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## MUDLOG MD

COMPANY	ExxonMobil Production
WELL	PCU 297-11C7
FIELD	Piceance Creek
REGION	Rocky Mountain
COORDINATES	39.896041 N 108.254563 W
ELEVATION	GL: 6966.2' RKB: 6996.4'
COUNTY, STATE	Rio Blanco, CO
API INDEX	051031146900
SPUD DATE	02/19/2010
CONTRACTOR	HP Drilling
CO. REP.	M. Sadler / J. Wood
RIG/TYPE	#326/ Flex-Rig 4
LOGGING UNIT	MLU # 036
GEOLOGISTS	J. Kokes/ D. Thibodeaux C. Record
ADD. PERSONS	H. Strickland/ J. Yeagar P. Strickland/ D. Lockhart
CO. GEOLOGIST	C. Alba

### LOG INTERVAL

DEPTHS:	3882'	TO	12785'
DATES:	03/25/2010	TO	07/01/2010
SCALE:	5" = 100'		

### CASING DATA

16"	AT	150'
10 3/4"	AT	3866'
7"	AT	8707'

AT

### HOLE SIZE

14 3/4"	TO	3882'
9 7/8"	TO	8722'
6 1/8"	TO	12785'
	TO	

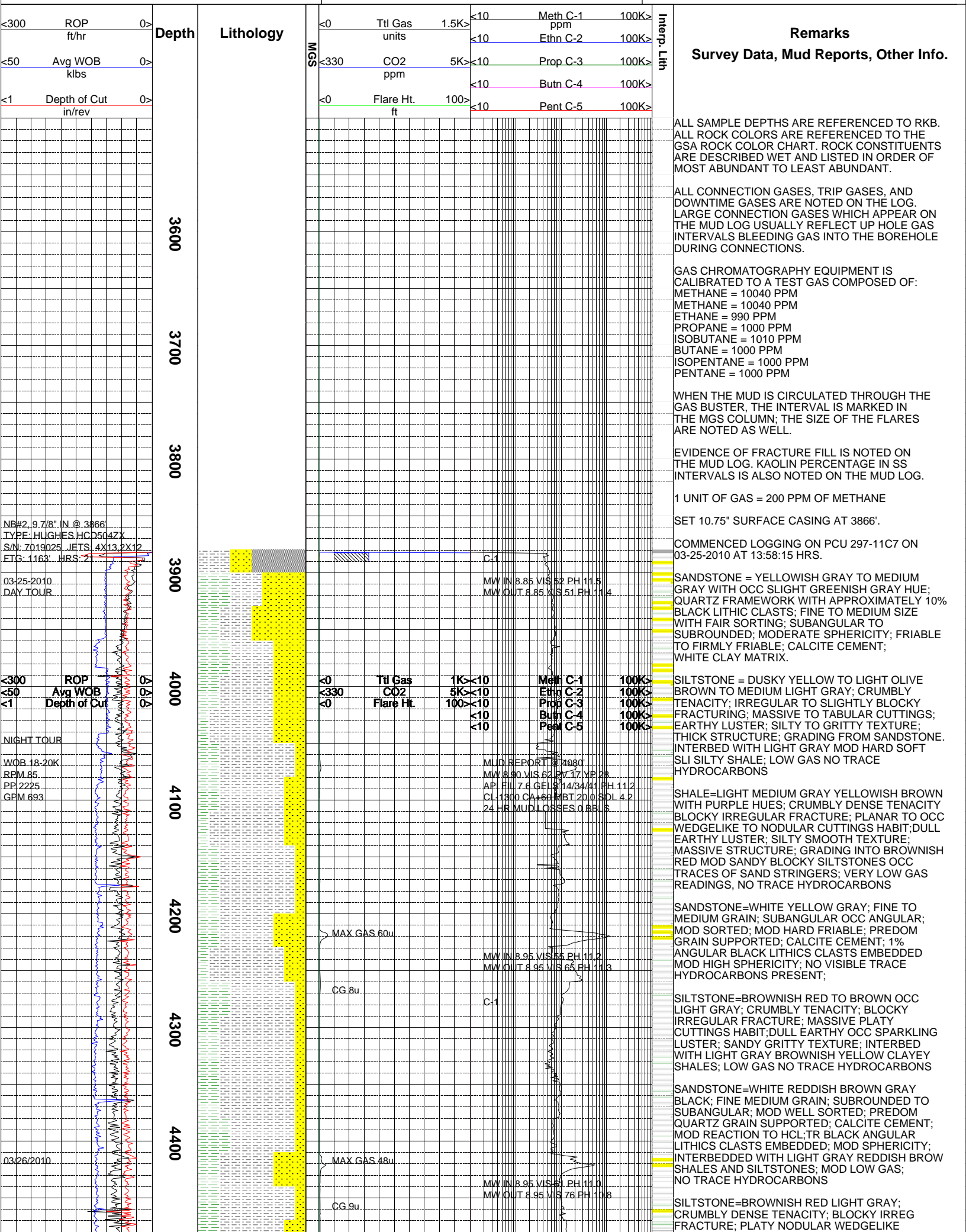
### MUD TYPES

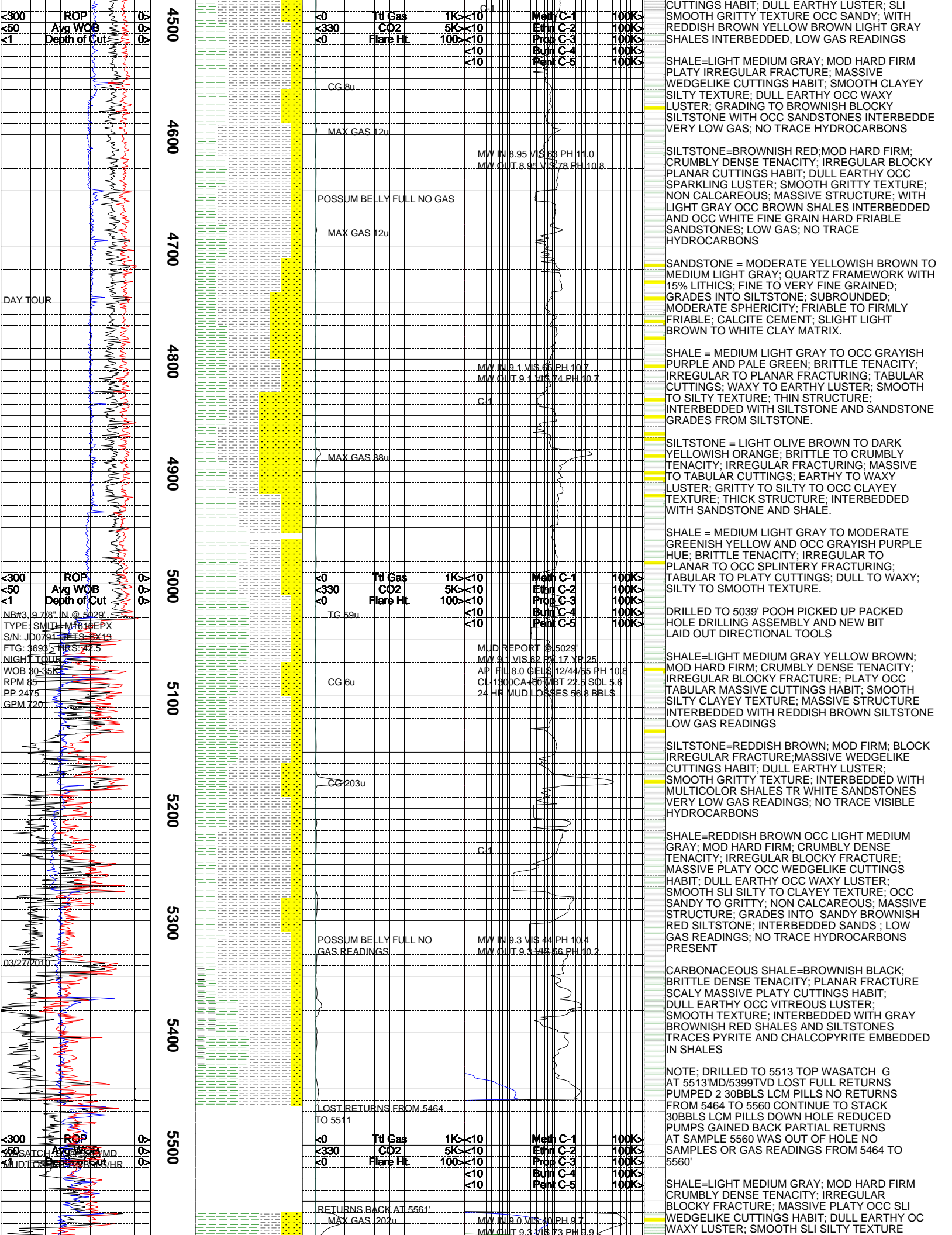
Water Based Spud Mud	TO	3882'
LSND	TO	12785'
	TO	
	TO	

