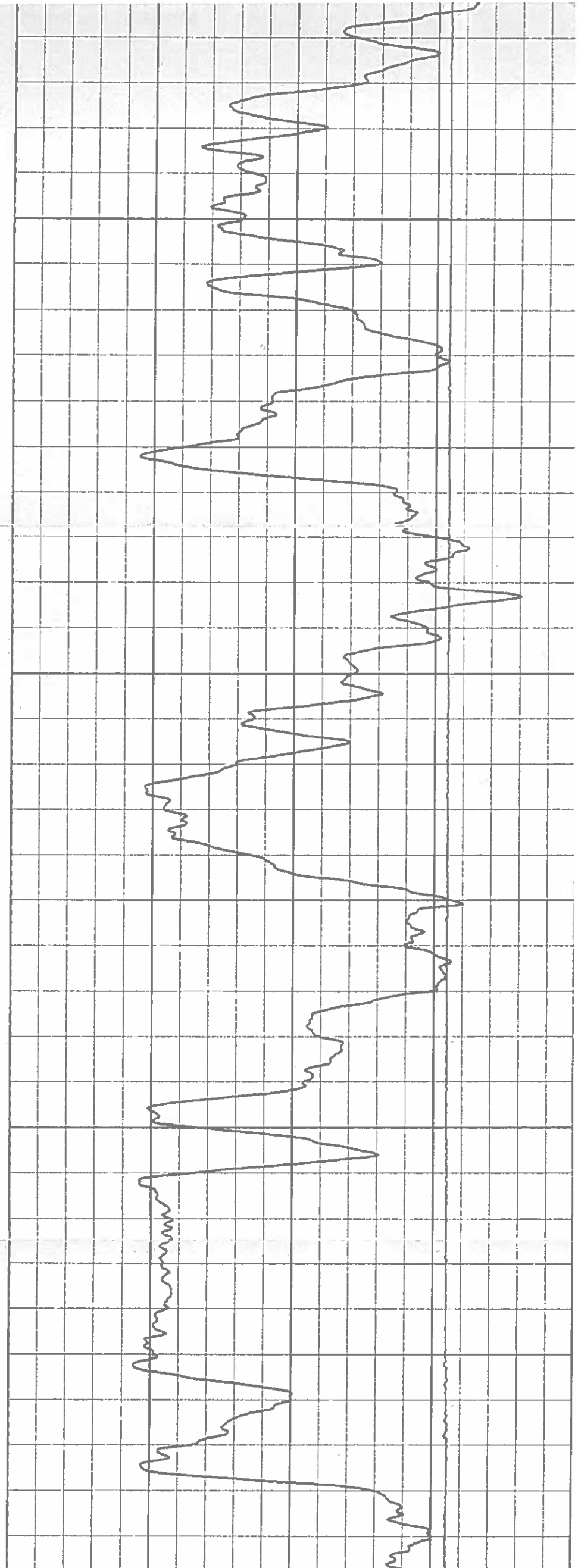
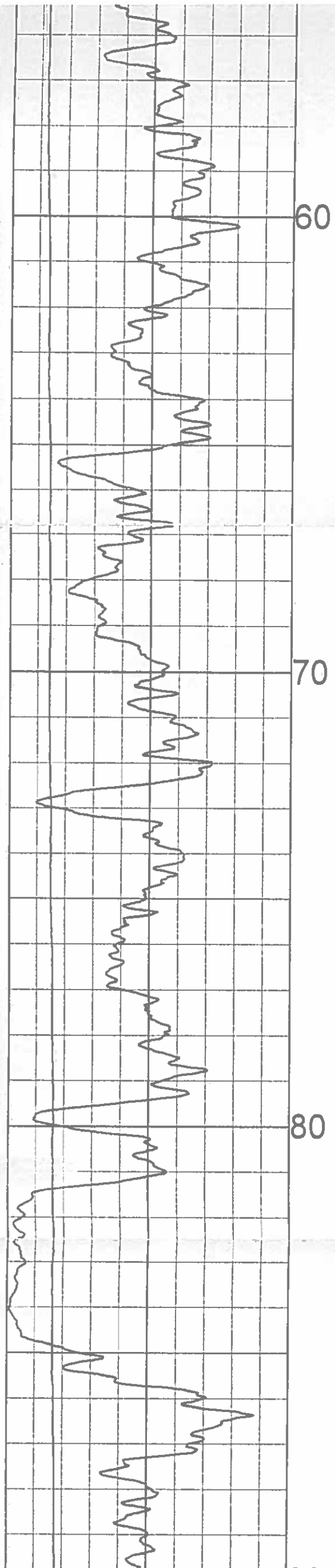


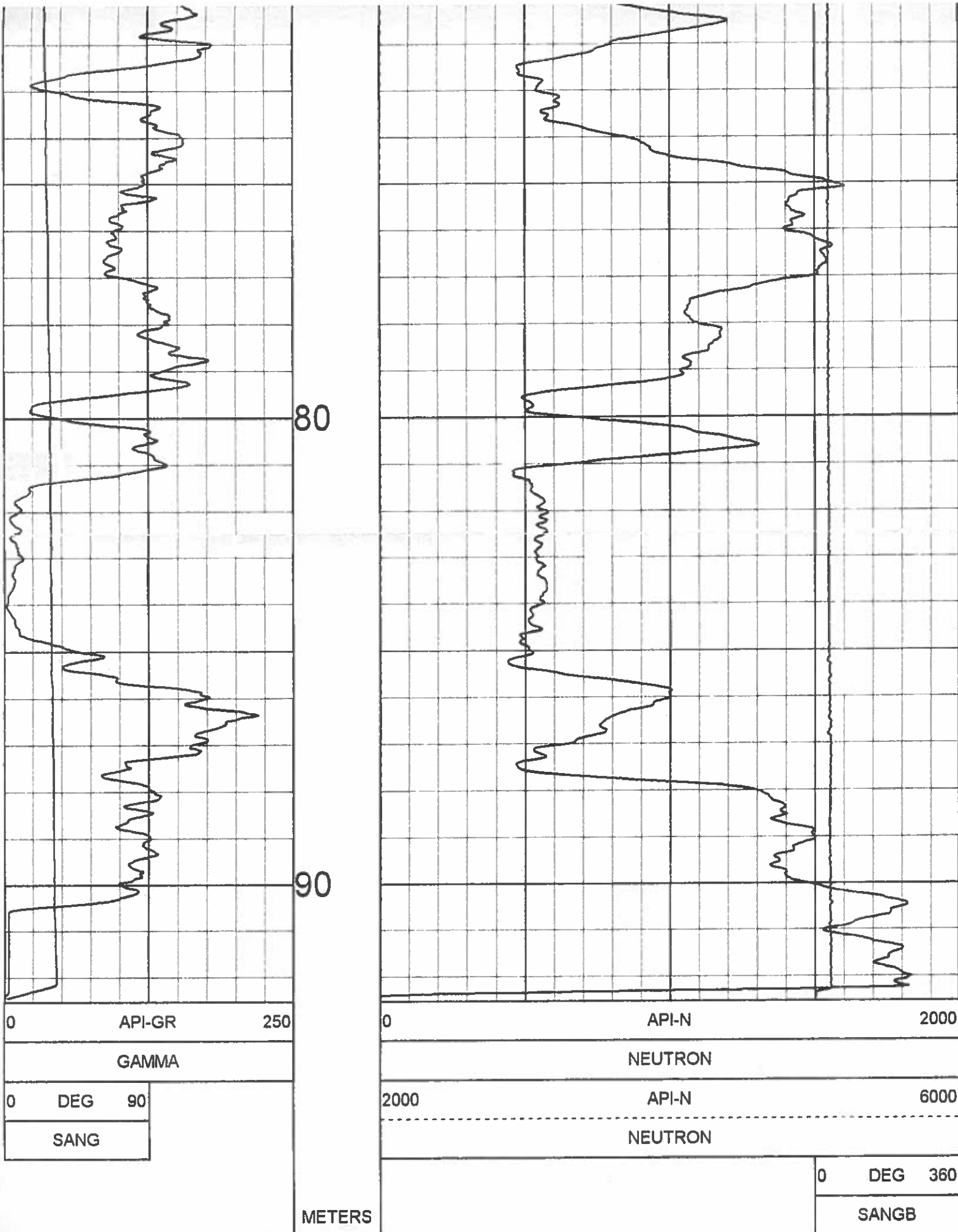
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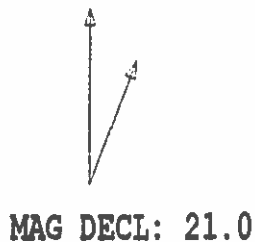
1:100 NEUTRON BR10-05 07/10/10

LOG PARAMETERS

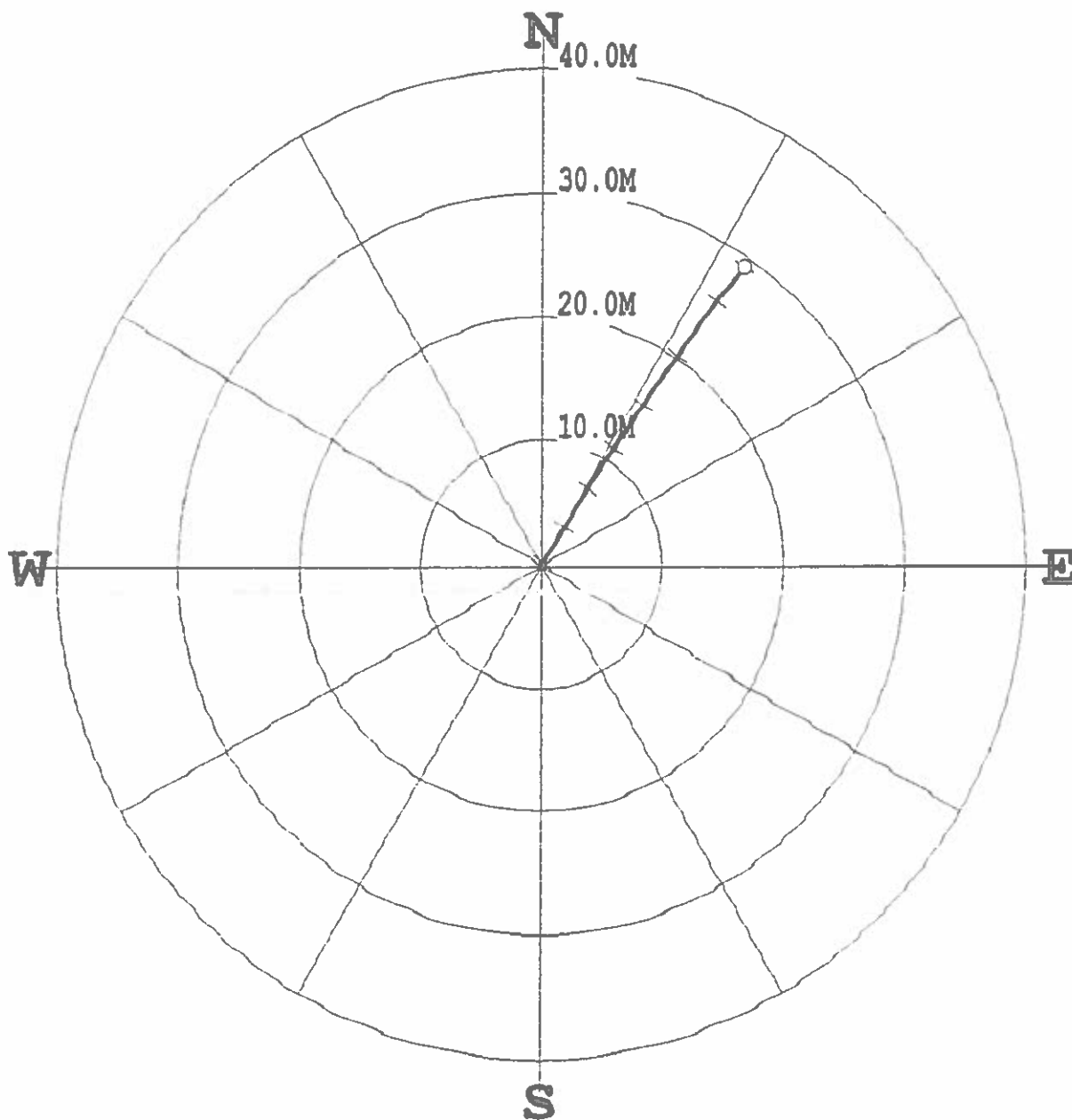
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T . 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE 11 43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.64HR

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-05
 DATE OF LOG: 07/10/10
 PROBE: 9057A 4565



SCALE: 5 M/CM
 TRUE DEPTH: 85.95 M
 AZIMUTH: 34.8
 DISTANCE: 29.2 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT	: WESTERN COAL CORPOR	HOLE ID.	: BR10-05
FIELD OFFICE	: CENTURY GEO	DATE OF LOG	: 07/10/10
DATA FROM	: N/A	PROBE	: 9057A , 4565
MAG. DECL.	: 21.000	DEPTH UNITS	: METERS
LOG: BR10-05_07-10-10_10-47_9057A_.02_17.45_92.48_DEVI.log			


CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
19.00	18.99	0.00	0.00	0.0	0.0	0.0	0.0
20.00	19.95	0.20	0.11	0.2	28.6	18.4	30.2
21.00	20.90	0.47	0.27	0.5	29.9	18.2	31.1
22.00	21.85	0.74	0.43	0.9	30.5	18.2	31.5
23.00	22.80	1.00	0.60	1.2	30.8	18.6	31.1
24.00	23.75	1.27	0.76	1.5	30.8	18.8	31.3
25.00	24.70	1.54	0.93	1.8	31.0	18.4	32.3
26.00	25.65	1.82	1.09	2.1	30.9	18.6	30.2
27.00	26.59	2.09	1.25	2.4	30.9	18.7	31.1
28.00	27.54	2.37	1.41	2.8	30.8	18.8	29.8
29.00	28.49	2.65	1.57	3.1	30.7	18.7	31.0
30.00	29.43	2.93	1.74	3.4	30.7	19.1	31.1
31.00	30.38	3.21	1.91	3.7	30.8	19.4	31.6
32.00	31.32	3.49	2.09	4.1	30.9	19.1	30.8
33.00	32.27	3.77	2.26	4.4	31.0	19.5	31.9

S

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-05
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 07/10/10
 DATA FROM : N/A PROBE : 9057A , 4565
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-05_07-10-10_10-47_9057A_.02_17.45_92.48_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
19.00	18.99	0.00	0.00	0.0	0.0	0.0	0.0
20.00	19.95	0.20	0.11	0.2	28.6	18.4	30.2
21.00	20.90	0.47	0.27	0.5	29.9	18.2	31.1
22.00	21.85	0.74	0.43	0.9	30.5	18.2	31.5
23.00	22.80	1.00	0.60	1.2	30.8	18.6	31.1
24.00	23.75	1.27	0.76	1.5	30.8	18.8	31.3
25.00	24.70	1.54	0.93	1.8	31.0	18.4	32.3
26.00	25.65	1.82	1.09	2.1	30.9	18.6	30.2
27.00	26.59	2.09	1.25	2.4	30.9	18.7	31.1
28.00	27.54	2.37	1.41	2.8	30.8	18.8	29.8
29.00	28.49	2.65	1.57	3.1	30.7	18.7	31.0
30.00	29.43	2.93	1.74	3.4	30.7	19.1	31.1
31.00	30.38	3.21	1.91	3.7	30.8	19.4	31.6
32.00	31.32	3.49	2.09	4.1	30.9	19.1	30.8
33.00	32.27	3.77	2.26	4.4	31.0	19.5	31.9
34.00	33.21	4.06	2.44	4.7	31.1	19.7	32.4
35.00	34.15	4.34	2.62	5.1	31.1	19.8	32.3
36.00	35.09	4.63	2.80	5.4	31.2	19.8	32.5
37.00	36.03	4.92	2.99	5.8	31.3	20.0	32.2
38.00	36.97	5.21	3.17	6.1	31.3	20.0	32.7
39.00	37.91	5.49	3.35	6.4	31.4	20.2	31.3
40.00	38.85	5.79	3.53	6.8	31.4	19.9	31.3
41.00	39.79	6.08	3.72	7.1	31.4	20.0	33.1
42.00	40.72	6.38	3.90	7.5	31.5	20.8	33.4
43.00	41.66	6.68	4.09	7.8	31.5	21.0	32.6
44.00	42.59	6.98	4.29	8.2	31.6	21.2	34.0
45.00	43.52	7.28	4.48	8.6	31.6	21.3	33.2
46.00	44.45	7.59	4.68	8.9	31.7	20.4	35.0
47.00	45.39	7.89	4.88	9.3	31.7	21.3	33.1
48.00	46.32	8.20	5.08	9.6	31.8	21.3	33.1
49.00	47.25	8.50	5.29	10.0	31.9	22.1	32.5
50.00	48.17	8.81	5.50	10.4	31.9	21.6	33.8
51.00	49.10	9.13	5.71	10.8	32.0	22.1	33.4
52.00	50.03	9.43	5.92	11.1	32.1	21.9	36.0
53.00	50.95	9.75	6.13	11.5	32.2	22.4	34.1
54.00	51.88	10.06	6.35	11.9	32.3	22.7	35.0
55.00	52.80	10.38	6.57	12.3	32.3	22.5	36.0
56.00	53.72	10.69	6.79	12.7	32.4	22.2	35.7
57.00	54.65	11.01	7.00	13.0	32.4	22.4	32.3
58.00	55.57	11.33	7.21	13.4	32.5	22.9	34.2
59.00	56.49	11.65	7.43	13.8	32.5	23.3	35.1
60.00	57.41	11.98	7.66	14.2	32.6	24.5	36.4
61.00	58.32	12.31	7.90	14.6	32.7	24.6	35.3
62.00	59.23	12.65	8.14	15.0	32.8	24.5	35.0
63.00	60.14	12.99	8.38	15.5	32.8	24.1	34.0
64.00	61.05	13.33	8.61	15.9	32.9	24.8	35.5
65.00	61.96	13.68	8.86	16.3	32.9	25.5	36.0
66.00	62.86	14.03	9.11	16.7	33.0	25.6	37.3
67.00	63.76	14.37	9.36	17.2	33.1	25.3	38.1
68.00	64.66	14.72	9.62	17.6	33.2	25.8	36.0
69.00	65.56	15.08	9.88	18.0	33.2	25.8	36.1
70.00	66.46	15.43	10.13	18.5	33.3	25.5	36.3
71.00	67.36	15.78	10.39	18.9	33.4	25.6	37.8
72.00	68.26	16.13	10.64	19.3	33.4	26.2	37.5
73.00	69.16	16.50	10.91	19.8	33.5	26.8	36.6
74.00	70.05	16.86	11.17	20.2	33.5	26.9	35.6
75.00	70.94	17.23	11.44	20.7	33.6	27.0	37.2
76.00	71.83	17.60	11.71	21.1	33.6	28.0	35.0
77.00	72.71	17.99	11.98	21.6	33.7	28.3	34.6
78.00	73.59	18.37	12.25	22.1	33.7	28.4	37.6
79.00	74.47	18.76	12.53	22.6	33.8	29.1	37.0
80.00	75.34	19.15	12.82	23.0	33.8	29.3	36.4
81.00	76.22	19.55	13.10	23.5	33.8	28.9	37.0
82.00	77.09	19.94	13.39	24.0	33.9	29.5	35.4
83.00	77.96	20.33	13.69	24.5	33.9	29.3	37.3
84.00	78.83	20.73	13.98	25.0	34.0	29.4	36.4
85.00	79.70	21.12	14.27	25.5	34.0	29.6	34.1
86.00	80.57	21.51	14.58	26.0	34.1	30.2	37.4
87.00	81.43	21.90	14.90	26.5	34.2	30.9	42.4
88.00	82.29	22.29	15.23	27.0	34.3	30.5	43.9
89.00	83.15	22.69	15.56	27.5	34.5	31.1	39.1

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-06	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,477.83	6,140,374.80	1,254.09

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
40.8	-88	207.10	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: slim tool

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	40.8	-87.50
14.00	38.3	-87.50
15.00	37.4	-87.80
16.00	37.1	-87.80
17.00	37.7	-87.90
18.00	38.7	-88.10
19.00	39.5	-88.10
20.00	39.9	-88.20
21.00	40.1	-88.50
22.00	39.8	-88.50
23.00	39.4	-88.70
24.00	39.3	-88.20
25.00	39.4	-88.10
26.00	39.7	-88.20
27.00	40.0	-88.30
28.00	40.1	-88.40
29.00	40.1	-88.50
30.00	40.1	-88.60
31.00	39.5	-88.60
32.00	38.6	-88.20
33.00	38.0	-87.90
34.00	37.5	-87.50
35.00	37.0	-87.40
36.00	36.2	-87.10
37.00	35.1	-86.90
38.00	33.9	-86.60
39.00	32.9	-86.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	9.14	9.14		
60.00	63.30	3.30		
66.50	67.60	1.10		
104.10	104.70	0.60		
124.80	125.30	0.50		
133.90	134.80	0.90		
175.60	176.20	0.60		
195.20	195.90	0.70		
202.70	203.70	1.00		

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

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Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-06**

year drilled: 2010

AREA: **BURNT RIVER
BRULE**

40.00	32.0	-86.80
41.00	31.4	-86.80
42.00	31.0	-86.50
43.00	30.8	-85.90
44.00	30.6	-85.50
45.00	30.4	-85.40
46.00	30.2	-85.30
47.00	29.8	-84.80
48.00	29.2	-84.40
49.00	28.4	-84.10
50.00	27.6	-84.10
51.00	26.7	-83.40
52.00	25.9	-83.00
53.00	25.3	-83.40
54.00	24.6	-83.30
55.00	24.0	-83.30
56.00	23.5	-83.50
57.00	23.0	-83.40
58.00	22.5	-83.20
59.00	22.1	-82.90
60.00	21.7	-83.70
61.00	21.3	-83.90
62.00	20.8	-83.50
63.00	20.2	-83.10
64.00	19.7	-83.00
65.00	19.3	-83.10
66.00	18.9	-83.10
67.00	18.5	-82.80
68.00	18.0	-82.70
69.00	17.6	-82.60
70.00	17.2	-82.30
71.00	16.9	-82.00
72.00	16.6	-82.50
73.00	16.4	-81.90
74.00	16.3	-81.40
75.00	16.2	-81.00
76.00	16.2	-80.30
77.00	16.1	-79.80
78.00	16.1	-79.80
79.00	16.1	-79.80
80.00	16.2	-79.20
81.00	16.2	-78.90
82.00	16.3	-78.80
83.00	16.5	-78.50
84.00	16.7	-78.40

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-06**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

85.00	16.8	-78.70
86.00	17.0	-78.80
87.00	17.1	-78.40
88.00	17.3	-77.90
89.00	17.5	-78.30
90.00	17.7	-78.40
91.00	17.9	-78.00
92.00	18.1	-77.80
93.00	18.3	-77.70
94.00	18.5	-77.20
95.00	18.7	-76.80
96.00	18.9	-76.30
97.00	19.1	-76.00
98.00	19.3	-75.50
99.00	19.5	-74.90
100.00	19.8	-74.70
101.00	20.0	-74.40
102.00	20.2	-74.20
103.00	20.5	-74.00
104.00	20.7	-74.00
105.00	20.9	-73.80
106.00	21.2	-73.70
107.00	21.4	-73.40
108.00	21.6	-73.50
109.00	21.8	-73.30
110.00	22.0	-73.10
111.00	22.1	-73.00
112.00	22.3	-72.80
113.00	22.5	-72.60
114.00	22.6	-72.50
115.00	22.8	-72.30
116.00	22.9	-72.00
117.00	23.0	-71.30
118.00	23.2	-70.90
119.00	23.3	-70.50
120.00	23.4	-69.90
121.00	23.5	-69.20
122.00	23.6	-69.10
123.00	23.7	-68.70
124.00	23.8	-68.30
125.00	23.9	-67.90
126.00	24.0	-67.70
127.00	24.1	-67.60
128.00	24.1	-67.00
129.00	24.2	-67.00

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-06**

year drilled: 2010

AREA: **BURNT RIVER
BRULE**

130.00	24.3	-66.90
131.00	24.4	-66.60
132.00	24.5	-66.30
133.00	24.6	-66.40
134.00	24.8	-66.20
135.00	24.9	-66.30
136.00	25.0	-65.70
137.00	25.1	-65.60
138.00	25.2	-65.70
139.00	25.2	-65.70
140.00	25.3	-65.30
141.00	25.4	-65.10
142.00	25.4	-64.80
143.00	25.5	-64.80
144.00	25.5	-64.40
145.00	25.5	-64.50
146.00	25.6	-64.30
147.00	25.6	-63.80
148.00	25.7	-63.40
149.00	25.7	-63.40
150.00	25.8	-63.60
151.00	25.8	-63.70
152.00	25.8	-64.00
153.00	25.9	-62.90
154.00	25.9	-62.90
155.00	26.0	-62.80
156.00	26.0	-62.70
157.00	26.1	-62.40
158.00	26.1	-62.40
159.00	26.1	-62.10
160.00	26.2	-63.10
161.00	26.2	-63.00
162.00	26.2	-62.20
163.00	26.2	-62.00
164.00	26.2	-61.30
165.00	26.2	-61.20
166.00	26.2	-61.00
167.00	26.2	-61.10
168.00	26.2	-60.50
169.00	26.2	-60.10
170.00	26.2	-59.30
171.00	26.2	-58.40
172.00	26.2	-58.30
173.00	26.2	-58.40
174.00	26.2	-58.50

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Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-06**

year drilled: 2010

AREA:

BURNT RIVER
BRULE

175.00	26.3	-58.30
176.00	26.3	-58.10
177.00	26.3	-57.50
178.00	26.3	-57.40
179.00	26.3	-56.90
180.00	26.4	-56.90
181.00	26.4	-56.70
182.00	26.4	-56.30
183.00	26.4	-55.70
184.00	26.4	-55.70
185.00	26.5	-55.20
186.00	26.5	-54.80
187.00	26.5	-54.70
188.00	26.5	-54.30
189.00	26.5	-53.80
190.00	26.6	-53.20
191.00	26.6	-52.70
192.00	26.6	-52.10
193.00	26.6	-51.90
194.00	26.6	-51.50
195.00	26.7	-51.20
196.00	26.7	-50.70
197.00	26.7	-50.10
198.00	26.8	-49.40
199.00	26.8	-48.90
200.00	26.8	-48.70
201.00	26.9	-48.20
202.00	26.9	-48.30
203.00	26.9	-48.30
204.00	27.0	-49.10
205.00	27.1	-46.90
206.00	27.1	-46.90
206.92	27.2	-46.40

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

Century
WIRELINE SERVICES

GAM-GAMH
SLIM TOOL
BR10-06

PICKS - Jan 11/2011

COMPANY		WESTERHILL COAL CORPORATION	OTHER SERVICES
WELL	BR10-06		NEUTRON
FIELD	SRULE		
COUNTRY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	NEALE NORTH		
SECTION	N/A	ELEVATION KB	N/A
TOWN	N/A	ELEVATION DF	N/A
PARCEL	N/A	ELEVATION SL	N/A
LOG #	N/A		
		LOG NUMBER	
		LOGGER ID	
		ARRIVAL TIME	
		DEPARTURE TIME	
		LOG STOPPED	
DATE			
DESCRIPTION	N/A		
CASING CODE	STEEL		
LOG TYPE	WATER		
LOG TEMPERATURE	N/A		
LOG KE	N/A		
LOG WEIGHT	DF		
ATTENDED BY	C HOLDON		
RECORD #	3 333		
REMARK	SPR 2		
REVISION			

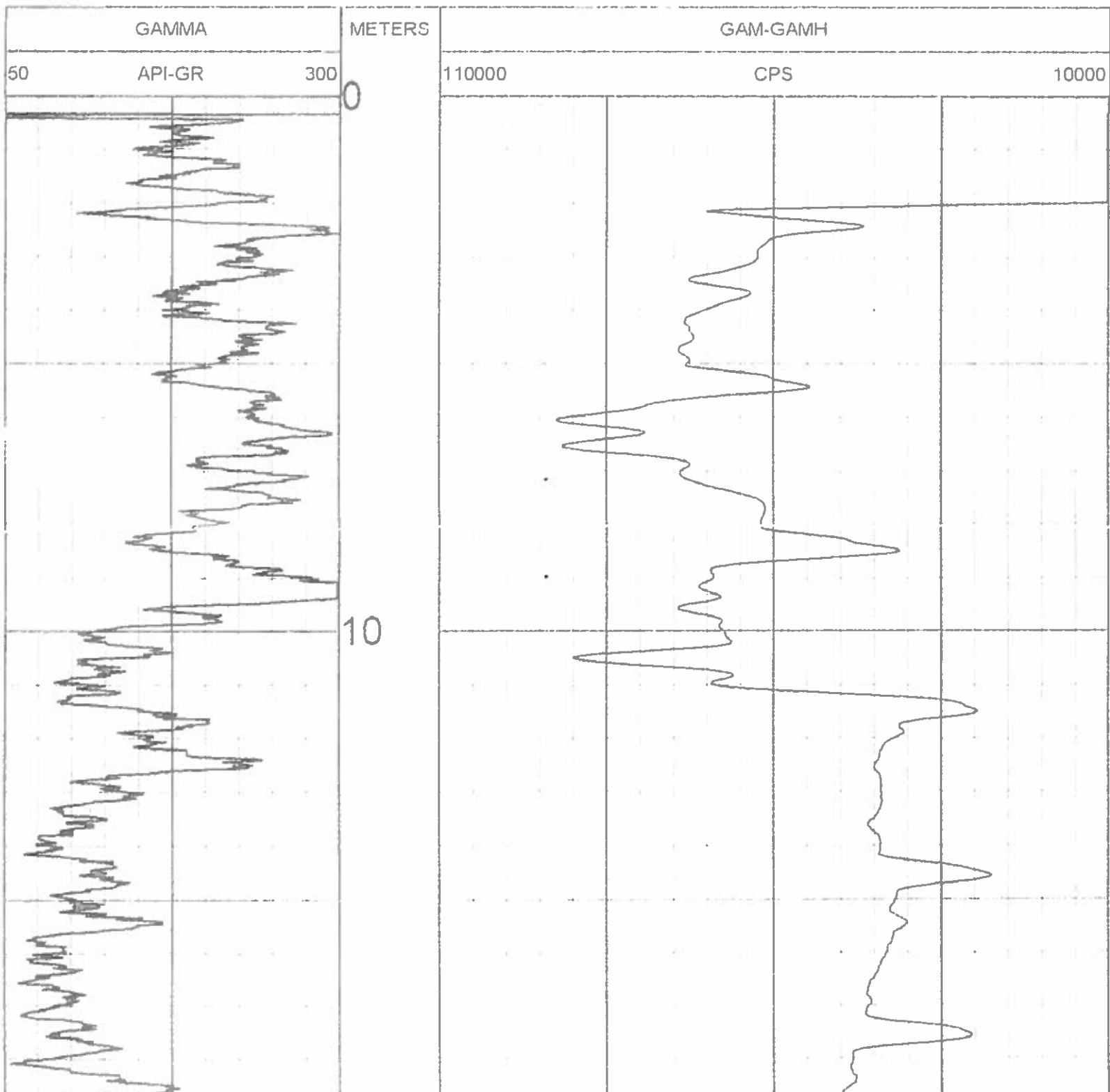
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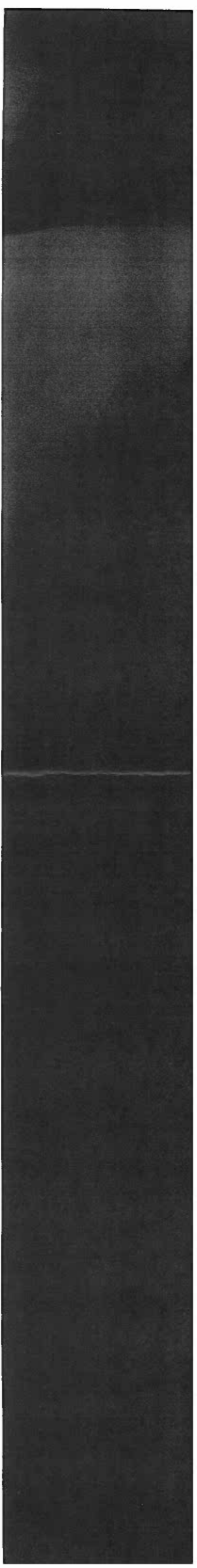
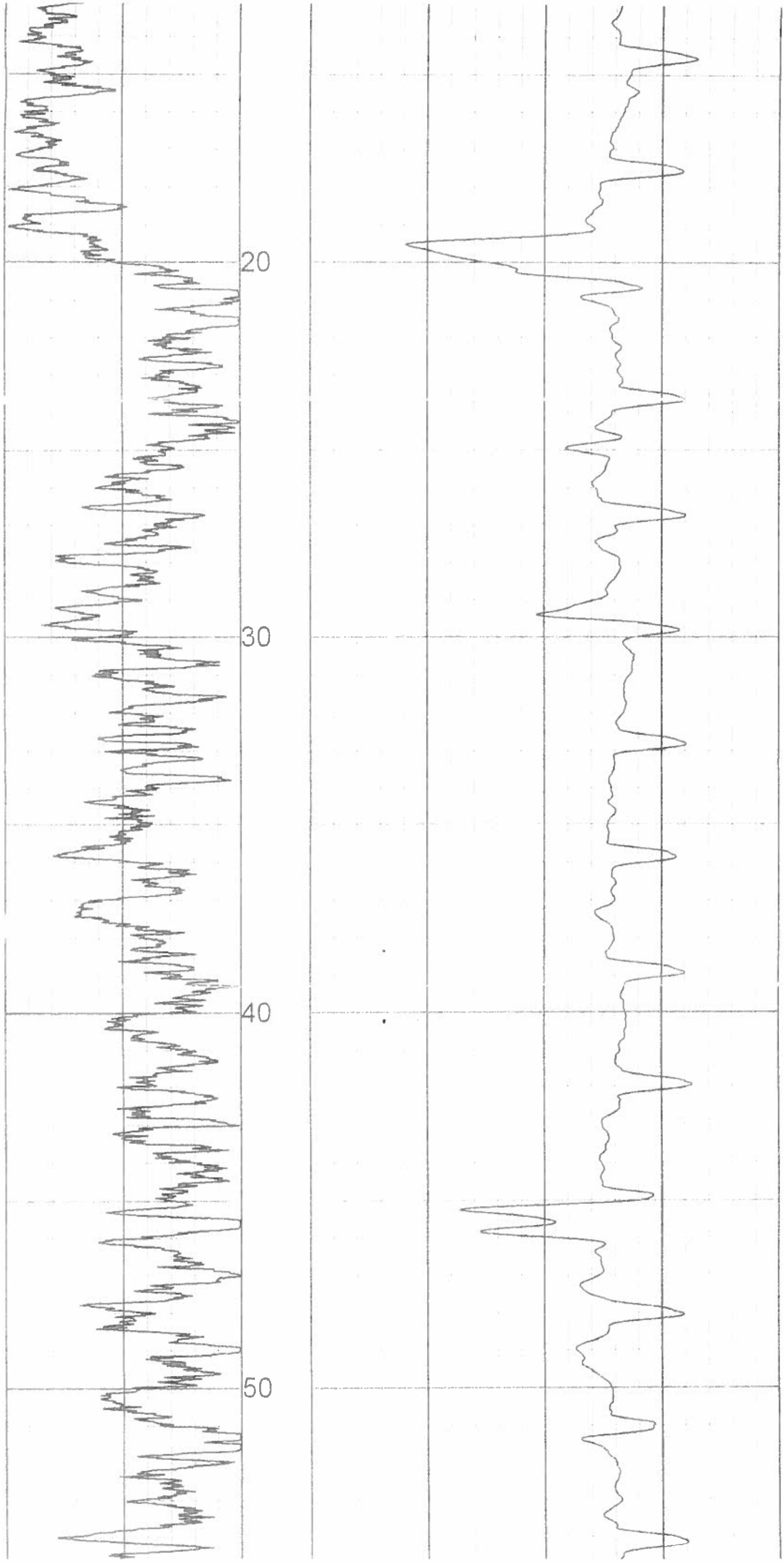
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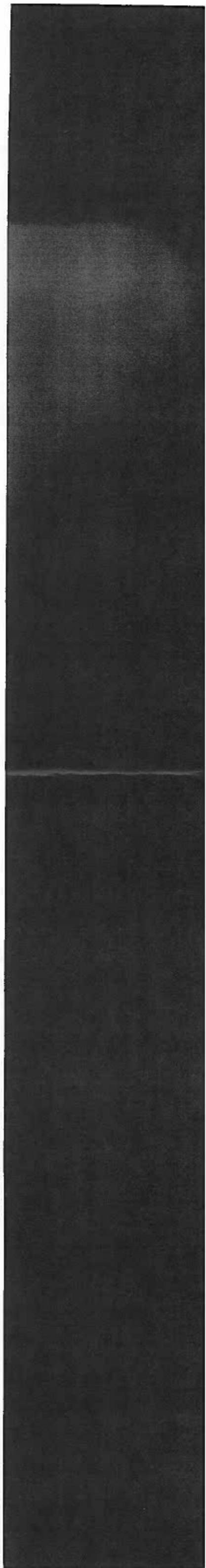
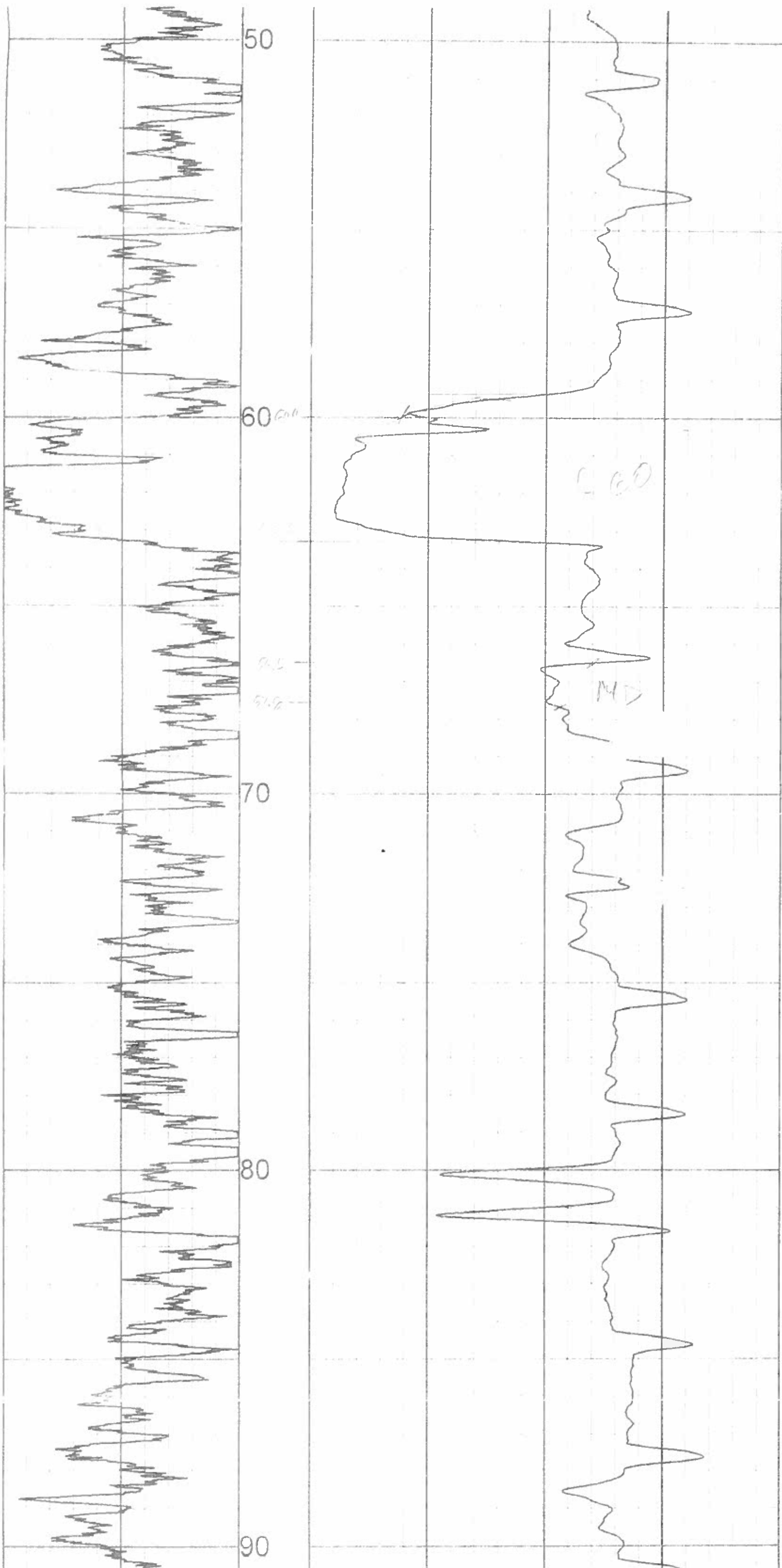
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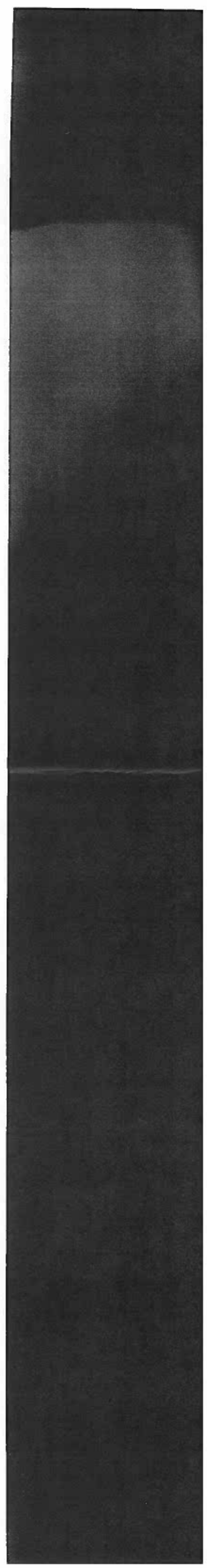
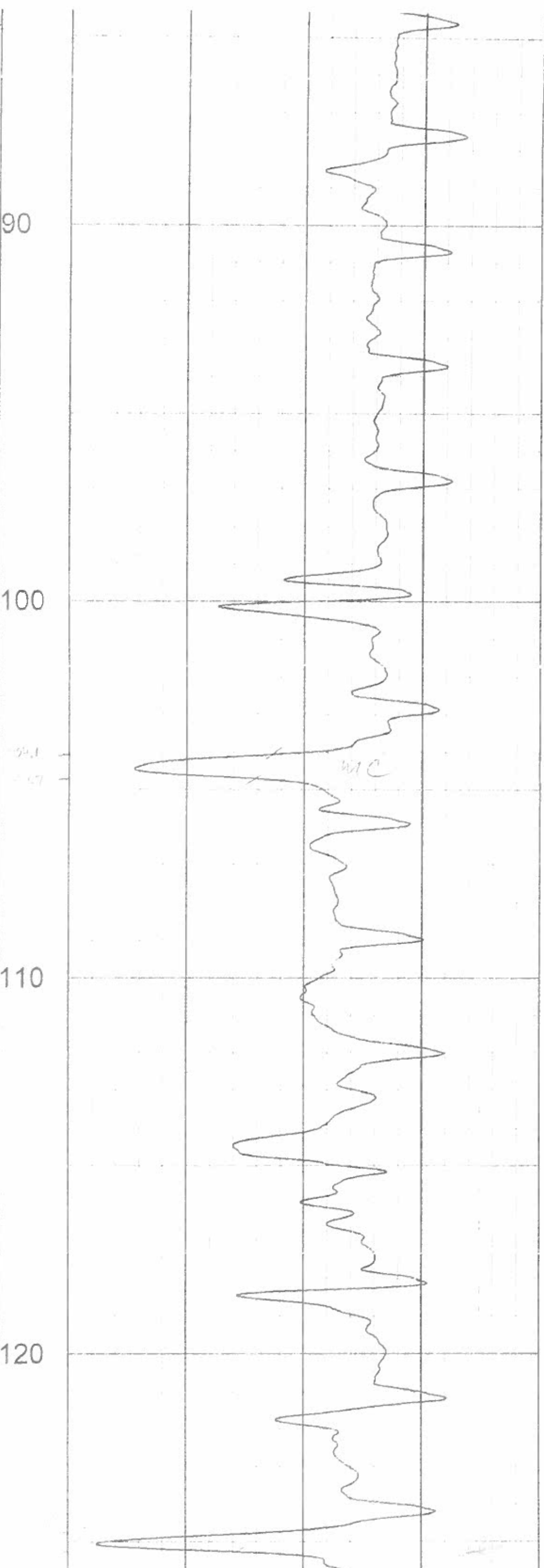
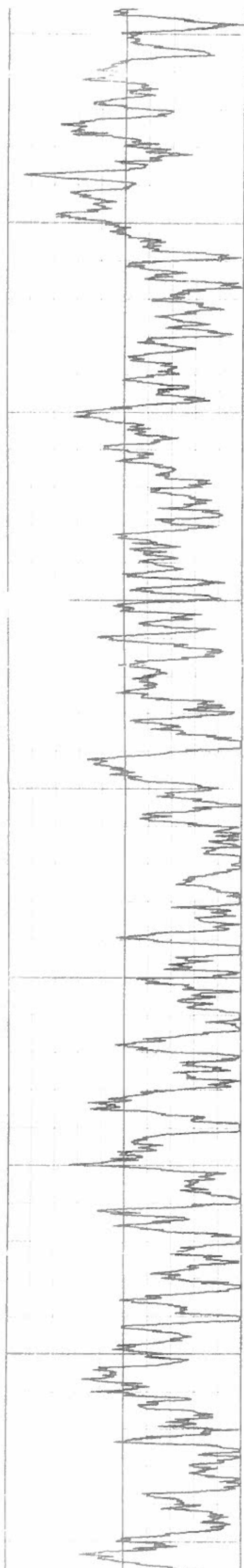
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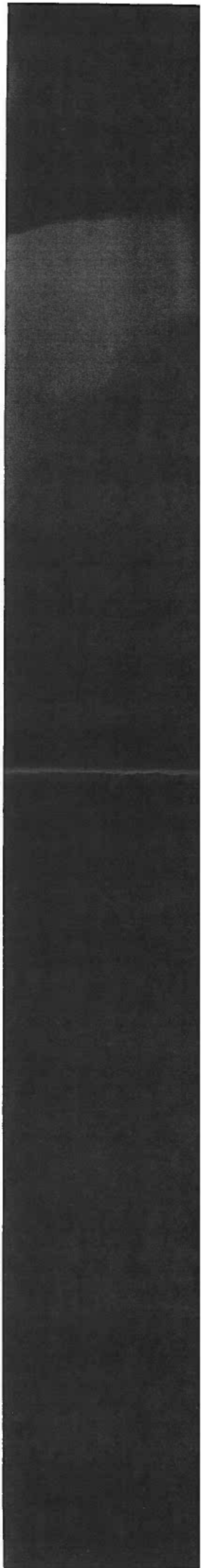
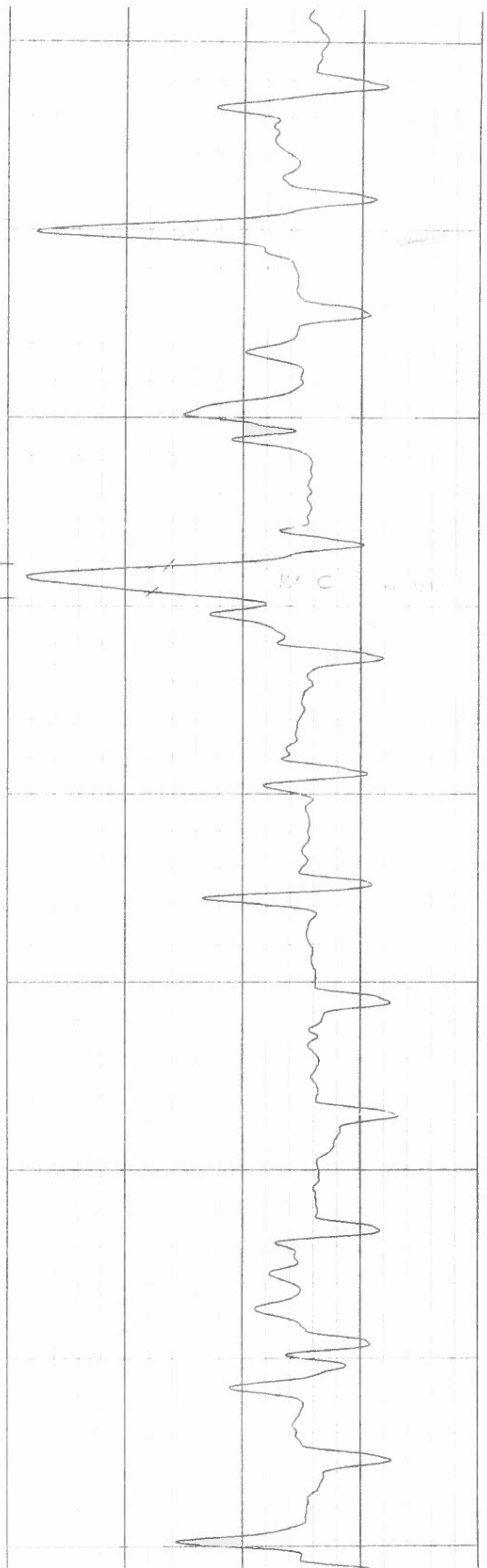
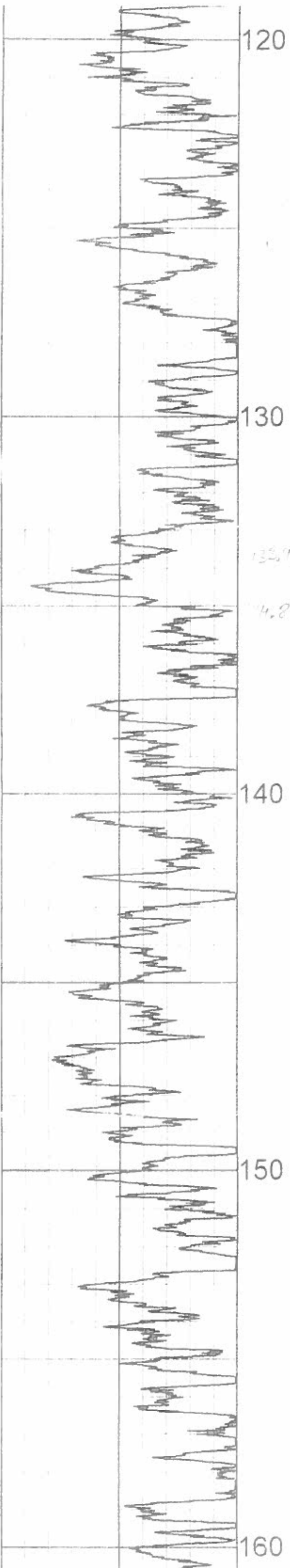
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MAGNETIC DECL 21.0 ELECT CUTOFF 99999 BIT SIZE 11.43
PRESENTATION NAME/DATE = 9068 SLIM DENSITY 0 07/28/2010 VERSION = 3.64IC

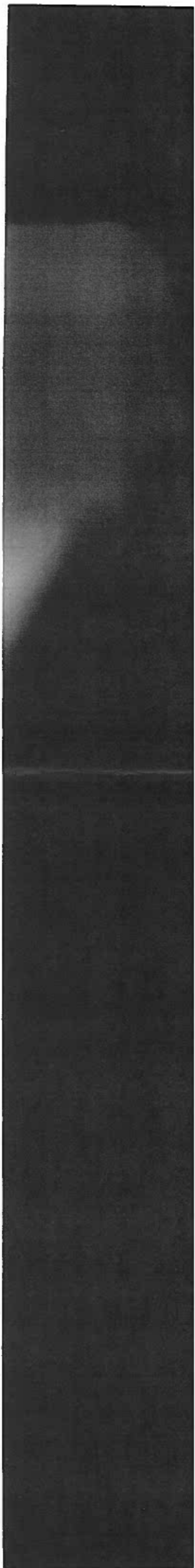
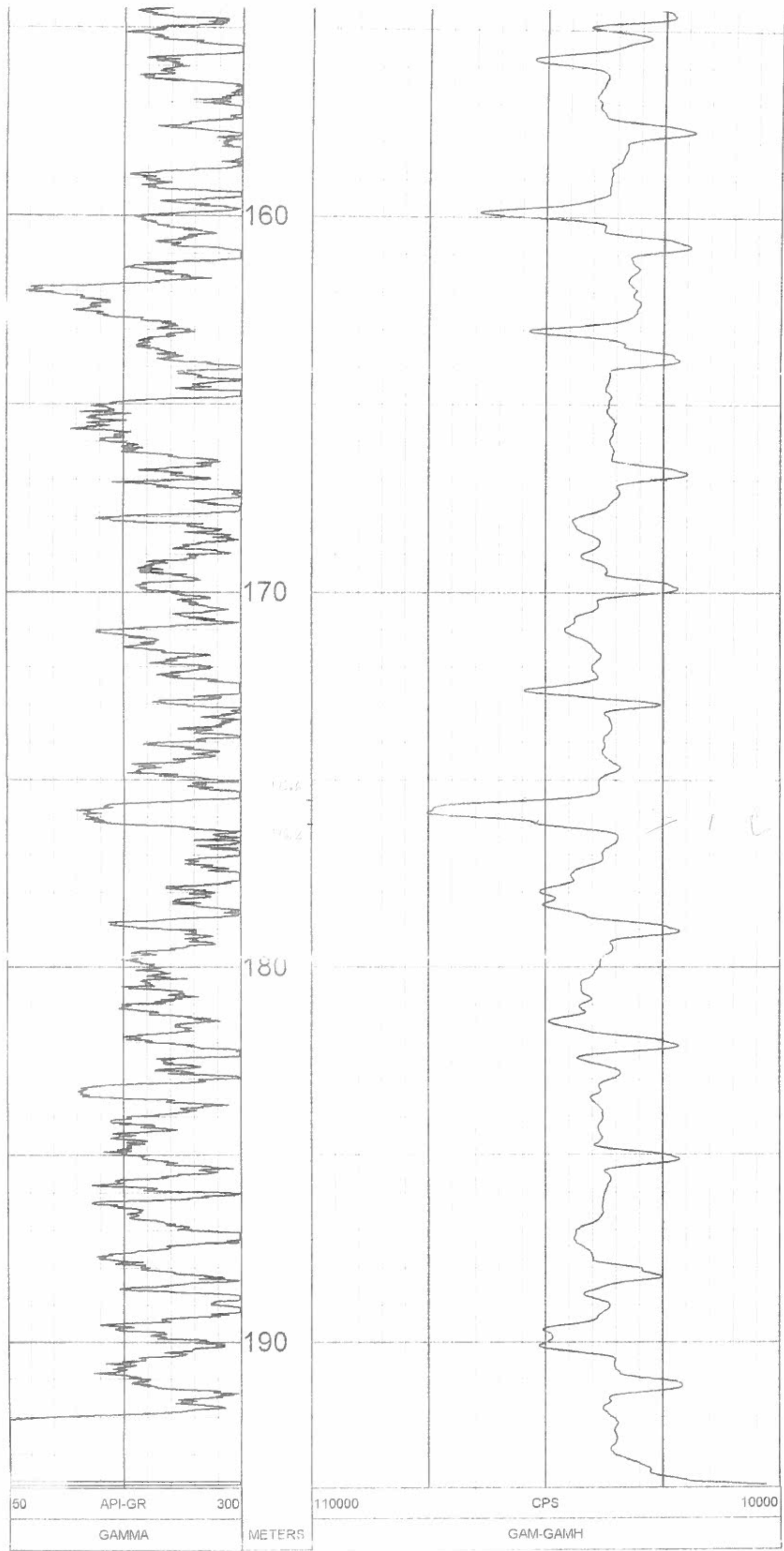












BR10-06

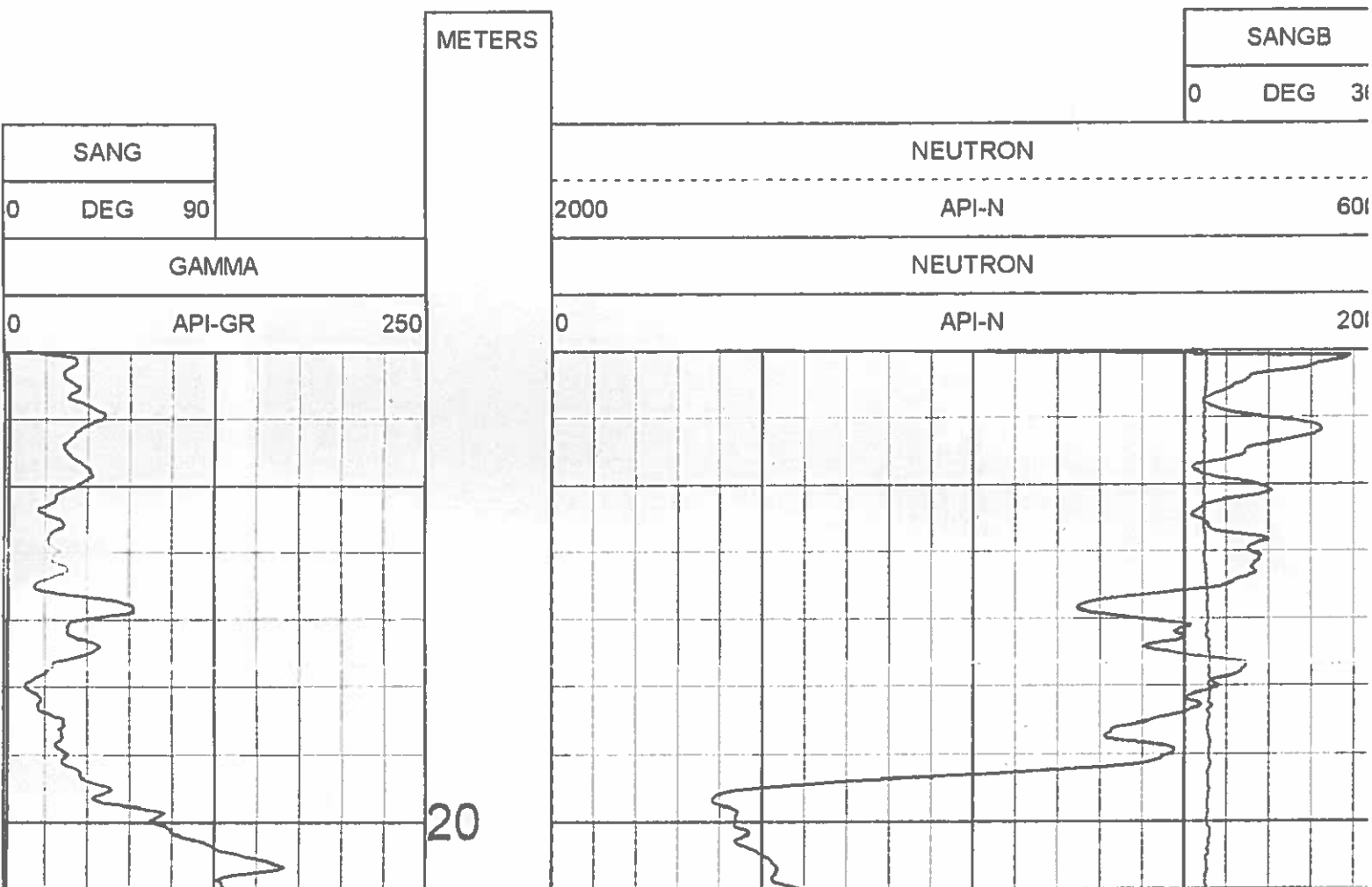
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES, DENSITY
WELL	BR10-06	
FIELD	BRULE	
COUNTY	CANADA	
STATE	BRITISH COLUMBIA	
LOCATION	BRULE NORTH	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
API NO	N/A	
UNIQUE WELL ID	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	08/07/10	RIG NUMBER
DEPTH DRILLER	207 87	LOGGER TD
BIT SIZE	11 43	ARRIVAL TIME
LOG TOP	13 00	DEPARTURE TIME
LOG BOTTOM	207 10	CIRC STOPPED
CASING OD	9 14	
CASING BOTTOM	9 14	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1 00	
WITNESSED BY	G HOLMLUND	
RECORDED BY	B SNELL	
REMARKS 1	VERTICAL	
REMARKS 2		

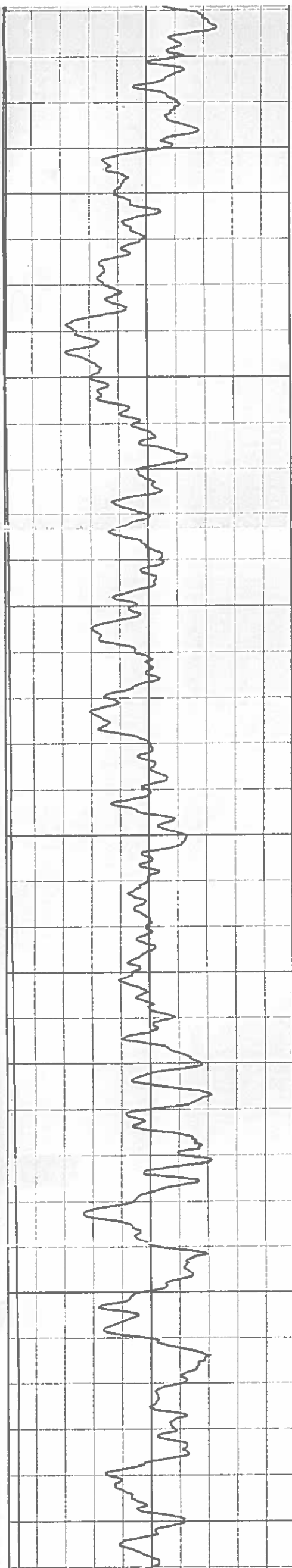
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

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LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3 64IC

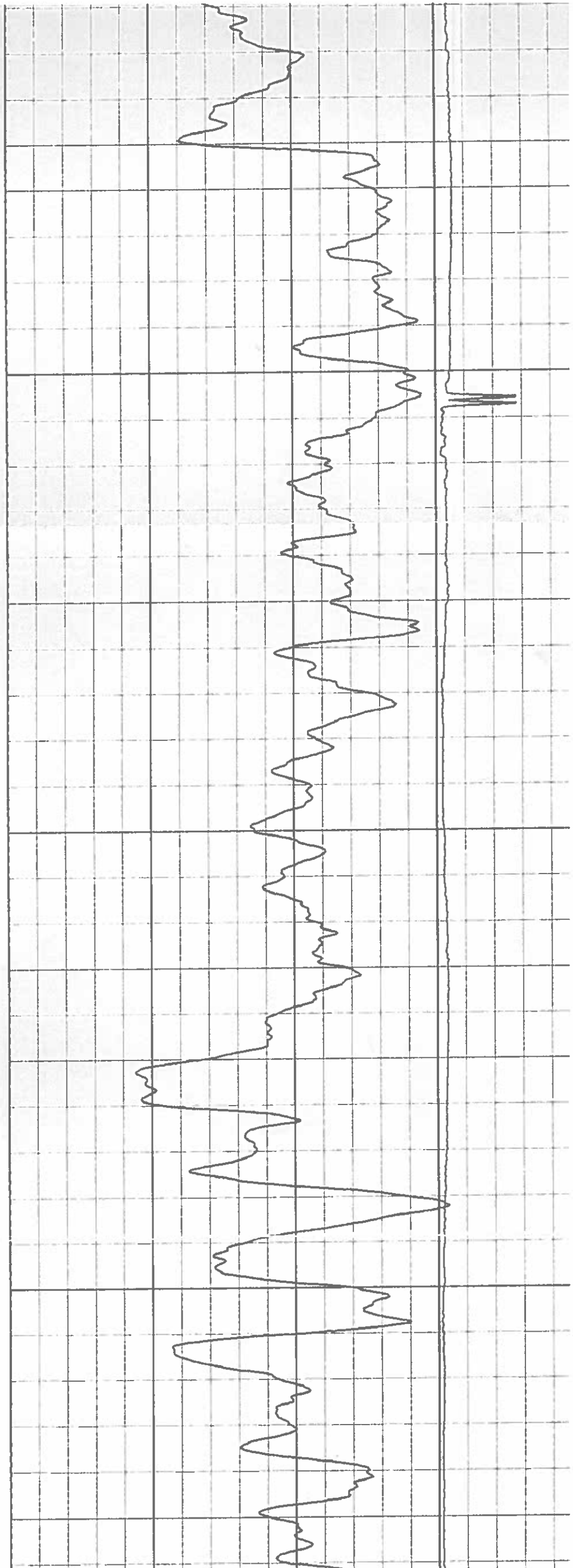


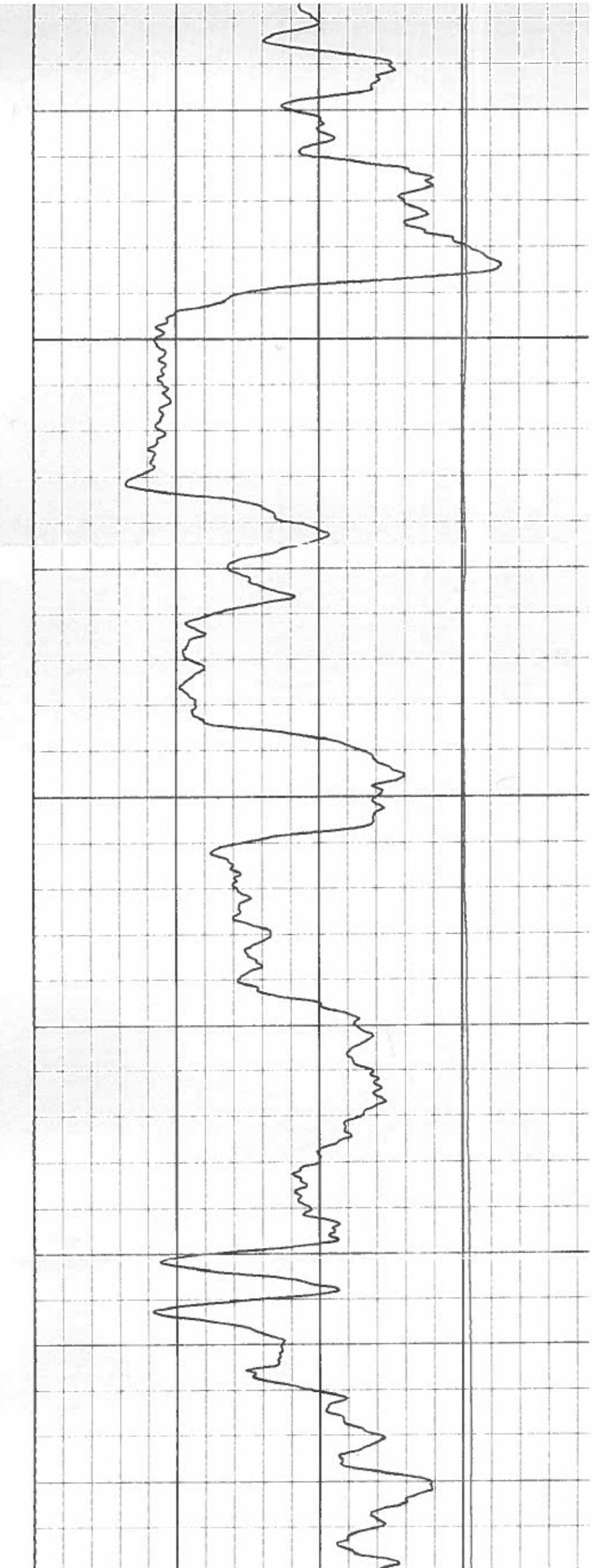
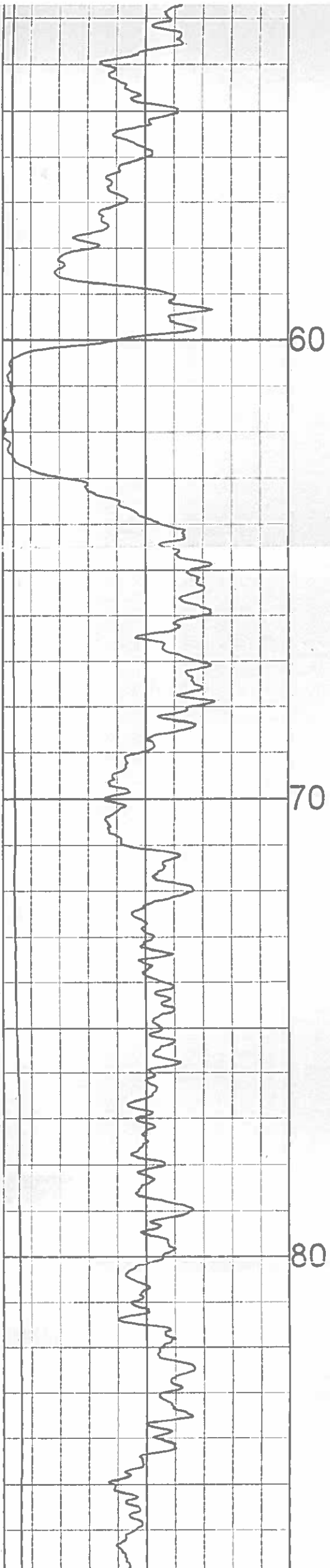


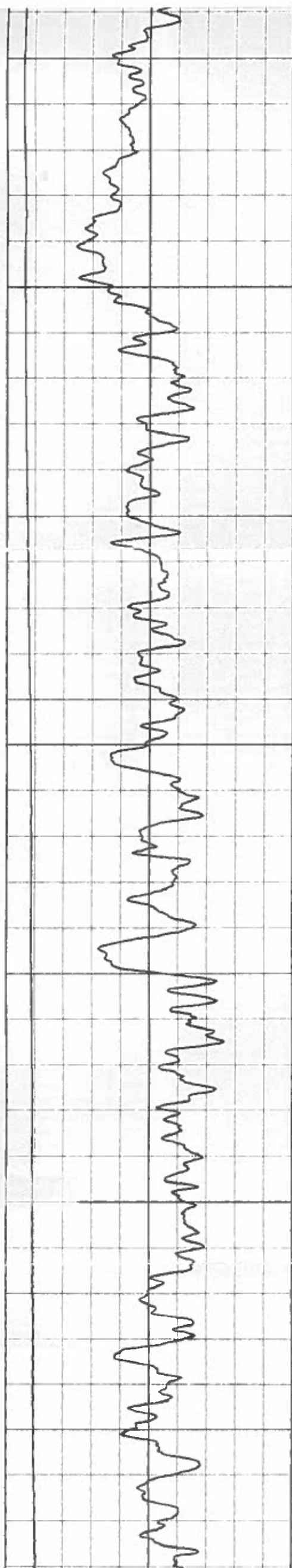
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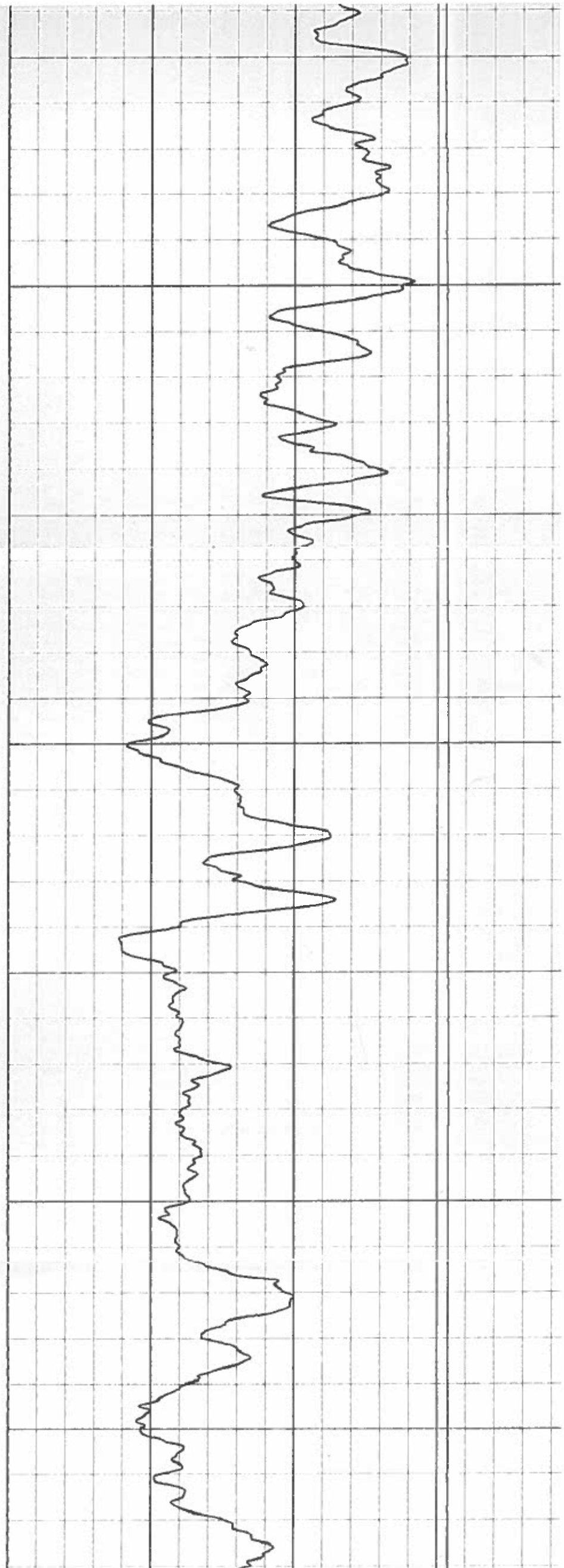


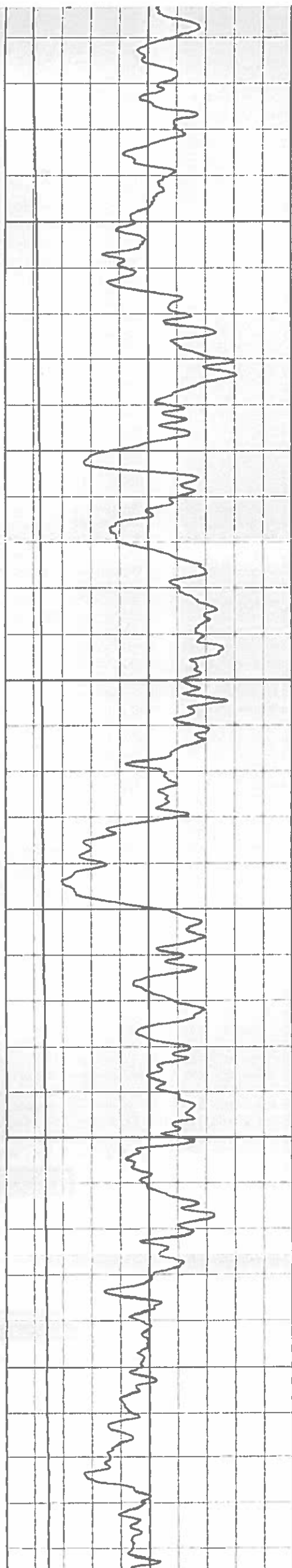


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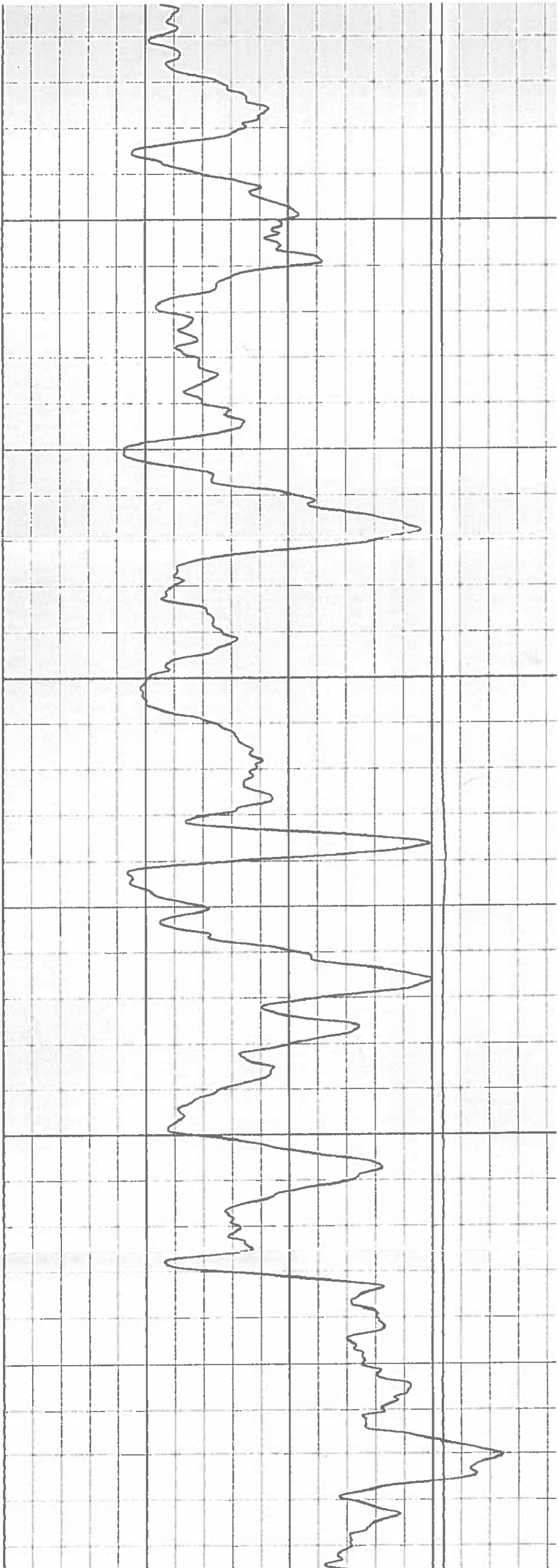


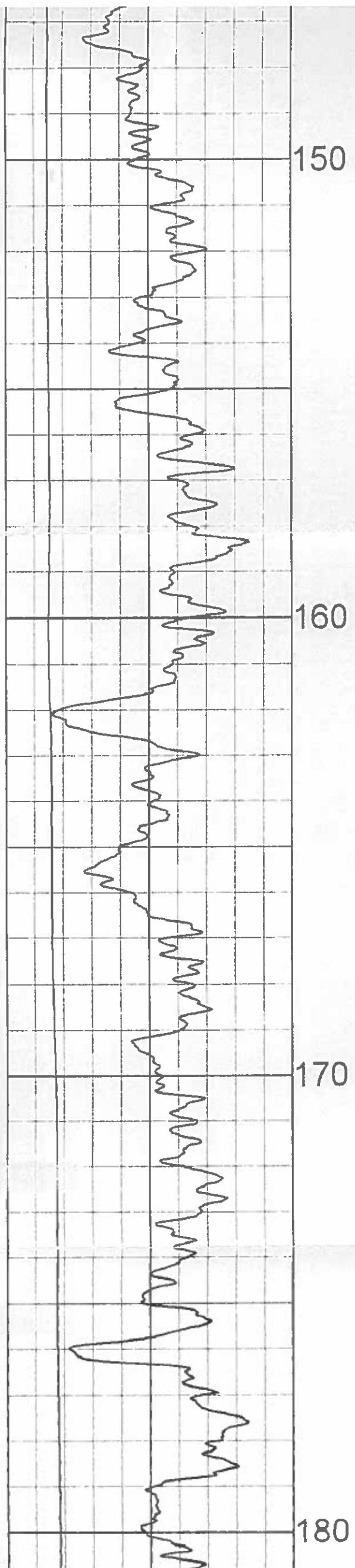


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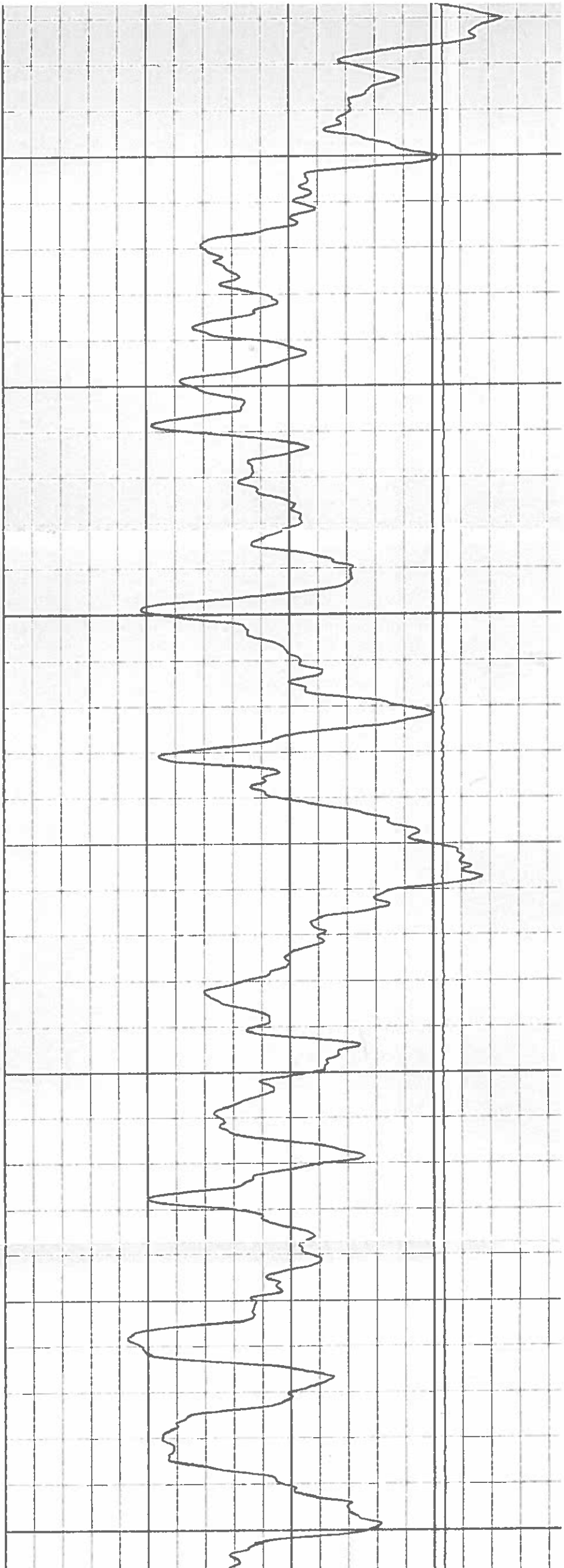


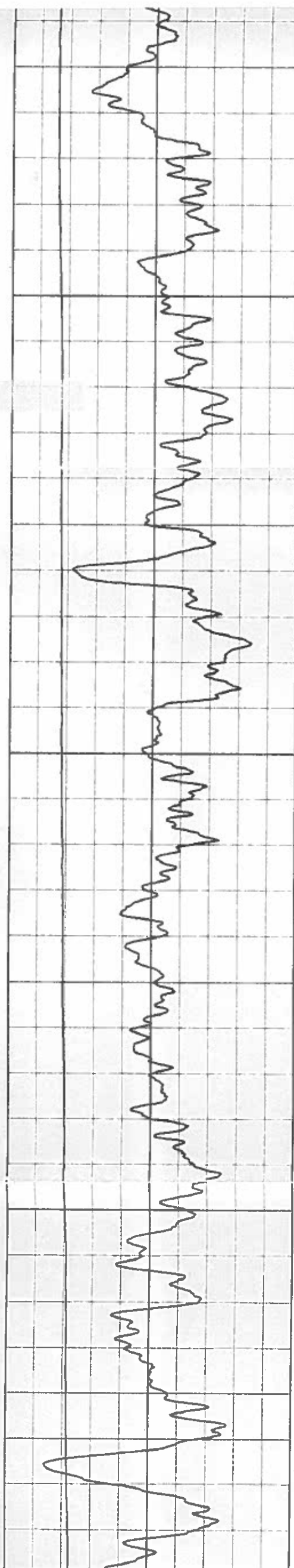
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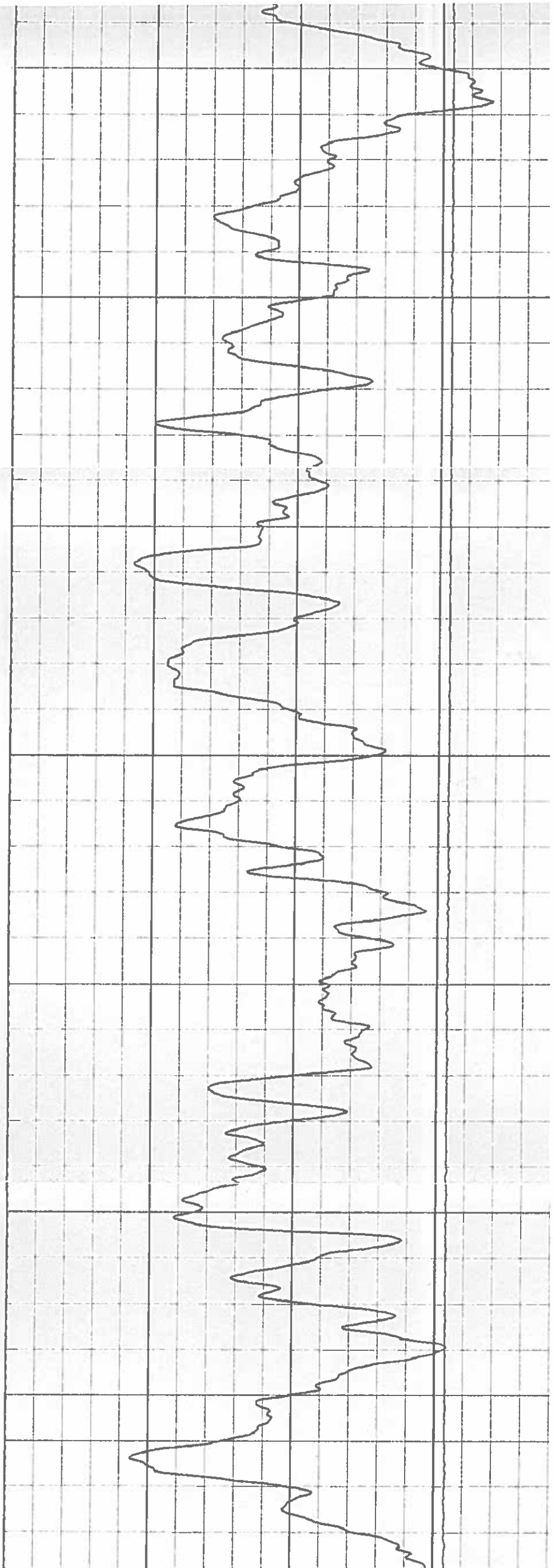


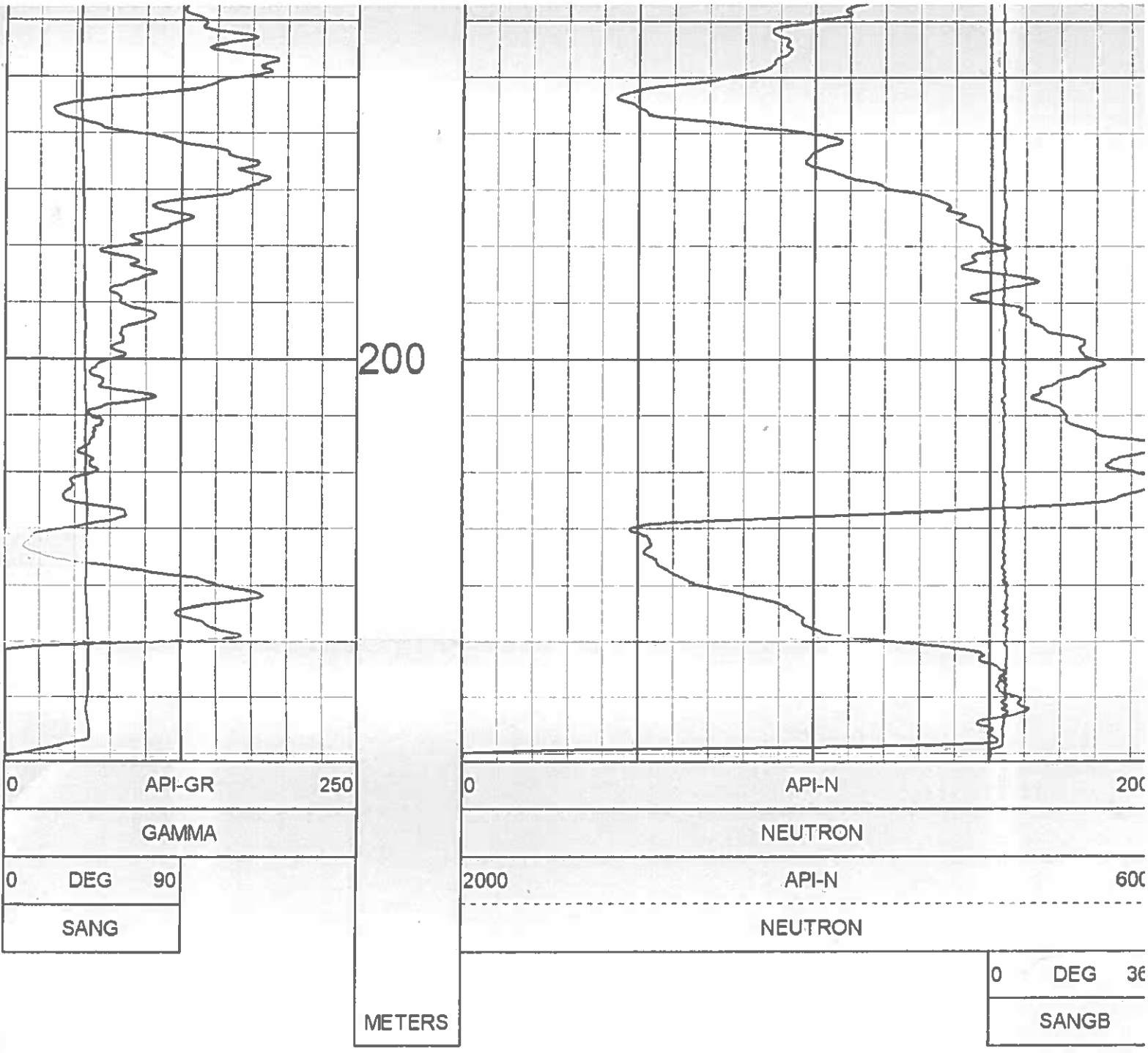


170

180

190





1:100 NEUTRON BR10-06 08/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010		VERSION = 3 64IC

TOOL CALIBRATION BR10-06 08/07/10 11:53
 TOOL 9057A TM VERSION 1
 SERIAL NUMBER 1071

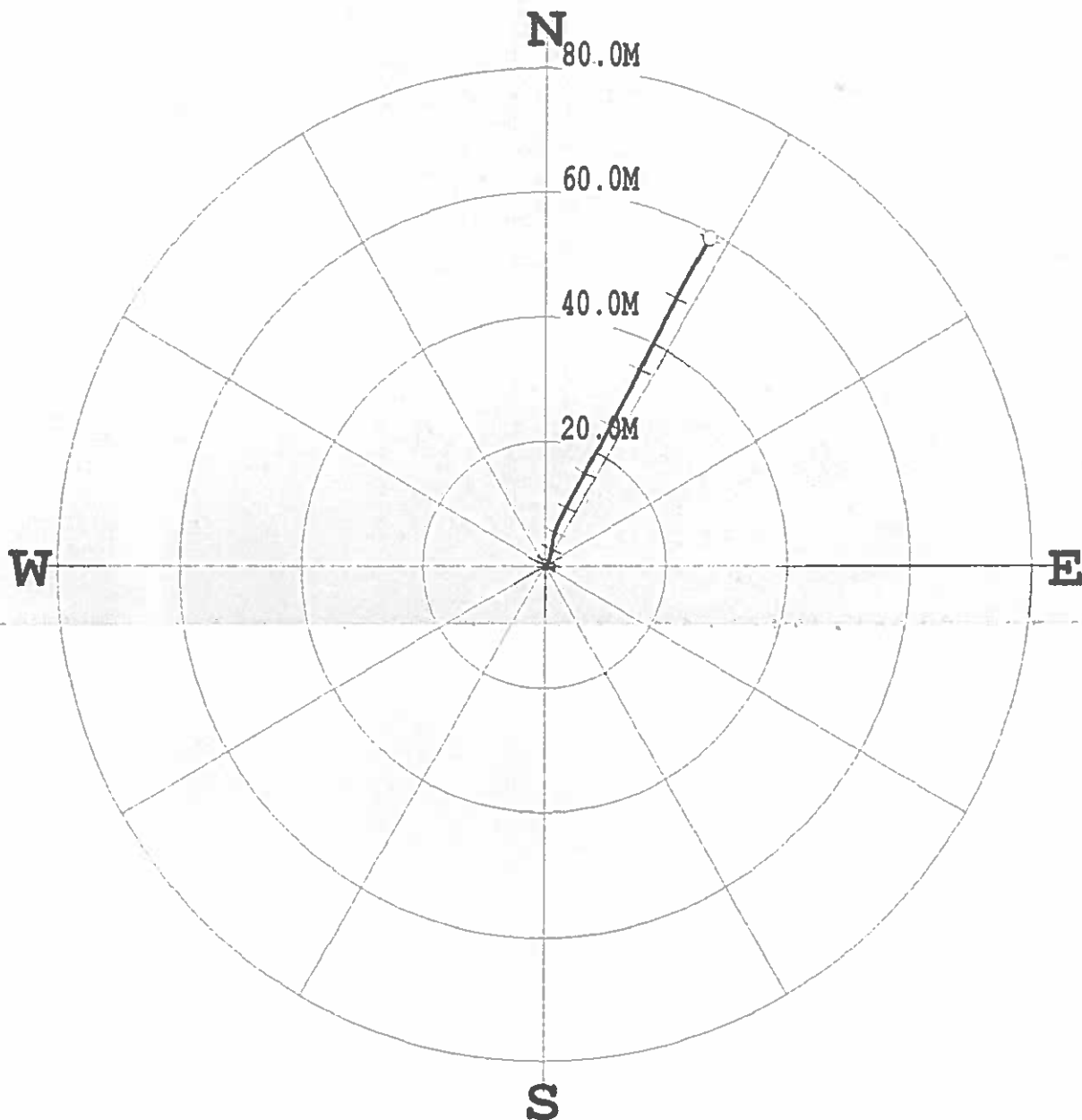
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	10:37:27	GAMMA 0.000	[API-GR]	4.000 [CPS]
	Jul15,10	10:37:27	GAMMA 545.000	[API-GR]	480.000 [CPS]
2	Jun11,10	14:36:01	NEUTRON 0.000	[API-N]	1.000 [CPS]
	Jun11,10	14:36:01	NEUTRC 271.000	[API-N]	697.000 [CPS]
3	May19,08	08:54:58	SP 0.000	[MV]	60204.000 [CPS]
	May19,08	08:54:58	SP 399.000	[MV]	20101.000 [CPS]
4	May19,08	08:55:04	RES(16N) 0.000	[OHM-M]	3996.000 [CPS]
	May19,08	08:55:04	RES(16↑ 1953.000	[OHM-M]	101843.000 [CPS]
5	May19,08	08:55:10	RES(64N) 0.000	[OHM-M]	4026.000 [CPS]
	May19,08	08:55:10	RES(64↑ 1990.000	[OHM-M]	103531.000 [CPS]
6	May19,08	09:00:49	TEMP 35.500	[DEG F]	101300.000 [CPS]
	May19,08	09:00:49	TEMP 84.400	[DEG F]	64850.000 [CPS]
7	May19,08	08:55:17	RES 0.000	[OHM]	9984.000 [CPS]
	May19,08	08:55:17	RES 943.000	[OHM]	58869.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-06
 DATE OF LOG: 08/07/10
 PROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 193.00 M
 AZIMUTH: 27.2
 DISTANCE: 59.1 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE




* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-06
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/07/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-06_08-07-10_11-53_9057A_.02_13.00_207.10_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
13.02	13.02	0.00	0.00	0.0	40.8	2.5	40.8
14.00	14.00	0.03	0.03	0.0	38.3	2.5	36.1
15.00	15.00	0.07	0.05	0.1	37.4	2.2	38.0
16.00	16.00	0.10	0.07	0.1	37.1	2.2	37.5
17.00	17.00	0.13	0.10	0.2	37.7	2.1	42.8
18.00	18.00	0.15	0.12	0.2	38.7	1.9	37.6
19.00	19.00	0.18	0.14	0.2	39.5	1.9	43.9
20.00	20.00	0.20	0.17	0.3	39.9	1.8	38.9
21.00	20.99	0.22	0.19	0.3	40.1	1.5	40.5
22.00	21.99	0.24	0.20	0.3	39.8	1.5	36.4
23.00	22.99	0.26	0.21	0.3	39.4	1.3	34.4
24.00	23.99	0.28	0.23	0.4	39.3	1.8	40.8
25.00	24.99	0.31	0.25	0.4	39.4	1.9	44.6
26.00	25.99	0.33	0.28	0.4	39.7	1.8	45.0
27.00	26.99	0.36	0.30	0.5	40.0	1.7	43.7
28.00	27.99	0.38	0.32	0.5	40.1	1.6	38.4
29.00	28.99	0.40	0.33	0.5	40.1	1.5	39.2

33.00	32.99	0.49	0.39	0.6	38.0	2.1	28.7
34.00	33.99	0.53	0.40	0.7	37.5	2.5	28.7
35.00	34.99	0.57	0.43	0.7	37.0	2.6	31.0
36.00	35.99	0.61	0.45	0.8	36.2	2.9	22.9
37.00	36.99	0.66	0.46	0.8	35.1	3.1	15.1
38.00	37.98	0.71	0.48	0.9	33.9	3.4	17.8
39.00	38.98	0.77	0.50	0.9	32.9	3.3	16.7
40.00	39.98	0.82	0.51	1.0	32.0	3.2	19.6
41.00	40.98	0.87	0.53	1.0	31.4	3.2	22.0
42.00	41.98	0.92	0.55	1.1	31.0	3.5	26.4
43.00	42.98	0.98	0.58	1.1	30.8	4.1	28.1
44.00	43.97	1.05	0.62	1.2	30.6	4.5	28.6
45.00	44.97	1.12	0.66	1.3	30.4	4.6	27.3
46.00	45.97	1.19	0.69	1.4	30.2	4.7	23.9
47.00	46.96	1.27	0.73	1.5	29.8	5.2	26.5
48.00	47.96	1.36	0.76	1.6	29.2	5.6	18.9
49.00	48.95	1.45	0.79	1.7	28.4	5.9	15.6
50.00	49.95	1.55	0.81	1.8	27.6	5.9	14.9
51.00	50.94	1.66	0.84	1.9	26.7	6.6	13.1
52.00	51.93	1.77	0.86	2.0	25.9	7.0	13.7
53.00	52.93	1.89	0.89	2.1	25.3	6.6	12.4
54.00	53.92	2.00	0.92	2.2	24.6	6.7	11.6
55.00	54.91	2.12	0.94	2.3	24.0	6.7	12.7
56.00	55.91	2.23	0.97	2.4	23.5	6.5	13.5
57.00	56.90	2.34	0.99	2.5	23.0	6.6	11.9
58.00	57.89	2.45	1.02	2.7	22.5	6.8	11.0
59.00	58.89	2.57	1.04	2.8	22.1	7.1	11.6
60.00	59.88	2.68	1.07	2.9	21.7	6.3	11.4
61.00	60.87	2.79	1.09	3.0	21.3	6.1	7.6
62.00	61.87	2.90	1.10	3.1	20.8	6.5	4.7
63.00	62.86	3.01	1.11	3.2	20.2	6.9	5.5
64.00	63.85	3.13	1.12	3.3	19.7	7.0	8.4
65.00	64.85	3.25	1.14	3.4	19.3	6.9	9.0
66.00	65.84	3.37	1.16	3.6	18.9	6.9	4.6
67.00	66.83	3.49	1.17	3.7	18.5	7.2	5.9
68.00	67.82	3.62	1.18	3.8	18.0	7.3	4.3
69.00	68.82	3.75	1.19	3.9	17.6	7.4	5.8
70.00	69.81	3.88	1.20	4.1	17.2	7.7	7.3
71.00	70.80	4.01	1.22	4.2	16.9	8.0	7.8
72.00	71.79	4.15	1.24	4.3	16.6	7.5	5.9
73.00	72.78	4.28	1.26	4.5	16.4	8.1	11.7
74.00	73.77	4.42	1.29	4.6	16.3	8.6	13.8
75.00	74.76	4.57	1.33	4.8	16.2	9.0	13.4
76.00	75.74	4.72	1.37	4.9	16.2	9.7	13.4
77.00	76.73	4.89	1.41	5.1	16.1	10.2	14.8
78.00	77.71	5.06	1.46	5.3	16.1	10.2	15.9
79.00	78.70	5.23	1.51	5.4	16.1	10.2	20.1
80.00	79.68	5.41	1.57	5.6	16.2	10.8	18.0
81.00	80.66	5.59	1.63	5.8	16.2	11.1	19.3
82.00	81.64	5.77	1.69	6.0	16.3	11.2	20.9
83.00	82.62	5.95	1.76	6.2	16.5	11.5	21.8
84.00	83.60	6.14	1.84	6.4	16.7	11.6	22.6
85.00	84.58	6.33	1.91	6.6	16.8	11.3	21.0
86.00	85.56	6.51	1.99	6.8	17.0	11.2	23.0
87.00	86.54	6.69	2.06	7.0	17.1	11.6	22.0
88.00	87.52	6.88	2.14	7.2	17.3	12.1	25.0
89.00	88.50	7.07	2.23	7.4	17.5	11.7	23.4
90.00	89.48	7.25	2.31	7.6	17.7	11.6	23.9
91.00	90.46	7.44	2.40	7.8	17.9	12.0	24.4
92.00	91.44	7.63	2.49	8.0	18.1	12.2	25.6
93.00	92.41	7.82	2.58	8.2	18.3	12.3	26.3
94.00	93.39	8.01	2.68	8.5	18.5	12.8	25.9
95.00	94.36	8.22	2.78	8.7	18.7	13.2	26.2
96.00	95.34	8.43	2.88	8.9	18.9	13.7	26.5
97.00	96.31	8.64	2.99	9.1	19.1	14.0	27.4
98.00	97.28	8.86	3.10	9.4	19.3	14.5	27.8
99.00	98.24	9.09	3.22	9.6	19.5	15.1	27.9
100.00	99.21	9.32	3.35	9.9	19.8	15.3	28.8
101.00	100.17	9.55	3.48	10.2	20.0	15.6	29.3
102.00	101.13	9.79	3.61	10.4	20.2	15.8	29.5
103.00	102.10	10.02	3.74	10.7	20.5	16.0	29.6
104.00	103.06	10.26	3.88	11.0	20.7	16.0	29.7
105.00	104.02	10.50	4.02	11.2	20.9	16.2	30.1
106.00	104.98	10.75	4.16	11.5	21.2	16.3	30.3
107.00	105.94	10.99	4.30	11.8	21.4	16.6	30.3
108.00	106.90	11.24	4.44	12.1	21.6	16.5	30.3
109.00	107.85	11.48	4.59	12.4	21.8	16.7	29.9
110.00	108.81	11.73	4.73	12.7	22.0	16.9	29.8
111.00	109.77	11.99	4.88	12.9	22.1	17.0	29.7
112.00	110.72	12.24	5.02	13.2	22.3	17.2	29.6
113.00	111.68	12.50	5.17	13.5	22.5	17.4	29.5
114.00	112.63	12.76	5.32	13.8	22.6	17.5	29.6
115.00	113.59	13.03	5.47	14.1	22.8	17.7	29.2
116.00	114.54	13.29	5.62	14.4	22.9	18.0	28.9
117.00	115.49	13.57	5.77	14.7	23.0	18.7	29.0
118.00	116.43	13.85	5.93	15.1	23.2	19.1	29.3
119.00	117.38	14.14	6.09	15.4	23.3	19.5	28.7
120.00	118.32	14.44	6.25	15.7	23.4	20.1	28.2
121.00	119.25	14.74	6.42	16.1	23.5	20.8	27.7
122.00	120.19	15.05	6.59	16.4	23.6	20.9	27.9
123.00	121.12	15.37	6.76	16.8	23.7	21.3	28.4
124.00	122.05	15.70	6.93	17.2	23.8	21.7	27.3
125.00	122.98	16.02	7.10	17.5	23.9	22.1	28.3
126.00	123.91	16.36	7.28	17.9	24.0	22.3	27.3
127.00	124.83	16.70	7.45	18.3	24.1	22.4	27.4
128.00	125.75	17.04	7.63	18.7	24.1	23.0	28.0

121.00	119.25	14.74	6.42	16.1	23.5	20.8	27.7
122.00	120.19	15.05	6.59	16.4	23.6	20.9	27.9
123.00	121.12	15.37	6.76	16.8	23.7	21.3	28.4
124.00	122.05	15.70	6.93	17.2	23.8	21.7	27.3
125.00	122.98	16.02	7.10	17.5	23.9	22.1	28.3
126.00	123.91	16.36	7.28	17.9	24.0	22.3	27.3
127.00	124.83	16.70	7.45	18.3	24.1	22.4	27.4
128.00	125.75	17.04	7.63	18.7	24.1	23.0	28.0
129.00	126.68	17.38	7.82	19.1	24.2	23.0	28.3
130.00	127.60	17.73	8.00	19.4	24.3	23.1	28.0
131.00	128.51	18.08	8.19	19.8	24.4	23.4	28.2
132.00	129.43	18.43	8.38	20.2	24.5	23.7	28.5
133.00	130.35	18.77	8.58	20.6	24.6	23.6	33.0
134.00	131.26	19.10	8.81	21.0	24.8	23.8	37.9
135.00	132.18	19.43	9.04	21.4	24.9	23.7	27.4
136.00	133.09	19.79	9.24	21.8	25.0	24.3	28.0
137.00	134.00	20.15	9.44	22.2	25.1	24.4	28.8
138.00	134.91	20.51	9.64	22.7	25.2	24.3	28.4
139.00	135.82	20.87	9.84	23.1	25.2	24.3	28.7
140.00	136.73	21.24	10.04	23.5	25.3	24.7	27.7
141.00	137.64	21.61	10.24	23.9	25.4	24.9	29.2
142.00	138.55	21.98	10.44	24.3	25.4	25.2	27.8
143.00	139.45	22.35	10.64	24.8	25.5	25.2	28.9
144.00	140.35	22.73	10.84	25.2	25.5	25.6	27.7
145.00	141.26	23.11	11.05	25.6	25.5	25.5	27.6
146.00	142.16	23.50	11.24	26.0	25.6	25.7	26.8
147.00	143.06	23.89	11.45	26.5	25.6	26.2	27.4
148.00	143.95	24.28	11.66	26.9	25.7	26.6	31.9
149.00	144.85	24.67	11.88	27.4	25.7	26.6	29.4
150.00	145.74	25.06	12.09	27.8	25.8	26.4	28.9
151.00	146.64	25.45	12.31	28.3	25.8	26.3	28.8
152.00	147.53	25.84	12.52	28.7	25.8	26.0	28.7
153.00	148.43	26.23	12.73	29.2	25.9	27.1	28.5
154.00	149.32	26.63	12.95	29.6	25.9	27.1	29.3
155.00	150.21	27.02	13.16	30.1	26.0	27.2	29.5
156.00	151.10	27.43	13.39	30.5	26.0	27.3	29.7
157.00	151.99	27.83	13.61	31.0	26.1	27.6	28.7
158.00	152.87	28.23	13.84	31.4	26.1	27.6	28.8
159.00	153.76	28.64	14.05	31.9	26.1	27.9	28.5
160.00	154.65	29.04	14.26	32.4	26.2	26.9	26.4
161.00	155.54	29.45	14.47	32.8	26.2	27.0	27.5
162.00	156.43	29.86	14.67	33.3	26.2	27.8	24.3
163.00	157.31	30.28	14.88	33.7	26.2	28.0	16.1
164.00	158.19	30.71	15.09	34.2	26.2	28.7	26.6
165.00	159.07	31.14	15.31	34.7	26.2	28.8	27.4
166.00	159.94	31.57	15.53	35.2	26.2	29.0	25.9
167.00	160.82	32.01	15.74	35.7	26.2	28.9	26.4
168.00	161.69	32.44	15.96	36.2	26.2	29.5	26.3
169.00	162.56	32.88	16.19	36.7	26.2	29.9	28.6
170.00	163.42	33.34	16.41	37.2	26.2	30.7	25.9
171.00	164.28	33.80	16.65	37.7	26.2	31.6	28.4
172.00	165.13	34.27	16.88	38.2	26.2	31.7	27.0
173.00	165.98	34.74	17.12	38.7	26.2	31.6	27.2
174.00	166.83	35.20	17.36	39.3	26.2	31.5	26.9
175.00	167.68	35.67	17.60	39.8	26.3	31.7	27.9
176.00	168.53	36.14	17.84	40.3	26.3	31.9	27.6
177.00	169.38	36.61	18.08	40.8	26.3	32.5	28.4
178.00	170.22	37.08	18.33	41.4	26.3	32.6	27.3
179.00	171.06	37.56	18.59	41.9	26.3	33.1	28.3
180.00	171.90	38.04	18.84	42.5	26.4	33.1	28.5
181.00	172.74	38.53	19.10	43.0	26.4	33.3	27.0
182.00	173.57	39.02	19.35	43.6	26.4	33.7	23.1
183.00	174.40	39.51	19.62	44.1	26.4	34.3	28.6
184.00	175.23	40.00	19.89	44.7	26.4	34.3	27.0
185.00	176.05	40.50	20.16	45.2	26.5	34.8	28.5
186.00	176.87	41.01	20.42	45.8	26.5	35.2	27.8
187.00	177.69	41.52	20.70	46.4	26.5	35.3	27.9
188.00	178.50	42.03	20.97	47.0	26.5	35.7	29.1
189.00	179.31	42.55	21.25	47.6	26.5	36.2	28.1
190.00	180.11	43.07	21.53	48.2	26.6	36.8	28.3
191.00	180.91	43.60	21.81	48.8	26.6	37.3	28.0
192.00	181.70	44.14	22.10	49.4	26.6	37.9	28.0
193.00	182.49	44.68	22.40	50.0	26.6	38.1	28.3
194.00	183.28	45.23	22.69	50.6	26.6	38.5	28.8
195.00	184.06	45.78	22.99	51.2	26.7	38.8	28.7
196.00	184.83	46.33	23.30	51.9	26.7	39.3	29.2
197.00	185.60	46.89	23.60	52.5	26.7	39.9	29.3
198.00	186.37	47.45	23.92	53.1	26.8	40.6	29.9
199.00	187.12	48.01	24.25	53.8	26.8	41.1	31.1
200.00	187.88	48.58	24.57	54.4	26.8	41.3	29.6
201.00	188.63	49.16	24.90	55.1	26.9	41.8	32.3
202.00	189.38	49.74	25.22	55.8	26.9	41.7	27.0
203.00	190.12	50.32	25.56	56.4	26.9	41.7	30.7
204.00	190.86	50.90	25.89	57.1	27.0	40.9	41.9
205.00	191.60	51.45	26.27	57.8	27.1	43.1	36.1
206.00	192.32	52.01	26.67	58.4	27.1	43.1	37.3
207.00	193.08	52.54	26.99	59.1	27.2	0.0	0.0
208.92	193.00	52.54	26.99	59.1	27.2	43.6	29.2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-07	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,538.17	6,140,403.80	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
131	-87	183.14	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	131.3	-87.30
8.00	131.6	-87.10
9.00	130.4	-86.90
10.00	130.2	-87.10
11.00	128.8	-87.00
12.00	127.9	-86.90
13.00	127.5	-87.00
14.00	127.3	-87.00
15.00	127.1	-87.00
16.00	127.0	-87.10
17.00	126.9	-87.20
18.00	126.7	-87.30
19.00	126.3	-87.20
20.00	126.0	-87.40
21.00	125.8	-87.60
22.00	125.5	-87.70
23.00	124.9	-87.90
24.00	124.3	-87.90
25.00	123.5	-87.80
26.00	122.8	-87.90
27.00	122.2	-88.10
28.00	121.6	-88.20
29.00	121.1	-88.30
30.00	120.4	-88.30
31.00	119.8	-88.40
32.00	119.3	-88.50
33.00	118.7	-88.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	3.40	3.40		
51.00	54.10	3.10		
58.40	59.00	0.60		
103.80	104.40	0.60		
130.50	131.20	0.70		
152.80	153.50	0.70		
153.50	158.10	4.60		
158.10	159.00	0.90		
167.60	168.20	0.60		
170.30	174.40	4.10		
174.40	175.10	0.70		
176.80	177.30	0.50		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-07	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

34.00	118.1	-88.30
35.00	117.5	-88.40
36.00	116.9	-88.60
37.00	116.2	-88.50
38.00	115.3	-88.00
39.00	114.2	-88.00
40.00	113.0	-88.00
41.00	111.7	-87.90
42.00	110.4	-87.60
43.00	109.1	-87.60
44.00	107.8	-87.60
45.00	106.4	-87.50
46.00	105.0	-87.50
47.00	103.6	-87.30
48.00	102.1	-87.50
49.00	100.7	-87.50
50.00	99.2	-87.10
51.00	97.4	-86.50
52.00	95.5	-86.50
53.00	93.4	-85.90
54.00	91.2	-85.60
55.00	88.8	-85.30
56.00	86.2	-85.00
57.00	83.7	-84.70
58.00	81.0	-84.40
59.00	78.3	-83.90
60.00	75.6	-83.50
61.00	72.9	-83.40
62.00	70.3	-83.10
63.00	67.9	-83.30
64.00	65.6	-83.30
65.00	63.4	-82.70
66.00	61.3	-82.50
67.00	59.4	-82.50
68.00	57.6	-82.20
69.00	55.9	-82.10
70.00	54.3	-81.90
71.00	52.8	-81.90
72.00	51.4	-81.80
73.00	50.1	-81.30
74.00	48.9	-81.10
75.00	47.8	-80.90
76.00	46.8	-80.80
77.00	45.8	-80.60
78.00	44.9	-80.40

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

Page 2 of 5

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-07	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

79.00	44.1	-80.30
80.00	43.3	-80.20
81.00	42.7	-79.90
82.00	42.0	-79.80
83.00	41.5	-79.60
84.00	40.9	-78.80
85.00	40.4	-78.80
86.00	39.9	-78.50
87.00	39.5	-78.40
88.00	39.2	-78.30
89.00	39.0	-78.00
90.00	38.8	-77.80
91.00	38.7	-77.20
92.00	38.6	-77.40
93.00	38.6	-76.80
94.00	38.5	-76.80
95.00	38.5	-76.50
96.00	38.5	-76.30
97.00	38.5	-76.30
98.00	38.5	-75.60
99.00	38.5	-75.40
100.00	38.5	-75.40
101.00	38.5	-75.20
102.00	38.6	-75.00
103.00	38.6	-74.90
104.00	38.6	-74.90
105.00	38.7	-74.80
106.00	38.7	-74.30
107.00	38.7	-74.20
108.00	38.7	-73.70
109.00	38.7	-73.70
110.00	38.7	-73.40
111.00	38.8	-73.40
112.00	38.8	-73.20
113.00	38.8	-72.80
114.00	38.8	-72.70
115.00	38.8	-72.70
116.00	38.8	-72.00
117.00	38.8	-71.80
118.00	38.8	-71.10
119.00	38.8	-70.80
120.00	38.8	-70.60
121.00	38.8	-70.40
122.00	38.8	-70.30
123.00	38.7	-70.20

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

Page 3 of 5



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-07**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

124.00	38.7	-70.00
125.00	38.7	-69.90
126.00	38.7	-69.60
127.00	38.6	-69.20
128.00	38.6	-68.80
129.00	38.5	-68.50
130.00	38.5	-68.50
131.00	38.4	-68.20
132.00	38.4	-67.90
133.00	38.3	-67.60
134.00	38.3	-67.40
135.00	38.3	-67.00
136.00	38.2	-66.50
137.00	38.2	-66.20
138.00	38.2	-66.00
139.00	38.1	-65.60
140.00	38.1	-65.30
141.00	38.0	-64.90
142.00	38.0	-64.70
143.00	38.0	-64.00
144.00	38.0	-63.80
145.00	38.0	-63.80
146.00	38.0	-63.20
147.00	38.0	-62.50
148.00	38.0	-62.50
149.00	38.0	-61.60
150.00	37.9	-60.90
151.00	38.0	-60.60
152.00	38.0	-60.40
153.00	38.0	-59.40
154.00	38.0	-58.90
155.00	38.1	-58.30
156.00	38.1	-57.80
157.00	38.1	-57.40
158.00	38.1	-57.00
159.00	38.2	-56.20
160.00	38.2	-55.90
161.00	38.2	-55.70
162.00	38.3	-55.20
163.00	38.3	-55.30
164.00	38.3	-54.80
165.00	38.3	-53.90
166.00	38.2	-53.30
167.00	38.2	-52.50
168.00	38.1	-51.70

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-07**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

169.00	38.0	-52.10
170.00	38.0	-52.40
171.00	38.0	-51.60
172.00	37.9	-51.40
173.00	37.9	-51.30
174.00	37.8	-51.10
175.00	37.7	-52.00
176.00	37.7	-50.50
177.00	37.6	-50.00
178.00	37.5	-50.10
179.00	37.5	-50.30
180.00	37.5	-49.90
181.00	37.5	-48.60
182.00	37.5	-48.90
182.96	37.6	-48.50

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

DETAILED DENSITY GAMMA - CALIPER - RES. BR10-07

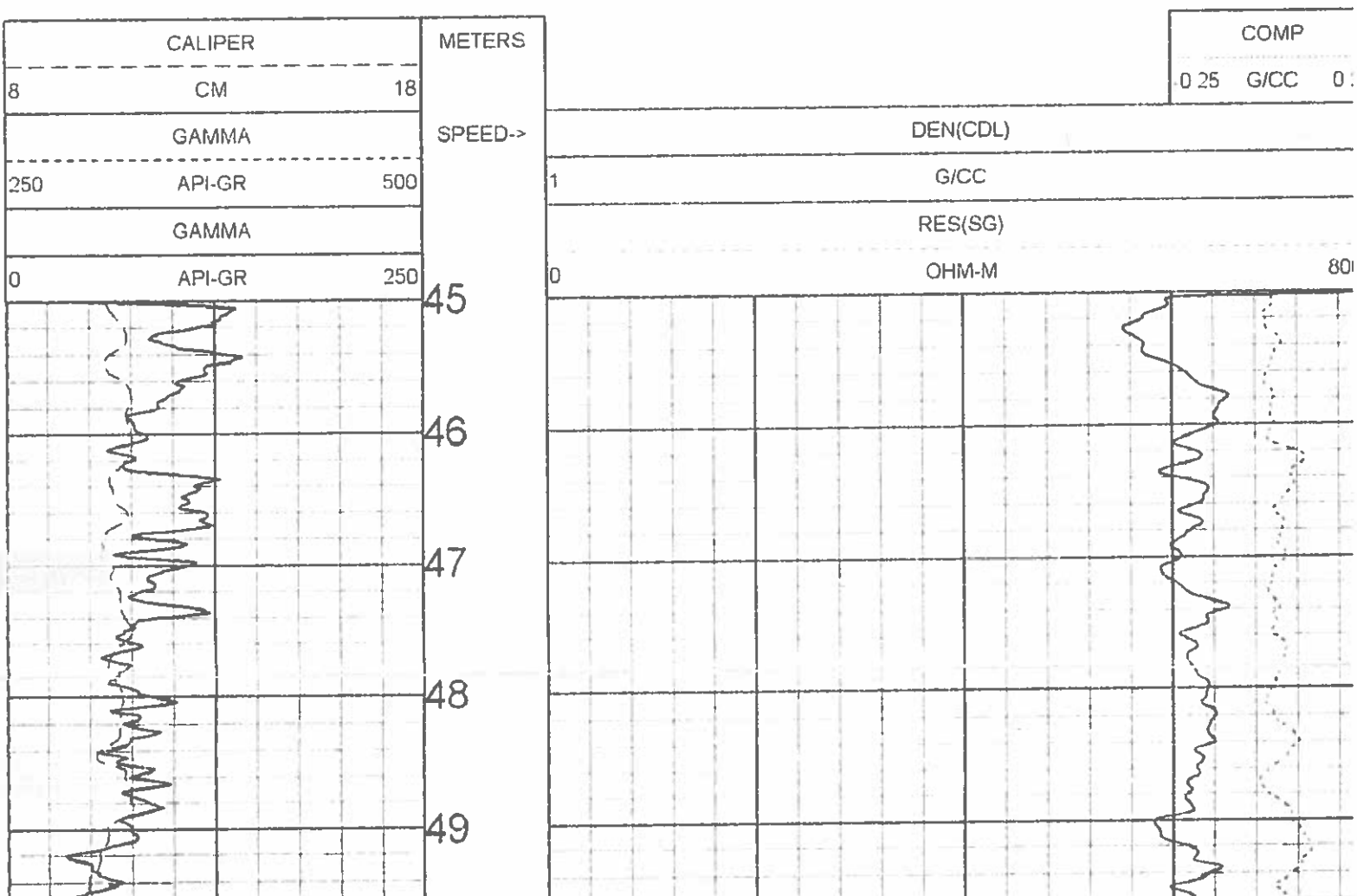
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-07		
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
API NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/26/10	RIG NUMBER	
DEPTH DRILLER	184 40	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	-0 17	DEPARTURE TIME	
LOG BOTTOM	183 14	CIRC STOPPED	N/A
CASING OD	4 57		
CASING BOTTOM	4 57		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1 00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	B SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

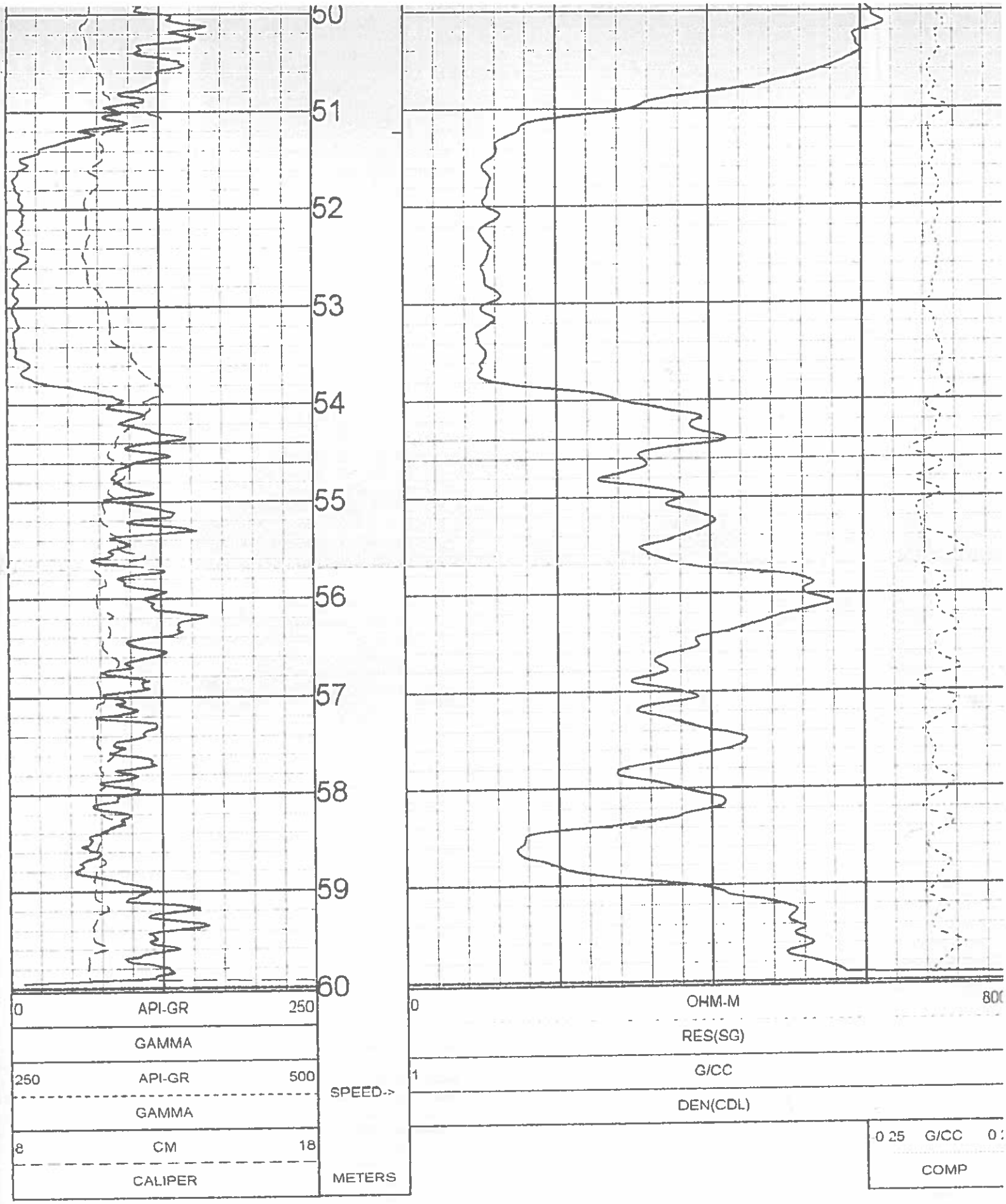
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010 VERSION = 3.64IC





1:50 BULK DENSITY EXPANDED BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL 21.0	ELECT. CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010		VERSION = 3.64IC

1:50 BULK DENSITY EXPANDED BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL 21.0	ELECT. CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010		VERSION = 3.64IC

LOG PARAMETERS

MATRIX DENSITY 2.65

NEUTRON MATRIX SANDSTONE

MATRIX DELTA T 177

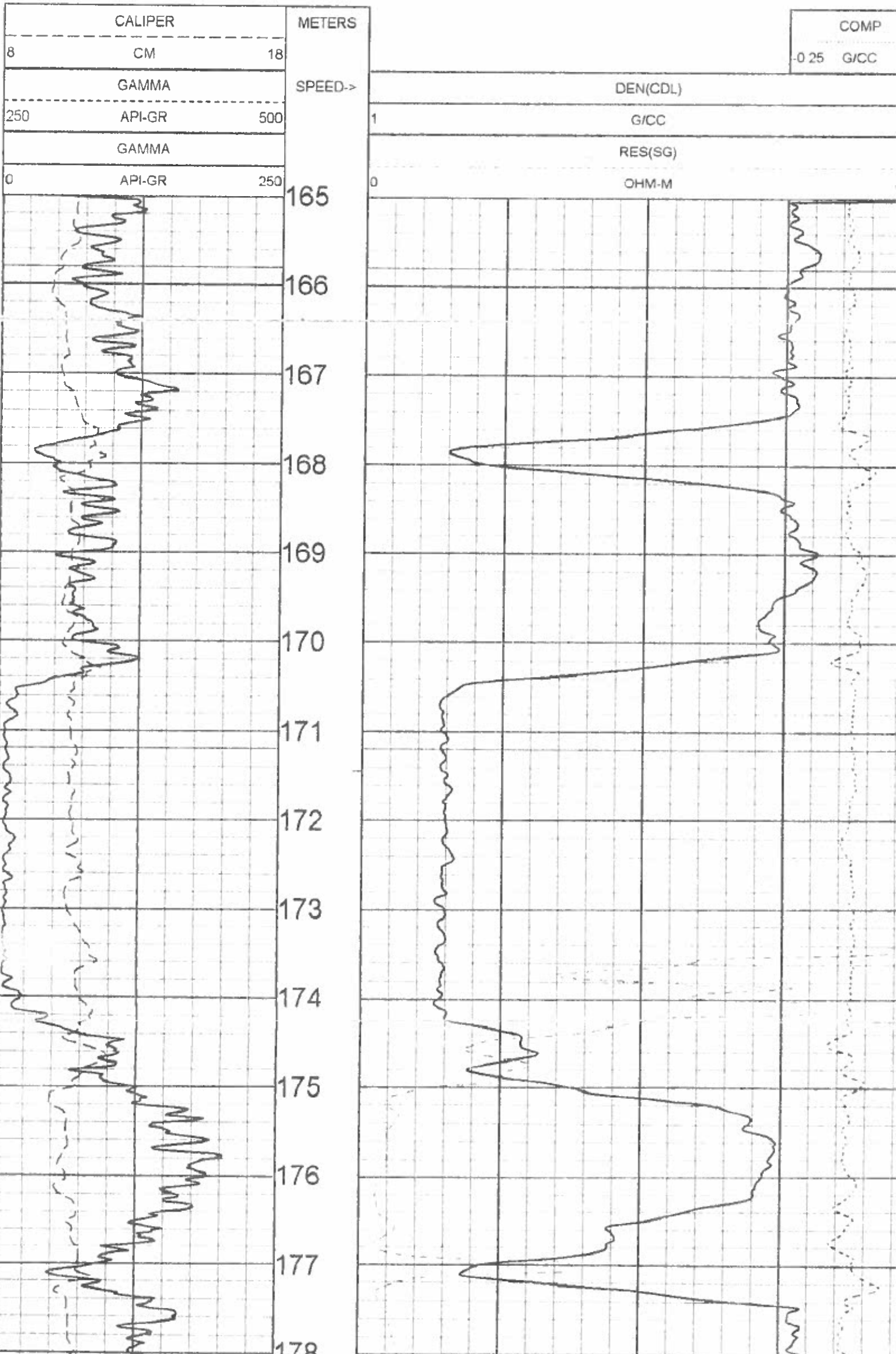
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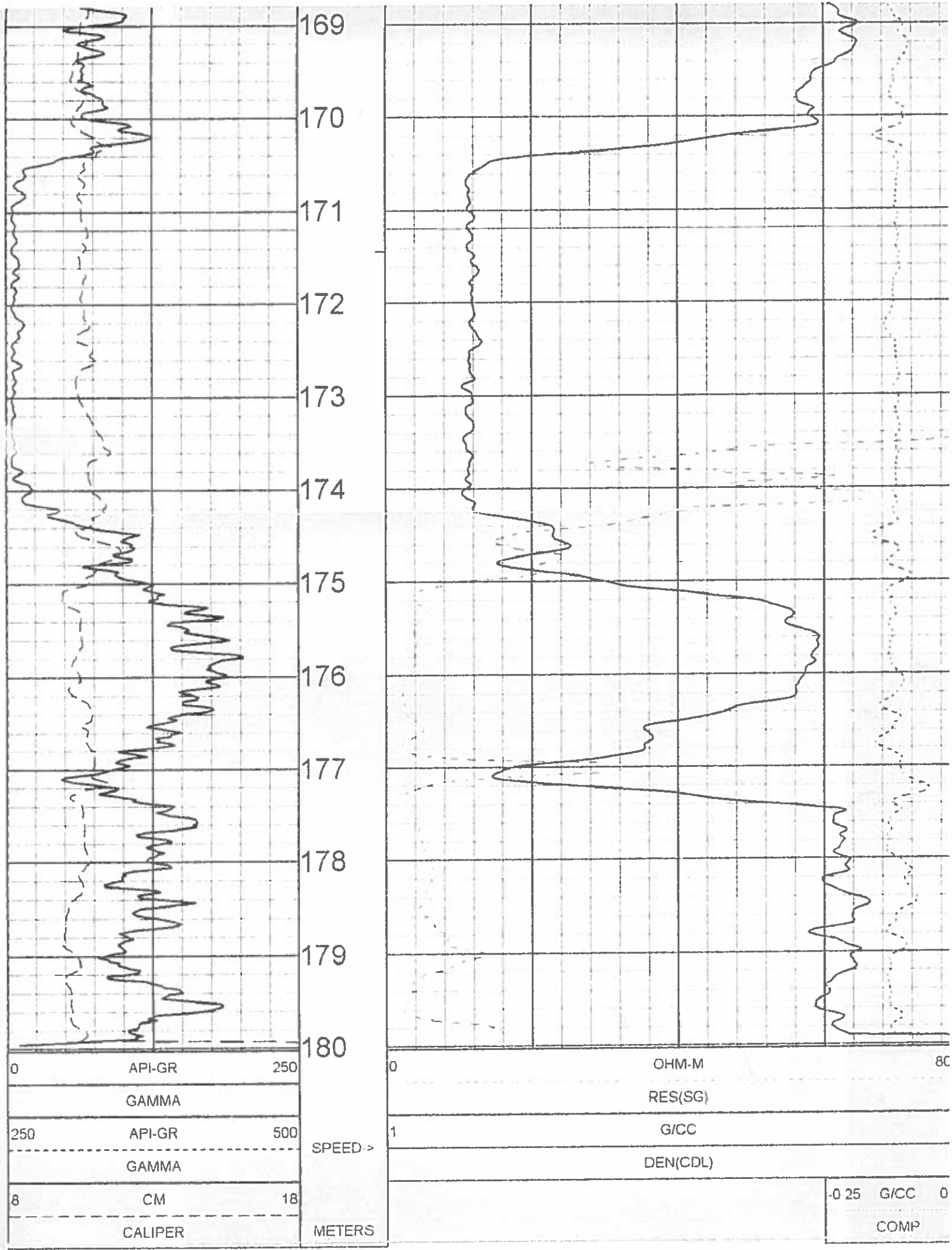
ELECT CUTOFF 99999

BIT SIZE 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64IC





1:50 BULK DENSITY EXPANDED BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY 2.65

NEUTRON MATRIX SANDSTONE

MATRIX DELTA T 177

MAGNETIC DECL 21.0

ELECT. CUTOFF 99999

BIT SIZE 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010

VERSION = 3.64IC



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-07

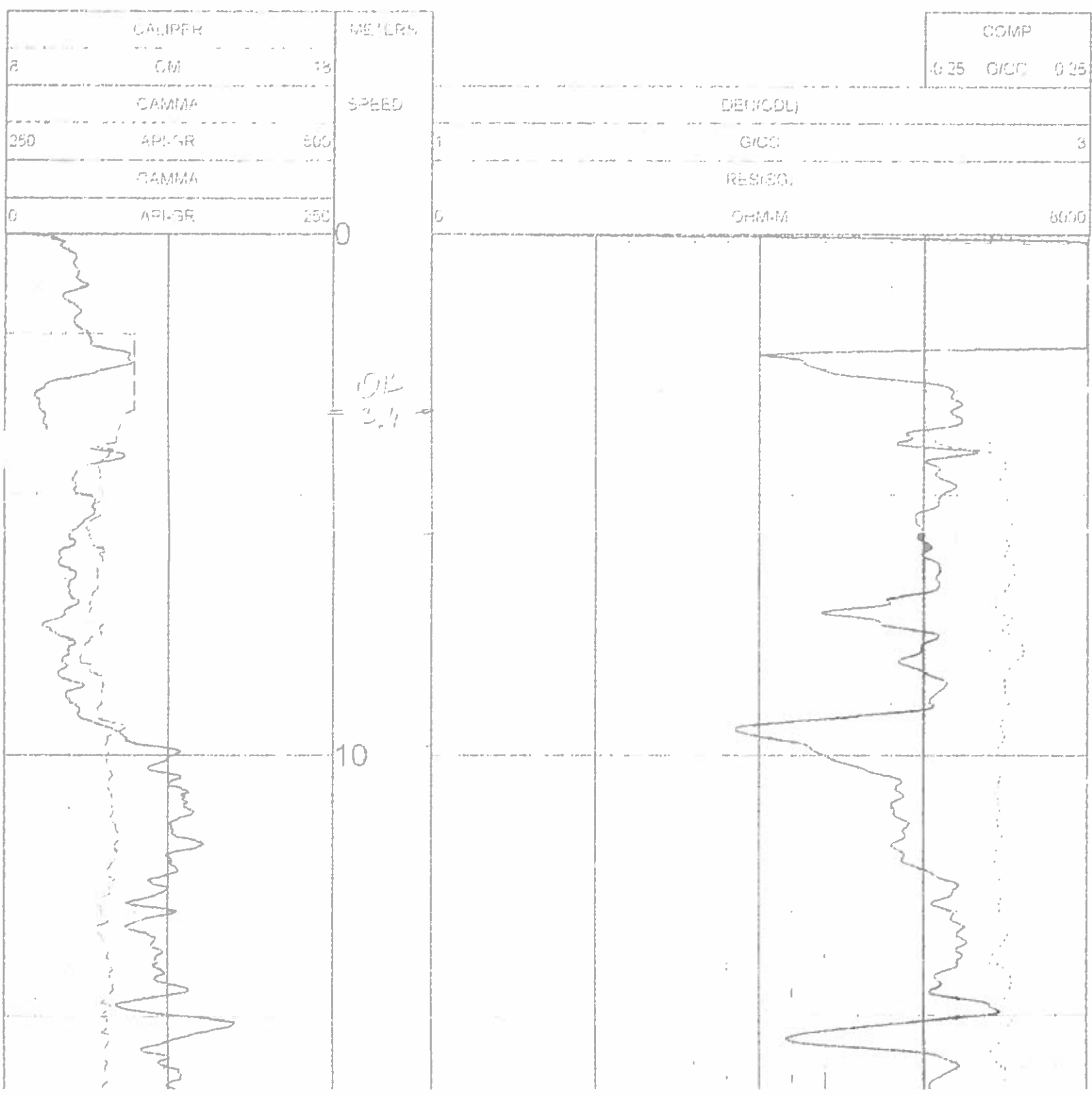
Picks - Jan 11 / 2011

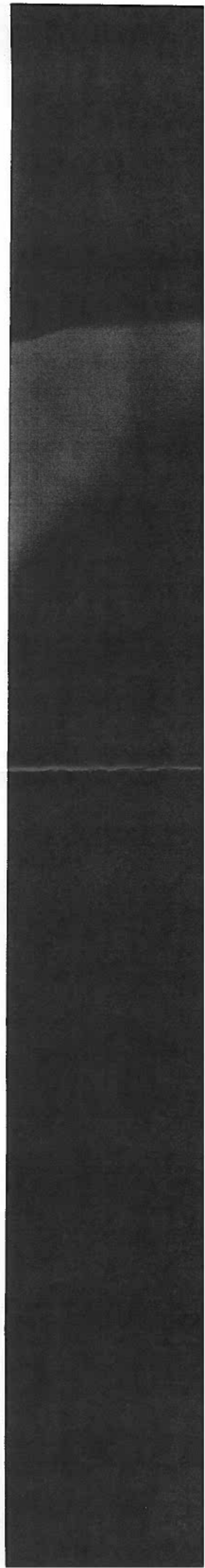
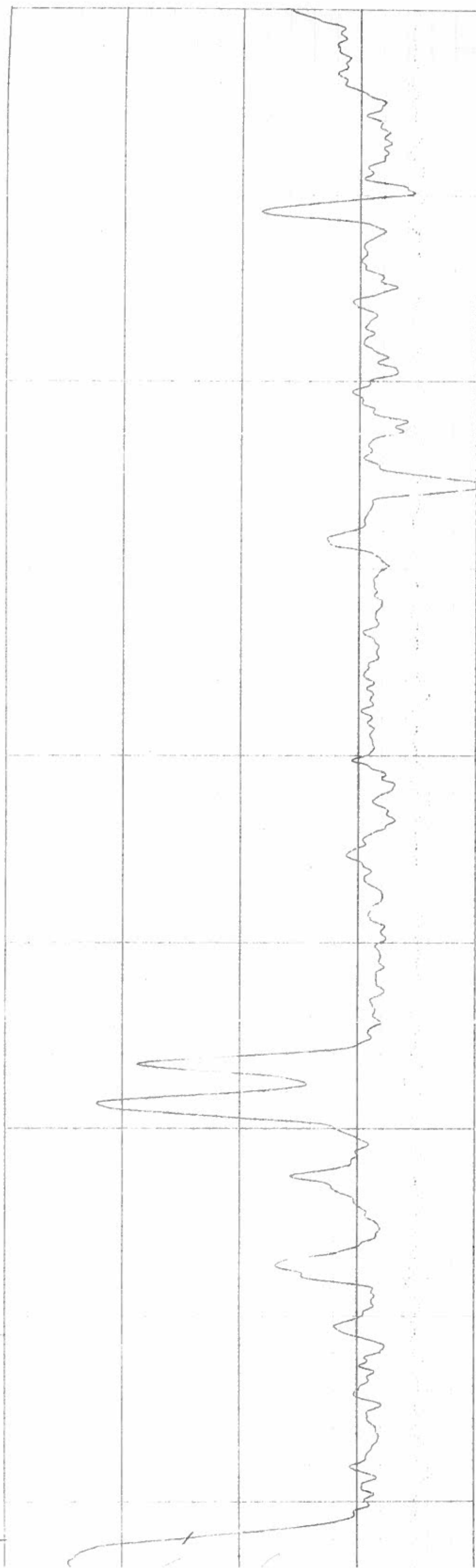
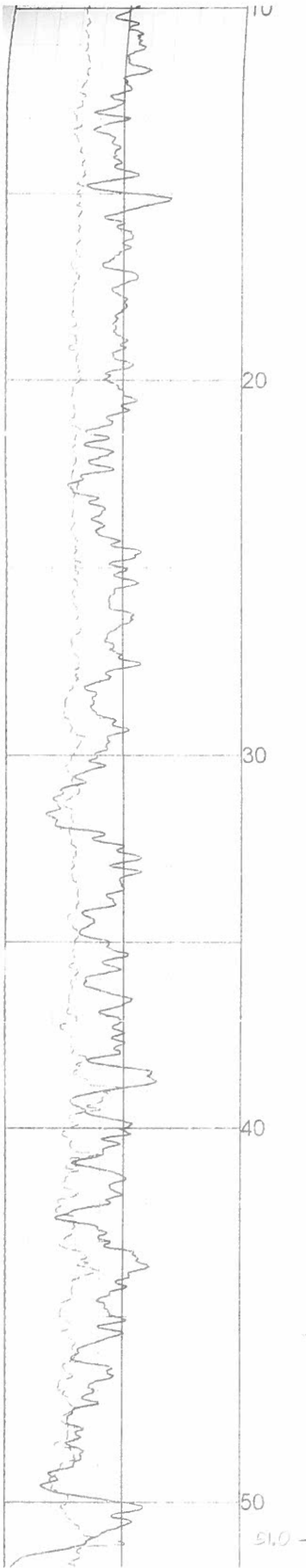
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 WELL: ...
 LOCALITY: BRITISH COLUMBIA
 STATE: BRITISH COLUMBIA
 SECTION: ...
 WELL ID: ...
 MEASUREMENT: ...
 MEASUREMENT: ...
 MEASUREMENT: ...
 MEASUREMENT: ...

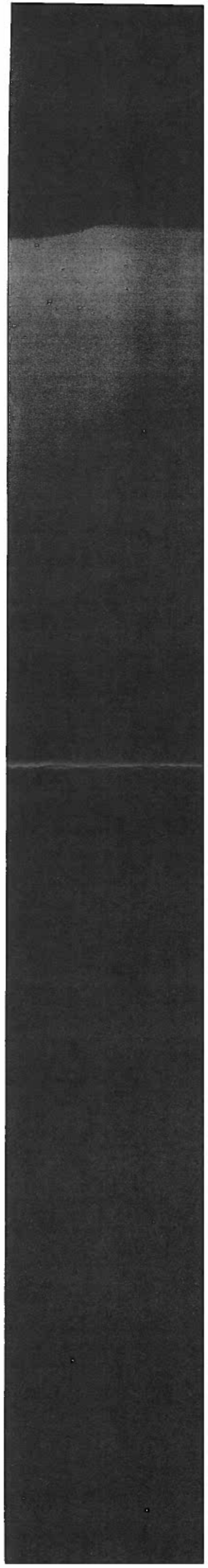
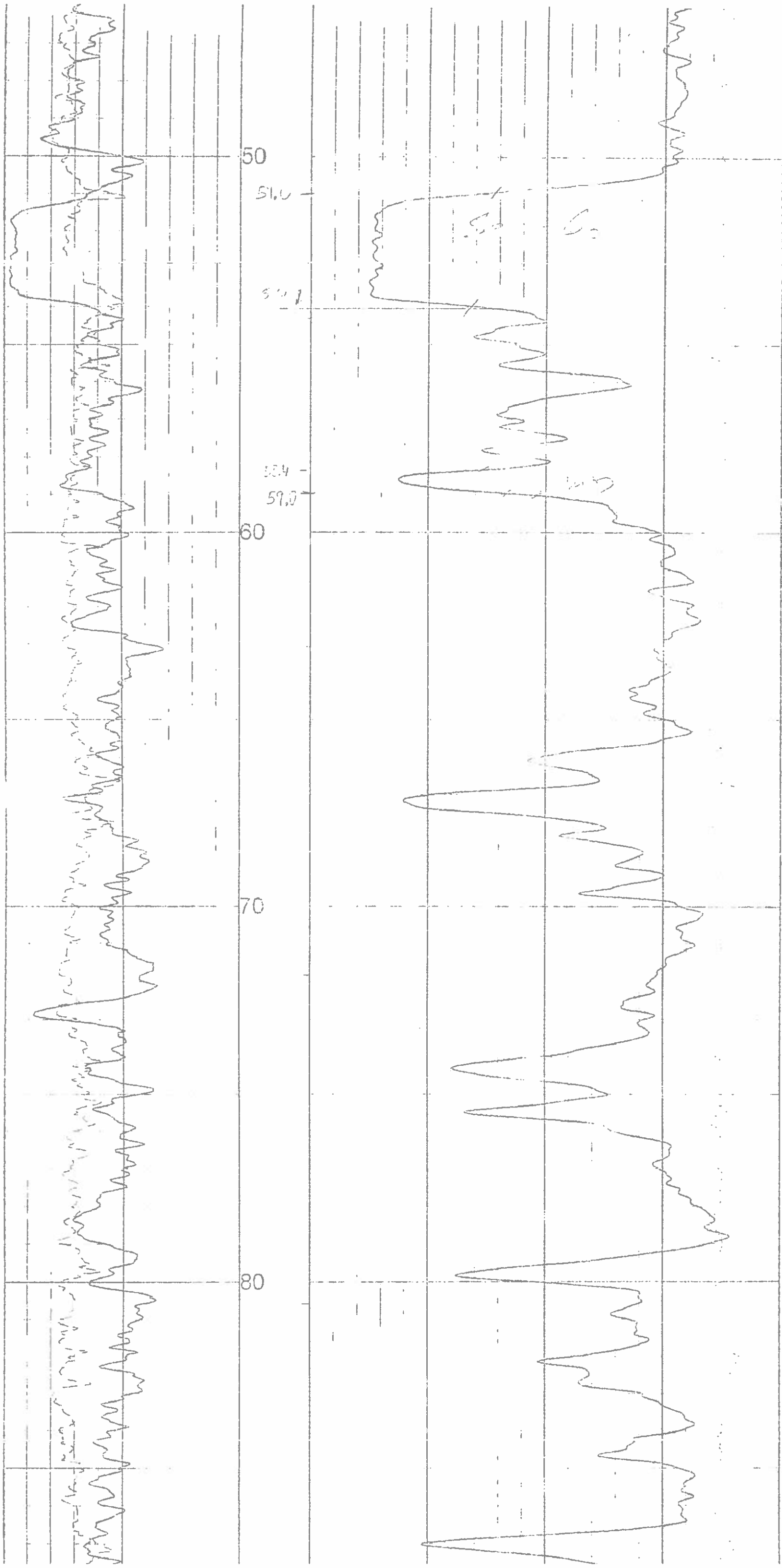
1:100 BULK DENSITY BR10-07 07/26/10

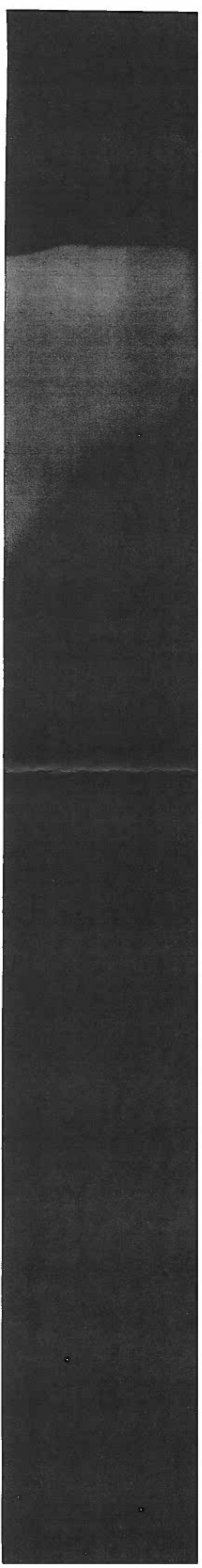
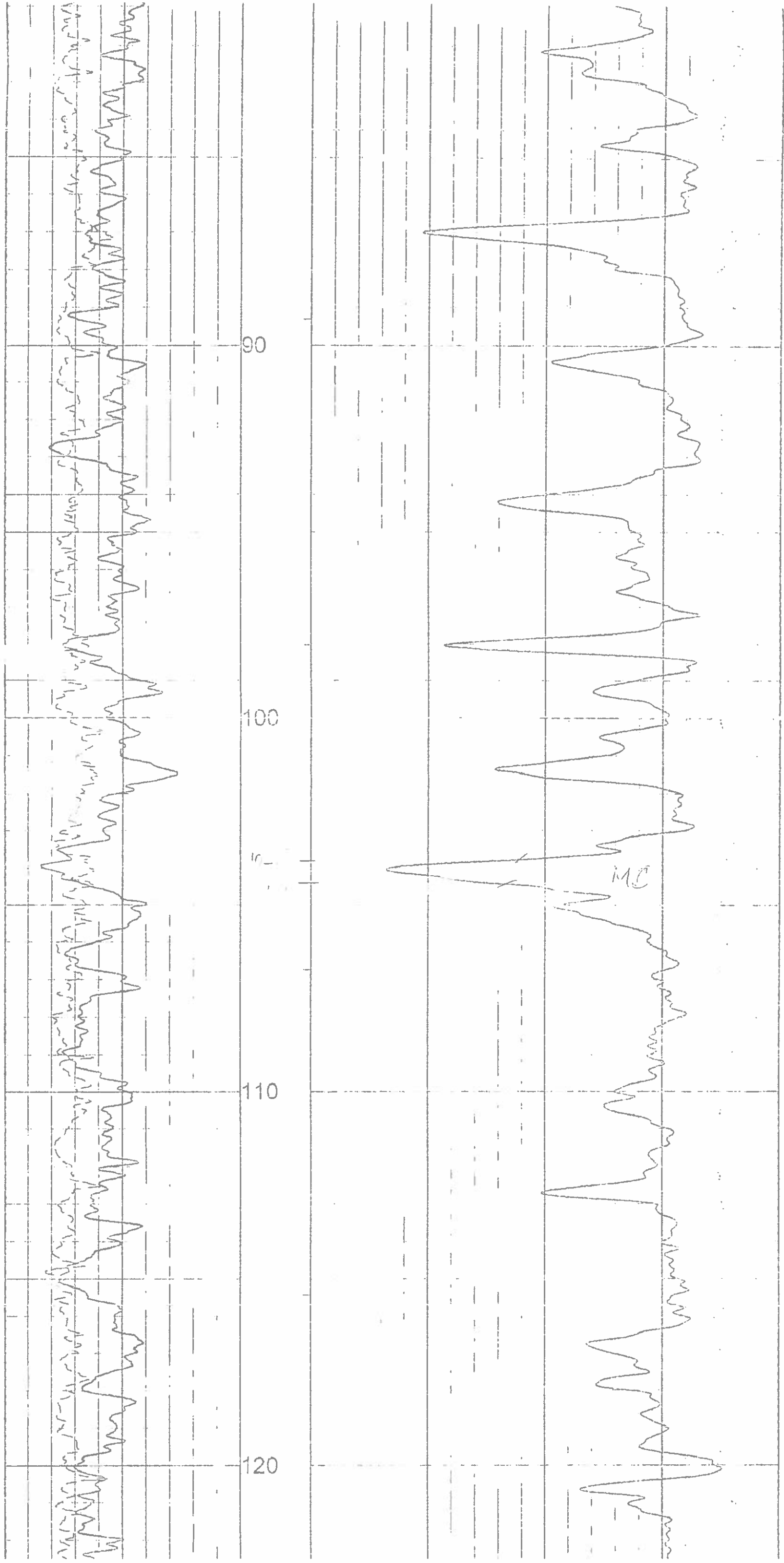
LOG PARAMETERS

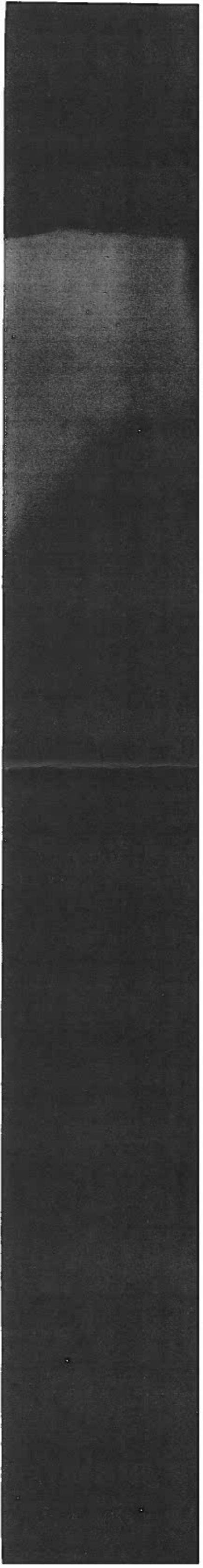
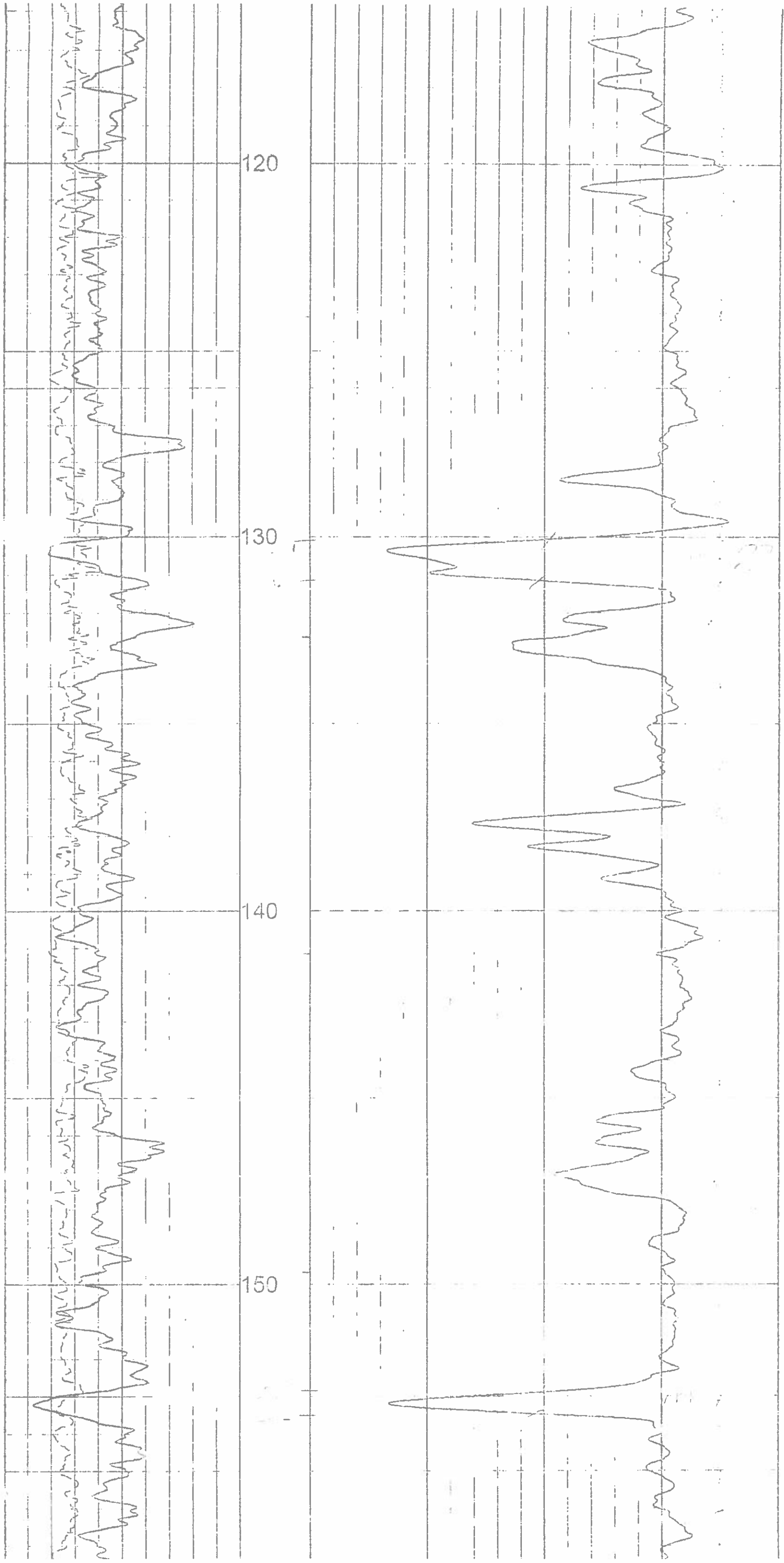
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 MAGNETIC DEFL: 21.0
 PRESENTATION NAME DATE: ...
 LITHOLOGY MATRIX: SANDSTONE
 ELECT. CUTOFF: 98999
 LOG NO. DENSITY: 07100010
 MATRIX DELTA T: 1.7
 BIT SIZE: 11.43
 VERSION: 3.64C

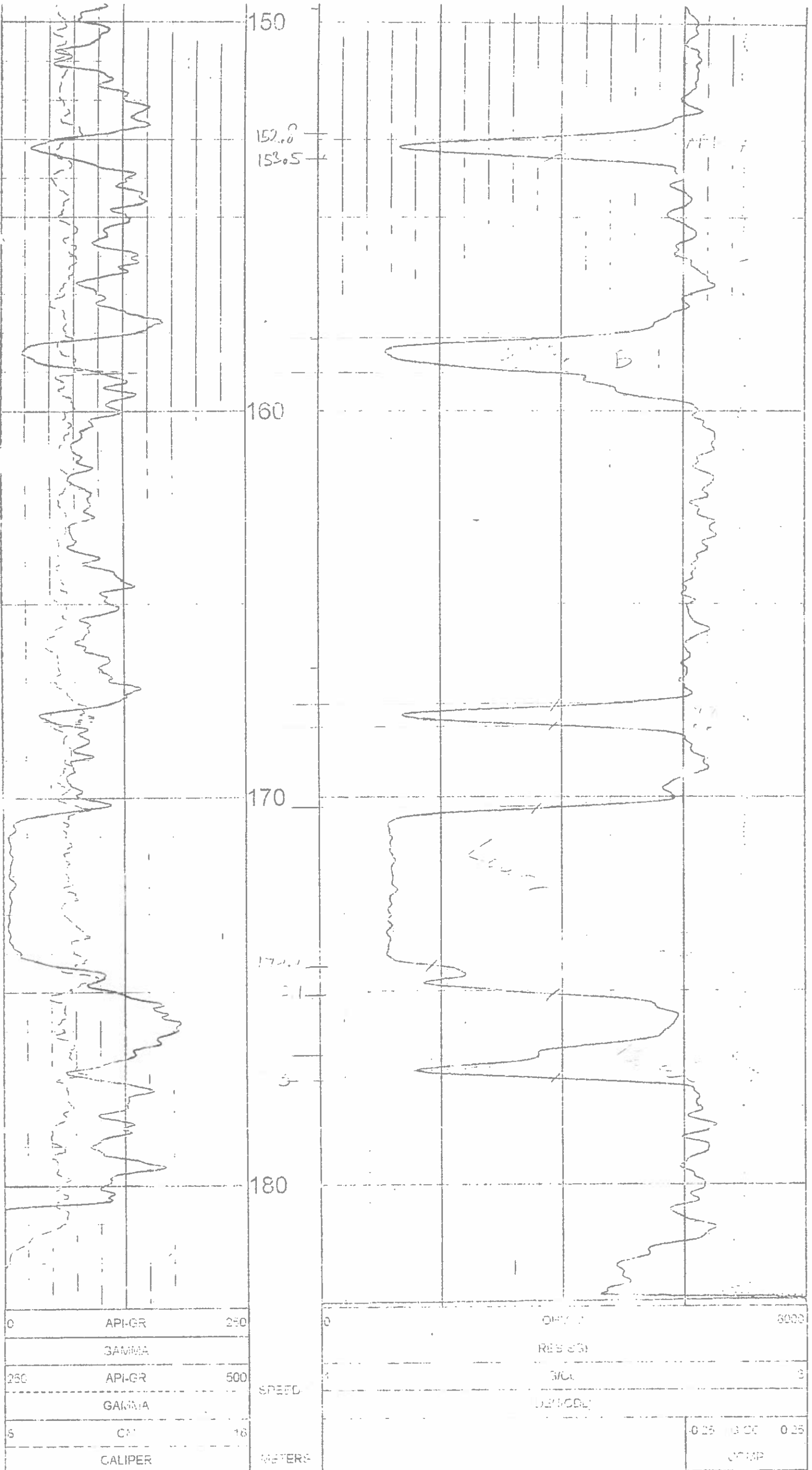












1:100 BULK DENSITY BR10-07 07/26/10

LOG PARAMETERS

BR10-07

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	
WELL	BR10-07	DENSITY	
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
API NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/26/10	RIG NUMBER	
DEPTH DRILLER	184 40	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	7 00	DEPARTURE TIME	
LOG BOTTOM	183 14	CIRC STOPPED	N/A
CASING OD	4 57		
CASING BOTTOM	4 57		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1 00		
WITNESSED BY	G HOLMLUND		
RECORDED BY	B SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

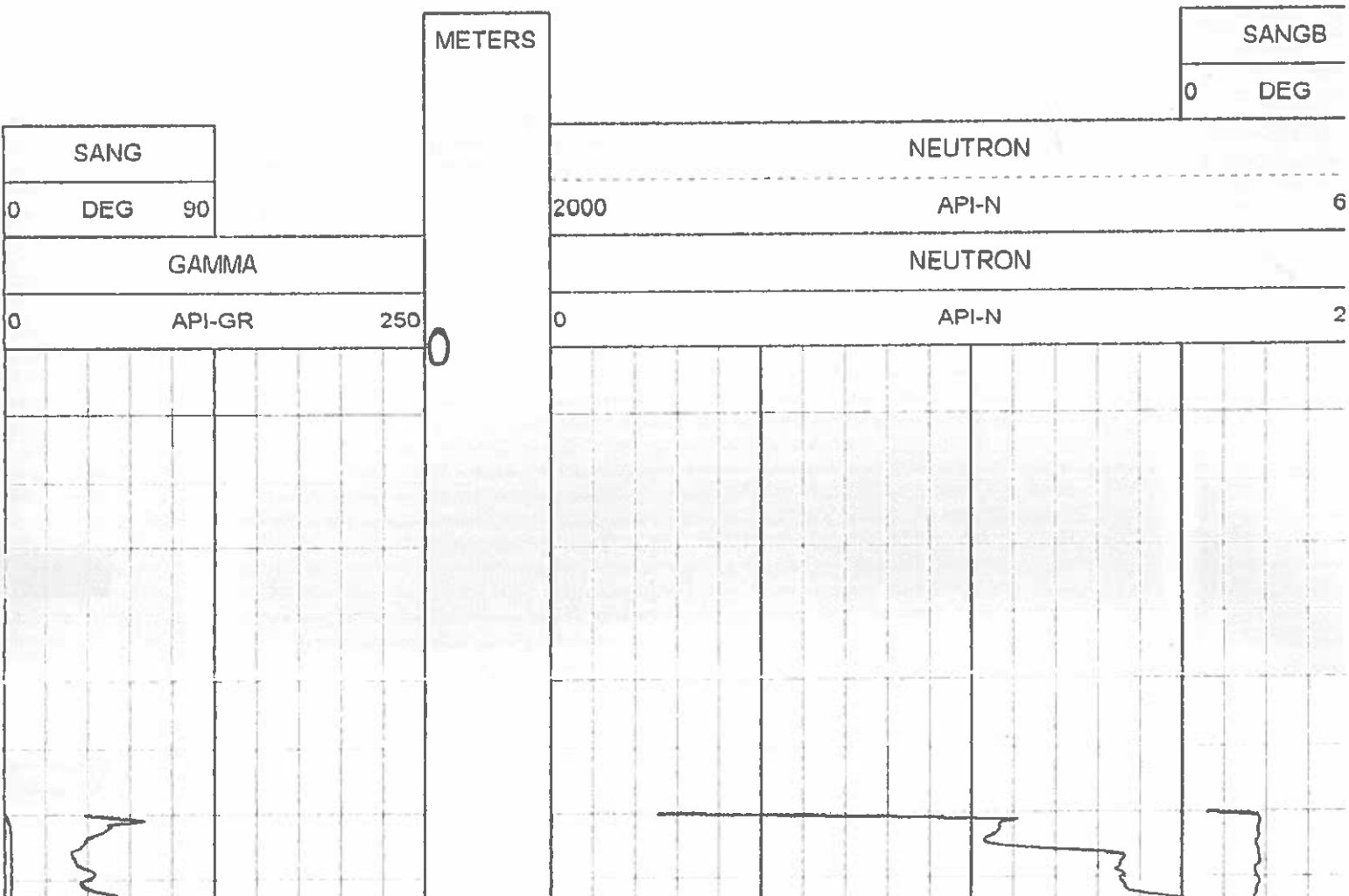
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY	2 65	NEUTRON MATRIX	SANDSTONE	MATRIX DELTA T	177
MAGNETIC DECL	21 0	ELECT. CUTOFF	99999	BIT SIZE	11 43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010			VERSION = 3 641C		

METERS



SANGB

0 DEG

NEUTRON

API-N

NEUTRON

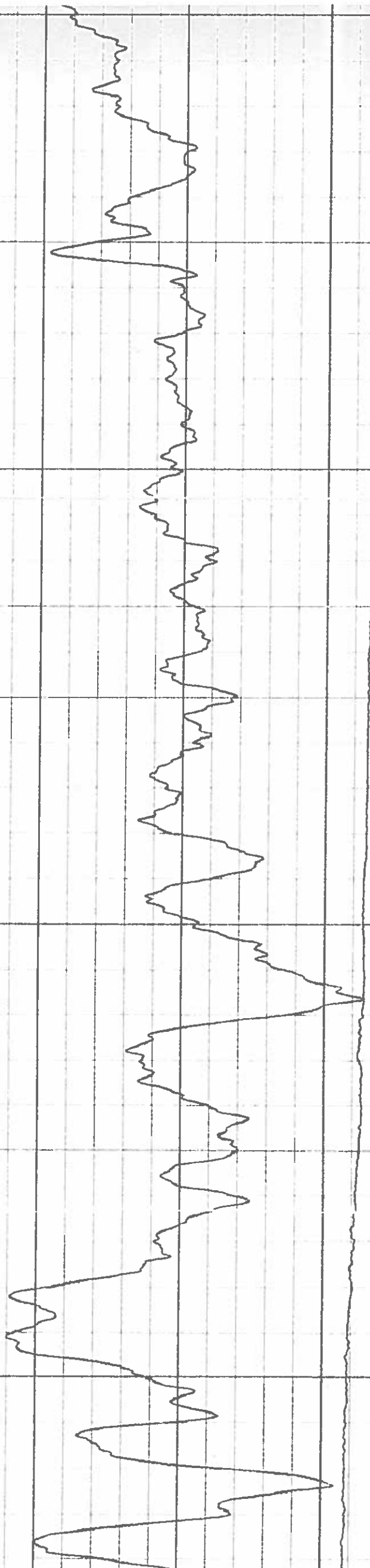
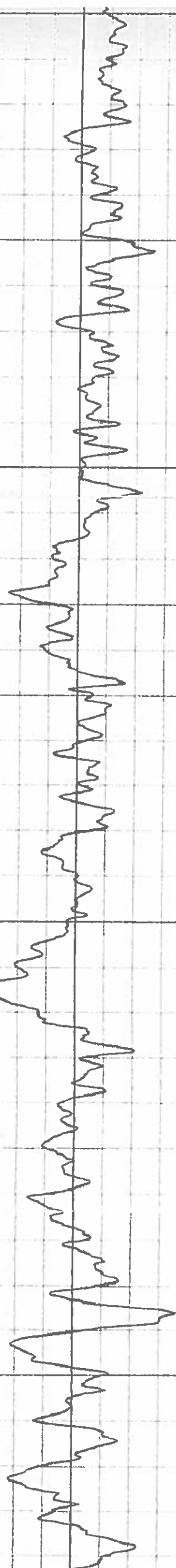
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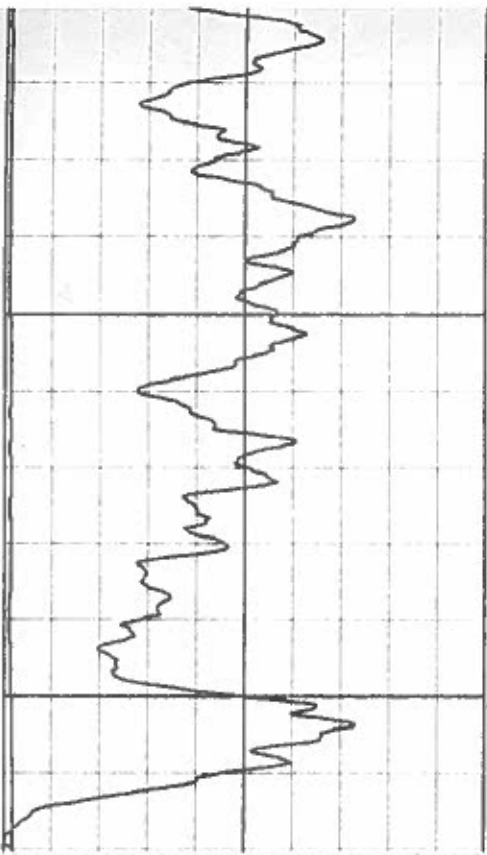
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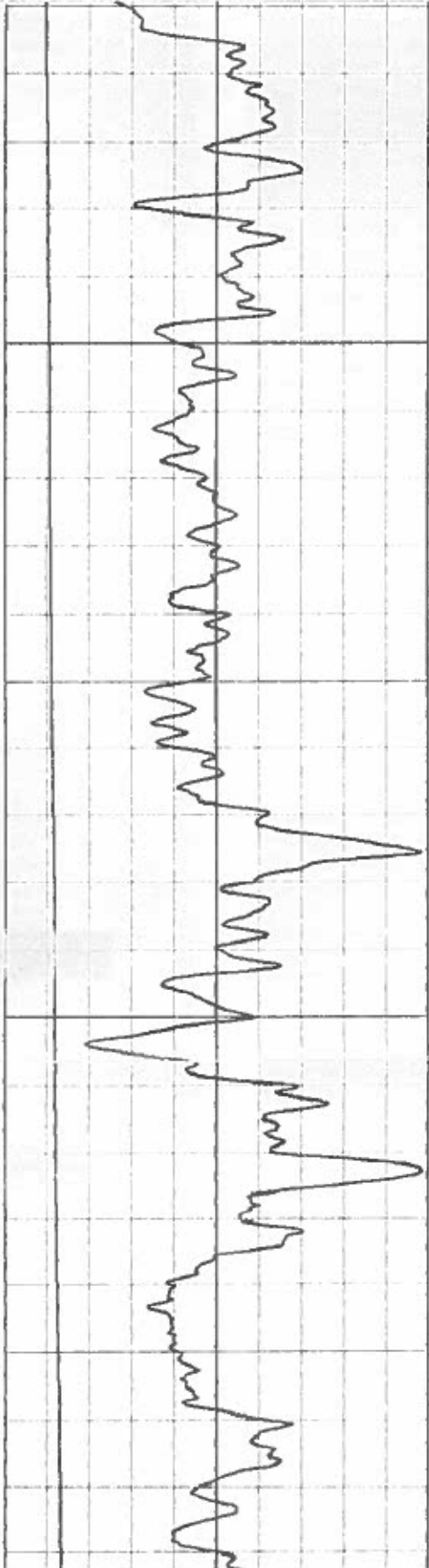
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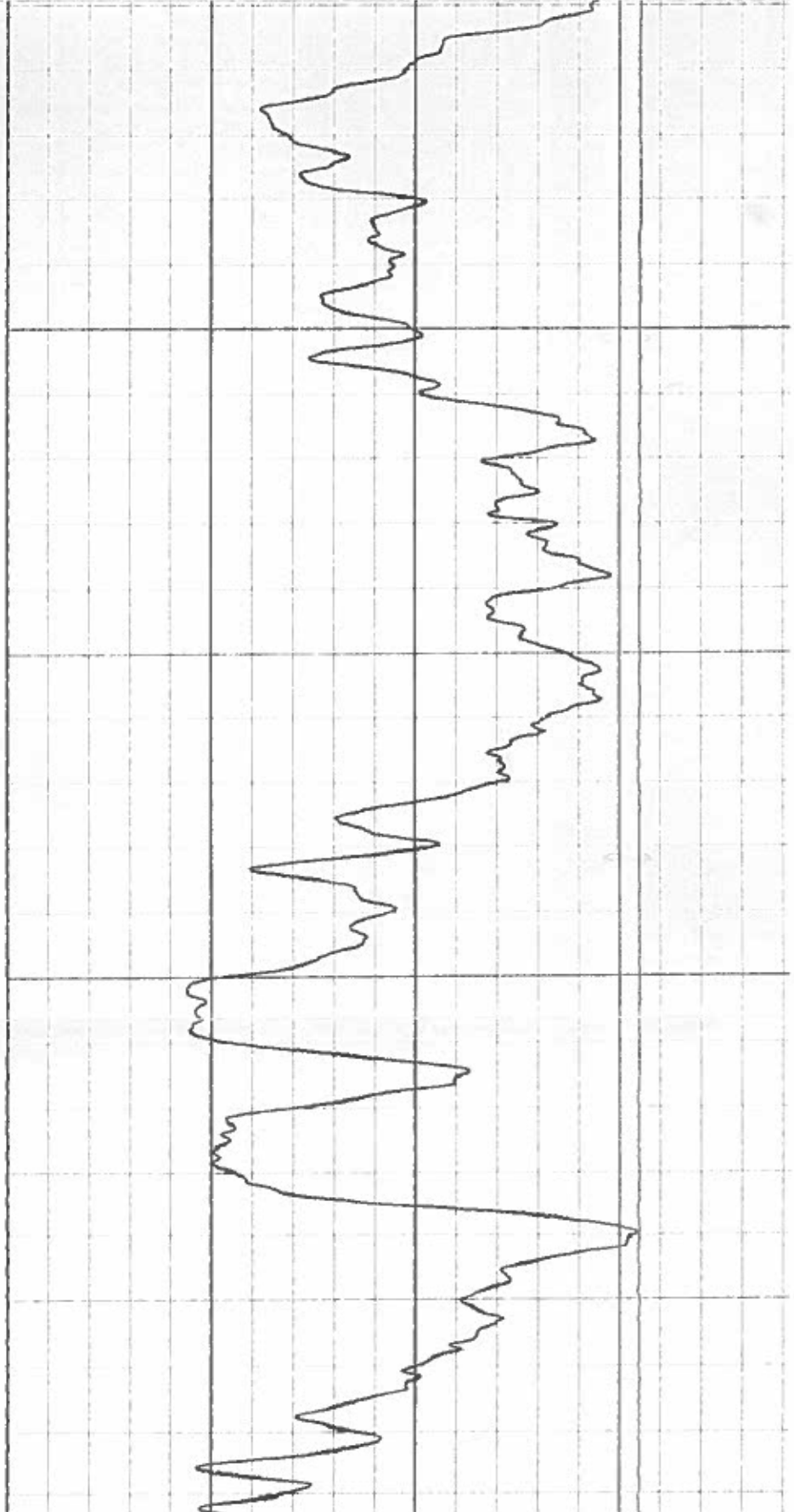
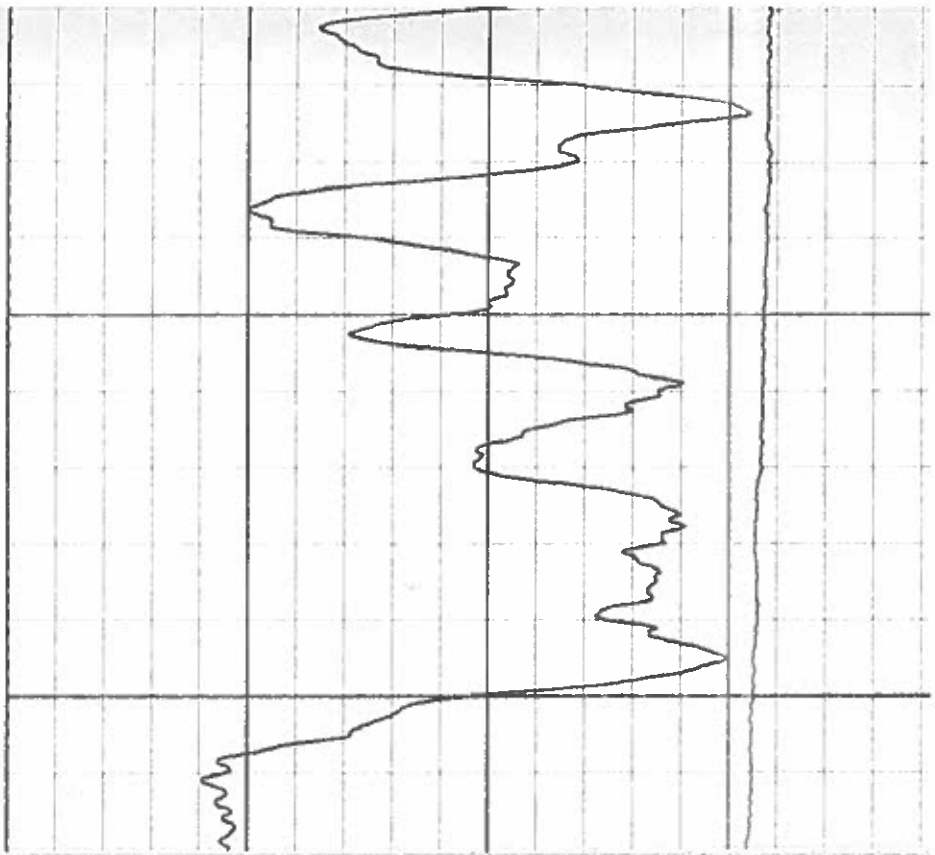
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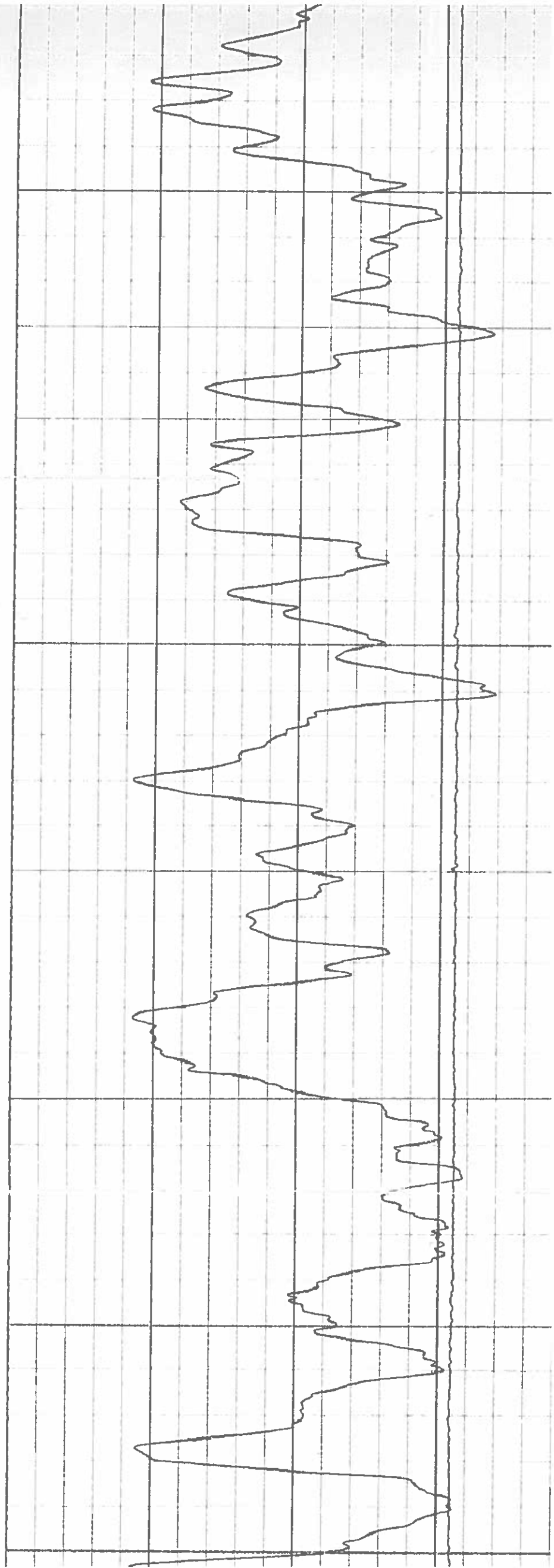
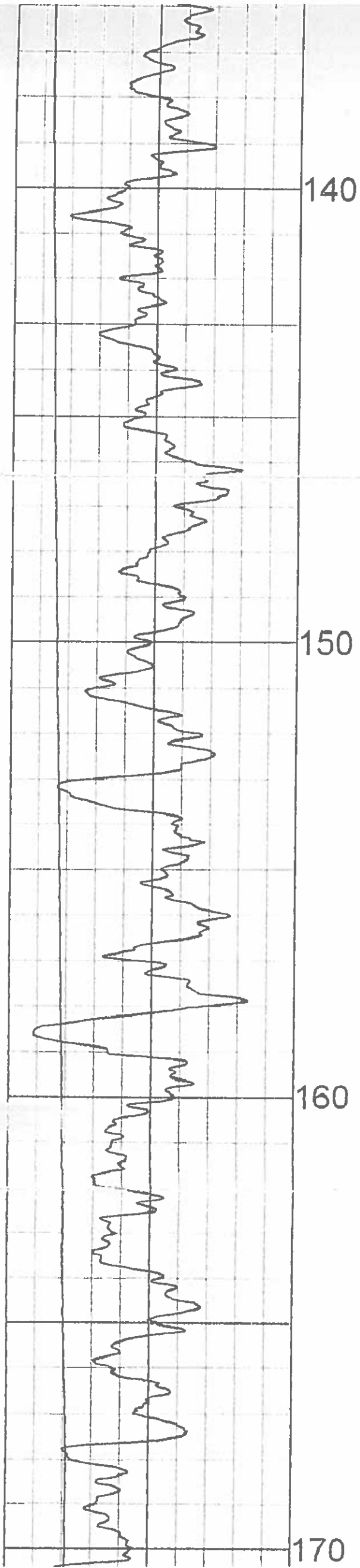


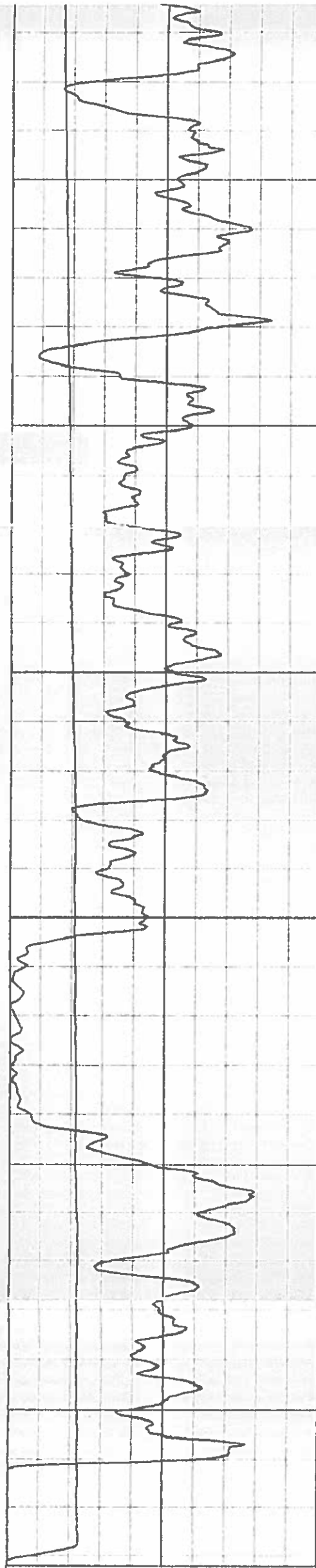
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130





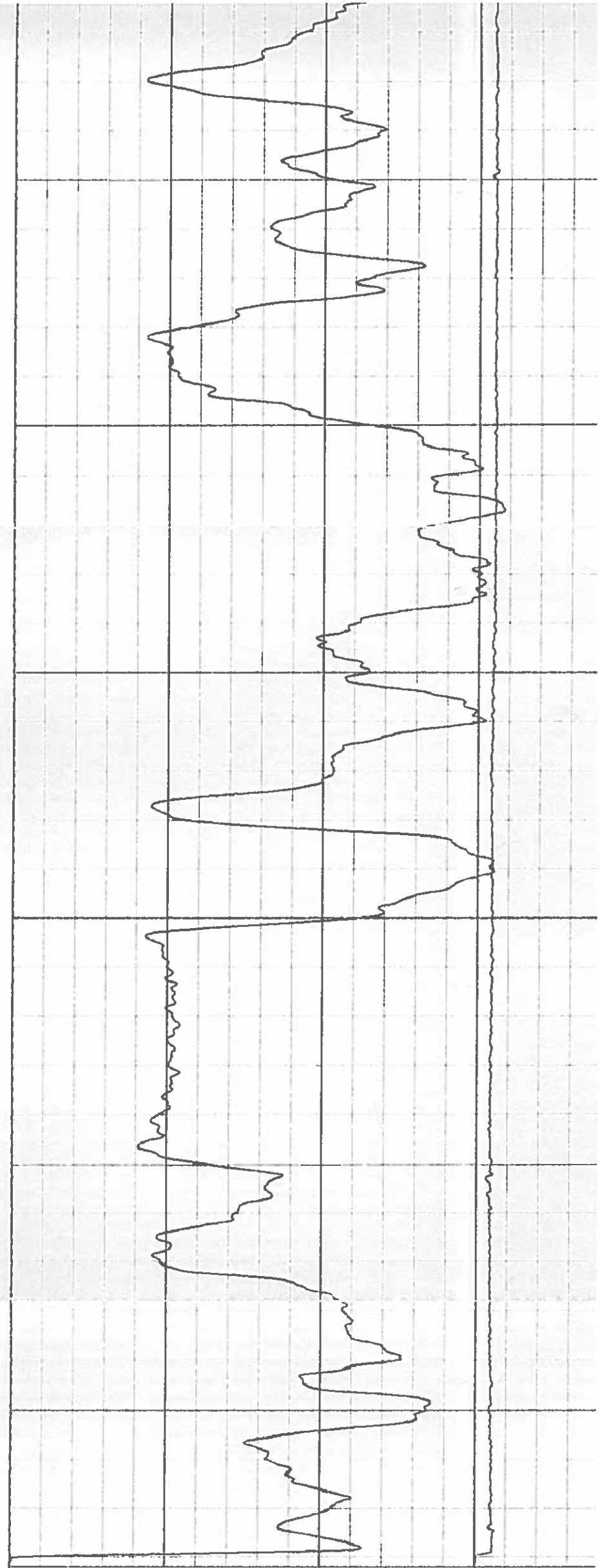


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 GAMMA
 0 DEG 90

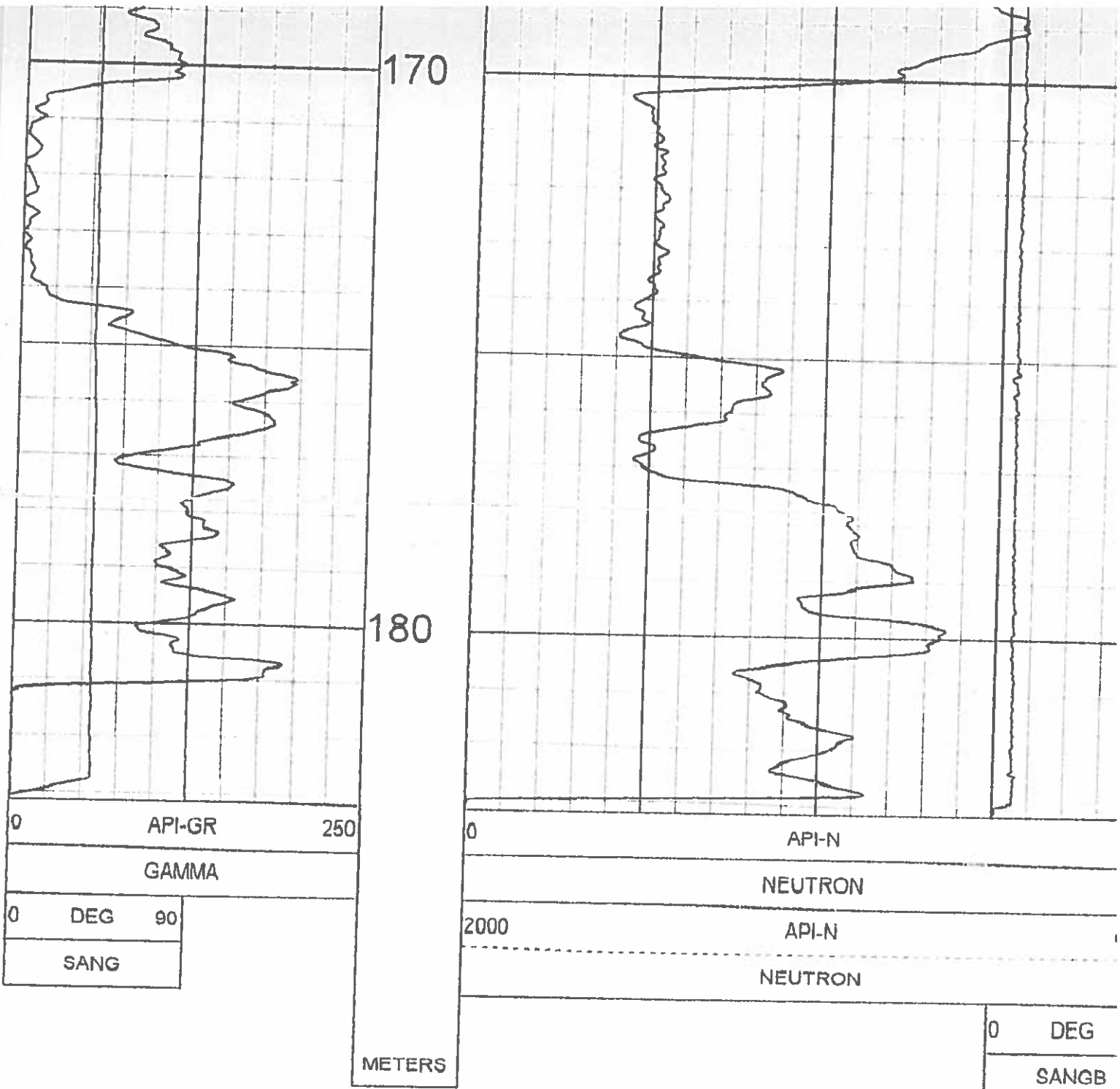
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170

180



0 API-N 2
 NEUTRON
 2000 API-N 6



1:100 NEUTRON BR10-07 07/26/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
MAGNETIC DECL : 21.0	ELECT CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.641C

TOOL CALIBRATION BR10-07 07/26/10 09:09
 TOOL 9057A TM VERSION 1
 SERIAL NUMBER 1071

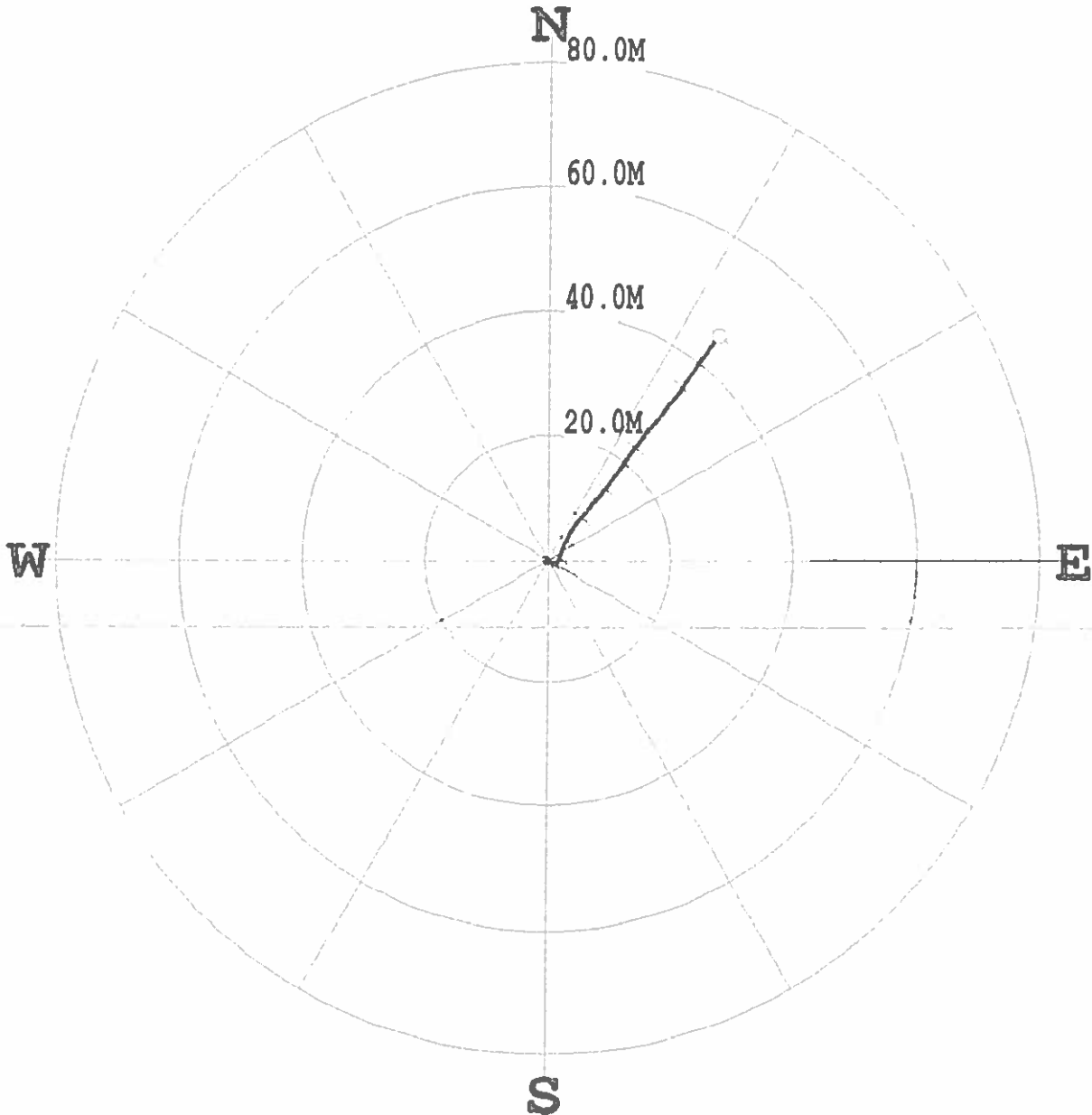
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	10:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	10:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	14:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	14:36:01	NEUTRC	271.000 [API-N]	697.000 [CPS]
3	May19,08	08:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	08:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	08:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	08:55:04	RES(16I)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	08:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	08:55:10	RES(64I)	1990.000 [OHM-M]	103531.000 [CPS]
6	May19,08	09:00:49	TEMP	35.500 [DEG F]	101300.000 [CPS]
	May19,08	09:00:49	TEMP	84.400 [DEG F]	64850.000 [CPS]
7	May19,08	08:55:17	RES	0.000 [OHM]	9984.000 [CPS]
	May19,08	08:55:17	RES	0.000 [OHM]	9984.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-07
 DATE OF LOG: 07/26/10
 PROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 172.51 M
 AZIMUTH: 37.6
 DISTANCE: 45.4 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-07
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 07/26/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-07_07-26-10_09-09_9057A_.02_7.00_183.14_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
7.02	7.02	-0.00	0.00	0.0	131.3	2.7	131.3
8.00	8.00	-0.03	0.04	0.1	131.6	2.9	132.4
9.00	9.00	-0.07	0.08	0.1	130.4	3.1	132.9
10.00	10.00	-0.10	0.12	0.2	130.2	2.9	126.5
11.00	10.99	-0.13	0.16	0.2	128.8	3.0	124.3
12.00	11.99	-0.16	0.20	0.3	127.9	3.1	125.9
13.00	12.99	-0.19	0.25	0.3	127.5	3.0	126.2
14.00	13.99	-0.22	0.29	0.4	127.3	3.0	125.0
15.00	14.99	-0.25	0.33	0.4	127.1	3.0	122.6
16.00	15.99	-0.28	0.37	0.5	127.0	2.9	126.4
17.00	16.99	-0.31	0.41	0.5	126.9	2.8	125.9
18.00	17.99	-0.34	0.45	0.6	126.7	2.7	121.0
19.00	18.98	-0.36	0.49	0.6	126.3	2.8	119.7
20.00	19.98	-0.39	0.53	0.7	126.0	2.6	123.3
21.00	20.98	-0.41	0.57	0.7	125.8	2.4	122.3
22.00	21.98	-0.43	0.61	0.7	125.5	2.3	122.6
23.00	22.98	-0.45	0.64	0.8	124.9	2.1	110.6

16.00	15.99	-0.28	0.37	0.5	127.0	2.9	126.4
17.00	16.99	-0.31	0.41	0.5	126.9	2.8	125.9
18.00	17.99	-0.34	0.45	0.6	126.7	2.7	121.0
19.00	18.98	-0.36	0.49	0.6	126.3	2.8	119.7
20.00	19.98	-0.39	0.53	0.7	126.0	2.6	123.3
21.00	20.98	-0.41	0.57	0.7	125.8	2.4	122.3
22.00	21.98	-0.43	0.61	0.7	125.5	2.3	122.6
23.00	22.98	-0.45	0.64	0.8	124.9	2.1	110.6
24.00	23.98	-0.46	0.68	0.8	124.3	2.1	110.5
25.00	24.98	-0.47	0.72	0.9	123.5	2.2	106.7
26.00	25.98	-0.49	0.75	0.9	122.8	2.1	106.6
27.00	26.98	-0.49	0.79	0.9	122.2	1.9	106.8
28.00	27.98	-0.50	0.82	1.0	121.6	1.8	105.1
29.00	28.98	-0.51	0.85	1.0	121.1	1.7	98.1
30.00	29.98	-0.51	0.88	1.0	120.4	1.7	97.0
31.00	30.98	-0.52	0.91	1.0	119.8	1.6	98.8
32.00	31.98	-0.52	0.93	1.1	119.3	1.5	98.1
33.00	32.98	-0.53	0.96	1.1	118.7	1.6	92.5
34.00	33.97	-0.53	0.99	1.1	118.1	1.7	96.8
35.00	34.97	-0.53	1.02	1.1	117.5	1.6	91.3
36.00	35.97	-0.53	1.04	1.2	116.9	1.4	82.8
37.00	36.97	-0.52	1.07	1.2	116.2	1.5	83.0
38.00	37.97	-0.52	1.10	1.2	115.3	2.0	79.5
39.00	38.97	-0.51	1.13	1.2	114.2	2.0	66.1
40.00	39.97	-0.49	1.16	1.3	113.0	2.0	65.6
41.00	40.97	-0.48	1.19	1.3	111.7	2.1	63.7
42.00	41.97	-0.46	1.23	1.3	110.4	2.4	60.3
43.00	42.97	-0.44	1.26	1.3	109.1	2.4	56.1
44.00	43.97	-0.42	1.30	1.4	107.8	2.4	59.7
45.00	44.97	-0.39	1.33	1.4	106.4	2.5	53.1
46.00	45.97	-0.37	1.37	1.4	105.0	2.5	52.7
47.00	46.97	-0.34	1.40	1.4	103.6	2.7	52.1
48.00	47.96	-0.31	1.44	1.5	102.1	2.5	42.3
49.00	48.96	-0.28	1.47	1.5	100.7	2.5	45.4
50.00	49.96	-0.24	1.50	1.5	99.2	2.9	36.9
51.00	50.96	-0.20	1.53	1.5	97.4	3.5	34.2
52.00	51.96	-0.15	1.56	1.6	95.5	3.5	30.1
53.00	52.96	-0.10	1.59	1.6	93.4	4.1	30.3
54.00	53.96	-0.03	1.63	1.6	91.2	4.4	30.1
55.00	54.95	0.04	1.67	1.7	88.8	4.7	25.4
56.00	55.95	0.11	1.70	1.7	86.2	5.0	25.8
57.00	56.94	0.19	1.74	1.7	83.7	5.3	25.1
58.00	57.94	0.28	1.77	1.8	81.0	5.6	22.9
59.00	58.93	0.37	1.81	1.8	78.3	5.1	22.6
60.00	59.93	0.47	1.85	1.9	75.6	6.5	22.4
61.00	60.92	0.58	1.89	2.0	72.9	6.6	20.9
62.00	61.92	0.69	1.93	2.1	70.3	6.9	20.7
63.00	62.91	0.80	1.97	2.1	67.9	6.7	19.3
64.00	63.90	0.92	2.01	2.2	65.6	6.7	19.5
65.00	64.89	1.03	2.06	2.3	63.4	7.3	21.3
66.00	65.89	1.15	2.10	2.4	61.3	7.5	20.1
67.00	66.88	1.27	2.15	2.5	59.4	7.5	20.4
68.00	67.87	1.40	2.20	2.6	57.6	7.8	20.6
69.00	68.86	1.52	2.25	2.7	55.9	7.9	21.6
70.00	69.85	1.65	2.30	2.8	54.3	8.1	21.8
71.00	70.84	1.79	2.35	3.0	52.8	8.1	21.4
72.00	71.83	1.92	2.40	3.1	51.4	8.2	20.7
73.00	72.82	2.05	2.46	3.2	50.1	8.7	23.9
74.00	73.81	2.20	2.52	3.3	48.9	8.9	23.4
75.00	74.79	2.34	2.58	3.5	47.8	9.1	23.8
76.00	75.78	2.49	2.65	3.6	46.8	9.2	24.7
77.00	76.77	2.63	2.71	3.8	45.8	9.4	24.2
78.00	77.75	2.79	2.78	3.9	44.9	9.6	23.1
79.00	78.74	2.94	2.85	4.1	44.1	9.7	22.8
80.00	79.72	3.10	2.92	4.3	43.3	9.8	26.3
81.00	80.71	3.25	2.99	4.4	42.7	10.1	25.8
82.00	81.69	3.41	3.07	4.6	42.0	10.2	27.6
83.00	82.68	3.57	3.15	4.8	41.5	10.4	29.7
84.00	83.66	3.73	3.24	4.9	40.9	11.2	25.2
85.00	84.64	3.91	3.32	5.1	40.4	11.2	27.6
86.00	85.62	4.08	3.42	5.3	39.9	11.5	28.6
87.00	86.60	4.26	3.51	5.5	39.5	11.6	30.9
88.00	87.58	4.43	3.62	5.7	39.2	11.7	31.3
89.00	88.56	4.61	3.73	5.9	39.0	12.0	31.2
90.00	89.54	4.78	3.84	6.1	38.8	12.2	36.7
91.00	90.51	4.95	3.97	6.3	38.7	12.8	36.1
92.00	91.49	5.13	4.10	6.6	38.6	12.6	36.7
93.00	92.46	5.32	4.24	6.8	38.6	13.2	36.6
94.00	93.44	5.50	4.37	7.0	38.5	13.2	37.4
95.00	94.41	5.68	4.51	7.3	38.5	13.5	38.2
96.00	95.38	5.86	4.66	7.5	38.5	13.7	38.5
97.00	96.35	6.05	4.81	7.7	38.5	13.7	38.4
98.00	97.32	6.24	4.96	8.0	38.5	14.4	38.9
99.00	98.29	6.44	5.12	8.2	38.5	14.6	38.4
100.00	99.26	6.63	5.27	8.5	38.5	14.6	39.5
101.00	100.23	6.83	5.44	8.7	38.5	14.8	40.1
102.00	101.19	7.02	5.60	9.0	38.6	15.0	40.3
103.00	102.16	7.22	5.77	9.2	38.6	15.1	39.1
104.00	103.12	7.42	5.94	9.5	38.6	15.1	39.8
105.00	104.09	7.63	6.10	9.8	38.7	15.2	39.0
106.00	105.05	7.83	6.27	10.0	38.7	15.7	39.0
107.00	106.02	8.04	6.44	10.3	38.7	15.8	39.1
108.00	106.98	8.26	6.61	10.6	38.7	16.3	37.7
109.00	107.94	8.47	6.78	10.8	38.7	16.3	39.0
110.00	108.90	8.69	6.96	11.1	38.7	16.6	39.9
111.00	109.86	8.90	7.15	11.4	38.8	16.6	42.2
112.00	110.82	9.12	7.33	11.7	38.8	16.8	38.9

78.00	78.17	4.97	4.09	4.1	38.1	9.7	22.0
80.00	79.72	3.10	2.92	4.3	43.3	9.8	26.3
81.00	80.71	3.25	2.99	4.4	42.7	10.1	25.8
82.00	81.69	3.41	3.07	4.6	42.0	10.2	27.6
83.00	82.68	3.57	3.15	4.8	41.5	10.4	29.7
84.00	83.66	3.73	3.24	4.9	40.9	11.2	25.2
85.00	84.64	3.91	3.32	5.1	40.4	11.2	27.6
86.00	85.62	4.08	3.42	5.3	39.9	11.5	28.6
87.00	86.60	4.26	3.51	5.5	39.5	11.6	30.9
88.00	87.58	4.43	3.62	5.7	39.2	11.7	31.3
89.00	88.56	4.61	3.73	5.9	39.0	12.0	31.2
90.00	89.54	4.78	3.84	6.1	38.8	12.2	36.7
91.00	90.51	4.95	3.97	6.3	38.7	12.8	36.1
92.00	91.49	5.13	4.10	6.6	38.6	12.6	36.7
93.00	92.46	5.32	4.24	6.8	38.6	13.2	36.6
94.00	93.44	5.50	4.37	7.0	38.5	13.2	37.4
95.00	94.41	5.68	4.51	7.3	38.5	13.5	38.2
96.00	95.38	5.86	4.66	7.5	38.5	13.7	38.5
97.00	96.35	6.05	4.81	7.7	38.5	13.7	38.4
98.00	97.32	6.24	4.96	8.0	38.5	14.4	38.9
99.00	98.29	6.44	5.12	8.2	38.5	14.6	38.4
100.00	99.26	6.63	5.27	8.5	38.5	14.6	39.5
101.00	100.23	6.83	5.44	8.7	38.5	14.8	40.1
102.00	101.19	7.02	5.60	9.0	38.6	15.0	40.3
103.00	102.16	7.22	5.77	9.2	38.6	15.1	39.1
104.00	103.12	7.42	5.94	9.5	38.6	15.1	39.8
105.00	104.09	7.63	6.10	9.8	38.7	15.2	39.0
106.00	105.05	7.83	6.27	10.0	38.7	15.7	39.0
107.00	106.02	8.04	6.44	10.3	38.7	15.8	39.1
108.00	106.98	8.26	6.61	10.6	38.7	16.3	37.7
109.00	107.94	8.47	6.78	10.8	38.7	16.3	39.0
110.00	108.90	8.69	6.96	11.1	38.7	16.6	39.9
111.00	109.86	8.90	7.15	11.4	38.8	16.6	42.2
112.00	110.82	9.12	7.33	11.7	38.8	16.8	38.9
113.00	111.77	9.35	7.51	12.0	38.8	17.2	39.3
114.00	112.73	9.58	7.70	12.3	38.8	17.3	39.0
115.00	113.68	9.81	7.88	12.6	38.8	17.3	38.9
116.00	114.63	10.05	8.07	12.9	38.8	18.0	38.2
117.00	115.58	10.29	8.27	13.2	38.8	18.2	38.9
118.00	116.53	10.54	8.47	13.5	38.8	18.9	39.9
119.00	117.48	10.79	8.67	13.8	38.8	19.2	38.0
120.00	118.42	11.05	8.88	14.2	38.8	19.4	38.5
121.00	119.37	11.31	9.08	14.5	38.8	19.6	38.1
122.00	120.31	11.57	9.29	14.8	38.8	19.7	37.6
123.00	121.25	11.84	9.50	15.2	38.7	19.8	37.5
124.00	122.19	12.11	9.70	15.5	38.7	20.0	37.8
125.00	123.13	12.38	9.91	15.9	38.7	20.1	38.0
126.00	124.07	12.66	10.12	16.2	38.7	20.4	37.1
127.00	125.00	12.94	10.33	16.6	38.6	20.8	33.8
128.00	125.94	13.23	10.54	16.9	38.6	21.2	37.0
129.00	126.87	13.52	10.76	17.3	38.5	21.5	36.8
130.00	127.80	13.81	10.98	17.6	38.5	21.5	36.6
131.00	128.73	14.11	11.20	18.0	38.4	21.8	36.2
132.00	129.66	14.41	11.42	18.4	38.4	22.1	36.2
133.00	130.58	14.72	11.64	18.8	38.3	22.4	36.1
134.00	131.51	15.03	11.87	19.1	38.3	22.6	36.9
135.00	132.43	15.34	12.10	19.5	38.3	23.0	36.6
136.00	133.35	15.66	12.33	19.9	38.2	23.5	35.8
137.00	134.26	15.98	12.57	20.3	38.2	23.8	36.5
138.00	135.18	16.31	12.81	20.7	38.2	24.0	36.6
139.00	136.09	16.64	13.05	21.1	38.1	24.4	36.7
140.00	137.00	16.97	13.30	21.6	38.1	24.7	36.2
141.00	137.91	17.31	13.54	22.0	38.0	25.1	35.5
142.00	138.81	17.64	13.80	22.4	38.0	25.3	36.6
143.00	139.71	17.99	14.06	22.8	38.0	26.0	35.6
144.00	140.61	18.34	14.33	23.3	38.0	26.2	37.4
145.00	141.51	18.69	14.59	23.7	38.0	26.2	41.9
146.00	142.40	19.04	14.87	24.2	38.0	26.8	37.8
147.00	143.30	19.40	15.15	24.6	38.0	27.5	35.3
148.00	144.18	19.77	15.43	25.1	38.0	27.5	40.3
149.00	145.06	20.14	15.71	25.5	38.0	28.4	37.3
150.00	145.94	20.52	16.00	26.0	37.9	29.1	37.1
151.00	146.81	20.91	16.31	26.5	38.0	29.4	40.3
152.00	147.68	21.29	16.62	27.0	38.0	29.6	44.3
153.00	148.55	21.67	16.95	27.5	38.0	30.6	41.0
154.00	149.40	22.07	17.27	28.0	38.0	31.1	38.4
155.00	150.26	22.48	17.60	28.5	38.1	31.7	40.0
156.00	151.11	22.88	17.94	29.1	38.1	32.2	39.1
157.00	151.95	23.30	18.28	29.6	38.1	32.6	36.9
158.00	152.79	23.71	18.62	30.2	38.1	33.0	39.6
159.00	153.63	24.14	18.97	30.7	38.2	33.8	35.8
160.00	154.46	24.56	19.33	31.3	38.2	34.1	41.9
161.00	155.28	24.99	19.69	31.8	38.2	34.3	42.1
162.00	156.11	25.43	20.05	32.4	38.3	34.8	39.8
163.00	156.93	25.87	20.42	33.0	38.3	34.7	41.9
164.00	157.74	26.32	20.78	33.5	38.3	35.2	40.5
165.00	158.55	26.78	21.14	34.1	38.3	36.1	35.5
166.00	159.36	27.26	21.48	34.7	38.2	36.7	36.9
167.00	160.16	27.76	21.82	35.3	38.2	37.5	34.7
168.00	160.94	28.27	22.16	35.9	38.1	38.3	31.7
169.00	161.73	28.78	22.52	36.5	38.0	37.9	37.8
170.00	162.52	29.28	22.88	37.2	38.0	37.6	36.9
171.00	163.31	29.78	23.24	37.8	38.0	38.4	34.8
172.00	164.09	30.29	23.60	38.4	37.9	38.6	32.8
173.00	164.87	30.80	23.95	39.0	37.9	38.7	34.7
174.00	165.65	31.33	24.29	39.6	37.8	38.9	33.1
175.00	166.43	31.85	24.64	40.3	37.7	38.0	38.5

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-08	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,503.34	6,140,270.18	1,283.90

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
291	-64	149.99	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	291.2	-63.80
6.00	244.3	-64.50
8.00	237.4	-62.90
10.00	234.4	-62.20
12.00	231.1	-62.20
14.00	229.7	-63.00
16.00	229.5	-62.40
18.00	229.1	-62.40
20.00	228.1	-62.10
22.00	227.2	-62.50
24.00	227.1	-61.60
26.00	226.5	-60.10
28.00	225.7	-61.30
30.00	225.3	-60.80
32.00	225.2	-61.00
34.00	224.7	-60.40
36.00	224.2	-60.70
38.00	224.1	-61.10
40.00	224.0	-61.40
42.00	223.7	-60.90
44.00	223.3	-60.50
46.00	222.9	-60.60
48.00	222.6	-60.00
50.00	222.3	-60.40
52.00	222.0	-59.50
54.00	221.9	-60.00
56.00	221.9	-59.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.00	2.00		
38.60	41.20	2.60		
44.10	44.80	0.70		
73.60	74.20	0.60		
93.70	94.50	0.80		
115.20	115.90	0.70		
115.90	118.70	2.80		
118.70	119.50	0.80		
136.80	141.20	4.40		
141.20	142.00	0.80		
143.80	144.30	0.50		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-08**

year drilled: 2010

AREA:

BURNT RIVER
BRULE

58.00	221.9	-59.90
60.00	221.9	-59.30
62.00	222.0	-59.70
64.00	222.0	-59.90
66.00	222.1	-59.60
68.00	221.9	-59.10
70.00	221.8	-59.40
72.00	221.7	-59.30
74.00	221.5	-59.30
76.00	221.4	-59.00
78.00	221.3	-59.20
80.00	221.2	-59.20
82.00	221.1	-59.20
84.00	221.0	-59.30
86.00	220.9	-58.60
88.00	220.8	-58.80
90.00	220.8	-58.70
92.00	220.8	-58.30
94.00	220.9	-58.10
96.00	220.9	-58.00
98.00	221.0	-58.00
100.00	221.0	-58.80
102.00	221.0	-57.90
104.00	220.9	-57.40
106.00	220.8	-57.10
108.00	220.7	-56.60
110.00	220.6	-57.10
112.00	220.5	-56.00
114.00	220.4	-56.00
116.00	220.3	-55.80
118.00	220.3	-55.30
120.00	220.2	-56.20
122.00	220.2	-56.40
124.00	220.2	-56.90
126.00	220.2	-56.20
128.00	220.2	-56.60
130.00	220.2	-56.30
132.00	220.2	-57.40
134.00	220.1	-57.10
136.00	220.1	-57.60
138.00	220.1	-57.10
140.00	220.0	-57.90
142.00	220.0	-58.30
144.00	220.0	-57.30
146.00	219.9	-57.30

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-08	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

148.00	219.8	-57.20
149.26	219.8	-57.30

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 3 of 3

Century
WIRELINE SERVICES

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-08

OTHER SERVICES:
NEUTRCHI

WESTERN COAL CORPORATION

WELL: BR10-08

FIELD: BR10-1

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

LOCATION: BRUI ENORTH

SECTION: N/A

TOWNSHIP: N/A

RANGE: N/A

LICENCE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 08/22/10

DEPTH DRILLER: 129.54

BIT SIZE: 11.43

LOG TOP: 149.99

LOG BOTTOM: 149.99

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

WITNESSED BY: G. HOLMLUND

RECORDED BY: T. NEAL

REMARKS 1: 65 DEGREE

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

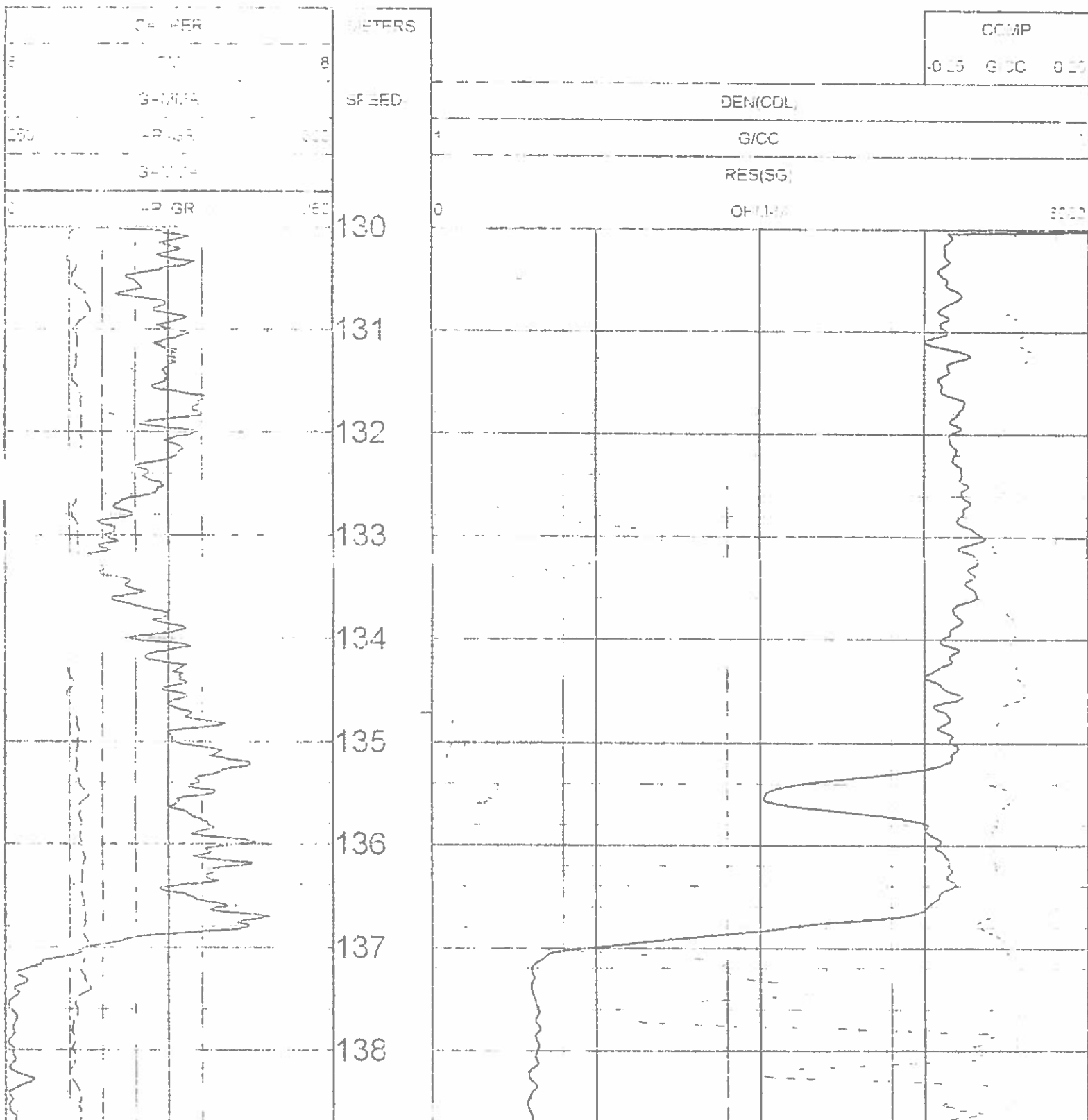
150 BULK DENSITY EXPANDED BR10-08 08/22/10

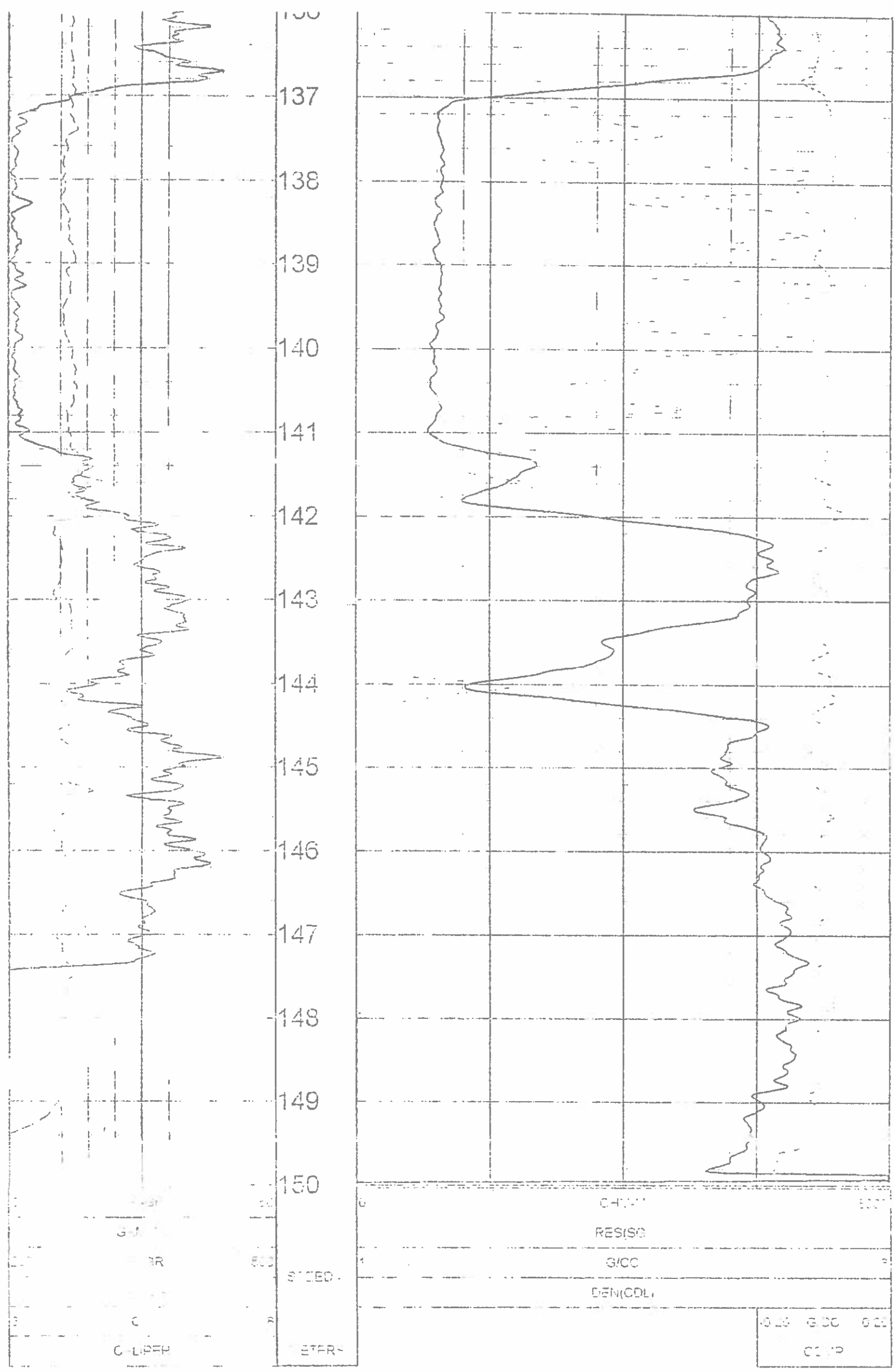
LOG PARAMETERS

WELL: BR10-08
FIELD: BR10-1
DATE: 08/22/10

NEUTRON MATRIX: SANDSTONE
ELECT CUTOFF: 99999
EXPANDED: 07/20/2010

MATRIX DELTA T: 177
BIT SIZE: 11.43
VERSION: 0.6-4R





1.50 BULK DENSITY EXPANDED BR10-08 08/22/10

LOG PARAMETERS

MATRIX DENSITY = 2.650 NEUTRON MATRIX SANDSTONE MATRIX DELTA-T = 177
 MAG. T.D. DEC. FILE # CATCH# 90000 BIT SIZE 1.49
 PRESENTATION DATE = 07/20/2010 VERSION = 3.64HP

DATE	TIME	CONTR	STANDARD	RESPONSE
1	Aug 10 4:00	GEN A	200	APIGR 0.000 (CPS)
2	Jun 04 1:00	GEN A	200	APIGR 630.000 (CPS)
3	Jun 04 1:00	GEN A	200	APIGR 6315.000 (CPS)
4	Jun 04 1:00	GEN A	200	APIGR 6500.000 (CPS)
5	Jun 04 1:00	GEN A	200	APIGR 6525.000 (CPS)

D1115 Jan 4-2011



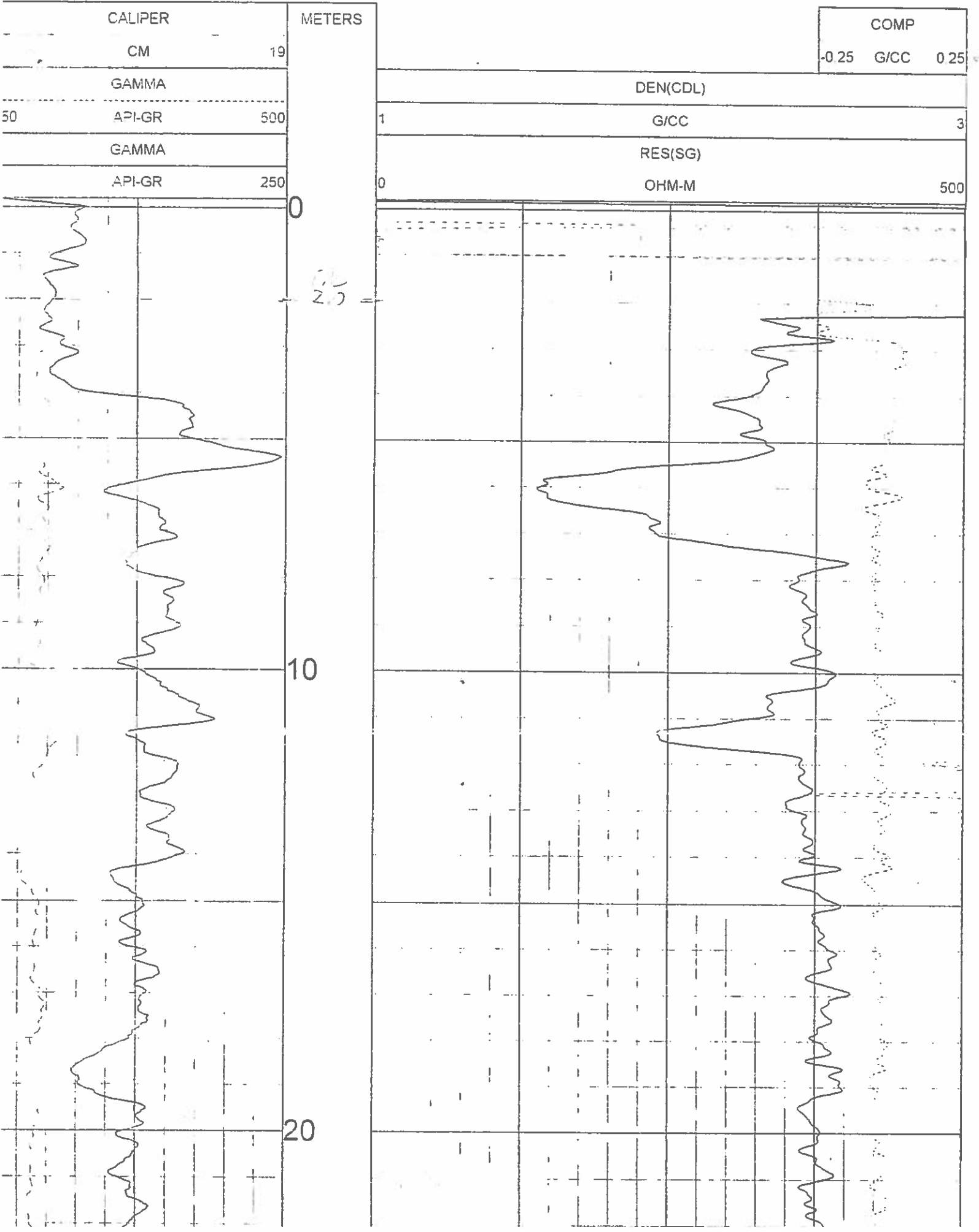
century-geo.com

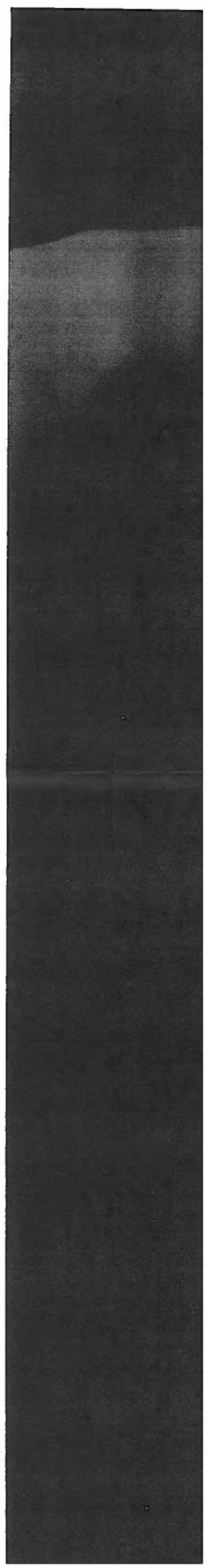
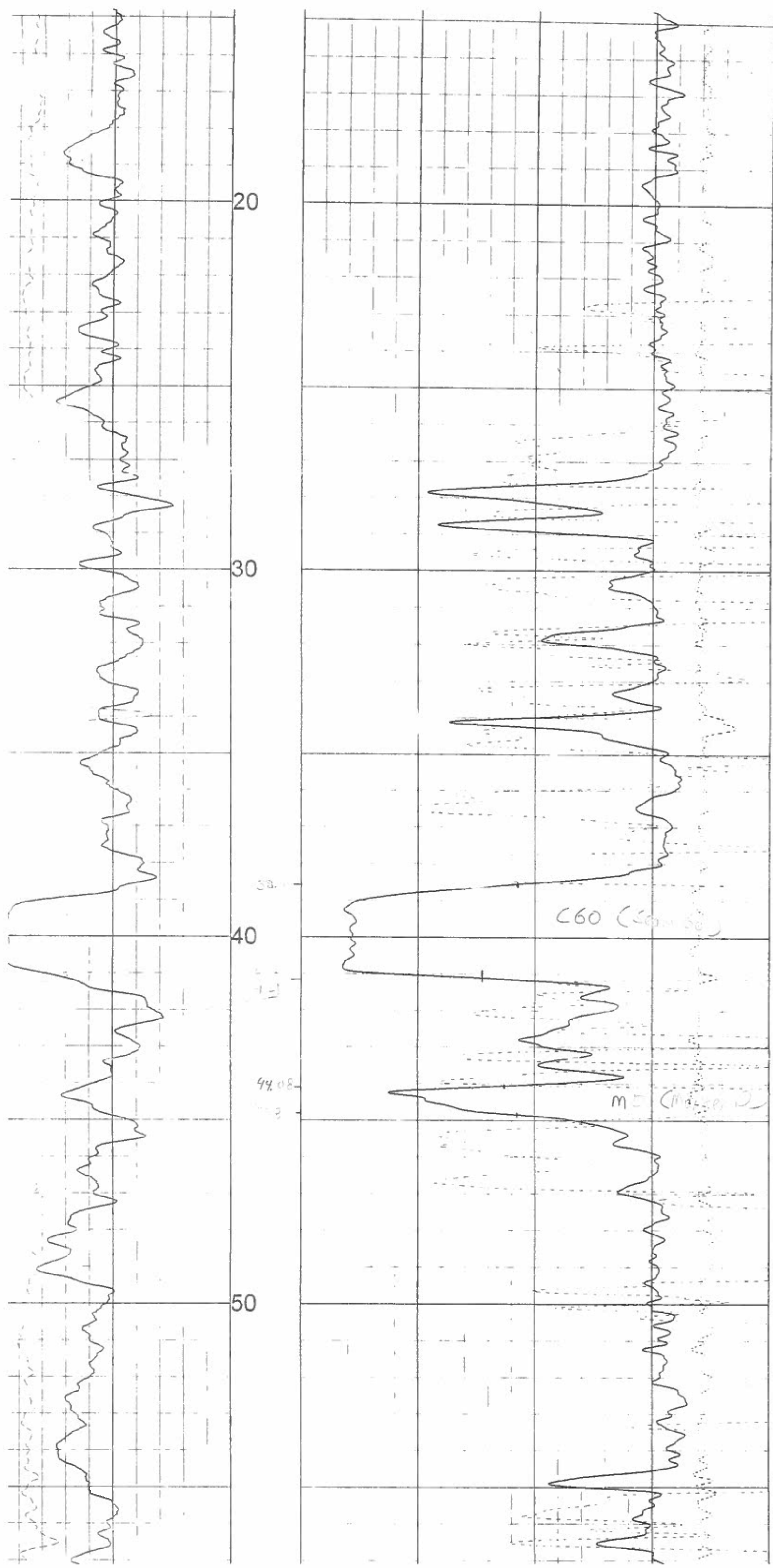
COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-08

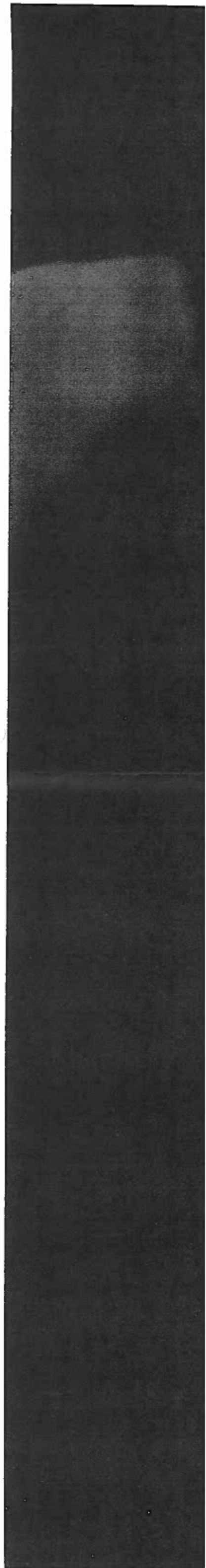
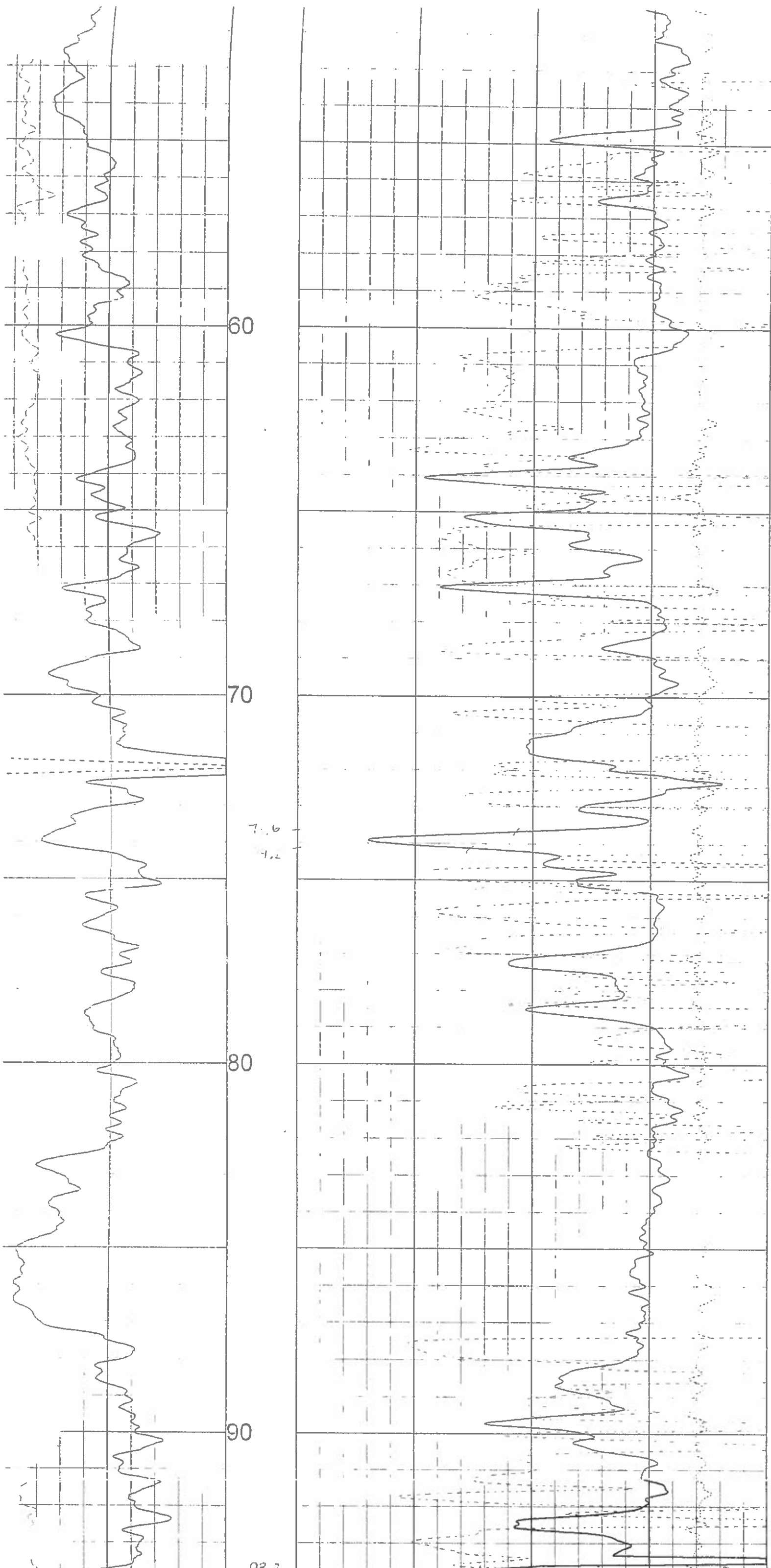
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-08		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LSD	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/22/10	RIG NUMBER	
DEPTH DRILLER	129 54	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	-0.20	DEPARTURE TIME:	
LOG BOTTOM	149.99	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

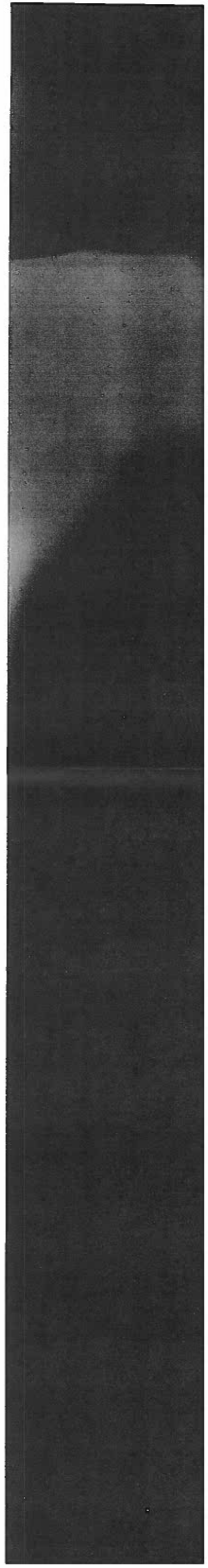
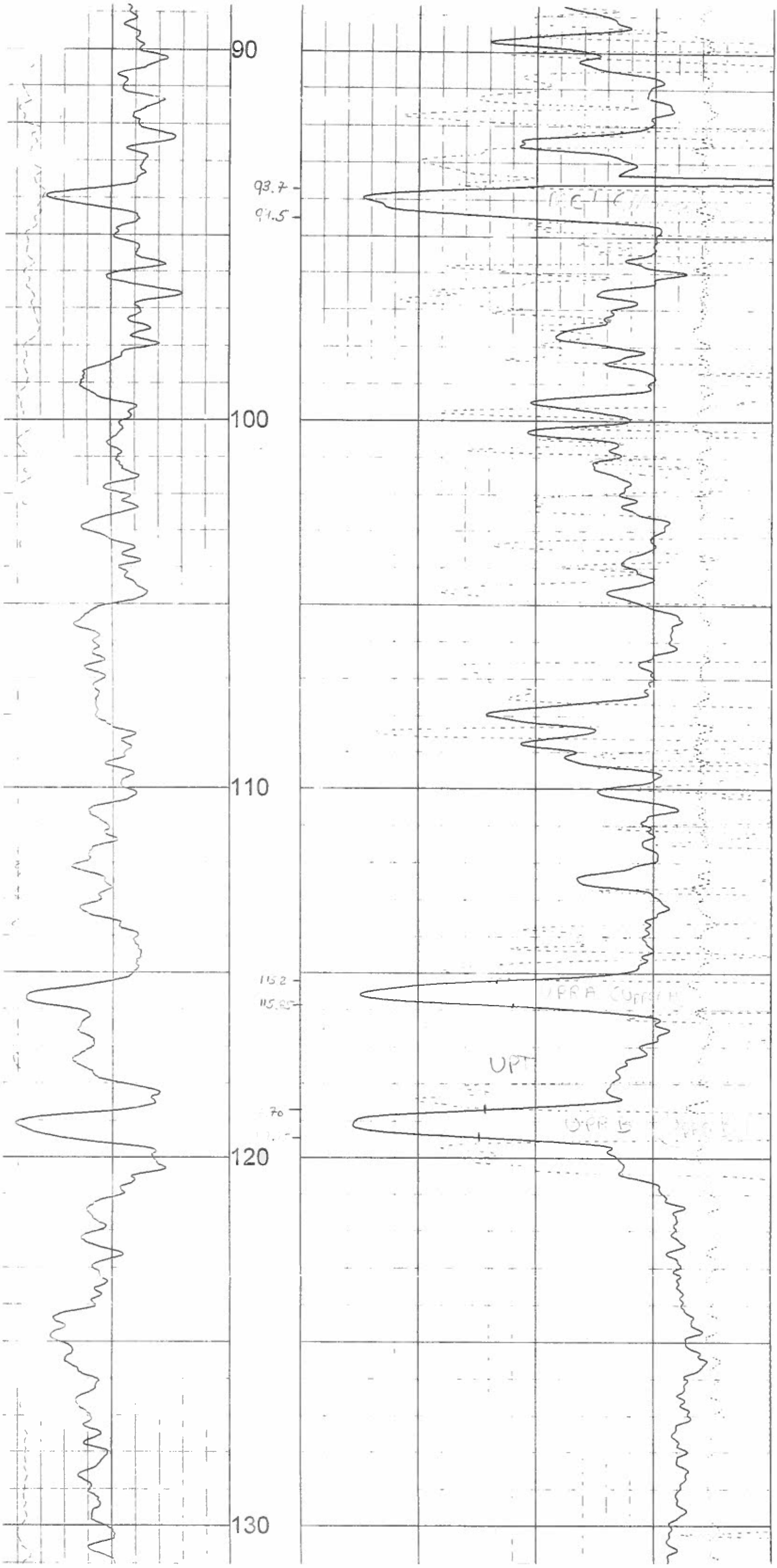
- use casing ascepth of 08 (overburden)

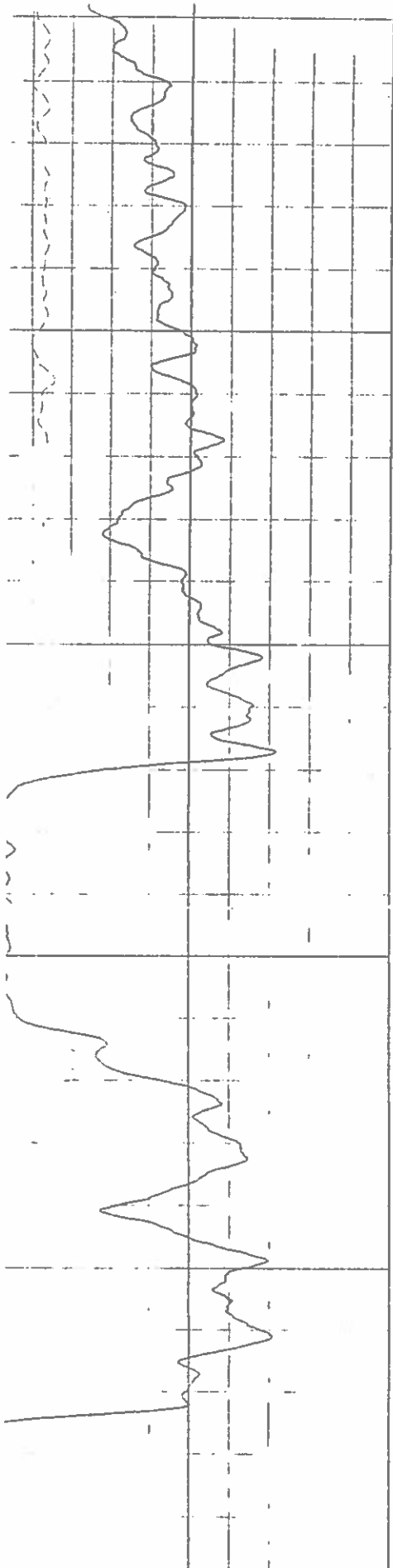
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS







