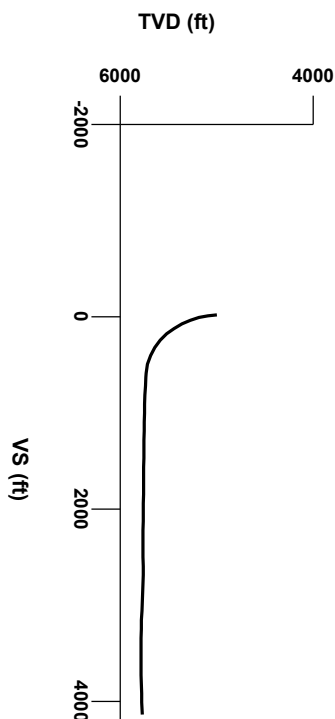


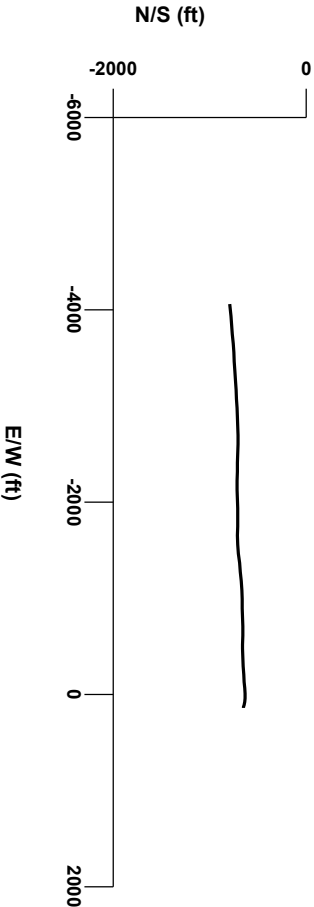
LOG created using LPLOT VH Version 3.0, September 29, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC  
**WELL:** ROHN STATE LD09-69HN  
**LOCATION:** SESE SEC 4 T9N R58W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 661' FSL; 480' FEL  
**ELEVATION:** 4712' GL; 4736' KB  
**FIELD:** WILDCAT  
**SPUD DATE:** 09/22/2013  
**TD DATE:** 09/29/2013  
**DATES LOGGED:** 09/24/2013 - 09/29/2013  
**DEPTHS LOGGED:** 5039' - 9710' MD  
**LOGGERS:** LAURA KELLOGG; CONOR PESICKA  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 273  
**API:** 05-123-37472  
**LOG TYPE:** HORIZONTAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** WELLSITE GEOLOGICAL SERVICES  
 PROVIDED BY COLUMBINE LOGGING INC.



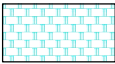
Survey Elevation

Survey Plan



6000

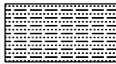




Chalk



Marl



Silty Shale

ENGINEERING SYMBOLS



Casing



Casing



Connection



Connection Gas



Midnight Depth

GAS		
0	UNITS	3000
0	C1	300000
0	PPM	300000
0	C2	300000
0	PPM	300000
0	C3	300000
0	PPM	300000
0	C4	300000
0	PPM	300000

ROP	
0	FT/HR
500	

DEPTH (FEET)

4990 5000 10 20 30 40 50 60 70 80 90 5100 10 20 30 40

BHA BIT:  
SEC 8.75" FXD55  
Serial #: 12038503  
Jets: 5x14

BEGAN DRILLING CURVE  
@ 11:56 PM 09/24/2013

09/25/2013

687u  
C1: 89.0%  
C2: 0.4%  
C3: 8.9%  
C4: 1.7%

1174u

1433u

TVD	
7000	ft
4800	

GAMMA RAY	
40	API
300	

CUTTINGS LITHOLOGY

Acetone was used as the cutting agent with the dimple filled to the rim

The ratings are based on 7 descriptors: None, Slight trace, Trace, Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgment of brilliance, color and longevity of the cut.

MD 5075'  
INC 4.3°  
AZM 280.2°  
TVD 5000.17'

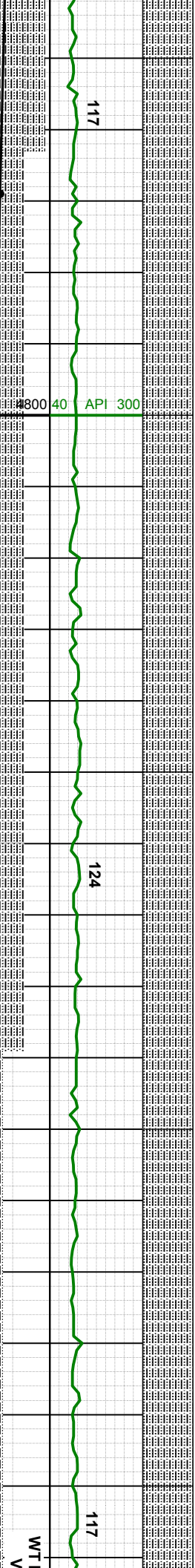
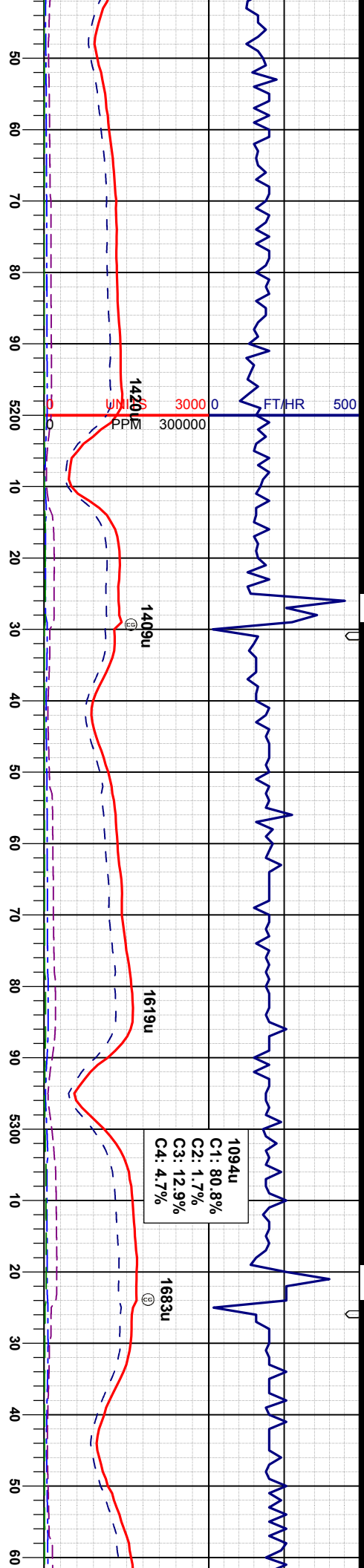
WT IN 9.90/ OU  
VIS IN 38/ OU

SLTYSH: lly-gy, sbbly-sbply, sft, gt-sily  
tex, rr sdy tex, arg cmt

SLTYSH: lly-gy, sbbly-sbply, sft, gt-  
tex, arg cmt, rr shys

SAMPLE PHOTOS





MD 5169'  
INC 8.3°  
AZM 282.8°  
TVD 5093.58'

WT IN 10.10/ OUT 10.10  
VIS IN 40/ OUT 40

MD 5264'  
INC 16.4°  
AZM 281.6°  
TVD 5186.31'

