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(281) 784-5500
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(661) 328-1595
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(907) 561-2465

Mudlog MD

COMPANY	EXXONMOBIL
WELL	PCU 296-6B2
FIELD	PICEANCE CREEK UNIT
REGION	ROCKY MOUNTIANS
COORDINATES	LAT 39.905269000 LON 108.205030000
ELEVATION	GL 7363.9 KB 7390.9
COUNTY, STATE	RIO BLANCO CO
API INDEX	051031154500
SPUD DATE	01-24-2011
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	SCOTT ARENBURG
RIG/TYPE	215 / FLEX 3
LOGGING UNIT	MLU 51
GEOLOGISTS	G.BAKER, D.CLAAR B.MARSH, B.JOHANNING
ADD. PERSONS	I.FAROOQUI K.WALLANDER
CO. GEOLOGIST	WILLIAM HOFFMAN

LOG INTERVAL

DEPTHS: 145' **TO** 10,275'
DATES: 01-24-2011 **TO** 02-17-2011
SCALE: 5" = 100'

CASING DATA

17" **AT** 145'
10.75" **AT** 4,627'
AT
AT

MUD TYPES

LSDN **TO** 10,275'
TO
TO
TO

HOLE SIZE

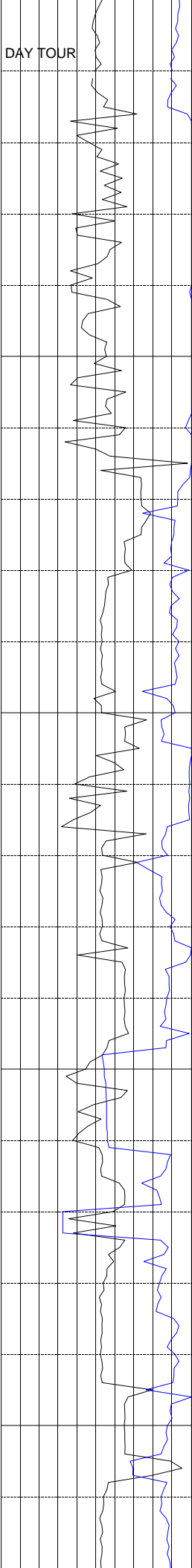
20" **TO** 145'
14.75" **TO** 4,627'
9.875" **TO** 10,275'
TO

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	

EXXONMOBIL				PCU 296-6B2				2/21/2011															
<div><300ROP0></div> <div>ft/hr</div> <div><50Avg WOB0></div> <div>klbs</div>			Depth	Lithology	MGS	Ttl Gas units	500>	<10Meth C-1 ppm	100K>	<10Ethn C-2	100K>	<10CO2 ppm	10K>	<10Prop C-3	100K>	<10Butn C-4	100K>	<10Flare Ht. ft	100>	<10Pent C-5	100K>	Interp. Lith	Remarks
Survey Data, Mud Reports, Other Info.																							
CANRIG WELL SERVICE COMMENCED LOGGING																							
OPERATION ON 1/26/2011 @ 2:49 HRS AT A																							
DEPTH OF 145'.																							
MW IN 8.7+ VIS 36																							
MW OUT 8.7 VIS 36																							
NB#1, 14.75", IN @ 145'																							
SEC FX75M w/ 7-13's																							
68' Hrs' 4559'																							
20																							



300

400

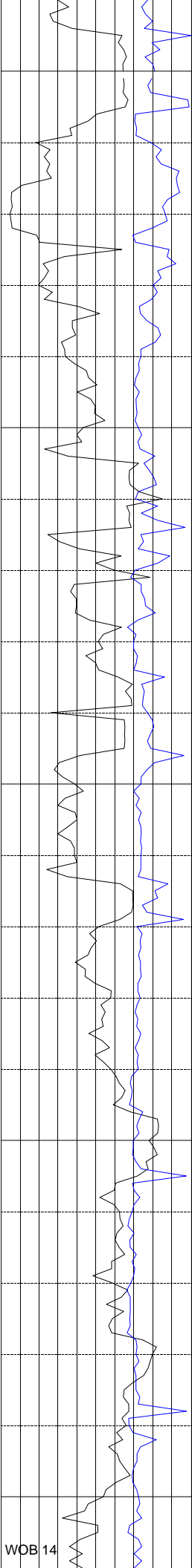
C-1

MW IN 8.9 VIS 40

MW OUT 8.9+ VIS 40

CHANGED GAS EQUIP ATTN

CALIB GAS EQUIPMENT



700

800

MUD DATA @ 620'

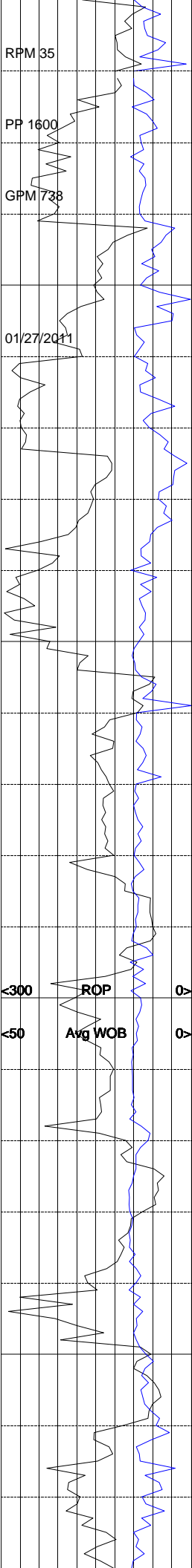
MW 9.0 FV 42 PV 14 YF 10

API FIL 7.0 GELS 8/22/31 pH 9.7

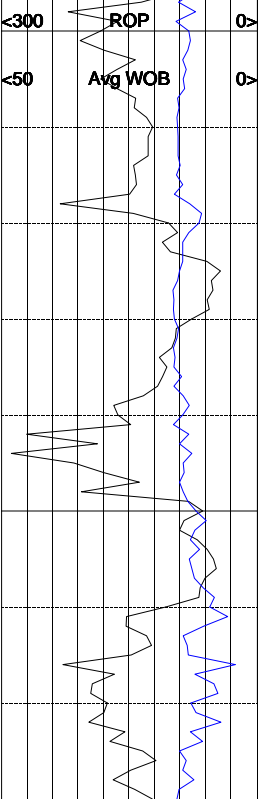
Cl- 500 Ca+ 40 MBT 20.0 SCL 3.7

24 HRS LOSSES 0.00 bbls

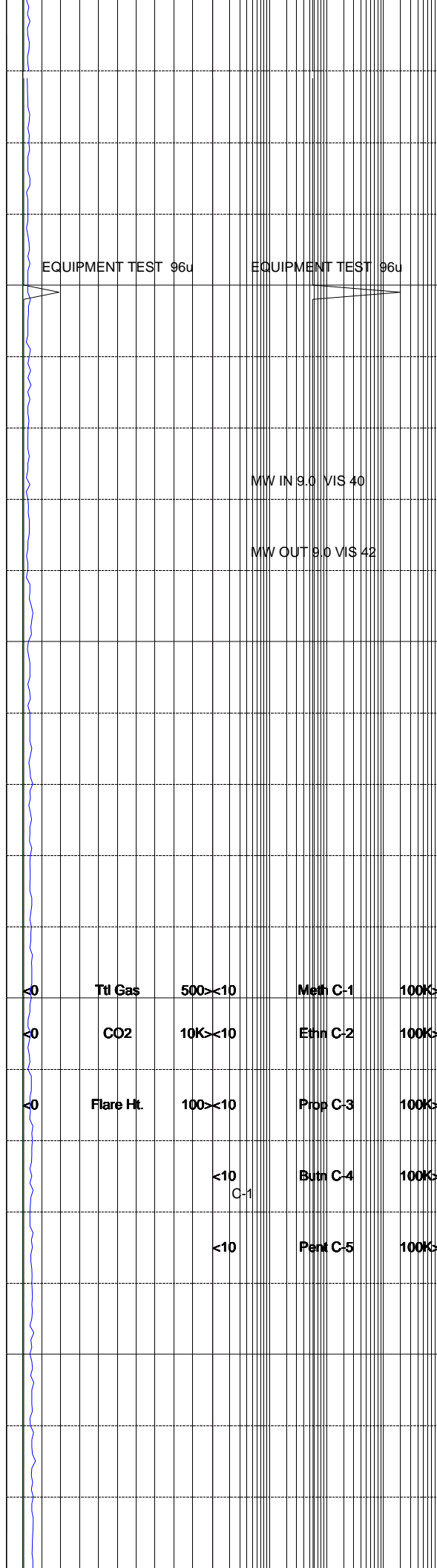
C-1



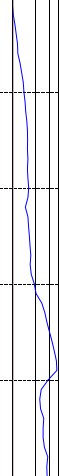
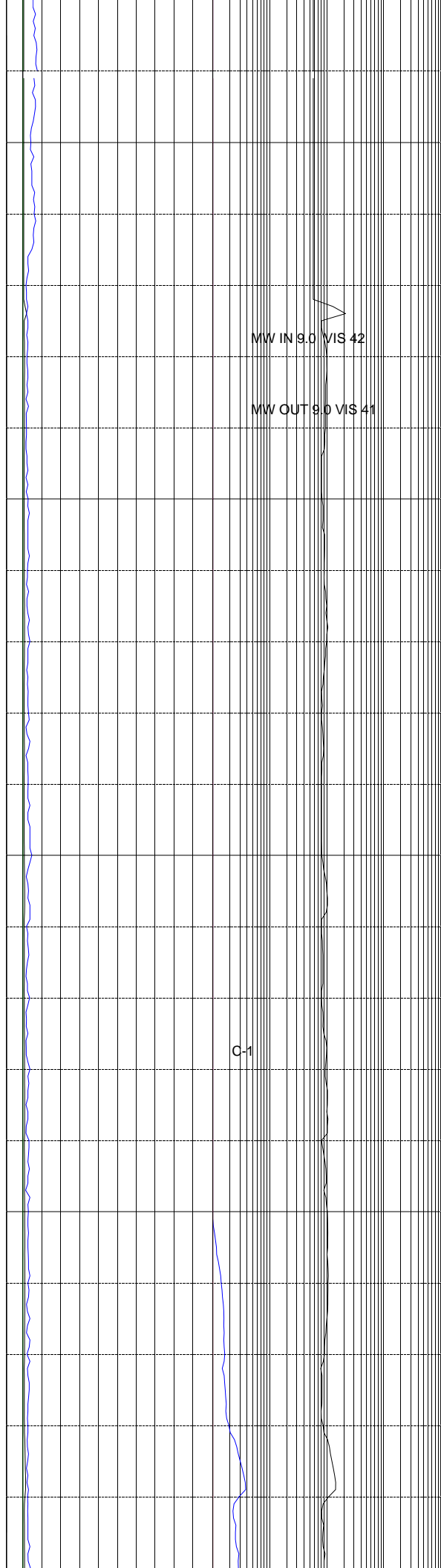
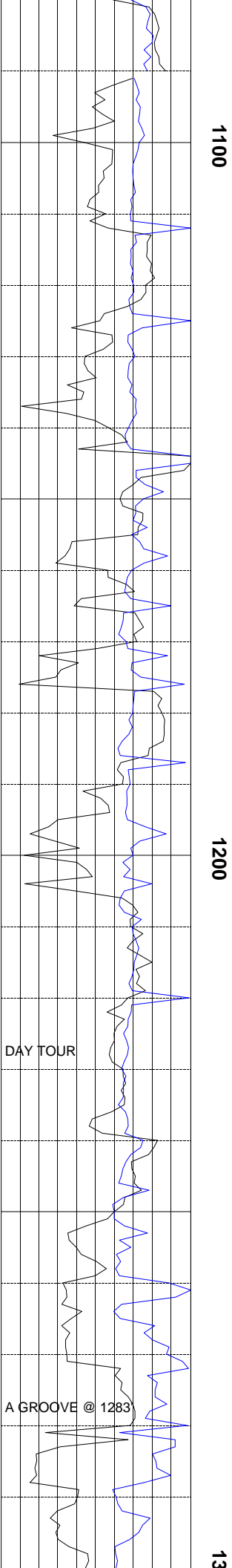
900

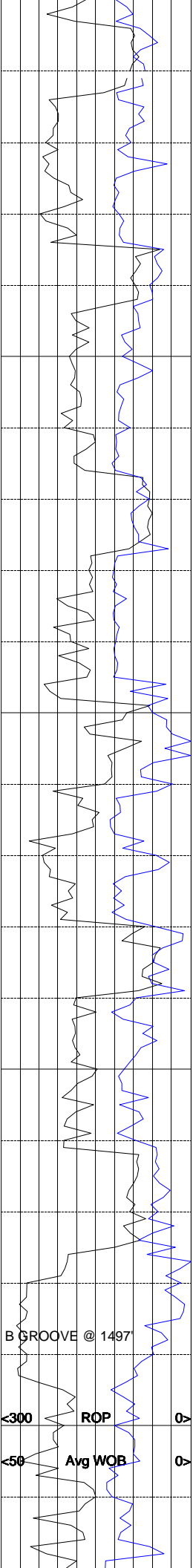


1000



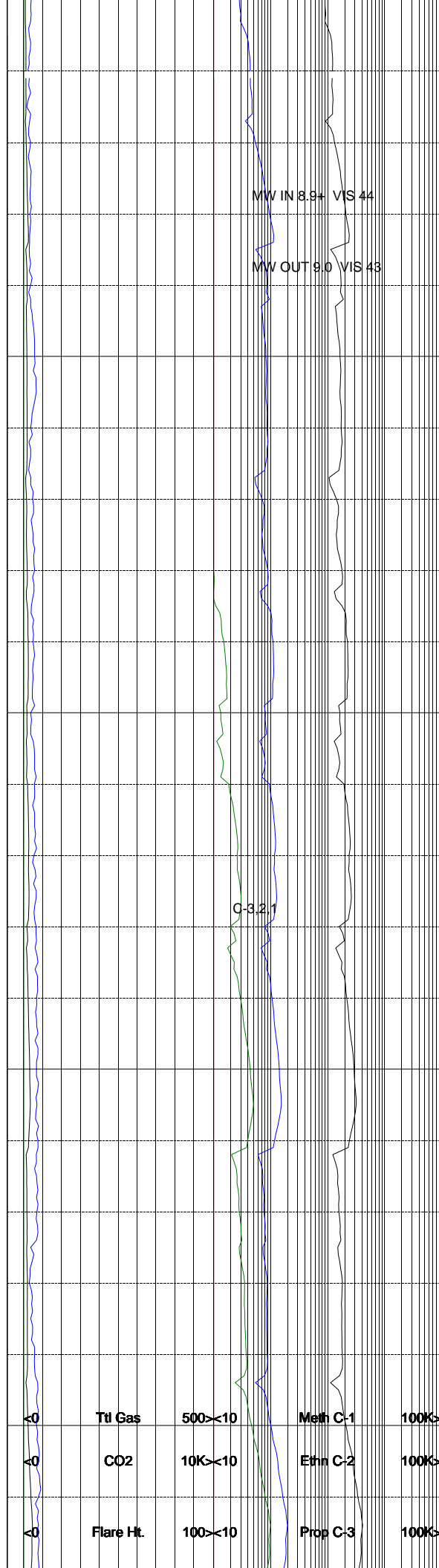
<0	Ttl Gas	500><10	Meth C-1	100K>
<0	CO2	10K><10	Ethn C-2	100K>
<0	Flare Ht.	100><10	Prop C-3	100K>
		<10 C-1	Butn C-4	100K>
		<10	Pent C-5	100K>

