

Scale: 5" / 100'
Measured Depth Log

| | | | |
|------------------------|--|--------------------|------------|
| Well Name | Pronghorn 24-8-5XRLNBST01 | | |
| Location | SESW Sec.8 T5N R61W | | |
| State | Colorado | County | Weld |
| Country | United States | Rig Number | Atika 19 |
| API Number | 05-123-45068 | AFE # | 18123 |
| Geographic Region | D.J. Basin | Field | Wattenberg |
| Spud Date | 11/25/2018 | Drilling Completed | 12/2/2018 |
| Surface Coordinates | SESW Sec.8 T5N R61W 247' FSL 1332' FWL | | |
| Ground Elevation | 4,608 | K.B. Elevation | 4,625 |
| Logged Interval | 6,000 To 11,200 | Total Depth | 11,200 |
| Formation | Niobrara B Chalk | | |
| Type of Drilling Fluid | Oil Based Mud | | |

Operator

Company Bonanza Creek
Address Bonanza Creek Energy
410 17th Street
Suite 1400
Denver, CO 80202

Geologist

Name Nick Bauer
Company Bonanza Creek Energy
Address Bonanza Creek Energy
410 17th Street
Suite 1400
Denver, CO 80202























Other

Dan Kabala Wellsite Geologist
Ryan Scribner Wellsite Geologist










































Zone Color Coding




Rock Types

| | | | |
|---|---|---|---|
|  UNKNOWN |    MARLSTONE |  SILTSTONE |  BENTONITE |
|  GYPSUM |  CLAYSTONE |  SANDSTONE |  TUFF |
|  LIMESTONE |  SHALE |  CONGLOMERATE |  CEMENT |
|  CHERT |  SHALE GRAY |  BRECCIA |  CHALK |
|  COAL |  SHALE COLORED |  TILL |  SILTY SHALE |

Accessories

| | | |
|--|--|--|
|  FORAMINIFERA |  GLAUCONITE |  COAL STRINGER |
|  F FOSSIL |  ANHYDRITIC |  GYPSIFEROUS |
|  ALGAE |  GASTROPOD |  MARLSTONE |
|  AMPHIPORA |  OOLITE |  BITUMENOUS SUBSTANCE |
|  BELEMNITE |  OSTRACOD |  NODULES |
|  BIOCLASTIC |  PELECYPOD |  PHOSPHATE PELLETS |
|  BRACHIOPOD |  PELLET |  PYRITE |
|  BRYOZOA |  PISOLITE |  SANDY |
|  CEPHALOPOD |  PLANT REMAINS |  SILTACEOUS |
|  CORAL |  PLANT SPORES |  SILTY |
|  CRINOID |  SCAPHOPOD |  DOLOMITIC |
|  ECHINOID |  STROMATOPOROID |  FELDSPAR |
|  FISH |  FERRUGINOUS PELLET |  ANHYDRITE STRINGER |
| |  FERRUGINOUS |  BENTONITE STRINGER |


Stringer

 SILTY SHALE STRINGER

Minerals

Other Sym

Oil Show


| | |
|---|--|
|  MOLDIC |  FOR |
|  ORGANIC |  OIL SHOW |

 DEAD


 PINPOINT

 EVEN


 VUGGY

 QUESTIONABLE


 SLIDE

 SPOTTED STAINING

Engineering

 SURVEY


 BIT

 TRIP GAS

Porosity

 CASING

 WIRELINE


 EARTHY

 CONNECTION (RIGHT)

 WIRELINE

 FENESTRAL


 CONNECTION GAS

 FRACTURE

 CORE - LOST

Roundin

 INTERCRYSTALLINE

 CORE - RECOVERED

 INTEROOLITIC

 FAULT

 ROUNDED

Symbols

ACTION TOP
 SUBANG
 PACKSTONE

SUBRND
 WACKESTONE

CORE (LEFT)

Textures Sorting

CORE (RIGHT)

