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MUDLOG TVD

COMPANY	ExxonMobil Production
WELL	Freedom Unit 197-33A8
FIELD	Piceance Creek
REGION	Rockies
COORDINATES	39.915617000 108.285739000
ELEVATION	GL:6387 KB: 6414
COUNTY, STATE	Rio Blanco, Colorado
API INDEX	01-103-1140-100
SPUD DATE	January 28, 2010
CONTRACTOR	Helmerich and Payne
CO. REP.	Ricky T. Owens
RIG/TYPE	215/ Flex 3
LOGGING UNIT	MLU051
GEOLOGISTS	George Baker Brenda Marsh
ADD. PERSONS	Devin Claar Bill Johanning
CO. GEOLOGIST	Melanie Biggs

LOG INTERVAL

DEPTHS:	3,900'	TO	12,457'
DATES:	1/28/2010	TO	2/12/2010
SCALE:	5" = 100'		

CASING DATA

10.75"	AT	3,914'
7.00"	AT	8,646'
4.5"	AT	12,457'
	AT	

HOLE SIZE

9.875"	TO	8,648"
6.125"	TO	12.457'
	TO	
	TO	

MUD TYPES

SPUD	TO	3,900'
LSND	TO	12,457'
	TO	
	TO	

ABBREVIATIONS

<i>NB</i> NEWBIT	<i>PV</i> PLASTIC VISCOSITY	<i>LC</i> LOST CIRCULATION
<i>RRB</i> RERUN BIT	<i>YP</i> YIELD POINT	<i>CO</i> CIRCULATE OUT
<i>CB</i> CORE BIT	<i>FL</i> FLUID LOSS	<i>NR</i> NO RETURNS
<i>WOB</i> WEIGHT ON BIT	<i>CL</i> PPM CLORIDE ION	<i>TG</i> TRIP GAS
<i>RPM</i> ROTARY REV/MIN	<i>Rm</i> MUD RESISTIVITY	<i>SG</i> SURVEY GAS
<i>PP</i> PUMP PRESSURE	<i>Rmf</i> FILTRATE RESISTIVITY	<i>WG</i> WIPER GAS
<i>SPM</i> STROKES/MIN	<i>PR</i> POOR RETURNS	<i>CG</i> CONNECTION GAS
<i>MW</i> MUD WEIGHT	<i>LAT</i> LOGGED AFTER TRIP	
<i>VIS</i> FUNNEL VISCOSITY	<i>LAS</i> LOGGED AFTER SURVEY	

	ALTERED ZONE
	ANDESITE
	ANHYDRITE
	BASALT
	BENTONITE
	BIOTITIZATION
	BRECCIA
	CALCARENITE
	CALCAREOUS TUFF
	CALCILUTITE
	CARBONATES
	CARBONACEOUS MAT
	CARBONACEOUS SH
	CEMENT CONTAM.
	CHALK
	CRYSTALLINE TUFF
	CHERT - ARGILL

	CHERT - GLASSY
	CHERT - PORCEL
	CHERT - TIGER STRIPE
	CHERT - UNDIFF
	CLAY
	CLAY-MUDSTONE
	CLYST-TUFFACEOUS
	CHLORITIZATION
	COAL
	CONGLOMERATE
	CONGL. SAND
	CONGL. SANDSTONE
	COQUINA
	DACITE
	DIATOMITE
	DIORITE
	DOLOSTONE

	FELSIC SILIC DIKE
	FOSSIL
	GABBRO
	GLASSY TUFF
	GRANITE
	GRANITE WASH
	GRANODIORITE
	GYPSUM
	HALITE
	HORNBL-QTZ-DIO
	IGNEOUS (ACIDIC)
	IGNEOUS (BASIC)
	INTRUSIVES
	KAOLINITIC
	LIMESTONE
	LITHIC TUFF
	MARL - DOLO

	MARL - CALC
	METAMORPHICS
	MUDSTONE
	OBSIDIAN
	PALEOSOL
	PHOSPHATE
	PORCELANITE
	PORCELANEOUS CLYST
	PYRITE
	PYROCLASTICS
	QUARTZ DIORITE
	QUARTZ LATITE
	QUARTZ MONZONITE
	RECRYSTALLIZED CALCITE
	RHYOLITE
	SALT
	SAND

	SANDSTONE
	SANDSTONE-TUFFACEOUS
	SERICITIZATION
	SERPENTINE
	SHALE
	SHALE TUFFACEOUS
	SHELL FRAGMENTS
	SIDERITE
	SILICIFICATION
	SILTSTONE
	SILTST-TUFFACEOUS
	TUFF
	VOLCANICLASTICS SEDS
	VOLCANICS

[illegible]

N-BUTANE = 1000 PPM

I-PENTANE = 1000 PPM

N-PENTANE = 1000 PPM

WHEN THE MUD IS RUN THROUGH THE GAS

BUSTER THE INTERVAL IS MARKED ON THE MGS

COLUMN AND SIZE OF FLARES NOTED.

EVIDENCE OF FRACTURE FILL IS NOTED ON

THE MUD LOG AS METAMORPHICS. KAOLIN

PERCENTAGE IN SS INTERVALS IS ALSO NOTED

1 UNIT OF GAS = 200 PPM METHANE

SHALE = BLuish GRAY TO GRAY MOTTLED

WITH ORANGE-BROWN HUES; BRITTLE TO

PULVERULENT; IRREGULAR TO PLANAR

FRACTURE; MASSIVE TO PLATY TO TABULAR

CUTTINGS HABIT; DULL TO VERY EARTHY

LUSTER; SMOOTH TO CLAYEY TEXTURE;

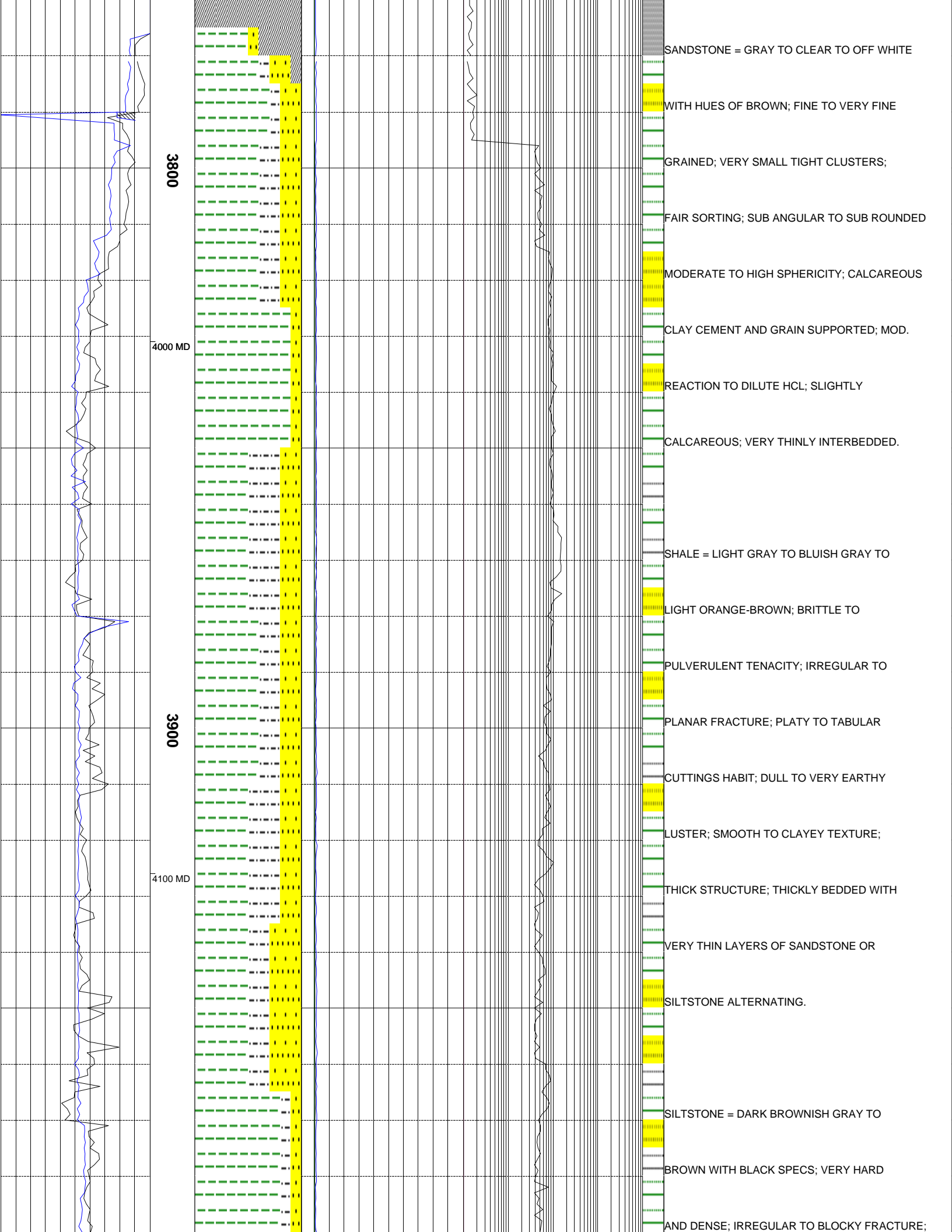
THICK STRUCTURE; THICKLY BEDDED.

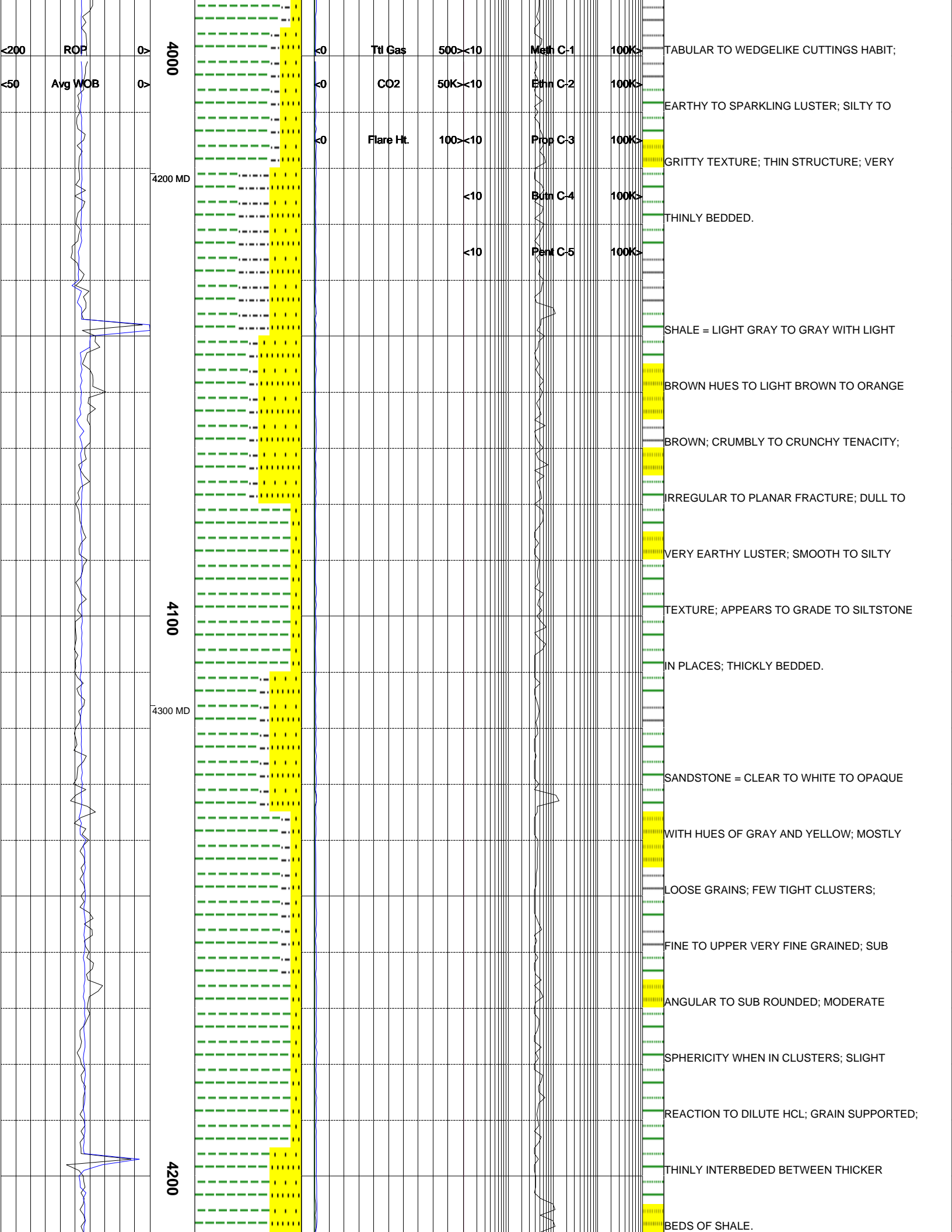
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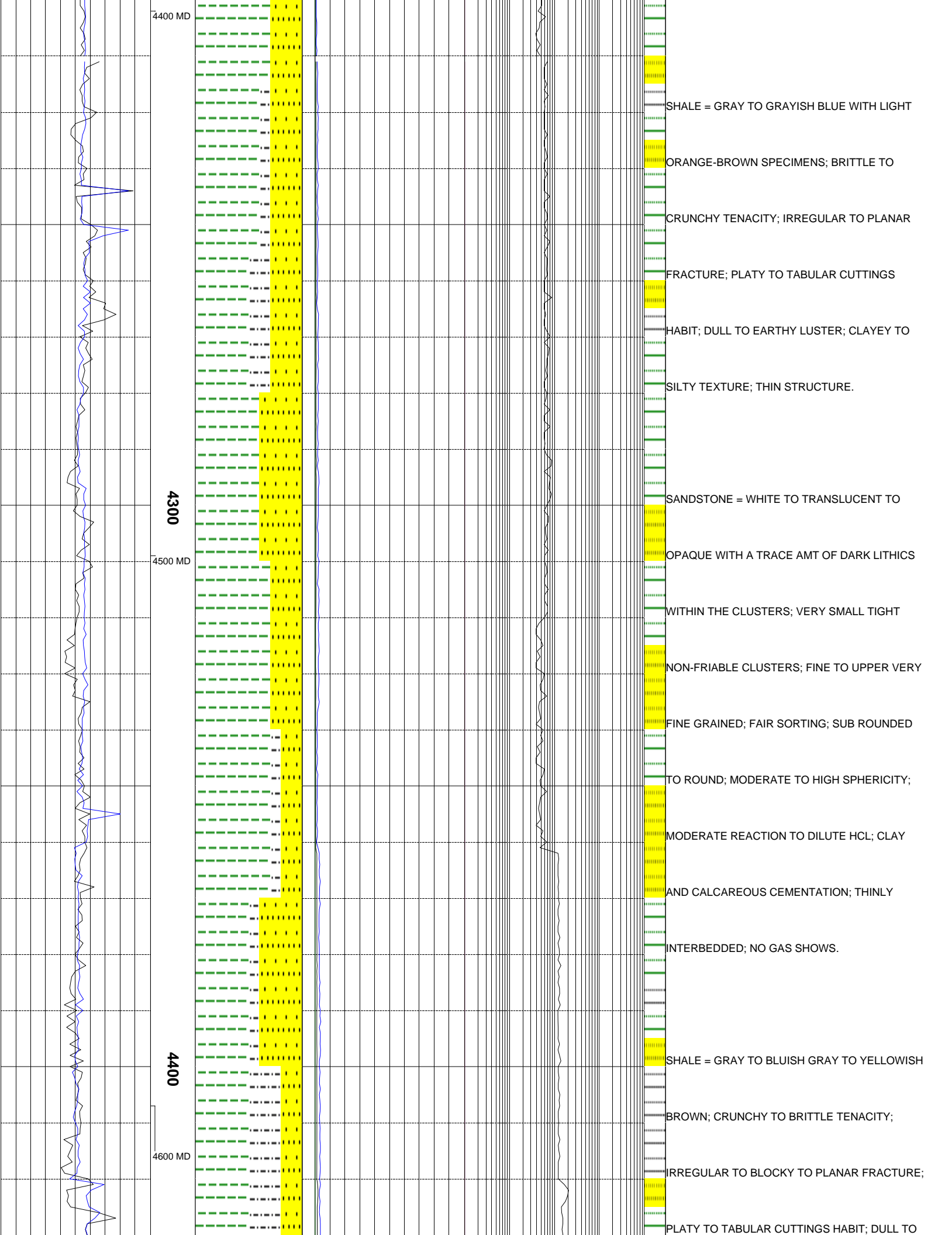
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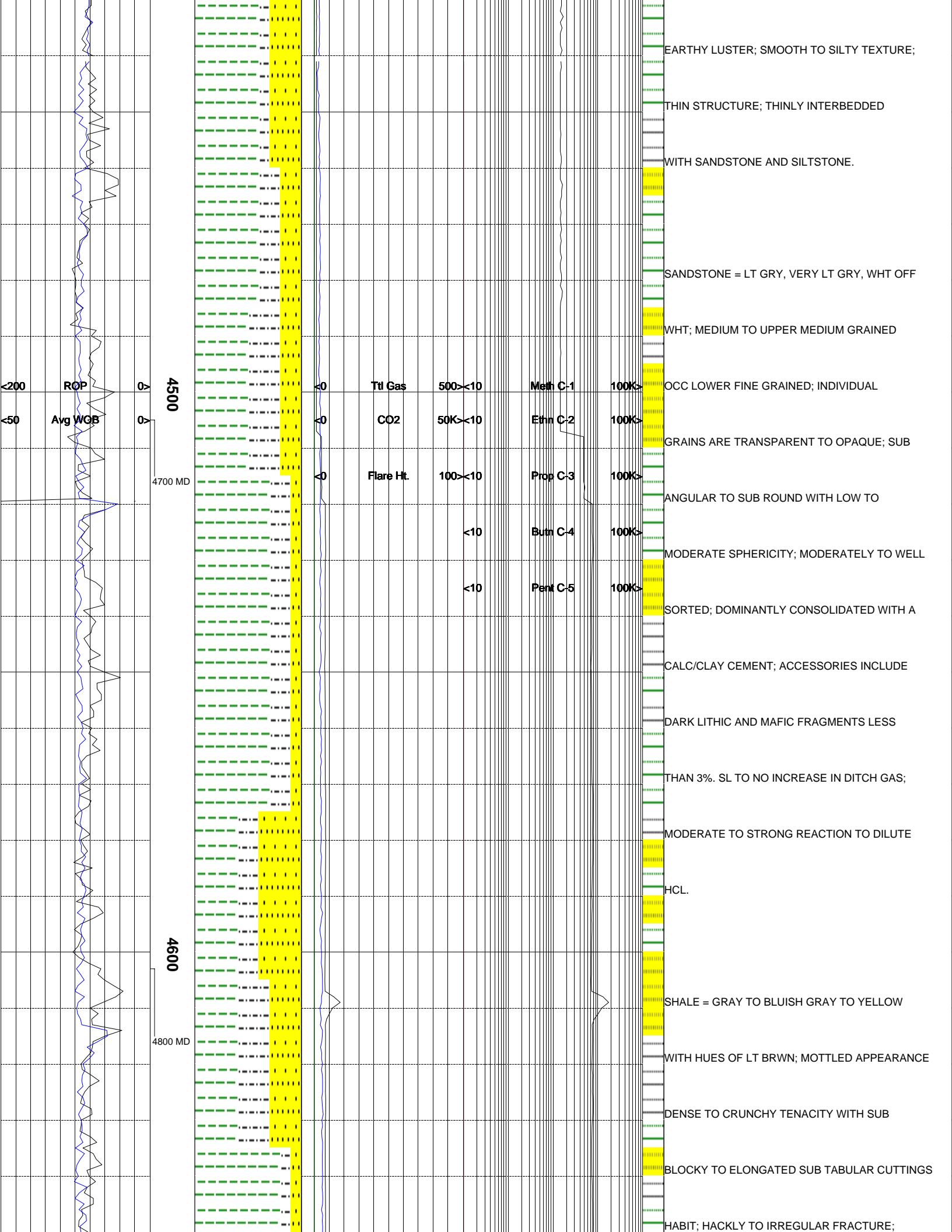
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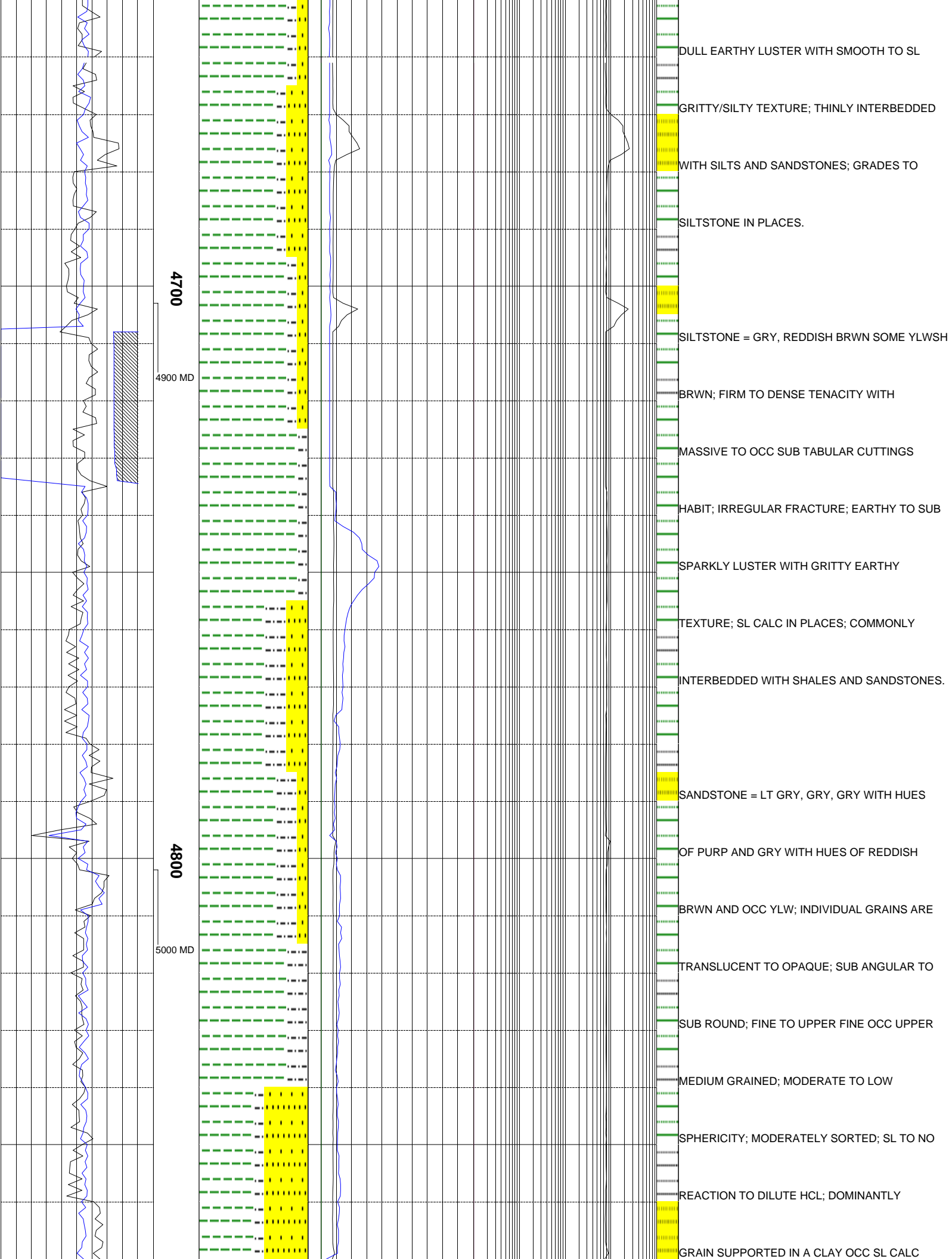
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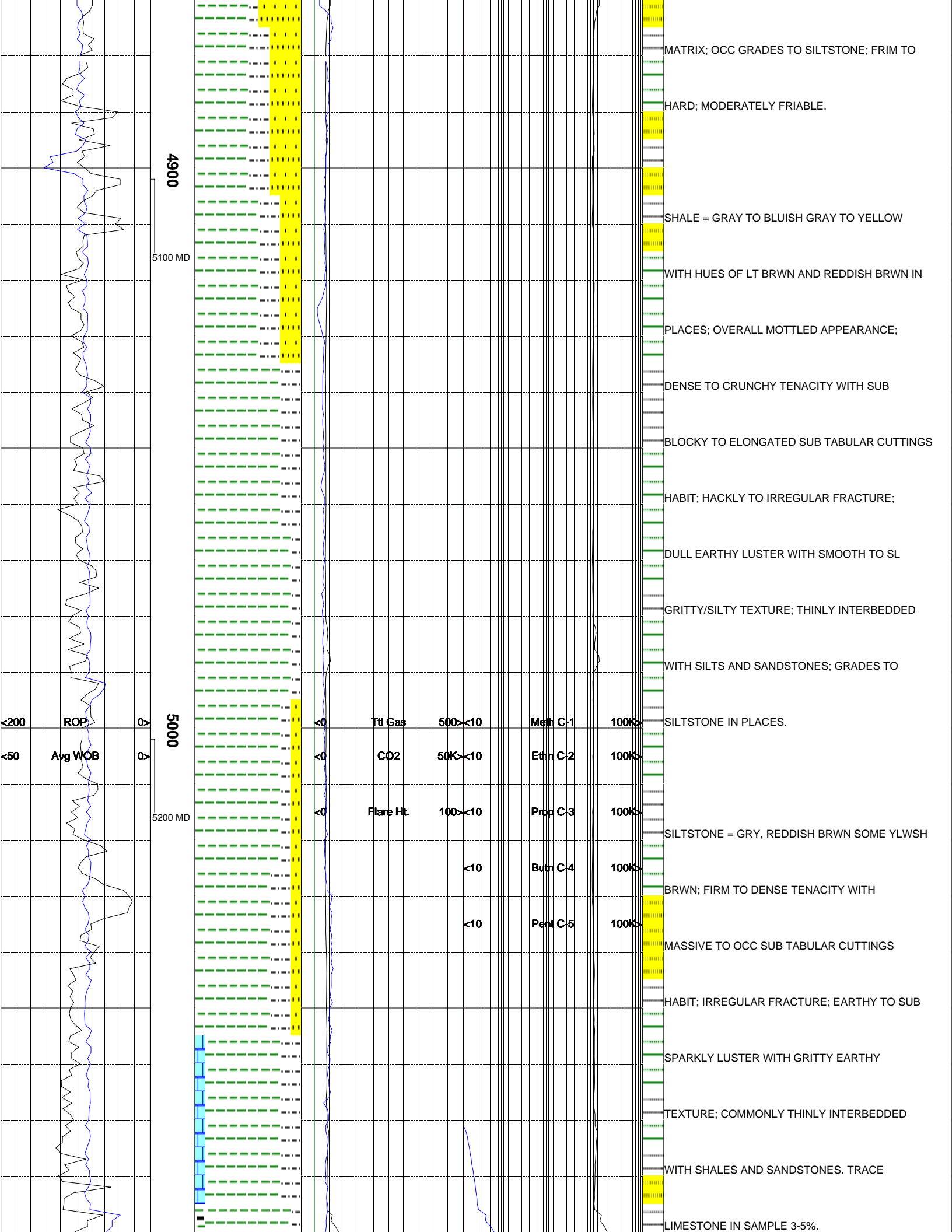


