

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Diamond T Sheep 7-92 1-26

Location NWNW SEC 26, T7N, R92W

State COLORADO

County MOFFAT

Country USA

Rig Number PD 706

API Number 05-081-07804

AFE # 1004473

Region SANDWASH BASIN

Field WILDCAT

Spud Date 9/2/2014

Drilling Completed 9/26/2014

Surface Coordinates 660' FNL, 930' FWL

Bottom Hole Coordinates 301' FNL, 254' FWL

Ground Elevation 6680'

Logged Interval 7000' To 9900'

Total Depth 9900'

Formation NIOBRARA

Type of Drilling Fluid OBM

Other Symbols

Oil Show

- D DEAD
- EVEN
- QUESTIONABLE
- ◐ SPOTTED STAINING

- MOLDIC
- ORGANIC
- P PINPOINT
- V VUGGY

Engineering

- ▲ BIT
- ◀ CONNECTION (LEFT)
- ▶ CONNECTION (RIGHT)

Porosity

- E EARTHY
- ▣ FENESTRAL
- F FRACTURE
- × INTERCRYSTALLINE
- ◊ INTEROOLITIC

- ◻ CONNECTION GAS
- ↓ CORE - LOST
- ◻ CORE - RECOVERED
- ⋯ DST INTERVAL

- ⚡ FAULT
- ↔ FORMATION TOP
- ☀ GAS SHOW
- MINDEPTH MN DEPTH
- ↘ NORMAL FAULT
- OIL SHOW
- ↑ OVERTURNED STRATA
- ↗ REVERSE FAULT

- ▲ ANGULAR
- ⊖ ROUNDED
- ▣ SUBBANG
- ⊖ SUBRND
- ◀ SIDEWALL CORE (LEFT)
- ▶ SIDEWALL CORE (RIGHT)
- ▨ SLIDE
- BS SURVEY
- TRIP GAS

Rounding

Textures

- BS BOUNDSTONE
- CHALKY
- ⊗ CRYPTOXLN

- ◁ WIRELINE TESTED - LEFT
- ▷ WIRELINE TESTED - RT
- E EARTHY
- FX FINELYXLN

- BS GRAINSTONE
- L LITHOGRAPHIC
- MX MICROXLN
- MS MUDSTONE
- PS PACKSTONE
- WS WACKESTONE

Sorting

- M MODERATE
- P POOR
- W WELL

Zone Color Coding

- Oil
- Condensate
- Gas
- Note
- Core
- Pressure
- Error
- Water
- Seal

Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHIOPOD

- F FOSSIL
- GASTROPOD
- INOCERAMUS
- OOLITE
- OSTRACOD
- PELECYPOD
- PELLET

- ANHYDRITIC
- ARGILLACEOUS
- ARGILLITE GRAIN
- BENTONITE
- BITUMENOUS SUBSTANCE
- BRECCIA FRAGMENTS
- CAL CAREOUS

- FERRUGINOUS
- GLAUCONITE
- GYPSEFEROUS
- HEAVY MINERAL
- KAOLIN
- MARLSTONE
- MINERAL CRYSTALS

- TUFFACEOUS

Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLOMITE STRINGER

- ↑ BRYOZOA
- ☞ CEPHALOPOD
- ☞ CORAL
- ☞ CRINOID
- ☞ ECHINOID
- ☞ FISH
- ☞ FORAMINIFERA

- ☞ PISOLITE
- ☞ PLANT REMAINS
- ☞ PLANT SPORES
- ☞ SCAPHOPOD
- ☞ STROMATOPOROID

Minerals

- CARBONACEOUS FLAKES
- ▲ CHTDK
- ▲ CHTLT
- COAL - THIN BEDS
- ↙ DOLOMITIC
- + FELDSPAR
- FERRUGINOUS PELLETT

- ☞ NODULES
- PHOSPHATE PELLETS
- ☞ PYRITE
- ☞ SALT CAST
- ☞ SANDY
- ☞ SILICEOUS
- ☞ SILTY

- ☞ GYPSUM STRINGER
- ☞ LIMESTONE STRINGER
- ☞ MARLSTONE (CALC) STRG
- ☞ MARLSTONE (DOL) STRG
- ☞ SANDSTONE STRINGER
- ☞ SHALE STRINGER
- ☞ SILTSTONE STRINGER

Rock Types

- | | | | |
|--|--|---|--|
| <ul style="list-style-type: none"> ☞ UNKNOWN ☞ ANHYDRITE ☞ BENTONITE ☞ BRECCIA ☞ CEMENT ☞ CHALK ☞ CHERT ☞ CLAY CHOKE SAND ☞ CLAYSTONE | <ul style="list-style-type: none"> ☞ COAL ☞ CONGLOMERATE ☞ DOLOMITE ☞ GRANITE ☞ GYPSUM ☞ IGNEOUS ☞ LIMESTONE ☞ SIDERITE or LIMONITE ☞ MARLSTONE | <ul style="list-style-type: none"> ☞ METAMORPHIC ☞ NO SAMPLE ☞ SALT ☞ SALT- PEPPER SAND ☞ SANDSTONE ☞ SHALE ☞ SHALE COLORED ☞ SHALE GRAY ☞ SHALY SANDSTONE | <ul style="list-style-type: none"> ☞ SHALY SILTSTONE ☞ SILTSTONE ☞ SILTY SHALE ☞ TILL ☞ TUFF ☞ WELDED TUFF |
|--|--|---|--|

Operator

Company Southwestern Energy

Address 2350 N.SAM HOUSTON PKWY E.
SUITE 125
HOUSTON, TX 77032

Geologist

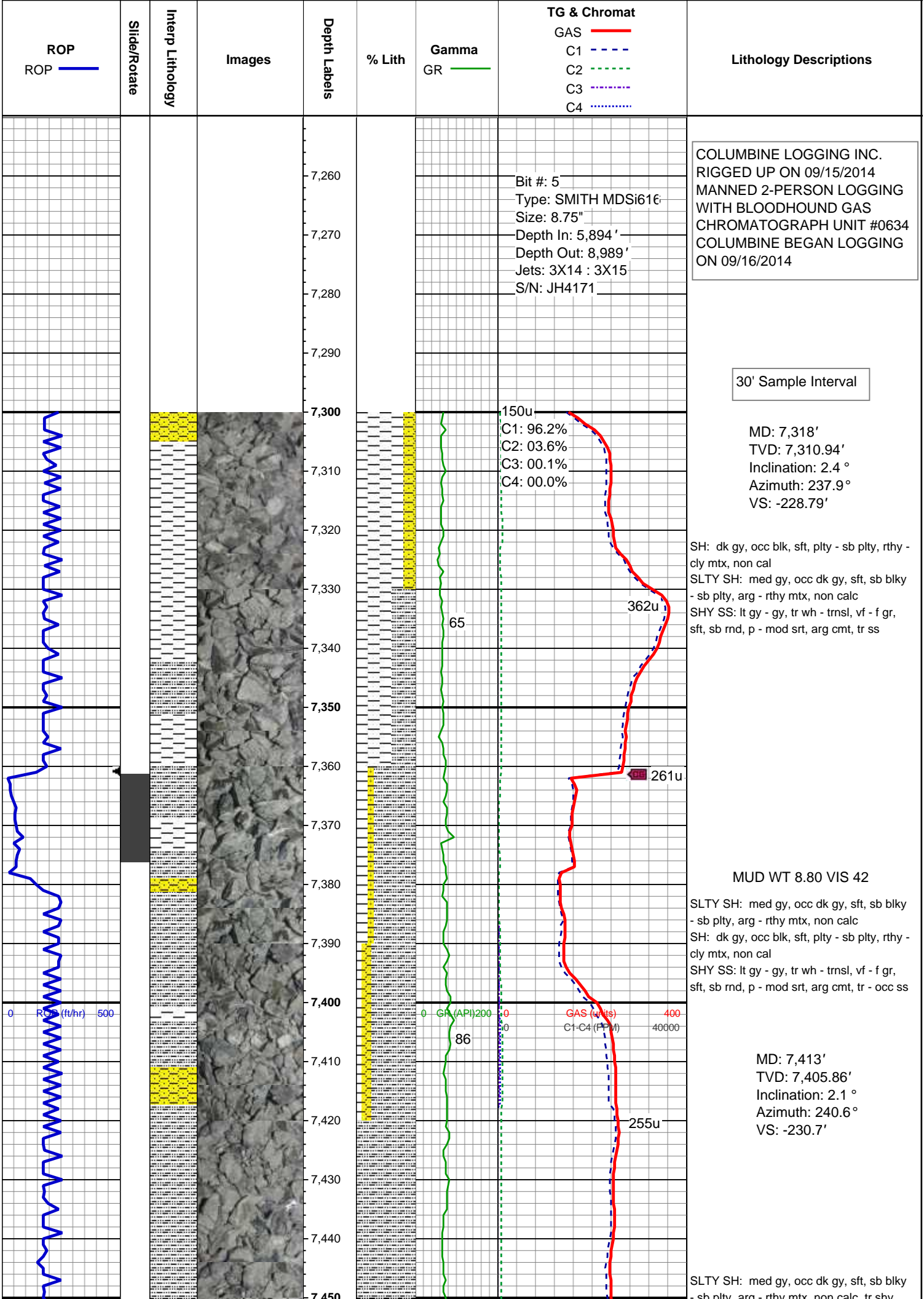
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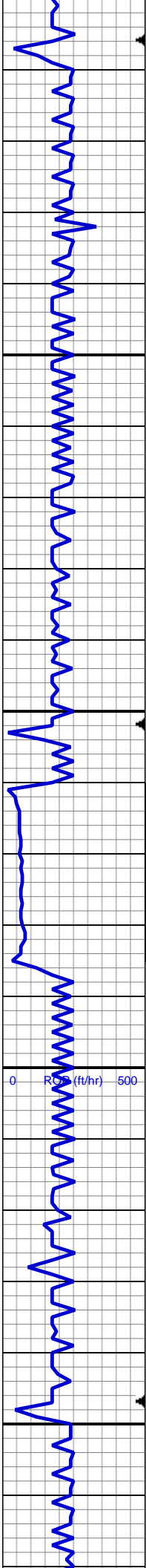
Company SOUTHWESTERN ENERGY

