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MUDLOG MD

| | |
|---------------|---------------------------------|
| COMPANY | Exxon Mobil |
| WELL | FRU197-33B9 |
| FIELD | Piceance Creek |
| REGION | Rockies |
| COORDINATES | 39.921322000 -108.282561000 |
| ELEVATION | GL: 6459.3' RKB: 30.2' |
| COUNTY, STATE | RIO BLANCO, CO |
| API INDEX | 051031142200 |
| SPUD DATE | 04/08/2010 |
| CONTRACTOR | HE |
| CO. REP. | C. CURTIS |
| RIG/TYPE | HP321 |
| LOGGING UNIT | MLU#31 |
| GEOLOGISTS | B.DELANEY; C.RECORD M.FRANCO |
| ADD. PERSONS | M.PIPER; K.WALLANDER |
| CO. GEOLOGIST | C.ALBA / N. ROOSMAWATI |

LOG INTERVAL

DEPTHS: 3950' TO 12300'
DATES: 07/21/2010 TO 08/02/2010
SCALE: 5"=100'

CASING DATA

16.00" AT 150'
10.75" AT 3940'
4.5" AT 12285'

AT

HOLE SIZE

14.75" TO 3950'
8.75" TO 12300'
TO
TO

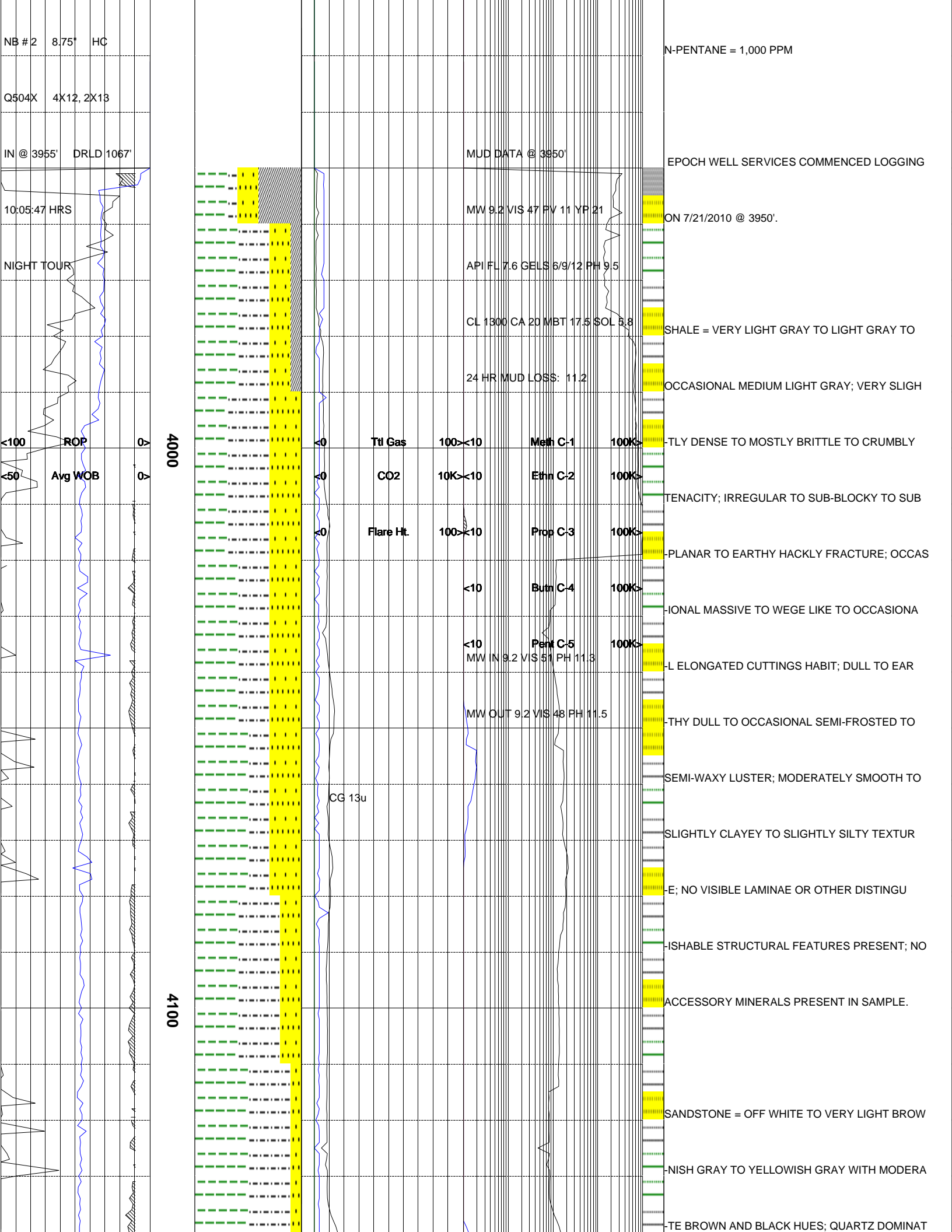
MUD TYPES

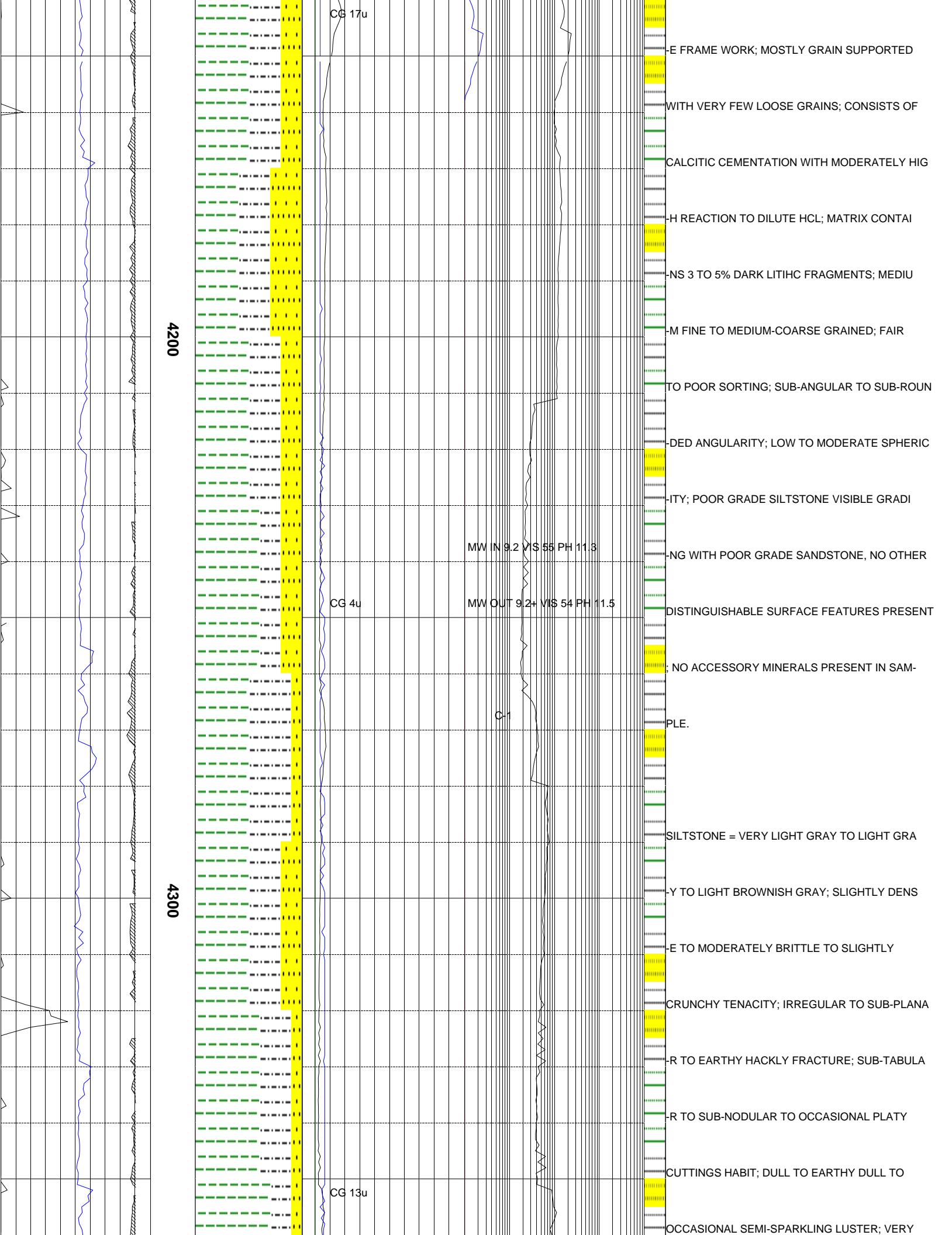
WATER-BASED TO 3950'
LSND TO 12300'
TO
TO

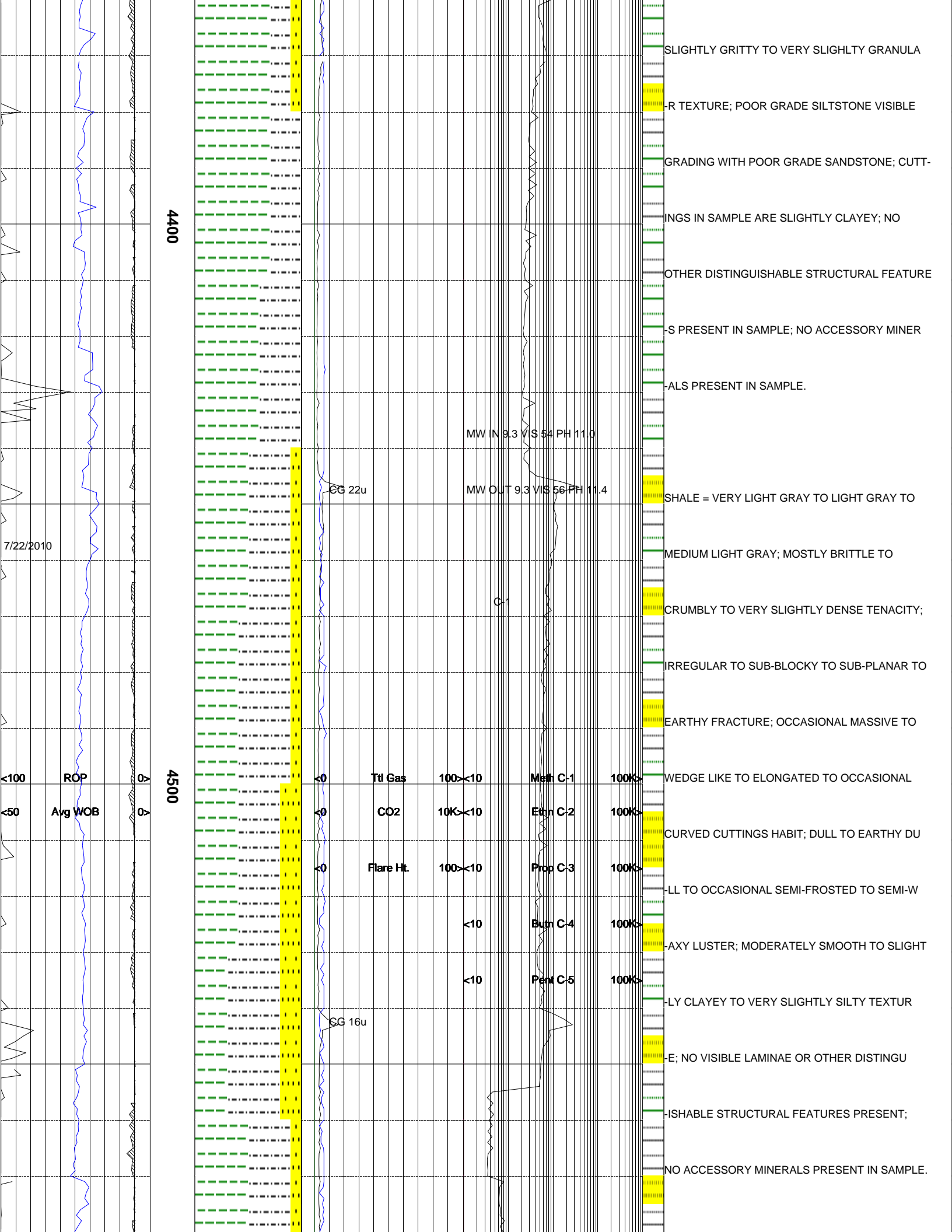
ABBREVIATIONS

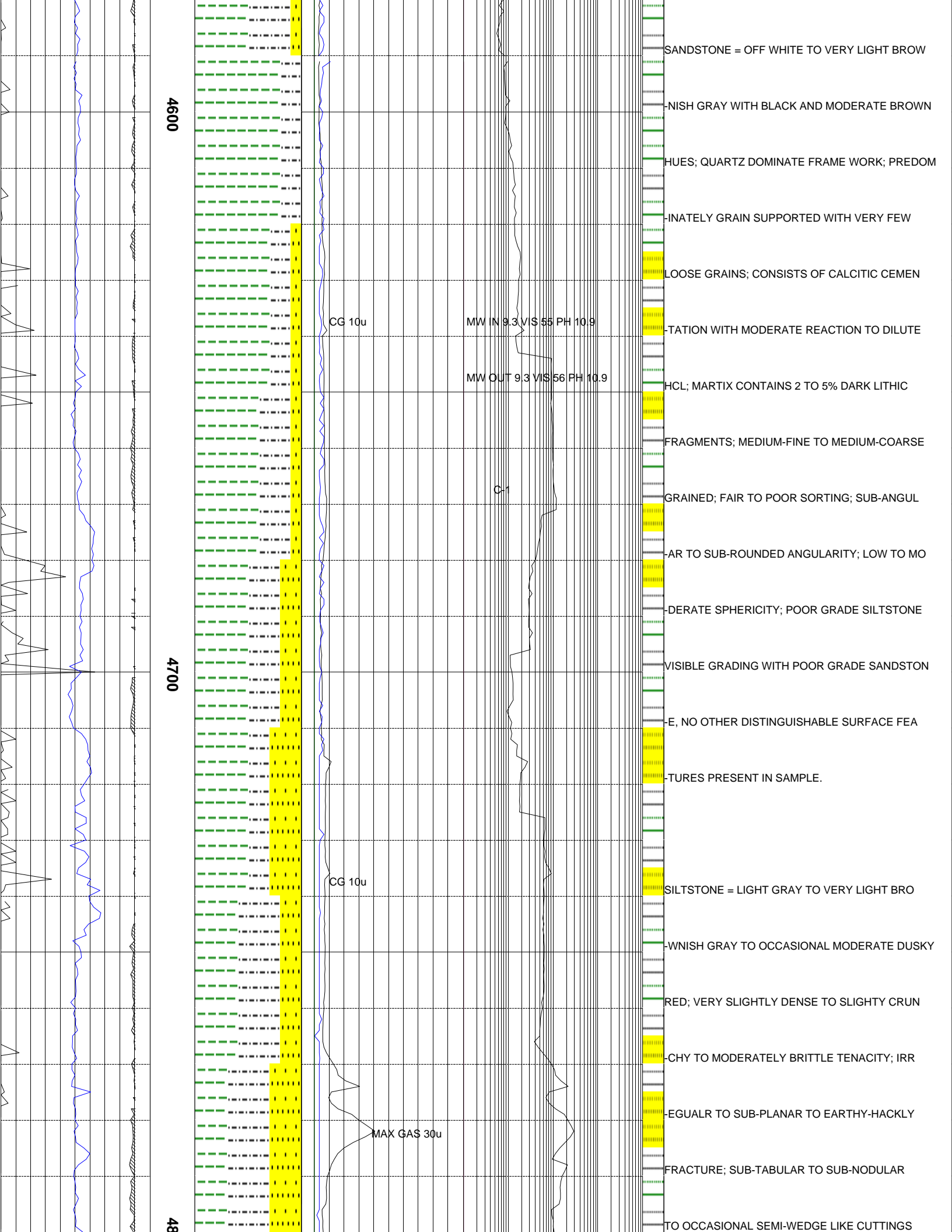
| | | | | | |
|-----|------------------|-----|----------------------|----|------------------|
| NB | NEWBIT | PV | PLASTIC VISCOSITY | LC | LOST CIRCULATION |
| RRB | RERUN BIT | YP | YIELD POINT | CO | CIRCULATE OUT |
| CB | CORE BIT | FL | FLUID LOSS | NR | NO RETURNS |
| WOB | WEIGHT ON BIT | CL |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