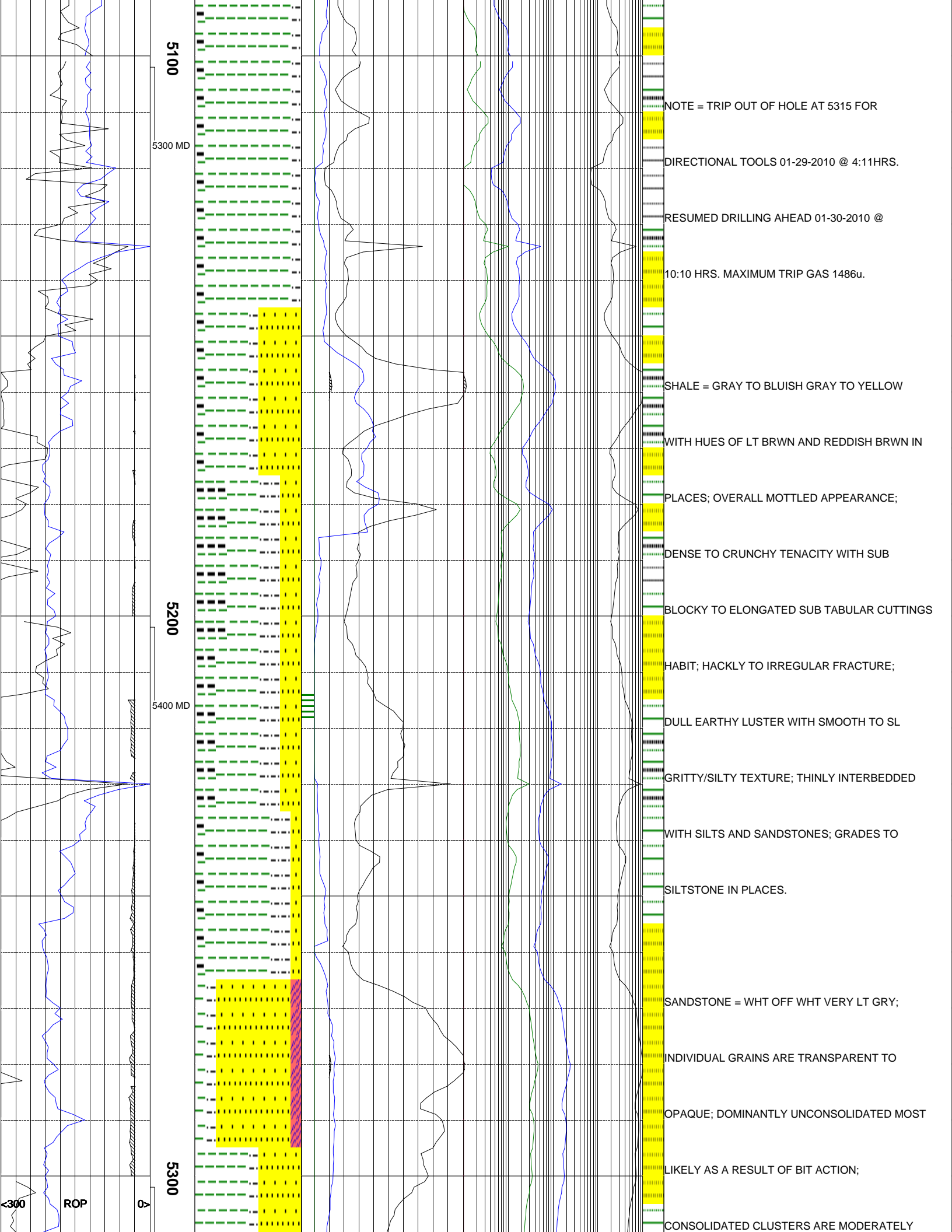


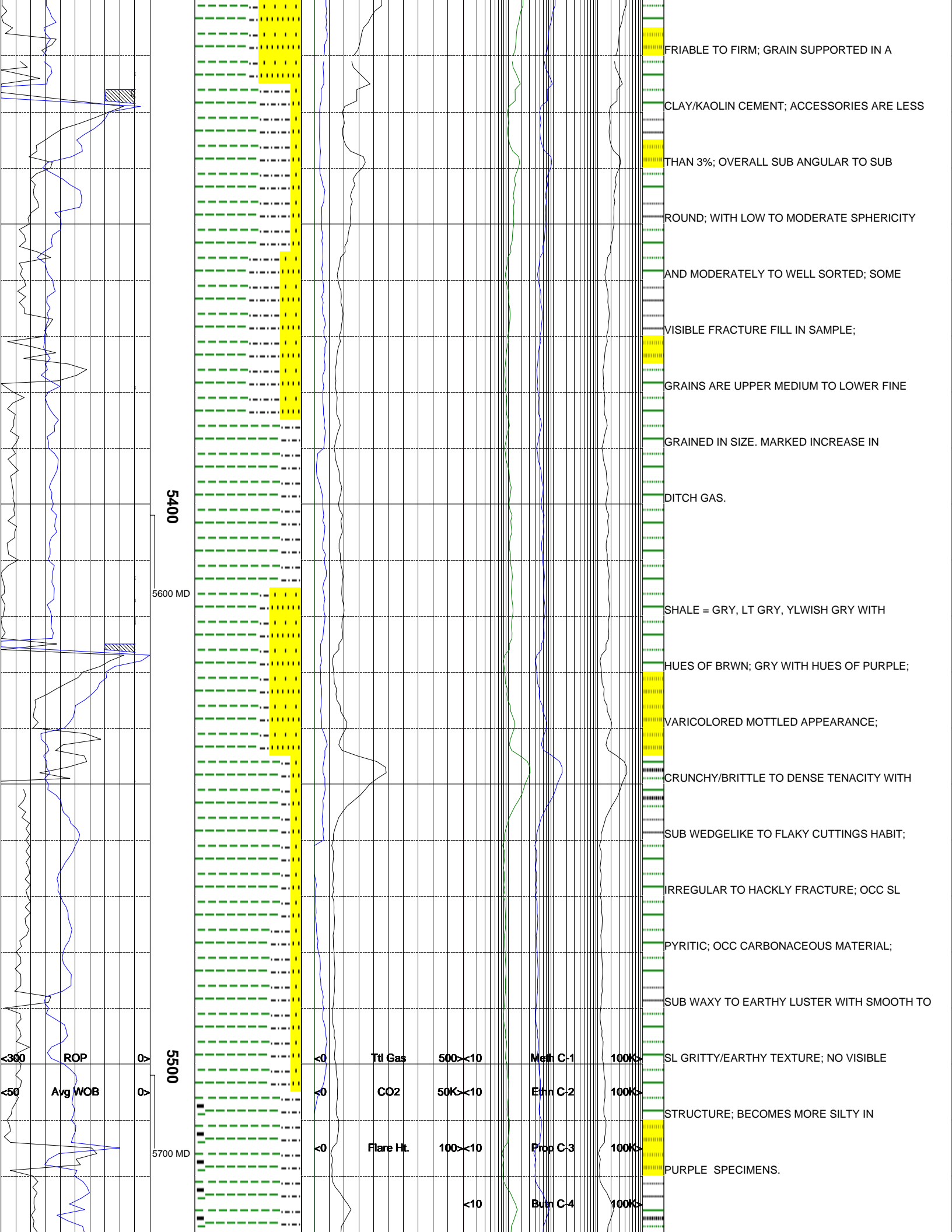


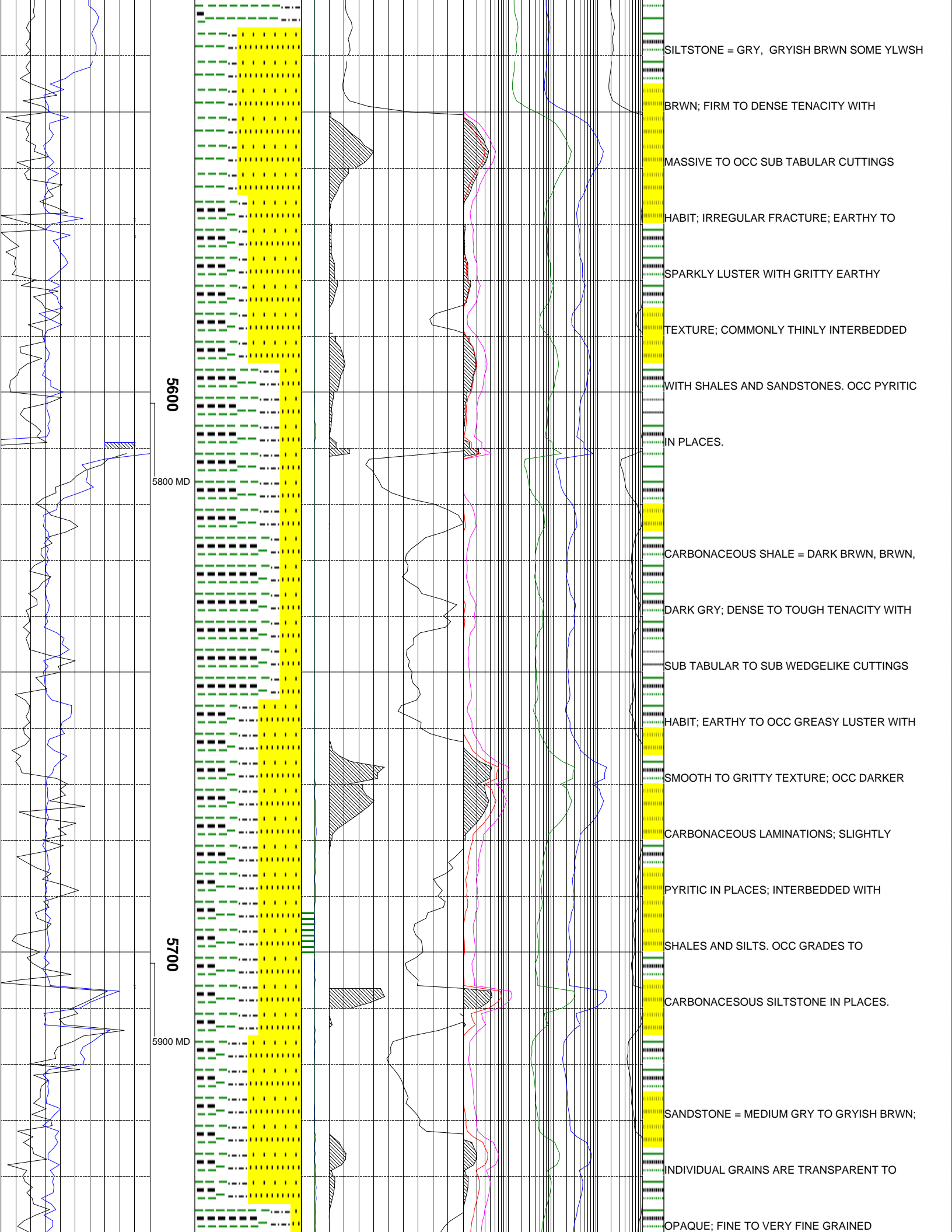


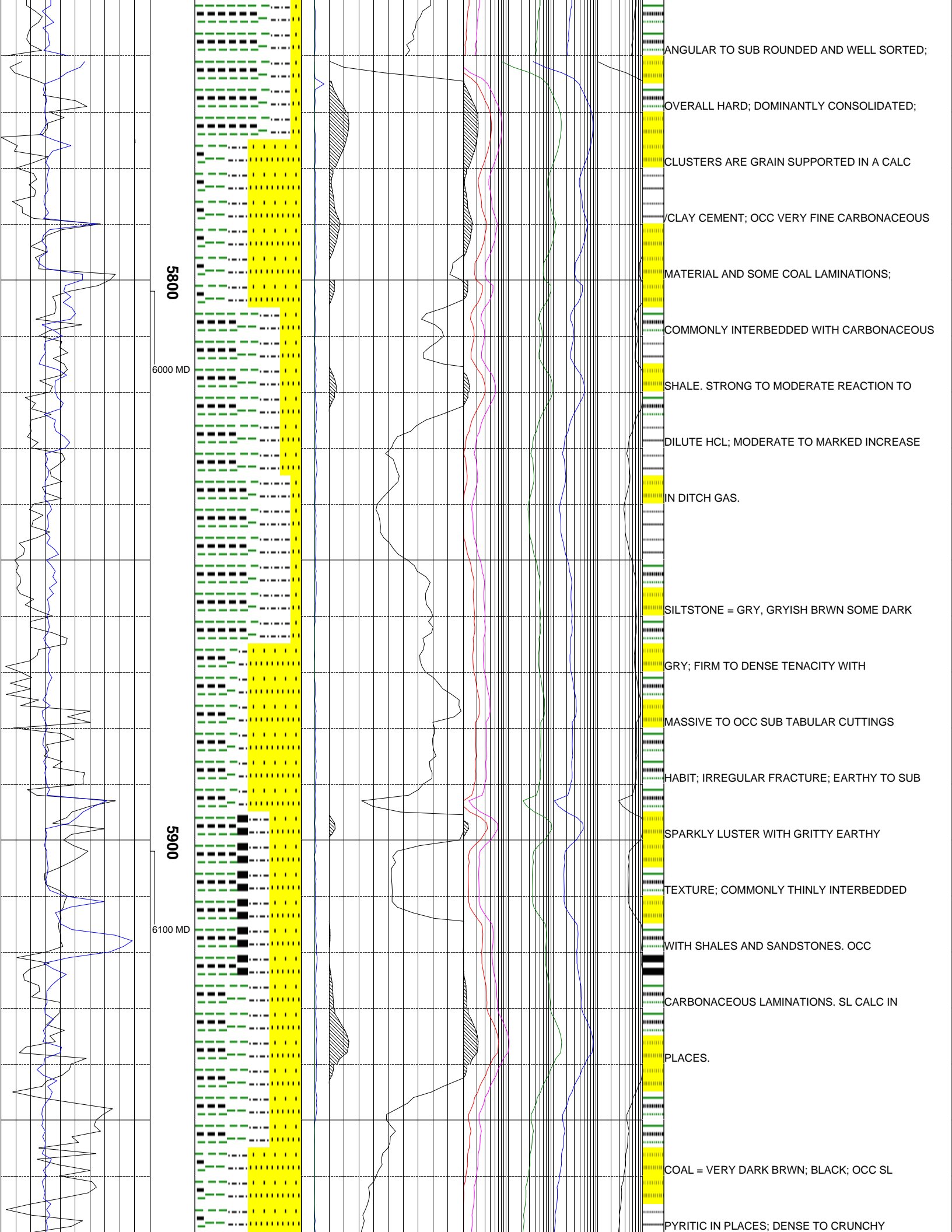


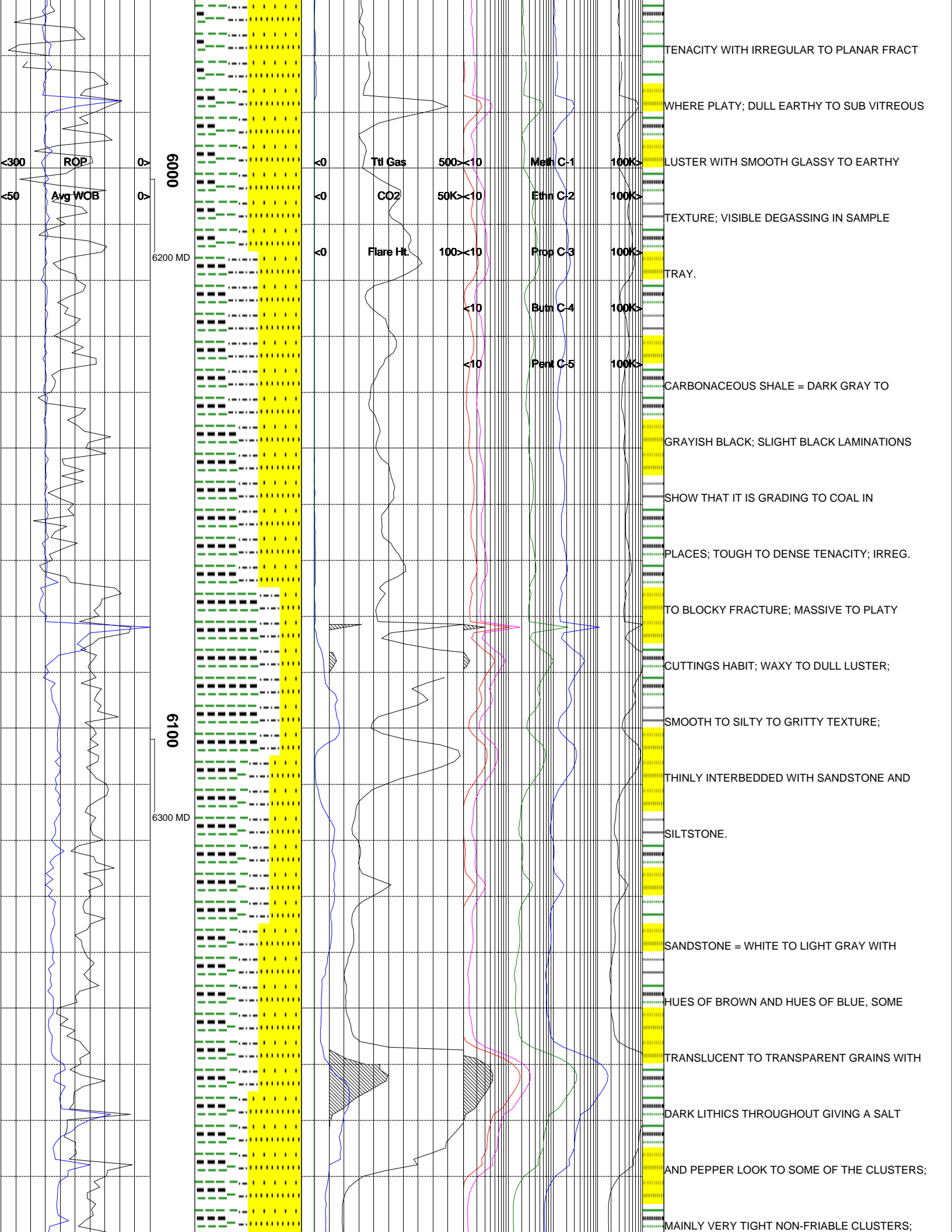