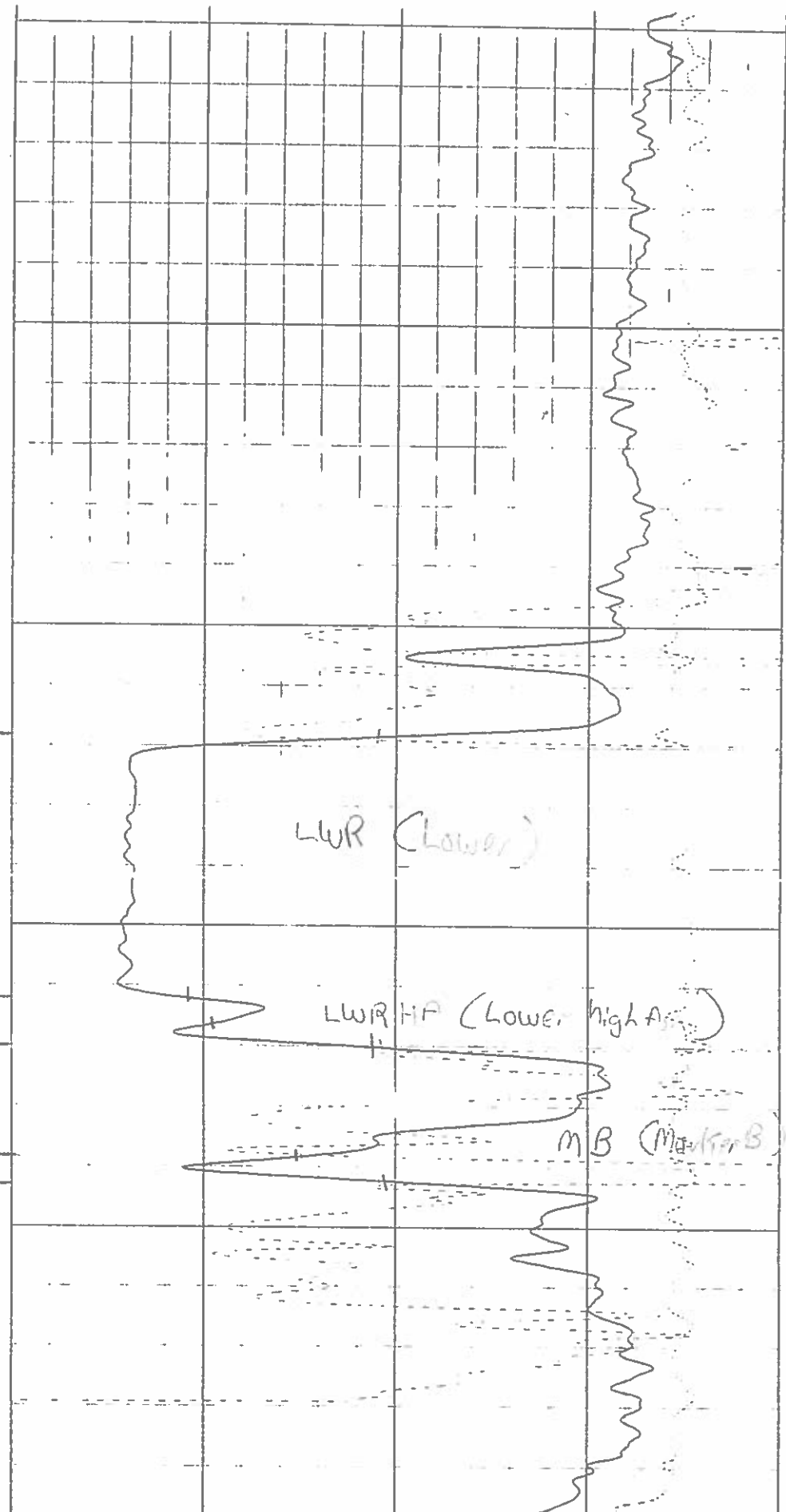




130

140

150



136.8

141.2

142.0

143.8

144.3

API-GR	250
GAMMA	
50 API-GR	500
GAMMA	
CM	19
CALIPER	METERS

0	OHM-M	500
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
	-0.25 G/CC	0.25
	COMP	



Century
WIRELINE SERVICES

GAMMA - NEUTRON
BR10-08

COMPANY WESTERN COAL CORPORATION

OTHER SERVICE
DENSITY

WELL BR10-08

FIELD BRUIF

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

LOCATION BRULE NORTH

SECTION N/A

TOWNSHIP N/A

RANGE N/A

LICENCE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM GL

LOG MEASURED FROM GL

DIPL MEASURED FROM GL

DATE 08/22/10

DEPTH DRILLER 120 54

BIT SIZE 11 43

LOG TOP 2.08

LOG BOTTOM 149.45

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

WITNESSED BY G. HOLMLUND

RECORDED BY T. NEAL

REMARKS 1 55 DEGREE

REMARKS 2

ELEVATION KB N/A
ELEVATION DI N/A
ELEVATION GL N/A

LOG NUMBER

LOGGER TD

ARRIVAL TIME

DEPARTURE TIME

CIRC STOPPED N/A

1:100 NEUTRON BR10-08 08/22/10

LOG PARAMETERS

ELECTRICAL MATRIX SANDSTONE

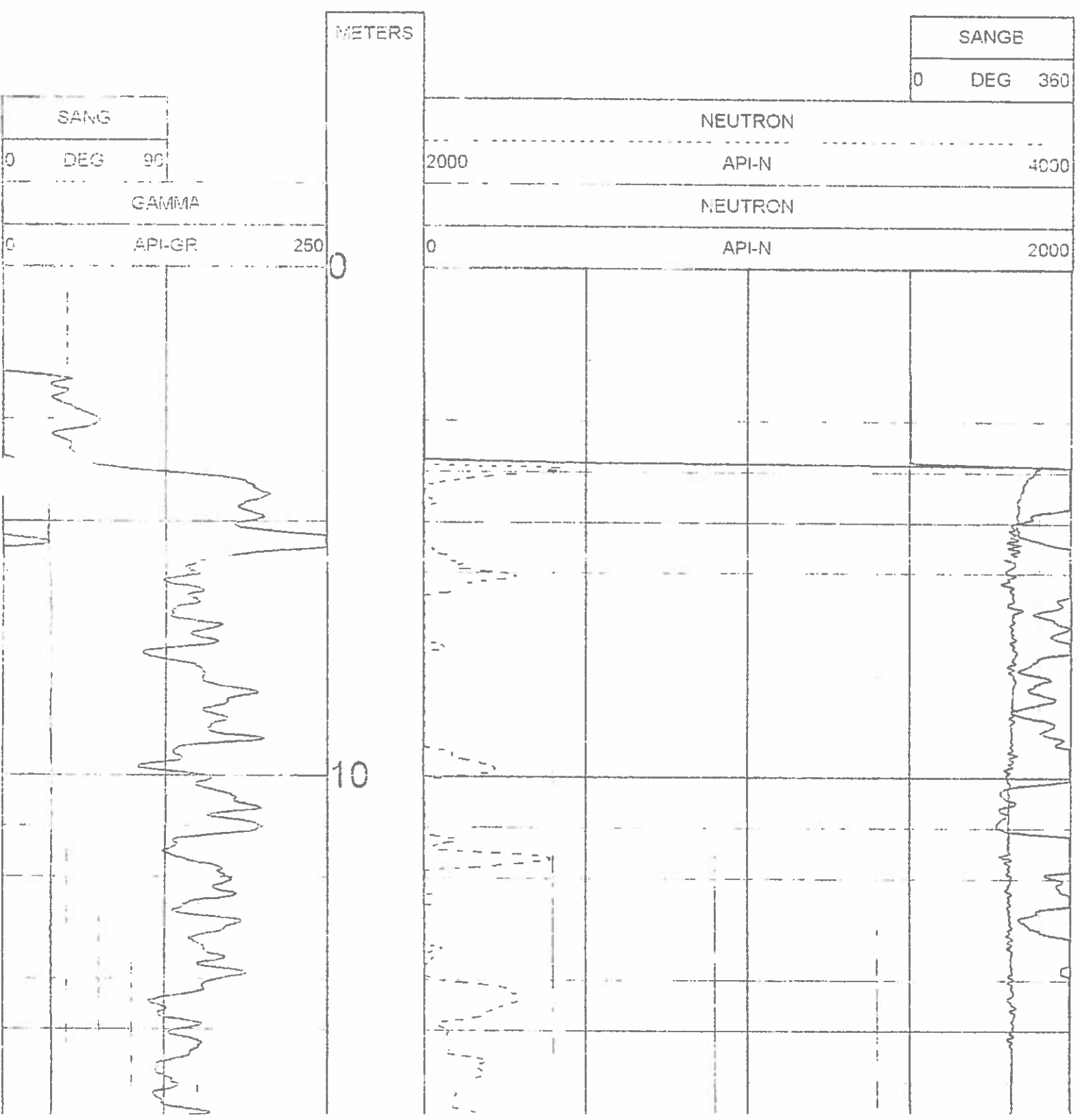
MATRIX DELTA T 177

ELECT CUTOFF 65000

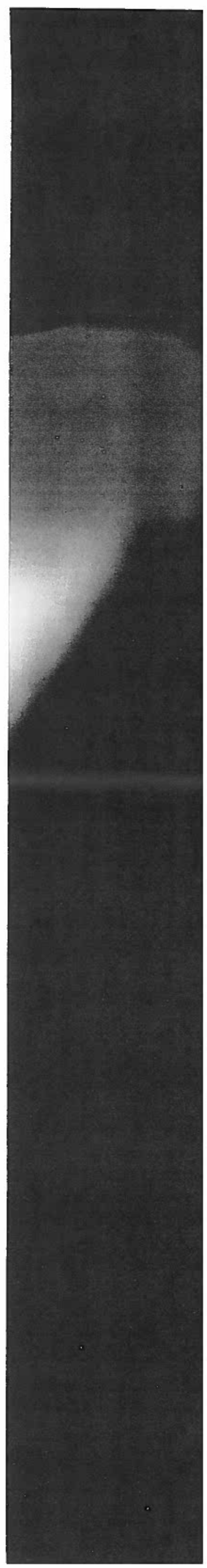
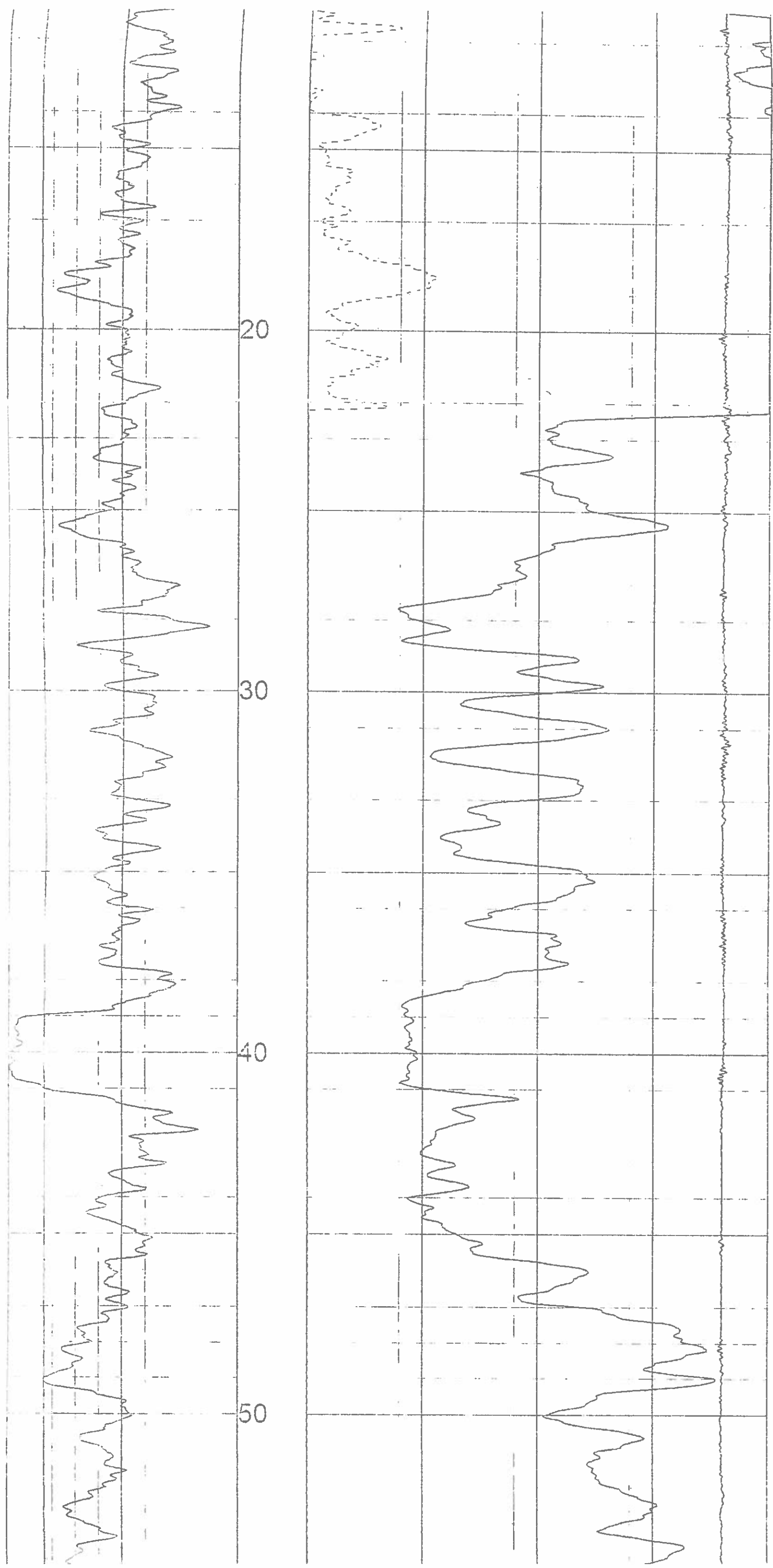
BIT SIZE 11.43

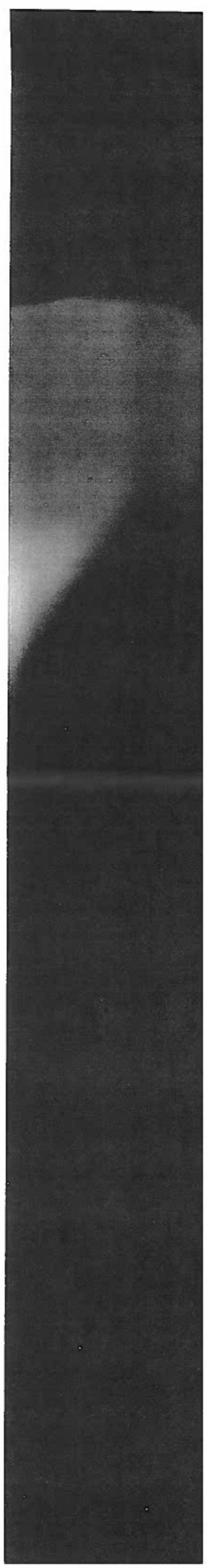
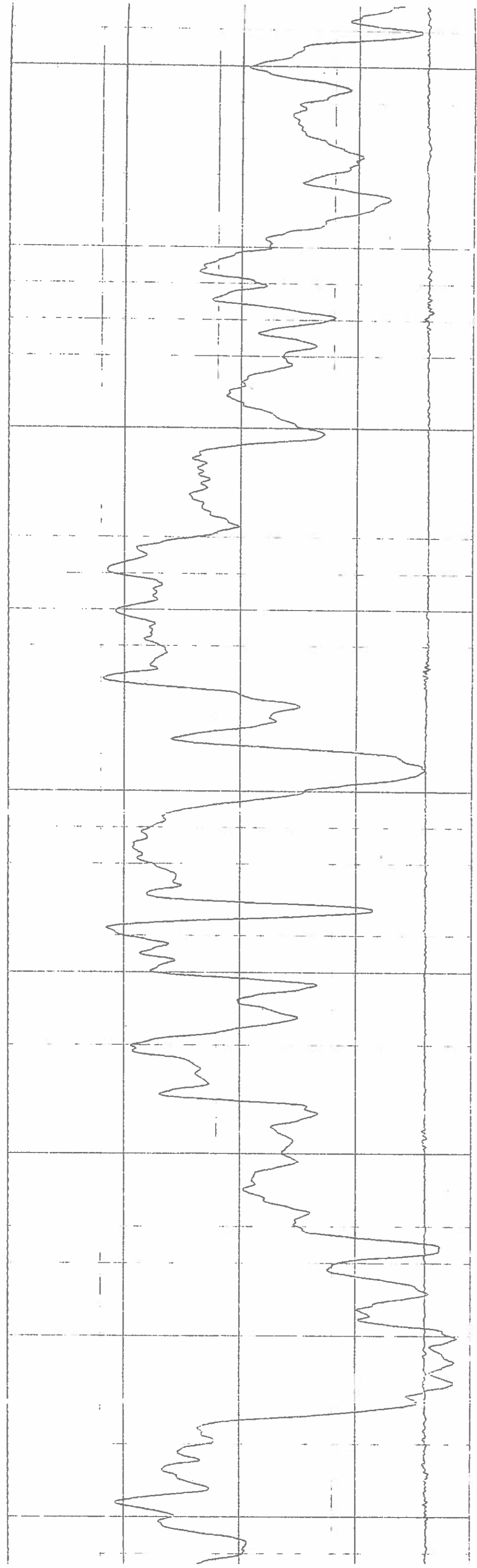
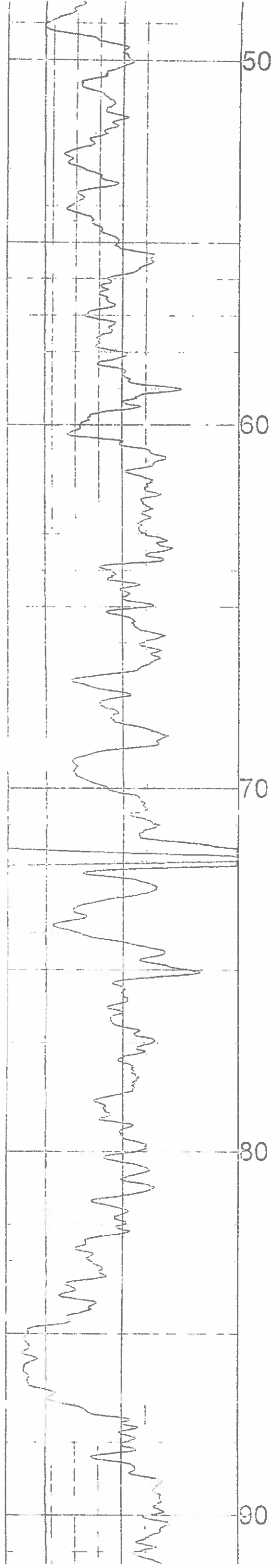
DATE = 08/22/2010

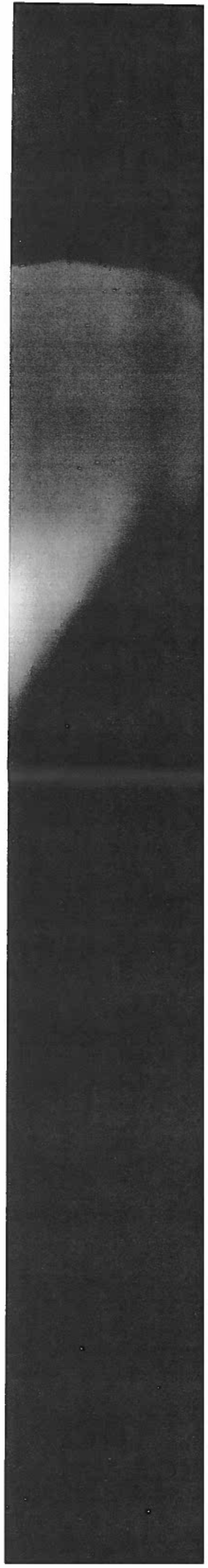
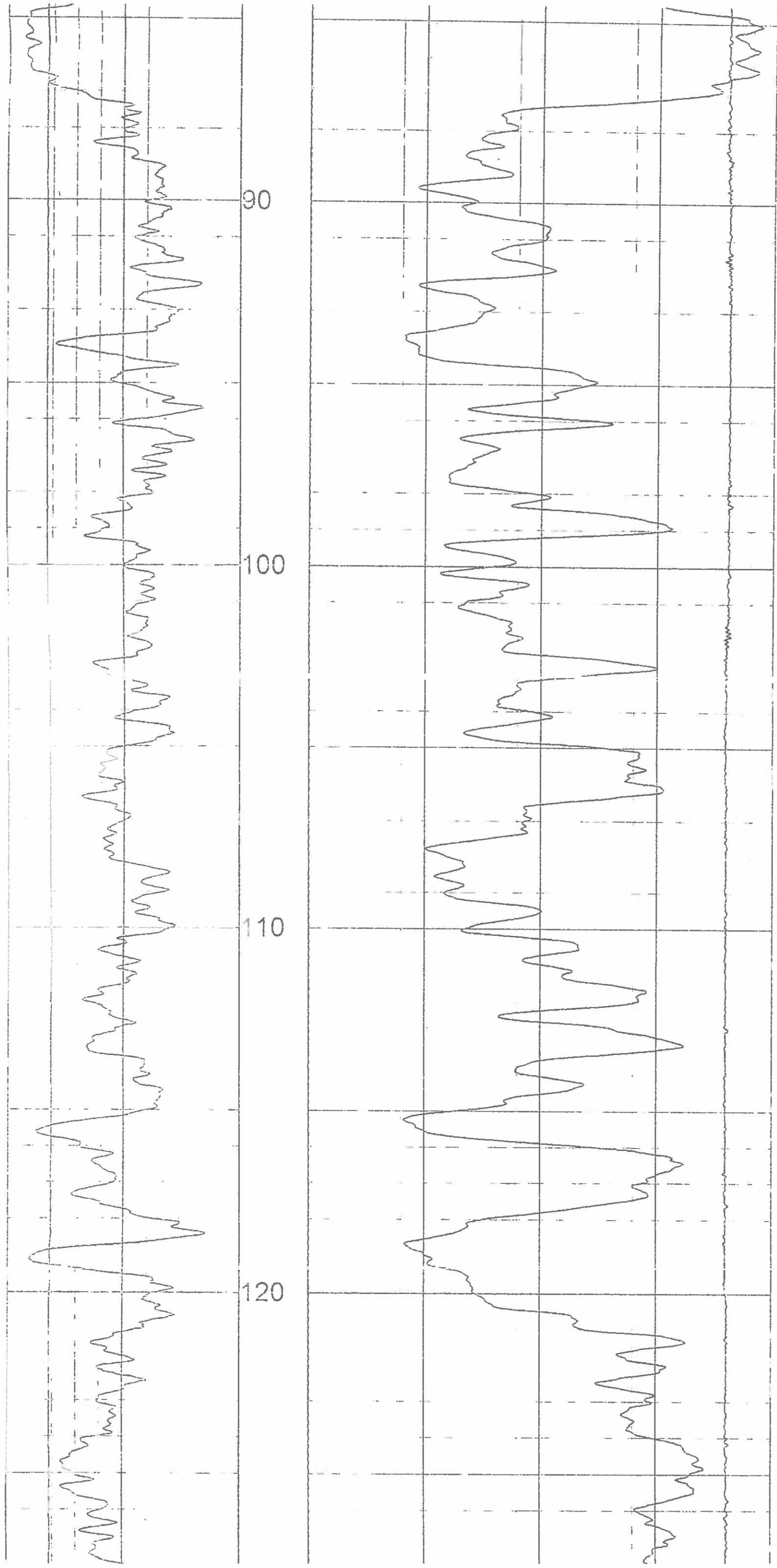
VERSION = 3.64-R

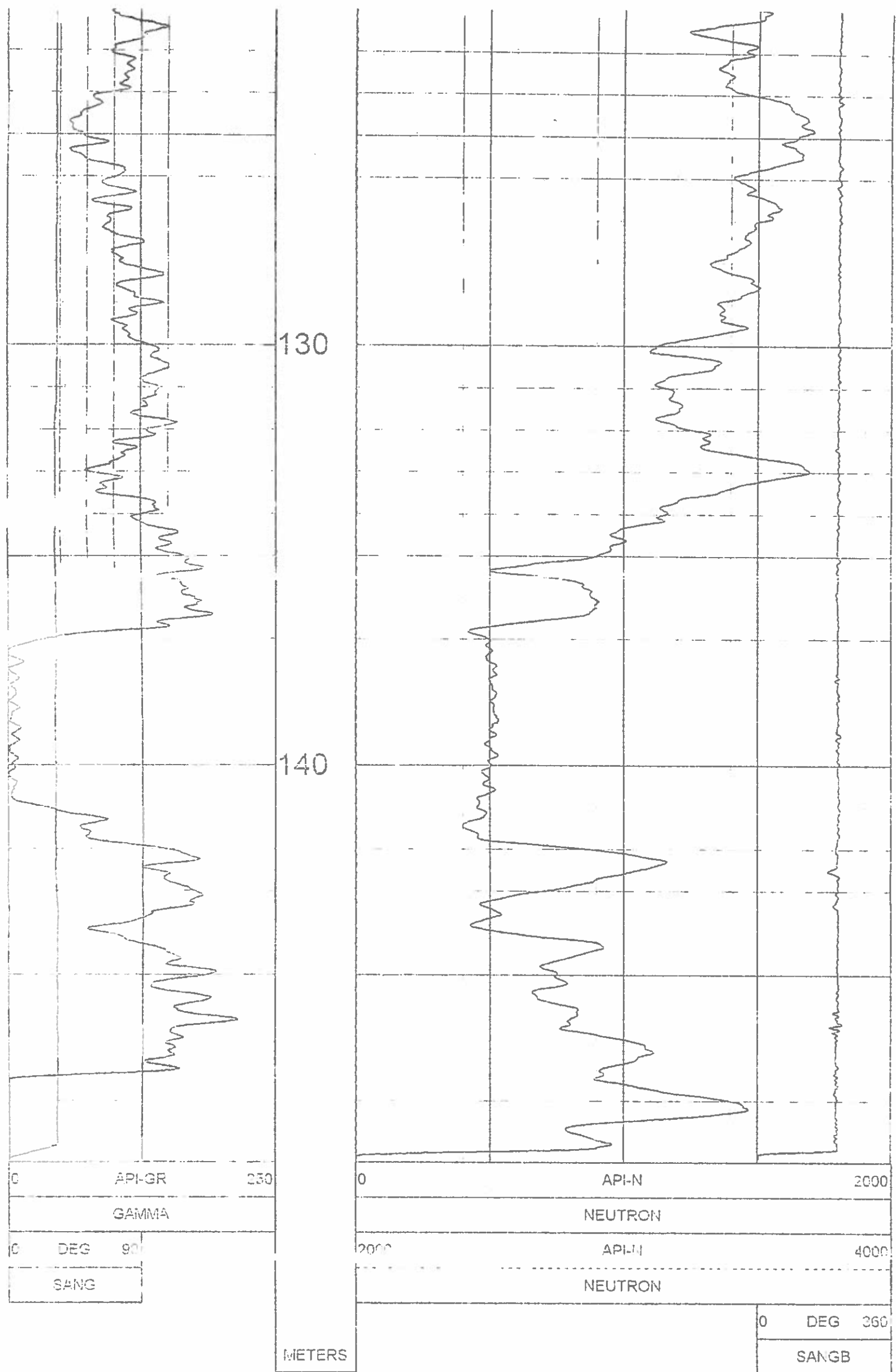


ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS









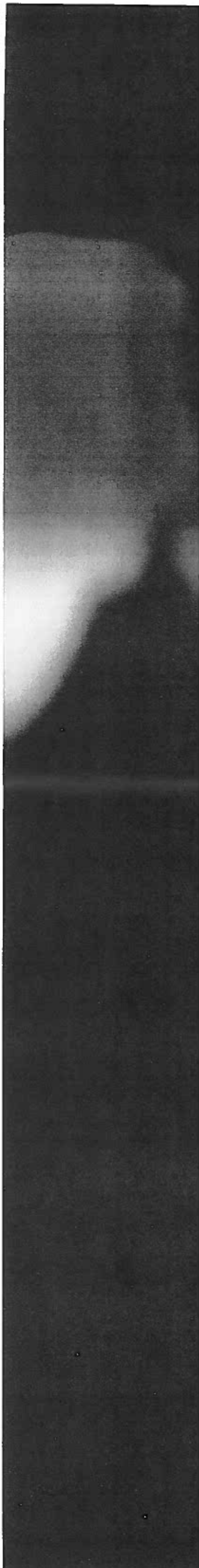
▲ 1.100 NEUTRON BR10-08 08/22/10 ▲

LOG PARAMETERS

WTRADENUM 2 JF	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 177
OPENING DECL 21	ELECT CUTOFF 99999	ET SIZE 11.43
PRESENT DATE TIME = 06/11/10 07:03:20	NEUTRON TO 07/03/2010	VERSION = 3.64HR

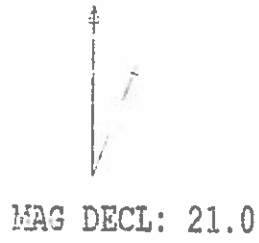
TOOL CALIBRATION BR10-08 08/22/10 09:14
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 1071

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	JUN 15 10	09:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	JUN 15 10	09:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	JUN 11 10	10:36:01	NEUTRON	0.000 [API-N 1]	1.000 [CPS]

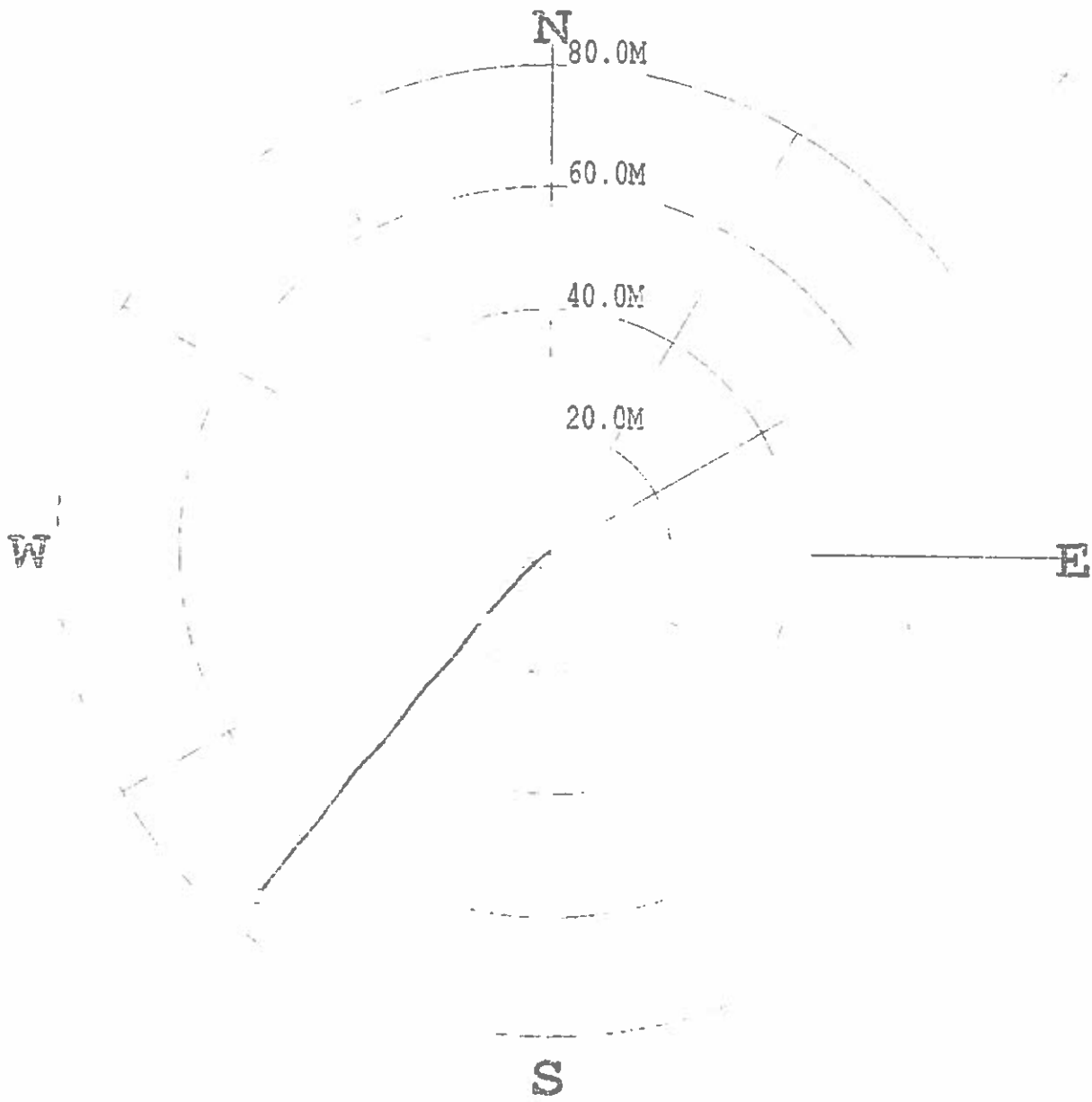


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-08
 DATE OF LOG: 08/22/10
 PROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 128.66 M
 AZIMUTH: 219.8
 DISTANCE: 73.8 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *


CLIENT: WESTERN COAL CORP HOLE ID: BR10-08
 FIELD OFFICE: CENTURY GEO DATE OF LOG: 08/22/10
 DATA FROM: N/A PROBE: 9057A 1071
 MAG. DECL: 21.000 DEPTH UNITS: METERS
 LOG: BR10-08_08-22-10_09-14_9057A_02_2_08_149_45_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.99	0.02	-0.06	0.1	291.2	25.2	286.1
6.00	5.79	-0.37	-0.77	0.9	244.3	25.5	192.8
8.00	7.57	-0.93	-1.45	1.7	237.4	27.1	233.1
10.00	9.36	-1.52	-2.12	2.6	234.4	27.8	218.2
12.00	11.13	-2.21	-2.73	3.5	231.1	27.8	229.5
14.00	12.90	-2.86	-3.37	4.4	229.7	27.0	235.3
16.00	14.68	-3.47	-4.06	5.3	229.5	27.5	228.3
18.00	16.45	-4.10	-4.73	6.3	229.1	27.6	228.3
20.00	18.22	-4.73	-5.34	7.2	228.1	27.9	220.8
22.00	19.99	-5.50	-5.93	8.1	227.2	27.5	214.0
24.00	21.75	-6.14	-6.60	9.0	227.1	28.4	227.1
26.00	23.51	-6.86	-7.22	10.0	226.5	29.9	208.0
28.00	25.28	-7.62	-7.80	10.9	225.7	28.7	223.5
30.00	27.01	-8.34	-8.43	11.9	225.3	29.2	215.4
32.00	28.76	-9.02	-9.08	12.8	225.2	29.0	229.1
34.00	30.50	-9.73	-9.68	13.8	224.7	29.6	217.6
36.00	32.25	-10.56	-10.27	14.7	224.2	29.3	222.0
38.00	34.00	-11.27	-10.91	15.7	224.1	28.9	223.0
40.00	35.75	-11.97	-11.57	16.6	224.0	28.6	224.4
42.00	37.50	-12.72	-12.15	17.6	223.7	29.1	215.9
44.00	39.25	-13.51	-12.73	18.6	223.3	29.5	215.5
46.00	40.99	-14.30	-13.30	19.5	222.9	29.4	217.3
48.00	42.73	-15.10	-13.88	20.5	222.6	30.0	213.8
50.00	44.47	-15.88	-14.46	21.5	222.3	29.6	217.2
52.00	46.21	-16.63	-15.04	22.5	222.0	30.5	221.2
54.00	47.95	-17.46	-15.66	23.5	221.9	30.0	215.9
56.00	49.68	-18.21	-16.32	24.4	221.9	30.2	224.2
58.00	51.41	-18.94	-16.99	25.4	221.9	30.1	221.6
60.00	53.14	-19.68	-17.67	26.4	221.9	30.7	226.3
62.00	54.86	-20.41	-18.36	27.5	222.0	30.3	224.1
64.00	56.59	-21.14	-19.05	28.5	222.0	30.1	223.5
66.00	58.32	-21.87	-19.74	29.5	222.1	30.4	227.1
68.00	60.04	-22.66	-20.36	30.5	221.9	30.9	215.3
70.00	61.76	-23.48	-20.98	31.5	221.8	30.6	215.9
72.00	63.48	-24.28	-21.60	32.5	221.7	30.7	215.6
74.00	65.21	-25.09	-22.22	33.5	221.5	30.7	217.4
76.00	66.92	-25.90	-22.84	34.5	221.4	31.0	218.8
78.00	68.64	-26.71	-23.46	35.6	221.3	30.8	218.0
80.00	70.36	-27.53	-24.07	36.6	221.2	30.8	217.6

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-08
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/22/10
 DATA FROM : N/A PROBE : 9057A 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-08_08-22-10_09-14_9057A_02_2.08_149_45_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.99	0.02	-0.06	0.1	291.2	26.2	286.1
6.00	5.79	-0.37	-0.77	0.9	244.3	25.5	192.8
8.00	7.57	-0.93	-1.45	1.7	237.4	27.1	233.1
10.00	9.36	-1.52	-2.12	2.6	234.4	27.8	218.2
	11.13	-2.21	-2.73	3.5	231.1	27.8	229.5
	12.90	-2.86	-3.37	4.4	229.7	27.0	235.3
16.00	14.68	-3.47	-4.06	5.3	229.5	27.6	228.3
18.00	16.45	-4.10	-4.73	6.3	229.1	27.6	228.3
20.00	18.22	-4.79	-5.34	7.2	228.1	27.9	220.8
22.00	19.99	-5.50	-5.93	8.1	227.2	27.5	214.0
24.00	21.75	-6.14	-6.60	9.0	227.1	28.4	227.1
26.00	23.51	-6.86	-7.22	10.0	226.5	29.9	208.0
28.00	25.26	-7.62	-7.80	10.9	225.7	28.7	223.5
30.00	27.01	-8.34	-8.43	11.9	225.3	29.2	215.4
32.00	28.76	-9.02	-9.08	12.8	225.2	29.0	229.1
34.00	30.50	-9.79	-9.68	13.8	224.7	29.6	217.6
36.00	32.25	-10.56	-10.27	14.7	224.2	29.3	222.0
38.00	34.00	-11.27	-10.91	15.7	224.1	28.9	223.0
40.00	35.75	-11.97	-11.57	16.6	224.0	28.6	224.4
42.00	37.50	-12.72	-12.15	17.6	223.7	29.1	215.9
44.00	39.25	-13.51	-12.73	18.6	223.3	29.5	215.5
46.00	40.99	-14.30	-13.30	19.5	222.9	29.4	217.3
48.00	42.73	-15.10	-13.88	20.5	222.6	30.0	213.8
50.00	44.47	-15.88	-14.46	21.5	222.3	29.6	217.2
52.00	46.21	-16.68	-15.04	22.5	222.0	30.5	221.2
54.00	47.95	-17.46	-15.66	23.5	221.9	30.0	215.9
56.00	49.68	-18.21	-16.32	24.4	221.9	30.2	224.2
58.00	51.41	-18.94	-16.99	25.4	221.9	30.1	221.6
60.00	53.14	-19.68	-17.67	26.4	221.9	30.7	226.3
62.00	54.86	-20.41	-18.36	27.5	222.0	30.3	224.1
64.00	56.59	-21.14	-19.05	28.5	222.0	30.1	223.5
66.00	58.32	-21.87	-19.74	29.5	222.1	30.4	227.1
68.00	60.04	-22.66	-20.36	30.5	221.9	30.9	215.3
70.00	61.76	-23.48	-20.98	31.5	221.8	30.6	215.9
72.00	63.48	-24.26	-21.60	32.5	221.7	30.7	215.6
74.00	65.21	-25.09	-22.22	33.5	221.5	30.7	217.4
76.00	66.92	-25.90	-22.84	34.5	221.4	31.0	218.8
78.00	68.64	-26.71	-23.46	35.6	221.3	30.8	218.0
80.00	70.36	-27.53	-24.07	36.6	221.2	30.8	217.6
82.00	72.08	-28.34	-24.69	37.6	221.1	30.8	216.8
84.00	73.79	-29.16	-25.32	38.6	221.0	30.7	217.3
86.00	75.50	-29.98	-25.95	39.6	220.9	31.4	220.0
88.00	77.22	-30.79	-26.58	40.7	220.8	31.2	208.0
90.00	78.93	-31.59	-27.23	41.7	220.8	31.3	212.9
92.00	80.63	-32.38	-27.92	42.7	220.8	31.7	227.8
94.00	82.33	-33.12	-28.65	43.8	220.9	31.9	225.6
96.00	84.03	-33.88	-29.38	44.8	220.9	32.0	226.2
98.00	85.73	-34.65	-30.09	45.9	221.0	32.0	228.7
100.00	87.43	-35.42	-30.81	46.9	221.0	31.2	219.0
102.00	89.13	-36.20	-31.50	48.0	221.0	32.1	182.9
104.00	90.81	-37.07	-32.14	49.1	220.9	32.6	217.1
106.00	92.49	-37.96	-32.75	50.1	220.8	32.9	212.6
108.00	94.17	-38.84	-33.40	51.2	220.7	33.4	215.9
110.00	95.84	-39.73	-34.05	52.3	220.6	32.9	228.9
112.00	97.49	-40.63	-34.70	53.4	220.5	34.0	215.9
114.00	99.15	-41.53	-35.37	54.5	220.4	34.0	218.6
116.00	100.81	-42.44	-36.03	55.7	220.3	34.2	217.4
118.00	102.46	-43.34	-36.70	56.8	220.3	34.7	217.5
120.00	104.11	-44.26	-37.35	57.9	220.2	33.8	215.9
122.00	105.77	-45.09	-38.07	59.0	220.2	33.6	219.7
124.00	107.44	-45.94	-38.78	60.1	220.2	33.1	214.8
126.00	109.10	-46.79	-39.50	61.2	220.2	33.8	216.5
128.00	110.77	-47.63	-40.22	62.3	220.2	33.4	218.2
130.00	112.43	-48.48	-40.92	63.4	220.2	33.7	216.1
132.00	114.10	-49.33	-41.62	64.5	220.2	32.6	218.9
134.00	115.78	-50.18	-42.29	65.6	220.1	32.9	217.9
136.00	117.47	-51.02	-42.95	66.7	220.1	32.4	220.5
138.00	119.16	-51.87	-43.61	67.8	220.1	32.9	189.3
140.00	120.85	-52.69	-44.28	68.8	220.0	32.1	230.4
142.00	122.55	-53.51	-44.95	69.9	220.0	31.7	212.4
144.00	124.23	-54.38	-45.57	70.9	220.0	32.7	219.2
146.00	125.92	-55.23	-46.22	72.0	219.9	32.7	224.4
148.00	127.60	-56.12	-46.81	73.1	219.8	32.8	215.1
149.26	128.66	-56.68	-47.19	73.8	219.8	32.7	215.8

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-09	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,567.22	6,140,343.02	1,271.84

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
127	-90	214.60	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: slim tool

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	126.6	-89.60
21.00	126.3	-89.20
22.00	125.5	-88.90
23.00	123.6	-88.90
24.00	120.6	-88.70
25.00	117.7	-88.70
26.00	115.2	-88.90
27.00	112.3	-88.60
28.00	109.8	-88.60
29.00	107.3	-88.30
30.00	104.7	-88.30
31.00	102.3	-88.00
32.00	99.9	-87.60
33.00	97.0	-87.50
34.00	93.8	-87.40
35.00	91.1	-87.50
36.00	88.4	-87.10
37.00	85.8	-87.00
38.00	83.9	-87.20
39.00	82.1	-86.90
40.00	80.3	-86.30
41.00	78.9	-86.30
42.00	77.8	-86.50
43.00	76.5	-85.90
44.00	74.9	-85.40
45.00	73.3	-85.40
46.00	71.8	-85.40

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	11.10	11.10		
73.90	76.80	2.90		
79.10	79.80	0.70		
142.00	142.80	0.80		
168.10	168.60	0.50		
190.60	191.40	0.80		
191.40	193.50	2.10		
193.50	194.60	1.10		
203.40	203.90	0.50		
205.70	209.60	3.90		
209.60	210.50	0.90		
211.60	212.20	0.60		

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-09**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

47.00	70.4	-85.60
48.00	69.2	-85.60
49.00	68.0	-85.10
50.00	66.9	-85.20
51.00	65.9	-85.30
52.00	64.9	-85.40
53.00	64.0	-85.30
54.00	63.1	-85.30
55.00	62.2	-85.30
56.00	61.5	-85.40
57.00	60.7	-85.50
58.00	60.0	-85.50
59.00	59.3	-85.70
60.00	58.6	-85.60
61.00	57.8	-85.10
62.00	57.0	-85.40
63.00	56.2	-85.20
64.00	55.2	-84.30
65.00	54.3	-84.10
66.00	53.3	-84.10
67.00	52.4	-83.60
68.00	51.6	-83.40
69.00	50.7	-82.90
70.00	49.9	-83.20
71.00	49.2	-83.10
72.00	48.5	-82.80
73.00	47.8	-82.60
74.00	47.2	-82.20
75.00	46.6	-82.10
76.00	46.0	-82.00
77.00	45.5	-81.90
78.00	45.0	-81.80
79.00	44.5	-81.70
80.00	44.0	-81.70
81.00	43.6	-81.20
82.00	43.2	-80.90
83.00	42.8	-80.70
84.00	42.5	-80.40
85.00	42.1	-80.10
86.00	41.8	-79.70
87.00	41.5	-79.60
88.00	41.2	-79.20
89.00	41.0	-78.80
90.00	40.7	-78.70
91.00	40.5	-78.40

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-09	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

92.00	40.3	-78.20
93.00	40.1	-77.90
94.00	39.8	-77.60
95.00	39.6	-77.60
96.00	39.4	-77.30
97.00	39.3	-77.00
98.00	39.1	-76.60
99.00	38.9	-76.60
100.00	38.8	-76.50
101.00	38.7	-76.20
102.00	38.6	-76.10
103.00	38.5	-76.10
104.00	38.4	-76.10
105.00	38.3	-76.30
106.00	38.2	-75.90
107.00	38.2	-75.90
108.00	38.1	-75.90
109.00	38.1	-75.80
110.00	38.1	-75.30
111.00	38.1	-75.20
112.00	38.1	-75.10
113.00	38.2	-75.00
114.00	38.2	-74.90
115.00	38.3	-74.90
116.00	38.3	-75.00
117.00	38.4	-75.00
118.00	38.4	-75.20
119.00	38.5	-75.00
120.00	38.6	-75.40
121.00	38.6	-75.40
122.00	38.7	-75.40
123.00	38.8	-75.20
124.00	38.8	-75.10
125.00	38.9	-75.00
126.00	39.0	-75.00
127.00	39.1	-75.00
128.00	39.1	-74.90
129.00	39.2	-74.90
130.00	39.2	-74.80
131.00	39.3	-74.70
132.00	39.4	-74.70
133.00	39.4	-74.60
134.00	39.5	-74.00
135.00	39.5	-73.70
136.00	39.6	-73.60

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

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 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-09	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	--------------------------------------

137.00	39.6	-73.10
138.00	39.7	-72.90
139.00	39.8	-72.60
140.00	39.8	-72.20
141.00	39.9	-71.80
142.00	40.0	-71.30
143.00	40.0	-71.10
144.00	40.1	-70.90
145.00	40.2	-70.60
146.00	40.2	-70.40
147.00	40.3	-70.00
148.00	40.4	-69.30
149.00	40.4	-69.40
150.00	40.5	-68.60
151.00	40.5	-69.20
152.00	40.6	-68.90
153.00	40.7	-69.00
154.00	40.7	-69.20
155.00	40.8	-68.90
156.00	40.8	-68.40
157.00	40.9	-67.80
158.00	40.9	-67.50
159.00	41.0	-67.40
160.00	41.0	-66.90
161.00	41.0	-67.10
162.00	41.1	-66.60
163.00	41.1	-66.10
164.00	41.1	-65.60
165.00	41.1	-65.50
166.00	41.2	-65.60
167.00	41.2	-64.70
168.00	41.3	-64.50
169.00	41.3	-64.10
170.00	41.3	-63.60
171.00	41.4	-63.30
172.00	41.4	-62.60
173.00	41.4	-61.70
174.00	41.4	-61.30
175.00	41.5	-60.80
176.00	41.5	-59.80
177.00	41.5	-59.50
178.00	41.6	-59.00
179.00	41.6	-58.80
180.00	41.6	-58.40
181.00	41.6	-57.90

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

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 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-09	year drilled: 2010	AREA: BURNT RIVER BRULE
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182.00	41.6	-57.70
183.00	41.7	-56.60
184.00	41.7	-56.20
185.00	41.8	-55.70
186.00	41.8	-55.30
187.00	41.8	-54.80
188.00	41.9	-54.20
189.00	41.9	-54.10
190.00	42.0	-53.00
191.00	42.0	-52.50
192.00	42.0	-52.10
193.00	42.1	-51.80
194.00	42.1	-51.50
195.00	42.2	-51.00
196.00	42.2	-50.40
197.00	42.2	-50.70
198.00	42.3	-50.50
199.00	42.3	-50.50
200.00	42.3	-50.50
201.00	42.4	-50.10
202.00	42.4	-49.80
203.00	42.4	-48.60
204.00	42.5	-49.20
205.00	42.5	-49.30
206.00	42.5	-48.60
207.00	42.6	-48.90
208.00	42.6	-48.40
209.00	42.6	-48.00
210.00	42.7	-48.20
211.00	42.7	-48.20
212.00	42.7	-48.00
213.00	42.7	-47.10
214.00	42.7	-47.30
214.38	42.7	-47.40

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014 Reviewed: October 11, 2002

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DETAILED DENSITY GAMMA - CALIPER - RES. BR10-09

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR10-09		
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
API NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/31/10	RIG NUMBER	
DEPTH DRILLER	230 12	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	-0.07	DEPARTURE TIME	
LOG BOTTOM	214.60	CIRC STOPPED	N/A
CASING OD	12.19		
CASING BOTTOM	12.19		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	B. SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

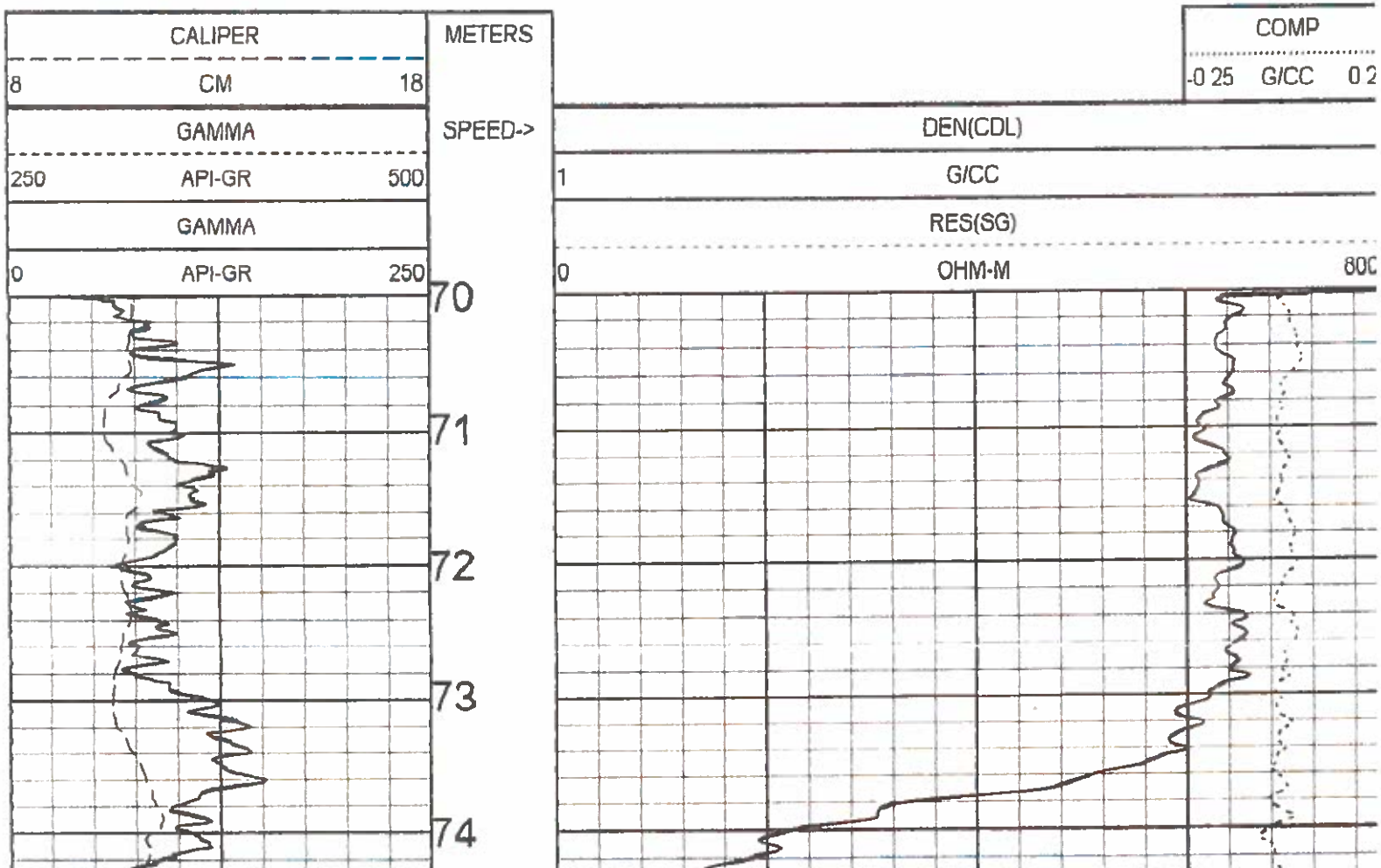
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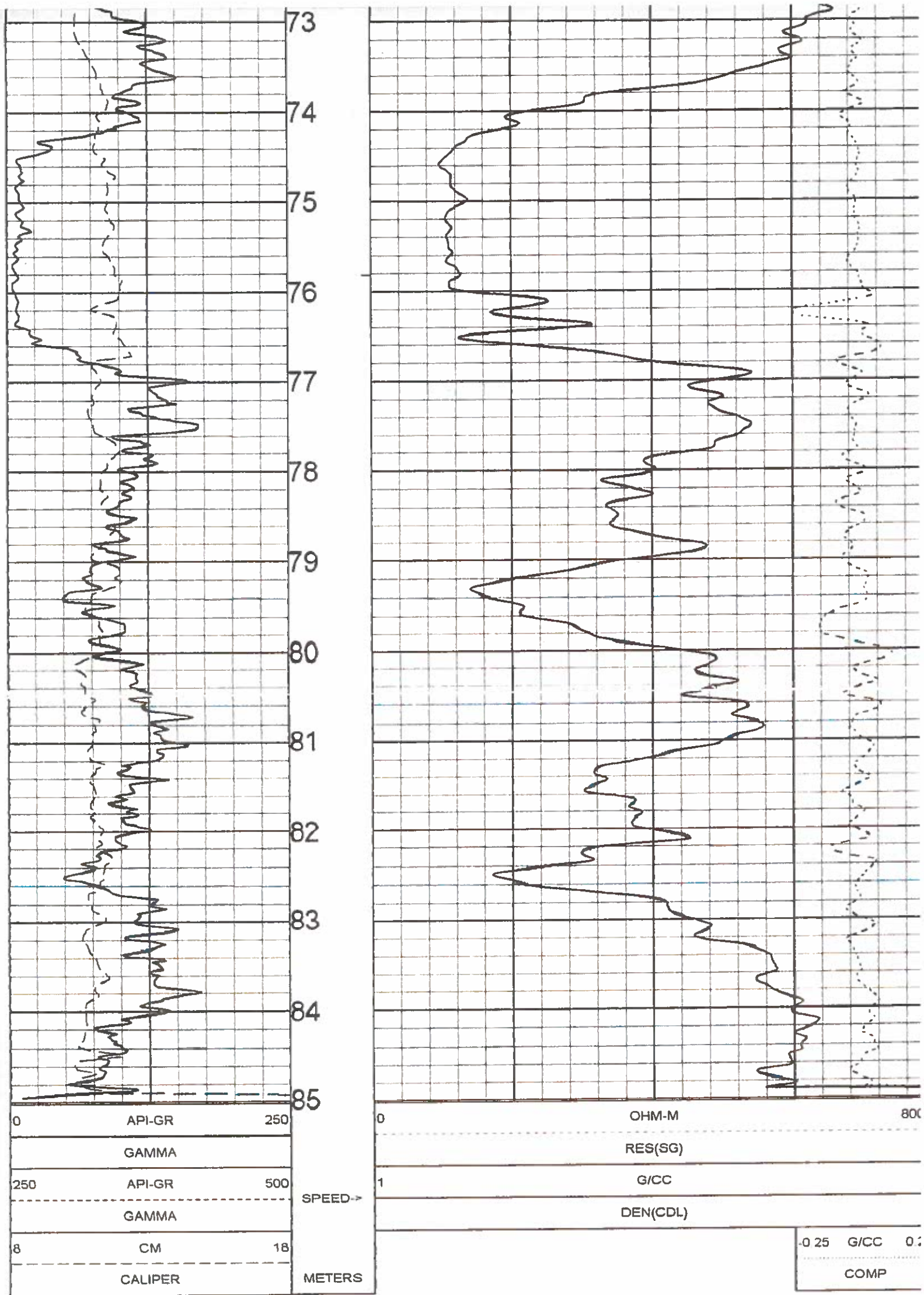
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.641C





1:50 BULK DENSITY EXPANDED BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64C

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64IC

1:50 BULK DENSITY EXPANDED BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

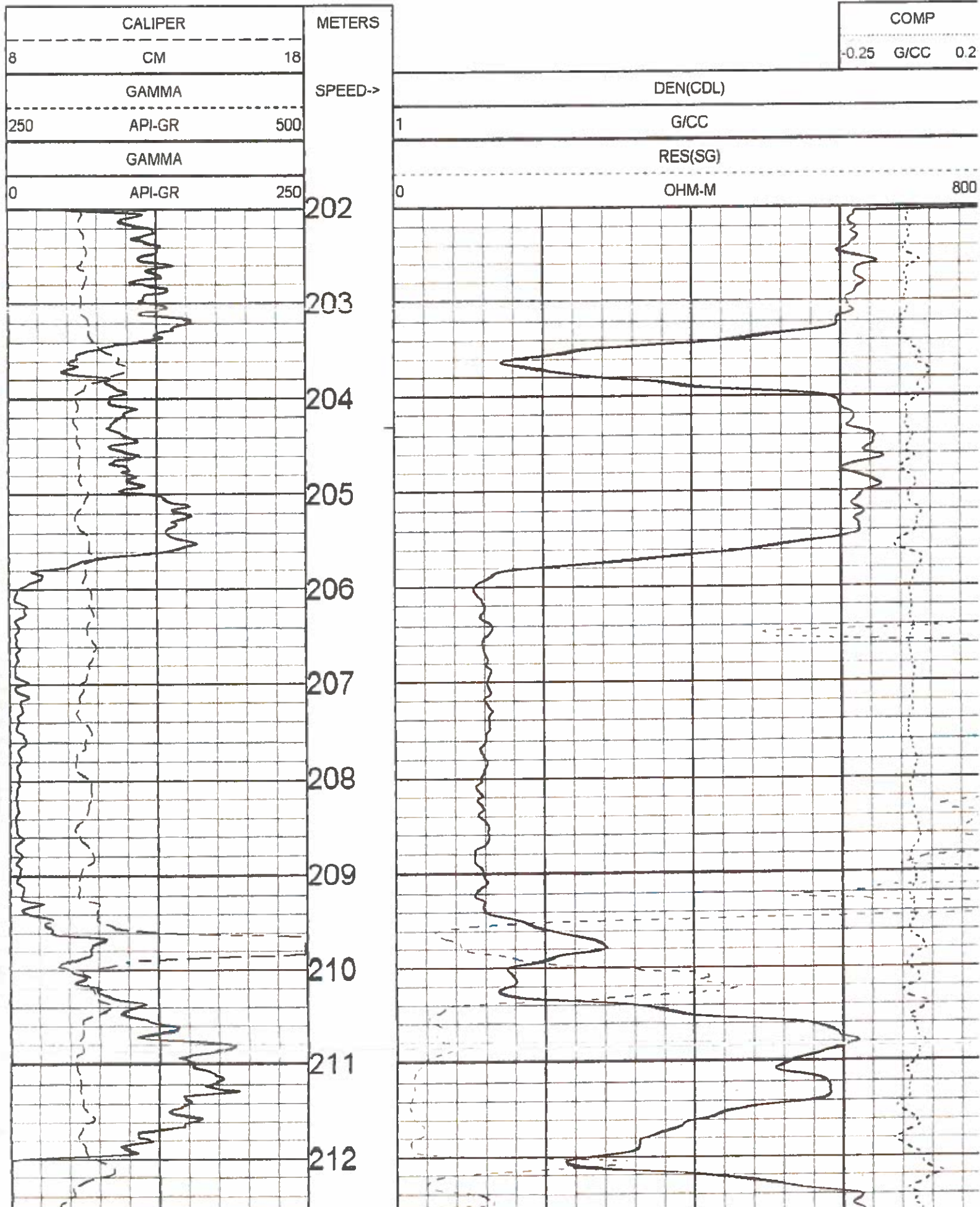
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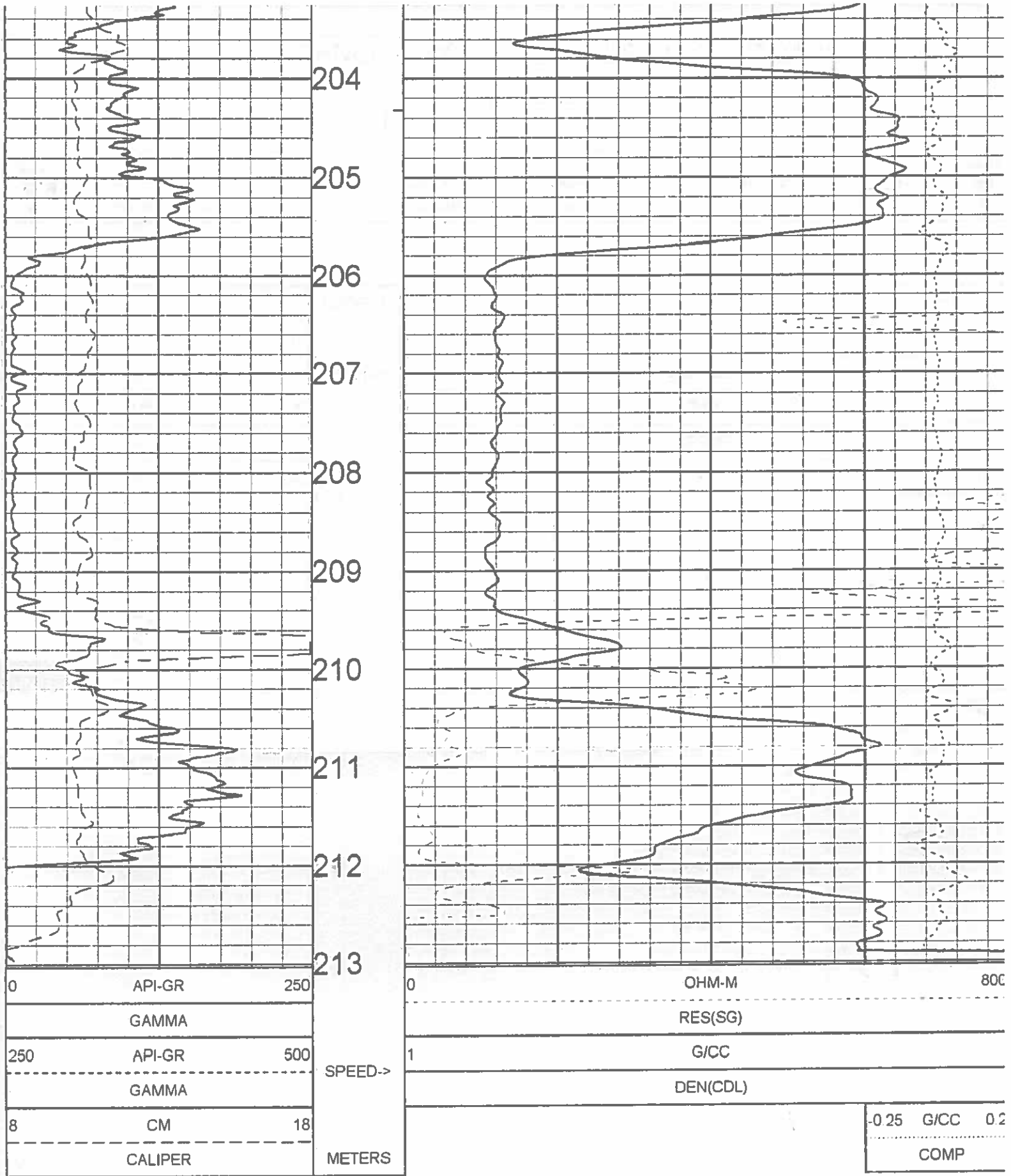
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BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64IC





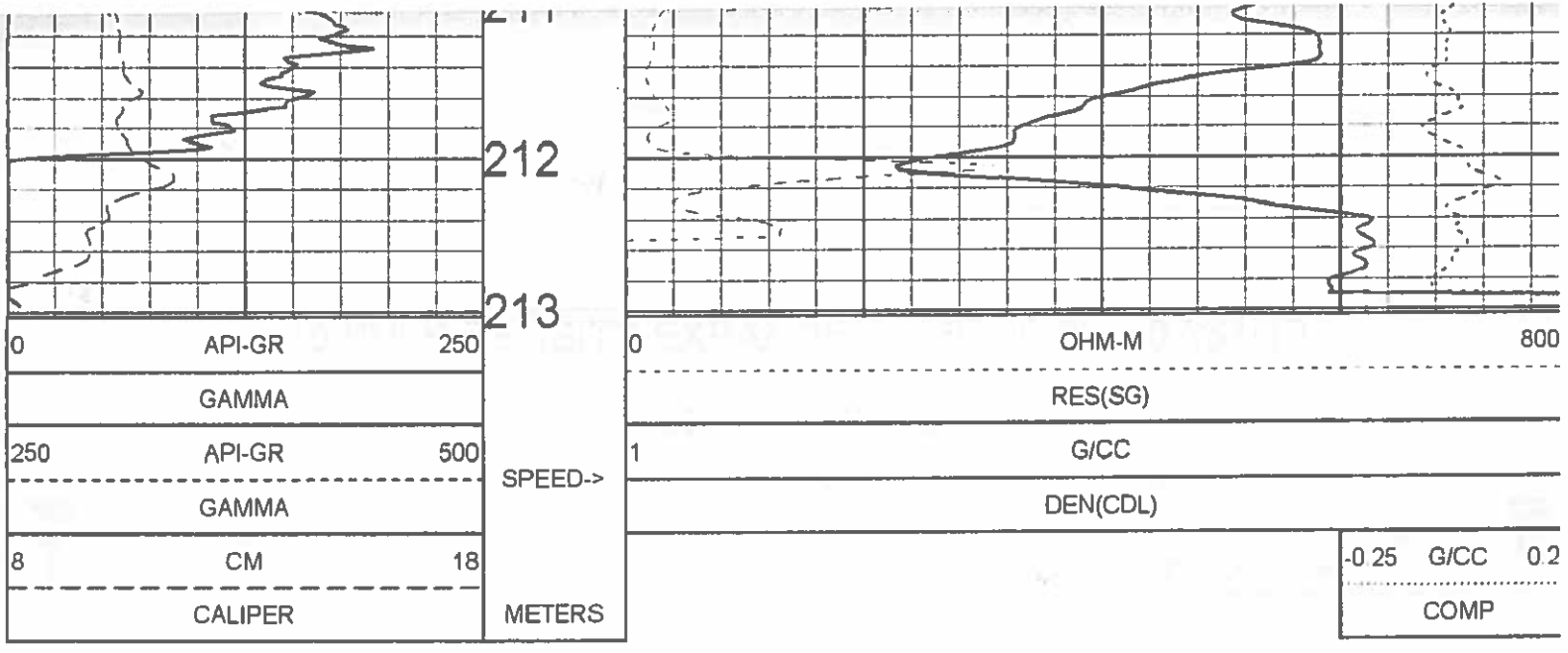
1:50 BULK DENSITY EXPANDED BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010 VERSION = 3.64IC

TOOL CALIBRATION BR10-09 07/31/10 17:11
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 957

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul13.10	11:52:09	GAMMA	5.000 [API-GR]	0.000 [CPS]
	Jul13.10	11:52:09	GAMMA	545.000 [API-GR]	501.000 [CPS]
2	Jun11.10	11:10:27	VOLTAGE	31.300 [MV]	8340.000 [CPS]
	Jun11.10	11:10:27	VOLTAGE	240.800 [MV]	35818.000 [CPS]



1:50 BULK DENSITY EXPANDED BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64IC

TOOL CALIBRATION BR10-09 07/31/10 17:11
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 957

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul13,10	11:52:09	GAMMA	5.000 [API-GR]	0.000 [CPS]
	Jul13,10	11:52:09	GAMMA	545.000 [API-GR]	501.000 [CPS]
2	Jun11,10	11:10:27	VOLTAGE	31.300 [MV]	8340.000 [CPS]
	Jun11,10	11:10:27	VOLTAGE	240.800 [MV]	35818.000 [CPS]
3	Jun11,10	10:38:42	CALIPER	8.890 [MM]	137560.000 [CPS]
	Jun11,10	10:38:42	CALIPER	15.240 [MM]	284114.000 [CPS]
4	Jul13,10	11:29:20	DEN(LS)	1.620 [G/CC]	14973.000 [CPS]
	Jul13,10	11:29:20	DEN(LS)	2.612 [G/CC]	2121.000 [CPS]
5	Jul13,10	11:29:34	DEN(SS)	1.590 [G/CC]	70570.000 [CPS]
	Jul13,10	11:29:34	DEN(SS)	2.580 [G/CC]	30114.000 [CPS]
6	Jun11,10	10:45:54	CALIPERL	12.700 [MM]	142036.000 [CPS]
	Jun11,10	10:45:54	CALIPERL	22.800 [MM]	256447.000 [CPS]
7	Jun11,10	11:18:09	CURRENT	31.300 [UA]	7970.000 [CPS]
	Jun11,10	11:18:09	CURRENT	240.800 [UA]	23909.000 [CPS]
8	Dec14,09	16:14:58	F	Default [CPS]	
9	Dec14,09	16:14:58	X	Default [CPS]	



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-09

F1055 - Jan 11 2010

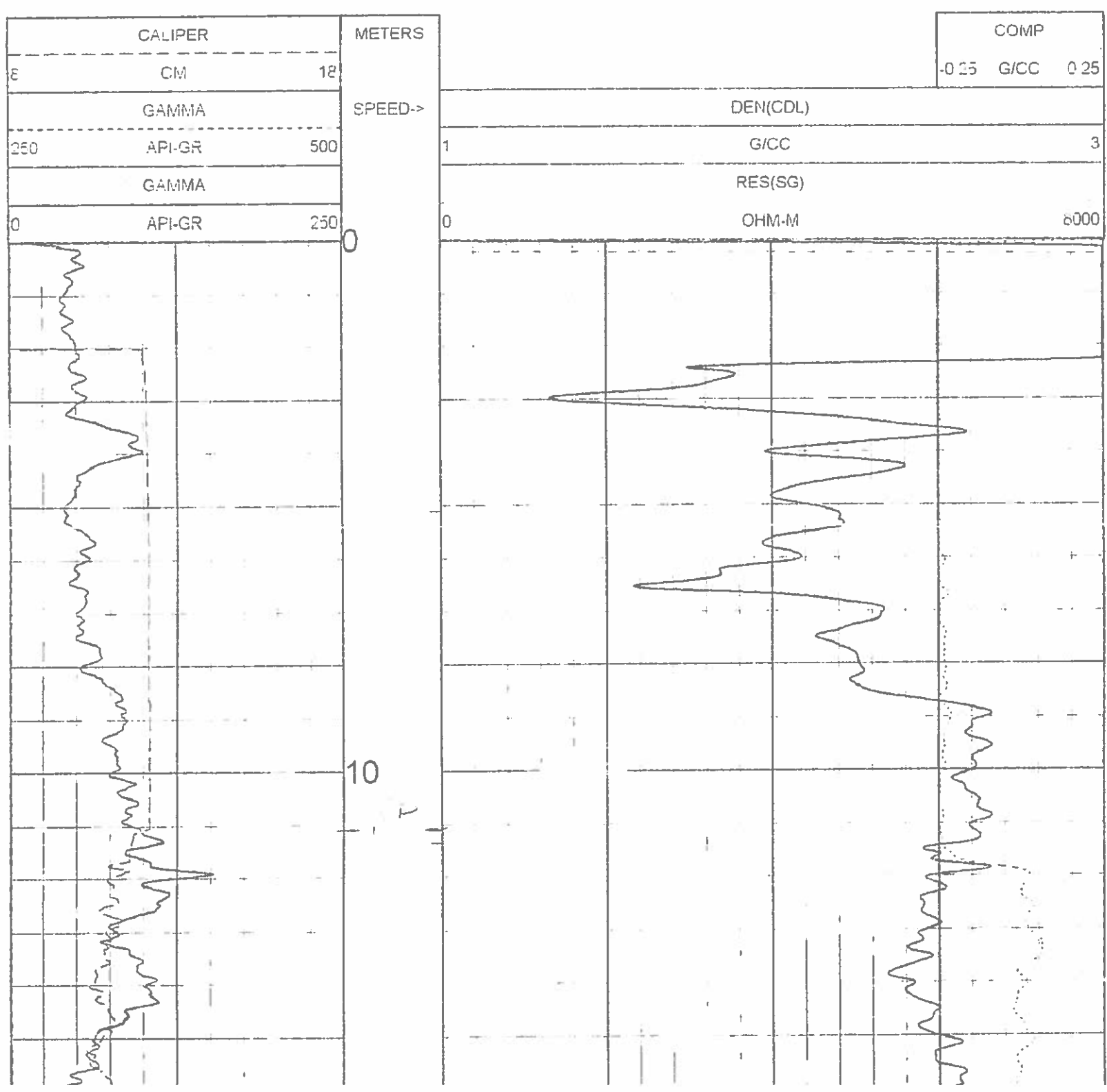
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-09		
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	R14		
RANGE	14		
API NO	N/A		
UNIQUE WELL ID	N/A		
DATE	07/31/10	RIG NUMBER	N/A
DEPTH DRILLER	23012	LOGGERS TD	N/A
BIT SIZE	11.43	ARRIVAL TIME	N/A
LOG TOP	0	DEPARTURE TIME	N/A
LOG BOTTOM	14.30	IRC STOPPED	N/A
CASING OD	1.315		
CASING BOTTOM	12.19		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RPT TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	BOG HOLMLUND		
RECORDED BY	BOB SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

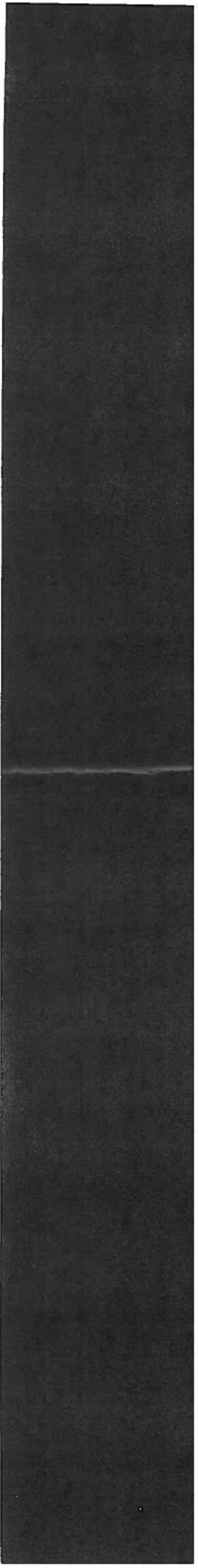
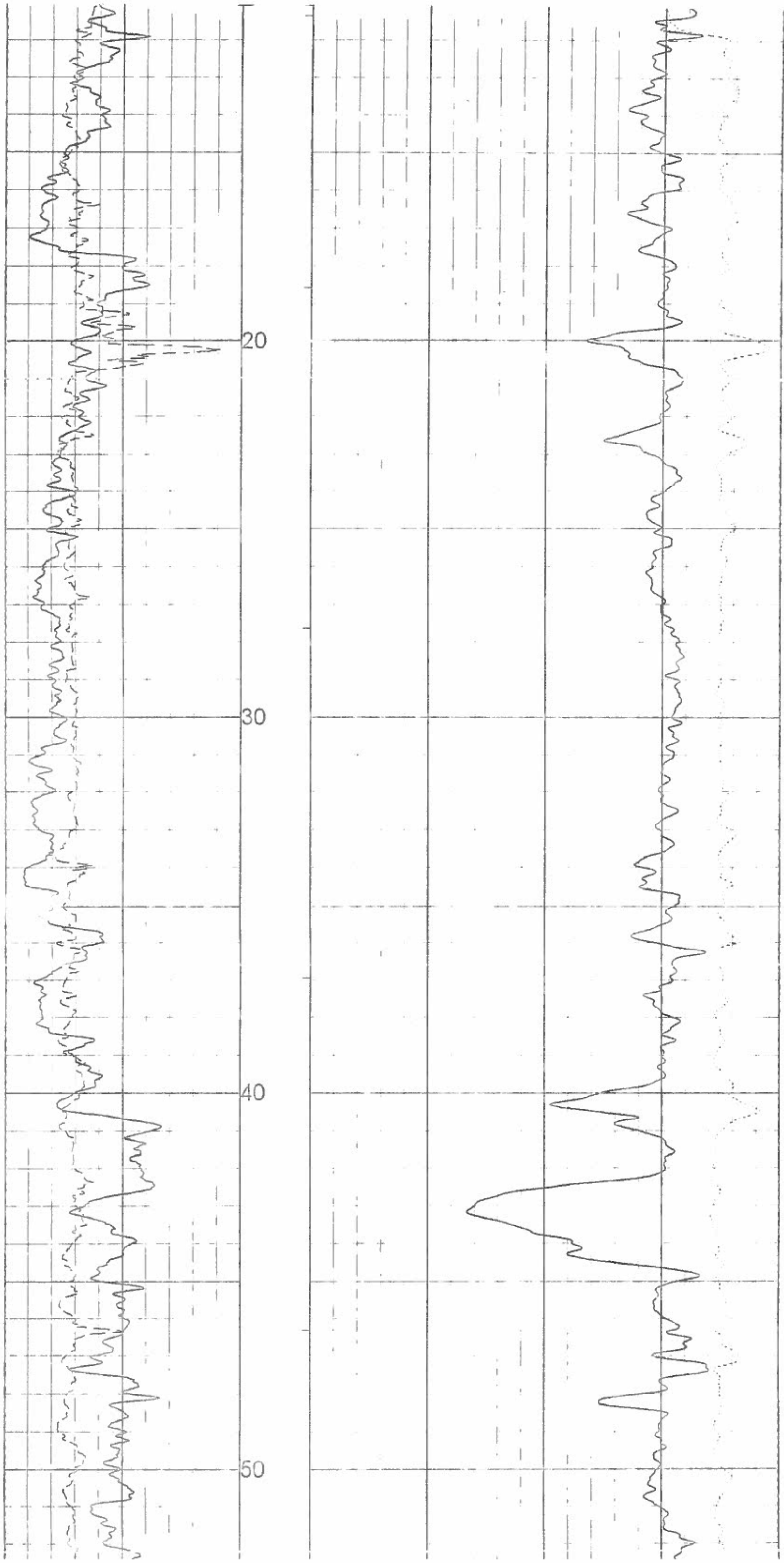
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

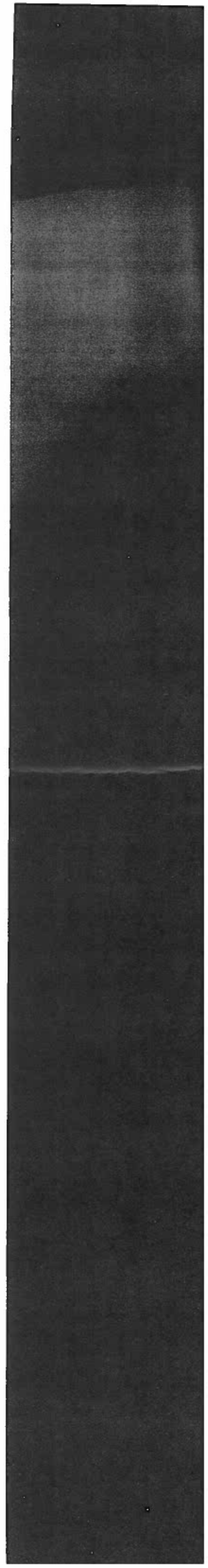
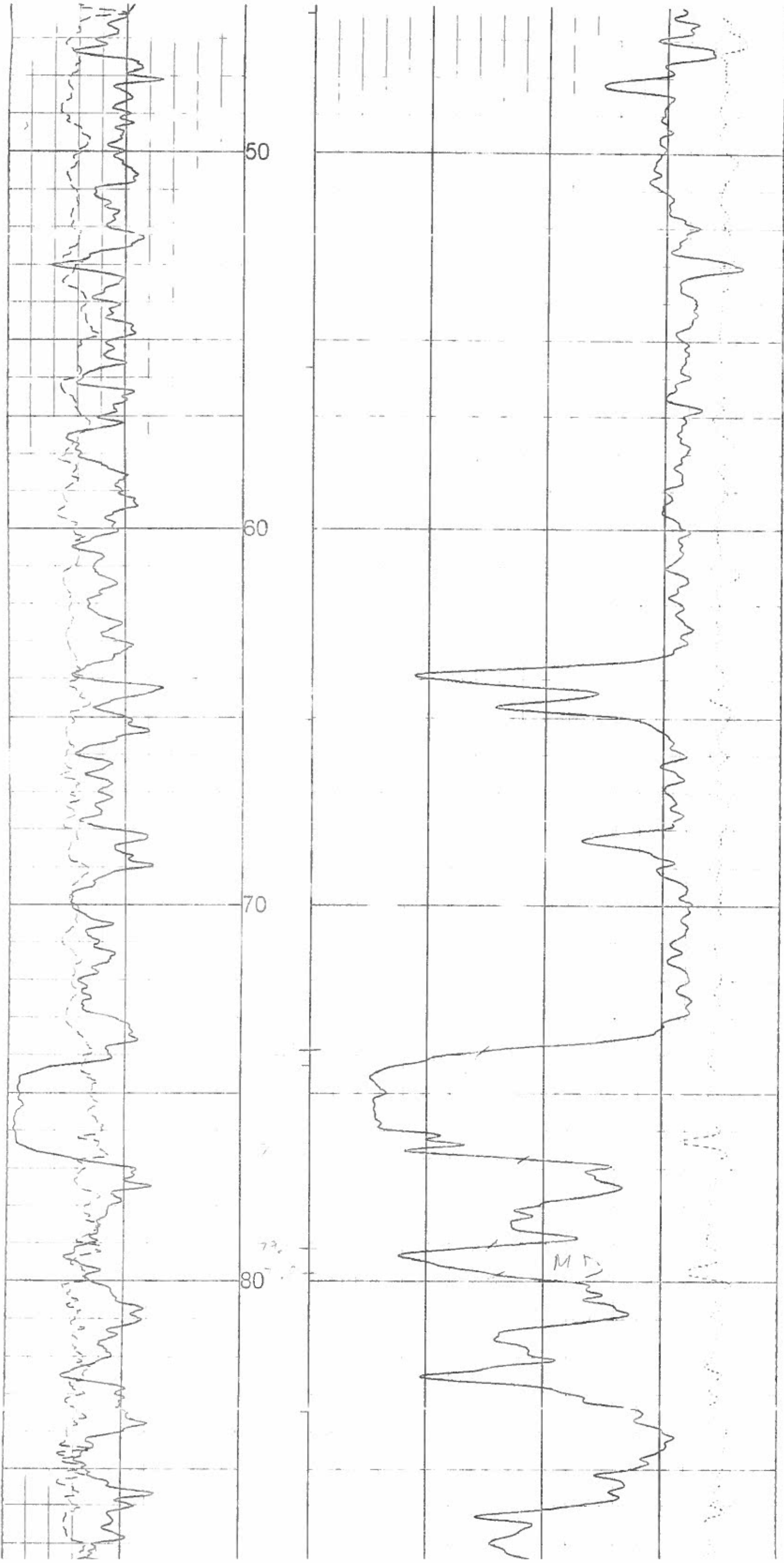
1:100 BULK DENSITY BR10-09 07/31/10

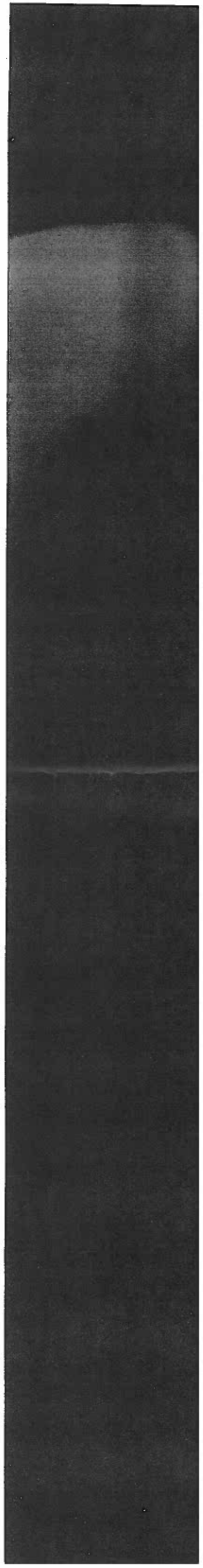
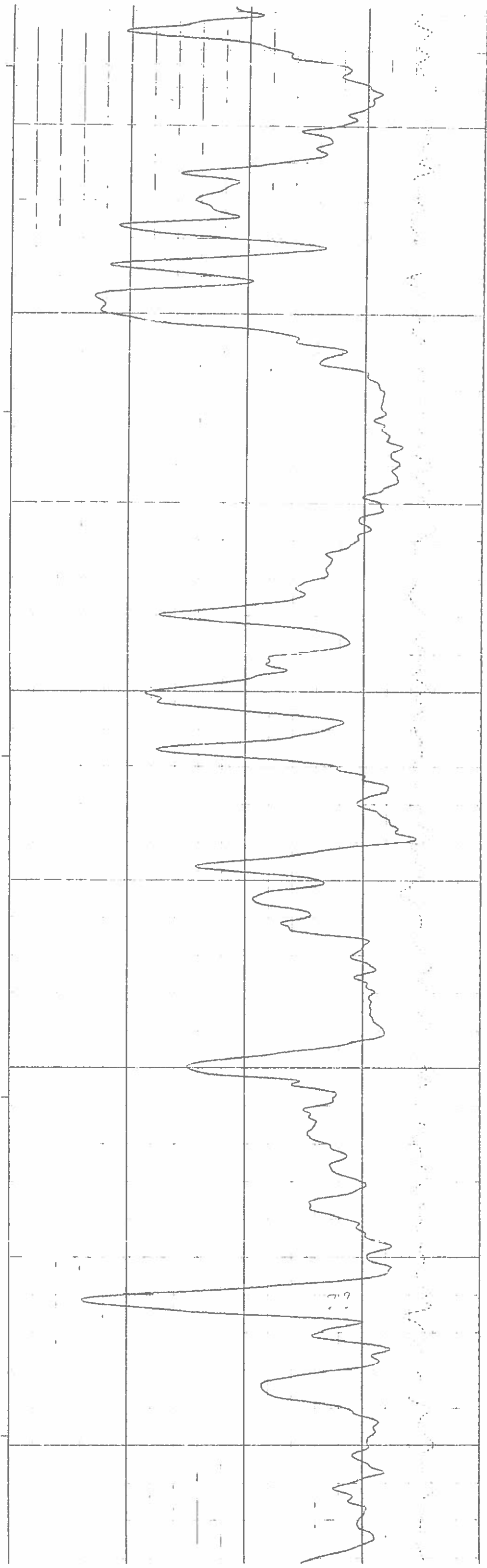
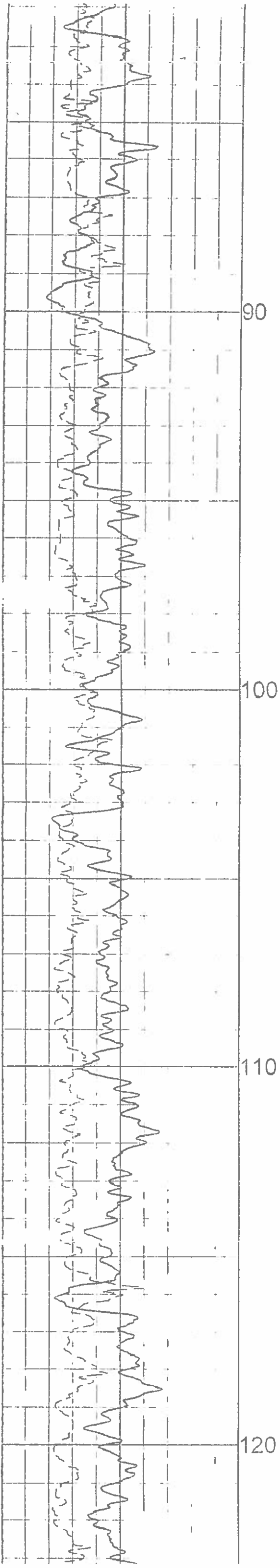
LOG PARAMETERS

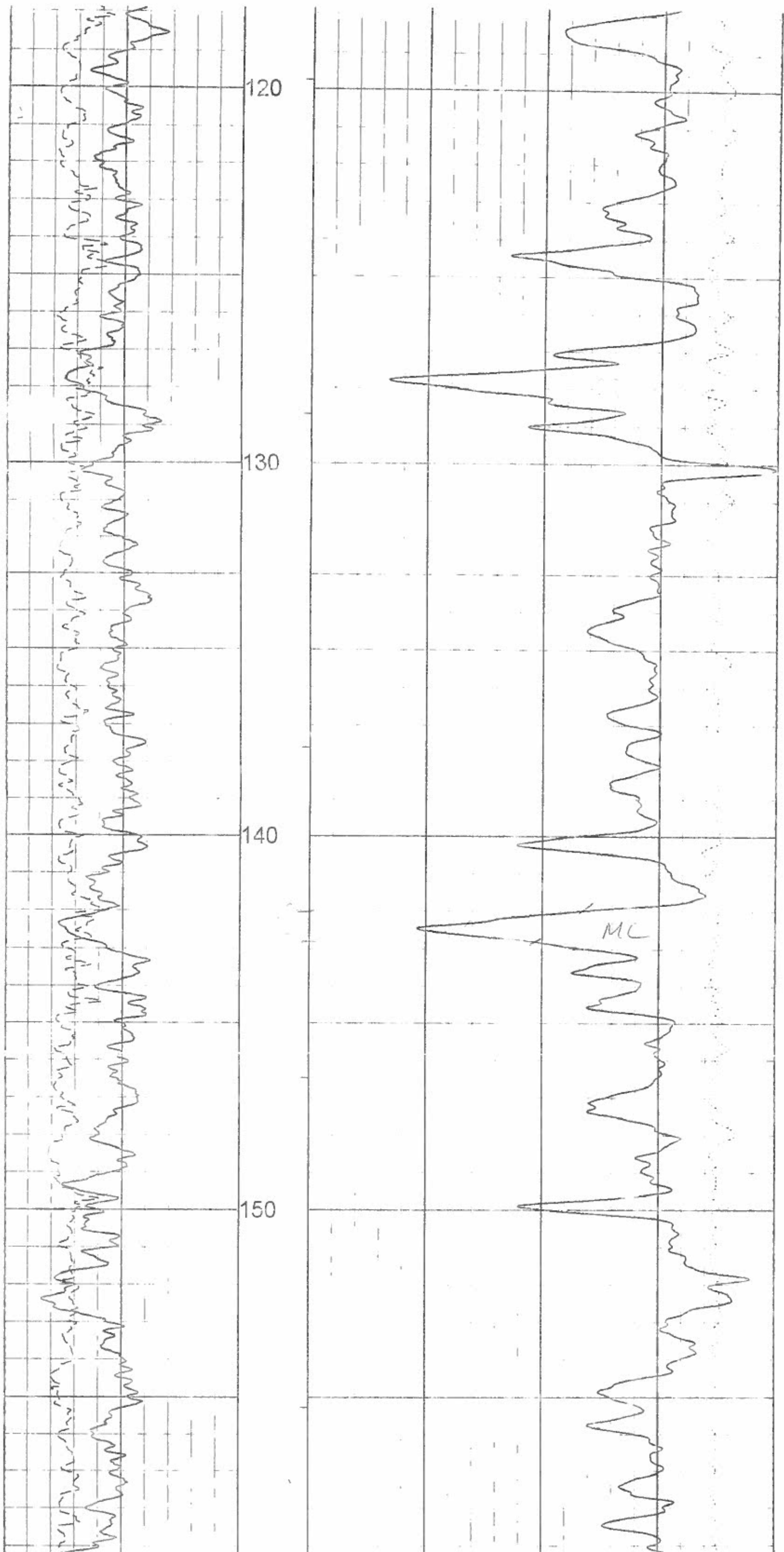
MATRIX DENSITY 2.65 NEUTRON MATRIX SANDSTONE MATRIX DELTA 177
MAGNETIC DECL 21.0 ELECT CUTOFF 99599 BIT SIZE 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 07/10/2010 VERSION = 3.64IC

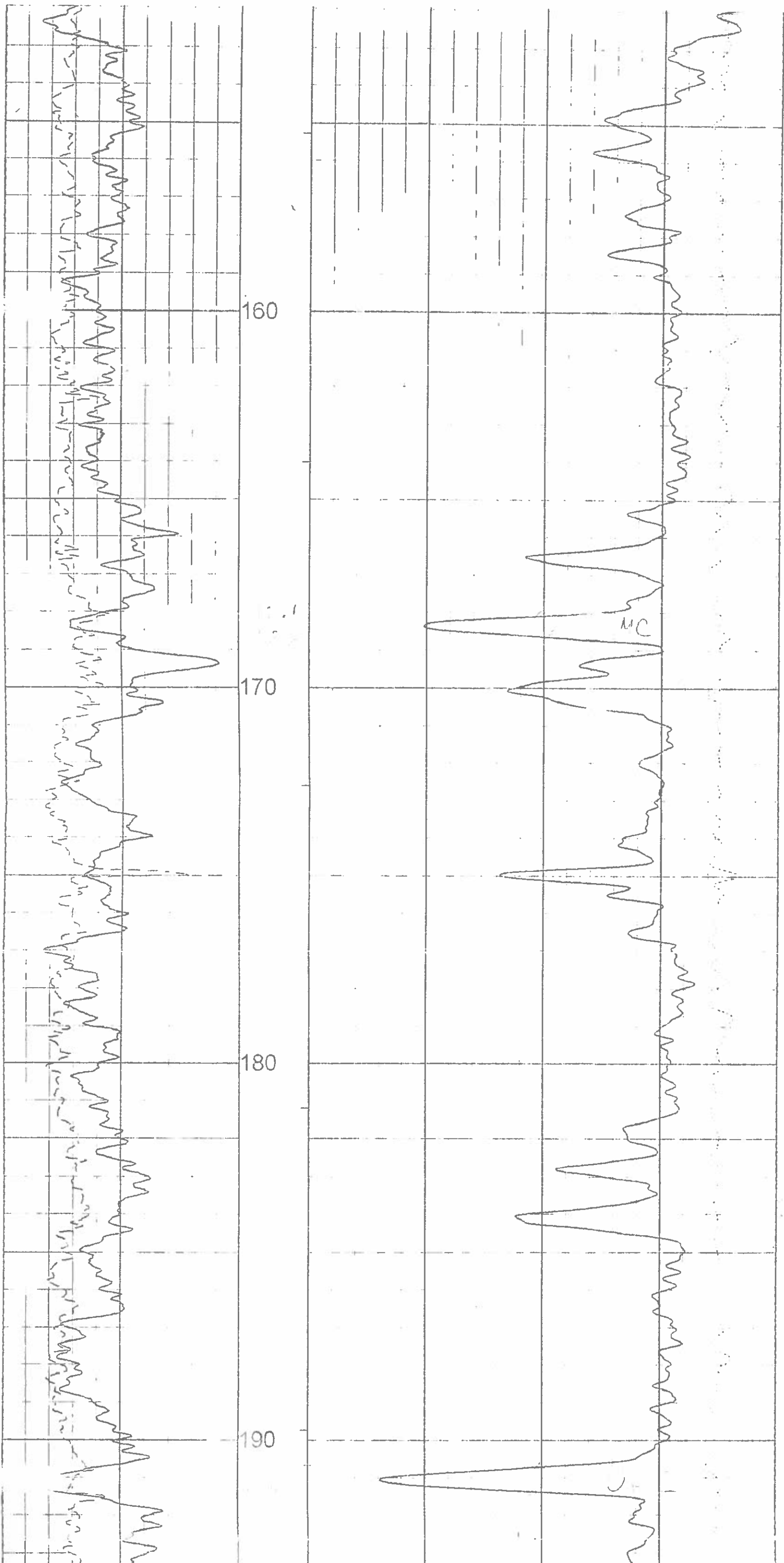


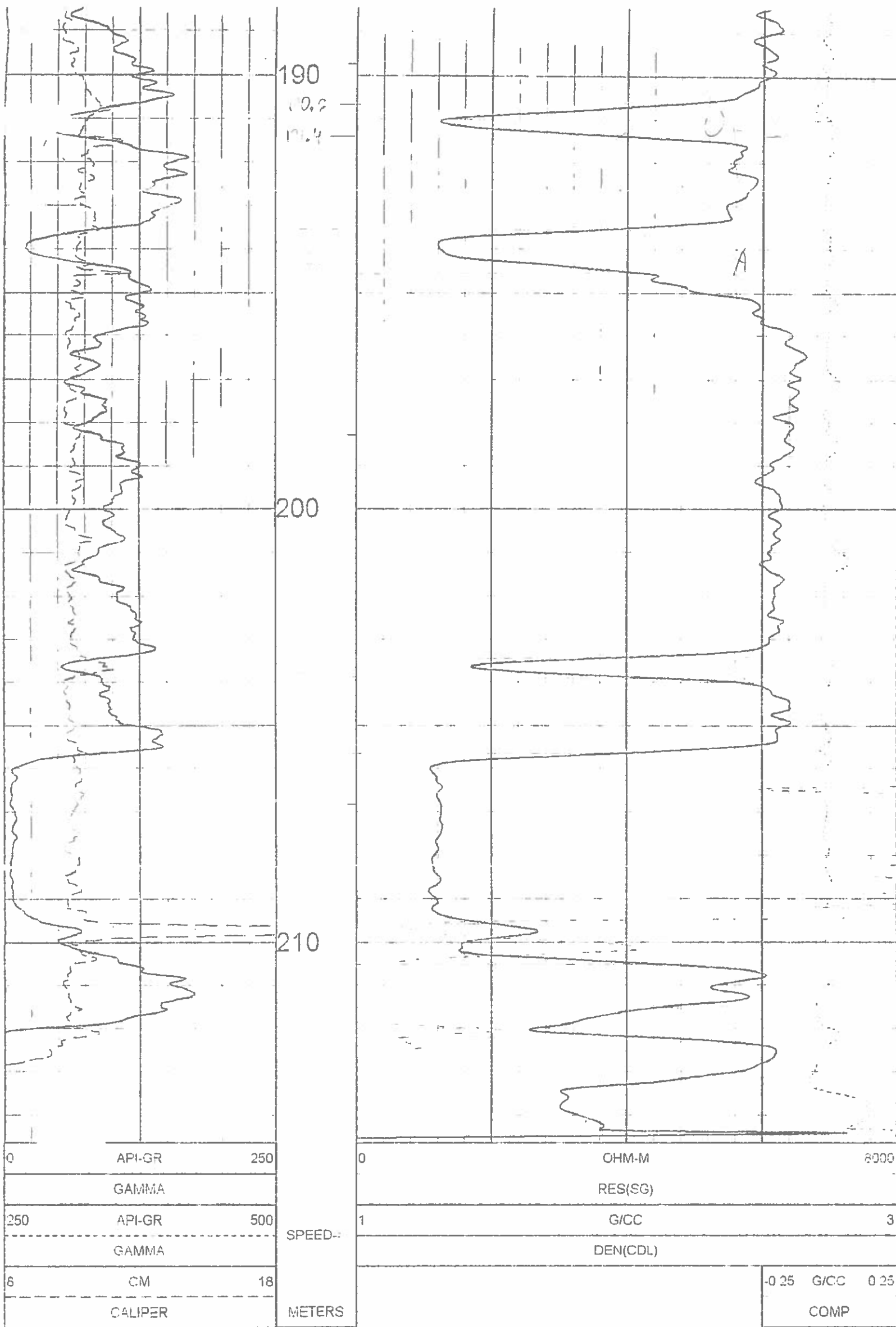












▲ 1:100 BULK DENSITY BR10-09 07/31/10 ▲

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T 1.77
MAGNETIC DECL 21.0	ELECT CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE - 9239C DENSITY U 07/31/2010		VERSION = 3.641C

TOOL CALIBRATION BR10-09 07/31/2010
TOOL 9239C TIA VERSION 2023
SERIAL NUMBER 957

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jun13,10	11:52:09	GAMMA	5000 [API-GR]	0.000 [CPS]
	Jul13,10	11:52:09	GAMMA	545000 [API-GR]	501.000 [CPS]
2	Jun11,10	11:10:27	VOLTAGE	31300 [MV]	8340.000 [CPS]
	Jun11,10	11:10:27	VOLTAGE	240800 [MV]	35818.000 [CPS]
3	Jun11,10	10:38:42	CALIPER	8.890 [MM]	137560.000 [CPS]
	Jun11,10	10:38:42	CALIPER	15.240 [MM]	284114.000 [CPS]

BR10-09

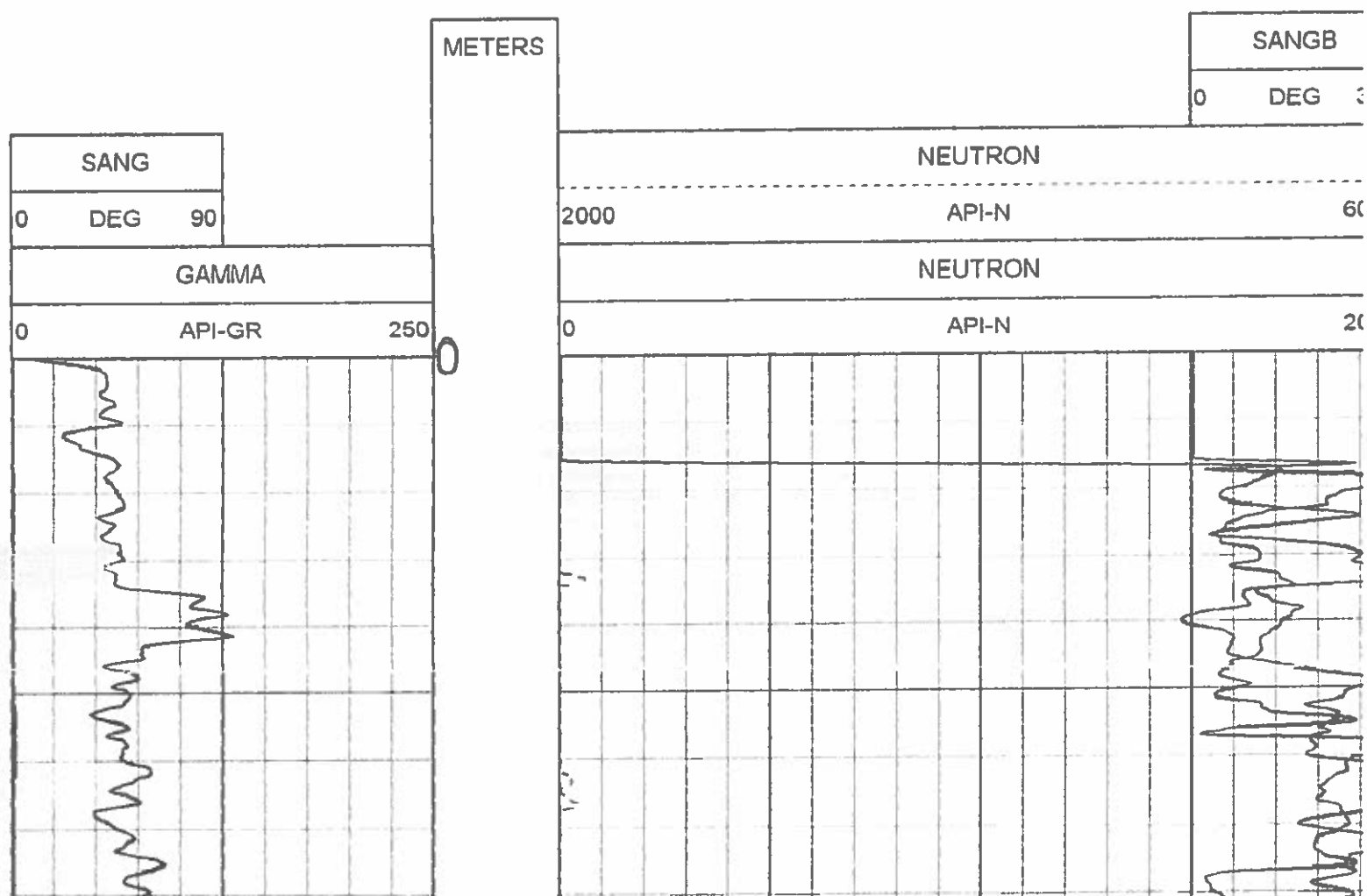
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR10-09	DENSITY	
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
API NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/31/10	RIG NUMBER	
DEPTH DRILLER	230 12	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	-0.13	DEPARTURE TIME	
LOG BOTTOM	214.56	CIRC STOPPED	N/A
CASING OD	12.19		
CASING BOTTOM	12.19		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	B. SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

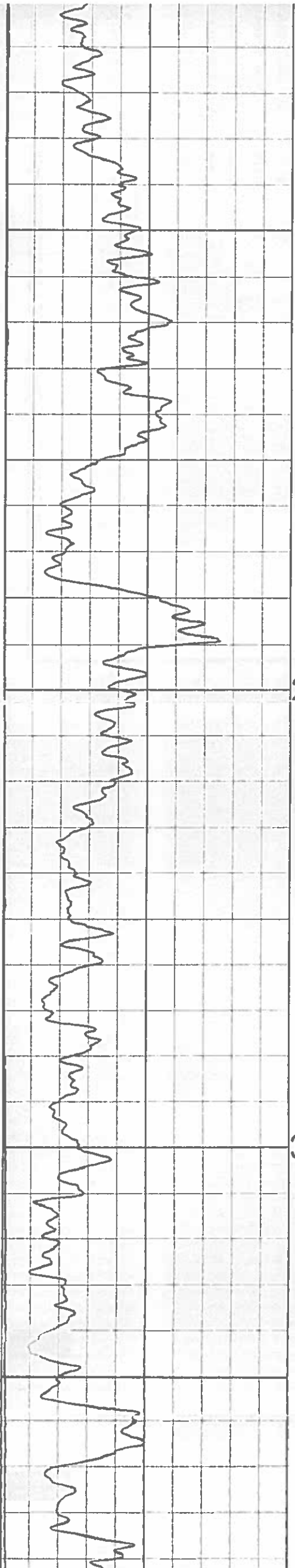
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.64IC

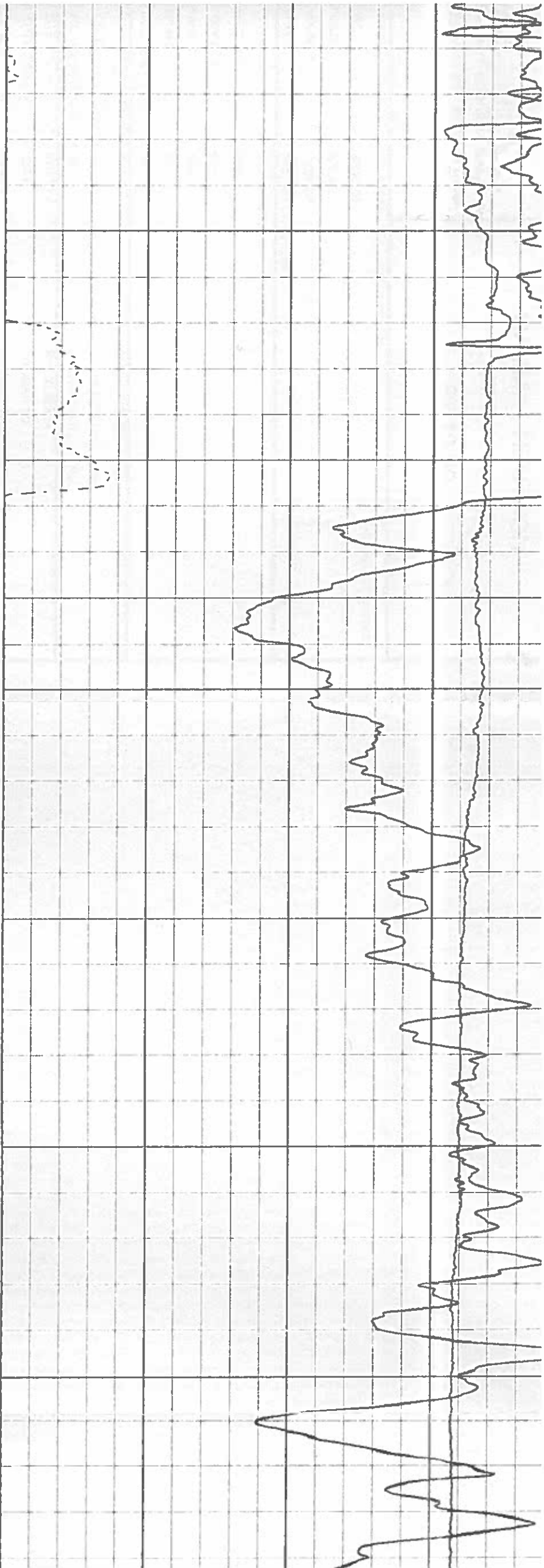


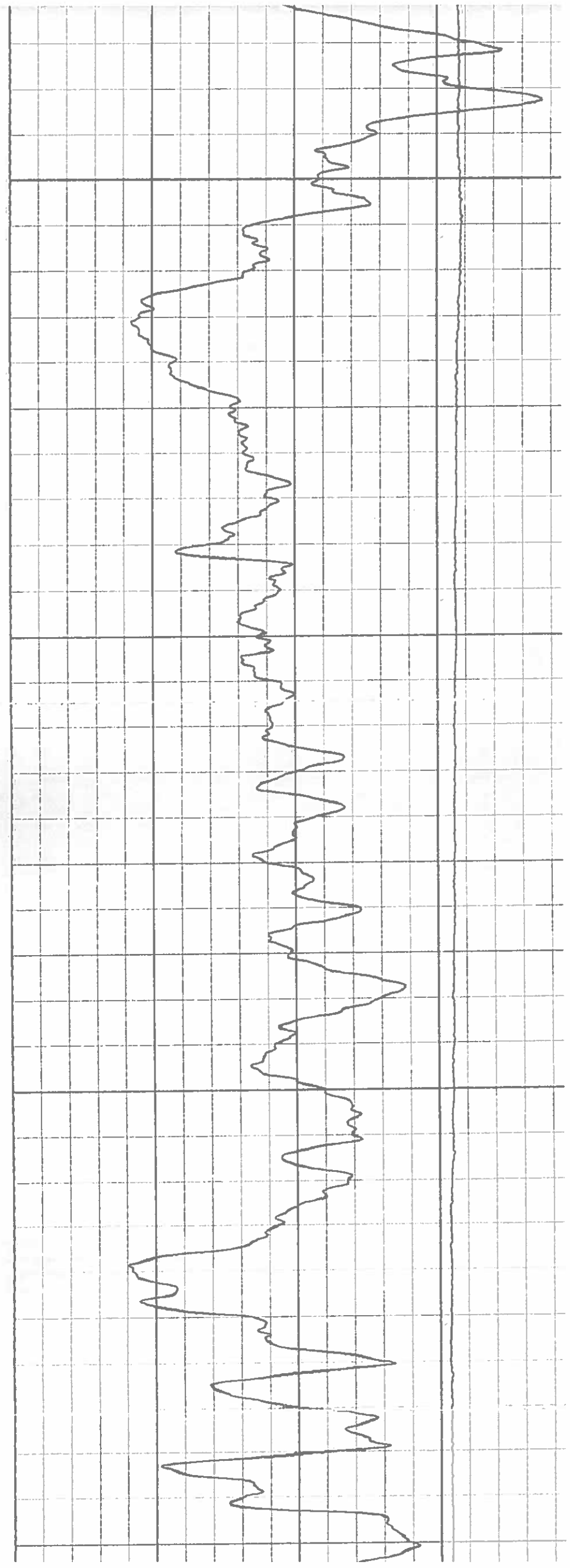
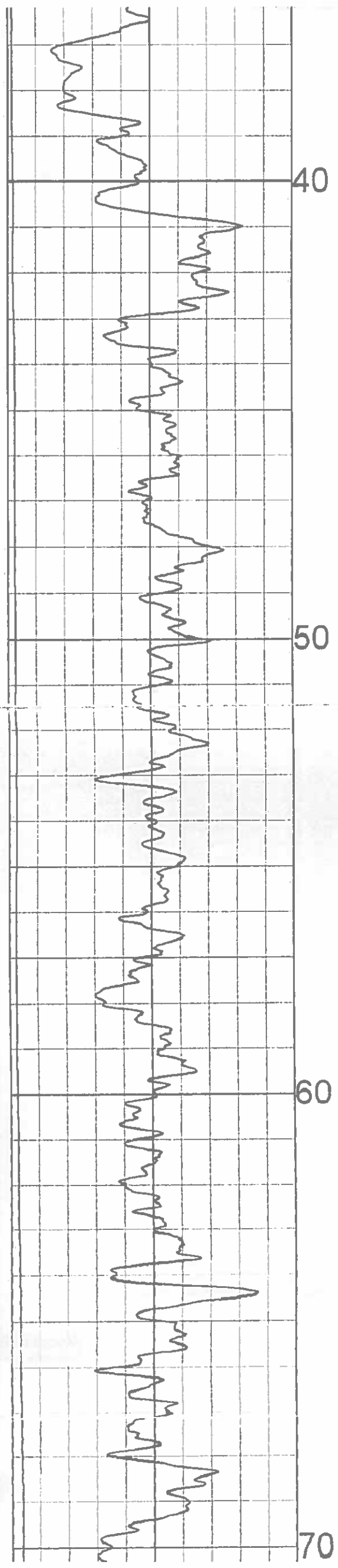


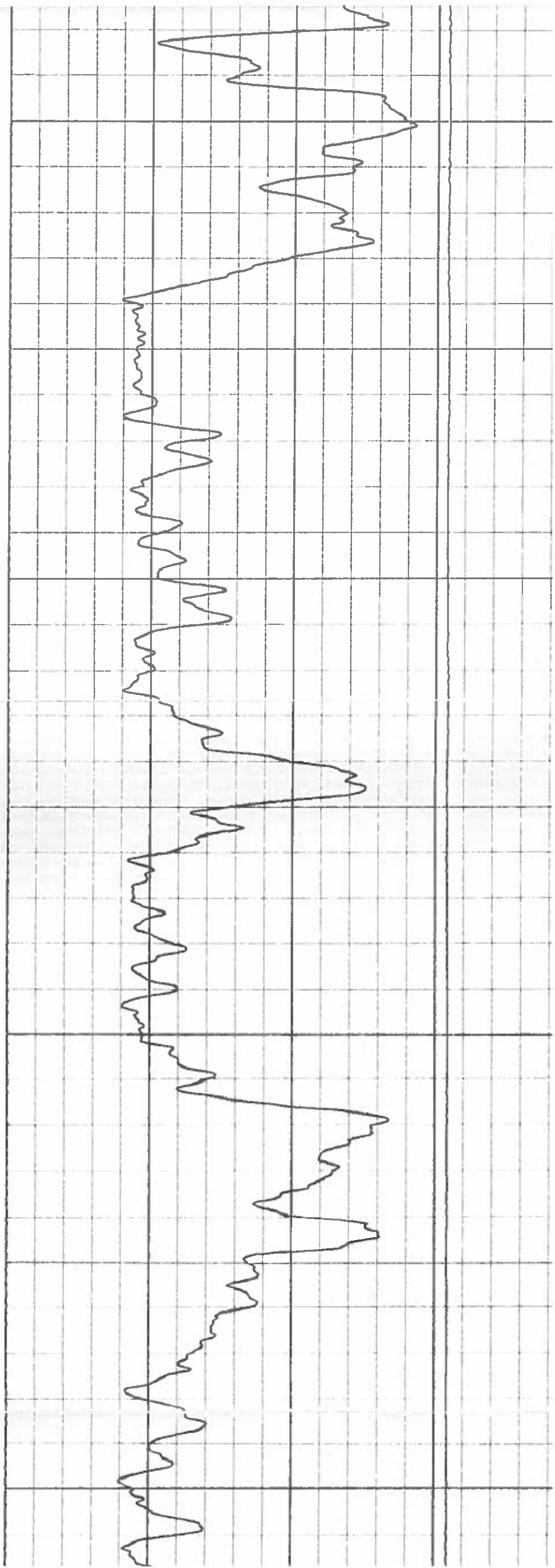
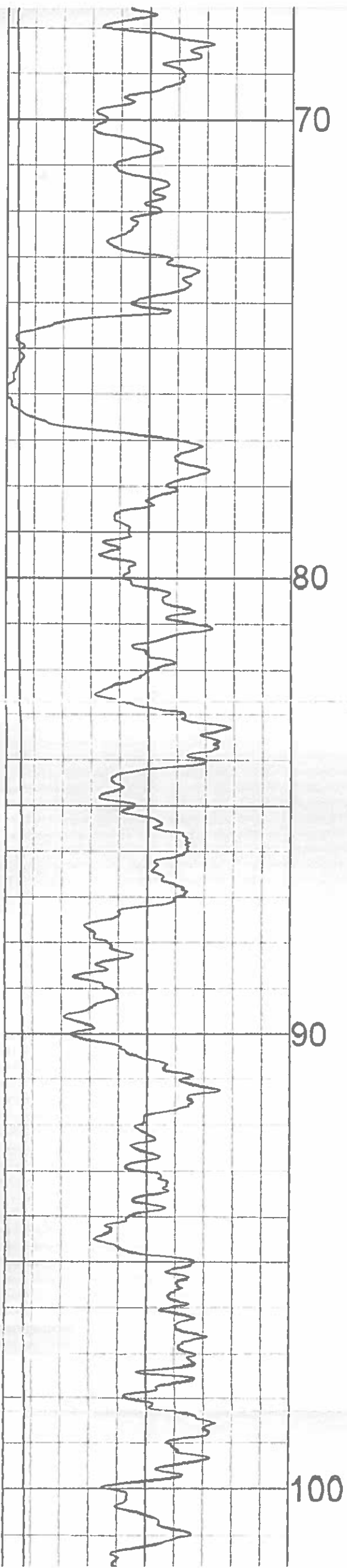
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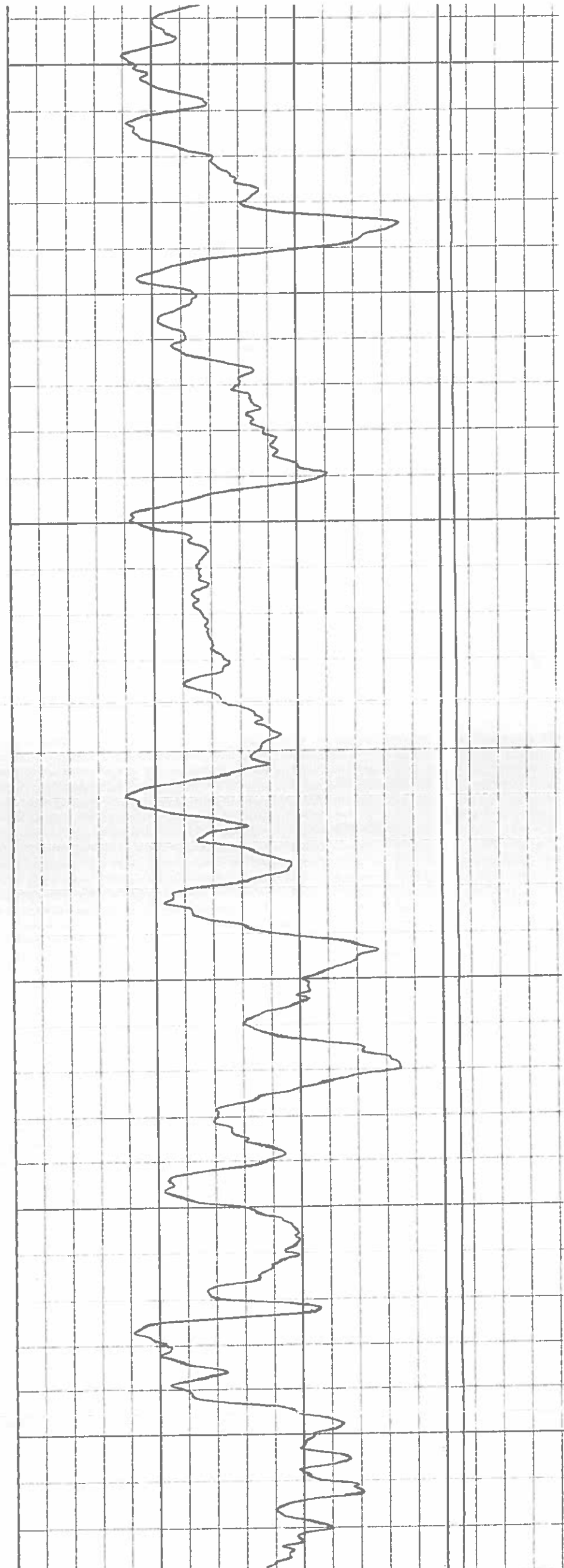
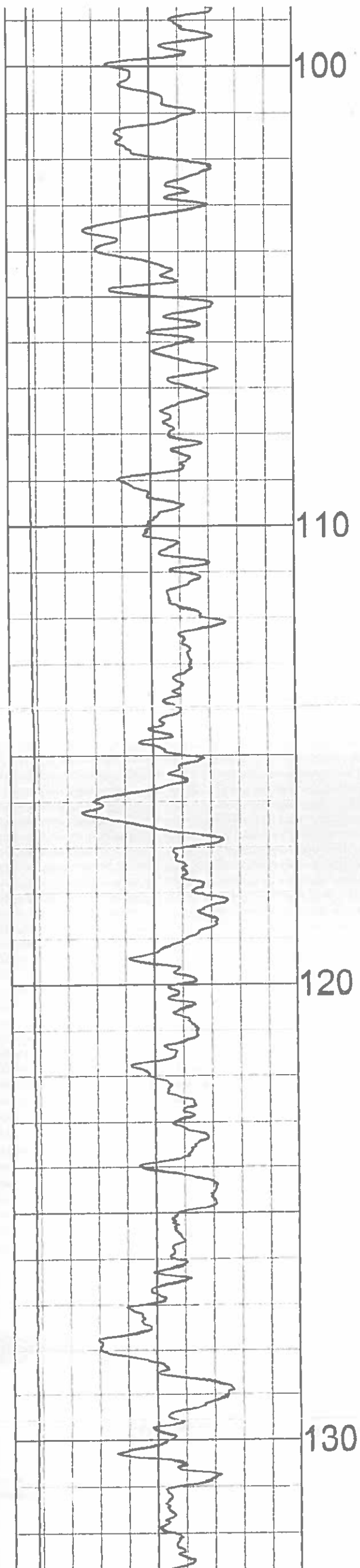
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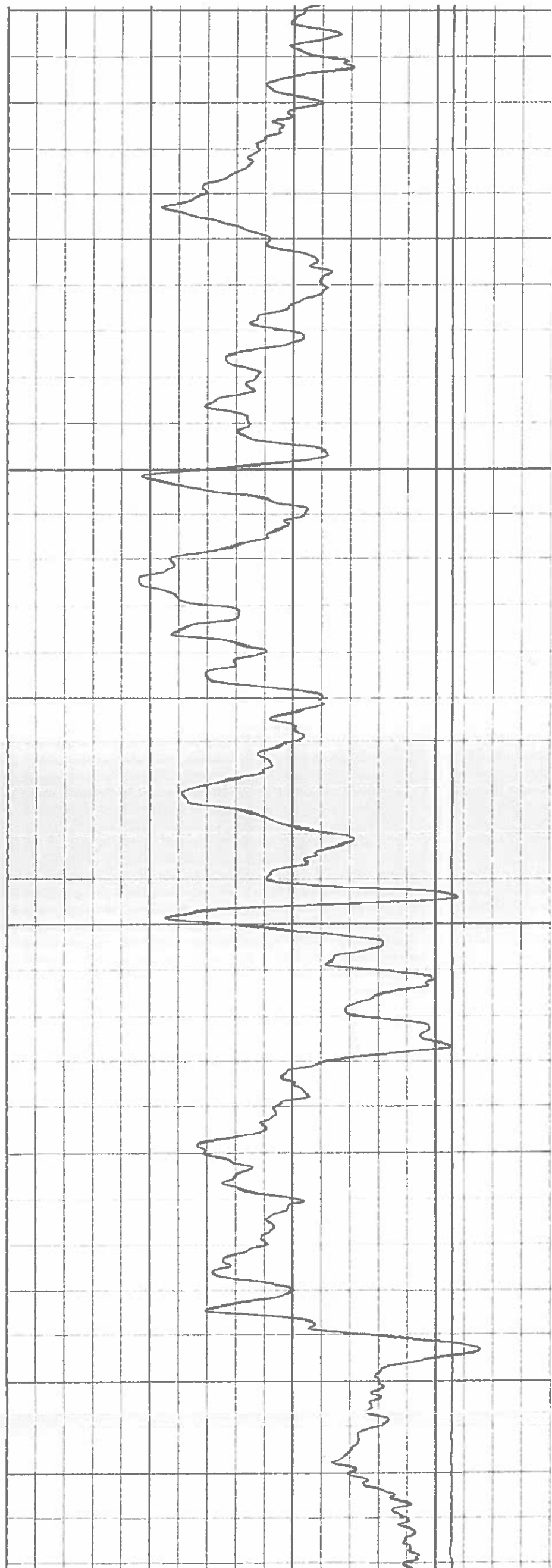
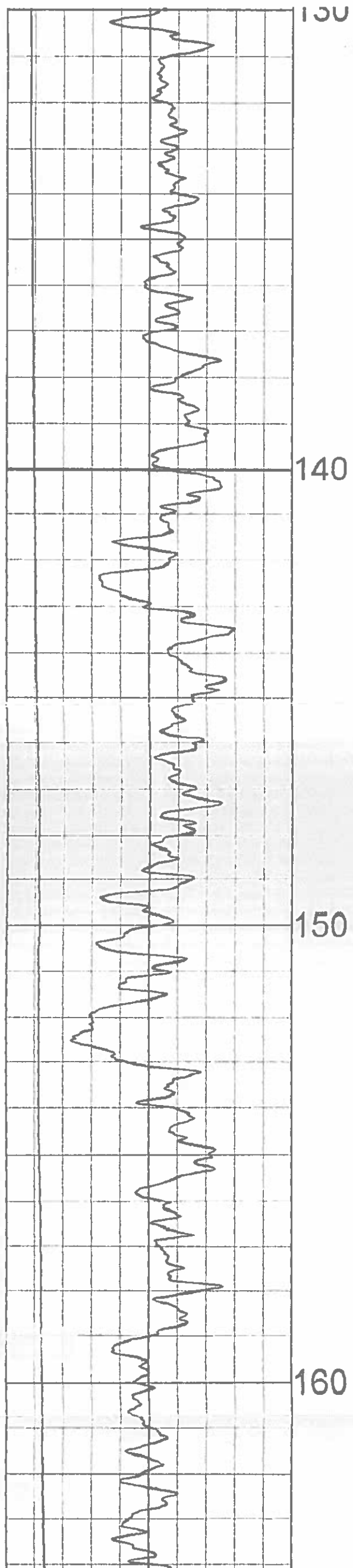
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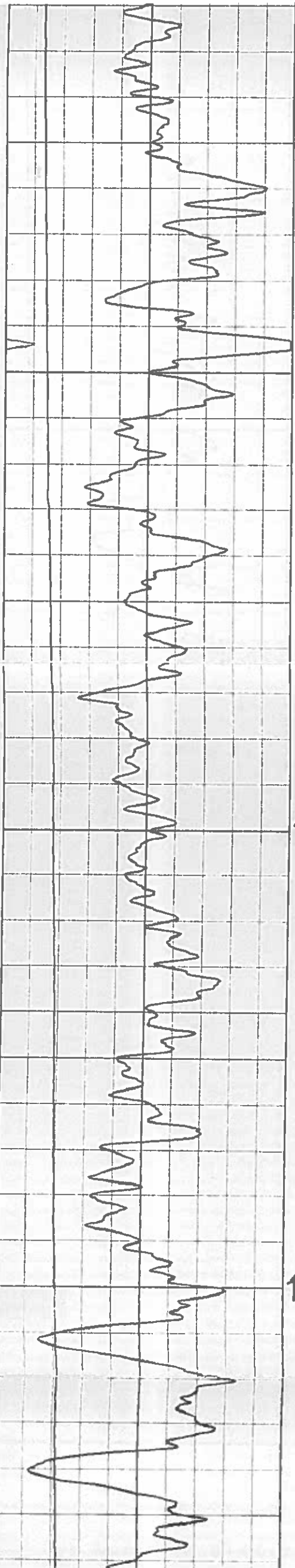








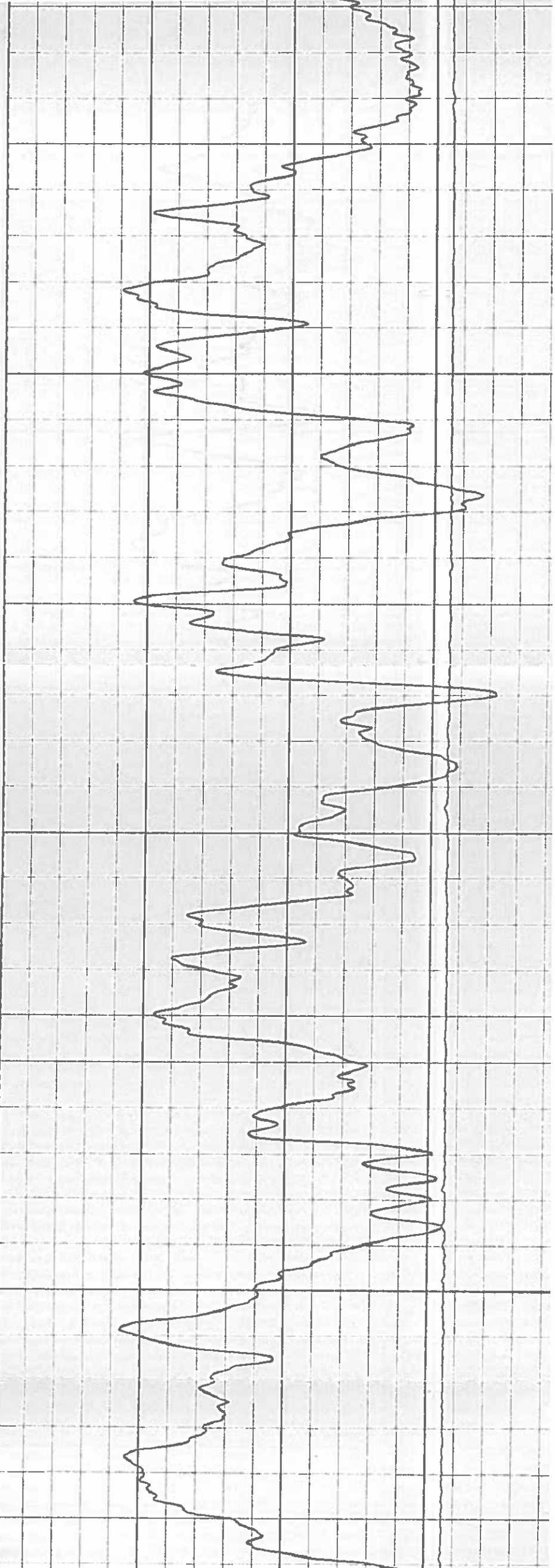


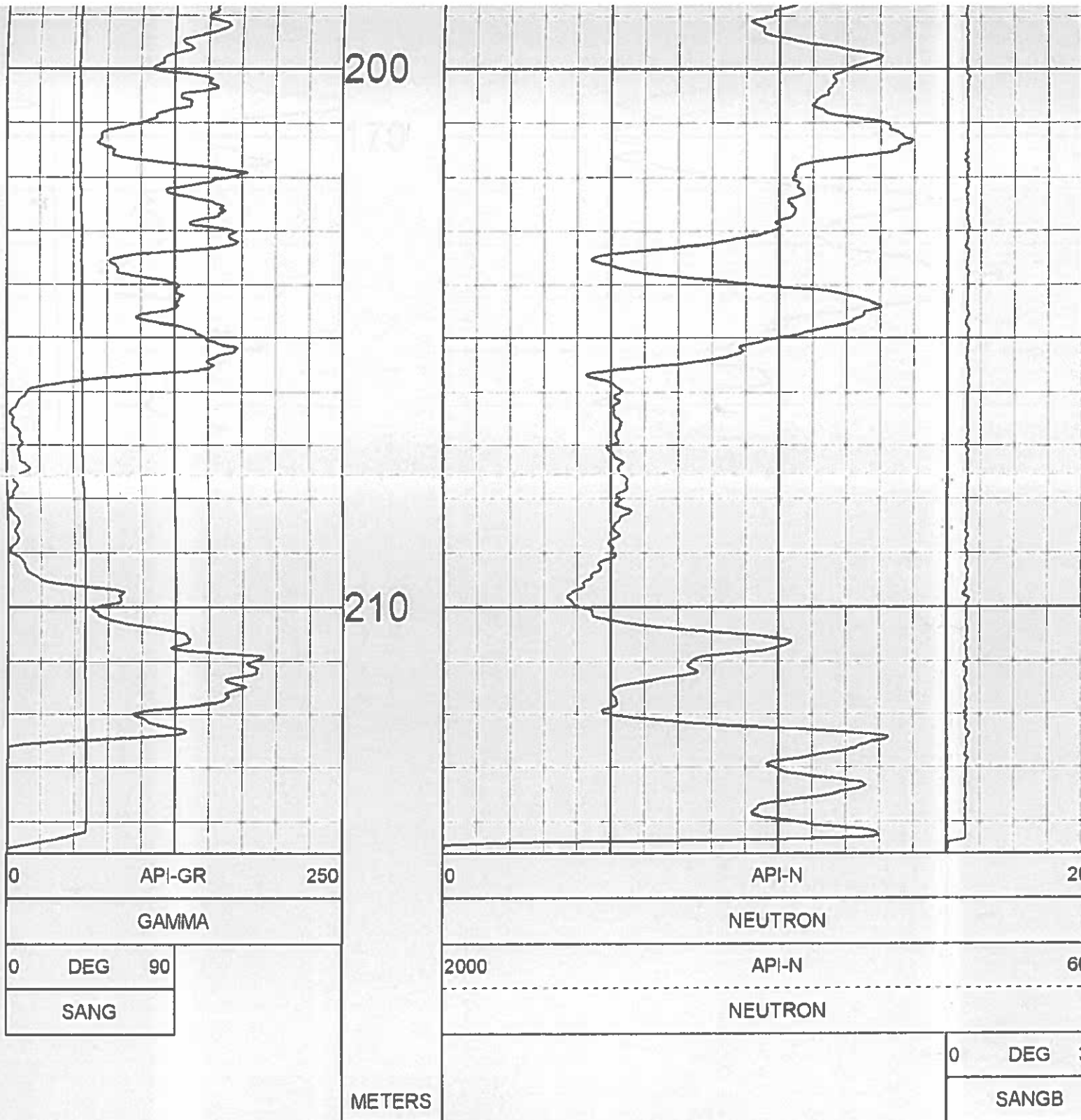


170

180

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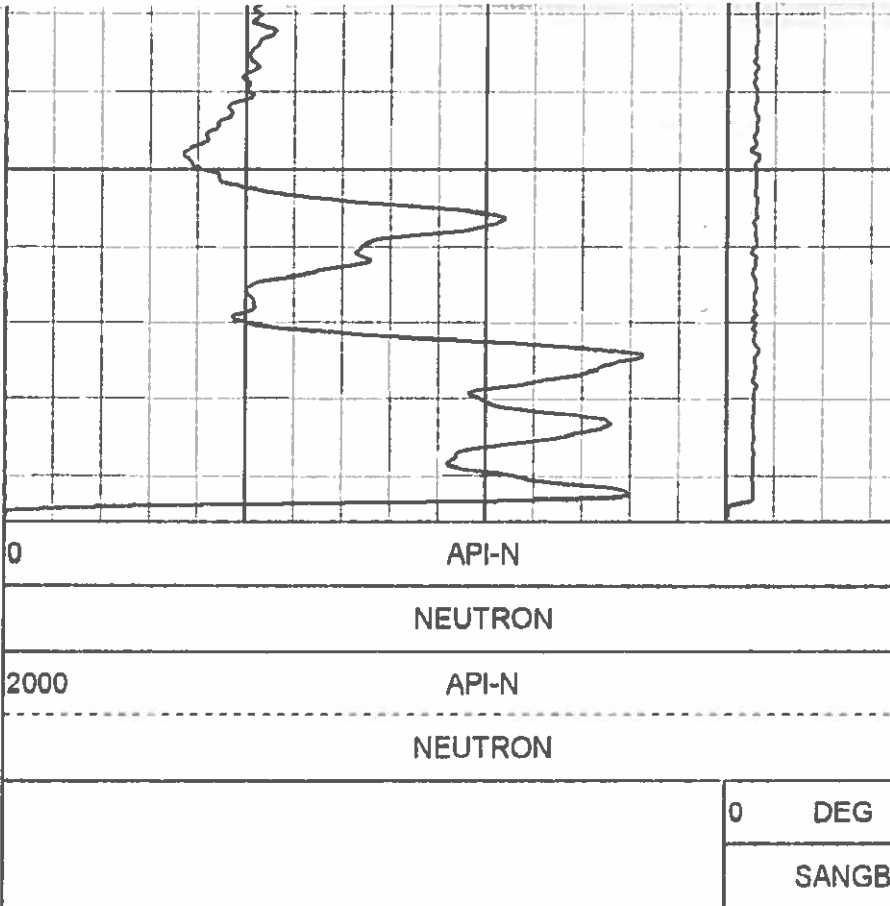
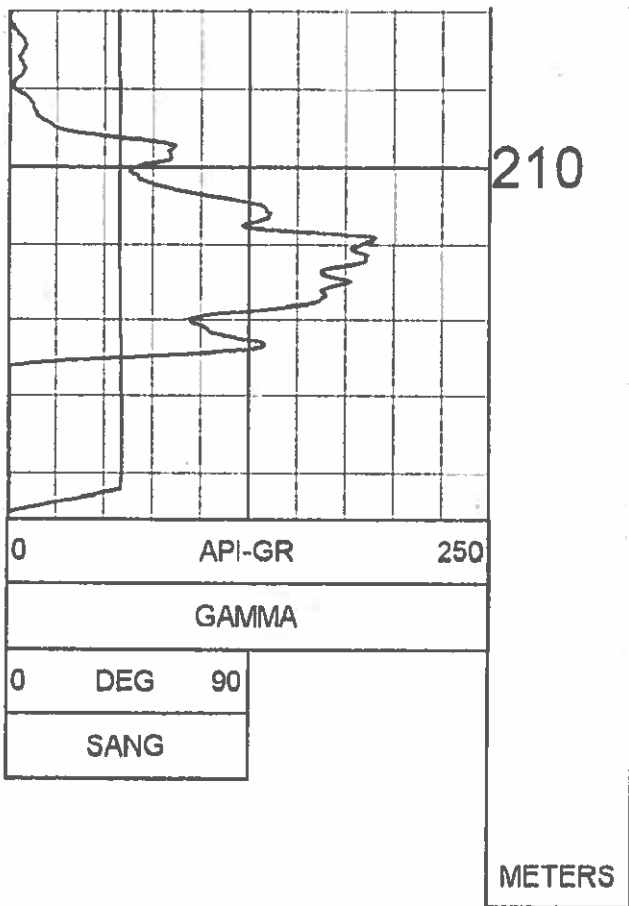
1:100 NEUTRON BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA 1.77
MAGNETIC DECL 21.0	ELECT. CUTOFF 99999	BIT SIZE 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010		VERSION = 3.64IC

TOOL CALIBRATION BR10-09 07/31/10 16:33
 TOOL 9057A TM VERSION 1
 SERIAL NUMBER 1071

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	10:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	10:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	14:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	14:36:01	NEUTRC	271.000 [API-N]	697.000 [CPS]
3	May19,08	08:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	08:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	08:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	08:55:04	RES(16)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	08:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	08:55:10	RES(64)	1990.000 [OHM-M]	103531.000 [CPS]



1:100 NEUTRON BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY 2.65 NEUTRON MATRIX SANDSTONE MATRIX DELTA I 177
 MAGNETIC DECL 21.0 ELECT. CUTOFF 99999 BIT SIZE 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010 VERSION = 3.64C

TOOL CALIBRATION BR10-09 07/31/10 16:33
 TOOL 9057A TM VERSION 1
 SERIAL NUMBER 1071

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	10:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	10:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	14:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	14:36:01	NEUTRON	271.000 [API-N]	697.000 [CPS]
3	May19,08	08:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	08:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	08:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	08:55:04	RES(16N)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	08:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	08:55:10	RES(64N)	1990.000 [OHM-M]	103531.000 [CPS]
6	May19,08	09:00:49	TEMP	35.500 [DEG F]	101300.000 [CPS]
	May19,08	09:00:49	TEMP	84.400 [DEG F]	64850.000 [CPS]
7	May19,08	08:55:17	RES	0.000 [OHM]	9984.000 [CPS]
	May19,08	08:55:17	RES	943.000 [OHM]	58869.000 [CPS]

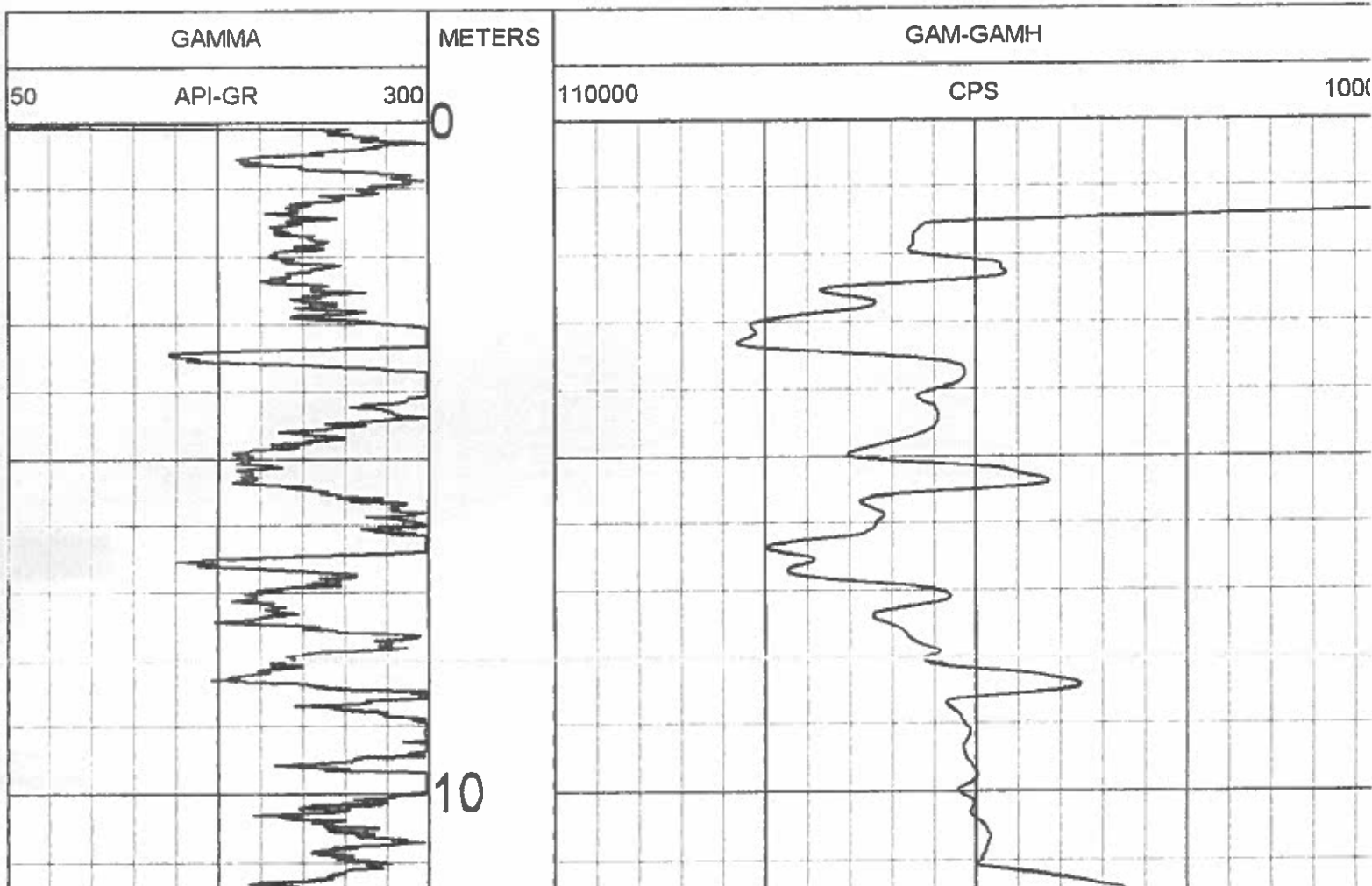
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-09		
FIELD	BRULE		
COUNTY	CANADA		
STATE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
API NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	07/31/10	RIG NUMBER	
DEPTH DRILLER	230 12	LOGGER TD	
BIT SIZE	.11 43	ARRIVAL TIME	
LOG TOP	-0 29	DEPARTURE TIME	
LOG BOTTOM	215 22	CIRC STOPPED	N/A
CASING OD	12 19		
CASING BOTTOM	12 19		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	B. SNELL		
REMARKS 1	VERTICAL		
REMARKS 2			

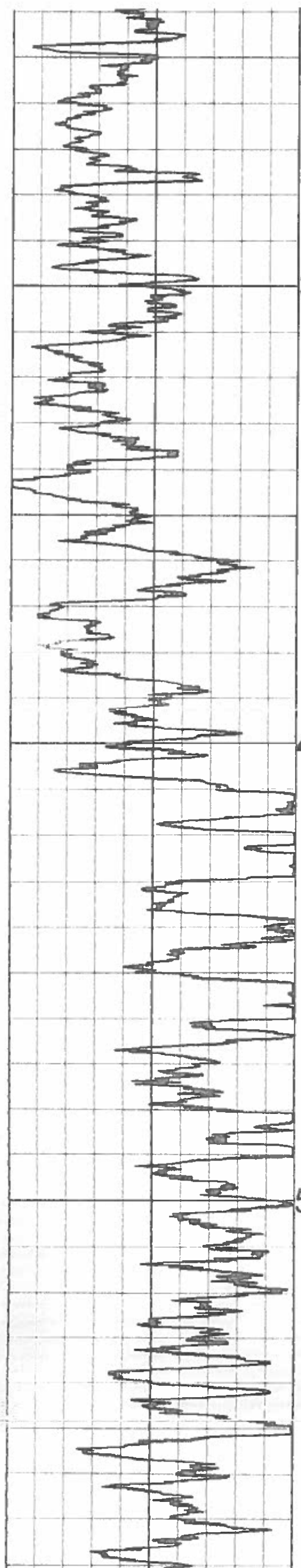
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 SLIM DENSITY BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21 0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9068 SLIM DENSITY 0 07/28/2010 VERSION = 3.64IC

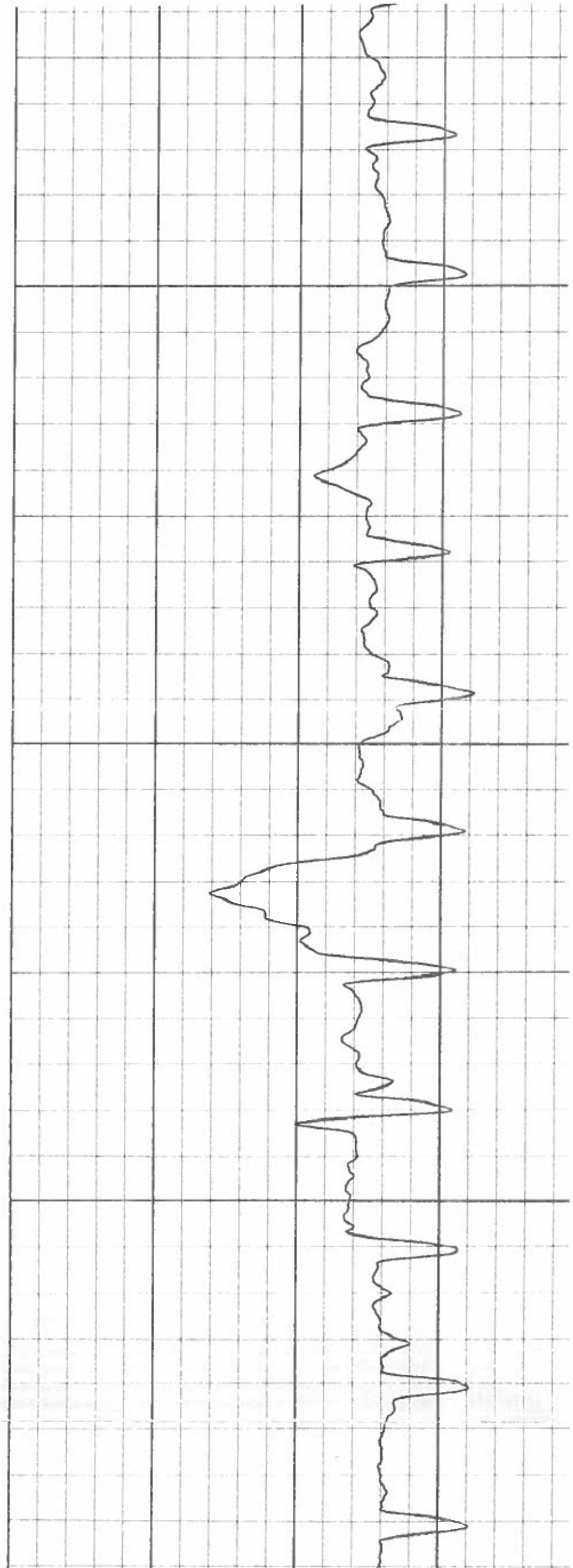


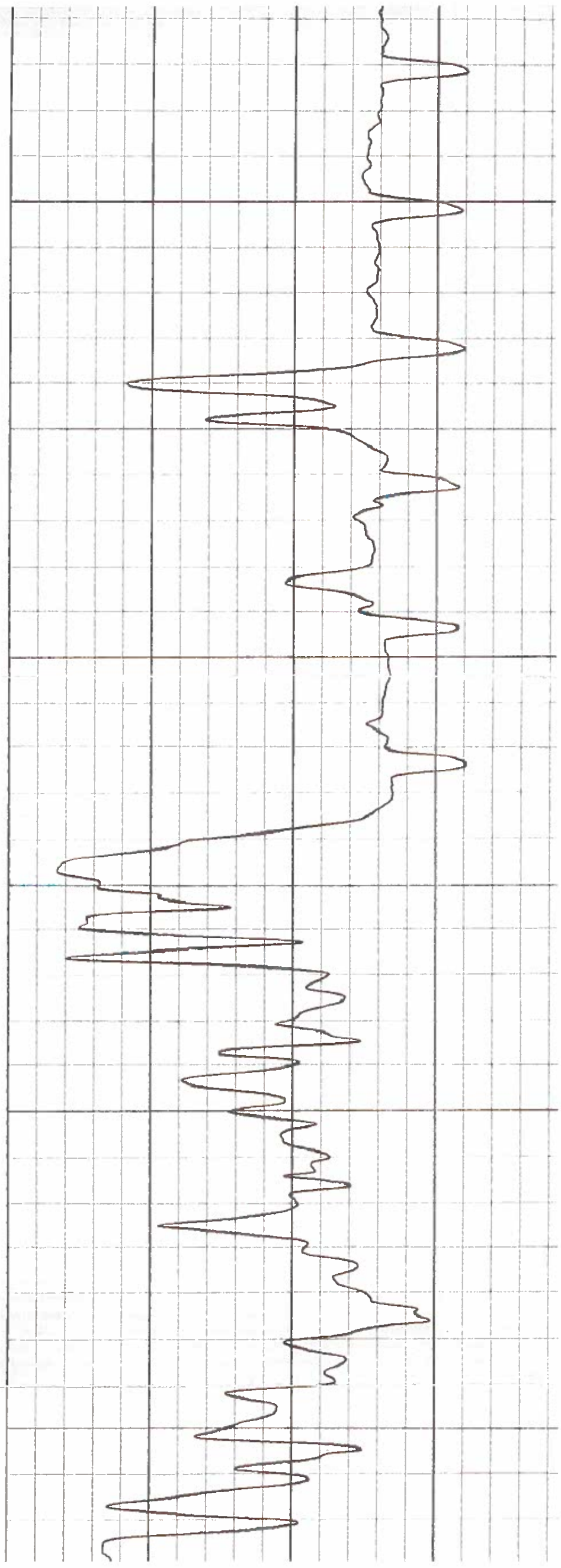
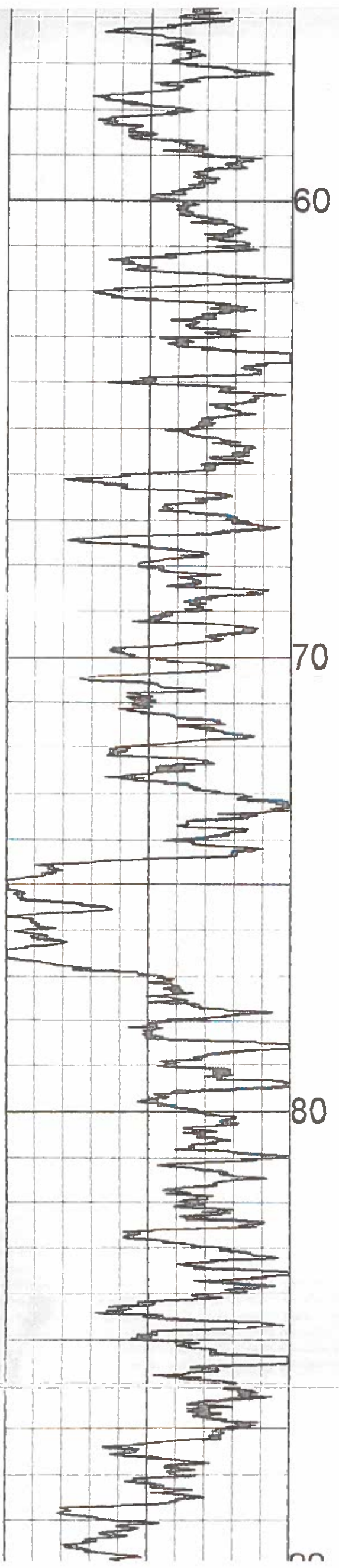


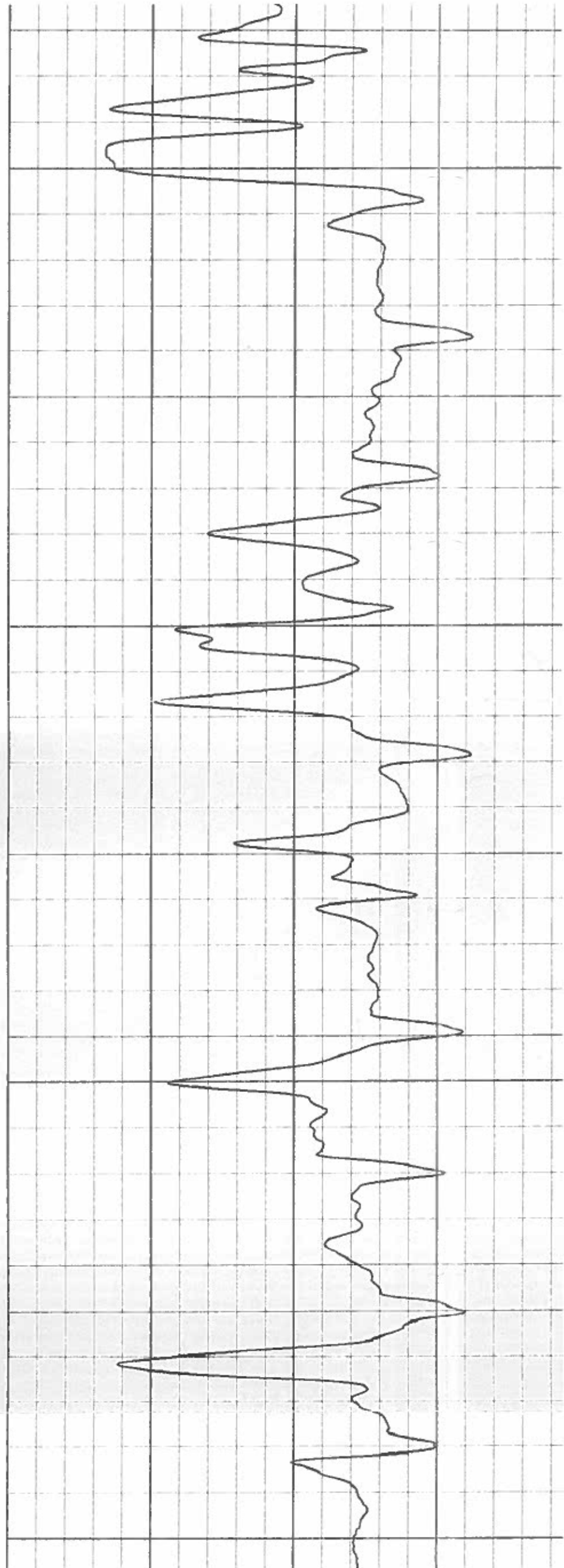
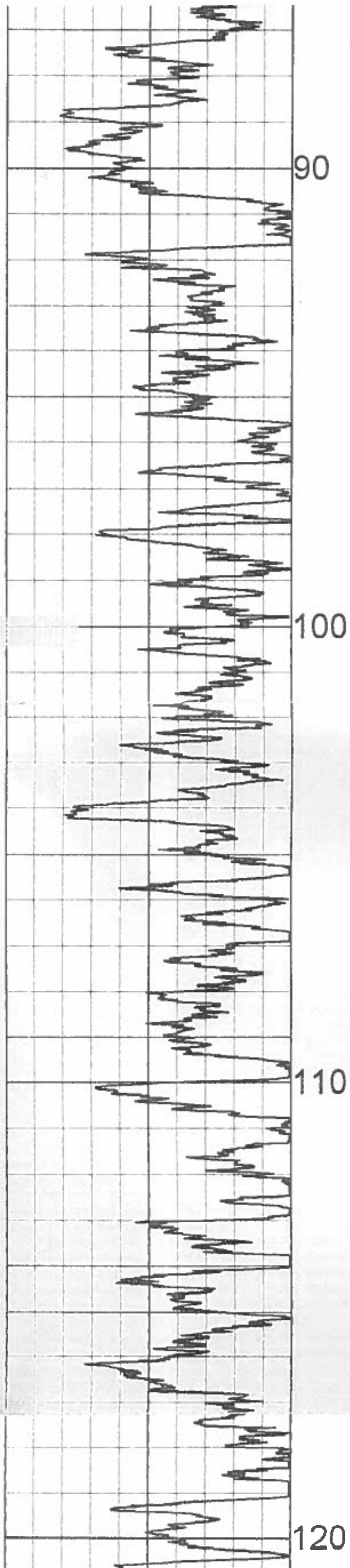
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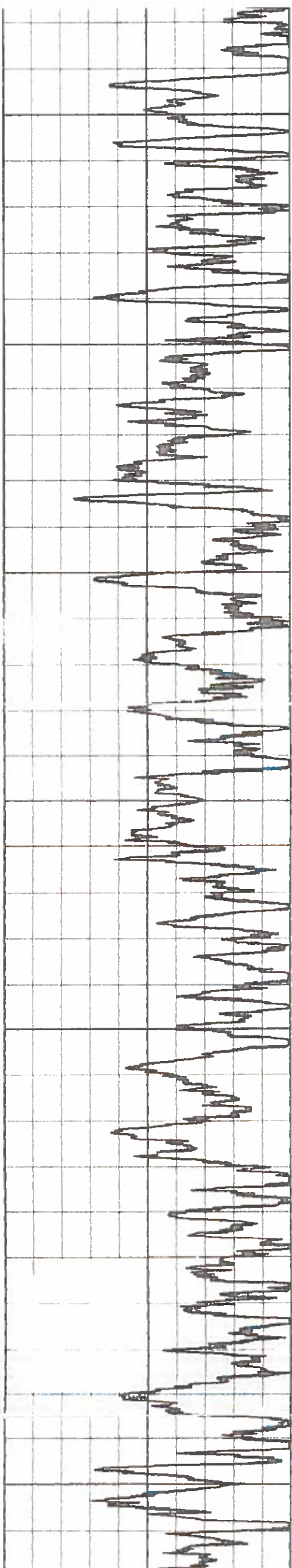
40

50







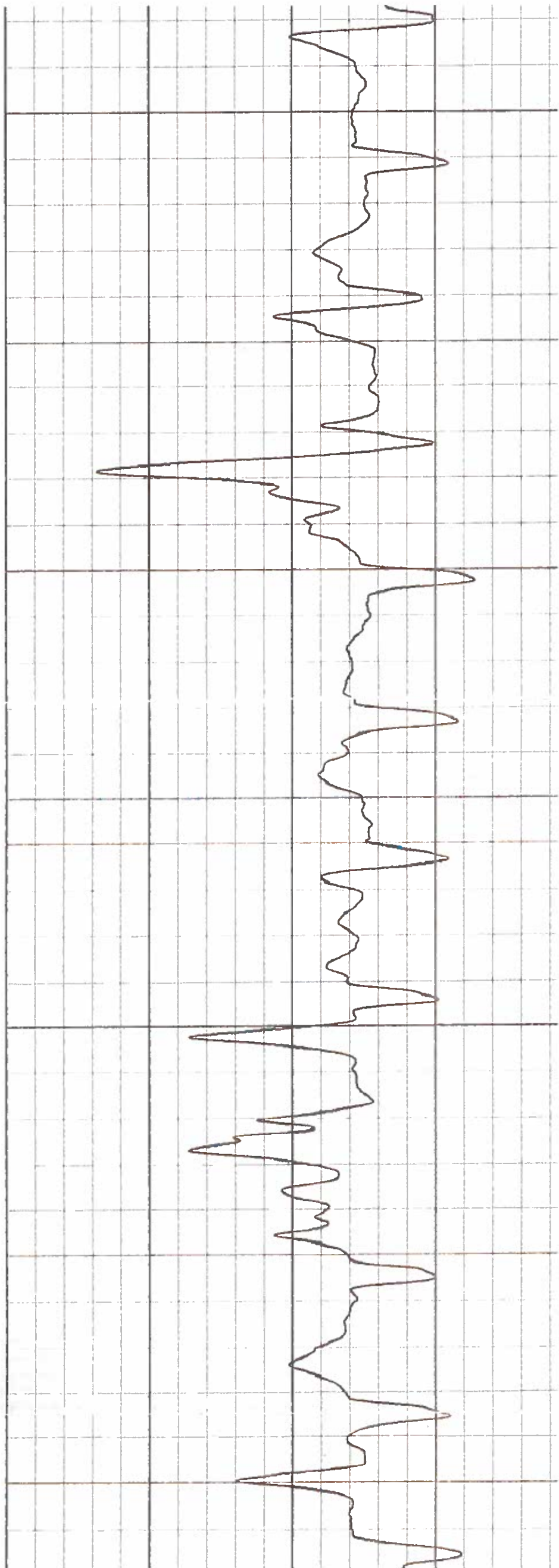


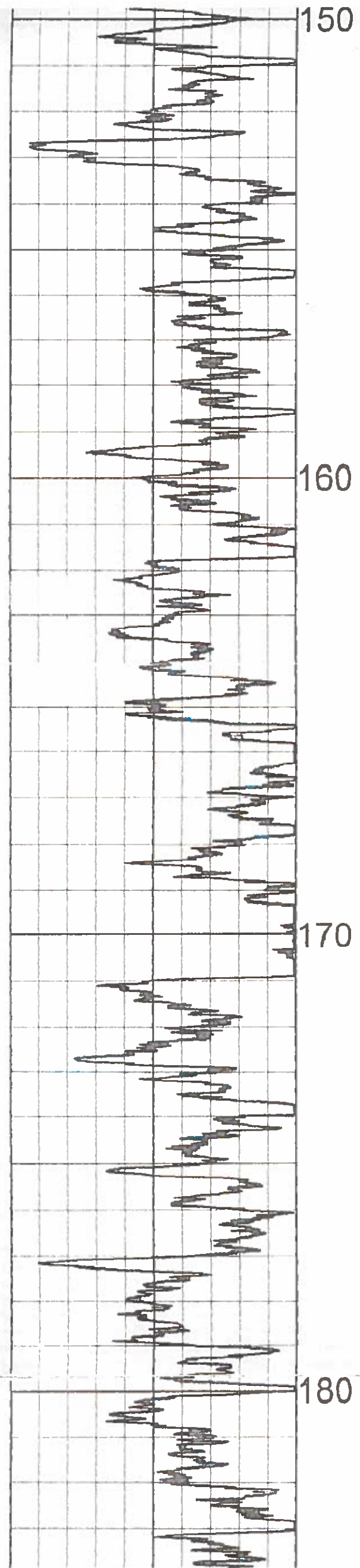
120

130

140

150



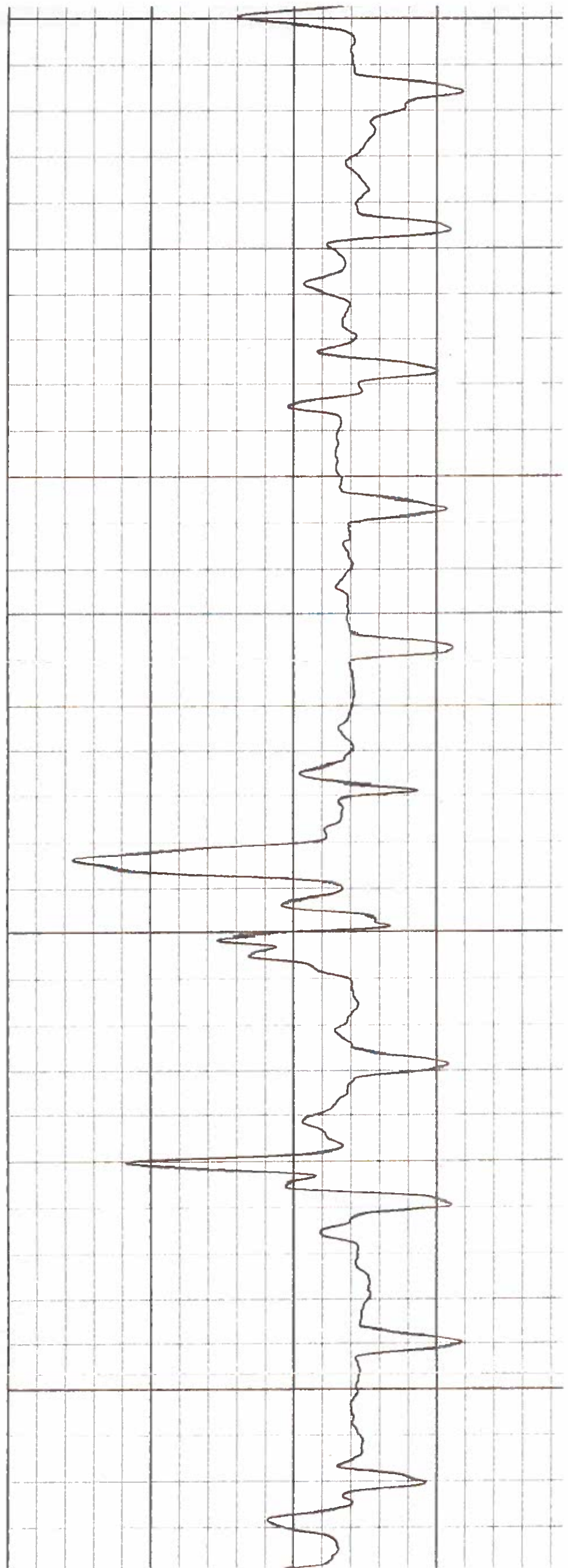


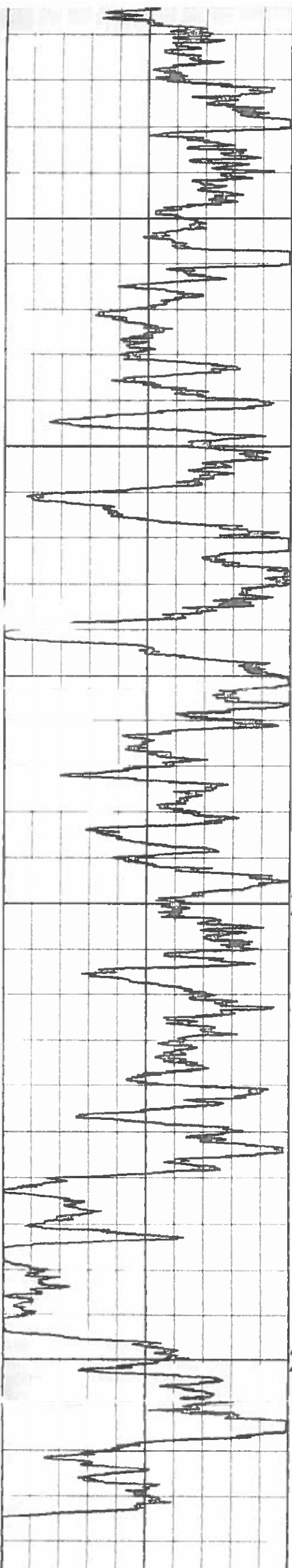
150

160

170

180

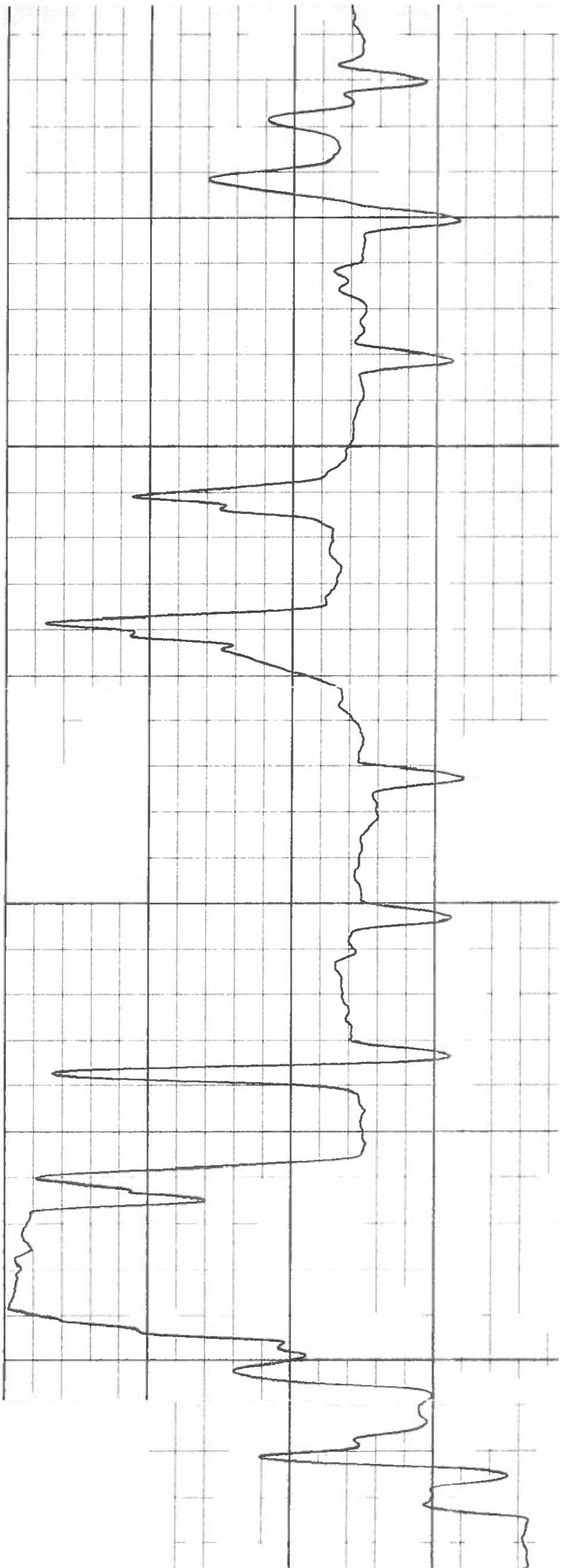


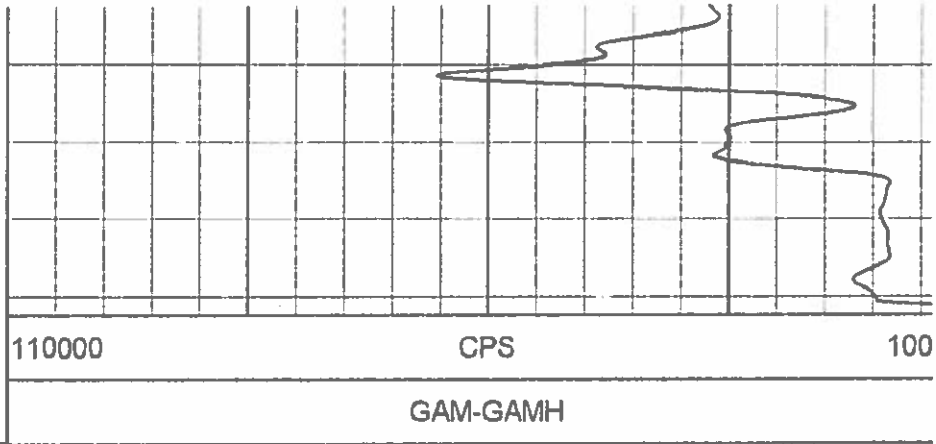
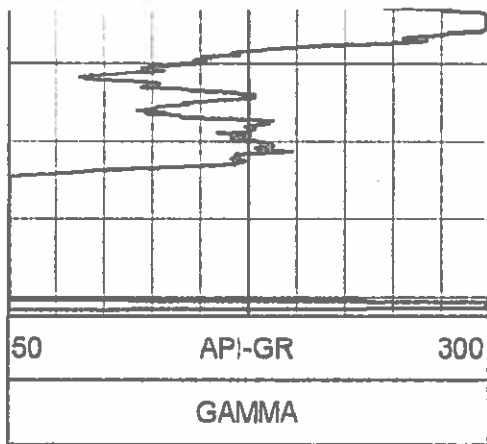


190

200

2





1:100 SLIM DENSITY BR10-09 07/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9068 SLIM DENSITY 0 07/28/2010

VERSION = 3.64IC

TOOL CALIBRATION BR10-09 07/31/10 14:24

TOOL 9068A TM VERSION 1

SERIAL NUMBER 643

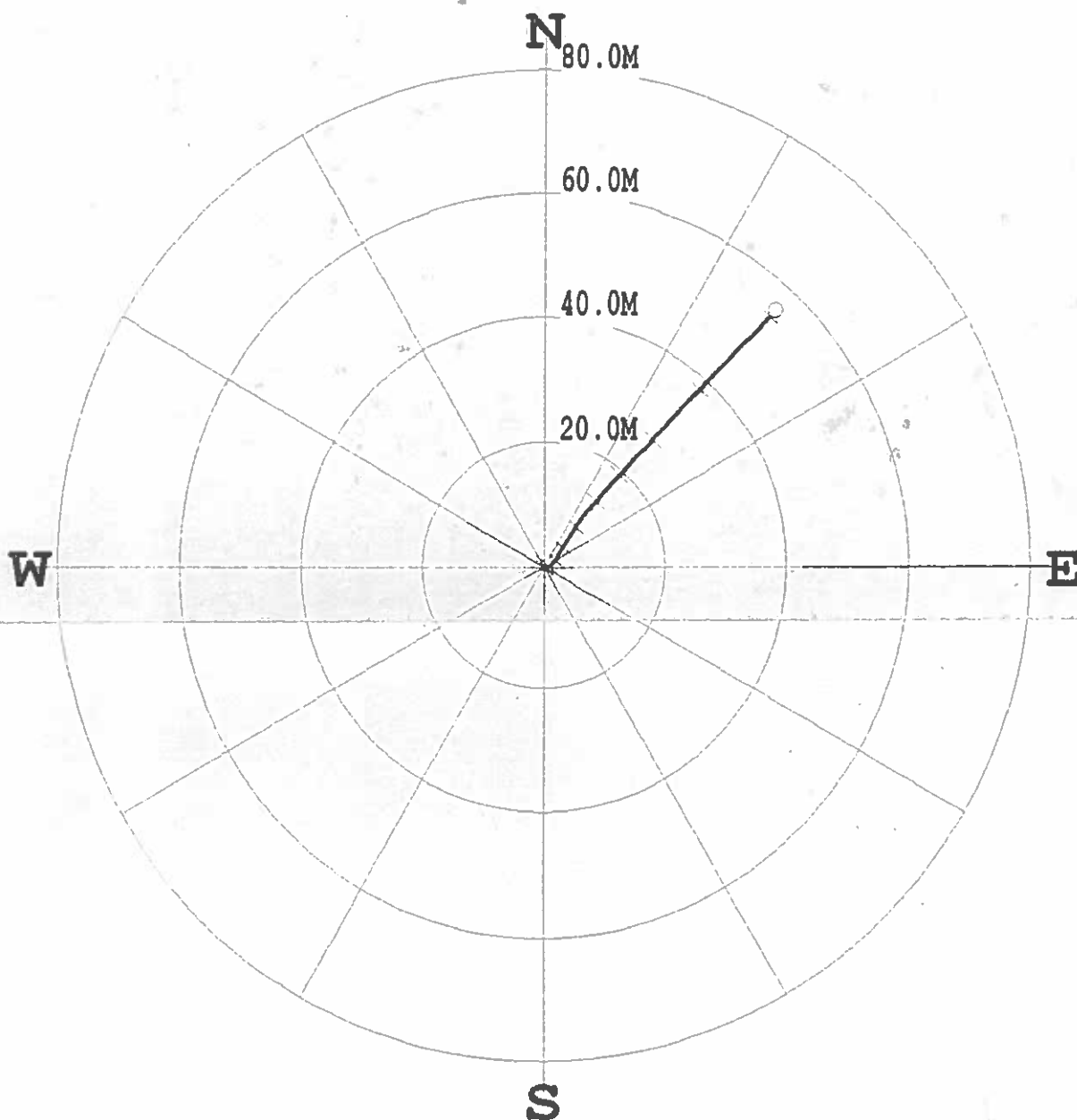
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May22,10	09:32:25	GAMMA	Default [CPS]	Default [CPS]
	May22,10	09:32:25	GAMMA	545.000 [API-GR]	100.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-09
 DATE OF LOG: 07/31/10
 PROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 201.46 M
 AZIMUTH: 42.7
 DISTANCE: 55.9 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-09
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 07/31/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-09_07-31-10_16-33_9057A_.02_-0.13_214.56_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
20.00	20.01	-0.11	0.15	0.2	126.6	0.4	132.3
21.00	21.01	-0.11	0.16	0.2	126.3	0.8	106.4
22.00	22.01	-0.12	0.17	0.2	125.5	1.1	110.4
23.00	23.01	-0.12	0.19	0.2	123.6	1.1	93.3
24.00	24.01	-0.12	0.21	0.2	120.6	1.3	81.6
25.00	25.01	-0.12	0.23	0.3	117.7	1.3	84.1
26.00	26.01	-0.12	0.25	0.3	115.2	1.1	75.2
27.00	27.01	-0.11	0.27	0.3	112.3	1.4	76.9
28.00	28.00	-0.11	0.30	0.3	109.8	1.4	75.7
29.00	29.00	-0.10	0.32	0.3	107.3	1.7	72.4
30.00	30.00	-0.09	0.35	0.4	104.7	1.7	74.1
31.00	31.00	-0.08	0.38	0.4	102.3	2.0	63.1
32.00	32.00	-0.07	0.41	0.4	99.9	2.4	67.1
33.00	33.00	-0.06	0.45	0.5	97.0	2.5	55.0
34.00	34.00	-0.03	0.49	0.5	93.8	2.6	60.8
35.00	35.00	-0.01	0.52	0.5	91.1	2.5	56.0
36.00	36.00	0.02	0.56	0.6	88.4	2.9	54.4

28.00	28.00	-0.11	0.30	0.3	107.8	1.4	75.7
29.00	29.00	-0.10	0.32	0.3	107.3	1.7	72.4
30.00	30.00	-0.09	0.35	0.4	104.7	1.7	74.1
31.00	31.00	-0.08	0.38	0.4	102.3	2.0	63.1
32.00	32.00	-0.07	0.41	0.4	99.9	2.4	67.1
33.00	33.00	-0.06	0.45	0.5	97.0	2.5	55.0
34.00	34.00	-0.03	0.49	0.5	93.8	2.6	60.8
35.00	35.00	-0.01	0.52	0.5	91.1	2.5	56.0
36.00	36.00	0.02	0.56	0.6	88.4	2.9	54.4
37.00	37.00	0.04	0.60	0.6	85.8	3.0	53.2
38.00	38.00	0.07	0.64	0.6	83.9	2.8	59.0
39.00	39.00	0.10	0.68	0.7	82.1	3.1	56.1
40.00	39.99	0.13	0.73	0.7	80.3	3.7	60.8
41.00	40.99	0.16	0.79	0.8	78.9	3.7	67.3
42.00	41.99	0.18	0.85	0.9	77.8	3.5	55.4
43.00	42.99	0.22	0.90	0.9	76.5	4.1	57.2
44.00	43.98	0.26	0.96	1.0	74.9	4.6	53.6
45.00	44.98	0.31	1.03	1.1	73.3	4.6	52.2
46.00	45.98	0.36	1.09	1.1	71.8	4.6	50.5
47.00	46.98	0.41	1.15	1.2	70.4	4.4	51.4
48.00	47.97	0.46	1.21	1.3	69.2	4.4	45.0
49.00	48.97	0.51	1.27	1.4	68.0	4.9	45.6
50.00	49.97	0.57	1.33	1.4	66.9	4.8	49.7
51.00	50.96	0.62	1.39	1.5	65.9	4.7	45.3
52.00	51.96	0.68	1.45	1.6	64.9	4.6	47.9
53.00	52.96	0.74	1.51	1.7	64.0	4.7	45.9
54.00	53.95	0.79	1.56	1.8	63.1	4.7	43.6
55.00	54.95	0.85	1.62	1.8	62.2	4.7	41.6
56.00	55.95	0.91	1.68	1.9	61.5	4.6	43.6
57.00	56.94	0.97	1.73	2.0	60.7	4.5	39.7
58.00	57.94	1.03	1.78	2.1	60.0	4.5	36.1
59.00	58.94	1.09	1.83	2.1	59.3	4.3	35.9
60.00	59.93	1.15	1.88	2.2	58.6	4.4	39.0
61.00	60.93	1.21	1.92	2.3	57.8	4.9	37.7
62.00	61.93	1.28	1.97	2.4	57.0	4.6	32.3
63.00	62.92	1.35	2.01	2.4	56.2	4.8	29.1
64.00	63.92	1.43	2.06	2.5	55.2	5.7	31.8
65.00	64.91	1.52	2.11	2.6	54.3	5.9	29.4
66.00	65.91	1.61	2.16	2.7	53.3	5.9	24.9
67.00	66.90	1.70	2.21	2.8	52.4	6.4	28.7
68.00	67.90	1.80	2.27	2.9	51.6	6.6	27.3
69.00	68.89	1.90	2.32	3.0	50.7	7.1	29.9
70.00	69.88	2.01	2.39	3.1	49.9	6.8	30.7
71.00	70.88	2.11	2.45	3.2	49.2	6.9	29.8
72.00	71.87	2.22	2.51	3.3	48.5	7.2	30.2
73.00	72.86	2.33	2.57	3.5	47.8	7.4	29.8
74.00	73.85	2.44	2.63	3.6	47.2	7.8	30.9
75.00	74.84	2.56	2.70	3.7	46.6	7.9	31.0
76.00	75.83	2.67	2.77	3.9	46.0	8.0	30.9
77.00	76.82	2.79	2.85	4.0	45.5	8.1	29.7
78.00	77.81	2.92	2.92	4.1	45.0	8.2	29.5
79.00	78.80	3.04	2.99	4.3	44.5	8.3	29.8
80.00	79.79	3.17	3.06	4.4	44.0	8.3	31.4
81.00	80.78	3.30	3.14	4.5	43.6	8.8	31.1
82.00	81.77	3.43	3.22	4.7	43.2	9.1	32.7
83.00	82.76	3.56	3.30	4.9	42.8	9.3	33.7
84.00	83.74	3.70	3.39	5.0	42.5	9.6	32.4
85.00	84.73	3.84	3.48	5.2	42.1	9.9	31.8
86.00	85.71	3.99	3.57	5.4	41.8	10.3	31.3
87.00	86.70	4.14	3.67	5.5	41.5	10.4	32.9
88.00	87.68	4.30	3.76	5.7	41.2	10.8	33.5
89.00	88.66	4.46	3.87	5.9	41.0	11.2	33.0
90.00	89.64	4.62	3.98	6.1	40.7	11.3	32.3
91.00	90.62	4.78	4.09	6.3	40.5	11.6	33.6
92.00	91.60	4.95	4.20	6.5	40.3	11.8	33.0
93.00	92.58	5.13	4.31	6.7	40.1	12.1	32.9
94.00	93.56	5.30	4.43	6.9	39.8	12.4	33.8
95.00	94.53	5.48	4.54	7.1	39.6	12.4	33.1
96.00	95.51	5.66	4.66	7.3	39.4	12.7	32.8
97.00	96.49	5.85	4.78	7.6	39.3	13.0	34.1
98.00	97.46	6.04	4.91	7.8	39.1	13.4	32.7
99.00	98.43	6.23	5.04	8.0	38.9	13.4	34.0
100.00	99.40	6.43	5.17	8.2	38.8	13.5	34.7
101.00	100.38	6.62	5.30	8.5	38.7	13.8	34.4
102.00	101.35	6.82	5.44	8.7	38.6	13.9	35.1
103.00	102.32	7.02	5.58	9.0	38.5	13.9	34.5
104.00	103.29	7.21	5.71	9.2	38.4	13.9	34.5
105.00	104.26	7.41	5.85	9.4	38.3	13.7	34.9
106.00	105.23	7.60	5.99	9.7	38.2	14.1	37.4
107.00	106.20	7.80	6.13	9.9	38.2	14.1	36.2
108.00	107.17	8.00	6.28	10.2	38.1	14.1	36.5
109.00	108.14	8.19	6.42	10.4	38.1	14.2	36.2
110.00	109.11	8.39	6.58	10.7	38.1	14.7	38.4
111.00	110.07	8.59	6.74	10.9	38.1	14.8	38.1
112.00	111.04	8.79	6.90	11.2	38.1	14.9	39.7
113.00	112.01	8.99	7.06	11.4	38.2	15.0	40.1
114.00	112.97	9.19	7.23	11.7	38.2	15.1	40.3
115.00	113.94	9.38	7.40	11.9	38.3	15.1	41.0
116.00	114.90	9.58	7.57	12.2	38.3	15.0	41.0
117.00	115.87	9.77	7.74	12.5	38.4	15.0	41.6
118.00	116.84	9.97	7.91	12.7	38.4	14.8	41.9
119.00	117.80	10.16	8.08	13.0	38.5	15.0	40.4
120.00	118.77	10.34	8.25	13.2	38.6	14.6	42.4
121.00	119.74	10.53	8.42	13.5	38.6	14.6	42.8
122.00	120.71	10.72	8.58	13.7	38.7	14.6	42.3
123.00	121.67	10.90	8.76	14.0	38.8	14.8	43.3
124.00	122.64	11.09	8.93	14.2	38.8	14.8	42.8

72.00	72.00	2.22	2.57	3.5	47.8	7.4	29.8
73.00	72.86	2.33	2.57	3.5	47.8	7.4	29.8
74.00	73.85	2.44	2.63	3.6	47.2	7.8	30.9
75.00	74.84	2.56	2.70	3.7	46.6	7.9	31.0
76.00	75.83	2.67	2.77	3.9	46.0	8.0	30.9
77.00	76.82	2.79	2.85	4.0	45.5	8.1	29.7
78.00	77.81	2.92	2.92	4.1	45.0	8.2	29.5
79.00	78.80	3.04	2.99	4.3	44.5	8.3	29.8
80.00	79.79	3.17	3.06	4.4	44.0	8.3	31.4
81.00	80.78	3.30	3.14	4.5	43.6	8.8	31.1
82.00	81.77	3.43	3.22	4.7	43.2	9.1	32.7
83.00	82.76	3.56	3.30	4.9	42.8	9.3	33.7
84.00	83.74	3.70	3.39	5.0	42.5	9.6	32.4
85.00	84.73	3.84	3.48	5.2	42.1	9.9	31.8
86.00	85.71	3.99	3.57	5.4	41.8	10.3	31.3
87.00	86.70	4.14	3.67	5.5	41.5	10.4	32.9
88.00	87.68	4.30	3.76	5.7	41.2	10.8	33.5
89.00	88.66	4.46	3.87	5.9	41.0	11.2	33.0
90.00	89.64	4.62	3.98	6.1	40.7	11.3	32.3
91.00	90.62	4.78	4.09	6.3	40.5	11.6	33.6
92.00	91.60	4.95	4.20	6.5	40.3	11.8	33.0
93.00	92.58	5.13	4.31	6.7	40.1	12.1	32.9
94.00	93.56	5.30	4.43	6.9	39.8	12.4	33.8
95.00	94.53	5.48	4.54	7.1	39.6	12.4	33.1
96.00	95.51	5.66	4.66	7.3	39.4	12.7	32.8
97.00	96.49	5.85	4.78	7.6	39.3	13.0	34.1
98.00	97.46	6.04	4.91	7.8	39.1	13.4	32.7
99.00	98.43	6.23	5.04	8.0	38.9	13.4	34.0
100.00	99.40	6.43	5.17	8.2	38.8	13.5	34.7
101.00	100.38	6.62	5.30	8.5	38.7	13.8	34.4
102.00	101.35	6.82	5.44	8.7	38.6	13.9	35.1
103.00	102.32	7.02	5.58	9.0	38.5	13.9	34.5
104.00	103.29	7.21	5.71	9.2	38.4	13.9	34.5
105.00	104.26	7.41	5.85	9.4	38.3	13.7	34.9
106.00	105.23	7.60	5.99	9.7	38.2	14.1	37.4
107.00	106.20	7.80	6.13	9.9	38.2	14.1	36.2
108.00	107.17	8.00	6.28	10.2	38.1	14.1	36.5
109.00	108.14	8.19	6.42	10.4	38.1	14.2	36.2
110.00	109.11	8.39	6.58	10.7	38.1	14.7	38.4
111.00	110.07	8.59	6.74	10.9	38.1	14.8	38.1
112.00	111.04	8.79	6.90	11.2	38.1	14.9	39.7
113.00	112.01	8.99	7.06	11.4	38.2	15.0	40.1
114.00	112.97	9.19	7.23	11.7	38.2	15.1	40.3
115.00	113.94	9.38	7.40	11.9	38.3	15.1	41.0
116.00	114.90	9.58	7.57	12.2	38.3	15.0	41.0
117.00	115.87	9.77	7.74	12.5	38.4	15.0	41.6
118.00	116.84	9.97	7.91	12.7	38.4	14.8	41.9
119.00	117.80	10.16	8.08	13.0	38.5	15.0	40.4
120.00	118.77	10.34	8.25	13.2	38.6	14.6	42.4
121.00	119.74	10.53	8.42	13.5	38.6	14.6	42.8
122.00	120.71	10.72	8.58	13.7	38.7	14.6	42.3
123.00	121.67	10.90	8.76	14.0	38.8	14.8	43.3
124.00	122.64	11.09	8.93	14.2	38.8	14.9	42.9
125.00	123.61	11.28	9.11	14.5	38.9	15.0	43.5
126.00	124.57	11.47	9.29	14.8	39.0	15.0	43.1
127.00	125.54	11.66	9.46	15.0	39.1	15.0	43.3
128.00	126.50	11.85	9.64	15.3	39.1	15.1	40.5
129.00	127.47	12.04	9.81	15.5	39.2	15.1	43.5
130.00	128.43	12.23	9.99	15.8	39.2	15.2	42.7
131.00	129.40	12.43	10.17	16.1	39.3	15.3	42.7
132.00	130.36	12.62	10.35	16.3	39.4	15.3	42.9
133.00	131.33	12.81	10.53	16.6	39.4	15.4	41.1
134.00	132.29	13.01	10.71	16.9	39.5	16.0	43.4
135.00	133.25	13.21	10.90	17.1	39.5	16.3	43.1
136.00	134.21	13.42	11.09	17.4	39.6	16.4	43.1
137.00	135.17	13.63	11.29	17.7	39.6	16.9	42.7
138.00	136.13	13.84	11.49	18.0	39.7	17.1	43.6
139.00	137.08	14.05	11.69	18.3	39.8	17.4	44.2
140.00	138.03	14.27	11.91	18.6	39.8	17.8	43.8
141.00	138.99	14.50	12.12	18.9	39.9	18.2	44.0
142.00	139.93	14.72	12.34	19.2	40.0	18.7	44.1
143.00	140.88	14.96	12.56	19.5	40.0	18.9	44.1
144.00	141.83	15.19	12.79	19.9	40.1	19.1	44.4
145.00	142.77	15.43	13.02	20.2	40.2	19.4	44.2
146.00	143.71	15.67	13.25	20.5	40.2	19.6	44.4
147.00	144.65	15.91	13.49	20.9	40.3	20.0	44.9
148.00	145.59	16.15	13.74	21.2	40.4	20.7	44.0
149.00	146.53	16.41	13.98	21.6	40.4	20.6	43.1
150.00	147.46	16.66	14.22	21.9	40.5	21.4	43.8
151.00	148.40	16.92	14.47	22.3	40.5	20.8	44.7
152.00	149.33	17.17	14.72	22.6	40.6	21.1	44.3
153.00	150.26	17.43	14.97	23.0	40.7	21.0	43.4
154.00	151.20	17.69	15.22	23.3	40.7	20.8	44.1
155.00	152.13	17.95	15.47	23.7	40.8	21.1	43.3
156.00	153.06	18.21	15.72	24.1	40.8	21.6	44.5
157.00	153.99	18.48	15.99	24.4	40.9	22.2	44.6
158.00	154.91	18.76	16.25	24.8	40.9	22.5	43.7
159.00	155.84	19.03	16.52	25.2	41.0	22.6	42.1
160.00	156.76	19.31	16.79	25.6	41.0	23.1	43.9
161.00	157.68	19.59	17.06	26.0	41.0	22.9	43.6
162.00	158.60	19.88	17.32	26.4	41.1	23.4	41.8
163.00	159.51	20.18	17.59	26.8	41.1	23.9	43.2
164.00	160.43	20.48	17.86	27.2	41.1	24.4	45.1
165.00	161.34	20.78	18.15	27.6	41.1	24.5	43.0
166.00	162.25	21.08	18.43	28.0	41.2	24.4	43.3
167.00	163.15	21.38	18.73	28.4	41.2	25.3	43.7
168.00	164.06	21.69	19.03	28.9	41.3	25.5	43.9

120.00	118.77	10.34	8.25	13.2	38.6	14.6	42.4
121.00	119.74	10.53	8.42	13.5	38.6	14.6	42.8
122.00	120.71	10.72	8.58	13.7	38.7	14.6	42.3
123.00	121.67	10.90	8.76	14.0	38.8	14.8	43.3
124.00	122.64	11.09	8.93	14.2	38.8	14.9	42.9
125.00	123.61	11.28	9.11	14.5	38.9	15.0	43.5
126.00	124.57	11.47	9.29	14.8	39.0	15.0	43.1
127.00	125.54	11.66	9.46	15.0	39.1	15.0	43.3
128.00	126.50	11.85	9.64	15.3	39.1	15.1	40.5
129.00	127.47	12.04	9.81	15.5	39.2	15.1	43.5
130.00	128.43	12.23	9.99	15.8	39.2	15.2	42.7
131.00	129.40	12.43	10.17	16.1	39.3	15.3	42.7
132.00	130.36	12.62	10.35	16.3	39.4	15.3	42.9
133.00	131.33	12.81	10.53	16.6	39.4	15.4	41.1
134.00	132.29	13.01	10.71	16.9	39.5	16.0	43.4
135.00	133.25	13.21	10.90	17.1	39.5	16.3	43.1
136.00	134.21	13.42	11.09	17.4	39.6	16.4	43.1
137.00	135.17	13.63	11.29	17.7	39.6	16.9	42.7
138.00	136.13	13.84	11.49	18.0	39.7	17.1	43.6
139.00	137.08	14.05	11.69	18.3	39.8	17.4	44.2
140.00	138.03	14.27	11.91	18.6	39.8	17.8	43.8
141.00	138.99	14.50	12.12	18.9	39.9	18.2	44.0
142.00	139.93	14.72	12.34	19.2	40.0	18.7	44.1
143.00	140.88	14.96	12.56	19.5	40.0	18.9	44.1
144.00	141.83	15.19	12.79	19.9	40.1	19.1	44.4
145.00	142.77	15.43	13.02	20.2	40.2	19.4	44.2
146.00	143.71	15.67	13.25	20.5	40.2	19.6	44.4
147.00	144.65	15.91	13.49	20.9	40.3	20.0	44.9
148.00	145.59	16.15	13.74	21.2	40.4	20.7	44.0
149.00	146.53	16.41	13.98	21.6	40.4	20.6	43.1
150.00	147.46	16.66	14.22	21.9	40.5	21.4	43.8
151.00	148.40	16.92	14.47	22.3	40.5	20.8	44.7
152.00	149.33	17.17	14.72	22.6	40.6	21.1	44.3
153.00	150.26	17.43	14.97	23.0	40.7	21.0	43.4
154.00	151.20	17.69	15.22	23.3	40.7	20.8	44.1
155.00	152.13	17.95	15.47	23.7	40.8	21.1	43.3
156.00	153.06	18.21	15.72	24.1	40.8	21.6	44.5
157.00	153.99	18.48	15.99	24.4	40.9	22.2	44.6
158.00	154.91	18.76	16.25	24.8	40.9	22.5	43.7
159.00	155.84	19.03	16.52	25.2	41.0	22.6	42.1
160.00	156.76	19.31	16.79	25.6	41.0	23.1	43.9
161.00	157.68	19.59	17.06	26.0	41.0	22.9	43.6
162.00	158.60	19.88	17.32	26.4	41.1	23.4	41.8
163.00	159.51	20.18	17.59	26.8	41.1	23.9	43.2
164.00	160.43	20.48	17.86	27.2	41.1	24.4	45.1
165.00	161.34	20.78	18.15	27.6	41.1	24.5	43.0
166.00	162.25	21.08	18.43	28.0	41.2	24.4	43.3
167.00	163.15	21.38	18.73	28.4	41.2	25.3	43.7
168.00	164.06	21.69	19.03	28.9	41.3	25.5	43.9
169.00	164.96	22.01	19.33	29.3	41.3	25.9	45.0
170.00	165.86	22.33	19.63	29.7	41.3	26.4	43.7
171.00	166.75	22.65	19.94	30.2	41.4	26.7	43.3
172.00	167.64	22.99	20.25	30.6	41.4	27.4	44.3
173.00	168.53	23.32	20.57	31.1	41.4	28.3	43.2
174.00	169.41	23.67	20.89	31.6	41.4	28.7	42.8
175.00	170.28	24.02	21.23	32.1	41.5	29.2	42.7
176.00	171.14	24.38	21.58	32.6	41.5	30.2	41.9
177.00	172.01	24.75	21.92	33.1	41.5	30.5	43.1
178.00	172.87	25.12	22.27	33.6	41.6	31.0	44.6
179.00	173.72	25.50	22.62	34.1	41.6	31.2	44.0
180.00	174.58	25.89	22.97	34.6	41.6	31.6	42.1
181.00	175.42	26.27	23.34	35.1	41.6	32.1	42.2
182.00	176.27	26.66	23.71	35.7	41.6	32.3	42.3
183.00	177.10	27.05	24.09	36.2	41.7	33.4	44.8
184.00	177.94	27.45	24.48	36.8	41.7	33.8	45.0
185.00	178.77	27.85	24.87	37.3	41.8	34.3	44.5
186.00	179.59	28.26	25.26	37.9	41.8	34.7	43.4
187.00	180.41	28.66	25.67	38.5	41.8	35.2	47.0
188.00	181.22	29.08	26.07	39.1	41.9	35.8	45.7
189.00	182.03	29.50	26.48	39.6	41.9	35.9	41.1
190.00	182.84	29.92	26.90	40.2	42.0	37.0	45.1
191.00	183.63	30.35	27.32	40.8	42.0	37.5	45.2
192.00	184.43	30.78	27.75	41.4	42.0	37.9	45.2
193.00	185.21	31.22	28.19	42.1	42.1	38.2	44.6
194.00	186.00	31.66	28.62	42.7	42.1	38.5	44.9
195.00	186.78	32.10	29.06	43.3	42.2	39.0	45.0
196.00	187.56	32.56	29.50	43.9	42.2	39.6	45.0
197.00	188.33	33.00	29.95	44.6	42.2	39.3	44.1
198.00	189.10	33.46	30.39	45.2	42.3	39.5	42.2
199.00	189.87	33.91	30.84	45.8	42.3	39.5	43.1
200.00	190.65	34.36	31.29	46.5	42.3	39.5	46.1
201.00	191.41	34.81	31.74	47.1	42.4	39.9	44.6
202.00	192.18	35.26	32.19	47.7	42.4	40.2	45.4
203.00	192.95	35.72	32.64	48.4	42.4	41.4	49.1
204.00	193.71	36.18	33.10	49.0	42.5	40.8	45.0
205.00	194.47	36.63	33.56	49.7	42.5	40.7	44.9
206.00	195.22	37.09	34.03	50.3	42.5	41.4	44.3
207.00	195.98	37.55	34.50	51.0	42.6	41.1	44.0
208.00	196.73	38.01	34.97	51.7	42.6	41.6	45.4
209.00	197.48	38.48	35.44	52.3	42.6	42.0	46.1
210.00	198.22	38.95	35.91	53.0	42.7	41.8	43.9
211.00	198.97	39.42	36.39	53.6	42.7	41.8	46.9
212.00	199.71	39.90	36.85	54.3	42.7	42.0	33.8
213.00	200.45	40.37	37.32	55.0	42.7	42.9	43.5
214.00	201.18	40.88	37.78	55.7	42.7	42.7	42.9
214.38	201.46	41.07	37.95	55.8	42.7	42.7	42.9



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-10

year drilled: 2010

AREA:

BURNT RIVER
BRULE

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,675.29	6,140,379.37	1,314.35

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
50.4	-63	155.58	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	50.4	-62.70
6.00	50.6	-62.70
8.00	51.7	-63.00
10.00	50.8	-61.70
12.00	50.4	-61.60
14.00	50.1	-61.60
16.00	50.0	-60.60
18.00	49.8	-60.80
20.00	49.7	-60.50
22.00	49.5	-59.90
24.00	49.3	-58.60
26.00	49.1	-58.00
28.00	49.0	-57.70
30.00	48.8	-57.30
32.00	48.6	-57.00
34.00	48.5	-56.90
36.00	48.3	-56.50
38.00	48.2	-56.00
40.00	48.1	-55.80
42.00	47.9	-55.30
44.00	47.8	-54.90
46.00	47.6	-54.10
48.00	47.5	-53.90
50.00	47.4	-53.40
52.00	47.3	-53.20
54.00	47.2	-53.00
56.00	47.1	-52.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.30	2.30		
54.50	56.70	2.20		
58.10	58.70	0.60		
95.40	96.10	0.70		
119.30	120.00	0.70		
120.00	121.00	1.00		
121.00	122.00	1.00		
126.60	127.00	0.40		
127.70	131.50	3.80		
132.40	132.80	0.40		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-10**

year drilled: 2010

AREA: **BURNT RIVER
BRULE**

58.00	47.0	-51.90
60.00	46.9	-51.10
62.00	46.8	-50.60
64.00	46.7	-50.10
66.00	46.6	-49.40
68.00	46.5	-49.30
70.00	46.5	-49.00
72.00	46.4	-49.30
74.00	46.4	-49.20
76.00	46.3	-49.10
78.00	46.3	-48.50
80.00	46.2	-48.40
82.00	46.1	-47.70
84.00	46.1	-47.30
86.00	46.0	-46.80
88.00	45.9	-46.60
90.00	45.9	-46.40
92.00	45.8	-46.40
94.00	45.8	-46.60
96.00	45.7	-46.30
98.00	45.7	-46.20
100.00	45.7	-46.00
102.00	45.7	-46.20
104.00	45.6	-46.10
106.00	45.6	-45.80
108.00	45.5	-45.70
110.00	45.5	-45.40
112.00	45.5	-45.00
114.00	45.4	-44.80
116.00	45.4	-45.00
118.00	45.4	-45.00
120.00	45.4	-45.00
122.00	45.4	-45.10
124.00	45.4	-44.70
126.00	45.4	-44.70
128.00	45.4	-44.80
130.00	45.3	-44.90
132.00	45.3	-44.60
134.00	45.3	-44.20
136.00	45.3	-44.50
138.00	45.4	-44.10
140.00	45.4	-44.00
142.00	45.4	-44.10
144.00	45.4	-44.40
146.00	45.4	-44.80

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-10**

year drilled: 2010

AREA:

BURNT RIVER
BRULE

148.00	45.4	-44.30
150.00	45.4	-44.80
152.00	45.4	-44.60
154.00	45.4	-44.50
155.26	45.4	-43.90

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

PICKS - Jan 11/2011



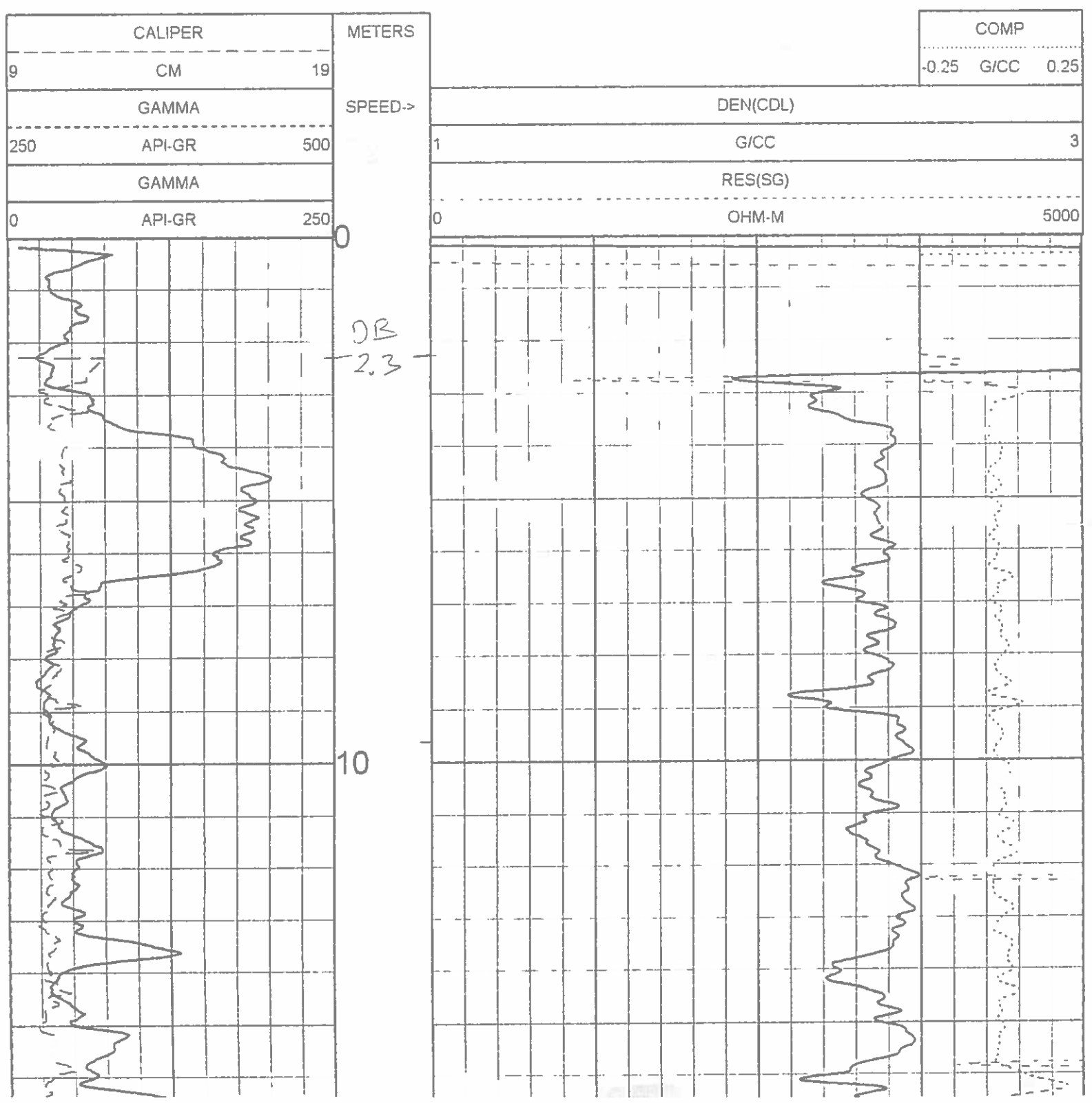
COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-10

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR 10-10		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/30/10	RIG NUMBER	
DEPTH DRILLER	156.9	LOGGERS TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.18	DEPARTURE TIME	
LOG BOTTOM	155.58	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G HOLMLUND		
RECORDED BY	JT NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

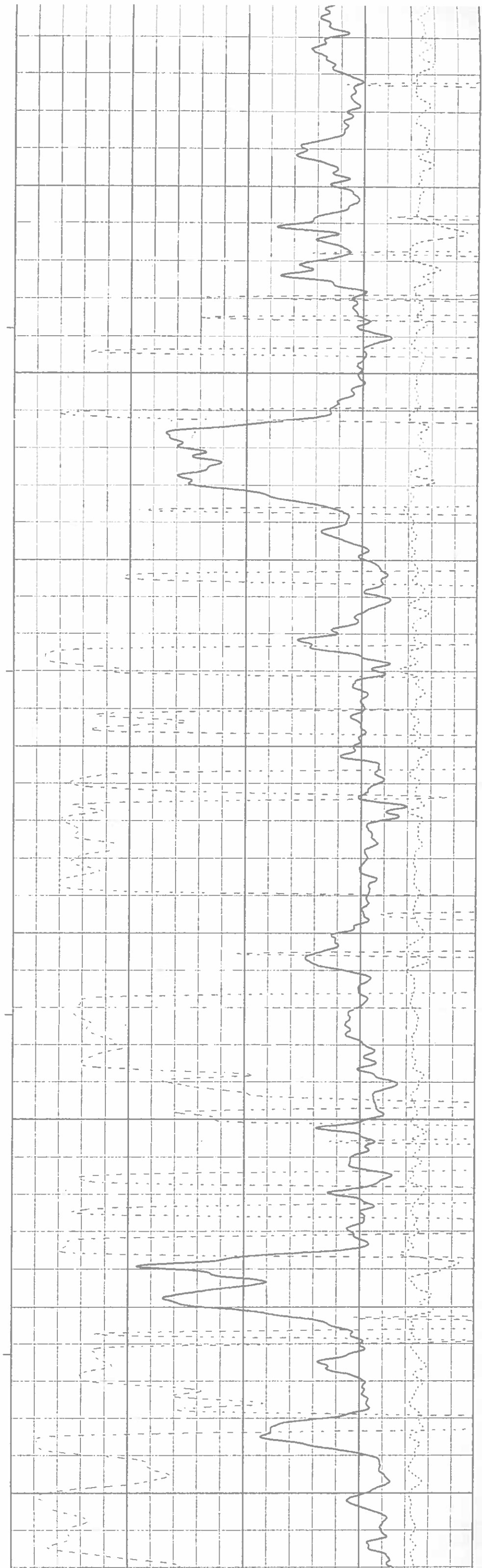
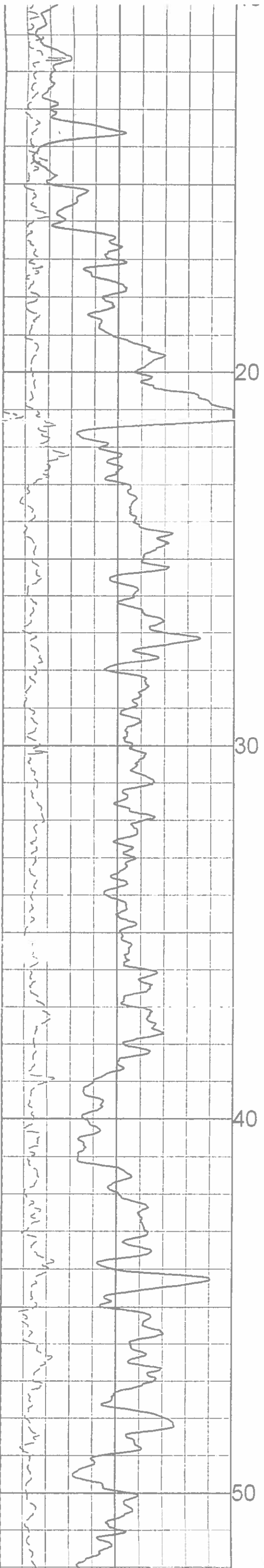
1:100 BULK DENSITY BR10-10 08/30/10

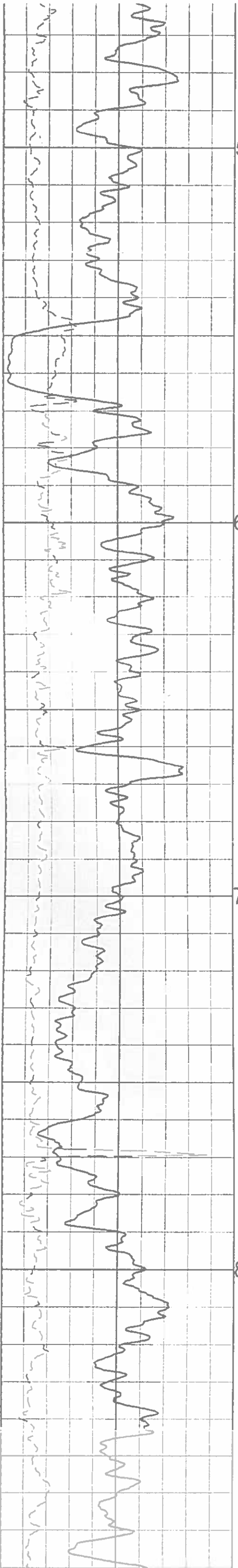
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 08/25/2010 VERSION = 3.64HR



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





50

54.5

56.7

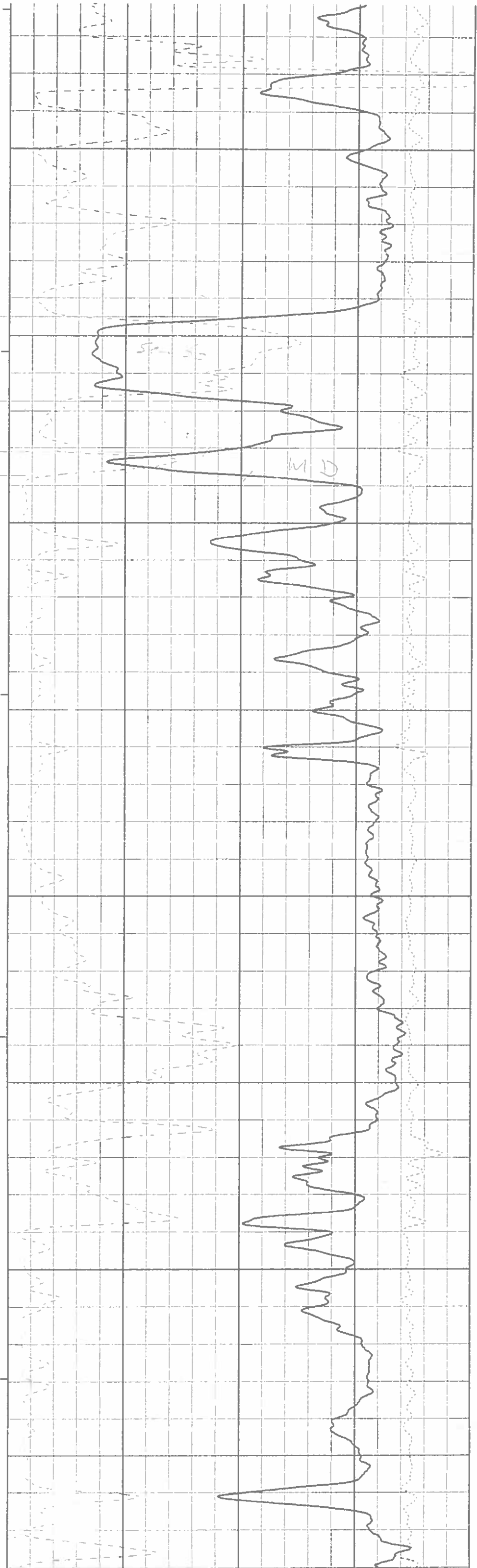
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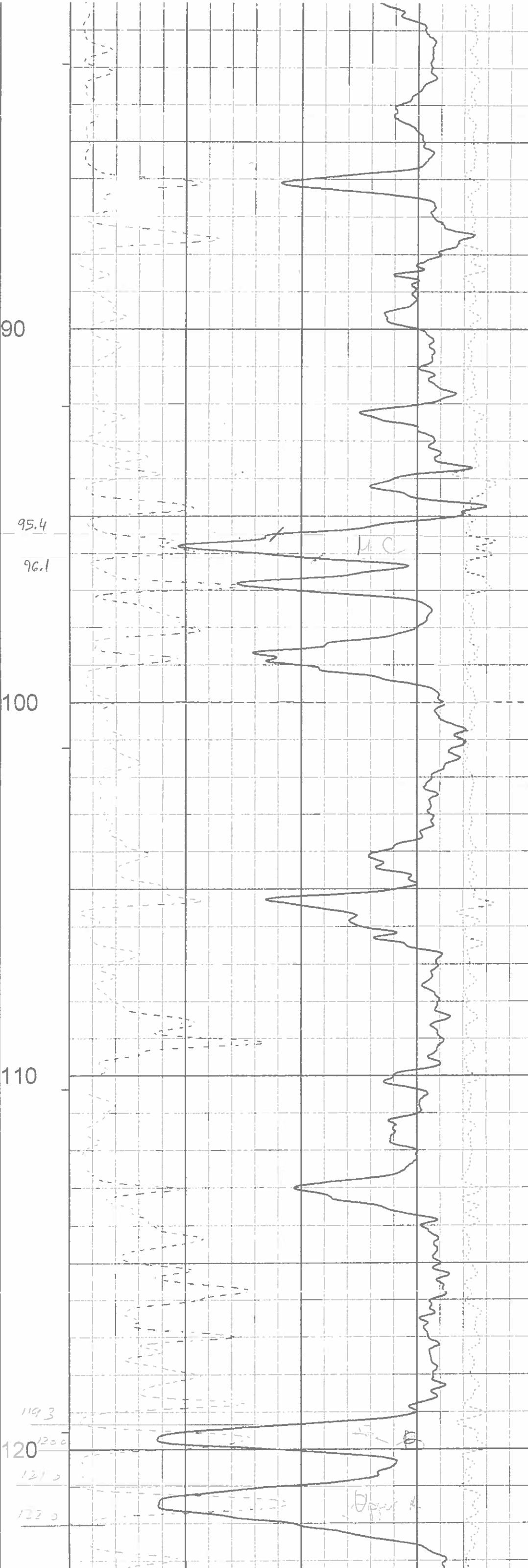
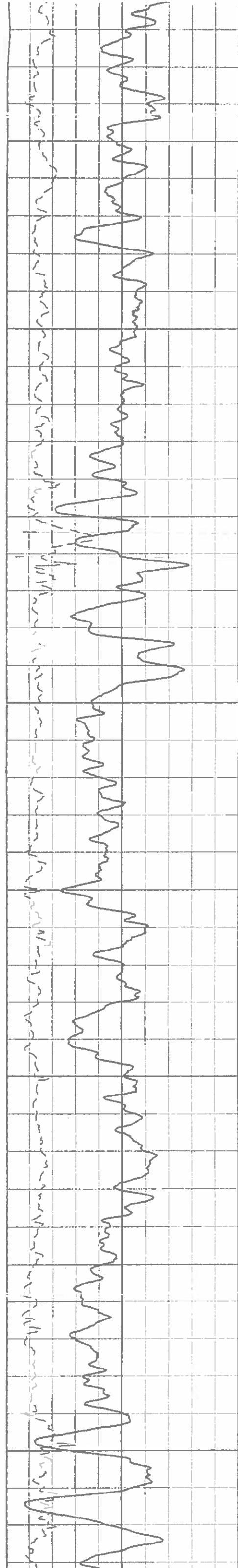
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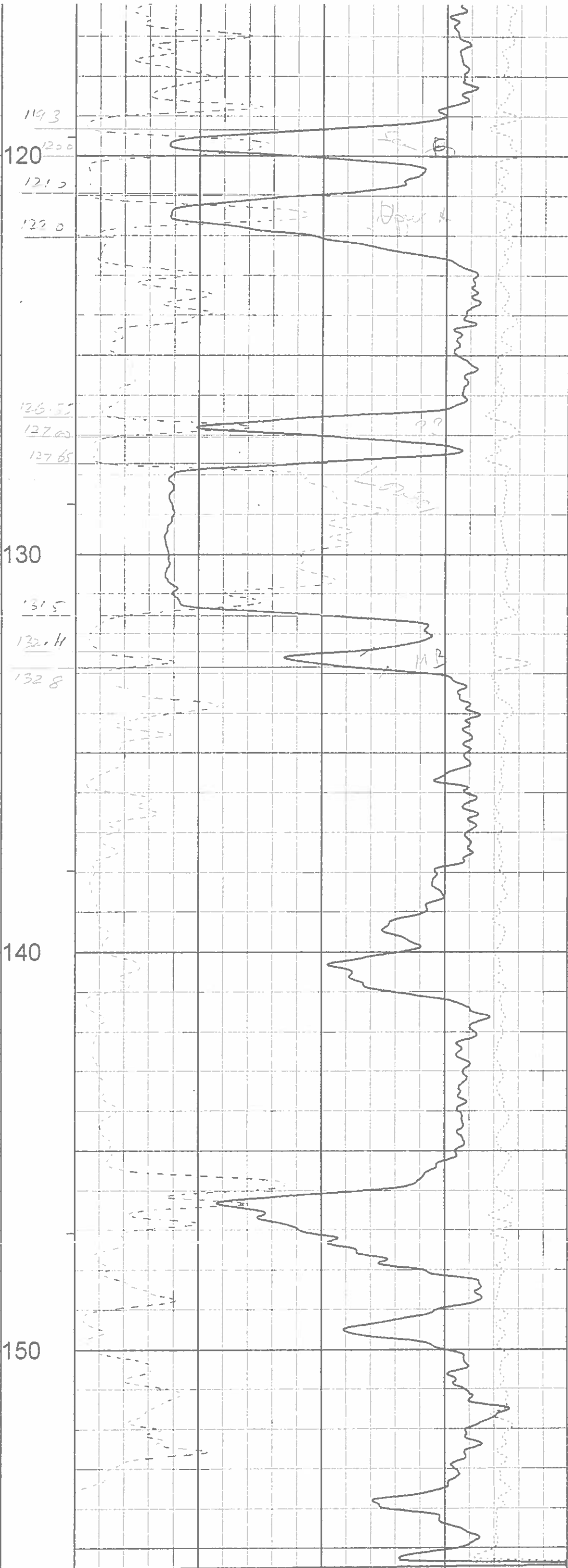
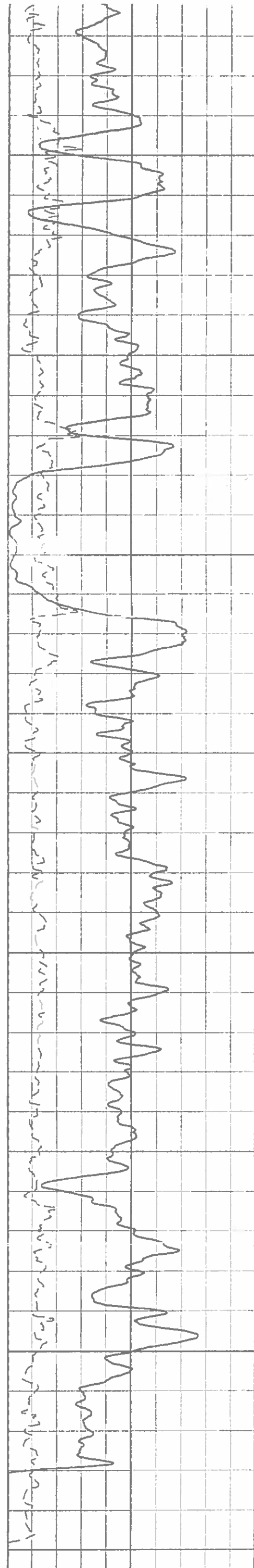
60

70

80





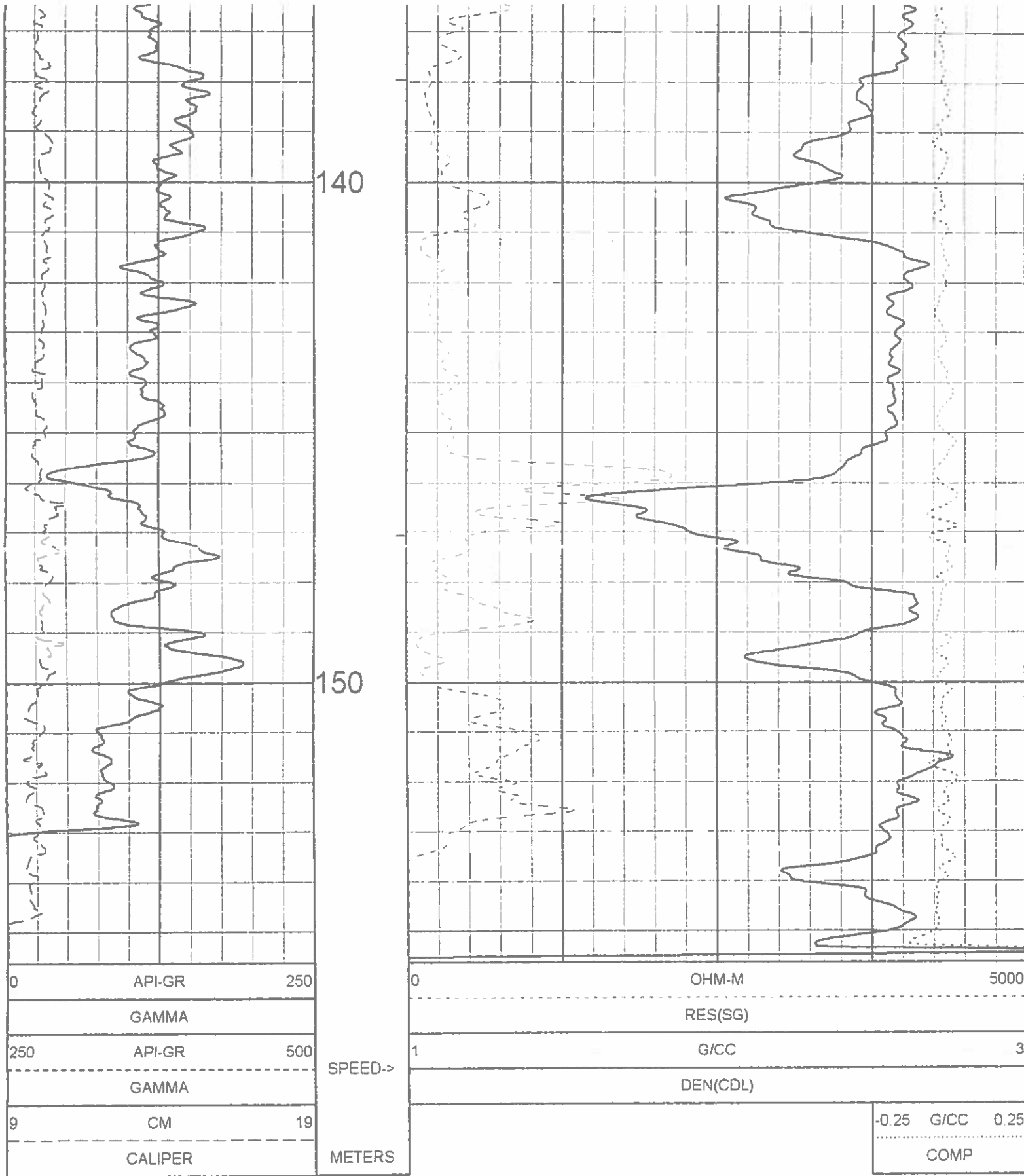


0 API-GR 250
 GAMMA
 250 API-GR 500
 GAMMA

0 OHM-M 5000
 RES(SG)
 1 G/CC 3
 DEN(C/D)

SPEED->





1:100 BULK DENSITY BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 08/25/2010 VERSION = 3 64HR

TOOL CALIBRATION BR10-10 08/30/10 10:45
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14 55 56	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14 55 56	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09 04 49	VOLTAGE	32 300 [MV]	8515.000 [CPS]
	Jun24,10	09 04 49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08 52 25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08 52 25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug29,10	11 06 34	DEN(LS)	1.620 [G/CC]	17244.000 [CPS]
	Aug29,10	11 06 34	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug30,10	11 03 26	DEN(SS)	1.590 [G/CC]	54336.000 [CPS]
	Aug30,10	11 02 55	DEN(SS)	2.580 [G/CC]	23224.000 [CPS]
6	Jun11,10	08 52 34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08 52 34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09 05 20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09 05 20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07 31 00	F	Default [CPS]	
9	Jun11,10	07 31 00	X	Default [CPS]	

DETAILED DENSITY GAMMA - CALIPER - RES. BR10-10

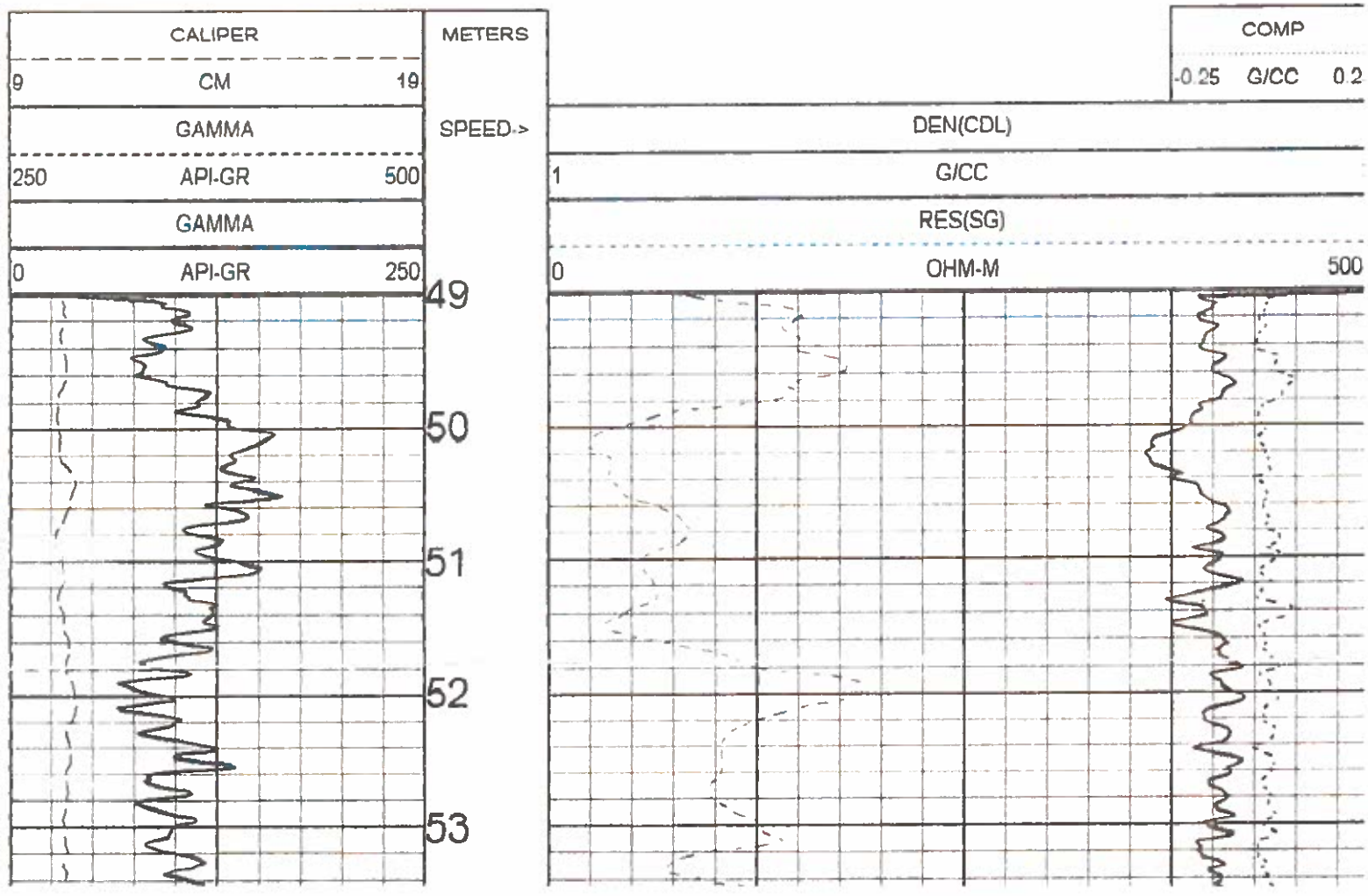
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICE ES:	NEUTRON
WELL	BR 10-10		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/30/10	RIG NUMBER	
DEPTH DRILLER	156 9	LOGGER TD	
BIT SIZE	11 43	ARRIVAL TIME	
LOG TOP	0 18	DEPARTURE TIME	
LOG BOTTOM	155 58	CIRC STOPPED	N/A
CASING LOGGER	3 048		
CASING DRILLER	3 048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1 00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

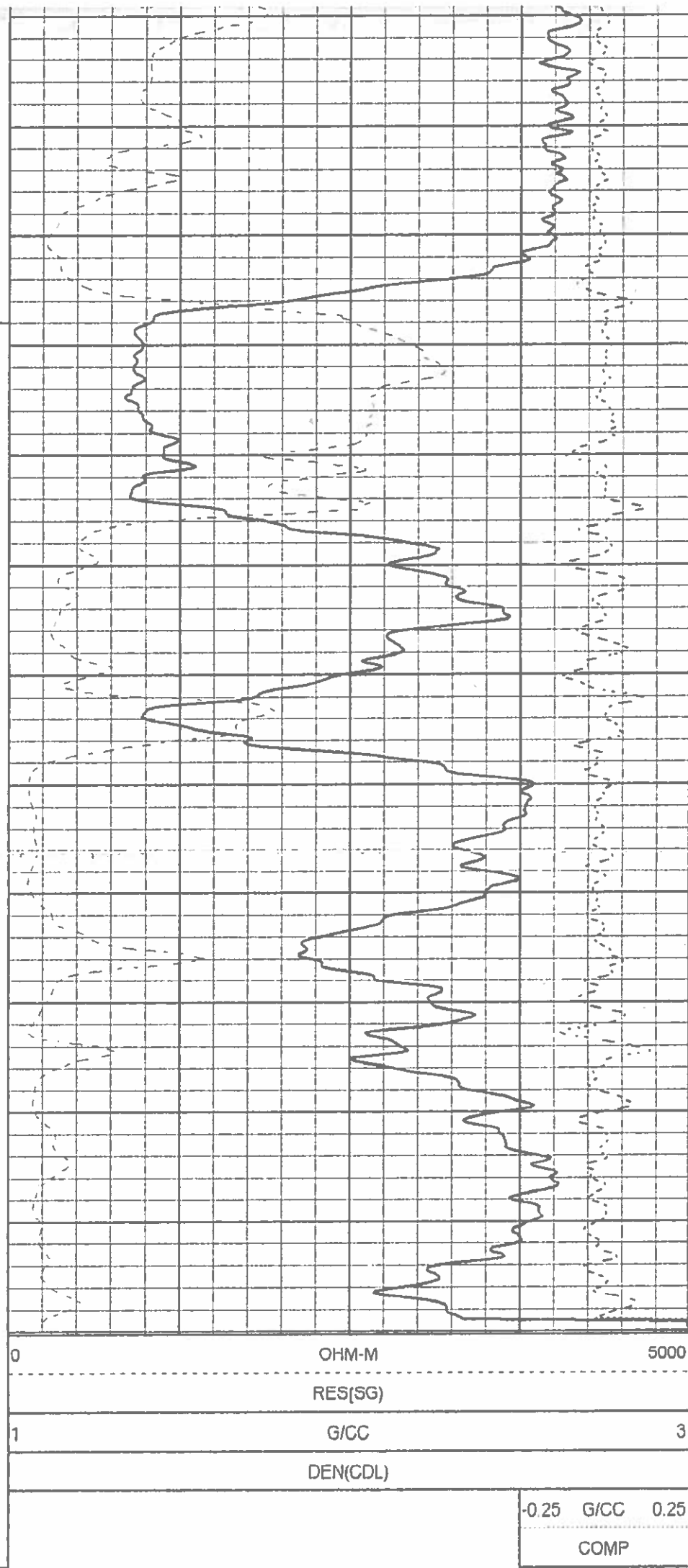
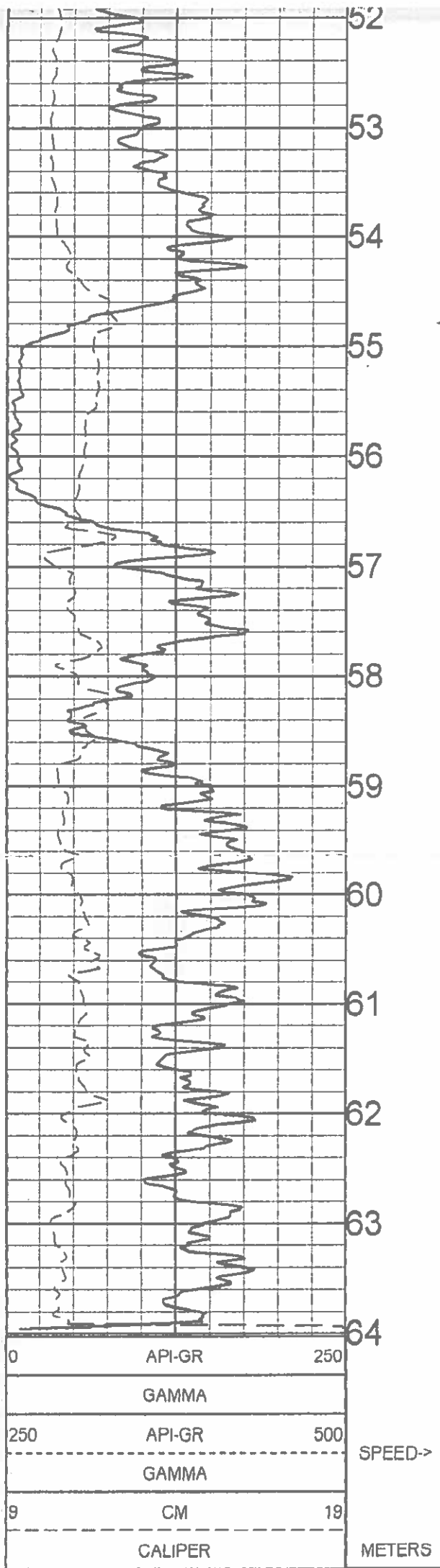
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 08/25/2010 VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HR

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HR

1:50 BULK DENSITY EXPANDED BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

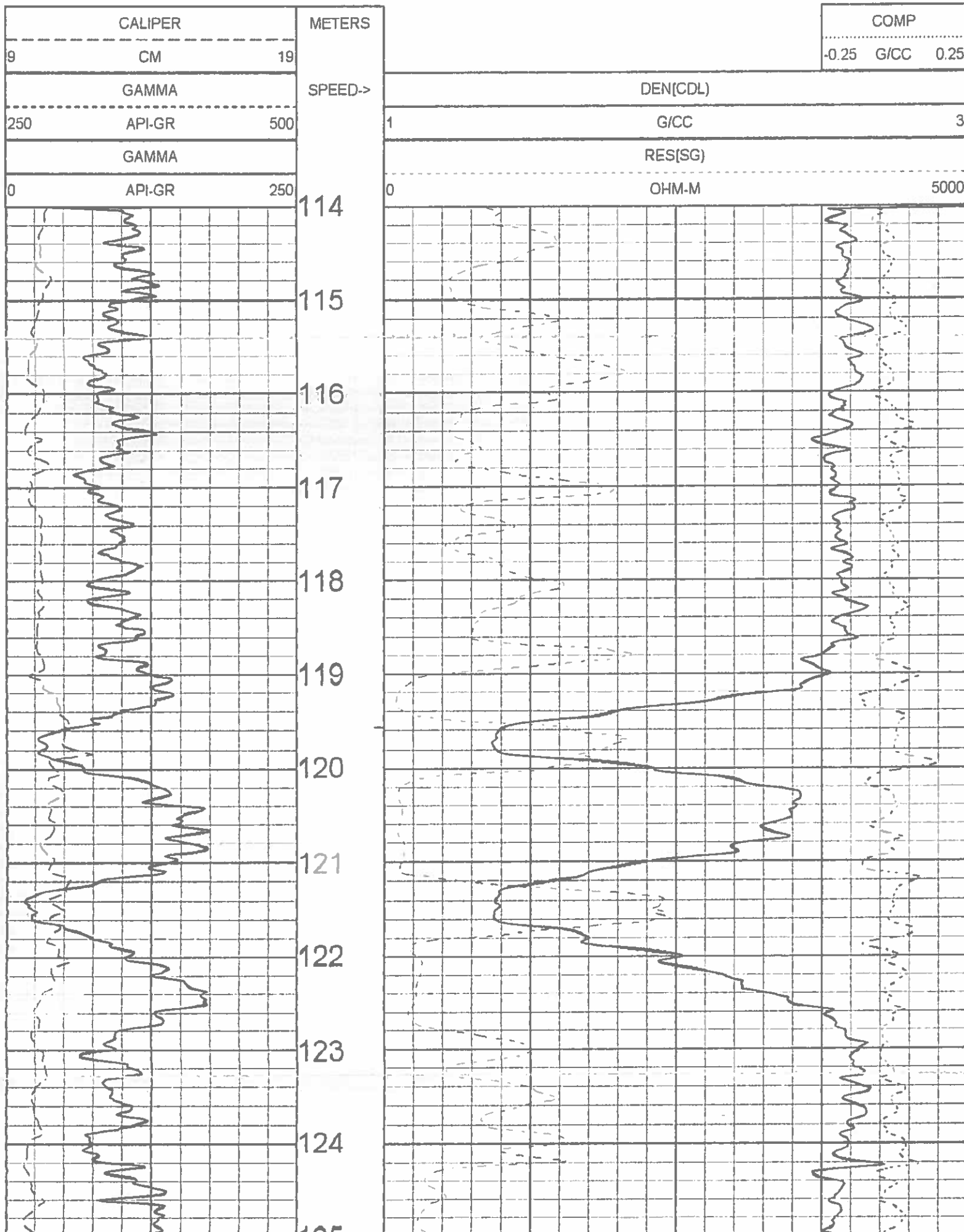
MAGNETIC DECL : 21.0

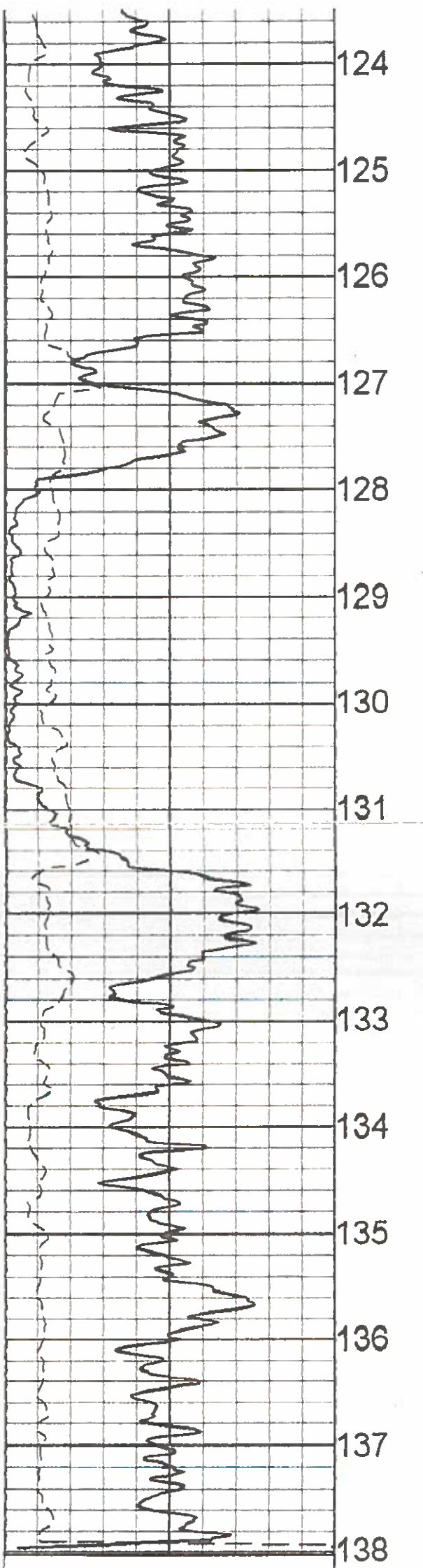
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

