



Empirica

Scale: 5" / 100'
Measured Depth Log

Well Name Diamond Valley East 3 Horizontal

State Colorado

Country USA

Region DJ Basin

County Weld

Rig Number Frontier #10

Field Wattenberg

Surface Coordinates Lat:

Long:

SHL:

Bottom Hole Coordinates Lat:

Long:

BHL:

Logged Interval 5000'

To 7,355'

Total Depth TBD

Formation Niobrara B Chalk

Type of Drilling Fluid Fresh Water

Company Extraction Oil and Gas
Address 1888 Sherman Street
Denver, CO 80202

Name Dominic Pitre / C
Company ALS Empirica
Address 6360 W. Sam Houston
Houston, Texas
(713)-466-7400

Equipment ML-402
Comments Start Date: 8-10-14
Standby: 8-08-14
TD: 8-10-14 (Release Date)

Operator

d Gas

st., Suite 200

03

Rock Types



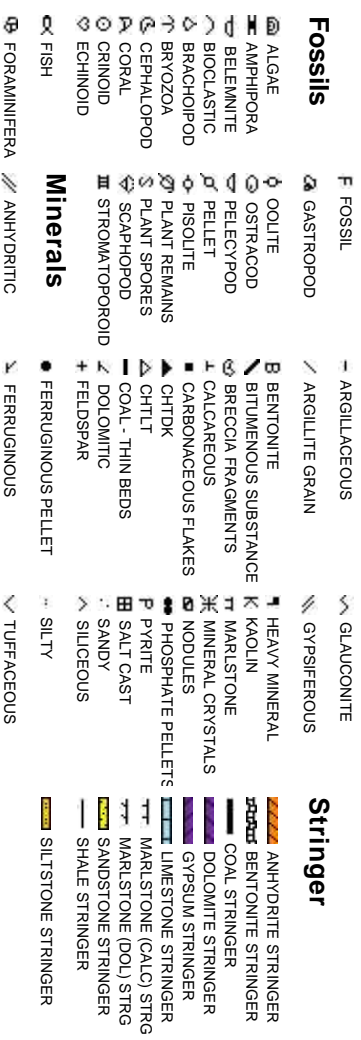
Geologist

John Ahearn

Douston Pkwy North

77041

Accessories



Other

08-14 (curve), xx-xx-xx (lateral)

3-14

(curve), xx-xx-xx (lateral)

: TBD

Oil

- D DE
- E EV
- F FE
- F FR
- X IN
- Φ IN

Poi

Other Symbols

Show

- MOLDIC
- ORGANIC
- PINPOINT
- VUGGY

- FAULT
- FORMATION TOP
- GAS SHOW
- MINDEPTH MN DEPTH

- WIRELINE TESTED - LEFT
- WIRELINE TESTED - RT

- E EARTHY
- FX FINELYXLN
- GS GRAINSTONE
- L LITHOGRAPHIC

Engineering

- NORMAL FAULT
- OIL SHOW
- OVERTURNED STRATA
- REVERSE FAULT
- SIDEWALL CORE (LEFT)
- SIDEWALL CORE (RIGHT)
- CONNECTION GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL

