



Scale: 5" / 100'
Measured Depth Log

Well Name DOE CANYON #14 Lateral

Location 35.4 Mi. North of Cortez, CO

State CO

County Delores

Country US

Rig Number NABORS 405

API Number 05-033-06177-01

AFE # 63728

Region Colorado

Field Doe Canyon Project

Spud Date 20JUL2013

Drilling Completed 05SEPT2013

Surface Coordinates SHL: 987'FSL, 2384' FEL, SEC. 14, T40N, R18W NMPM

Bottom Hole Coordinates BHL: 2284' FNL, & 2376' FEL, SEC. 14 T40N, R18W, NMPM, 0 deg Azimuth from SHL (2000'max lateral extension)

Ground Elevation 7105'

K.B. Elevation 7130.5

Logged Interval 8314' **To** 10369'

Total Depth 10369'

Formation Leadville Base

Type of Drilling Fluid Fresh Water

Operator

Company KINDER MORGAN CO2 CO., LP

Address 17801 HWY 4881
Colorado

Geologist

Name Leon Walters

Company Above Enterprise

510 Old Lubbock HWY
Snyder, TX 79549

ML-581 and ML-569

Rock Types

UNKNOWN	DOLOMITE	SHALE GRAY	TILL
ANHYDRITE	CHERT	SHALE COLORED	BENTONITE
GYPSUM	COAL	SILTSTONE	TUFF
SALT	MARLSTONE	SANDSTONE	IGNEOUS
SIDERITE or LIMONITE	CLAYSTONE	CONGLOMERATE	METAMORPHIC
LIMESTONE	SHALE	BRECCIA	

Accessories

Fossils

ALGAE
 AMPHIPORA
 BELEMNITE
 BIOCLASTIC
 BRACHIOIPOD
 BRYOZOA
 CEPHALOPOD
 CORAL
 CRINOID
 ECHINOID
 FISH
 FORAMINIFERA

F FOSSIL

GASTROPOD
 OOLITE
 OSTRACOD
 PELECYPOD
 PELLET
 PISOLITE
 PLANT REMAINS
 PLANT SPORES
 SCAPHOPOD
 STROMATOPOROID

Minerals

ANHYDRITIC

ARGILLACEOUS

ARGILLITE GRAIN
 BENTONITE
 BITUMENOUS SUBSTANCE
 BRECCIA FRAGMENTS
 CALCAREOUS
 CARBONACEOUS FLAKES
 CHTDK
 CHTLT
 COAL - THIN BEDS
 DOLOMITIC
 FELDSPAR
 FERRUGINOUS PELLET
 FERRUGINOUS

GLAUCONITE

GYPSIFEROUS
 HEAVY MINERAL
 KAOLIN
 MARLSTONE
 MINERAL CRYSTALS
 NODULES
 PHOSPHATE PELLETS
 PYRITE
 SALT CAST
 SANDY
 SILICEOUS
 SILTY
 TUFFACEOUS

Stringer

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

Other Symbols

Oil Show

DEAD
 EVEN
 QUESTIONABLE
 SPOTTED STAINING

Porosity

E EARTHY
 F FENESTRAL
 F FRACTURE
 X INTERCRYSTALLINE
 O INTEROOLITIC

MOLDIC

O ORGANIC
 P PINPOINT
 V VUGGY

Engineering

BIT
 CONNECTION (LEFT)
 CONNECTION (RIGHT)
 CONNECTION GAS
 CORE - LOST
 CORE - RECOVERED
 DST INTERVAL

FAULT

FORMATION TOP
 GAS SHOW
 MN DEPTH
 NORMAL FAULT
 OIL SHOW
 OVERTURNED STRATA
 REVERSE FAULT
 SIDEWALL CORE (LEFT)
 SIDEWALL CORE (RIGHT)
 SLIDE
 SURVEY
 TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

