



Scale: 5" / 100'
Measured Depth Log

Well Name State Seventy Holes F11-J14-3HNC

Location NWNW SEC 3 T4N R62W

State COLORADO

County WELD

Country USA

Rig Number CADE 26

API Number 05-123-38884-00

Region DJ BASIN

Field WATTENBERG

Spud Date 3/21/2014

Drilling Completed 3/28/2014

Surface Coordinates 404' FNL x 635' FWL (LAT: 40.347765, 104.319753)

Bottom Hole Coordinates (Projected) 470' FSL x 988' FWL (LAT: 40.335412, 104.317516)

Ground Elevation 4534'

K.B. Elevation 4551'

Logged Interval 5800' To 10897'

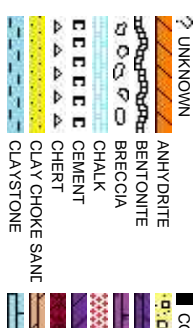
Total Depth 10897'

Formation NIOBRARA, C-CHALK

Type of Drilling Fluid H2O, LSND

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

Name Paul McKay
Company Bonanza Creek
Address 410 17th Street
Denver, CO 80202



Operator

Energy Inc.

Suite 1500

202

Geologist

Energy Inc.

Suite 1500

202

Rock Types

CONGLOMERATE	MARLSTONE	SHALY SANDSTONE
DOLomite	METAMORPHIC	SHALY SILTSTONE
DOLomite Limestone	NO SAMPLE	SILTY SHALE
GRANITE	SALT	SILTSTONE
Gypsum	SANDSTONE	TILL
igneous	SALT-PEPPER SAN	TUFF
SIDERITE or LIMONITE	SHALE	WELDED TUFF
LIMESTONE	SHALE COLORED	
	SHALE GRAY	

Accessories

Fossils	GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL
INOCERAMUS	B BENTONITE	K KAOLIN	ANHYDRITE STRINGER
ALGAE	O OOLITE	BITUMENOUS SUBSTANCE	BENTONITE STRINGER
AMPHIPORA	O OSTRACOD	BRECIA FRAGMENTS	COAL STRINGER
BELEMNITE	P PELECYPOD	C CALCAREOUS	DOLOMITE STRINGER
BIOCLASTIC	P PELLET	CARBONACEOUS FLAKES	GYPSUM STRINGER
BRACHIOPOD	P PISOLITE	C CHERT	LIMESTONE STRINGER
BRYOZOA	P PLANT REMAINS	C CHERT	MARLSTONE (CALC) STRG
CEPHALOPOD	S PLANT SPORES	C COAL - THIN BEDS	MARLSTONE (DOL) STRG
CORAL	S SCAPHOPOD	D DOLOMITIC	SANDSTONE STRINGER
CRINOID	S STROMATOPOROID	F FELDSPAR	SHALE STRINGER
ECHINOID	F FERRUGINOUS PELLET	F FERRUGINOUS	S SILTY
FISH	Minerals	T TUFFACEOUS	
FORAMINIFERA	A ANHYDRITIC	G GLAUCONITE	
F FOSSIL	A ARGILLACEOUS	G GYPSIFEROUS	Stringer

Other Symbols

Oil Show	P PINPOINT	DST INTERVAL	WIRELINE TESTED - LEFT	E EARTHY
V VUGGY	F FAULT	WIRELINE TESTED - RT	Fx FINELY XLN	
D DEAD	FORMATION TOP	DRILL STEM TEST	GS GRAINSTONE	
E EVEN	GAS SHOW	MN DEPTH	L LITHOGRAPHIC	
Q QUESTIONABLE	BIT	OIL SHOW	MX MICROXLN	
S SPOTTED STAINING	C CONNECTION (UP)	MN DEPTH UP	Rounding	MS MUDSTONE
C CONNECTION (DOWN)	MN DEPTH (DOWN)	A ANGULAR	PS PACKSTONE	
Porosity	C CONNECTION GAS	N NORMAL FAULT	R ROUNDED	WS WACKESTONE
E EARTHY	C CONNECTION GAS (LEFT)	O OVERTURNED STRATA	B SUBANG	
F FENESTRAL	T TRIP GAS	R REVERSE FAULT	R SUBRND	
F FRACTURE	T TRIP GAS (LEFT)	C CASING	Textures	M MODERATE
I INTERCRYSTALLINE	D DOWN TIME GAS	S SIDEWALL CORE (LEFT)	P POOR	
I INTERCRYSTALLINE	D DOWN TIME GAS (LEFT)	S SIDEWALL CORE (RIGHT)	BS BOUNDSTONE	
M MOLDIC	C CORE - LOST	S SLIDE	C CHALKY	W WELL
O ORGANIC	C CORE - RECOVERED	S SURVEY	Cx CRYPTOXLN	

ROP
ROF
GAMMA

Bit Data
Bit #: 3
Type: HE04JMRSV
Size: 8.75
Depth In: 5,735'
Jets: 3 x 20
S/N: 1387679

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

COLUMBINE LOGGING RIGGED UP ON
3/24/2014 MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0603 BEGAN
ON 3/24/2014, 22:59 MST at 5800' MD

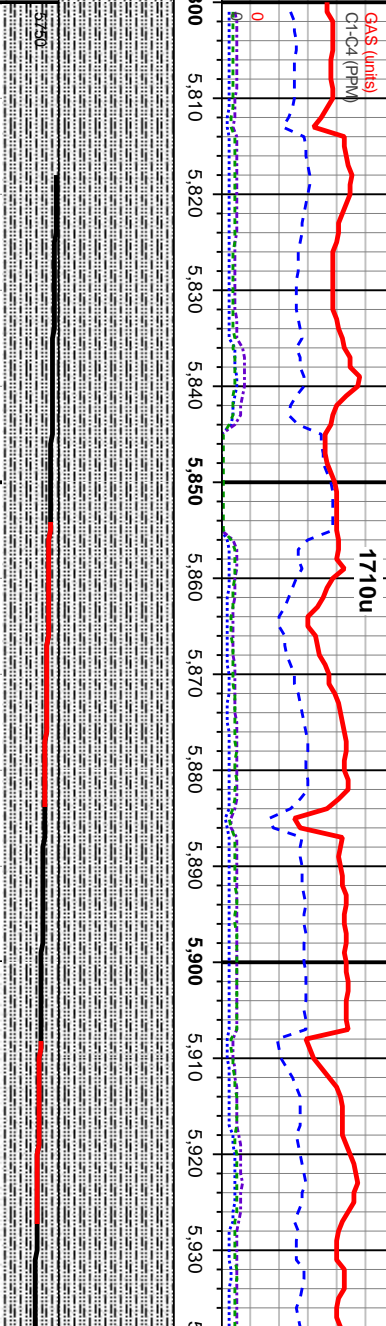
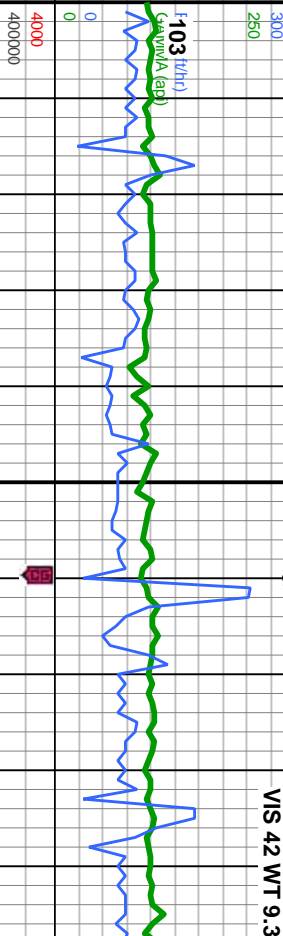
Depth Labels

% Lith

Well Bore
TVD

Oil Show

Images



MD: 5,818'
Inclination: 14.6 °
Azimuth: 172.98 °
TVD: 5,763.97'
VS: -305.67'

MD: 5,866'
Inclination: 19.38 °
Azimuth: 176.17 °
TVD: 5,809.86'
VS: -291.67'

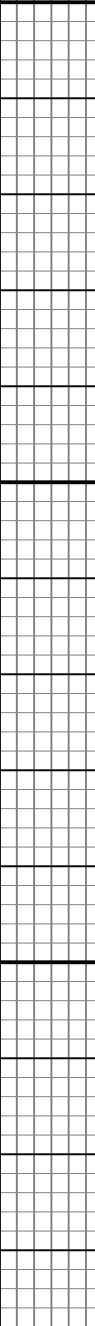
MD: 5,913'
Inclination: 23 °
Azimuth: 179.47 °
TVD: 5,853.68'
VS: -274.78'

