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MUDLOG MD

COMPANY	ExxonMobil Production
WELL	FRU197-33B5
FIELD	Freedom Ranch
REGION	Rockies
COORDINATES	39.921295000 108.282534000
ELEVATION	6460.5'
COUNTY, STATE	Rio Blanco, CO
API INDEX	051031142500
SPUD DATE	04/24/2010
CONTRACTOR	HP
CO. REP.	Chad Jarvis
RIG/TYPE	HP321
LOGGING UNIT	Unit #31
GEOLOGISTS	Barbara Delaney Mike Franco
ADD. PERSONS	Chad Record
CO. GEOLOGIST	Chris Alba

LOG INTERVAL

DEPTHS:	4524'	TO	12445'
DATES:	04/25/2010	TO	05/13/2010
SCALE:	5"=100'		

CASING DATA

10.75"	AT	4524'
4.5"	AT	12444'
	AT	
	AT	

MUD TYPES

WATER-BASED	TO	12445'
	TO	
	TO	
	TO	

HOLE SIZE

8.750"	TO	11087'
7.875"	TO	12445'
	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	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	

ROCK CHARACTERISTICS AND CONSTITUENTS

ARE LISTED FROM MOST ABUNDANT TO LEAST

ABUNDANT PERCENTAGE OF SAMPLE.

GAS CALIBRATED TO S.P.L.W.A.

STANDARDS (2% ME = 100 UNITS).

GAS CHROMATOGRAPHY EQUIPMENT CALIBRATED

TO A TEST GAS COMPOSED OF THE FOLLOWING:

METHANE = 10,000 PPM

ETHANE = 1,000 PPM

PROPANE = 1,000 PPM

I - BUTANE = 1,000 PPM

N - BUTANE = 1,000 PPM

I - PENTANE = 1,000 PPM

N - PENTANE = 1,000 PPM

<100		ROP				0>
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<50	Avg WOB	0>
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DAY TOUR

NB#4	8.750"	HC
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506FX JETS: 5x12

4400

4500

<0	Ttl Gas	1K<10	Meth C-1	100K
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<0	CO2	10K<<10	Ethn C-2	100K<
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<0	Flare Ht.	100>10	Prop C-3	100K
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	<10	Burn C-4	100K
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<10	Pent C-5	100%
MW IN 9.1+	VS 51 pH 9.6	

