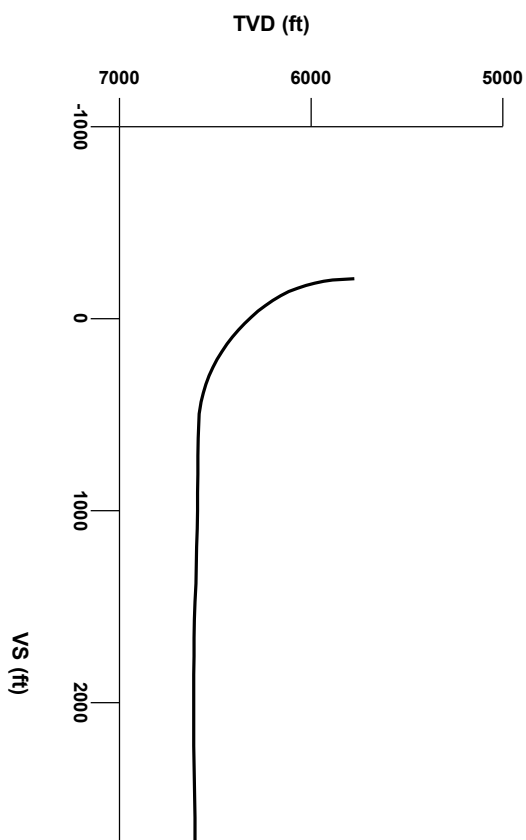


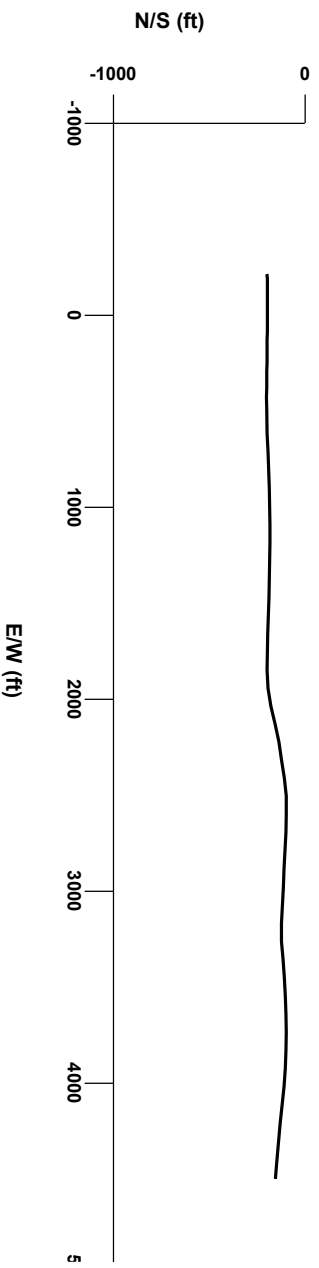
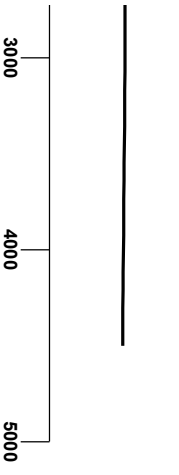
LOG created using LPLLOT VH Version 3.0, June 21, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC.  
**WELL:** WELLS RANCH AA14-63-1HN  
**LOCATION:** SWSW SEC. 14-6N-63W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 1,192' FSL 295' FWL  
**ELEVATION:** 4,735' GL 4,759' KB  
**FIELD:** WATTENBERG  
**SPUD DATE:** 6/13/2012  
**TD DATE:** 6/20/2012  
**DATES LOGGED:** 6/15/2012 - 6/20/2012 (HORIZONTAL)  
**DEPTHS LOGGED:** 5,800' - 11,000' (HORIZONTAL)  
**LOGGERS:** CHRIS COOK; MARK COLE; D. HENSLEY  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 315  
**API:** 05-123-35524  
**LOG TYPE:** HORIZONTAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** See corresponding horizontal log: WELLS RANCH AA14-63-1HN VERT.  
Latitude: 40.482590; Longitude -104.412141



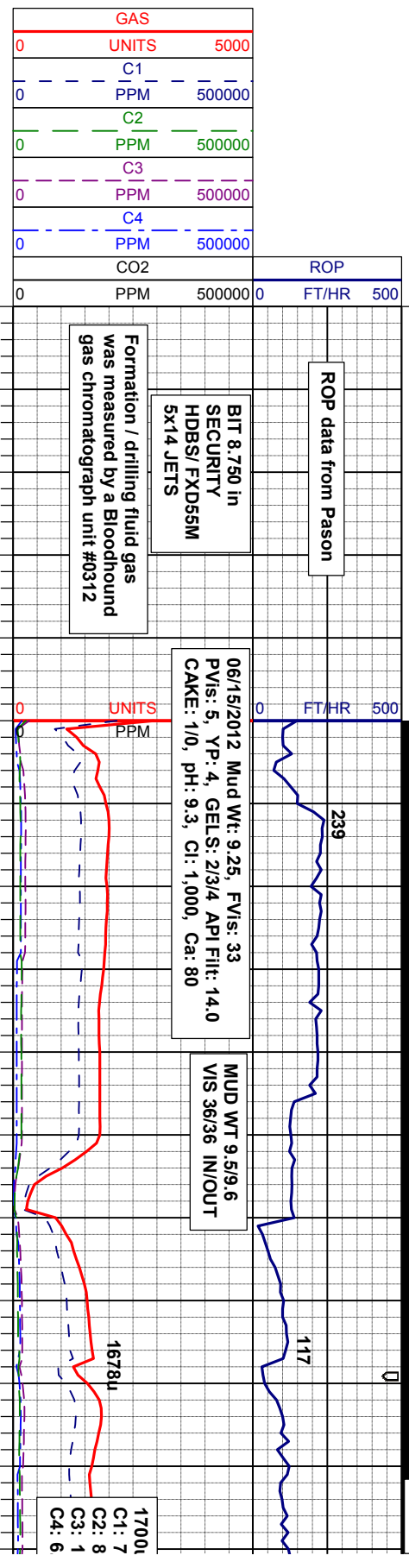
Survey Elevation

# Survey Plan



SLIDE ROTATE

SLIDE



CUTTINGS LITHOLOGY

Gamma data from Sperry - Halliburton

BEGIN LOGGING LATERAL ON 06/15/2012 @ 17:24 hr MST BY COLUMBINE LOGGING INC.

SEE CORRESPONDING VERTICAL L PLOT LOG WELLS RANCH AA14-63-11HN VERTICAL

OIL SHOW

T F G	TVD	GAMMA R
6750	ft	API 250
6750	#	API 250

SLTY SH: pred olvy, sme lty, firm, spply -ply, silty tex, tr inbd ss, tr bent, sl calc

SLTY SH: pred olvy, sme lty, firm, spply -ply, silty tex, tr inbd ss, tr bent, sl calc

NONE

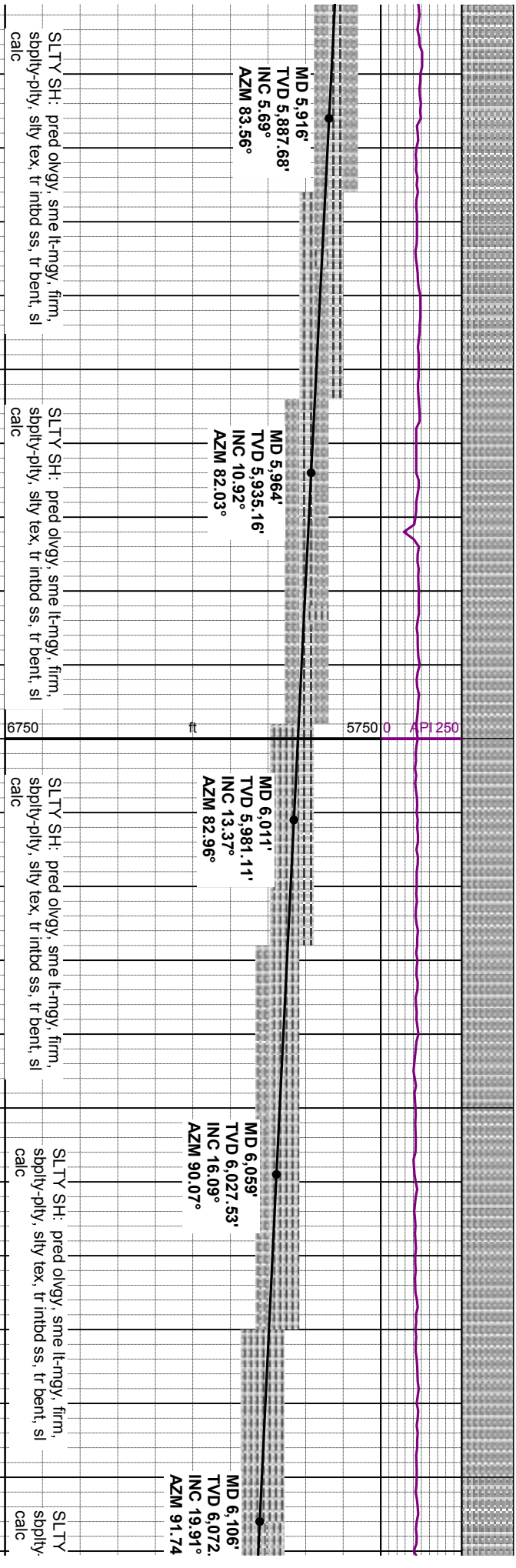
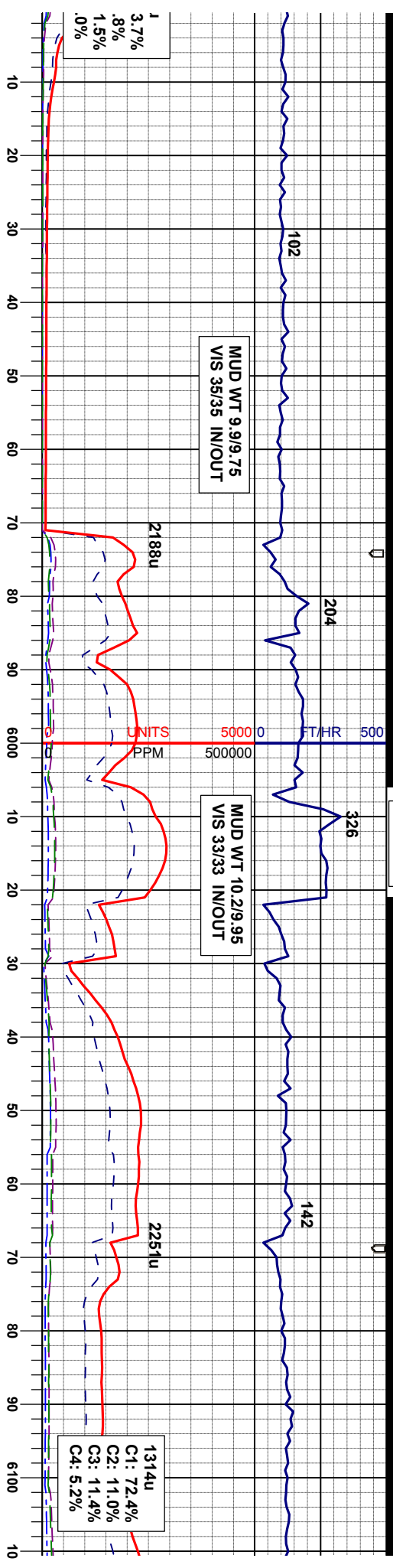


A Celestron digital microscope was used for sample pictures at ~ 50 x resolution. The samples were inspected hydrated and color identified using a Munsell color chart.

