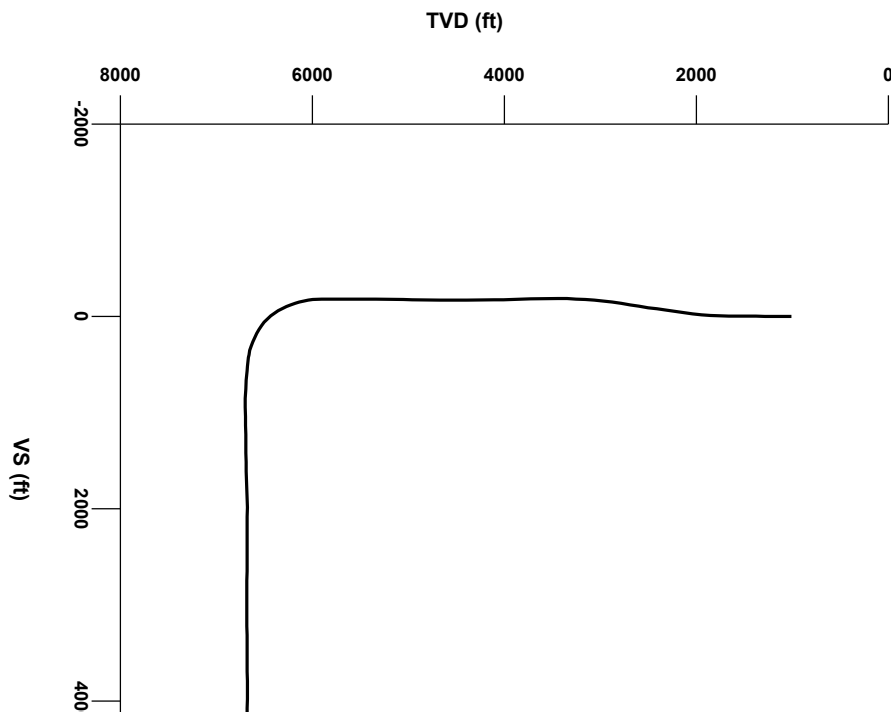


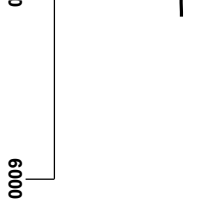
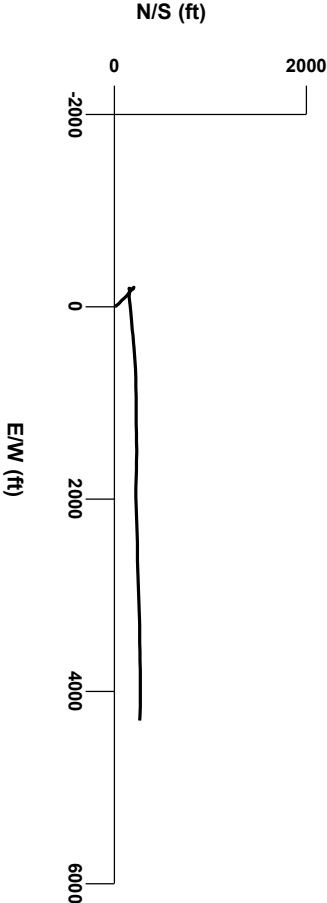
LOG created using LPLLOT VH Version 3.0, March 29, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY  
**WELL:** SIEVERS LE17-62HN  
**LOCATION:** SEC 17 T8N R61W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 462' FSL, 275' FWL  
**ELEVATION:** GL 5032' KB 5048'  
**FIELD:** WILDCAT  
**SPUD DATE:** 3/22/13  
**TD DATE:** 3/28/13  
**DATES LOGGED:** 3/22/13 - 3/29/13  
**DEPTHS LOGGED:** 2,000' - 10,960'  
**LOGGERS:** TERRY ACOMB, MICHAEL ROOKS  
**DRILLING FLUID:** WATER, POLY, MUD  
**DRILLING RIG:** H&P #322  
**API:** 05-123-36639  
**LOG TYPE:** HORIZONTAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC



Survey Elevation

Survey Plan



Chalk

Marl

Silty Shale

ENGINEERING SYMBOLS

▲

Casing

◀

Casing

◻

Connection

⊗

Connection Gas

⬛

Midnight Depth

LOG CONTINUED FROM  
SIEVERS LB17-62HN VERT

GAS

0

UNITS

3000

C1

0

PPM

300000

C2

0

PPM

300000

C3

0

PPM

300000

C4

0

PPM

300000

ROP

0

FT/HR

400

DEPTH  
(FEET)

6100

10

20

30

40

50

60

70

80

90

6200

10

20

30

1212u

1400u

▲

◀

◻

⊗

⬛

CUTTINGS

LITHOLOGY

TVD

ft

6000

50

CPS

250

GAMMA

50

CPS

250

MD 6120'

INC 12.47

AZM 82.09

TVD: 6092.41

MD 6167'

INC 14.61

AZM 86.45

TVD: 6138.11

MD 6214'

INC 18.85

AZM 92.03

TVD: 6183.11

100% SILTY SH: m gy-mg/bm occ v dk gy, firm-sft, sbdky - sbply, rthy, silty

100% SILTY SH: m gy-mg/bm occ v dk gy, firm-sft, sbdky - sbply, rthy, silty

100% SILTY SH: m gy-mg/bm occ v dk gy, firm-sft, sbdky - sbply, rthy, silty

TFG 6600

6600

ft

6000

50

CPS

250

OIL SHOWS

6600

ft


6000

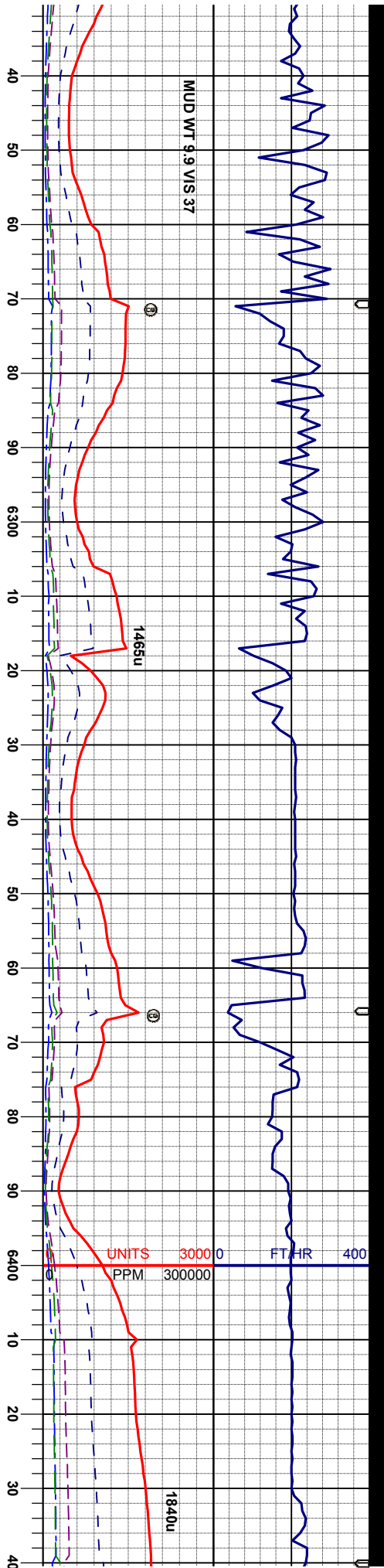
50

CPS

250

SAMPLE PHOTOS





MD 6261'  
INC 20.21  
AZM 98.79  
TVD: 6227.41

MD 6309'  
INC 23.17  
AZM 95.06  
TVD: 6272.01

MD 6404'  
INC 29.34  
AZM 81.94  
TVD: 6357.24

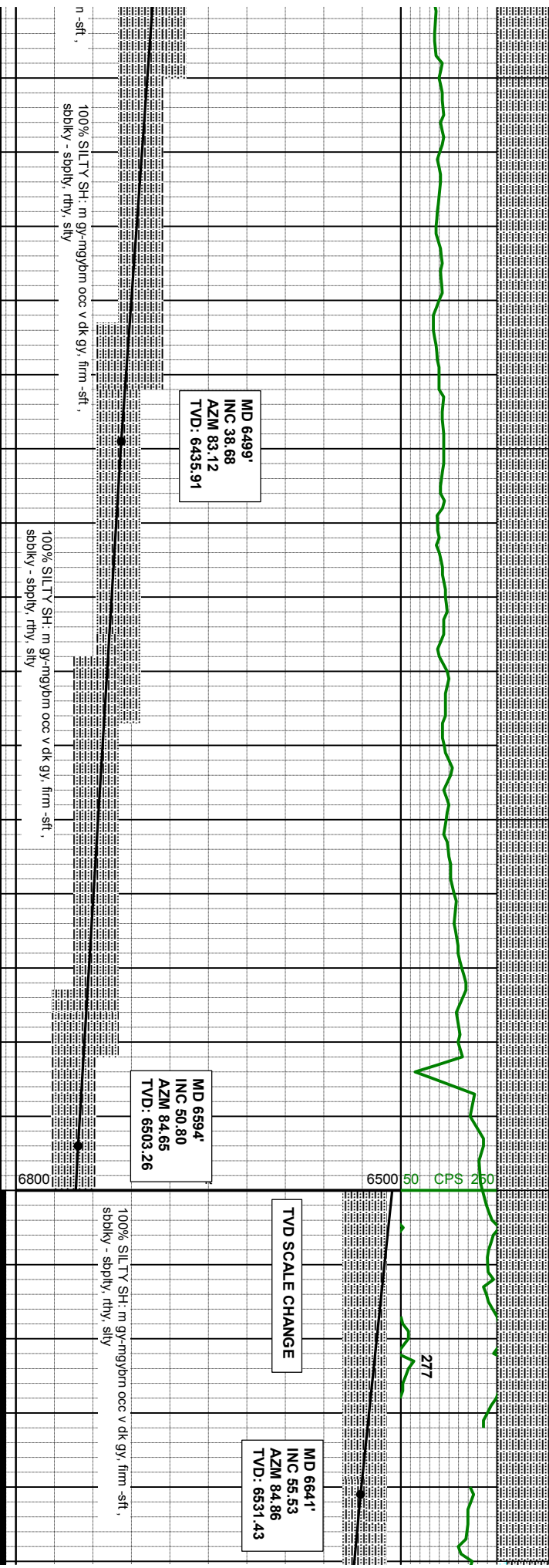
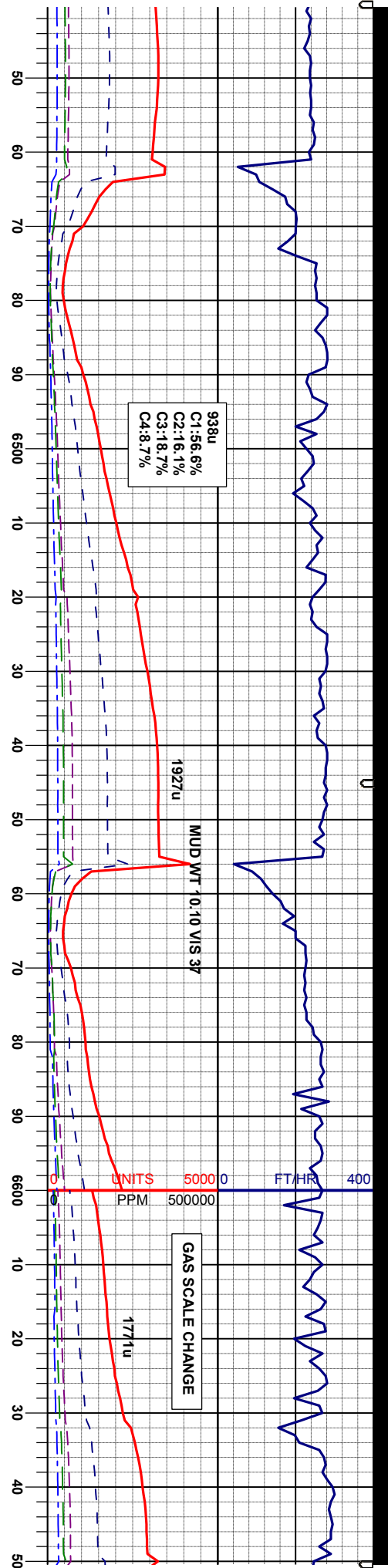
v dk gy, firm -sft, 100% SILTY SH: m gy-mgybm occ v dk gy, firm -sft, sbdky - sbply, rthy, slty