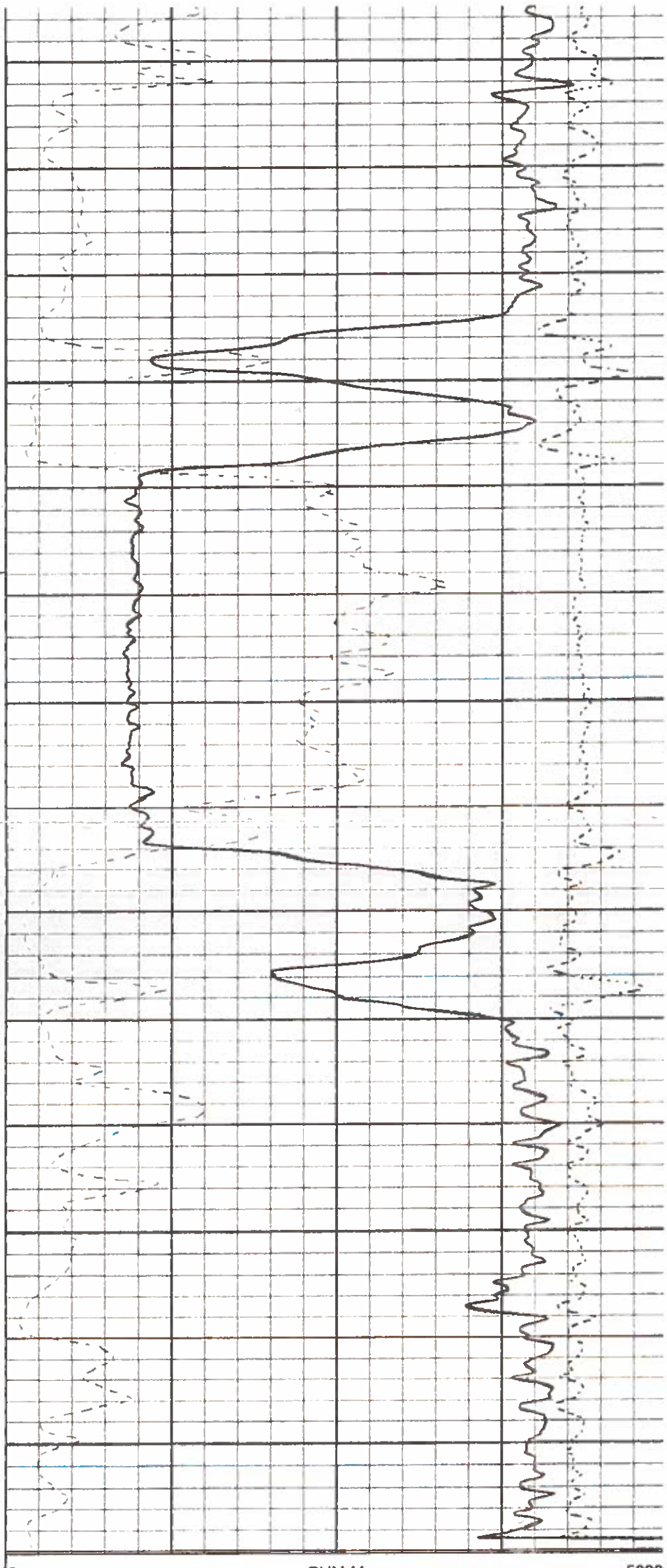
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HR



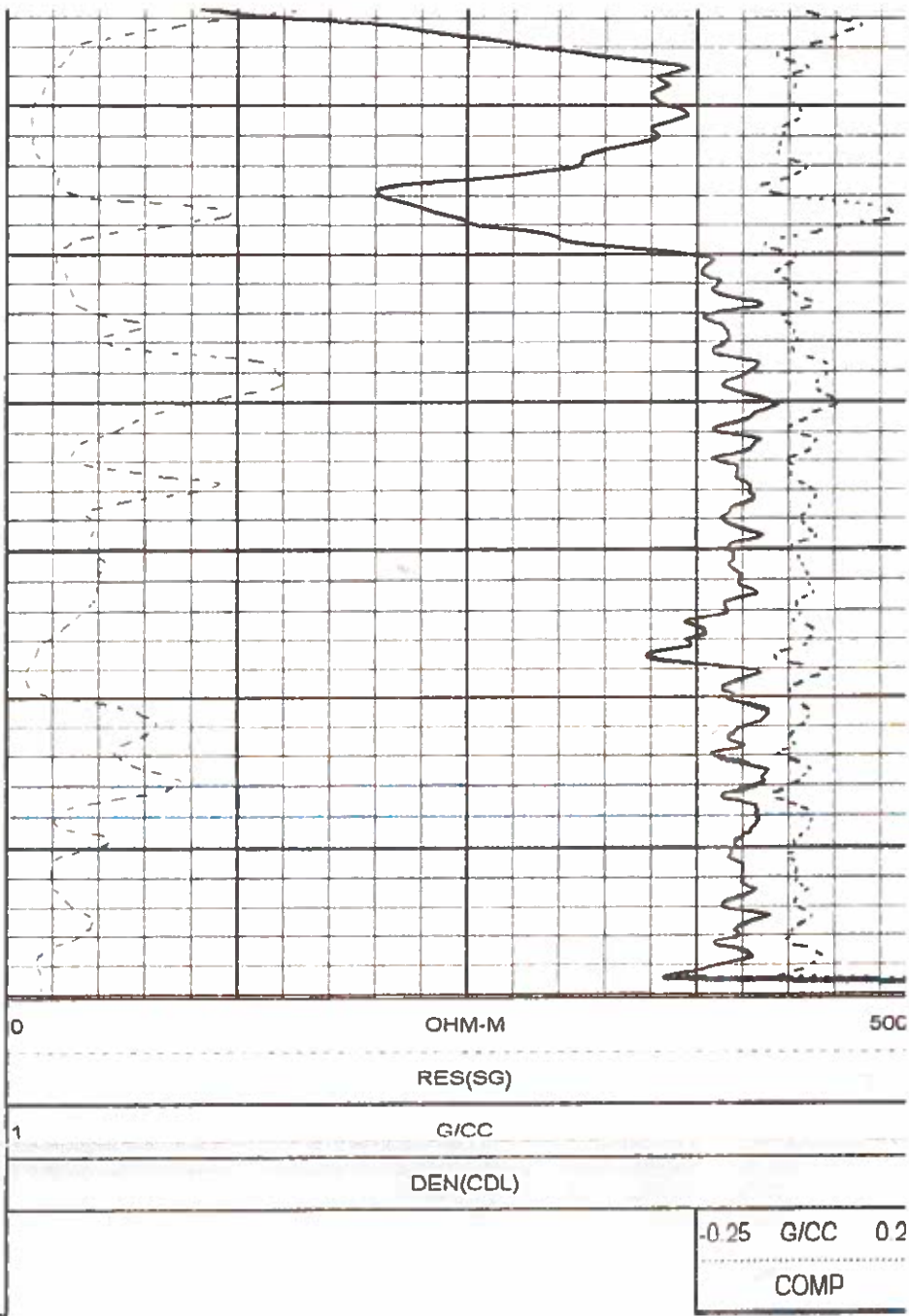
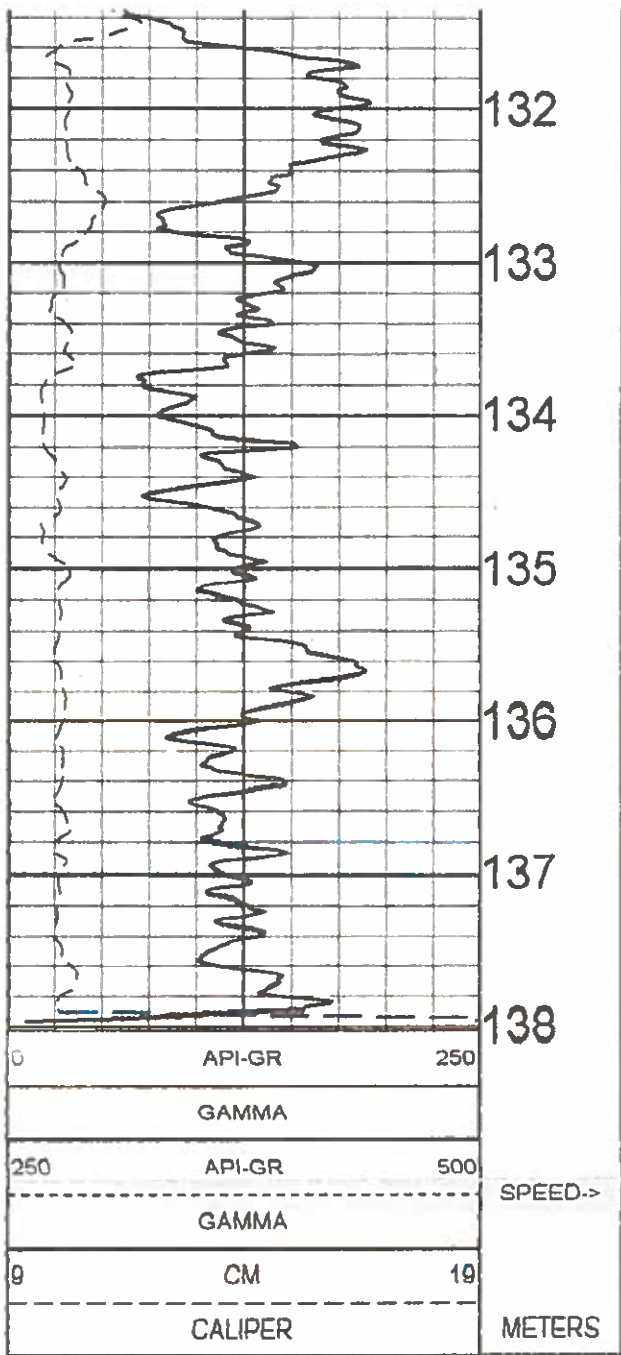


0	API-GR	250	SPEED->
	GAMMA		
250	API-GR	500	METERS
	GAMMA		
9	CM	19	
	CALIPER		



0	OHM-M	5000
	RES(SG)	
1	GICC	3
	DEN(CDL)	

-0.25	GICC	0.25
	COMP	



1:50 BULK DENSITY EXPANDED BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HR

TOOL CALIBRATION BR10-10 08/30/10 10:45
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14:55:56	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug29,10	11:06:34	DEN(LS)	1.620 [G/CC]	17244.000 [CPS]
	Aug29,10	11:06:34	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug30,10	11:03:26	DEN(SS)	1.590 [G/CC]	54336.000 [CPS]
	Aug30,10	11:02:55	DEN(SS)	2.580 [G/CC]	23224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [IA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

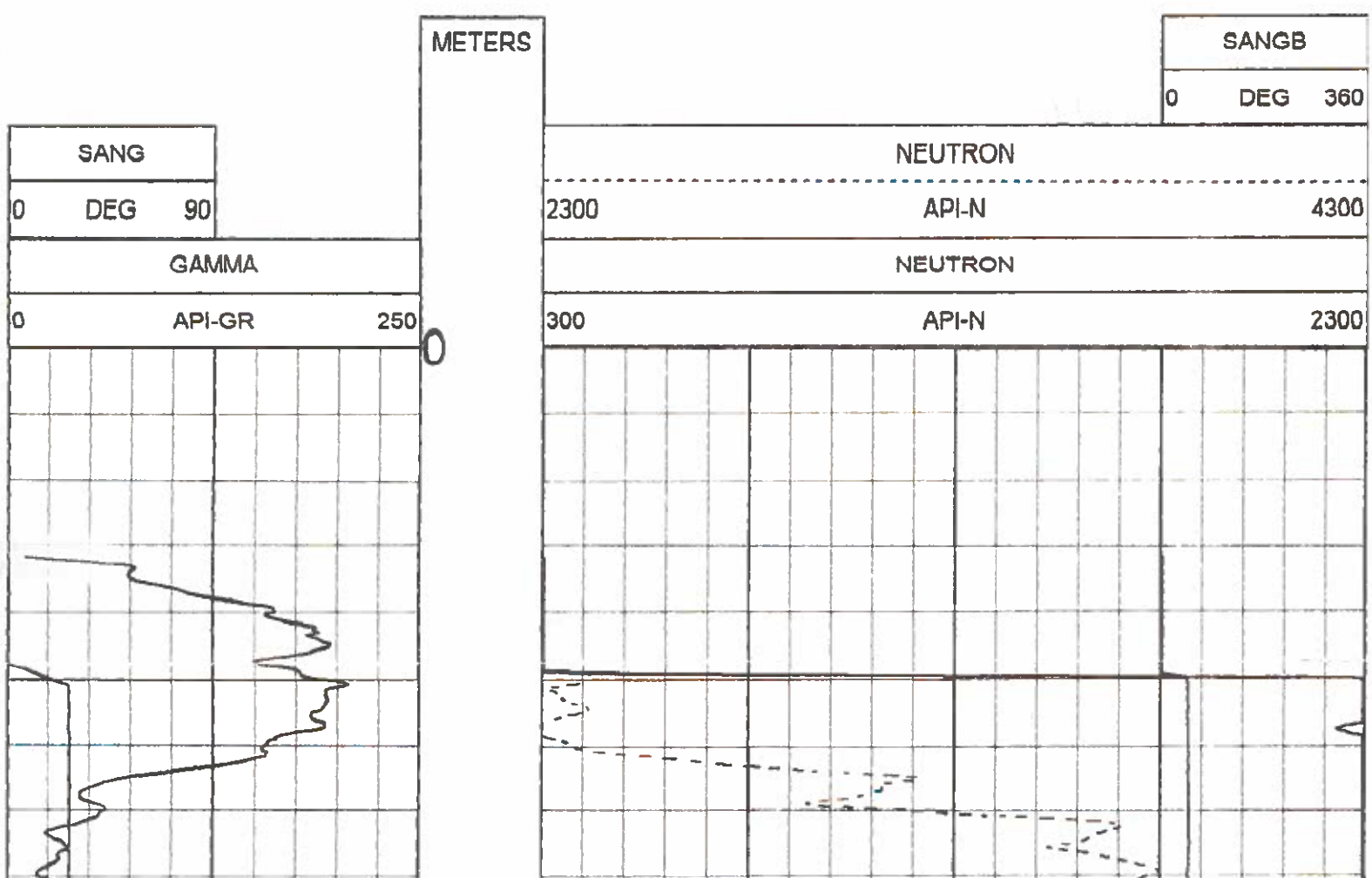
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	
WELL	BR10-10	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/30/10	RIG NUMBER	
DEPTH DRILLER	156.9	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	3.16	DEPARTURE TIME	
LOG BOTTOM	155.44	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

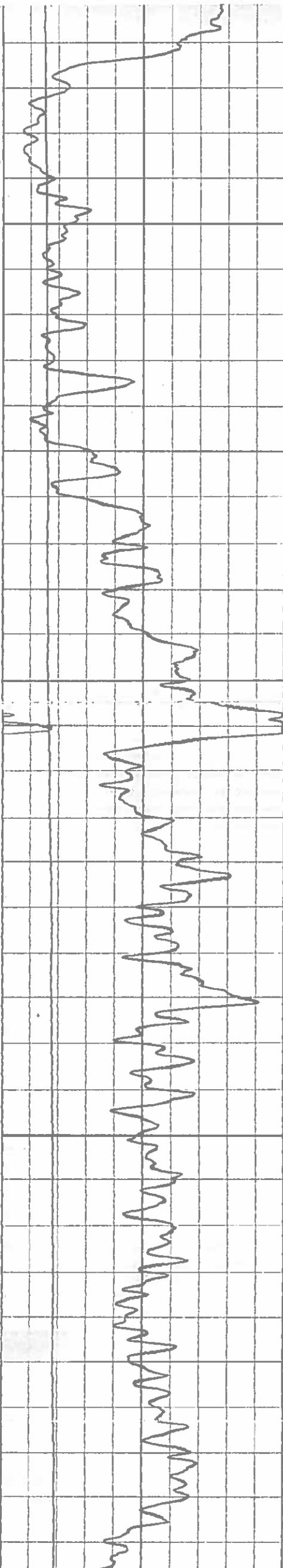
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 08/29/2010		VERSION = 3.64HR

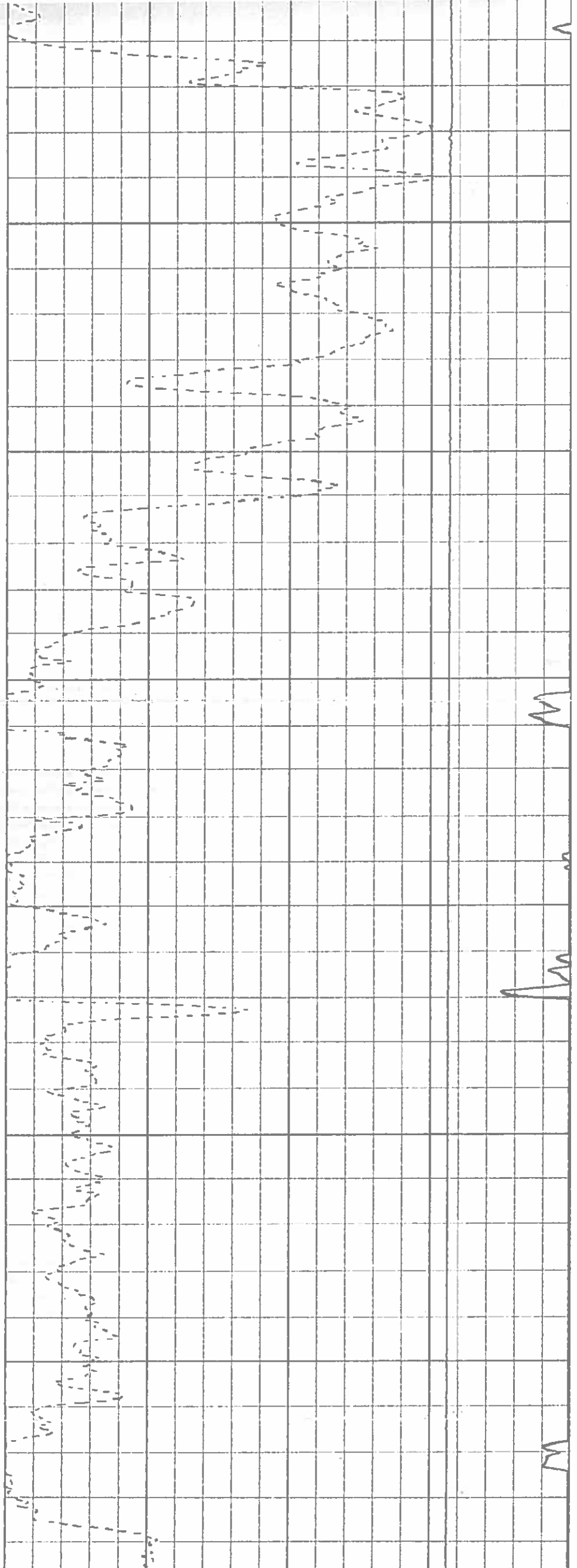


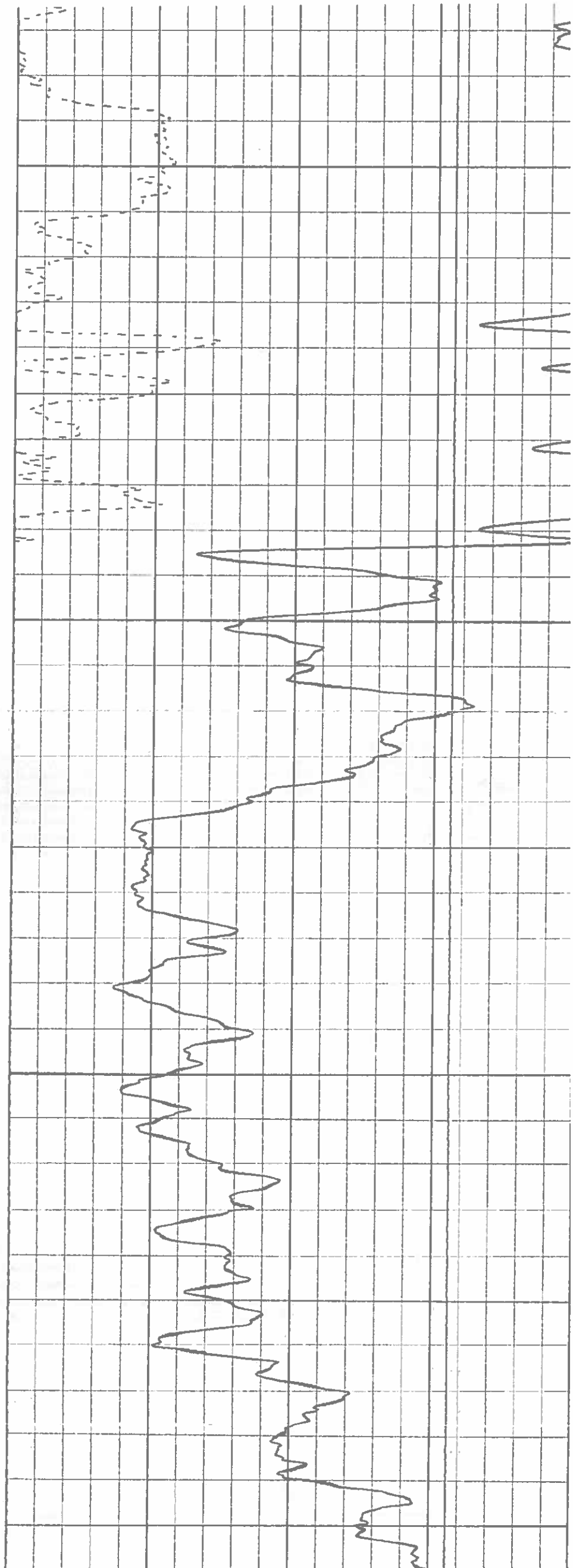
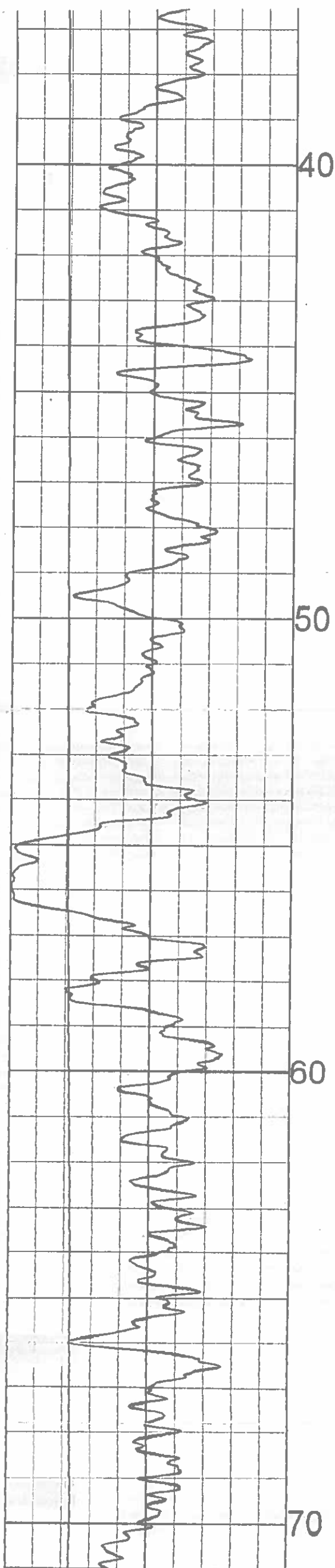


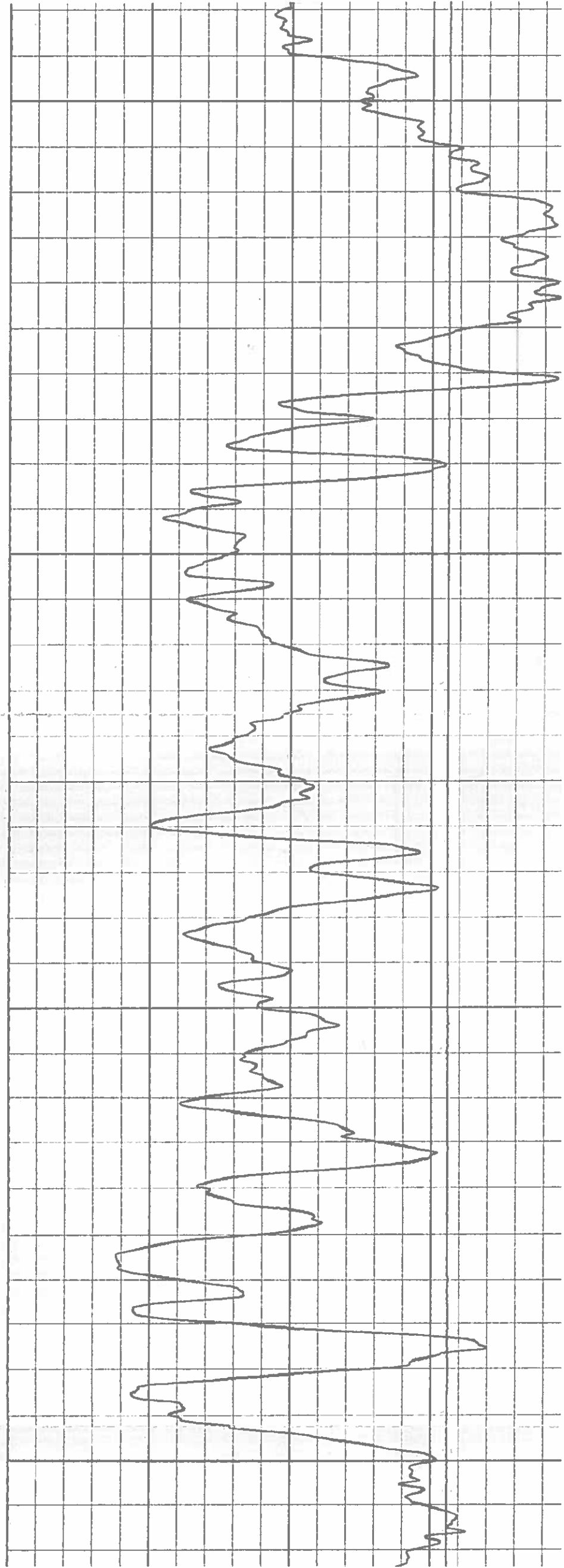
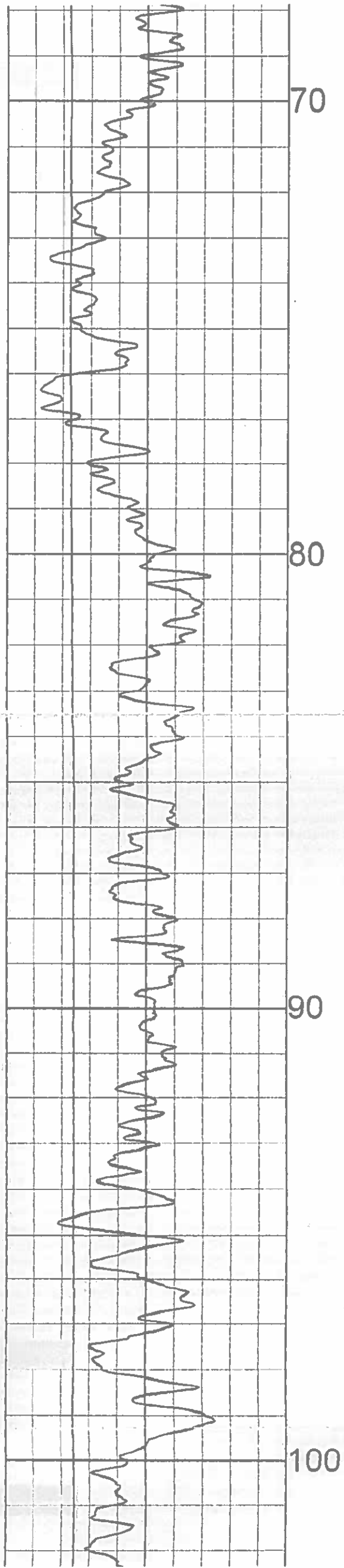
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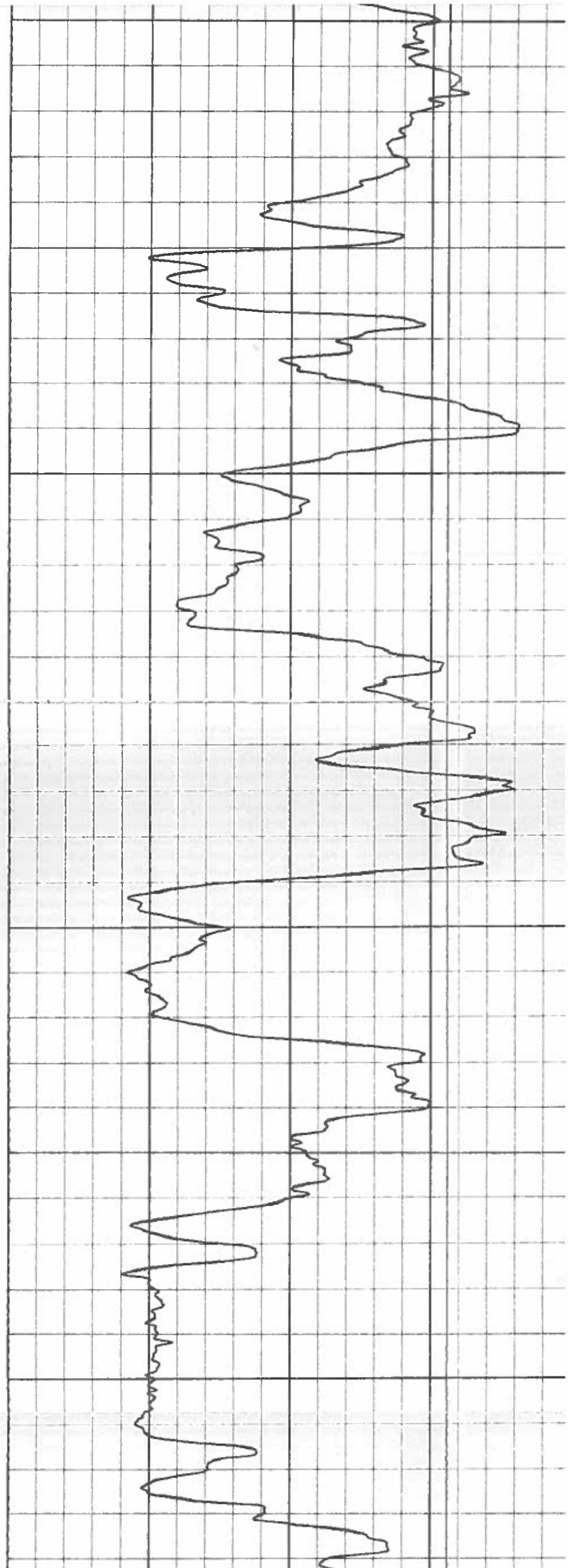
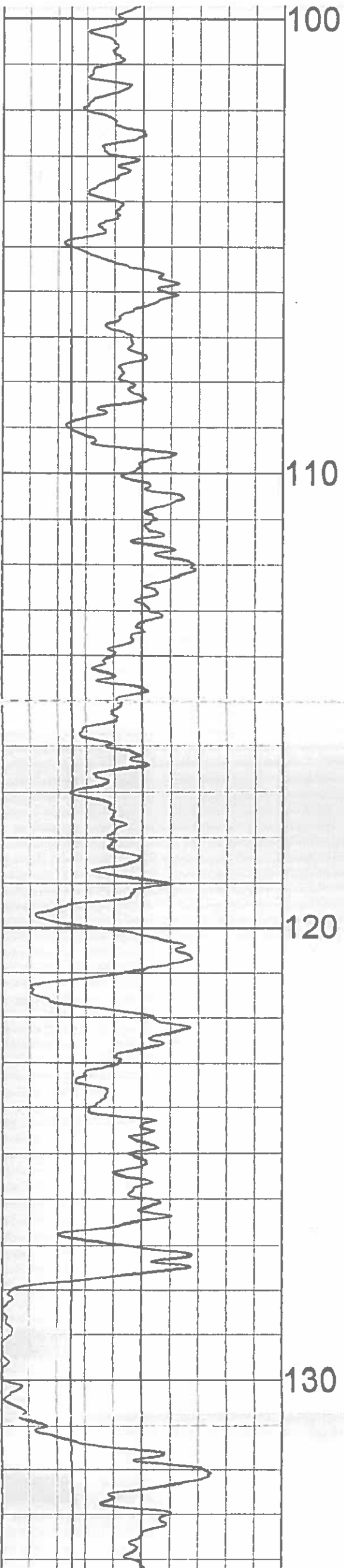
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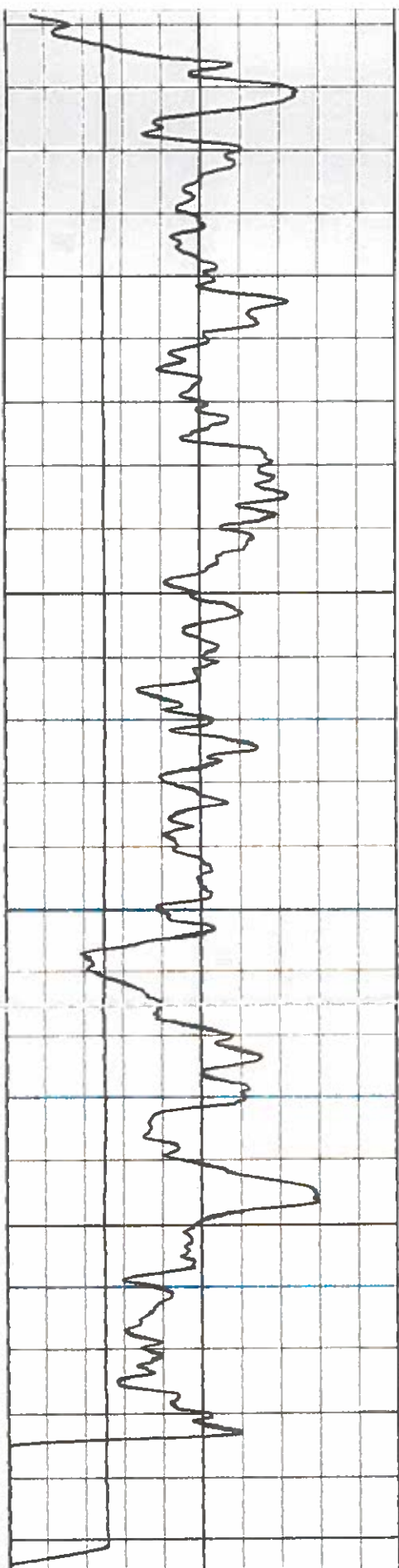
30









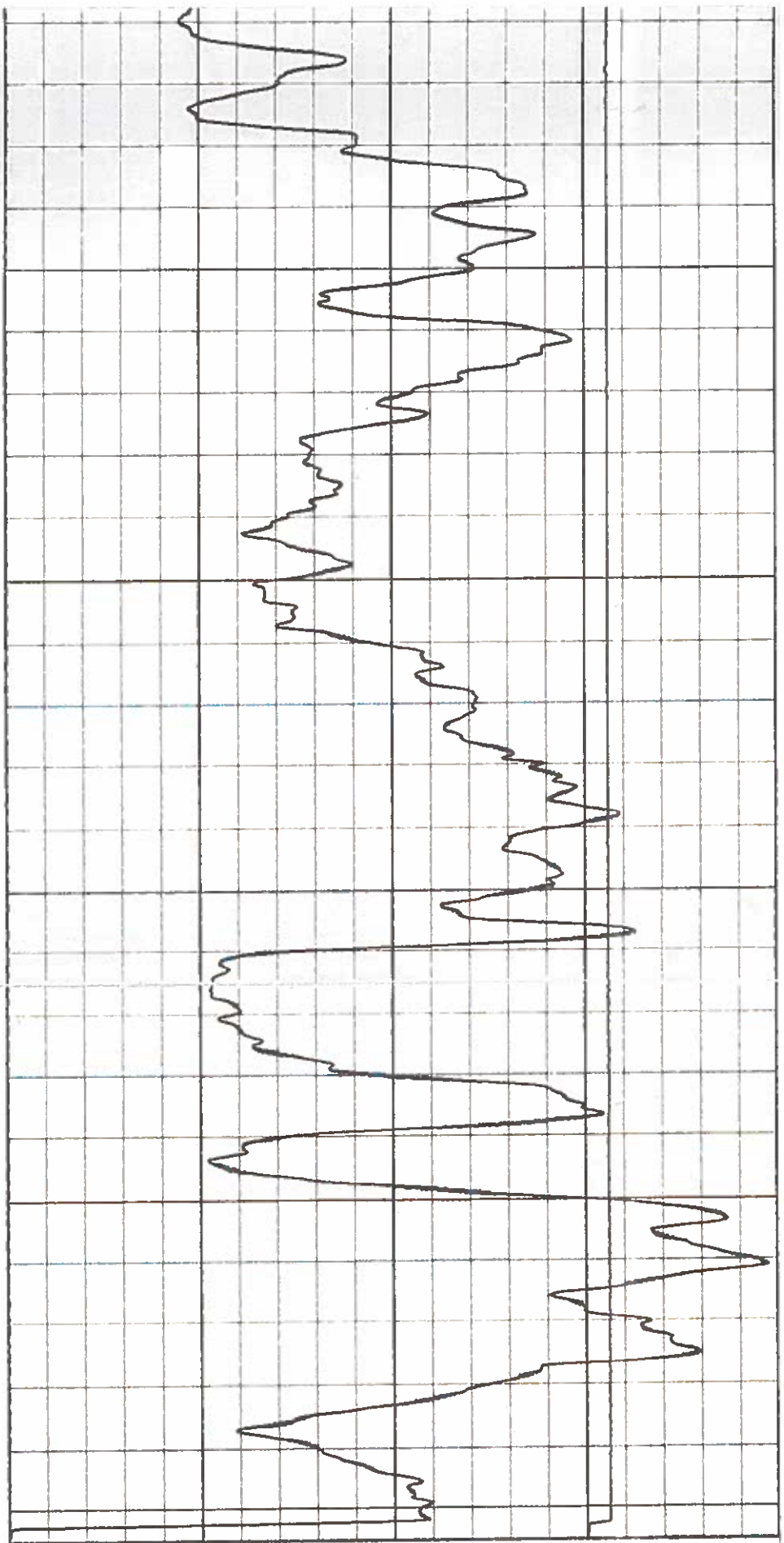


140

150

0	API-GR	250
GAMMA		
0	DEG	90
SANG		

METERS



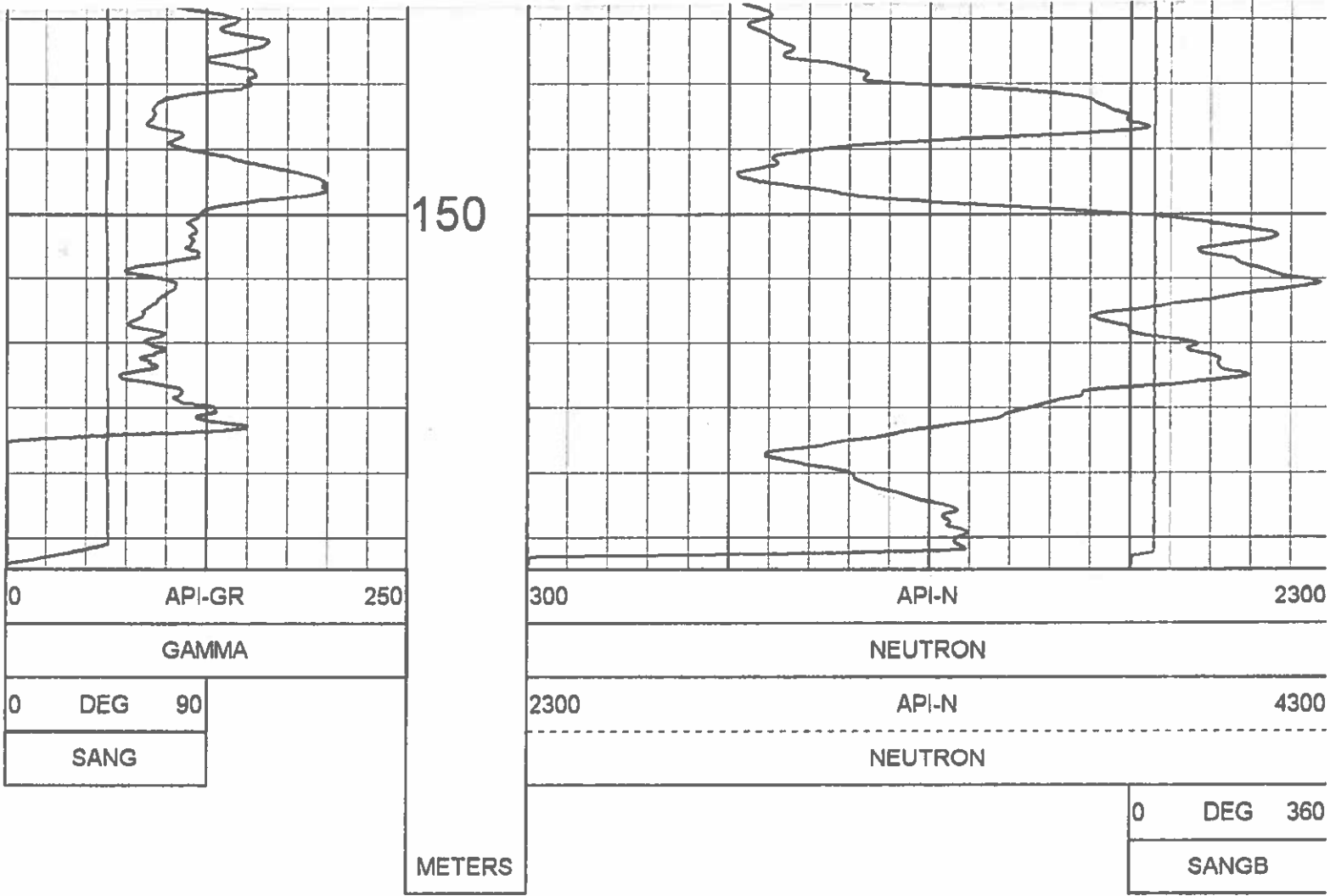
300	API-N	2300
NEUTRON		
2300	API-N	4300
NEUTRON		

0	DEG	360
SANGB		

1:100 NEUTRON BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 08/29/2010		VERSION = 3.64HR



1:100 NEUTRON BR10-10 08/30/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 08/29/2010

VERSION = 3.64HR

TOOL CALIBRATION BR10-10 08/30/10 09:50
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4565

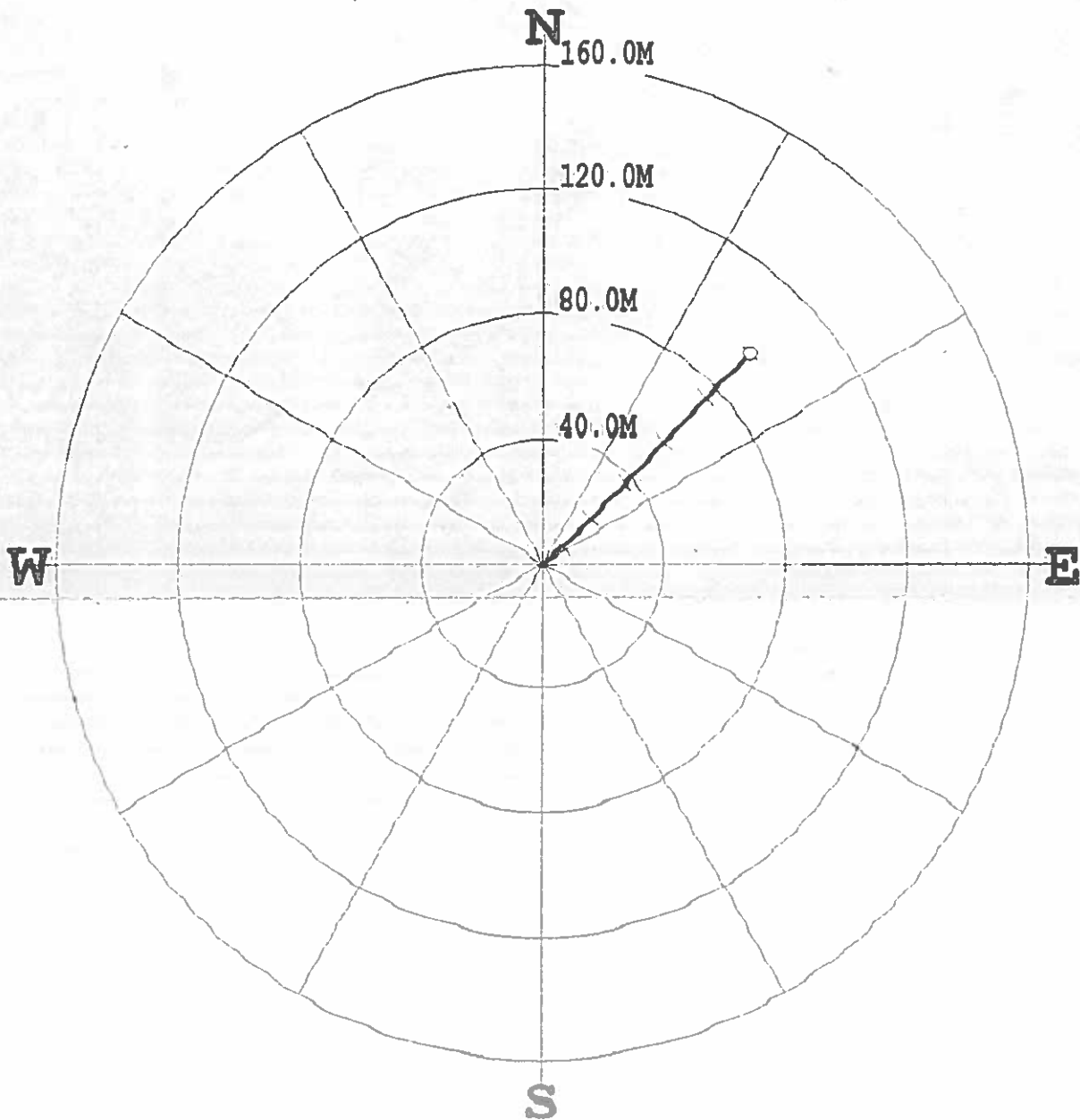
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul07,10	09:35:40	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul07,10	09:35:40	GAMMA	545.000 [API-GR]	504.000 [CPS]
2	Jun11,10	12:54:44	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	12:54:44	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	May13,08	11:46:00	SP	0.000 [MV]	320190.000 [CPS]
	May13,08	11:46:00	SP	349.000 [MV]	149150.000 [CPS]
4	May13,08	14:09:51	RES(16N)	0.000 [OHM-M]	4158.000 [CPS]
	May13,08	14:09:51	RES(16I)	1953.000 [OHM-M]	422983.000 [CPS]
5	May13,08	14:09:08	RES(64N)	0.000 [OHM-M]	3135.000 [CPS]
	May13,08	14:09:08	RES(64I)	1990.000 [OHM-M]	425737.000 [CPS]
6	Feb24,09	11:19:14	TEMP	12.830 [DEG F]	346522.000 [CPS]
	Feb24,09	11:19:14	TEMP	32.940 [DEG F]	372068.000 [CPS]
7	May13,08	11:44:50	RES	0.000 [OHM]	4217.000 [CPS]
	May13,08	11:44:50	RES	943.000 [OHM]	161475.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-10
 DATE OF LOG: 08/30/10
 PROBE: 9057A 4565



SCALE: 20 M/CM
 TRUE DEPTH: 119.91 M
 AZIMUTH: 45.4
 DISTANCE: 95.6 M
 + = 20 M INCR
 O = BOTTOM OF HOLE




* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-10
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/30/10
 DATA FROM : N/A PROBE : 9057A , 4565
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-10_08-30-10_09-50_9057A_02_3.16_155.44_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.96	4.96	0.01	0.01	0.0	50.4	27.3	50.4
6.00	5.88	0.31	0.37	0.5	50.6	27.3	52.2
8.00	7.66	0.87	1.10	1.4	51.7	27.0	47.5
10.00	9.42	1.48	1.82	2.3	50.8	28.3	49.7
12.00	11.18	2.10	2.54	3.3	50.4	28.4	49.3
14.00	12.94	2.72	3.26	4.2	50.1	28.4	48.5
16.00	14.69	3.35	3.99	5.2	50.0	29.4	49.2
18.00	16.44	3.99	4.72	6.2	49.8	29.2	48.2
20.00	18.18	4.64	5.46	7.2	49.7	29.5	48.4
22.00	19.92	5.30	6.20	8.2	49.5	30.1	47.9
24.00	21.64	5.98	6.96	9.2	49.3	31.4	45.3
26.00	23.34	6.69	7.73	10.2	49.1	32.0	48.5
28.00	25.04	7.41	8.51	11.3	49.0	32.3	47.4
30.00	26.73	8.14	9.30	12.4	48.8	32.7	47.1
32.00	28.41	8.88	10.09	13.4	48.6	33.0	46.9
34.00	30.08	9.63	10.88	14.5	48.5	33.1	47.0

18.00	16.44	3.99	4.72	6.2	49.8	29.2	48.2
20.00	18.18	4.64	5.46	7.2	49.7	29.5	48.4
22.00	19.92	5.30	6.20	8.2	49.5	30.1	47.9
24.00	21.64	5.98	6.96	9.2	49.3	31.4	45.3
26.00	23.34	6.69	7.73	10.2	49.1	32.0	48.5
28.00	25.04	7.41	8.51	11.3	49.0	32.3	47.4
30.00	26.73	8.14	9.30	12.4	48.8	32.7	47.1
32.00	28.41	8.88	10.09	13.4	48.6	33.0	46.9
34.00	30.08	9.63	10.88	14.5	48.5	33.1	47.0
36.00	31.75	10.39	11.68	15.6	48.3	33.5	46.8
38.00	33.41	11.16	12.49	16.7	48.2	34.0	46.0
40.00	35.07	11.94	13.30	17.9	48.1	34.2	46.7
42.00	36.72	12.73	14.10	19.0	47.9	34.7	46.4
44.00	38.36	13.53	14.92	20.1	47.8	35.1	45.5
46.00	39.99	14.35	15.74	21.3	47.6	35.9	43.8
48.00	41.60	15.18	16.58	22.5	47.5	36.1	45.8
50.00	43.22	16.02	17.41	23.7	47.4	36.6	45.0
52.00	44.82	16.86	18.26	24.8	47.3	36.8	45.0
54.00	46.42	17.71	19.10	26.0	47.2	37.0	44.7
56.00	48.02	18.57	19.95	27.3	47.1	37.3	45.4
58.00	49.60	19.44	20.81	28.5	47.0	38.1	46.4
60.00	51.17	20.32	21.68	29.7	46.9	38.9	44.7
62.00	52.72	21.22	22.57	31.0	46.8	39.4	44.8
64.00	54.26	22.12	23.47	32.3	46.7	39.9	44.8
66.00	55.79	23.04	24.37	33.5	46.6	40.6	44.6
68.00	57.30	23.96	25.30	34.8	46.5	40.7	45.0
70.00	58.82	24.89	26.22	36.2	46.5	41.0	45.2
72.00	60.33	25.82	27.13	37.5	46.4	40.7	44.6
74.00	61.84	26.75	28.06	38.8	46.4	40.8	44.5
76.00	63.35	27.68	28.98	40.1	46.3	40.9	44.3
78.00	64.86	28.62	29.90	41.4	46.3	41.5	44.2
80.00	66.36	29.57	30.83	42.7	46.2	41.6	44.3
82.00	67.84	30.53	31.76	44.1	46.1	42.3	44.6
84.00	69.32	31.51	32.69	45.4	46.1	42.7	43.9
86.00	70.78	32.49	33.64	46.8	46.0	43.2	43.8
88.00	72.24	33.48	34.59	48.1	45.9	43.4	44.1
90.00	73.69	34.47	35.55	49.5	45.9	43.6	44.2
92.00	75.14	35.45	36.51	50.9	45.8	43.6	44.3
94.00	76.59	36.44	37.46	52.3	45.8	43.4	43.9
96.00	78.04	37.43	38.42	53.6	45.7	43.7	46.5
98.00	79.48	38.41	39.39	55.0	45.7	43.8	44.8
100.00	80.93	39.40	40.36	56.4	45.7	44.0	44.1
102.00	82.37	40.39	41.33	57.8	45.7	43.8	43.7
104.00	83.81	41.39	42.29	59.2	45.6	43.9	44.4
106.00	85.25	42.39	43.26	60.6	45.6	44.2	44.2
108.00	86.68	43.39	44.23	62.0	45.5	44.3	43.8
110.00	88.11	44.40	45.20	63.4	45.5	44.6	43.2
112.00	89.53	45.42	46.18	64.8	45.5	45.0	44.1
114.00	90.94	46.43	47.16	66.2	45.4	45.2	44.2
116.00	92.36	47.45	48.15	67.6	45.4	45.0	43.9
118.00	93.77	48.47	49.13	69.0	45.4	45.0	44.4
120.00	95.18	49.47	50.13	70.4	45.4	45.0	45.3
122.00	96.60	50.47	51.12	71.8	45.4	44.9	44.8
124.00	98.00	51.48	52.13	73.3	45.4	45.3	45.3
126.00	99.41	52.48	53.14	74.7	45.4	45.3	44.8
128.00	100.82	53.48	54.14	76.1	45.4	45.2	45.1
130.00	102.23	54.49	55.14	77.5	45.3	45.1	44.4
132.00	103.64	55.49	56.15	78.9	45.3	45.4	45.7
134.00	105.04	56.49	57.17	80.4	45.3	45.8	46.4
136.00	106.44	57.49	58.19	81.8	45.3	45.5	46.2
138.00	107.84	58.49	59.21	83.2	45.4	45.9	46.1
140.00	109.23	59.50	60.24	84.7	45.4	46.0	46.0
142.00	110.62	60.51	61.26	86.1	45.4	45.9	45.6
144.00	112.02	61.51	62.28	87.5	45.4	45.6	45.4
146.00	113.42	62.51	63.29	89.0	45.4	45.2	45.2
148.00	114.82	63.51	64.31	90.4	45.4	45.7	46.0
150.00	116.23	64.50	65.33	91.8	45.4	45.2	45.7
152.00	117.63	65.48	66.36	93.2	45.4	45.4	46.2
154.00	119.03	66.48	67.38	94.7	45.4	45.5	45.6
155.26	119.91	67.11	68.03	95.6	45.4	46.1	45.6

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-11	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,574.41	6,140,195.79	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
203	-64	174.32	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	203.2	-64.40
6.00	233.2	-63.50
8.00	230.6	-63.90
10.00	228.8	-62.30
12.00	228.0	-63.80
14.00	227.4	-63.00
16.00	226.8	-65.50
18.00	227.0	-63.10
20.00	227.1	-63.30
22.00	227.1	-63.50
24.00	226.9	-63.70
26.00	226.7	-65.70
28.00	226.8	-64.20
30.00	226.9	-64.30
32.00	226.9	-64.30
34.00	227.0	-63.80
36.00	227.1	-63.60
38.00	227.1	-63.60
40.00	227.1	-63.30
42.00	227.1	-63.30
44.00	227.1	-63.50
46.00	227.1	-63.40
48.00	227.0	-63.80
50.00	226.8	-64.10
52.00	226.6	-64.10
54.00	226.5	-64.10
56.00	226.5	-63.30

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	1.30	1.30		
57.80	60.40	2.60		
62.50	63.50	1.00		
88.80	89.30	0.50		
108.40	109.20	0.80		
131.80	132.40	0.60		
132.40	134.40	2.00		
134.40	135.20	0.80		
151.00	155.40	4.40		
155.40	156.10	0.70		
157.60	158.30	0.70		

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 1 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-11	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

58.00	226.4	-63.20
60.00	226.3	-62.70
62.00	226.2	-62.50
64.00	226.1	-62.40
66.00	226.0	-62.50
68.00	226.0	-62.50
70.00	225.9	-62.40
72.00	225.8	-61.90
74.00	225.7	-62.00
76.00	225.6	-61.90
78.00	225.5	-61.60
80.00	225.4	-61.60
82.00	225.2	-62.10
84.00	225.1	-61.20
86.00	225.0	-61.20
88.00	224.9	-61.40
90.00	224.8	-61.30
92.00	224.6	-61.10
94.00	224.5	-61.00
96.00	224.4	-61.30
98.00	224.3	-60.50
100.00	224.2	-60.80
102.00	224.1	-60.80
104.00	224.0	-60.90
106.00	223.9	-61.00
108.00	223.7	-60.10
110.00	223.6	-60.10
112.00	223.6	-59.70
114.00	223.5	-59.30
116.00	223.4	-59.40
118.00	223.4	-59.70
120.00	223.3	-60.10
122.00	223.3	-59.60
124.00	223.3	-59.50
126.00	223.2	-59.80
128.00	223.2	-59.30
130.00	223.2	-59.00
132.00	223.2	-58.30
134.00	223.1	-58.30
136.00	223.1	-57.80
138.00	223.1	-57.60
140.00	223.0	-57.80
142.00	223.0	-57.20
144.00	223.0	-56.90
146.00	222.9	-56.80

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

Page 2 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-11	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------


148.00	222.9	-56.30
150.00	222.9	-55.40
152.00	222.9	-55.40
154.00	222.8	-54.80
156.00	222.8	-55.00
158.00	222.8	-55.30
160.00	222.8	-55.50
162.00	222.7	-55.40
164.00	222.7	-55.30
166.00	222.7	-55.10
168.00	222.7	-54.80
170.00	222.6	-54.50
172.00	222.6	-54.30
174.00	222.6	-54.10
174.14	222.6	-54.10

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 3 of 3

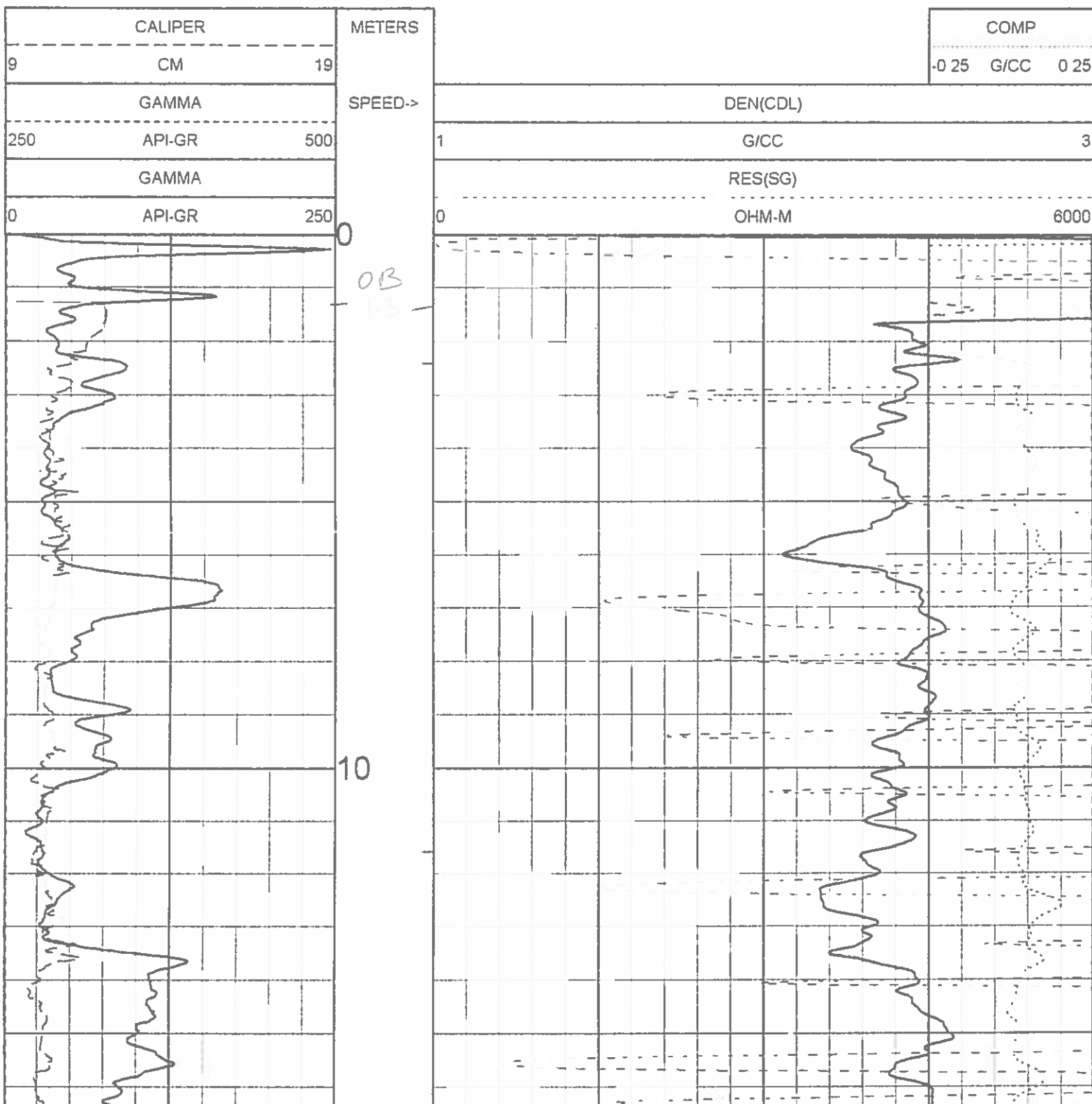
PICKS - Jan 11/2011

		COMPENSATED DENSITY GAMMA - CALIPER - RES. BR10-11	
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR10-11		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	09/02/10	RIG NUMBER	
DEPTH DRILLER	175.26	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	173.97	DEPARTURE TIME	
LOG BOTTOM	173.97	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

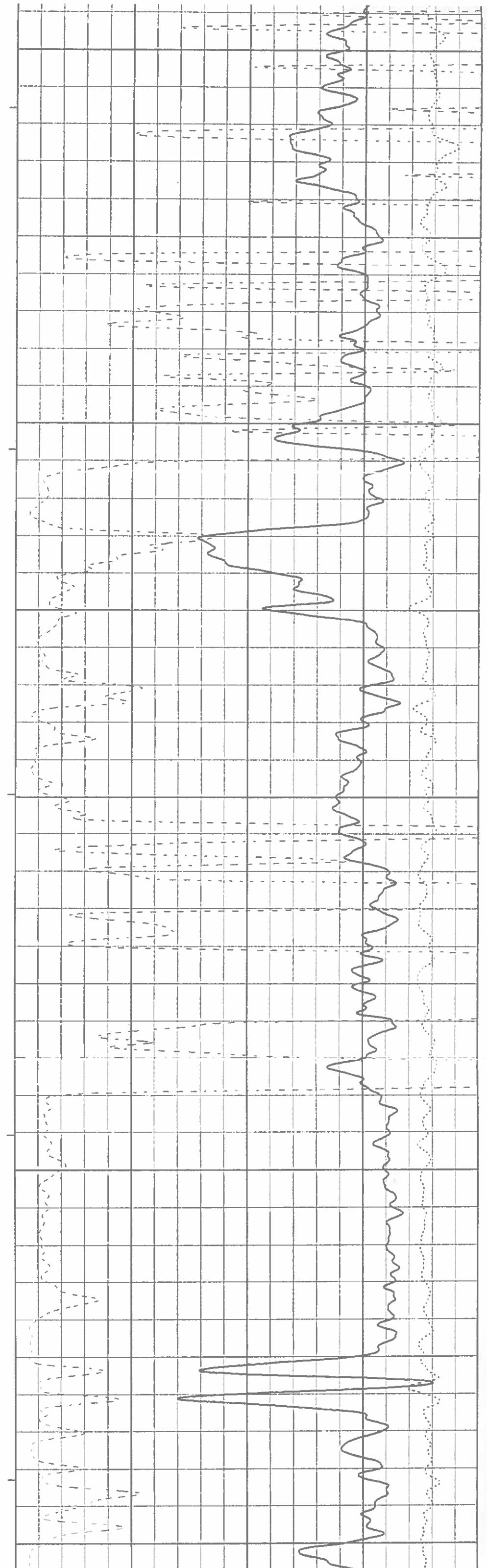
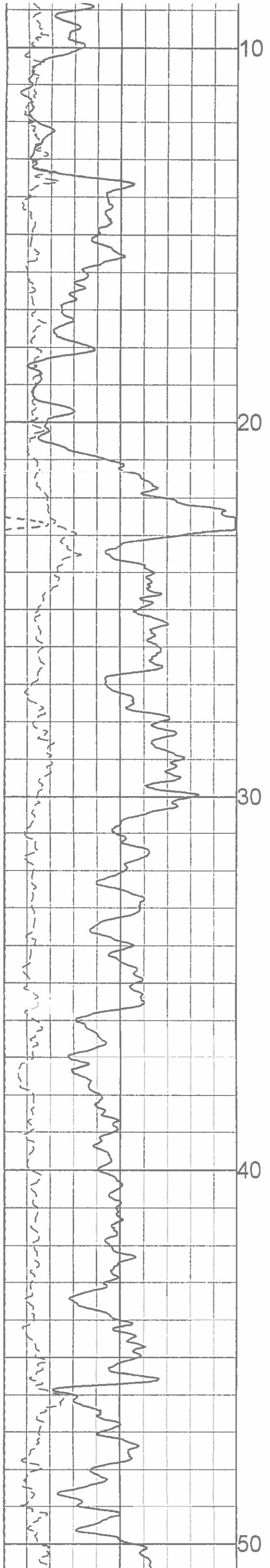
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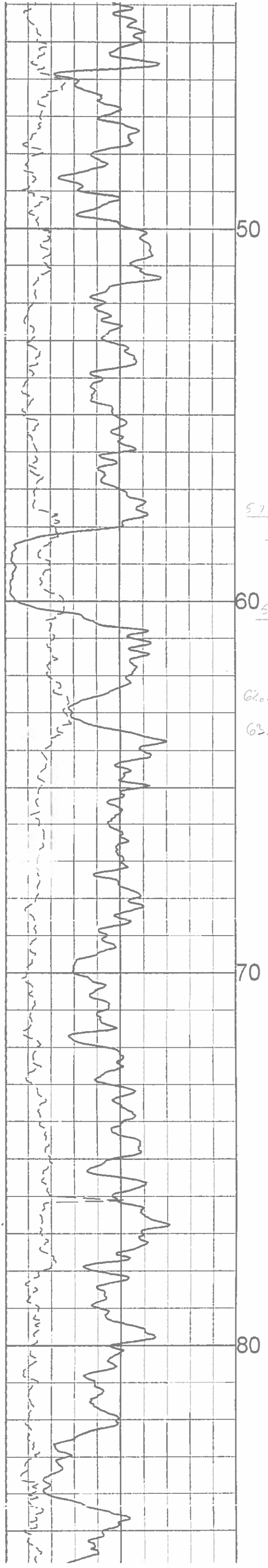
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 08/25/2010		VERSION = 3.64HE



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





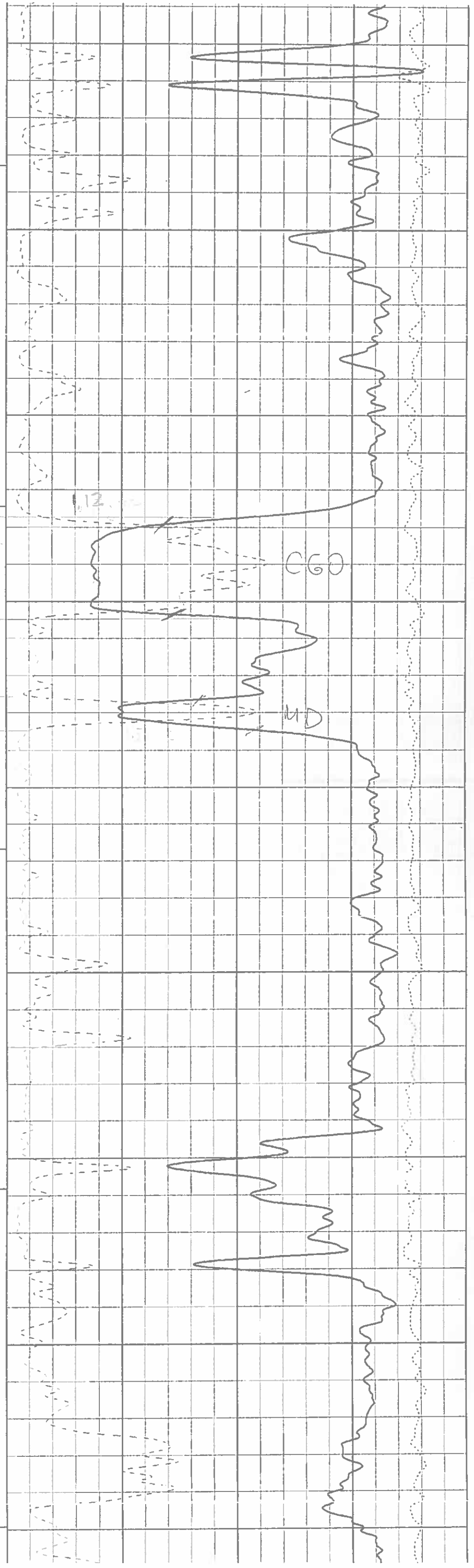
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60

70

80

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50
60
60.4
62.5
63.5

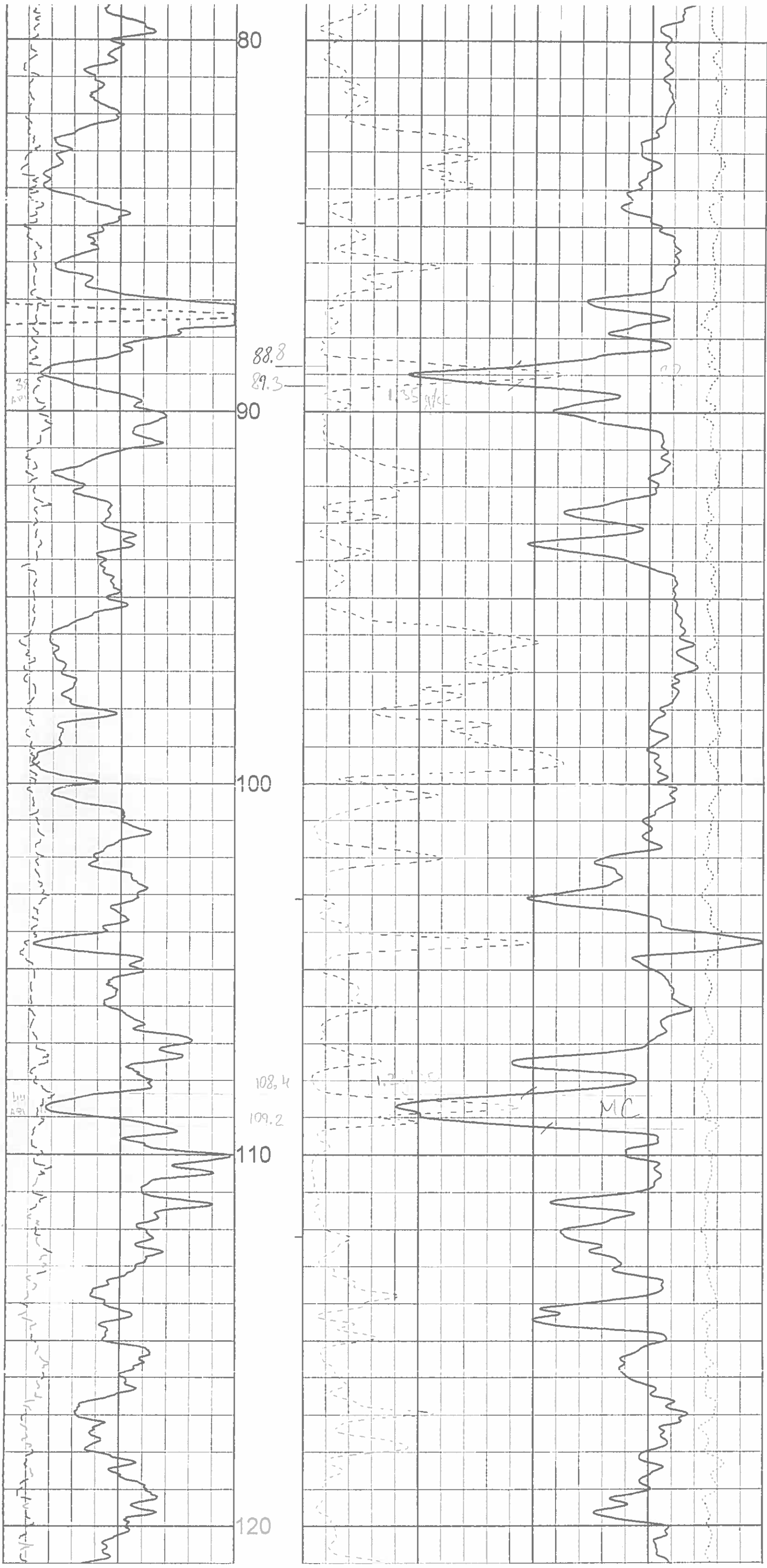


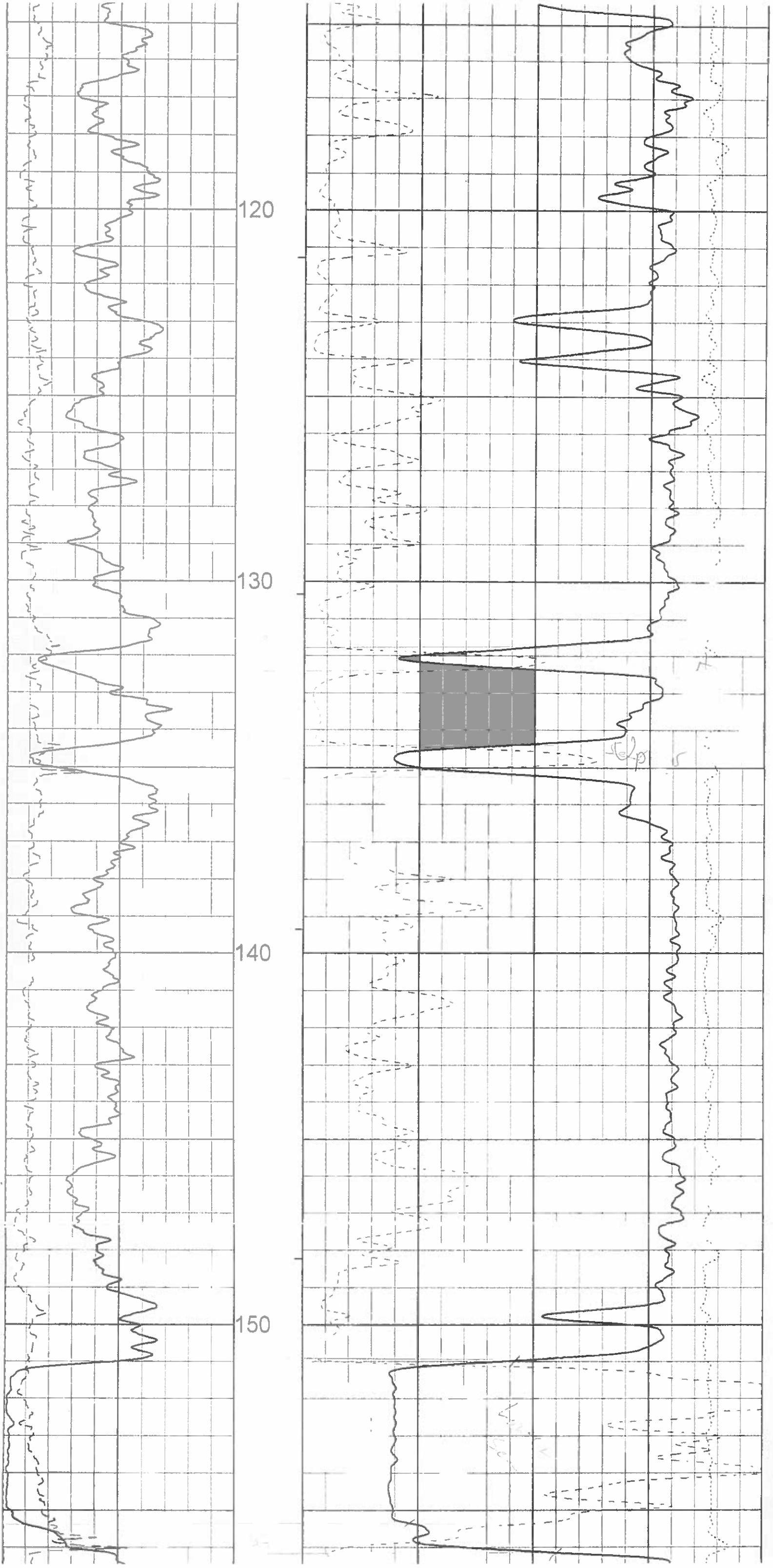
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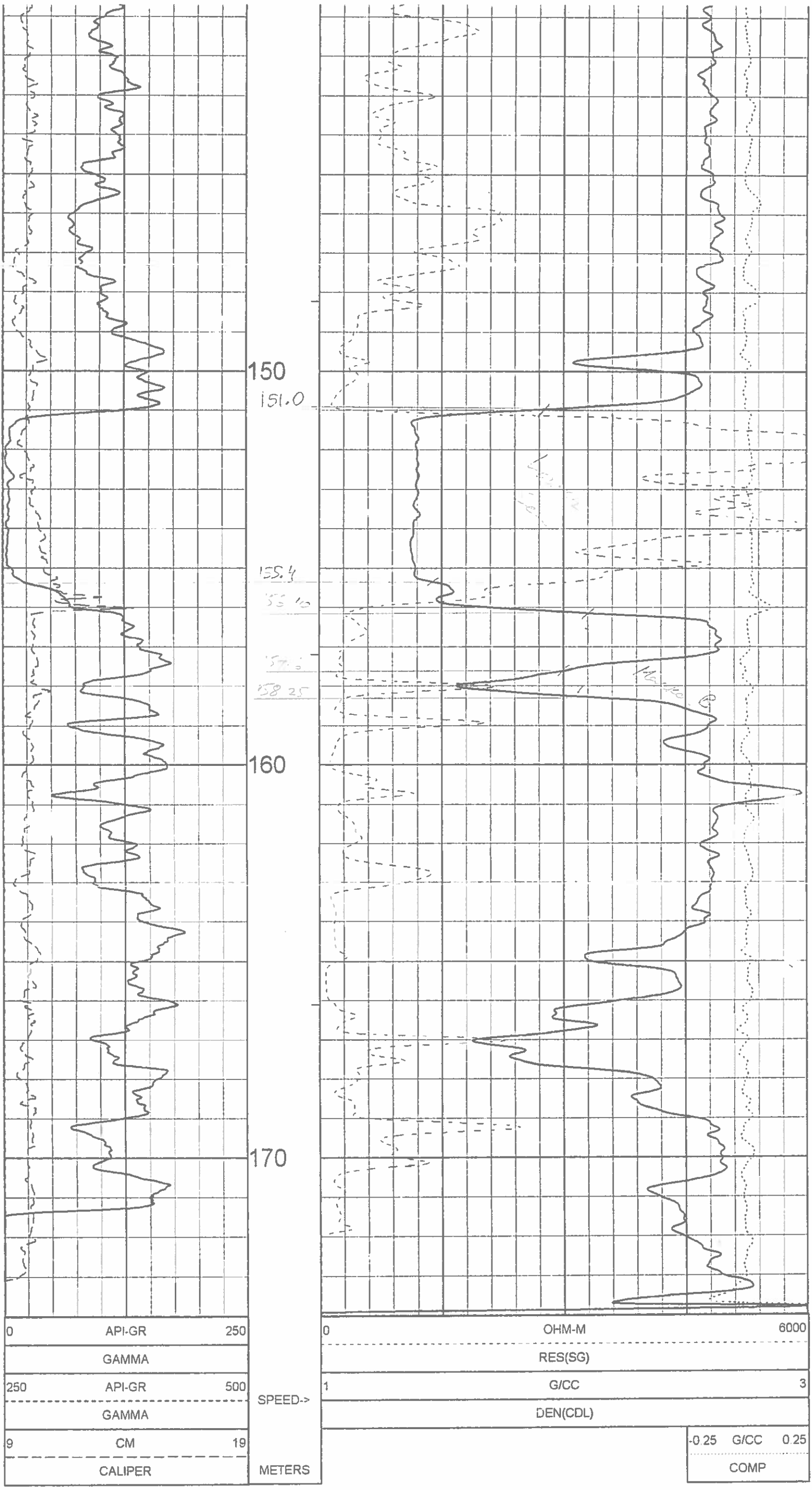
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12.0

5







1:100 BULK DENSITY BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0

NEUTRON MATRIX : SANDSTONE
ELECT CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43

DETAILED DENSITY GAMMA - CALIPER - RES. BR10-11

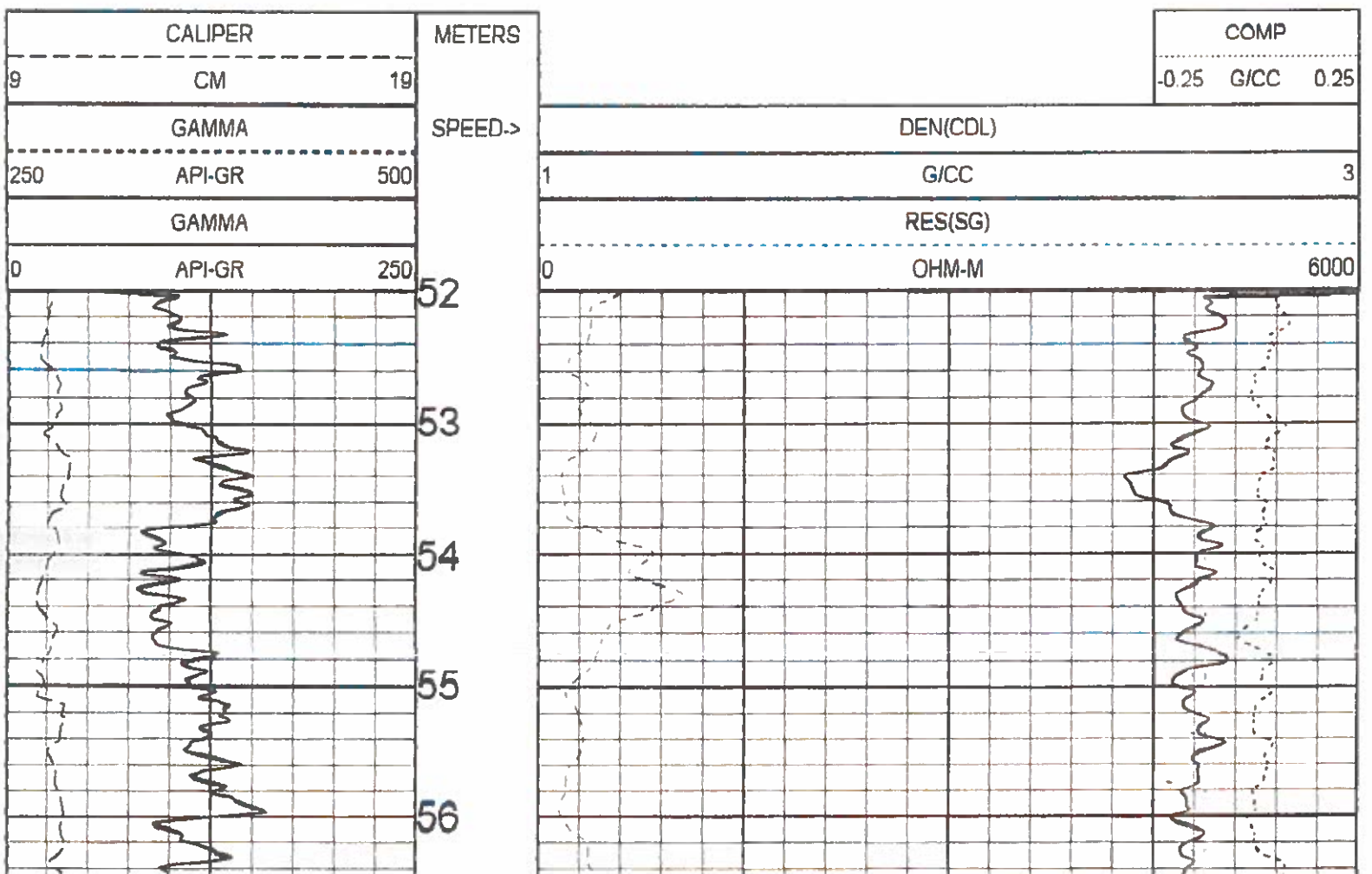
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICE:	NEUTRON
WELL	BR10-11		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	09/02/10	RIG NUMBER	
DEPTH DRILLER	175 26	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	-0.83	DEPARTURE TIME	
LOG BOTTOM	173.97	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

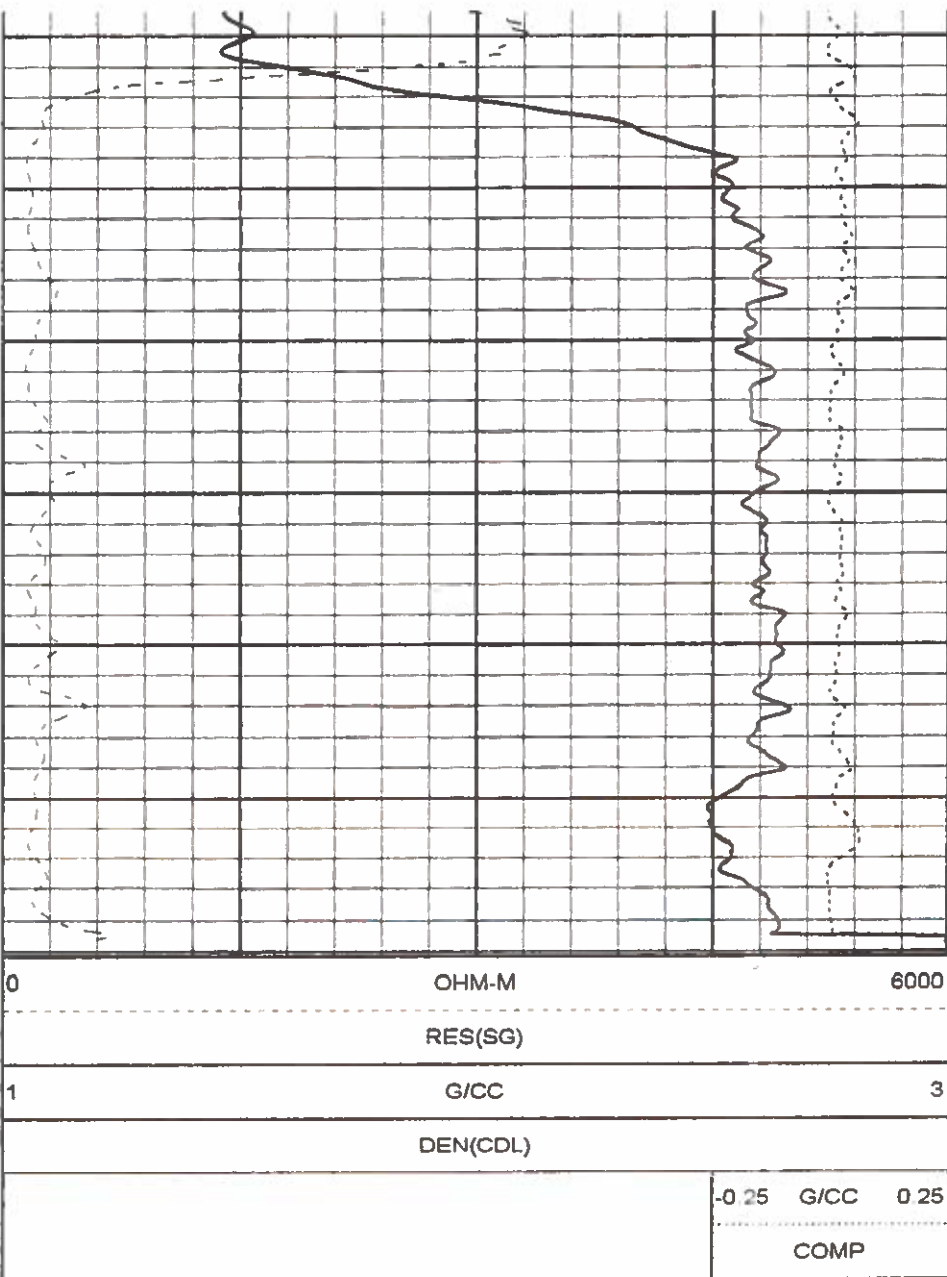
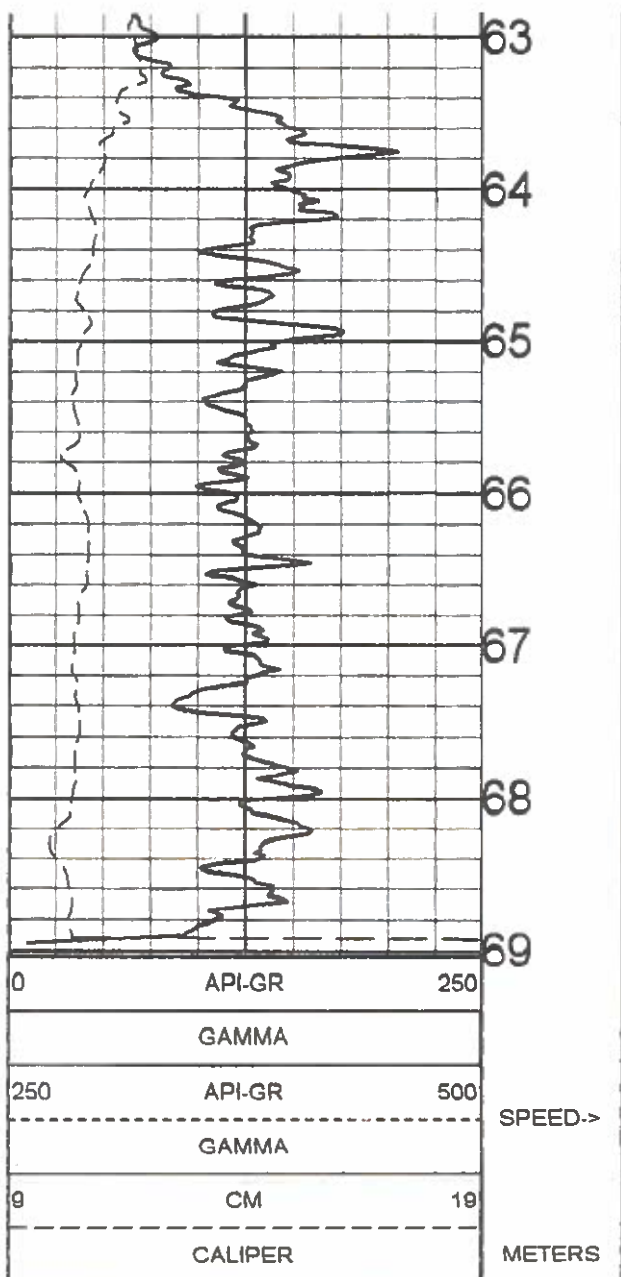
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010 VERSION = 3.64HE





1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

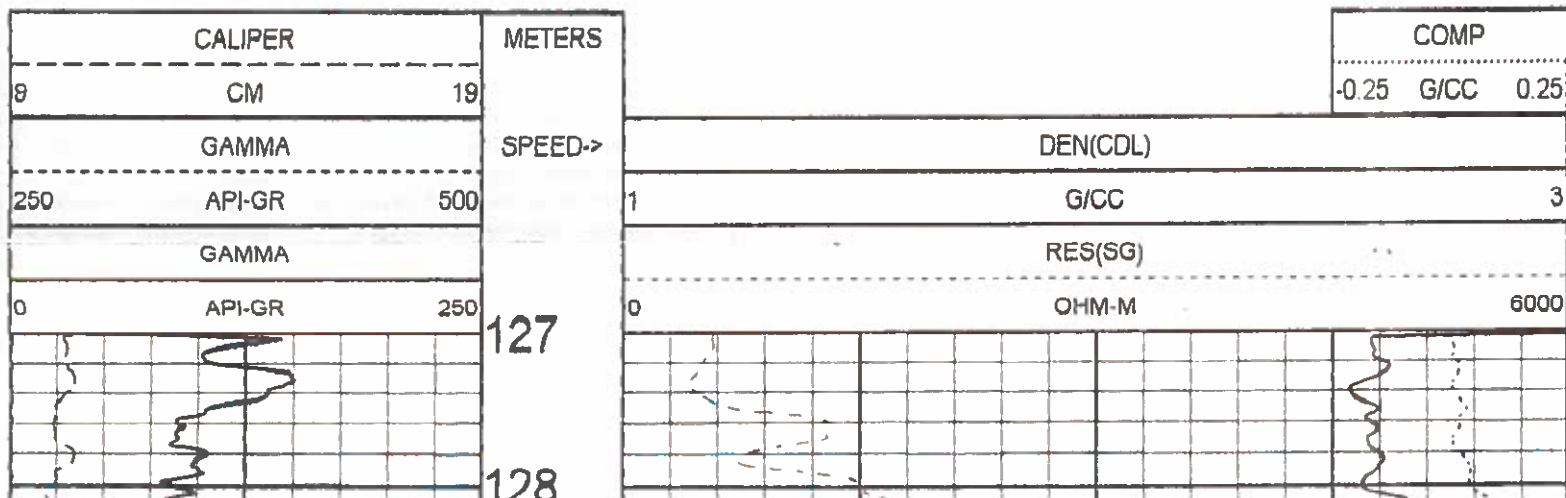
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010		VERSION = 3.64HE

1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010		VERSION = 3.64HE



CALIPER

METERS

COMP

1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HE

1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

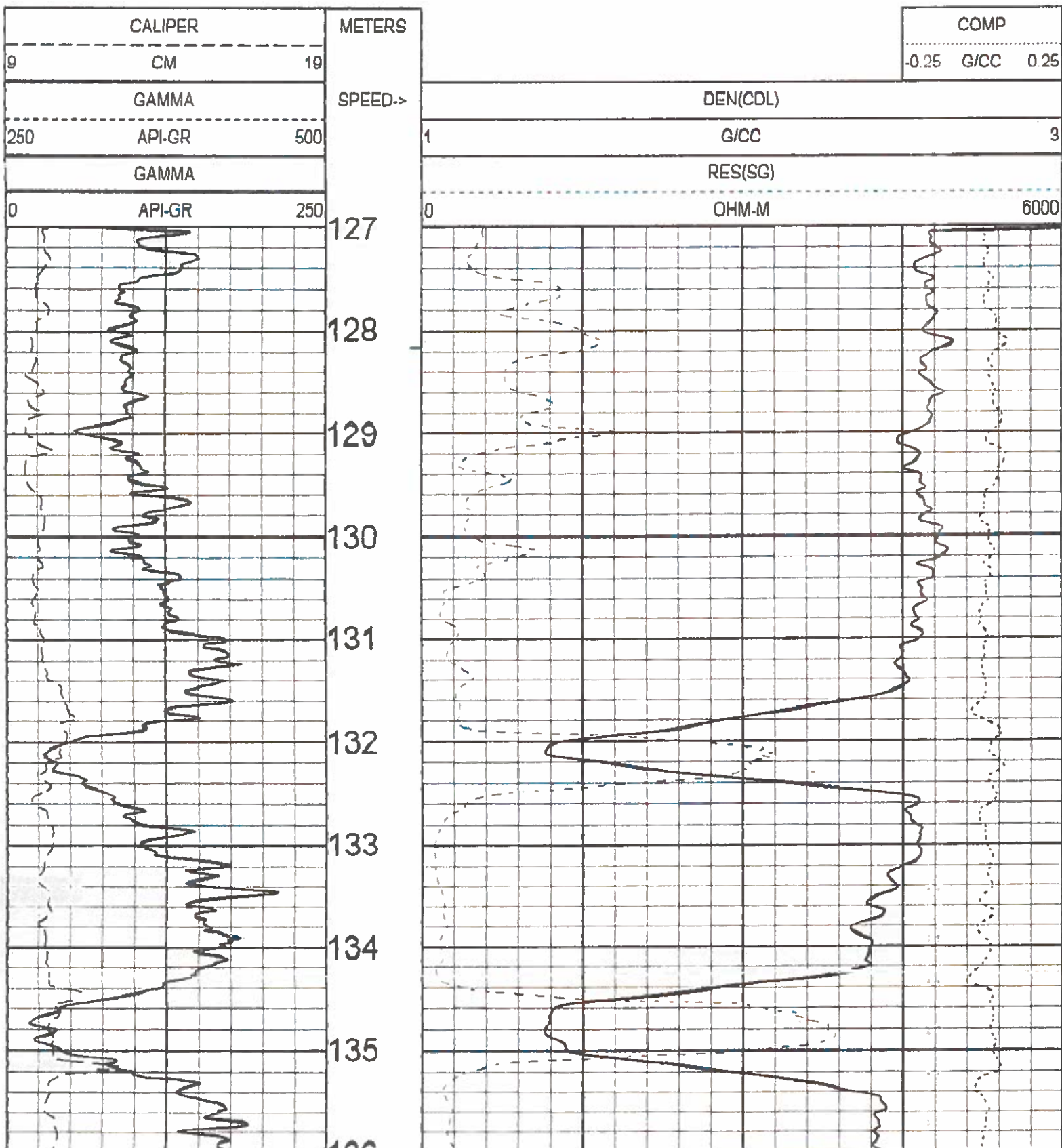
MAGNETIC DECL : 21.0

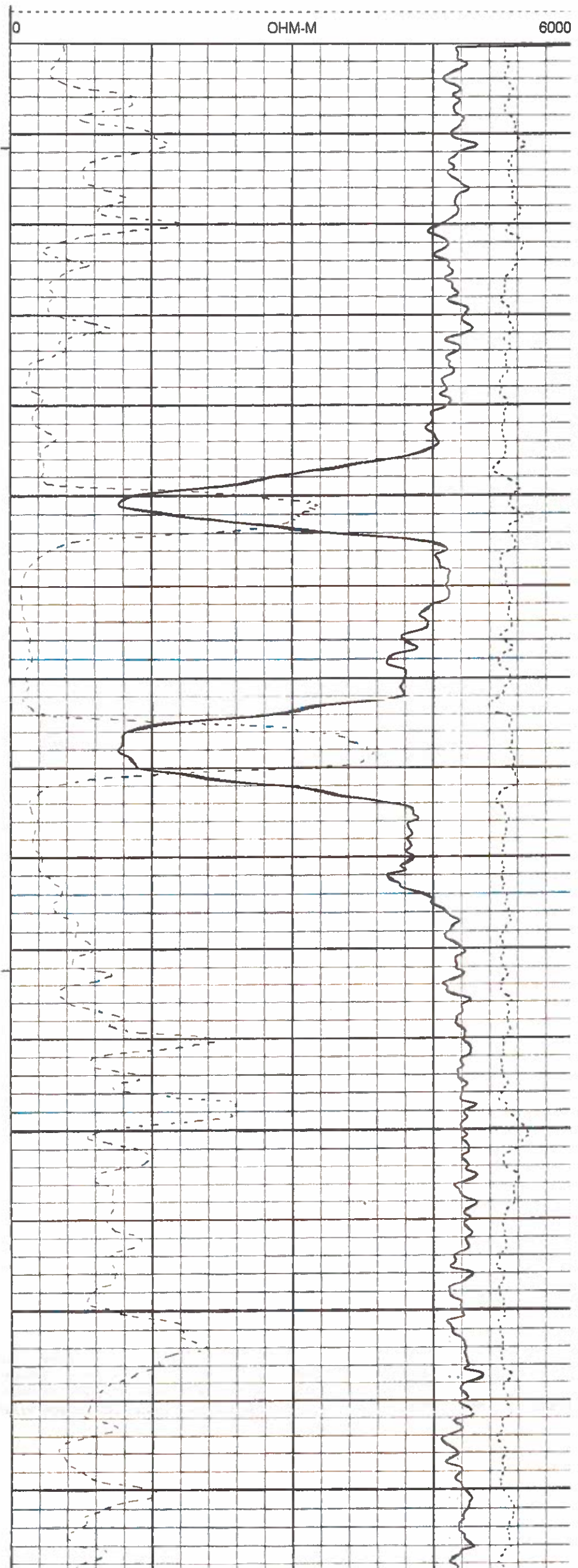
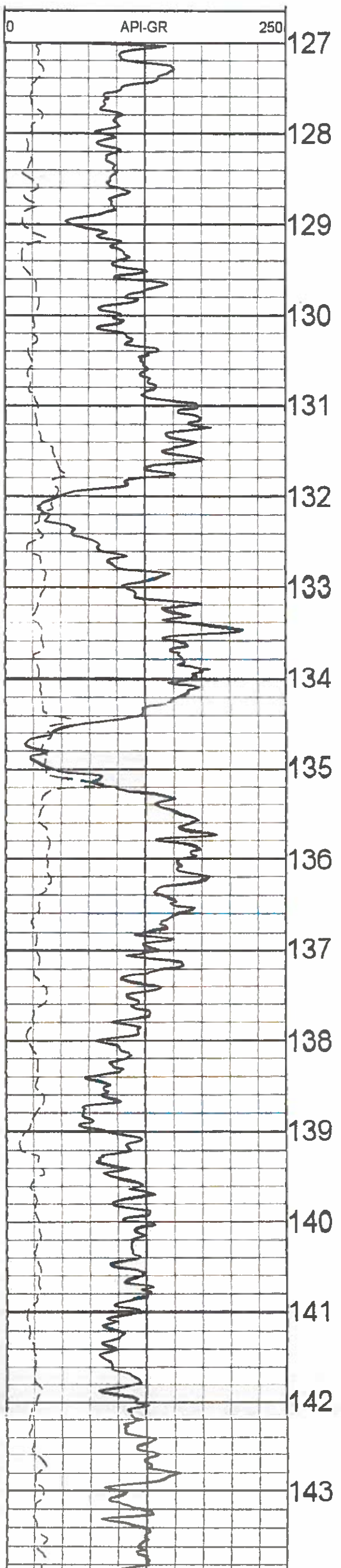
ELECT. CUTOFF : 99999

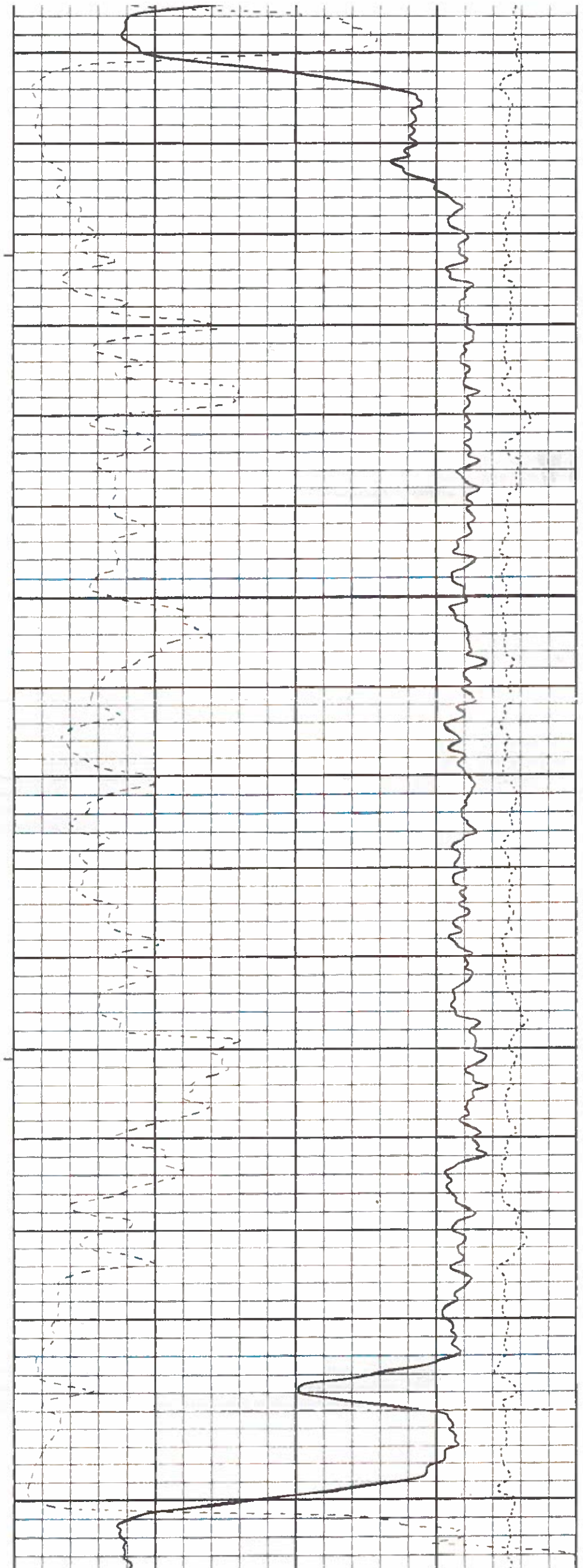
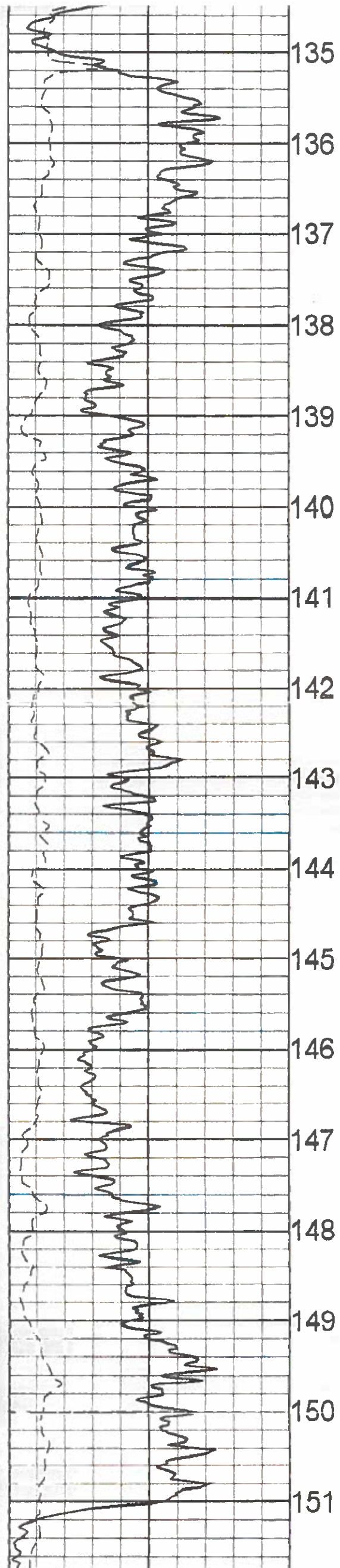
BIT SIZE : 11.43

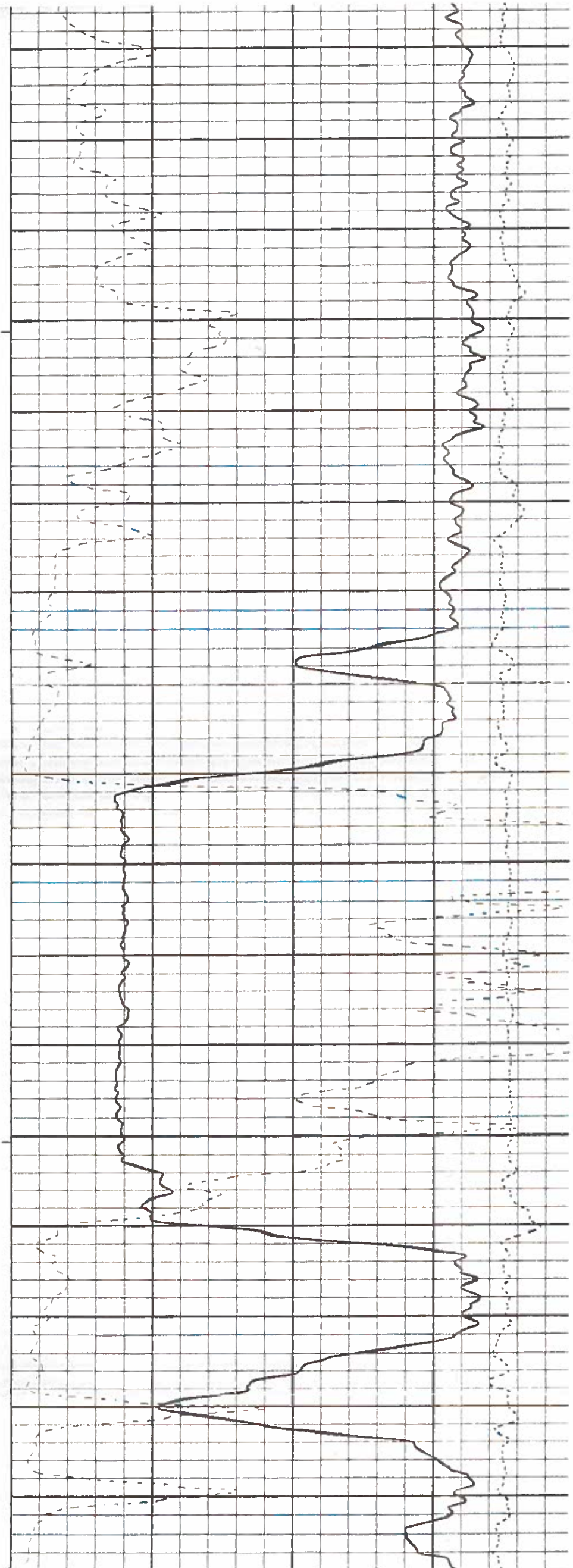
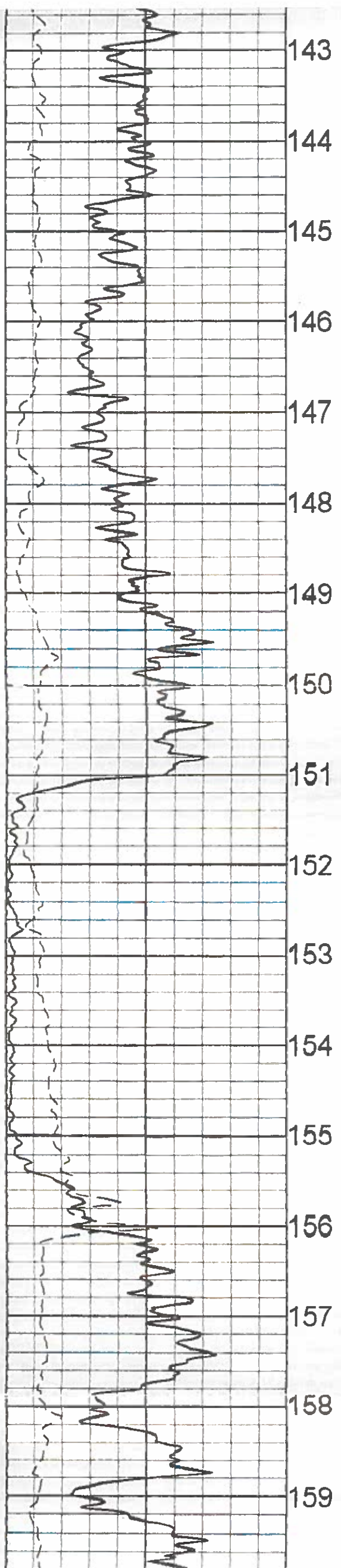
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

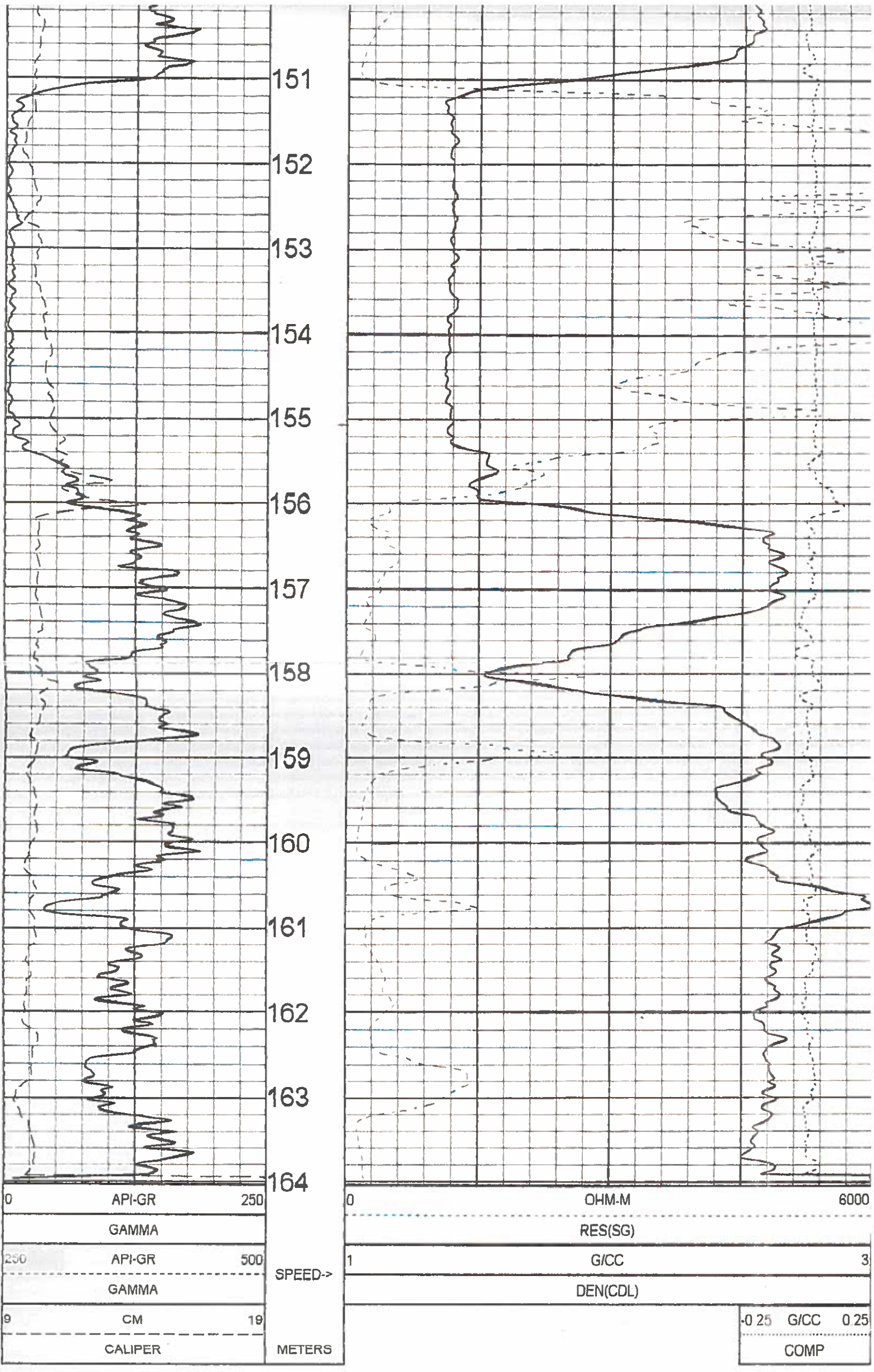
VERSION = 3.64HE



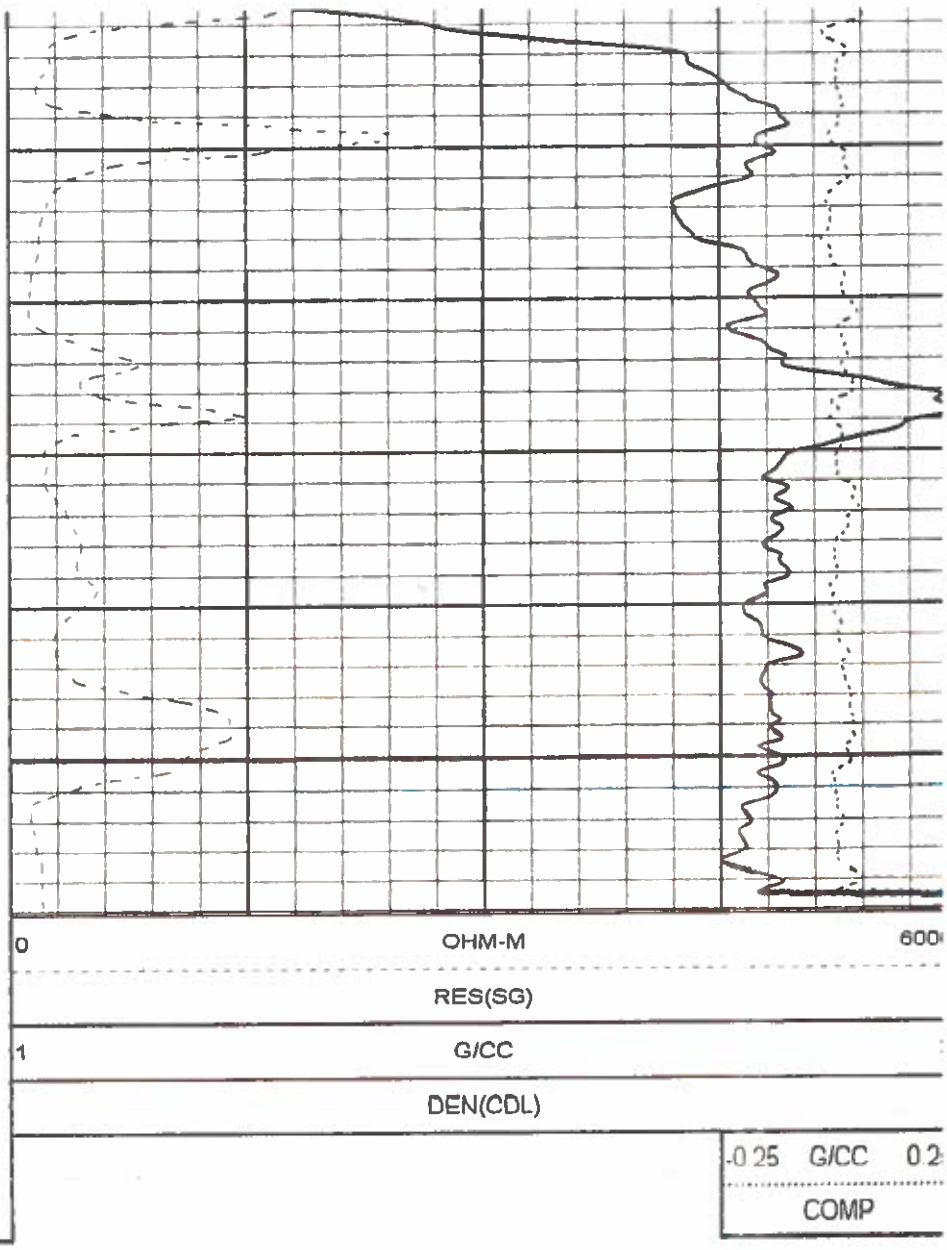
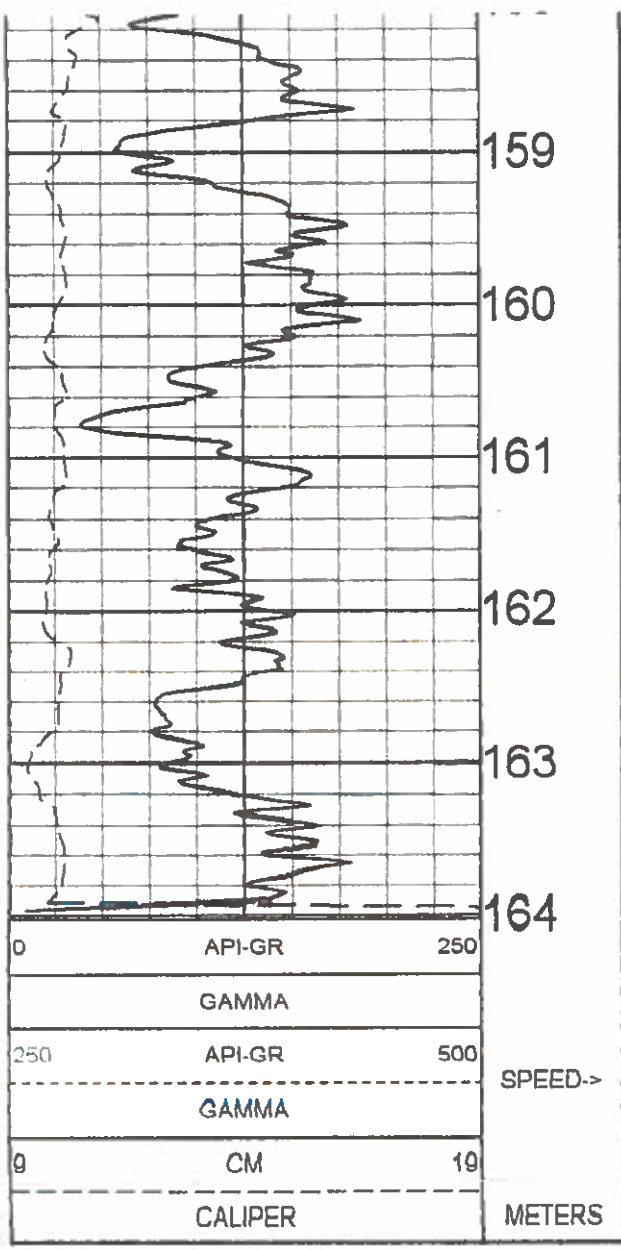








1:50 BULK DENSITY EXPANDED BR10-11 09/02/10



1:50 BULK DENSITY EXPANDED BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HE

TOOL CALIBRATION BR10-11 09/02/10 14:57

TOOL 9239C TM VERSION 2023

SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2 000 [API-GR]	0 000 [CPS]
	Aug18,10	14:55:56	GAMMA	545 000 [API-GR]	800 000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32 300 [MV]	8515 000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231 200 [MV]	35100 000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8 890 [CM]	159525 000 [CPS]
	Jun11,10	08:52:25	CALIPER	15 240 [CM]	308559 000 [CPS]
4	Aug29,10	11:06:34	DEN(LS)	1 620 [G/CC]	17244 000 [CPS]
	Aug29,10	11:06:34	DEN(LS)	2 612 [G/CC]	2295 000 [CPS]
5	Sep02,10	15:17:41	DEN(SS)	1 590 [G/CC]	59336 000 [CPS]
	Sep01,10	11:22:26	DEN(SS)	2 580 [G/CC]	24724 000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12 700 [CM]	163449 000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22 800 [CM]	281258 000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32 300 [UA]	6570 000 [CPS]
	Jun24,10	09:05:20	CURRENT	231 200 [UA]	23175 000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

BR10-11

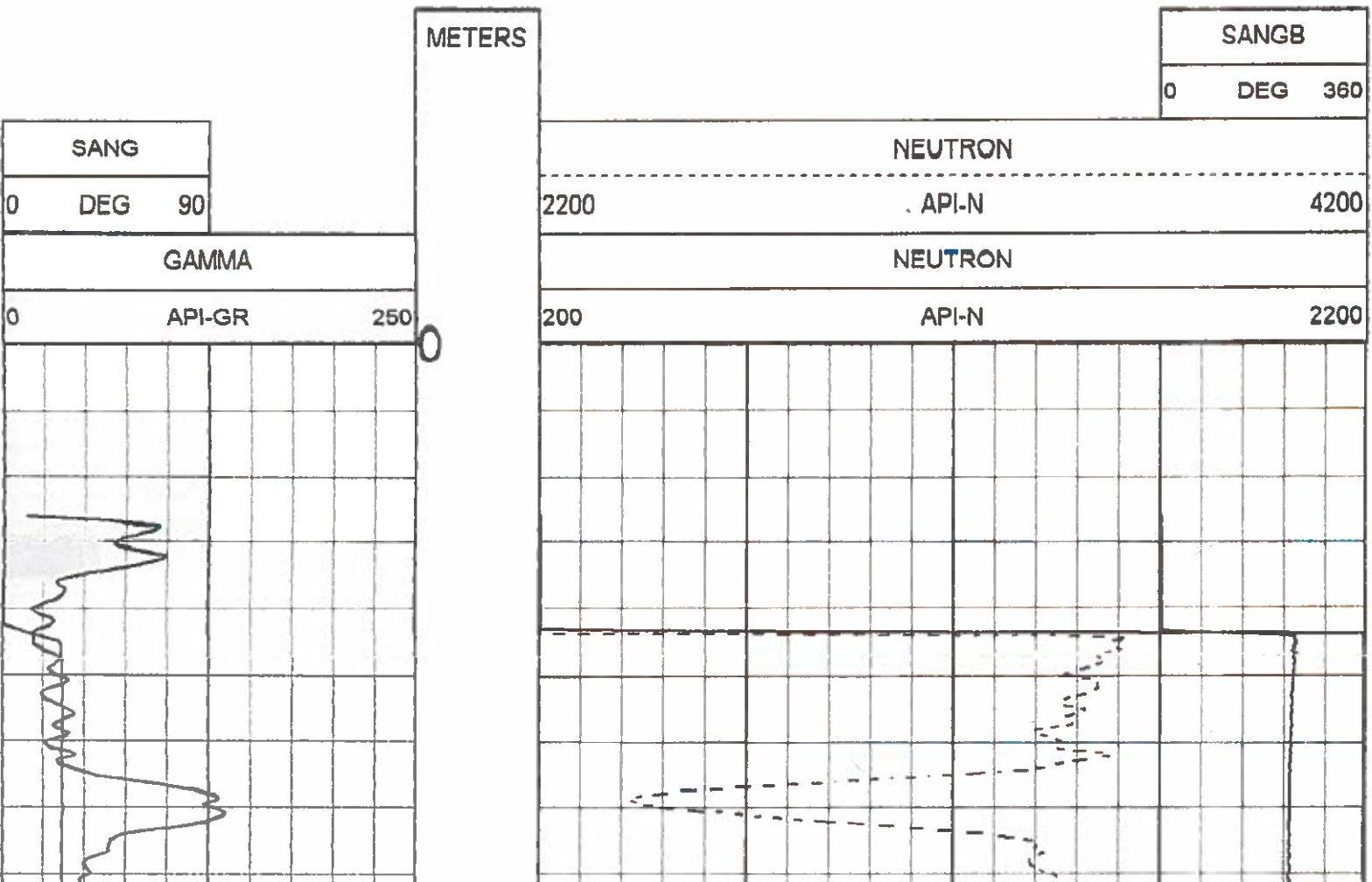
COMPANY	:WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	:BR10-11	DENSITY	
FIELD	:BRULE		
COUNTRY	:CANADA		
PROVINCE	:BRITISH COLUMBIA		
LOCATION	:BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	:GL	ELEVATION KB	N/A
LOG MEASURED FROM	:GL	ELEVATION DF	N/A
DRL MEASURED FROM	:GL	ELEVATION GL	N/A
DATE	:09/02/10	RIG NUMBER	
DEPTH DRILLER	:175 26	LOGGER TD	
BIT SIZE	:11.43	ARRIVAL TIME	
LOG TOP	:2.69	DEPARTURE TIME	
LOG BOTTOM	:174.32	CIRC STOPPED	N/A
CASING LOGGER	:3.048		
CASING DRILLER	:3.048		
CASING TYPE	:STEEL		
BOREHOLE FLUID	:WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	:1.00		
WITNESSED BY	:G. HOLMLUND		
RECORDED BY	:T. NEAL		
REMARKS 1	:65 DEGREE		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 09/01/2010		VERSION = 3.64HR



LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

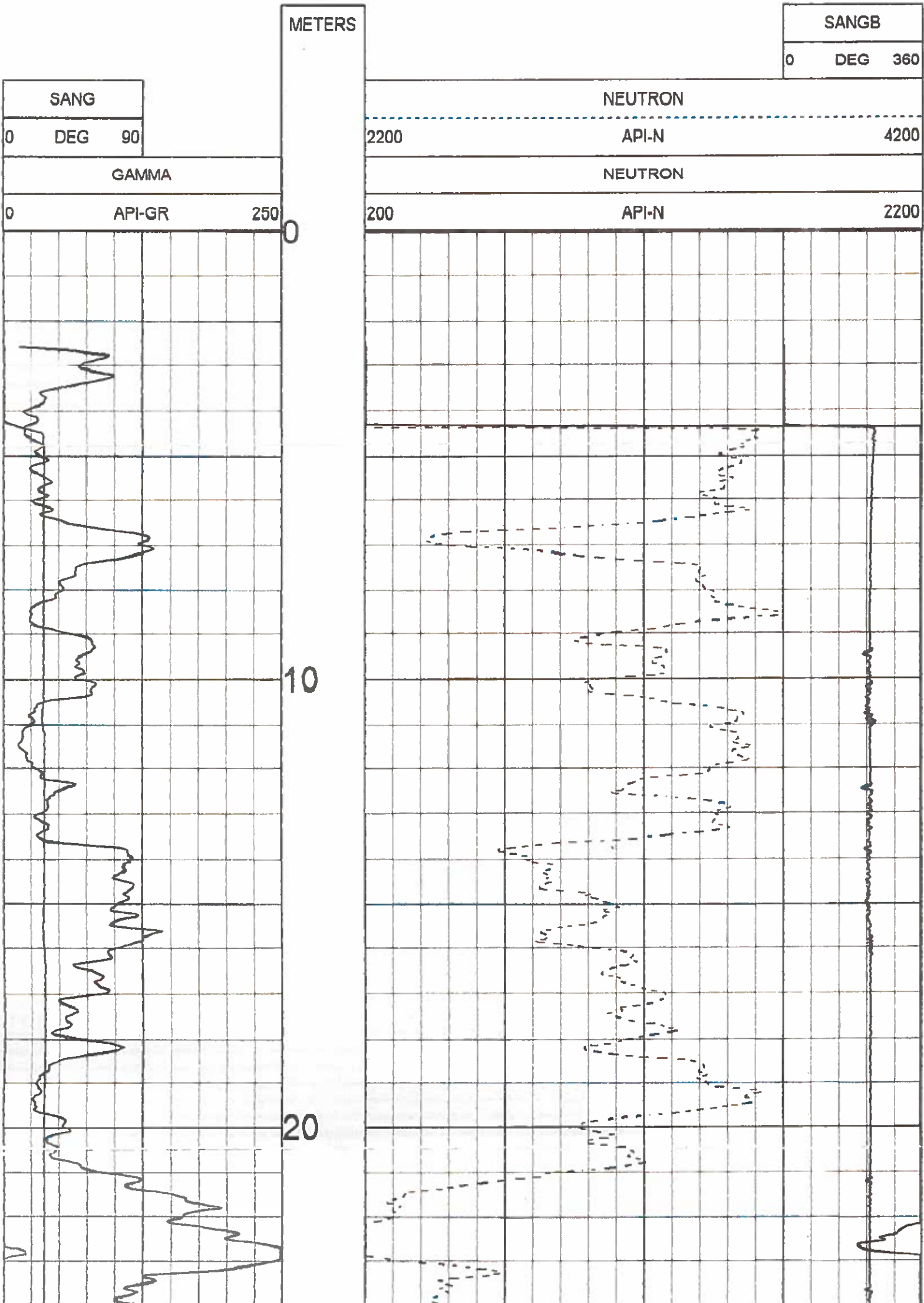
MAGNETIC DECL : 21.0

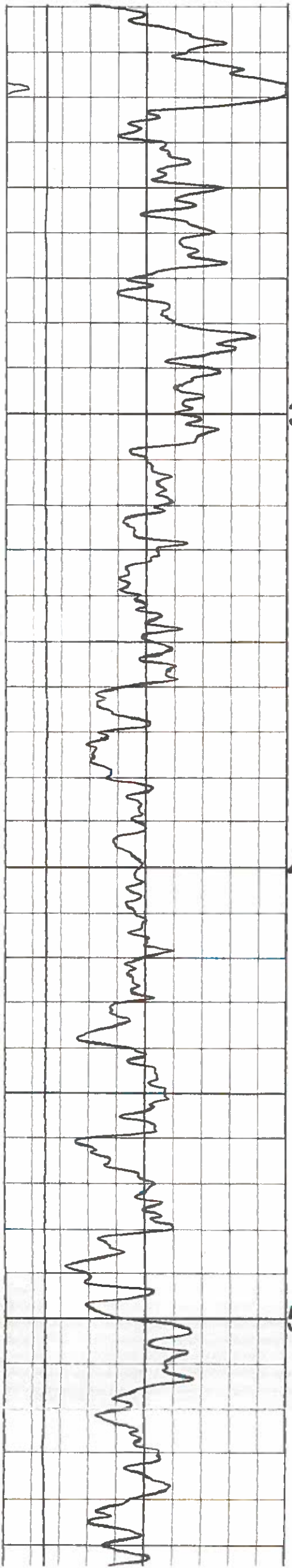
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 09/01/2010

VERSION = 3.64HR

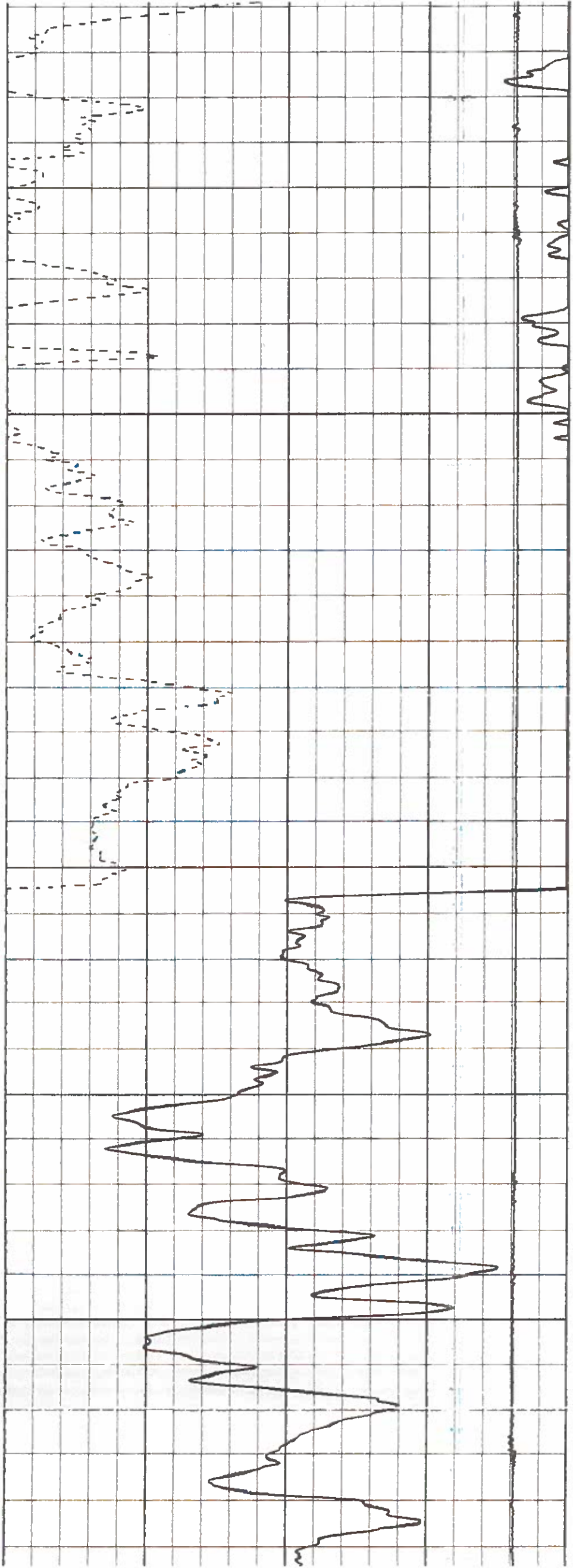


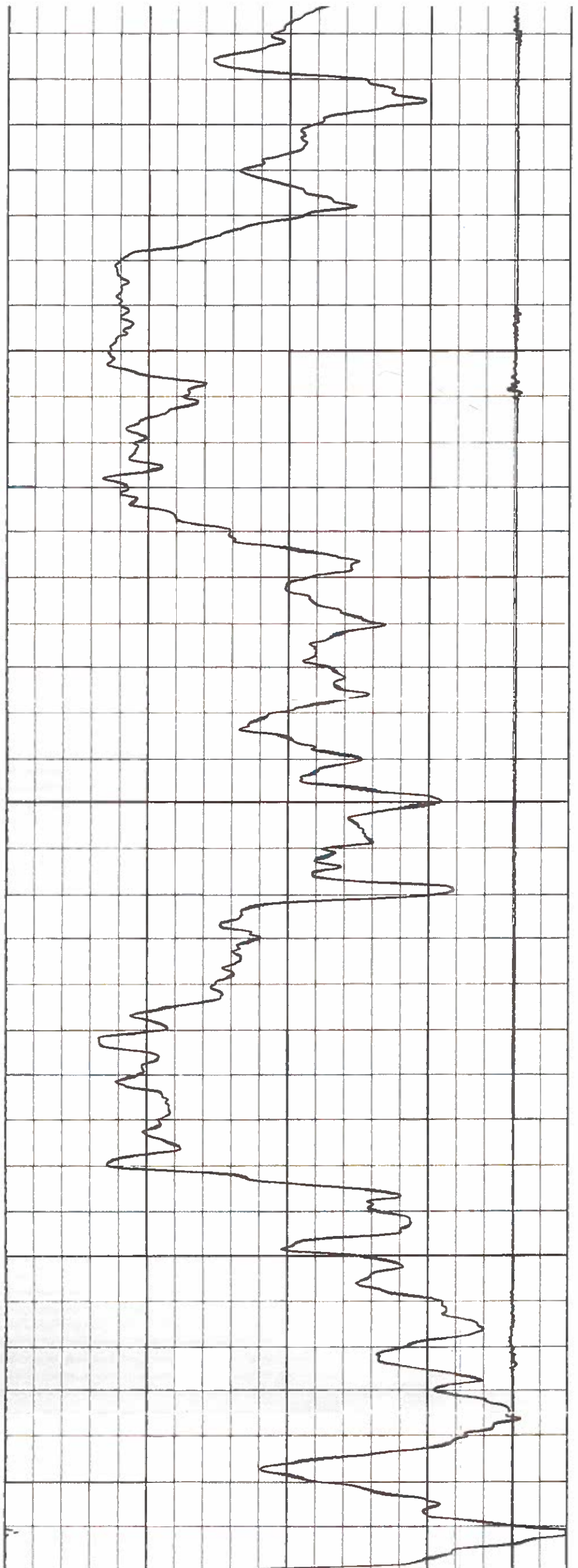
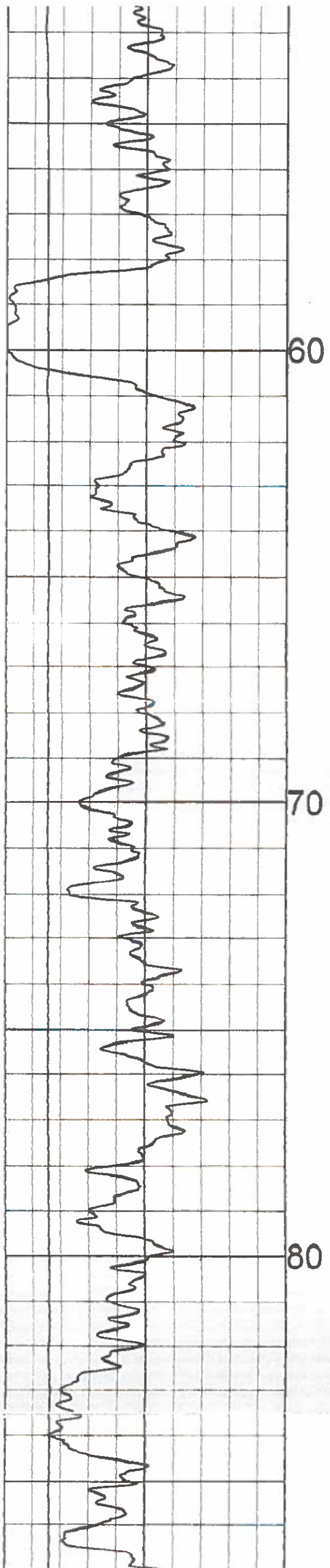


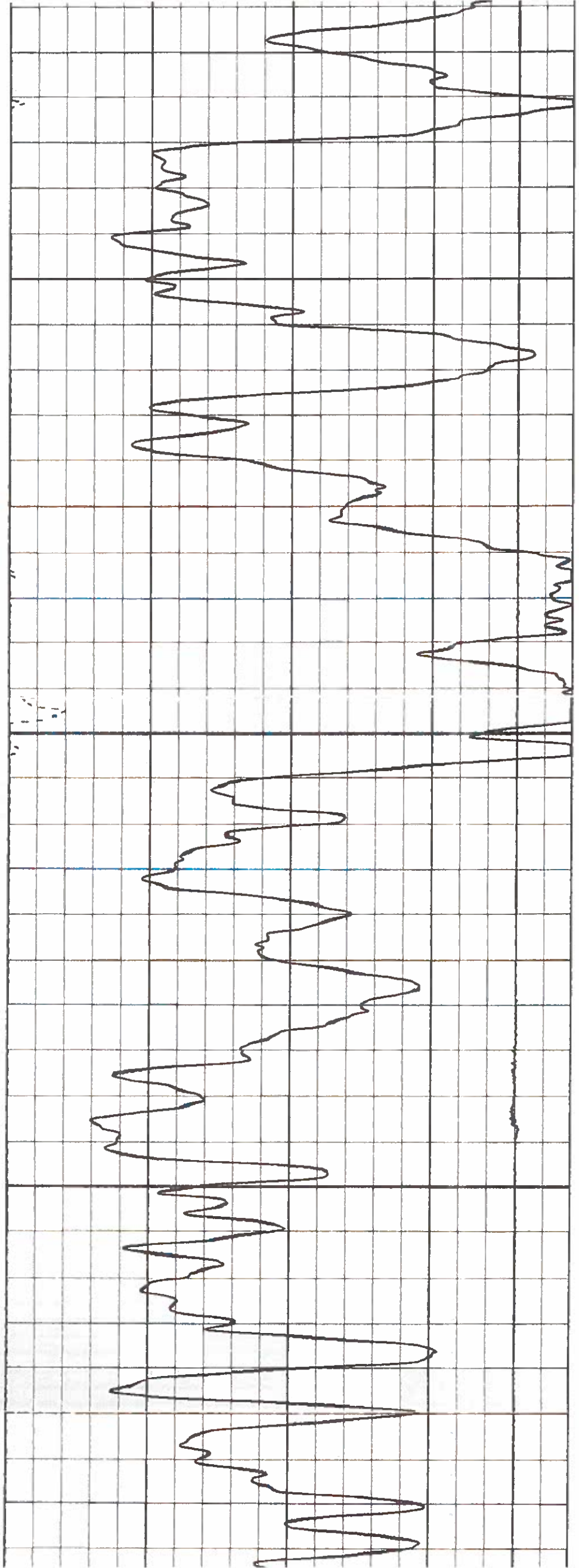
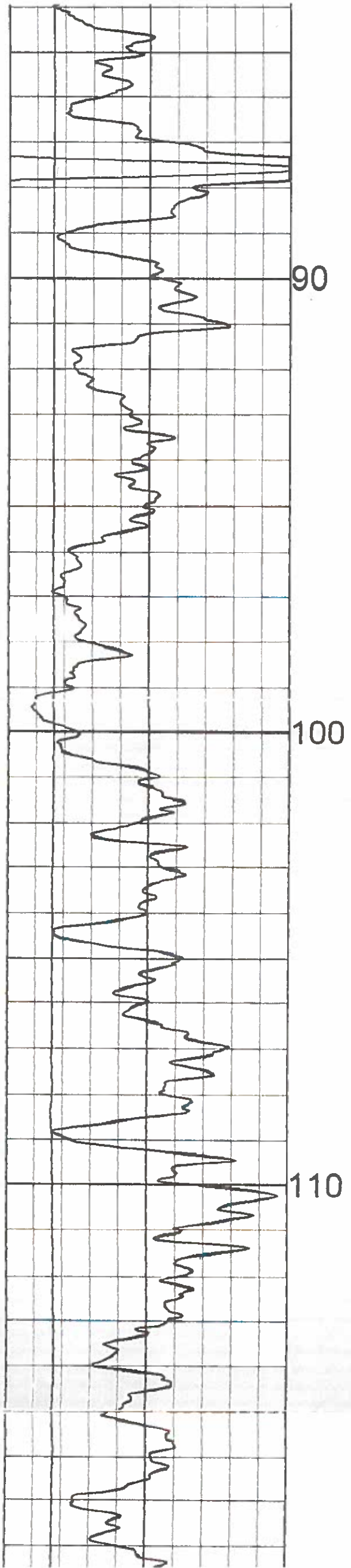
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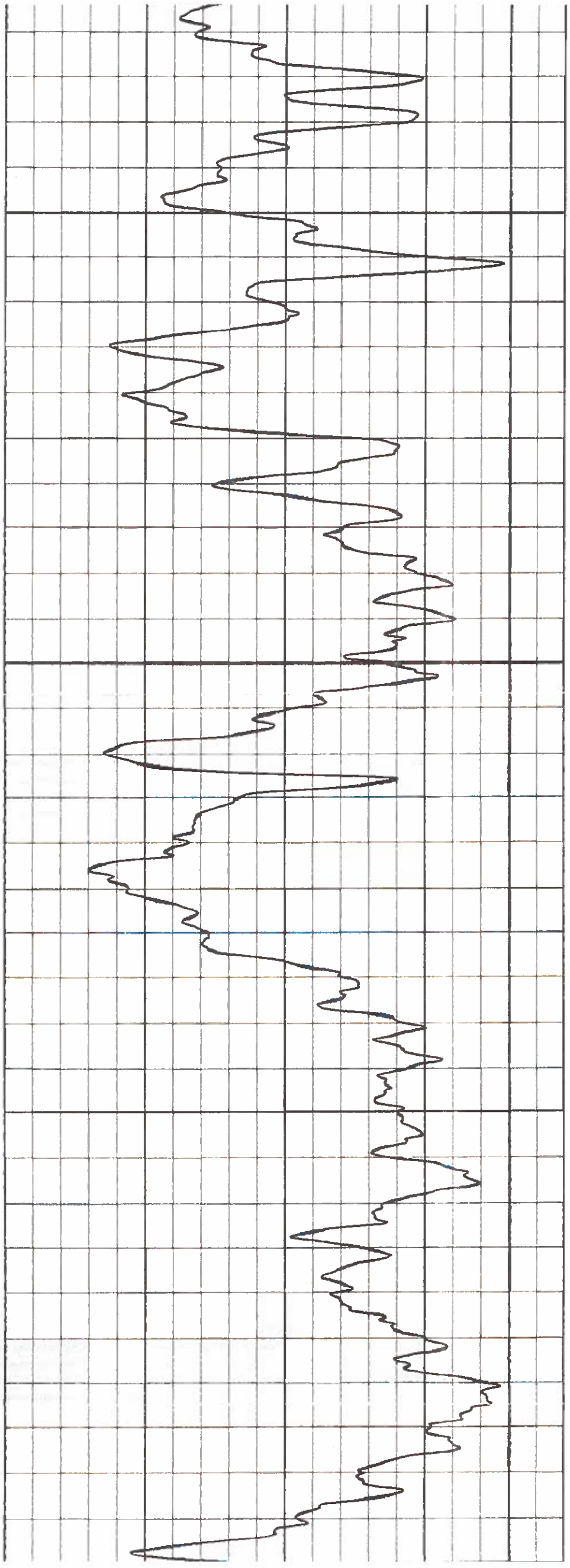
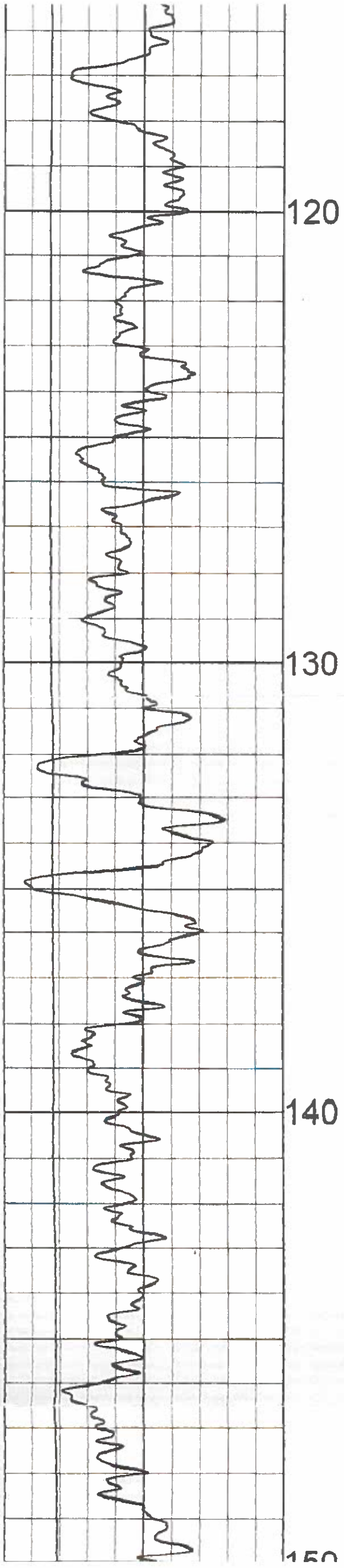
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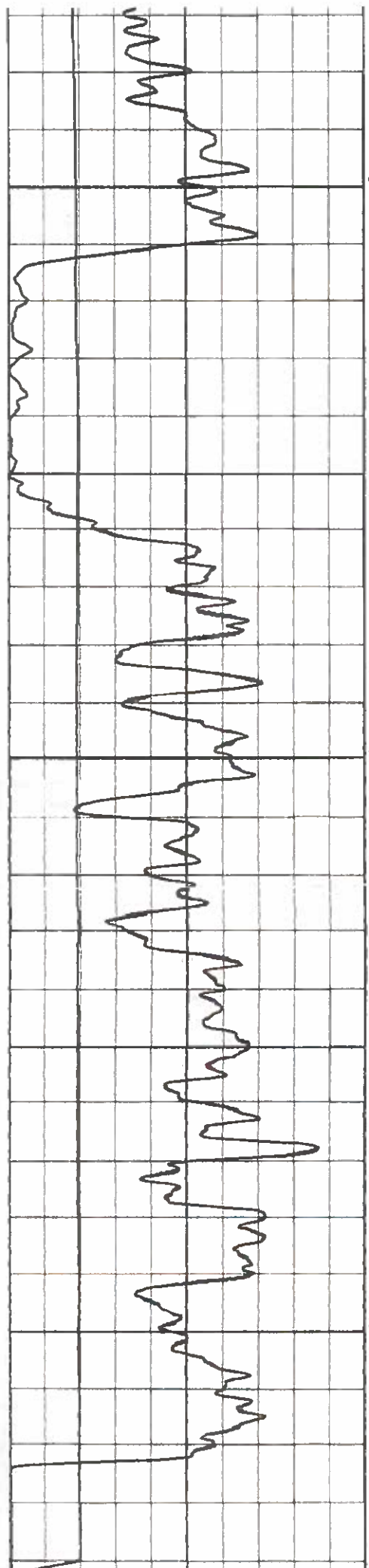
50











150
160
170

0 API-GR 250

GAMMA

0 DEG 90

SANG

200 API-N 2200

NEUTRON

2200 API-N 4200

NEUTRON

0 DEG 360

SANGB

METERS

1:100 NEUTRON BR10-11 09/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 09/01/2010

VERSION = 3.64HR

TOOL CALIBRATION BR10-11 09/02/10 14:22

TOOL 9057A TM VERSION 2

SERIAL NUMBER 4565

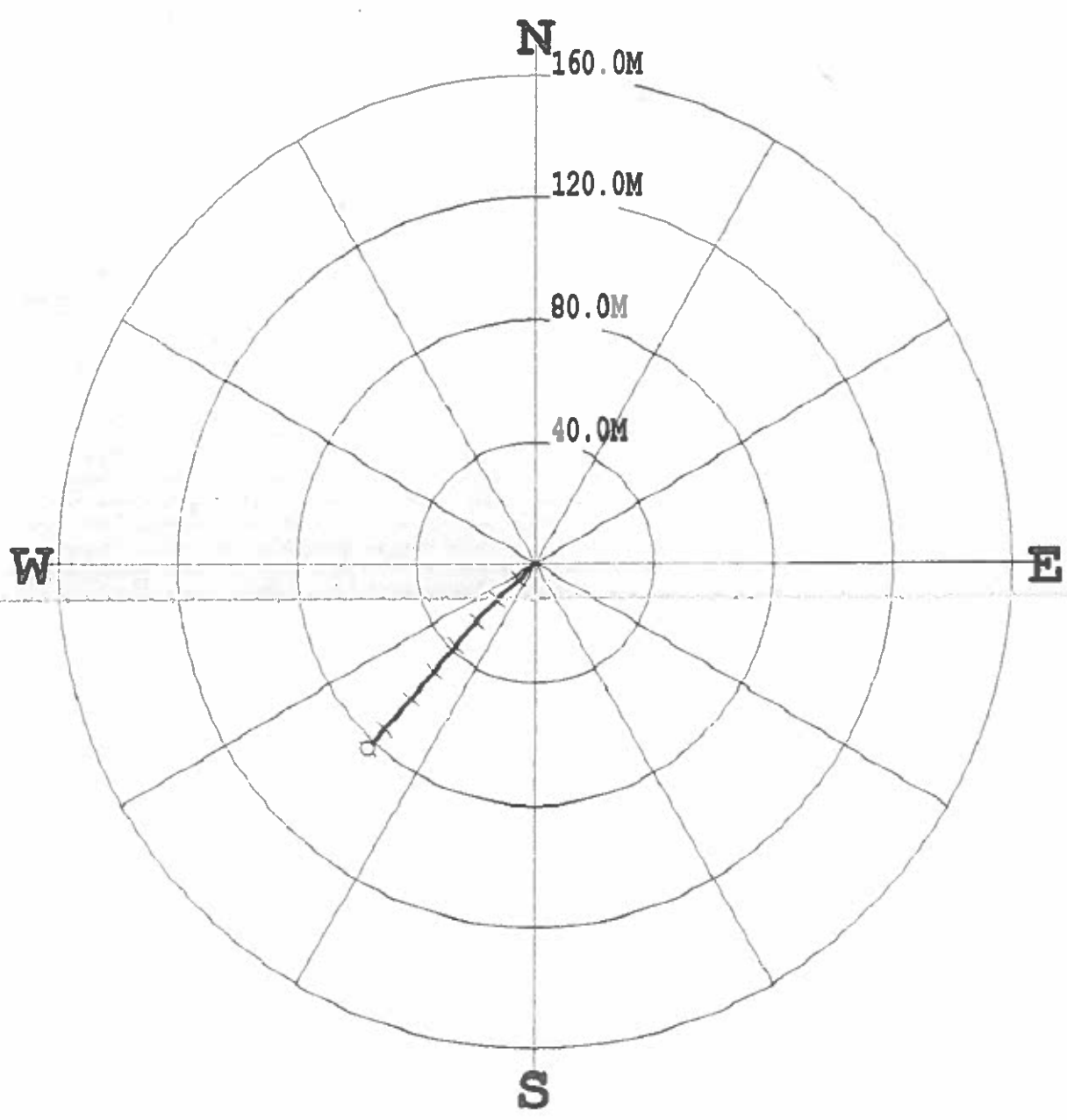
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul07,10	09:35:40	GAMMA 0.000	[API-GR]	4.000 [CPS]
	Jul07,10	09:35:40	GAMMA 545.000	[API-GR]	504.000 [CPS]
2	Jun11,10	12:54:44	NEUTRON 0.000	[API-N]	1.000 [CPS]
	Jun11,10	12:54:44	NEUTRC 271.000	[API-N]	790.000 [CPS]
3	May13,08	11:46:00	SP 0.000	[MV]	320190.000 [CPS]
	May13,08	11:46:00	SP 349.000	[MV]	149150.000 [CPS]
4	May13,08	14:09:51	RES(16N) 0.000	[OHM-M]	4158.000 [CPS]
	May13,08	14:09:51	RES(16N) 1953.000	[OHM-M]	422983.000 [CPS]
5	May13,08	14:09:08	RES(64N) 0.000	[OHM-M]	3135.000 [CPS]
	May13,08	14:09:08	RES(64N) 1990.000	[OHM-M]	425737.000 [CPS]
6	Feb24,09	11:19:14	TEMP 12.830	[DEG F]	346522.000 [CPS]
	Feb24,09	11:19:14	TEMP 32.940	[DEG F]	372068.000 [CPS]
7	May13,08	11:44:50	RES 0.000	[OHM]	4217.000 [CPS]
	May13,08	11:44:50	RES 943.000	[OHM]	161475.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-11
 DATE OF LOG: 09/02/10
 PROBE: 9057A 4565



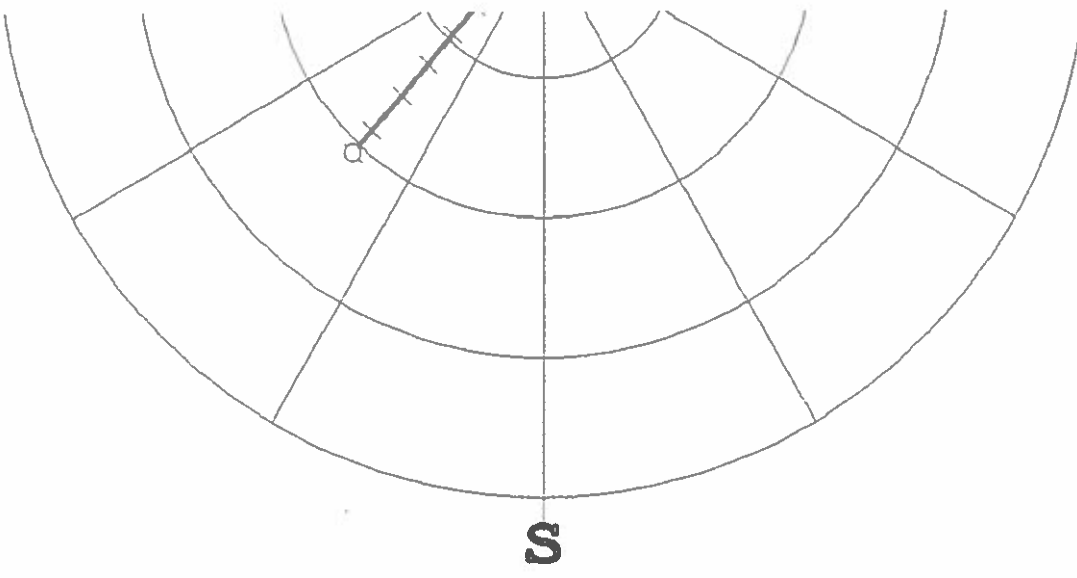
SCALE: 20 M/CM
 TRUE DEPTH: 152.04 M
 AZIMUTH: 222.6
 DISTANCE: 82.9 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-11
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 09/02/10
 DATA FROM : N/A PROBE : 9057A , 4565
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-11_09-02-10_14-22_9057A_.02_2.59_174.32_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.38	4.37	-0.01	-0.00	0.0	203.2	25.6	203.2
6.00	5.82	-0.43	-0.58	0.7	233.2	26.5	231.1
8.00	7.61	-1.02	-1.24	1.6	230.6	26.1	226.7
10.00	9.40	-1.64	-1.87	2.5	228.8	27.7	209.7
12.00	11.19	-2.24	-2.48	3.3	228.0	26.2	228.5
14.00	12.98	-2.85	-3.11	4.2	227.4	27.0	225.8
16.00	14.77	-3.48	-3.71	5.1	226.8	24.5	226.6
18.00	16.56	-4.08	-4.38	6.0	227.0	26.9	229.2
20.00	18.34	-4.69	-5.05	6.9	227.1	26.7	228.2
22.00	20.13	-5.29	-5.69	7.8	227.1	26.5	227.5
24.00	21.93	-5.91	-6.32	8.7	226.9	26.3	224.9
26.00	23.72	-6.53	-6.93	9.5	226.7	24.3	224.1
28.00	25.52	-7.11	-7.57	10.4	226.8	25.8	228.3
30.00	27.32	-7.69	-8.21	11.3	226.9	25.7	227.9
32.00	29.13	-8.27	-8.86	12.1	226.9	25.7	228.2
34.00	30.92	-8.86	-9.51	13.0	227.0	26.2	228.3




***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-11
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 09/02/10
 DATA FROM : N/A PROBE : 9057A , 4565
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-11_09-02-10_14-22_9057A_.02_2.59_174.32_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.38	4.37	-0.01	-0.00	0.0	203.2	25.6	203.2
6.00	5.82	-0.43	-0.58	0.7	233.2	26.5	231.1
8.00	7.61	-1.02	-1.24	1.6	230.6	26.1	226.7
10.00	9.40	-1.64	-1.87	2.5	228.8	27.7	209.7
12.00	11.19	-2.24	-2.48	3.3	228.0	26.2	228.5
14.00	12.98	-2.85	-3.11	4.2	227.4	27.0	225.8
16.00	14.77	-3.48	-3.71	5.1	226.8	24.5	226.6
18.00	16.56	-4.08	-4.38	6.0	227.0	26.9	229.2
20.00	18.34	-4.69	-5.05	6.9	227.1	26.7	228.2
22.00	20.13	-5.29	-5.69	7.8	227.1	26.5	227.5
24.00	21.93	-5.91	-6.32	8.7	226.9	26.3	224.9
26.00	23.72	-6.53	-6.93	9.5	226.7	24.3	224.1
28.00	25.52	-7.11	-7.57	10.4	226.8	25.8	228.3
30.00	27.32	-7.69	-8.21	11.3	226.9	25.7	227.9
32.00	29.13	-8.27	-8.86	12.1	226.9	25.7	228.2
34.00	30.92	-8.86	-9.51	13.0	227.0	26.2	228.3
36.00	32.72	-9.45	-10.17	13.9	227.1	26.4	228.3
38.00	34.51	-10.05	-10.83	14.8	227.1	26.4	224.0
40.00	36.30	-10.66	-11.48	15.7	227.1	26.7	227.7
42.00	38.08	-11.27	-12.14	16.6	227.1	26.7	227.5
44.00	39.87	-11.88	-12.79	17.5	227.1	26.5	226.7
46.00	41.66	-12.50	-13.44	18.4	227.1	26.6	226.9
48.00	43.45	-13.12	-14.07	19.2	227.0	26.2	223.5
50.00	45.25	-13.75	-14.67	20.1	226.8	25.9	223.1
52.00	47.05	-14.40	-15.25	21.0	226.6	25.9	223.3
54.00	48.85	-15.02	-15.83	21.8	226.5	25.9	225.9
56.00	50.65	-15.64	-16.46	22.7	226.5	26.7	225.6
58.00	52.43	-16.28	-17.10	23.6	226.4	26.8	224.7
60.00	54.21	-16.92	-17.72	24.5	226.3	27.3	223.6
62.00	55.99	-17.57	-18.32	25.4	226.2	27.5	224.2
64.00	57.77	-18.23	-18.96	26.3	226.1	27.6	223.7
66.00	59.54	-18.90	-19.60	27.2	226.0	27.5	223.9
68.00	61.31	-19.57	-20.24	28.2	226.0	27.5	222.7
70.00	63.09	-20.24	-20.87	29.1	225.9	27.6	223.8
72.00	64.86	-20.93	-21.50	30.0	225.8	28.1	222.8
74.00	66.63	-21.61	-22.13	30.9	225.7	28.0	220.4
76.00	68.39	-22.31	-22.76	31.9	225.6	28.1	222.0
78.00	70.15	-23.02	-23.39	32.8	225.5	28.4	221.1
80.00	71.91	-23.73	-24.03	33.8	225.4	28.4	221.9
82.00	73.67	-24.45	-24.62	34.7	225.2	27.9	236.6
84.00	75.43	-25.15	-25.25	35.6	225.1	28.8	220.4
86.00	77.18	-25.88	-25.88	36.6	225.0	28.8	221.5
88.00	78.93	-26.61	-26.50	37.6	224.9	28.6	221.1
90.00	80.69	-27.34	-27.12	38.5	224.8	28.7	219.4
92.00	82.44	-28.08	-27.74	39.5	224.6	28.9	220.6
94.00	84.19	-28.83	-28.35	40.4	224.5	29.0	220.1
96.00	85.94	-29.58	-28.96	41.4	224.4	28.7	219.2
98.00	87.69	-30.33	-29.58	42.4	224.3	29.5	219.7
100.00	89.43	-31.08	-30.20	43.3	224.2	29.2	219.4
102.00	91.18	-31.84	-30.82	44.3	224.1	29.2	219.5
104.00	92.93	-32.59	-31.44	45.3	224.0	29.1	219.0
106.00	94.68	-33.35	-32.04	46.2	223.9	29.0	217.9
108.00	96.42	-34.10	-32.64	47.2	223.7	29.9	215.5
110.00	98.16	-34.85	-33.24	48.2	223.6	29.9	220.7
112.00	99.90	-35.62	-33.89	49.2	223.6	30.3	220.1
114.00	101.62	-36.39	-34.54	50.2	223.5	30.7	219.7
116.00	103.34	-37.16	-35.20	51.2	223.4	30.6	220.7
118.00	105.07	-37.94	-35.85	52.2	223.4	30.3	220.0
120.00	106.80	-38.70	-36.50	53.2	223.3	29.9	220.8
122.00	108.52	-39.45	-37.14	54.2	223.2	29.4	220.2

20.00	18.34	-4.69	-5.05	6.9	227.1	26.7	228.2
22.00	20.13	-5.29	-5.69	7.8	227.1	26.5	227.5
24.00	21.93	-5.91	-6.32	8.7	226.9	26.3	224.9
26.00	23.72	-6.53	-6.93	9.5	226.7	24.3	224.1
28.00	25.52	-7.11	-7.57	10.4	226.8	25.8	228.3
30.00	27.32	-7.69	-8.21	11.3	226.9	25.7	227.9
32.00	29.13	-8.27	-8.86	12.1	226.9	25.7	228.2
34.00	30.92	-8.86	-9.51	13.0	227.0	26.2	228.3
36.00	32.72	-9.45	-10.17	13.9	227.1	26.4	228.3
38.00	34.51	-10.05	-10.83	14.8	227.1	26.4	224.0
40.00	36.30	-10.66	-11.48	15.7	227.1	26.7	227.7
42.00	38.08	-11.27	-12.14	16.6	227.1	26.7	227.5
44.00	39.87	-11.88	-12.79	17.5	227.1	26.5	226.7
46.00	41.66	-12.50	-13.44	18.4	227.1	26.6	226.9
48.00	43.45	-13.12	-14.07	19.2	227.0	26.2	223.5
50.00	45.25	-13.75	-14.67	20.1	226.8	25.9	223.1
52.00	47.05	-14.40	-15.25	21.0	226.6	25.9	223.3
54.00	48.85	-15.02	-15.83	21.8	226.5	25.9	225.9
56.00	50.65	-15.64	-16.46	22.7	226.5	26.7	225.6
58.00	52.43	-16.28	-17.10	23.6	226.4	26.8	224.7
60.00	54.21	-16.92	-17.72	24.5	226.3	27.3	223.6
62.00	55.99	-17.57	-18.32	25.4	226.2	27.5	224.2
64.00	57.77	-18.23	-18.96	26.3	226.1	27.6	223.7
66.00	59.54	-18.90	-19.60	27.2	226.0	27.5	223.9
68.00	61.31	-19.57	-20.24	28.2	226.0	27.5	222.7
70.00	63.09	-20.24	-20.87	29.1	225.9	27.6	223.8
72.00	64.86	-20.93	-21.50	30.0	225.8	28.1	222.8
74.00	66.63	-21.61	-22.13	30.9	225.7	28.0	220.4
76.00	68.39	-22.31	-22.76	31.9	225.6	28.1	222.0
78.00	70.15	-23.02	-23.39	32.8	225.5	28.4	221.1
80.00	71.91	-23.73	-24.03	33.8	225.4	28.4	221.9
82.00	73.67	-24.45	-24.62	34.7	225.2	27.9	236.6
84.00	75.43	-25.15	-25.25	35.6	225.1	28.8	220.4
86.00	77.18	-25.88	-25.88	36.6	225.0	28.8	221.5
88.00	78.93	-26.61	-26.50	37.6	224.9	28.6	221.1
90.00	80.69	-27.34	-27.12	38.5	224.8	28.7	219.4
92.00	82.44	-28.08	-27.74	39.5	224.6	28.9	220.6
94.00	84.19	-28.83	-28.35	40.4	224.5	29.0	220.1
96.00	85.94	-29.58	-28.96	41.4	224.4	28.7	219.2
98.00	87.69	-30.33	-29.58	42.4	224.3	29.5	219.7
100.00	89.43	-31.08	-30.20	43.3	224.2	29.2	219.4
102.00	91.18	-31.84	-30.82	44.3	224.1	29.2	219.5
104.00	92.93	-32.59	-31.44	45.3	224.0	29.1	219.0
106.00	94.68	-33.35	-32.04	46.2	223.9	29.0	217.9
108.00	96.42	-34.10	-32.64	47.2	223.7	29.9	215.5
110.00	98.16	-34.85	-33.24	48.2	223.6	29.9	220.7
112.00	99.90	-35.62	-33.89	49.2	223.6	30.3	220.1
114.00	101.62	-36.39	-34.54	50.2	223.5	30.7	219.7
116.00	103.34	-37.16	-35.20	51.2	223.4	30.6	220.7
118.00	105.07	-37.94	-35.85	52.2	223.4	30.3	220.0
120.00	106.80	-38.70	-36.50	53.2	223.3	29.9	220.8
122.00	108.53	-39.45	-37.16	54.2	223.3	30.4	220.2
124.00	110.25	-40.21	-37.83	55.2	223.3	30.5	223.4
126.00	111.98	-40.97	-38.50	56.2	223.2	30.2	219.9
128.00	113.70	-41.72	-39.18	57.2	223.2	30.7	221.9
130.00	115.42	-42.49	-39.85	58.3	223.2	31.0	216.3
132.00	117.13	-43.26	-40.55	59.3	223.2	31.7	222.1
134.00	118.83	-44.04	-41.25	60.3	223.1	31.7	220.6
136.00	120.53	-44.83	-41.96	61.4	223.1	32.2	222.2
138.00	122.22	-45.64	-42.66	62.5	223.1	32.4	220.7
140.00	123.91	-46.44	-43.37	63.5	223.0	32.2	221.1
142.00	125.60	-47.24	-44.08	64.6	223.0	32.8	220.0
144.00	127.28	-48.06	-44.79	65.7	223.0	33.1	221.5
146.00	128.95	-48.89	-45.51	66.8	222.9	33.2	220.6
148.00	130.62	-49.72	-46.23	67.9	222.9	33.7	221.1
150.00	132.28	-50.56	-46.96	69.0	222.9	34.6	221.2
152.00	133.93	-51.41	-47.71	70.1	222.9	34.6	220.6
154.00	135.57	-52.28	-48.46	71.3	222.8	35.2	221.8
156.00	137.20	-53.14	-49.22	72.4	222.8	35.0	220.5
158.00	138.84	-54.01	-49.97	73.6	222.8	34.7	221.0
160.00	140.49	-54.86	-50.72	74.7	222.8	34.5	221.1
162.00	142.13	-55.72	-51.47	75.9	222.7	34.6	221.2
164.00	143.78	-56.58	-52.21	77.0	222.7	34.7	222.3
166.00	145.42	-57.44	-52.97	78.1	222.7	34.9	221.3
168.00	147.05	-58.31	-53.72	79.3	222.7	35.2	223.7
170.00	148.68	-59.18	-54.49	80.4	222.6	35.5	222.0
172.00	150.31	-60.05	-55.26	81.6	222.6	35.7	221.4
174.00	151.93	-60.92	-56.04	82.8	222.6	35.9	220.7
174.14	152.04	-60.99	-56.09	82.9	222.6	35.9	221.3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-13	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	------------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,720.66	6,140,166.11	1,310.03

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
225	-64	204.07	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	224.7	-64.20
18.26	224.5	-64.10
19.26	224.7	-64.10
20.26	224.7	-64.50
21.26	224.7	-64.60
22.26	224.7	-64.50
23.26	224.6	-64.50
24.26	224.6	-64.50
25.26	224.6	-64.40
26.26	224.7	-64.50
27.26	224.6	-64.60
28.26	224.6	-64.30
29.26	224.7	-64.00
30.26	225.3	-63.70
31.26	225.8	-63.80
32.26	226.2	-63.00
33.26	225.8	-62.70
34.26	225.8	-63.70
35.26	225.8	-63.80
36.26	225.7	-63.30
37.26	225.7	-63.60
38.26	225.8	-63.40
39.26	225.9	-63.40
40.26	225.9	-63.20
41.26	225.9	-63.10
42.26	226.0	-63.20
43.26	226.1	-63.20

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	6.00	6.00		
86.20	89.00	2.80		
90.60	91.80	1.20		
143.10	143.80	0.70		
164.80	165.60	0.80		
165.60	166.50	0.90		
166.50	167.50	1.00		
190.30	195.00	4.70		
195.00	195.80	0.80		
198.20	198.60	0.40		

Date issued: Tuesday, June 10, 2014
Reviewed: October 11, 2002

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Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-13**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

44.26	226.1	-63.20
45.26	226.2	-63.00
46.26	226.2	-63.00
47.26	226.2	-62.50
48.26	226.2	-62.50
49.26	226.2	-62.90
50.26	226.3	-62.60
51.26	226.3	-62.70
52.26	226.2	-62.80
53.26	226.2	-62.70
54.26	226.2	-62.50
55.26	226.2	-62.20
56.26	226.2	-62.00
57.26	226.2	-61.50
58.26	226.2	-61.20
59.26	226.1	-60.90
60.26	226.1	-61.00
61.26	226.1	-60.90
62.26	226.1	-61.00
63.26	226.1	-60.80
64.26	226.0	-60.70
65.26	226.0	-60.80
66.26	226.0	-60.80
67.26	226.0	-60.90
68.26	226.0	-61.00
69.26	226.0	-61.00
70.26	226.0	-61.20
71.26	226.0	-61.50
72.26	226.0	-61.60
73.26	226.0	-61.50
74.26	226.0	-61.60
75.26	226.0	-61.90
76.26	226.0	-61.80
77.26	226.0	-61.10
78.26	226.0	-61.00
79.26	226.0	-60.60
80.26	226.0	-60.60
81.26	226.0	-60.70
82.26	226.0	-60.80
83.26	226.0	-60.60
84.26	226.0	-60.50
85.26	226.0	-60.20
86.26	225.9	-60.20
87.26	225.9	-60.10
88.26	225.9	-60.20

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-13	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

89.26	225.9	-59.70
90.26	225.8	-59.70
91.26	225.8	-59.70
92.26	225.8	-59.70
93.26	225.7	-59.70
94.26	225.7	-59.70
95.26	225.6	-59.70
96.26	225.6	-59.80
97.26	225.5	-59.60
98.26	225.5	-59.40
99.26	225.4	-58.70
100.26	225.4	-59.10
101.26	225.3	-58.50
102.26	225.2	-58.10
103.26	225.2	-57.60
104.26	225.1	-57.80
105.26	225.0	-57.50
106.26	225.0	-57.00
107.26	224.9	-56.50
108.26	224.8	-56.80
109.26	224.8	-56.20
110.26	224.7	-56.10
111.26	224.6	-56.20
112.26	224.6	-56.60
113.26	224.5	-56.90
114.26	224.5	-56.20
115.26	224.4	-56.10
116.26	224.3	-56.10
117.26	224.3	-56.20
118.26	224.2	-56.50
119.26	224.1	-56.60
120.26	224.1	-56.60
121.26	224.0	-56.60
122.26	223.9	-56.70
123.26	223.9	-56.80
124.26	223.8	-56.70
125.26	223.8	-56.50
126.26	223.7	-55.80
127.26	223.7	-56.30
128.26	223.6	-56.20
129.26	223.5	-56.00
130.26	223.5	-55.70
131.26	223.4	-55.90
132.26	223.4	-55.80
133.26	223.3	-55.60

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-13**

year drilled: 2010


AREA:

**BURNT RIVER
BRULE**

134.26	223.2	-55.70
135.26	223.2	-55.60
136.26	223.1	-55.70
137.26	223.0	-55.90
138.26	223.0	-55.50
139.26	222.9	-55.50
140.26	222.8	-55.20
141.26	222.8	-55.60
142.26	222.7	-55.20
143.26	222.6	-55.00
144.26	222.6	-55.00
145.26	222.5	-54.90
146.26	222.5	-55.20
147.26	222.4	-54.80
148.26	222.3	-54.80
149.26	222.3	-54.60
150.26	222.2	-54.50
151.26	222.2	-54.40
152.26	222.1	-54.90
153.26	222.1	-54.80
154.26	222.0	-54.90
155.26	221.9	-54.80
156.26	221.9	-55.30
157.26	221.8	-55.30
158.26	221.7	-55.50
159.26	221.7	-55.60
160.26	221.6	-55.80
161.26	221.6	-55.50
162.26	221.5	-55.20
163.26	221.5	-55.90
164.26	221.4	-56.20
165.26	221.4	-56.20
166.26	221.3	-56.30
167.26	221.3	-56.10
168.26	221.2	-56.00
169.26	221.2	-56.30
170.26	221.1	-55.80
171.26	221.1	-55.90
172.26	221.0	-55.90
173.26	221.0	-55.50
174.26	220.9	-55.70
175.26	220.9	-56.30
176.26	220.8	-56.20
177.26	220.8	-56.30
178.26	220.7	-56.10

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-13	year drilled: 2010	AREA: BURNT RIVER BRULE
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179.26	220.7	-55.80
180.26	220.7	-55.30
181.26	220.6	-54.70
182.26	220.6	-54.80
183.26	220.5	-54.80
184.26	220.5	-54.80
185.26	220.4	-54.80
186.26	220.4	-54.80
187.26	220.4	-54.20
188.26	220.3	-54.30
189.26	220.3	-54.10
190.26	220.2	-53.70
191.26	220.2	-53.90
192.26	220.2	-53.70
193.26	220.1	-53.60
194.26	220.1	-53.10
195.26	220.0	-53.40
196.26	220.0	-53.20
197.26	220.0	-52.70
198.26	219.9	-53.30
199.26	219.9	-53.20
200.26	219.9	-53.30
201.26	219.8	-53.10
202.26	219.8	-53.50
203.26	219.7	-53.70
204.00	219.7	-54.10

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014 Reviewed: October 11, 2002

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PICKS → Jan 11/2011



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-13

Century-geo.com

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-13		
FIELD	N/A N/A N/A		
COUNTRY	CANADA		
PROVINCE			

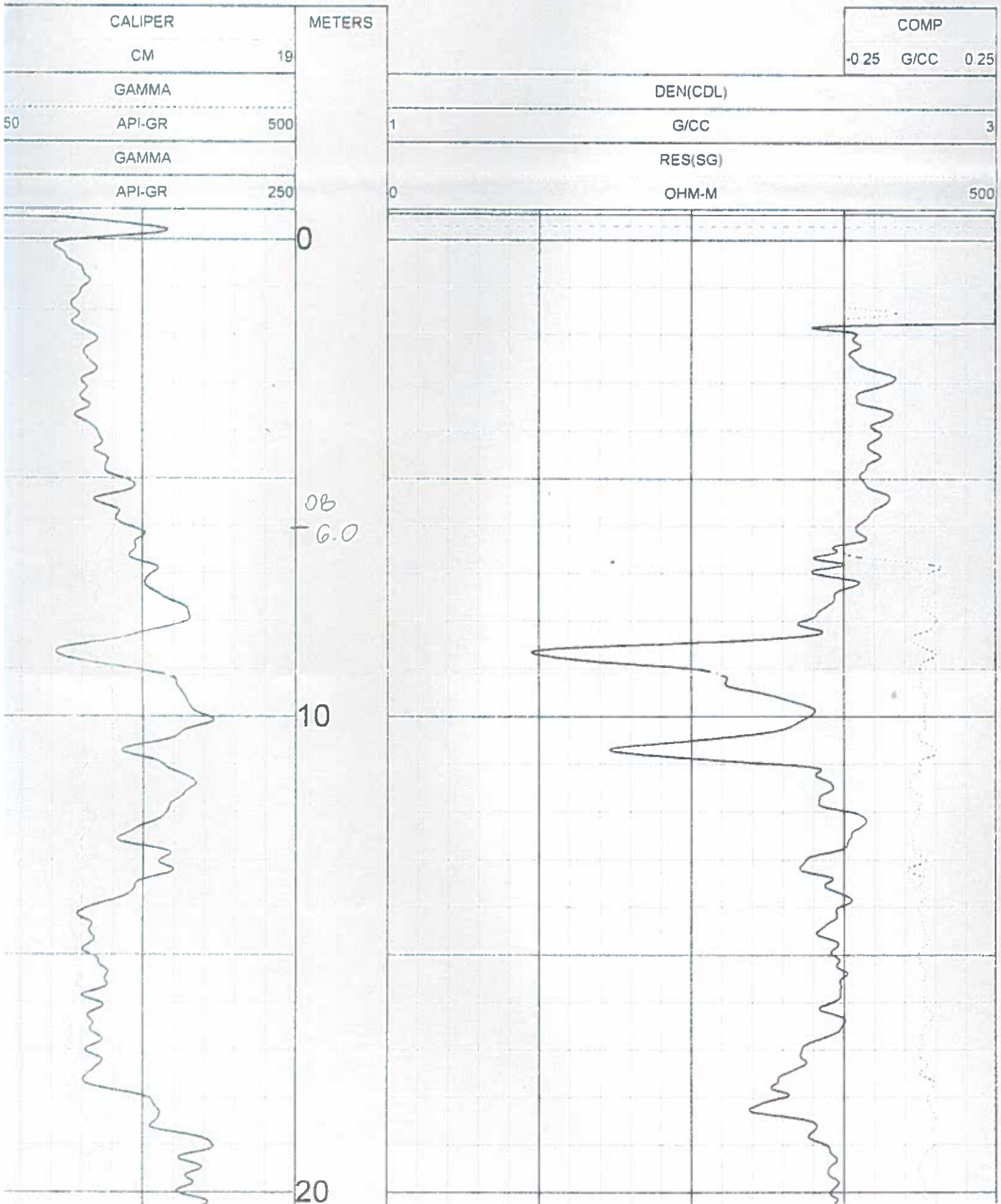
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TOWNSHIP			
RANGE	Y		
LICENSE NO			
UNIQUE WELL ID			
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LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRI MEASURED FROM	GL	ELEVATION GL	N/A

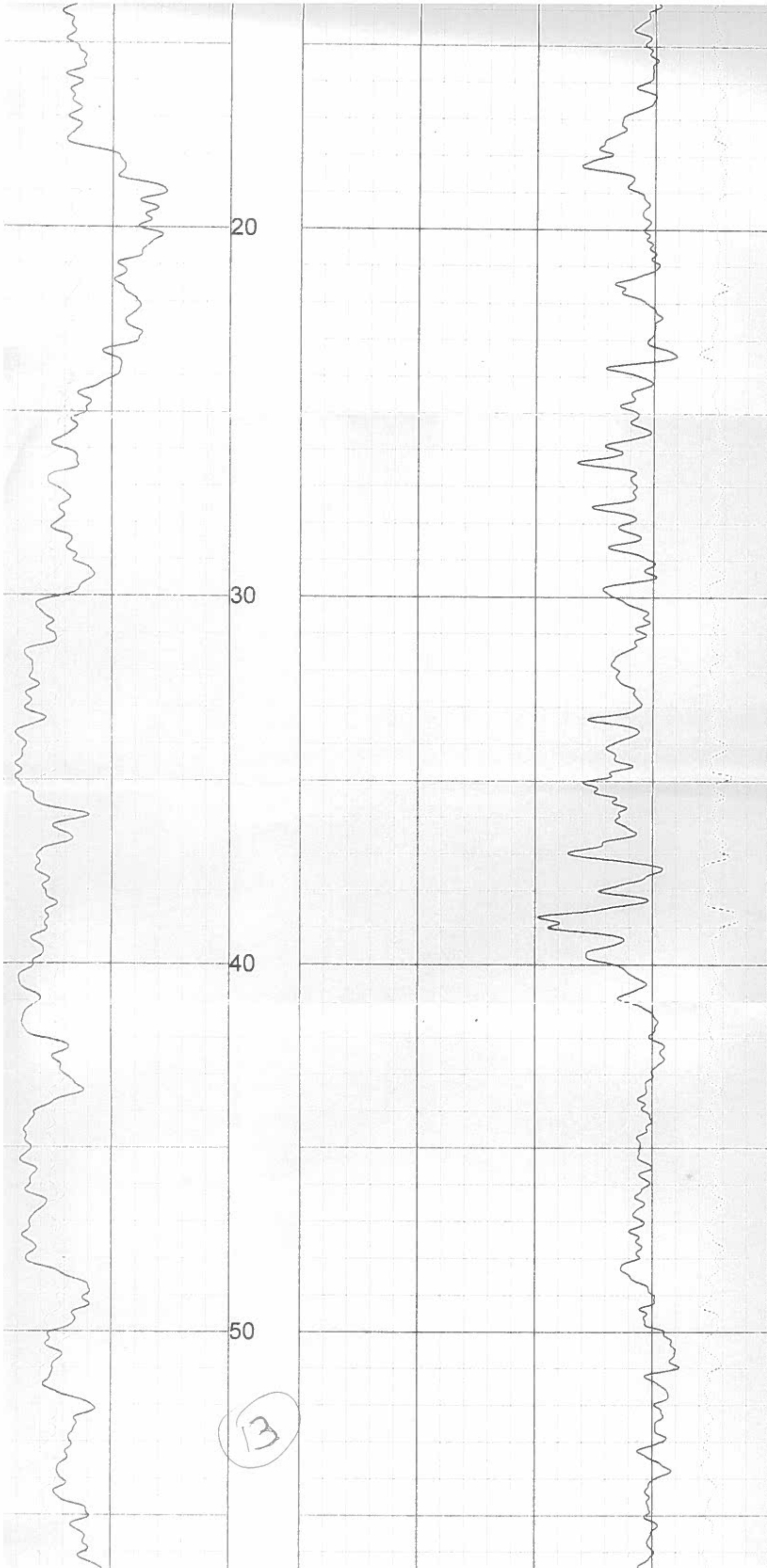
DATE	10/02/10	RIG NUMBER	
DEPTH DRILLER	205 74	LOGGER TD	
BIT SIZE	11.4	ARRIVAL TIME	
LOG TOP	0 64	DEPARTURE TIME:	
LOG BOTTOM	204 06	CIRC STOPPED	N/A

CASING LOGGER			
CASING DRILLER	12 71		6.0
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1 00		

WITNESSED BY			
RECORDED BY	J MELANSON		
REMARKS 1	2		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





50

13

60

70

80

86.20

89.00

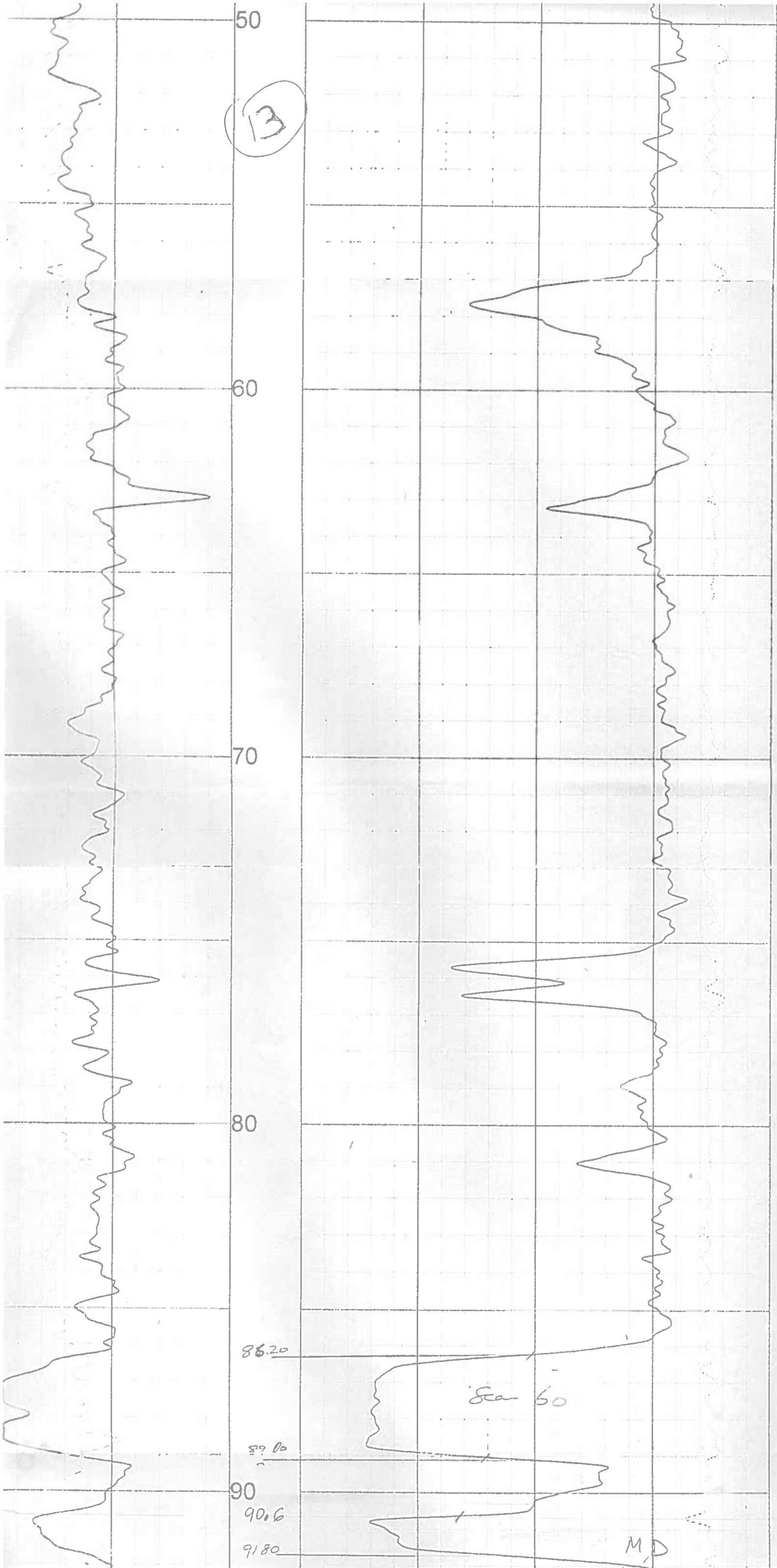
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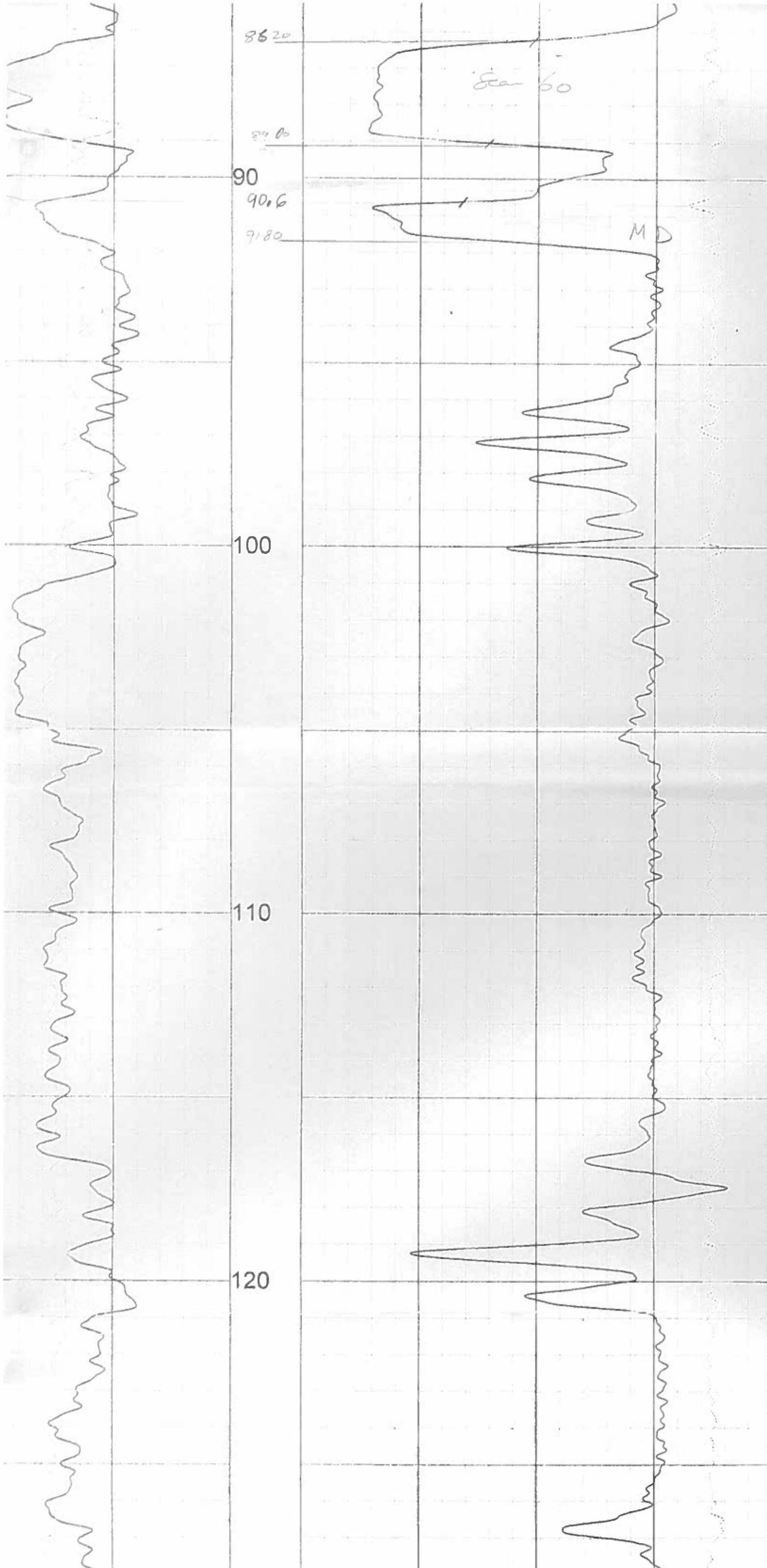
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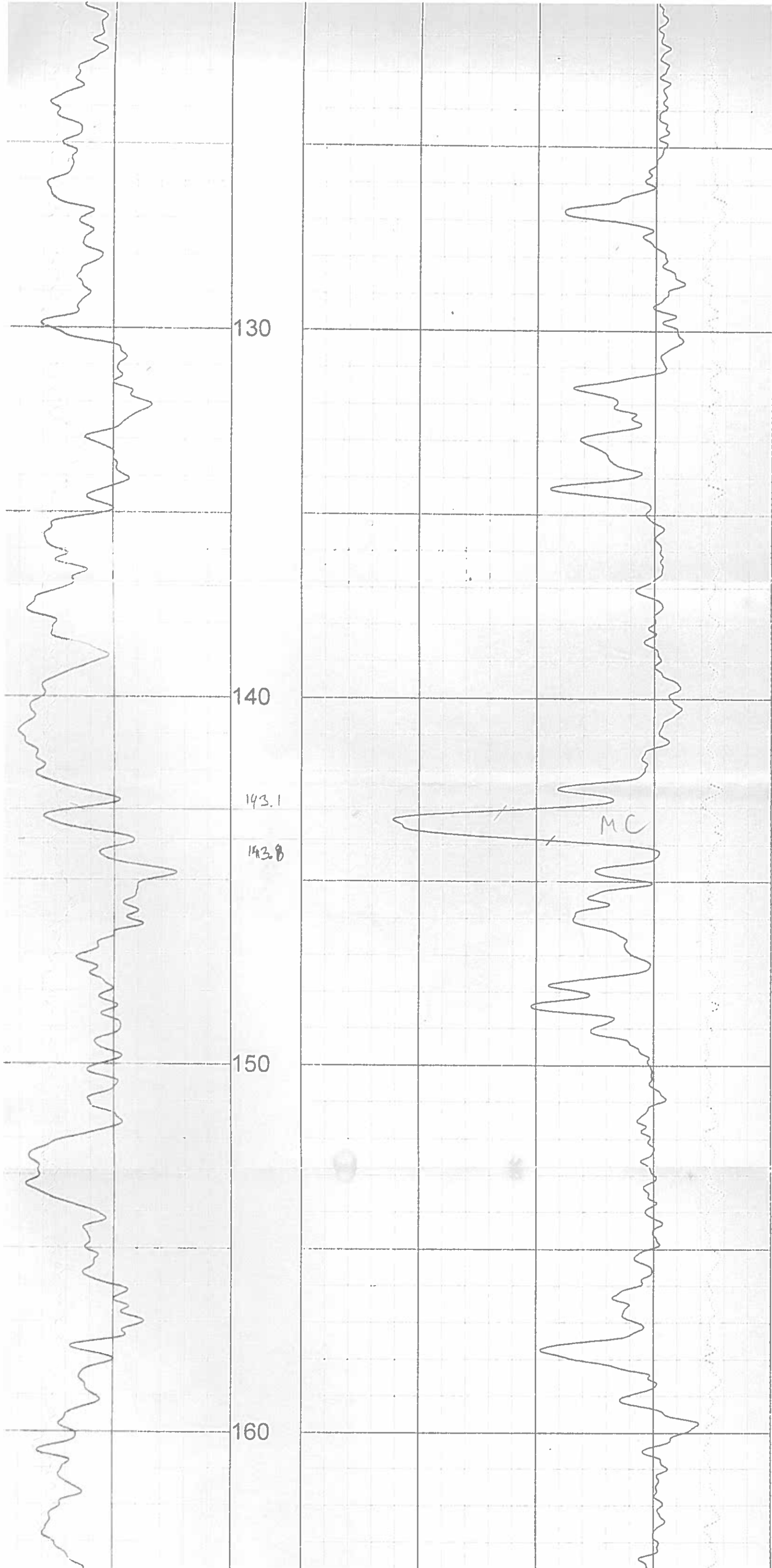
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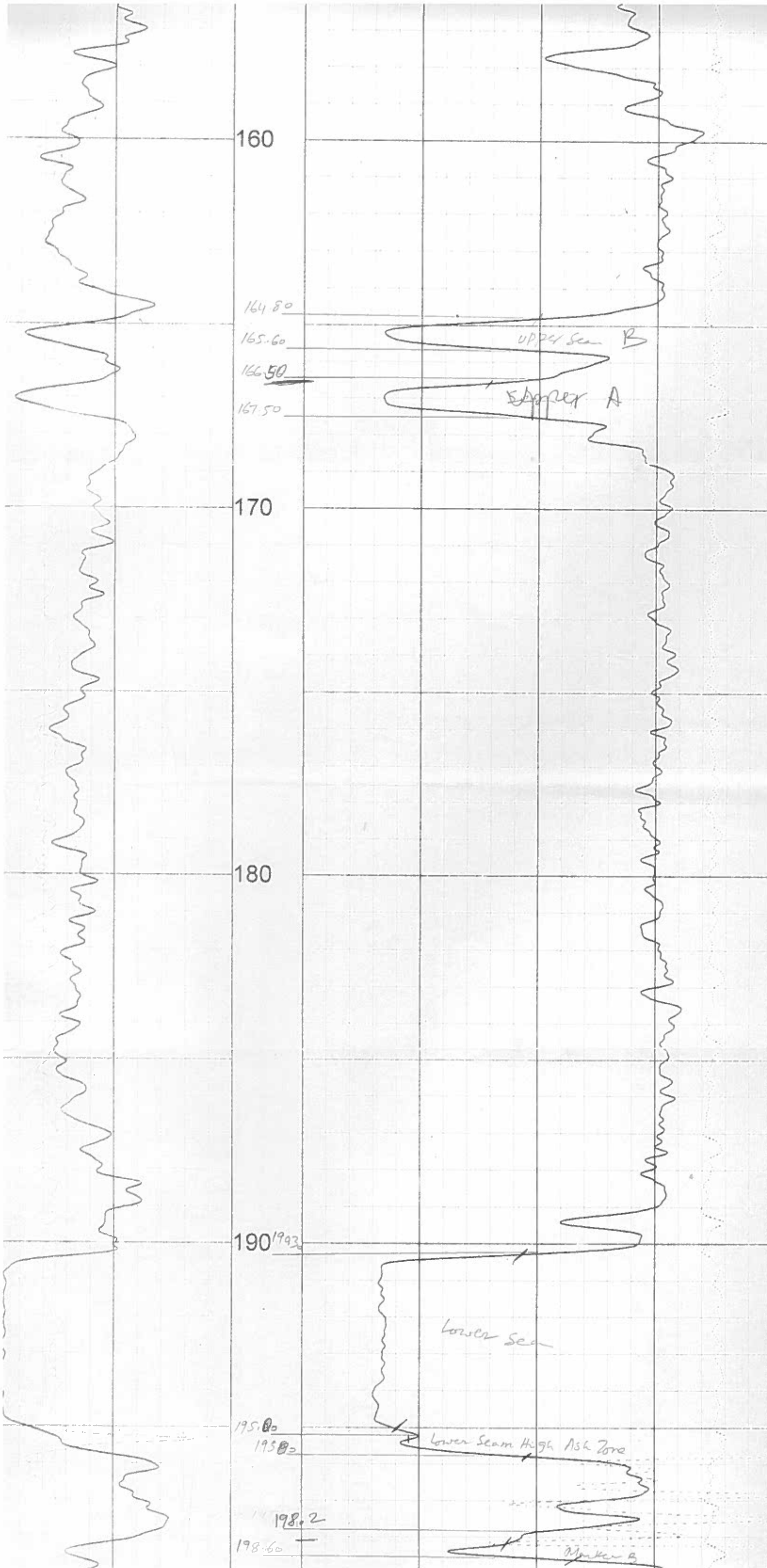
Sea 60

M.D









160

164.80

165.60

166.50

167.50

170

180

190/1993

195.00

195.80

198.2

198.60

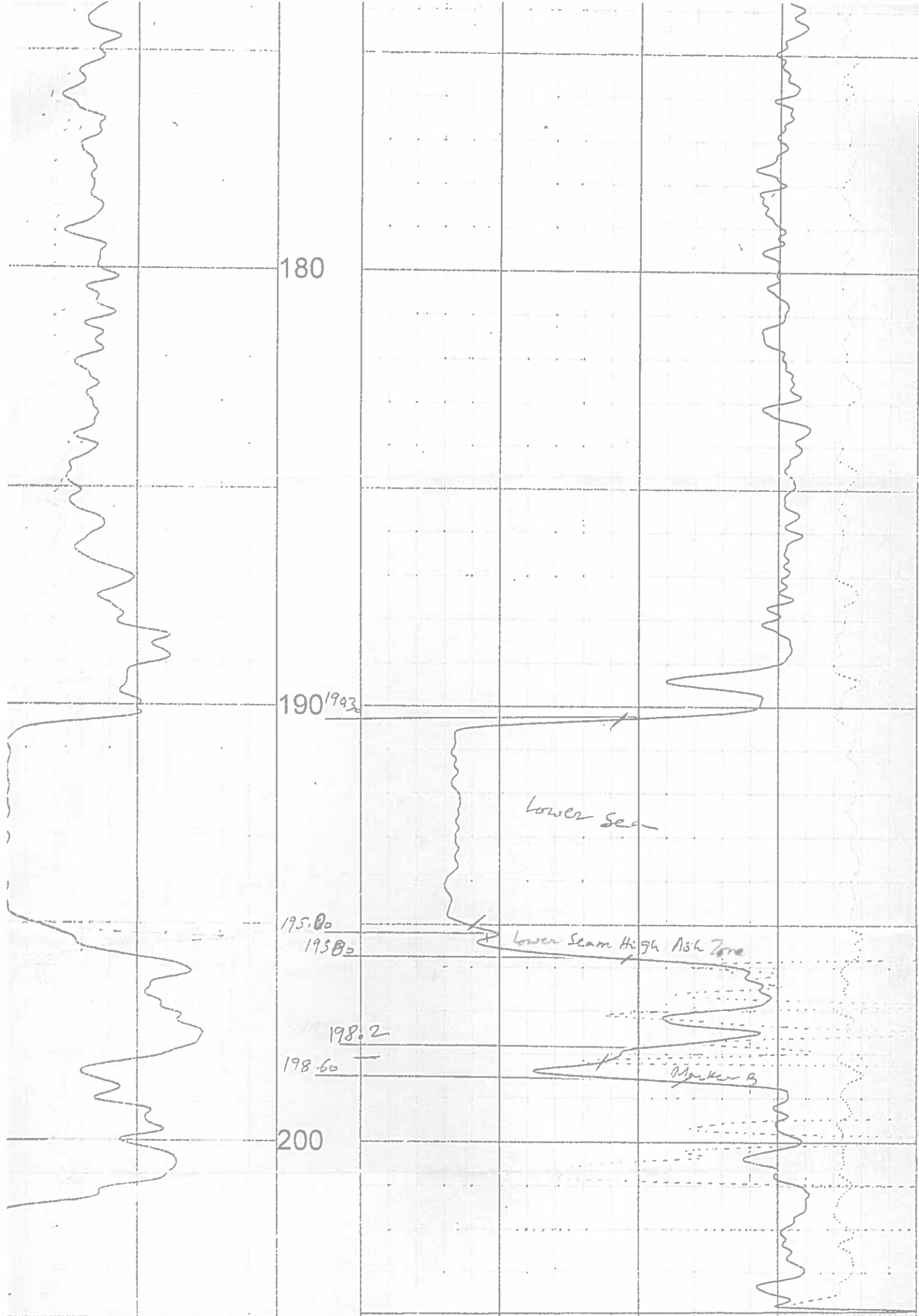
UPPER Seam B

SEAM A

Lower Seam

Lower Seam High Ash Zone

Marker B



AP-GR	250	0	OHM-M	500
GAMMA			RES(SG)	
50 API-GR	500	1	G/CC	3
GAMMA			DEN(CDL)	
CM	19			
CALIPER				

METERS

-0.25 G/CC 0.25
 COMP

BR-10-13



DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-13

COMPANY: WESTERN COAL CORPORATION
WELL: BR10-13
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA
LSD: BRULE NORTH

OTHER SERVICES:
NEUTRON

SECTION: N/A
TOWNSHIP: N/A
RANGE: N/A
LICENCE NO.: N/A
UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

DATE: 10/02/10
DEPTH DRILLER: 205.74
BIT SIZE: 11.43
LOG TOP: -0.64
LOG BOTTOM: 204.07
CASING LOGGER: 13.71
CASING DRILLER: 13.71
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
WITNESSED BY: G. HOLMLUND
RECORDED BY: J. MELANSON
REMARKS 1: 65 DEGREE
REMARKS 2:

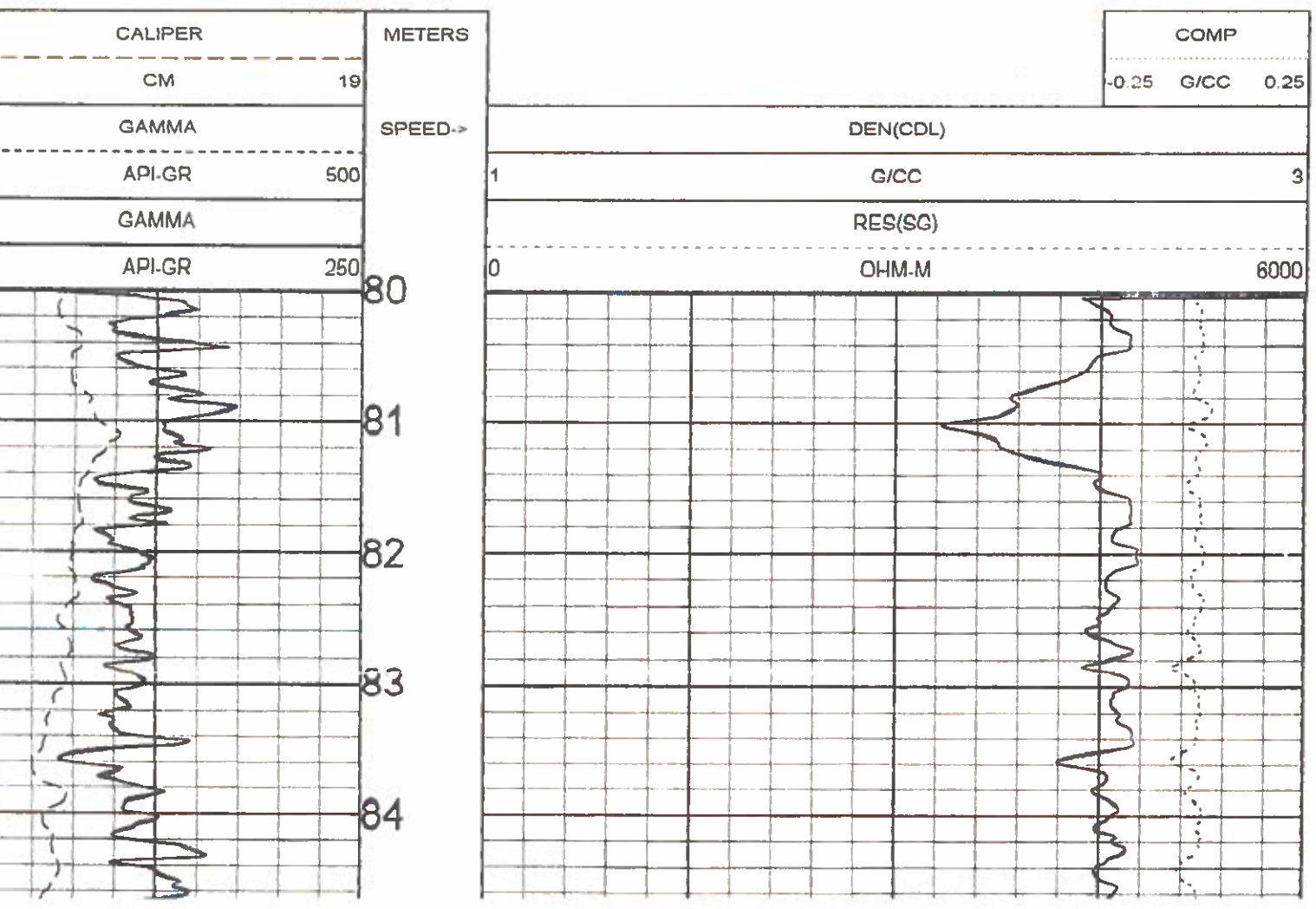
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ELEVATION DF: N/A
ELEVATION GL: N/A
RIG NUMBER:
LOGGER TO:
ARRIVAL TIME:
DEPARTURE TIME:
CIRC STOPPED: N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

DENSITY EXPANDED 1:50 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY: 2.65
MAGNETIC DECL: 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010
NEUTRON MATRIX: SANDSTONE
ELECT. CUTOFF: 11000
MATRIX DELTA T: 177
BIT SIZE: 11.43
VERSION = 3.64HT



LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

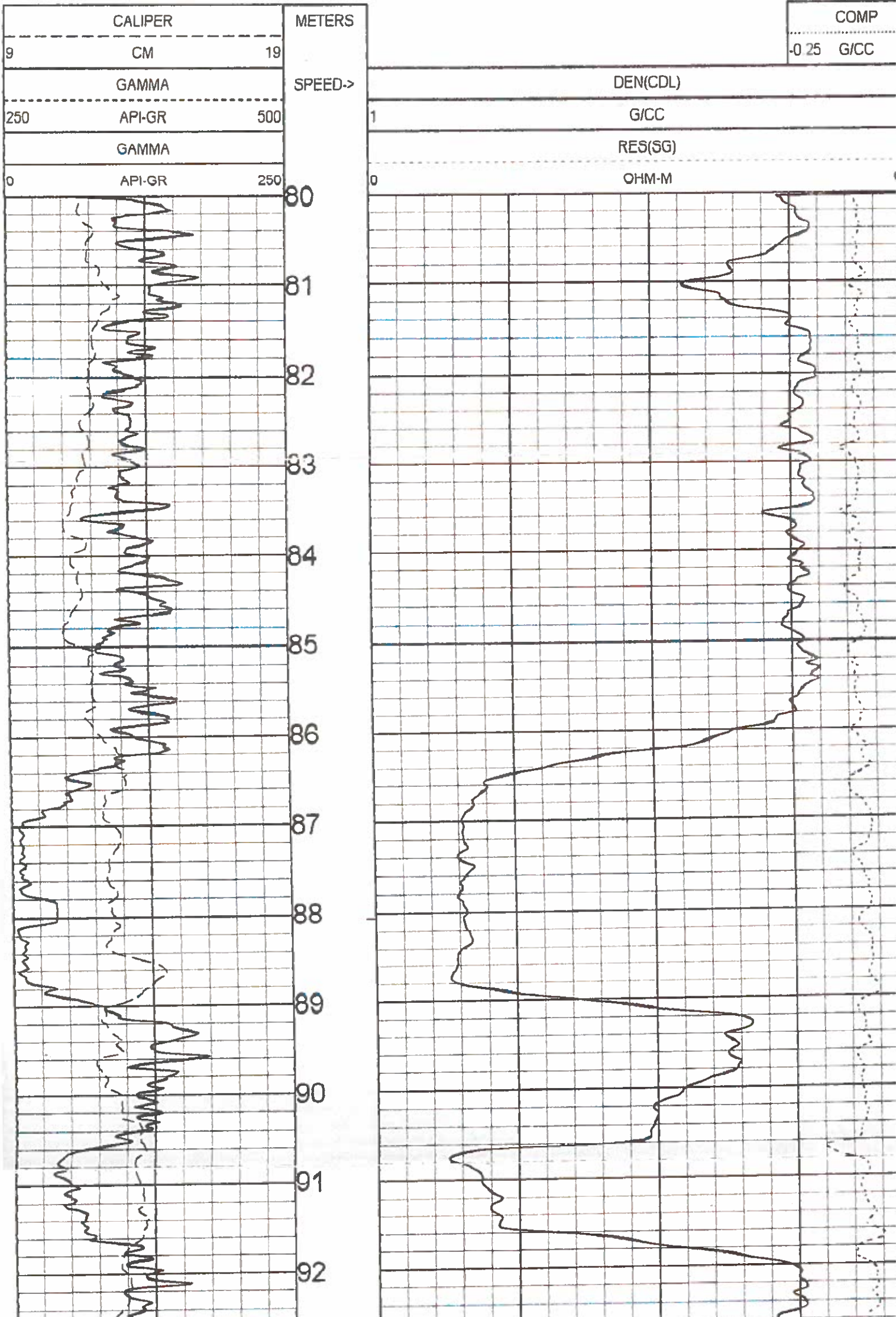
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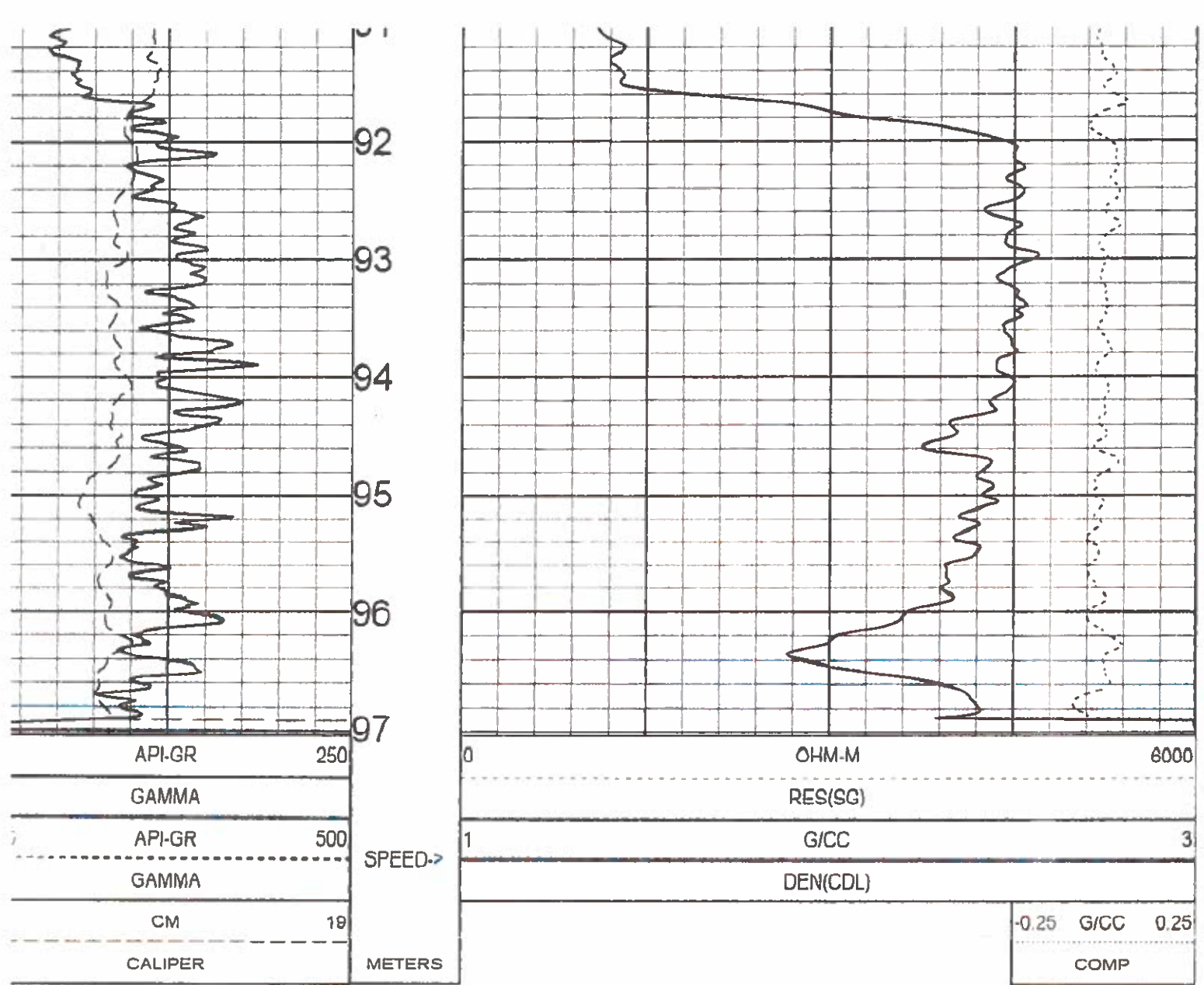
ELECT CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HT





DENSITY EXPANDED 1:50 BR10-13 10/02/10

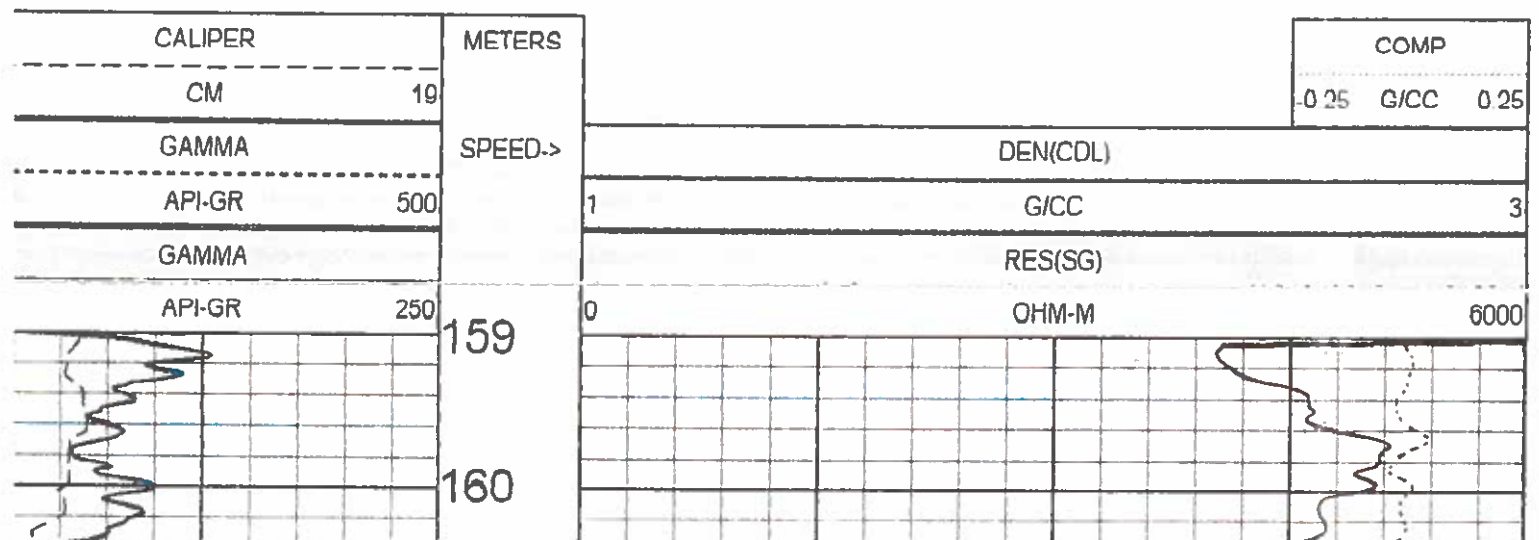
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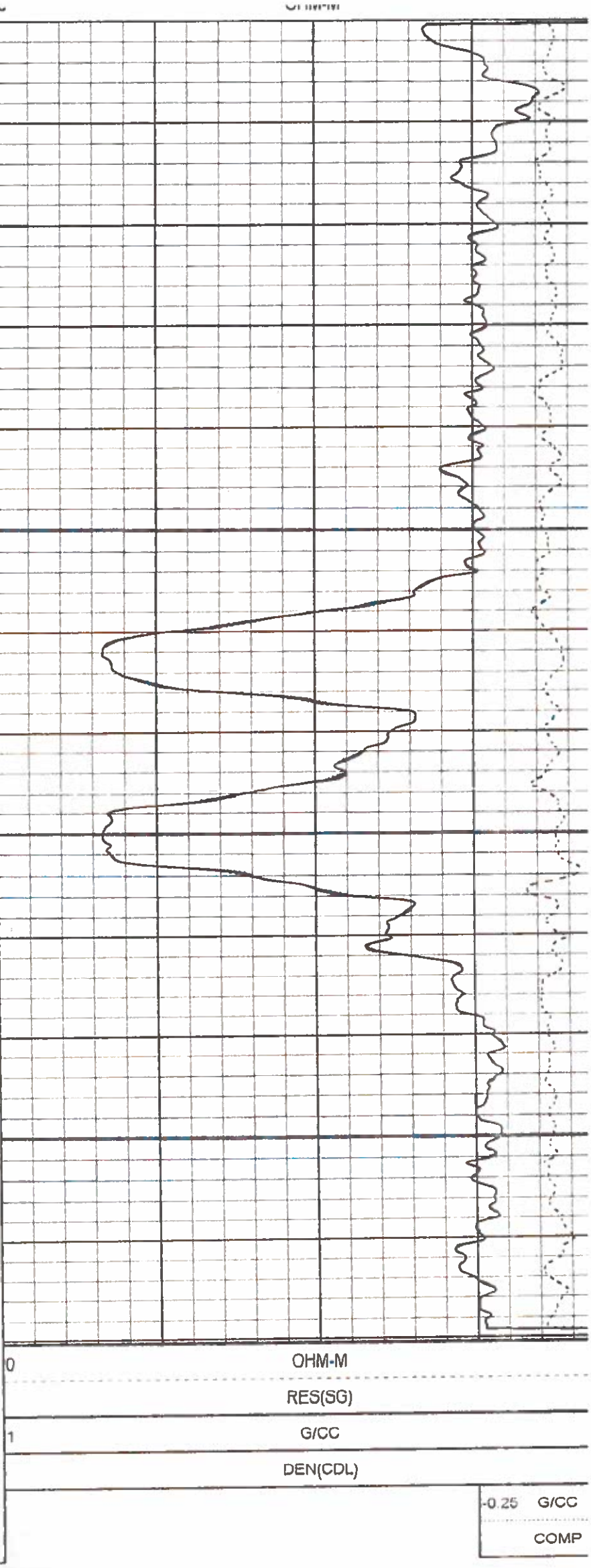
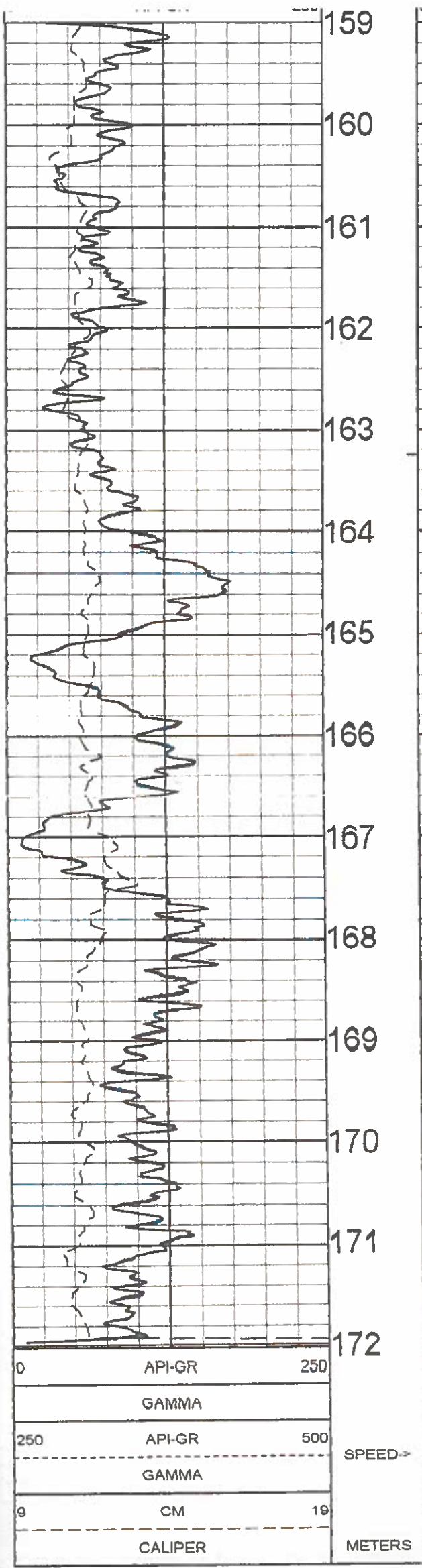
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 11000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 08/25/2010 VERSION = 3.64HT

DENSITY EXPANDED 1:50 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 11000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 08/25/2010 VERSION = 3.64HT





DENSITY EXPANDED 1:50 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

-0.25 G/CC
COMP

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HT

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

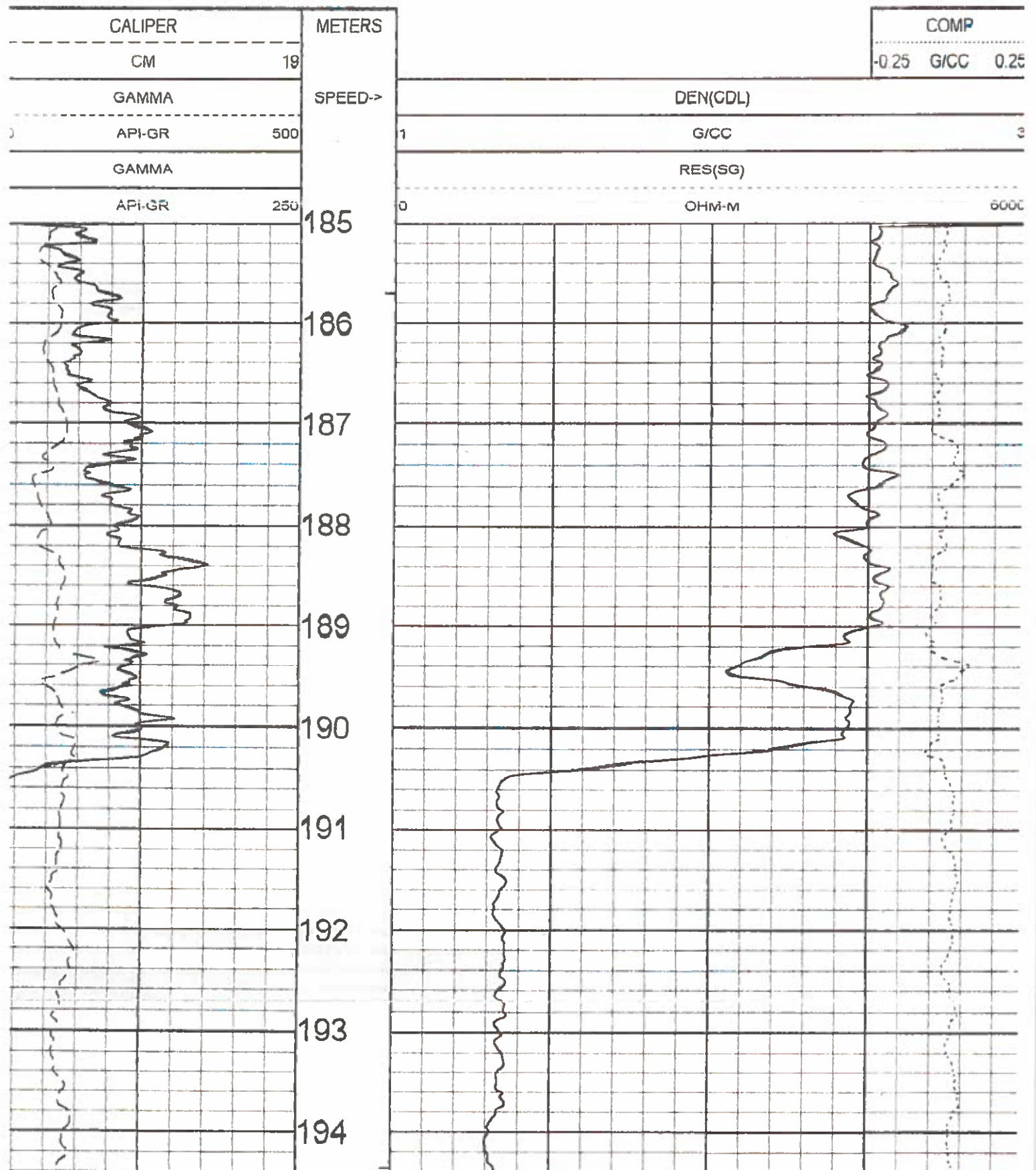
MAGNETIC DECL : 21.0

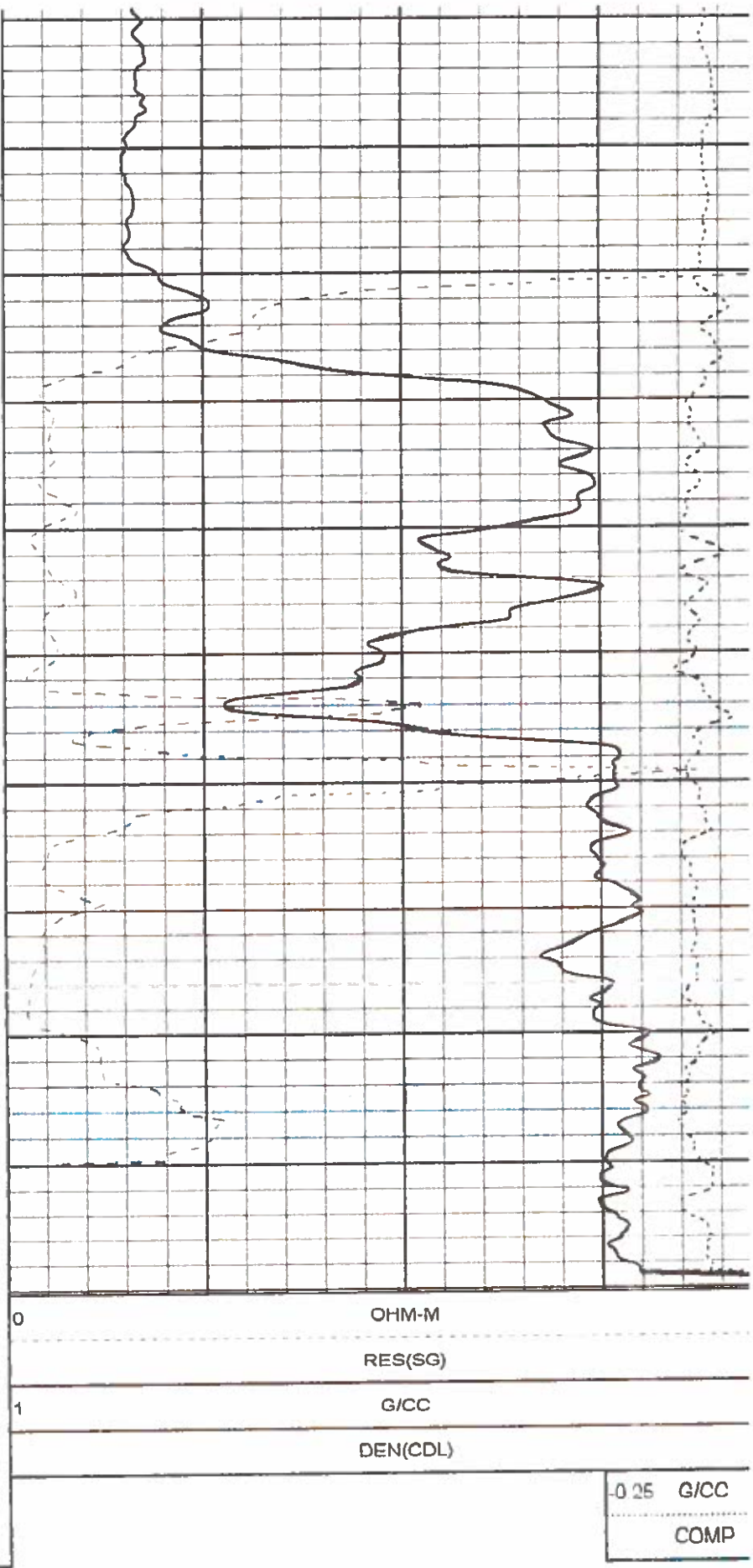
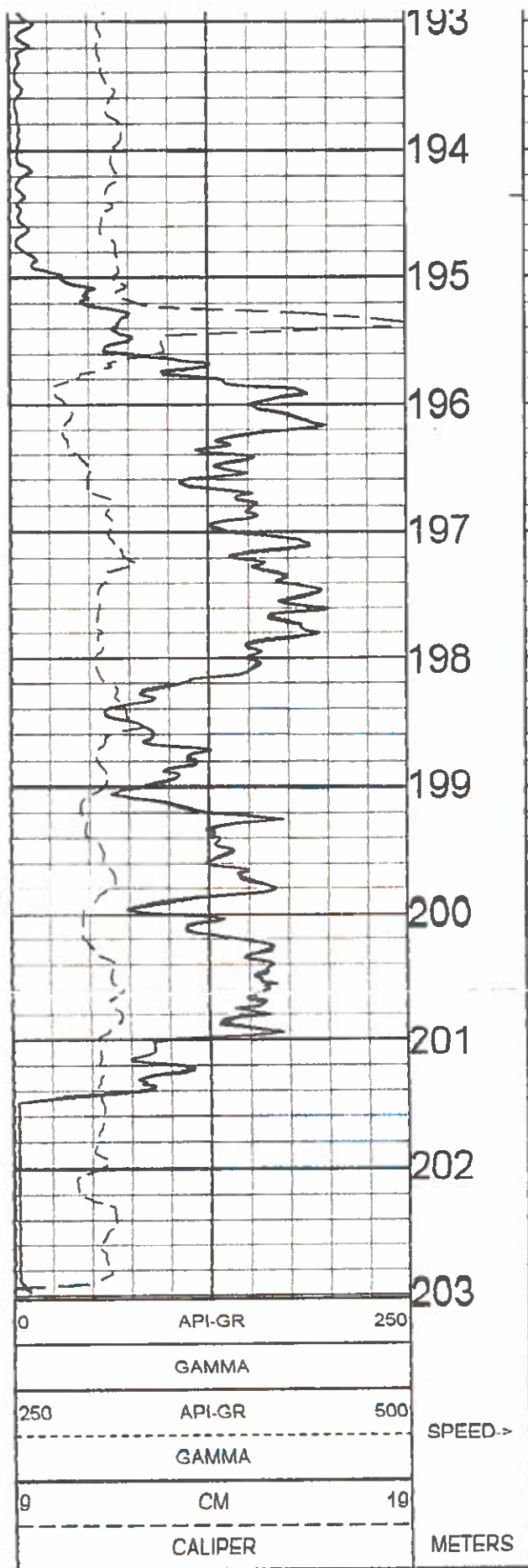
ELECT. CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

VERSION = 3.64HT





DENSITY EXPANDED 1:50 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010

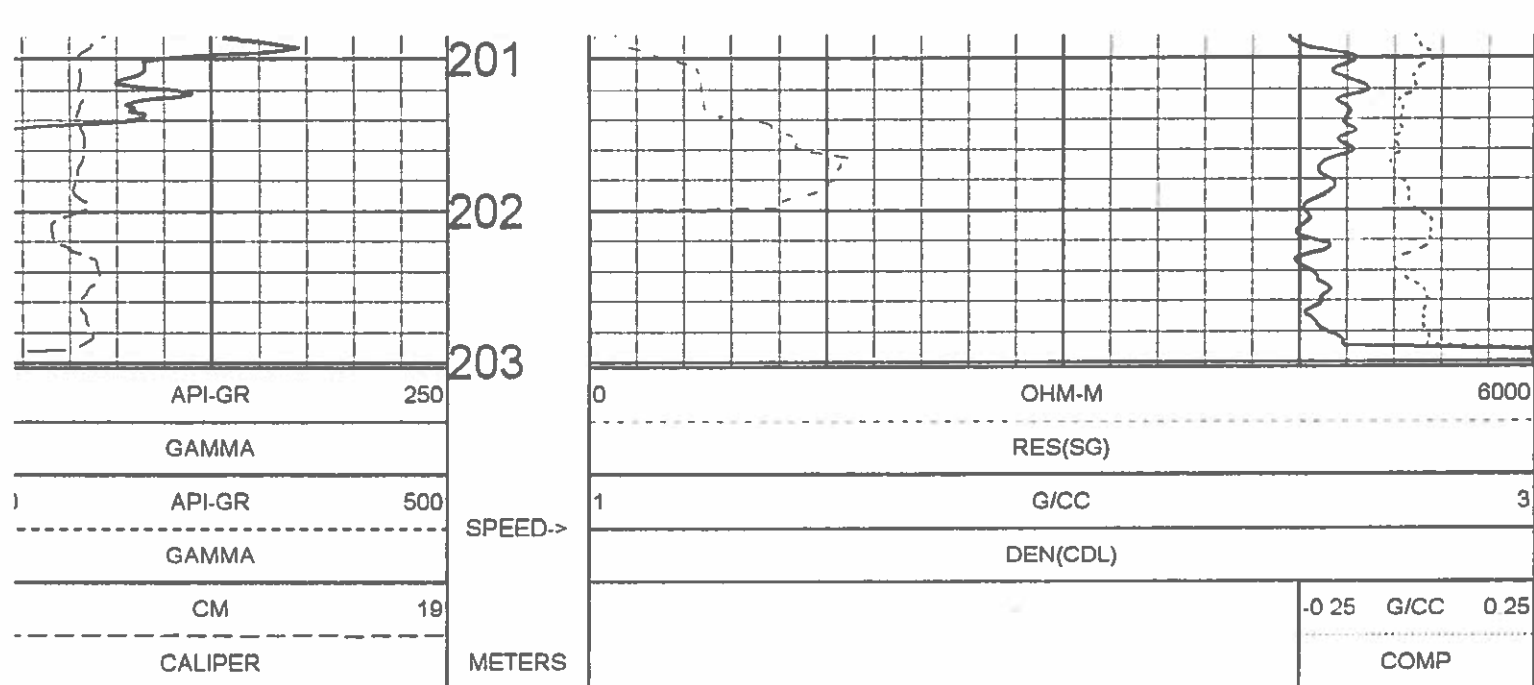
VERSION = 3.64HT

TOOL CALIBRATION BR10-13 10/02/10 15.09

TOOL 9239C TM VERSION 2023

SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct02.10	15:33:28	GAMMA	4.000 [API-GR]	0.000 [CPS]
	Oct02.10	15:33:28	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15.09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15.09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]



DENSITY EXPANDED 1:50 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT CUTOFF : 11000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 08/25/2010 VERSION = 3 64HT

TOOL CALIBRATION BR10-13 10/02/10 15:09
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

DATE	TIME	SENSOR	STANDARD	RESPONSE
Oct02,10	15:33:28	GAMMA	4.000 [API-GR]	0.000 [CPS]
Oct02,10	15:33:28	GAMMA	545.000 [API-GR]	510.000 [CPS]
Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
Aug12,10	13:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
Aug12,10	13:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
Sep16,10	11:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
Sep16,10	11:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
Sep16,10	11:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
Sep16,10	11:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
Aug12,10	12:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
Aug12,10	12:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
Aug28,08	14:12:31	F	Default [CPS]	
Aug28,08	14:12:31	X	Default [CPS]	

GAMMA - NEUTRON

BR10-13

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-13

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENCE NO.: N/A

UNIQUE WELL ID.: N/A

OTHER SERVICES:
DENSITY

PERMANENT DATUM: GL ELEVATION KB: N/A
 LOG MEASURED FROM: GL ELEVATION DF: N/A
 DRL MEASURED FROM: GL ELEVATION GL: N/A

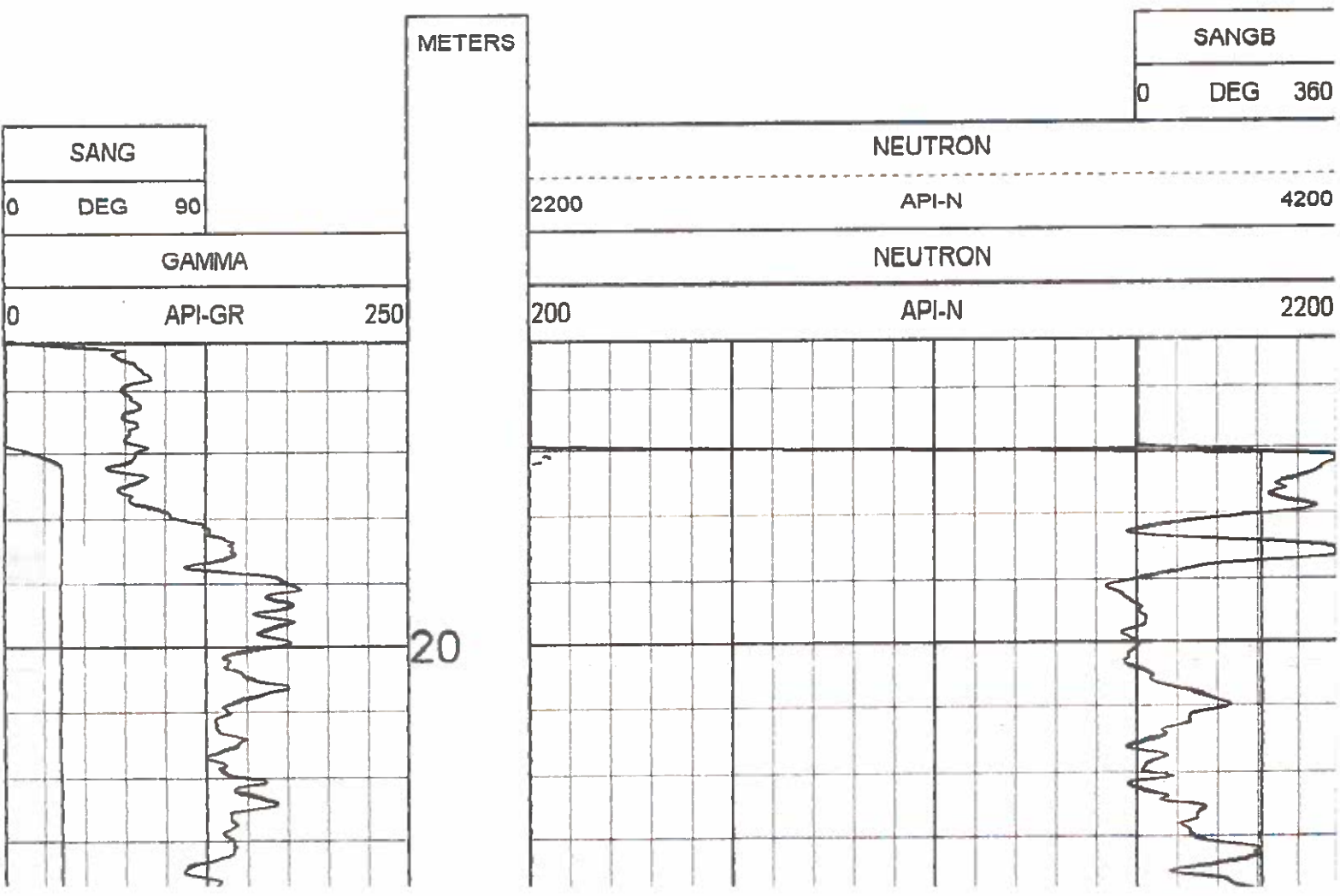
DATE	10/02/10	RIG NUMBER	
DEPTH DRILLER	205.74	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	15.25	DEPARTURE TIME	
LOG BOTTOM	204.17	CIRC STOPPED	N/A
CASING LOGGER	13.71		
CASING DRILLER	13.71		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	J. MELANSON		
REMARKS 1	65 DEGREE		
REMARKS 2			

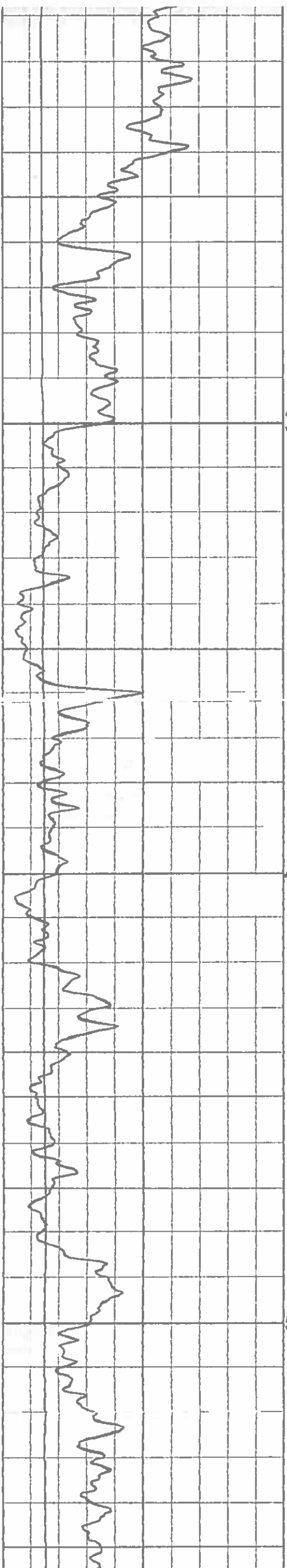
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

NEUTRON 1:100 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY: 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T: 177
 MAGNETIC DECL: 21.0 ELECT. CUTOFF: 11000 BIT SIZE: 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON 0 09/01/2010 VERSION = 3.64HT

