

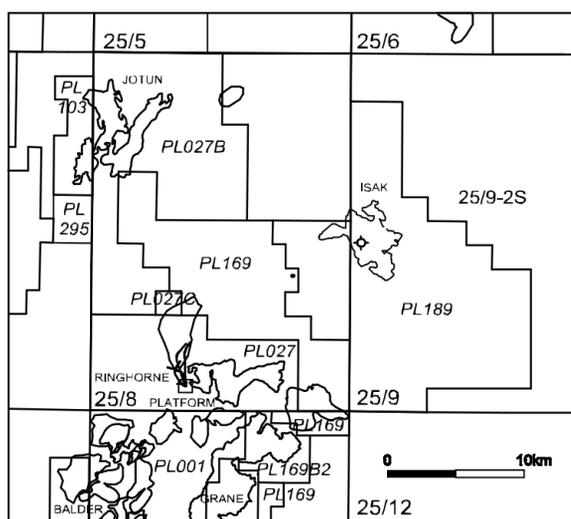


ESSO NORGE AS

COMPOSITE LOG 1:500

WELL : 25/9-2S
 LICENSE : PL189

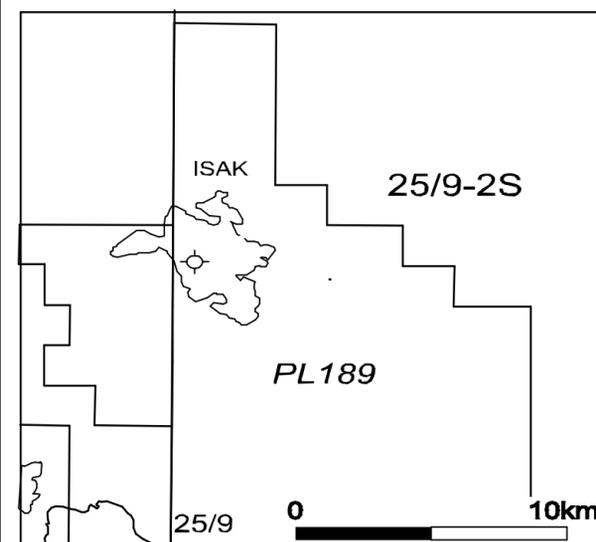
REGIONAL MAP



COUNTRY : NORWAY
 BASIN : North Sea
 BLOCK : 25/9
 LICENSE : PL189
 OPERATOR : ESSO NORGE AS
 PRE-DRILL STATUS : EXPLORATION
 RIG NAME/TYPE : Deep Sea Trym
 STATUS : Dry Hole, P&A

OBJECTIVES
 PRIMARY : Brent Group

LOCATION MAP



RIG DATA

RIG PICK UP DATE : July 17 2003 RKB - MSL : 25 m
 SPUD DATE : July 18 2003 RKB - SB : 147 m
 DRILLING COMPLETED: July 30 2003 WATER DEPTH : 122 m
 RIG RELEASED : 4 August 2003 TD (Driller) : 2250 m MDRKB
 TOTAL DAYS : 17 days TVD : (-2114 m TVDSS)

LOCATION DATA

SURFACE LATITUDE : 59°22' 56.270" N
 SURFACE LONGITUDE : 02°41'46.970" E
 ZONE ED UTM : 482749.29 m E
 6582814.21m E
 TD LATITUDE : 59° 22' 47.010" N
 TD LOGITUDE : 02 41' 23.360" E
 ZONE ED UTM : 482375.34m E
 6582529.47m N

PARTNERS

ESSO NORGE AS (OPERATOR): 45%
 NORSK HYDRO: 45%
 PETORO: 10%

CONTRACTORS

DRILLING : ODDFJELL
 WELLSITE GEOLOGY : CAMBRIAN
 MUDLOGGING : GEOSERVICE
 WIRELINE : BAKER ATLAS
 DIRECTIONAL : BHI
 MWD/LWD : BHI
 MUD : MI
 CASING : WEATHERFORD
 CEMENT : HALIBURTON
 BIOSTRATIGRAPHY : Robertson Research

GEOLOGISTS

OPERATIONS : TORUNN VALHEIM
 : HAAKON LEDJE
 WELLSITE : G. HAYES
 : G. WATTS

LOG COMPILER(S)

DATE : November 2003

LITHOSTRATIGRAPHIC TOPS

WIRELINE LOGS

GROUP	FORMATION	MEMBER	SEQUENCE/ CYCLE	DEPTH (MDRKB)	DEPTH (TVDSS)	DATE	RUN No.	LOGGING SUITE	INTERVAL
Nordland	Seabed				147			NONE	
	Utsira			789	764				
Hordaland	Lark			1002	977				
	Skade			1226	1200				
	Lark			1312	1281				
	Horda			1450	1406				
Rogaland	Balder			1832	1744				
	Lista			1923.5	1825				
	Sele			1975	1870				
Shetland	Våle			2026.5	1916				
	Tor			2036	1925				
	Tryggvason			2050.5	1939				
Cromer Knoll	Svarte			2066.5	1952				
	Rødby			2111	1990				
	Mime			2153.5	2029				
Viking	Draupne			2162.5	2037				
	Heather			2172.5	2045				
	Hugin			2183	2055				
Dunlin	Burton			2190	2061				

LITHOLOGY SYMBOLS

	CONGLOMERATE		LIMESTONE		HALITE
	BRECCIA		ARGILLACEOUS LIMESTONE		POLYHALITE
	SANDSTONE		DOLOMITIC LIMESTONE		VOLCANICS TUFF
	SILTSTONE		OOLITIC LIMESTONE		INTRUSIVE IGNEOUS
	CLAY CLAYSTONE SHALE		DOLOMITE		EXTRUSIVE IGNEOUS
	CALCAREOUS CLAYSTONE		CALCAREOUS DOLOMITE		METAMORHPIC
	MARL		ANHYDRITE GYPSUM		BASEMENT
	CHALK		COAL		CEMENT
	NO RETURNS				