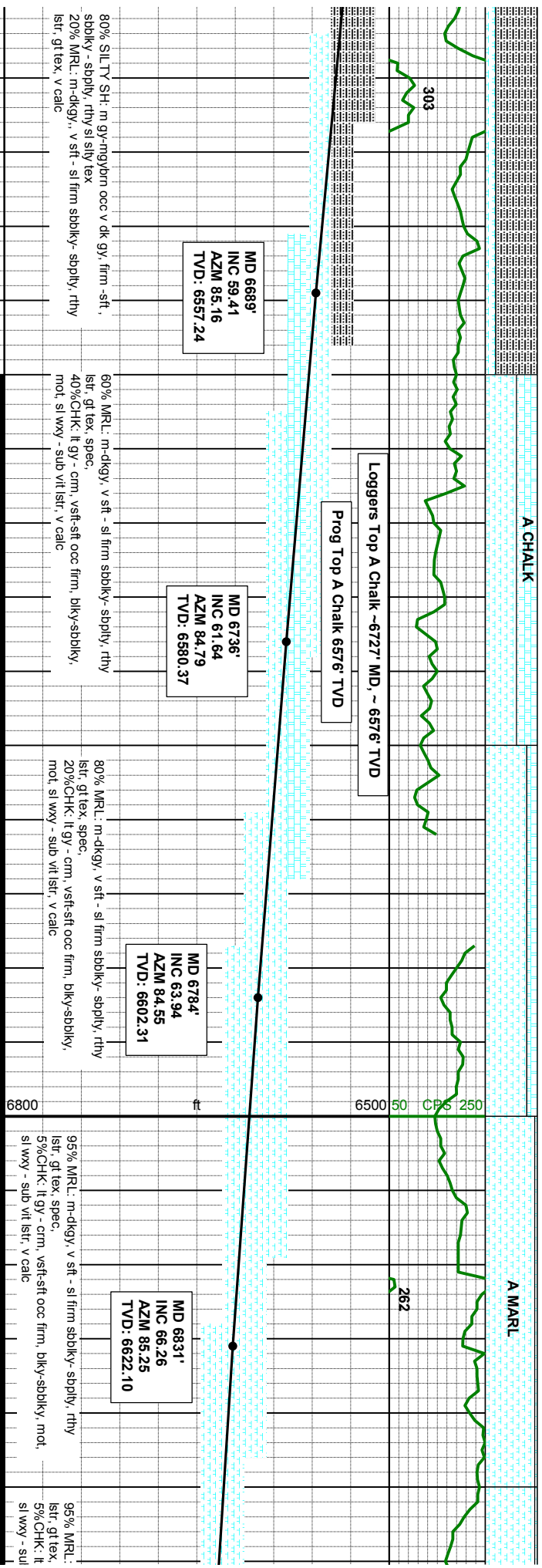
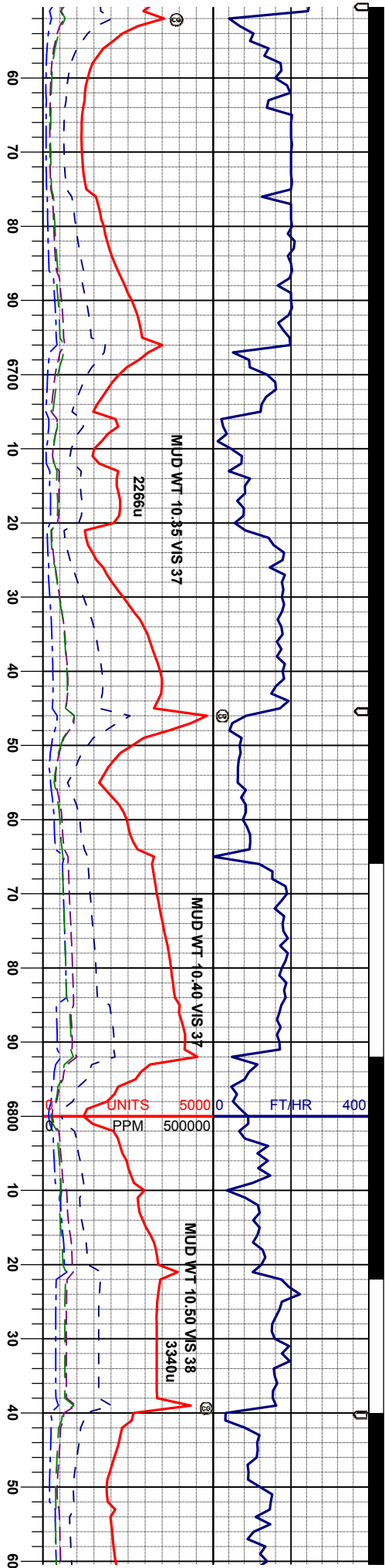
100% SILTY SH: m gy-mgybm occ v dk gy, firm -sft, sbdky - sbply, rthy, slty

100% SILTY SH: m gy-mgybm occ v dk gy, firm -sft, sbdky - sbply, rthy, slty

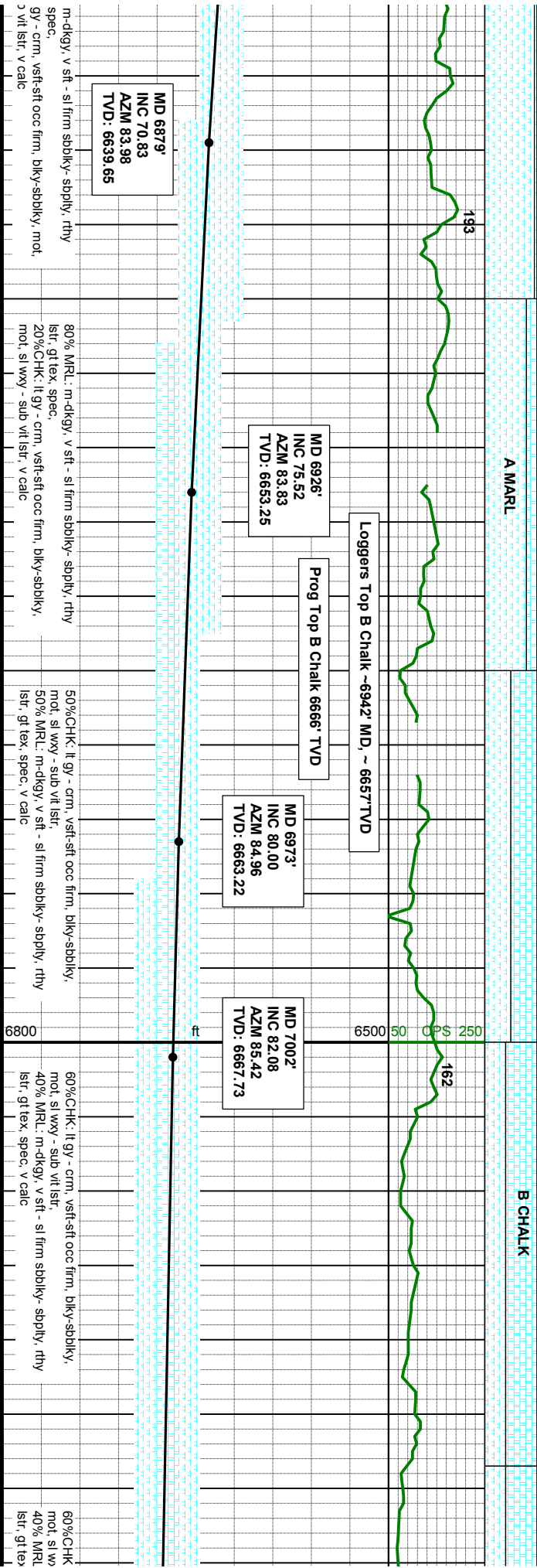
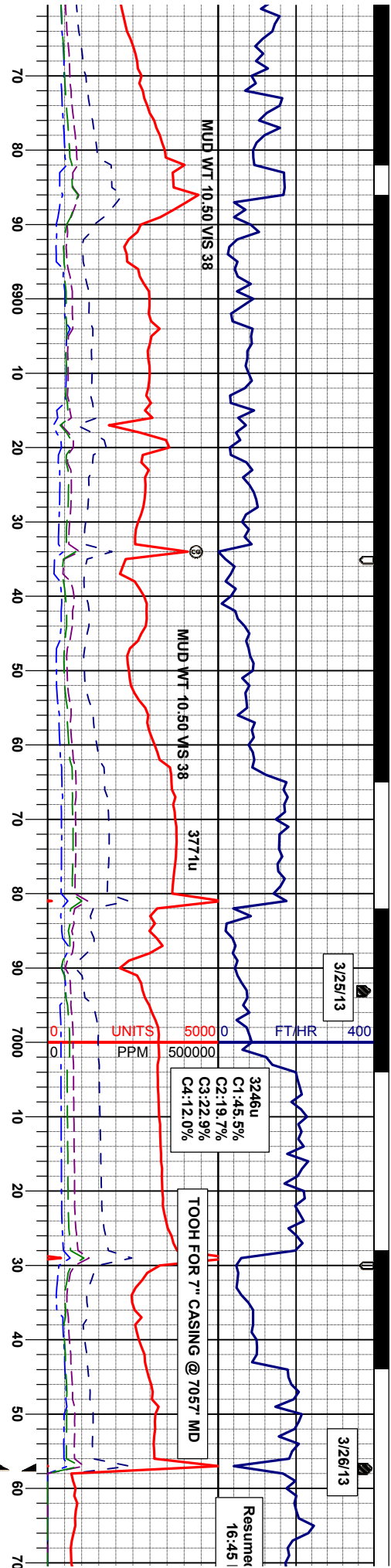


