



Copyright © 2003 by Epoch Well Services, Inc.

Houston, TX
(281) 784-5500
Bakersfield, CA
(661) 328-1595
New Iberia, LA
(337) 364-2322
Anchorage, AK
(907) 561-2465

MUDLOG TVD

COMPANY	ExxonMobil Production
WELL	FRU 197-33A9
FIELD	FREEDOM RANCH UNIT
REGION	ROCKY MOUNTAINS
COORDINATES	N39.915656 W108.285725
ELEVATION	KB 6415' GL 6388'
COUNTY, STATE	RIO BLANCO COUNTY, CO
API INDEX	05-103-11400-00
SPUD DATE	10/02/2009
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	RICKY T OWENS
RIG/TYPE	215/FLEX 3
LOGGING UNIT	MLU 51
GEOLOGISTS	GEORGE BAKER BRENDA MARSH
ADD. PERSONS	DEVIN CLAAR BILL JOHANNING
CO. GEOLOGIST	MELISSA SAURBORN

LOG INTERVAL

DEPTHS: 3,800' **TO** 12,281'

DATES: 01/05/2010 **TO** 01/24/2010

SCALE: 5"=100'

CASING DATA

16" **AT** 131'

10.75" **AT** 3,833'

7.00" **AT** 8,533'

AT

HOLE SIZE

9.875' **TO** 8,533'

6.125' **TO** 12,281'

TO

TO

MUD TYPES

SPUD **TO** 3,833'

LSND **TO** 12,281'

