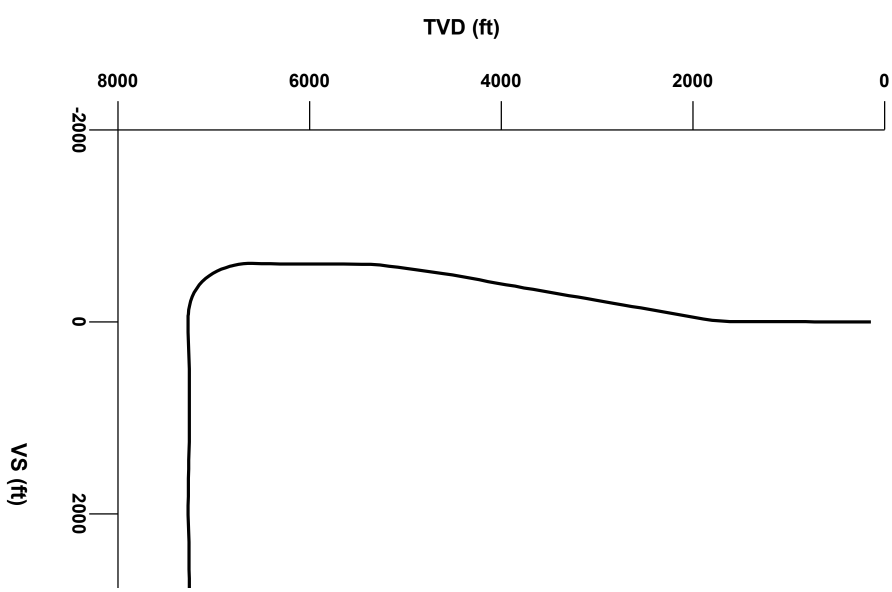
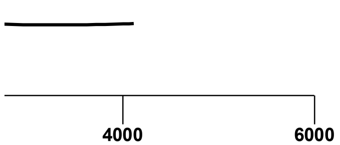
Lplot VH

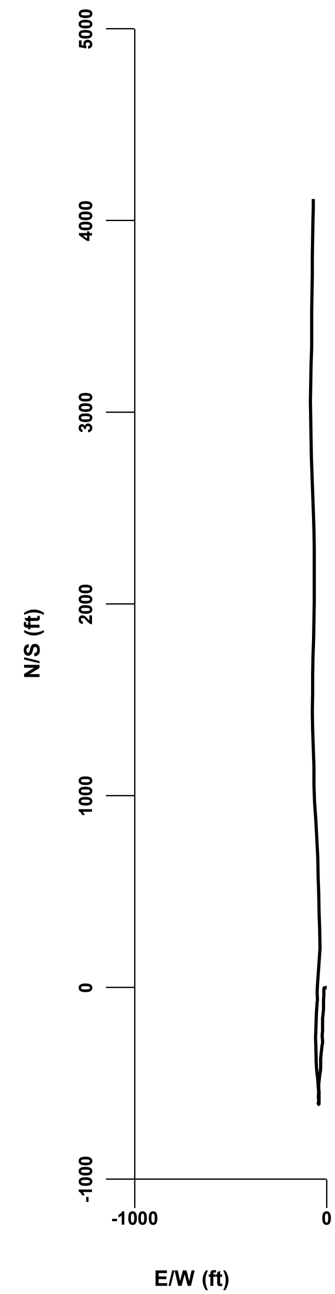
OPERATOR:	**ANADARKO PETROLEUM CORPORATION**
WELL:	**USA FED 03N-36HZ**
LOCATION:	**SESW SEC 36, T3N, R66W**
COUNTY:	**WELD**
STATE:	**COLORADO**
SPOT:	**635' FSL, 1903' FWL**
ELEVATION:	**GR 5003', KB 5016'**
FIELD:	**WATTENBERG**
SPUD DATE:	**07/26/2013**
TD DATE:	**08/03/2013**
DATES LOGGED:	**07/28/2013 - 08/03/2013**
DEPTHS LOGGED:	**6695' MD - 11792' MD**
LOGGERS:	**SHANA SWIRIN, LIZ VAN DIEPEN**
DRILLING FLUID:	**FSLN**
DRILLING RIG:	**ENSIGN 132**
API:	**05-123-36847**
LOG TYPE:	**HORIZONTAL**
SCALE:	**1:240 (5 inches per 100 feet)**
REMARKS:	**WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.**