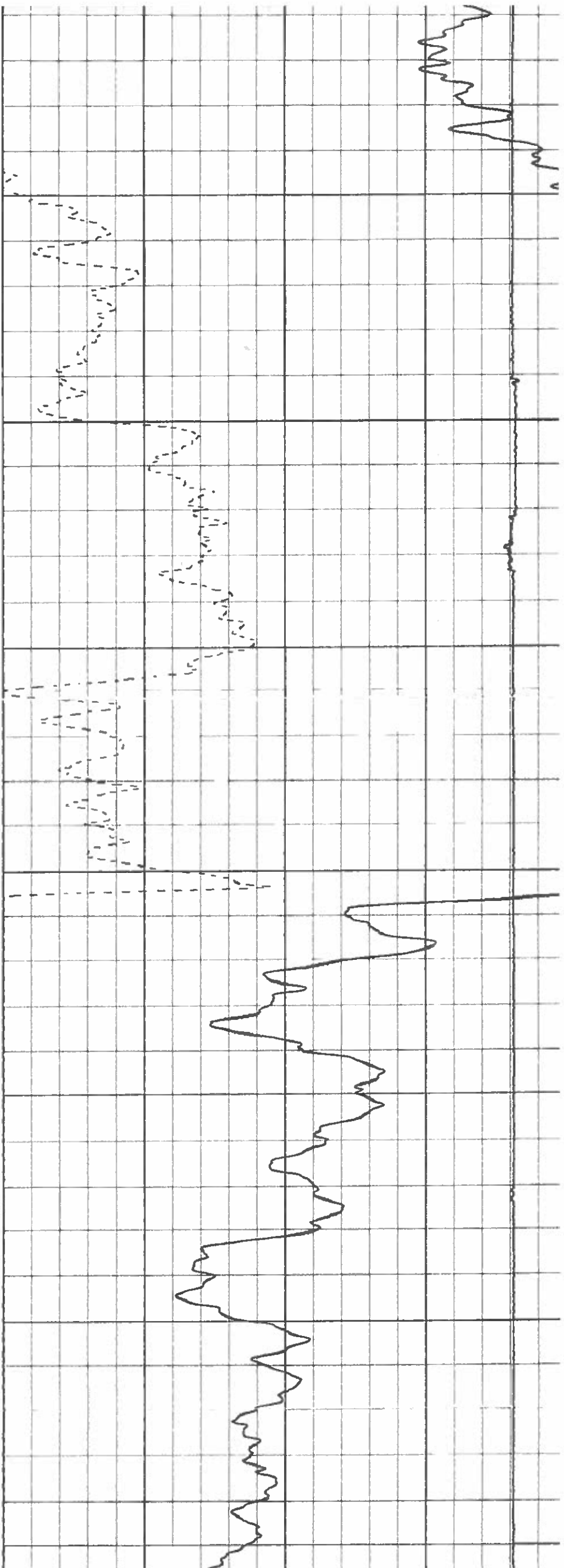


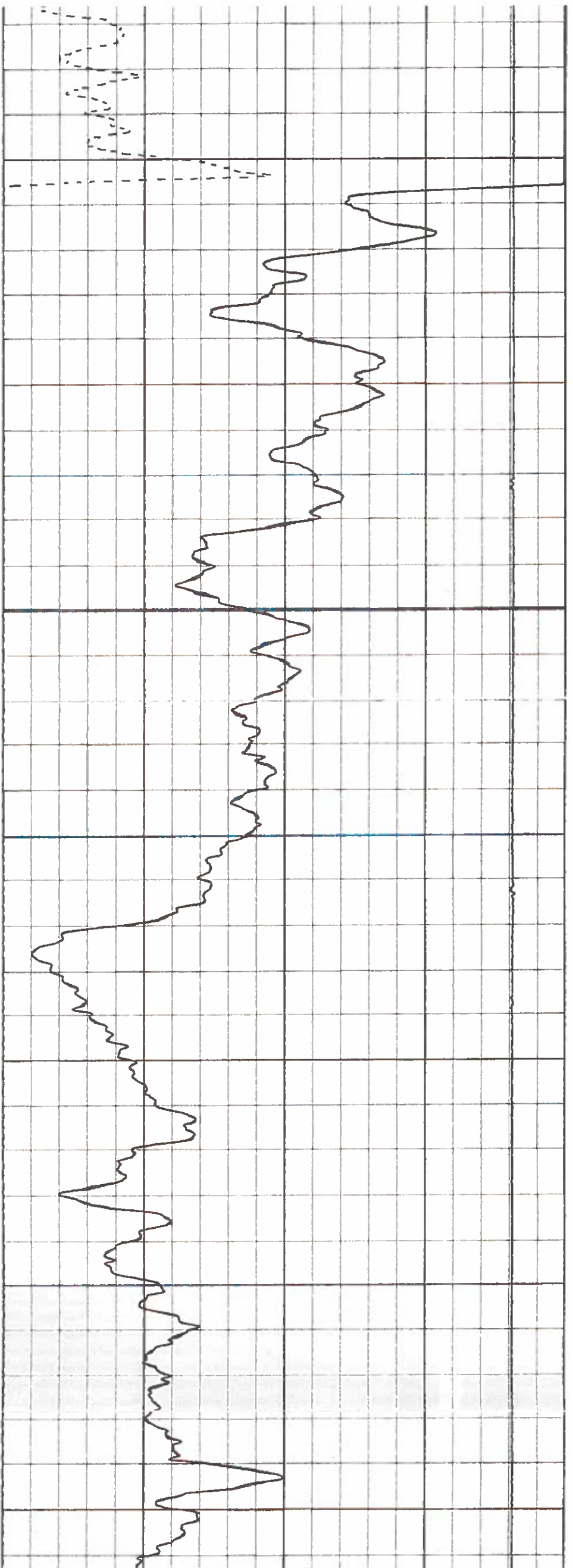
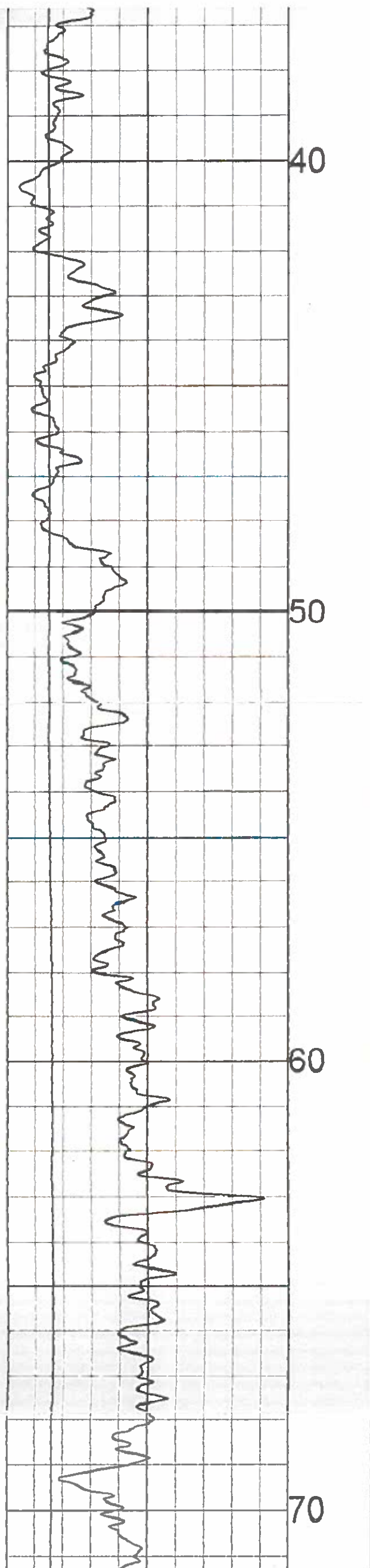


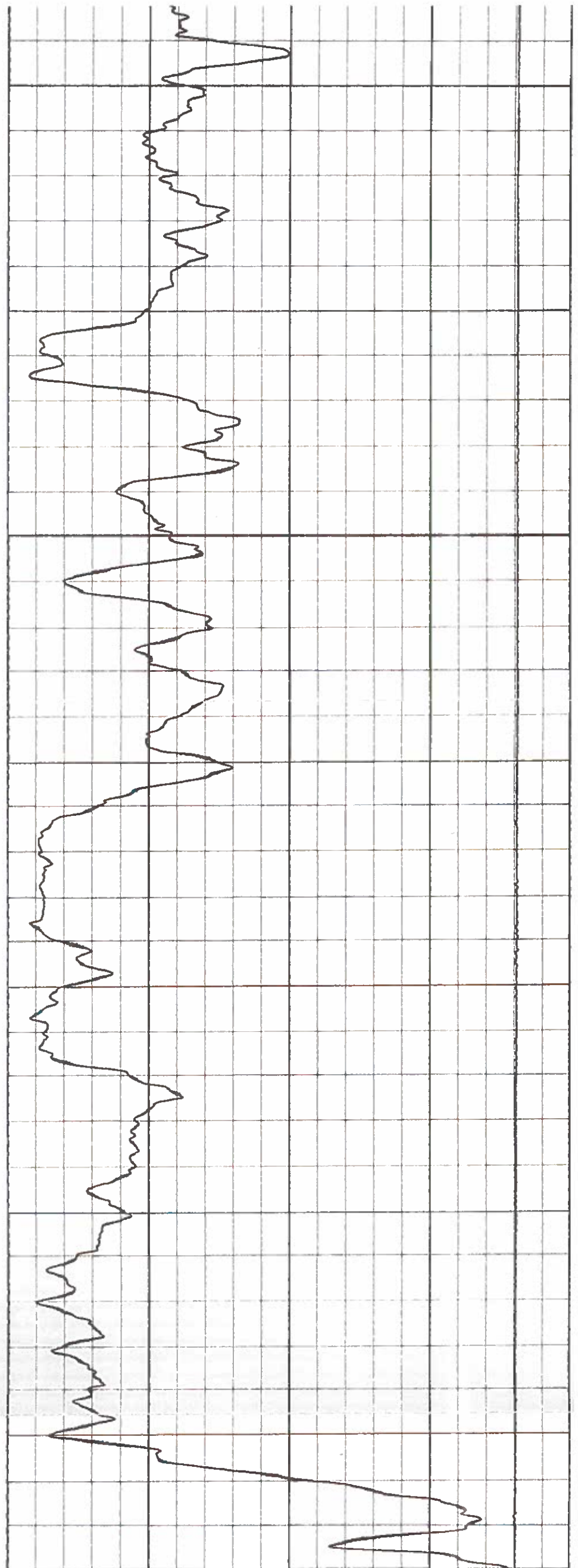
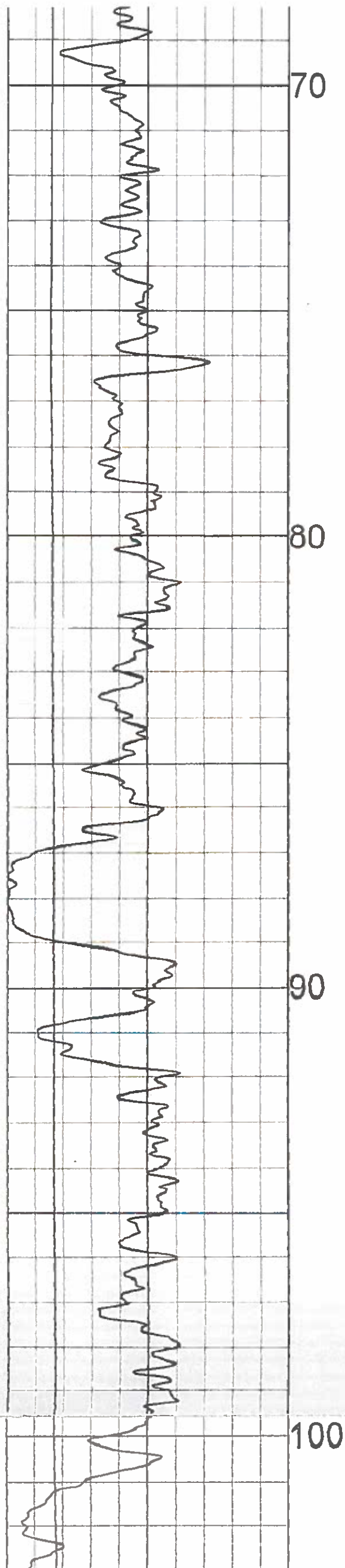
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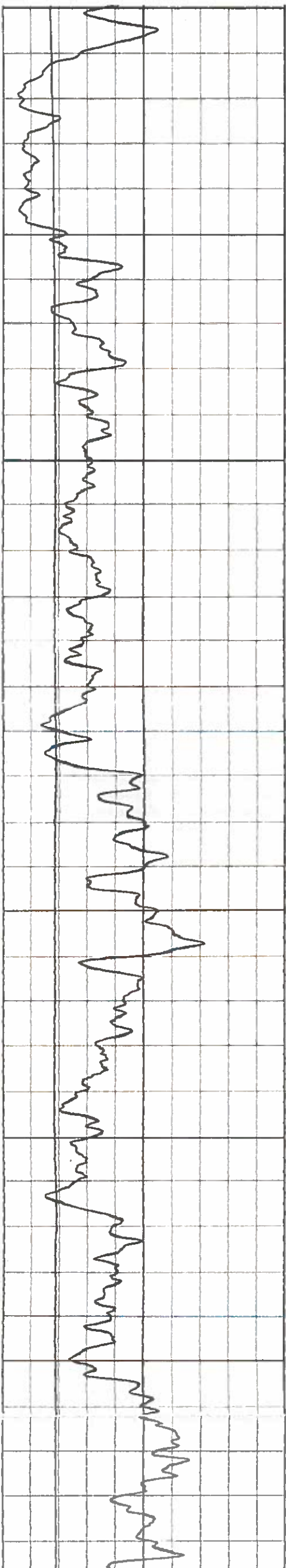
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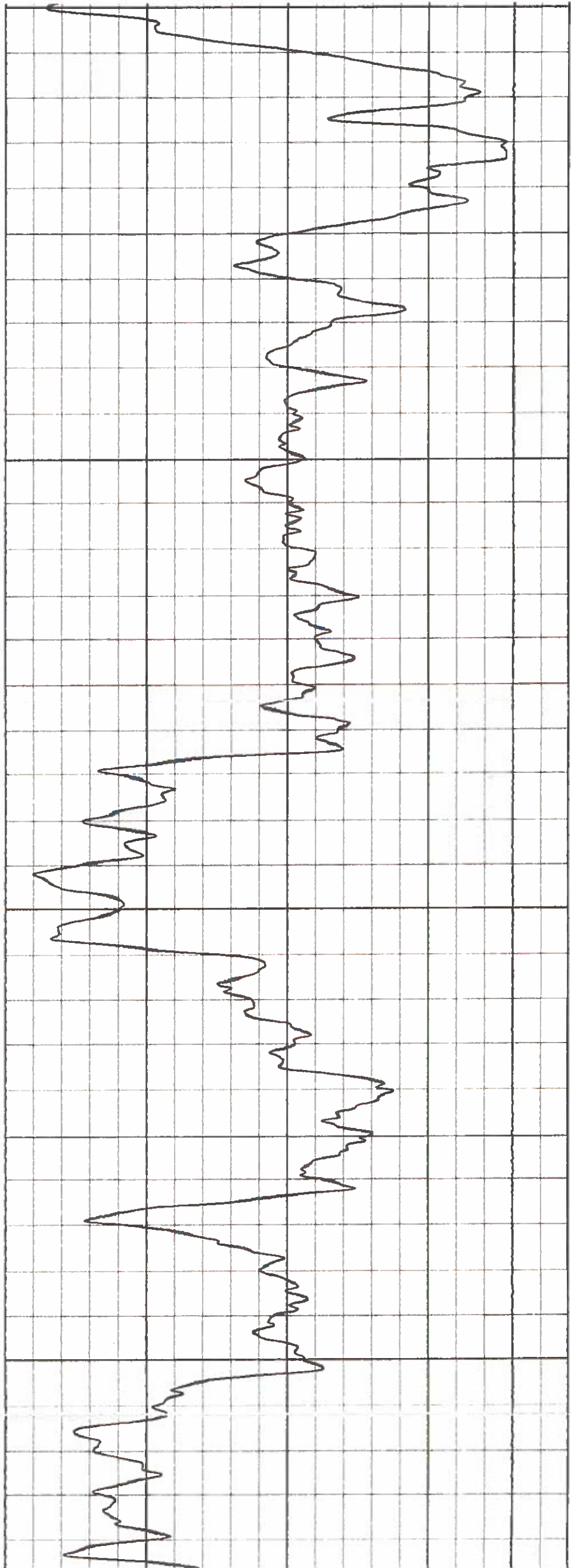


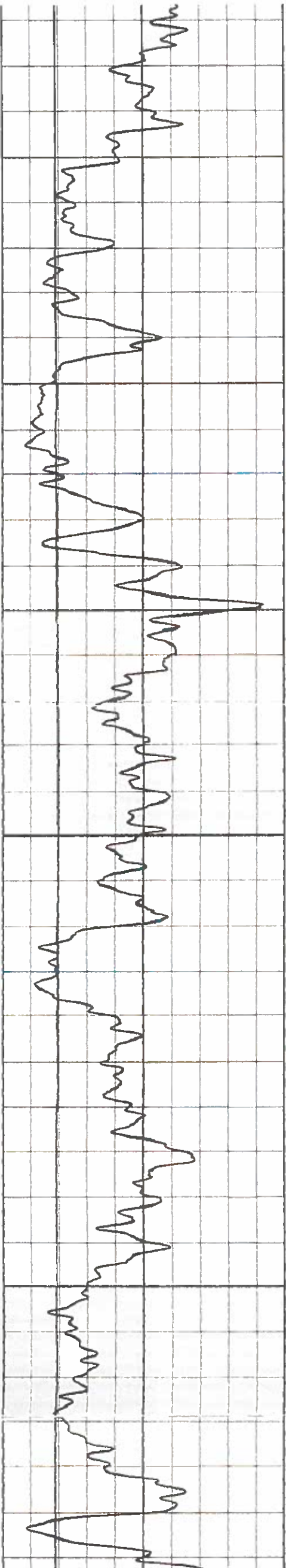
100

110

120

130

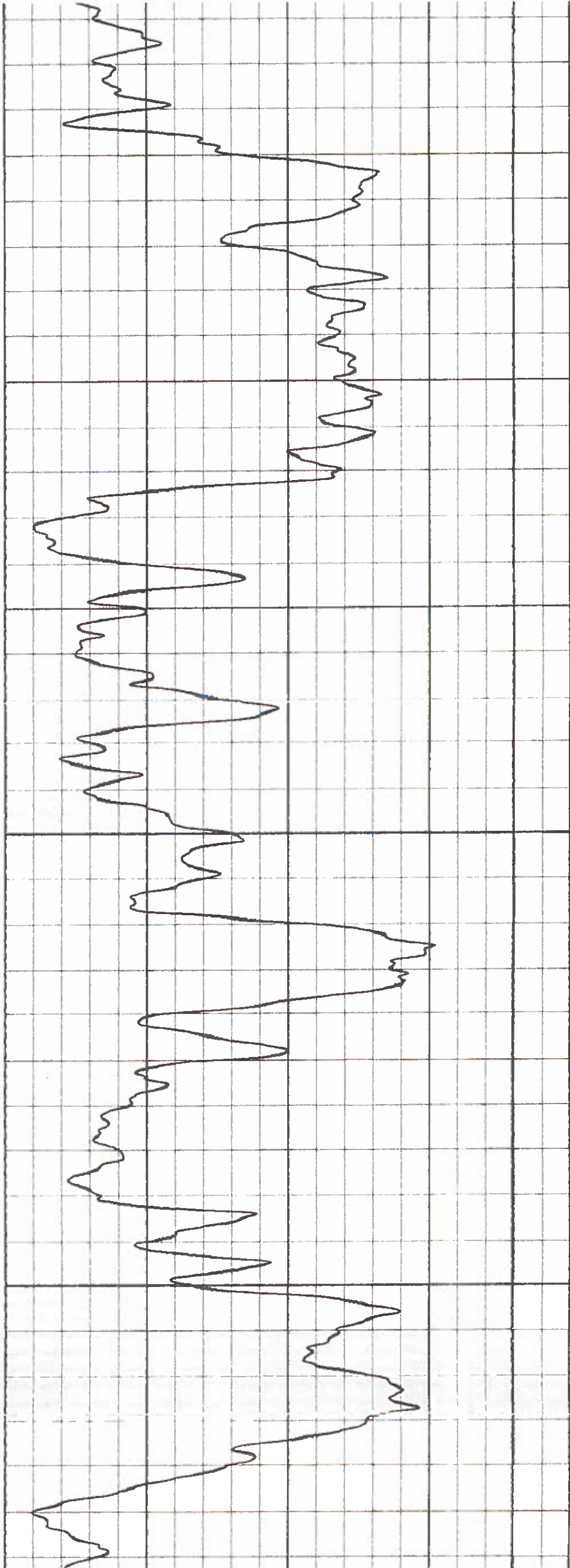


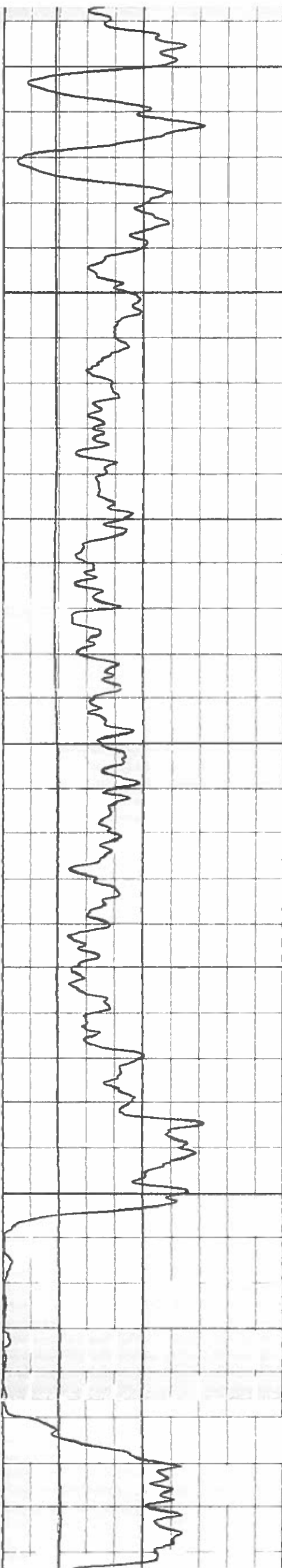


140

150

160

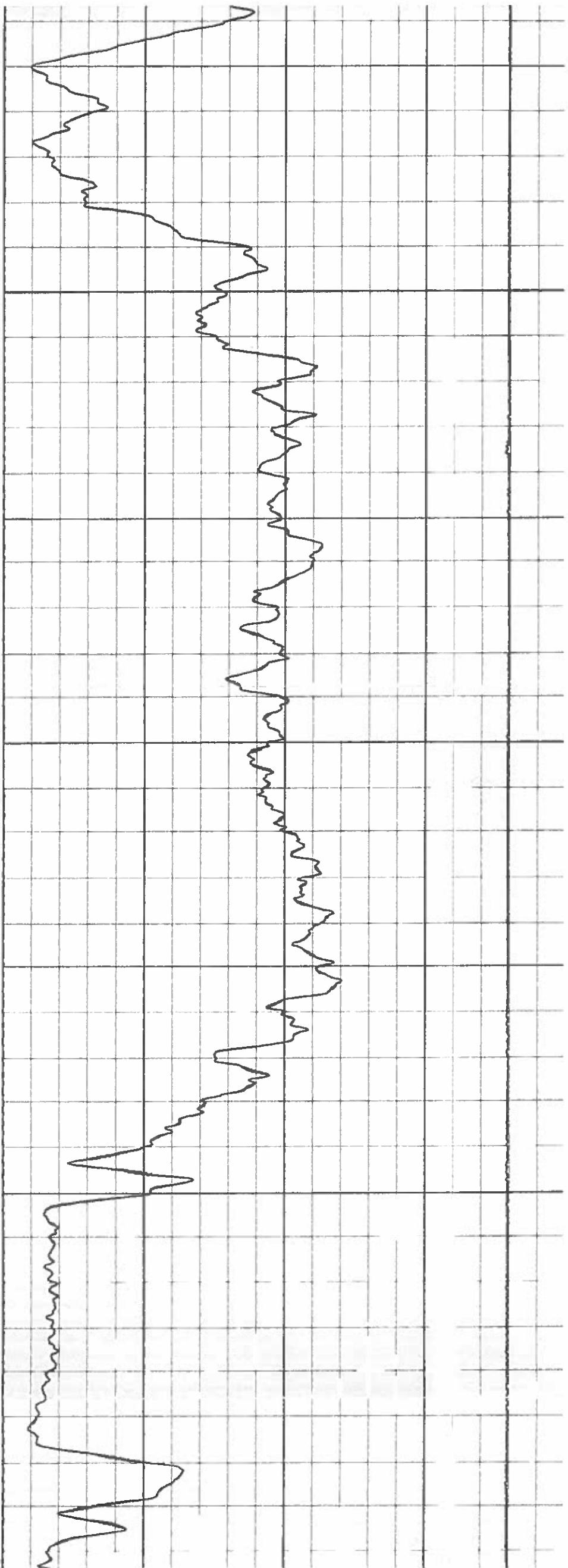


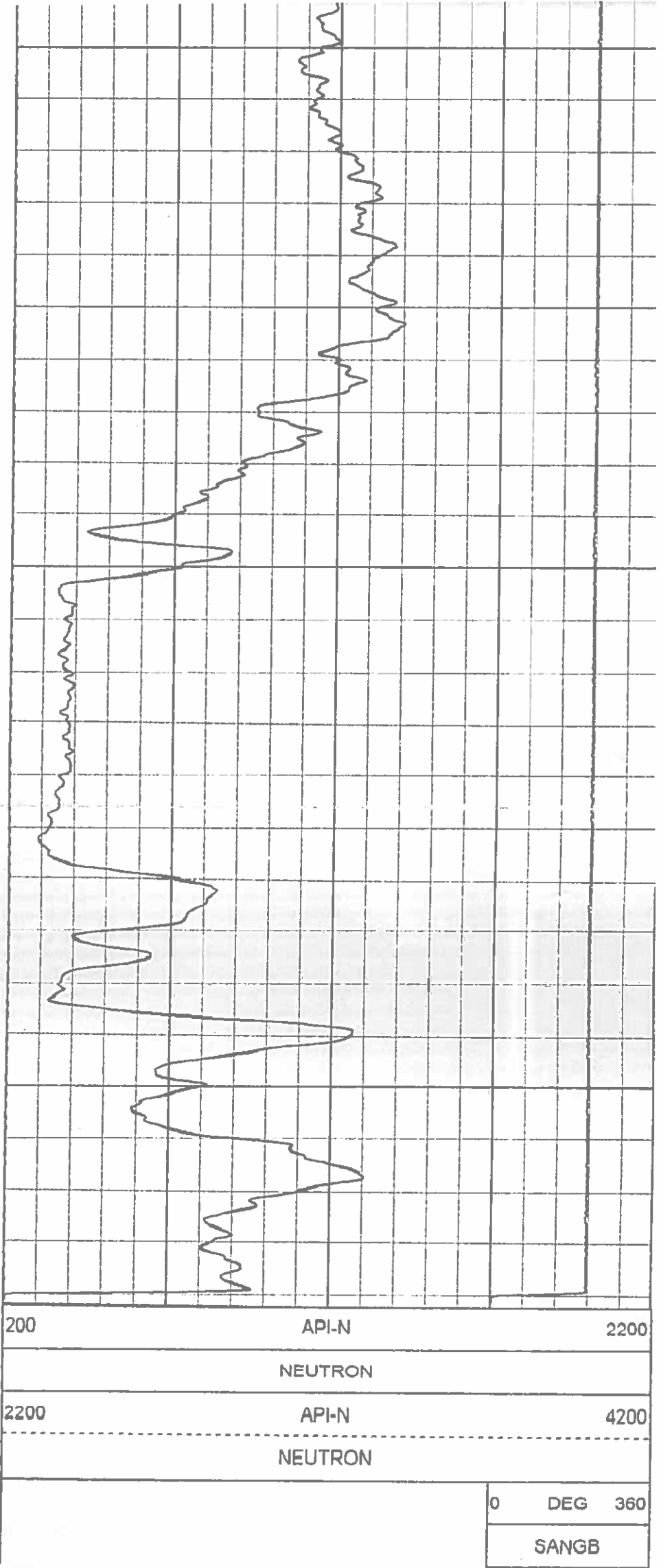
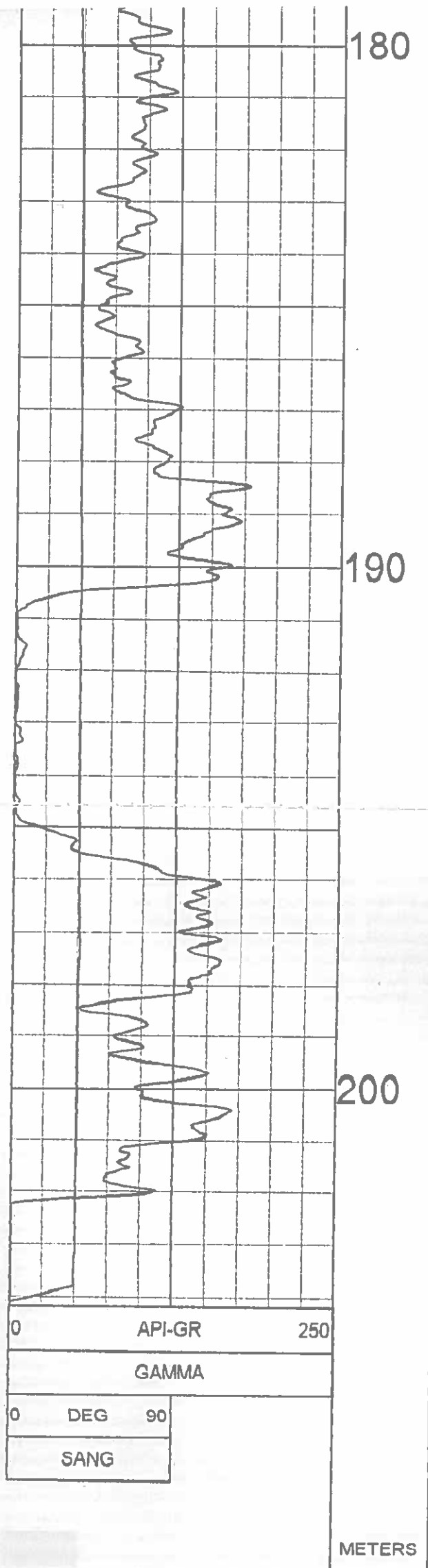


170

180

190





NEUTRON 1:100 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

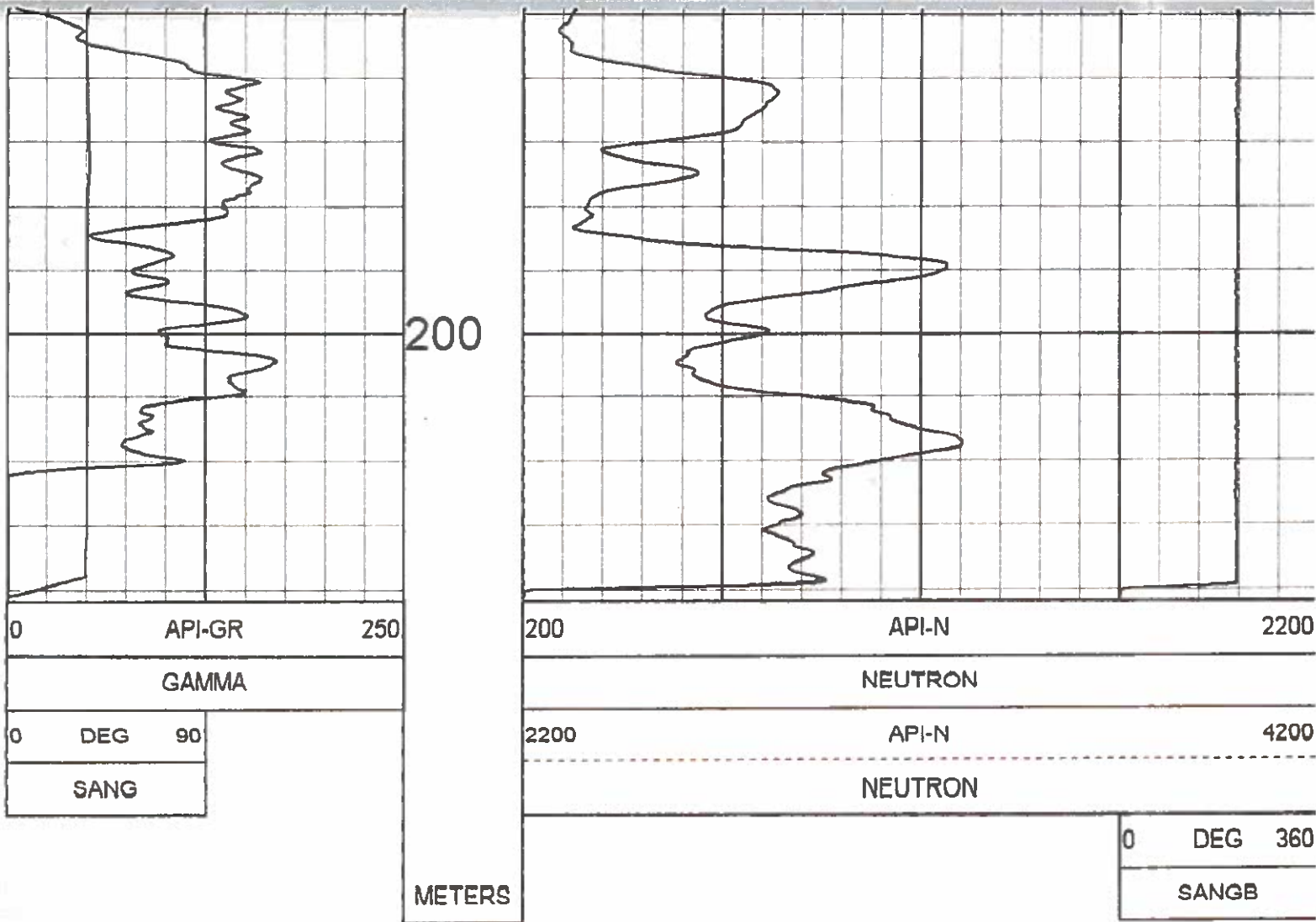
MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE : 0057 NEUTRON 1:100 BR10-13 10/02/10



NEUTRON 1:100 BR10-13 10/02/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 11000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON 0 09/01/2010

VERSION = 3.64HT

TOOL CALIBRATION BR10-13 10/02/10 15:50

TOOL 9057A TM VERSION 4

SERIAL NUMBER 4429

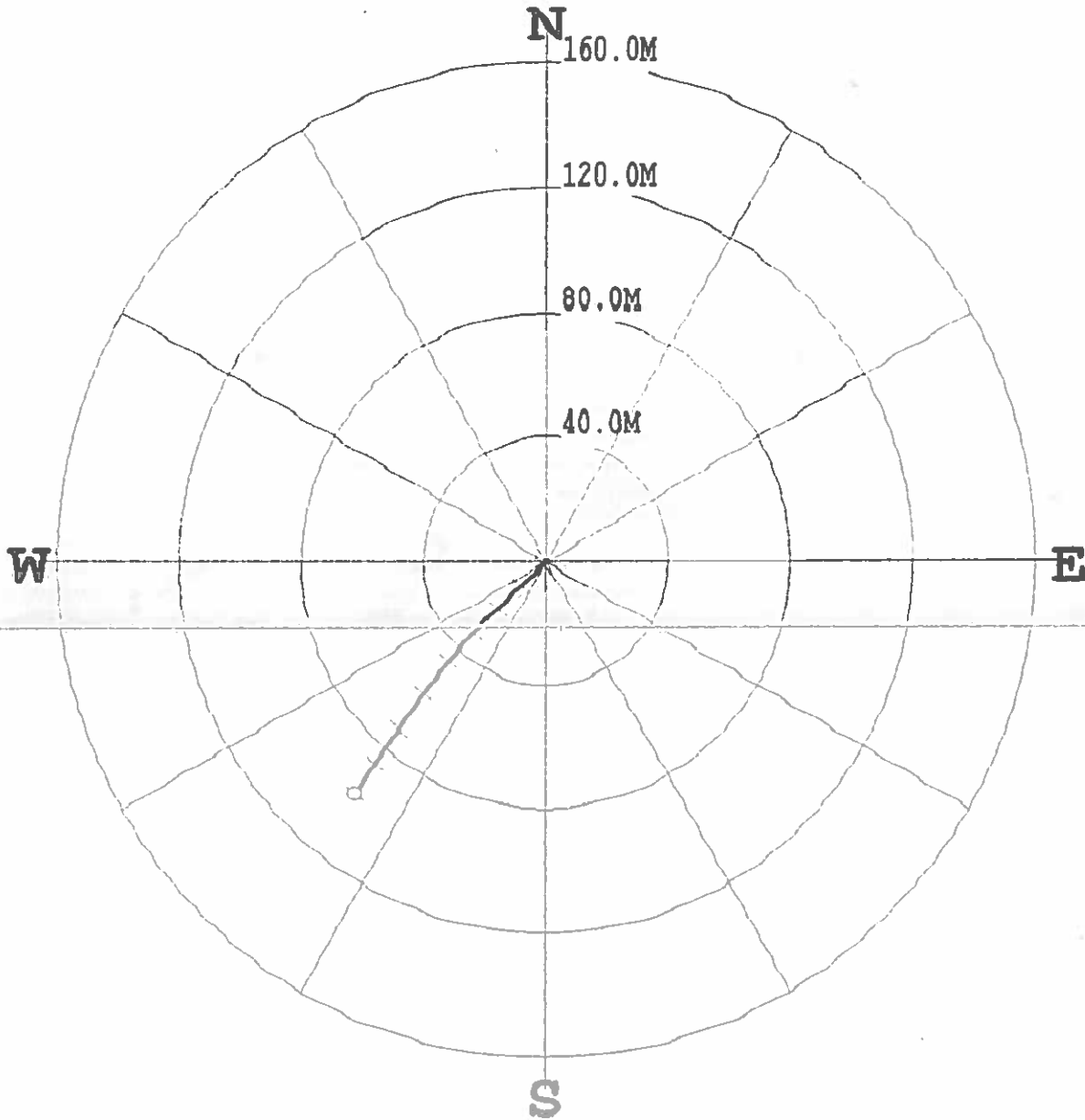
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Dec11,09	15:10:40	GAMMA	0.000 [API-GR]	3.000 [CPS]
	Dec11,09	15:10:40	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	11:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	11:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	13:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	13:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	06:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	06:41:27	RES(16)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	06:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	06:27:01	RES(64)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	08:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	08:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	06:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	06:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-13
 DATE OF LOG: 10/02/10
 PROBE: 9057A 4429



SCALE: 20 M/CM
 TRUE DEPTH: 175.94 M
 AZIMUTH: 219.7
 DISTANCE: 97.4 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *


CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-13
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/02/10
 DATA FROM : N/A PROBE : 9057A 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-13_10-02-10_15-50_9057A_02_15.25_204.17_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
16.26	16.25	0.00	0.00	0.0	0.0	0.0	0.0
17.26	17.23	-0.07	-0.07	0.1	224.7	25.8	224.2
18.26	18.13	-0.39	-0.38	0.5	224.5	25.9	225.3
19.26	19.03	-0.69	-0.69	1.0	224.7	25.9	225.1
20.26	19.93	-1.00	-0.99	1.4	224.7	25.5	224.2
21.26	20.83	-1.31	-1.29	1.8	224.7	25.4	225.2
22.26	21.73	-1.61	-1.59	2.3	224.7	25.5	224.3
23.26	22.64	-1.92	-1.89	2.7	224.6	25.5	224.9
24.26	23.54	-2.23	-2.20	3.1	224.6	25.5	223.8
25.26	24.44	-2.53	-2.50	3.6	224.6	25.6	225.2
26.26	25.34	-2.84	-2.81	4.0	224.7	25.5	224.8
27.26	26.25	-3.15	-3.11	4.4	224.6	25.4	223.0
28.26	27.15	-3.45	-3.41	4.9	224.6	25.7	225.2
29.26	28.05	-3.75	-3.71	5.3	224.7	26.0	236.3
30.26	28.95	-4.02	-4.06	5.7	225.3	26.3	231.5
31.26	29.84	-4.29	-4.41	6.2	225.8	26.2	231.2
32.26	30.74	-4.56	-4.75	6.6	226.2	27.0	212.3
33.26	31.64	-4.89	-5.03	7.0	225.8	27.3	231.5

26.26	25.34	-2.84	-2.81	4.0	224.7	25.5	224.8
27.26	26.25	-3.15	-3.11	4.4	224.6	25.4	223.0
28.26	27.15	-3.45	-3.41	4.9	224.6	25.7	225.2
29.26	28.05	-3.75	-3.71	5.3	224.7	26.0	236.3
30.26	28.95	-4.02	-4.06	5.7	225.3	26.3	231.5
31.26	29.84	-4.29	-4.41	6.2	225.8	26.2	231.2
32.26	30.74	-4.56	-4.75	6.6	226.2	27.0	212.3
33.26	31.64	-4.89	-5.03	7.0	225.8	27.3	231.5
34.26	32.53	-5.19	-5.33	7.4	225.8	26.3	225.6
35.26	33.43	-5.50	-5.65	7.9	225.8	26.2	225.2
36.26	34.33	-5.81	-5.97	8.3	225.7	26.7	228.7
37.26	35.22	-6.13	-6.29	8.8	225.7	26.4	227.3
38.26	36.12	-6.43	-6.61	9.2	225.8	26.6	227.2
39.26	37.01	-6.74	-6.94	9.7	225.9	26.6	227.3
40.26	37.90	-7.04	-7.27	10.1	225.9	26.8	227.2
41.26	38.80	-7.35	-7.60	10.6	225.9	26.9	227.7
42.26	39.69	-7.66	-7.93	11.0	226.0	26.8	226.7
43.26	40.58	-7.96	-8.26	11.5	226.1	26.8	226.7
44.26	41.47	-8.27	-8.60	11.9	226.1	26.8	227.6
45.26	42.36	-8.57	-8.93	12.4	226.2	27.0	226.3
46.26	43.26	-8.88	-9.26	12.8	226.2	27.0	226.3
47.26	44.14	-9.20	-9.59	13.3	226.2	27.5	224.3
48.26	45.03	-9.51	-9.93	13.8	226.2	27.5	226.2
49.26	45.92	-9.83	-10.26	14.2	226.2	27.1	225.9
50.26	46.81	-10.14	-10.59	14.7	226.3	27.4	227.3
51.26	47.70	-10.46	-10.92	15.1	226.3	27.3	225.7
52.26	48.59	-10.78	-11.25	15.6	226.2	27.2	225.5
53.26	49.48	-11.10	-11.58	16.0	226.2	27.3	225.2
54.26	50.36	-11.42	-11.91	16.5	226.2	27.5	224.0
55.26	51.25	-11.74	-12.24	17.0	226.2	27.8	225.5
56.26	52.13	-12.06	-12.58	17.4	226.2	28.0	230.4
57.26	53.01	-12.39	-12.93	17.9	226.2	28.5	224.7
58.26	53.89	-12.73	-13.27	18.4	226.2	28.8	224.8
59.26	54.77	-13.07	-13.61	18.9	226.1	29.1	227.2
60.26	55.64	-13.42	-13.95	19.4	226.1	29.0	224.4
61.26	56.52	-13.76	-14.29	19.8	226.1	29.1	225.6
62.26	57.39	-14.10	-14.64	20.3	226.1	29.0	225.5
63.26	58.26	-14.44	-14.98	20.8	226.1	29.2	225.2
64.26	59.14	-14.79	-15.33	21.3	226.0	29.3	226.3
65.26	60.01	-15.13	-15.68	21.8	226.0	29.2	225.1
66.26	60.88	-15.47	-16.03	22.3	226.0	29.2	226.2
67.26	61.76	-15.81	-16.38	22.8	226.0	29.1	226.6
68.26	62.63	-16.15	-16.72	23.2	226.0	29.0	226.6
69.26	63.51	-16.48	-17.07	23.7	226.0	29.0	228.0
70.26	64.38	-16.81	-17.42	24.2	226.0	28.8	226.6
71.26	65.26	-17.14	-17.77	24.7	226.0	28.5	226.5
72.26	66.14	-17.47	-18.11	25.2	226.0	28.4	226.5
73.26	67.02	-17.80	-18.45	25.6	226.0	28.5	225.9
74.26	67.90	-18.13	-18.80	26.1	226.0	28.4	226.6
75.26	68.78	-18.46	-19.14	26.6	226.0	28.1	227.0
76.26	69.66	-18.79	-19.48	27.1	226.0	28.2	226.5
77.26	70.54	-19.11	-19.83	27.5	226.0	28.9	230.7
78.26	71.42	-19.45	-20.17	28.0	226.0	29.0	225.7
79.26	72.29	-19.79	-20.52	28.5	226.0	29.4	224.1
80.26	73.16	-20.13	-20.87	29.0	226.0	29.4	226.5
81.26	74.03	-20.48	-21.22	29.5	226.0	29.3	225.5
82.26	74.90	-20.82	-21.57	30.0	226.0	29.2	225.2
83.26	75.78	-21.17	-21.91	30.5	226.0	29.4	225.0
84.26	76.65	-21.52	-22.26	31.0	226.0	29.5	224.2
85.26	77.51	-21.87	-22.61	31.5	226.0	29.8	224.7
86.26	78.38	-22.22	-22.96	32.0	225.9	29.8	224.2
87.26	79.25	-22.58	-23.31	32.4	225.9	29.9	225.1
88.26	80.12	-22.93	-23.66	32.9	225.9	29.8	225.6
89.26	80.98	-23.29	-24.01	33.4	225.9	30.3	232.1
90.26	81.85	-23.65	-24.36	33.9	225.8	30.3	223.9
91.26	82.71	-24.02	-24.71	34.5	225.8	30.3	222.8
92.26	83.57	-24.38	-25.05	35.0	225.8	30.3	223.0
93.26	84.44	-24.75	-25.40	35.5	225.7	30.3	223.3
94.26	85.30	-25.12	-25.74	36.0	225.7	30.3	222.5
95.26	86.16	-25.50	-26.07	36.5	225.6	30.3	222.4
96.26	87.03	-25.87	-26.41	37.0	225.6	30.2	222.8
97.26	87.89	-26.25	-26.74	37.5	225.5	30.4	221.7
98.26	88.75	-26.63	-27.08	38.0	225.5	30.6	220.6
99.26	89.61	-27.02	-27.41	38.5	225.4	31.3	220.8
100.26	90.47	-27.40	-27.75	39.0	225.4	30.9	218.7
101.26	91.33	-27.80	-28.08	39.5	225.3	31.5	221.4
102.26	92.18	-28.20	-28.42	40.0	225.2	31.9	219.1
103.26	93.03	-28.60	-28.76	40.6	225.2	32.4	220.5
104.26	93.87	-29.01	-29.10	41.1	225.1	32.2	220.7
105.26	94.72	-29.42	-29.45	41.6	225.0	32.5	221.7
106.26	95.56	-29.84	-29.80	42.2	225.0	33.0	220.6
107.26	96.39	-30.26	-30.15	42.7	224.9	33.5	220.9
108.26	97.23	-30.68	-30.51	43.3	224.8	33.2	221.5
109.26	98.06	-31.10	-30.86	43.8	224.8	33.8	219.9
110.26	98.89	-31.53	-31.21	44.4	224.7	33.9	219.8
111.26	99.72	-31.96	-31.56	44.9	224.6	33.8	219.0
112.26	100.56	-32.39	-31.92	45.5	224.6	33.4	220.4
113.26	101.39	-32.81	-32.27	46.0	224.5	33.1	218.1
114.26	102.22	-33.24	-32.62	46.6	224.5	33.8	218.7
115.26	103.05	-33.68	-32.96	47.1	224.4	33.9	218.0
116.26	103.88	-34.12	-33.31	47.7	224.3	33.9	219.2
117.26	104.71	-34.55	-33.66	48.2	224.3	33.8	219.9
118.26	105.55	-34.98	-34.01	48.8	224.2	33.5	218.7
119.26	106.38	-35.41	-34.35	49.3	224.1	33.4	218.3
120.26	107.22	-35.84	-34.69	49.9	224.1	33.4	218.8
121.26	108.05	-36.27	-35.04	50.4	224.0	33.4	218.7
122.26	108.89	-36.71	-35.38	51.0	223.9	33.3	219.4

71.26	65.26	-17.14	-17.77	24.7	226.0	28.5	226.5
72.26	66.14	-17.47	-18.11	25.2	226.0	28.4	226.5
73.26	67.02	-17.80	-18.45	25.6	226.0	28.5	225.9
74.26	67.90	-18.13	-18.80	26.1	226.0	28.4	226.6
75.26	68.78	-18.46	-19.14	26.6	226.0	28.1	227.0
76.26	69.66	-18.79	-19.48	27.1	226.0	28.2	226.5
77.26	70.54	-19.11	-19.83	27.5	226.0	28.9	230.7
78.26	71.42	-19.45	-20.17	28.0	226.0	29.0	225.7
79.26	72.29	-19.79	-20.52	28.5	226.0	29.4	224.1
80.26	73.16	-20.13	-20.87	29.0	226.0	29.4	226.5
81.26	74.03	-20.48	-21.22	29.5	226.0	29.3	225.5
82.26	74.90	-20.82	-21.57	30.0	226.0	29.2	225.2
83.26	75.78	-21.17	-21.91	30.5	226.0	29.4	225.0
84.26	76.65	-21.52	-22.26	31.0	226.0	29.5	224.2
85.26	77.51	-21.87	-22.61	31.5	226.0	29.8	224.7
86.26	78.38	-22.22	-22.96	32.0	225.9	29.8	224.2
87.26	79.25	-22.58	-23.31	32.4	225.9	29.9	225.1
88.26	80.12	-22.93	-23.66	32.9	225.9	29.8	225.6
89.26	80.98	-23.29	-24.01	33.4	225.9	30.3	232.1
90.26	81.85	-23.65	-24.36	33.9	225.8	30.3	223.9
91.26	82.71	-24.02	-24.71	34.5	225.8	30.3	222.8
92.26	83.57	-24.38	-25.05	35.0	225.8	30.3	223.0
93.26	84.44	-24.75	-25.40	35.5	225.7	30.3	223.3
94.26	85.30	-25.12	-25.74	36.0	225.7	30.3	222.5
95.26	86.16	-25.50	-26.07	36.5	225.6	30.3	222.4
96.26	87.03	-25.87	-26.41	37.0	225.6	30.2	222.8
97.26	87.89	-26.25	-26.74	37.5	225.5	30.4	221.7
98.26	88.75	-26.63	-27.08	38.0	225.5	30.6	220.6
99.26	89.61	-27.02	-27.41	38.5	225.4	31.3	220.8
100.26	90.47	-27.40	-27.75	39.0	225.4	30.9	218.7
101.26	91.33	-27.80	-28.08	39.5	225.3	31.5	221.4
102.26	92.18	-28.20	-28.42	40.0	225.2	31.9	219.1
103.26	93.03	-28.60	-28.76	40.6	225.2	32.4	220.5
104.26	93.87	-29.01	-29.10	41.1	225.1	32.2	220.7
105.26	94.72	-29.42	-29.45	41.6	225.0	32.5	221.7
106.26	95.56	-29.84	-29.80	42.2	225.0	33.0	220.6
107.26	96.39	-30.26	-30.15	42.7	224.9	33.5	220.9
108.26	97.23	-30.68	-30.51	43.3	224.8	33.2	221.5
109.26	98.06	-31.10	-30.86	43.8	224.8	33.8	219.9
110.26	98.89	-31.53	-31.21	44.4	224.7	33.9	219.8
111.26	99.72	-31.96	-31.56	44.9	224.6	33.8	219.0
112.26	100.56	-32.39	-31.92	45.5	224.6	33.4	220.4
113.26	101.39	-32.81	-32.27	46.0	224.5	33.1	218.1
114.26	102.22	-33.24	-32.62	46.6	224.5	33.8	218.7
115.26	103.05	-33.68	-32.96	47.1	224.4	33.9	218.0
116.26	103.88	-34.12	-33.31	47.7	224.3	33.9	219.2
117.26	104.71	-34.55	-33.66	48.2	224.3	33.8	219.9
118.26	105.55	-34.98	-34.01	48.8	224.2	33.5	218.7
119.26	106.38	-35.41	-34.35	49.3	224.1	33.4	218.3
120.26	107.22	-35.84	-34.69	49.9	224.1	33.4	218.8
121.26	108.05	-36.27	-35.04	50.4	224.0	33.4	218.7
122.26	108.89	-36.71	-35.38	51.0	223.9	33.3	219.4
123.26	109.72	-37.14	-35.72	51.5	223.9	33.2	218.4
124.26	110.56	-37.57	-36.06	52.1	223.8	33.3	218.8
125.26	111.39	-37.99	-36.40	52.6	223.8	33.5	222.2
126.26	112.22	-38.43	-36.75	53.2	223.7	34.2	218.6
127.26	113.05	-38.87	-37.09	53.7	223.7	33.7	218.1
128.26	113.88	-39.31	-37.43	54.3	223.6	33.8	217.7
129.26	114.71	-39.75	-37.77	54.8	223.5	34.0	219.0
130.26	115.54	-40.19	-38.12	55.4	223.5	34.3	216.8
131.26	116.37	-40.64	-38.46	56.0	223.4	34.1	219.8
132.26	117.20	-41.08	-38.80	56.5	223.4	34.2	214.8
133.26	118.02	-41.53	-39.14	57.1	223.3	34.4	216.5
134.26	118.85	-41.99	-39.47	57.6	223.2	34.3	216.0
135.26	119.68	-42.44	-39.81	58.2	223.2	34.4	215.4
136.26	120.50	-42.90	-40.13	58.7	223.1	34.3	216.0
137.26	121.33	-43.36	-40.46	59.3	223.0	34.1	217.2
138.26	122.15	-43.81	-40.79	59.9	223.0	34.5	216.7
139.26	122.98	-44.27	-41.13	60.4	222.9	34.5	216.6
140.26	123.80	-44.73	-41.46	61.0	222.8	34.8	215.3
141.26	124.63	-45.19	-41.79	61.6	222.8	34.4	216.8
142.26	125.45	-45.65	-42.13	62.1	222.7	34.8	219.8
143.26	126.27	-46.11	-42.46	62.7	222.6	35.0	216.1
144.26	127.09	-46.57	-42.80	63.3	222.6	35.0	217.2
145.26	127.91	-47.04	-43.14	63.8	222.5	35.1	216.0
146.26	128.73	-47.50	-43.48	64.4	222.5	34.8	212.9
147.26	129.54	-47.97	-43.82	65.0	222.4	35.2	216.8
148.26	130.36	-48.44	-44.15	65.5	222.3	35.2	215.0
149.26	131.18	-48.91	-44.48	66.1	222.3	35.4	215.5
150.26	131.99	-49.38	-44.83	66.7	222.2	35.5	215.6
151.26	132.80	-49.85	-45.17	67.3	222.2	35.6	216.2
152.26	133.62	-50.32	-45.50	67.8	222.1	35.1	214.0
153.26	134.44	-50.79	-45.83	68.4	222.1	35.2	214.0
154.26	135.25	-51.27	-46.16	69.0	222.0	35.1	213.3
155.26	136.07	-51.75	-46.48	69.6	221.9	35.2	214.7
156.26	136.89	-52.22	-46.81	70.1	221.9	34.7	215.0
157.26	137.71	-52.69	-47.13	70.7	221.8	34.7	214.1
158.26	138.53	-53.16	-47.45	71.3	221.7	34.5	214.1
159.26	139.36	-53.63	-47.76	71.8	221.7	34.4	214.0
160.26	140.18	-54.10	-48.08	72.4	221.6	34.2	214.7
161.26	141.01	-54.57	-48.39	72.9	221.6	34.5	210.6
162.26	141.83	-55.03	-48.72	73.5	221.5	34.8	215.5
163.26	142.66	-55.50	-49.03	74.1	221.5	34.1	214.5
164.26	143.49	-55.96	-49.35	74.6	221.4	33.8	214.4
165.26	144.32	-56.42	-49.67	75.2	221.4	33.8	215.0
166.26	145.15	-56.87	-49.98	75.7	221.3	33.7	214.2
167.26	145.98	-57.33	-50.29	76.3	221.3	33.9	215.9
168.26	146.81	-57.78	-50.61	76.8	221.2	34.0	214.5

115.26	103.05	-33.68	-32.96	47.1	224.4	33.9	218.0
116.26	103.88	-34.12	-33.31	47.7	224.3	33.9	219.2
117.26	104.71	-34.55	-33.66	48.2	224.3	33.8	219.9
118.26	105.55	-34.98	-34.01	48.8	224.2	33.5	218.7
119.26	106.38	-35.41	-34.35	49.3	224.1	33.4	218.3
120.26	107.22	-35.84	-34.69	49.9	224.1	33.4	218.8
121.26	108.05	-36.27	-35.04	50.4	224.0	33.4	218.7
122.26	108.89	-36.71	-35.38	51.0	223.9	33.3	219.4
123.26	109.72	-37.14	-35.72	51.5	223.9	33.2	218.4
124.26	110.56	-37.57	-36.06	52.1	223.8	33.3	218.8
125.26	111.39	-37.99	-36.40	52.6	223.8	33.5	222.2
126.26	112.22	-38.43	-36.75	53.2	223.7	34.2	218.6
127.26	113.05	-38.87	-37.09	53.7	223.7	33.7	218.1
128.26	113.88	-39.31	-37.43	54.3	223.6	33.8	217.7
129.26	114.71	-39.75	-37.77	54.8	223.5	34.0	219.0
130.26	115.54	-40.19	-38.12	55.4	223.5	34.3	216.8
131.26	116.37	-40.64	-38.46	56.0	223.4	34.1	219.8
132.26	117.20	-41.08	-38.80	56.5	223.4	34.2	214.8
133.26	118.02	-41.53	-39.14	57.1	223.3	34.4	216.5
134.26	118.85	-41.99	-39.47	57.6	223.2	34.3	216.0
135.26	119.68	-42.44	-39.81	58.2	223.2	34.4	215.4
136.26	120.50	-42.90	-40.13	58.7	223.1	34.3	216.0
137.26	121.33	-43.36	-40.46	59.3	223.0	34.1	217.2
138.26	122.15	-43.81	-40.79	59.9	223.0	34.5	216.7
139.26	122.98	-44.27	-41.13	60.4	222.9	34.5	216.6
140.26	123.80	-44.73	-41.46	61.0	222.8	34.8	215.3
141.26	124.63	-45.19	-41.79	61.6	222.8	34.4	216.8
142.26	125.45	-45.65	-42.13	62.1	222.7	34.8	219.8
143.26	126.27	-46.11	-42.46	62.7	222.6	35.0	216.1
144.26	127.09	-46.57	-42.80	63.3	222.6	35.0	217.2
145.26	127.91	-47.04	-43.14	63.8	222.5	35.1	216.0
146.26	128.73	-47.50	-43.48	64.4	222.5	34.8	212.9
147.26	129.54	-47.97	-43.82	65.0	222.4	35.2	216.8
148.26	130.36	-48.44	-44.15	65.5	222.3	35.2	215.0
149.26	131.18	-48.91	-44.48	66.1	222.3	35.4	215.5
150.26	131.99	-49.38	-44.83	66.7	222.2	35.5	215.6
151.26	132.80	-49.85	-45.17	67.3	222.2	35.6	216.2
152.26	133.62	-50.32	-45.50	67.8	222.1	35.1	214.0
153.26	134.44	-50.79	-45.83	68.4	222.1	35.2	214.0
154.26	135.25	-51.27	-46.16	69.0	222.0	35.1	213.3
155.26	136.07	-51.75	-46.48	69.6	221.9	35.2	214.7
156.26	136.89	-52.22	-46.81	70.1	221.9	34.7	215.0
157.26	137.71	-52.69	-47.13	70.7	221.8	34.7	214.1
158.26	138.53	-53.16	-47.45	71.3	221.7	34.5	214.1
159.26	139.36	-53.63	-47.76	71.8	221.7	34.4	214.0
160.26	140.18	-54.10	-48.08	72.4	221.6	34.2	214.7
161.26	141.01	-54.57	-48.39	72.9	221.6	34.5	210.6
162.26	141.83	-55.03	-48.72	73.5	221.5	34.8	215.5
163.26	142.66	-55.50	-49.03	74.1	221.5	34.1	214.5
164.26	143.49	-55.96	-49.35	74.6	221.4	33.8	214.4
165.26	144.32	-56.42	-49.67	75.2	221.4	33.8	215.0
166.26	145.15	-56.87	-49.98	75.7	221.3	33.7	214.2
167.26	145.98	-57.33	-50.29	76.3	221.3	33.9	215.9
168.26	146.81	-57.79	-50.61	76.8	221.2	34.0	214.5
169.26	147.64	-58.25	-50.93	77.4	221.2	33.7	213.3
170.26	148.47	-58.72	-51.24	77.9	221.1	34.2	213.8
171.26	149.30	-59.18	-51.55	78.5	221.1	34.1	213.8
172.26	150.13	-59.64	-51.87	79.0	221.0	34.1	216.4
173.26	150.95	-60.10	-52.20	79.6	221.0	34.5	216.7
174.26	151.78	-60.57	-52.50	80.2	220.9	34.3	214.2
175.26	152.61	-61.03	-52.82	80.7	220.9	33.7	212.7
176.26	153.44	-61.49	-53.13	81.3	220.8	33.8	215.9
177.26	154.27	-61.95	-53.44	81.8	220.8	33.7	216.0
178.26	155.10	-62.40	-53.76	82.4	220.7	33.9	214.3
179.26	155.93	-62.86	-54.08	82.9	220.7	34.2	215.6
180.26	156.76	-63.33	-54.40	83.5	220.7	34.7	214.1
181.26	157.58	-63.80	-54.72	84.1	220.6	35.3	214.2
182.26	158.39	-64.28	-55.04	84.6	220.6	35.2	215.1
183.26	159.21	-64.76	-55.36	85.2	220.5	35.2	213.8
184.26	160.03	-65.24	-55.69	85.8	220.5	35.2	213.0
185.26	160.84	-65.71	-56.01	86.3	220.4	35.2	213.8
186.26	161.66	-66.19	-56.33	86.9	220.4	35.2	214.3
187.26	162.48	-66.67	-56.66	87.5	220.4	35.8	215.4
188.26	163.29	-67.15	-56.99	88.1	220.3	35.7	214.4
189.26	164.10	-67.63	-57.32	88.7	220.3	35.9	213.2
190.26	164.91	-68.13	-57.64	89.2	220.2	36.3	215.9
191.26	165.71	-68.62	-57.97	89.8	220.2	36.1	213.1
192.26	166.52	-69.10	-58.31	90.4	220.2	36.3	216.9
193.26	167.32	-69.59	-58.64	91.0	220.1	36.4	209.2
194.26	168.12	-70.09	-58.98	91.6	220.1	36.9	214.3
195.26	168.93	-70.58	-59.31	92.2	220.0	36.6	214.3
196.26	169.73	-71.08	-59.65	92.8	220.0	36.8	211.8
197.26	170.53	-71.57	-59.99	93.4	220.0	37.3	214.6
198.26	171.33	-72.07	-60.32	94.0	219.9	36.7	213.9
199.26	172.13	-72.56	-60.66	94.6	219.9	36.8	213.2
200.26	172.93	-73.06	-60.99	95.2	219.9	36.7	214.8
201.26	173.73	-73.56	-61.33	95.8	219.8	36.9	214.0
202.26	174.54	-74.05	-61.66	96.4	219.8	36.5	217.2
203.26	175.34	-74.54	-61.99	97.0	219.7	36.3	216.7
204.00	175.94	-74.90	-62.24	97.4	219.7	35.9	214.3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-16	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,609.26	6,139,978.96	1,331.31

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
266	-65	125.41	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	266.0	-65.40
5.00	237.6	-65.20
6.00	231.6	-65.10
7.00	228.8	-64.80
8.00	227.4	-64.50
9.00	226.4	-64.40
10.00	225.7	-64.30
11.00	225.2	-64.50
12.00	224.3	-63.50
13.00	223.4	-63.30
14.00	223.0	-64.00
15.00	222.9	-64.10
16.00	222.9	-64.40
17.00	222.7	-64.40
18.00	222.6	-63.50
19.00	222.6	-63.70
20.00	222.6	-64.20
21.00	222.6	-64.00
22.00	222.6	-64.30
23.00	222.6	-64.20
24.00	222.5	-64.00
25.00	222.5	-64.10
26.00	222.4	-64.20
27.00	222.5	-64.50
28.00	222.4	-64.40
29.00	222.4	-64.40
30.00	222.4	-64.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.40	2.40		
39.50	40.30	0.80		
63.80	64.30	0.50		
64.30	65.40	1.10		
65.40	66.20	0.80		
81.10	85.90	4.80		
85.90	86.60	0.70		
87.90	88.40	0.50		

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-16**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

31.00	222.4	-64.20
32.00	222.4	-64.30
33.00	222.4	-64.20
34.00	222.4	-64.50
35.00	222.3	-64.00
36.00	222.3	-64.20
37.00	222.3	-63.80
38.00	222.3	-63.70
39.00	222.3	-64.00
40.00	222.2	-64.20
41.00	222.2	-64.70
42.00	222.2	-64.60
43.00	222.2	-64.60
44.00	222.2	-64.40
45.00	222.1	-64.40
46.00	222.1	-64.70
47.00	222.1	-65.00
48.00	222.1	-64.60
49.00	222.0	-65.00
50.00	222.0	-65.20
51.00	222.0	-65.50
52.00	221.9	-64.90
53.00	221.9	-64.40
54.00	221.9	-64.30
55.00	221.8	-64.90
56.00	221.8	-64.50
57.00	221.7	-64.40
58.00	221.6	-64.20
59.00	221.4	-64.30
60.00	221.2	-64.40
61.00	220.9	-64.40
62.00	220.7	-64.70
63.00	220.5	-64.70
64.00	220.3	-64.60
65.00	220.2	-64.80
66.00	220.0	-65.00
67.00	219.9	-64.80
68.00	219.8	-64.80
69.00	219.6	-64.70
70.00	219.5	-64.60
71.00	219.3	-64.60
72.00	219.2	-64.90
73.00	219.1	-65.10
74.00	219.0	-65.00
75.00	218.9	-65.40

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-16**

year drilled: 2010


AREA:

**BURNT RIVER
BRULE**

76.00	218.8	-65.30
77.00	218.7	-65.60
78.00	218.6	-65.70
79.00	218.5	-65.40
80.00	218.4	-65.10
81.00	218.3	-65.60
82.00	218.2	-65.50
83.00	218.1	-65.70
84.00	218.1	-65.90
85.00	218.0	-66.10
86.00	217.9	-66.20
87.00	217.9	-67.10
88.00	217.8	-66.00
89.00	217.7	-66.30
90.00	217.6	-66.60
91.00	217.6	-66.50
92.00	217.5	-66.70
93.00	217.5	-66.70
94.00	217.5	-66.40
95.00	217.5	-66.00
96.00	217.5	-66.40
97.00	217.4	-66.10
98.00	217.4	-66.30
99.00	217.3	-65.80
100.00	217.2	-66.10
101.00	217.0	-65.80
102.00	216.9	-66.10
103.00	216.8	-65.90
104.00	216.7	-65.70
105.00	216.6	-65.50
106.00	216.5	-65.90
107.00	216.4	-66.30
108.00	216.3	-66.10
109.00	216.2	-68.20
110.00	216.2	-65.70
111.00	216.2	-66.50
112.00	216.2	-66.20
113.00	216.2	-66.20
114.00	216.2	-66.70
115.00	216.1	-66.10
116.00	216.1	-65.70
117.00	216.1	-65.50
118.00	216.0	-66.50
119.00	216.0	-65.10
120.00	216.0	-65.60

Date issued: Tuesday, June 10, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-16	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

121.00	215.9	-66.10
122.00	215.9	-66.50
123.00	215.9	-65.70
124.00	215.9	-65.70
125.00	215.9	-65.70
125.24	215.9	-65.70

RAW SAMPLE INFORMATION

Date issued: Tuesday, June 10, 2014
 Reviewed: October 11, 2002

Page 4 of 4

PICKS → Jan 11/2011



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-16

century-geo.com

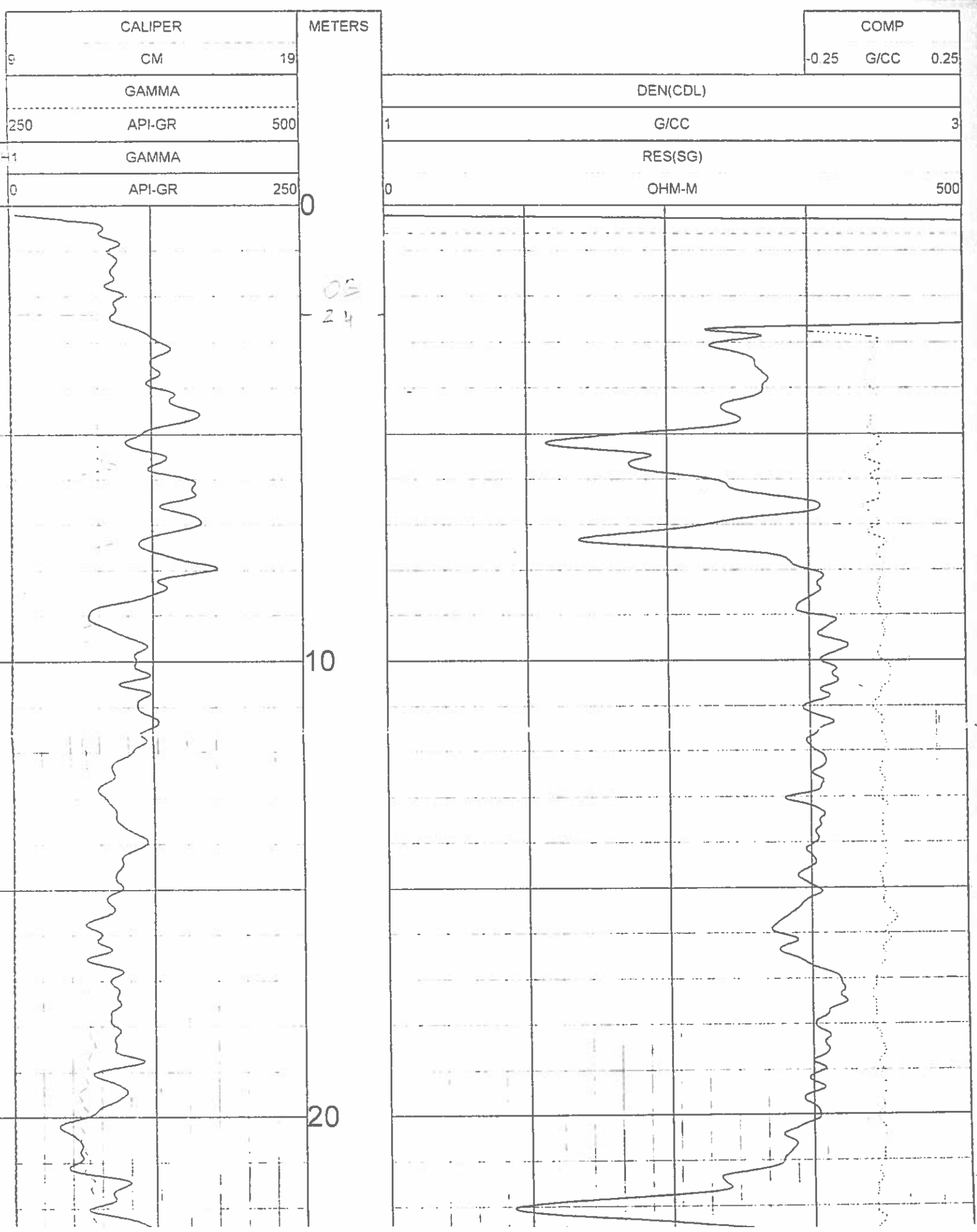
COMPANY : WESTERN COAL CORPORATION
WELL : BR10-16
FIELD : N/A N/A N/A
COUNTRY : CANADA
PROVINCE :
LSD :
SECTION : BRULE
TOWNSHIP :
RANGE : Y1
LICENSE NO. :
UNIQUE WELL ID. :

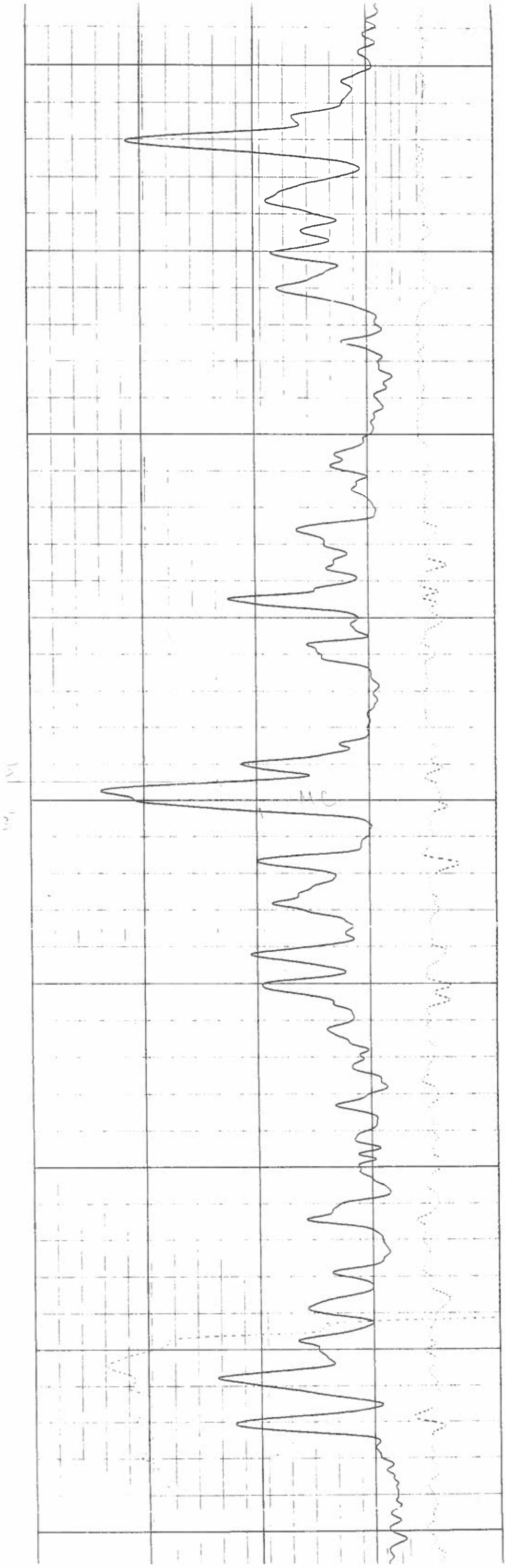
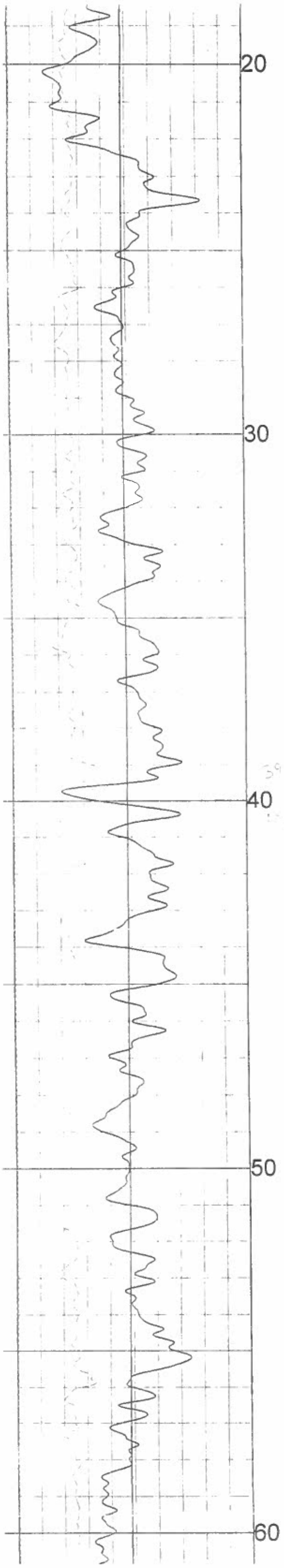
OTHER SERVICES:
NEUTRON

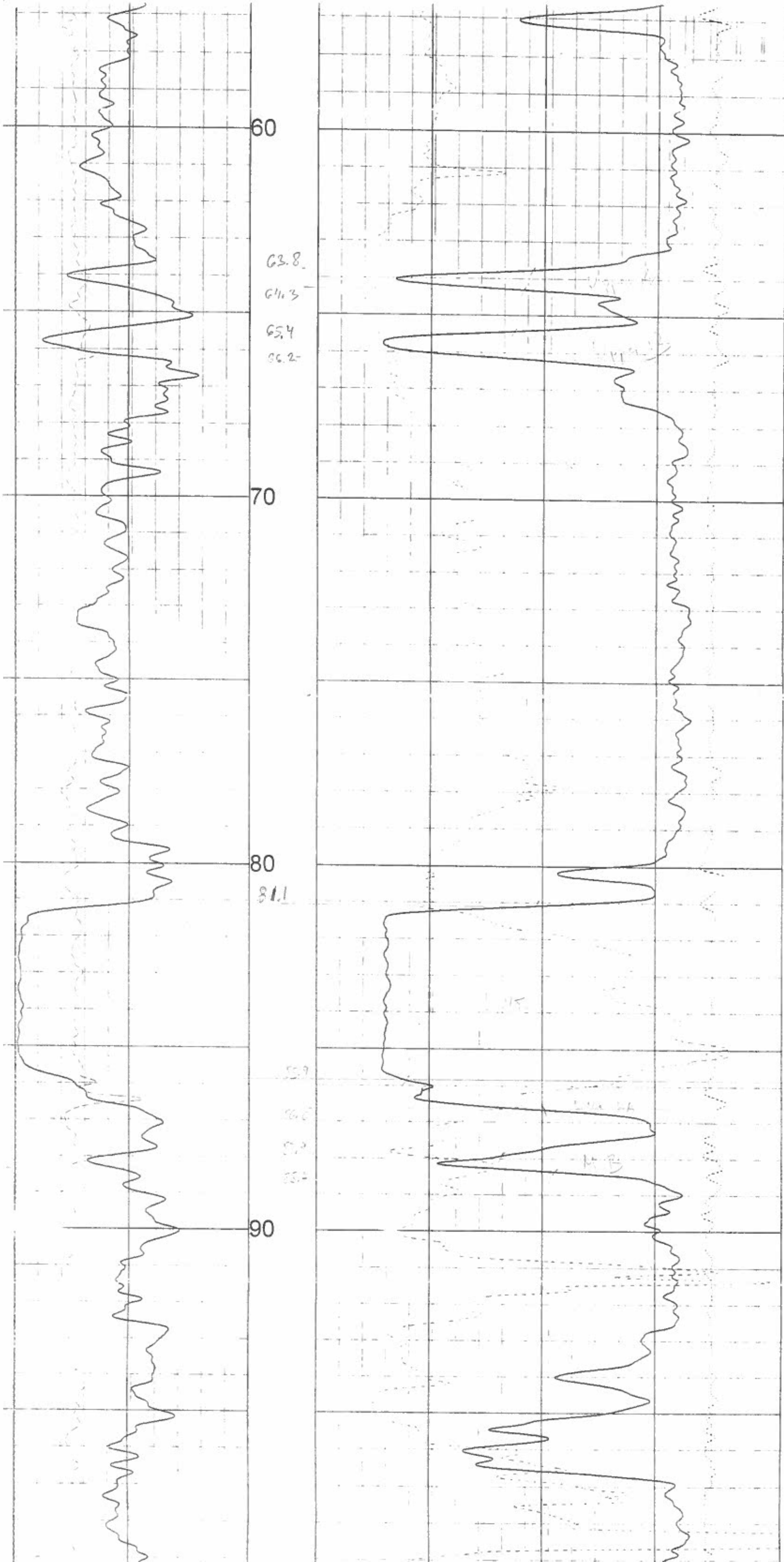
PERMANENT DATUM : N/A
LOG MEASURED FROM : GL
DRL MEASURED FROM : 3L
ELEVATION KB : N/A
ELEVATION DF : N/A
ELEVATION GL : N/A

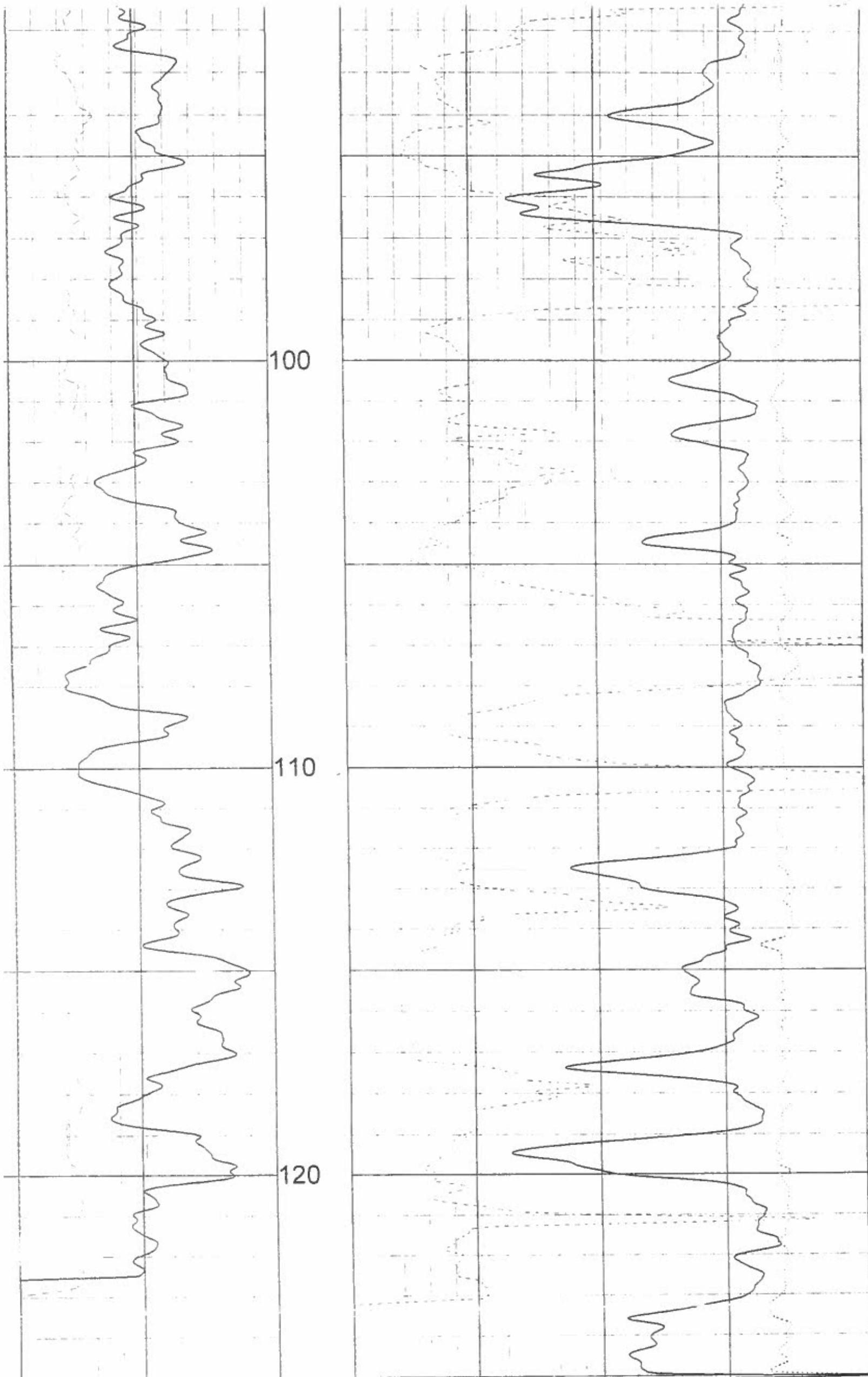
DATE : 10/11/10
DEPTH DRILLER : 129.54
BIT SIZE : 11.4
LOG TOP : 0.19
LOG BOTTOM : 125.19
CASING LOGGER :
CASING DRILLER : 3048
CASING TYPE : FTBL
BOREHOLE FLUID : WATER
RM TEMPERATURE : 14
SMB HT : N/A
MUD LOG : 00
SMB HT :
SMB HT :
REMARKS 1 : T NEAL
REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS









TH1	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
9	CM	19
	CALIPER	METERS

0	OHM-M	500	
	RES(SG)		
1	G/CC	3	
	DEN(CDL)		
	-0.25	G/CC	0.25
		COMP	



DETAILED DENSITY GAMMA - CALIPER - RES. BR10-16

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-16		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LSD	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	10/11/10	RIG NUMBER	
DEPTH DRILLER	129 54	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.19	DEPARTURE TIME	
LOG BOTTOM	125.19	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

MAGNETIC DECL : 21.0

PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010

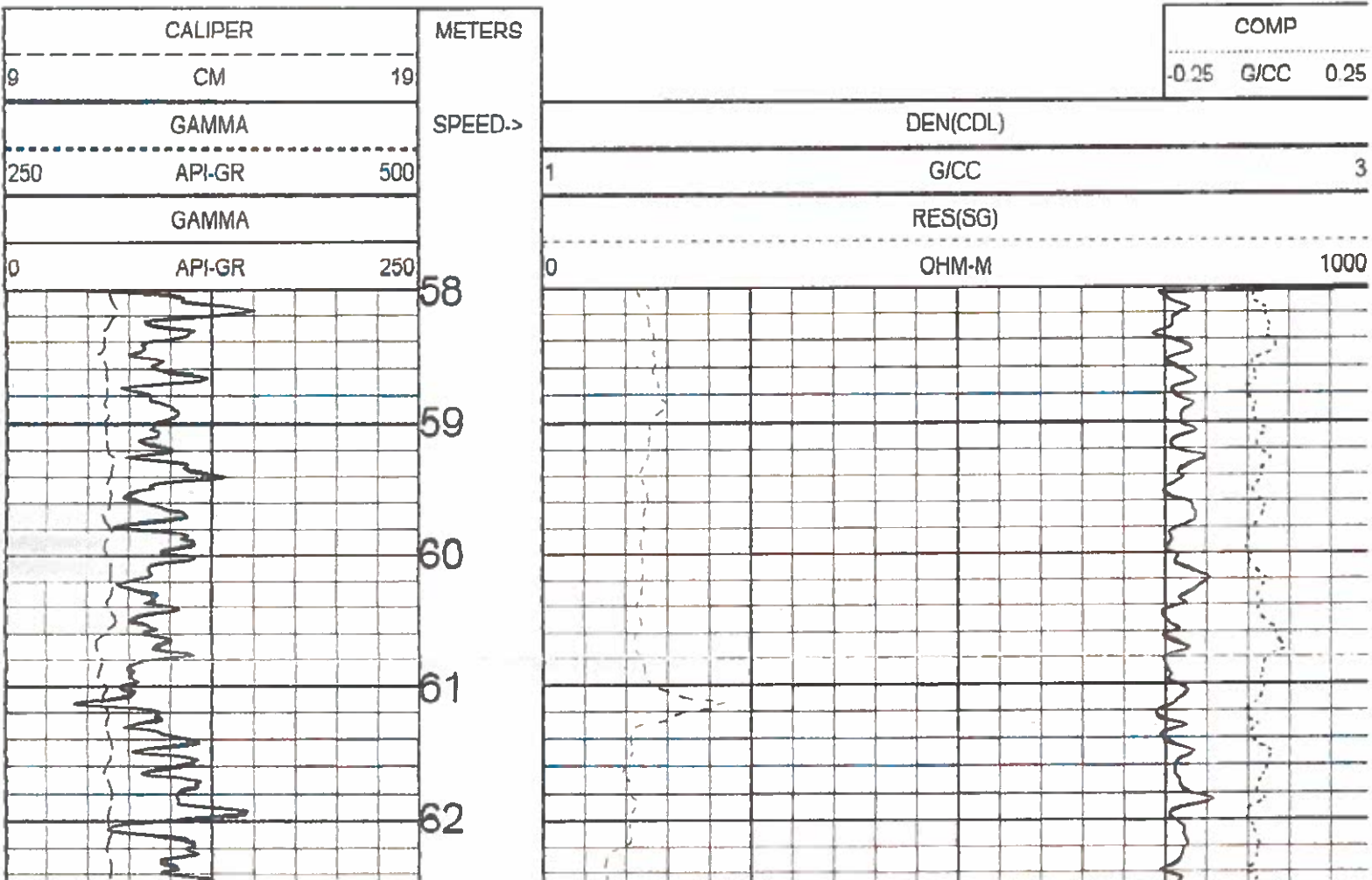
NEUTRON MATRIX : SANDSTONE

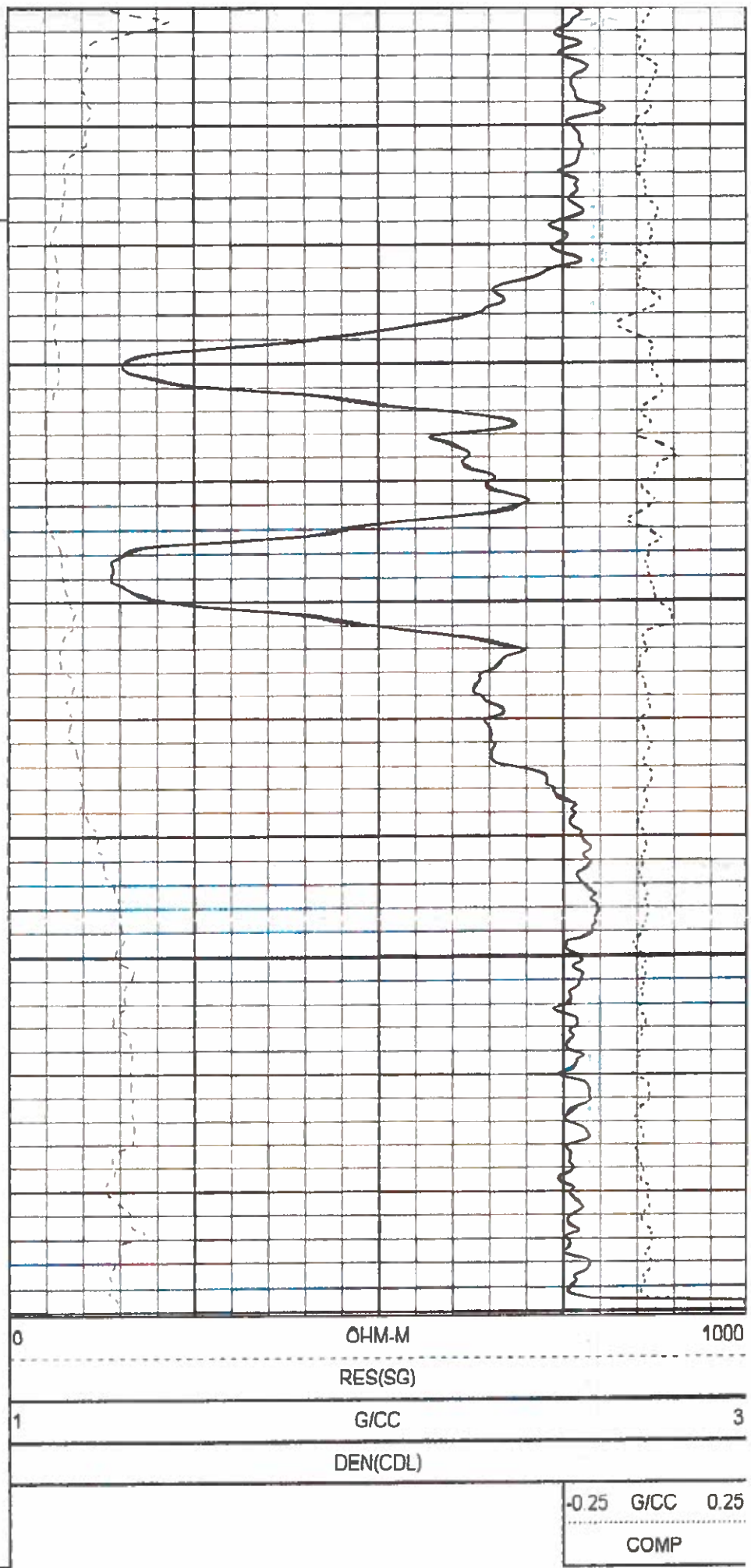
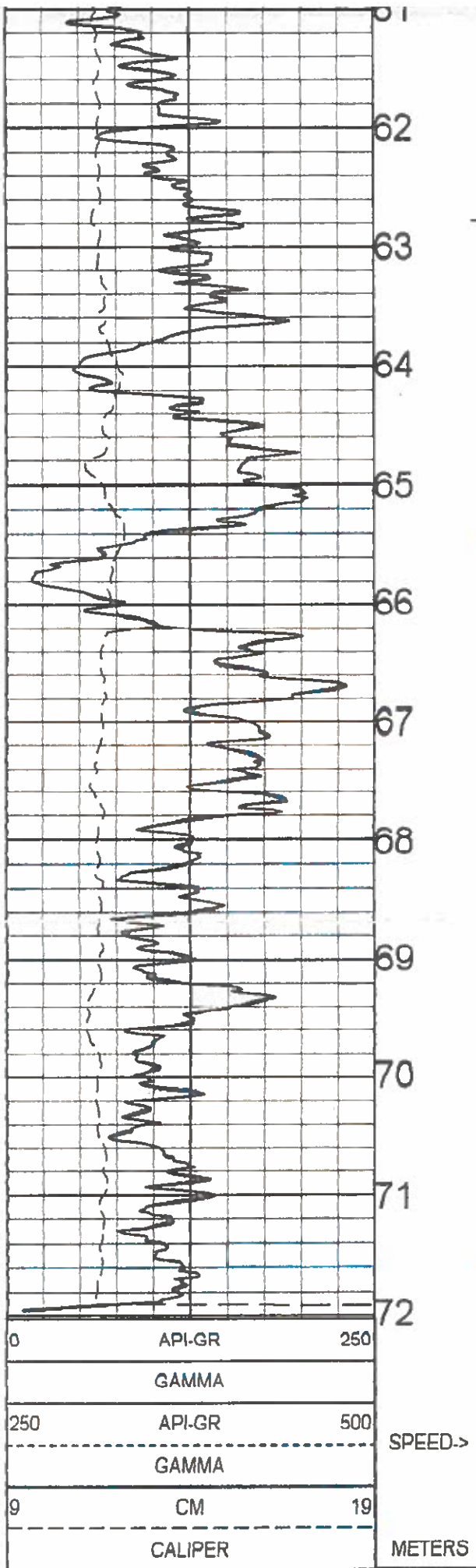
ELECT. CUTOFF : 90000

MATRIX DELTA T : 177

BIT SIZE : 11.43

VERSION = 3.64IE





▲ 1:50 BULK DENSITY EXPANDED BR10-16 10/11/10 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.641E

1:50 BULK DENSITY EXPANDED BR10-16 10/11/10

LOG PARAMETERS

1:50 BULK DENSITY EXPANDED BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

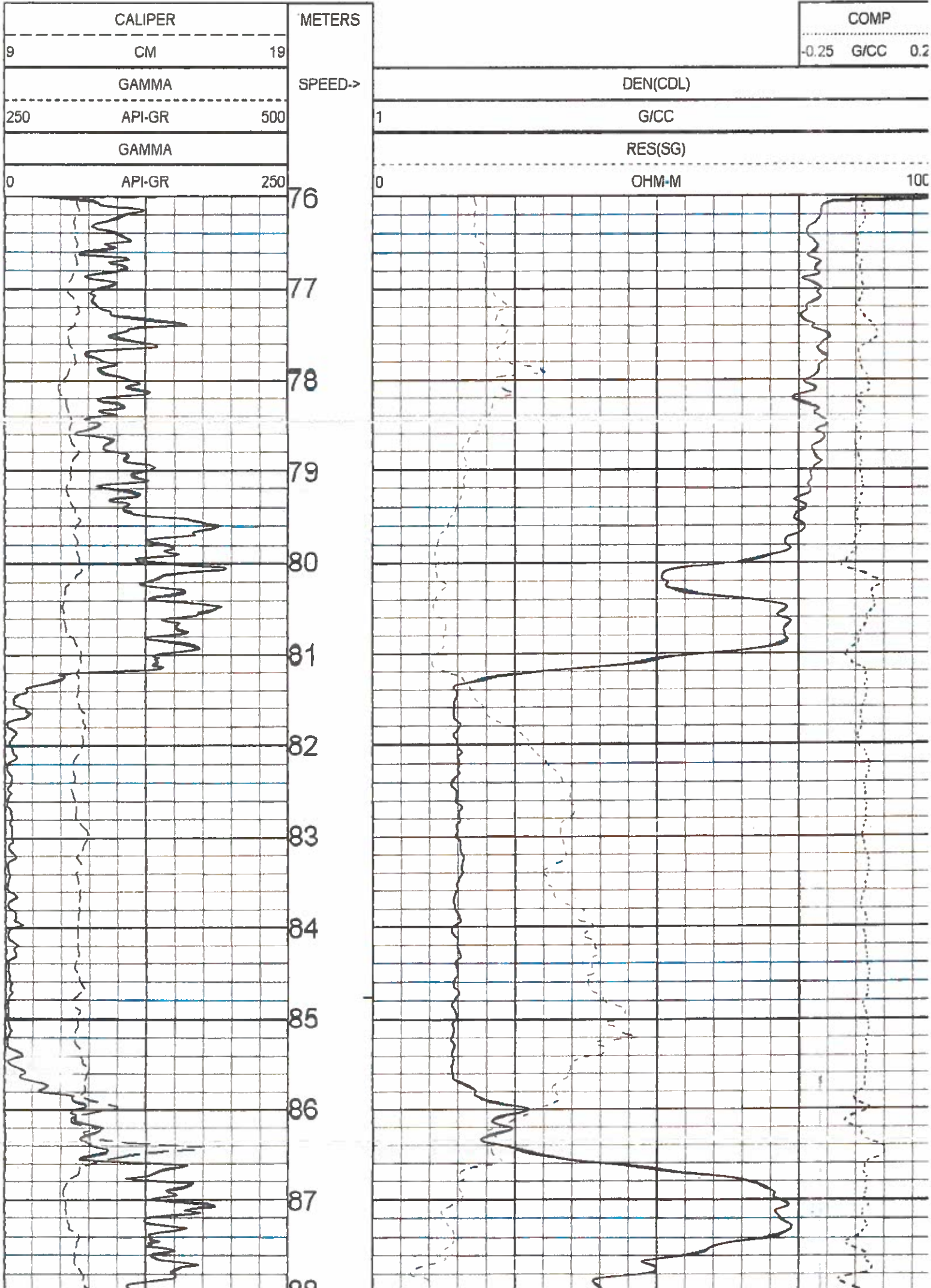
MAGNETIC DECL : 21.0

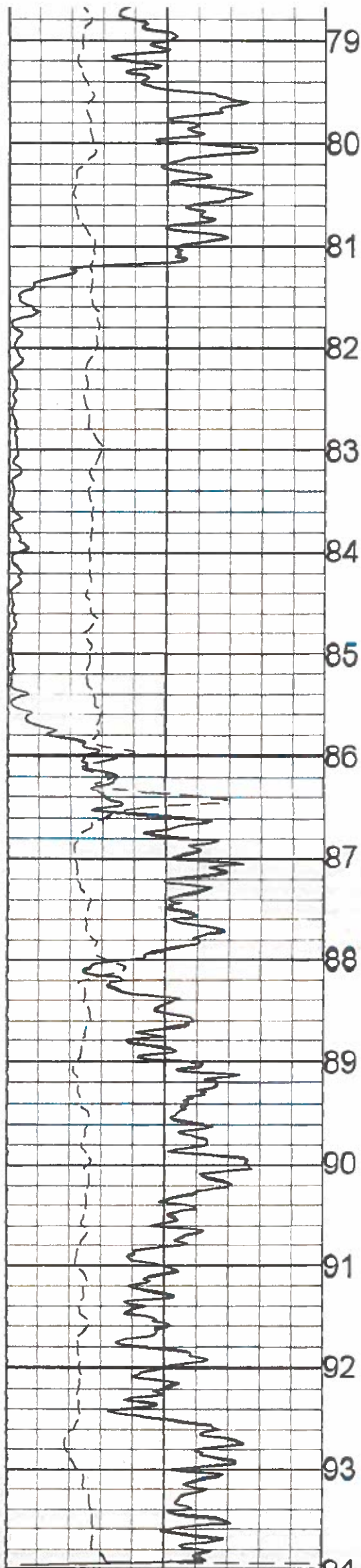
ELECT. CUTOFF : 90000

BIT SIZE : 11.43

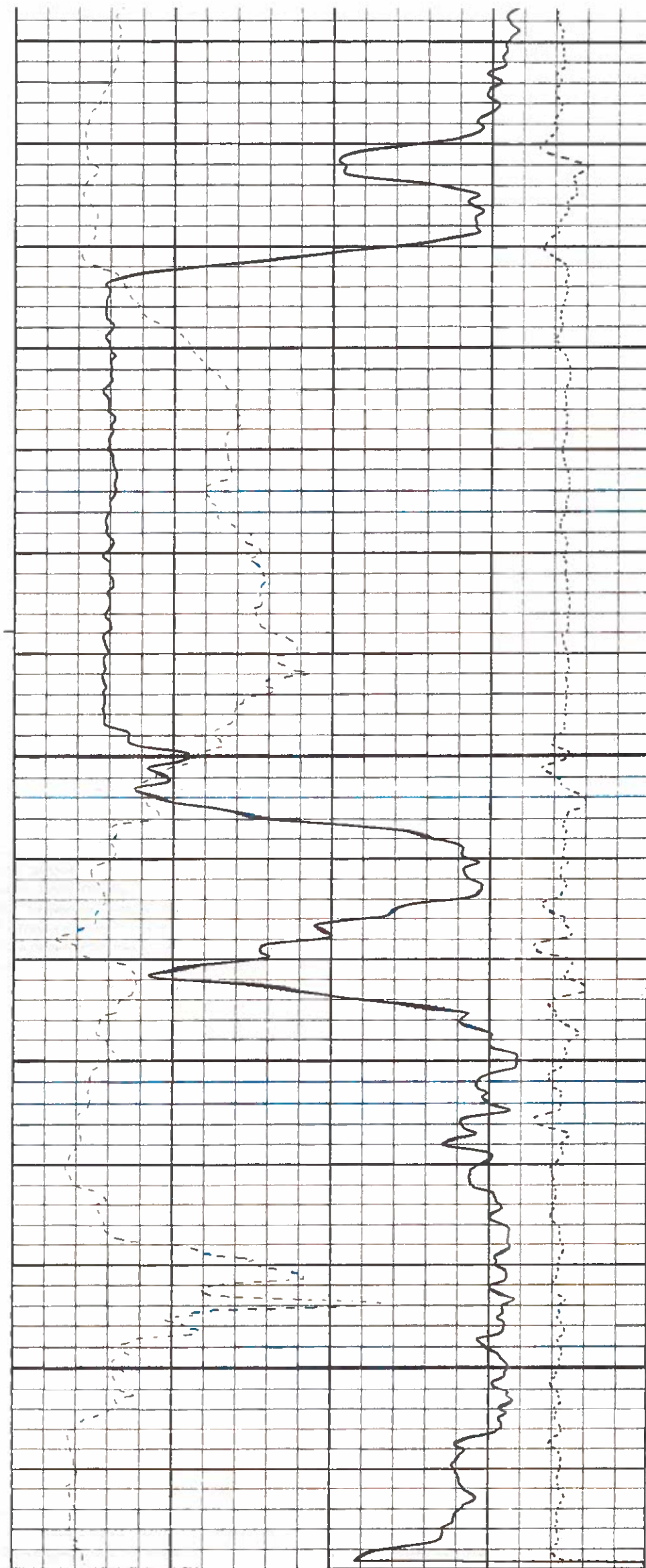
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010

VERSION = 3.64E





0	API GR	250
GAMMA		
250	API-GR	500
GAMMA		
0	CM	19



0	OHM M	1000
RES(SG)		
1	G/CC	3
DEN(CDL)		
		-0.25 G/CC 0.25

SPEED->

GAMMA		SPEED->	RES(SG)	
250	API-GR 500		1	G/CC 3
GAMMA			DEN(CDL)	
9	CM 19	METERS	-0.25 G/CC 0.25	
CALIPER			COMP	

1:50 BULK DENSITY EXPANDED BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-16 10/11/10 10:50
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	93609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29566.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	6024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

GAMMA - NEUTRON

BR 10-16

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	
WELL	BR10-16	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LSD	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
ORL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	10/11/10	RIG NUMBER	
DEPTH DRILLER	129.54	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	1.67	DEPARTURE TIME	
LOG BOTTOM	125.41	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	65 DEGREE		
REMARKS 2			

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

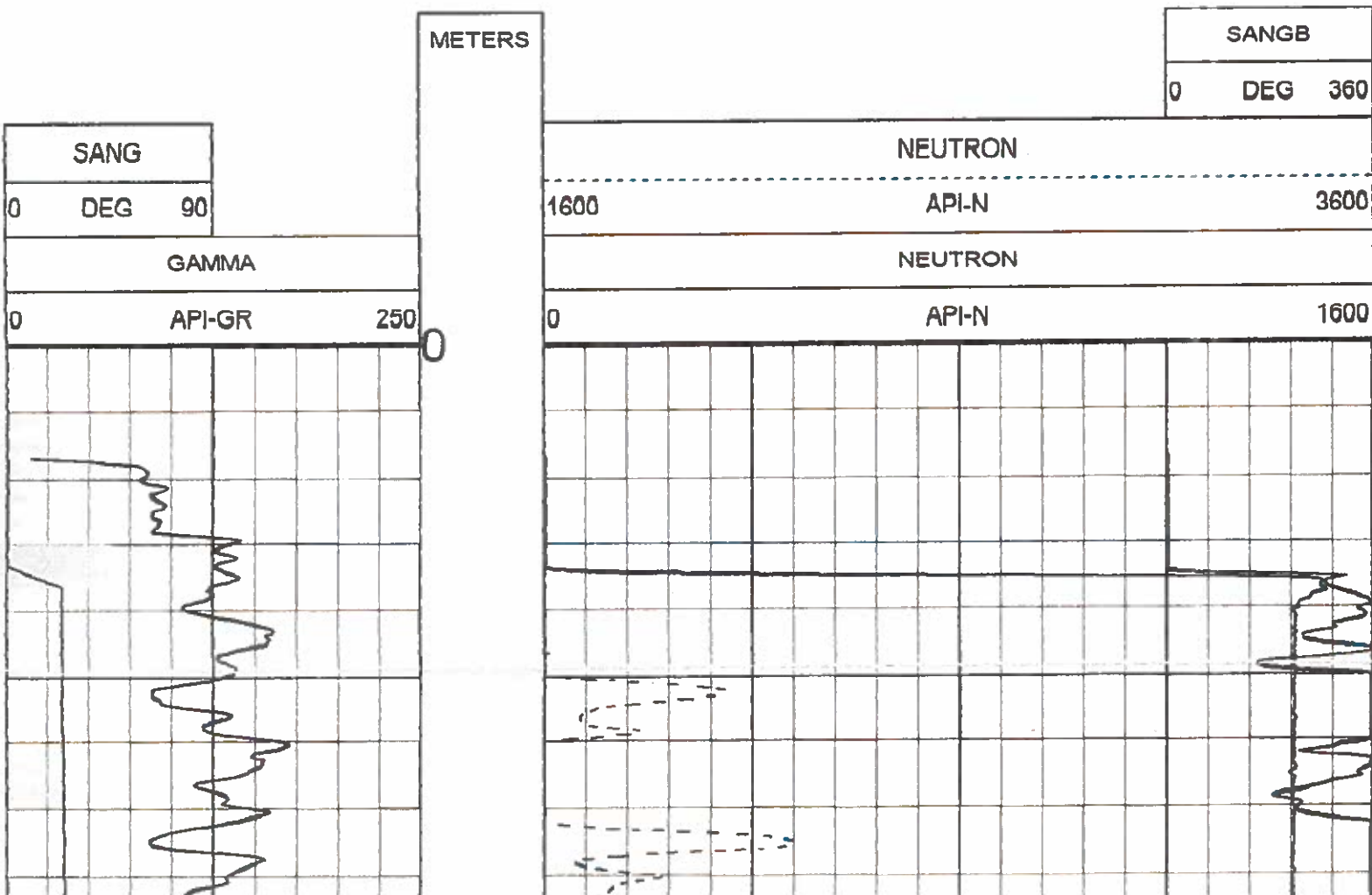
MAGNETIC DECL : 21.0

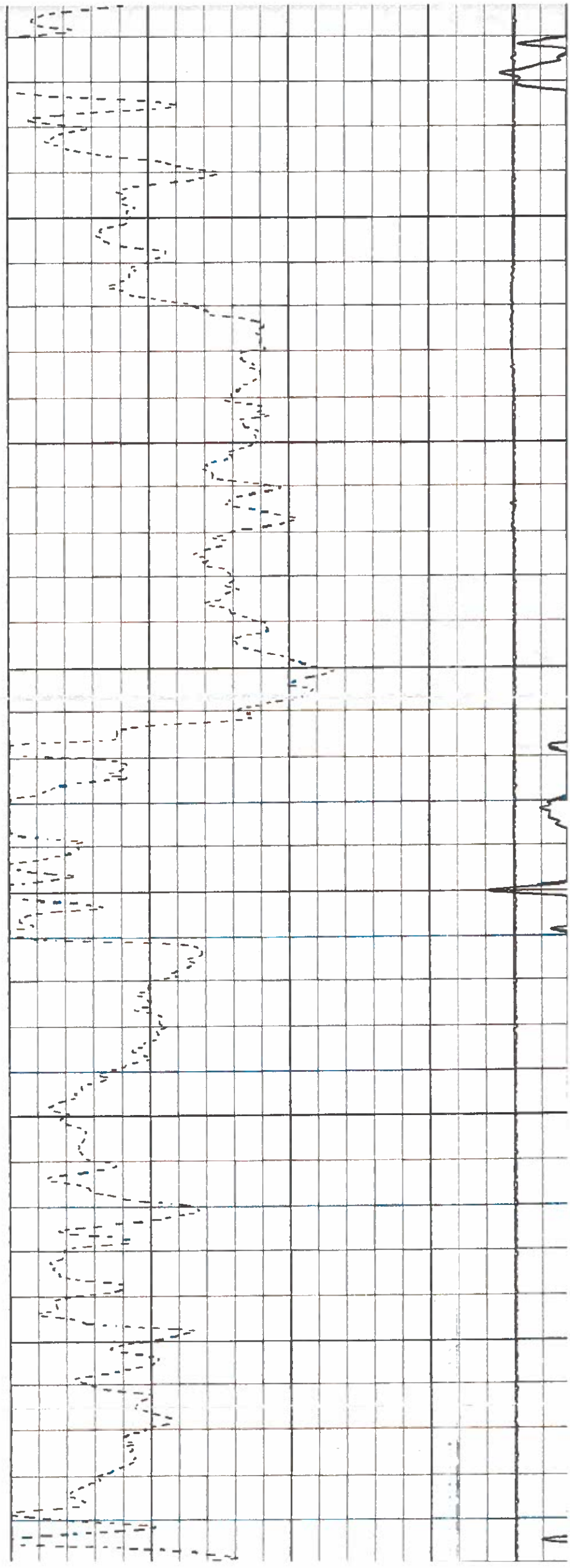
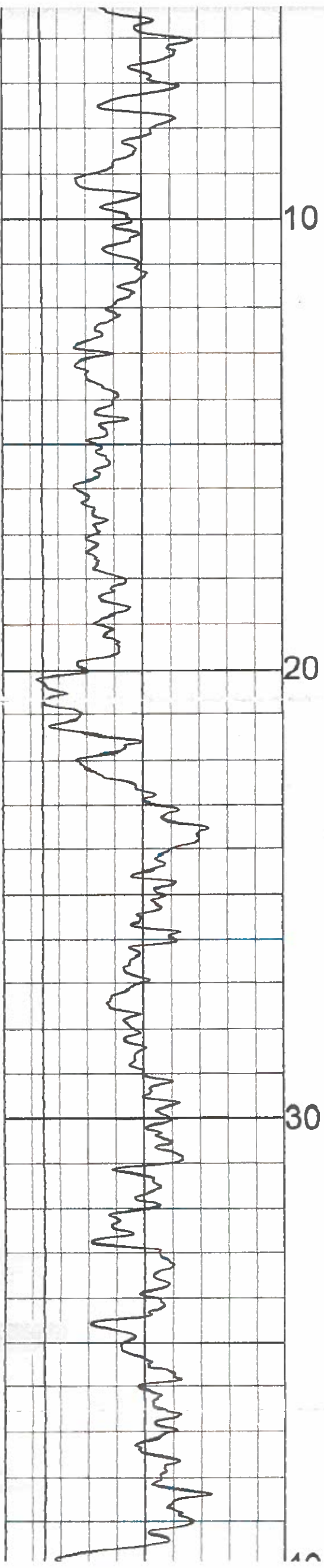
ELECT. CUTOFF : 90000

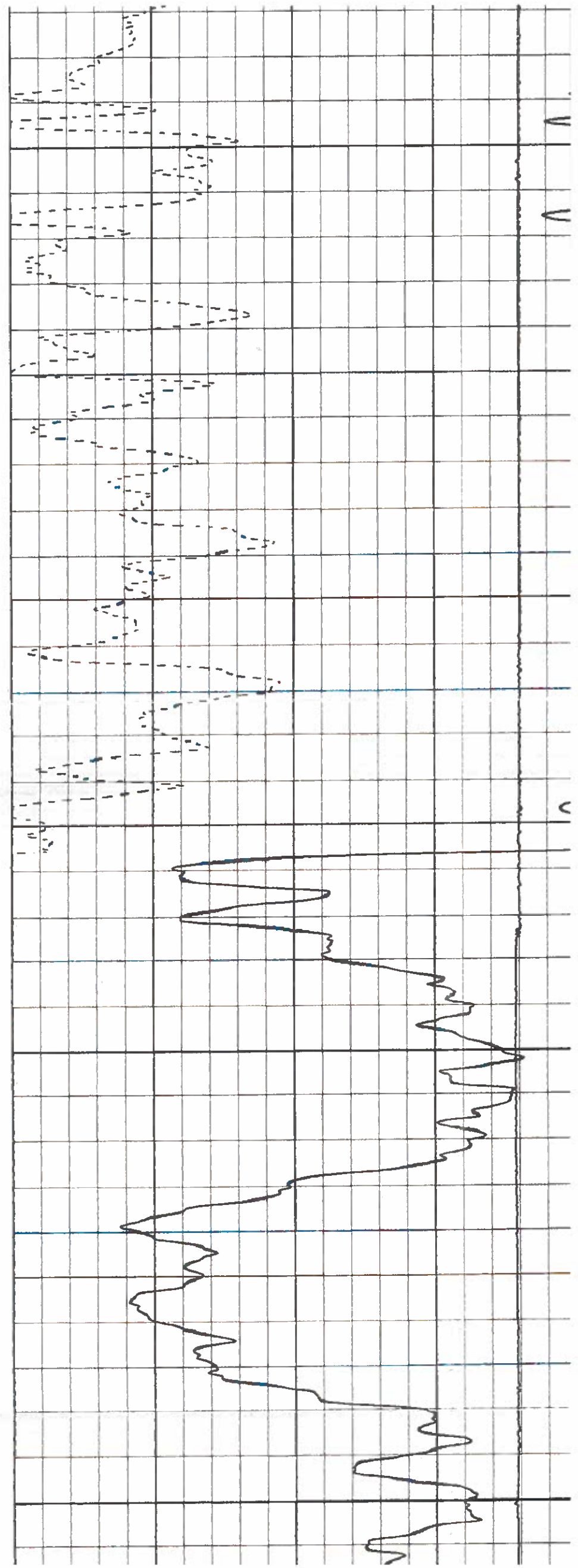
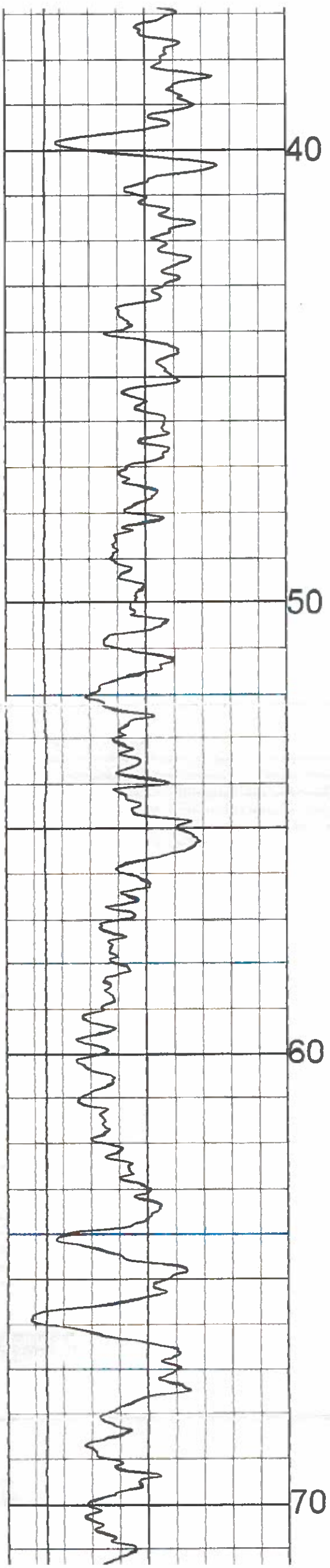
BIT SIZE : 11.43

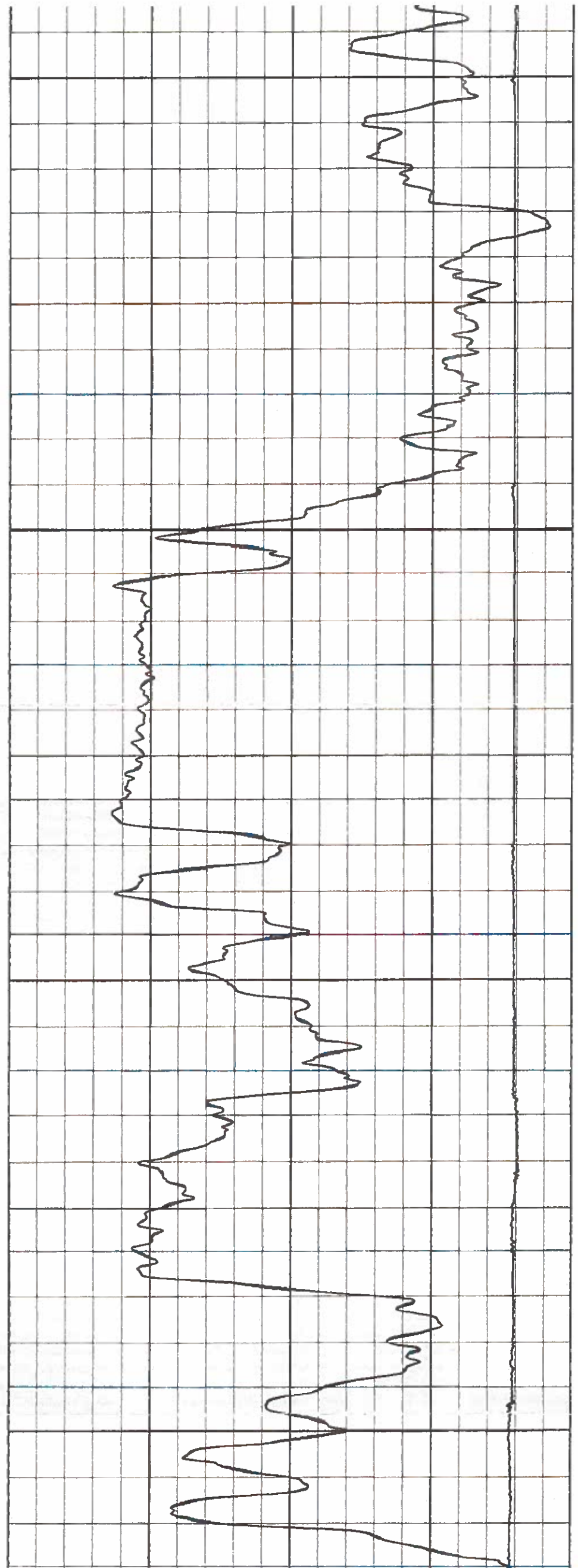
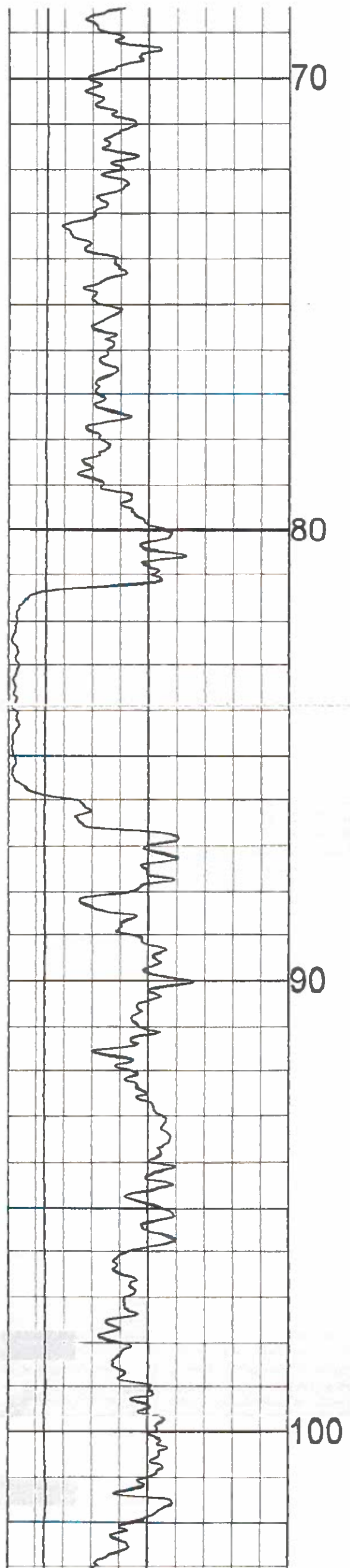
PRESENTATION NAME/DATE = 9057 NEUTRON 0 10/07/2010

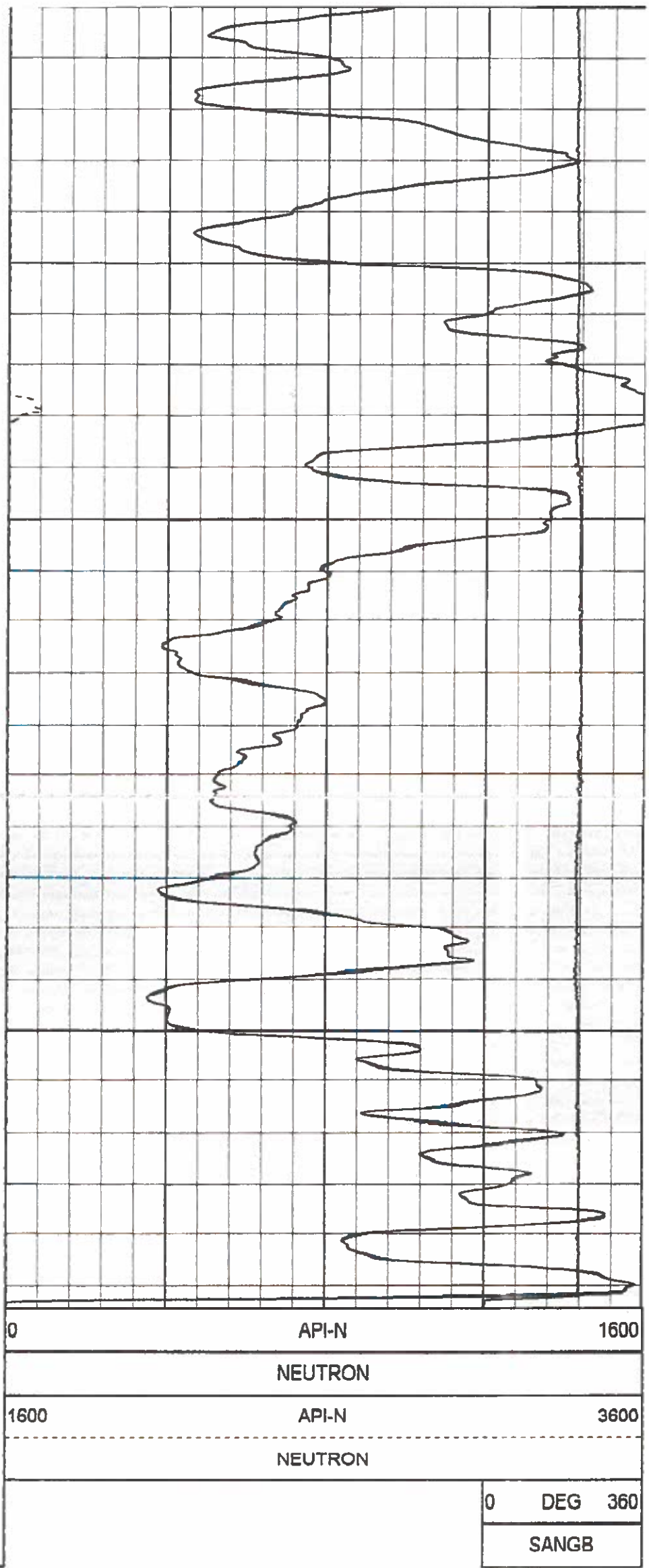
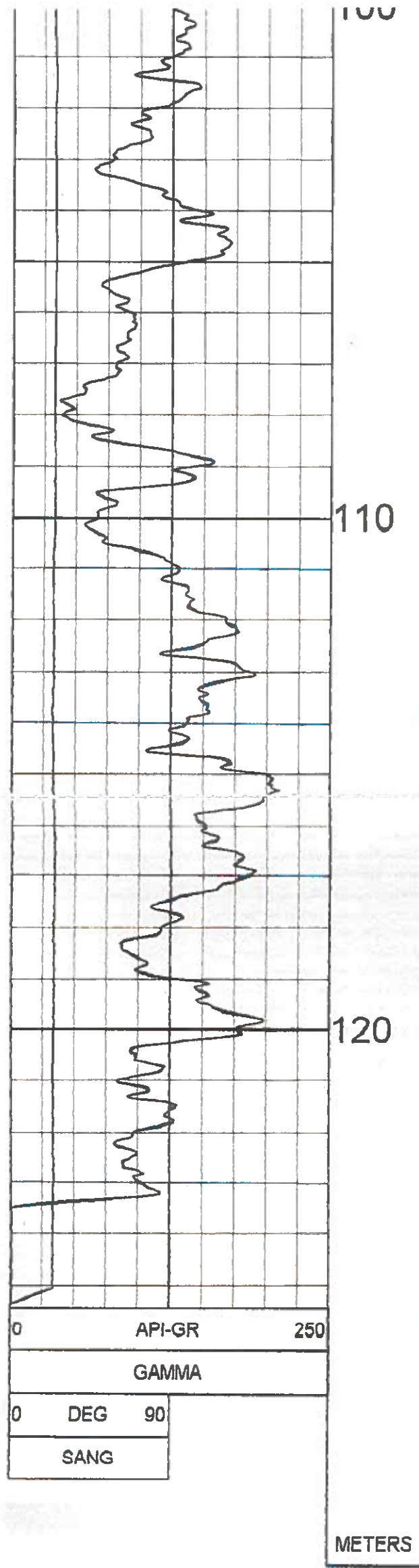
VERSION = 3.64IE











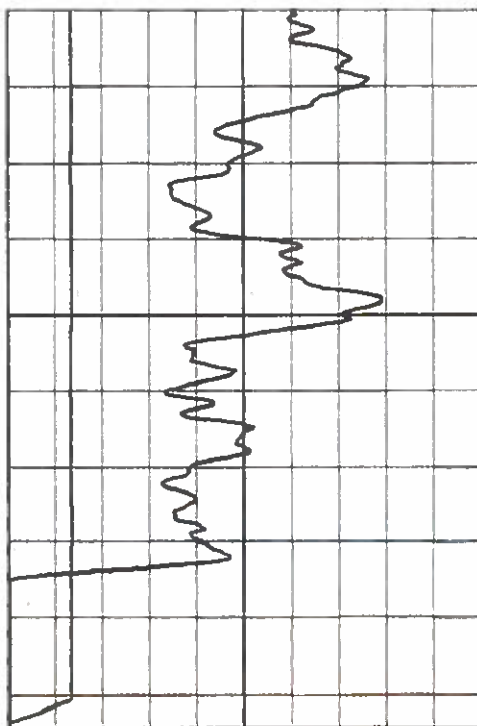
1:100 NEUTRON BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177



0 API-GR 250

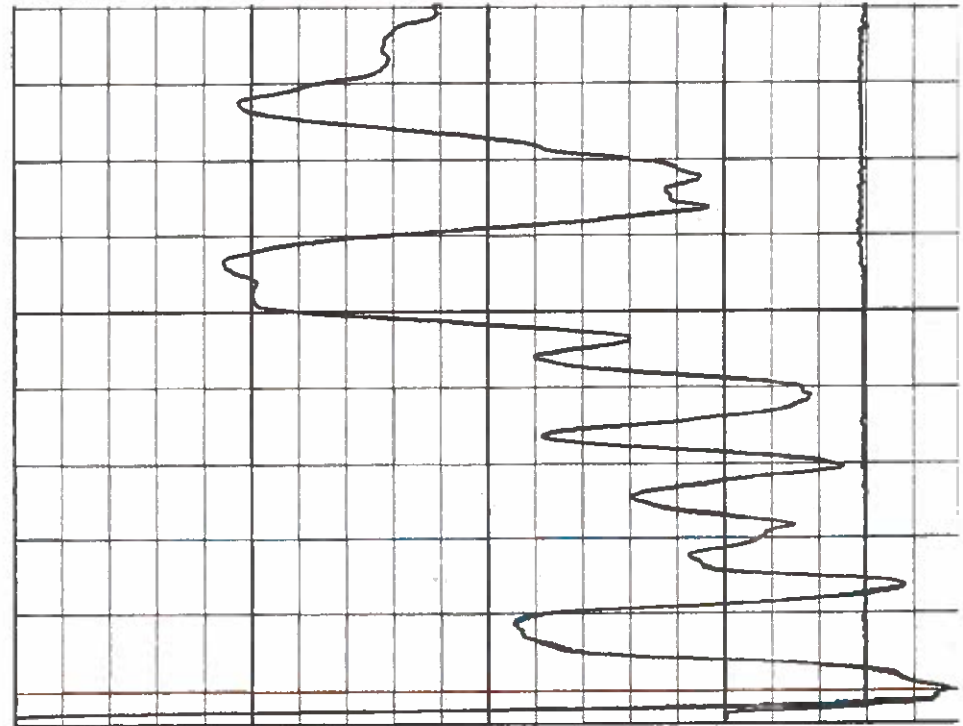
GAMMA

0 DEG 90

SANG

120

METERS



0 API-N 1600

NEUTRON

1600 API-N 3600

NEUTRON

0 DEG 360

SANGB

1:100 NEUTRON BR10-16 10/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT CUTOFF : 90000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010

VERSION = 3.64IE

TOOL CALIBRATION BR10-16 10/11/10 10:23

TOOL 9057A TM VERSION 2

SERIAL NUMBER 4429

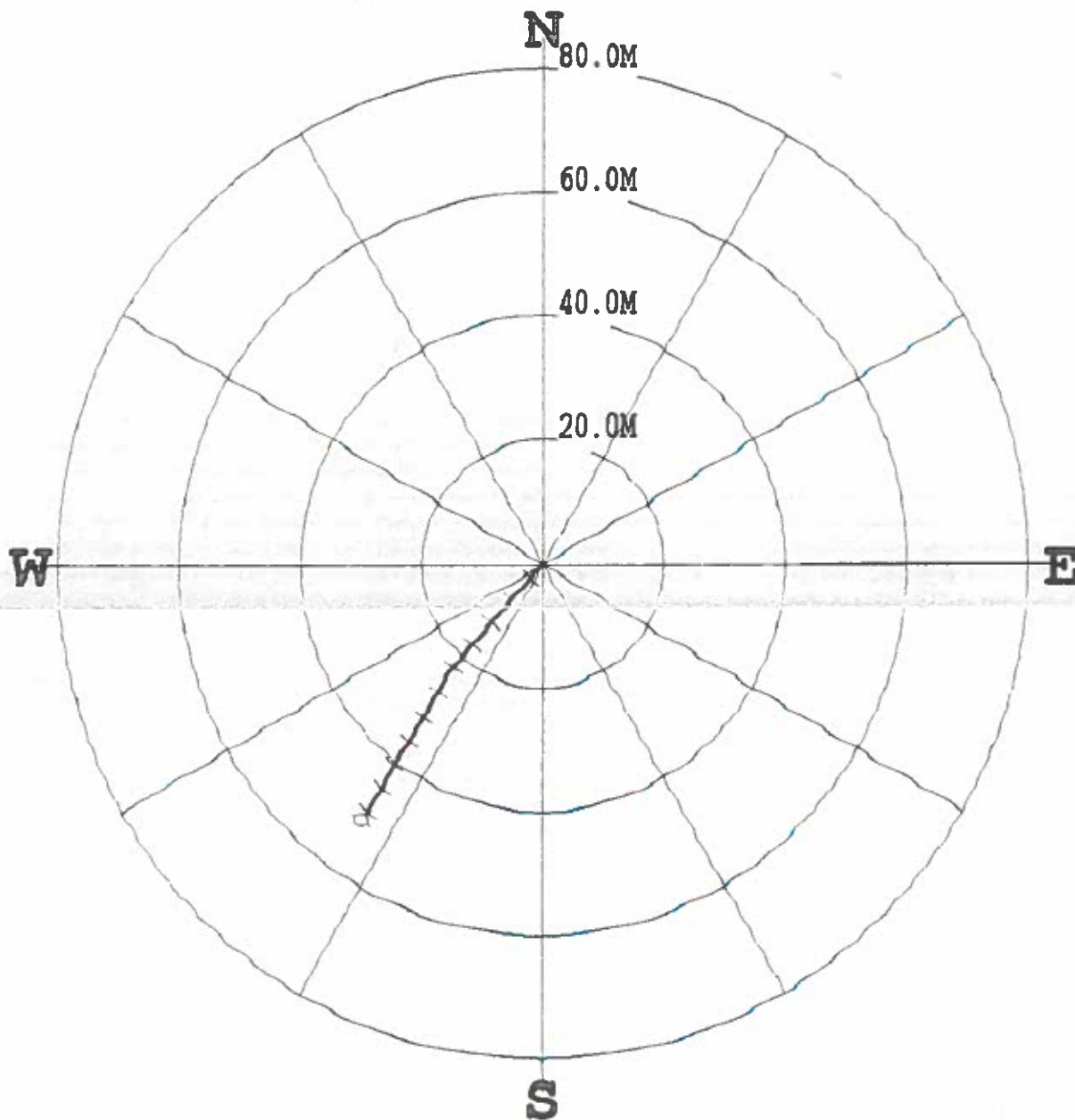
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-16
 DATE OF LOG: 10/11/10
 PROBE: 9057A 4429



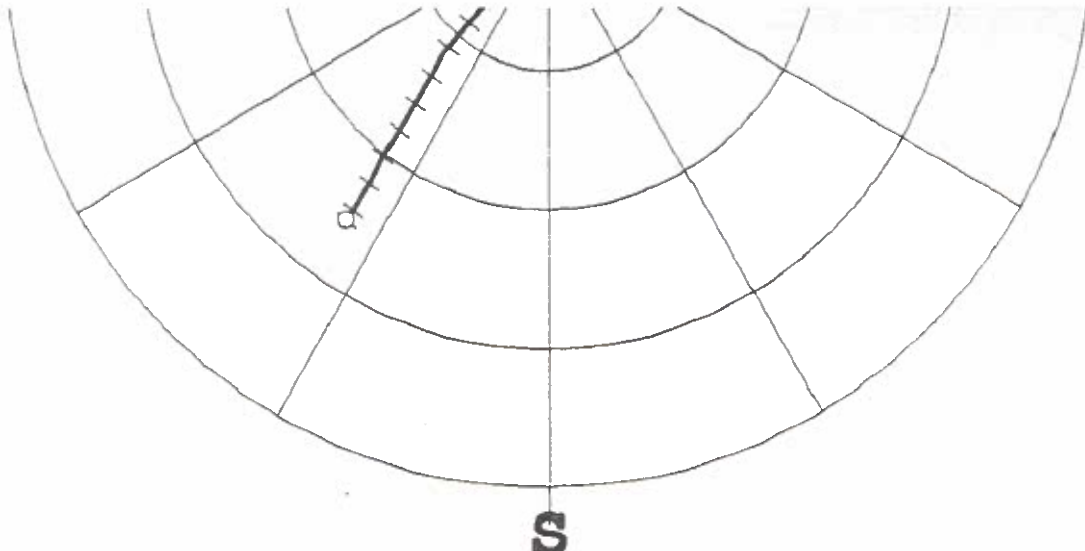
SCALE: 10 M/CM
 TRUE DEPTH: 113.88 M
 AZIMUTH: 215.9
 DISTANCE: 50.9 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-16
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/11/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-16_10-11-10_10-23_9057A_.02_1.67_125.41_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.94	-0.01	-0.19	0.2	266.0	24.6	216.8
5.00	4.85	-0.31	-0.48	0.6	237.6	24.8	229.3
6.00	5.76	-0.61	-0.77	1.0	231.6	24.9	216.7
7.00	6.66	-0.92	-1.05	1.4	228.8	25.2	217.1
8.00	7.57	-1.24	-1.35	1.8	227.4	25.5	214.7
9.00	8.47	-1.56	-1.63	2.3	226.4	25.6	222.8
10.00	9.37	-1.88	-1.92	2.7	225.7	25.7	224.6
11.00	10.27	-2.20	-2.22	3.1	225.2	25.5	215.4
12.00	11.17	-2.54	-2.48	3.6	224.3	26.5	221.8
13.00	12.07	-2.89	-2.74	4.0	223.4	26.7	216.4
14.00	12.97	-3.23	-3.02	4.4	223.0	26.0	220.5
15.00	13.87	-3.56	-3.31	4.9	222.9	25.9	222.8
16.00	14.77	-3.88	-3.60	5.3	222.9	25.6	225.3
17.00	15.67	-4.21	-3.88	5.7	222.7	25.6	210.4
18.00	16.57	-4.54	-4.17	6.2	222.6	26.5	220.0
19.00	17.46	-4.87	-4.47	6.6	222.6	26.3	217.6




***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-16
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/11/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-16_10-11-10_10-23_9057A_.02_1.67_125.41_DEVT.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZMUTH	SANG	SANGB
4.00	3.94	-0.01	-0.19	0.2	266.0	24.6	216.8
5.00	4.85	-0.31	-0.48	0.6	237.6	24.8	229.3
6.00	5.76	-0.61	-0.77	1.0	231.6	24.9	216.7
7.00	6.66	-0.92	-1.05	1.4	228.8	25.2	217.1
8.00	7.57	-1.24	-1.35	1.8	227.4	25.5	214.7
9.00	8.47	-1.56	-1.63	2.3	226.4	25.6	222.8
10.00	9.37	-1.88	-1.92	2.7	225.7	25.7	224.6
11.00	10.27	-2.20	-2.22	3.1	225.2	25.5	215.4
12.00	11.17	-2.54	-2.48	3.6	224.3	26.5	221.8
13.00	12.07	-2.89	-2.74	4.0	223.4	26.7	216.4
14.00	12.97	-3.23	-3.02	4.4	223.0	26.0	220.5
15.00	13.87	-3.56	-3.31	4.9	222.9	25.9	222.8
16.00	14.77	-3.88	-3.60	5.3	222.9	25.6	225.3
17.00	15.67	-4.21	-3.88	5.7	222.7	25.6	210.4
18.00	16.57	-4.54	-4.17	6.2	222.6	26.5	220.0
19.00	17.46	-4.87	-4.47	6.6	222.6	26.3	217.6
20.00	18.36	-5.19	-4.77	7.0	222.6	25.8	228.2
21.00	19.26	-5.51	-5.06	7.5	222.6	26.0	221.5
22.00	20.16	-5.83	-5.36	7.9	222.6	25.7	226.5
23.00	21.06	-6.15	-5.65	8.4	222.6	25.8	224.9
24.00	21.96	-6.48	-5.94	8.8	222.5	26.0	219.4
25.00	22.86	-6.81	-6.23	9.2	222.5	25.9	223.5
26.00	23.76	-7.13	-6.52	9.7	222.4	25.8	221.1
27.00	24.66	-7.45	-6.81	10.1	222.5	25.5	222.0
28.00	25.56	-7.77	-7.10	10.5	222.4	25.6	220.2
29.00	26.46	-8.09	-7.39	11.0	222.4	25.6	223.1
30.00	27.36	-8.41	-7.68	11.4	222.4	25.5	217.0
31.00	28.27	-8.73	-7.97	11.8	222.4	25.8	220.7
32.00	29.17	-9.06	-8.26	12.3	222.4	25.7	223.9
33.00	30.07	-9.38	-8.55	12.7	222.4	25.8	224.8
34.00	30.97	-9.70	-8.84	13.1	222.4	25.5	222.7
35.00	31.87	-10.03	-9.13	13.6	222.3	26.0	219.3
36.00	32.77	-10.35	-9.42	14.0	222.3	25.8	216.0
37.00	33.66	-10.68	-9.71	14.4	222.3	26.2	231.9
38.00	34.56	-11.01	-10.01	14.9	222.3	26.3	220.1
39.00	35.46	-11.34	-10.30	15.3	222.3	26.0	222.4
40.00	36.36	-11.66	-10.59	15.8	222.2	25.8	221.6
41.00	37.26	-11.99	-10.87	16.2	222.2	25.3	223.8
42.00	38.16	-12.31	-11.16	16.6	222.2	25.4	223.6
43.00	39.07	-12.63	-11.44	17.0	222.2	25.4	221.4
44.00	39.97	-12.95	-11.73	17.5	222.2	25.6	221.4
45.00	40.87	-13.27	-12.01	17.9	222.1	25.6	221.4
46.00	41.77	-13.60	-12.29	18.3	222.1	25.3	222.6
47.00	42.68	-13.92	-12.58	18.8	222.1	25.0	228.9
48.00	43.58	-14.25	-12.85	19.2	222.1	25.4	218.5
49.00	44.49	-14.57	-13.13	19.6	222.0	25.0	216.6
50.00	45.39	-14.89	-13.40	20.0	222.0	24.8	226.2
51.00	46.30	-15.20	-13.68	20.4	222.0	24.5	220.2
52.00	47.21	-15.52	-13.95	20.9	221.9	25.1	216.4
53.00	48.11	-15.85	-14.22	21.3	221.9	25.6	220.8
54.00	49.01	-16.18	-14.50	21.7	221.9	25.7	221.0
55.00	49.92	-16.51	-14.77	22.2	221.8	25.1	220.9
56.00	50.82	-16.84	-15.04	22.6	221.8	25.5	219.9
57.00	51.73	-17.17	-15.31	23.0	221.7	25.6	223.5
58.00	52.63	-17.53	-15.55	23.4	221.6	25.8	209.7
59.00	53.53	-17.90	-15.77	23.9	221.4	25.7	209.5
60.00	54.43	-18.28	-15.98	24.3	221.2	25.6	207.1
61.00	55.33	-18.66	-16.18	24.7	220.9	25.6	209.4
62.00	56.23	-19.03	-16.39	25.1	220.7	25.3	208.6
63.00	57.14	-19.41	-16.59	25.5	220.5	25.3	207.7

12.00	11.17	-2.54	-2.48	3.6	224.3	26.5	221.8
13.00	12.07	-2.89	-2.74	4.0	223.4	26.7	221.4
14.00	12.97	-3.23	-3.02	4.4	223.0	26.0	220.5
15.00	13.87	-3.56	-3.31	4.9	222.9	25.9	222.8
16.00	14.77	-3.88	-3.60	5.3	222.9	25.6	225.3
17.00	15.67	-4.21	-3.88	5.7	222.7	25.6	210.4
18.00	16.57	-4.54	-4.17	6.2	222.6	26.5	220.0
19.00	17.46	-4.87	-4.47	6.6	222.6	26.3	217.6
20.00	18.36	-5.19	-4.77	7.0	222.6	25.8	228.2
21.00	19.26	-5.51	-5.06	7.5	222.6	26.0	221.5
22.00	20.16	-5.83	-5.36	7.9	222.6	25.7	226.5
23.00	21.06	-6.15	-5.65	8.4	222.6	25.8	224.9
24.00	21.96	-6.48	-5.94	8.8	222.5	26.0	219.4
25.00	22.86	-6.81	-6.23	9.2	222.5	25.9	223.5
26.00	23.76	-7.13	-6.52	9.7	222.4	25.8	221.1
27.00	24.66	-7.45	-6.81	10.1	222.5	25.5	222.0
28.00	25.56	-7.77	-7.10	10.5	222.4	25.6	220.2
29.00	26.46	-8.09	-7.39	11.0	222.4	25.6	223.1
30.00	27.36	-8.41	-7.68	11.4	222.4	25.5	217.0
31.00	28.27	-8.73	-7.97	11.8	222.4	25.8	220.7
32.00	29.17	-9.06	-8.26	12.3	222.4	25.7	223.9
33.00	30.07	-9.38	-8.55	12.7	222.4	25.8	224.8
34.00	30.97	-9.70	-8.84	13.1	222.4	25.5	222.7
35.00	31.87	-10.03	-9.13	13.6	222.3	26.0	219.3
36.00	32.77	-10.35	-9.42	14.0	222.3	25.8	216.0
37.00	33.66	-10.68	-9.71	14.4	222.3	26.2	231.9
38.00	34.56	-11.01	-10.01	14.9	222.3	26.3	220.1
39.00	35.46	-11.34	-10.30	15.3	222.3	26.0	222.4
40.00	36.36	-11.66	-10.59	15.8	222.2	25.8	221.6
41.00	37.26	-11.99	-10.87	16.2	222.2	25.3	223.8
42.00	38.16	-12.31	-11.16	16.6	222.2	25.4	223.6
43.00	39.07	-12.63	-11.44	17.0	222.2	25.4	221.4
44.00	39.97	-12.95	-11.73	17.5	222.2	25.6	221.4
45.00	40.87	-13.27	-12.01	17.9	222.1	25.6	221.4
46.00	41.77	-13.60	-12.29	18.3	222.1	25.3	222.6
47.00	42.68	-13.92	-12.58	18.8	222.1	25.0	228.9
48.00	43.58	-14.25	-12.85	19.2	222.1	25.1	218.5
49.00	44.49	-14.57	-13.13	19.6	222.0	25.0	216.6
50.00	45.39	-14.89	-13.40	20.0	222.0	24.8	226.2
51.00	46.30	-15.20	-13.68	20.4	222.0	24.5	220.2
52.00	47.21	-15.52	-13.95	20.9	221.9	25.1	216.4
53.00	48.11	-15.85	-14.22	21.3	221.9	25.6	220.8
54.00	49.01	-16.18	-14.50	21.7	221.9	25.7	221.8
55.00	49.92	-16.51	-14.77	22.2	221.8	25.1	220.9
56.00	50.82	-16.84	-15.04	22.6	221.8	25.5	219.9
57.00	51.73	-17.17	-15.31	23.0	221.7	25.6	223.5
58.00	52.63	-17.53	-15.55	23.4	221.6	25.8	209.7
59.00	53.53	-17.90	-15.77	23.9	221.4	25.7	209.5
60.00	54.43	-18.28	-15.98	24.3	221.2	25.6	207.1
61.00	55.33	-18.66	-16.18	24.7	220.9	25.6	209.4
62.00	56.23	-19.03	-16.39	25.1	220.7	25.3	208.6
63.00	57.14	-19.41	-16.59	25.5	220.5	25.3	207.7
64.00	58.04	-19.78	-16.80	26.0	220.3	25.4	209.3
65.00	58.95	-20.15	-17.02	26.4	220.2	25.2	210.4
66.00	59.85	-20.52	-17.23	26.8	220.0	25.0	208.8
67.00	60.76	-20.88	-17.45	27.2	219.9	25.2	211.0
68.00	61.66	-21.25	-17.67	27.6	219.8	25.2	209.0
69.00	62.57	-21.61	-17.90	28.1	219.6	25.3	211.4
70.00	63.47	-21.98	-18.11	28.5	219.5	25.4	201.9
71.00	64.38	-22.35	-18.32	28.9	219.3	25.4	211.2
72.00	65.28	-22.71	-18.54	29.3	219.2	25.1	210.8
73.00	66.19	-23.07	-18.76	29.7	219.1	24.9	211.3
74.00	67.09	-23.43	-18.98	30.2	219.0	25.0	211.7
75.00	68.00	-23.79	-19.19	30.6	218.9	24.6	211.2
76.00	68.91	-24.15	-19.41	31.0	218.8	24.7	210.7
77.00	69.82	-24.51	-19.62	31.4	218.7	24.4	211.1
78.00	70.73	-24.86	-19.84	31.8	218.6	24.3	211.2
79.00	71.64	-25.22	-20.05	32.2	218.5	24.6	215.2
80.00	72.55	-25.58	-20.26	32.6	218.4	24.9	211.6
81.00	73.46	-25.93	-20.48	33.0	218.3	24.4	211.6
82.00	74.37	-26.28	-20.69	33.5	218.2	24.5	211.6
83.00	75.28	-26.64	-20.91	33.9	218.1	24.3	212.1
84.00	76.19	-26.98	-21.13	34.3	218.1	24.1	213.4
85.00	77.11	-27.33	-21.34	34.7	218.0	23.9	211.1
86.00	78.02	-27.67	-21.55	35.1	217.9	23.8	210.8
87.00	78.94	-28.01	-21.76	35.5	217.9	22.9	211.0
88.00	79.85	-28.36	-21.97	35.9	217.8	24.0	212.0
89.00	80.77	-28.70	-22.18	36.3	217.7	23.7	211.6
90.00	81.68	-29.04	-22.39	36.7	217.6	23.4	212.4
91.00	82.60	-29.38	-22.60	37.1	217.6	23.5	213.8
92.00	83.52	-29.71	-22.81	37.5	217.5	23.3	213.2
93.00	84.44	-30.03	-23.04	37.9	217.5	23.3	215.1
94.00	85.36	-30.33	-23.30	38.2	217.5	23.6	220.6
95.00	86.27	-30.65	-23.54	38.6	217.5	24.0	198.2
96.00	87.19	-31.00	-23.74	39.0	217.5	23.6	202.4
97.00	88.10	-31.34	-23.96	39.5	217.4	23.9	211.2
98.00	89.01	-31.68	-24.18	39.9	217.4	23.7	211.6
99.00	89.93	-32.03	-24.38	40.3	217.3	24.2	209.1
100.00	90.84	-32.39	-24.56	40.6	217.2	23.9	203.3
101.00	91.76	-32.76	-24.72	41.0	217.0	24.2	208.0
102.00	92.67	-33.13	-24.90	41.4	216.9	23.9	199.8
103.00	93.58	-33.50	-25.07	41.8	216.8	24.1	202.5
104.00	94.49	-33.87	-25.25	42.2	216.7	24.3	205.7
105.00	95.40	-34.23	-25.44	42.6	216.6	24.5	209.6
106.00	96.31	-34.59	-25.63	43.1	216.5	24.1	205.4
107.00	97.23	-34.96	-25.81	43.5	216.4	23.7	202.4

56.00	50.82	-16.84	-15.04	22.6	221.8	25.5	219.9
57.00	51.73	-17.17	-15.31	23.0	221.7	25.6	223.5
58.00	52.63	-17.53	-15.55	23.4	221.6	25.8	209.7
59.00	53.53	-17.90	-15.77	23.9	221.4	25.7	209.5
60.00	54.43	-18.28	-15.98	24.3	221.2	25.6	207.1
61.00	55.33	-18.66	-16.18	24.7	220.9	25.6	209.4
62.00	56.23	-19.03	-16.39	25.1	220.7	25.3	208.6
63.00	57.14	-19.41	-16.59	25.5	220.5	25.3	207.7
64.00	58.04	-19.78	-16.80	26.0	220.3	25.4	209.3
65.00	58.95	-20.15	-17.02	26.4	220.2	25.2	210.4
66.00	59.85	-20.52	-17.23	26.8	220.0	25.0	208.8
67.00	60.76	-20.88	-17.45	27.2	219.9	25.2	211.0
68.00	61.66	-21.25	-17.67	27.6	219.8	25.2	209.0
69.00	62.57	-21.61	-17.90	28.1	219.6	25.3	211.4
70.00	63.47	-21.98	-18.11	28.5	219.5	25.4	201.9
71.00	64.38	-22.35	-18.32	28.9	219.3	25.4	211.2
72.00	65.28	-22.71	-18.54	29.3	219.2	25.1	210.8
73.00	66.19	-23.07	-18.76	29.7	219.1	24.9	211.3
74.00	67.09	-23.43	-18.98	30.2	219.0	25.0	211.7
75.00	68.00	-23.79	-19.19	30.6	218.9	24.6	211.2
76.00	68.91	-24.15	-19.41	31.0	218.8	24.7	210.7
77.00	69.82	-24.51	-19.62	31.4	218.7	24.4	211.1
78.00	70.73	-24.86	-19.84	31.8	218.6	24.3	211.2
79.00	71.64	-25.22	-20.05	32.2	218.5	24.6	215.2
80.00	72.55	-25.58	-20.26	32.6	218.4	24.9	211.6
81.00	73.46	-25.93	-20.48	33.0	218.3	24.4	211.6
82.00	74.37	-26.28	-20.69	33.5	218.2	24.5	211.6
83.00	75.28	-26.64	-20.91	33.9	218.1	24.3	212.1
84.00	76.19	-26.98	-21.13	34.3	218.1	24.1	213.4
85.00	77.11	-27.33	-21.34	34.7	218.0	23.9	211.1
86.00	78.02	-27.67	-21.55	35.1	217.9	23.8	210.8
87.00	78.94	-28.01	-21.76	35.5	217.9	22.9	211.0
88.00	79.85	-28.36	-21.97	35.9	217.8	24.0	212.0
89.00	80.77	-28.70	-22.18	36.3	217.7	23.7	211.6
90.00	81.68	-29.04	-22.39	36.7	217.6	23.4	212.4
91.00	82.60	-29.38	-22.60	37.1	217.6	23.5	213.8
92.00	83.52	-29.71	-22.81	37.5	217.5	23.3	213.2
93.00	84.44	-30.03	-23.04	37.9	217.5	23.3	215.1
94.00	85.36	-30.33	-23.30	38.2	217.5	23.6	220.6
95.00	86.27	-30.65	-23.54	38.6	217.5	24.0	198.2
96.00	87.19	-31.00	-23.74	39.0	217.5	23.6	202.4
97.00	88.10	-31.34	-23.96	39.5	217.4	23.9	211.2
98.00	89.01	-31.68	-24.18	39.9	217.4	23.7	211.6
99.00	89.93	-32.03	-24.38	40.3	217.3	24.2	209.1
100.00	90.84	-32.39	-24.56	40.6	217.2	23.9	203.3
101.00	91.76	-32.76	-24.72	41.0	217.0	24.2	208.0
102.00	92.67	-33.13	-24.90	41.4	216.9	23.9	199.8
103.00	93.58	-33.50	-25.07	41.8	216.8	24.1	202.5
104.00	94.49	-33.87	-25.25	42.2	216.7	24.3	205.7
105.00	95.40	-34.23	-25.44	42.6	216.6	24.5	209.6
106.00	96.31	-34.59	-25.63	43.1	216.5	24.1	205.4
107.00	97.23	-34.96	-25.81	43.5	216.4	23.7	202.4
108.00	98.14	-35.32	-25.98	43.9	216.3	23.9	207.9
109.00	99.06	-35.69	-26.15	44.2	216.2	21.8	190.1
110.00	99.97	-36.03	-26.38	44.6	216.2	24.3	215.0
111.00	100.88	-36.36	-26.60	45.1	216.2	23.5	212.5
112.00	101.80	-36.69	-26.83	45.5	216.2	23.8	211.0
113.00	102.72	-37.02	-27.06	45.9	216.2	23.8	213.5
114.00	103.63	-37.34	-27.30	46.3	216.2	23.3	215.9
115.00	104.55	-37.68	-27.52	46.7	216.1	23.9	219.1
116.00	105.46	-38.01	-27.75	47.1	216.1	24.3	214.0
117.00	106.37	-38.37	-27.96	47.5	216.1	24.5	208.0
118.00	107.28	-38.72	-28.17	47.9	216.0	23.5	212.0
119.00	108.19	-39.08	-28.37	48.3	216.0	24.9	214.7
120.00	109.10	-39.43	-28.60	48.7	216.0	24.4	214.8
121.00	110.01	-39.77	-28.83	49.1	215.9	23.9	214.8
122.00	110.93	-40.11	-29.05	49.5	215.9	23.5	221.1
123.00	111.84	-40.44	-29.29	49.9	215.9	24.3	216.6
124.00	112.75	-40.78	-29.54	50.3	215.9	24.3	221.3
125.00	113.66	-41.11	-29.77	50.8	215.9	24.3	214.9
125.24	113.88	-41.19	-29.83	50.9	215.9	24.3	216.1

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-35	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,308.24	6,140,381.08	1,264.02

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
340	-57	95.02	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	14.50	14.50		
49.00	50.00	1.00		
76.30	77.20	0.90		

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 1 of 1

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR-10-35

COMPANY: WESTERN COAL CORPORATION

OTHER SERVICES:
NEUTRON

WELL: BR-10-35

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

LOCATION: N/A

OWNERSHIP: N/A

LEASE: N/A

PERMITS: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DATE MEASURED FROM: GL

DATE: 08/11/10

DEPTH DRILLER: 96.0

BIT SIZE: 11.43

LOG TOP: -0.93

LOG BOTTOM: 95.02

LOGGING LOGGER: 15.24

LOGGING DRILLER: 15.24

LOGGING TYPE: STEEL

LOGGING FLUID: WATER

LOG TEMPERATURE: N/A

LOG RES: N/A

LOG WEIGHT: 1.00

LOG BY: G. HOLMLUND

LOG RECORDED BY: T. NEAL

REMARKS 1: VERTICAL

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR10-35 08/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

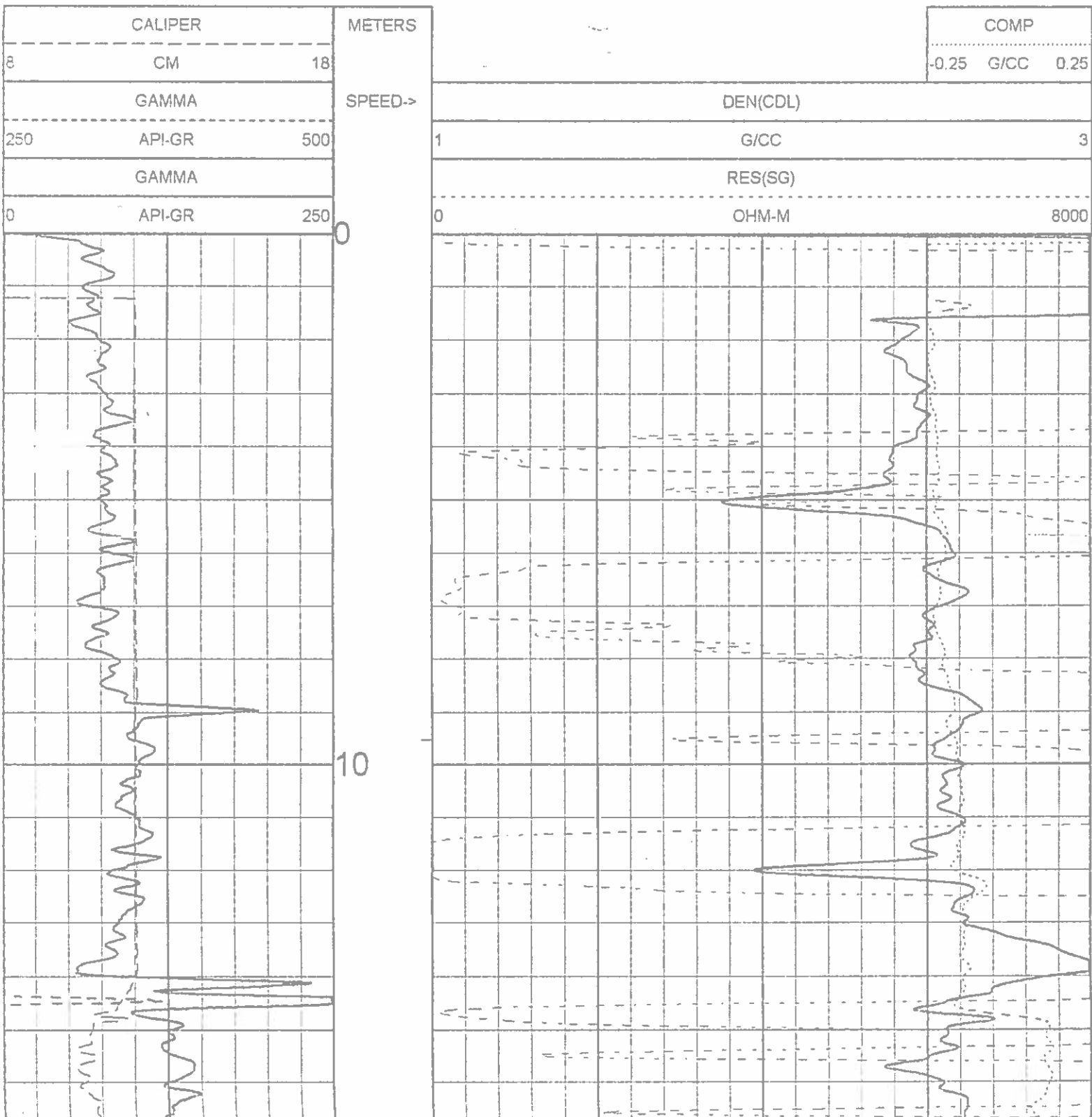
MAGNETIC DECL : 21.0

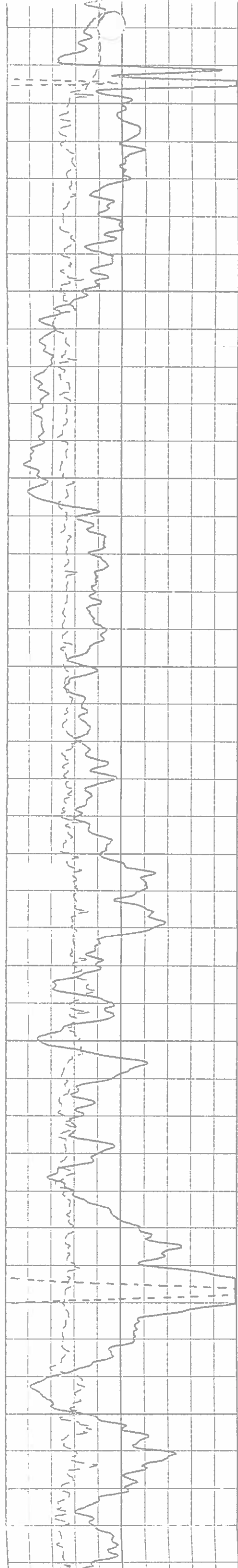
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010

VERSION = 3.64HR



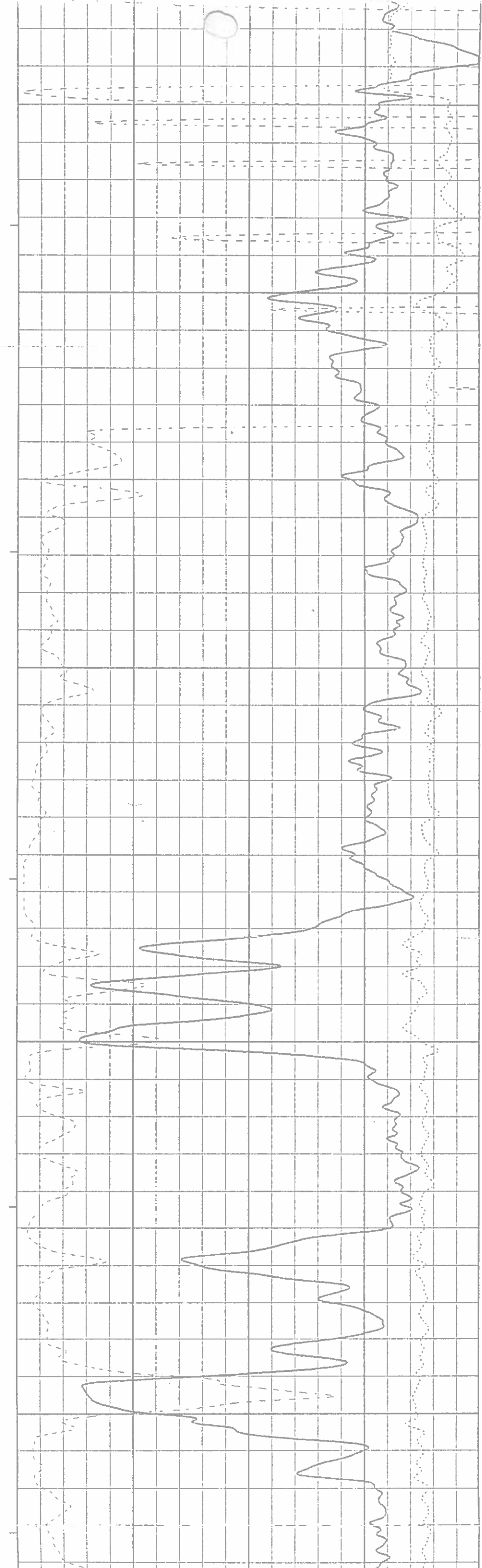


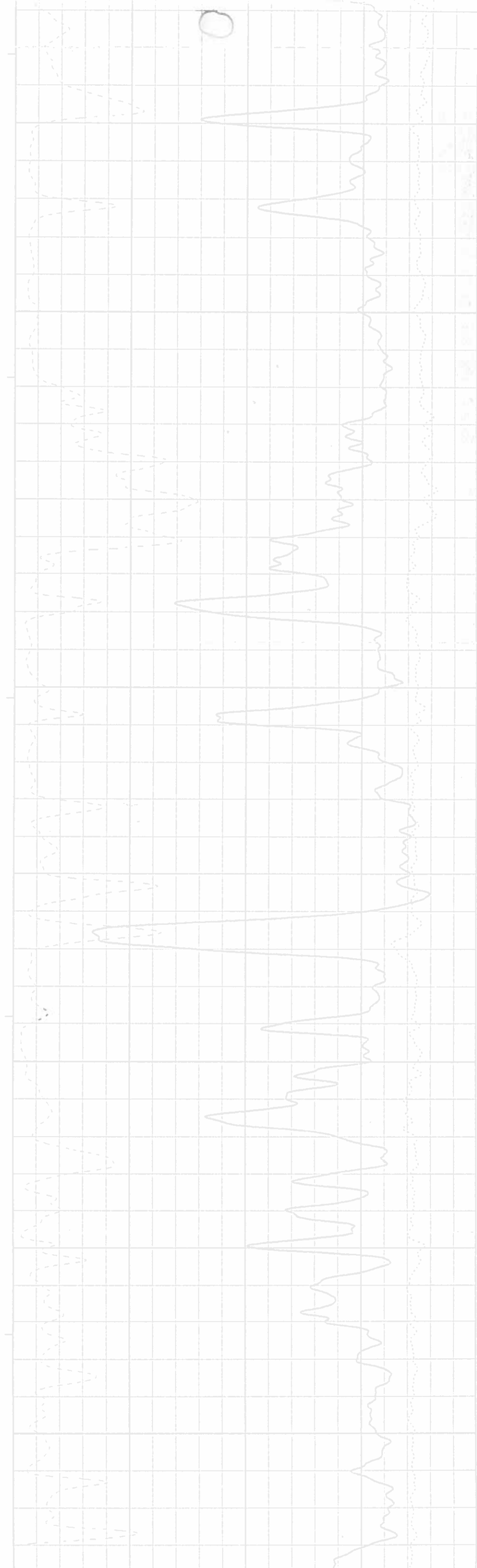
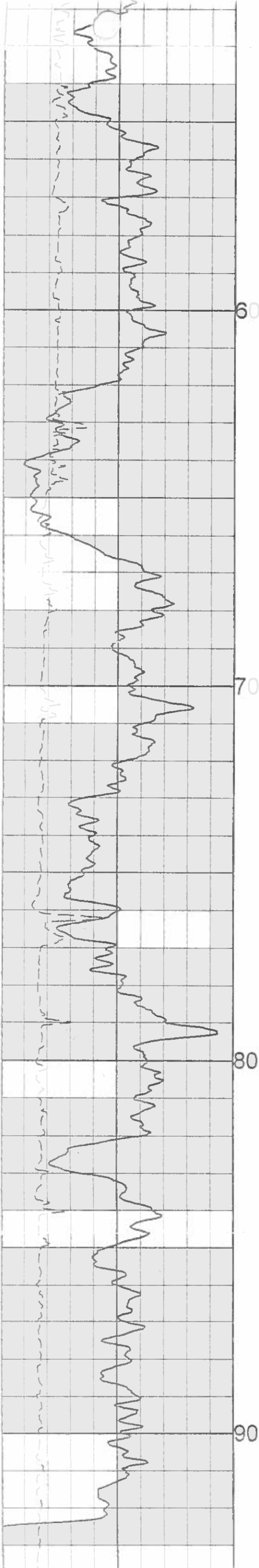
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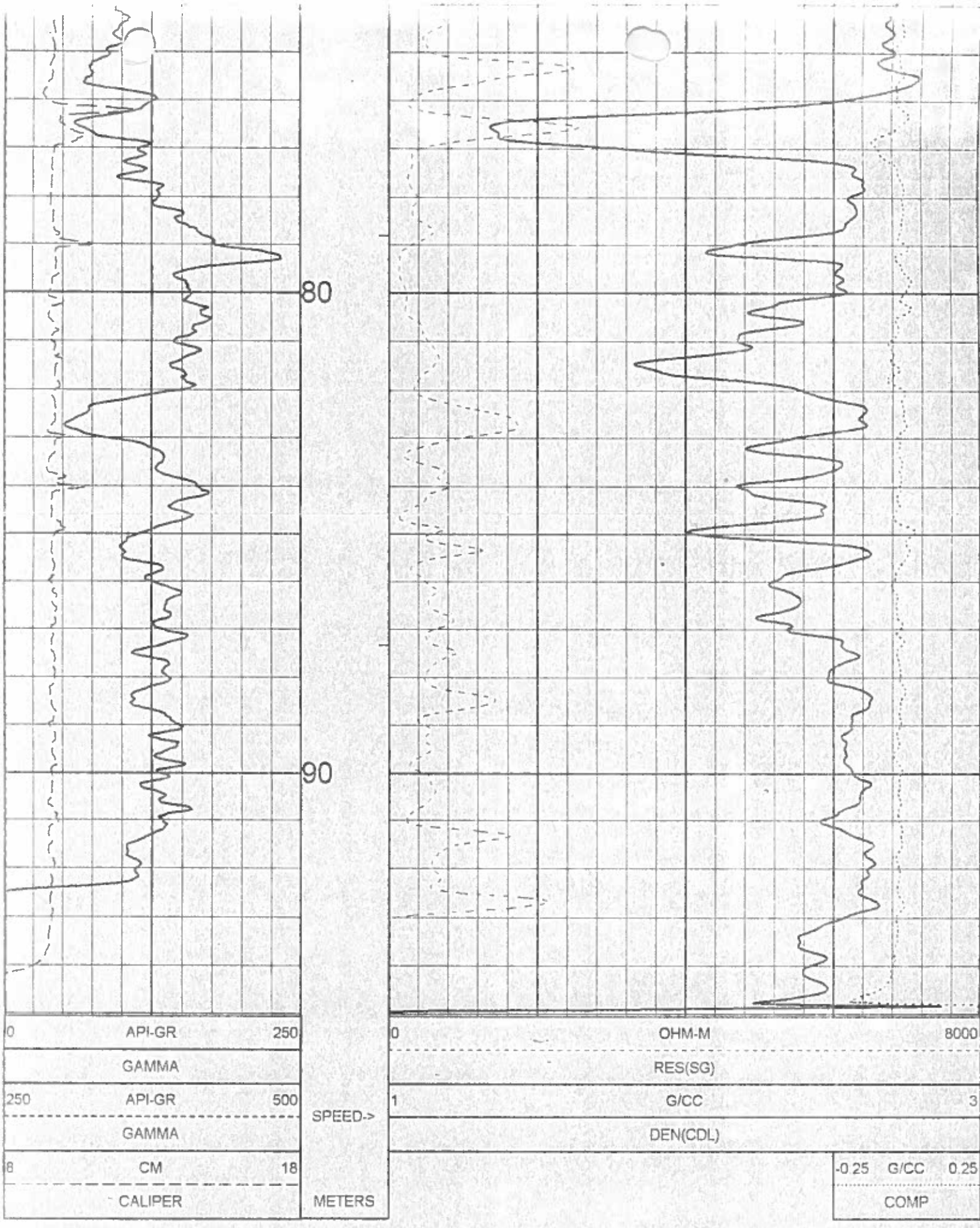
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1:100 BULK DENSITY BR10-35 08/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-35 08/11/10 11:55
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul07,10	09:25:20	GAMMA	0.000 [API-GR]	2.000 [CPS]
	Jul07,10	09:25:20	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Jun11,10	10:37:55	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug11,10	19:57:44	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug11,10	19:58:00	DEN(SS)	1.590 [G/CC]	48236.000 [CPS]
	Aug11,10	19:58:58	DEN(SS)	2.580 [G/CC]	21224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-35A	year drilled: 2010	AREA: BURNT RIVER BRULE
---------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,308.19	6,140,378.27	1,264.04

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		167.40	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments: slim tool

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	340.0	-56.80
12.00	247.5	-55.10
14.00	233.8	-56.20
16.00	231.2	-55.60
18.00	230.1	-55.50
20.00	229.2	-55.10
22.00	228.7	-54.60
24.00	228.5	-55.10
26.00	227.9	-53.60
28.00	227.1	-53.40
30.00	226.6	-53.50
32.00	226.5	-54.40
34.00	226.5	-53.70
36.00	226.0	-52.90
38.00	225.8	-52.80
40.00	225.6	-52.80
42.00	225.5	-51.80
44.00	225.6	-52.10
46.00	225.7	-51.20
48.00	225.9	-51.70
50.00	226.0	-50.80
52.00	226.1	-50.50
54.00	226.2	-49.80
56.00	226.3	-49.60
58.00	226.4	-49.20
60.00	226.5	-48.90
62.00	226.6	-48.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	8.40	8.40		
49.00	49.60	0.60		
70.20	71.20	1.00		
78.60	79.20	0.60		
96.90	97.40	0.50		
98.30	102.30	4.00		
102.30	103.00	0.70		
104.20	105.00	0.80		
161.00	162.60	1.60		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

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Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-35A**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

64.00	226.7	-48.40
66.00	226.8	-48.20
68.00	226.9	-48.10
70.00	226.9	-48.40
72.00	227.0	-48.00
74.00	227.1	-48.10
76.00	227.2	-47.90
78.00	227.2	-47.60
80.00	227.3	-47.80
82.00	227.3	-47.60
84.00	227.4	-47.90
86.00	227.4	-48.00
88.00	227.4	-47.80
90.00	227.5	-48.10
92.00	227.5	-47.90
94.00	227.6	-47.80
96.00	227.6	-48.00
98.00	227.6	-47.70
100.00	227.6	-47.40
102.00	227.7	-47.30
104.00	227.7	-47.00
106.00	227.7	-47.20
108.00	227.8	-46.70
110.00	227.8	-46.30
112.00	227.8	-46.20
114.00	227.9	-45.30
116.00	227.9	-44.90
118.00	227.9	-46.90
120.00	228.0	-44.40
122.00	228.0	-43.10
124.00	228.0	-44.70
126.00	228.0	-43.90
128.00	228.1	-44.20
130.00	228.1	-44.20
132.00	228.1	-44.20
134.00	228.1	-44.10
136.00	228.1	-44.60
138.00	228.1	-44.00
140.00	228.2	-44.00
142.00	228.2	-44.20
144.00	228.2	-43.80
146.00	228.2	-43.70
148.00	228.2	-43.50
150.00	228.2	-42.90
152.00	228.2	-40.40

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-35A**

year drilled: 2010

AREA:

BURNT RIVER
BRULE

154.00	228.3	-42.80
156.00	228.3	-42.20
158.00	228.3	-41.20
160.00	228.3	-39.80
162.00	228.3	-42.50
164.00	228.4	-40.30
166.00	228.4	-40.50
167.22	228.3	-40.40

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

Century
WIRELINE SERVICES

**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-35A**

COMPANY: WESTERN COAL CORPORATION
WELL: BR10-35A
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA
OTHER SERVICES: NEUTRON

PERMANENT DATUM: EGL
LOG MEASURED FROM: EGL
DATE MEASURED FROM: EGL
DATE: 08/13/10
RIG NUMBER: :
LOG NUMBER: :
LOGGER TD: :
ARRIVAL TIME: :
DEPARTURE TIME: :
CIRC STOPPED: N/A

DEPTH DRILLER: :170.68
BIT SIZE: :11.43
LOG TOP: :0.88
LOG BOTTOM: :167.62

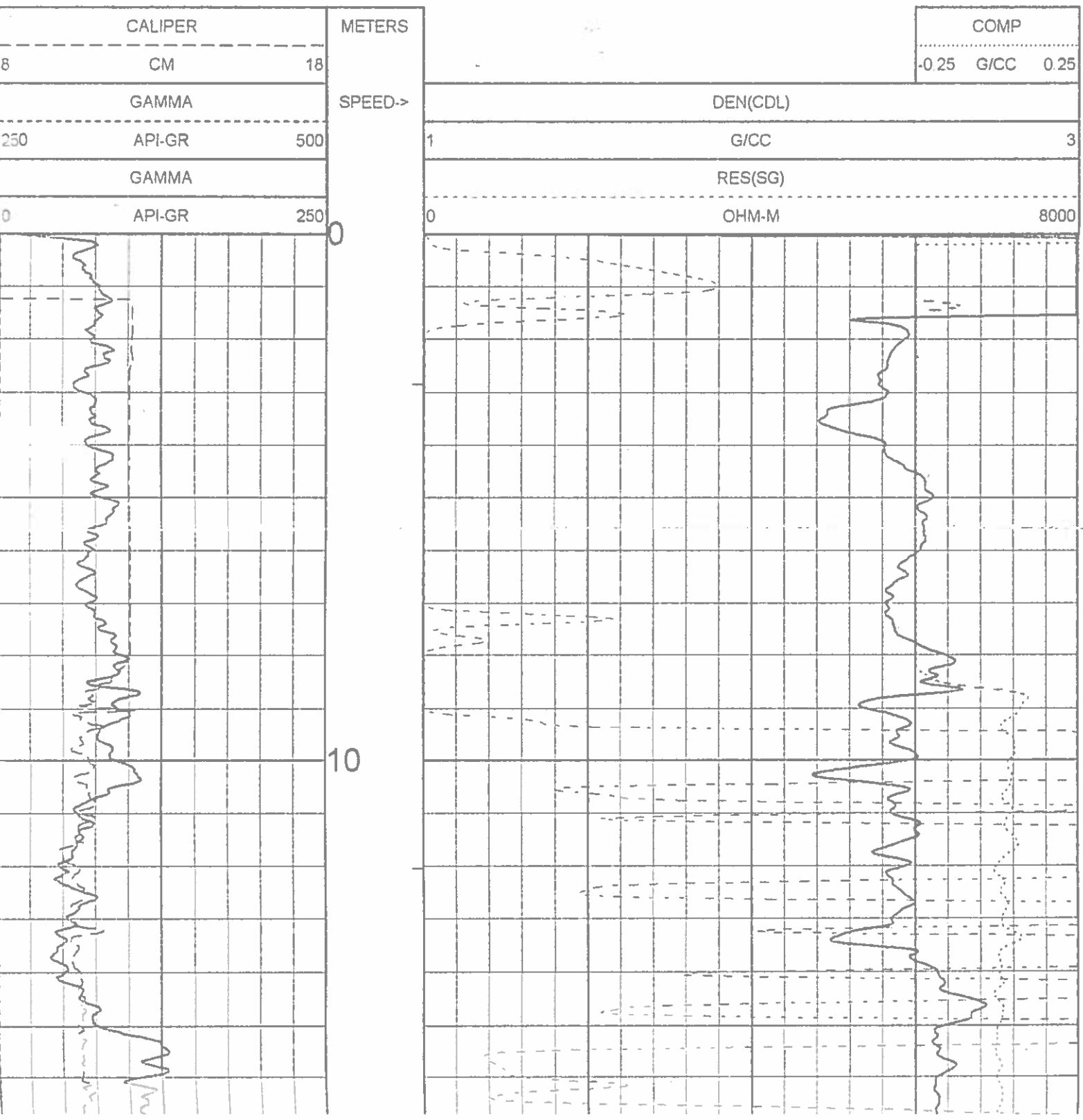
CASING LOGGER: 9.144
CASING DRILLER: 9.144
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
BOREHOLE TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: :1.00
RECORDED BY: G. HOLMLUND
REMARKS 1: 60 DEGREE
REMARKS 2:

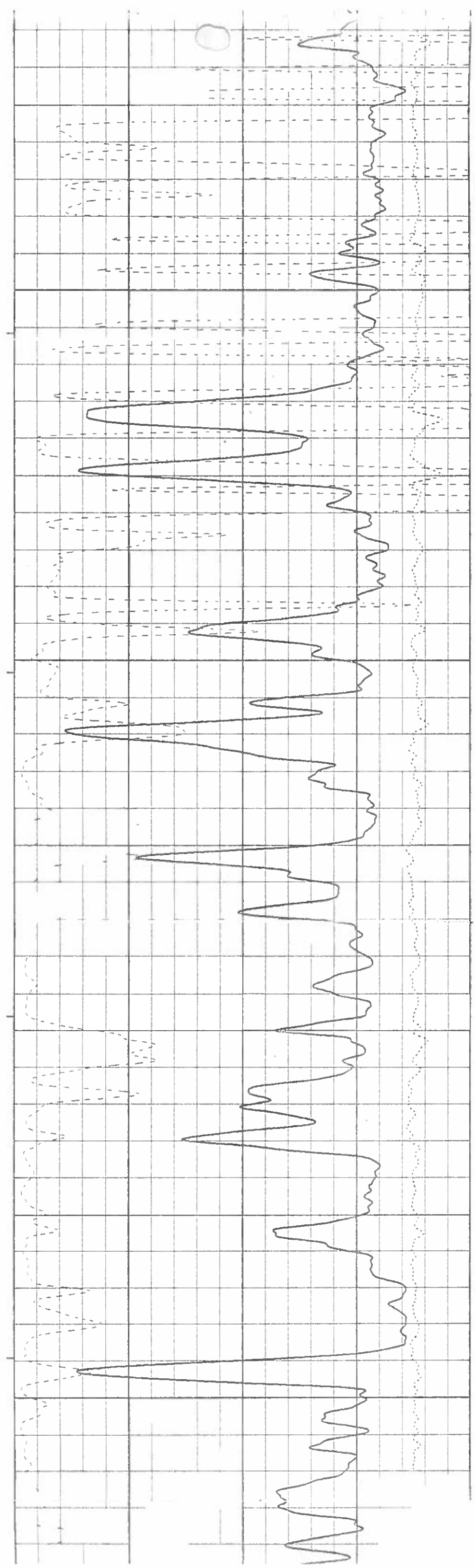
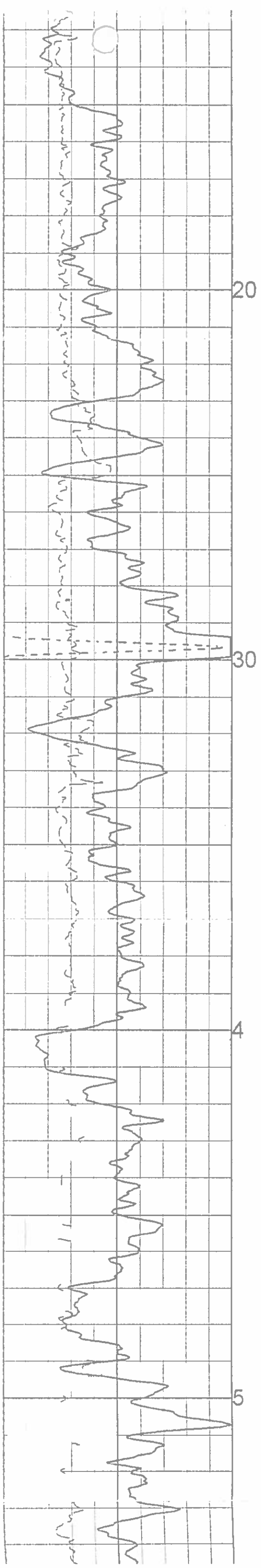
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

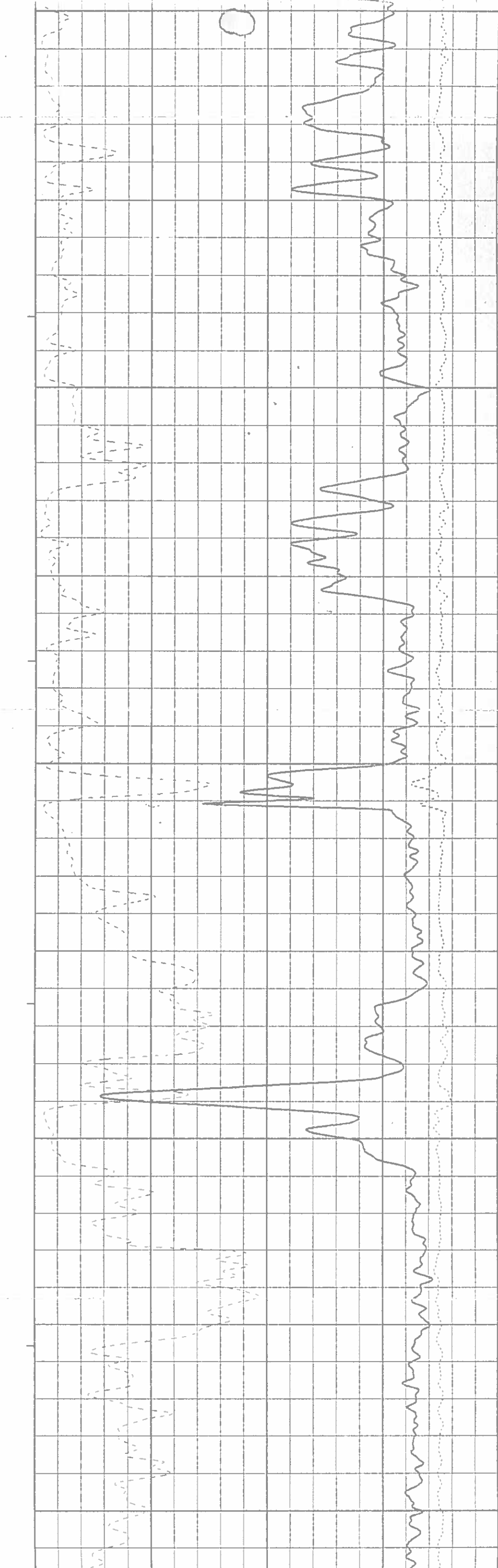
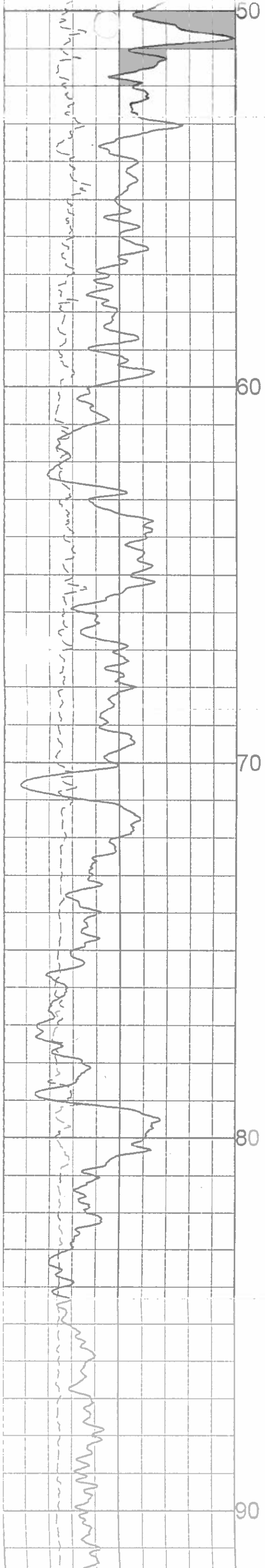
1:100 BULK DENSITY BR10-35A 08/13/10

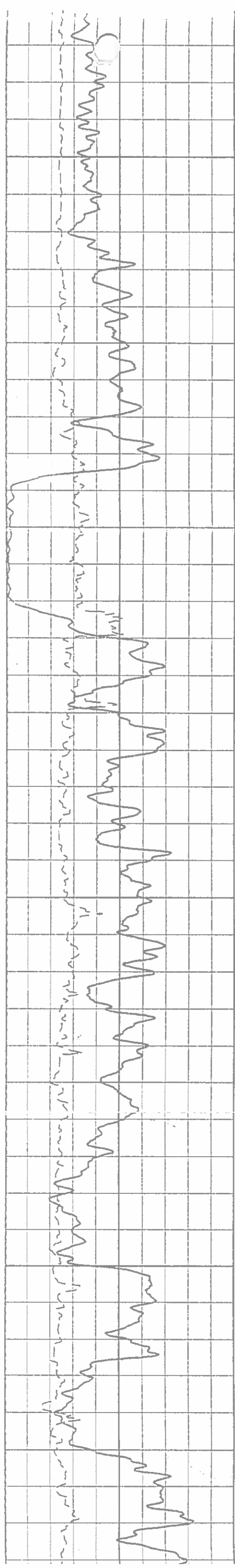
LOG PARAMETERS

MATRIX DENSITY: 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T: 177
MAGNETIC DECL: 21.0 ELECT. CUTOFF: 99999 BIT SIZE: 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010 VERSION = 3.64HR







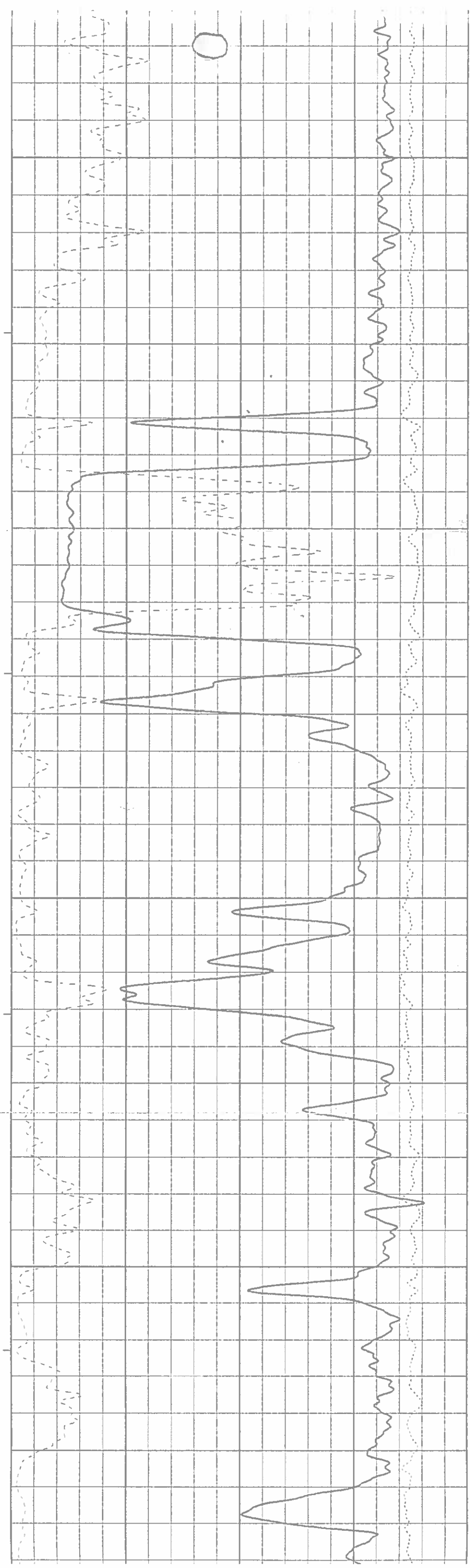


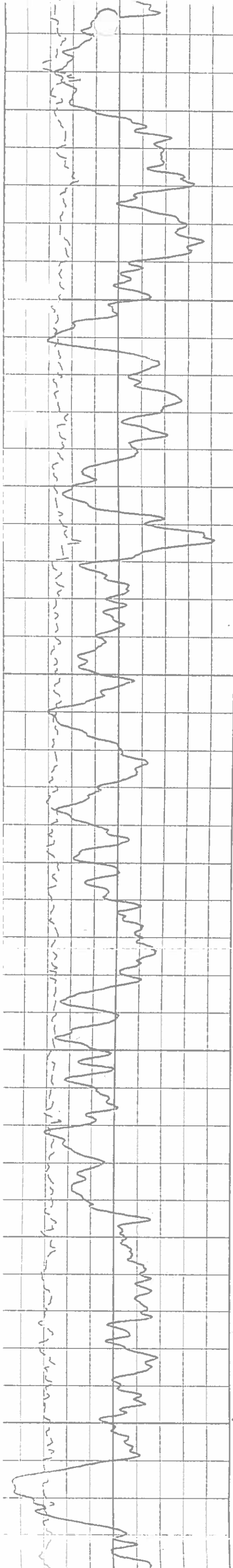
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100

110

120



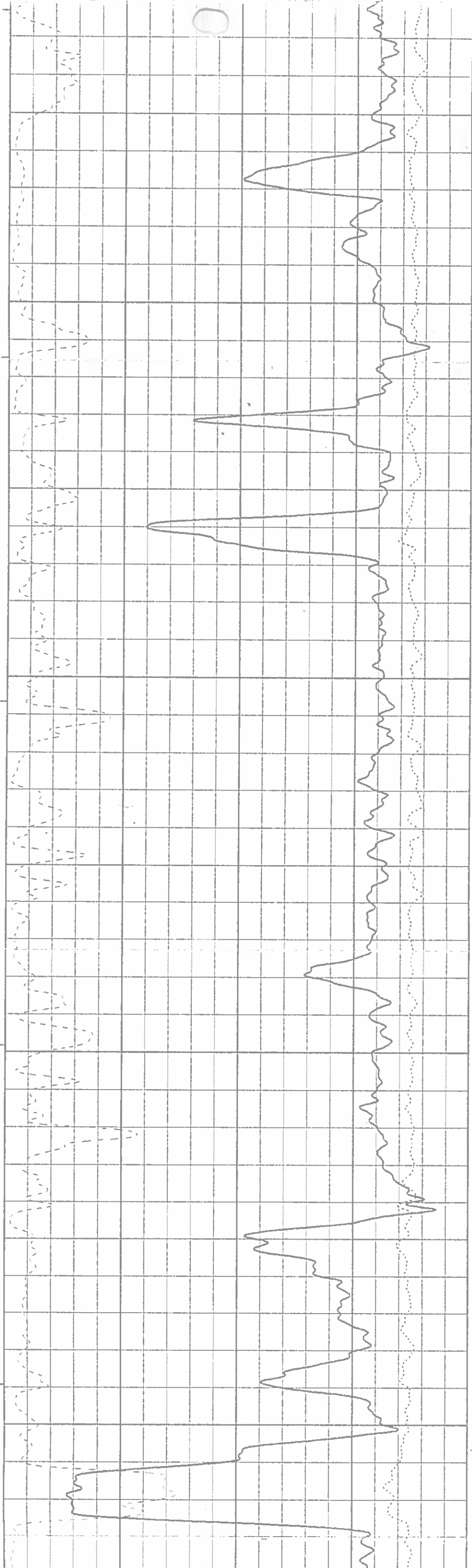


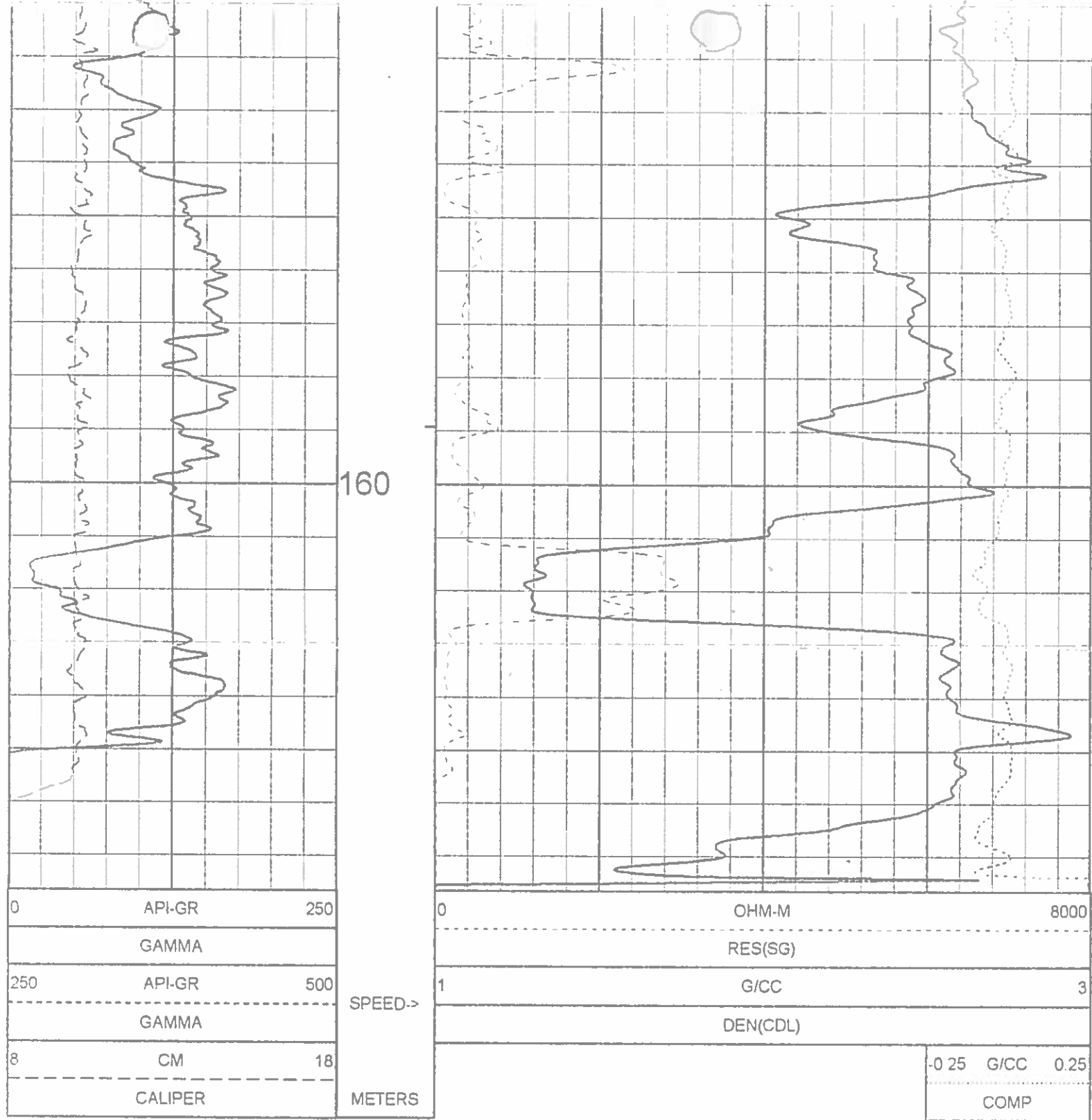
130

140

150

160





1:100 BULK DENSITY BR10-35A 08/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-35A 08/13/10 11:37
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul07,10	09:25:20	GAMMA	0.000 [API-GR]	2.000 [CPS]
	Jul07,10	09:25:20	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	12:00:05	DEN(LS)	1.620 [G/CC]	14244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug13,10	12:00:34	DEN(SS)	1.590 [G/CC]	54236.000 [CPS]
	Aug13,10	11:59:43	DEN(SS)	2.580 [G/CC]	24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-35A

COMPANY: WESTERN COAL CORPORATION

OTHER SERVICES:
NEUTRON

WELL: BR10-35A

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

LOCATION: BRULE NORTH

SECTION: N/A

TOWNSHIP: N/A

RANGE: N/A

LICENCE NO: N/A

UNIQUE WELL ID: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 08/13/10

DEPTH DRILLER: 170 68

BIT SIZE: 11 43

LOG TOP: -0 88

LOG BOTTOM: -167 62

CASING LOGGER: 9 144

CASING DRILLER: 9 144

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1 00

RECORDED BY: G HOLMLUND

RECORDED BY: T NEAL

REMARKS 1: 60 DEGREE

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-35A 08/13/10

LOG PARAMETERS

MATRIX DENSITY: 2.65

NEUTRON MATRIX: SANDSTONE

MATRIX DELTA T: 177

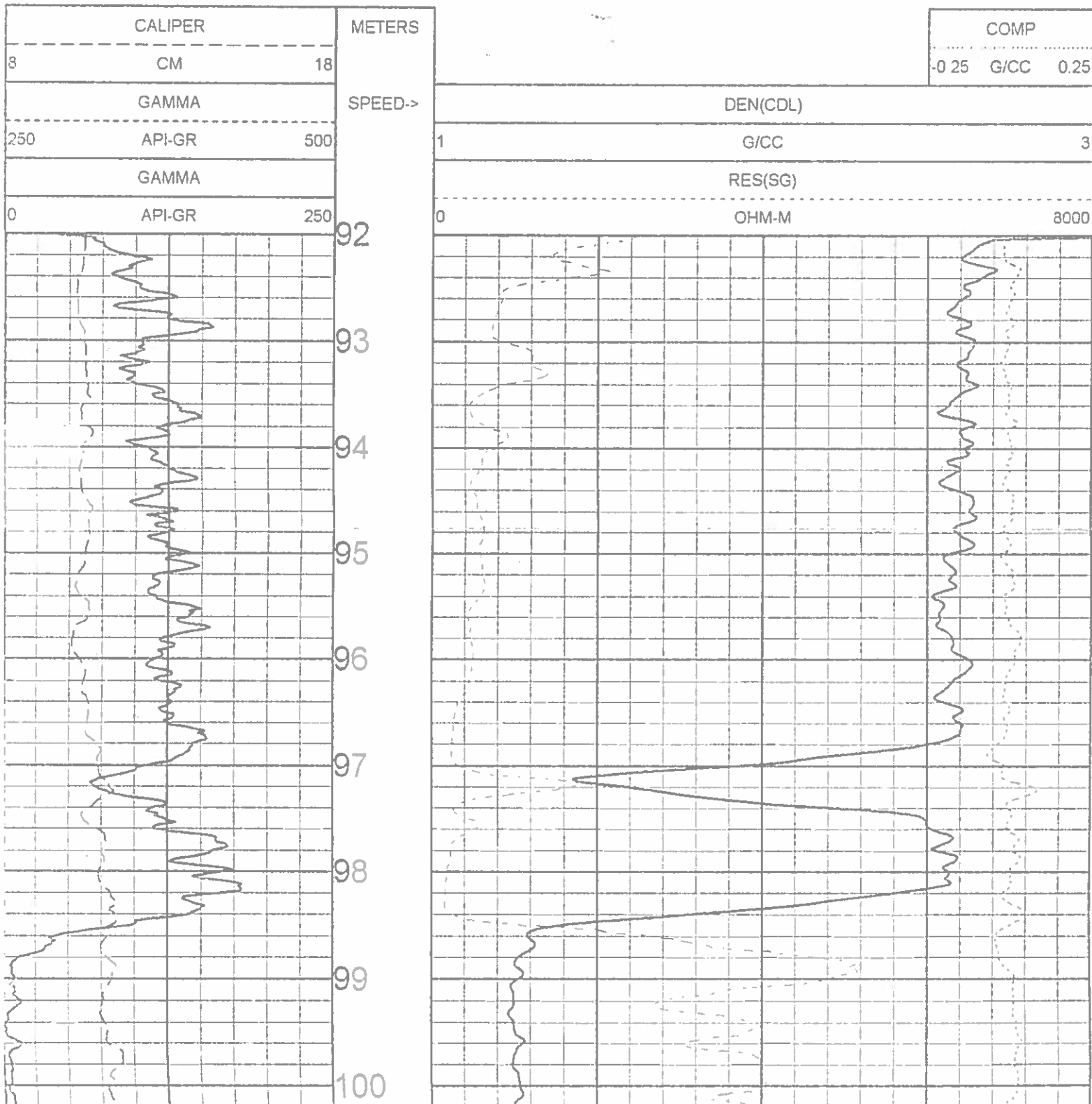
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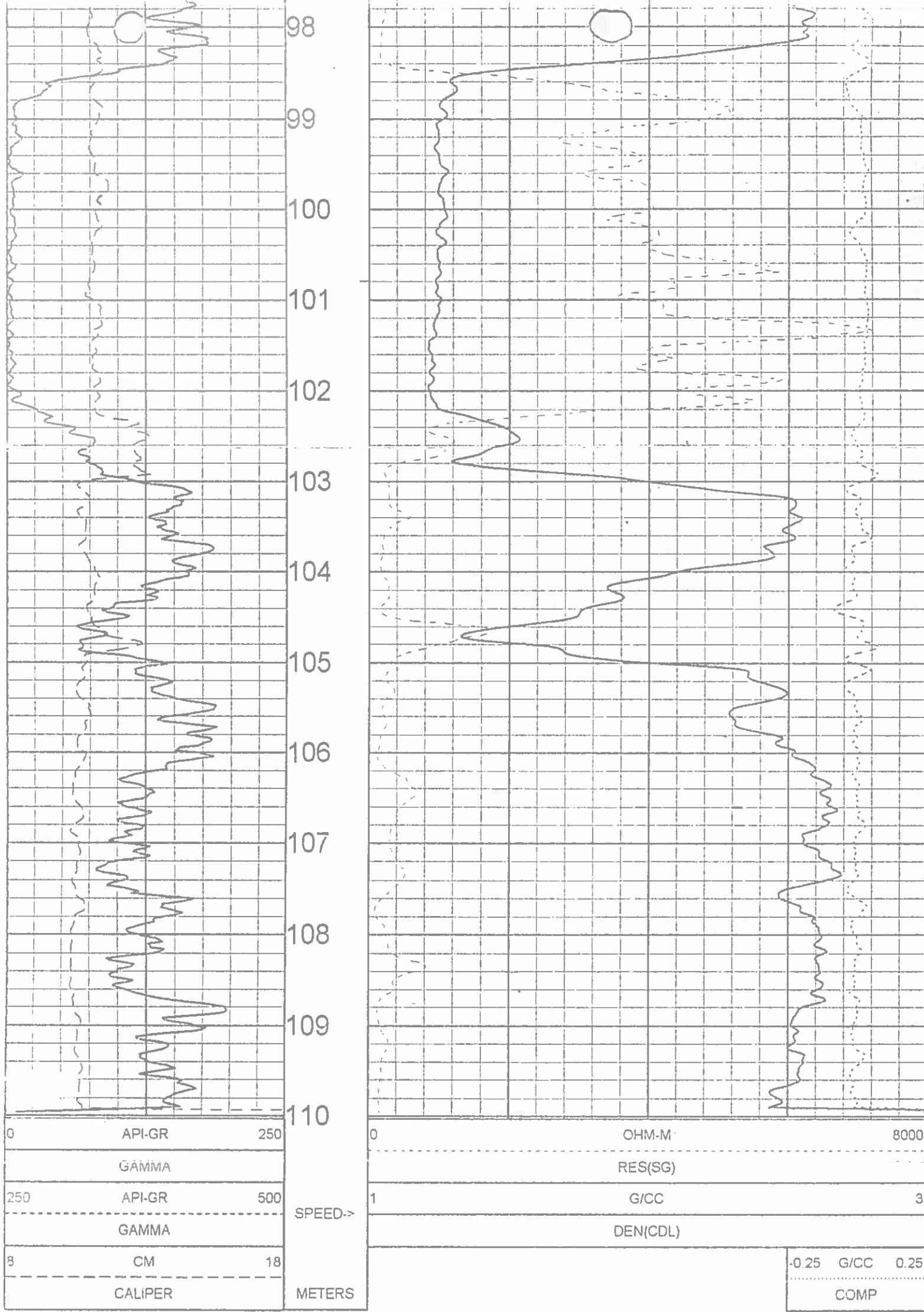
ELECT. CUTOFF: 99999

BIT SIZE: 11 43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR10-35A 08/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-35A 08/13/10 11:37
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug13,10	12:16:36	GAMMA	Default [CPS]	Default [CPS]
	Aug13,10	12:16:36	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	12:00:05	DEN(LS)	1.620 [G/CC]	14244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug13,10	12:00:34	DEN(SS)	1.590 [G/CC]	54236.000 [CPS]
	Aug13,10	11:59:43	DEN(SS)	2.580 [G/CC]	24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]

Century WIRELINE SERVICES		GAMMA - NEUTRON	
BR10-35A			
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	
WELL	BR 10-35A	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/13/10	RIG NUMBER	
DEPTH DRILLER	170.68	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	8.00	DEPARTURE TIME	
LOG BOTTOM	167.40	CIRC STOPPED	N/A
CASING LOGGER	9.144		
CASING DRILLER	9.144		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
RECORDED BY	G. HOLMLUND		
REMARKS 1	T. NEAL		
REMARKS 2	60 DEGREE		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-35A 08/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

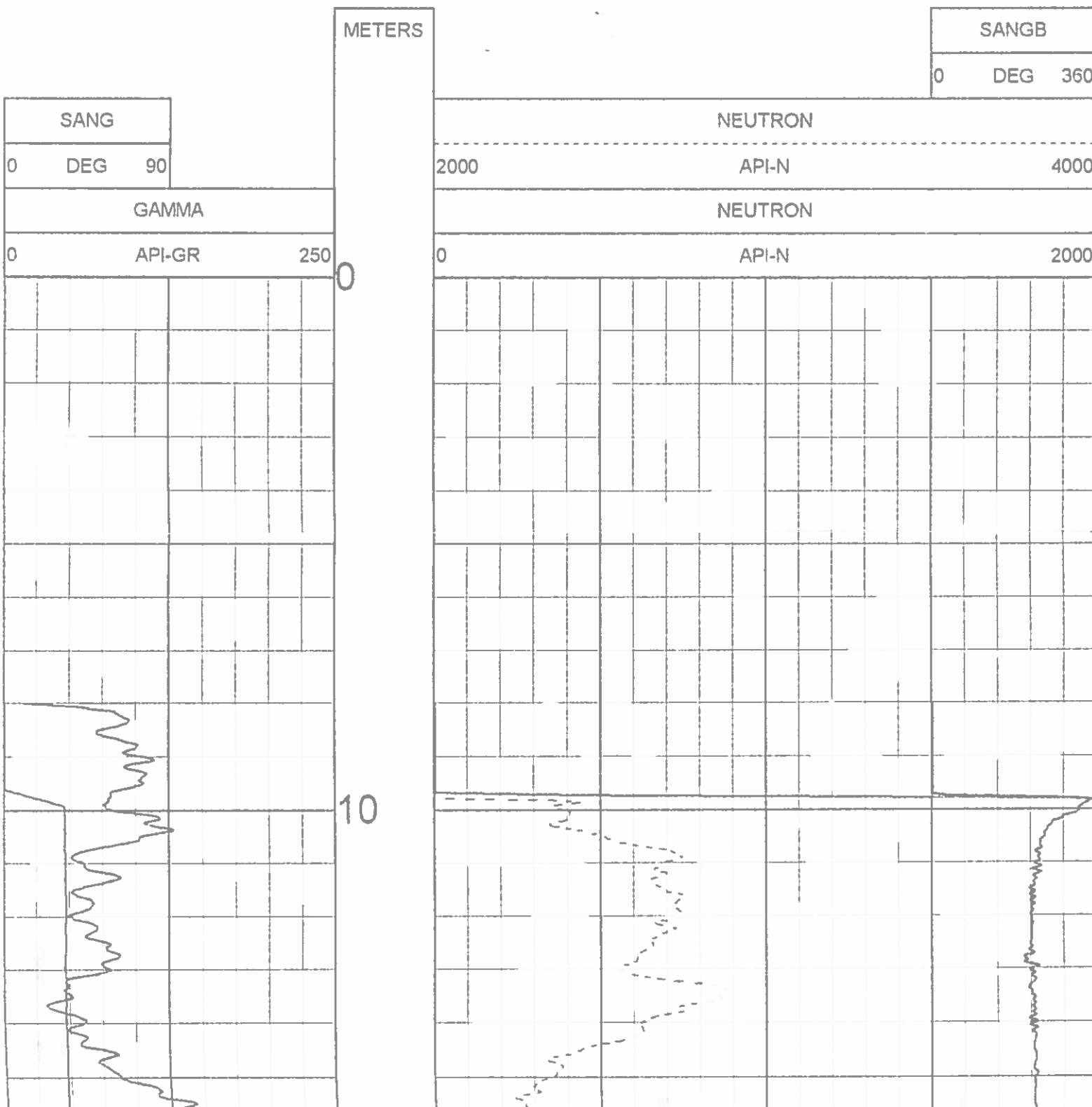
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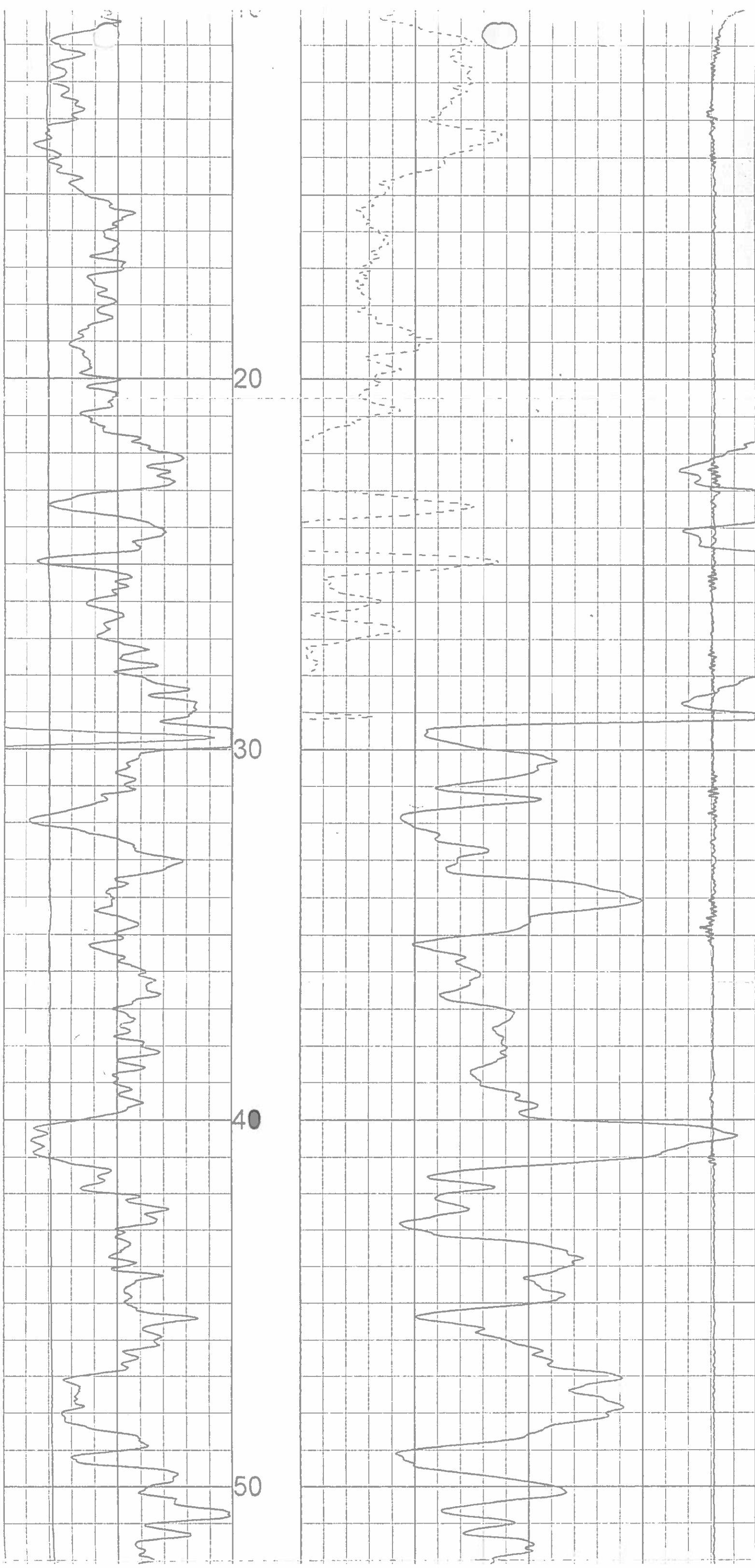
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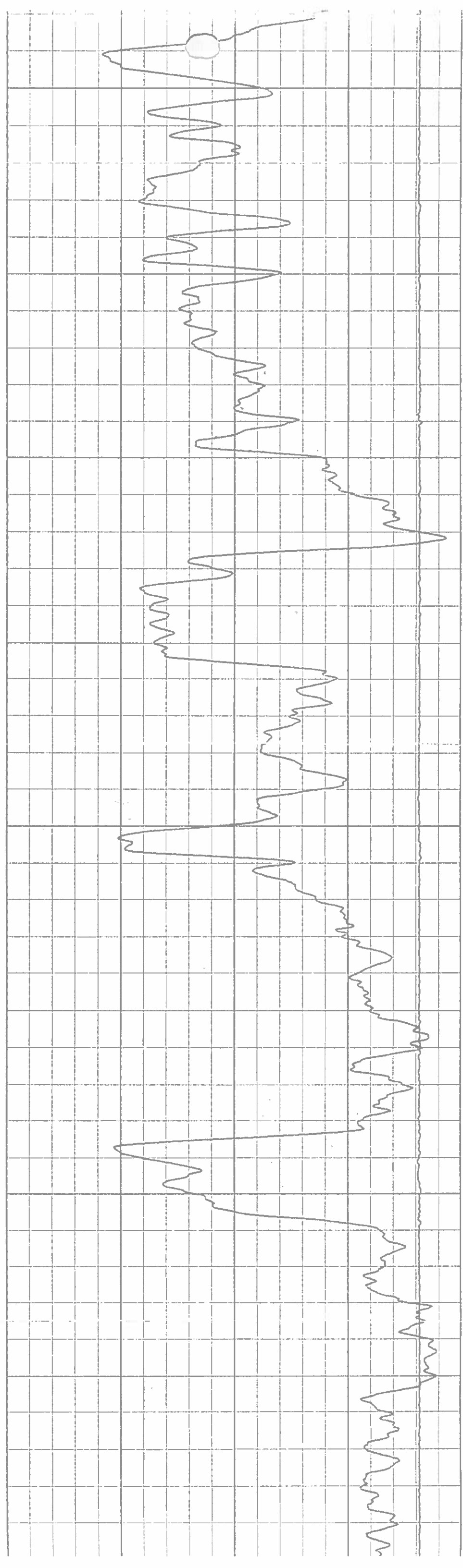
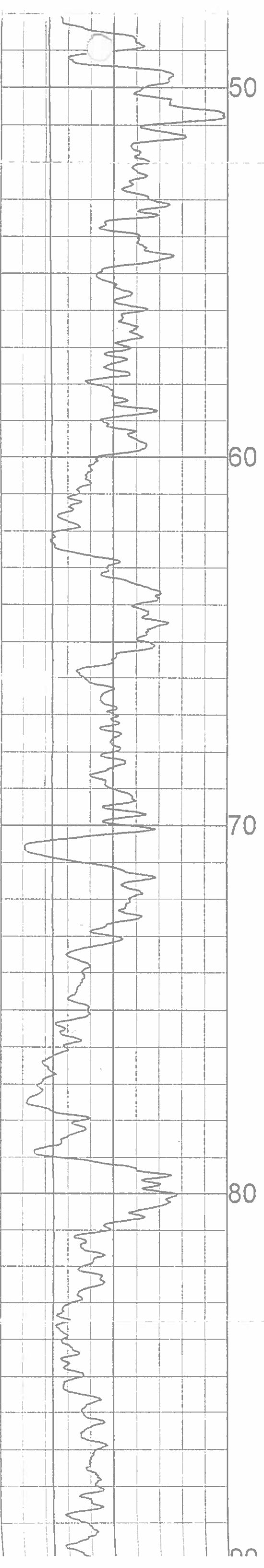
BIT SIZE : 11.43

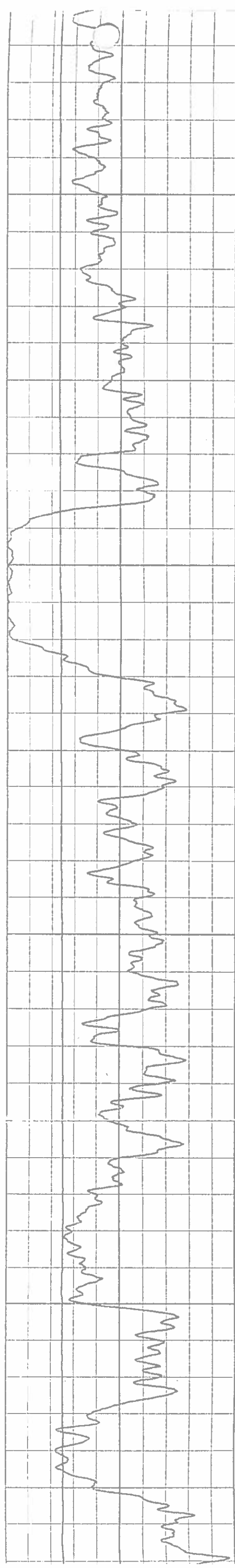
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

VERSION = 3.64HE







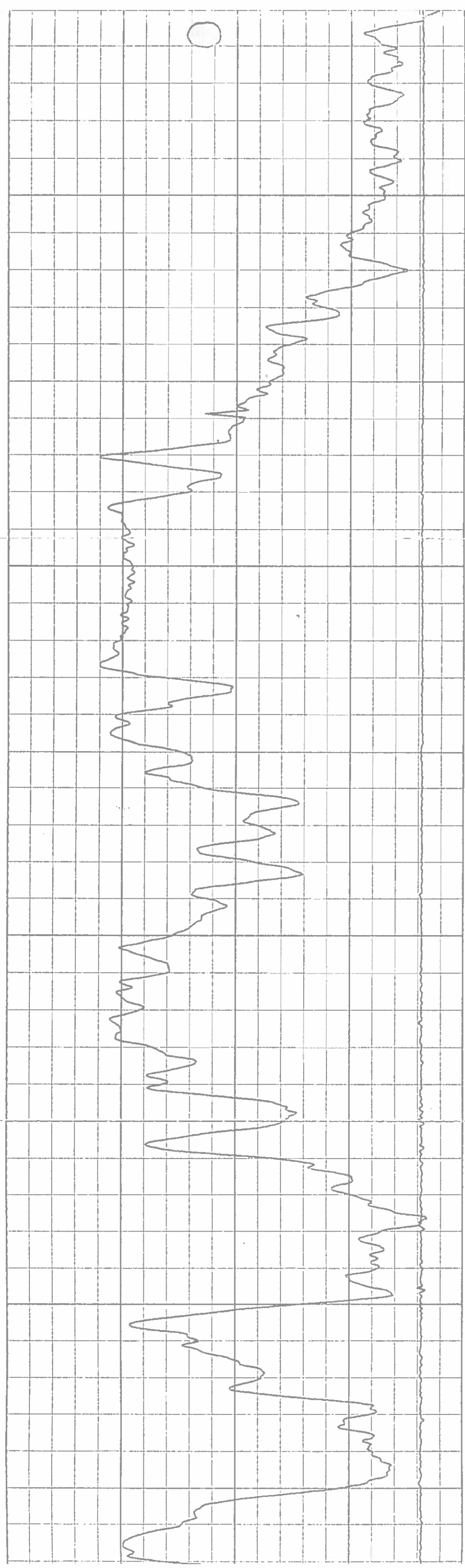


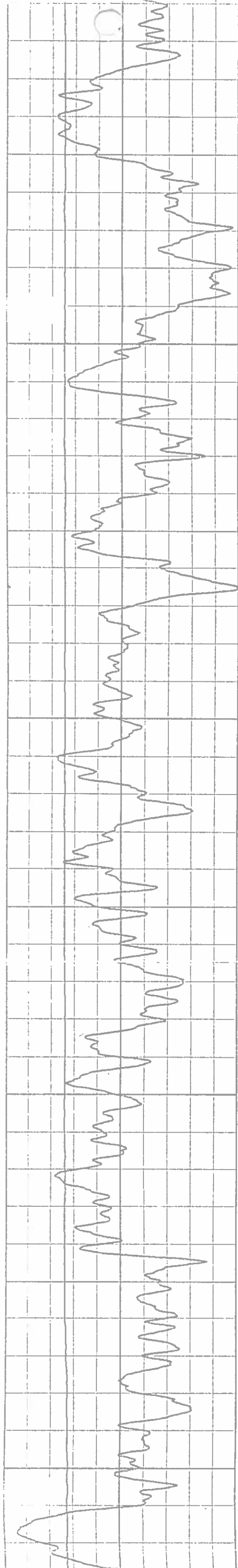
90

100

110

120



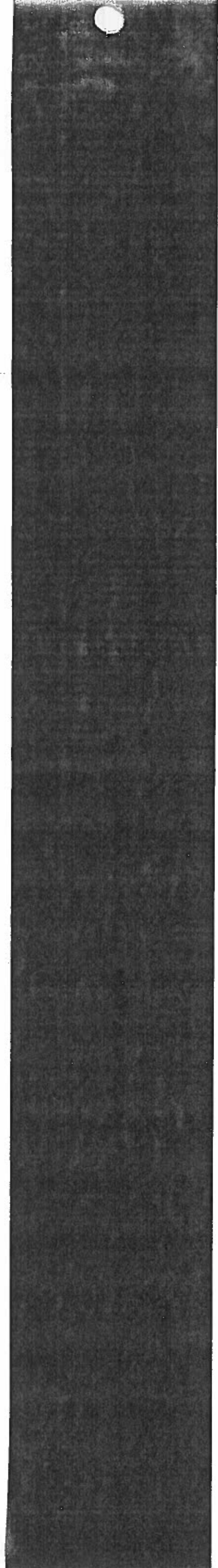
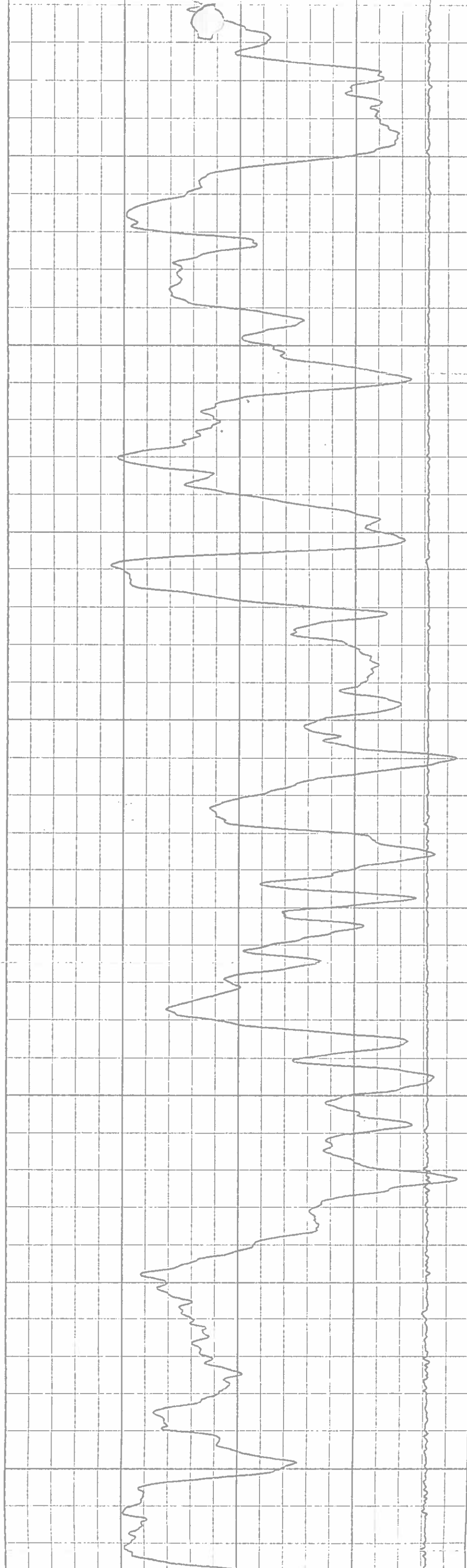


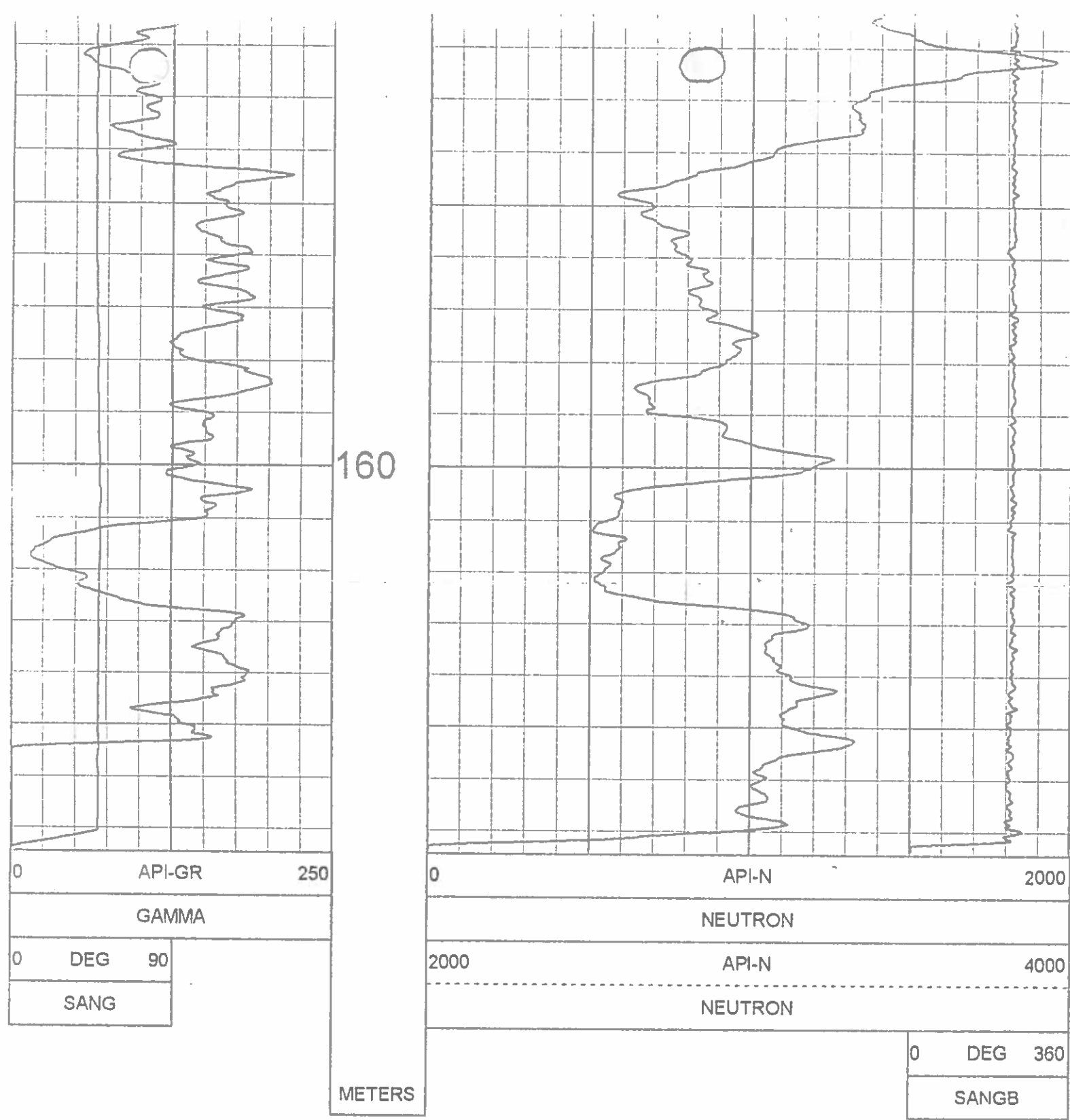
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140

150

160





1:100 NEUTRON BR10-35A 08/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 07/06/2010		VERSION = 3 64HE

TOOL CALIBRATION BR10-35A 08/13/10 12:21
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 1071

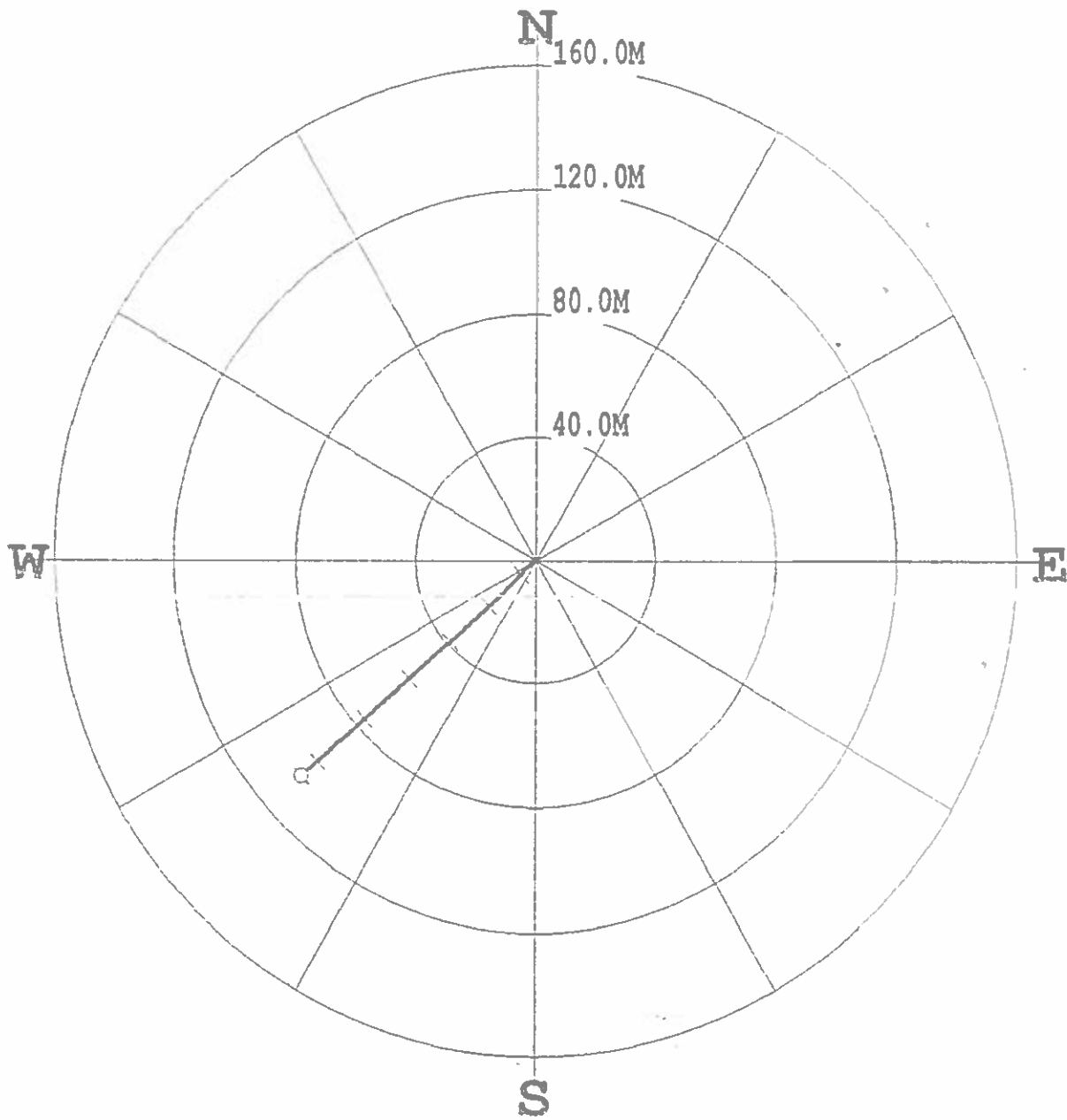
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	09:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	09:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	13:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	13:36:01	NEUTRON	271.000 [API-N]	697.000 [CPS]
3	May19,08	07:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	07:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	07:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	07:55:04	RES(16N)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	07:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	07:55:10	RES(64N)	1990.000 [OHM-M]	103531.000 [CPS]
6	May19,08	08:00:49	TEMP	35.500 [DEG F]	101300.000 [CPS]
	May19,08	08:00:49	TEMP	84.400 [DEG F]	64850.000 [CPS]
7	May19,08	07:55:17	RES	0.000 [OHM]	9984.000 [CPS]
	May19,08	07:55:17	RES	943.000 [OHM]	58869.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-35A
 DATE OF LOG: 08/13/10
 PROBE: 9057A 1071



SCALE: 20 M/CM
 TRUE DEPTH: 126.27 M
 AZIMUTH: 228.3
 DISTANCE: 104.5 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-35A
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/13/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-35A_08-13-10_12-21_9057A_.02_8.00_167.40_DEVI.log


TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.00	9.96	0.11	-0.04	0.1	340.0	33.2	324.1
12.00	11.62	-0.38	-0.92	1.0	247.5	34.9	217.0
14.00	13.28	-1.20	-1.64	2.0	233.8	33.8	234.6
16.00	14.93	-1.97	-2.45	3.1	231.2	34.4	222.1
18.00	16.58	-2.75	-3.28	4.3	230.1	34.5	227.4
20.00	18.22	-3.54	-4.10	5.4	229.2	34.9	214.1
22.00	19.85	-4.34	-4.94	6.6	228.7	35.4	224.5
24.00	21.48	-5.10	-5.77	7.7	228.5	34.9	221.6
26.00	23.11	-5.92	-6.56	8.8	227.9	36.4	222.8
28.00	24.71	-6.82	-7.32	10.0	227.1	36.6	222.6
30.00	26.32	-7.69	-8.12	11.2	226.6	36.5	223.5
32.00	27.92	-8.50	-8.95	12.3	226.5	35.6	225.9
34.00	29.53	-9.32	-9.81	13.5	226.5	36.3	228.6
36.00	31.12	-10.20	-10.55	14.7	226.0	37.1	223.0
38.00	32.71	-11.08	-11.38	15.9	225.8	37.2	224.5
40.00	34.30	-11.96	-12.21	17.1	225.6	37.2	223.3
42.00	35.89	-12.82	-13.05	18.3	225.5	38.2	225.8
44.00	37.47	-13.65	-13.95	19.5	225.6	37.9	228.3
46.00	39.05	-14.48	-14.86	20.8	225.7	38.8	227.9
48.00	40.61	-15.32	-15.79	22.0	225.9	38.3	230.2
50.00	42.17	-16.16	-16.72	23.3	226.0	39.2	226.6
52.00	43.72	-17.01	-17.65	24.5	226.1	39.5	226.9
54.00	45.25	-17.86	-18.61	25.8	226.2	40.2	229.4
56.00	46.78	-18.71	-19.58	27.1	226.3	40.4	228.4
58.00	48.30	-19.58	-20.55	28.4	226.4	40.8	232.2
60.00	49.81	-20.44	-21.54	29.7	226.5	41.1	228.9
62.00	51.31	-21.31	-22.54	31.0	226.6	41.2	228.6
64.00	52.81	-22.18	-23.53	32.3	226.7	41.6	228.3
66.00	54.30	-23.05	-24.54	33.7	226.8	41.8	229.8
68.00	55.79	-23.92	-25.55	35.0	226.9	41.9	229.2
70.00	57.28	-24.80	-26.54	36.3	226.9	41.6	228.5
72.00	58.77	-25.67	-27.56	37.7	227.0	42.0	229.3
74.00	60.26	-26.55	-28.57	39.0	227.1	41.9	229.8
76.00	61.74	-27.43	-29.58	40.3	227.2	42.1	223.8
78.00	63.22	-28.31	-30.58	41.7	227.2	42.4	225.3
80.00	64.71	-29.19	-31.60	43.0	227.3	42.2	233.7
82.00	66.18	-30.08	-32.62	44.4	227.3	42.4	229.2

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* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-35A
FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/13/10
DATA FROM : N/A PROBE : 9057A , 1071
MAG. DECL. : 21.000 DEPTH UNITS : METERS
LOG: BR10-35A_08-13-10_12-21_9057A_02_8.00_167.40_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
10.00	9.96	0.11	-0.04	0.1	340.0	33.2	324.1
12.00	11.62	-0.38	-0.92	1.0	247.5	34.9	217.0
14.00	13.28	-1.20	-1.64	2.0	233.8	33.8	234.6
16.00	14.93	-1.97	-2.45	3.1	231.2	34.4	222.1
18.00	16.58	-2.75	-3.28	4.3	230.1	34.5	227.4
20.00	18.22	-3.54	-4.10	5.4	229.2	34.9	214.1
22.00	19.85	-4.34	-4.94	6.6	228.7	35.4	224.5
24.00	21.48	-5.10	-5.77	7.7	228.5	34.9	221.6
26.00	23.11	-5.92	-6.56	8.8	227.9	36.4	222.8
28.00	24.71	-6.82	-7.32	10.0	227.1	36.6	222.6
30.00	26.32	-7.69	-8.12	11.2	226.6	36.5	223.5
32.00	27.92	-8.50	-8.95	12.3	226.5	35.6	225.9
34.00	29.53	-9.32	-9.81	13.5	226.5	36.3	228.6
36.00	31.12	-10.20	-10.55	14.7	226.0	37.1	223.0
38.00	32.71	-11.08	-11.38	15.9	225.8	37.2	224.5
40.00	34.30	-11.96	-12.21	17.1	225.6	37.2	223.3
42.00	35.89	-12.82	-13.05	18.3	225.5	38.2	225.8
44.00	37.47	-13.65	-13.95	19.5	225.6	37.9	228.3
46.00	39.05	-14.48	-14.86	20.8	225.7	38.8	227.9
48.00	40.61	-15.32	-15.79	22.0	225.9	38.3	230.2
50.00	42.17	-16.16	-16.72	23.3	226.0	39.2	226.6
52.00	43.72	-17.01	-17.65	24.5	226.1	39.5	226.9
54.00	45.25	-17.86	-18.61	25.8	226.2	40.2	229.4
56.00	46.78	-18.71	-19.58	27.1	226.3	40.4	228.4
58.00	48.30	-19.58	-20.55	28.4	226.4	40.8	232.2
60.00	49.81	-20.44	-21.54	29.7	226.5	41.1	228.9
62.00	51.31	-21.31	-22.54	31.0	226.6	41.2	228.6
64.00	52.81	-22.18	-23.53	32.3	226.7	41.6	228.3
66.00	54.30	-23.05	-24.54	33.7	226.8	41.8	229.8
68.00	55.79	-23.92	-25.55	35.0	226.9	41.9	229.2
70.00	57.28	-24.80	-26.54	36.3	226.9	41.6	228.5
72.00	58.77	-25.67	-27.56	37.7	227.0	42.0	229.3
74.00	60.26	-26.55	-28.57	39.0	227.1	41.9	229.8
76.00	61.74	-27.43	-29.58	40.3	227.2	42.1	223.8
78.00	63.22	-28.31	-30.58	41.7	227.2	42.4	225.3
80.00	64.71	-29.19	-31.60	43.0	227.3	42.2	233.7
82.00	66.18	-30.08	-32.62	44.4	227.3	42.4	229.2
84.00	67.66	-30.96	-33.63	45.7	227.4	42.1	229.2
86.00	69.14	-31.85	-34.64	47.1	227.4	42.0	229.2
88.00	70.62	-32.73	-35.66	48.4	227.4	42.2	229.1
90.00	72.10	-33.62	-36.66	49.7	227.5	41.9	228.6
92.00	73.59	-34.50	-37.68	51.1	227.5	42.1	229.4
94.00	75.07	-35.38	-38.69	52.4	227.6	42.2	230.1
96.00	76.55	-36.26	-39.70	53.8	227.6	42.0	228.7
98.00	78.03	-37.15	-40.71	55.1	227.6	42.3	230.8
100.00	79.50	-38.04	-41.73	56.5	227.6	42.6	228.1
102.00	80.97	-38.94	-42.75	57.8	227.7	42.7	229.6
104.00	82.44	-39.82	-43.78	59.2	227.7	43.0	230.3
106.00	83.90	-40.71	-44.81	60.5	227.7	42.8	232.9
108.00	85.36	-41.61	-45.85	61.9	227.8	43.3	228.1
110.00	86.81	-42.51	-46.89	63.3	227.8	43.7	230.2
112.00	88.25	-43.41	-47.94	64.7	227.8	43.8	226.2
114.00	89.67	-44.32	-49.01	66.1	227.9	44.7	229.4
116.00	91.09	-45.24	-50.07	67.5	227.9	45.1	226.6
118.00	92.50	-46.15	-51.15	68.9	227.9	43.1	227.3
120.00	93.92	-47.07	-52.21	70.3	228.0	45.6	226.8
122.00	95.33	-47.99	-53.28	71.7	228.0	46.9	228.5
124.00	96.73	-48.91	-54.37	73.1	228.0	45.3	228.4
126.00	98.13	-49.85	-55.44	74.6	228.0	46.1	238.4
128.00	99.53	-50.78	-56.52	76.0	228.1	45.8	228.2
130.00	100.93	-51.72	-57.60	77.4	228.1	45.8	230.1
132.00	102.33	-52.65	-58.68	78.8	228.1	45.8	229.0
134.00	103.73	-53.59	-59.76	80.3	228.1	45.9	230.5
136.00	105.12	-54.54	-60.83	81.7	228.1	45.4	228.0
138.00	106.51	-55.48	-61.92	83.1	228.1	46.0	228.3
140.00	107.90	-56.41	-63.01	84.6	228.2	46.0	229.3
142.00	109.29	-57.35	-64.10	86.0	228.2	45.8	227.0
144.00	110.68	-58.29	-65.18	87.4	228.2	46.2	229.4
146.00	112.07	-59.24	-66.26	88.9	228.2	46.3	229.8
148.00	113.45	-60.20	-67.35	90.3	228.2	46.5	227.8
150.00	114.82	-61.14	-68.46	91.8	228.2	47.1	230.1
152.00	116.19	-62.09	-69.56	93.2	228.2	49.6	203.0
154.00	117.55	-63.01	-70.69	94.7	228.3	47.2	230.9
156.00	118.91	-63.96	-71.79	96.1	228.3	47.8	226.7
158.00	120.24	-64.94	-72.90	97.6	228.3	48.8	231.5
160.00	121.56	-65.92	-74.04	99.1	228.3	50.2	226.2
162.00	122.86	-66.90	-75.19	100.6	228.3	47.5	225.9
164.00	124.16	-67.85	-76.36	102.2	228.4	49.7	224.7
166.00	125.47	-68.87	-77.46	103.6	228.4	49.5	229.7
167.22	126.27	-69.48	-78.11	104.5	228.3	49.6	229.5