- A ANGULAR
- R ROUNDED
- B SUBANG
- r SUBRND

Textures

- SLIDE
- SURVEY
- TRIP GAS
- BS BOUNDSTONE
- C CHALKY
- CX CRYPTOXLN

Sorting

- M MODERATE
- P POOR
- W WELL

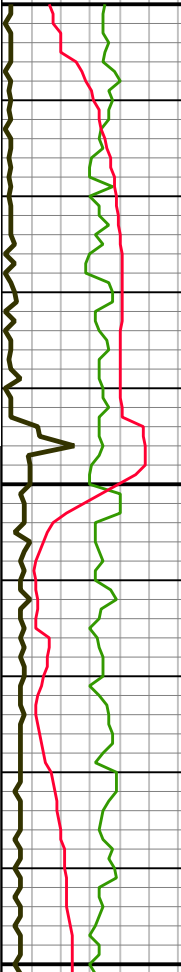
osity

- EARTHY
- MESTRAL
- ACTURE
- PERCRYSTALLINE
- PETROOLITIC

Extraction Oil and Gas

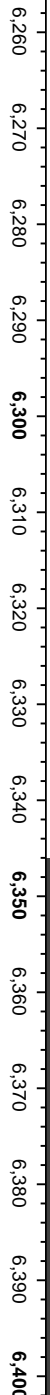
Diamond Valley East #3

ROP
 TG
 ROF
 GAMMA



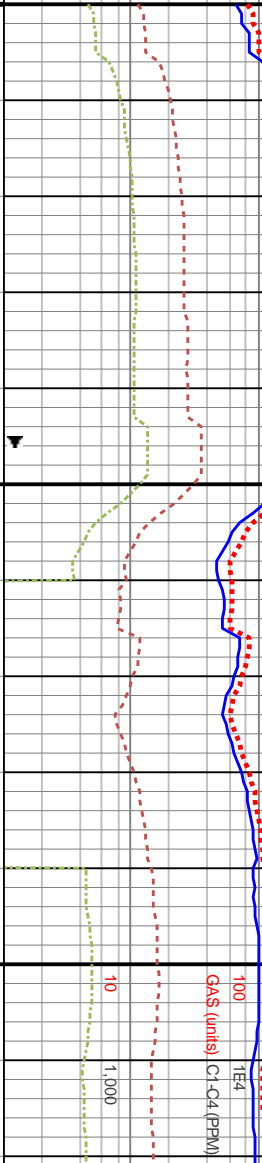
TG (Units)
 ROP (min/ft)
 GAMMA (Units)

Slide/Rotate
 Depth Labels



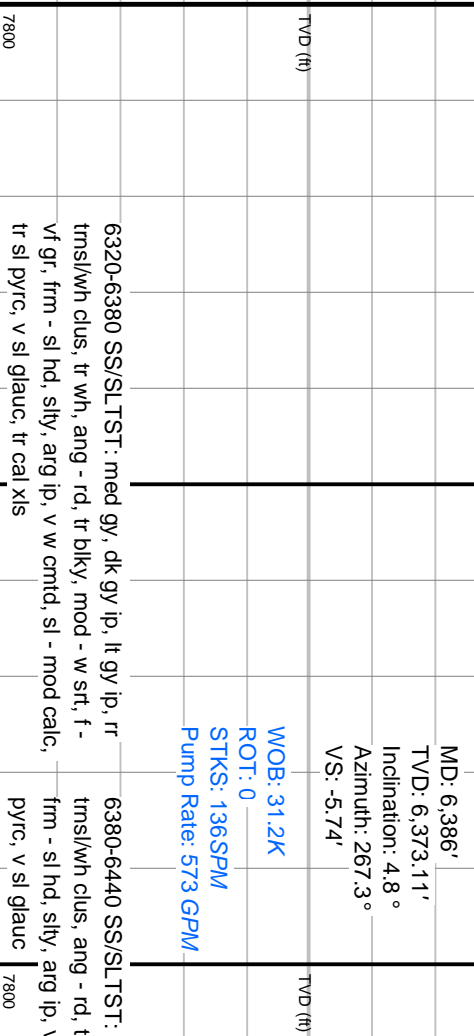
Total Gas & Chromatograph

GAS
 C1
 C2
 C3
 C4



100
 1E4
 GAS (units) C1-C4 (PPM)

Well Bore
 TVD



MD: 6,386'
 TVD: 6,373.11'
 Inclination: 4.8°
 Azimuth: 267.3°
 VS: -5.74'