Address 2350 N.SAM HOUSTON PKWY E.
SUITE 125
HOUSTON, TX 77032

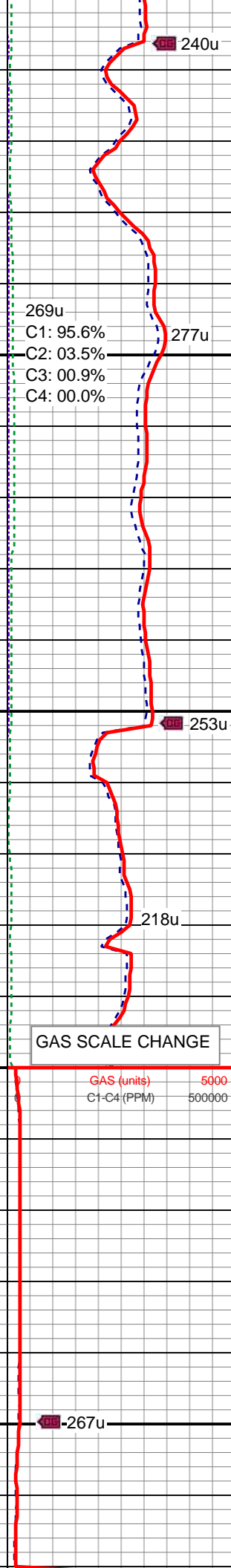
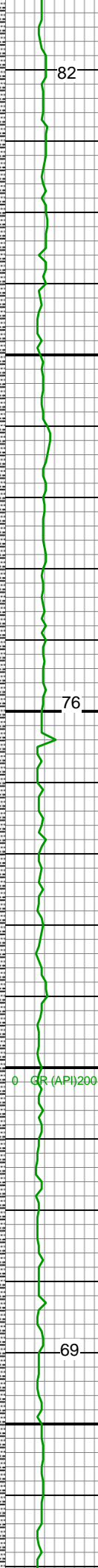
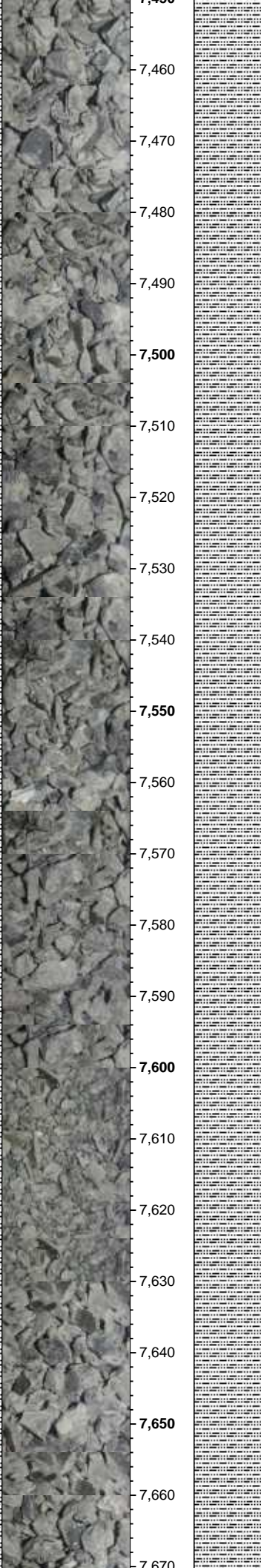
Other

WELL SITE GEOLOGIST ANDREA ZUIDEMA
JESSICA SILVEY
TIM BRIGHT





7,450
7,460
7,470
7,480
7,490
7,500
7,510
7,520
7,530
7,540
7,550
7,560
7,570
7,580
7,590
7,600
7,610
7,620
7,630
7,640
7,650
7,660
7,670



ss, tr sh

240u

82

269u
C1: 95.6%
C2: 03.5%
C3: 00.9%
C4: 00.0%

277u

SLTY SH: med gy, occ dk gy, sft, sb blkly
- sb plty, arg - rthy mtx, non calc, tr shy
ss, tr sh

MD: 7,509'
TVD: 7,501.77'
Inclination: 2.9 °
Azimuth: 232.9 °
VS: -233.03'

76

253u

SLTY SH: med gy - dk gy, tr blk, sft,
sb blkly - sb plty, occ plty, arg - rthy
mtx, non calc, tr shy ss, tr sh

218u

GAS SCALE CHANGE

MD: 7,604'
TVD: 7,596.68'
Inclination: 2.1 °
Azimuth: 235.4 °
VS: -235.46'