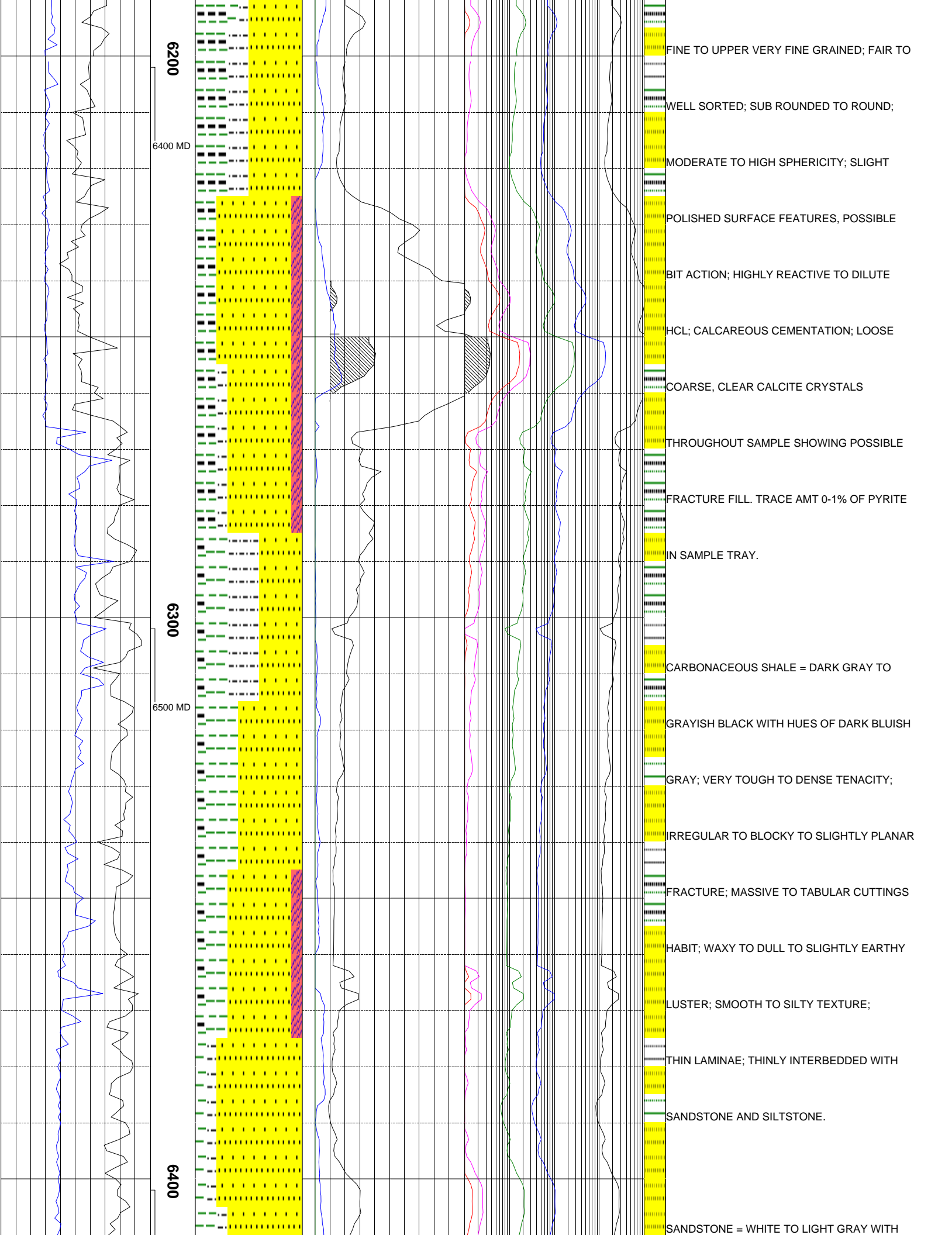


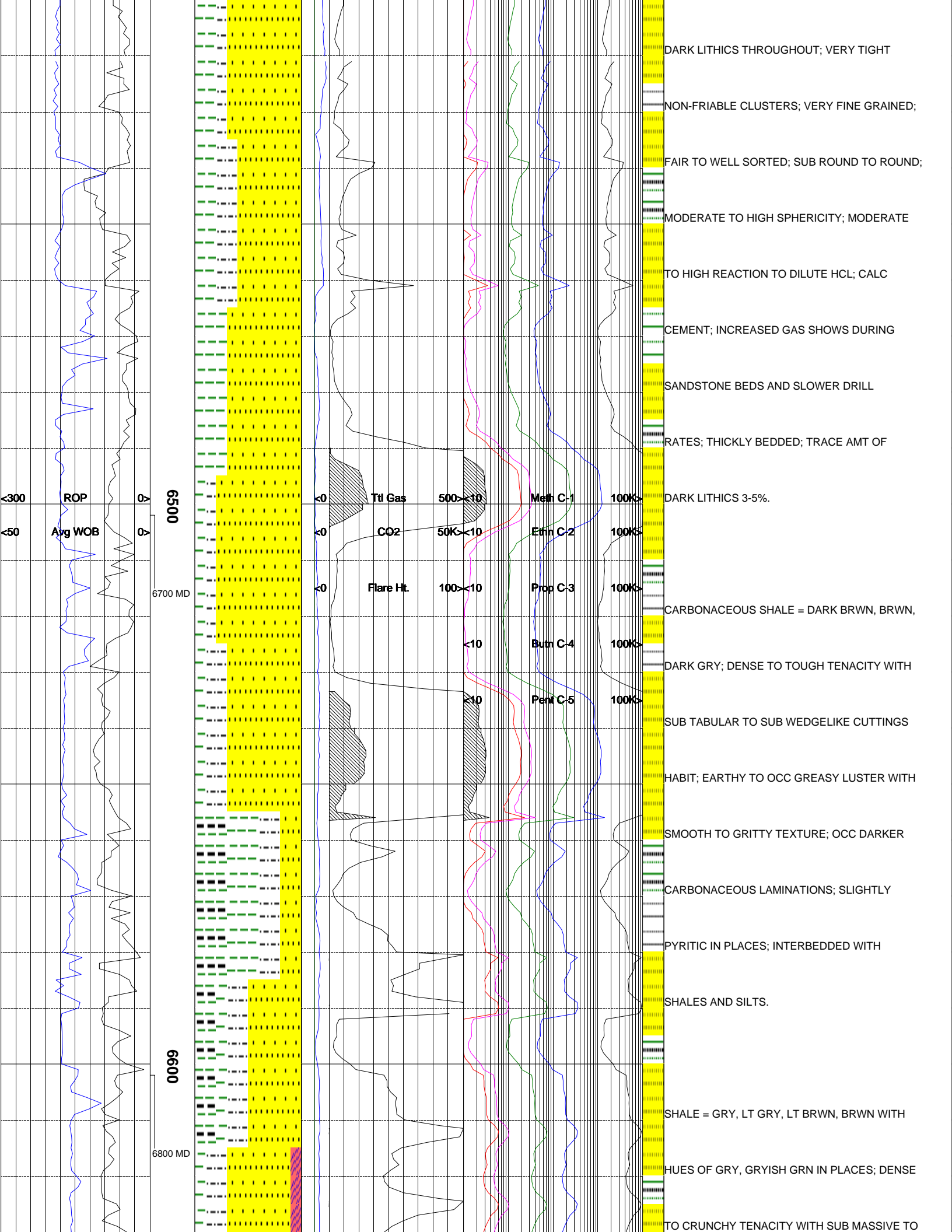


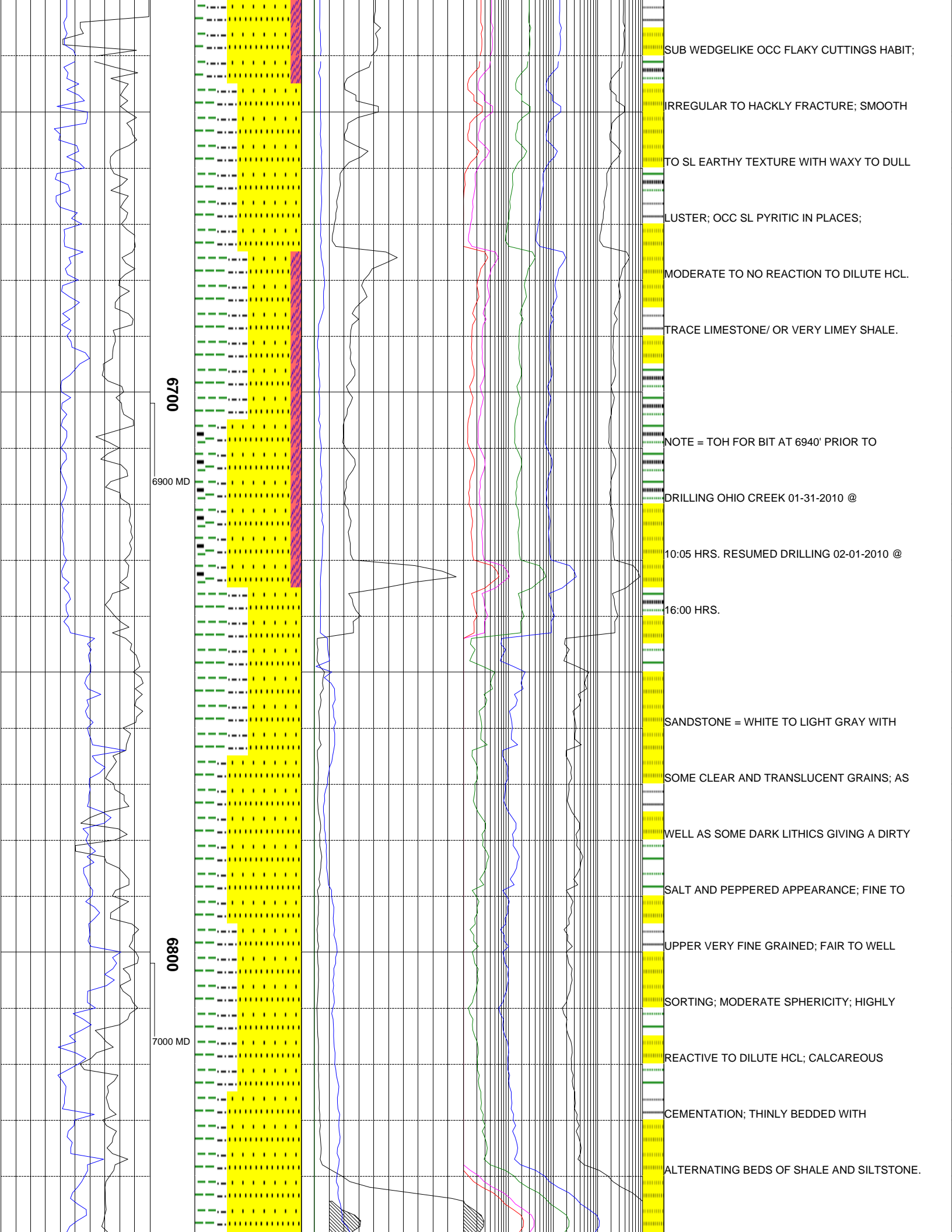


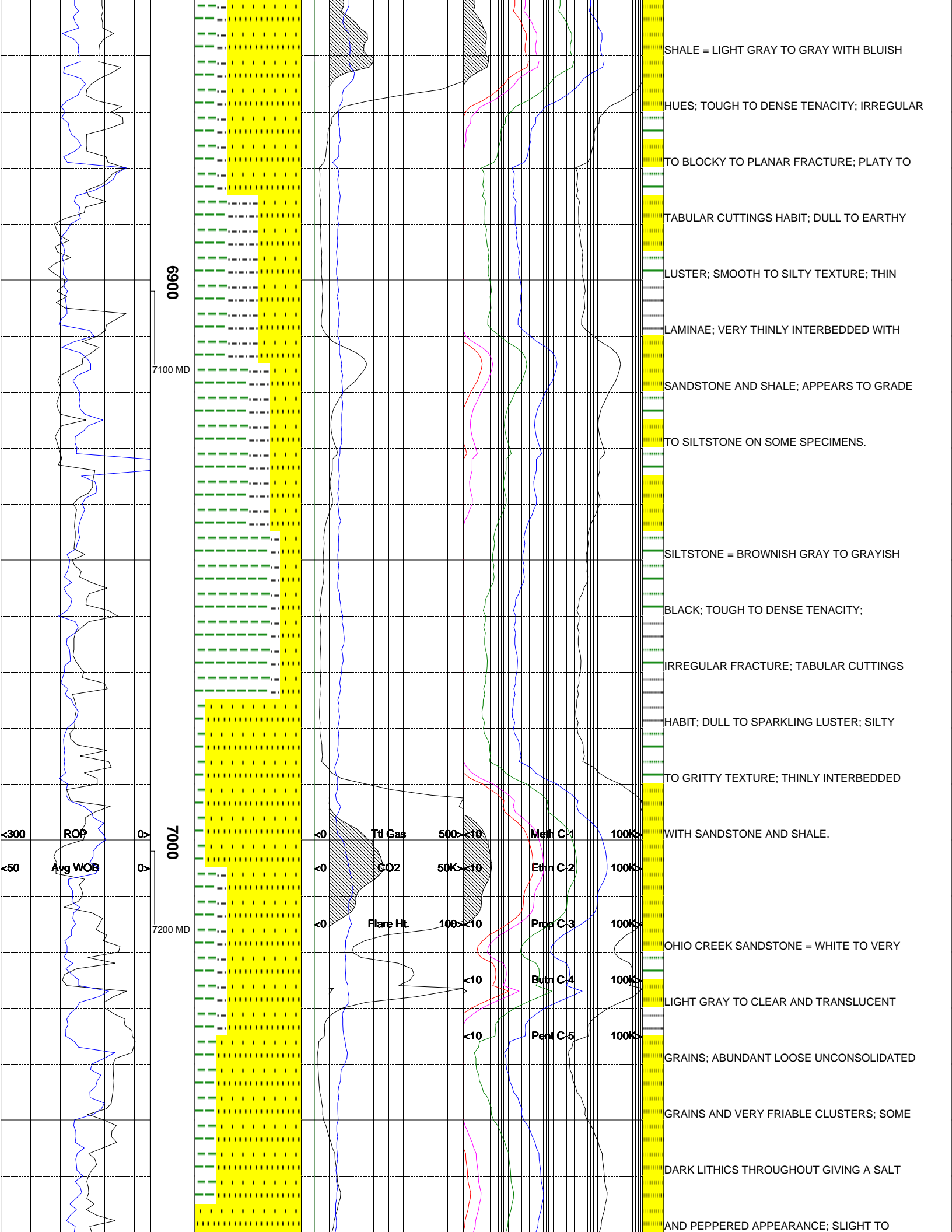


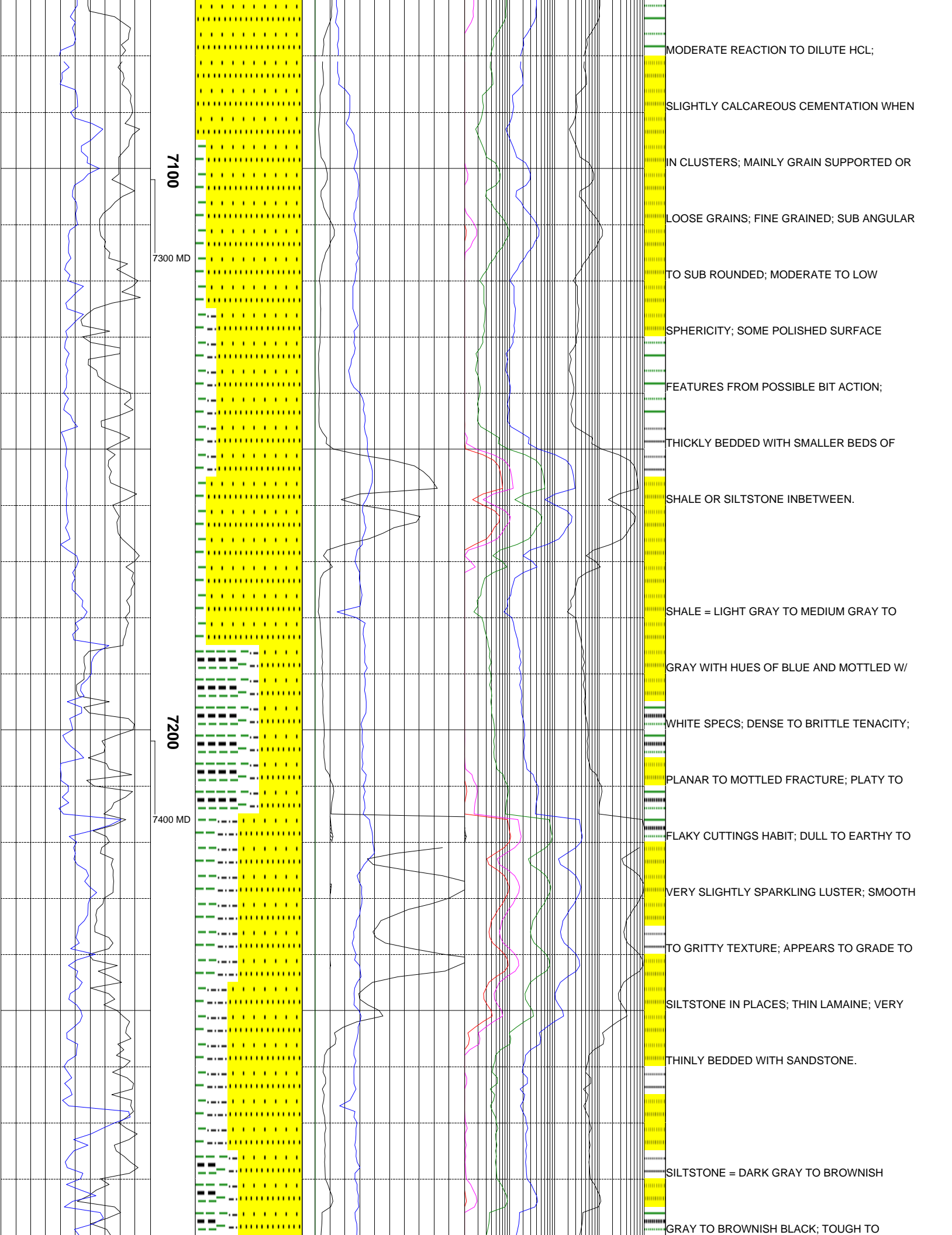


