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MUDLOG TVD

COMPANY	ExxonMobil Production
WELL	FRU 197-33A7
FIELD	PICEANCE CREEK
REGION	ROCKIES
COORDINATES	39.915575000 108.28575000
ELEVATION	GL 6386 KB 6359
COUNTY, STATE	RIO BLANCO, CO
API INDEX	05-103-1139-900
SPUD DATE	02/16/2010
CONTRACTOR	HE
CO. REP.	R.T. OWENS
RIG/TYPE	215/FLEX 3
LOGGING UNIT	MLU051
GEOLOGISTS	G.BAKER B.MARSH
ADD. PERSONS	D.CLAAR B.JOHANNING
CO. GEOLOGIST	MELANIE BIGGS

LOG INTERVAL

DEPTHS:	3,790'	TO	12,375'
DATES:	02/16/2010	TO	02/26/2010
SCALE:	1"=100'		

CASING DATA

10.75"	AT	3,808'
7.00"	AT	8,609'
	AT	
	AT	

MUD TYPES

LSND	TO	12,375"
	TO	
	TO	
	TO	

HOLE SIZE

9.875"	TO	8,619'
6.125"	TO	12,375'
	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	

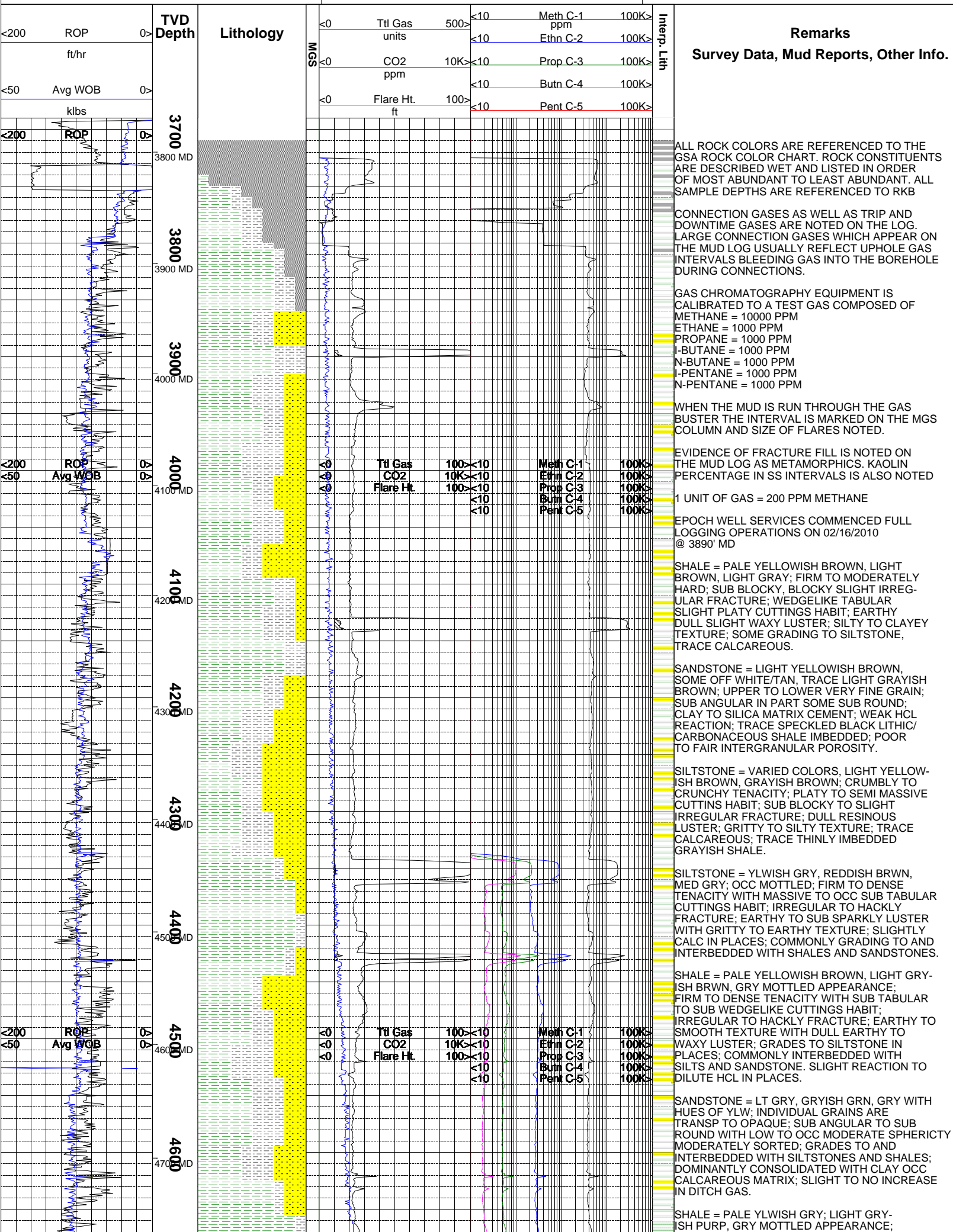
	ALTERED ZONE
	ANDESITE
	ANHYDRITE
	BASALT
	BENTONITE
	BIOTITIZATION
	BRECCIA
	CALCARENITE
	CALCAREOUS TUFF
	CALCILUTITE
	CARBONATES
	CARBONACEOUS MAT
	CARBONACEOUS SH
	CEMENT CONTAM.
	CHALK
	CRYSTALLINE TUFF
	CHERT - ARGILL