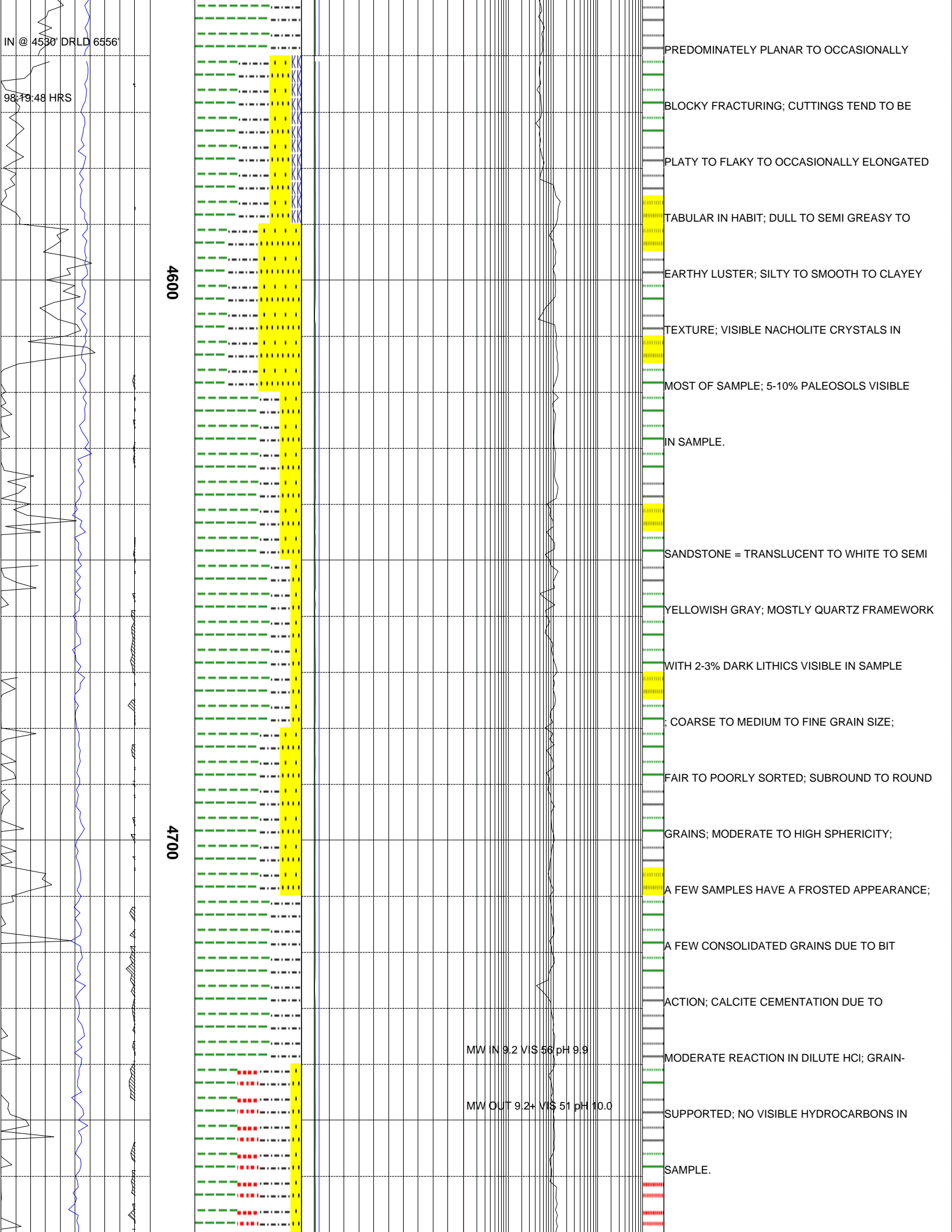
MW OUT 9.1+VIS 53 pH 11.1

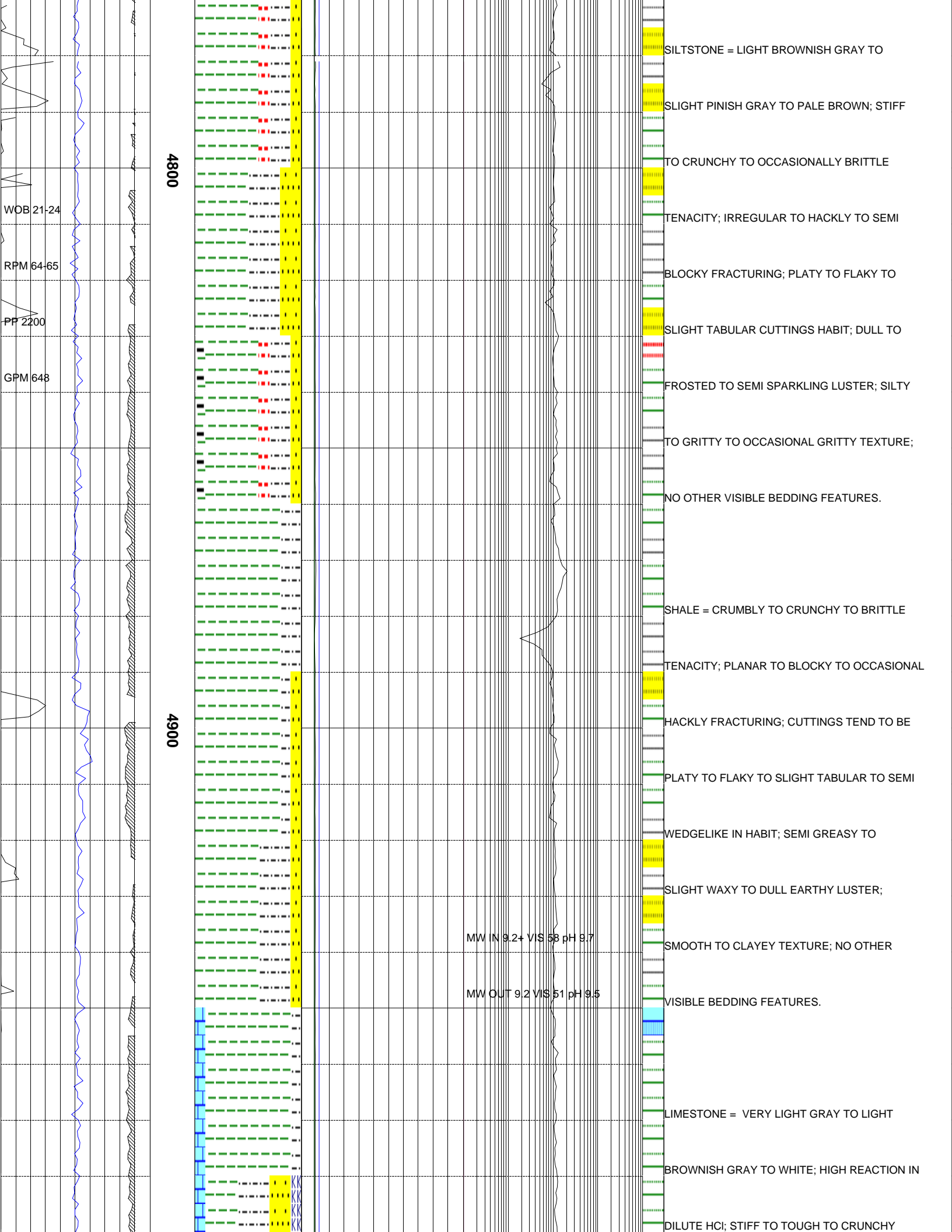
EPOCH WELL SERVICES COMMENCED LOGGING

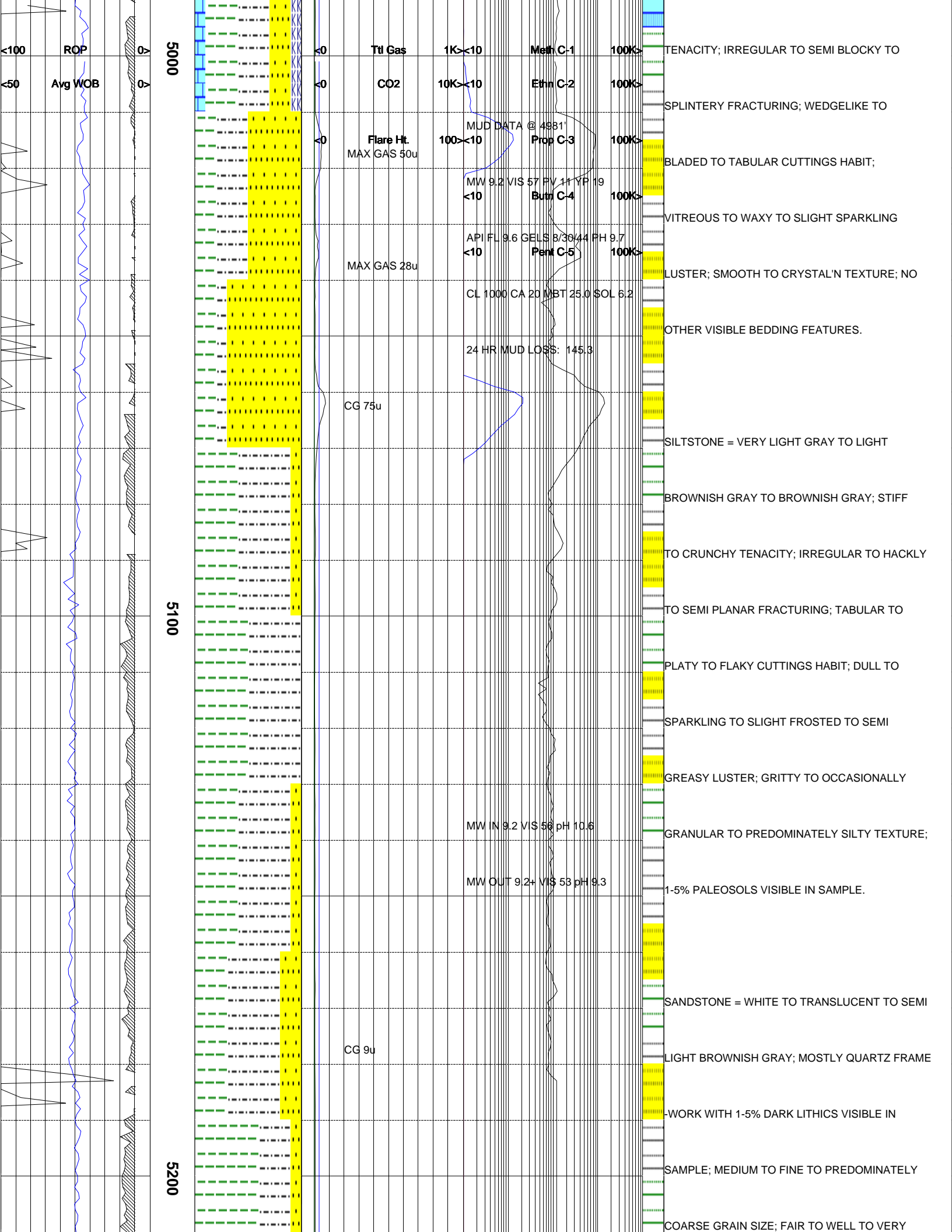
ON 04/25/2010 @ 4530'

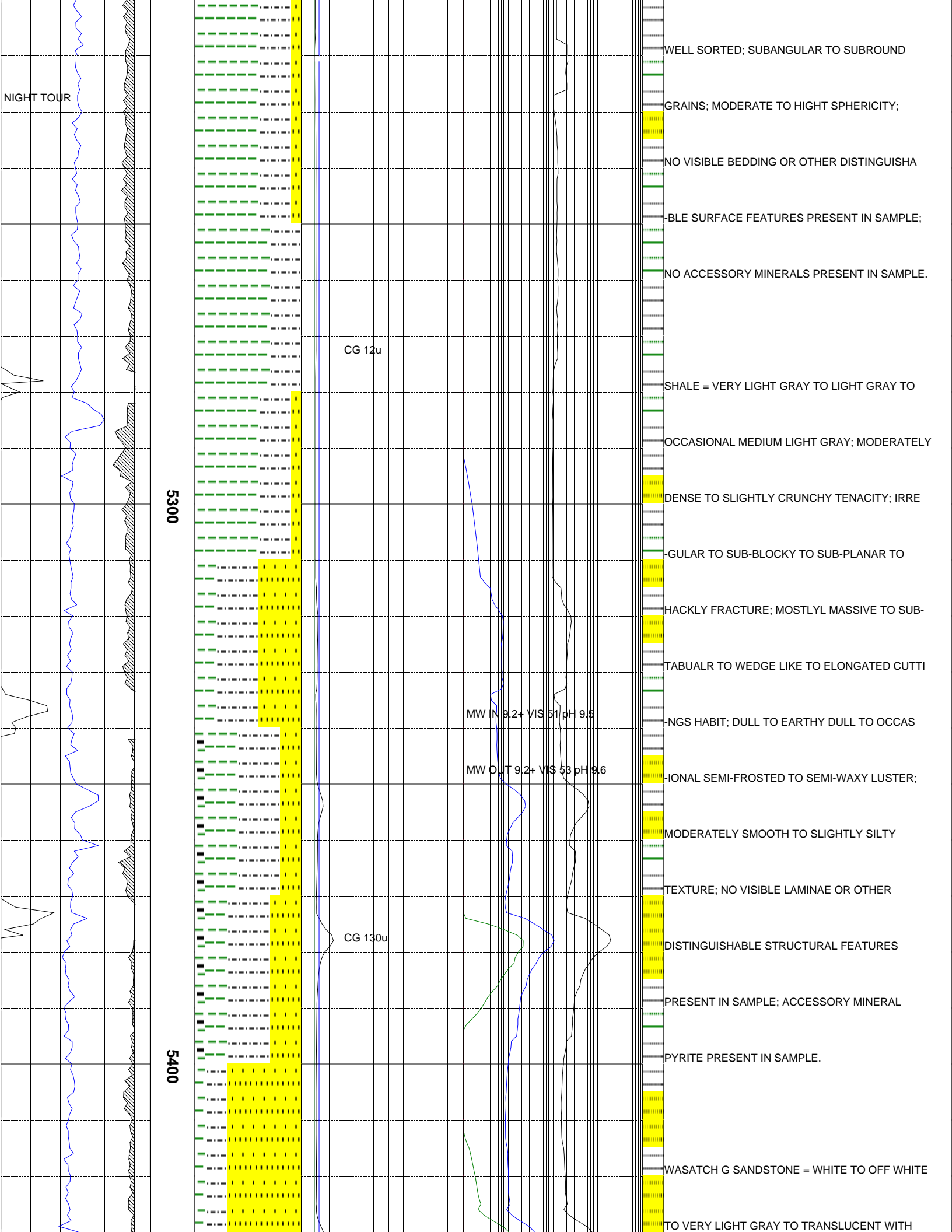
SHALE = LIGHT GRAY TO LIGHT OLIVE GRAY;