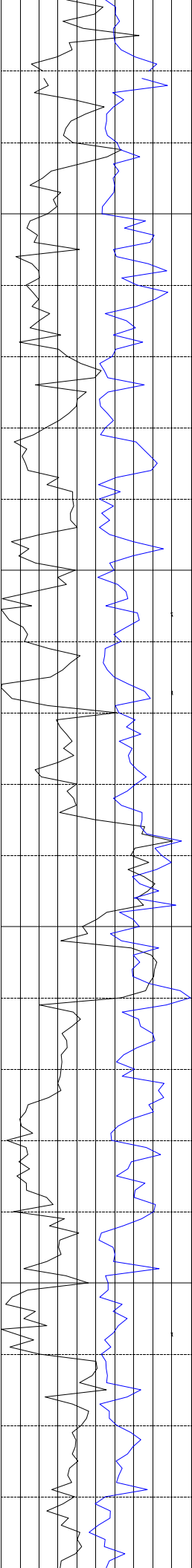




1400

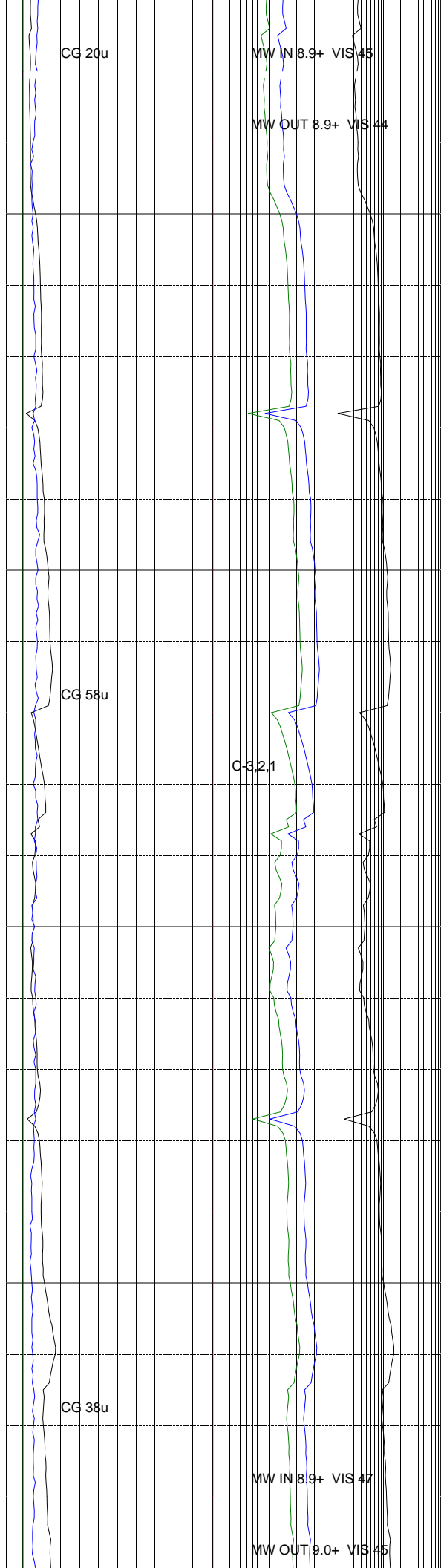
1500





1600

1700



CG 20u

MW IN 8.9+ VIS 45

MW OUT 8.9+ VIS 44

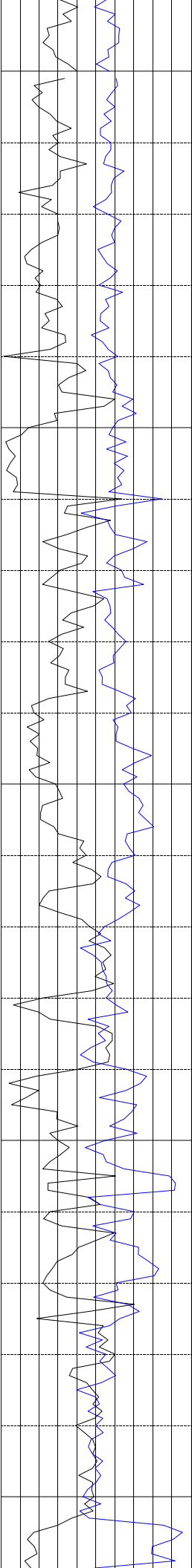
CG 58u

C-3.2.1

CG 38u

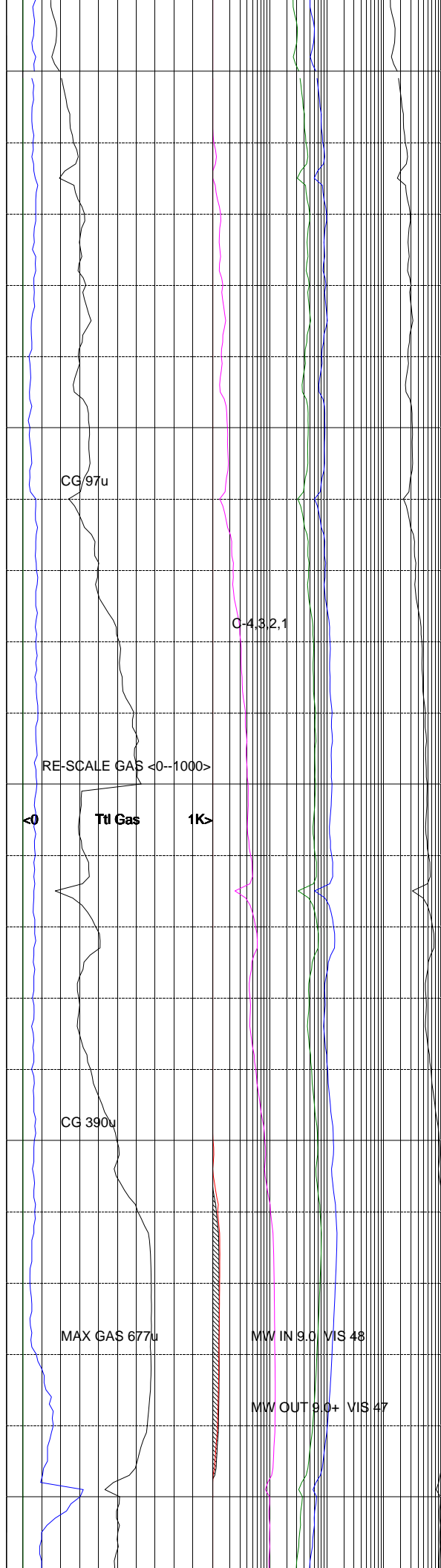
MW IN 8.9+ VIS 47

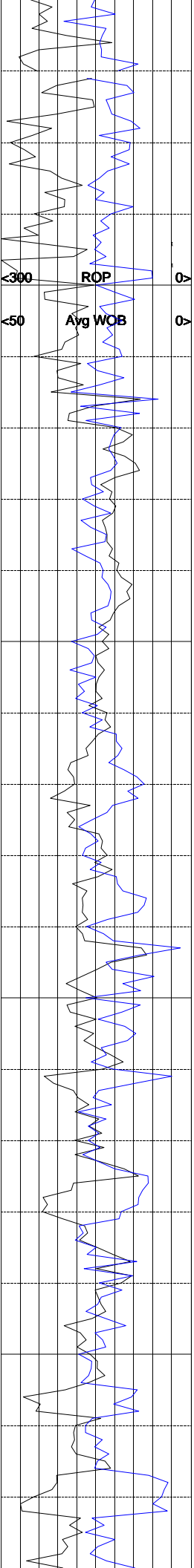
MW OUT 9.0+ VIS 45



1800

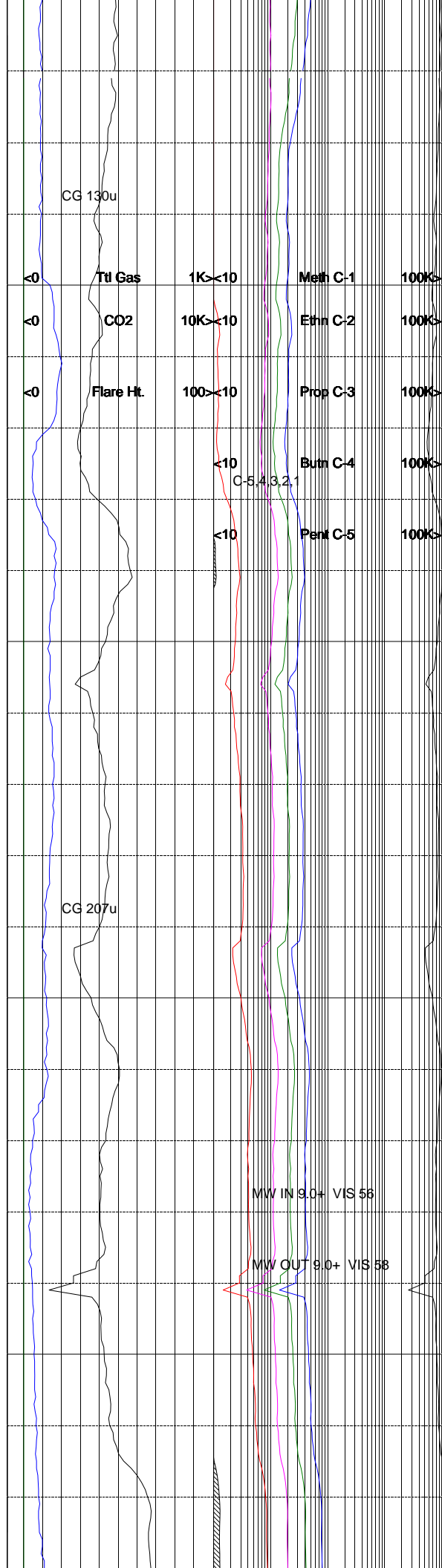
1900

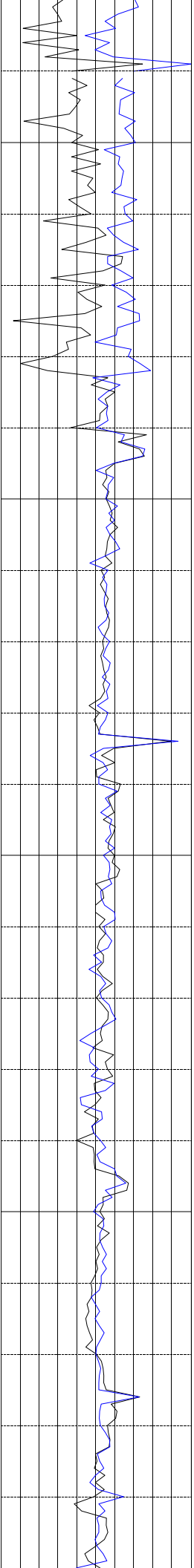




2000

2100

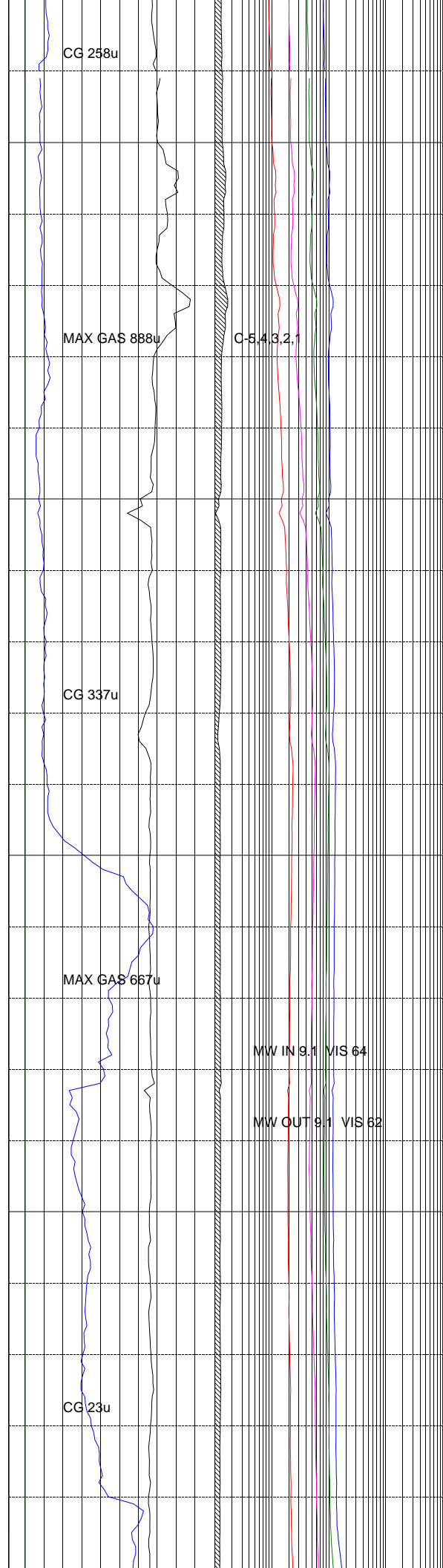


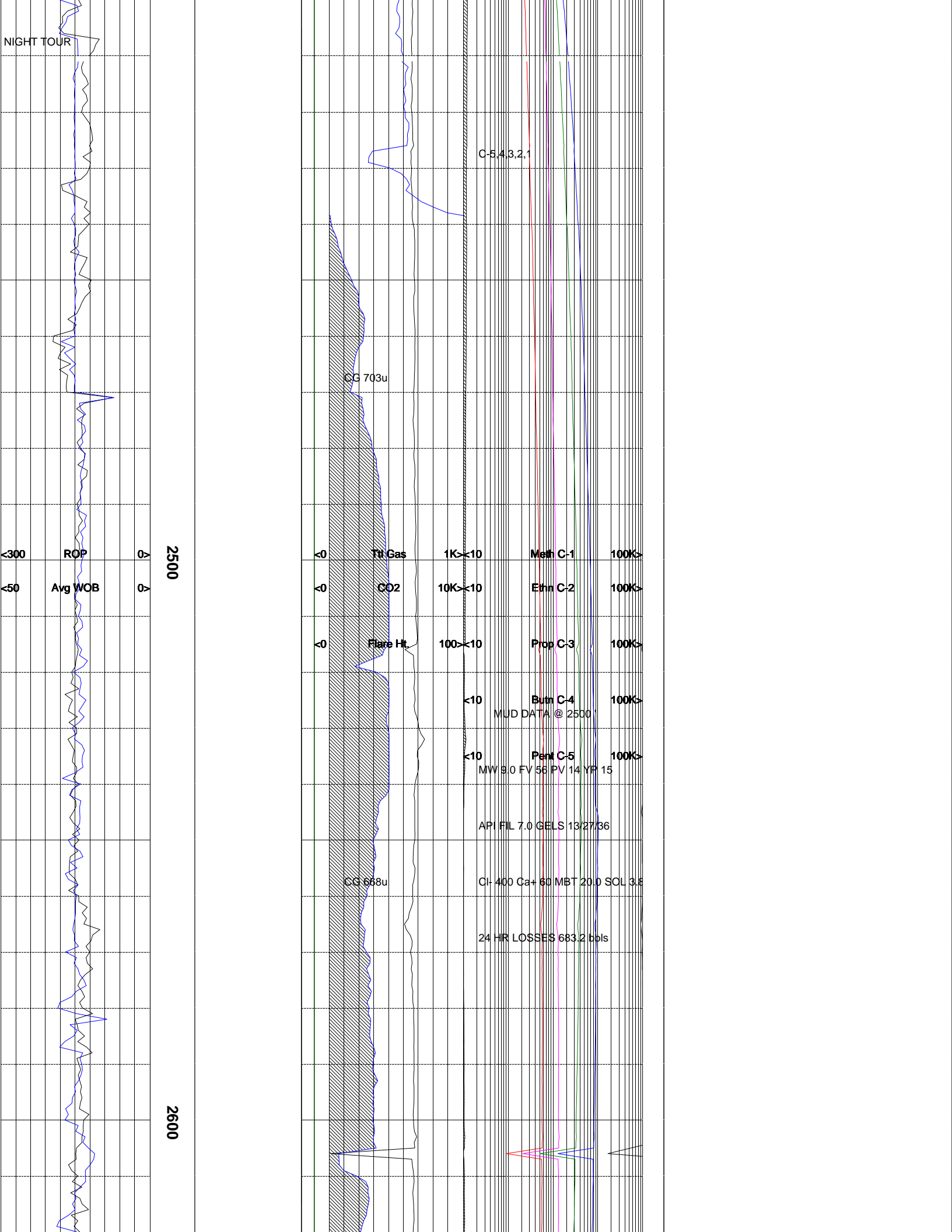


2200

2300

24





NIGHT TOUR

2500

2600

300 ROP
50 Avg WOB

CG 703u

CG 668u

C-5,4,3,2,1

<0	Tot Gas	1K<10	Meth C-1	100K>
<0	CO2	10K>10	Ethn C-2	100K>
<0	Flare Ht	100>10	Prop C-3	100K>
<10	Butn C-4			100K>
<10	Pent C-5			100K>