OPERATIONAL SYMBOLS

	CASING SHOE		CEMENT PLUG
	DST		BRIDGE PLUG
	BIT DATA DATE		
			NB NEW BIT
			RRB RERUN BIT
			CB CORE BIT
	CORE		

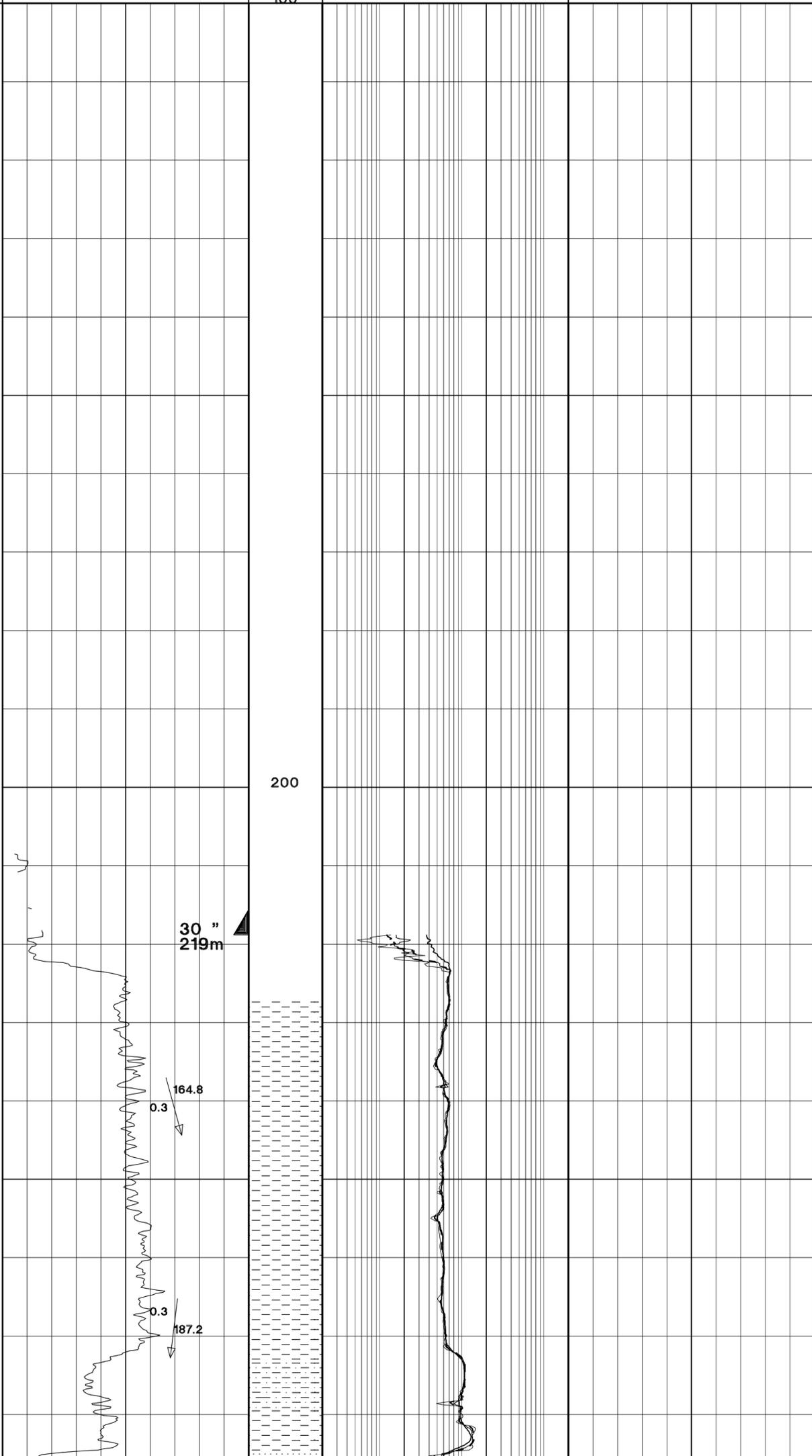
ACCESSORY SYMBOLS

	CONGLOMERATIC		CALCITIC		MACROFOSSILS UNDIFF
	SANDY		CHERTY		MICROFOSSILS UNDIFF
	SILTY		GLAUCONITIC		AMMONITES
	ARGILLACEOUS		FERRUGINOUS		BELEMNITES
	SHALY		PYRITIC		CORALS
	MARLY		CARBONACEOUS		ECHINOIDS
	CALCAREOUS		MICACEOUS		GASTROPODS
	DOLOMITIC		FELDSPATHIC		BIOTURBATED
	LIMESTONE STRINGER		PHOSPHATIC		ROOTS
	ANHYDRITIC GYPSIFEROUS		OOLITIC		PLANT REMAINS
	VOLCANICS TUFFACEOUS				

	SIDEWALL CORES		RFT/FMT
	SAMPLE TAKEN		
	PRESSURE TEST		
	DIPMETER		INTERVAL MARKER eg. FMS
	DEVIATION SURVEY		

CHRONO/LITHO STRATIGRAPHY	GAMMA RAY	DEPTH AND LITH	RESISTIVITY	POROSITY	LITHOLOGY DESCRIPTION

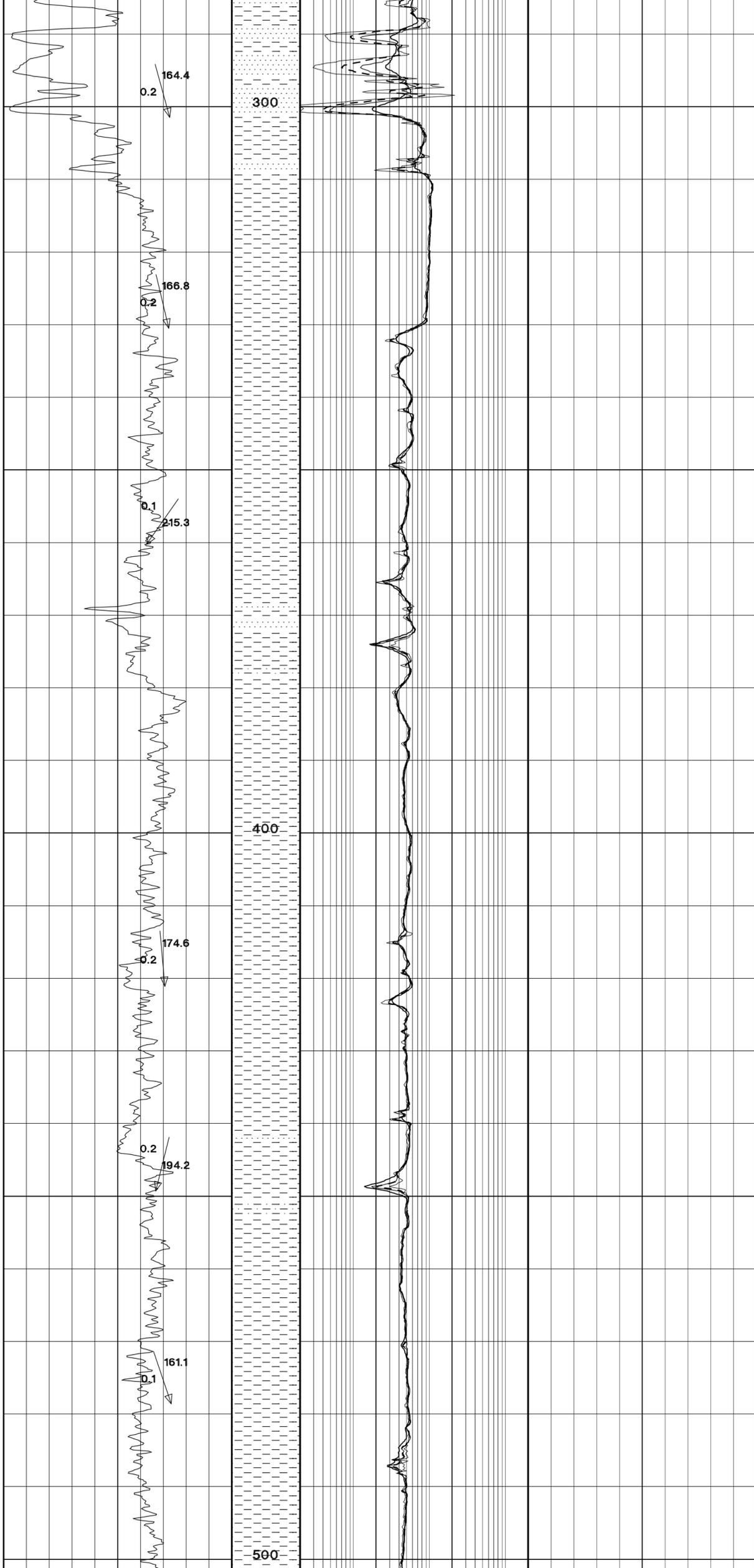
SYSTEM	SERIES	STAGE	GROUP	FORMATION	MEMBER	0	150	100	200
				GRAFM(API)					
						0.20	0.20	0.20	0.20
						RPCELM(Ohm.m)	RPCEHM(Ohm.m)	RACELM(Ohm.m)	RACEHM(Ohm.m)
						20	20	20	20
						1.95	140	0.45	-0.25
						BDCFM(g/cm3)	DT(msec/ft)	NPLFM(pu)	DRHFM(I)
						2.95	40	-0.15	0.25