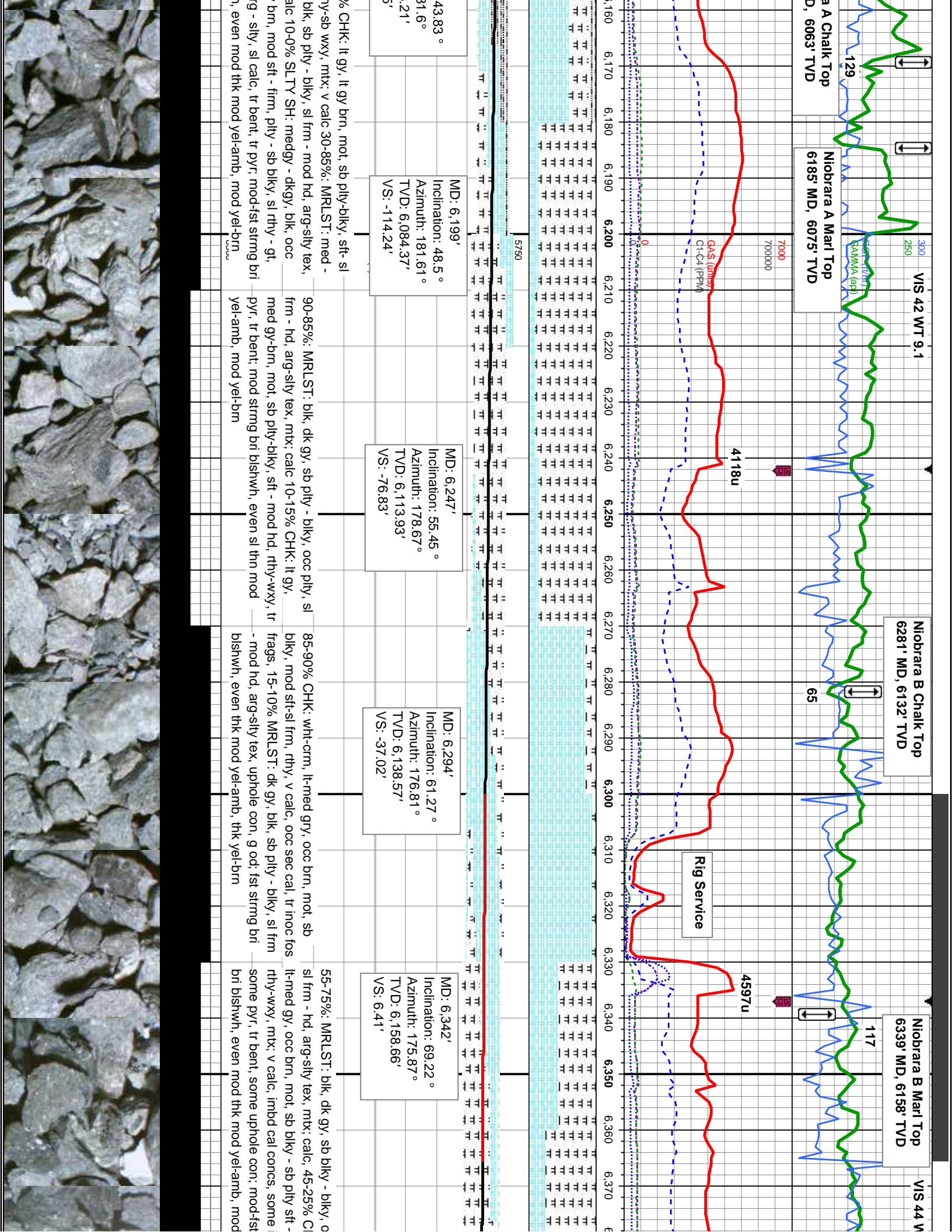
100% SLTY SH: med-dk gy, blk gy, mod sft
- sl firm, sb blk - blk, occ ply, rthy - gt, mtx;
arg - sily, sl calc

100% SLTY SH: med-dk gy, blk gy, mod sft - sl firm,
sb blk - blk, occ ply, rthy - gt, mtx; arg - sily, sl calc

100% SLTY SH: med-dk
sb blk - blk, occ ply, r

E
G
M
F
T
S





6364' - 6453' MD

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700000

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89

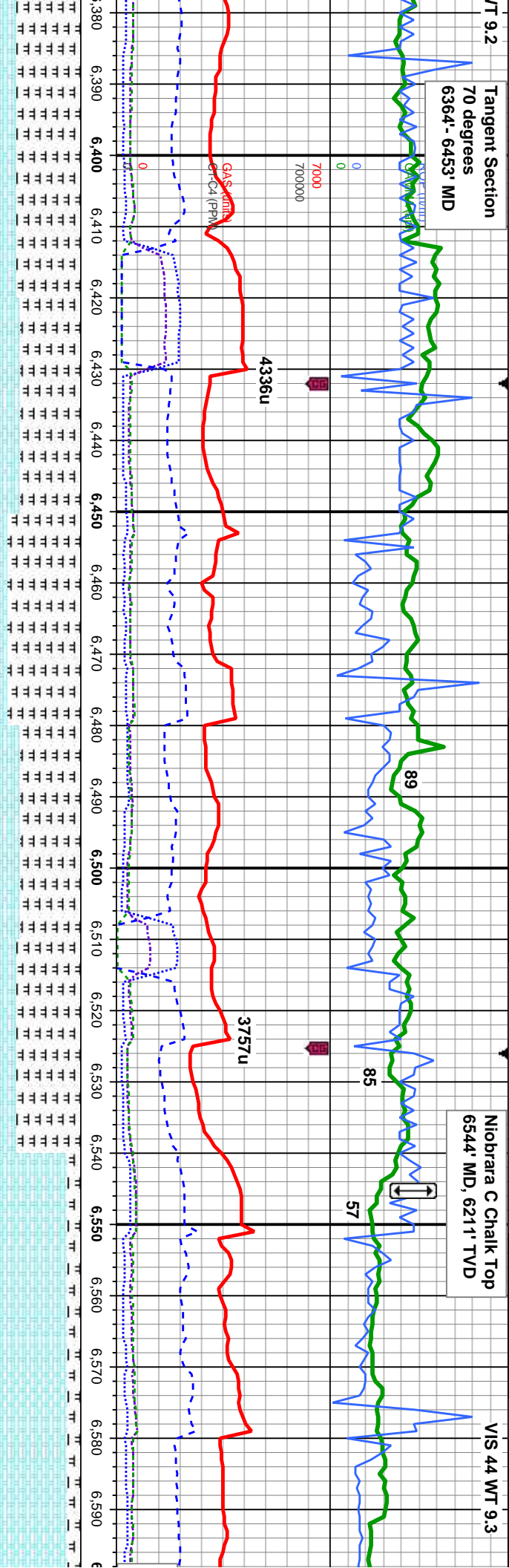
85

57

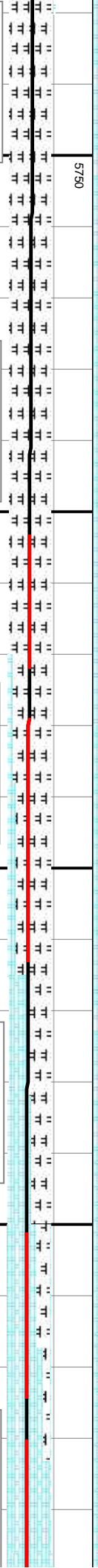
3757u

4336u

GAS (ml)
G-C4 (PPM)



5750



MD: 6,388'
Inclination: 72.21 °
Azimuth: 174.85 °
TVD: 6,173.85'
VS: 49.76'

MD: 6,436'
Inclination: 72.31 °
Azimuth: 176.81 °
TVD: 6,188.47'
VS: 95.38'

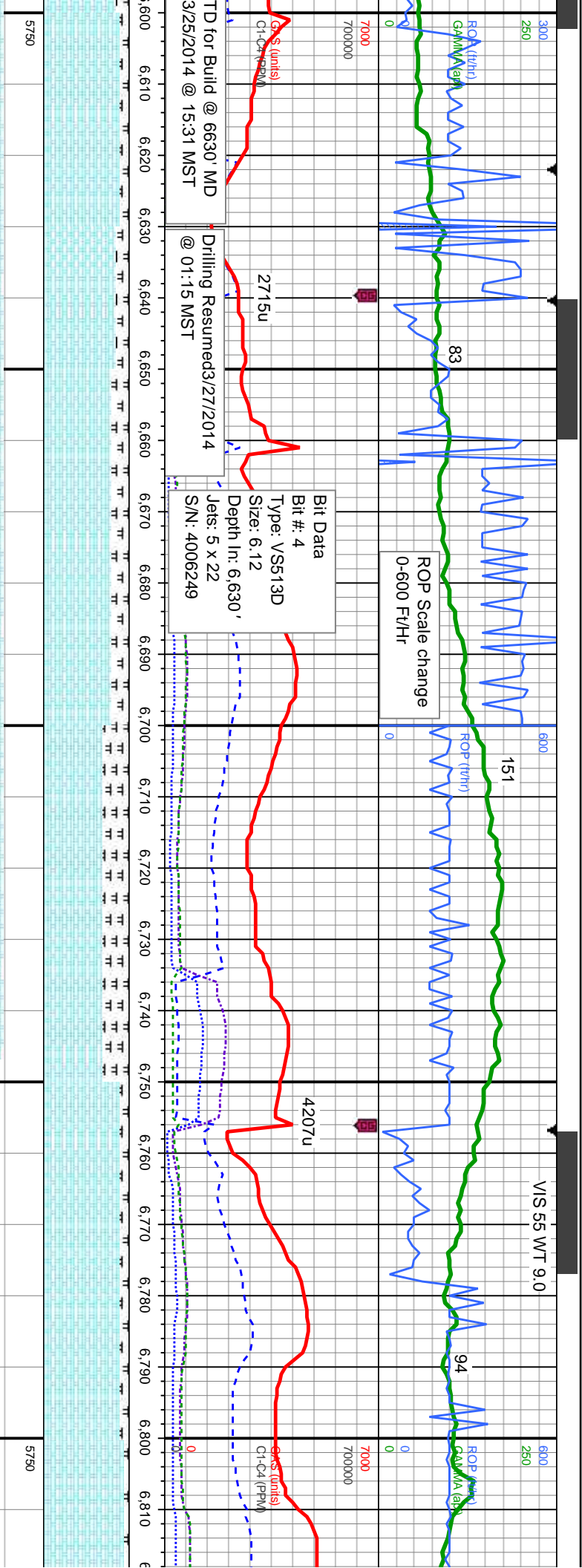
MD: 6,483'
Inclination: 76.78 °
Azimuth: 176.08 °
TVD: 6,201'
VS: 140.53'

MD: 6,531'
Inclination: 81.29 °
Azimuth: 175.15 °
TVD: 6,210.12'
VS: 187.56'

