



RESERVOIR GROUP

Scale: 5" / 100'
Measured Depth Log

Well Name Desha 4-15-1

Location SEC.33-T01N-R65W

State COLORADO

County WELD

Country USA

Rig Number XTEREME 24

API Number 05-123-47343

AFE # 102028

Geographic Region ROCKIES

Field N DJ BASIN

Spud Date 8/9/2013

Drilling Completed 8/21/2018

Surface Coordinates 450' FWL & 635' FSL SEC 4, T1S, R65W

Bottom Hole Coordinates 0' FWL & 470' FSL SEC 4, T12, R65W

Ground Elevation 5,078'

K.B. Elevation 5,094'

Logged Interval 4,000' **To** 11,504'

Total Depth 11,504'

Formation NIOBRARA A

Type of Drilling Fluid OIL BADES MUD

Operator

Company CONFLUENCE DJ LLC

Address 1001 17th ST. SUITE 1250
DENVER, CO. 80202



Geologist

Name ANNE GRAU

Address 1001 17th ST. SUITE 1250
DENVER, CO. 80202

Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Service Type TWO MAN LOGGING + ASW
Logger(s) ROBERT KELLEY/MICAH MORGAN
Equipment ML-577
Start Date 8/9/2018
Release Date TBD
Address Reservoir Group
 6360 W Sam Houston Pkwy N
 Houston, TX 77041

Rock Types

UNKNOWN	BENTONITE	SILTSTONE	LIMESTONE 2
TILL	SIDERITE or LIMONITE	SHALE	SANDY LIMESTONE
BRECCIA	CONGLOMERATE	SHALE GRAY	SANDY LIMESTONE 2
ANHYDRITE	SHALY CONG	BLACK SHALE	SHALY LIMESTONE
GYPSUM	GRANITE WASH	SHALE COLORED	DOLOMITE
SALT	SHALY GRANITE WASH	CLAYSTONE	COAL
METAMORPHIC	SANDSTONE	MARLSTONE	Casing
IGNEOUS	SHALY SANDSTONE	CHERT	NO SMPL
TUFF	LIMY SANDSTONE	LIMESTONE	NO SAMPLE

Accessories

Fossils

ALGAE
 AMPHIPORA
 BELEMNITE
 BIOCLASTIC
 BRACHIOPOD
 BRYOZOA
 CEPHALOPOD
 CORAL
 CRINOID
 ECHINOID
 FISH
 FORAMINIFERA
 FOSSIL

GASTROPOD
 OOLITE
 OSTRACOD
 PELECYPOD
 PELLET
 PISOLITE
 PLANT REMAINS
 PLANT SPORES
 SCAPHOPOD
 STROMATOPOROID

Minerals

ANHYDRITIC
 ARGILLACEOUS
 ARGILLITE GRAIN

BENTONITE
 BITUMENOUS SUBSTANCE
 BRECCIA FRAGMENTS
 CALCAREOUS
 CARBONACEOUS FLAKES
 CHTDK
 CHTLT
 COAL - THIN BEDS
 DOLOMITIC
 FELDSPAR
 FERRUGINOUS PELLET

FERRUGINOUS
 GLAUCONITE
 GYPSIFEROUS
 HEAVY MINERAL

KAOLIN
 MARLSTONE
 MINERAL CRYSTALS
 NODULES
 PHOSPHATE PELLETS
 PYRITE
 SALT CAST
 SANDY
 SILICEOUS
 SILTY
 TUFFACEOUS

Stringer

ANHYDRITE STRINGER
 BENTONITE STRINGER

COAL STRINGER
 DOLOMITE STRINGER
 GYPSUM STRINGER
 LIMESTONE STRINGER
 MARLSTONE (CALC) STRG
 MARLSTONE (DOL) STRG
 SANDSTONE STRINGER
 SHALE STRINGER
 SILTSTONE STRINGER
 WASH
 SHLY WASH
 QTZ WASH
 SILTY SHALE

Other Symbols

Oil Show

ORGANIC
 PINPOINT
 CORE - LOST
 CORE - RECOVERED
 WIRELINE TESTED - LEFT
 WIRELINE TESTED - RT
 FINELYXLN
 GRAINSTONE

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- EARTHY
- FENESTRAL
- FRACTURE
- INTERCRYSTALLINE
- INTEROOLITIC
- MOLDIC

- VUGGY
- Engineering
- SLIDE
- Trip
- CONNECTION KD
- FLOW CHECK
- Down Time
- CONNECTION GAS
- TRIP GAS
- CONNECTION (LEFT)
- CONNECTION (RIGHT)

- DST INTERVAL
- FAULT
- FORMATION TOP
- GAS SHOW
- NORMAL FAULT
- OIL SHOW
- BIT
- OVERTURNED STRATA
- REVERSE FAULT
- SIDEWALL CORE (LEFT)
- SIDEWALL CORE (RIGHT)
- SURVEY