### ABBREVIATIONS

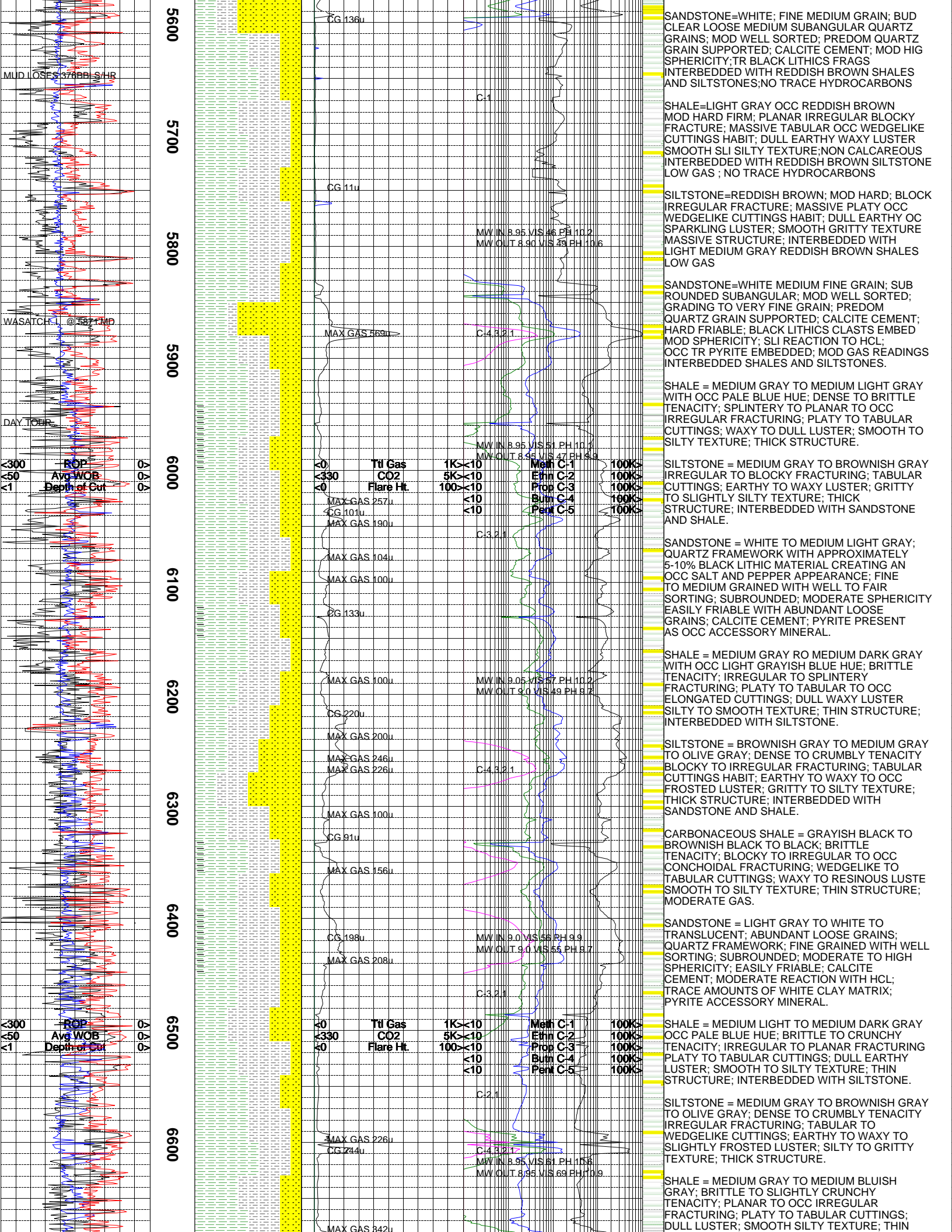
NB NEWBIT	PV PLASTIC VISCOSITY	LC LOST CIRCULATION
RRB RERUN BIT	YP YIELD POINT	CO CIRCULATE OUT
CB CORE BIT	FL FLUID LOSS	NR NO RETURNS
WOB WEIGHT ON BIT	CL PPM CLORIDE ION	TG TRIP GAS
RPM ROTARY REV/MIN	Rm MUD RESISTIVITY	SG SURVEY GAS
PP PUMP PRESSURE	Rmf FILTRATE RESISTIVITY	WG WIPER GAS
SPM STROKES/MIN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