A ANGULAR
 R ROUNDED
 B SUBANG
 F SUBRND

Textures

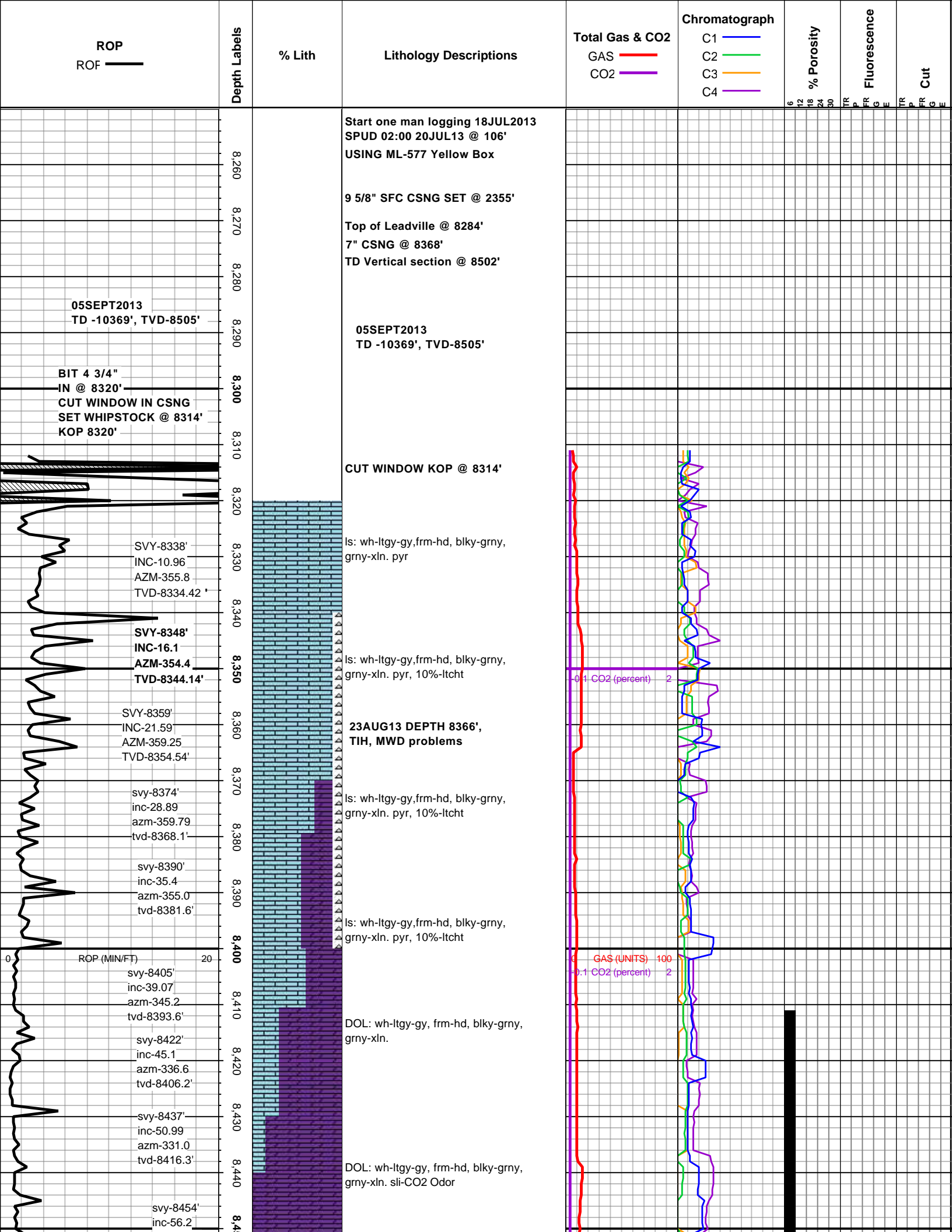
B BOUNDSTONE
 C CHALKY
 CX CRYPTOXLN

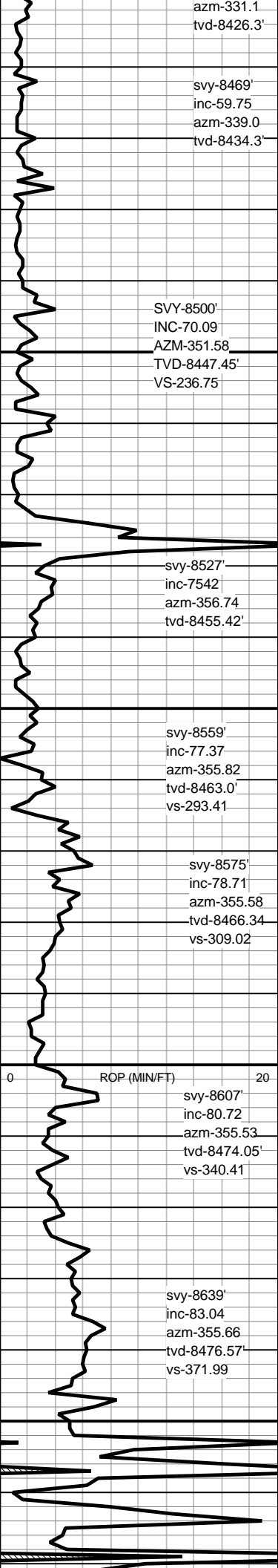
E EARTHY

FX FINELYXLN
 GS GRAINSTONE
 L LITHOGRAPHIC
 MX MICROXLN
 MS MUDSTONE
 PS PACKSTONE
 WS WACKESTONE

Sorting

M MODERATE
 P POOR
 W WELL





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DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln.

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. sli-CO2 Odor

24AUG13 Depth 8523', TVD-8435'est,
TOH PU Lateral BHA

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. sli-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DRLG @ 8625', TVD-8676'est

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
suc-grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-suc. good-CO2 Odor,
ANHY:tr-5%w/pyr

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor



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DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
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DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

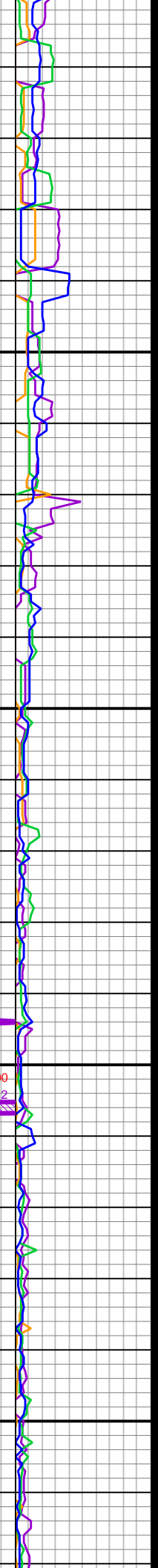
DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DRLG @ 8625', TVD-8676'est