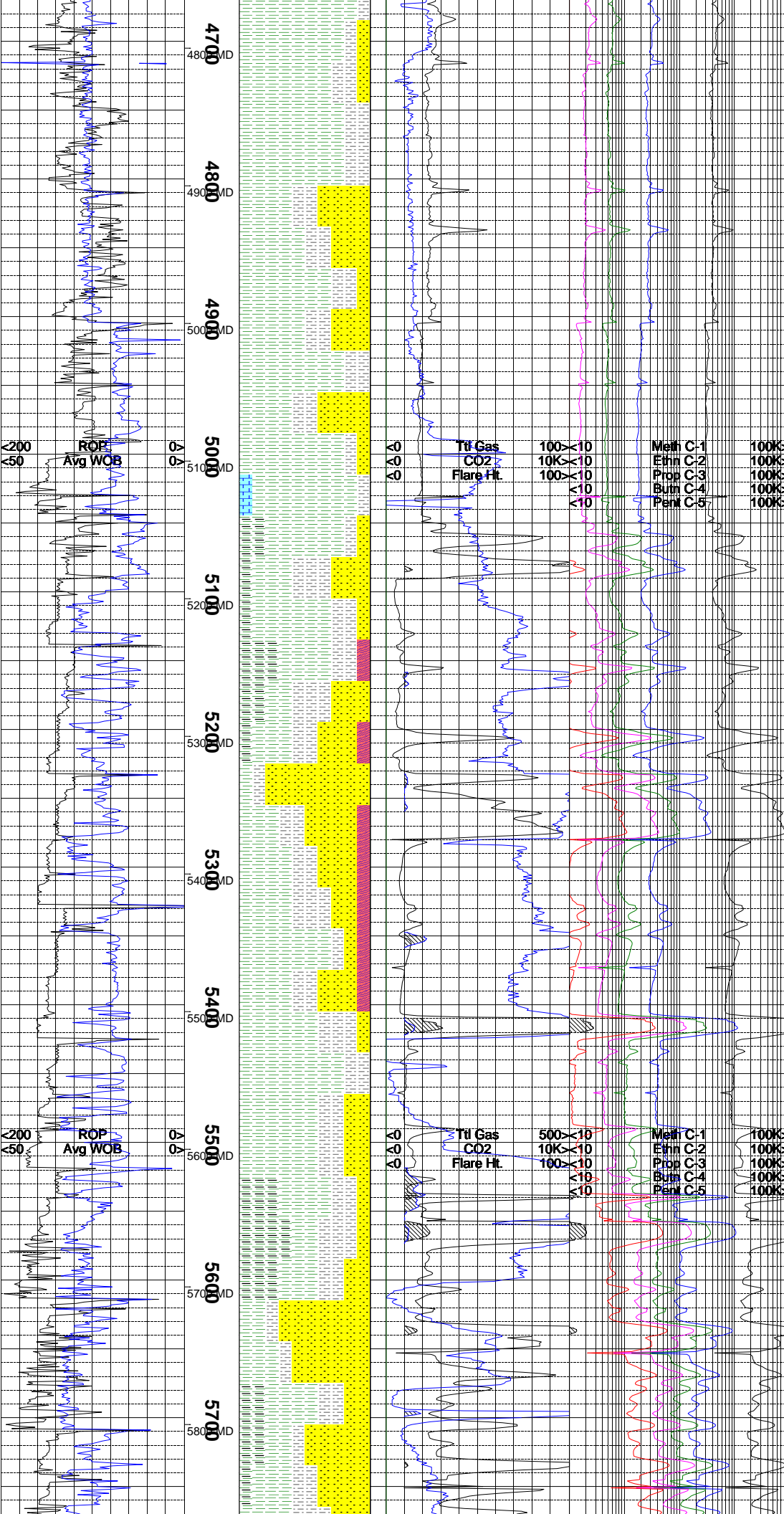
	CHERT - GLASSY
	CHERT - PORCEL
	CHERT - TIGER STRIPE
	CHERT - UNDIFF
	CLAY
	CLAY-MUDSTONE
	CLYST-TUFFACEOUS
	CHLORITIZATION
	COAL
	CONGLOMERATE
	CONGL. SAND
	CONGL. SANDSTONE
	COQUINA
	DACITE
	DIATOMITE
	DIORITE
	DOLOSTONE

	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





FIRM TO DENSE TENACITY WITH SUB TABULAR TO SUB WEDGE LIKE CUTTINGS HABIT; IRREGULAR TO HACKLY FRACTURE; EARTHY TO SMOOTH TEXTURE WITH DULL EARTHY TO WAXY LUSTER; GRADES TO SILTSTONE IN PLACES; COMMONLY INTERBEDDED WITH SILTS AND SANDSTONE.

