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MUDLOG TVD

COMPANY	ExxonMobil Production
WELL	FRU 197-28A5
FIELD	PICEANCE CREEK
REGION	ROCKIES
COORDINATES	LAT: 39.9344449000 LON: 108.295900000
ELEVATION	GL = 6,082' KB = 6,109'
COUNTY, STATE	RIO BLANCO, CO
API INDEX	051031163300
SPUD DATE	08/05/2010
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	RICKY T. OWENS
RIG/TYPE	215 / FLEX 3
LOGGING UNIT	UNIT 051
GEOLOGISTS	GEORGE BAKER DEVIN CLAAR
ADD. PERSONS	BILL JOHANNING TRISH ORTIZ
CO. GEOLOGIST	MEL,ANIE BIGGS

LOG INTERVAL

DEPTHS:	149'	TO	12,529'
DATES:	8/05/2010	TO	8/25/2010
SCALE:	1" =100'		

CASING DATA

16"	AT	120'
10.75"	AT	3,566'
	AT	
	AT	

MUD TYPES

SPUD MUD	TO	3,576'
BARO-TROL PLUS	TO	12,529'
	TO	
	TO	

HOLE SIZE

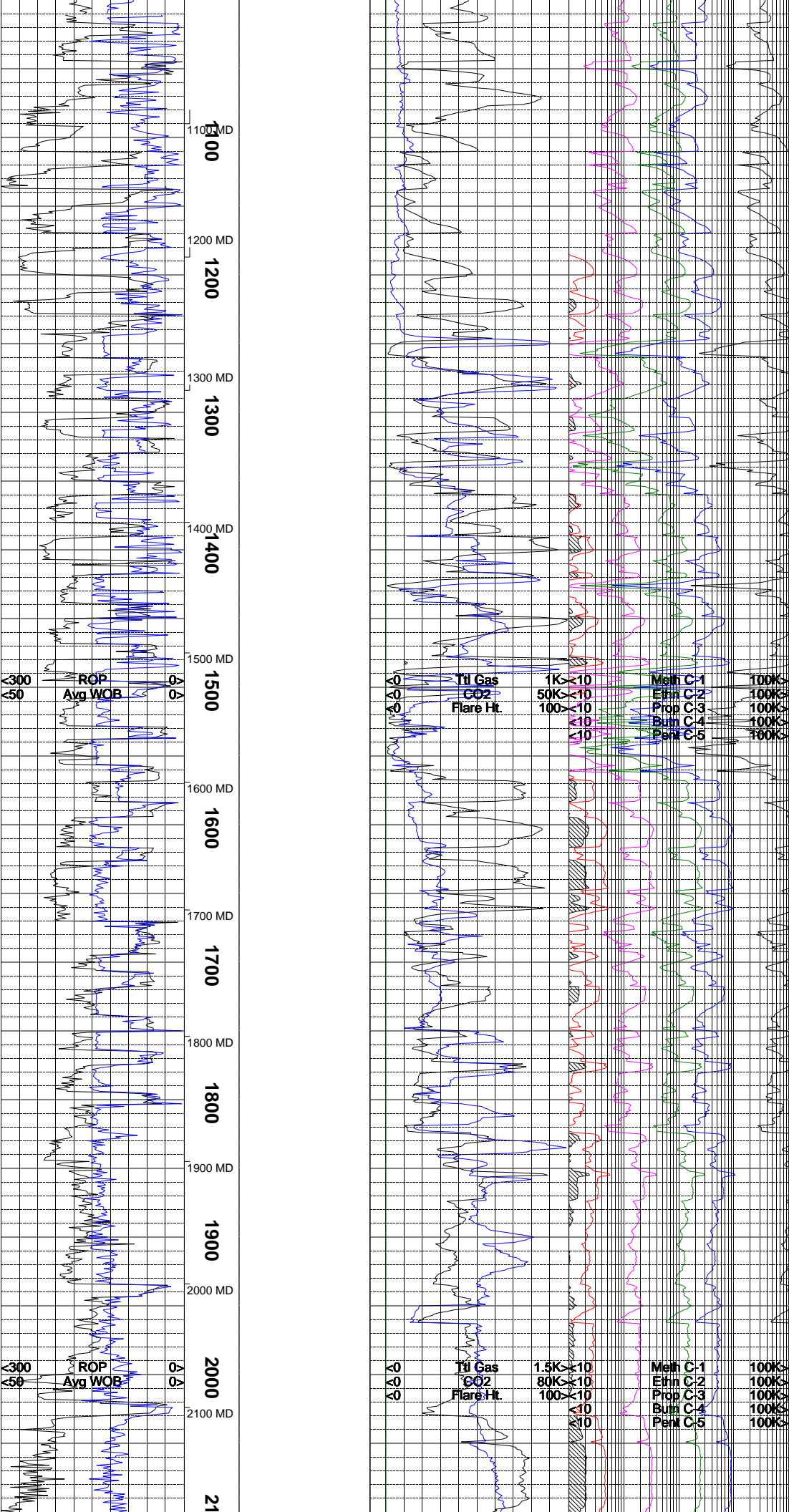
14.75"	TO	3,576'
8.75"	TO	12,529'
	TO	
	TO	

