

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Fiducial 6-62-34-6457 BH2

Location SWSW Sec 24-T6N-R62W

State Colorado

County Weld

Country USA

Rig Number nabors M22

API Number 05-123-39296

AFE # 18781D

Region DJ Basin

Field Wattenberg

Spud Date 10/11/2014

Drilling Completed 10/20/2014

Surface Coordinates SWSW Sec 34-T6N-R62W
1030' FSL 3500' FEL

Bottom Hole Coordinates SESE Sec 358-T6N-R62W
1158' FSL 500' FEL

Ground Elevation 4677'

K.B. Elevation 4699'

Logged Interval 4800' **To** 5866'

Total Depth 16273'

Formation Shannon

Type of Drilling Fluid LSND

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- Q INTEROOLITIC
- MOLDIC

ORGANIC

P PINPOINT

V VUGGY

Engineering

- BIT CHANGE
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- TRIP GAS
- DOWN TIME GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

OIL SHOW

MN DEPTH MN DEPTH

MN DEPTH MN DEPTH (RIGHT)

NORMAL FAULT

OVERTURNED STRATA

REVERSE FAULT

CASING

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

DST DRILL STEM TEST

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

Textures

- BOUNDSTONE
- CHALKY
- CRYPTOXLN

E EARTHY

FX FINELYXLN

GS GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKSTONE

Sorting

- M MODERATE
- P POOR
- W WELL

Accessories

Fossils

- ALGAE
- AMPHIPORA

GASTROPOD

INOCERAMUS

OOLITE

OSTRACOD

ARGILLITE GRAIN

B BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

HEAVY MINERAL

K KAOLIN

MARCASITE

MARLSTONE

Stringer

ANHYDRITE STRINGER

BENTONITE STRINGER

BELEMNITE
BIOCLASTIC
BRACHIOPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA
FOSSIL

PELECYPOD
PELLET
PISOLITE
PLANT REMAINS
PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

ANHYDRITIC
ARGILLACEOUS

CALCAREOUS
CARBONACEOUS FLAKES
CHTDK
CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET
FERRUGINOUS
GLAUCONITE
GYPSIFEROUS

MICACEOUS
MINERAL CRYSTALS
NODULES
PHOSPHATE PELLETS
PYRITE
SALT CAST
SANDY
SIDERITE
SILICEOUS
SILTY
TUFFACEOUS

COAL STRINGER
DOLOMITE STRINGER
GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Rock Types

UNKNOWN
ANHYDRITE
BENTONITE
BRECCIA
CEMENT
CHALK
CHERT
CLAY CHOKE SAND
CLAYSTONE

COAL
CONGLOMERATE
DOLOMITE
DOLOMITIC LIMESTONE
GRANITE
GYPSUM
IGNEOUS
LIMESTONE
SIDERITE or LIMONITE

MARLSTONE
METAMORPHIC
NO SAMPLE
SALT
SALT- PEPPER SAND
SANDSTONE
SHALE
SHALE COLORED
SHALE GRAY

SHALY SANDSTONE
SHALY SILTSTONE
SILTSTONE
SILTY SHALE
TILL
TUFF
WELDED TUFF

Operator

Company Bill Barrett Corp.

Address 1099 18th Street, Suite 2300
Denver, CO 80202

Geologist

Name Scott Hampton

Company Bill Barrett Corp.

