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MUDLOG MD

COMPANY	ExxonMobil Oil Corporation
WELL	PCU 297-12A1-ST1
FIELD	Piceance Creek
REGION	Rocky Mountains
COORDINATES	Lat: 39.8890710 Long: 108.2372410
ELEVATION	GL: 7183.6' RKB: 7213'
COUNTY, STATE	Rio Blanco, Colorado
API INDEX	051031115701
SPUD DATE	09/22/2009
CONTRACTOR	HE DRILLING
CO. REP.	M. SADLER / J. WOODS
RIG/TYPE	326 FLEX FOUR
LOGGING UNIT	CANRIG UNIT ML036
GEOLOGISTS	Don Thibodeaux Brandon Laiche
ADD. PERSONS	Huel _Patti Strickland Linda Davison/Darryl Ebbert
CO. GEOLOGIST	CHRIS ALBA

LOG INTERVAL

DEPTHS: 4111' **TO** 13338'

DATES: 6/16/2009 **TO** 9/24/2009

SCALE: 5" = 100'

CASING DATA

16.000" **AT** 150'

10.750" **AT** 4111'

7.00" **AT** 9131'

4.50" **AT** 13338'

MUD TYPES

WATER BASE **TO** 5730'

DSF **TO** 6200'

LSND **TO** 13338'

TO

HOLE SIZE

14.250" **TO** 4111'

9.875" **TO** 9131'

6.125" **TO** 13338'

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	CHERT - GLASSY	FELSIC SILIC DIKE	MARL - CALC	SANDSTONE
ANDESITE	CHERT - PORCEL	FOSSIL	METAMORPHICS	SANDSTONE-TUFFACEOUS
ANHYDRITE	CHERT - TIGER STRIPE	GABBRO	MUDSTONE	SERICITIZATION
BASALT	CHERT - UNDIFF	GLASSY TUFF	OBSIDIAN	SERPENTINE
BENTONITE	CLAY	GRANITE	PALEOSOL	SHALE
BIOTITIZATION	CLAY-MUDSTONE	GRANITE WASH	PHOSPHATE	SHALE TUFFACEOUS
BRECCIA	CLYST-TUFFACEOUS	GRANODIORITE	PORCELANITE	SHELL FRAGMENTS
CALCARENITE	CHLORITIZATION	GYPSUM	PORCELANEOUS CLYST	SIDERITE
CALCAREOUS TUFF	COAL	HALITE	PYRITE	SILICIFICATION
CALCILUTITE	CONGLOMERATE	HORNBL-QTZ-DIO	PYROCLASTICS	SILTSTONE
CARBONATES	CONGL. SAND	IGNEOUS (ACIDIC)	QUARTZ DIORITE	SILTST-TUFFACEOUS
CARBONACEOUS MAT	CONGL. SANDSTONE	IGNEOUS (BASIC)	QUARTZ LATITE	TUFF
CARBONACEOUS SH	COQUINA	INTRUSIVES	QUARTZ MONZONITE	VOLCANICLASTICS SEDS
CEMENT CONTAM.	DACITE	KAOLINITIC	RECRYSTALLIZED CALCITE	VOLCANICS
CHALK	DIATOMITE	LIMESTONE	RHYOLITE	
CRYSTALLINE TUFF	DIORITE	LITHIC TUFF	SALT	
CHERT - ARGILL	DOLOSTONE	MARL - DOLO	SAND	

N-BUTANE = 1000 PPM

I-PENTANE = 1000 PPM

N-PENTANE = 1000 PPM

WHEN THE MUD IS CIRCULATED THROUGH
THE GAS BUSTER, THE INTERVAL IS MARKED
IN THE MGS COLUMN AND SIZE OF FLARES
ARE NOTED.

EVIDENCE OF FRACTURE FILL IS NOTED ON THE MUD LOG. KAOLIN PERCENTAGE IN SS INTERVALS IS ALSO NOTED ON THE MUD LOG.

1 UNIT OF GAS = 200 PPM METHANE

EPOCH COMMENCED LOGGING ON 6/16/2009

AT 4111' MD.

NOTE: DRILLING WITH POWER DRIVE AND MWD

SHALE = DARK YELLOWISH BROWN, MEDIUM

TO DARK OLIVE GRAY; FIRM TO MODERATELY

HARD; CRUMBLY TO MODERATELY TOUGH;

<200	ROP	0	4000

<50	Avg WOB	0>
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06/16/09

NB #2 9 7/8" IN AT 4111'

HTC

JETS

SN

4000

4100

<0	Ttl Gas	100><10	Meth C-1	100K>
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<0	CO2	5K<10	Ethn C-2	100K>
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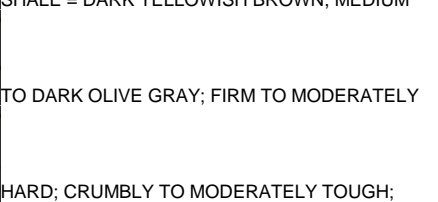
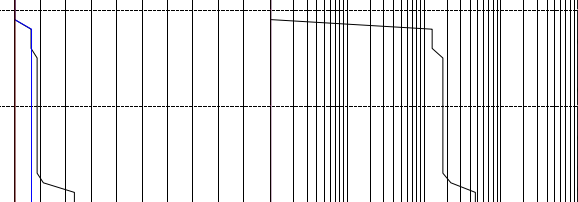
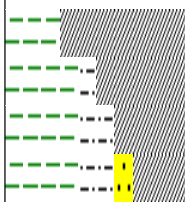
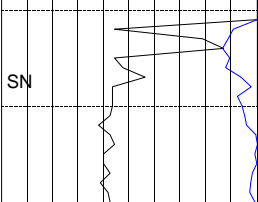
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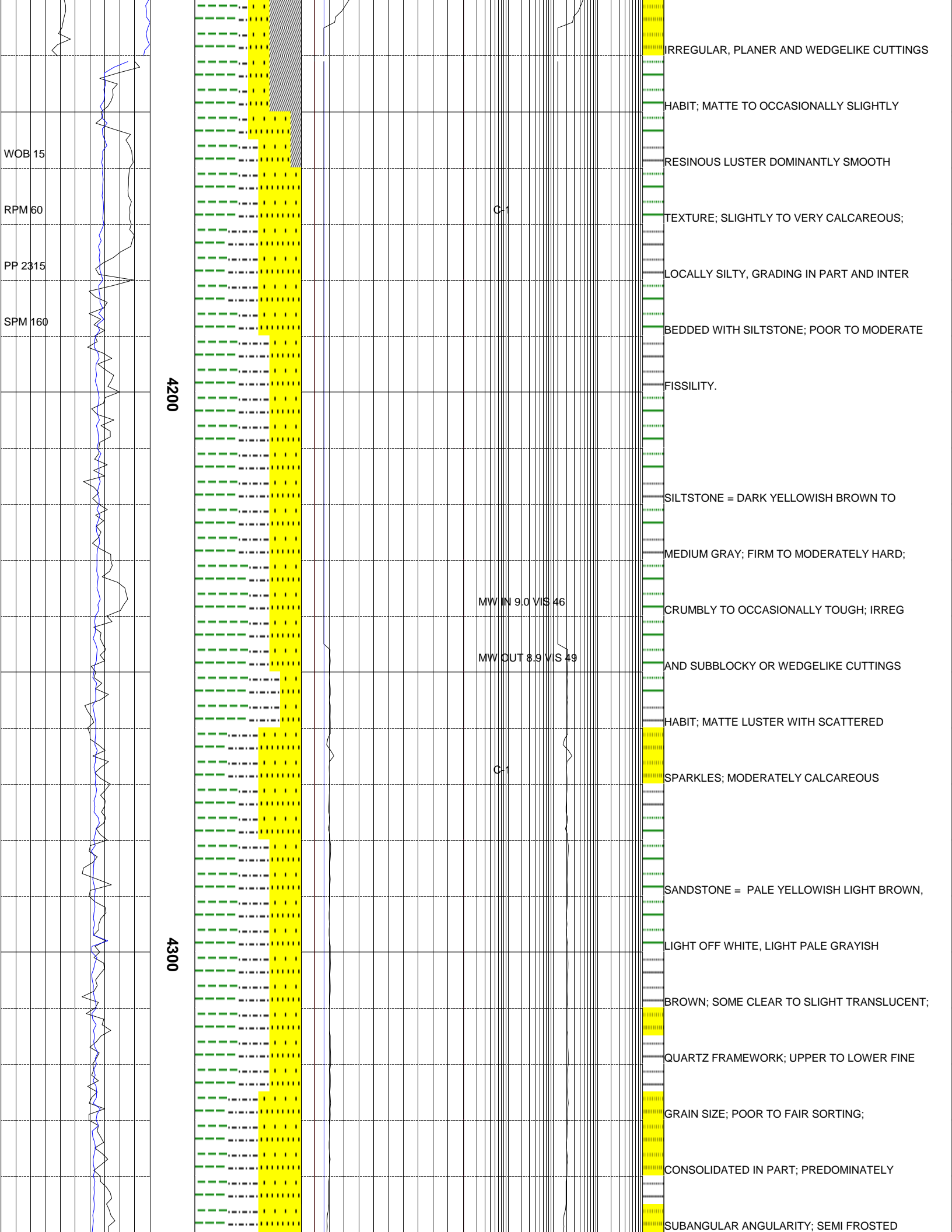
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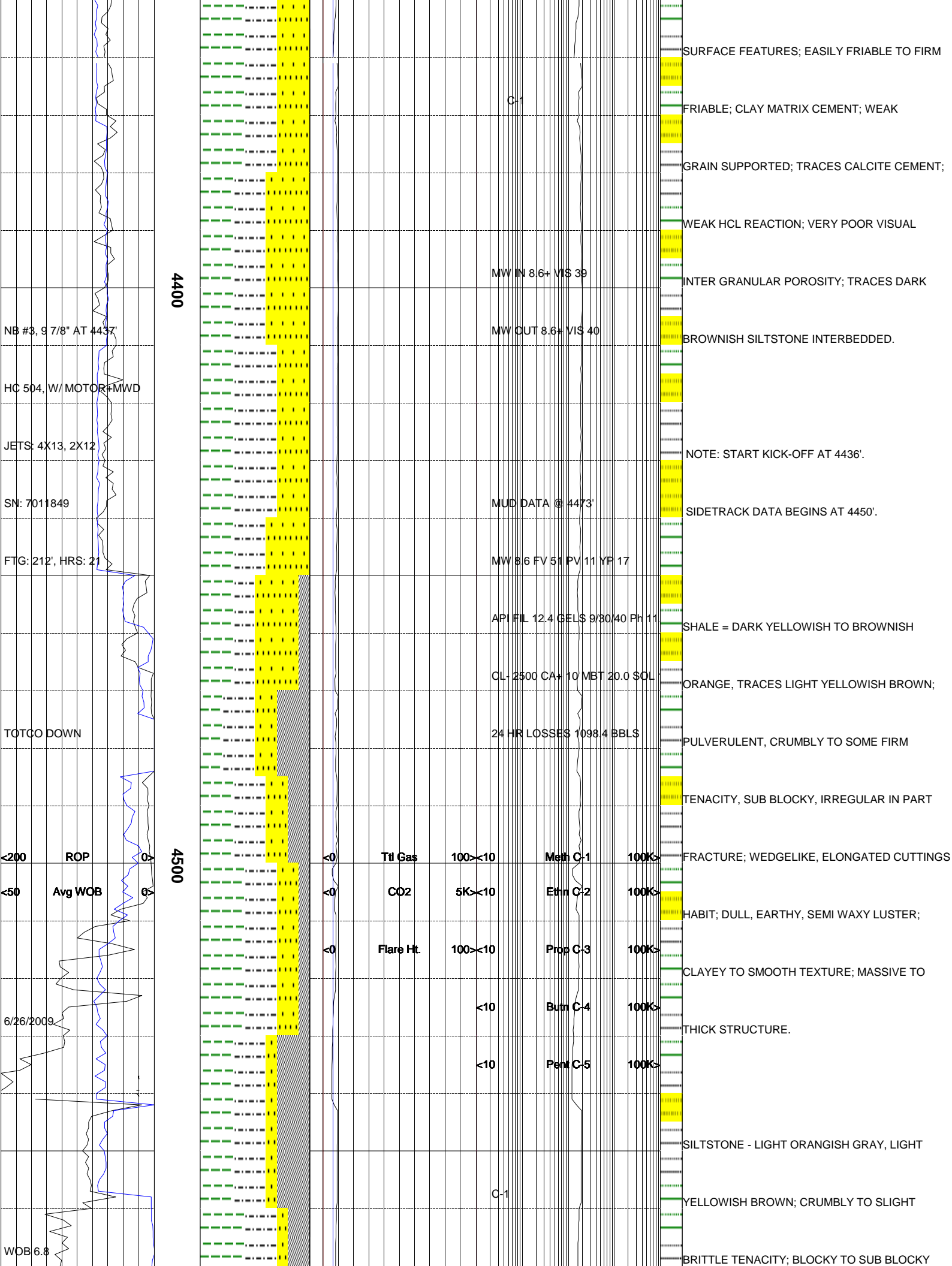
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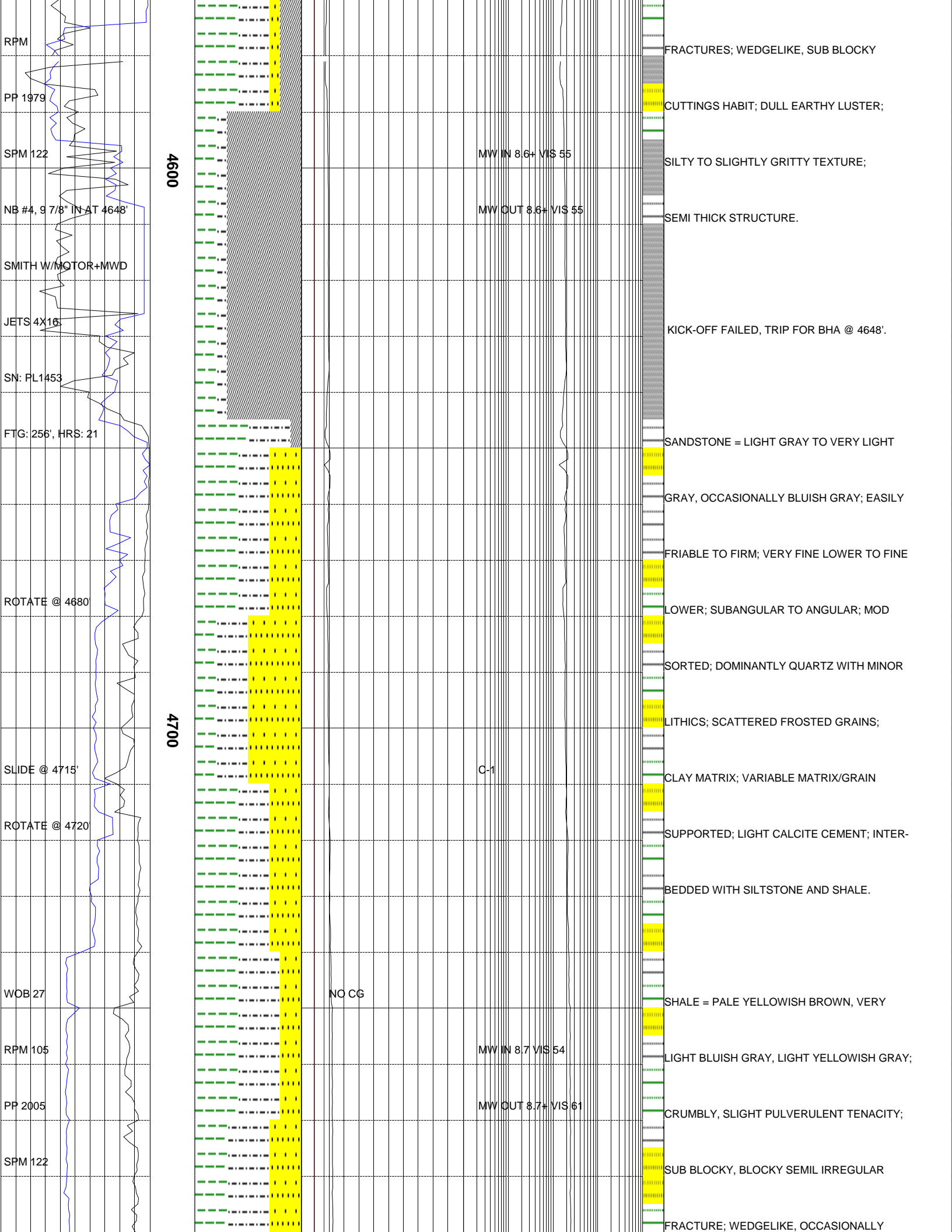
MW IN 8.9 VIS 43