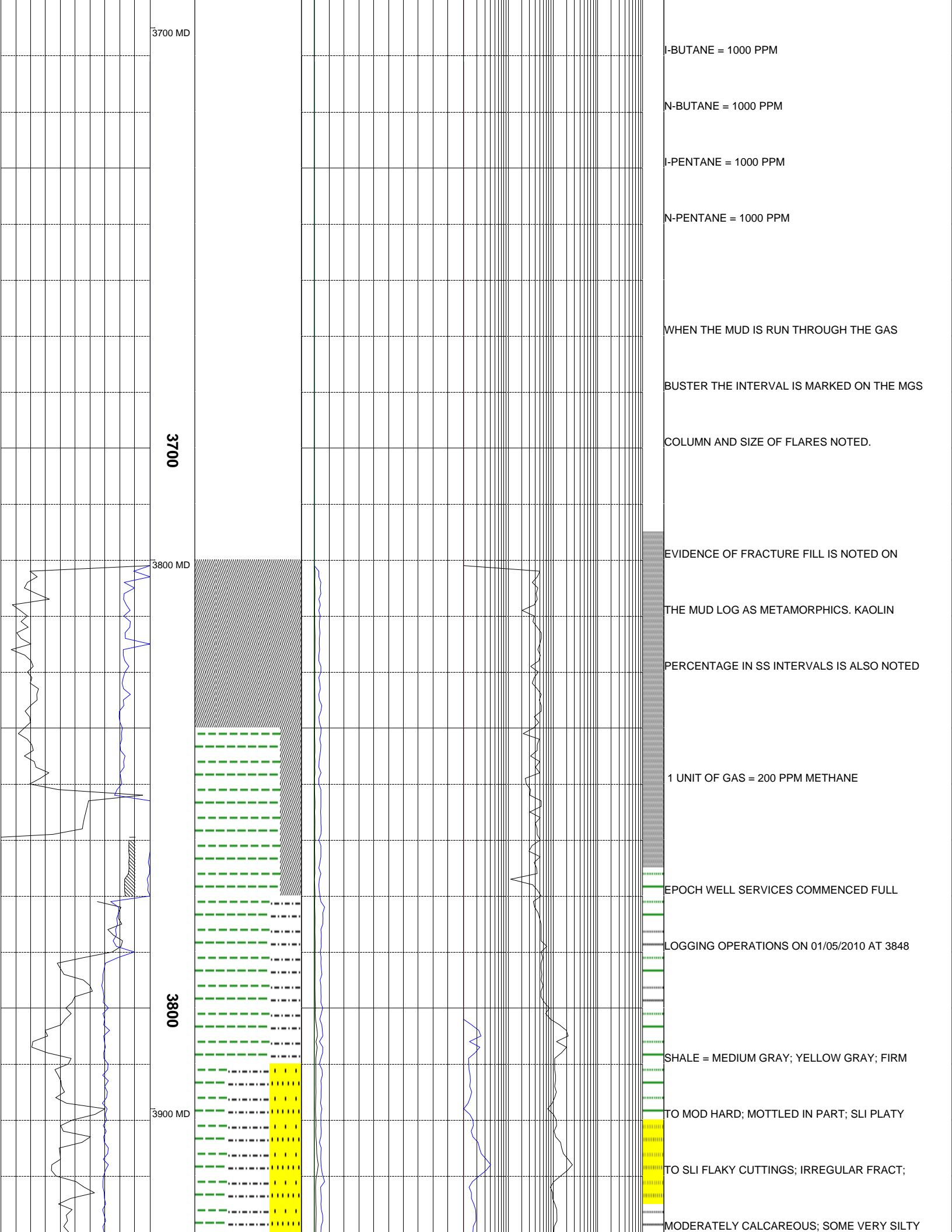
TO

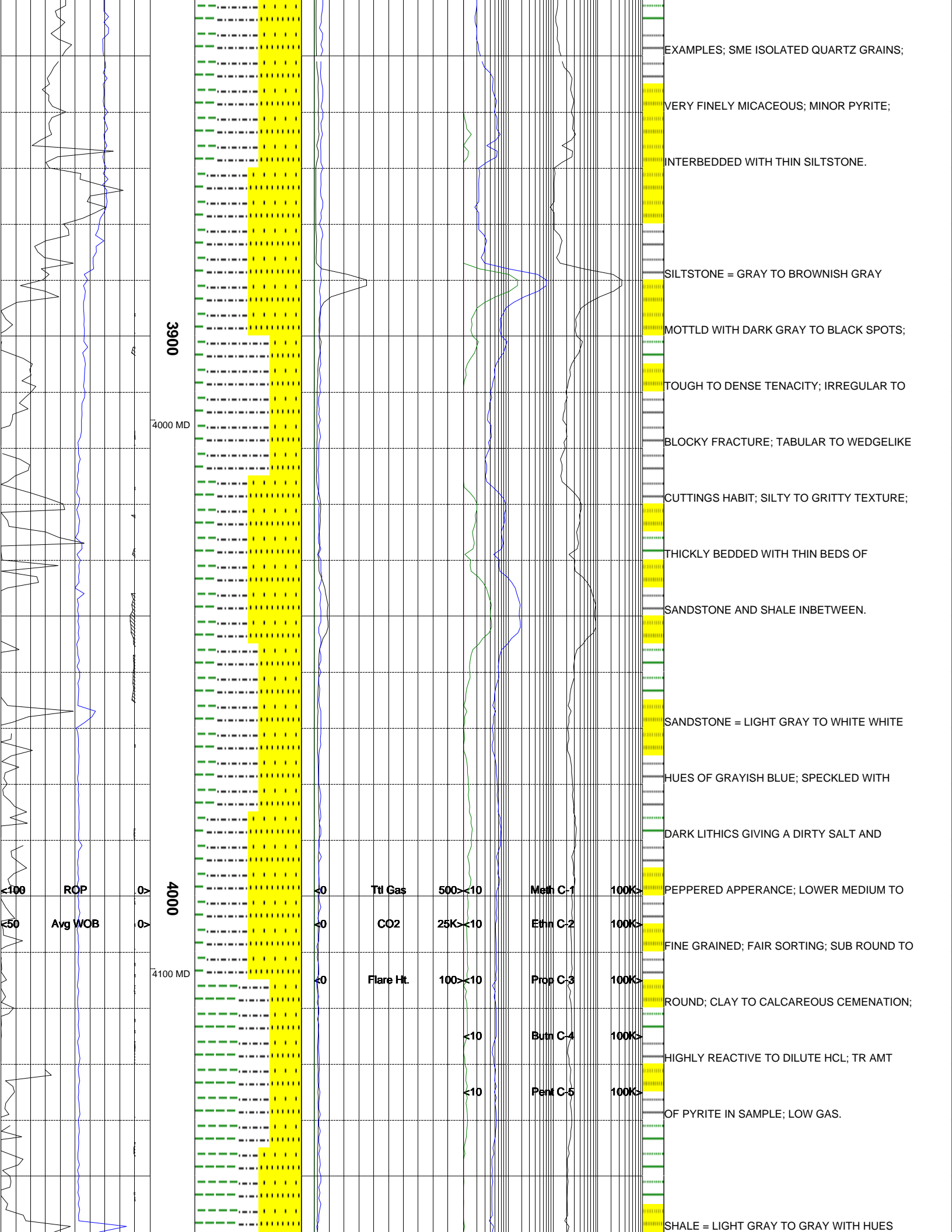
TO

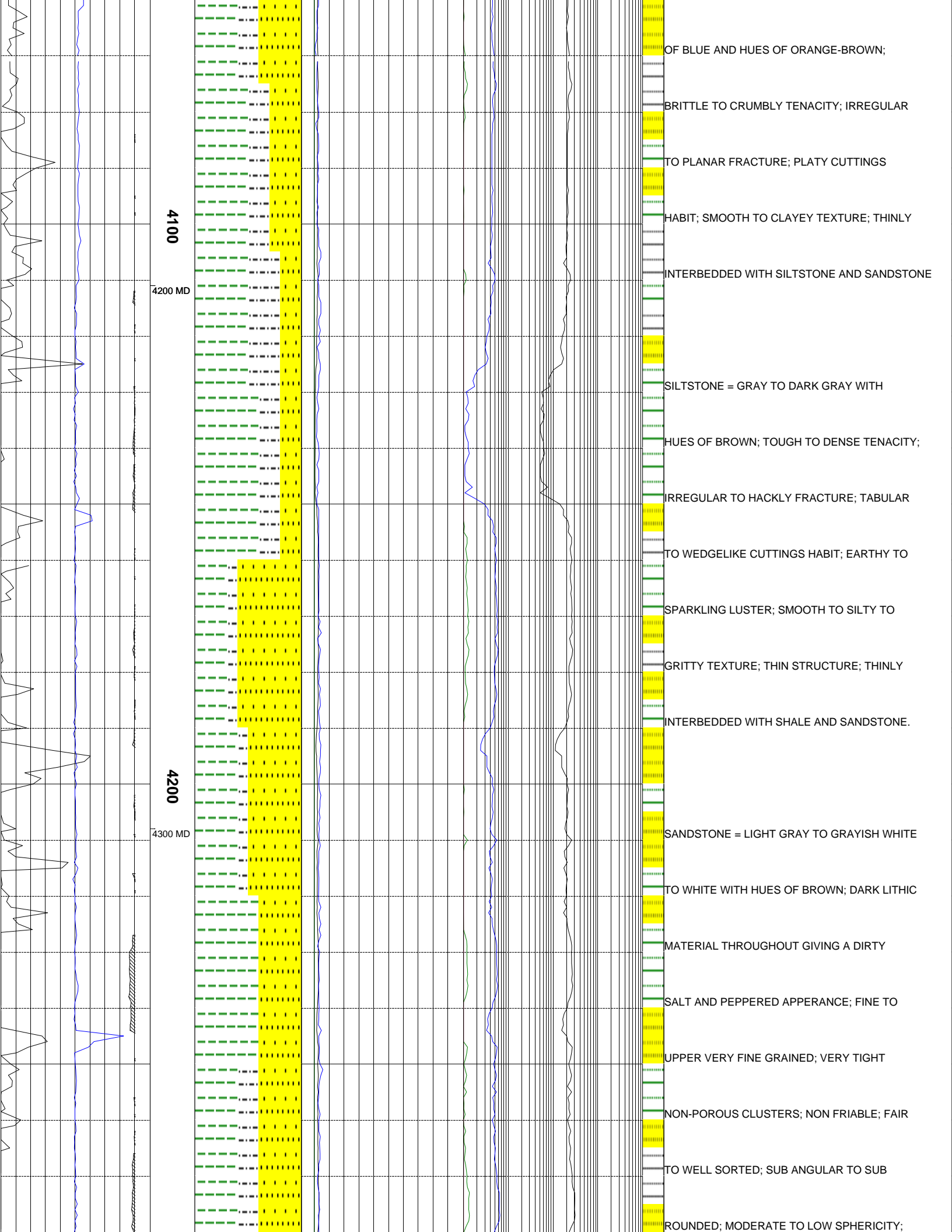
ABBREVIATIONS

<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	







4100

4200 MD

4200

4300 MD

OF BLUE AND HUES OF ORANGE-BROWN;

BRITTLE TO CRUMBLY TENACITY; IRREGULAR

TO PLANAR FRACTURE; PLATY CUTTINGS

HABIT; SMOOTH TO CLAYEY TEXTURE; THINLY

INTERBEDDED WITH SILTSTONE AND SANDSTONE

SILTSTONE = GRAY TO DARK GRAY WITH

HUES OF BROWN; TOUGH TO DENSE TENACITY;

IRREGULAR TO HACKLY FRACTURE; TABULAR

TO WEDGELIKE CUTTINGS HABIT; EARTHY TO

SPARKLING LUSTER; SMOOTH TO SILTY TO

GRITTY TEXTURE; THIN STRUCTURE; THINLY

INTERBEDDED WITH SHALE AND SANDSTONE.

SANDSTONE = LIGHT GRAY TO GRAYISH WHITE

TO WHITE WITH HUES OF BROWN; DARK LITHIC

MATERIAL THROUGHOUT GIVING A DIRTY

SALT AND PEPPERED APPERANCE; FINE TO

UPPER VERY FINE GRAINED; VERY TIGHT

NON-POROUS CLUSTERS; NON FRIABLE; FAIR

TO WELL SORTED; SUB ANGULAR TO SUB

ROUNDED; MODERATE TO LOW SPHERICITY;