Address 1099 18th Street, Suite 2300
Denver, CO 80202

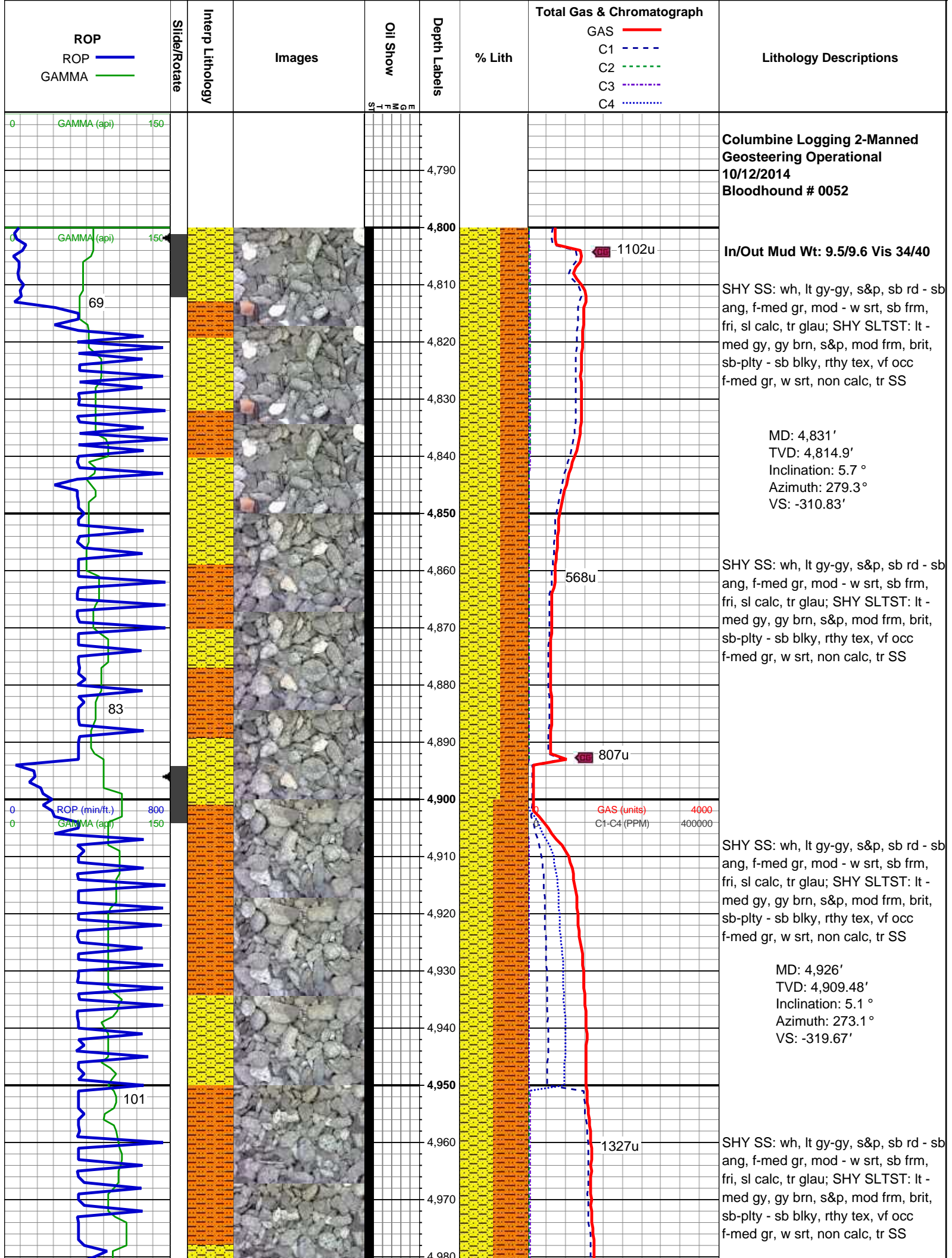
Zone Color Coding

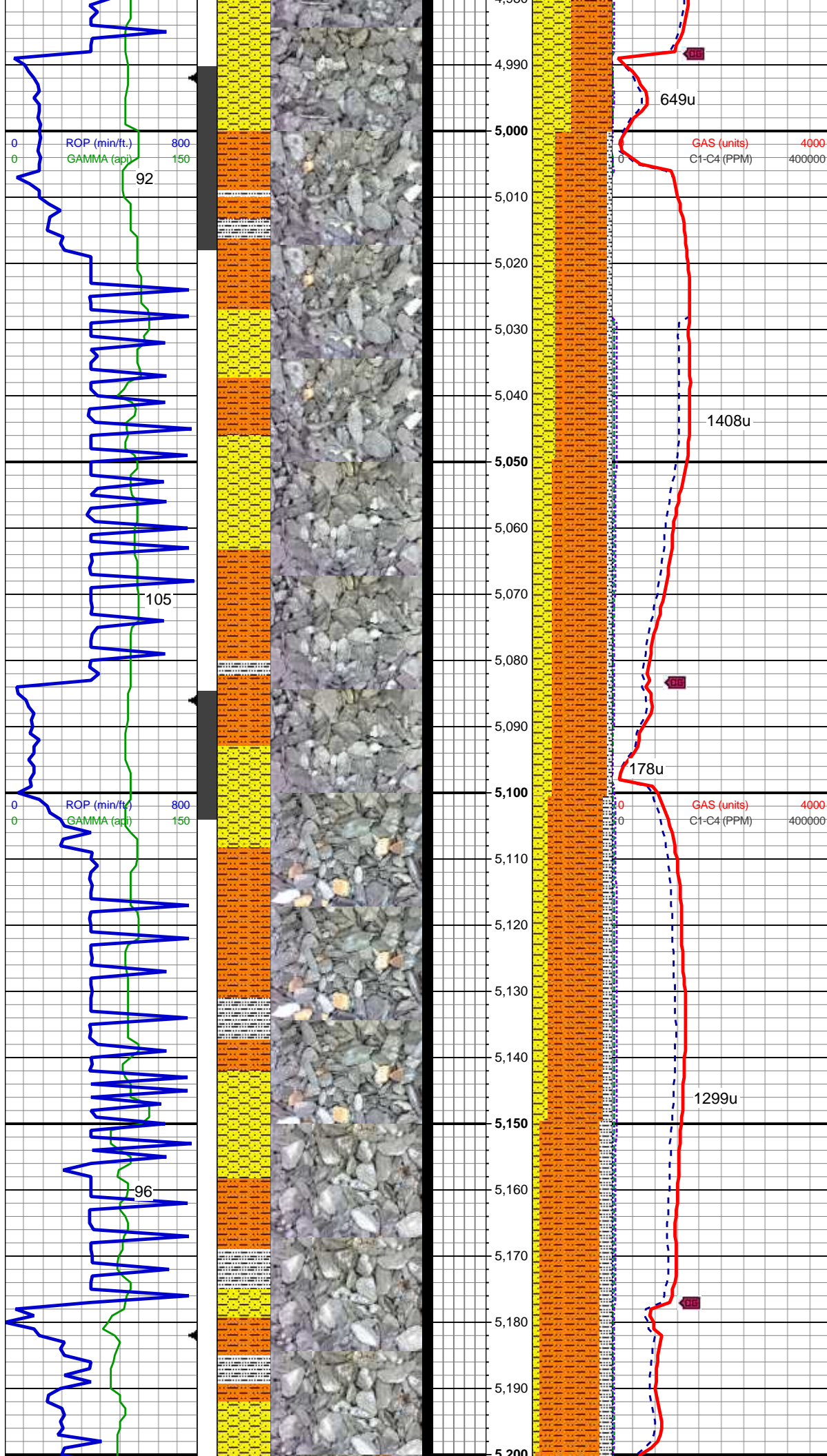
Oil
Note
Error
Condensate
Core
Water
Gas
Pressure
Seal

Other

Charles Trodick Senior Wellsite Geologist

Mark Raimo Senior Wellsite Geologist





SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

MD: 5,021'
TVD: 5,004.16'
Inclination: 4.3 °
Azimuth: 279.2°
VS: -327.38'