MD  
INC  
AZM  
TVD 527

SLTYSH: lgy-gy, sbblky-sbply, sft, gt-sily  
tex, arg cnt, r shyss

SLTYSH: lgy-gy, r dkgy, sbblky-sbply, sft,  
gt-sily tex, arg cnt, r shyss

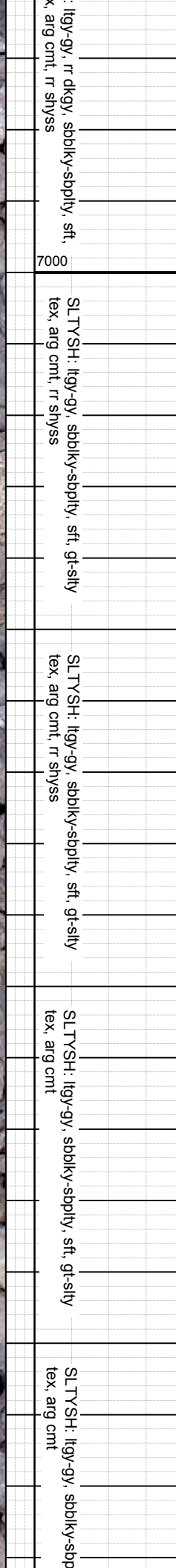
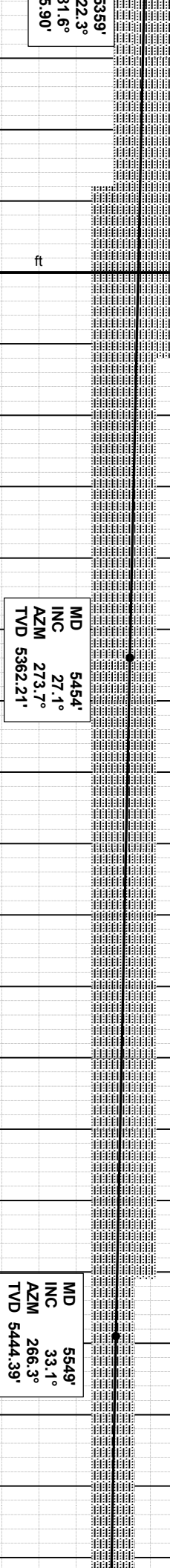
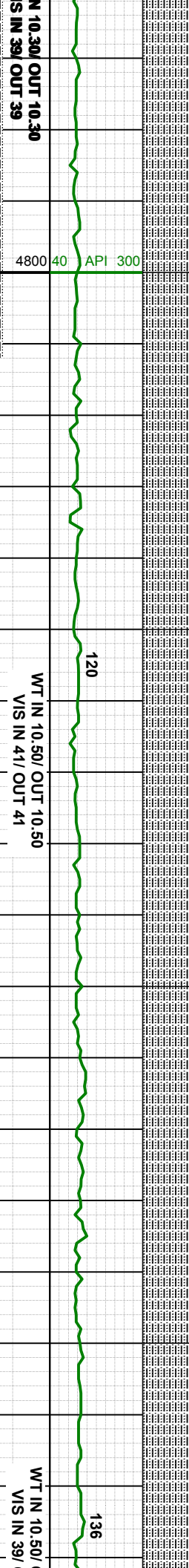
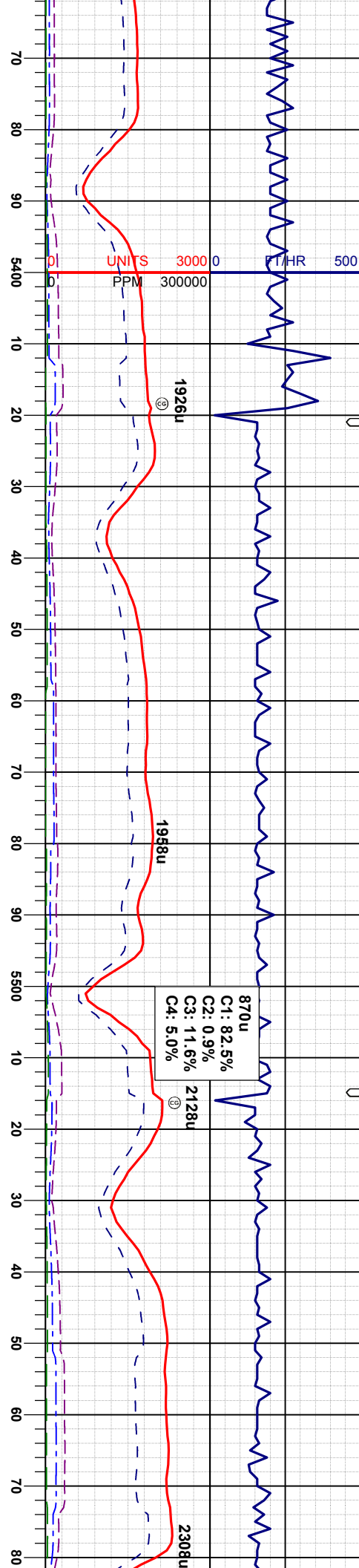
SLTYSH: lgy-gy, r dkgy, sbblky-sbply, sft,  
gt-sily tex, arg cnt, r shyss

SLTYSH: lgy-gy, r dkgy, sbblky-sbply, sft,  
gt-sily tex, arg cnt, r shyss

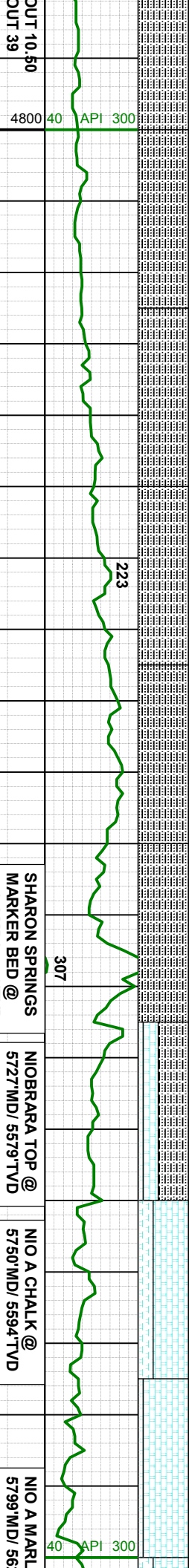
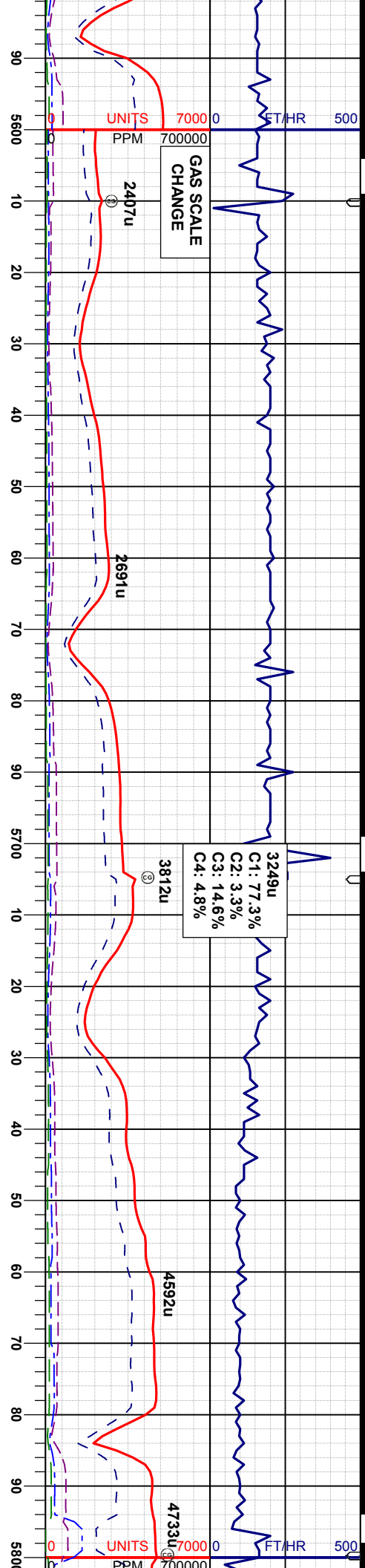
SLTYSH: lgy-gy, r dkgy, sbblky-sbply, sft,  
gt-sily tex, arg cnt, r shyss











MD 5644'  
INC 40.3°  
AZM 266.5°  
TVD 5520.51'

MD 5738'  
INC 49.2°  
AZM 266.4°  
TVD 5587.20'