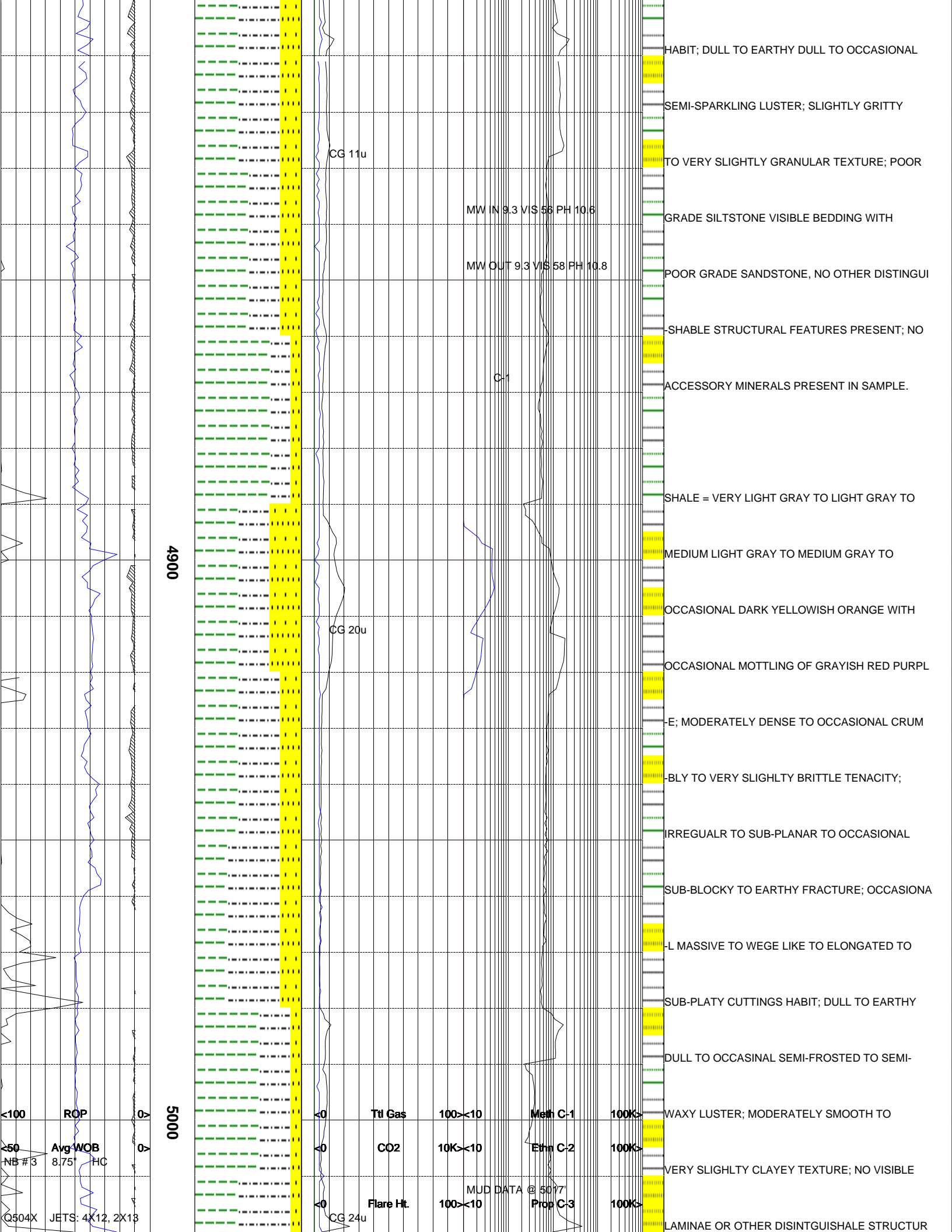
| | | | | | | | | | |
|--|------------------|--|----------------------|--|-------------------|--|------------------------|--|----------------------|
| | ALTERED ZONE | | CHERT - GLASSY | | FELSIC SILIC DIKE | | MARL - CALC | | SANDSTONE |
| | ANDESITE | | CHERT - PORCEL | | FOSSIL | | METAMORPHICS | | 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 | | |