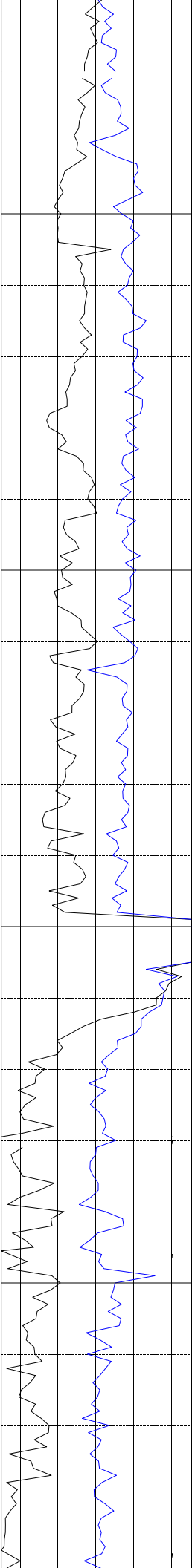
MUD DATA @ 2500

MW 9.0 FV 56 PV 14 YP 15

API FIL 7.0 GELS 13/27/36

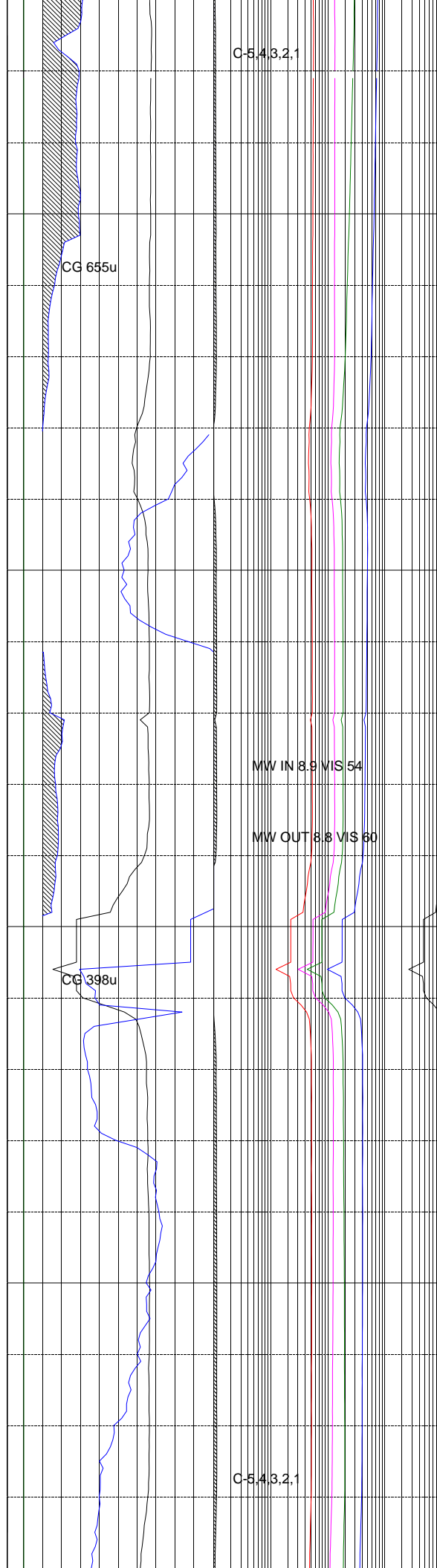
Cl- 400 Ca+ 60 MBT 20.0 SCL 3.8

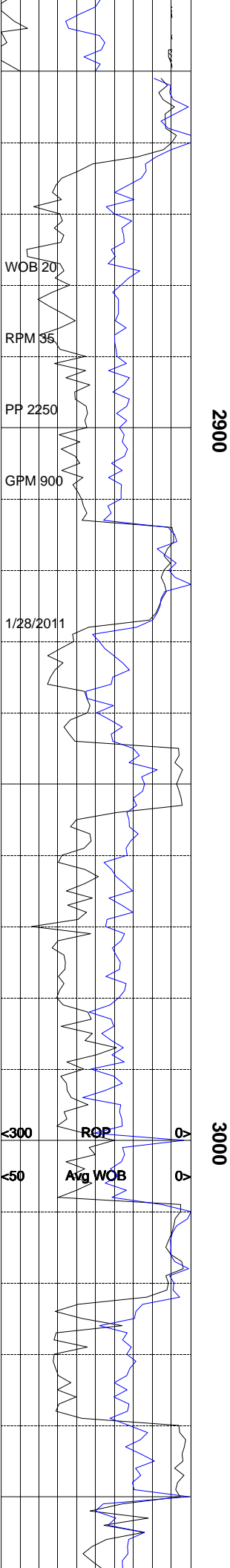
24 HR LOSSES 683.2 bbls



2700

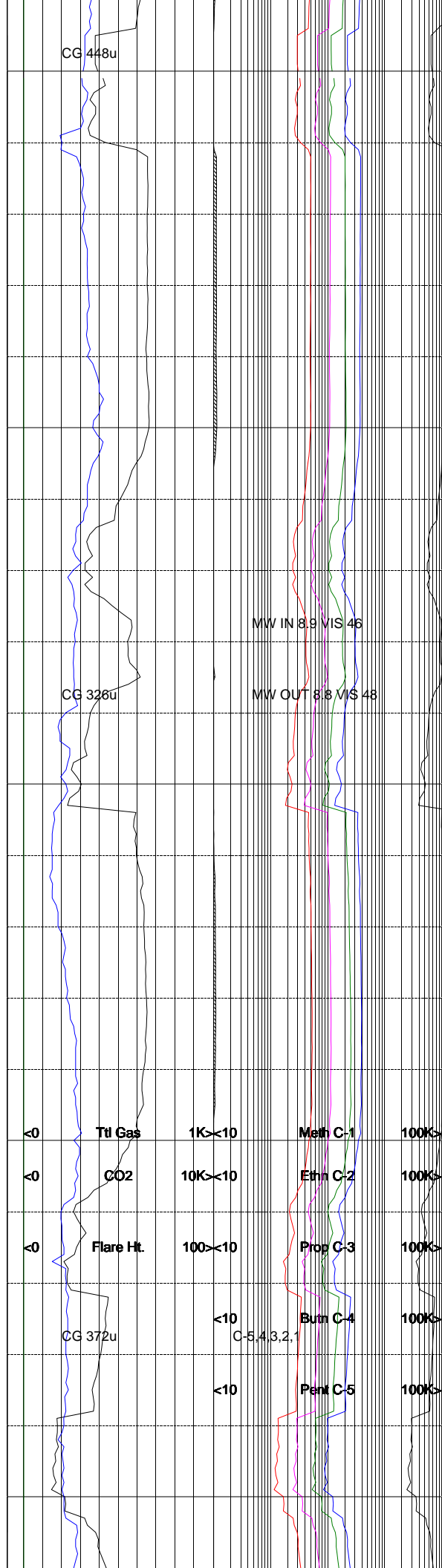
2800





2900

3000



CG 448u

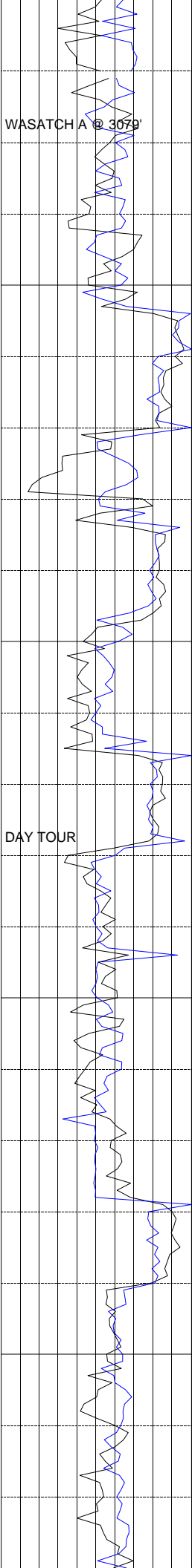
CG 326u

CG 372u

MW IN 8.9 VIS 46

MW OUT 8.8 VIS 48

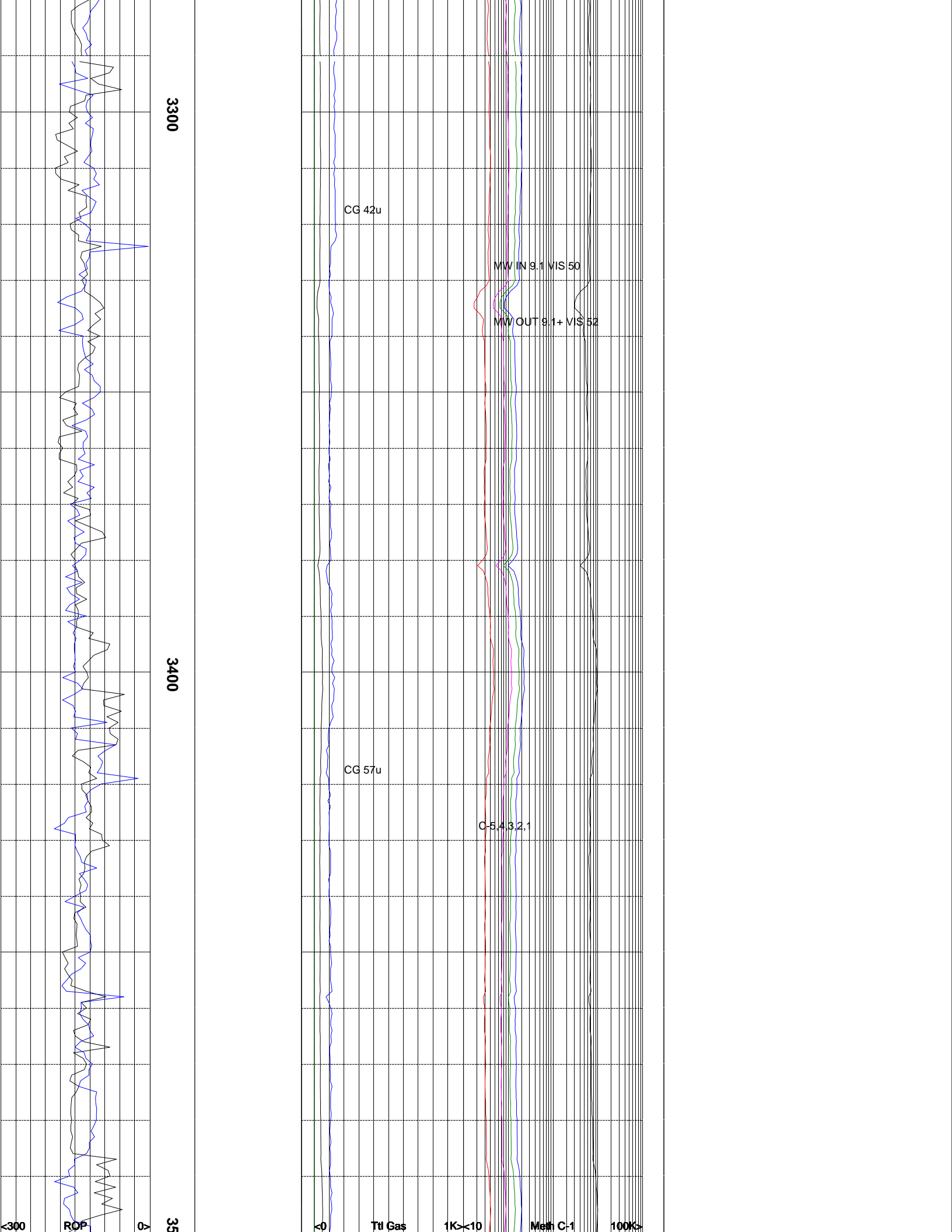
<0	Ttl Gas	1K<10	Meth C-1	100K>
<0	CO2	10K<10	Ethn C-2	100K>
<0	Flare Ht.	100><10	Prop C-3	100K>
		<10	Butn C-4	100K>
		<10	Pent C-5	100K>

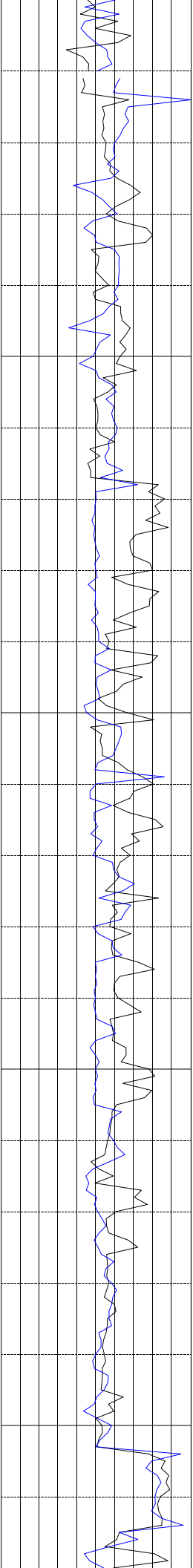


3100

3200

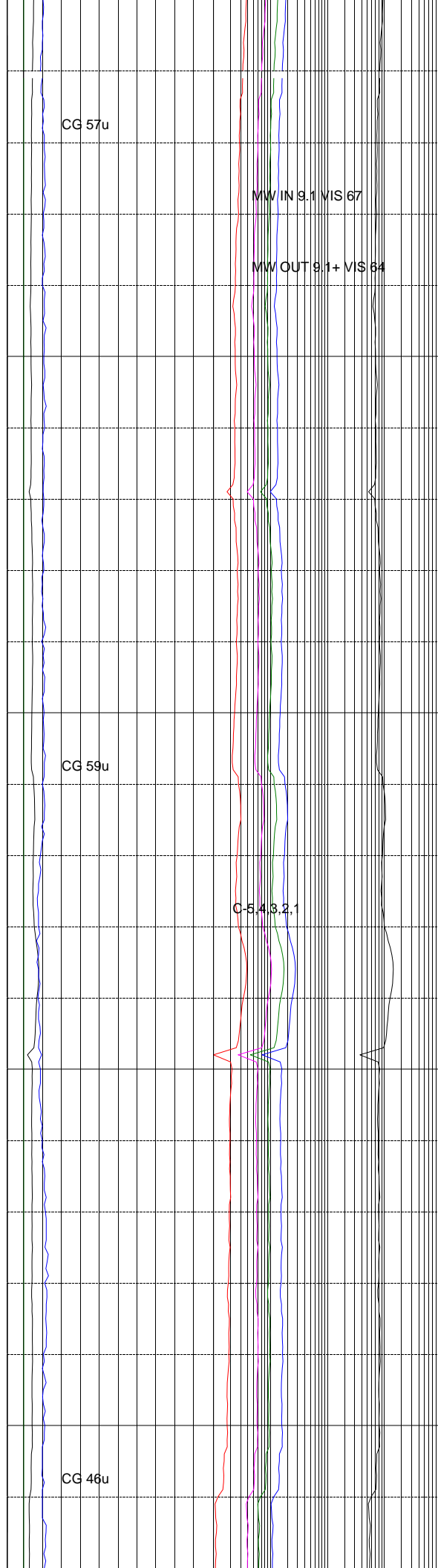






3600

3700



CG 57u

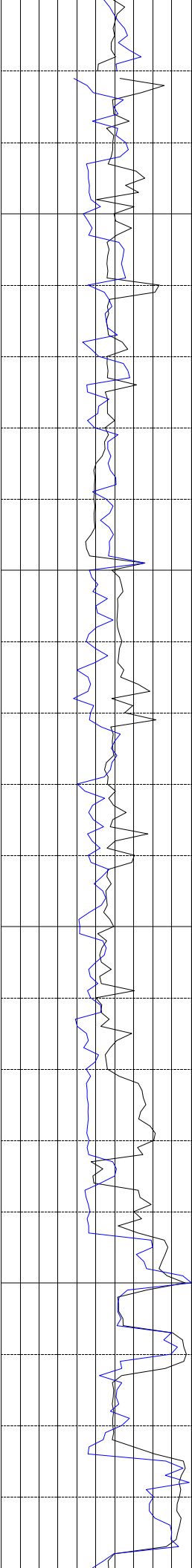
MW IN 9.1 VIS 67

MW OUT 9.1+ VIS 64

CG 59u

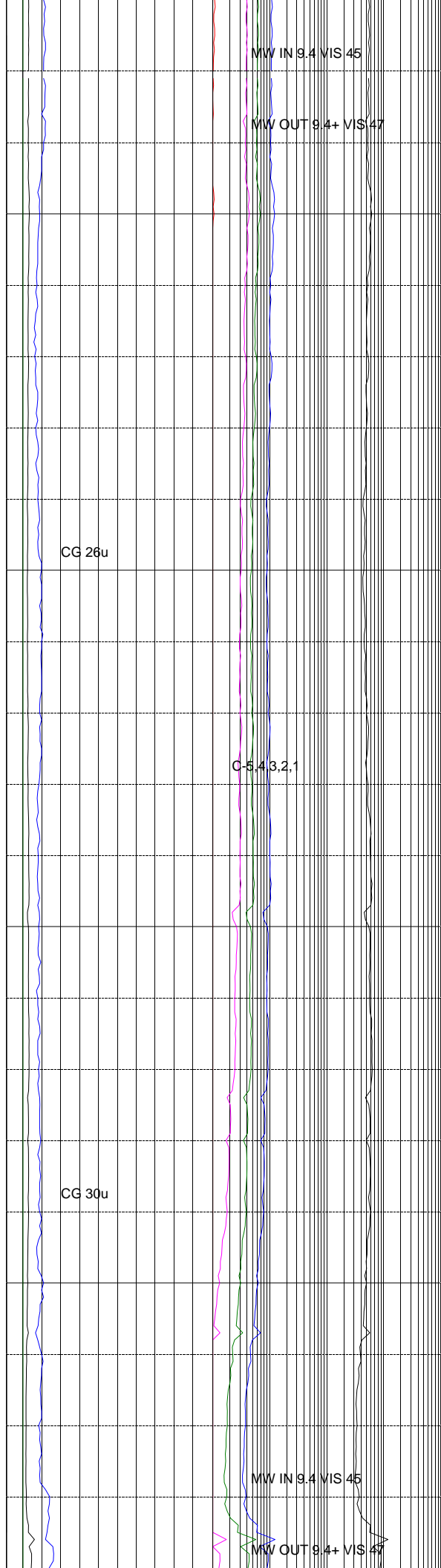
C-5.4.3.2.1

CG 46u



3800

3900



MW IN 9.4 VIS 45

MW OUT 9.4+ VIS 47

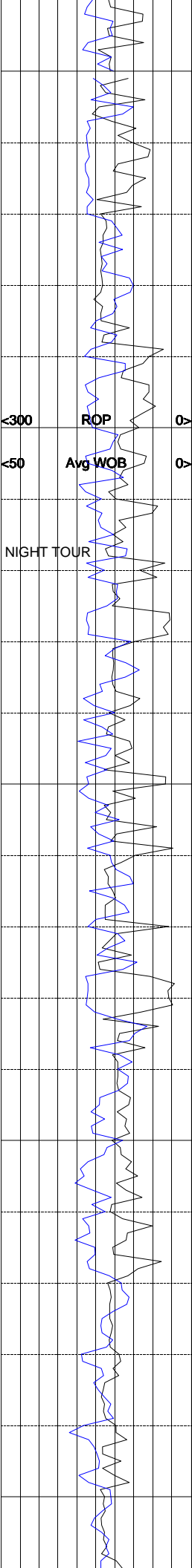
CG 26u

C-5.4 3.2,1

CG 30u

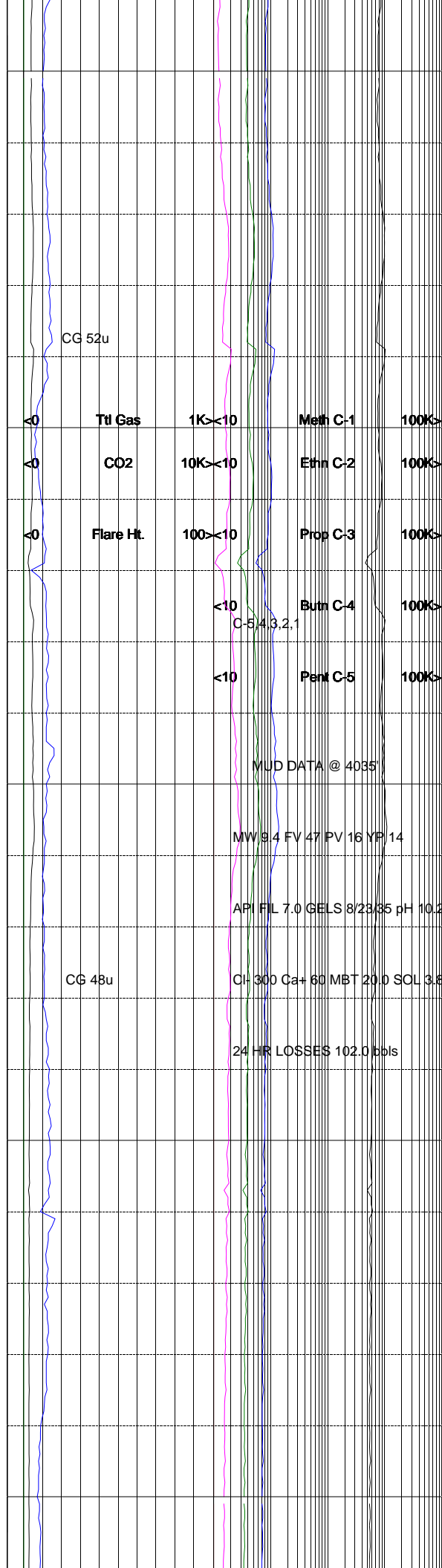
MW IN 9.4 VIS 45

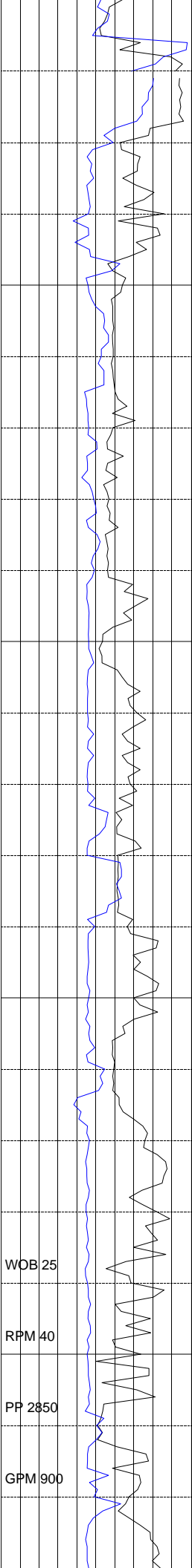
MW OUT 9.4+ VIS 47



4000

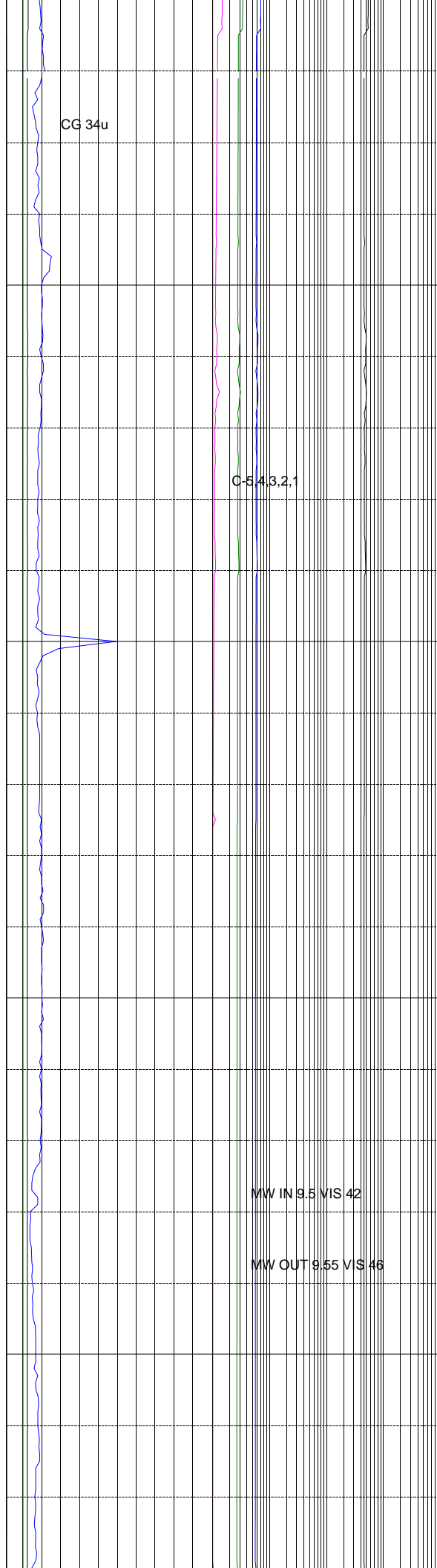
4100





4200

4300



ALL ROCK COLORS ARE REFERENCED TO THE
GSA ROCK COLOR CHART, ROCK CONSTITUENTS
ARE DESCRIBED WET AND LISTED IN ORDER OF
MOST ABUNDANT TO LEAST ABUNDANT, ALL
SAMPLE DEPTHS ARE REFERENCED TO RKB.

GAS CHROMATOGRAPHY EQUIPMENT IS
CALIBRATED TO A TEST GAS COMPOSED OF

METHANE = 10000 PPM

ETHANE = 1000 PPM

PROPANE = 1000 PPM

I-BUTANE = 1000 PPM

N- BUTANE = 1000 PPM

I- PENTANE = 1000 PPM

N- PENTANE = 1000 PPM

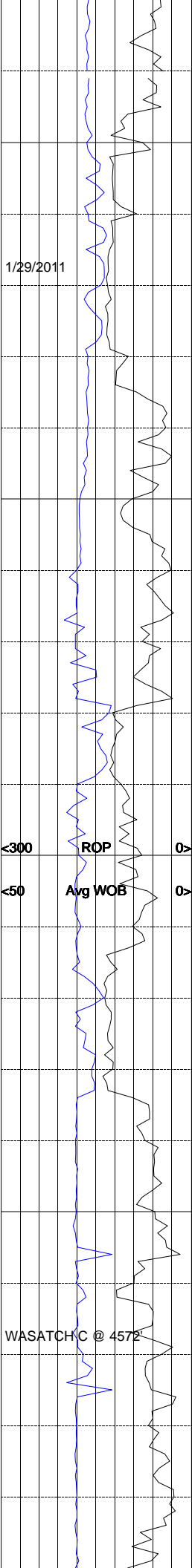
MW IN 8.5 VIS 42

MW OUT 9.55 VIS 46

CO2 IS CALIBRATED TO A TEST GAS COMPOSED
OF 100000 PPM

CONNECTION GAS, TRIP GAS, AND WIPER GAS

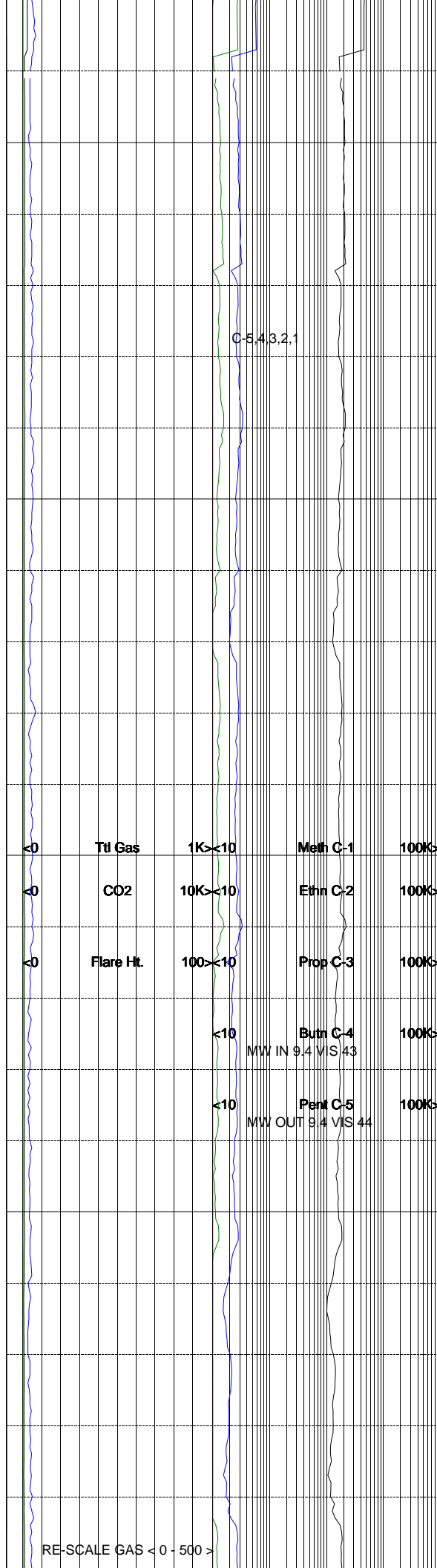
ARE NOTED ON THE MUDLOG, FLARE HEIGHTS



4400

4500

4600



RE-SCALE GAS < 0 - 500 >

AND DEPTHS OF GAS BUSTER USAGE ARE ALSO

NOTED.