SHARON SPRINGS  
MARKER BED @  
5717' MD/ 5572' TVD

NIOBRARA TOP @  
5727' MD/ 5579' TVD

NIO A CHALK @  
5750' MD/ 5594' TVD

NIO A MARL  
5799' MD/ 56

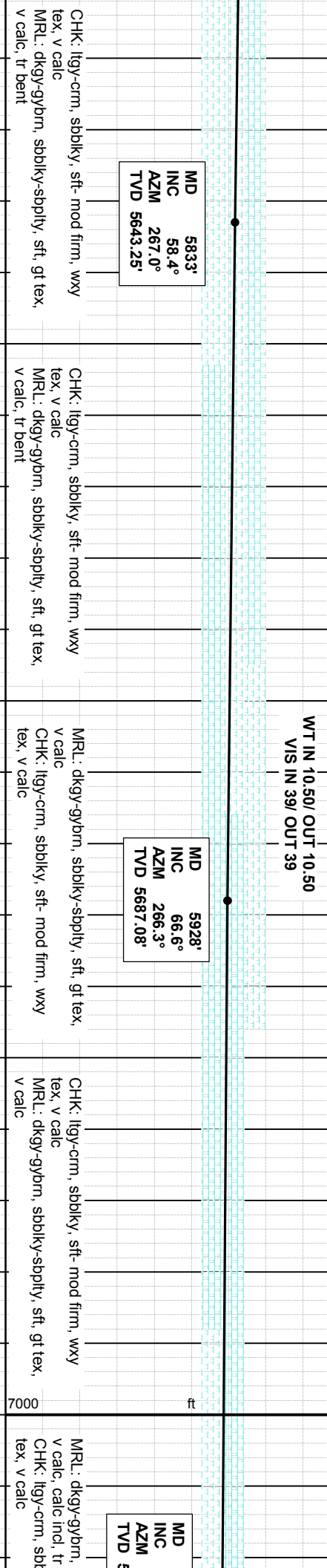
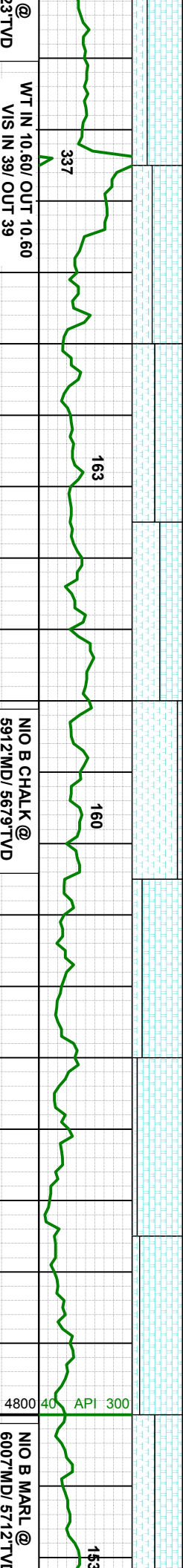
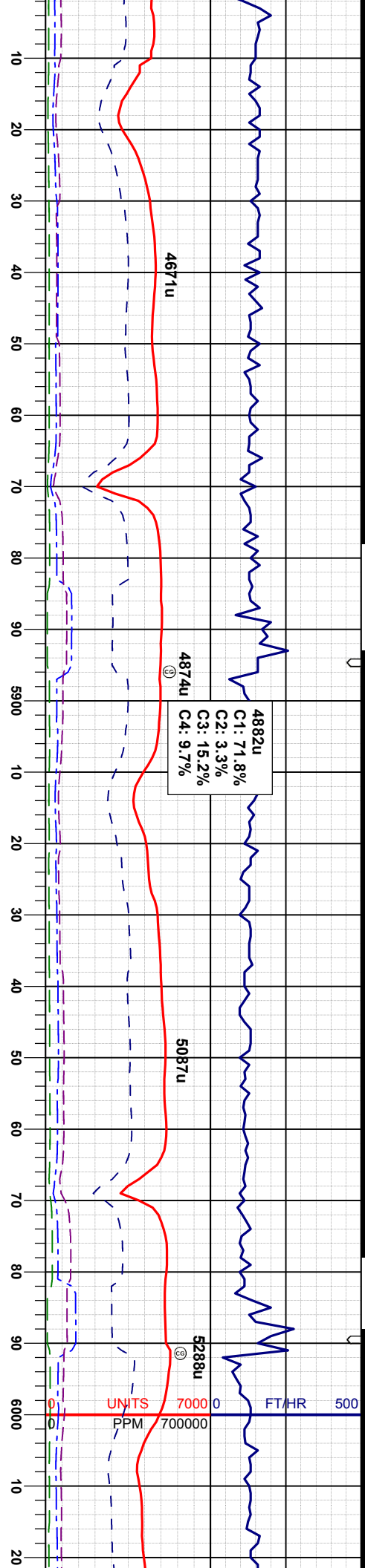
SLTYSH: lly-gy, sbblky-sbply, sft, gt-sily  
tex, arg cmt

SLTYSH: lly-gy, sbblky-sbply, sft, gt-sily  
tex, arg cmt

SLTYSH: lly-gy, rr dky, sbblky-sbply, sft,  
gt-sdy tex, arg cmt, v sl calc, spar ip  
CHK: lly-crm, sbblky, sft- firm, wxy tex, v  
calc  
MRL: dky-gybm, sbblky-sbply, sft, gt tex,  
v calc, occ bent

CHK: lly-crm, sbblky, sft- firm, wxy tex, v  
calc  
MRL: dky-gybm, sbblky-sbply, sft, gt tex,  
v calc, occ bent



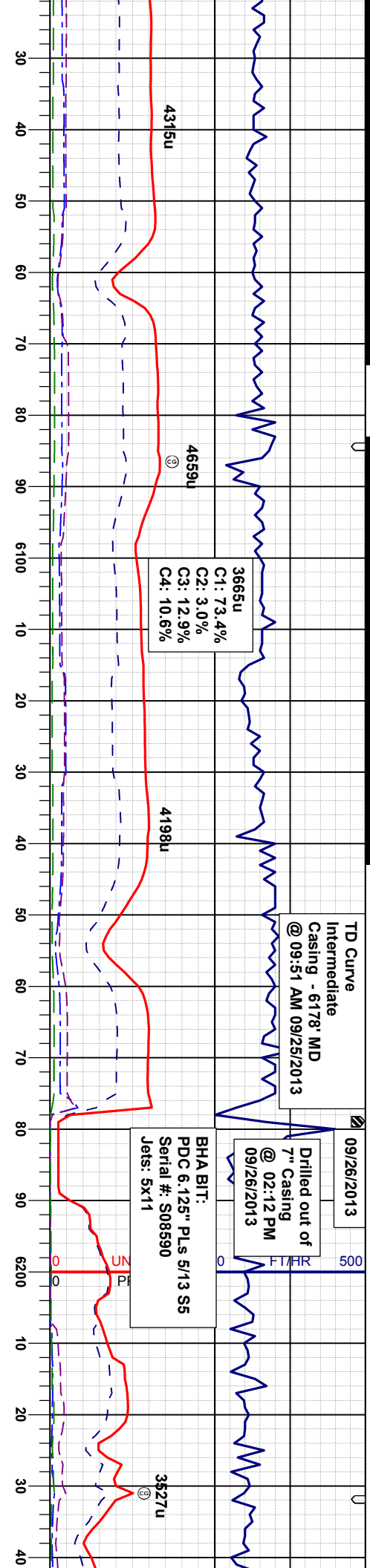




TD Curve  
Intermediate  
Casing - 6178' MD  
@ 09:51 AM 09/25/2013

09/26/2013  
Drilled out of  
7" Casing  
@ 02:12 PM  
09/26/2013

BHA BIT:  
PDC 6.125" PLS 5/13 S5  
Serial #: S08590  
Jets: 5x11



WT IN 10.50/ OUT 10.50  
VIS IN 37/ OUT 37

6023'  
75.8°  
267.4°  
717.66'

MD 6118'  
INC 85.8°  
AZM 269.1°  
TVD 5732.84'

MD 6163'  
INC 87.3°  
AZM 271.4°  
TVD 5735.55'

MRL: dkgy-gybrn, sbblky-sbply, sft, gt tex,  
v calc, calc incl, tr fos frag, tr pyr  
CHK: lgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

MRL: dkgy-gybrn, sbblky-sbply, sft, gt tex,  
v calc, calc incl, occ fos frag, tr pyr  
CHK: lgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

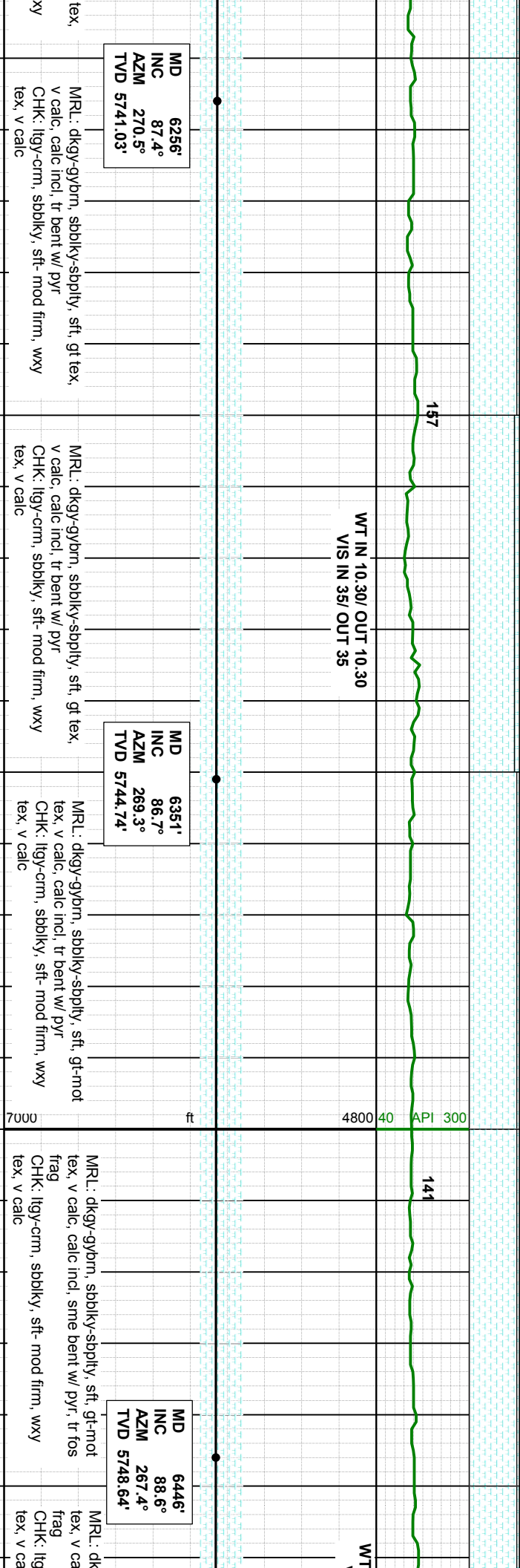
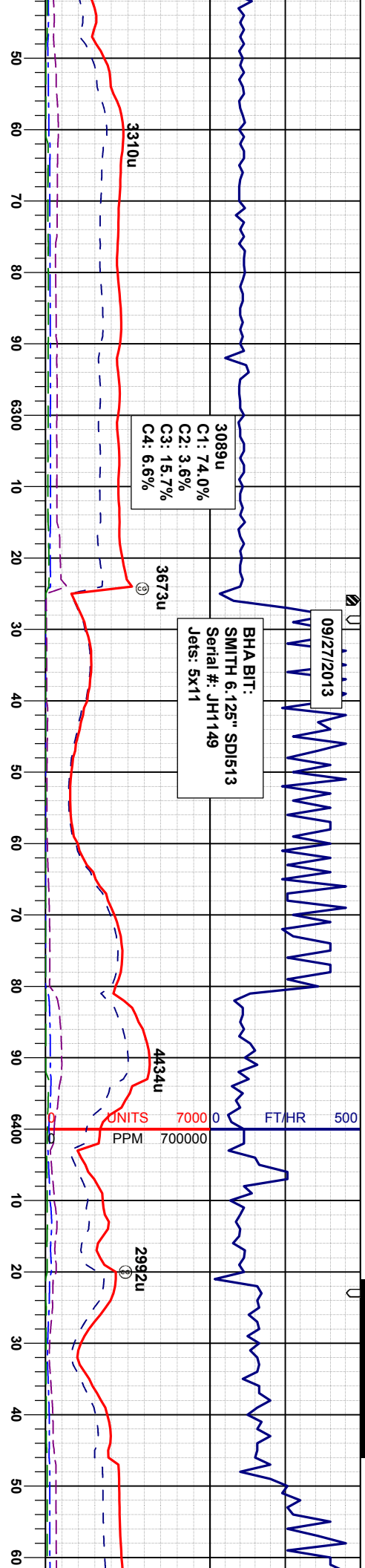
MRL: dkgy-gybrn, sbblky-sbply, sft, gt tex,  
v calc, calc incl, tr fos frag, tr pyr  
CHK: lgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