SAMPLE PHOTOS

1000

ROTATE



MD 5,916'  
 TVD 5,887.68'  
 INC 5.69°  
 AZM 83.56°

MD 5,964'  
 TVD 5,935.16'  
 INC 10.92°  
 AZM 82.03°

MD 6,011'  
 TVD 5,981.11'  
 INC 13.37°  
 AZM 82.96°

MD 6,059'  
 TVD 6,027.53'  
 INC 16.09°  
 AZM 90.07°

MD 6,106'  
 TVD 6,072.  
 INC 19.91°  
 AZM 91.74

SLTY SH: pred olvgv, sme lt-mgy, firm, sbply-pty, silty tex, tr inbnd ss, tr bent, sl calc

SLTY SH: pred olvgv, sme lt-mgy, firm, sbply-pty, silty tex, tr inbnd ss, tr bent, sl calc

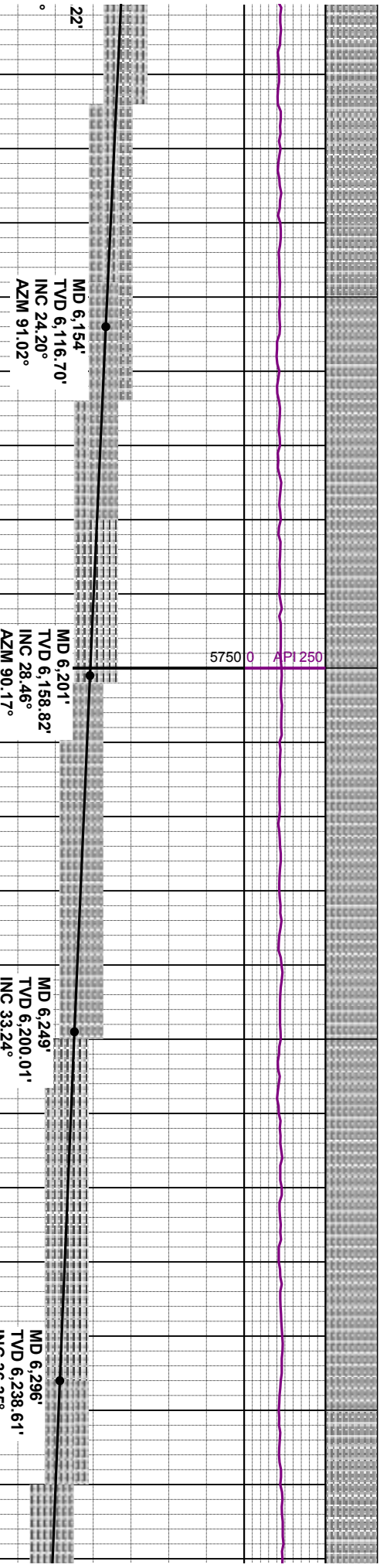
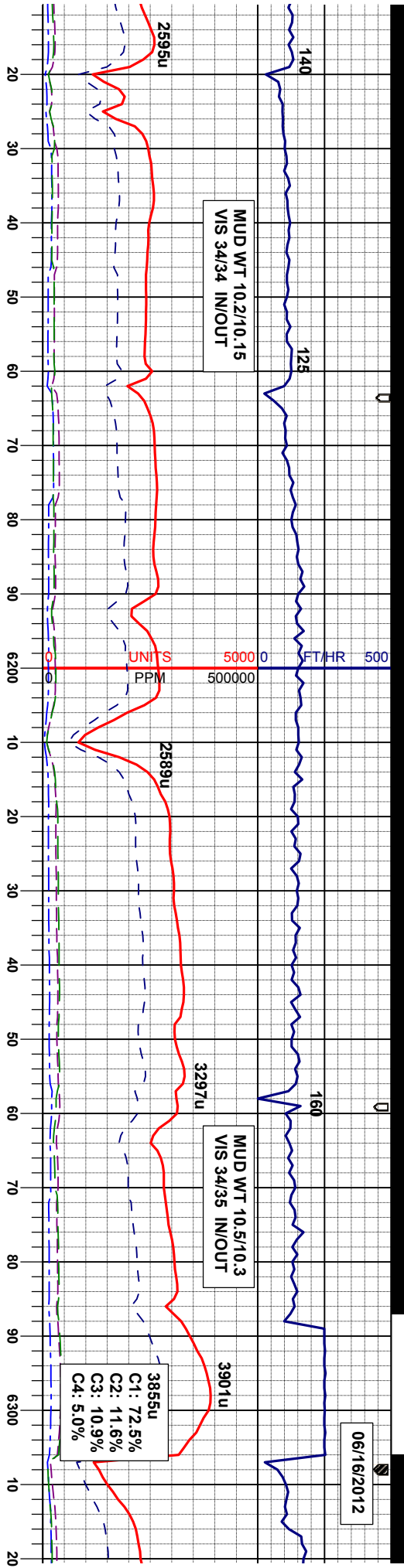
SLTY SH: pred olvgv, sme lt-mgy, firm, sbply-pty, silty tex, tr inbnd ss, tr bent, sl calc

SLTY SH: pred olvgv, sme lt-mgy, firm, sbply-pty, silty tex, tr inbnd ss, tr bent, sl calc

SLTY sbply calc



06/16/2012



SH: pred olvg, sme lt-mgy, firm, pily, silty tex, tr intbd ss, tr bent, sl

SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc

SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc

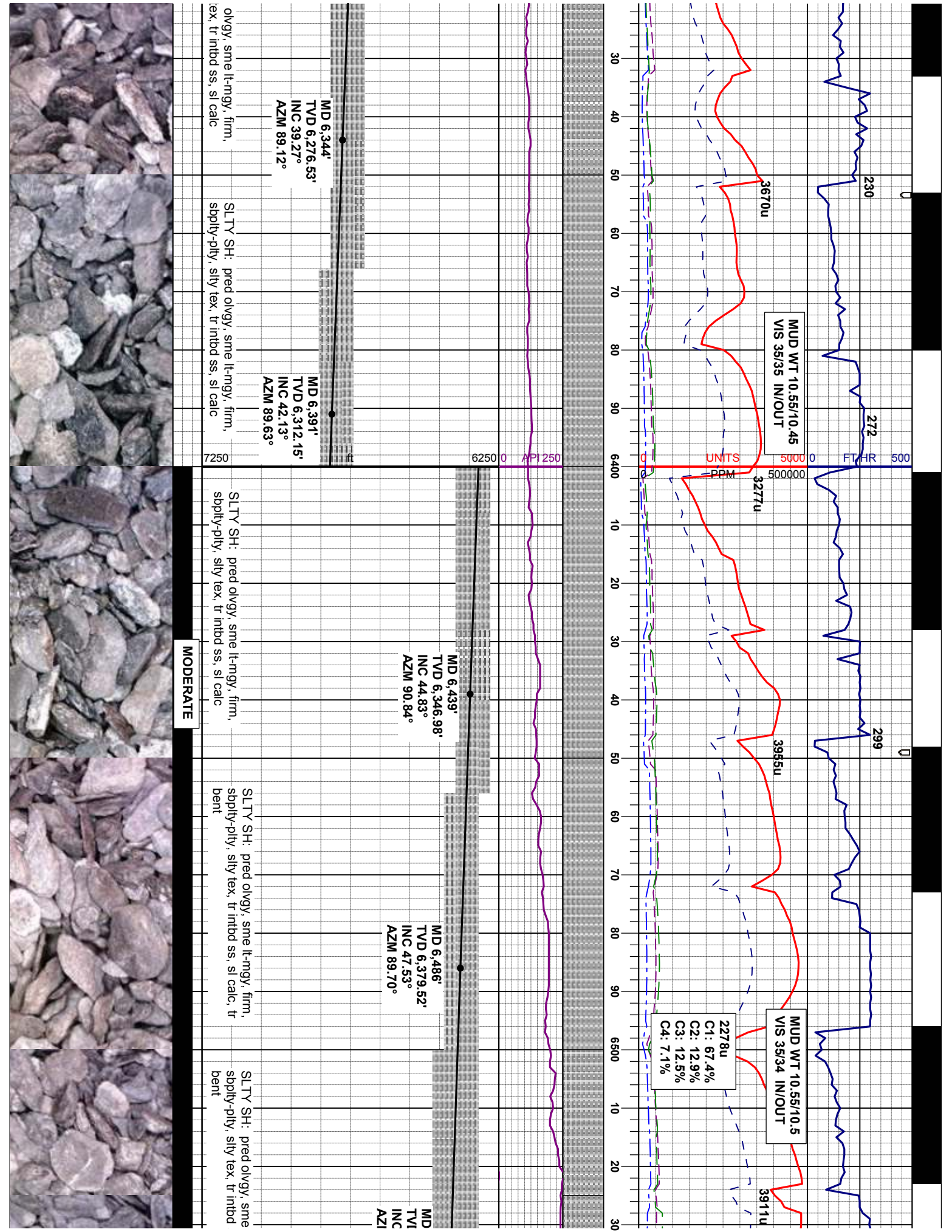
SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc

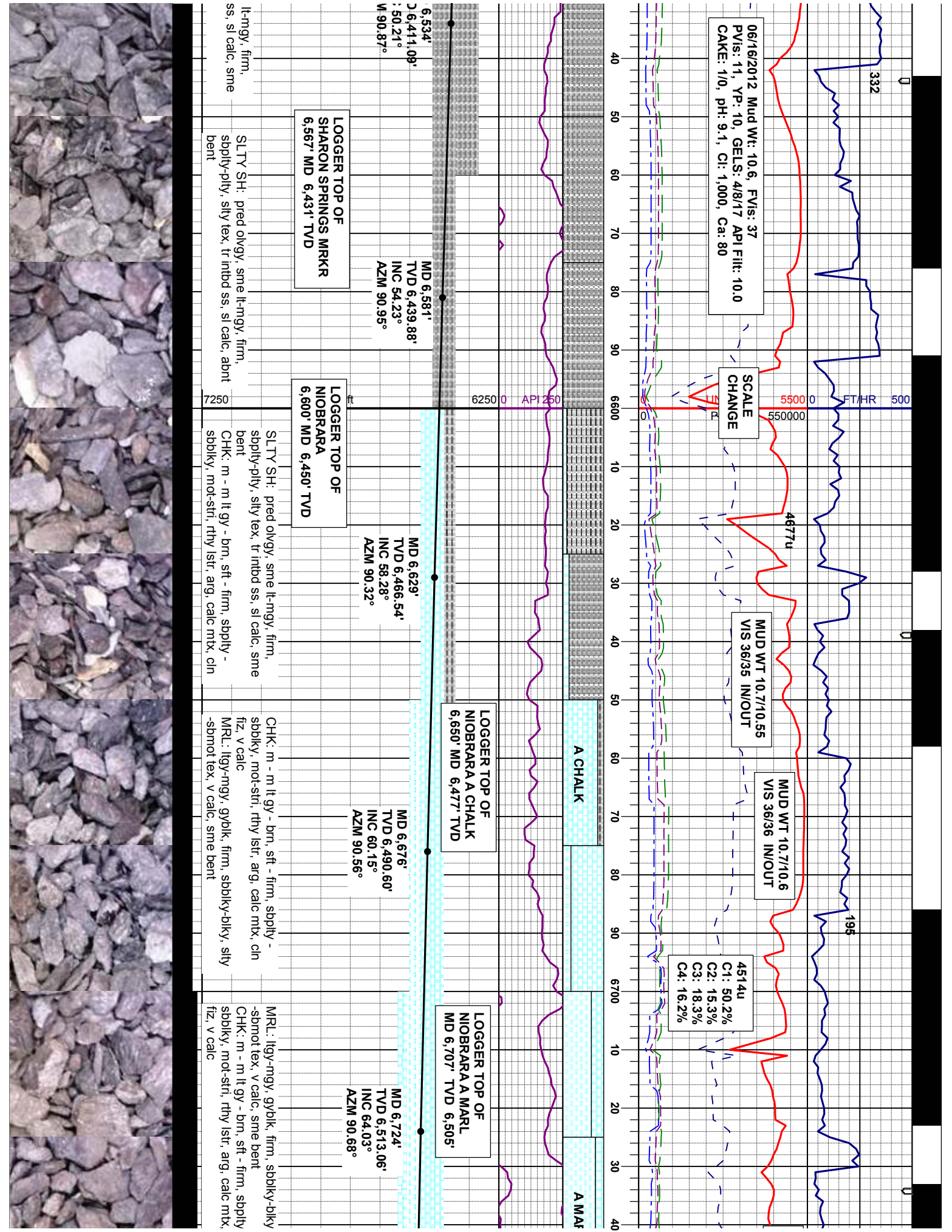
SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc

SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc

SLTY SH: pred olvg, sme lt-mgy, firm, spily-pily, silty tex, tr intbd ss, sl calc







06/16/2012 Mud Wt: 10.6, FVis: 37  
 PVis: 11, YP: 10, GELS: 4/8/17 API Filtr: 10.0  
 CAKE: 1/0, pH: 9.1, CI: 1,000, Ca: 80

SCALE CHANGE

MUD WT 10.7/10.55  
 VIS 36/35 IN/OUT

MUD WT 10.7/10.6  
 VIS 36/36 IN/OUT

4514u  
 C1: 50.2%  
 C2: 15.3%  
 C3: 18.3%  
 C4: 16.2%

LOGGER TOP OF  
 SHARON SPRINGS MRKR  
 6,567' MD 6,431' TVD

LOGGER TOP OF  
 NIOBRARA  
 6,600' MD 6,450' TVD

LOGGER TOP OF  
 NIOBRARA A CHALK  
 6,650' MD 6,477' TVD

LOGGER TOP OF  
 NIOBRARA A MARL  
 MD 6,707' TVD 6,505'