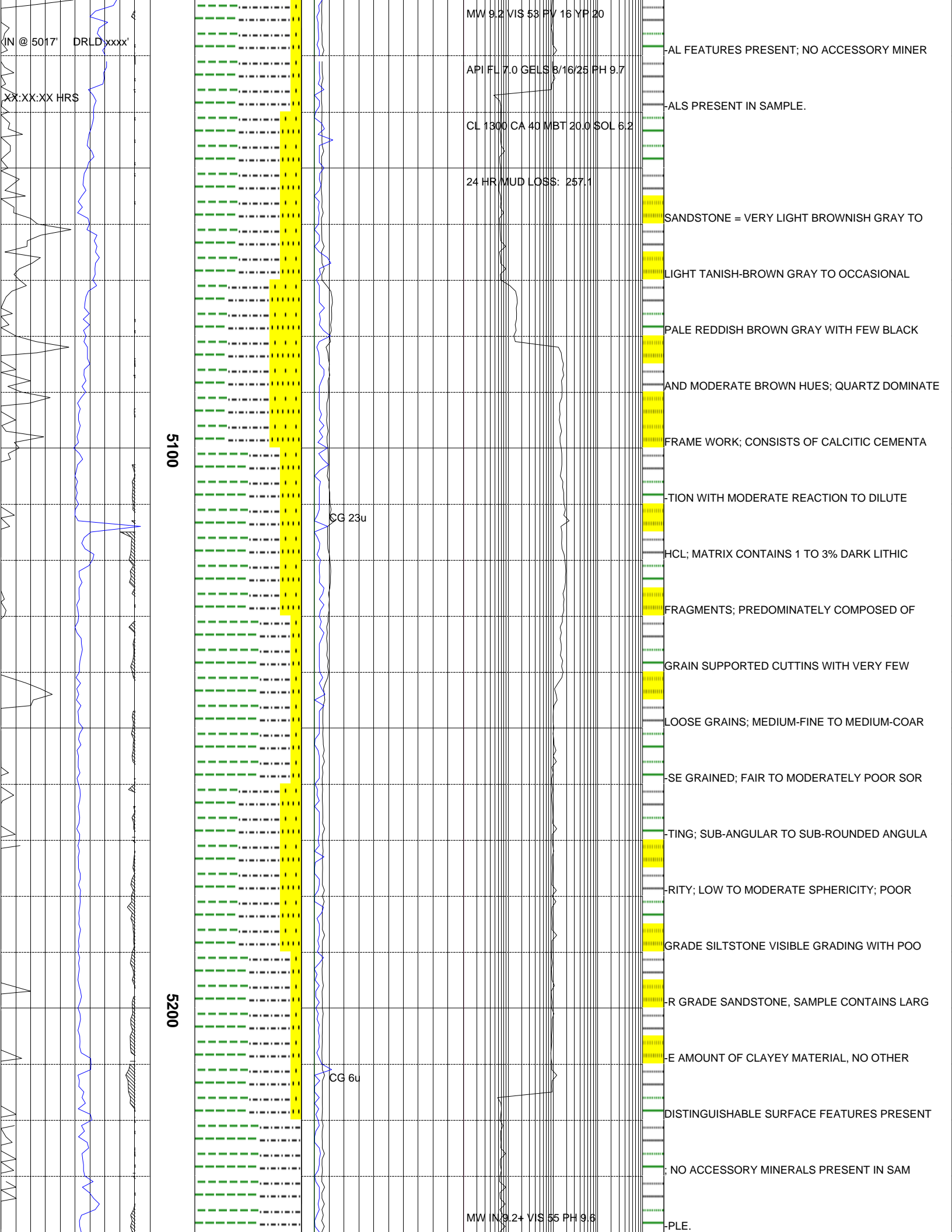


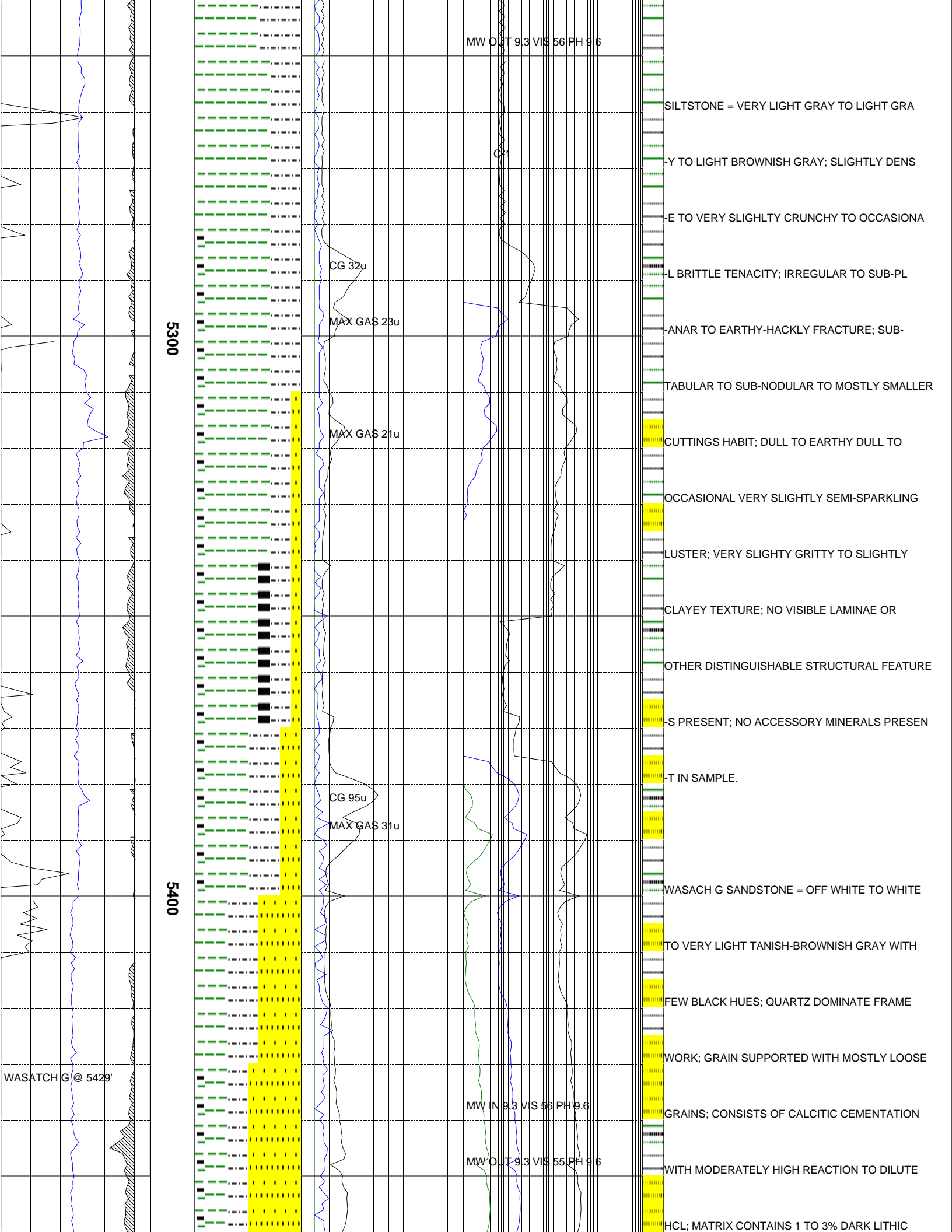


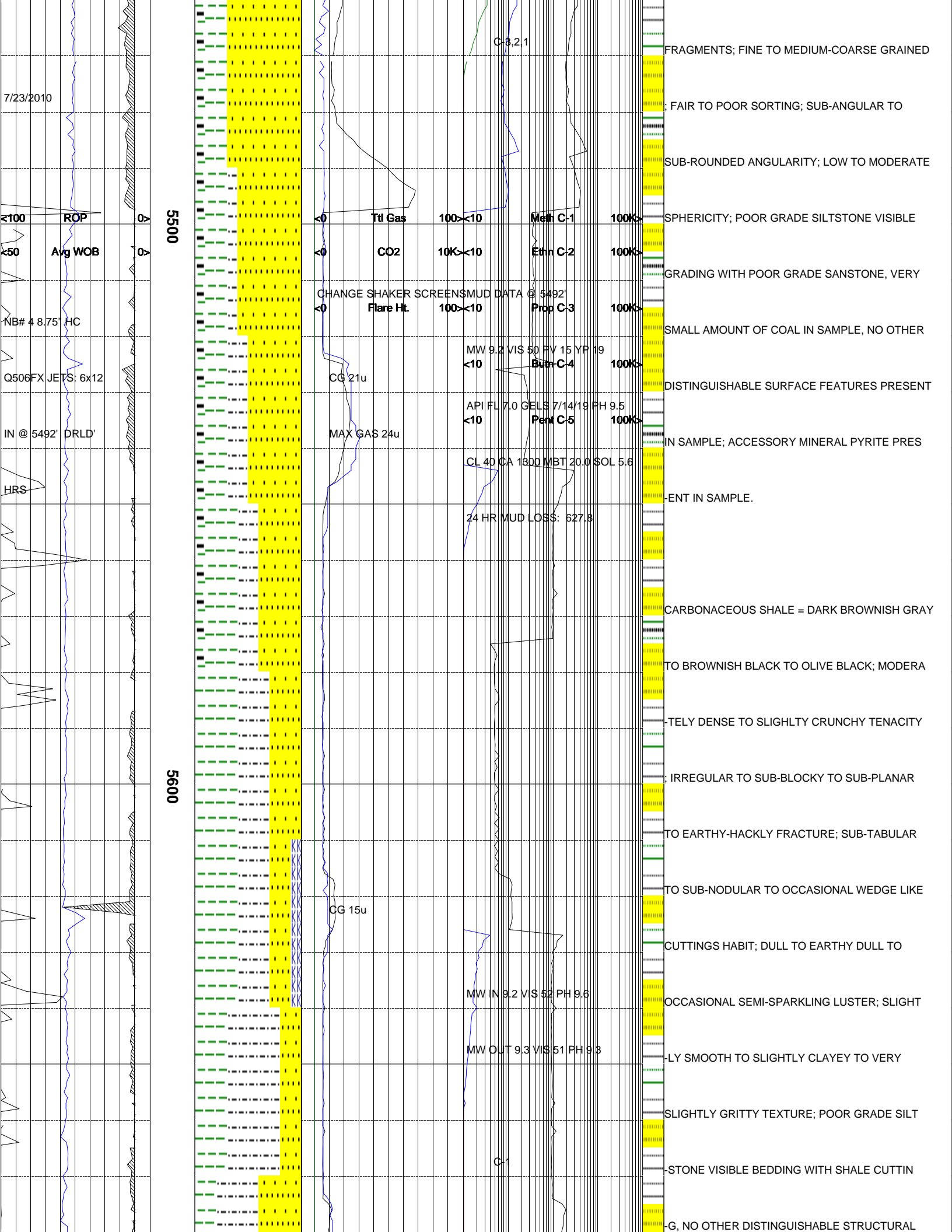


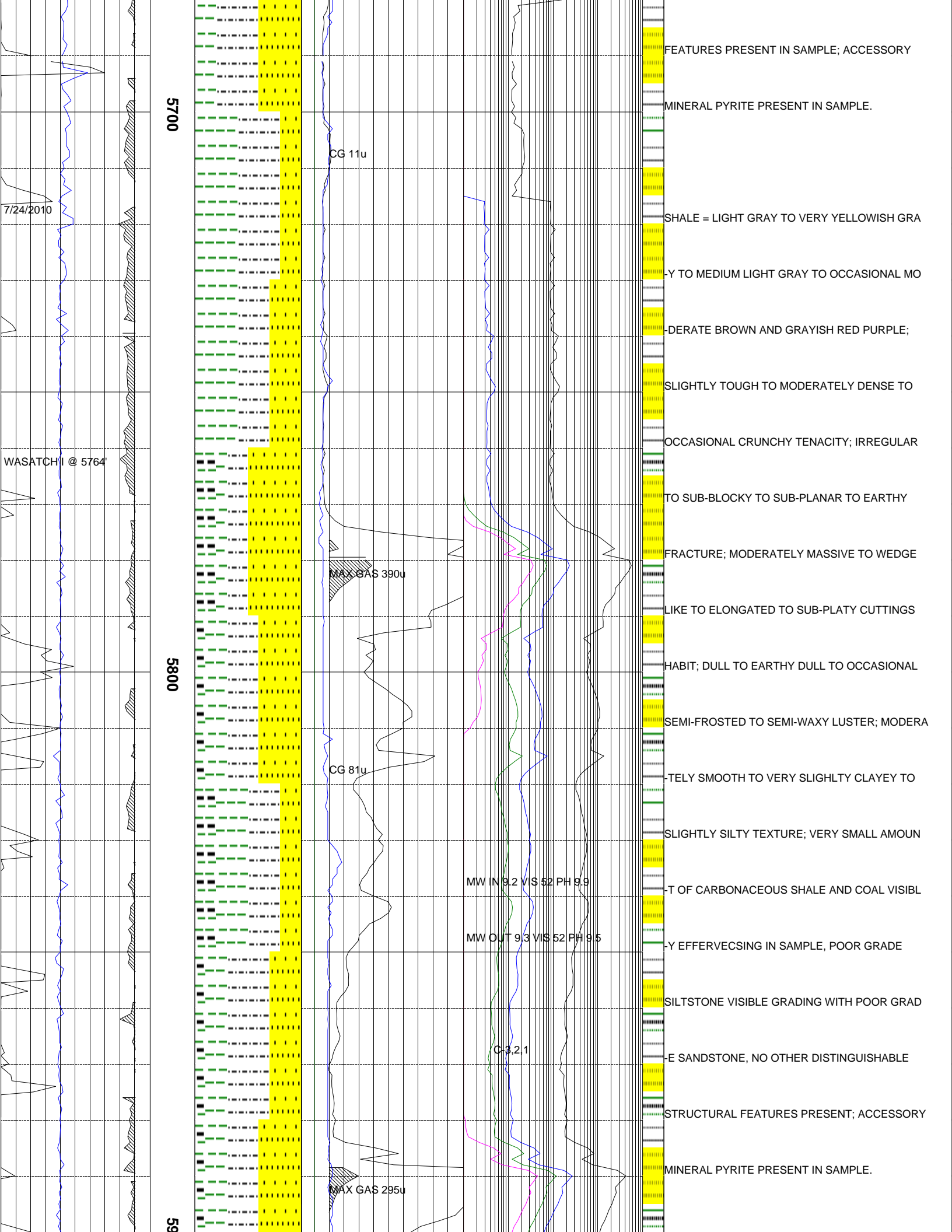


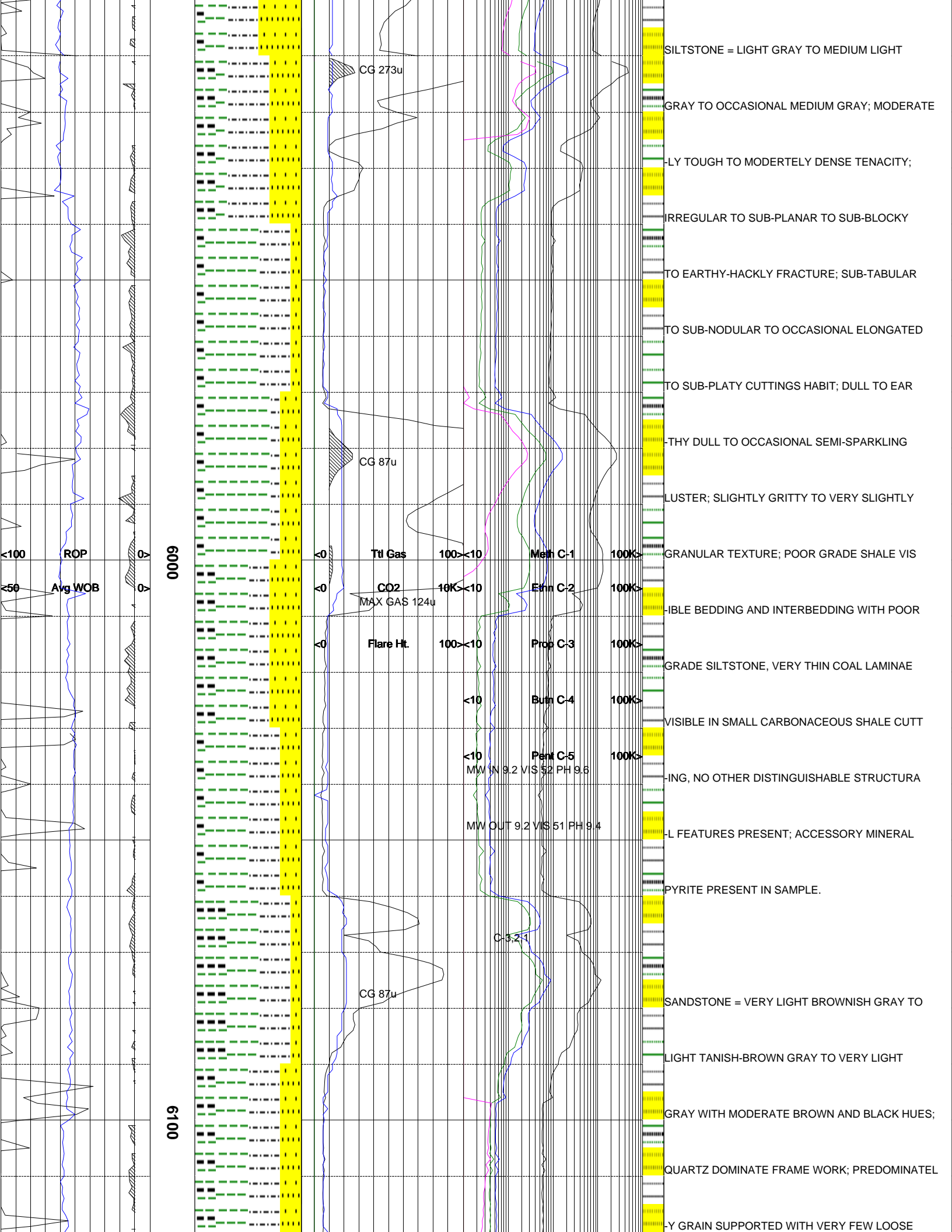


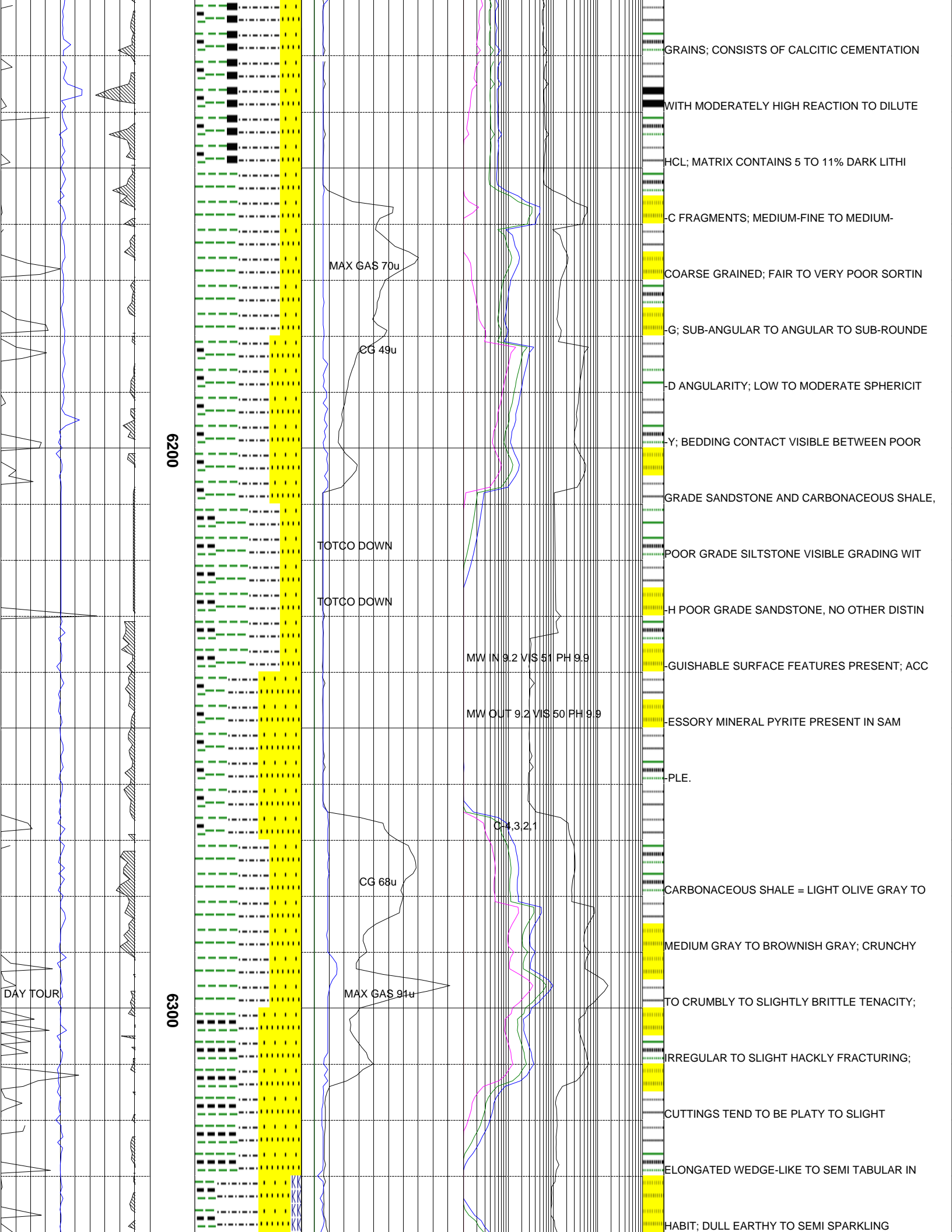


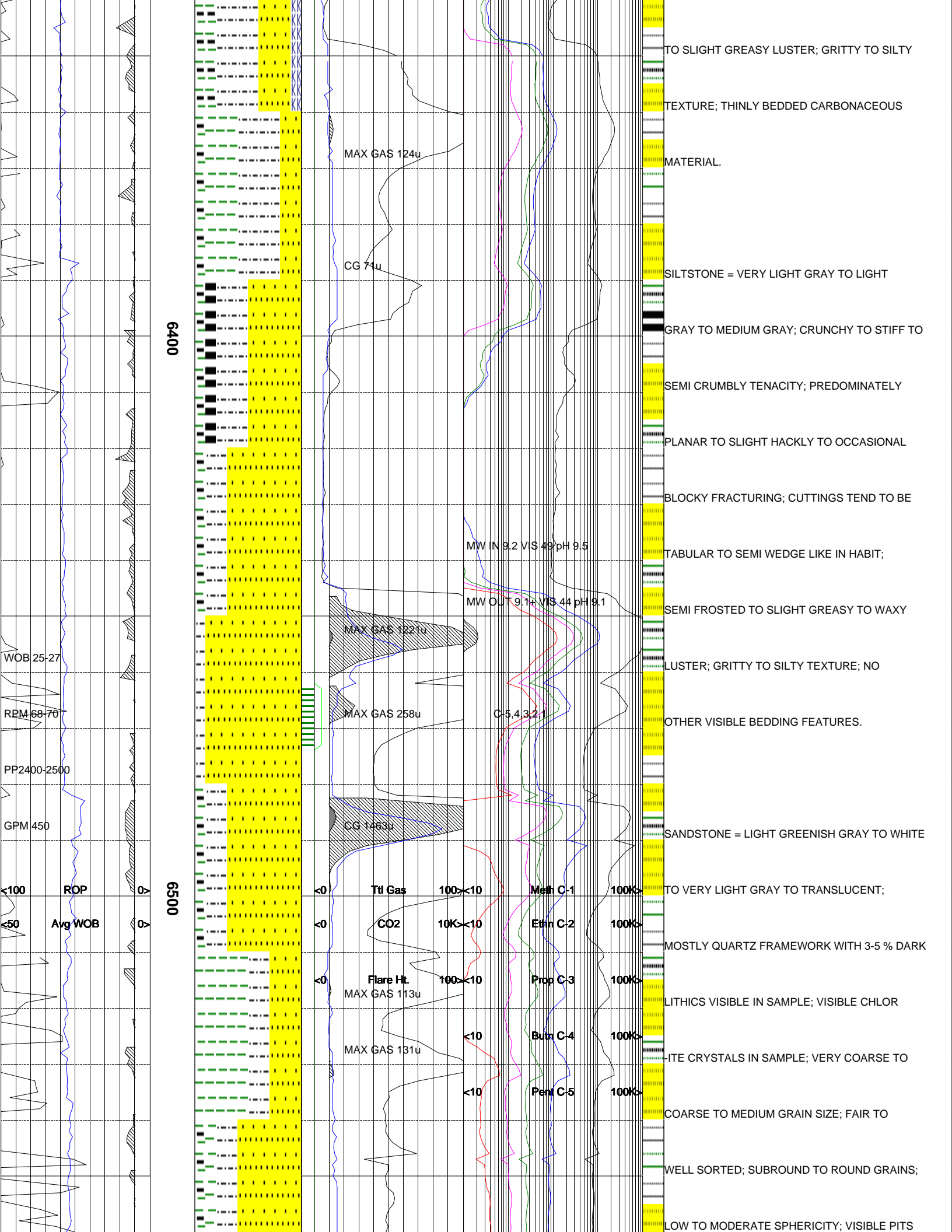


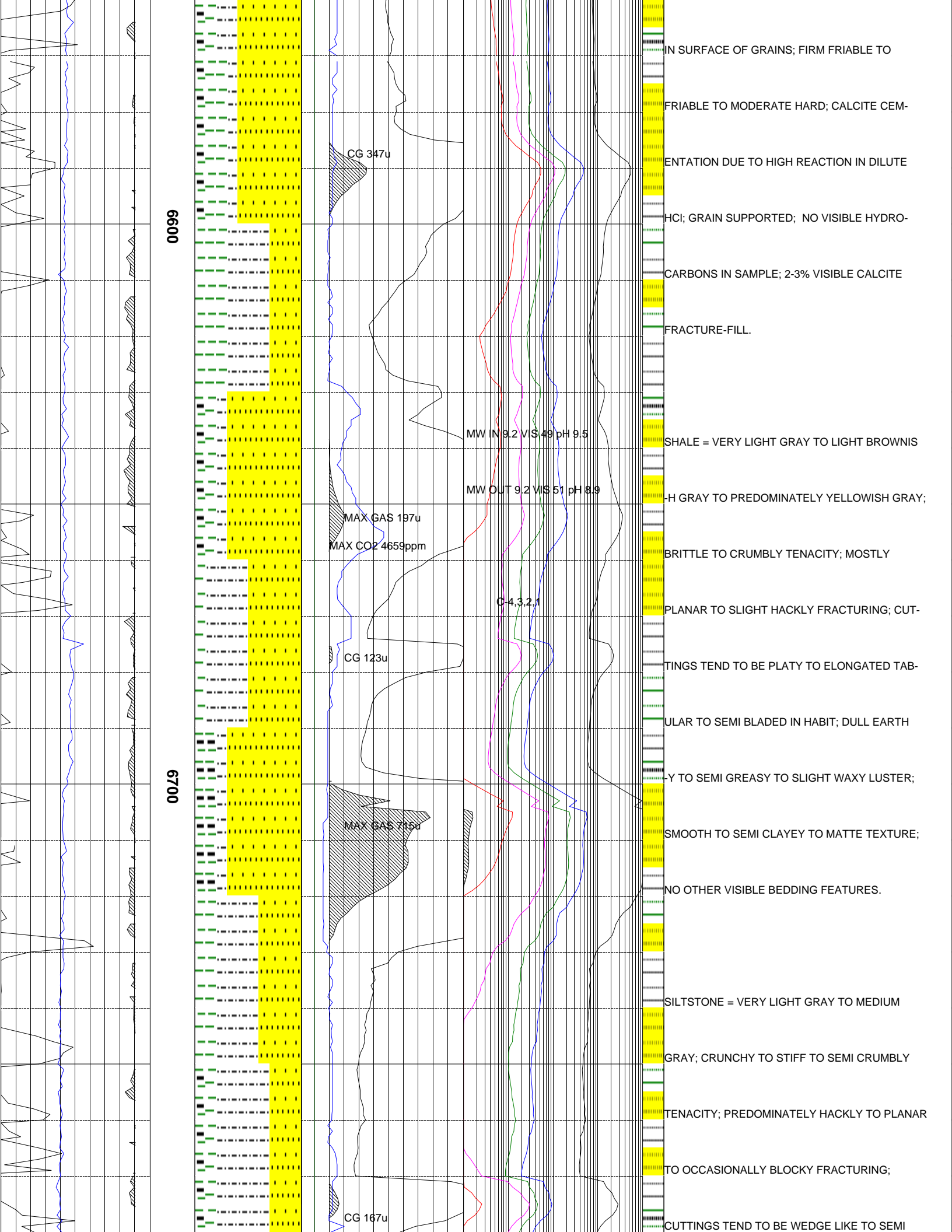


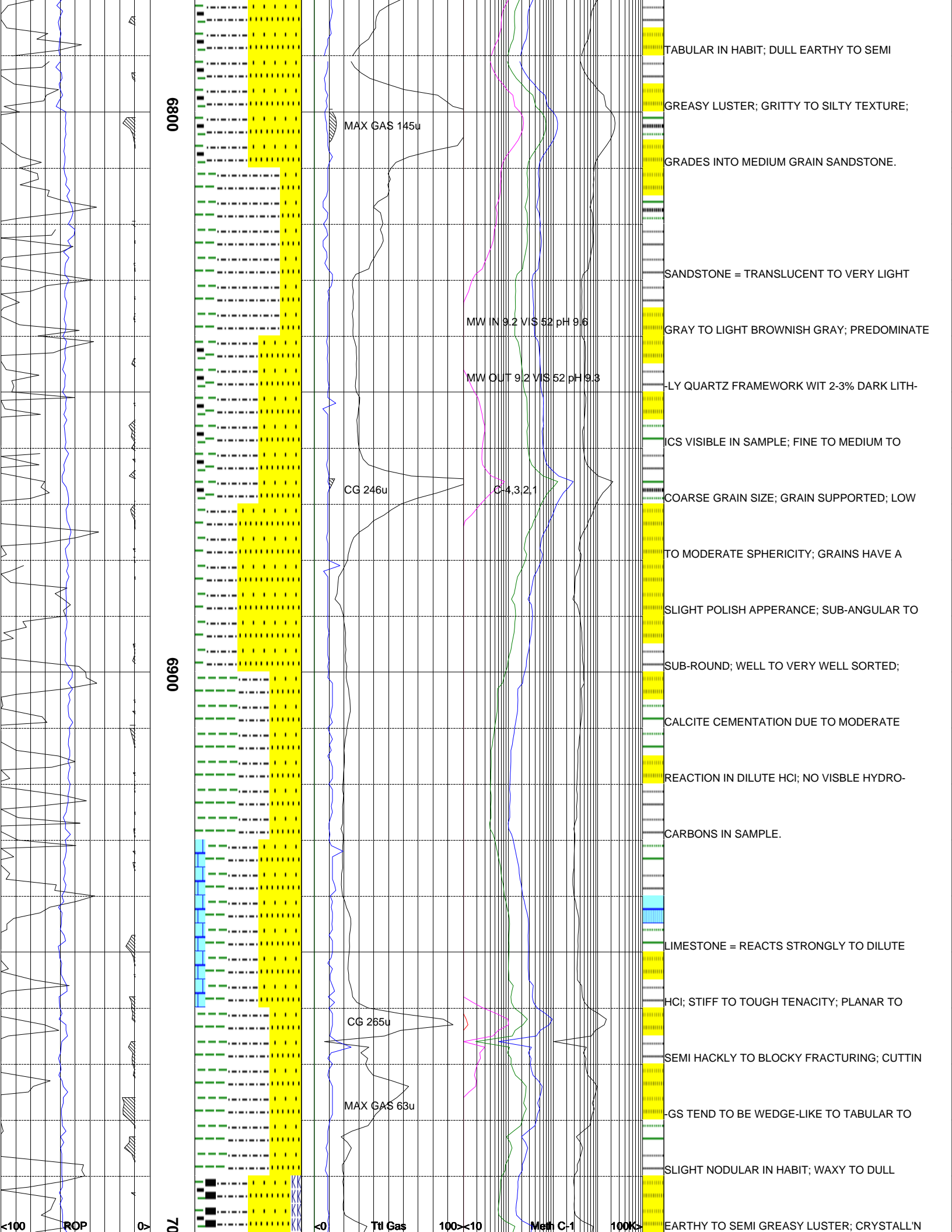


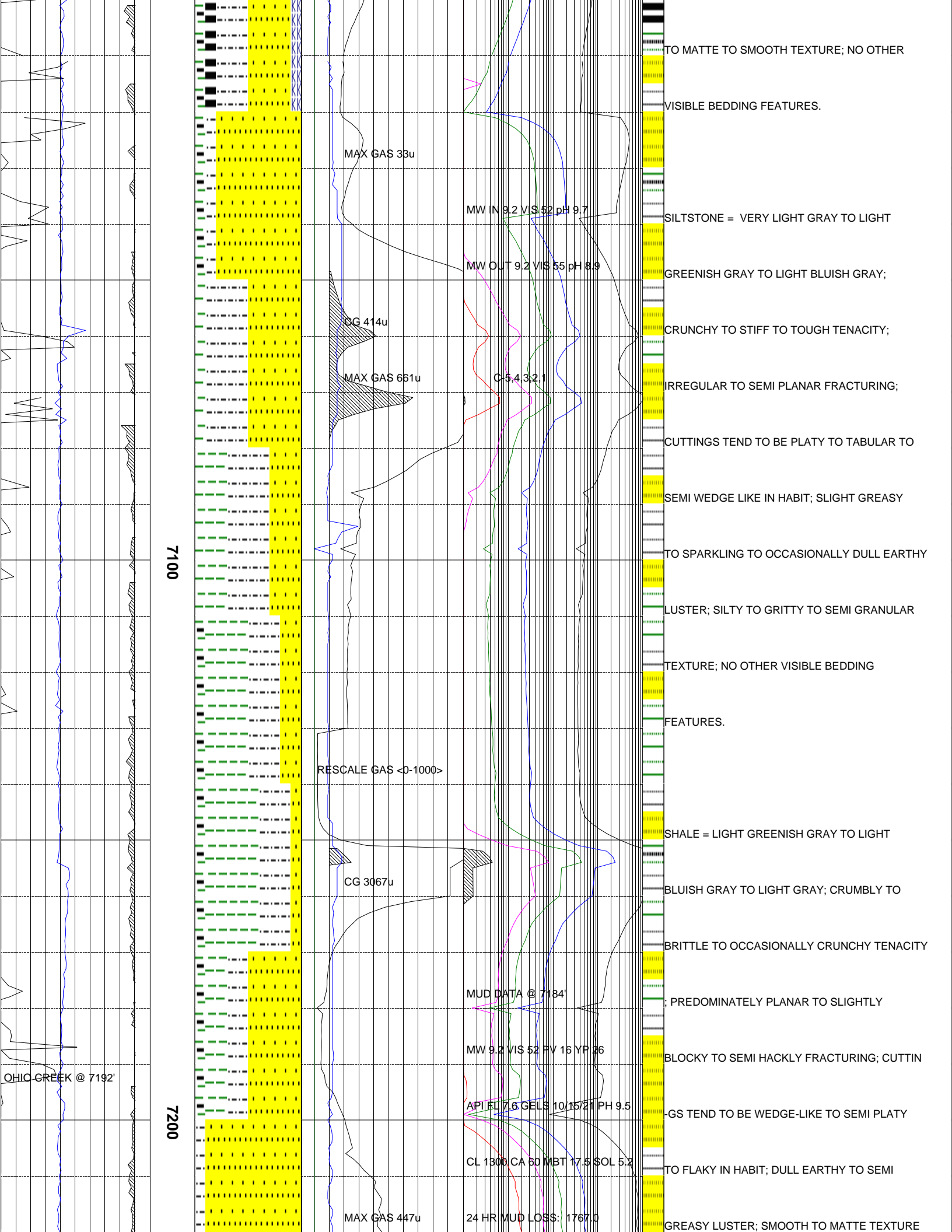












7100

7200

OHIO CREEK @ 7192'

MAX GAS 33u

MW IN 9.2 VIS 52 pH 9.7

MW OUT 9.2 VIS 55 pH 8.9

CG 414u

MAX GAS 661u

C 5.4 32.1

RESCALE GAS <0-1000>

CG 3067u

MUD DATA @ 7134'

MW 9.2 VIS 52 PV 15 YP 26

API FL 7.6 GELS 10/15/21 PH 9.5

CL 1300 CA 60 MBT 17.5 SOL 5.2

MAX GAS 447u