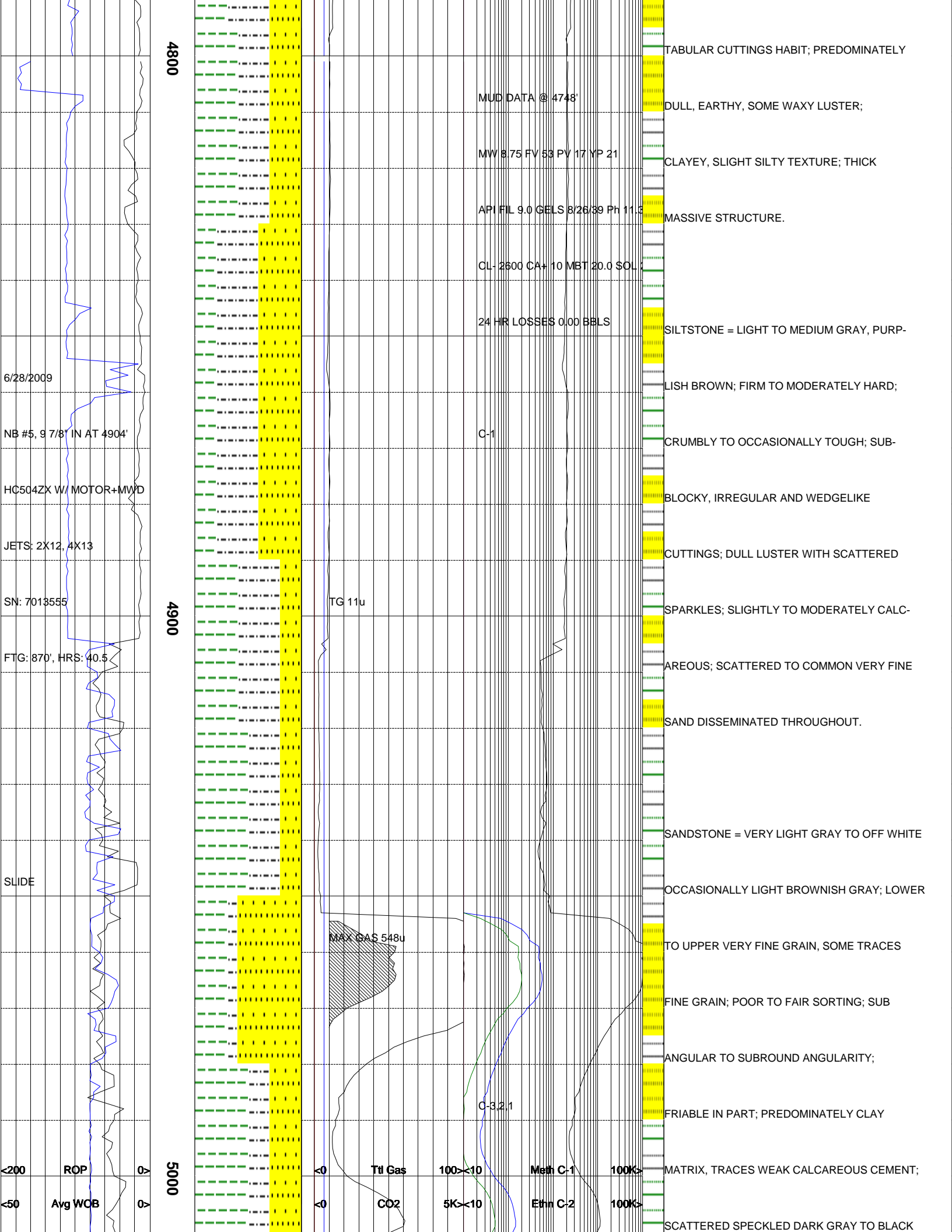
MW OUT 8.9 VIS 48

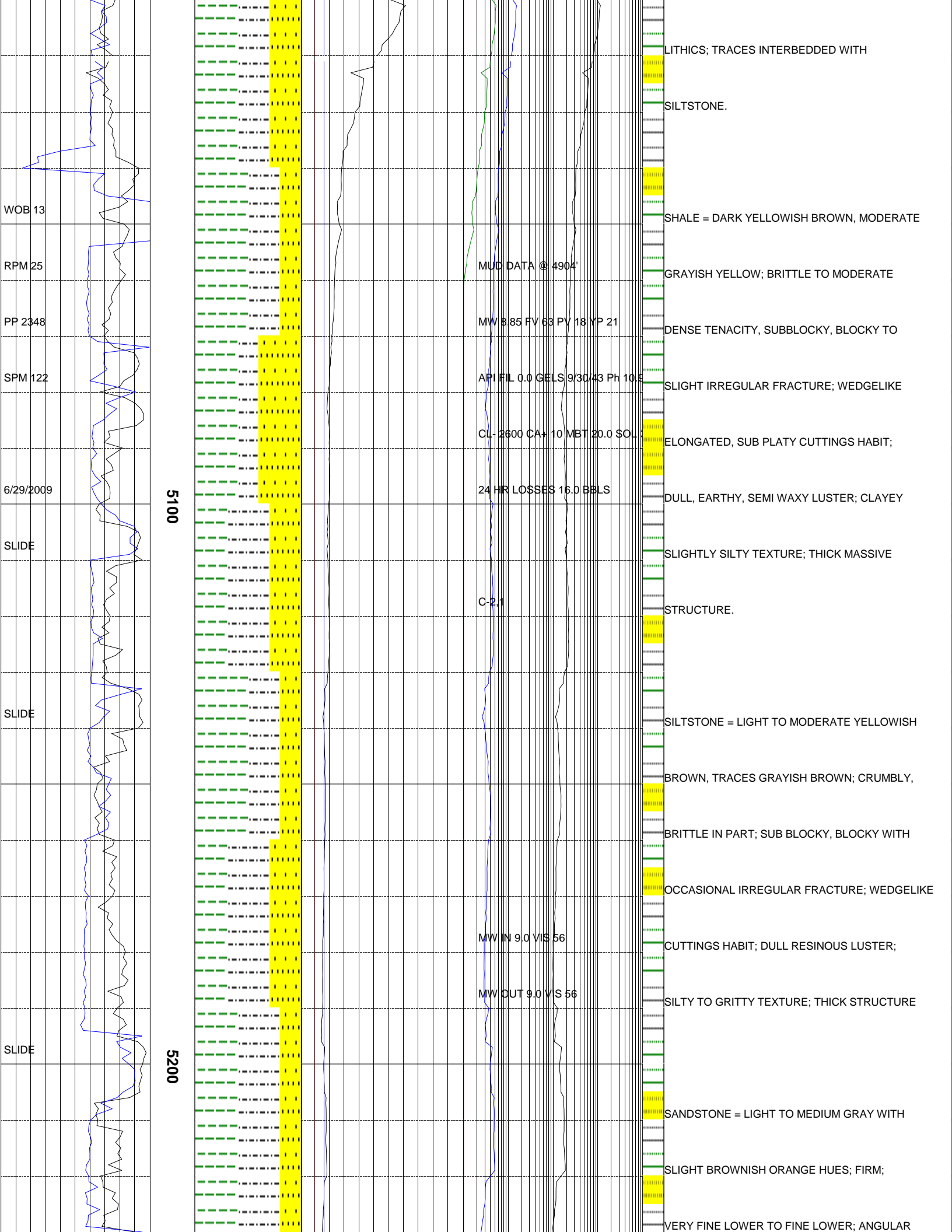


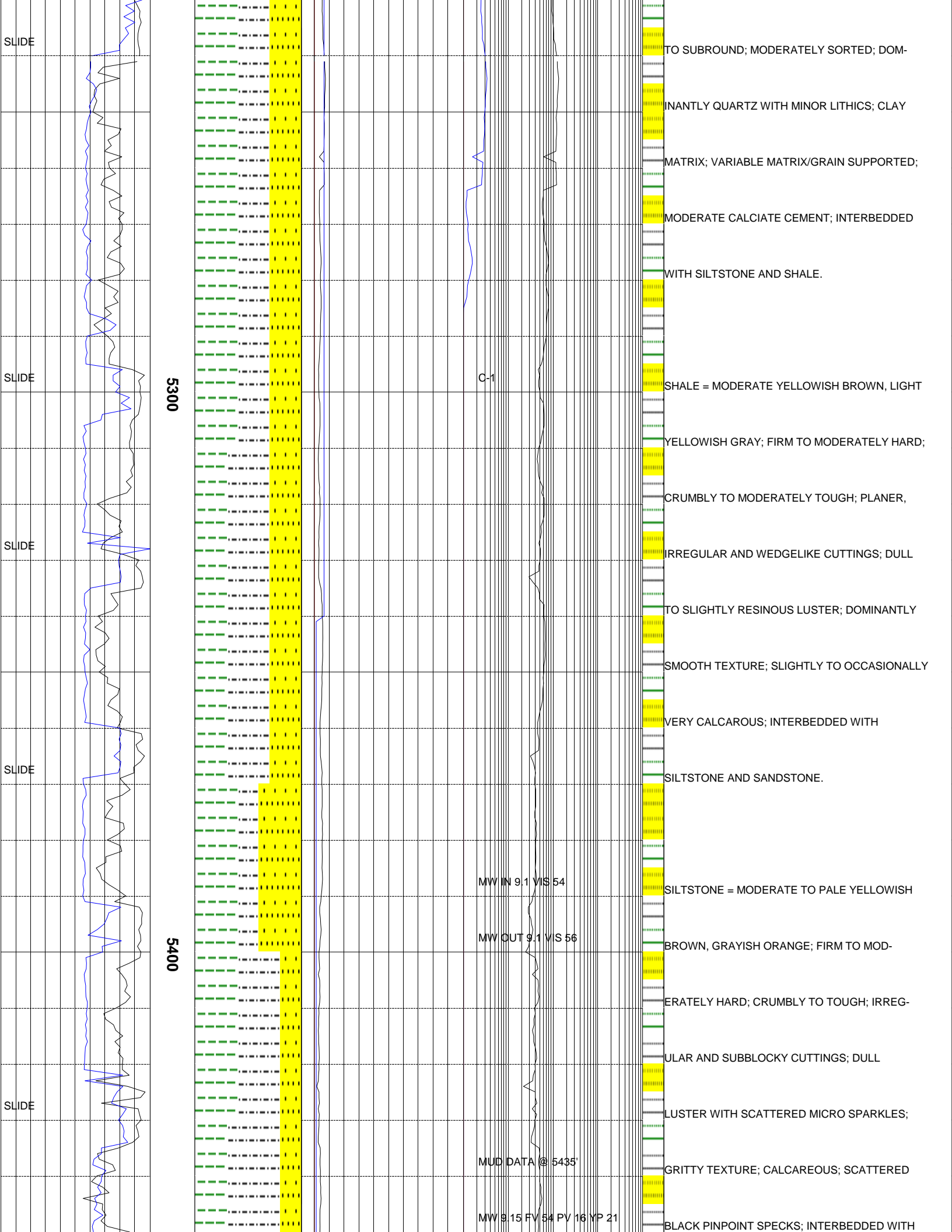


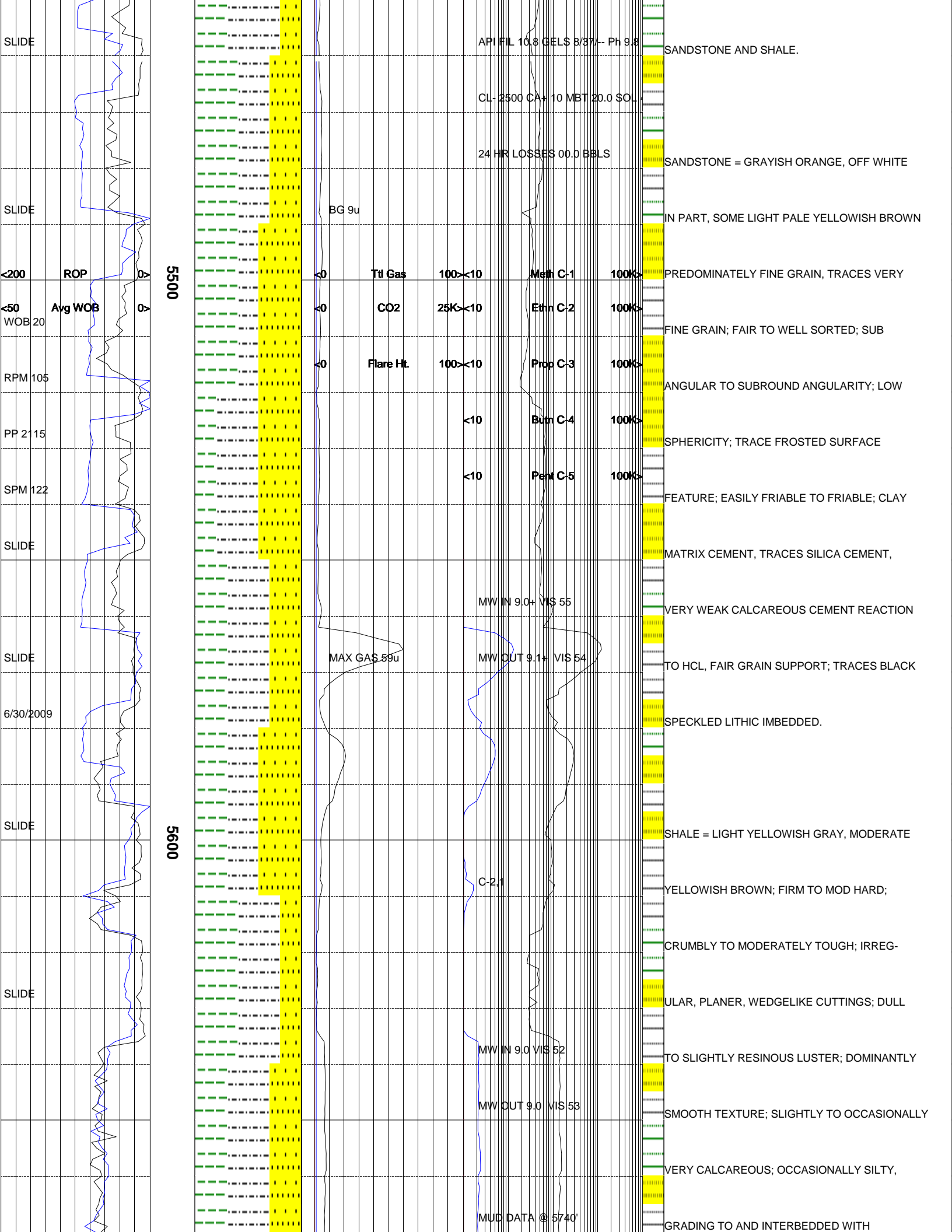


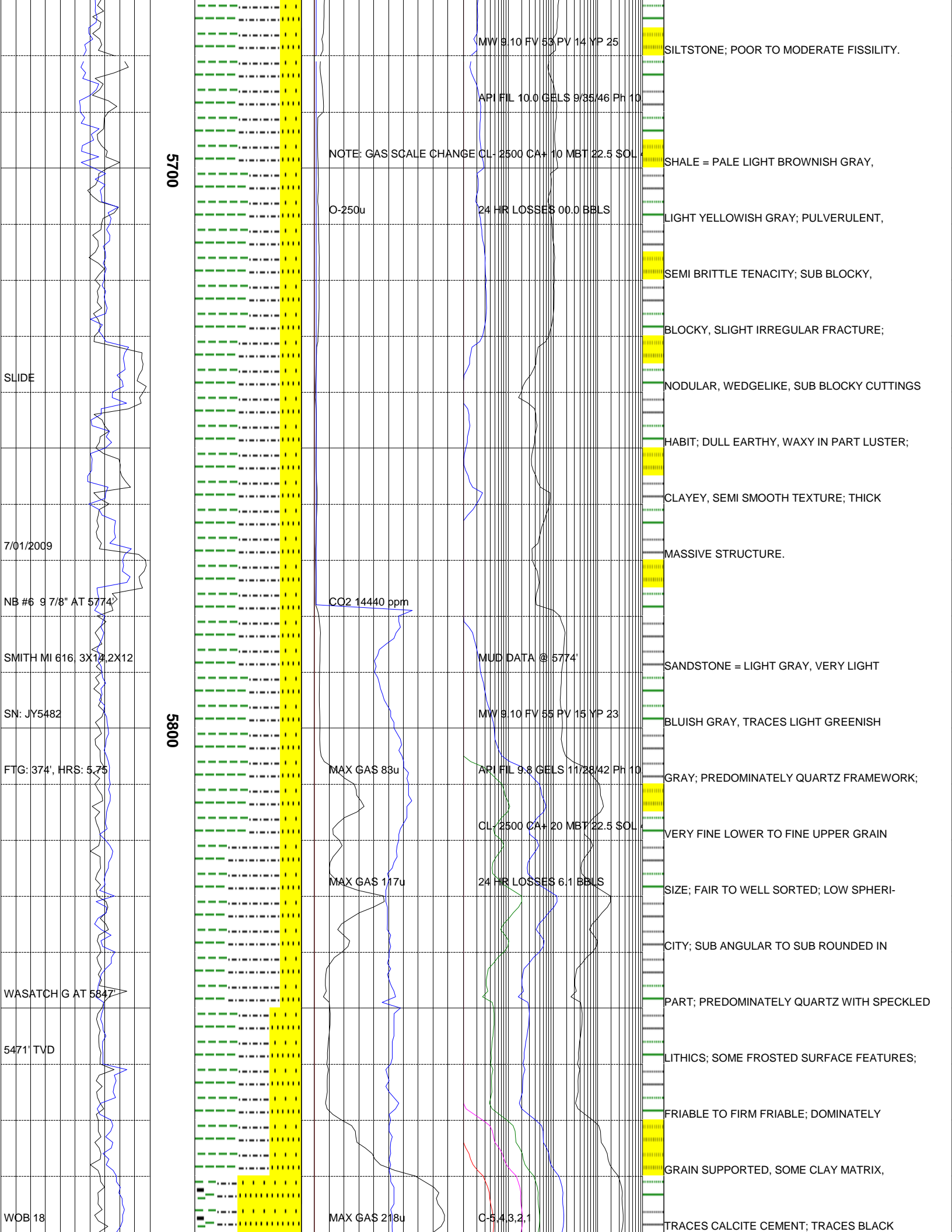


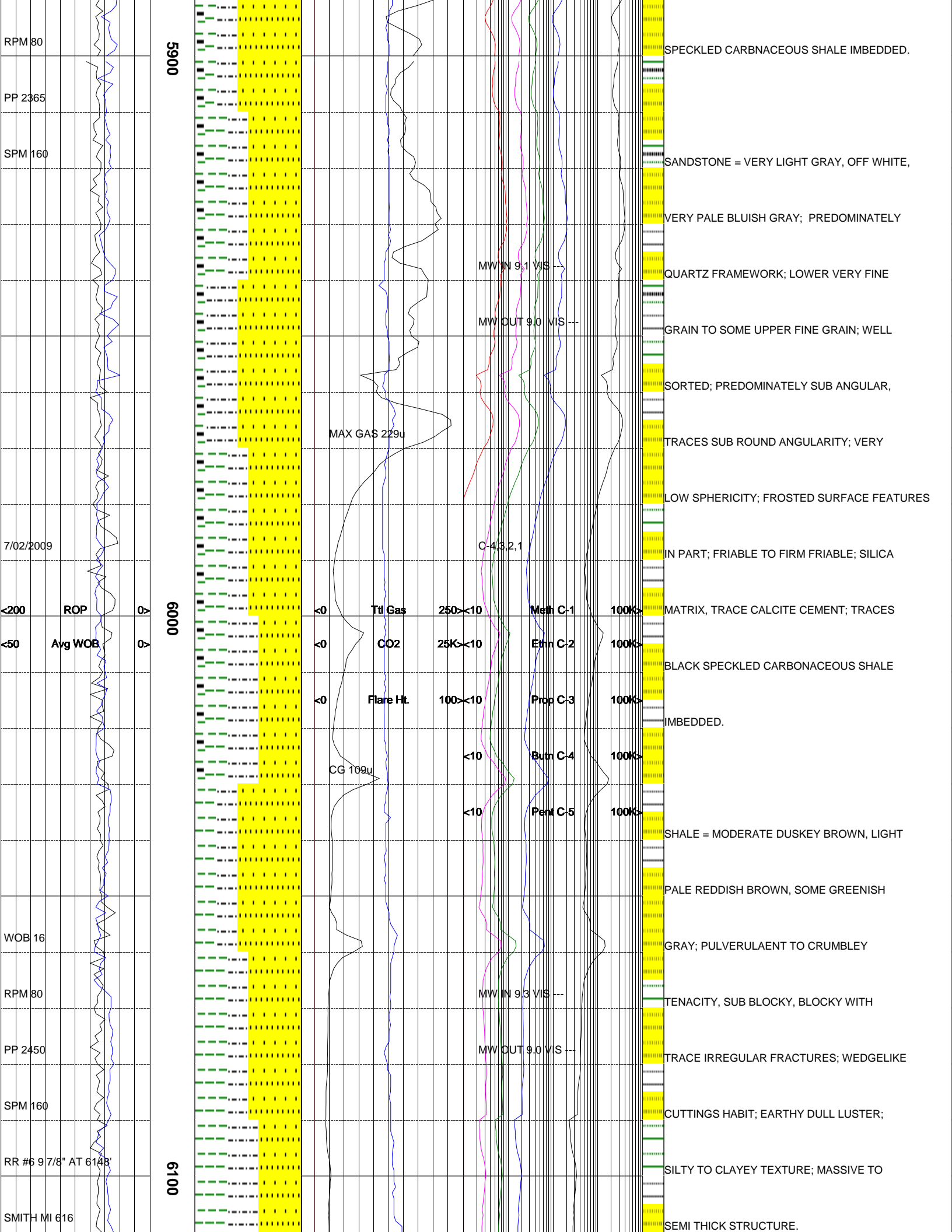


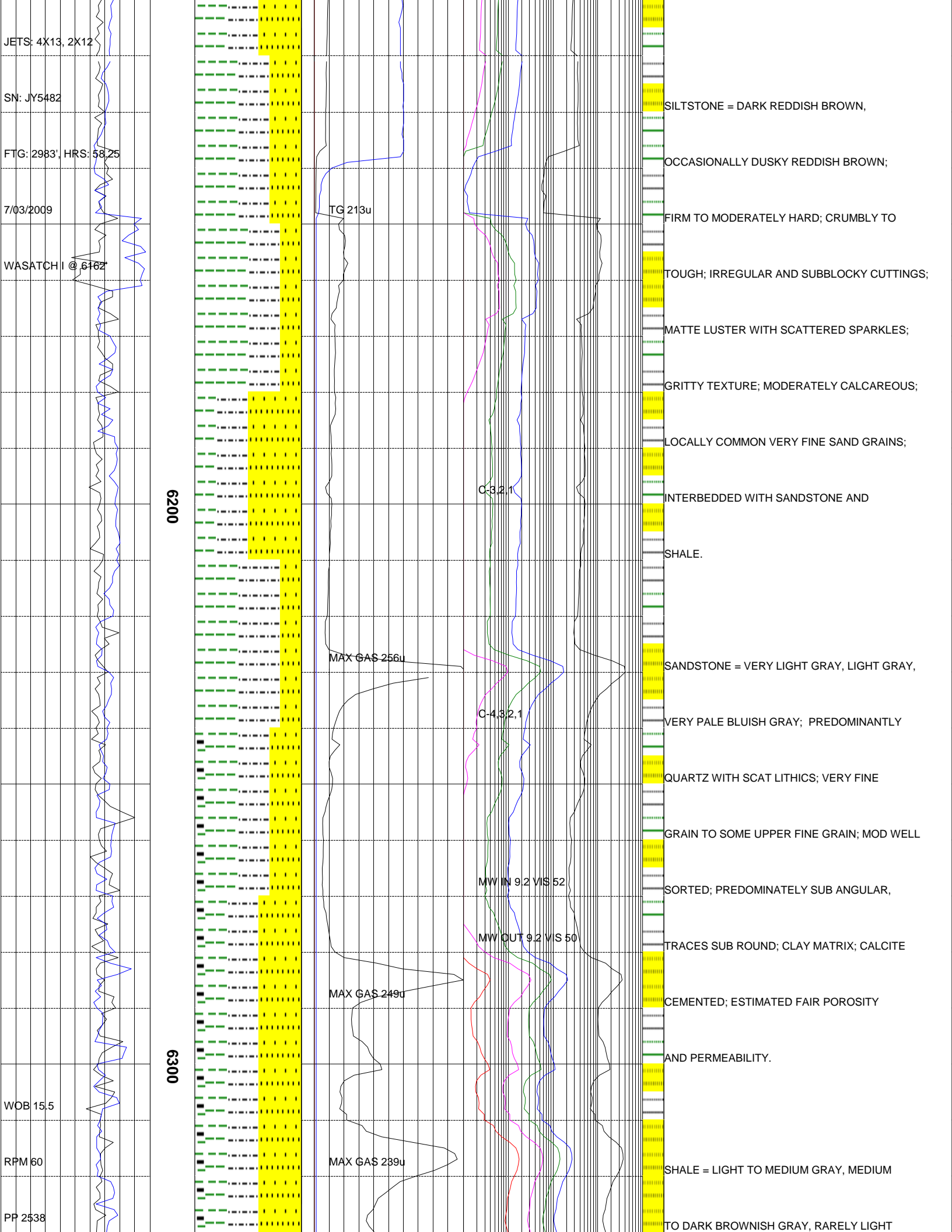


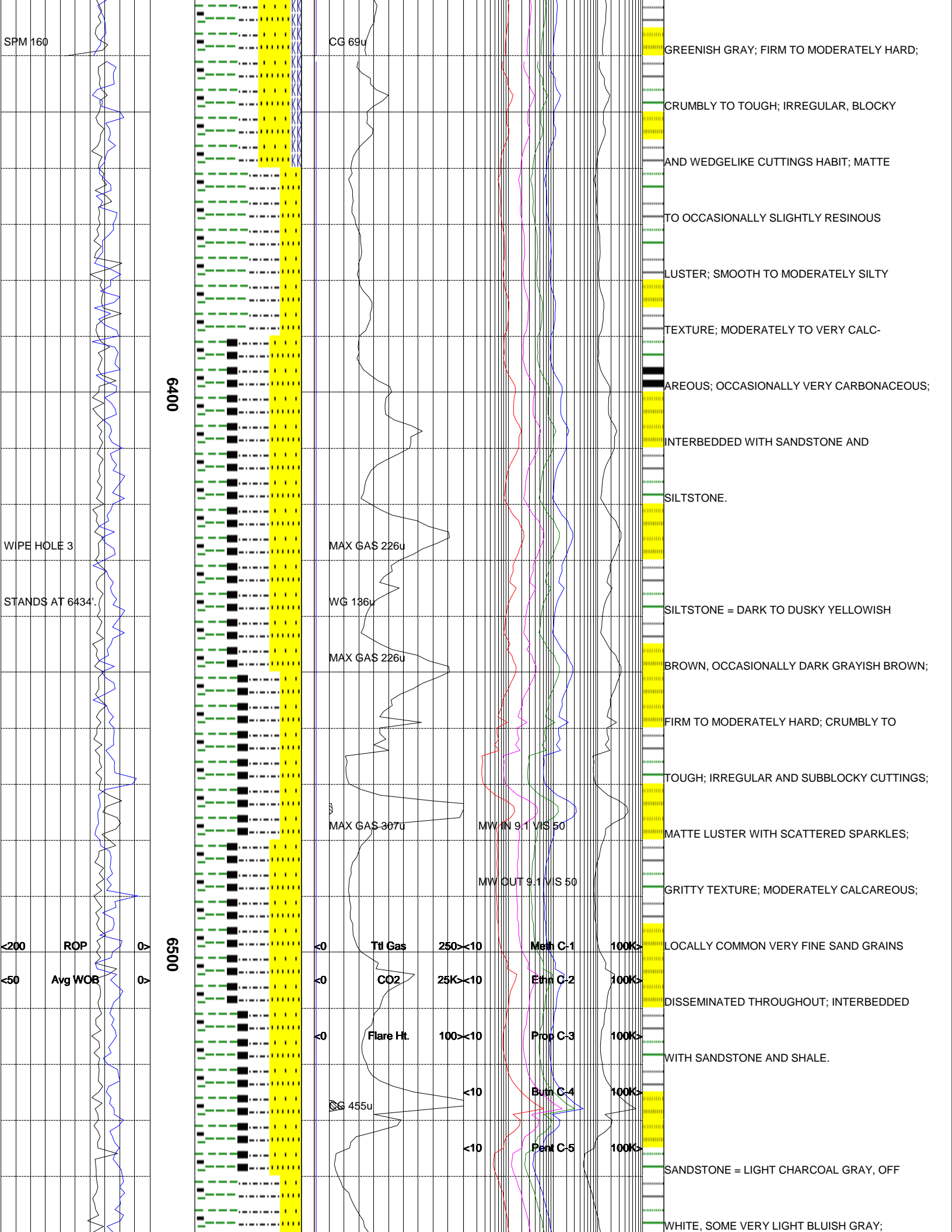


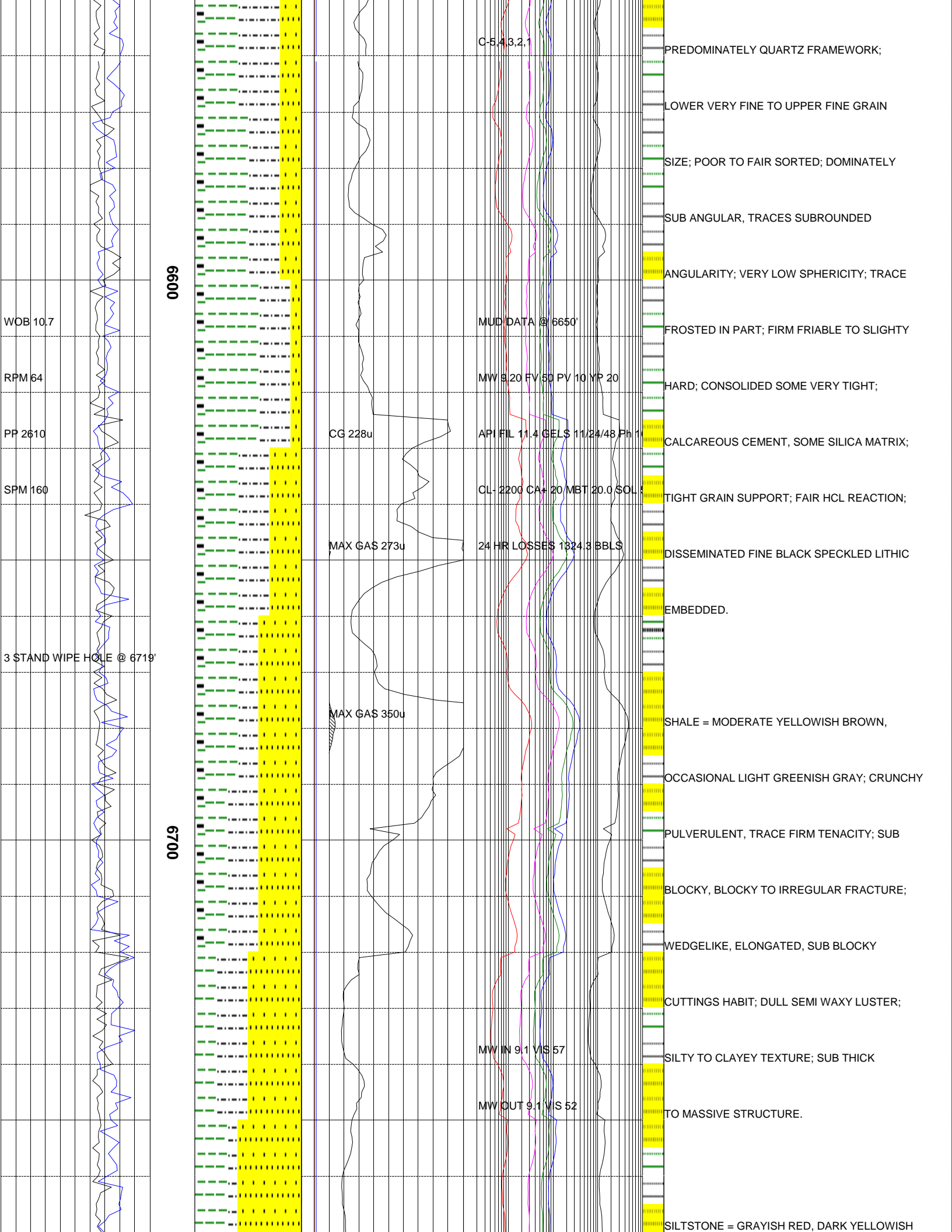