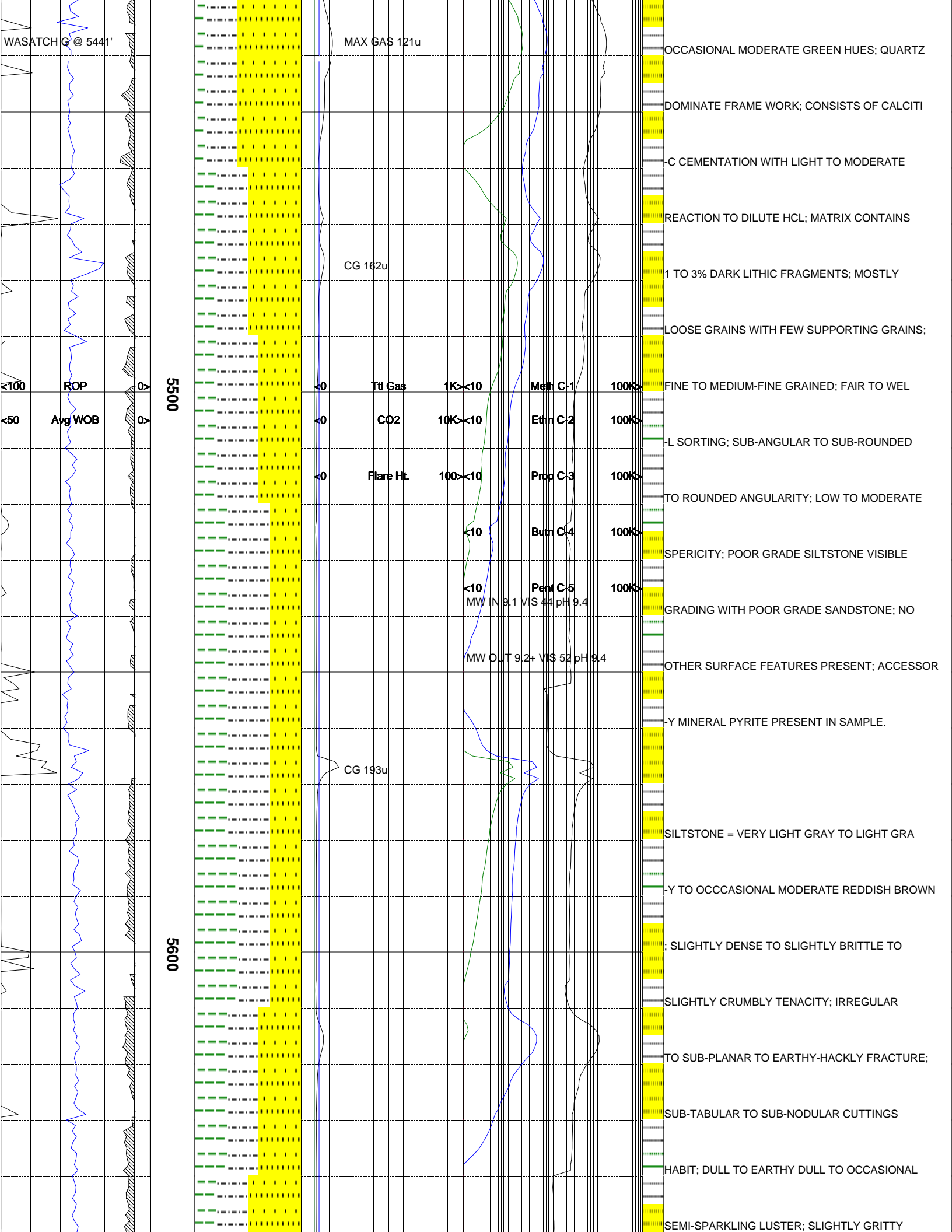
BRITTLE TO CRUMBLY TO CRUNCHY TENACITY;