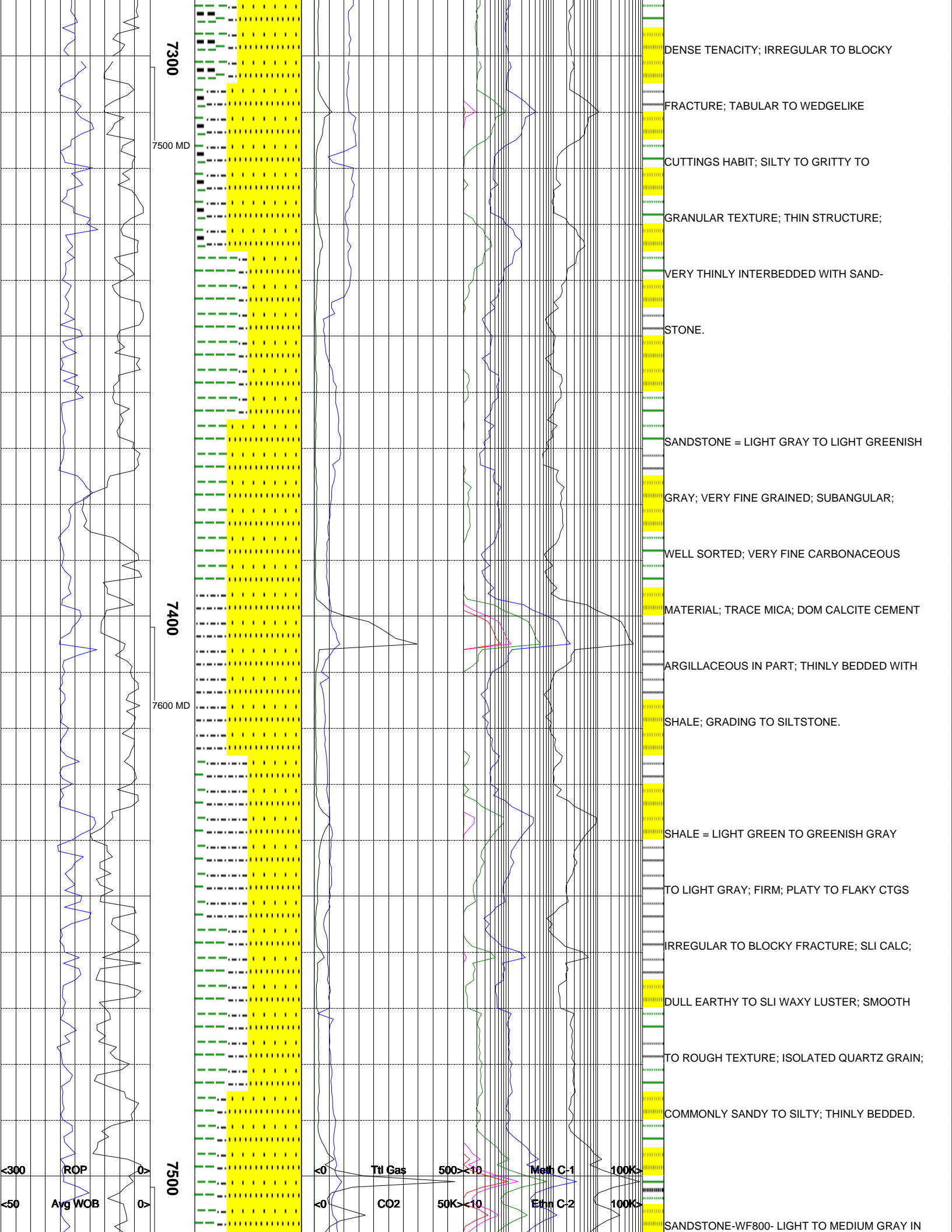


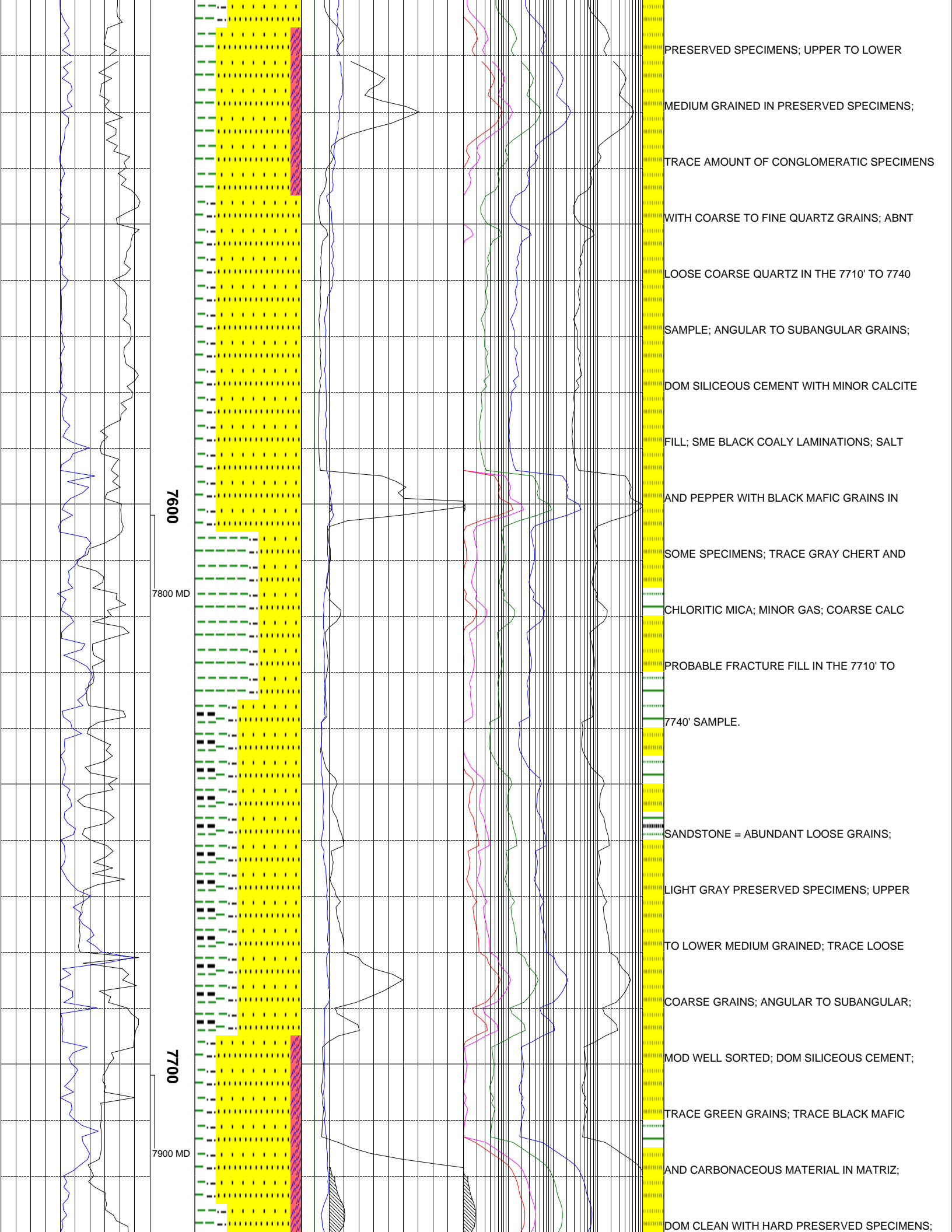


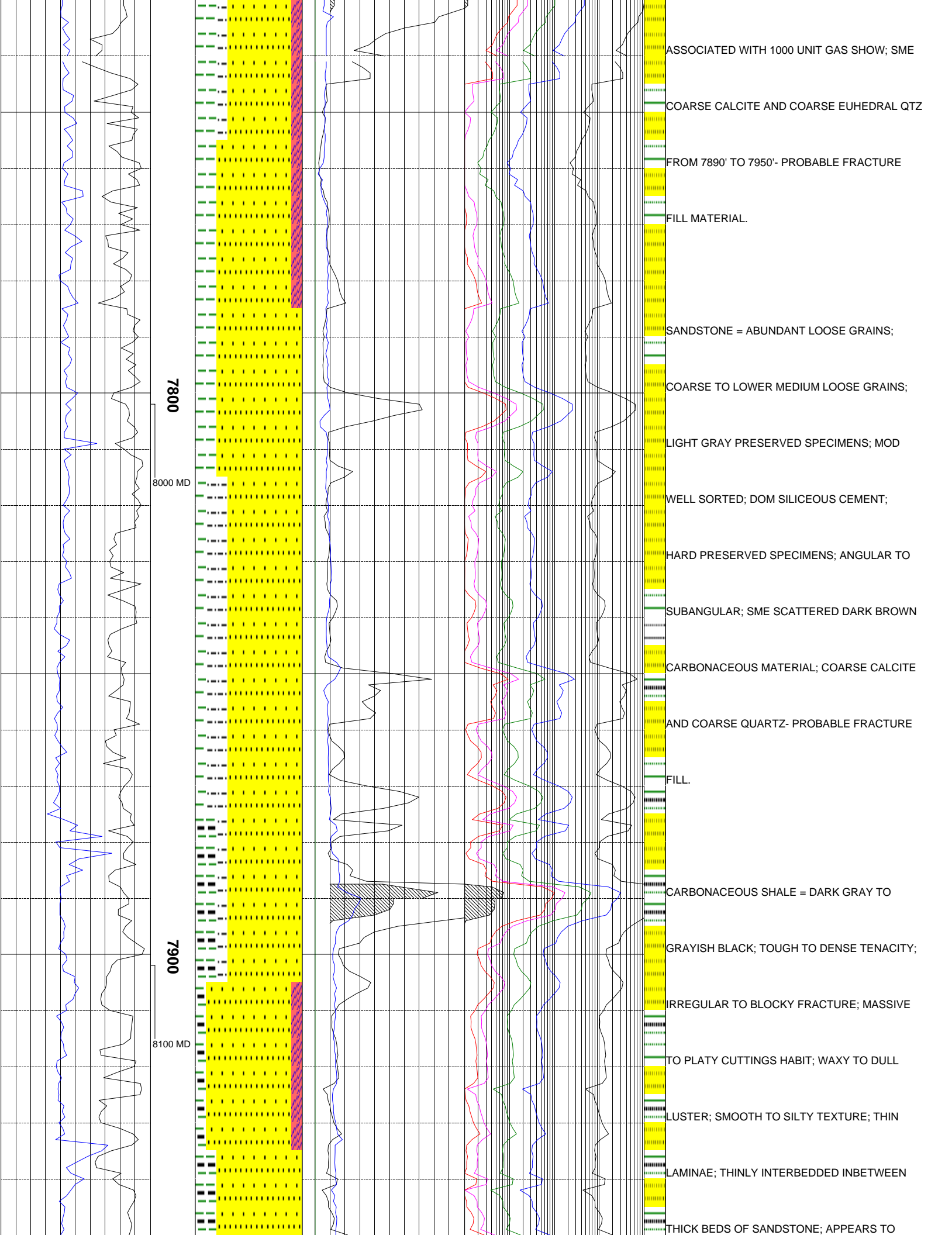


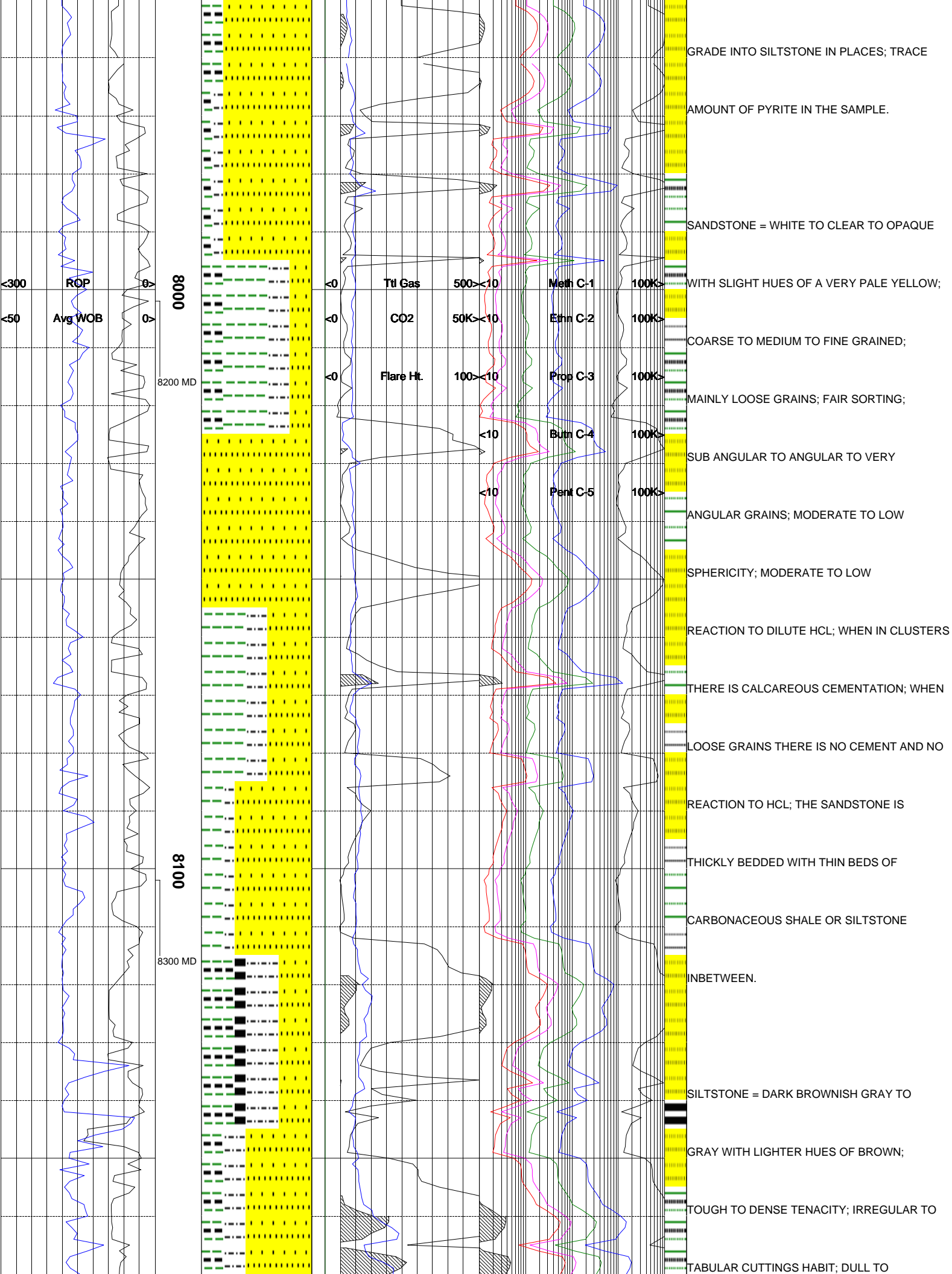


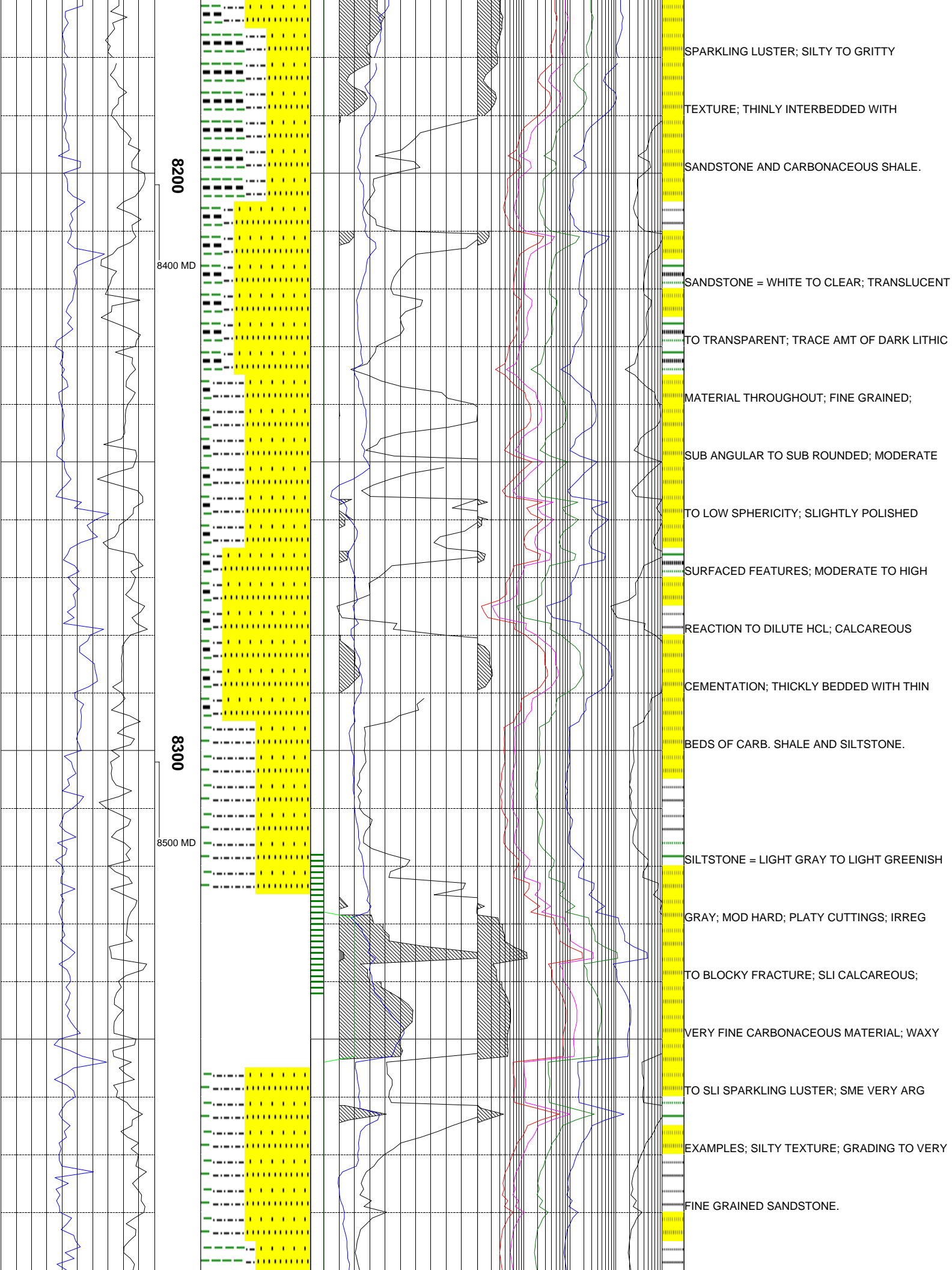