WOB: 31.2K
 ROT: 0
 STKS: 136SPM
 Pump Rate: 573 GPM

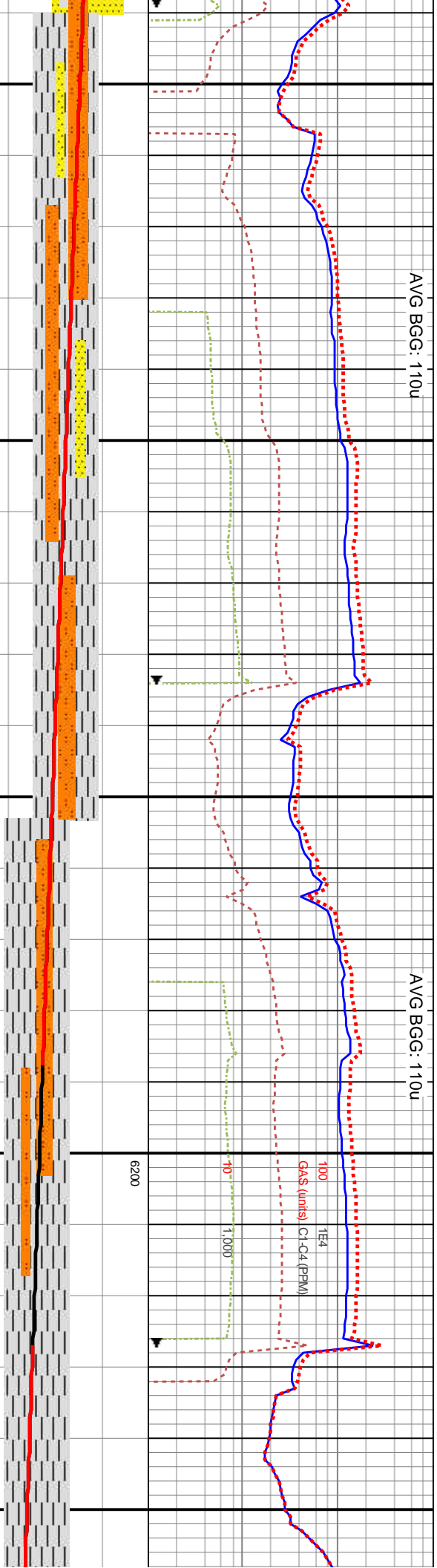
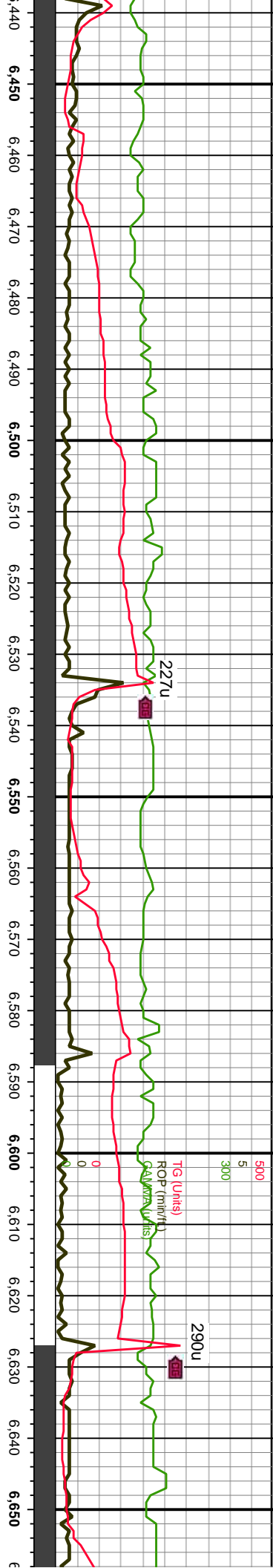
6320-6380 SS/SLTST: med gy, dk gy ip, lt gy ip, r r
 tmsl/w h clus, tr wh, ang - rd, tr blk y, mod - w srt, f -
 vf gr, frm - sl hd, slty, arg ip, v w cmt d, sl - mod calc,
 tr sl pyrc, v sl glauc, tr cal xls

6380-6440 SS/SLTST: med gy, dk gy ip, tr lt gy, r r
 tmsl/w h clus, ang - rd, tr blk y, mod srt, f - vf gr, v
 frm - sl hd, slty, arg ip, v w cmt d, sl - mod calc, tr sl
 pyrc, v sl glauc