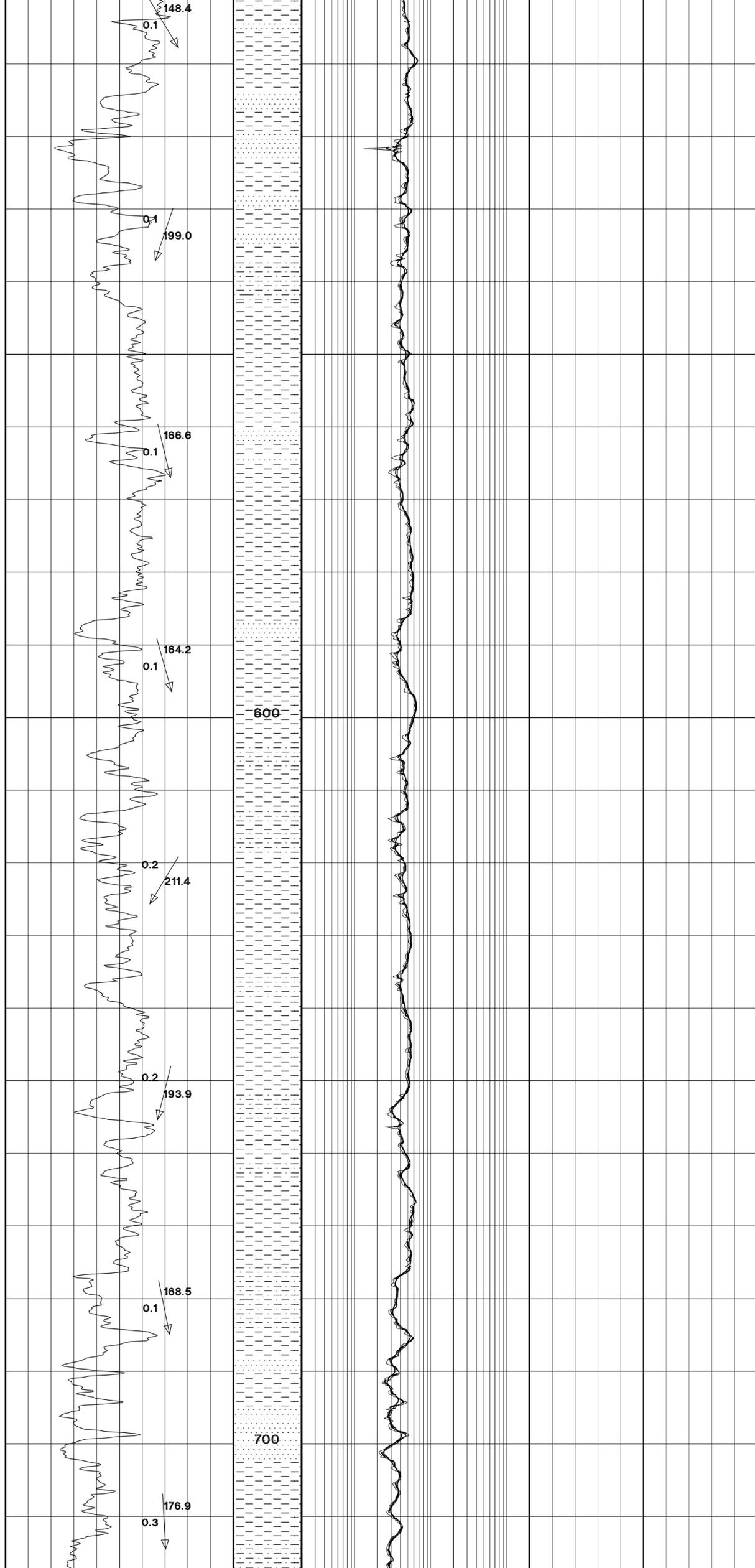
Seabed at 147m

9 5/8 Pilot Hole drilled to 1057m with seawater and 1.20sg High Vis Sweeps. Returns to Seabed - No Riser. Hole then opened to 17.5". ROP shown from Pilot Hole