6,534'  
 2,6,414,09'  
 : 50.21°  
 M 90.87°

MD 6,581'  
 TVD 6,439,88'  
 INC 54.23°  
 AZM 90.95°

MD 6,629'  
 TVD 6,466,54'  
 INC 58.28°  
 AZM 90.32°

MD 6,676'  
 TVD 6,490,60'  
 INC 60.15°  
 AZM 90.56°

MD 6,724'  
 TVD 6,513,06'  
 INC 64.03°  
 AZM 90.68°

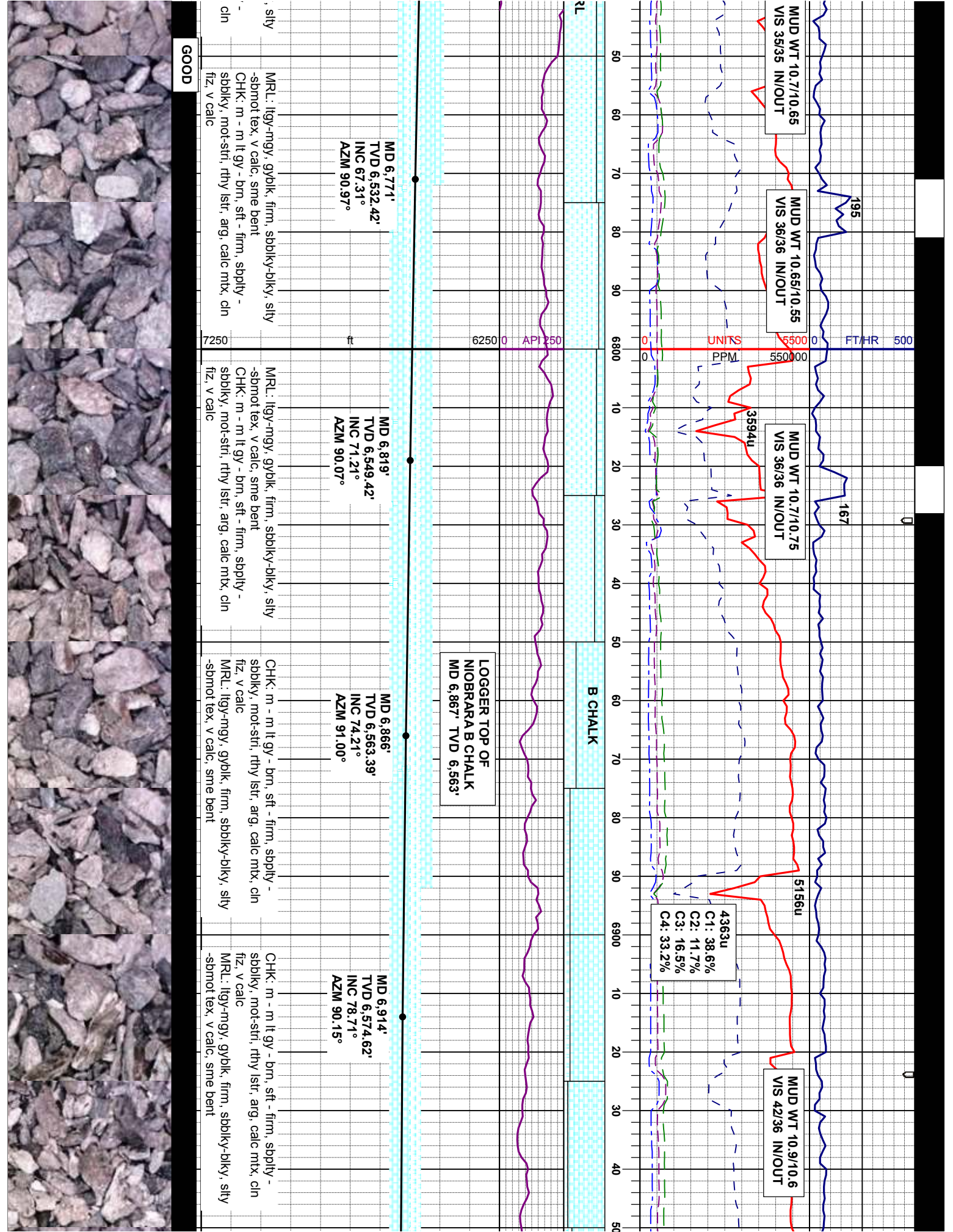
lt-mgy, firm,  
 ss, sl calc, sme  
 SLTY SH: pred olvgy, sme lt-mgy, firm,  
 sbply-pily, silty tex, tr intbd ss, sl calc, abnt  
 bent

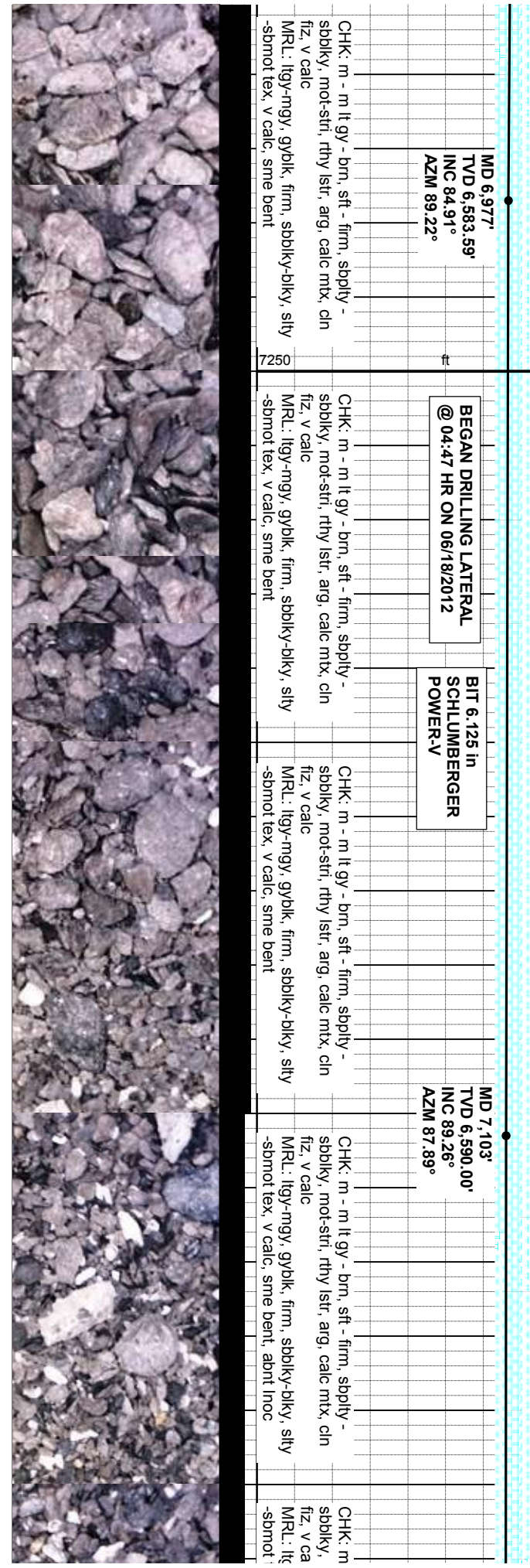
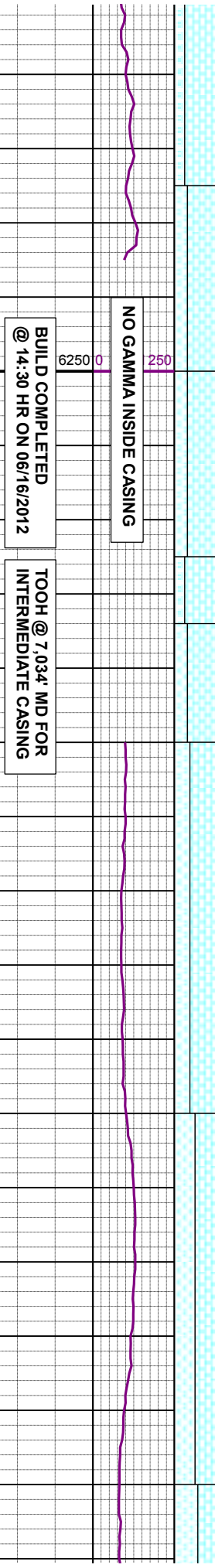
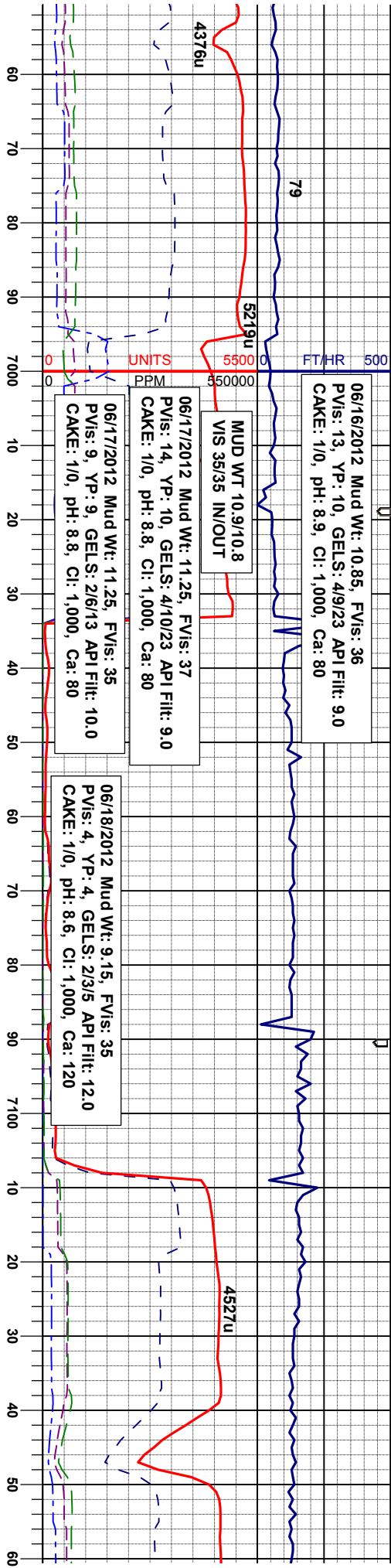
SLTY SH: pred olvgy, sme lt-mgy, firm,  
 sbply-pily, silty tex, tr intbd ss, sl calc, sme  
 bent  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbply, mot-str, rthy istr, arg, calc mtx, cin

CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbply, mot-str, rthy istr, arg, calc mtx, cin  
 fiz, v calc  
 MRL: lgy-mgy, gyblk, firm, sbply-blky, silty  
 -sbmot tex, v calc, sme bent

MRL: lgy-mgy, gyblk, firm, sbply-blky  
 -sbmot tex, v calc, sme bent  
 CHK: m - m lt gy - brn, sft - firm, sbply  
 sbply, mot-str, rthy istr, arg, calc mtx,  
 fiz, v calc







06/16/2012 Mud Wt: 10.85, FVis: 36  
 PVis: 13, YP: 10, GELS: 4/9/23 API Filtr: 9.0  
 CAKE: 1/0, PH: 8.9, CI: 1,000, Ca: 80

06/17/2012 Mud Wt: 11.25, FVis: 37  
 PVis: 14, YP: 10, GELS: 4/10/23 API Filtr: 9.0  
 CAKE: 1/0, PH: 8.8, CI: 1,000, Ca: 80

06/17/2012 Mud Wt: 11.25, FVis: 35  
 PVis: 9, YP: 9, GELS: 2/6/13 API Filtr: 10.0  
 CAKE: 1/0, PH: 8.8, CI: 1,000, Ca: 80

06/18/2012 Mud Wt: 9.15, FVis: 35  
 PVis: 4, YP: 4, GELS: 2/3/5 API Filtr: 12.0  
 CAKE: 1/0, PH: 8.6, CI: 1,000, Ca: 120

NO GAMMA INSIDE CASING

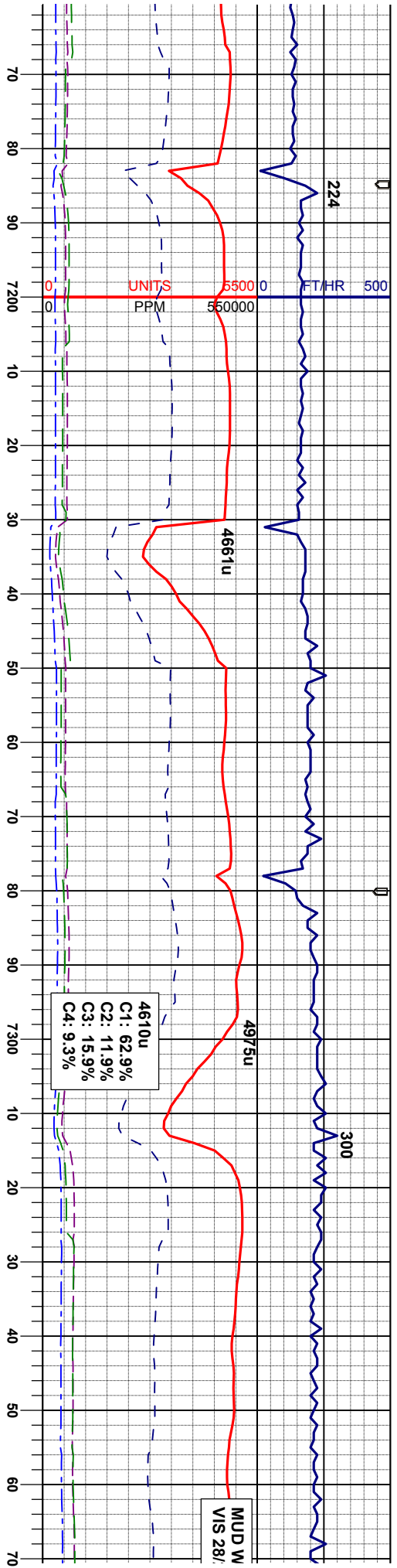
BUILD COMPLETED @ 14:30 HR ON 06/16/2012

TOOH @ 7.034' MD FOR INTERMEDIATE CASING

BEGAN DRILLING LATERAL @ 04:47 HR ON 06/18/2012

BIT 6.125 in SCHLUMBERGER POWER-V

MD 7,103'  
 TVD 6,590.00'  
 INC 89.26°  
 AZM 87.89°



FAULT @ 7,327' MD  
DOWNTHROW 56"