Oil Show



Images



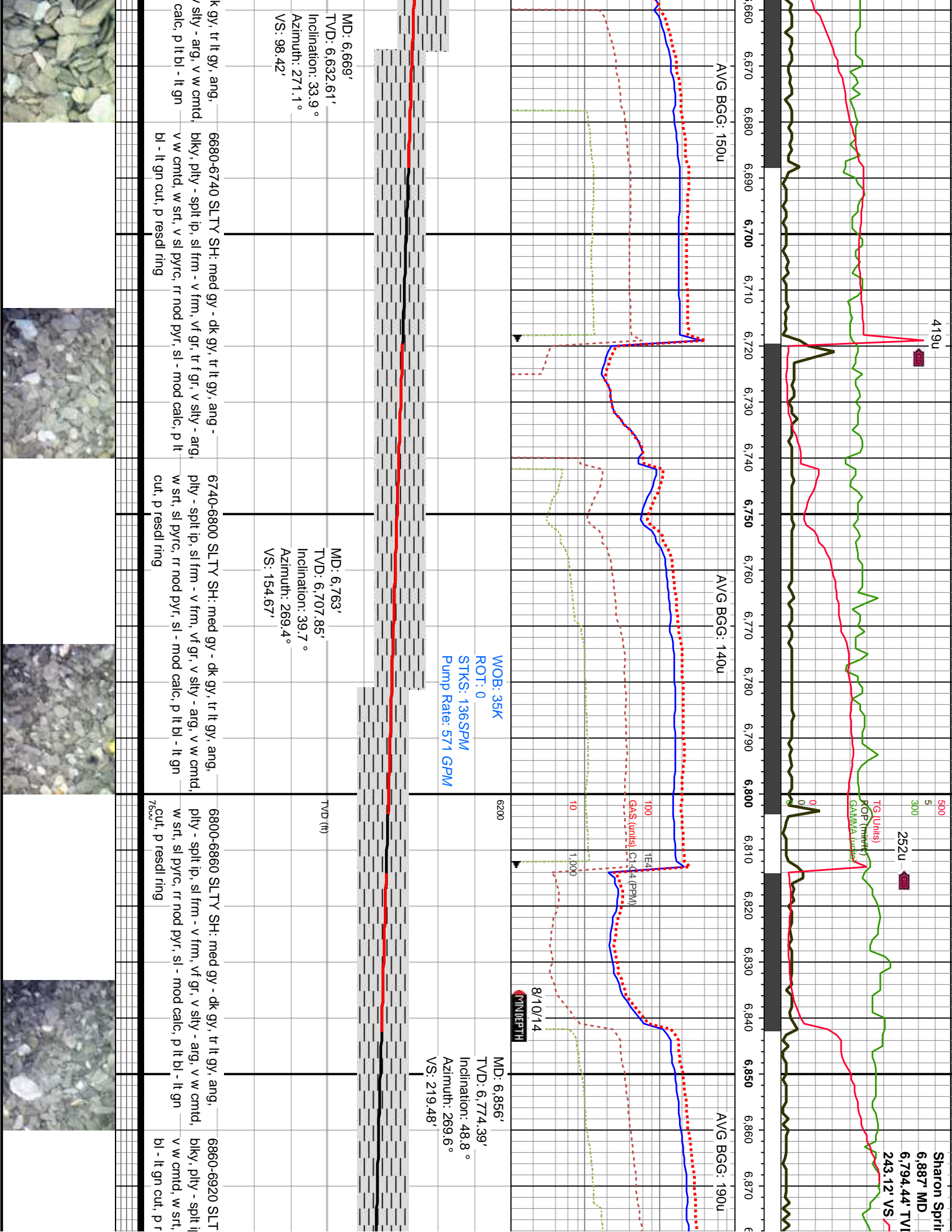
6440-6500 SLTST/SH: med gy, tr lt gy - ofwht, tr dk gy, rr wh - trnsl, ang - pty, spit ip, sl frm - sl hd, f - vf gr, rr ofwht sdy intbds, sh intbds, v slty - arg, v w cmtd, mod srt, sl pyrc, rr nod pyr, sl - mod calc, p resdl ring

6500-6560 SLTST/SH: med gy - dk gy, tr lt gy - ofwht, ang - bkly, pty - spit ip, sl frm - v frm, f - vf gr, rr ofwht sdy intbds, v slty - arg, v w cmtd, mod srt, sl pyrc, rr nod pyr, sl - mod calc, p resdl ring

6560-6620 SLTST/SH: med gy, tr lt gy - ofwht, tr dk gy, rr wh - trnsl, ang - pty, spit ip, sl frm - sl hd, f - vf gr, rr ofwht sdy intbds, sh intbds, v slty - arg, v w cmtd, mod srt, sl pyrc, rr nod pyr, sl - mod calc, p resdl ring

6620-6680 SLTY SH: med gy - d pty - spit ip, sl frm - v frm, vf gr, w srt, sl pyrc, rr nod pyr, sl - mod cut, p resdl ring





Sharon Sprir

6,887 MD

6,794.44 TVD

243.12 VS

AVG BGG: 190u

AVG BGG: 140u

AVG BGG: 150u

8/10/14
PINDERPTH

MD: 6,856'
TVD: 6,774.39'
Inclination: 48.8°
Azimuth: 269.6°
VS: 219.48'