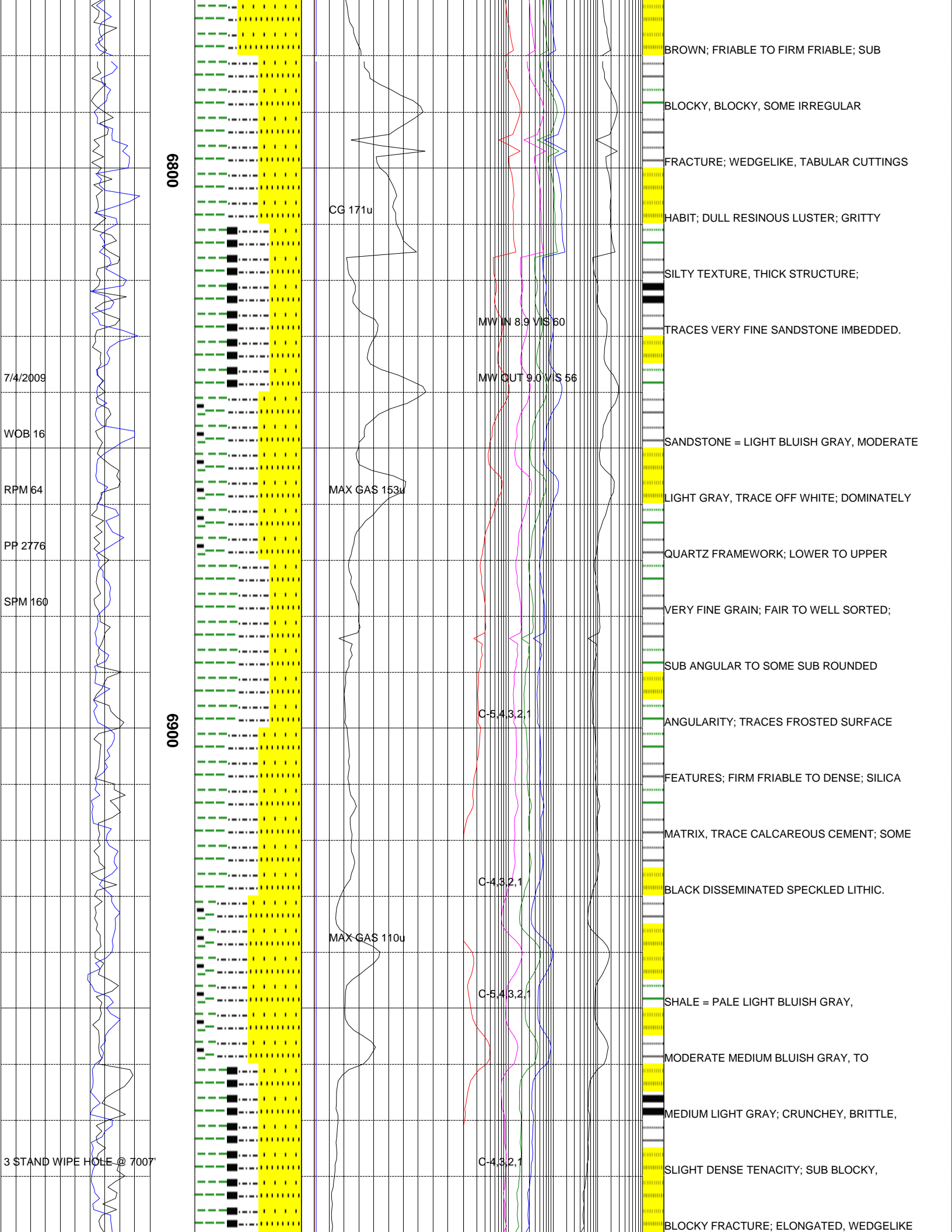


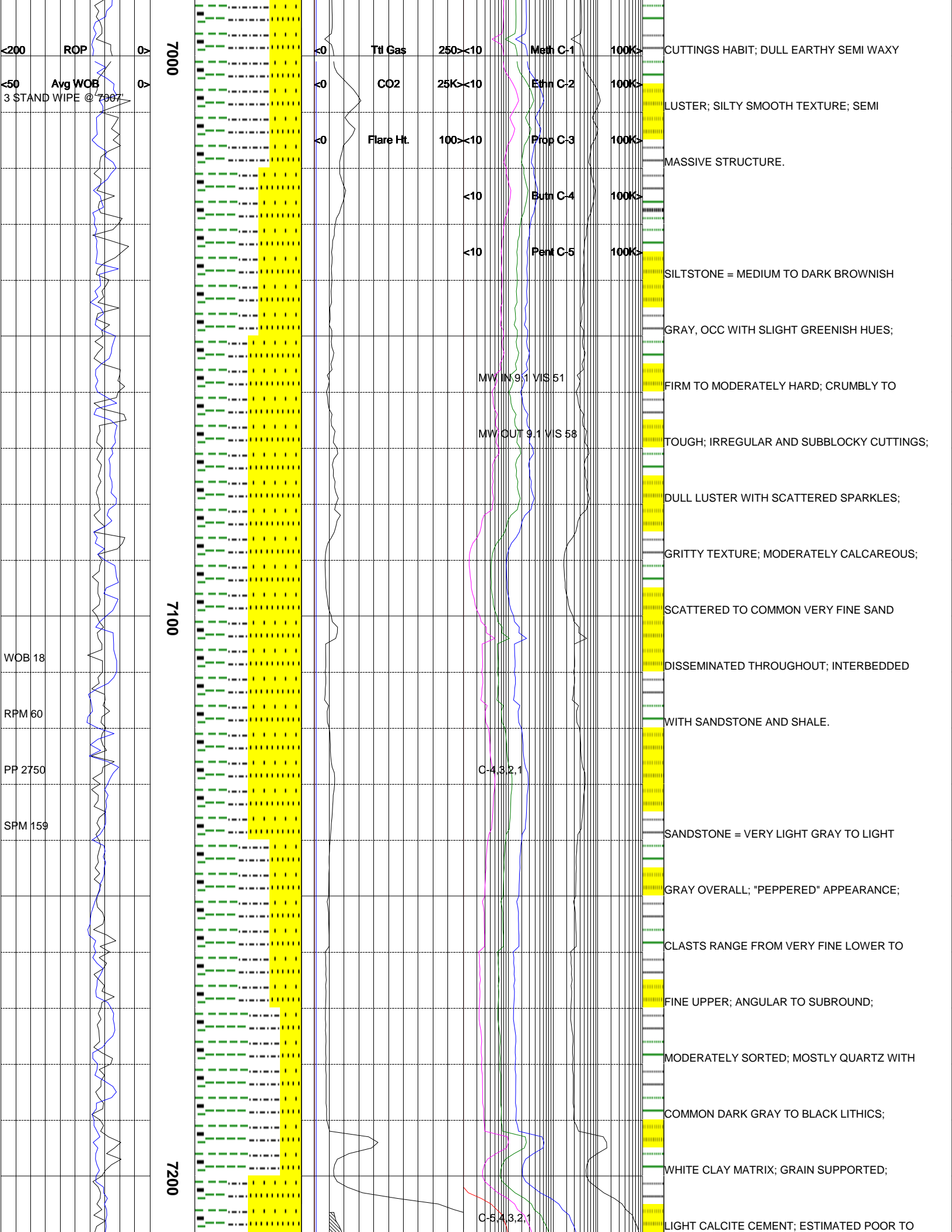


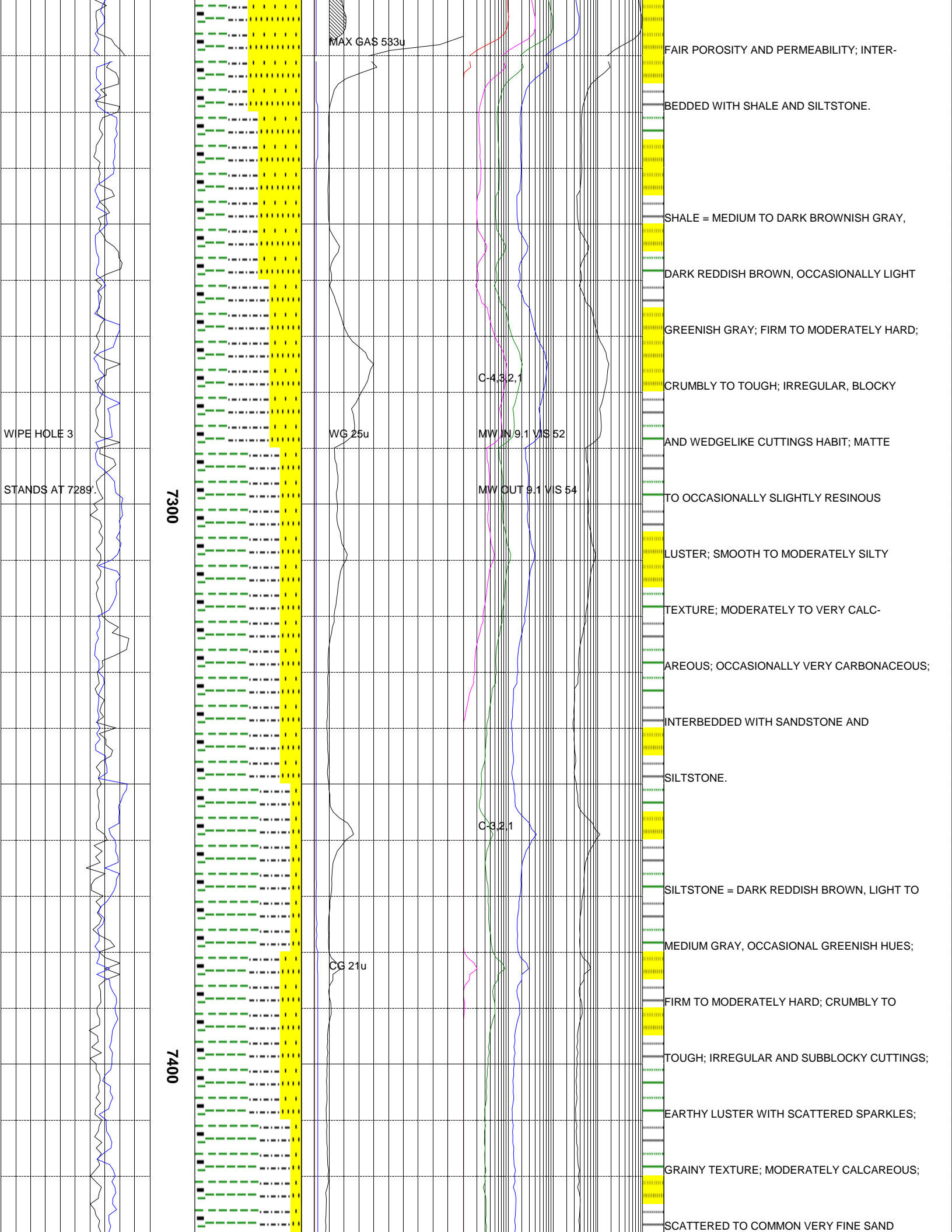


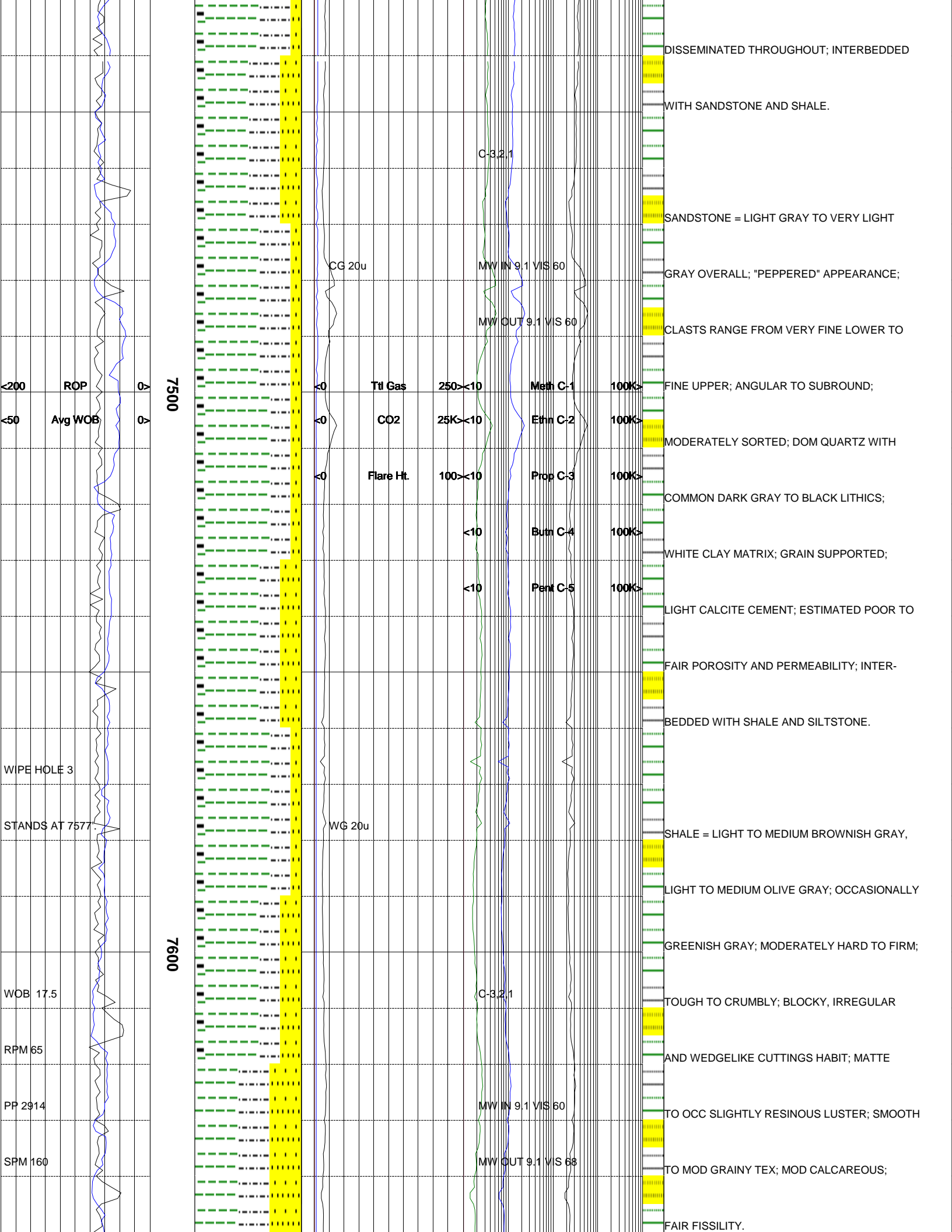


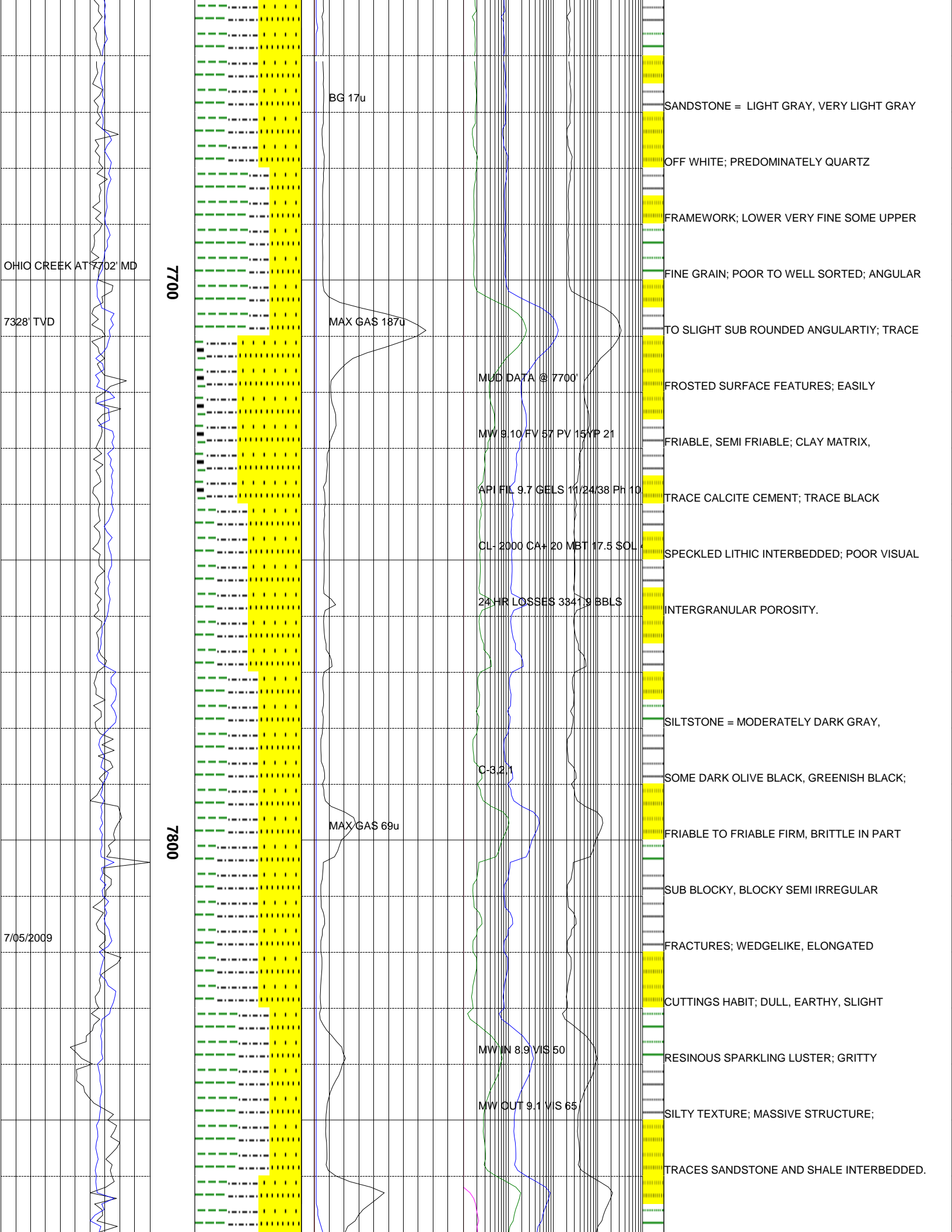


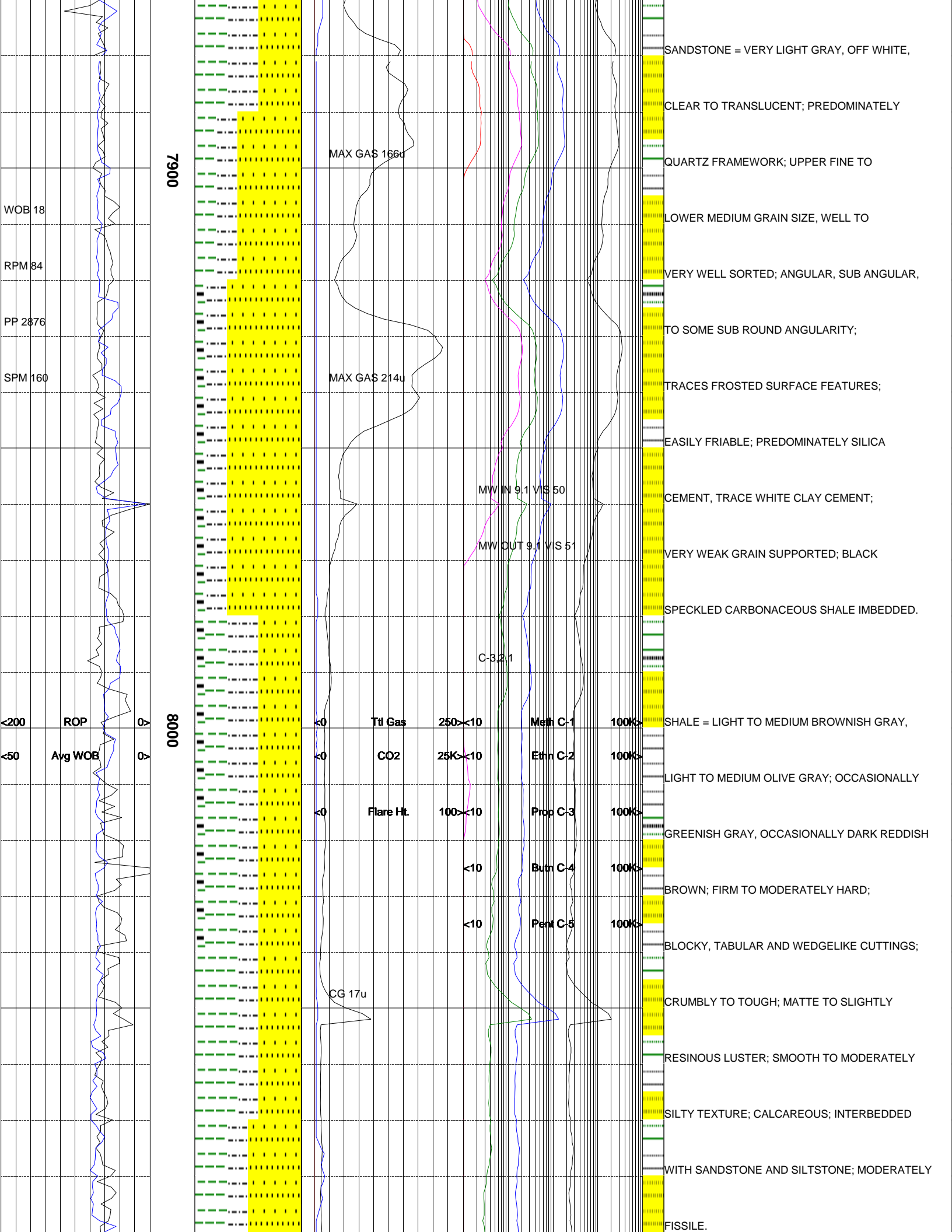


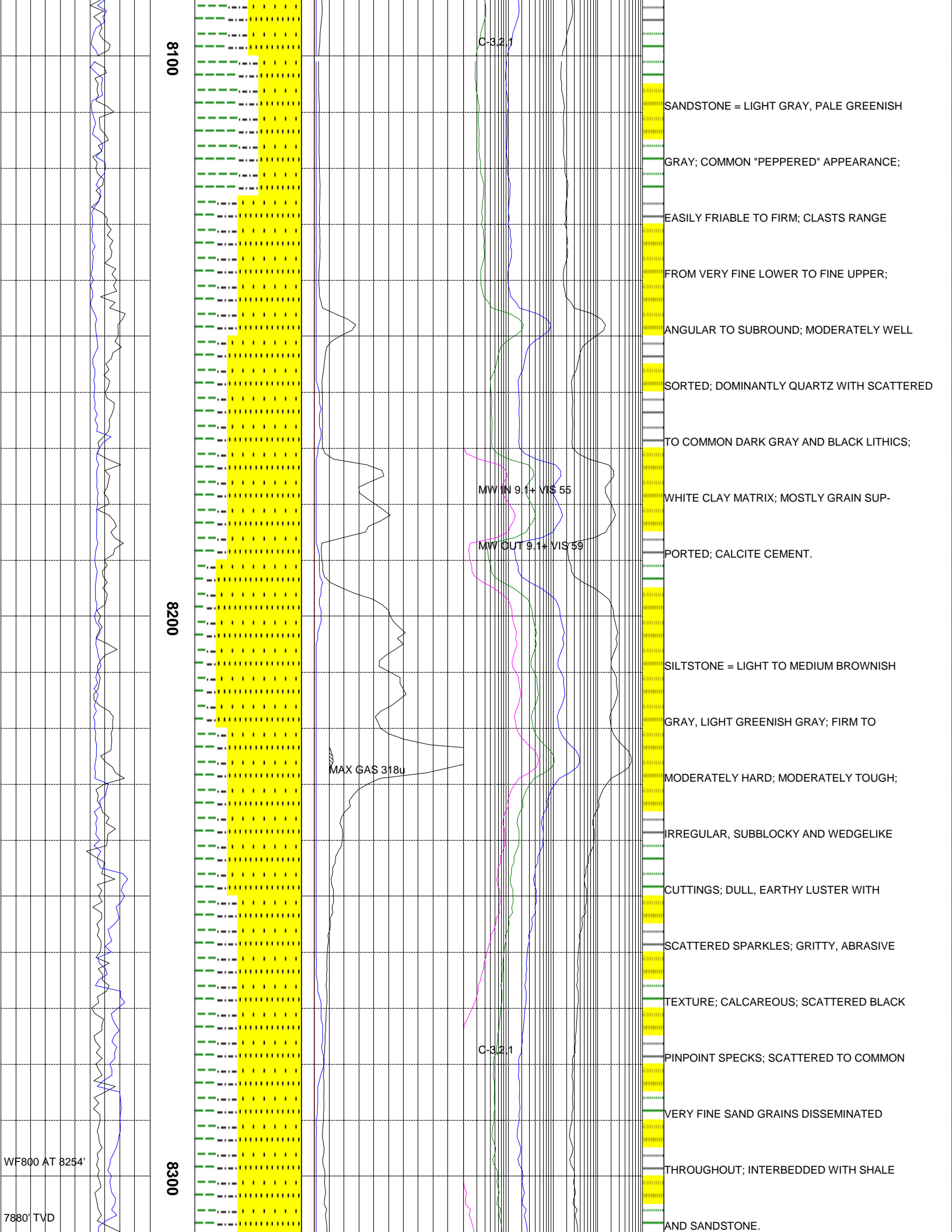


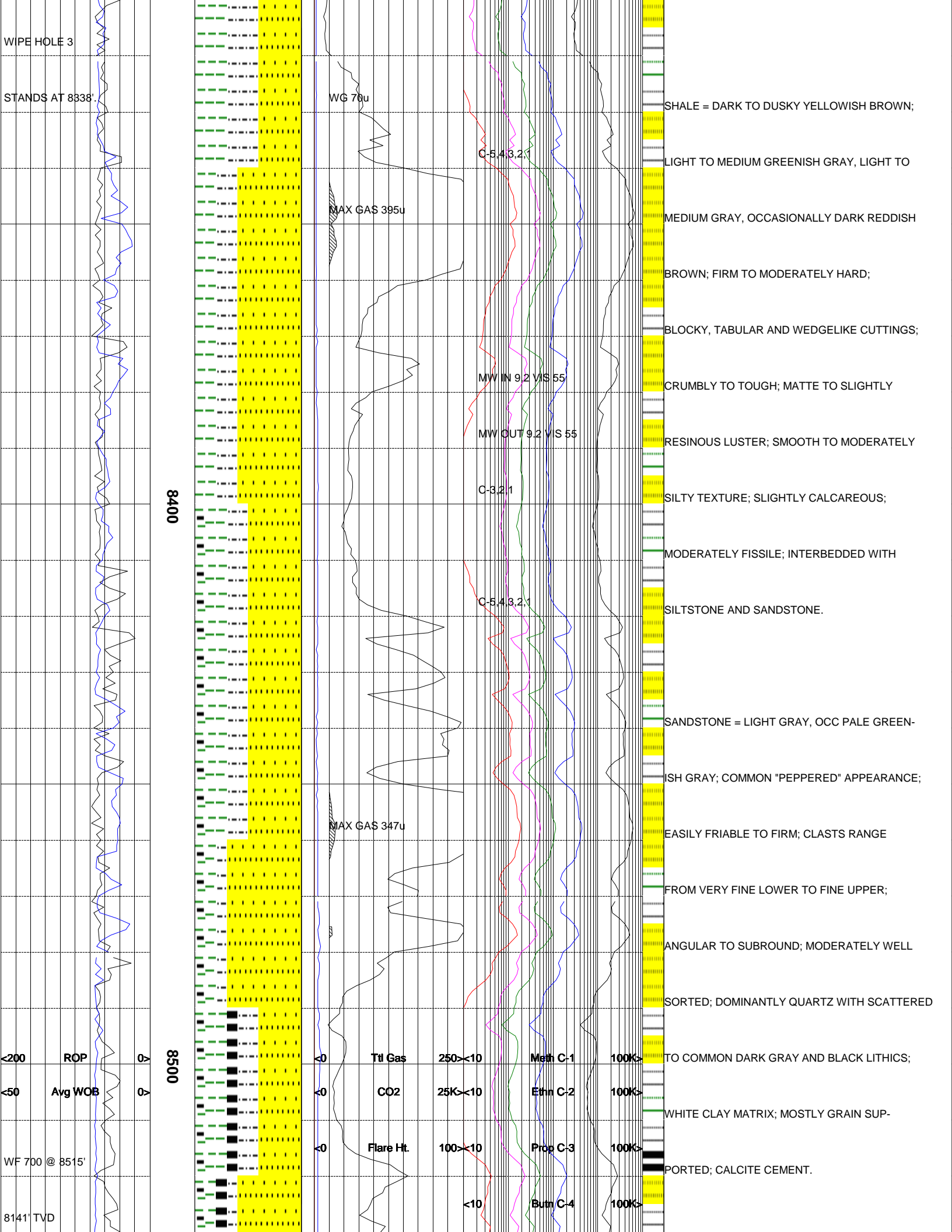


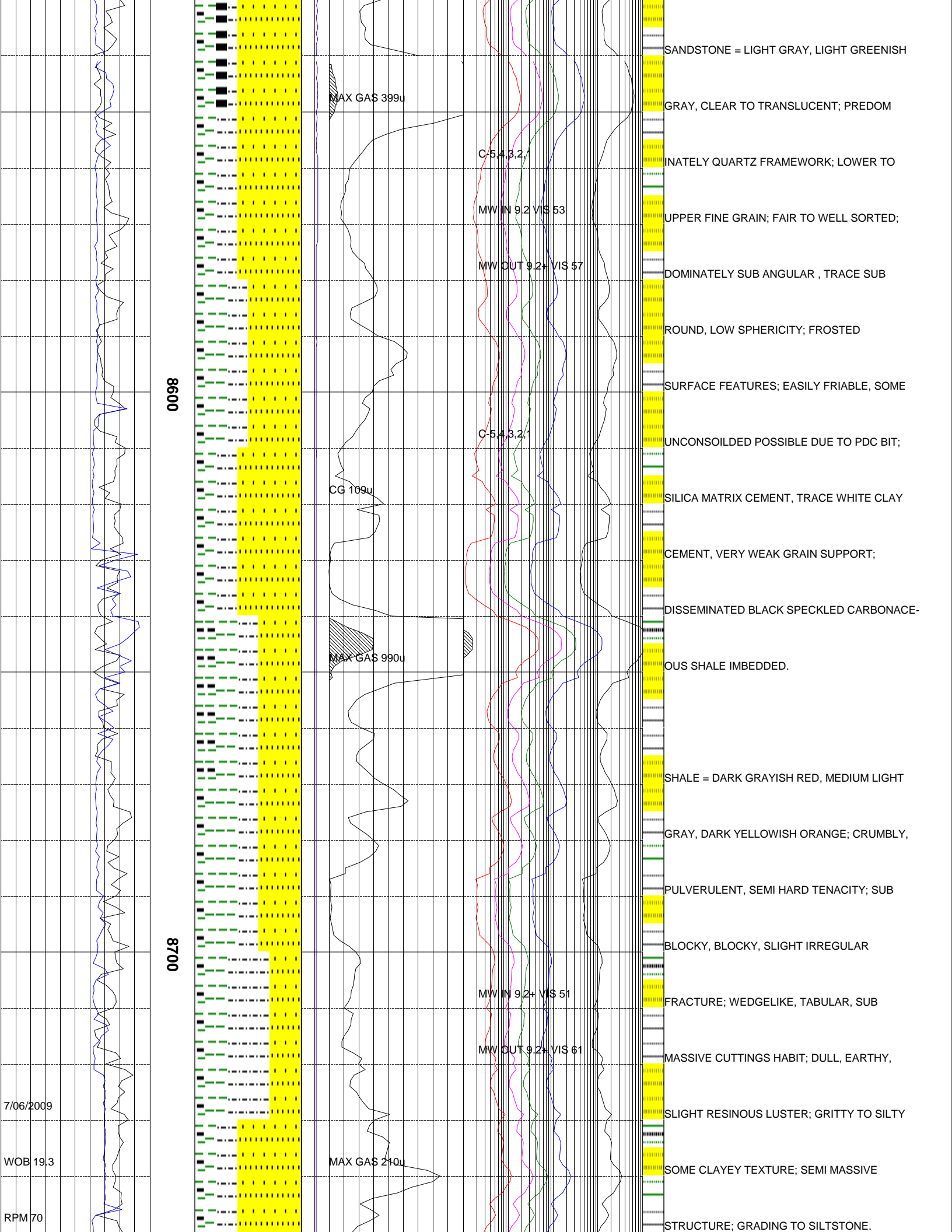