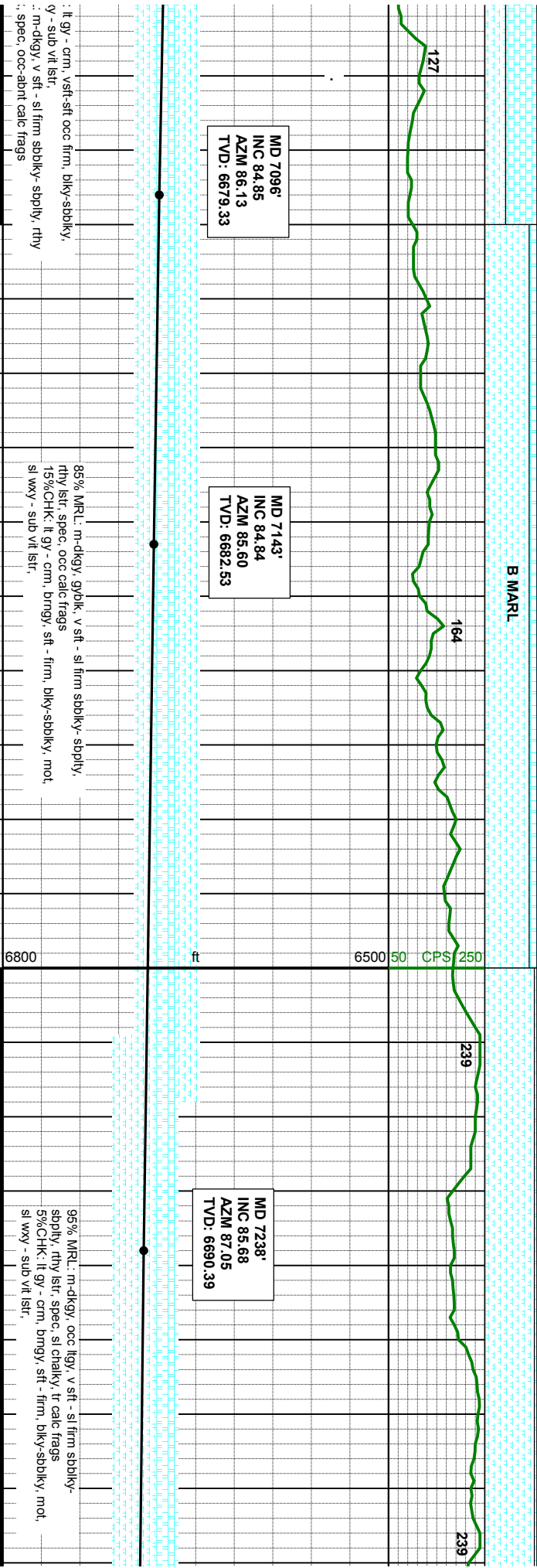
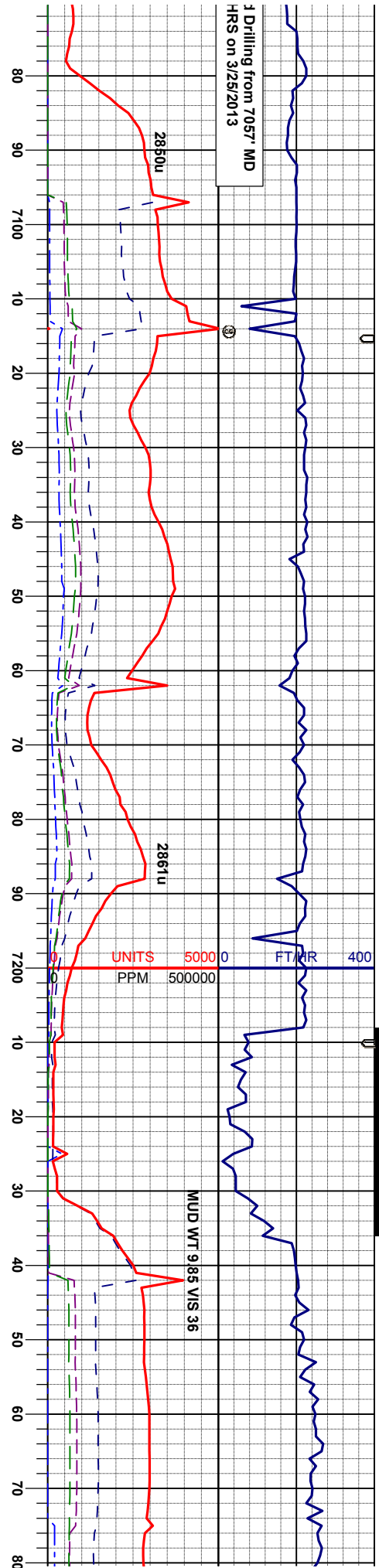