WOB: 35K
ROT: 0
STKS: 136SPM
Pump Rate: 571 GPM

MD: 6,763'
TVD: 6,707.85'
Inclination: 39.7°
Azimuth: 269.4°
VS: 154.67'

MD: 6,669'
TVD: 6,632.61'
Inclination: 33.9°
Azimuth: 271.1°
VS: 98.42'

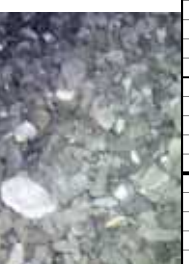
6860-6920 SLT
bky, pty - split li
v w cntd, w srt,
bl - lt gn cut, p r

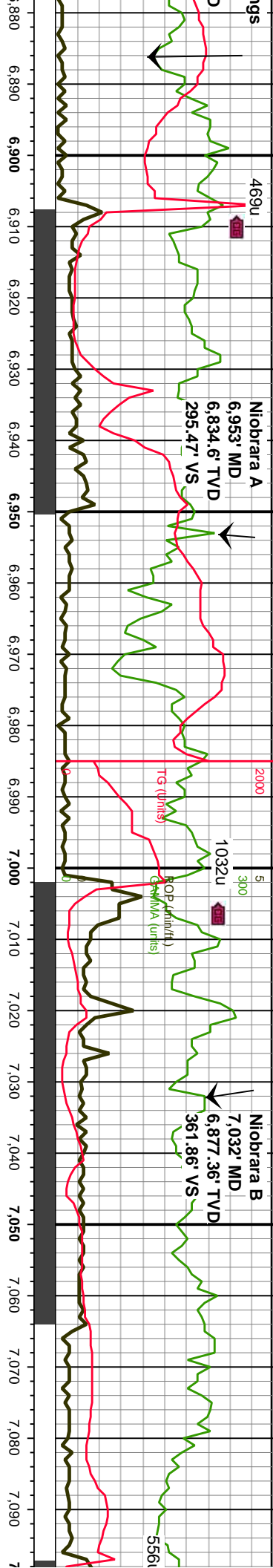
6800-6860 SLTY SH: med gy - dk gy, tr lt gy, ang,
bky, pty - split li
v w cntd, w srt,
bl - lt gn cut, p r

6740-6800 SLTY SH: med gy - dk gy, tr lt gy, ang,
bky, pty - split li, sl frm - v frm, vf gr, v slty - arg,
w srt, sl pyr, rr nod pyr, sl - mod calc, p lt bl - lt gn
cut, p resdl ring

6680-6740 SLTY SH: med gy - dk gy, tr lt gy, ang -
bky, pty - split ip, sl frm - v frm, vf gr, tr f gr, v slty - arg,
w srt, sl pyr, rr nod pyr, sl - mod calc, p lt
cut, p resdl ring