MD: 6,587'
Inclination: 89.41 °
Azimuth: 174.54 °
TVD: 6,214.66'
VS: 243.26'

occ sb pty, blk, dk gy, sb blkly - sb pty, sl frm -	75-70%: MRLST: blk, dk gy, sb blkly - sb pty, sl frm -	85-70%: MRLST: blk, dk gy, sb blkly - sb pty, sl frm -	75-15%: MRLST: blk, dk gy, sb blkly - blkly, occ sb pty, sl frm - hd, arg-sily tex, mx; calc, 25-85% CHK: wht-crm, lt gy, arg-sily tex, mx; calc, 25-30% CHK: wht-crm, lt gy, occ brn, mot, sb blkly - sb pty sft - mod hd, rthy-wxy, mot, sb blkly - sb pty sft - mod hd, rthy-wxy, mx; v calc, imbd cal concs, occ inoc fos, tr pyr, tr bent, abnt uphole con; v slow strng bri bishwn, even mod thk mod yel-amb, mod yel-brn	85-90% CHK: wht-crm, t sft - mod hd, rthy-wxy, m concs, 15-10%: MRLST: sb pty, sl frm - hd, arg-si strng bri bishwn, even m yel-brn
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PROJECTION TO BIT
MD: 6630'
INC: 89.41
AZI: 174.54
TVD: 6215.10'
VS: 286.22

tan-brn, mot, sb blkly - sb ply,
tx; v calc, occ imbd cal
blk, dk gy, sb blkly - blkly, occ
y tex, mt; calc, con spl; 1st
mod thk mod yel-amb, mod

85-80% CHK: lt gry-med gry, occ crm and tan-brn, mot, sb
blkly - sb ply, sft - mod hd, rthy-wxy, mt; v calc, occ imbd cal
concs, 15-20%: MRLST: blk, dk gy, sb blkly - blkly, occ sb ply,
sl frm - hd, arg-sily tex, mt; calc, mod bl wht milky-stmg, no
flor, dull gr-yel ring, fr stn

MD: 6.703'
Inclination: 90.28 °
Azimuth: 172.79 °
TVD: 6,214.97'
VS: 359.21'

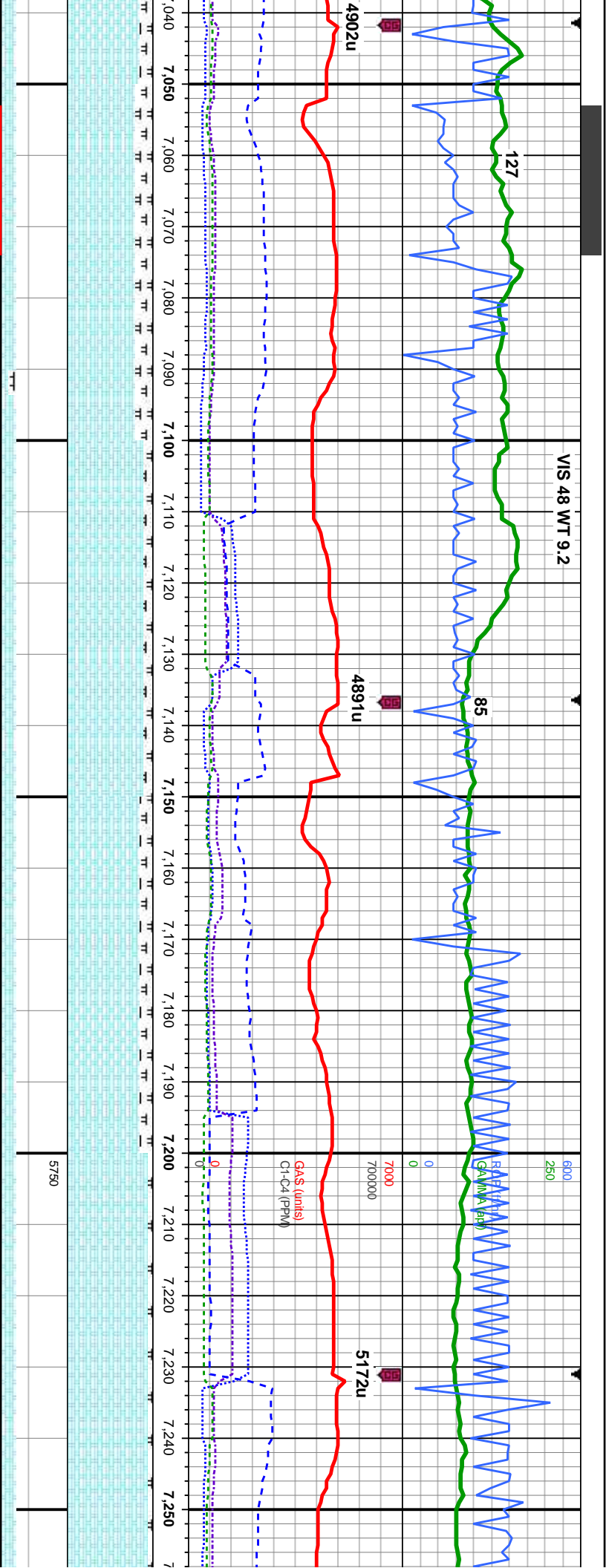
70% CHK: lt gry-med gry, occ crm and
tan-brn, mot, sb blkly - sb ply, sft - mod hd,
rthy-wxy, mt; v calc, occ imbd cal concs,
30%: MRLST: blk, dk gy, sb blkly - blkly, occ
sb ply, sl frm - hd, arg-sily tex, mt; calc,
mod bl wht milky-stmg, no flor, med gr-yel
ring, tr stn

MD: 6.798'
Inclination: 89.01 °
Azimuth: 174.72 °
TVD: 6,215.56'
VS: 454.17'

90% CHK: lt-med gry, occ crm and tan-brn,
mot, sb blkly - sb ply, sft - mod hd, rthy-wxy,
mt; v calc, occ imbd cal concs, 10%:
MRLST: blk, dk gy, sb blkly - blkly, occ sb ply,
sl frm - hd, arg-sily tex, mt; calc, mod bl
wht milky-stmg, no flor, med gr-yel ring, tr
stn

95% CHK: wht-c-
blkly - sb ply, sft
calc, occ imbd c
dk gy, sb blkly -
arg-sily tex, mt; x
mod-fast blshw/
ring, mod stn



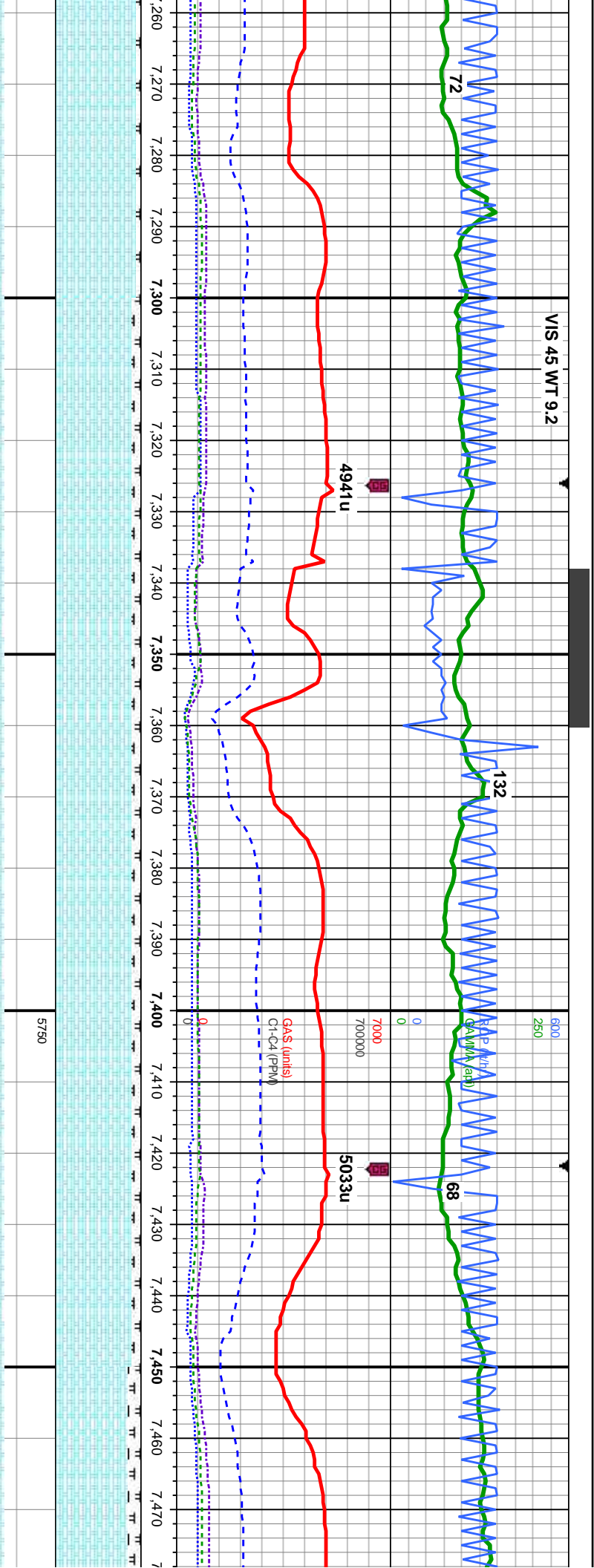


MD: 7,083'
Inclination: 88.23 °
Azimuth: 178.47 °
TVD: 6,224.68'
VS: 738.11'

MD: 7,178'
Inclination: 89.94 °
Azimuth: 179.1 °
TVD: 6,226.2'
VS: 832.45'

t, sb blkly ; calc, alky, occ ; calc, tr mod bl wht , fr stn	80% CHK: lt-med gry, mot, sb blkly - sb pily, sft - mod hd, rthy-wxy, mtb; v calc, 20%: MRLST: blk, dk gy, sb blkly - blkly, occ sb pily, sl frm - hd, arg-sily tex, mtb; calc, imbd cal conc, tr inoc fos frag, g od, mod bl wht milky-stmg, no flor, med gr-yel ring, fr stn	90% CHK: lt-med gry, mot, sb blkly - sb pily, sft - mod hd, rthy-wxy, mtb; v calc, 10%: MRLST: blk, dk gy, sb blkly - blkly, occ sb pily, sl frm - hd, arg-sily tex, mtb; calc, tr inoc fos frag, g od, mod bl wht milky-stmg, no flor, dull gr-yel ring, fr stn	85% CHK: lt-med gry, mot, sb blkly - sb pily, sft - mod hd, rthy-wxy, mtb; v calc, 15%: MRLST: blk, dk gy, sb blkly - blkly, occ sb pily, sl frm - hd, arg-sily tex, mtb; calc, imbd cal conc, tr inoc fos frag, g od, mod bl wht milky-stmg, no flor, dull gr-yel ring, fr stn	95% CHK: lt-med gry, occ dk gry, mot, sb blkly - sb pily, sft - mod hd, rthy-wxy, mtb; v calc, 5%: MRLST: blk, dk gy, sb blkly - blkly, occ sb pily, sl frm - hd, arg-sily tex, mtb; calc, imbd cal conc, tr inoc fos frag, g od, mod-fast blshw stmg, no flor, med brt wh ring, mod stn	95% C blkly - s calc, 5% occ sb imbd c mod-fa ring, m
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MD: 7,273'
Inclination: 90.0°
Azimuth: 179.07°
TVD: 6,226.25'
VS: 926.75'