ABBREVIATIONS

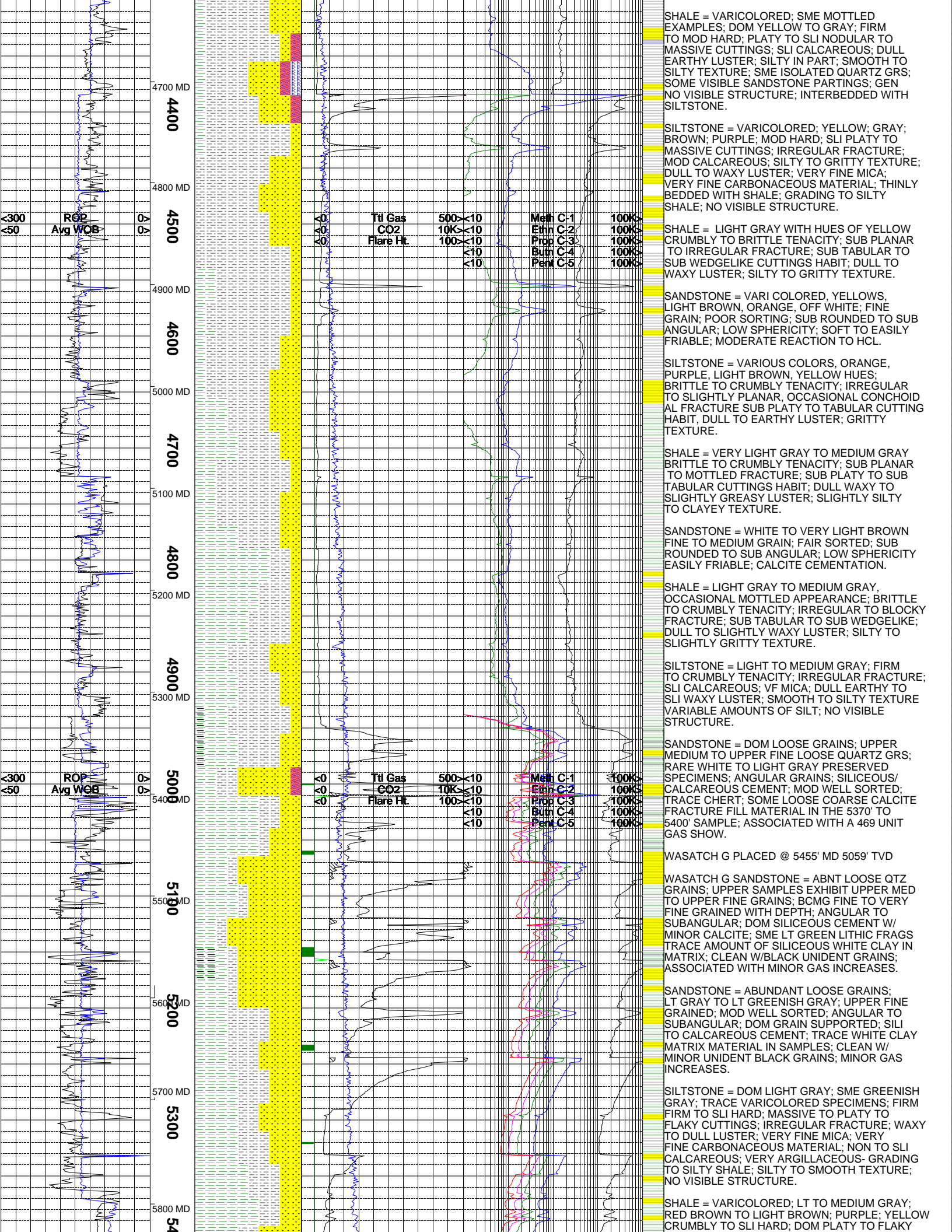
<i>NB</i> NEWBIT	<i>PV</i> PLASTIC VISCOSITY	<i>LC</i> LOST CIRCULATION
<i>RRB</i> RERUN BIT	<i>YP</i> YIELD POINT	<i>CO</i> CIRCULATE OUT
<i>CB</i> CORE BIT	<i>FL</i> FLUID LOSS	<i>NR</i> NO RETURNS
<i>WOB</i> WEIGHT ON BIT	<i>CL</i> PPM CLORIDE ION	<i>TG</i> TRIP GAS
<i>RPM</i> ROTARY REV/MIN	<i>Rm</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	