k gy, tr lt gy, ang,
sly - arg, v w cntd,
calc, p lt bl - lt gn

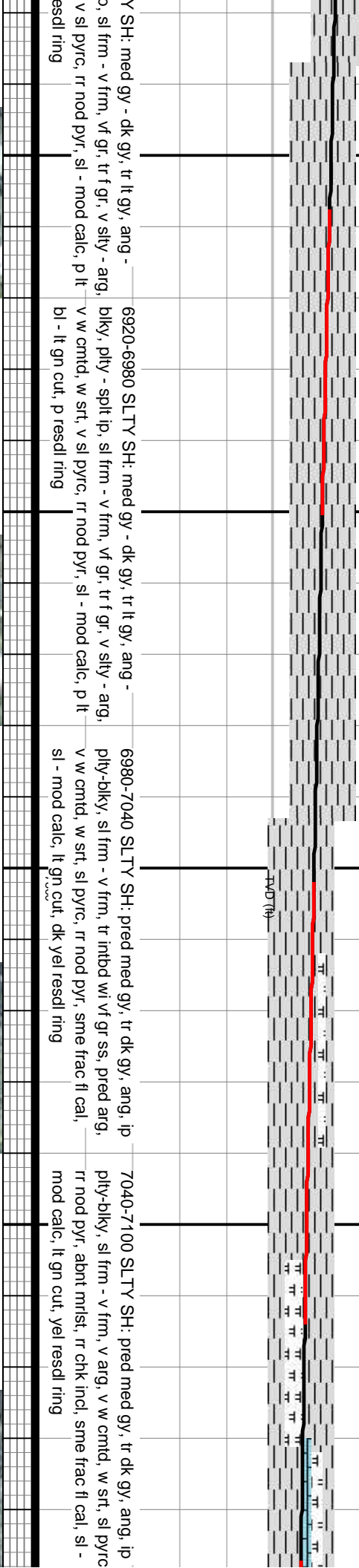


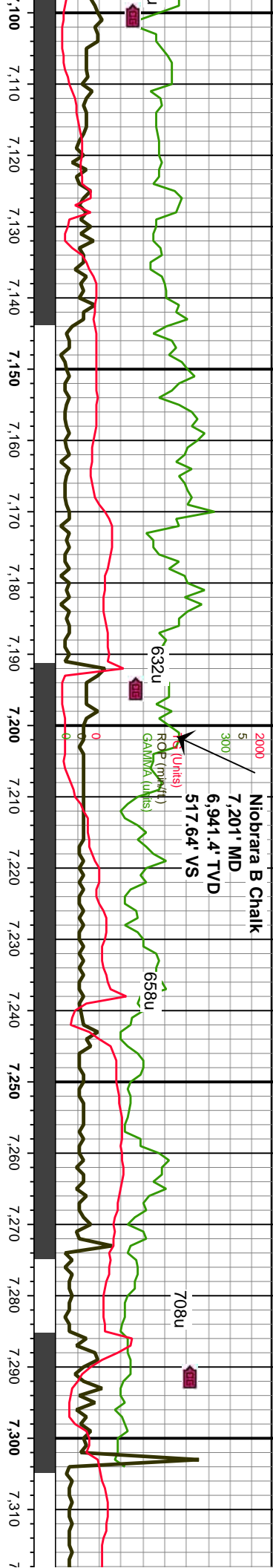


MD: 6,951'
 TVD: 6,833.45'
 Inclination: 54.3 °
 Azimuth: 268 °
 VS: 293.85'

MOB: 31.5K
 ROT: 56
 STKS: 128SPM
 Pump Rate: 534 GPM

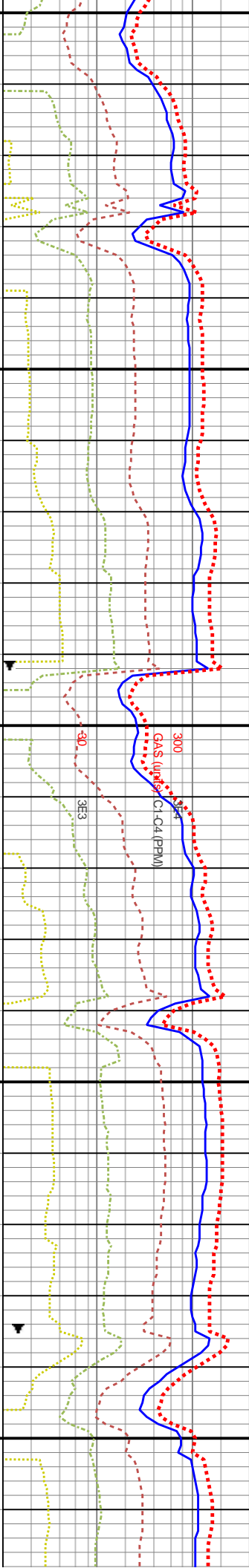
MD: 7,045'
 TVD: 6,883.72'
 Inclination: 61 °
 Azimuth: 266.9 °
 VS: 373.2'





AVG BGG: 330u

AVG BGG: 370u

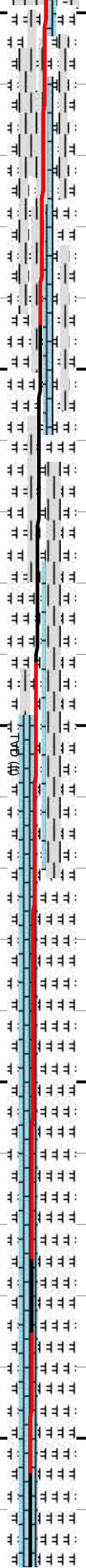


MD: 7,140'
 TVD: 6,923.16'
 Inclination: 69.9°
 Azimuth: 270.3°
 VS: 459.51'