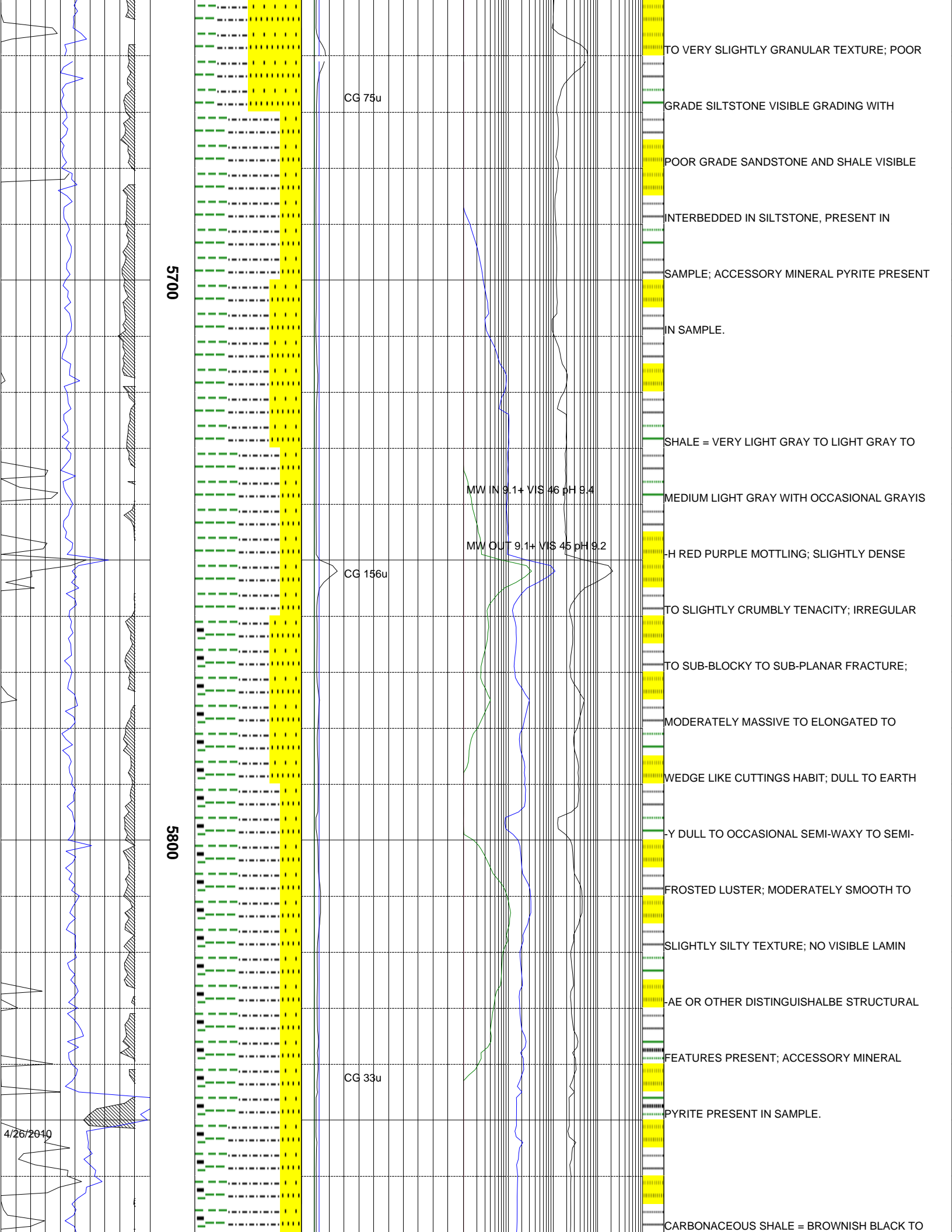


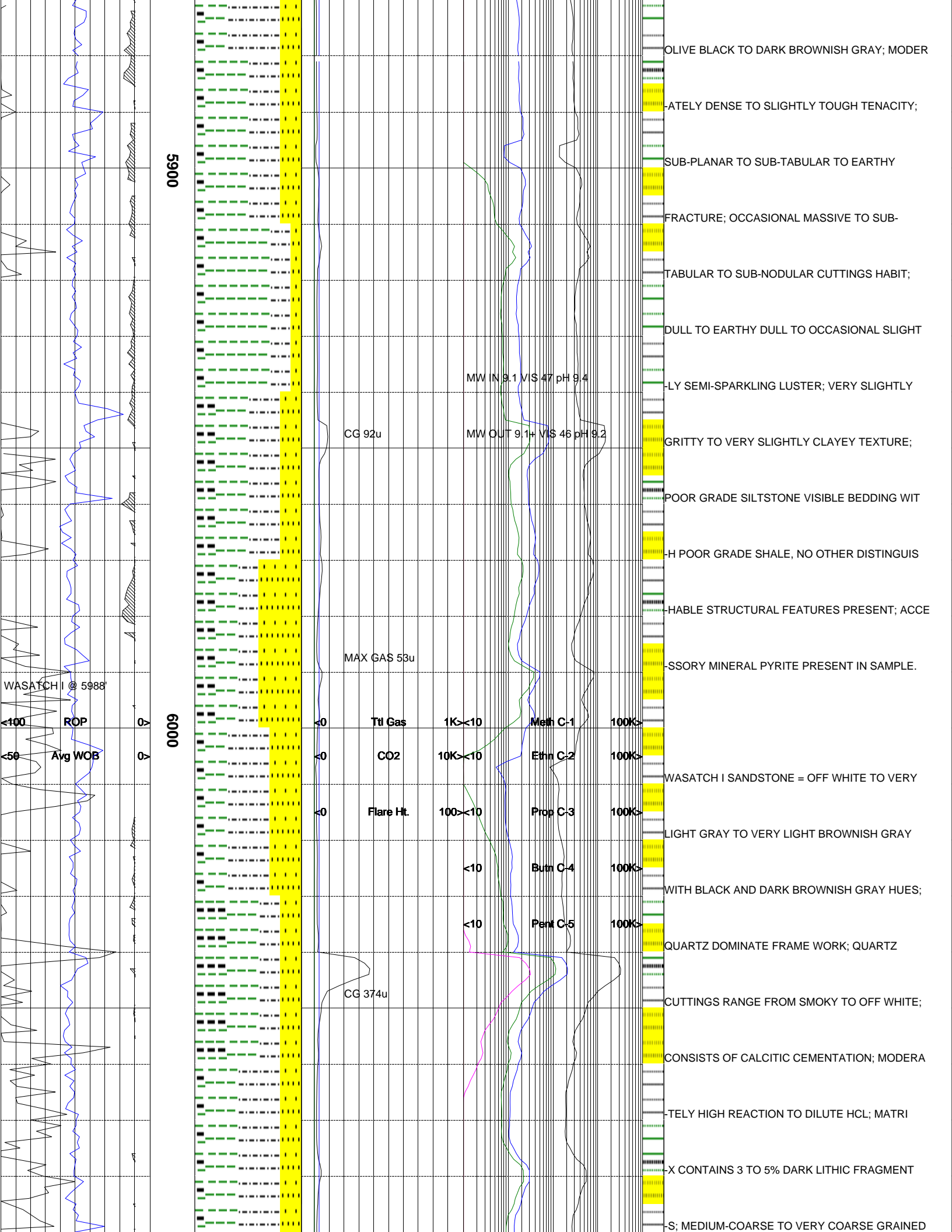


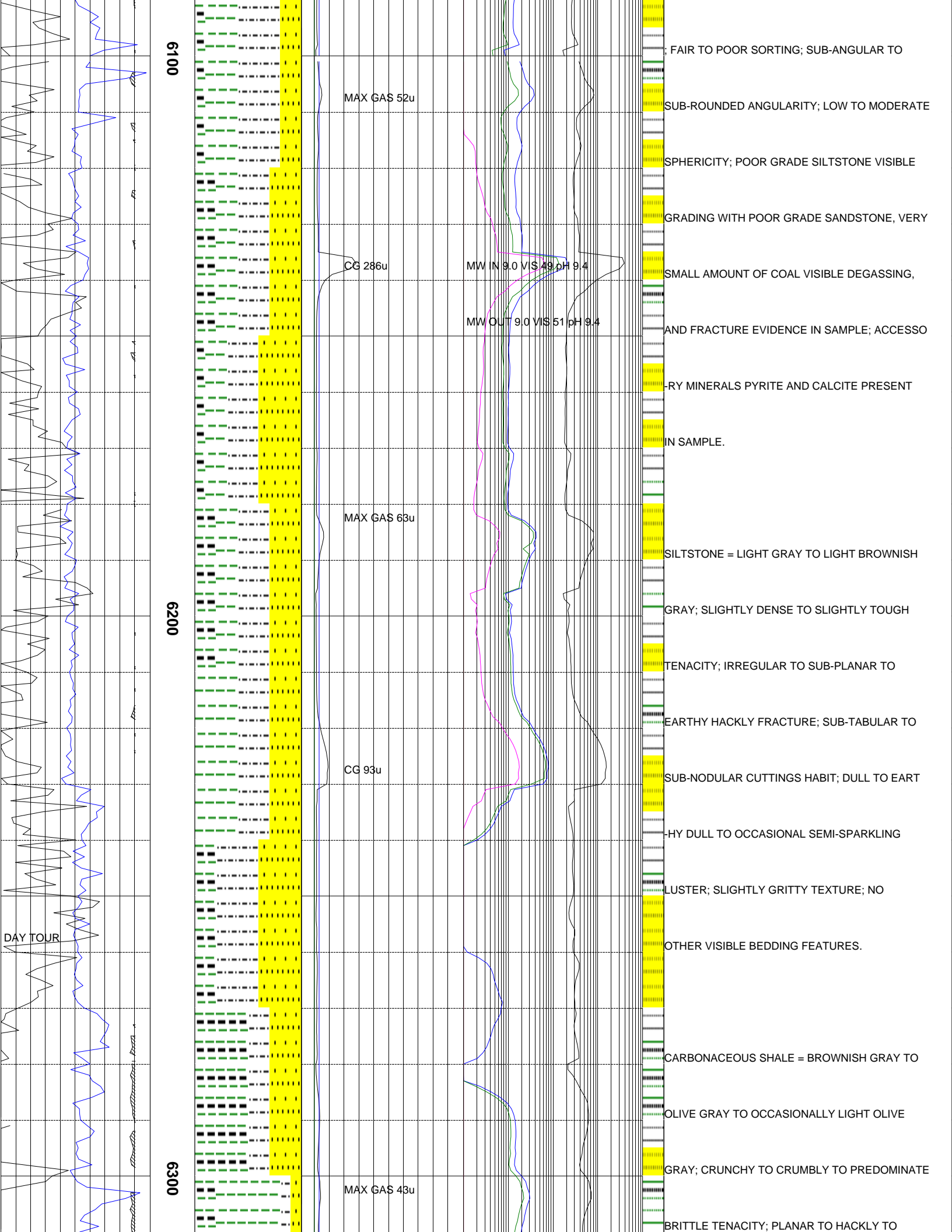


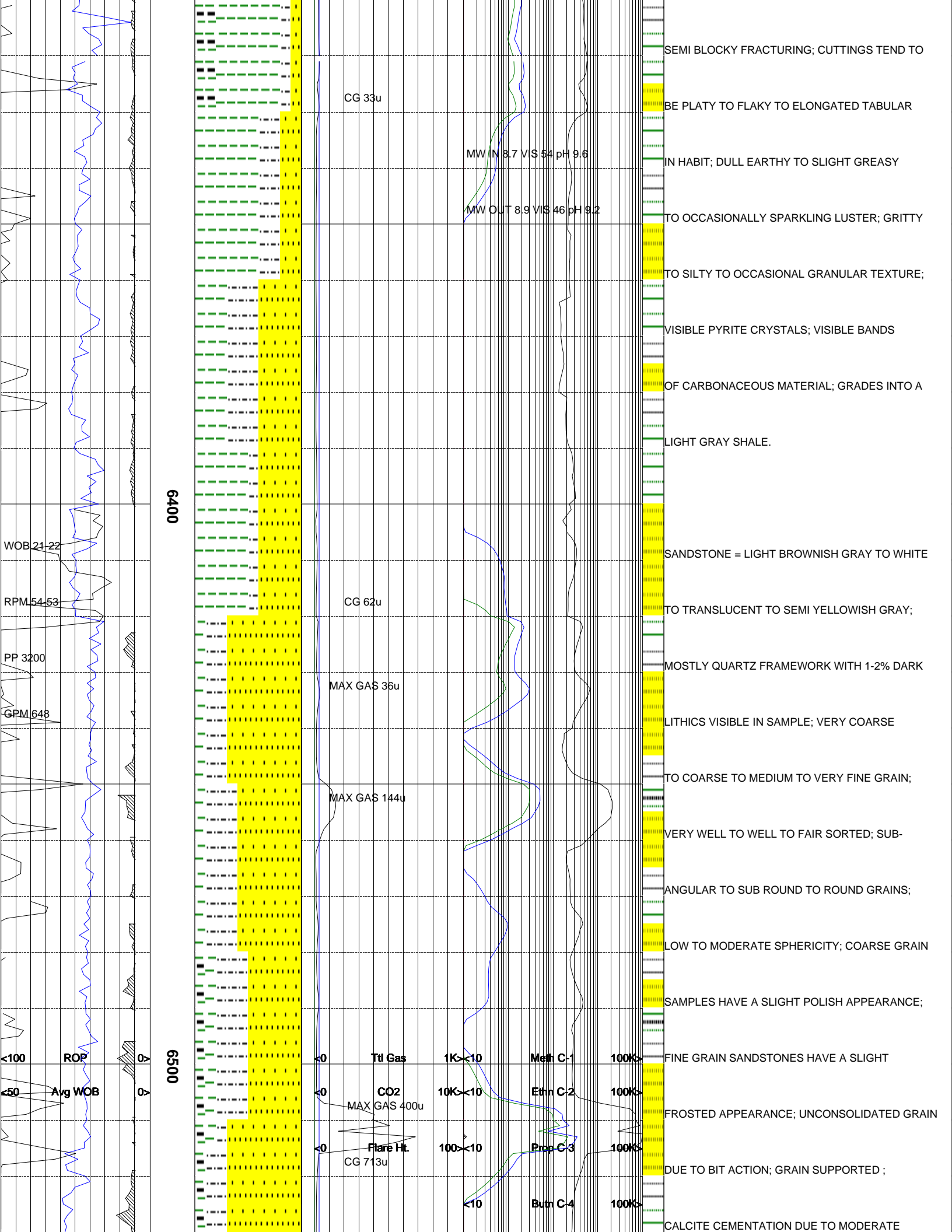


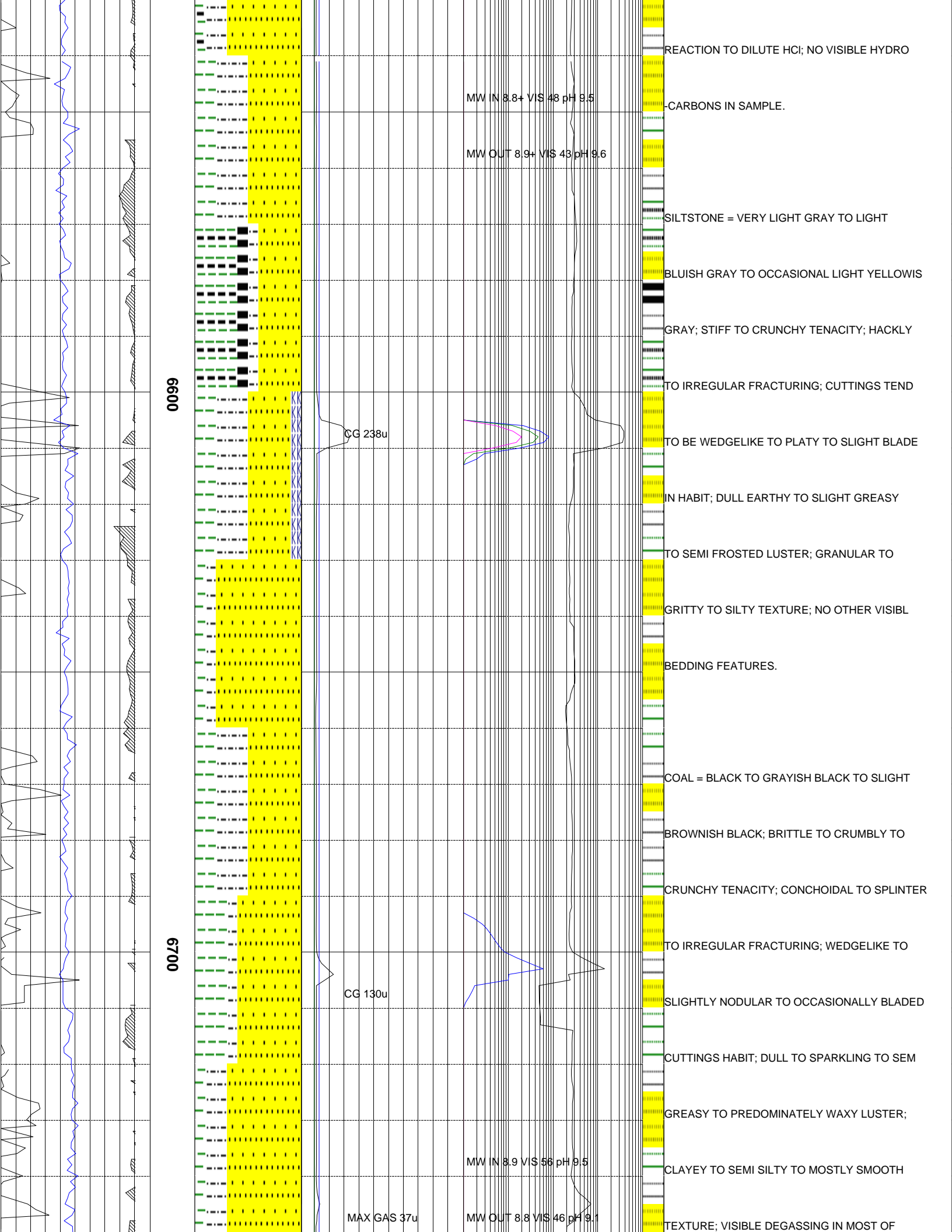


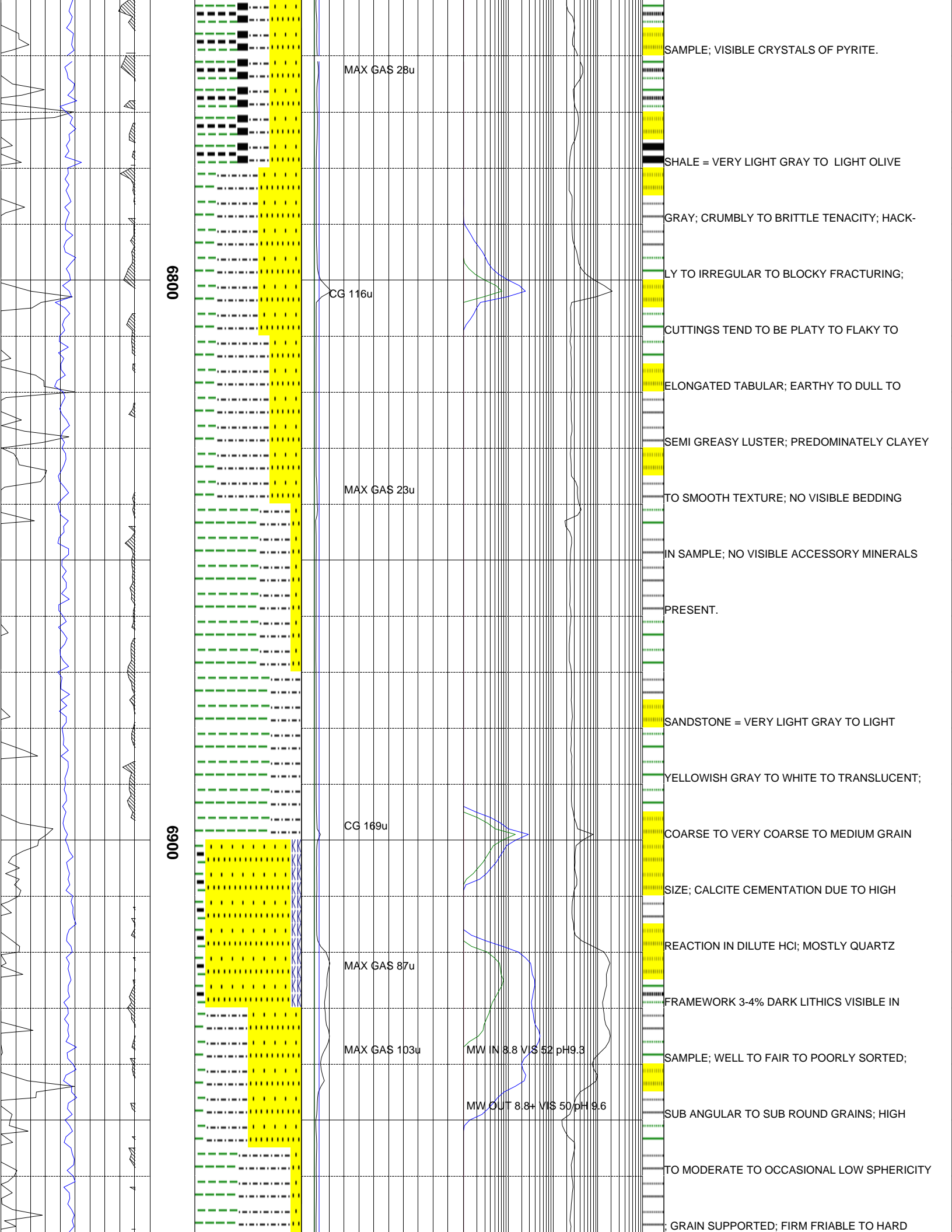


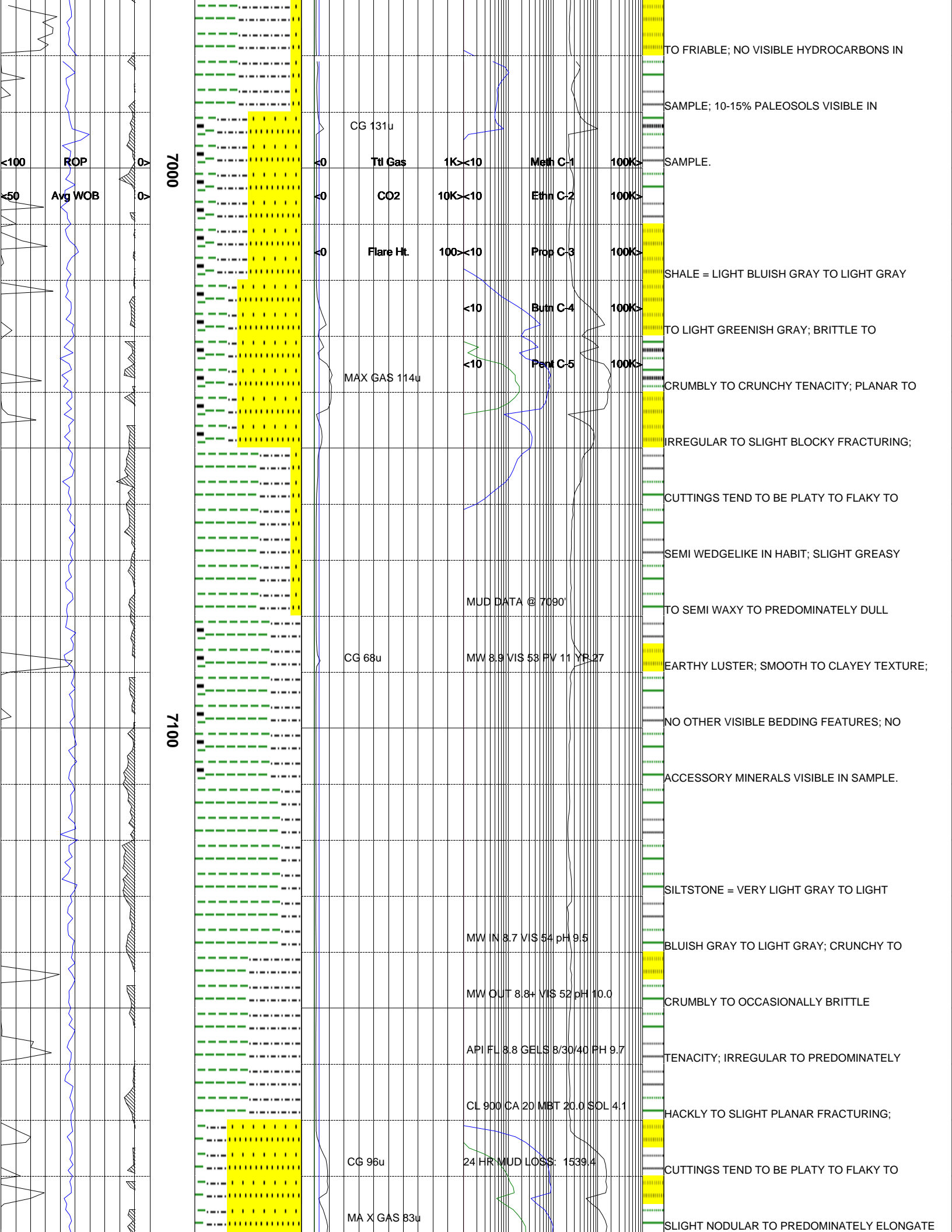