BS BOUNDSTONE
 M MODERATE

C CHALKY
 P POOR

CX CRYPTOXLN
 W WELL

TESTED - LEFT
 E EARTHY

TESTED - RT
 FX FINELYXLN

Cut

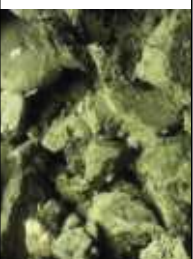
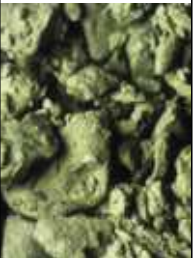
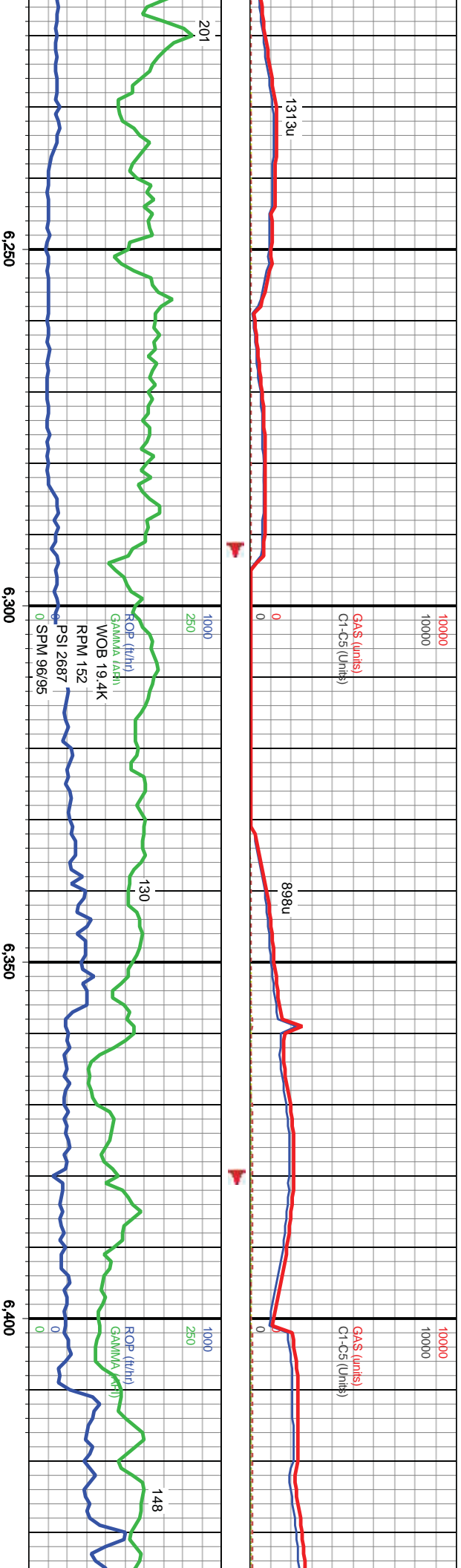
GS GRAINSTONE
 No Cut