WOB: 40.4K
 ROT: 0
 STKS: 117SPM
 Pump Rate: 494 GPM

MD: 7,235'
 TVD: 6,948.84'
 Inclination: 78.7°
 Azimuth: 270.1°
 VS: 550.82'

MD: 7,305'
 TVD: 6,957.06'
 Inclination: 87.8°
 Azimuth: 271°
 VS: 620.21'



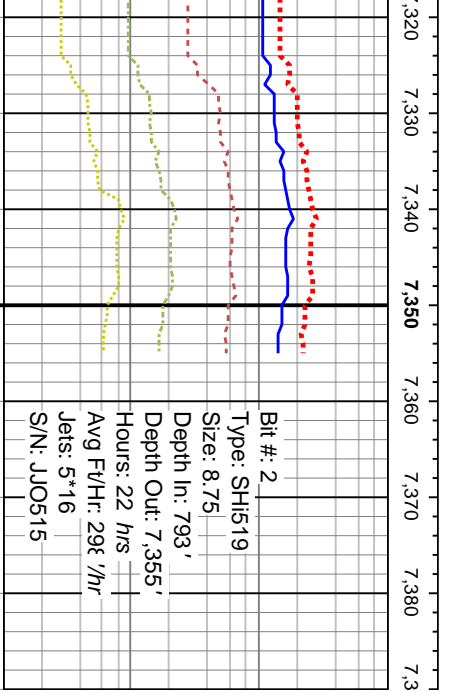
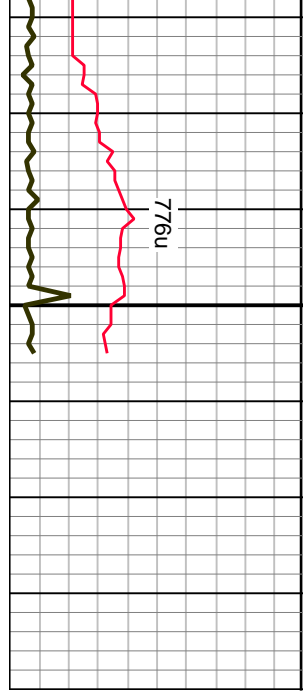
7100-7160 MRLY SH: med gy, occ dk gy, ang, blkly ip, sl frm - v frm, v arg, v w cmtd, w - v w srt, sl pyrc, abnt mlst, tr chk incl, sl - mod calc, p lt gn mky cut, yel resdl ring

7160-7220 70% MRLY SH, 30% CHK: med gy, occ dk gy, ang, blkly ip, sl frm - v frm, v arg, v w cmtd, w - v w srt, sl pyrc, abnt mlst, sme chk incl, tr ise chk, sl - mod calc, sme v calc, p lt gn - bl mky cut, yel resdl ring

7220-7280 50% CHK: pred med- dk gy, pred mot, sl frm - frm, ang - blkly, sme microxin, occ ise chk, tr intbd mlst - sly sh, v calc, v arg, tr frac fl cal, sl pyrc, occ f lam, g lt gn cut, gn resdl ring: 50% MRLY SH: dk gy- blk, med gy ip, ang- blkly, tr spl, sl frm, sl - mod calc, v arg, sl pyrc DP @ 7,250'

7280-7340 70% CHK: pred n mot, sl frm - frm, ang - blkly, sme microxin, lse chk, tr intbd mlst - sly sh, v calc, v arg, tr frac fl cal, sl pyrc, occ f lam, g lt gn cut, ring: 30% MRLY SH: dk gy- blk, med gy ip, ang- blkly, tr spl, sl frm, sl - mod calc, v arg, sl pyrc





Bit #: 2
 Type: SH1519
 Size: 8.75
 Depth In: 793'
 Depth Out: 7,355'
 Hours: 22 hrs
 Avg Ft/Hr: 29ft/hr
 Jets: 5*16
 S/N: JJO515

Projected
 MD: 7,355'
 TVD: 6,958.45'
 Inclination: 89°
 Azimuth: 271°
 VS: 670.14'



TD @
 0600hrs on
 8-10-14

med - dk gy, pred
 some microxln, occ
 , v calc, v arg, tr
 g lt gn cut, gn resdl
 blk, med gy ip, ang-
 alc, v arg, sl pyrc