MD 7,198'  
TVD 6,590.97'  
INC 89.57°  
AZM 87.84°

MD 7,293'  
TVD 6,591.74'  
INC 89.51°  
AZM 88.06°

- m lt gy - brn, sft - firm, sbply -  
mot-stri, rthy istr, arg, calc mtx, cin

MR.L: lgy-mgy, gyblk, firm, sbply-dlky, slty  
-sbmot tex, v calc, sme bent, abnt inoc  
CHK: m - m lt gy - brn, sft - firm, sbply -  
sbply, mot-stri, rthy istr, arg, calc mtx, cin  
fiz, v calc

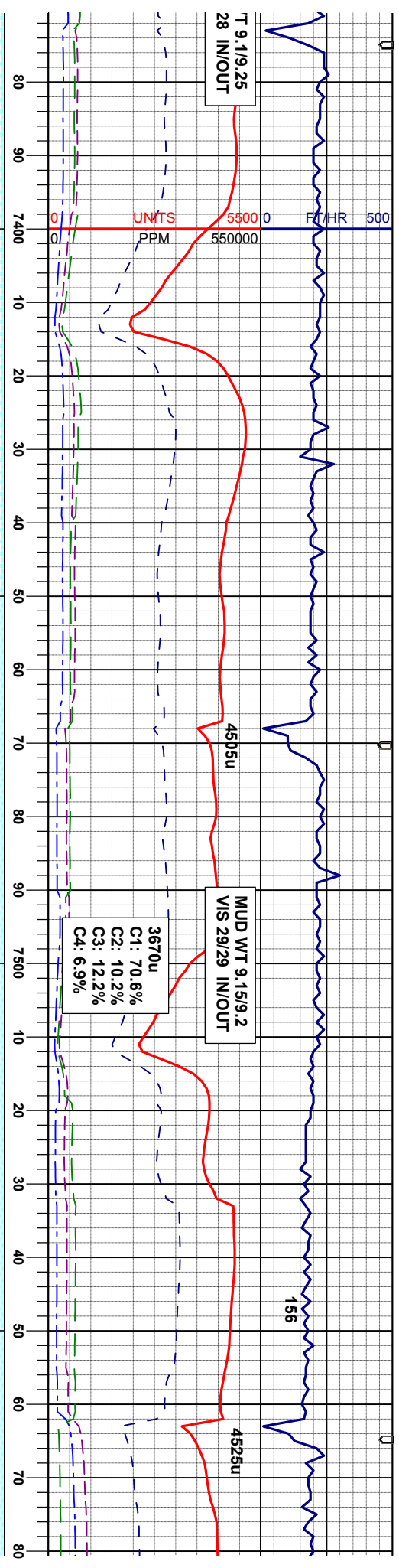
MR.L: lgy-mgy, gyblk, firm, sbply-dlky, slty  
-sbmot tex, v calc, sme bent, abnt inoc  
CHK: m - m lt gy - brn, sft - firm, sbply -  
sbply, mot-stri, rthy istr, arg, calc mtx, cin  
fiz, v calc

MR.L: lgy-mgy, gyblk, firm, sbply-dlky, slty  
-sbmot tex, v calc, sme bent, abnt inoc  
CHK: m - m lt gy - brn, sft - firm, sbply -  
sbply, mot-stri, rthy istr, arg, calc mtx, cin  
fiz, v calc

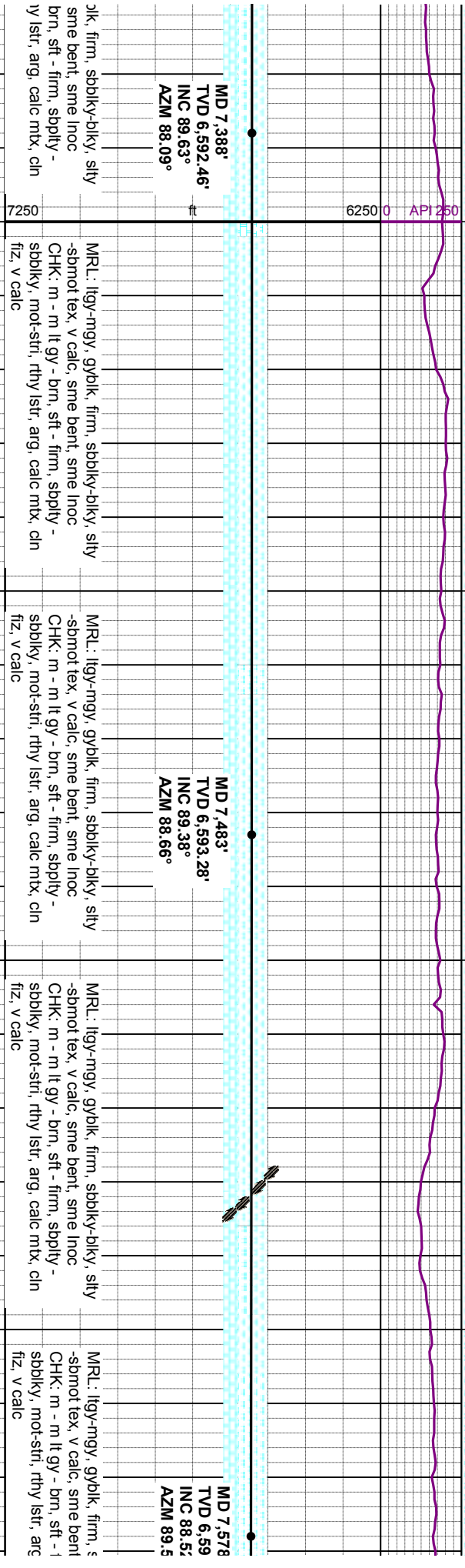
MR.L: lgy-mgy, gyt  
-sbmot tex, v calc,  
CHK: m - m lt gy -  
sbply, mot-stri, rth  
fiz, v calc

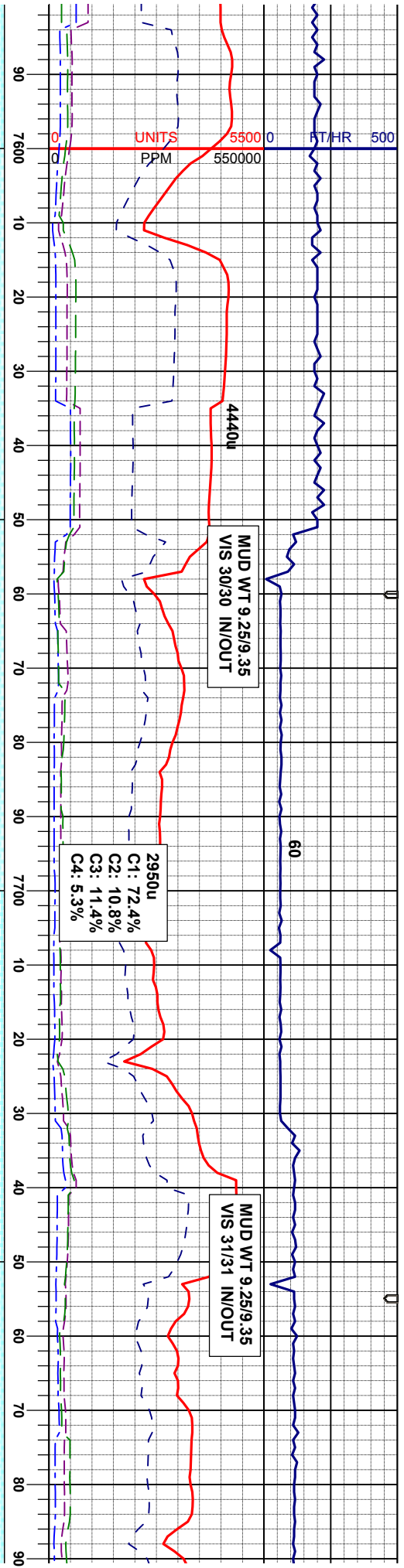
MODERATE





**MARL**





6250 0 API 250

MD 7,673'  
 TVD 6,597.06'  
 INC 89.01°  
 AZM 90.95°

MD 7,768'  
 TVD 6,599.00'  
 INC 88.64°  
 AZM 90.97°

sbblky-dlky, stly  
 : sme Inoc  
 firm, sbply -  
 j, calc mtx, cin

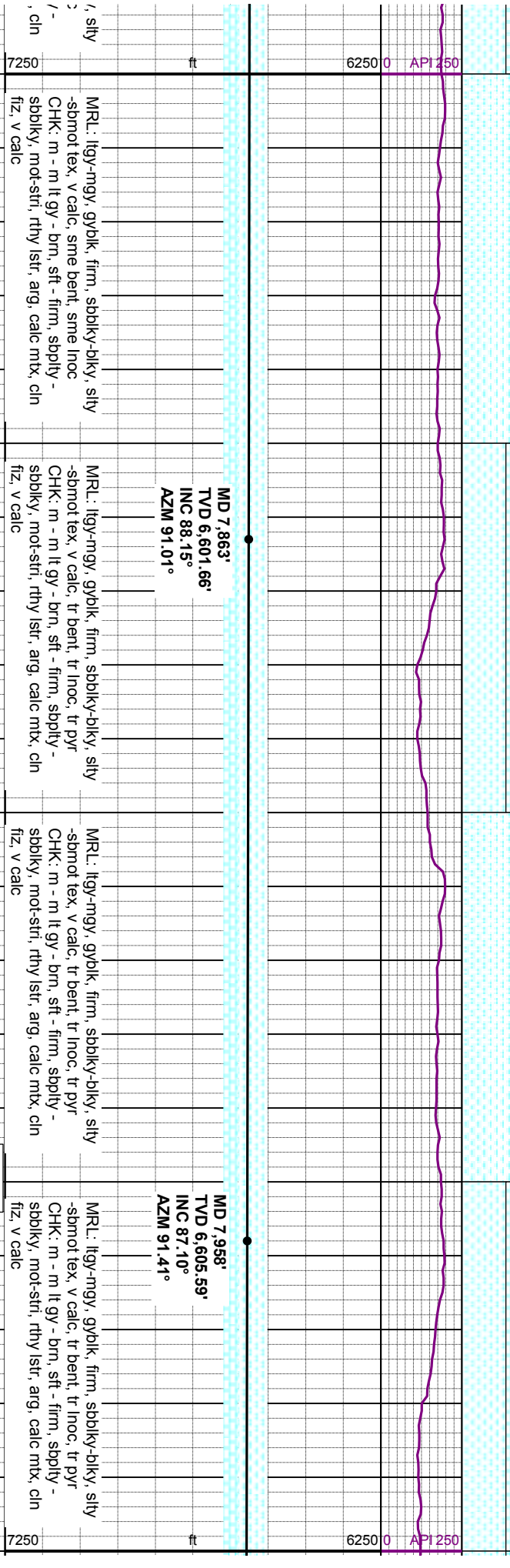
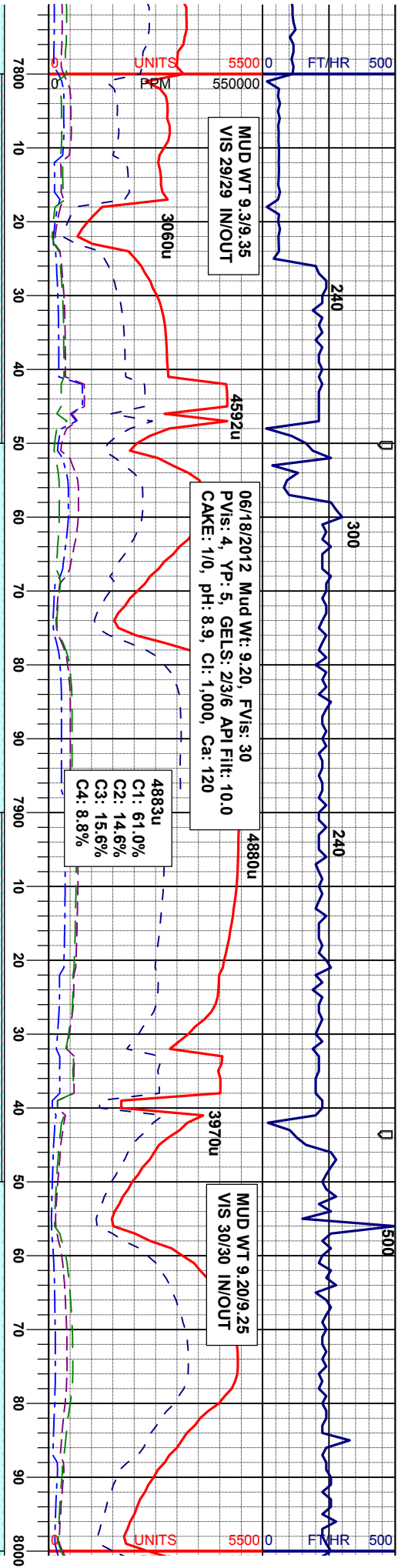
MRU: lgy-mgy, gyblk, firm, sbblky-dlky, stly  
 -sbnmt tex, v calc, sme bent, sme Inoc  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy str, arg, calc mtx, cin  
 fiz, v calc