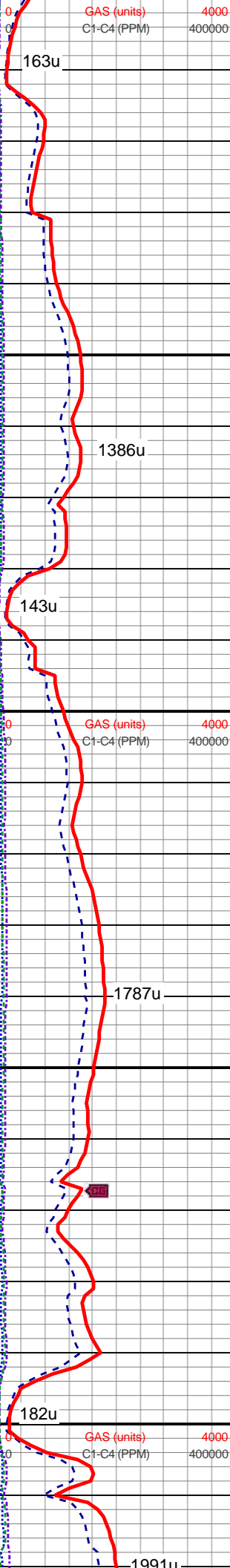
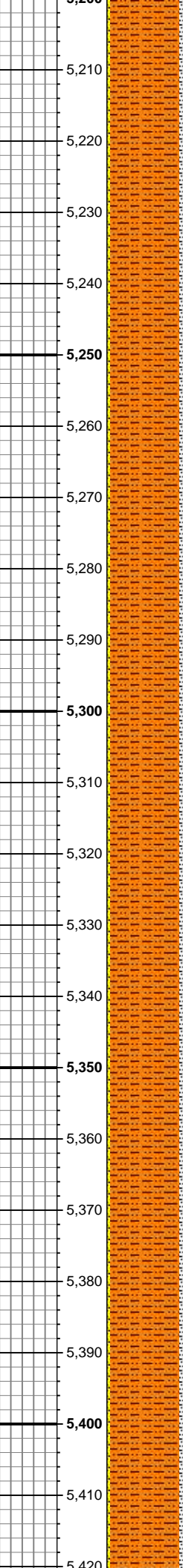
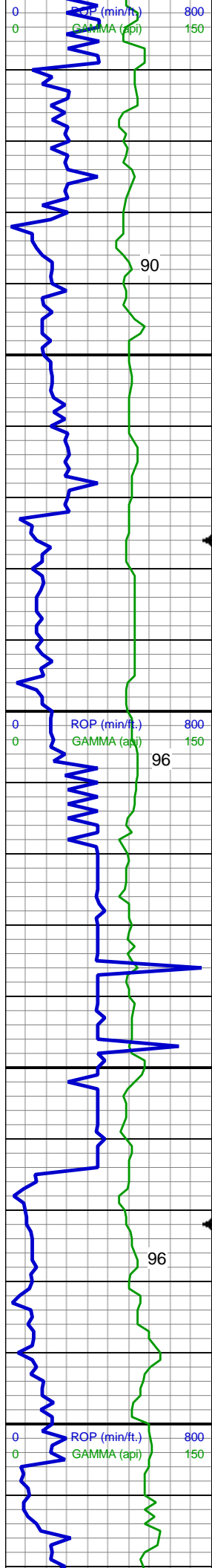
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MD: 5,116'
TVD: 5,098.9'
Inclination: 4.2 °
Azimuth: 296.8°
VS: -333.95'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

In/Out Mud Wt: 9.5/9.6 Vis 40/41



MD: 5,211'
TVD: 5,193.69'
Inclination: 3.5 °
Azimuth: 303.2 °
VS: -339.4'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissd pyr

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissd pyr

MD: 5,306'
TVD: 5,288.59'
Inclination: 1.6 °
Azimuth: 271.9 °
VS: -343.11'