CHK: lt-med gry, occ dk gry, mot, sb
b pily, sft - mod hd, rthy-wxy, mtx; v
10%: MRLST: blk, dk gy, sb blkly - blkly,
pily, sl frm - hd, arg-sily tex, mtx; calc,
calc, imbd cal conc, tr inoc fos frag, tr pyr, g od,
st bishwh string, no flor, med bri wh
sin

90% CHK: med-dk gry, lt gry, mot, sb blkly -
sb pily, sft - mod hd, rthy-wxy, mtx; v calc,
10%: MRLST: blk, dk gy, sb blkly - blkly, occ
sb pily, sl frm - hd, arg-sily tex, mtx; calc,
imbd cal conc, some lse cal, g od, mod-fast
bishwh string, no flor, med bri wh ring, mod
sin

MD: 7,368'
Inclination: 90.71°
Azimuth: 177.06°
TVD: 6,225.66'
VS: 1,021.23'

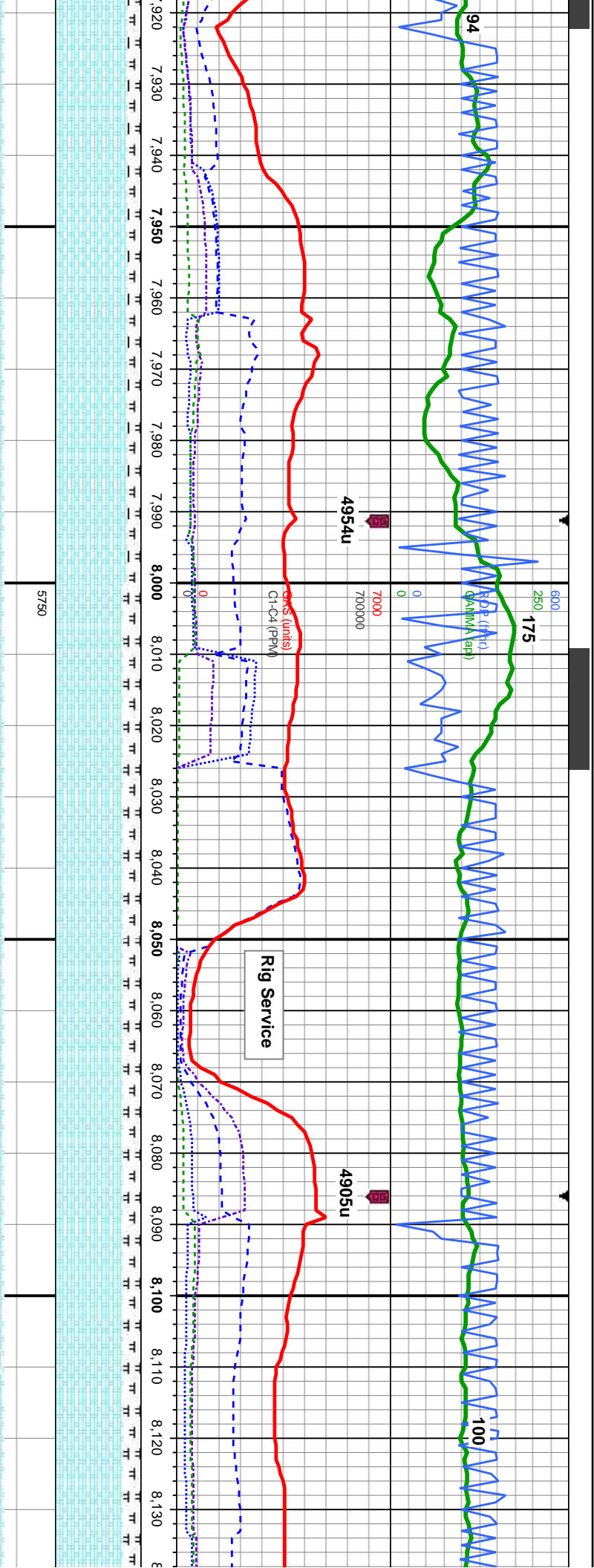
90% CHK: med-dk gry, lt gry, mot, sb blkly -
sb pily, sft - mod hd, rthy-wxy, mtx; v calc,
10%: MRLST: blk, dk gy, sb blkly - blkly, occ
sb pily, sl frm - hd, arg-sily tex, mtx; calc,
imbd cal conc, some lse cal, g od, mod-fast
bishwh string, no flor, med bri wh ring, mod
sin

90% CHK: med-dk gry, lt gry, mot, sb blkly -
sb pily, sft - mod hd, rthy-wxy, mtx; v calc,
10%: MRLST: blk, dk gy, sb blkly - blkly, occ
sb pily, sl frm - hd, arg-sily tex, mtx; calc,
imbd cal conc, some lse cal, g od, mod bl
wht milky-string, no flor, med gr-yel ring, fr
sin

MD: 7,463'
Inclination: 90.68°
Azimuth: 176.53°
TVD: 6,224.51'
VS: 1,115.9'

85% CHK: lt-med gry, occ
blkly - sb pily, sft - mod hc
calc, 15%: MRLST: blk, d
occ sb pily, sl frm - hd, ar
imbd cal conc, g od, mod
no flor, med gr-yel ring, fr





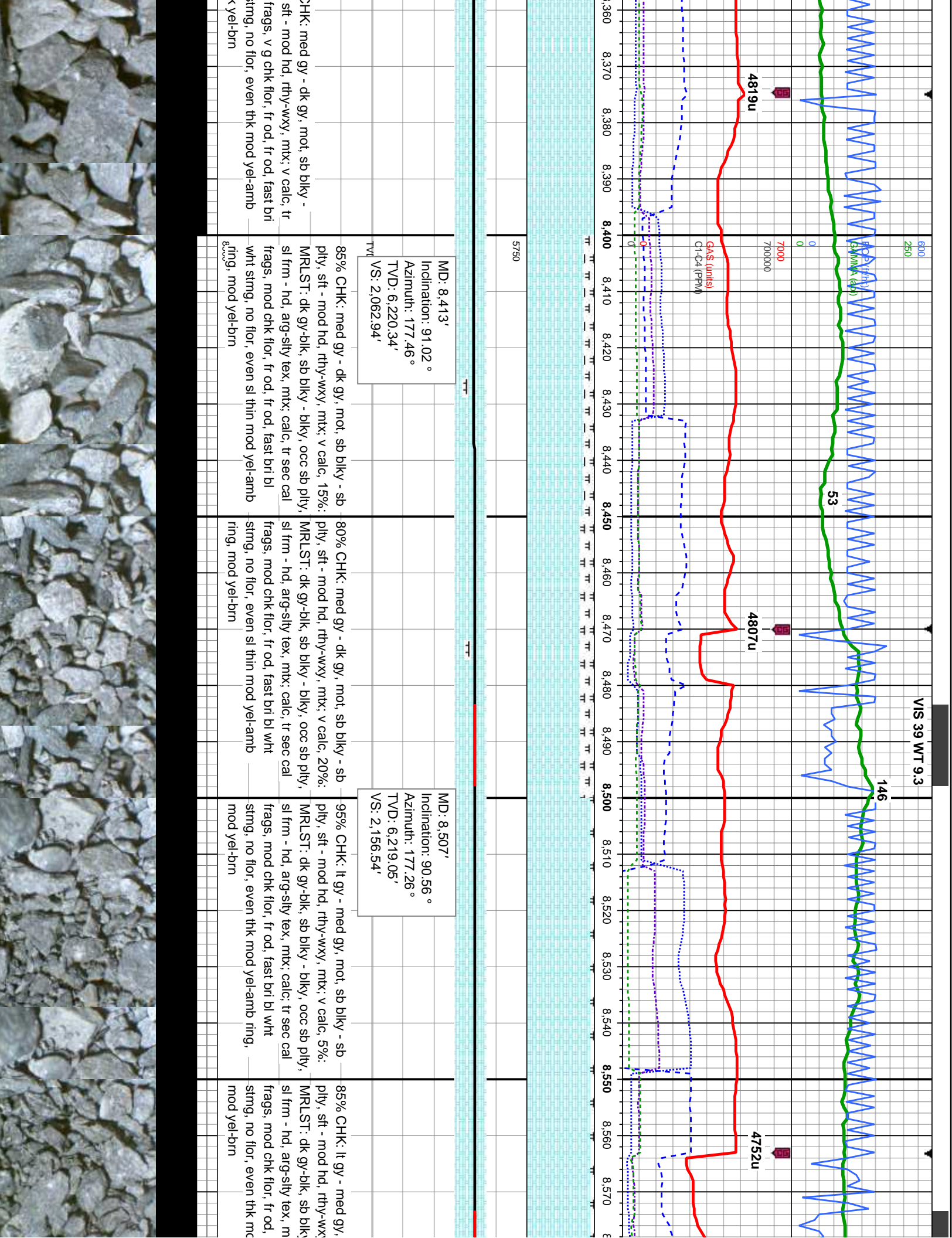
MD: 7,938'
Inclination: 88.37 °
Azimuth: 175.42 °
TVD: 6,220.92'
VS: 1,589.82'