SILTSTONE = LIGHT YLWSH BRWN; GRYISH BRWN, REDDISH PURP; CRUMBLY TO CRUNCHY TENACITY; SUB BLKY TO MASSIVE CUTTINGS HABIT; IRREGULAR TO SLIGHTLY HACKLY FRACTURE; DULL TO SUB SPARKLY LUSTER; GRITTY TO SILTY TEXTURE.

NOTE: TRIP OUT OF HOLE AT 4998' TO LAY DOWN DIRECTIONAL TOOLS. ACHIEVED VERTICAL AT 4996' MD 4901.16' TVD ON 02-17-2010 AT 12:17 HRS
MAXIMUM TRIP GAS 214u
FINAL SURVEY DATA FROM SCHLUMBERGER MD: 4996
TVD: 4901.16
AZIMUTH: 131.49
INCLINATION: 0.09

LIMESTONE = VERY LT BRWN TO BUFF; FIRM TO DENSE TENACITY WITH SUB WEDGE LIKE TO SUB TABULAR CUTTINGS HABIT; IRREGULAR FRACTURE SL FLAKY SCALY IN PLACES; SMOOTH SCALY WITH DULL TO SUB WAXY LUSTER; STRONG VIOLENT REACTION TO DILUTE HCL; GRADES TO A LIMY SHALE IN PLACES.

SHALE = GRY, GRY WITH DARK CARBONACEOUS MATERIAL AND OR LITHIC CLASTS; GRY WITH HUES OF YLW; FIRM TO SUB MALLEABLE TENACITY WITH IRREGULAR FRACTURE; SMOOTH TO SL EARTHY TEXTURE; WAXY TO SUB GREASY LUSTER; SL MOTTLED IN PLACES; SUB TABULAR/SUB MASSIVE TO WEDGE LIKE CUTTINGS HABIT; BECOMES LIMY IN PLACES;

CARBONACEOUS SHALE = DARK BRWN, BRWN, HUES OF BLACK; BRWN WITH DARKER BRWN TO BLACK CARBONACEOUS LAMINATIONS; OCC PYRITIC IN PLACES; SMOOTH TO OCC SUB ABRASIVE TEXTURE WITH WAXY TO OCC SUB RESINOUS LUSTER; SUB TABULAR TO TABULAR CUTTINGS HABIT WITH IRREGULAR TO SUB PLATY FRACTURE; CRUNCHY TO DENSE TENACITY; GRADES TO SHALE IN PLACES INTERBEDDED WITH SHALES AND SANDSTONES.

SANDSTONE = GRY, LT GRY, GREEN; HARD NON FRIABLE; SUB ANGULAR TO ANGULAR OCC SUB ROUND; CONSOLIDATED; SILICEOUS/ SL CALC CEMENT; GREEN HUES ARE MOST LIKELY A RESULT OF CHLORITIZATION.