WT IN 10.20/ OUT 10.20  
VIS IN 35/ OUT 35

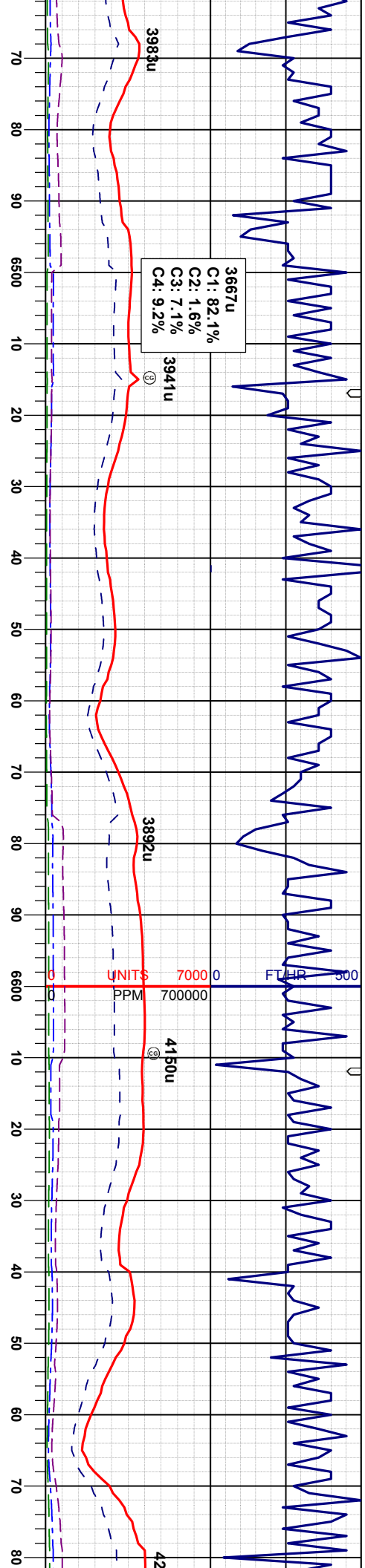
MRL: dkgy-gybrn, sbblky-sbply, sft, gt tex,  
v calc, calc incl, tr bent w/ pyr  
CHK: lgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc









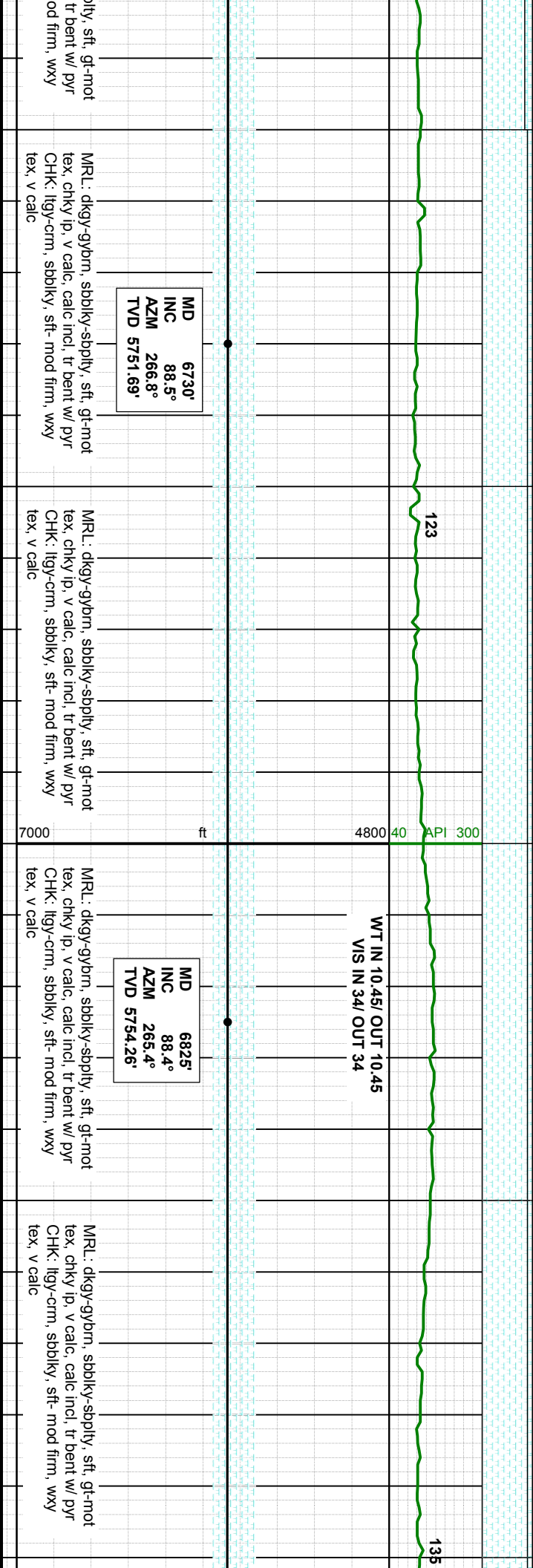
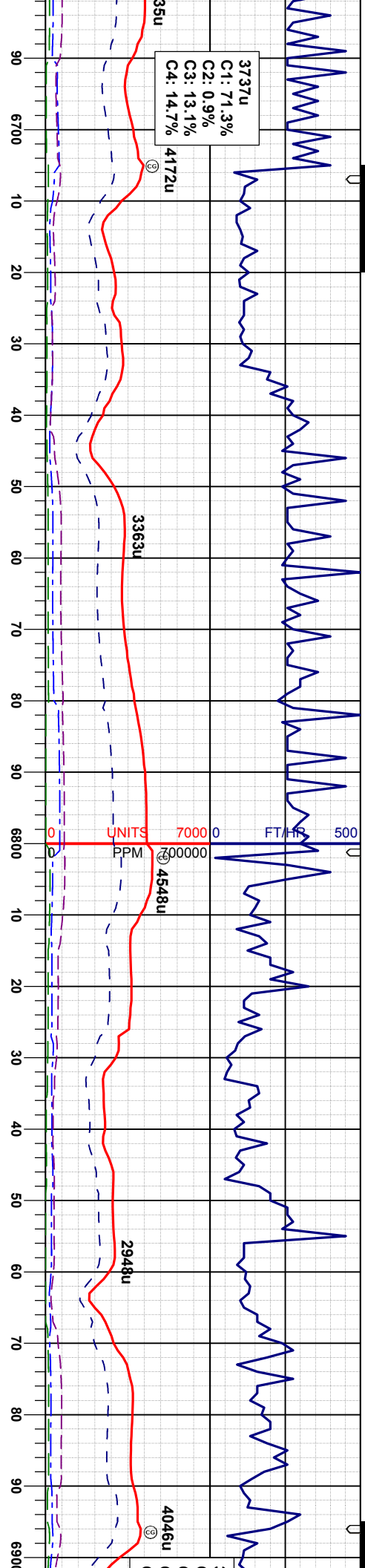