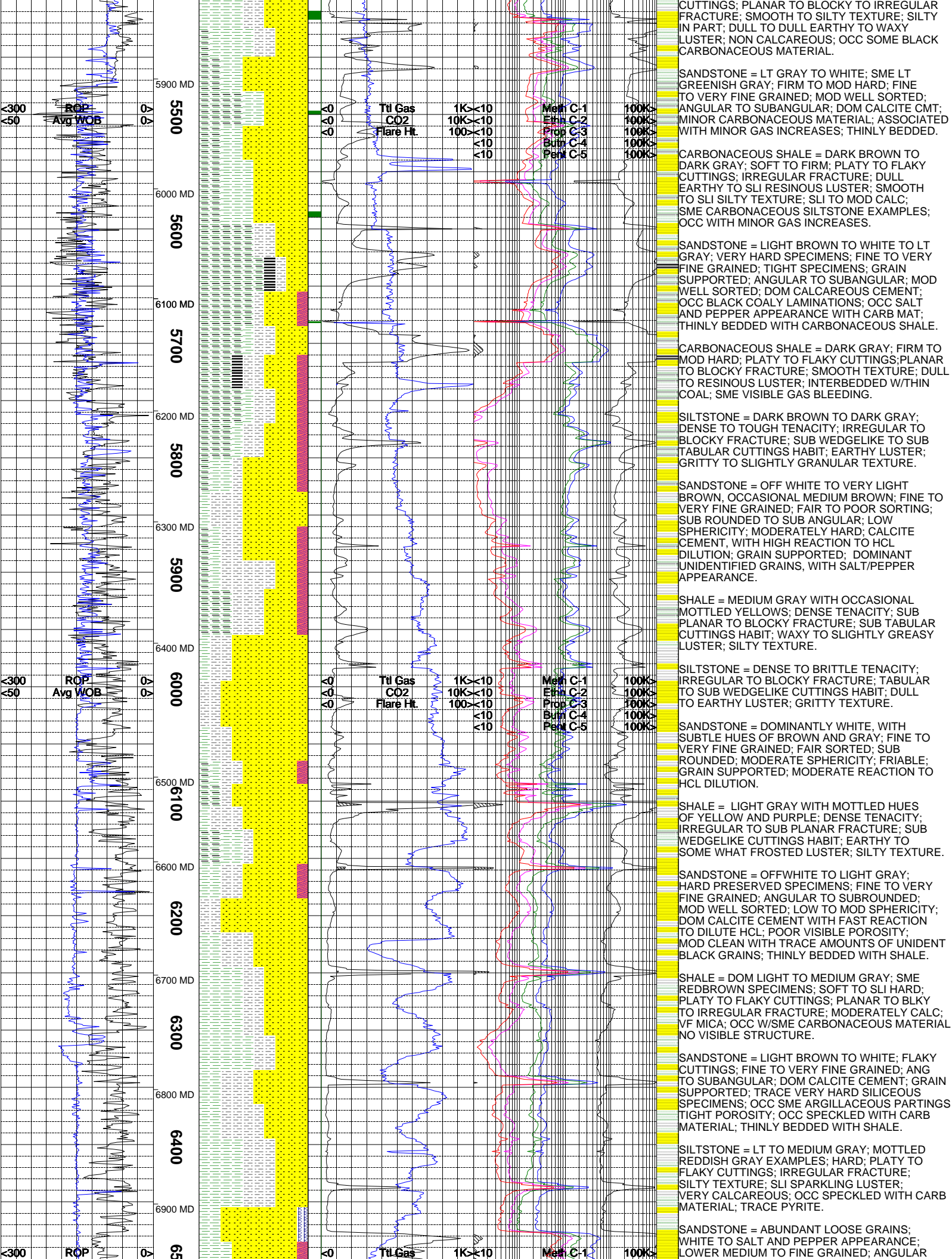
ALTERED ZONE	CHERT - GLASSY	FELSIC SILIC DIKE	MARL - CALC	SANDSTONE
ANDESITE	CHERT - PORCEL	FOSSIL	METAMORPHICS	SANDSTONE-TUFFACEOUS
ANHYDRITE	CHERT - TIGER STRIPE	GABBRO	MUDSTONE	SERICITIZATION
BASALT	CHERT - UNDIFF	GLASSY TUFF	OBSIDIAN	SERPENTINE
BENTONITE	CLAY	GRANITE	PALEOSOL	SHALE
BIOTITIZATION	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	