24 HR MUD LOSS: 1767.0

TO MATTE TO SMOOTH TEXTURE; NO OTHER

VISIBLE BEDDING FEATURES.

SILTSTONE = VERY LIGHT GRAY TO LIGHT

GREENISH GRAY TO LIGHT BLUISH GRAY;

CRUNCHY TO STIFF TO TOUGH TENACITY;

IRREGULAR TO SEMI PLANAR FRACTURING;

CUTTINGS TEND TO BE PLATY TO TABULAR TO

SEMI WEDGE LIKE IN HABIT; SLIGHT GREASY

TO SPARKLING TO OCCASIONALLY DULL EARTHY

LUSTER; SILTY TO GRITTY TO SEMI GRANULAR

TEXTURE; NO OTHER VISIBLE BEDDING

FEATURES.

SHALE = LIGHT GREENISH GRAY TO LIGHT

BLUISH GRAY TO LIGHT GRAY; CRUMBLY TO

BRITTLE TO OCCASIONALLY CRUNCHY TENACITY

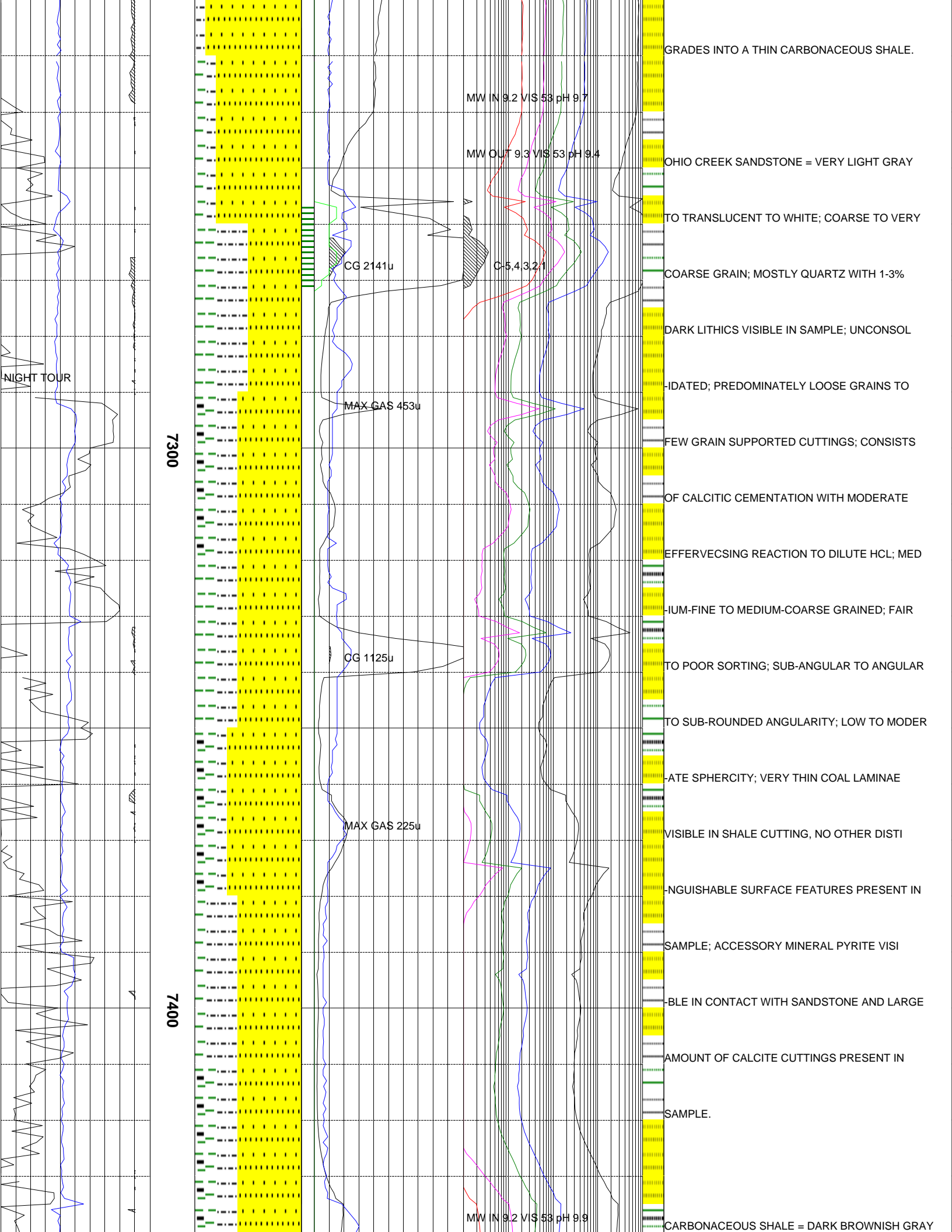
; PREDOMINATELY PLANAR TO SLIGHTLY

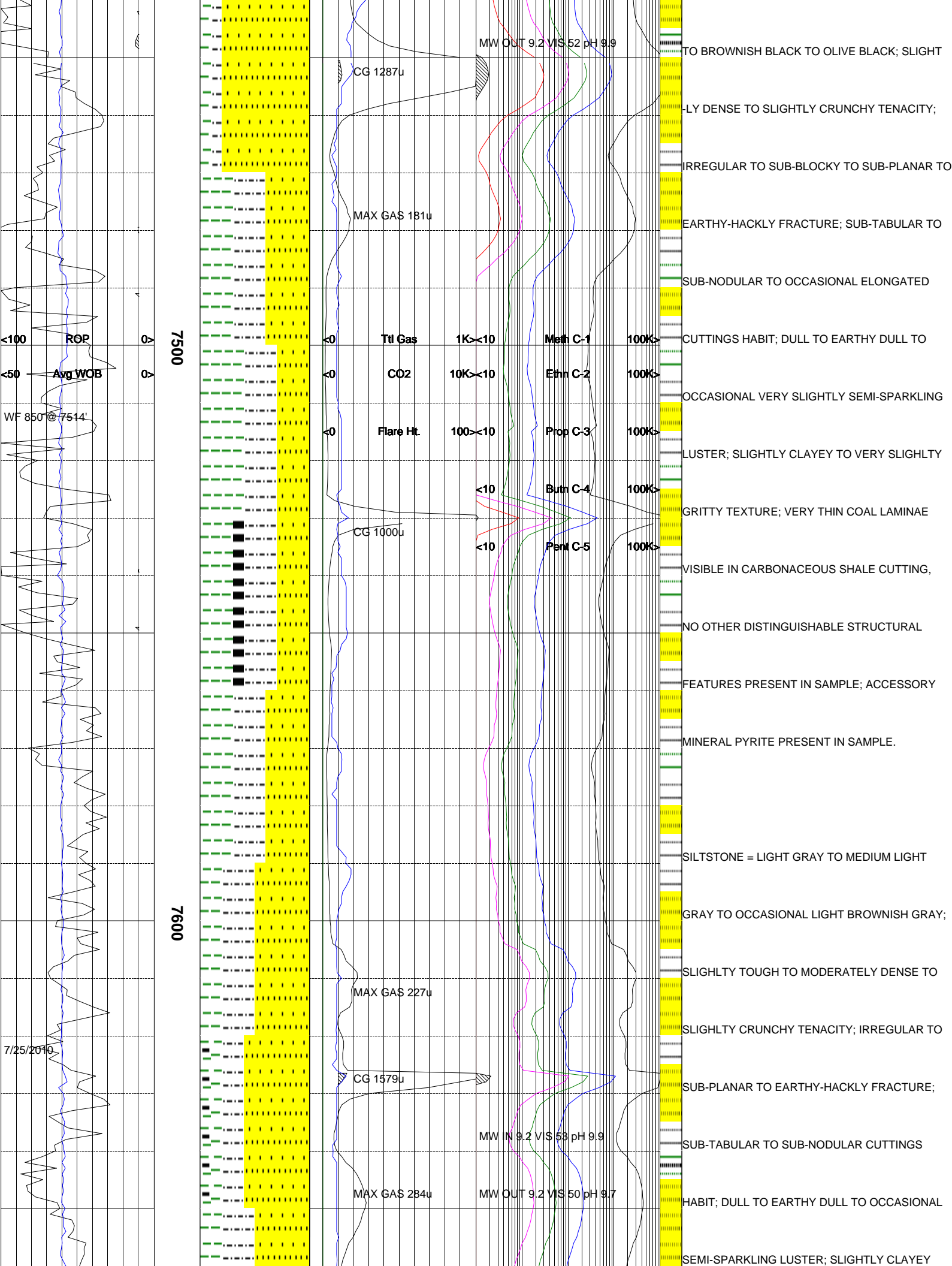
BLOCKY TO SEMI HACKLY FRACTURING; CUTTIN