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

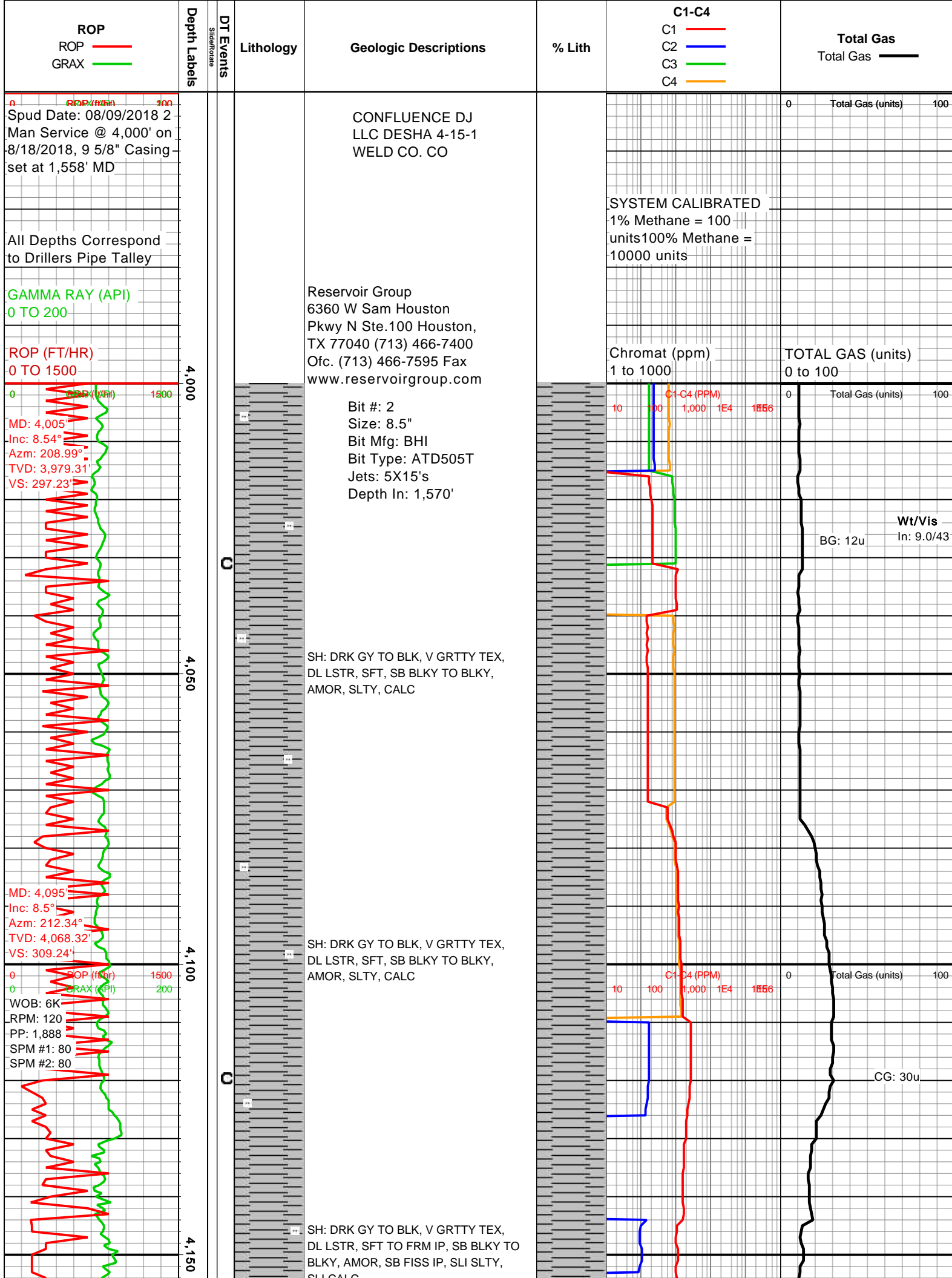
Textures

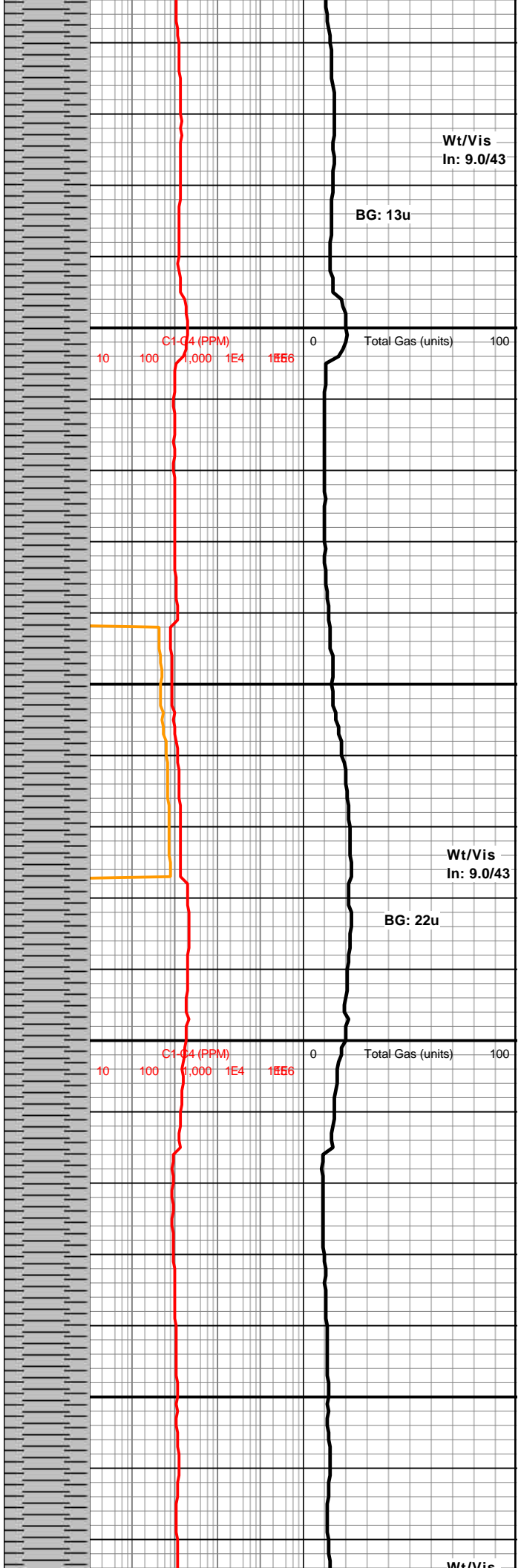
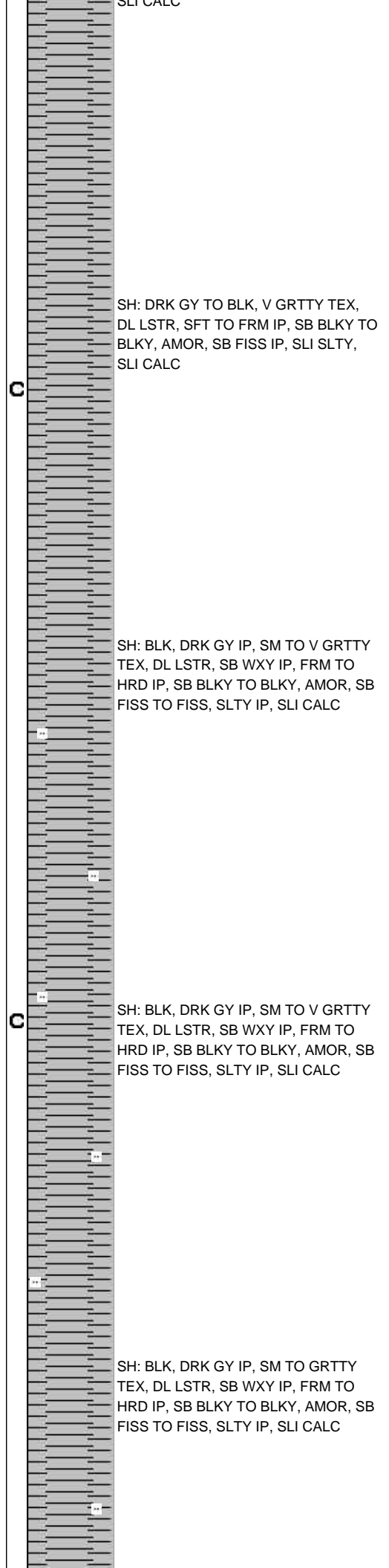
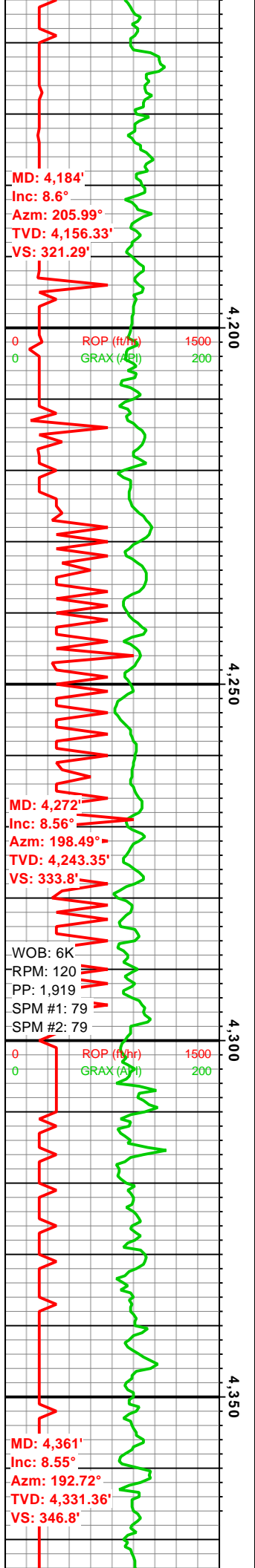
- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- EARTHY

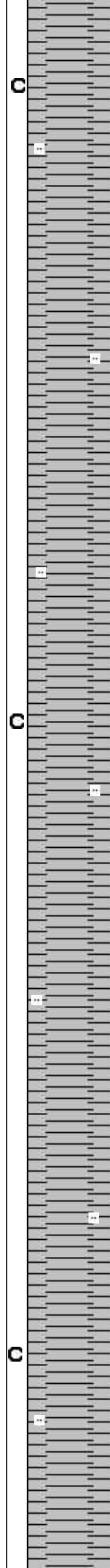
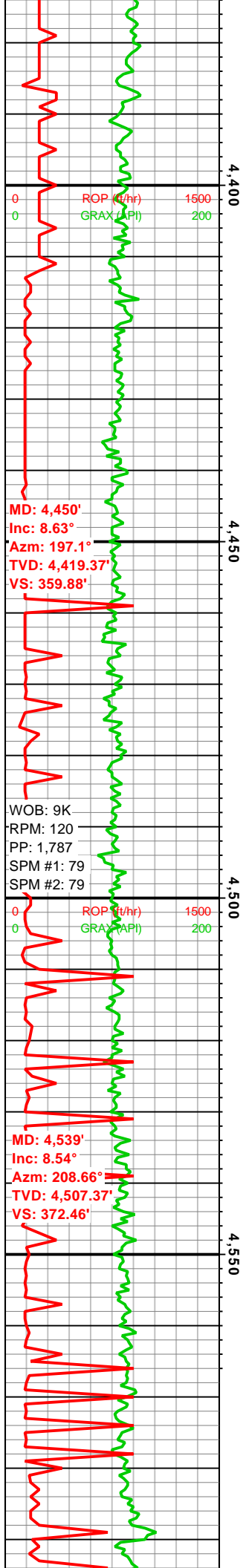
- LITHOGRAPHIC
- MICROXLN
- MUDSTONE
- PACKSTONE
- WACKESTONE

Sorting

- MODERATE
- POOR
- WELL





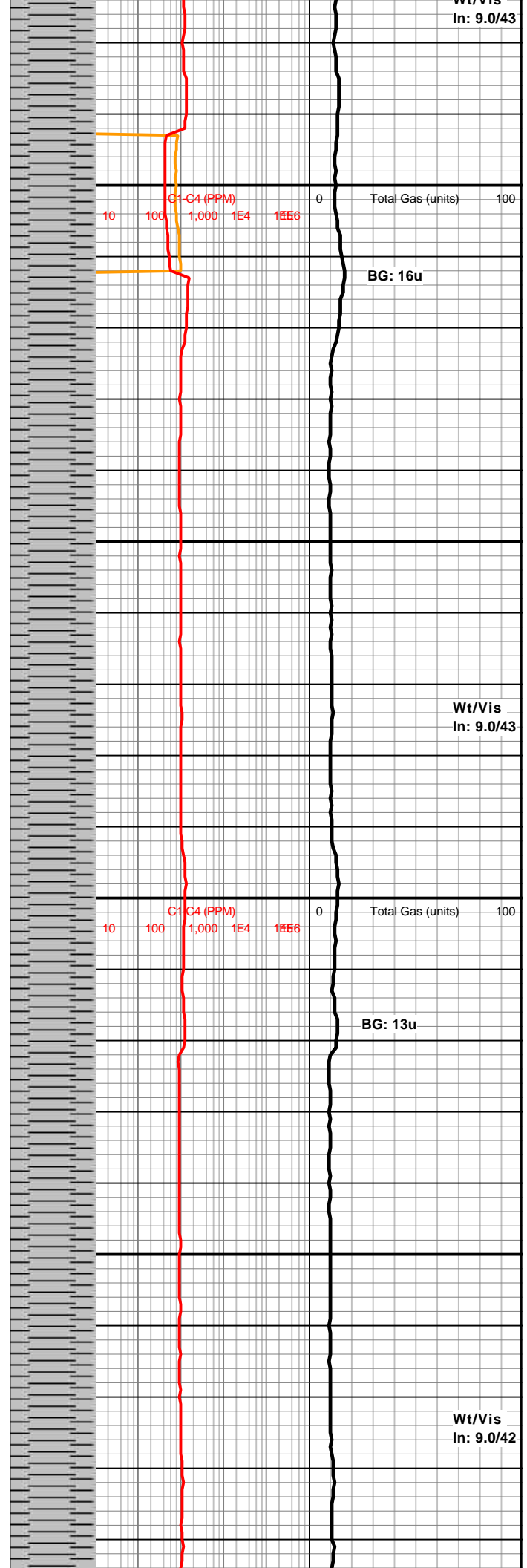


SH: DRK GY TO BLK IP, SLI SM TO GRTTY TEX, DL LSTR, SB WXY IP, FRM TO HRD IP, SB BLKY TO BLKY, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC

SH: DRK GY TO BLK IP, SLI SM TO GRTTY TEX, DL LSTR, SB WXY IP, FRM TO HRD IP, SB BLKY TO BLKY, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC

SH: DRK GY, SM TO GRTTY TEX, DL LSTR, SB WXY IP, FRM TO HRD IP, SB BLKY TO BLKY, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC

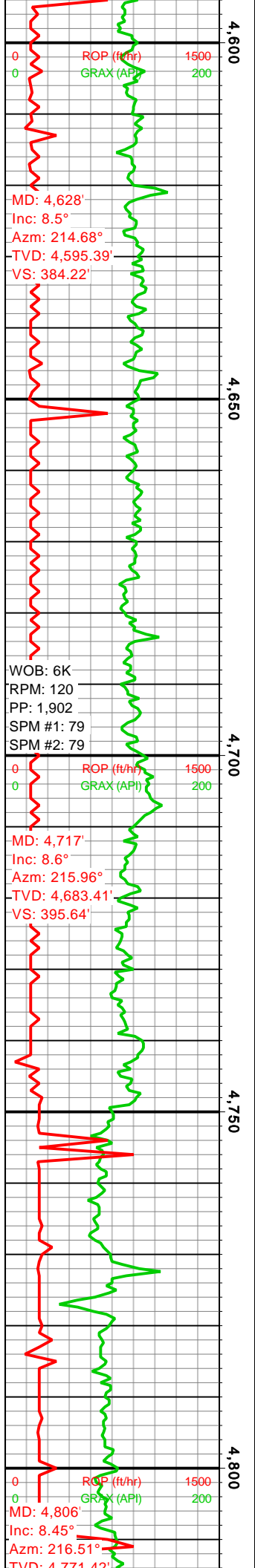
SH: DRK GY, SM TO GRTTY TEX, DL LSTR, SB WXY IP, FRM TO HRD IP, SB BLKY TO BLKY, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC IP



Wt/Vis
In: 9.0/43

Wt/Vis
In: 9.0/43

Wt/Vis
In: 9.0/42



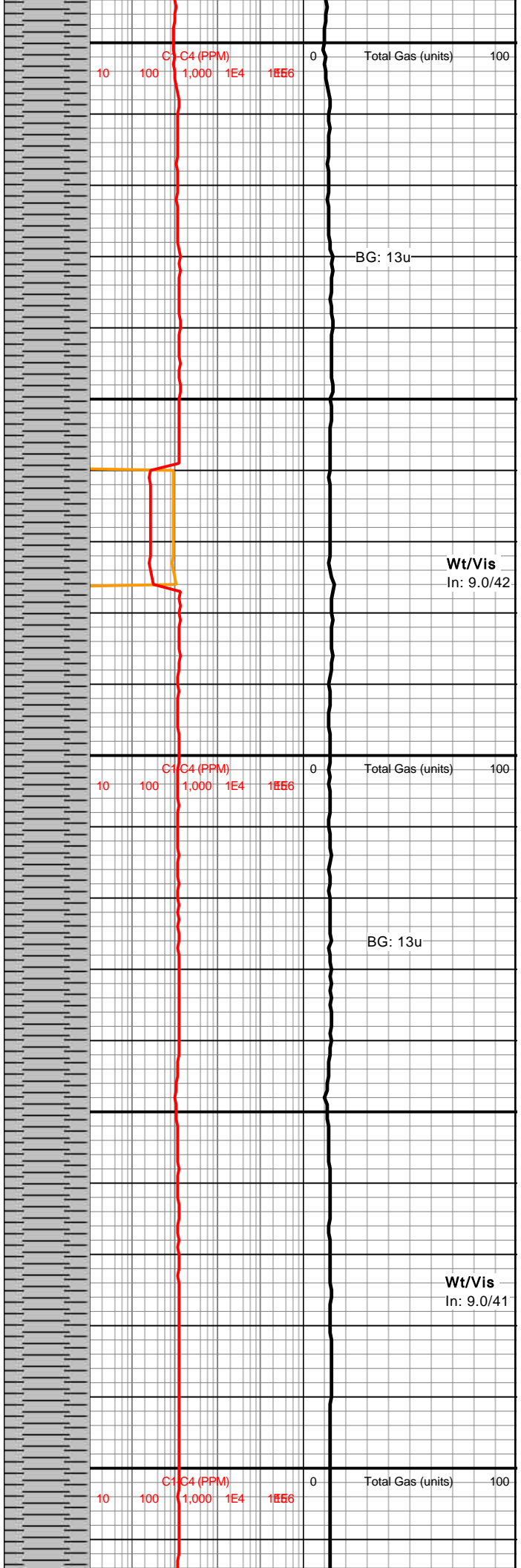
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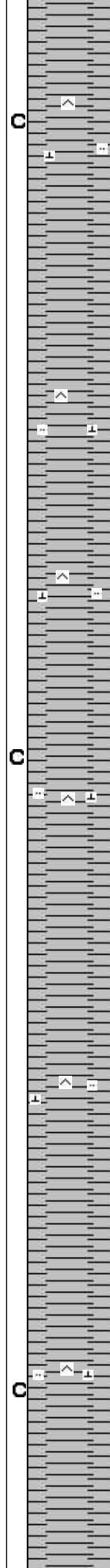
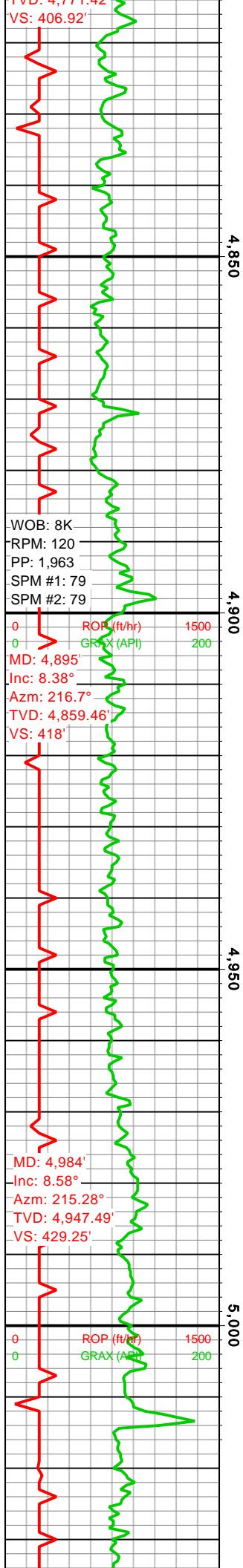
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SH: GY TO DRK GY, SM TO SLI GRTTY TEX, DL LSTR, SLI RTHY IP, FRM TO HRD, SB BLKY TO BLKY, AMOR, SB FISS TO FISS, SLTY, SLI CALC

SH: GY TO DRK GY, SM TO SLI GRTTY TEX, DL LSTR, FRM TO HRD, SB BLKY TO BLKY, SB PLTY IP, AMOR, SB FISS TO FISS, SLTY, SLI CALC

SH: GY TO DRK GY, SM TO SLI GRTTY TEX, DL LSTR, FRM TO HRD, SB BLKY TO BLKY, SB PLTY IP, AMOR, SB FISS TO FISS, SLTY, SILIC IP, CALC