MD: 8,033'
Inclination: 89.48 °
Azimuth: 177.16 °
TVD: 6,222.7'
VS: 1,684.54'

MD: 8,128'
Inclination: 89.88
Azimuth: 177.19 °
TVD: 6,223.23'
VS: 1,779.17'

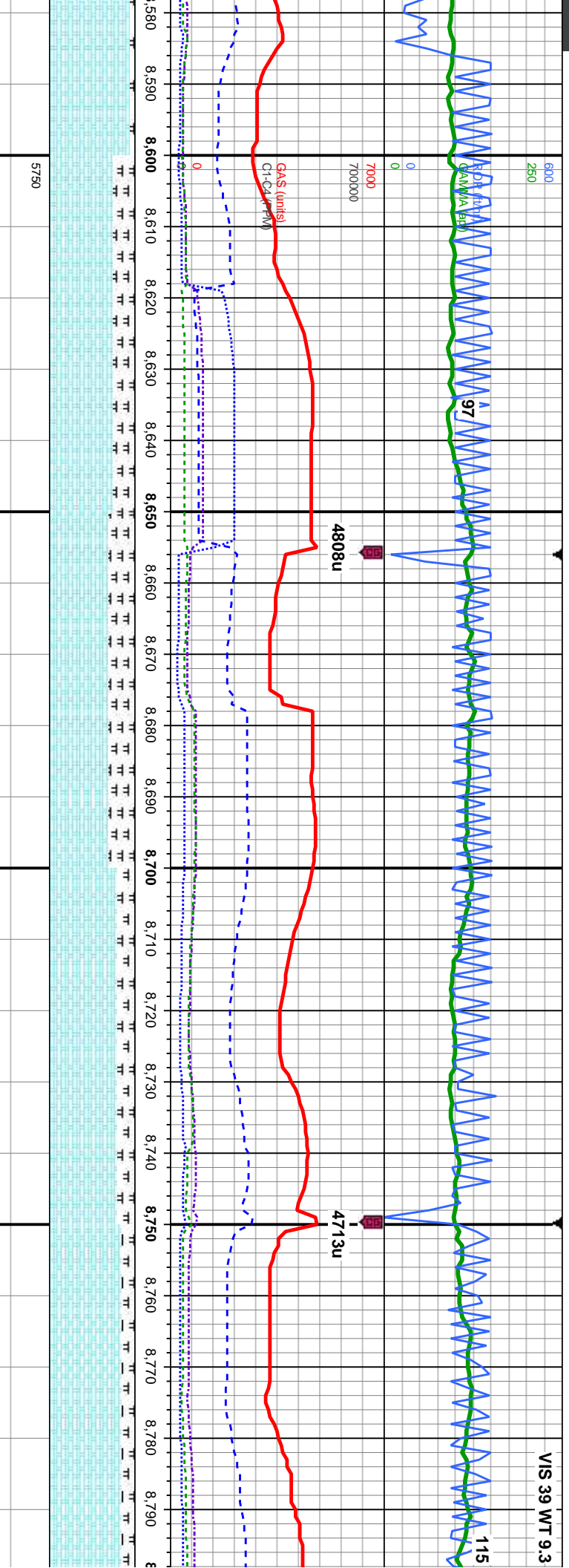
firm, lt-med gry, occ dk gry, ply, sft - mod hd, rthy-wxy, MRLST: blk, dk gy, sb biky - sl frm - hd, arg-sily tex, mtx; med yel-amb ring, tr yel-brn	85% CHK: wht-crm, lt-med gry, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: blk, dk gy, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc, tr foss, tr bent, fr od, fast bri bl wht string, no flor, even sl thin mod yel-amb ring, tr yel-brn sin	80% CHK: med gy - dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 20%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc: tr sec imbd cal, tr inoc fos, fast bri bl wht string, no flor, even sl thin mod yel-amb ring, tr yel-brn sin	80% CHK: med gy - dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 20%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc: tr sec imbd cal, tr inoc fos, fast bri bl wht string, no flor, even sl thin mod yel-amb ring, tr yel-brn sin	80% CHK: med gy - dk gy, mot, sb ply, sft - mod hd, rthy-wxy, MRLST: dk gy-blk, sb biky - biky, o sl frm - hd, arg-sily tex, mtx; calc: t imbd cal, tr inoc fos, tr pyr, mod-fac wht string, no flor, even sl thin mod ring, tr yel-brn sin
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MD: 8,413'
Inclination: 91.02°
Azimuth: 177.46°
TVD: 6,220.34'
VS: 2,062.94'

MD: 8,507'
Inclination: 90.56°
Azimuth: 177.26°
TVD: 6,219.05'
VS: 2,156.54'



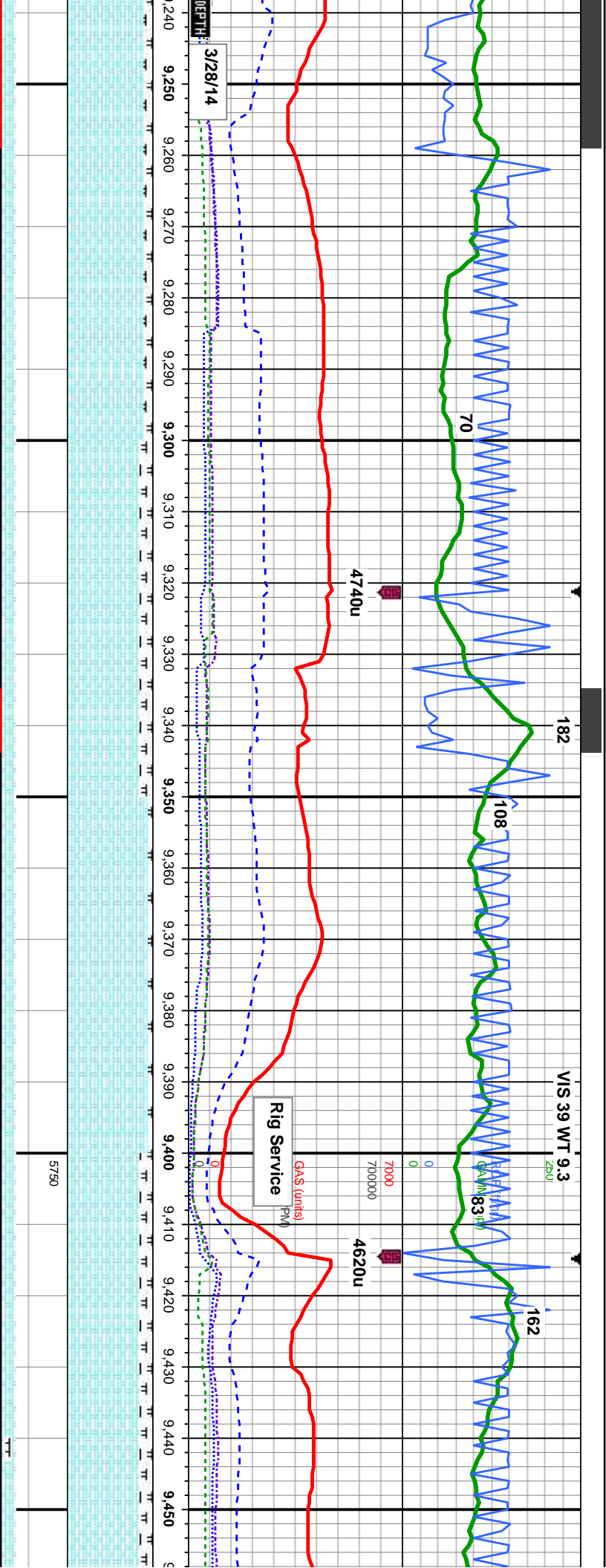
MD: 8,602'
Inclination: 89.41 °
Azimuth: 177.1 °
TVD: 6,219.07'
VS: 2,251.17'

MD: 8,697'
Inclination: 89.26 °
Azimuth: 177.15 °
TVD: 6,220.18'
VS: 2,345.8'

MD: 8,792'
Inclination: 89
Azimuth: 176.
TVD: 6,221.46'
VS: 2,440.45'

mot, sb blkly - sb /, mtx: v calc, 15%: - / - blkly, occ sb ply, tx; calc; tr sec cal	75% CHK: med gy - dk gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 25%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr sec cal frags, mod chk flor, fr od, fast bri bl wht stimg, no flor, even thk mod yel-amb ring, mod yel-brn	70% CHK: med gy - dk gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 30%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr sec cal frags, mod chk flor, fr od, fast bri bl wht stimg, no flor, even thk mod yel-amb ring, mod yel-brn	80% CHK: lt gy - med gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 20%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr sec cal frags, mod chk flor, fr od, v fast bri bl wht stimg, no flor, even thk mod yel-amb ring, mod yel-brn	85% CHK: lt gy - med gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr sec cal frags, mod chk flor, fr od, v fast bri bl wht stimg, no flor, even thk mod yel-amb ring, mod yel-brn
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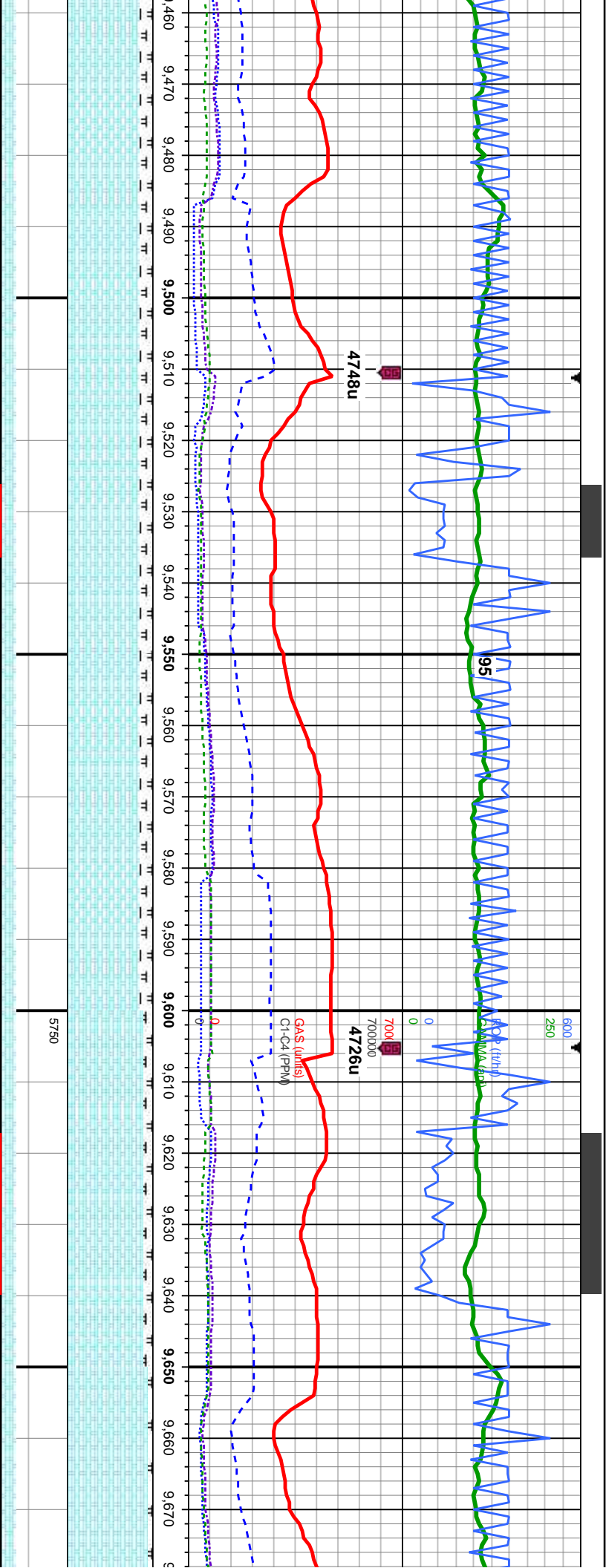
MD: 9,268'
Inclination: 88.98 °
Azimuth: 176.42 °
TVD: 6,221.32'
VS: 2,914.95'