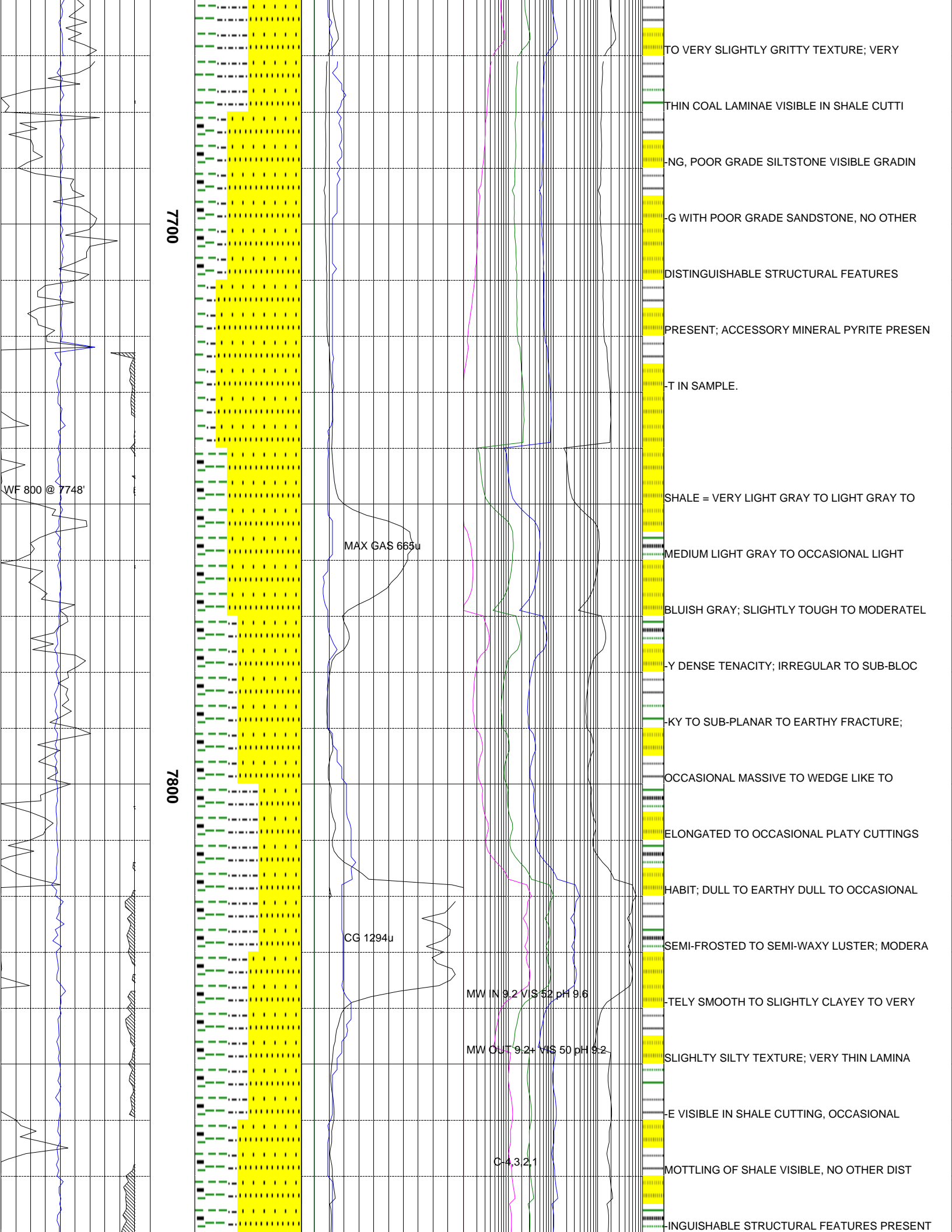
GS TEND TO BE WEDGE-LIKE TO SEMI PLATY

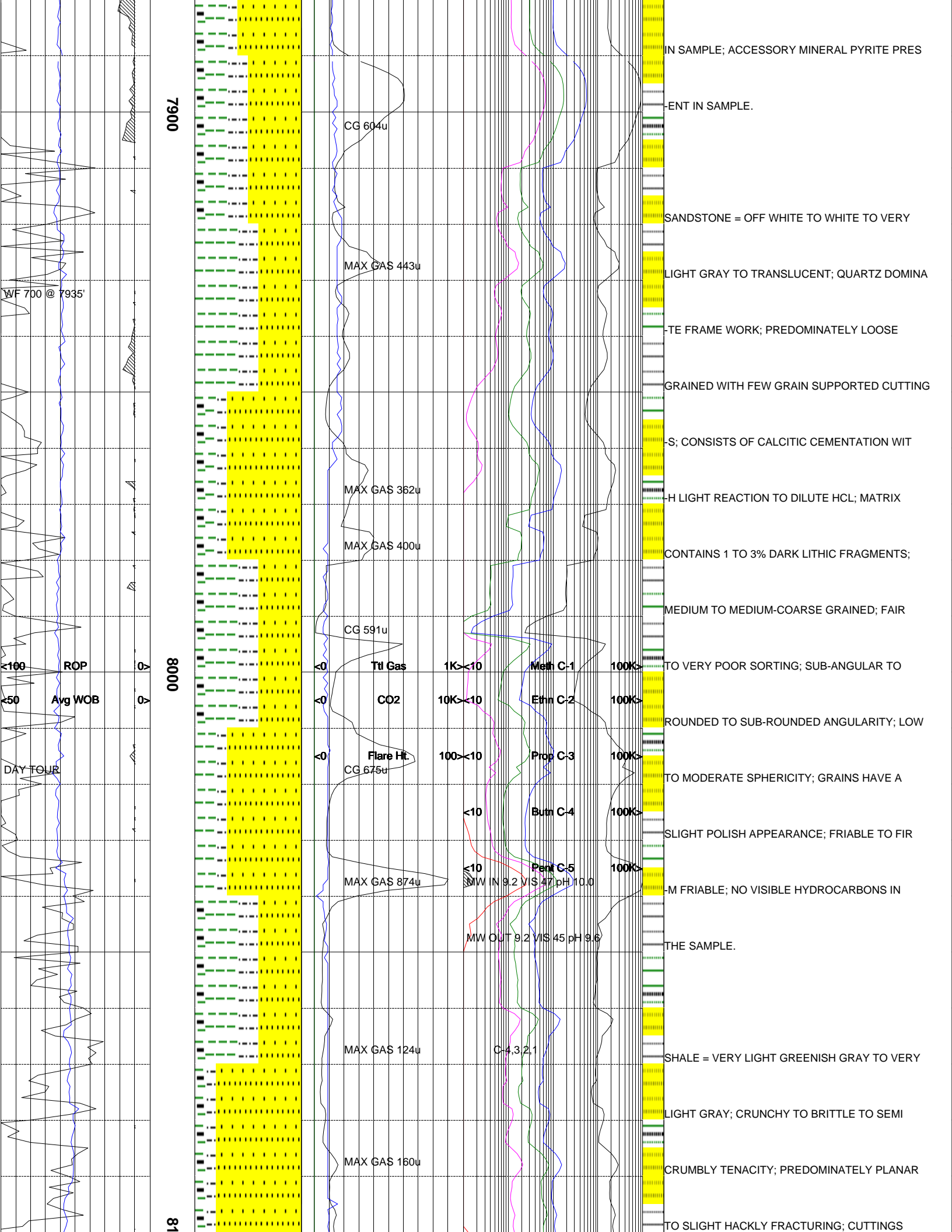
TO FLAKY IN HABIT; DULL EARTHY TO SEMI

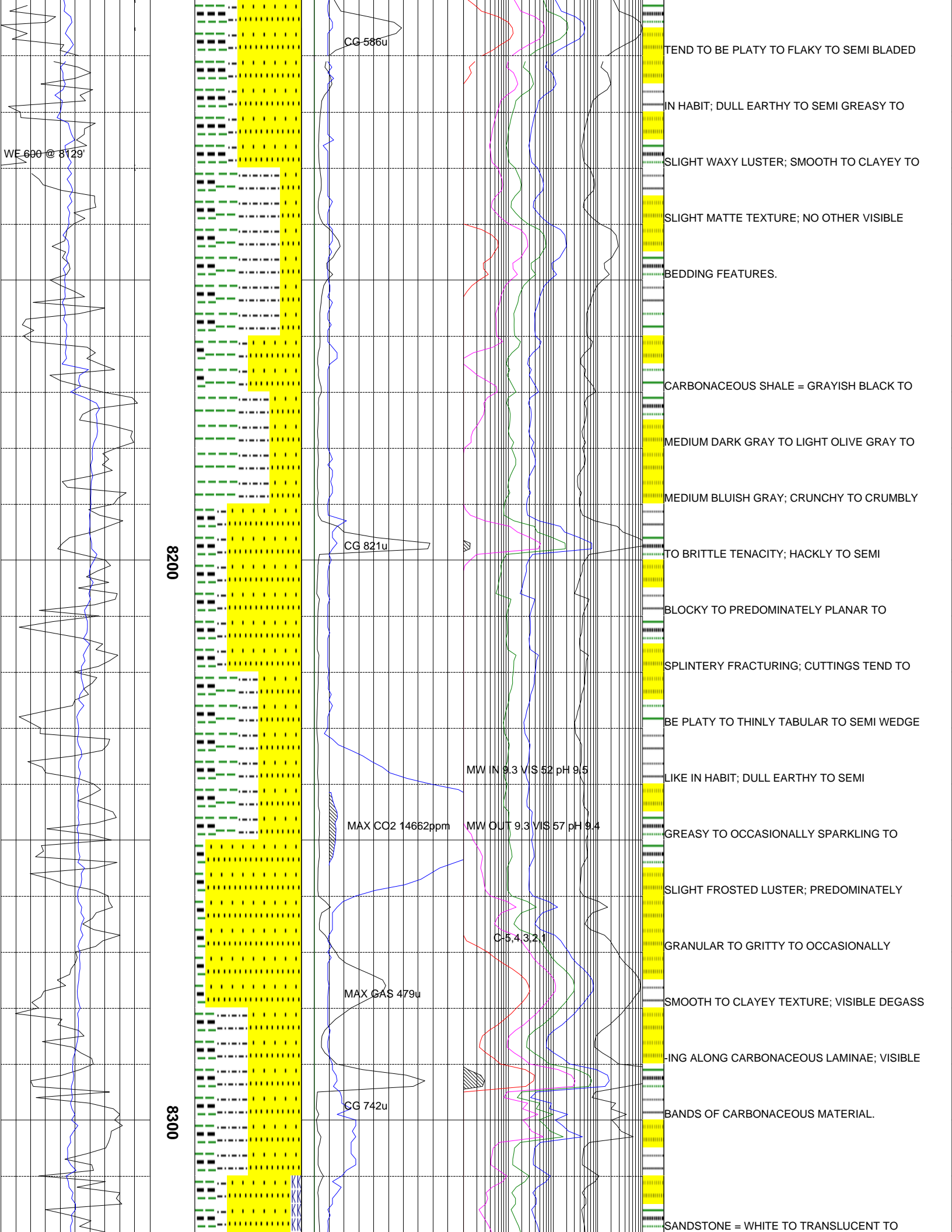
GREASY LUSTER; SMOOTH TO MATTE TEXTURE

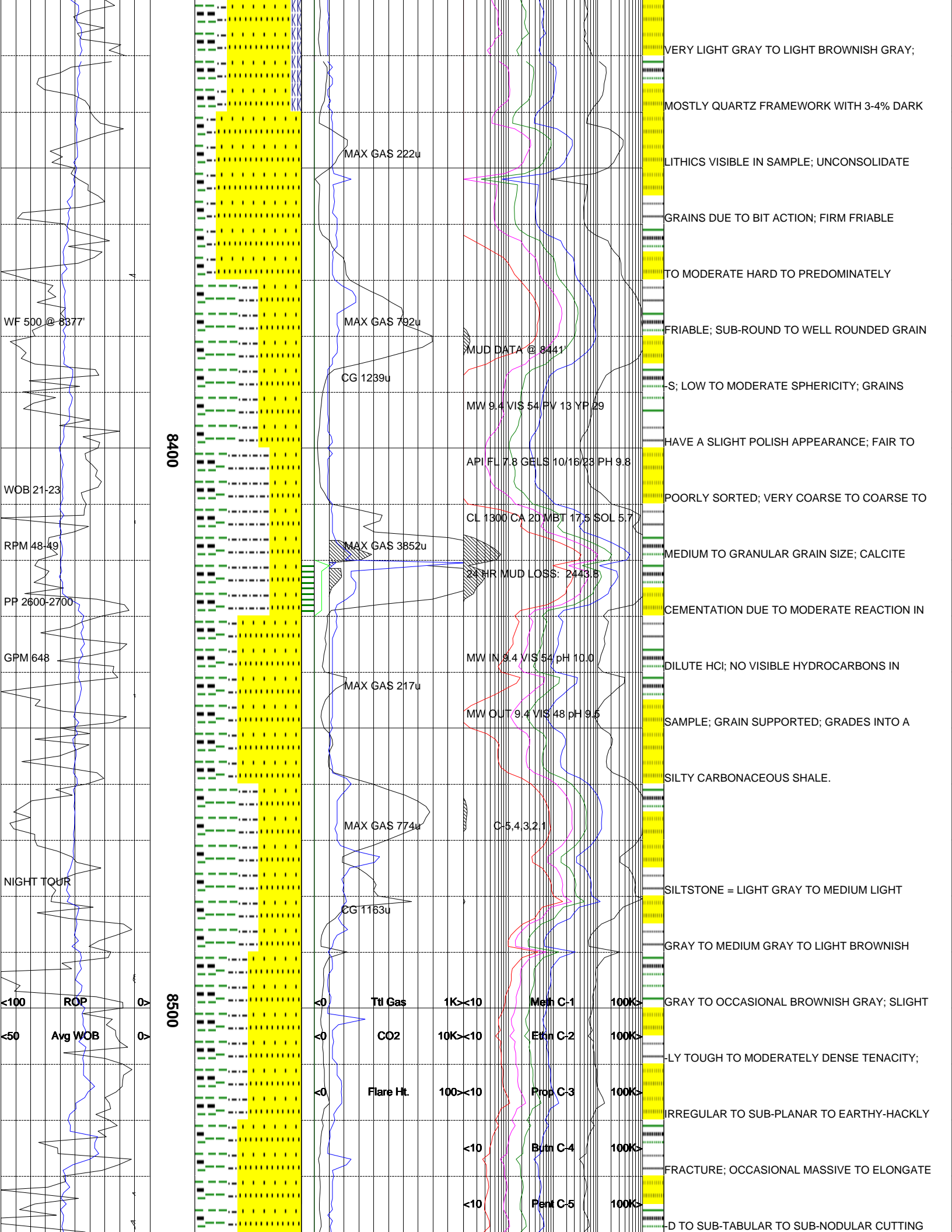