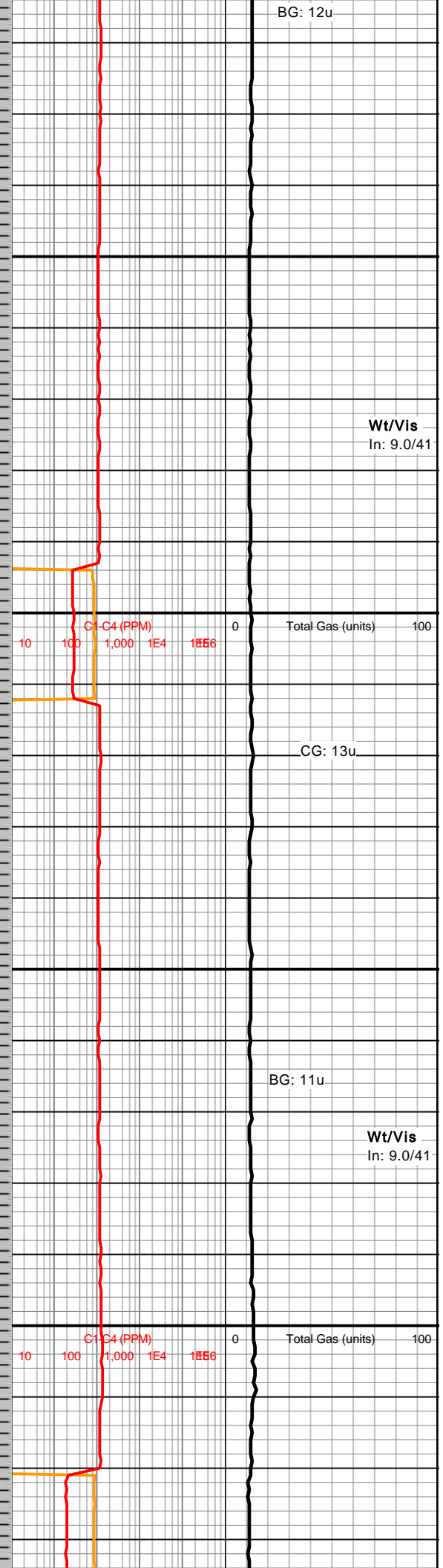


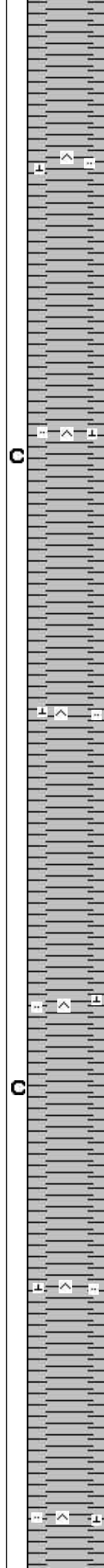
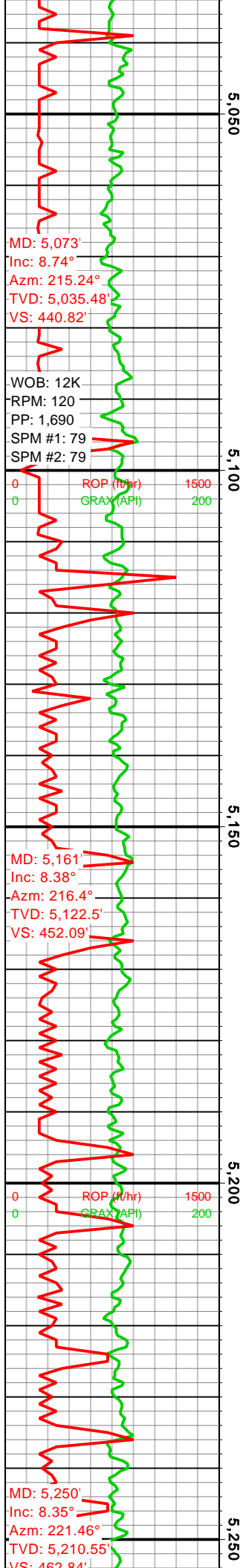
SH: GY TO DRK GY, SM TO SLI GRTTY
TEX, DL LSTR, FRM TO HRD, SB BLKY
TO BLKY, SB PLTY IP, AMOR, SB FISS
TO FISS, SLTY, SILIC IP, CALC

SH: GY TO DRK GY, SM TO SLI GRTTY
TEX, DL LSTR, FRM TO HRD, SB BLKY
TO BLKY, SB PLTY IP, AMOR, SB FISS
TO FISS, SLTY, SILIC IP, CALC

SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD, SB BLKY
TO BLKY, SB PLTY IP, AMOR, SB FISS
TO FISS, V SLTY, SILIC IP, CALC

SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD, SB BLKY
TO BLKY, SB PLTY IP, AMOR, SB FISS
TO FISS, V SLTY, SILIC IP, CALC





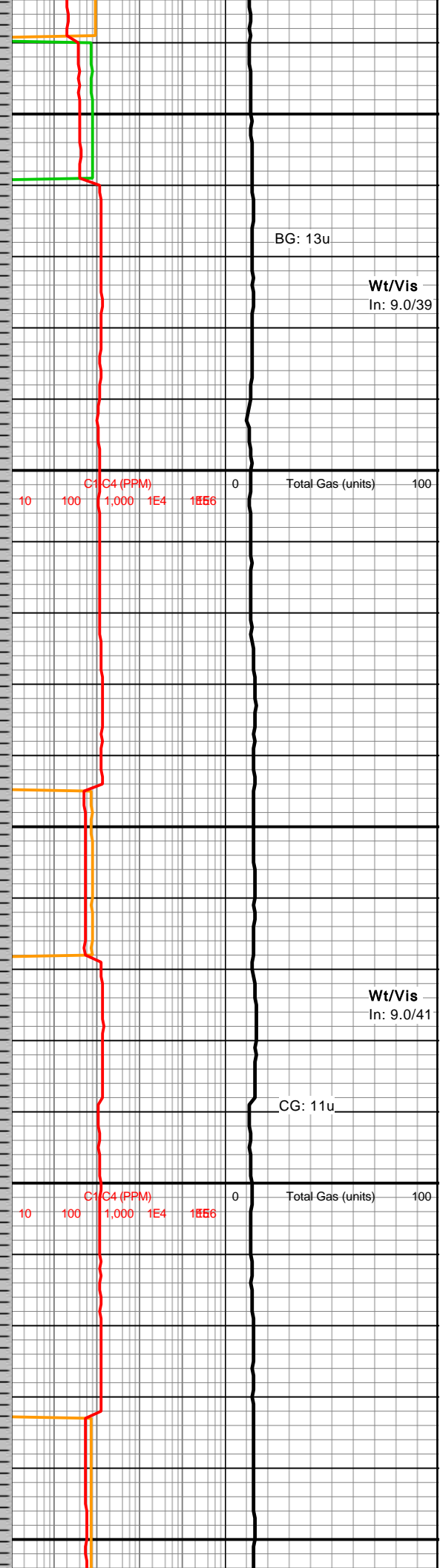
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TEX, DL LSTR, FRM TO HRD, SB BLKY
TO BLKY, SB PLTY IP, AMOR, SB FISS
TO FISS, V SLTY, SILIC IP, CALC

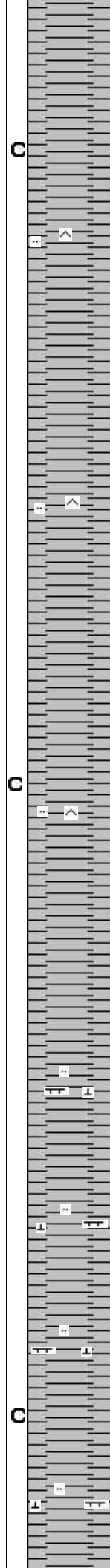
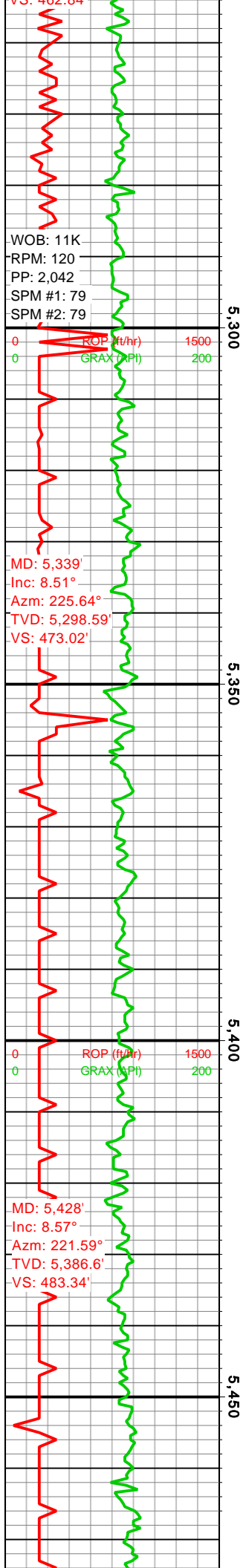
SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD IP, SB
BLKY TO BLKY, SB PLTY IP, AMOR,
SB FISS TO FISS, V SLTY, SILIC IP,
CALC

SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD IP, SB
BLKY TO BLKY, SB PLTY IP, AMOR,
SB FISS TO FISS, V SLTY, SILIC IP,
CALC, SLI H2O SENS IP

SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD IP, SB
BLKY TO BLKY, SB PLTY IP, AMOR,
SB FISS TO FISS, V SLTY, SILIC IP,
CALC, SLI H2O SENS IP