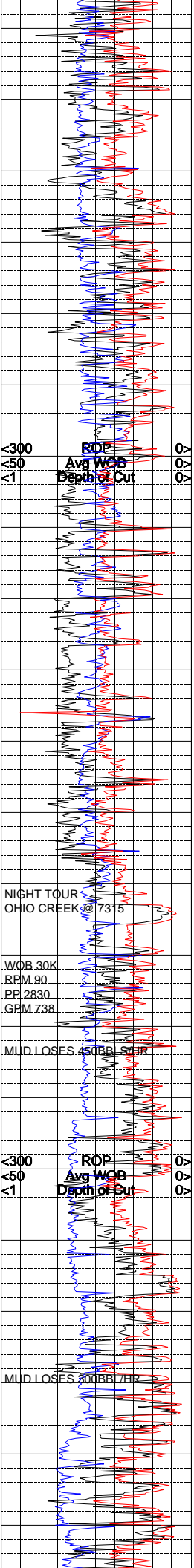




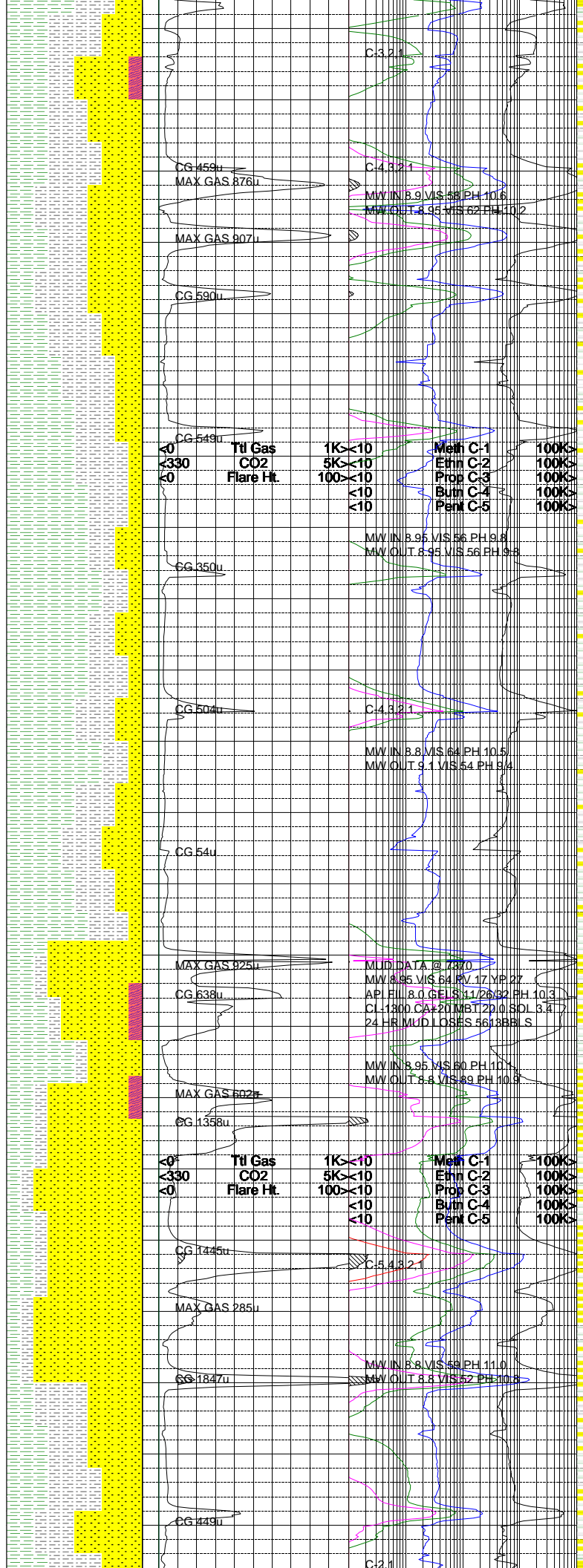








6700  
6800  
6900  
7000  
7100  
7200  
7300  
7400  
7500  
7600  
7700



TO SLIGHTLY THICK STRUCTURE.

SANDSTONE = WHITE TO LIGHT GRAY; QUARTZ FRAMEWORK WITH 5% BLACK LITHIC CLASTS; FINE TO MEDIUM SIZED WITH FAIR SORTING; SUBANGULAR TO SUBROUNDED WITH MODERATE SPHERICITY; FRIABLE TO FIRMLY FRIABLE; CALCITE CEMENT; STRONG REACTION WITH HCL LOW GAS ASSOCIATED.

SILTSTONE = BROWNISH GRAY TO MEDIUM DARK GRAY; BRITTLE TO CRUMBLY TENACITY; IRREGULAR FRACTURING; TABULAR CUTTINGS; FROSTED TO WAXY TO EARTHY LUSTER; GRITTY TO SILTY TEXTURE; THICK STRUCTURE; INTERBEDDED WITH SANDSTONE AND SHALE; GRADES FROM SANDSTONE.