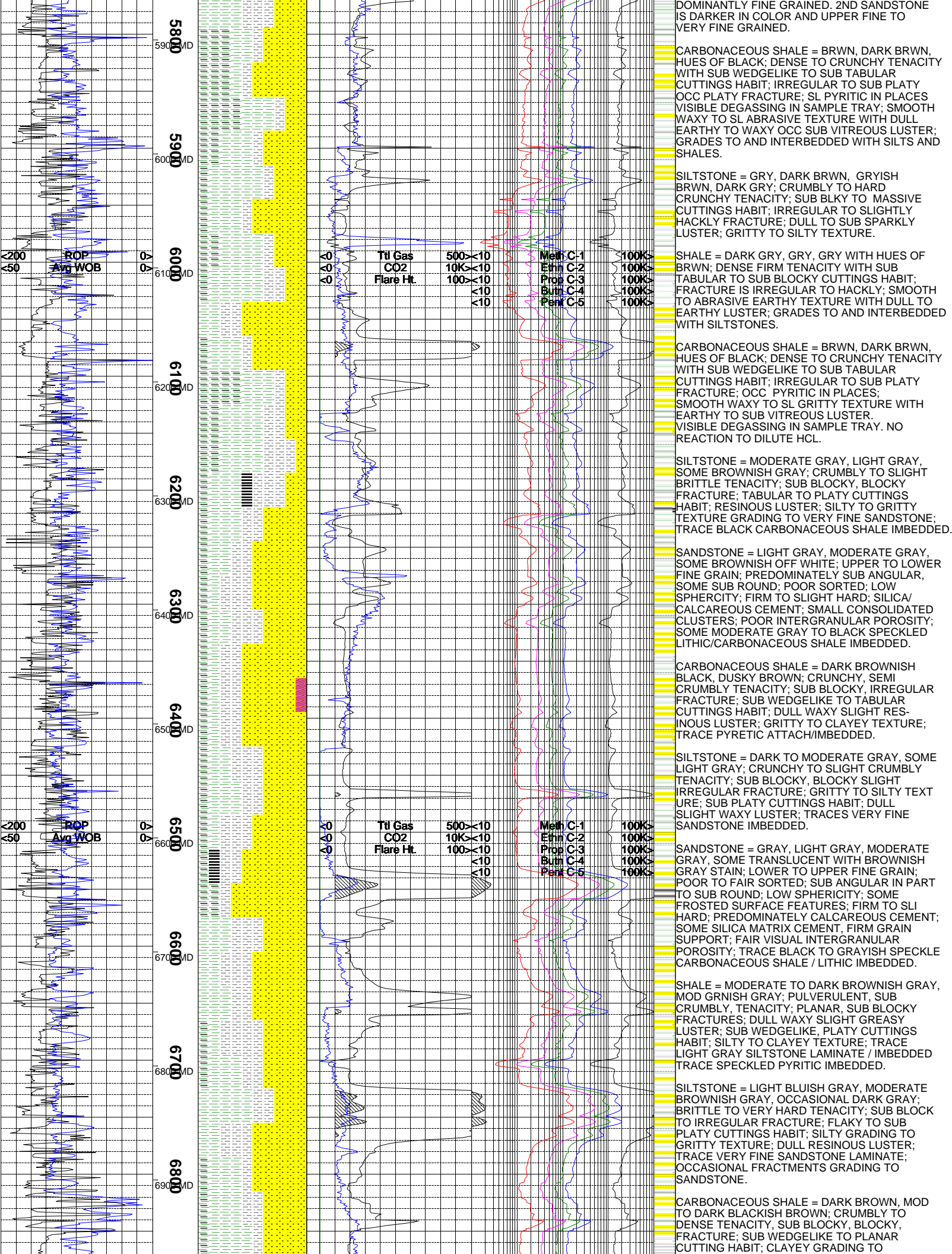
WASATCH G SANDSTONE = WHT, OFF WHT, VERY LT GRY; UPPER MEDIUM TO FINE GRAINED; INDIVIDUAL GRAINS ARE SUB ANGULAR TO SUB ROUND TRANSPARENT TO TRANSLUCENT; MODERATELY TO WELL SORTED WITH LOW TO MODERATE SPHERICITY; FIRM BUT HIGHLY FRIABLE; DOMINANTLY UNCONSOLIDATED MOST LIKELY AS A RESULT OF BIT ACTION; CONSOLIDATED CLUSTERS ARE GRAIN SUPPORTED IN A CLAY/SILICEOUS CEMENT; ACCESSORIES ARE LESS THAN 3 %. MARKED INCREASE IN DITCH GAS; NO REACTION TO DILUTE HCL.