EARLY CONNECTION GASES REPRESENTING

UP HOLE GAS INTERVALS BLEEDING INTO THE

BOREHOLE ARE COMMON IN THE PRODUCTION

INTERVAL.

EVIDENCE OF FRACTURE FILL IS NOTED ON

THE LOG USING THE LITHOLOGY SYMBOL FOR

METAMORPHICS. THE 10% DOES NOT REPRESENT

10% FRACTURE FILL IN SAMPLE. IT ONLY

INDICATES THAT FRACTURE FILL HAS BEEN

OBSERVED OVER THE INTERVAL.

SURVEY DATA AT 6323' MD

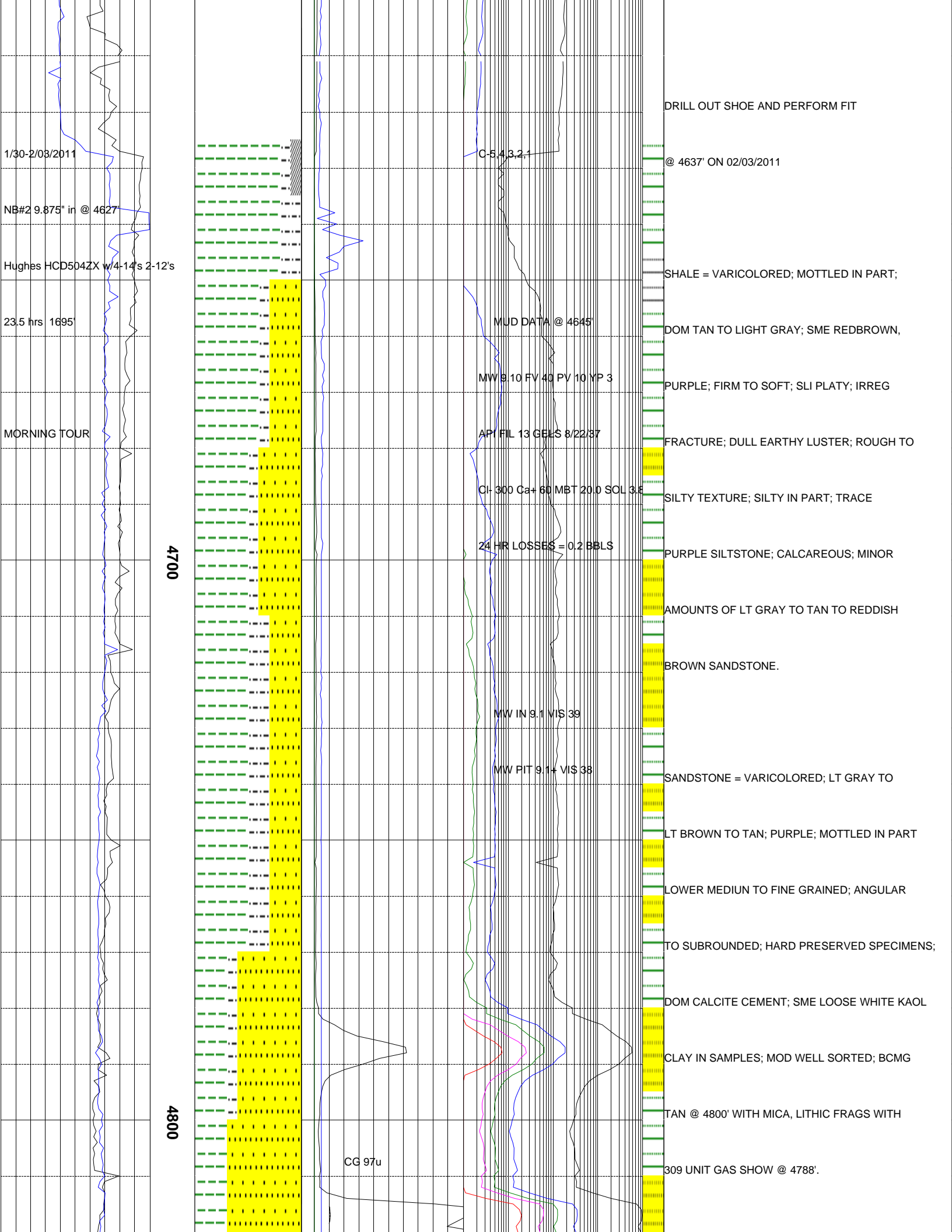
INCL: 0.04

AZIM: 13.79

TVD: 6013.15

NOTE: TD SURFACE SECTION @ 4627'

ON 1-29-2011 AT 03:10 AM



DRILL OUT SHOE AND PERFORM FIT

1/30-2/03/2011
NB#2 9.875" in @ 4627

C-5.4 3.2'
@ 4637' ON 02/03/2011

Hughes HCD504ZX w/4-14's 2-12's
23.5 hrs 1695'

SHALE = VARICOLORED; MOTTLED IN PART;
DOM TAN TO LIGHT GRAY; SME REDBROWN,

MORNING TOUR

MUD DATA @ 4645'
MW 9.10 FV 40 PV 10 YP 3
PURPLE; FIRM TO SOFT; SLI PLATY; IRRREG

API FIL 13 GELS 8/22/37
FRACTURE; DULL EARTHY LUSTER; ROUGH TO

CI- 300 Ca+ 60 MBT 20.0 SOL 3.8
SILTY TEXTURE; SILTY IN PART; TRACE

24 HR LOSSES = 0.2 BBLs
PURPLE SILTSTONE; CALCAREOUS; MINOR

4700

AMOUNTS OF LT GRAY TO TAN TO REDDISH
BROWN SANDSTONE.

MW IN 9.1 VIS 39

MW PIT 9.1+ VIS 38
SANDSTONE = VARICOLORED; LT GRAY TO

LT BROWN TO TAN; PURPLE; MOTTLED IN PART
LOWER MEDIUN TO FINE GRAINED; ANGULAR

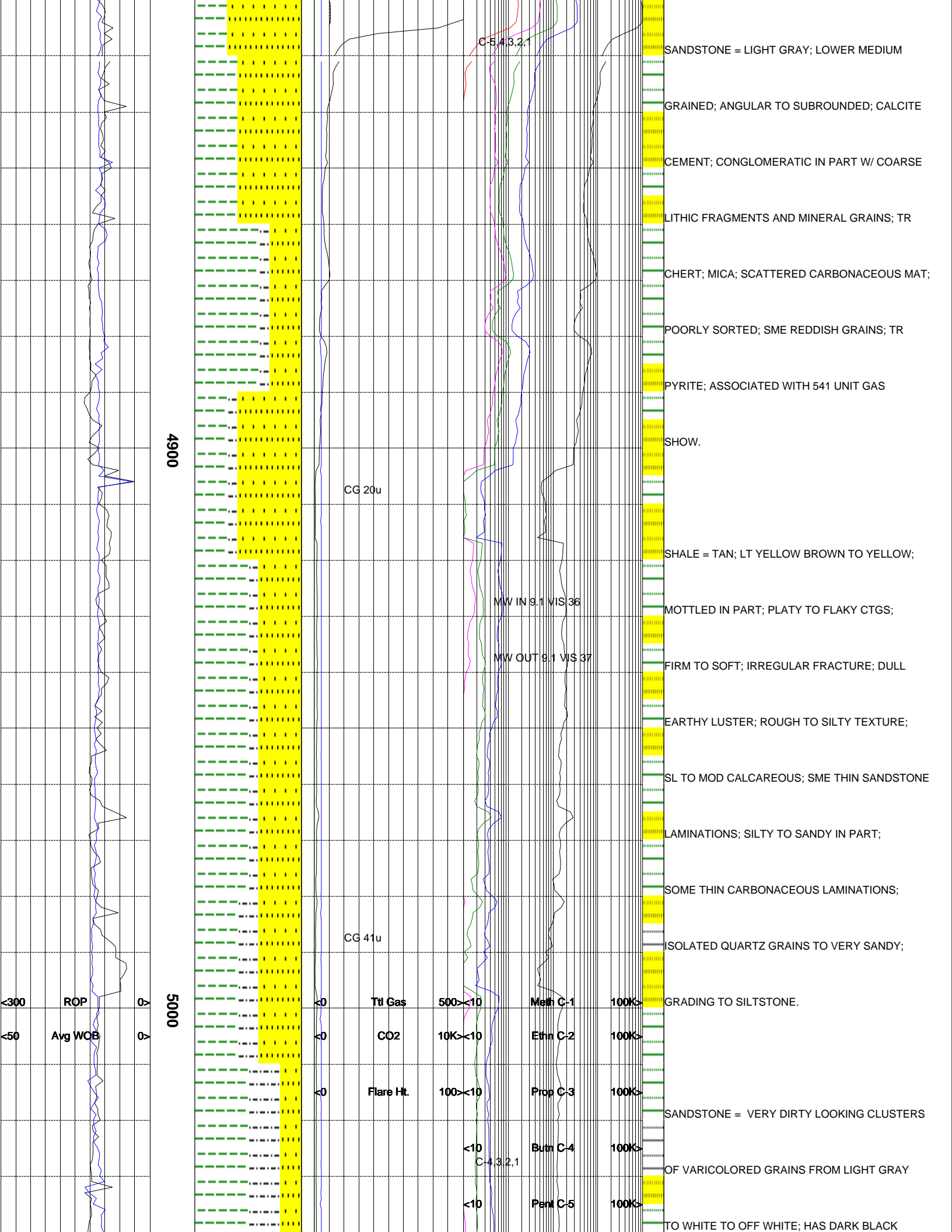
TO SUBROUNDED; HARD PRESERVED SPECIMENS;
DOM CALCITE CEMENT; SME LOOSE WHITE KAOL