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-36	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	------------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,282.51	6,140,252.62	1,309.36

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
122	-89	83.12	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	122.1	-88.90
5.00	119.2	-88.70
6.00	119.2	-89.00
7.00	117.9	-88.90
8.00	116.1	-88.70
9.00	114.2	-88.60
10.00	112.1	-88.70
11.00	109.3	-88.60
12.00	106.5	-88.80
13.00	104.2	-89.10
14.00	102.5	-89.20
15.00	102.4	-88.90
16.00	103.1	-89.00
17.00	103.8	-89.20
18.00	104.0	-89.20
19.00	103.3	-89.30
20.00	102.5	-89.40
21.00	102.1	-89.60
22.00	102.2	-89.50
23.00	103.0	-89.70
24.00	103.8	-89.50
25.00	104.2	-89.40
26.00	104.2	-89.60
27.00	104.2	-89.60
28.00	104.2	-89.90
29.00	104.2	-90.00
30.00	104.4	-89.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	1.90	1.90		
27.60	28.10	0.50		
36.80	37.70	0.90		
63.50	64.00	0.50		
65.70	71.80	6.10		
71.80	73.00	1.20		
75.30	76.00	0.70		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-36**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

31.00	105.0	-89.80
32.00	105.8	-89.60
33.00	106.6	-89.70
34.00	107.0	-89.80
35.00	106.9	-89.80
36.00	106.6	-89.90
37.00	106.4	-89.70
38.00	106.7	-89.70
39.00	107.5	-89.50
40.00	109.0	-89.30
41.00	110.8	-89.30
42.00	112.4	-89.50
43.00	113.9	-89.50
44.00	115.3	-89.50
45.00	116.2	-89.70
46.00	117.4	-89.50
47.00	118.6	-89.60
48.00	119.7	-89.40
49.00	121.0	-89.40
50.00	122.2	-89.40
51.00	123.4	-89.30
52.00	124.7	-89.50
53.00	126.6	-89.10
54.00	128.9	-89.00
55.00	131.3	-89.30
56.00	133.2	-89.20
57.00	136.1	-89.00
58.00	140.2	-88.90
59.00	144.4	-88.90
60.00	149.7	-88.70
61.00	155.7	-88.60
62.00	162.2	-88.60
63.00	169.1	-88.50
64.00	175.9	-88.60
65.00	181.9	-88.40
66.00	188.7	-88.10
67.00	195.3	-88.00
68.00	200.6	-88.00
69.00	205.4	-88.00
70.00	209.6	-88.30
71.00	213.5	-87.70
72.00	217.0	-87.60
73.00	219.1	-87.50
74.00	221.4	-87.20
75.00	223.2	-86.80

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-36	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

76.00	224.8	-86.90
77.00	226.6	-87.10
78.00	228.0	-87.10
79.00	229.2	-86.90
80.00	230.5	-86.50
81.00	231.7	-86.30
82.00	233.0	-86.00
82.94	234.0	-85.90

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014 Reviewed: October 11, 2002
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Page 3 of 3



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-36

COMPANY: WESTERN COAL CORPORATION
WELL: BR10-36
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA

OTHER SERVICES:
NEUTRON

SECTION: BRULE NORTH
TOWNSHIP: N/A
RANGE: N/A
LICENCE NO.: N/A
UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

DATE: 08/18/10
DEPTH DRILLER: 83.82
BIT SIZE: 11.43
LOG TOP: -0.28
LOG BOTTOM: 83.00
CASING LOGGER: 3.048
CASING DRILLER: 3.048
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 11.00
WEIGHTED BY: G. HOLMLUND
RECORDED BY: T. NEAL
REMARKS 1: VERTICAL
REMARKS 2:

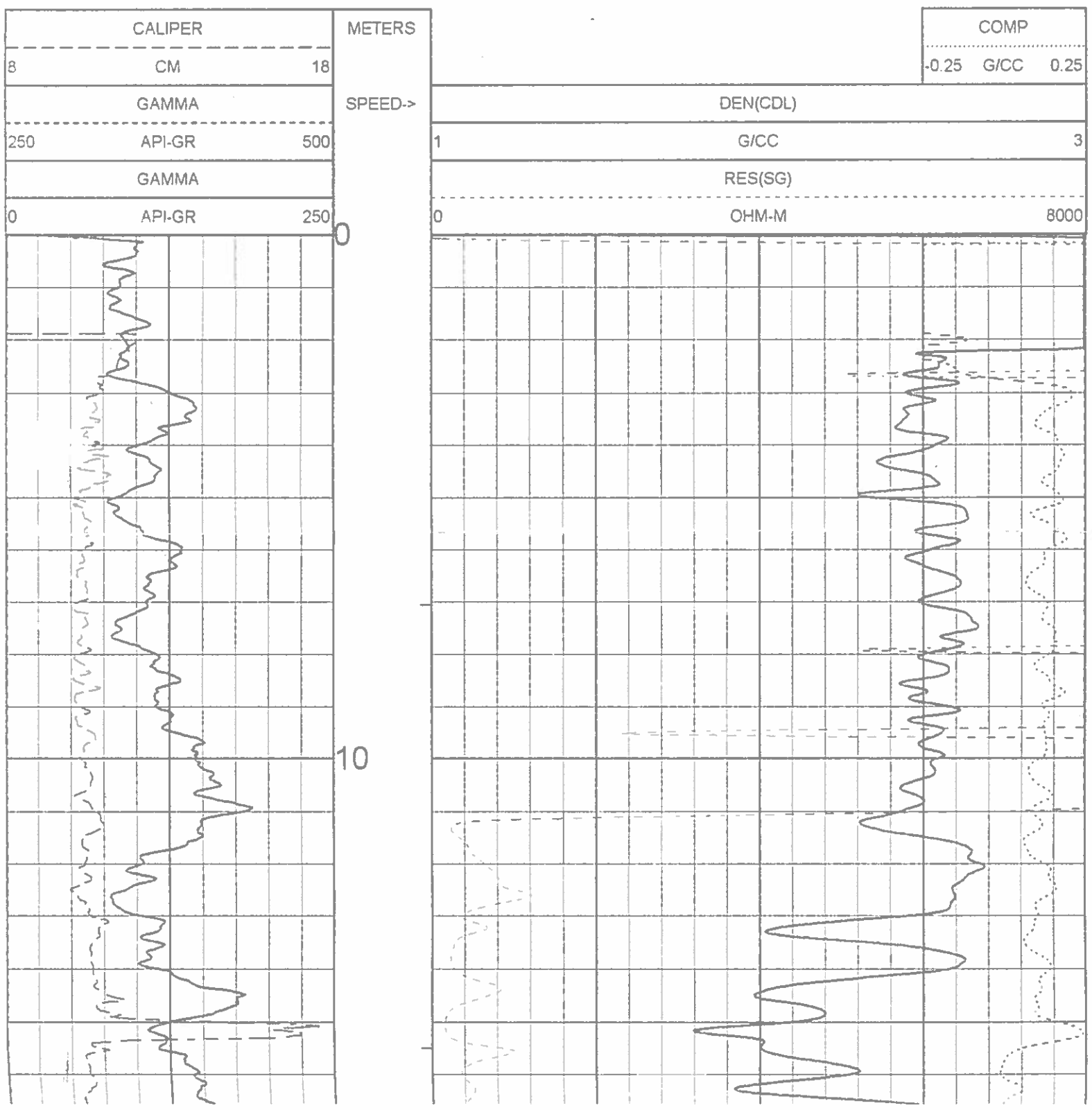
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ELEVATION DF: N/A
ELEVATION GL: N/A
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LOGGER TD:
ARRIVAL TIME:
DEPARTURE TIME:
CIRC STOPPED: N/A

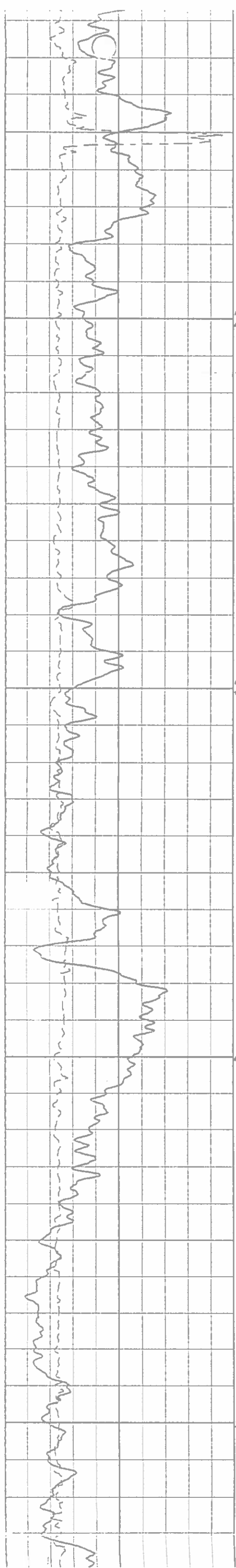
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR10-36 08/18/10

LOG PARAMETERS

MATRIX DENSITY: 2.65
MAGNETIC DECL: 21.0
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010
NEUTRON MATRIX: SANDSTONE
ELECT. CUTOFF: 99999
MATRIX DELTA T: 177
BIT SIZE: 11.43
VERSION = 3 64HR



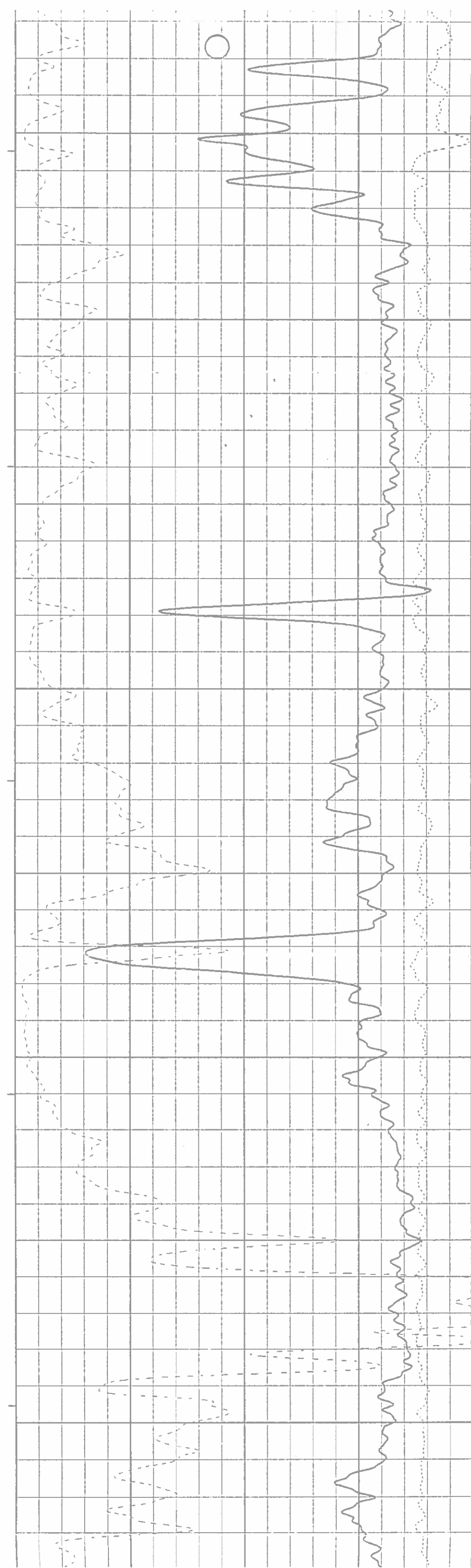


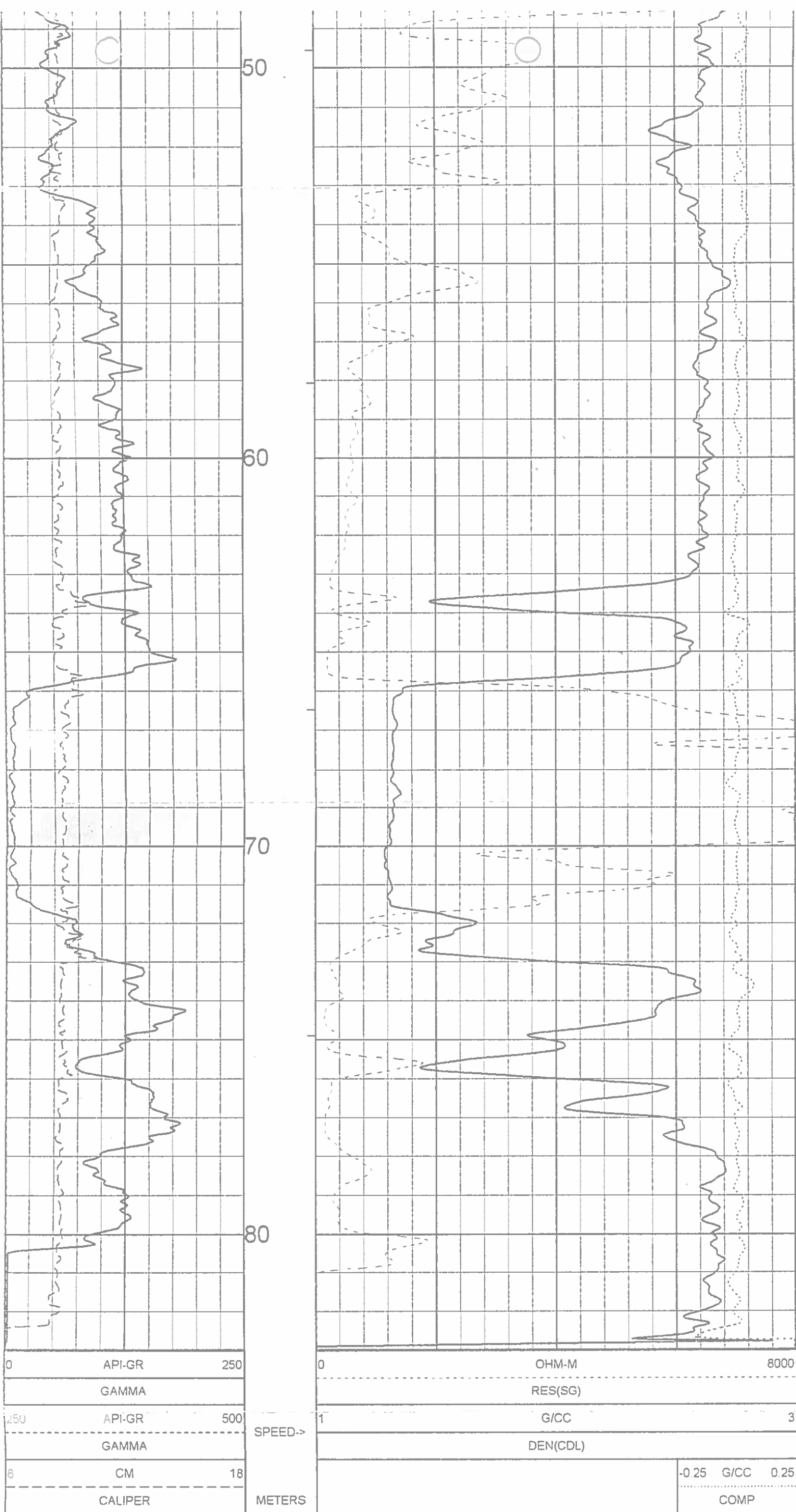
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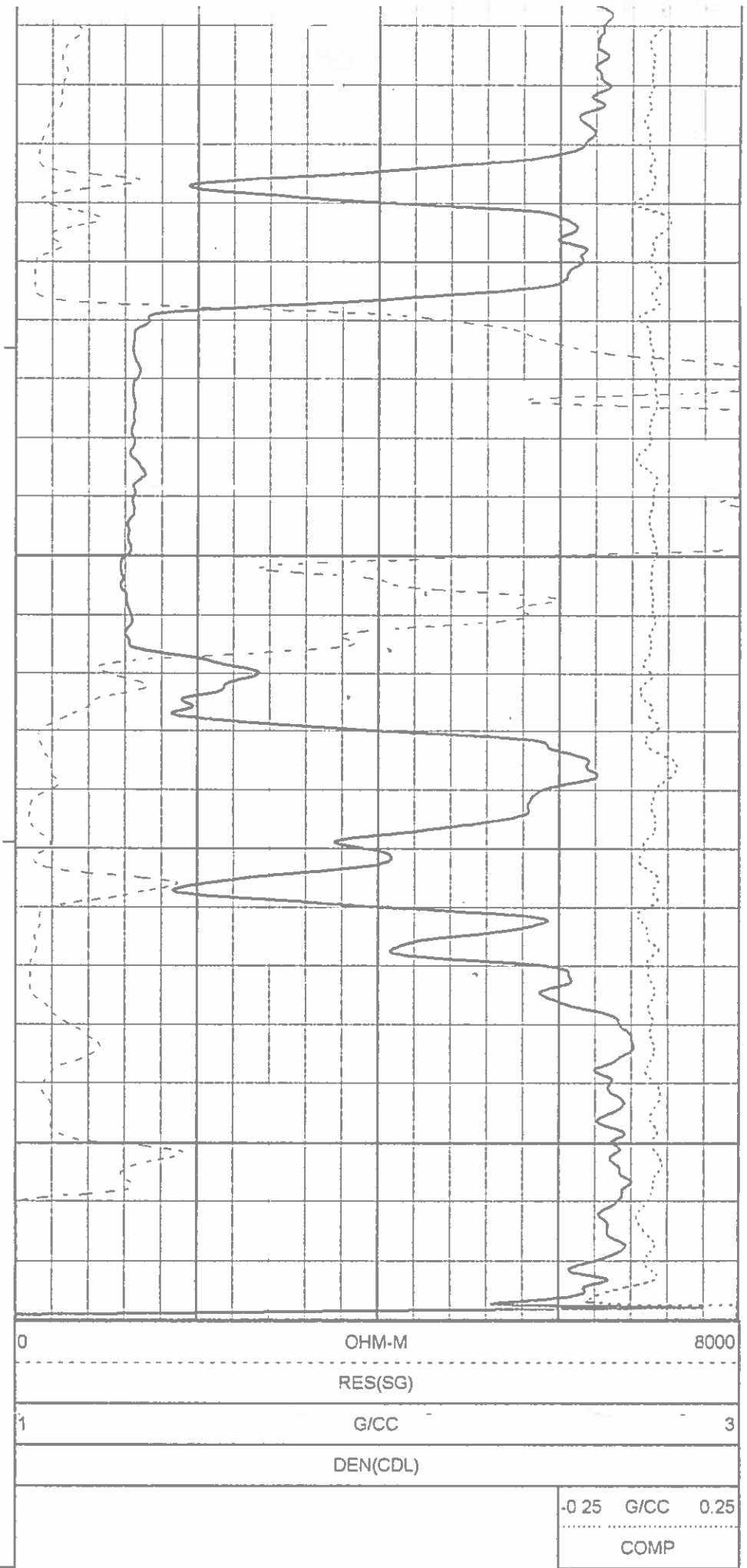
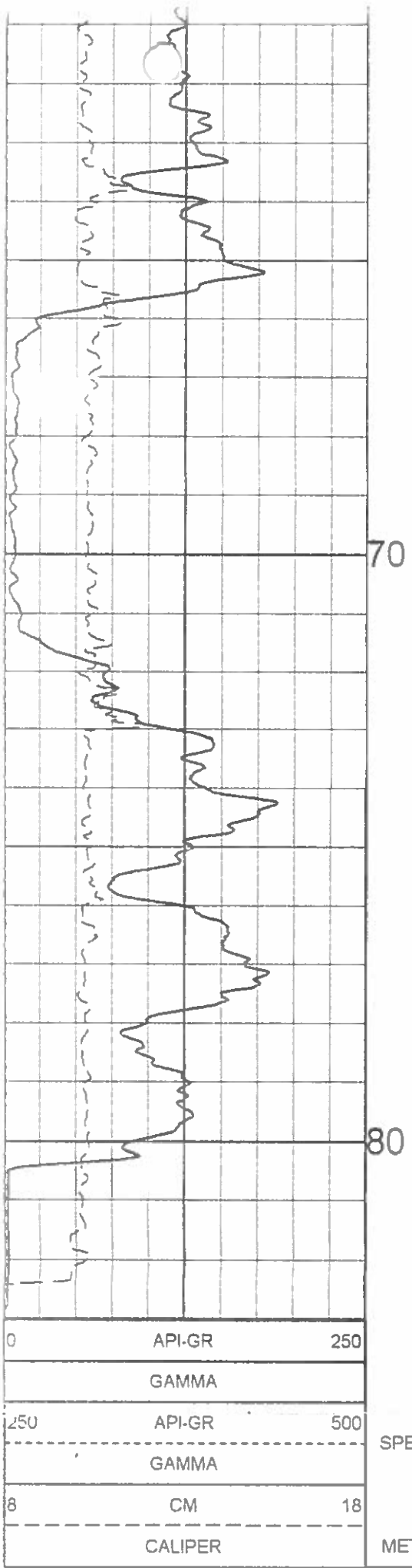
50





1:100 BULK DENSITY BR10-36 08/18/10

LOG PARAMETERS



1:100 BULK DENSITY BR10-36 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-36 08/18/10 14.44
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:54:42	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14:54:42	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug18,10	14:55:15	DEN(SS)	1.590 [G/CC]	48536.000 [CPS]
	Aug13,10	11:26:02	DEN(SS)	2.580 [G/CC]	21224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

DETAILED DENSITY GAMMA - CALIPER - RES. BR10-36

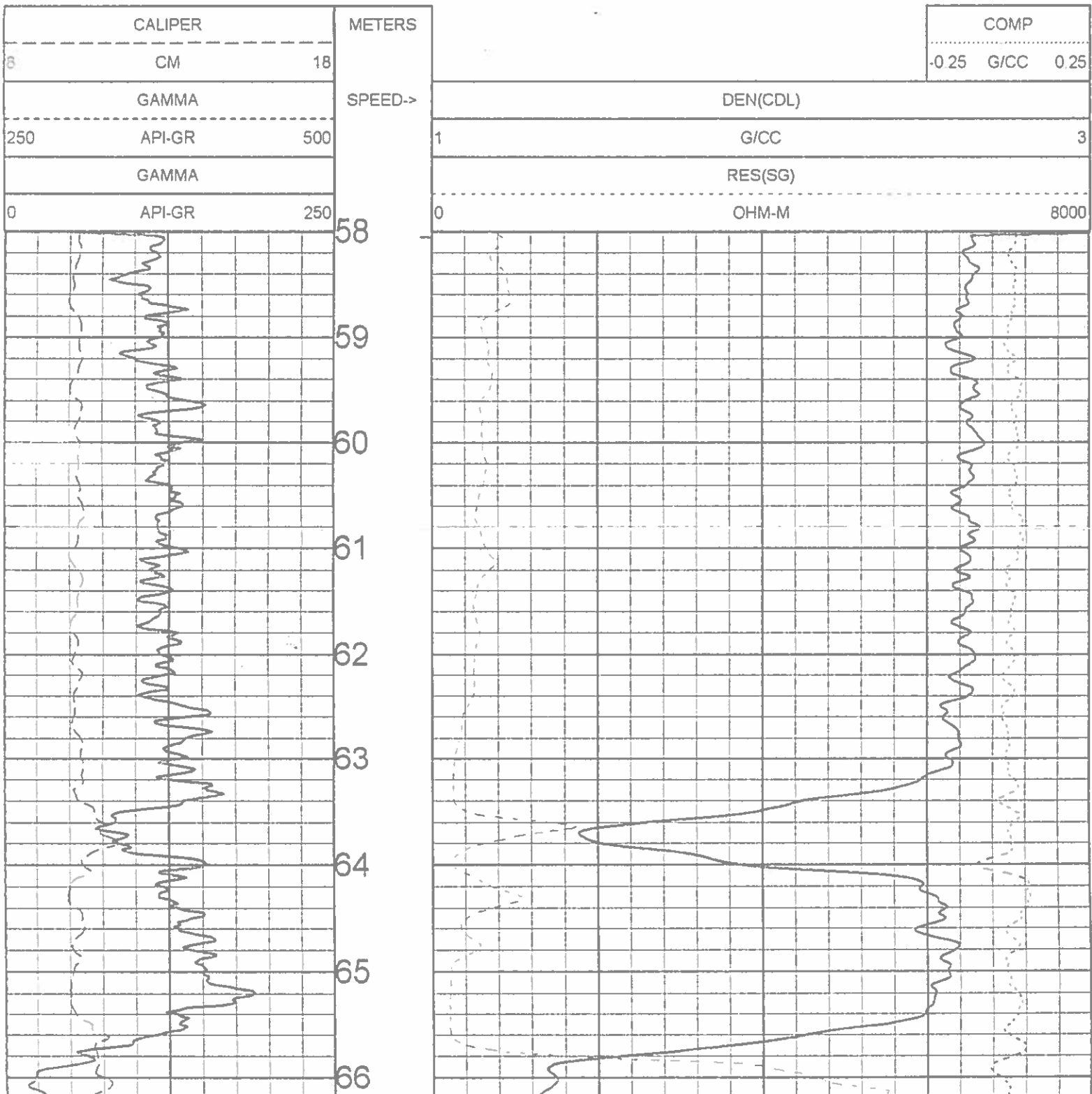
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-36		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
SECTION	BRULE NORTH		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/18/10	RIG NUMBER	
DEPTH DRILLER	83.82	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	-0.28	DEPARTURE TIME	
LOG BOTTOM	83.00	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
RECORDED BY	G. HOLMLUND		
REMARKS 1	VERTICAL		
REMARKS 2			

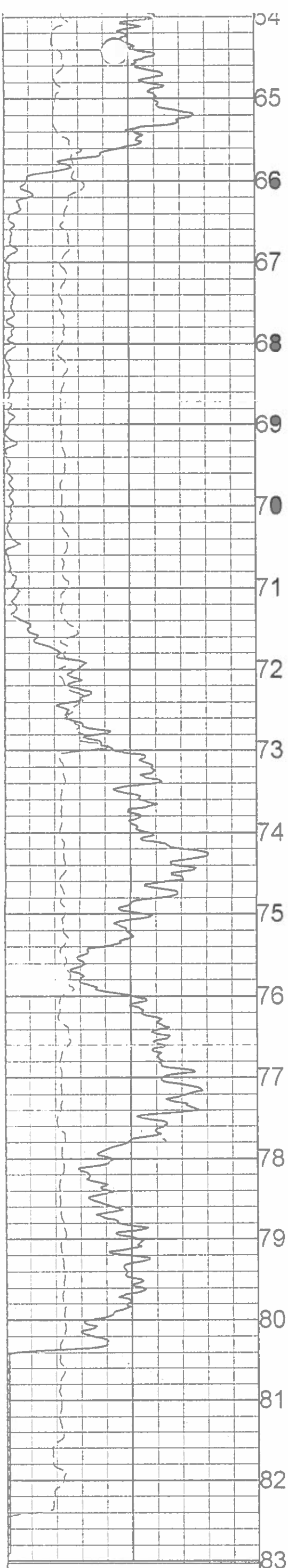
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-36 08/18/10

LOG PARAMETERS

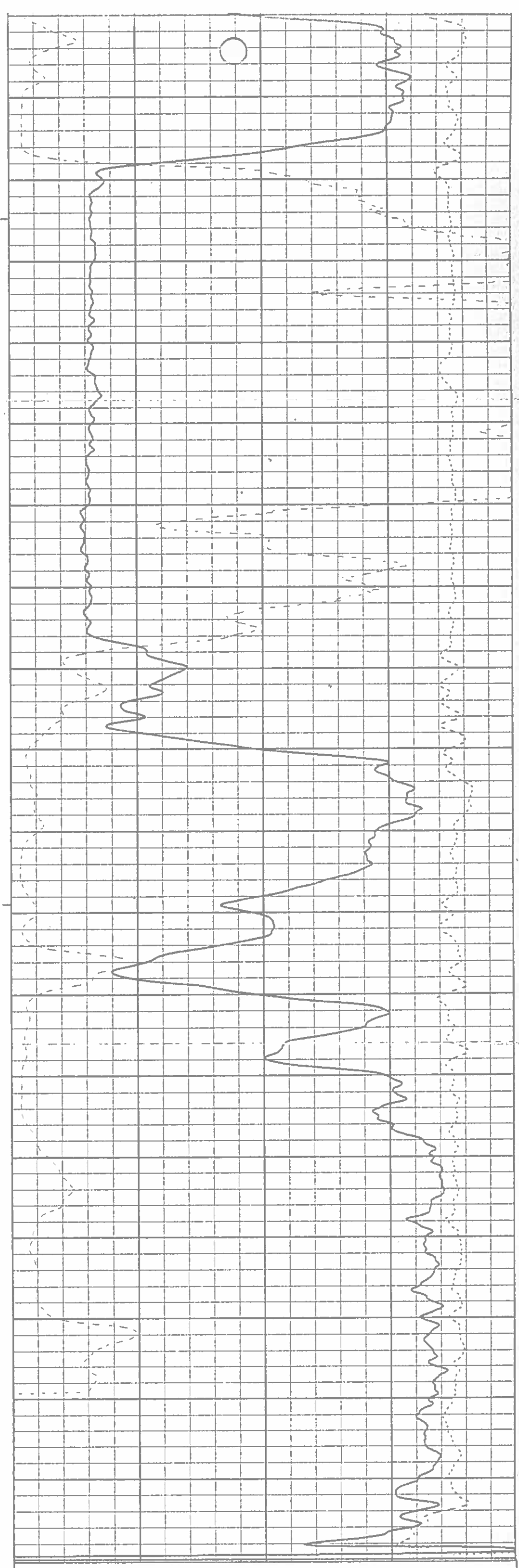
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010 VERSION = 3.64HR



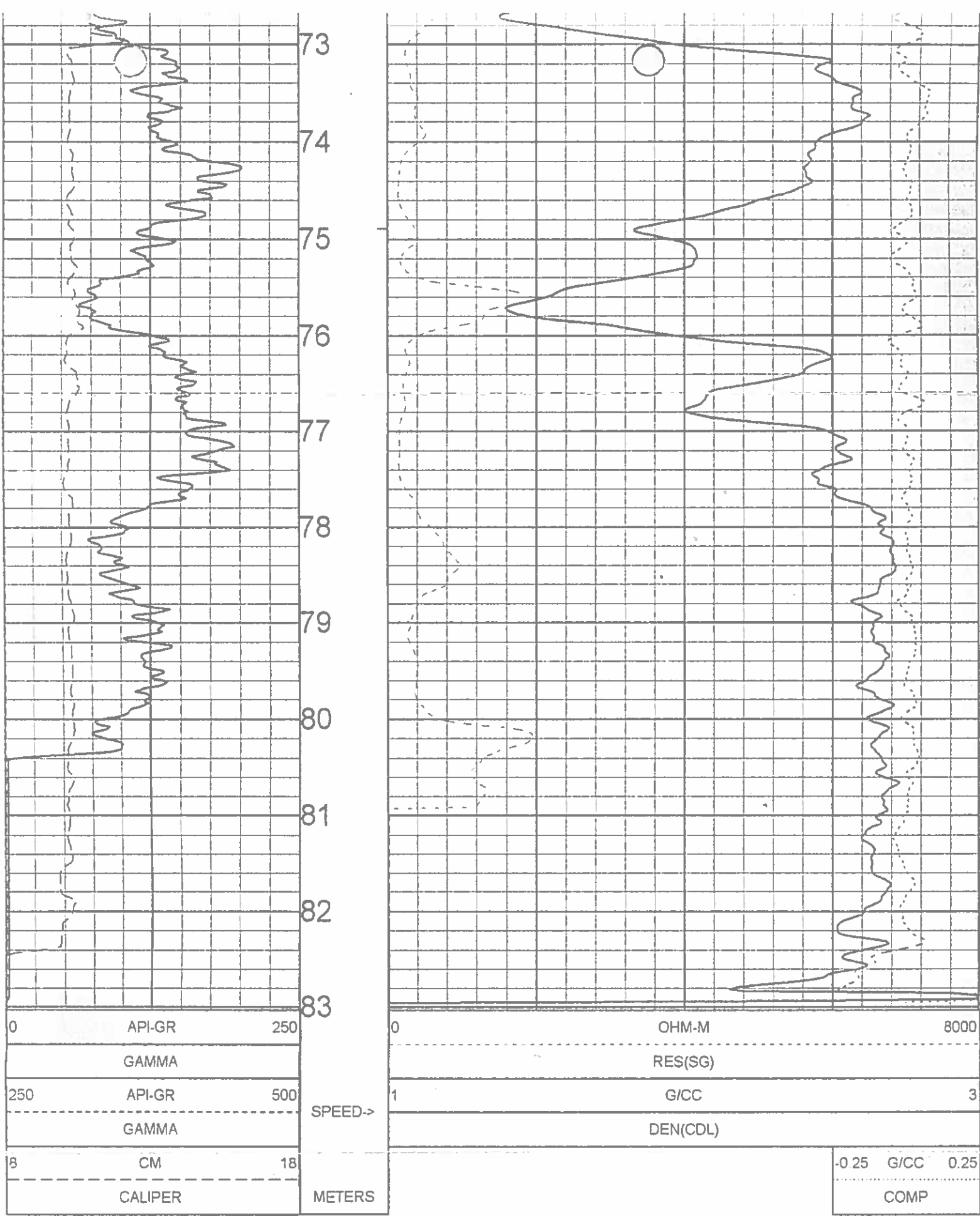


0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	
8	CM	18
	CALIPER	

SPEED->
METERS



0	OHM-M	8000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
	-0.25 G/CC 0.25	
	COMP	



▲
1:50 BULK DENSITY EXPANDED BR10-36 08/18/10
▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-36 08/18/10 14.44
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14.54.42	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14.54.42	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11.25.45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11.25.45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug18,10	14.55.15	DEN(SS)	1.590 [G/CC]	48536.000 [CPS]
	Aug13,10	11:26:02	DEN(SS)	2.580 [G/CC]	21224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

GAMMA - NEUTRON

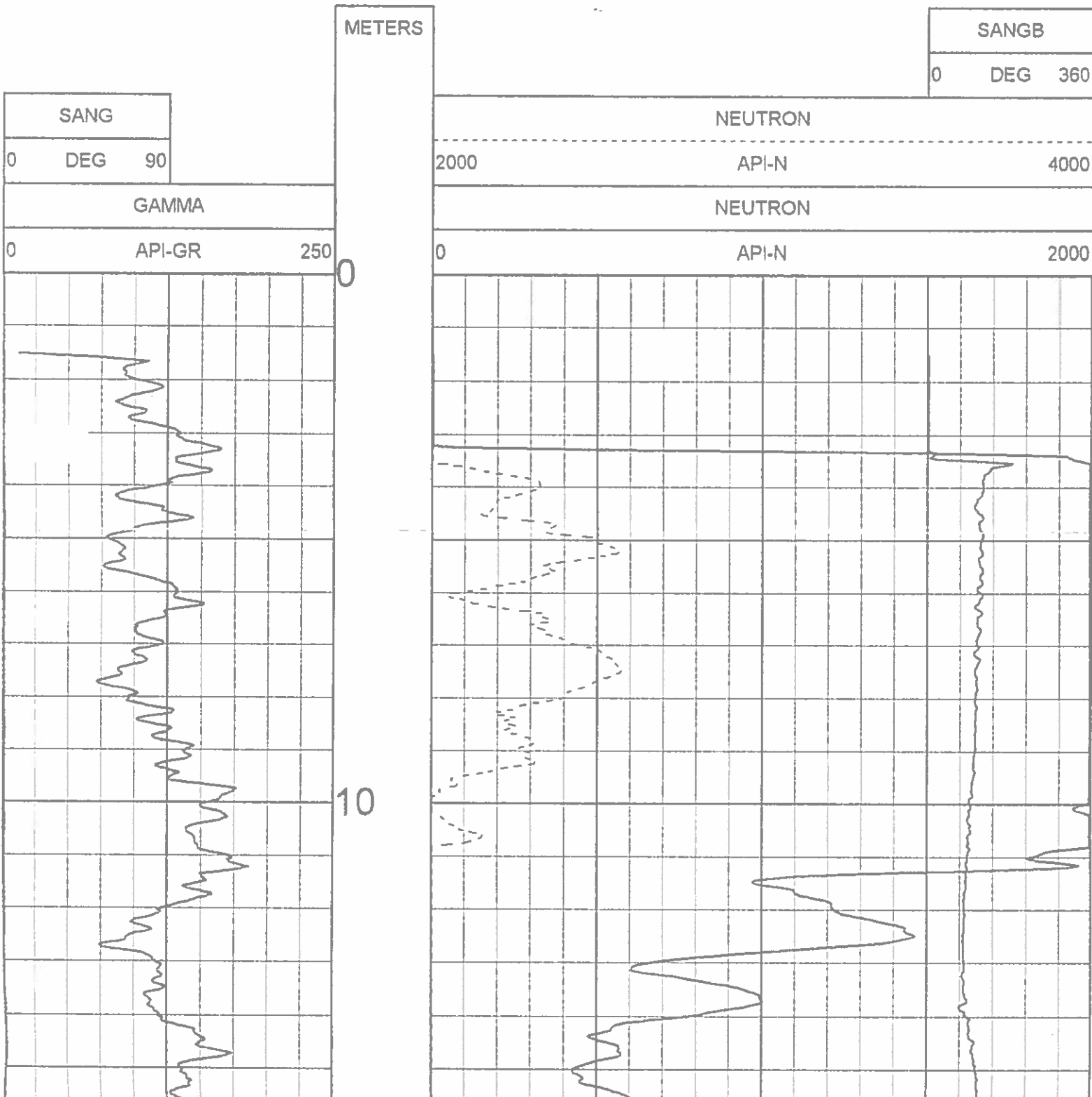
BR10-36

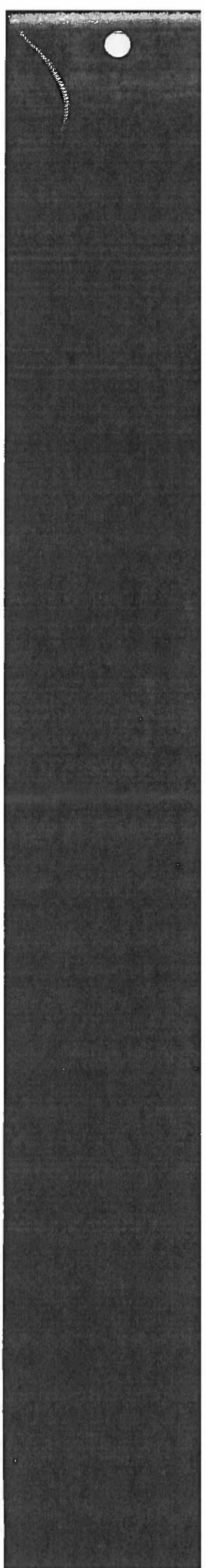
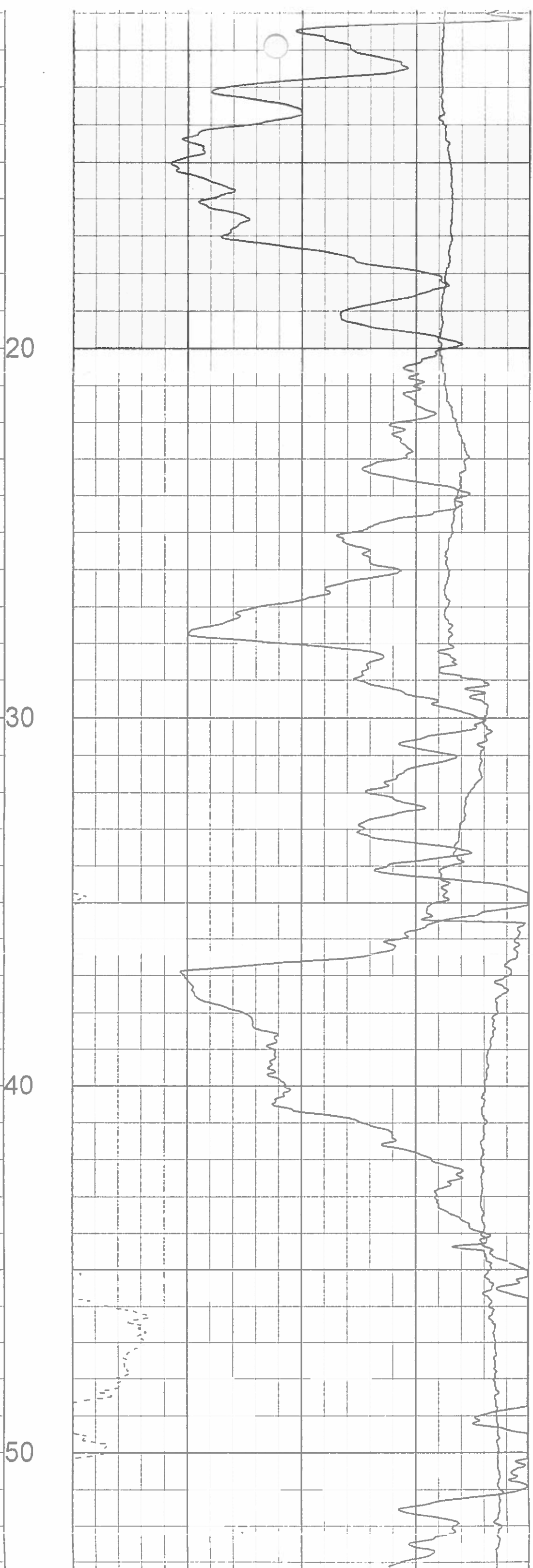
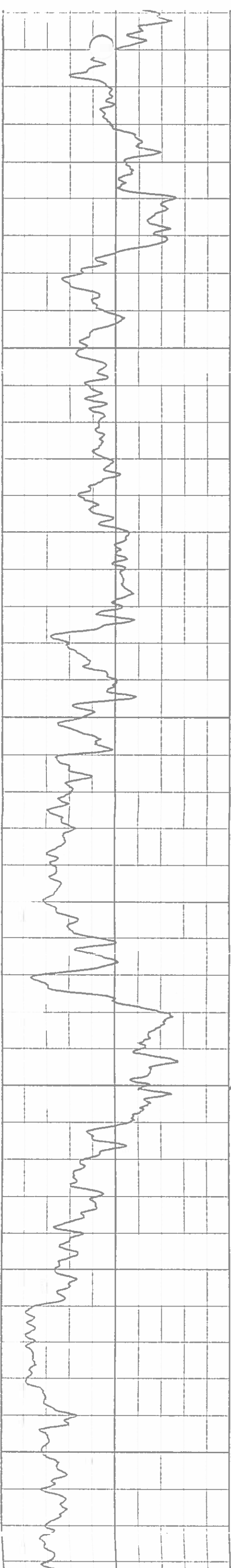
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR10-36	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LOCATION	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENCE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	08/18/10	RIG NUMBER	
DEPTH DRILLER	83.82	LOGGER TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	1.50	DEPARTURE TIME	
LOG BOTTOM	83.12	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WORKSHEP	G. HOLMLUND		
RECORDED BY	T. NEAL		
REMARKS 1	VERTICAL		
REMARKS 2			

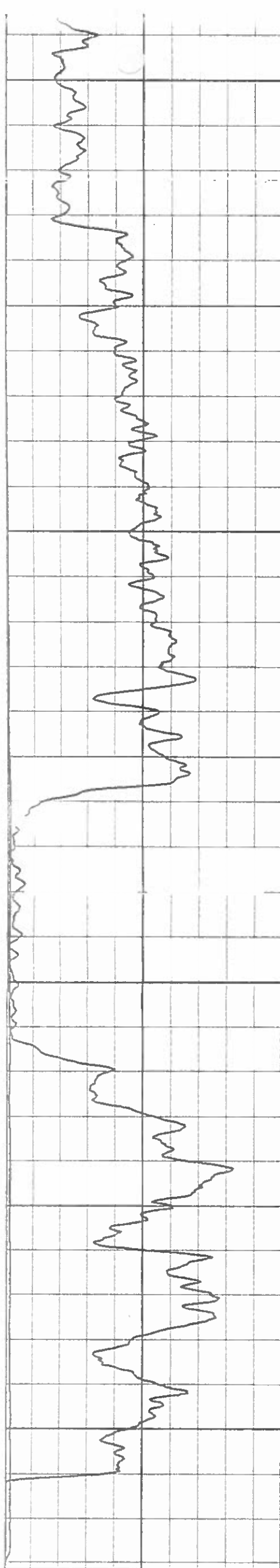
1:100 NEUTRON BR10-36 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010 VERSION = 3.64HR

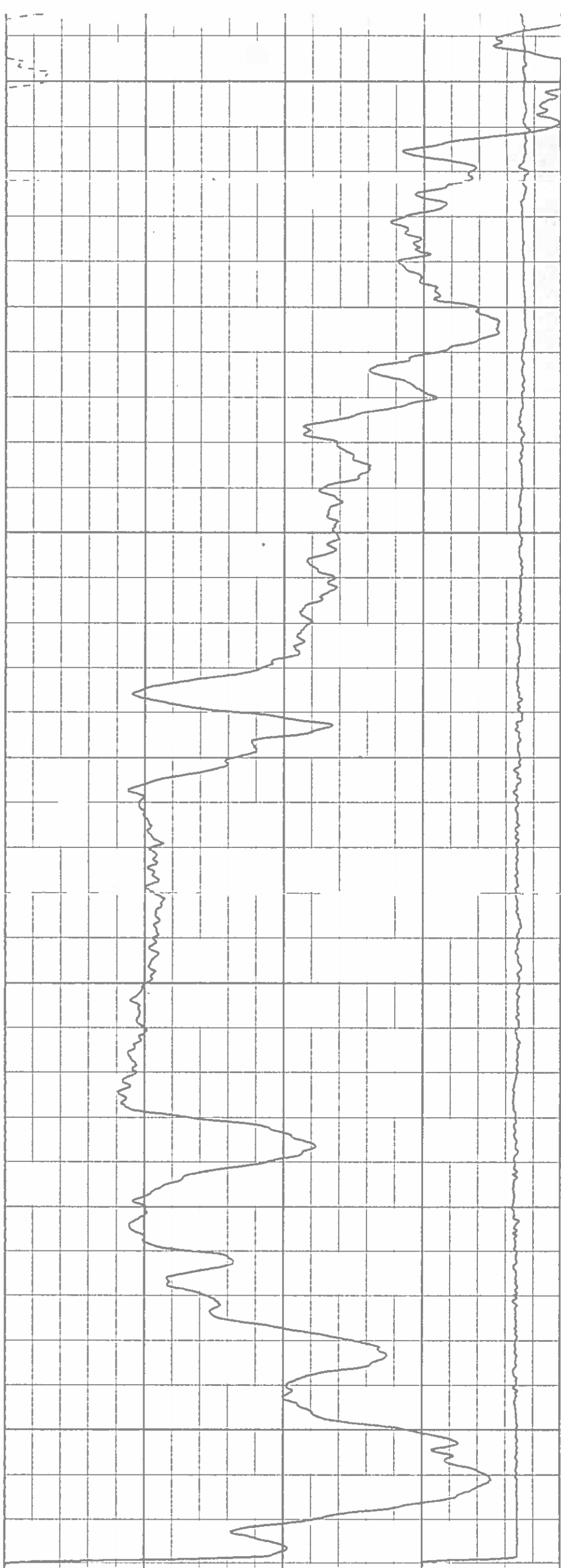






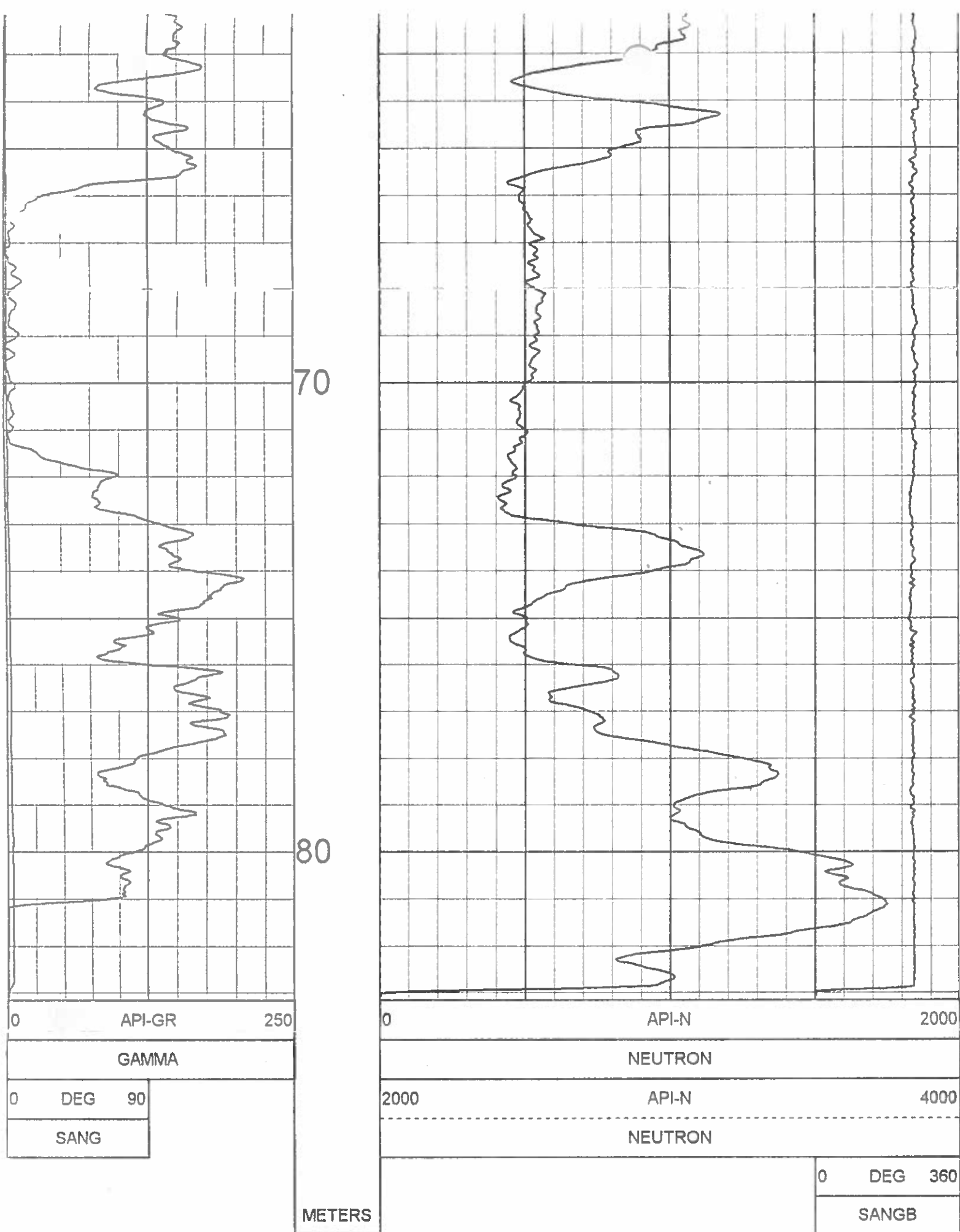
0 API-GR 250
 GAMMA
 0 DEG 90
 SANG

METERS



0 API-N 2000
 NEUTRON
 2000 API-N 4000
 NEUTRON

0 DEG 360
 SANGB



1:100 NEUTRON BR10-36 08/18/10

LOG PARAMETERS

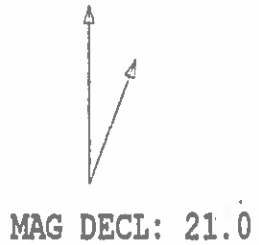
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-36 08/18/10 15:08
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 1071

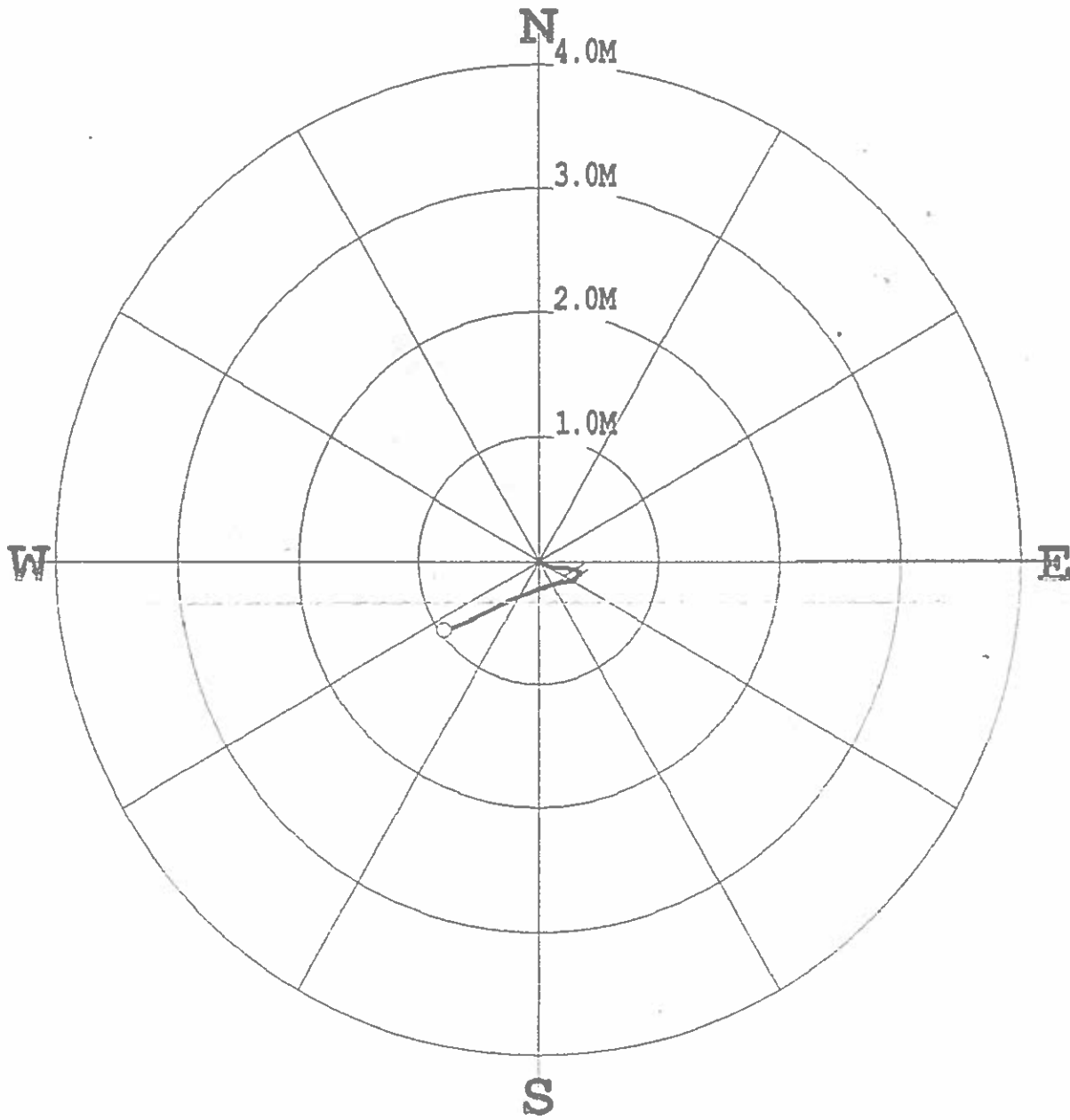
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	09:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	09:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	13:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	13:36:01	NEUTRON	271.000 [API-N]	697.000 [CPS]
3	May19,08	07:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	07:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	07:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	07:55:04	RES(16N)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	07:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	07:55:10	RES(64N)	1990.000 [OHM-M]	103531.000 [CPS]
6	May19,08	08:00:49	TEMP	35.500 [DEG F]	101300.000 [CPS]
	May19,08	08:00:49	TEMP	84.400 [DEG F]	64850.000 [CPS]
7	May19,08	07:55:17	RES	0.000 [OHM]	9984.000 [CPS]
	May19,08	07:55:17	RES	943.000 [OHM]	58869.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-36
 DATE OF LOG: 08/18/10
 PROBE: 9057A 1071



SCALE: 1 M/CM
 TRUE DEPTH: 82.91 M
 AZIMUTH: 234.0
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-36
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/18/10
 DATA FROM : N/A PROBE : 9057A 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-36_08-18-10_15-08_9057A_02_1.50_83.12_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGE
3.00	3.00	0.00	0.00	0.0	0.0	0.0	0.0
4.00	4.00	-0.00	0.01	0.0	122.1	1.1	124.4
5.00	5.00	-0.01	0.02	0.0	119.2	1.3	119.5
6.00	6.00	-0.02	0.04	0.0	119.2	1.0	113.9
7.00	7.00	-0.03	0.06	0.1	117.9	1.1	107.0
8.00	8.00	-0.04	0.08	0.1	116.1	1.3	107.8
9.00	9.00	-0.05	0.10	0.1	114.2	1.4	107.6
10.00	10.00	-0.05	0.12	0.1	112.1	1.3	93.7
11.00	11.00	-0.05	0.15	0.2	109.3	1.4	91.2
12.00	12.00	-0.05	0.17	0.2	106.5	1.2	84.6
13.00	13.00	-0.05	0.19	0.2	104.2	0.9	84.7
14.00	14.00	-0.05	0.21	0.2	102.5	0.8	74.8
15.00	15.00	-0.05	0.22	0.2	102.4	1.1	109.7
16.00	16.00	-0.06	0.24	0.2	103.1	1.0	115.5
17.00	17.00	-0.06	0.25	0.3	103.8	0.8	114.0
18.00	18.00	-0.07	0.27	0.3	104.0	0.8	94.8
19.00	19.00	-0.07	0.28	0.3	103.3	0.7	82.4
20.00	20.00	-0.06	0.29	0.3	102.5	0.6	78.0
21.00	21.00	-0.06	0.30	0.3	102.1	0.4	93.4
22.00	22.00	-0.07	0.31	0.3	102.2	0.5	123.6
23.00	23.00	-0.07	0.31	0.3	103.0	0.3	170.9
24.00	24.00	-0.08	0.31	0.3	103.8	0.5	133.8
25.00	25.00	-0.08	0.32	0.3	104.2	0.6	119.7
26.00	26.00	-0.08	0.33	0.3	104.2	0.4	99.6
27.00	27.00	-0.08	0.33	0.3	104.2	0.4	105.4
28.00	28.00	-0.09	0.34	0.3	104.2	0.1	105.0
29.00	29.00	-0.09	0.34	0.4	104.2	0.0	218.6
30.00	30.00	-0.09	0.34	0.4	104.4	0.2	221.0
31.00	31.00	-0.09	0.34	0.3	105.0	0.2	204.2
32.00	32.00	-0.09	0.34	0.3	105.8	0.4	176.8
33.00	33.00	-0.10	0.34	0.4	106.6	0.3	142.2
34.00	34.00	-0.10	0.34	0.4	107.0	0.2	106.2
35.00	35.00	-0.10	0.34	0.4	106.9	0.2	96.0
36.00	36.00	-0.10	0.35	0.4	106.6	0.1	326.7
37.00	37.00	-0.10	0.34	0.4	106.4	0.3	304.9
38.00	38.00	-0.10	0.34	0.4	106.7	0.3	261.7
39.00	39.00	-0.10	0.34	0.4	107.5	0.5	235.8

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***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-36
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/18/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-36_08-18-10_15-08_9057A_.02_1.50_83.12_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.00	3.00	0.00	0.00	0.0	0.0	0.0	0.0
4.00	4.00	-0.00	0.01	0.0	122.1	1.1	124.4
5.00	5.00	-0.01	0.02	0.0	119.2	1.3	119.5
6.00	6.00	-0.02	0.04	0.0	119.2	1.0	113.9
7.00	7.00	-0.03	0.06	0.1	117.9	1.1	107.0
8.00	8.00	-0.04	0.08	0.1	116.1	1.3	107.8
9.00	9.00	-0.05	0.10	0.1	114.2	1.4	107.6
10.00	10.00	-0.05	0.12	0.1	112.1	1.3	93.7
11.00	11.00	-0.05	0.15	0.2	109.3	1.4	91.2
12.00	12.00	-0.05	0.17	0.2	106.5	1.2	84.6
13.00	13.00	-0.05	0.19	0.2	104.2	0.9	84.7
14.00	14.00	-0.05	0.21	0.2	102.5	0.8	74.8
15.00	15.00	-0.05	0.22	0.2	102.4	1.1	109.7
16.00	16.00	-0.06	0.24	0.2	103.1	1.0	115.5
17.00	17.00	-0.06	0.25	0.3	103.8	0.8	114.0
18.00	18.00	-0.07	0.27	0.3	104.0	0.8	94.8
19.00	19.00	-0.07	0.28	0.3	103.3	0.7	82.4
20.00	20.00	-0.06	0.29	0.3	102.5	0.6	78.0
21.00	21.00	-0.06	0.30	0.3	102.1	0.4	93.4
22.00	22.00	-0.07	0.31	0.3	102.2	0.5	123.6
23.00	23.00	-0.07	0.31	0.3	103.0	0.3	170.9
24.00	24.00	-0.08	0.31	0.3	103.8	0.5	133.8
25.00	25.00	-0.08	0.32	0.3	104.2	0.6	119.7
26.00	26.00	-0.08	0.33	0.3	104.2	0.4	99.6
27.00	27.00	-0.08	0.33	0.3	104.2	0.4	105.4
28.00	28.00	-0.09	0.34	0.3	104.2	0.1	105.0
29.00	29.00	-0.09	0.34	0.4	104.2	0.0	218.6
30.00	30.00	-0.09	0.34	0.4	104.4	0.2	221.0
31.00	31.00	-0.09	0.34	0.3	105.0	0.2	204.2
32.00	32.00	-0.09	0.34	0.3	105.8	0.4	176.8
33.00	33.00	-0.10	0.34	0.4	106.6	0.3	142.2
34.00	34.00	-0.10	0.34	0.4	107.0	0.2	106.2
35.00	35.00	-0.10	0.34	0.4	106.9	0.2	96.0
36.00	36.00	-0.10	0.35	0.4	106.6	0.1	326.7
37.00	37.00	-0.10	0.34	0.4	106.4	0.3	304.9
38.00	38.00	-0.10	0.34	0.4	106.7	0.3	261.7
39.00	39.00	-0.10	0.33	0.3	107.5	0.5	235.8
40.00	40.00	-0.11	0.32	0.3	109.0	0.7	220.9
41.00	41.00	-0.12	0.32	0.3	110.8	0.7	227.1
42.00	42.00	-0.13	0.31	0.3	112.4	0.5	209.0
43.00	43.00	-0.14	0.31	0.3	113.9	0.5	209.8
44.00	44.00	-0.14	0.30	0.3	115.3	0.5	213.2
45.00	45.00	-0.15	0.30	0.3	116.2	0.3	242.7
46.00	46.00	-0.15	0.30	0.3	117.4	0.5	233.9
47.00	47.00	-0.16	0.29	0.3	118.6	0.4	255.5
48.00	48.00	-0.16	0.28	0.3	119.7	0.6	259.3
49.00	49.00	-0.16	0.27	0.3	121.0	0.6	256.5
50.00	50.00	-0.16	0.26	0.3	122.2	0.6	265.2
51.00	51.00	-0.16	0.25	0.3	123.4	0.7	268.0
52.00	52.00	-0.17	0.24	0.3	124.7	0.5	272.2
53.00	53.00	-0.17	0.23	0.3	126.6	0.9	257.2
54.00	54.00	-0.17	0.21	0.3	128.9	1.0	262.7
55.00	55.00	-0.17	0.20	0.3	131.3	0.7	266.1
56.00	56.00	-0.17	0.18	0.3	133.2	0.8	258.2
57.00	57.00	-0.18	0.17	0.2	136.1	1.0	259.2
58.00	58.00	-0.18	0.15	0.2	140.2	1.1	256.1
59.00	59.00	-0.18	0.13	0.2	144.4	1.1	260.8
60.00	59.99	-0.19	0.11	0.2	149.7	1.3	254.5
61.00	60.99	-0.20	0.09	0.2	155.7	1.4	246.2
62.00	61.99	-0.20	0.07	0.2	162.2	1.4	247.5
63.00	62.99	-0.21	0.04	0.2	169.1	1.5	249.3
64.00	63.99	-0.22	0.02	0.2	175.9	1.4	246.2
65.00	64.99	-0.23	-0.01	0.2	181.9	1.6	253.1
66.00	65.99	-0.24	-0.04	0.2	188.7	1.9	243.0
67.00	66.99	-0.25	-0.07	0.3	195.3	2.0	245.5
68.00	67.99	-0.27	-0.10	0.3	200.6	2.0	246.0
69.00	68.99	-0.28	-0.13	0.3	205.4	2.0	246.7
70.00	69.99	-0.29	-0.16	0.3	209.6	1.7	251.5
71.00	70.99	-0.30	-0.20	0.4	213.5	2.3	254.2
72.00	71.99	-0.32	-0.24	0.4	217.0	2.4	250.1
73.00	72.99	-0.34	-0.27	0.4	219.1	2.5	243.1
74.00	73.99	-0.36	-0.31	0.5	221.4	2.8	241.6
75.00	74.99	-0.38	-0.36	0.5	223.2	3.2	237.1
76.00	75.98	-0.40	-0.40	0.6	224.8	3.1	248.5
77.00	76.98	-0.42	-0.45	0.6	226.6	2.9	238.2
78.00	77.98	-0.45	-0.49	0.7	228.0	2.9	244.3
79.00	78.98	-0.47	-0.54	0.7	229.2	3.1	243.4
80.00	79.98	-0.49	-0.60	0.8	230.5	3.5	246.3
81.00	80.98	-0.52	-0.65	0.8	231.7	3.7	248.9
82.00	81.97	-0.54	-0.72	0.9	233.0	4.0	248.9
83.00	82.97	-0.56	-0.78	1.0	234.0	0.0	0.0
82.94	82.91	-0.56	-0.78	1.0	234.0	4.1	248.5



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-37**

year drilled: 2010

AREA:

BURNT RIVER
BRULE

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,329.15	6,140,285.55	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
203	-87	110.48	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	203.1	-87.20
11.00	199.8	-87.10
12.00	197.8	-87.00
13.00	197.0	-87.30
14.00	195.0	-87.10
15.00	194.2	-87.00
16.00	193.5	-87.40
17.00	194.1	-86.70
18.00	194.9	-86.10
19.00	195.7	-85.90
20.00	196.8	-85.50
21.00	197.5	-86.30
22.00	198.1	-85.40
23.00	198.4	-85.60
24.00	199.0	-85.40
25.00	200.2	-85.20
26.00	201.6	-84.80
27.00	203.1	-84.40
28.00	204.6	-84.20
29.00	205.7	-83.80
30.00	206.8	-83.70
31.00	207.6	-83.00
32.00	208.5	-83.10
33.00	209.5	-82.60
34.00	210.5	-82.30
35.00	211.6	-82.20
36.00	212.5	-82.00

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	8.30	8.30		
35.30	36.10	0.80		
63.70	64.40	0.70		
72.40	73.10	0.70		
93.30	93.60	0.30		
94.80	99.60	4.80		
99.60	100.50	0.90		
102.20	102.80	0.60		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-37**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

37.00	213.5	-82.20
38.00	214.3	-81.90
39.00	214.8	-82.00
40.00	215.1	-81.60
41.00	215.6	-81.00
42.00	216.1	-81.00
43.00	216.6	-80.90
44.00	217.1	-80.90
45.00	217.5	-80.50
46.00	218.0	-80.40
47.00	218.3	-80.40
48.00	218.7	-80.10
49.00	219.0	-80.30
50.00	219.3	-80.20
51.00	219.6	-79.70
52.00	219.9	-79.70
53.00	220.2	-79.50
54.00	220.5	-79.00
55.00	220.8	-79.00
56.00	221.1	-78.70
57.00	221.3	-78.10
58.00	221.6	-78.10
59.00	221.8	-78.30
60.00	221.9	-78.30
61.00	222.1	-78.30
62.00	222.3	-78.10
63.00	222.4	-77.80
64.00	222.5	-77.60
65.00	222.6	-78.50
66.00	222.6	-77.90
67.00	222.7	-77.50
68.00	222.7	-77.50
69.00	222.7	-77.80
70.00	222.7	-77.10
71.00	222.8	-77.30
72.00	222.7	-76.90
73.00	222.8	-77.10
74.00	222.8	-75.90
75.00	222.9	-75.80
76.00	223.0	-76.00
77.00	223.0	-76.00
78.00	223.1	-75.80
79.00	223.2	-75.50
80.00	223.3	-75.70
81.00	223.3	-76.10

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-37	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

82.00	223.4	-75.10
83.00	223.5	-74.80
84.00	223.6	-74.70
85.00	223.7	-74.80
86.00	223.8	-74.40
87.00	223.8	-74.70
88.00	223.9	-74.40
89.00	224.0	-74.00
90.00	224.2	-73.90
91.00	224.2	-73.90
92.00	224.3	-73.20
93.00	224.5	-72.70
94.00	224.6	-72.10
95.00	224.6	-72.00
96.00	224.7	-72.20
97.00	224.8	-71.50
98.00	224.9	-70.90
99.00	224.9	-70.90
100.00	225.0	-70.90
101.00	225.0	-70.50
102.00	225.1	-69.70
103.00	225.1	-69.30
104.00	225.1	-69.10
105.00	225.2	-68.70
106.00	225.3	-68.60
107.00	225.3	-68.40
108.00	225.4	-68.20
109.00	225.4	-67.00
110.00	225.4	-67.20
110.30	225.5	-67.10

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 3 of 3

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-37

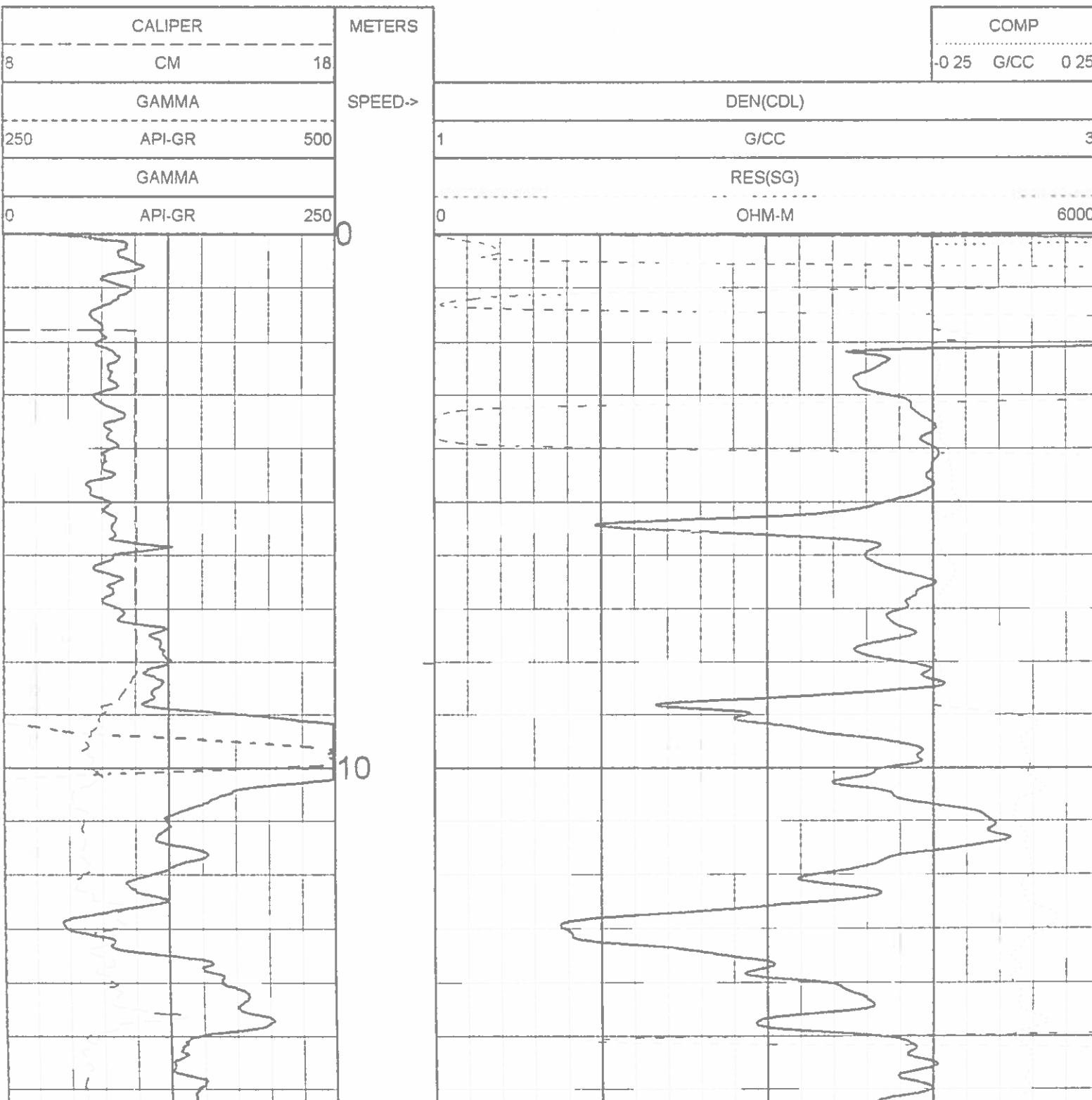
OTHER SERVICES:
NEUTRON

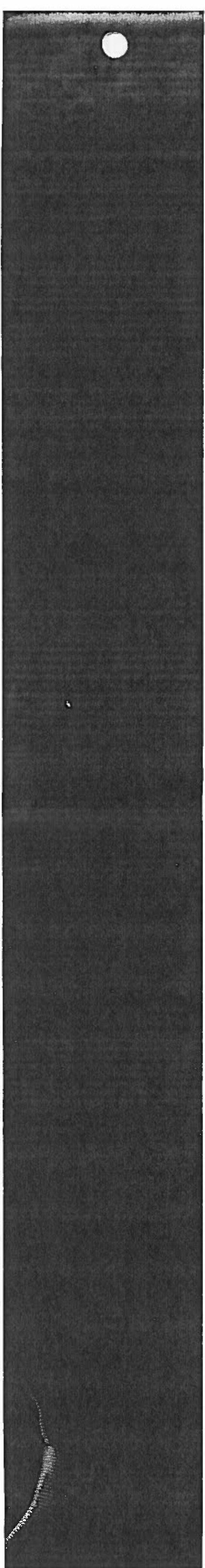
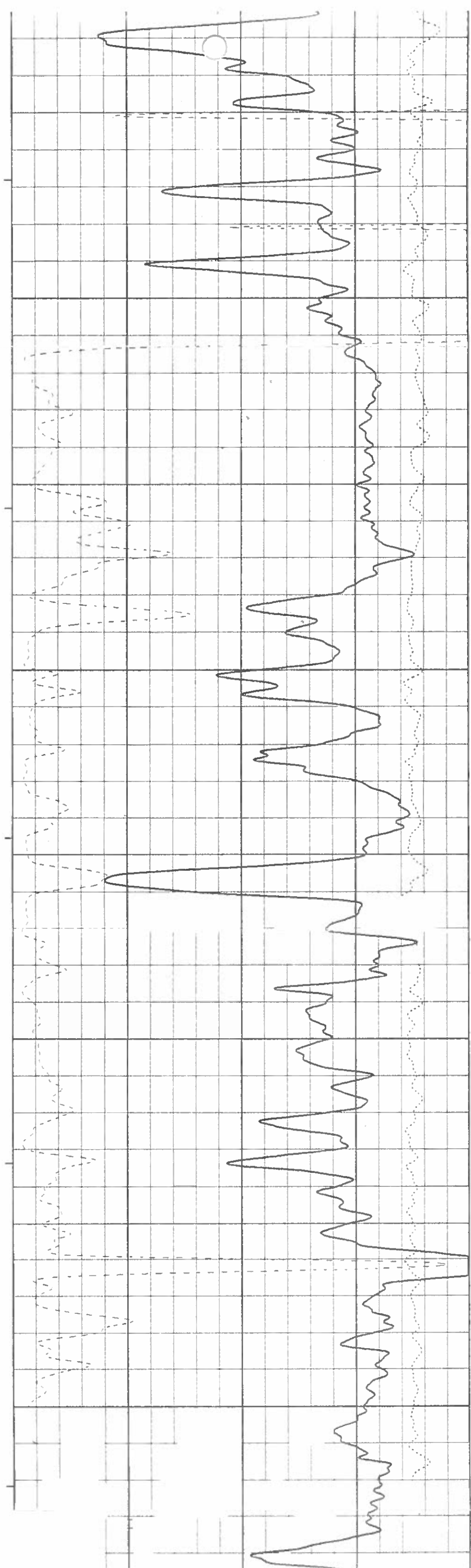
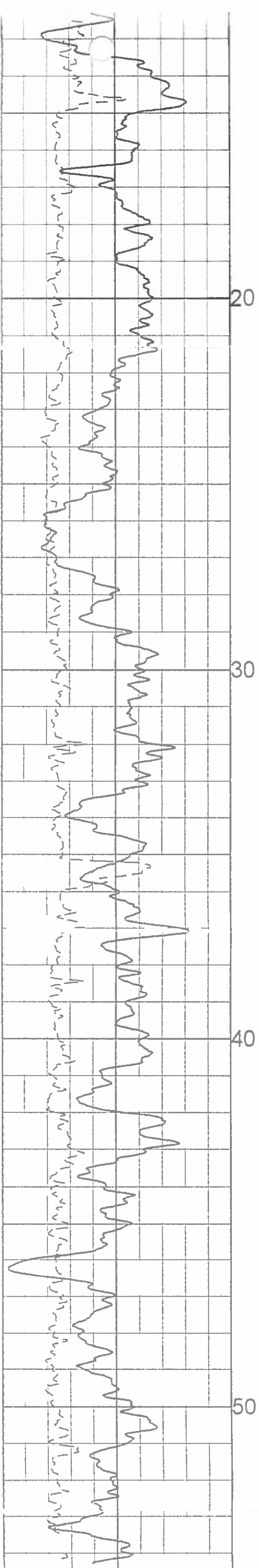
COMPANY	WESTERN COAL CORPORATION	
WELL	BR10-37	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
SECTION	BRULE NORTH	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB N/A
LOG MEASURED FROM	GL	ELEVATION DF N/A
DRL MEASURED FROM	GL	ELEVATION GL N/A
DATE	08/17/10	RIG NUMBER
DEPTH DRILLER	:111.25	LOGGER TD
BIT SIZE	:11.43	ARRIVAL TIME
LOG TOP	:0.38	DEPARTURE TIME
LOG BOTTOM	:110.43	CIRC STOPPED
CASING LOGGER	9.144	
CASING DRILLER	9.144	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	:1.00	
RECORDED BY	G. HOLMLUND	
REMARKS 1	T. NEAL	
REMARKS 2	VERTICAL	

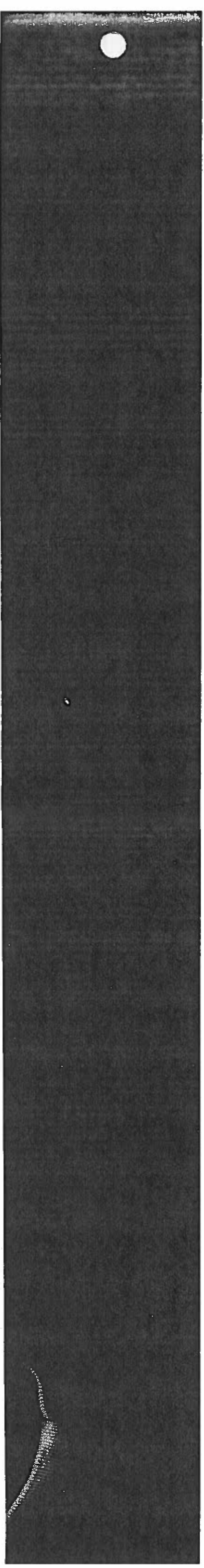
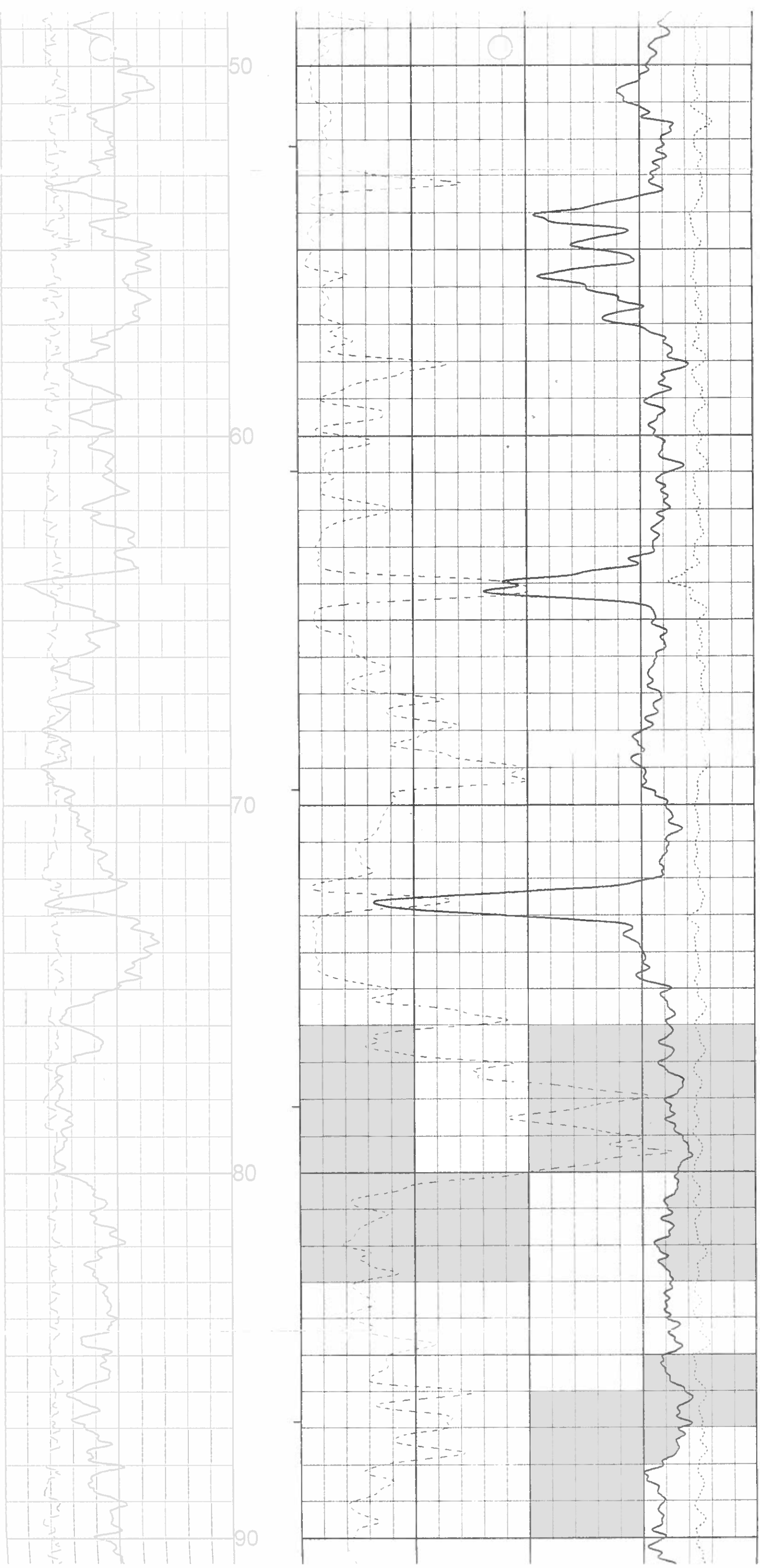
1:100 BULK DENSITY BR10-37 08/17/10

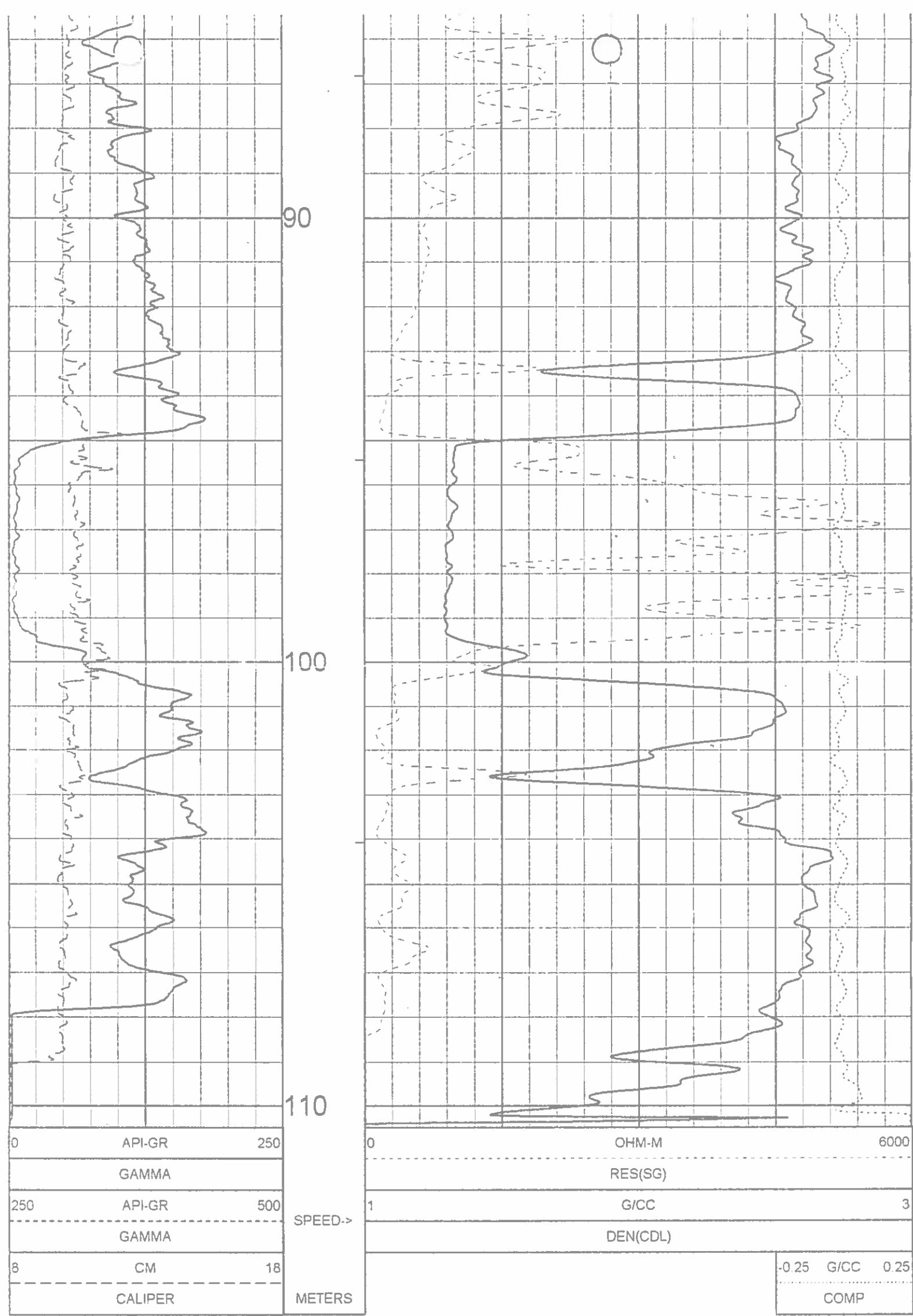
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010 VERSION = 3.64HR









1:100 BULK DENSITY BR10-37 08/17/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 07/10/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-37 08/17/10 10:33
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug17,10	10:47:19	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug17,10	10:47:19	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug17,10	10:48:37	DEN(SS)	1.590 [G/CC]	47536.000 [CPS]
	Aug13,10	11:26:02	DEN(SS)	2.580 [G/CC]	21224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-37

OTHER SERVICES:
NEUTRON

WESTERN COAL CORPORATION

BR10-37

BRULE

CANADA

BRITISH COLUMBIA

BRULE NORTH

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-37 08/17/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

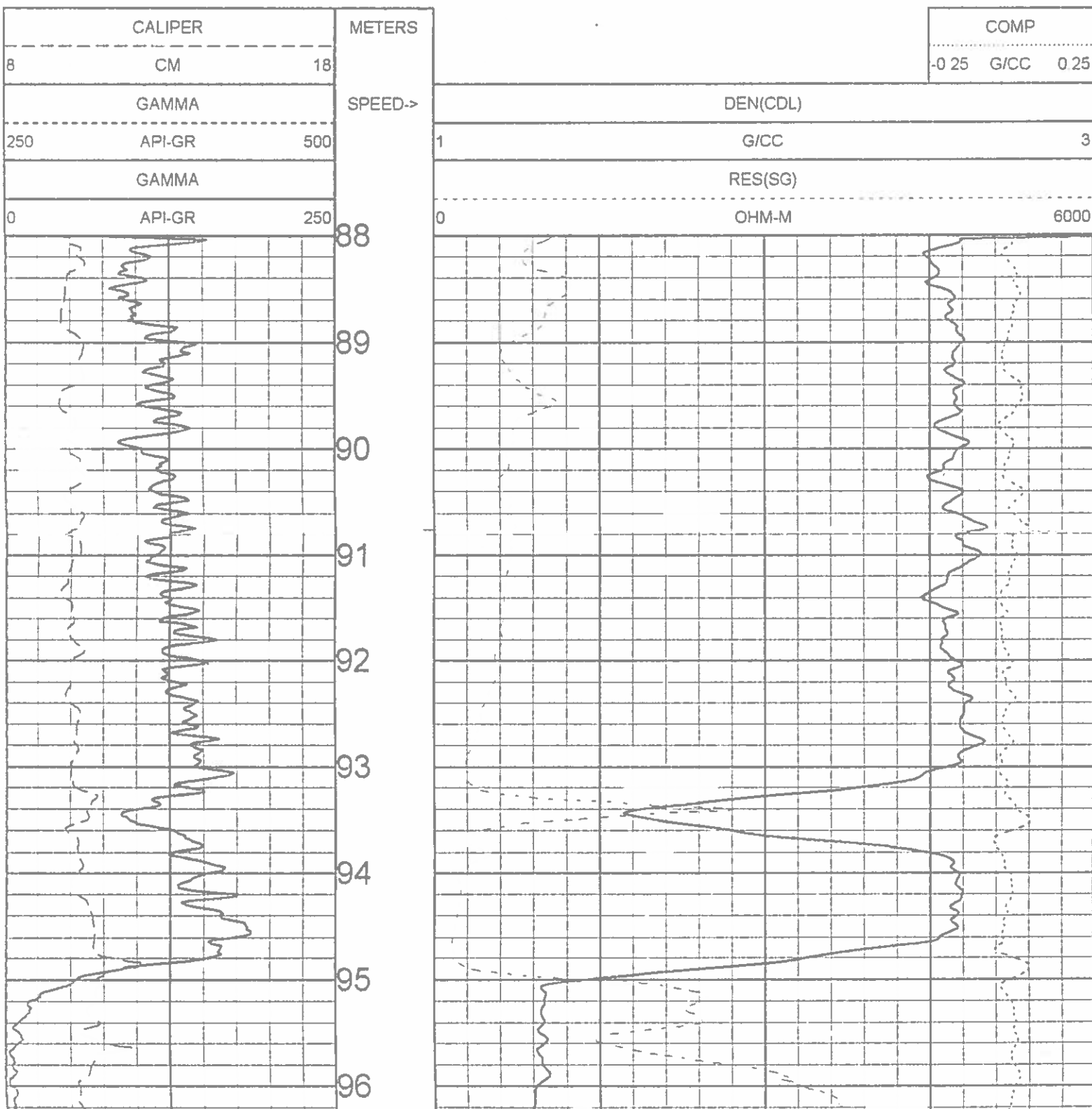
MAGNETIC DECL : 21.0

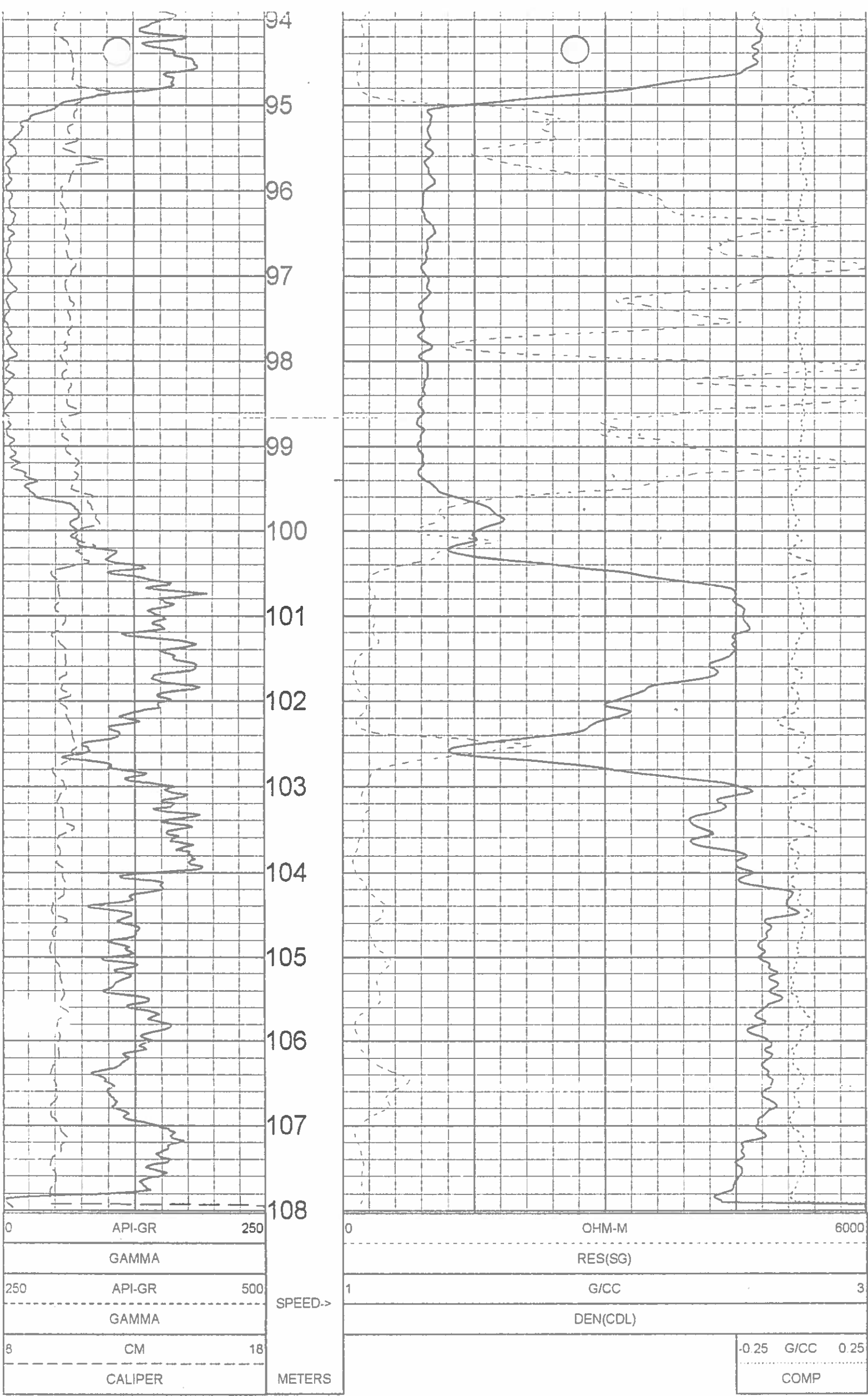
ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64HR





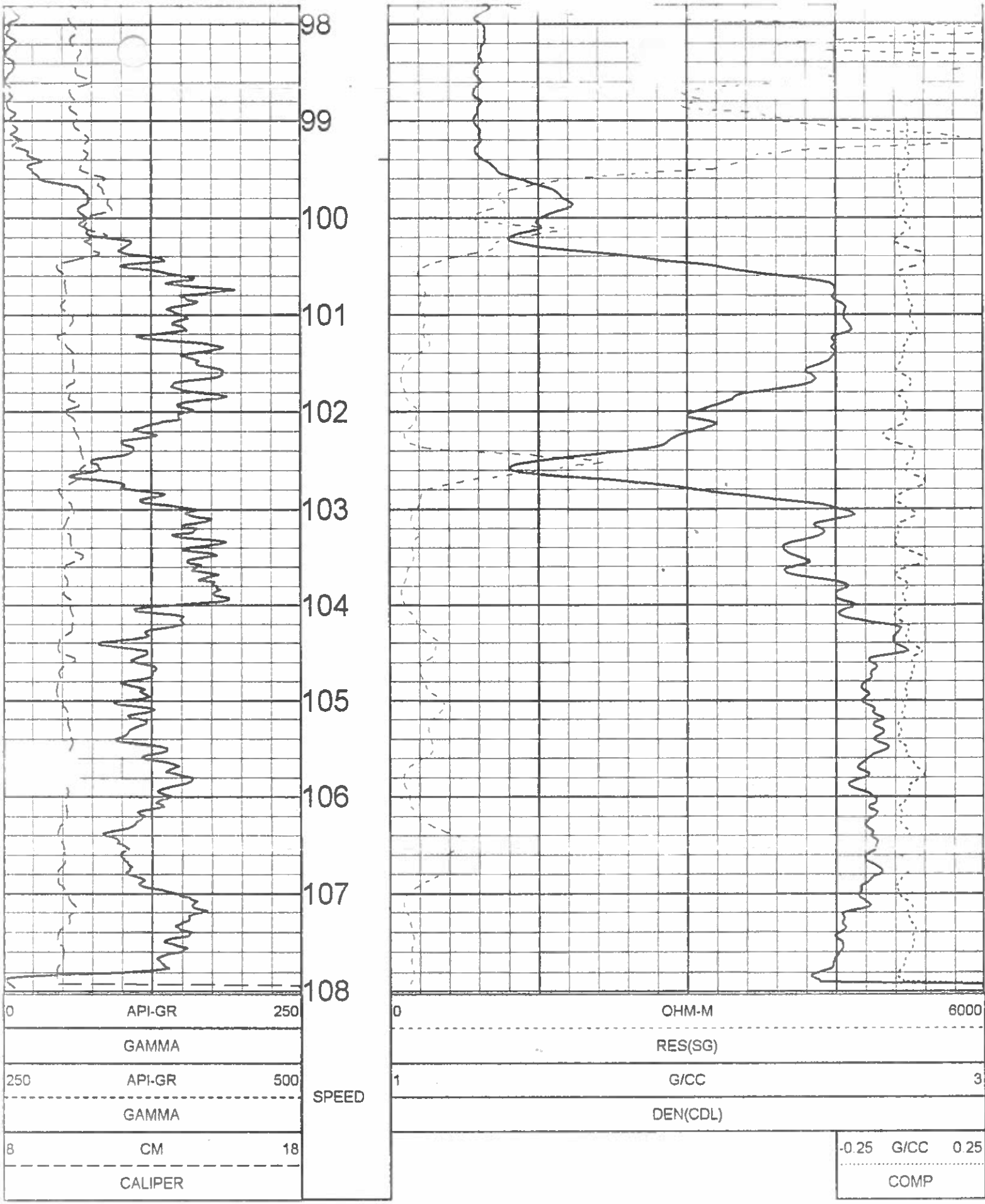
1:50 BULK DENSITY EXPANDED BR10-37 08/17/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-37 08/17/10 10:33
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

DATE	TIME	SENSOR	STANDARD	RESPONSE
1 Aug17,10	10:47:19	GAMMA	2.000 [API-GR]	0.000 [CPS]
Aug17,10	10:47:19	GAMMA	545.000 [API-GR]	800.000 [CPS]
		VOLTAGE	00.000 [API-GR]	0000.000 [CPS]




1:50 BULK DENSITY EXPANDED BR10-37 08/17/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010 VERSION = 3 64HR

TOOL CALIBRATION BR10-37 08/17/10 10:33
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug17,10	10:47:19	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug17,10	10:47:19	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug17,10	10:48:37	DEN(SS)	1.590 [G/CC]	47536.000 [CPS]
	Aug13,10	11:26:02	DEN(SS)	2.580 [G/CC]	21224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

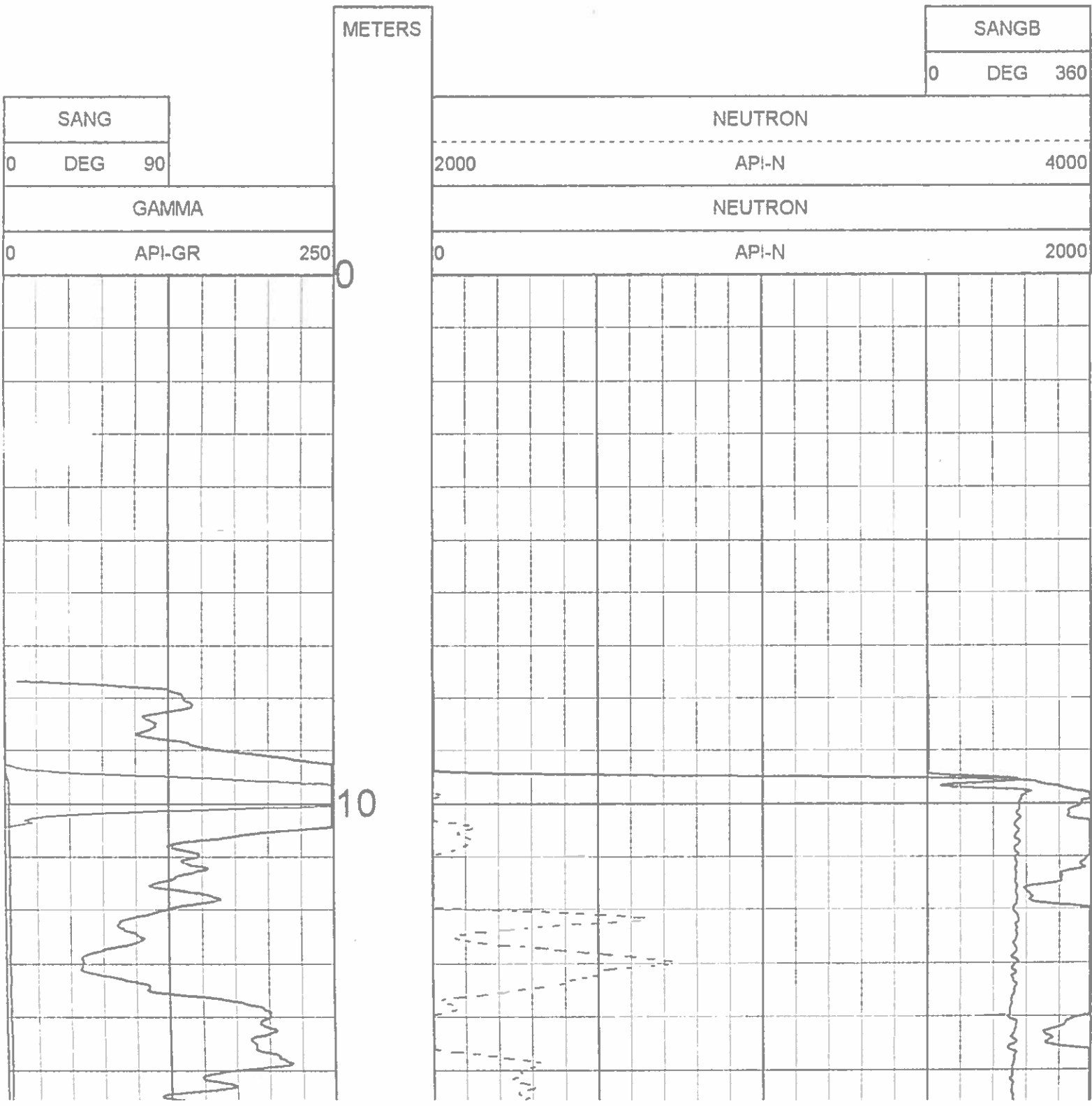
		GAMMA - NEUTRON BR10-37		COMPANY: WESTERN COAL CORPORATION WELL: BR10-37 FIELD: BRULE COUNTRY: CANADA PROVINCE: BRITISH COLUMBIA		OTHER SERVICES: DENSITY
				LOG MEASURED FROM: GL DRL MEASURED FROM: GL PERMANENT DATUM: GL LOG MEASURED FROM: GL DRL MEASURED FROM: GL		ELEVATION KB: N/A ELEVATION DF: N/A ELEVATION GL: N/A
DATE	08/17/10	RIG NUMBER	:			
DEPTH DRILLER	:11.25	LOGGERS TD	:			
BIT SIZE	:11.43	ARRIVAL TIME	:			
LOG TOP	:7.68	DEPARTURE TIME	:			
LOG BOTTOM	:110.48	CIRC STOPPED	:	N/A		
CASING LOGGER	9.144					
CASING DRILLER	9.144					
CASING TYPE	:STEEL					
BOREHOLE FLUID	:WATER					
RM TEMPERATURE	N/A					
MUD RES	N/A					
MUD WEIGHT	:1.00					
RECORDED BY	G. HOLMLUND					
REMARKS 1	T NEAL					
REMARKS 2	VERTICAL					

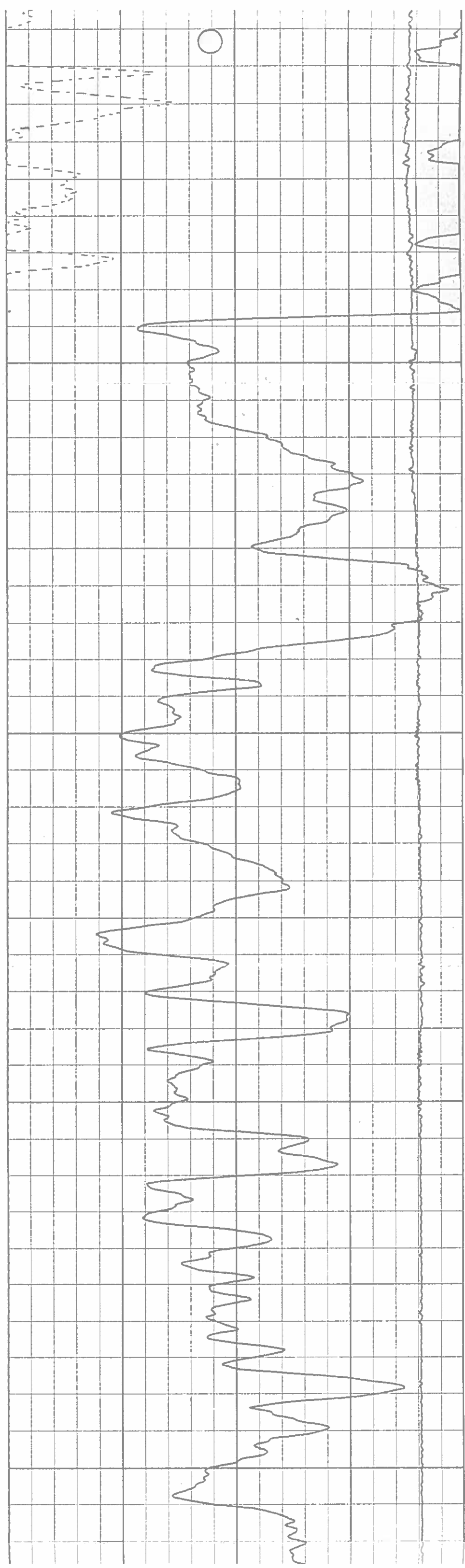
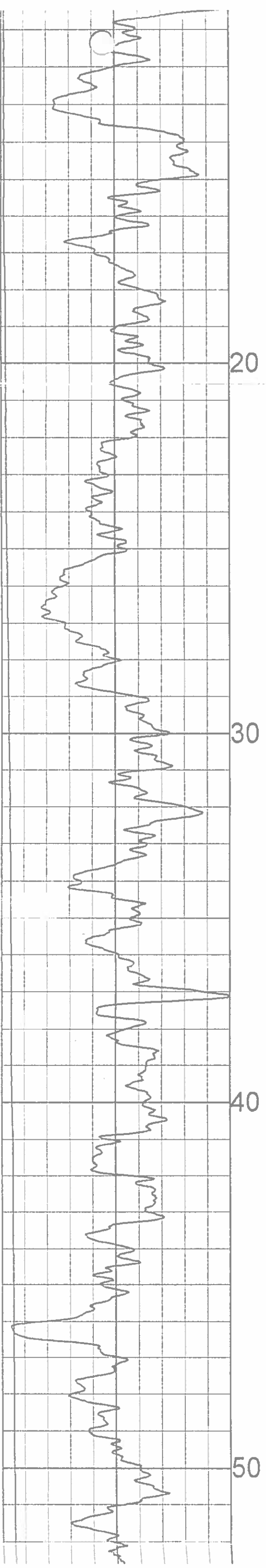
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

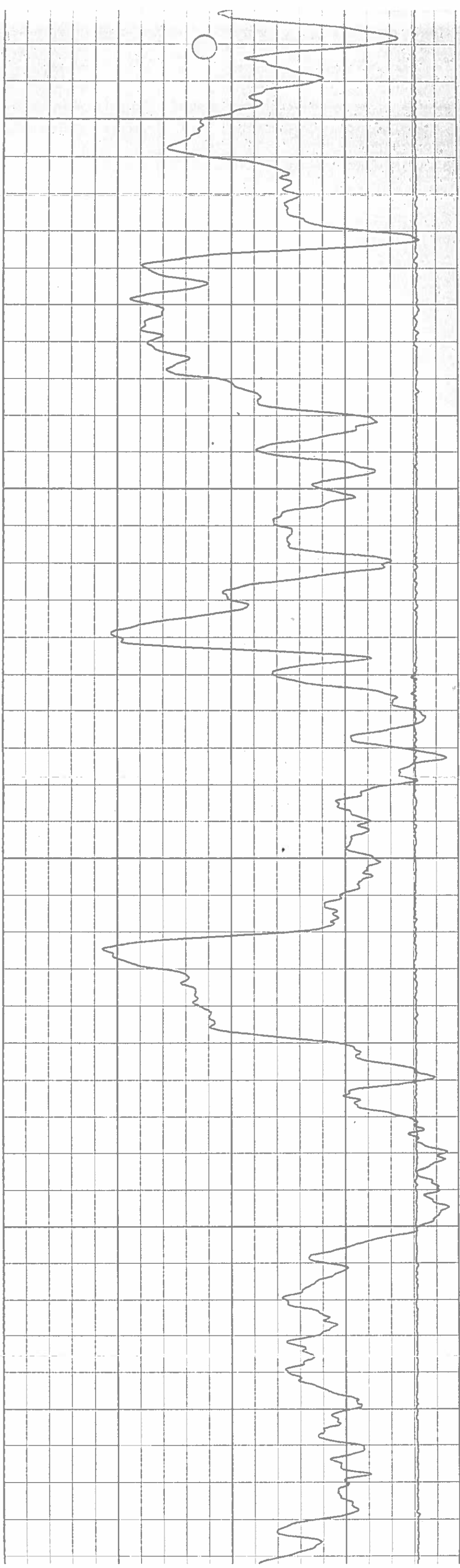
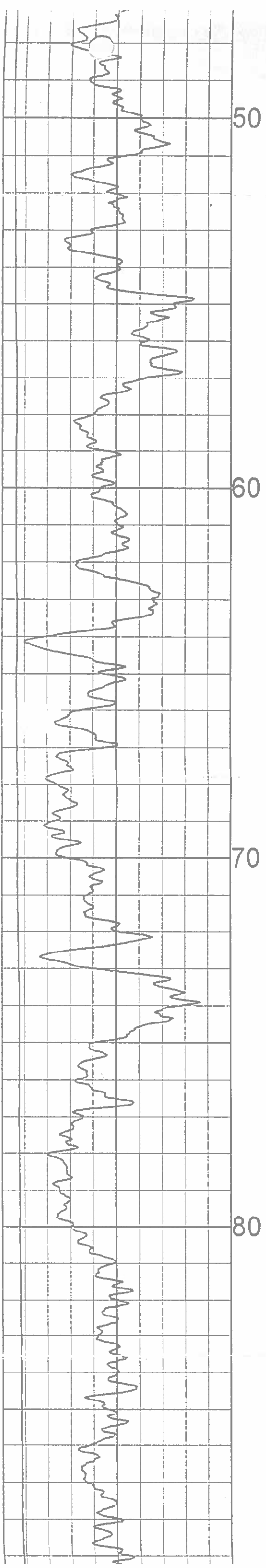
1:100 NEUTRON BR10-37 08/17/10

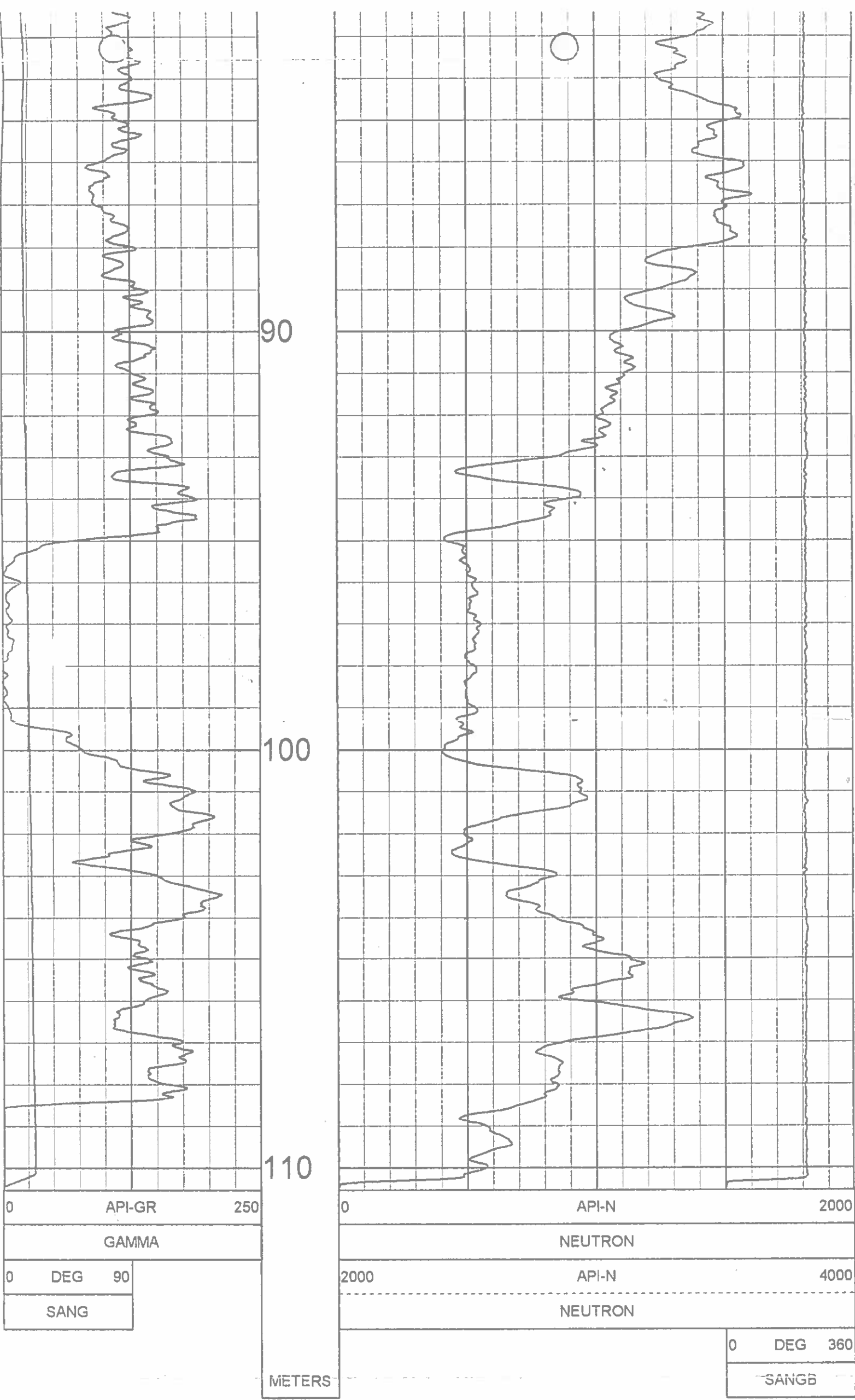
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.64HE









1:100 NEUTRON BR10-37 08/17/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

VERSION = 3.64HE

TOOL CALIBRATION BR10-37 08/17/10 11:03
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 1071

DATE	TIME	SENSOR	STANDARD	RESPONSE
------	------	--------	----------	----------

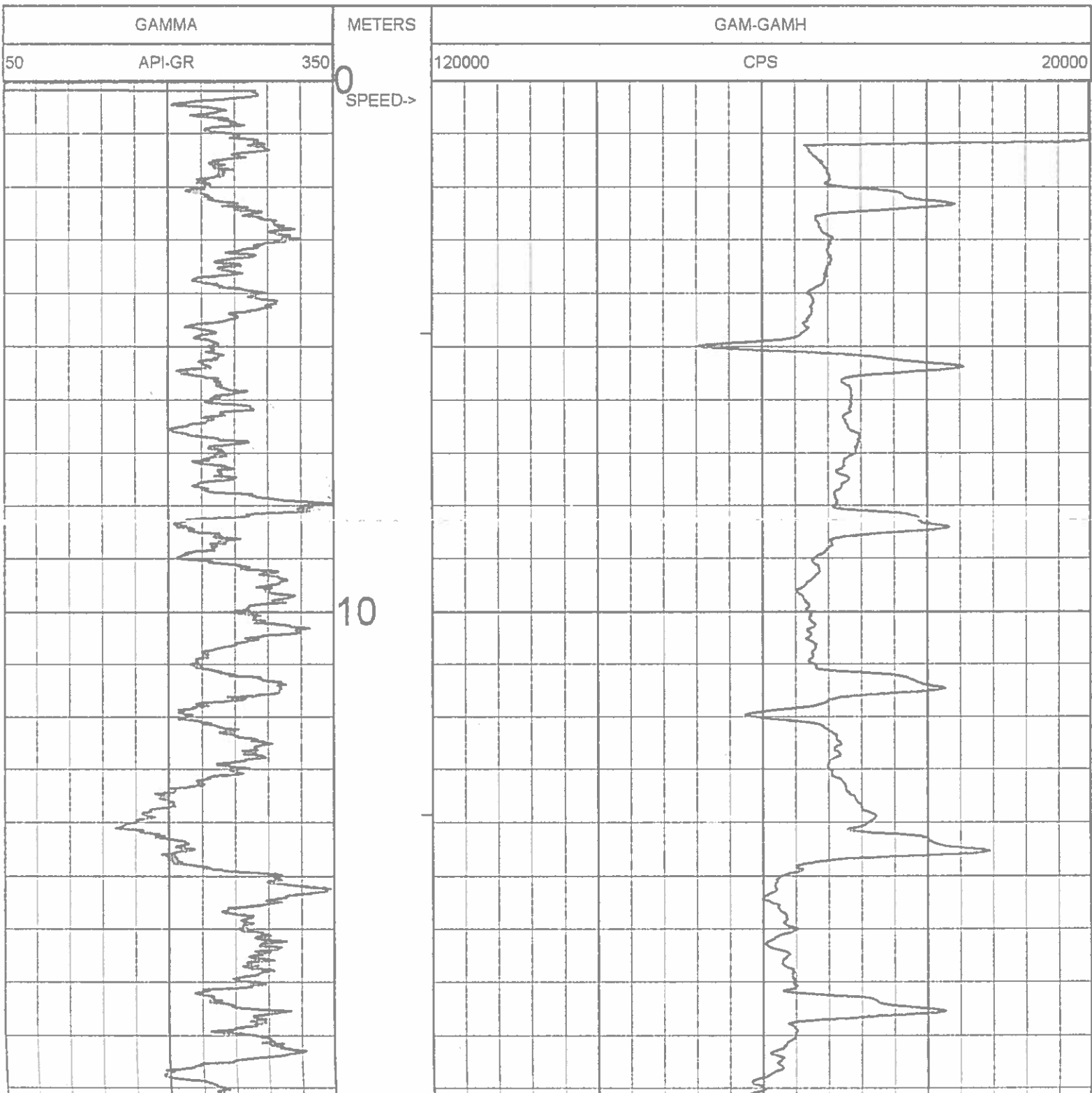
GAM-GAMH
SLIM TOOL
BR10-37

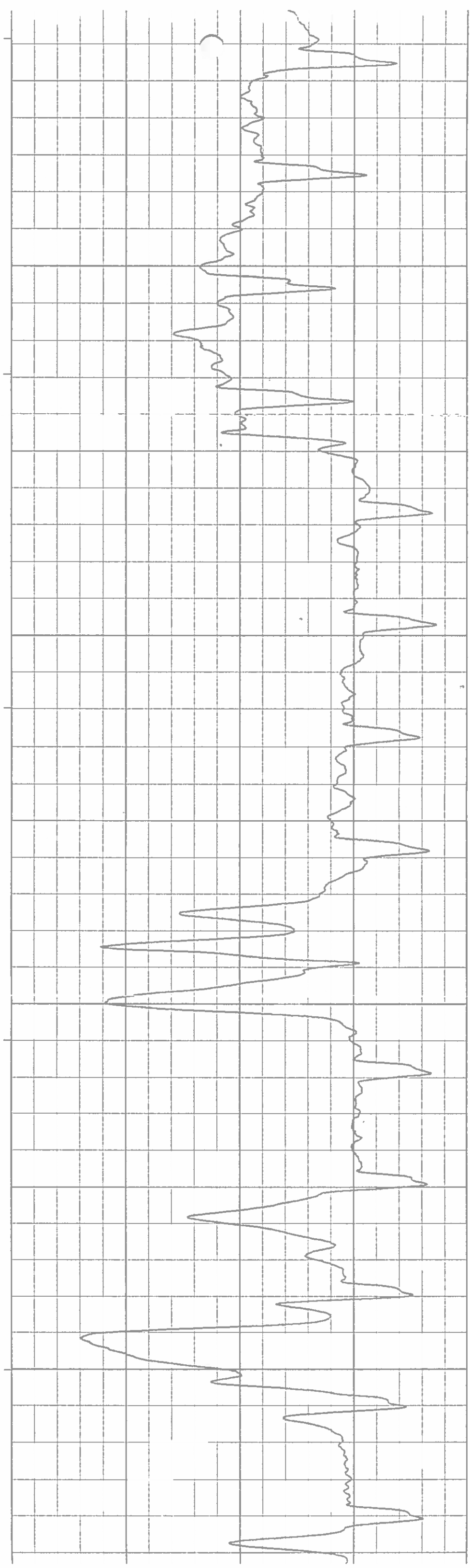
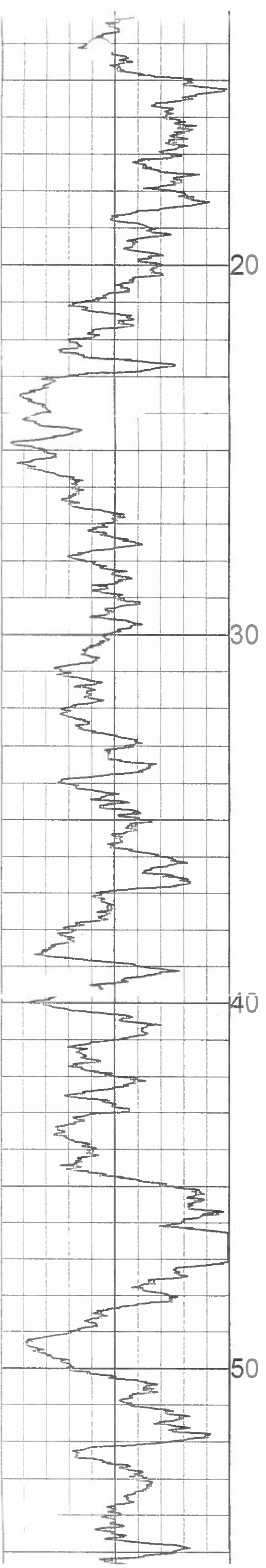
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES
WELL	BR10-37	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
LOCATION	BRULE NORTH	
SECTION	N/A	
TOWNSHIP	N/A	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB : N/A
LOG MEASURED FROM	GL	ELEVATION DF : N/A
DRL MEASURED FROM	GL	ELEVATION GL : N/A
DATE	08/11/10	RIG NUMBER :
DEPTH DRILLER	94.48	LOGGER TD :
BIT SIZE	:11.43	ARRIVAL TIME :
LOG TOP	:0.60	DEPARTURE TIME :
LOG BOTTOM	93.15	CIRC STOPPED : N/A
CASING LOGGER	:15.24	
CASING DRILLER	:15.24	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	:1.00	
DESIGNED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	IN-PIPE	
REMARKS 2		

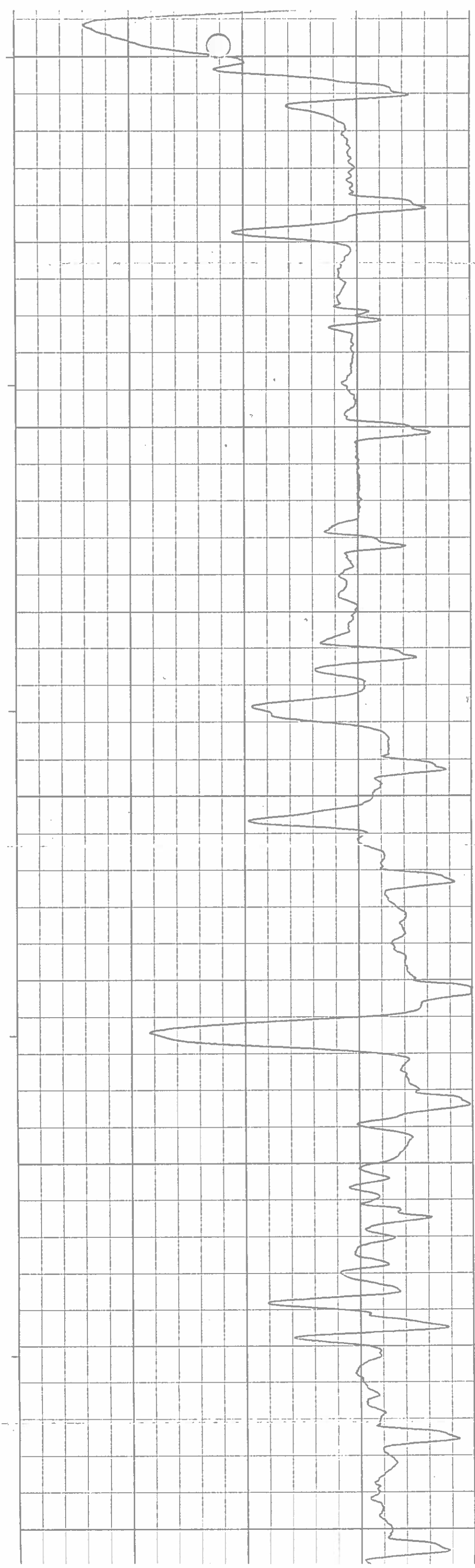
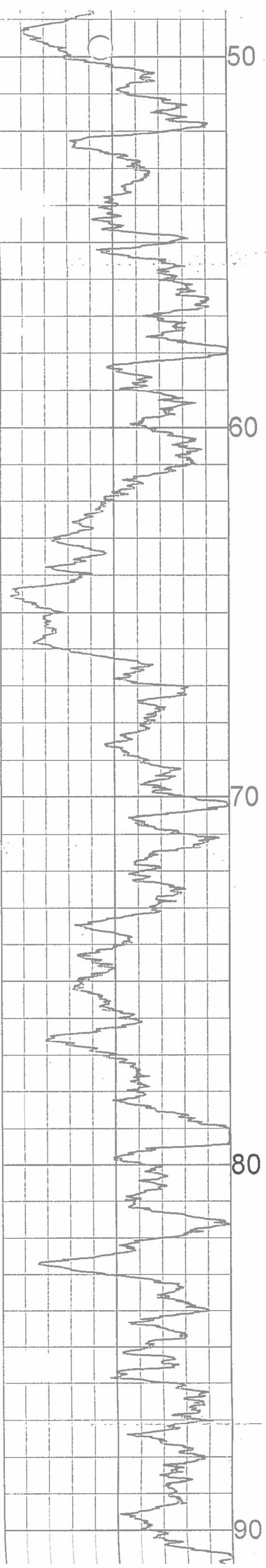
1:100 GAM-GAMH BR10-37 08/11/10

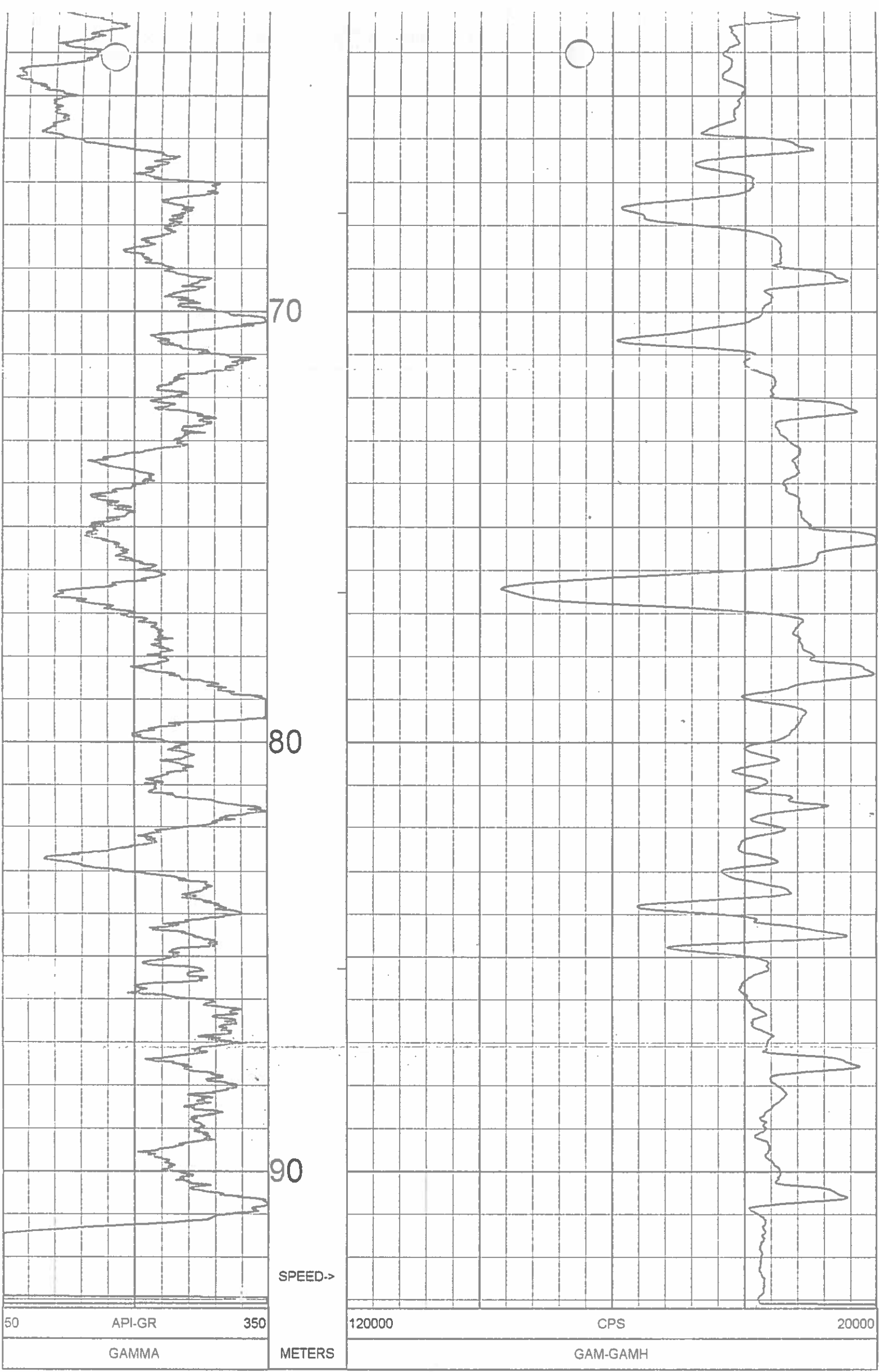
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9068A.0 07/14/2010 VERSION = 3.64HR









1:100 GAM-GAMH BR10-37 08/11/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9068A.0 07/14/2010		VERSION = 3 64HR

TOOL CALIBRATION BR10-37 08/11/10 10:47
 TOOL 9068A TM VERSION 1
 SERIAL NUMBER 643

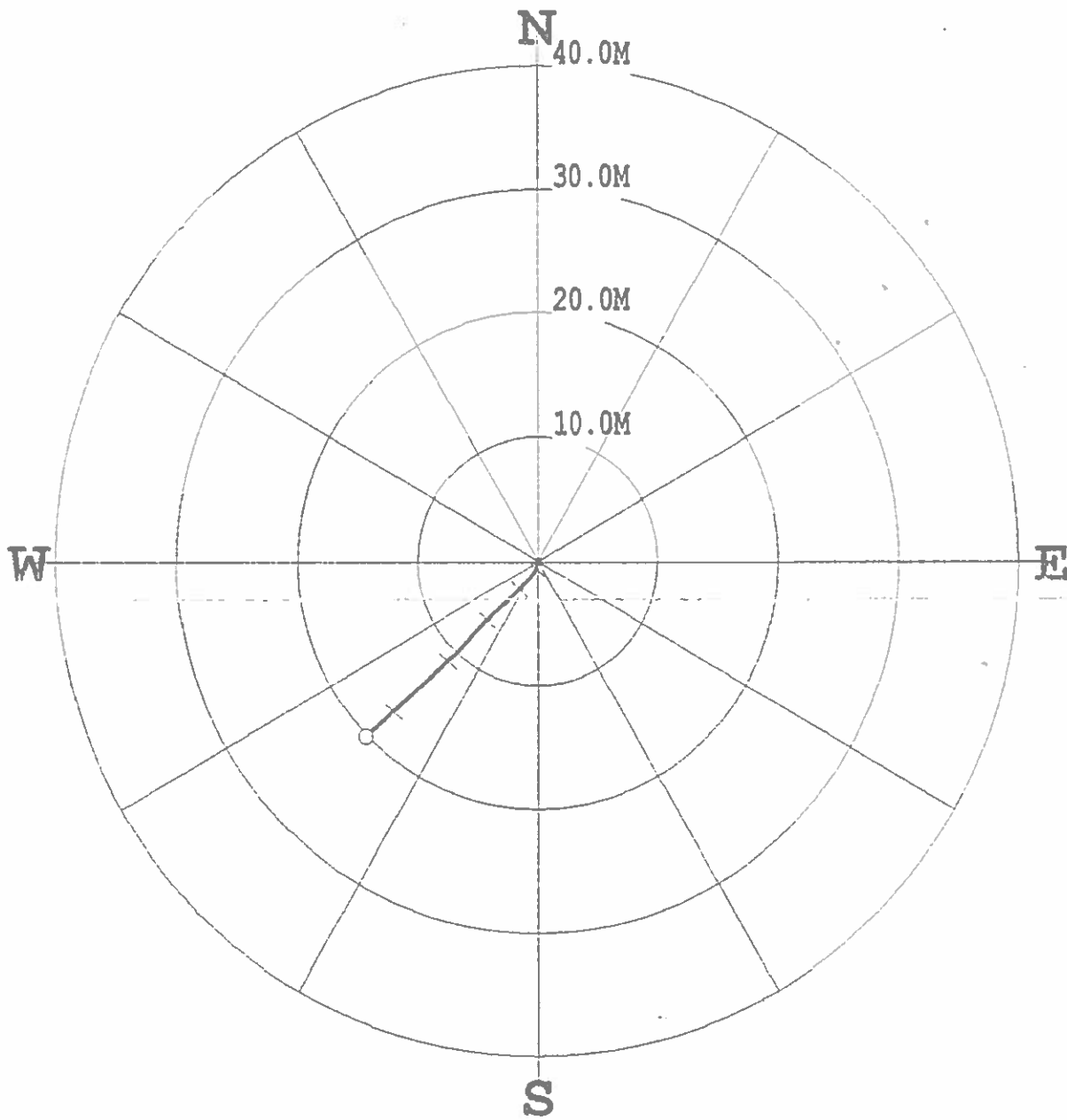
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1	May22,10	08:32:25	GAMMA	Default [CPS]	Default [CPS]
	May22,10	08:32:25	GAMMA	545.000 [API-GR]	100.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-37
 DATE OF LOG: 08/17/10
 PROBE: 9057A 1071



SCALE: 5 M/CM
 TRUE DEPTH: 107.78 M
 AZIMUTH: 225.5
 DISTANCE: 20.1 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE




* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-37
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/17/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-37_08-17-10_11-03_9057A_.02_7.68_110.48_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
9.00	9.00	0.00	0.00	0.0	0.0	0.0	0.0
10.00	10.00	-0.01	-0.00	0.0	203.1	2.8	201.4
11.00	11.00	-0.06	-0.02	0.1	199.8	2.9	201.5
12.00	12.00	-0.11	-0.03	0.1	197.8	3.0	188.6
13.00	13.00	-0.16	-0.05	0.2	197.0	2.7	200.9
14.00	13.99	-0.21	-0.06	0.2	195.0	2.9	181.6
15.00	14.99	-0.26	-0.06	0.3	194.2	3.0	189.4
16.00	15.99	-0.30	-0.07	0.3	193.5	2.6	197.8
17.00	16.99	-0.35	-0.09	0.4	194.1	3.3	191.1
18.00	17.99	-0.41	-0.11	0.4	194.9	3.9	201.9
19.00	18.99	-0.48	-0.13	0.5	195.7	4.1	202.7
20.00	19.98	-0.54	-0.16	0.6	196.8	4.5	186.1
21.00	20.98	-0.61	-0.19	0.6	197.5	3.7	204.0
22.00	21.98	-0.67	-0.22	0.7	198.1	4.6	204.5
23.00	22.98	-0.75	-0.25	0.8	198.4	4.4	208.5
24.00	23.97	-0.81	-0.28	0.9	199.0	4.6	212.2
25.00	24.97	-0.88	-0.33	0.9	200.2	4.8	214.6
26.00	25.97	-0.95	-0.38	1.0	201.6	5.2	218.8
27.00	26.96	-1.02	-0.44	1.1	203.1	5.6	222.4
28.00	27.96	-1.10	-0.50	1.2	204.6	5.8	225.8
29.00	28.95	-1.18	-0.57	1.3	205.7	6.2	222.3
30.00	29.94	-1.26	-0.64	1.4	206.8	6.3	201.6
31.00	30.94	-1.35	-0.71	1.5	207.6	7.0	222.4
32.00	31.93	-1.44	-0.78	1.6	208.5	6.9	224.0
33.00	32.92	-1.53	-0.87	1.8	209.5	7.4	222.0
34.00	33.91	-1.63	-0.96	1.9	210.5	7.7	228.4
35.00	34.91	-1.72	-1.06	2.0	211.6	7.8	225.2
36.00	35.90	-1.81	-1.16	2.1	212.5	8.0	227.9
37.00	36.89	-1.90	-1.26	2.3	213.5	7.8	215.7
38.00	37.88	-2.00	-1.36	2.4	214.3	8.1	225.5
39.00	38.87	-2.10	-1.46	2.6	214.8	8.0	226.5
40.00	39.86	-2.21	-1.55	2.7	215.1	8.4	222.2
41.00	40.84	-2.31	-1.66	2.8	215.6	9.0	226.7
42.00	41.83	-2.42	-1.77	3.0	216.1	9.0	228.6
43.00	42.82	-2.53	-1.88	3.2	216.6	9.1	227.0
44.00	43.81	-2.65	-2.00	3.3	217.1	9.1	226.0
45.00	44.79	-2.76	-2.12	3.5	217.5	9.5	226.1

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-37
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/17/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-37_08-17-10_11-03_9057A_02_7.68_110.48_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
9.00	9.00	0.00	0.00	0.0	0.0	0.0	0.0
10.00	10.00	-0.01	-0.00	0.0	203.1	2.8	201.4
11.00	11.00	-0.06	-0.02	0.1	199.8	2.9	201.5
12.00	12.00	-0.11	-0.03	0.1	197.8	3.0	188.6
13.00	13.00	-0.16	-0.05	0.2	197.0	2.7	200.9
14.00	13.99	-0.21	-0.06	0.2	195.0	2.9	181.6
15.00	14.99	-0.26	-0.06	0.3	194.2	3.0	189.4
16.00	15.99	-0.30	-0.07	0.3	193.5	2.6	197.8
17.00	16.99	-0.35	-0.09	0.4	194.1	3.3	191.1
18.00	17.99	-0.41	-0.11	0.4	194.9	3.9	201.9
19.00	18.99	-0.48	-0.13	0.5	195.7	4.1	202.7
20.00	19.98	-0.54	-0.16	0.6	196.8	4.5	186.1
21.00	20.98	-0.61	-0.19	0.6	197.5	3.7	204.0
22.00	21.98	-0.67	-0.22	0.7	198.1	4.6	204.5
23.00	22.98	-0.75	-0.25	0.8	198.4	4.4	208.5
24.00	23.97	-0.81	-0.28	0.9	199.0	4.6	212.2
25.00	24.97	-0.88	-0.33	0.9	200.2	4.8	214.6
26.00	25.97	-0.95	-0.38	1.0	201.6	5.2	218.8
27.00	26.96	-1.02	-0.44	1.1	203.1	5.6	222.4
28.00	27.96	-1.10	-0.50	1.2	204.6	5.8	225.8
29.00	28.95	-1.18	-0.57	1.3	205.7	6.2	222.3
30.00	29.94	-1.26	-0.64	1.4	206.8	6.3	201.6
31.00	30.94	-1.35	-0.71	1.5	207.6	7.0	222.4
32.00	31.93	-1.44	-0.78	1.6	208.5	6.9	224.0
33.00	32.92	-1.53	-0.87	1.8	209.5	7.4	222.0
34.00	33.91	-1.63	-0.96	1.9	210.5	7.7	228.4
35.00	34.91	-1.72	-1.06	2.0	211.6	7.8	225.2
36.00	35.90	-1.81	-1.16	2.1	212.5	8.0	227.9
37.00	36.89	-1.90	-1.26	2.3	213.5	7.8	215.7
38.00	37.88	-2.00	-1.36	2.4	214.3	8.1	225.5
39.00	38.87	-2.10	-1.46	2.6	214.8	8.0	226.5
40.00	39.86	-2.21	-1.55	2.7	215.1	8.4	222.2
41.00	40.84	-2.31	-1.66	2.8	215.6	9.0	226.7
42.00	41.83	-2.42	-1.77	3.0	216.1	9.0	228.6
43.00	42.82	-2.53	-1.88	3.2	216.6	9.1	227.0
44.00	43.81	-2.65	-2.00	3.3	217.1	9.1	226.0
45.00	44.79	-2.76	-2.12	3.5	217.5	9.5	226.1
46.00	45.78	-2.87	-2.24	3.6	218.0	9.6	224.4
47.00	46.76	-2.98	-2.36	3.8	218.3	9.6	229.1
48.00	47.75	-3.10	-2.48	4.0	218.7	9.9	226.9
49.00	48.74	-3.22	-2.61	4.1	219.0	9.7	228.4
50.00	49.72	-3.33	-2.73	4.3	219.3	9.8	230.4
51.00	50.71	-3.46	-2.86	4.5	219.6	10.3	227.5
52.00	51.69	-3.58	-2.99	4.7	219.9	10.3	226.0
53.00	52.67	-3.70	-3.13	4.8	220.2	10.5	228.7
54.00	53.66	-3.82	-3.26	5.0	220.5	11.0	228.5
55.00	54.64	-3.94	-3.41	5.2	220.8	11.0	223.8
56.00	55.62	-4.07	-3.55	5.4	221.1	11.3	224.8
57.00	56.60	-4.21	-3.70	5.6	221.3	11.9	228.7
58.00	57.57	-4.35	-3.86	5.8	221.6	11.9	229.3
59.00	58.55	-4.49	-4.01	6.0	221.8	11.7	230.7
60.00	59.53	-4.63	-4.16	6.2	221.9	11.7	227.7
61.00	60.51	-4.76	-4.31	6.4	222.1	11.7	226.8
62.00	61.49	-4.90	-4.45	6.6	222.3	11.9	227.9
63.00	62.47	-5.05	-4.60	6.8	222.4	12.2	222.7
64.00	63.45	-5.19	-4.76	7.0	222.5	12.4	228.2
65.00	64.42	-5.34	-4.91	7.3	222.6	11.5	224.8
66.00	65.40	-5.49	-5.05	7.5	222.6	12.1	215.6
67.00	66.38	-5.64	-5.20	7.7	222.7	12.5	227.5
68.00	67.35	-5.80	-5.35	7.9	222.7	12.5	222.7
69.00	68.33	-5.96	-5.50	8.1	222.7	12.2	227.3
70.00	69.31	-6.12	-5.65	8.3	222.7	12.9	221.6
71.00	70.28	-6.28	-5.80	8.6	222.8	12.7	218.9
72.00	71.26	-6.44	-5.95	8.8	222.7	13.1	222.1
73.00	72.23	-6.61	-6.11	9.0	222.8	12.9	207.6
74.00	73.20	-6.78	-6.29	9.2	222.8	14.1	226.1
75.00	74.17	-6.95	-6.46	9.5	222.9	14.2	225.8
76.00	75.14	-7.12	-6.64	9.7	223.0	14.0	223.1
77.00	76.11	-7.29	-6.81	10.0	223.0	14.0	227.0
78.00	77.08	-7.46	-6.98	10.2	223.1	14.2	228.1
79.00	78.05	-7.63	-7.16	10.5	223.2	14.5	224.0
80.00	79.02	-7.80	-7.34	10.7	223.3	14.3	225.2
81.00	79.99	-7.97	-7.52	11.0	223.3	13.9	226.2
82.00	80.95	-8.14	-7.71	11.2	223.4	14.9	227.3
83.00	81.92	-8.32	-7.90	11.5	223.5	15.2	228.7
84.00	82.88	-8.49	-8.09	11.7	223.6	15.3	229.8
85.00	83.85	-8.67	-8.28	12.0	223.7	15.2	224.7
86.00	84.81	-8.85	-8.47	12.3	223.8	15.6	229.6
87.00	85.78	-9.03	-8.67	12.5	223.8	15.3	224.5
88.00	86.74	-9.21	-8.87	12.8	223.9	15.6	227.2
89.00	87.70	-9.38	-9.08	13.1	224.0	16.0	230.4
90.00	88.66	-9.57	-9.29	13.3	224.2	16.1	225.5
91.00	89.62	-9.75	-9.49	13.6	224.2	16.1	230.3
92.00	90.58	-9.94	-9.71	13.9	224.3	16.8	230.0
93.00	91.54	-10.12	-9.94	14.2	224.5	17.3	235.6
94.00	92.49	-10.32	-10.17	14.5	224.6	17.9	225.8
95.00	93.44	-10.53	-10.40	14.8	224.6	18.0	226.6
96.00	94.39	-10.73	-10.63	15.1	224.7	17.8	226.6
97.00	95.34	-10.94	-10.86	15.4	224.8	18.5	225.0
98.00	96.29	-11.16	-11.10	15.7	224.9	19.1	227.2
99.00	97.23	-11.38	-11.35	16.1	224.9	19.1	228.3
100.00	98.18	-11.59	-11.59	16.4	225.0	19.1	230.0
101.00	99.12	-11.82	-11.84	16.7	225.0	19.5	224.8
102.00	100.06	-12.06	-12.08	17.1	225.1	20.3	224.5
103.00	101.00	-12.29	-12.34	17.4	225.1	20.7	220.5
104.00	101.93	-12.53	-12.60	17.8	225.1	20.9	231.6
105.00	102.87	-12.77	-12.87	18.1	225.2	21.3	227.9
106.00	103.80	-13.01	-13.14	18.5	225.3	21.4	228.0
107.00	104.73	-13.25	-13.41	18.9	225.3	21.6	227.4
108.00	105.66	-13.50	-13.68	19.2	225.4	21.8	228.7
109.00	106.58	-13.77	-13.96	19.6	225.4	23.0	225.7
110.00	107.50	-14.03	-14.24	20.0	225.4	22.8	231.1
110.30	107.78	-14.10	-14.33	20.1	225.5	22.9	227.2

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-38	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,604.13	6,140,448.39	1,280.11

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
32.5	-64	201.37	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: *slim tool*

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	32.5	-64.20
8.00	43.3	-64.40
10.00	47.3	-64.30
12.00	49.7	-63.90
14.00	51.0	-63.60
16.00	51.8	-63.60
18.00	52.2	-63.60
20.00	52.5	-64.00
22.00	52.6	-62.40
24.00	52.3	-62.20
26.00	51.9	-61.60
28.00	51.3	-60.70
30.00	50.7	-60.20
32.00	50.2	-58.80
34.00	50.1	-58.00
36.00	49.9	-57.30
38.00	49.6	-57.20
40.00	49.1	-56.10
42.00	48.5	-55.50
44.00	48.0	-55.90
46.00	47.9	-54.30
48.00	47.7	-54.00
50.00	47.6	-53.40
52.00	47.4	-53.20
54.00	47.2	-52.30
56.00	47.0	-51.80
58.00	46.8	-51.60

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	1.70	1.70		
22.20	23.00	0.80		
25.30	25.90	0.60		
61.40	62.20	0.80		
85.90	86.70	0.80		
86.70	89.00	2.30		
89.00	89.70	0.70		
94.40	95.00	0.60		
96.70	99.60	2.90		
99.60	100.40	0.80		
100.90	101.80	0.90		

Date issued: Thursday, June 12, 2014
 Reviewed: October 11, 2002

Page 1 of 3



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-38**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

60.00	46.6	-51.50
62.00	46.4	-51.20
64.00	46.3	-51.00
66.00	46.1	-51.50
68.00	45.9	-51.10
70.00	45.7	-50.50
72.00	45.7	-49.80
74.00	45.6	-49.80
76.00	45.6	-49.50
78.00	45.6	-49.40
80.00	45.5	-48.90
82.00	45.5	-48.40
84.00	45.5	-48.60
86.00	45.4	-50.70
88.00	45.3	-48.60
90.00	45.2	-47.30
92.00	45.0	-46.80
94.00	44.8	-45.40
96.00	44.7	-44.90
98.00	44.6	-44.90
100.00	44.6	-45.40
102.00	44.5	-44.70
104.00	44.5	-44.60
106.00	44.4	-45.10
108.00	44.4	-43.90
110.00	44.3	-43.60
112.00	44.3	-43.10
114.00	44.3	-43.20
116.00	44.2	-44.40
118.00	44.2	-43.50
120.00	44.2	-43.40
122.00	44.1	-43.20
124.00	44.1	-43.50
126.00	44.0	-44.00
128.00	44.0	-43.90
130.00	44.0	-44.40
132.00	43.9	-44.50
134.00	43.9	-44.70
136.00	43.8	-44.40
138.00	43.8	-44.50
140.00	43.7	-44.50
142.00	43.6	-43.10
144.00	43.5	-44.00
146.00	43.5	-45.00
148.00	43.4	-44.40

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-38	year drilled: 2010	AREA: BURNT RIVER BRULE
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150.00	43.4	-44.40
152.00	43.3	-44.90
154.00	43.2	-44.40
156.00	43.1	-44.10
158.00	43.0	-43.70
160.00	42.9	-44.70
162.00	42.8	-43.70
164.00	42.7	-43.60
166.00	42.6	-43.10
168.00	42.4	-42.90
170.00	42.3	-42.10
172.00	42.2	-42.30
174.00	42.1	-42.90
176.00	42.0	-42.20
178.00	41.9	-40.90
180.00	41.8	-41.60
182.00	41.7	-41.30
184.00	41.6	-41.70
186.00	41.5	-40.60
188.00	41.4	-40.90
190.00	41.3	-40.20
192.00	41.3	-39.80
194.00	41.2	-39.10
196.00	41.1	-40.90
198.00	41.0	-39.70
200.00	40.9	-38.00
201.20	40.9	-38.30

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
 Reviewed: October 11, 2002

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Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-38

WESTERN COAL CORPORATION

OTHER SERVICES:
NEUTRON

WELL : BR 10-38

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

SECTION : BRULE NORTH

TOWNSHIP : N/A

RANGE : N/A

LICENCE NO. : N/A

UNIQUE WELL ID. : N/A

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

DATE : 08/21/10

DEPTH DRILLER : 202.69

BIT SIZE : 11.43

LOG TOP : -0.27

CASING LOGGER : 201.25

CASING DRILLER : 3.048

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

RM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

RECORDED BY : G. HOLMLUND

RECORDED BY : T. NEAL

REMARKS 1 : 65 DEGREE

REMARKS 2 :

ELEVATION KB : N/A

ELEVATION DF : N/A

ELEVATION GL : N/A

RIG NUMBER :

LOGGER TD :

ARRIVAL TIME :

DEPARTURE TIME :

CIRC STOPPED : N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

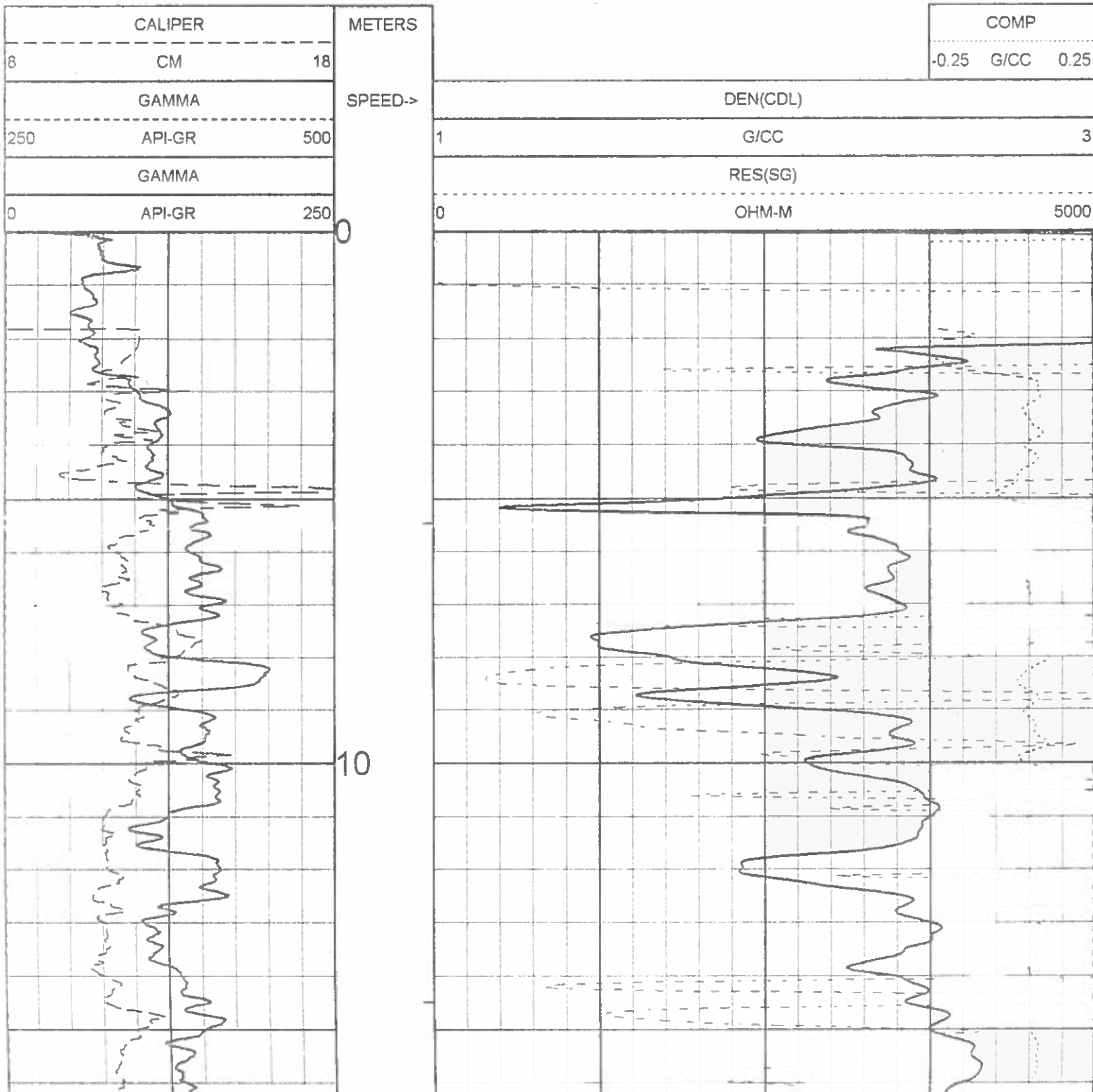
1:100 BULK DENSITY BR10-38 08/21/10

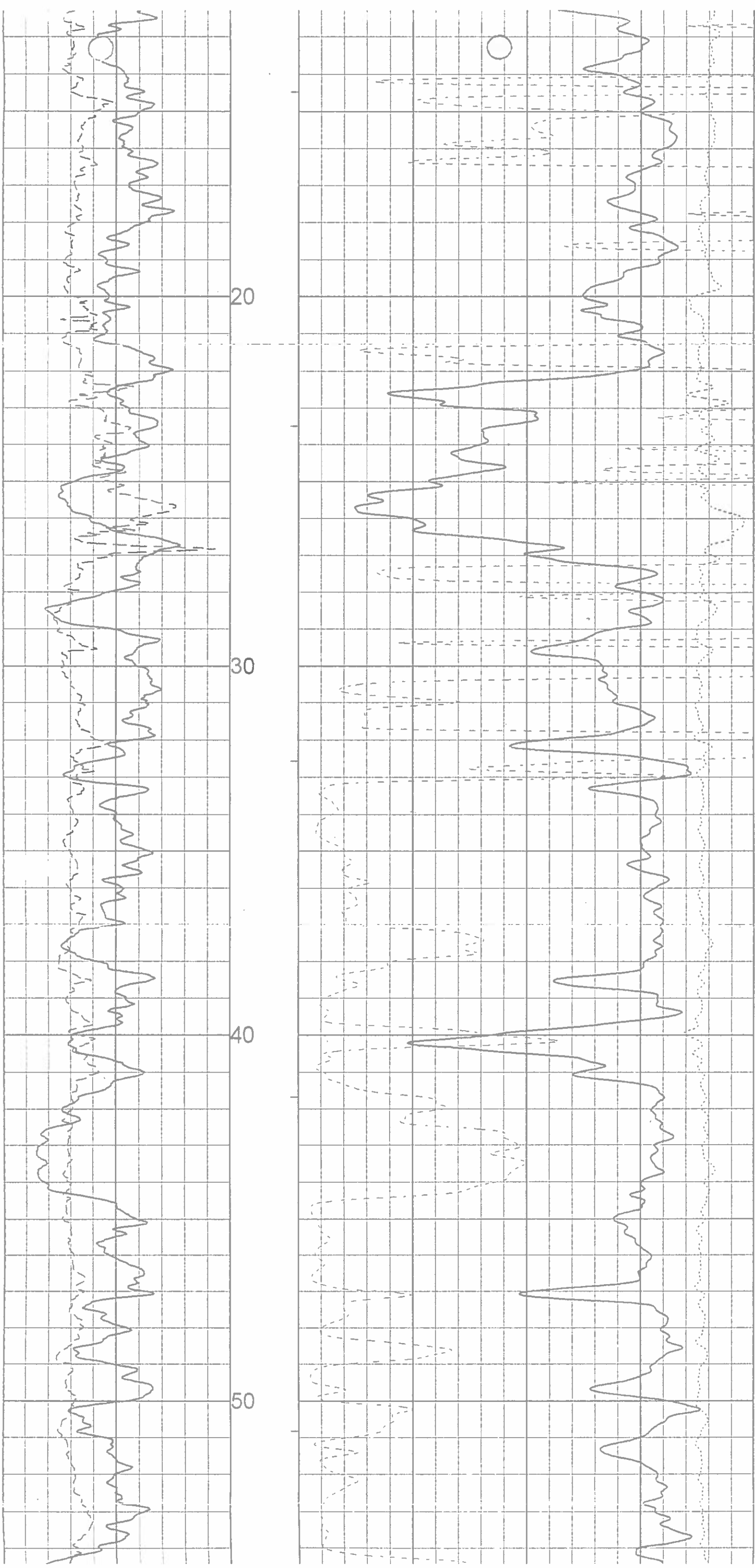
LOG PARAMETERS

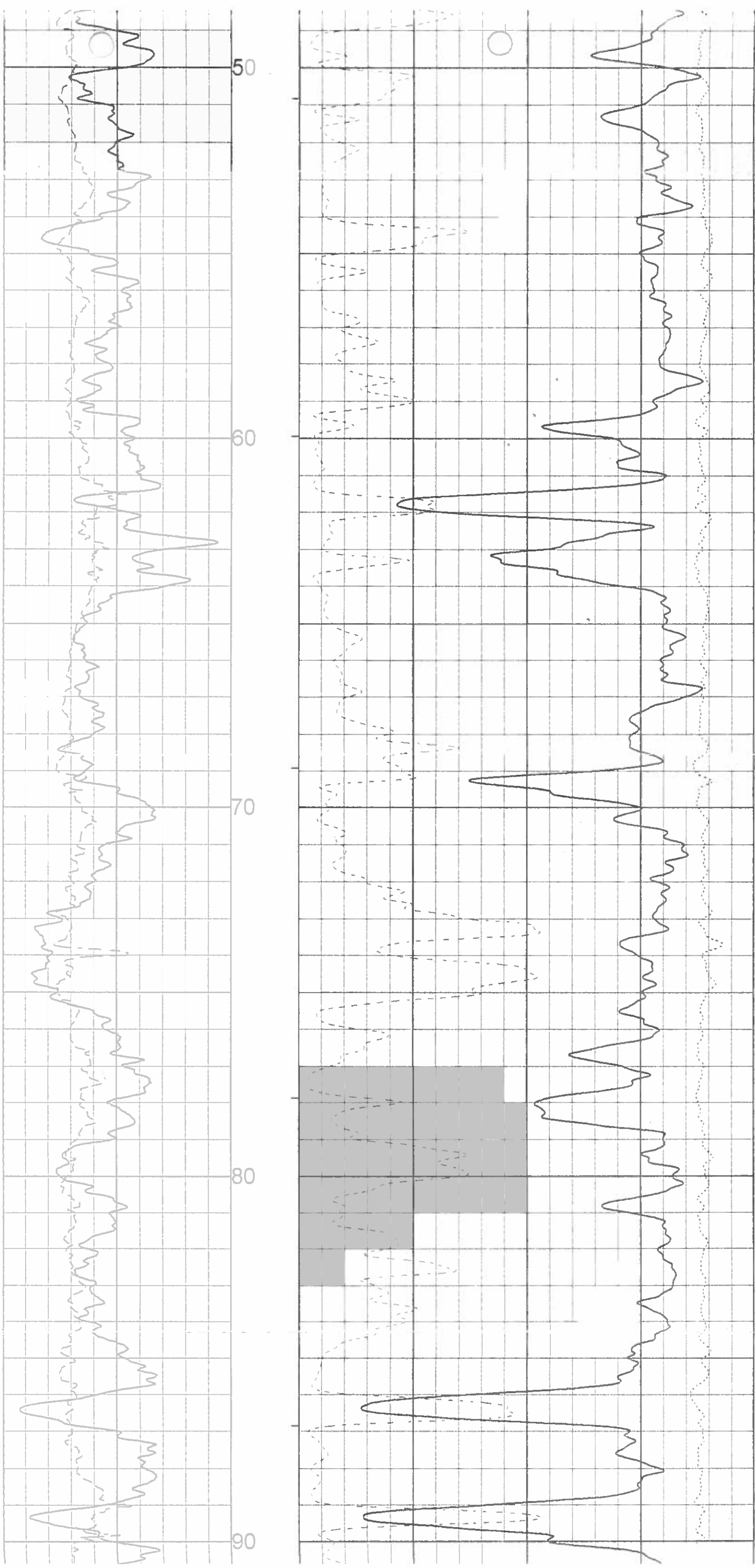
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010

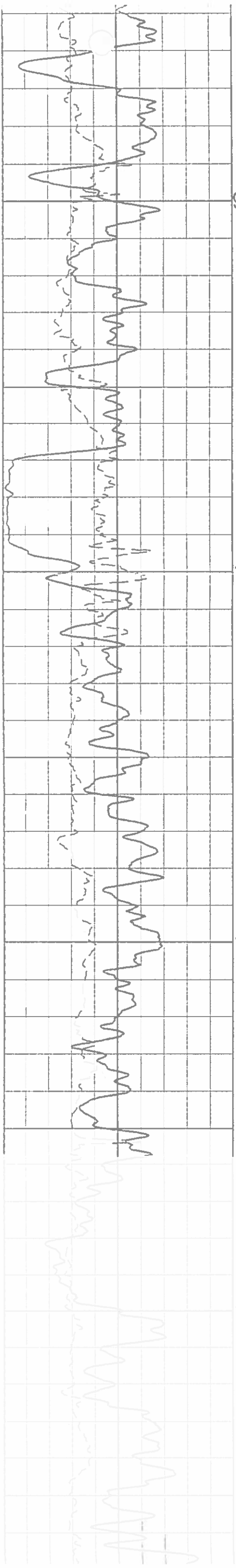
NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3 64HR







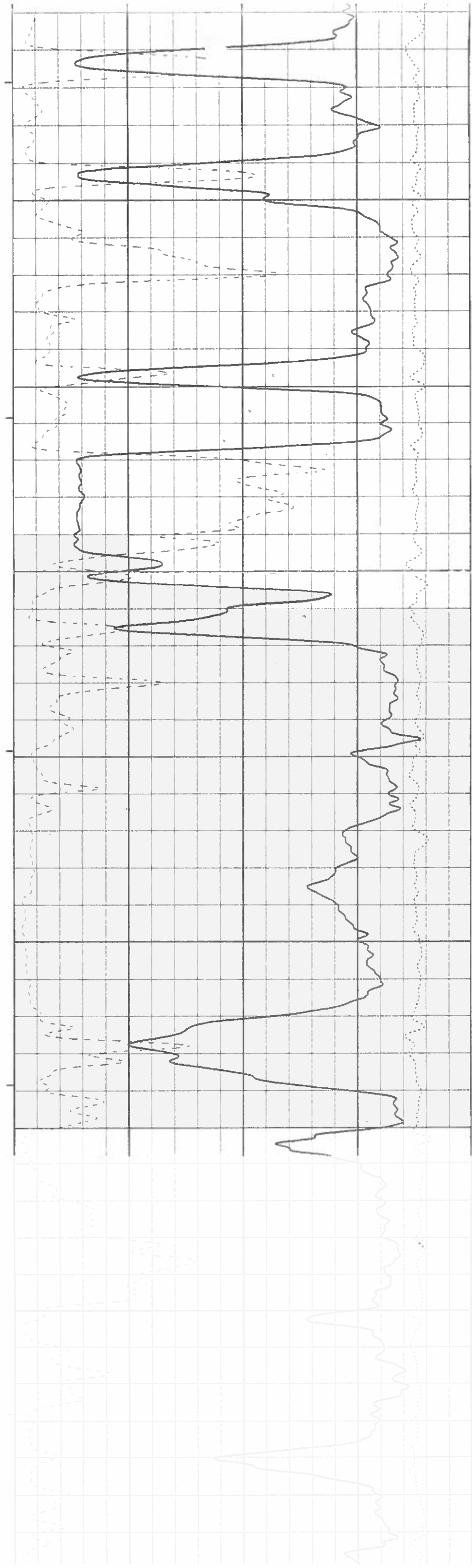


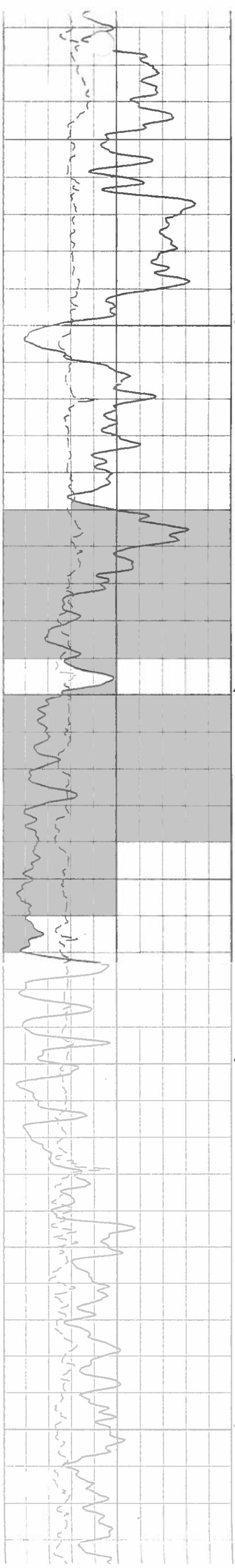
90

100

110

120



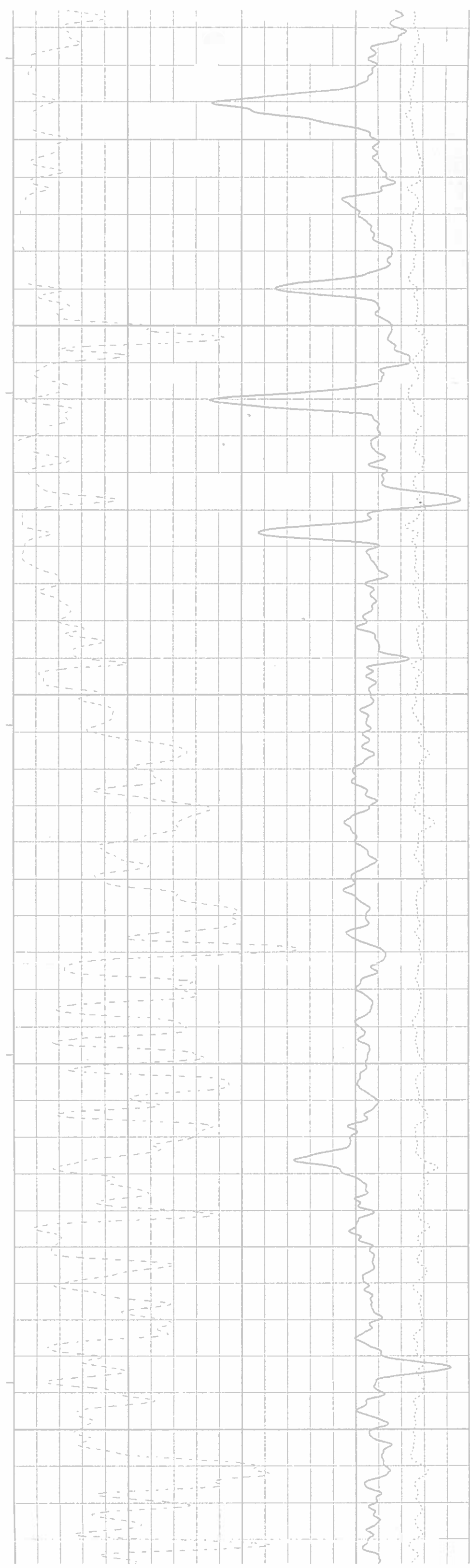


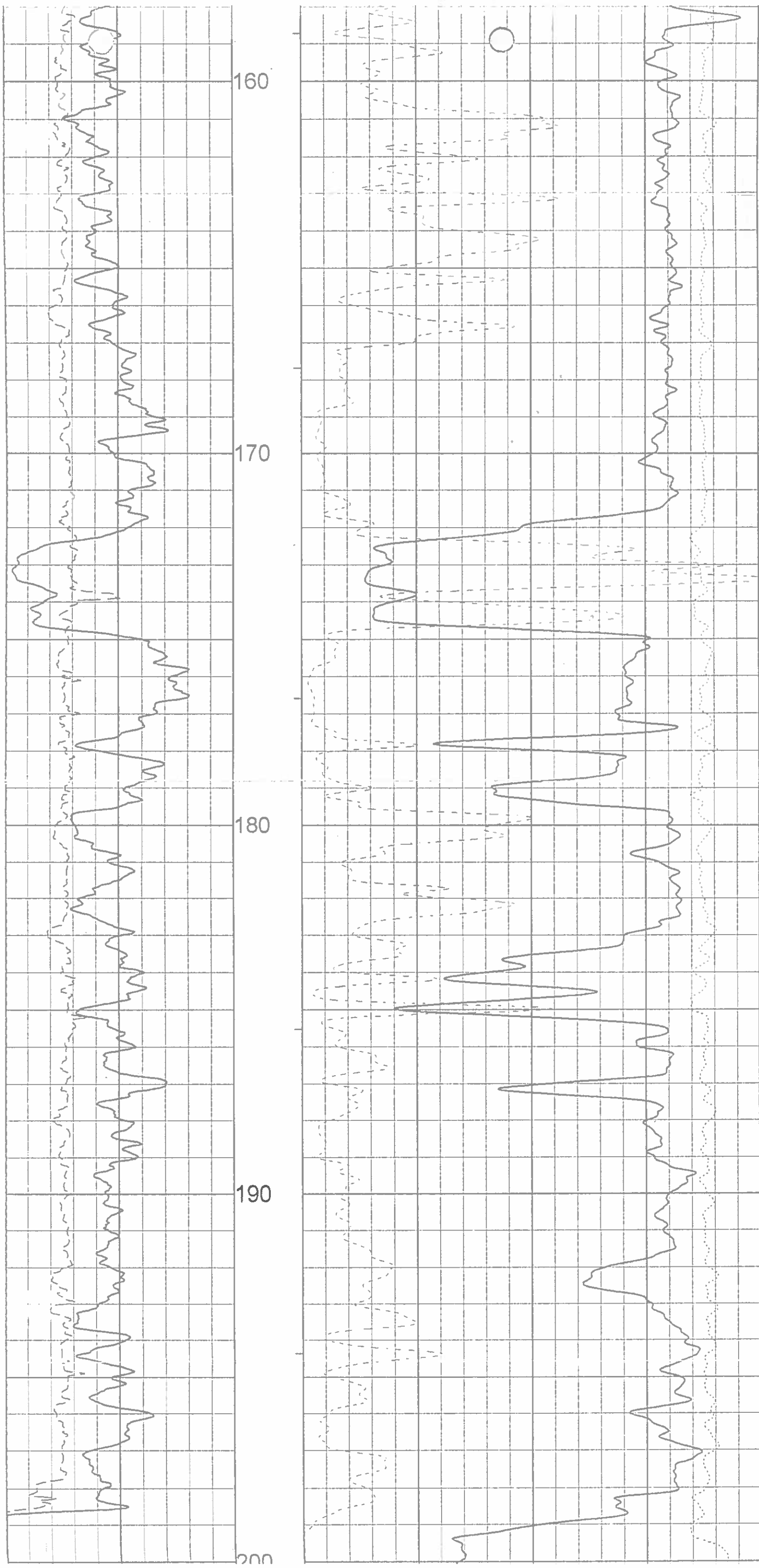
130

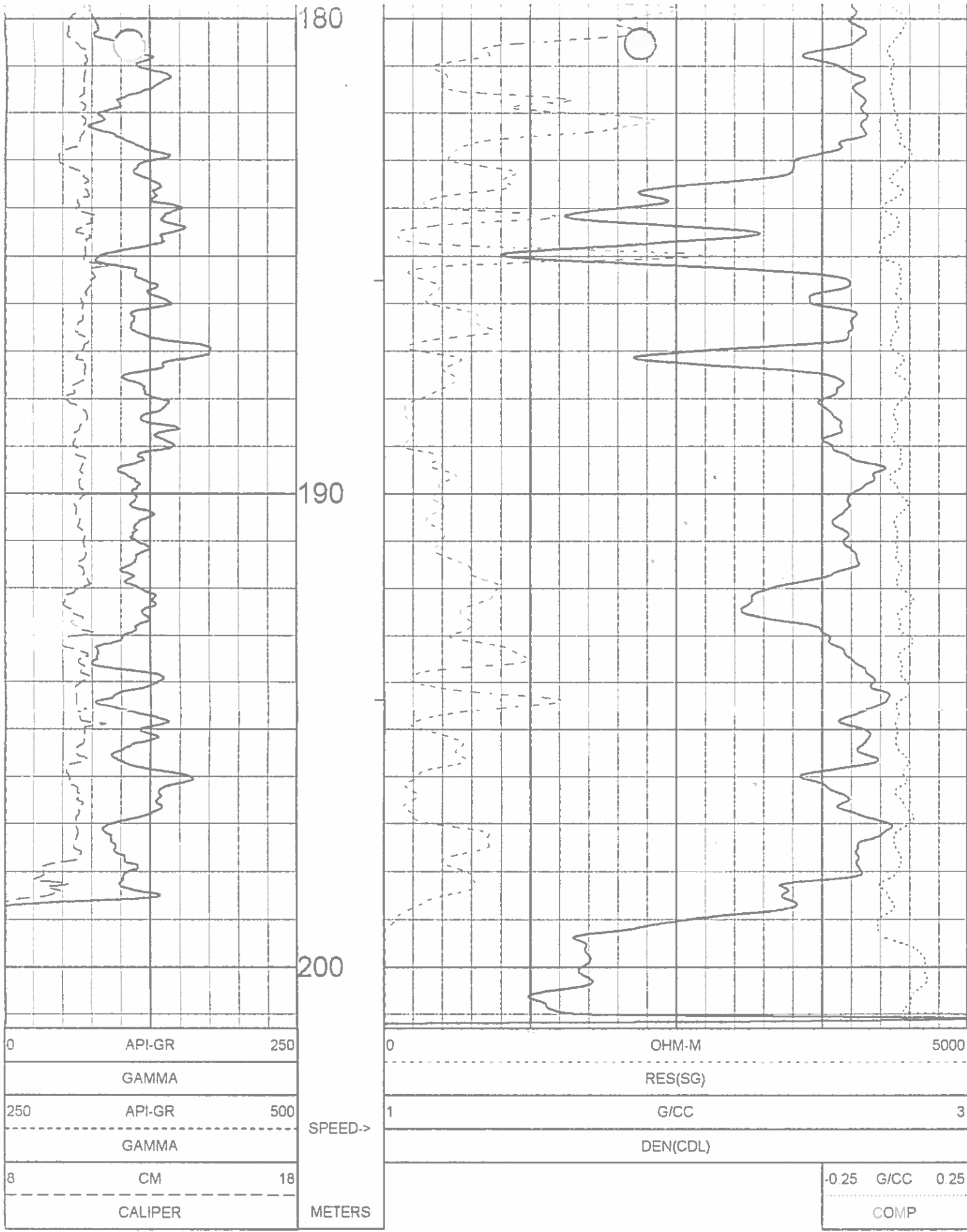
140

150

160







1:100 BULK DENSITY BR10-38 08/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C BENSITY-0 07/10/2010		VERSION = 3 64HR-

TOOL CALIBRATION BR10-38 08/21/10 09:54
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2.000 [API-GR [0.000 [CPS]
	Aug18,10	14:55:56	GAMMA	545.000 [API-GR [800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV [8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM [159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM [308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug21,10	10:18:09	DEN(SS)	1.590 [G/CC]	56536.000 [CPS]
	Aug21,10	10:17:43	DEN(SS)	2.580 [G/CC [24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM [163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM [281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-38

COMPANY WESTERN COAL CORPORATION

OTHER SERVICES
NEUTRON

WELL BR 10-38

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

LOCATION BRULE NORTH

SECTION N/A

TOWNSHIP N/A

RANGE N/A

LICENCE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM GL

LOG MEASURED FROM GL

DRL MEASURED FROM GL

DATE 08/21/10

DEPTH DRILLER 202 69

BIT SIZE 11.43

LOG TOP -0.27

LOG BOTTOM 201.25

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

WEIGHTED BY G. HOLMLUND

RECORDED BY J. NEAL

REMARKS 1 65 DEGREE

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-38 08/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

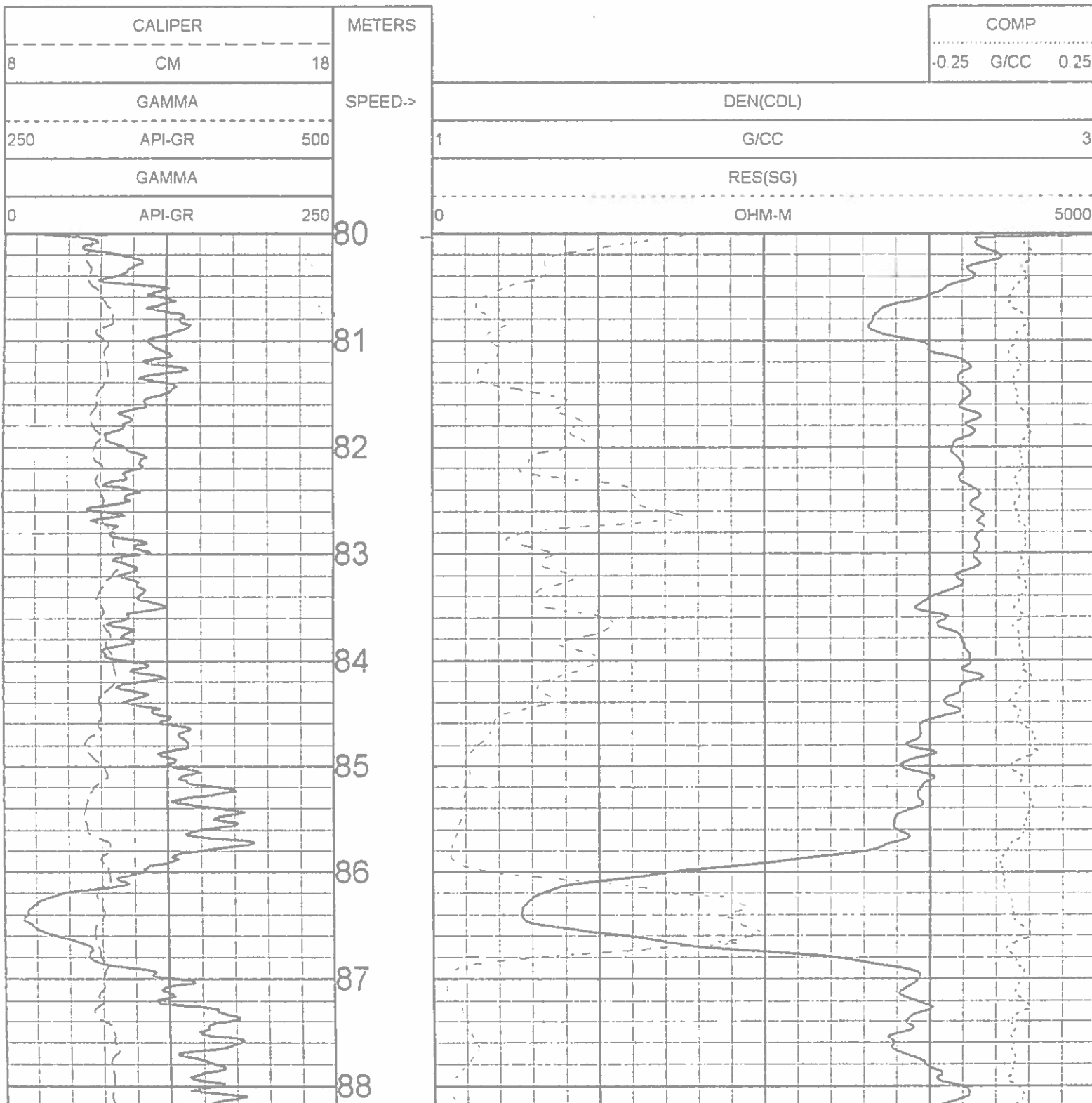
MAGNETIC DECL : 21.0

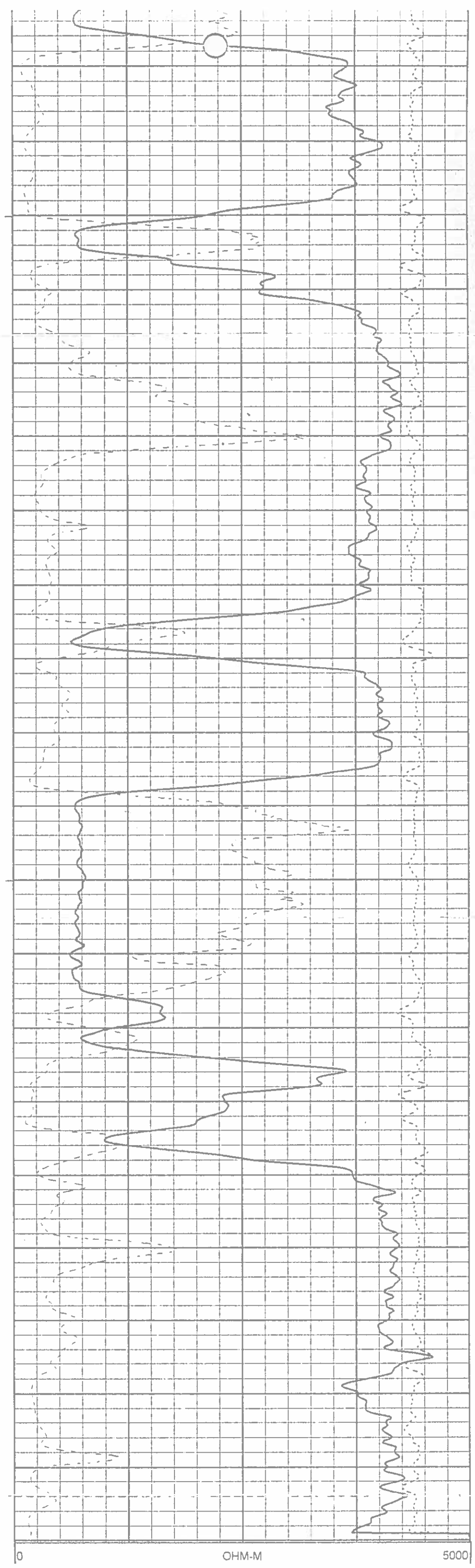
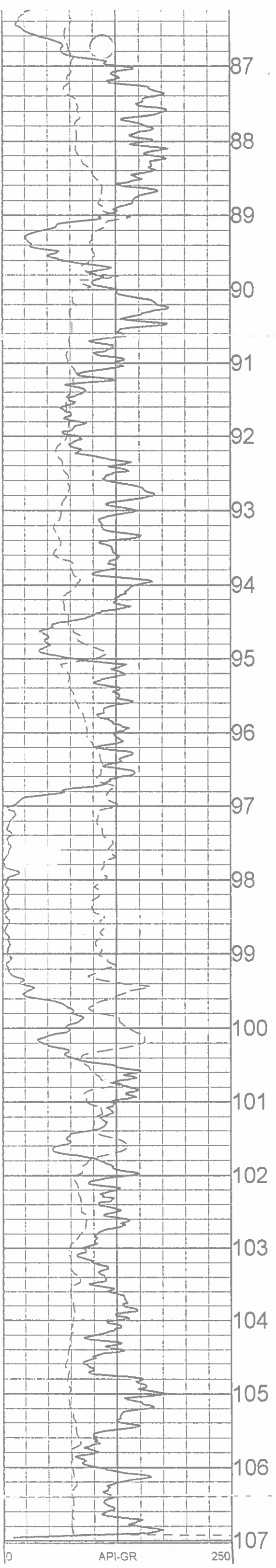
ELECT. CUTOFF : 99999

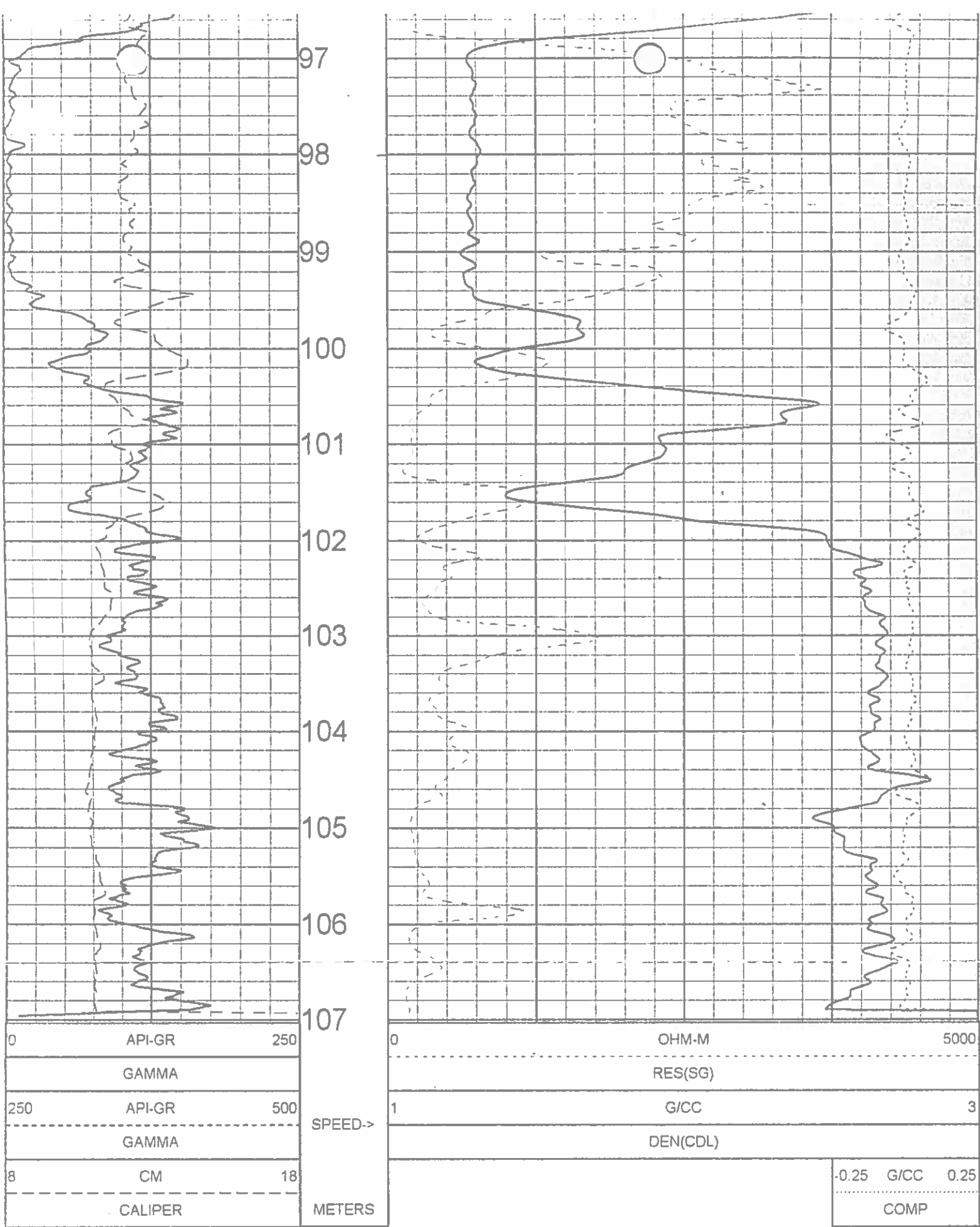
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010

VERSION = 3 64HR







1:50 BULK DENSITY EXPANDED BR10-38 08/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11 43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010 VERSION = 3 64HR

TOOL CALIBRATION BR10-38 08/21/10 09:54
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14:55:56	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug21,10	10:18:09	DEN(SS)	1.590 [G/CC]	56536.000 [CPS]
	Aug21,10	10:17:43	DEN(SS)	2.580 [G/CC]	24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA - NEUTRON
BR10-38

COMPANY : WESTERN COAL CORPORATION

WELL : BR10-38

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

SECTION : BRULE NORTH

TOWNSHIP : N/A

RANGE : N/A

LICENCE NO. : N/A

UNIQUE WELL ID. : N/A

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

DATE : 08/21/10

DEPTH DRILLER : 202.69

BIT SIZE : 11.43

LOG TOP : 0.85

LOG BOTTOM : 201.37

CASING LOGGER : 3.048

CASING DRILLER : 3.048

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

RM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

RECORDED BY : G. HOLMLUND

REMARKS 1 : T. NEAL

REMARKS 2 : 65 DEGREE

OTHER SERVICES

DENSITY

ELEVATION KB : N/A

ELEVATION DF : N/A

ELEVATION GL : N/A

RIG NUMBER :

LOGGER TD :

ARRIVAL TIME :

DEPARTURE TIME :

CIRC STOPPED : N/A

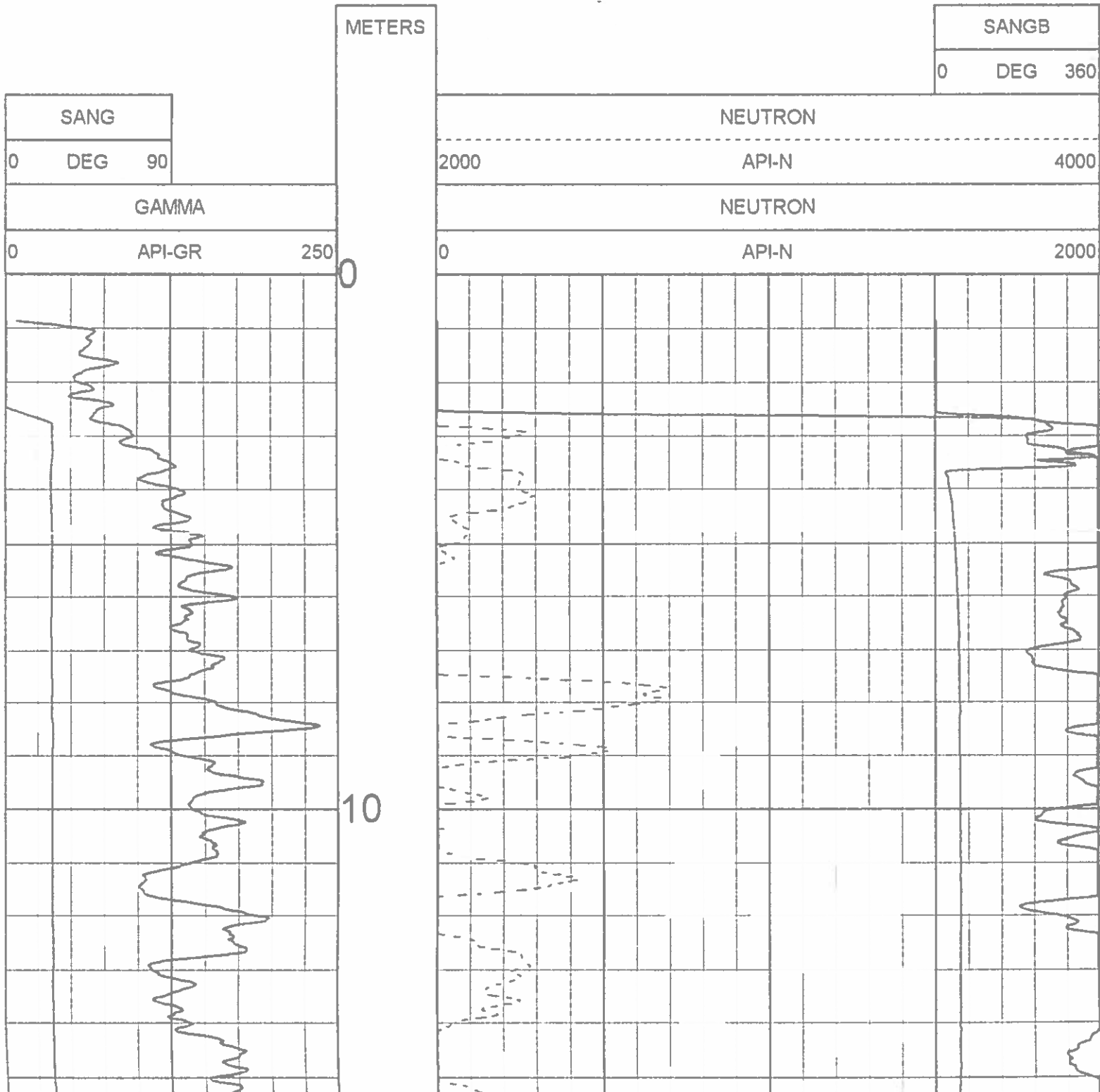
1:100 NEUTRON BR10-38 08/21/10

LOG PARAMETERS

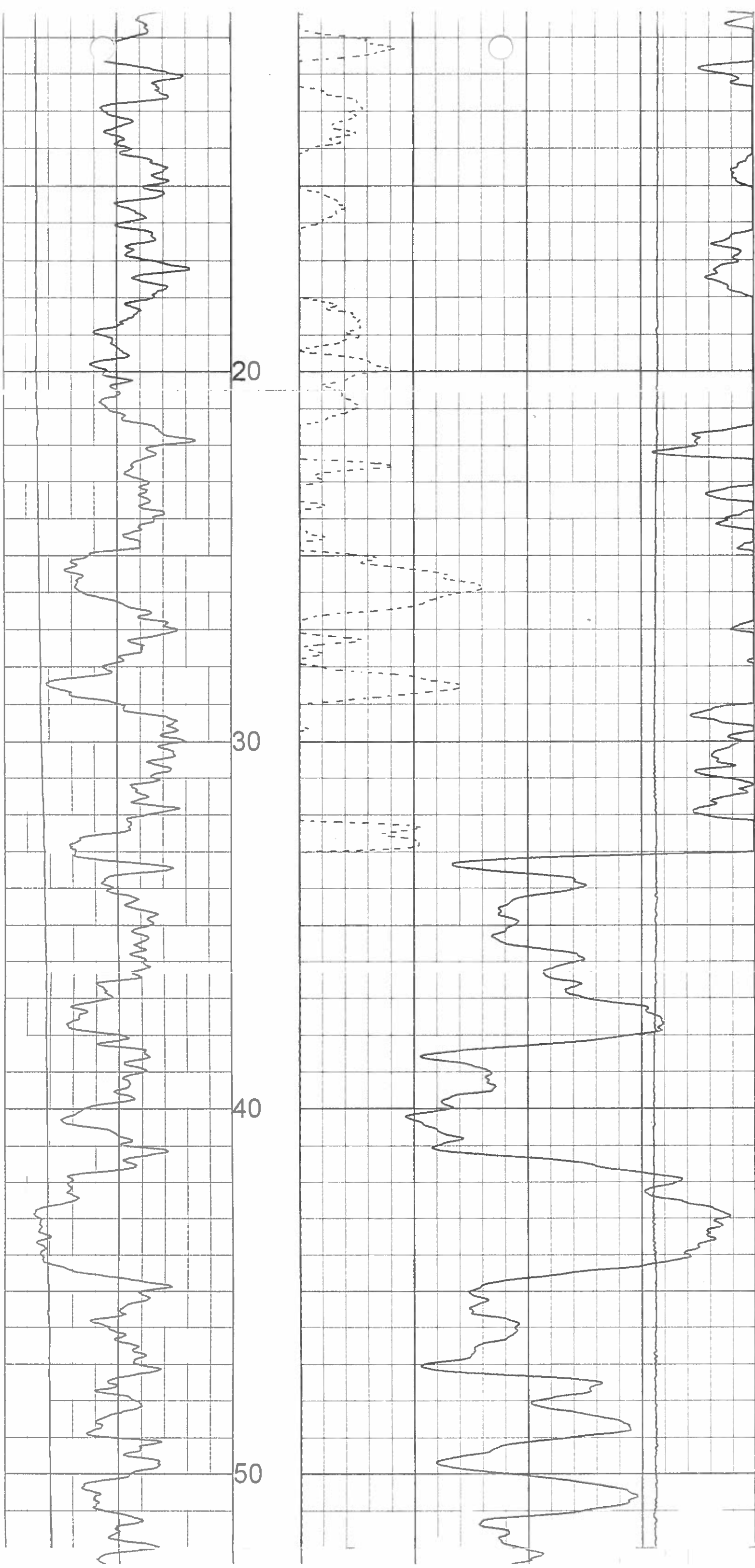
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

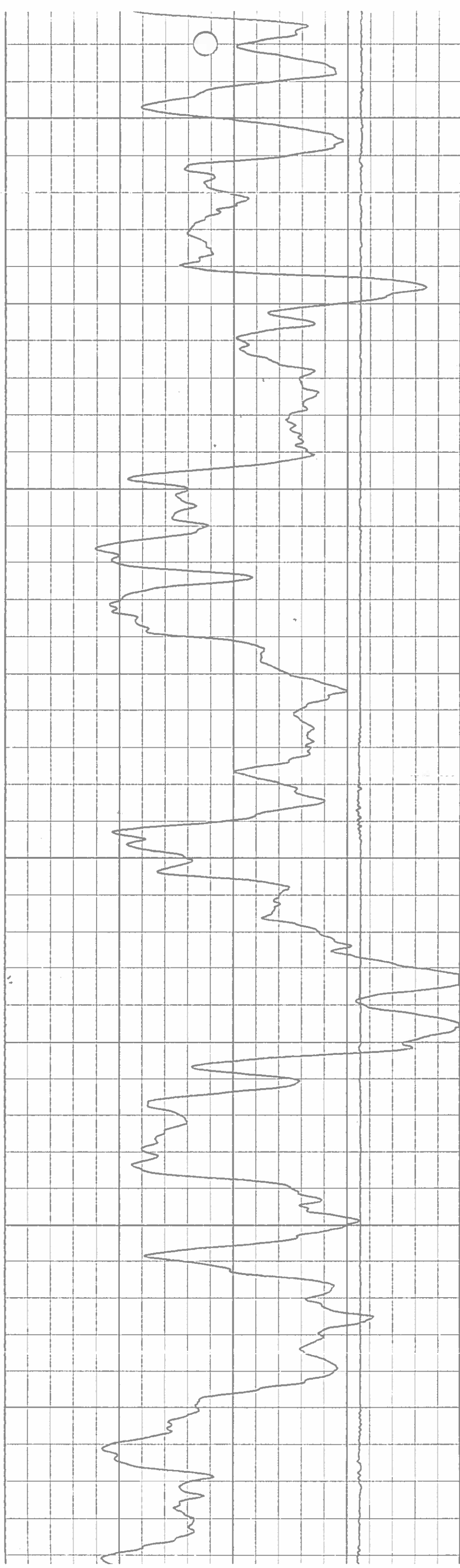
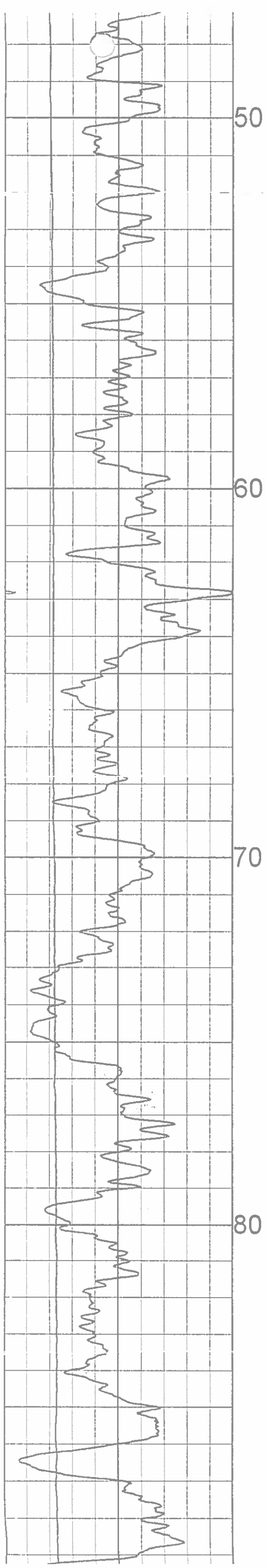
NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

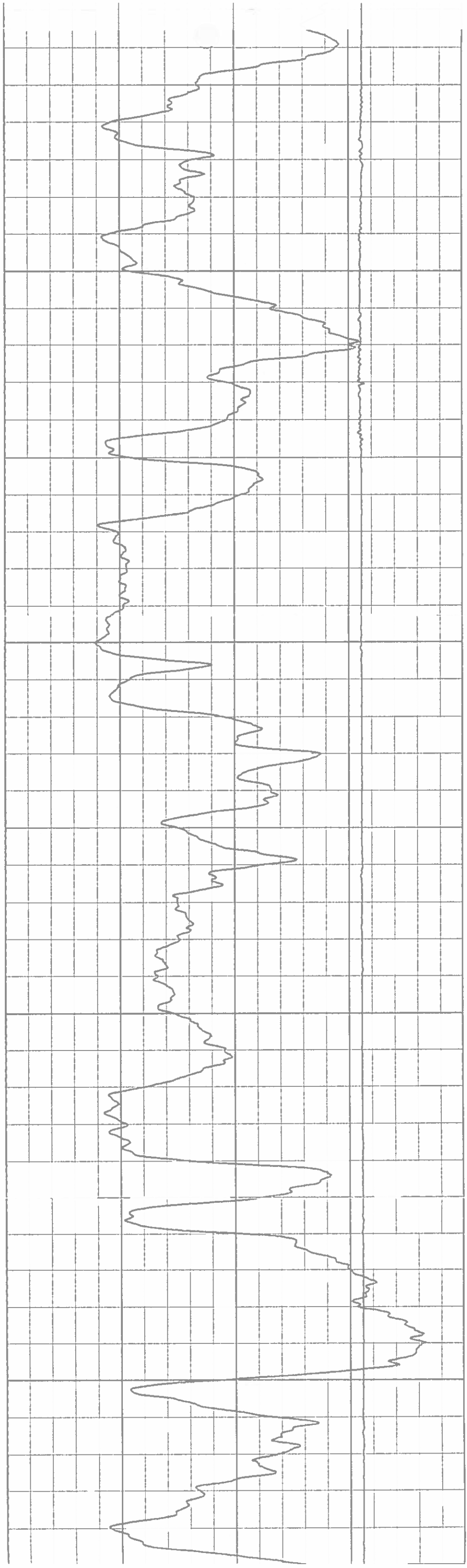
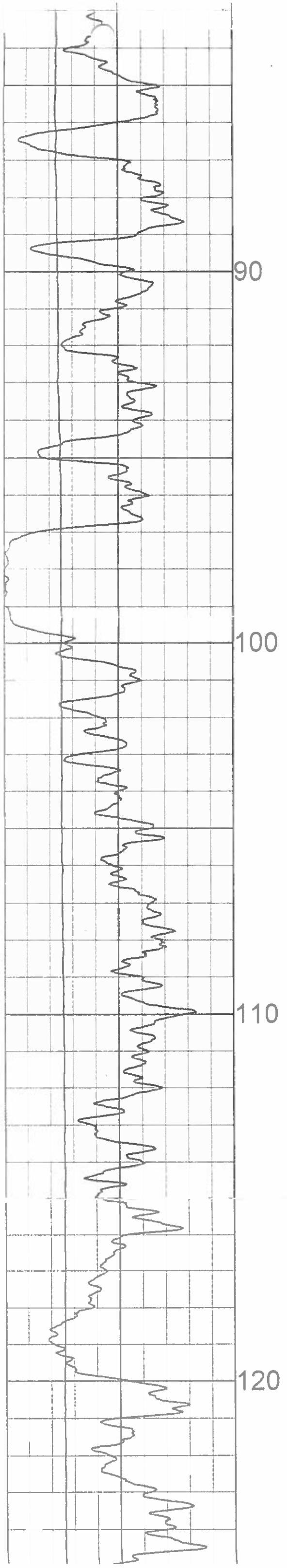
MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR

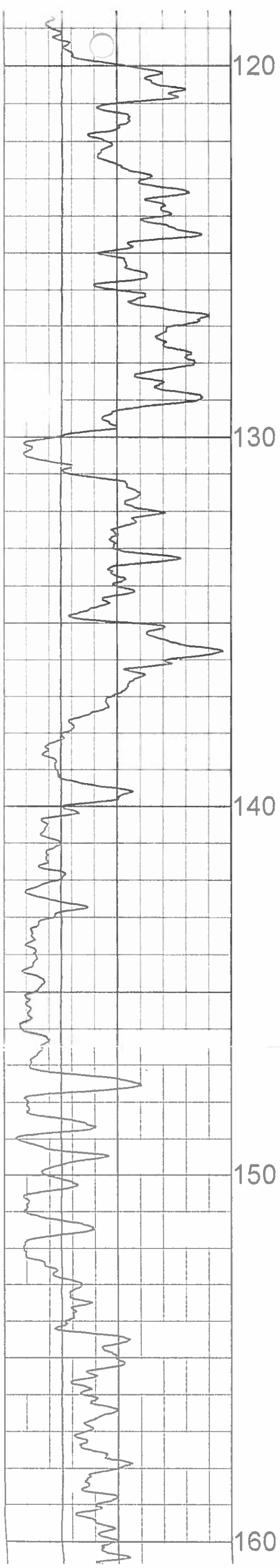


ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS









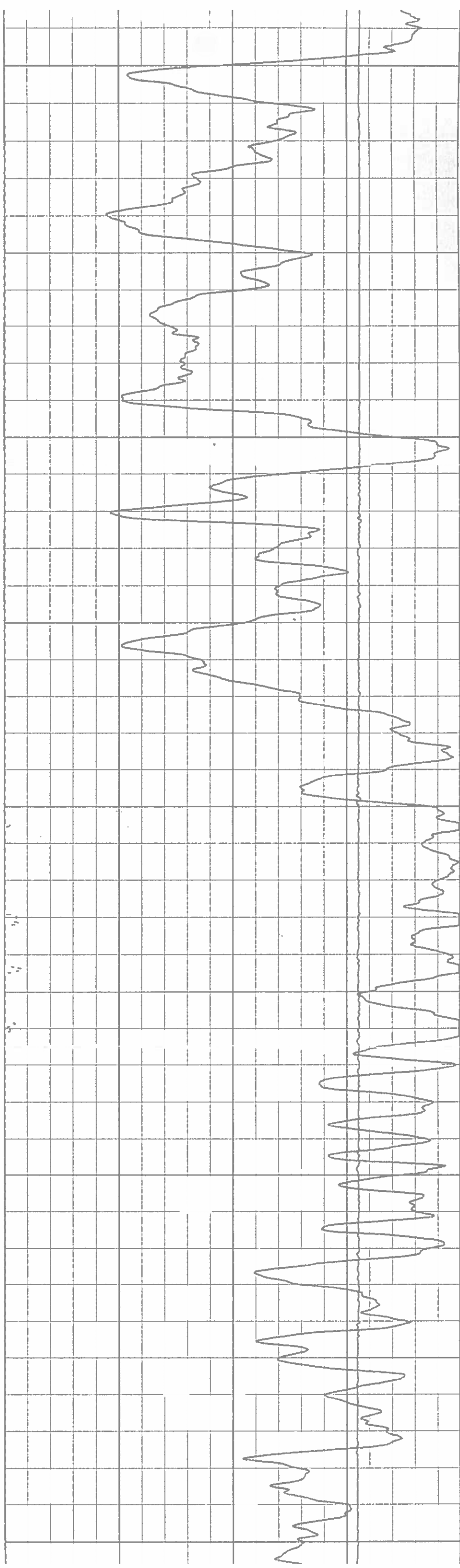
120

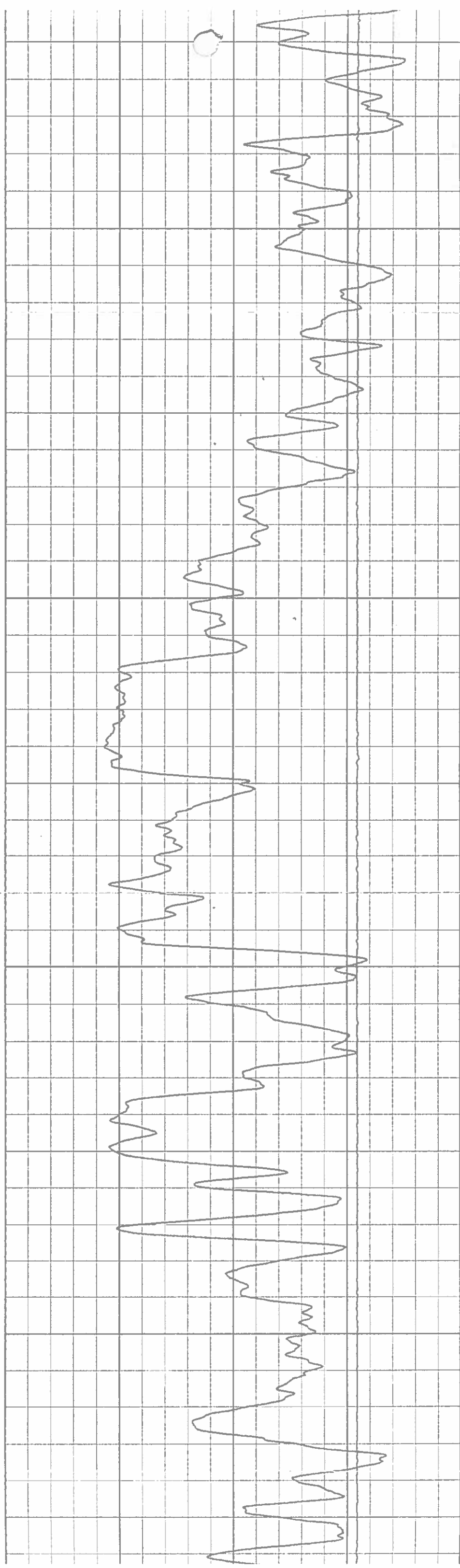
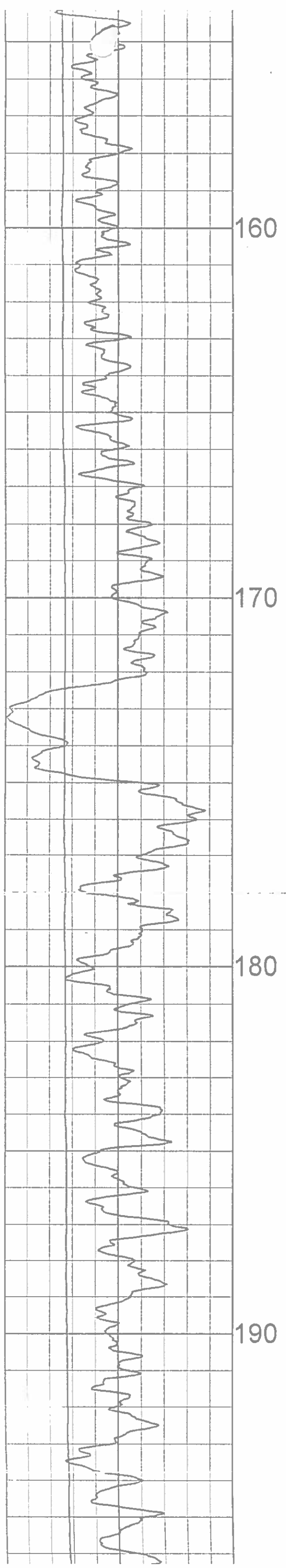
130

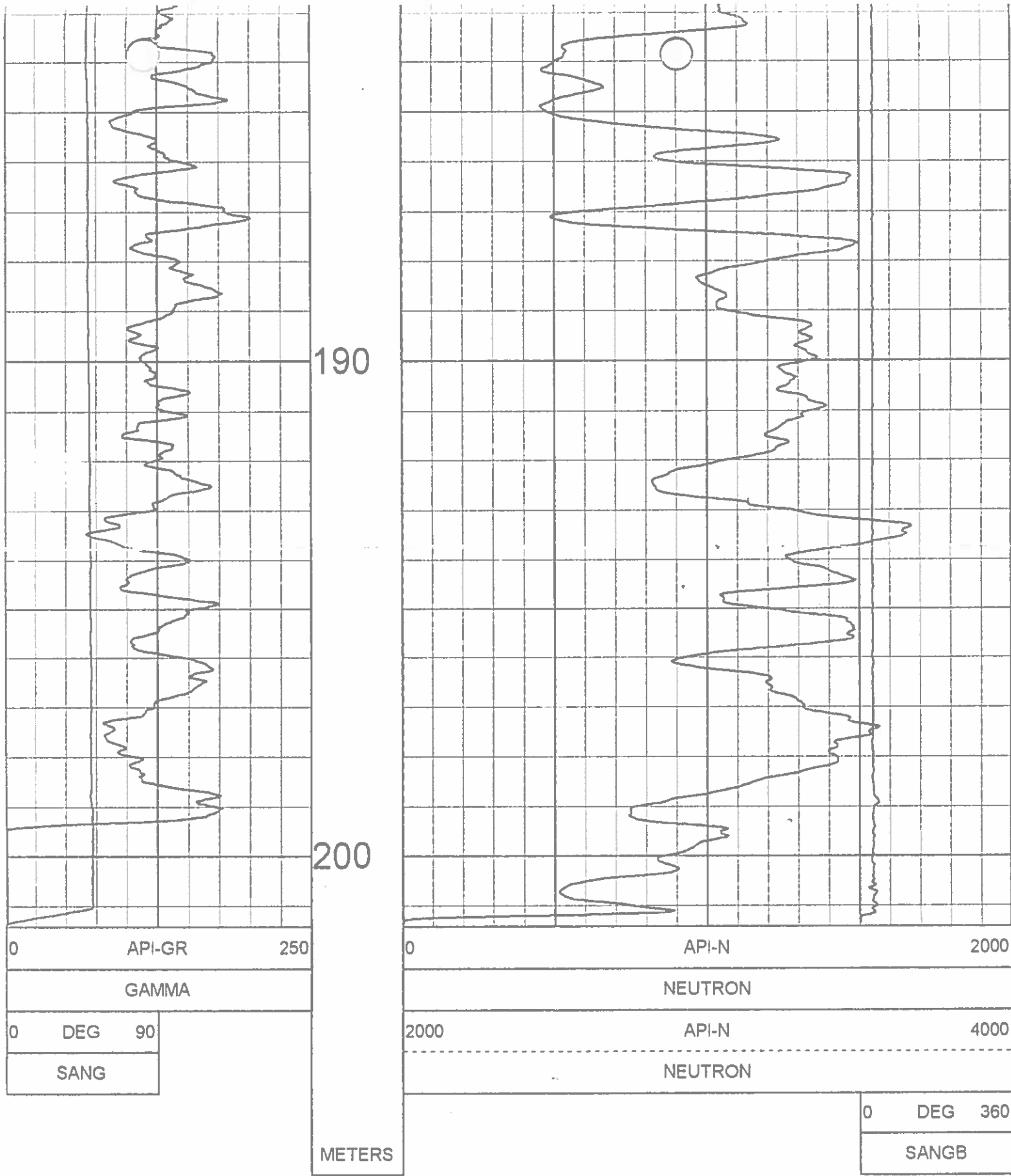
140

150

160







1:100 NEUTRON BR10-38 08/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11 43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

VERSION = 3.64HR

TOOL CALIBRATION BR10-38 08/21/10 10:35

TOOL 9057A TM VERSION 2

SERIAL NUMBER 1071

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Jul15,10	09:37:27	GAMMA	0.000 [API-GR]	4.000 [CPS]
	Jul15,10	09:37:27	GAMMA	545.000 [API-GR]	480.000 [CPS]
2	Jun11,10	13:36:01	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Jun11,10	13:36:01	NEUTRC	271.000 [API-N]	697.000 [CPS]
3	May19,08	07:54:58	SP	0.000 [MV]	60204.000 [CPS]
	May19,08	07:54:58	SP	399.000 [MV]	20101.000 [CPS]
4	May19,08	07:55:04	RES(16N)	0.000 [OHM-M]	3996.000 [CPS]
	May19,08	07:55:04	RES(16)	1953.000 [OHM-M]	101843.000 [CPS]
5	May19,08	07:55:10	RES(64N)	0.000 [OHM-M]	4026.000 [CPS]
	May19,08	07:55:10	RES(64)	1990.000 [OHM-M]	103531.000 [CPS]
6	May19,08	08:00:49	TEMP	35.500 [DEG F]	101300.000 [CPS]
	May19,08	08:00:49	TEMP	84.400 [DEG F]	64850.000 [CPS]
7	May19,08	07:55:17	RES	0.000 [OHM]	9984.000 [CPS]
	May19,08	07:55:17	RES	943.000 [OHM]	58869.000 [CPS]

Century
WIRELINE SERVICES

GAM-GAMH
SLIM TOOL
BR10-38

COMPANY : WESTERN COAL CORPORATION
WELL : BR10-38
FIELD : BRULE
COUNTRY : CANADA
PROVINCE : BRITISH COLUMBIA
LOCALITY : BRULE NORTH

SECTION : N/A
TOWNSHIP : N/A
RANGE : N/A
LICENCE NO. : N/A
UNIQUE WELL ID. : N/A

PERMANENT DATUM : GL
LOG MEASURED FROM : GL
DRL MEASURED FROM : GL

ELEVATION KB : N/A
ELEVATION DF : N/A
ELEVATION GL : N/A
RIG NUMBER :
LOGGER TD :
ARRIVAL TIME :
DEPARTURE TIME :
CIRC STOPPED : N/A

DATE : 08/20/10
DEPTH DRILLER : 201.16
BIT SIZE : 11.43
LOG TOP : -1.02
LOG BOTTOM : 198.92
CASING LOGGER : 3.048
CASING DRILLER : 3.048

CASING TYPE : STEEL
BOREHOLE FLUID : WATER
RM TEMPERATURE : N/A
MUD RES : N/A
MUD WEIGHT : 1.00

WAS RECORDED BY : G. HOLMLUND
REMARKS 1 : 65 DEGREE
REMARKS 2 : IN-PIPE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 GAM-GAMH BR10-38 08/20/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

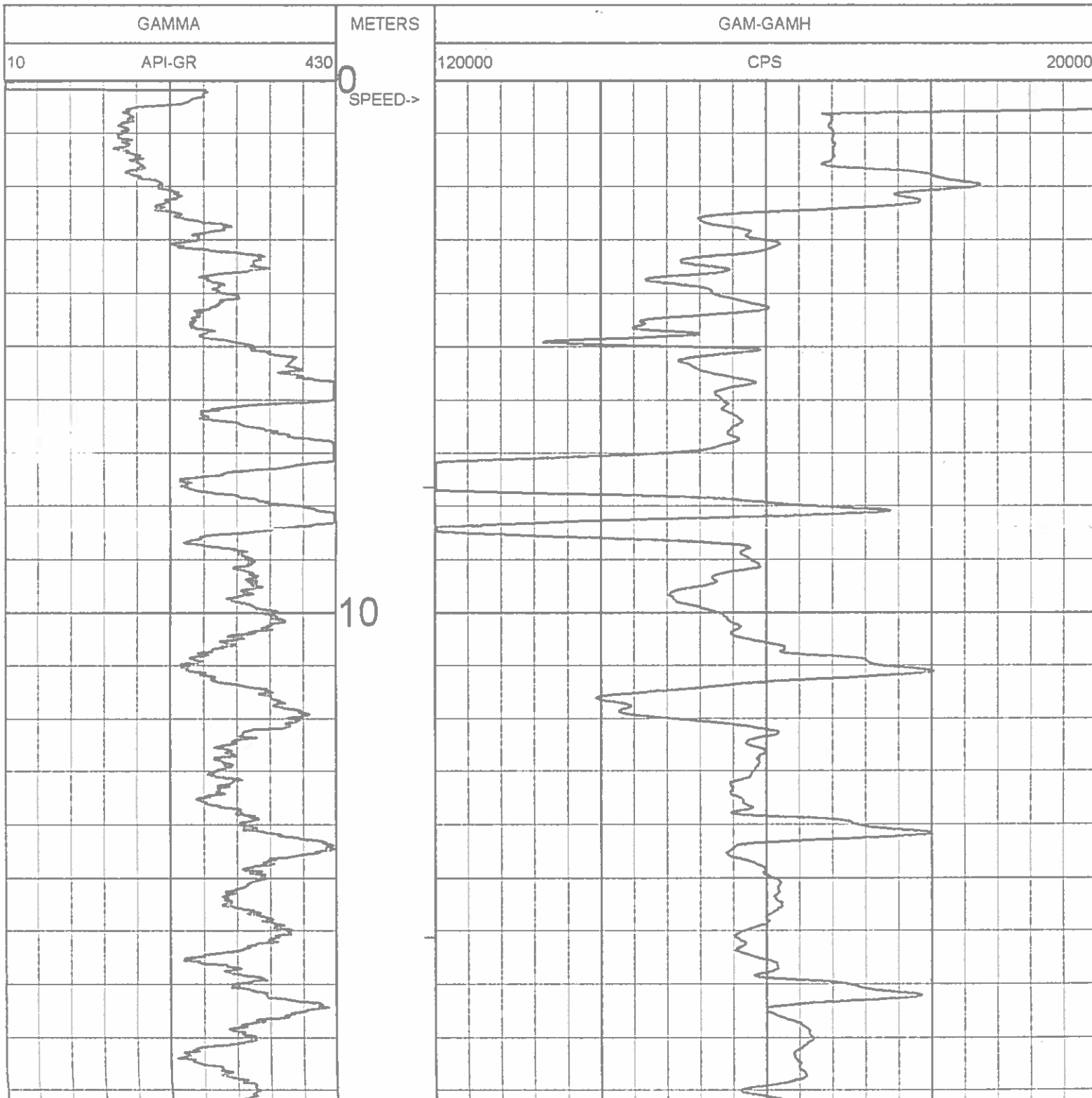
MAGNETIC DECL : 21.0

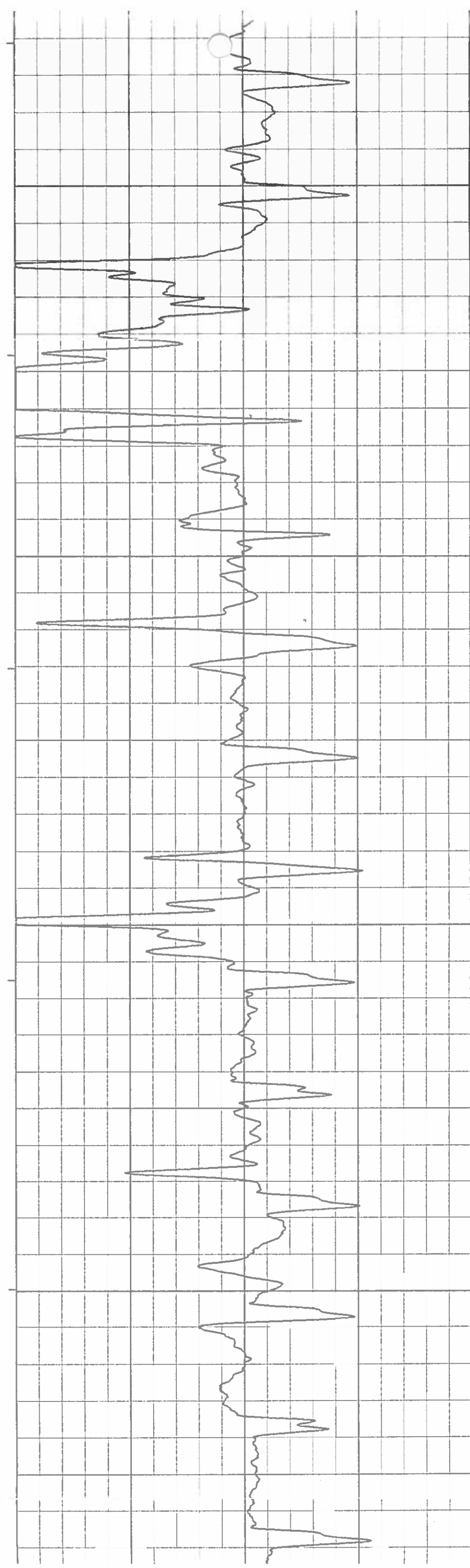
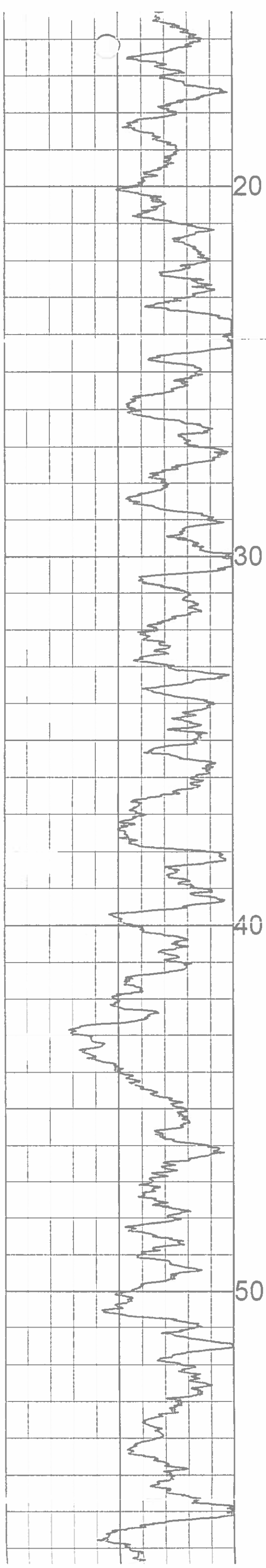
ELECT. CUTOFF : 99999

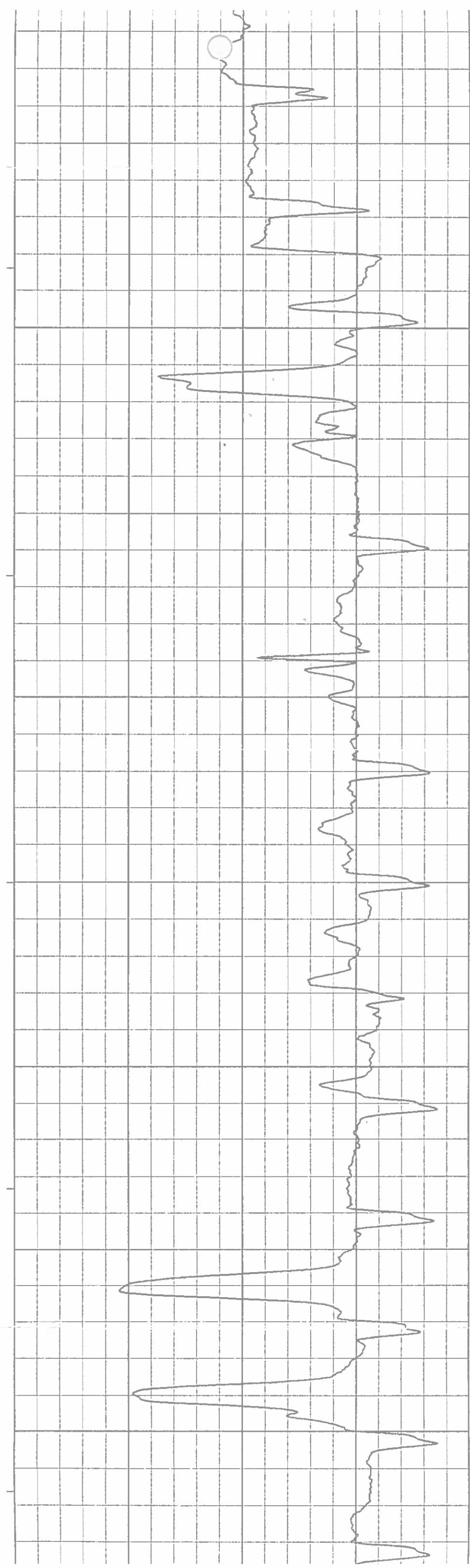
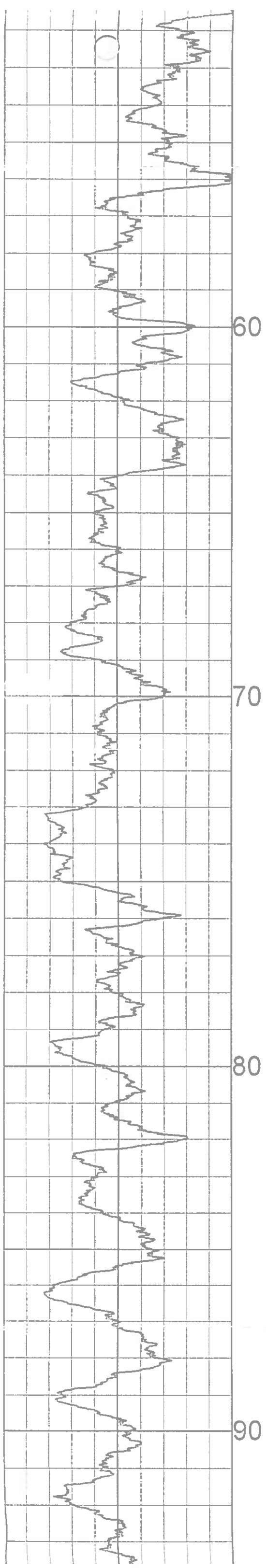
BIT SIZE : 11.43

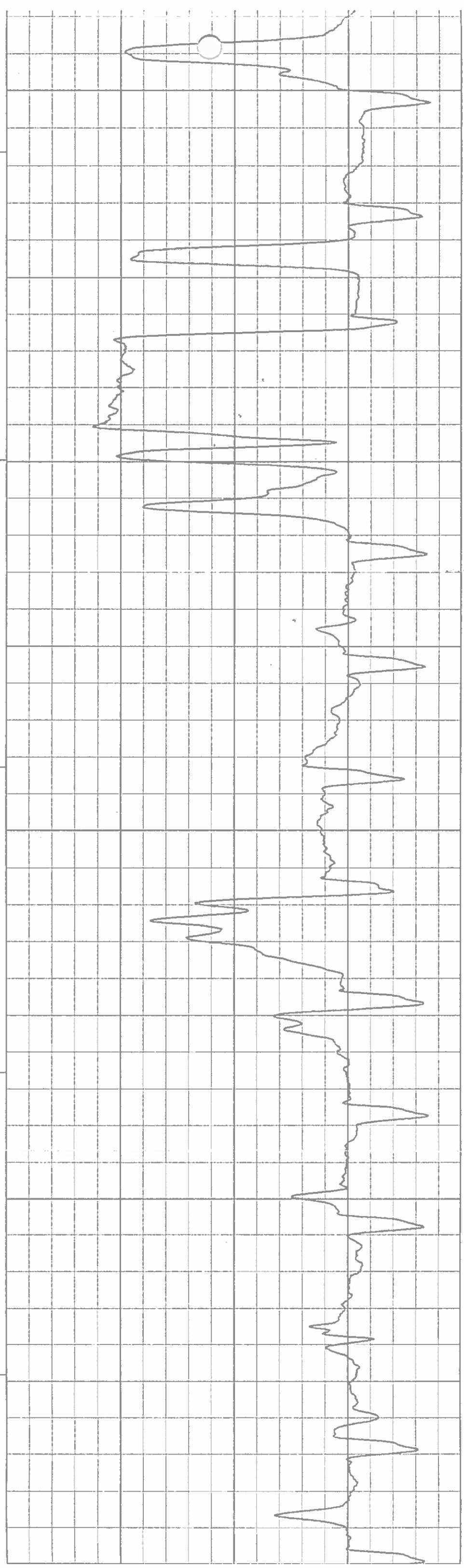
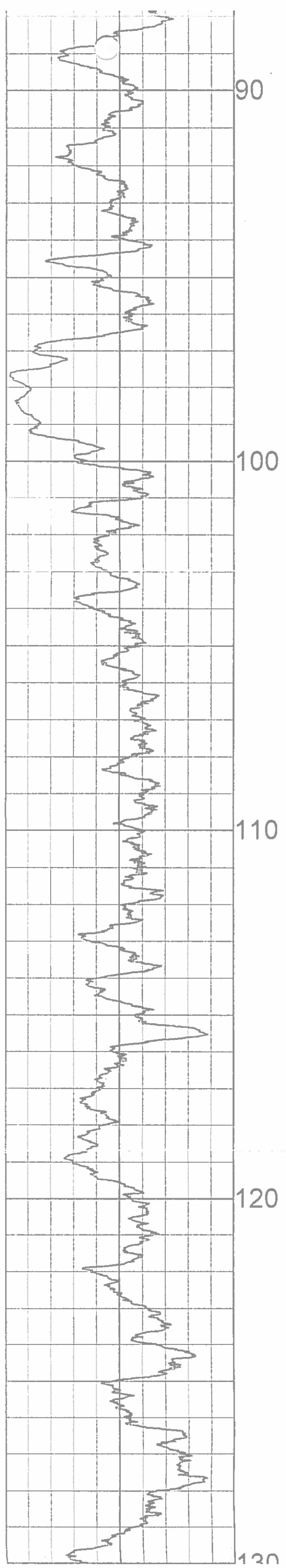
PRESENTATION NAME/DATE = 9068A.0 07/14/2010

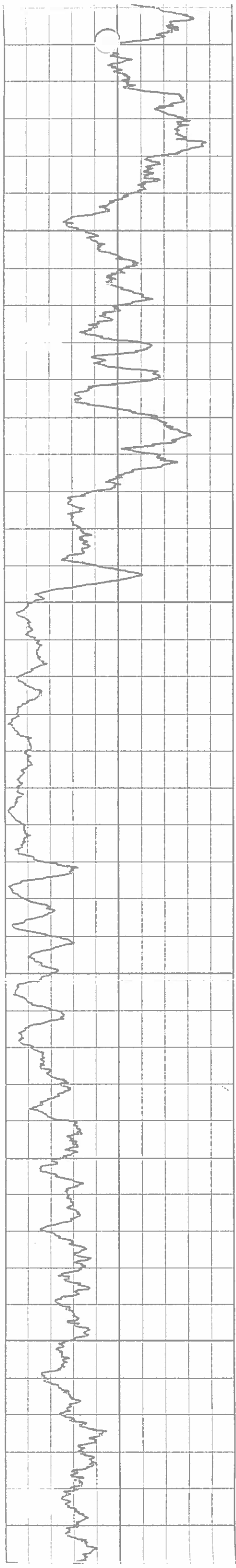
VERSION = 3 64HR









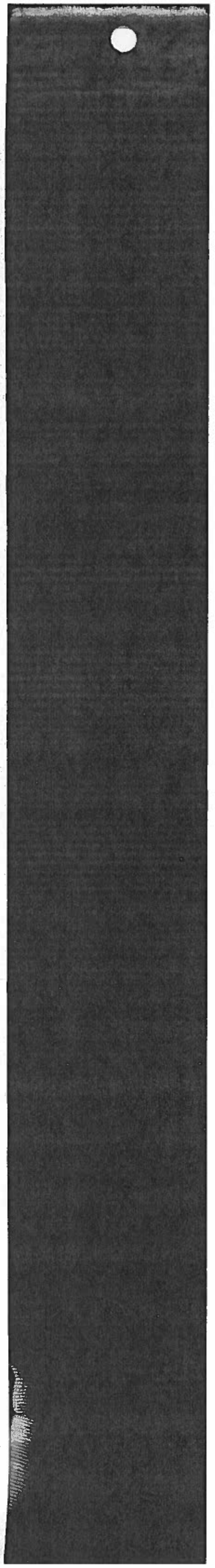
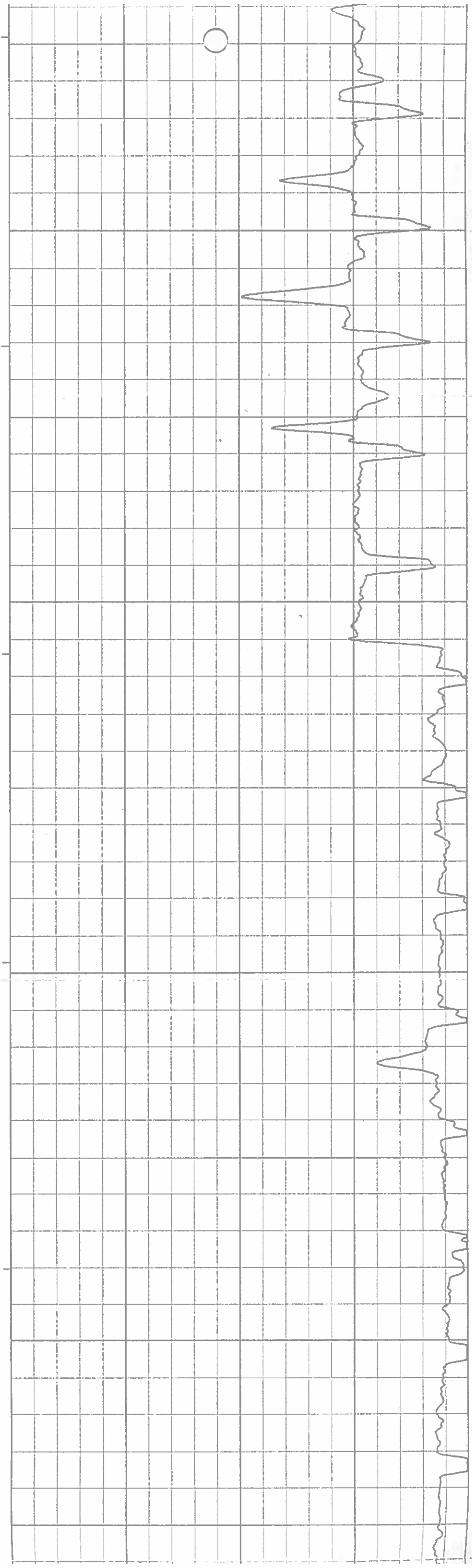


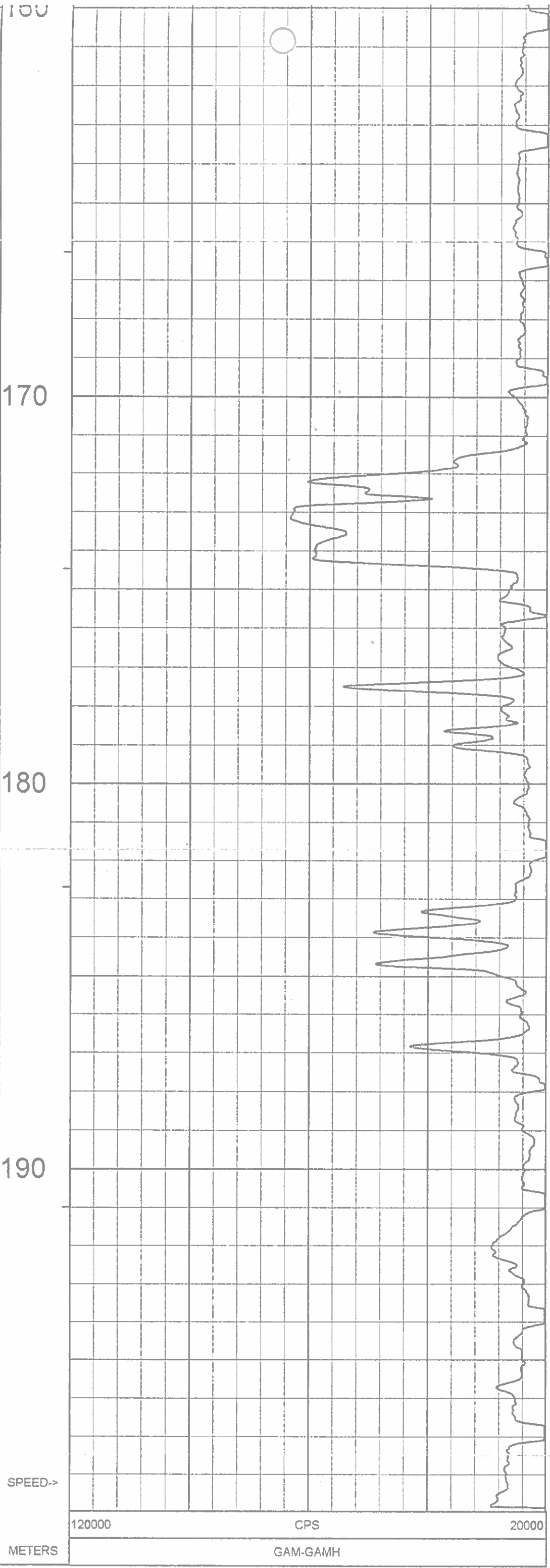
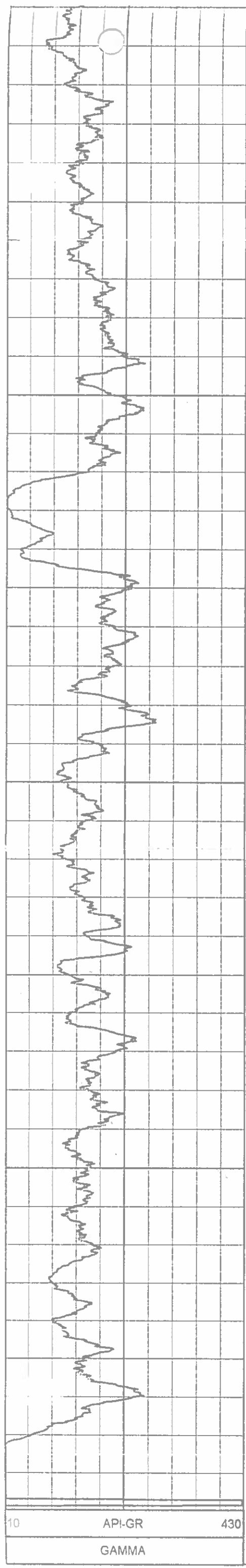
130