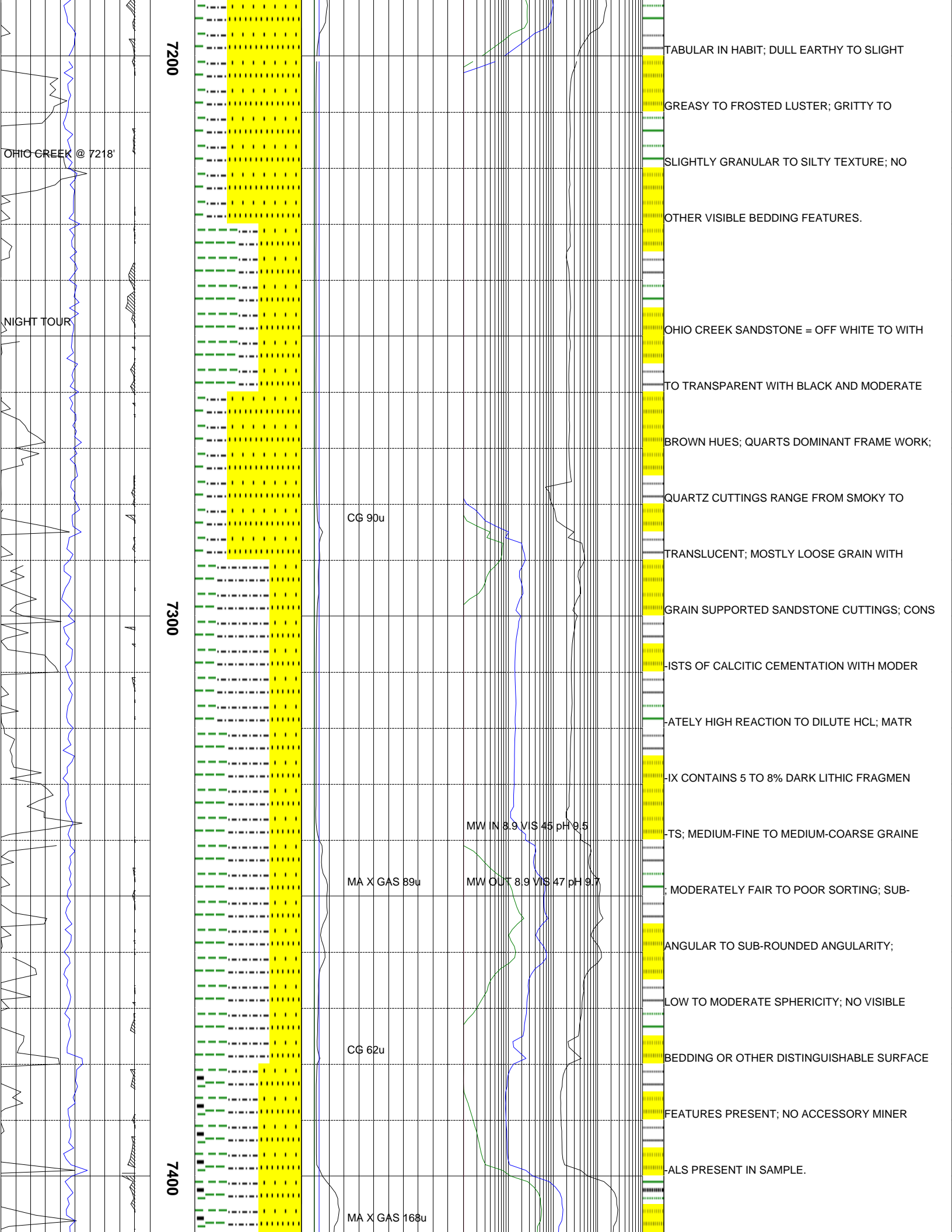


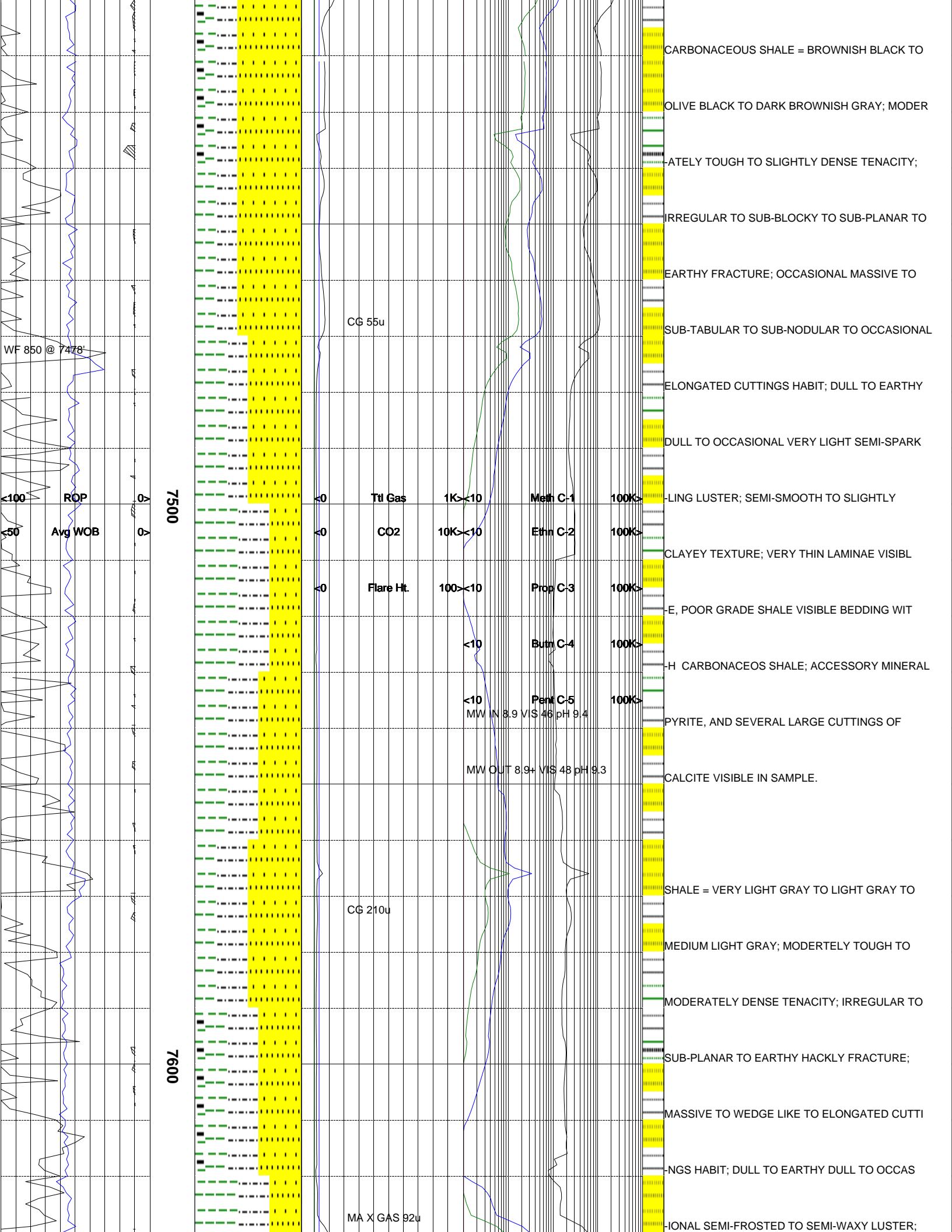


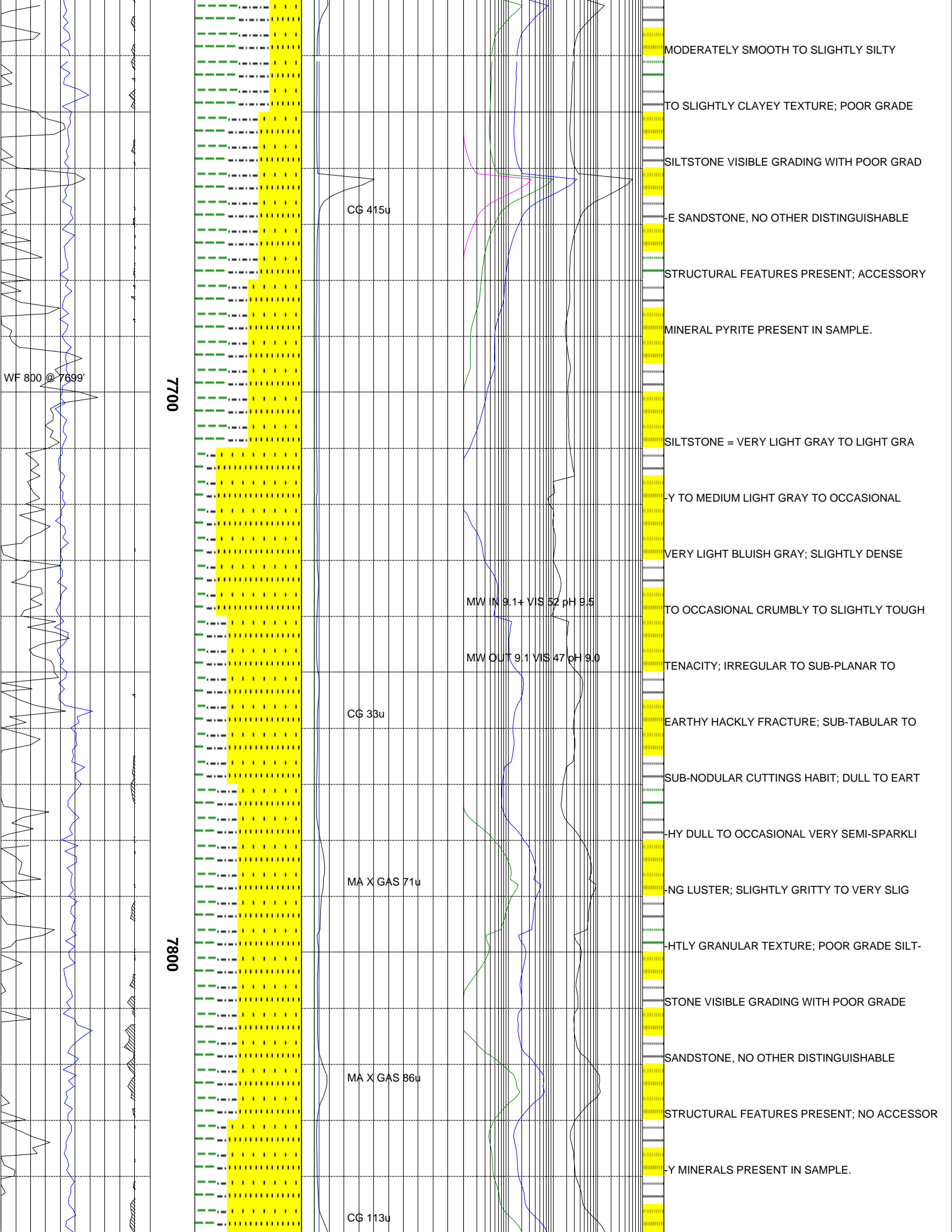


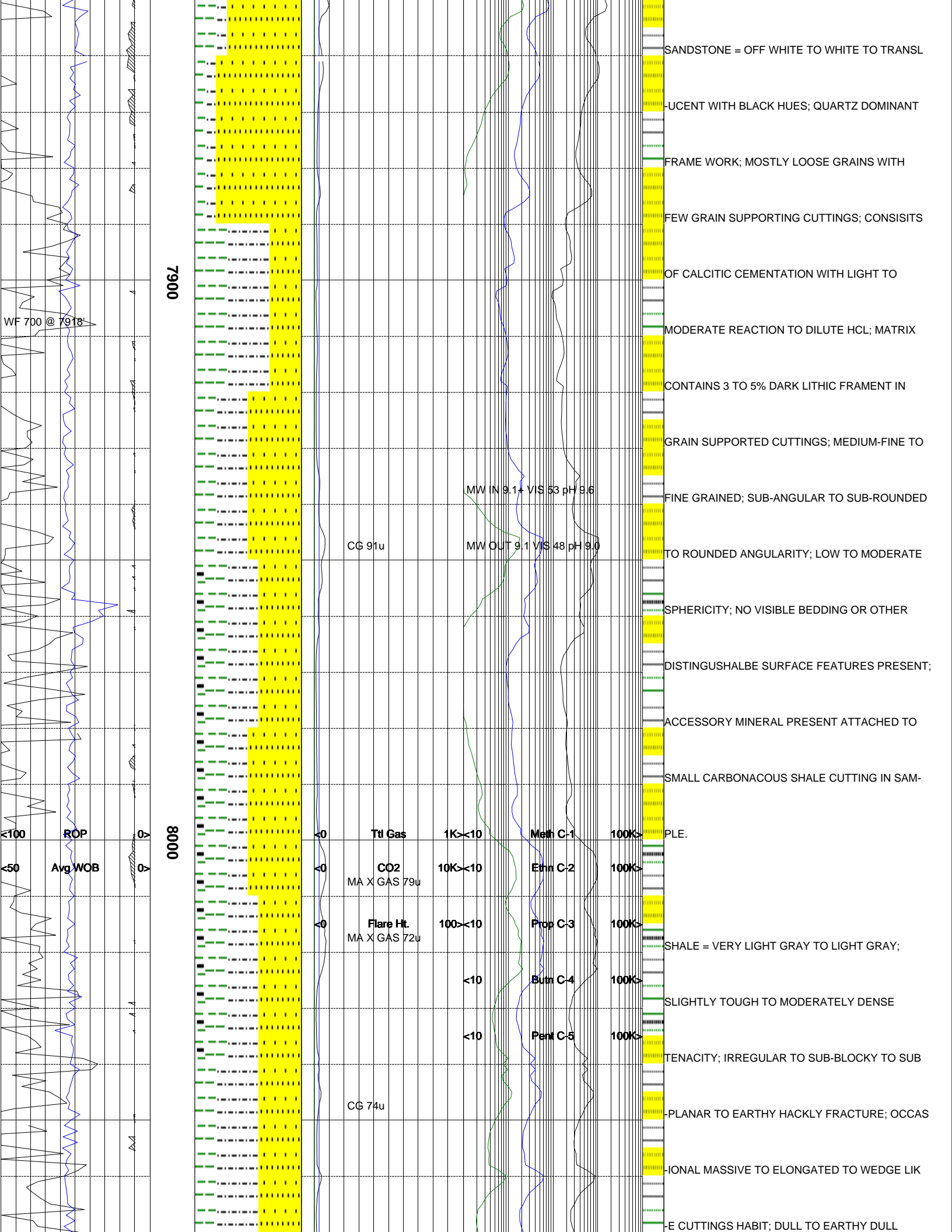


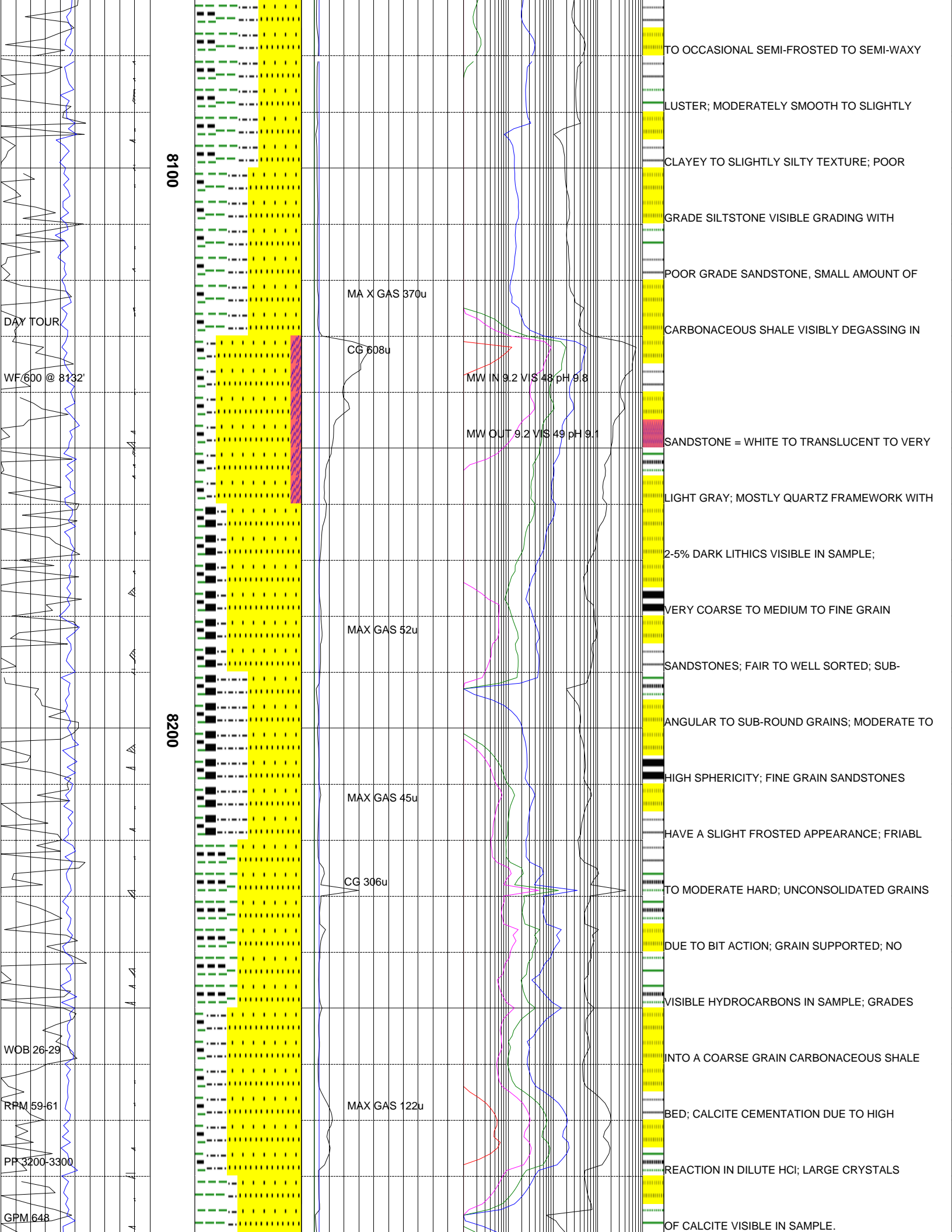


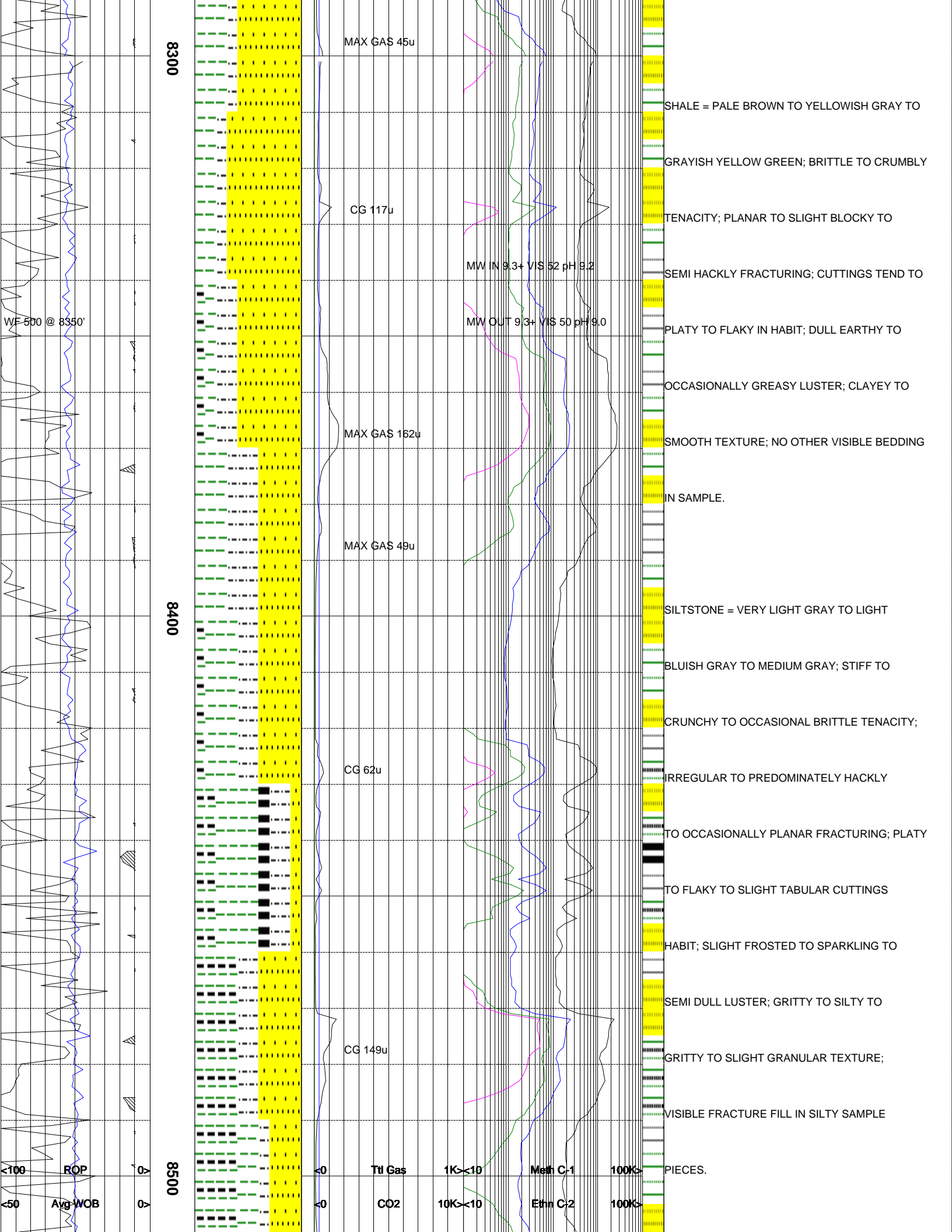












8300

8400

8500

MAX GAS 45u