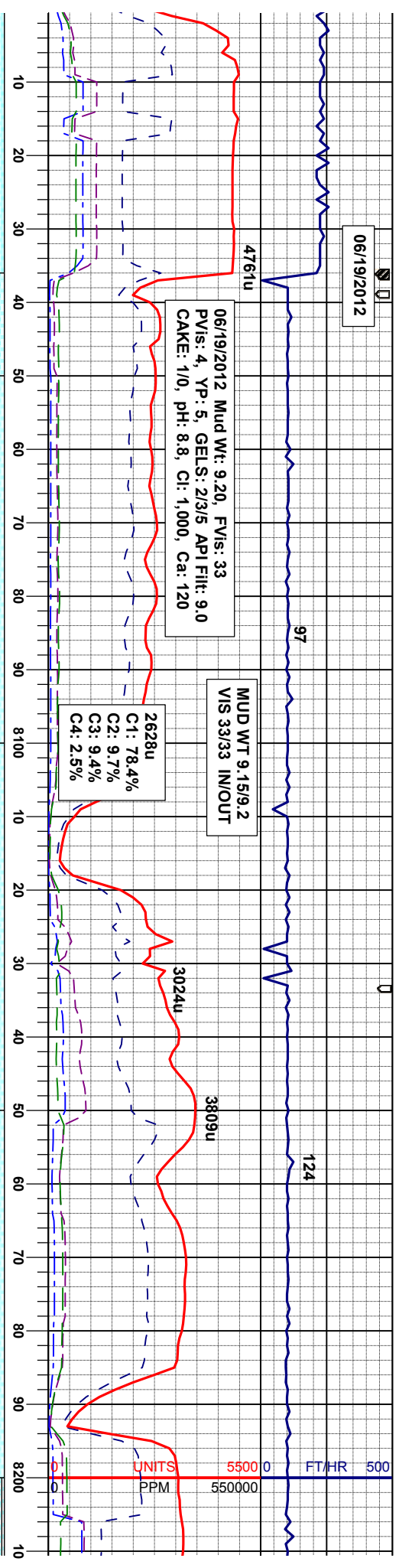
MRU: lgy-mgy, gyblk, firm, sbblky-dlky, stly  
 -sbnmt tex, v calc, sme bent, sme Inoc  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy str, arg, calc mtx, cin  
 fiz, v calc

MRU: lgy-mgy, gyblk, firm, sbblky-dlky  
 -sbnmt tex, v calc, sme bent, sme Inoc  
 CHK: m - m lt gy - brn, sft - firm, sbply  
 sbblky, mot-stri, rthy str, arg, calc mtx  
 fiz, v calc

MODERATE







TOOH @ 8.036' FOR  
 TOOL FAILURE

FAULT @ 8.120' MD  
 UPTHROW 52'

MD 8,052'  
 TVD 6,609.39'  
 INC 88.27°  
 AZM 91.59°

MD 8,147'  
 TVD 6,611.13'  
 INC 89.63°  
 AZM 91.83°

MRL: lgy-ngy, gyblk, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, tr bent, tr inoc, tr pyr  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy lstr, arg, calc mx, cin  
 fiz, v calc

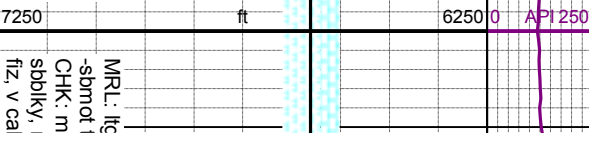
MRL: lgy-ngy, gyblk, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, tr bent, tr inoc, tr pyr  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy lstr, arg, calc mx, cin  
 fiz, v calc

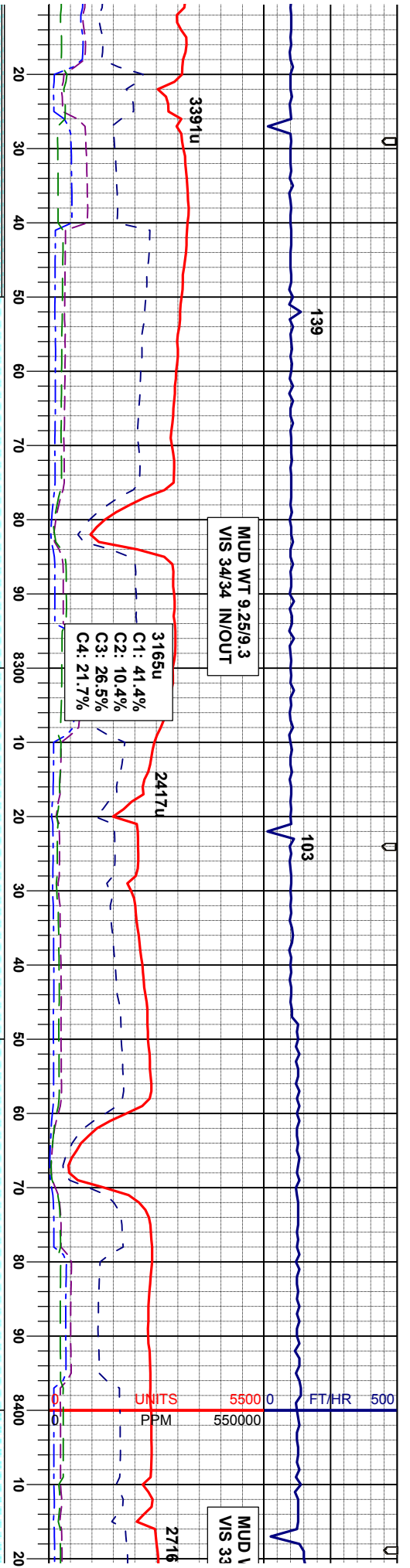
MRL: lgy-ngy, gyblk, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, tr bent, tr inoc, tr pyr  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy lstr, arg, calc mx, cin  
 fiz, v calc

MRL: lgy-ngy, gyblk, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, tr bent, tr inoc, tr pyr  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy lstr, arg, calc mx, cin  
 fiz, v calc

MRL: lgy-ngy, gyblk, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, tr bent, tr inoc, tr pyr  
 CHK: m - m lt gy - brn, sft - firm, sbply -  
 sbblky, mot-stri, rthy lstr, arg, calc mx, cin  
 fiz, v calc

B MARL





MD 8,242'  
 TVD 6,611.69'  
 INC 89.69°  
 AZM 91.34°

MD 8,337'  
 TVD 6,612.10'  
 INC 89.82°  
 AZM 90.58°

ly-mgy, gybik, firm, sbblky-dlky, slty  
 tex, v calc, tr bent, tr inoc, tr pyr  
 - m lt gy - brn, sft - firm, sbply -  
 mot-stri, rthy str, arg, calc mx, chl

MRL: lgy-mgy, gybik, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, abnt bent, tr inoc, sme

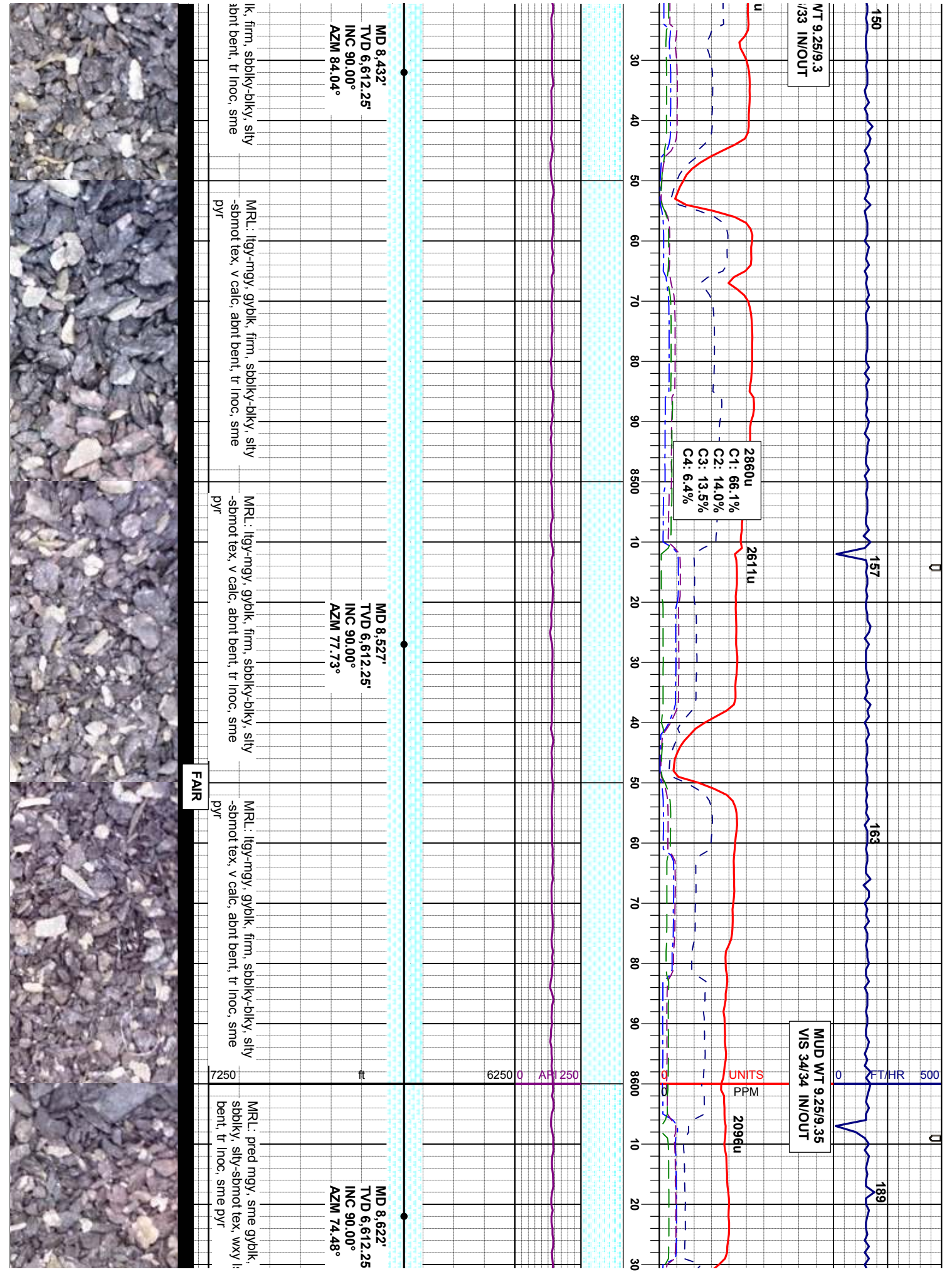
MRL: lgy-mgy, gybik, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, abnt bent, tr inoc, sme  
 pyr

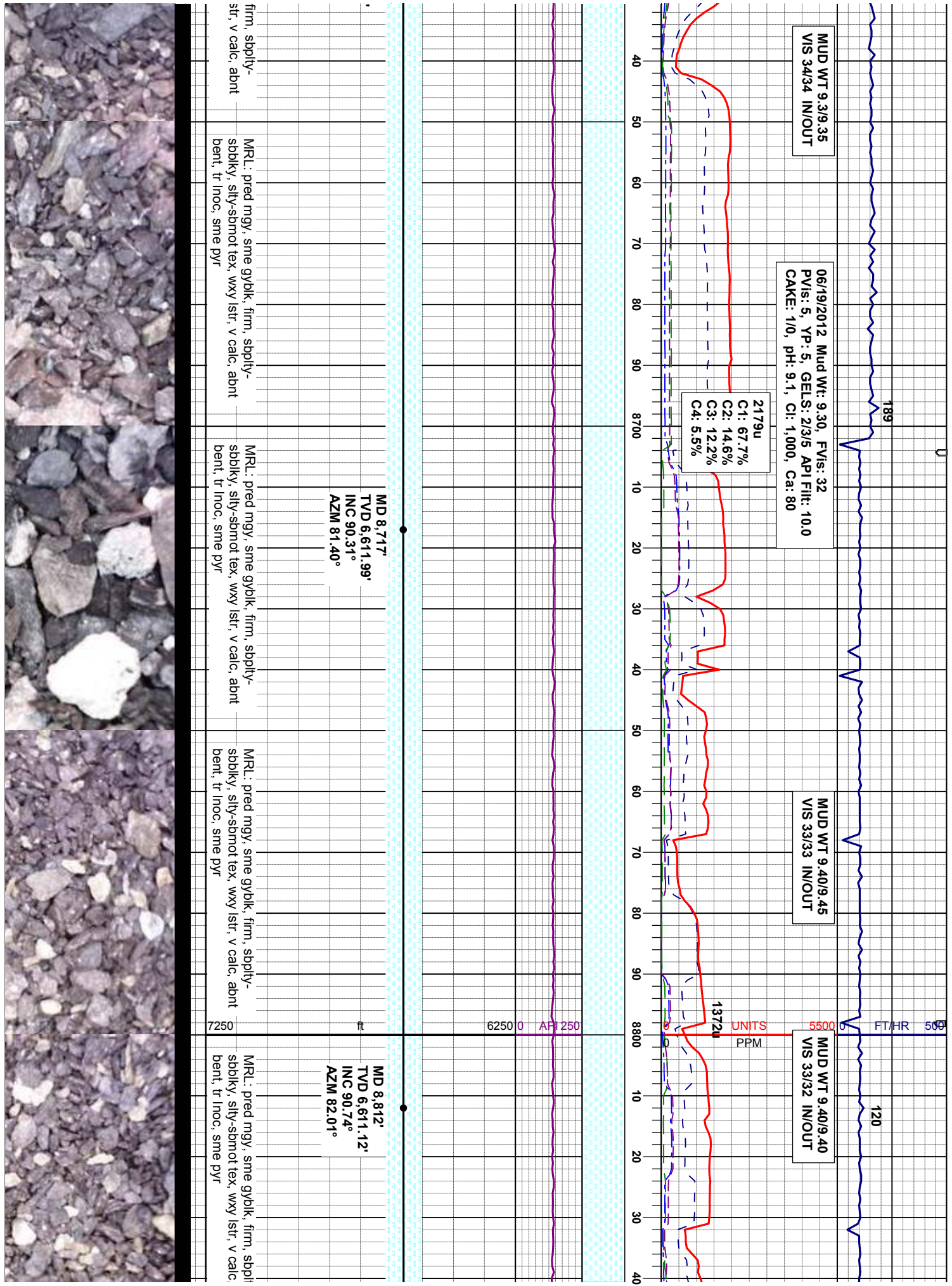
MRL: lgy-mgy, gybik, firm, sbblky-dlky, slty  
 -sbmot tex, v calc, abnt bent, tr inoc, sme  
 pyr