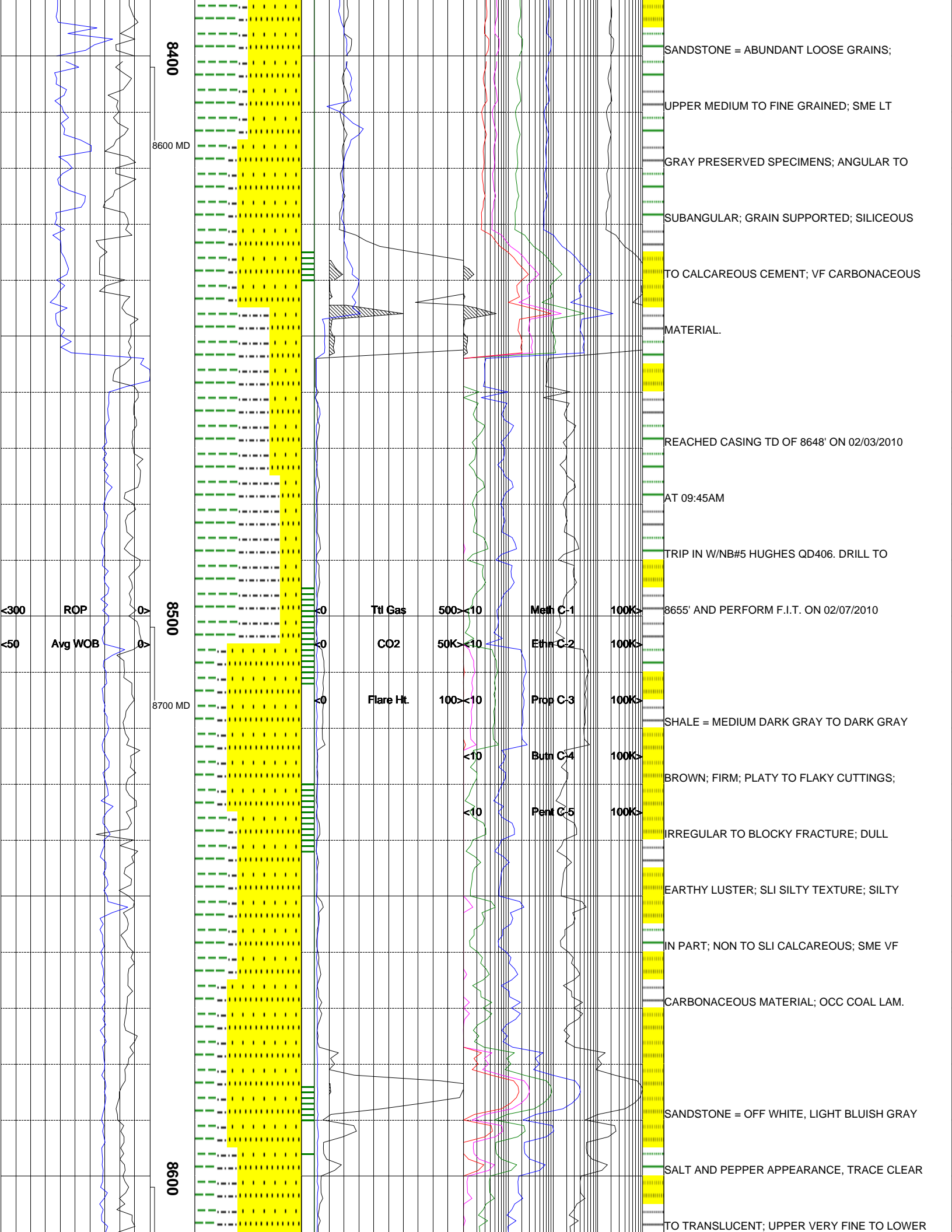


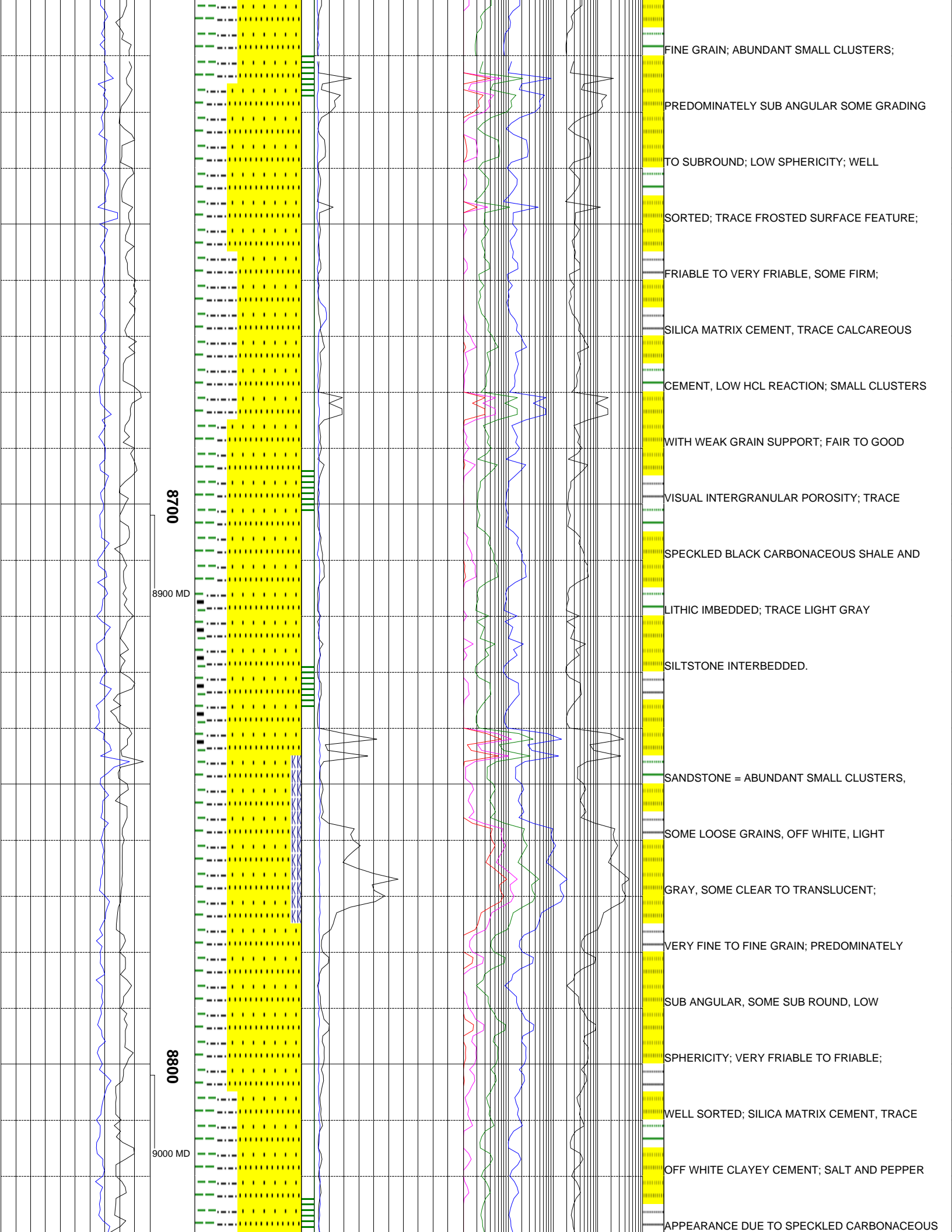


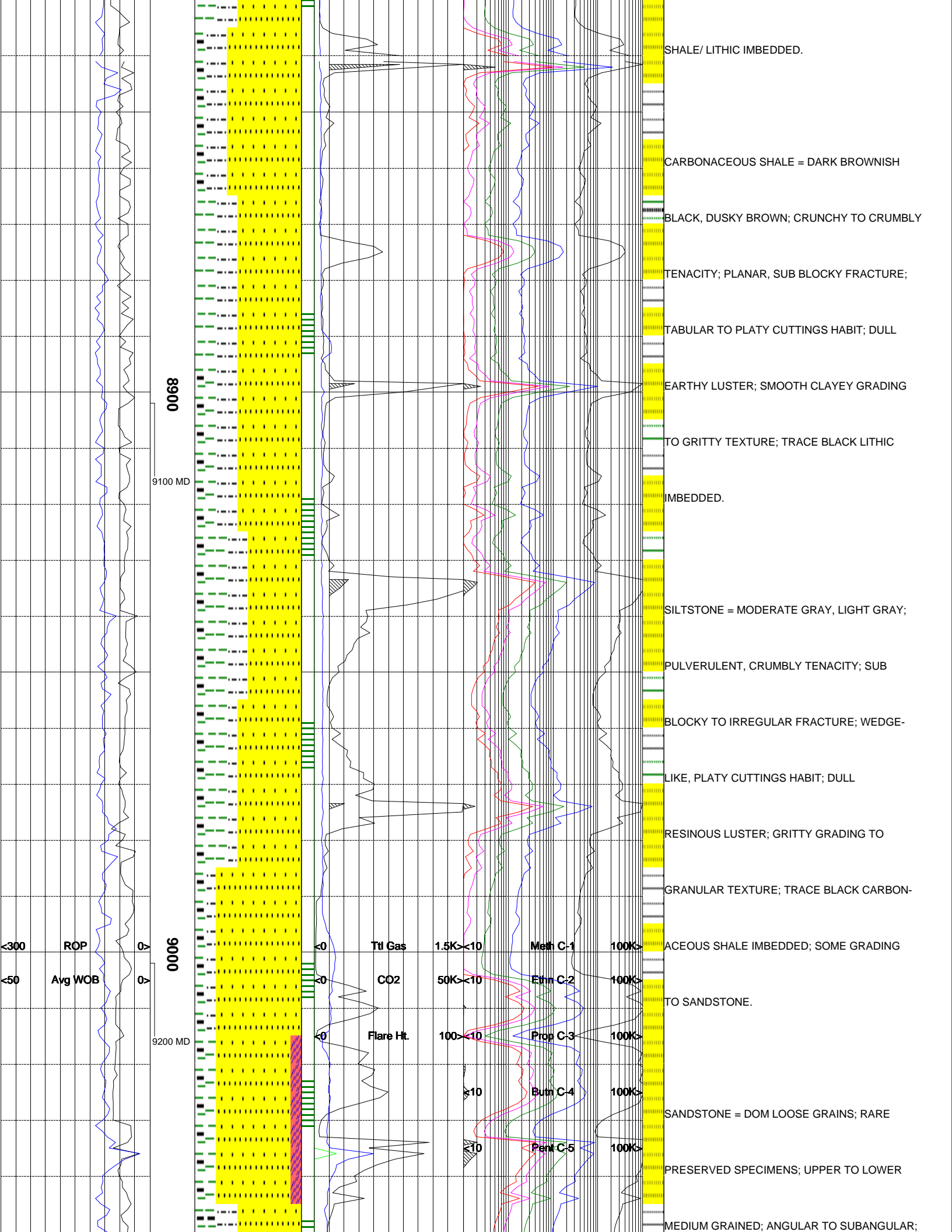


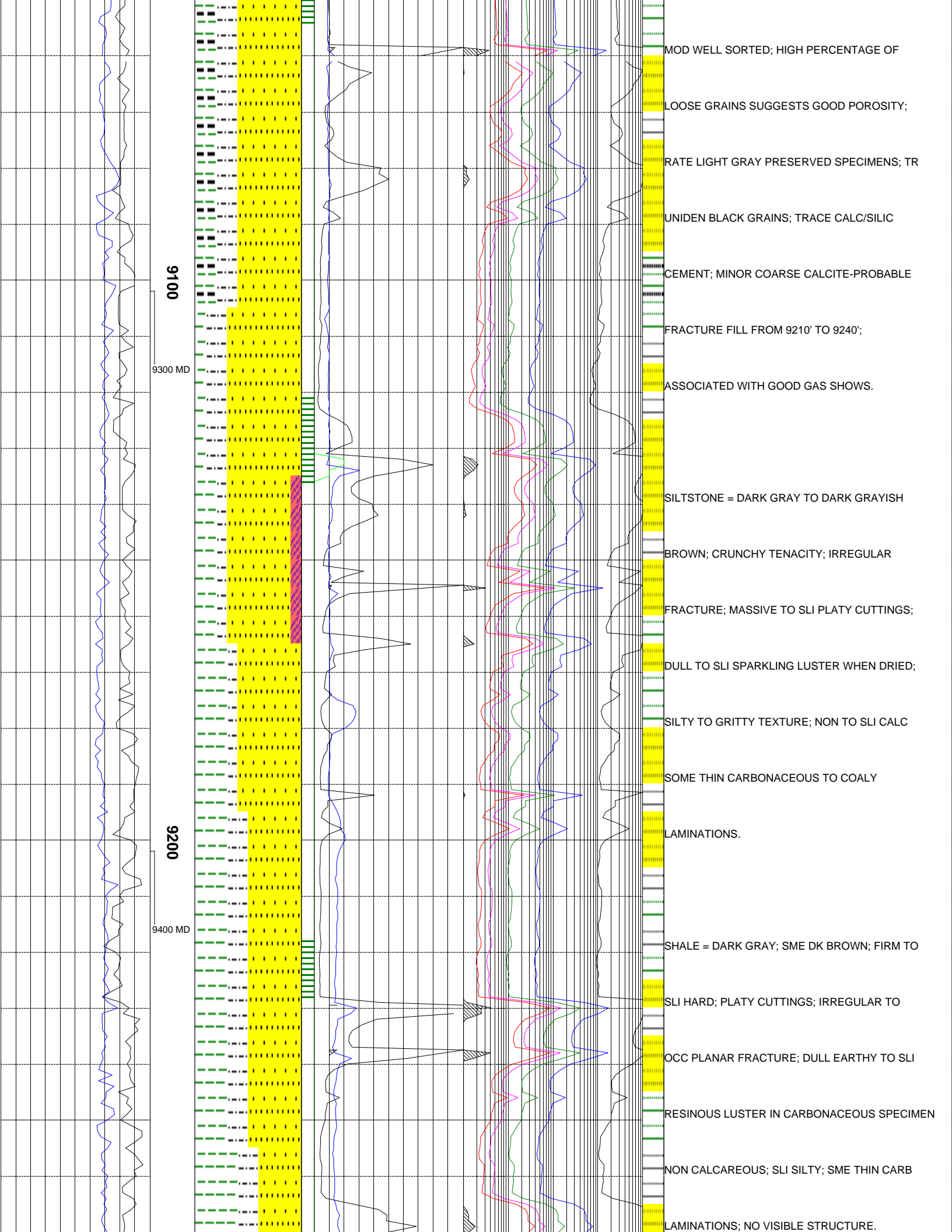


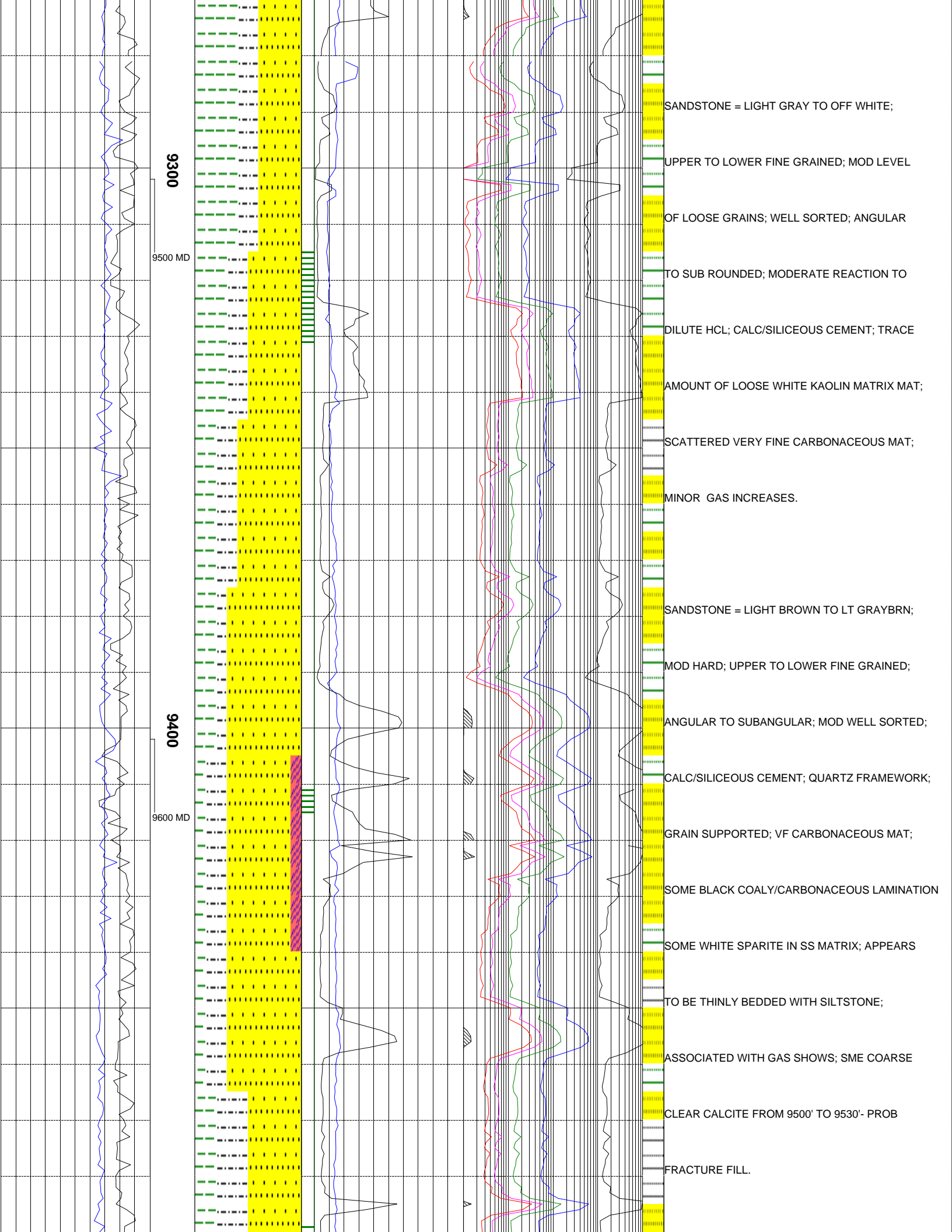