IN 10.30/ OUT 10.30  
/IS IN 34/ OUT 34

MD 6540' INC 89.3° AZM 269.3° TVD 5750.36'		MD 6635' INC 90.3° AZM 269.5° TVD 5750.69'	
MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, v calc, calc incl, sme bent w/ pyr, tr fos frag CHK: llyg-crm, sbblky, sft- mod firm, wxy tex, v calc		MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, tr chky, v calc, calc incl, sme bent w/ pyr CHK: llyg-crm, sbblky, sft- mod firm, wxy tex, v calc	
7000		7000	





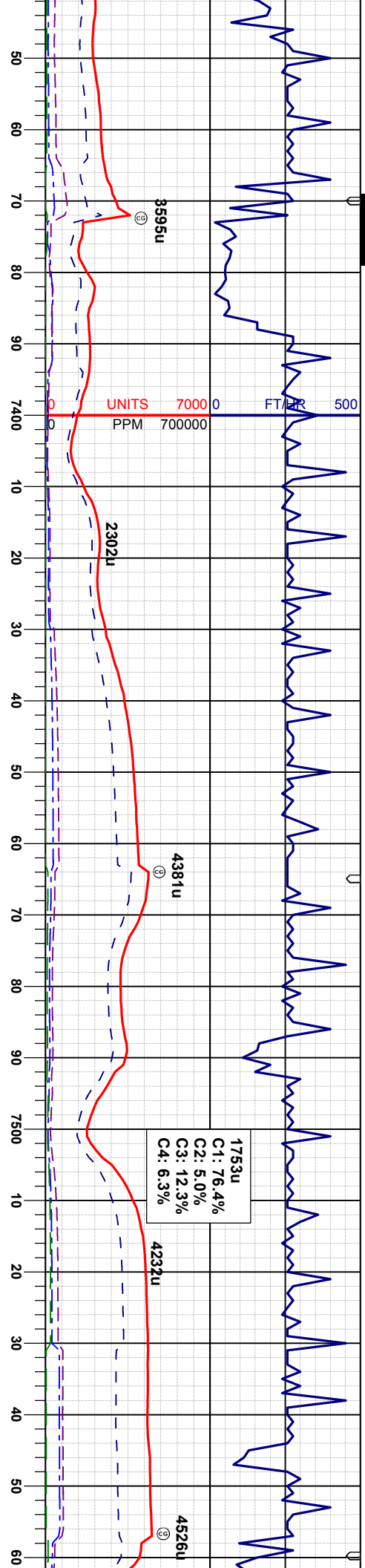












WT IN 10.30/ OUT 10.30  
VIS IN 37/ OUT 37

MD 7393'  
INC 89.1°  
AZM 270.9°  
TVD 5759.95'

MRL: dkgy-gybm, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent,  
tr fos frag  
CHK: ltgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

MRL: dkgy-gybm, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent,  
tr fos frag  
CHK: ltgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

MD 7488'  
INC 89.9°  
AZM 271.1°  
TVD 5760.78'

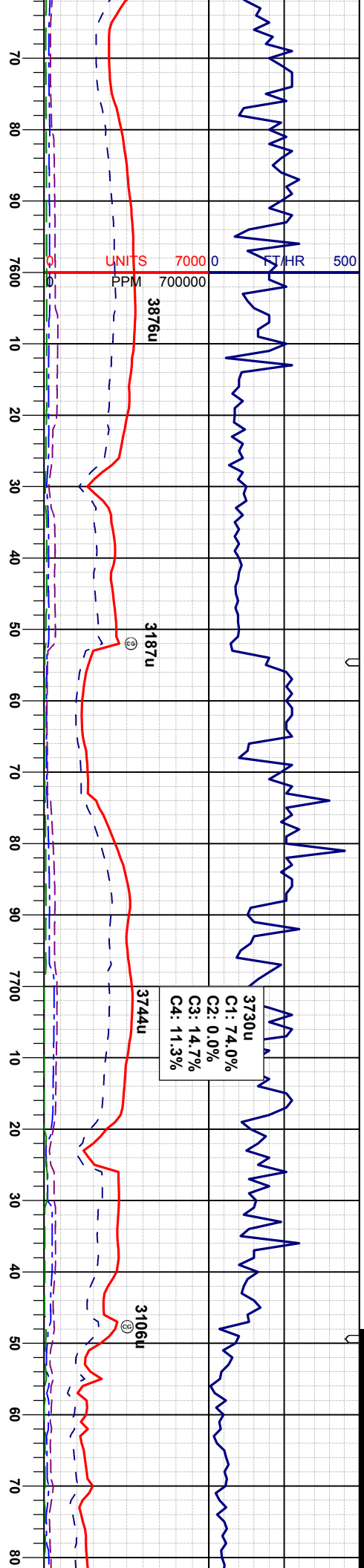
MRL: dkgy-gybm, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent,  
tr fos frag  
CHK: ltgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

MRL: dkgy-gybm, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent,  
tr fos frag  
CHK: ltgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc

MRL: dkgy-gybm, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent,  
tr fos frag  
CHK: ltgy-crm, sbblky, sft- mod firm, wxy  
tex, v calc







WT IN 10.40/ OUT 10.40  
VIS IN 35/ OUT 35

MD	7583'
INC	89.4°
AZM	269.5°
TVD	5761.36'

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent  
CHK: llyg-crm, sbblky, sft-firm, wxy tex, v  
calc

WT IN 10.40/ OUT 10.40  
VIS IN 36/ OUT 36

MD	7678'
INC	89.3°
AZM	267.2°
TVD	5762.43'

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent  
CHK: llyg-crm, sbblky, sft-firm, wxy tex, v  
calc

WT IN 10.40/ OUT 10.40  
VIS IN 36/ OUT 36

MD	7773'
INC	88.6°
AZM	267.2°
TVD	5764.18'

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr pyr, tr bent  
CHK: llyg-crm, sbblky, sft-firm, wxy-mot  
tex, v calc

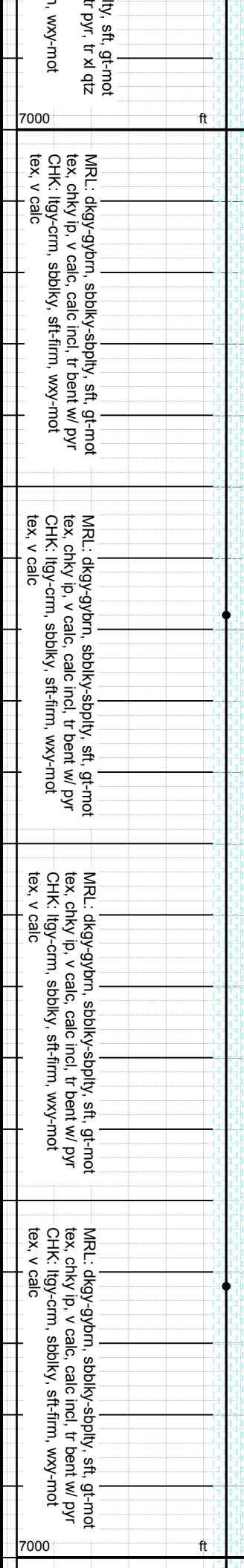
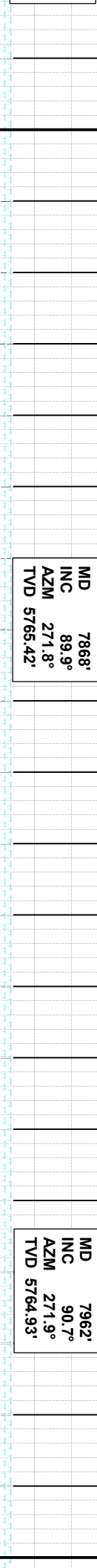
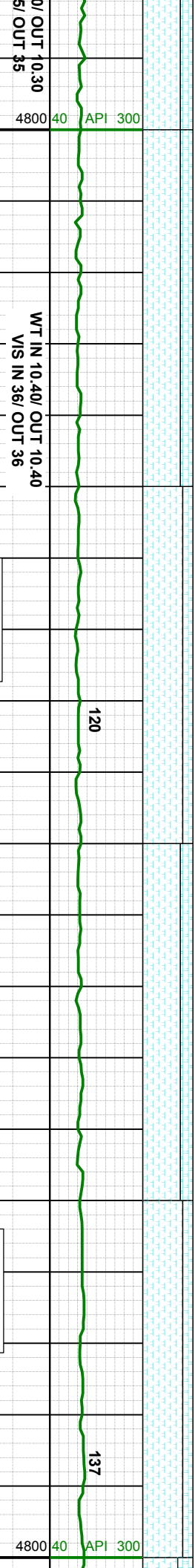
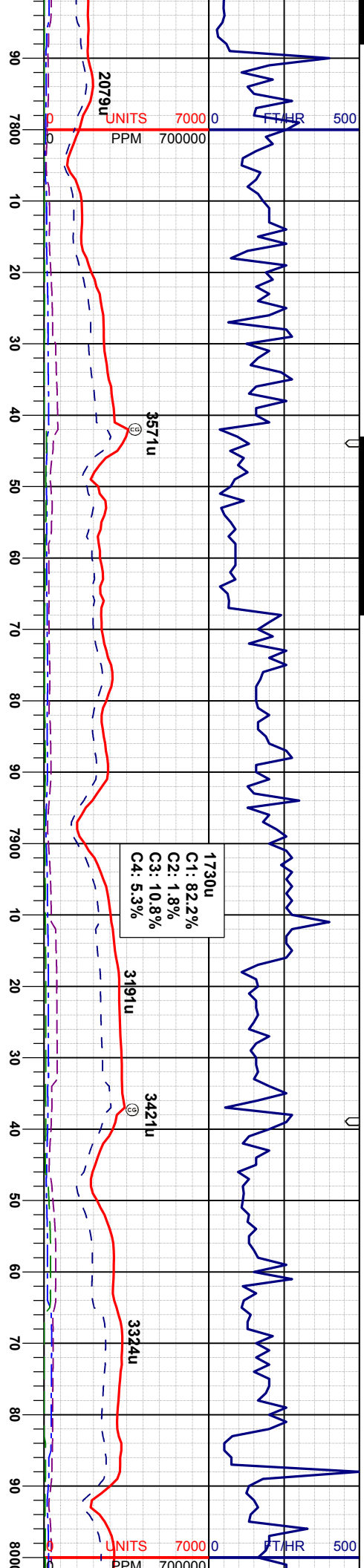
WT IN 10.3  
VIS IN 3