69

267u

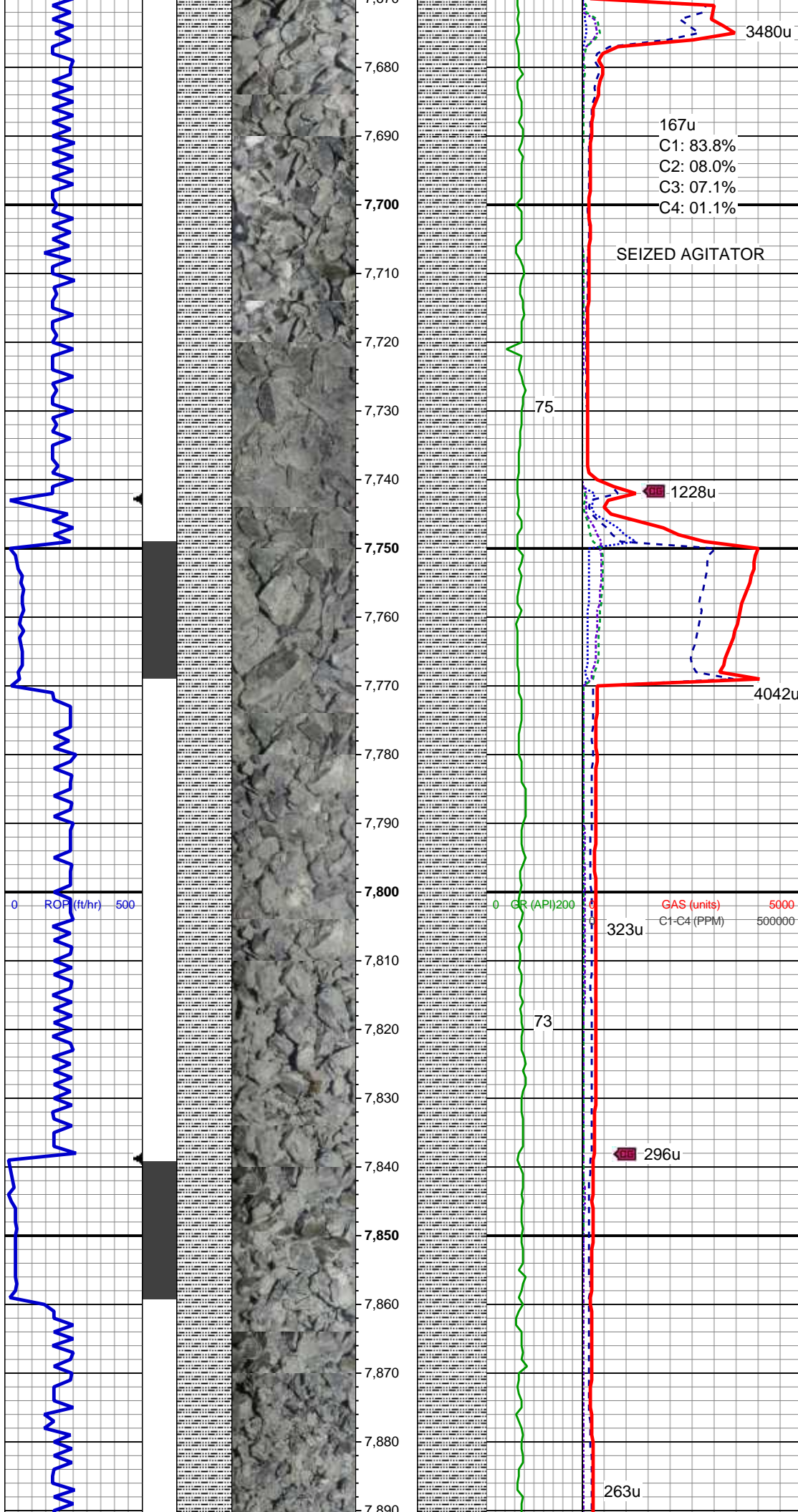
SLTY SH: med gy - dk gy, tr blk, sft,
sb blkly - sb plty, occ plty, arg - rthy
mtx, non calc, tr shy ss, tr sh

0 RGR (ft/hr) 500

0 GR (API) 200

GAS (units) 5000

C1-C4 (PPM) 500000



SLTY SH: med gy - dk gy, tr blk, sft, sb
 blkly - sb plty, occ plty, arg - rthy mtx, non
 calc, tr shy ss, tr sh

MD: 7,700'
 TVD: 7,692.59'
 Inclination: 3 °
 Azimuth: 230.5 °
 VS: -238.06'

MUD WT 9.0 VIS 44

SLTY SH: med gy - dk gy, occ blk, sft, sb
 blkly - sb plty, tr plty, arg - rthy mtx, non
 calc, tr shy ss, occ sh

MUD WT 9.30 VIS 46

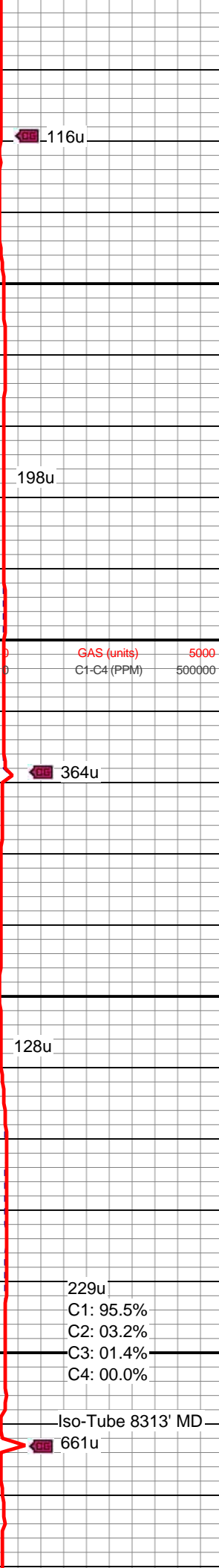
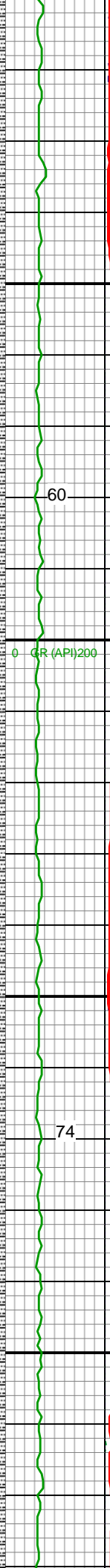
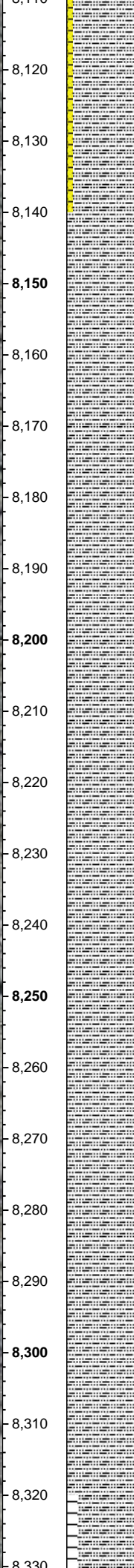
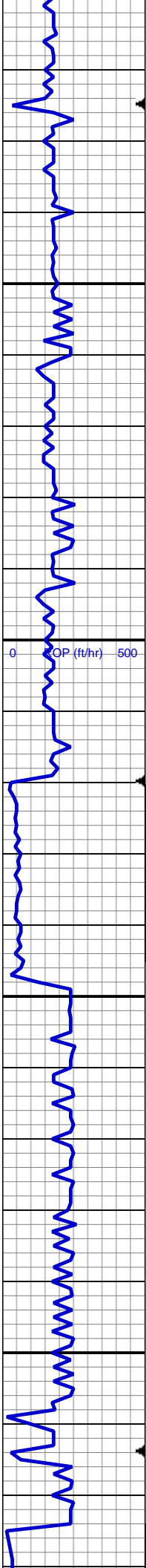
MD: 7,796'
 TVD: 7,788.46'
 Inclination: 2.8 °
 Azimuth: 231.5 °
 VS: -241.12'

SLTY SH: med gy - dk gy, occ blk, tr lt
 gy, sft, sb blkly - sb plty, occ plty, arg - rthy
 mtx, non calc, occ sh

MUD WT 9.30 VIS 44

SLTY SH: med gy - dk gy, tr lt gy, tr-occ
 blk, sft, sb blkly - sb plty, occ plty, arg -
 rthy mtx, non calc, occ shy ss, tr-occ sh

MD: 7,891'
 TVD: 7,883.38'



8,110
8,120
8,130
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330

SLTY SH: med gy-gy, tr-occ dk gy, sft, sb blkly - sb plty, tr-occ plty, arg - rthy mtx, non calc, tr sh
SHY SS: lt gy - gy, tr med gy, vf - f gr, sft, sb rnd-sb blkly, mod srt, arg cmt, grd to slty sh

SLTY SH: med gy-gy, tr dk gy, sft, sb blkly - sb plty, occ plty, arg - rthy mtx, non calc, tr-occ sh, tr shy ss

MD: 8,177'
TVD: 8,169.17'
Inclination: 3 °
Azimuth: 226.2 °
VS: -251.22'