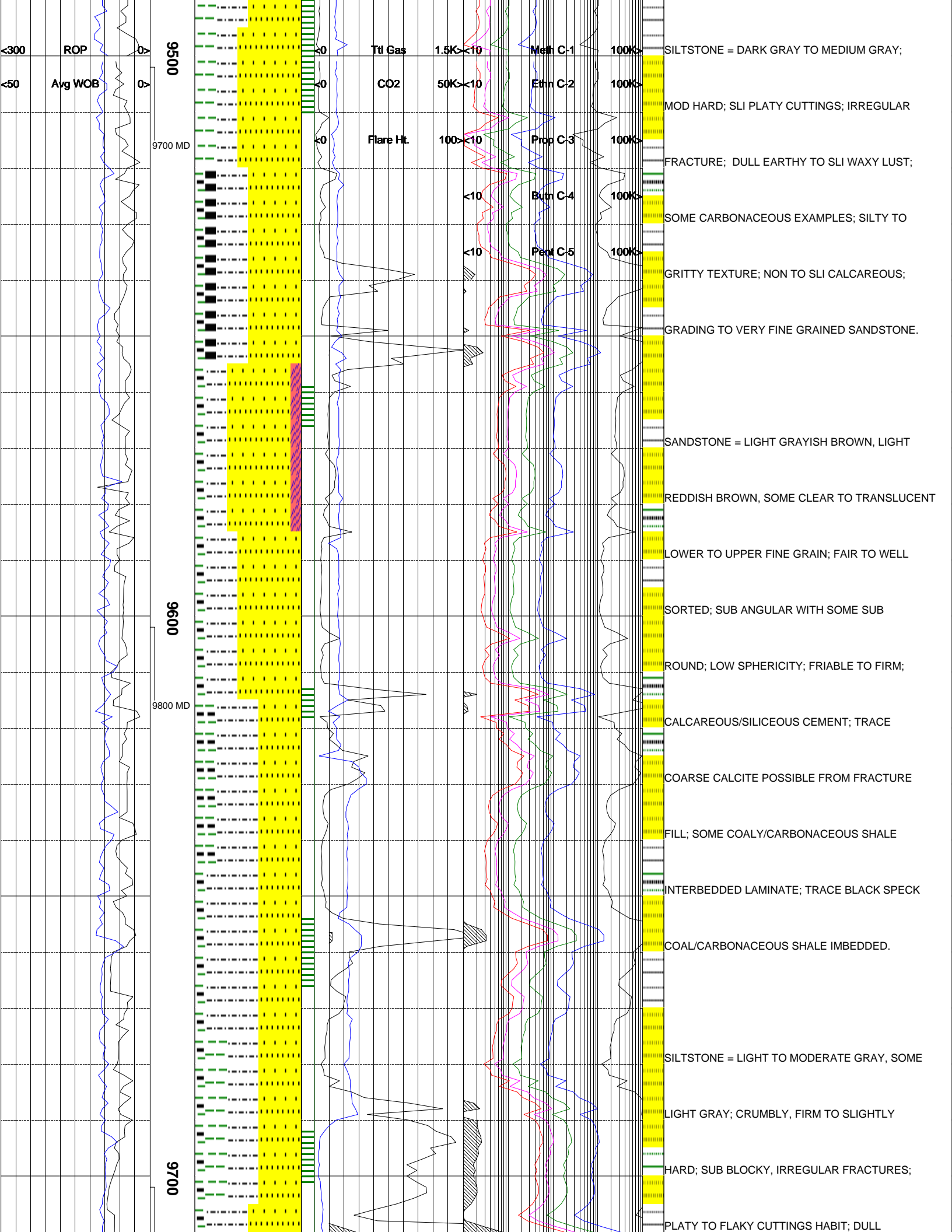


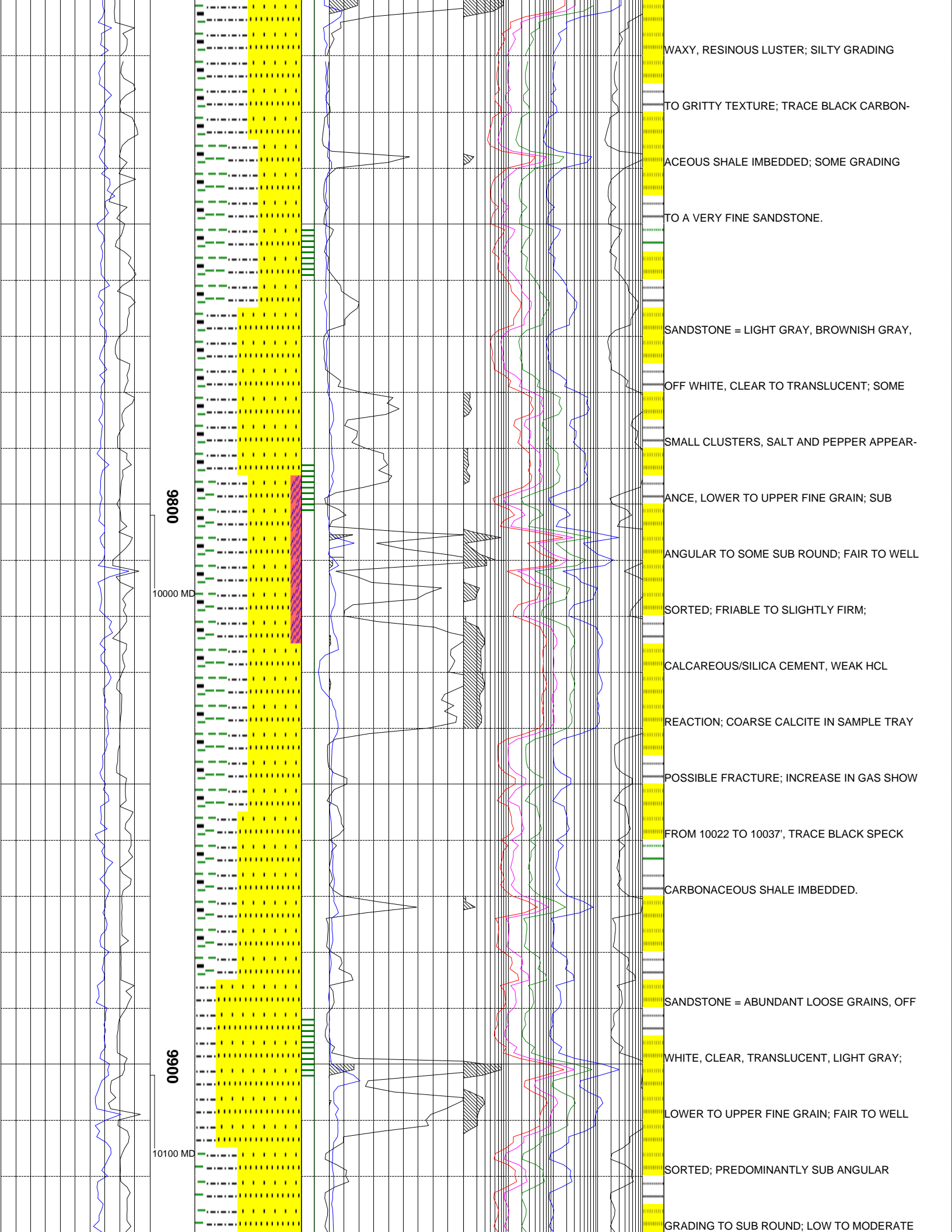


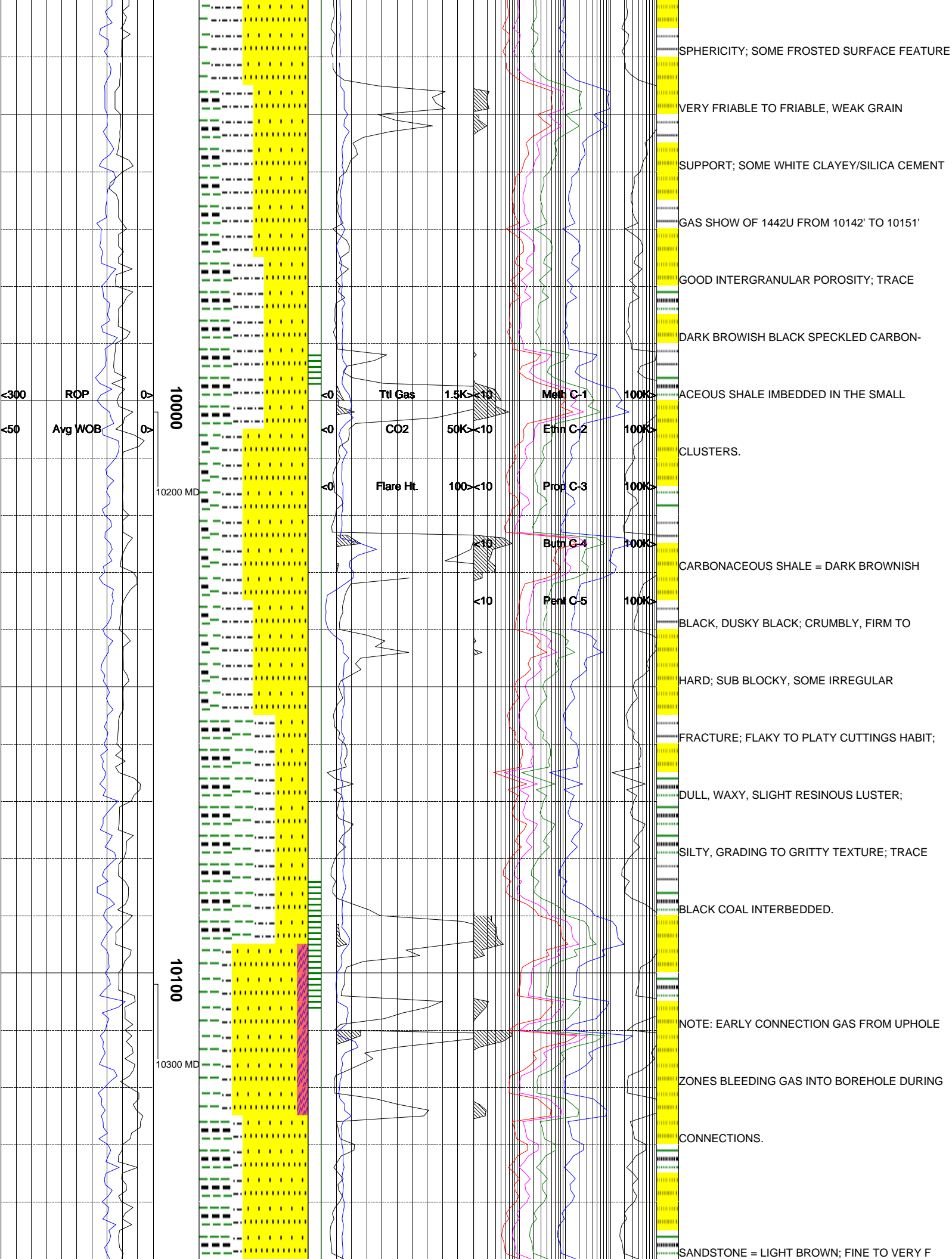


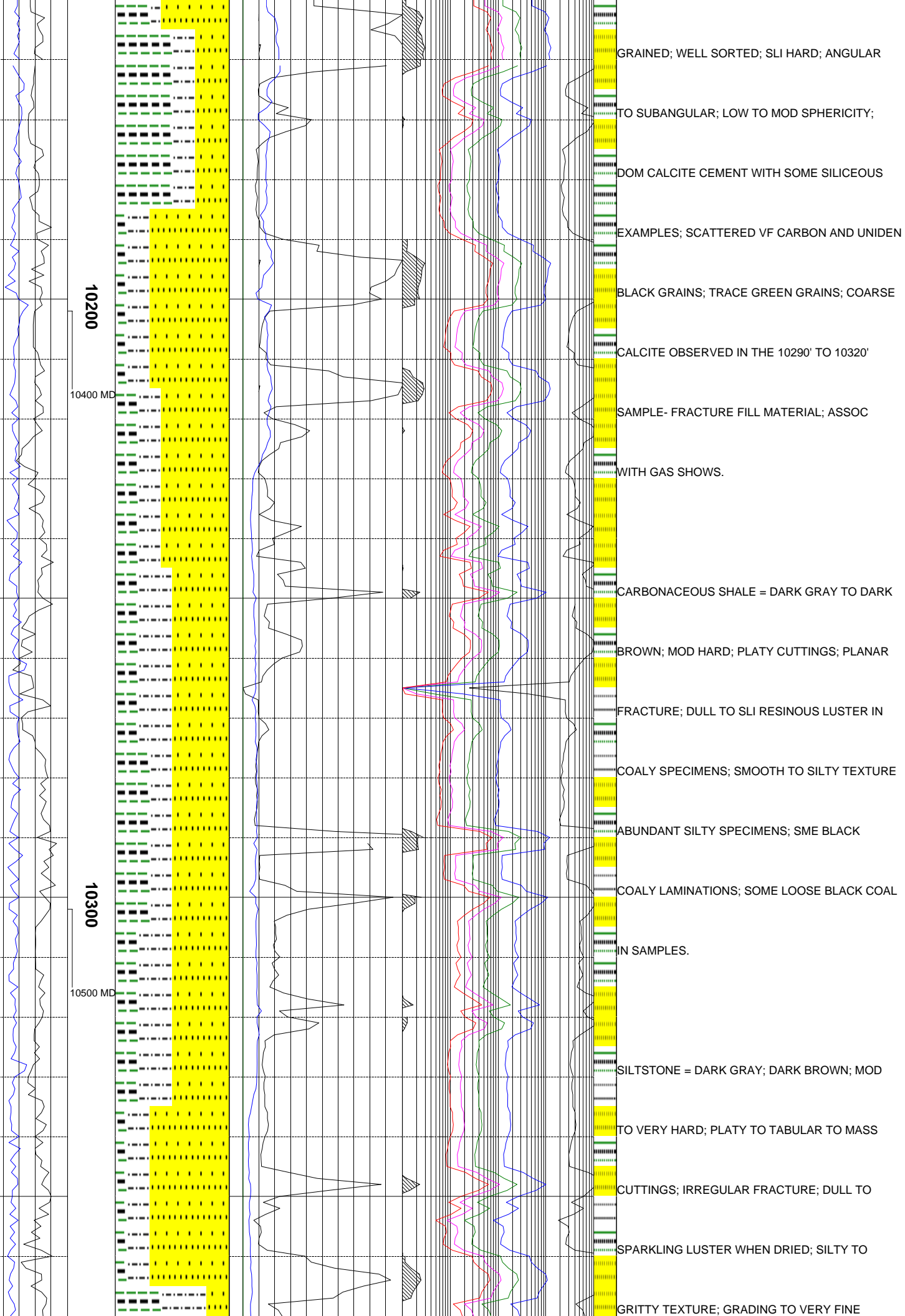


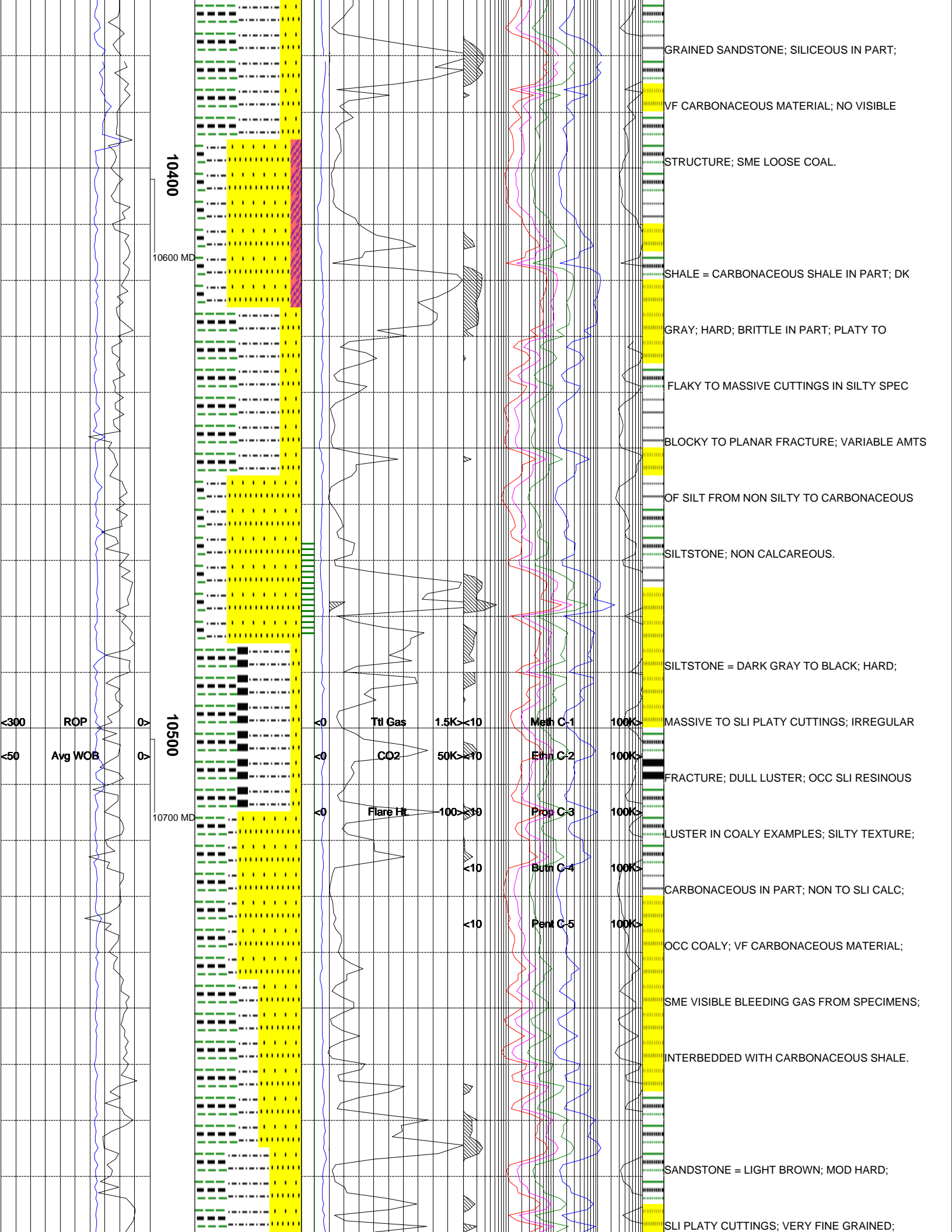