MD: 9,363'
Inclination: 90 °
Azimuth: 176.43 °
TVD: 6,222.17'
VS: 3,009.68'

MD: 9,450'
Inclination:
Azimuth:
TVD: 6,222.17'
VS: 3,102.17'

bkly - sb ply, 10%: occ sb ply, imbd at bri bl yel-amb	90% CHK: med gy - dk gy, mot, sb bkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 10%: MRLST: dk gy-blk, sb bkly - bkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd sec cal, mod chk flor,fr od; mod-fast bri bl wht string, no flor, even sl thin med yel-amb ring, tr yel-brn stn	85% CHK: med gy - dk gy, mot, sb bkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: dk gy-blk, sb bkly - bkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd sec cal, mod chk flor,fr od; mod-fast bri bl wht string, no flor, even sl thin med yel-amb ring, tr yel-brn stn	95% CHK: lt gy - med gy, occ crm- brn, mot, sb bkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 5%: MRLST: dk gy-blk, sb bkly - bkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd sec cal, g chk flor,fr od; mod string bri blshwn, even sl thin mod yel-amb, mod yel-brn	85% CHK: lt gy - med gy, occ crm- brn, mot, sb bkly - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: dk gy-blk, sb bkly - bkly, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd sec cal, tr imbd pyr, g chk flor,fr od; mod string bri blshwn, even sl thin mod yel-amb, mod yel-brn	85% C sb bkly - v calc, bkly, o calc; tr od; mo yel-arr
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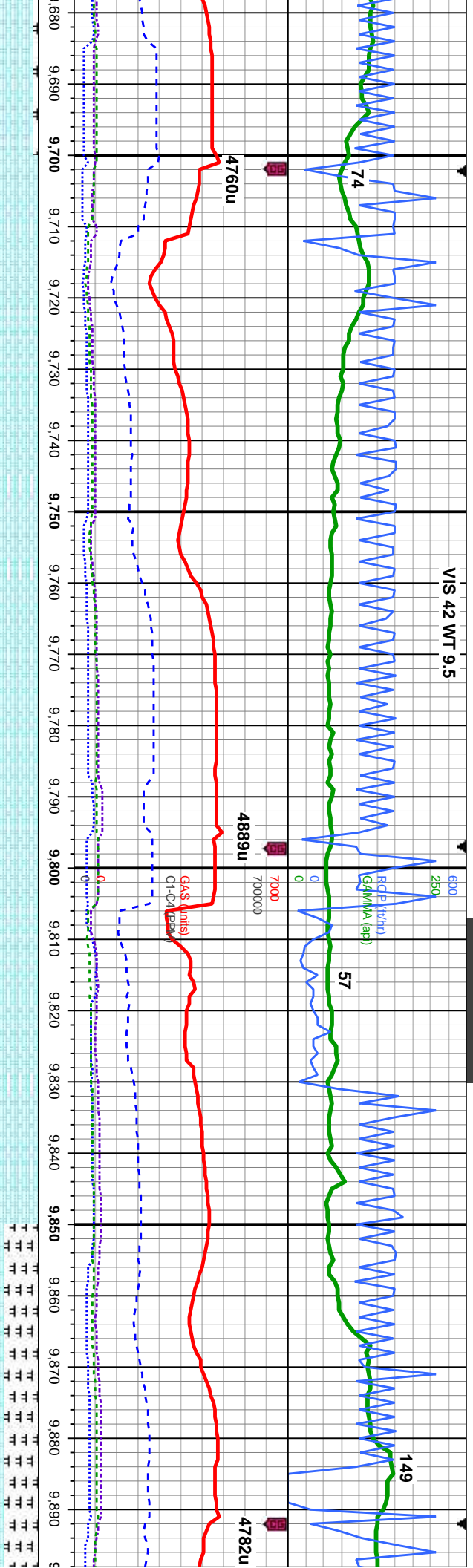


MD: 9,553'
Inclination: 89.91 °
Azimuth: 175.7 °
TVD: 6,222.66'
VS: 3,199.21'

MD: 9,648'
Inclination: 90 °
Azimuth: 178.61 °
TVD: 6,222.73'
VS: 3,293.83'

85% CHK: med gy, occ lt gy and dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd & loose sec cal, tr imbd pyr, g chk flor, fr od; mod strmg bri blshwh, even sl thin mod yel-amb, mod yel-brn	85% CHK: med gy, occ lt gy and dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 15%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd & loose sec cal, tr imbd pyr, g chk flor, fr od; mod strmg bri blshwh, even sl thin mod yel-amb, mod yel-brn	90% CHK: med gy, occ lt gy and dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 10%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd & loose sec cal, tr imbd pyr, g chk flor, fr odmod-fast bri bl wht strmg, no flor; even sl thin med yel-amb ring, mod yel-brn sin	95% CHK: med gy, occ lt gy and dk gy, mot, sb biky - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, 10%: MRLST: dk gy-blk, sb biky - biky, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; tr imbd & loose sec cal, tr imbd pyr, g chk flor, fr od; even sl thin med yel-amb ring, mod yel-brn sin
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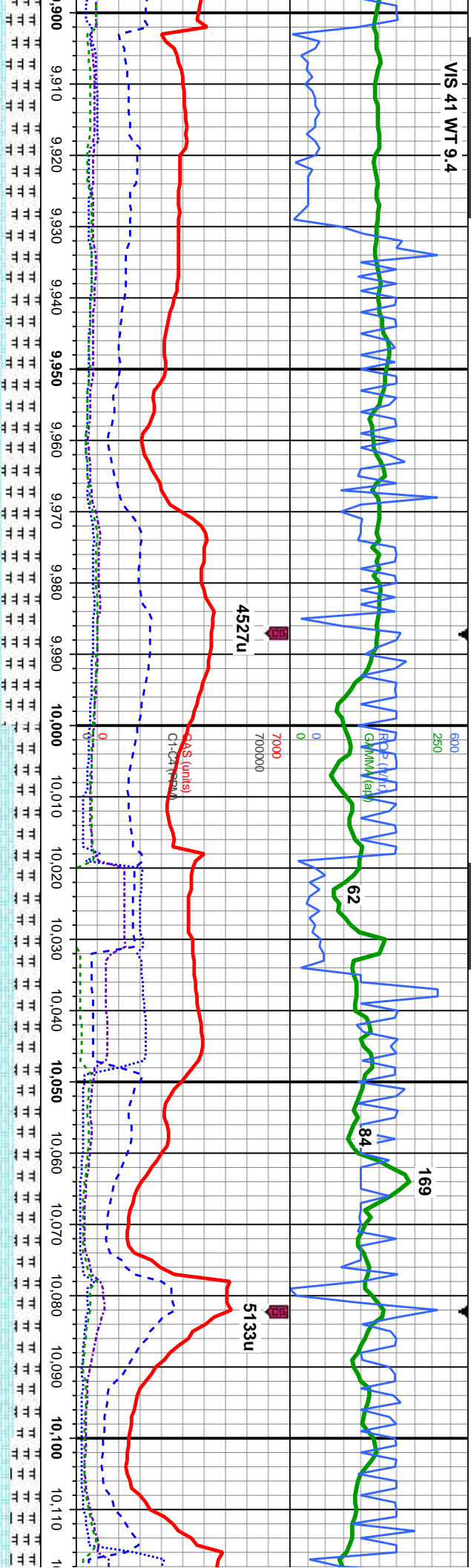


MD: 9,743'
Inclination: 90.68 °
Azimuth: 179.46 °
TVD: 6,222.17'
VS: 3,388.14'