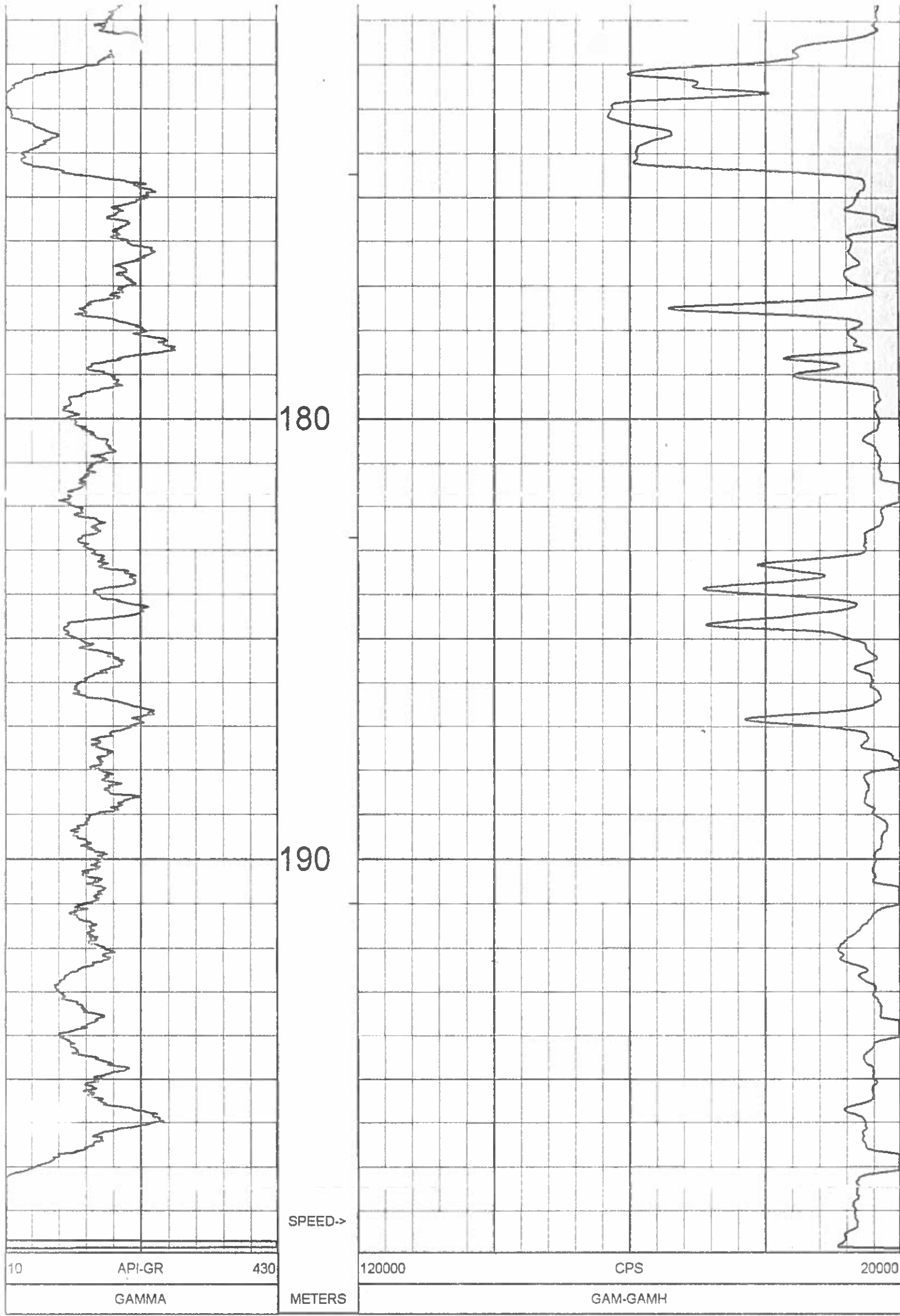
140

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160







10	API-GR	430	120000	CPS	20000
	GAMMA	METERS		GAM-GAMH	

1:100 GAM-GAMH BR10-38 08/20/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9068A.0 07/14/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-38 08/20/10 15.19
 TOOL 9068A TM VERSION 1
 SERIAL NUMBER 643

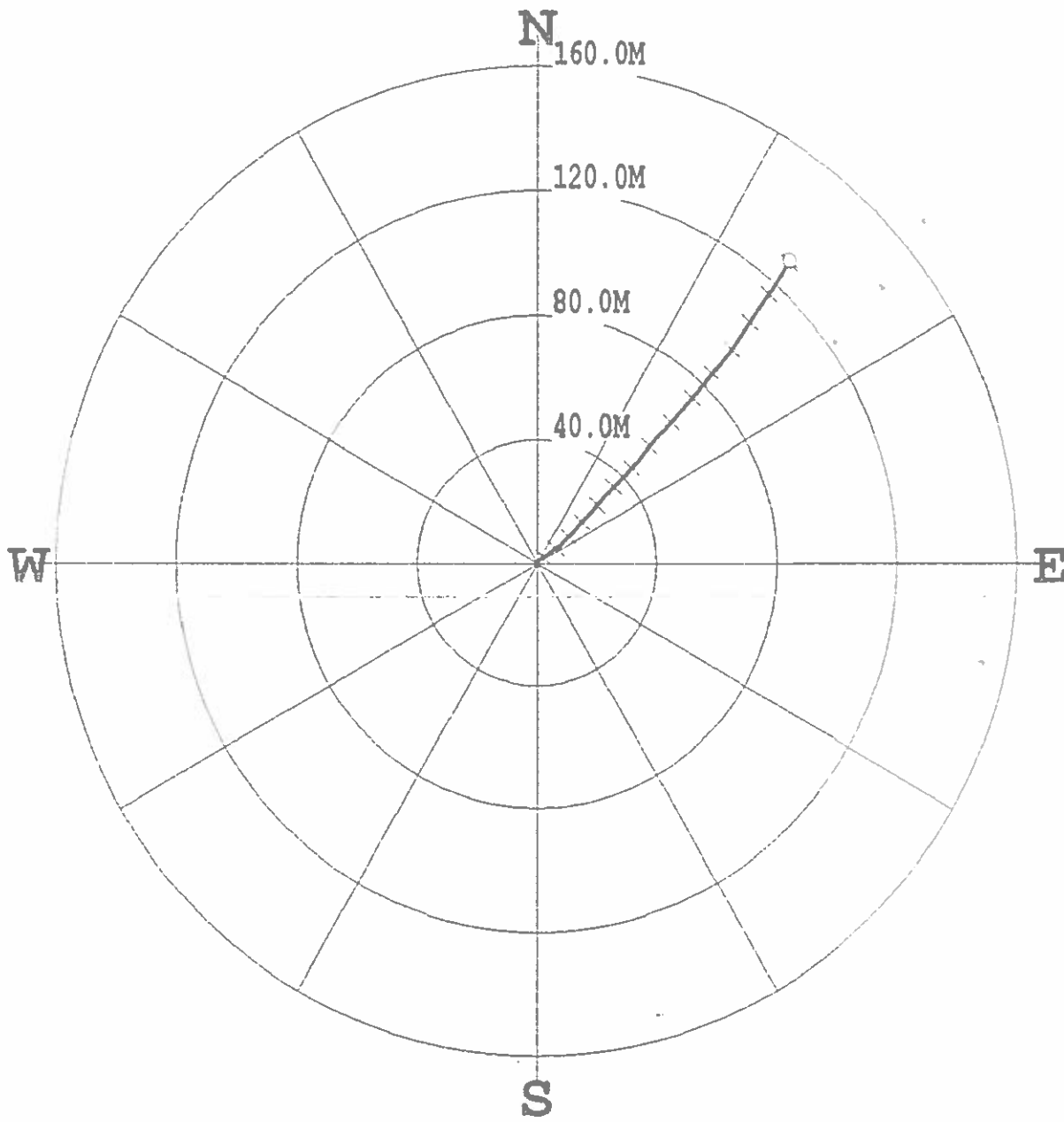
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May22,10	08:32:25	GAMMA	Default [CPS]	Default [CPS]
	May22,10	08:32:25	GAMMA	545.000 [API-GR]	100.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-38
 DATE OF LOG: 08/21/10
 PROBE: 9057A 1071



SCALE: 20 M/CM
 TRUE DEPTH: 150.57 M
 AZIMUTH: 40.9
 DISTANCE: 128.6 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-38
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/21/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-38_08-21-10_10-35_9057A_.02_0.95_201.37_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.85	0.07	-0.17	0.2	291.5	25.4	33.1
6.00	5.66	0.68	0.43	0.8	32.5	25.8	50.6
8.00	7.46	1.20	1.13	1.6	43.3	25.6	54.6
10.00	9.26	1.70	1.85	2.5	47.3	25.7	55.8
12.00	11.05	2.19	2.58	3.4	49.7	26.1	56.8
14.00	12.85	2.68	3.31	4.3	51.0	26.4	58.4
16.00	14.64	3.19	4.04	5.1	51.8	26.4	54.9
18.00	16.43	3.70	4.76	6.0	52.2	26.4	54.1
20.00	18.22	4.22	5.49	6.9	52.5	26.0	55.9
22.00	20.00	4.75	6.22	7.8	52.6	27.6	52.8
24.00	21.78	5.35	6.93	8.8	52.3	27.8	47.7
26.00	23.54	5.99	7.62	9.7	51.9	28.4	47.0
28.00	25.29	6.66	8.32	10.7	51.3	29.3	46.8
30.00	27.04	7.36	9.00	11.6	50.7	29.8	43.4
32.00	28.76	8.08	9.71	12.6	50.2	31.2	48.3
34.00	30.47	8.77	10.49	13.7	50.1	32.0	48.0
36.00	32.17	9.48	11.26	14.7	49.9	32.7	43.4
38.00	33.85	10.24	12.03	15.8	49.6	32.8	46.2
40.00	35.52	11.07	12.76	16.9	49.1	33.9	40.5
42.00	37.18	11.92	13.48	18.0	48.5	34.5	39.6
44.00	38.83	12.79	14.20	19.1	48.0	34.1	40.6
46.00	40.47	13.58	15.02	20.3	47.9	35.7	46.9
48.00	42.09	14.42	15.84	21.4	47.7	36.0	44.0
50.00	43.71	15.25	16.68	22.6	47.6	36.6	43.7
52.00	45.31	16.10	17.51	23.8	47.4	36.8	45.0
54.00	46.89	17.00	18.34	25.0	47.2	37.7	42.4
56.00	48.47	17.89	19.18	26.2	47.0	38.2	42.3
58.00	50.04	18.80	20.02	27.5	46.8	38.4	40.6
60.00	51.61	19.71	20.86	28.7	46.6	38.5	42.1
62.00	53.17	20.64	21.70	29.9	46.4	38.8	42.0
64.00	54.73	21.56	22.55	31.2	46.3	39.0	42.4
66.00	56.28	22.49	23.40	32.5	46.1	38.5	42.7
68.00	57.84	23.45	24.21	33.7	45.9	38.9	47.9
70.00	59.39	24.40	25.03	35.0	45.7	39.5	44.1
72.00	60.91	25.32	25.93	36.2	45.7	40.2	45.1
74.00	62.44	26.25	26.83	37.5	45.6	40.2	45.0
76.00	63.96	27.18	27.74	38.8	45.6	40.5	44.2

* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-38
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/21/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-38_08-21-10_10-35_9057A_.02_0.95_201.37_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.85	0.07	-0.17	0.2	291.5	25.4	33.1
6.00	5.66	0.68	0.43	0.8	32.5	25.8	50.6
8.00	7.46	1.20	1.13	1.6	43.3	25.6	54.6
10.00	9.26	1.70	1.85	2.5	47.3	25.7	55.8
12.00	11.05	2.19	2.58	3.4	49.7	26.1	56.8
14.00	12.85	2.68	3.31	4.3	51.0	26.4	58.4
16.00	14.64	3.19	4.04	5.1	51.8	26.4	54.9
18.00	16.43	3.70	4.76	6.0	52.2	26.4	54.1
20.00	18.22	4.22	5.49	6.9	52.5	26.0	55.9
22.00	20.00	4.75	6.22	7.8	52.6	27.6	52.8
24.00	21.78	5.35	6.93	8.8	52.3	27.8	47.7
26.00	23.54	5.99	7.62	9.7	51.9	28.4	47.0
28.00	25.29	6.66	8.32	10.7	51.3	29.3	46.8
30.00	27.04	7.36	9.00	11.6	50.7	29.8	43.4
32.00	28.76	8.08	9.71	12.6	50.2	31.2	48.3
34.00	30.47	8.77	10.49	13.7	50.1	32.0	48.0
36.00	32.17	9.48	11.26	14.7	49.9	32.7	43.4
38.00	33.85	10.24	12.03	15.8	49.6	32.8	46.2
40.00	35.52	11.07	12.76	16.9	49.1	33.9	40.5
42.00	37.18	11.92	13.48	18.0	48.5	34.5	39.6
44.00	38.83	12.79	14.20	19.1	48.0	34.1	40.6
46.00	40.47	13.58	15.02	20.3	47.9	35.7	46.9
48.00	42.09	14.42	15.84	21.4	47.7	36.0	44.0
50.00	43.71	15.25	16.68	22.6	47.6	36.6	43.7
52.00	45.31	16.10	17.51	23.8	47.4	36.8	45.0
54.00	46.89	17.00	18.34	25.0	47.2	37.7	42.4
56.00	48.47	17.89	19.18	26.2	47.0	38.2	42.3
58.00	50.04	18.80	20.02	27.5	46.8	38.4	40.6
60.00	51.61	19.71	20.86	28.7	46.6	38.5	42.1
62.00	53.17	20.64	21.70	29.9	46.4	38.8	42.0
64.00	54.73	21.56	22.55	31.2	46.3	39.0	42.4
66.00	56.28	22.49	23.40	32.5	46.1	38.5	42.7
68.00	57.84	23.45	24.21	33.7	45.9	38.9	47.9
70.00	59.39	24.40	25.03	35.0	45.7	39.5	44.1
72.00	60.91	25.32	25.93	36.2	45.7	40.2	45.1
74.00	62.44	26.25	26.83	37.5	45.6	40.2	45.0
76.00	63.96	27.18	27.74	38.8	45.6	40.5	44.2
78.00	65.48	28.11	28.66	40.1	45.6	40.6	46.5
80.00	66.98	29.05	29.58	41.5	45.5	41.1	45.1
82.00	68.48	30.00	30.51	42.8	45.5	41.6	45.0
84.00	69.97	30.94	31.43	44.1	45.5	41.4	44.1
86.00	71.48	31.89	32.35	45.4	45.4	39.3	46.8
88.00	72.98	32.86	33.25	46.7	45.3	41.4	42.7
90.00	74.46	33.89	34.10	48.1	45.2	42.7	38.5
92.00	75.92	34.96	34.95	49.4	45.0	43.2	39.9
94.00	77.38	36.04	35.78	50.8	44.8	44.6	34.8
96.00	78.80	37.09	36.70	52.2	44.7	45.1	42.7
98.00	80.22	38.13	37.66	53.6	44.6	45.1	42.3
100.00	81.63	39.18	38.61	55.0	44.6	44.6	42.3
102.00	83.04	40.23	39.56	56.4	44.5	45.3	42.4
104.00	84.44	41.27	40.53	57.8	44.5	45.4	42.5
106.00	85.85	42.32	41.50	59.3	44.4	44.9	44.1
108.00	87.24	43.38	42.46	60.7	44.4	46.1	42.4
110.00	88.62	44.44	43.44	62.2	44.3	46.4	41.9
112.00	89.99	45.53	44.43	63.6	44.3	46.9	42.3
114.00	91.35	46.60	45.42	65.1	44.3	46.8	41.0
116.00	92.71	47.68	46.41	66.5	44.2	45.6	36.3
118.00	94.08	48.76	47.40	68.0	44.2	46.5	45.0
120.00	95.45	49.83	48.38	69.5	44.2	46.6	42.9
122.00	96.83	50.90	49.36	70.9	44.1	46.8	41.1
124.00	98.20	51.97	50.34	72.4	44.1	46.5	42.4
126.00	99.58	53.05	51.31	73.8	44.0	46.0	41.8
128.00	100.96	54.12	52.28	75.2	44.0	46.1	42.3
130.00	102.35	55.19	53.24	76.7	44.0	45.6	42.0
132.00	103.75	56.25	54.20	78.1	43.9	45.5	39.9
134.00	105.16	57.32	55.13	79.5	43.9	45.3	42.4
136.00	106.56	58.39	56.06	80.9	43.8	45.6	36.9
138.00	107.97	59.48	56.97	82.4	43.8	45.5	39.7
140.00	109.37	60.59	57.87	83.8	43.7	45.5	40.7
142.00	110.76	61.69	58.78	85.2	43.6	46.9	38.3
144.00	112.17	62.79	59.68	86.6	43.5	46.0	34.8
146.00	113.57	63.89	60.60	88.1	43.5	45.0	43.2
148.00	114.97	64.99	61.50	89.5	43.4	45.6	39.4
150.00	116.37	66.10	62.40	90.9	43.4	45.6	37.7
152.00	117.78	67.19	63.30	92.3	43.3	45.1	40.3
154.00	119.18	68.31	64.19	93.7	43.2	45.6	35.8
156.00	120.57	69.47	65.03	95.2	43.1	45.9	35.5
158.00	121.96	70.64	65.86	96.6	43.0	46.3	35.7
160.00	123.35	71.81	66.70	98.0	42.9	45.3	34.6
162.00	124.74	72.99	67.53	99.4	42.8	46.3	34.4
164.00	126.12	74.18	68.35	100.9	42.7	46.4	34.5
166.00	127.50	75.36	69.18	102.3	42.6	46.9	35.1
168.00	128.85	76.58	70.02	103.8	42.4	47.1	34.7
170.00	130.20	77.79	70.85	105.2	42.3	47.9	35.6
172.00	131.54	79.01	71.70	106.7	42.2	47.7	34.8
174.00	132.89	80.23	72.53	108.2	42.1	47.1	35.0
176.00	134.23	81.44	73.38	109.6	42.0	47.8	35.6
178.00	135.57	82.66	74.23	111.1	41.9	49.1	35.9
180.00	136.90	83.89	75.08	112.6	41.8	48.4	35.3
182.00	138.22	85.13	75.92	114.1	41.7	48.7	34.4
184.00	139.55	86.37	76.77	115.6	41.6	48.3	35.4
186.00	140.86	87.62	77.62	117.1	41.5	49.4	34.1
188.00	142.16	88.87	78.47	118.6	41.4	49.1	33.2
190.00	143.47	90.13	79.31	120.1	41.3	49.9	34.0
192.00	144.75	91.40	80.16	121.6	41.3	50.2	33.4
194.00	146.03	92.69	81.01	123.1	41.2	50.9	35.4
196.00	147.31	93.98	81.85	124.6	41.1	49.1	32.4
198.00	148.57	95.27	82.71	126.2	41.0	50.3	33.6
200.00	149.82	96.54	83.61	127.7	40.9	52.0	36.4
201.20	150.57	97.30	84.15	128.6	40.9	51.7	38.0



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-39

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,385.98	6,140,195.88	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
239	-57	76.89	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	239.3	-57.00
5.00	234.4	-56.80
6.00	231.8	-57.40
7.00	230.5	-56.80
8.00	230.2	-56.20
9.00	229.9	-56.40
10.00	229.8	-55.80
11.00	229.6	-55.90
12.00	229.2	-55.60
13.00	228.9	-55.70
14.00	228.8	-55.40
15.00	228.7	-55.60
16.00	228.7	-54.90
17.00	228.7	-55.10
18.00	228.7	-54.20
19.00	228.8	-54.10
20.00	228.6	-54.50
21.00	228.5	-54.30
22.00	228.5	-54.70
23.00	228.5	-54.30
24.00	228.6	-53.90
25.00	228.6	-52.90
26.00	228.7	-53.00
27.00	228.8	-52.70
28.00	228.8	-52.90
29.00	228.9	-51.30
30.00	228.9	-52.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.00	2.00		
21.20	22.00	0.80		
45.20	45.70	0.50		
45.70	49.10	3.40		
49.10	49.60	0.50		
68.30	72.60	4.30		
72.60	73.50	0.90		
75.00	75.80	0.80		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-39**

year drilled: 2010


AREA:

**BURNT RIVER
BRULE**

31.00	229.0	-52.40
32.00	229.1	-52.90
33.00	229.1	-52.80
34.00	228.9	-51.70
35.00	228.7	-51.90
36.00	228.6	-51.30
37.00	228.4	-51.50
38.00	228.4	-51.60
39.00	228.2	-51.50
40.00	228.1	-52.00
41.00	228.0	-51.70
42.00	228.0	-51.60
43.00	227.9	-50.50
44.00	227.8	-51.90
45.00	227.8	-50.70
46.00	227.8	-51.30
47.00	227.7	-52.70
48.00	227.7	-50.60
49.00	227.6	-50.00
50.00	227.5	-50.70
51.00	227.5	-50.50
52.00	227.5	-51.30
53.00	227.4	-50.70
54.00	227.4	-51.00
55.00	227.4	-50.20
56.00	227.4	-50.10
57.00	227.3	-50.30
58.00	227.3	-50.30
59.00	227.2	-50.60
60.00	227.2	-50.30
61.00	227.1	-50.60
62.00	227.1	-50.70
63.00	227.1	-50.90
64.00	227.1	-51.00
65.00	227.1	-51.30
66.00	227.1	-51.30
67.00	227.1	-50.40
68.00	227.1	-50.10
69.00	227.0	-50.90
70.00	227.0	-50.60
71.00	227.0	-50.60
72.00	227.0	-50.20
73.00	227.1	-50.00
74.00	227.1	-50.00
75.00	227.2	-49.90

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-39	year drilled: 2010	AREA: BURNT RIVER BRULE
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76.00	227.2	-49.60
76.72	227.3	-49.90

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
 Reviewed: October 11, 2002

Page 3 of 3

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-39

COMPANY WESTERN COAL CORPORATION

WELL BR10-39

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

LOCATION BRULE NORTH

TOWNSHIP N/A

RANGE N/A

LICENCE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM GL

LOG MEASURED FROM GL

DRL MEASURED FROM GL

DATE 08/18/10

DEPTH DRILLER 80.77

BIT SIZE 11.43

LOG TOP 0.19

LOG BOTTOM 77.05

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

WITNESSED BY G. HOLMLUND

RECORDED BY T. NEAL

REMARKS 1 60 DEGREE

REMARKS 2

OTHER SERVICES
NEUTRON

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL N/A

RIG NUMBER :
LOGGER TD :
ARRIVAL TIME :
DEPARTURE TIME :
CIRC STOPPED N/A

1:100 BULK DENSITY BR10-39 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

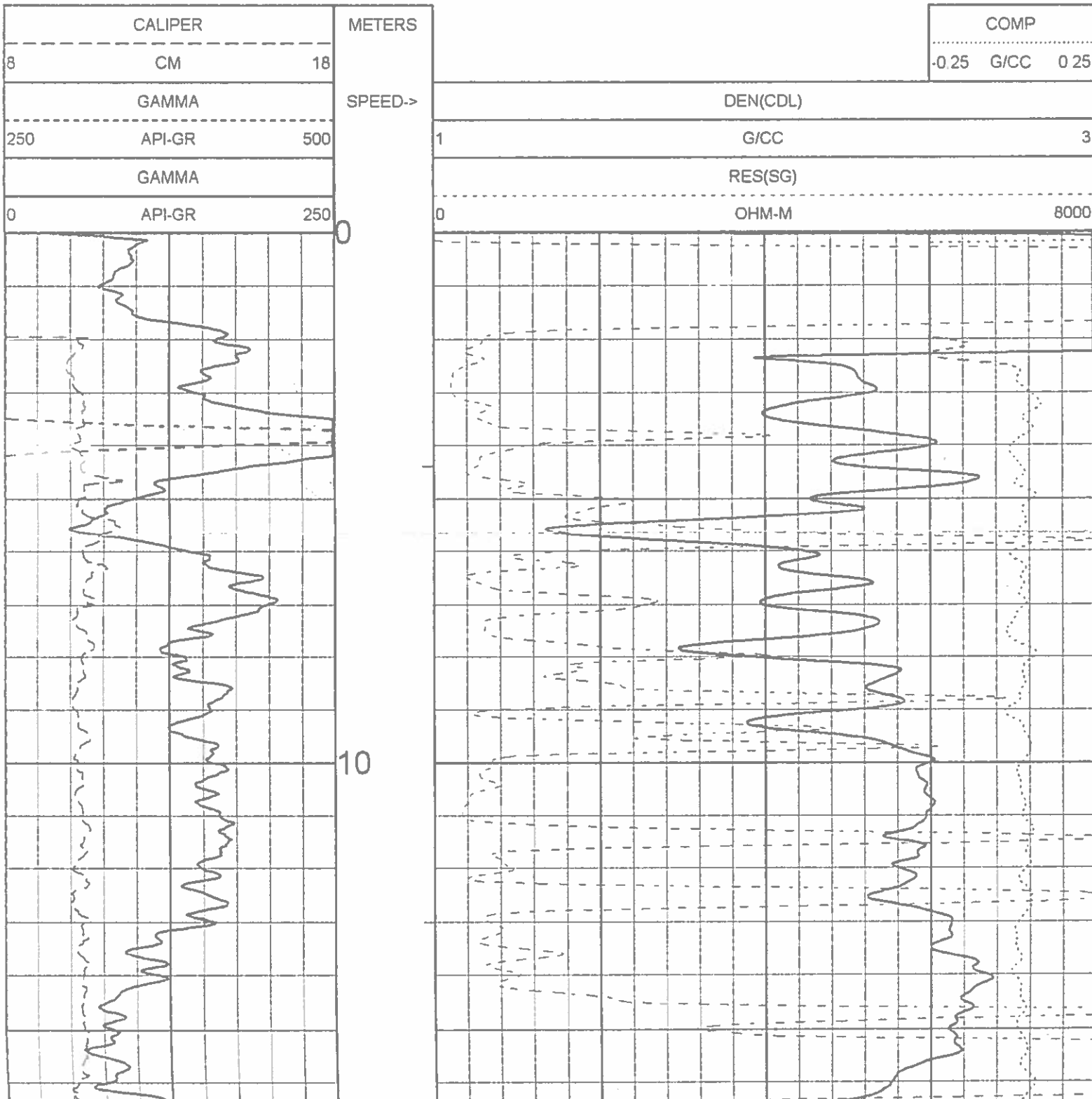
MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

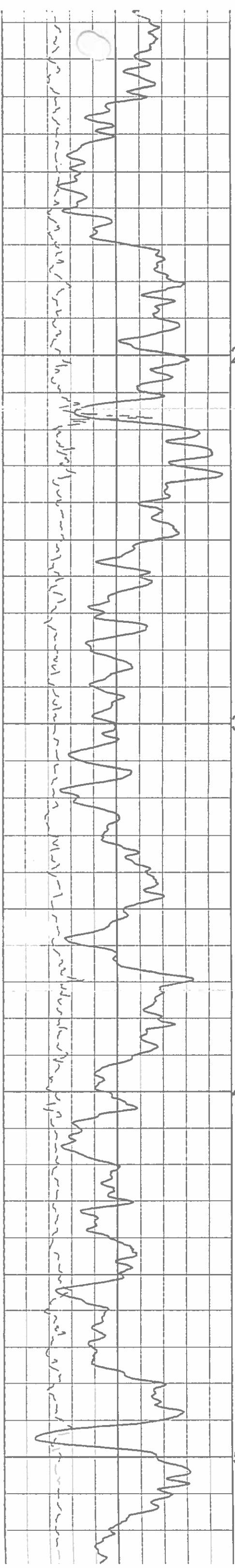
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010

VERSION = 3.64HR



ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

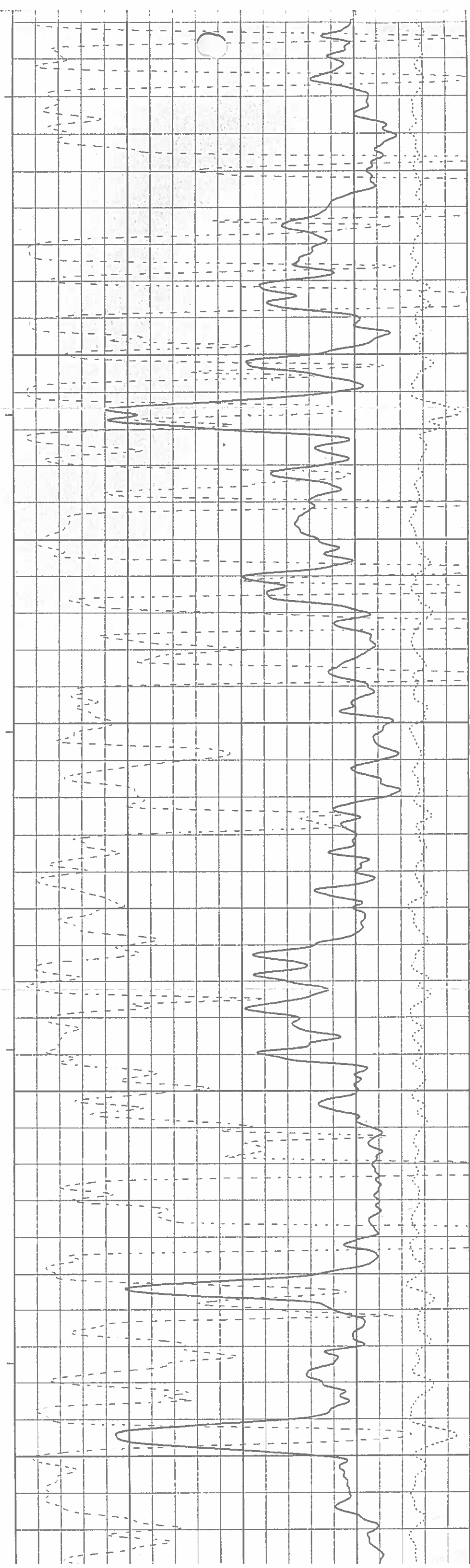


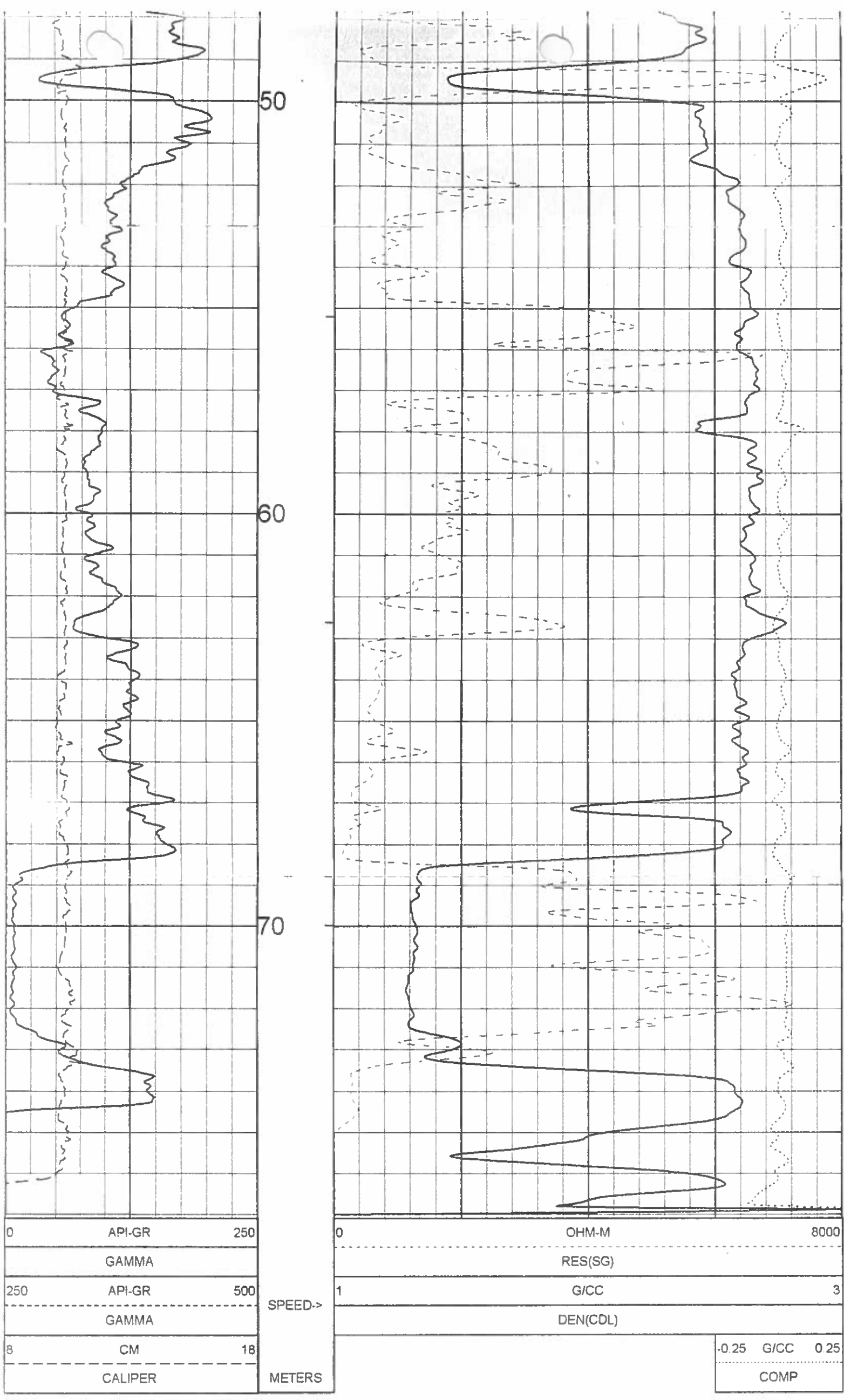
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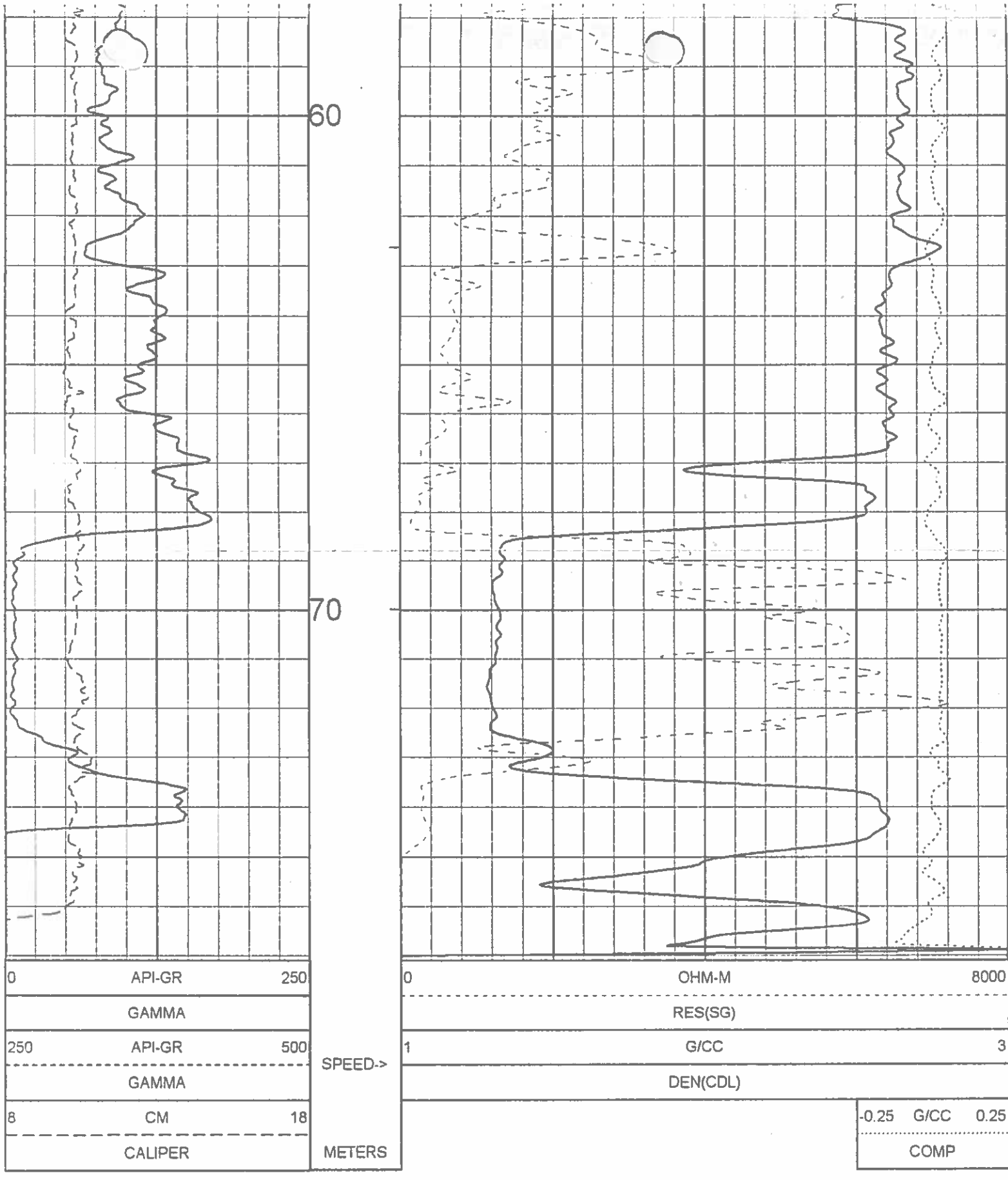


1:100 BULK DENSITY BR10-39 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010		VERSION = 3.64HR

TOOL CALIBRATION BR10-39 08/18/10 16:09				
TOOL 9239C TM VERSION 2023				
SERIAL NUMBER 2534				
DATE	TIME	SENSOR	STANDARD	RESPONSE



1:100 BULK DENSITY BR10-39 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 07/10/2010 VERSION = 3 64HR

TOOL CALIBRATION BR10-39 08/18/10 16:09
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14:55:56	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug18,10	16:20:15	DEN(SS)	1.590 [G/CC]	55536.000 [CPS]
	Aug18,10	16:20:03	DEN(SS)	2.580 [G/CC]	24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	



DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-39

COMPANY: WESTERN COAL CORPORATION

OTHER SERVICES:
NEUTRON

WELL: BR10-39

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

LOCATION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENCE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: N/A

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 08/18/10

DEPTH DRILLER: 80.77

BIT SIZE: 11.43

LOG TOP: -0.19

LOG BOTTOM: 77.05

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

WITNESSED BY: G. HOLMLUND

CREATED BY: T. NEAL

REMARKS 1: 60 DEGREE

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-39 08/18/10

LOG PARAMETERS

MATRIX DENSITY: 2.65

NEUTRON MATRIX: SANDSTONE

MATRIX DELTA T: 177

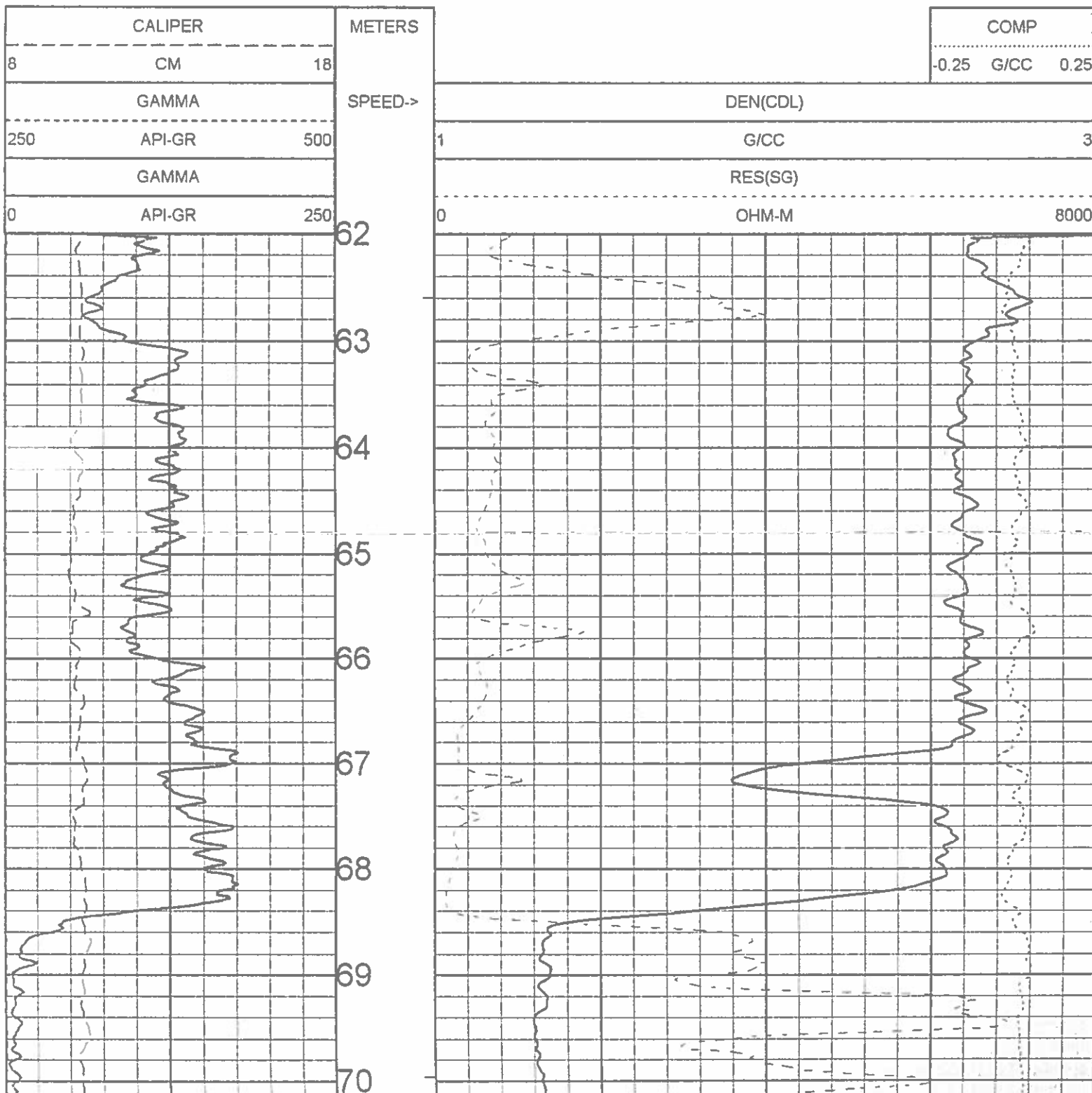
MAGNETIC DECL: 21.0

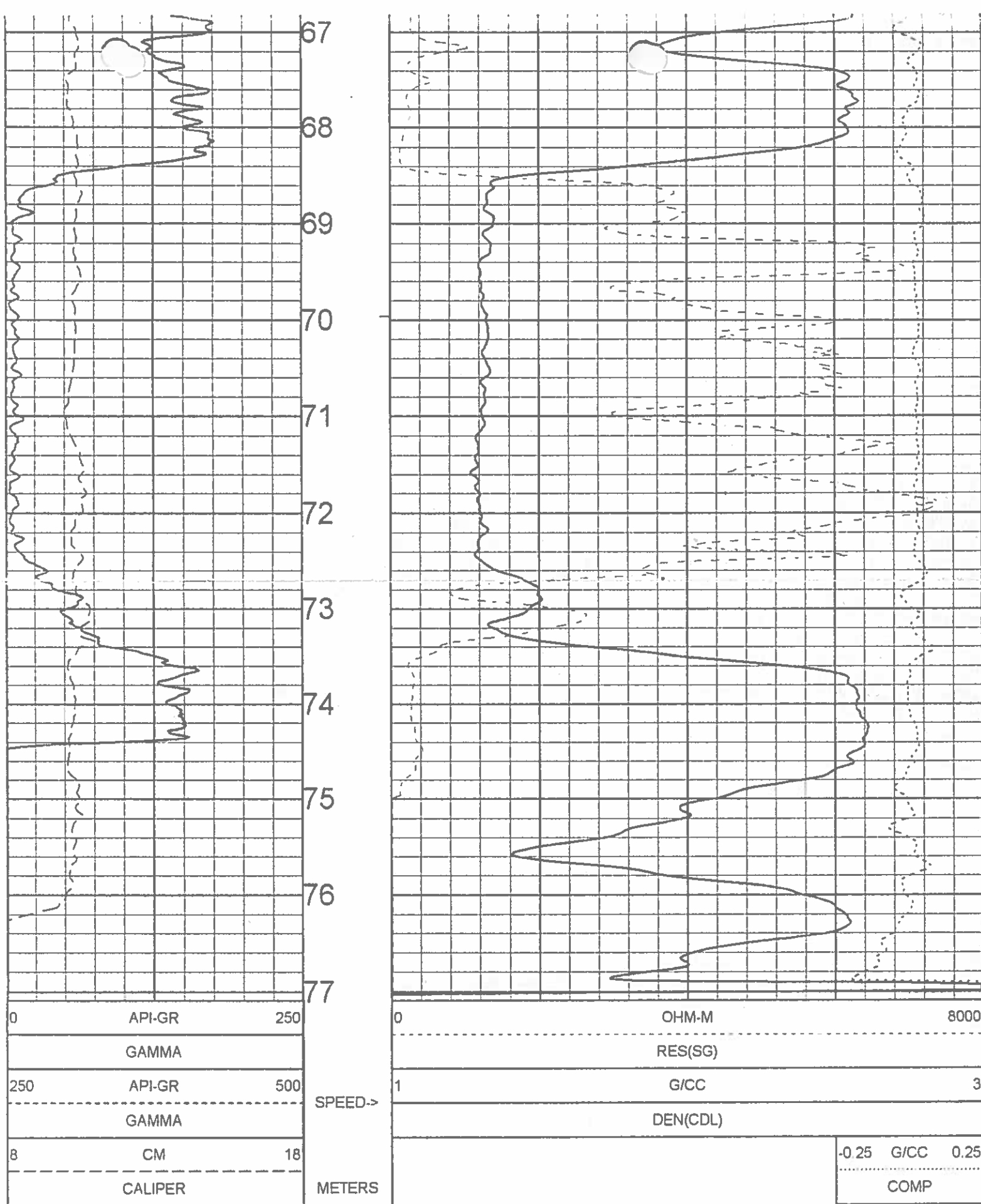
ELECT. CUTOFF: 99999

BIT SIZE: 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 07/20/2010

VERSION = 3.64HR





1:50 BULK DENSITY EXPANDED BR10-39 08/18/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED 0 07/20/2010 VERSION = 3.64HR

TOOL CALIBRATION BR10-39 08/18/10 16:09
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 2534

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Aug18,10	14:55:56	GAMMA	2.000 [API-GR]	0.000 [CPS]
	Aug18,10	14:55:56	GAMMA	545.000 [API-GR]	800.000 [CPS]
2	Jun24,10	09:04:49	VOLTAGE	32.300 [MV]	8515.000 [CPS]
	Jun24,10	09:04:49	VOLTAGE	231.200 [MV]	35100.000 [CPS]
3	Jun11,10	08:52:25	CALIPER	8.890 [CM]	159525.000 [CPS]
	Jun11,10	08:52:25	CALIPER	15.240 [CM]	308559.000 [CPS]
4	Aug13,10	11:25:45	DEN(LS)	1.620 [G/CC]	15244.000 [CPS]
	Aug13,10	11:25:45	DEN(LS)	2.612 [G/CC]	2295.000 [CPS]
5	Aug18,10	16:20:15	DEN(SS)	1.590 [G/CC]	55536.000 [CPS]
	Aug18,10	16:20:03	DEN(SS)	2.580 [G/CC]	24224.000 [CPS]
6	Jun11,10	08:52:34	CALIPERL	12.700 [CM]	163449.000 [CPS]
	Jun11,10	08:52:34	CALIPERL	22.800 [CM]	281258.000 [CPS]
7	Jun24,10	09:05:20	CURRENT	32.300 [UA]	6570.000 [CPS]
	Jun24,10	09:05:20	CURRENT	231.200 [UA]	23175.000 [CPS]
8	Jun11,10	07:31:00	F	Default [CPS]	
9	Jun11,10	07:31:00	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA - NEUTRON

BR10-39

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-39

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

LOCATION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENCE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 08/18/10

DEPTH DRILLER: 80.77

BIT SIZE: 11.43

LOG TOP: 1.17

LOG BOTTOM: 76.89

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

WEIGHTED BY: G. HOLMLUND

CORRECTED BY: T. NEAL

REMARKS 1: 60 DEGREE

REMARKS 2: ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

OTHER SERVICES
DENSITY

RIG NUMBER :
LOGGER TD :
ARRIVAL TIME :
DEPARTURE TIME :
CIRC STOPPED : N/A

ELEVATION KB : N/A

ELEVATION DF : N/A

ELEVATION GL : N/A

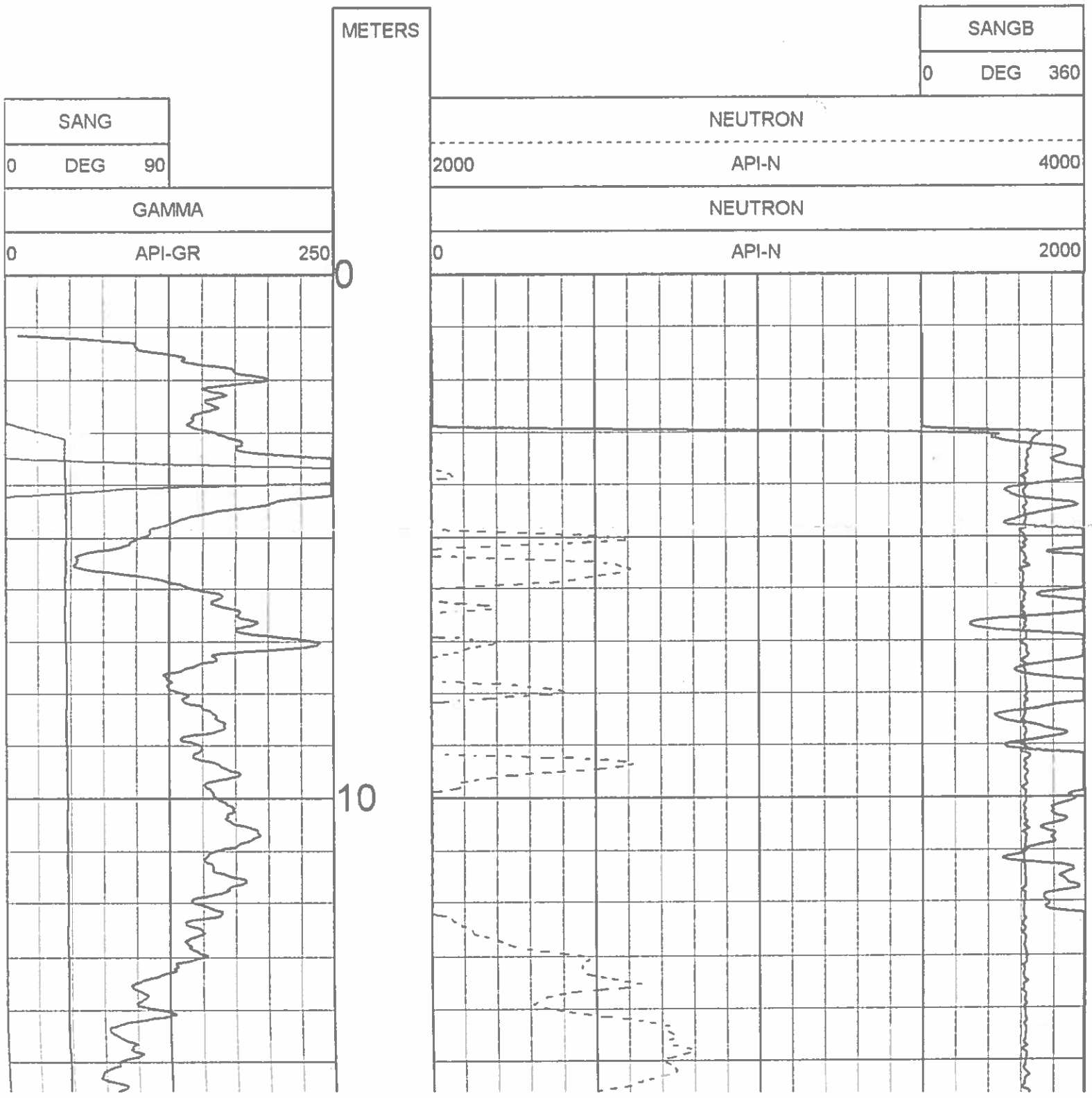
1:100 NEUTRON BR10-39 08/18/10

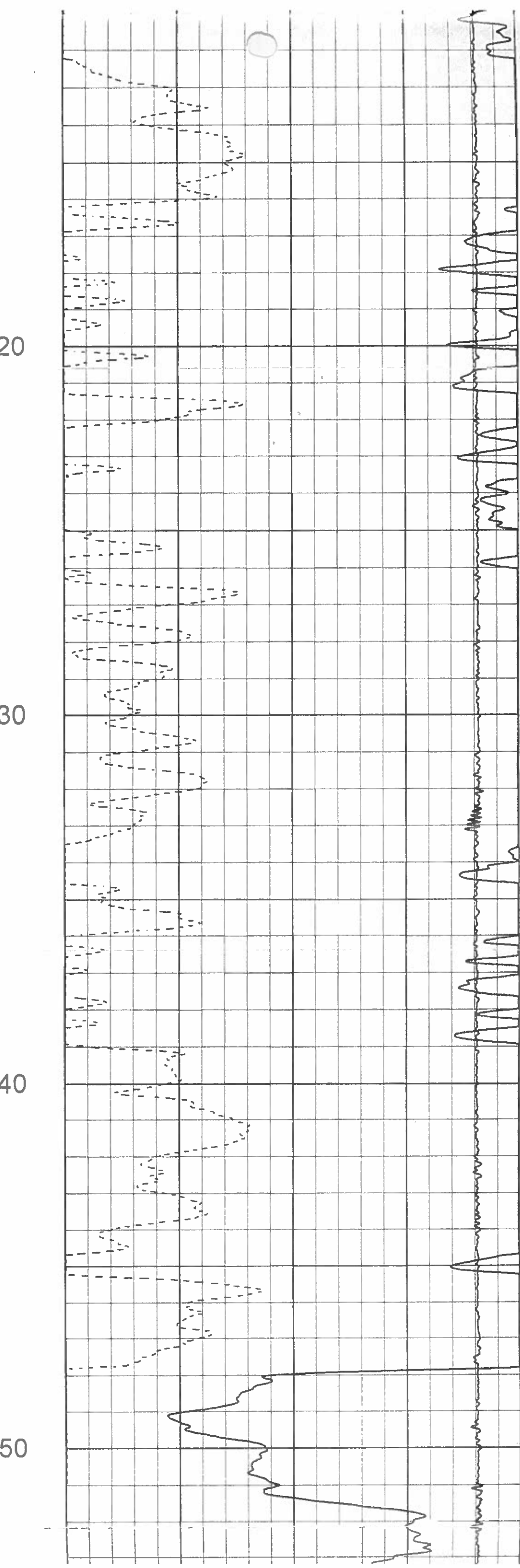
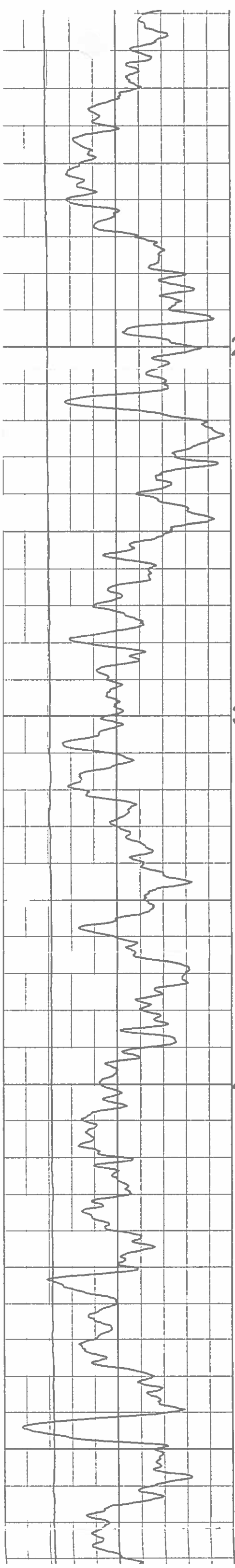
LOG PARAMETERS

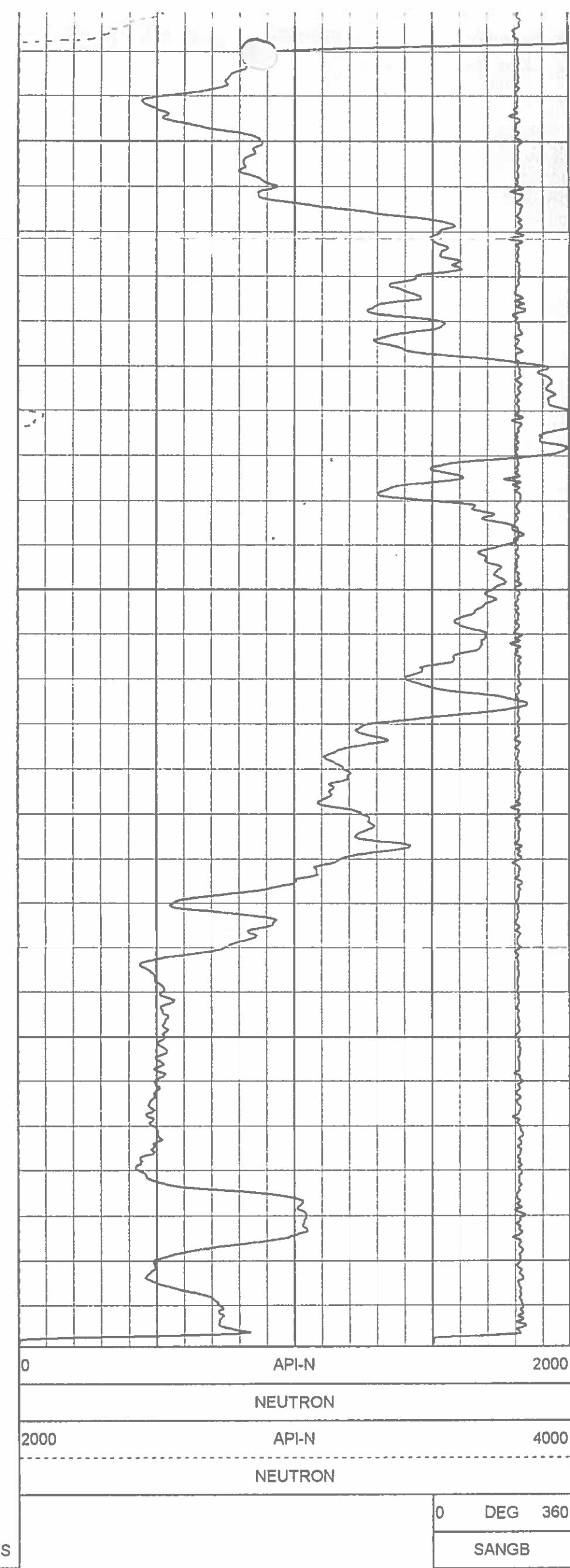
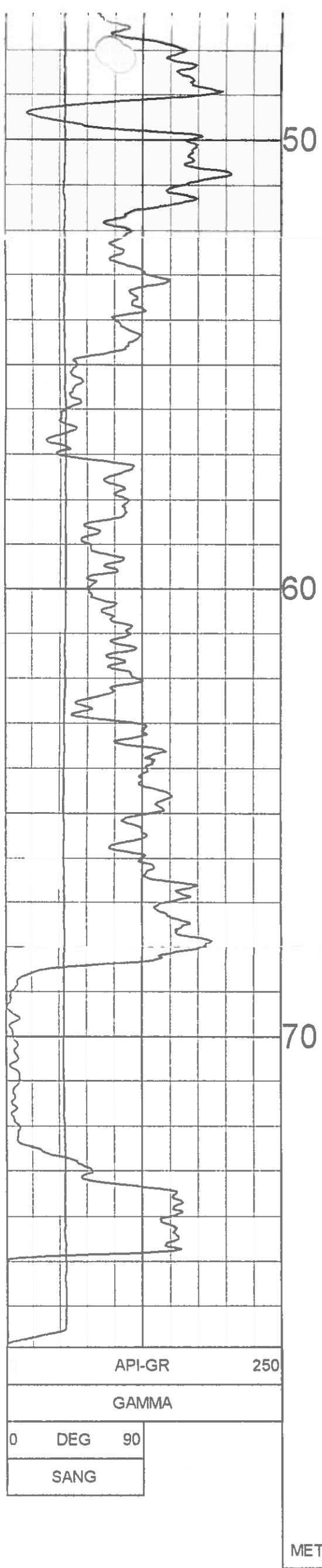
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 99999

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64HR







1:100 NEUTRON BR10-39 08/18/10

LOG PARAMETERS

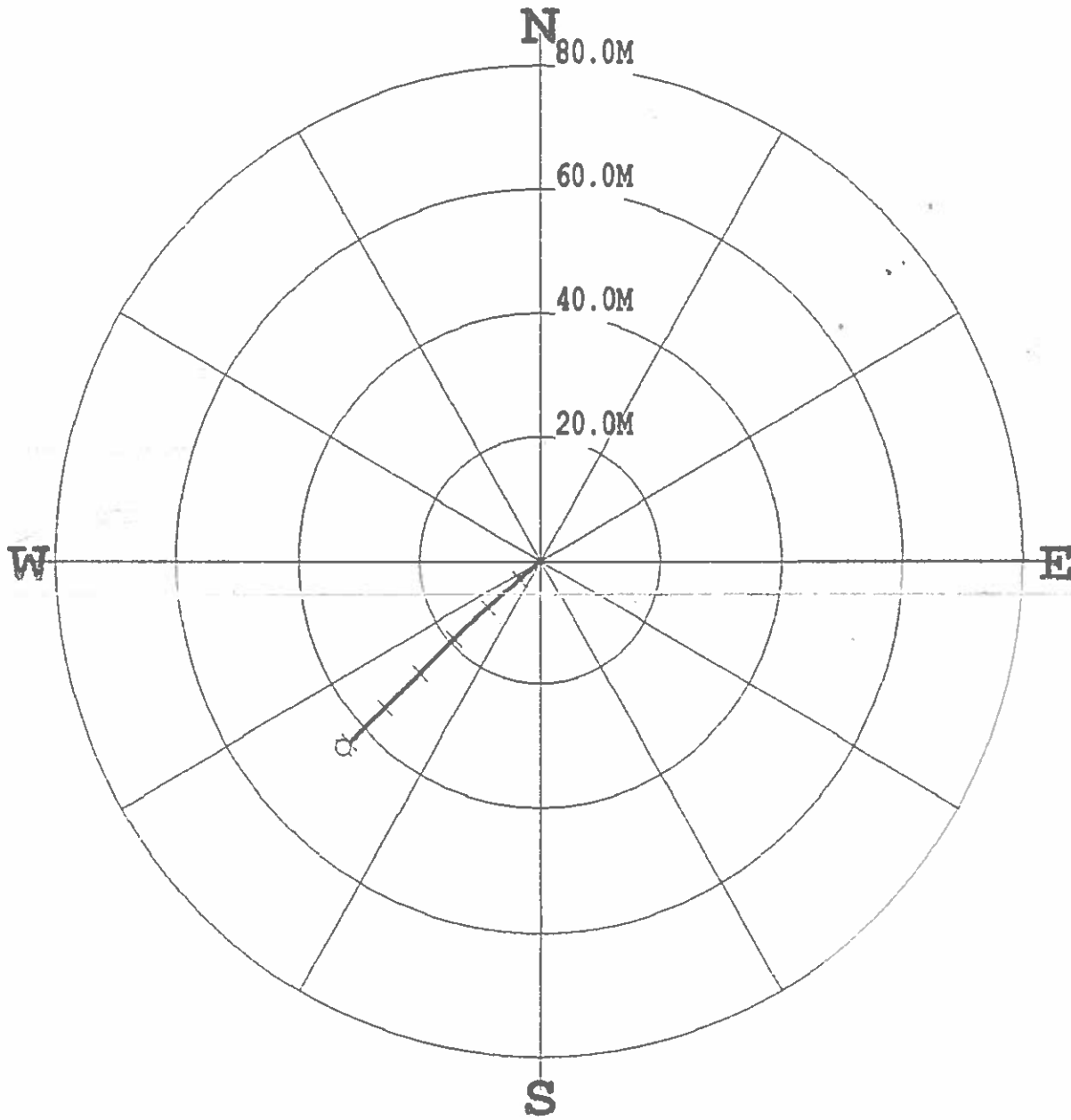
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 99999	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 07/06/2010		VERSION = 3.64HR

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-39
 DATE OF LOG: 08/18/10
 ROBE: 9057A 1071



SCALE: 10 M/CM
 TRUE DEPTH: 61.41 M
 AZIMUTH: 227.3
 DISTANCE: 44.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-39
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/18/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-39_08-18-10_16-34_9057A_.02_1.17_76.89_DEVI.log


TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.00	3.01	0.00	0.00	0.0	0.0	0.0	0.0
4.00	3.85	-0.27	-0.46	0.5	239.3	33.0	228.2
5.00	4.69	-0.62	-0.87	1.1	234.4	33.2	238.0
6.00	5.53	-0.99	-1.26	1.6	231.8	32.6	218.3
7.00	6.36	-1.37	-1.66	2.1	230.5	33.2	231.0
8.00	7.20	-1.73	-2.07	2.7	230.2	33.8	229.2
9.00	8.03	-2.09	-2.49	3.3	229.9	33.6	227.5
10.00	8.86	-2.45	-2.91	3.8	229.8	34.2	228.6
11.00	9.69	-2.83	-3.32	4.4	229.6	34.1	227.1
12.00	10.51	-3.21	-3.73	4.9	229.2	34.4	230.0
13.00	11.34	-3.60	-4.13	5.5	228.9	34.3	229.9
14.00	12.17	-3.98	-4.54	6.0	228.8	34.6	223.9
15.00	12.99	-4.36	-4.96	6.6	228.7	34.4	229.5
16.00	13.82	-4.72	-5.39	7.2	228.7	35.1	230.5
17.00	14.64	-5.10	-5.81	7.7	228.7	34.9	231.9
18.00	15.45	-5.48	-6.25	8.3	228.7	35.8	230.5
19.00	16.26	-5.86	-6.69	8.9	228.8	35.9	231.3
20.00	17.07	-6.26	-7.11	9.5	228.6	35.5	235.4
21.00	17.89	-6.67	-7.53	10.1	228.5	35.7	217.5
22.00	18.70	-7.05	-7.96	10.6	228.5	35.3	236.5
23.00	19.51	-7.43	-8.40	11.2	228.5	35.7	234.8
24.00	20.32	-7.81	-8.85	11.8	228.6	36.1	232.5
25.00	21.12	-8.20	-9.30	12.4	228.6	37.1	231.0
26.00	21.92	-8.58	-9.76	13.0	228.7	37.0	229.4
27.00	22.72	-8.96	-10.22	13.6	228.8	37.3	234.0
28.00	23.52	-9.35	-10.68	14.2	228.8	37.1	222.8
29.00	24.31	-9.73	-11.15	14.8	228.9	38.7	234.3
30.00	25.10	-10.12	-11.61	15.4	228.9	37.9	229.6
31.00	25.90	-10.50	-12.09	16.0	229.0	37.6	236.0
32.00	26.69	-10.88	-12.56	16.6	229.1	37.1	232.6
33.00	27.48	-11.24	-12.99	17.2	229.1	37.2	241.4
34.00	28.27	-11.68	-13.37	17.8	228.9	38.3	220.6
35.00	29.06	-12.11	-13.80	18.4	228.7	38.1	208.3
36.00	29.84	-12.55	-14.24	19.0	228.6	38.7	212.7
37.00	30.63	-13.00	-14.66	19.6	228.4	38.5	227.6
38.00	31.42	-13.43	-15.10	20.2	228.4	38.4	224.0

S

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-39
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 08/18/10
 DATA FROM : N/A PROBE : 9057A , 1071
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-39_08-18-10_16-34_9057A_.02_1.17_76.89_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
3.00	3.01	0.00	0.00	0.0	0.0	0.0	0.0
4.00	3.85	-0.27	-0.46	0.5	239.3	33.0	228.2
5.00	4.69	-0.62	-0.87	1.1	234.4	33.2	238.0
6.00	5.53	-0.99	-1.26	1.6	231.8	32.6	218.3
7.00	6.36	-1.37	-1.66	2.1	230.5	33.2	231.0
8.00	7.20	-1.73	-2.07	2.7	230.2	33.8	229.2
9.00	8.03	-2.09	-2.49	3.3	229.9	33.6	227.5
10.00	8.86	-2.45	-2.91	3.8	229.8	34.2	228.6
11.00	9.69	-2.83	-3.32	4.4	229.6	34.1	227.1
12.00	10.51	-3.21	-3.73	4.9	229.2	34.4	230.0
13.00	11.34	-3.60	-4.13	5.5	228.9	34.3	229.9
14.00	12.17	-3.98	-4.54	6.0	228.8	34.6	223.9
15.00	12.99	-4.36	-4.96	6.6	228.7	34.4	229.5
16.00	13.82	-4.72	-5.39	7.2	228.7	35.1	230.5
17.00	14.64	-5.10	-5.81	7.7	228.7	34.9	231.9
18.00	15.45	-5.48	-6.25	8.3	228.7	35.8	230.5
19.00	16.26	-5.86	-6.69	8.9	228.8	35.9	231.3
20.00	17.07	-6.26	-7.11	9.5	228.6	35.5	235.4
21.00	17.89	-6.67	-7.53	10.1	228.5	35.7	217.5
22.00	18.70	-7.05	-7.96	10.6	228.5	35.3	236.5
23.00	19.51	-7.43	-8.40	11.2	228.5	35.7	234.8
24.00	20.32	-7.81	-8.85	11.8	228.6	36.1	232.5
25.00	21.12	-8.20	-9.30	12.4	228.6	37.1	231.0
26.00	21.92	-8.58	-9.76	13.0	228.7	37.0	229.4
27.00	22.72	-8.96	-10.22	13.6	228.8	37.3	234.0
28.00	23.52	-9.35	-10.68	14.2	228.8	37.1	222.8
29.00	24.31	-9.73	-11.15	14.8	228.9	38.7	234.3
30.00	25.10	-10.12	-11.61	15.4	228.9	37.9	229.6
31.00	25.90	-10.50	-12.09	16.0	229.0	37.6	236.0
32.00	26.69	-10.88	-12.56	16.6	229.1	37.1	232.6
33.00	27.48	-11.24	-12.99	17.2	229.1	37.2	241.4
34.00	28.27	-11.68	-13.37	17.8	228.9	38.3	220.6
35.00	29.06	-12.11	-13.80	18.4	228.7	38.1	208.3
36.00	29.84	-12.55	-14.24	19.0	228.6	38.7	212.7
37.00	30.63	-13.00	-14.66	19.6	228.4	38.5	227.6
38.00	31.42	-13.43	-15.10	20.2	228.4	38.4	224.0
39.00	32.20	-13.87	-15.54	20.8	228.2	38.5	227.3
40.00	32.98	-14.31	-15.98	21.5	228.1	38.0	224.3
41.00	33.76	-14.76	-16.41	22.1	228.0	38.3	227.2
42.00	34.55	-15.20	-16.85	22.7	228.0	38.4	227.5
43.00	35.33	-15.63	-17.29	23.3	227.9	39.5	222.8
44.00	36.11	-16.06	-17.73	23.9	227.8	38.1	232.8
45.00	36.88	-16.49	-18.19	24.6	227.8	39.3	221.4
46.00	37.66	-16.93	-18.64	25.2	227.8	38.7	224.2
47.00	38.45	-17.36	-19.09	25.8	227.7	37.3	230.8
48.00	39.22	-17.80	-19.53	26.4	227.7	39.4	221.5
49.00	40.00	-18.24	-19.98	27.1	227.6	40.0	222.7
50.00	40.77	-18.70	-20.40	27.7	227.5	39.3	238.0
51.00	41.54	-19.14	-20.86	28.3	227.5	39.5	218.8
52.00	42.32	-19.55	-21.32	28.9	227.5	38.7	223.5
53.00	43.09	-19.99	-21.76	29.5	227.4	39.3	230.9
54.00	43.86	-20.41	-22.21	30.2	227.4	39.0	216.6
55.00	44.63	-20.85	-22.65	30.8	227.4	39.8	223.7
56.00	45.40	-21.28	-23.12	31.4	227.4	39.9	227.6
57.00	46.17	-21.72	-23.57	32.0	227.3	39.7	223.0
58.00	46.95	-22.15	-24.00	32.7	227.3	39.7	231.7
59.00	47.72	-22.61	-24.44	33.3	227.2	39.4	219.4
60.00	48.49	-23.06	-24.88	33.9	227.2	39.7	220.4
61.00	49.26	-23.51	-25.32	34.6	227.1	39.4	198.2
62.00	50.03	-23.94	-25.77	35.2	227.1	39.3	229.3
63.00	50.81	-24.37	-26.23	35.8	227.1	39.1	223.8
64.00	51.59	-24.81	-26.68	36.4	227.1	39.0	231.1
65.00	52.37	-25.23	-27.13	37.0	227.1	38.7	219.7
66.00	53.14	-25.65	-27.58	37.7	227.1	38.7	246.2
67.00	53.92	-26.08	-28.04	38.3	227.1	39.6	222.8
68.00	54.69	-26.52	-28.50	38.9	227.1	39.9	233.0
69.00	55.46	-26.96	-28.95	39.6	227.0	39.1	224.4
70.00	56.24	-27.40	-29.41	40.2	227.0	39.4	212.9
71.00	57.02	-27.82	-29.87	40.8	227.0	39.4	239.7
72.00	57.79	-28.24	-30.33	41.4	227.0	39.8	229.2
73.00	58.56	-28.64	-30.82	42.1	227.1	40.0	224.8
74.00	59.33	-29.06	-31.29	42.7	227.1	40.0	230.4
75.00	60.10	-29.46	-31.78	43.3	227.2	40.1	228.4
76.00	60.86	-29.87	-32.28	44.0	227.2	40.4	233.9
76.72	61.41	-30.14	-32.64	44.4	227.3	40.1	231.5

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-40	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	------------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,168.93	6,139,944.17	1,303.30

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
43	-63	101.17	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY


DEPTH	AZ	INCL
0.00	43.0	-62.60
5.00	43.5	-62.70
6.00	45.1	-61.40
7.00	44.6	-60.60
8.00	44.2	-61.20
9.00	44.0	-60.90
10.00	43.9	-60.90
11.00	44.2	-60.30
12.00	44.2	-60.10
13.00	44.1	-60.30
14.00	44.2	-60.10
15.00	44.3	-59.20
16.00	44.5	-58.80
17.00	44.5	-59.20
18.00	44.6	-58.90
19.00	44.7	-58.20
20.00	45.1	-58.40
21.00	45.7	-57.00
22.00	46.2	-57.50
23.00	46.7	-57.10
24.00	47.1	-56.70
25.00	47.5	-56.10
26.00	48.0	-55.20
27.00	48.3	-55.10
28.00	48.7	-53.80
29.00	49.0	-53.90
30.00	49.3	-53.30

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.10	2.10		
8.80	10.40	1.60		
19.00	19.60	0.60		
21.30	21.80	0.50		
29.40	30.00	0.60		
62.80	63.40	0.60		
84.80	88.70	3.90		
89.70	90.60	0.90		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-40	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

31.00	49.6	-53.30
32.00	49.5	-53.10
33.00	49.4	-53.20
34.00	49.2	-53.20
35.00	49.0	-53.00
36.00	48.9	-52.90
37.00	48.8	-52.90
38.00	48.7	-52.40
39.00	48.6	-51.90
40.00	48.5	-51.10
41.00	48.4	-50.60
42.00	48.4	-50.30
43.00	48.2	-51.20
44.00	48.1	-51.40
45.00	48.2	-49.10
46.00	48.2	-49.00
47.00	48.1	-49.00
48.00	48.1	-48.70
49.00	48.0	-48.70
50.00	48.0	-48.50
51.00	47.9	-48.60
52.00	47.9	-49.10
53.00	47.8	-49.00
54.00	47.8	-49.10
55.00	47.7	-48.50
56.00	47.7	-48.70
57.00	47.6	-48.90
58.00	47.6	-48.80
59.00	47.5	-49.00
60.00	47.4	-49.00
61.00	47.4	-48.90
62.00	47.4	-48.70
63.00	47.3	-48.80
64.00	47.3	-48.90
65.00	47.2	-48.80
66.00	47.2	-48.80
67.00	47.1	-49.00
68.00	47.1	-48.90
69.00	47.0	-48.80
70.00	47.0	-48.90
71.00	47.0	-48.80
72.00	46.9	-49.40
73.00	46.9	-49.40
74.00	46.8	-49.60
75.00	46.8	-50.00

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 2 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-40	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

76.00	46.7	-49.80
77.00	46.6	-50.30
78.00	46.6	-50.20
79.00	46.5	-49.90
80.00	46.5	-49.70
81.00	46.4	-50.60
82.00	46.4	-50.50
83.00	46.3	-50.00
84.00	46.3	-49.20
85.00	46.2	-49.20
86.00	46.2	-49.90
87.00	46.1	-49.40
88.00	46.1	-49.50
89.00	46.0	-48.90
90.00	46.0	-48.60
91.00	45.9	-48.90
92.00	45.9	-49.00
93.00	45.8	-49.10
94.00	45.8	-48.40
95.00	45.8	-48.00
96.00	45.8	-48.10
97.00	45.8	-47.80
98.00	45.8	-47.80
99.00	45.8	-48.10
100.00	45.8	-48.20
101.00	45.8	-48.30
101.10	45.8	-48.20

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

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Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-40

OTHER SERVICES:
NEUTRON

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-40

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENSE NO.: N/A

UNIQUE WELL ID: N/A

PERMANENT DATUM: -GL

LOG MEASURED FROM: -GL

DRL MEASURED FROM: -GL

DATE: 10/13/10

DEPTH DRILLER: 102.1

BIT SIZE: 11.43

LOG TOP: -0.10

LOG BOTTOM: 101.17

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

DESIGNED BY: G. HOLMLUND

RECORDED BY: T. NEAL

REMARKS 1: 65 DEGREE

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

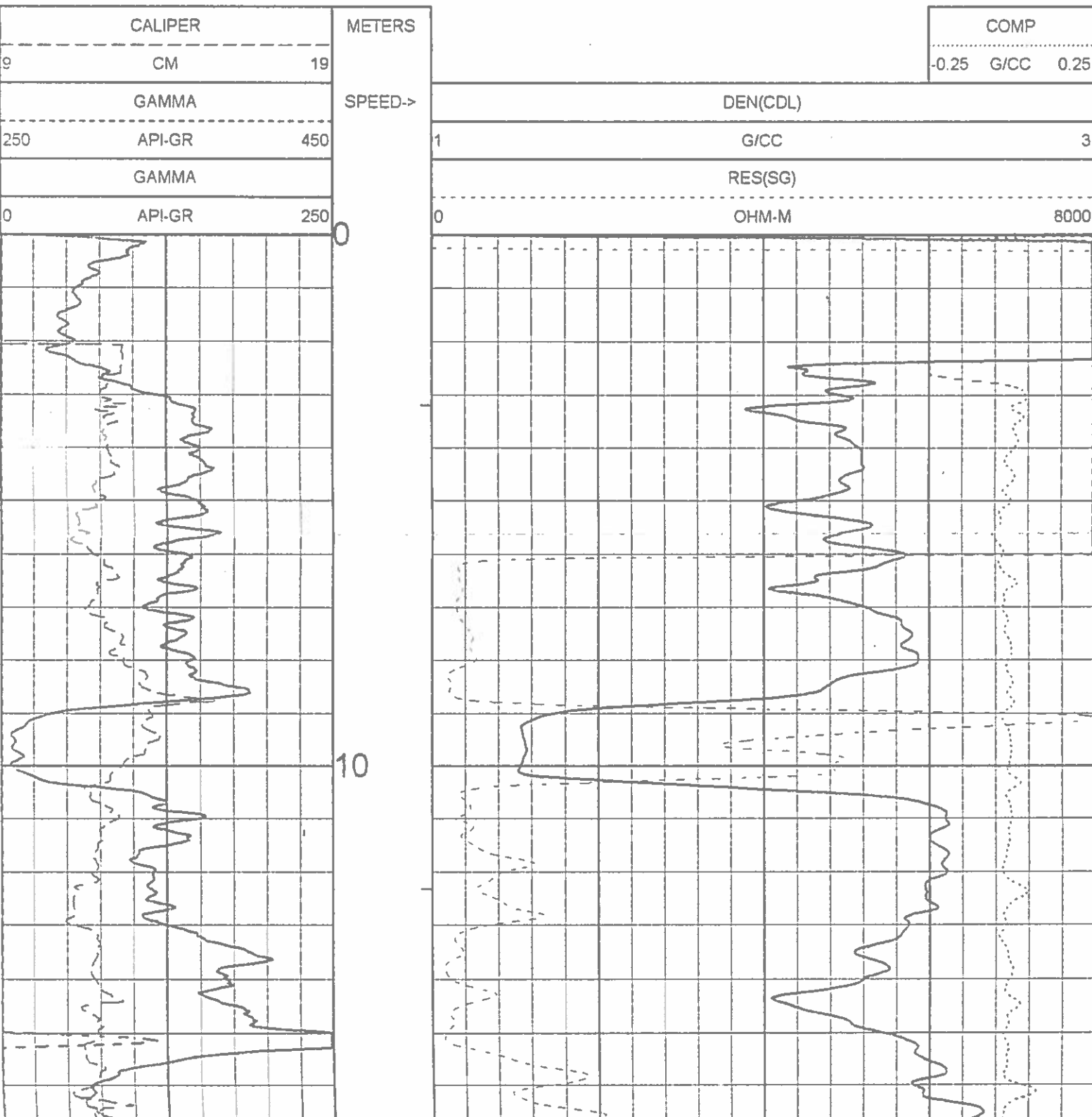
MAGNETIC DECL : 21.0

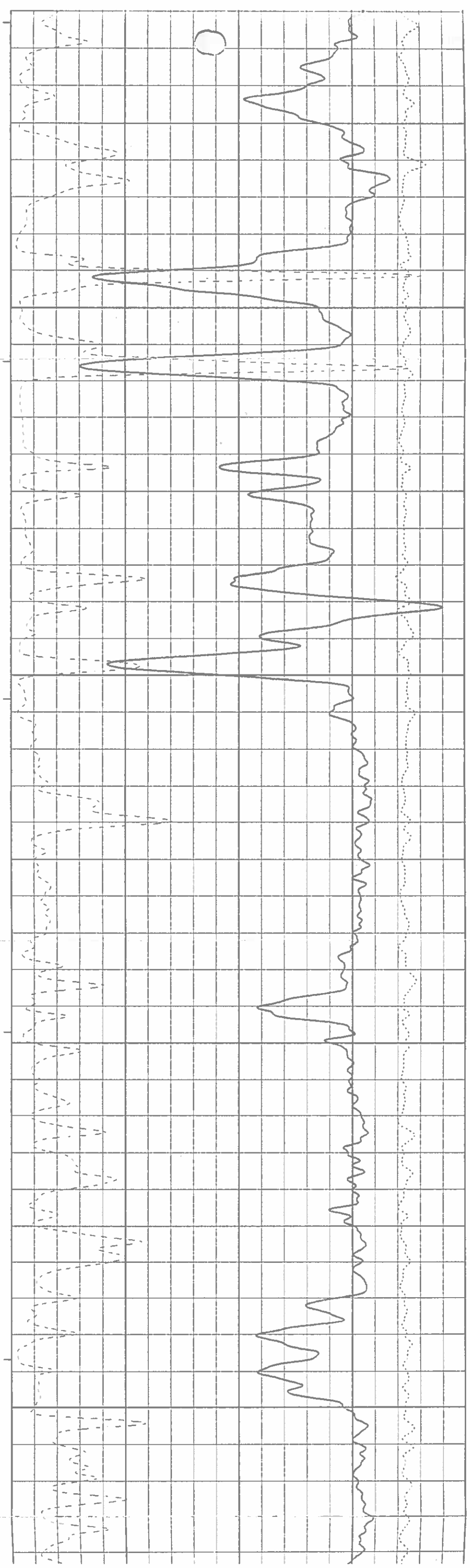
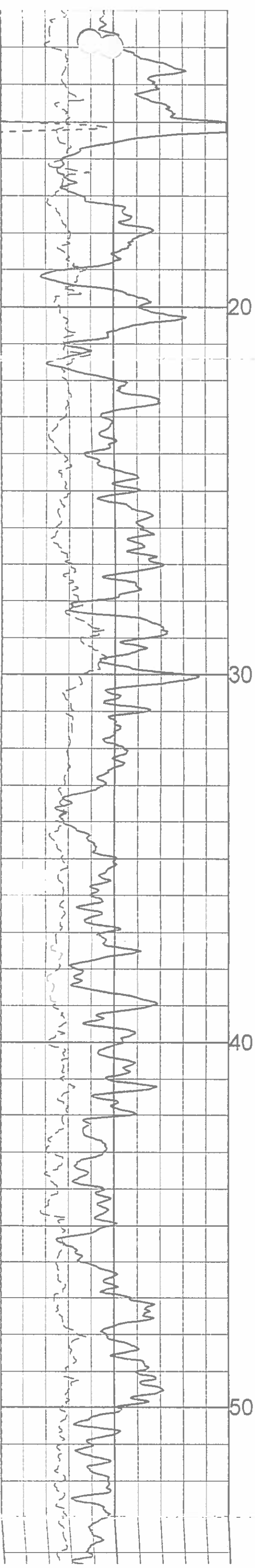
ELECT. CUTOFF : 90000

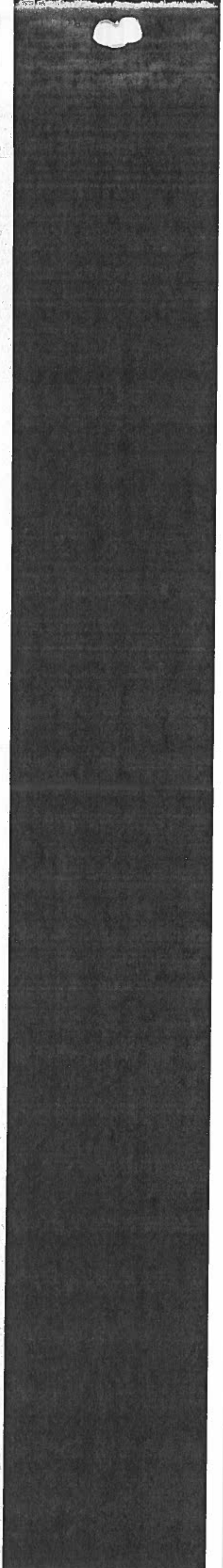
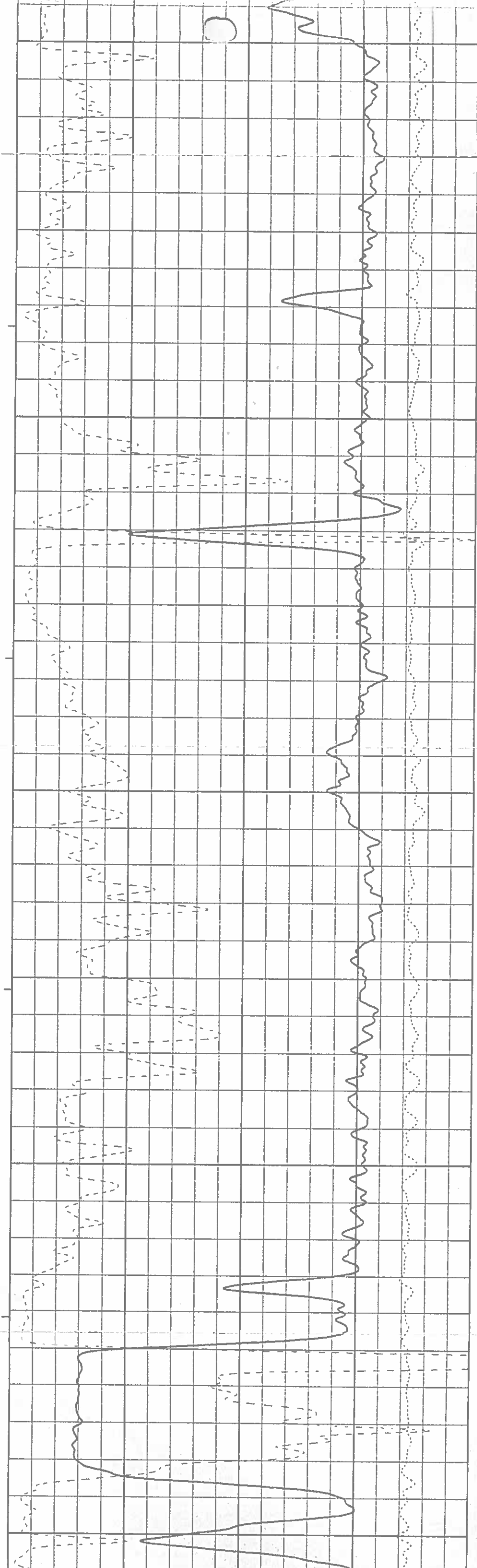
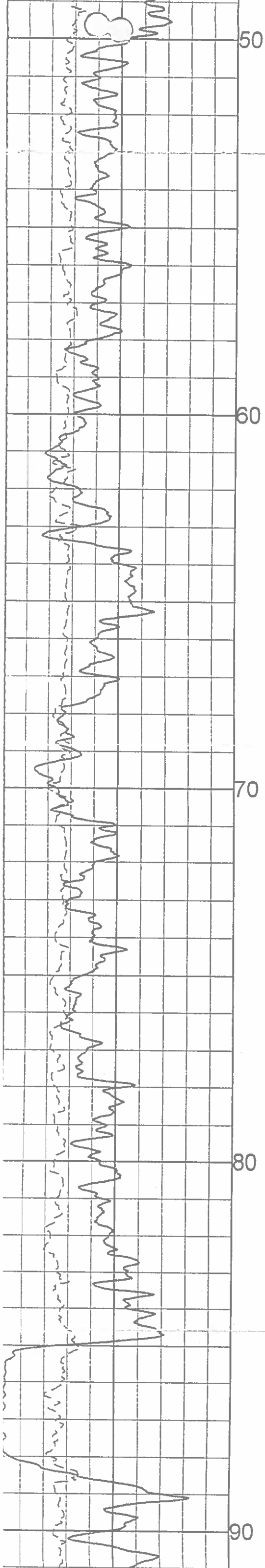
BIT SIZE : 11.43

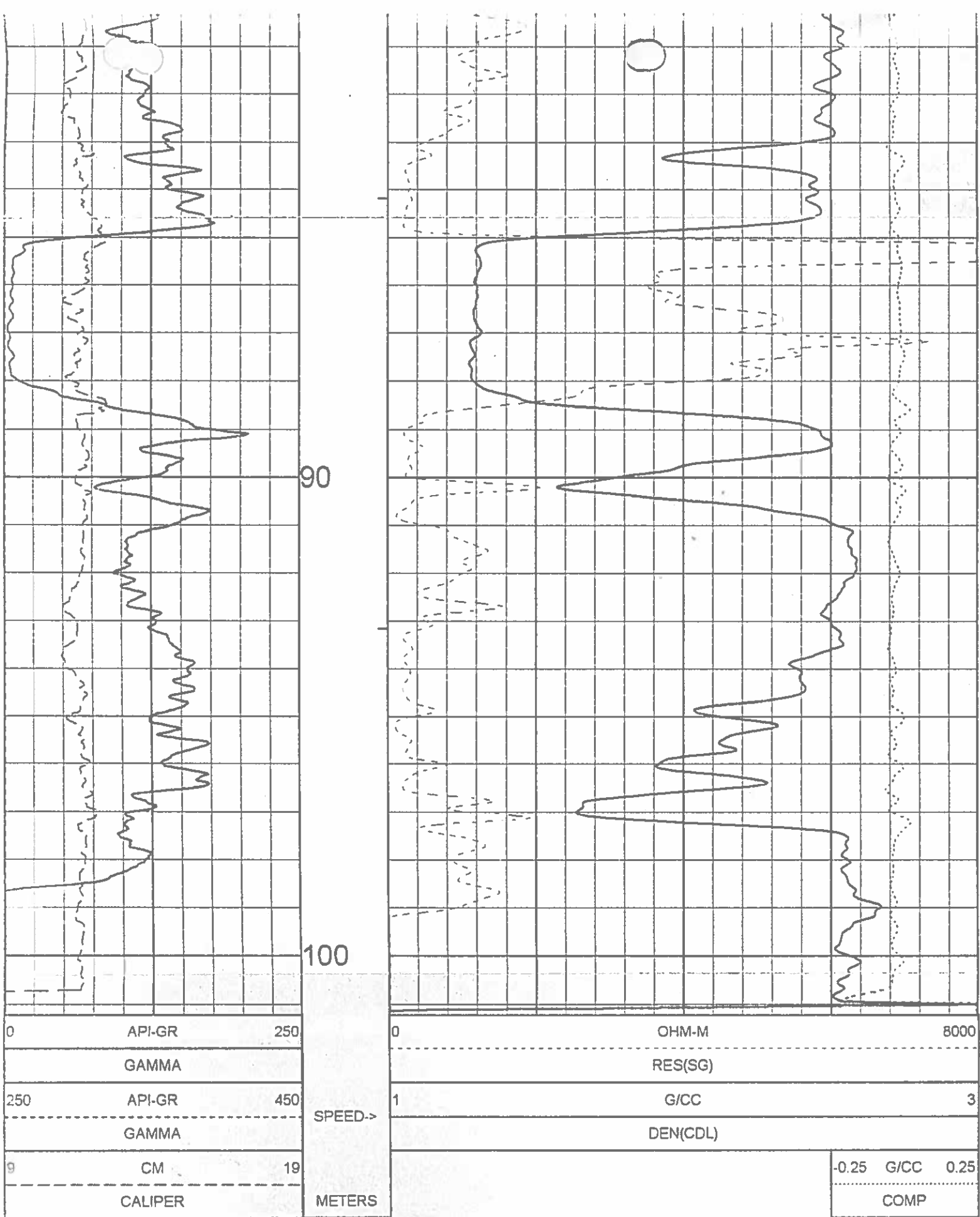
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010

VERSION = 3.641E









1:100 BULK DENSITY BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = .9239C DENSITY.0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-40 10/13/10 12:37
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-40

COMPANY: WESTERN COAL CORPORATION
WELL: BR10-40
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA
OTHER SERVICES: NEUTRON

SECTION: BRULE NORTH
TOWNSHIP: N/A
RANGE: N/A
LICENSE NO.: N/A
UNIQUE WELL ID.: N/A
PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

DATE: 10/13/10
DEPTH DRILLER: 102.1
BIT SIZE: 11.43
LOG TOP: -0.10
LOG BOTTOM: 101.17

CASING LOGGER: 3.048
CASING DRILLER: 3.048
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
LOGGED BY: G. HOLMLUND
CORRECTED BY: T. NEAL

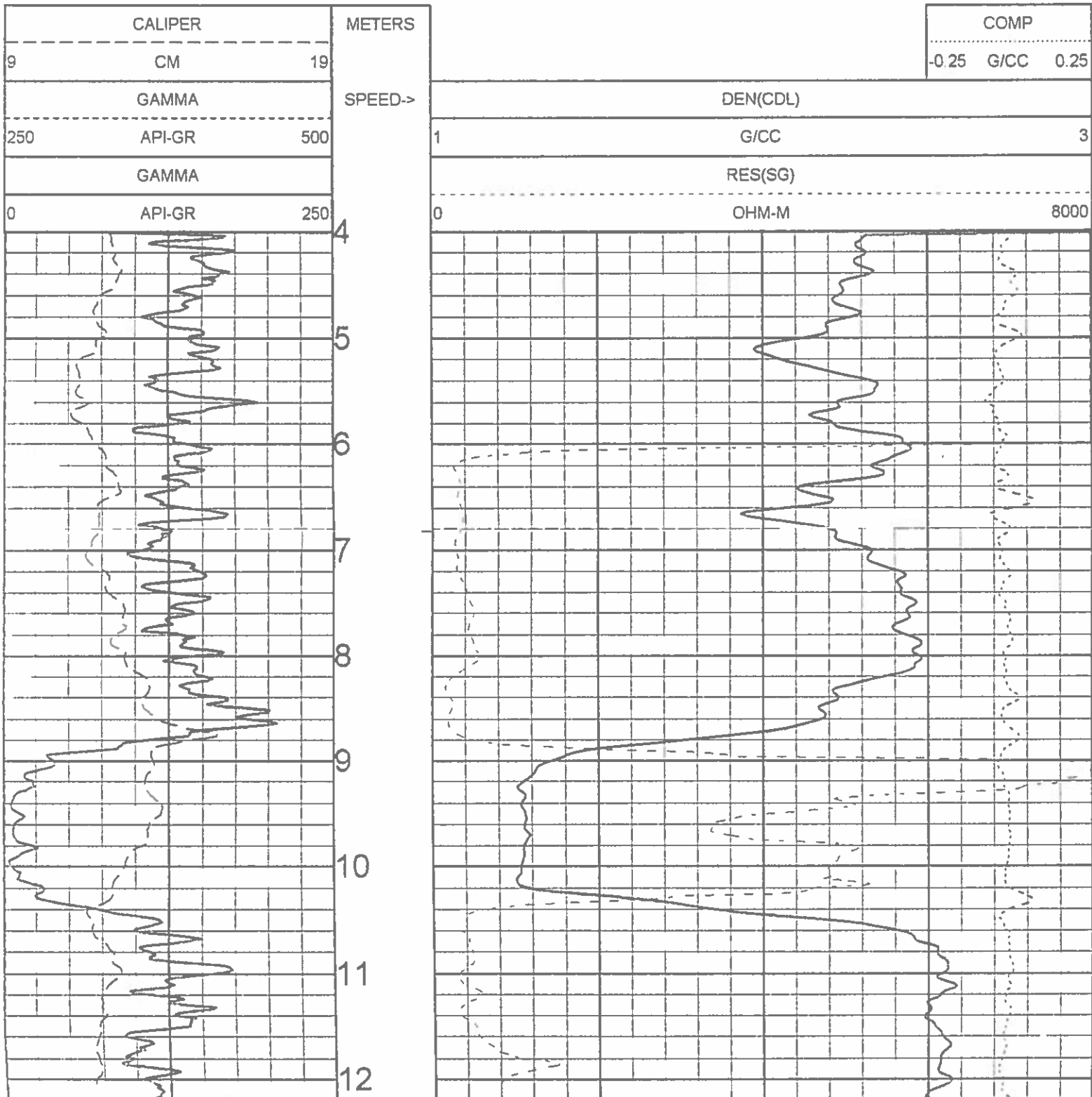
ARRIVAL TIME:
DEPARTURE TIME:
CIRC STOPPED: N/A
ELEVATION KB: N/A
ELEVATION DF: N/A
ELEVATION GL: N/A
RIG NUMBER:
LOGGER TO:
ARRIVAL TIME:
DEPARTURE TIME:
CIRC STOPPED: N/A

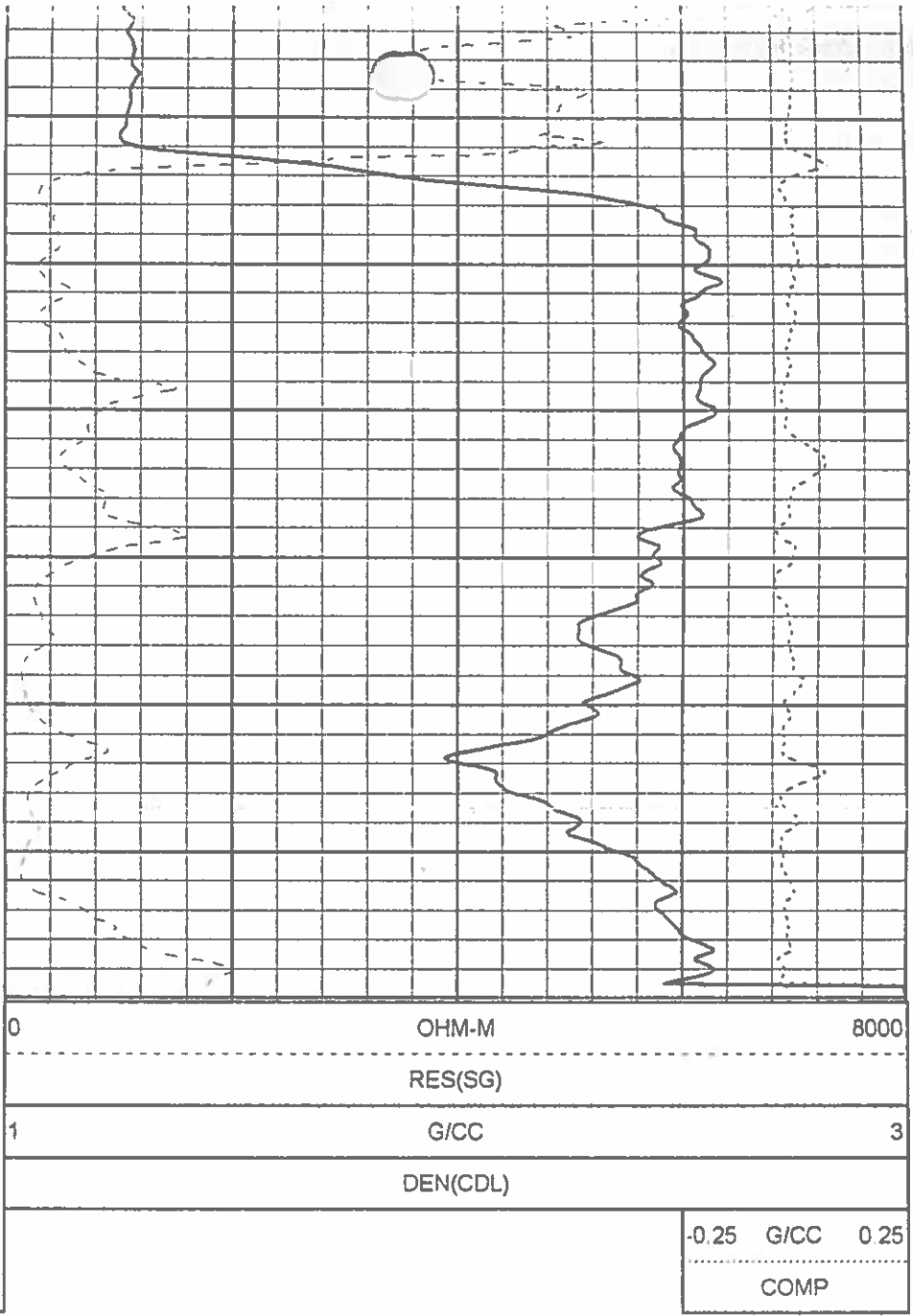
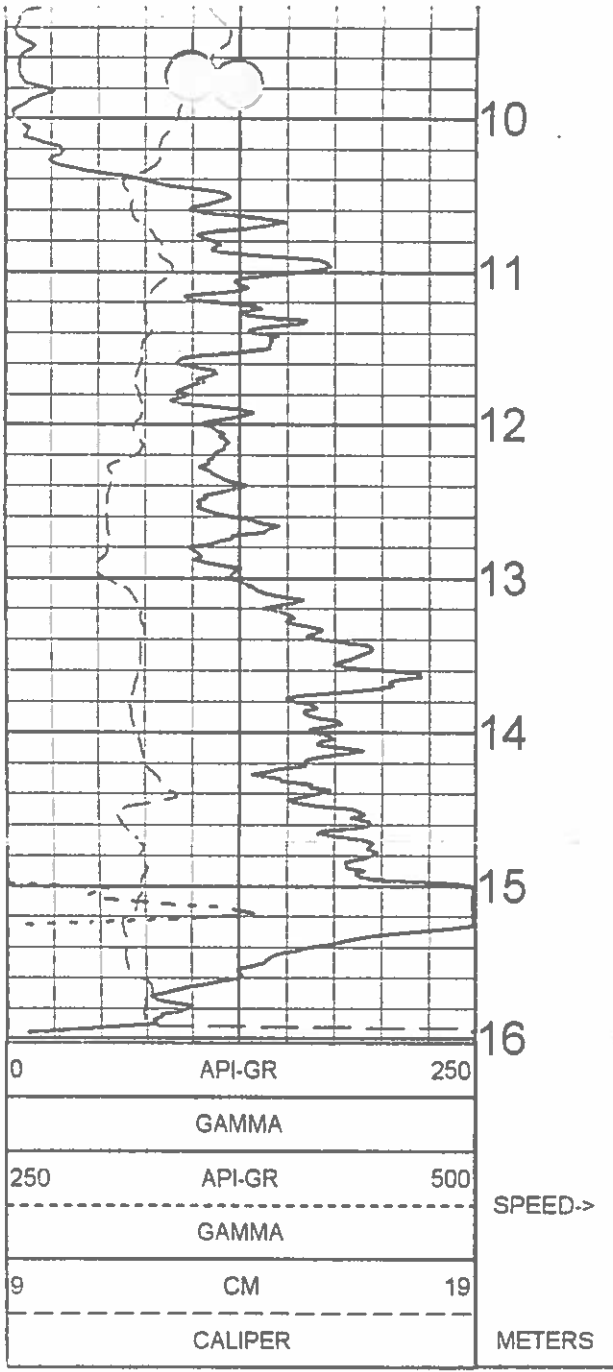
REMARKS 1: 65 DEGREE
REMARKS 2:
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY: 2.65
MAGNETIC DECL: 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010
NEUTRON MATRIX: SANDSTONE
ELECT. CUTOFF: 90000
MATRIX DELTA T: 177
BIT SIZE: 11.43
VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-40 10/13/10

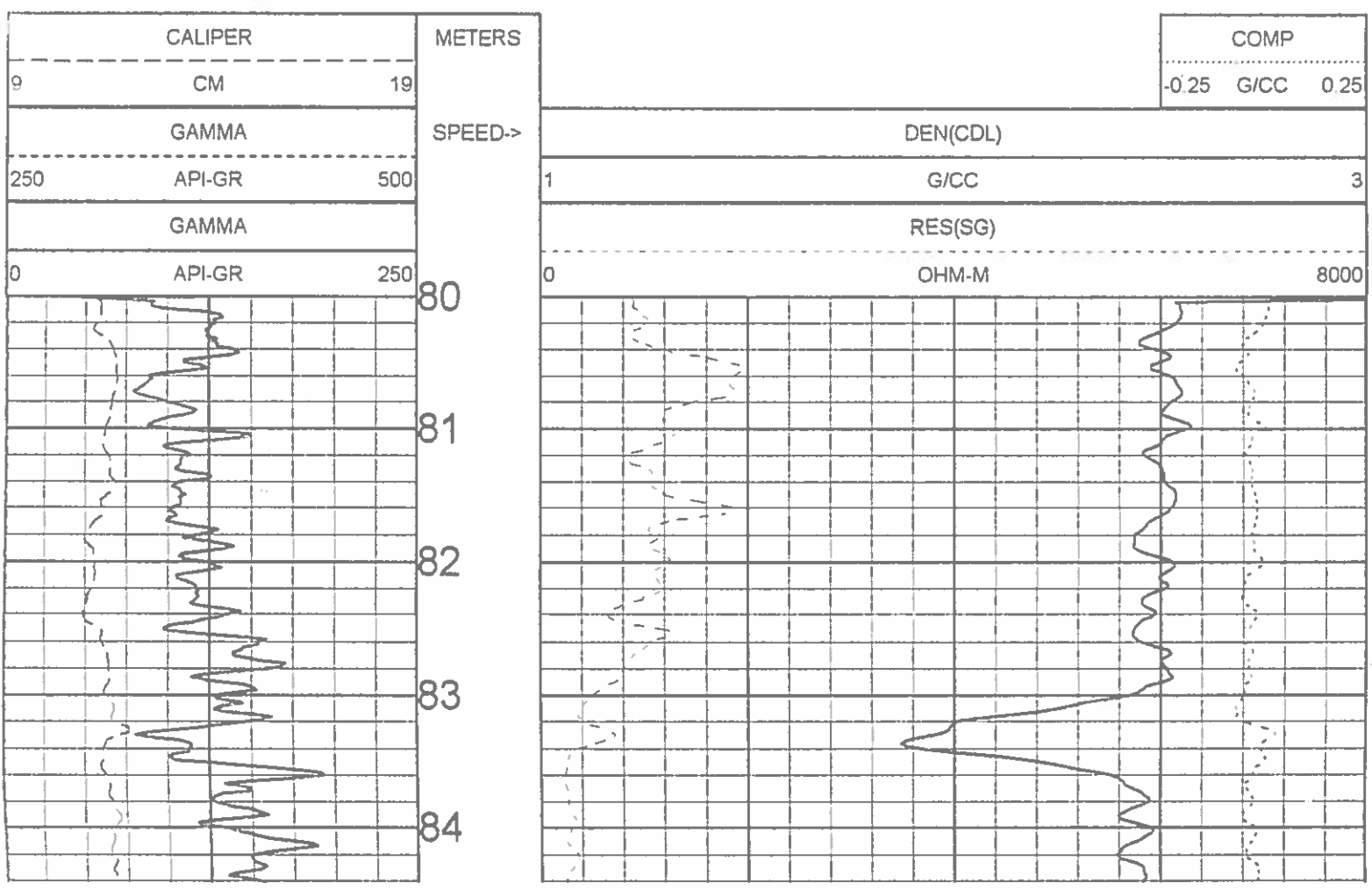
LOG PARAMETERS

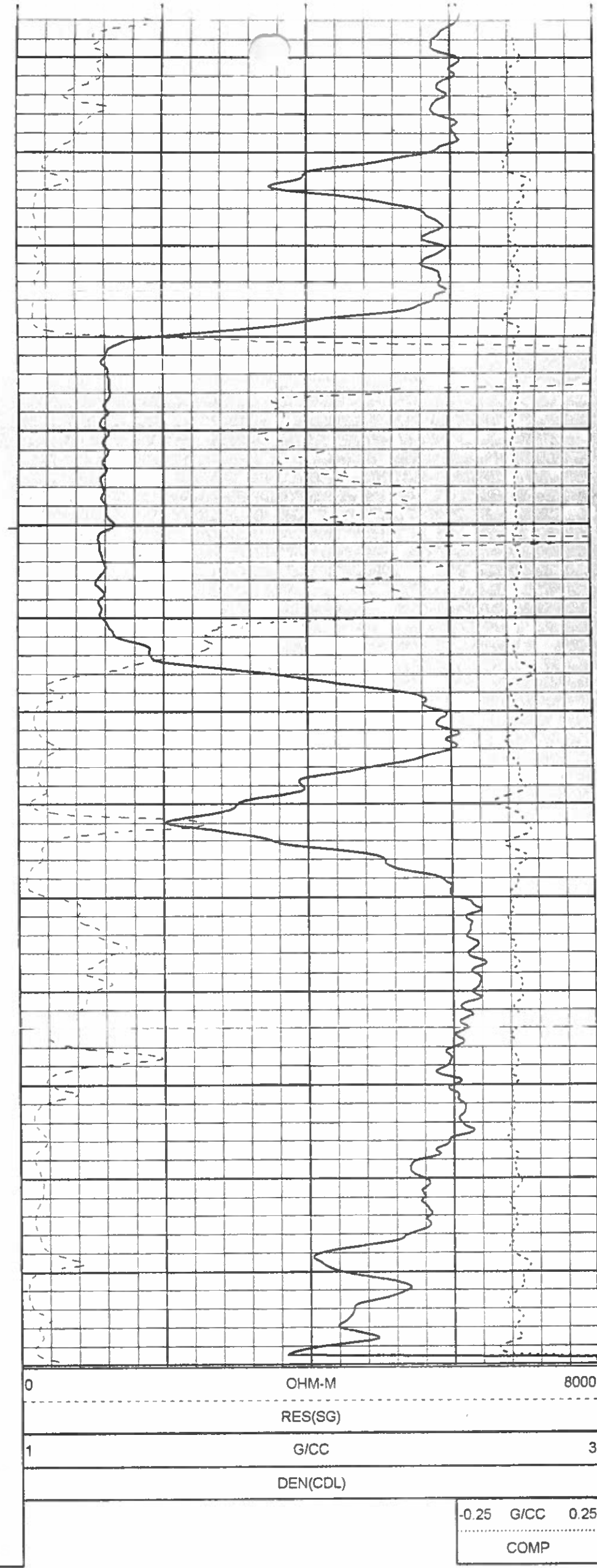
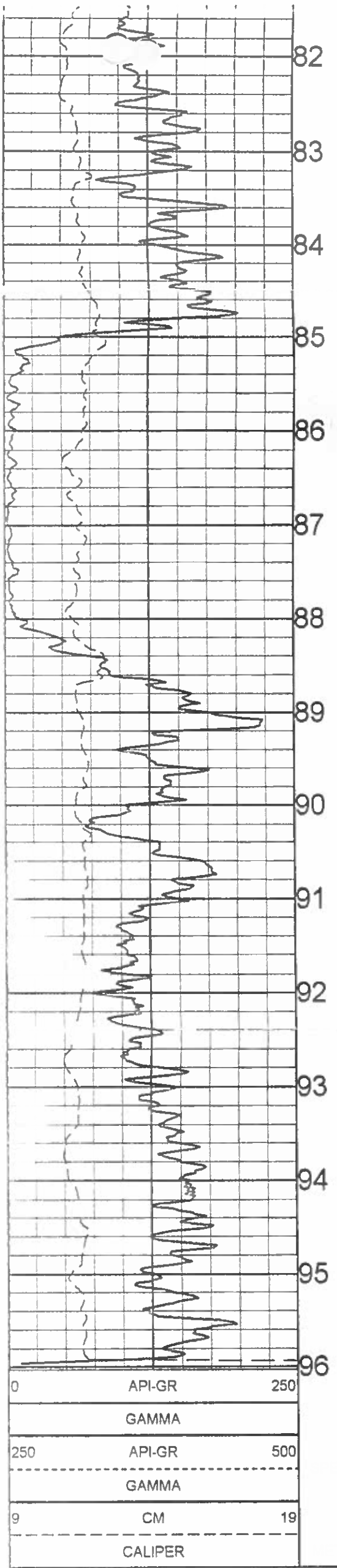
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.64IE

1:50 BULK DENSITY EXPANDED BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010		VERSION = 3 64IE

TOOL CALIBRATION BR10-40 10/13/10 12:37			
TOOL 9239C TM VERSION 2023			
SERIAL NUMBER 1269			
DATE	TIME	SENSOR	STANDARD
			RESPONSE

Century
WIRELINE SERVICES

GAMMA - NEUTRON

BR10-40

COMPANY WESTERN COAL CORPORATION

WELL BR10-40

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

SECTION BRULE NORTH

TOWNSHIP N/A

RANGE N/A

LICENSE NO. N/A

UNIQUE WELL ID. N/A

OTHER SERVICES:
DENSITY

PERMANENT DATUM :GL
LOG MEASURED FROM :GL
DRL MEASURED FROM :GL

ELEVATION KB :N/A
ELEVATION DF :N/A
ELEVATION GL :N/A

DATE 10/13/10

RIG NUMBER :

DEPTH DRILLER 102.1

LOGGER TD :

BIT SIZE 11.43

ARRIVAL TIME :

LOG TOP 1.48

DEPARTURE TIME :

LOG BOTTOM 101.27

CIRC STOPPED :N/A

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

WEIGHTED BY G. HOLMLUND

RECORDED BY T. NEAVE

REMARKS 1 65 DEGREE

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-40 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

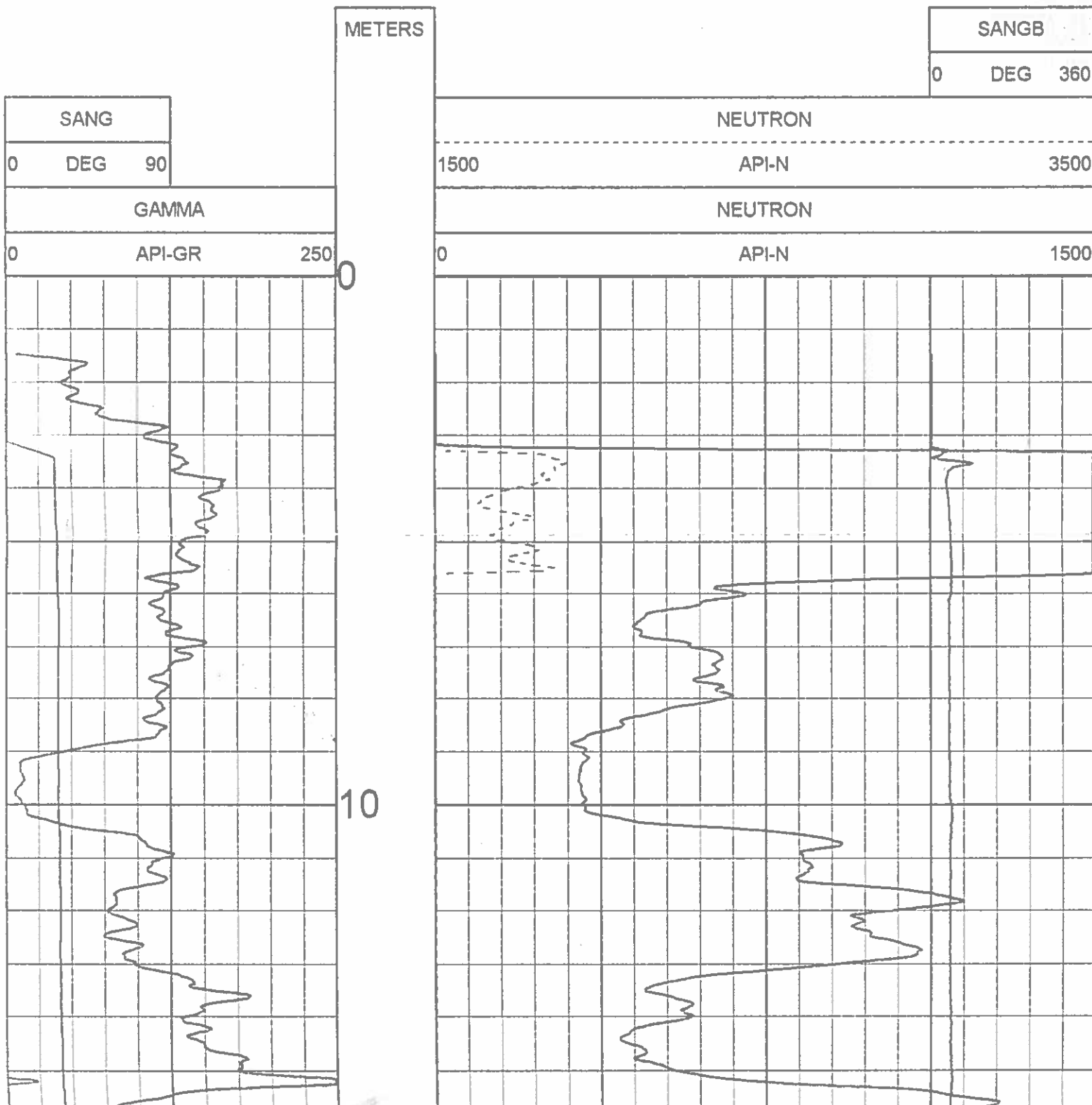
MAGNETIC DECL : 21.0

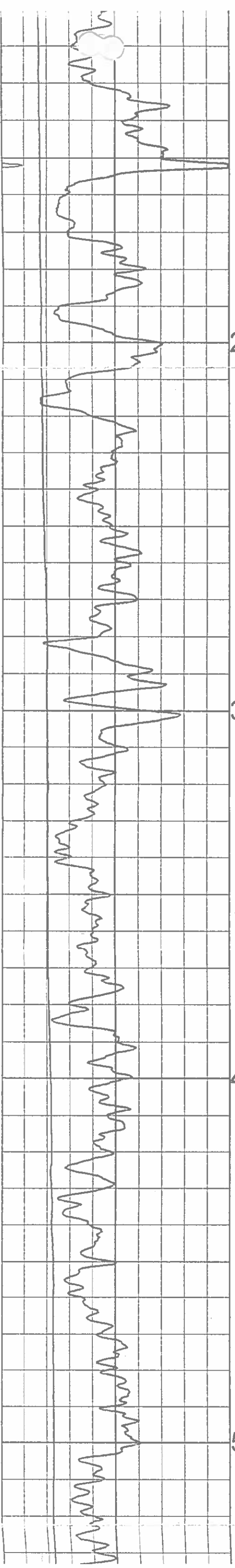
ELECT. CUTOFF : 90000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010

VERSION = 3.641E



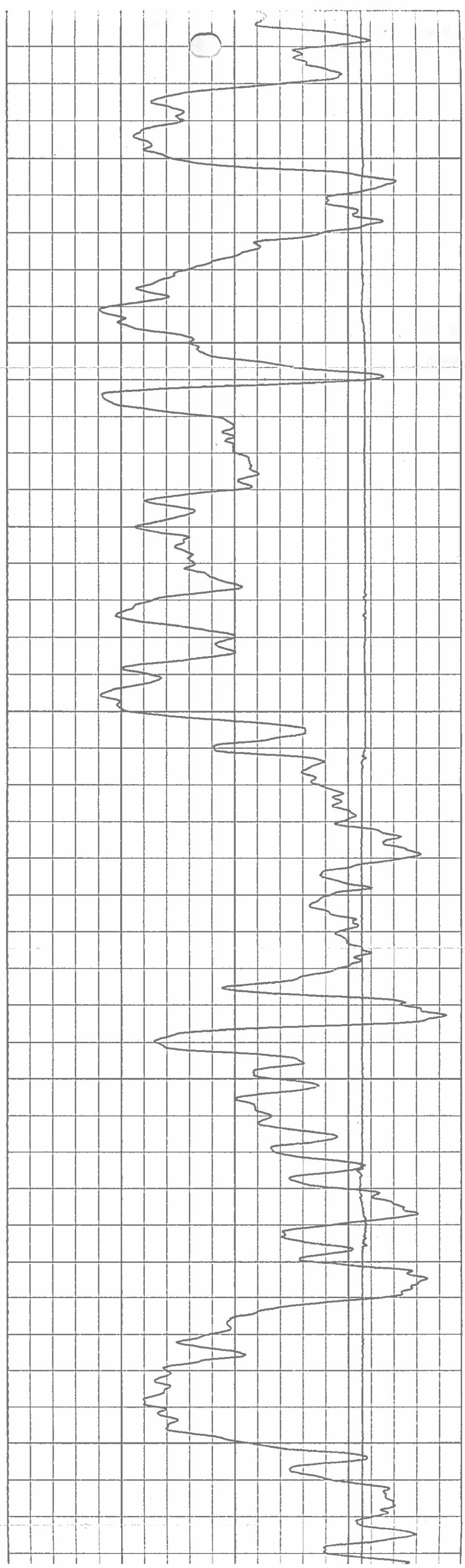


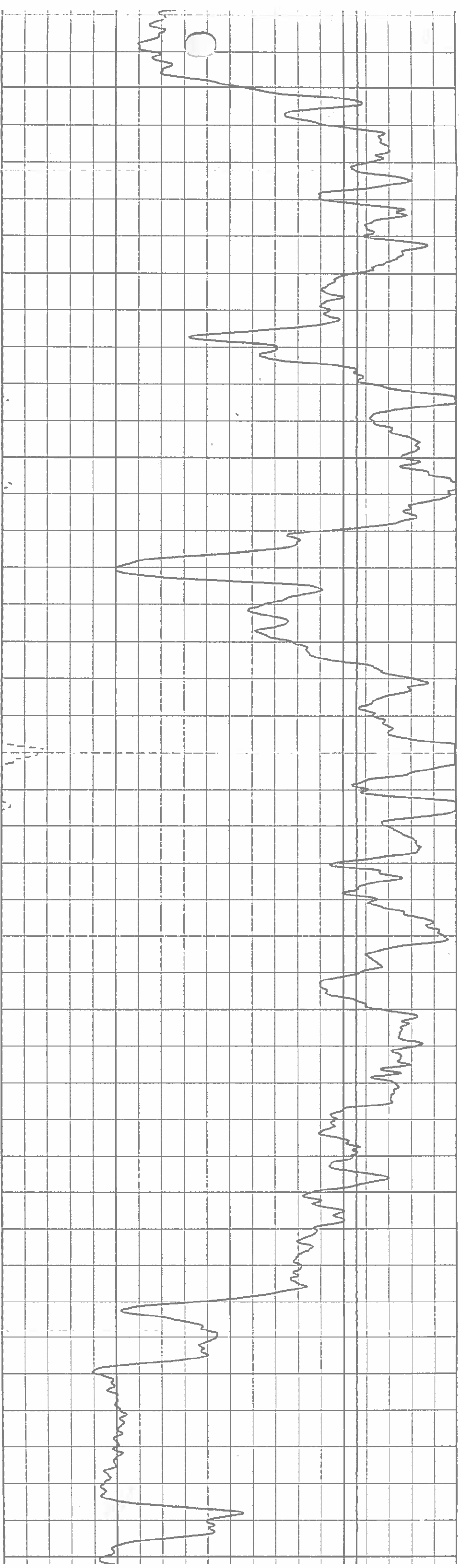
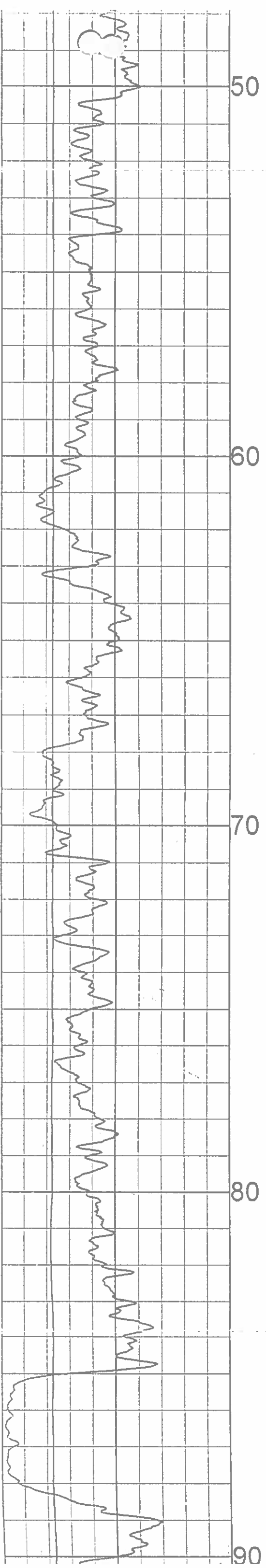
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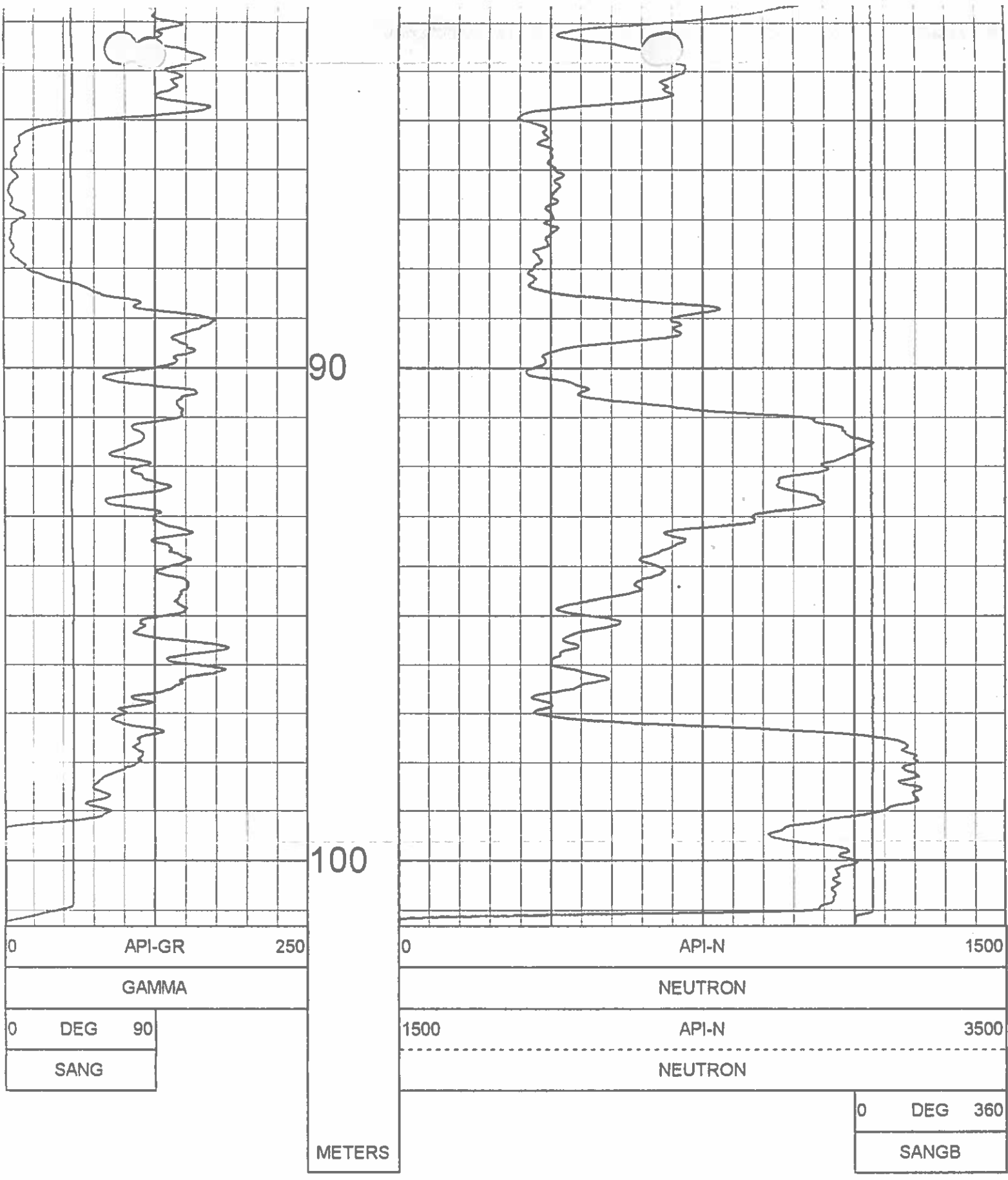
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40

50







1:100 NEUTRON BR10-40 10/13/10

LOG PARAMETERS

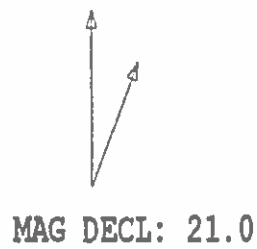
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-40 10/13/10 13:05
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

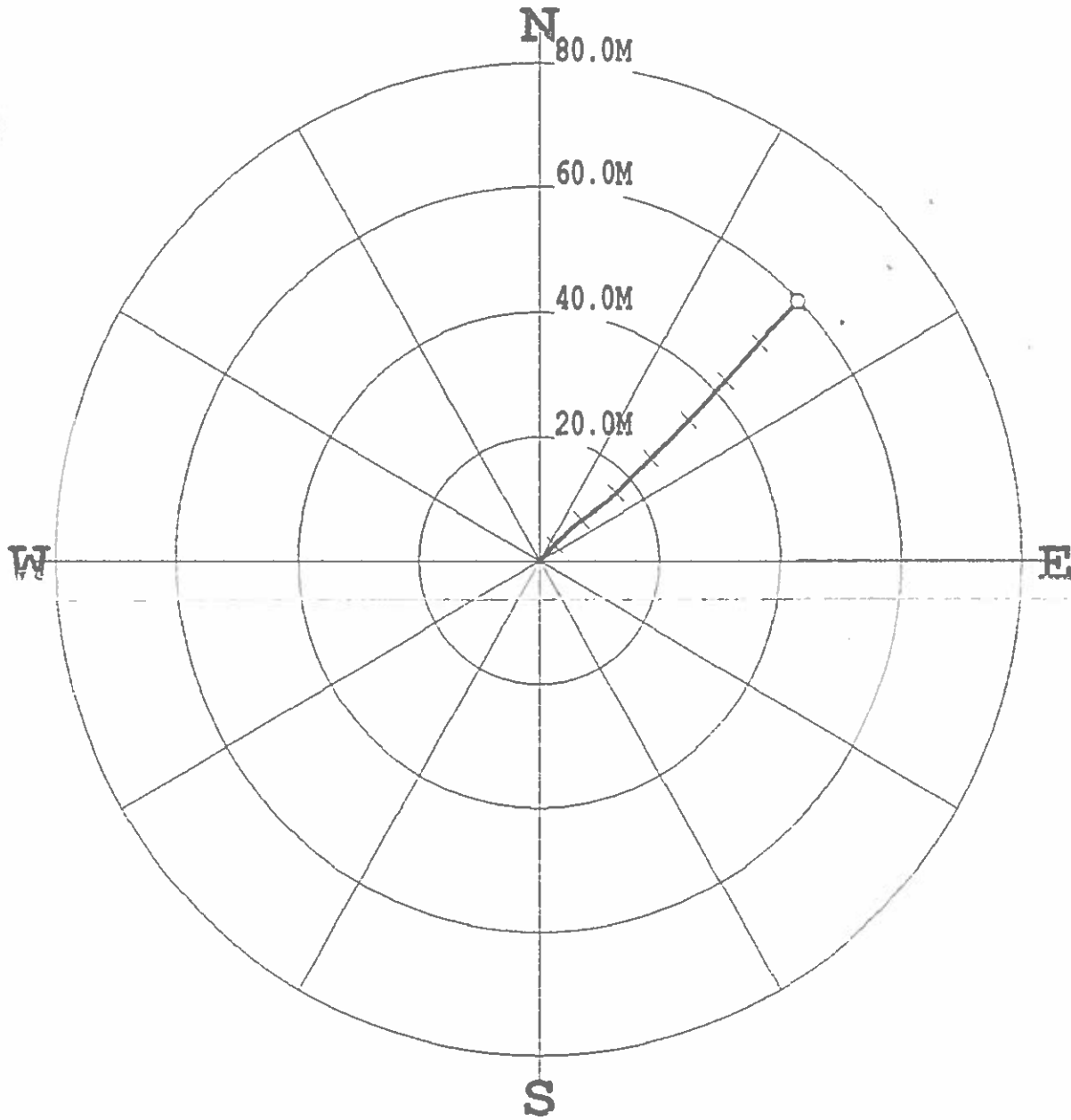
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16N)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64N)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-40
 DATE OF LOG: 10/13/10
 PROBE: 9057A 4429



SCALE: 10 M/CM
 TRUE DEPTH: 80.26 M
 AZIMUTH: 45.8
 DISTANCE: 59.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****


CLIENT : WESTERN COAL CORP HOLE ID. : BR10-40
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/13/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-40_10-13-10_13-05_9057A_02_1.48_101.27_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.92	0.21	0.20	0.3	43.0	27.4	37.6
5.00	4.81	0.54	0.51	0.7	43.5	27.3	46.4
6.00	5.70	0.85	0.86	1.2	45.1	28.6	44.6
7.00	6.57	1.21	1.19	1.7	44.6	29.4	43.6
8.00	7.45	1.56	1.52	2.2	44.2	28.8	43.4
9.00	8.32	1.92	1.85	2.7	44.0	29.1	42.2
10.00	9.20	2.27	2.18	3.1	43.9	29.1	42.7
11.00	10.07	2.61	2.54	3.6	44.2	29.7	43.9
12.00	10.94	2.96	2.88	4.1	44.2	29.9	43.4
13.00	11.80	3.32	3.22	4.6	44.1	29.7	43.3
14.00	12.67	3.68	3.57	5.1	44.2	29.9	47.0
15.00	13.53	4.03	3.94	5.6	44.3	30.8	44.3
16.00	14.39	4.38	4.31	6.1	44.5	31.2	44.6
17.00	15.25	4.75	4.66	6.7	44.5	30.8	43.8
18.00	16.11	5.11	5.04	7.2	44.6	31.1	45.7
19.00	16.96	5.47	5.42	7.7	44.7	31.8	46.7
20.00	17.81	5.81	5.82	8.2	45.1	31.6	54.5
21.00	18.65	6.11	6.26	8.7	45.7	33.0	55.8
22.00	19.50	6.42	6.70	9.3	46.2	32.5	55.7
23.00	20.34	6.73	7.14	9.8	46.7	32.9	53.6
24.00	21.18	7.04	7.58	10.3	47.1	33.3	55.0
25.00	22.01	7.36	8.04	10.9	47.5	33.9	55.5
26.00	22.84	7.67	8.51	11.5	48.0	34.8	56.7
27.00	23.66	7.99	8.98	12.0	48.3	34.9	53.4
28.00	24.47	8.32	9.47	12.6	48.7	36.2	55.8
29.00	25.27	8.66	9.95	13.2	49.0	36.1	57.4
30.00	26.08	8.99	10.44	13.8	49.3	36.7	57.2
31.00	26.88	9.32	10.94	14.4	49.6	36.7	59.9
32.00	27.68	9.71	11.38	15.0	49.5	36.9	45.8
33.00	28.48	10.13	11.81	15.6	49.4	36.8	47.7
34.00	29.28	10.55	12.23	16.2	49.2	36.8	44.0
35.00	30.08	10.98	12.65	16.8	49.0	37.0	42.2
36.00	30.88	11.41	13.08	17.4	48.9	37.1	45.4
37.00	31.68	11.83	13.50	18.0	48.8	37.1	46.3
38.00	32.47	12.26	13.94	18.6	48.7	37.6	47.2
39.00	33.26	12.68	14.38	19.2	48.6	38.1	47.0

***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-40
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/13/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-40_10-13-10_13-05_9057A_02_1.48_101.27_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.92	0.21	0.20	0.3	43.0	27.4	37.6
5.00	4.81	0.54	0.51	0.7	43.5	27.3	46.4
6.00	5.70	0.85	0.86	1.2	45.1	28.6	44.6
7.00	6.57	1.21	1.19	1.7	44.6	29.4	43.6
8.00	7.45	1.56	1.52	2.2	44.2	28.8	43.4
9.00	8.32	1.92	1.85	2.7	44.0	29.1	42.2
10.00	9.20	2.27	2.18	3.1	43.9	29.1	42.7
11.00	10.07	2.61	2.54	3.6	44.2	29.7	43.9
12.00	10.94	2.96	2.88	4.1	44.2	29.9	43.4
13.00	11.80	3.32	3.22	4.6	44.1	29.7	43.3
14.00	12.67	3.68	3.57	5.1	44.2	29.9	47.0
15.00	13.53	4.03	3.94	5.6	44.3	30.8	44.3
16.00	14.39	4.38	4.31	6.1	44.5	31.2	44.6
17.00	15.25	4.75	4.66	6.7	44.5	30.8	43.8
18.00	16.11	5.11	5.04	7.2	44.6	31.1	45.7
19.00	16.96	5.47	5.42	7.7	44.7	31.8	46.7
20.00	17.81	5.81	5.82	8.2	45.1	31.6	54.5
21.00	18.65	6.11	6.26	8.7	45.7	33.0	55.8
22.00	19.50	6.42	6.70	9.3	46.2	32.5	55.7
23.00	20.34	6.73	7.14	9.8	46.7	32.9	53.6
24.00	21.18	7.04	7.58	10.3	47.1	33.3	55.0
25.00	22.01	7.36	8.04	10.9	47.5	33.9	55.5
26.00	22.84	7.67	8.51	11.5	48.0	34.8	56.7
27.00	23.66	7.99	8.98	12.0	48.3	34.9	53.4
28.00	24.47	8.32	9.47	12.6	48.7	36.2	55.8
29.00	25.27	8.66	9.95	13.2	49.0	36.1	57.4
30.00	26.08	8.99	10.44	13.8	49.3	36.7	57.2
31.00	26.88	9.32	10.94	14.4	49.6	36.7	59.9
32.00	27.68	9.71	11.38	15.0	49.5	36.9	45.8
33.00	28.48	10.13	11.81	15.6	49.4	36.8	47.7
34.00	29.28	10.55	12.23	16.2	49.2	36.8	44.0
35.00	30.08	10.98	12.65	16.8	49.0	37.0	42.2
36.00	30.88	11.41	13.08	17.4	48.9	37.1	45.4
37.00	31.68	11.83	13.50	18.0	48.8	37.1	46.3
38.00	32.47	12.26	13.94	18.6	48.7	37.6	47.2
39.00	33.26	12.68	14.38	19.2	48.6	38.1	47.0
40.00	34.05	13.11	14.83	19.8	48.5	38.9	49.8
41.00	34.82	13.55	15.29	20.4	48.4	39.4	46.2
42.00	35.59	13.99	15.75	21.1	48.4	39.7	46.4
43.00	36.37	14.46	16.17	21.7	48.2	38.8	34.7
44.00	37.14	14.89	16.62	22.3	48.1	38.6	53.1
45.00	37.90	15.29	17.12	23.0	48.2	40.9	47.8
46.00	38.65	15.75	17.59	23.6	48.2	41.0	45.3
47.00	39.41	16.20	18.07	24.3	48.1	41.0	46.5
48.00	40.16	16.65	18.55	24.9	48.1	41.3	46.0
49.00	40.91	17.11	19.02	25.6	48.0	41.3	46.1
50.00	41.66	17.56	19.50	26.2	48.0	41.5	45.6
51.00	42.41	18.02	19.97	26.9	47.9	41.4	45.2
52.00	43.17	18.49	20.44	27.6	47.9	40.9	44.9
53.00	43.92	18.95	20.91	28.2	47.8	41.0	44.9
54.00	44.67	19.41	21.37	28.9	47.6	40.9	45.4
55.00	45.42	19.87	21.85	29.5	47.7	41.5	45.4
56.00	46.17	20.34	22.31	30.2	47.7	41.3	44.9
57.00	46.93	20.80	22.78	30.8	47.6	41.1	44.9
58.00	47.68	21.27	23.25	31.5	47.6	41.2	45.8
59.00	48.43	21.73	23.71	32.2	47.5	41.0	44.4
60.00	49.19	22.20	24.18	32.8	47.4	41.0	44.8
61.00	49.94	22.66	24.64	33.5	47.4	41.1	43.8
62.00	50.69	23.12	25.11	34.1	47.4	41.3	45.7
63.00	51.45	23.59	25.57	34.8	47.3	41.2	45.1
64.00	52.20	24.05	26.04	35.4	47.3	41.1	44.0
65.00	52.95	24.52	26.50	36.1	47.2	41.2	45.3
66.00	53.70	24.99	26.97	36.8	47.2	41.2	44.8
67.00	54.46	25.46	27.43	37.4	47.1	41.0	45.4
68.00	55.21	25.92	27.89	38.1	47.1	41.1	45.4
69.00	55.97	26.39	28.35	38.7	47.0	41.2	44.5
70.00	56.72	26.86	28.81	39.4	47.0	41.1	43.3
71.00	57.47	27.33	29.28	40.0	47.0	41.2	45.3
72.00	58.23	27.80	29.73	40.7	46.9	40.6	43.7
73.00	58.99	28.26	30.18	41.3	46.9	40.6	43.9
74.00	59.75	28.74	30.62	42.0	46.8	40.4	42.7
75.00	60.52	29.21	31.06	42.6	46.8	40.0	41.8
76.00	61.28	29.69	31.49	43.3	46.7	40.2	42.3
77.00	62.05	30.17	31.93	43.9	46.6	39.7	41.7
78.00	62.81	30.64	32.36	44.6	46.6	39.8	43.7
79.00	63.58	31.11	32.79	45.2	46.5	40.1	42.7
80.00	64.35	31.58	33.24	45.8	46.5	40.3	43.3
81.00	65.11	32.05	33.67	46.5	46.4	39.4	42.9
82.00	65.89	32.52	34.09	47.1	46.4	39.5	42.2
83.00	66.66	32.99	34.53	47.8	46.3	40.0	45.0
84.00	67.41	33.47	34.97	48.4	46.3	40.8	42.9
85.00	68.17	33.95	35.41	49.1	46.2	40.8	43.7
86.00	68.93	34.43	35.85	49.7	46.2	40.1	41.8
87.00	69.69	34.91	36.28	50.4	46.1	40.6	41.9
88.00	70.45	35.40	36.72	51.0	46.1	40.5	40.6
89.00	71.21	35.88	37.16	51.7	46.0	41.1	43.6
90.00	71.96	36.36	37.60	52.3	46.0	41.4	42.5
91.00	72.71	36.85	38.05	53.0	45.9	41.1	43.6
92.00	73.47	37.33	38.50	53.6	45.9	41.0	42.4
93.00	74.23	37.81	38.94	54.3	45.8	40.9	44.4
94.00	74.98	38.28	39.40	54.9	45.8	41.6	44.3
95.00	75.72	38.76	39.87	55.6	45.8	42.0	44.6
96.00	76.47	39.23	40.34	56.3	45.8	41.9	45.4
97.00	77.21	39.70	40.82	56.9	45.8	42.2	46.5
98.00	77.95	40.16	41.30	57.6	45.8	42.2	46.3
99.00	78.69	40.63	41.78	58.3	45.8	41.9	45.3
100.00	79.44	41.10	42.26	58.9	45.8	41.8	44.7
101.00	80.18	41.56	42.73	59.6	45.8	41.7	44.5
101.10	80.26	41.61	42.78	59.7	45.8	41.8	45.5

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-41	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,232.97	6,139,986.64	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
55.9	-70	67.38	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	55.9	-69.80
5.00	59.4	-69.40
6.00	59.5	-69.80
7.00	59.6	-70.30
8.00	58.9	-70.00
9.00	58.2	-68.70
10.00	57.9	-70.20
11.00	57.1	-69.30
12.00	55.8	-69.60
13.00	54.7	-69.30
14.00	53.9	-69.10
15.00	53.2	-69.50
16.00	52.6	-70.20
17.00	52.1	-70.00
18.00	51.7	-69.40
19.00	51.3	-69.30
20.00	51.2	-69.20
21.00	51.1	-69.20
22.00	51.2	-69.10
23.00	51.2	-69.20
24.00	51.3	-68.90
25.00	51.3	-68.60
26.00	51.3	-68.80
27.00	51.8	-68.50
28.00	52.0	-68.90
29.00	52.1	-69.10
30.00	51.9	-68.70

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.80	2.80		
26.40	26.90	0.50		
49.80	54.20	4.40		
54.20	55.00	0.80		
56.10	56.70	0.60		

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 1 of 3



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-41**

year drilled: 2010


AREA: **BURNT RIVER
BRULE**

31.00	51.7	-68.80
32.00	51.4	-68.70
33.00	51.2	-68.60
34.00	51.0	-68.60
35.00	50.9	-68.50
36.00	50.7	-68.20
37.00	50.5	-68.10
38.00	50.3	-68.10
39.00	50.2	-67.90
40.00	50.0	-67.90
41.00	49.8	-68.00
42.00	49.7	-67.70
43.00	49.5	-68.00
44.00	49.5	-67.20
45.00	49.5	-67.20
46.00	49.5	-66.90
47.00	49.7	-66.30
48.00	50.0	-66.30
49.00	50.1	-66.30
50.00	50.2	-65.60
51.00	50.3	-66.20
52.00	50.3	-66.80
53.00	50.3	-66.70
54.00	50.4	-67.50
55.00	50.4	-65.50
56.00	50.6	-65.00
57.00	50.6	-64.50
58.00	50.7	-64.80
59.00	50.7	-64.70
60.00	50.7	-64.70
61.00	50.7	-62.80
62.00	50.8	-62.40
63.00	50.8	-62.20
64.00	50.8	-63.70
65.00	50.8	-62.70
66.00	50.9	-63.10
67.00	50.9	-62.40
67.20	50.9	-62.40

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	
HOLE-ID: BR-10-41	year drilled: 2010	AREA: BURNT RIVER BRULE

Date issued: Thursday, June 12, 2014
 Reviewed: October 11, 2002

Page 3 of 3

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-41

OTHER SERVICES
NEUTRON

COMPANY WESTERN COAL CORPORATION

WELL BR10-41

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

SECTION BRULE NORTH

TOWNSHIP N/A

RANGE N/A

LICENSE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM N/A

LOG MEASURED FROM N/A

DRL MEASURED FROM N/A

DATE 10/15/10

DEPTH DRILLER :71.62

BIT SIZE :11.43

LOG TOP :0.80

LOG BOTTOM :57.24

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

MEASURED BY G. HOLMLUND

ORDERED BY T. NEAL

REMARKS 1 70 DEGREE

REMARKS 2

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

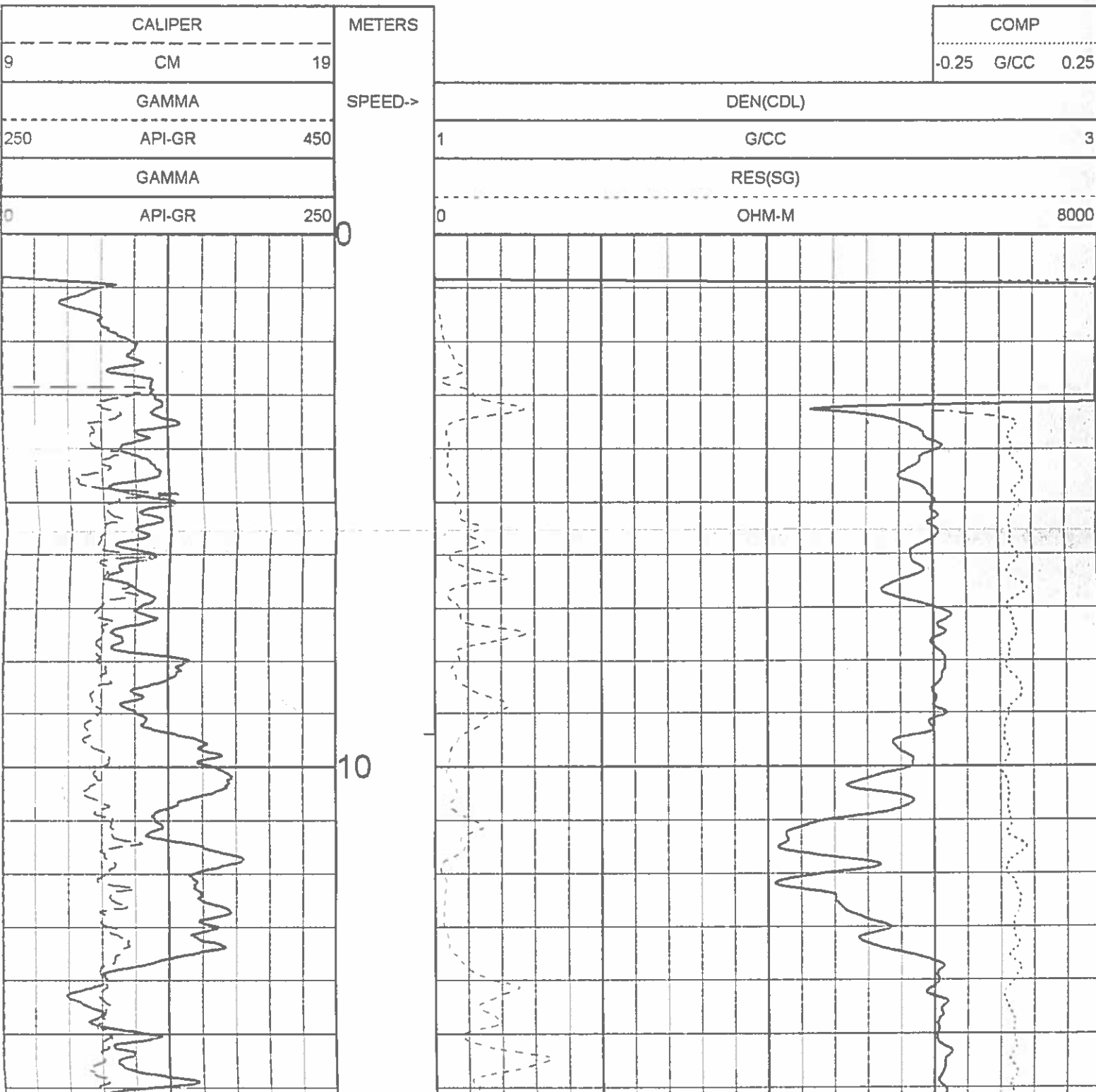
MAGNETIC DECL : 21.0

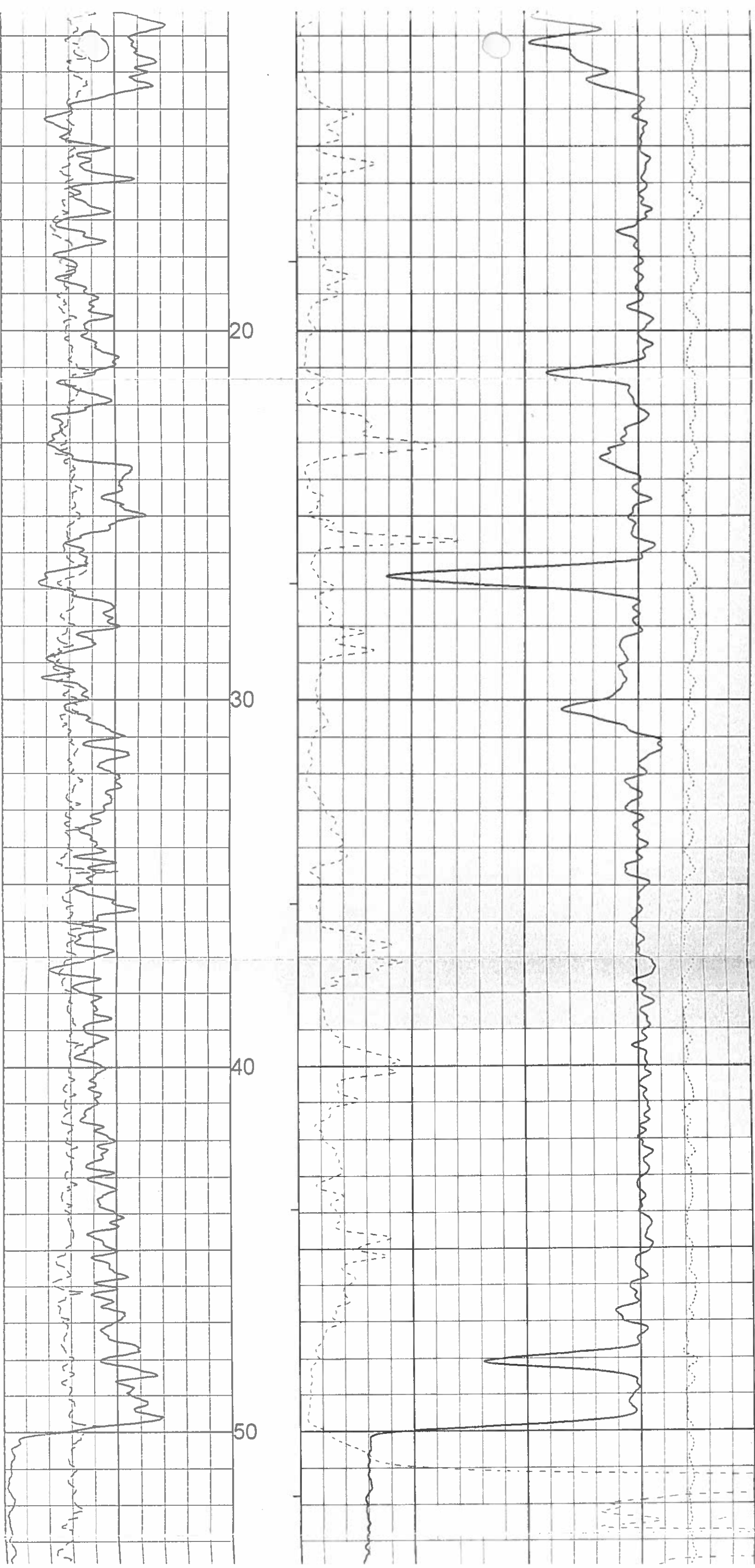
ELECT. CUTOFF : 90000

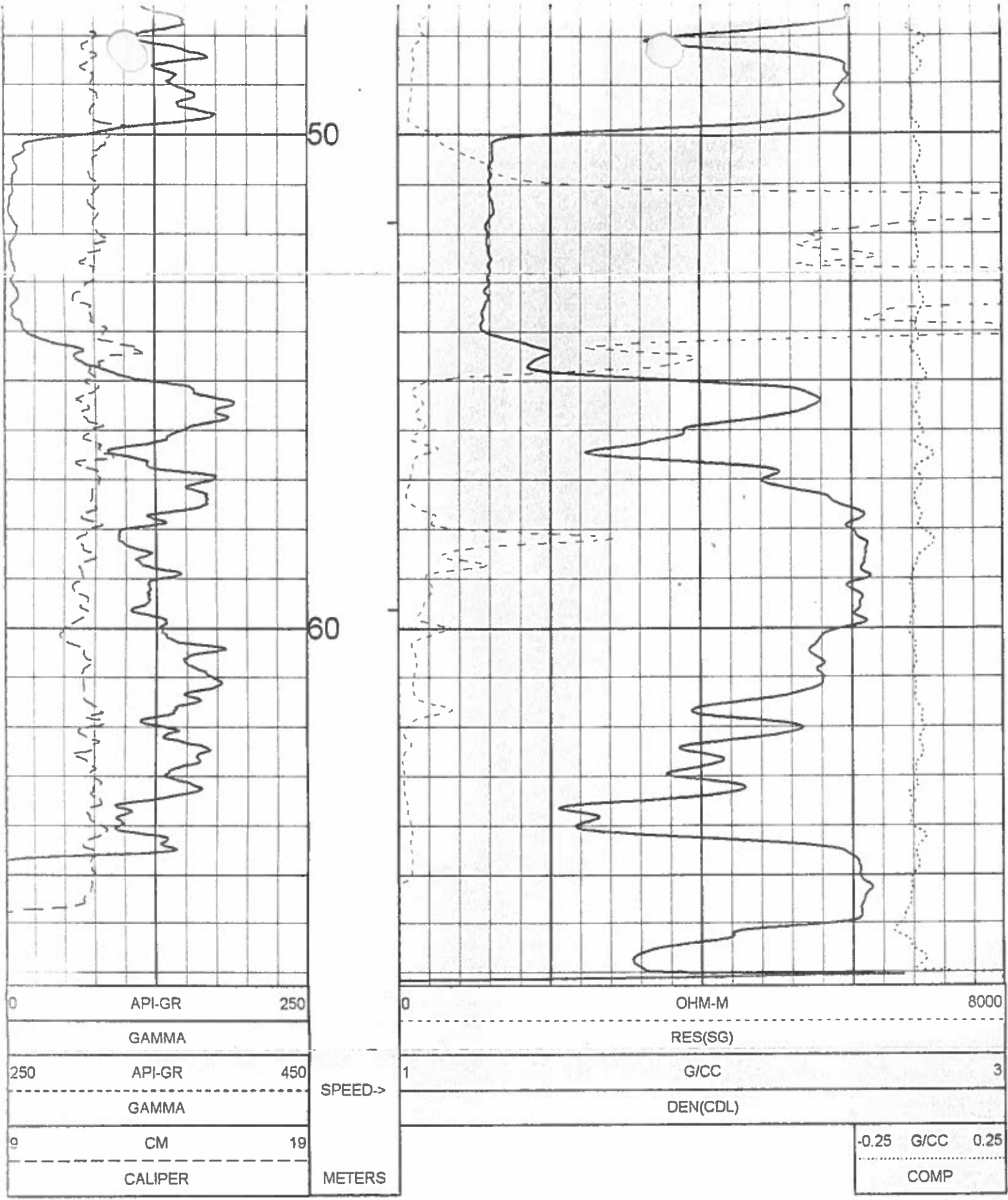
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY 0 09/16/2010

VERSION = 3.64IE







1:100 BULK DENSITY BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-41 10/15/10 10:13
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	



DETAILED DENSITY
GAMMA - CALIPER - RES.
BR-10-41

COMPANY : WESTERN COAL CORPORATION

OTHER SERVICES
NEUTRON

WELL : BR-10-41

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

SECTION : BRULE NORTH

TOWNSHIP : N/A

RANGE : N/A

LICENSE NO. : N/A

UNIQUE WELL ID. : N/A

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

DATE : 10/15/10

DEPTH DRILLER : 71.62

BIT SIZE : 11.43

LOG TOP : 0.80

LOG BOTTOM : 67.24

CASING LOGGER : 3.048

CASING DRILLER : 3.048

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

RM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

MEASURED BY : G. HOLMLUND

ORDERED BY : J. NEAL

REMARKS 1 : 70 DEGREE

REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

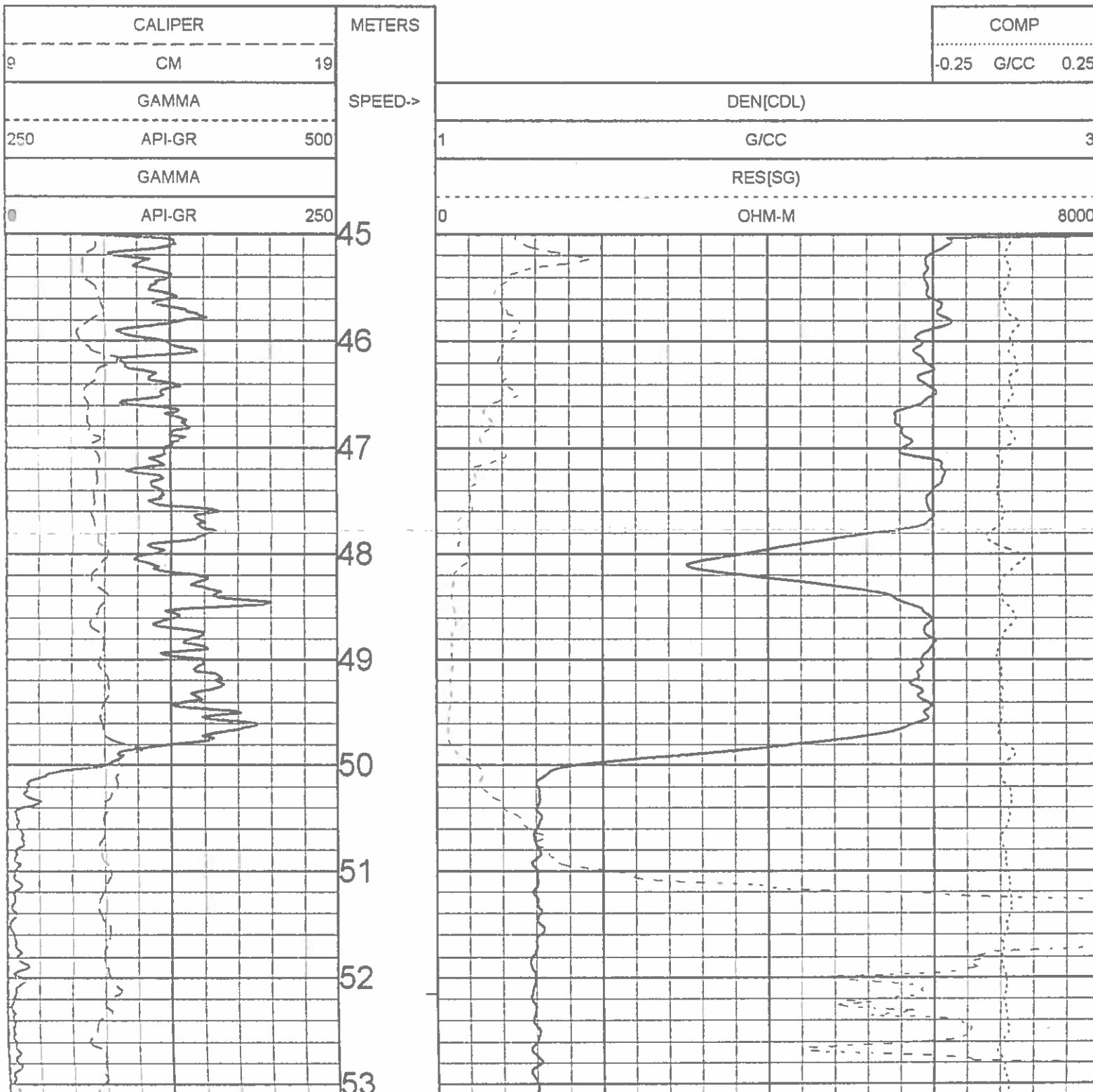
MAGNETIC DECL : 21.0

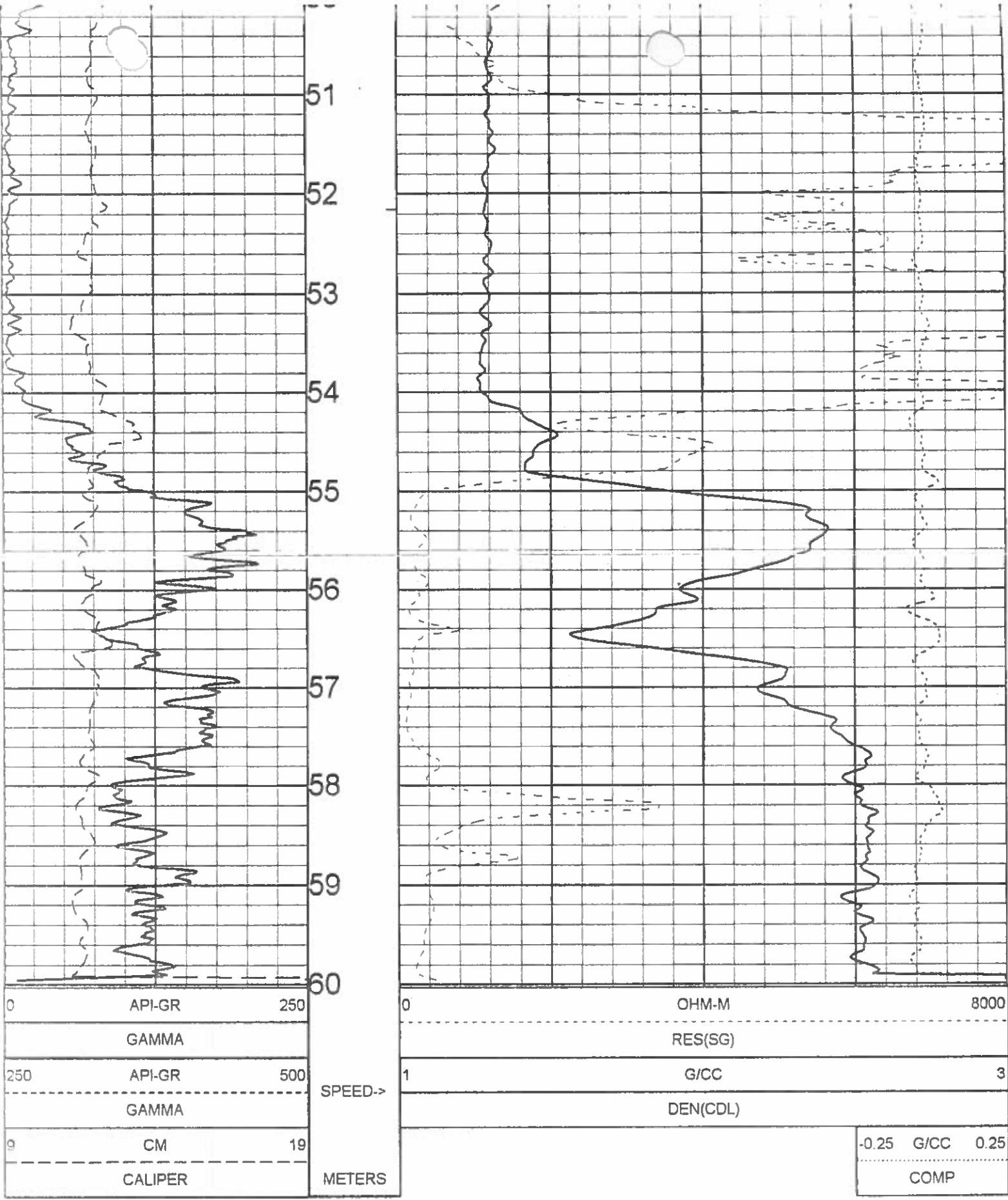
ELECT. CUTOFF : 90000

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010

VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3 64IE

TOOL CALIBRATION BR10-41 10/15/10 10:13
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

GAMMA - NEUTRON

BR10-41

COMPANY : WESTERN COAL CORPORATION

WELL : BR10-41

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

SECTION : BRULE NORTH

TOWNSHIP : N/A

RANGE : N/A

LICENSE NO. : N/A

UNIQUE WELL ID. : N/A

OTHER SERVICES

DENSITY

PERMANENT DATUM : GL

LOG MEASURED FROM : GL

DRL MEASURED FROM : GL

ELEVATION KB : N/A

ELEVATION DF : N/A

ELEVATION GL : N/A

DATE : 10/15/10

DEPTH DRILLER : 71.62

BIT SIZE : 11.43

LOG TOP : 1.99

LOG BOTTOM : 87.38

CASING LOGGER : 3.048

CASING DRILLER : 3.048

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

RM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

WT% SSESSED BY : G. HOLMLUND

LOGGED BY : T. NEAL

REMARKS 1 : 70 DEGREE

REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

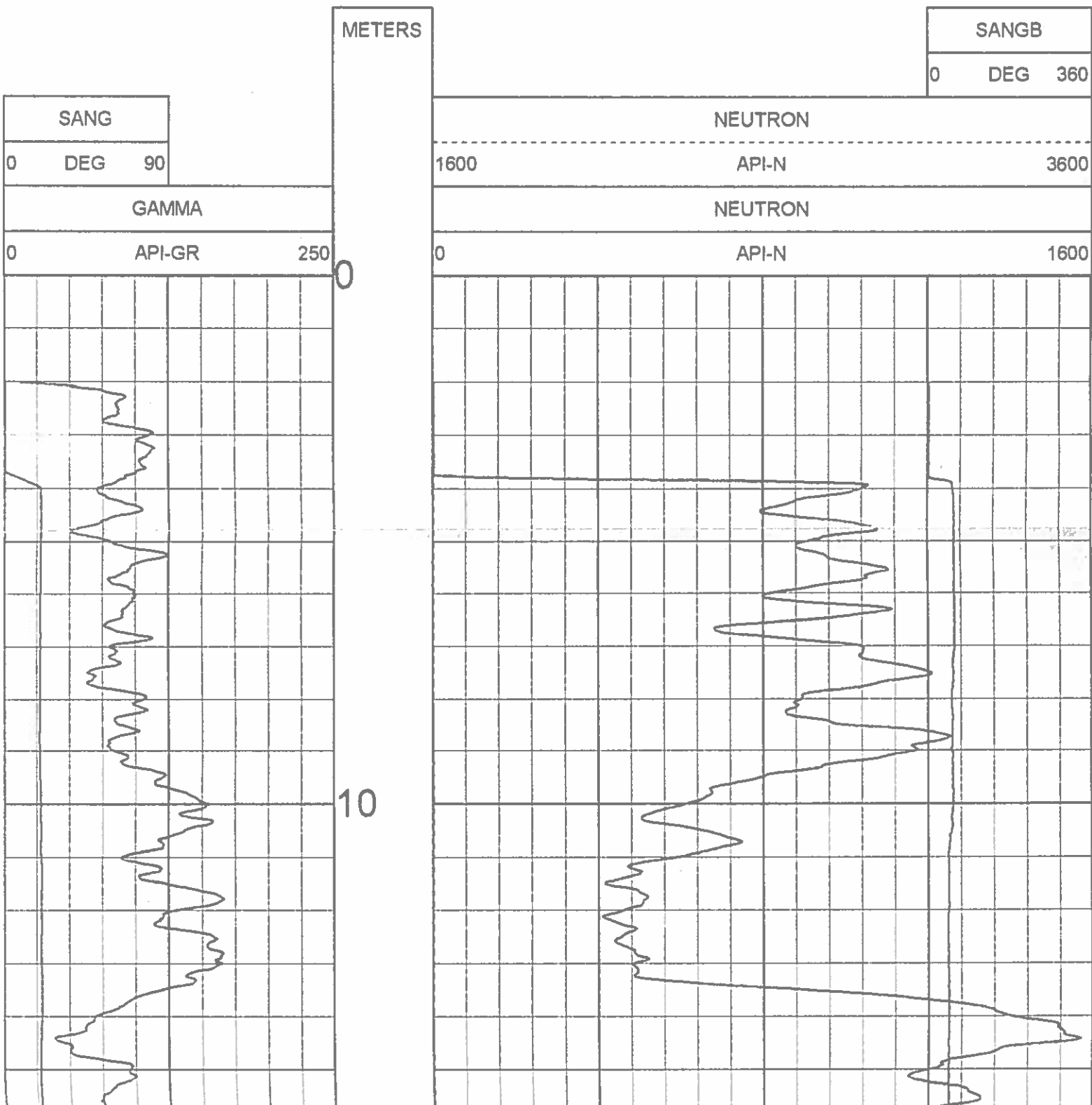
MAGNETIC DECL : 21.0

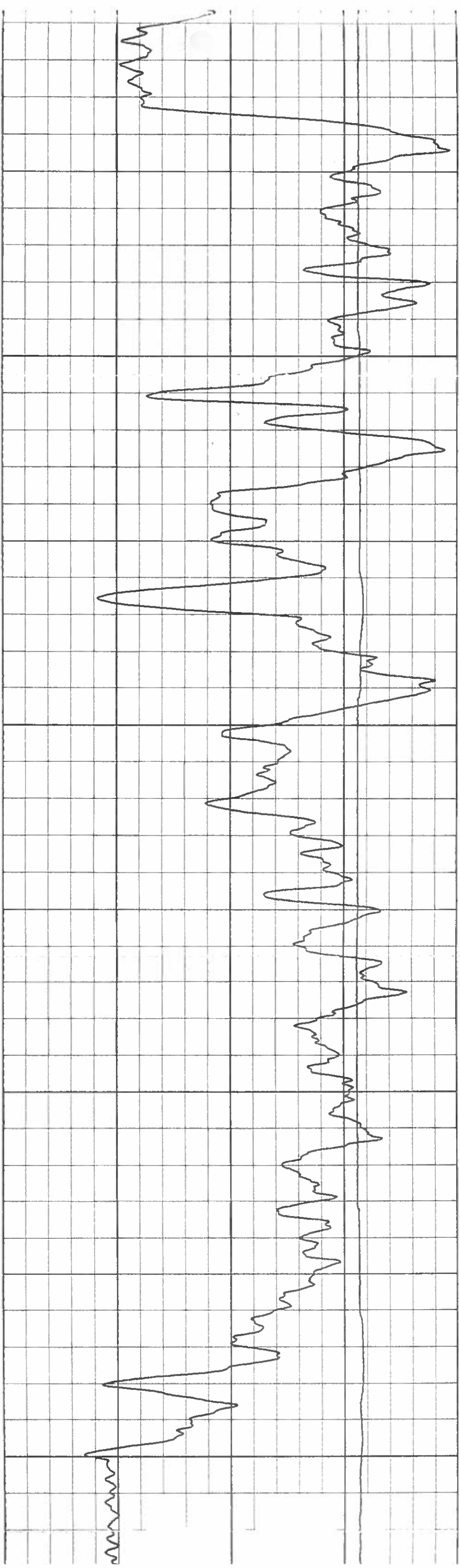
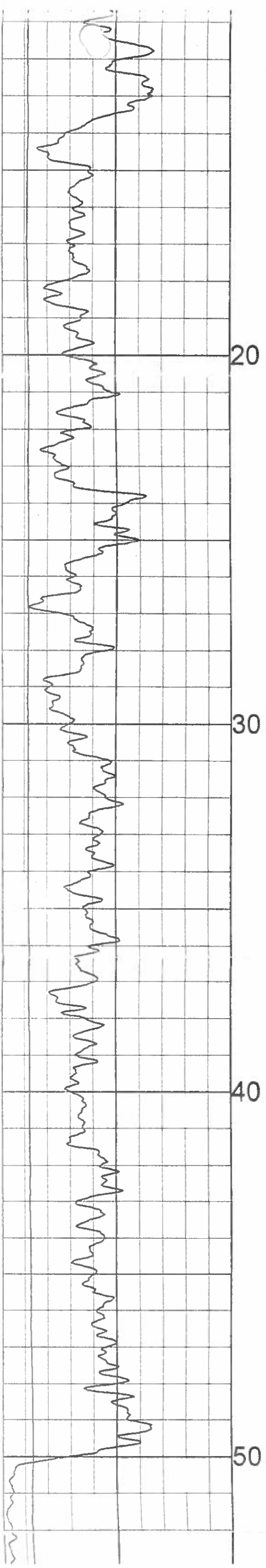
ELECT. CUTOFF : 90000

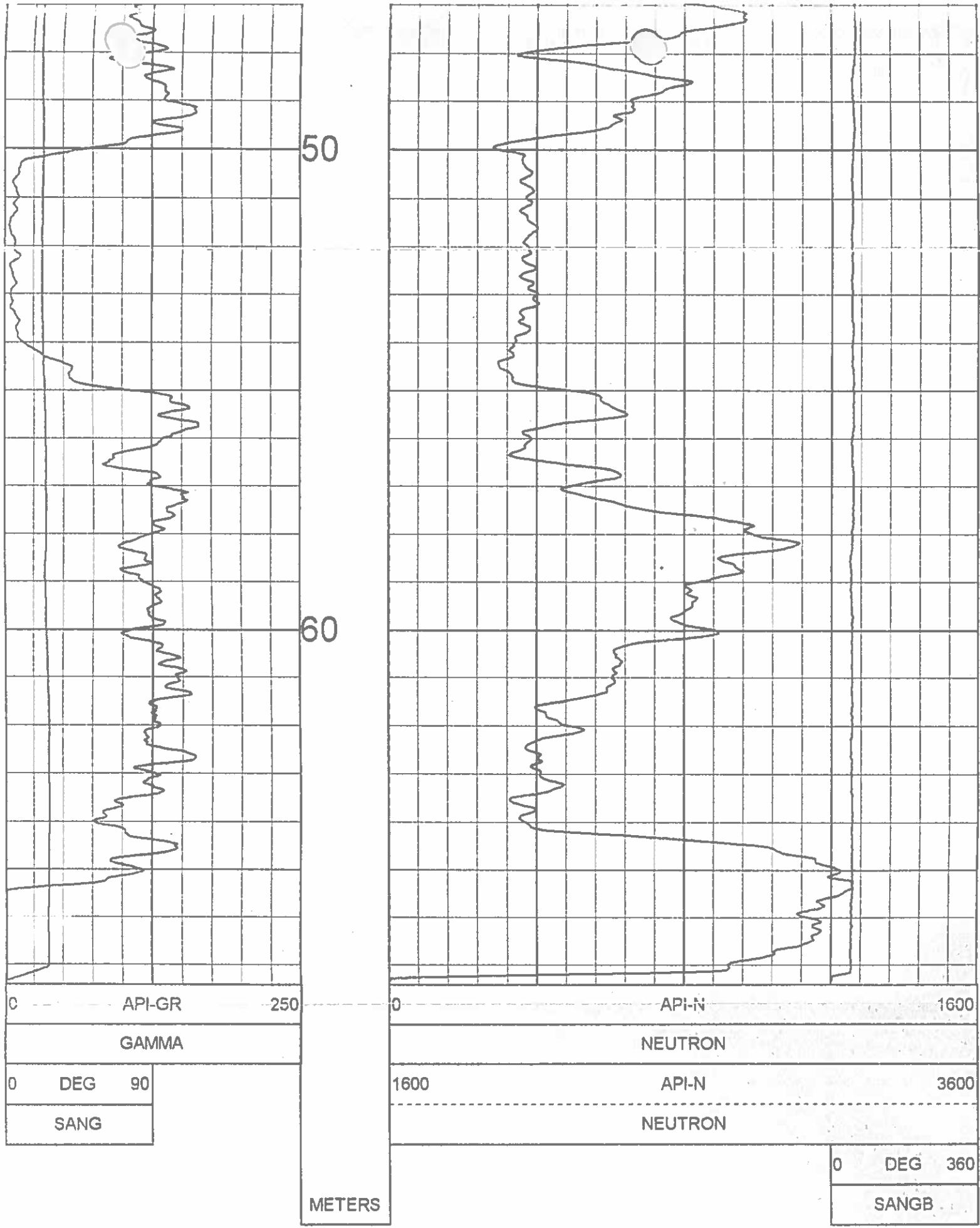
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010

VERSION = 3.64IE







1:100 NEUTRON BR10-41 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-41 10/15/10 09:54
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

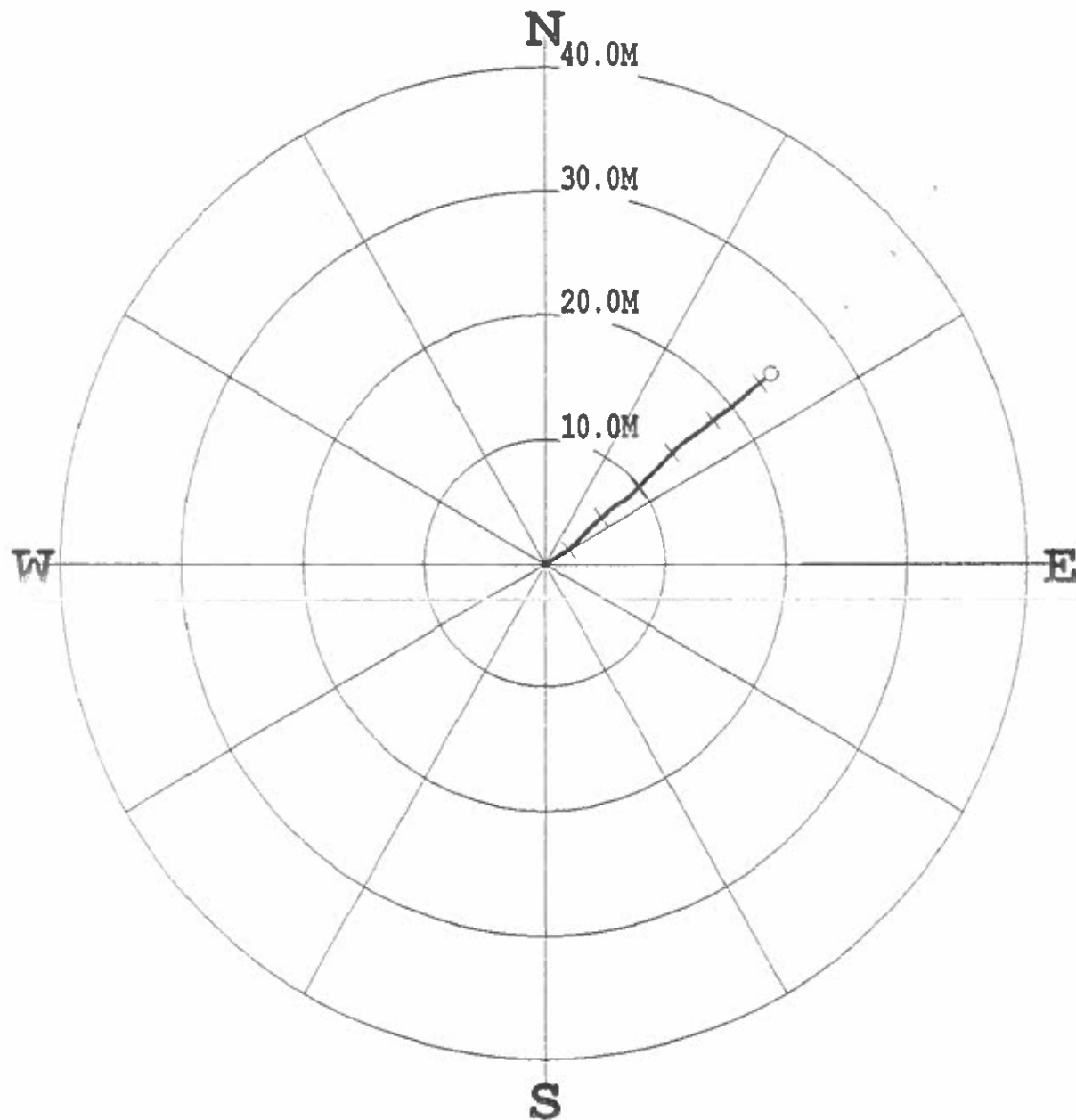
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16N)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64N)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-41
 DATE OF LOG: 10/15/10
 PROBE: 9057A 4429



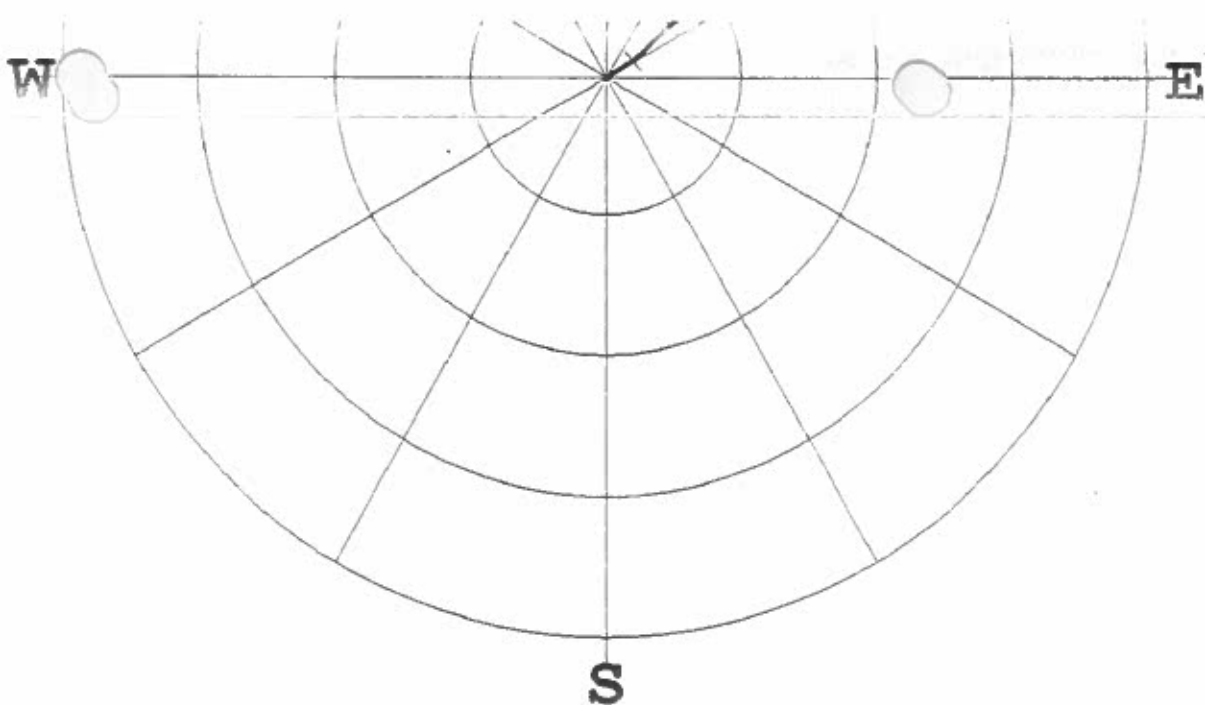
SCALE: 5 M/CM
 TRUE DEPTH: 62.32 M
 AZIMUTH: 50.9
 DISTANCE: 24.1 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-41
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/15/10
 DATA FROM : N/A PROBE : 9057A 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-41_10-15-10_09-54_9057A_02_1.99_67.38_DEVI.log


ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.98	0.04	0.05	0.1	55.9	20.2	57.5
5.00	4.92	0.21	0.35	0.4	59.4	20.6	60.2
6.00	5.85	0.38	0.65	0.8	59.5	20.2	59.0
7.00	6.79	0.56	0.95	1.1	59.6	19.7	60.4
8.00	7.73	0.74	1.23	1.4	58.9	20.0	54.3
9.00	8.67	0.94	1.51	1.8	58.2	21.3	53.4
10.00	9.61	1.13	1.80	2.1	57.9	19.8	57.3
11.00	10.55	1.34	2.07	2.5	57.1	20.7	46.9
12.00	11.49	1.58	2.33	2.8	55.8	20.4	46.3
13.00	12.42	1.83	2.59	3.2	54.7	20.7	45.9
14.00	13.35	2.08	2.84	3.5	53.9	20.9	46.7
15.00	14.29	2.32	3.10	3.9	53.2	20.5	45.8
16.00	15.23	2.56	3.35	4.2	52.6	19.8	46.2
17.00	16.17	2.79	3.60	4.6	52.1	20.0	46.6
18.00	17.11	3.04	3.85	4.9	51.7	20.6	46.1
19.00	18.04	3.28	4.10	5.3	51.3	20.7	46.5
20.00	18.98	3.51	4.36	5.6	51.2	20.8	50.3
21.00	19.91	3.74	4.64	6.0	51.1	20.8	50.9
22.00	20.85	3.96	4.92	6.3	51.2	20.9	51.4
23.00	21.78	4.18	5.20	6.7	51.2	20.8	51.8
24.00	22.72	4.40	5.48	7.0	51.3	21.1	53.0
25.00	23.65	4.62	5.77	7.4	51.3	21.4	52.0
26.00	24.58	4.84	6.05	7.8	51.3	21.2	54.1
27.00	25.51	5.01	6.37	8.1	51.8	21.5	62.2
28.00	26.44	5.21	6.67	8.5	52.0	21.1	54.0
29.00	27.38	5.42	6.96	8.8	52.1	20.9	55.1
30.00	28.31	5.66	7.22	9.2	51.9	21.3	45.2
31.00	29.24	5.92	7.48	9.5	51.7	21.2	45.3
32.00	30.17	6.17	7.74	9.9	51.4	21.3	45.6
33.00	31.11	6.43	8.00	10.3	51.2	21.4	45.5
34.00	32.04	6.68	8.26	10.6	51.0	21.4	45.6
35.00	32.97	6.94	8.52	11.0	50.9	21.5	46.8
36.00	33.90	7.19	8.79	11.4	50.7	21.8	46.0
37.00	34.83	7.46	9.05	11.7	50.5	21.9	44.6
38.00	35.76	7.72	9.31	12.1	50.3	21.9	45.6
39.00	36.69	7.98	9.57	12.5	50.2	22.1	45.0



***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-41
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/15/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-41_10-15-10_09-54_9057A_02_1.99_67.38_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.98	0.04	0.05	0.1	55.9	20.2	57.5
5.00	4.92	0.21	0.35	0.4	59.4	20.6	60.2
6.00	5.85	0.38	0.65	0.8	59.5	20.2	59.0
7.00	6.79	0.56	0.95	1.1	59.6	19.7	60.4
8.00	7.73	0.74	1.23	1.4	58.9	20.0	54.3
9.00	8.67	0.94	1.51	1.8	58.2	21.3	53.4
10.00	9.61	1.13	1.80	2.1	57.9	19.8	57.3
11.00	10.55	1.34	2.07	2.5	57.1	20.7	46.9
12.00	11.49	1.58	2.33	2.8	55.8	20.4	46.3
13.00	12.42	1.83	2.59	3.2	54.7	20.7	45.9
14.00	13.35	2.08	2.84	3.5	53.9	20.9	46.7
15.00	14.29	2.32	3.10	3.9	53.2	20.5	45.8
16.00	15.23	2.56	3.35	4.2	52.6	19.8	46.2
17.00	16.17	2.79	3.60	4.6	52.1	20.0	46.6
18.00	17.11	3.04	3.85	4.9	51.7	20.6	46.1
19.00	18.04	3.28	4.10	5.3	51.3	20.7	46.5
20.00	18.98	3.51	4.36	5.6	51.2	20.8	50.3
21.00	19.91	3.74	4.64	6.0	51.1	20.8	50.9
22.00	20.85	3.96	4.92	6.3	51.2	20.9	51.4
23.00	21.78	4.18	5.20	6.7	51.2	20.8	51.8
24.00	22.72	4.40	5.48	7.0	51.3	21.1	53.0
25.00	23.65	4.62	5.77	7.4	51.3	21.4	52.0
26.00	24.58	4.84	6.05	7.8	51.3	21.2	54.1
27.00	25.51	5.01	6.37	8.1	51.8	21.5	62.2
28.00	26.44	5.21	6.67	8.5	52.0	21.1	54.0
29.00	27.38	5.42	6.96	8.8	52.1	20.9	55.1
30.00	28.31	5.66	7.22	9.2	51.9	21.3	45.2
31.00	29.24	5.92	7.48	9.5	51.7	21.2	45.3
32.00	30.17	6.17	7.74	9.9	51.4	21.3	45.6
33.00	31.11	6.43	8.00	10.3	51.2	21.4	45.5
34.00	32.04	6.68	8.26	10.6	51.0	21.4	45.6
35.00	32.97	6.94	8.52	11.0	50.9	21.5	46.8
36.00	33.90	7.19	8.79	11.4	50.7	21.8	46.0
37.00	34.83	7.46	9.05	11.7	50.5	21.9	44.6
38.00	35.76	7.72	9.31	12.1	50.3	21.9	45.6
39.00	36.68	7.99	9.57	12.5	50.2	22.1	45.0
40.00	37.61	8.26	9.84	12.8	50.0	22.1	44.8
41.00	38.54	8.52	10.10	13.2	49.8	22.0	44.3
42.00	39.46	8.79	10.36	13.6	49.7	22.3	44.9
43.00	40.39	9.06	10.63	14.0	49.5	22.0	43.9
44.00	41.31	9.32	10.91	14.3	49.5	22.8	49.8
45.00	42.24	9.57	11.20	14.7	49.5	22.8	50.2
46.00	43.16	9.82	11.50	15.1	49.5	23.1	50.4
47.00	44.08	10.03	11.82	15.5	49.7	23.7	58.5
48.00	45.00	10.22	12.17	15.9	50.0	23.7	58.8
49.00	45.91	10.45	12.50	16.3	50.1	23.7	57.4
50.00	46.83	10.68	12.84	16.7	50.2	24.4	55.4
51.00	47.74	10.93	13.15	17.1	50.3	23.8	52.8
52.00	48.66	11.18	13.46	17.5	50.3	23.2	51.7
53.00	49.58	11.43	13.77	17.9	50.3	23.3	51.9
54.00	50.49	11.67	14.09	18.3	50.4	22.5	55.8
55.00	51.40	11.91	14.42	18.7	50.4	24.5	56.9
56.00	52.31	12.15	14.77	19.1	50.6	25.0	50.5
57.00	53.22	12.41	15.11	19.5	50.6	25.5	55.2
58.00	54.12	12.65	15.46	20.0	50.7	25.2	55.3
59.00	55.02	12.93	15.79	20.4	50.7	25.3	50.3
60.00	55.93	13.19	16.13	20.8	50.7	25.3	51.4
61.00	56.82	13.47	16.48	21.3	50.7	27.2	52.2
62.00	57.71	13.75	16.84	21.7	50.8	27.6	53.0
63.00	58.59	14.04	17.20	22.2	50.8	27.8	52.8
64.00	59.48	14.32	17.57	22.7	50.8	26.3	56.8
65.00	60.37	14.61	17.94	23.1	50.8	27.3	52.9
66.00	61.25	14.89	18.30	23.6	50.9	26.9	47.0
67.00	62.14	15.18	18.66	24.1	50.9	27.6	52.1
67.20	62.32	15.23	18.73	24.1	50.9	27.6	51.9

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-42	year drilled: 2011	AREA: MINK CREEK WEST
--------------------------	--------------------	-----------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			563,322.99	6,145,320.63	1,220.00

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		259.00				

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 1 of 1

Century
WIRELINE SERVICES

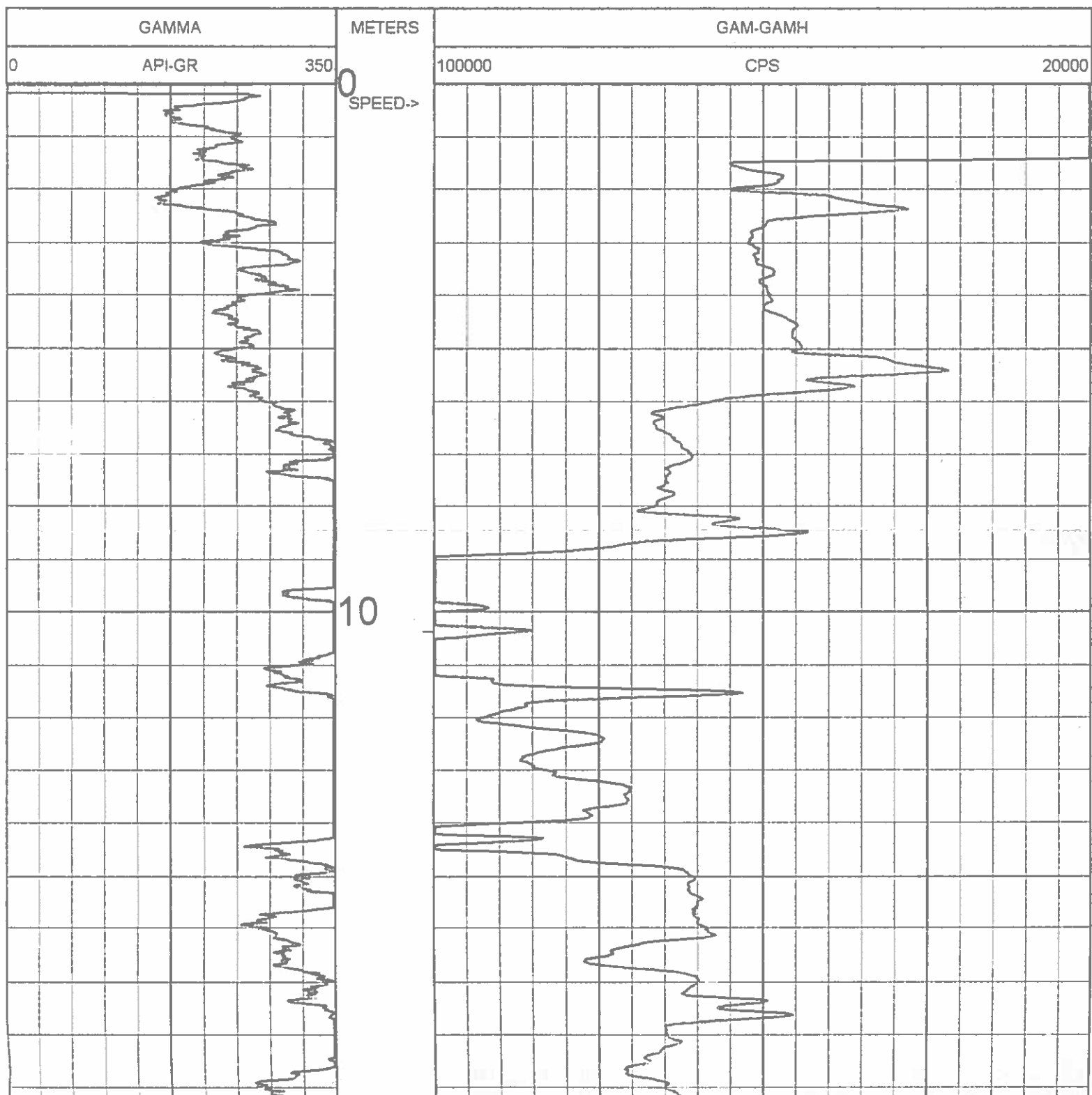
GAM-GAMH
SLIM TOOL
BR10-42

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES
WELL	BR10-42	
FIELD	BRULE	
COUNTRY	CANADA	
PROVINCE	BRITISH COLUMBIA	
TOWNSHIP	BRULE NORTH	
RANGE	N/A	
LICENCE NO.	N/A	
UNIQUE WELL ID.	N/A	
PERMANENT DATUM	GL	ELEVATION KB
LOG MEASURED FROM	GL	ELEVATION DF
DRL MEASURED FROM	GL	ELEVATION GL
DATE	08/31/10	RIG NUMBER
DEPTH DRILLER	233.78	LOGGERS
BIT SIZE	11.43	ARRIVAL TIME
LOG TOP	-0.28	DEPARTURE TIME
LOG BOTTOM	232.99	CIRC STOPPED
CASING LOGGER	6.096	
CASING DRILLER	6.096	
CASING TYPE	STEEL	
BOREHOLE FLUID	WATER	
RM TEMPERATURE	N/A	
MUD RES	N/A	
MUD WEIGHT	1.00	
WITNESSED BY	G. HOLMLUND	
RECORDED BY	T. NEAL	
REMARKS 1	VERTICAL	
REMARKS 2	IN-PIPE	

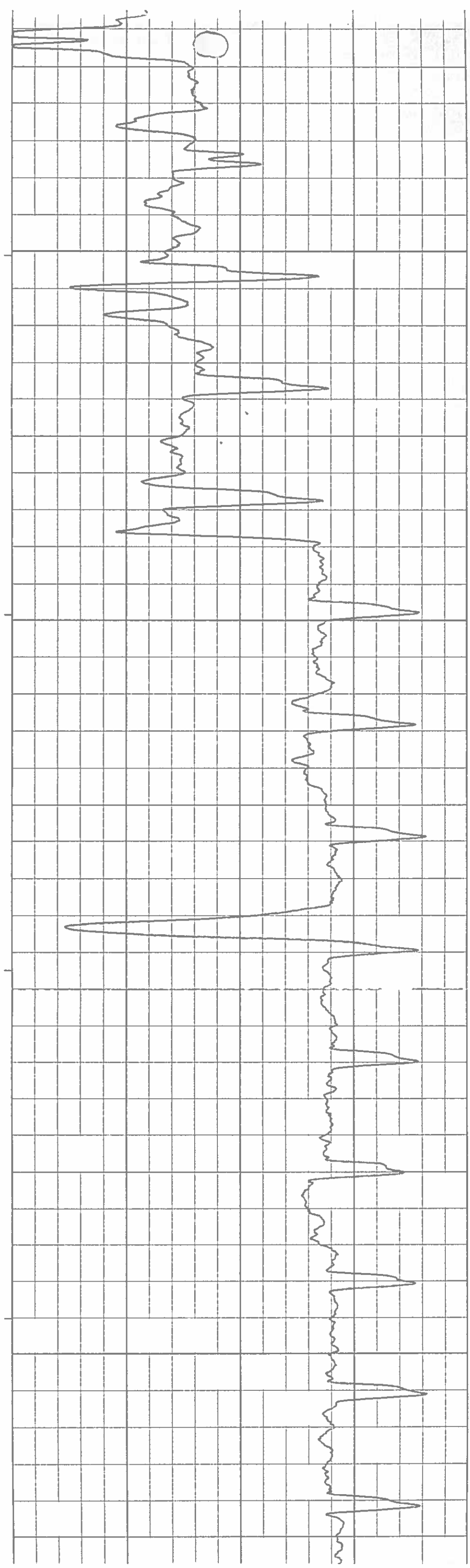
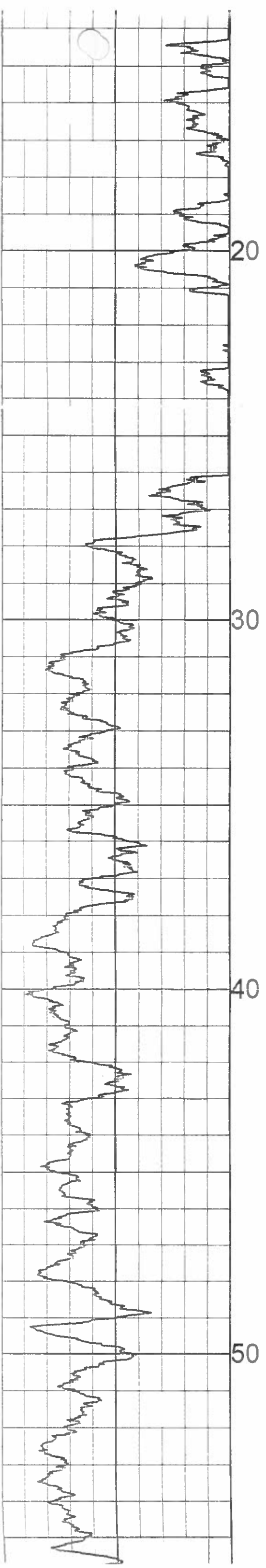
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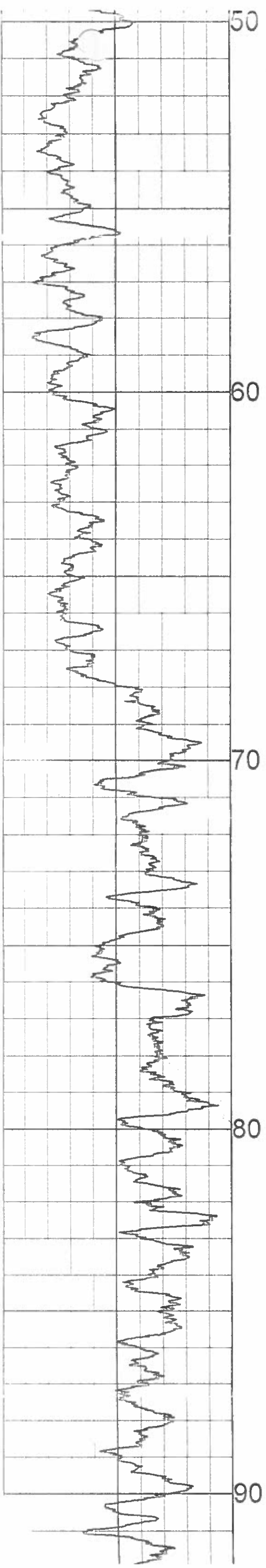
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 99999 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9068A.0 07/14/2010 VERSION = 3.64HR

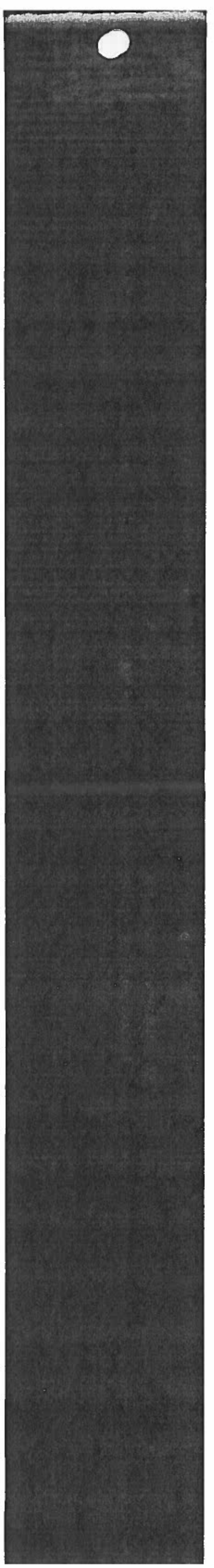
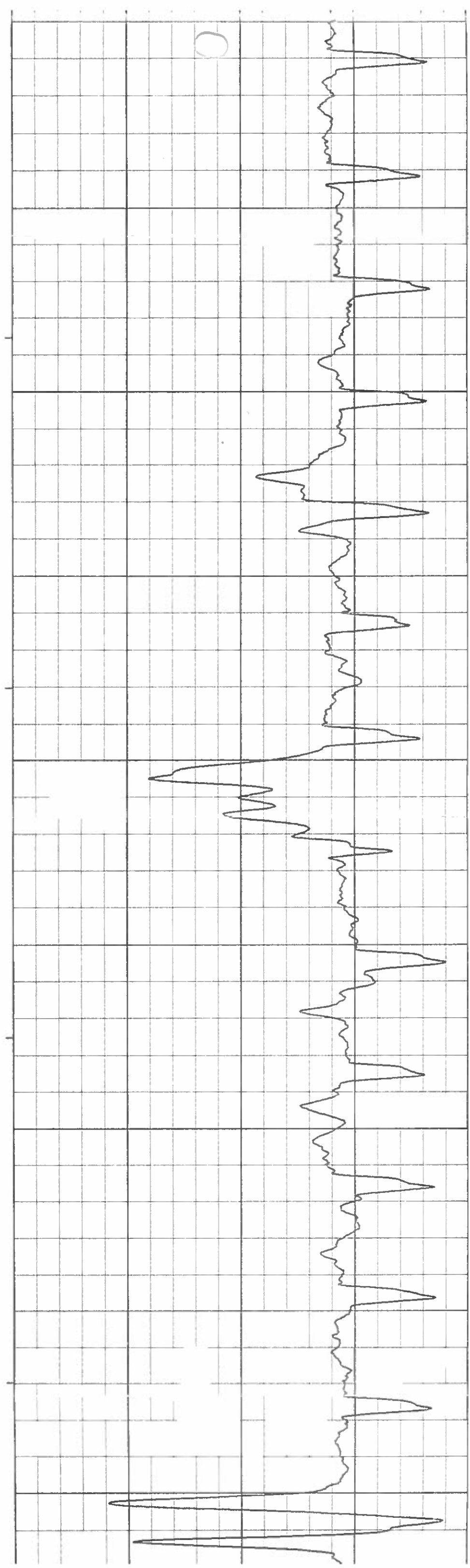


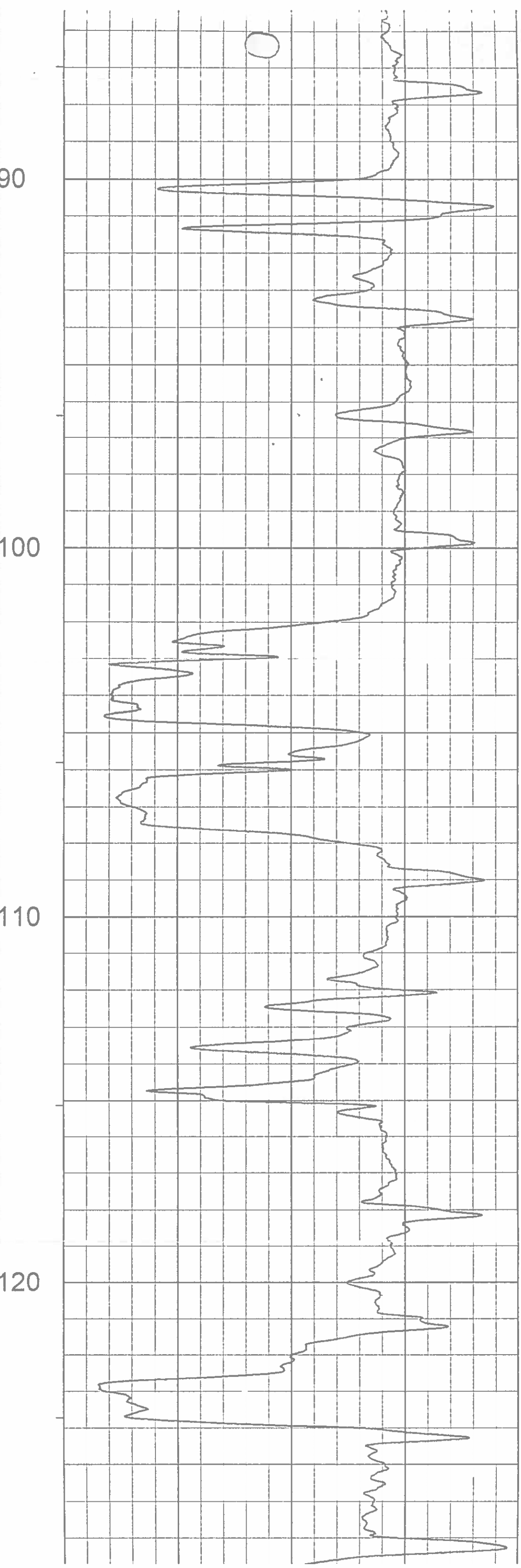
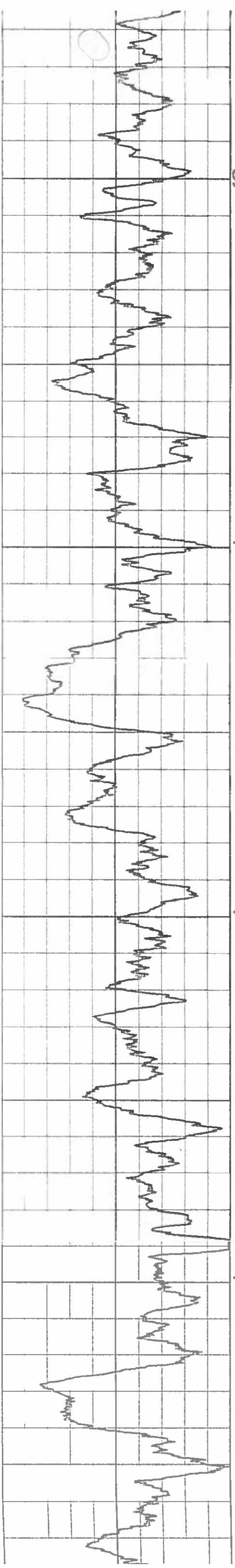
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

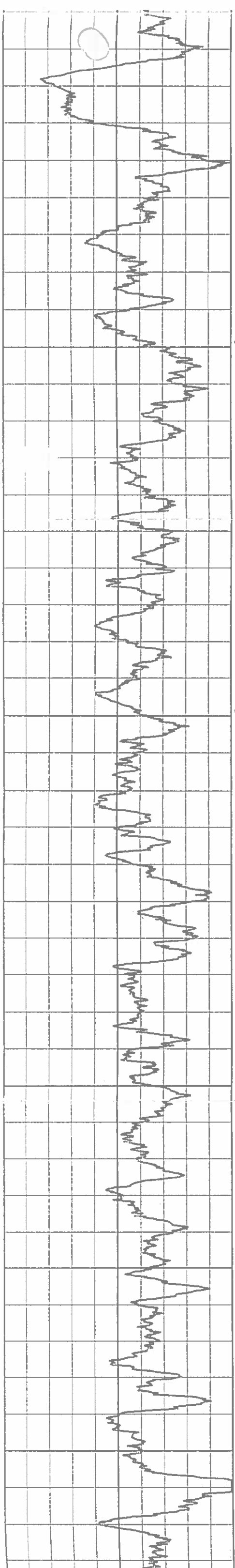




50
60
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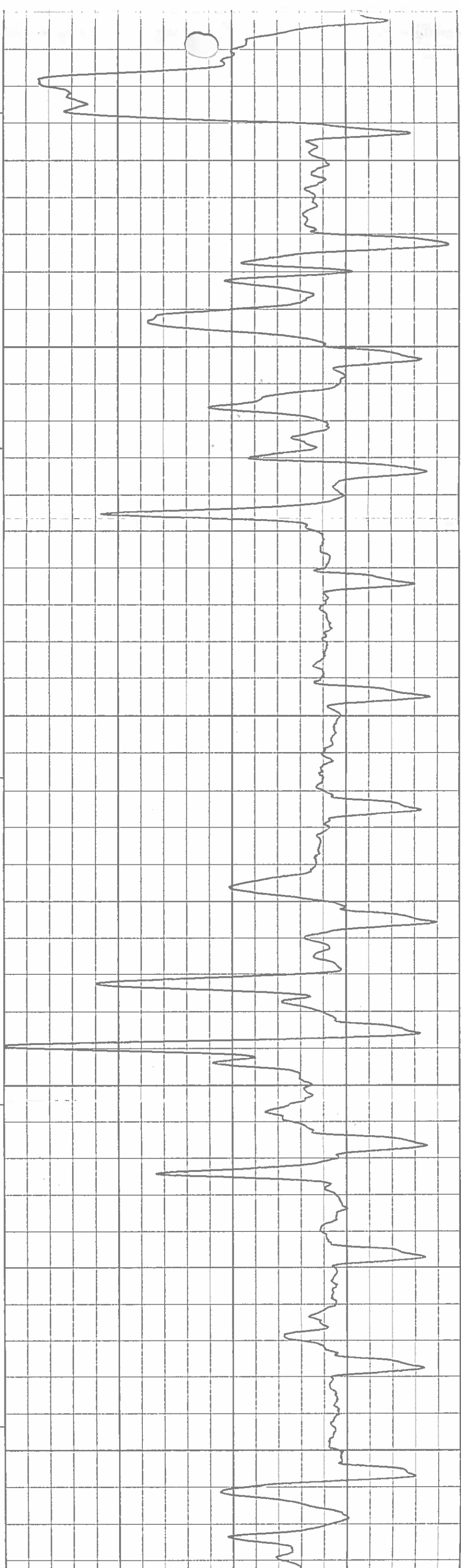


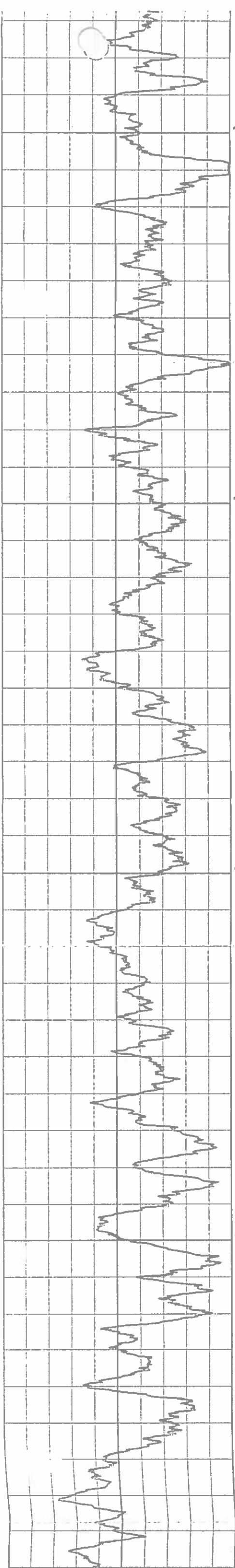
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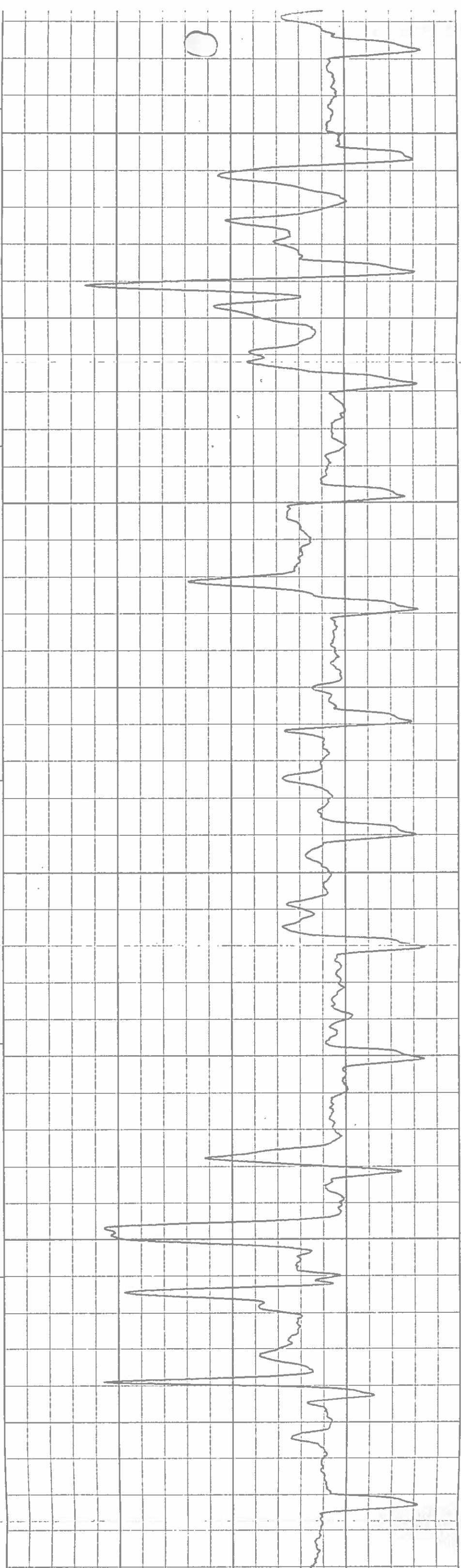


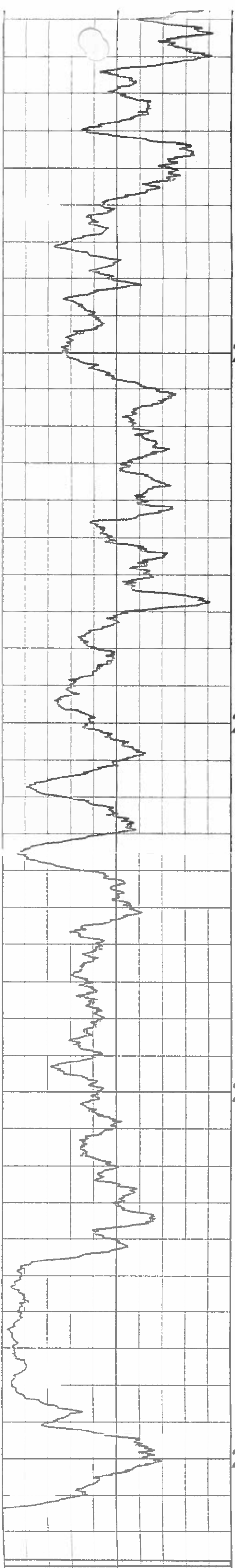
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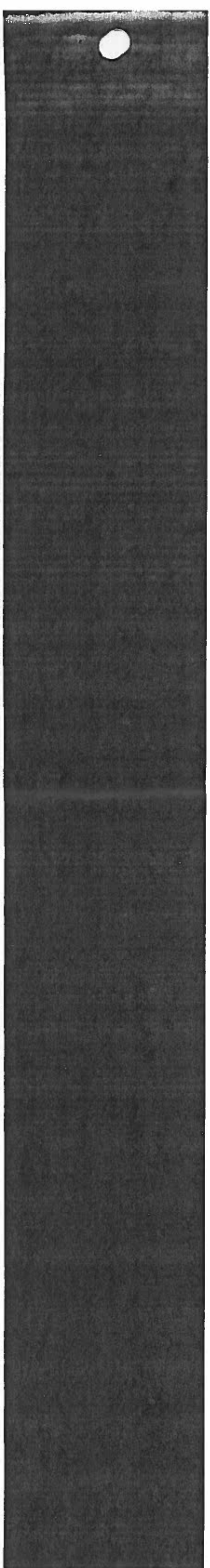
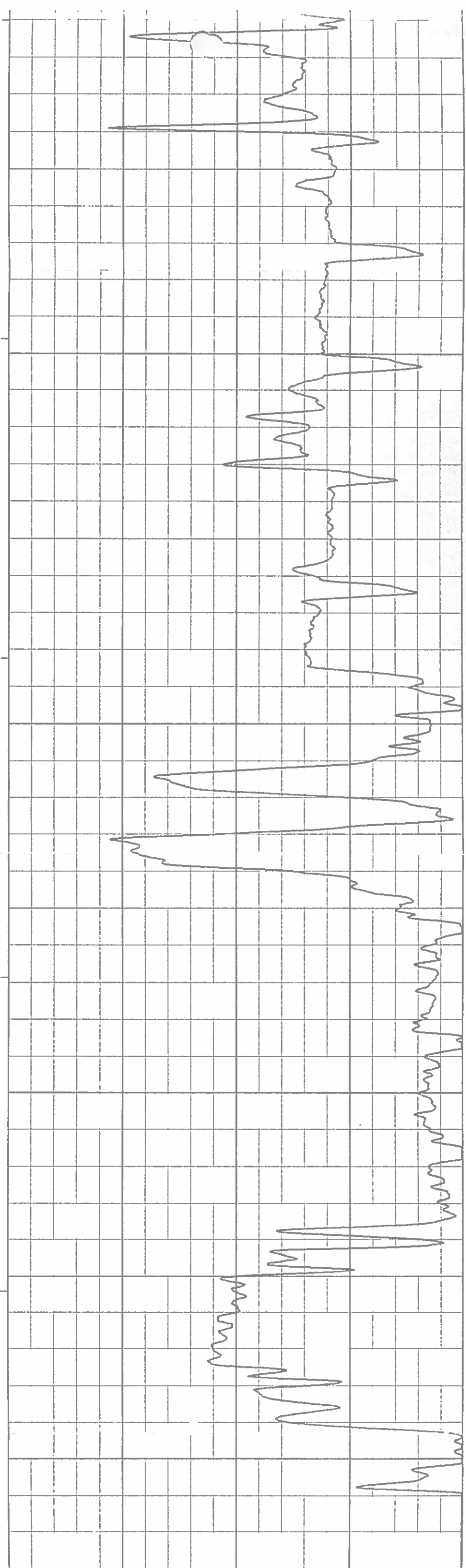
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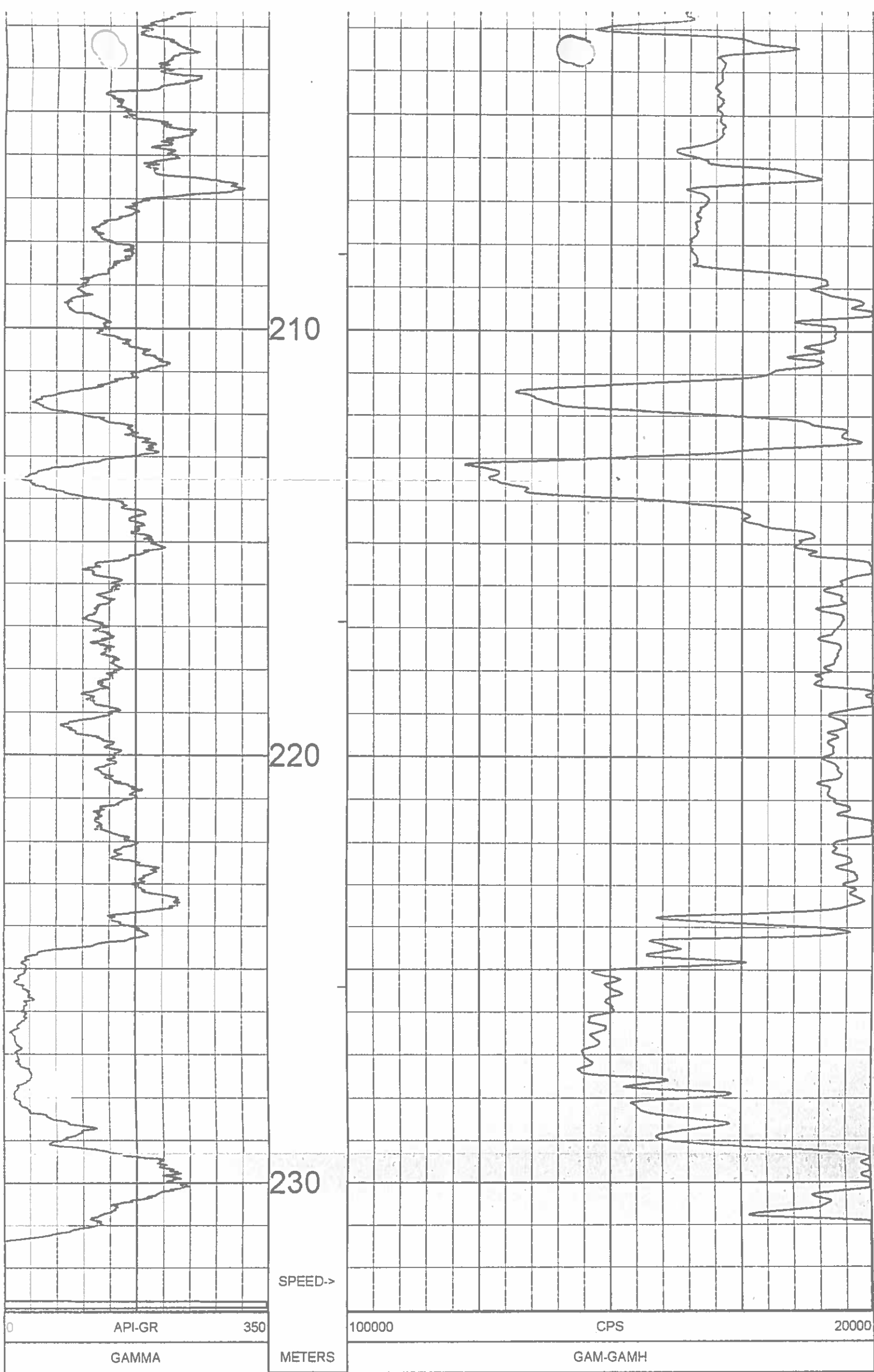
210

220

230

SPEED->





1:100 GAM-GAMH BR10-42 08/31/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

MAGNETIC DECL : 21.0

ELECT. CUTOFF : 99999

BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9068A.0 07/14/2010


VERSION = 3 64HR

TOOL CALIBRATION BR10-42 08/31/10 09:37

TOOL 9068A TM VERSION 1

SERIAL NUMBER 643

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	May22,10	08:32:25	GAMMA	Default [CPS]	Default [CPS]
	May22,10	08:32:25	GAMMA	545.000 [API-GR]	100.000 [CPS]

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,473.86	6,139,903.41	1,340.95

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
125	-88	119.60	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	124.7	-88.00
5.00	112.1	-88.10
6.00	109.3	-88.10
7.00	107.6	-88.00
8.00	104.7	-87.50
9.00	101.6	-87.40
10.00	98.2	-87.40
11.00	95.1	-87.20
12.00	91.4	-86.90
13.00	88.4	-87.10
14.00	85.2	-86.90
15.00	82.1	-86.90
16.00	79.3	-86.90
17.00	76.3	-87.10
18.00	74.0	-87.40
19.00	71.5	-86.90
20.00	69.1	-86.50
21.00	66.7	-86.30
22.00	64.6	-85.60
23.00	62.8	-86.50
24.00	61.1	-86.50
25.00	59.3	-85.90
26.00	57.6	-86.60
27.00	56.0	-86.10
28.00	54.4	-85.80
29.00	53.0	-85.70
30.00	51.6	-85.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.40	2.40		
18.40	18.90	0.50		
18.90	20.80	1.90		
20.80	21.80	1.00		
39.10	50.20	11.10		
50.20	51.80	1.60		
53.30	53.80	0.50		
113.80	116.20	2.40		

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-44**


year drilled: 2010

AREA: **BURNT RIVER
BRULE**

31.00	50.1	-85.90
32.00	48.6	-85.80
33.00	47.3	-85.40
34.00	45.9	-85.50
35.00	44.7	-85.50
36.00	43.5	-85.30
37.00	42.4	-85.50
38.00	41.3	-84.90
39.00	40.4	-84.00
40.00	39.7	-83.20
41.00	39.0	-83.30
42.00	38.3	-83.30
43.00	37.7	-82.80
44.00	37.2	-82.40
45.00	36.5	-82.10
46.00	36.1	-81.10
47.00	35.6	-80.80
48.00	35.1	-81.20
49.00	35.2	-80.70
50.00	35.0	-80.10
51.00	34.4	-80.20
52.00	34.1	-79.80
53.00	33.8	-80.30
54.00	33.4	-80.50
55.00	33.1	-81.20
56.00	32.8	-81.00
57.00	32.6	-80.40
58.00	32.4	-80.00
59.00	32.1	-80.90
60.00	31.8	-81.70
61.00	31.6	-82.20
62.00	31.3	-82.30
63.00	31.0	-82.40
64.00	30.7	-82.90
65.00	30.5	-83.30
66.00	30.2	-83.20
67.00	29.8	-83.40
68.00	29.5	-83.60
69.00	29.1	-83.50
70.00	28.7	-83.30
71.00	28.3	-83.30
72.00	27.9	-84.20
73.00	27.5	-83.90
74.00	27.1	-83.60
75.00	26.6	-83.40

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
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76.00	26.1	-83.60
77.00	25.6	-83.50
78.00	25.1	-83.70
79.00	24.6	-83.90
80.00	24.1	-83.80
81.00	23.6	-84.00
82.00	23.0	-84.20
83.00	22.4	-84.20
84.00	21.8	-84.20
85.00	21.3	-84.00
86.00	20.7	-84.00
87.00	20.1	-84.10
88.00	19.5	-84.20
89.00	18.9	-84.30
90.00	18.3	-83.60
91.00	17.6	-83.80
92.00	16.9	-83.80
93.00	16.2	-83.70
94.00	15.6	-83.40
95.00	14.9	-83.20
96.00	14.1	-83.10
97.00	13.4	-83.20
98.00	12.7	-83.30
99.00	12.0	-83.40
100.00	11.4	-82.90
101.00	10.6	-83.00
102.00	10.0	-83.70
103.00	9.3	-83.30
104.00	8.7	-83.00
105.00	8.0	-83.00
106.00	7.3	-83.40
107.00	6.6	-83.60
108.00	6.0	-83.80
109.00	5.4	-83.50
110.00	4.7	-83.30
111.00	4.0	-83.30
112.00	3.4	-83.30
113.00	2.7	-83.30
114.00	2.1	-83.50
115.00	1.4	-83.40
116.00	0.7	-82.90
117.00	0.0	-82.90
118.00	359.3	-83.40
119.00	358.7	-83.40
119.48	358.3	-83.30

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

Page 3 of 4

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
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RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014 Reviewed: October 11, 2002
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Page 4 of 4

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-44

COMPANY WESTERN COAL CORPORATION

OTHER SERVICES
NEUTRON

WELL BR10-44

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

SECTION BRULE NORTH

TOWNSHIP N/A

RANGE N/A

LICENSE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM GL

LOG MEASURED FROM GL

DRL MEASURED FROM GL

DATE 10/13/10

DEPTH DRILLER 120 39

BIT SIZE 11.43

LOG TOP 0.24

LOG BOTTOM 119.60

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

LOGGED BY G. HOLMLUND

CORRECTED BY T. NEAL

REMARKS 1 VERTICAL

REMARKS 2

ELEVATION KB N/A
ELEVATION DF N/A
ELEVATION GL N/A

RIG NUMBER

LOGGER TD

ARRIVAL TIME

DEPARTURE TIME

CIRC STOPPED N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

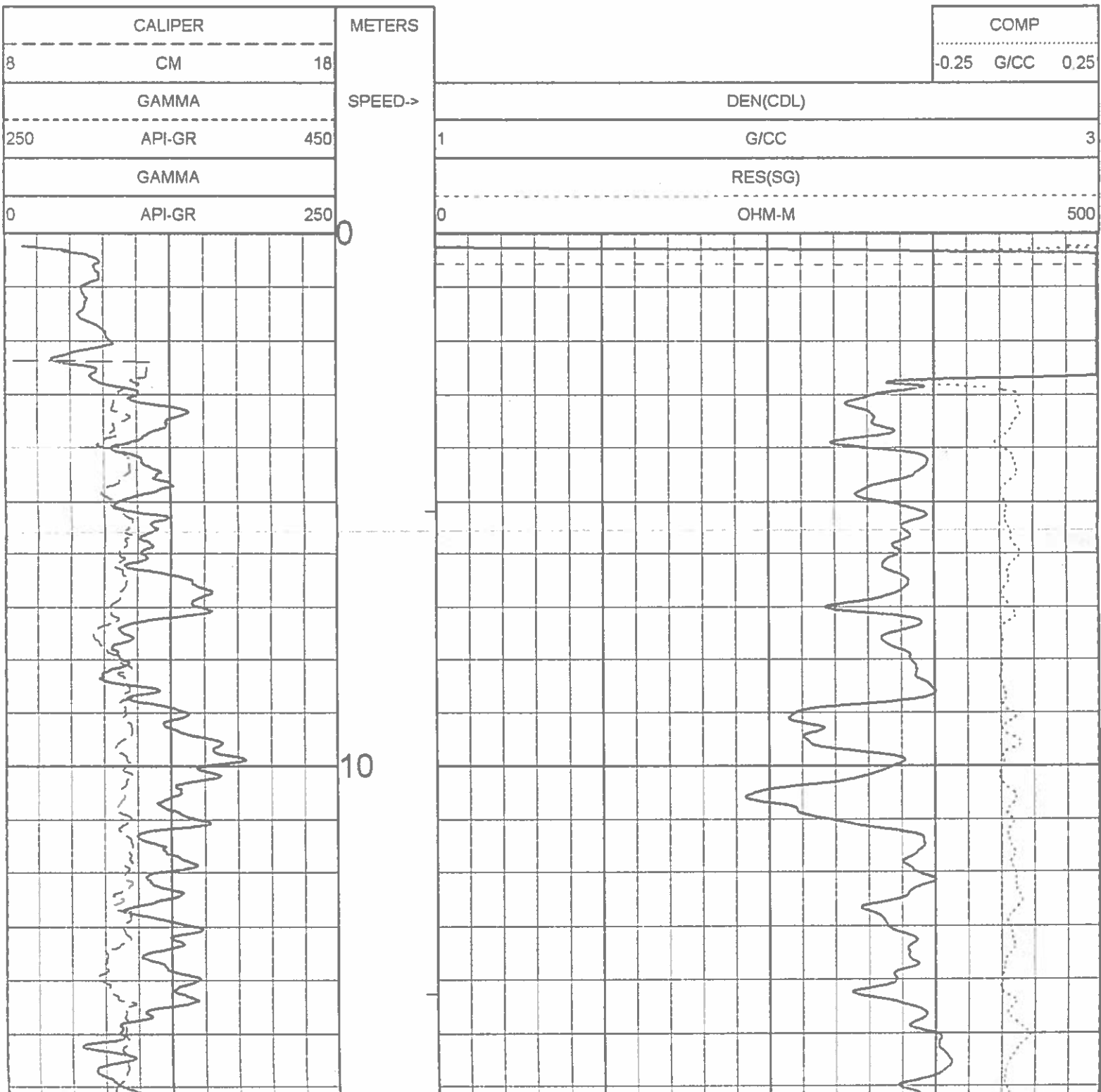
1:100 BULK DENSITY BR10-44 10/13/10

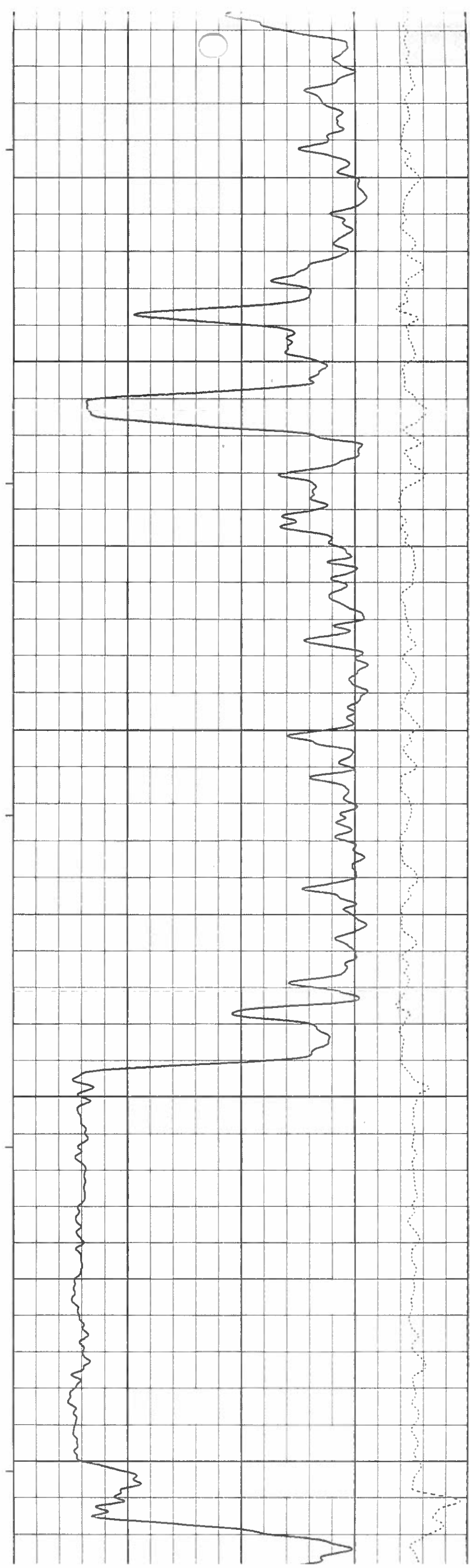
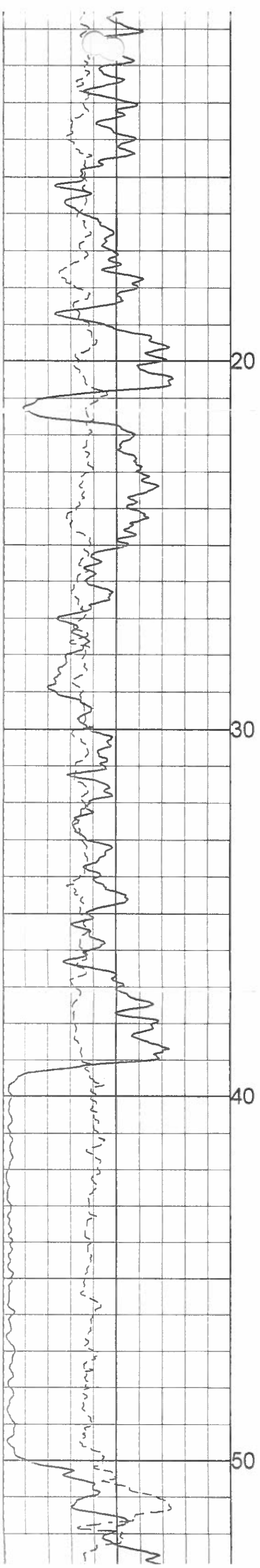
LOG PARAMETERS

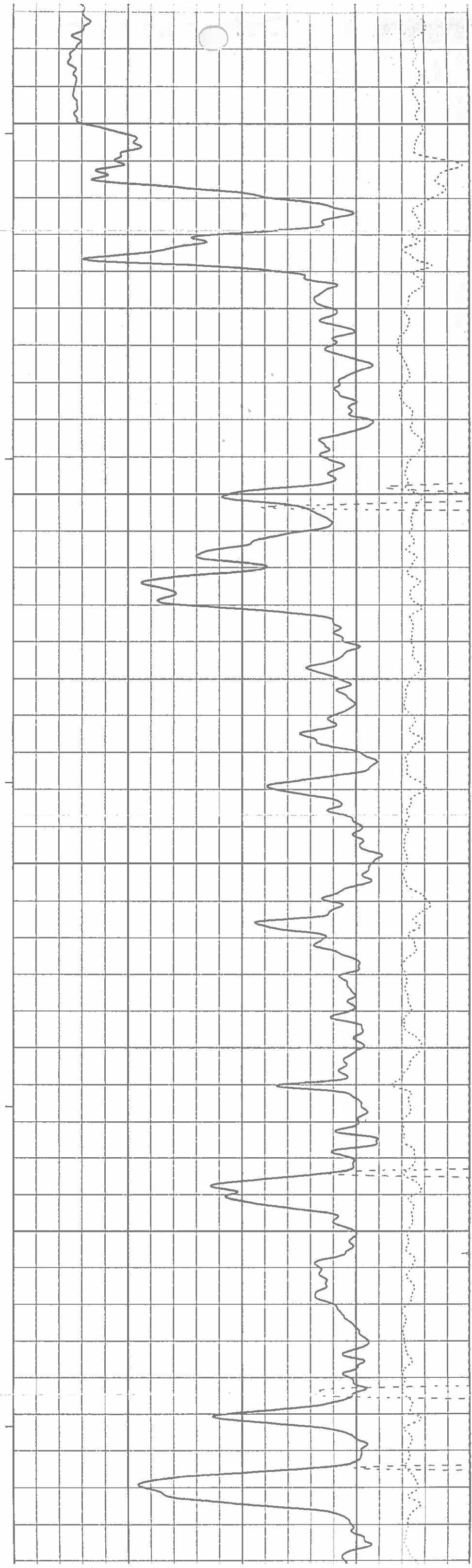
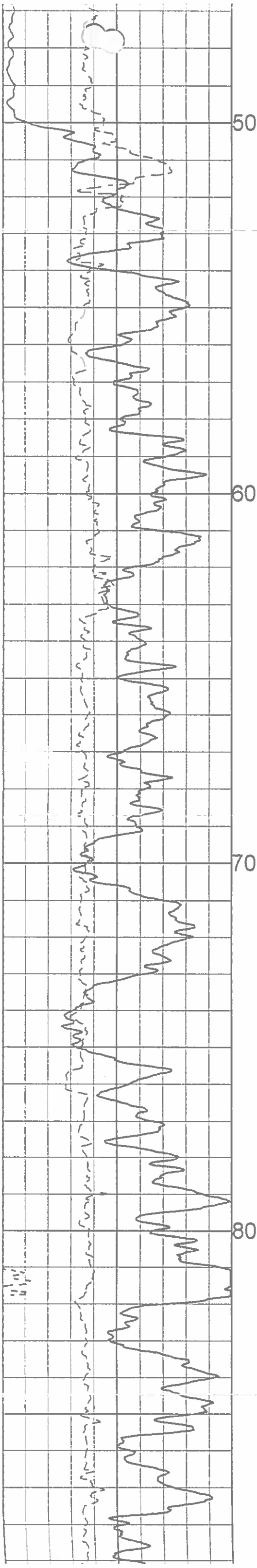
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C.0 07/14/2010

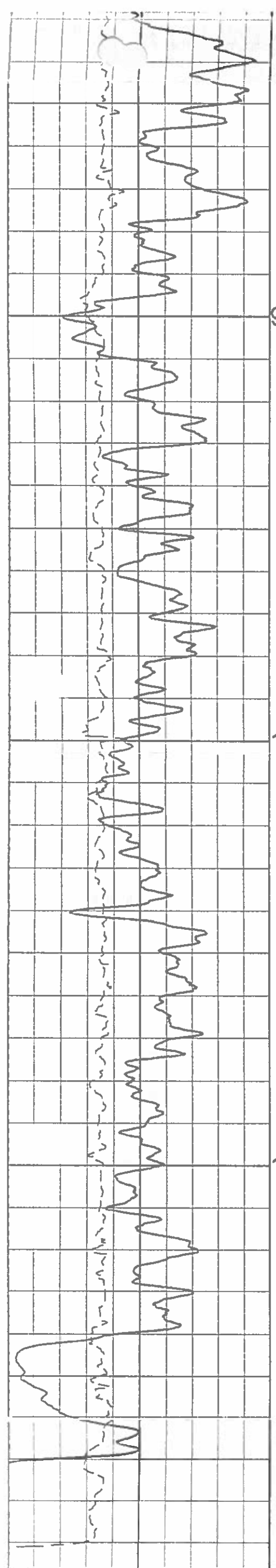
NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 90000