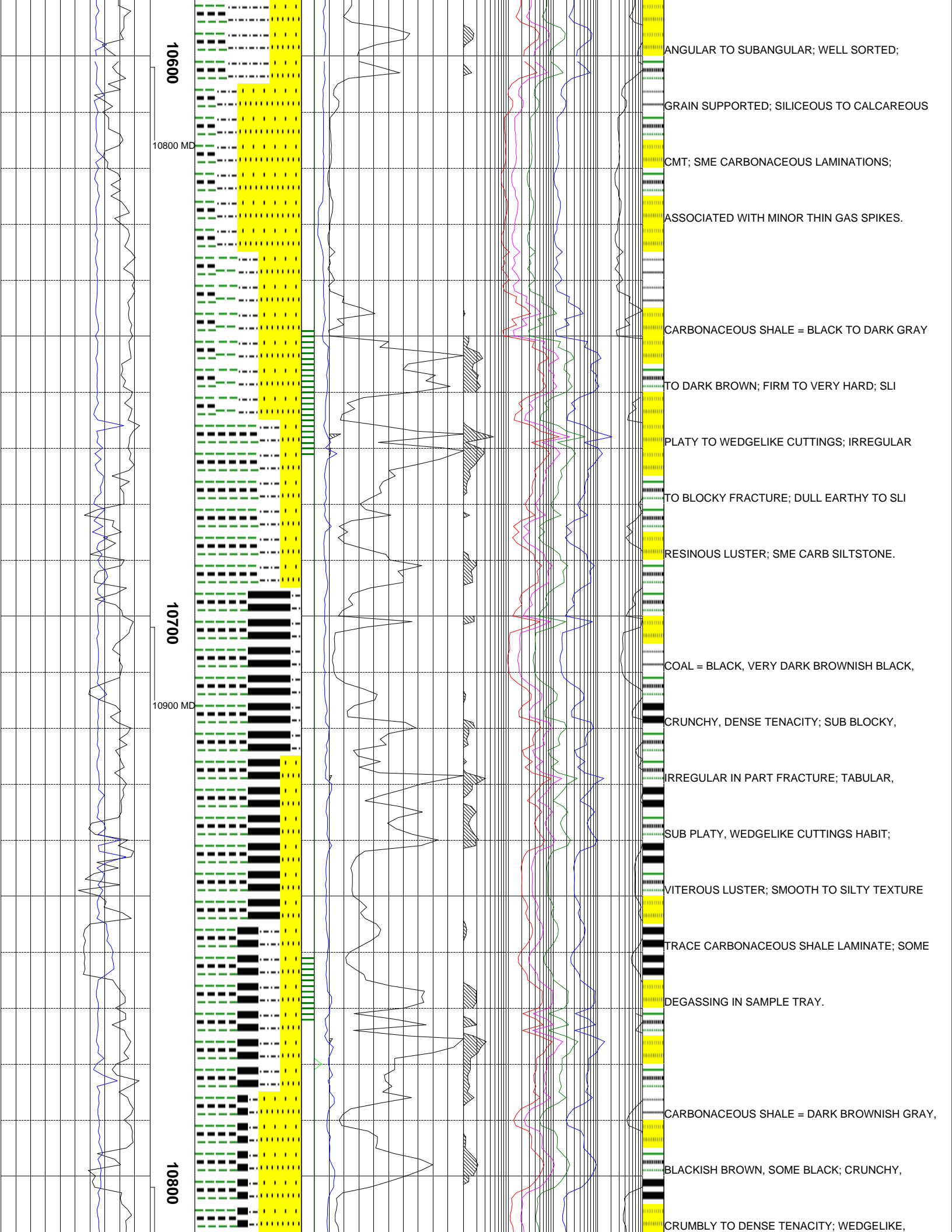


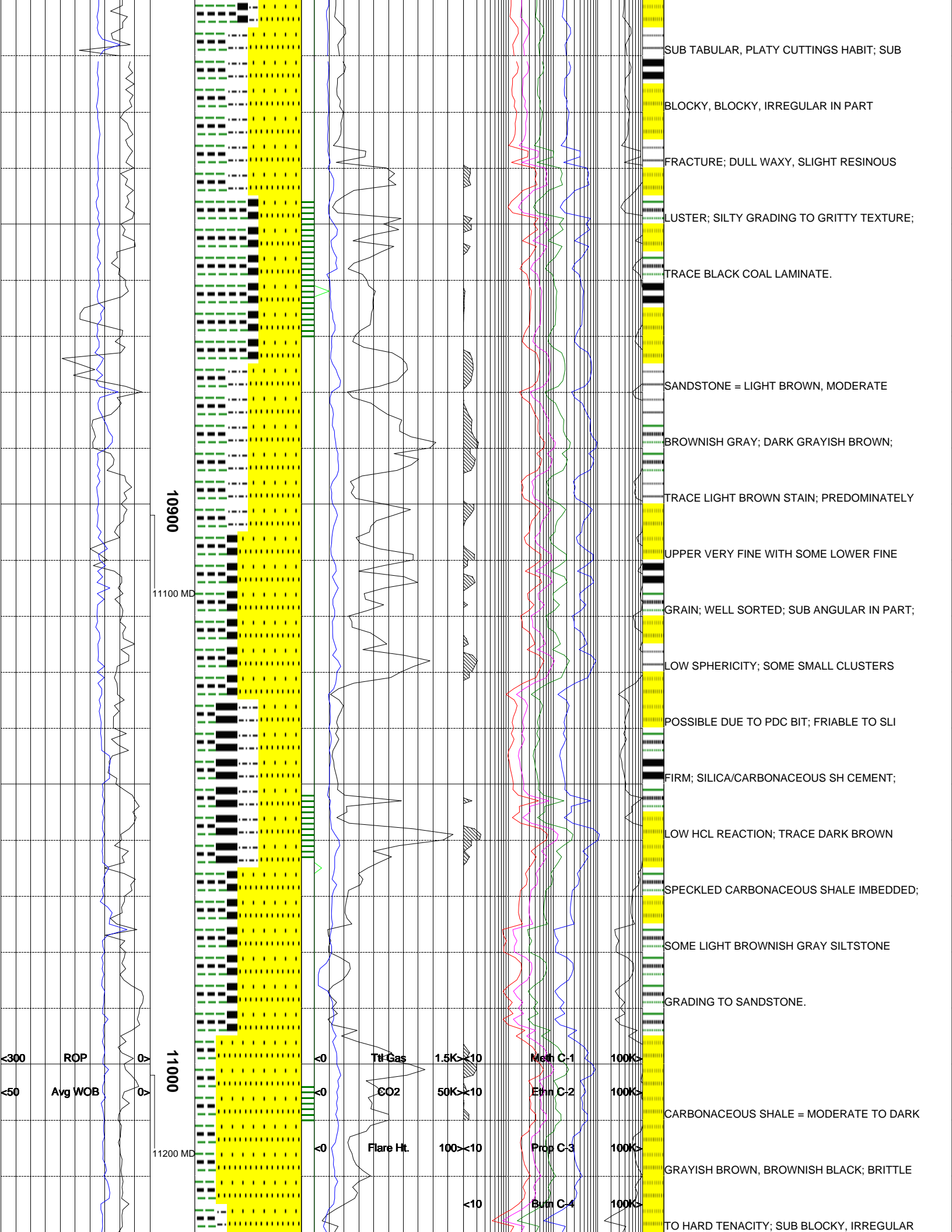


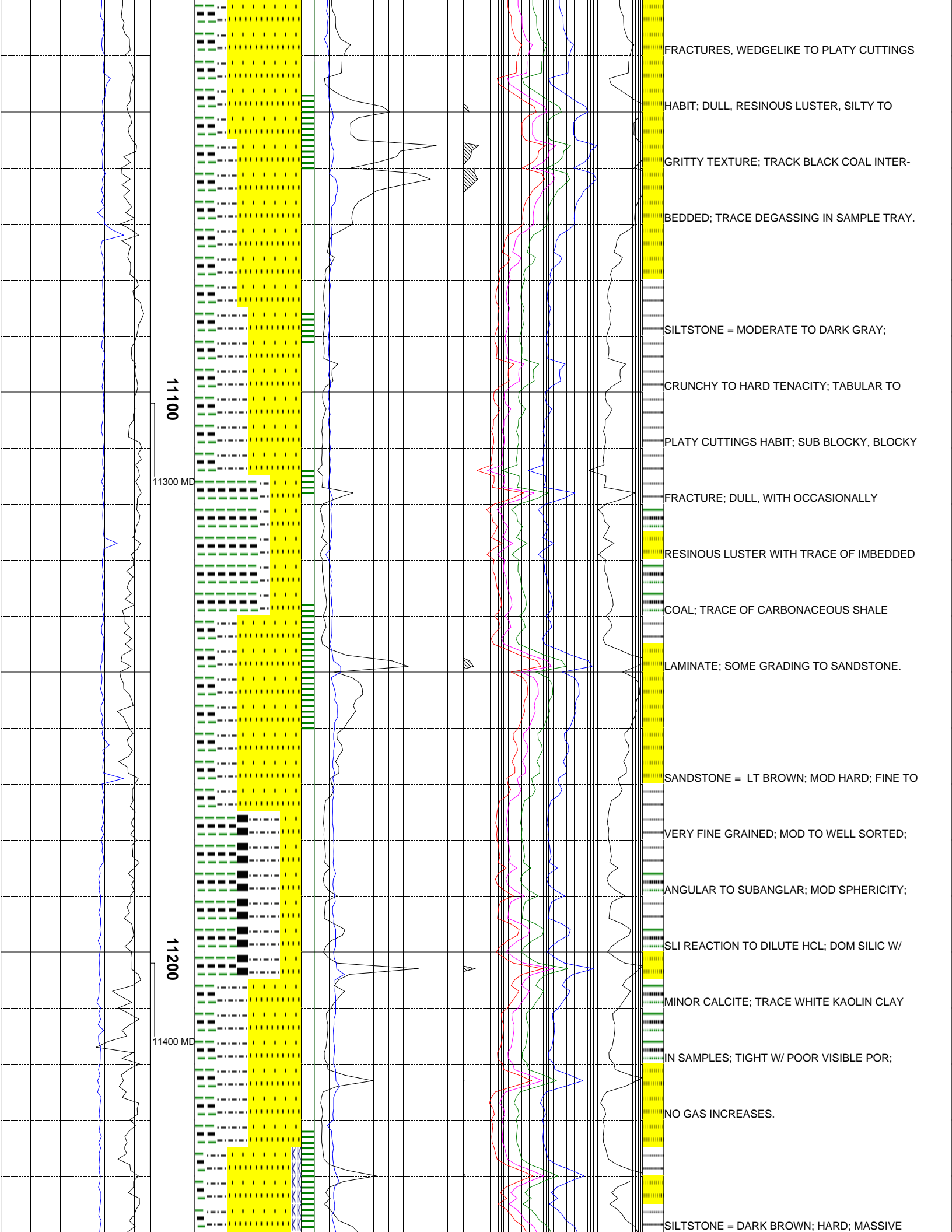


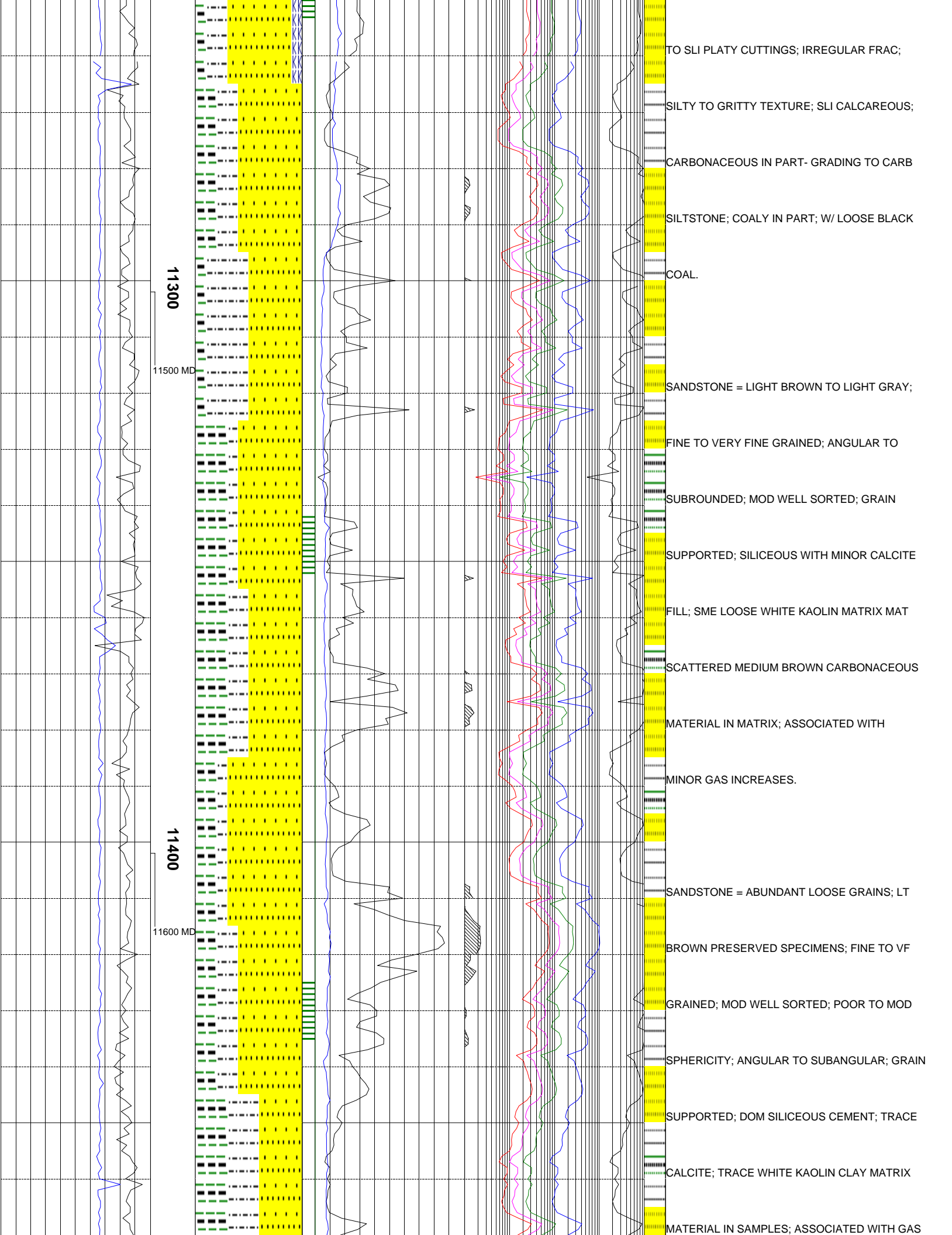


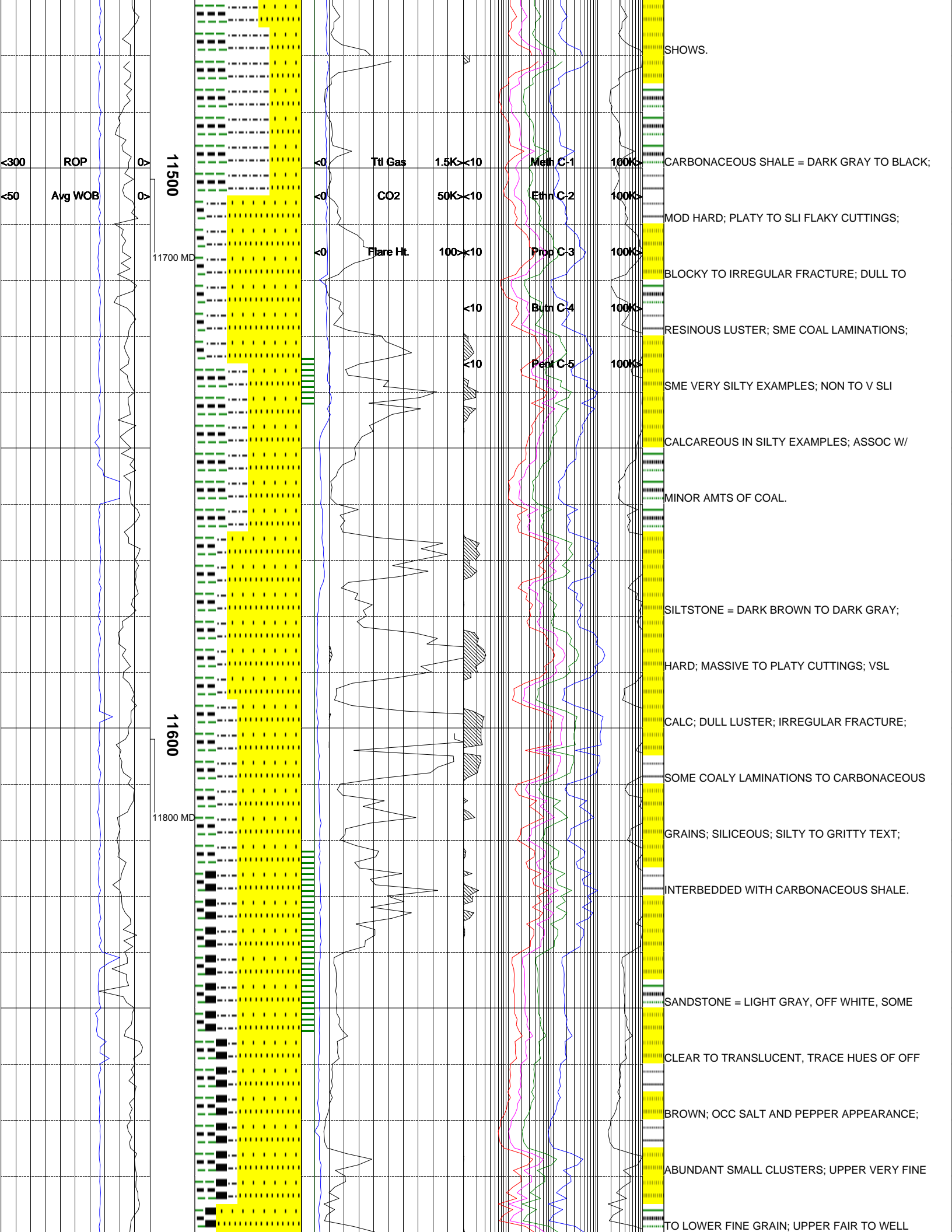