MD	7773'
INC	88.6°
AZM	267.2°
TVD	5764.18'

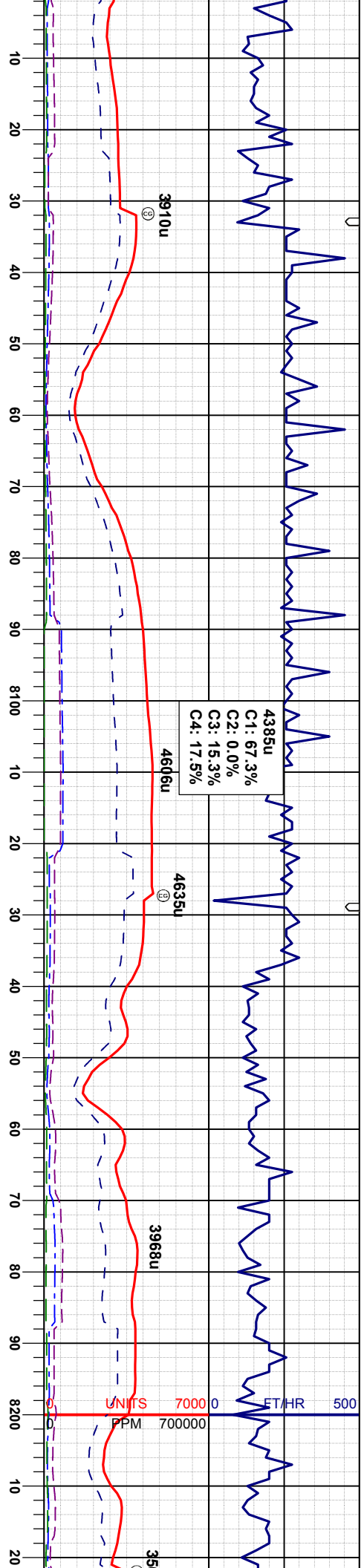
MRL: dkgy-gybrn, sbblky-sbply  
tex, chky ip, v calc, calc incl,  
& pyr  
CHK: llyg-crm, sbblky, sft-firm  
tex, v calc











MD 8057'  
INC 90.2°  
AZM 271.1°  
TVD 5764.18'

WT IN 10.45/ OUT 10.45  
VIS IN 36/ OUT 36

MD 8152'  
INC 90.4°  
AZM 272.3°  
TVD 5763.68'

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr bent w/ pyr  
CHK: ltgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v chky, v calc, calc incl, tr bent w/ pyr  
CHK: ltgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc

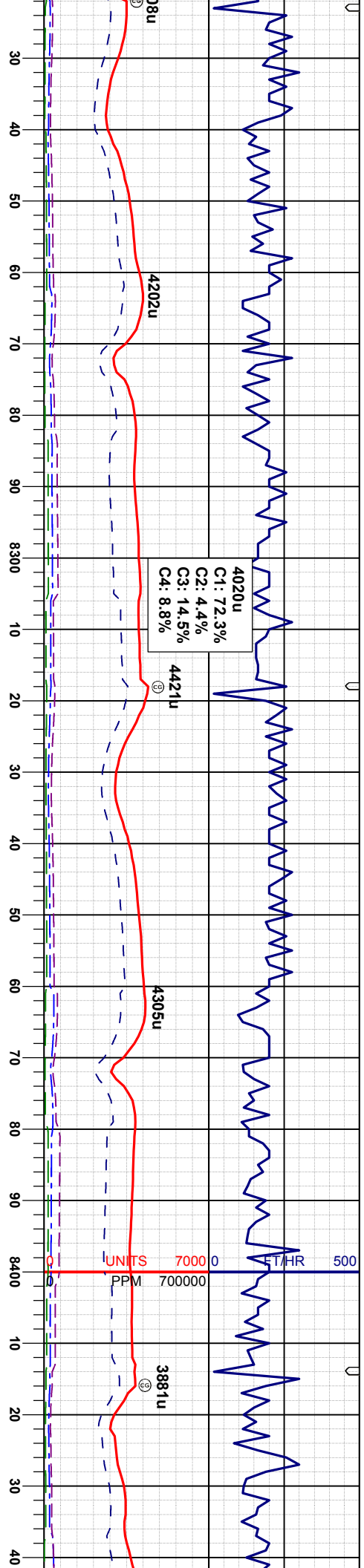
MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v chky, v calc, calc incl, tr bent w/ pyr  
CHK: ltgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, sme bent w/  
pyr  
CHK: ltgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc

MRL: dkgy-gybrn,  
tex, chky ip, v calc  
pyr  
CHK: ltgy-crm, sb  
tex, v calc







MD 8247'  
INC 89.7°  
AZM 271.2°  
TVD 5763.60'

WT IN 10.55/ OUT 10.55  
VIS IN 38/ OUT 38

124

MD 8341'  
INC 88.6°  
AZM 268.3°  
TVD 5765.00'

134

WT IN 10.60/ OUT 10.60  
VIS IN 39/ OUT 39

MD 843'  
INC 87°  
AZM 267°  
TVD 5767.9°

sbblky-sbply, sft, gt-mot  
calc incl, sme bent w/  
sblky, sft-firm, wxy-mot

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, chky ip, v calc, calc incl, tr bent w/ pyr  
CHK: lgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc, calc incl

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v calc, calc incl, tr bent w/ pyr, tr xl qtz  
CHK: lgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc, calc incl