SHALE = MEDIUM GRAY TO MEDIUM BLuish GRAY WITH A SLIGHT LIGHT OLIVE GRAY HUE; BRITTLE TENACITY; IRREGULAR TO PLANAR FRACTURING; TABULAR TO PLATY TO OCC SCALY; WAXY DULL SLIGHT EARTHY LUSTER; SMOOTH TO CLAYEY TEXTURE; THIN STRUCTURE INTERBEDDED WITH SILTSTONE AND SANDSTONE

SILTSTONE = BROWNISH GRAY TO GRAYISH RED WITH OCC MEDIUM GRAY; IRREGULAR TO BLOCKY FRACTURING; TABULAR CUTTINGS; DENSE TO CRUMBLY TENACITY; EARTHY LUSTER GRITTY TO CLAYEY TEXTURE; THICK STRUCTURE.

SANDSTONE = WHITE TO LIGHT GRAY TO TRANSLUCENT; ABUNDANT LOOSE QUARTZ GRAINS; QUARTZ FRAMEWORK WITH 5% BLACK LITHIC CLASTS; FINE TO MEDIUM GRAINED; FAIR TO WELL SORTING; SUBROUNDED TO SUBANGULAR; FIRMLY FRIABLE; CALCITE CEMENT WITH GRAIN SUPPORT.

SHALE = LIGHT TO MEDIUM GRAY; BRITTLE TO SLIGHTLY CRUNCHY TENACITY; IRREGULAR TO PLANAR TO SPLINTERY FRACTURING; PLATY TABULAR CUTTINGS; DULL TO WAXY LUSTER; SMOOTH TO CLAYEY TEXTURE; THIN TO THICK STRUCTURE.