L LITHOGRAPHIC
 Fair Cut

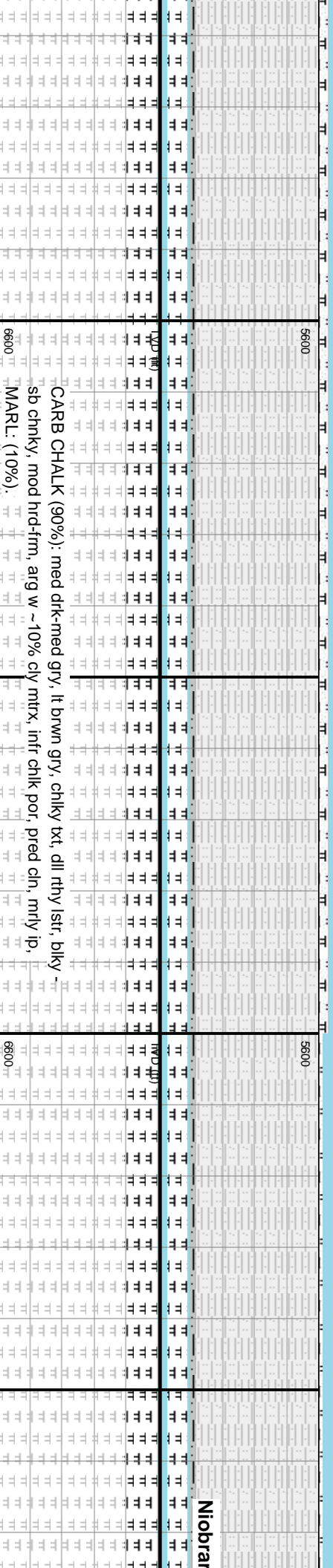
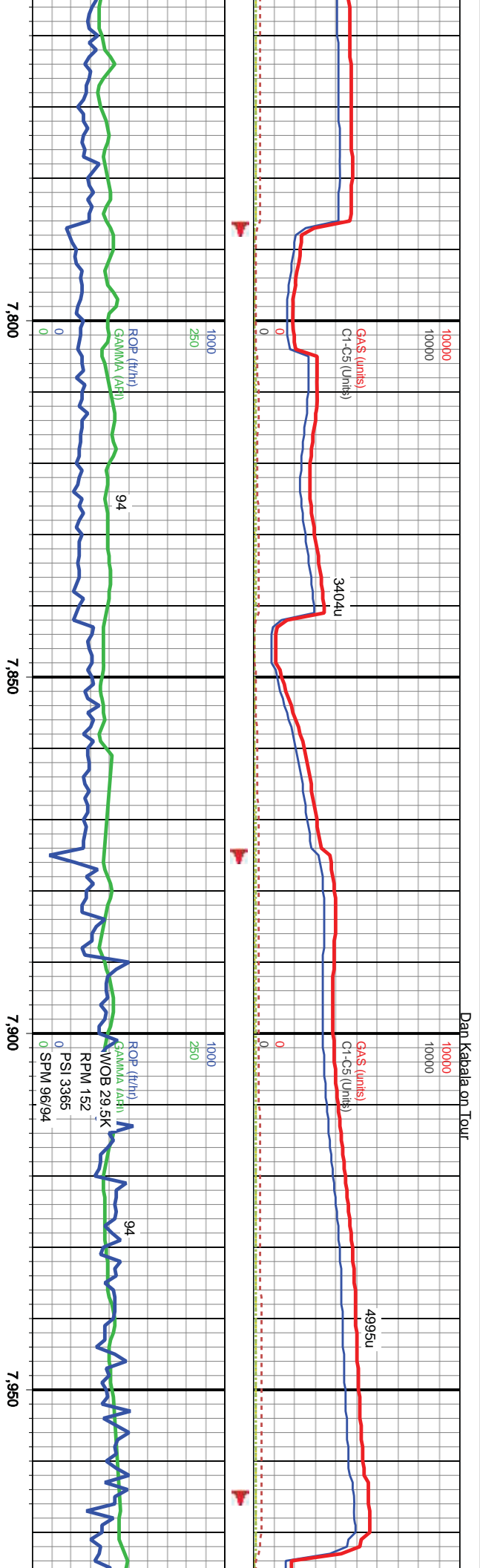
MX MICROXLN
 Good Cut