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64IE



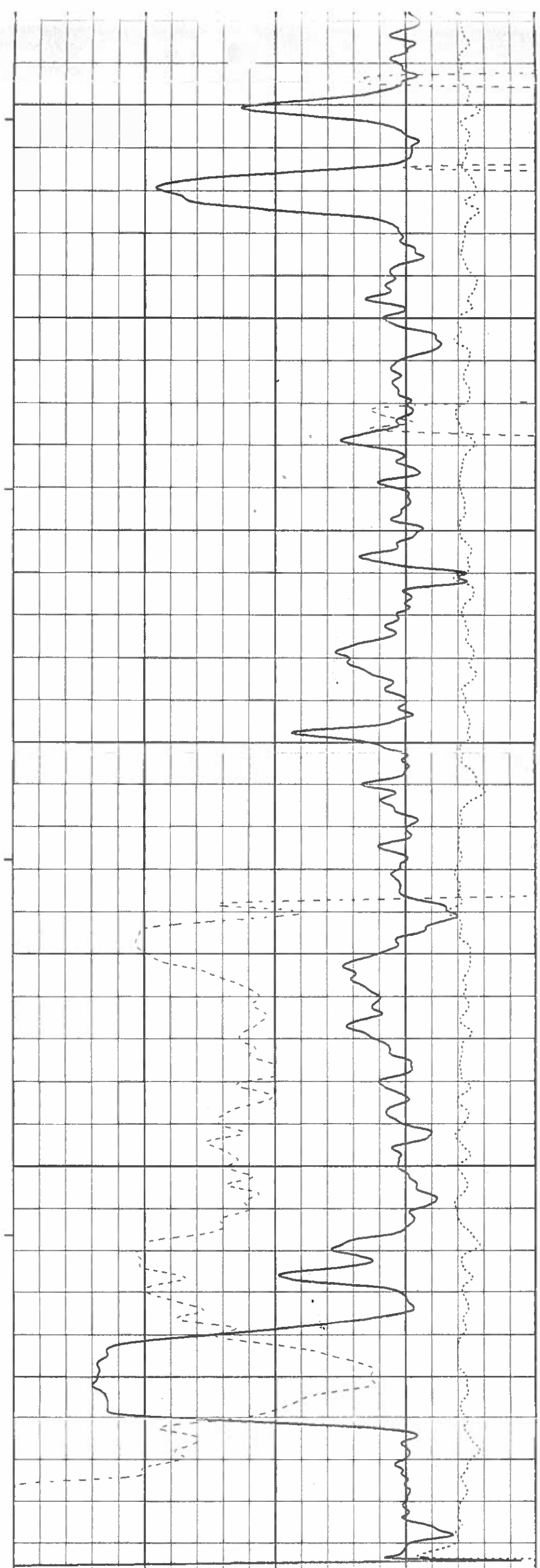




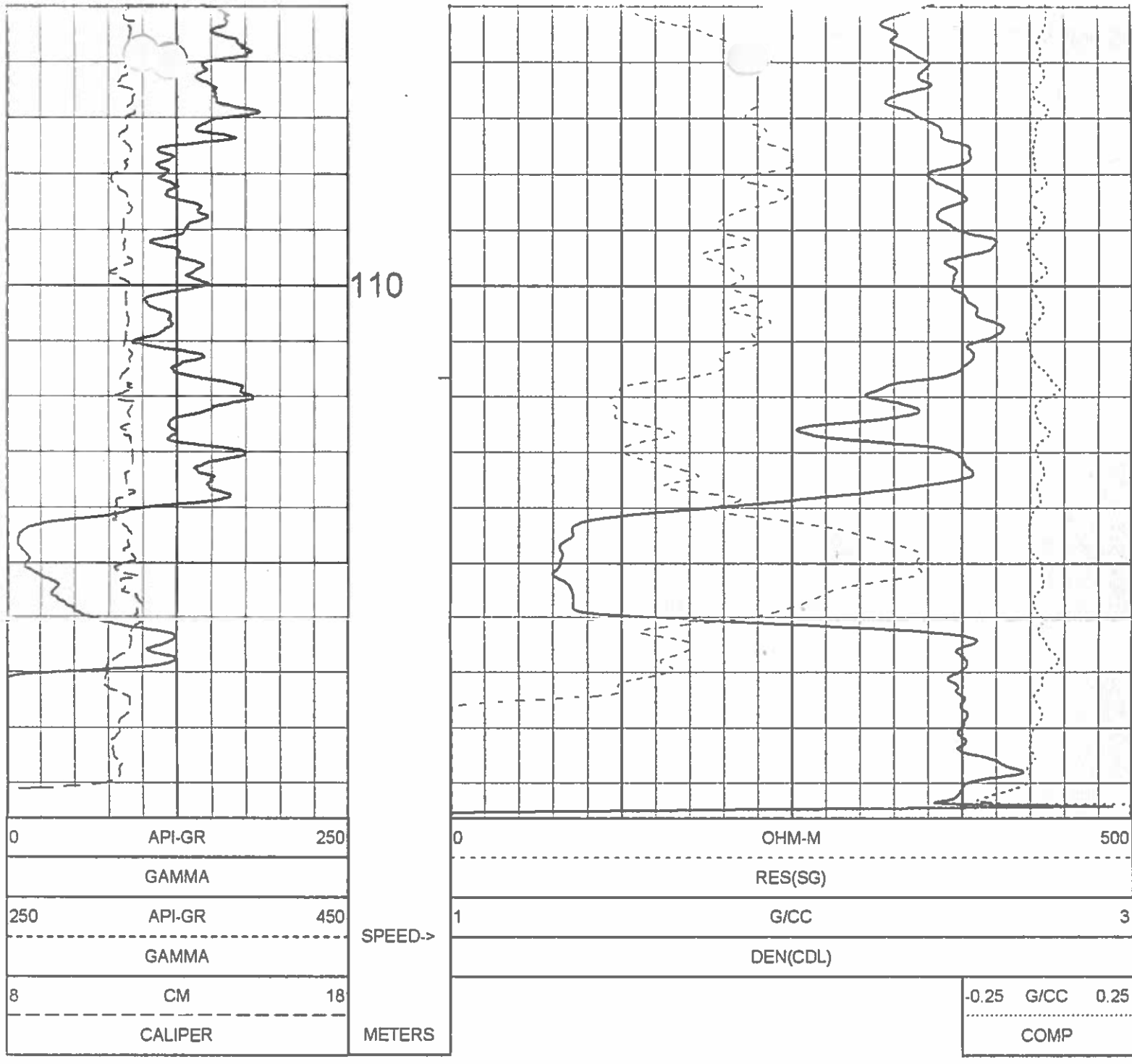


0	API-GR	250
	GAMMA	
250	API-GR	450
	GAMMA	
8	CM	18
	CALIPER	

SPEED->
METERS



0	OHM-M	500
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
	-0.25 G/CC 0.25	
	COMP	



1:100 BULK DENSITY BR10-44 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C.0 07/14/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-44 10/13/10 10:40
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-44

COMPANY: WESTERN COAL CORPORATION
WELL: BR 10-44
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA
OTHER SERVICES: NEUTRON

SECTION: BRULE NORTH
TOWNSHIP: N/A
RANGE: N/A
LICENSE NO.: N/A
UNIQUE WELL ID.: N/A
PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

DATE: 10/13/10
DEPTH DRILLER: 120.39
BIT SIZE: 11.43
LOG TOP: 0.24
LOG BOTTOM: 119.60
CASING LOGGER: 3.048
CASING DRILLER: 3.048
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
MUD USED BY: G. HOLMLUND
MUD ADDED BY: T. NEAL
REMARKS 1: VERTICAL
REMARKS 2:

ELEVATION KB: N/A
ELEVATION DF: N/A
ELEVATION GL: N/A
RIG NUMBER:
LOGGER TD:
ARRIVAL TIME:
DEPARTURE TIME:
CIRC STOPPED: N/A

LOG TOP: 0.24
LOG BOTTOM: 119.60
CASING LOGGER: 3.048
CASING DRILLER: 3.048
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
MUD USED BY: G. HOLMLUND
MUD ADDED BY: T. NEAL
REMARKS 1: VERTICAL
REMARKS 2:

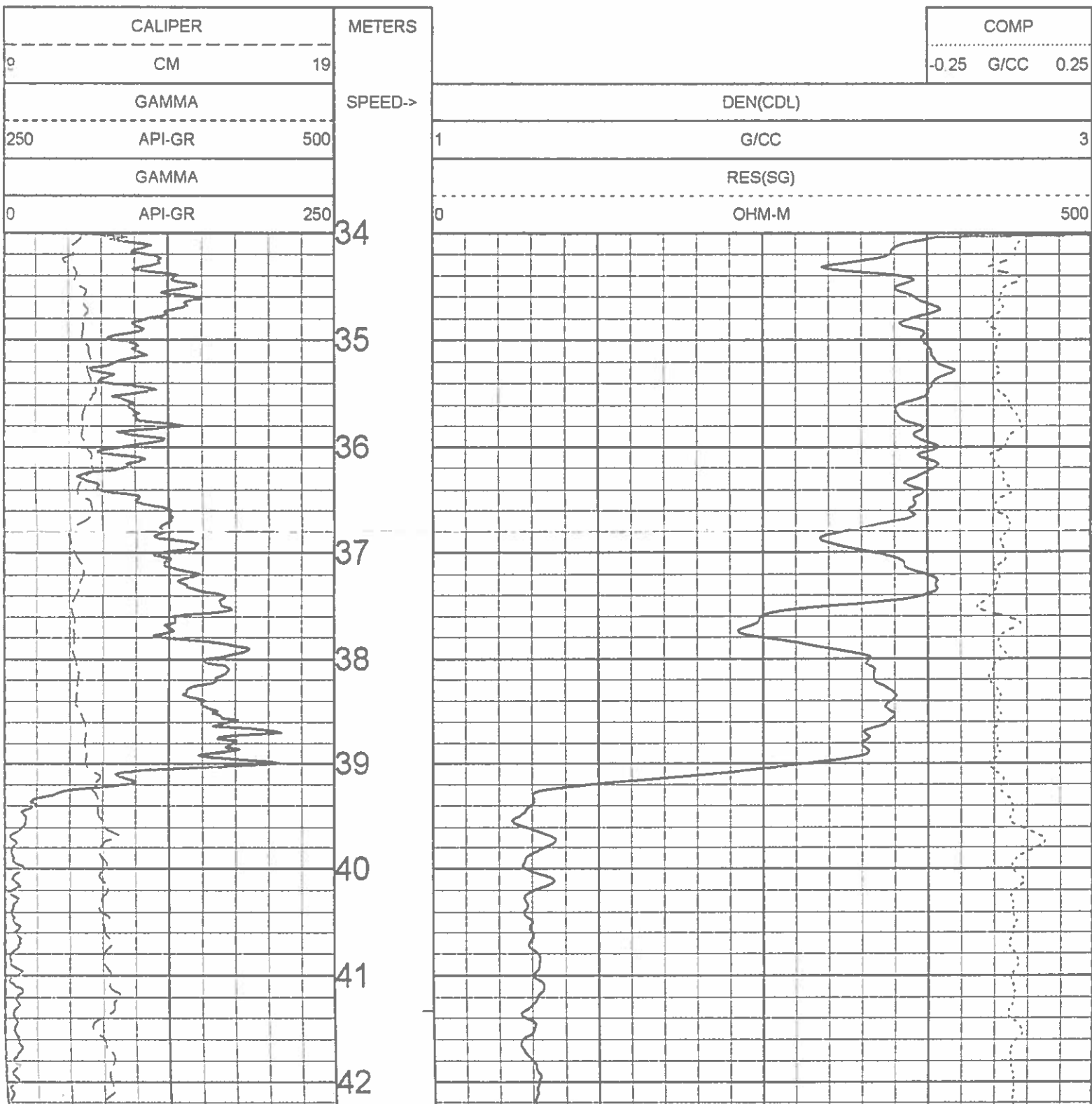
LOG TOP: 0.24
LOG BOTTOM: 119.60
CASING LOGGER: 3.048
CASING DRILLER: 3.048
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
MUD USED BY: G. HOLMLUND
MUD ADDED BY: T. NEAL
REMARKS 1: VERTICAL
REMARKS 2:

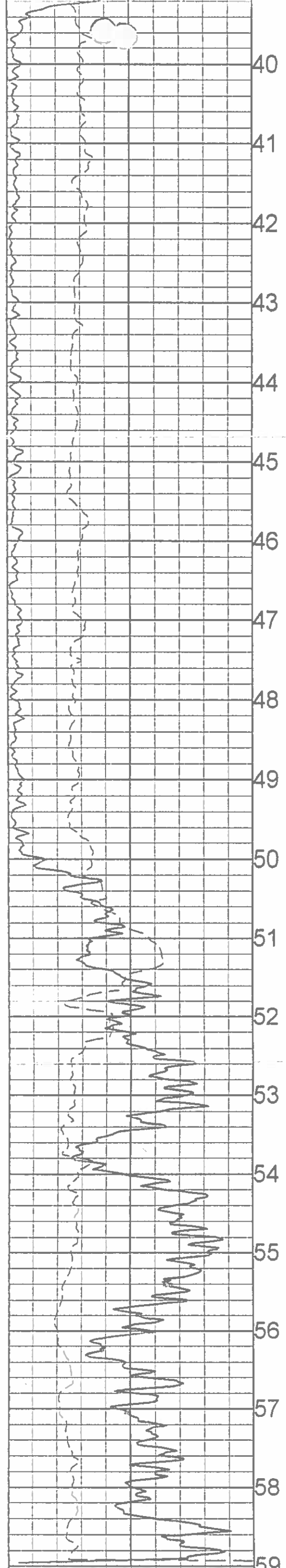
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-44 10/13/10

LOG PARAMETERS

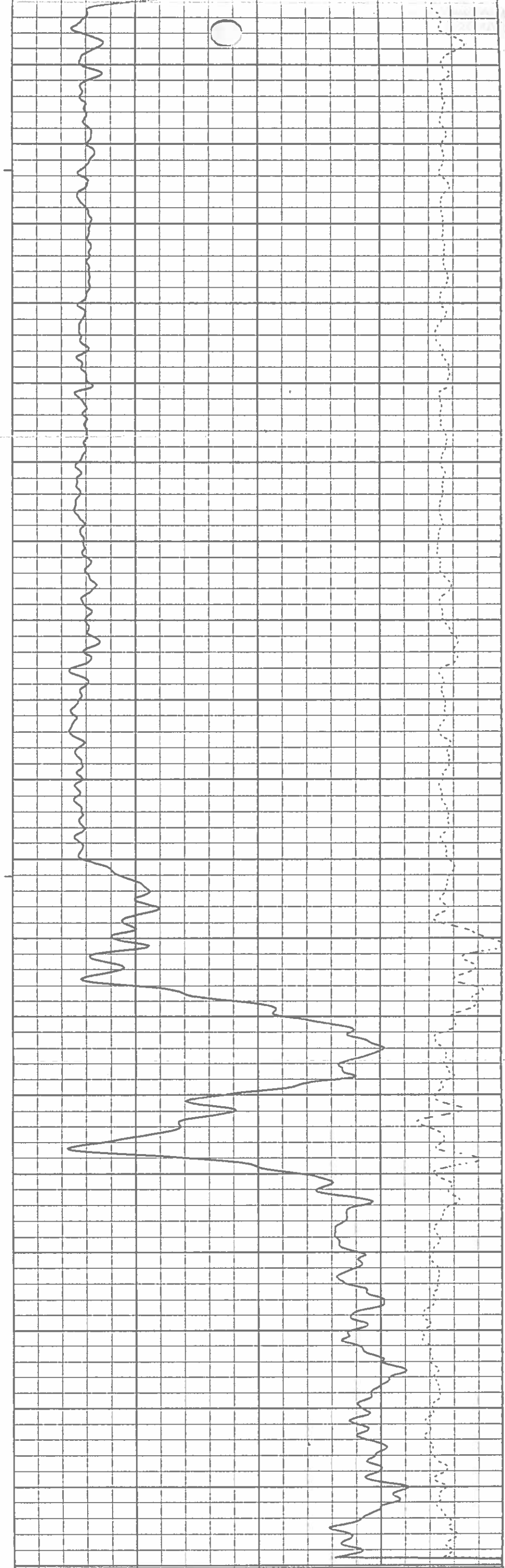
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010
NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 90000
VERSION = 3.64IE
MATRIX DELTA T : 177
BIT SIZE : 11.43



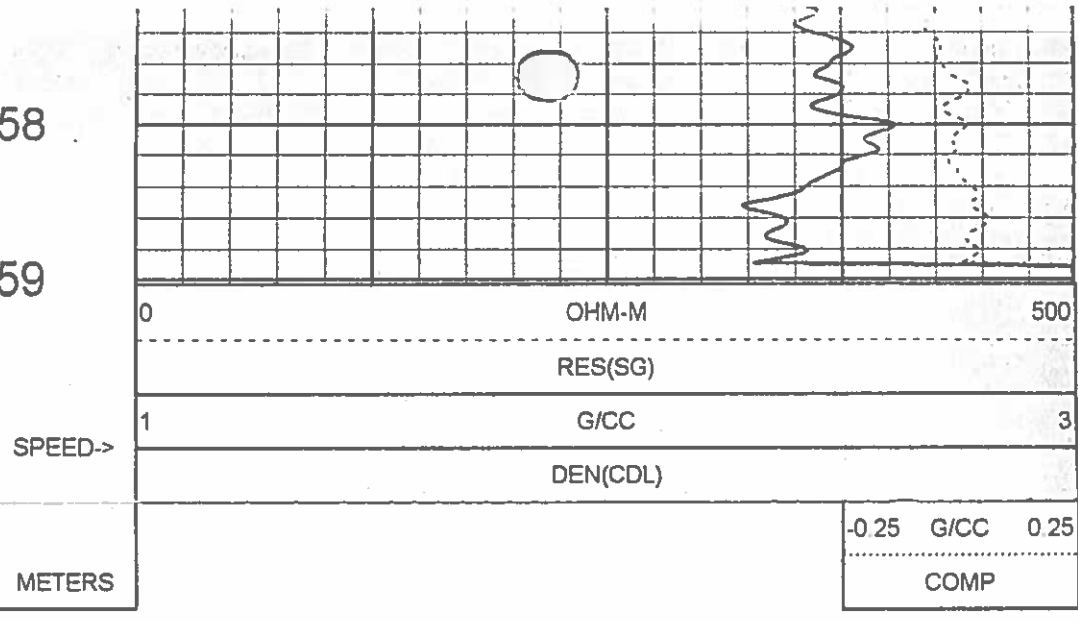
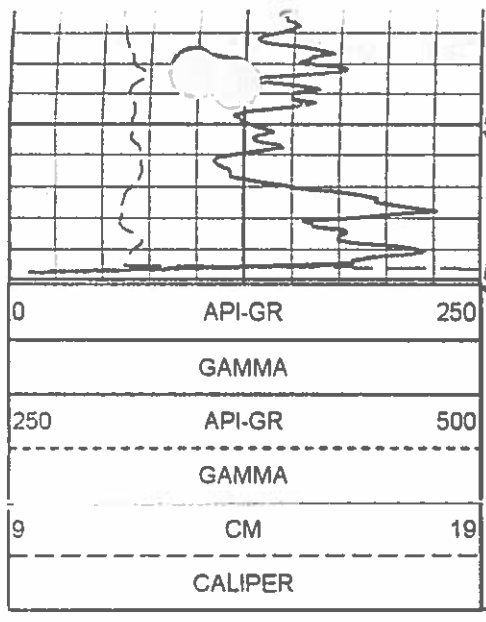


0	API-GR	250
	GAMMA	
250	API-GR	500
	GAMMA	

SPEED->



0	OHM-M	500
	RES(SG)	
1	G/CC	3
	DEN(C/D)	



1:50 BULK DENSITY EXPANDED BR10-44 10/13/10

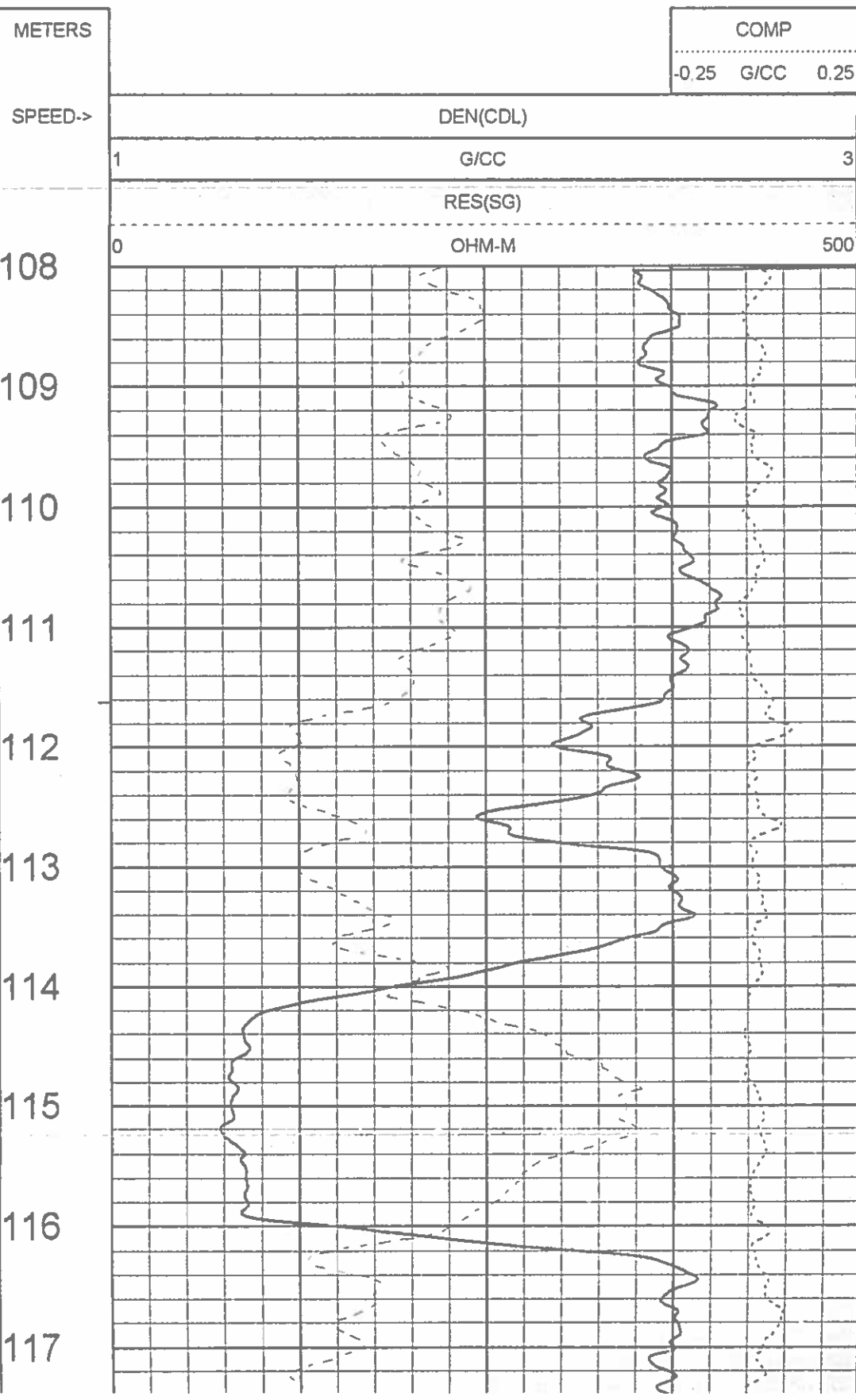
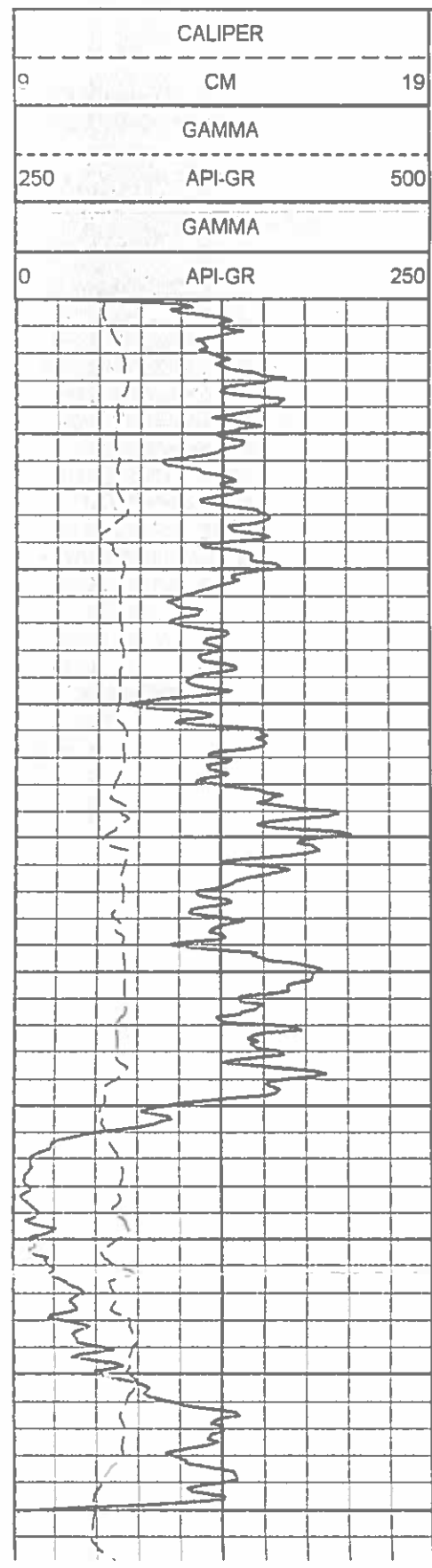
LOG PARAMETERS

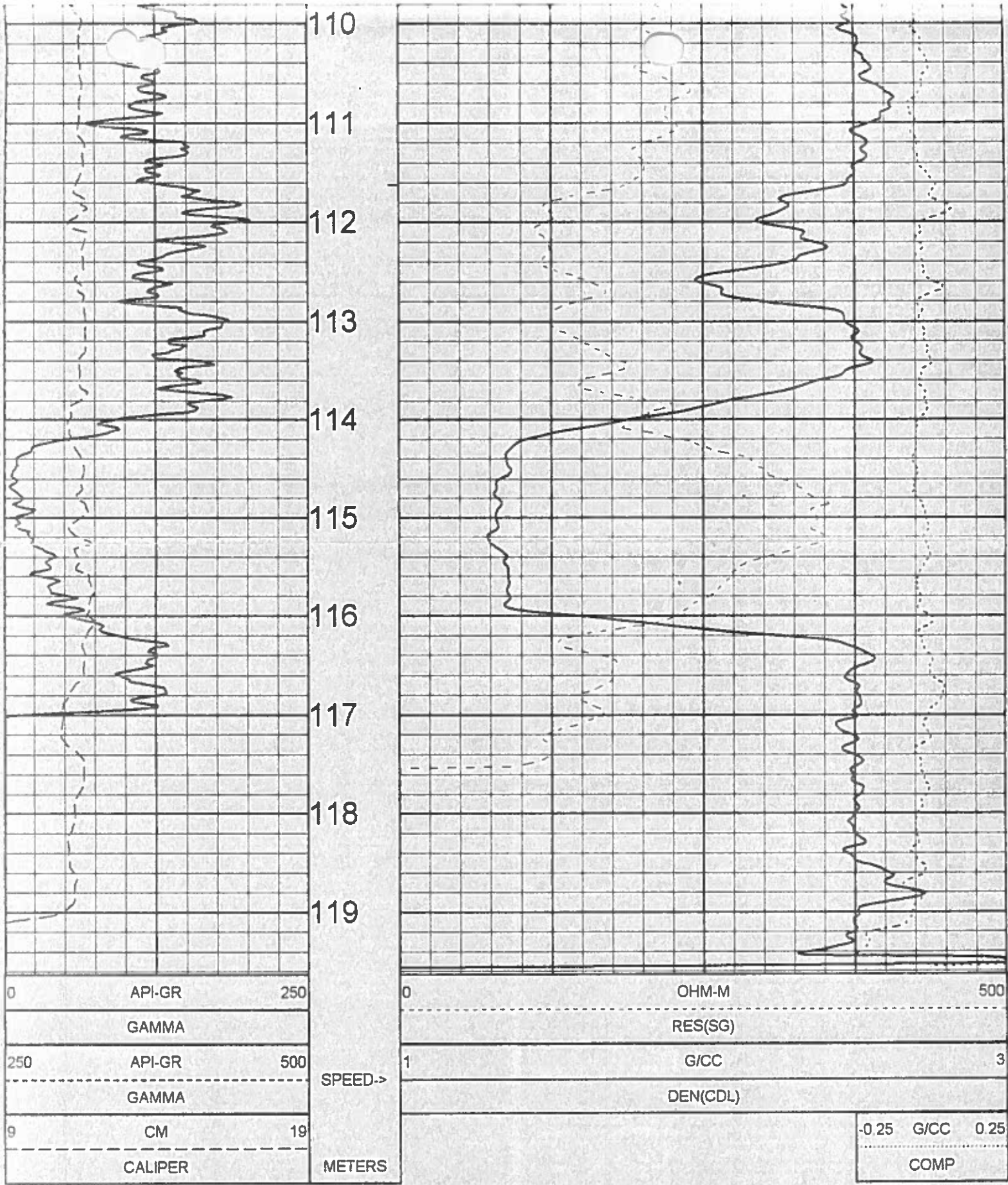
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.64IE

1:50 BULK DENSITY EXPANDED BR10-44 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-44 10/13/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-44 10/13/10 10:40
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3876.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63809.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA - NEUTRON

BR10-44

COMPANY : WESTERN COAL CORPORATION

WELL : BR10-44

FIELD : BRULE

COUNTRY : CANADA

PROVINCE : BRITISH COLUMBIA

LOCATION : BRULE NORTH

TOWNSHIP : N/A

RANGE : N/A

LICENSE NO. : N/A

UNIQUE WELL ID. : N/A

OTHER SERVICES:
DENSITY

PERMANENT DATUM : EGL

LOG MEASURED FROM : EGL

DRL MEASURED FROM : EGL

DATE : 10/13/10

DEPTH DRILLER : 120.39

BIT SIZE : 11.43

LOG TOP : 1.76

LOG BOTTOM : 119.66

CASING LOGGER : 3.048

CASING DRILLER : 3.048

CASING TYPE : STEEL

BOREHOLE FLUID : WATER

FORM TEMPERATURE : N/A

MUD RES : N/A

MUD WEIGHT : 1.00

DESIGNED BY : G. HOLMLUND

LOGGED BY : T. NEAL

REMARKS 1 : VERTICAL

REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

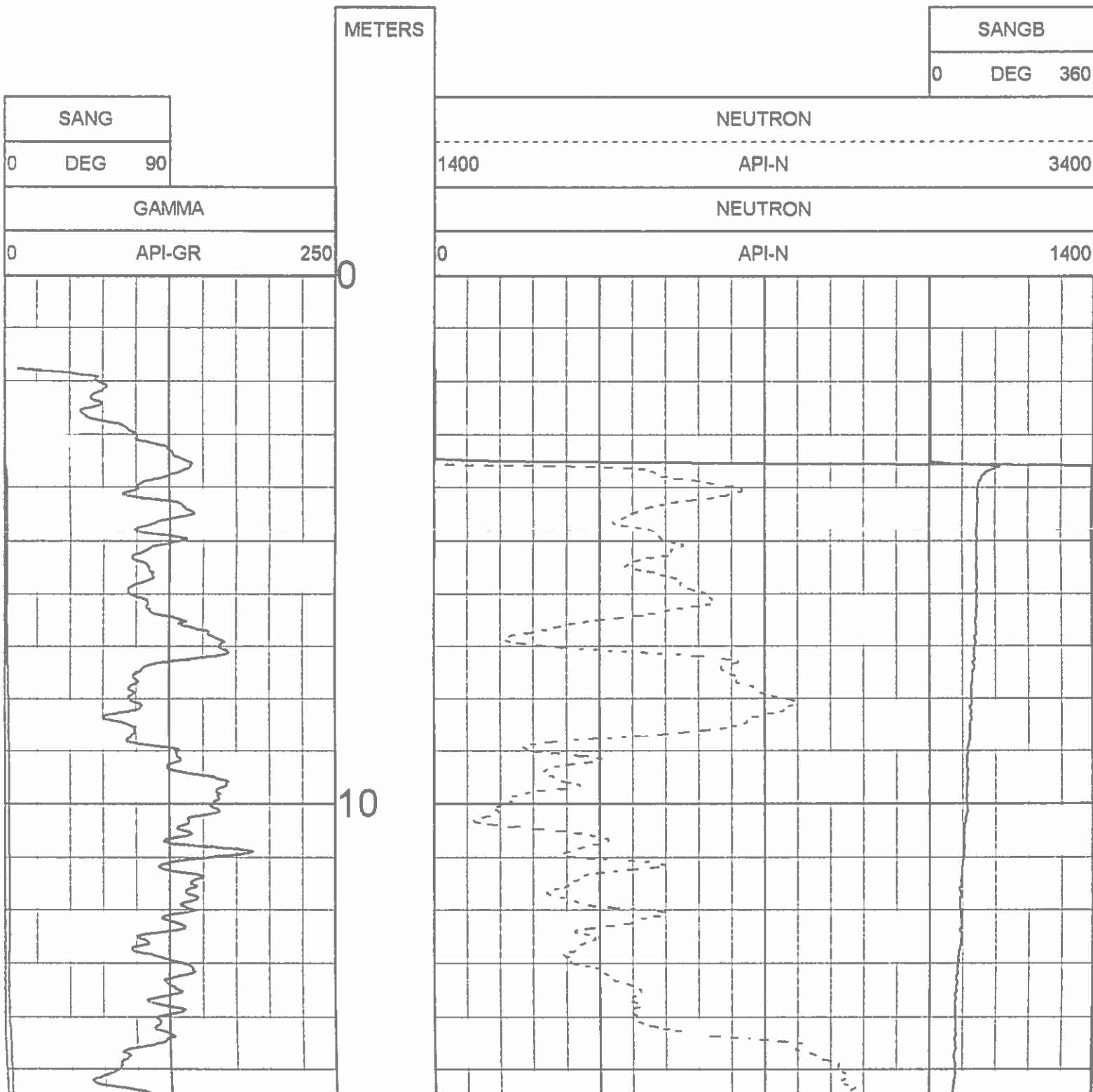
1:100 NEUTRON BR10-44 10/13/10

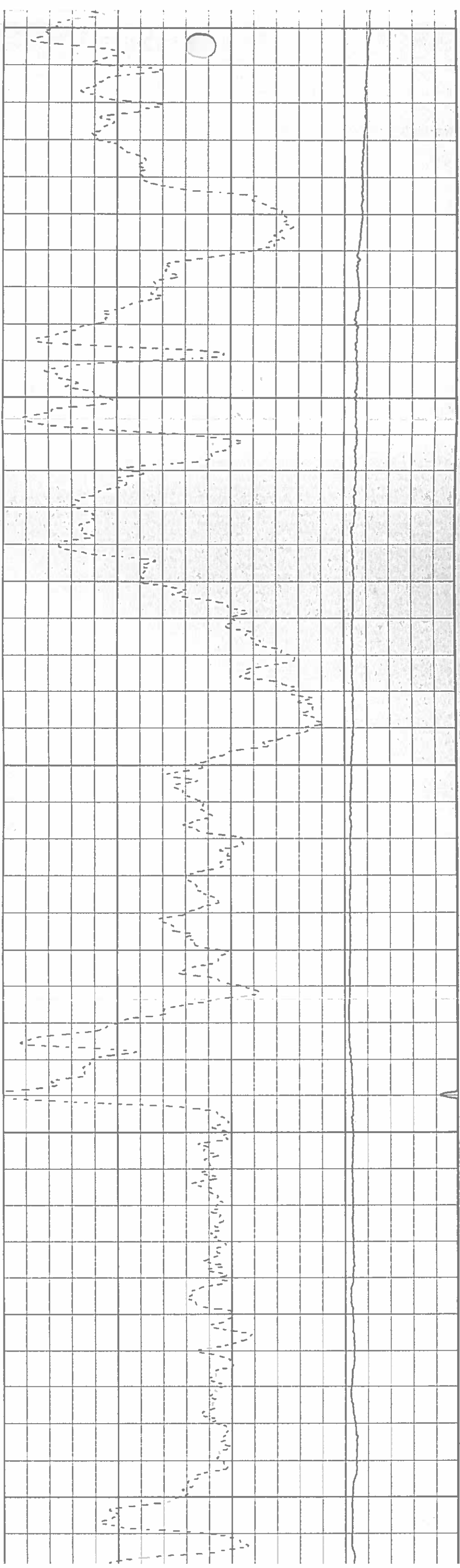
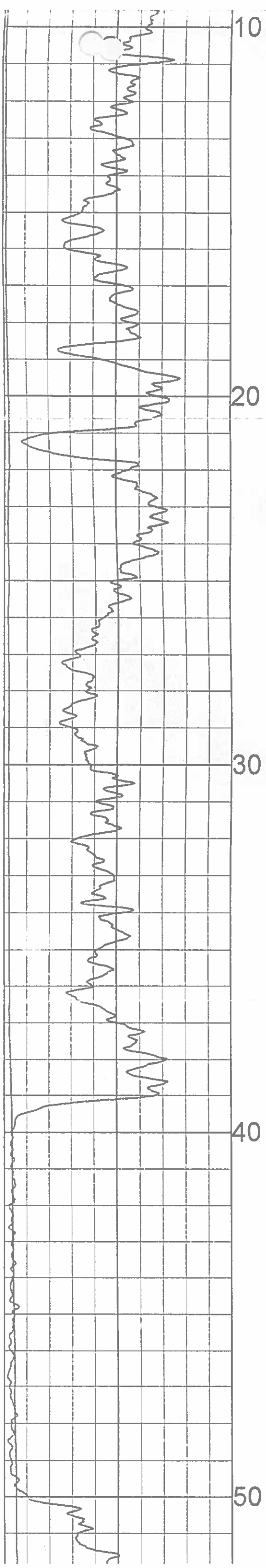
LOG PARAMETERS

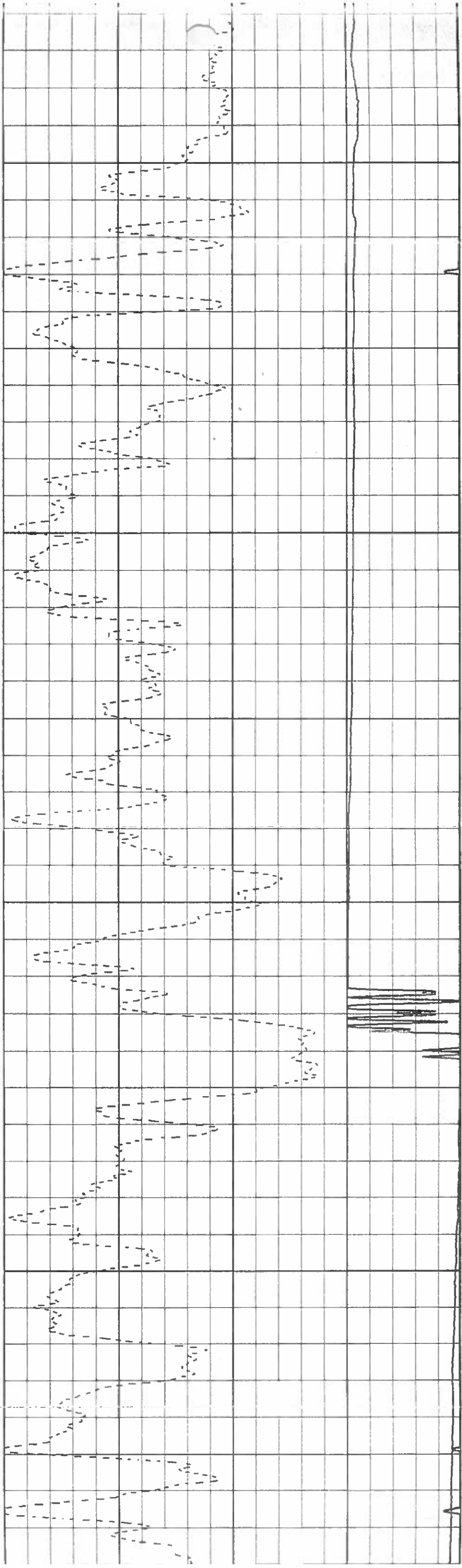
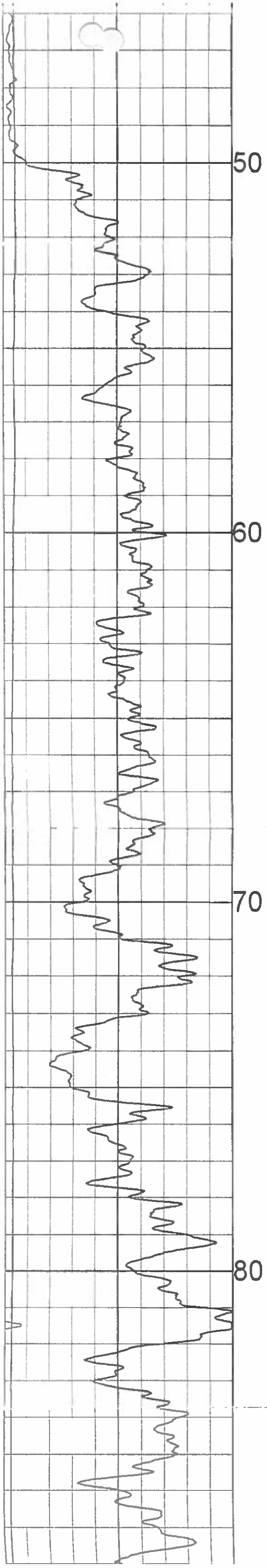
MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010

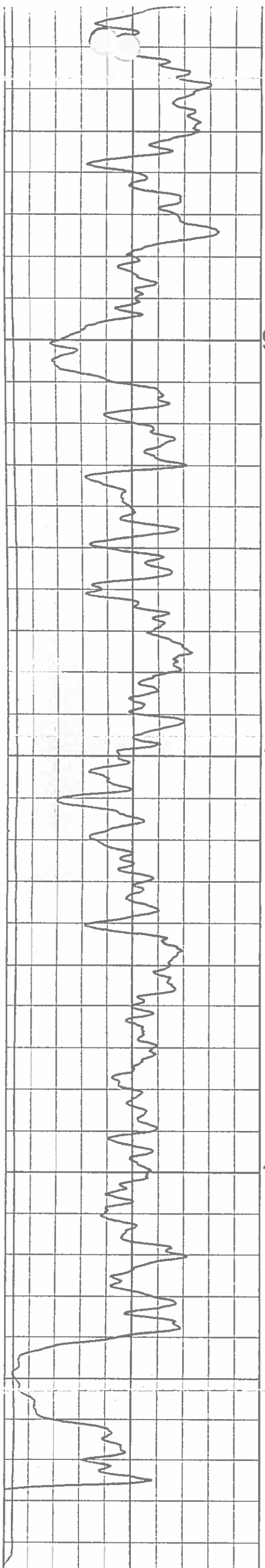
NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 90000

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.641E







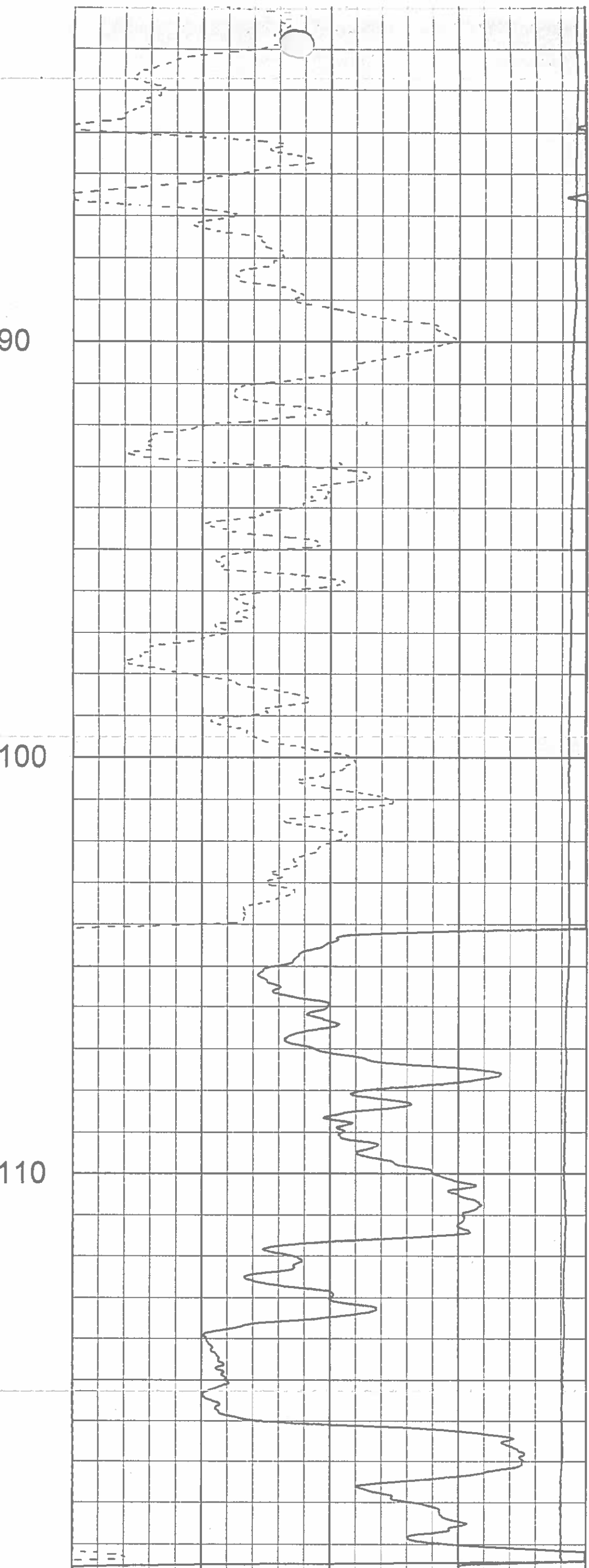


0 API-GR 250

GAMMA

0 DEG 90

SANG



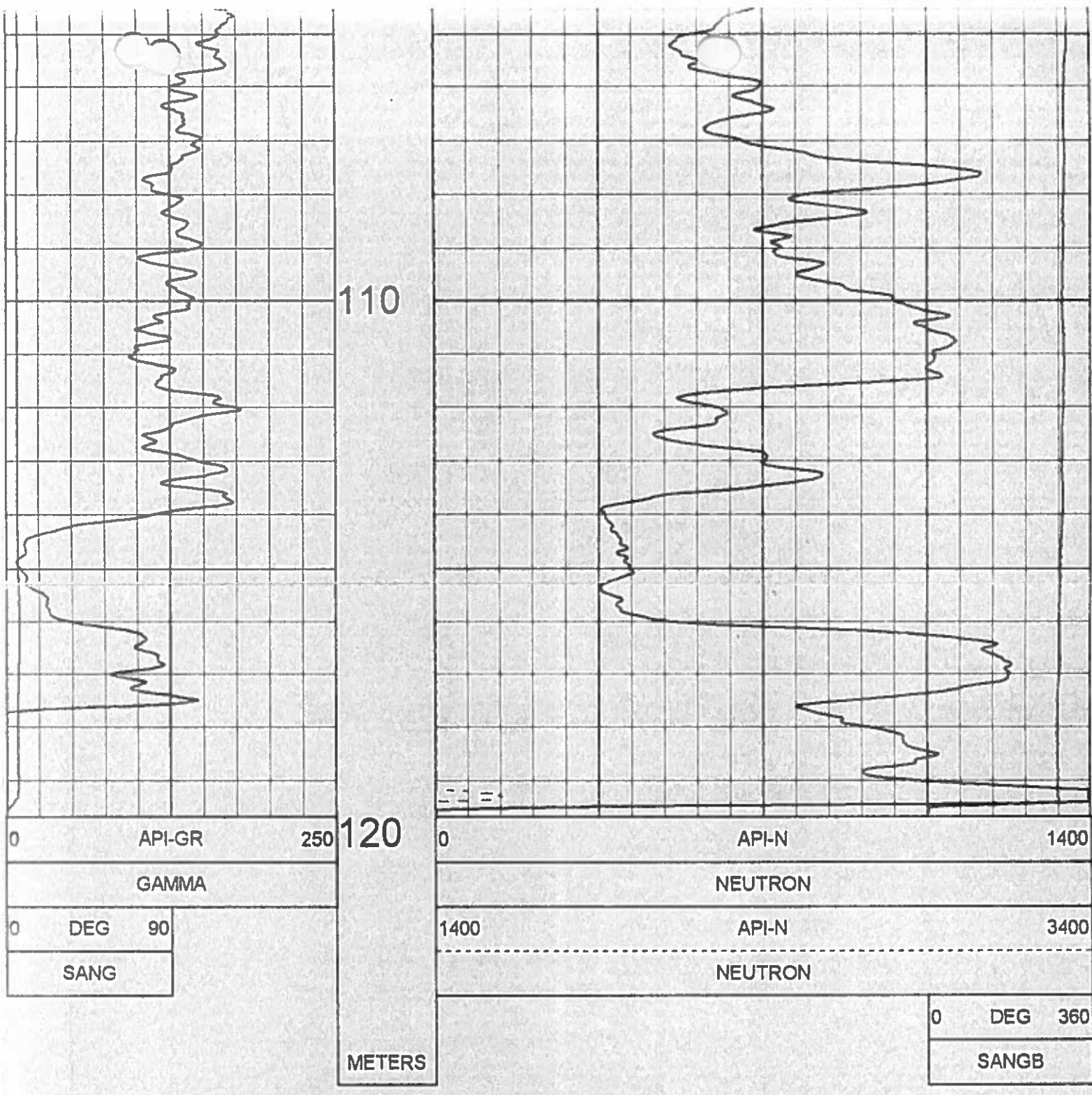
0 API-N 1400

NEUTRON

1400 API-N 3400

NEUTRON

0 DEG 360



1:100 NEUTRON BR10-44 10/13/10

LOG PARAMETERS

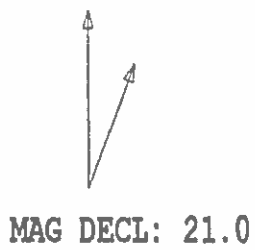
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-44 10/13/10 10:14
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

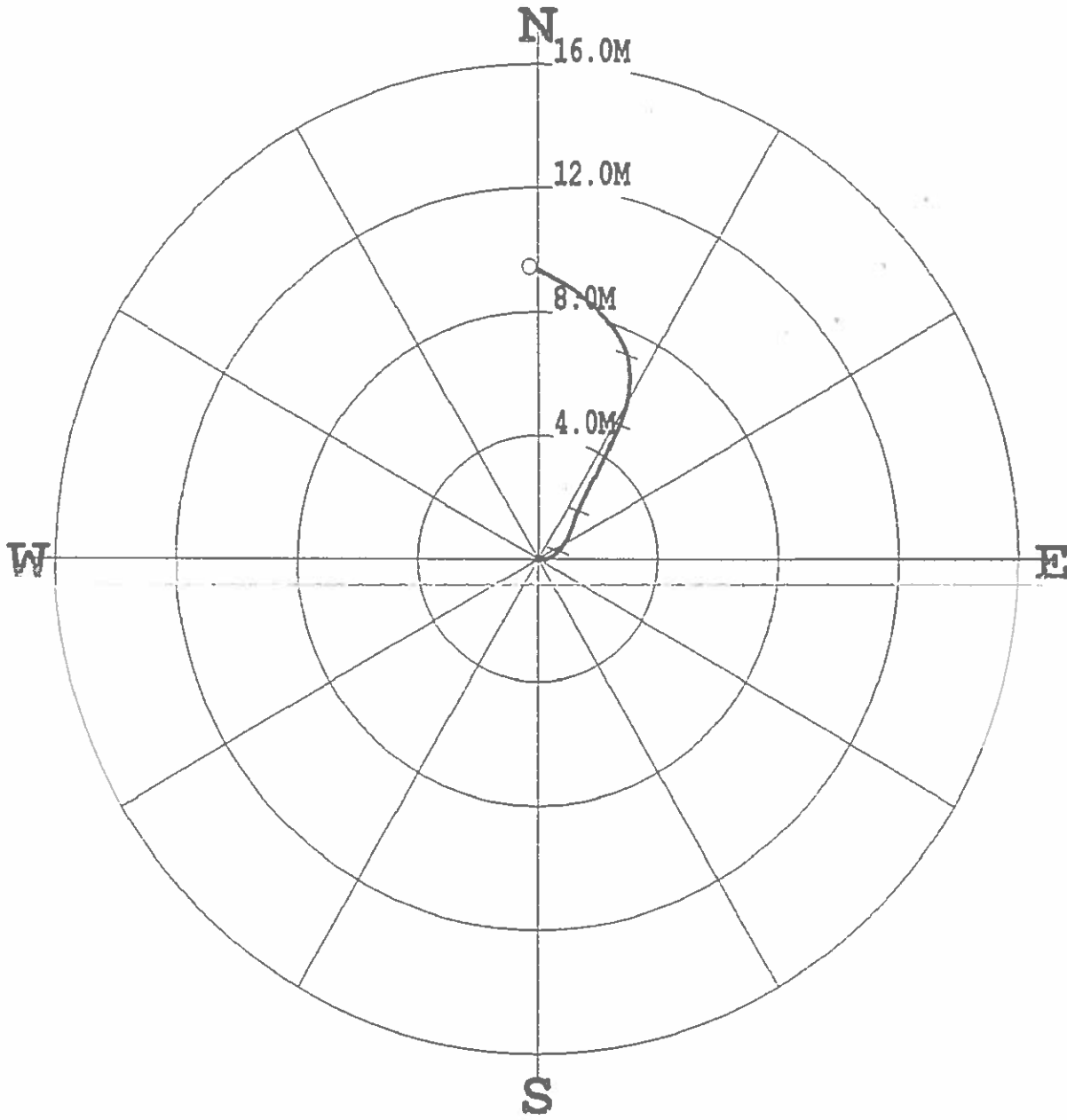
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRON	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16N)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64N)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-44
 DATE OF LOG: 10/13/10
 PROBE: 9057A 4429



SCALE: 2 M/CM
 TRUE DEPTH: 118.78 M
 AZIMUTH: 358.3
 DISTANCE: 9.5 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE




* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-44
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/13/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-44_10-13-10_10-14_9057A_.02_1.76_119.66_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	4.00	-0.01	0.01	0.0	124.7	2.0	108.3
5.00	5.00	-0.02	0.04	0.0	112.1	1.9	106.6
6.00	6.00	-0.03	0.07	0.1	109.3	1.9	103.7
7.00	7.00	-0.03	0.11	0.1	107.6	2.0	100.4
8.00	8.00	-0.04	0.14	0.1	104.7	2.5	93.5
9.00	9.00	-0.04	0.19	0.2	101.6	2.6	84.2
10.00	10.00	-0.03	0.23	0.2	98.2	2.6	83.6
11.00	10.99	-0.03	0.28	0.3	95.1	2.8	77.5
12.00	11.99	-0.01	0.33	0.3	91.4	3.1	67.2
13.00	12.99	0.01	0.38	0.4	88.4	2.9	63.3
14.00	13.99	0.04	0.42	0.4	85.2	3.1	58.8
15.00	14.99	0.07	0.47	0.5	82.1	3.1	58.3
16.00	15.99	0.10	0.52	0.5	79.3	3.1	45.8
17.00	16.99	0.13	0.55	0.6	76.3	2.9	48.4
18.00	17.98	0.17	0.58	0.6	74.0	2.6	26.8
19.00	18.98	0.21	0.62	0.7	71.5	3.1	41.3
20.00	19.98	0.25	0.66	0.7	69.1	3.5	37.5
21.00	20.98	0.30	0.70	0.8	66.7	3.7	43.6
22.00	21.98	0.35	0.75	0.8	64.6	4.4	40.0
23.00	22.97	0.40	0.79	0.9	62.8	3.5	43.3
24.00	23.97	0.45	0.82	0.9	61.1	3.5	33.5
25.00	24.97	0.51	0.86	1.0	59.3	4.1	34.6
26.00	25.97	0.57	0.89	1.1	57.6	3.4	32.4
27.00	26.97	0.62	0.92	1.1	56.0	3.9	29.0
28.00	27.96	0.69	0.96	1.2	54.4	4.2	31.0
29.00	28.96	0.75	0.99	1.2	53.0	4.3	30.1
30.00	29.96	0.81	1.03	1.3	51.6	4.1	20.7
31.00	30.96	0.88	1.05	1.4	50.1	4.1	20.4
32.00	31.95	0.95	1.08	1.4	48.6	4.2	19.6
33.00	32.95	1.02	1.11	1.5	47.3	4.6	20.7
34.00	33.95	1.10	1.13	1.6	45.9	4.5	19.6
35.00	34.94	1.17	1.16	1.6	44.7	4.5	19.5
36.00	35.94	1.25	1.18	1.7	43.5	4.7	18.5
37.00	36.94	1.32	1.20	1.8	42.4	4.5	14.8
38.00	37.93	1.40	1.23	1.9	41.3	5.1	19.8
39.00	38.93	1.49	1.27	2.0	40.4	6.0	24.5

22.00	21.98	0.35	0.75	0.8	64.6	4.4	40.0
23.00	22.97	0.40	0.79	0.9	6	3.5	43.3
24.00	23.97	0.45	0.82	0.9	6	3.5	33.5
25.00	24.97	0.51	0.86	1.0	59.3	4.1	34.6
26.00	25.97	0.57	0.89	1.1	57.6	3.4	32.4
27.00	26.97	0.62	0.92	1.1	56.0	3.9	29.0
28.00	27.96	0.69	0.96	1.2	54.4	4.2	31.0
29.00	28.96	0.75	0.99	1.2	53.0	4.3	30.1
30.00	29.96	0.81	1.03	1.3	51.6	4.1	20.7
31.00	30.96	0.88	1.05	1.4	50.1	4.1	20.4
32.00	31.95	0.95	1.08	1.4	48.6	4.2	19.6
33.00	32.95	1.02	1.11	1.5	47.3	4.6	20.7
34.00	33.95	1.10	1.13	1.6	45.9	4.5	19.6
35.00	34.94	1.17	1.16	1.6	44.7	4.5	19.5
36.00	35.94	1.25	1.18	1.7	43.5	4.7	18.5
37.00	36.94	1.32	1.20	1.8	42.4	4.5	14.8
38.00	37.93	1.40	1.23	1.9	41.3	5.1	19.8
39.00	38.93	1.49	1.27	2.0	40.4	6.0	24.5
40.00	39.92	1.58	1.32	2.1	39.7	6.8	29.0
41.00	40.92	1.69	1.37	2.2	39.0	6.7	24.9
42.00	41.91	1.80	1.42	2.3	38.3	6.7	26.0
43.00	42.90	1.90	1.47	2.4	37.7	7.2	28.1
44.00	43.89	2.02	1.53	2.5	37.2	7.6	26.0
45.00	44.89	2.14	1.59	2.7	36.5	7.9	25.2
46.00	45.87	2.27	1.65	2.8	36.1	8.9	31.3
47.00	46.86	2.41	1.72	3.0	35.6	9.2	17.6
48.00	47.85	2.55	1.79	3.1	35.1	8.8	35.8
49.00	48.84	2.67	1.88	3.3	35.2	9.3	34.4
50.00	49.82	2.82	1.97	3.4	35.0	9.9	24.4
51.00	50.81	2.98	2.04	3.6	34.4	9.8	23.1
52.00	51.79	3.13	2.12	3.8	34.1	10.2	28.8
53.00	52.78	3.29	2.20	4.0	33.8	9.7	24.8
54.00	53.76	3.43	2.27	4.1	33.4	9.5	27.2
55.00	54.75	3.58	2.34	4.3	33.1	8.8	23.1
56.00	55.74	3.72	2.40	4.4	32.8	9.0	25.7
57.00	56.73	3.87	2.47	4.6	32.6	9.6	26.8
58.00	57.71	4.02	2.55	4.8	32.4	10.0	25.6
59.00	58.70	4.17	2.62	4.9	32.1	9.1	24.4
60.00	59.69	4.31	2.67	5.1	31.8	8.3	21.7
61.00	60.68	4.44	2.73	5.2	31.6	7.8	21.7
62.00	61.67	4.56	2.78	5.3	31.3	7.7	21.1
63.00	62.66	4.69	2.82	5.5	31.0	7.6	19.4
64.00	63.65	4.81	2.86	5.6	30.7	7.1	17.3
65.00	64.64	4.92	2.90	5.7	30.5	6.7	16.2
66.00	65.64	5.04	2.93	5.8	30.2	6.8	13.8
67.00	66.63	5.15	2.96	5.9	29.8	6.6	12.6
68.00	67.62	5.26	2.98	6.0	29.5	6.4	8.3
69.00	68.62	5.37	2.99	6.2	29.1	6.5	8.1
70.00	69.61	5.49	3.01	6.3	28.7	6.7	7.1
71.00	70.60	5.60	3.02	6.4	28.3	6.7	3.9
72.00	71.60	5.71	3.03	6.5	27.9	5.8	3.0
73.00	72.59	5.81	3.03	6.6	27.5	6.1	1.6
74.00	73.59	5.92	3.03	6.7	27.1	6.4	1.9
75.00	74.58	6.04	3.02	6.8	26.6	6.6	358.2
76.00	75.57	6.15	3.02	6.8	26.1	6.4	354.0
77.00	76.57	6.26	3.00	6.9	25.6	6.5	355.4
78.00	77.56	6.37	2.99	7.0	25.1	6.3	352.1
79.00	78.55	6.48	2.97	7.1	24.6	6.1	346.8
80.00	79.55	6.58	2.95	7.2	24.1	6.2	344.6
81.00	80.54	6.68	2.91	7.3	23.6	6.0	340.5
82.00	81.54	6.78	2.88	7.4	23.0	5.8	337.5
83.00	82.53	6.87	2.83	7.4	22.4	5.8	332.6
84.00	83.53	6.96	2.79	7.5	21.8	5.8	334.6
85.00	84.52	7.05	2.75	7.6	21.3	6.0	330.6
86.00	85.52	7.14	2.69	7.6	20.7	6.0	328.3
87.00	86.51	7.23	2.64	7.7	20.1	5.9	329.0
88.00	87.51	7.32	2.59	7.8	19.5	5.8	327.0
89.00	88.50	7.40	2.53	7.8	18.9	5.7	326.9
90.00	89.50	7.49	2.47	7.9	18.3	6.4	320.8
91.00	90.49	7.57	2.40	7.9	17.6	6.2	317.5
92.00	91.48	7.65	2.33	8.0	16.9	6.2	318.0
93.00	92.48	7.73	2.25	8.1	16.2	6.3	319.3
94.00	93.47	7.81	2.18	8.1	15.6	6.6	316.2
95.00	94.46	7.90	2.10	8.2	14.9	6.8	313.5
96.00	95.46	7.98	2.01	8.2	14.1	6.9	314.5
97.00	96.45	8.07	1.93	8.3	13.4	5.8	314.2
98.00	97.44	8.15	1.84	8.4	12.7	6.7	312.4
99.00	98.44	8.22	1.76	8.4	12.0	6.6	311.8
100.00	99.43	8.30	1.67	8.5	11.4	7.1	311.0
101.00	100.42	8.38	1.57	8.5	10.6	7.0	310.6
102.00	101.42	8.46	1.49	8.6	10.0	6.3	309.3
103.00	102.41	8.53	1.40	8.6	9.3	6.7	309.5
104.00	103.40	8.60	1.31	8.7	8.7	7.0	311.4
105.00	104.39	8.68	1.22	8.8	8.0	7.0	308.9
106.00	105.39	8.75	1.12	8.8	7.3	6.6	303.0
107.00	106.38	8.81	1.03	8.9	6.6	6.4	302.7
108.00	107.38	8.87	0.94	8.9	6.0	6.2	301.7
109.00	108.37	8.93	0.84	9.0	5.4	6.5	301.3
110.00	109.36	8.98	0.74	9.0	4.7	6.7	298.5
111.00	110.36	9.04	0.64	9.1	4.0	6.7	302.0
112.00	111.35	9.10	0.54	9.1	3.4	6.7	300.6
113.00	112.34	9.16	0.44	9.2	2.7	6.7	296.4
114.00	113.34	9.21	0.34	9.2	2.1	6.5	298.7
115.00	114.33	9.26	0.23	9.3	1.4	6.6	287.6
116.00	115.32	9.31	0.12	9.3	0.7	7.1	292.1
117.00	116.31	9.36	0.00	9.4	0.0	7.1	293.9
118.00	117.31	9.40	-0.11	9.4	359.3	6.6	287.4
119.00	118.30	9.43	-0.22	9.4	358.7	6.6	287.2
119.48	118.78	9.45	-0.27	9.5	358.3	6.7	290.8

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,473.86	6,139,903.41	1,340.95

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
125	-88	119.60	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	124.7	-88.00
5.00	112.1	-88.10
6.00	109.3	-88.10
7.00	107.6	-88.00
8.00	104.7	-87.50
9.00	101.6	-87.40
10.00	98.2	-87.40
11.00	95.1	-87.20
12.00	91.4	-86.90
13.00	88.4	-87.10
14.00	85.2	-86.90
15.00	82.1	-86.90
16.00	79.3	-86.90
17.00	76.3	-87.10
18.00	74.0	-87.40
19.00	71.5	-86.90
20.00	69.1	-86.50
21.00	66.7	-86.30
22.00	64.6	-85.60
23.00	62.8	-86.50
24.00	61.1	-86.50
25.00	59.3	-85.90
26.00	57.6	-86.60
27.00	56.0	-86.10
28.00	54.4	-85.80
29.00	53.0	-85.70
30.00	51.6	-85.90

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.40	2.40		
18.40	18.90	0.50		
18.90	20.80	1.90		
20.80	21.80	1.00		
39.10	50.20	11.10		
50.20	51.80	1.60		
53.30	53.80	0.50		
113.80	116.20	2.40		

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

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Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-44**

year drilled: 2010


AREA:

**BURNT RIVER
BRULE**

31.00	50.1	-85.90
32.00	48.6	-85.80
33.00	47.3	-85.40
34.00	45.9	-85.50
35.00	44.7	-85.50
36.00	43.5	-85.30
37.00	42.4	-85.50
38.00	41.3	-84.90
39.00	40.4	-84.00
40.00	39.7	-83.20
41.00	39.0	-83.30
42.00	38.3	-83.30
43.00	37.7	-82.80
44.00	37.2	-82.40
45.00	36.5	-82.10
46.00	36.1	-81.10
47.00	35.6	-80.80
48.00	35.1	-81.20
49.00	35.2	-80.70
50.00	35.0	-80.10
51.00	34.4	-80.20
52.00	34.1	-79.80
53.00	33.8	-80.30
54.00	33.4	-80.50
55.00	33.1	-81.20
56.00	32.8	-81.00
57.00	32.6	-80.40
58.00	32.4	-80.00
59.00	32.1	-80.90
60.00	31.8	-81.70
61.00	31.6	-82.20
62.00	31.3	-82.30
63.00	31.0	-82.40
64.00	30.7	-82.90
65.00	30.5	-83.30
66.00	30.2	-83.20
67.00	29.8	-83.40
68.00	29.5	-83.60
69.00	29.1	-83.50
70.00	28.7	-83.30
71.00	28.3	-83.30
72.00	27.9	-84.20
73.00	27.5	-83.90
74.00	27.1	-83.60
75.00	26.6	-83.40

Date issued: Thursday, June 12, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
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76.00	26.1	-83.60
77.00	25.6	-83.50
78.00	25.1	-83.70
79.00	24.6	-83.90
80.00	24.1	-83.80
81.00	23.6	-84.00
82.00	23.0	-84.20
83.00	22.4	-84.20
84.00	21.8	-84.20
85.00	21.3	-84.00
86.00	20.7	-84.00
87.00	20.1	-84.10
88.00	19.5	-84.20
89.00	18.9	-84.30
90.00	18.3	-83.60
91.00	17.6	-83.80
92.00	16.9	-83.80
93.00	16.2	-83.70
94.00	15.6	-83.40
95.00	14.9	-83.20
96.00	14.1	-83.10
97.00	13.4	-83.20
98.00	12.7	-83.30
99.00	12.0	-83.40
100.00	11.4	-82.90
101.00	10.6	-83.00
102.00	10.0	-83.70
103.00	9.3	-83.30
104.00	8.7	-83.00
105.00	8.0	-83.00
106.00	7.3	-83.40
107.00	6.6	-83.60
108.00	6.0	-83.80
109.00	5.4	-83.50
110.00	4.7	-83.30
111.00	4.0	-83.30
112.00	3.4	-83.30
113.00	2.7	-83.30
114.00	2.1	-83.50
115.00	1.4	-83.40
116.00	0.7	-82.90
117.00	0.0	-82.90
118.00	359.3	-83.40
119.00	358.7	-83.40
119.48	358.3	-83.30

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

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 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-44	year drilled: 2010	AREA: BURNT RIVER BRULE
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RAW SAMPLE INFORMATION

Date issued: Thursday, June 12, 2014
Reviewed: October 11, 2002

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 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-47	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,443.28	6,139,643.73	1,340.73

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
44.5	-65	156.63	ROTARY			

Available Logs	gamma density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	44.5	-65.00
5.00	50.1	-64.30
6.00	50.4	-63.50
7.00	50.9	-63.60
8.00	51.3	-63.60
9.00	51.6	-63.40
10.00	51.7	-63.40
11.00	51.8	-63.30
12.00	52.0	-63.10
13.00	52.1	-62.70
14.00	52.1	-62.50
15.00	52.2	-62.10
16.00	52.2	-61.30
17.00	52.3	-61.30
18.00	52.2	-60.80
19.00	52.1	-61.00
20.00	52.2	-60.40
21.00	52.6	-59.50
22.00	52.5	-58.90
23.00	52.4	-58.80
24.00	52.3	-58.80
25.00	52.2	-58.20
26.00	52.1	-58.20
27.00	52.1	-57.80
28.00	52.0	-57.60
29.00	51.9	-56.80
30.00	51.8	-57.00

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.10	2.10		
34.30	37.10	2.80		
40.60	41.20	0.60		
56.30	57.00	0.70		
84.90	85.60	0.70		
114.40	114.90	0.50		
114.90	116.60	1.70		
116.60	117.30	0.70		
139.10	143.50	4.40		
143.50	144.60	1.10		
145.70	146.40	0.70		

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-47

year drilled: 2010

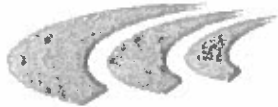
AREA: BURNT RIVER
BRULE

31.00	51.7	-57.20
32.00	51.7	-57.10
33.00	51.7	-56.40
34.00	51.6	-56.30
35.00	51.5	-56.10
36.00	51.4	-55.90
37.00	51.4	-57.00
38.00	51.6	-55.60
39.00	51.3	-54.50
40.00	51.1	-54.70
41.00	50.8	-55.90
42.00	50.6	-54.90
43.00	50.4	-54.50
44.00	50.2	-54.30
45.00	50.0	-54.30
46.00	49.8	-54.50
47.00	49.6	-54.60
48.00	49.5	-54.30
49.00	49.3	-53.20
50.00	49.2	-53.90
51.00	49.1	-53.50
52.00	48.9	-53.50
53.00	48.8	-52.70
54.00	48.8	-52.40
55.00	48.8	-52.30
56.00	48.9	-52.90
57.00	49.0	-53.20
58.00	49.3	-58.50
59.00	49.3	-52.30
60.00	49.4	-51.80
61.00	49.5	-52.20
62.00	49.5	-52.70
63.00	49.7	-51.30
64.00	49.8	-51.60
65.00	50.0	-51.50
66.00	50.1	-50.80
67.00	50.2	-51.50
68.00	50.4	-50.00
69.00	50.5	-51.00
70.00	50.6	-50.50
71.00	50.6	-50.60
72.00	50.6	-50.30
73.00	50.7	-51.00
74.00	50.7	-50.70
75.00	50.7	-51.00

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002





Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-47**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

76.00	50.7	-50.90
77.00	50.7	-51.00
78.00	50.7	-51.40
79.00	50.7	-51.30
80.00	50.7	-51.20
81.00	50.7	-51.50
82.00	50.7	-51.80
83.00	50.7	-51.00
84.00	50.7	-50.90
85.00	50.7	-50.20
86.00	50.7	-50.40
87.00	50.7	-49.90
88.00	50.7	-50.10
89.00	50.7	-49.70
90.00	50.7	-49.40
91.00	50.7	-49.20
92.00	50.7	-49.10
93.00	50.7	-48.90
94.00	50.7	-48.20
95.00	50.7	-48.90
96.00	50.7	-48.60
97.00	50.7	-47.60
98.00	50.7	-48.00
99.00	50.7	-48.40
100.00	50.7	-48.10
101.00	50.7	-48.40
102.00	50.7	-47.60
103.00	50.7	-48.20
104.00	50.7	-48.20
105.00	50.7	-47.00
106.00	50.7	-47.10
107.00	50.7	-48.10
108.00	50.7	-46.50
109.00	50.7	-45.90
110.00	50.7	-46.10
111.00	50.7	-45.90
112.00	50.7	-45.30
113.00	50.7	-45.50
114.00	50.7	-46.30
115.00	50.7	-45.90
116.00	50.7	-43.10
117.00	50.7	-44.40
118.00	50.8	-42.40
119.00	50.8	-46.60
120.00	50.8	-44.10

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002





Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-47**

year drilled: 2010

AREA:

**BURNT RIVER
BRULE**

121.00	50.9	-44.00
122.00	50.9	-43.30
123.00	50.9	-44.00
124.00	51.0	-43.90
125.00	51.0	-41.70
126.00	51.1	-43.20
127.00	51.1	-43.70
128.00	51.1	-43.30
129.00	51.1	-44.50
130.00	51.1	-44.10
131.00	51.2	-43.10
132.00	51.2	-41.80
133.00	51.2	-42.90
134.00	51.2	-42.80
135.00	51.2	-42.20
136.00	51.2	-42.20
137.00	51.2	-42.20
138.00	51.2	-41.10
139.00	51.2	-41.90
140.00	51.2	-42.20
141.00	51.2	-41.80
142.00	51.2	-39.50
143.00	51.2	-41.20
144.00	51.2	-43.50
145.00	51.2	-40.30
146.00	51.2	-41.30
147.00	51.2	-41.50
148.00	51.3	-39.30
149.00	51.3	-40.90
150.00	51.3	-40.00
151.00	51.3	-40.60
152.00	51.3	-40.00
153.00	51.4	-40.80
154.00	51.4	-39.90
155.00	51.4	-40.40
156.00	51.4	-39.90
156.46	51.4	-40.40

RAW SAMPLE INFORMATION

Date issued: Friday, May 18, 2012

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-47	year drilled: 2010	AREA: BURNT RIVER BRULE
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Date issued: Friday, May 18, 2012
Reviewed: October 11, 2002

Page 5 of 5

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-47

COMPANY WESTERN COAL CORPORATION

OTHER SERVICES:
NEUTRON

WELL BR10-47

FIELD BRULE

COUNTRY CANADA

PROVINCE BRITISH COLUMBIA

SECTION BRULE NORTH

TOWNSHIP N/A

RANGE N/A

LICENSE NO. N/A

UNIQUE WELL ID. N/A

PERMANENT DATUM GL

LOG MEASURED FROM GL

DRL MEASURED FROM GL

DATE 10/15/10

DEPTH DRILLER 160.02

BIT SIZE 11.43

LOG TOP -0.01

LOG BOTTOM 156.63

CASING LOGGER 3.048

CASING DRILLER 3.048

CASING TYPE STEEL

BOREHOLE FLUID WATER

RM TEMPERATURE N/A

MUD RES N/A

MUD WEIGHT 1.00

MEASURED BY G. HOLMLUND

RECORDED BY T. NEAL

REMARKS 1 65 DEGREE

REMARKS 2

ELEVATION KB N/A

ELEVATION DF N/A

ELEVATION GL N/A

RIG NUMBER

LOGGER TD

ARRIVAL TIME

DEPARTURE TIME

CIRC STOPPED N/A

1:100 BULK DENSITY BR10-47 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

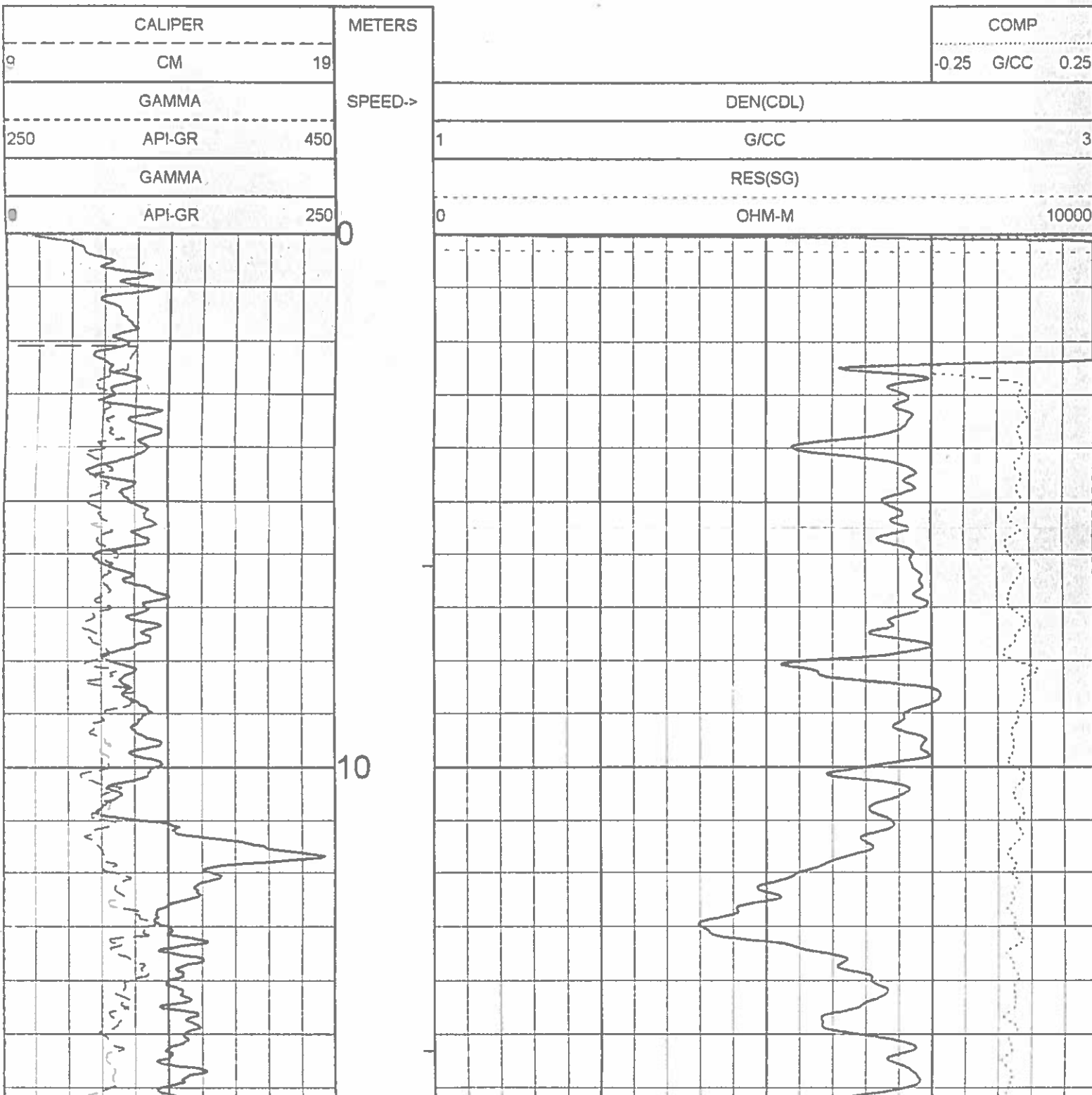
MAGNETIC DECL : 21.0

ELECT. CUTOFF : 90000

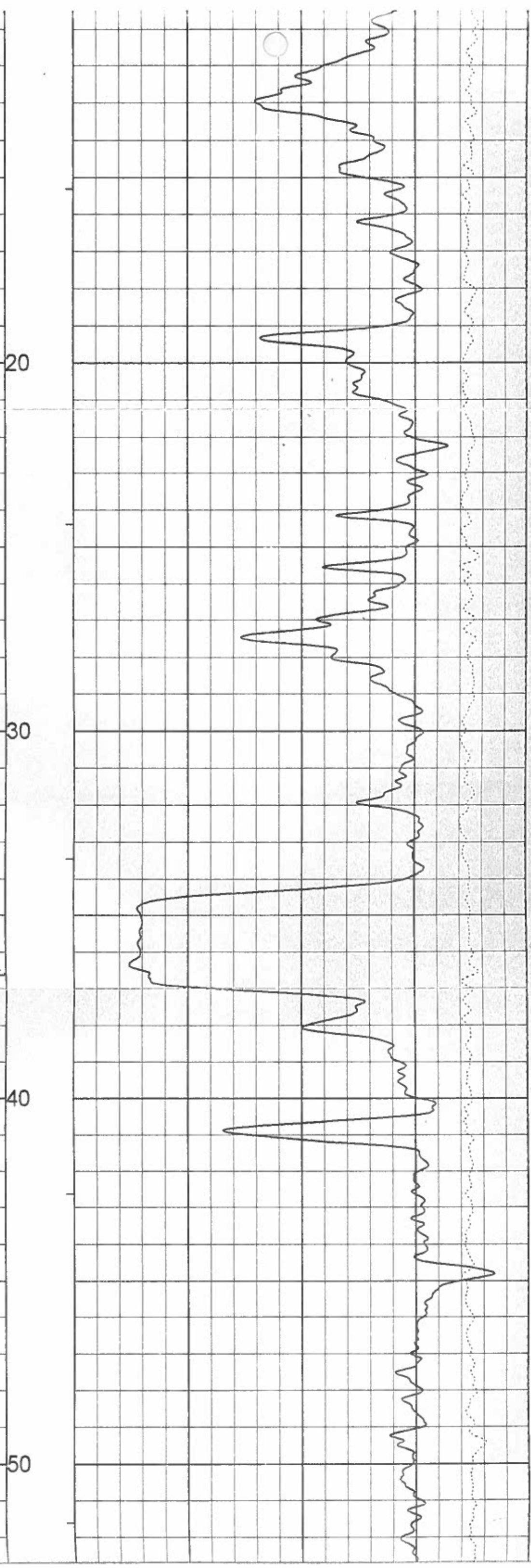
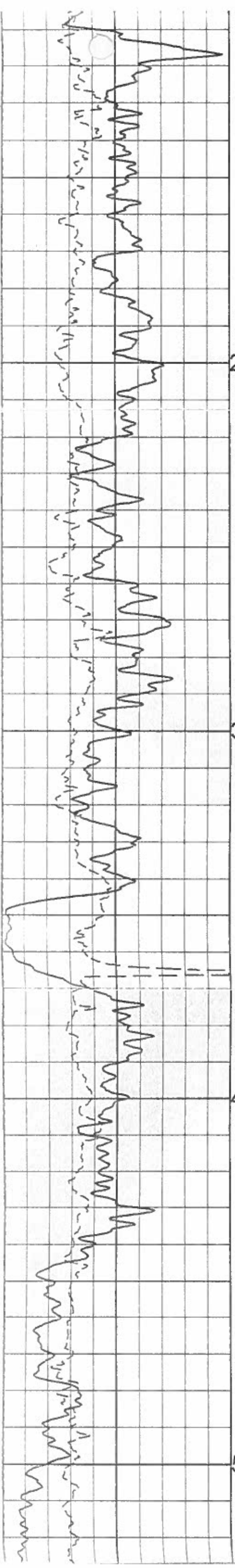
BIT SIZE : 11.43

PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010

VERSION = 3.64IE



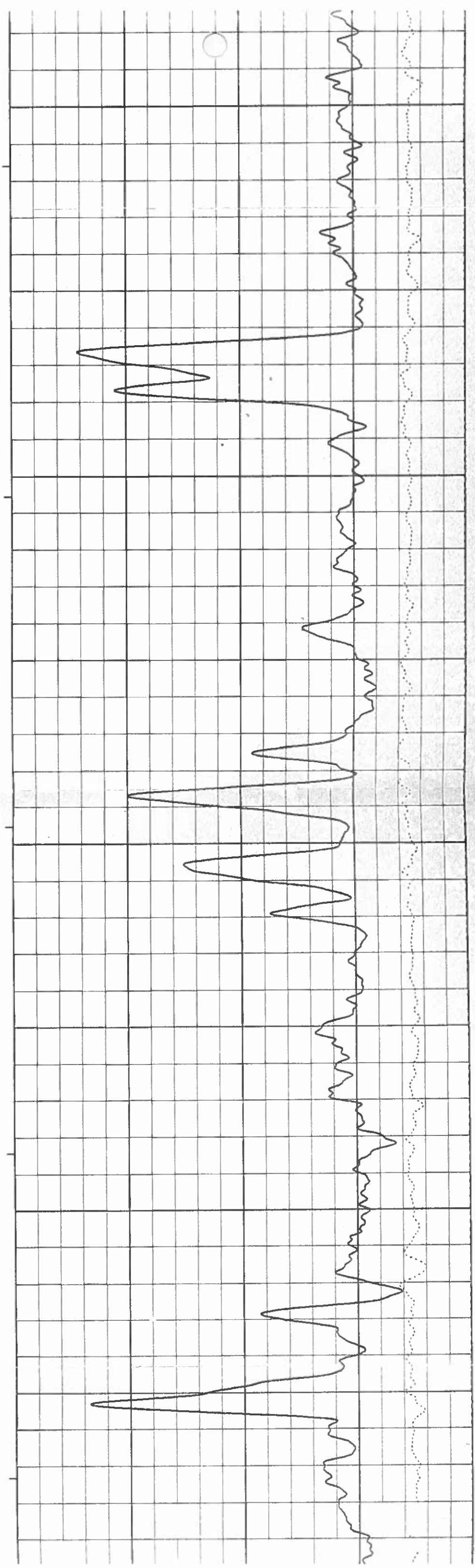
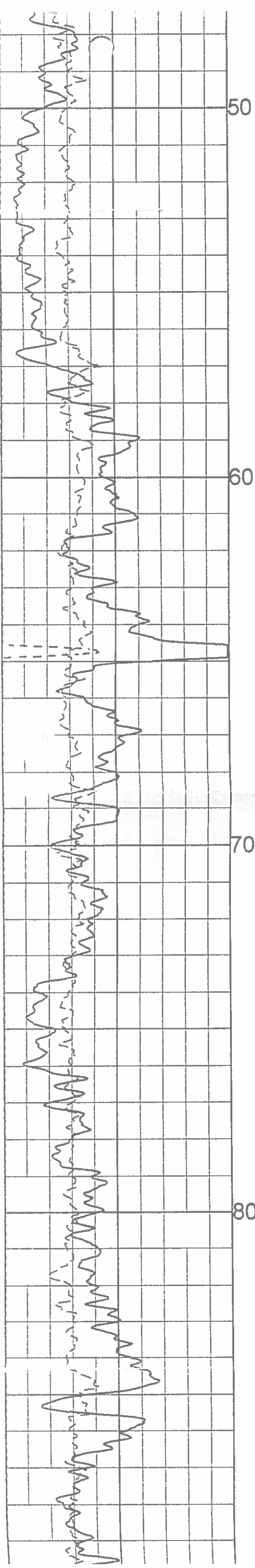
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

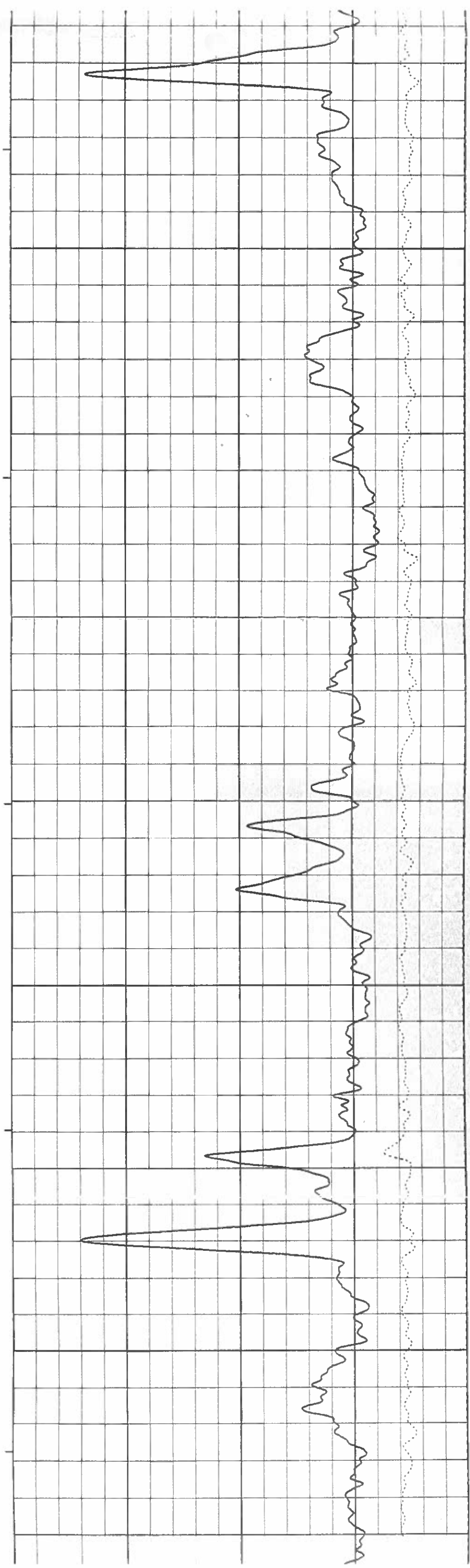
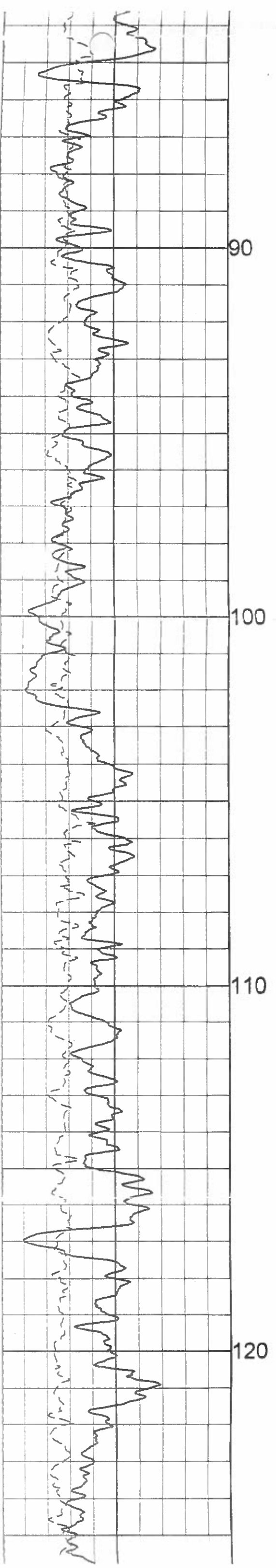


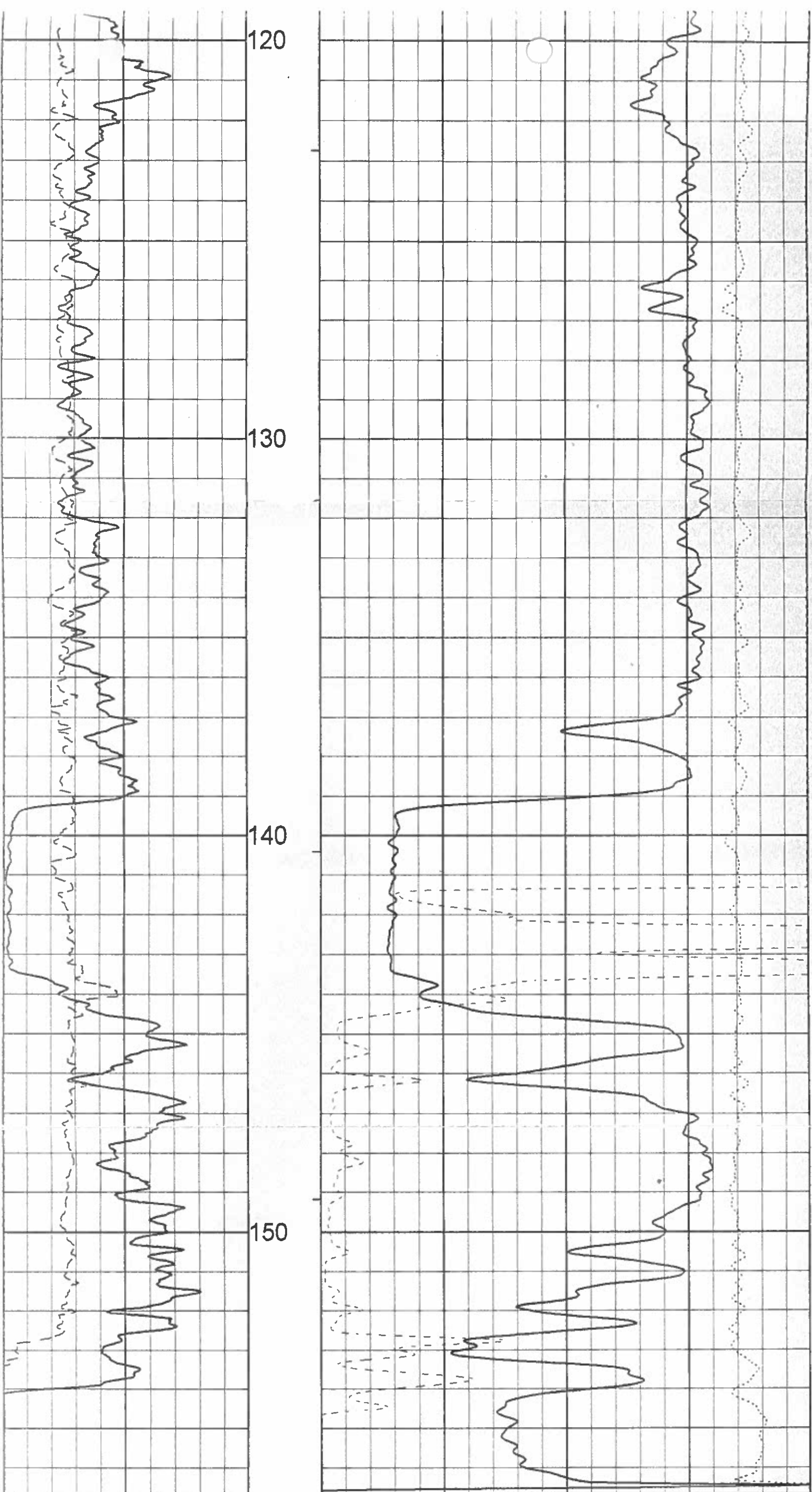
C60

A







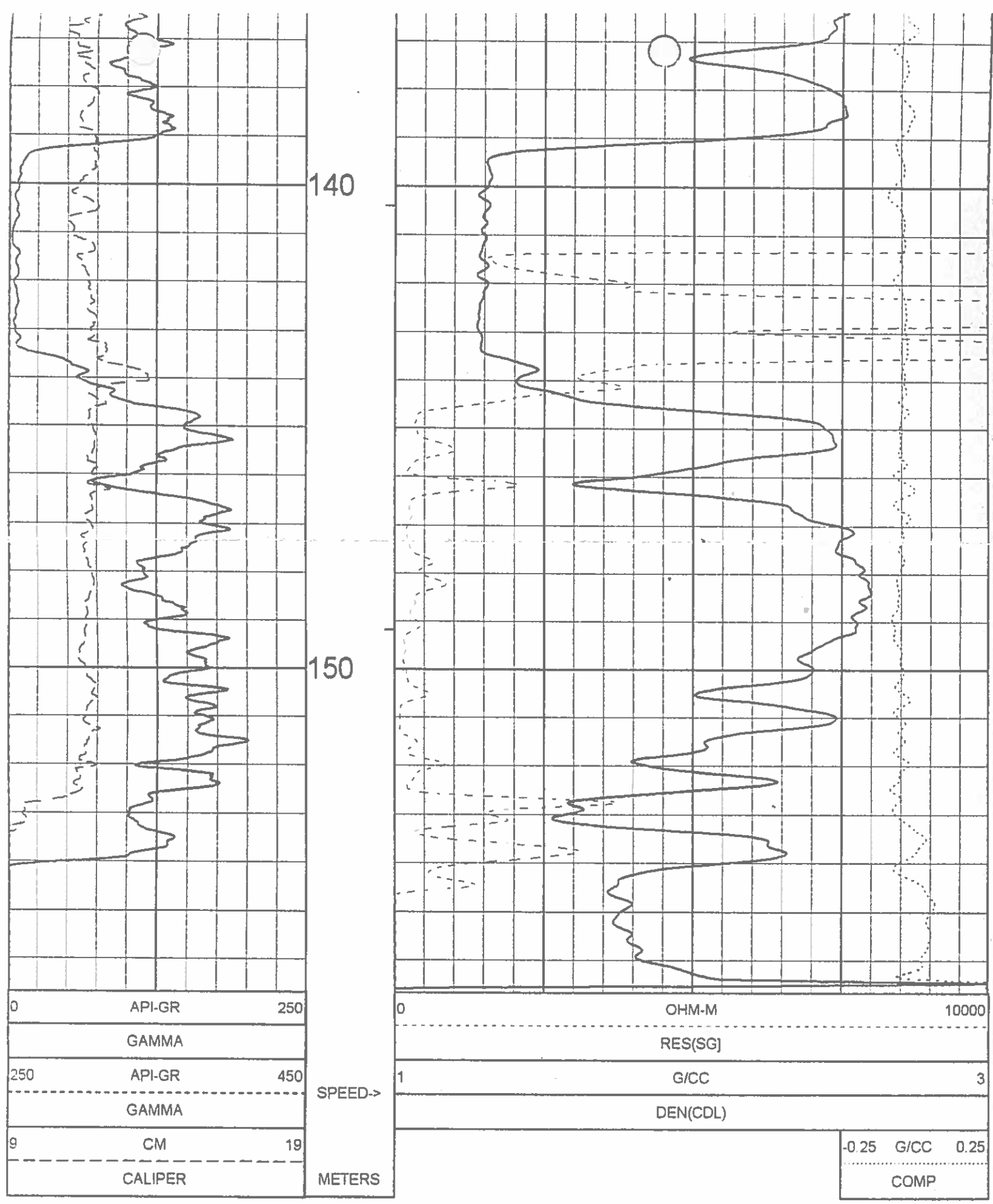


0	API-GR	250
	GAMMA	
250	API-GR	450
	GAMMA	
9	CM	19
	CALIPER	

SPEED->
METERS

0	OHM-M	10000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
	-0.25 G/CC 0.25	
	COMP	





1:100 BULK DENSITY BR10-47 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY 0 09/16/2010 VERSION = 3.641E

TOOL CALIBRATION BR10-47 10/15/10 11:40
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

GAMMA - NEUTRON

BR10-47

OTHER SERVICES:
DENSITY

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-47

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENSE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 10/15/10

DEPTH DRILLER: 160.02

BIT SIZE: 11.43

LOG TOP: 2.03

LOG BOTTOM: 156.63

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

RECORDED BY: T. NEAL

RECORDED BY: G. HOLMLUND

REMARKS 1: 65 DEGREE

REMARKS 2:

REMARKS 2:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-47 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65

NEUTRON MATRIX : SANDSTONE

MATRIX DELTA T : 177

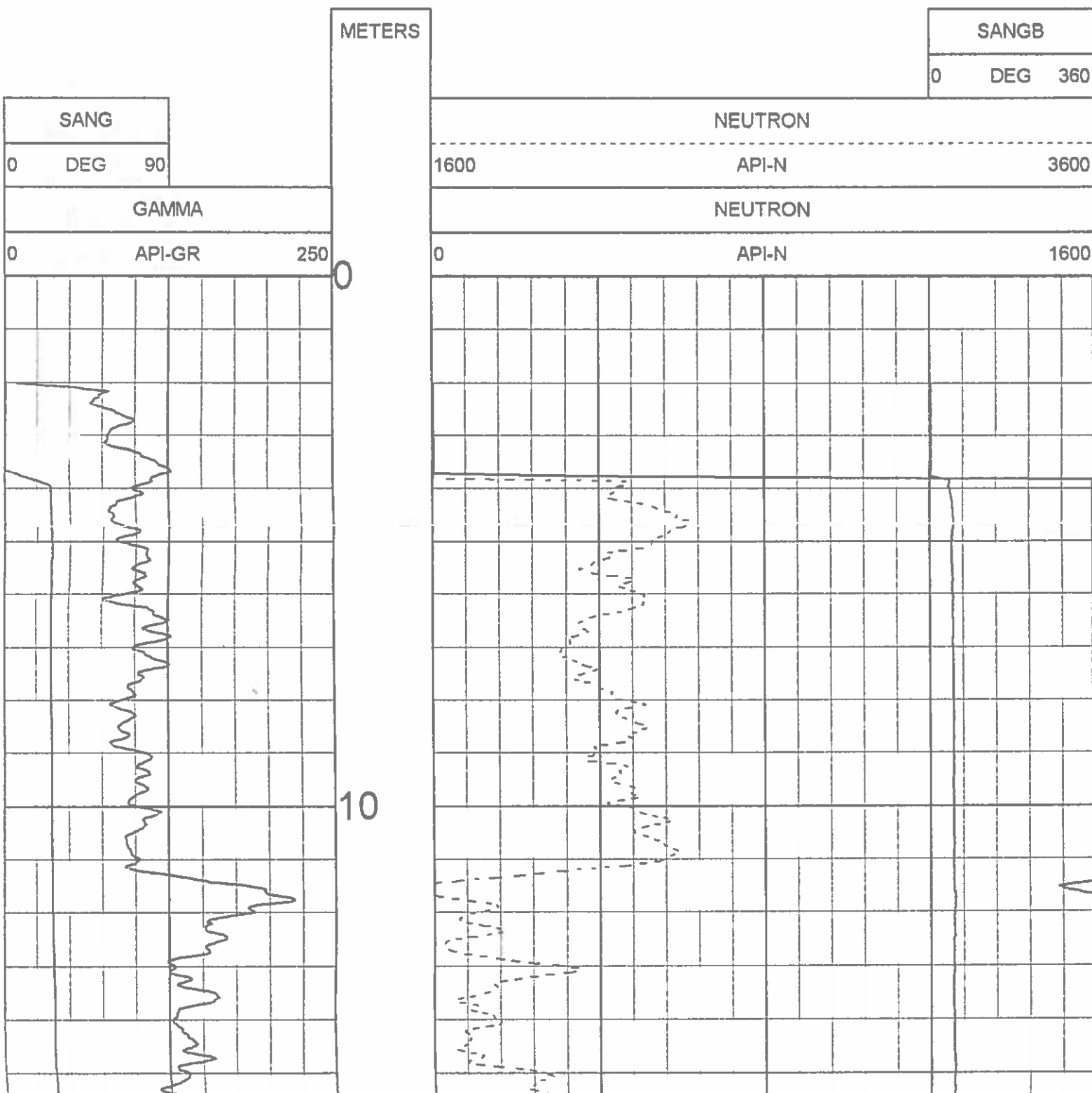
MAGNETIC DECL : 21.0

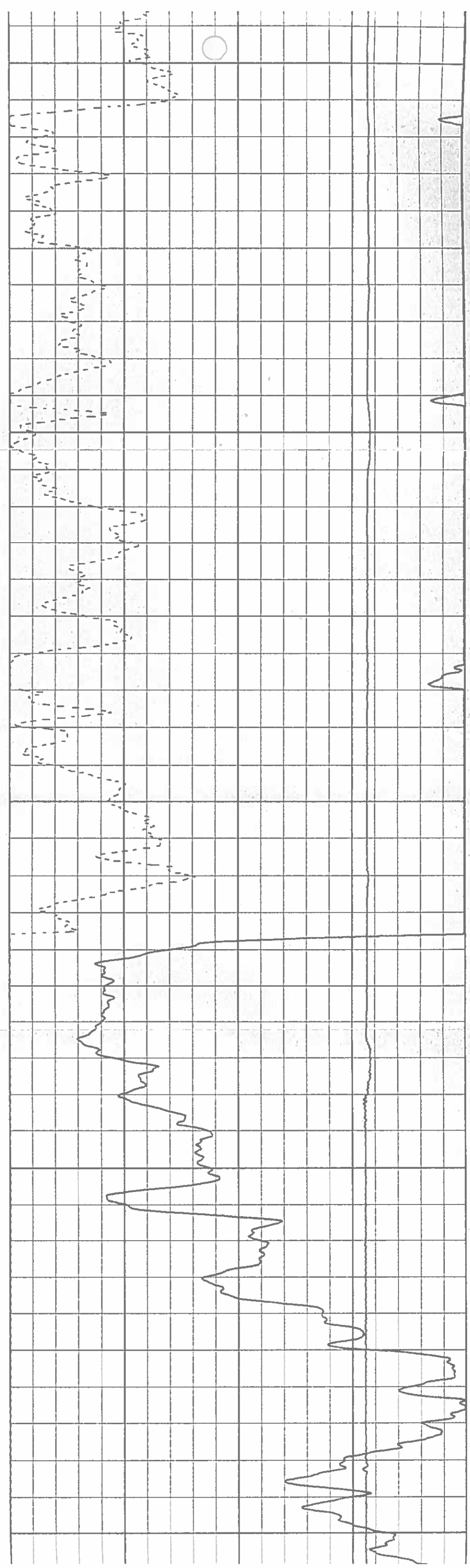
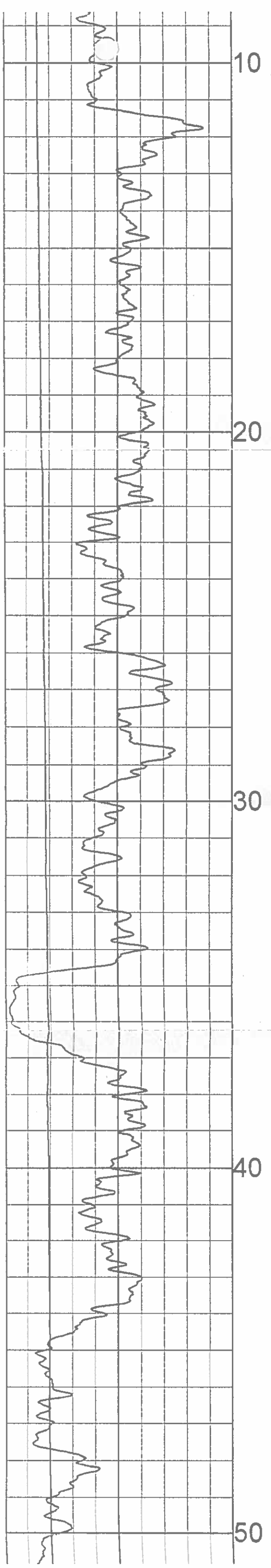
ELECT. CUTOFF : 90000

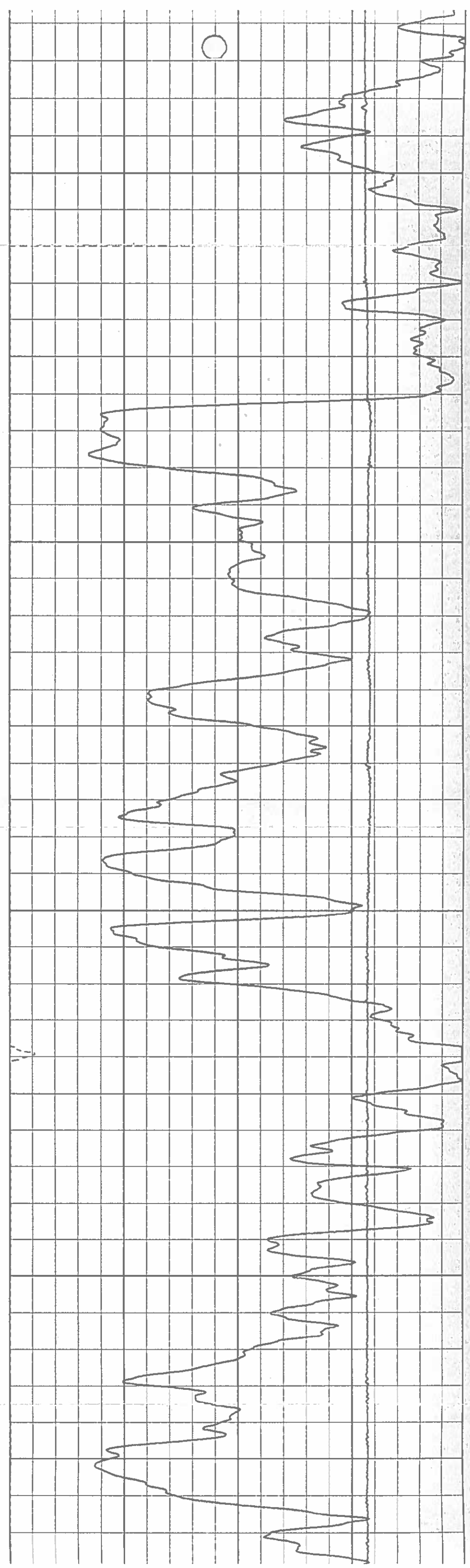
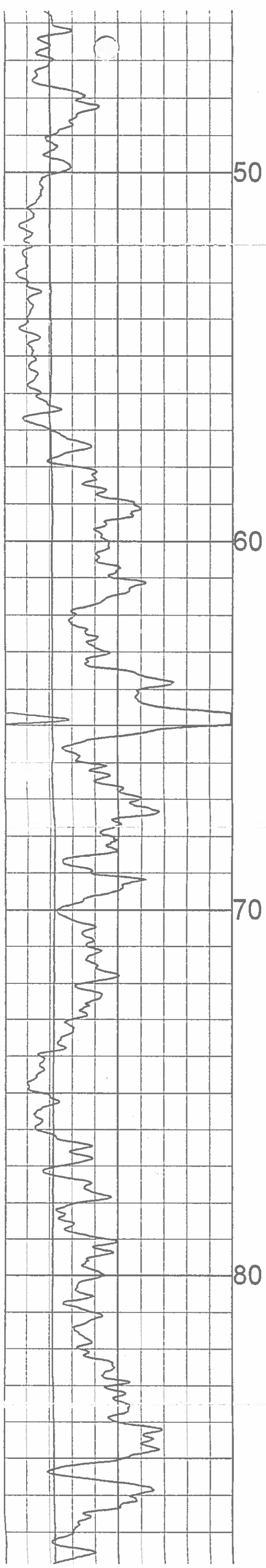
BIT SIZE : 11.43

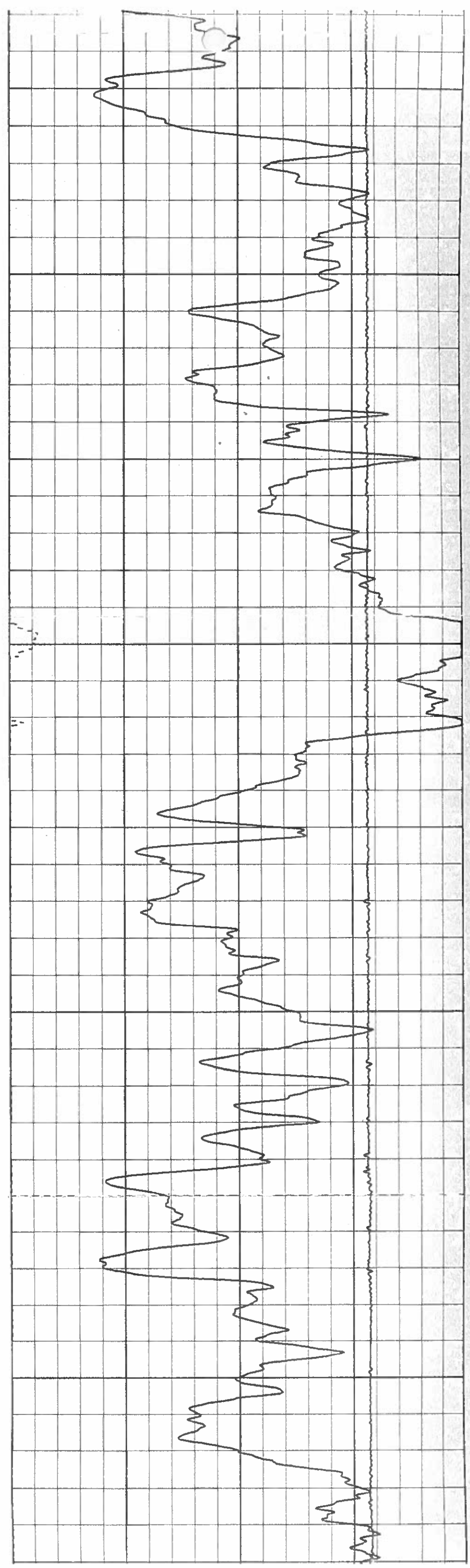
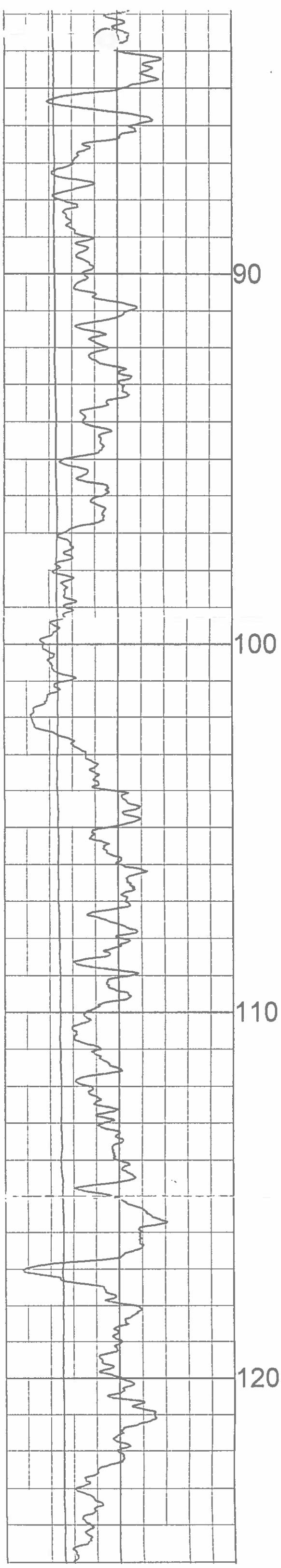
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010

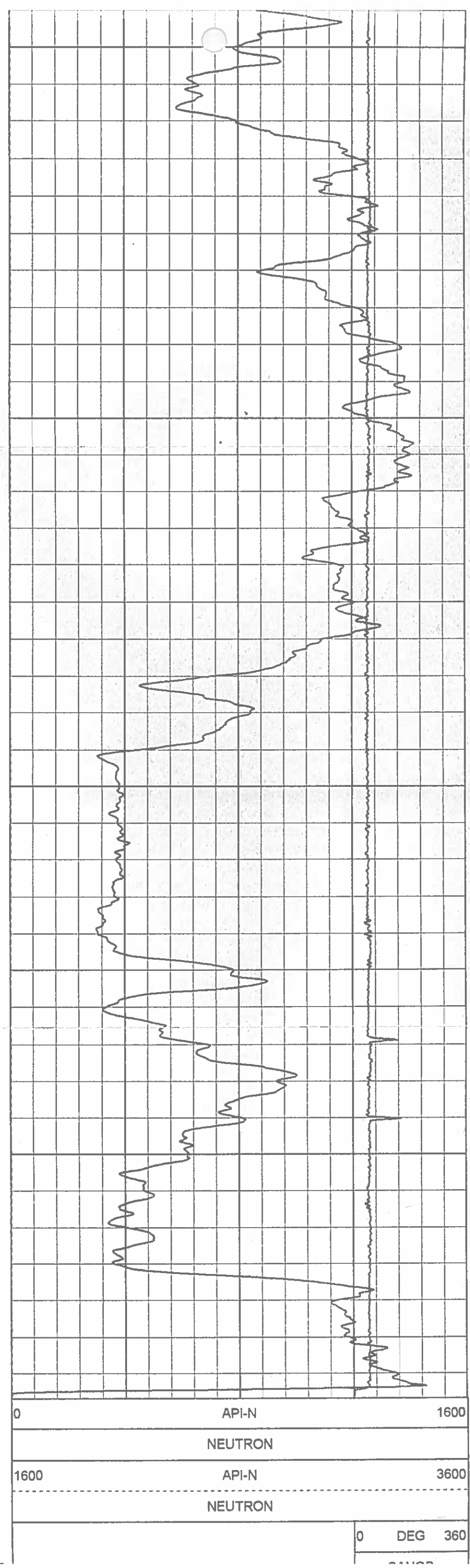
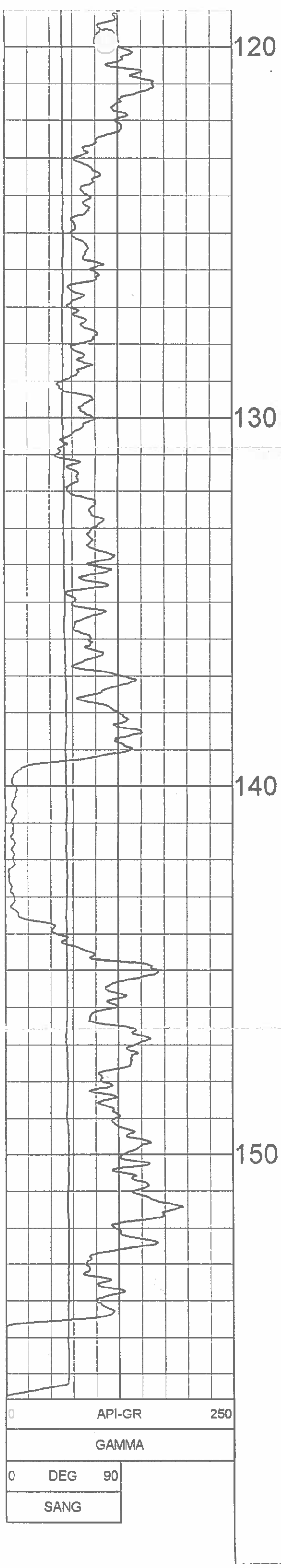
VERSION = 3.64IE

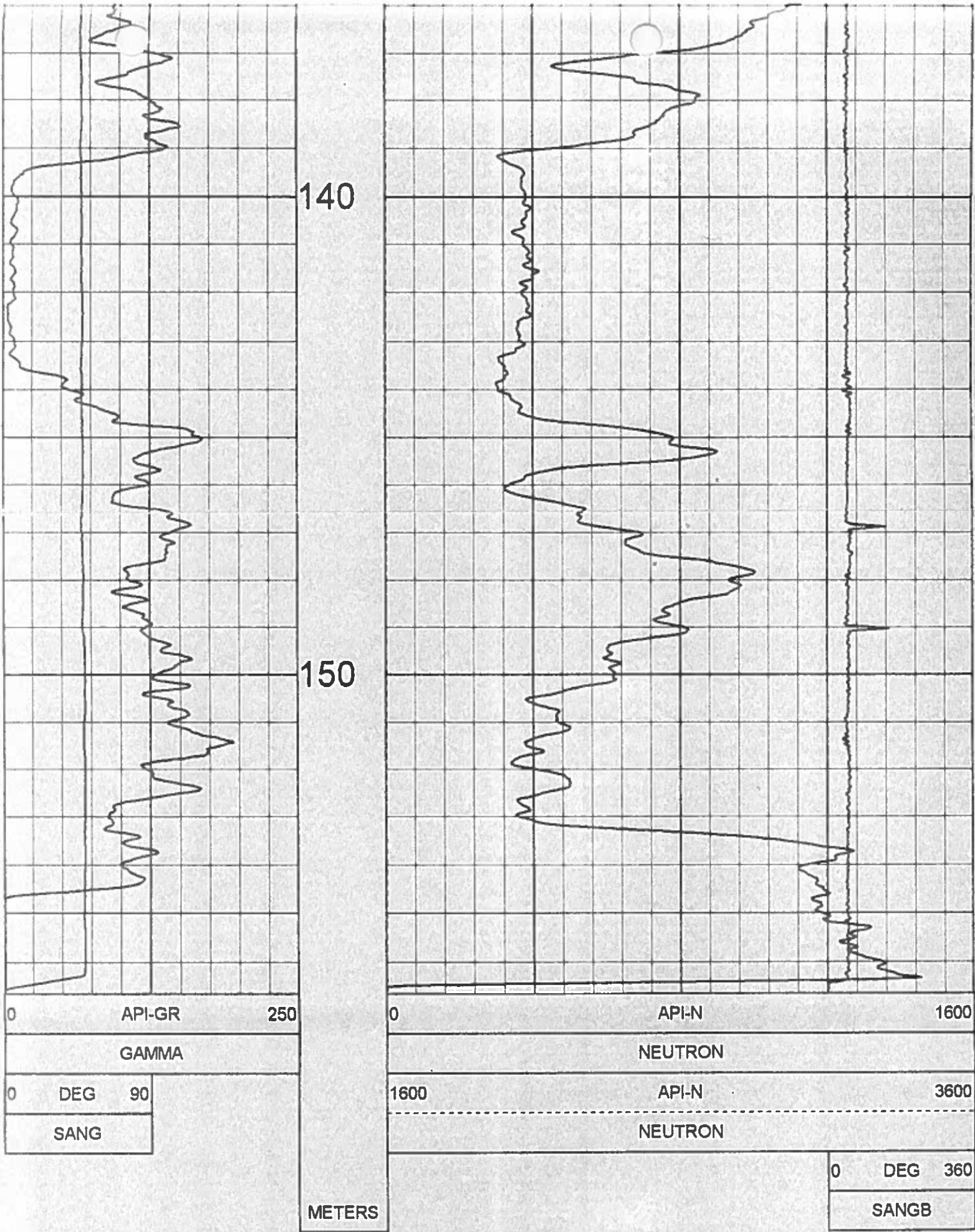












1:100 NEUTRON BR10-47 10/15/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11 43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 10/07/2010		VERSION = 3 64IE

TOOL CALIBRATION BR10-47 10/15/10 11:05
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

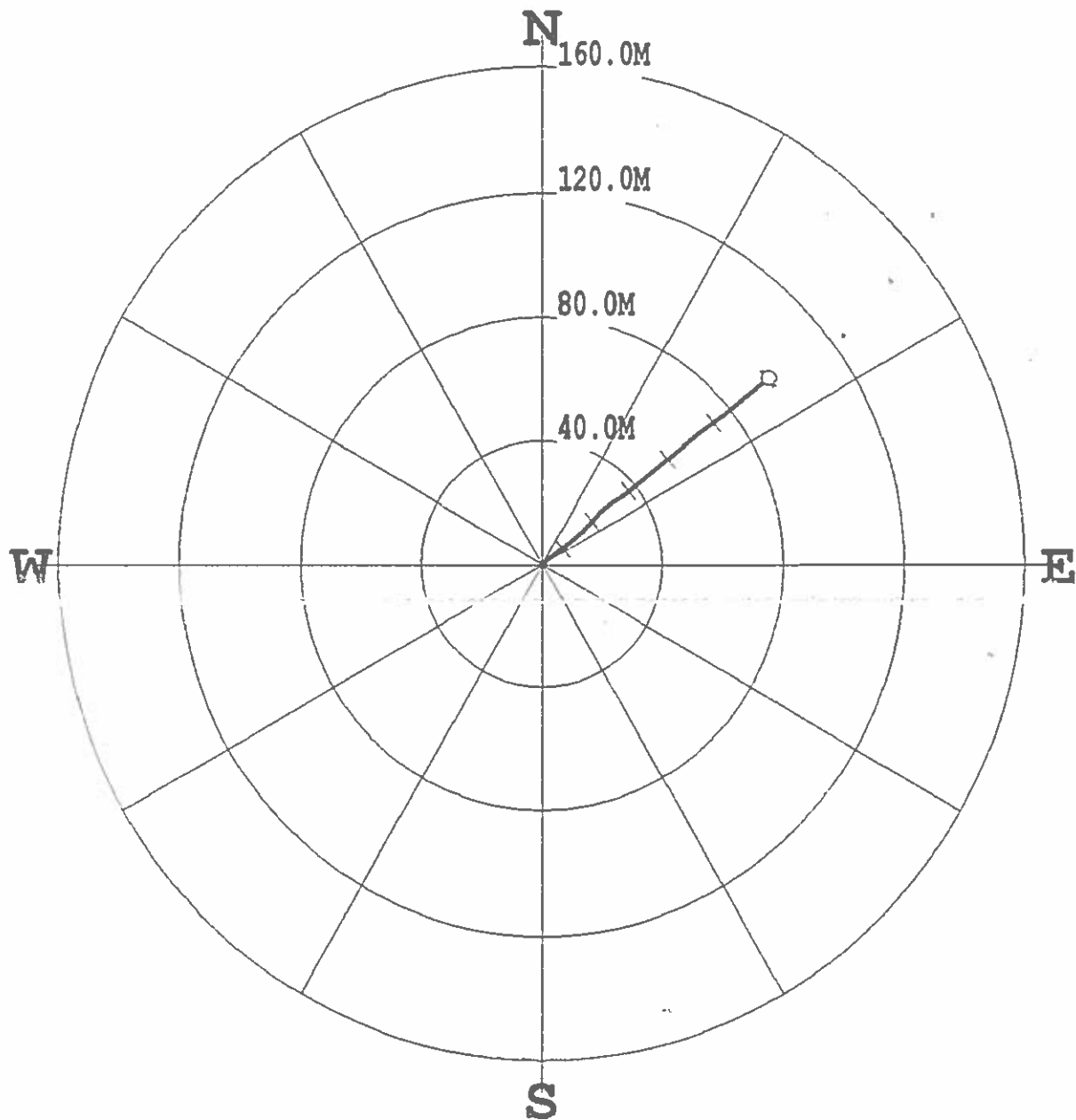
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16↑	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64↑	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-47
 DATE OF LOG: 10/15/10
 PROBE: 9057A 4429



SCALE: 20 M/CM
 TRUE DEPTH: 120.67 M
 AZIMUTH: 51.4
 DISTANCE: 96.1 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE




***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-47
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/15/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-47_10-15-10_11-05_9057A_.02_2.03_156.63_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.99	0.06	0.05	0.1	44.5	25.0	43.9
5.00	4.89	0.33	0.39	0.5	50.1	25.7	52.6
6.00	5.79	0.61	0.73	1.0	50.4	26.5	51.0
7.00	6.69	0.88	1.08	1.4	50.9	26.4	51.8
8.00	7.58	1.15	1.44	1.8	51.3	26.4	53.2
9.00	8.48	1.42	1.79	2.3	51.6	26.6	52.8
10.00	9.37	1.69	2.15	2.7	51.7	26.6	51.9
11.00	10.26	1.97	2.50	3.2	51.8	26.7	52.2
12.00	11.16	2.24	2.86	3.6	52.0	26.9	55.1
13.00	12.05	2.51	3.23	4.1	52.1	27.3	52.4
14.00	12.93	2.80	3.59	4.6	52.1	27.5	52.4
15.00	13.82	3.08	3.97	5.0	52.2	27.9	54.9
16.00	14.70	3.37	4.34	5.5	52.2	28.7	49.9
17.00	15.58	3.65	4.73	6.0	52.3	28.7	50.0
18.00	16.45	3.96	5.10	6.5	52.2	29.2	51.2
19.00	17.32	4.27	5.48	6.9	52.1	29.0	50.0
20.00	18.20	4.55	5.87	7.4	52.2	29.6	58.2
21.00	19.07	4.82	6.29	7.9	52.6	30.5	57.5
22.00	19.92	5.14	6.69	8.4	52.5	31.1	50.8
23.00	20.78	5.47	7.09	9.0	52.4	31.2	51.1
24.00	21.63	5.80	7.50	9.5	52.3	31.2	50.8
25.00	22.49	6.12	7.90	10.0	52.2	31.8	50.0
26.00	23.34	6.46	8.31	10.5	52.1	31.8	51.1
27.00	24.18	6.79	8.72	11.1	52.1	32.2	50.4
28.00	25.03	7.14	9.14	11.6	52.0	32.4	50.8
29.00	25.87	7.48	9.55	12.1	51.9	33.2	49.1
30.00	26.71	7.84	9.96	12.7	51.8	33.0	49.1
31.00	27.55	8.19	10.38	13.2	51.7	32.8	50.3
32.00	28.39	8.54	10.79	13.8	51.7	32.9	56.5
33.00	29.22	8.88	11.22	14.3	51.7	33.6	48.6
34.00	30.05	9.24	11.65	14.9	51.6	33.7	49.5
35.00	30.88	9.60	12.07	15.4	51.5	33.9	49.9
36.00	31.71	9.97	12.49	16.0	51.4	34.1	47.9
37.00	32.54	10.31	12.92	16.5	51.4	33.0	61.6
38.00	33.37	10.62	13.38	17.1	51.6	34.4	47.0
39.00	34.20	11.02	13.76	17.6	51.3	35.5	45.0

26.00	23.34	6.46	8.31	10.5	52.1	31.0	51.1
27.00	24.18	6.79	8.72	11.1	52.1	32.2	50.4
28.00	25.03	7.14	9.14	11.6	52.	32.4	50.8
29.00	25.87	7.48	9.55	12.1	51.	33.2	49.1
30.00	26.71	7.84	9.96	12.7	51.8	33.0	49.1
31.00	27.55	8.19	10.38	13.2	51.7	32.8	50.3
32.00	28.39	8.54	10.79	13.8	51.7	32.9	56.5
33.00	29.22	8.88	11.22	14.3	51.7	33.6	48.6
34.00	30.05	9.24	11.65	14.9	51.6	33.7	49.5
35.00	30.88	9.60	12.07	15.4	51.5	33.9	49.9
36.00	31.71	9.97	12.49	16.0	51.4	34.1	47.9
37.00	32.54	10.31	12.92	16.5	51.4	33.0	61.6
38.00	33.37	10.62	13.38	17.1	51.6	34.4	47.0
39.00	34.20	11.02	13.76	17.6	51.3	35.5	45.0
40.00	35.03	11.43	14.15	18.2	51.1	35.3	44.9
41.00	35.85	11.85	14.55	18.8	50.8	34.1	42.3
42.00	36.66	12.27	14.94	19.3	50.6	35.1	42.9
43.00	37.48	12.69	15.34	19.9	50.4	35.5	43.4
44.00	38.29	13.11	15.73	20.5	50.2	35.7	43.0
45.00	39.11	13.53	16.13	21.1	50.0	35.7	44.8
46.00	39.92	13.96	16.53	21.6	49.8	35.5	43.6
47.00	40.73	14.39	16.92	22.2	49.6	35.4	40.8
48.00	41.54	14.81	17.33	22.8	49.5	35.7	40.0
49.00	42.35	15.24	17.73	23.4	49.3	36.8	44.9
50.00	43.16	15.67	18.15	24.0	49.2	36.1	43.4
51.00	43.96	16.10	18.55	24.6	49.1	36.5	43.2
52.00	44.77	16.53	18.96	25.2	48.9	36.5	45.0
53.00	45.57	16.96	19.37	25.7	48.8	37.3	32.6
54.00	46.37	17.35	19.82	26.3	48.8	37.6	49.5
55.00	47.16	17.74	20.29	27.0	48.8	37.7	50.2
56.00	47.95	18.12	20.76	27.6	48.9	37.1	50.7
57.00	48.76	18.45	21.25	28.1	49.0	36.8	58.6
58.00	49.56	18.75	21.77	28.7	49.3	31.5	83.1
59.00	50.34	19.12	22.26	29.3	49.3	37.7	53.2
60.00	51.13	19.50	22.76	30.0	49.4	38.2	53.7
61.00	51.92	19.88	23.24	30.6	49.5	37.8	50.3
62.00	52.70	20.24	23.74	31.2	49.5	37.3	42.2
63.00	53.49	20.57	24.26	31.8	49.7	38.7	57.3
64.00	54.27	20.91	24.78	32.4	49.8	38.4	62.6
65.00	55.05	21.23	25.31	33.0	50.0	38.5	61.4
66.00	55.83	21.58	25.83	33.7	50.1	39.2	58.1
67.00	56.62	21.91	26.35	34.3	50.2	38.5	60.6
68.00	57.40	22.23	26.89	34.9	50.4	40.0	53.7
69.00	58.17	22.59	27.41	35.5	50.5	39.0	56.1
70.00	58.94	22.96	27.93	36.2	50.6	39.5	53.5
71.00	59.71	23.35	28.43	36.8	50.6	39.4	49.8
72.00	60.48	23.73	28.93	37.4	50.6	39.7	48.9
73.00	61.26	24.12	29.42	38.0	50.7	39.0	56.4
74.00	62.03	24.51	29.93	38.7	50.7	39.3	53.4
75.00	62.81	24.90	30.42	39.3	50.7	39.0	47.0
76.00	63.59	25.29	30.91	39.9	50.7	39.1	51.2
77.00	64.36	25.69	31.40	40.6	50.7	39.0	50.7
78.00	65.14	26.09	31.88	41.2	50.7	38.6	55.7
79.00	65.92	26.48	32.37	41.8	50.7	38.7	50.3
80.00	66.70	26.87	32.86	42.4	50.7	38.8	53.1
81.00	67.48	27.26	33.35	43.1	50.7	38.5	51.6
82.00	68.26	27.65	33.83	43.7	50.7	38.2	53.2
83.00	69.04	28.05	34.31	44.3	50.7	39.0	55.7
84.00	69.82	28.45	34.80	44.9	50.7	39.1	51.9
85.00	70.59	28.85	35.29	45.6	50.7	39.8	52.0
86.00	71.36	29.26	35.78	46.2	50.7	39.6	46.9
87.00	72.13	29.66	36.28	46.9	50.7	40.1	53.9
88.00	72.89	30.07	36.78	47.5	50.7	39.9	48.5
89.00	73.66	30.48	37.27	48.1	50.7	40.3	51.7
90.00	74.42	30.89	37.76	48.8	50.7	40.6	48.4
91.00	75.18	31.30	38.27	49.4	50.7	40.8	48.9
92.00	75.94	31.71	38.77	50.1	50.7	40.9	51.0
93.00	76.70	32.13	39.27	50.7	50.7	41.1	49.3
94.00	77.45	32.54	39.79	51.4	50.7	41.8	51.7
95.00	78.20	32.96	40.30	52.1	50.7	41.1	44.8
96.00	78.95	33.38	40.81	52.7	50.7	41.4	39.7
97.00	79.68	33.80	41.34	53.4	50.7	42.4	54.8
98.00	80.43	34.21	41.86	54.1	50.7	42.0	48.5
99.00	81.17	34.64	42.38	54.7	50.7	41.6	39.2
100.00	81.91	35.06	42.89	55.4	50.7	41.9	52.3
101.00	82.65	35.49	43.40	56.1	50.7	41.6	47.7
102.00	83.39	35.92	43.92	56.7	50.7	42.4	52.4
103.00	84.13	36.34	44.44	57.4	50.7	41.8	46.3
104.00	84.88	36.78	44.94	58.1	50.7	41.8	55.7
105.00	85.61	37.21	45.46	58.7	50.7	43.0	47.6
106.00	86.35	37.64	45.99	59.4	50.7	42.9	46.7
107.00	87.08	38.07	46.52	60.1	50.7	41.9	56.5
108.00	87.80	38.50	47.05	60.8	50.7	43.5	49.4
109.00	88.52	38.94	47.58	61.5	50.7	44.1	52.5
110.00	89.24	39.38	48.12	62.2	50.7	43.9	54.4
111.00	89.96	39.83	48.65	62.9	50.7	44.1	50.8
112.00	90.68	40.27	49.18	63.6	50.7	44.7	52.0
113.00	91.39	40.71	49.73	64.3	50.7	44.5	66.1
114.00	92.10	41.16	50.26	65.0	50.7	43.7	59.3
115.00	92.81	41.60	50.79	65.7	50.7	44.1	51.3
116.00	93.51	42.01	51.37	66.4	50.7	46.9	58.3
117.00	94.20	42.46	51.94	67.1	50.7	45.6	48.4
118.00	94.90	42.88	52.50	67.8	50.8	47.6	48.7
119.00	95.60	43.29	53.10	68.5	50.8	43.4	62.4
120.00	96.30	43.71	53.67	69.2	50.8	45.9	52.5
121.00	96.99	44.14	54.25	69.9	50.9	46.0	55.5
122.00	97.68	44.55	54.84	70.7	50.9	46.7	49.8
123.00	98.38	44.98	55.42	71.4	50.9	46.0	54.7
124.00	99.07	45.40	56.00	72.1	51.0	46.1	57.8
125.00	99.76	45.78	56.61	72.8	51.0	48.3	53.7
126.00	100.44	46.22	57.18	73.5	51.1	46.8	54.4
127.00	101.13	46.67	57.75	74.3	51.1	46.3	53.8
128.00	101.82	47.09	58.34	75.0	51.1	46.7	56.2
129.00	102.51	47.51	58.92	75.7	51.1	45.5	50.9
130.00	103.19	47.97	59.48	76.4	51.1	45.9	55.0
131.00	103.88	48.37	60.08	77.1	51.2	46.9	60.3
132.00	104.56	48.79	60.68	77.9	51.2	48.2	47.7
133.00	105.24	49.25	61.25	78.6	51.2	47.1	51.5
134.00	105.91	49.70	61.82	79.3	51.2	47.2	53.5
135.00	106.59	50.16	62.40	80.1	51.2	47.8	46.7
136.00	107.26	50.63	62.97	80.8	51.2	47.8	52.5
137.00	107.93	51.08	63.55	81.5	51.2	47.8	44.5
138.00	108.59	51.54	64.14	82.3	51.2	48.9	56.0
139.00	109.26	52.03	64.71	83.0	51.2	48.1	42.5
140.00	109.92	52.49	65.28	83.8	51.2	47.8	44.6
141.00	110.59	52.95	65.87	84.5	51.2	48.2	50.7
142.00	111.25	53.42	66.44	85.3	51.2	50.5	43.9

69.00	58.17	22.59	27.41	35.5	50.5	39.0	56.1
70.00	58.94	22.96	27.93	36.2	50.0	39.5	53.5
71.00	59.71	23.35	28.43	36.8	50.0	39.4	49.8
72.00	60.48	23.73	28.93	37.4	50.6	39.7	48.9
73.00	61.26	24.12	29.42	38.0	50.7	39.0	56.4
74.00	62.03	24.51	29.93	38.7	50.7	39.3	53.4
75.00	62.81	24.90	30.42	39.3	50.7	39.0	47.0
76.00	63.59	25.29	30.91	39.9	50.7	39.1	51.2
77.00	64.36	25.69	31.40	40.6	50.7	39.0	50.7
78.00	65.14	26.09	31.88	41.2	50.7	38.6	55.7
79.00	65.92	26.48	32.37	41.8	50.7	38.7	50.3
80.00	66.70	26.87	32.86	42.4	50.7	38.8	53.1
81.00	67.48	27.26	33.35	43.1	50.7	38.5	51.6
82.00	68.26	27.65	33.83	43.7	50.7	38.2	53.2
83.00	69.04	28.05	34.31	44.3	50.7	39.0	55.7
84.00	69.82	28.45	34.80	44.9	50.7	39.1	51.9
85.00	70.59	28.85	35.29	45.6	50.7	39.8	52.0
86.00	71.36	29.26	35.78	46.2	50.7	39.6	46.9
87.00	72.13	29.66	36.28	46.9	50.7	40.1	53.9
88.00	72.89	30.07	36.78	47.5	50.7	39.9	48.5
89.00	73.66	30.48	37.27	48.1	50.7	40.3	51.7
90.00	74.42	30.89	37.76	48.8	50.7	40.6	48.4
91.00	75.18	31.30	38.27	49.4	50.7	40.8	48.9
92.00	75.94	31.71	38.77	50.1	50.7	40.9	51.0
93.00	76.70	32.13	39.27	50.7	50.7	41.1	49.3
94.00	77.45	32.54	39.79	51.4	50.7	41.8	51.7
95.00	78.20	32.96	40.30	52.1	50.7	41.1	44.8
96.00	78.95	33.38	40.81	52.7	50.7	41.4	39.7
97.00	79.68	33.80	41.34	53.4	50.7	42.4	54.8
98.00	80.43	34.21	41.86	54.1	50.7	42.0	48.5
99.00	81.17	34.64	42.38	54.7	50.7	41.6	39.2
100.00	81.91	35.06	42.89	55.4	50.7	41.9	52.3
101.00	82.65	35.49	43.40	56.1	50.7	41.6	47.7
102.00	83.39	35.92	43.92	56.7	50.7	42.4	52.4
103.00	84.13	36.34	44.44	57.4	50.7	41.8	46.3
104.00	84.88	36.78	44.94	58.1	50.7	41.8	55.7
105.00	85.61	37.21	45.46	58.7	50.7	43.0	47.6
106.00	86.35	37.64	45.99	59.4	50.7	42.9	46.7
107.00	87.08	38.07	46.52	60.1	50.7	41.9	56.5
108.00	87.80	38.50	47.05	60.8	50.7	43.5	49.4
109.00	88.52	38.94	47.58	61.5	50.7	44.1	52.5
110.00	89.24	39.38	48.12	62.2	50.7	43.9	54.4
111.00	89.96	39.83	48.65	62.9	50.7	44.1	50.8
112.00	90.68	40.27	49.18	63.6	50.7	44.7	52.0
113.00	91.39	40.71	49.73	64.3	50.7	44.5	66.1
114.00	92.10	41.16	50.26	65.0	50.7	43.7	59.3
115.00	92.81	41.60	50.79	65.7	50.7	44.1	51.3
116.00	93.51	42.01	51.37	66.4	50.7	46.9	58.3
117.00	94.20	42.46	51.94	67.1	50.7	45.6	48.4
118.00	94.90	42.88	52.50	67.8	50.8	47.6	48.7
119.00	95.60	43.29	53.10	68.5	50.8	43.4	62.4
120.00	96.30	43.71	53.67	69.2	50.8	45.9	52.5
121.00	96.99	44.14	54.25	69.9	50.9	46.0	55.5
122.00	97.68	44.55	54.84	70.7	50.9	46.7	49.8
123.00	98.38	44.98	55.42	71.4	50.9	46.0	54.7
124.00	99.07	45.40	56.00	72.1	51.0	46.1	57.8
125.00	99.76	45.78	56.61	72.8	51.0	48.3	53.7
126.00	100.44	46.22	57.18	73.5	51.1	46.8	54.4
127.00	101.13	46.67	57.75	74.3	51.1	46.3	53.8
128.00	101.82	47.08	58.34	75.0	51.1	46.7	56.2
129.00	102.51	47.51	58.92	75.7	51.1	45.5	50.9
130.00	103.19	47.97	59.48	76.4	51.1	45.9	55.0
131.00	103.88	48.37	60.08	77.1	51.2	46.9	60.3
132.00	104.56	48.79	60.68	77.9	51.2	48.2	47.7
133.00	105.24	49.25	61.25	78.6	51.2	47.1	51.5
134.00	105.91	49.70	61.82	79.3	51.2	47.2	53.5
135.00	106.59	50.16	62.40	80.1	51.2	47.8	46.7
136.00	107.26	50.63	62.97	80.8	51.2	47.8	52.5
137.00	107.93	51.08	63.55	81.5	51.2	47.8	44.5
138.00	108.59	51.54	64.14	82.3	51.2	48.9	56.0
139.00	109.26	52.03	64.71	83.0	51.2	48.1	42.5
140.00	109.92	52.49	65.28	83.8	51.2	47.8	44.6
141.00	110.59	52.95	65.87	84.5	51.2	48.2	50.7
142.00	111.25	53.42	66.44	85.3	51.2	50.5	43.9
143.00	111.91	53.89	67.03	86.0	51.2	48.8	50.4
144.00	112.57	54.36	67.60	86.7	51.2	46.5	66.6
145.00	113.23	54.77	68.21	87.5	51.2	49.7	47.1
146.00	113.89	55.23	68.80	88.2	51.2	48.7	53.0
147.00	114.55	55.71	69.36	89.0	51.2	48.5	54.3
148.00	115.20	56.11	69.99	89.7	51.3	50.7	67.9
149.00	115.86	56.58	70.58	90.5	51.3	49.1	62.5
150.00	116.51	57.02	71.19	91.2	51.3	50.0	53.7
151.00	117.15	57.48	71.80	92.0	51.3	49.4	43.0
152.00	117.80	57.94	72.39	92.7	51.3	50.0	55.2
153.00	118.44	58.38	73.02	93.5	51.4	49.2	54.5
154.00	119.08	58.84	73.62	94.2	51.4	50.1	52.5
155.00	119.73	59.31	74.22	95.0	51.4	49.6	51.0
156.00	120.38	59.78	74.82	95.8	51.4	50.1	49.6
156.46	120.67	60.00	75.10	96.1	51.4	49.6	50.9

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-48	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,601.25	6,139,748.88	1,354.54

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
297	-89	93.63	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	297.0	-89.20
3.00	297.1	-88.90
4.00	304.0	-88.50
5.00	310.1	-87.90
6.00	317.2	-87.80
7.00	323.9	-87.30
8.00	329.7	-86.90
9.00	336.0	-86.40
10.00	340.3	-86.10
11.00	342.8	-85.60
12.00	344.3	-85.40
13.00	345.4	-85.10
14.00	346.4	-85.00
15.00	347.5	-84.60
16.00	348.2	-84.70
17.00	348.9	-84.60
18.00	349.9	-84.50
19.00	350.6	-84.30
20.00	350.9	-84.40
21.00	351.4	-84.20
22.00	352.4	-83.30
23.00	354.1	-82.80
24.00	355.7	-82.80
25.00	357.3	-82.80
26.00	358.8	-82.70
27.00	0.5	-82.40
28.00	1.9	-82.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.30	2.30		
23.60	24.90	1.30		
53.20	53.70	0.50		
53.70	54.70	1.00		
54.70	55.50	0.80		
72.70	85.10	12.40		
86.70	87.10	0.40		

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002



Drillhole Information sheet

HOLE-ID: **BR-10-48**

year drilled: 2010

AREA: **BURNT RIVER
BRULE**

29.00	3.2	-82.30
30.00	4.2	-81.90
31.00	4.9	-81.90
32.00	5.2	-81.60
33.00	5.4	-82.00
34.00	5.5	-82.10
35.00	5.6	-81.90
36.00	5.7	-81.70
37.00	5.8	-81.70
38.00	5.8	-81.60
39.00	6.1	-80.90
40.00	6.6	-81.00
41.00	7.2	-80.60
42.00	7.9	-79.90
43.00	8.7	-79.80
44.00	9.3	-79.80
45.00	9.9	-79.30
46.00	10.5	-79.00
47.00	11.1	-78.40
48.00	11.6	-78.70
49.00	12.0	-78.60
50.00	12.3	-77.90
51.00	12.7	-77.60
52.00	12.7	-77.80
53.00	12.9	-77.70
54.00	13.3	-76.70
55.00	13.6	-76.70
56.00	14.0	-76.40
57.00	14.2	-76.30
58.00	14.5	-76.00
59.00	14.8	-75.80
60.00	15.1	-76.00
61.00	15.3	-75.80
62.00	15.6	-75.90
63.00	15.8	-75.70
64.00	16.0	-75.50
65.00	16.2	-75.90
66.00	16.4	-75.50
67.00	16.7	-76.00
68.00	16.8	-76.00
69.00	17.0	-76.60
70.00	17.3	-75.00
71.00	17.6	-74.60
72.00	17.8	-74.60
73.00	18.1	-74.50

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	


HOLE-ID: BR-10-48	year drilled: 2010	AREA: BURNT RIVER BRULE
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74.00	18.3	-73.90
75.00	18.3	-73.90
76.00	18.4	-73.60
77.00	18.4	-73.90
78.00	18.5	-72.50
79.00	18.6	-72.60
80.00	18.6	-72.60
81.00	18.6	-72.80
82.00	18.6	-72.70
83.00	18.5	-73.20
84.00	18.5	-73.40
85.00	18.5	-73.50
86.00	18.5	-73.30
87.00	18.4	-73.50
88.00	18.4	-73.60
89.00	18.4	-74.40
90.00	18.3	-74.60
91.00	18.3	-75.10
92.00	18.2	-74.90
93.00	18.2	-75.10
93.46	18.1	-74.80

RAW SAMPLE INFORMATION

Date issued: Friday, June 13, 2014
 Reviewed: October 11, 2002

Page 3 of 3

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-49	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,696.27	6,139,805.51	1,341.45

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
320	-88	115.86	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	319.7	-87.80
9.00	317.3	-88.00
10.00	311.7	-87.70
11.00	307.7	-87.70
12.00	305.8	-87.70
13.00	304.5	-88.30
14.00	304.1	-88.10
15.00	304.0	-87.90
16.00	305.6	-87.70
17.00	307.4	-87.70
18.00	309.2	-87.70
19.00	311.5	-87.60
20.00	314.0	-87.50
21.00	316.7	-87.40
22.00	320.0	-87.20
23.00	323.1	-86.90
24.00	326.1	-87.10
25.00	328.4	-87.20
26.00	330.5	-87.20
27.00	332.4	-87.10
28.00	333.9	-87.10
29.00	335.4	-87.10
30.00	336.4	-87.50
31.00	337.2	-87.80
32.00	338.3	-87.50
33.00	339.2	-87.30
34.00	340.5	-87.10

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.20	2.20		
37.40	39.00	1.60		
39.00	40.20	1.20		
40.20	42.60	2.40		
50.50	54.00	3.50		
70.20	75.90	5.70		
75.90	76.70	0.80		
77.90	78.70	0.80		

Date issued: Friday, June 13, 2014
 Reviewed: October 11, 2002



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-49**

year drilled: 2010


AREA:

**BURNT RIVER
BRULE**

35.00	341.9	-86.90
36.00	343.1	-87.00
37.00	344.2	-87.10
38.00	345.1	-87.70
39.00	345.7	-87.70
40.00	346.3	-87.70
41.00	346.7	-87.80
42.00	347.1	-87.80
43.00	347.4	-87.80
44.00	347.7	-88.10
45.00	347.9	-88.10
46.00	347.9	-88.10
47.00	347.5	-88.10
48.00	346.8	-88.50
49.00	346.0	-88.10
50.00	345.2	-88.20
51.00	344.7	-88.50
52.00	344.3	-88.80
53.00	343.9	-88.60
54.00	343.6	-88.00
55.00	343.4	-88.30
56.00	343.3	-88.60
57.00	343.1	-88.70
58.00	342.8	-88.40
59.00	342.5	-88.30
60.00	341.9	-88.10
61.00	341.2	-88.60
62.00	340.6	-88.60
63.00	339.9	-88.70
64.00	339.3	-88.50
65.00	338.6	-88.50
66.00	338.0	-88.70
67.00	337.5	-88.70
68.00	337.1	-88.80
69.00	336.6	-88.50
70.00	336.2	-88.30
71.00	335.6	-88.40
72.00	335.1	-88.20
73.00	334.3	-88.10
74.00	333.5	-88.30
75.00	332.7	-88.20
76.00	331.8	-88.00
77.00	330.8	-87.50
78.00	329.5	-87.30
79.00	328.2	-87.20

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	


HOLE-ID: BR-10-49	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

80.00	326.8	-86.70
81.00	325.2	-86.80
82.00	323.7	-86.90
83.00	322.1	-86.70
84.00	320.3	-86.10
85.00	318.4	-86.00
86.00	316.4	-85.50
87.00	314.2	-85.20
88.00	312.0	-85.20
89.00	309.9	-85.60
90.00	308.0	-85.50
91.00	306.2	-85.50
92.00	304.4	-85.50
93.00	302.6	-85.30
94.00	300.9	-85.50
95.00	299.3	-85.50
96.00	297.7	-85.40
97.00	296.2	-85.10
98.00	294.5	-85.00
99.00	292.8	-85.10
100.00	291.2	-85.30
101.00	289.7	-85.00
102.00	288.1	-84.80
103.00	286.4	-85.20
104.00	284.7	-85.30
105.00	283.1	-85.00
106.00	281.6	-85.10
107.00	279.9	-84.80
108.00	278.2	-84.30
109.00	276.5	-84.30
110.00	275.0	-84.50
111.00	273.6	-84.30
112.00	272.2	-84.80
113.00	270.7	-84.00
114.00	269.3	-83.80
115.00	268.1	-83.90
115.58	267.3	-84.20

RAW SAMPLE INFORMATION

Date issued: Friday, June 13, 2014
Reviewed: October 11, 2002

Page 3 of 4

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-49	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	--------------------------------------

Date issued: Friday, June 13, 2014
Reviewed: October 11, 2002

Page 4 of 4

Century
WIRELINE SERVICES

COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-49

COMPANY: WESTERN COAL CORPORATION
WELL: BR10-49
FIELD: BRULE
COUNTRY: CANADA
PROVINCE: BRITISH COLUMBIA
OTHER SERVICES: NEUTRON

SECTION: BRULE NORTH
TOWNSHIP: N/A
RANGE: N/A
LICENSE NO.: N/A
UNIQUE WELL ID.: N/A
PERMANENT DATUM: GL
LOG MEASURED FROM: GL
DRL MEASURED FROM: GL

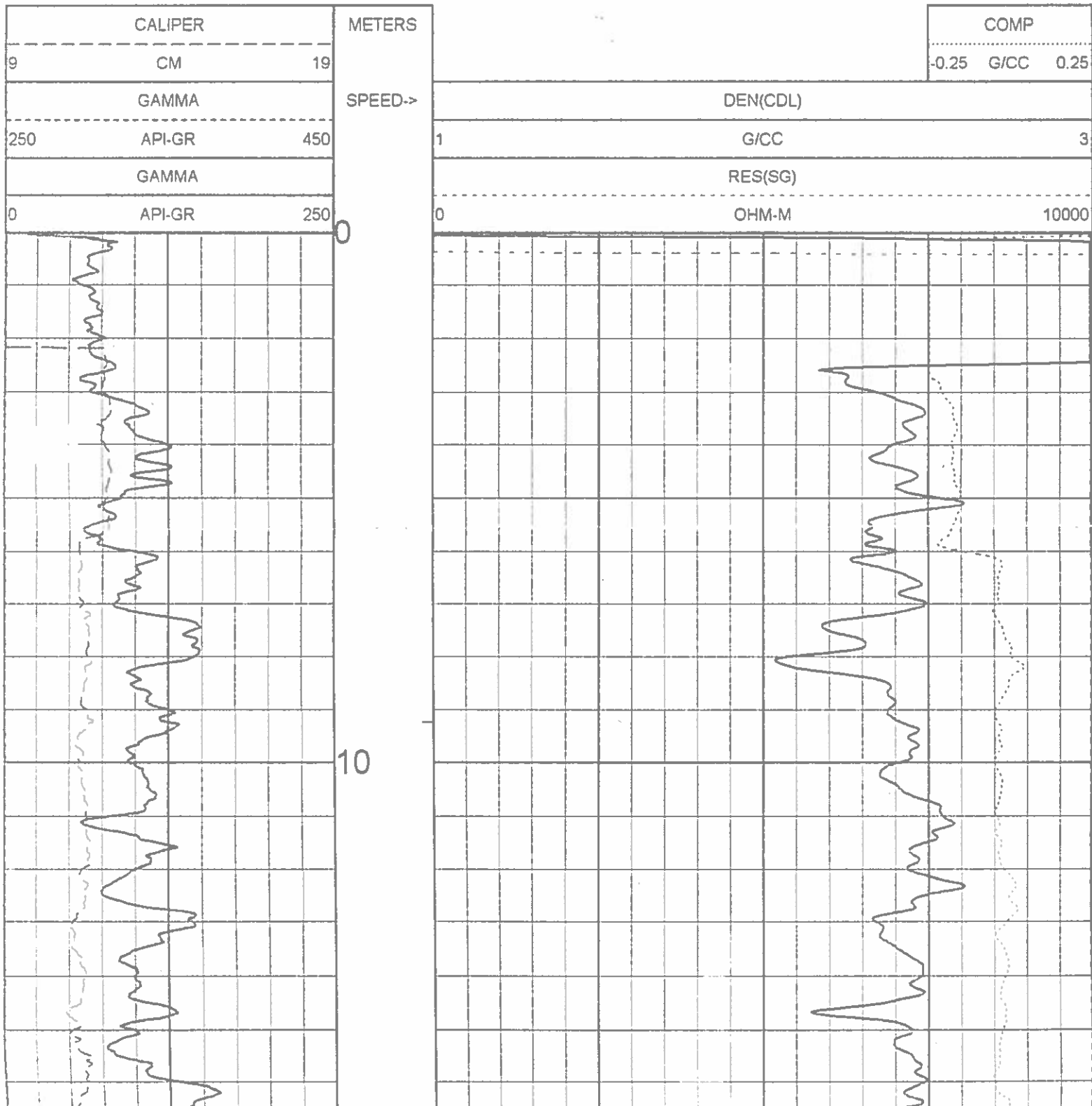
ELEVATION KB: N/A
ELEVATION DF: N/A
ELEVATION GL: N/A
RIG NUMBER: :
LOGGER TD: :
ARRIVAL TIME: :
DEPARTURE TIME: :
CIRC STOPPED: N/A

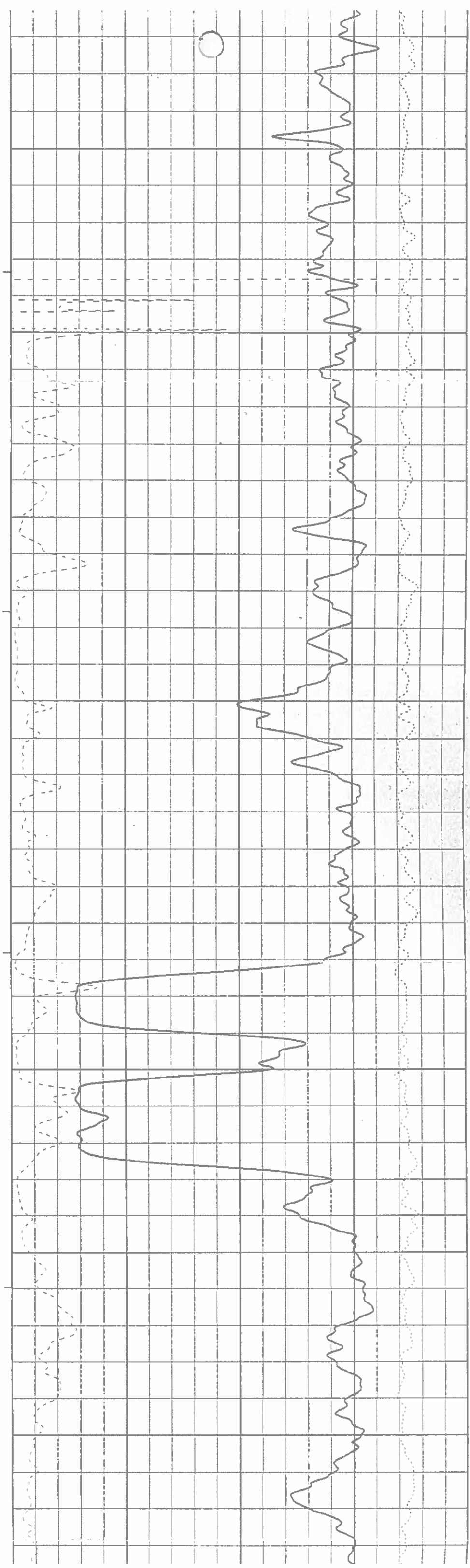
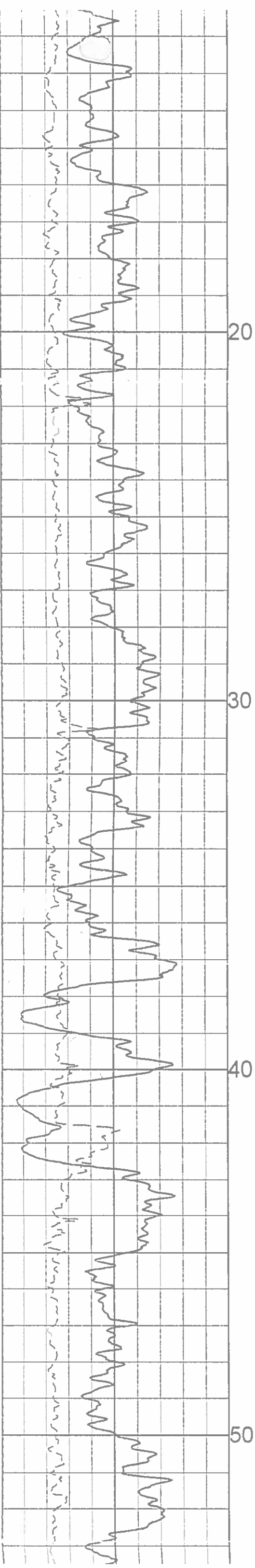
DATE: 10/19/10
DEPTH DRILLER: 123.4
BIT SIZE: 11.43
LOG TOP: 0.04
LOG BOTTOM: 115.86
CASING LOGGER: 6.096
CASING DRILLER: 6.096
CASING TYPE: STEEL
BOREHOLE FLUID: WATER
RM TEMPERATURE: N/A
MUD RES: N/A
MUD WEIGHT: 1.00
WT USED BY: G. HOLMLUND
RECORDED BY: T. NEAL
REMARKS 1: VERTICAL
REMARKS 2: ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

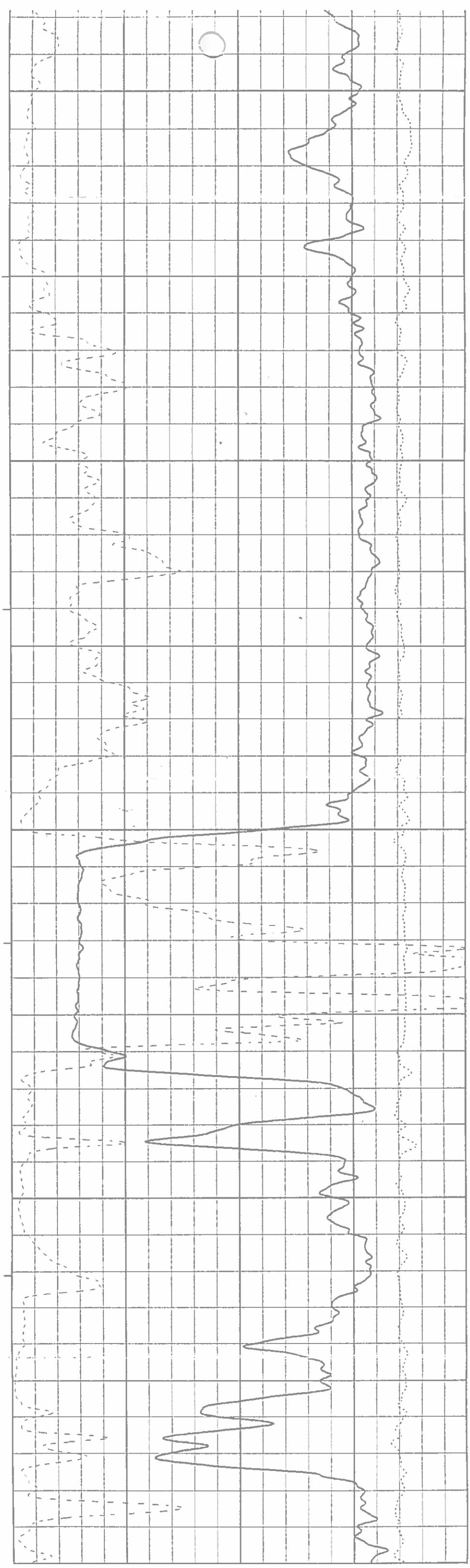
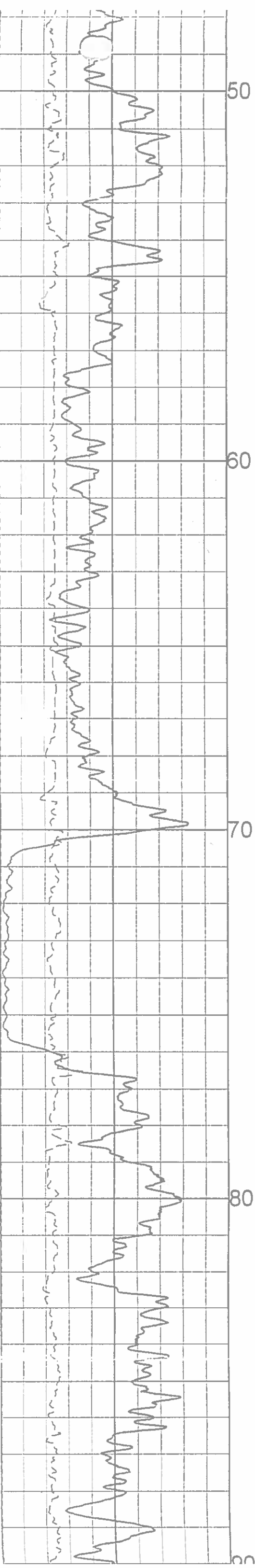
1:100 BULK DENSITY BR10-49 10/19/10

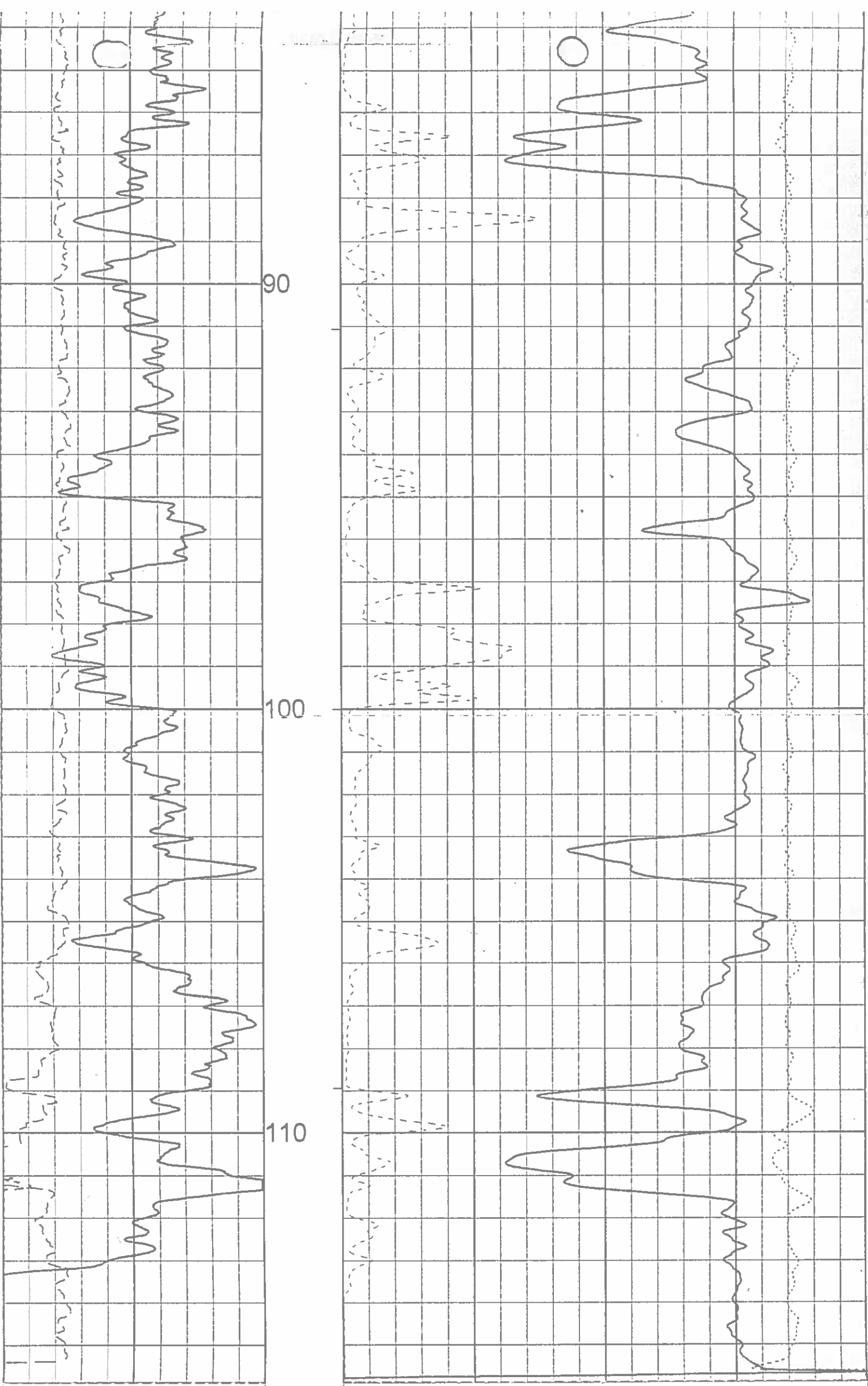
LOG PARAMETERS

MATRIX DENSITY: 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T: 177
MAGNETIC DECL: 21.0 ELECT. CUTOFF: 90000 BIT SIZE: 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010 VERSION = 3.641E









0	API-GR	250
	GAMMA	
250	API-GR	450
	GAMMA	
9	CM	19
	CALIPER	

SPEED->
METERS

0	OHM-M	10000
	RES(SG)	
1	G/CC	3
	DEN(CDL)	
	-0.25 G/CC 0.25	
	COMP	

1:100 BULK DENSITY BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010		VERSION = 3 64IE

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-49

COMPANY : WESTERN COAL CORPORATION
WELL : BR10-49
FIELD : BRULE
COUNTRY : CANADA
PROVINCE : BRITISH COLUMBIA

OTHER SERVICES
NEUTRON

SECTION : BRULE NORTH
TOWNSHIP : N/A
RANGE : N/A
LICENSE NO. : N/A
UNIQUE WELL ID. : N/A

PERMANENT DATUM : GL
LOG MEASURED FROM : GL
DRL MEASURED FROM : GL

DATE : 10/19/10
DEPTH DRILLER : 123.4
BIT SIZE : 11.43
LOG TOP : 0.04
LOG BOTTOM : 115.86

CASING LOGGER : 6.096
CASING DRILLER : 6.096
CASING TYPE : STEEL
BOREHOLE FLUID : WATER
RM TEMPERATURE : N/A
MUD RES : N/A
MUD WEIGHT : 1.00

DESIGNED BY : G. HOLMLUND
CORRECTED BY : T. NEAL
REMARKS 1 : VERTICAL
REMARKS 2 :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

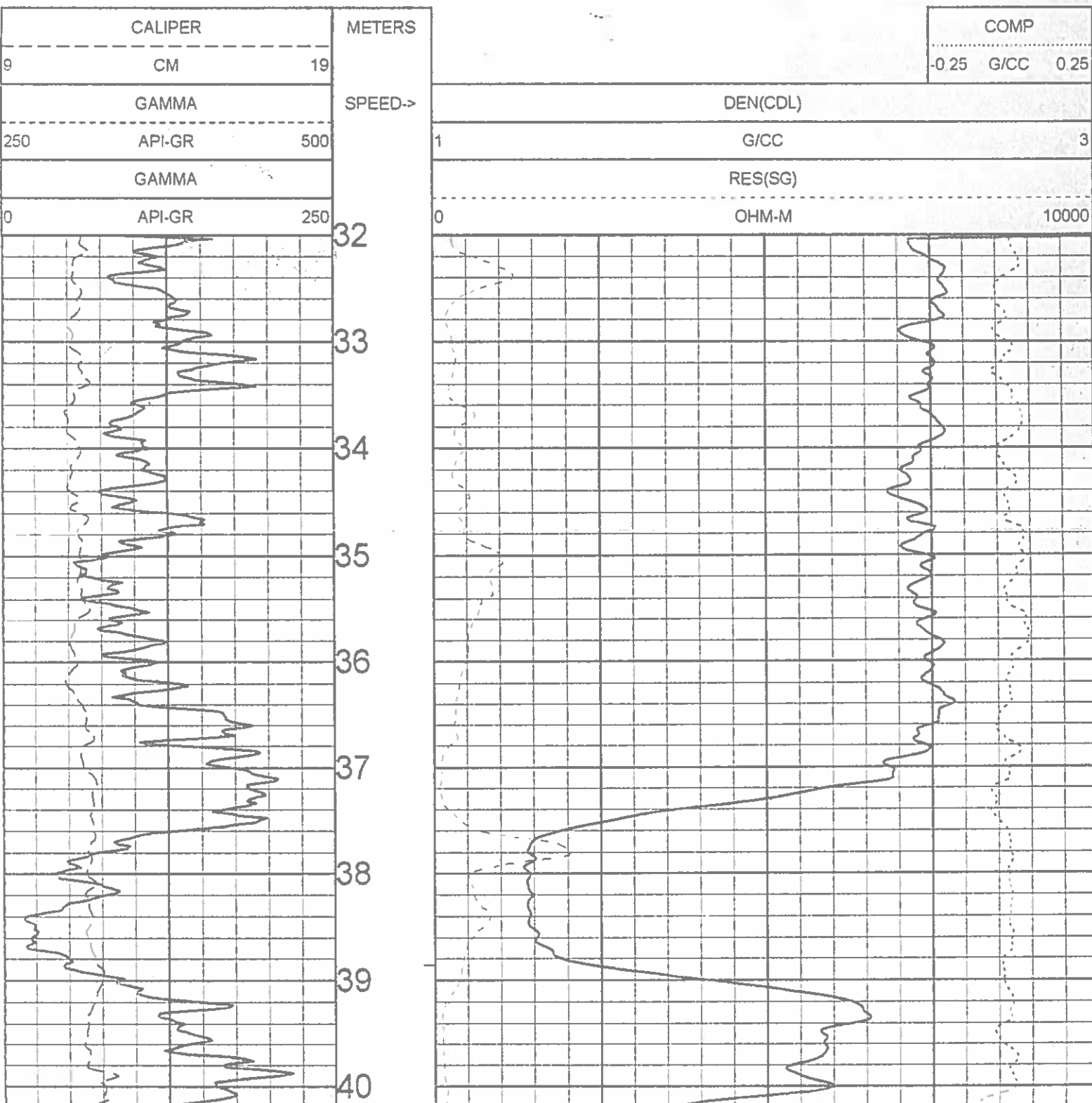
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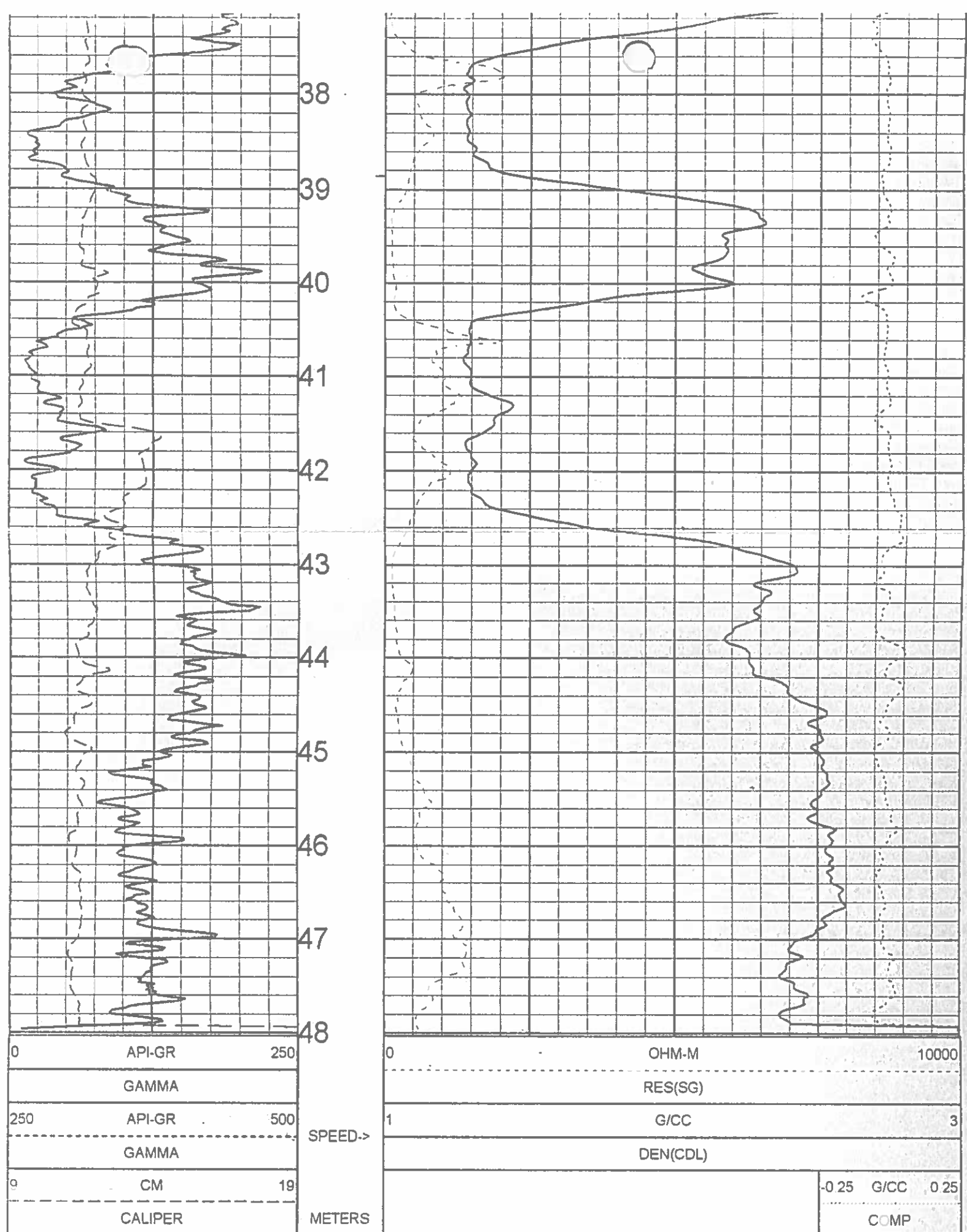
LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 21.0
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 90000

MATRIX DELTA T : 177
BIT SIZE : 11.43
VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-49 10/19/10

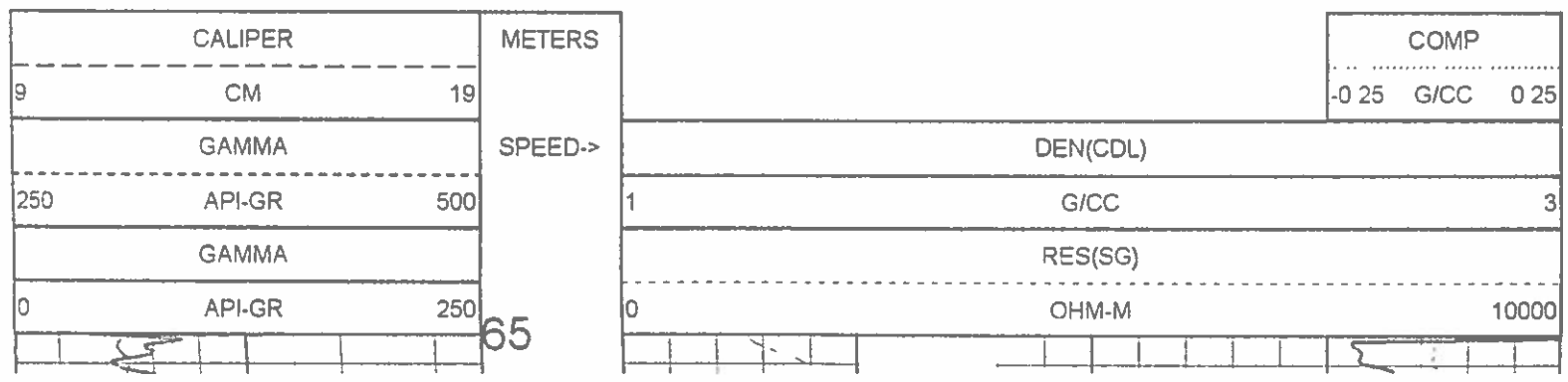
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		
VERSION = 3.64IE		

1:50 BULK DENSITY EXPANDED BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		
VERSION = 3.64IE		



GAMMA		
250	GR	500
GAMMA		
9	CM	19
CALIPER		
		METERS

RES(SG)		
1	G/CC	3
DEN(CDL)		
		-0.25 G/CC 0.25
		COMP

1:50 BULK DENSITY EXPANDED BR10-49 10/19/10

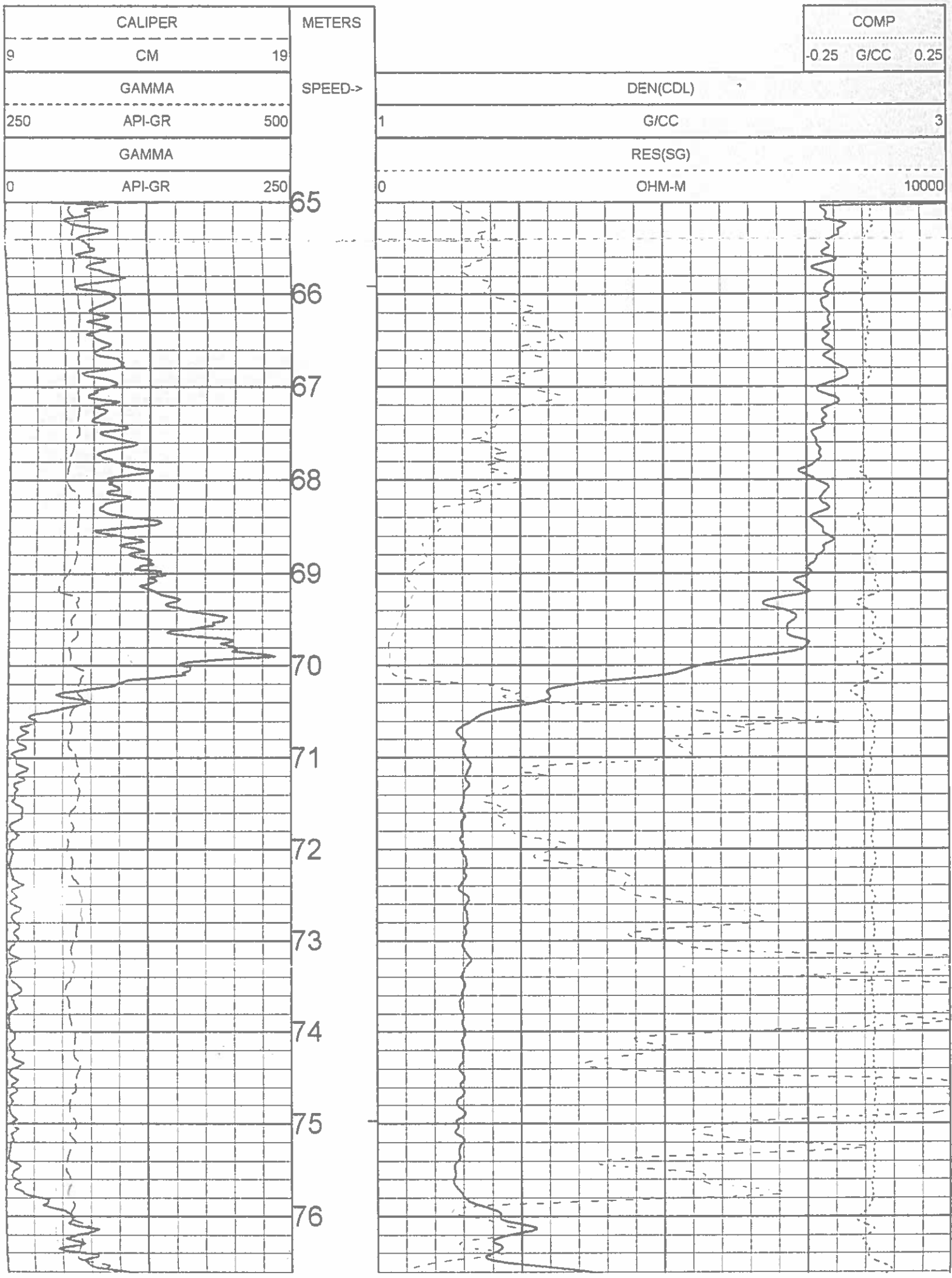
LOG PARAMETERS

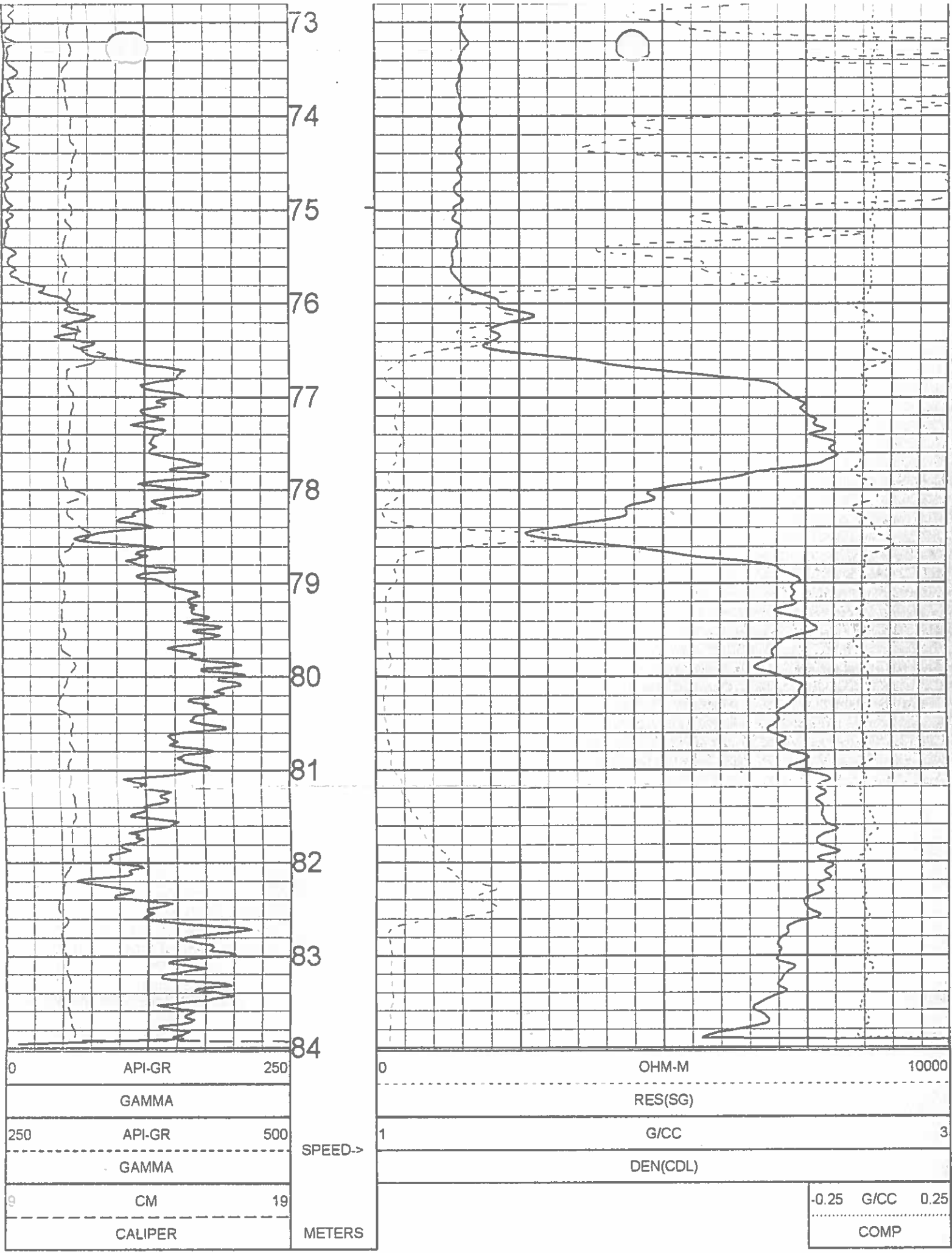
MATRIX DENSITY: 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T: 177
MAGNETIC DECL: 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010 VERSION = 3 64IE

1:50 BULK DENSITY EXPANDED BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY: 2.65 NEUTRON MATRIX: SANDSTONE MATRIX DELTA T: 177
MAGNETIC DECL: 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010 VERSION = 3 64IE





1:50 BULK DENSITY EXPANDED BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-49 10/19/10 10:50
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	158183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

Century
WIRELINE SERVICES

GAMMA - NEUTRON
BR10-49

COMPANY: WESTERN COAL CORPORATION

OTHER SERVICES
DENSITY

WELL: BR10-49

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENSE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 10/19/10

DEPTH DRILLER: 123 4

BIT SIZE: 11.43

LOG TOP: 4.55

LOG BOTTOM: 115.76

CASING LOGGER: 6.096

CASING DRILLER: 6.096

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RTM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

RECORDED BY: G HOLMLUND

REMARKS 1: T NEAL

REMARKS 2: VERTICAL

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 NEUTRON BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY: 2.65

NEUTRON MATRIX: SANDSTONE

MATRIX DELTA T: 177

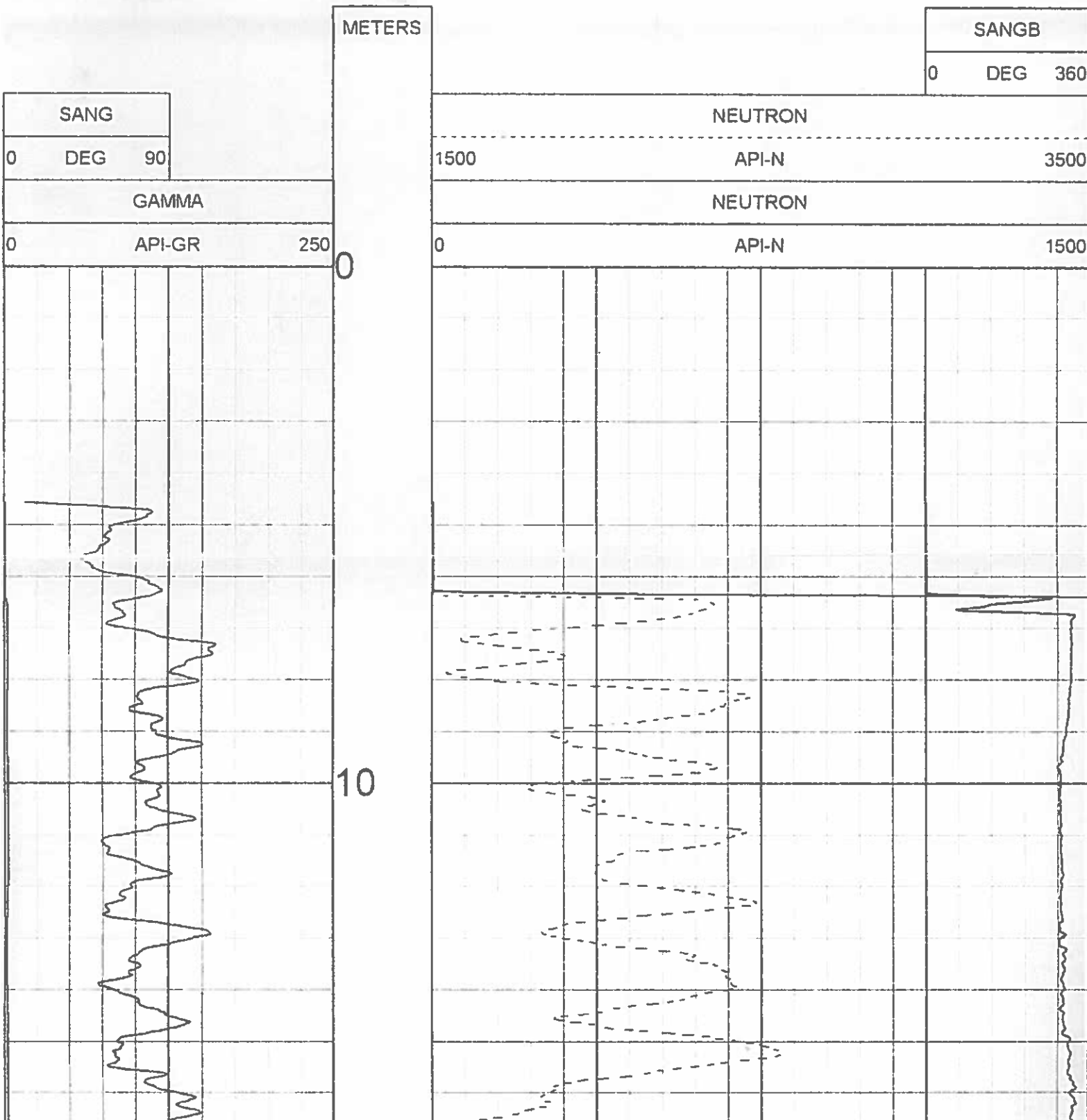
MAGNETIC DECL: 21.0

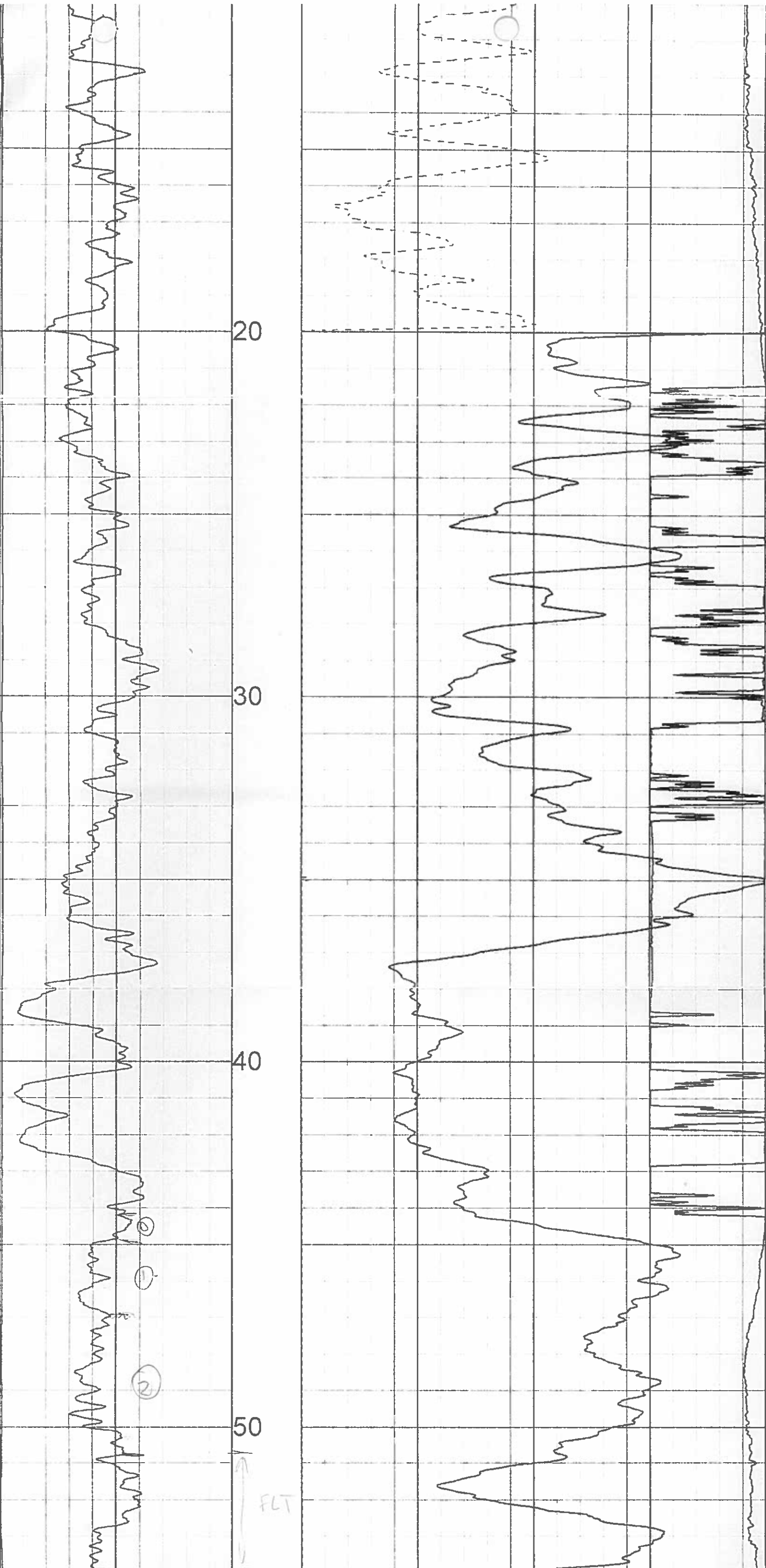
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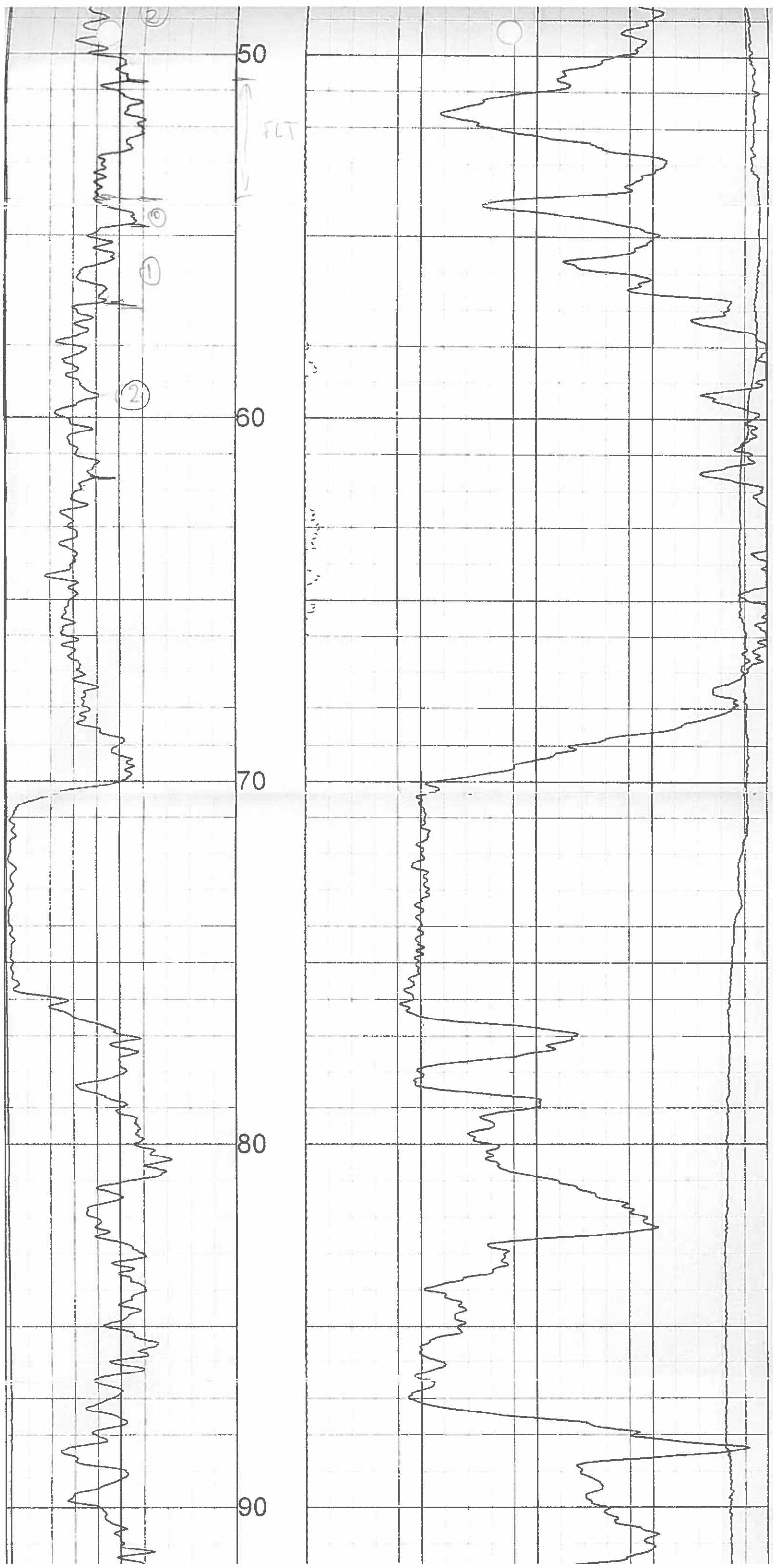
BIT SIZE: 11.43

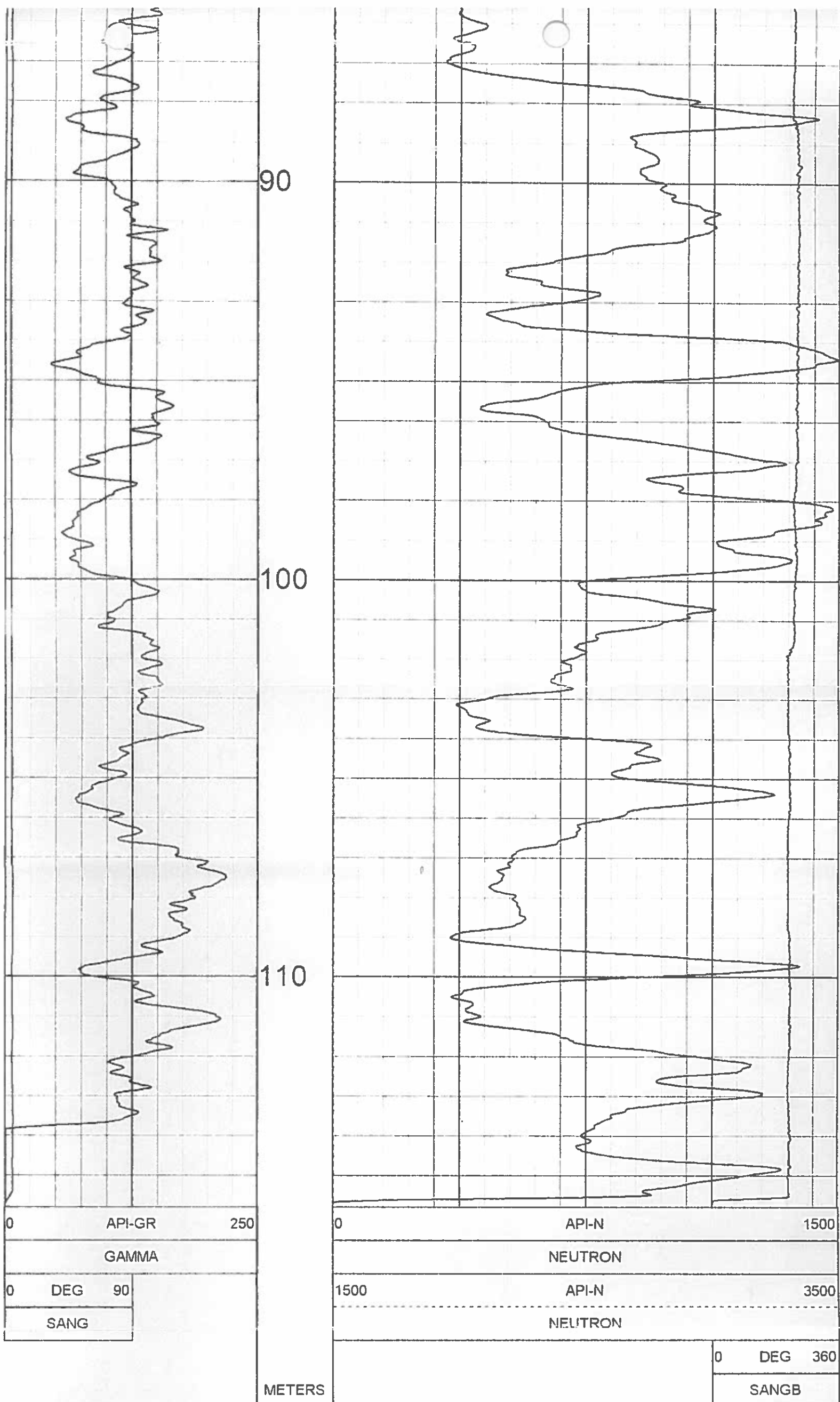
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/17/2010

VERSION = 3 64IE







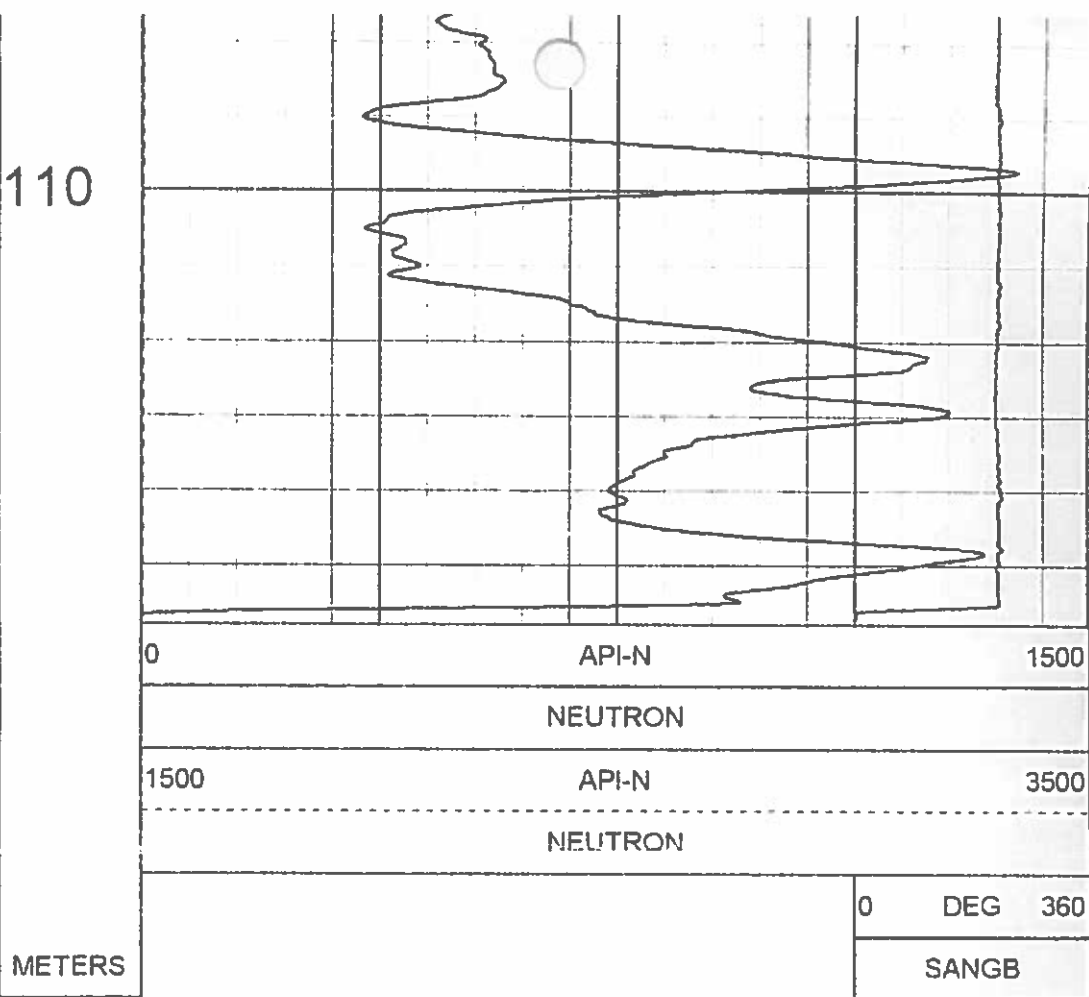
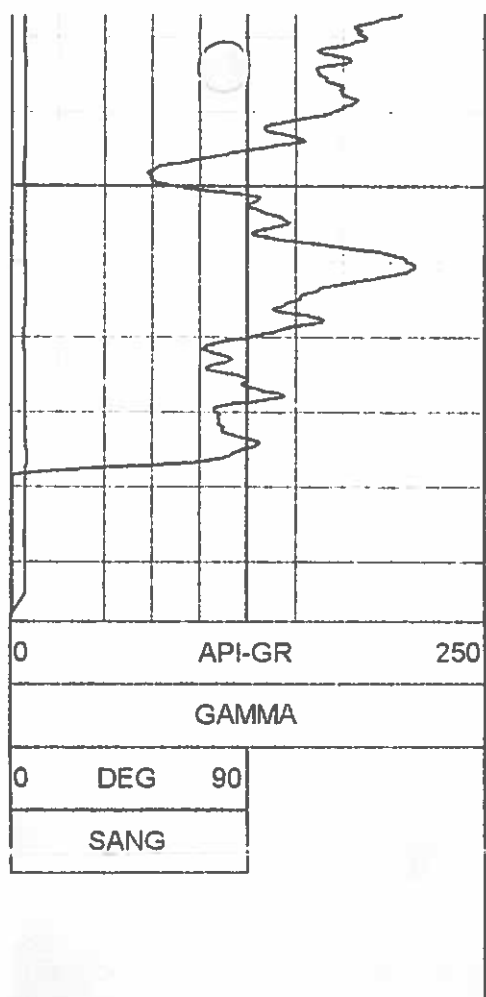


1:100 NEUTRON BR10-49 10/19/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 10/17/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-49 10/19/10 11:20



▲ 1:100 NEUTRON BR10-49 10/19/10 ▲

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON 0 10/17/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-49 10/19/10 11:20
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

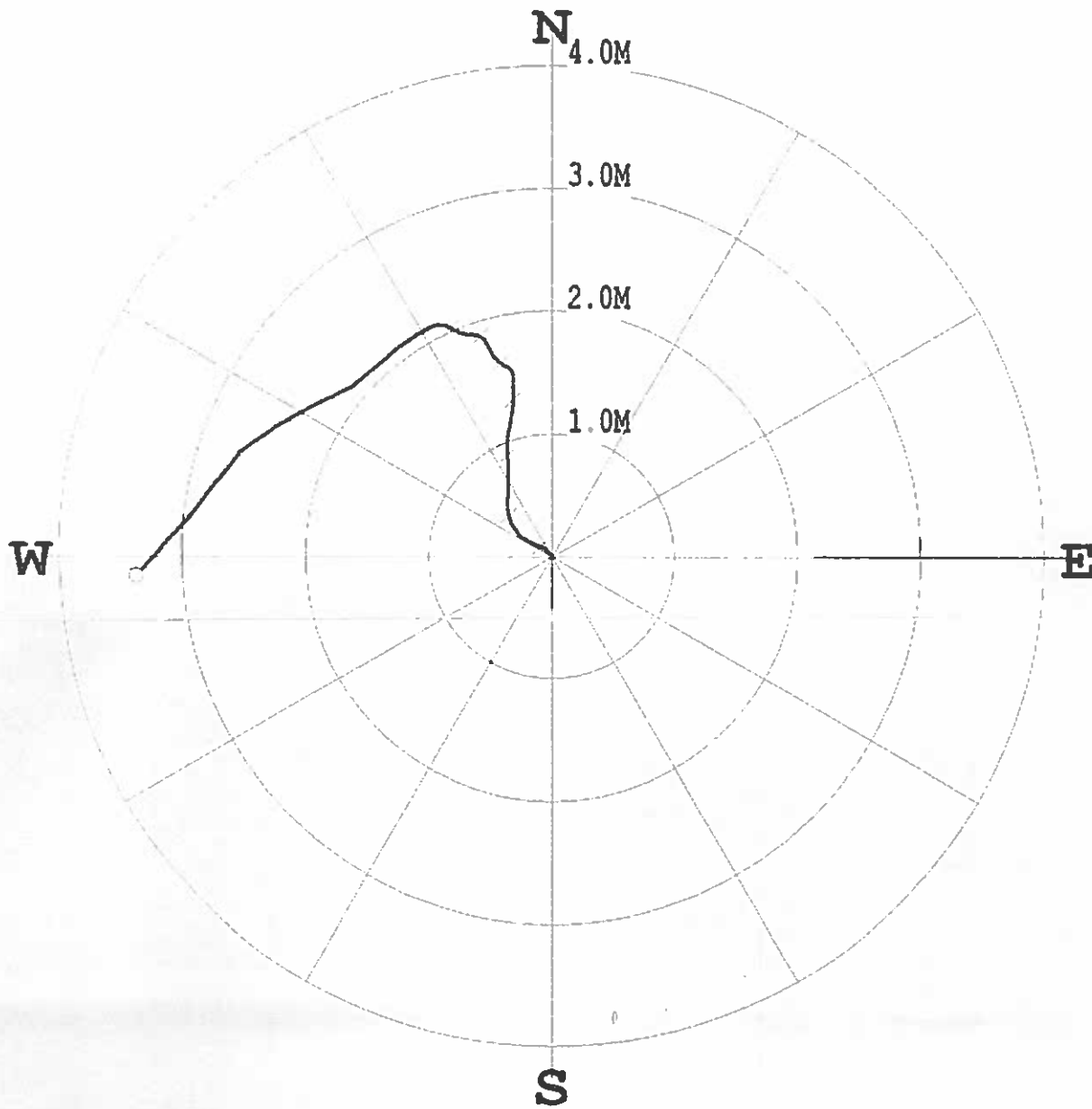
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA 3.000	[API-GR]	0.000 [CPS]
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2	Sep24,10	10:57:57	NEUTRON 0.000	[API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC 271.000	[API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP 10.000	[MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP 100.000	[MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N) 0.000	[OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16) 1996.000	[OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N) 0.000	[OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64) 1990.000	[OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP 52.600	[DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP 113.100	[DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES 0.000	[OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES 989.000	[OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-49
 DATE OF LOG: 10/19/10
 PROBE: 9057A 4429



SCALE: 1 M/CM
 TRUE DEPTH: 115.39 M
 AZIMUTH: 267.4
 DISTANCE: 3.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-49
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/19/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-49_10-19-10_11-20_9057A_.02_4.55_115.76_DEVI.log

TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
8.00	7.99	0.04	-0.03	0.1	319.7	2.2	319.3
9.00	8.99	0.07	-0.06	0.1	317.3	2.0	309.8
10.00	9.99	0.08	-0.09	0.1	311.7	2.3	290.2
11.00	10.99	0.10	-0.13	0.2	307.7	2.3	298.9
12.00	11.99	0.12	-0.16	0.2	305.8	2.3	299.0
13.00	12.99	0.13	-0.19	0.2	304.5	1.7	290.9
14.00	13.98	0.15	-0.22	0.3	304.1	1.9	306.8
15.00	14.98	0.17	-0.25	0.3	304.0	2.1	314.5
16.00	15.98	0.20	-0.28	0.3	305.6	2.2	314.4
17.00	16.98	0.23	-0.30	0.4	307.4	2.3	321.9
18.00	17.98	0.26	-0.32	0.4	309.2	2.3	336.2
19.00	18.98	0.30	-0.34	0.5	311.5	2.4	336.4
20.00	19.98	0.34	-0.35	0.5	314.0	2.5	348.6
21.00	20.98	0.38	-0.36	0.5	316.7	2.6	351.5
22.00	21.98	0.43	-0.36	0.6	320.0	2.8	360.0
23.00	22.98	0.48	-0.36	0.6	323.1	3.1	3.5
24.00	23.98	0.53	-0.36	0.6	326.1	2.9	2.3
25.00	24.97	0.58	-0.36	0.7	328.4	2.8	1.6
26.00	25.97	0.63	-0.36	0.7	330.5	2.8	0.9
27.00	26.97	0.68	-0.36	0.8	332.4	2.9	355.8
28.00	27.97	0.73	-0.36	0.8	333.9	2.9	359.2
29.00	28.97	0.78	-0.36	0.9	335.4	2.9	356.8
30.00	29.97	0.83	-0.36	0.9	336.4	2.5	8.2
31.00	30.97	0.87	-0.36	0.9	337.2	2.2	2.4
32.00	31.97	0.91	-0.36	1.0	338.3	2.5	0.5
33.00	32.97	0.95	-0.36	1.0	339.2	2.7	0.1
34.00	33.96	1.00	-0.36	1.1	340.5	2.9	11.6
35.00	34.96	1.05	-0.34	1.1	341.9	3.1	11.6
36.00	35.96	1.11	-0.34	1.2	343.1	3.0	10.5
37.00	36.96	1.16	-0.33	1.2	344.2	2.9	10.2
38.00	37.96	1.20	-0.32	1.2	345.1	2.3	9.8
39.00	38.96	1.24	-0.32	1.3	345.7	2.3	4.1
40.00	39.96	1.28	-0.31	1.3	346.3	2.3	2.7
41.00	40.96	1.32	-0.31	1.4	346.7	2.2	0.7
42.00	41.96	1.36	-0.31	1.4	347.1	2.2	359.0
43.00	42.95	1.40	-0.31	1.4	347.4	2.2	1.0
44.00	43.95	1.44	-0.31	1.5	347.7	1.9	357.2
45.00	44.95	1.47	-0.31	1.5	347.9	1.9	353.1
46.00	45.95	1.50	-0.32	1.5	347.9	1.9	339.2

10.00	9.99	0.01	-0.09	0.1	311.7	2.3	290.2
11.00	10.99	0.10	-0.13	0.2	307	2.3	298.9
12.00	11.99	0.12	-0.16	0.2	305	2.3	299.0
13.00	12.99	0.13	-0.19	0.2	304.5	1.7	290.9
14.00	13.98	0.15	-0.22	0.3	304.1	1.9	306.8
15.00	14.98	0.17	-0.25	0.3	304.0	2.1	314.5
16.00	15.98	0.20	-0.28	0.3	305.6	2.2	314.4
17.00	16.98	0.23	-0.30	0.4	307.4	2.3	321.9
18.00	17.98	0.26	-0.32	0.4	309.2	2.3	336.2
19.00	18.98	0.30	-0.34	0.5	311.5	2.4	336.4
20.00	19.98	0.34	-0.35	0.5	314.0	2.5	348.6
21.00	20.98	0.38	-0.36	0.5	316.7	2.6	351.5
22.00	21.98	0.43	-0.36	0.6	320.0	2.8	360.0
23.00	22.98	0.48	-0.36	0.6	323.1	3.1	3.5
24.00	23.98	0.53	-0.36	0.6	326.1	2.9	2.3
25.00	24.97	0.58	-0.36	0.7	328.4	2.8	1.6
26.00	25.97	0.63	-0.36	0.7	330.5	2.8	0.9
27.00	26.97	0.68	-0.36	0.8	332.4	2.9	355.8
28.00	27.97	0.73	-0.36	0.8	333.9	2.9	359.2
29.00	28.97	0.78	-0.36	0.9	335.4	2.9	356.8
30.00	29.97	0.83	-0.36	0.9	336.4	2.5	8.2
31.00	30.97	0.87	-0.36	0.9	337.2	2.2	2.4
32.00	31.97	0.91	-0.36	1.0	338.3	2.5	0.5
33.00	32.97	0.95	-0.36	1.0	339.2	2.7	0.1
34.00	33.96	1.00	-0.36	1.1	340.5	2.9	11.6
35.00	34.96	1.05	-0.34	1.1	341.9	3.1	11.6
36.00	35.96	1.11	-0.34	1.2	343.1	3.0	10.5
37.00	36.96	1.16	-0.33	1.2	344.2	2.9	10.2
38.00	37.96	1.20	-0.32	1.2	345.1	2.3	9.8
39.00	38.96	1.24	-0.32	1.3	345.7	2.3	4.1
40.00	39.96	1.28	-0.31	1.3	346.3	2.3	2.7
41.00	40.96	1.32	-0.31	1.4	346.7	2.2	0.7
42.00	41.96	1.36	-0.31	1.4	347.1	2.2	359.0
43.00	42.95	1.40	-0.31	1.4	347.4	2.2	1.0
44.00	43.95	1.44	-0.31	1.5	347.7	1.9	357.2
45.00	44.95	1.47	-0.31	1.5	347.9	1.9	353.1
46.00	45.95	1.50	-0.32	1.5	347.9	1.9	339.2
47.00	46.95	1.53	-0.34	1.6	347.5	1.9	325.1
48.00	47.95	1.55	-0.36	1.6	346.8	1.5	303.3
49.00	48.95	1.56	-0.39	1.6	346.0	1.9	305.2
50.00	49.95	1.58	-0.42	1.6	345.2	1.8	303.7
51.00	50.95	1.60	-0.44	1.7	344.7	1.5	332.4
52.00	51.95	1.61	-0.45	1.7	344.3	1.2	315.3
53.00	52.95	1.63	-0.47	1.7	343.9	1.4	312.5
54.00	53.95	1.65	-0.49	1.7	343.6	2.0	334.4
55.00	54.95	1.68	-0.50	1.8	343.4	1.7	333.3
56.00	55.95	1.71	-0.51	1.8	343.3	1.4	328.9
57.00	56.95	1.73	-0.53	1.8	343.1	1.3	325.7
58.00	57.95	1.75	-0.54	1.8	342.8	1.6	327.7
59.00	58.95	1.77	-0.56	1.9	342.5	1.7	312.8
60.00	59.95	1.79	-0.58	1.9	341.9	1.9	296.3
61.00	60.95	1.80	-0.61	1.9	341.2	1.4	290.2
62.00	61.95	1.80	-0.63	1.9	340.6	1.4	275.8
63.00	62.95	1.80	-0.66	1.9	339.9	1.3	278.9
64.00	63.95	1.81	-0.68	1.9	339.3	1.5	272.7
65.00	64.95	1.81	-0.71	1.9	338.6	1.5	274.5
66.00	65.95	1.81	-0.73	2.0	338.0	1.3	295.0
67.00	66.95	1.82	-0.75	2.0	337.5	1.3	291.1
68.00	67.94	1.83	-0.78	2.0	337.1	1.2	298.8
69.00	68.94	1.84	-0.80	2.0	336.6	1.5	301.1
70.00	69.94	1.85	-0.82	2.0	336.2	1.7	295.7
71.00	70.94	1.87	-0.85	2.0	335.6	1.6	300.3
72.00	71.94	1.88	-0.87	2.1	335.1	1.8	282.7
73.00	72.94	1.88	-0.90	2.1	334.3	1.9	269.7
74.00	73.94	1.88	-0.93	2.1	333.5	1.7	255.6
75.00	74.94	1.87	-0.96	2.1	332.7	1.8	252.6
76.00	75.94	1.86	-0.99	2.1	331.8	2.0	240.6
77.00	76.94	1.84	-1.03	2.1	330.8	2.5	240.1
78.00	77.94	1.82	-1.07	2.1	329.5	2.7	238.6
79.00	78.94	1.79	-1.11	2.1	328.2	2.8	238.2
80.00	79.94	1.76	-1.15	2.1	326.8	3.3	238.1
81.00	80.94	1.73	-1.20	2.1	325.2	3.2	234.6
82.00	81.93	1.70	-1.25	2.1	323.7	3.1	230.6
83.00	82.93	1.66	-1.29	2.1	322.1	3.3	226.7
84.00	83.93	1.62	-1.34	2.1	320.3	3.9	228.8
85.00	84.93	1.57	-1.40	2.1	318.4	4.0	229.6
86.00	85.92	1.52	-1.45	2.1	316.4	4.5	231.1
87.00	86.92	1.47	-1.51	2.1	314.2	4.8	231.0
88.00	87.92	1.42	-1.58	2.1	312.0	4.8	228.2
89.00	88.91	1.37	-1.64	2.1	309.9	4.4	246.1
90.00	89.91	1.34	-1.71	2.2	308.0	4.5	243.0
91.00	90.91	1.30	-1.78	2.2	306.2	4.5	241.1
92.00	91.91	1.27	-1.85	2.2	304.4	4.5	239.7
93.00	92.90	1.23	-1.92	2.3	302.6	4.7	244.2
94.00	93.90	1.19	-1.99	2.3	300.9	4.5	240.8
95.00	94.90	1.16	-2.06	2.4	299.3	4.5	246.9
96.00	95.89	1.12	-2.13	2.4	297.7	4.6	240.1
97.00	96.89	1.08	-2.20	2.4	296.2	4.9	246.3
98.00	97.89	1.03	-2.27	2.5	294.5	5.0	233.2
99.00	98.88	0.98	-2.34	2.5	292.8	4.9	242.2
100.00	99.88	0.94	-2.41	2.6	291.2	4.7	235.1
101.00	100.88	0.89	-2.48	2.6	289.7	5.0	232.4
102.00	101.87	0.83	-2.54	2.7	288.1	5.2	213.3
103.00	102.87	0.76	-2.59	2.7	286.4	4.8	216.8
104.00	103.86	0.70	-2.65	2.7	284.7	4.7	222.1
105.00	104.86	0.63	-2.70	2.8	283.1	5.0	221.6
106.00	105.86	0.56	-2.76	2.8	281.6	4.9	215.8
107.00	106.85	0.49	-2.81	2.9	279.9	5.2	214.3
108.00	107.85	0.42	-2.87	2.9	278.2	5.7	217.0
109.00	108.84	0.33	-2.93	2.9	276.5	5.7	224.1
110.00	109.84	0.26	-3.00	3.0	275.0	5.5	223.0
111.00	110.83	0.19	-3.06	3.1	273.6	5.7	225.0
112.00	111.83	0.12	-3.13	3.1	272.2	5.2	217.3
113.00	112.82	0.04	-3.19	3.2	270.7	6.0	218.8
114.00	113.82	-0.04	-3.26	3.3	269.3	6.2	224.1
115.00	114.81	-0.11	-3.33	3.3	268.1	6.1	219.0
115.58	115.39	-0.16	-3.37	3.4	267.3	5.8	222.9



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-51

year drilled: 2010

AREA:

BURNT RIVER
BRULE

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,689.34	6,139,682.38	

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
262	-88	86.21	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments: slim tool

SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	261.7	-88.40
5.00	279.5	-88.80
6.00	279.9	-88.80
7.00	277.1	-88.90
8.00	275.2	-89.20
9.00	275.2	-89.10
10.00	275.5	-89.10
11.00	275.2	-89.00
12.00	276.0	-89.20
13.00	277.4	-89.50
14.00	279.2	-89.70
15.00	281.1	-89.50
16.00	283.0	-89.40
17.00	284.9	-89.50
18.00	287.0	-89.30
19.00	289.7	-89.10
20.00	292.2	-88.90
21.00	294.8	-89.00
22.00	297.7	-88.50
23.00	301.0	-88.40
24.00	304.3	-88.30
25.00	308.3	-88.40
26.00	312.1	-88.50
27.00	315.7	-88.10
28.00	319.1	-87.90
29.00	322.5	-87.80
30.00	325.8	-87.50

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.40	2.40		
14.60	15.50	0.90		
40.70	41.40	0.70		
41.40	42.30	0.90		
42.30	43.20	0.90		
66.10	72.30	6.20		
73.20	73.80	0.60		

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: **BR-10-51**

year drilled: 2010

AREA: **BURNT RIVER
BRULE**

31.00	329.0	-87.20
32.00	332.0	-87.10
33.00	334.6	-86.80
34.00	337.0	-86.60
35.00	339.2	-86.50
36.00	341.3	-86.20
37.00	343.2	-86.00
38.00	345.0	-85.80
39.00	346.5	-85.60
40.00	347.8	-85.70
41.00	349.0	-85.40
42.00	350.2	-85.00
43.00	351.4	-84.70
44.00	352.4	-84.50
45.00	353.3	-84.60
46.00	354.4	-84.40
47.00	355.8	-84.40
48.00	357.2	-84.10
49.00	358.7	-83.90
50.00	0.0	-83.90
51.00	1.1	-83.60
52.00	1.9	-83.70
53.00	2.1	-84.20
54.00	2.2	-83.80
55.00	2.2	-83.90
56.00	2.3	-83.90
57.00	2.3	-83.70
58.00	2.5	-83.80
59.00	2.5	-84.00
60.00	2.7	-83.70
61.00	2.9	-83.40
62.00	3.3	-82.80
63.00	3.8	-82.60
64.00	4.2	-82.70
65.00	4.7	-82.50
66.00	5.1	-82.90
67.00	5.5	-83.20
68.00	5.8	-82.80
69.00	6.1	-83.00
70.00	6.5	-82.90
71.00	6.8	-83.00
72.00	7.1	-82.70
73.00	7.5	-82.10
74.00	7.8	-82.60
75.00	8.2	-82.50

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-51	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

76.00	8.4	-82.70
77.00	8.7	-82.60
78.00	9.1	-82.50
79.00	9.5	-82.30
80.00	9.8	-82.40
81.00	10.1	-82.30
82.00	10.4	-82.20
83.00	10.6	-82.30
84.00	10.9	-82.40
85.00	11.3	-82.10
86.00	11.6	-81.80
86.04	11.6	-81.80

RAW SAMPLE INFORMATION

Date issued: Friday, June 13, 2014
 Reviewed: October 11, 2002

Page 3 of 3



COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BR10-51

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-51

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENSE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 10/21/10

DEPTH DRILLER: 26.86

BIT SIZE: 11.43

LOG TOP: 0.25

LOG BOTTOM: 26.19

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

RECORDED BY: G. HOLMLUND

REMARKS 1: T. NEAL

REMARKS 2: VERTICAL

OTHER SERVICES
NEUTRON

ELEVATION KB: N/A

ELEVATION DF: N/A

ELEVATION GL: N/A

RIG NUMBER: :

LOGGER TD: :

ARRIVAL TIME: :

DEPARTURE TIME: :

CIRC STOPPED: N/A

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:100 BULK DENSITY BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY: 2.65

NEUTRON MATRIX: SANDSTONE

MATRIX DELTA T: 177

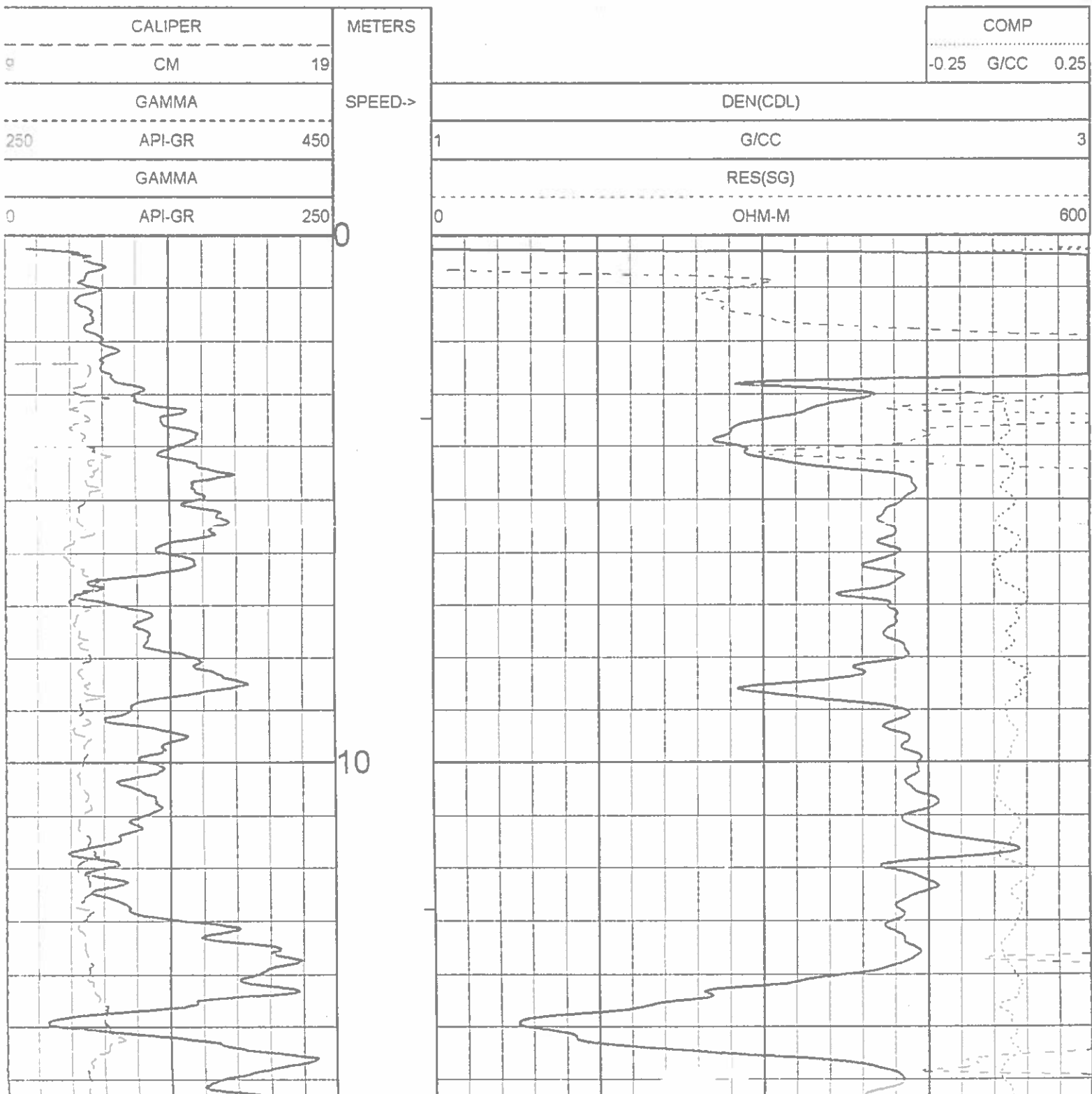
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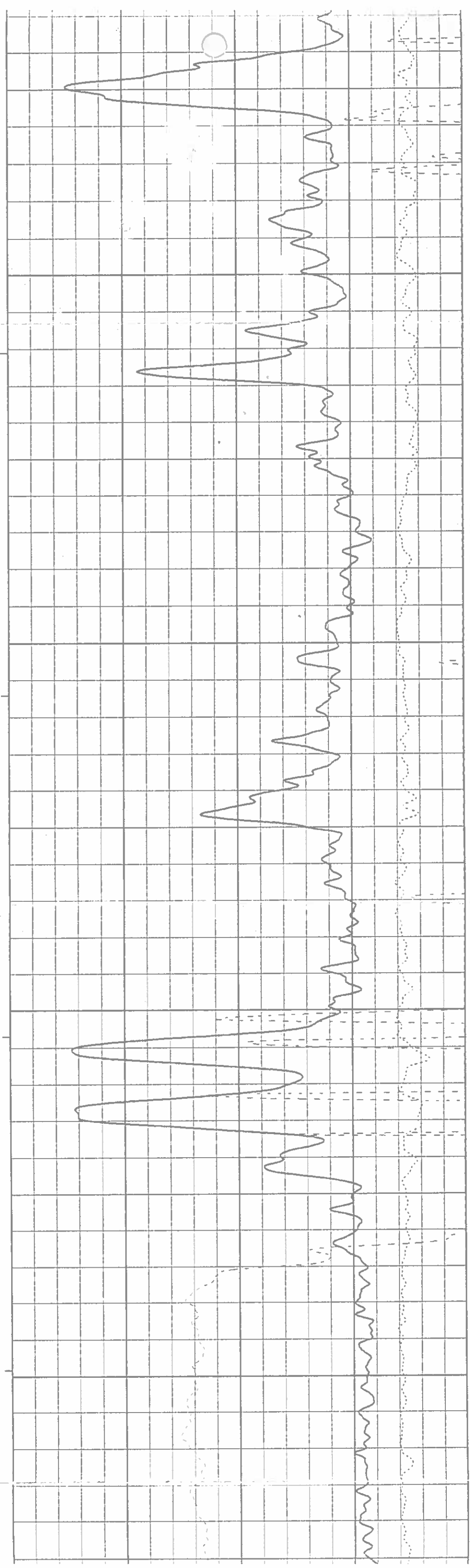
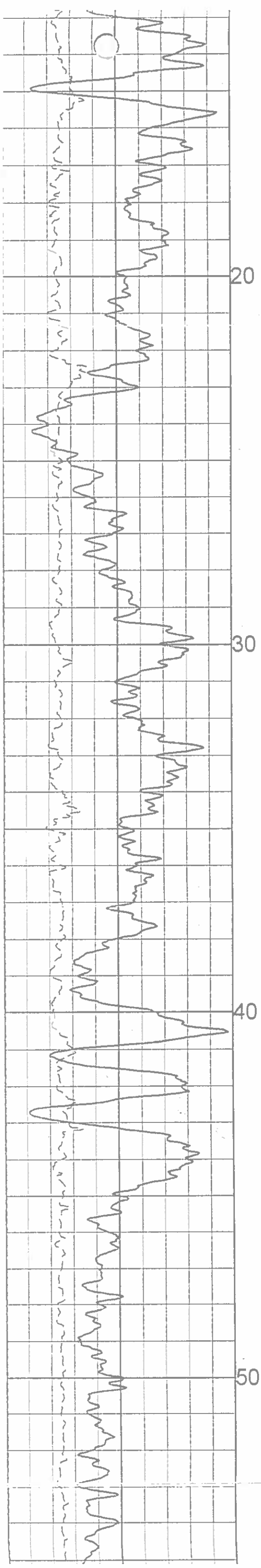
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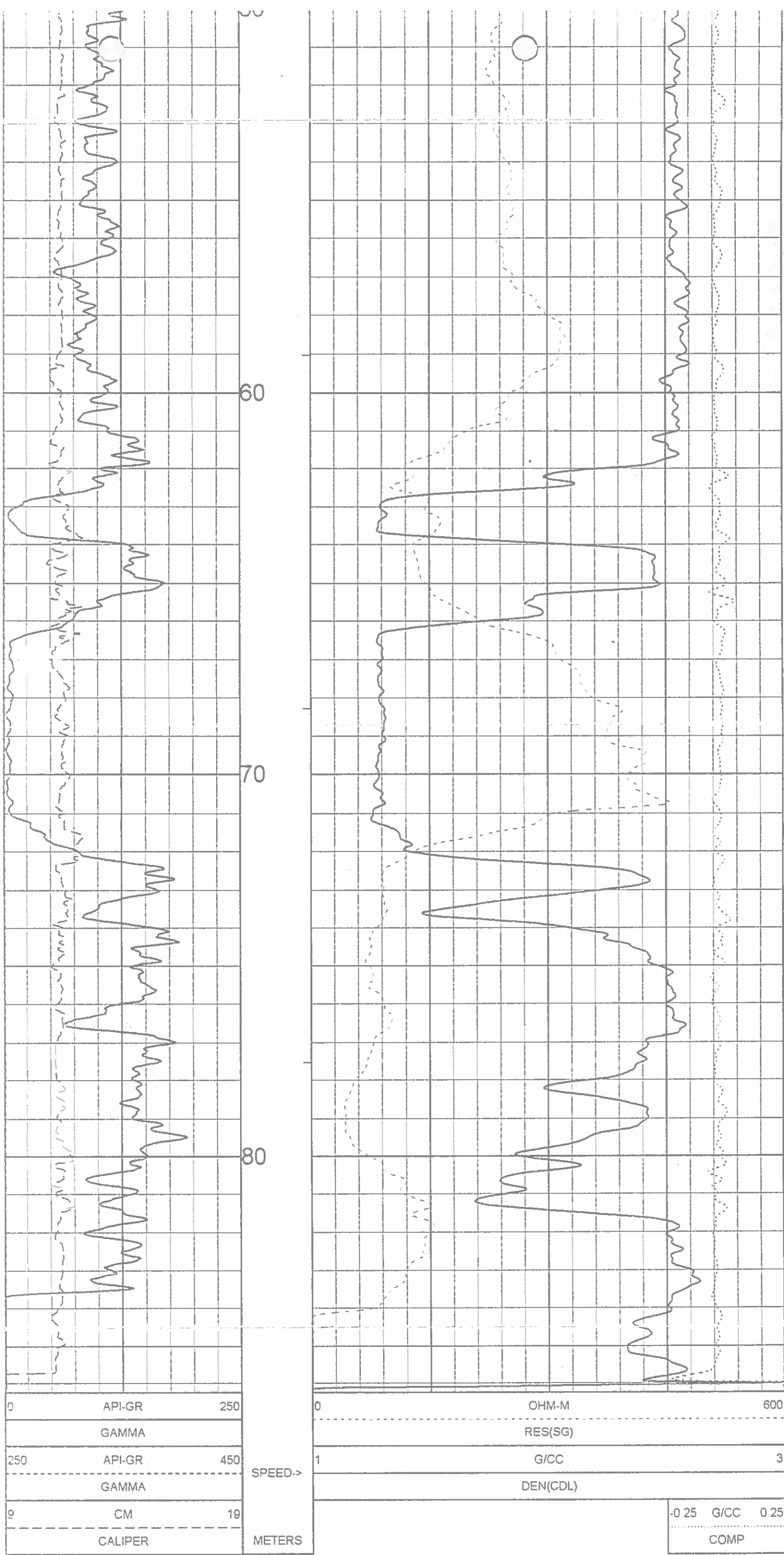
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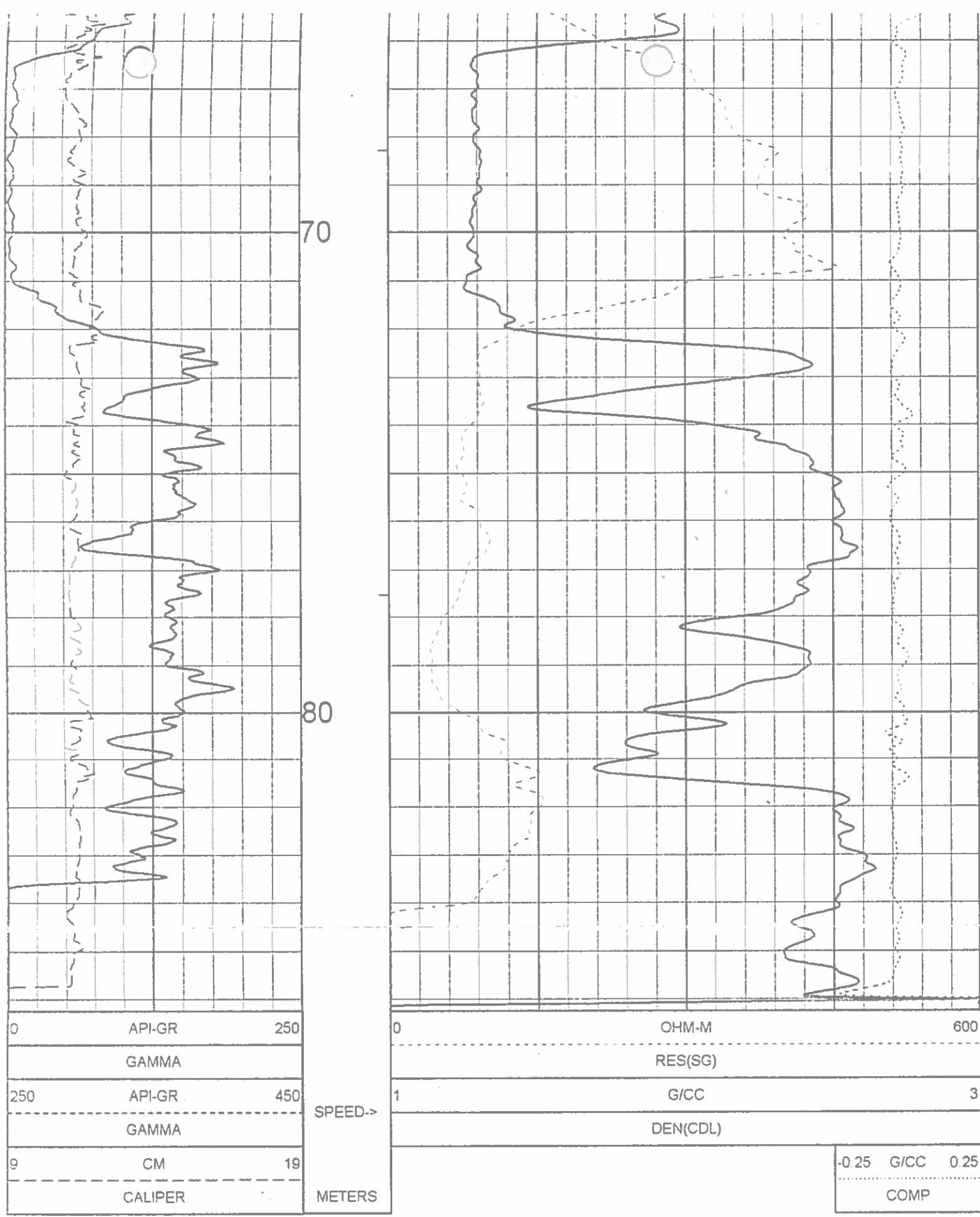
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010

VERSION = 3.64IE









1:100 BULK DENSITY BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-51 10/21/10 08:39
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

Century
WIRELINE SERVICES

DETAILED DENSITY
GAMMA - CALIPER - RES.
BR10-51

COMPANY: WESTERN COAL CORPORATION

WELL: BR10-51

FIELD: BRULE

COUNTRY: CANADA

PROVINCE: BRITISH COLUMBIA

OTHER SERVICES:
NEUTRON

SECTION: BRULE NORTH

TOWNSHIP: N/A

RANGE: N/A

LICENSE NO.: N/A

UNIQUE WELL ID.: N/A

PERMANENT DATUM: GL

LOG MEASURED FROM: GL

DRL MEASURED FROM: GL

DATE: 10/21/10

DEPTH DRILLER: 26.86

BIT SIZE: 11.43

LOG TOP: 0.25

LOG BOTTOM: 26.19

CASING LOGGER: 3.048

CASING DRILLER: 3.048

CASING TYPE: STEEL

BOREHOLE FLUID: WATER

RM TEMPERATURE: N/A

MUD RES: N/A

MUD WEIGHT: 1.00

RECORDED BY: G. HOLMLUND

REMARKS 1: T. NEAL

REMARKS 2: VERTICAL

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

1:50 BULK DENSITY EXPANDED BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY: 2.65