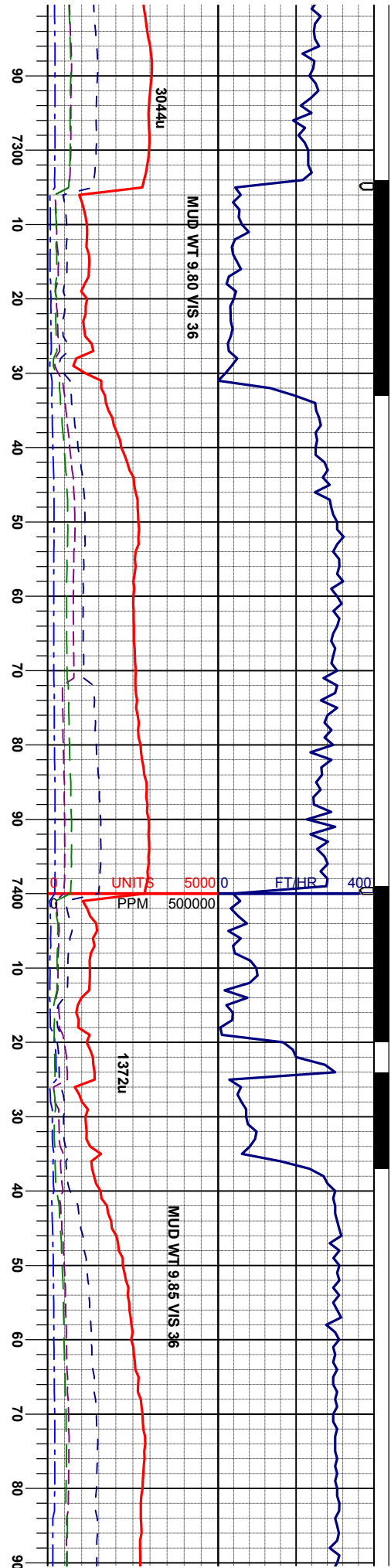












B MARL

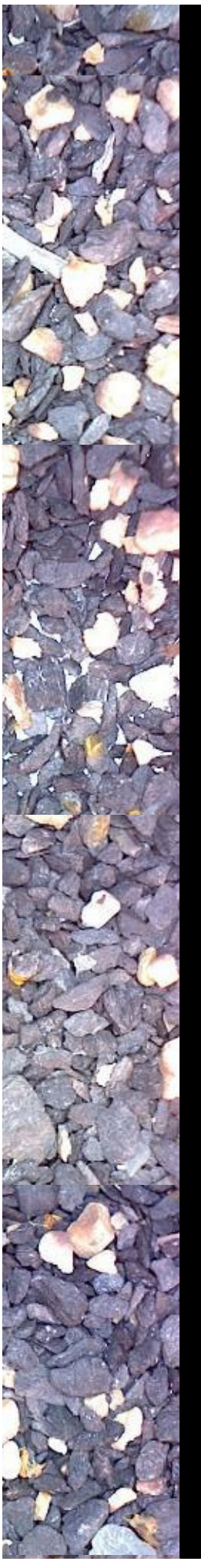
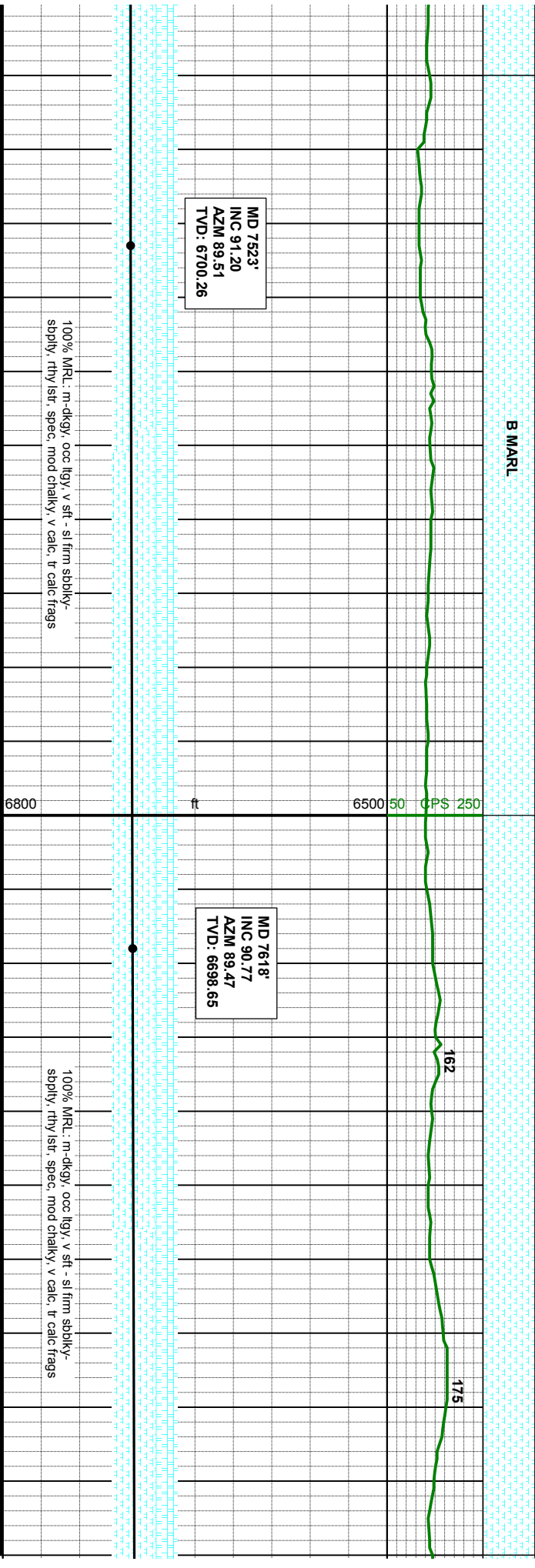
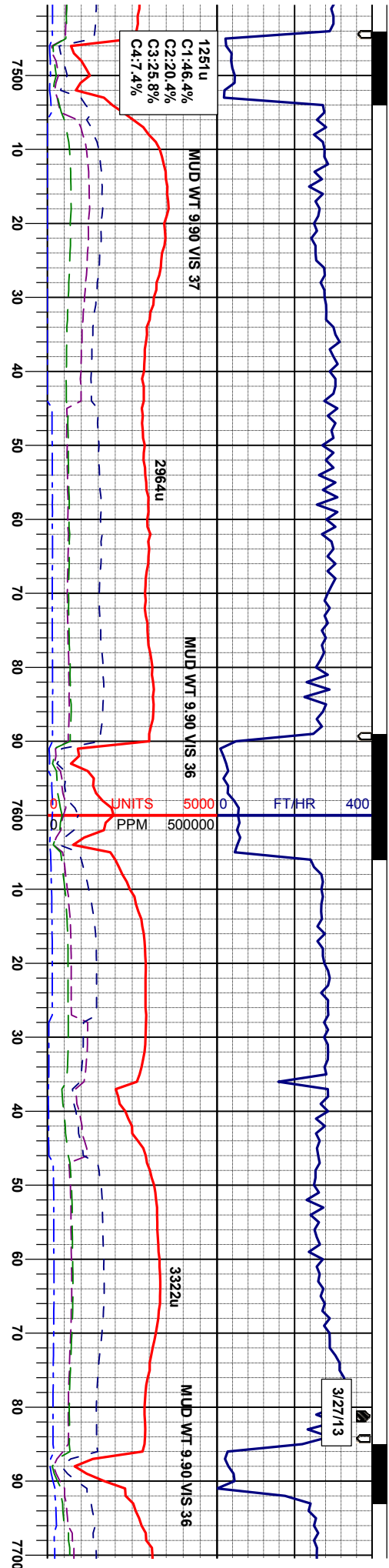
MD 7333'  
INC 86.88  
AZM 89.09  
TVD: 6696.55

MD 7428'  
INC 88.71  
AZM 88.87  
TVD: 6700.21

100% MRL: m-dkgy, occ lgy, v sft - sl firm sbbkly-  
sbbkly, rthy lstr, spec, mod chalky, v calc, tr calc frags

100% MRL: m-dkgy, occ lgy, v sft - sl firm sbbkly-  
sbbkly, rthy lstr, spec, mod chalky, v calc, tr calc frags

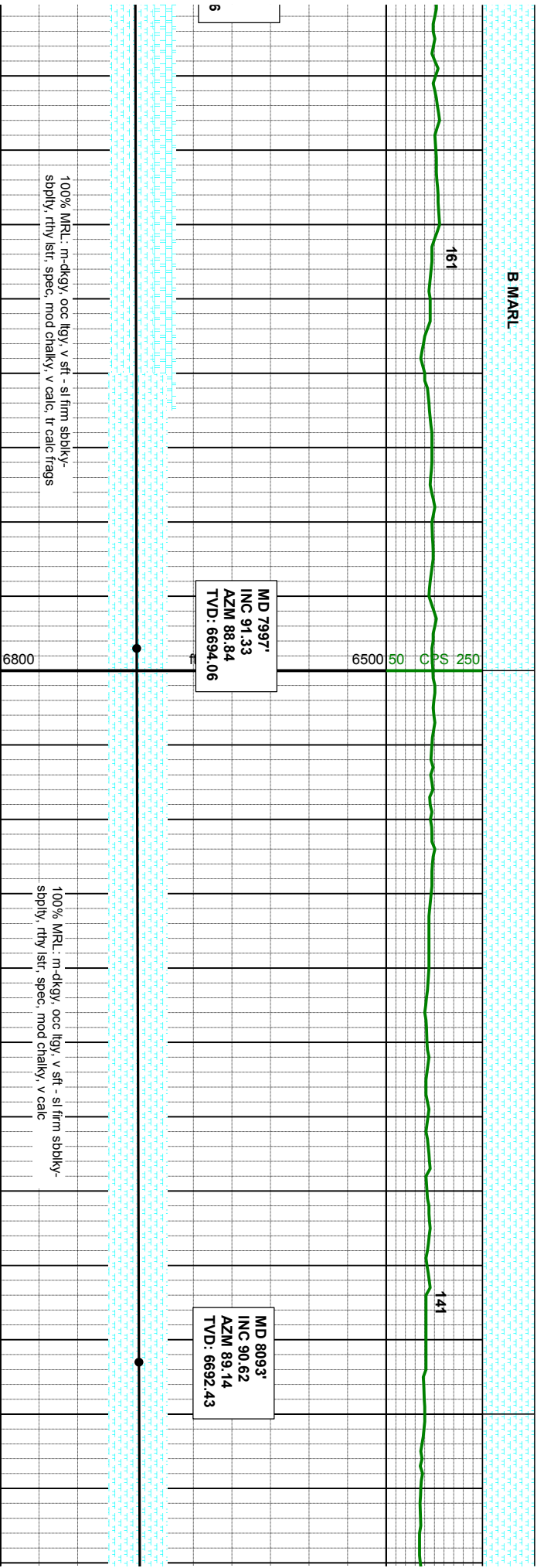
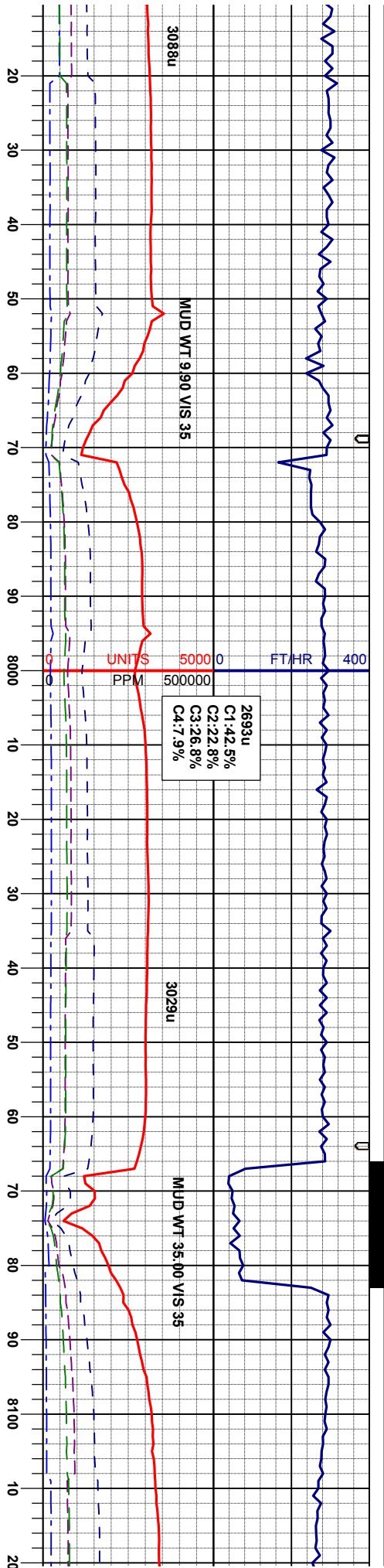