MUD WT 9.30 VIS 45

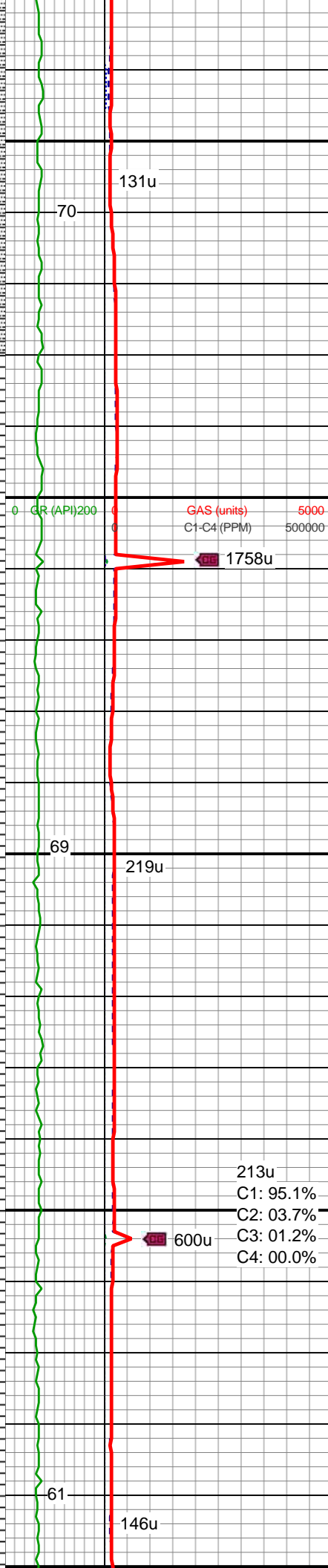
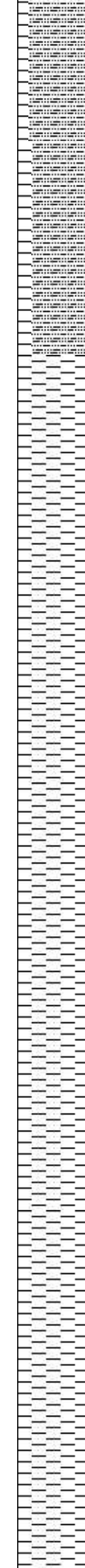
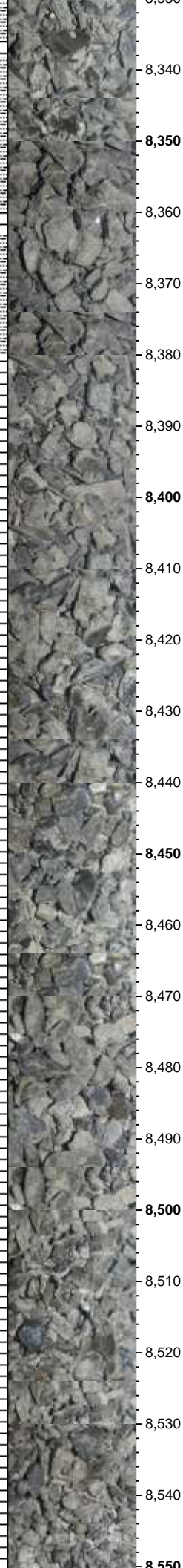
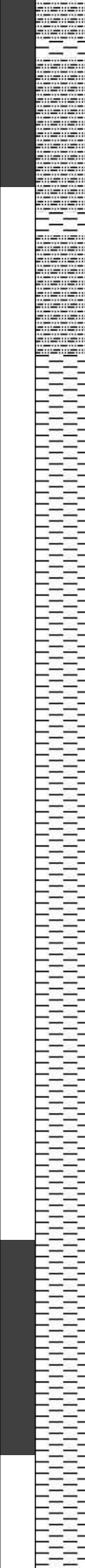
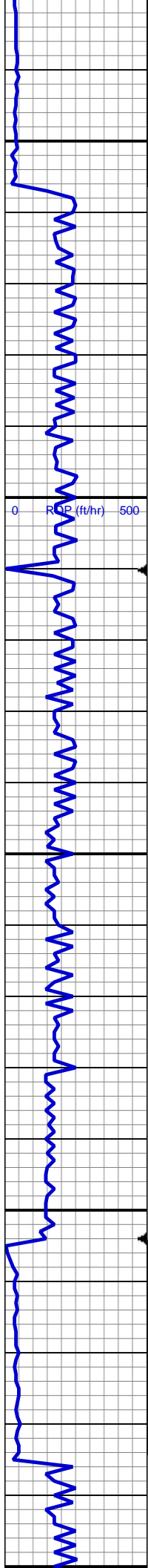
SLTY SH: med gy-gy, tr dk gy, tr lt gy, sft, sb blkly - sb plty, tr-occ plty, arg - rthy mtx, non calc, occ sh, occ shy ss

MD: 8,271'
TVD: 8,263.05'
Inclination: 2.9 °
Azimuth: 241 °
VS: -254.07'

SLTY SH: med gy-gy, tr dk gy, sft, sb blkly - sb plty, occ plty, arg - rthy mtx, non calc, occ sh

C1: 95.5%
C2: 03.2%
C3: 01.4%
C4: 00.0%

Iso-Tube 8313' MD



SLTY SH: med gy-gy, tr dk gy, sft, sb
 blkly - sb plty, occ plty, arg - rthy mtx, non
 calc
 SH: dk gy, occ blk, sft, plty - sb plty, rthy -
 cly mtx, sl calc

MD: 8,367'
 TVD: 8,358.96'
 Inclination: 1.9 °
 Azimuth: 248 °
 VS: -255.84'

MUD WT 9.30 VIS 45

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blkly, rthy - cly mtx, non calc, occ slty sh

MD: 8,461'
 TVD: 8,452.88'
 Inclination: 2.9 °
 Azimuth: 237.5 °
 VS: -257.71'

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blkly, rthy - cly mtx, non calc, occ slty sh

MUD WT 9.30 VIS 46

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blkly, rthy - cly mtx, non calc, occ slty sh,
 tr shy ss

MD: 8,556'

131u
70

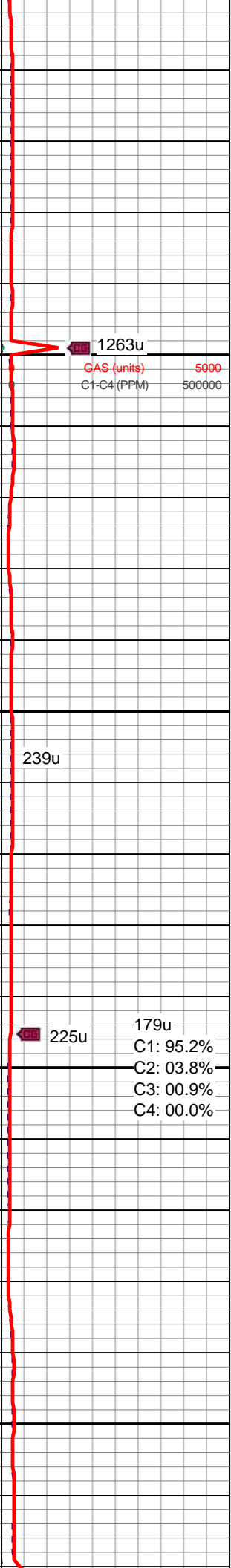
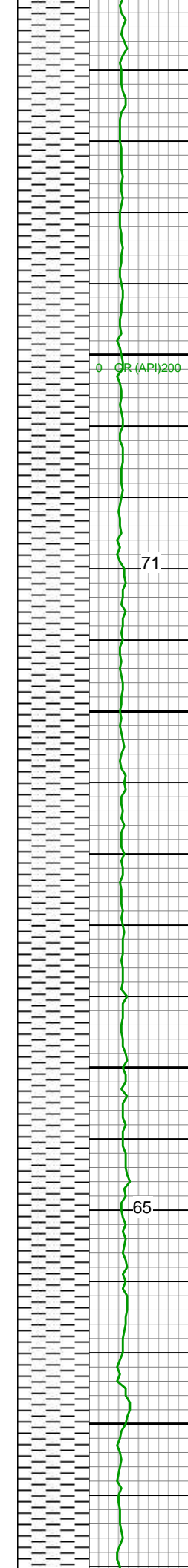
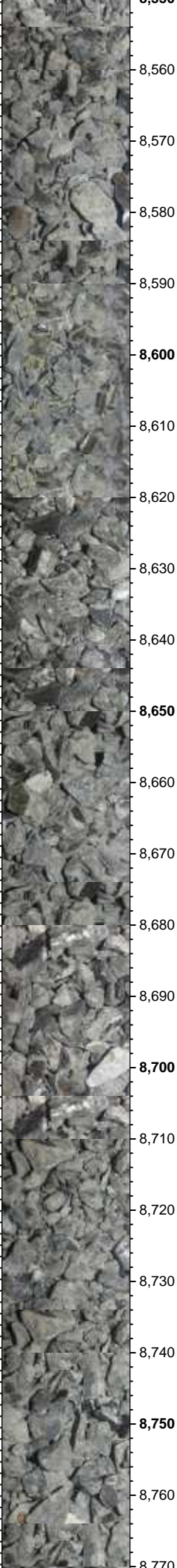
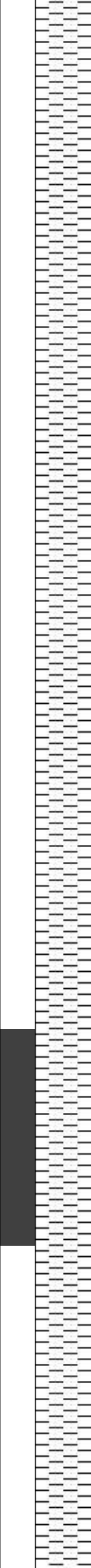
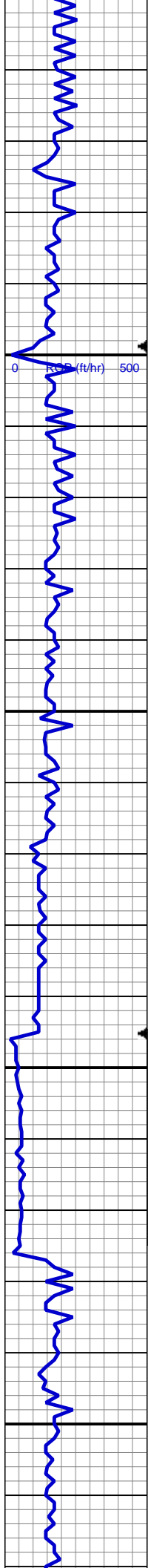
GR (API) 200 0
 GAS (units) 5000
 C1-C4 (PPM) 500000