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suc-grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-suc. good-CO2 Odor,
ANHY:tr-5%w/pyr

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor



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grny-xln. sli-CO2 Odor

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TOH PU Lateral BHA

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grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

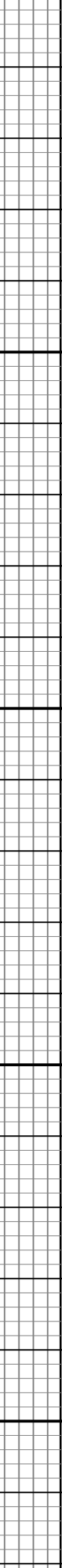
DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

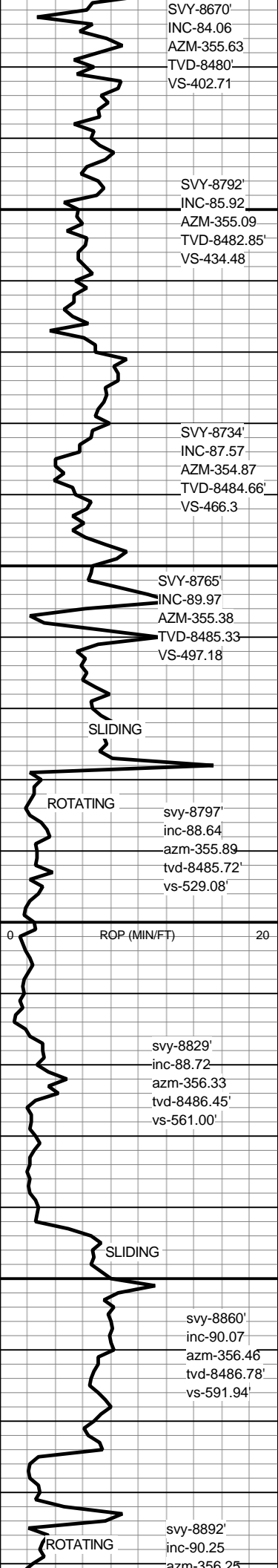
DRLG @ 8625', TVD-8676'est

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
suc-grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-suc. good-CO2 Odor,
ANHY:tr-5%w/pyr

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor





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8,890

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-suc. good-CO2 Odor,
ANH:tr-5%w/pyr

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: wh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln. good-CO2 Odor

DOL: ltgy-gy, frm-hd, blkgy-grny, grny-xln.
good-CO2 Odor

**26AUG13 DRLG @ 8793',
TVD-8485'est**

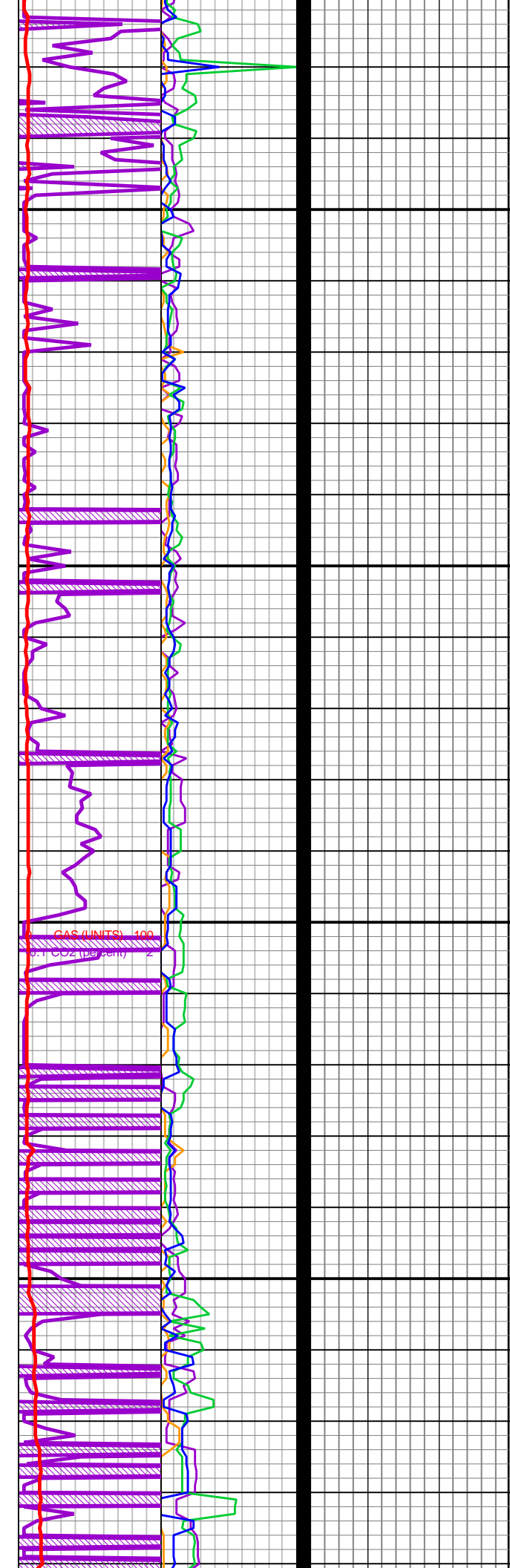
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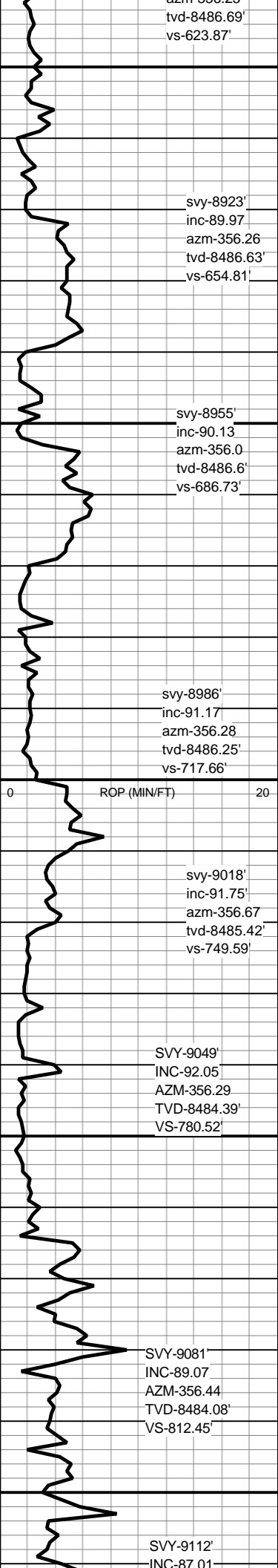
DOL: ltgy-gy, frm-hd, blkgy-grny,
grny-xln.d TR: anhy w/pyr