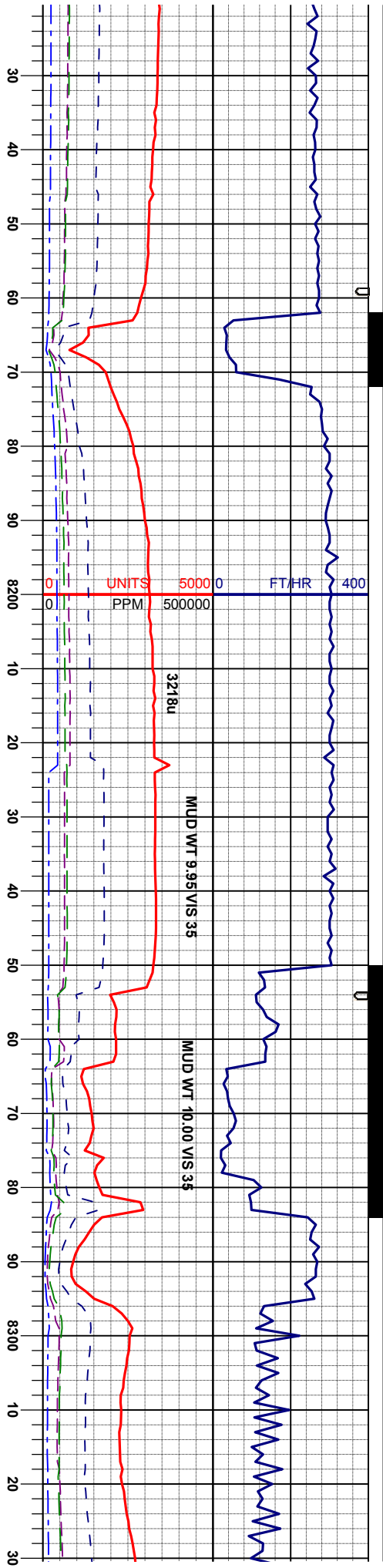












B MARL

MD 8188'  
INC 92.10  
AZM 91.72  
TVD: 6690.18

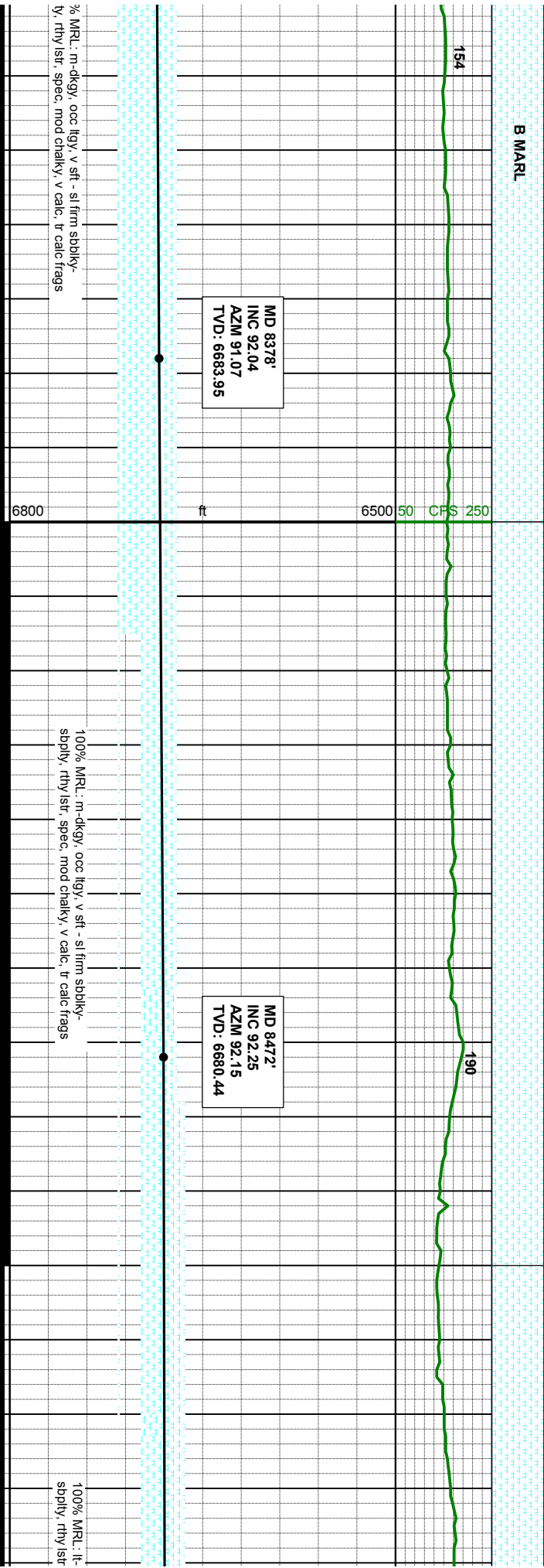
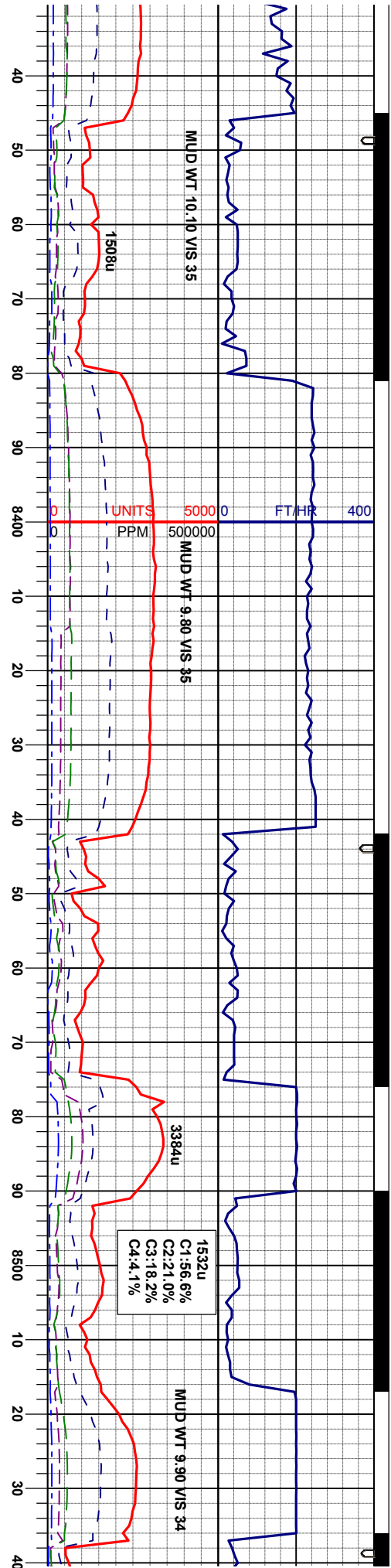
MD 8282'  
INC 91.70  
AZM 91.17  
TVD: 6687.07

100% MRL: dkgy, occ lgy, v sft - sl firm sbbly- spbly,  
rthy istr, spec, mod chalky, v calc

100% MRL: m-dkgy, occ lgy, v sft - sl firm sbbly-  
spbly, rthy istr, spec, mod chalky, v calc, tr calc frags

100%  
spbl



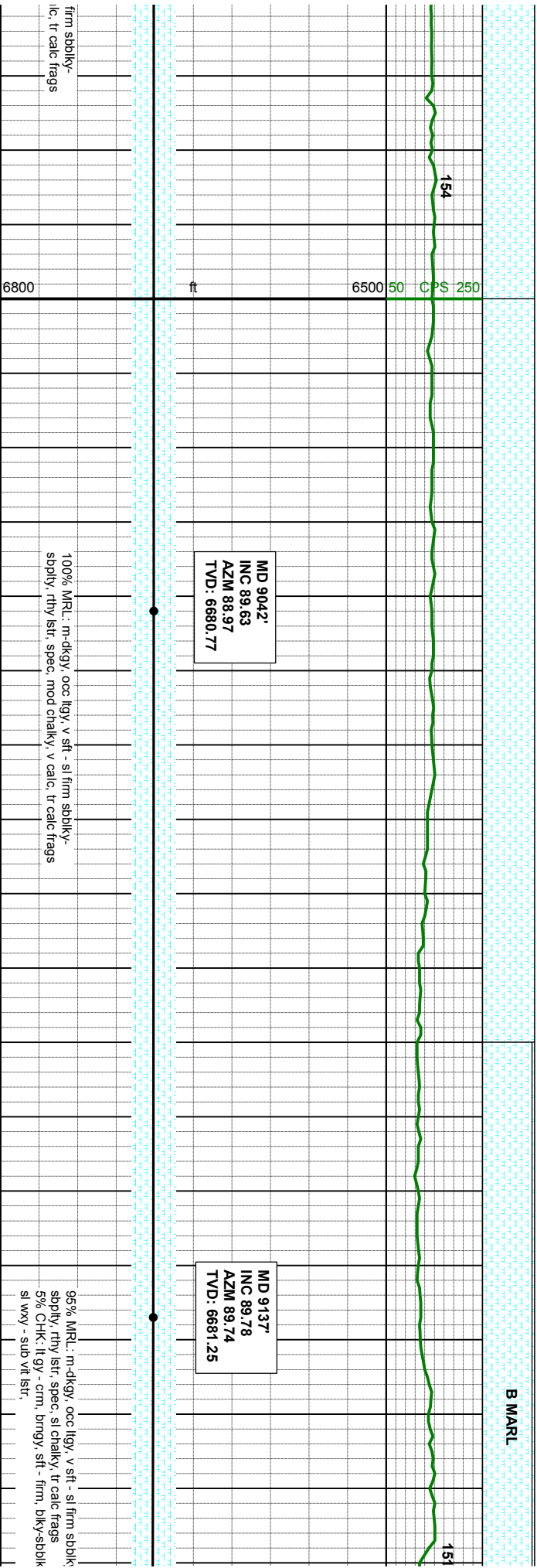
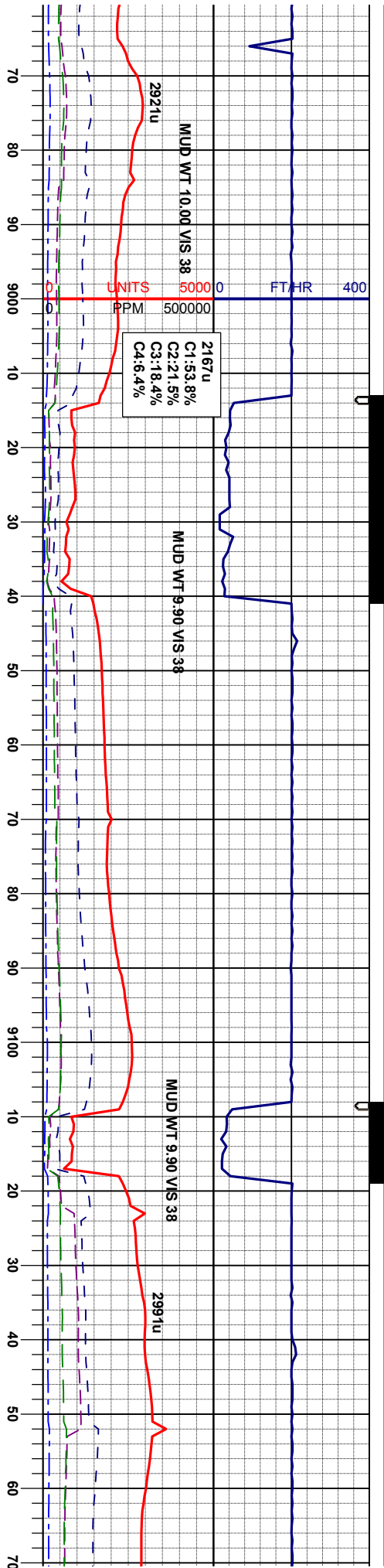