Survey Elevation



Survey Plan



LITHOLOGIES

Chalk
Marl
Silty Shale

ENGINEERING SYMBOLS

Casing
Casing
Connection
Connection Gas
Midnight Depth
Normal Fault

SAMPLE PHOTOS | OIL SHOWS | TFG | TVD 7400 ft 6500 | GAMMA RAY 50 API 300 | CUTTINGS LITHOLOGY | DEPTH (FEET) | GAS 0 UNITS 5000 | C1 0 PPM 500000 | C2 0 PPM 500000 | C3 0 PPM 500000 | C4 0 PPM 500000 | ROP 0 MIN/FT 5 | ROTATE/SLIDE

6650
60
70
80
90
6700
10
20
30

Columbine Logging Two Man Rigged Up 1900 hrs 07/28/2013 With Bloodhound Unit # 0313

Logging Began 0400hrs 07/29/2013 at 6695' MD

Bit #02
8-3/4
Smith SDI611
Serial: JH0455
Jets: 6x15

Survey
MD 6647'
INC 0.93°
AZM 154.97°
TVD 6597.61'

Begin in Sussex Formation

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 judgement of brilliance, color and longevity of the cut.

Survey
MD 6695'
INC 0.57°
AZM 109.01°
TVD 6645.61'

WT 9.5 / VIS 38

122

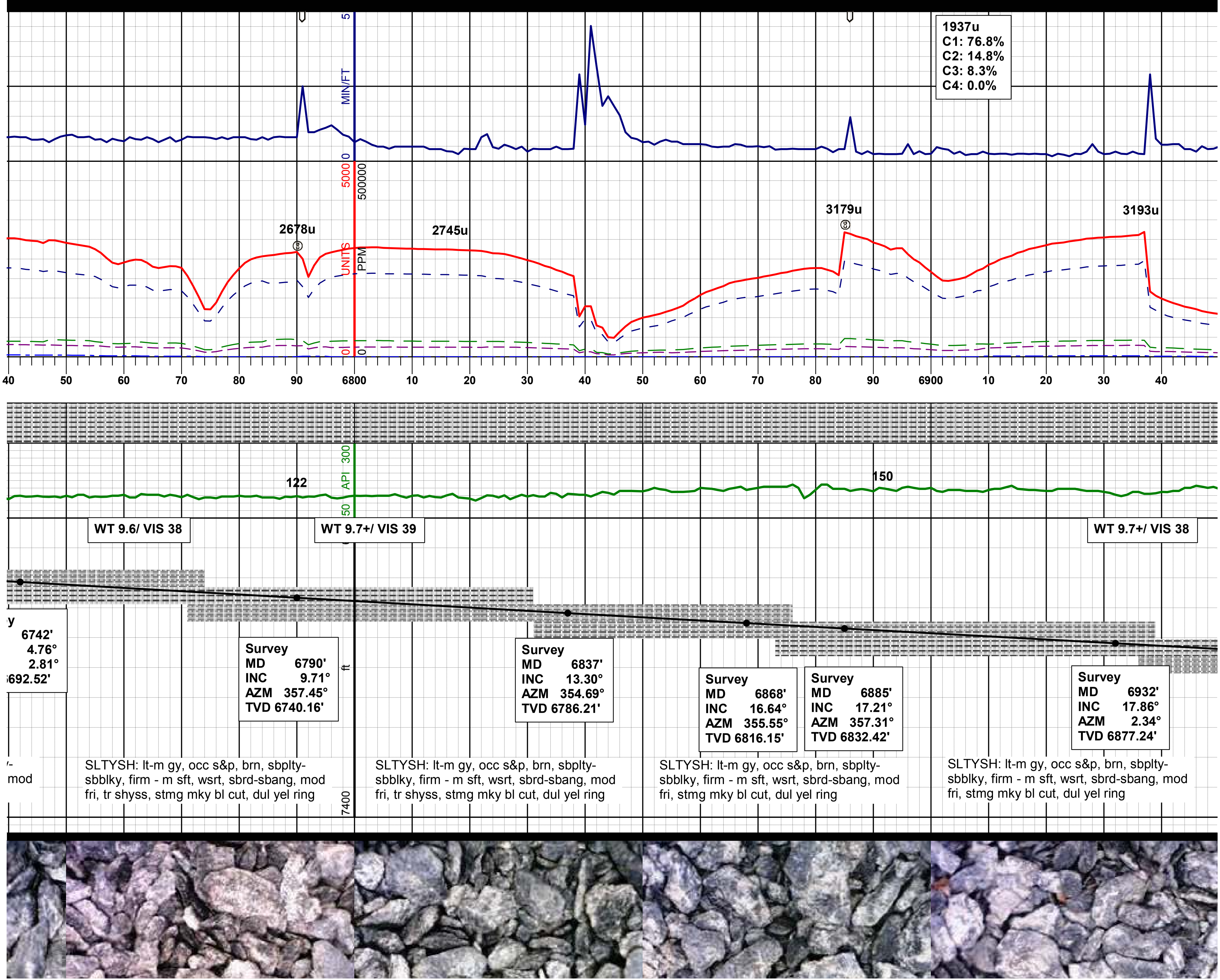
4236u

2364u
C1: 71.3%
C2: 15.6%
C3: 12.0%
C4: 1.1%

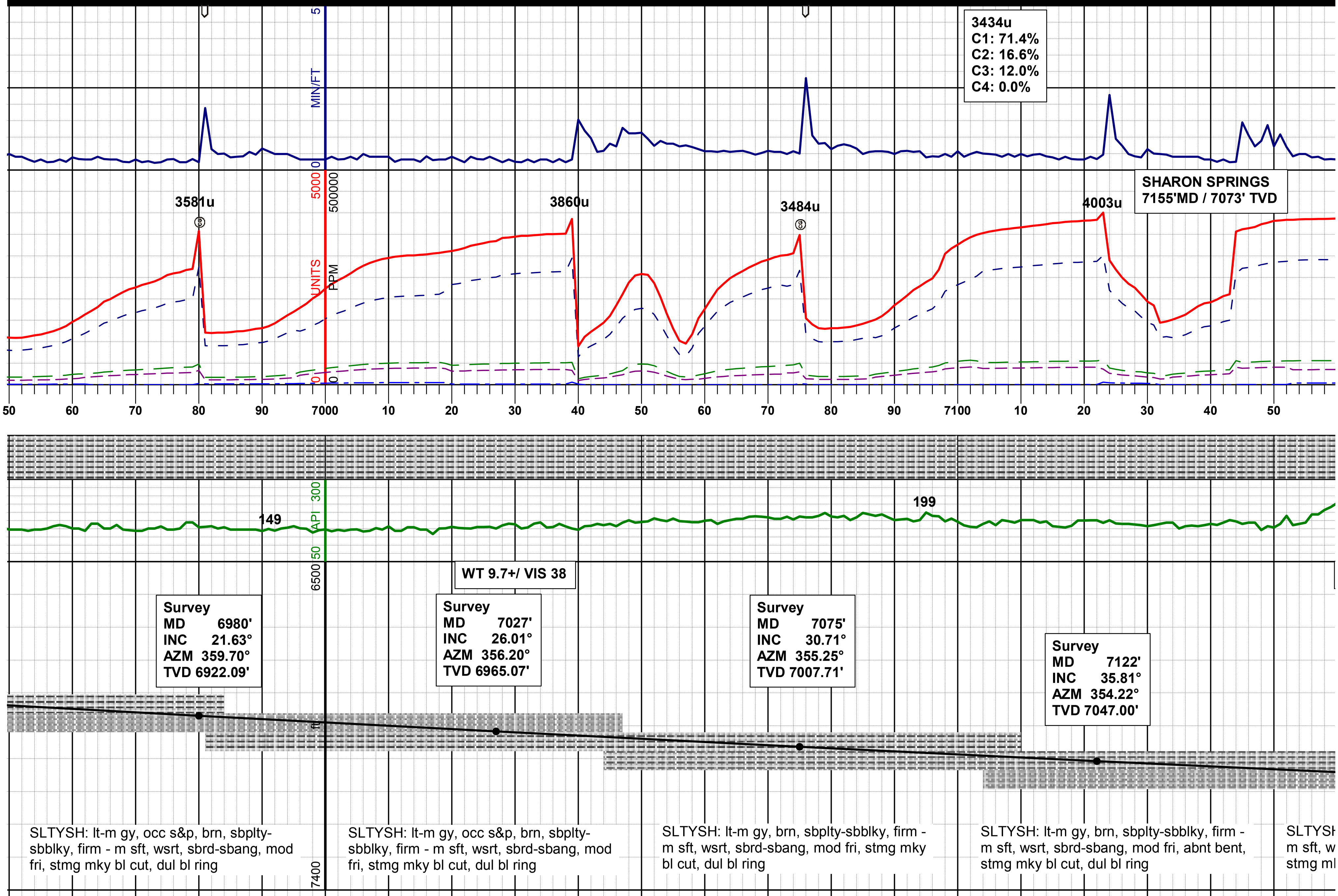
3371u

SLTYSH: lt-m gy, occ s&p, brn, sbplty sbblky, firm - m sft, wsrt, sbrd-sbang, fri, tr shyss, stmg mky bl cut,