SH: GY TO DRK GY, LT GY IP, GRTTY
TEX, DL LSTR, FRM TO HRD IP, BRITT
IP, SB BLKY TO BLKY, SB PLTY TO
PLTY IP, AMOR, SB FISS TO FISS,
SLTY IP, SILIC IP, CALC, SLI H2O SFNS



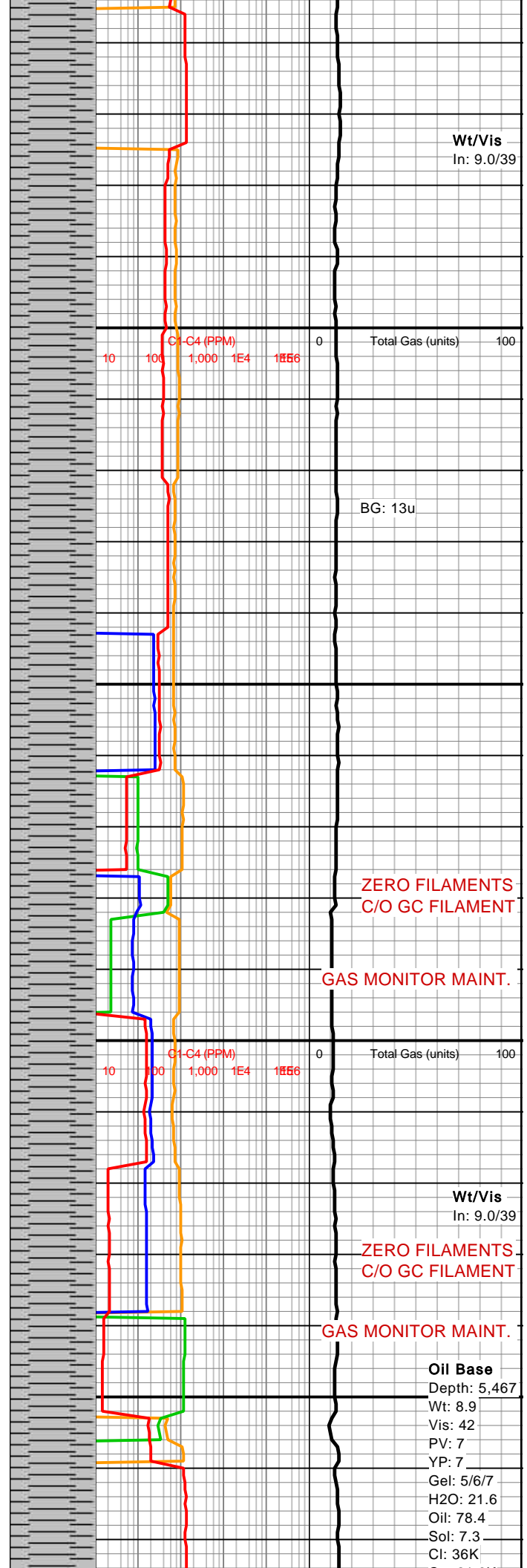


SH: LT GY TO GY, DRK GY IP, GRTTY TEX, DL LSTR, FRM TO HRD IP, SB BLKY TO BLKY, SB PLTY TO PLTY IP, AMOR, SB FISS TO FISS, SLTY IP, SILIC IP, SLI CALC, SLI H2O SENS IP

SH: LT GY TO GY, DRK GY IP, GRTTY TEX, DL LSTR, FRM TO HRD IP, SB BLKY TO BLKY, SB PLTY TO PLTY IP, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC, SLI H2O SENS IP

SH: LT GY TO GY, DRK GY IP, GRTTY TEX, DL LSTR, FRM TO HRD IP, SB BLKY TO BLKY, SB PLTY TO PLTY IP, AMOR, SB FISS TO FISS, SLTY IP, SLI CALC, SLI H2O SENS IP

SH: LT GY TO GY, DRK GY IP, GRTTY TEX, DL LSTR, SFT TO FRM, SB BLKY TO BLKY, SB PLTY TO PLTY IP, AMOR, SB FISS TO FISS, SLTY, CALC, TR MARL, SLI H2O SENS IP



WOB: 11K
RPM: 120
PP: 2,078
SPM #1: 79
SPM #2: 79

MD: 5,517'
Inc: 8.66°
Az: 216.22°
TVD: 5,474.6'
VS: 494.39'

MD: 5,606'
Inc: 8.66°
Az: 211.1°
TVD: 5,562.59'
VS: 506.13'

MD: 5,695'
Inc: 9.11°

5,500

5,550

5,600

5,650

C

C

SH: LT GY TO GY, DRK GY IP, GRTTY
TEX, DL LSTR, SFT TO FRM, SB BLKY
TO BLKY, SB PLTY TO PLTY IP,
AMOR, SB FISS TO FISS, SLTY, CALC,
TR MARL, SLI H2O SENS IP

SH: LT GY TO GY, DRK GY IP, GRTTY
TEX, DL LSTR, SFT TO FRM, SB BLKY
TO BLKY, SB PLTY TO PLTY IP,
AMOR, SB FISS TO FISS, SLTY, CALC,
TR MARL, SLI H2O SENS IP

SH: LT GY TO GY, GRTTY TEX, DL
LSTR, SFT TO FRM IP, BLKY, SB PLTY
TO PLTY IP, AMOR, SB FISS, SLTY,
CALC, SLI H2O SENS IP

SH: LT GY TO GY, GRTTY TEX, DL
LSTR RTHY IP, SFT TO FRM IP, BLKY,
SB PLTY TO PLTY IP, AMOR, SB FISS
TO FISS IP, V SLTY, CALC, SLI H2O
SENS IP

SH: LT GY TO GY, GRTTY TEX, DL

Ca: 21,6K
XsLm: 1.94

GAS TRAP TEST

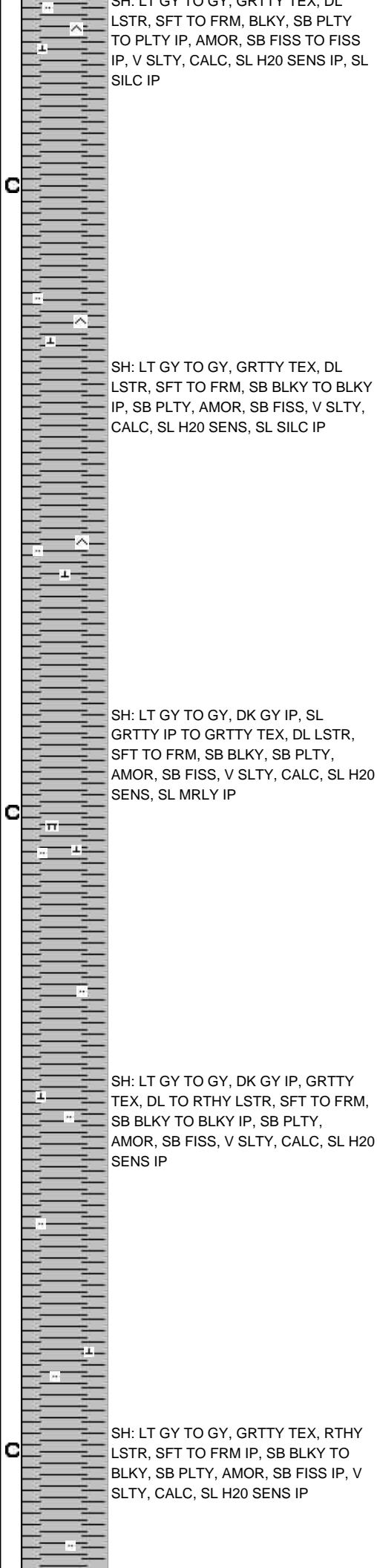
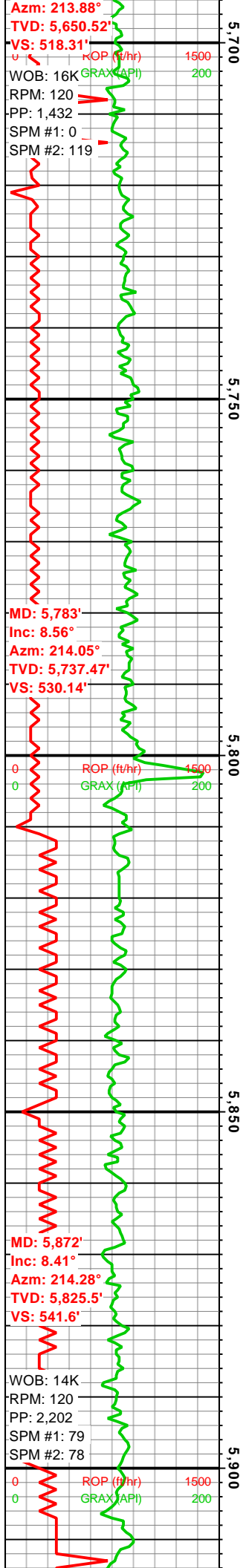
C1-C4 (PPM) 10 100 1,000 1E4 1E6
Total Gas (units) 0 100