MD: 9,838'
Inclination: 91.48 °
Azimuth: 177.56 °
TVD: 6,220.38'
VS: 3,482.52'

gy and dk gy, mot, hd, rthy-wxy, mtx: gy-blk, sb blk - mod, arg-sily tex, mtx; amb ring, mod	100% CHK: med gy, occ lt gy and dk gy, mot, sb blk - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, tr imbd & loose sec cal, g chk flor, g od: v fast bri bl wht string, no flor, even thk med yel-amb ring, thk yel-brn	100% CHK: med gy, occ lt gy and dk gy, mot, sb blk - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, tr imbd & loose sec cal, g chk flor, g od: v fast bri bl wht string, no flor, even thk med yel-amb ring, thk yel-brn	100% CHK: lt-med gy, occ dk gry, mot, sb blk - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, some imbd & loose sec cal, tr pyr, g chk flor, g od, mod-fast string bri wh bl, even mod thk bri yel-amb ring, mod brn amb sin
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MD: 9,934'
Inclination: 90.59 °
Azimuth: 174.81 °
TVD: 6,218.64'
VS: 3,578.25'

MD: 9,965'
Inclination: 90.53 °
Azimuth: 173.83 °
TVD: 6,218.34'
VS: 3,609.23'

TVD (ft)

MD: 10,063'
Inclination: 89.1 °
Azimuth: 174.04 °
TVD: 6,218.66'
VS: 3,707.18'

60% CHK: med-dk gy, occ lt gy, mot, sb blk
- sb pty, sft - mod hd, rthy-wxy, mtx: v calc,
40%: MRLST: dk gy-blk, sb blk - blk, occ
sb pty, sl frm - hd, arg-sly tex, mtx; calc;
some imbd & loose sec cal, tr pyr; mod bl
wht milky-stng, no flor, med gn-yei ring, sl
tr stn

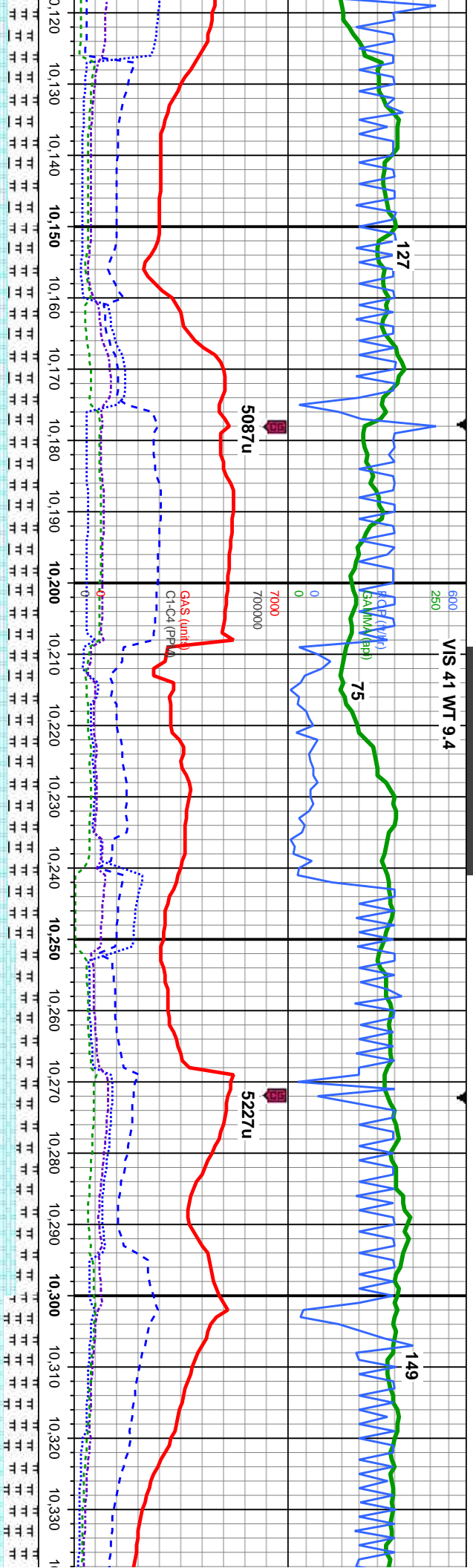
55% CHK: med-dk gy, occ lt gy, mot, sb blk
- sb pty, sft - mod hd, rthy-wxy, mtx: v calc,
45%: MRLST: dk gy-blk, sb blk - blk, occ sb
pty, sl frm - hd, arg-sly tex, mtx; calc; some
imbd & loose sec cal; ; mod bl wht
milky-stng, no flor, med gn-yei ring, sl tr stn

70% CHK: med-dk gy, occ lt gy, mot, sb blk
- sb pty, sft - mod hd, rthy-wxy, mtx: v calc,
30%: MRLST: dk gy-blk, sb blk - blk, occ sb
pty, sl frm - hd, arg-sly tex, mtx; calc; some
imbd & loose sec cal, tr foss frags; mod bl
wht milky-stng, no flor, med gn-yei ring, sl tr
stn

70% CHK: med-dk gy, occ lt gy, mot, sb blk
- sb pty, sft - mod hd, rthy-wxy, mtx: v calc,
30%: MRLST: dk gy-blk, sb blk - blk, occ
sb pty, sl frm - hd, arg-sly tex, mtx; calc;
abt imbd & loose sec cal, scat inoc foss
frags, tr pyr; mod bl wht milky-stng, no flor,
med gn-yei ring, sl tr stn

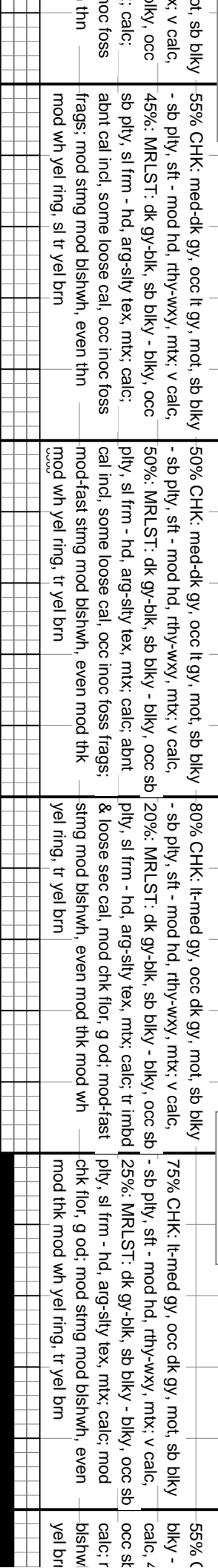
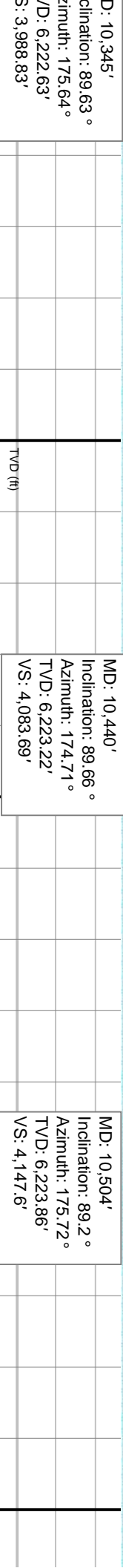
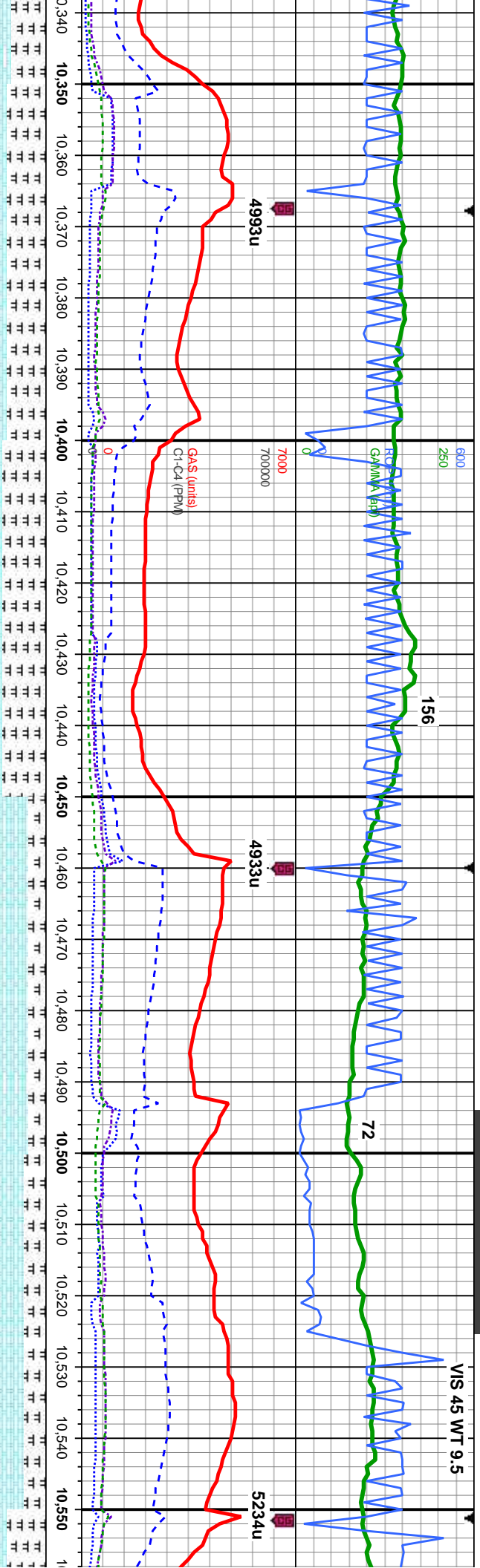
65% CHK: med-dk
- sb pty, sft - mod
35%: MRLST: dk
pty, sl frm - hd, i;
imbd & loose sec
pyr, g od; mod b
med gn-yei ring,