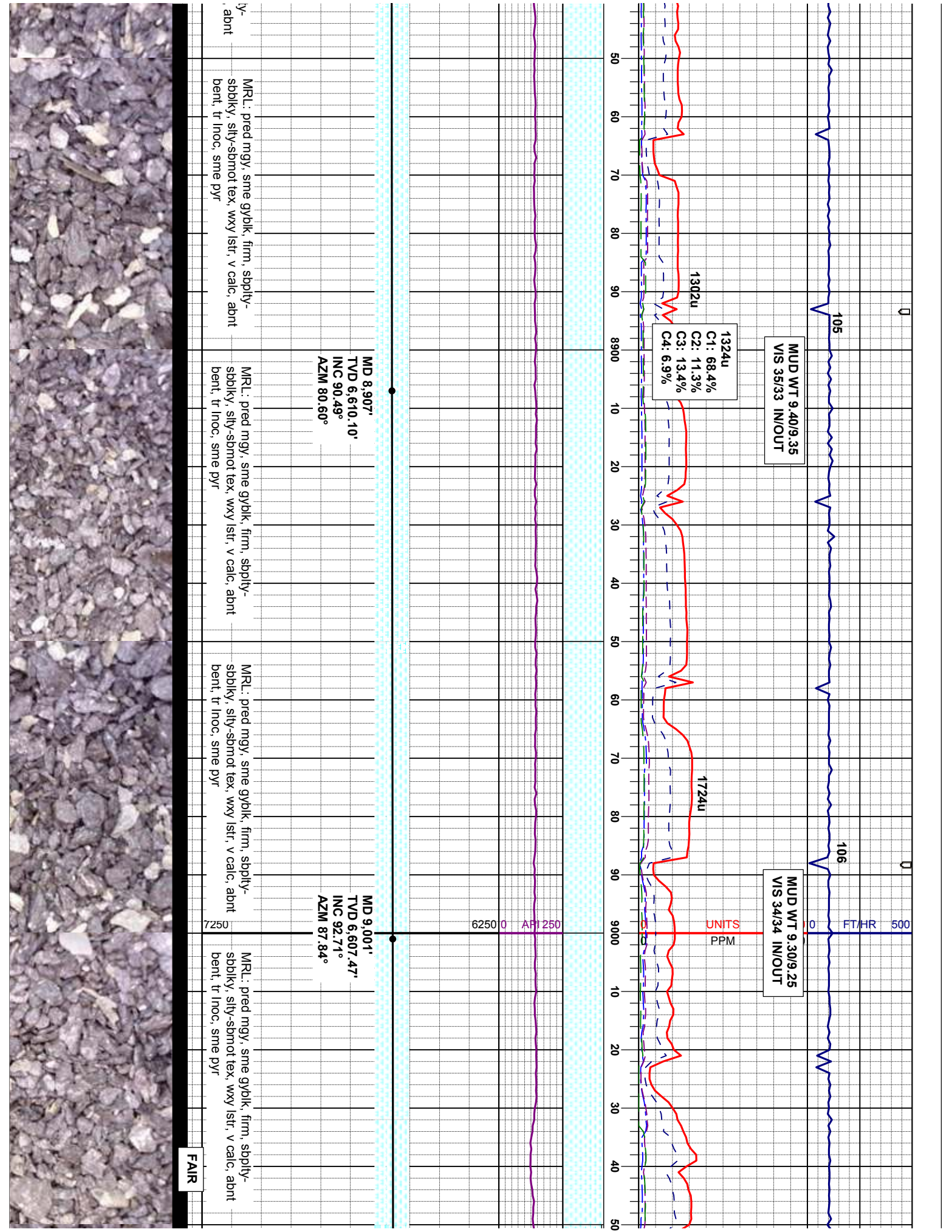
MRL: lgy-mgy, gyb  
 -sbmot tex, v calc, e  
 pyr



7250 ft 6250 0 AP 1250 UNITS 5500 0 FT/HR 500  
 PPM 550000 MUD V VIS 33

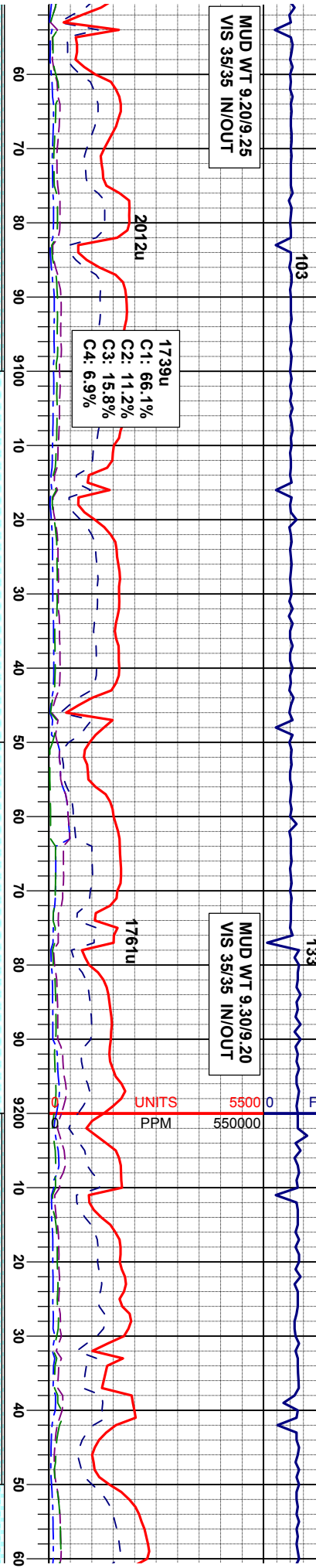






06/20/2012

MUD WT 9.20/9.25  
VIS 35/35 IN/OUT



MD 9,096'  
TVD 6,605.32'  
INC 89.88°  
AZM 90.79°

MD 9,191'  
TVD 6,605.42'  
INC 90.00°  
AZM 92.22°

MR.L: pred mgy, sme gyblk, firm, sbply-  
sbbly, silty-sbmot tex, wxy istr, v calc, abnt  
bent, tr inoc, sme pyr  
CHK: It-m gy - brn, sft - firm, sbply - sbbly,  
mot, lam, rthy istr, arg, v calc

MR.L: pred mgy, sme gyblk, firm, sbply-  
sbbly, silty-sbmot tex, wxy istr, v calc, sme  
bent, tr inoc, sme pyr

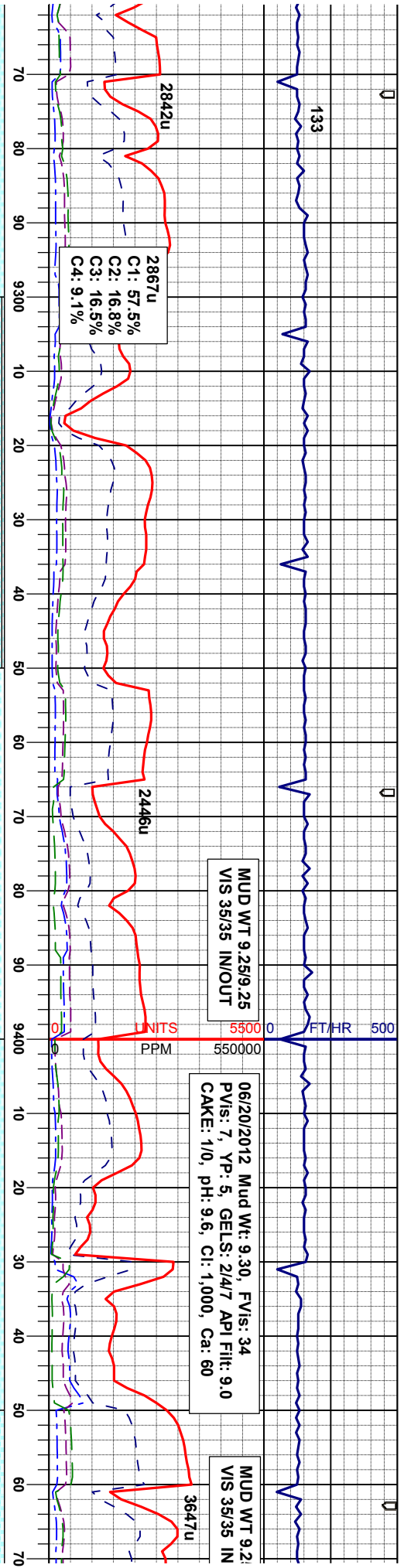
MR.L: pred mgy, sme gyblk, firm, sbply-  
sbbly, silty-sbmot tex, wxy istr, v calc, sme  
bent, tr inoc, sme pyr

MR.L: pred mgy, sme gyblk, firm, sbply-  
sbbly, silty-sbmot tex, wxy istr, v calc, abnt  
bent, tr inoc, sme pyr  
CHK: It-m gy - brn, sft - firm, sbply - sbbly,  
mot, lam, rthy istr, arg, v calc

MR.L: pr  
sbbly,  
bent, tr  
CHK: It-  
mot, lan



6250 0 AP 250



MD 9,286'  
 TVD 6,605.37'  
 INC 90.06°  
 AZM 93.68°

MD 9,381'  
 TVD 6,605.42'  
 INC 89.88°  
 AZM 92.05°

ed mgy, sme gyblk, firm, sbply-  
 sily-sbmot tex, wxy lstr, v calc, abnt  
 Inoc, sme pyr  
 m gy - brn, sft - firm, sbply - sbblky,  
 n, rthy lstr, arg, v calc

MRL: pred mgy, sme gyblk, firm, sbply-  
 sbblky, sily-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr Inoc, sme pyr  
 CHK: It-m gy - brn, sft - firm, sbply - sbblky,  
 mot, lam, rthy lstr, arg, v calc

MRL: pred mgy, sme gyblk, firm, sbply-  
 sbblky, sily-sbmot tex, wxy lstr, v calc, sme  
 bent, tr Inoc, sme pyr

MRL: pred mgy, sme gyblk, firm, sbply-  
 sbblky, sily-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr Inoc, sme pyr  
 CHK: It-m gy - brn, sft - firm, sbply - sbblky,  
 mot, lam, rthy lstr, arg, v calc

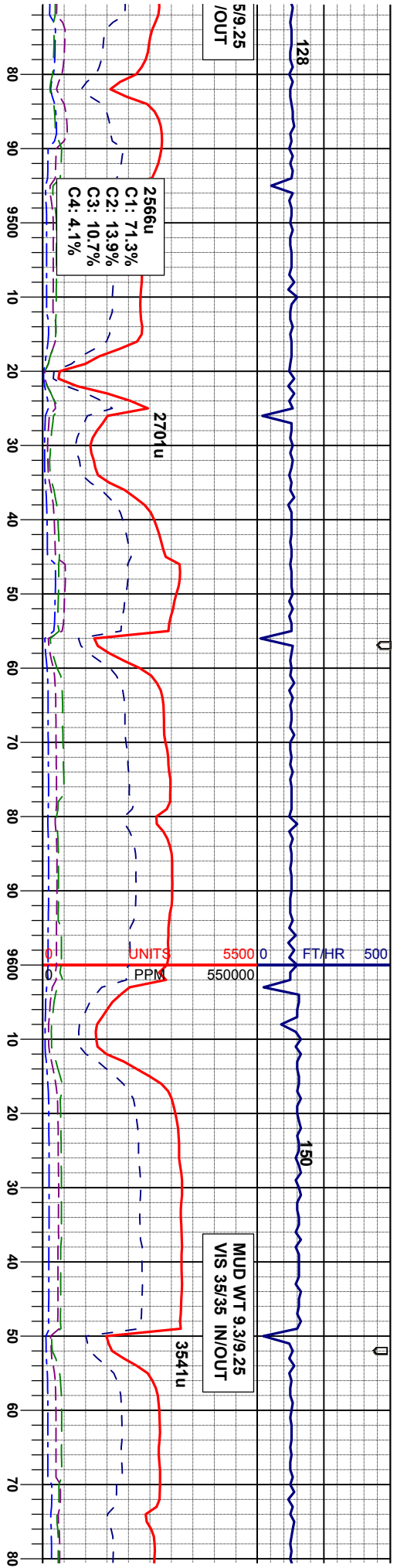
MRL: pred mgy, sme gyblk, firm, sbply-  
 sbblky, sily-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr Inoc, sme pyr  
 CHK: It-m gy - brn, sft - firm, sbply - sbblky,  
 mot, lam, rthy lstr, arg, v calc