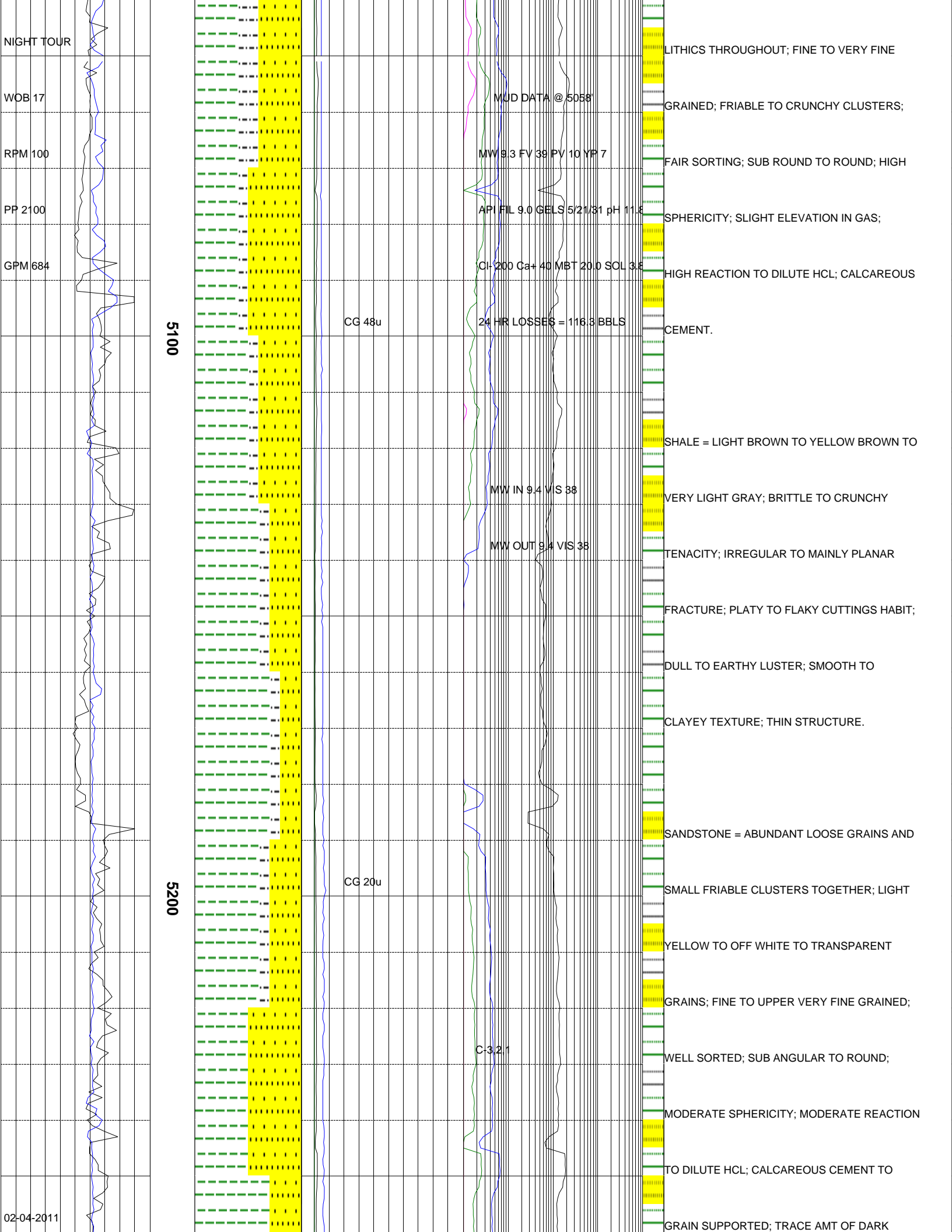
4800

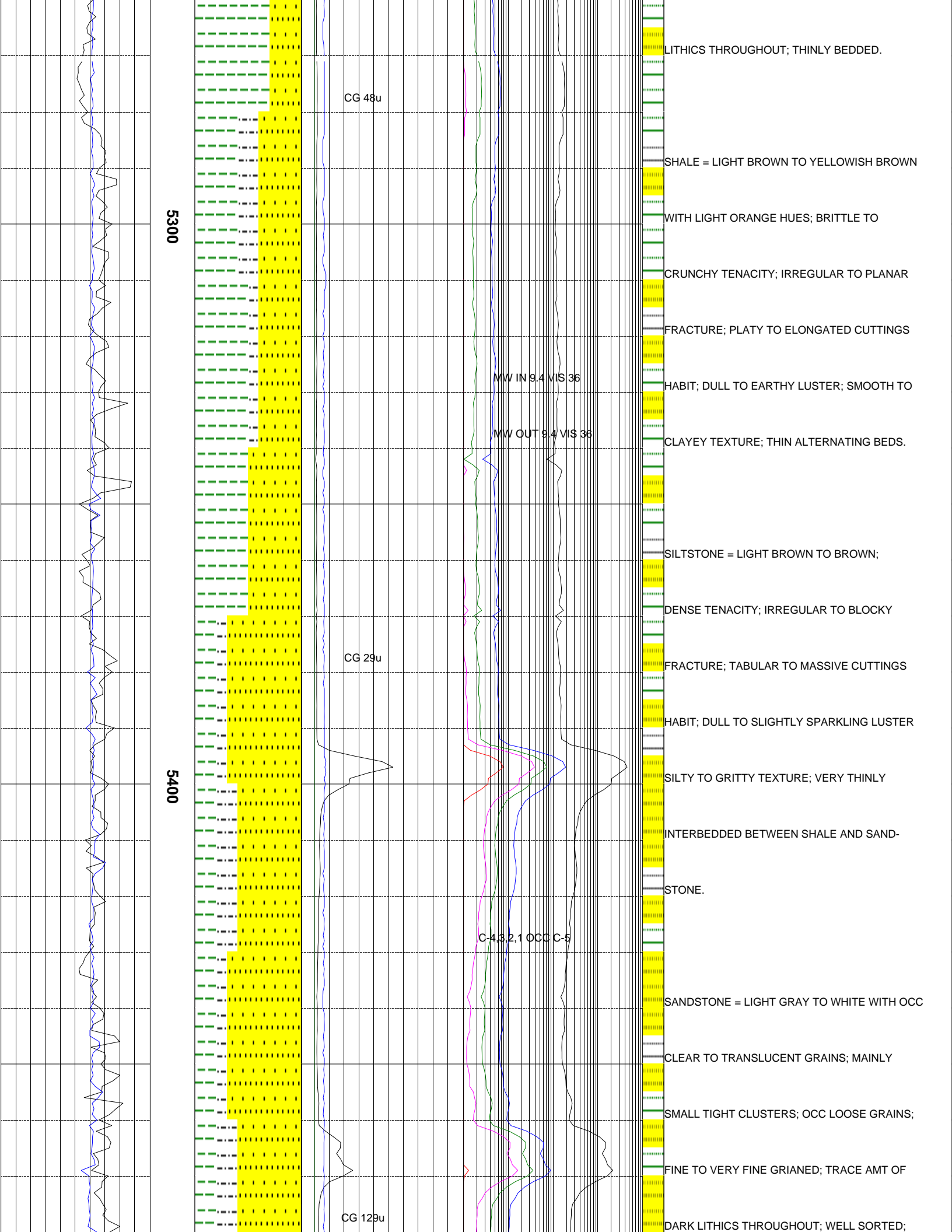
CLAY IN SAMPLES; MOD WELL SORTED; BCMG
TAN @ 4800' WITH MICA, LITHIC FRAGS WITH

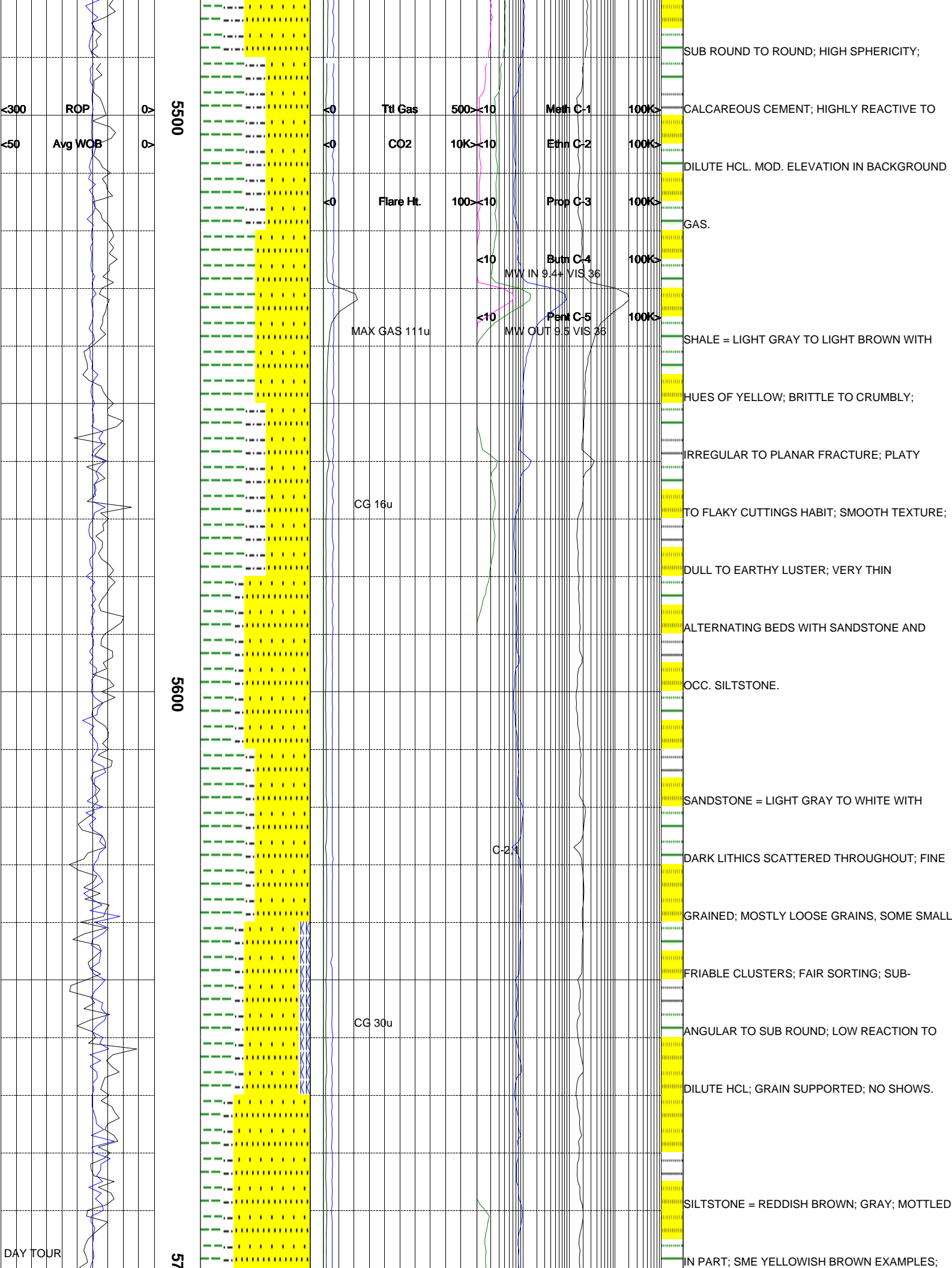
CG 97u

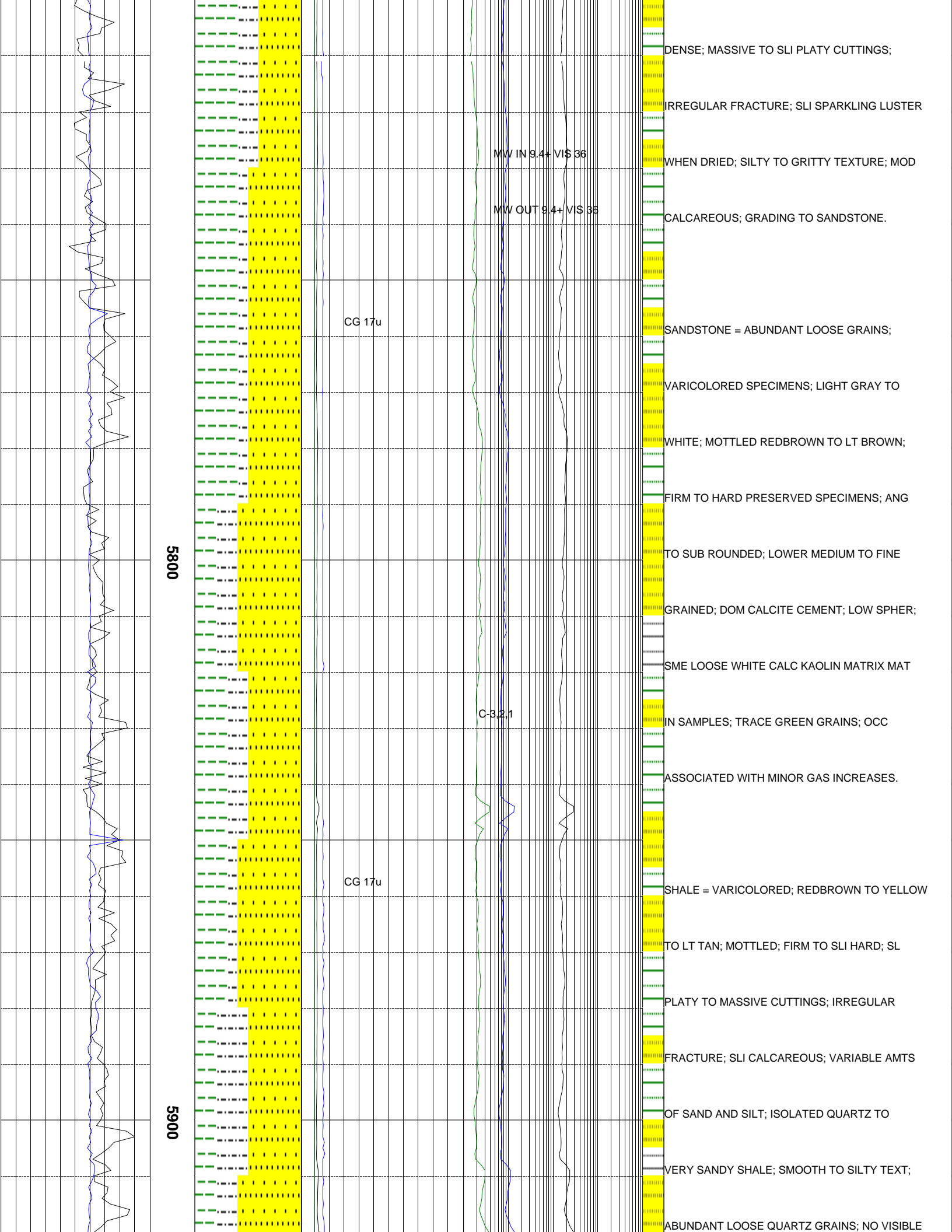
309 UNIT GAS SHOW @ 4788'.











5800

5900

CG 17u

MW IN 9.4+ VIS 36

MW OUT 9.4+ VIS 36

C-32.1

CG 17u

DENSE; MASSIVE TO SLI PLATY CUTTINGS;

IRREGULAR FRACTURE; SLI SPARKLING LUSTER

WHEN DRIED; SILTY TO GRITTY TEXTURE; MOD

CALCAREOUS; GRADING TO SANDSTONE.

SANDSTONE = ABUNDANT LOOSE GRAINS;

VARICOLORED SPECIMENS; LIGHT GRAY TO

WHITE; MOTTLED REDBROWN TO LT BROWN;

FIRM TO HARD PRESERVED SPECIMENS; ANG

TO SUB ROUNDED; LOWER MEDIUM TO FINE

GRAINED; DOM CALCITE CEMENT; LOW SPHER;

SME LOOSE WHITE CALC KAOLIN MATRIX MAT

IN SAMPLES; TRACE GREEN GRAINS; OCC

ASSOCIATED WITH MINOR GAS INCREASES.

SHALE = VARICOLORED; REDBROWN TO YELLOW

TO LT TAN; MOTTLED; FIRM TO SLI HARD; SL

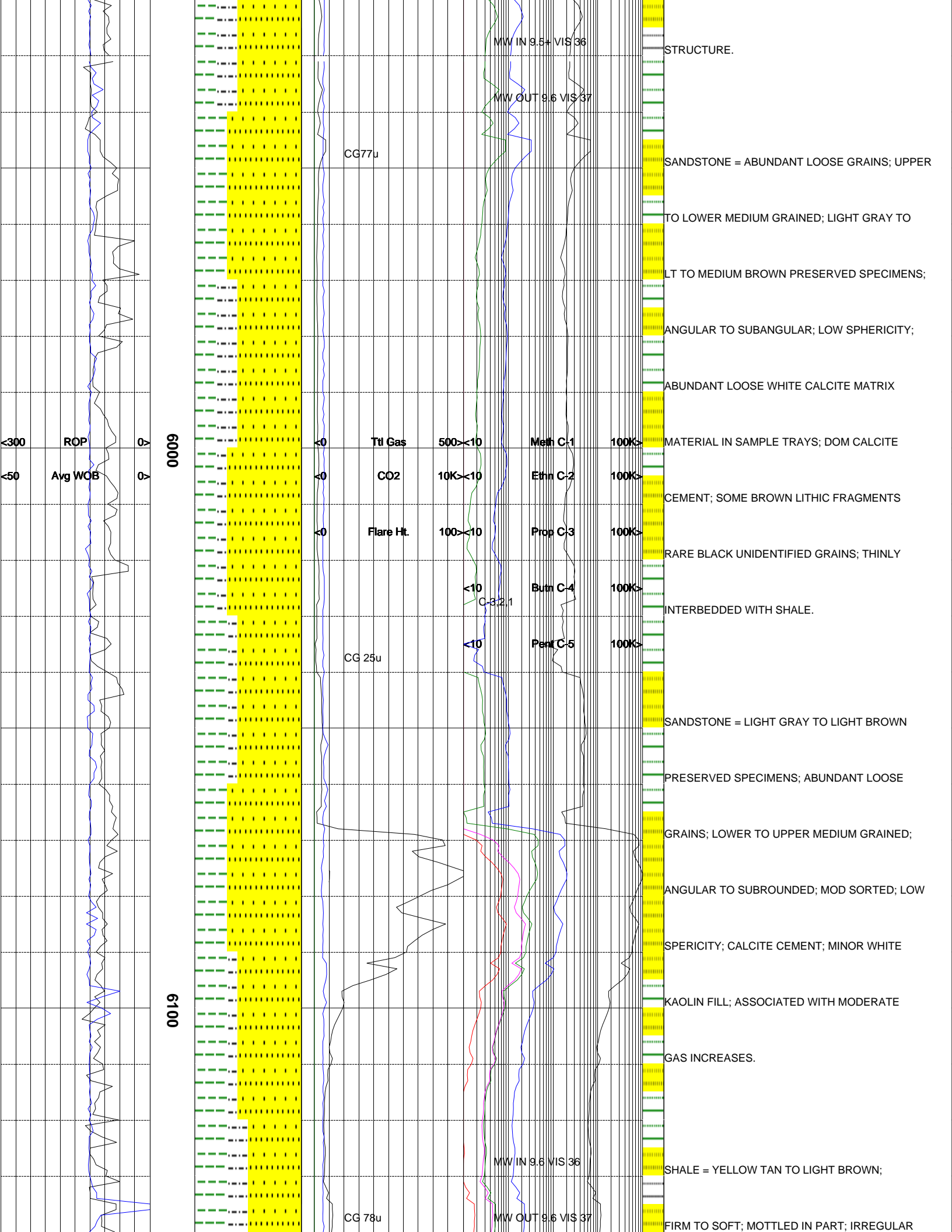
PLATY TO MASSIVE CUTTINGS; IRREGULAR

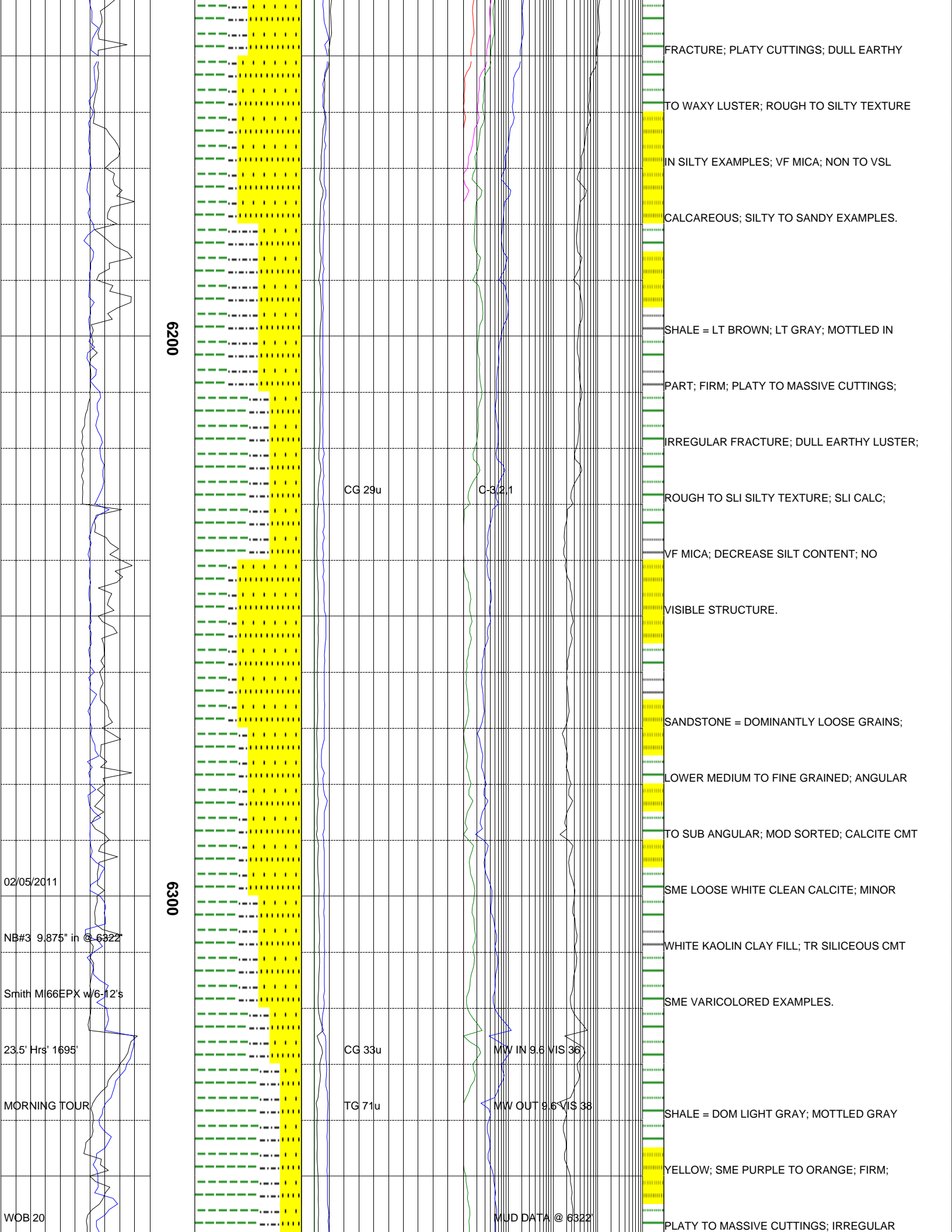
FRACTURE; SLI CALCAREOUS; VARIABLE AMTS

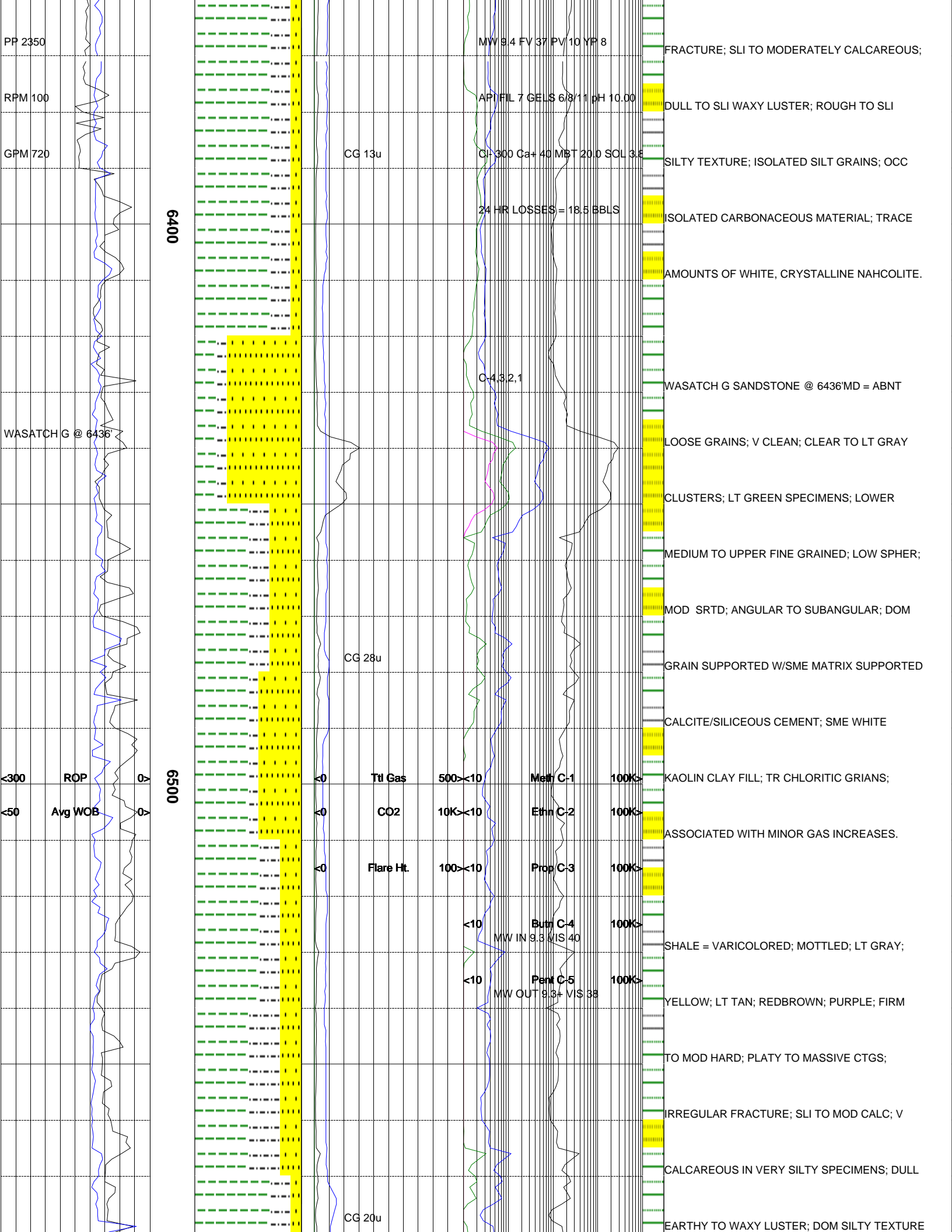
OF SAND AND SILT; ISOLATED QUARTZ TO

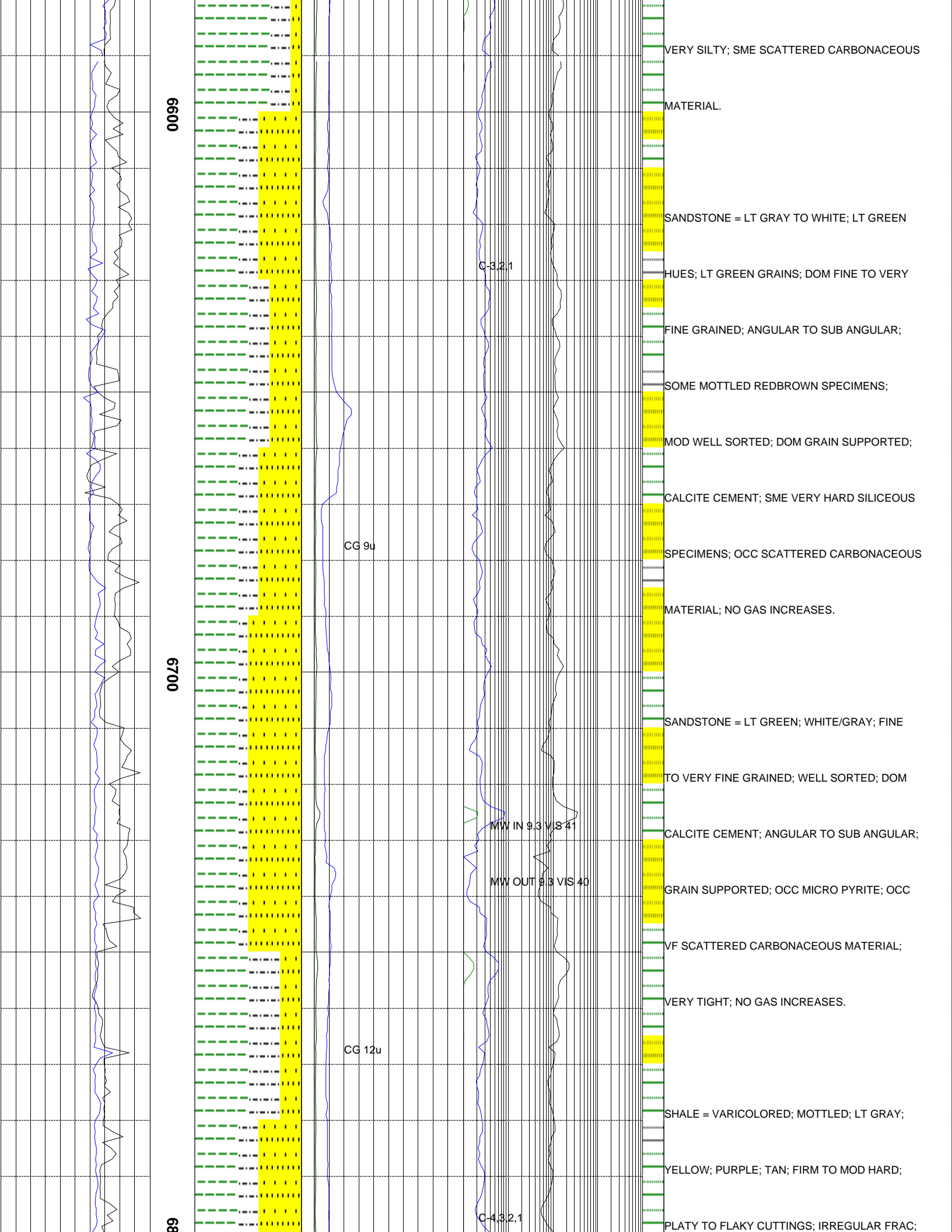
VERY SANDY SHALE; SMOOTH TO SILTY TEXT;