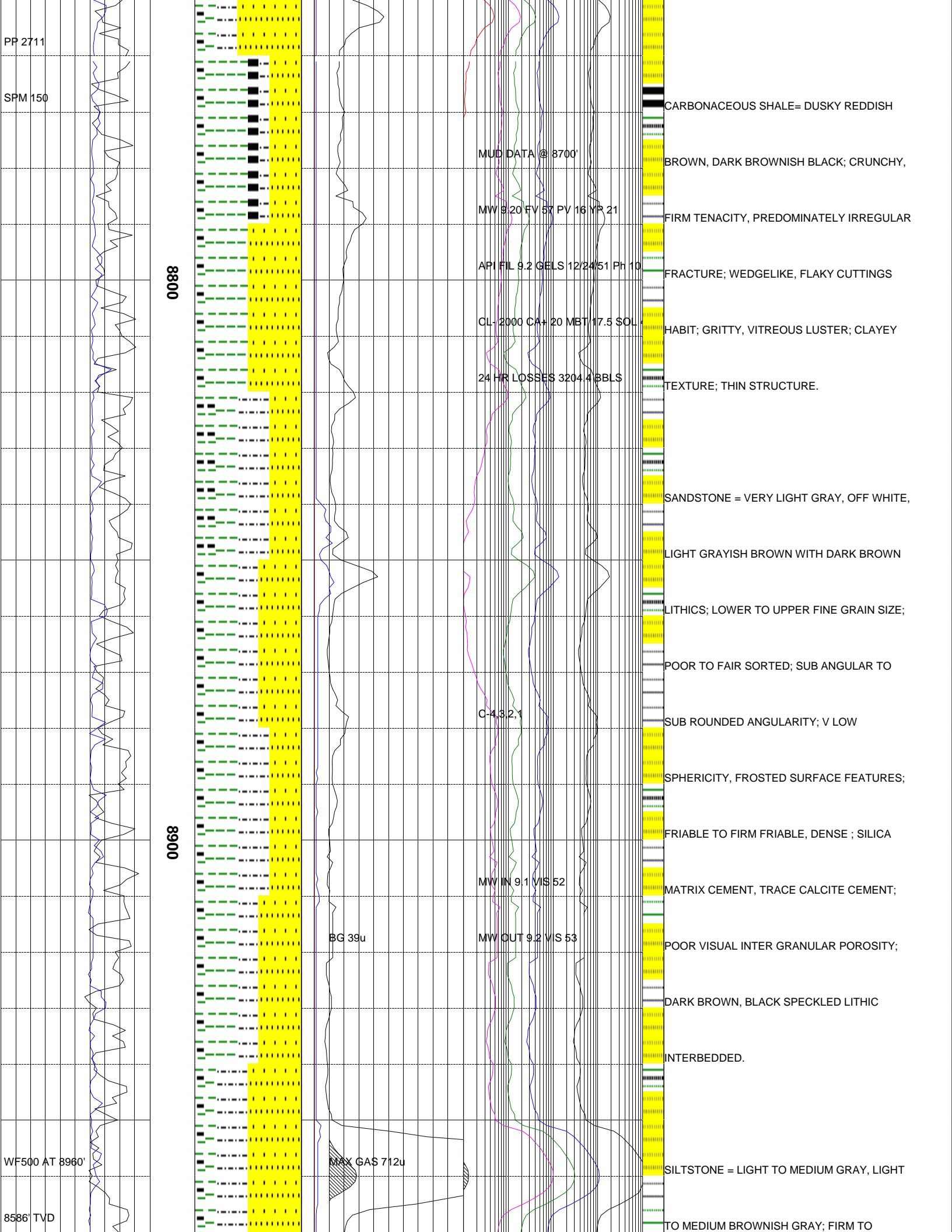












CARBONACEOUS SHALE= DUSKY REDDISH

BROWN, DARK BROWNISH BLACK; CRUNCHY,

FIRM TENACITY, PREDOMINATELY IRREGULAR

FRACTURE; WEDGELIKE, FLAKY CUTTINGS

HABIT; GRITTY, VITREOUS LUSTER; CLAYEY

TEXTURE; THIN STRUCTURE.

SANDSTONE = VERY LIGHT GRAY, OFF WHITE,

LIGHT GRAYISH BROWN WITH DARK BROWN

LITHICS; LOWER TO UPPER FINE GRAIN SIZE;