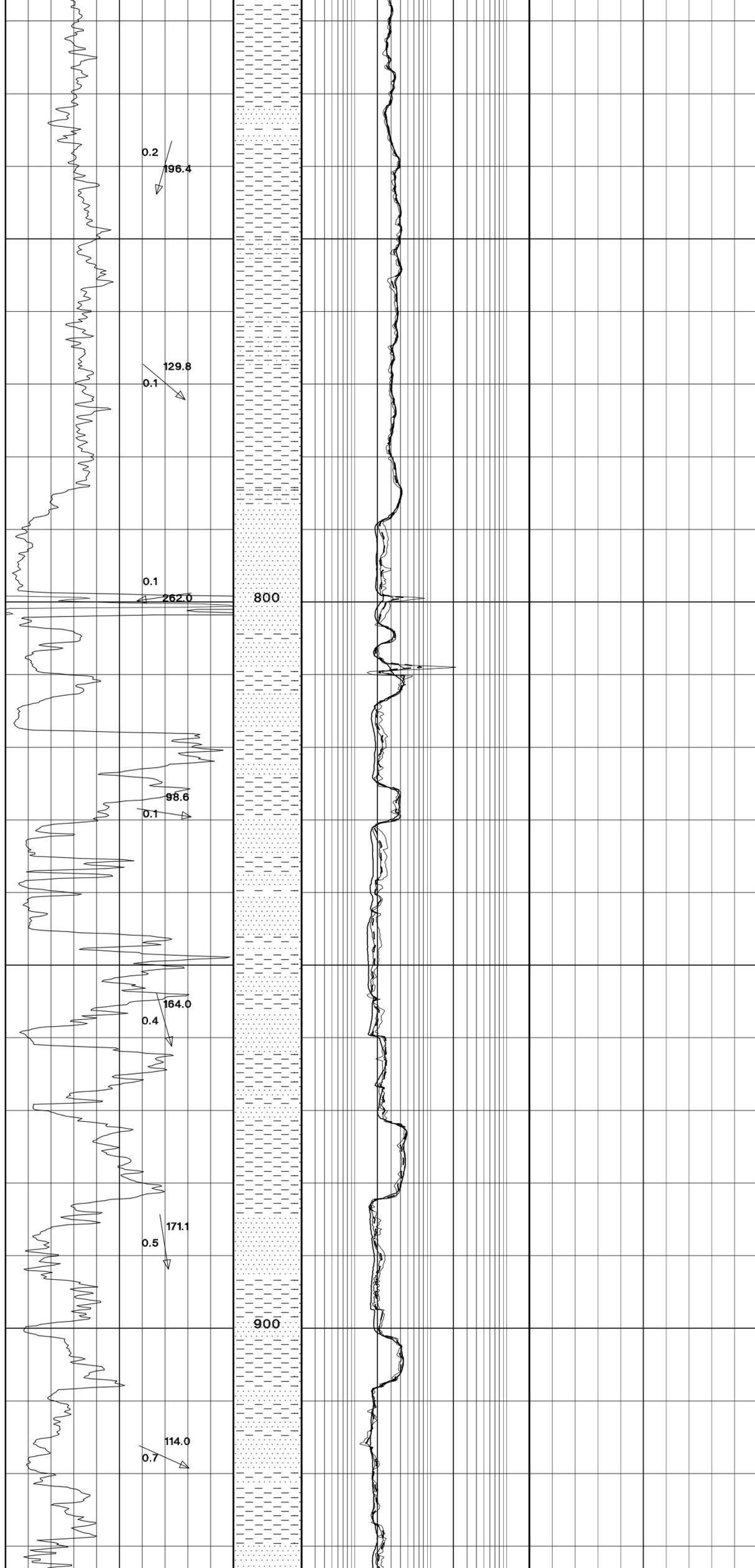
TERTIARY



TERTIARY



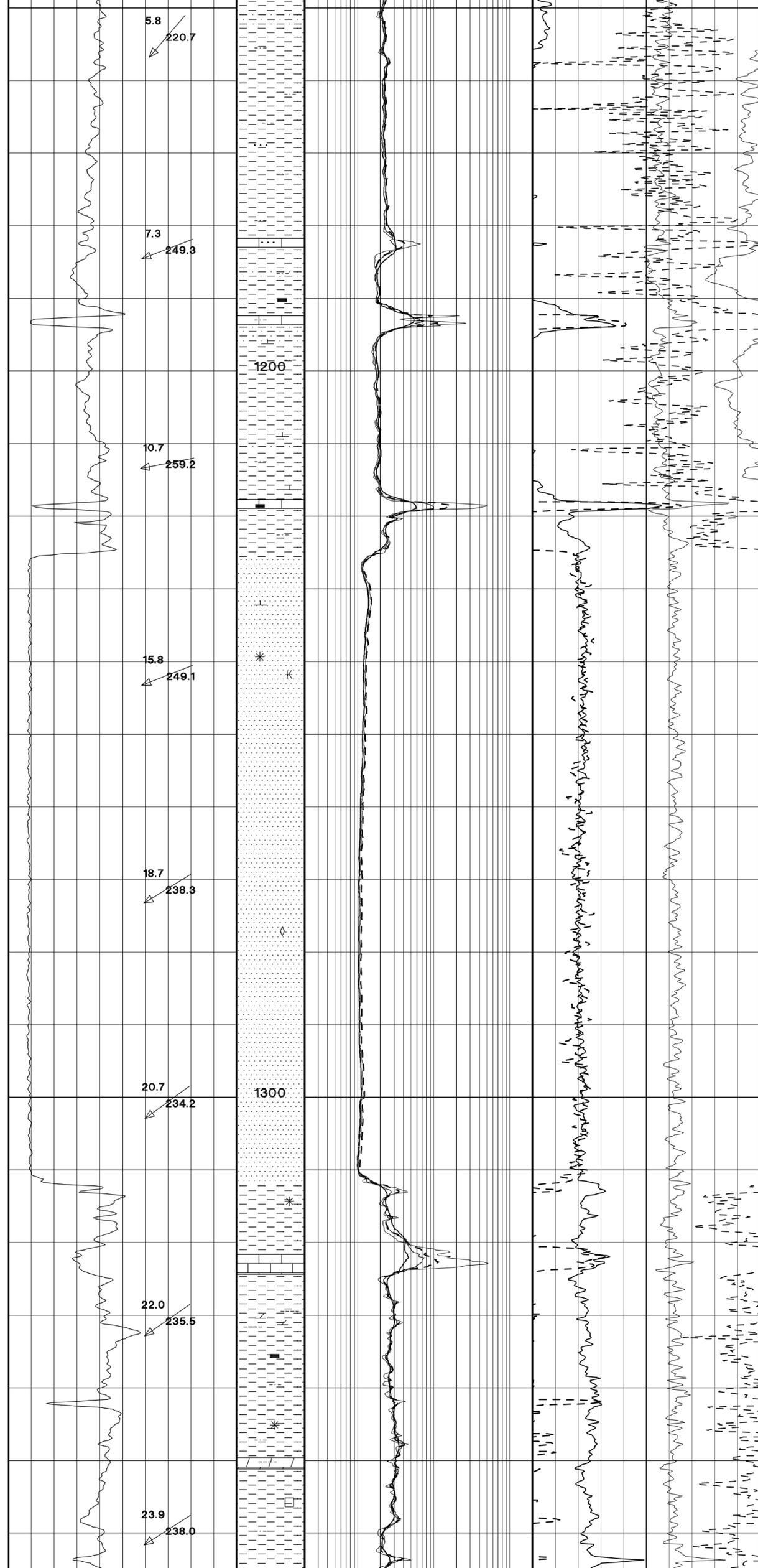
UTSIRA



Top UTSIRA Fm 789m MDRKB
(-764m TVDSS)

TERTIARY
OLIGOCENE

HORDALAND
SKADE



SILTSTONE: light medium to medium grey, occasionally medium blue grey, soft to firm, sub blocky, sticky, subfissile, crumbly, grading to CLAYSTONE.

CLAYSTONE: medium grey to medium dark grey, soft to firm, sub blocky, sticky and locally amorphous, silty to frequently very silty with local good Trace floating Qtz, moderately calcareous,

LIMESTONE: off white to olive grey, moderately hard, blocky, microcrystalline, mudstone, slightly argillaceous in parts, as stringers, no visible porosity - NO SHOWS.

CLAYSTONE: olive black to dark grey, generally firm, sub blocky, very hygrotergud, silty to very silty in parts, moderately calcareous, rare trace carbonaceous specks locally grading to Silty Claystone.

**Top SKADE Sand 1226m MDRKB
(-1200m TVDSS)**

SANDSTONE: as loose Qtz: clear, colourless, translucent, rarely frosted, medium to coarse with occasional very coarse grains, moderate to well sorted, well rounded with good spericity. Rare aggregates with weak silaceous cement, good inferred porosity, NO SHOWS.

SANDSTONE: unconsolidated Qtz: clear, colourless, translucent, rarely frosted, fine upper to medium upper occasional very coarse grains, poor to moderate sorted, well rounded with good spericity. Rare aggregates: medium light grey to light grey, very friable, weak silaceous cement to rare calcite cement, good inferred porosity, NO SHOWS.