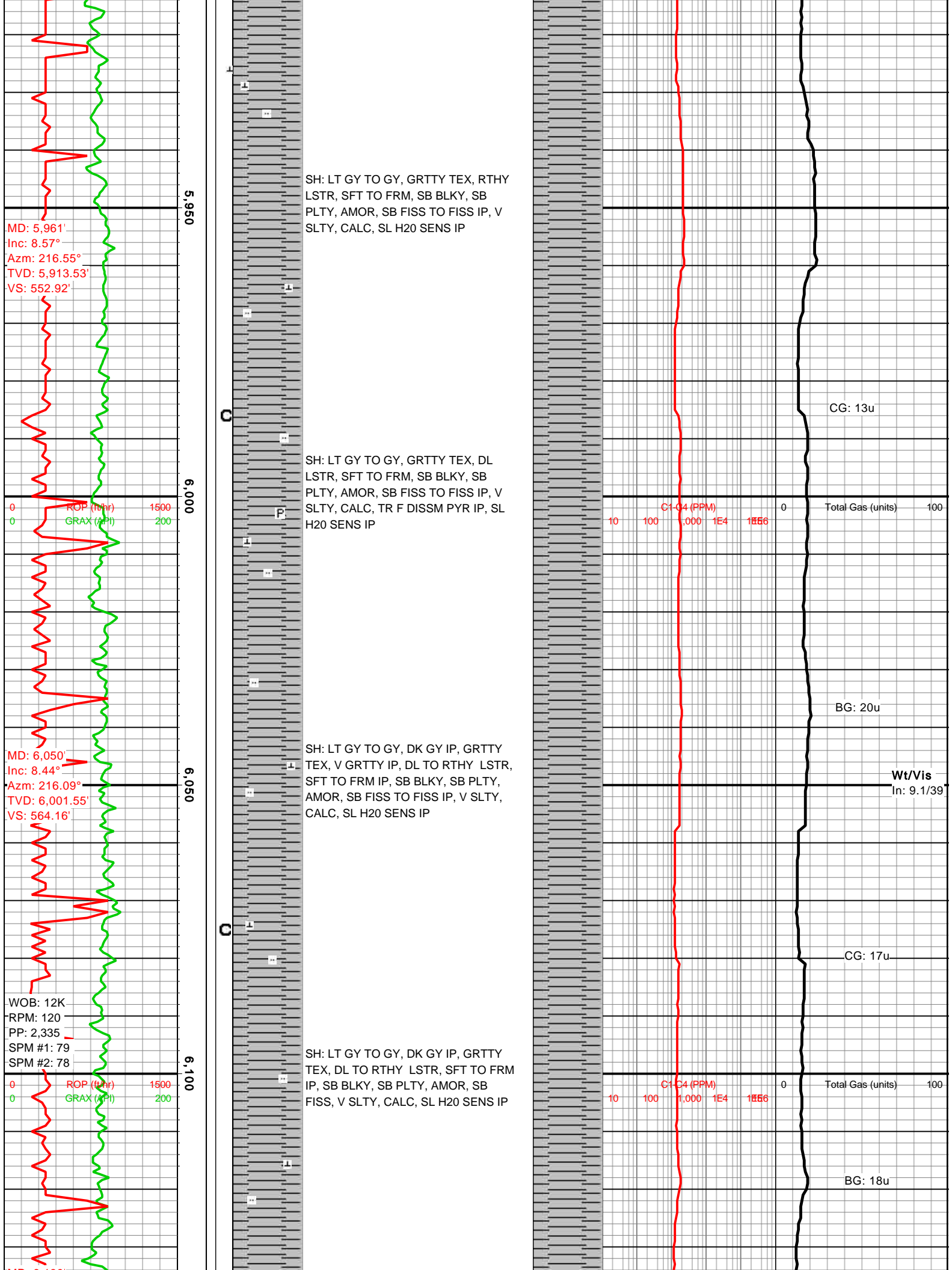
Wt/Vis
In: 9.0/39

BG: 12u

C1-C4 (PPM) 10 100 1,000 1E4 1E6
Total Gas (units) 0 100

CG: 15u



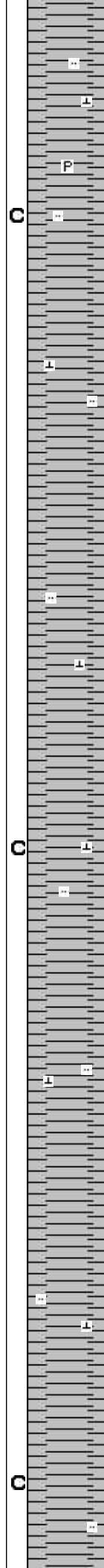
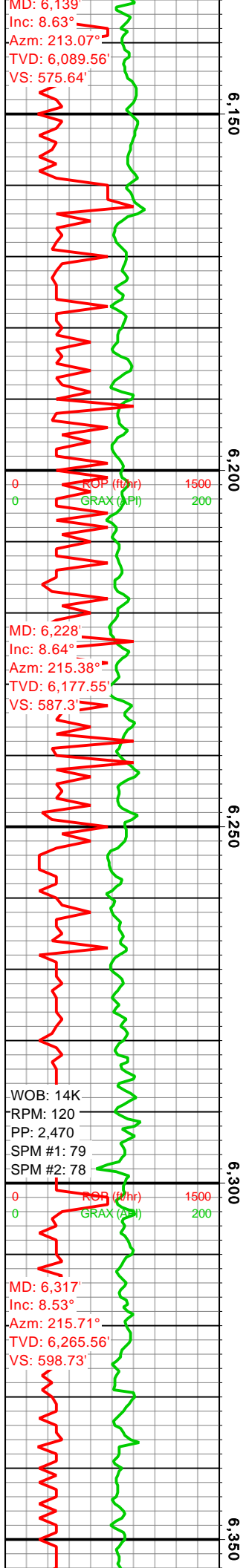


MD: 6,139'
Inc: 8.63°
Az: 213.07°
TVD: 6,089.56'
VS: 575.64'

MD: 6,228'
Inc: 8.64°
Az: 215.38°
TVD: 6,177.55'
VS: 587.3'

WOB: 14K
RPM: 120
PP: 2,470
SPM #1: 79
SPM #2: 78

MD: 6,317'
Inc: 8.53°
Az: 215.71°
TVD: 6,265.56'
VS: 598.73'



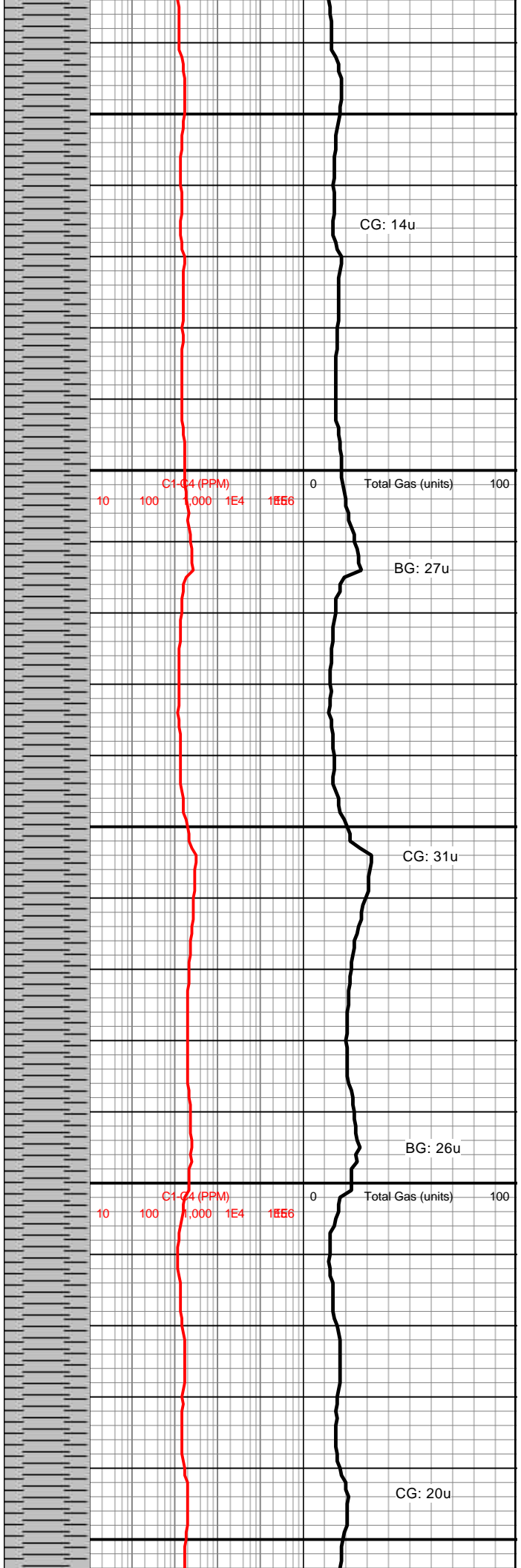
SH: LT GY TO GY, DK GY IP, GRTTY
TEX, RTHY LSTR, SFT TO FRM, SB
BLKY, SB PLTY IP, AMOR, SB FISS, V
SLTY, CALC, TR F DISSM PYR, SL H2O
SENS IP