POOR TO FAIR SORTED; SUB ANGULAR TO

SUB ROUNDED ANGULARITY; V LOW

SPHERICITY, FROSTED SURFACE FEATURES;

FRIABLE TO FIRM FRIABLE, DENSE ; SILICA

MATRIX CEMENT, TRACE CALCITE CEMENT;

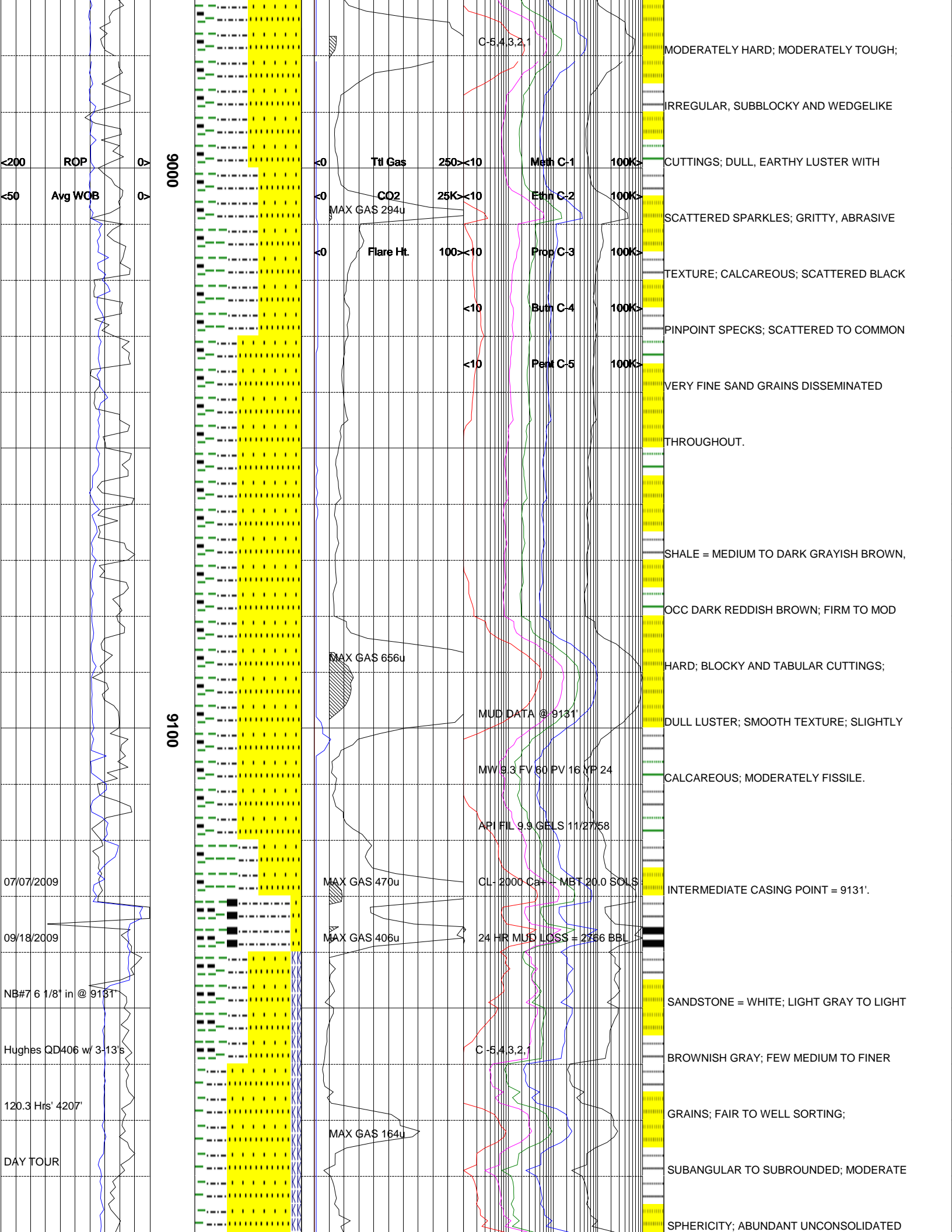
POOR VISUAL INTER GRANULAR POROSITY;

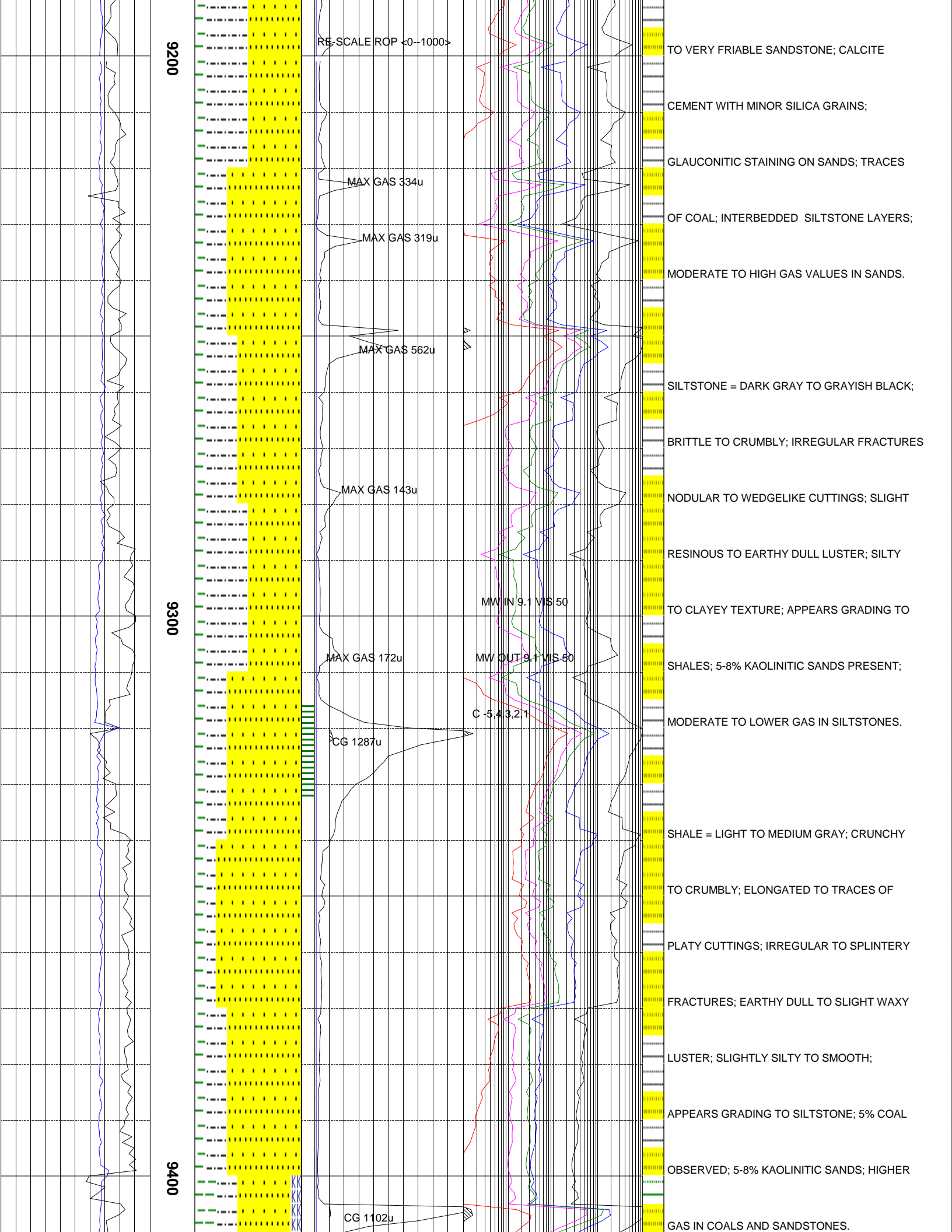
DARK BROWN, BLACK SPECKLED LITHIC

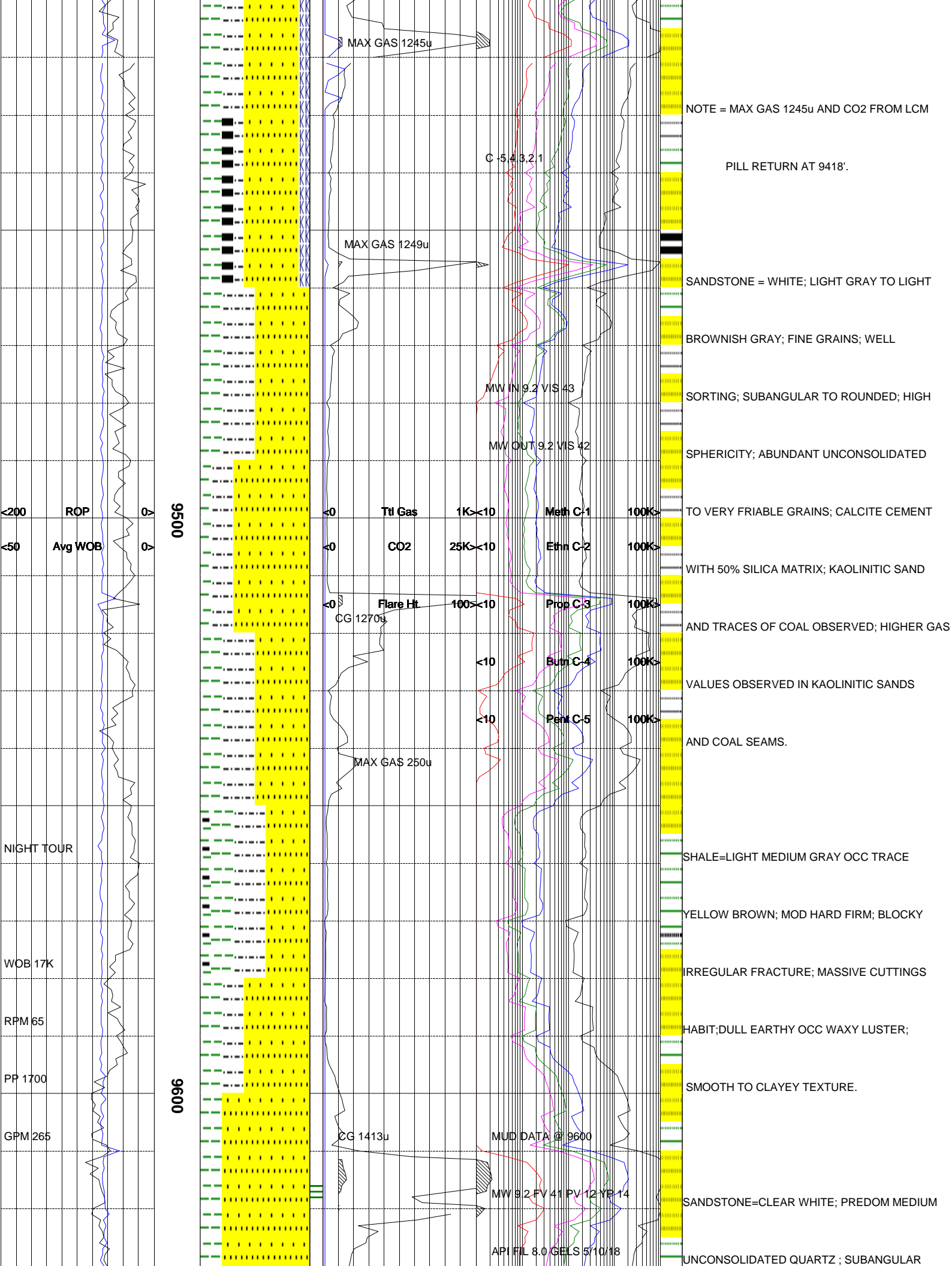
INTERBEDDED.