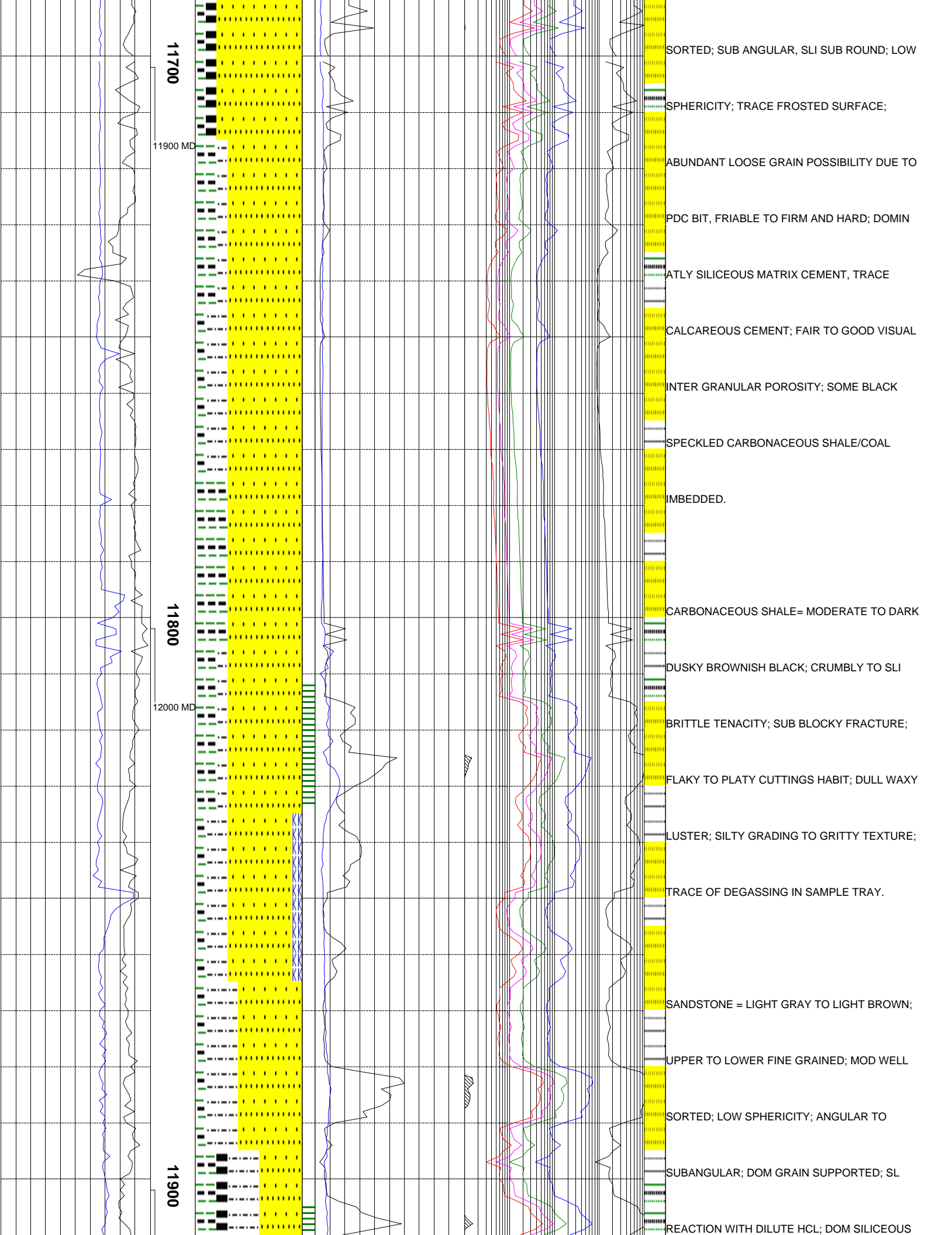


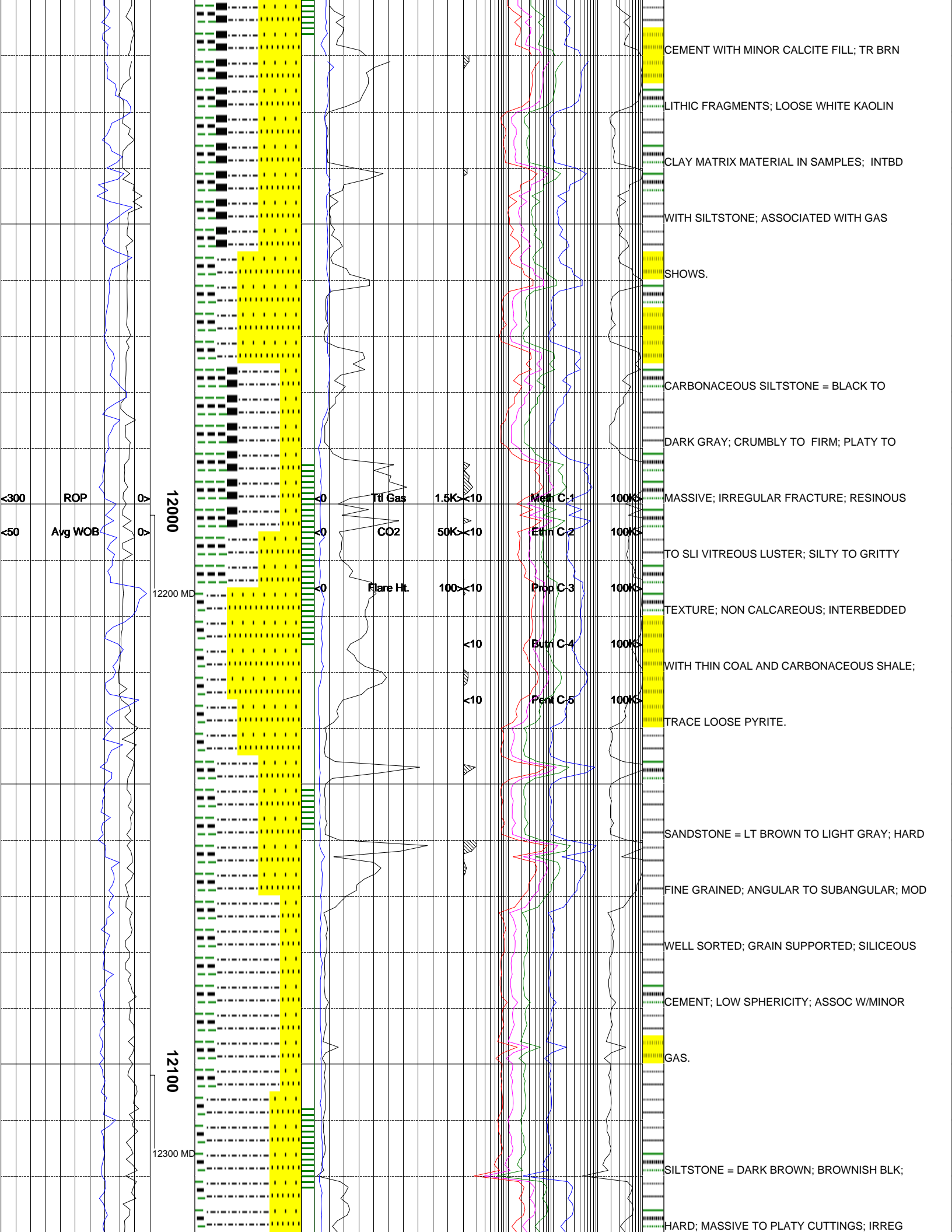


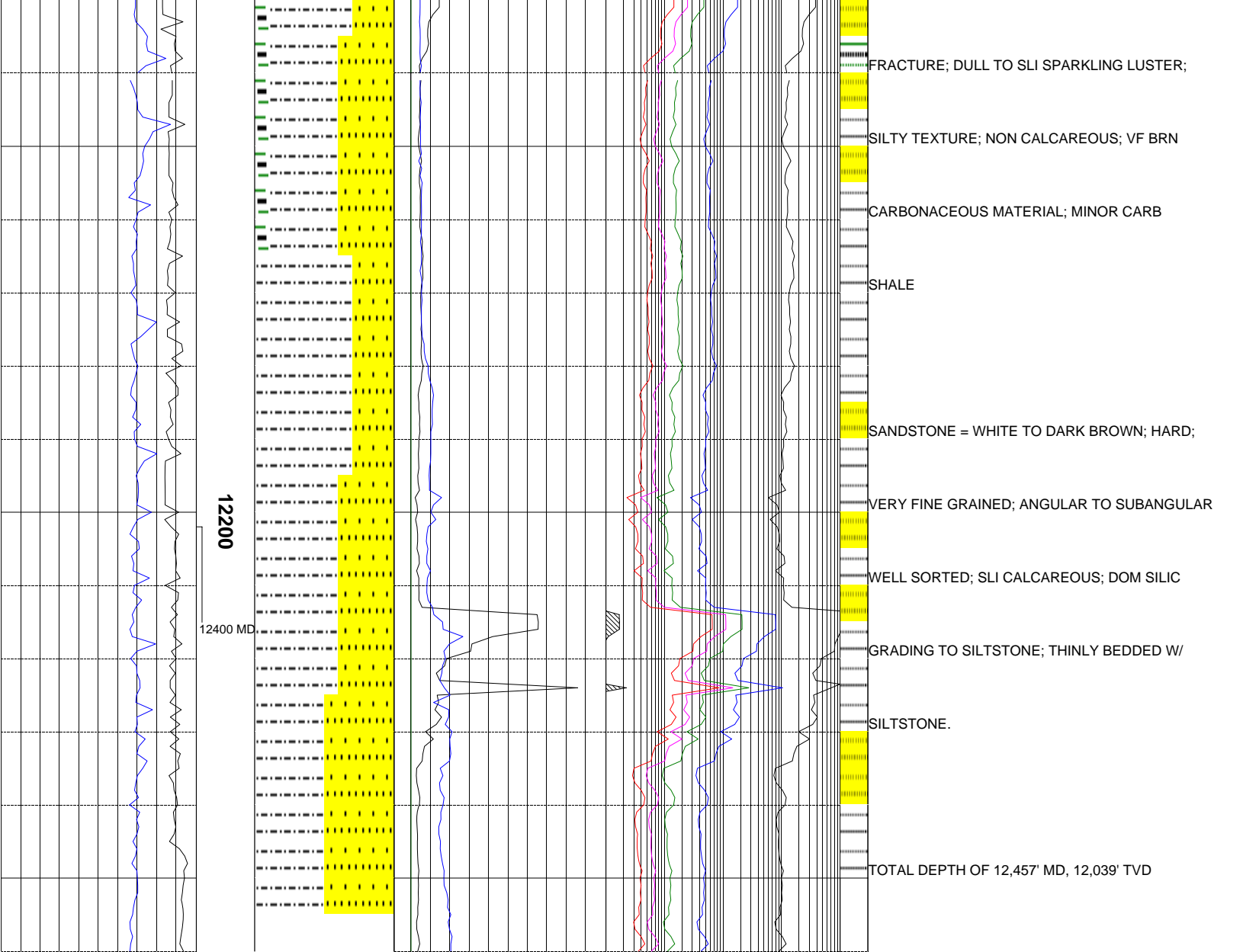












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