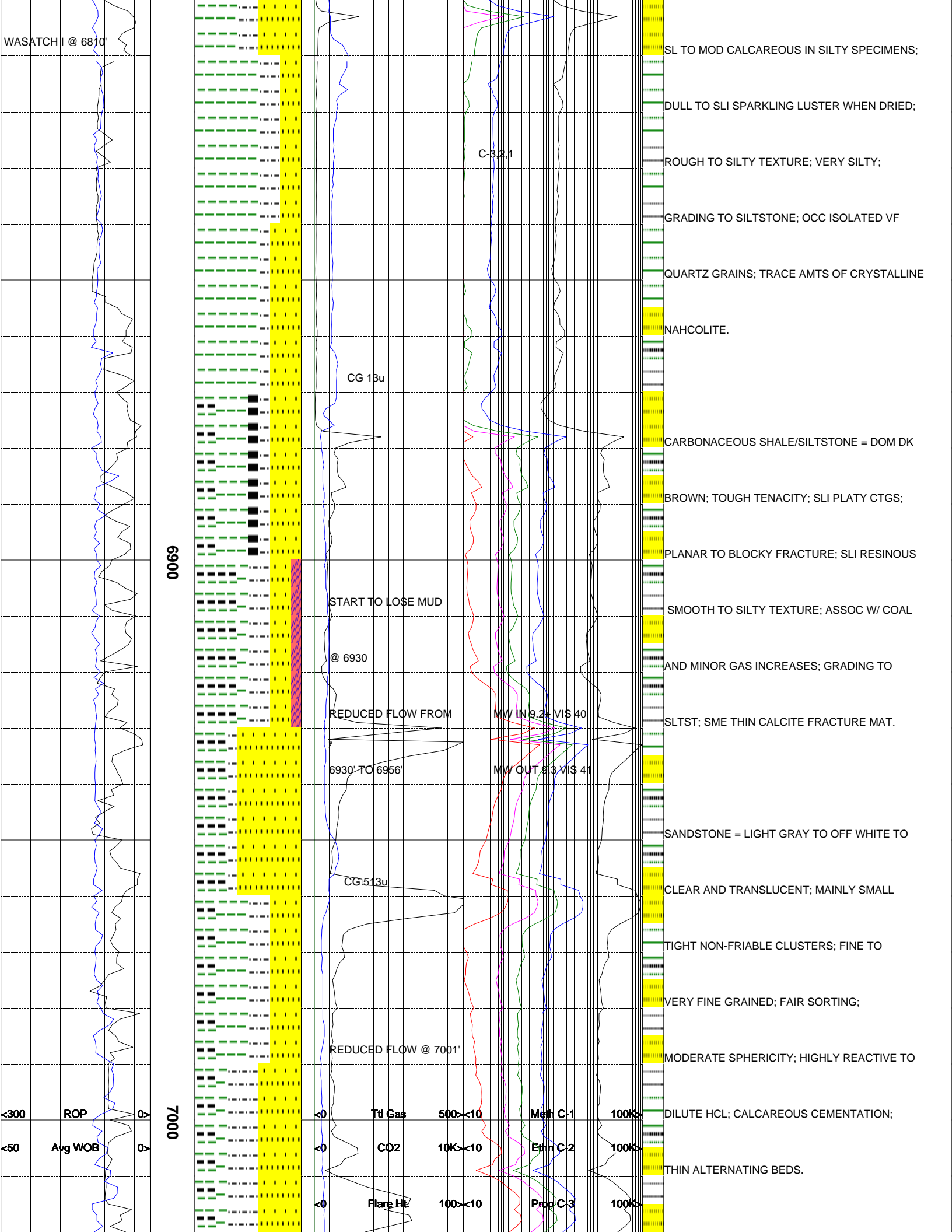
ABUNDANT LOOSE QUARTZ GRAINS; NO VISIBLE