DOL: offwh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln.

DOL: offwh-ltgy-gy, frm-hd, blkgy-grny,
grny-xln.

DOL: ltgy-gy-drkgy-blk, frm-hd,
blkgy-grny, grny-xln, g-por





svy-8923'
inc-89.97
azm-356.26
tvd-8486.63'
vs-623.87'

svy-8923'
inc-89.97
azm-356.26
tvd-8486.63'
vs-654.81'

svy-8955'
inc-90.13
azm-356.0
tvd-8486.6'
vs-686.73'

svy-8986'
inc-91.17
azm-356.28
tvd-8486.25'
vs-717.66'

svy-9018'
inc-91.75
azm-356.67
tvd-8485.42'
vs-749.59'

SVY-9049'
INC-92.05
AZM-356.29
TVD-8484.39'
VS-780.52'

SVY-9081'
INC-89.07
AZM-356.44
TVD-8484.08'
VS-812.45'

SVY-9112'
INC-87.01

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

CO2 @ 9016'
FLOW-3.9
TOT-6.6

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

CO2 @ 9034'
FLOW-4.1
TOT-6.7

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

CO2 @ 9063'
FLOW-3.7
TOT-6.9

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

DOL: ltgy-gy-drkgy-blk, frm-hd,
blky-grny, grny-xln, g-por

DOL: LTGY-DRKGY, FRM-HD,
BLKY-GRNY, GR-XLN-SUC, POR:
INTXLN-VUGGY-FRAC

CO2 @ 9072
FLOW-3.3
TOT-7.1

DOL: LTGY-DRKGY, FRM-HD,
BLKY-GRNY, GR-XLN-SUC, POR:
INTXLN-VUGGY-FRAC

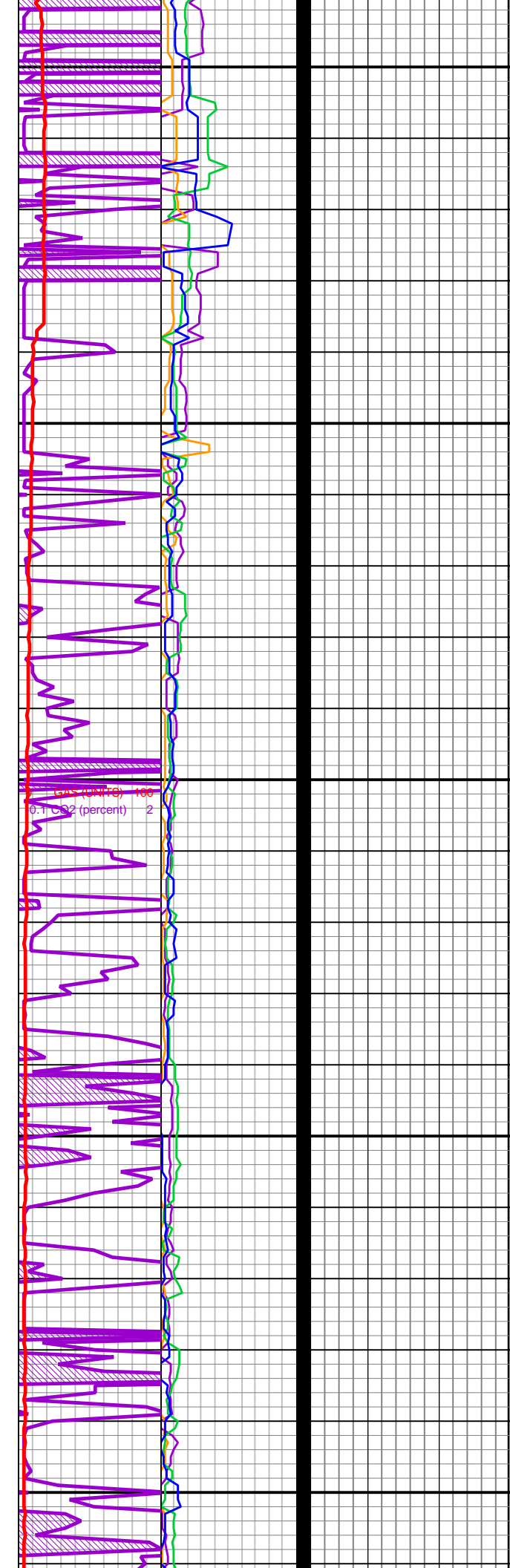
CO2 @ 9084'
FLOW-4.1
TOT-7.3

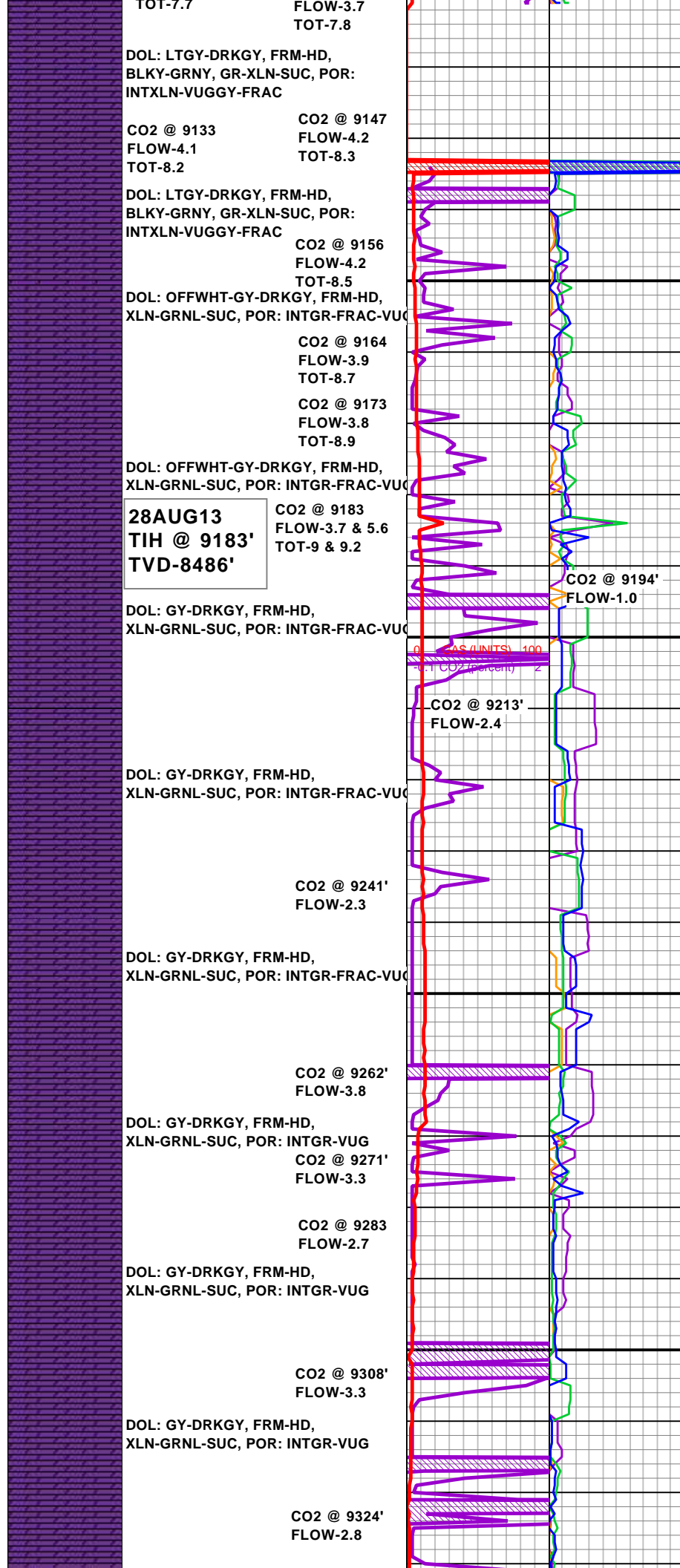
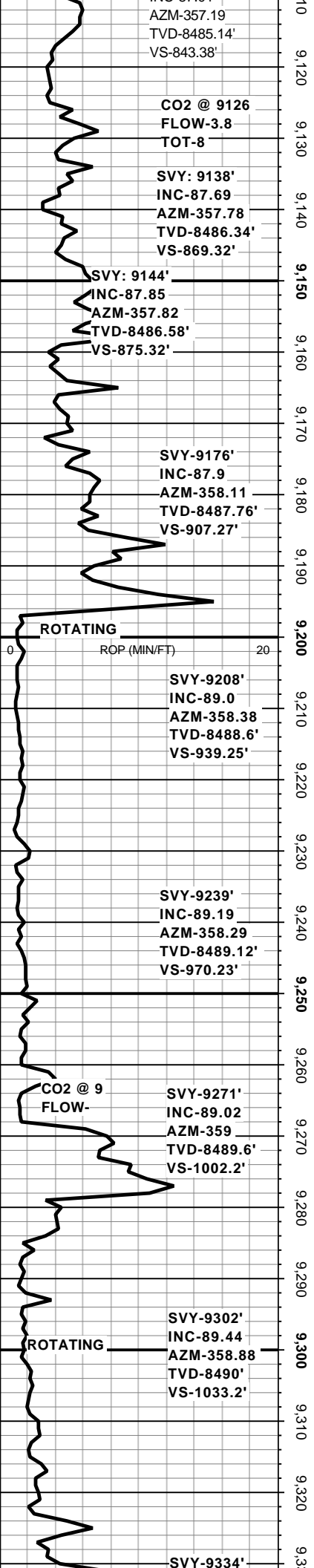
27AUG13 DRLG @ 9093'
TVD-8485'est