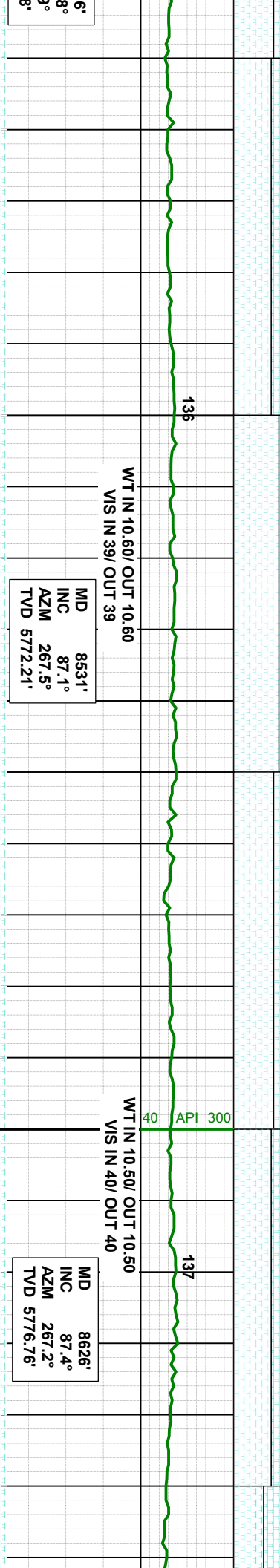
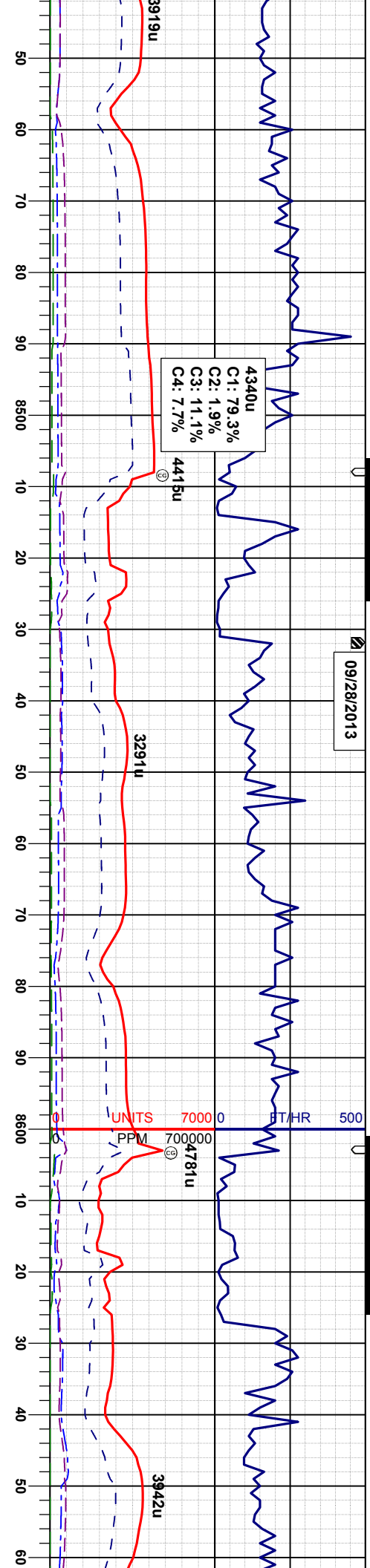
MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v calc, calc incl, tr bent w/ pyr, tr xl qtz  
CHK: lgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc, calc incl

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v calc, calc incl, tr bent w/ pyr, tr xl qtz  
CHK: lgy-crm, sbblky, sft-firm, wxy-mot  
tex, v calc, calc incl





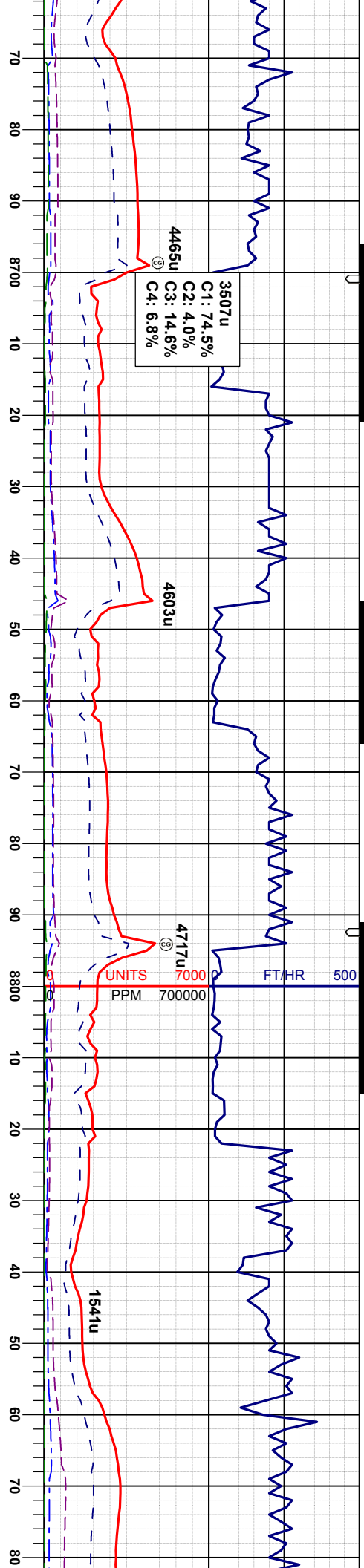
09/28/2013



MRSL: dkgy-gybm, sbblky-sbply, sft, gt-mot tex, v calc, calc incl, tr bent w/ pyr, tr fos frag CHK: lty-crm, sbblky, sft-firm, wxy-mot tex, v calc, calc incl		MRSL: dkgy-gybm, sbblky-sbply, sft, gt-mot tex, v calc, calc incl, tr bent w/ pyr, tr fos frag, tr pyr CHK: lty-crm, sbblky, sft-firm, wxy-mot tex, v calc, calc incl		MRSL: dkgy-gybm, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: lty-crm, sbblky, sft-firm, wxy-mot tex, ip, v calc, calc incl		MRSL: dkgy-gybm, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: lty-crm, sbblky, sft-firm, wxy-mot tex, v calc, calc incl	
WT IN 10.60/ OUT 10.60 VIS IN 39/ OUT 39		WT IN 10.50/ OUT 10.50 VIS IN 40/ OUT 40		WT IN 10.50/ OUT 10.50 VIS IN 40/ OUT 40		WT IN 10.50/ OUT 10.50 VIS IN 40/ OUT 40	
MD 8531' INC 87.1° AZM 267.5° TVD 5772.21'		MD 8626' INC 87.4° AZM 267.2° TVD 5776.76'		MD 8626' INC 87.4° AZM 267.2° TVD 5776.76'		MD 8626' INC 87.4° AZM 267.2° TVD 5776.76'	







WT IN 10.55/ OUT 10.55  
VIS IN 42/ OUT 42

MD 8721'  
INC 87.7°  
AZM 266.8°  
TVD 5780.82'

WT IN 10.65/ OUT 10.65  
VIS IN 41/ OUT 41

MD 8816'  
INC 88.9°  
AZM 267.5°  
TVD 5783.64'

gy-gybrn, sbblky-sbply, sft, gt-mot  
ky, v calc, calc incl  
y-crm, sbblky, sft-firm, wxy-sub vit  
ic, calc incl

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v chky, v calc, calc incl, tr fos frag  
CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit istr, v calc, calc incl

CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit istr, v calc, calc incl  
MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v chky, v calc, calc incl

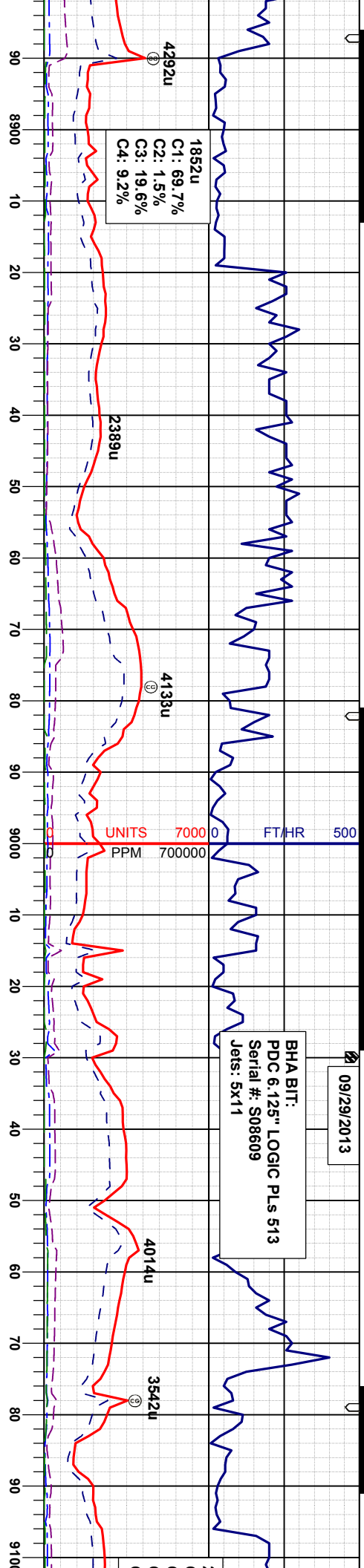
CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit istr, v calc, calc incl  
MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot  
tex, v chky, v calc, calc incl