SILTSTONE = BROWNISH RED TO BROWNISH GRA CRUMBLY TO SLIGHTLY PULVERULENT TENACITY IRREGULAR TO BLOCKY FRACTURING; TABULAR TO WEDGELIKE CUTTINGS; EARTHY LUSTER; SILTY TO GRITTY TO OCC CLAYEY TEXTURE; THIN STRUCTURE.

SHALE = MEDIUM BLuish GRAY TO MEDIUM GRAY; BRITTLE TO CRUNCHY TENACITY; PLANAR TO SPLINTERY FRACTURING; PLATY CUTTINGS; WAXY TO DULL LUSTER; SMOOTH TO CLAYEY TEXTURE; THICK STRUCTURE; INTERBEDDED WITH SILTSTONE.

SANDSTONE=WHITE; FINE GRAIN; MOD WELL SORTED;SUBROUNDED SUBANGULAR;PREDOM QUARTZ GRAIN SUPPORTED; CALCITE CEMENT WITH TRACES LOOSE MEDIUM GRAIN QUARTZ; MOD SPHERICITY; TR BLACK LITHICS CLASTS LOWER PORTION LARGE AMOUNTS LOOSE MEDIUM CLEAR QUARTZ GRAINS; HIGH GAS OCC TRACE OF VISIBLE CLEAR CALCITE FIL FRACTURE IN SAMPLE WHERE HIGH GAS WAS OBSERVED IN SANDSTONE

SANDSTONE=WHITE, FINE MEDIUM GRAINS; SUBROUNDED SUBANGULAR; MOD HARD EASILY FRIABLE; ABUD CLEAR MEDIUM LOOSE QUARTZ GRAINS IN SAMPLE; MOD WELL SORTED; CALCITE OCC CLAY MATRIX,TR KAOLINITE; SLOW REACTION TO HCL; INTERBED SHALES AND SILTSTONES HIGH GAS WHEN CALCITE FIL FRACTURE IS OBSERVED; OCC TRACE 1-3% BLACK LITHICS CLASTS

SHALE=LIGHT MEDIUM GRAY; MOD HARD FIRM IRREGULAR BLOCKY TO PLANAR FRACTURE; MASSIVE PLATY OCC TABULAR WEDGELIKE CUTTINGS HABIT:DULL EARTHY WAXY LUSTER; SMOOTH SILTY TEXTURE; ABUT CLEAR MEDIUM QUARTZ GRAINS IN SAMPLE WITH WHITE FINE MEDIUM GRAIN SANDS WITH TR GLAUC AND ABUD BLACK CARBONACEOUS FRAGS EMBEDDED IN SANDS; LOW GAS IN SHALES HIGH CONN GASES ASSOCIATED WITH SANDS

SILTSTONE=LIGHT GRAY OCC MEDIUM GRAY; VERY HARD FIRM; TOUGH DENSE TENACITY; IRREGULAR BLOCKY FRACTURE; MASSIVE CUTTINGS HABIT; DULL EARTHY LUSTER; SMOOTH GRITTY SANDY TEXTURE; GRADING FINE GRAIN SANDSTONES; LOW GAS; NO TRACE HYDROCARBONS

SHALE=GREENISH GRAY LIGHT MEDIUM GRAY FIRM; PLATY IRREGULAR FRACTURE; TABULAR PLANAR OCC WEDGELIKE CUTTINGS HABIT; WAX LUSTER; SMOOTH SLI SILTY TEXTURE THIN STRUCTURE; INTERBEDDED WITH GREENIS GRAY MOD HARD VERY SANDY SILTSTONES; OCC SANDSTONES; VERY LOW GAS; NO TRACE HYDROCARBONS PRESENT



MUD LOSSES 6 BBL/S/HR

380

~~MAX GAS 552 t~~

MW OUT 9.45 VIS 40 pH 10.1

SILTSTONE= WHITE,LIGHT GRAY;BRITTLE TO