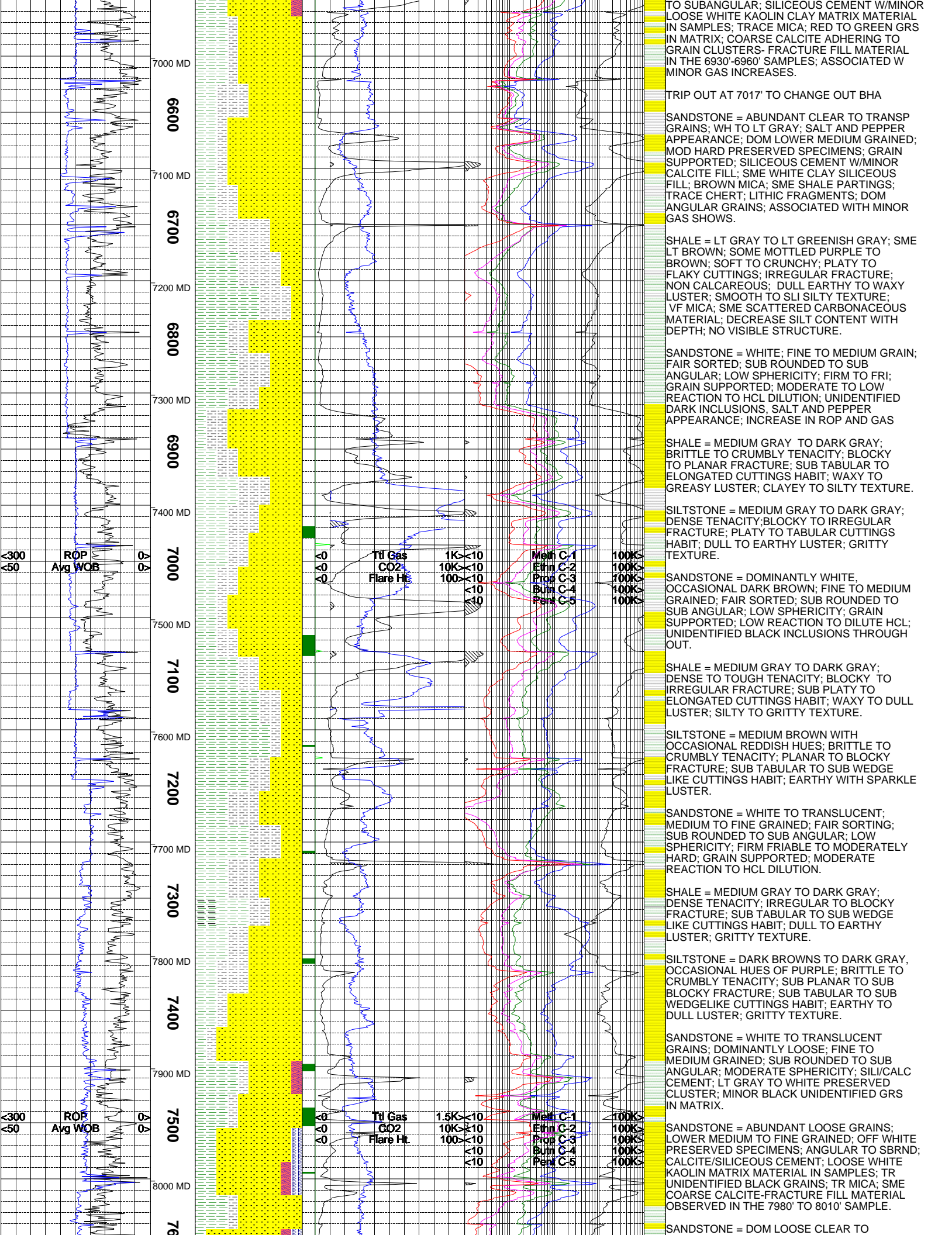


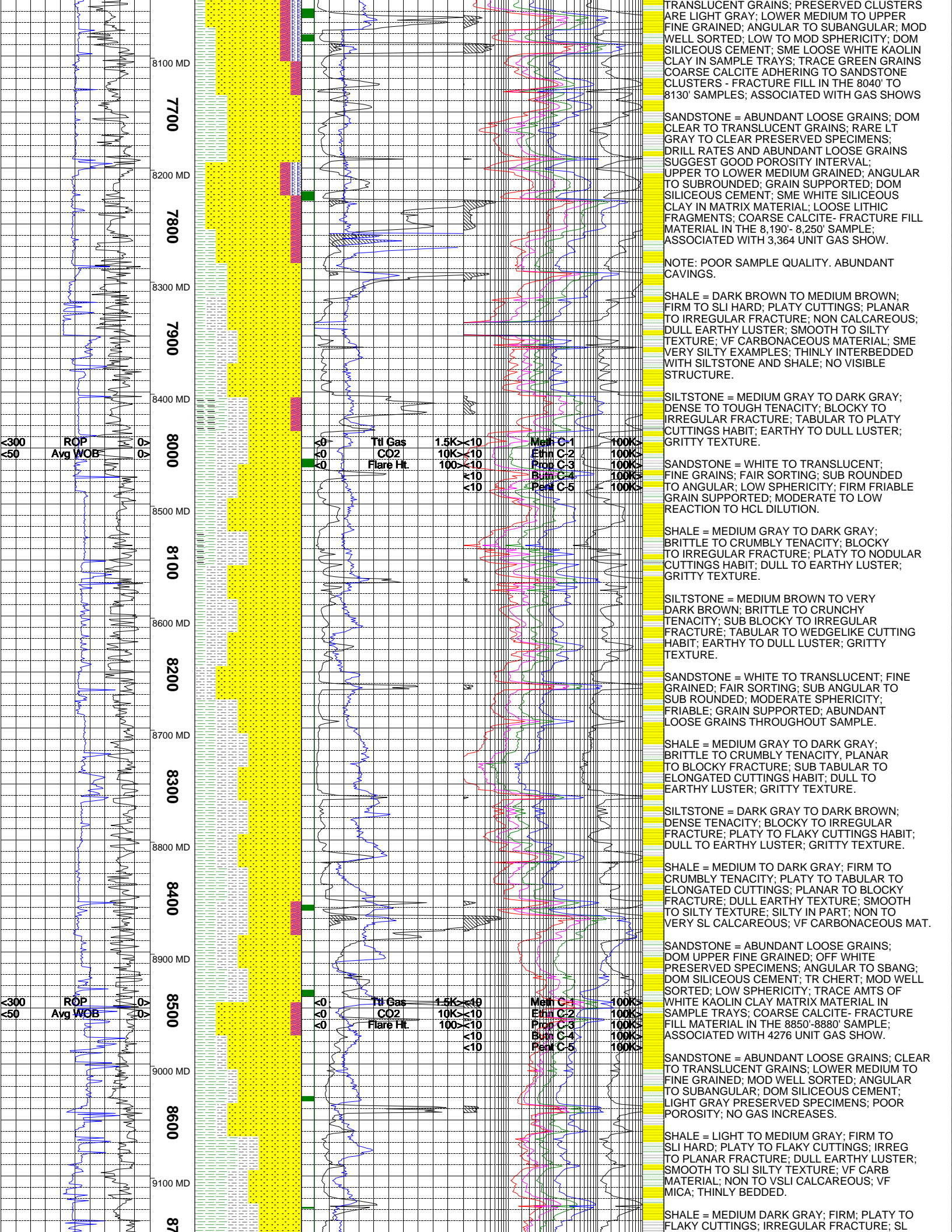


SHALE = VARICOLORED; YELLOW; LT TO MED GRAY; YELLOW GRAY; MOTTLED IN PART; SLI PLATY TO SLI NODULAR; BCMG MOD SILTY IRREGULAR FRACTURE; SLI TO MOD CALC; VF MICA; OCC CARBONACEOUS MATERIAL; DULL EARTHY LUSTER; ROUGH TO SILTY TEXTURE; SOME SANDY TO SILTY SPECIMENS; TRACE LOOSE PYRITE; NO VISIBLE STRUCTURE.









8100 MD
7700
8200 MD
7800
8300 MD
7900
8400 MD
8000
8500 MD
8100
8600 MD
8200
8700 MD
8300
8800 MD
8400
8900 MD
8500
9000 MD
8600
9100 MD
87

300
50
ROP
Avg WOB
300
50
ROP
Avg WOB

Ttl Gas 1.5K<10
CO2 10K<10
Flare Ht. 100<10
Meth C-1 100K<100
Ethn C-2 100K<100
Prop C-3 100K<100
Butn C-4 100K<100
Pent C-5 100K<100
Ttl Gas 1.5K<10
CO2 10K<10
Flare Ht. 100<10
Meth C-1 100K<100
Ethn C-2 100K<100
Prop C-3 100K<100
Butn C-4 100K<100
Pent C-5 100K<100

TRANSLUCENT GRAINS; PRESERVED CLUSTERS ARE LIGHT GRAY; LOWER MEDIUM TO UPPER FINE GRAINED; ANGULAR TO SUBANGULAR; MOD WELL SORTED; LOW TO MOD SPHERICITY; DOM SILICEOUS CEMENT; SME LOOSE WHITE KAOLIN CLAY IN SAMPLE TRAYS; TRACE GREEN GRAINS COARSE CALCITE ADHERING TO SANDSTONE CLUSTERS - FRACTURE FILL IN THE 8040' TO 8130' SAMPLES; ASSOCIATED WITH GAS SHOWS