1758u

69
219u

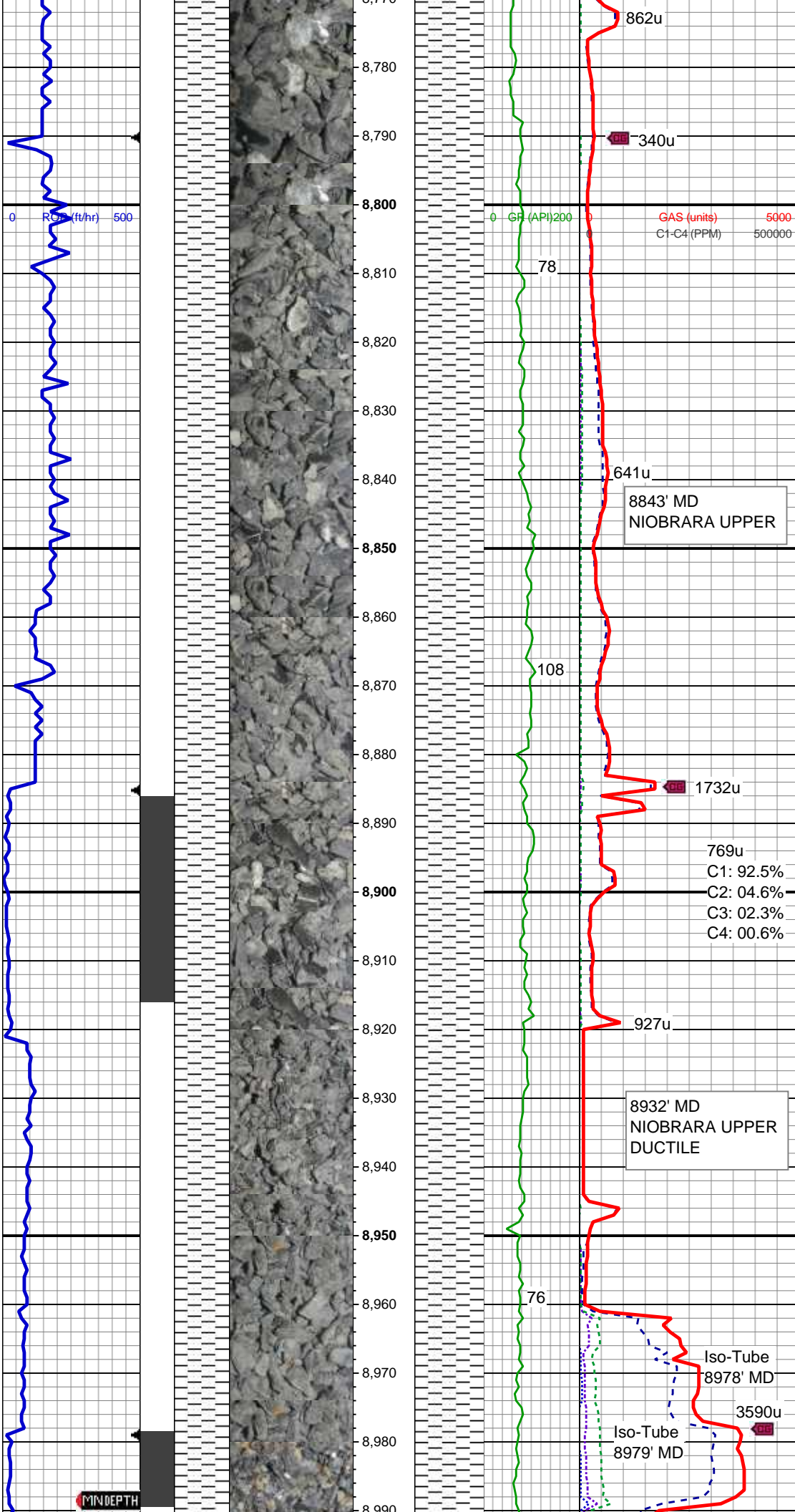
213u
 C1: 95.1%
 C2: 03.7%
 C3: 01.2%
 C4: 00.0%
 600u

61
146u



TVD: 8,547.8'
 Inclination: 1.8°
 Azimuth: 249.2°
 VS: -259.53'

 SH: dk gy, occ blk, sft, ppty - sb ppty, tr sb blk, rthy - cly mtx, non calc, occ slty sh, tr shy ss
 1263u
 GAS (units) 5000
 C1-C4 (PPM) 500000
 71
 SH: dk gy, occ blk, sft, ppty - sb ppty, tr sb blk, rthy - cly mtx, non calc, occ slty sh, tr shy ss
 239u
 MD: 8,652'
 TVD: 8,643.72'
 Inclination: 2.7°
 Azimuth: 235.5°
 VS: -261.34'
 225u
 179u
 C1: 95.2%
 C2: 03.8%
 C3: 00.9%
 C4: 00.0%
 MUD WT 9.45 VIS 45
 SH: dk gy, occ blk, sft, ppty - sb ppty, tr sb blk, rthy - cly mtx, non calc, occ slty sh, occ shy ss
 65
 MD: 8,747'
 TVD: 8,738.65'
 Inclination: 1.9°
 Azimuth: 229.6°
 VS: -263.63'
 SH: dk gy, occ blk, sft, ppty - sb ppty, tr sb blk, rthy - cly mtx, non calc, occ slty sh, tr shy ss



MUD WT 9.35 VIS 45

0 - GR (API) 200 GAS (units) 5000
 C1-C4 (PPM) 500000

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blk, rthy - cly mtx, non calc, occ slty sh

MD: 8,843'
 TVD: 8,834.55'
 Inclination: 3.1 °
 Azimuth: 219.1 °
 VS: -266.68'

8843' MD
 NIOBRARA UPPER

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blk, rthy - cly mtx, non calc, occ lt gy
 slty sh

MUD WT 9.50 VIS 46

769u
 C1: 92.5%
 C2: 04.6%
 C3: 02.3%
 C4: 00.6%

MD: 8,936'
 TVD: 8,927.44'
 Inclination: 2.6 °
 Azimuth: 226.3 °
 VS: -270.09'