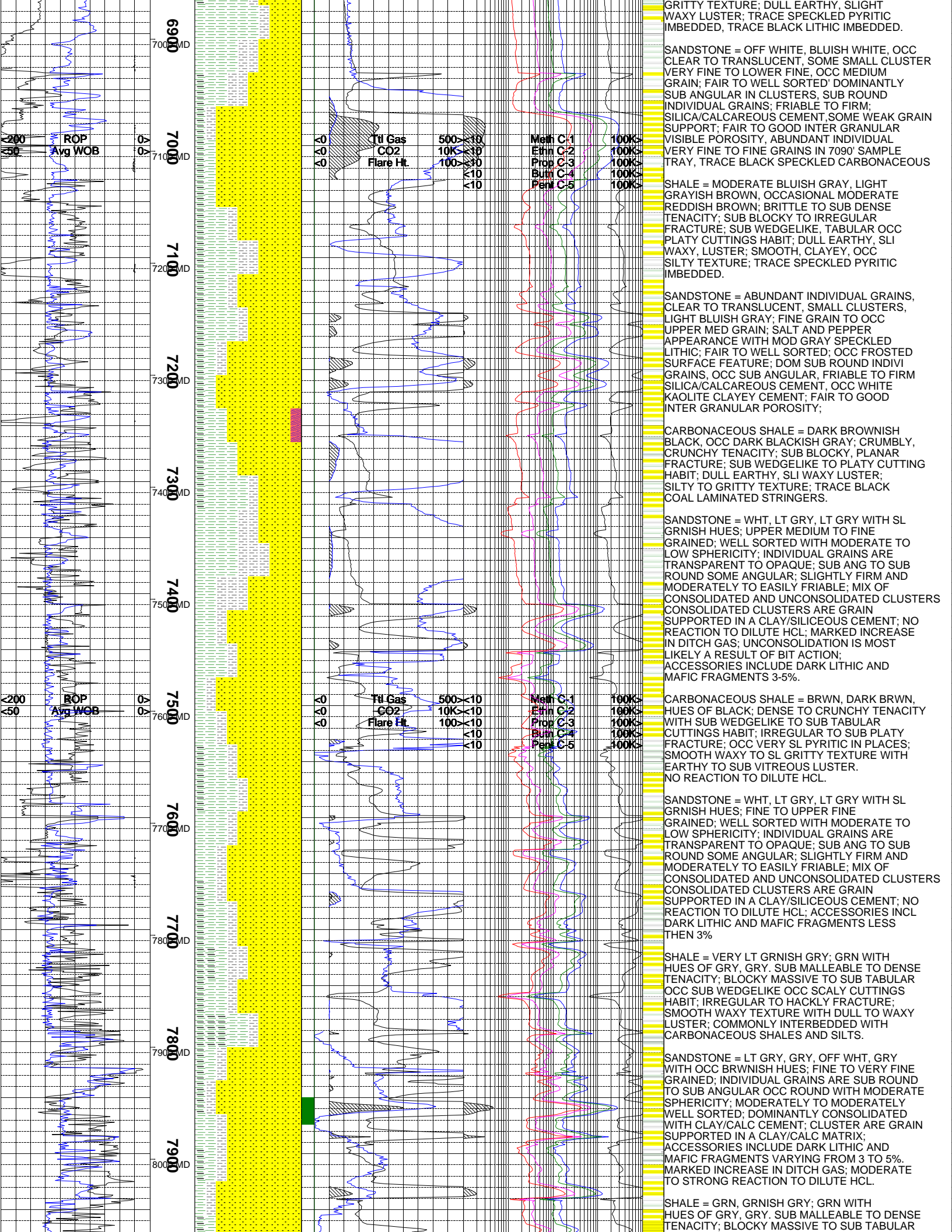
SHALE = DARK GRY, GRY, GRY WITH HUES OF BRWN; DENSE FIRM TENACITY WITH SUB TABULAR TO SUB BLOCKY CUTTINGS HABIT; FRACTURE IS IRREGULAR TO HACKLY; SMOOTH TO ABRASIVE EARTHY TEXTURE WITH DULL TO EARTHY LUSTER; GRADES TO AND INTERBEDDED WITH SILTSTONES.