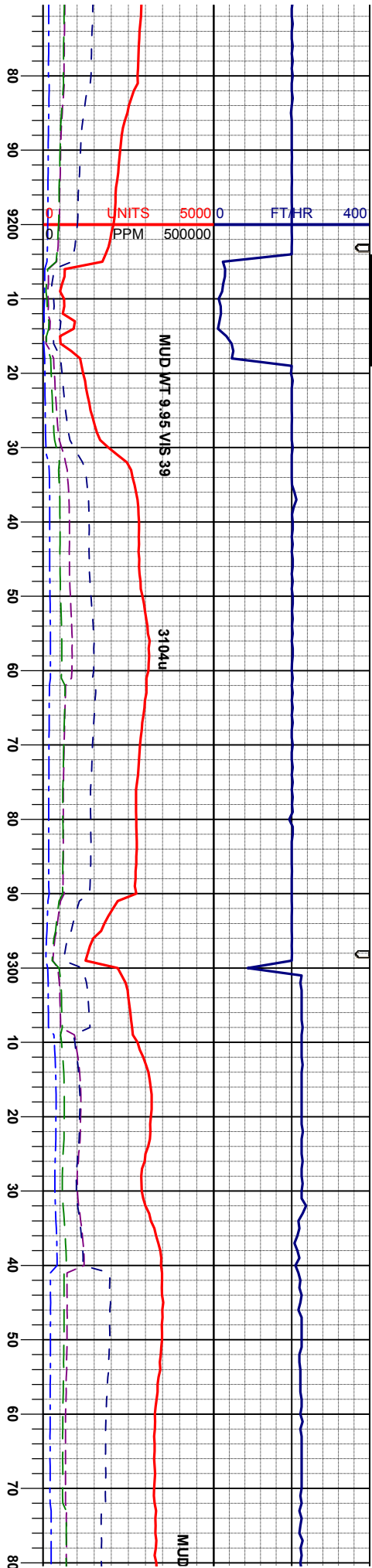












MID 9232'  
INC 88.89  
AZM 89.20  
TVD: 6682.35

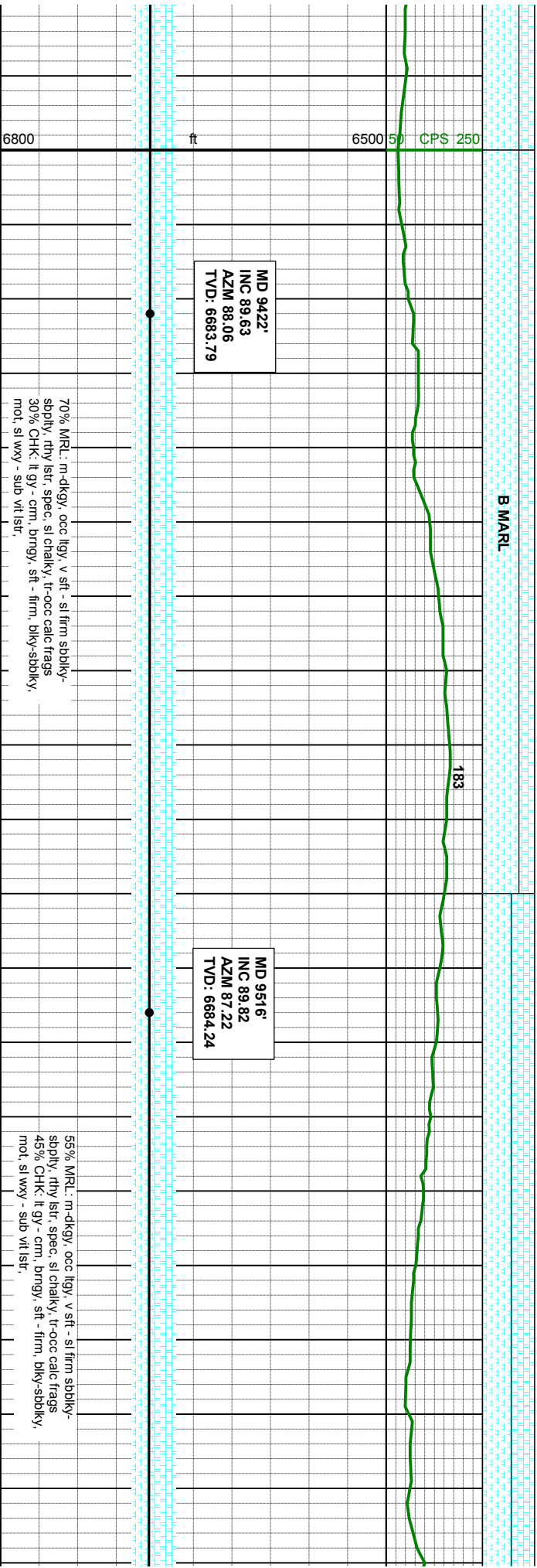
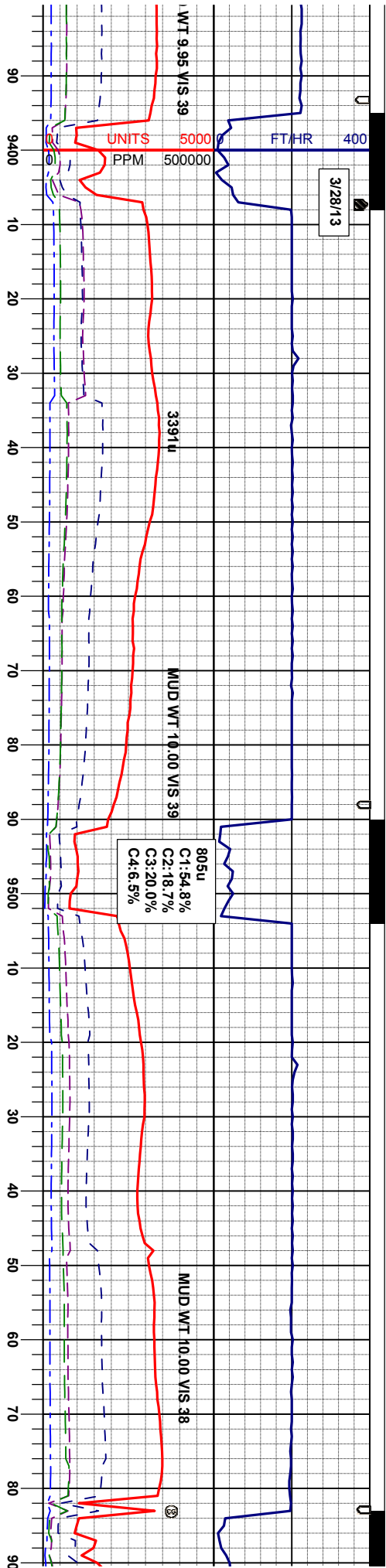
MID 9327'  
INC 89.88  
AZM 88.66  
TVD: 6683.38

Y-  
mot.

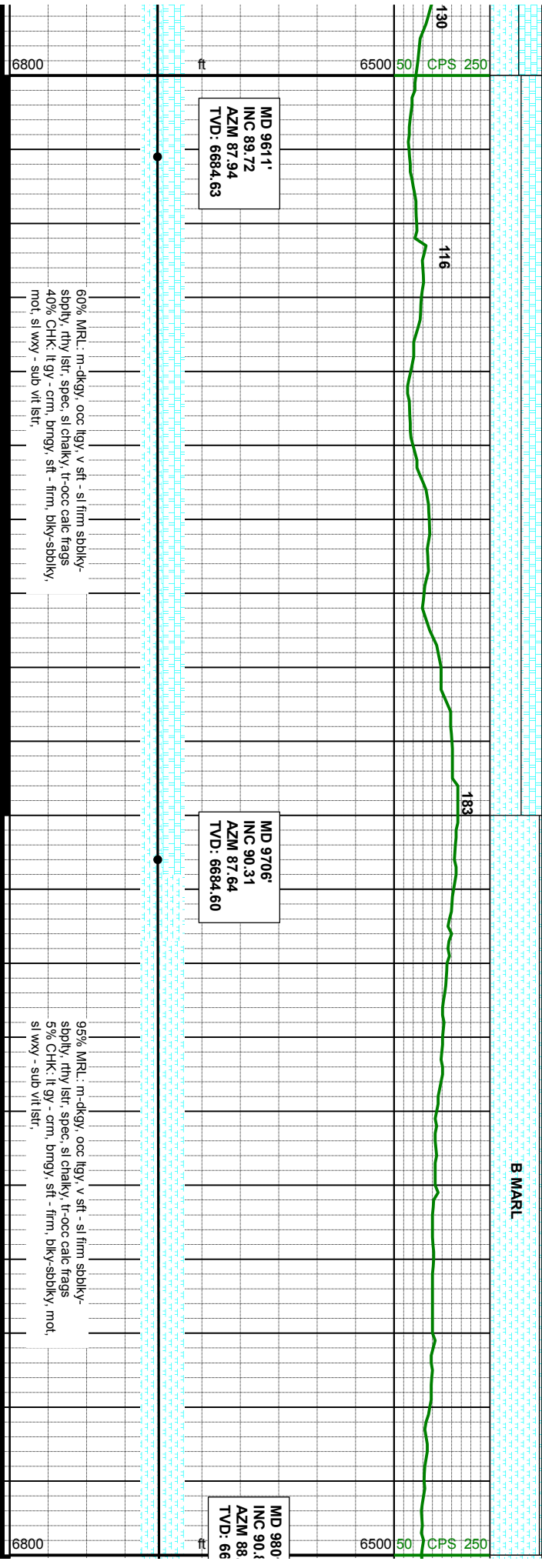
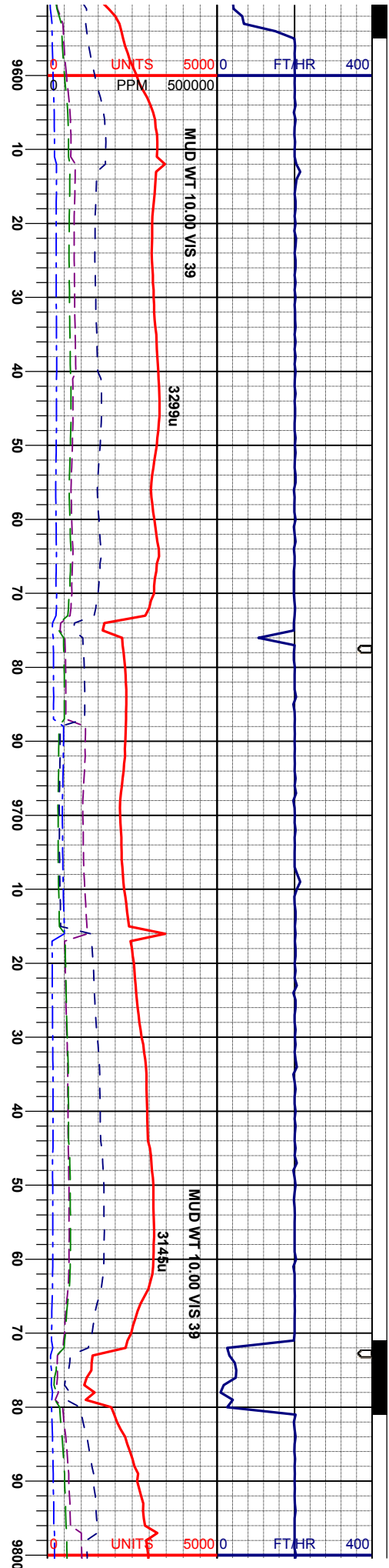
90% MRL: m-dkgy, occ ligy, v sft - sl firm sbbiky-  
sbbiky, rthy lstr, spec, sl chalky, tr calc frags  
10% CHK: lt gy - crm, brngy, sft - firm, biky-sbbiky,  
mot, sl wxy - sub vit lstr,