MD  
 TVI  
 INC  
 AZI

5/9,25  
/OUT

128



2566u  
 C1: 71.3%  
 C2: 13.9%  
 C3: 10.7%  
 C4: 4.1%

MUD WT 9,3/9,25  
 VIS 35/35 IN/OUT

9,475'  
 D 6,605.72'  
 : 89.75°  
 M 93.15°

MD 9,570'  
 TVD 6,606.33'  
 INC 89.51°  
 AZM 92.84°

MD 9,665'  
 TVD 6,607.20'  
 INC 89.45°  
 AZM 93.18°

ne gyblik, firm, sbply-  
 tex, wxy lstr, v calc, abnt  
 pyr  
 , sft - firm, sbply - sbply,  
 arg, v calc

MRL: pred mgy, sme gyblik, firm, sbply-  
 sbply, silty-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc

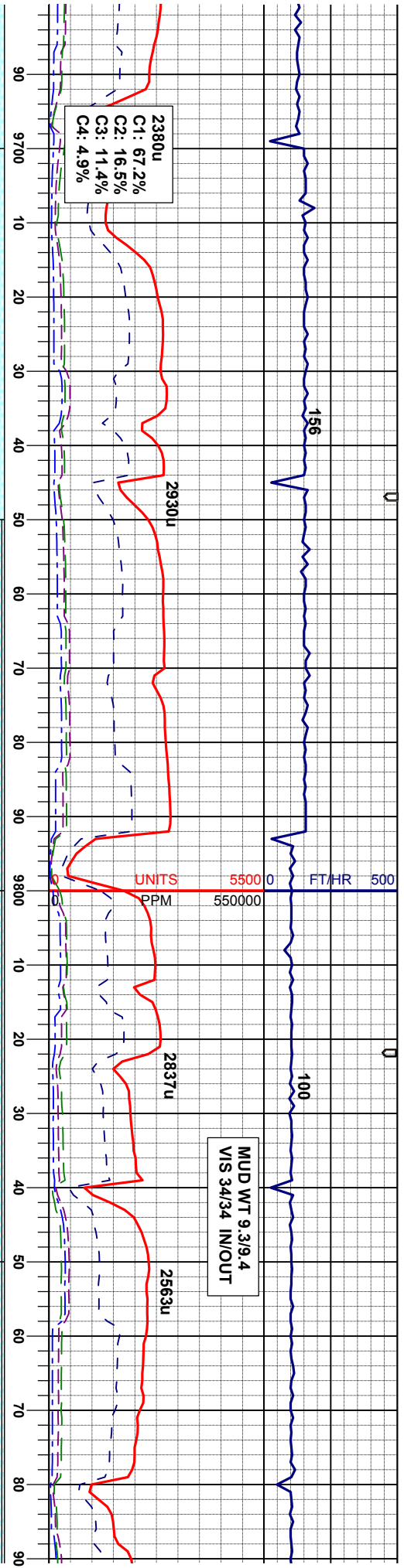
MRL: pred mgy, sme gyblik, firm, sbply-  
 sbply, silty-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc

MRL: pred mgy, sme gyblik, firm, sbply-  
 sbply, silty-sbmot tex, wxy lstr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc

MRL: pred mgy, sme gyblik, firm, sbply-  
 sbply, silty-sbmot tex, wxy l  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm,  
 mot, lam, rthy lstr, arg, v cal

GOOD





C1: 67.2%  
 C2: 16.5%  
 C3: 11.4%  
 C4: 4.9%

MUD WT 9.3/9.4  
 VIS 34/34 IN/OUT

MD 9,760'  
 TVD 6,607.76'  
 INC 89.88°  
 AZM 86.93°

MD 9,855'  
 TVD 6,608.47'  
 INC 89.26°  
 AZM 83.99°

firm, sbply-  
 str, v calc, abnt

MR.L: pred mgy, sme gyblk, firm, sbply-  
 sbply, silty-sbmot tex, wxy istr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy istr, arg, v calc

firm, sbply-  
 str, v calc, abnt

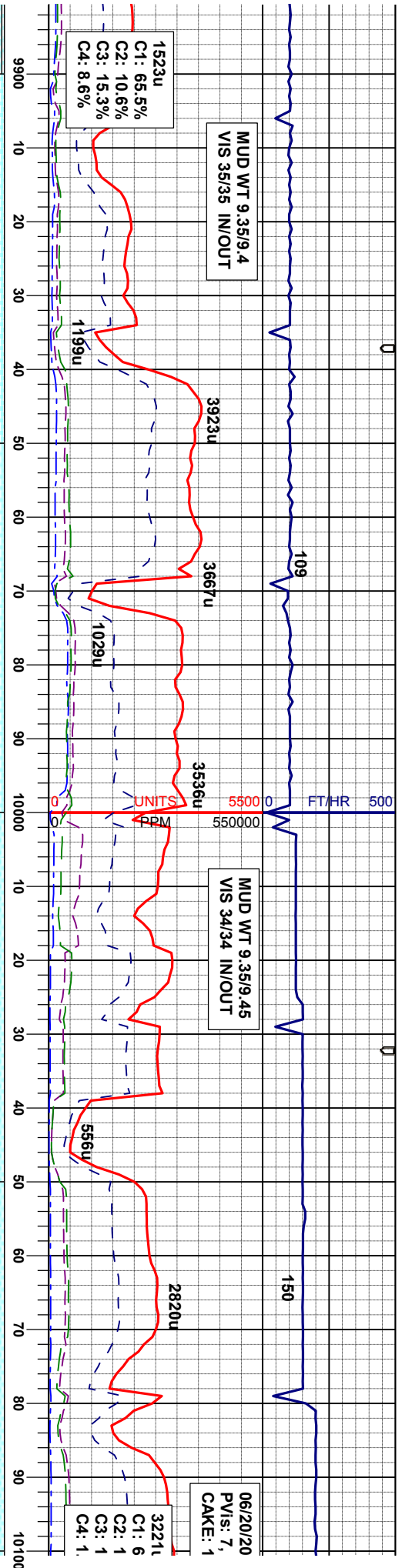
MR.L: pred mgy, sme gyblk, firm, sbply-  
 sbply, silty-sbmot tex, wxy istr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy istr, arg, v calc

firm, sbply-  
 str, v calc, abnt

MR.L: pred mgy, sme gyblk, firm, sbply-  
 sbply, silty-sbmot tex, wxy istr, v calc, abnt  
 bent, tr inoc, sme pyr  
 CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy istr, arg, v calc

FAIR





1523u  
C1: 65.5%  
C2: 10.6%  
C3: 15.3%  
C4: 8.6%

MUD WT 9.35/9.4  
VIS 35/35 IN/OUT

MUD WT 9.35/9.45  
VIS 34/34 IN/OUT

06/20/20  
PVI: 7,  
CAKE: 1

3221u  
C1: 6  
C2: 1  
C3: 1  
C4: 1

FAULT @ 9,939' MD  
DOWNTHROW

MD 9,950'  
TVD 6,609.55'  
INC 89.44°  
AZM 86.27°

MD 10,045'  
TVD 6,610.31'  
INC 89.63°  
AZM 87.88°

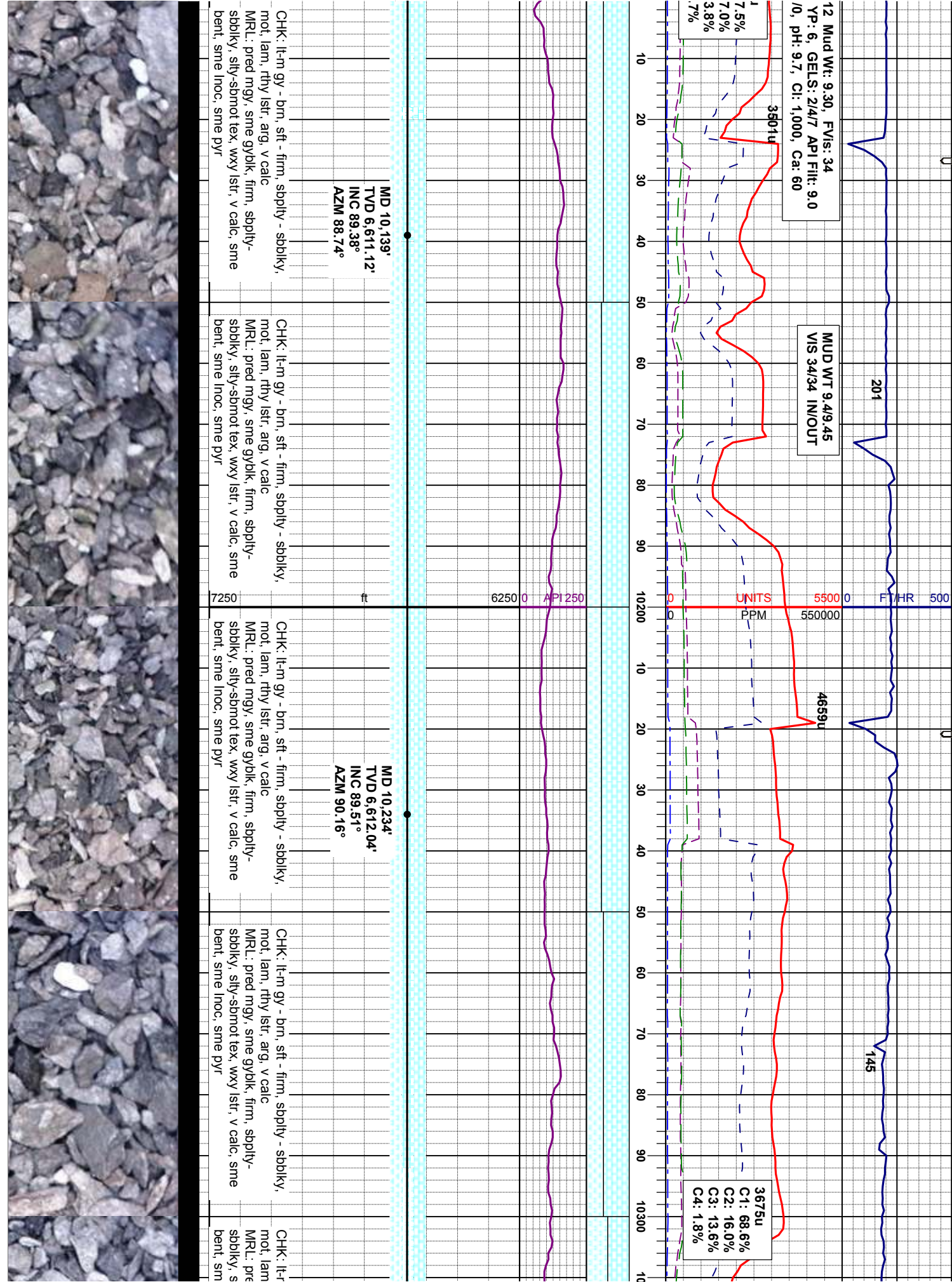
ly-  
abnt  
sblky,  
MRL: pred mgy, sme gyblk, firm, sbply-  
sblky, sly-sbmot tex, wxy lstr, v calc, abnt  
bent, tr inoc, sme pyr  
CHK: lt-m gy - brn, sft - firm, sbply - sblky,  
mot, lam, rthy lstr, arg, v calc

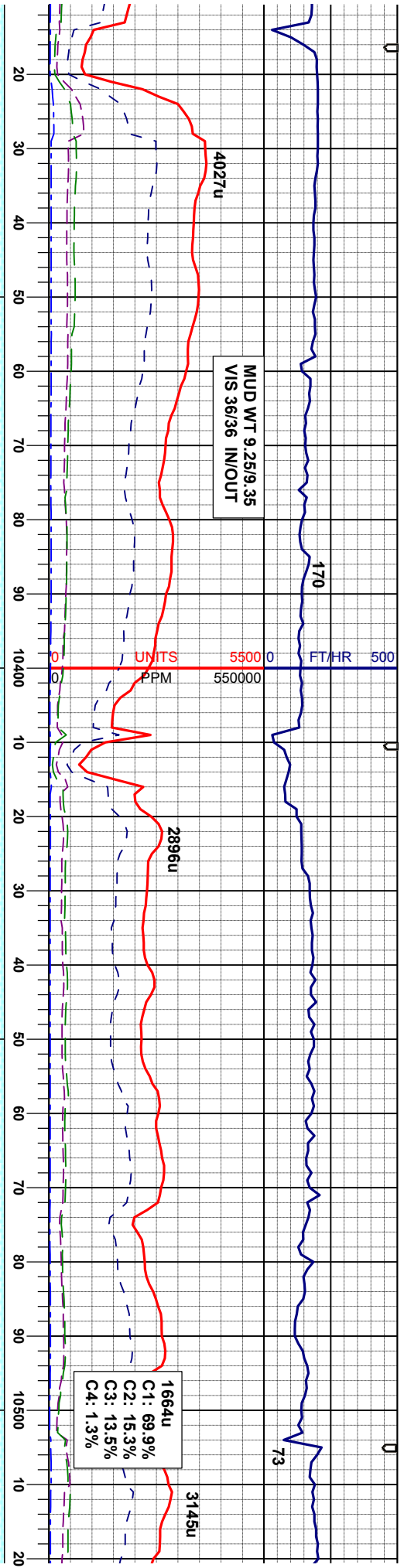
CHK: lt-m gy - brn, sft - firm, sbply - sblky,  
mot, lam, rthy lstr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sblky, sly-sbmot tex, wxy lstr, v calc, sme  
bent, sme inoc, sme pyr