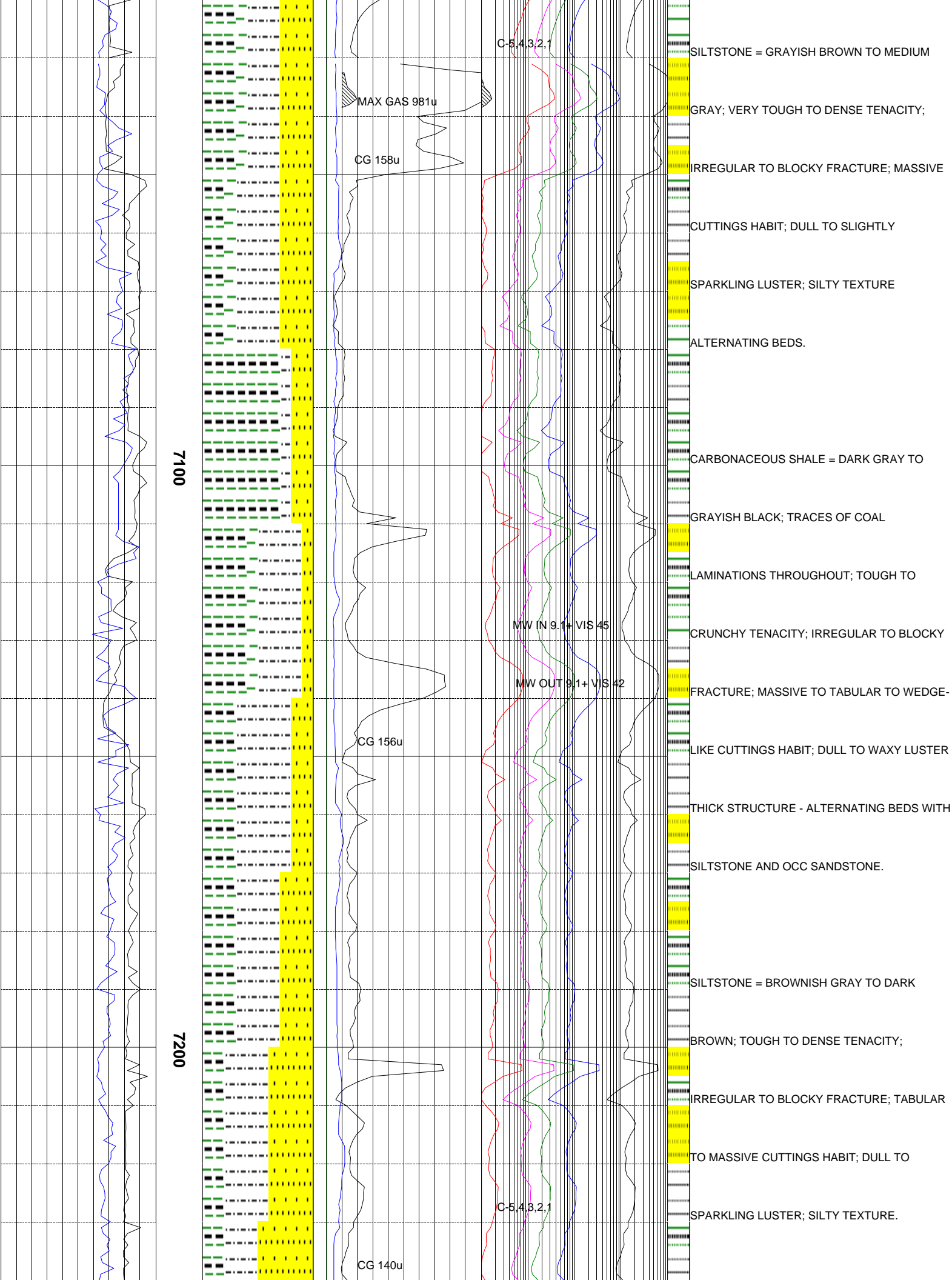


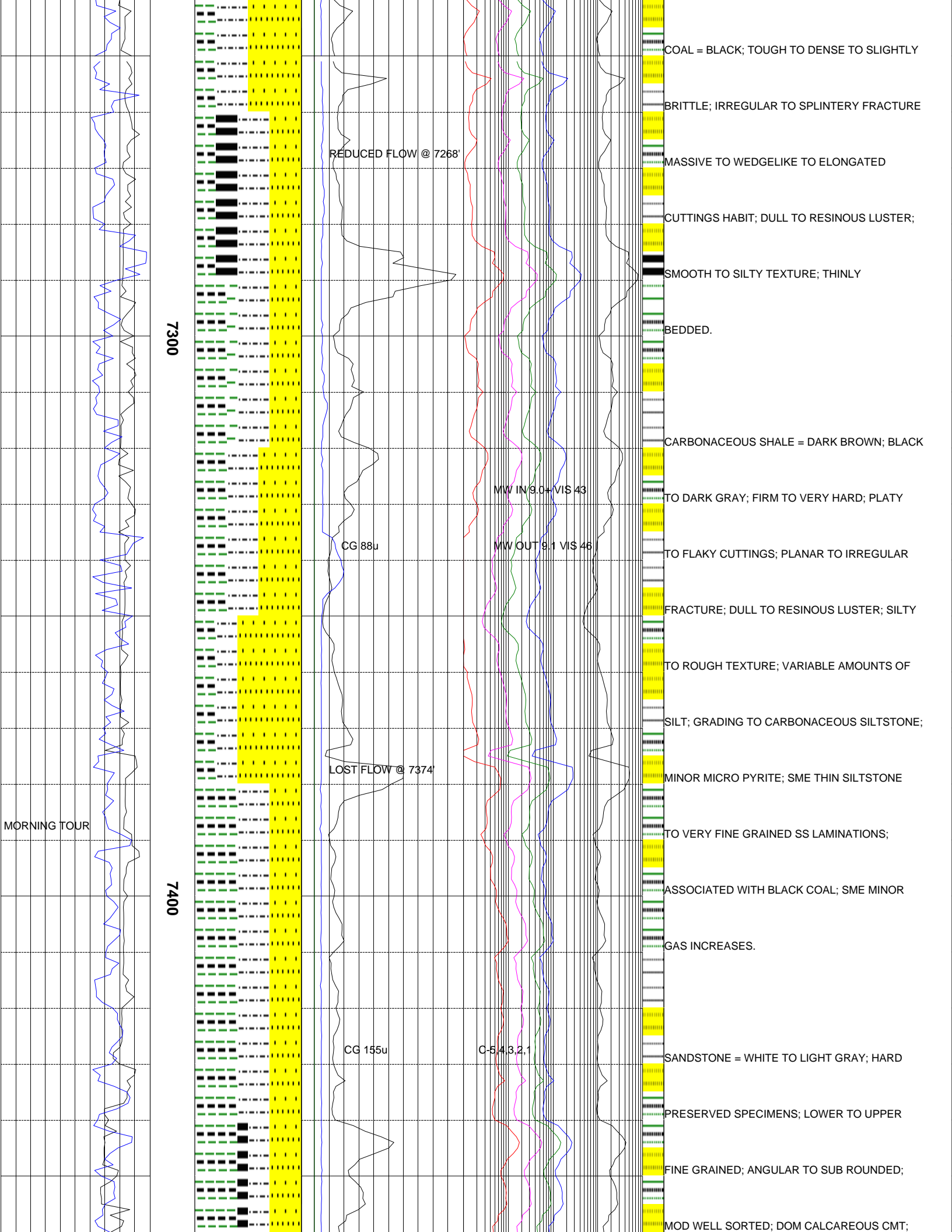


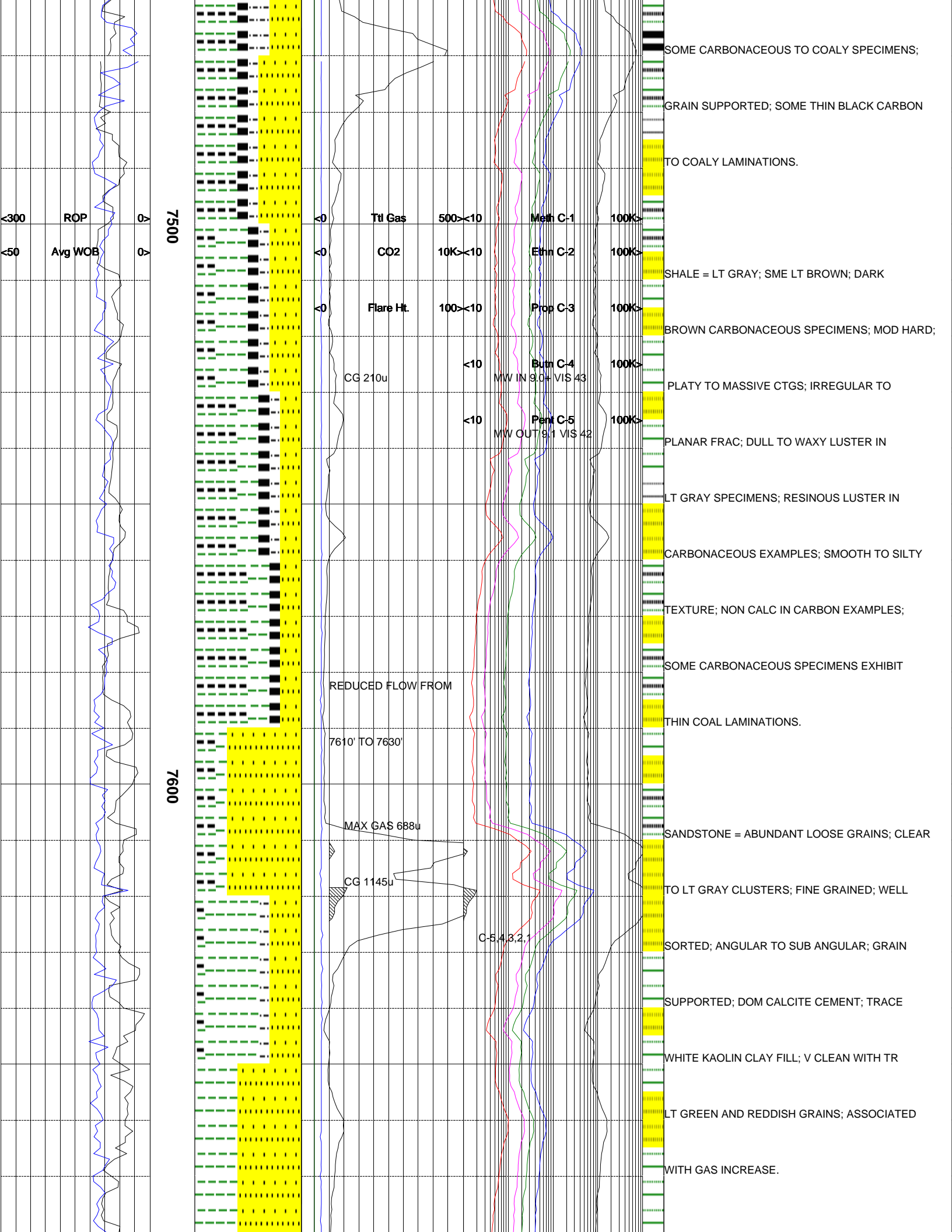


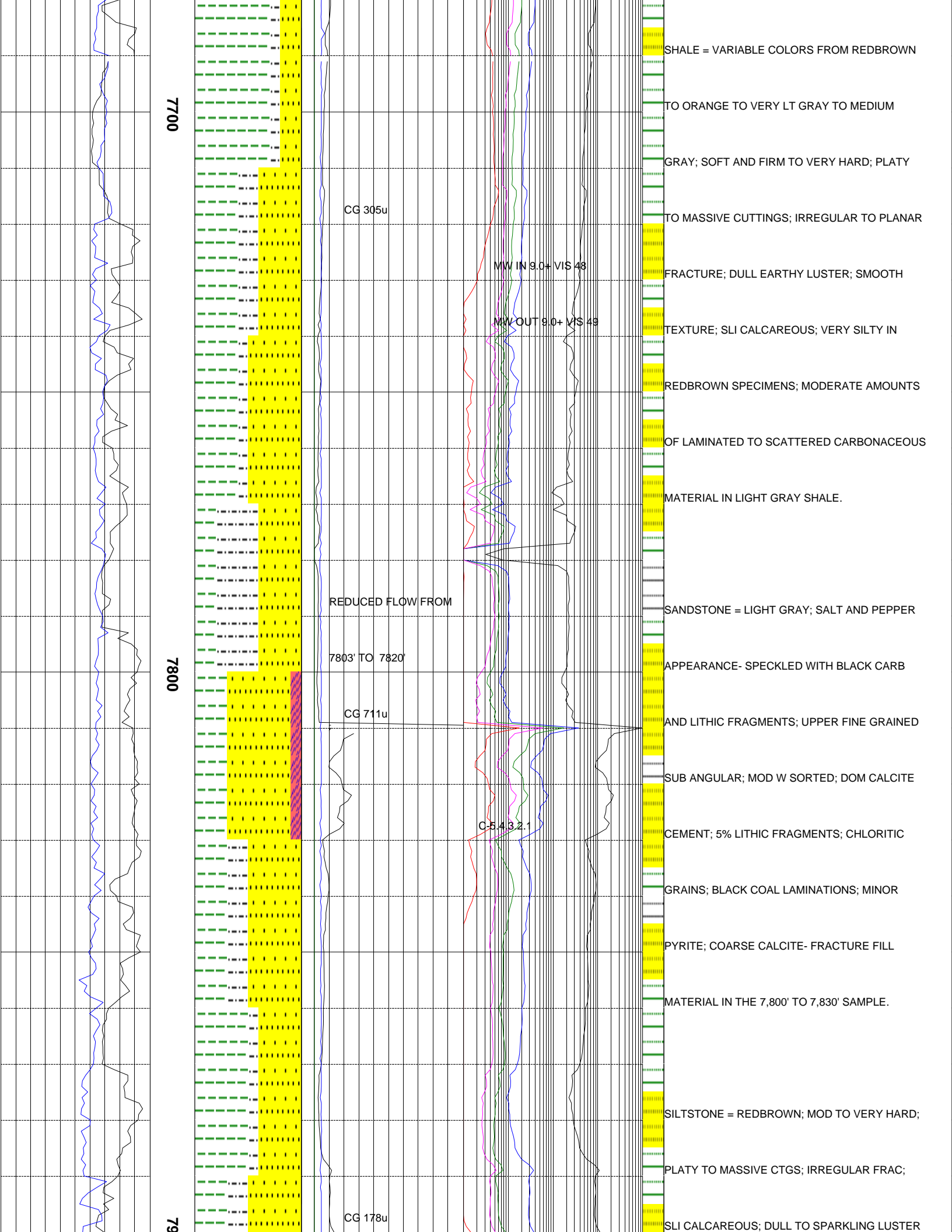


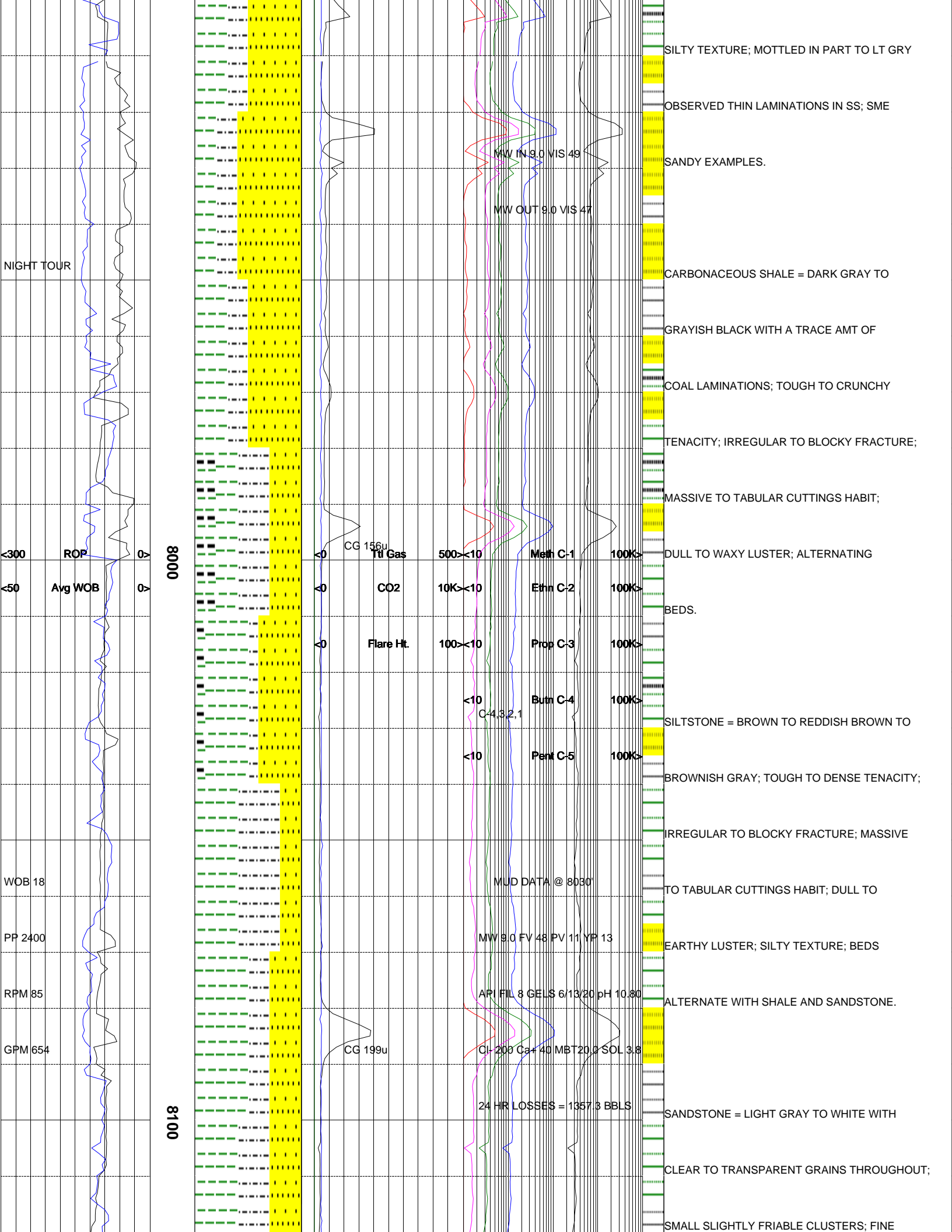


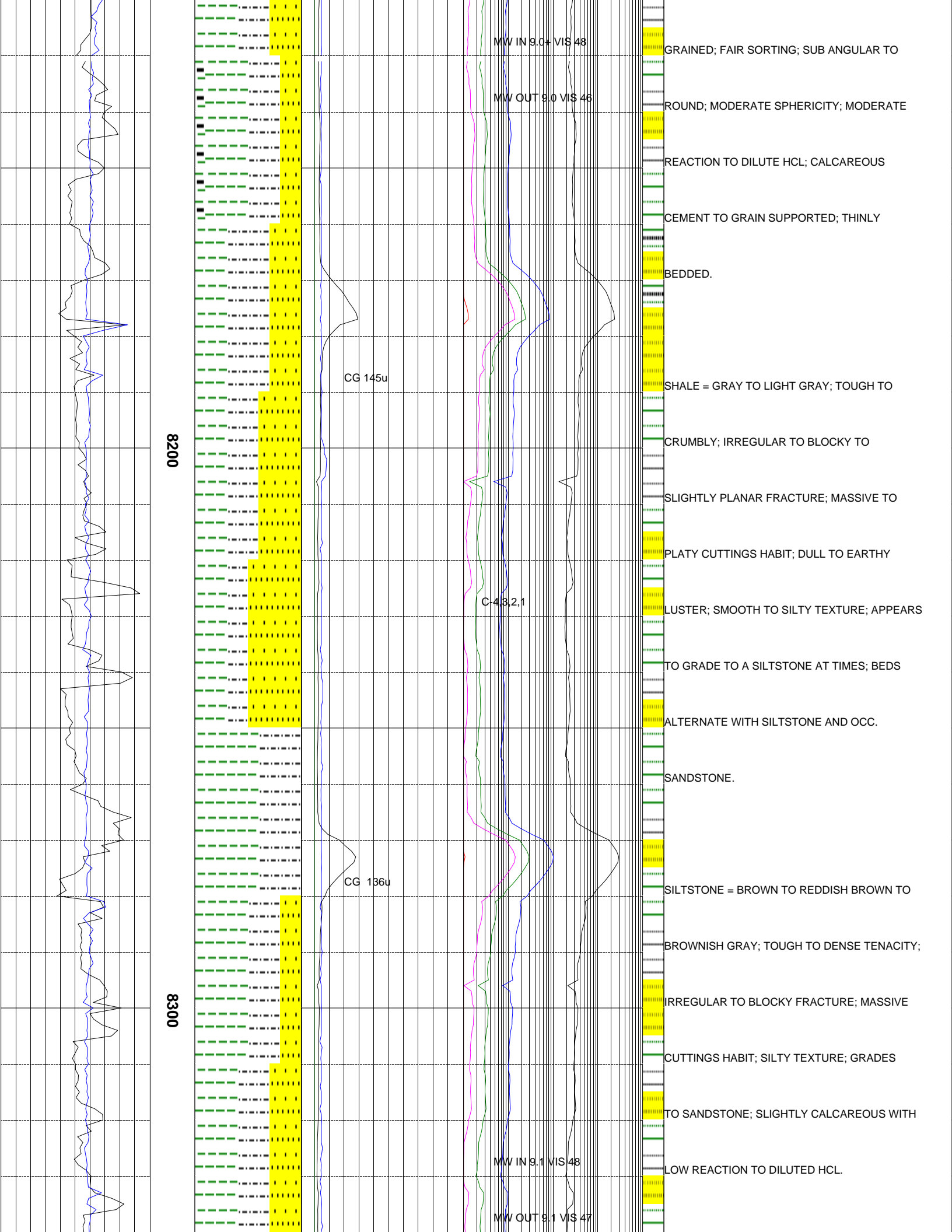


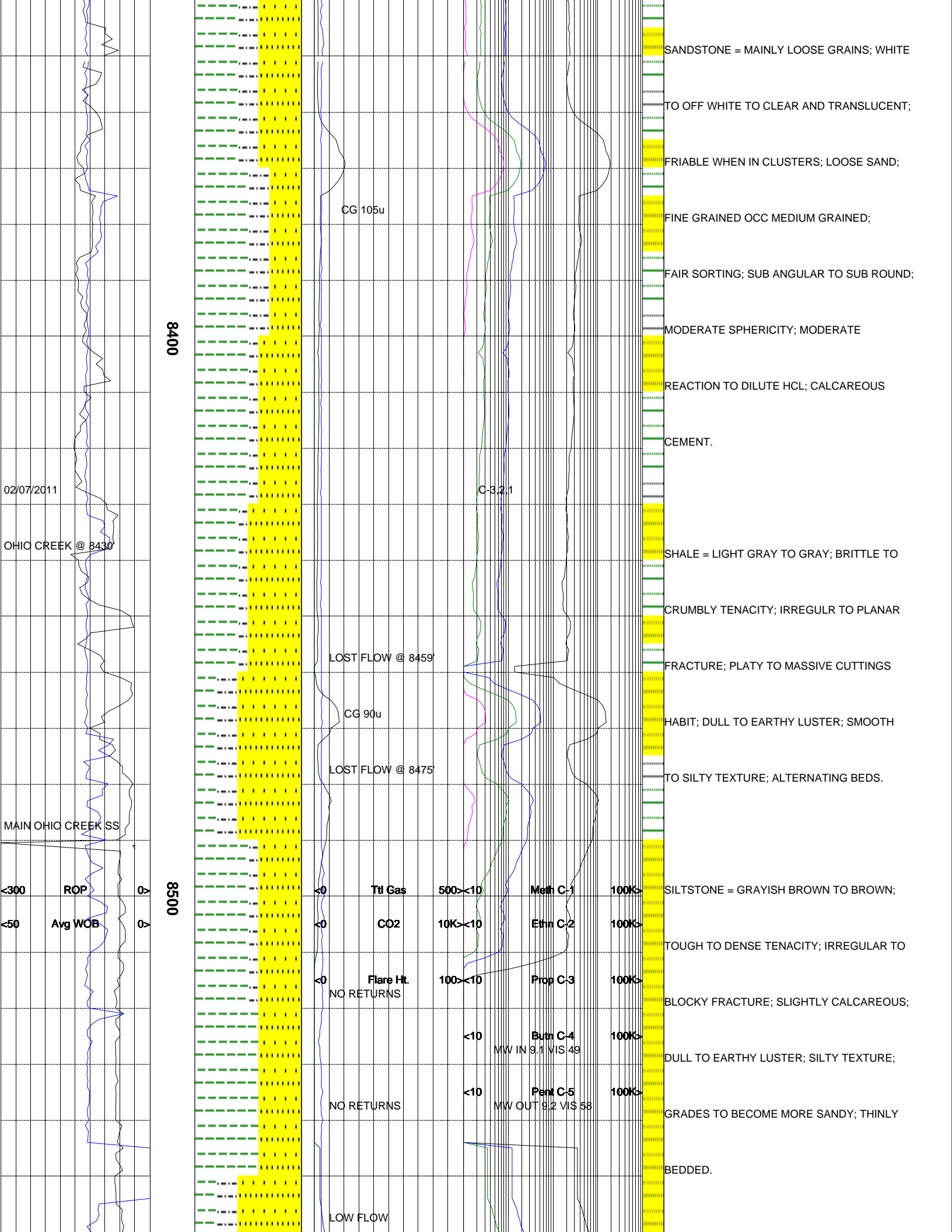


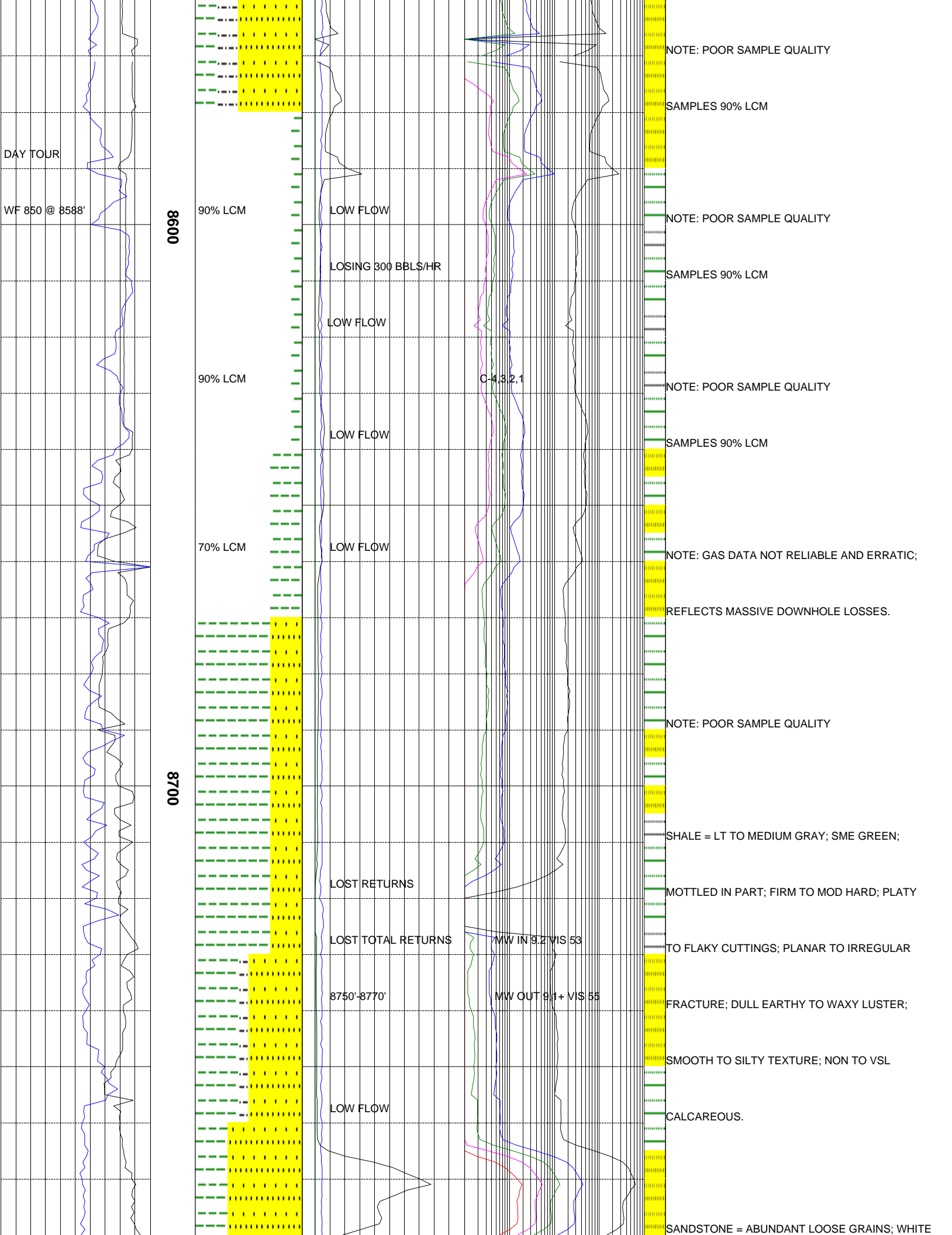


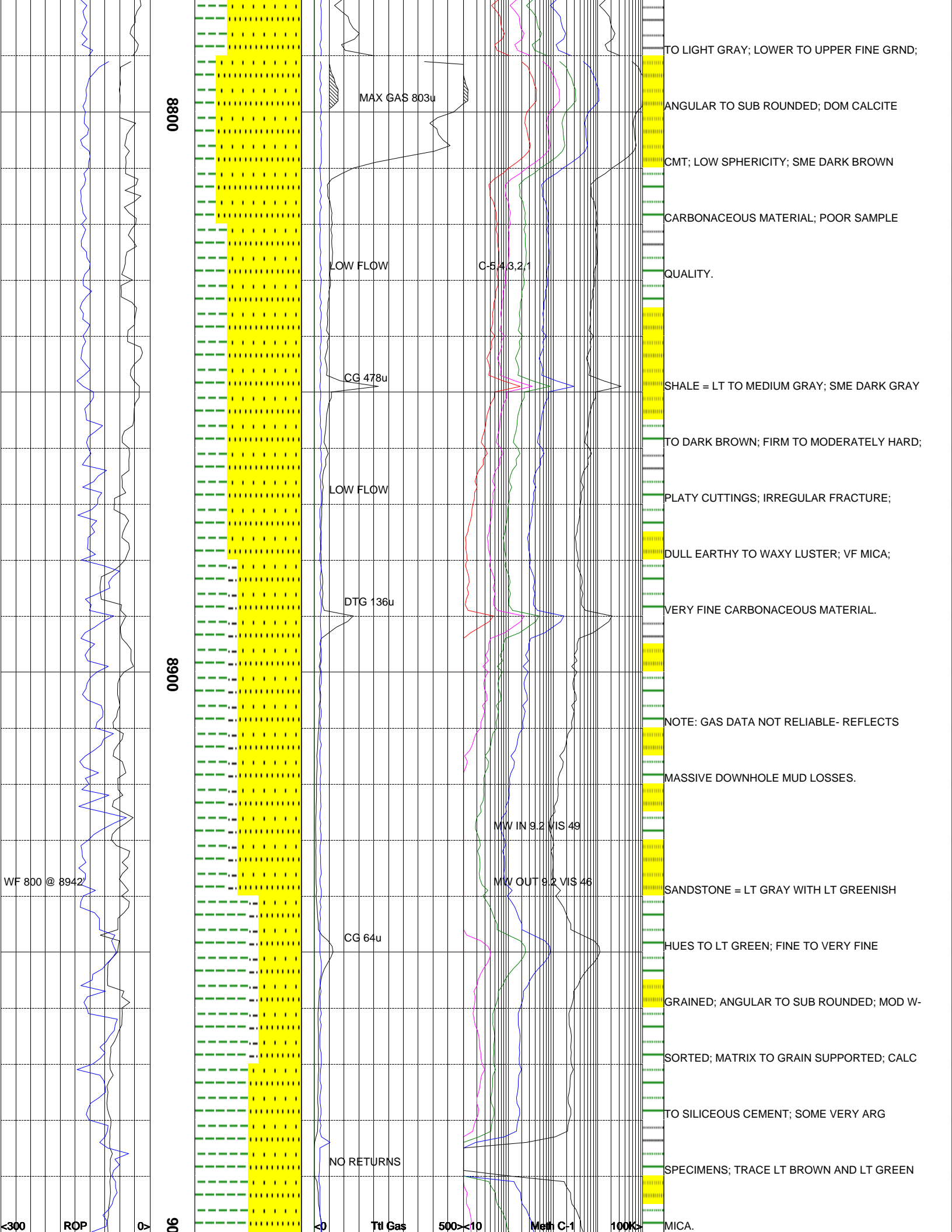