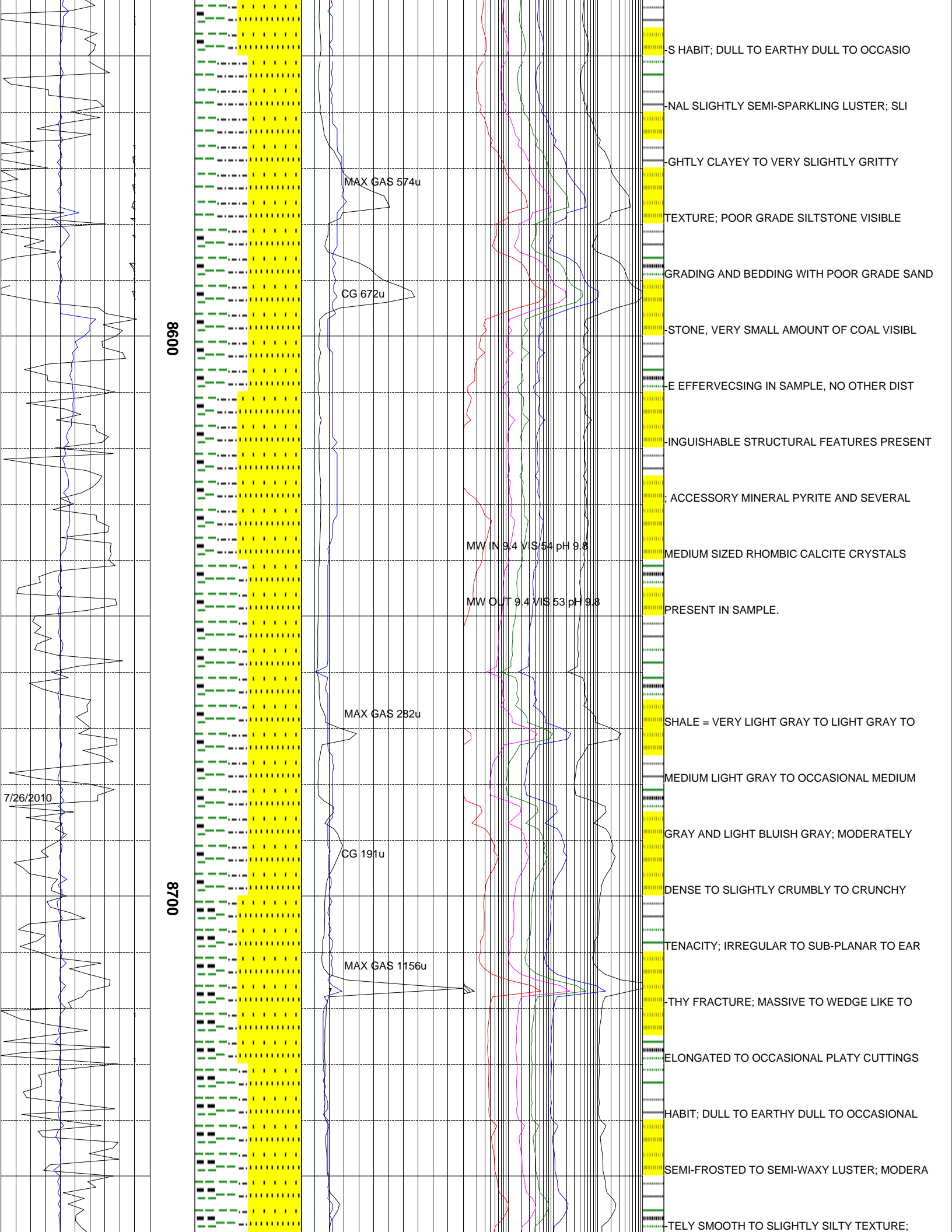


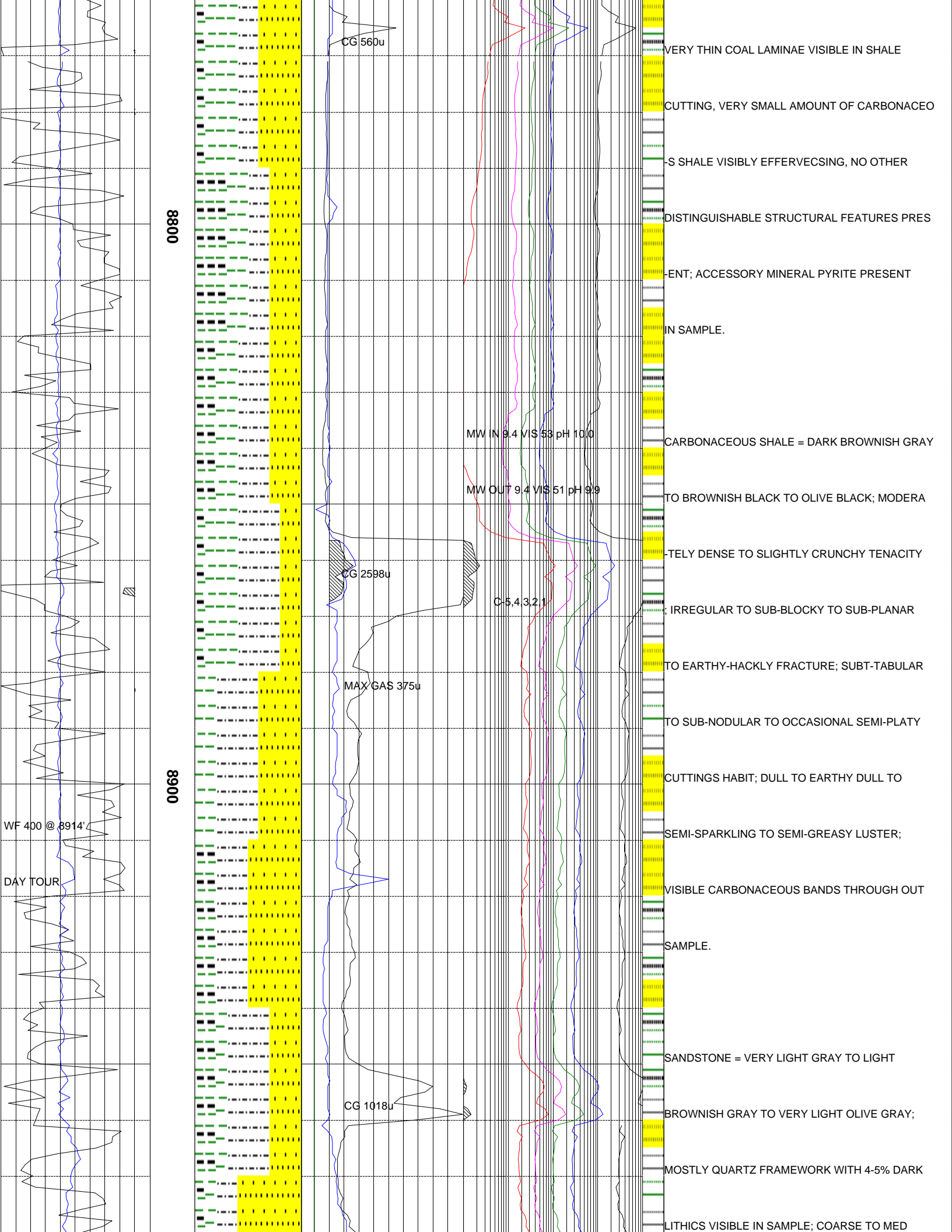


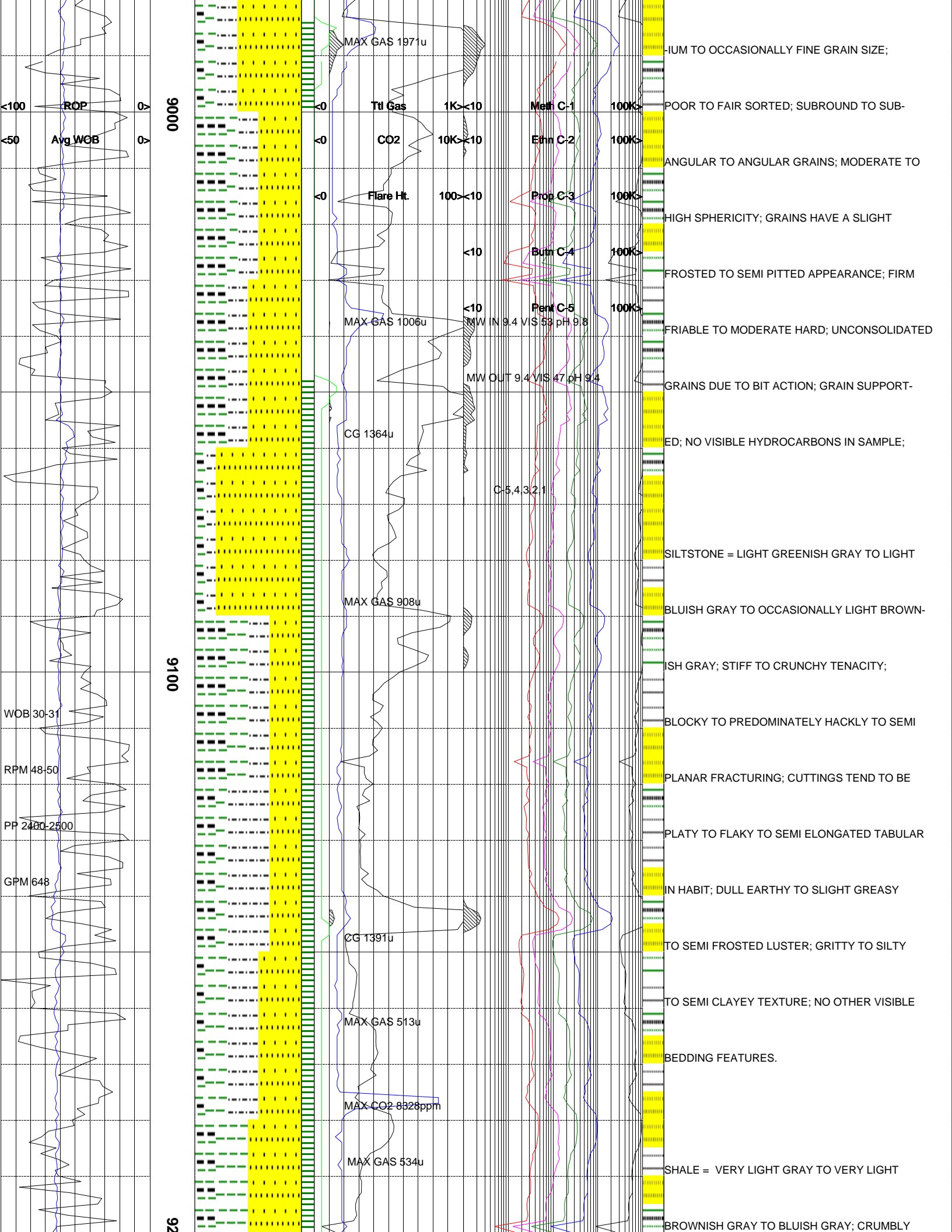


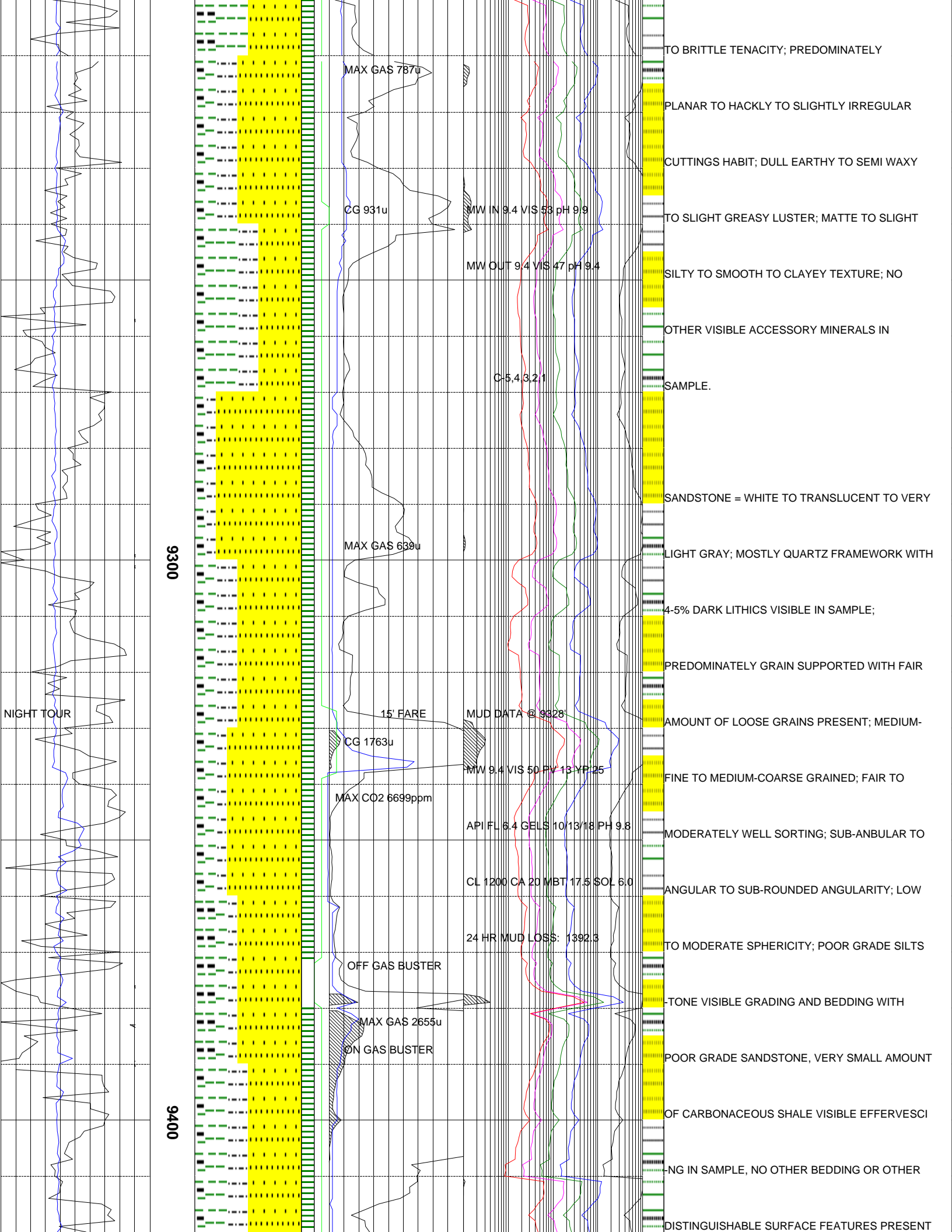


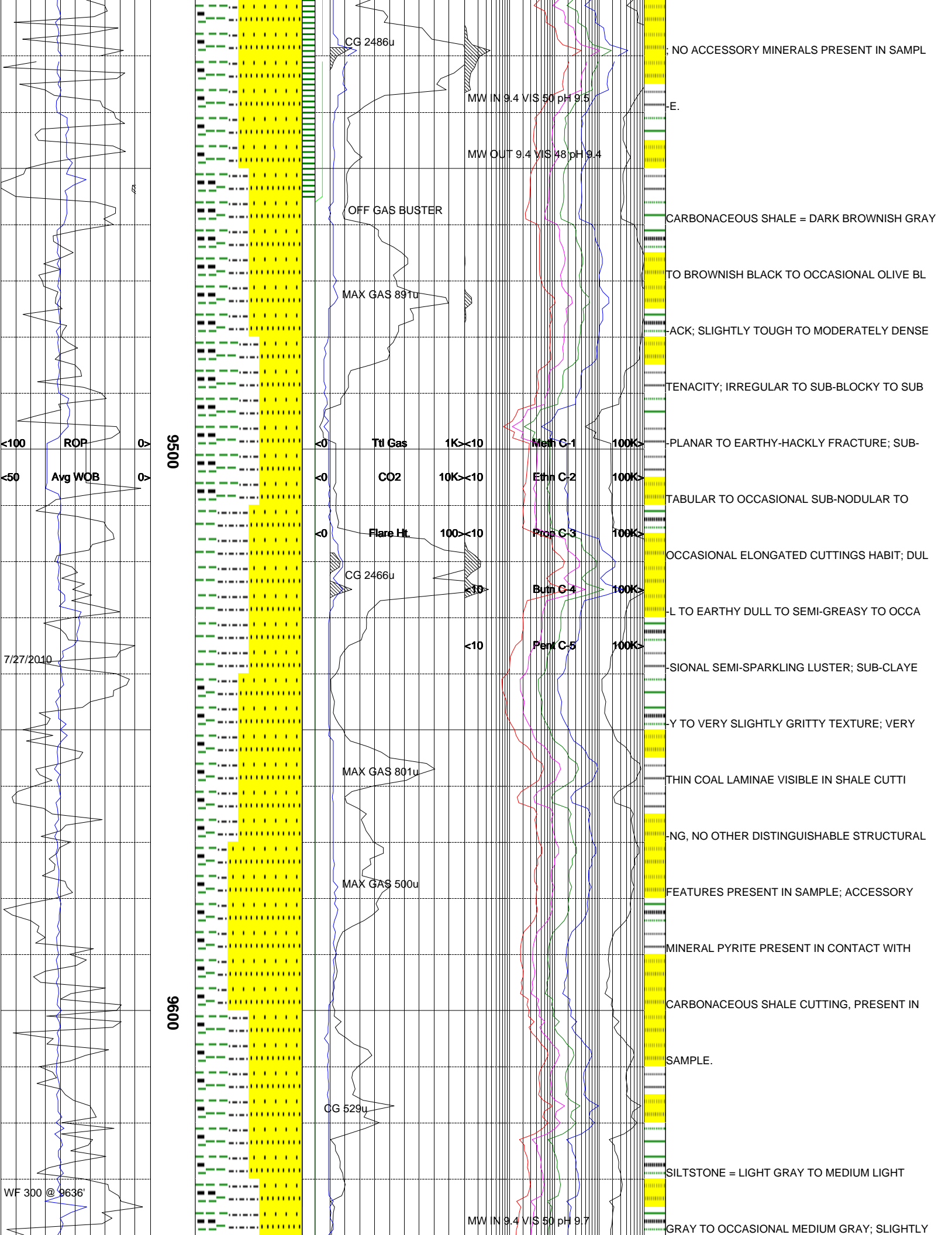


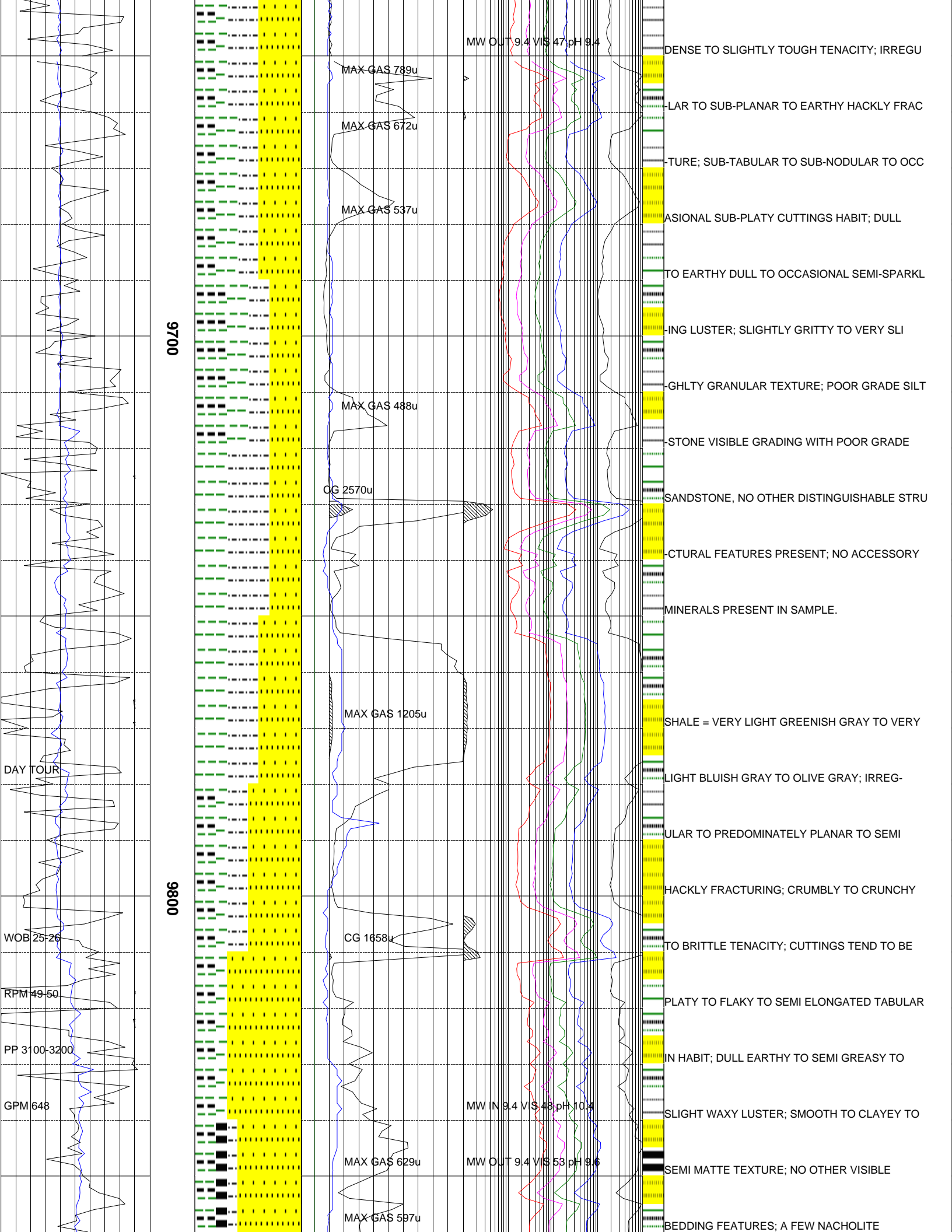