CHK: lt-m gy - brn, sft - firm, sbply - sblky,  
mot, lam, rthy lstr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sblky, sly-sbmot tex, wxy lstr, v calc, sme  
bent, sme inoc, sme pyr

CHK: lt-m gy - brn, sft - firm, sbply - sblky,  
mot, lam, rthy lstr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sblky, sly-sbmot tex, wxy lstr, v calc, sme  
bent, sme inoc, sme pyr







MD 10,329'  
 TVD 6,612.81'  
 INC 89.57°  
 AZM 91.26°

MD 10,424'  
 TVD 6,613.48'  
 INC 89.63°  
 AZM 93.19°

MD 10,101'  
 TVD 6,613.48'  
 INC 89.63°  
 AZM 94.19°

n gy - brn, sft - firm, sbply - sbply,  
 rthy lstr, arg, v calc  
 3d mgy, sme gyblk, firm, sbply -  
 lly-sbmot tex, wxy lstr, v calc, sme  
 e inoc, sme pyr

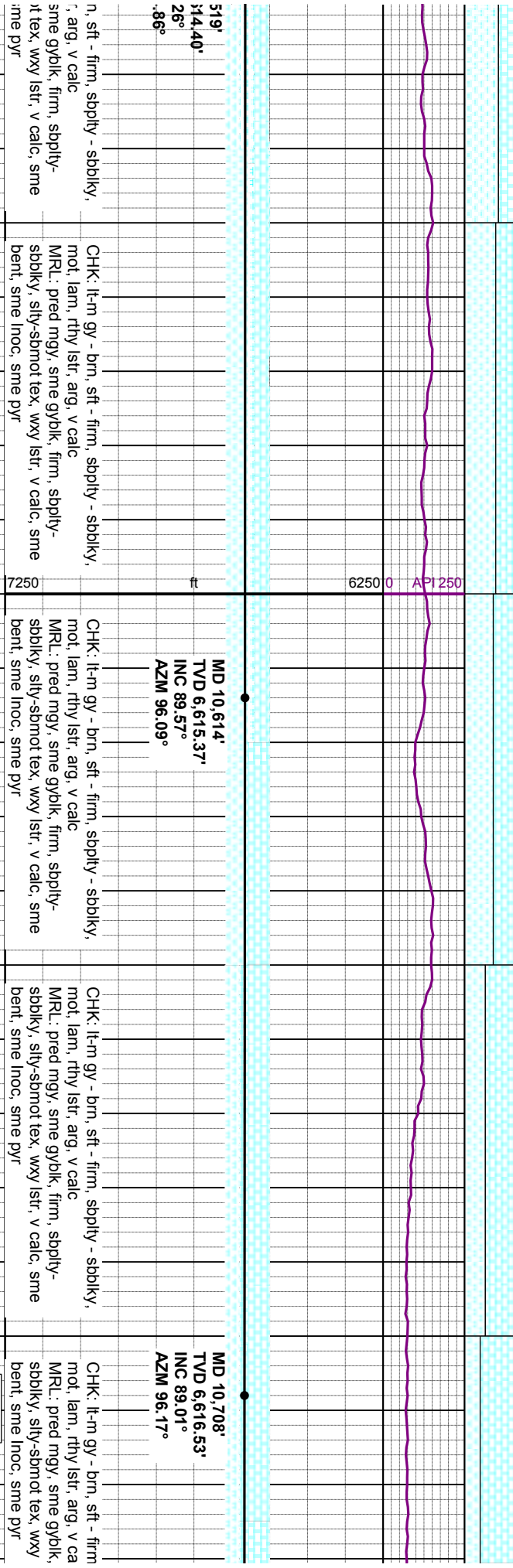
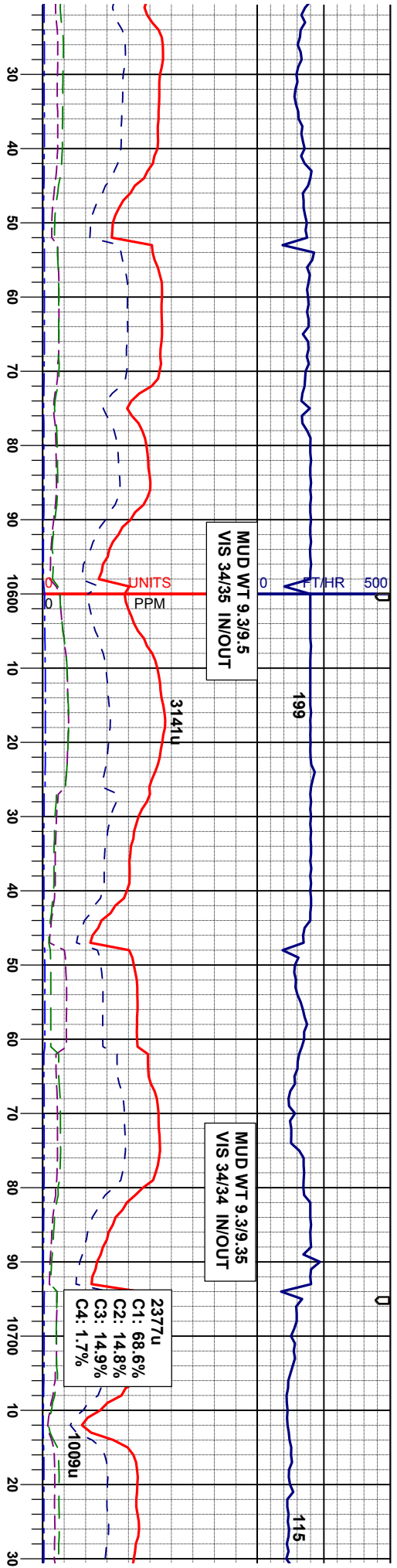
CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc  
 MRL: pred mgy, sme gyblk, firm, sbply -  
 sbply, sily-sbmot tex, wxy lstr, v calc, sme  
 bent, sme inoc, sme pyr

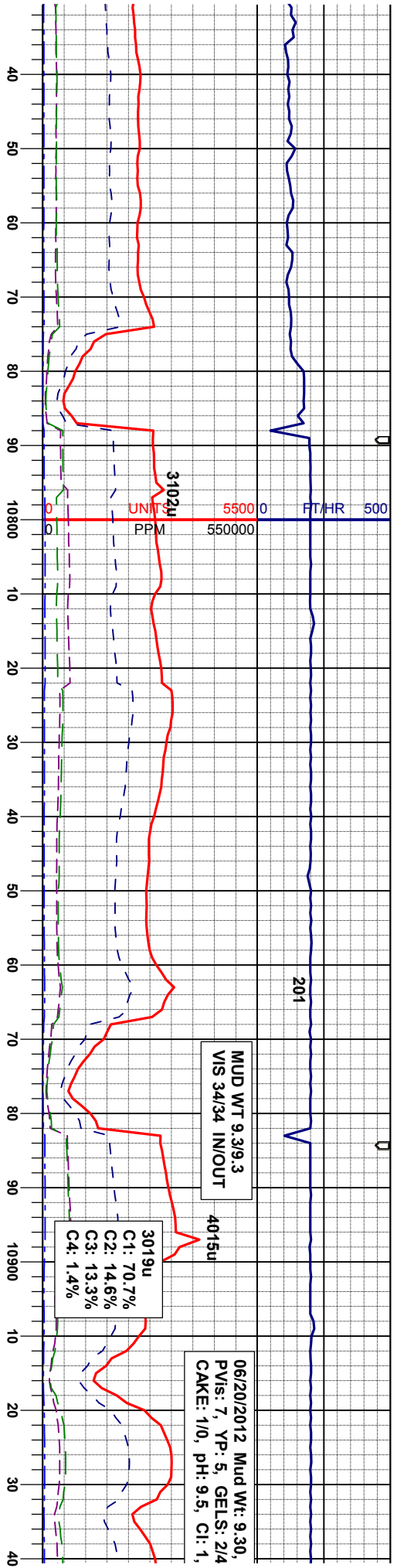
CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc  
 MRL: pred mgy, sme gyblk, firm, sbply -  
 sbply, sily-sbmot tex, wxy lstr, v calc, sme  
 bent, sme inoc, sme pyr

CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
 mot, lam, rthy lstr, arg, v calc  
 MRL: pred mgy, sme gyblk, firm, sbply -  
 sbply, sily-sbmot tex, wxy lstr, v calc, sme  
 bent, sme inoc, sme pyr

**MODERATE**







MUD WT 9.3/9.3  
VIS 34/34 IN/OUT

3019u  
C1: 70.7%  
C2: 14.6%  
C3: 13.3%  
C4: 1.4%

06/20/2012 Mud Wt: 9.30,  
PVis: 7, YP: 5, GELS: 2/4  
CAKE: 1/0, PH: 9.5, CI: 1,

MD 10,803'  
TVD 6,617.35'  
INC 90.00°  
AZM 94.18°

MD 10,898'  
TVD 6,617.60'  
INC 89.69°  
AZM 95.45°

MD 10,919'  
TVD 6,617.71'  
INC 89.69°  
AZM 95.26°

ic, sbply - sbply,  
firm, sbply-  
istr, v calc, sme

CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
mot, lam, rthy istr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sbply, sily-sbmot tex, wxy istr, v calc, sme  
bent, sme inoc, sme pyr

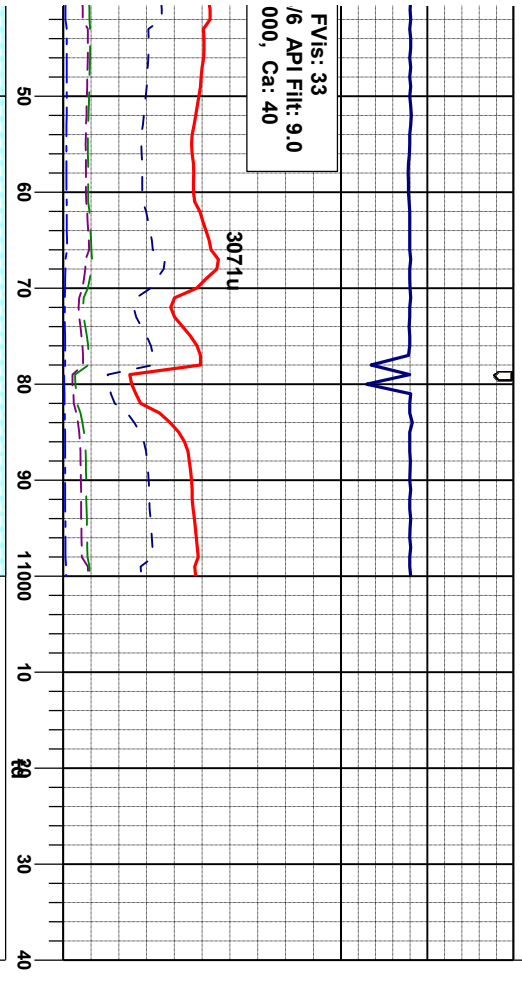
CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
mot, lam, rthy istr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sbply, sily-sbmot tex, wxy istr, v calc, sme  
bent, sme inoc, sme pyr

CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
mot, lam, rthy istr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sbply, sily-sbmot tex, wxy istr, v calc, sme  
bent, sme inoc, sme pyr

CHK: lt-m gy - brn, sft - firm, sbply - sbply,  
mot, lam, rthy istr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sbply, sily-sbmot tex, wxy istr, v calc, sme  
bent, sme inoc, sme pyr



FVis: 33  
/6 API Fil: 9.0  
000, Ca: 40



WELLBORE WELLS  
RANCH AA14-63-1HN  
TD @ 11,000' MD  
06/20/2012 @ 22:35 PM

PROJECTION @  
BIT  
MD 11,000'  
TVD 6,618.15'  
INC 89.69°  
AZM 95.26°

sbblky,  
ly-  
; sme  
CHK: lt-m gy - brn, sft - firm, sbply - sbblky,  
mot lam, rthy istr, arg, v calc  
MRL: pred mgy, sme gyblk, firm, sbply-  
sbblky, silty-sbmot tex, wxy istr, v calc, sme  
bent, sme inoc, sme pyr

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