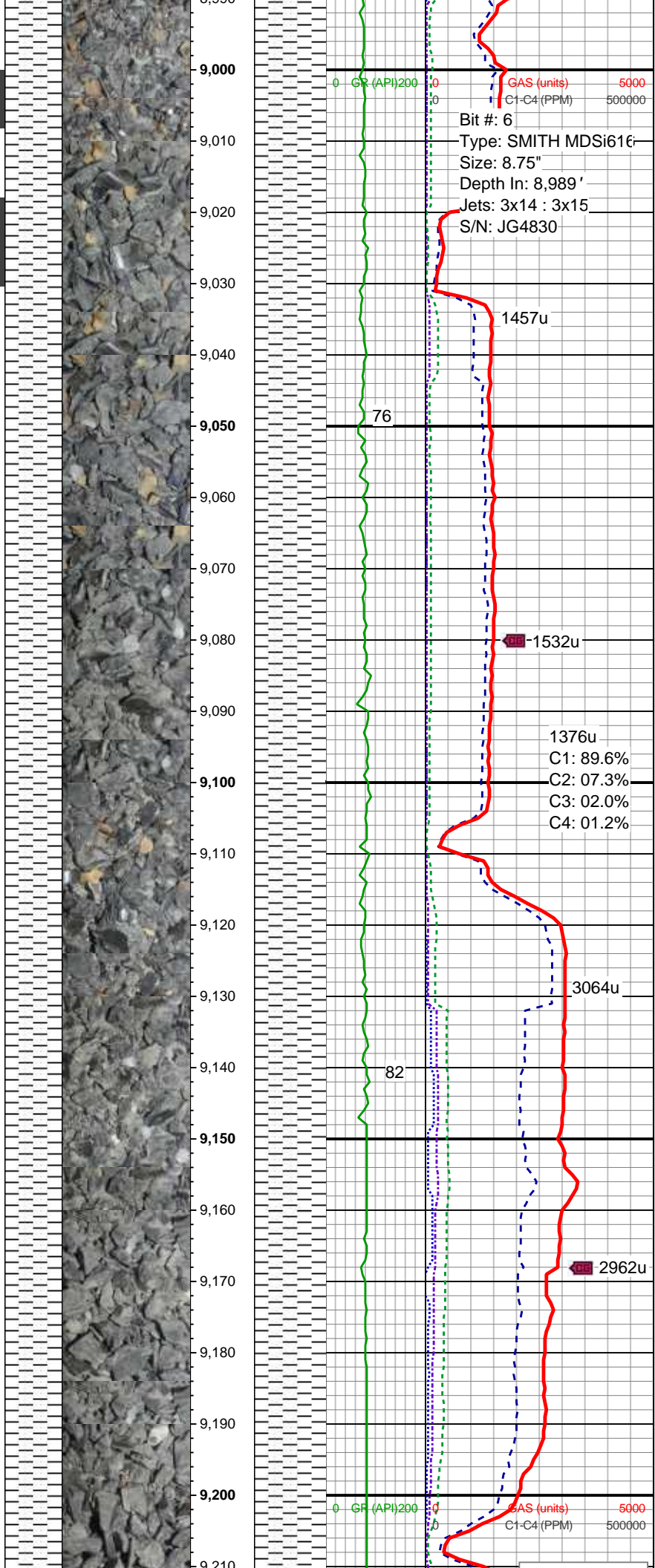
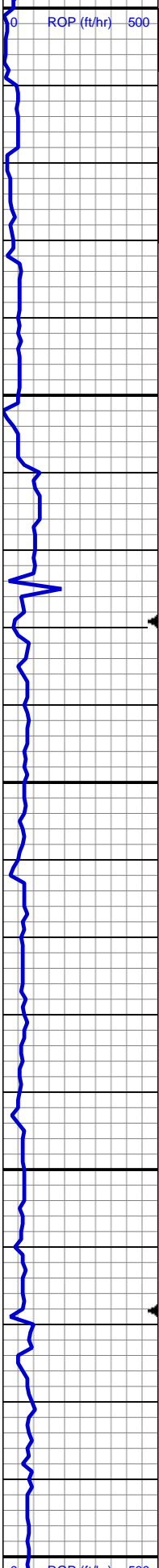
8932' MD
 NIOBRARA UPPER
 DUCTILE

SH: dk gy, occ blk, sft, plty - sb plty, tr sb
 blk, rthy - cly mtx, non calc- v sl calc, tr
 lt gy slty sh

Circulated LCM 9/18 - 9/23
 TOO H for Mud Motor & MWD 9/24

Resumed Drilling @

09/18/2014-
09/25/2014



MUD WT 11.10 VIS 47

SH: dk gy - gy, occ blk, sft, plty - sb plty,
occ sb blk, rthy - cly mtx, non calc - v sl
calc, tr lt gy slty sh

MD: 9,031'
TVD: 9,022.37'
Inclination: 1.7 °
Azimuth: 223.2 °
VS: -272.6'

SH: dk gy - gy, occ blk, sft, plty - sb
plty, occ sb blk, rthy - cly mtx, non
calc - v sl calc, tr lt gy slty sh

MUD WT 11.10 VIS 47

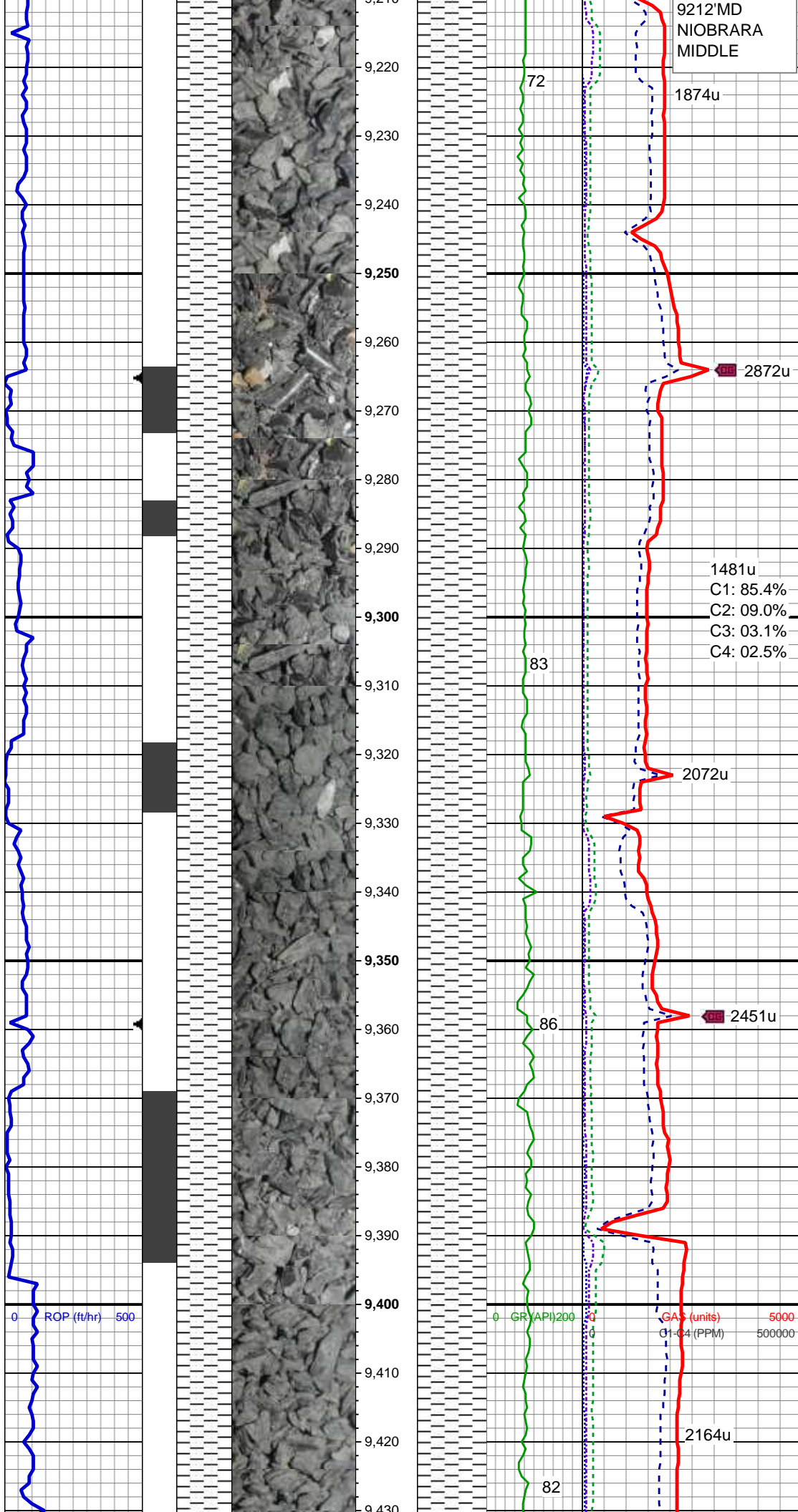
SH: dk gy - gy, occ blk, sft, plty - sb plty,
occ sb blk, rthy - cly mtx, non calc - v sl
calc, tr lt gy slty sh