SANDSTONE: as loose Qtz: clear, colourless, translucent, rarely frosted, medium lower to medium upper, moderate to well sorted, well rounded with good spericity, rare trace glauconitic overgrowths. Rare aggregates: medium light grey to light grey, very friable, weak silaceous cement, good inferred porosity, NO SHOWS.

**Base SKADE Sand 1312m MDRKB
(-1281m TVDSS)**

DOLOMITIC LIMESTONE: moderate yellowish brown to olive grey, soft to frm, locally crumbly, very argillaceous, occuring as stringers, no visible porosity and NO SHOWS.

CLAYSTONE: olive black, moderately hard, blocky, very hygrotergud, varying silt, non calcareous, rare trace granular pyrite, rare trace glauconitic specks, locally grading to SILTSTONE

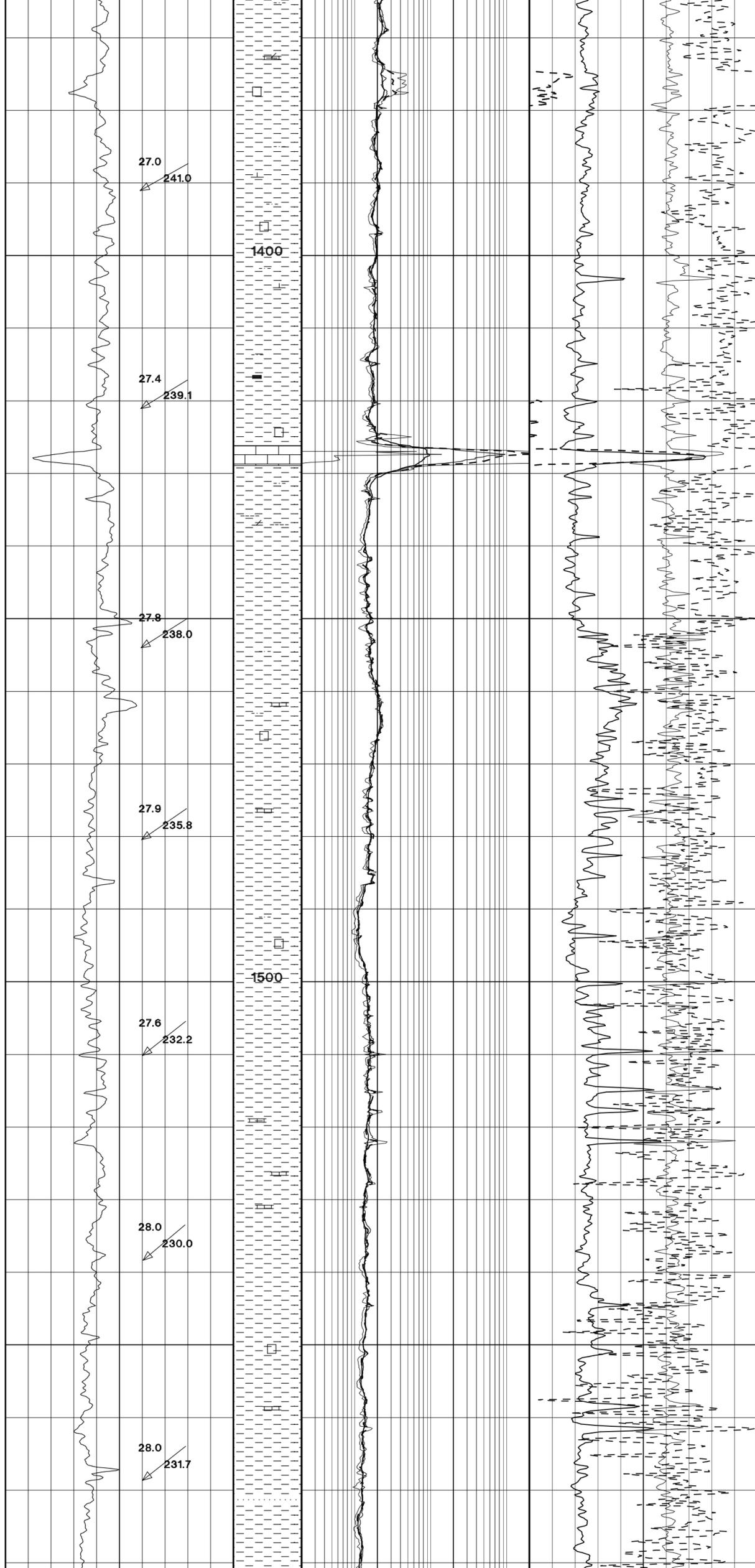
DOLOMITIC LIMESTONE: moderate yellowish brown to olive grey, soft to frm, locally crumbly, very argillaceous, occuring as stringers, no visible porosity and NO SHOWS.

CLAYSTONE: olive black and homogenous, moderately hard, blocky, slightly silty, non to occasionally slightly calcareous, trace very very fine disseminated pyrite.

TERTIARY
EOCENE

HORDALAND
HORDA

LARK



CLAYSTONE: olive black and generally homogenous, moderately hard, blocky, slightly silty to locally moderately silty, non calcareous, trace disseminated pyrite, trace carbonaceous specs.

LIMESTONE: light olive grey, soft to moderately hard, locally crumbly, microcrystalline, mudstone, very argillaceous, grading to DOLOMITIC LIMESTONE in parts, no visible porosity and NO SHOWS.

Top HORDA Fm 1450m MDRKB
(-1406m TVDSS)

CLAYSTONE: dark grey-olive black, green grey, dark green grey, firm, sub blocky, crumbly, trace disseminated pyrite

CLAYSTONE: green grey, occasionally light green grey, dark green grey, brown grey, sub blocky to sub platy, crumbly, occasionally brittle, trace disseminated pyrite, non calcareous.

LIMESTONE: light olive grey becoming yellow grey, soft to moderately hard, sub blocky to blocky, locally cubic, crumbly, cryptocrystalline, wackstone where seen, dolomitic in parts, no visible porosity, NO SHOWS.