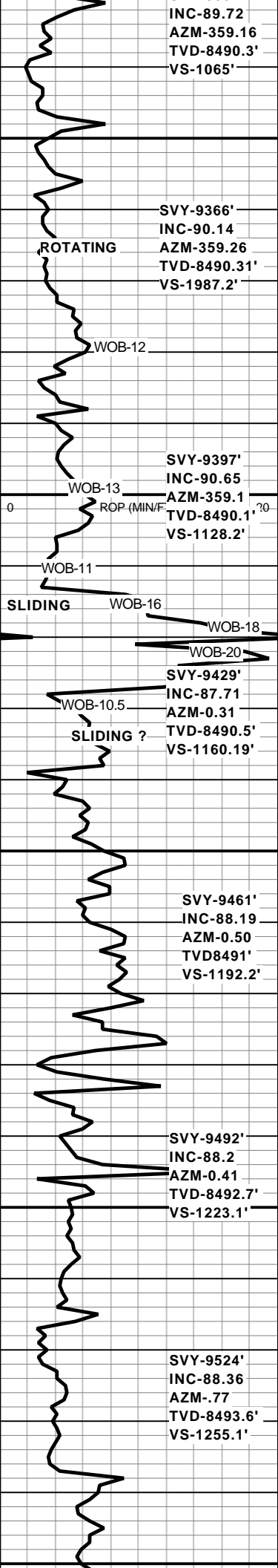
DOL: LTGY-DRKGY, FRM-HD,
BLKY-GRNY, GR-XLN-SUC, POR:
INTXLN-VUGGY-FRAC

CO2 @ 9105
FLOW-4.2

CO2 @ 9114







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DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9337'
FLOW-3.0

CO2 @ 9350'
FLOW-2.8

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9368'
FLOW-3.1

CO2 @ 9378'
FLOW-3.3

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9392'
FLOW-3.0

29AUG13 DRLG @ 9402', TVD-8490.1'

CO2 @ 9401'
FLOW-3.4

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9411'
FLOW-3.4

CO2 @ 9416'
FLOW-3.3

CO2 @ 9420'
FLOW-3.8

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9437'
FLOW-3.7

CO2 @ 9447'
FLOW-4.0

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9455'
FLOW-4.0

CO2 @ 9464'
FLOW-3.9

30AUG13 DEPTH 9474'
TVD-8490.55'
TIH w/bit-mtr

CO2 @ 9470'
FLOW-4.2

CO2 @ 9488'
FLOW-2.2

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9498'
FLOW-2.7

CO2 @ 9505'
FLOW-3.2

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

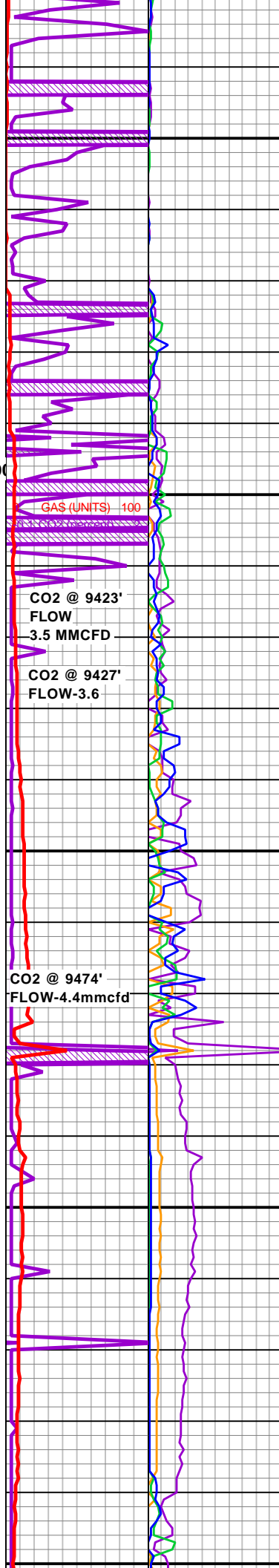
CO2 @ 9518'
FLOW-2.9

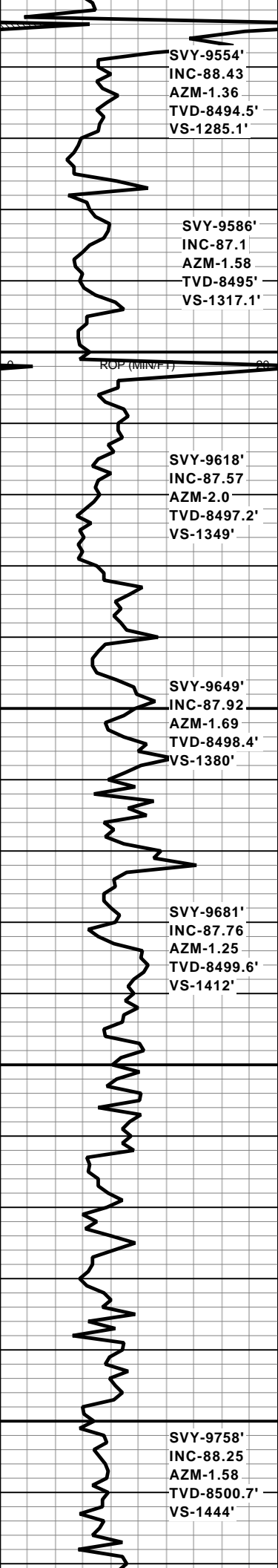
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9535'
FLOW-2.6