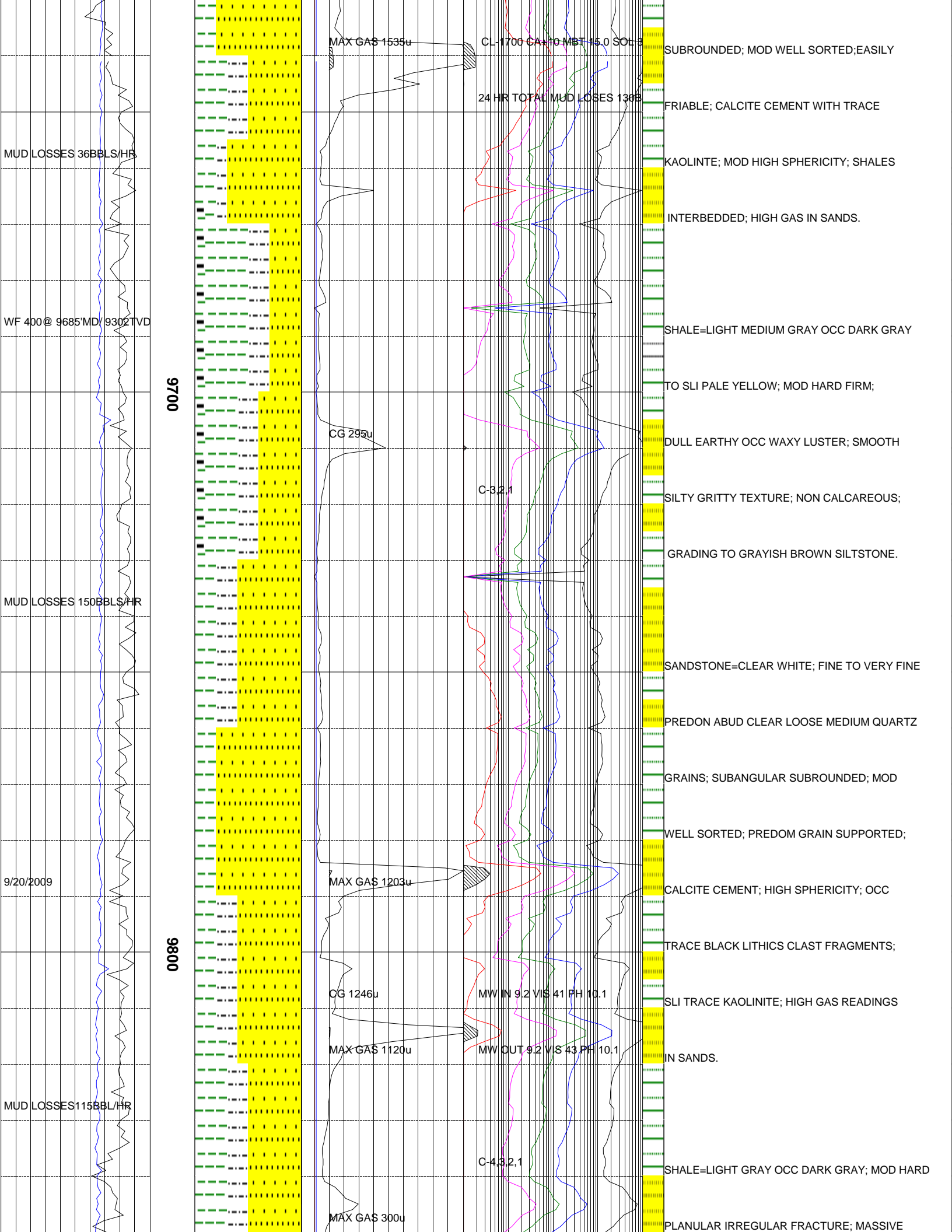
SILTSTONE = LIGHT TO MEDIUM GRAY, LIGHT

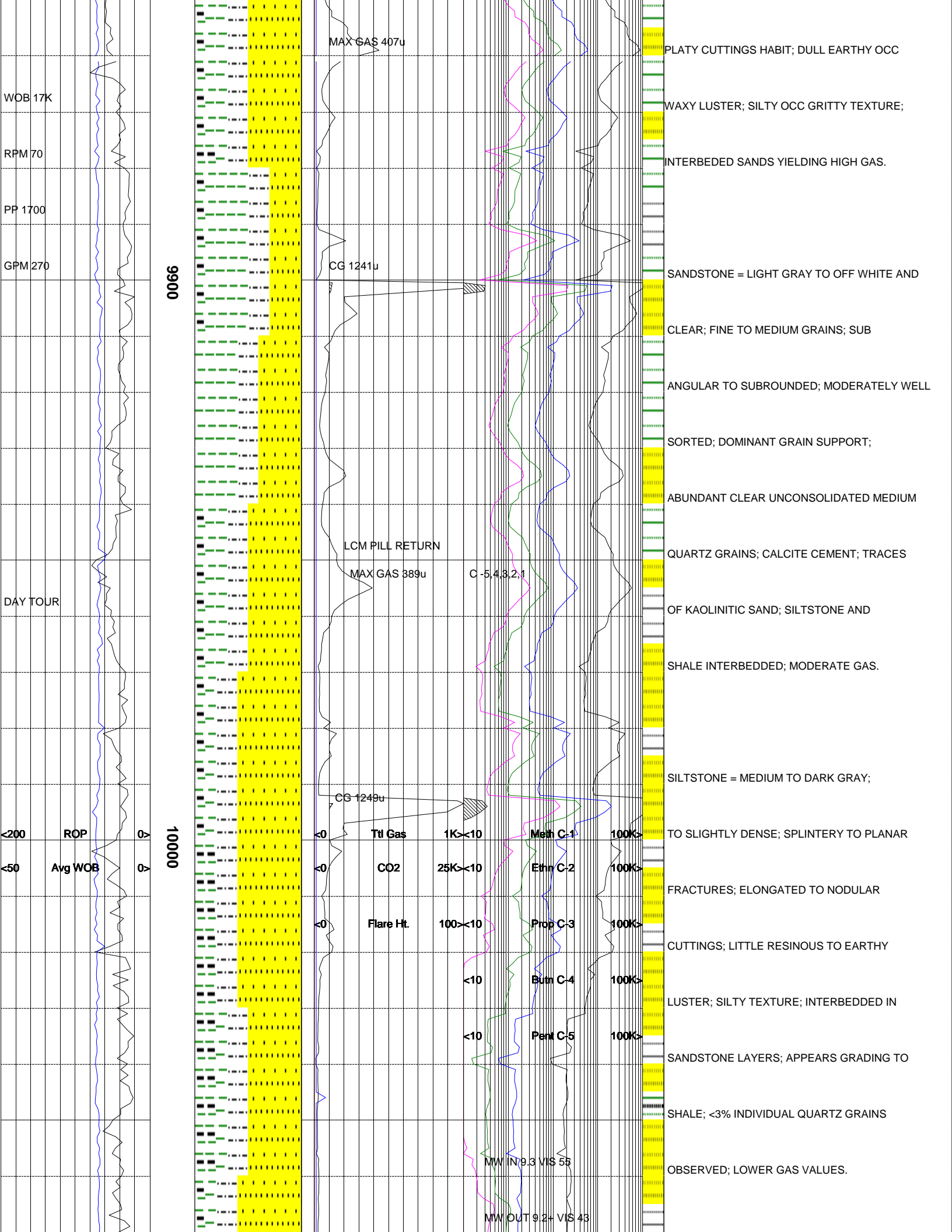
TO MEDIUM BROWNISH GRAY; FIRM TO

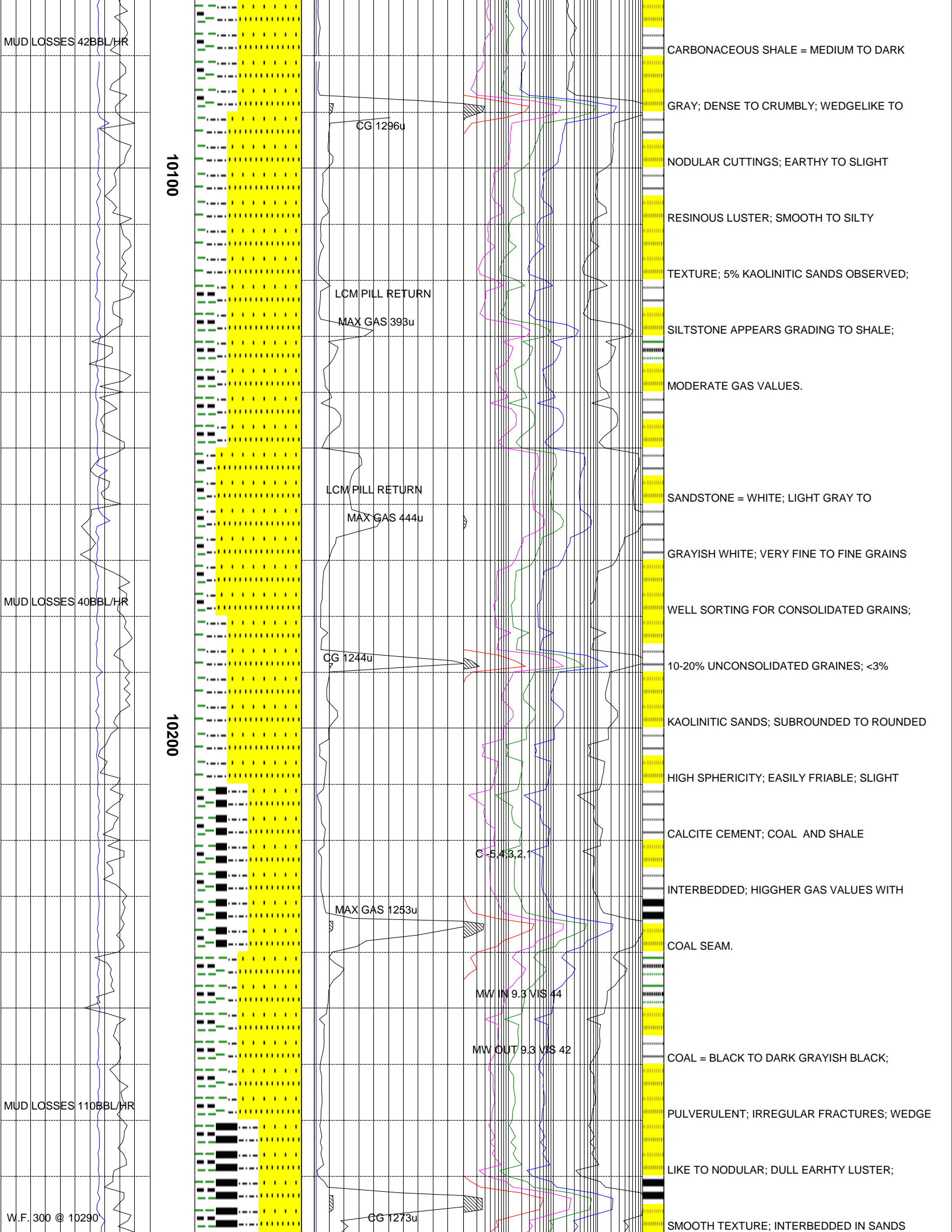












MUD LOSSES 42BBL/HR

10100

CG 1296u

LCM PILL RETURN

MAX GAS 393u

LCM PILL RETURN

MAX GAS 444u

MUD LOSSES 40BBL/HR

10200

CG 1244u

C-5.43.2,

MAX GAS 1253u

MW IN 9.3 VIS 44

MW OUT 9.3 VIS 42

MUD LOSSES 110BBL/HR

W.F. 300 @ 10290

CG 1273u

CARBONACEOUS SHALE = MEDIUM TO DARK

GRAY; DENSE TO CRUMBLY; WEDGELIKE TO

NODULAR CUTTINGS; EARTHY TO SLIGHT

RESINOUS LUSTER; SMOOTH TO SILTY

TEXTURE; 5% KAOLINITIC SANDS OBSERVED;

SILTSTONE APPEARS GRADING TO SHALE;

MODERATE GAS VALUES.

SANDSTONE = WHITE; LIGHT GRAY TO

GRAYISH WHITE; VERY FINE TO FINE GRAINS

WELL SORTING FOR CONSOLIDATED GRAINS;

10-20% UNCONSOLIDATED GRAINES; <3%

KAOLINITIC SANDS; SUBROUNDED TO ROUNDED

HIGH SPHERICITY; EASILY FRIABLE; SLIGHT

CALCITE CEMENT; COAL AND SHALE

INTERBEDDED; HIGGHER GAS VALUES WITH

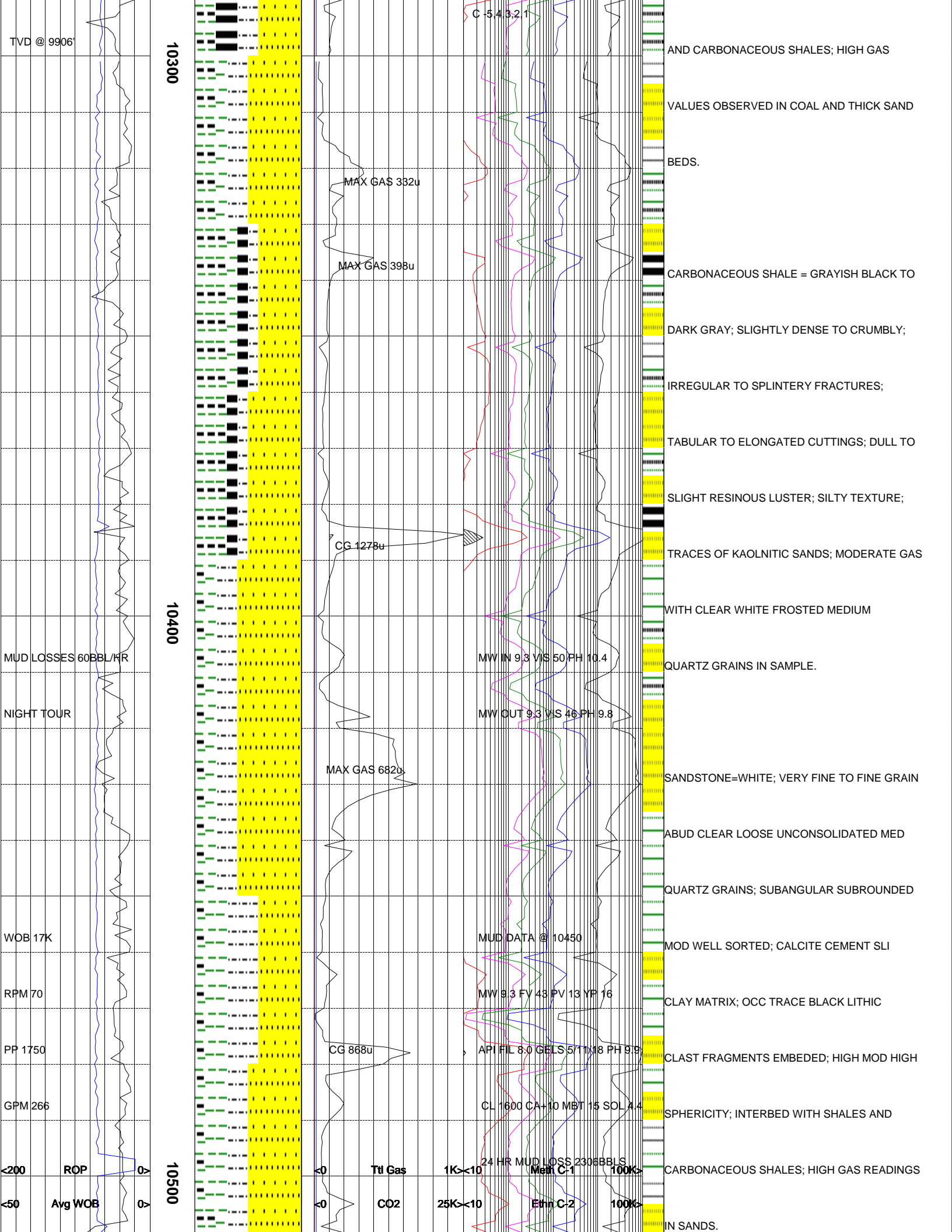
COAL SEAM.

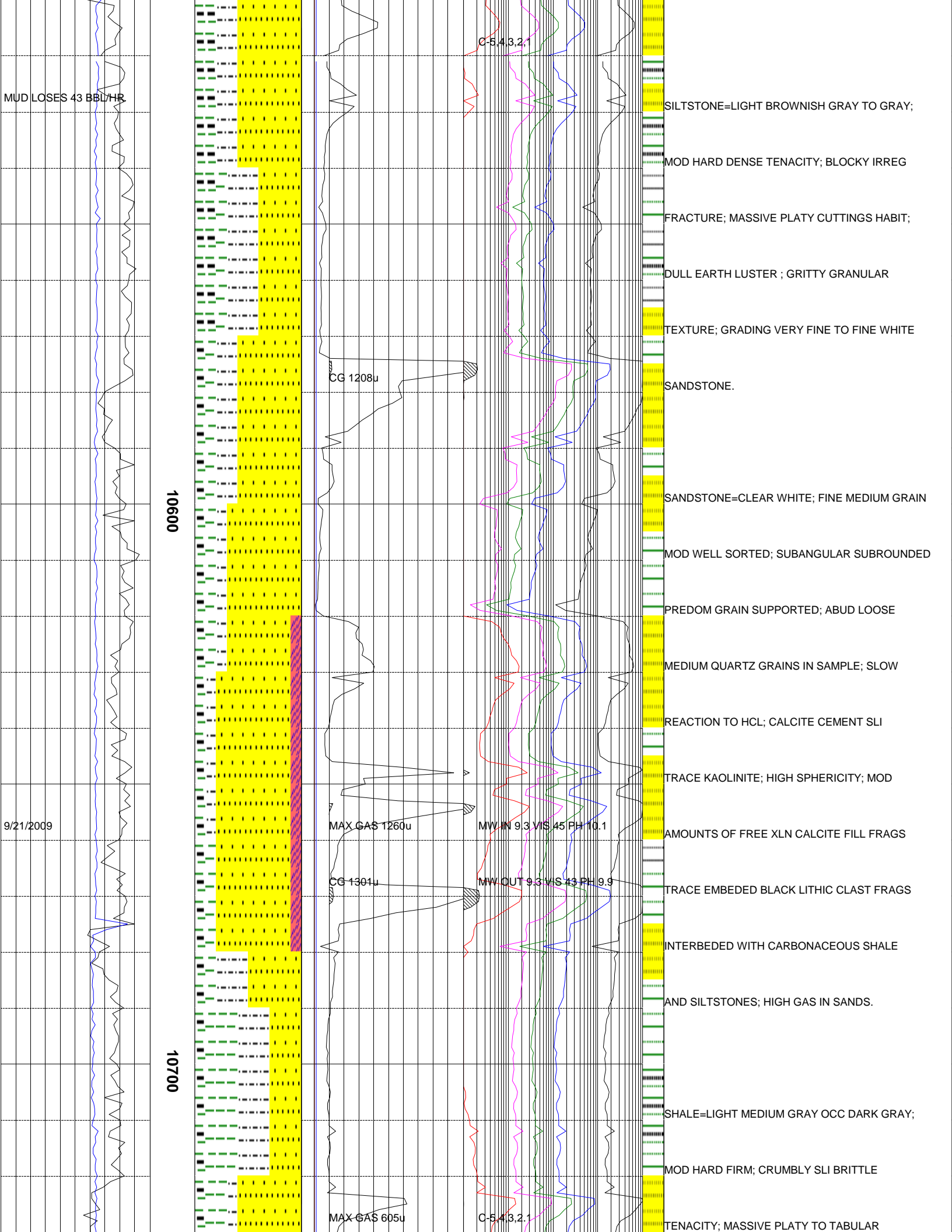
COAL = BLACK TO DARK GRAYISH BLACK;