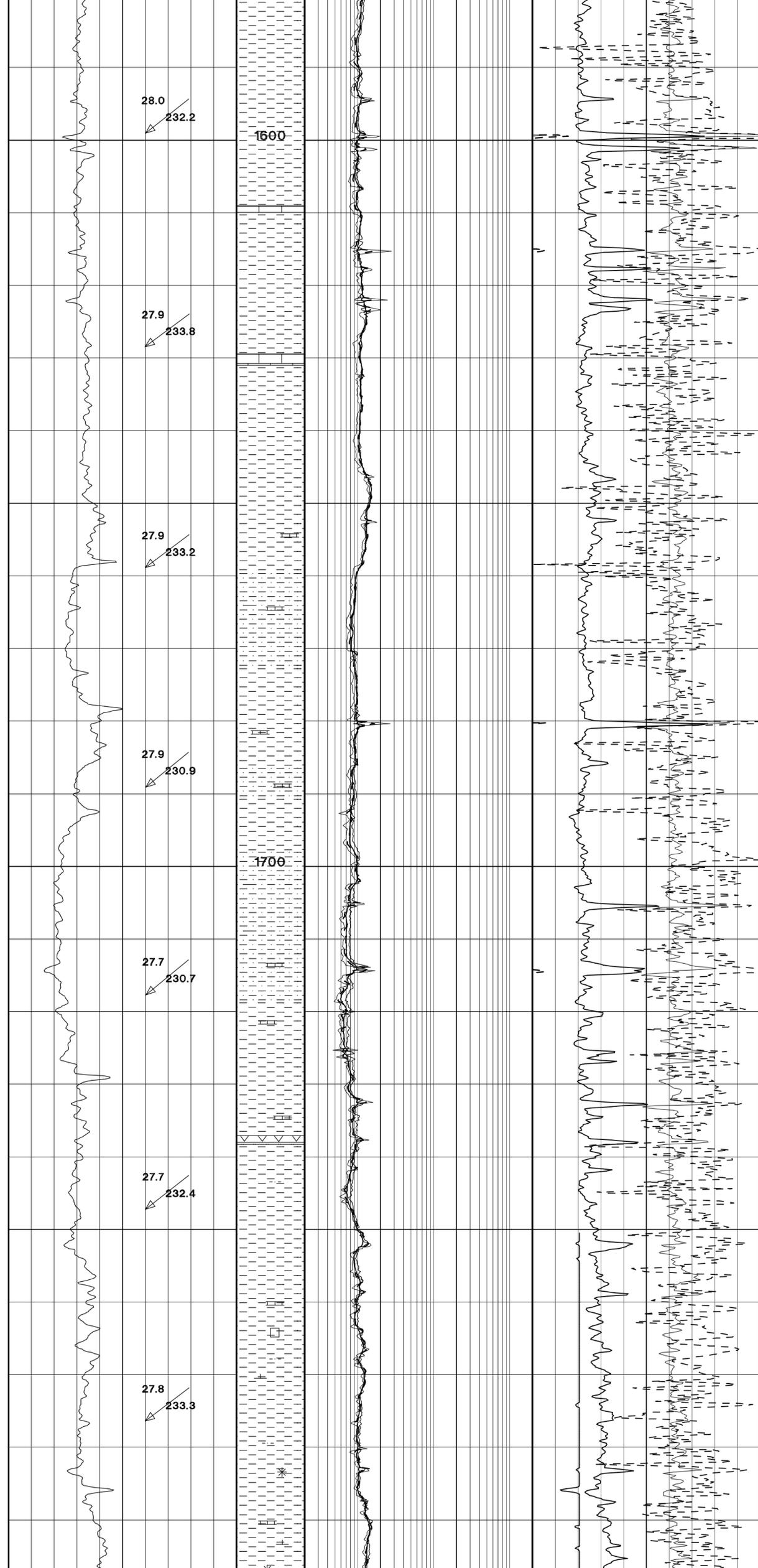
CLAYSTONE: dark green grey, dark blue grey, dark grey, olive black in parts, firm, sub blocky to sub platy, sub fissile to crumbly, rare disseminated pyrite.

SANDSTONE: loose quartz, clear, colourless, translucent, rarely frosted, medium lower to medium upper, poor to moderate sorted, sub angular to well rounded, poor inferred porosity, NO SHOWS.

CLAYSTONE: olive black, medium blue grey, dark green grey, firm to

TERTIARY
EOCENE

HORDALAND
HORDA



CLAYSTONE: olive black, medium blue grey, dark green grey, firm to occasionally hard, sub blocky, brittle to crumbly.

LIMESTONE: dark orange grey, yellow grey and light olive grey, firm, blocky, crumbly-brittle, micro-cryptocrystalline, mudstone-wackstone. NO SHOW

CLAYSTONE: medium dark grey, occasionally medium grey, homogenous, firm, sub blocky, sub fissile to crumbly, occasionally splintery.

LIMESTONE: light olive grey, medium grey, yellow grey, soft to firm, blocky, crumbly, cryptocrystalline, wackstone where visible, no visible porosity, NO SHOW.

LIMESTONE: very pale orange, grey orange, firm, blocky, crumbly, micro to cryptocrystalline, packstone, argillaceous, no visible porosity, NO SHOW.

CLAYSTONE: medium grey, medium dark grey, medium grey brown, homogenous, firm, sub blocky, sub fissile to crumbly

Trace TUFF: rare, pale green with dark green specks, soft, amorphous, blocky, sticky.

CLAYSTONE: dark greenish grey and olive grey, firm to moderately hard, sub blocky, slightly calcareous, moderately silty, abundant glauconite specks in green CLST, good trace very very fine disseminated pyrite.

Good Trace LIMESTONE: off white to olive grey, firm to moderately hard, sub blocky to crumbly, micro crystalline, mudstone to wackstone texture, locally grading to Dolomite which has a medium grained sucrosic texture in parts.