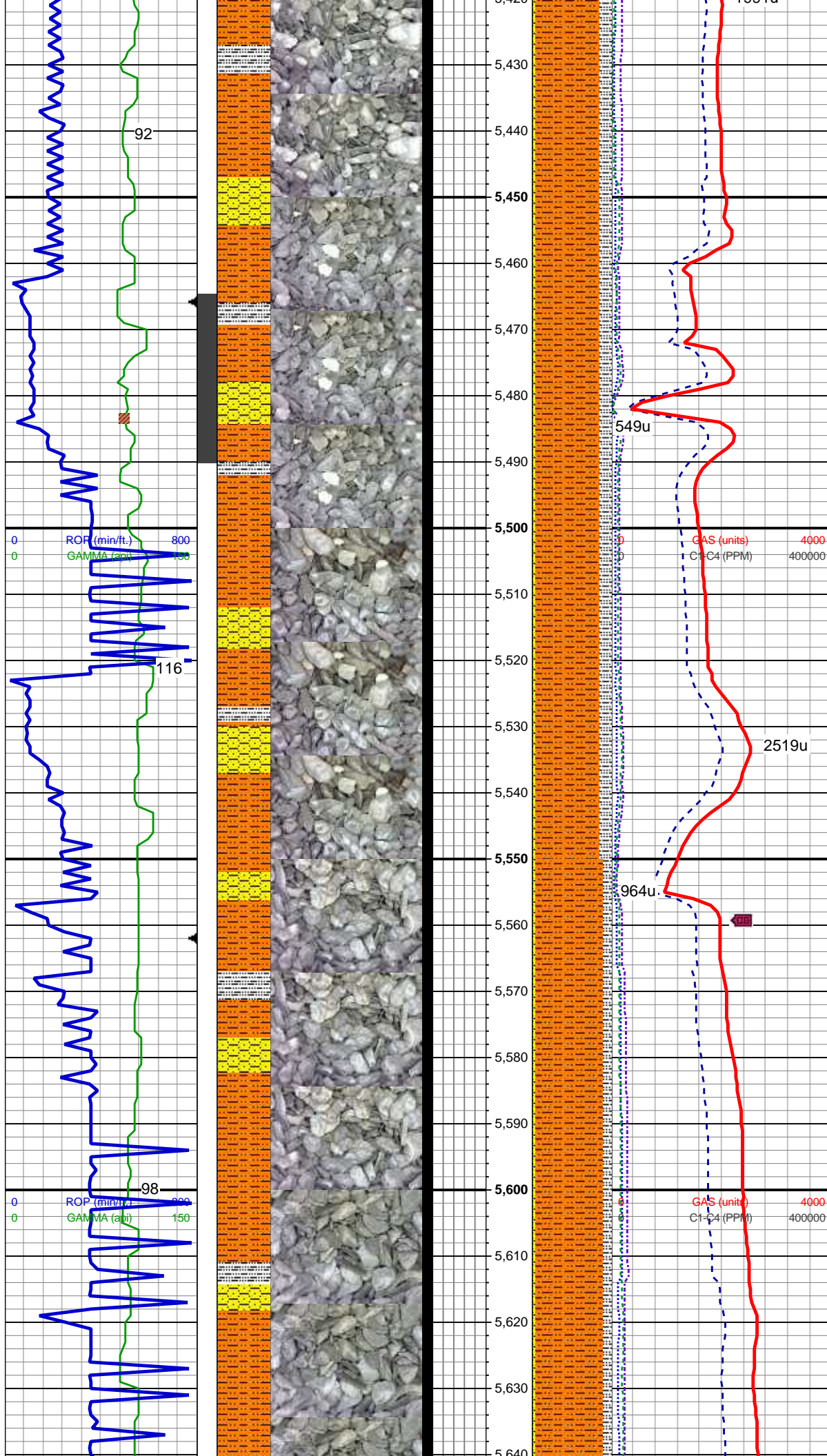
SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissd pyr

In/Out Mud Wt: 9.4/9.5 Vis 35/36

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissd pyr

MD: 5,401'
TVD: 5,383.56'
Inclination: 1.5 °
Azimuth: 218 °
VS: -345.22'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly,



rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

MD: 5,496'
TVD: 5,478.55'
Inclination: 0.2 °
Azimuth: 39.8 °
VS: -345.9'