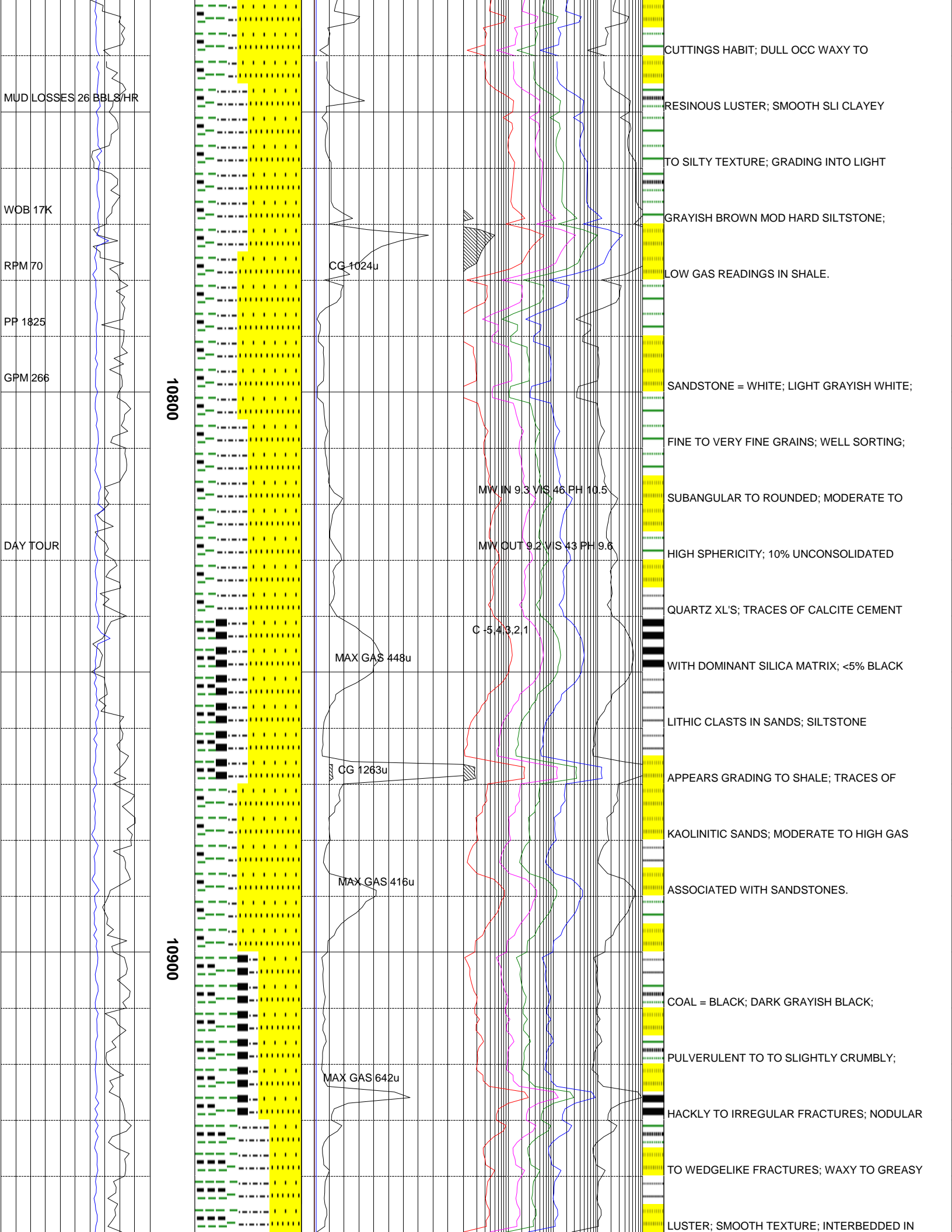
PULVERULENT; IRREGULAR FRACTURES; WEDGE

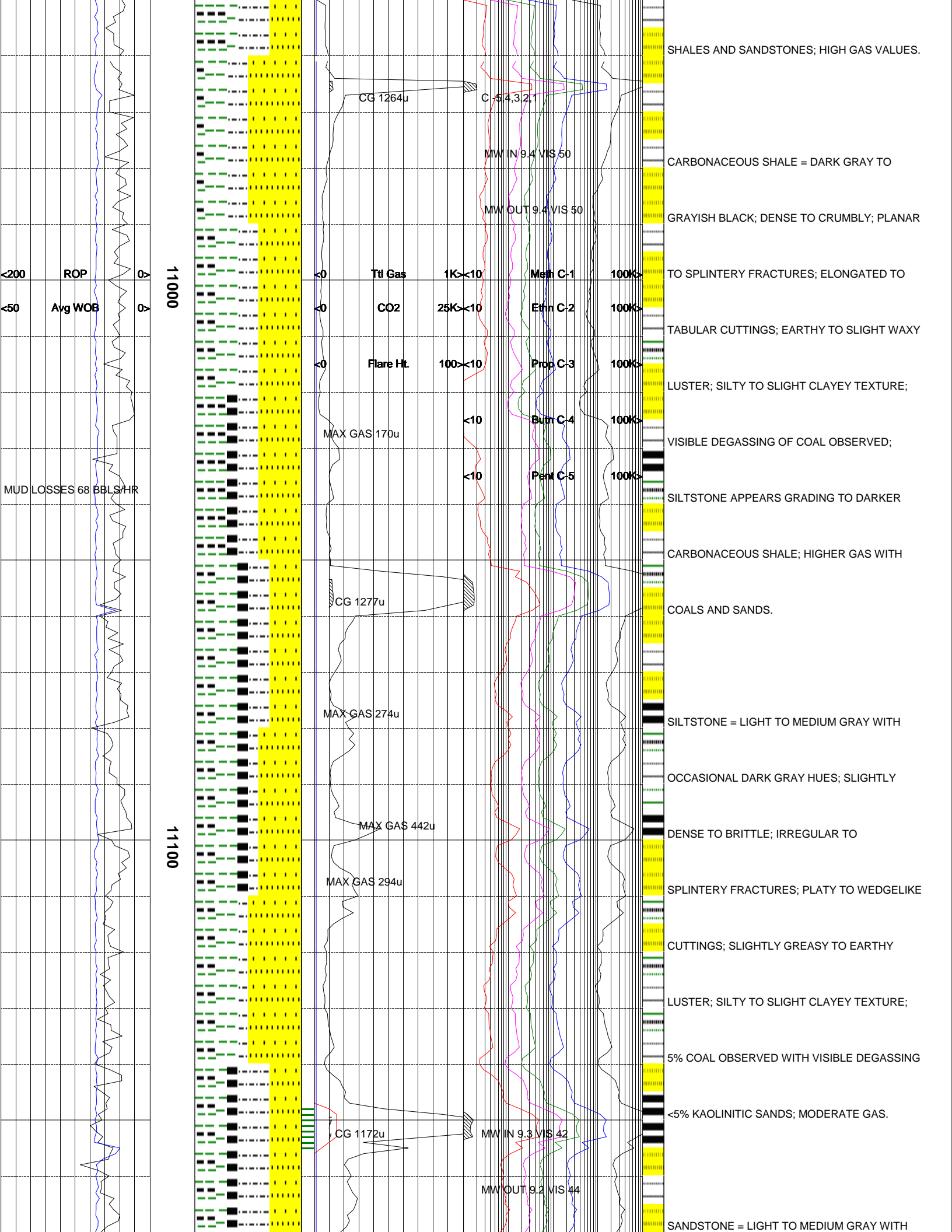
LIKE TO NODULAR; DULL EARTHY LUSTER;