MD: 9,119'
TVD: 9,110.33'
Inclination: 2 °
Azimuth: 218.4 °
VS: -274.76'

SH: dk gy - gy, occ blk, sft, plty - sb plty,
occ sb blk, rthy - cly mtx, non calc - v sl
calc, tr lt gy slty sh

MUD WT 11.10 VIS 48

MD: 9,214'
TVD: 9,205.25'
Inclination: 2.5 °
Azimuth: 216.2 °
VS: -277.73'



9212 MD
NIOBRARA
MIDDLE

MUD WT 11.15 VIS 50

SH: dk gy - gy, occ blk, sft, plty - sb plty,
occ sb blk, rthy - cly mtx, non calc - v sl
calc

72

1874u

MUD WT 11.10 VIS 48

SH: dk gy - gy, occ blk, sft, plty - sb plty,
occ sb blk, rthy - cly mtx, non calc - v sl
calc

1481u
C1: 85.4%
C2: 09.0%
C3: 03.1%
C4: 02.5%

MD: 9,309'
TVD: 9,300.16'
Inclination: 2.6 °
Azimuth: 212.7 °
VS: -281.21'

83

2072u

SH: dk gy - gy, occ blk, sft, sb blk - sb
plty, occ plty, rthy - cly mtx, non calc - sl
calc, tr pyr

MUD WT 11.10 VIS 47

86

2451u

SH: dk gy - gy, occ blk, sft, sb blk - sb
plty, occ-tr plty, rthy - cly mtx, non calc -
sl calc

MD: 9,404'
TVD: 9,395.11'
Inclination: 1 °
Azimuth: 224.7 °
VS: -283.62'

82

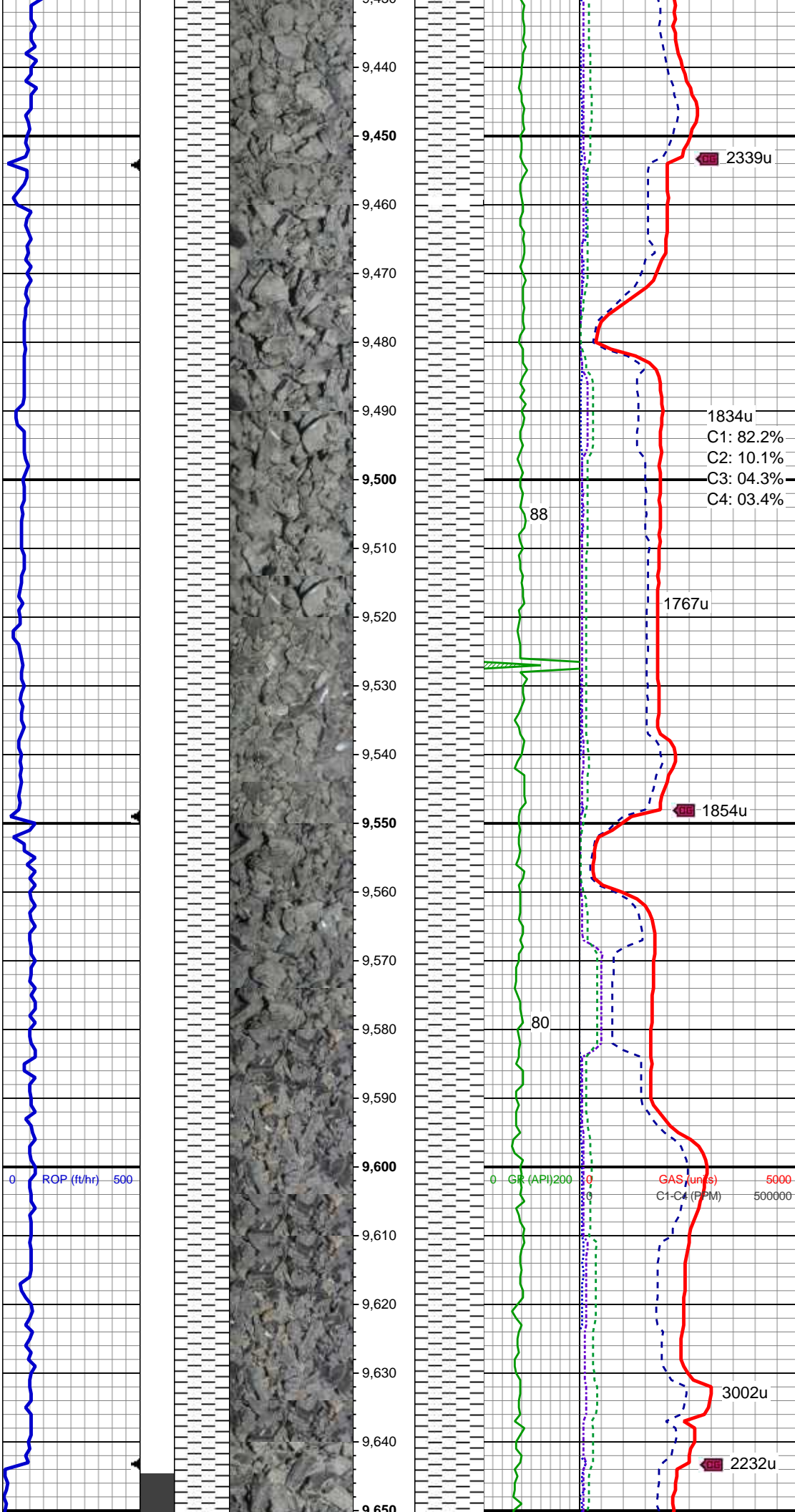
2164u

0 ROP (ft/hr) 500

0 GR (API)200

GAS (units) 5000

C1-C4 (PPM) 500000



SH: dk gy - gy, tr blk, sft, plty - sb plty, tr-occ sb blk, rthy - cly mtx, non calc - v sl calc

MD: 9,499'
 TVD: 9,490.09'
 Inclination: 1.5 °
 Azimuth: 229.1 °
 VS: -285.02'

SH: dk gy - gy, tr-occ blk, sft, sb blk - sb plty, occ plty, rthy - cly mtx, non calc - v sl calc