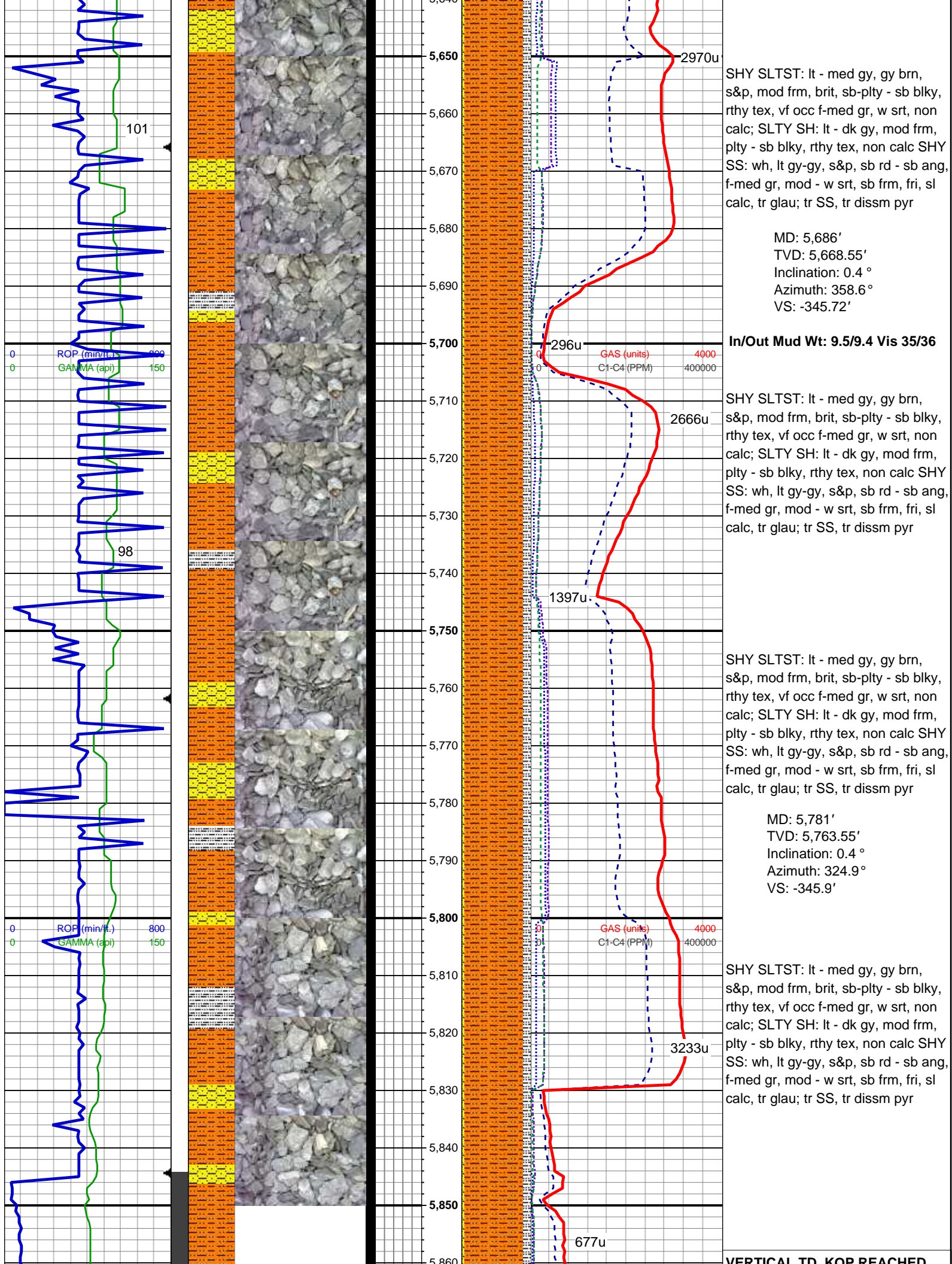
In/Out Mud Wt: 9.5/9.4 Vis 34/35

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr

MD: 5,591'
TVD: 5,573.55'
Inclination: 0.3 °
Azimuth: 7.4 °
VS: -345.76'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blk, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr diss pyr



SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissim pyr

MD: 5,686'
TVD: 5,668.55'
Inclination: 0.4 °
Azimuth: 358.6 °
VS: -345.72'

In/Out Mud Wt: 9.5/9.4 Vis 35/36

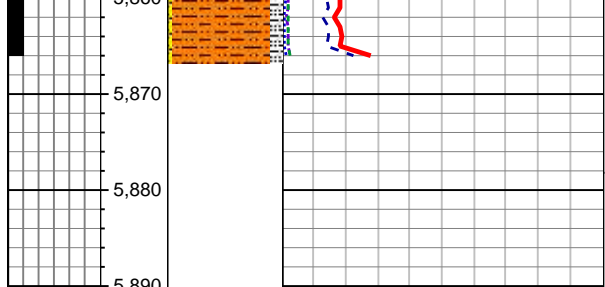
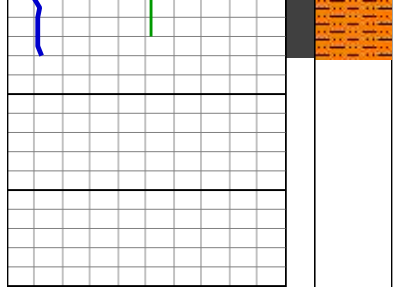
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SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissim pyr

MD: 5,781'
TVD: 5,763.55'
Inclination: 0.4 °
Azimuth: 324.9 °
VS: -345.9'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr SS, tr dissim pyr

VERTICAL TD, KOP REACHED



VERTICAL TD, ROT REACHED
5866'
TOOH, TO CHANGE MWD TOOLS
14:14 MST ON 10/14/2014
DATA CONTINUED ON
HORIZONTAL LOG

THANK YOU FOR USING
COLUMBINE LOGGING INC