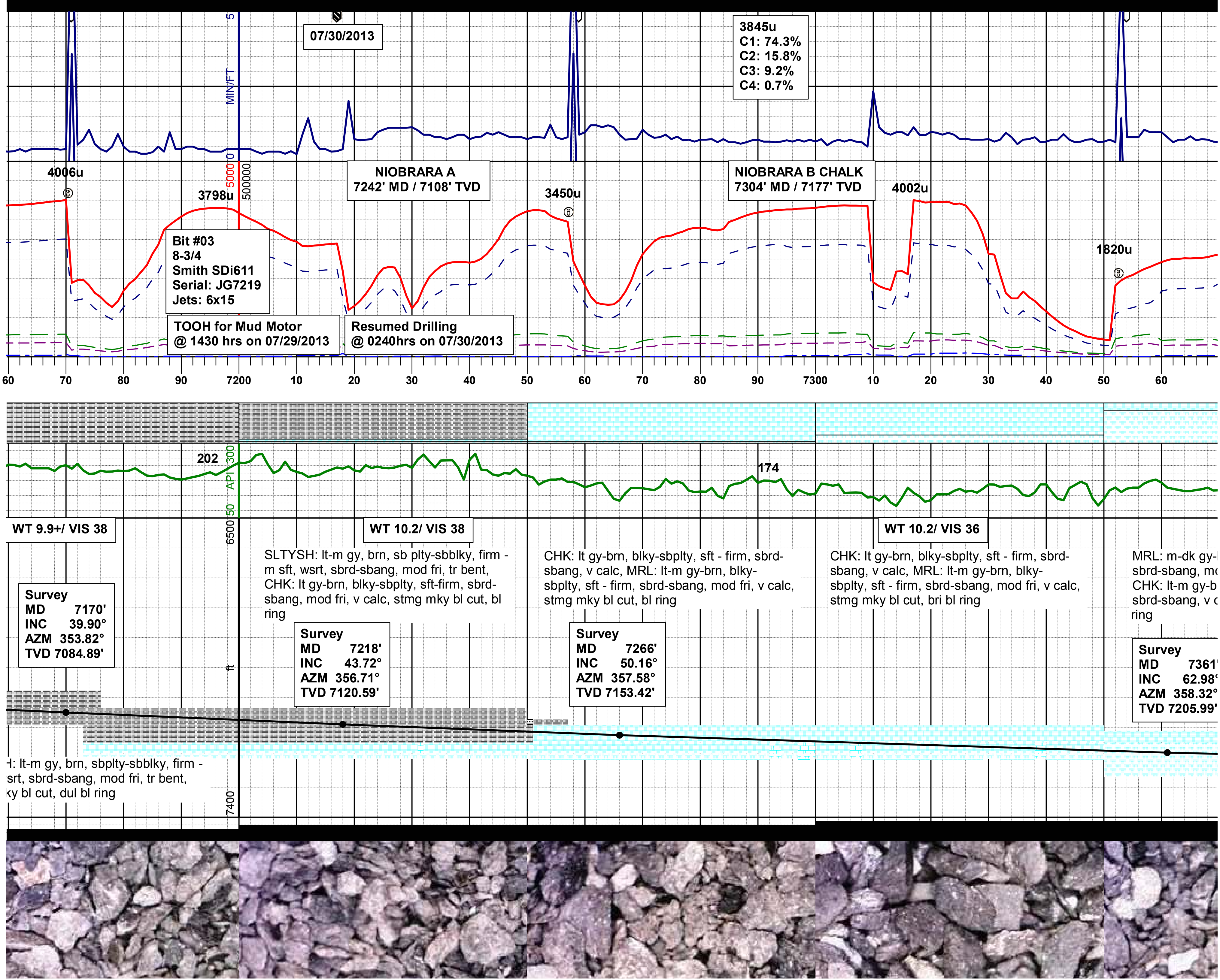
Surve
MD
INC
AZM
TVD 6



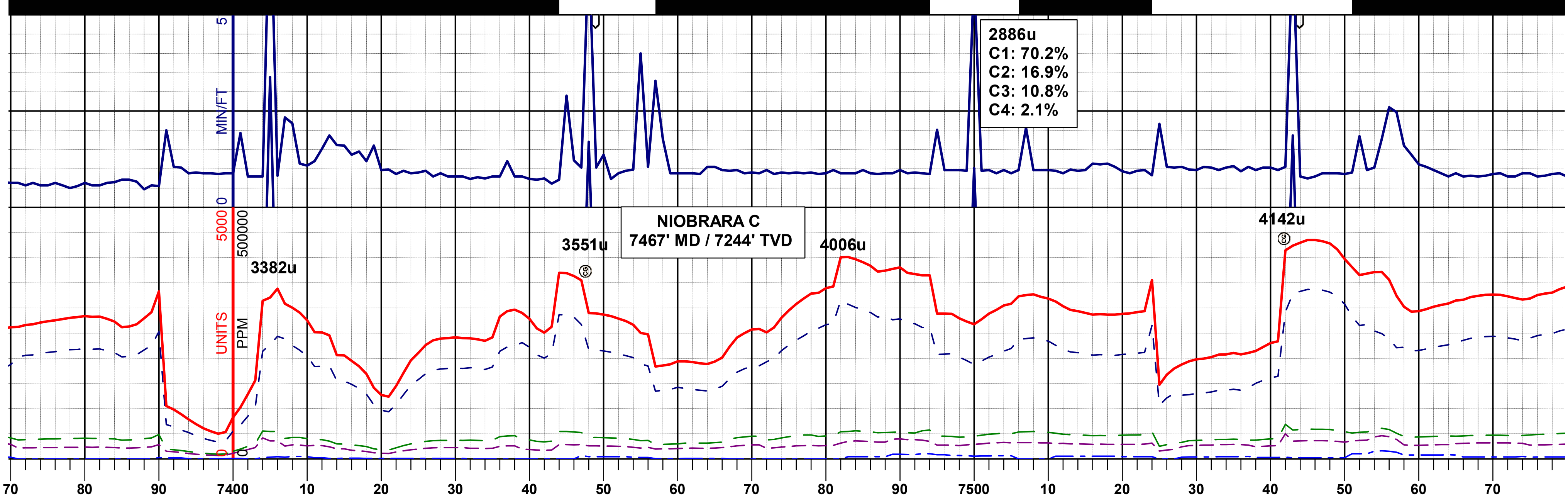
1937u
C1: 76.8%
C2: 14.8%
C3: 8.3%
C4: 0.0%
0 MIN/FT 5
0 UNITS 5000
0 PPM 500000
2678u
2745u
3179u
3193u
40 50 60 70 80 90 6800 10 20 30 40 50 60 70 80 90 6900 10 20 30 40
50 API 300
122
150
WT 9.6/ VIS 38
WT 9.7+/ VIS 39
WT 9.7+/ VIS 38
6742' 4.76° 2.81° 692.52'
Survey MD 6790' INC 9.71° AZM 357.45° TVD 6740.16'
Survey MD 6837' INC 13.30° AZM 354.69° TVD 6786.21'
Survey MD 6868' INC 16.64° AZM 355.55° TVD 6816.15'
Survey MD 6885' INC 17.21° AZM 357.31° TVD 6832.42'
Survey MD 6932' INC 17.86° AZM 2.34° TVD 6877.24'
ft
7400
mod
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, tr shyss, stmg mky bl cut, dul yel ring
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, tr shyss, stmg mky bl cut, dul yel ring
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, stmg mky bl cut, dul yel ring
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, stmg mky bl cut, dul yel ring