CG 117u

MW IN 9.3+ VIS 52 pH 9.2

MW OUT 9.3+ VIS 50 pH 9.0

MAX GAS 162u

MAX GAS 49u

CG 62u

CG 149u

SHALE = PALE BROWN TO YELLOWISH GRAY TO

GRAYISH YELLOW GREEN; BRITTLE TO CRUMBLY

TENACITY; PLANAR TO SLIGHT BLOCKY TO

SEMI HACKLY FRACTURING; CUTTINGS TEND TO

PLATY TO FLAKY IN HABIT; DULL EARTHY TO

OCCASIONALLY GREASY LUSTER; CLAYEY TO

SMOOTH TEXTURE; NO OTHER VISIBLE BEDDING

IN SAMPLE.

SILTSTONE = VERY LIGHT GRAY TO LIGHT

BLUISH GRAY TO MEDIUM GRAY; STIFF TO

CRUNCHY TO OCCASIONAL BRITTLE TENACITY;

IRREGULAR TO PREDOMINATELY HACKLY

TO OCCASIONALLY PLANAR FRACTURING; PLATY

TO FLAKY TO SLIGHT TABULAR CUTTINGS

HABIT; SLIGHT FROSTED TO SPARKLING TO

SEMI DULL LUSTER; GRITTY TO SILTY TO

GRITTY TO SLIGHT GRANULAR TEXTURE;

VISIBLE FRACTURE FILL IN SILTY SAMPLE

PIECES.

WF 500 @ 8350'

<100

ROP

<50

Avg WOB

Ttl Gas

1K<10

Meth C-1

100K>

CO2

10K<10

Ethn C-2

100K>