SANDSTONE = ABUNDANT LOOSE GRAINS; DOM CLEAR TO TRANSLUCENT GRAINS; RARE LT GRAY TO CLEAR PRESERVED SPECIMENS; DRILL RATES AND ABUNDANT LOOSE GRAINS SUGGEST GOOD POROSITY INTERVAL; UPPER TO LOWER MEDIUM GRAINED; ANGULAR TO SUBROUNDED; GRAIN SUPPORTED; DOM SILICEOUS CEMENT; SME WHITE SILICEOUS CLAY IN MATRIX MATERIAL; LOOSE LITHIC FRAGMENTS; COARSE CALCITE- FRACTURE FILL MATERIAL IN THE 8,190'- 8,250' SAMPLE; ASSOCIATED WITH 3,364 UNIT GAS SHOW.

NOTE: POOR SAMPLE QUALITY. ABUNDANT CAVINGS.

SHALE = DARK BROWN TO MEDIUM BROWN; FIRM TO SLI HARD; PLATY CUTTINGS; PLANAR TO IRREGULAR FRACTURE; NON CALCAREOUS; DULL EARTHY LUSTER; SMOOTH TO SILTY TEXTURE; VF CARBONACEOUS MATERIAL; SME VERY SILTY EXAMPLES; THINLY INTERBEDDED WITH SILTSTONE AND SHALE; NO VISIBLE STRUCTURE.

SILTSTONE = MEDIUM GRAY TO DARK GRAY; DENSE TO TOUGH TENACITY; BLOCKY TO IRREGULAR FRACTURE; TABULAR TO PLATY CUTTINGS HABIT; EARTHY TO DULL LUSTER; GRITTY TEXTURE.

SANDSTONE = WHITE TO TRANSLUCENT; FINE GRAINS; FAIR SORTING; SUB ROUNDED TO ANGULAR; LOW SPHERICITY; FIRM FRIABLE GRAIN SUPPORTED; MODERATE TO LOW REACTION TO HCL DILUTION.

SHALE = MEDIUM GRAY TO DARK GRAY; BRITTLE TO CRUMBLY TENACITY; BLOCKY TO IRREGULAR FRACTURE; PLATY TO NODULAR CUTTINGS HABIT; DULL TO EARTHY LUSTER; GRITTY TEXTURE.