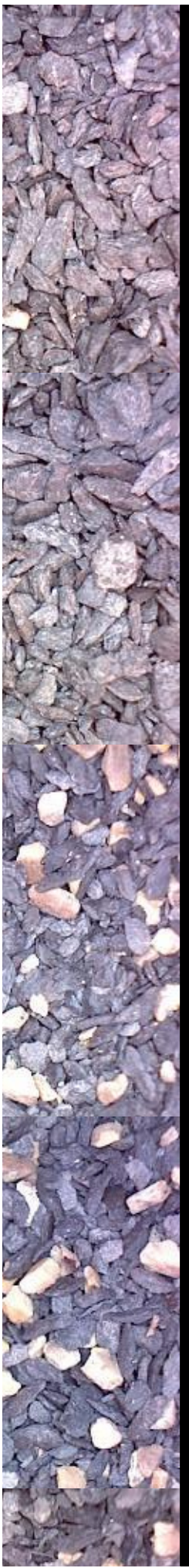
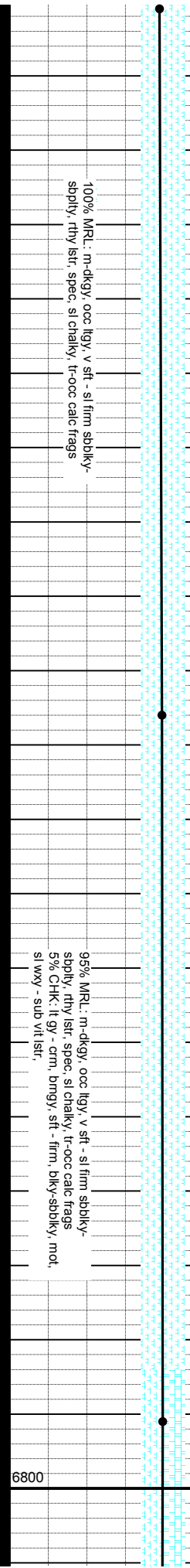
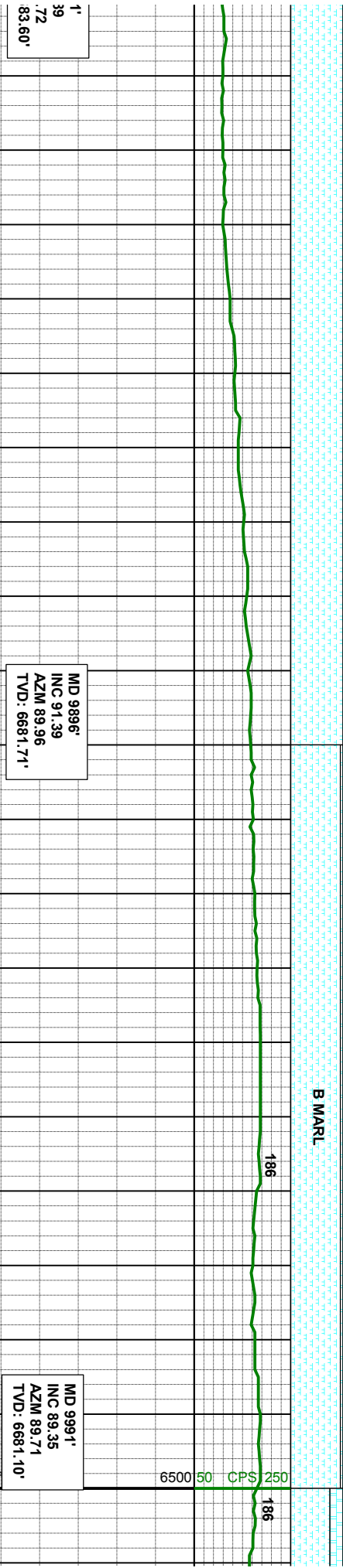
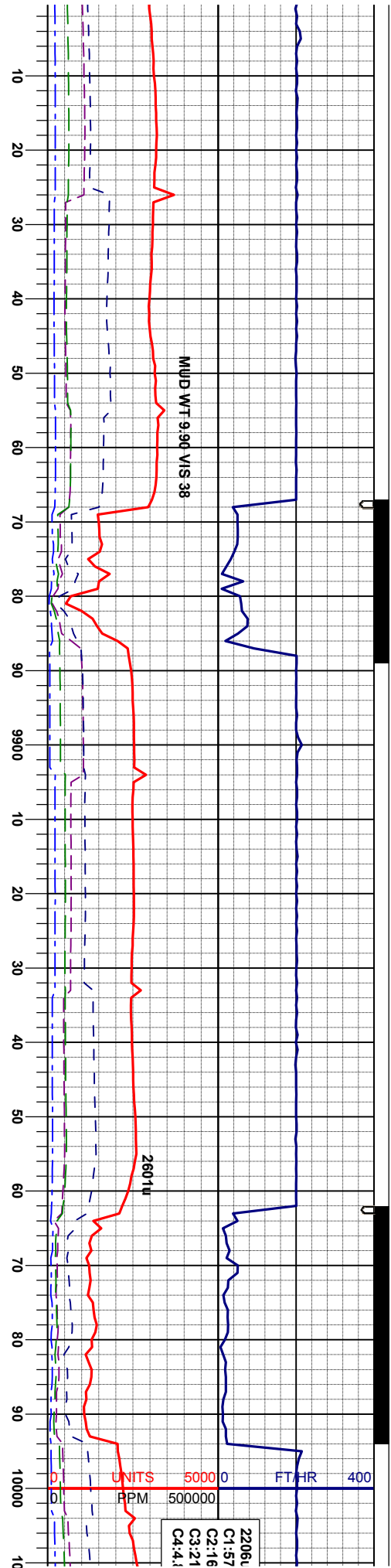
70% MRL: m-dkgy, occ ligy, v sft - sl firm sbbiky-  
sbbiky, rthy lstr, spec, sl chalky, tr calc frags  
30% CHK: lt gy - crm, brngy, sft - firm, biky-sbbiky,  
mot, sl wxy - sub vit lstr,



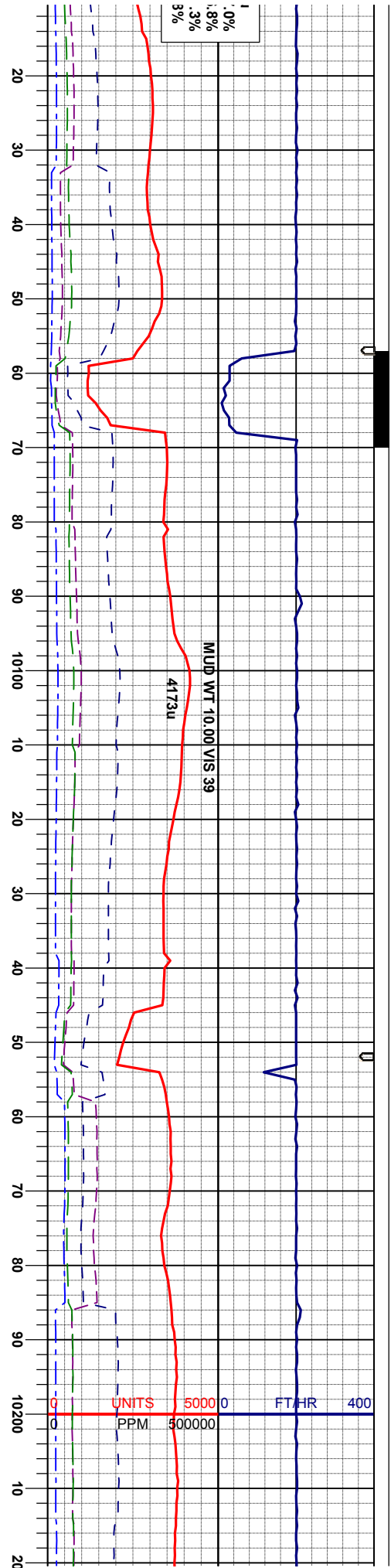












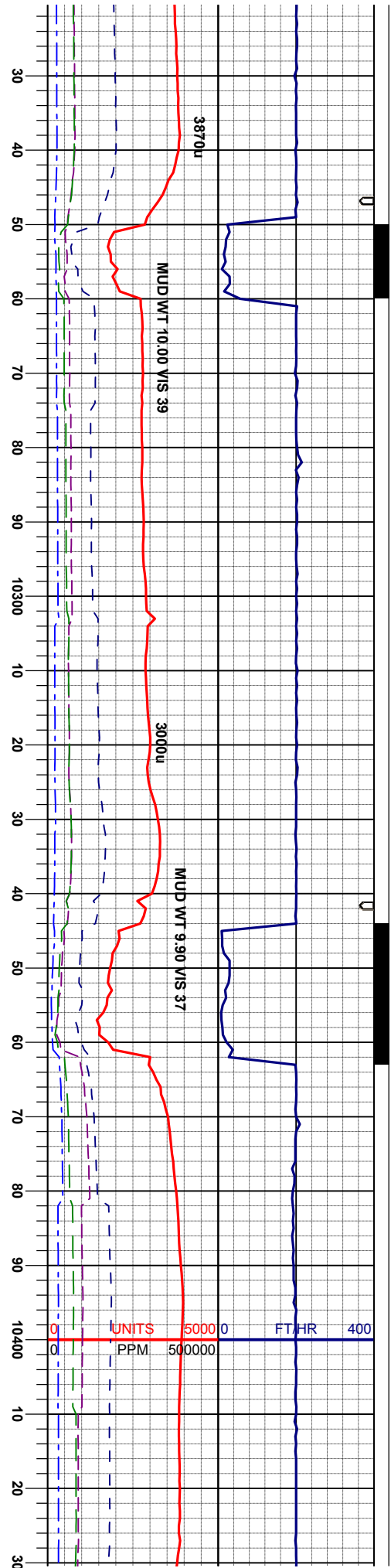
MD 10085'  
INC 89.41  
AZM 88.78  
TVD: 6682.11'

MD 10180'  
INC 90.65  
AZM 88.57  
TVD: 6682.06'

75% MRL: m-dkgy, occ lgy, v sft - sl firm sbbkly-  
sbply, rthy lstr, spec, sl chalky, lt-occ calc frags  
25% CHK: lt gy - crm, brgy, sft - firm, bkly-sbbkly,  
mot, sl wxy - sub vit lstr.