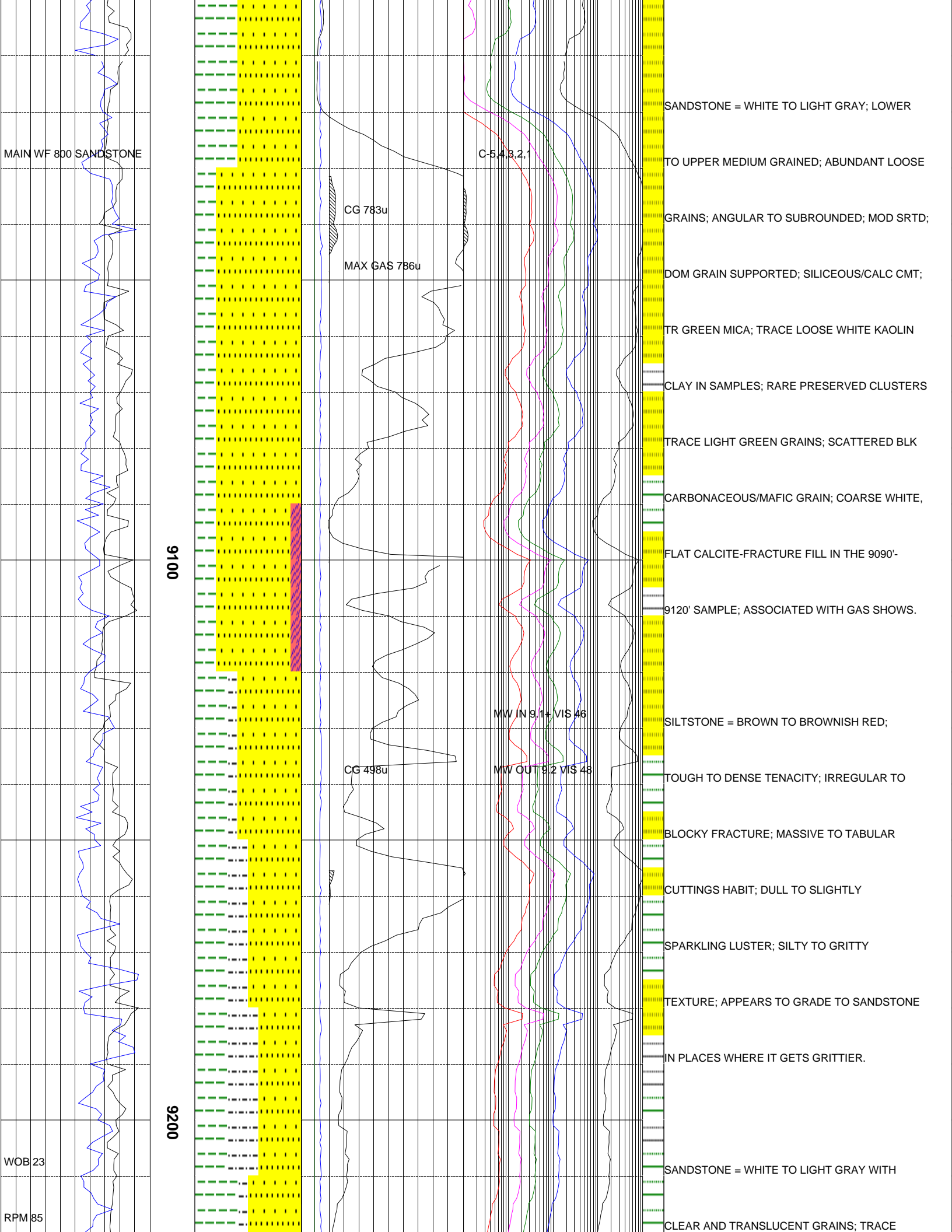


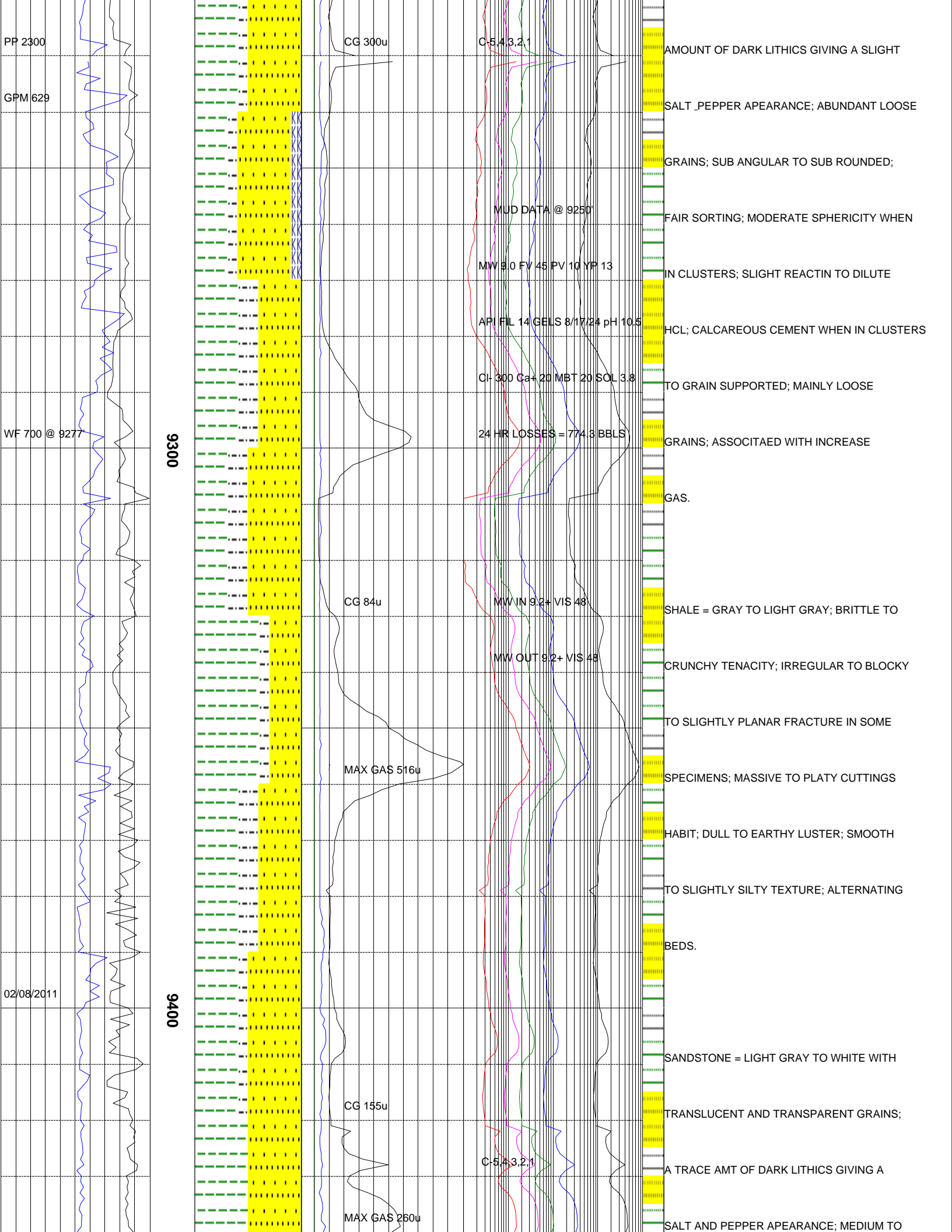


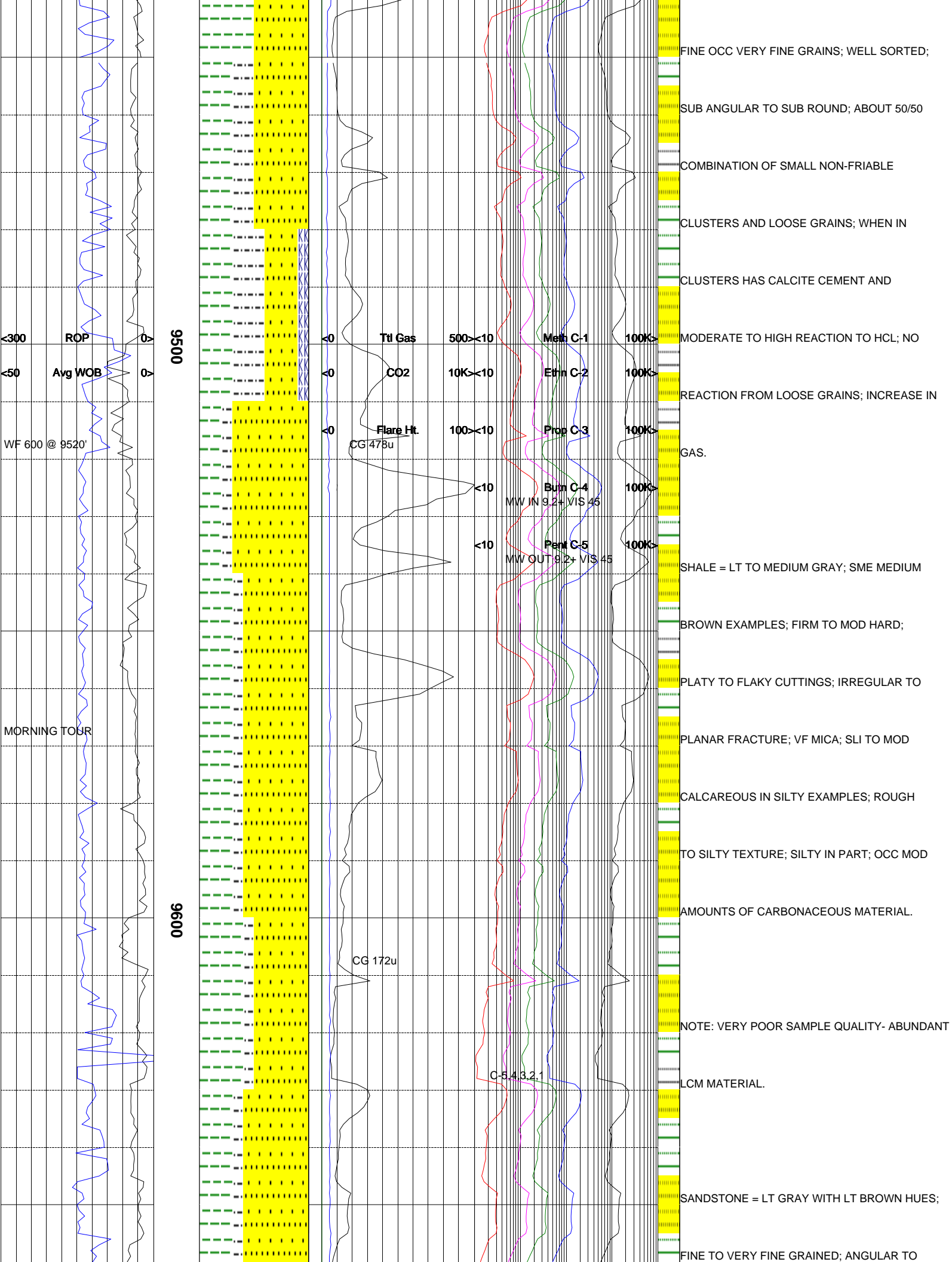


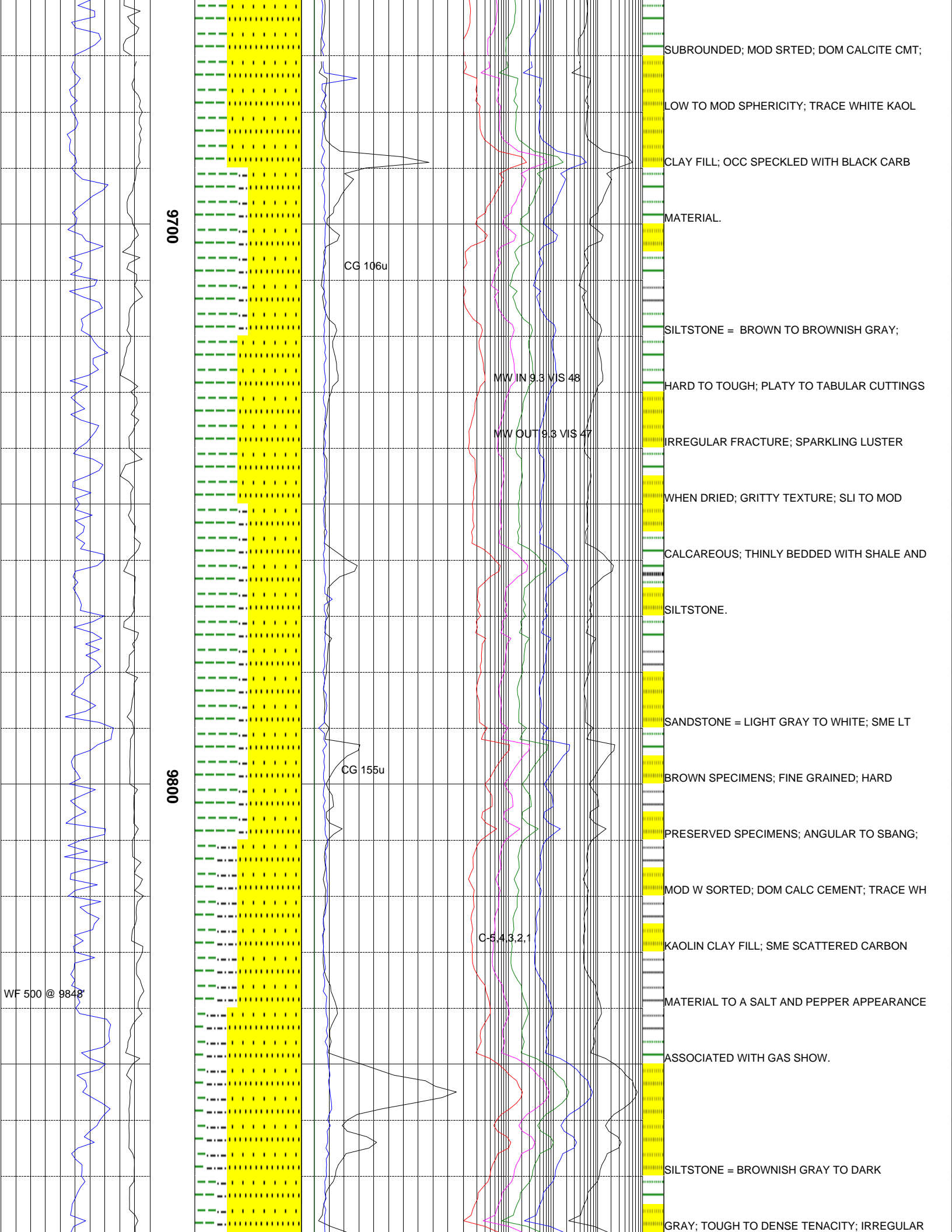


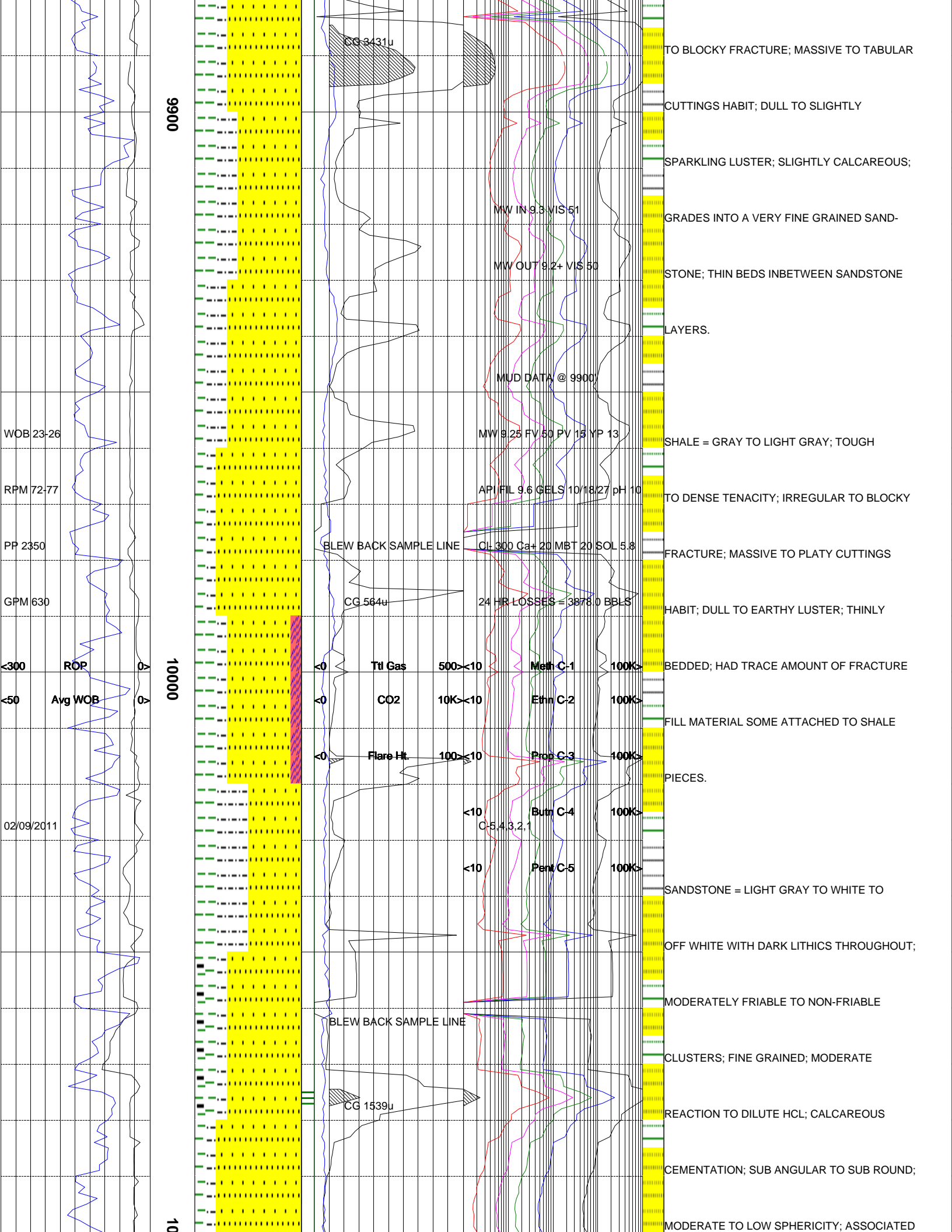


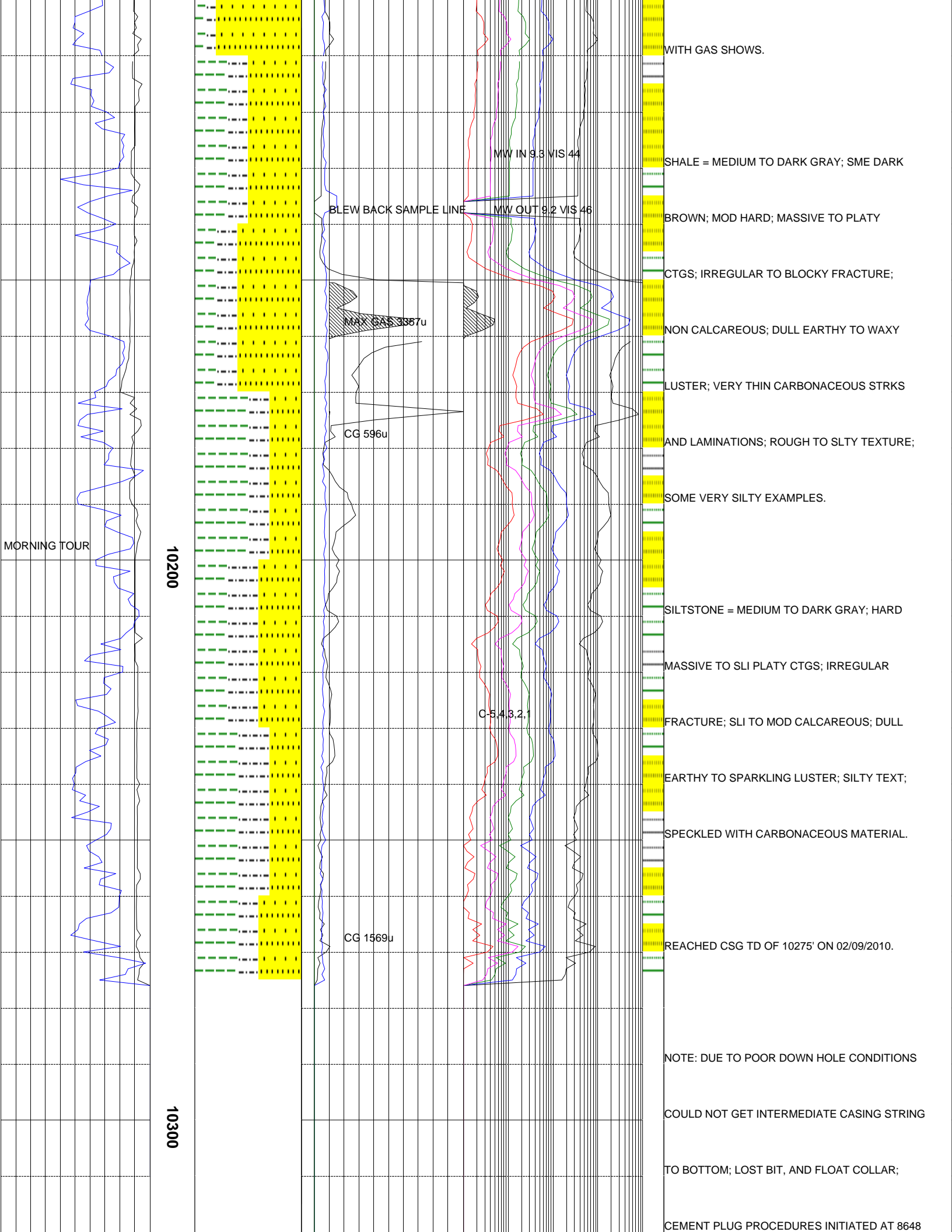












HOLE CEMENTED BACK TO SURFACE CASING

ON 02-17-2011.

PREP TO SKID TO PCU 296-6B3.

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