CLAYSTONE: dark greenish grey to dusky blueish grey, firm to

TERTIARY

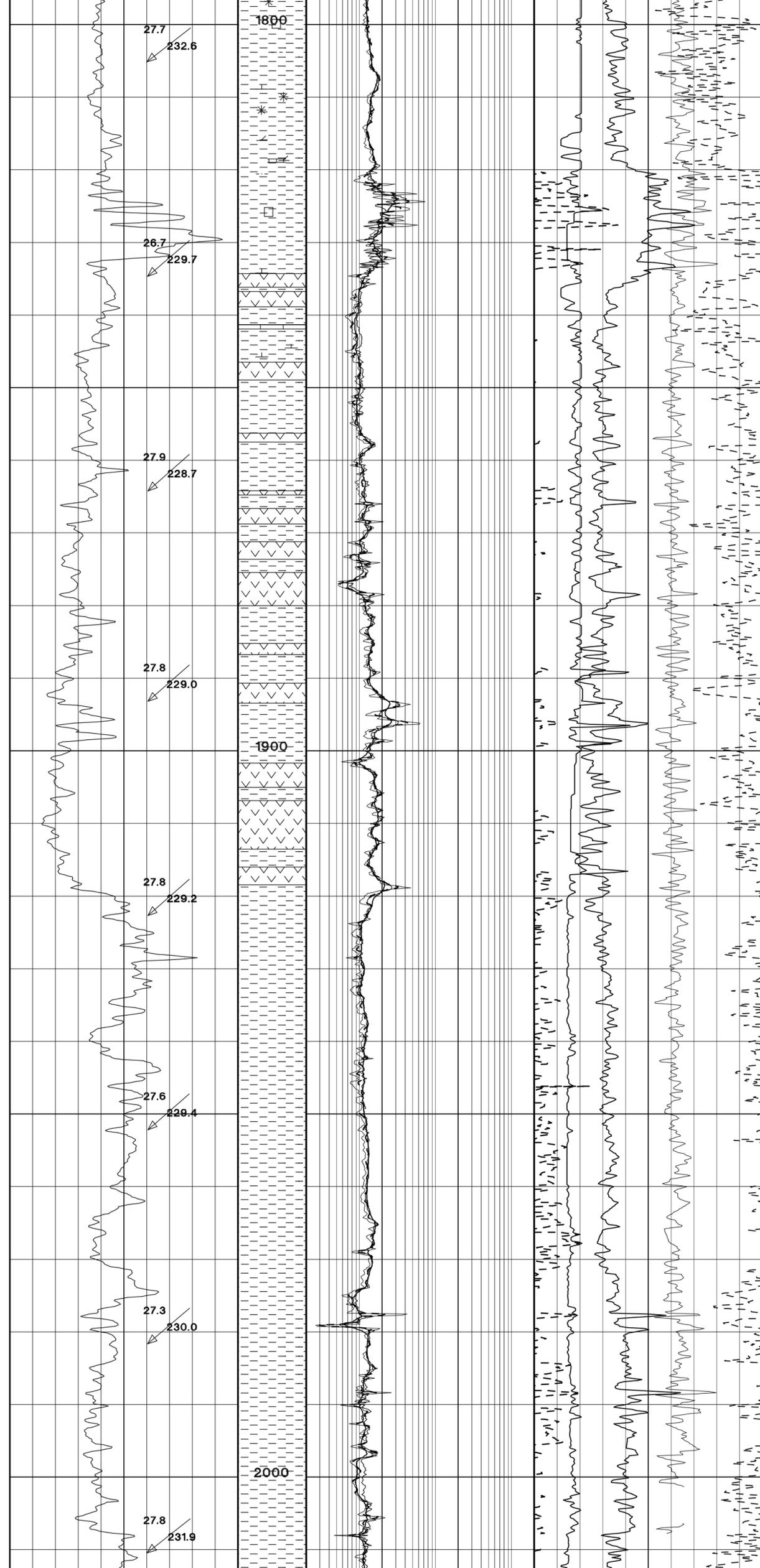
PALEOCENE

ROGALAND

SELE

LISTA

BALDER



moderately hard, sub blocky, slightly calcareous, moderately silty, abundant glauconite specks, good trace very very fine disseminated pyrite.

DOLOMITIC LIMESTONE: pale grey brown, firm to moderately hard, sub blocky to crumbly, micro crystalline to locally medium when sucrosic, wackstone - packstone, no vis por - NO SHOWS.

TUFF: medium blueish grey to medium grey, firm, crumbly, ashy texture, rare impregnated glass shards, very calcareous grading to CLST in parts, gd trace glauconite and abundant very very fine disseminated py

Top BALDER Fm 1832m MDRKB (-1744m TVDSS)

CLAYSTONE: predominatly olive black/grey, firm to moderately hard, blocky, rare ashy texture, non calcareous, very abnt pyrite , very slightly silty in parts.

tr DOMOMITE: pale grey brown to olive grey, firm to moderately hard, sub blocky to crumbly, micro crystalline to locally medium when sucrosic, wackstone - packstone, calcareous in parts, no vis por - NO SHOWS tr **TUFF:** medium blueish grey to medium grey, firm, crumbly, ashy texture, very calcareous, abundant very very fine disseminated pyrite

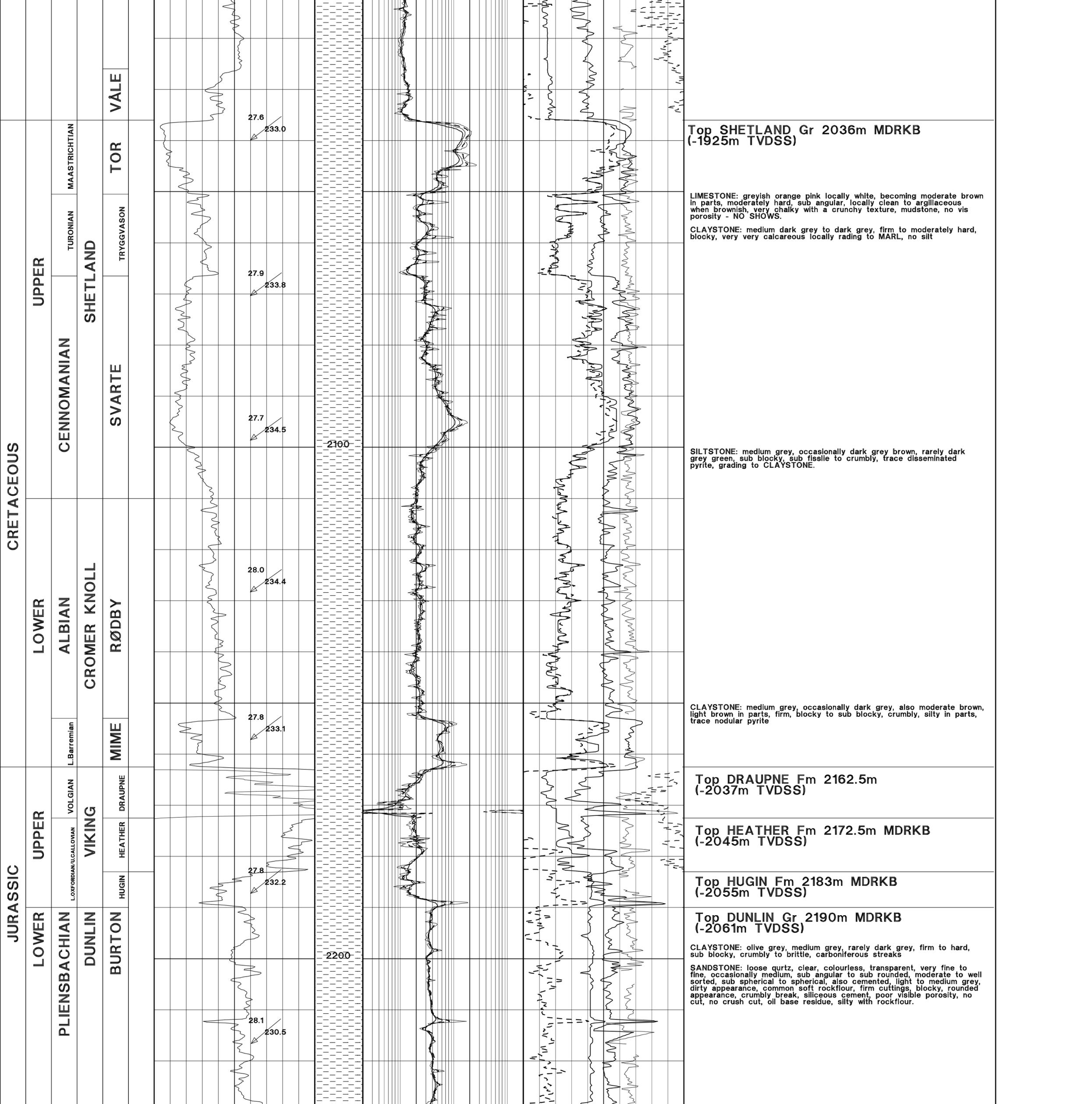
CLAYSTONE: predominatly olive grey, generally homogenous, firm to moderately hard, blocky, non calcareous to locally slightly calcareous, trace pyrite, locally very slightly silty.

TUFF: light grey to medium light grey mottled, firm, sub block to frequently crumbly, very calcareous, abundant flattened glass shards, very ashy, fine grained feldspars, trace very fine pyrite.