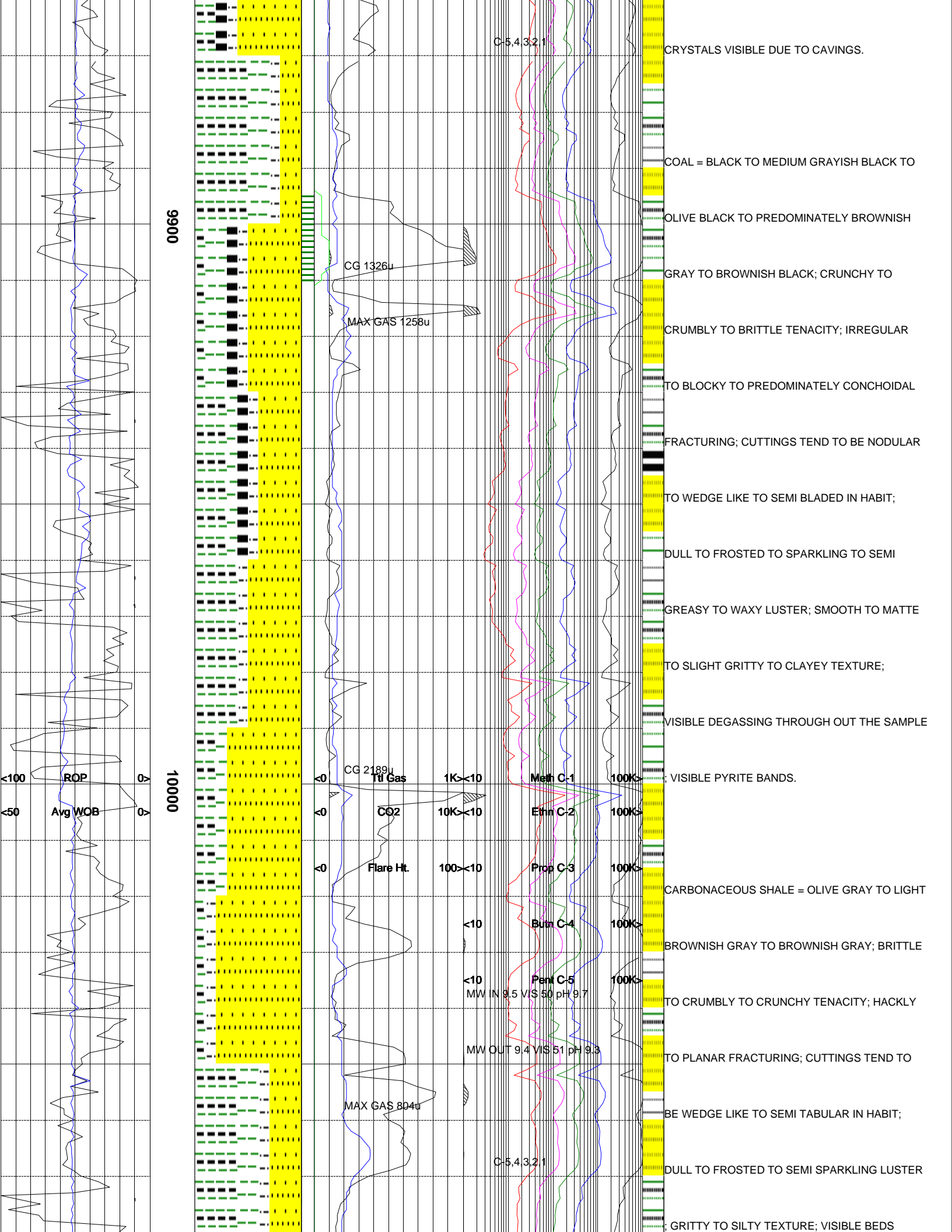


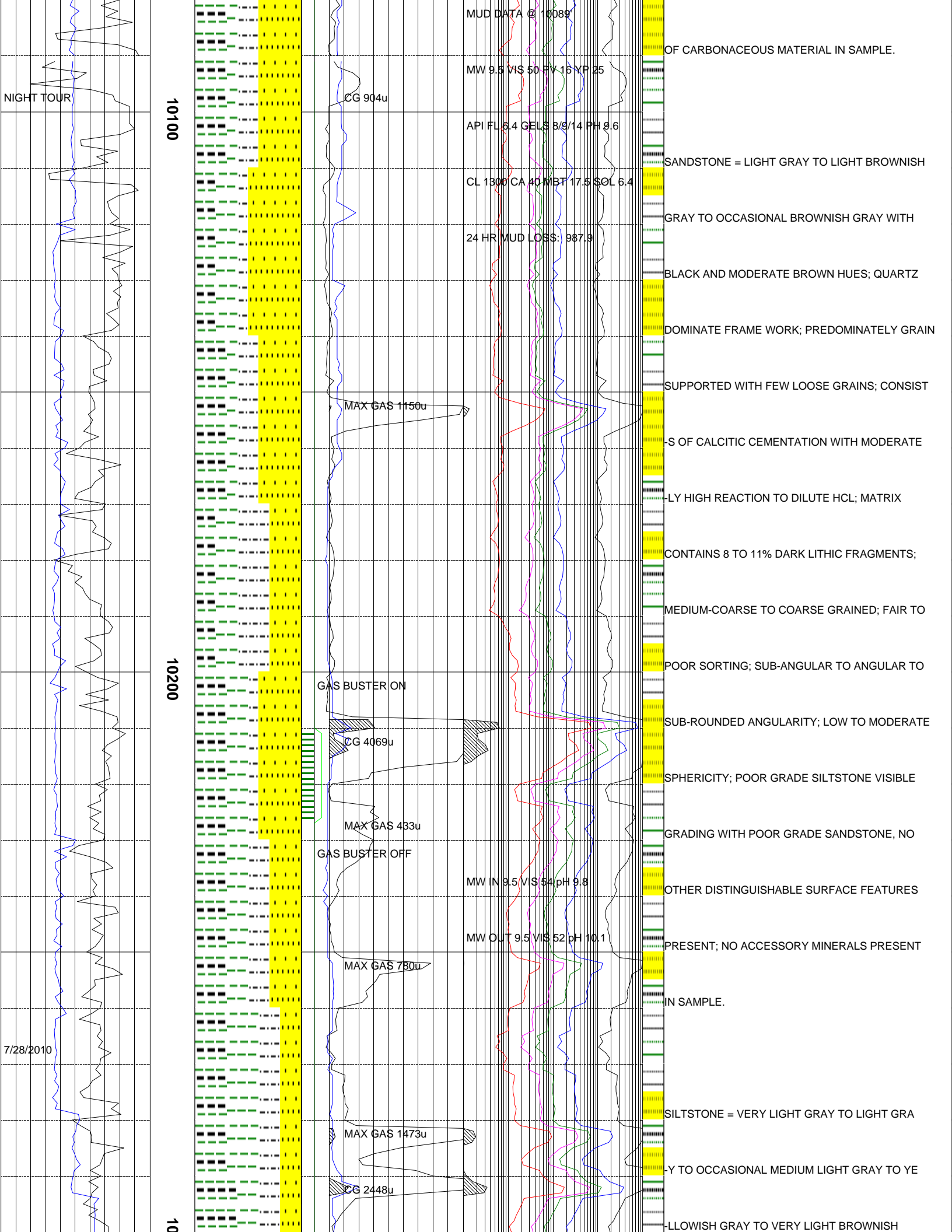


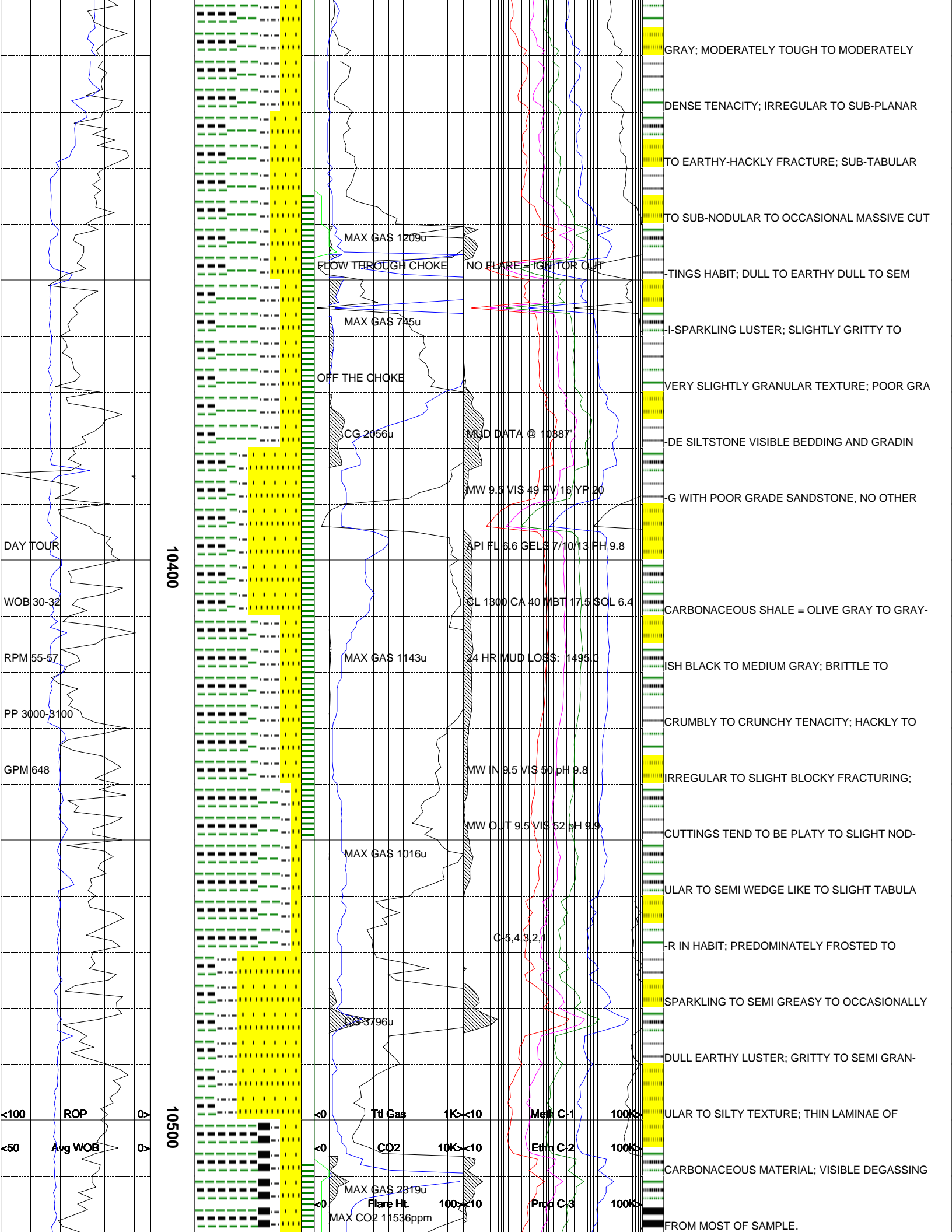


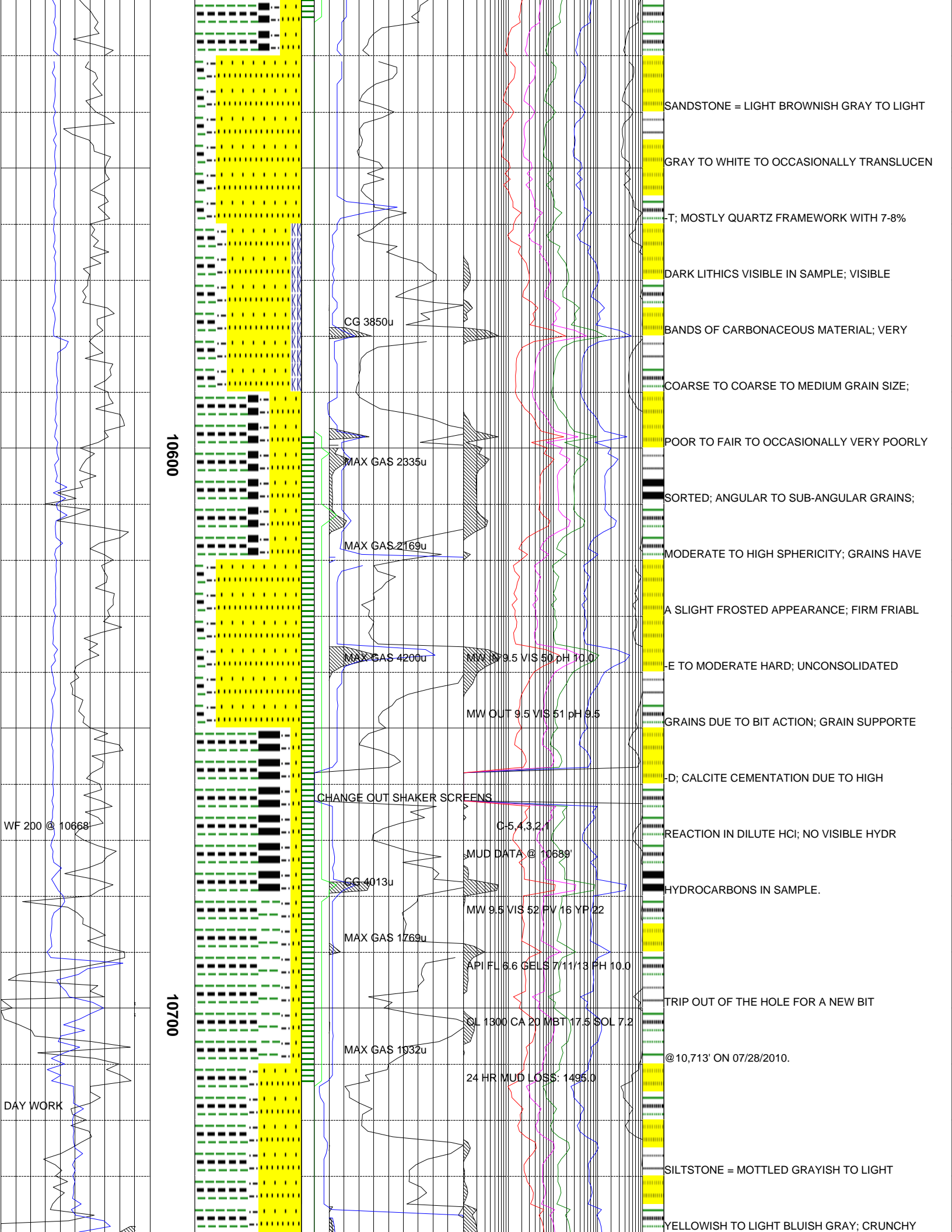


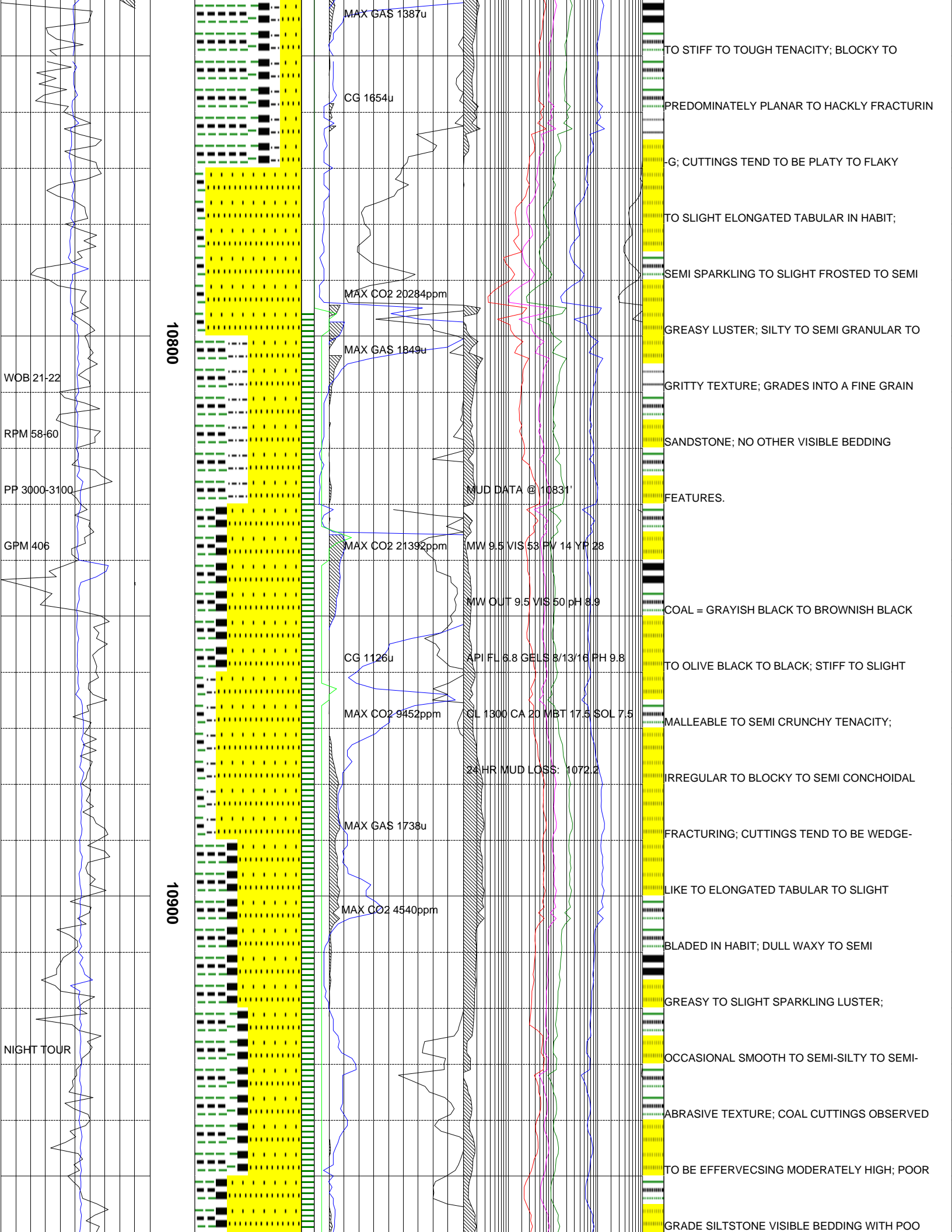


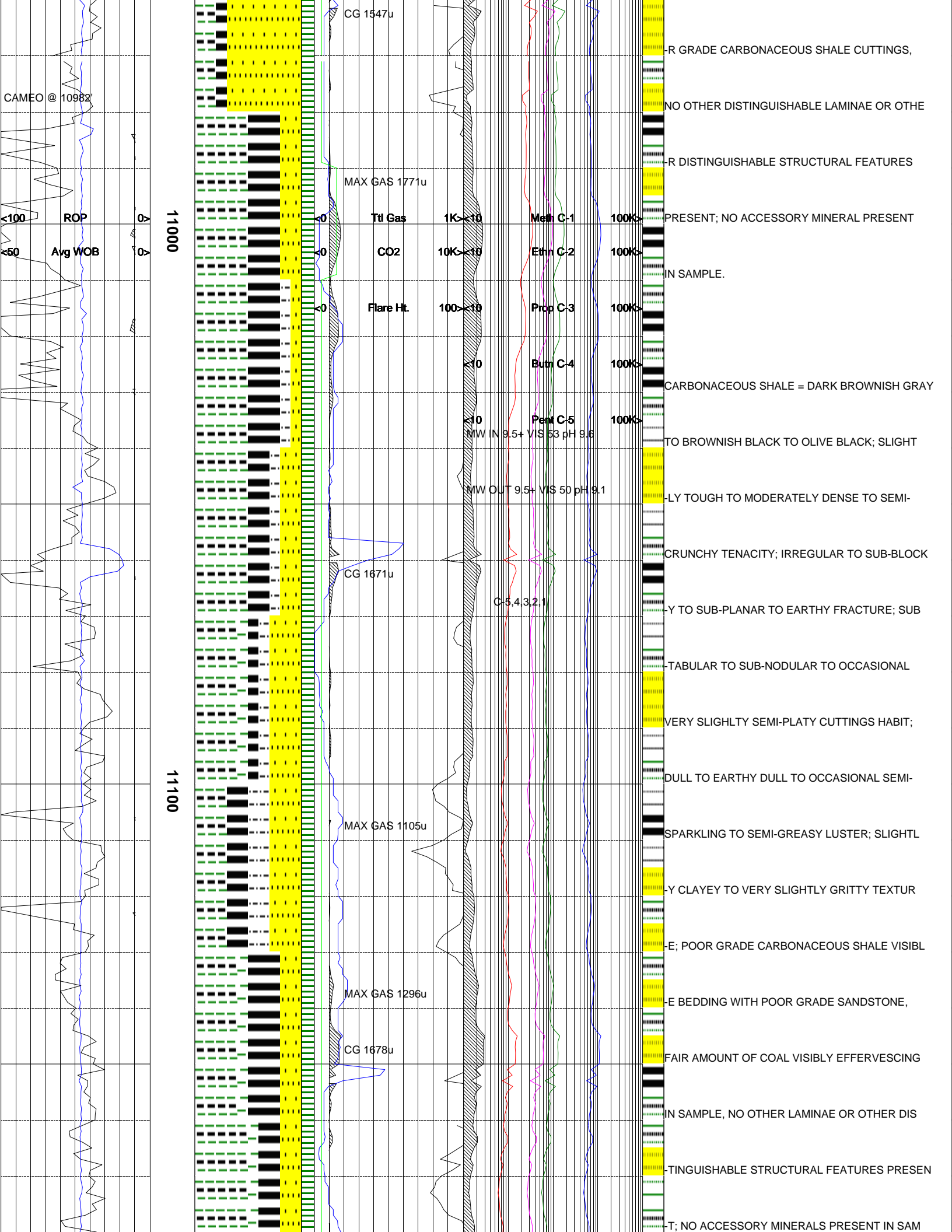


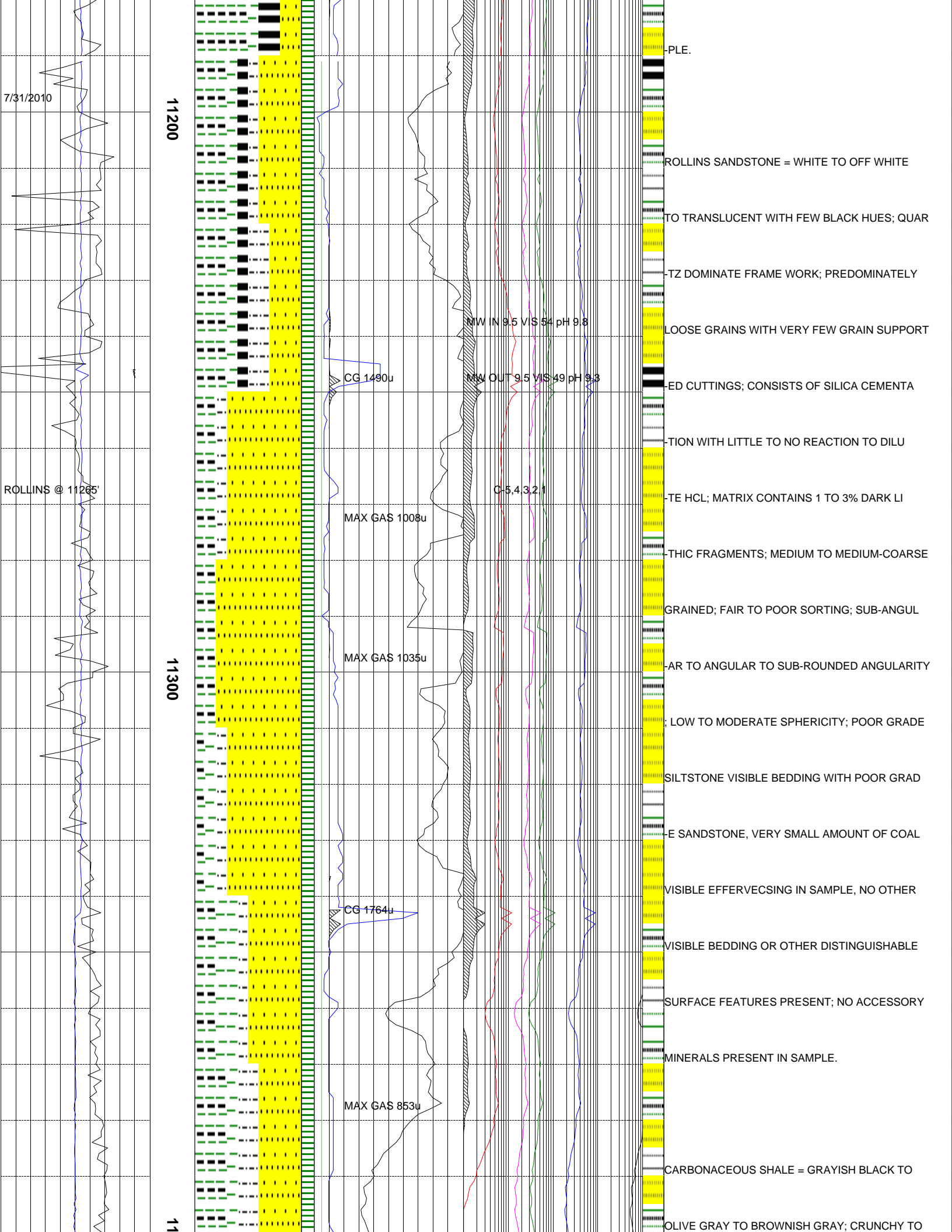