SH: LT GY TO GY, DK GY IP, SL
GRTTY TO GRTTY TEX, RTHY LSTR,
SFT TO FRM, SB BLKY, SB PLTY IP,
AMOR, SB FISS, V SLTY, CALC

SH: LT GY TO GY, GRTTY TEX, DL TO
RTHY LSTR, SB BLKY, SB PLTY IP,
AMOR, SB FISS TO FISS IP, V SLTY,
CALC

SH: LT GY TO GY, GRTTY TEX, DL TO
RTHY LSTR, SB BLKY TO BLKY IP,
AMOR, SB FISS TO FISS IP, V SLTY,
CALC, SL H2O SENS IP

SH: LT GY TO GY, SB GRTTY IP TO
GRTTY TEX, DL LSTR, SB BLKY TO
BLKY IP, AMOR, SB FISS TO FISS IP, V
SLTY, CALC, SL H2O SENS IP



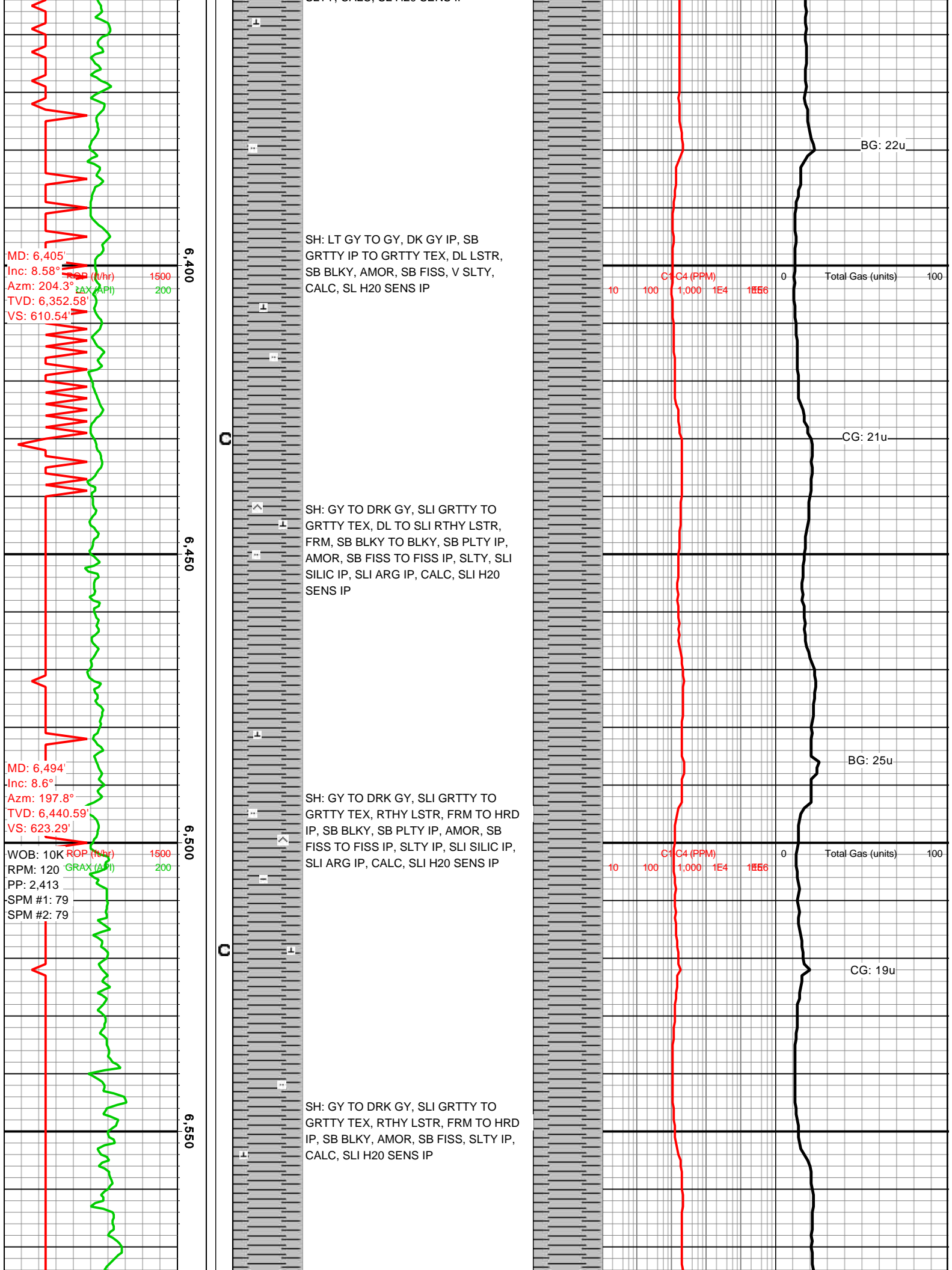
CG: 14u

BG: 27u

CG: 31u

BG: 26u

CG: 20u



MD: 6,583'
Inc: 8.49°
Azm: 202.71°
TVD: 6,528.6'
VS: 636.03'

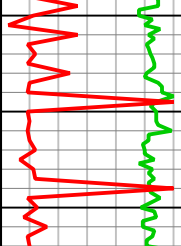
ROP (ft/hr)
GRAX (API)

MD: 6,672'
Inc: 8.47°
Azm: 205.16°
TVD: 6,616.63'
VS: 648.44'

WOB: 6K
RPM: 120
PP: 2,733
SPM #1: 79
SPM #2: 78

ROP (ft/hr)
GRAX (API)

MD: 6,760'
Inc: 8.67°
Azm: 207.63°
TVD: 6,703.65'
VS: 660.65'



C

C

C

SH: GY TO DRK GY, SLI GRTTY TEX,
GRTTY IP, DL LSTR, FRM, SB BLKY TO
BLKY IP, AMOR, SB FISS, SLTY IP,
CALC, SLI H2O SENS IP

SH: GY TO DRK GY, SLI GRTTY TEX,
DL LSTR, FRM, SB BLKY TO BLKY IP,
AMOR, SB FISS TO FISS IP, SL SLTY,
SL CALC, SLI H2O SENS IP

SH: DRK GY TO BLK IP, SL GRTTY
TEX, DL LSTR, FRM, SB BLKY TO
BLKY, SB PLTY IP, AMOR, SB FISS TO
FISS IP, SLTY IP, SLI SILIC IP, SLI
CALC

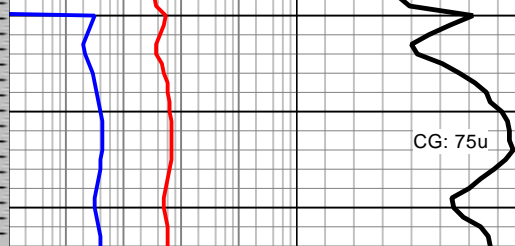
SH: GY TO DRK GY, SL GRTTY TEX,
DL TO RTHY LSTR, SFT TO FRM, SB
BLKY TO BLKY IP, AMOR, SB FISS TO
FISS IP, SL SLTY, SLI CALC