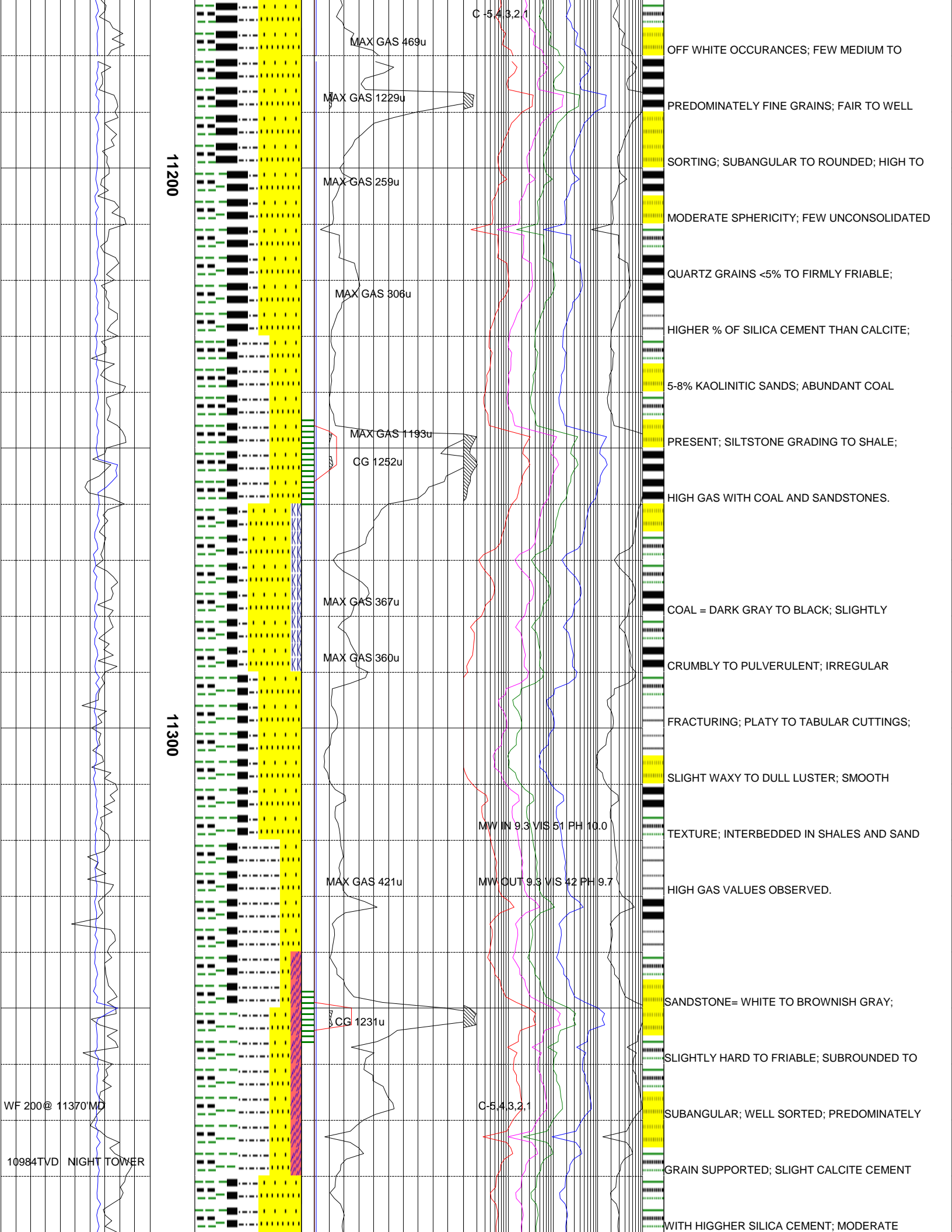
SMOOTH TEXTURE; INTERBEDDED IN SANDS

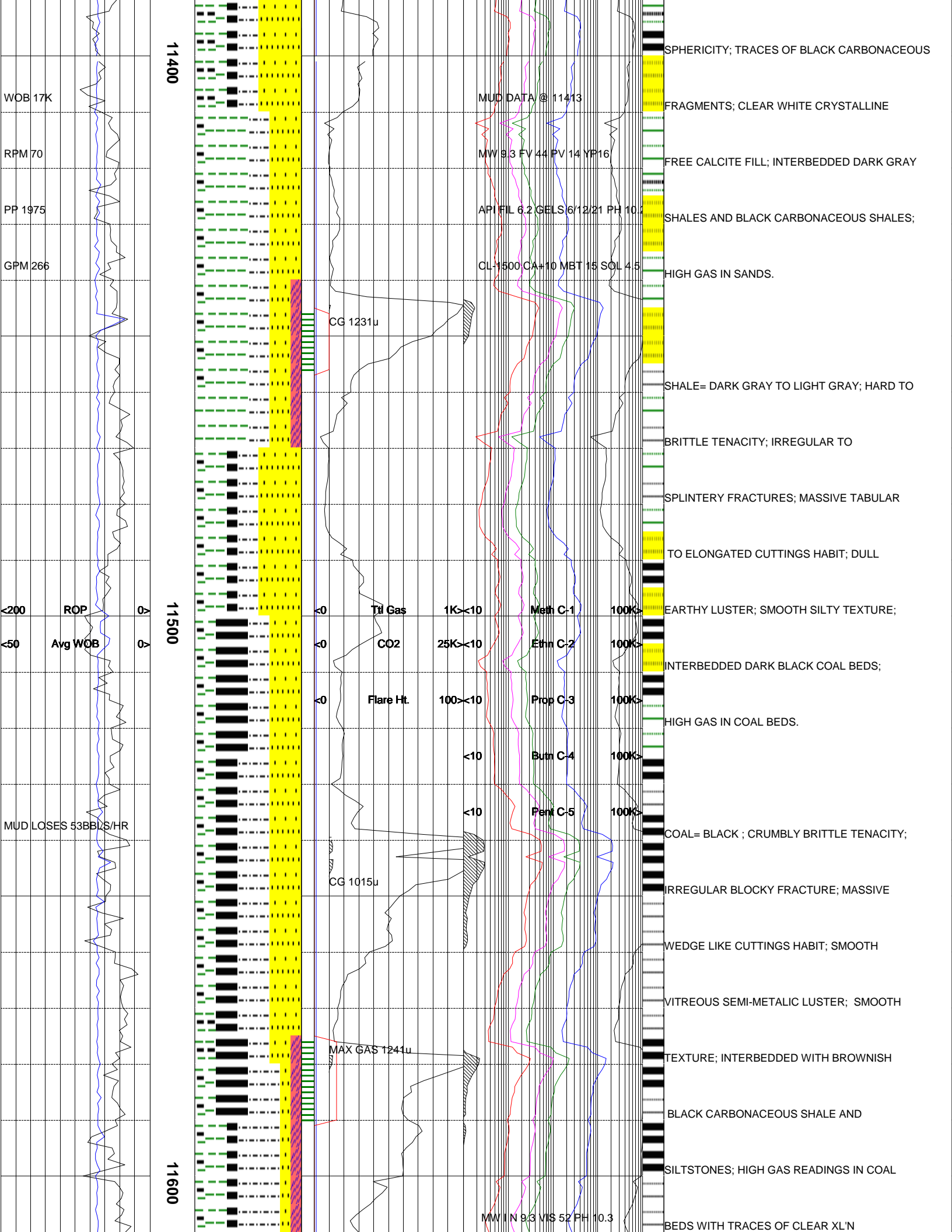


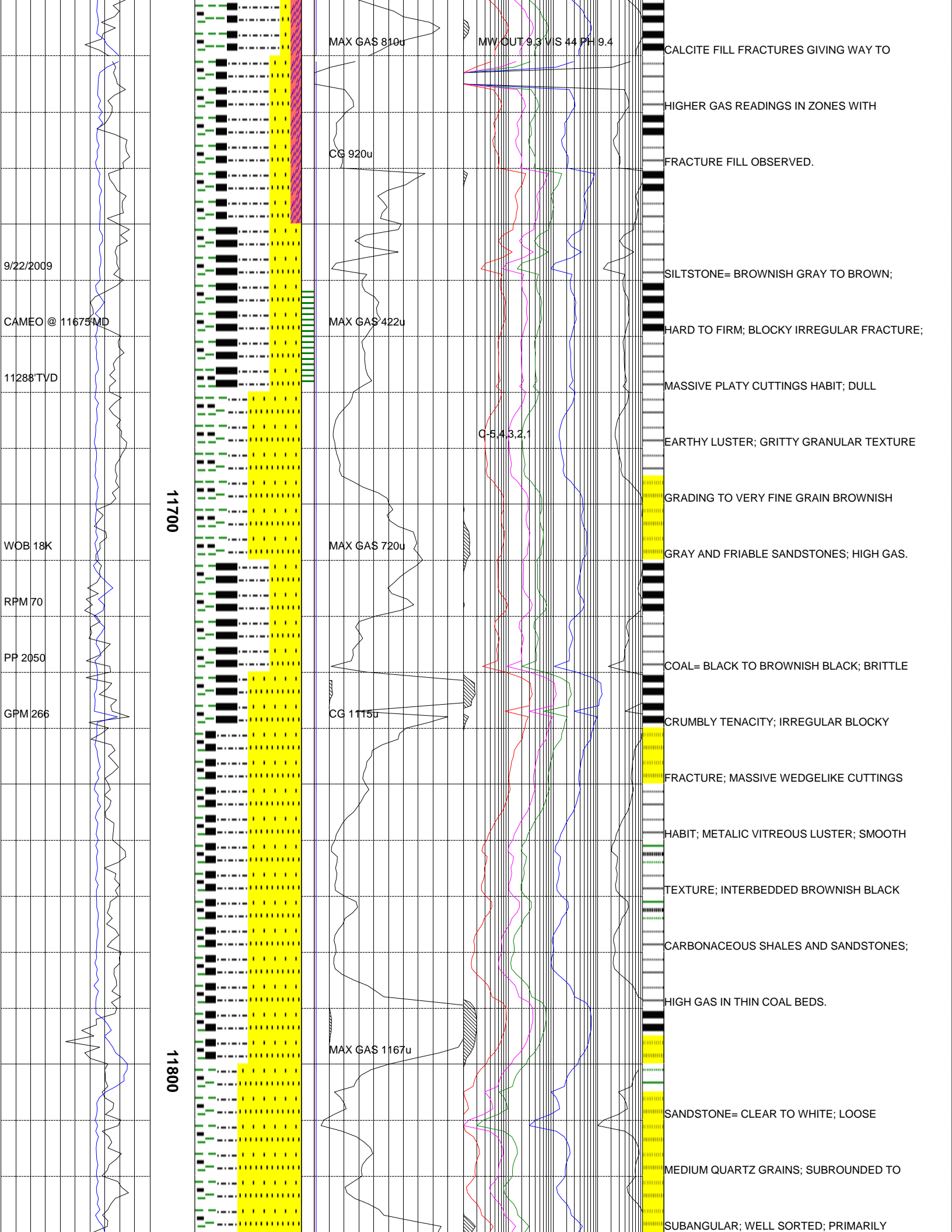


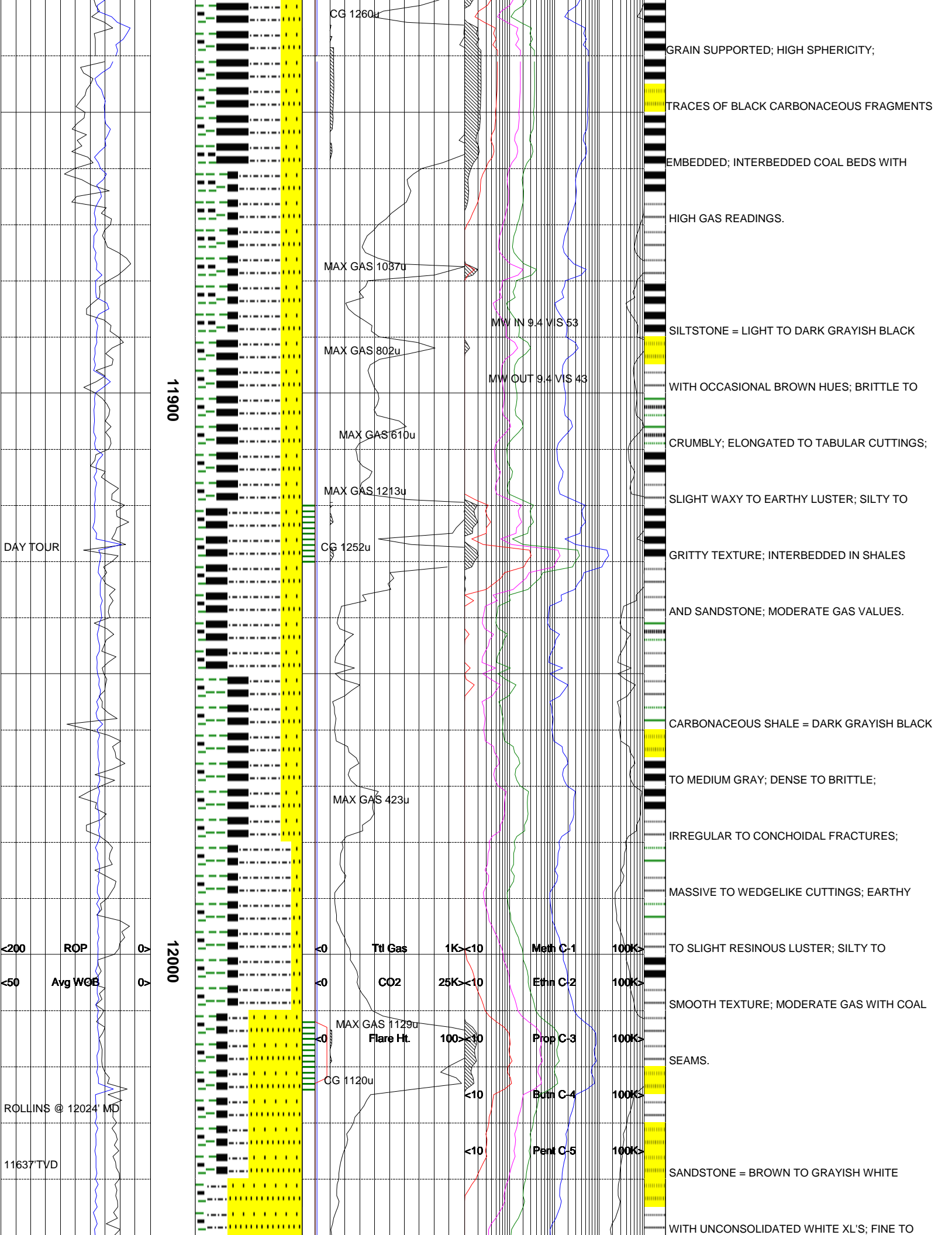


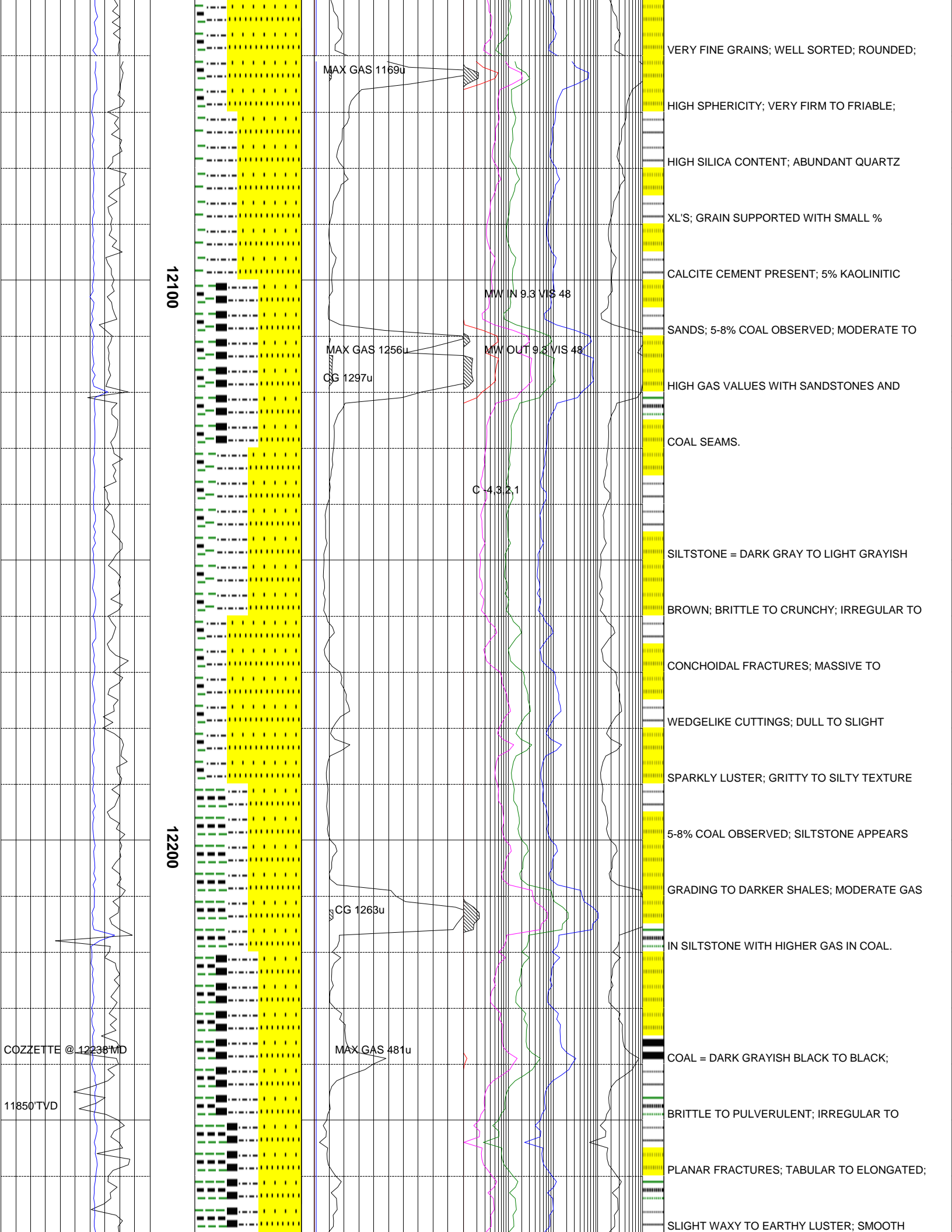


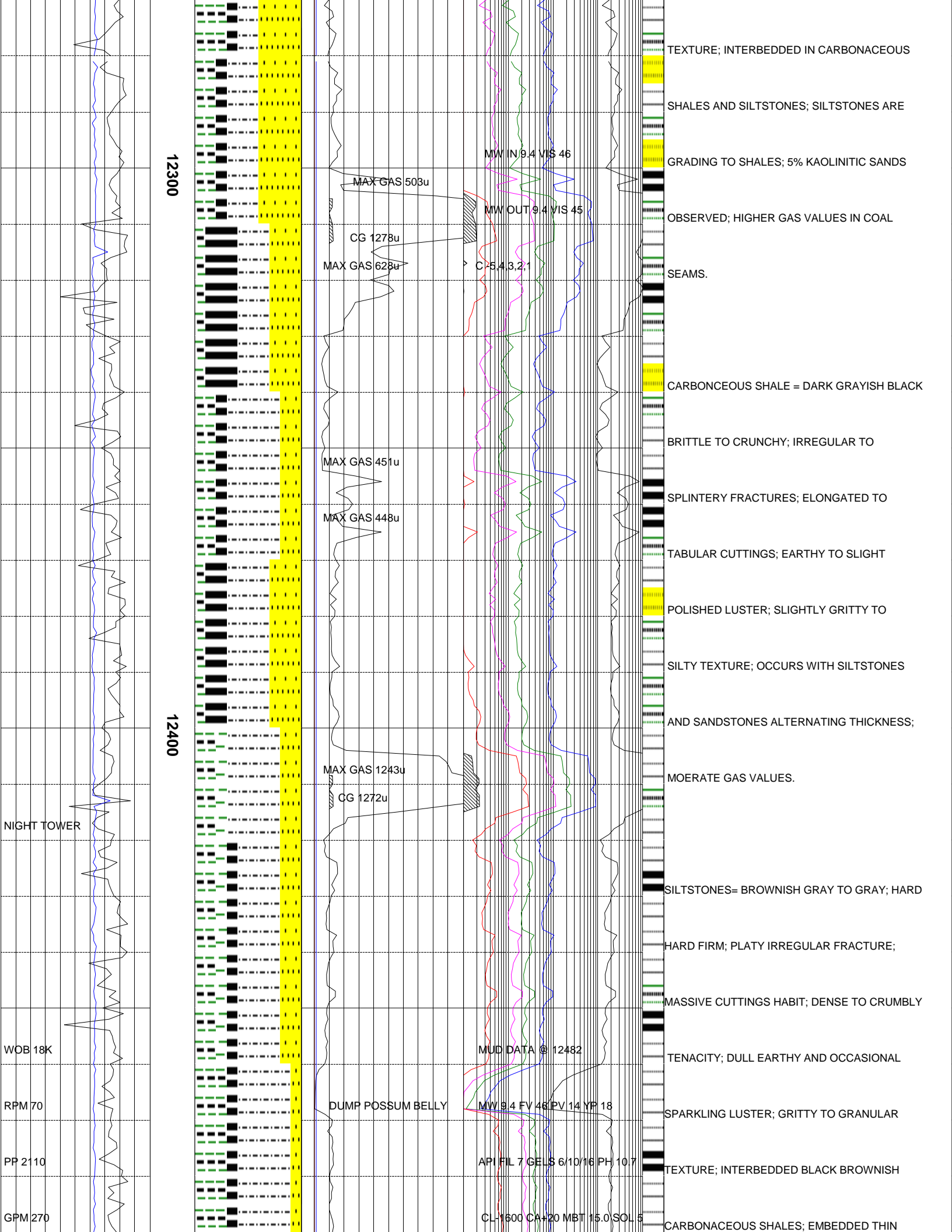


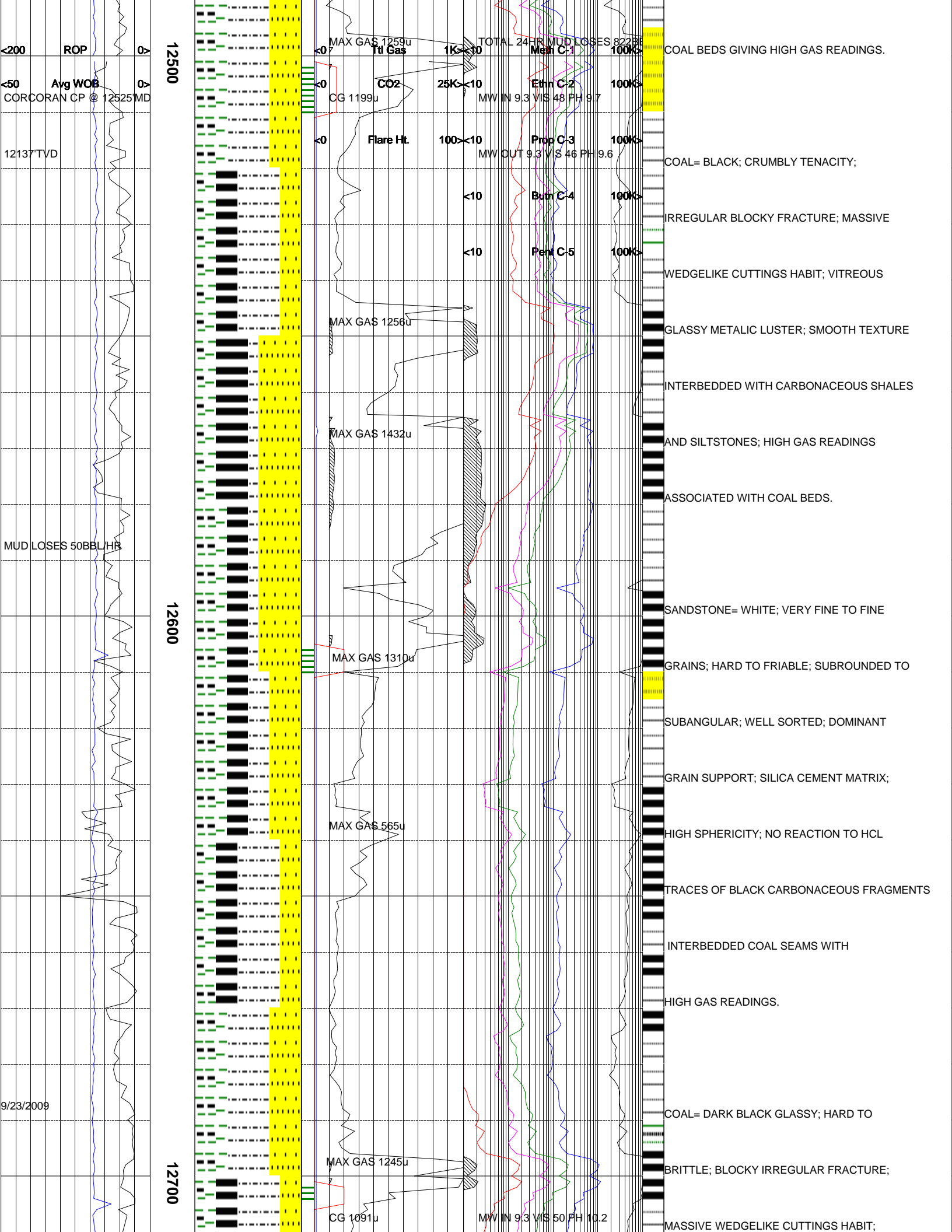


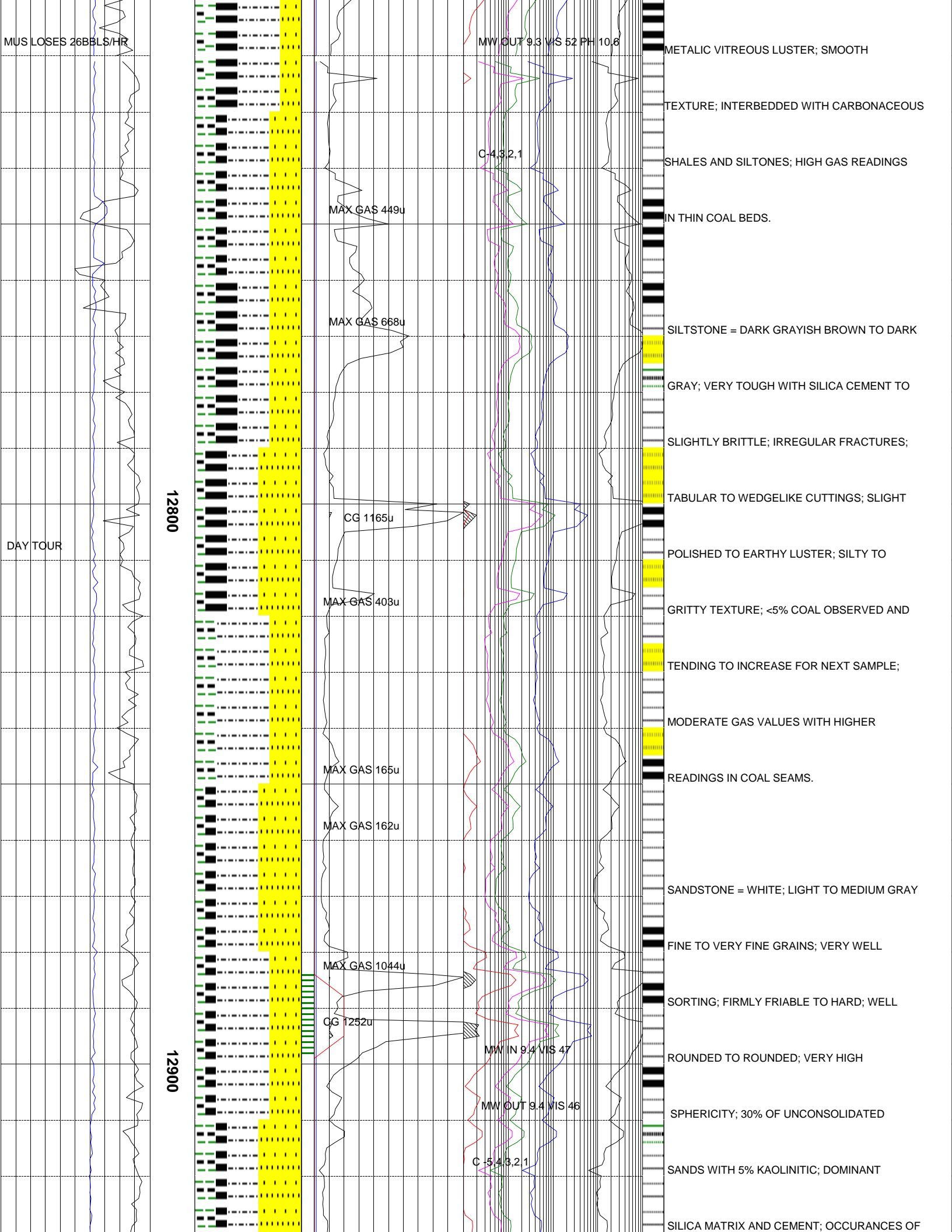


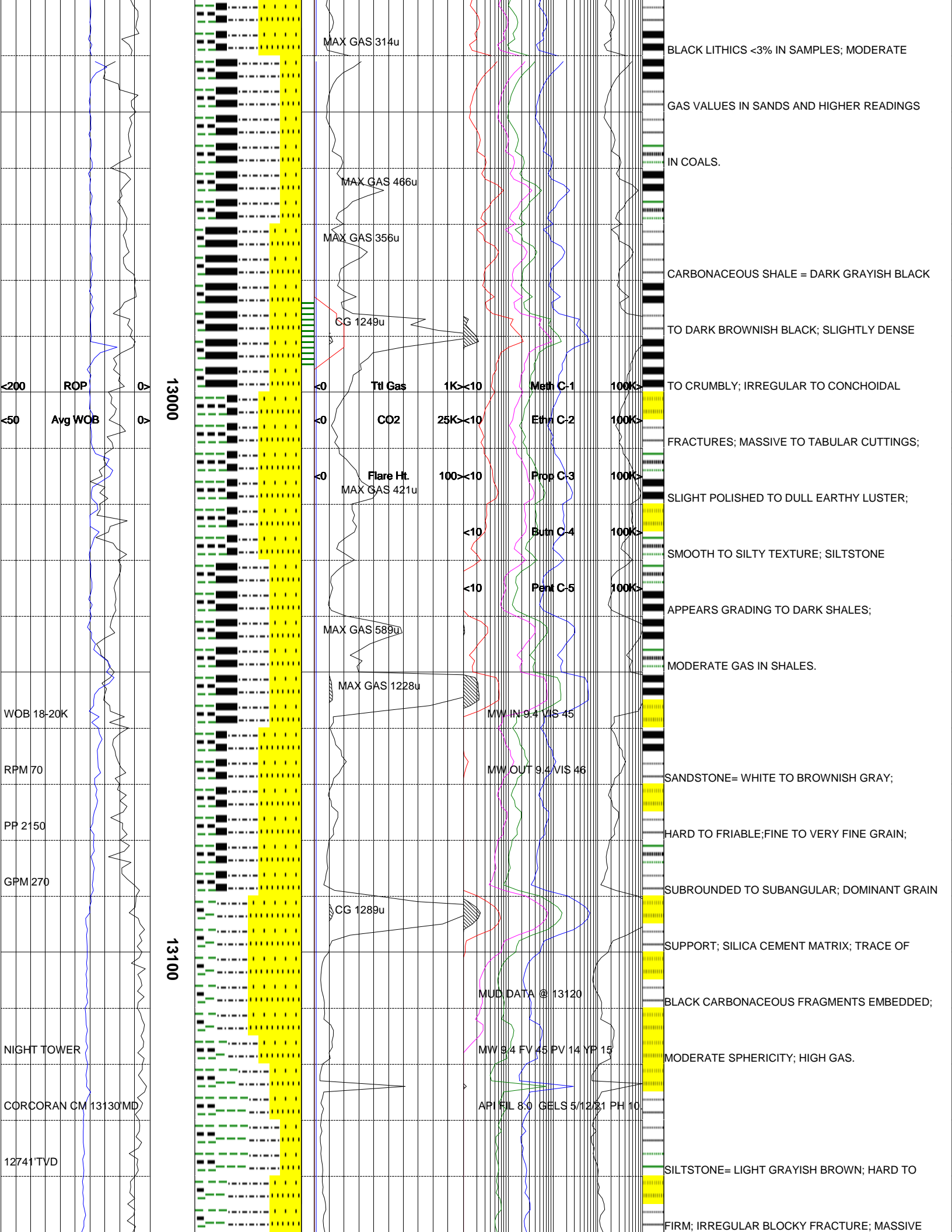


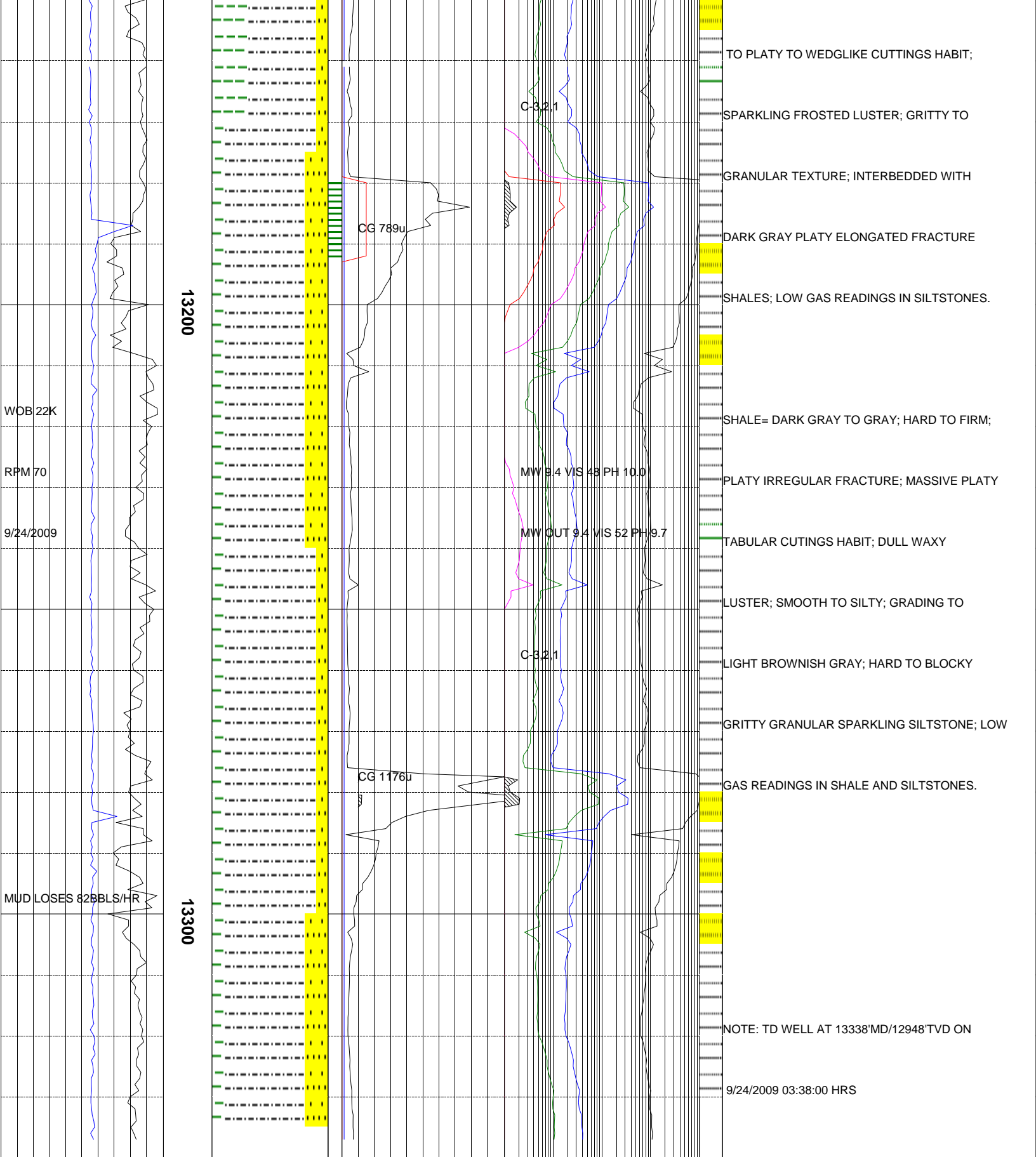












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