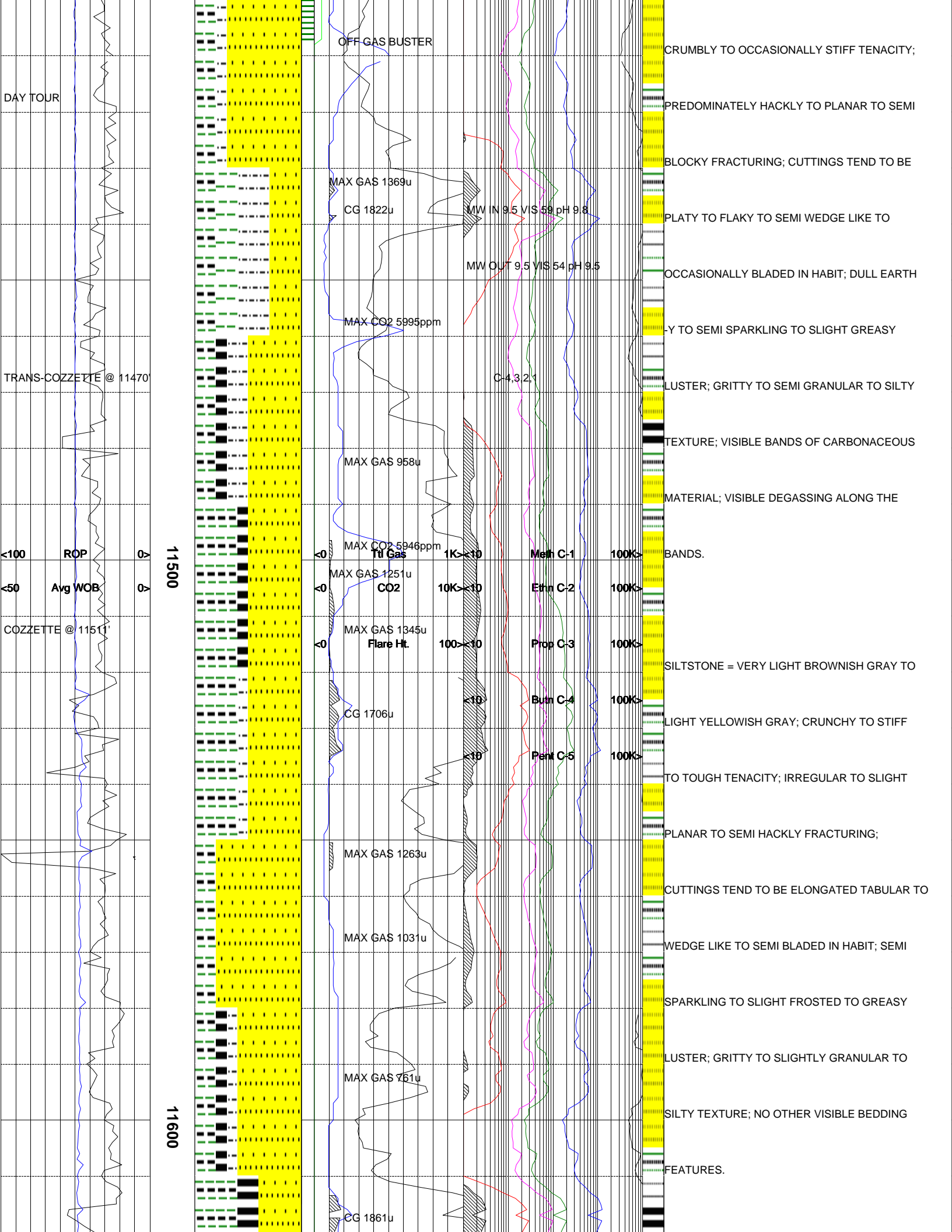


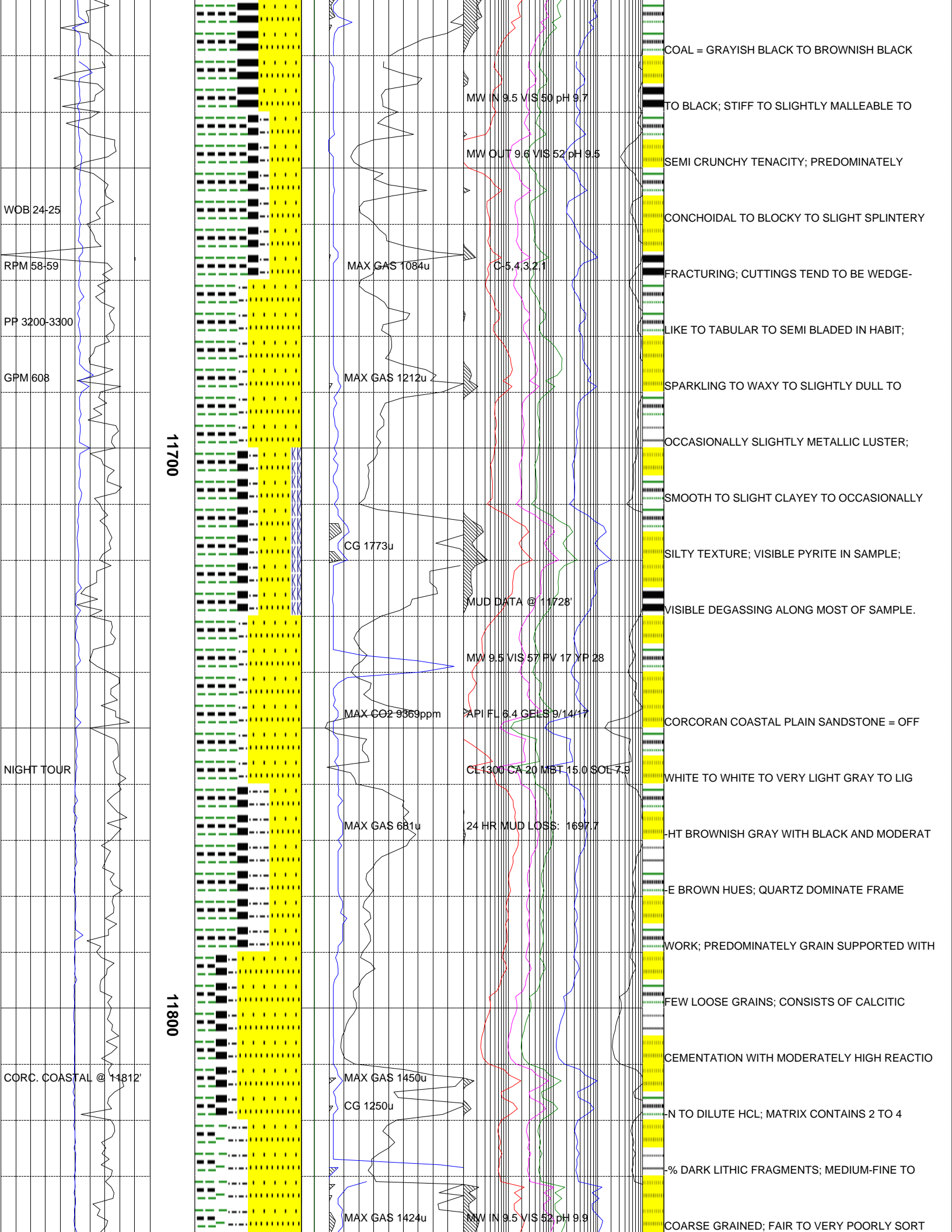


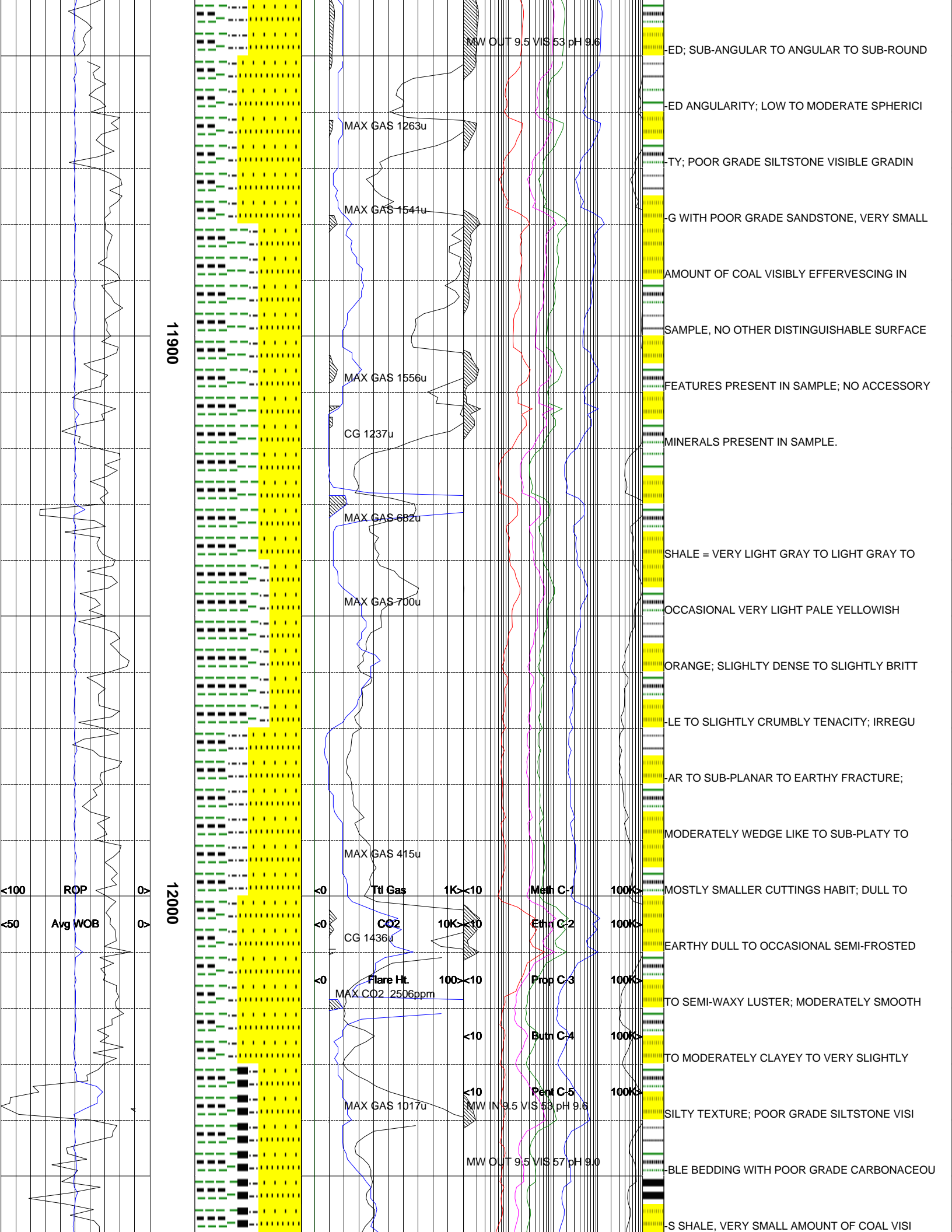


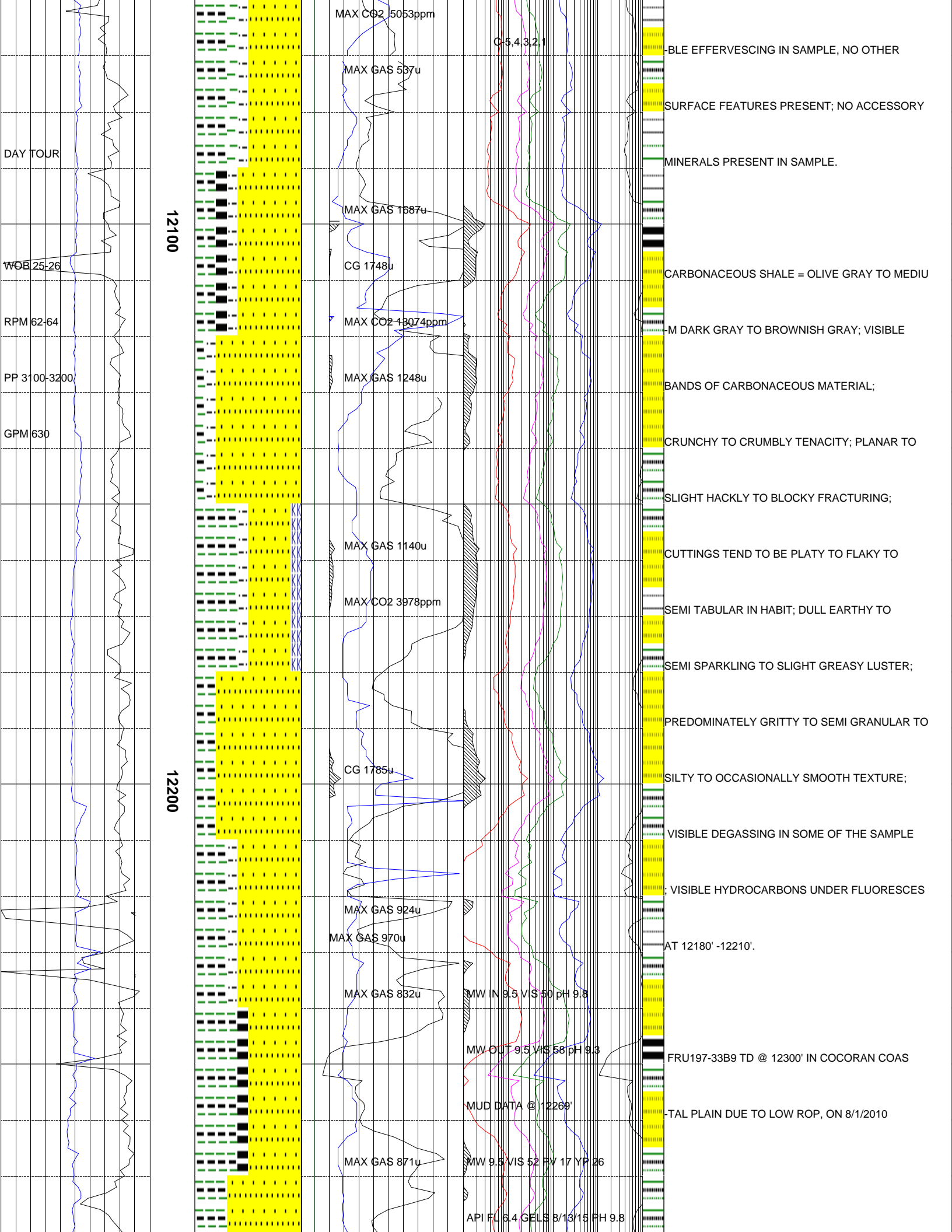


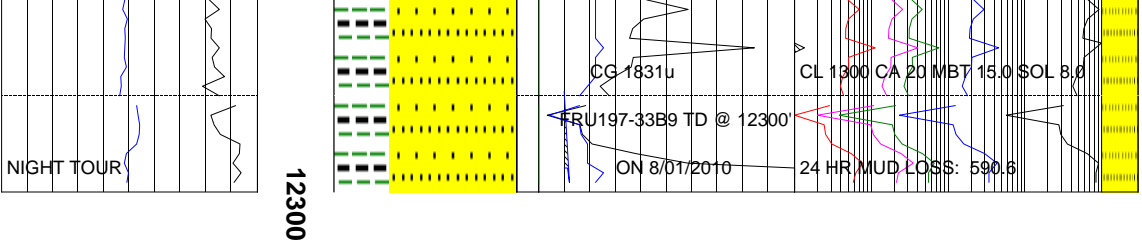












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