09/29/2013

BHA BIT:  
PDC 6.125" LOGIC PLS 513  
Serial #: S08609  
Jets: 5x11



C1: 69.7%  
C2: 1.5%  
C3: 19.6%  
C4: 9.2%

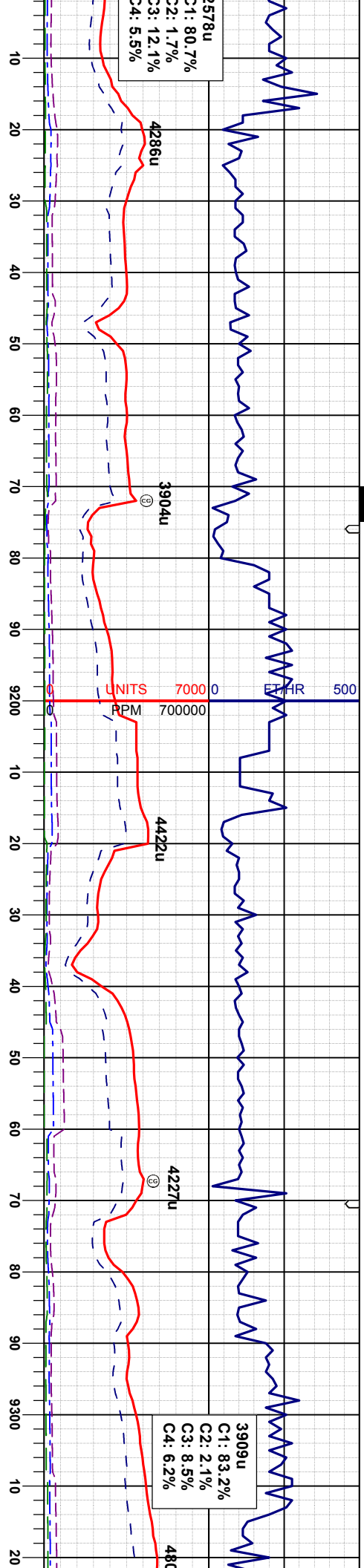
MD 8911'  
INC 89.7°  
AZM 265.8°  
TVD 5784.80'

MD 9015'  
INC 89.3°  
AZM 266.7°  
TVD 5785.71'

WT IN 10.50/ OUT 10.50 VIS IN 41/ OUT 41		WT IN 10.50/ OUT 10.50 VIS IN 42/ OUT 42		WT IN 10.50/ OUT 10.50 VIS IN 42/ OUT 42		WT IN 10.55/ OUT 10.55 VIS IN 40/ OUT 40	
n, wxy tex,		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl	
n, wxy tex,		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl	
n, wxy tex,		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl		MR.L: dkgv-gybrn, sbblky-sbply, sft, gl-mot tex, v chky, v calc, calc incl, tr bent CHK: llyg-crm, sbblky, sft-firm, wxy tex, sub vit istr, v calc, calc incl	





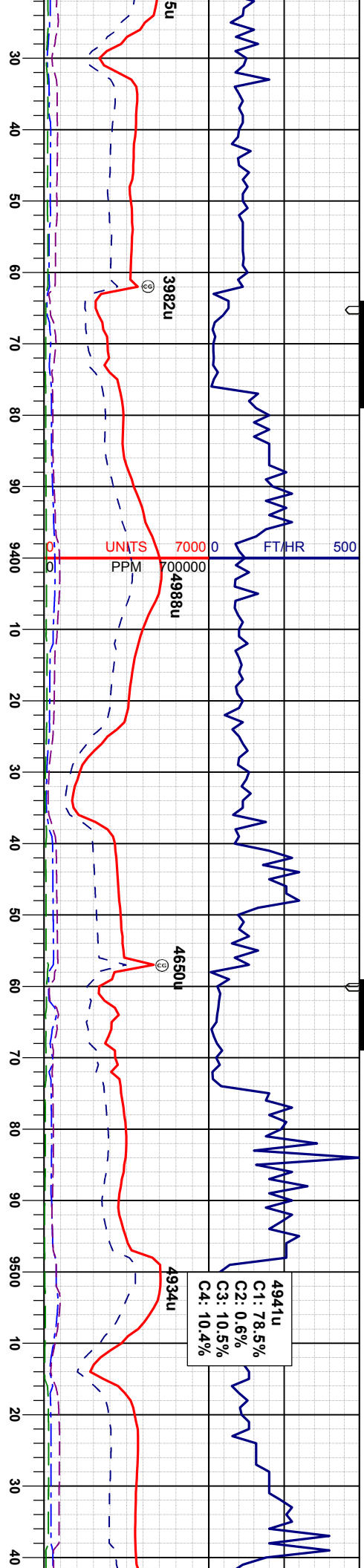


MD 9109' NC 90.0° AZM 266.7° TVD 5786.29'		MD 9204' INC 90.6° AZM 266.5° TVD 5785.79'		MD 9299' INC 91.0° AZM 265.6° TVD 5784.46'	
WT IN 10.50/ OUT 10.50 VIS IN 39/ OUT 39		WT IN 10.55/ OUT 10.55 VIS IN 39/ OUT 39			
160		4800		108	
		API 300			

MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: ltgy-crm, sbblky, sft-firm, wxy tex, sub vit lstr, v calc, calc incl	MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: ltgy-crm, sbblky, sft-firm, wxy tex, sub vit lstr, v calc, calc incl	MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: ltgy-crm, sbblky, sft-firm, wxy tex, sub vit lstr, v calc, calc incl	CHK: ltgy-crm, sbblky, sft-firm, wxy tex, sub vit lstr, v calc, calc incl	MRL: dkgy-gybrn, sbblky-sbply, sft, gt-mot tex, v chky, v calc, calc incl CHK: ltgy-crm, sbblky, sft-firm, wxy tex, sub vit lstr, v calc, calc incl
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WT IN 10.50/ OUT 10.50  
VIS IN 40/ OUT 40

MD 9394'  
INC 91.4°  
AZM 265.4°  
TVD 5782.47'

WT IN 10.50/ OUT 10.50  
VIS IN 40/ OUT 40

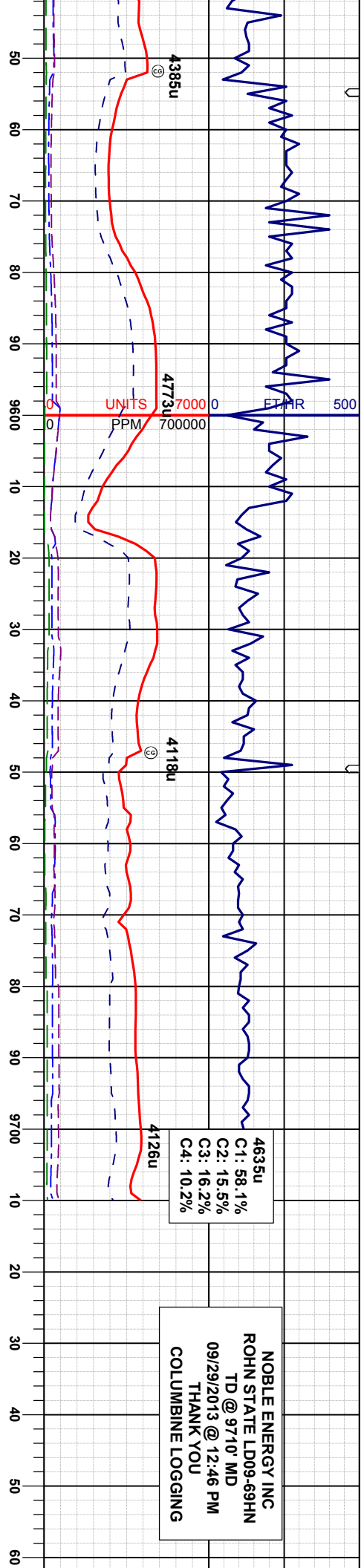
MD 9488'  
INC 91.1°  
AZM 265.3°  
TVD 5780.42'

MR.L: dkgy-gybrn, sbblky-sbply, sft-mot  
firm, gt-mot tex, v chky, v calc, calc incl, tr  
dism pyr  
CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl

MR.L: dkgy-gybrn, sbblky-sbply, sft-mot  
firm, gt-mot tex, v chky, v calc, calc incl, tr  
dism pyr  
CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl

MR.L: dkgy-gybrn, sbblky-sbply, sft-mot  
firm, gt-mot tex, v chky, v calc, calc incl, tr  
dism pyr  
CHK: llyg-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl





4635u  
C1: 58.1%  
C2: 15.5%  
C3: 16.2%  
C4: 10.2%

NOBLE ENERGY INC  
ROHN STATE LD09-69HN  
TD @ 9710' MD  
09/29/2013 @ 12:46 PM  
THANK YOU  
COLUMBINE LOGGING

MD 9583'  
INC 92.2°  
AZM 265.3°  
TVD 5777.69'

MD 9645'  
INC 92.4°  
AZM 264.2°  
TVD 5775.20'

PROJECTED  
MD 9710'  
INC 92.4°  
AZM 264.2°  
TVD 5772.48'

NOBLE ENERGY INC  
ROHN STATE LD09-69HN  
TD @ 9710' MD  
09/29/2013 @ 12:46 PM

MRI: dkgy-gybrn, sbblky-sbply, sft-mod  
firm, gt-mot tex, v chky, v calc, calc incl  
CHK: ltgy-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl

MRI: dkgy-gybrn, sbblky-sbply, sft-mod  
firm, gt-mot tex, v chky, v calc, calc incl  
CHK: ltgy-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl

MRI: dkgy-gybrn, sbblky-sbply, sft-mod  
firm, gt-mot tex, v chky, v calc, calc incl  
CHK: ltgy-crm, sbblky, sft-firm, wxy tex,  
sub vit lstr, v calc, calc incl