MUD WT 11.10 VIS 47

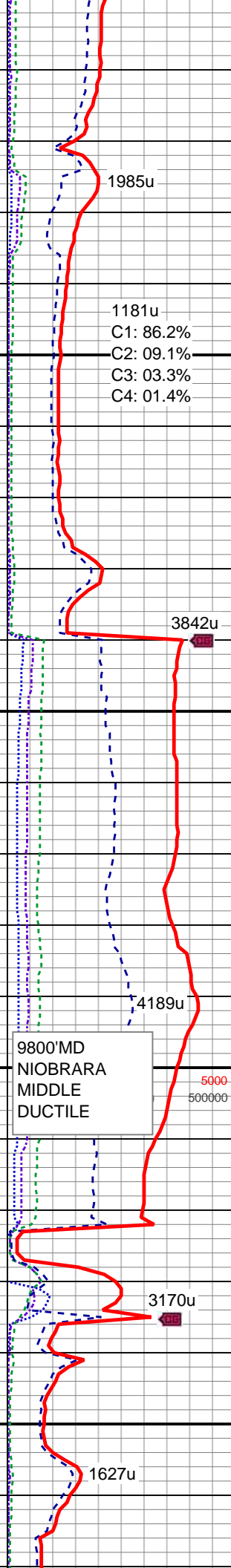
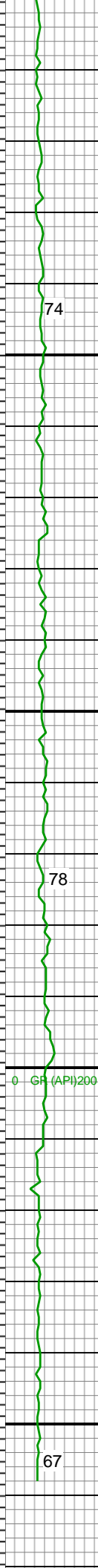
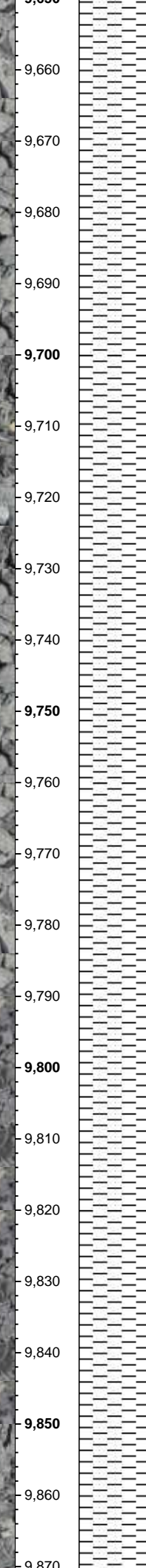
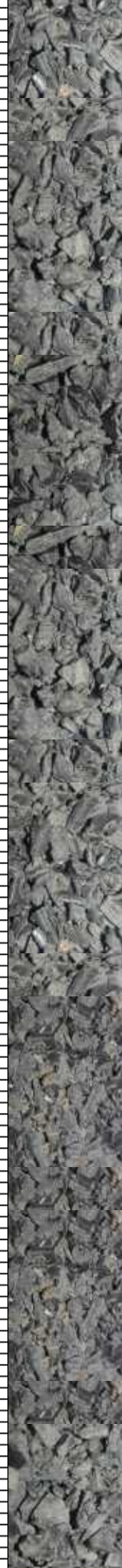
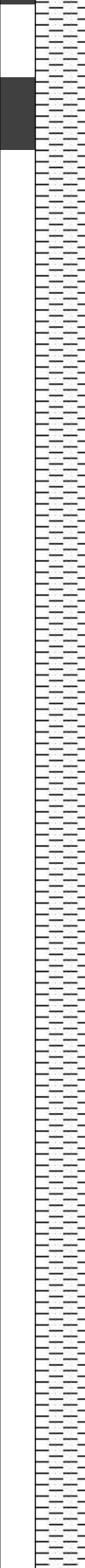
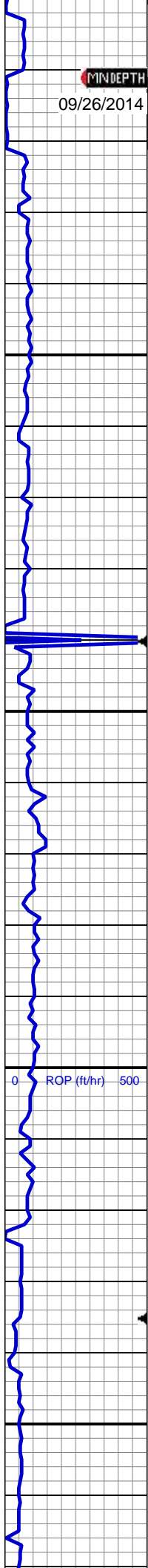
SH: dk gy - gy, occ blk, sft, sb blk - sb plty, occ plty, rthy - cly mtx, non calc - v sl calc

MD: 9,595'
 TVD: 9,586.03'
 Inclination: 2.5 °
 Azimuth: 224.4 °
 VS: -287.34'

MUD WT 11.10 VIS 46

SH: dk gy - med gy, tr blk, sft, plty - sb plty, occ sb blk, rthy - cly mtx, non calc - v sl calc

MIN DEPTH
09/26/2014



MUD WT 11.10 VIS 47

MD: 9,690'
TVD: 9,680.91'
Inclination: 3.1 °
Azimuth: 218.7 °
VS: -290.82'

SH: dk gy - med gy, tr-occ blk, sft, plty - sb plty, occ sb blk, rthy - cly mtx, non calc - v sl calc

MUD WT 11.10 VIS 46

SH: dk gy - med gy, tr - occ blk, sft, plty - sb plty, occ sb blk, rthy - cly mtx, tr arg mtx, non calc - v sl calc

MD: 9,785'
TVD: 9,775.74'
Inclination: 3.8 °
Azimuth: 219.7 °
VS: -295.25'

9800'MD NIOBRARA MIDDLE DUCTILE

MUD WT 11.30 VIS 49

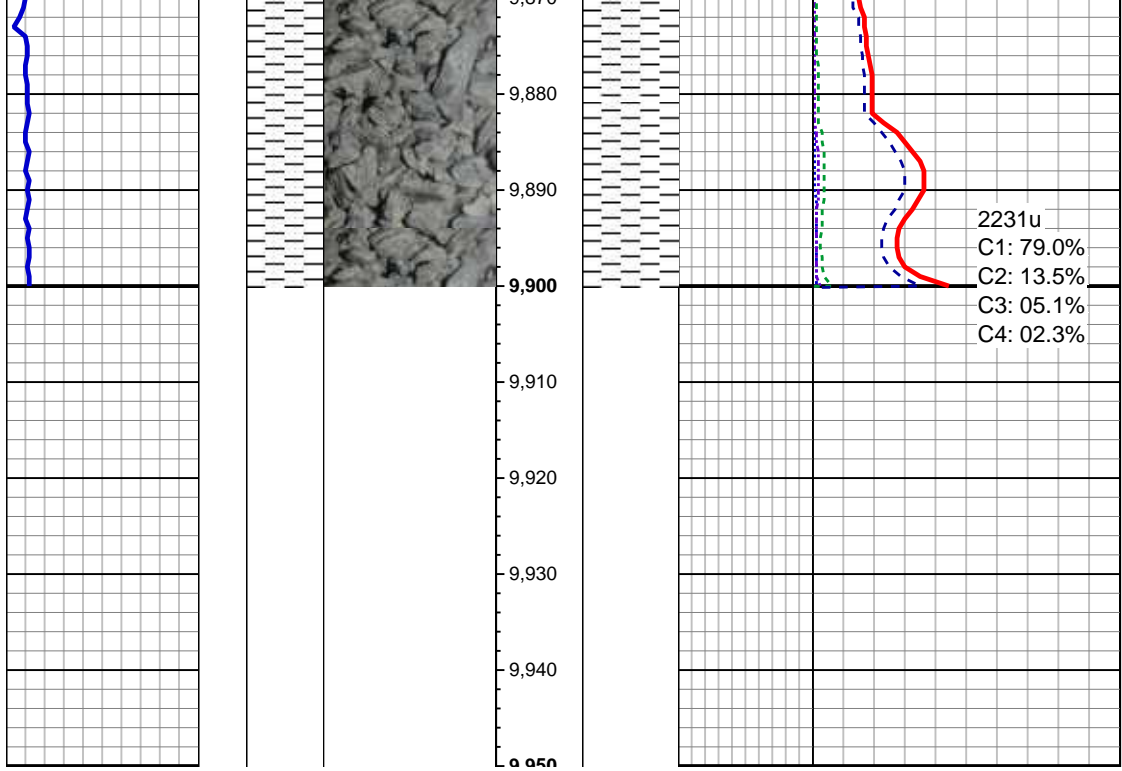
MD: 9,850'
TVD: 9,840.58'
Inclination: 4.1 °
Azimuth: 220.4 °
VS: -298.68'

SH: dk gy - med gy, tr blk, sft, plty - sb plty, occ sb blk, rthy - cly mtx, tr arg mtx, non calc - v sl calc

0 ROP (ft/hr) 500

0 GR (API) 200

5000
500000



MD: 9,900'
 TVD: 9,890.46'
 Inclination: 4.1 °
 Azimuth: 220.4 °
 VS: -301.4'

TD 9900'MD
 04:38 09/26/2014

Thank You for Choosing
 Columbine Logging Inc.