CO2 @ 9541'
FLOW-2.9

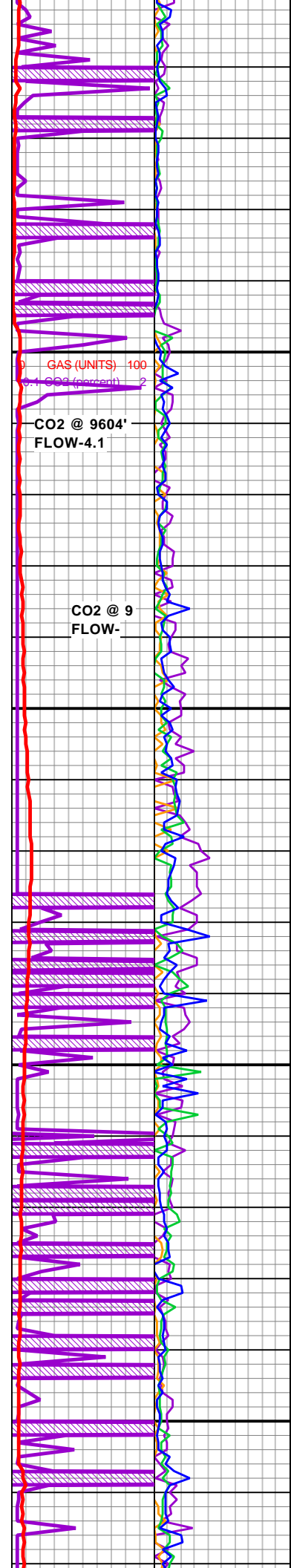
DOL: GY-DRKGY, FRM-HD,

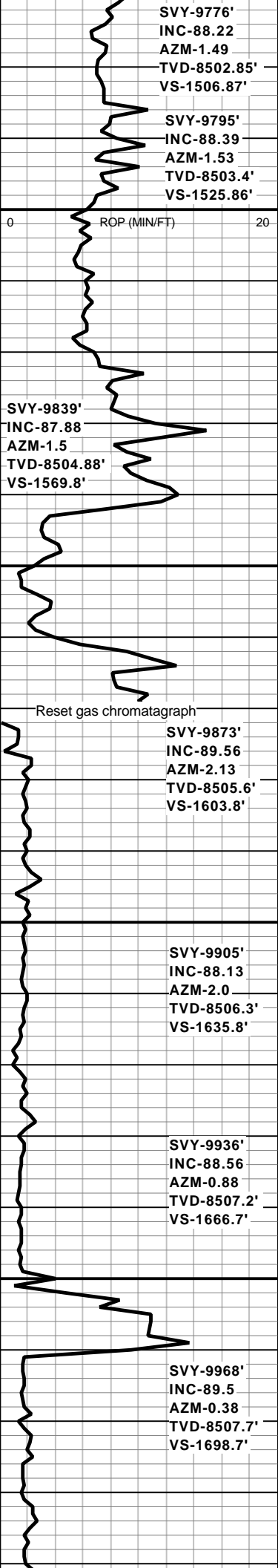




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XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9551'
FLOW-2.7
CO2 @ 9557'
FLOW-3.4
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9564'
FLOW-3.7
CO2 @ 9578'
FLOW-3.4
CO2 @ 9587'
FLOW-3.5
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9595'
FLOW-3.5
31AUG13 DRLG @ 9403', TVD-8494'
CO2 @ 9601'
FLOW-3.6
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9618'
FLOW-4.0
CO2 @ 9628'
FLOW-3.7
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9639'
FLOW-3.7
CO2 @ 9647'
FLOW-3.9
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9660'
FLOW-4.2
CO2 @ 9670'
FLOW-3.6
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9680'
FLOW-4.0
CO2 @ 9690'
FLOW-4.0
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9701'
FLOW-3.9
CO2 @ 9715'
FLOW-3.9
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9723'
FLOW-4.0
CO2 @ 9730'
FLOW-4.0
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9738'
FLOW-3.7
CO2 @ 9745'
FLOW-4.0
01SEPT13 DRLG @ 9758'
TVD-8500.7'
CO2 @ 9754'
FLOW-3.9
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG





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9,990



CO2 @ 9767'
FLOW-4.0

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9789'
FLOW-4.3
CO2 @ 9795'
FLOW-4.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9805'
FLOW-4.7
CO2 @ 9815'
FLOW-4.1

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9833'
FLOW-4.5

02SEPT13 DEPTH 9840'
TIH w/Bit & MTR
CO2 @ 9849'
FLOW-2.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9853'
FLOW-2.9