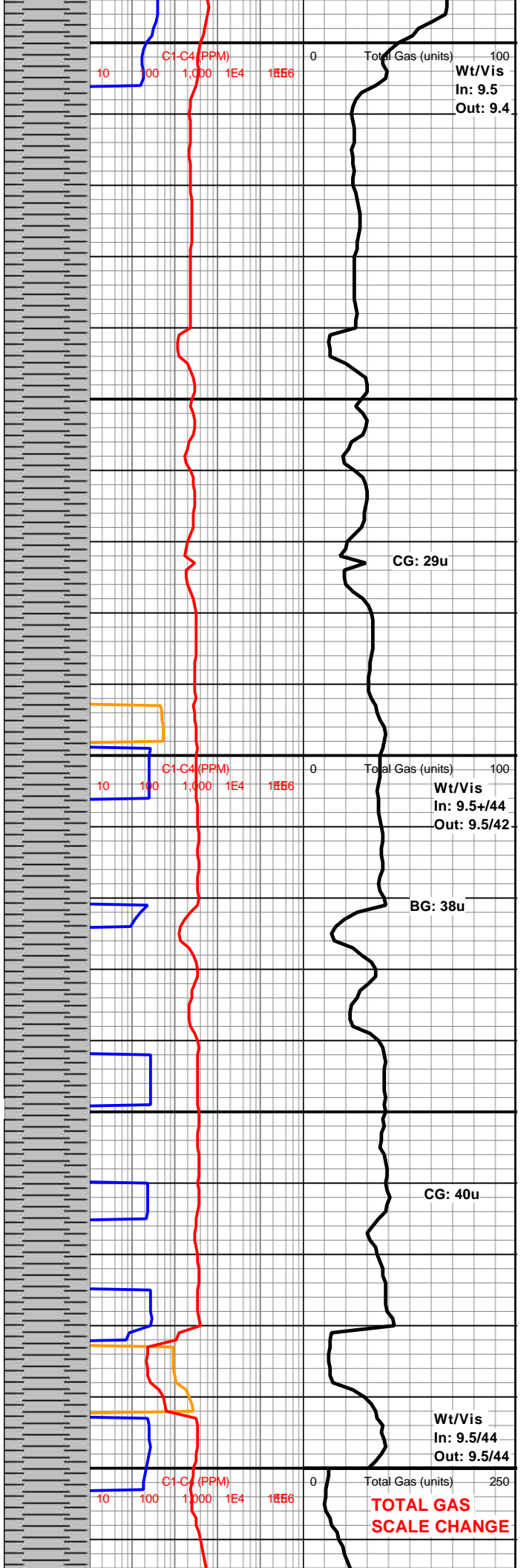
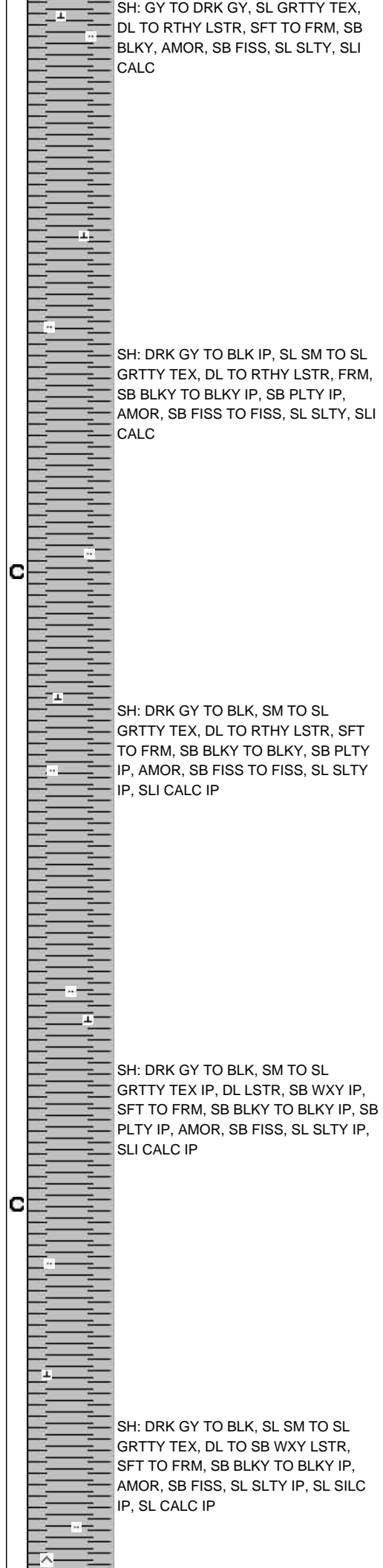
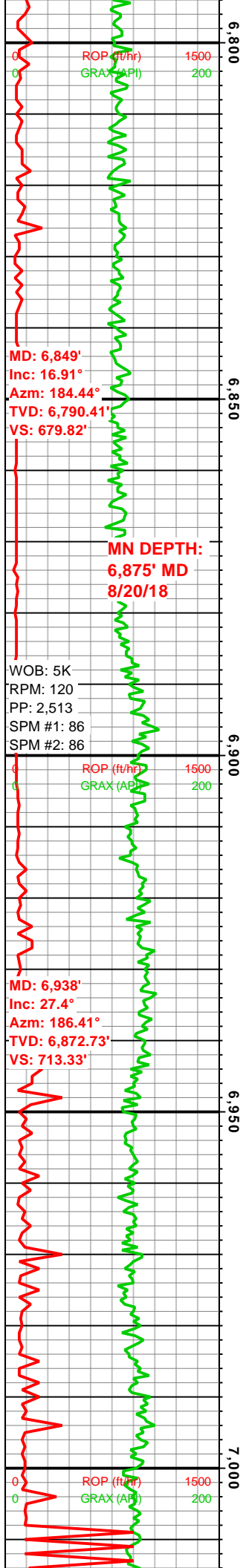
C1-C4 (PPM)
Total Gas (units)

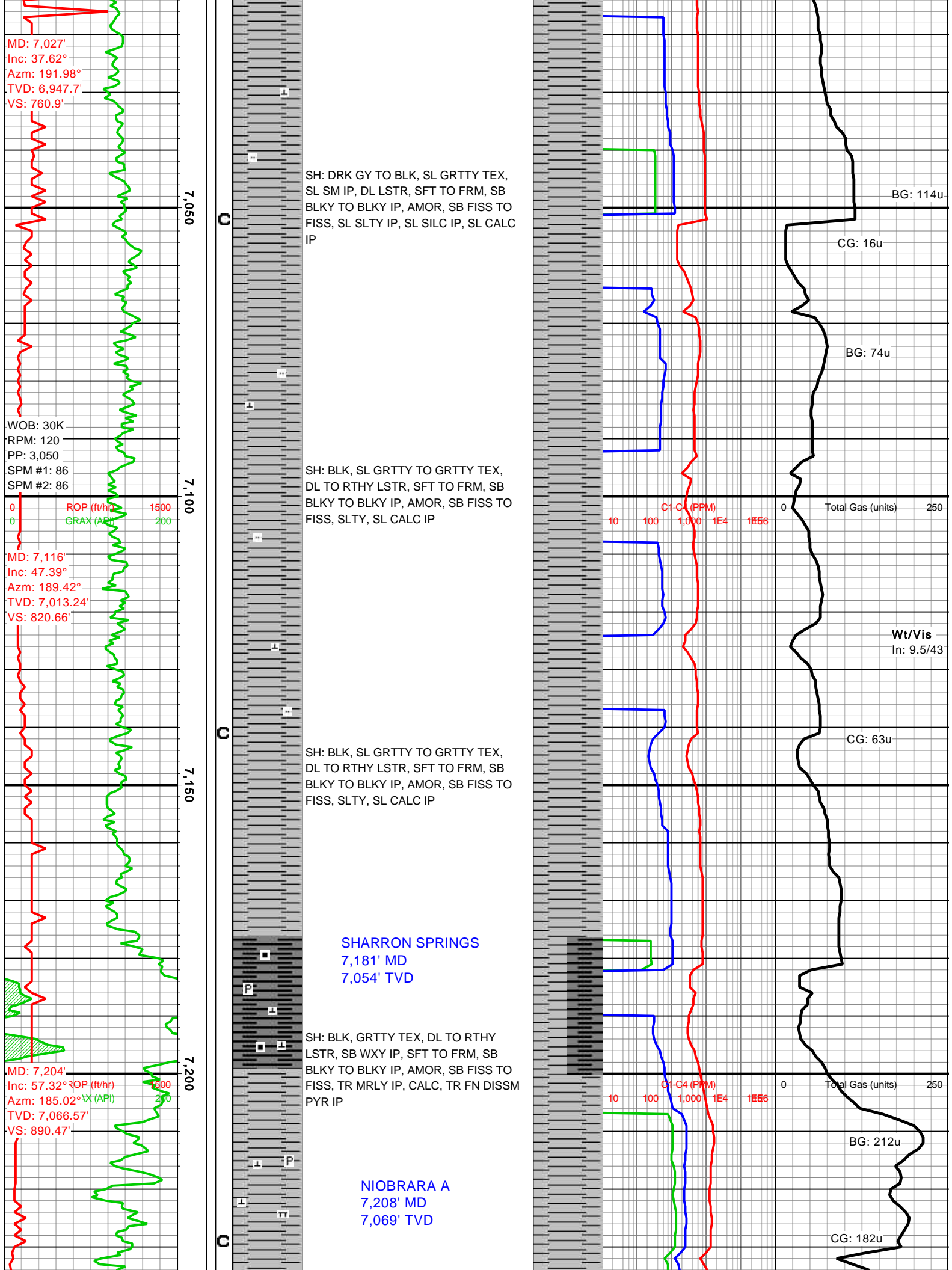
Wt/Vis
In: 9.2
Out: 9.1

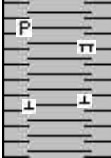
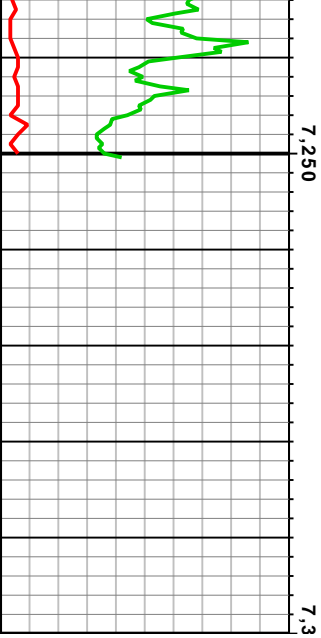
C1-C4 (PPM)
Total Gas (units)

Wt/Vis
In: 9.4
Out: 9.3









MRLYSH: DRK GY TO BLK, GRTTY
TEX, DL TO RTHY LSTR, SB WXY IP,
SFT TO FRM IP, SB BLKY TO BLKY IP,
AMOR, SB FISS, TR MRLY IP, CALC,
TR FN DISSM PYR IP

**ABANDONED THE VERTICAL
LOG FOR THE HORIZONTAL
LOG AT ~60° IN THE CURVE,
7,250' MD. PLEASE SEE THE
DESHA 4-15-1 HORIZONTAL
LOG**