SILTSTONE = MEDIUM BROWN TO VERY DARK BROWN; BRITTLE TO CRUNCHY TENACITY; SUB BLOCKY TO IRREGULAR FRACTURE; TABULAR TO WEDGE LIKE CUTTING HABIT; EARTHY TO DULL LUSTER; GRITTY TEXTURE.

SANDSTONE = WHITE TO TRANSLUCENT; FINE GRAINED; FAIR SORTING; SUB ANGULAR TO SUB ROUNDED; MODERATE SPHERICITY; FRIABLE; GRAIN SUPPORTED; ABUNDANT LOOSE GRAINS THROUGHOUT SAMPLE.

SHALE = MEDIUM GRAY TO DARK GRAY; BRITTLE TO CRUMBLY TENACITY, PLANAR TO BLOCKY FRACTURE; SUB TABULAR TO ELONGATED CUTTINGS HABIT; DULL TO EARTHY LUSTER; GRITTY TEXTURE.

SILTSTONE = DARK GRAY TO DARK BROWN; DENSE TENACITY; BLOCKY TO IRREGULAR FRACTURE; PLATY TO FLAKY CUTTINGS HABIT; DULL TO EARTHY LUSTER; GRITTY TEXTURE.

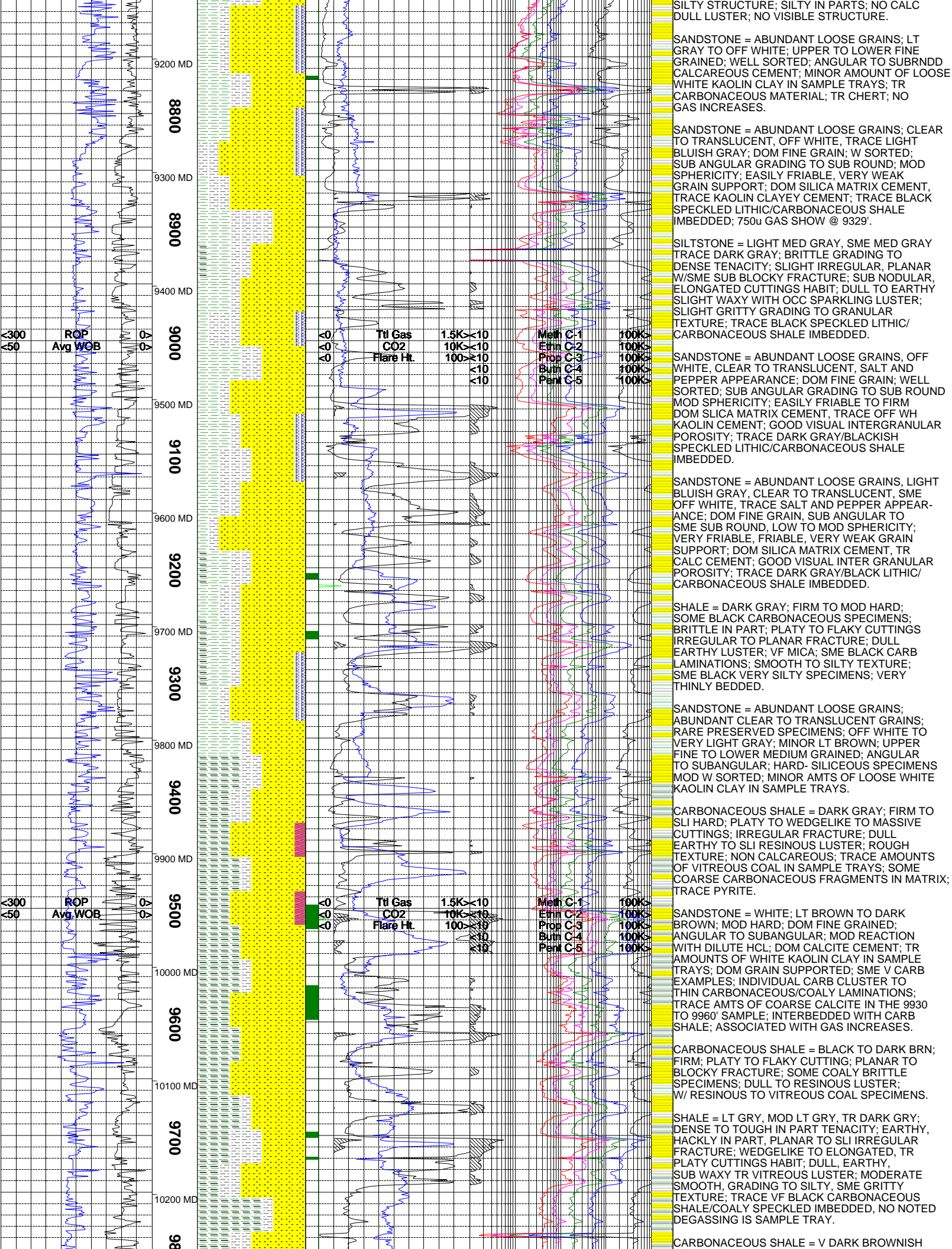
SHALE = MEDIUM TO DARK GRAY; FIRM TO CRUMBLY TENACITY; PLATY TO TABULAR TO ELONGATED CUTTINGS; PLANAR TO BLOCKY FRACTURE; DULL EARTHY TEXTURE; SMOOTH TO SILTY TEXTURE; SILTY IN PART; NON TO VERY SL CALCAREOUS; VF CARBONACEOUS MAT.