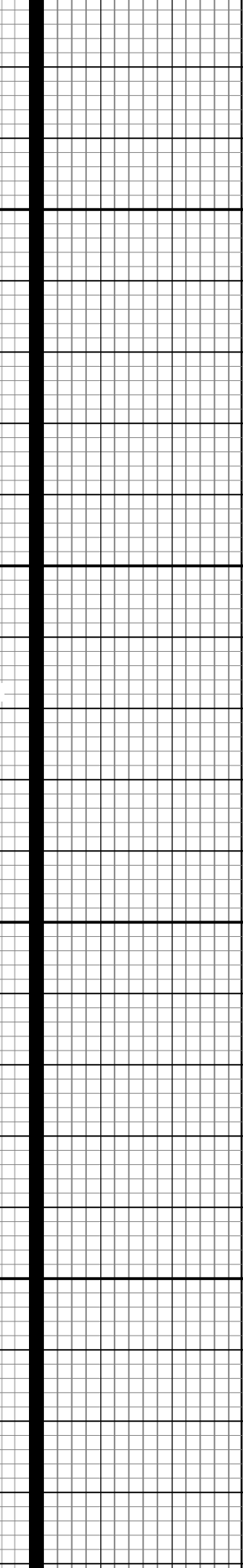
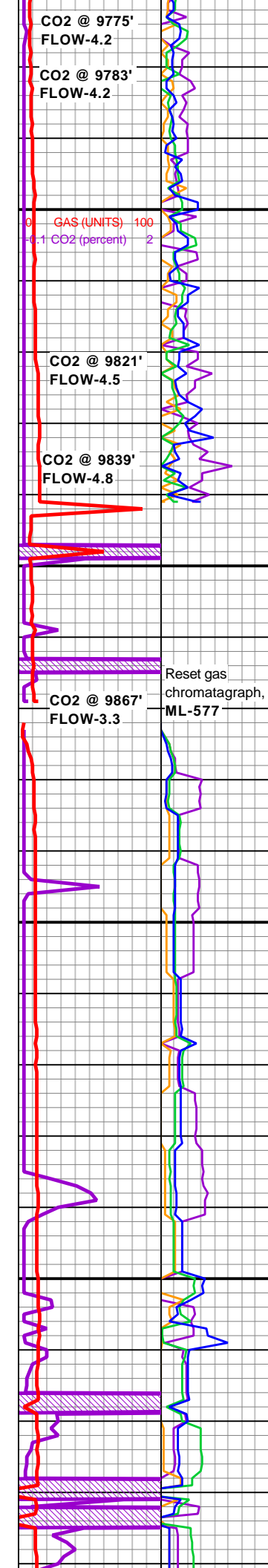
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9884'
FLOW-3.2

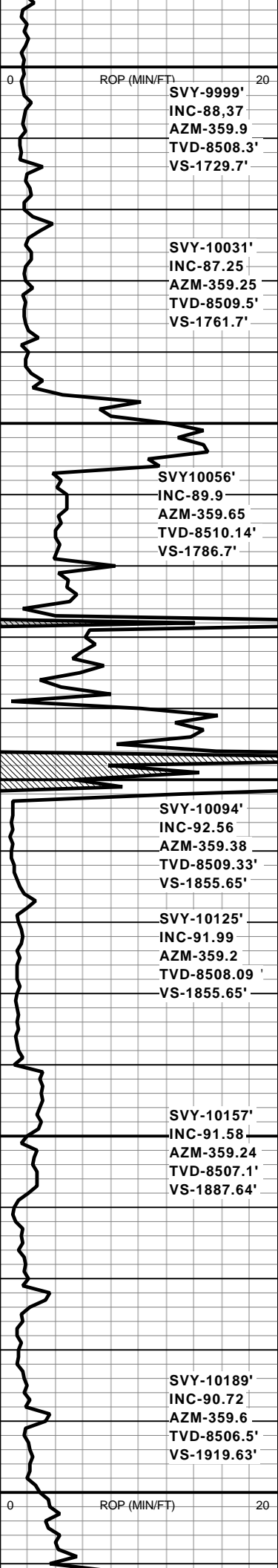
DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9912'
FLOW-3.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9937'
FLOW-3.8
CO2 @ 9951'
FLOW-3.9
CO2 @ 9957'
FLOW-3.4

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG
CO2 @ 9973'
FLOW-3.8

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG





90
10,000
10,010
10,020
10,030
10,040
10,050
10,060
10,070
10,080
10,090
10,100
10,110
10,120
10,130
10,140
10,150
10,160
10,170
10,180
10,190
10,200
10,210

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 9996'
FLOW-3.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10025'
FLOW-3.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10043'
FLOW-3.8

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10052'
FLOW-3.4

CO2 @ 10070'
FLOW-4.0

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

03SEPT13 DRLG @ 10080'
TVD-8509'est

CO2 @ 10080'
FLOW-4.5

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

04SEPT13 DEPTH 10101' TIH/Unload hole

CO2 @ 10101'
FLOW-2.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10129'
FLOW-2.7

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10148'
FLOW-2.0

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10170'
FLOW-3.4

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10195'
FLOW-2.8

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

CO2 @ 10206'
FLOW-2.9

DOL: GY-DRKGY, FRM-HD,
XLN-GRNL-SUC, POR: INTGR-VUG