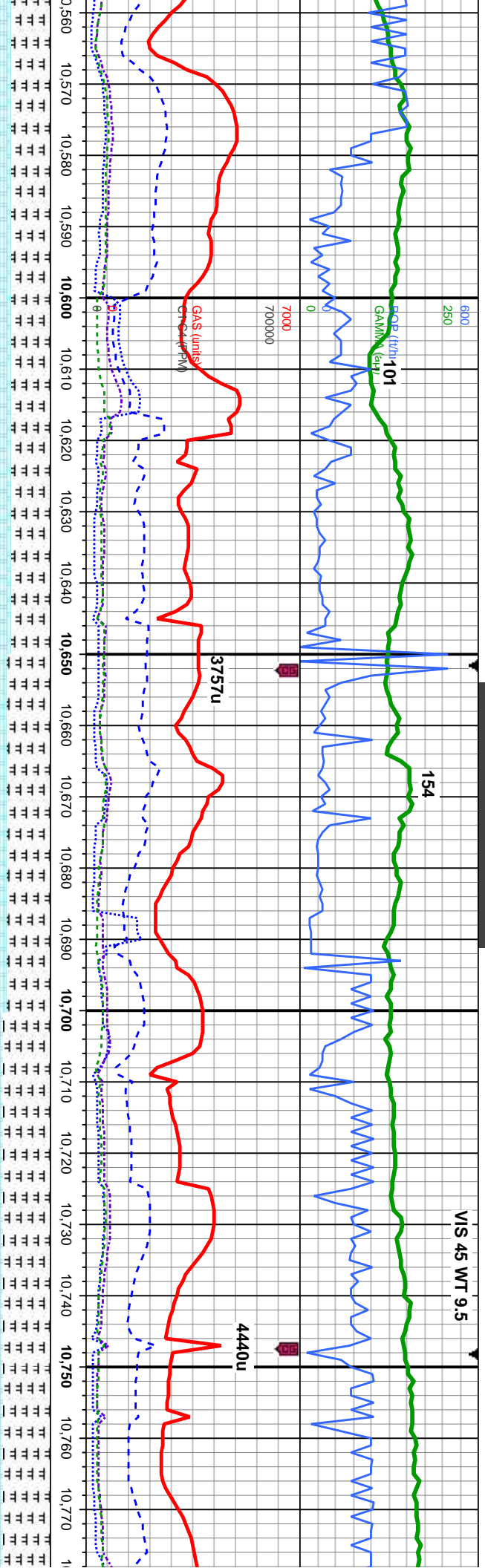




MD: 10,155' Inclination: 88.79 ° Azimuth: 173.31 ° TVD: 6,220.35' VS: 3,799.13'		65% CHK: med-dk gy, occ lt gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx: v calc, 35%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sly tex, mtx; calc; about imbd & loose sec cal, scat inoc foss frags, tr pyr, g oc; mod bl wht milky-stmg, no flor, med grn-yel ring, sl tr sin	65% CHK: med-dk gy, occ lt gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx: v calc, 35%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sly tex, mtx; calc; about imbd & loose sec cal, occ inoc foss frags, tr pyr; mod stmg mod blshwh, even thn mod wh yel ring, sl tr yel brn	MD: 10,249' Inclination: 89.41 ° Azimuth: 175.73 ° TVD: 6,221.83' VS: 3,893.02'	75% CHK: med-dk gy, occ lt gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx: v calc, 25%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sly tex, mtx; calc; about cal incl, some loose cal, occ inoc foss frags; mod stmg mod blshwh, even thn mod wh yel ring, sl tr yel brn	60% CHK: med-dk gy, occ lt gy, mot, sb blkly - sb ply, sft - mod hd, rthy-wxy, mtx: v calc, 40%: MRLST: dk gy-blk, sb blkly - blkly, occ sb ply, sl frm - hd, arg-sly tex, mtx; calc; about cal incl, some loose cal, occ inoc foss frags; mod stmg mod blshwh, even mod wh yel ring, sl tr yel brn
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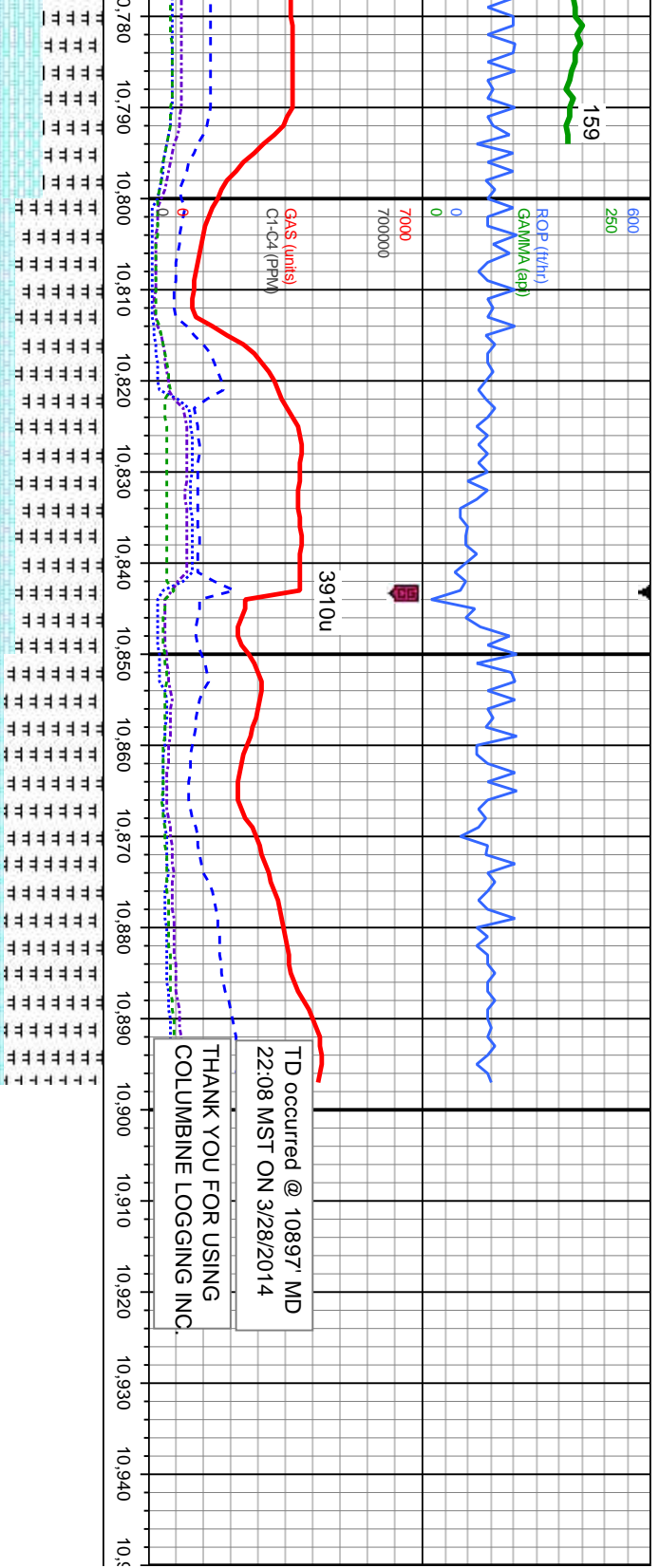


MD: 10,599'
Inclination: 88.86°
Azimuth: 176.95°
TVD: 6,225.47'
VS: 4,242.32'

MD: 10,694'
Inclination: 89.51°
Azimuth: 176.72°
TVD: 6,226.82'
VS: 4,336.99'

CHK: lt-med gy, occ dk gy, mot, sb sb pty, sft - mod hd, rthy-wxy, mtx; v 55%: MRLST: dk gy-blk, sb biky - biky, pty, sl frm - hd, arg-sily tex, mtx; mod chk flor, g od; mod strng mod even mod thk mod wh yel ring, tr	55% CHK: med gy, occ dk gy and lt gy, mot, sb biky - sb pty, sft - mod hd, rthy-wxy, mtx; v calc, 45%: MRLST: dk gy-blk, sb biky - biky, occ sb pty, sl frm - hd, arg-sily tex, mtx; calc; mod chk flor, g od; mod strng bri bishwh, even sl thn mod yel-amb, mod yel-brn	50% CHK: lt-med gy, occ dk gy, mot, sb biky - sb pty, sft - mod hd, rthy-wxy, mtx; v calc, 50%: MRLST: dk gy-blk, sb biky - biky, occ sb pty, sl frm - hd, arg-sily tex, mtx; calc; mod chk flor, hi contaminants, g od; mod strng bri bishwh, even sl thn mod yel-amb, mod yel-brn	55%: MRLST: dk gy-blk, sb biky - biky, occ sb pty, sl frm - hd, arg-sily tex, mtx; calc; 45% CHK: med gy, occ dk gy and lt gy, mot, sb biky - sb pty, sft - mod hd, rthy-wxy, mtx; v calc, hi contaminants, fr od; mod bl wht milky-stng, no flor, med gn-yel ring, sl tr stn	55%: MRLST: dk gy-blk, s sb pty, sl frm - hd, arg-sit 45% CHK: med gy, occ di sb biky - sb pty, sft - mod calc, hi contaminants, fr c milky-stng, no flor, med g
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TD occurred @ 10897' MD
22:08 MST ON 3/28/2014

THANK YOU FOR USING
COLUMBINE LOGGING INC.

MD: 10,789' Inclination: 89.41° Azimuth: 176.2° TVD: 6,227.71' VS: 4,431.71'		MD: 10,844' Inclination: 89.72° Azimuth: 176.13° TVD: 6,228.13' VS: 4,486.57'		Projection to Bit MD: 10897 INC: 89.72 AZM: 176.13 TVD: 6228.39 VS: 4539.44 Low: 6.39 Left: 23.88	
TVD (ft)					

sb blk-y - blk-y, occ y tex, mtx; calc; k gy and lt gy, mot, hd, rthy-wxy, mtx; v n-yei ring, sl tr stn	80%: MRLST: dk gy-blk, sb blk-y - blk-y, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; 20% CHK: med gy, occ dk gy and lt gy, mot, sb blk-y - sb ply, sft - mod hd, rthy-wxy, mtx; v calc, fr od; mod bl wht milky-stmg, no flor, med gn-yei ring, sl tr stn	90%: MRLST: dk gy-blk, sb blk-y - blk-y, occ sb ply, sl frm - hd, arg-sily tex, mtx; calc; 10% CHK: med-dk gy, mot, sb blk-y - sb ply, sft - mod hd, bnrd, rthy-wxy, mtx; v calc, tr fos; mod bl wht milky-stmg, no flor, med gn-yei ring, sl tr stn
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