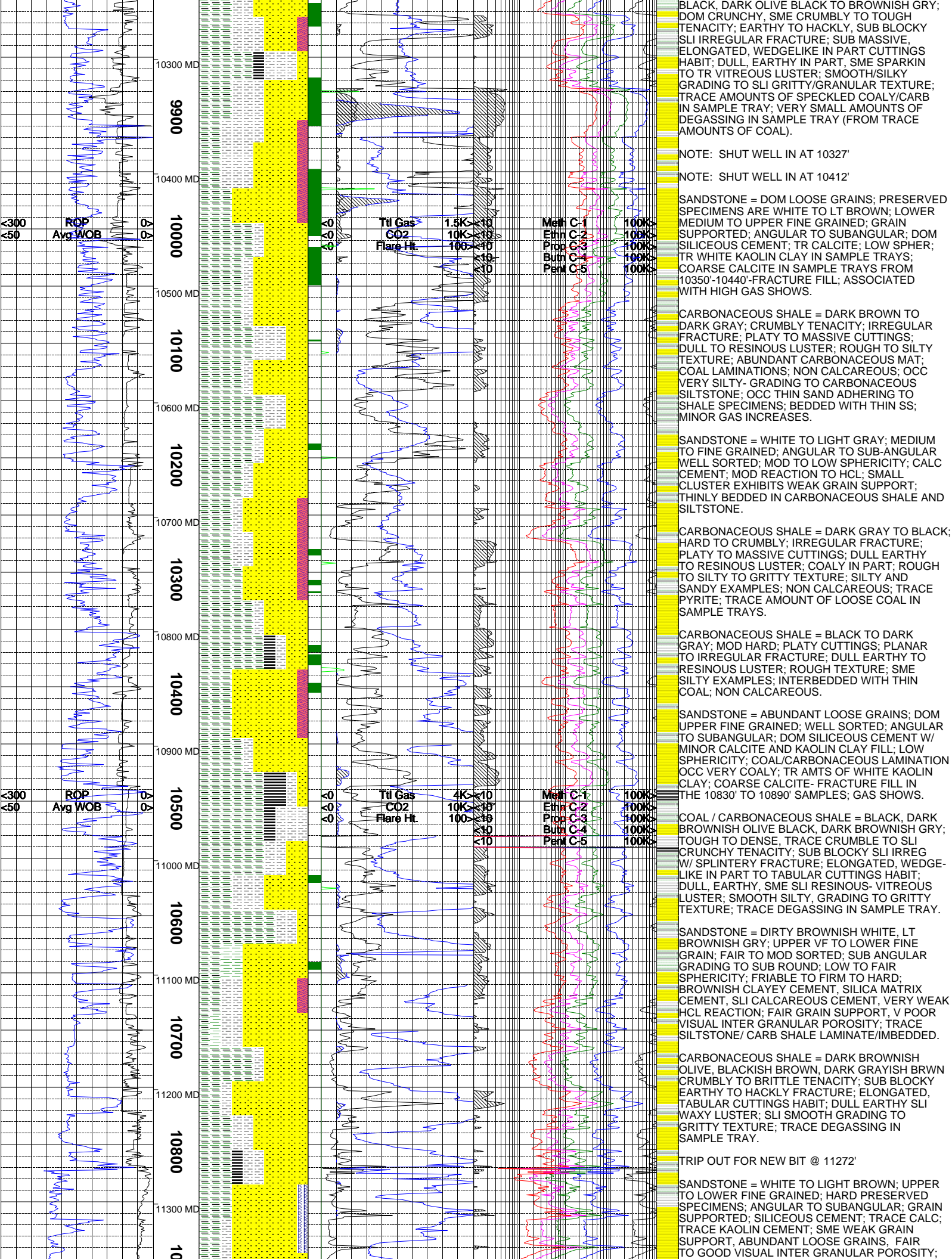
SANDSTONE = ABUNDANT LOOSE GRAINS; DOM UPPER FINE GRAINED; OFF WHITE PRESERVED SPECIMENS; ANGULAR TO SBANG; DOM SILICEOUS CEMENT; TR CHERT; MOD WELL SORTED; LOW SPHERICITY; TRACE AMTS OF WHITE KAOLIN CLAY MATRIX MATERIAL IN SAMPLE TRAYS; COARSE CALCITE- FRACTURE FILL MATERIAL IN THE 8850'-8880' SAMPLE; ASSOCIATED WITH 4276 UNIT GAS SHOW.