NEUTRON MATRIX: SANDSTONE

MATRIX DELTA T: 177

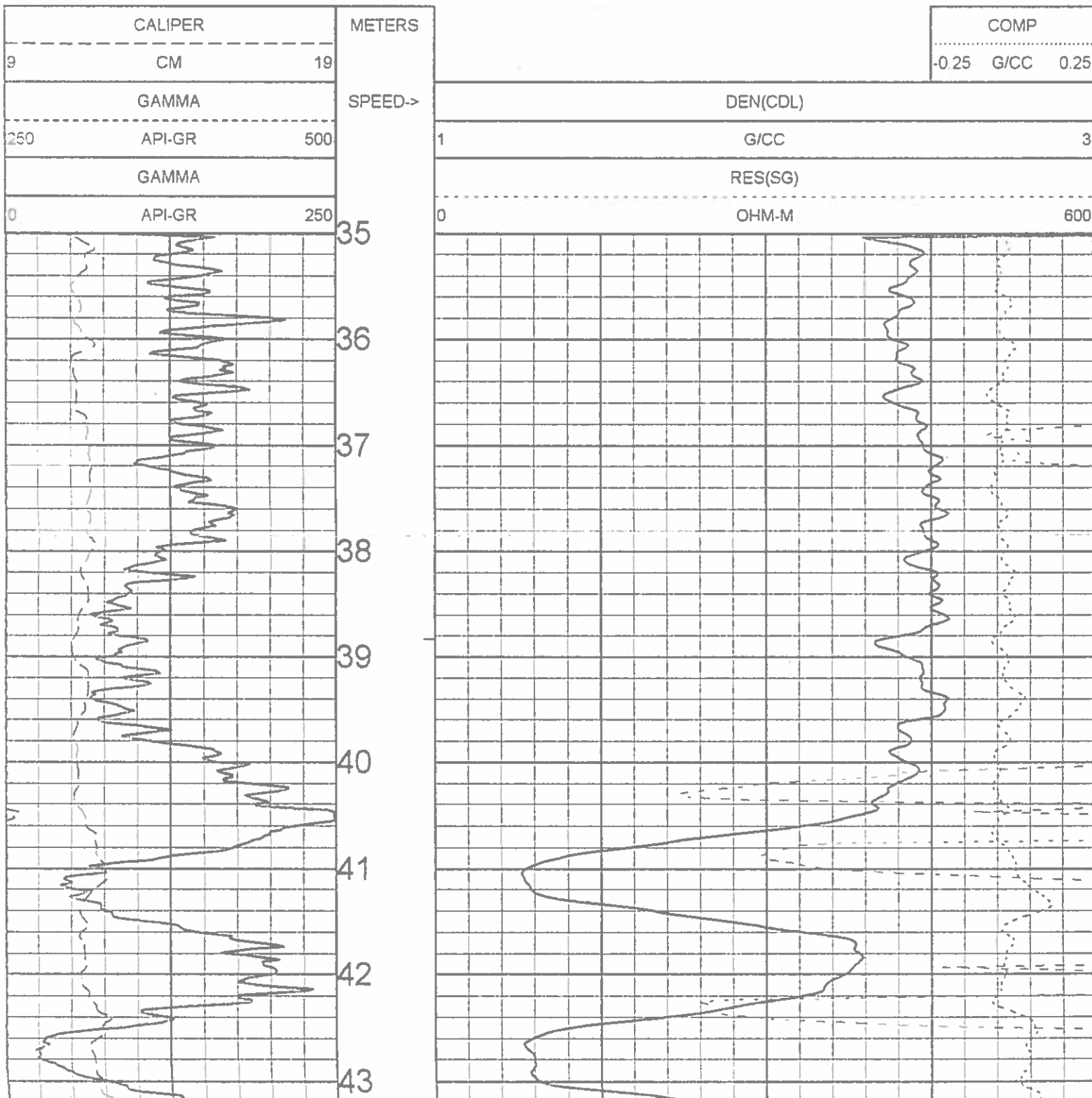
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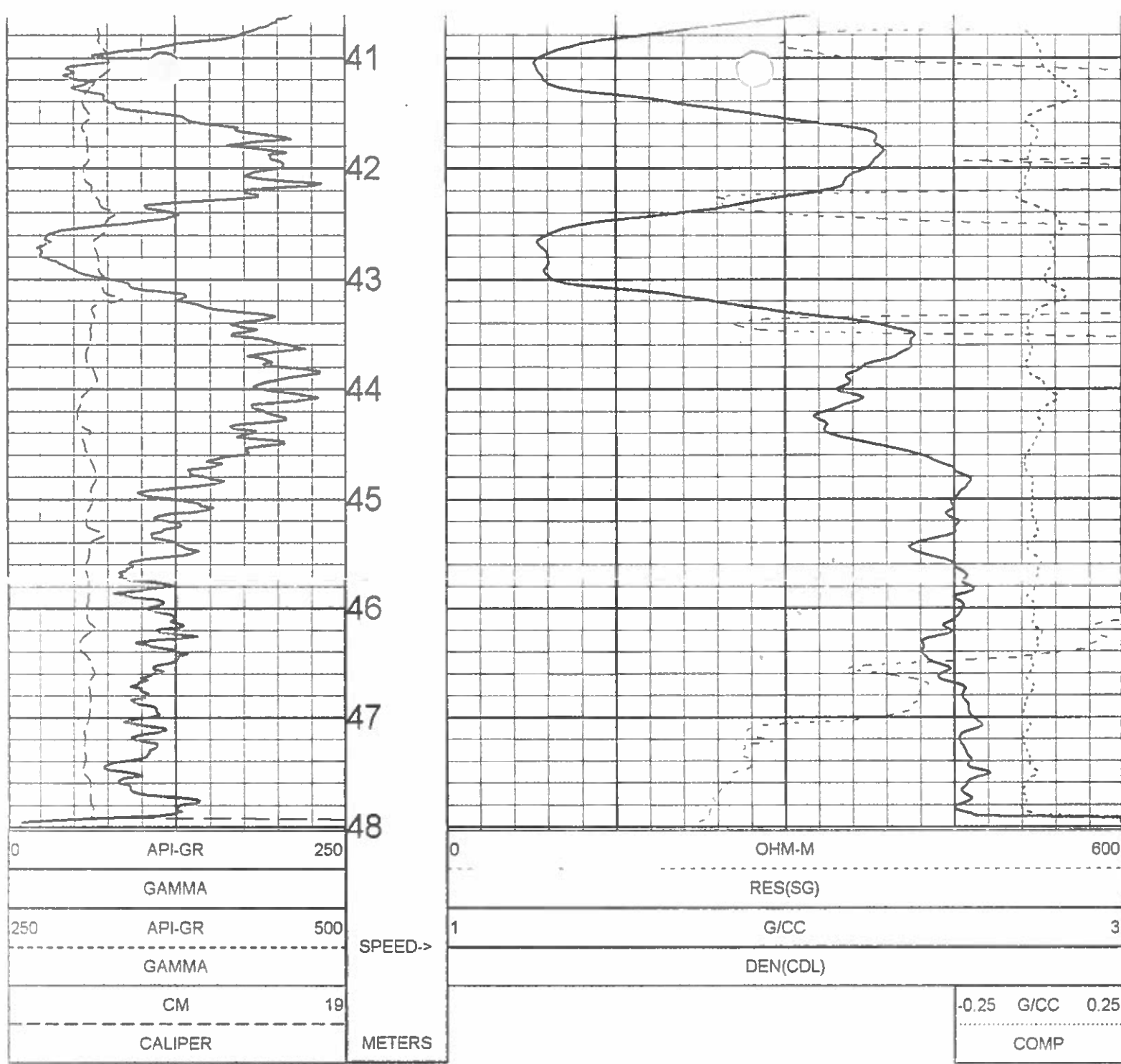
ELECT. CUTOFF: 90000

BIT SIZE: 11.43

PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010

VERSION = 3.64IE





1:50 BULK DENSITY EXPANDED BR10-51 10/21/10

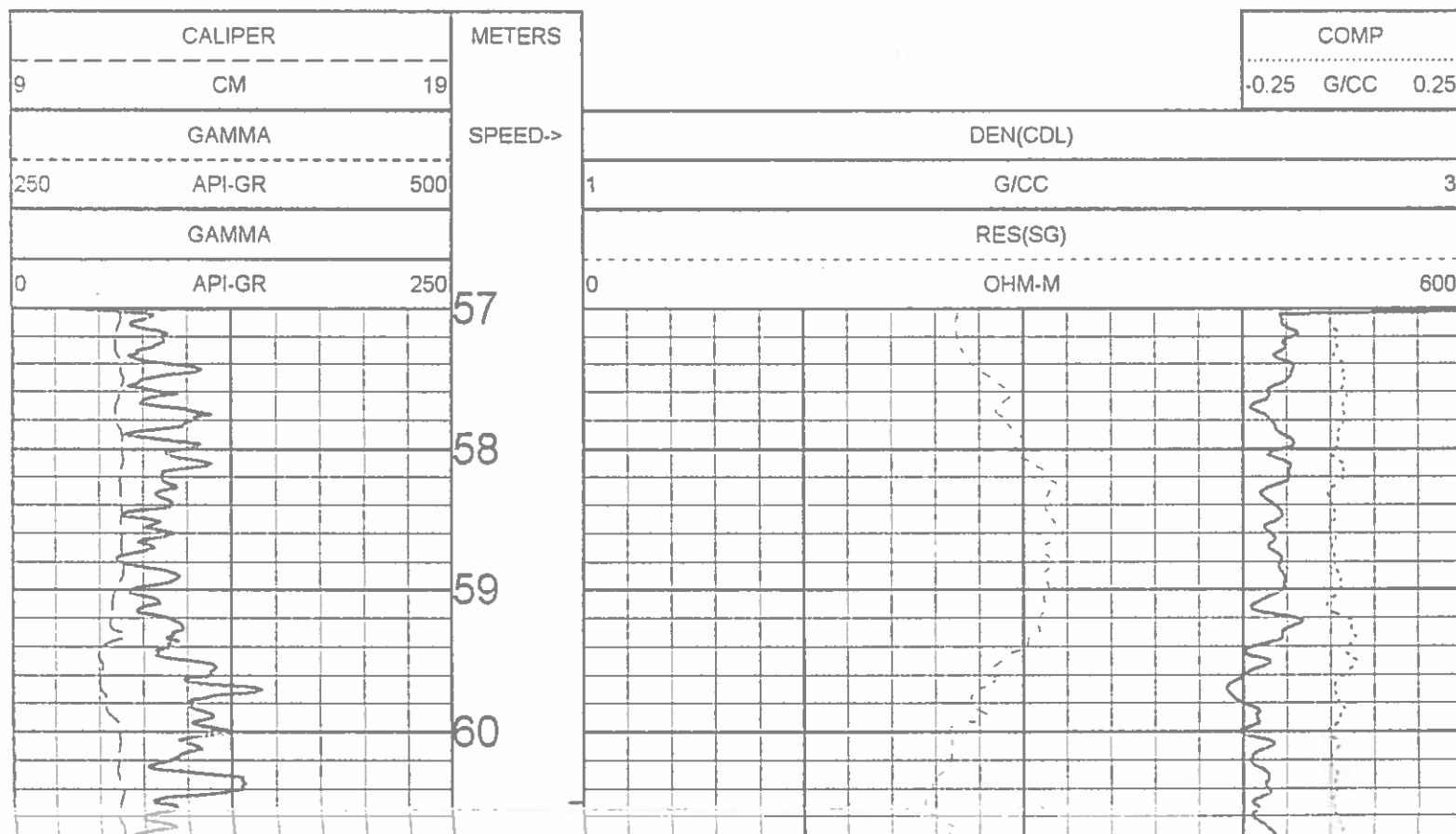
LOG PARAMETERS

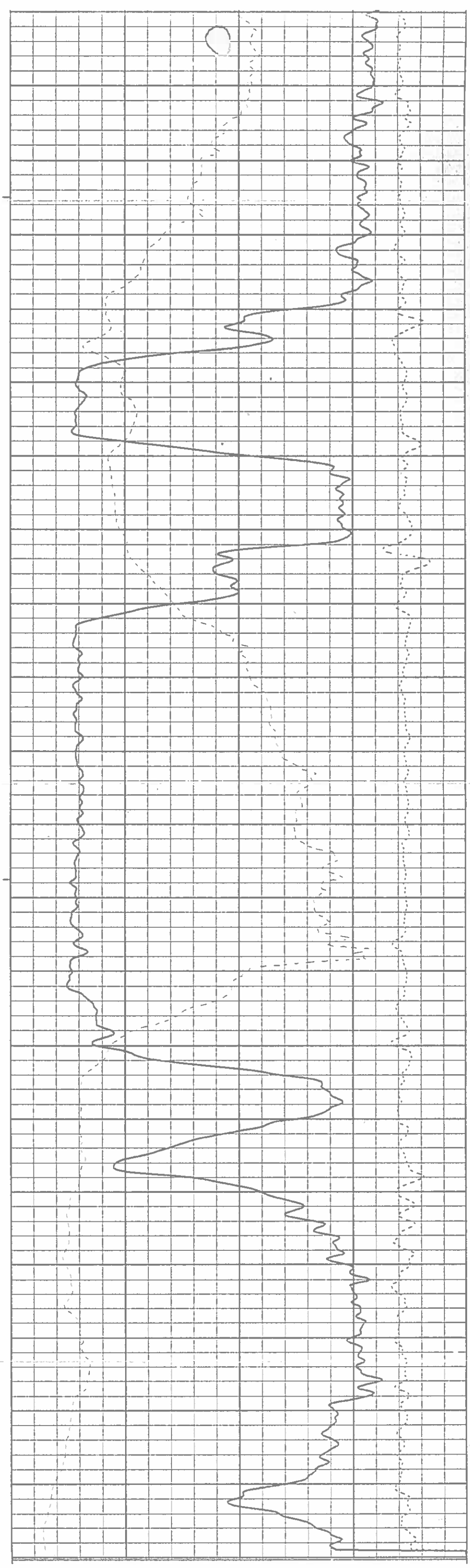
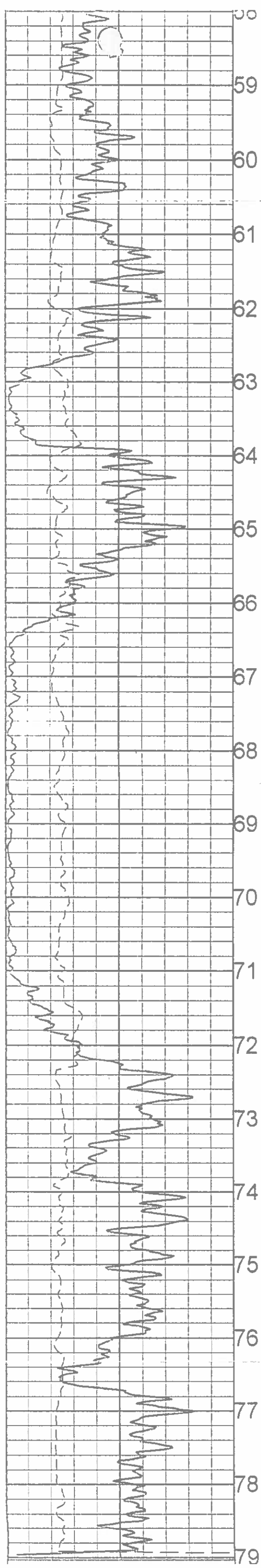
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE

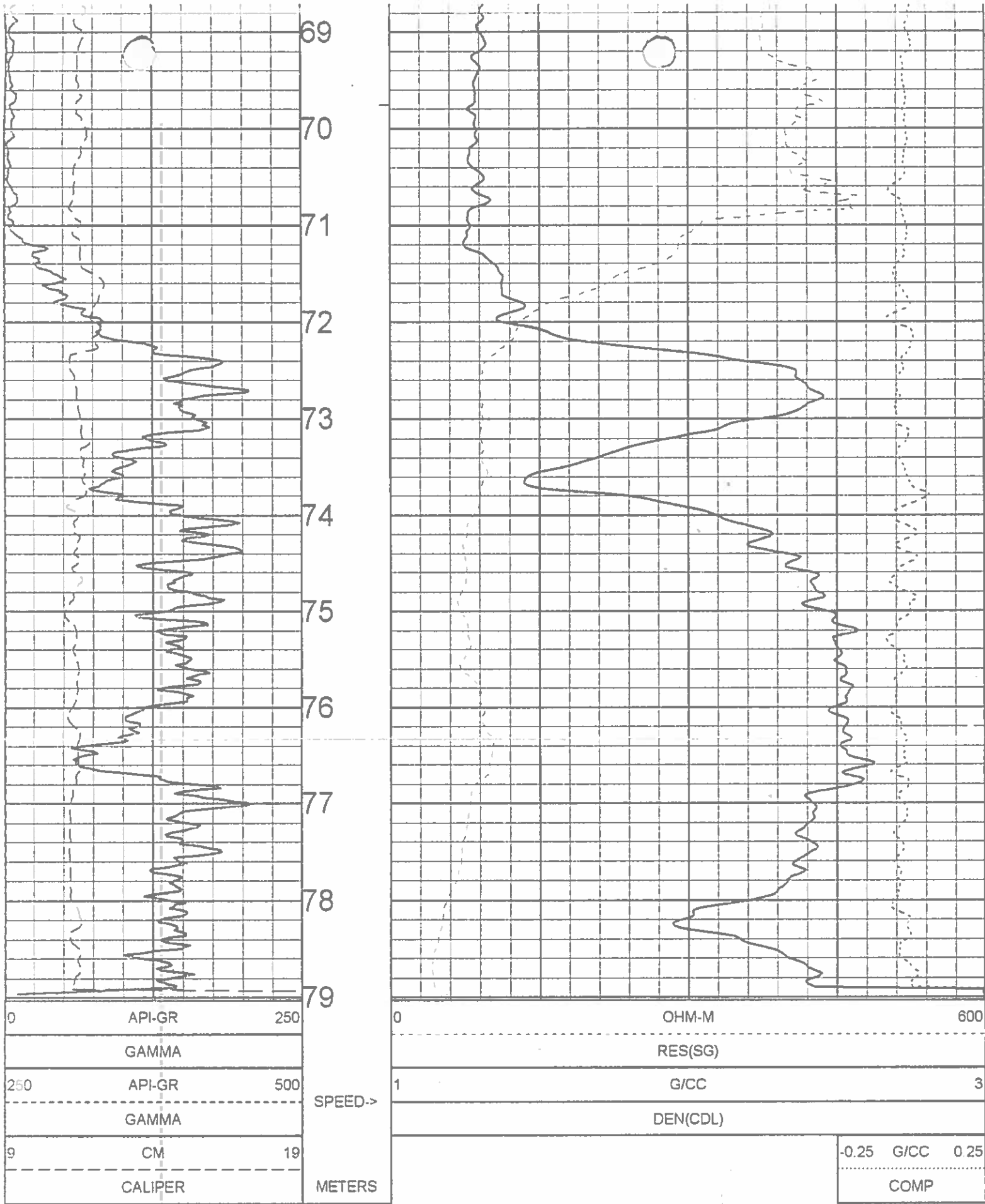
1:50 BULK DENSITY EXPANDED BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE







1:50 BULK DENSITY EXPANDED BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 21.0 ELECT CUTOFF : 90000 BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED 0 09/16/2010 VERSION = 3 64IE

TOOL CALIBRATION BR10-51 10/21/10 08:39
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10	15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06,10	15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09	10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15,09	10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12,10	12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12,10	12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10	10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16,10	10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10	10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
	Sep16,10	10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10	11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12,10	11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09	10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15,09	10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	13:12:31	F	Default [CPS]	
9	Aug28,08	13:12:31	X	Default [CPS]	

GAMMA - NEUTRON

BR10-51

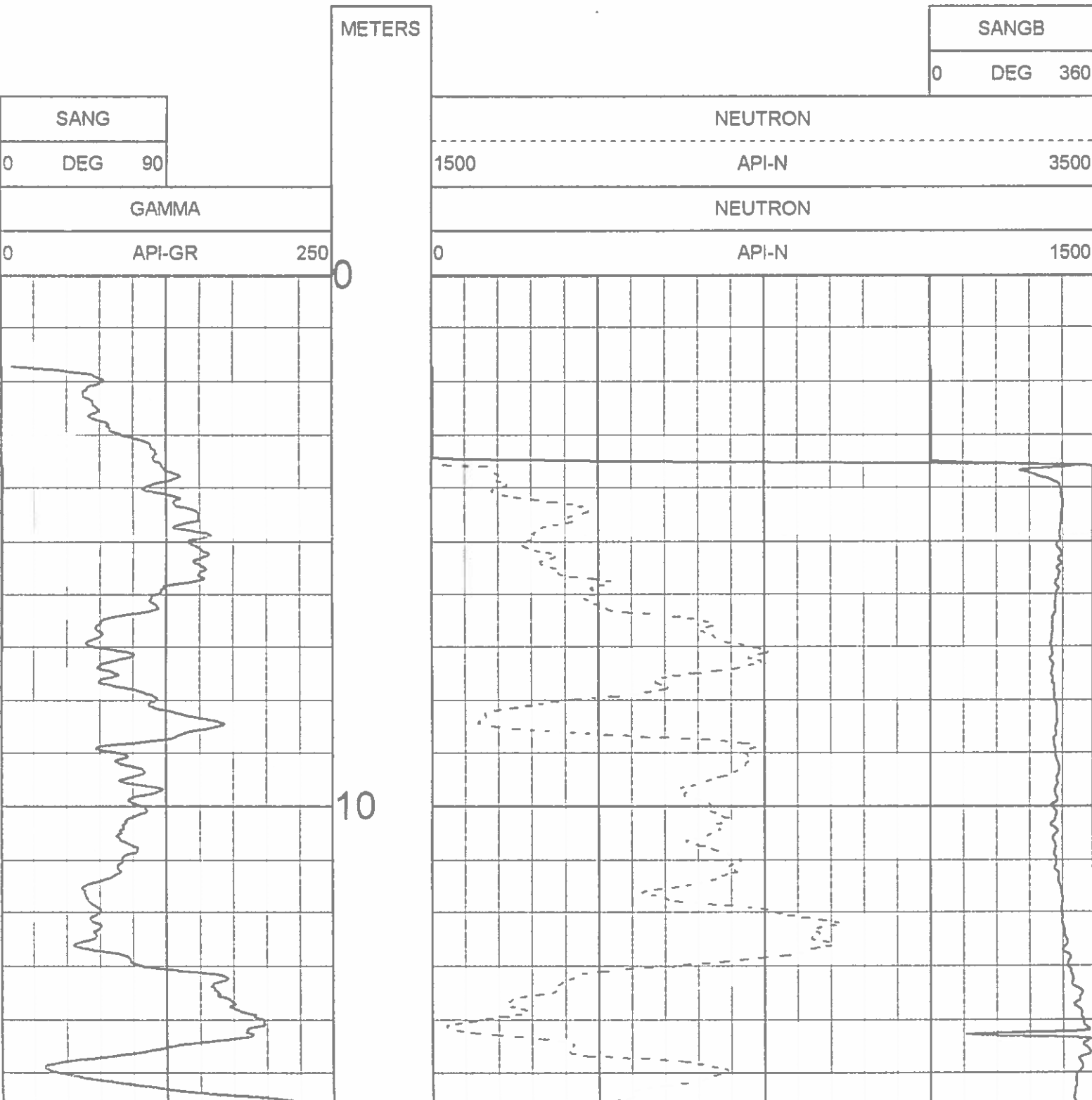
COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	
WELL	BR10-51	DENSITY	
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
SECTION	BRULE NORTH		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATUM	GL	ELEVATION KB	N/A
LOG MEASURED FROM	GL	ELEVATION DF	N/A
DRL MEASURED FROM	GL	ELEVATION GL	N/A
DATE	10/21/10	RIG NUMBER	
DEPTH DRILLER	86.86	LOGGERS TD	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	1.71	DEPARTURE TIME	
LOG BOTTOM	86.21	CIRC STOPPED	N/A
CASING LOGGER	3.048		
CASING DRILLER	3.048		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
RECORDED BY	G. HOLMLUND		
REMARKS 1	T. NEAL		
REMARKS 2	VERTICAL		

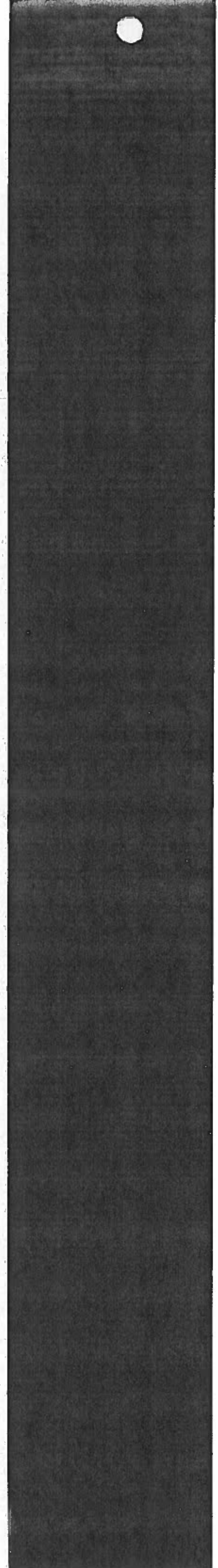
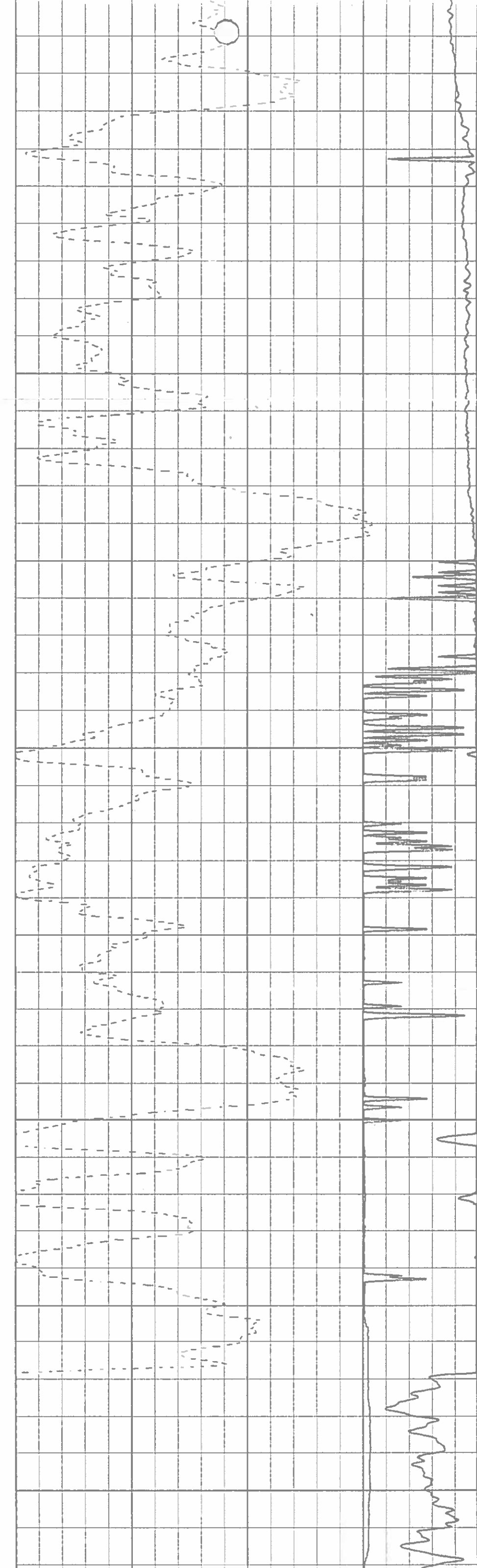
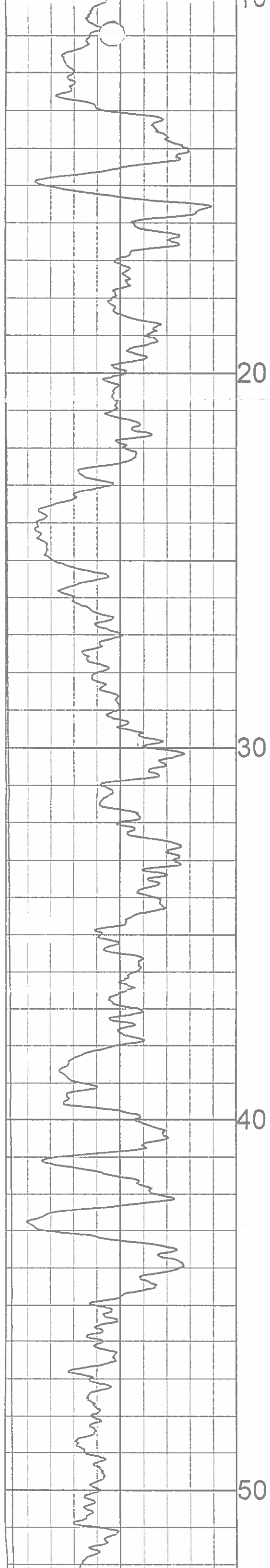
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

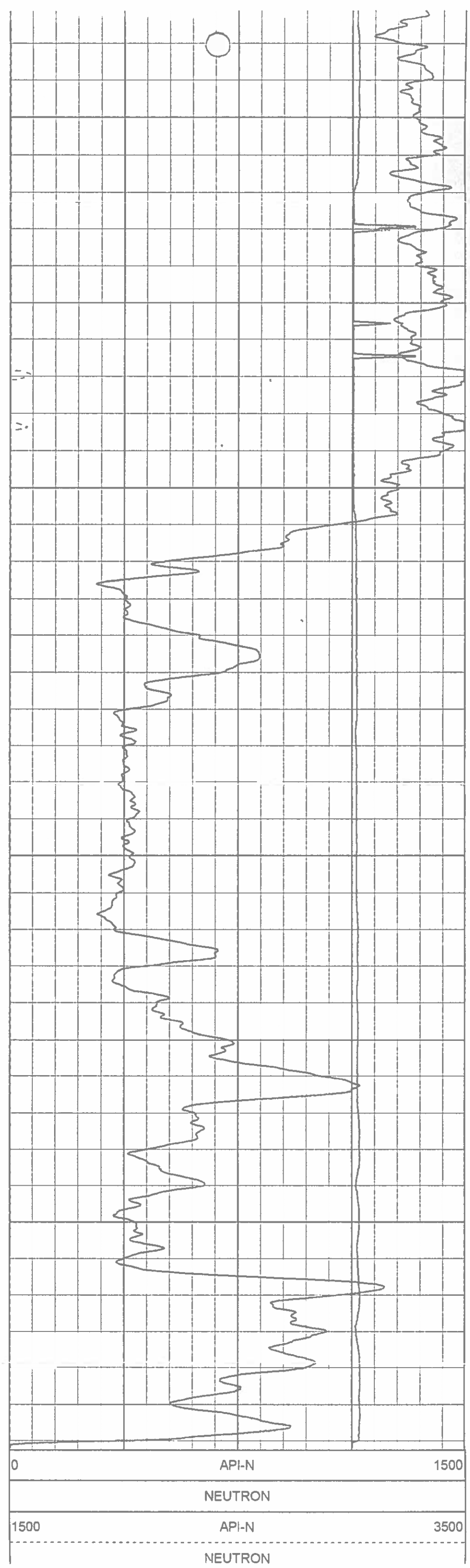
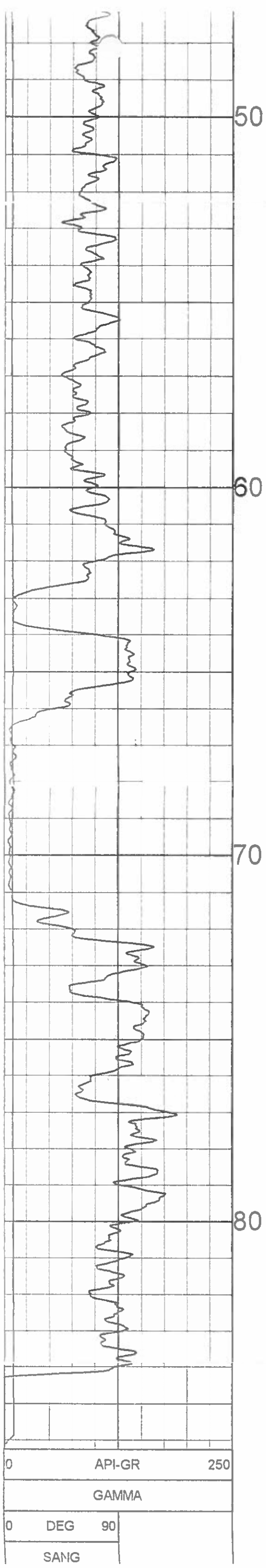
1:100 NEUTRON BR10-51 10/21/10

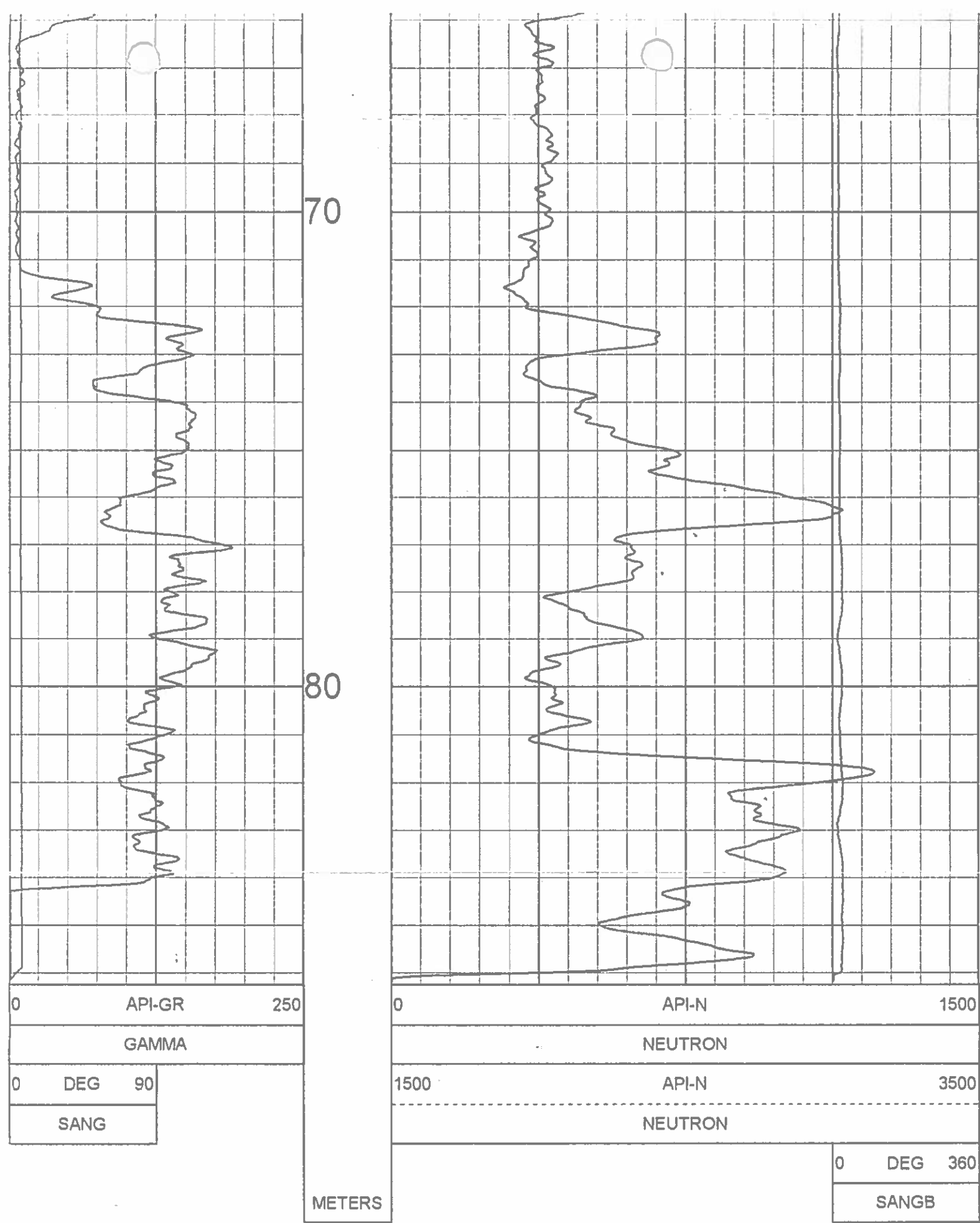
LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT. CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/17/2010 VERSION = 3.64IE









1:100 NEUTRON BR10-51 10/21/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/17/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-51 10/21/10 09:07
 TOOL 9057A TM VERSION 2
 SERIAL NUMBER 4429

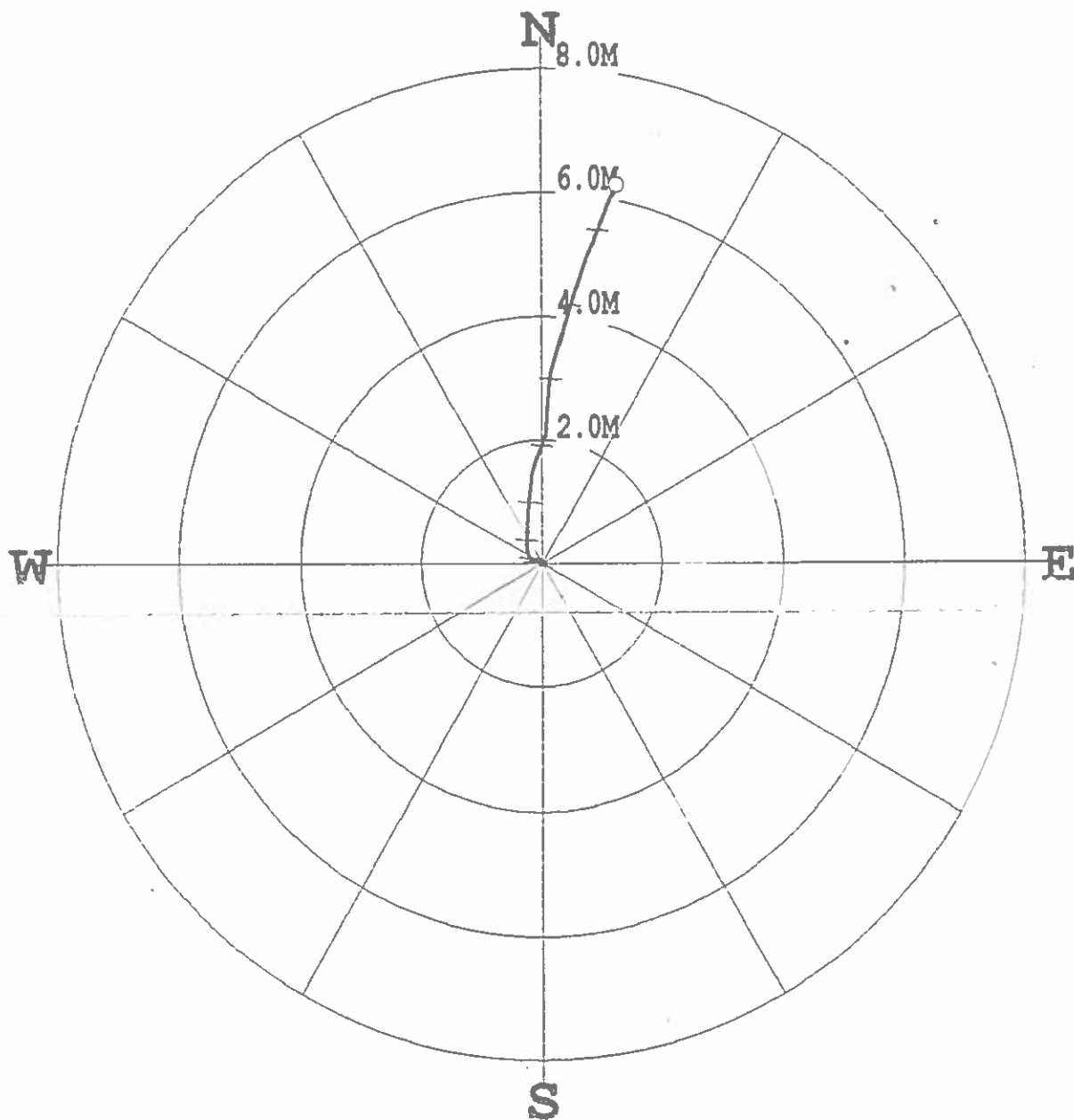
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10	12:29:34	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct07,10	12:29:34	GAMMA	545.000 [API-GR]	567.000 [CPS]
2	Sep24,10	10:57:57	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Sep24,10	10:57:57	NEUTRC	271.000 [API-N]	790.000 [CPS]
3	Jun27,08	12:33:57	SP	10.000 [MV]	321050.000 [CPS]
	Jun27,08	12:33:57	SP	100.000 [MV]	279300.000 [CPS]
4	Jul10,07	05:41:27	RES(16N)	0.000 [OHM-M]	5464.000 [CPS]
	Jul10,07	05:41:27	RES(16)	1996.000 [OHM-M]	422317.000 [CPS]
5	Jun27,07	05:27:01	RES(64N)	0.000 [OHM-M]	4823.000 [CPS]
	Jun27,07	05:27:01	RES(64)	1990.000 [OHM-M]	418052.000 [CPS]
6	Jul02,07	07:45:45	TEMP	52.600 [DEG F]	341402.000 [CPS]
	Jul02,07	07:45:45	TEMP	113.100 [DEG F]	387139.000 [CPS]
7	Jul10,07	05:42:24	RES	0.000 [OHM]	4956.000 [CPS]
	Jul10,07	05:42:24	RES	989.000 [OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
 LOCATION: BRULE
 HOLE ID: BR10-51
 DATE OF LOG: 10/21/10
 PROBE: 9057A 4429



SCALE: 1 M/CM
 TRUE DEPTH: 85.68 M
 AZIMUTH: 11.6
 DISTANCE: 6.2 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORP HOLE ID. : BR10-51
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/21/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-51_10-21-10_09-07_9057A_.02_1.71_86.21_DEVI.log


TABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.99	-0.00	-0.01	0.0	261.7	1.6	283.4
5.00	4.99	0.00	-0.03	0.0	279.5	1.2	284.0
6.00	5.99	0.01	-0.05	0.1	279.9	1.2	275.9
7.00	6.99	0.01	-0.07	0.1	277.1	1.1	263.2
8.00	7.99	0.01	-0.09	0.1	275.2	0.8	271.4
9.00	8.99	0.01	-0.10	0.1	275.2	0.9	274.8
10.00	9.99	0.01	-0.11	0.1	275.5	0.9	264.9
11.00	10.99	0.01	-0.13	0.1	275.2	1.0	276.3
12.00	11.99	0.02	-0.14	0.1	276.0	0.8	287.2
13.00	12.99	0.02	-0.15	0.2	277.4	0.5	301.3
14.00	13.99	0.03	-0.16	0.2	279.2	0.3	334.7
15.00	14.99	0.03	-0.16	0.2	281.1	0.5	323.8
16.00	15.99	0.04	-0.17	0.2	283.0	0.6	313.7
17.00	16.99	0.05	-0.18	0.2	284.9	0.5	325.3
18.00	17.99	0.06	-0.18	0.2	287.0	0.7	325.0
19.00	18.99	0.07	-0.19	0.2	289.7	0.9	321.7
20.00	19.99	0.08	-0.20	0.2	292.2	1.1	324.7
21.00	20.99	0.10	-0.21	0.2	294.8	1.0	316.5
22.00	21.99	0.12	-0.22	0.3	297.7	1.5	330.7
23.00	22.99	0.14	-0.23	0.3	301.0	1.6	332.9
24.00	23.99	0.17	-0.25	0.3	304.3	1.7	346.7
25.00	24.99	0.20	-0.25	0.3	308.3	1.6	355.5
26.00	25.99	0.23	-0.25	0.3	312.1	1.5	359.6
27.00	26.99	0.26	-0.26	0.4	315.7	1.9	353.8
28.00	27.98	0.30	-0.26	0.4	319.1	2.1	354.7
29.00	28.98	0.34	-0.26	0.4	322.5	2.2	2.3
30.00	29.98	0.38	-0.26	0.5	325.8	2.5	4.9
31.00	30.98	0.42	-0.25	0.5	329.0	2.8	0.6
32.00	31.98	0.47	-0.25	0.5	332.0	2.9	2.8
33.00	32.98	0.52	-0.25	0.6	334.6	3.2	1.6
34.00	33.98	0.58	-0.25	0.6	337.0	3.4	8.2
35.00	34.98	0.64	-0.24	0.7	339.2	3.5	3.8
36.00	35.97	0.70	-0.24	0.7	341.3	3.8	4.2
37.00	36.97	0.77	-0.23	0.8	343.2	4.0	4.0
38.00	37.97	0.85	-0.23	0.9	345.0	4.2	4.7
39.00	38.97	0.92	-0.22	0.9	346.5	4.4	3.9
40.00	39.96	0.99	-0.22	1.0	347.8	4.3	1.0

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***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-51
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/21/10
 DATA FROM : N/A PROBE : 9057A , 4429
 MAG. DECL. : 21.000 DEPTH UNITS : METERS
 LOG: BR10-51_10-21-10_09-07_9057A_.02_1.71_86.21_DEVI.log

ABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
4.00	3.99	-0.00	-0.01	0.0	261.7	1.6	283.4
5.00	4.99	0.00	-0.03	0.0	279.5	1.2	284.0
6.00	5.99	0.01	-0.05	0.1	279.9	1.2	275.9
7.00	6.99	0.01	-0.07	0.1	277.1	1.1	263.2
8.00	7.99	0.01	-0.09	0.1	275.2	0.8	271.4
9.00	8.99	0.01	-0.10	0.1	275.2	0.9	274.8
10.00	9.99	0.01	-0.11	0.1	275.5	0.9	264.9
11.00	10.99	0.01	-0.13	0.1	275.2	1.0	276.3
12.00	11.99	0.02	-0.14	0.1	276.0	0.8	287.2
13.00	12.99	0.02	-0.15	0.2	277.4	0.5	301.3
14.00	13.99	0.03	-0.16	0.2	279.2	0.3	334.7
15.00	14.99	0.03	-0.16	0.2	281.1	0.5	323.8
16.00	15.99	0.04	-0.17	0.2	283.0	0.6	313.7
17.00	16.99	0.05	-0.18	0.2	284.9	0.5	325.3
18.00	17.99	0.06	-0.18	0.2	287.0	0.7	325.0
19.00	18.99	0.07	-0.19	0.2	289.7	0.9	321.7
20.00	19.99	0.08	-0.20	0.2	292.2	1.1	324.7
21.00	20.99	0.10	-0.21	0.2	294.8	1.0	316.5
22.00	21.99	0.12	-0.22	0.3	297.7	1.5	330.7
23.00	22.99	0.14	-0.23	0.3	301.0	1.6	332.9
24.00	23.99	0.17	-0.25	0.3	304.3	1.7	346.7
25.00	24.99	0.20	-0.25	0.3	308.3	1.6	355.5
26.00	25.99	0.23	-0.25	0.3	312.1	1.5	359.6
27.00	26.99	0.26	-0.26	0.4	315.7	1.9	353.8
28.00	27.98	0.30	-0.26	0.4	319.1	2.1	354.7
29.00	28.98	0.34	-0.26	0.4	322.5	2.2	2.3
30.00	29.98	0.38	-0.26	0.5	325.8	2.5	4.9
31.00	30.98	0.42	-0.25	0.5	329.0	2.8	0.6
32.00	31.98	0.47	-0.25	0.5	332.0	2.9	2.8
33.00	32.98	0.52	-0.25	0.6	334.6	3.2	1.6
34.00	33.98	0.58	-0.25	0.6	337.0	3.4	8.2
35.00	34.98	0.64	-0.24	0.7	339.2	3.5	3.8
36.00	35.97	0.70	-0.24	0.7	341.3	3.8	4.2
37.00	36.97	0.77	-0.23	0.8	343.2	4.0	4.0
38.00	37.97	0.85	-0.23	0.9	345.0	4.2	4.7
39.00	38.97	0.92	-0.22	0.9	346.5	4.4	3.9
40.00	39.96	0.99	-0.22	1.0	347.8	4.3	1.0
41.00	40.96	1.07	-0.21	1.1	349.0	4.6	11.1
42.00	41.96	1.16	-0.20	1.2	350.2	5.0	12.6
43.00	42.95	1.25	-0.19	1.3	351.4	5.3	2.8
44.00	43.95	1.34	-0.18	1.3	352.4	5.5	6.2
45.00	44.94	1.43	-0.17	1.4	353.3	5.4	7.3
46.00	45.94	1.52	-0.15	1.5	354.4	5.6	17.9
47.00	46.93	1.61	-0.12	1.6	355.8	5.6	17.5
48.00	47.93	1.71	-0.08	1.7	357.2	5.9	22.3
49.00	48.92	1.80	-0.04	1.8	358.7	6.1	26.3
50.00	49.92	1.90	0.00	1.9	0.0	6.1	26.7
51.00	50.91	2.00	0.04	2.0	1.1	6.4	19.2
52.00	51.91	2.11	0.07	2.1	1.9	6.3	8.0
53.00	52.90	2.22	0.08	2.2	2.1	5.8	11.4
54.00	53.89	2.33	0.09	2.3	2.2	6.2	2.7
55.00	54.89	2.43	0.09	2.4	2.2	6.1	3.8
56.00	55.88	2.54	0.10	2.5	2.3	6.1	2.3
57.00	56.88	2.65	0.11	2.6	2.3	6.3	5.2
58.00	57.87	2.76	0.12	2.8	2.5	6.2	4.5
59.00	58.87	2.86	0.13	2.9	2.5	6.0	5.5
60.00	59.86	2.97	0.14	3.0	2.7	6.3	5.9
61.00	60.85	3.08	0.15	3.1	2.9	6.6	12.7
62.00	61.85	3.20	0.19	3.2	3.3	7.2	15.7
63.00	62.84	3.32	0.22	3.3	3.8	7.4	15.7
64.00	63.83	3.45	0.26	3.5	4.2	7.3	16.9
65.00	64.82	3.57	0.29	3.6	4.7	7.5	17.0
66.00	65.81	3.69	0.33	3.7	5.1	7.1	18.2
67.00	66.81	3.80	0.36	3.8	5.5	6.8	14.6
68.00	67.80	3.92	0.40	3.9	5.8	7.2	17.0
69.00	68.79	4.04	0.43	4.1	6.1	7.0	17.0
70.00	69.78	4.16	0.47	4.2	6.5	7.1	17.2
71.00	70.78	4.27	0.51	4.3	6.8	7.0	17.9
72.00	71.77	4.39	0.55	4.4	7.1	7.3	21.5
73.00	72.76	4.51	0.59	4.6	7.5	7.9	21.1
74.00	73.75	4.64	0.64	4.7	7.8	7.4	19.0
75.00	74.74	4.76	0.68	4.8	8.2	7.5	21.3
76.00	75.73	4.88	0.72	4.9	8.4	7.3	21.0
77.00	76.73	5.00	0.77	5.1	8.7	7.4	16.9
78.00	77.72	5.11	0.82	5.2	9.1	7.5	25.7
79.00	78.71	5.24	0.87	5.3	9.5	7.7	15.3
80.00	79.70	5.36	0.92	5.4	9.8	7.6	24.7
81.00	80.69	5.48	0.97	5.6	10.1	7.7	20.4
82.00	81.68	5.61	1.03	5.7	10.4	7.8	27.1
83.00	82.67	5.73	1.08	5.8	10.6	7.7	13.6
84.00	83.66	5.85	1.13	6.0	10.9	7.6	26.7
85.00	84.65	5.97	1.19	6.1	11.3	7.9	27.2
86.00	85.64	6.10	1.25	6.2	11.6	8.2	24.4
86.04	85.68	6.11	1.25	6.2	11.6	8.2	24.6

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-53	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,637.47	6,139,529.16	1,330.12

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
75.7	-77	136.14	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	75.7	-76.90
5.00	50.1	-76.40
6.00	49.4	-76.20
7.00	49.9	-75.80
8.00	50.1	-75.90
9.00	49.0	-75.30
10.00	48.2	-75.10
11.00	47.3	-74.80
12.00	46.6	-74.60
13.00	46.1	-74.40
14.00	45.7	-74.40
15.00	45.2	-74.20
16.00	44.8	-74.00
17.00	44.4	-73.90
18.00	44.1	-73.80
19.00	43.8	-73.40
20.00	43.5	-72.90
21.00	43.2	-72.50
22.00	42.9	-72.50
23.00	42.6	-72.00
24.00	42.3	-71.60
25.00	42.1	-71.20
26.00	41.8	-71.10
27.00	41.6	-70.70
28.00	41.5	-70.30
29.00	41.3	-70.20
30.00	41.2	-69.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	2.30	2.30		
16.40	18.50	2.10		
19.00	19.80	0.80		
59.10	60.10	1.00		
89.70	90.40	0.70		
90.40	91.40	1.00		
91.40	92.30	0.90		
110.70	115.90	5.20		
115.90	116.90	1.00		
118.30	118.90	0.60		

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002



Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: BR-10-53


year drilled: 2010

**AREA: BURNT RIVER
BRULE**

31.00	41.1	-69.60
32.00	41.0	-69.50
33.00	40.9	-69.60
34.00	40.8	-69.60
35.00	40.8	-69.50
36.00	40.7	-69.60
37.00	40.7	-69.50
38.00	40.6	-69.40
39.00	40.6	-69.50
40.00	40.5	-69.50
41.00	40.5	-69.30
42.00	40.5	-69.40
43.00	40.4	-69.00
44.00	40.4	-68.90
45.00	40.3	-68.80
46.00	40.3	-68.30
47.00	40.3	-68.10
48.00	40.3	-68.20
49.00	40.4	-68.30
50.00	40.4	-68.30
51.00	40.4	-68.20
52.00	40.4	-68.40
53.00	40.4	-68.20
54.00	40.3	-68.30
55.00	40.3	-68.50
56.00	40.3	-67.80
57.00	40.3	-67.30
58.00	40.3	-67.70
59.00	40.3	-67.60
60.00	40.3	-67.50
61.00	40.3	-67.40
62.00	40.3	-67.40
63.00	40.3	-67.50
64.00	40.3	-67.50
65.00	40.2	-67.00
66.00	40.2	-67.20
67.00	40.2	-73.70
68.00	40.3	-66.70
69.00	40.3	-66.80
70.00	40.4	-67.00
71.00	40.4	-68.40
72.00	40.3	-67.00
73.00	40.3	-67.20
74.00	40.3	-67.00
75.00	40.2	-67.20

Date issued: Friday, June 13, 2014

Reviewed: October 11, 2002


 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-53	year drilled: 2010	AREA: BURNT RIVER BRULE
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76.00	40.2	-67.00
77.00	40.2	-67.10
78.00	40.1	-67.10
79.00	40.1	-67.00
80.00	40.0	-66.50
81.00	40.0	-66.40
82.00	40.0	-66.30
83.00	39.9	-66.40
84.00	39.9	-66.10
85.00	39.9	-66.20
86.00	39.9	-66.10
87.00	39.8	-66.20
88.00	39.8	-66.00
89.00	39.7	-66.00
90.00	39.7	-66.20
91.00	39.7	-66.00
92.00	39.7	-65.80
93.00	39.6	-65.60
94.00	39.6	-65.40
95.00	39.5	-65.80
96.00	39.5	-65.70
97.00	39.4	-65.80
98.00	39.3	-65.90
99.00	39.3	-65.90
100.00	39.2	-65.90
101.00	39.2	-65.80
102.00	39.1	-65.90
103.00	39.0	-66.00
104.00	39.0	-66.00
105.00	38.9	-66.00
106.00	38.9	-66.00
107.00	38.8	-66.10
108.00	38.8	-66.20
109.00	38.7	-66.30
110.00	38.6	-65.60
111.00	38.6	-65.90
112.00	38.5	-65.80
113.00	38.5	-65.70
114.00	38.5	-66.00
115.00	38.4	-65.50
116.00	38.4	-65.30
117.00	38.3	-65.20
118.00	38.3	-65.00
119.00	38.3	-64.80
120.00	38.3	-64.70

Date issued: Friday, June 13, 2014
Reviewed: October 11, 2002

Page 3 of 4

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-53	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	----------------------------

121.00	38.2	-64.70
122.00	38.2	-64.50
123.00	38.2	-64.10
124.00	38.1	-63.80
125.00	38.1	-63.70
126.00	38.1	-63.50
127.00	38.1	-63.30
128.00	38.1	-63.90
129.00	38.0	-63.40
130.00	38.0	-62.60
131.00	38.0	-62.40
132.00	38.0	-62.50
133.00	38.0	-63.00
134.00	38.0	-62.70
135.00	37.9	-62.40
135.96	37.9	-62.70

RAW SAMPLE INFORMATION

Date issued: Friday, June 13, 2014 Reviewed: October 11, 2002
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	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-56	year drilled: 2010	AREA: BURNT RIVER BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
	0.00	0.00	572,678.66	6,139,432.12	1,320.87

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
24.4	-75	152.63	ROTARY			

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

comments:	
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SURVEY SUMMARY

DEPTH	AZ	INCL
0.00	24.4	-74.80
7.00	41.2	-74.80
8.00	45.7	-74.80
9.00	48.1	-74.60
10.00	49.5	-74.60
11.00	50.5	-74.60
12.00	51.2	-74.70
13.00	51.6	-74.80
14.00	51.9	-74.90
15.00	52.1	-75.00
16.00	52.3	-75.10
17.00	52.5	-75.20
18.00	52.6	-75.10
19.00	52.8	-75.10
20.00	52.8	-75.10
21.00	52.9	-75.10
22.00	52.9	-75.20
23.00	52.9	-75.20
24.00	52.8	-75.20
25.00	52.8	-75.20
26.00	52.8	-75.30
27.00	52.5	-75.10
28.00	52.3	-75.00
29.00	52.2	-74.50
30.00	52.3	-76.20
31.00	52.4	-74.90
32.00	52.5	-74.80

LITHOLOGY SUMMARY

FROM	TO	THICK	LITH	SEAM
0.00	4.20	4.20		
35.80	38.50	2.70		
39.40	40.40	1.00		
79.70	80.70	1.00		
108.40	109.10	0.70		
109.10	109.90	0.80		
109.90	110.90	1.00		
131.20	137.00	5.80		
137.80	138.50	0.70		

Date issued: Sunday, July 13, 2014
Reviewed: October 11, 2002

Page 1 of 4

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-56	year drilled: 2010	AREA: BURNT RIVER BRULE
--------------------------	--------------------	-----------------------------------

33.00	52.4	-74.90
34.00	52.4	-74.90
35.00	52.4	-75.00
36.00	52.4	-75.00
37.00	52.4	-74.90
38.00	52.4	-74.90
39.00	52.4	-74.80
40.00	52.3	-74.80
41.00	52.3	-74.80
42.00	52.3	-74.70
43.00	52.1	-74.30
44.00	51.9	-74.30
45.00	51.9	-75.50
46.00	52.0	-74.40
47.00	51.9	-74.50
48.00	51.9	-74.50
49.00	51.9	-74.20
50.00	51.9	-74.40
51.00	51.8	-74.40
52.00	51.8	-74.50
53.00	51.8	-74.50
54.00	51.7	-74.10
55.00	51.6	-74.00
56.00	51.7	-74.30
57.00	51.6	-74.60
58.00	51.6	-74.10
59.00	51.6	-74.10
60.00	51.5	-74.00
61.00	51.5	-74.00
62.00	51.5	-73.60
63.00	51.5	-73.60
64.00	51.4	-73.60
65.00	51.4	-73.60
66.00	51.3	-73.30
67.00	51.3	-73.10
68.00	51.2	-73.20
69.00	51.2	-73.10
70.00	51.1	-73.10
71.00	51.1	-73.00
72.00	51.0	-72.90
73.00	51.0	-72.90
74.00	50.9	-72.90
75.00	50.8	-72.70
76.00	50.7	-72.90
77.00	50.7	-72.50

Date issued: Sunday, July 13, 2014
Reviewed: October 11, 2002

Page 2 of 4

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-56	year drilled: 2010	AREA: BURNT RIVER BRULE
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78.00	50.6	-72.30
79.00	50.5	-72.20
80.00	50.5	-72.40
81.00	50.4	-72.30
82.00	50.3	-72.20
83.00	50.2	-72.60
84.00	50.2	-72.10
85.00	50.1	-71.60
86.00	50.0	-72.00
87.00	50.0	-72.10
88.00	49.9	-72.00
89.00	49.8	-71.80
90.00	49.7	-71.60
91.00	49.6	-71.60
92.00	49.6	-71.70
93.00	49.5	-71.70
94.00	49.4	-71.70
95.00	49.3	-71.80
96.00	49.3	-71.70
97.00	49.2	-71.60
98.00	49.1	-71.40
99.00	49.0	-71.50
100.00	49.0	-71.60
101.00	48.9	-71.50
102.00	48.8	-71.50
103.00	48.7	-71.60
104.00	48.7	-71.30
105.00	48.6	-71.10
106.00	48.5	-71.10
107.00	48.5	-71.10
108.00	48.4	-71.10
109.00	48.3	-71.10
110.00	48.2	-70.80
111.00	48.2	-70.90
112.00	48.1	-70.70
113.00	48.0	-70.70
114.00	48.0	-70.70
115.00	47.9	-70.70
116.00	47.8	-70.50
117.00	47.7	-70.40
118.00	47.7	-70.30
119.00	47.6	-70.30
120.00	47.5	-70.60
121.00	47.5	-70.00
122.00	47.4	-70.00

Date issued: Sunday, July 13, 2014
Reviewed: October 11, 2002

Page 3 of 4

	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BR-10-56	year drilled: 2010	AREA: BURNT RIVER BRULE
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123.00	47.4	-69.70
124.00	47.3	-69.80
125.00	47.2	-69.70
126.00	47.2	-69.50
127.00	47.1	-69.60
128.00	47.1	-69.60
129.00	47.0	-69.60
130.00	46.9	-69.60
131.00	46.9	-69.60
132.00	46.8	-69.70
133.00	46.8	-69.60
134.00	46.7	-69.50
135.00	46.7	-69.60
136.00	46.6	-69.40
137.00	46.6	-69.30
138.00	46.5	-69.40
139.00	46.5	-69.20
140.00	46.4	-69.00
141.00	46.4	-68.90
142.00	46.3	-68.50
143.00	46.3	-68.10
144.00	46.2	-68.60
145.00	46.2	-68.10
146.00	46.2	-67.80
147.00	46.1	-67.50
148.00	46.1	-67.90
149.00	46.1	-67.70
150.00	46.0	-67.30
151.00	46.0	-67.80
152.00	46.0	-67.70
152.46	45.9	-67.40

RAW SAMPLE INFORMATION

Date issued: Sunday, July 13, 2014
Reviewed: October 11, 2002

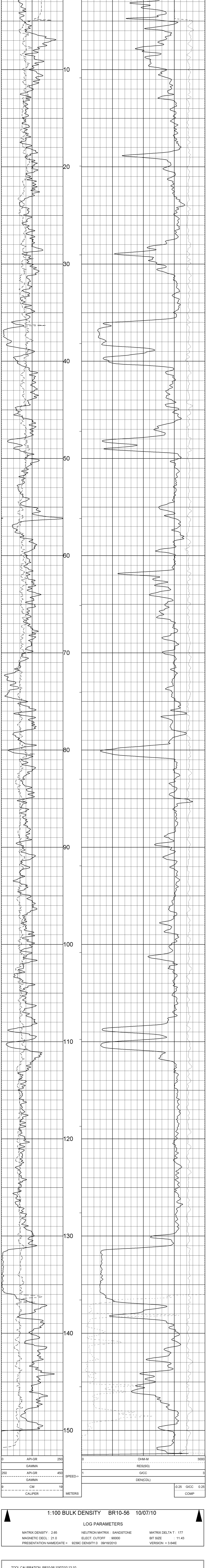
Page 4 of 4

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	NEUTRON
WELL	BR10-56		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
LSID	BRULE NORTH		
SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
LINIQUE WELL ID	N/A		
PERMANENT DATUM	SL	ELEVATION RB	N/A
LOG MEASURED FROM SL		ELEVATION OF	N/A
DRL MEASURED FROM SL		ELEVATION GL	N/A
DATE	10/07/10	RIS NUMBER	
DEPT# DRILLER	152.4	LOGSER TO	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.05	DEPARTURE TIME	
LOG BOTTOM	132.57	CIRC STOPPED	N/A
CASING LOGGER	K 87		
CASING DRILLER	K 87		
CASING TYPE	STEEL		
BOREHOLE FLUID	WATER		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	S HOLMLUND		
RECORDED BY	T NEAL		
REMARKS 1	75 DEGREE		
REMARKS 2			

1:100 BULK DENSITY BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT_CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010 VERSION = 3.64IE



1:100 BULK DENSITY BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 21.0 ELECT_CUTOFF : 90000 BIT SIZE : 11.43
 PRESENTATION NAME/DATE = 9239C DENSITY.0 09/16/2010 VERSION = 3.64IE

TOOL CALIBRATION BR10-56 10/07/10 13:10
 TOOL 9239C TM VERSION 2023
 SERIAL NUMBER 1269

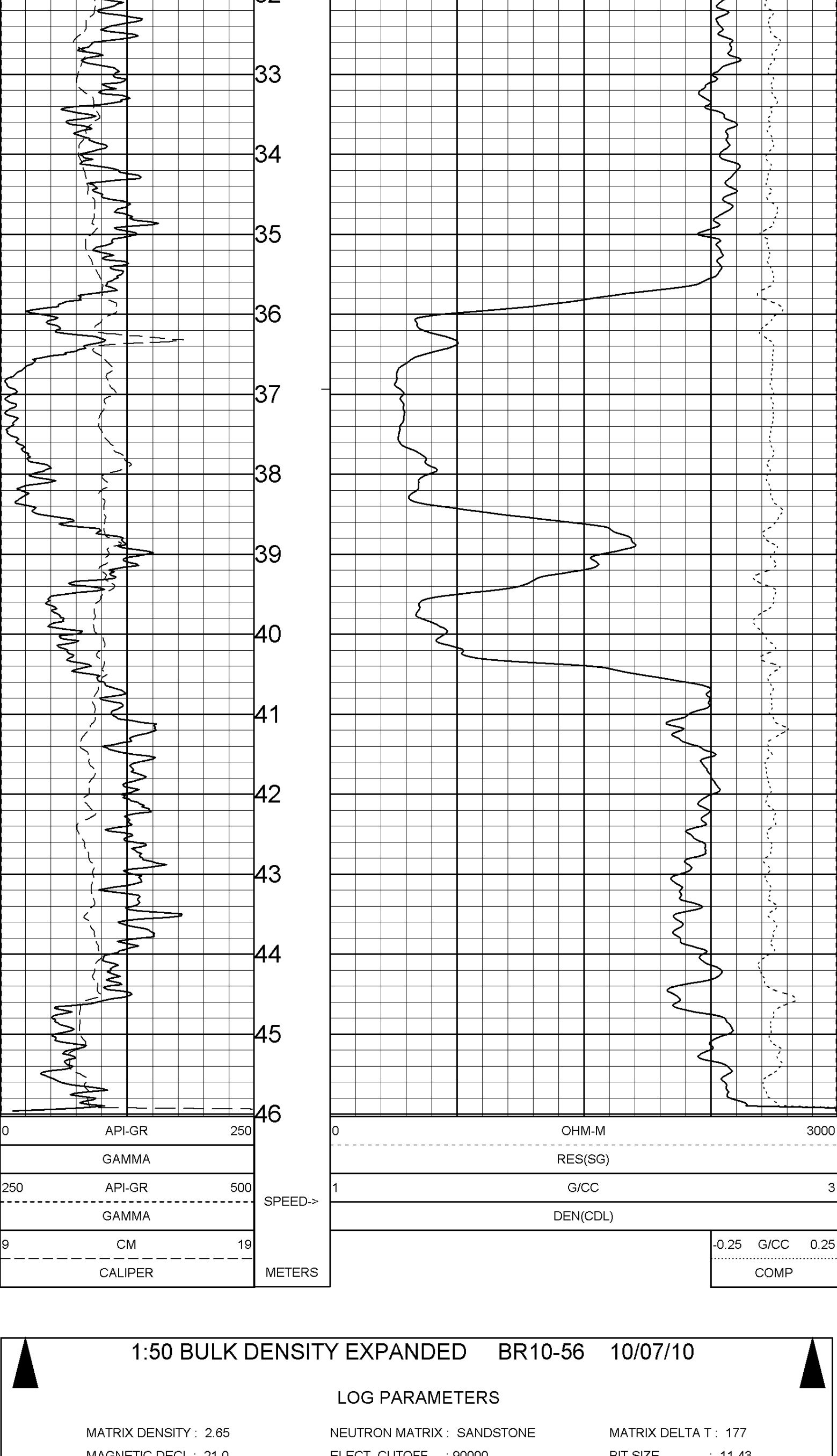
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06.10 15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
	Oct06.10 15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15.09 10:37:41	VOLTAGE	28.850 [MV]	7995.000 [CPS]
	Dec15.09 10:37:41	VOLTAGE	261.400 [MV]	38415.000 [CPS]
3	Aug12.10 12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
	Aug12.10 12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16.10 10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
	Sep16.10 10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16.10 10:19:08	DEN(SG)	1.000 [G/CC]	83909.000 [CPS]
	Sep16.10 10:19:08	DEN(SG)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12.10 11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
	Aug12.10 11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15.09 10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
	Dec15.09 10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28.08 13:12:31	F	Default [CPS]	
9	Aug28.08 13:12:31	X	Default [CPS]	

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES	NEUTRON
WELL	BR10-56		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
SECTION	BRULE NORTH		
LSID	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID.	N/A		
PERMANENT DATA	SL	ELEVATION RB	N/A
LOG MEASURED FROM GL		ELEVATION DF	N/A
DLL MEASURED FROM GL		ELEVATION SL	N/A
DATE	10/07/10	RIG NUMBER	
DEPTH DRILLER	152.4	LOGGER TO	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	0.05	DEPARTURE TIME	N/A
LOG BOTTOM	152.57	CIRC STOPPED	N/A
CASING LOGGER	4.87		
CASING DRILLER	STEEL		
CASING TYPE	WATER		
BOREHOLE FLUID	N/A		
RT TEMPERATURE	N/A		
MUD RES	1.00		
MUD WEIGHT	G. HOLLUND		
WRITTEN BY	J. NEAL		
RECORDED BY	75 DEGREE		
REMARKS 1			
REMARKS 2			

1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE



1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

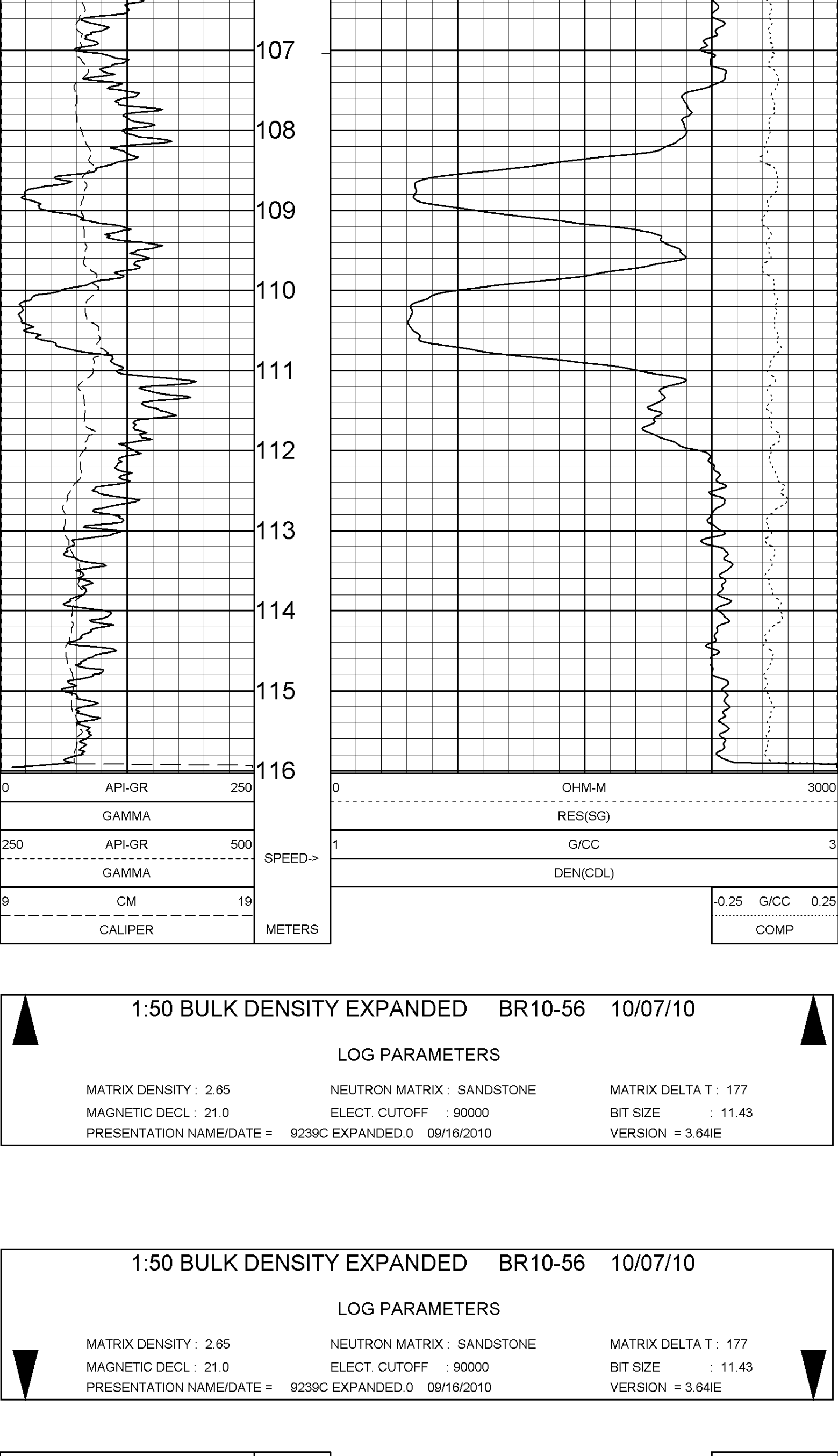
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE

1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE



1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

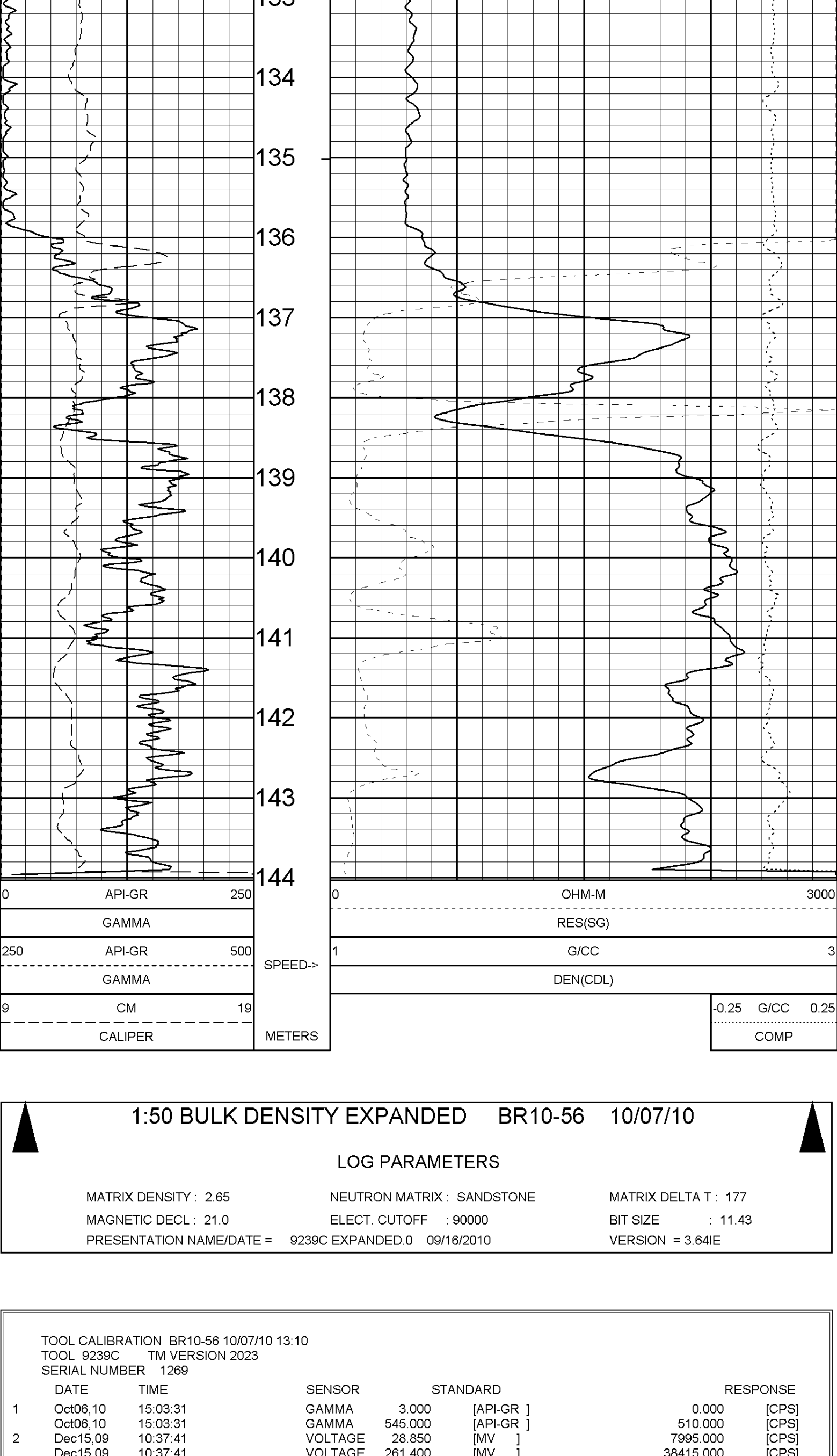
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE

1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE



1:50 BULK DENSITY EXPANDED BR10-56 10/07/10

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9239C EXPANDED.0 09/16/2010		VERSION = 3.64IE

TOOL CALIBRATION BR10-56 10/07/10 13:10

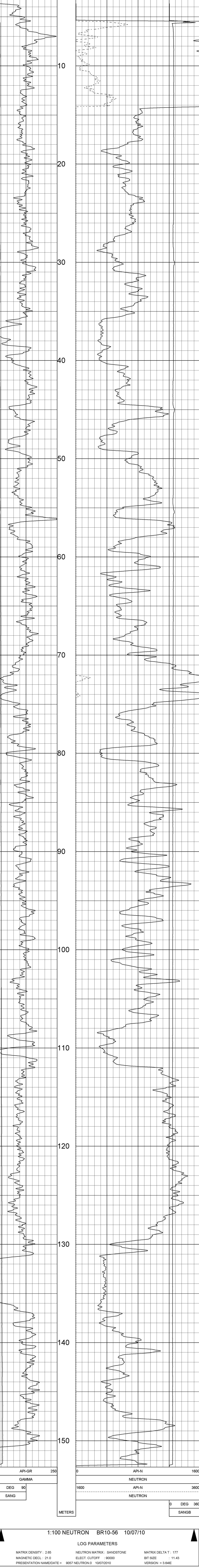
TOOL 9239C TM VERSION 2023
SERIAL NUMBER 1269

DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct06,10 15:03:31	GAMMA	3.000 [API-GR]	0.000 [CPS]
1	Oct06,10 15:03:31	GAMMA	545.000 [API-GR]	510.000 [CPS]
2	Dec15,09 10:37:41	VOLTAGE	28.650 [MV]	7995.000 [CPS]
2	Dec15,09 10:37:41	VOLTAGE	261.400 [MV]	36415.000 [CPS]
3	Aug12,10 12:28:45	CALIPER	8.890 [INCH]	156183.000 [CPS]
3	Aug12,10 12:28:45	CALIPER	20.200 [INCH]	440842.000 [CPS]
4	Sep16,10 10:19:01	DEN(LS)	1.000 [G/CC]	43851.000 [CPS]
4	Sep16,10 10:19:01	DEN(LS)	2.323 [G/CC]	3676.000 [CPS]
5	Sep16,10 10:19:08	DEN(SS)	1.000 [G/CC]	63609.000 [CPS]
5	Sep16,10 10:19:08	DEN(SS)	2.323 [G/CC]	29568.000 [CPS]
6	Aug12,10 11:44:36	CALIPERL	8.890 [INCH]	112841.000 [CPS]
6	Aug12,10 11:44:36	CALIPERL	20.200 [INCH]	231810.000 [CPS]
7	Dec15,09 10:37:56	CURRENT	28.850 [UA]	8024.000 [CPS]
7	Dec15,09 10:37:56	CURRENT	261.400 [UA]	26662.000 [CPS]
8	Aug28,08	F	Default	
9	Aug28,08	X	Default	

COMPANY	WESTERN COAL CORPORATION	OTHER SERVICES:	DENSITY
WELL	BR10-56		
FIELD	BRULE		
COUNTRY	CANADA		
PROVINCE	BRITISH COLUMBIA		
SECTION	BRULE NORTH		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
LINE/DE WELL ID	N/A		
PERMANENT DATUM	SL	ELEVATION RB	N/A
LOG MEASURED FROM SL		ELEVATION DB	N/A
DLI MEASURED FROM SL		ELEVATION GL	N/A
DATE	10/07/10	RIS NUMBER	
DEPT/ DRILLER	152.4	LOGGER ID	
BIT SIZE	11.43	ARRIVAL TIME	
LOG TOP	3.65	DEPARTURE TIME	
LOG BOTTOM	132.63	CIRC STOPPED	N/A
CASING LOGGER	4.87		
CASING DRILLER	STEEL		
CASING TYPE	WATER		
BOREHOLE FLUID	N/A		
RM TEMPERATURE	N/A		
MUD RES	1.00		
MUD WEIGHT	15 HOLLIMUND		
WITNESSED BY	J. NEAL		
RECORDED BY	75 DEGREE		
REMARKS 1			
REMARKS 2			

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010		VERSION = 3.64IE



LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 21.0	ELECT. CUTOFF : 90000	BIT SIZE : 11.43
PRESENTATION NAME/DATE = 9057 NEUTRON.0 10/07/2010		VERSION = 3.64IE

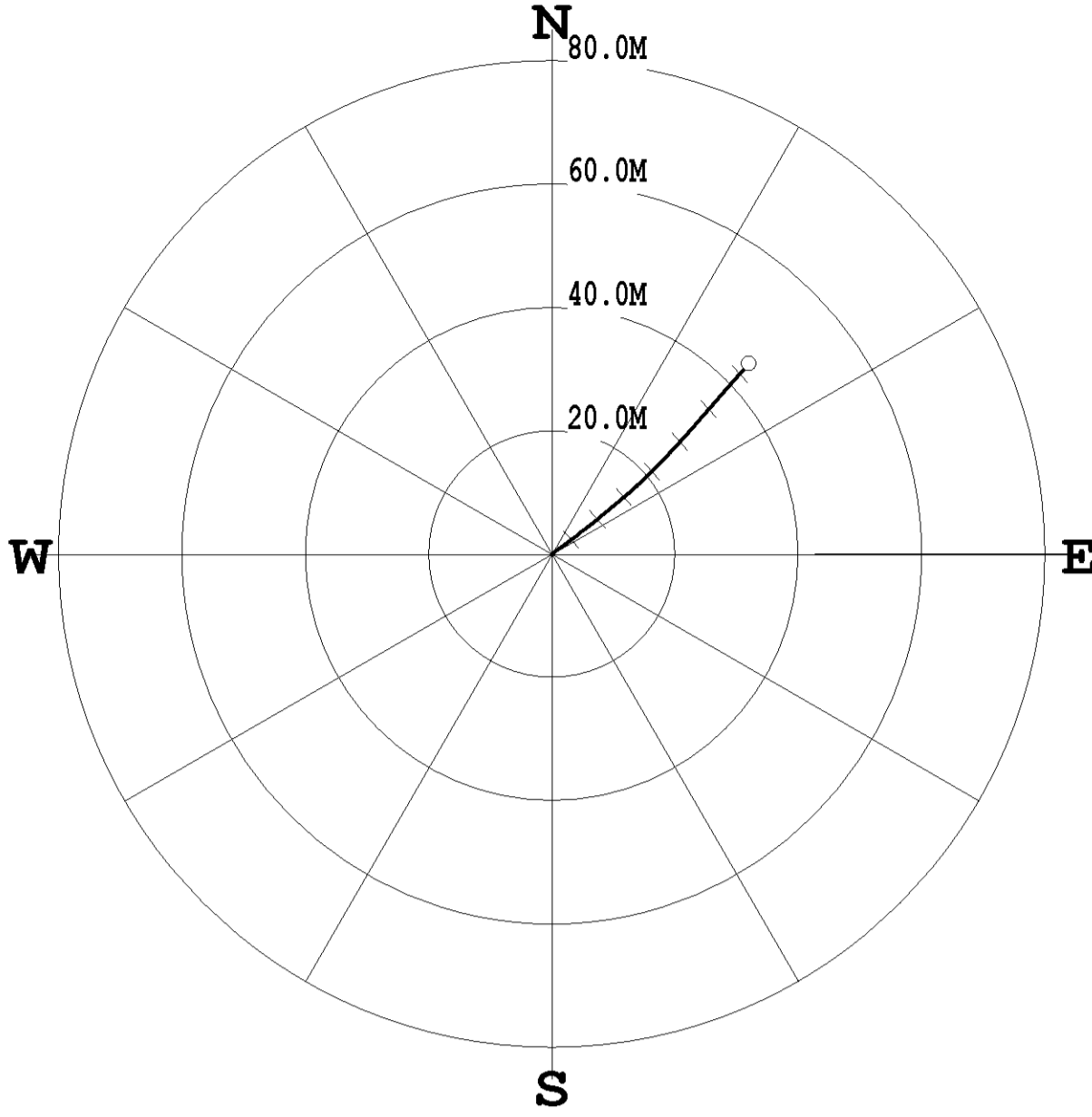
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Oct07,10 12:29:34	GAMMA	[API-GR]	0.000 [CPS]
	Oct07,10 12:29:34	GAMMA	[API-GR]	567.000 [CPS]
2	Sep24,10 10:57:57	NEUTRON	[API-N]	1.000 [CPS]
	Sep24,10 10:57:57	NEUTRON	[API-N]	790.000 [CPS]
3	Jun27,08 12:33:57	SP	[MV]	321050.000 [CPS]
	Jun27,08 12:33:57	SP	[MV]	279300.000 [CPS]
4	Jul10,07 05:41:27	RES(16N)	[OHM-M]	5464.000 [CPS]
	Jul10,07 05:41:27	RES(16N)	[OHM-M]	422317.000 [CPS]
5	Jun27,07 05:27:01	RES(64N)	[OHM-M]	4823.000 [CPS]
	Jun27,07 05:27:01	RES(64N)	[OHM-M]	418052.000 [CPS]
6	Jul02,07 07:45:45	TEMP	[DEG F]	341402.000 [CPS]
	Jul02,07 07:45:45	TEMP	[DEG F]	387139.000 [CPS]
7	Jul10,07 05:42:24	RES	[OHM]	4956.000 [CPS]
	Jul10,07 05:42:24	RES	[OHM]	162246.000 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WESTERN COAL CORPORATION
LOCATION: BRULE
HOLE ID: BR10-56
DATE OF LOG: 10/07/10
PROBE: 9057A 4429

MAG DECL: 21.0

SCALE: 10 M/CM
TRUE DEPTH: 145.40 M
AZIMUTH: 45.9
DISTANCE: 44.4 M
+ = 20 M INCR
○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WESTERN COAL CORPOR HOLE ID. : BR10-56
FIELD OFFICE : CENTURY GEO DATE OF LOG : 10/07/10
DATA FROM : N/A PROBE : 9057A , 4429
MAG. DECL. : 21.000 DEPTH UNITS : METERS
LOG: BR10-56_10-07-10_12-37_9057A_02_3.65_152.63_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
6.00	5.97	0.12	0.06	0.1	24.4	15.2	45.8
7.00	6.94	0.29	0.26	0.4	41.2	15.2	50.9
8.00	7.90	0.45	0.46	0.6	45.7	15.2	53.4
9.00	8.87	0.61	0.68	0.9	48.1	15.4	54.3
10.00	9.83	0.76	0.89	1.2	49.5	15.4	54.4
11.00	10.79	0.91	1.11	1.4	50.5	15.4	54.4
12.00	11.76	1.07	1.32	1.7	51.2	15.3	54.0
13.00	12.72	1.22	1.54	2.0	51.6	15.2	54.6
14.00	13.69	1.37	1.75	2.2	51.9	15.1	53.6
15.00	14.65	1.53	1.96	2.5	52.1	15.0	53.9
16.00	15.62	1.68	2.17	2.7	52.3	14.9	53.5
17.00	16.59	1.83	2.38	3.0	52.5	14.8	54.9
18.00	17.55	1.98	2.59	3.3	52.6	14.9	54.2
19.00	18.52	2.13	2.80	3.5	52.8	14.9	54.0
20.00	19.48	2.28	3.01	3.8	52.8	14.9	53.5
21.00	20.45	2.43	3.21	4.0	52.9	14.9	53.0
22.00	21.42	2.59	3.42	4.3	52.9	14.8	53.1
23.00	22.38	2.74	3.62	4.5	52.9	14.8	52.0
24.00	23.35	2.90	3.82	4.8	52.8	14.8	52.1
25.00	24.32	3.05	4.03	5.1	52.8	14.8	52.6
26.00	25.28	3.21	4.23	5.3	52.8	14.7	51.7
27.00	26.25	3.38	4.42	5.6	52.5	14.9	47.0
28.00	27.22	3.56	4.61	5.8	52.3	15.0	47.2
29.00	28.18	3.73	4.81	6.1	52.2	15.5	52.3
30.00	29.15	3.88	5.02	6.3	52.3	13.8	70.7
31.00	30.11	4.03	5.24	6.6	52.4	15.1	52.4
32.00	31.08	4.18	5.44	6.9	52.5	15.2	53.9
33.00	32.04	4.34	5.65	7.1	52.4	15.1	52.2
34.00	33.01	4.50	5.86	7.4	52.4	15.1	52.0
35.00	33.97	4.66	6.06	7.6	52.4	15.0	52.1
36.00	34.94	4.82	6.27	7.9	52.4	15.0	51.5
37.00	35.91	4.98	6.47	8.2	52.4	15.1	51.4
38.00	36.87	5.14	6.67	8.4	52.4	15.1	51.4
39.00	37.84	5.30	6.88	8.7	52.4	15.2	51.8
40.00	38.80	5.47	7.08	8.9	52.3	15.2	51.8
41.00	39.77	5.63	7.29	9.2	52.3	15.2	51.1
42.00	40.73	5.80	7.49	9.5	52.3	15.3	49.9
43.00	41.70	5.98	7.68	9.7	52.1	15.7	46.1
44.00	42.66	6.17	7.88	10.0	51.9	15.7	46.2
45.00	43.62	6.34	8.08	10.3	51.9	14.5	59.2
46.00	44.59	6.49	8.30	10.5	52.0	15.6	50.8
47.00	45.55	6.66	8.51	10.8	51.9	15.5	51.0
48.00	46.51	6.83	8.72	11.1	51.9	15.5	50.4
49.00	47.48	7.00	8.92	11.3	51.9	15.8	51.5
50.00	48.44	7.17	9.13	11.6	51.9	15.6	50.4
51.00	49.40	7.34	9.34	11.9	51.8	15.6	50.4
52.00	50.37	7.51	9.55	12.1	51.8	15.5	50.4
53.00	51.33	7.68	9.75	12.4	51.8	15.5	49.5
54.00	52.29	7.86	9.95	12.7	51.7	15.9	46.8
55.00	53.26	8.04	10.15	12.9	51.6	16.0	50.8
56.00	54.22	8.20	10.36	13.2	51.7	15.7	50.0
57.00	55.18	8.37	10.57	13.5	51.6	15.4	49.9
58.00	56.14	8.55	10.78	13.8	51.6	15.9	49.8
59.00	57.11	8.73	10.99	14.0	51.6	15.9	49.5
60.00	58.07	8.90	11.20	14.3	51.5	16.0	50.6
61.00	59.03	9.08	11.41	14.6	51.5	16.0	49.6
62.00	59.99	9.26	11.63	14.9	51.5	16.4	50.9
63.00	60.95	9.44	11.84	15.1	51.5	16.4	49.7
64.00	61.91	9.62	12.05	15.4	51.4	16.4	49.4
65.00	62.87	9.80	12.27	15.7	51.4	16.4	49.9
66.00	63.82	9.99	12.49	16.0	51.3	16.7	49.5
67.00	64.78	10.18	12.71	16.3	51.3	16.9	48.3
68.00	65.74	10.38	12.93	16.6	51.2	16.8	48.0
69.00	66.70	10.57	13.14	16.9	51.2	16.9	48.5
70.00	67.65	10.76	13.36	17.2	51.1	16.9	48.3
71.00	68.61	10.96	13.58	17.4	51.1	17.0	47.2
72.00	69.56	11.16	13.79	17.7	51.0	17.1	47.4
73.00	70.52	11.36	14.01	18.0	51.0	17.1	47.1
74.00	71.48	11.56	14.22	18.3	50.9	17.1	46.8
75.00	72.43	11.77	14.44	18.6	50.8	17.3	45.6
76.00	73.39	11.97	14.65	18.9	50.7	17.1	46.5
77.00	74.34	12.18	14.86	19.2	50.7	17.5	45.9
78.00	75.29	12.39	15.08	19.5	50.6	17.7	45.9
79.00	76.25	12.60	15.30	19.8	50.5	17.8	46.8
80.00	77.20	12.81	15.52	20.1	50.5	17.6	45.2
81.00	78.15	13.02	15.73	20.4	50.4	17.7	44.8
82.00	79.10	13.24	15.95	20.7	50.3	17.8	44.9
83.00	80.06	13.45	16.17	21.0	50.2	17.4	45.5
84.00	81.01	13.66	16.38	21.3	50.2	17.9	45.6
85.00	81.96	13.88	16.60	21.6	50.1	18.4	43.8
86.00	82.91	14.11	16.82	22.0	50.0	18.0	44.8
87.00	83.86	14.32	17.04	22.3	50.0	17.9	44.6
88.00	84.81	14.54	17.26	22.6	49.9	18.0	44.3
89.00	85.76	14.77	17.47	22.9	49.8	18.2	43.6
90.00	86.71	14.99	17.69	23.2	49.7	18.4	43.5
91.00	87.66	15.22	17.91	23.5	49.6	18.4	44.2
92.00	88.61	15.44	18.13	23.8	49.6	18.3	43.6
93.00	89.56	15.67	18.35	24.1	49.5	18.3	43.9
94.00	90.51	15.90	18.56	24.4	49.4	18.3	43.4
95.00	91.46	16.13	18.78	24.8	49.3	18.2	43.0
96.00	92.41	16.36	18.99	25.1	49.3	18.3	43.0
97.00	93.36	16.59	19.20	25.4	49.2	18.4	42.6
98.00	94.31	16.82	19.42	25.7	49.1	18.6	43.5
99.00	95.25	17.05	19.64	26.0	49.0	18.5	42.7
100.00	96.20	17.29	19.86	26.3	49.0	18.4	42.7
101.00	97.15	17.52	20.07	26.6	48.9	18.5	43.2
102.00	98.10	17.75	20.29	27.0	48.8	18.5	43.2
103.00	99.05	17.98	20.50	27.3	48.7	18.4	42.7
104.00	100.00	18.22	20.72	27.6	48.7	18.7	42.8
105.00	100.94	18.45	20.94	27.9	48.6	18.9	42.4
106.00	101.89	18.69	21.15	28.2	48.5	18.9	41.8
107.00	102.84	18.93	21.37	28.6	48.5	18.9	42.2
108.00	103.78	19.17	21.59	28.9	48.4	18.9	41.9
109.00	104.73	19.41	21.80	29.2	48.3	18.9	42.1
110.00	105.67	19.66	22.02	29.5	48.2	19.2	41.0
111.00	106.62	19.90	22.23	29.8	48.2	19.1	41.6
112.00	107.56	20.15	22.45	30.2	48.1	19.3	41.5
113.00	108.51	20.40	22.67	30.5	48.0	19.3	41.1
114.00	109.45	20.65	22.89	30.8	48.0	19.3	41.8
115.00	110.39	20.89	23.11	31.2	47.9	19.3	41.0
116.00	111.34	21.14	23.33	31.5	47.8	19.5	41.3
117.00	112.28	21.39	23.55	31.8	47.7	19.6	41.2
118.00	113.22	21.65	23.77	32.2	47.7	19.7	41.0
119.00	114.16	21.90	23.99	32.5	47.6	19.7	41.1
120.00	115.10	22.16	24.21	32.8	47.5	19.4	41.5
121.00	116.04	22.41	24.44	33.2	47.5	20.0	42.1
122.00	116.98	22.67	24.67	33.5	47.4	20.0	41.1
123.00	117.92	22.93	24.89	33.8	47.4	20.3	41.4
124.00	118.86	23.19	25.12	34.2	47.3	20.2	40.5
125.00	119.80	23.45	25.34	34.5	47.2	20.3	40.2
126.00	120.74	23.71	25.57	34.9	47.2	20.5	41.9
127.00	121.67	23.97	25.81	35.2	47.1	20.4	41.9
128.00	122.61	24.24	26.04	35.6	47.1	20.4	40.8
129.00	123.55	24.50	26.26	35.9	47.0	20.4	41.4
130.00	124.49	24.76	26.49	36.3	46.9	20.4	41.8
131.00	125.42	25.02	26.72	36.6	46.9	20.4	40.8
132.00	126.36	25.29	26.95	37.0	46.8	20.3	41.0
133.00	127.30	25.55	27.17	37.3	46.8	20.4	40.7
134.00	128.24	25.81	27.40	37.6	46.7	20.5	40.4
135.00	129.17	26.08	27.63	38.0	46.7	20.4	41.1
136.00	130.11	26.34	27.87	38.3	46.6	20.6	41.0
137.00	131.04	26.61	28.10	38.7	46.6	20.7	41.3
138.00	131.98	26.88	28.33	39.0	46.5	20.6	41.5
139.00	132.91	27.15	28.56	39.4	46.5	20.8	40.9
140.00	133.85	27.42	28.80	39.8	46.4	21.0	41.8
141.00	134.78	27.68	29.03	40.1	46.4	21.1	42.5
142.00	135.71	27.95	29.27	40.5	46.3	21.5	41.2
143.00	136.64	28.23	29.52	40.8	46.3	21.9	41.3
144.00	137.57	28.50	29.77	41.2	46.2	21.4	42.2
145.00	138.50	28.78	30.01	41.6	46.2	21.9	41.6
146.00	139.43	29.06	30.26	42.0	46.2	22.2	41.4
147.00	140.35	29.34	30.52	42.3	46.1	22.5	42.0
148.00	141.28	29.62	30.77	42.7	46.1	22.1	42.3
149.00	142.21	29.90	31.03				



Western Canadian Coal

Quality Control System

Form 02-C

Drillhole Information sheet

HOLE-ID: <i>BM13-01A</i>	year drilled: 2013	AREA:	Brule
---------------------------------	--------------------	--------------	--------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			572,212.05	6,141,113.05	1,220.00

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		102.55	Rotary			03/07/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments: - borehole log, picture of rock chips for designated intervals

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-01A

(Page 1 of 1)



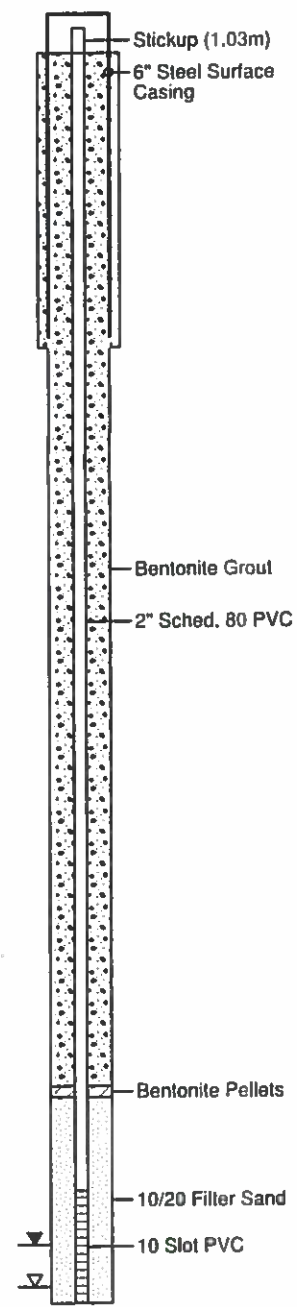
Date Started : Mar 7, 2013
 Date Completed : Mar 8, 2013
 Drilling Method : 6" Barber AR
 Surveyed By : Brule Mine
 Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6141113.053
 Easting Coord. : 572212.045
 Logged By : JY/JT
 Reveiwed By : MB/LF

Brule Mine: 5 Year Plan - GW Investigation
 Project #: A320-2

Depth (m)	Elev. (masl)	Dip/Trend	Grab Sample	Graphic	DESCRIPTION	Depth (m)	Water Levels	
							▼	▽
0	1145				OVERBURDEN sandy SILT, dark brown, dry, small pieces of sandstone; 0m-17m	0	Water Level BM13-01A: 99.350m (24-Mar-13)	Water Level BM13-01A: 102.769m (24-Apr-13)
10	1135				CARBONACEOUS SHALE	10		
20	1125		X		SILTSTONE, grey-brown, friable	20		
30	1115		X		SANDSTONE; some interbedded siltstone	30		
40	1105		X		CARBONACEOUS SHALE; coarsening upwards, sandstone w/ siltstone	40		
50	1095		X		CARBONACEOUS SHALE	50		
60	1085		X		SANDSTONE w/ interbeds of siltstone	60		
70	1075		X		CARBONACEOUS SHALE; coarsening upwards	70		
80	1065		X		SILTSTONE and SANDSTONE, alternating beds 1-2m thick	80		
90	1055		X		SANDSTONE, fining upwards to siltstone	90		
100	1045		X		SILTSTONE	100		
			X		COAL, black, dry			
			X		SILTSTONE			
			X		COAL, black, dry			
			X		SANDSTONE, grading up to siltstone			
			X		SILTSTONE			
			X		COAL, black, dry			
			X		SILTSTONE, grey, dry. Air Lift Yield: 0 GPM			
					EOH @ 102.55m			

Well: BM13-01A
 Elev.: 1146.86 m.a.s.l. (TOC)





**COMPENSATED DENSITY
GAMMA - CALIPER - RES.
BM13-01A**

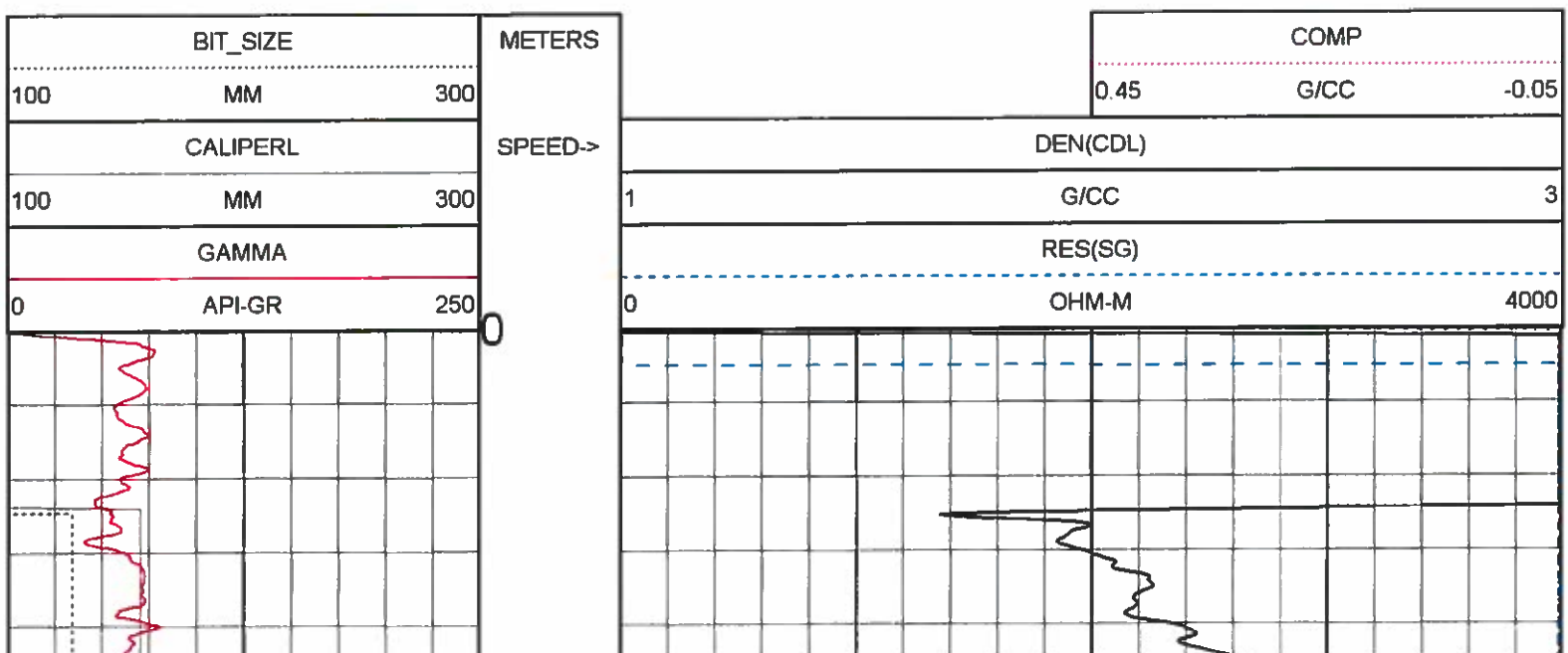
COMPANY	:WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	
WELL	:BM13-01A	NEU	
FIELD	:BRULE	DIP	
COUNTRY	:CANADA		
PROVINCE	:BRITISH COLUMBIA		
LOG MEASURED FROM	:G.L.	ELEVATION KB	:N/A
DRL MEASURED FROM	:G.L.	ELEVATION DF	:N/A
		ELEVATION GL	:N/A
DATE	:03/14/13	RIG NUMBER	:N/A
DEPTH DRILLER	:103.00	LOGGER TD	:102.55
BIT SIZE	:127.87	ARRIVAL TIME	:7.30
LOG TOP	:0.02	DEPARTURE TIME	:10.00
LOG BOTTOM	:102.35	CIRC STOPPED	:N/A
CASING LOGGER	:4.90		
CASING DRILLER	:3.96		
CASING TYPE	:STEEL		
BOREHOLE FLUID	:H2O		
RM TEMPERATURE	:N/A		
MUD RES	:N/A		
MUD WEIGHT	:1.00		
WITNESSED BY	:J.TODD		
RECORDED BY	:B.HILL		
REMARKS 1	:VERTICAL HOLE		
REMARKS 2	:N/A		

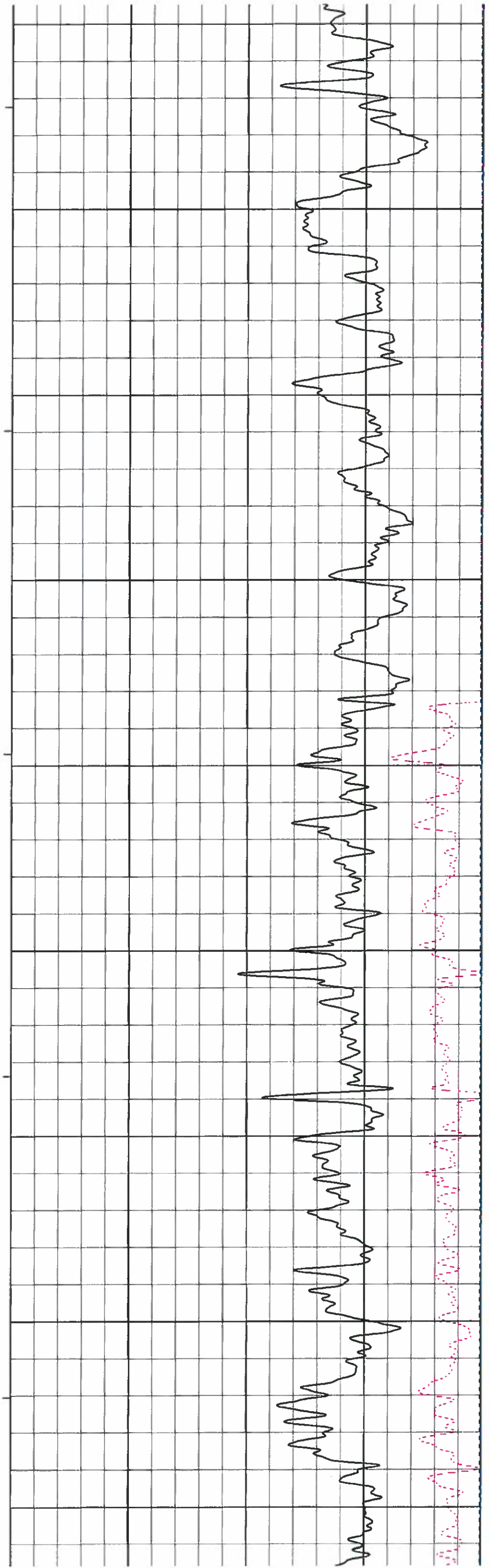
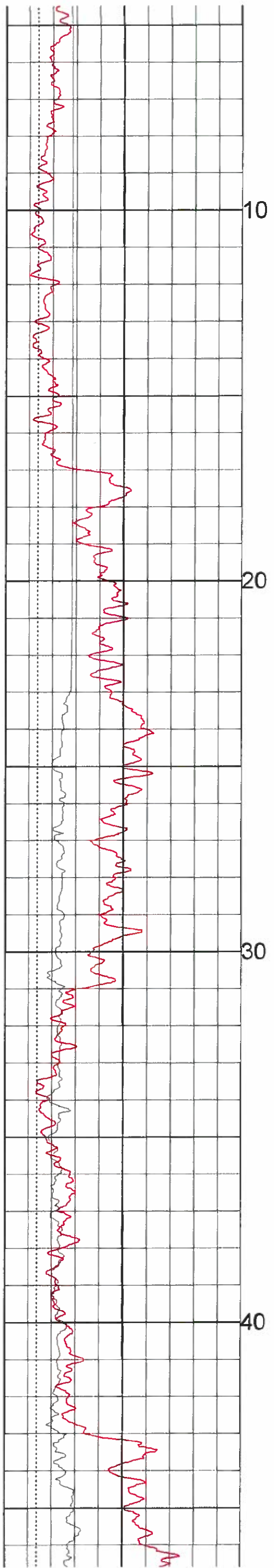
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

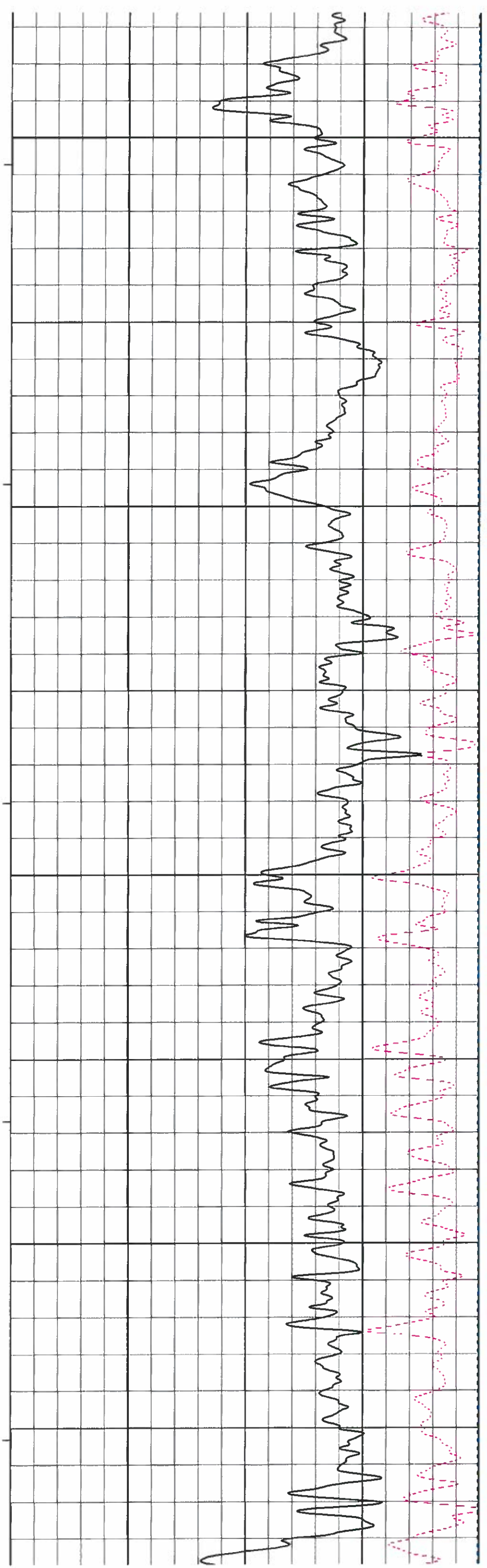
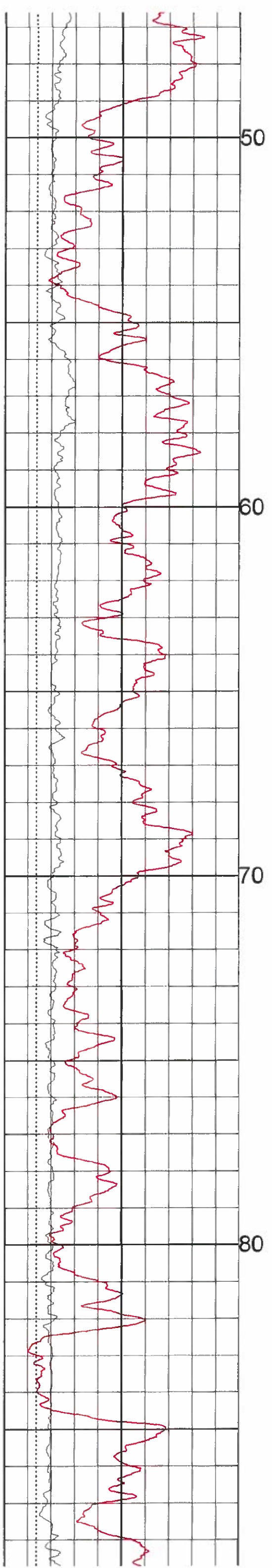
DENSITY LOG 1:100 BM13-01A 03/14/13

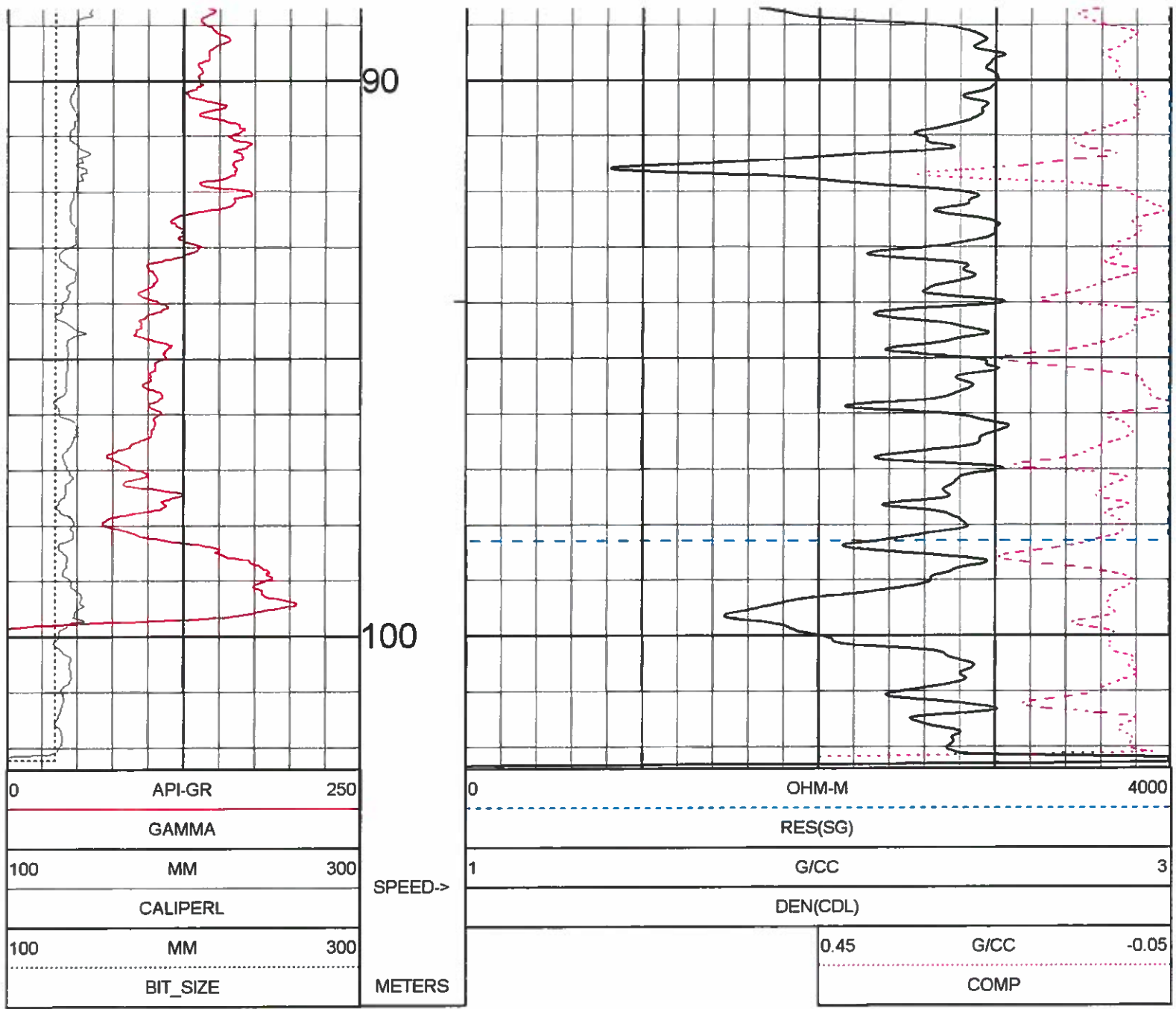
LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013		VERSION = 3.64KT










DENSITY LOG 1:100 BM13-01A 03/14/13

LOG PARAMETERS

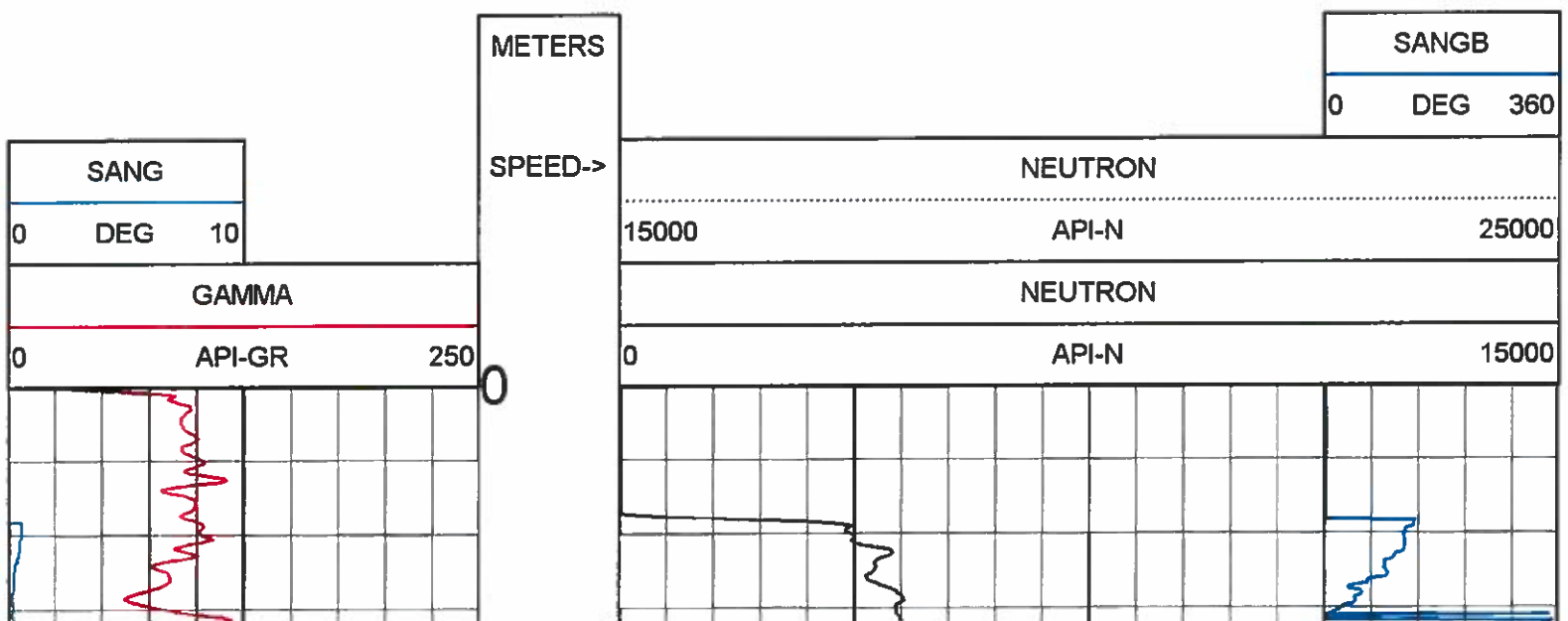
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013		VERSION = 3.64KT

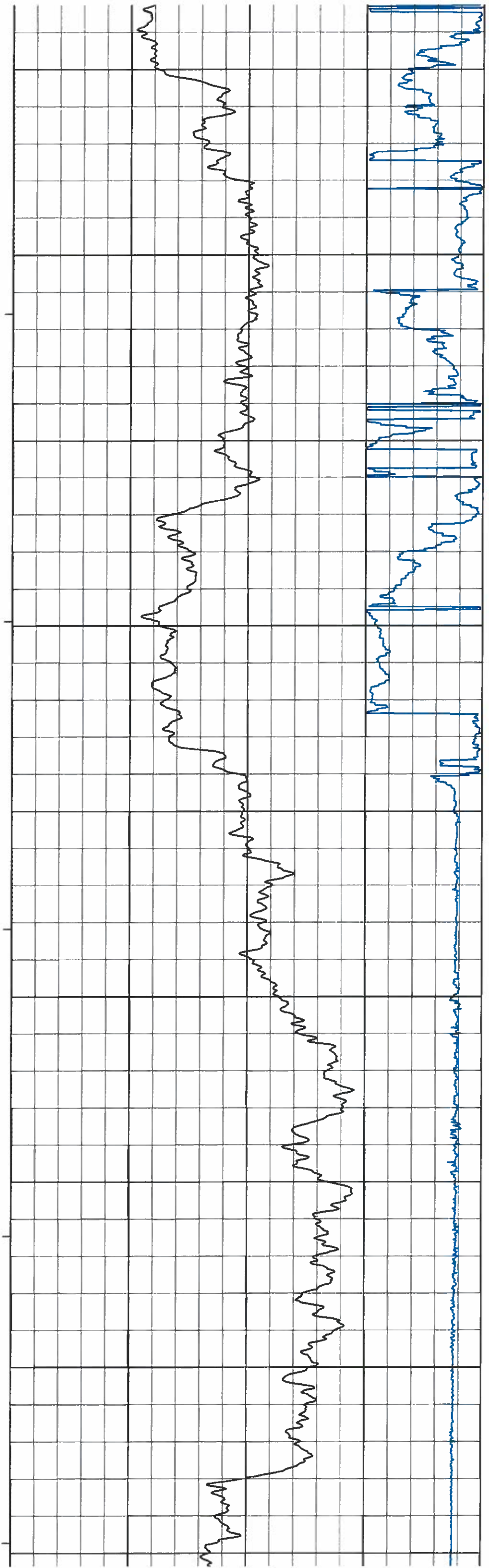
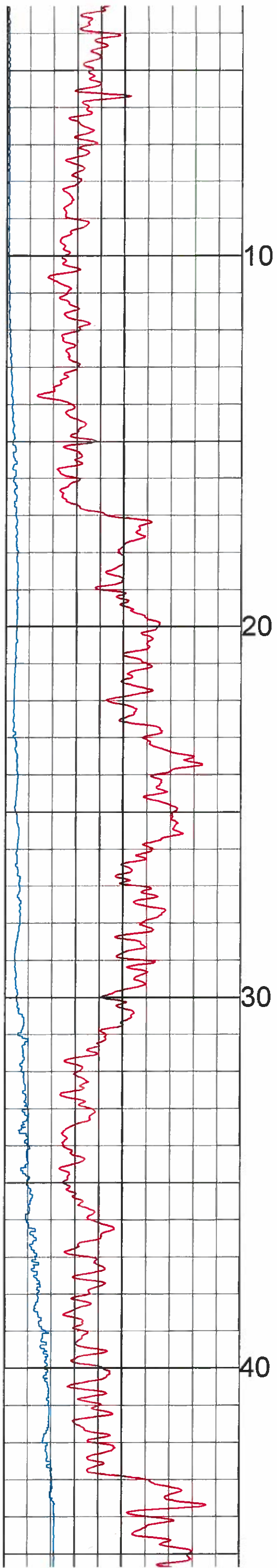
TOOL CALIBRATION BM13-01A 03/14/13 10:00
 TOOL 9239C1 TM VERSION 2025
 SERIAL NUMBER 959

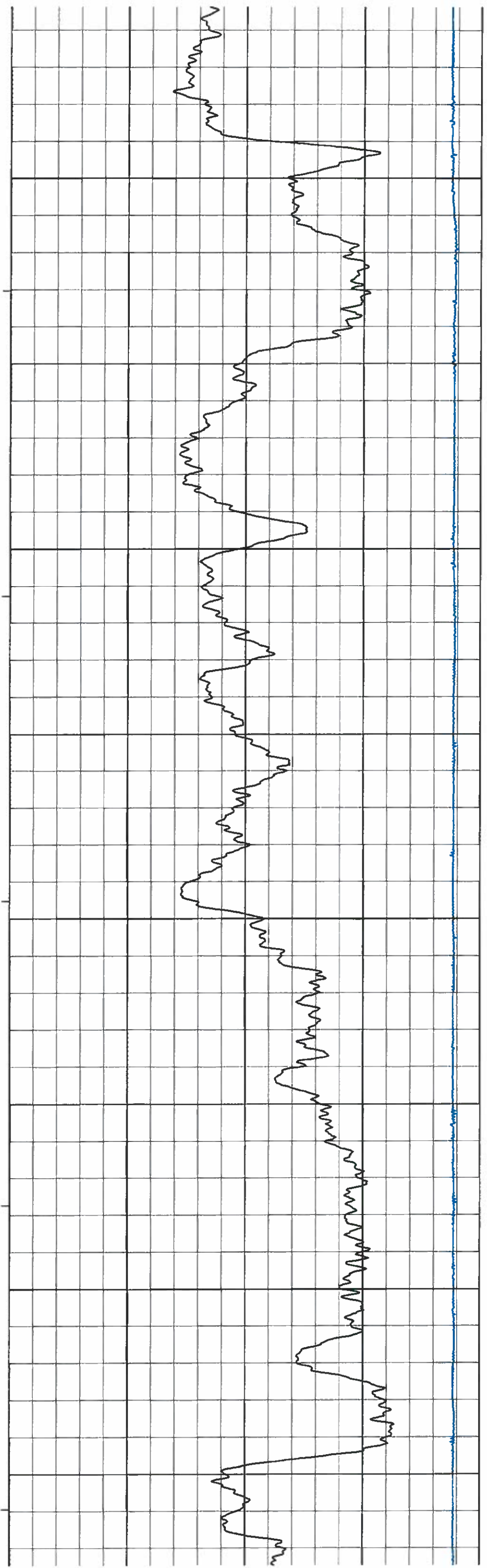
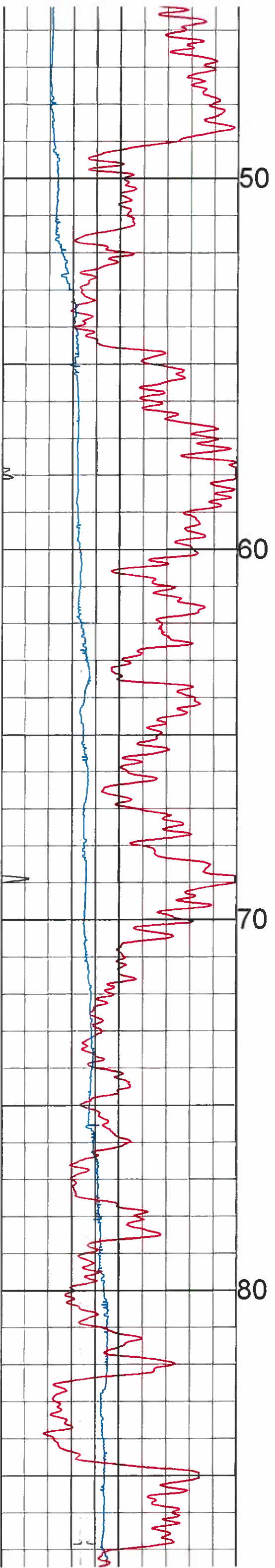
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Mar07,13	10:52:25	GAMMA	0.000 [API-GR]	1.000 [CPS]
	Mar07,13	10:52:25	GAMMA	545.000 [API-GR]	550.000 [CPS]
2	Mar07,13	10:28:46	VOLTAGE	27.200 [MV]	7680.000 [CPS]
	Mar07,13	10:28:46	VOLTAGE	237.200 [MV]	35824.898 [CPS]
3	Mar19,12	11:04:16	CALIPER	Default [CPS]	Default [CPS]
	Mar19,12	11:04:16	CALIPER	Default [CPS]	Default [CPS]
4	Mar07,13	09:59:31	DEN(LS)	1.620 [G/CC]	12753.700 [CPS]
	Mar07,13	09:59:31	DEN(LS)	2.612 [G/CC]	1699.200 [CPS]
5	Mar07,13	09:58:29	DEN(SS)	1.590 [G/CC]	45253.102 [CPS]
	Mar07,13	09:58:29	DEN(SS)	2.580 [G/CC]	17432.600 [CPS]
6	Mar07,13	10:43:04	CALIPERL	100.000 [MM]	123992.227 [CPS]
	Mar07,13	10:43:04	CALIPERL	200.000 [MM]	229839.406 [CPS]
7	Mar07,13	10:23:06	CURRENT	27.200 [UA]	7922.100 [CPS]
	Mar07,13	10:23:06	CURRENT	237.200 [UA]	25930.400 [CPS]
8	Mar19,12	11:04:16	F	Default [CPS]	
9	Mar19,12	11:04:16	X	Default [CPS]	

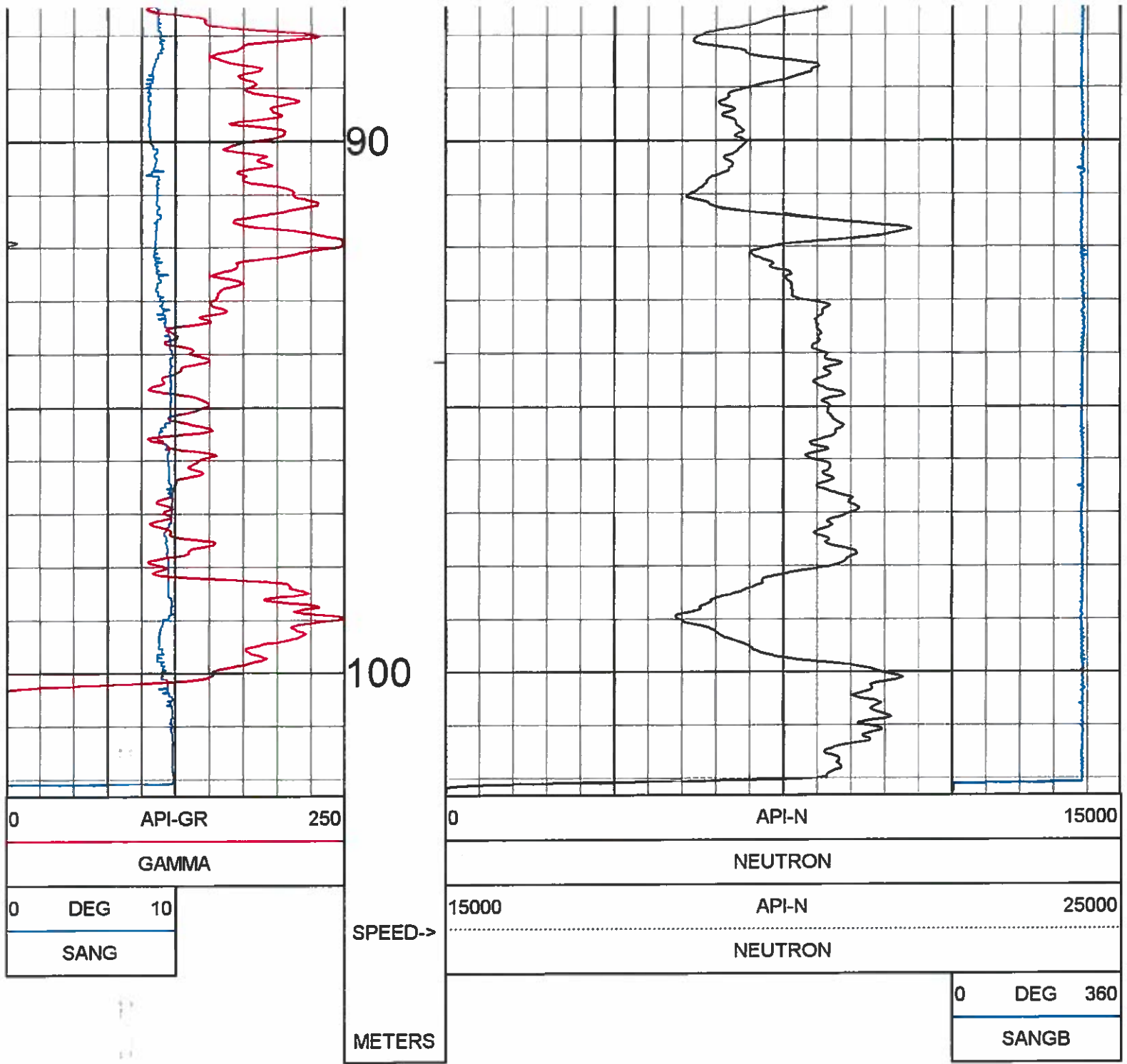
		GAMMA - NEUTRON - RES BM13-01A	
COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	
WELL	: BM13-01A	DEN	
FIELD	: BRULE	DIP	
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID.	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION KB	: N/A
LOG MEASURED FROM	: G.L.	ELEVATION DF	: N/A
DRL MEASURED FROM	: G.L.	ELEVATION GL	: N/A
DATE	: 03/14/13	RIG NUMBER	: N/A
DEPTH DRILLER	: 103.00	LOGGER TD	: 102.47
BIT SIZE	: 127.87	ARRIVAL TIME	: 7.30
LOG TOP	: 0.00	DEPARTURE TIME	: 10.00
LOG BOTTOM	: 102.27	CIRC STOPPED	: N/A
CASING LOGGER	: 23.00		
CASING DRILLER	: 23.00		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
RM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TODD		
RECORDED BY	: B.HILL		
REMARKS 1	: VERTICAL HOLE		
REMARKS 2	: N/A		
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS			

NEUTRON LOG 1:100 BM13-01A 03/14/13		
LOG PARAMETERS		
MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013		VERSION = 3.64KT










NEUTRON LOG 1:100 BM13-01A 03/14/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013		VERSION = 3.64KT

TOOL CALIBRATION BM13-01A 03/14/13 09:28
 TOOL 9058A TM VERSION 2
 SERIAL NUMBER 2635

	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Feb01,13	14:39:20	GAMMA 1.000	[API-GR]	0.770 [CPS]
	Feb01,13	14:39:20	GAMMA 545.000	[API-GR]	575.000 [CPS]
2	Aug10,12	11:25:15	TEMP 41.700	[DEG_F]	333776.000 [CPS]
	Aug10,12	11:25:15	TEMP 121.500	[DEG_F]	398824.000 [CPS]
3	Mar08,13	13:31:34	NEUTRON 0.000	[API-N]	1.000 [CPS]
	Mar08,13	13:31:34	NEUTRC 271.000	[API-N]	71.000 [CPS]
4	Feb01,13	14:06:13	POR(NEI 100.000	[PERCENT]	57.100 [CPS]

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-01B	year drilled: 2013	AREA: BRULE
--------------------------	--------------------	-------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			572,222.34	6,141,118.13	1,145.79

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		23.20	Rotary			03/15/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: - borehole log, drilled in pairs, see B13-01A for geophysics

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-01B

(Page 1 of 1)



Brule Mine: 5 Year Plan - GW Investigation
Project #: A320-2

Date Started : Mar 15, 2013
Date Completed : Mar 15, 2013
Drilling Method : 6" Barber AR
Surveyed By : Brule Mine
Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6141118.13
Easting Coord. : 572222.336
Elevation (Ground): 1145.793
Logged By : JY
Reviewed By : LF

Depth (m)	Elev. (masl)	Dip/Trend	Grab Sample	Graphic	Water Levels	DESCRIPTION	Depth (m)
					▼ Water Level BM13-01B: 12.057m (16-Mar-13) ▼ Water Level BM13-01B: 12.740m (24-Apr-13)		
0	1145					OVERBURDEN	Well: BM13-01B Elev.: 1146.71 m.a.s.l. (TOC)
5	1140						Stickup (0.92m) 6" Steel Surface Casing Bentonite Grout 2" Sched 80 PVC Bentonite Pellets
10	1135					OVERBURDEN, sandy silt, dark brown, dry, small peices of sandstone	10/20 Filter Sand 10 Slot Screen
15	1130						Bentonite Pellets Sand
20	1125						Cuttings
25						EOH @ 23.2m	

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-02A	year drilled: 2013	AREA: BRULE
--------------------------	--------------------	--------------------

Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
				571,837.64	6,140,140.85

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		182.10	Rotary			03/08/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: - borehole log, picture of rock chips for designated intervals

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-02A

(Page 1 of 2)



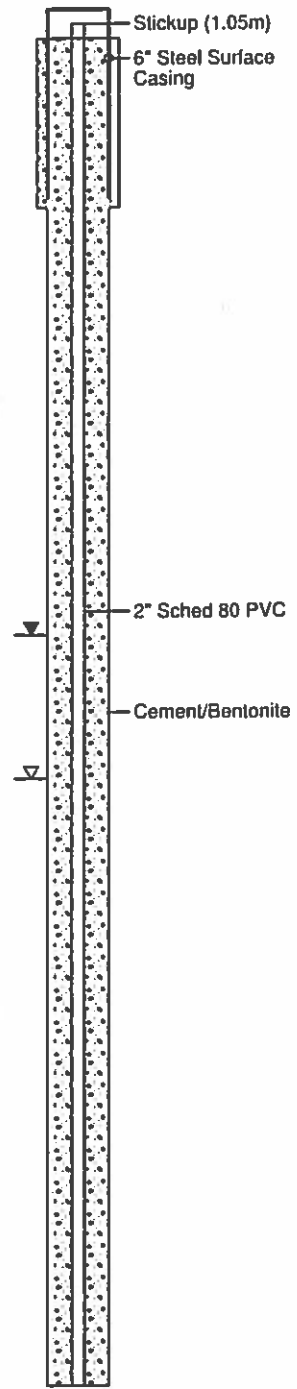
Date Started : Mar 8, 2013
 Date Completed : Mar 10, 2013
 Drilling Method : 6" Barber AR
 Surveyed By : Brule Mine
 Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6140140.85
 Easting Coord. : 571837.636
 Logged By : JY/JT
 Reviewed By : MB/LF

Brule Mine: 5 Year Plan - GW Investigation
 Project #: A320-2

Depth (m)	Elev. (masl) 1244.60	Dip/Trend	Grab Sample	Graphic	Water Levels	DESCRIPTION	Depth (m)
					▼ Water Level BM13-02A: 43.070m (19-Mar-13) ▽ Water Level BM13-02A: 53.242m (24-Apr-13)		
0	1244					OVERBURDEN: high fines content, dark brown, dry	0
5	1239		X			SILTSTONE, dark grey, dry	5
10	1234		X				10
15	1229		X			SANDSTONE/SILTSTONE	15
20	1224		X				20
25	1219		X			SILTSTONE	25
30	1214		X				30
35	1209		X			COAL	35
			X			MUDSTONE/SILTSTONE, dark brown, dry	
			X			COAL	
40	1204		X			SILTSTONE	40
			X			COAL	
			X			SILTSTONE	
45	1199		X				45
50	1194		X			COAL	50
			X			SILTSTONE	
55	1189		X				55
60	1184		X			COAL	60
			X			SILTSTONE, dark grey (some dark brown), wet from 62.2m	
65	1179		X				65
70	1174		X				70
75	1169		X				75
80	1164						80
85	1159					SANDSTONE	85
90	1154					COAL	90
						SILTSTONE, with interbeds of sandstone	
95							95

Well: BM13-02A
 Elev.: 1245.64 m.a.s.l. (TOC)





Borehole Log of BM13-02A

(Page 2 of 2)



Brule Mine: 5 Year Plan - GW Investigation
Project #: A320-2

Date Started : Mar 8, 2013
Date Completed : Mar 10, 2013
Drilling Method : 6" Barber AR
Surveyed By : Brule Mine
Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6140140.85
Easting Coord. : 571837.636
Logged By : JY/JT
Reviewed By : MB/LF

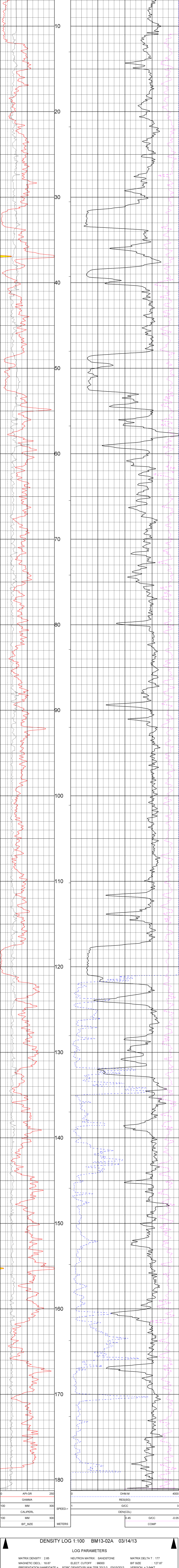
Depth (m)	Elev. (masl)	Dip/Trend	Grab Sample	Graphic	DESCRIPTION	Depth (m)	
	1244.60				<p>Water Levels</p> <p>▼ Water Level BM13-02A: 43.070m (19-Mar-13)</p> <p>▼ Water Level BM13-02A: 53.242m (24-Apr-13)</p>		Well: BM13-02A Elev.: 1245.64 m.a.s.l. (TOC)
95	1149				SILTSTONE, with interbedded sandstone Air Lift Yield: 12 GPM	95	
100	1144	20/220			Dipmeter survey starts at 100m	100	
105	1139	31/234				105	Cement/Bentonite (heavy)
110	1134	22/240			COAL	110	
115	1129	40/230			SILTSTONE, Air Lift Yield: 9.6 GPM	115	
120	1124	36/240			COAL	120	Bentonite Pellets
125	1119	25/235			SILTSTONE	125	
130	1114	37/240			COAL	130	
135	1109	35/235			SILTSTONE	135	
140	1104	33/230			COAL	140	2" Sched 80 PVC
145	1099	35/340			SANDSTONE	145	
150	1094	40/236			MUDSTONE/SILTSTONE Air Lift Yield: 12 GPM	150	Bentonite Grout
155	1089	35/230				155	
160	1084	35/240			Easy drilling (fracture?), 156m-162m	160	
165	1079	35/230			COAL	165	
170	1074	38/245			SANDSTONE, fining upwards to siltstone	170	Bentonite Pellets
175	1069	45/245			SANDSTONE	175	10/20 Filter Sand
180	1064				SILTSTONE	180	10 Slot Screen
185					Air Lift Yield: ~15 GPM EOH @ 182.1	185	

COMPANY	WALTER ENERGY / WESTERN COAL	OTHER SERVICES	RES
WELL	BM13-02A	MS	DIP
COUNTRY	BRULE		
PROVINCE	CANADA		
	BRITISH COLUMBIA		
LOG SECTION	N/A		
TOWNSHIP	N/A		
RANGE	N/A		
LICENSE NO.	N/A		
UNIQUE WELL ID	N/A		
PERMANENT DATUM	G.L.	ELEVATION RB	N/A
LOG MEASURED FROM	G.L.	ELEVATION DF	N/A
DEL MEASURED FROM	G.L.	ELEVATION GL	N/A
DATE	03/14/13	RIG NUMBER	N/A
DEPTH DRILLER	183.00	LOGGERS	N/A
BIT SIZE	127.87	ARRIVAL TIME	10:15
LOG TOP	-0.16	DEPARTURE TIME	13:00
LOG BOTTOM	-181.21	CIRC STOPPED	N/A
CASING LOGGER	11:00		
CASING DRILLER	11:27		
ROSBOL FLUID	STEEL		
ROSBOL TYPE	H2O		
RM TEMPERATURE	N/A		
MUD RES	N/A		
MUD WEIGHT	1.00		
WITNESSED BY	J.TODD		
RECORDED BY	B.HILL		
REMARKS 1	VERTICAL HOLE		
REMARKS 2	N/A		

DENSITY LOG 1:100 BM13-02A 03/14/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013	VERSION = 3.64KT	



DENSITY LOG 1:100 BM13-02A 03/14/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013	VERSION = 3.64KT	

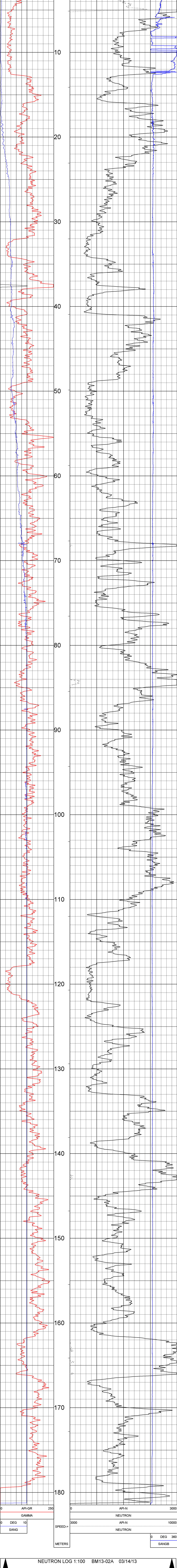
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Mar07_13 10:52:25	GAMMA	0.000 [API-GR]	1.000 [CPS]
2	Mar07_13 10:52:25	GAMMA	545.000 [API-GR]	550.000 [CPS]
3	Mar07_13 10:28:46	VOLTAGE	27.200 [MV]	7680.000 [CPS]
4	Mar07_13 10:28:46	VOLTAGE	237.200 [MV]	35824.696 [CPS]
5	Mar19_12 11:04:16	CALIPER	Default [CPS]	Default [CPS]
6	Mar19_12 11:04:16	CALIPER	Default [CPS]	Default [CPS]
7	Mar07_13 09:59:31	DEN(LS)	1.620 [G/CC]	12753.700 [CPS]
8	Mar07_13 09:59:31	DEN(LS)	2.612 [G/CC]	1699.200 [CPS]
9	Mar07_13 09:58:29	DEN(SS)	1.590 [G/CC]	45253.102 [CPS]
10	Mar07_13 09:58:29	DEN(SS)	2.580 [G/CC]	17432.600 [CPS]
11	Mar07_13 10:43:04	CALIPERL	100.000 [MM]	123982.227 [CPS]
12	Mar07_13 10:43:04	CALIPERL	200.000 [MM]	229839.408 [CPS]
13	Mar07_13 10:23:06	CURRENT	27.200 [UA]	7922.100 [CPS]
14	Mar07_13 10:23:06	CURRENT	237.200 [UA]	25930.400 [CPS]
15	Mar19_12 11:04:16	F	Default [CPS]	
16	Mar19_12 11:04:16	X	Default [CPS]	

COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES	NEU
WELL	: BM13-02A	RES	DIP
FIELD	: BRULE		
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
USD SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION RB	: N/A
LOG MEASURED FROM	: G.L.	ELEVATION DF	: N/A
DATE	: 03/14/13	ELEVATION GL	: N/A
DEPTH DRILLER	: 183.00	RIG NUMBER	: N/A
LOG TOP	: 127.27	LOGGERS TD	: 181.93
LOG BOTTOM	: 0.46	ARRIVAL TIME	: 10:15
CASING LOGGER	: 11.27	DEPARTURE TIME	: 13:00
CASING DRILLER	: 11.27	CIRC STOPPED	: N/A
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
RHM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TROD		
RECORDED BY	: BHILL		
REMARKS 1	: VERTICAL HOLE		
REMARKS 2	: N/A		

NEUTRON LOG 1:100 BM13-02A 03/14/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013	VERSION = 3.64KT	



NEUTRON LOG 1:100 BM13-02A 03/14/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013	VERSION = 3.64KT	

TOOL CALIBRATION BM13-02A 03/14/13 11:36

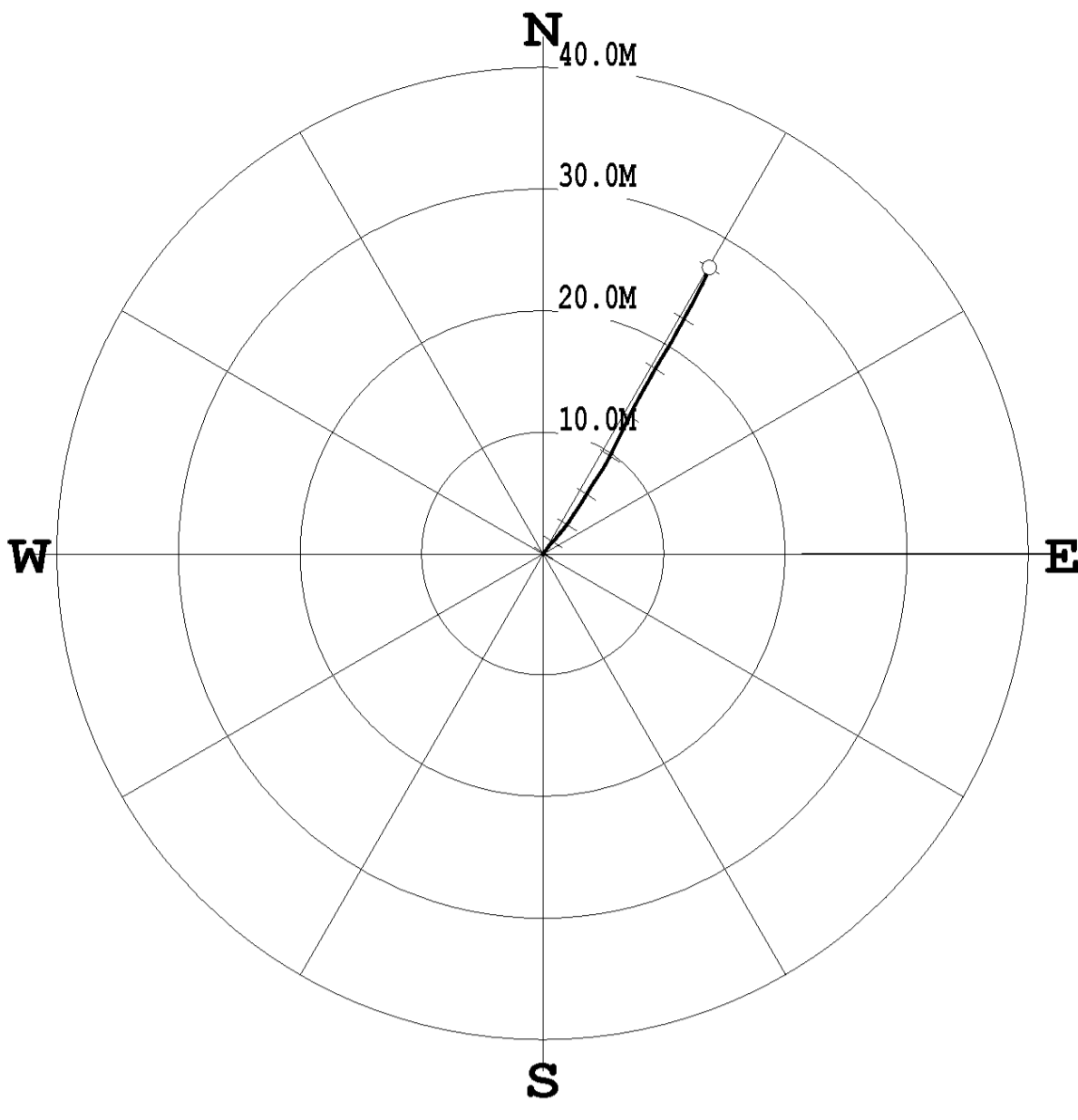
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Feb01,13 14:39:20	GAMMA	1.000 [API-GR]	0.770 [CPS]
	Feb01,13 14:39:20	GAMMA	545.000 [API-GR]	575.000 [CPS]
2	Aug10,12 11:25:15	TEMP	41.700 [DEG_F]	333776.000 [CPS]
	Aug10,12 11:25:15	TEMP	121.500 [DEG_F]	398824.000 [CPS]
3	Mar08,13 13:31:34	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Mar08,13 13:31:34	NEUTRON	271.000 [API-N]	71.000 [CPS]
4	Feb01,13 14:06:13	POR(NEI)	100.000 [PERCENT]	57.100 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WALTER ENERGY / WESTERN COAL
 LOCATION: BRULE
 HOLE ID: BM13-02A
 DATE OF LOG: 03/14/13
 PROBE: 9058A 2635

↑
 ↓
 ↗
 ↘
 MAG DECL: 18.7

SCALE: 5 M/CM
 TRUE DEPTH: 178.60 M
 AZIMUTH: 30.3
 DISTANCE: 27.2 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WALTER ENERGY / WES HOLE ID. : BM13-02A
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 03/14/13
 DATA FROM : N/A PROBE : 9058A , 2635
 MAG. DECL. : 18.670 DEPTH UNITS : METERS
 LOG: BM13-02A_03-14-13_11-36_9058A_02_0.46_181.43_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
15.00	15.00	0.02	0.02	0.0	37.0	0.6	26.0
16.00	16.00	0.03	0.02	0.0	34.8	0.4	23.8
17.00	17.00	0.04	0.03	0.0	33.8	0.3	24.0
18.00	18.00	0.05	0.03	0.1	32.9	0.5	24.6
19.00	19.00	0.06	0.04	0.1	33.5	1.1	48.5
20.00	20.00	0.07	0.05	0.1	34.9	1.2	37.0
21.00	21.00	0.08	0.06	0.1	36.8	1.5	44.1
22.00	22.00	0.10	0.08	0.1	38.5	1.8	42.3
23.00	23.00	0.13	0.11	0.2	39.1	2.4	41.4
24.00	24.00	0.17	0.13	0.2	38.9	2.7	40.0
25.00	25.00	0.21	0.17	0.3	38.5	3.3	35.1
26.00	25.99	0.26	0.20	0.3	38.0	3.5	35.5
27.00	26.99	0.31	0.24	0.4	37.6	3.6	35.0
28.00	27.99	0.36	0.27	0.4	37.3	3.5	33.5
29.00	28.99	0.41	0.31	0.5	36.8	3.5	32.3
30.00	29.99	0.46	0.34	0.6	36.4	3.8	38.6
31.00	30.98	0.52	0.38	0.6	36.2	3.9	34.2
32.00	31.98	0.57	0.42	0.7	36.0	3.9	32.8
33.00	32.98	0.63	0.45	0.8	35.8	3.6	34.9
34.00	33.98	0.68	0.49	0.8	35.6	4.1	38.9
35.00	34.97	0.74	0.54	0.9	35.9	4.4	39.7
36.00	35.97	0.80	0.59	1.0	36.3	4.1	43.3
37.00	36.97	0.85	0.63	1.1	36.7	3.9	44.4
38.00	37.97	0.90	0.68	1.1	37.3	4.4	48.8
39.00	38.96	0.95	0.74	1.2	37.8	4.3	42.6
40.00	39.96	1.01	0.79	1.3	38.1	4.3	42.8
41.00	40.96	1.06	0.84	1.4	38.5	4.1	43.8
42.00	41.95	1.11	0.90	1.4	39.0	5.2	45.5
43.00	42.95	1.18	0.96	1.5	39.3	5.0	42.1
44.00	43.95	1.24	1.02	1.6	39.4	4.5	39.4
45.00	44.94	1.30	1.07	1.7	39.4	4.7	39.8
46.00	45.94	1.37	1.12	1.8	39.4	4.6	39.5
47.00	46.94	1.43	1.18	1.9	39.4	4.7	39.7
48.00	47.93	1.50	1.23	1.9	39.4	4.9	40.7
49.00	48.93	1.56	1.28	2.0	39.4	4.2	38.3
50.00	49.93	1.62	1.32	2.1	39.3	4.3	38.3
51.00	50.92	1.68	1.37	2.2	39.3	4.8	37.7
52.00	51.92	1.75	1.43	2.3	39.4	5.3	45.0
53.00	52.92	1.81	1.49	2.3	39.5	5.3	42.5
54.00	53.91	1.89	1.55	2.4	39.5	6.0	41.5
55.00	54.91	1.96	1.62	2.5	39.6	5.6	43.1
56.00	55.90	2.04	1.69	2.7	39.5	6.0	37.4
57.00	56.89	2.13	1.76	2.8	39.5	6.1	39.5
58.00	57.89	2.22	1.82	2.9	39.4	6.5	36.2
59.00	58.88	2.31	1.89	3.0	39.4	6.4	39.3
60.00	59.88	2.40	1.96	3.1	39.3	6.4	35.3
61.00	60.87	2.49	2.03	3.2	39.2	6.5	36.6
62.00	61.86	2.58	2.09	3.3	39.0	7.0	33.2
63.00	62.85	2.69	2.16	3.5	38.8	7.4	34.4
64.00	63.85	2.79	2.23	3.6	38.6	7.1	33.1
65.00	64.84	2.90	2.30	3.7	38.4	7.6	31.6
66.00	65.83	3.01	2.37	3.8	38.1	7.5	30.2
67.00	66.82	3.13	2.44	4.0	37.9	7.7	32.1
68.00	67.81	3.25	2.51	4.1	37.7	8.6	19.8
69.00	68.80	3.37	2.60	4.3	37.7	7.7	34.7
70.00	69.79	3.49	2.69	4.4	37.6	8.4	36.6
71.00	70.78	3.61	2.77	4.6	37.4	8.9	32.3
72.00	71.76	3.74	2.86	4.7	37.3	9.2	35.3
73.00	72.75	3.87	2.94	4.9	37.2	9.0	33.7
74.00	73.74	4.00	3.03	5.0	37.1	9.0	32.3
75.00	74.73	4.14	3.11	5.2	36.9	9.6	31.8
76.00	75.71	4.28	3.20	5.3	36.8	9.5	31.0
77.00	76.70	4.42	3.29	5.5	36.6	9.8	30.4
78.00	77.69	4.56	3.38	5.7	36.5	9.5	31.5
79.00	78.67	4.71	3.46	5.8	36.4	9.7	31.0
80.00	79.66	4.85	3.55	6.0	36.2	9.9	30.2
81.00	80.64	5.00	3.64	6.2	36.1	10.5	30.9
82.00	81.62	5.16	3.74	6.4	35.9	10.1	30.1
83.00	82.61	5.31	3.83	6.5	35.8	10.6	31.8
84.00	83.59	5.48	3.92	6.7	35.6	10.7	30.5
85.00	84.57	5.64	4.02	6.9	35.5	11.2	32.6
86.00	85.55	5.80	4.13	7.1	35.4	10.8	32.8
87.00	86.54	5.95	4.23	7.3	35.4	10.8	35.1
88.00	87.52	6.11	4.33	7.5	35.4	10.6	32.7
89.00	88.50	6.26	4.44	7.7	35.3	10.4	30.8
90.00	89.48	6.42	4.55	7.9	35.3	10.9	34.7
91.00	90.47	6.57	4.65	8.1	35.3	10.8	35.2
92.00	91.45	6.73	4.76	8.2	35.3	10.7	35.9
93.00	92.43	6.88	4.85	8.4	35.2	10.4	29.3
94.00	93.42	7.03	4.95	8.6	35.1	10.3	31.0
95.00	94.40	7.19	5.04	8.8	35.0	10.2	30.5
96.00	95.38	7.34	5.13	9.0	34.9	10.0	31.0
97.00	96.37	7.48	5.21	9.1	34.8	10.0	27.1
98.00	97.35	7.64	5.29	9.3	34.7	10.3	27.7
99.00	98.34	7.79	5.37	9.5	34.6	10.1	28.8
100.00	99.32	7.94	5.45	9.6	34.5	9.7	28.4
101.00	100.31	8.09	5.53	9.8	34.4	10.0	27.5
102.00	101.29	8.25	5.61	10.0	34.2	9.6	27.9
103.00	102.28	8.40	5.69	10.1	34.1	9.8	24.8
104.00	103.26	8.55	5.76	10.3	34.0	10.4	26.2
105.00	104.25	8.72	5.84	10.5	33.8	10.3	26.6
106.00	105.23	8.87	5.92	10.7	33.7	10.0	26.1
107.00	106.22	9.03	6.00	10.8	33.6	10.1	27.3
108.00	107.20	9.19	6.08	11.0	33.5	9.8	27.7
109.00	108.19	9.34	6.15	11.2	33.4	9.9	26.0
110.00	109.17	9.50	6.23	11.4	33.3	10.4	25.6
111.00	110.16	9.66	6.31	11.5	33.1	10.6	27.9
112.00	111.14	9.82	6.39	11.7	33.0	10.7	27.0
113.00	112.12	9.99	6.47	11.9	32.9	10.8	26.5
114.00	113.11	10.15	6.55	12.1	32.8	10.3	24.9
115.00	114.09	10.31	6.62	12.3	32.7	10.6	24.9
116.00	115.07	10.48	6.70	12.4	32.6	10.5	24.3
117.00	116.05	10.65	6.78	12.6	32.5	10.9	24.6
118.00	117.04	10.81	6.86	12.8	32.4	10.7	26.7
119.00	118.02	10.98	6.94	13.0	32.3	10.7	25.8
120.00	119.00	11.15	7.03	13.2	32.2	10.7	25.9
121.00	119.98	11.32	7.10	13.4	32.1	11.0	25.1
122.00	120.96	11.50	7.19	13.6	32.0	11.8	27.8
123.00	121.94	11.68	7.28	13.8	31.9	11.8	27.7
124.00	122.92	11.86	7.37	14.0	31.9	11.3	26.6
125.00	123.90	12.04	7.46	14.2	31.8	11.7	27.9
126.00	124.88	12.21	7.56	14.4	31.7	11.4	27.3
127.00	125.86	12.40	7.66	14.6	31.7	12.2	29.7
128.00	126.84	12.58	7.76	14.8	31.7	12.0	29.1
129.00	127.81	12.77	7.87	15.0	31.6	12.4	29.6
130.00	128.79	12.95	7.97	15.2	31.6	12.0	27.1
131.00	129.77	13.14	8.07	15.4	31.5	12.6	27.5
132.00	130.74	13.34	8.18	15.6	31.5	13.1	29.7
133.00	131.72	13.54	8.29	15.9	31.5	13.2	30.4
134.00	132.69	13.74	8.41	16.1	31.5	12.8	29.6
135.00	133.66	13.93	8.52	16.3	31.4	13.1	30.3
136.00	134.64	14.13	8.63	16.6	31.4	13.0	28.5
137.00	135.61	14.32	8.74	16.8	31.4	13.0	29.4
138.00	136.59	14.52	8.86	17.0	31.4	13.4	28.8
139.00	137.56	14.72	8.96	17.2	31.3	13.3	28.2
140.00	138.53	14.92	9.07	17.5	31.3	12.5	29.9
141.00	139.51	15.12	9.18	17.7	31.3	12.9	30.1
142.00	140.48	15.31	9.29	17.9	31.3	12.6	29.5
143.00	141.46	15.50	9.40	18.1	31.3	12.5	30.7
144.00	142.43	15.69	9.52	18.3	31.2	12.4	29.9
145.00	143.41	15.87	9.62	18.6	31.2	12.3	28.2
146.00	144.39	16.06	9.73	18.8	31.2	12.5	31.8
147.00	145.36	16.24	9.85	19.0	31.2	12.7	31.6
148.00	146.34	16.43	9.96	19.2	31.2	12.7	31.9
149.00	147.31	16.62	10.08	19.4	31.2	13.2	32.0
150.00	148.29	16.82	10.20	19.7	31.2	13.1	32.5
151.00	149.26	17.01	10.32	19.9	31.3	12.9	32.0
152.00	150.23	17.20	10.44	20.1	31.2	13.3	30.0
153.00	151.21	17.41	10.56	20.4	31.2	13.7	29.9
154.00	152.18	17.61	10.67	20.6	31.2	14.0	28.9
155.00	153.15	17.83	10.79	20.8	31.2	14.6	27.4
156.00	154.12	18.05	10.90	21.1	31.1	13.9	28.2
157.00	155.09	18.26	11.02	21.3	31.1	14.1	28.6
158.00	156.06	18.47	11.14	21.6	31.1	13.9	29.7
159.00	157.03	18.68	11.25	21.8	31.1	13.9	29.9
160.00	158.00	18					

DIPMETER ANALYSIS

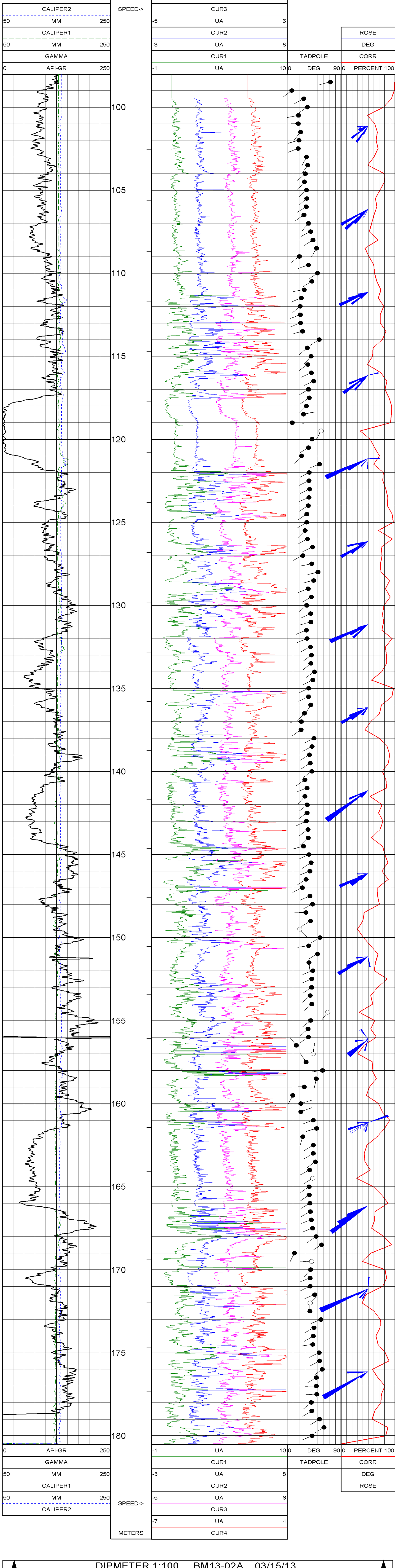
BM13-02A

COMPANY	:WALTER ENERGY /WESTERN COAL	OTHER SERVICES:	NEU
WELL	:BM13-02A	DEN	
FIELD	:BRULE		
COUNTRY	:CANADA		
PROVINCE	:BRITISH COLUMBIA		
LSD	:		
SECTION	:N/A		
TOWNSHIP	:N/A		
RANGE	:N/A		
LICENSE NO.	:N/A		
UNIQUE WELL ID.	:N/A		
PERMANENT DATUM	:GL	ELEVATION RG	:N/A
LOG MEASURED FROM	:GL	ELEVATION DF	:N/A
DPL MEASURED FROM	:GL	ELEVATION GI	:N/A
DATE	:03/15/13	RIG NUMBER	:N/A
DEPTH DRILLER	:189.00	LOGGER TD	:181.55
BIT SIZE	:127.87	ARRIVAL TIME	:10:15
LOG TOP	:96.86	DEPARTURE TIME	:13:00
LOG BOTTOM	:180.50	CIRC STOPPED	:N/A
CASING LOGGER	:4.90		
CASING DRILLER	:11.27		
CASING TYPE	:STEEL		
BOREHOLE FLUID	:H2O		
RH TEMPERATURE	:N/A		
MUD RES	:N/A		
MUD WEIGHT	:1.00		
WITNESSED BY	:J.TODD		
RECORDED BY	:B.HILL		
REMARKS 1	:VERTICAL HOLE		
REMARKS 2	:N/A		

DIPMETER 1:100 BM13-02A 03/15/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9411A-Dipmeter.0 03/13/2013		VERSION = 3.64KT




DIPMETER 1:100 BM13-02A 03/15/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 18.67	ELECT. CUTOFF : 99000	BIT SIZE : 127.87
PRESENTATION NAME/DATE = 9411A-Dipmeter.0 03/13/2013		VERSION = 3.64KT

DATE	TIME	SENSOR	STANDARD	RESPONSE
Mar07,13	11:35:43	GAMMA	0.000 [API-GR]	4.870 [CPS]
Mar07,13	11:35:43	GAMMA	545.000 [API-GR]	549.650 [CPS]
Aug14,12	11:51:58	VOLTAGE	28.600 [MV]	280.000 [CPS]
Aug14,12	11:51:58	VOLTAGE	316.000 [MV]	2163.000 [CPS]
Aug14,12	11:55:39	CUR1	2.860 [UA]	5511.000 [CPS]
Aug14,12	11:55:39	CUR1	8.980 [UA]	15950.000 [CPS]
Aug14,12	11:55:50	CUR2	2.860 [UA]	5515.000 [CPS]
Aug14,12	11:55:50	CUR2	8.980 [UA]	15910.000 [CPS]
Aug14,12	11:56:01	CUR3	2.860 [UA]	5520.000 [CPS]
Aug14,12	11:56:01	CUR3	8.980 [UA]	15950.000 [CPS]
Aug14,12	11:56:10	CUR4	2.860 [UA]	5410.000 [CPS]
Aug14,12	11:56:10	CUR4	8.980 [UA]	15720.000 [CPS]
Mar07,13	11:18:41	CALIPER1	100.000 [CM]	2858.840 [CPS]
Mar07,13	11:18:41	CALIPER1	200.000 [CM]	6806.830 [CPS]
Mar07,13	11:26:34	CALIPER2	100.000 [CM]	5116.560 [CPS]
Mar07,13	11:26:34	CALIPER2	200.000 [CM]	8781.080 [CPS]

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-02B	year drilled: 2013	AREA:	BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			571,835.85	6,140,144.18	1,244.54

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		51.20	Rotary			03/17/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: - borehole log, drilled in pairs, see BM13-02A for geophysics

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-02B

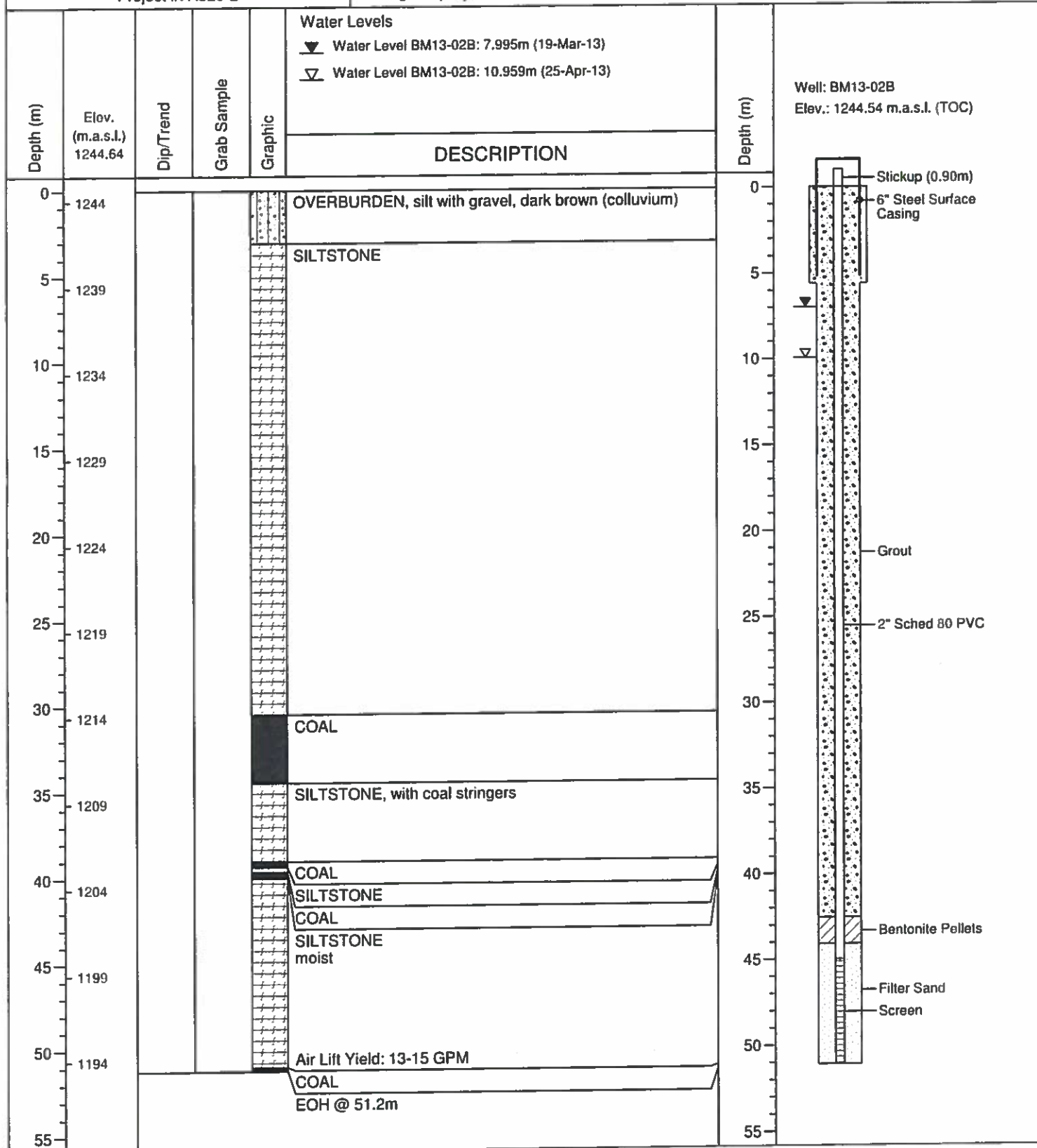
(Page 1 of 1)




Brule Mine: 5 Year Plan - GW Investigation
Project #: A320-2

Date Started : Mar 17, 2013
Date Completed : Mar 18, 2013
Drilling Method : 6" Barber AR
Surveyed By : Brule Mine
Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6140144.176
Easting Coord. : 571835.853
Logged By : JT
Reviewed By : LF



 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-06A	year drilled: 2013	AREA:	BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			574,458.87	6,137,469.92	1,051.05

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		53.70	Rotary			03/18/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
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comments:	- borehole log, picture of rock chips for designated intervals
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SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

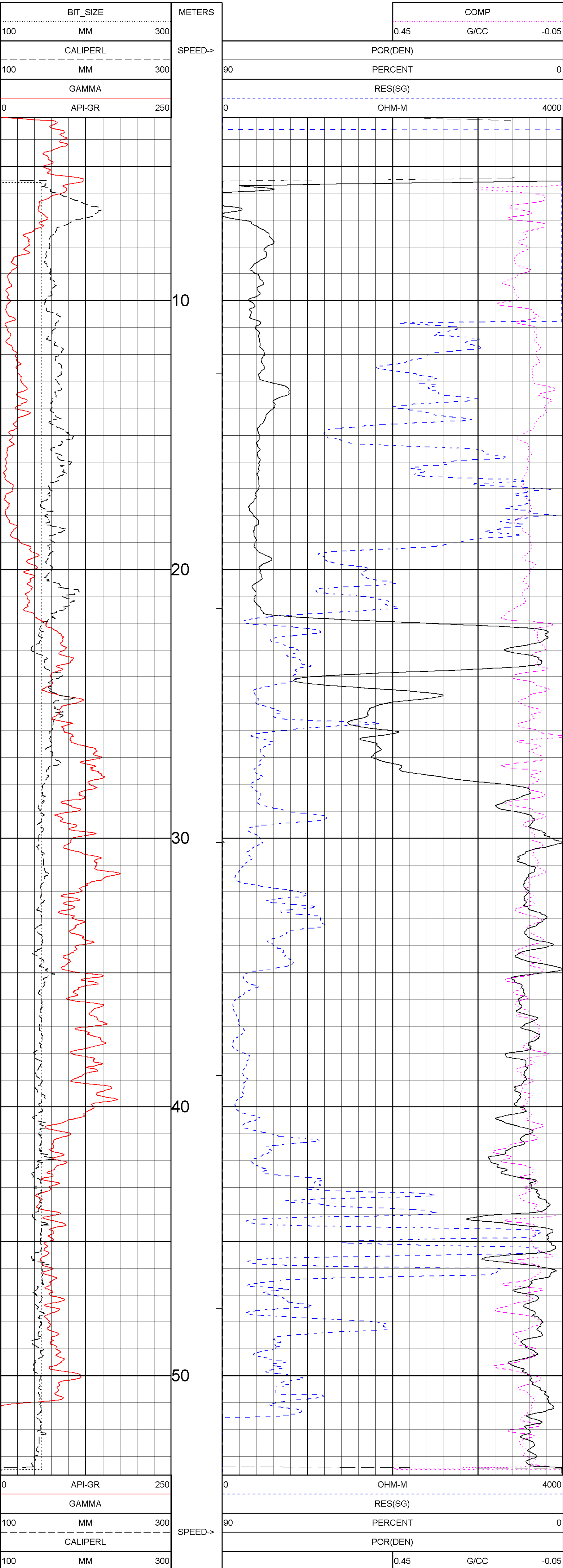
Page 1 of 1

COMPANY : WALTER ENERGY / WESTERN COAL WELL : BM13-06A FIELD : BRULE COUNTRY : CANADA PROVINCE : BRITISH COLUMBIA LSD : N/A SECTION : N/A TOWNSHIP : N/A RANGE : N/A LICENSE NO. : N/A UNIQUE WELL ID. : N/A	OTHER SERVICES: DIP : NEU :
PERMANENT DATUM : G.L. LOG MEASURED FROM : G.L. DRL MEASURED FROM : G.L. DATE : 03/19/13 DEPTH DRILLER : :54.00 BIT SIZE : :149.22 LOG TOP : :3.16 LOG BOTTOM : :53.65 CASING LOGGER : :3.048 CASING DRILLER : :5.18 CASING TYPE : :STEEL BOREHOLE FLUID : :H2O RM TEMPERATURE : :N/A MUD RES : :N/A MUD WEIGHT : :1.00 WITNESSED BY : :J.TODD RECORDED BY : :BHILL REMARKS 1 : :VERTICAL REMARKS 2 : :NORTHING:574448 EASTING:6137466	ELEVATION KB : :N/A ELEVATION DF : :N/A ELEVATION GL : :1054.00 RIG NUMBER : :FOUNDEX LOGGER TD : :53.86 ARRIVAL TIME : :9:30 DEPARTURE TIME : :13:00 CIRC STOPPED : :N/A

DENSITY LOG 1:100 BM13-06A 03/19/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 19.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9239C DENSITY POR DEN WALTER 2013.0 03/18/2CVERSION = 3.64KT



DENSITY LOG 1:100 BM13-06A 03/19/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 19.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9239C DENSITY POR DEN WALTER 2013.0 03/18/2CVERSION = 3.64KT

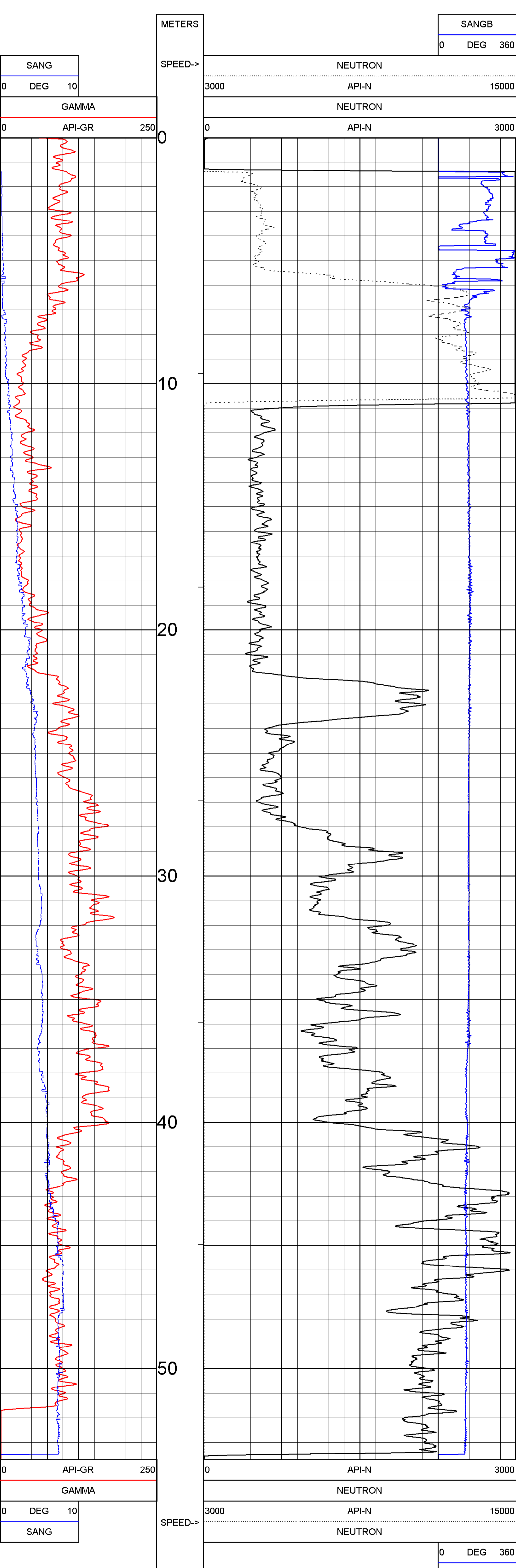
TOOL CALIBRATION BM13-06A 03/19/13 11:49					
TOOL 9239C1 TM VERSION 2025					
SERIAL NUMBER 959					
DATE	TIME	SENSOR	STANDARD	RESPONSE	
1	Mar07,13 10:52:25	GAMMA	0.000 [API-GR]	1.000	[CPS]
2	Mar07,13 10:52:25	GAMMA	545.000 [API-GR]	550.000	[CPS]
3	Mar07,13 10:28:46	VOLTAGE	27.200 [MV]	7680.000	[CPS]
3	Mar07,13 10:28:46	VOLTAGE	237.200 [MV]	35824.898	[CPS]
4	Mar19,12 11:04:16	CALIPER	Default [CPS]	Default	[CPS]
4	Mar19,12 11:04:16	CALIPER	Default [CPS]	Default	[CPS]
5	Mar07,13 09:59:31	DEN(LS)	1.620 [G/CC]	12753.700	[CPS]
5	Mar07,13 09:59:31	DEN(LS)	2.612 [G/CC]	1699.200	[CPS]
6	Mar07,13 09:58:29	DEN(SS)	1.590 [G/CC]	45253.102	[CPS]
6	Mar07,13 09:58:29	DEN(SS)	2.580 [G/CC]	17432.600	[CPS]
7	Mar07,13 10:43:04	CALIPERL	100.000 [MM]	123992.227	[CPS]
7	Mar07,13 10:43:04	CALIPERL	200.000 [MM]	229839.406	[CPS]
8	Mar07,13 10:23:06	CURRENT	27.200 [UA]	7922.100	[CPS]
8	Mar07,13 10:23:06	CURRENT	237.200 [UA]	25930.400	[CPS]
9	Mar19,12 11:04:16	F	Default [CPS]		
9	Mar19,12 11:04:16	X	Default [CPS]		

COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	
WELL	: BM13-06A	DEN	
FIELD	: BRULE	DIP	
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
LSD	: N/A		
SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID.	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION KB	: NA
LOG MEASURED FROM	: G.L.	ELEVATION DF	: N/A
DRL MEASURED FROM	: G.L.	ELEVATION GL	: 1054.00
DATE	: 03/19/13	RIG NUMBER	: FOUNDEX
DEPTH DRILLER	: 54.00	LOGGER TD	: 53.85
BIT SIZE	: 149.22	ARRIVAL TIME	: 9:30
LOG TOP	: -0.46	DEPARTURE TIME	: 13:00
LOG BOTTOM	: 53.65	CIRC STOPPED	: N/A
CASING LOGGER	: 5.18		
CASING DRILLER	: 5.18		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
RM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TODD		
RECORDED BY	: B.HILL		
REMARKS 1	: VERTICAL		
REMARKS 2	: NORTHING:574448 EASTING:6137466		

NEUTRON LOG 1:100 BM13-06A 03/19/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 19.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT



NEUTRON LOG 1:100 BM13-06A 03/19/13

LOG PARAMETERS

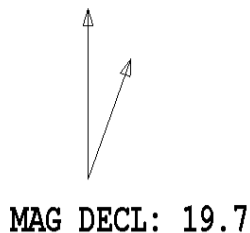
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 19.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT

TOOL CALIBRATION BM13-06A 03/19/13 11:27
 TOOL 9058A TM VERSION 2
 SERIAL NUMBER 2635

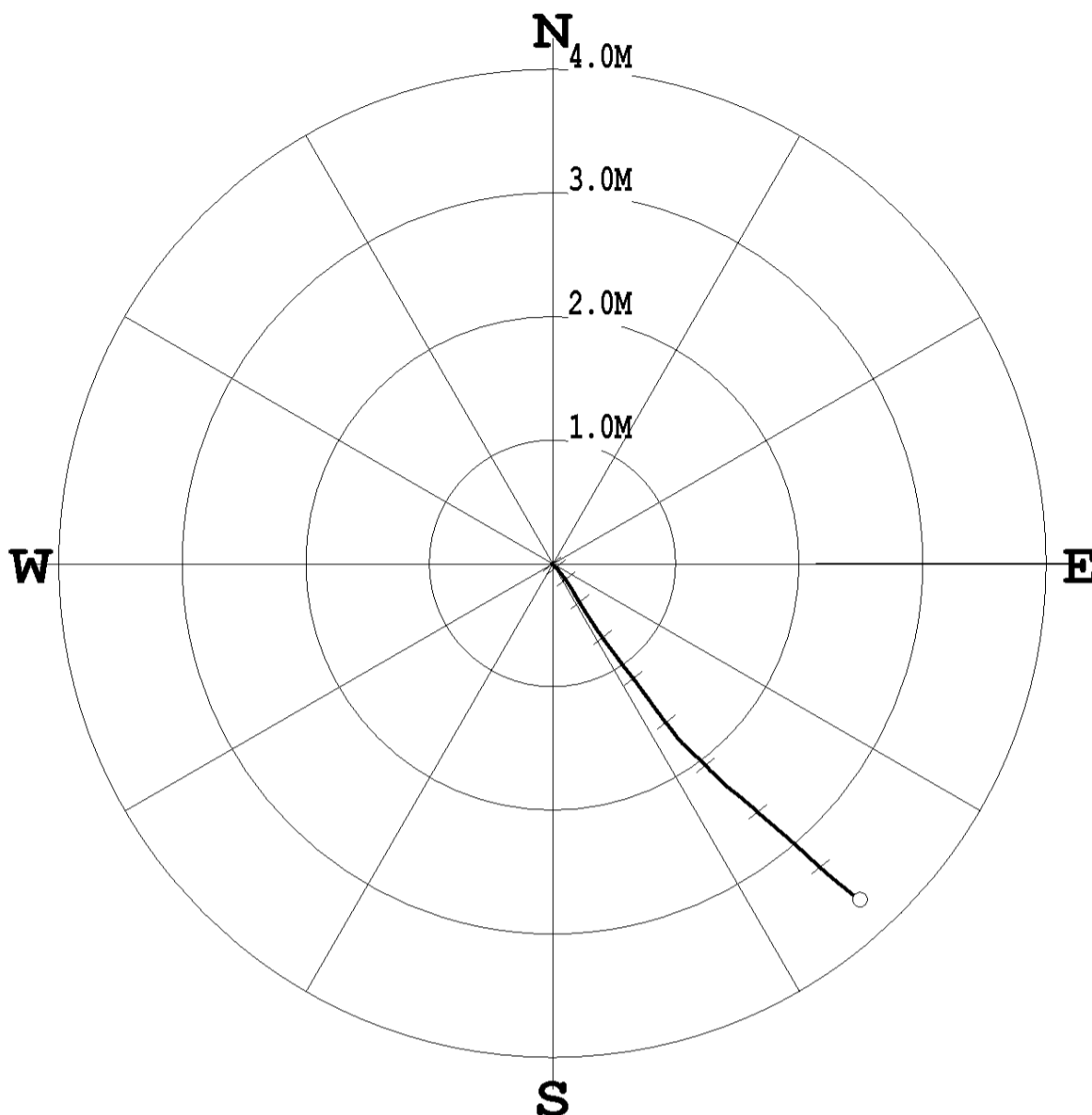
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Feb01,13 14:39:20	GAMMA	1.000 [API-GR]	0.770 [CPS]
	Feb01,13 14:39:20	GAMMA	545.000 [API-GR]	575.000 [CPS]
2	Aug10,12 11:25:15	TEMP	41.700 [DEG_F]	333776.000 [CPS]
	Aug10,12 11:25:15	TEMP	121.500 [DEG_F]	398824.000 [CPS]
3	Mar08,13 13:31:34	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Mar08,13 13:31:34	NEUTRON	271.000 [API-N]	71.000 [CPS]
4	Feb01,13 14:06:13	POR(NEI	100.000 [PERCENT]	57.100 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WALTER ENERGY / WESTERN COAL
 LOCATION: BRULE
 HOLE ID: BM13-06A
 DATE OF LOG: 03/19/13
 PROBE: 9058A 2635



SCALE: 1 M/CM
 TRUE DEPTH: 53.28 M
 AZIMUTH: 137.6
 DISTANCE: 3.7 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WALTER ENERGY / WES HOLE ID. : BM13-06A
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 03/19/13
 DATA FROM : N/A PROBE : 9058A , 2635
 MAG. DECL. : 19.670 DEPTH UNITS : METERS
 LOG: BM13-06A_03-19-13_11-27_9058A_.02_-0.46_53.65_DEVI.log

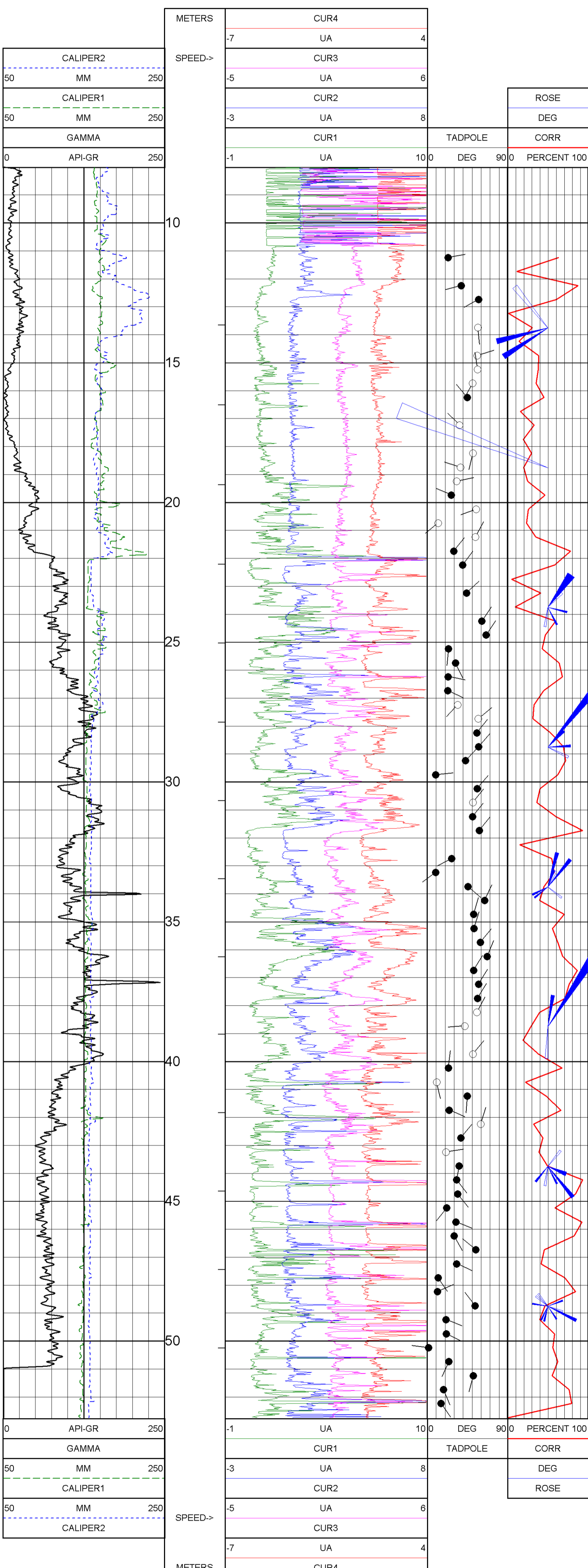
CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
8.00	8.00	-0.01	0.00	0.0	158.2	0.7	129.4
9.00	9.00	-0.02	0.01	0.0	144.8	0.8	132.4
10.00	10.00	-0.03	0.02	0.0	140.7	1.1	129.8
11.00	11.00	-0.04	0.04	0.1	139.6	1.2	142.5
12.00	12.00	-0.06	0.05	0.1	140.1	1.5	142.6
13.00	13.00	-0.08	0.07	0.1	140.5	1.3	141.1
14.00	14.00	-0.10	0.08	0.1	140.8	1.8	141.3
15.00	15.00	-0.13	0.10	0.2	141.4	2.0	145.3
16.00	16.00	-0.16	0.12	0.2	142.2	2.1	148.9
17.00	17.00	-0.19	0.14	0.2	142.9	2.2	145.2
18.00	18.00	-0.22	0.16	0.3	143.8	2.5	153.1
19.00	18.99	-0.27	0.19	0.3	144.7	3.1	148.9
20.00	19.99	-0.31	0.22	0.4	145.3	3.2	149.3
21.00	20.99	-0.36	0.25	0.4	145.8	3.7	145.8
22.00	21.99	-0.41	0.28	0.5	146.0	3.6	146.8
23.00	22.99	-0.47	0.31	0.6	146.1	4.2	145.3
24.00	23.98	-0.53	0.36	0.6	146.2	4.4	145.4
25.00	24.98	-0.60	0.40	0.7	146.1	4.5	144.9
26.00	25.98	-0.66	0.45	0.8	145.9	4.7	143.9
27.00	26.98	-0.72	0.50	0.9	145.6	4.7	141.0
28.00	27.97	-0.79	0.55	1.0	145.4	4.9	142.7
29.00	28.97	-0.86	0.60	1.0	145.2	4.8	140.6
30.00	29.96	-0.93	0.65	1.1	144.9	4.9	142.4
31.00	30.96	-1.00	0.70	1.2	144.8	5.2	143.6
32.00	31.96	-1.07	0.76	1.3	144.8	5.0	144.6
33.00	32.95	-1.14	0.80	1.4	144.7	4.7	145.1
34.00	33.95	-1.21	0.86	1.5	144.7	5.3	142.8
35.00	34.94	-1.28	0.91	1.6	144.6	5.4	142.1
36.00	35.94	-1.36	0.97	1.7	144.4	5.3	144.7
37.00	36.94	-1.43	1.02	1.8	144.3	4.8	138.7
38.00	37.93	-1.49	1.08	1.8	143.9	5.4	133.7
39.00	38.93	-1.55	1.16	1.9	143.3	5.8	133.6
40.00	39.92	-1.62	1.23	2.0	142.8	5.9	140.5
41.00	40.92	-1.70	1.30	2.1	142.5	6.1	131.6
42.00	41.91	-1.77	1.38	2.2	142.1	6.0	137.7
43.00	42.91	-1.84	1.46	2.4	141.6	6.4	127.4
44.00	43.90	-1.92	1.55	2.5	141.0	7.1	129.2
45.00	44.89	-2.00	1.65	2.6	140.5	7.4	131.7
46.00	45.88	-2.09	1.75	2.7	140.0	8.0	130.2
47.00	46.87	-2.18	1.85	2.9	139.6	8.1	132.6
48.00	47.86	-2.27	1.96	3.0	139.2	7.4	131.5
49.00	48.85	-2.35	2.05	3.1	138.9	7.4	132.4
50.00	49.85	-2.44	2.15	3.3	138.7	7.4	131.0
51.00	50.84	-2.53	2.24	3.4	138.4	7.4	129.7
52.00	51.83	-2.61	2.34	3.5	138.1	7.3	130.8
53.00	52.82	-2.69	2.44	3.6	137.7	7.3	127.6
53.46	53.28	-2.72	2.49	3.7	137.6	7.4	125.9

COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	DEN NEU
WELL	: BM13-06A		
FIELD	: BRULE		
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
LSD	: N/A		
SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID.	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION KB	: N/A
LOG MEASURED FROM: G.L.		ELEVATION DF	: N/A
DRL MEASURED FROM: G.L.		ELEVATION GL	: 1054.00
DATE	: 03/19/13	RIG NUMBER	: N/A
DEPTH DRILLER	: 54.00	LOGGER TD	: 53.80
BIT SIZE	: 149.22	ARRIVAL TIME	: 9:30
LOG TOP	: 4.24	DEPARTURE TIME	: 13:00
LOG BOTTOM	: 52.75	CIRC STOPPED	: N/A
CASING LOGGER	: 5.18		
CASING DRILLER	: 5.18		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
FM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TODD		
RECORDED BY	: B.HILL		
REMARKS 1	: VERTICAL		
REMARKS 2	: NORTHING:574448 EASTING:6137466		

DIPMETER 1:100 BM13-06A 03/19/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 19.67	ELECT. CUTOFF : 99000	BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9411A-Dipmeter.0 03/13/2013		VERSION = 3.64KT



DIPMETER 1:100 BM13-06A 03/19/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 19.67	ELECT. CUTOFF : 99000	BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9411A-Dipmeter.0 03/13/2013		VERSION = 3.64KT

DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Mar07,13 11:35:43	GAMMA	0.000 [API-GR]	4.870 [CPS]
1	Mar07,13 11:35:43	GAMMA	545.000 [API-GR]	549.650 [CPS]
2	Aug14,12 11:51:58	VOLTAGE	28.600 [MV]	280.000 [CPS]
2	Aug14,12 11:51:58	VOLTAGE	316.000 [MV]	2163.000 [CPS]
3	Aug14,12 11:55:39	CUR1	2.860 [UA]	5511.000 [CPS]
3	Aug14,12 11:55:39	CUR1	8.980 [UA]	15950.000 [CPS]
4	Aug14,12 11:55:50	CUR2	2.860 [UA]	5515.000 [CPS]
4	Aug14,12 11:55:50	CUR2	8.980 [UA]	15910.000 [CPS]
5	Aug14,12 11:56:01	CUR3	2.860 [UA]	5520.000 [CPS]
5	Aug14,12 11:56:01	CUR3	8.980 [UA]	15950.000 [CPS]
6	Aug14,12 11:56:10	CUR4	2.860 [UA]	5410.000 [CPS]
6	Aug14,12 11:56:10	CUR4	8.980 [UA]	15720.000 [CPS]
7	Mar07,13 11:18:41	CALIPER1	100.000 [CM]	2858.840 [CPS]
7	Mar07,13 11:18:41	CALIPER1	200.000 [CM]	6806.830 [CPS]
8	Mar07,13 11:26:34	CALIPER2	100.000 [CM]	5116.560 [CPS]
8	Mar07,13 11:26:34	CALIPER2	200.000 [CM]	8781.080 [CPS]

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-06B	year drilled: 2013	AREA: BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			574,466.66	6,137,476.13	1,050.69

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		23.50	Rotary			03/19/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: - borehole log, drilled in pairs, see BM13-06A for geophysics

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-06B

(Page 1 of 1)



Date Started : March 19, 2013
 Date Completed : March 19, 2013
 Drilling Method : 6" Barber Dual AR
 Surveyed By : Brule Mine
 Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6137476.13
 Easting Coord. : 574466.66
 Logged By : JT
 Reviewed By : LF

Brule Mine: 5 Year Plan - GW Investigation
 Project #: A320-2

Depth (m)	Elev. (m.a.s.l.)	Dip/Trend	Grab Sample	Graphic	DESCRIPTION	Depth (m)	
					Water Levels ▼ Water Level BM13-06B: 8.187m (22-Mar-13) ▽ Water Level BM13-06B: 6.861m (25-Apr-13)		
					DESCRIPTION		
0	1049				OVERBURDEN: SILT with GRAVEL with trace sand dark brown	0	<div style="text-align: center;"> <p>Well: BM13-06B Elev.: 1050.69 m.a.s.l. (TOC)</p> <p>Stickup (0.86m) 6" Steel Surface Casing Bentonite Grout 2" Sched 80 PVC Bentonite Pellets 10/20 Filter Sand 10 Slot Screen</p> </div>
2	1047					2	
4	1045		X			4	
6	1043				SILTSTONE, weathered	6	
8	1041		X		SILTSTONE, brown-grey	8	
10	1039		X		10.1m wet 10.7m dark grey	10	
12	1037					12	
14	1035		X			14	
16	1033		X			16	
18	1031					18	
20	1029		X			20	
22	1027		X			22	
24	1025				EOH @ 23.5m	24	
26						26	

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-07A	year drilled: 2013	AREA:	BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
				575,052.41	6,137,597.52

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		41.97	Rotary			03/20/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	- borehole log.
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SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014 Reviewed: October 11, 2002
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Page 1 of 1



LORAX
ENVIRONMENTAL

Borehole Log of BM13-07A

(Page 1 of 1)



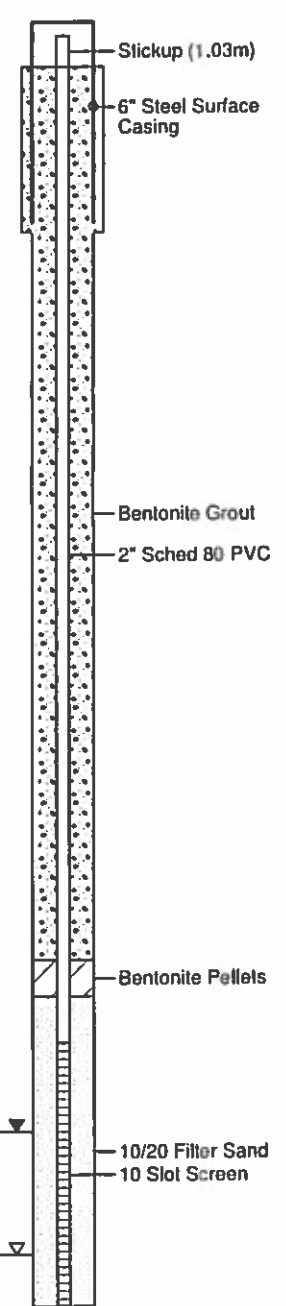
Brule Mine: 5 Year Plan - GW Investigation
Project #: A320-2

Date Started : Mar 20, 2013
Date Completed : Mar 21, 2013
Drilling Method : 6" Barber Dual AR
Surveyed By : Brule Mine
Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6137597.52
Easting Coord. : 575052.41
Logged By : JT/LF
Reviewed By : MB/LF

Depth (m)	Elev. (m.a.s.l.)	Dip/Trend	Grab Sample	Graphic	DESCRIPTION	Depth (m)	Water Levels	
							▼	▽
0	1033				OVERBURDEN	0	Water Level BM13-07A: 36,610m (22-Mar-13)	Water Level BM13-07A: 40,717m (25-Apr-13)
5	1028		X		CONGLOMERATE, grey with trace brown fine sandstone matrix	5		
10	1023		X			10		
15	1018		X			15		
20	1013		X			20		
25	1008		X			25		
30	1003		X		SILTSTONE	30		
			X		fracturing at 29m			
35	998		X		SANDSTONE, grading to siltstone	35		
40	993		X			40		
45			X			45		
					Air Lift Yield: 0 GPM EOH @ 41.97m			

Well: BM13-07A
Elev.: 1034.25 m.a.s.l. (TOC)

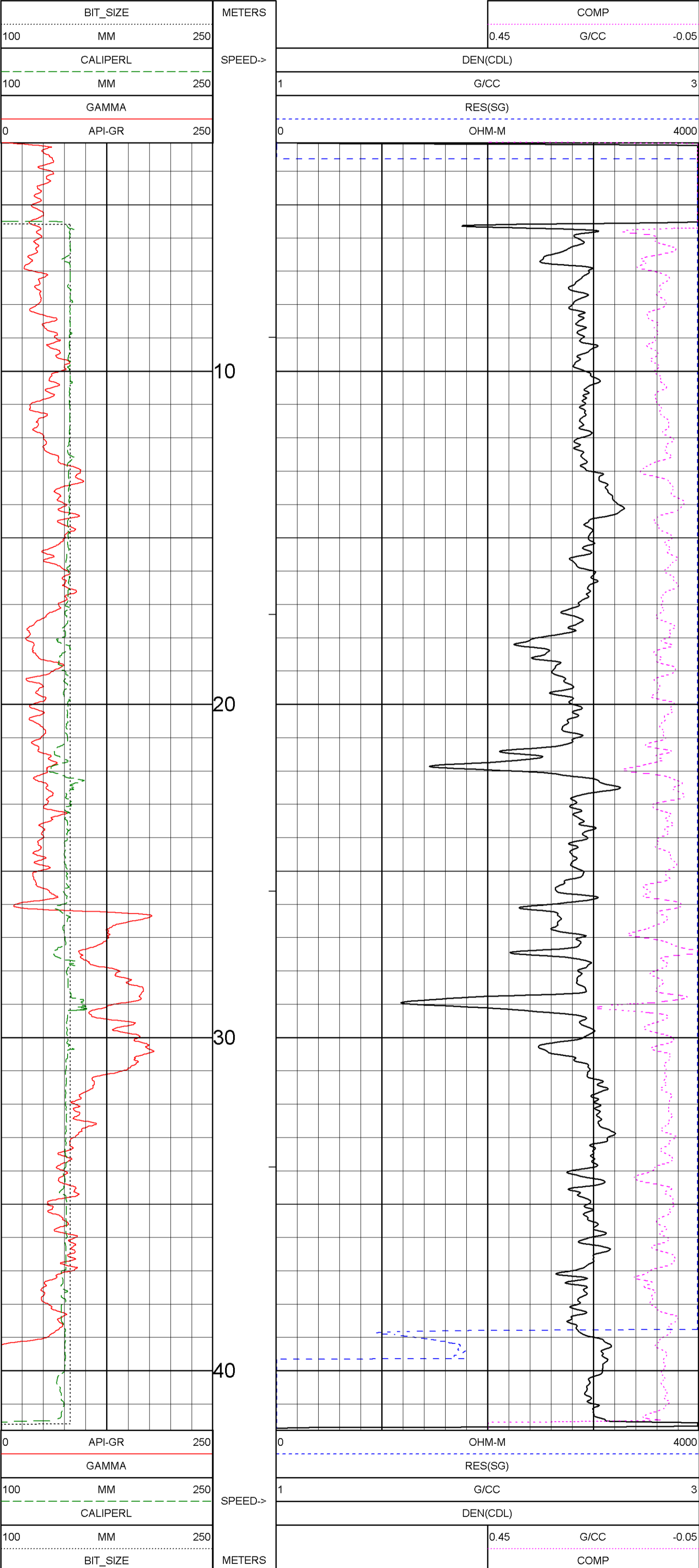


COMPANY : WALTER ENERGY / WESTERN COAL WELL : BM13-07A FIELD : BRULE COUNTRY : CANADA PROVINCE : BRITISH COLUMBIA LSD : N/A SECTION : N/A TOWNSHIP : N/A RANGE : N/A LICENSE NO. : N/A UNIQUE WELL ID. : N/A PERMANENT DATUM : G.L. LOG MEASURED FROM : G.L. DRL MEASURED FROM : G.L.	OTHER SERVICES: NEU ELEVATION KB : N/A ELEVATION DF : N/A ELEVATION GL : 1038.00 DATE : 03/21/13 RIG NUMBER : FOUNDEX DEPTH DRILLER : :42.00 BIT SIZE : :149.22 LOG TOP : :3.13 LOG BOTTOM : :41.75 CASING LOGGER : :4.57 CASING DRILLER : :4.57 CASING TYPE : :STEEL BOREHOLE FLUID : :H2O RM TEMPERATURE : :N/A MUD RES : :N/A MUD WEIGHT : :1.00 WITNESSED BY : :J.TODD RECORDED BY : :B.HILL REMARKS 1 : :VERTICAL REMARKS 2 : :EASTING:575035 NORTHING:6137594
--	--

DENSITY LOG 1:100 BM13-07A 03/21/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 18.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013 VERSION = 3.64KT



DENSITY LOG 1:100 BM13-07A 03/21/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 18.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013 VERSION = 3.64KT

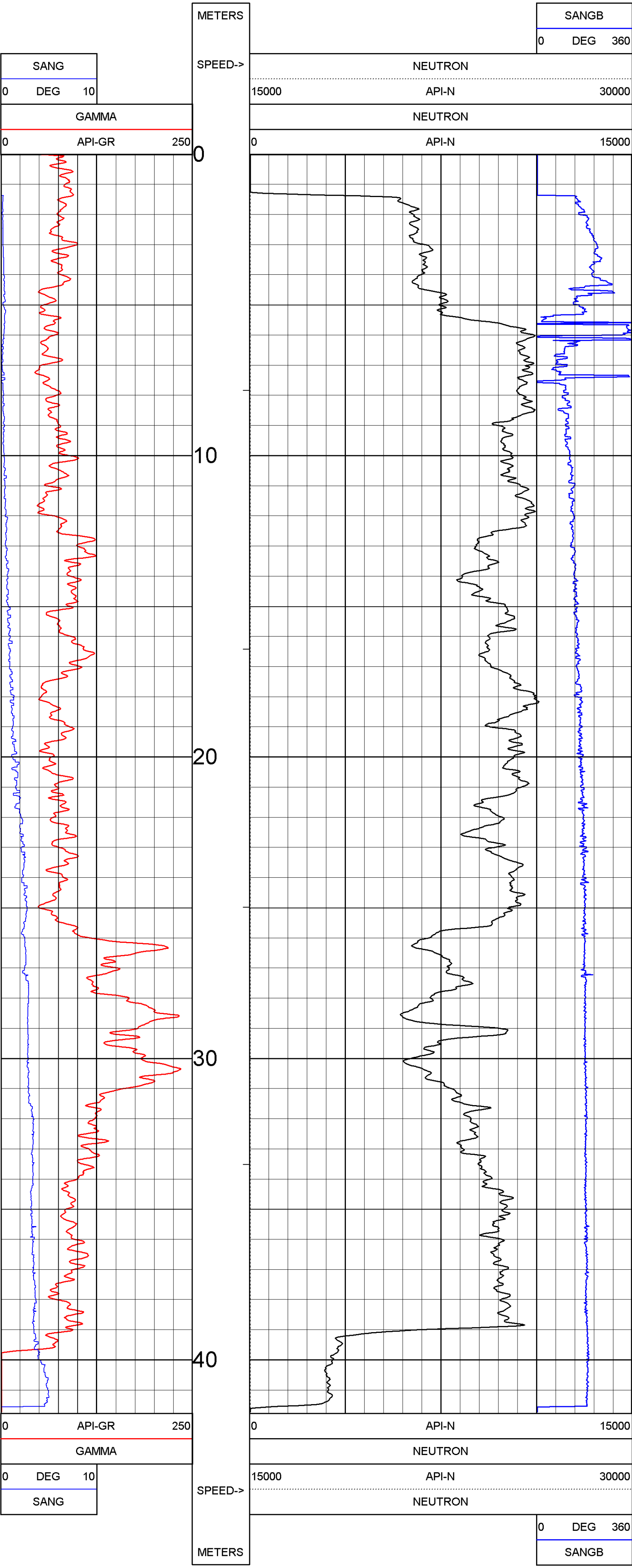
TOOL CALIBRATION BM13-07A 03/21/13 10:49					
TOOL 9239C1 TM VERSION 2025					
SERIAL NUMBER 959					
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Mar07,13	10:52:25	GAMMA	0.000 [API-GR]	1.000 [CPS]
	Mar07,13	10:52:25	GAMMA	545.000 [API-GR]	550.000 [CPS]
2	Mar07,13	10:28:46	VOLTAGE	27.200 [MV]	7680.000 [CPS]
	Mar07,13	10:28:46	VOLTAGE	237.200 [MV]	35824.898 [CPS]
3	Mar19,12	11:04:16	CALIPER	Default [CPS]	Default [CPS]
	Mar19,12	11:04:16	CALIPER	Default [CPS]	Default [CPS]
4	Mar07,13	09:59:31	DEN(LS)	1.620 [G/CC]	12753.700 [CPS]
	Mar07,13	09:59:31	DEN(LS)	2.612 [G/CC]	1699.200 [CPS]
5	Mar07,13	09:58:29	DEN(SS)	1.590 [G/CC]	45253.102 [CPS]
	Mar07,13	09:58:29	DEN(SS)	2.580 [G/CC]	17432.600 [CPS]
6	Mar07,13	10:43:04	CALIPERL	100.000 [MM]	123992.227 [CPS]
	Mar07,13	10:43:04	CALIPERL	200.000 [MM]	229839.406 [CPS]
7	Mar07,13	10:23:06	CURRENT	27.200 [UA]	7922.100 [CPS]
	Mar07,13	10:23:06	CURRENT	237.200 [UA]	25930.400 [CPS]
8	Mar19,12	11:04:16	F	Default [CPS]	
9	Mar19,12	11:04:16	X	Default [CPS]	

COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	
WELL	: BM13-07A	DEN	
FIELD	: BRULE		
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
LSD	: N/A		
SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID.	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION KB	: N/A
LOG MEASURED FROM	: G.L.	ELEVATION DF	: N/A
DRL MEASURED FROM	: G.L.	ELEVATION GL	: 1038.00
DATE	: 03/21/13	RIG NUMBER	: FOUNDEX
DEPTH DRILLER	: 42.00	LOGGER TD	: 41.92
BIT SIZE	: 149.22	ARRIVAL TIME	: 9:40
LOG TOP	: -0.47	DEPARTURE TIME	: 11:30
LOG BOTTOM	: 41.73	CIRC STOPPED	: N/A
CASING LOGGER	: 4.57		
CASING DRILLER	: 4.57		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
RM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TODD		
RECORDED BY	: B.HILL		
REMARKS 1	: VERTICAL		
REMARKS 2	: EASTING:575035 NORTHING:6137594		

NEUTRON LOG 1:100 BM13-07A 03/21/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 18.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT



NEUTRON LOG 1:100 BM13-07A 03/21/13

LOG PARAMETERS

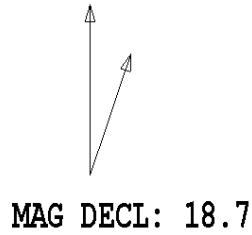
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
 MAGNETIC DECL : 18.67 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
 PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT

TOOL CALIBRATION BM13-07A 03/21/13 10:23
 TOOL 9058A TM VERSION 2
 SERIAL NUMBER 2635

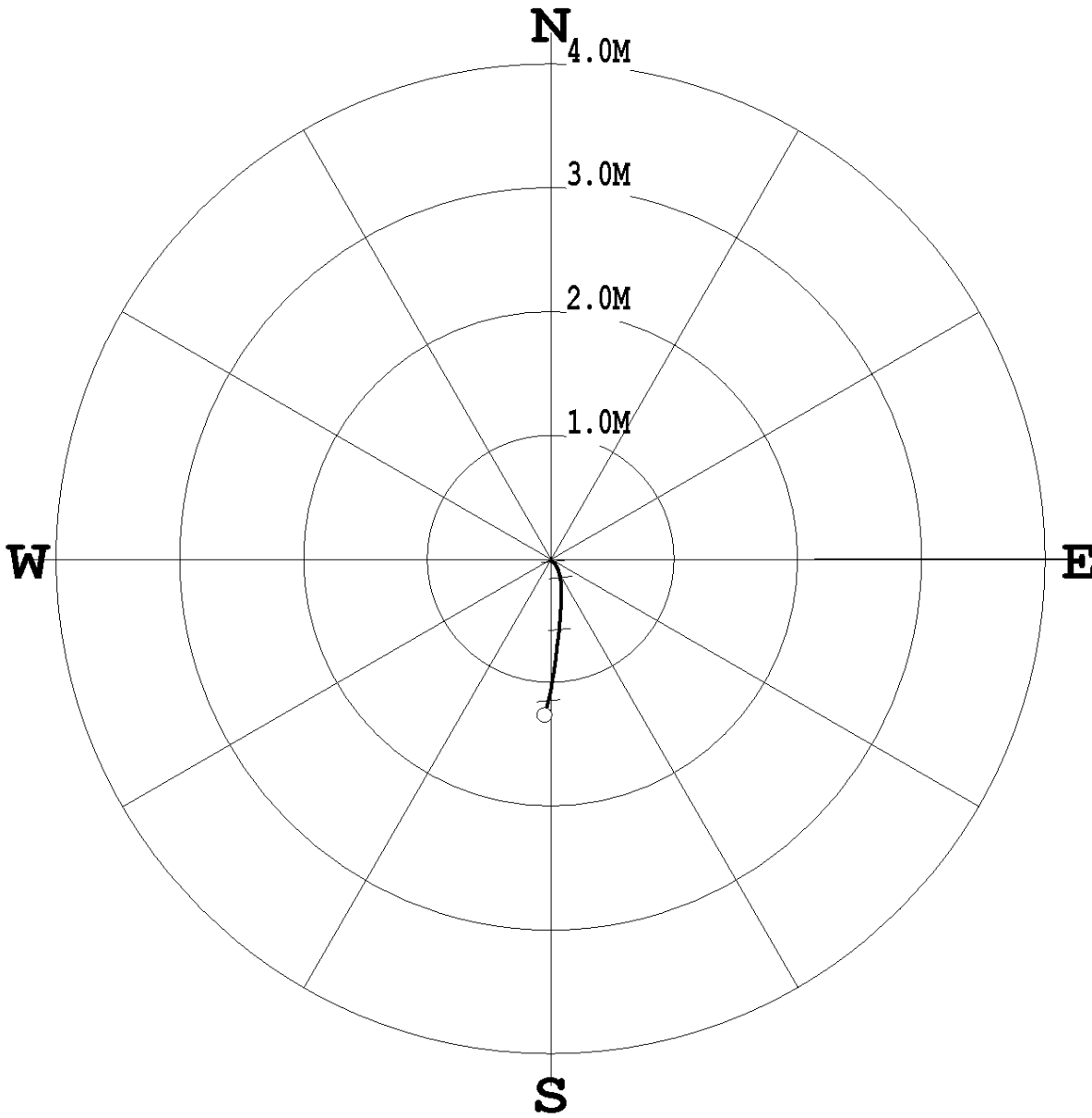
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Feb01,13 14:39:20	GAMMA	1.000 [API-GR]	0.770 [CPS]
	Feb01,13 14:39:20	GAMMA	545.000 [API-GR]	575.000 [CPS]
2	Aug10,12 11:25:15	TEMP	41.700 [DEG_F]	333776.000 [CPS]
	Aug10,12 11:25:15	TEMP	121.500 [DEG_F]	398824.000 [CPS]
3	Mar08,13 13:31:34	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Mar08,13 13:31:34	NEUTRON	271.000 [API-N]	71.000 [CPS]
4	Feb01,13 14:06:13	POR(NEI	100.000 [PERCENT]	57.100 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WALTER ENERGY / WESTERN COAL
 LOCATION: BRULE
 HOLE ID: BM13-07A
 DATE OF LOG: 03/21/13
 PROBE: 9058A 2635



SCALE: 1 M/CM
 TRUE DEPTH: 41.50 M
 AZIMUTH: 182.2
 DISTANCE: 1.3 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WALTER ENERGY / WES HOLE ID. : BM13-07A
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 03/21/13
 DATA FROM : N/A PROBE : 9058A , 2635
 MAG. DECL. : 18.670 DEPTH UNITS : METERS
 LOG: BM13-07A_03-21-13_10-23_9058A_.02_-0.47_41.73_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
8.00	7.99	-0.01	0.00	0.0	176.4	0.3	110.6
9.00	8.99	-0.01	0.01	0.0	159.1	0.4	111.4
10.00	9.99	-0.02	0.01	0.0	148.8	0.4	127.6
11.00	10.99	-0.02	0.02	0.0	144.3	0.5	143.7
12.00	11.99	-0.03	0.02	0.0	142.3	0.5	141.7
13.00	12.99	-0.04	0.03	0.0	141.1	0.6	129.7
14.00	13.99	-0.05	0.04	0.1	141.5	0.7	144.8
15.00	14.99	-0.06	0.04	0.1	142.7	0.8	147.1
16.00	15.99	-0.07	0.05	0.1	144.3	1.0	151.7
17.00	16.99	-0.08	0.06	0.1	146.2	0.9	153.5
18.00	17.99	-0.10	0.06	0.1	148.3	1.4	145.7
19.00	18.99	-0.12	0.07	0.1	151.0	1.3	173.3
20.00	19.99	-0.15	0.07	0.2	153.1	1.3	158.7
21.00	20.99	-0.17	0.08	0.2	155.6	1.6	167.4
22.00	21.99	-0.21	0.08	0.2	158.4	2.1	177.7
23.00	22.99	-0.24	0.08	0.3	161.2	2.1	188.6
24.00	23.99	-0.29	0.08	0.3	163.7	2.2	188.1
25.00	24.99	-0.33	0.08	0.3	166.2	2.8	182.2
26.00	25.98	-0.37	0.08	0.4	167.9	2.5	180.9
27.00	26.98	-0.42	0.08	0.4	169.4	2.5	181.3
28.00	27.98	-0.47	0.07	0.5	171.0	2.9	186.1
29.00	28.98	-0.52	0.07	0.5	172.2	2.9	184.9
30.00	29.98	-0.57	0.07	0.6	173.3	2.9	186.3
31.00	30.98	-0.62	0.06	0.6	174.3	2.9	184.6
32.00	31.98	-0.67	0.05	0.7	175.4	3.4	192.1
33.00	32.97	-0.73	0.05	0.7	176.4	3.4	184.1
34.00	33.97	-0.79	0.04	0.8	177.2	3.4	188.2
35.00	34.97	-0.84	0.03	0.8	177.7	3.2	186.6
36.00	35.97	-0.90	0.02	0.9	178.4	3.4	185.0
37.00	36.97	-0.96	0.01	1.0	179.1	3.4	191.0
38.00	37.97	-1.02	0.00	1.0	179.7	3.7	187.6
39.00	38.96	-1.08	-0.01	1.1	180.3	3.5	192.4
40.00	39.96	-1.14	-0.02	1.1	181.1	4.1	193.4
41.00	40.96	-1.22	-0.04	1.2	181.9	4.9	191.1
41.54	41.50	-1.26	-0.05	1.3	182.2	4.6	191.6

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-07B	year drilled: 2013	AREA:	BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			575,037.79	6,137,590.52	1,033.96

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		23.80	Rotary			03/22/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	- borehole log, drilled in pairs, see BM13-07A for geophysics
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SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

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Borehole Log of BM13-07B

(Page 1 of 1)



Date Started : Mar 22, 2013
 Date Completed : Mar 22, 2013
 Drilling Method : 6" Barber Dual AR
 Surveyed By : Brule Mine
 Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6137590.52
 Easting Coord. : 575037.79
 Elevation Ground : 1033.957
 Logged By : LF
 Reviewed By : LF

Brule Mine: 5 Year Plan - GW Investigation
 Project #: A320-2

Depth (m)	Elev. (m.a.s.l.)	Dip/Trend	Grab Sample	Graphic	DESCRIPTION	Depth (m)	Well: BM13-07B Elev.: 1034.97 m.a.s.l. (TOC)
					Water Levels ▼ Water Level BM13-07B: 23.746 (23-Mar-13) ▼ Water Level BM13-07B: 15.829 (25-Apr-13)		
0	1033				silty SAND and gravel, brown, dry	0	Stickup (1.02m)
5	1028				CONGLOMERATE, grey with brown fine sandstone matrix	5	Bentonite Grout
10	1023					10	2" Sched 80 PVC
15	1018					15	Bentonite Pellets
20	1013					20	10/20 Filter Sand
			X		23.1m moist		10 Slot PVC
					EOH @ 23.8 m		
25						25	

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-08A	year drilled: 2013	AREA: BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			574,600.60	6,137,534.03	1,048.42

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		28.80	Rotary			03/22/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments:	- borehole log.
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SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-08A

(Page 1 of 1)



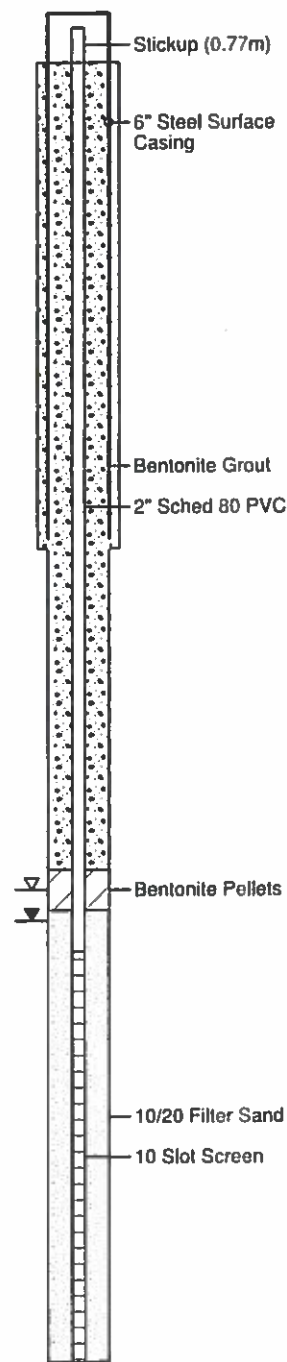
Brule Mine: 5 Year Plan - GW Investigation
Project #: A320-2

Date Started : Mar 22, 2013
Date Completed : Mar 22, 2013
Drilling Method : 6" Barber Dual AR
Surveyed By : Brule Mine
Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6137534.03
Easting Coord. : 574600.60
Logged By : LG
Reviewed By : MB/LF

Depth (m)	Elev. (m.a.s.l.)	Dip/Trend	Grab Sample	Graphic	Water Levels	DESCRIPTION	Depth (m)
					▼ Water Level BM13-08A: 19.890m (23-Mar-13) ▽ Water Level BM13-08A: 19.205m (25-Apr-13)		
0	1048					OVERBURDEN	0
			X			3m black, silty organic rich layer	
5	1043		X			SILTSTONE, grey, broken	5
			X			8.5m damp	
						9.1m water returned to cyclone	
10	1038		X			CARBONACEOUS SHALE	10
						11.1m water at rod change	
15	1033		X			CARBONACEOUS SHALE	15
						17.1m no waer at rod	
20	1028					SILTSTONE	20
			X			SANDSTONE	
						22.3m wet spot	
			X			SILTSTONE	
						24.4m dusty	
25	1023		X			SILTSTONE	25
						26.8 wet spot	
			X			Air Lift Yield: 0 GPM	
						EOH @ 28.8m	
30							30

Well: BM13-08A
Elev.: 1049.19 m.a.s.l. (TOC)



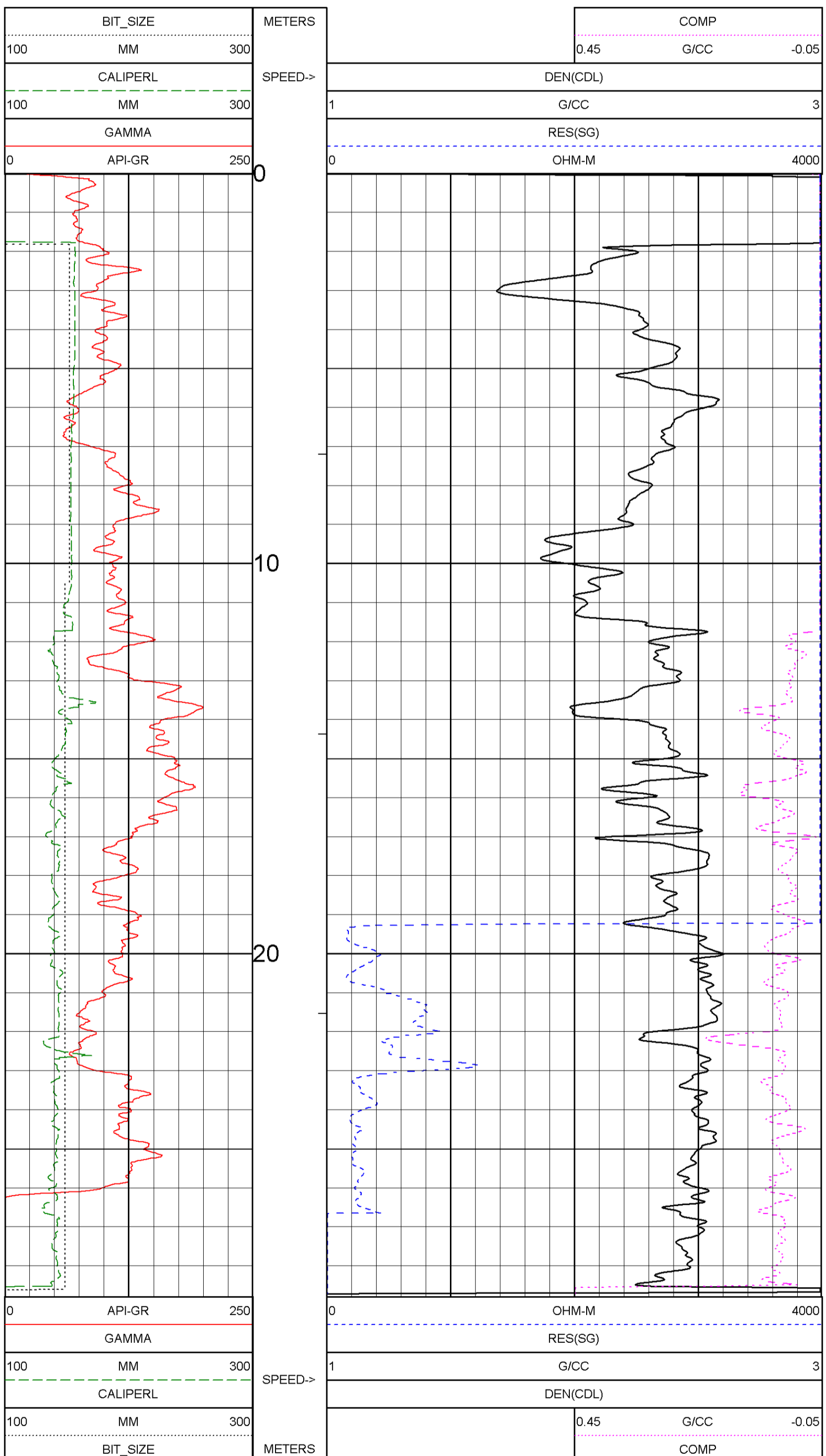
COMPENSATED DENSITY GAMMA - CALIPER - RES. BM13-08A

COMPANY : WALTER ENERGY / WESTERN COAL WELL : BM13-08A FIELD : BRULE COUNTRY : CANADA PROVINCE : BRITISH COLUMBIA	OTHER SERVICES: NEU
LSD : N/A SECTION : N/A TOWNSHIP : N/A RANGE : N/A LICENSE NO. : N/A UNIQUE WELL ID. : N/A	ELEVATION KB : N/A ELEVATION DF : N/A ELEVATION GL : 1036.00 RIG NUMBER : FOUNDEX
PERMANENT DATUM : G.L. LOG MEASURED FROM : G.L. DRL MEASURED FROM : G.L.	DATE : 03/22/13 DEPTH DRILLER : 29.00 BIT SIZE : 149.22 LOG TOP : -0.63 LOG BOTTOM : 28.76 CASING LOGGER : 11.00 CASING DRILLER : 5.18 CASING TYPE : STEEL BOREHOLE FLUID : H2O RM TEMPERATURE : N/A MUD RES : N/A MUD WEIGHT : 1.00 WITNESSED BY : J.TODD RECORDED BY : B.HILL REMARKS 1 : VERTICAL REMARKS 2 : EASTING:574598 NORTHING:6137525

DENSITY LOG 1:100 BM13-08A 03/22/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 19.7	ELECT. CUTOFF : 99000	BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013		VERSION = 3.64KT



DENSITY LOG 1:100 BM13-08A 03/22/13

LOG PARAMETERS

MATRIX DENSITY : 2.65	NEUTRON MATRIX : SANDSTONE	MATRIX DELTA T : 177
MAGNETIC DECL : 19.7	ELECT. CUTOFF : 99000	BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9239C DENSITY(B) WALTER 2013.0 03/15/2013		VERSION = 3.64KT

TOOL CALIBRATION BM13-08A 03/22/13 10:06
 TOOL 9239C1 TM VERSION 2025
 SERIAL NUMBER 959

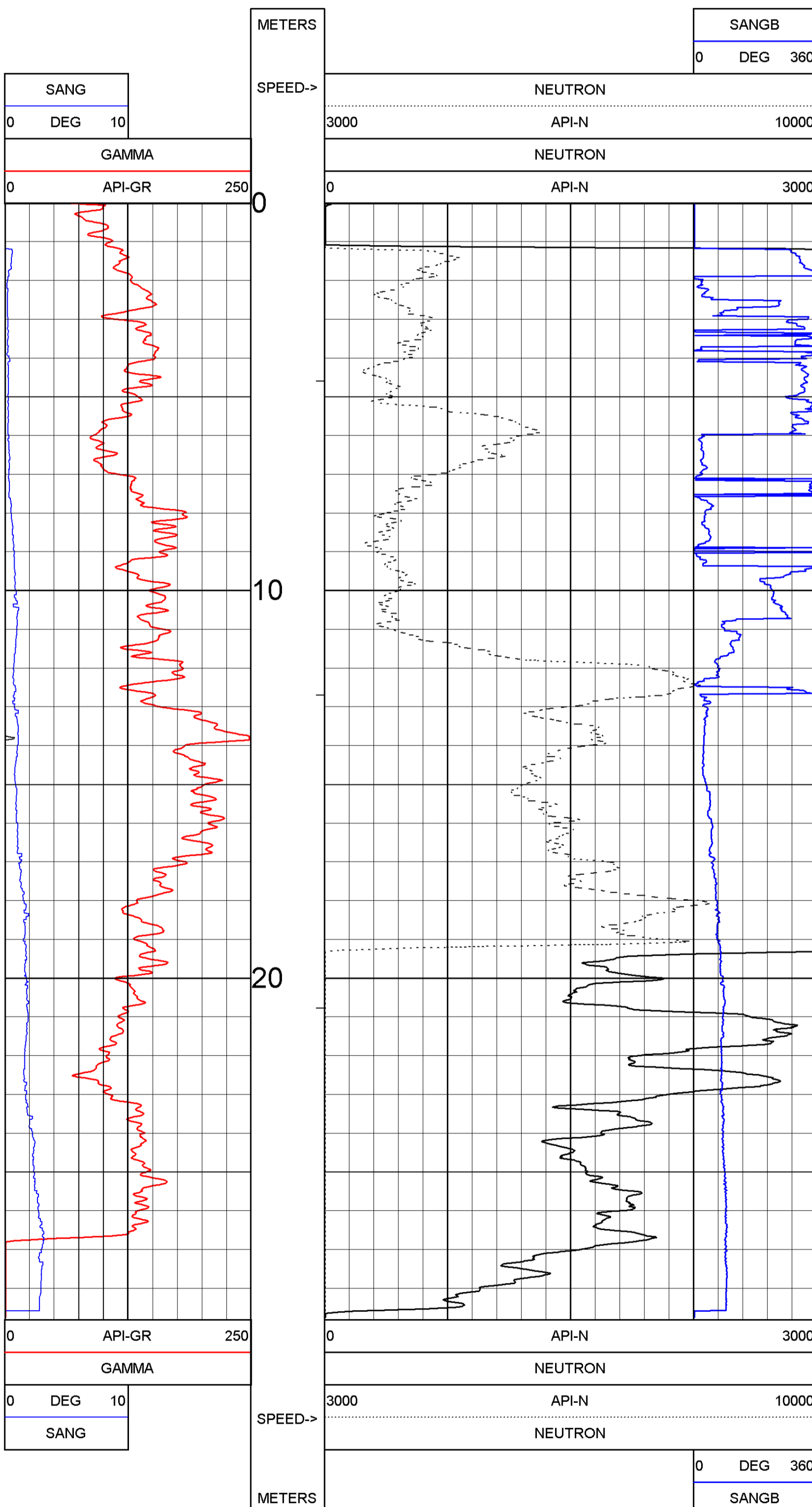
DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Mar07,13 10:52:25	GAMMA	0.000 [API-GR]	1.000 [CPS]
	Mar07,13 10:52:25	GAMMA	545.000 [API-GR]	550.000 [CPS]
2	Mar07,13 10:28:46	VOLTAGE	27.200 [MV]	7680.000 [CPS]
	Mar07,13 10:28:46	VOLTAGE	237.200 [MV]	35824.898 [CPS]
3	Mar19,12 11:04:16	CALIPER	Default [CPS]	Default [CPS]
	Mar19,12 11:04:16	CALIPER	Default [CPS]	Default [CPS]
4	Mar07,13 09:59:31	DEN(LS)	1.620 [G/CC]	12753.700 [CPS]
	Mar07,13 09:59:31	DEN(LS)	2.612 [G/CC]	1699.200 [CPS]
5	Mar07,13 09:58:29	DEN(SS)	1.590 [G/CC]	45253.102 [CPS]
	Mar07,13 09:58:29	DEN(SS)	2.580 [G/CC]	17432.600 [CPS]
6	Mar07,13 10:43:04	CALIPERL	100.000 [MM]	123992.227 [CPS]
	Mar07,13 10:43:04	CALIPERL	200.000 [MM]	229839.406 [CPS]
7	Mar07,13 10:23:06	CURRENT	27.200 [UA]	7922.100 [CPS]
	Mar07,13 10:23:06	CURRENT	237.200 [UA]	25930.400 [CPS]
8	Mar19,12 11:04:16	F	Default [CPS]	
9	Mar19,12 11:04:16	X	Default [CPS]	

COMPANY	: WALTER ENERGY / WESTERN COAL	OTHER SERVICES:	
WELL	: BM13-08A	DEN	
FIELD	: BRULE		
COUNTRY	: CANADA		
PROVINCE	: BRITISH COLUMBIA		
LSD	: N/A		
SECTION	: N/A		
TOWNSHIP	: N/A		
RANGE	: N/A		
LICENSE NO.	: N/A		
UNIQUE WELL ID.	: N/A		
PERMANENT DATUM	: G.L.	ELEVATION KB	: N/A
LOG MEASURED FROM	: G.L.	ELEVATION DF	: N/A
DRL MEASURED FROM	: G.L.	ELEVATION GL	: 1036.00
DATE	: 03/22/13	RIG NUMBER	: FOUNDEX
DEPTH DRILLER	: 28.00	LOGGER TD	: 28.97
BIT SIZE	: 149.22	ARRIVAL TIME	: 08:00
LOG TOP	: -0.67	DEPARTURE TIME	: 13:00
LOG BOTTOM	: 28.78	CIRC STOPPED	: N/A
CASING LOGGER	: 5.18		
CASING DRILLER	: 5.18		
CASING TYPE	: STEEL		
BOREHOLE FLUID	: H2O		
RM TEMPERATURE	: N/A		
MUD RES	: N/A		
MUD WEIGHT	: 1.00		
WITNESSED BY	: J.TODD		
RECORDED BY	: B.HILL		
REMARKS 1	: VERTICAL		
REMARKS 2	: EASTING:574598 NORTHING:6137525		

NEUTRON LOG 1:100 BM13-08A 03/22/13

LOG PARAMETERS

MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 19.00 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT



NEUTRON LOG 1:100 BM13-08A 03/22/13

LOG PARAMETERS

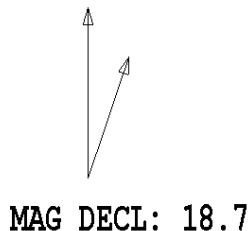
MATRIX DENSITY : 2.65 NEUTRON MATRIX : SANDSTONE MATRIX DELTA T : 177
MAGNETIC DECL : 19.00 ELECT. CUTOFF : 99000 BIT SIZE : 149.22
PRESENTATION NAME/DATE = 9058A NEUTRON WALTER 2013.0 03/14/2013 VERSION = 3.64KT

TOOL CALIBRATION BM13-08A 03/22/13 09:16
TOOL 9058A TM VERSION 2
SERIAL NUMBER 2635

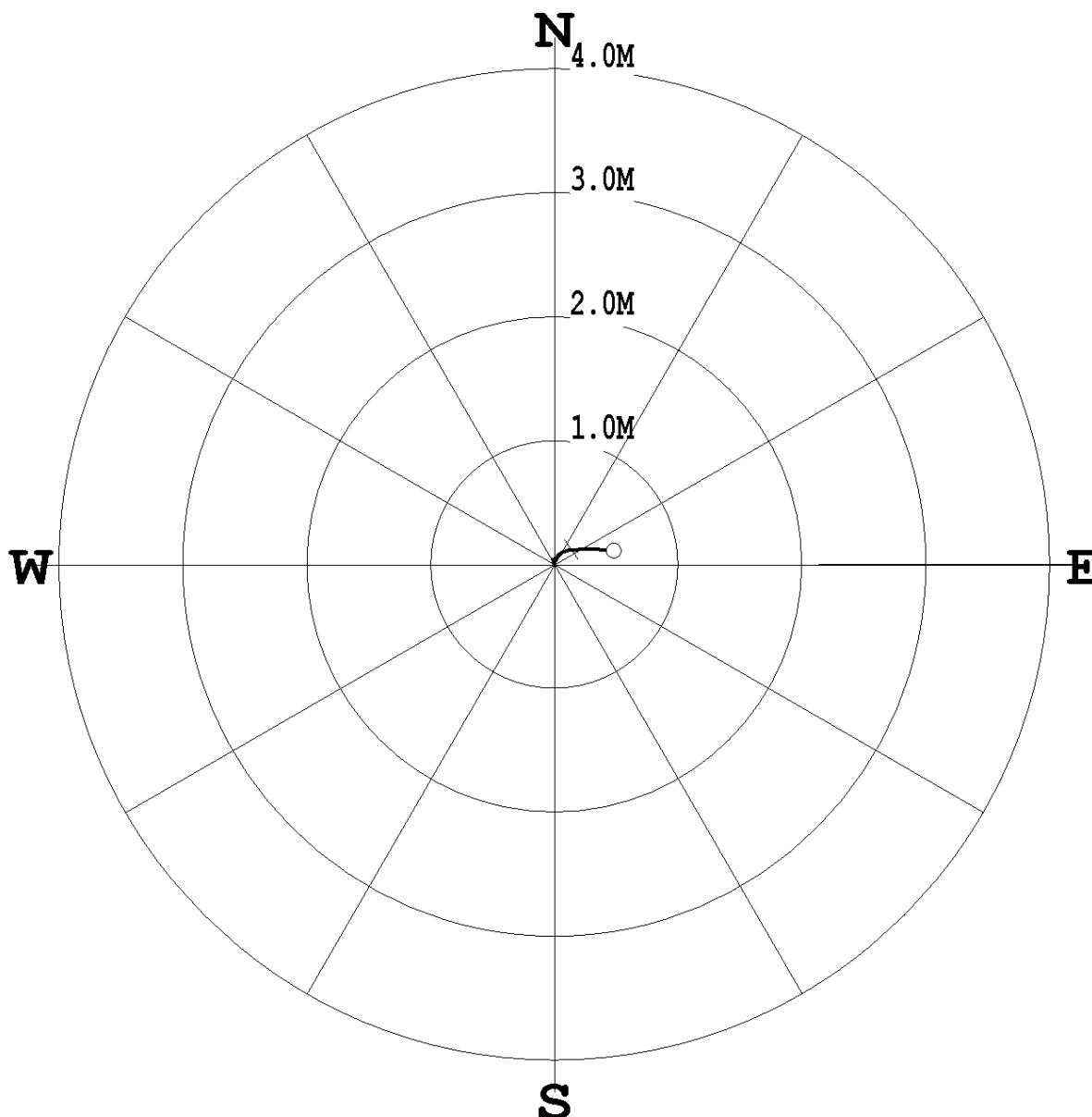
	DATE	TIME	SENSOR	STANDARD	RESPONSE
1	Feb01,13	14:39:20	GAMMA	1.000 [API-GR]	0.770 [CPS]
	Feb01,13	14:39:20	GAMMA	545.000 [API-GR]	575.000 [CPS]
2	Aug10,12	11:25:15	TEMP	41.700 [DEG_F]	333776.000 [CPS]
	Aug10,12	11:25:15	TEMP	121.500 [DEG_F]	398824.000 [CPS]
3	Mar08,13	13:31:34	NEUTRON	0.000 [API-N]	1.000 [CPS]
	Mar08,13	13:31:34	NEUTRON	271.000 [API-N]	71.000 [CPS]
4	Feb01,13	14:06:13	POR(NEI)	100.000 [PERCENT]	57.100 [CPS]

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: WALTER ENERGY / WESTERN COAL
 LOCATION: BRULE
 HOLE ID: BM13-08A
 DATE OF LOG: 03/22/13
 PROBE: 9058A 2635



SCALE: 1 M/CM
 TRUE DEPTH: 28.58 M
 AZIMUTH: 77.3
 DISTANCE: 0.5 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : WALTER ENERGY / WES HOLE ID. : BM13-08A
 FIELD OFFICE : CENTURY GEO DATE OF LOG : 03/22/13
 DATA FROM : N/A PROBE : 9058A , 2635
 MAG. DECL. : 18.700 DEPTH UNITS : METERS
 LOG: BM13-08A_03-22-13_09-16_9058A_.02_-0.67_28.78_DEVI.log

CABLE DEPTH	TRUE DEPTH	NORTH DEV.	EAST DEV.	DISTANCE	AZIMUTH	SANG	SANGB
12.00	12.01	0.04	0.00	0.0	5.6	0.7	73.0
13.00	13.01	0.04	0.01	0.0	10.5	0.8	38.0
14.00	14.01	0.06	0.02	0.1	17.6	1.1	30.8
15.00	15.01	0.07	0.03	0.1	20.3	0.9	38.2
16.00	16.01	0.09	0.04	0.1	25.1	1.1	54.3
17.00	17.01	0.10	0.06	0.1	30.1	1.3	57.7
18.00	18.01	0.11	0.08	0.1	35.9	1.5	71.6
19.00	19.01	0.12	0.11	0.2	42.3	1.5	70.7
20.00	20.01	0.12	0.14	0.2	48.1	1.8	88.6
21.00	21.01	0.12	0.17	0.2	54.1	1.9	87.2
22.00	22.01	0.12	0.20	0.2	58.0	1.7	84.0
23.00	23.01	0.13	0.23	0.3	60.8	1.7	83.1
24.00	24.01	0.13	0.26	0.3	63.8	2.3	88.9
25.00	25.00	0.13	0.30	0.3	66.9	2.4	92.8
26.00	26.00	0.12	0.35	0.4	70.3	2.8	99.0
27.00	27.00	0.12	0.40	0.4	73.5	3.1	92.9
28.00	28.00	0.11	0.45	0.5	76.1	3.0	98.0
28.58	28.58	0.11	0.48	0.5	77.3	2.9	97.4

 Western Canadian Coal	Quality Control System	Form 02-C
	Drillhole Information sheet	

HOLE-ID: BM13-08B	year drilled: 2013	AREA: BRULE
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Collar coordinates:	NAD27 DATUM		NAD83 DATUM		ELEVATION
	EAST	NORTH	EAST	NORTH	
			574,604.35	6,137,534.43	1,048.41

AZ	INCL	TD	HOLE TYPE	COLLAR SURVEY	SECTION	DRILL DATE (MM/DD/YY)
		17.10	Rotary			03/22/13

Available Logs	gamma	density	caliper	neutron	strat	drillers	deviation	res	core
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

comments: - borehole log, picture of rock chips for designated intervals, drilled in pairs, see BM13-08A for geophysics

SURVEY SUMMARY

LITHOLOGY SUMMARY

RAW SAMPLE INFORMATION

Date issued: Monday, June 16, 2014
 Reviewed: October 11, 2002

Page 1 of 1



Borehole Log of BM13-08B

(Page 1 of 1)



Date Started : Mar 22, 2013
 Date Completed : Mar 22, 2013
 Drill Method : 6" Barber Dual AR
 Surveyed By : Brule Mine
 Drilling Company : Foundex Explorations Ltd

Northing Coord. : 6137534.431
 Easting Coord. : 574604.354
 Logged By : LF
 Reviewed By : LF

Brule Mine: 5 Year Plan - GW Investigation
 Project #: A320-2