MS MUDSTONE
 Blank

g



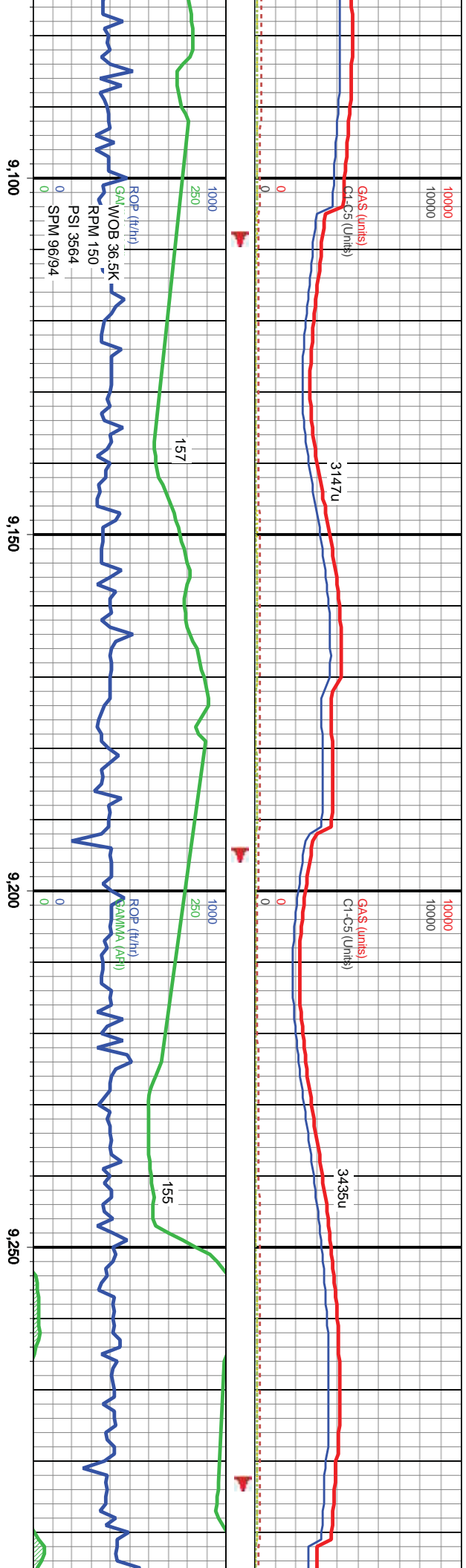
| | | | | | | | |
|---|--|----------|--|--|--|----------|--|
| 669' MD | | 5600 | | NIOBRARA "B" CHALK @ 6074' TVD 6359' MD | | 5600 | |
| RL @ 6010' TVD 6192' MD | | | | | | | |
| (70%) med-med dk gry-brwn, rthy, sbchiky, occ sbwxy spkng ip, frm | | TVD (ft) | | MRLY CHALK (50%): med dk-med gry, lt brwn gry, chiky txt, dll rthy lstr, blk - sb | | TVD (ft) | |
| y, lent chiky lns, no vis perm or por, cmn blk carb mat (SH) to, NSFOC, | | | | chiky, mod hrd-frn, mod arg w 20% cly mtrx, infr chlk por, vry mfly w blk carb mat | | | |
| frn, MRLY CHLK: (30%), abn alt BENT (phyllo) w pyr nuds. | | 6600 | | (SH) to, CHALK (30%), MARL (20%). | | 6600 | |
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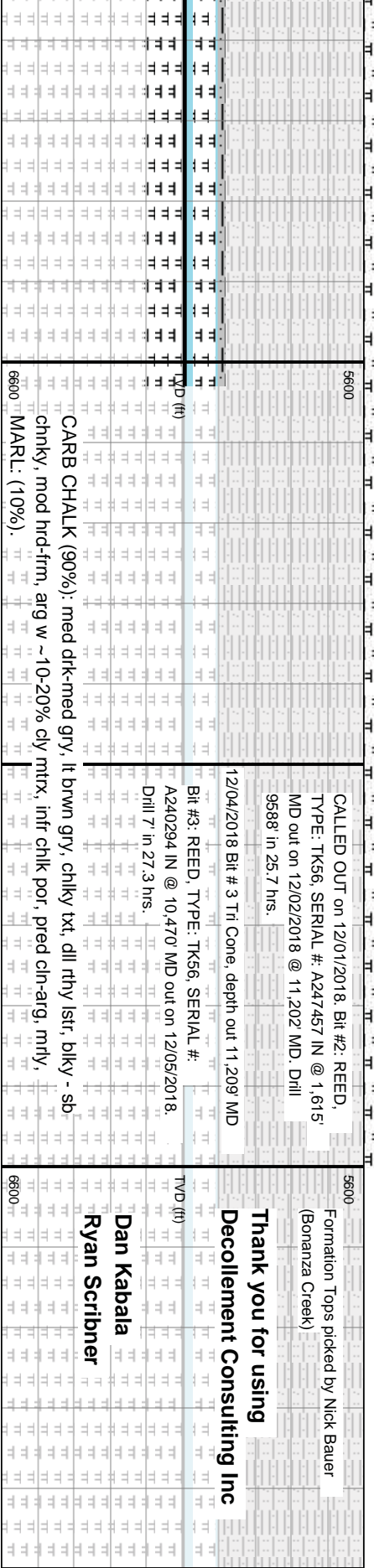
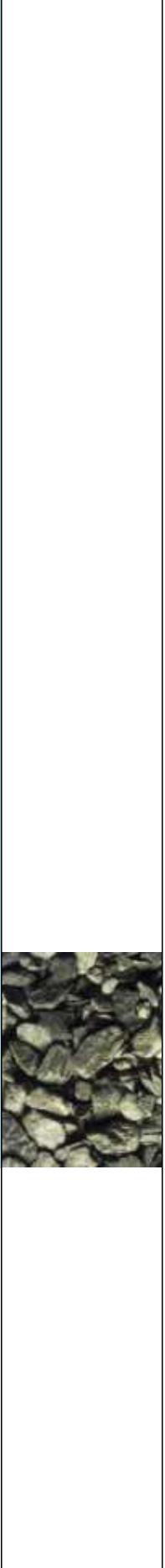
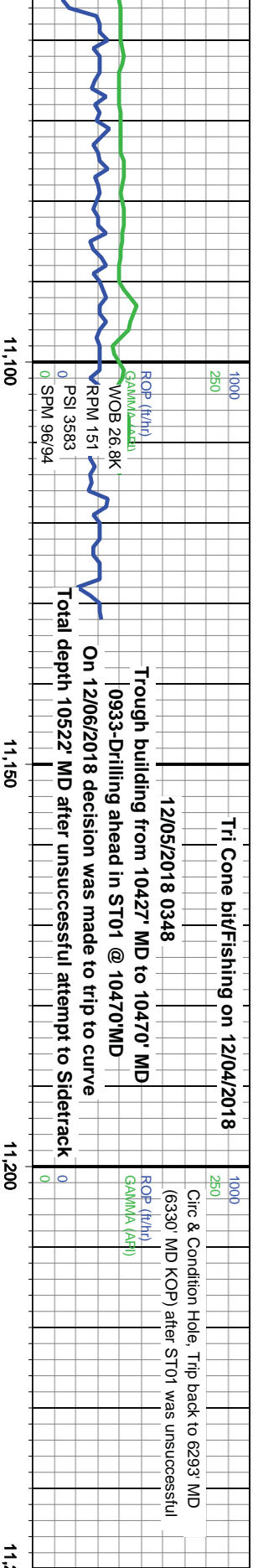
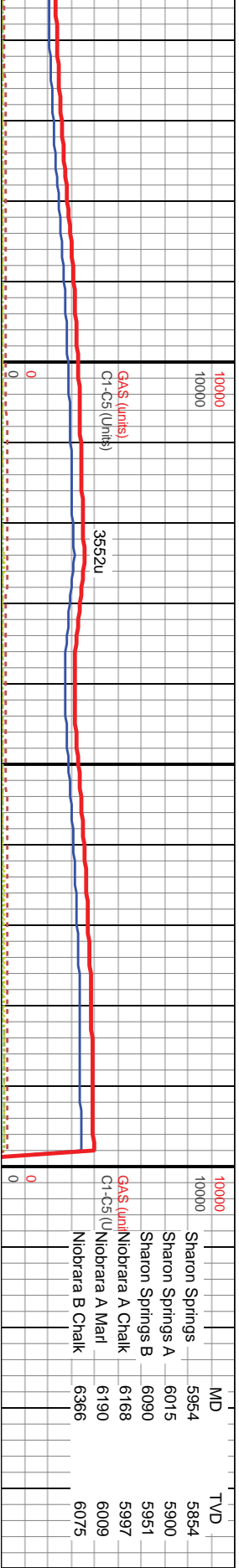
MD: 7,763'
Inclination: 90°
Azimuth: 3°
TV D: 6,093'
VS: 1,497'