60% MRL: m-dkgy, occ lgy, v sft - sl firm sbbkly-  
sbply, rthy lstr, spec, sl chalky, lt-occ calc frags  
40% CHK: lt gy - crm, brgy, sft - firm, bkly-sbbkly,  
mot, sl wxy - sub vit lstr.





B MARL

MD 10275'  
INC 90.83  
AZM 88.23  
TVD: 6680.83'

MD 10370'  
INC 90.99  
AZM 90.17  
TVD: 6679.32'

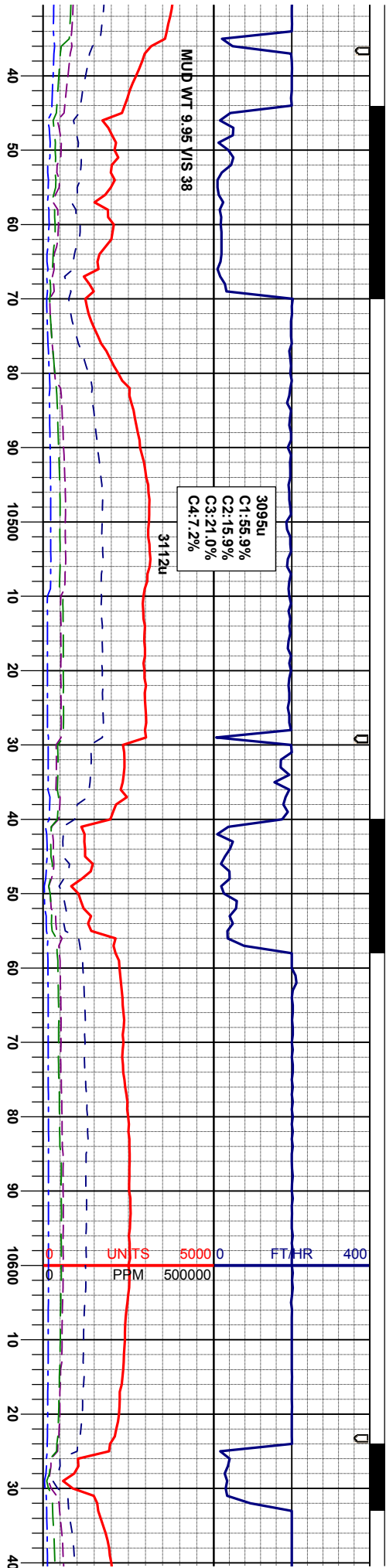
95% MRL: m-dkgy, ooc lgy, v sft - sl firm sbbky-  
sbbly, rthy lstr, spec, sl chakly, tr-ooc calc frags  
5% CHK: lt gy - crm, bmgly, sft - firm, bkly-sbbky, mol,  
sl wxy - sub vl lstr.

70% MRL: m-dkgy, ooc lgy, v sft - sl firm sbbky-  
sbbly, rthy lstr, spec, sl chakly, tr-ooc calc frags  
30% CHK: lt gy - crm, bmgly, sft - firm, bkly-sbbky,  
mol, sl wxy - sub vl lstr.

6800 ft 6500 50 CPS 250







MD 10465'  
INC 89.69  
AZM 89.78  
TVD: 6678.76'

MD 10560'  
INC 89.11  
AZM 88.98  
TVD: 6679.76'

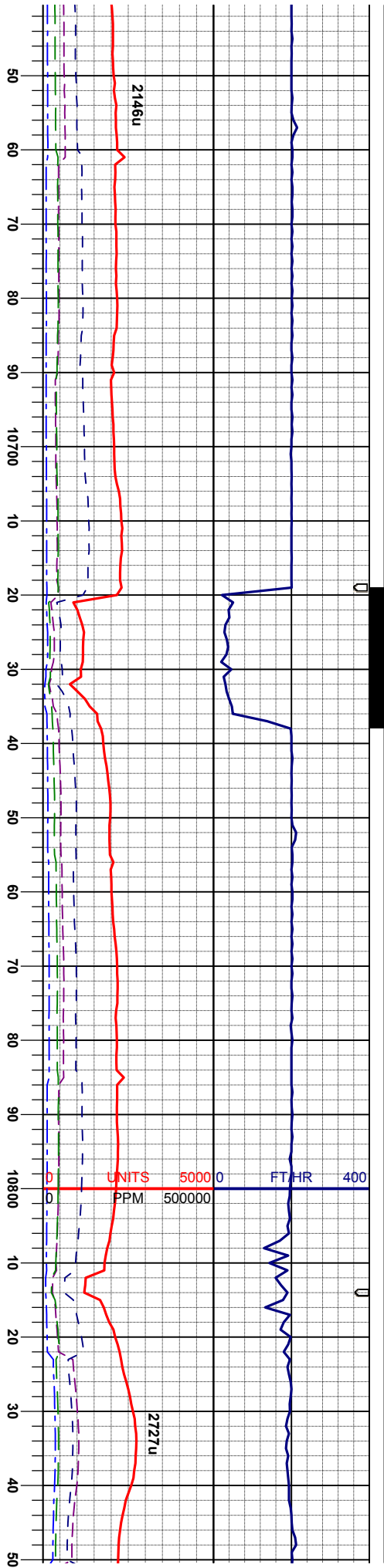
B MARL

60% CHK: lt gy - cm, brngy, sft - firm, bkly-sbdkly,  
mod, sl wxy - sub vit lst,  
40% MRL: m-dkgy, occ lgy, v sft - sl firm sbdkly-  
spdkly, rthy lst, spec, sl chalky, occ calc frags

85% MRL: m-dkgy, occ lgy, v sft - sl firm sbdkly-  
spdkly, rthy lst, spec, sl chalky, lt-occ calc frags  
15% CHK: lt gy - cm, brngy, sft - firm, bkly-sbdkly,  
mod, sl wxy - sub vit lst,

85% MRL:  
spdkly, rthy  
15% CHK:  
mod, sl wxy





B CHALK

MD 10654'  
INC 90.09  
AZM 90.26  
TVD: 6680.41'

MD 10749'  
INC 89.14  
AZM 91.38  
TVD: 6681.05'

MD 10844'  
INC 92.78  
AZM 93.37  
TVD: 6679.46'

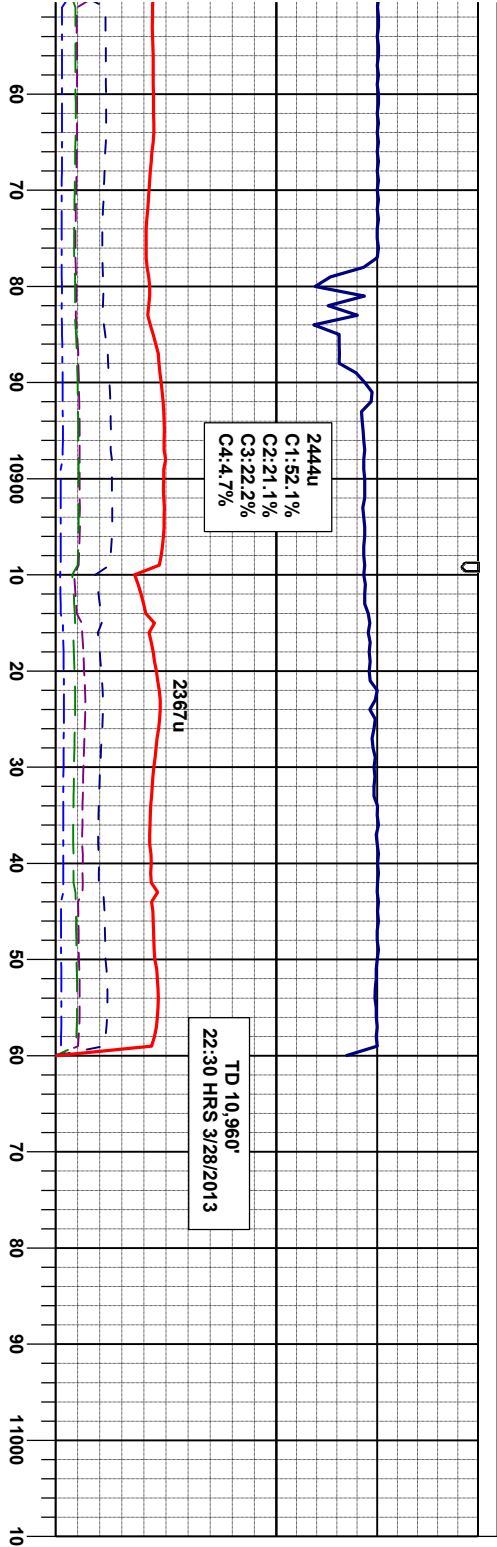
m-dkgy, occ llyg, v sft - sl firm sdbkly-  
/lst, spec, sl chalky, lt-occ calc frags  
lt gy - crm, brngy, sft - firm, bkly-sdbkly,  
/- sub vit lstf,

60% MRL: m-dkgy, occ llyg, v sft - sl firm sdbkly-  
spbly, rthy lst, spec, sl chalky, lt-occ calc frags  
40% CHK: lt gy - crm, brngy, sft - firm, bkly-sdbkly,  
mot, sl wxy - sub vit lstf,

50% MRL: m-dkgy, occ,  
spbly, rthy lst, spec, sl  
50% CHK: lt gy - crm, br  
mot, sl wxy - sub vit lstf,







B CHALK

MD 10895'  
INC 92.99  
AZM 92.94  
TVD: 6676.90'

Thank you for using  
Columbine Logging Inc.

gyblík, v sft - si firm sbblík-  
čtálík, occ-abnt calc frags  
ngy, sft - firm, bly-sbly,

60% CHK: lt gy - cm, brngy, sft - firm, bly-sbly,  
mot: si lxy - sub vt lstr,  
40% WFL: m-dky, occ gyblík, v sft - si firm sbblík-  
sblly, rthy lstr, spec: si čtálík, occ-abnt calc frags