Top LISTA Fm 1923.5m MDRKB (-1825m TVDSS)

CLAYSTONE: dusky brown to black brown, firm to moderately hard, blocky, silty to locally very silty, rare trace of pyrite, trace mic-mic, moderately calc, often blueish green grey, no silt, predominantly non calcareous.

LIMESTONE: off white to olive grey, pale brown i/p, firm to moderately hard, sub blocky to crumbly, micro crystalline, mudstone to wackstone, chalky, slightly argillaceous in parts, no vis por - NO SHOWS.



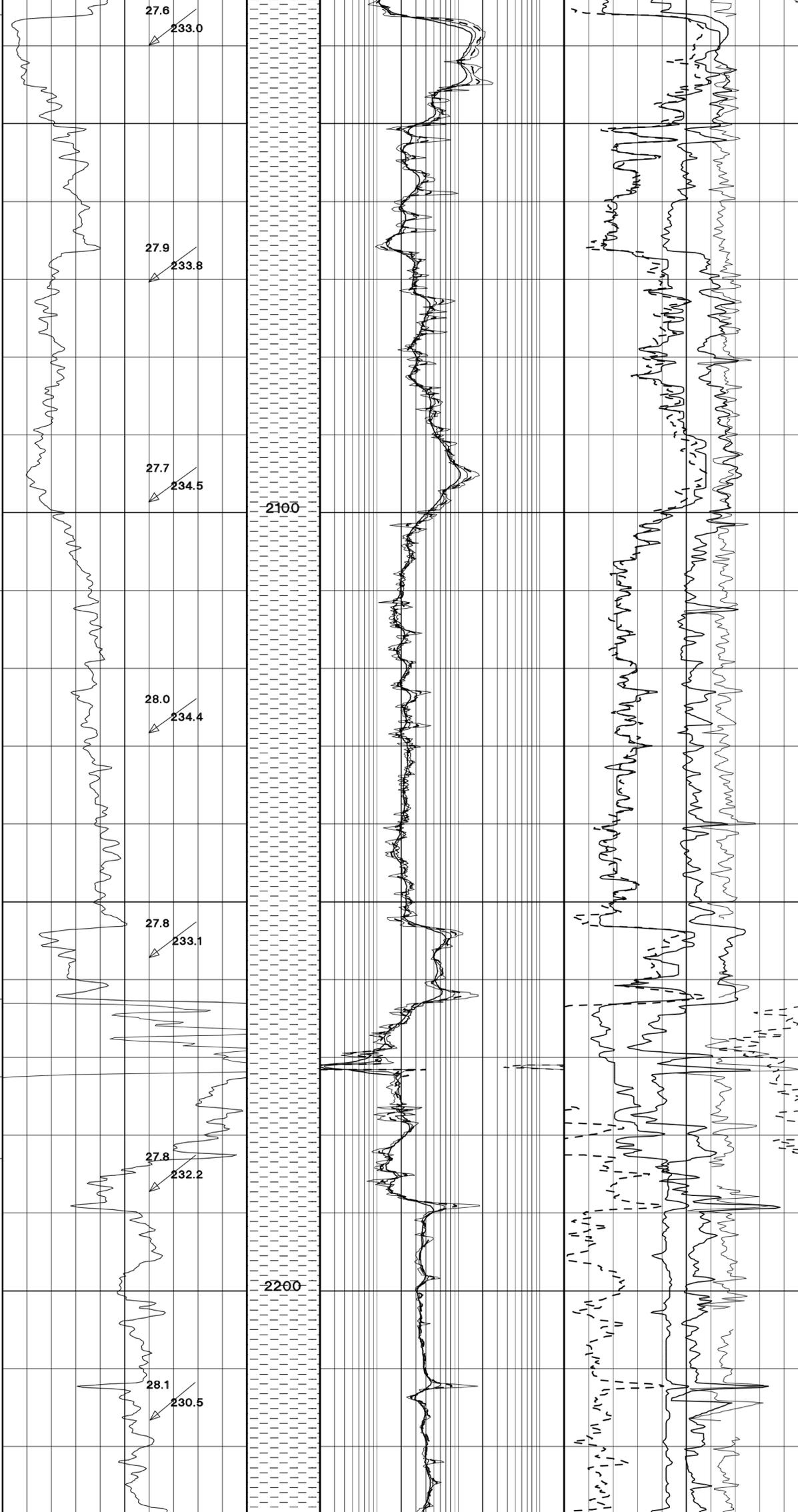
CRETACEOUS

UPPER
CENNOMANIAN
SHETLAND
SVARTE
TOR
VALE

LOWER
ALBIAN
CROMER KNOLL
RØDBY

UPPER
VIKING
HEATHER
DRAUPNE

LOWER
PLIENSACHIAN
DUNLIN
BURTON



Top SHETLAND Gr 2036m MDRKB (-1925m TVDSS)

LIMESTONE: greyish orange pink locally white, becoming moderate brown in parts, moderately hard, sub angular, locally clean to argillaceous when brownish, very chalky with a crunchy texture, mudstone, no vis porosity - NO SHOWS.
CLAYSTONE: medium dark grey to dark grey, firm to moderately hard, blocky, very very calcareous locally grading to MARL, no silt

SILTSTONE: medium grey, occasionally dark grey brown, rarely dark grey green, sub blocky, sub fissile to crumbly, trace disseminated pyrite, grading to CLAYSTONE.

CLAYSTONE: medium grey, occasionally dark grey, also moderate brown, light brown in parts, firm, blocky to sub blocky, crumbly, silty in parts, trace nodular pyrite

Top DRAUPNE Fm 2162.5m (-2037m TVDSS)

Top HEATHER Fm 2172.5m MDRKB (-2045m TVDSS)

Top HUGIN Fm 2183m MDRKB (-2055m TVDSS)

Top DUNLIN Gr 2190m MDRKB (-2061m TVDSS)

CLAYSTONE: olive grey, medium grey, rarely dark grey, firm to hard, sub blocky, crumbly to brittle, carboniferous streaks
SANDSTONE: loose quartz, clear, colourless, transparent, very fine to fine, occasionally medium, sub angular to sub rounded, moderate to well sorted, sub spherical to spherical, also cemented, light to medium grey, dirty appearance, common soft rockflour, firm cuttings, blocky, rounded appearance, crumbly break, siliceous cement, poor visible porosity, no cut, no crush cut, oil base residue, silty with rockflour.

SYSTEM	SERIES	STAGE	GROUP	FORMATION	MEMBER	GAMMA RAY	DEPTH AND LITH	RESISTIVITY	POROSITY	LITHOLOGY DESCRIPTION
						0		RACEHM(Ohm.m) 20 RACELM(Ohm.m) 20 RPCEHM(Ohm.m) 20 RPCELM(Ohm.m) 20	DRHFM(I) 0.25 NPLFM(pu) -0.15 DT(msec/ft) 40 BDCFM(g/cm3) 2.95	CLAYSTONE: olive black, homogenous firm sub blocky to crumbly locally brittle, slightly calcareous, frequent specks carbonaceous, trace very fine disseminated pyrite, very silty locally grading to SLTST <div style="border: 1px solid black; padding: 5px; width: fit-content;"> TD at 2250m MDRKB (-2114m TVDSS) </div>
						150	2300			

27.8
229.7