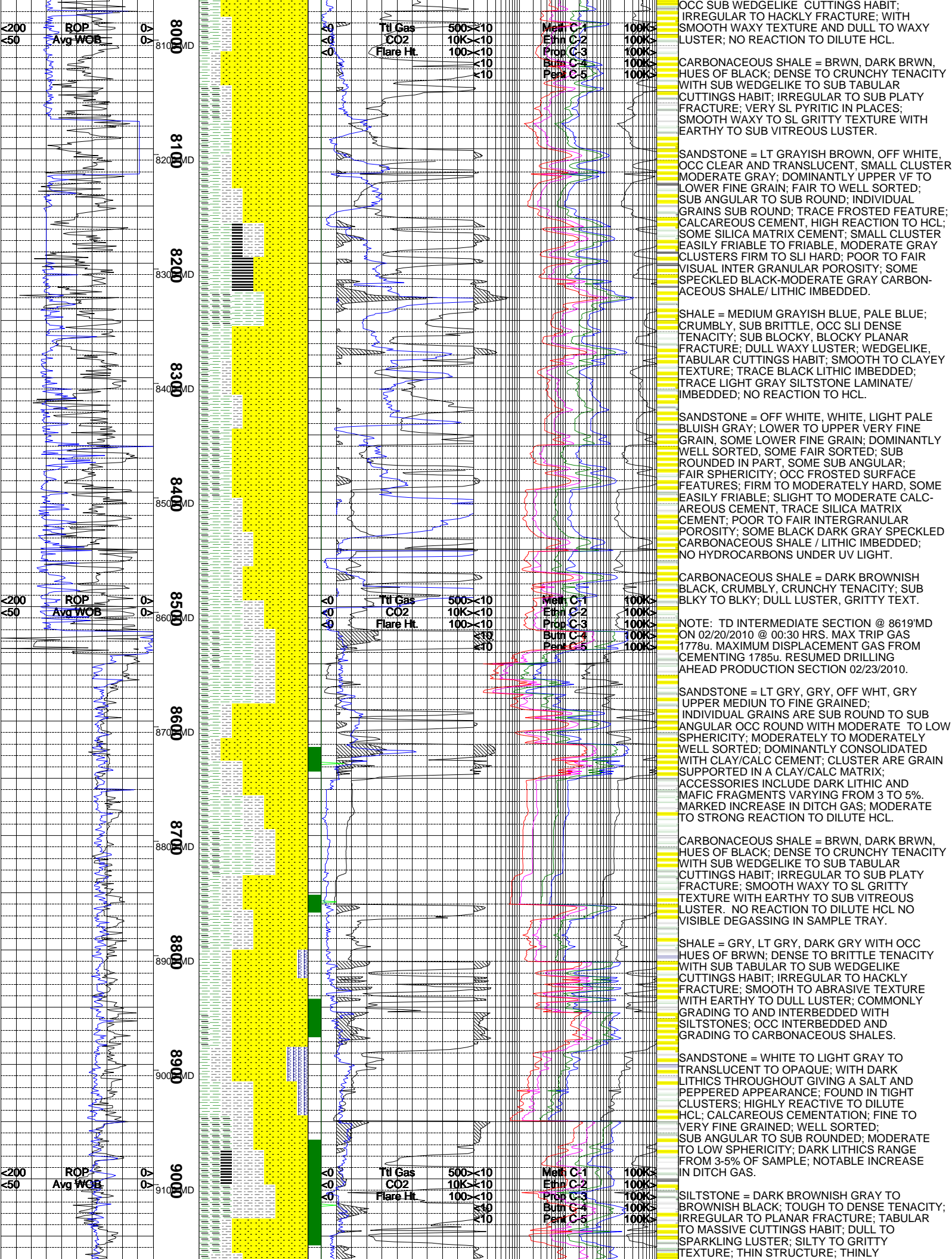
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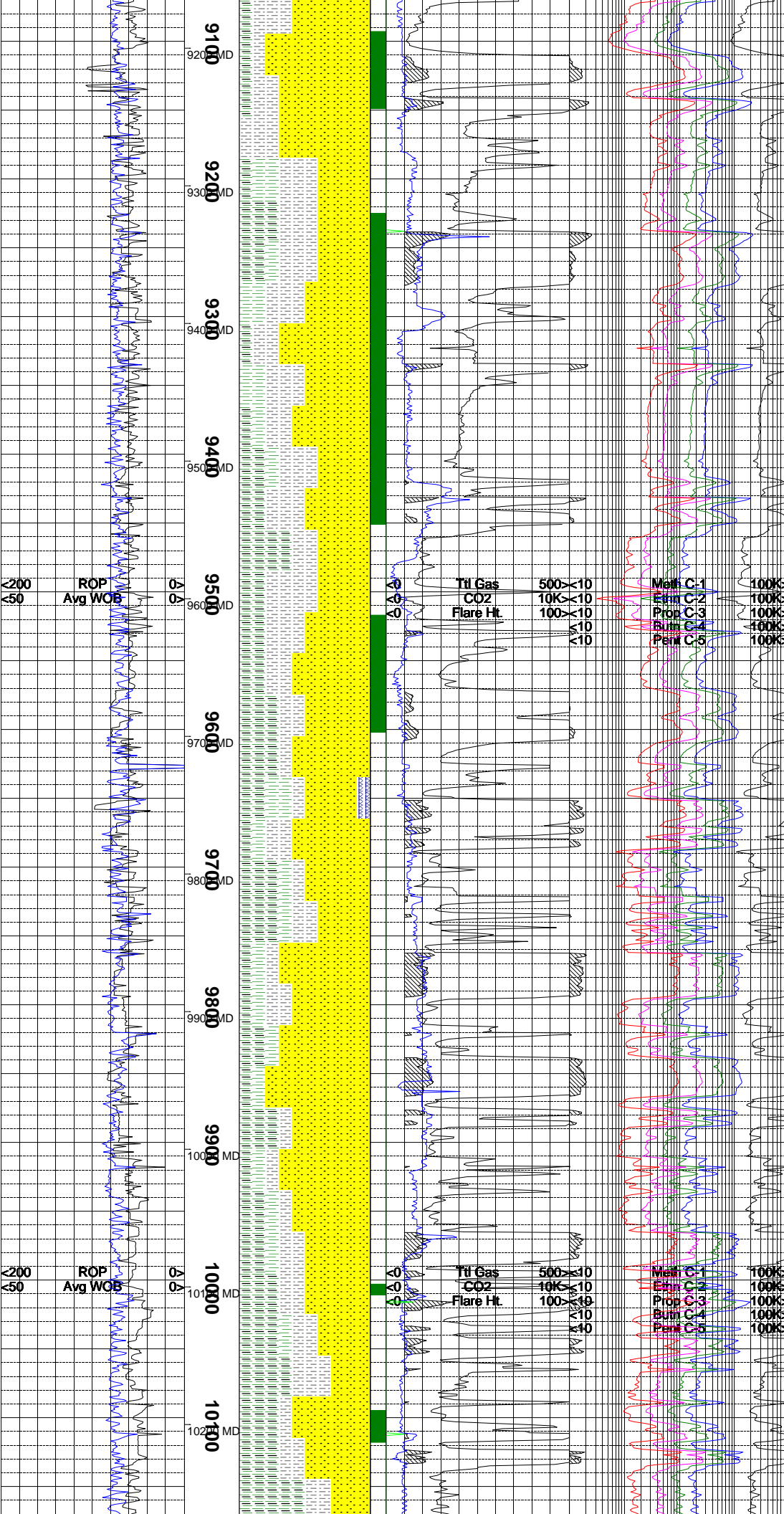
SANDSTONE = LT GRY, GRYISH BRWN OCC HUES OF WHT; FIRM AND MODERATELY FRIABLE; INDIVIDUAL GRAINS ARE TRNSP TO OPAQUE; SUB ANGULAR TO SUB ROUND; MODERATELY TO WELL SORTED WITH MODERATE TO LOW SPHERICITY; DOMINANTLY CONSOLIDATED; CLUSTERS ARE GRAIN SUPPORTED IN A CALC/ KAOLIN CEMENT; MODERATE TO STRONG REACTION TO DILUTE HCL; ACCESSORIES INCLUDE DARK LITHIC AND MAFIC FRAGMENTS AND SOME CARBONACEOUS MATERIAL; MARKED INCREASE IN DITCH GAS.