MD: 7,851'
Inclination: 90°
Azimuth: 358°
TVD: 6,093'
VS: 1,585'

MD: 7,941'
Inclination: 90°
Azimuth: 354°
TVD: 6,093'
VS: 1,674'



| | | | | | |
|---|--|---|--|---|--|
| MD: 9,082' | | MD: 9,169' | | MD: 9,257' | |
| Inclination: 90° | | Inclination: 90° | | Inclination: 90° | |
| Azimuth: 5° | | Azimuth: 6° | | Azimuth: 5° | |
| VD: 6.093 | | TVD: 6.093' | | TVD: 6.093 | |
| VS: 2.808' | | VS: 2.895' | | VS: 2.983' | |
| MRL Y CHALK (50%): med dkf-med gry. lt brwn gry, chiky txt, dll rthy lstr wxy ip, blk | | MRL Y CHALK (50%): med dkf-med gry. lt brwn gry, chiky txt, dll rthy lstr wxy ip, blk | | MRL Y CHALK (50%): med dkf-med gry. lt brwn gry, chiky txt, dll rthy lstr wxy ip, blk | |
| - sb chnky, mod hrd-frm, mod arg w 20% cly mtrx, infr chlk por, vry mrlly w blk carb | | - sb chnky, mod hrd-frm, mod arg w 20% cly mtrx, infr chlk por, vry mrlly w blk carb | | - sb chnky, mod hrd-frm, mod arg w 20% cly mtrx, infr chlk por, vry mrlly w blk carb | |
| mat (SH) to, MARL (50%), CHALK (tr%). | | mat (SH) to, MARL (50%), CHALK (tr%). | | mat (SH) to, MARL (50%), CHALK (tr%). | |
| 6600 | | 6600 | | 6600 | |



MD: 11,103'
Inclination: 90°
Azimuth: 358°
TVD: 6,093
VS: 4,825'

Thank you for using
Decollement Consulting Inc

Dan Kabala
Ryan Scribner

Formation Tops picked by Nick Bauer
(Bonanza Creek)