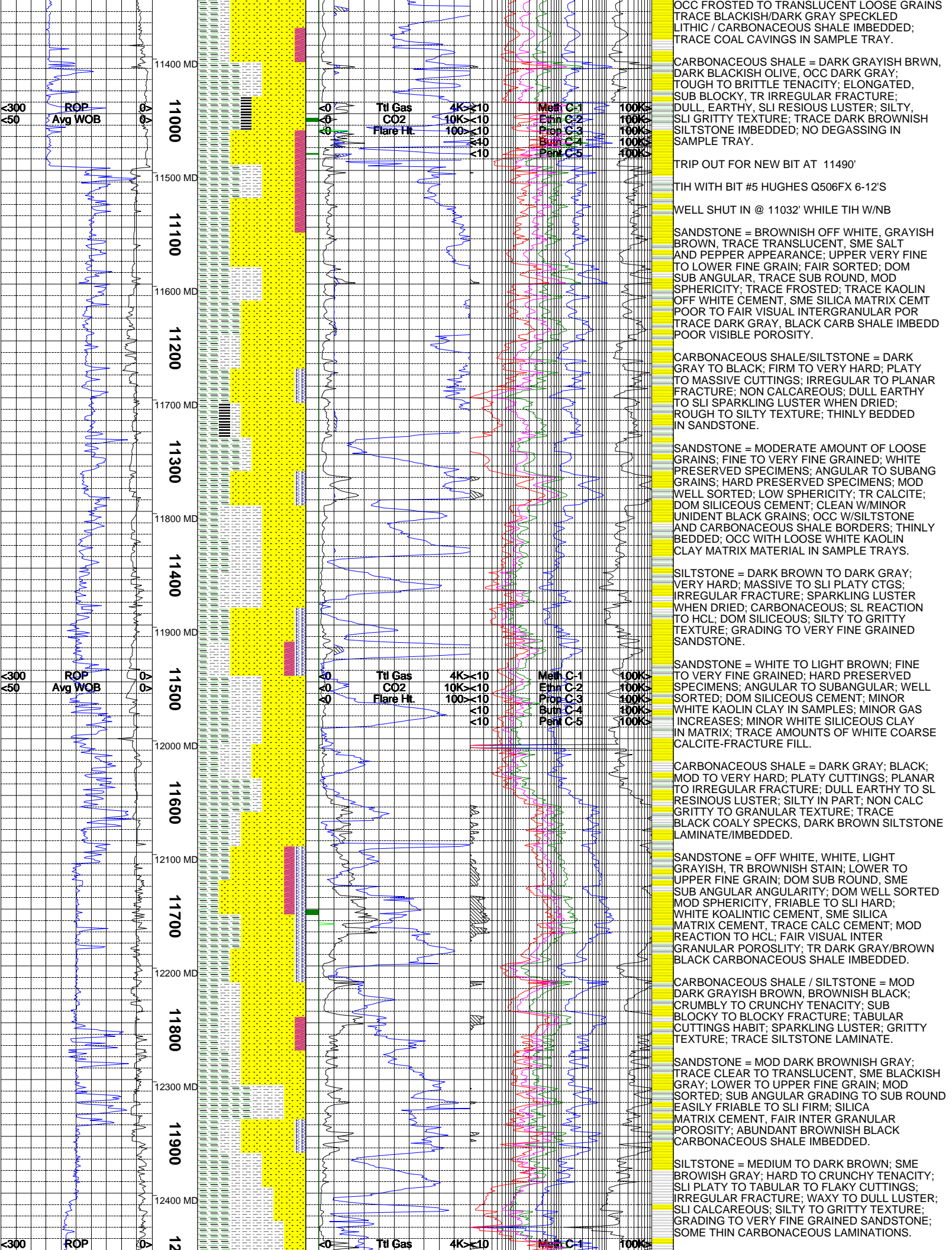
SANDSTONE = ABUNDANT LOOSE GRAINS; CLEAR TO TRANSLUCENT GRAINS; LOWER MEDIUM TO FINE GRAINED; MOD WELL SORTED; ANGULAR TO SUBANGULAR; DOM SILICEOUS CEMENT; LIGHT GRAY PRESERVED SPECIMENS; POOR POROSITY; NO GAS INCREASES.

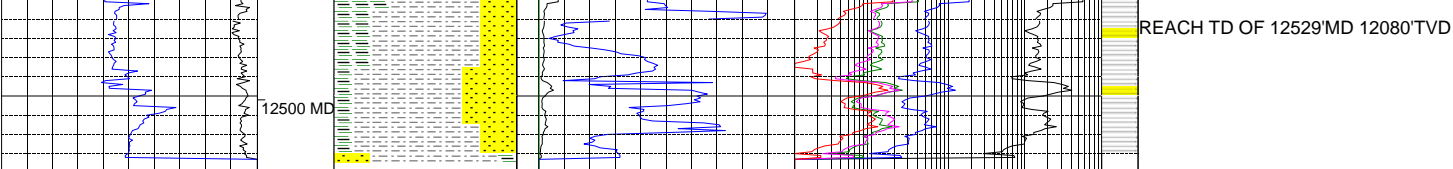
SHALE = LIGHT TO MEDIUM GRAY; FIRM TO SLI HARD; PLATY TO FLAKY CUTTINGS; IRREG TO PLANAR FRACTURE; DULL EARTHY LUSTER; SMOOTH TO SLI SILTY TEXTURE; VF CARB MATERIAL; NON TO VS LI CALCAREOUS; VF MICA; THINLY BEDDED.

SHALE = MEDIUM DARK GRAY; FIRM; PLATY TO FLAKY CUTTINGS; IRREGULAR FRACTURE; SL









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