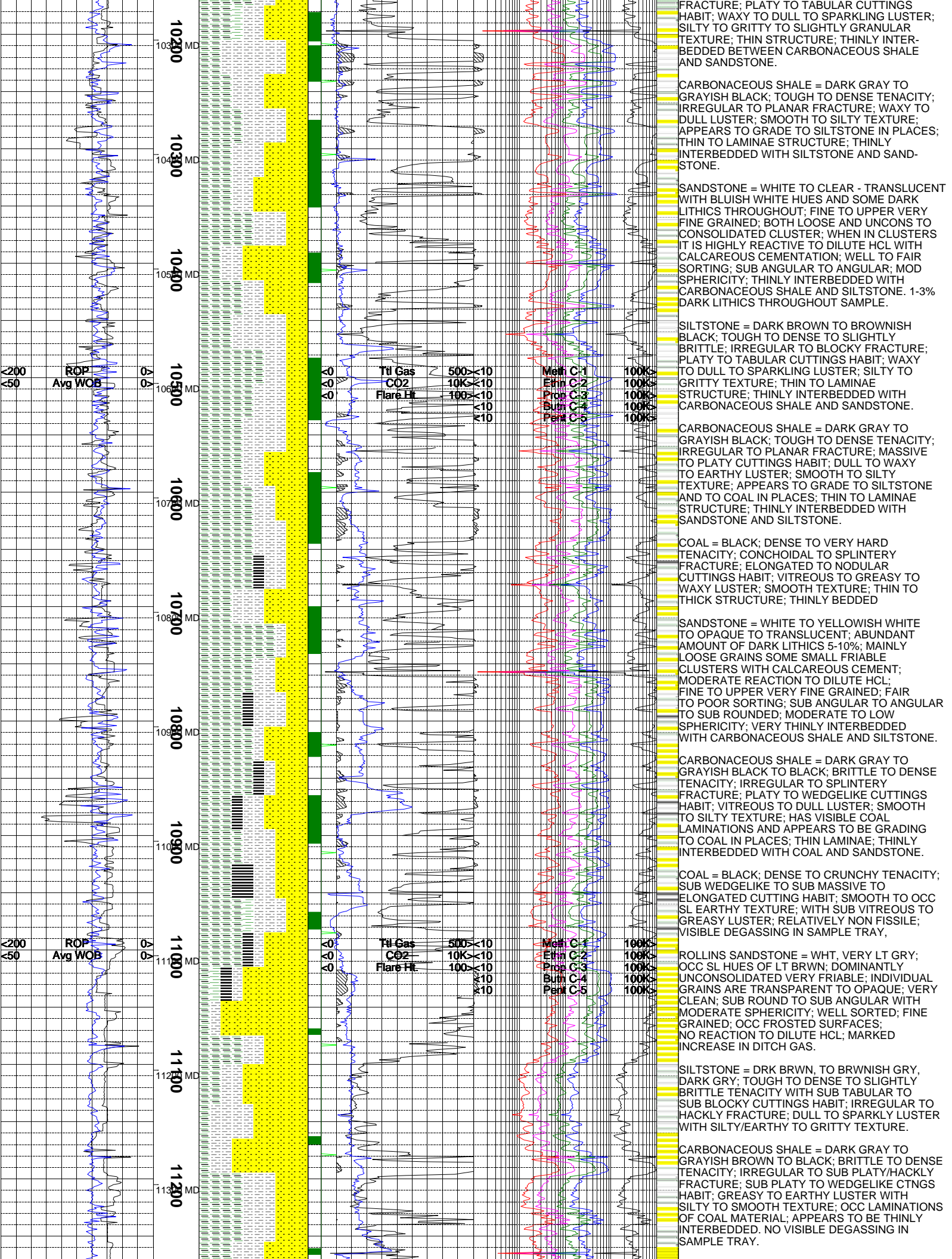


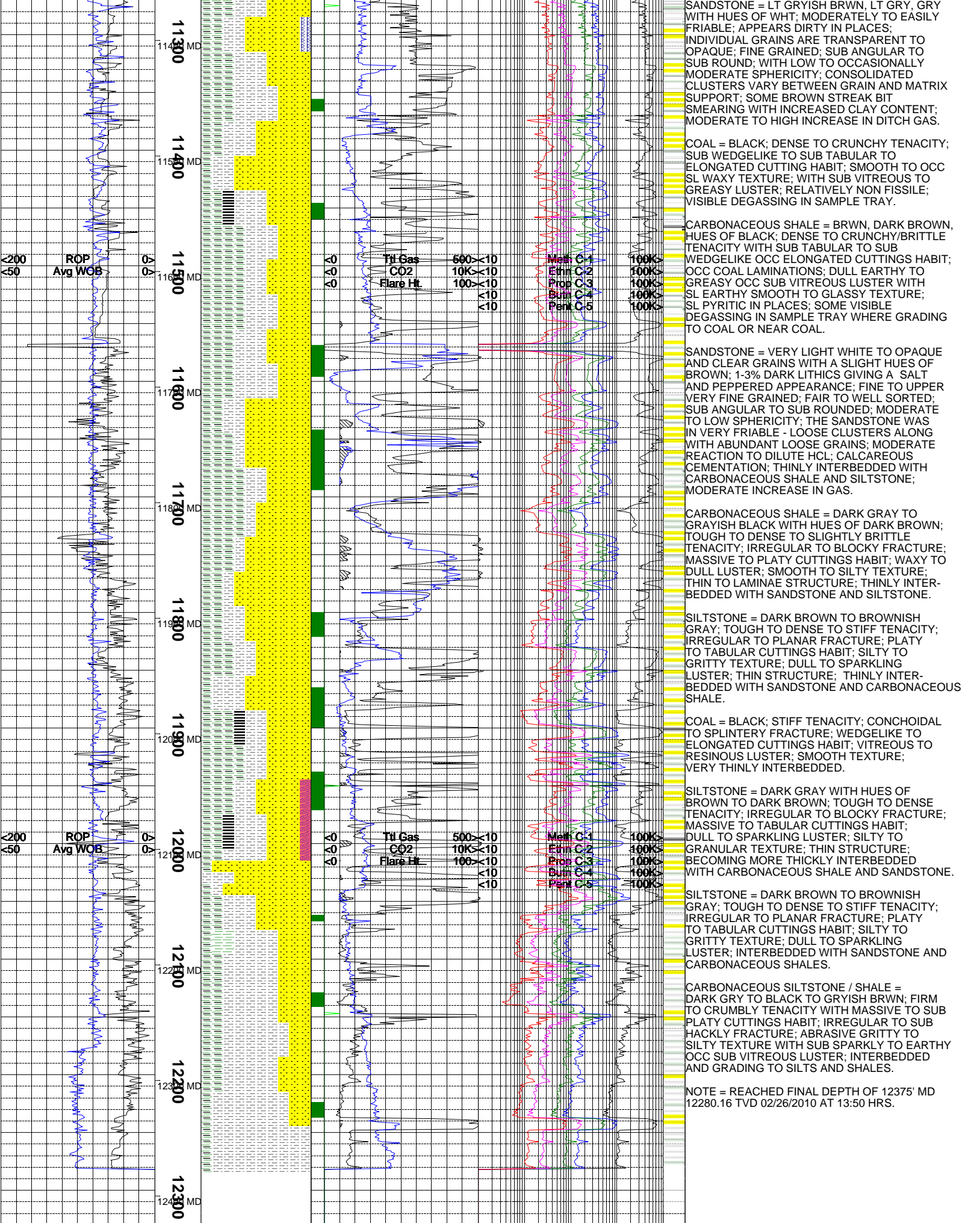




SILTSTONE = DARK BROWN TO BROWISH
GRAY TO BROWNISH BLACK; TOUGH TO
DENSE TENACITY; IRREGULAR TO PLANAR







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