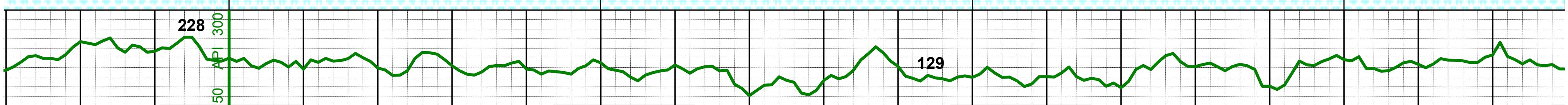


3434u
C1: 71.4%
C2: 16.6%
C3: 12.0%
C4: 0.0%
0 MIN/FT 5
3581u
3860u
3484u
4003u
SHARON SPRINGS
7155'MD / 7073' TVD
0 UNITS 5000
0 PPM 500000
50
60
70
80
90
7000
10
20
30
40
50
60
70
80
90
7100
10
20
30
40
50
149
199
50 API 300
6500
ft
7400
WT 9.7+/ VIS 38
Survey
MD 6980'
INC 21.63°
AZM 359.70°
TVD 6922.09'
Survey
MD 7027'
INC 26.01°
AZM 356.20°
TVD 6965.07'
Survey
MD 7075'
INC 30.71°
AZM 355.25°
TVD 7007.71'
Survey
MD 7122'
INC 35.81°
AZM 354.22°
TVD 7047.00'
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, stmg mky bl cut, dul bl ring
SLTYSH: lt-m gy, occ s&p, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, stmg mky bl cut, dul bl ring
SLTYSH: lt-m gy, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, stmg mky bl cut, dul bl ring
SLTYSH: lt-m gy, brn, sbplty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, abnt bent, stmg mky bl cut, dul bl ring



07/30/2013
MIN/FT
0
5
3845u
C1: 74.3%
C2: 15.8%
C3: 9.2%
C4: 0.7%
4006u
3798u
5000
500000
Bit #03
8-3/4
Smith SDi611
Serial: JG7219
Jets: 6x15
TOOH for Mud Motor
@ 1430 hrs on 07/29/2013
Resumed Drilling
@ 0240hrs on 07/30/2013
NIOBRARA A
7242' MD / 7108' TVD
3450u
NIOBRARA B CHALK
7304' MD / 7177' TVD
4002u
1820u
60 70 80 90 7200 10 20 30 40 50 60 70 80 90 7300 10 20 30 40 50 60
202
174
50 API 300
6500
ft
7400
WT 9.9+/ VIS 38
WT 10.2/ VIS 38
WT 10.2/ VIS 36
SLTYSH: lt-m gy, brn, sb plty-sbblky, firm - m sft, wsrt, sbrd-sbang, mod fri, tr bent, CHK: lt gy-brn, blky-sbplty, sft-firm, sbrd-sbang, mod fri, v calc, stmg mky bl cut, bl ring
CHK: lt gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: lt-m gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, stmg mky bl cut, bl ring
CHK: lt gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: lt-m gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, stmg mky bl cut, bri bl ring
MRL: m-dk gy- sbrd-sbang, m CHK: lt-m gy-b sbrd-sbang, v c ring
Survey
MD 7170'
INC 39.90°
AZM 353.82°
TVD 7084.89'
Survey
MD 7218'
INC 43.72°
AZM 356.71°
TVD 7120.59'
Survey
MD 7266'
INC 50.16°
AZM 357.58°
TVD 7153.42'
Survey
MD 7361'
INC 62.98°
AZM 358.32°
TVD 7205.99'
H: lt-m gy, brn, sbplty-sbblky, firm - srt, sbrd-sbang, mod fri, tr bent, ky bl cut, dul bl ring





WT 10.1/ VIS 37

brn, blky-sbplty, sft - firm,
od fri, v calc, occ calc incl,
rn, blky-sbplty, sft - firm,
calc, stmg mky bl cut

MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-m gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring

WT 10.2/ VIS 38

MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring

WT 10.2/ VIS 37

CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring

MRL: m-dk gy-brn, blky-sb
sbrd-sbang, mod fri, v calc
CHK: lt-dk gy-brn, blky-sb
sbrd-sbang, v calc, stmg n
ring

ft

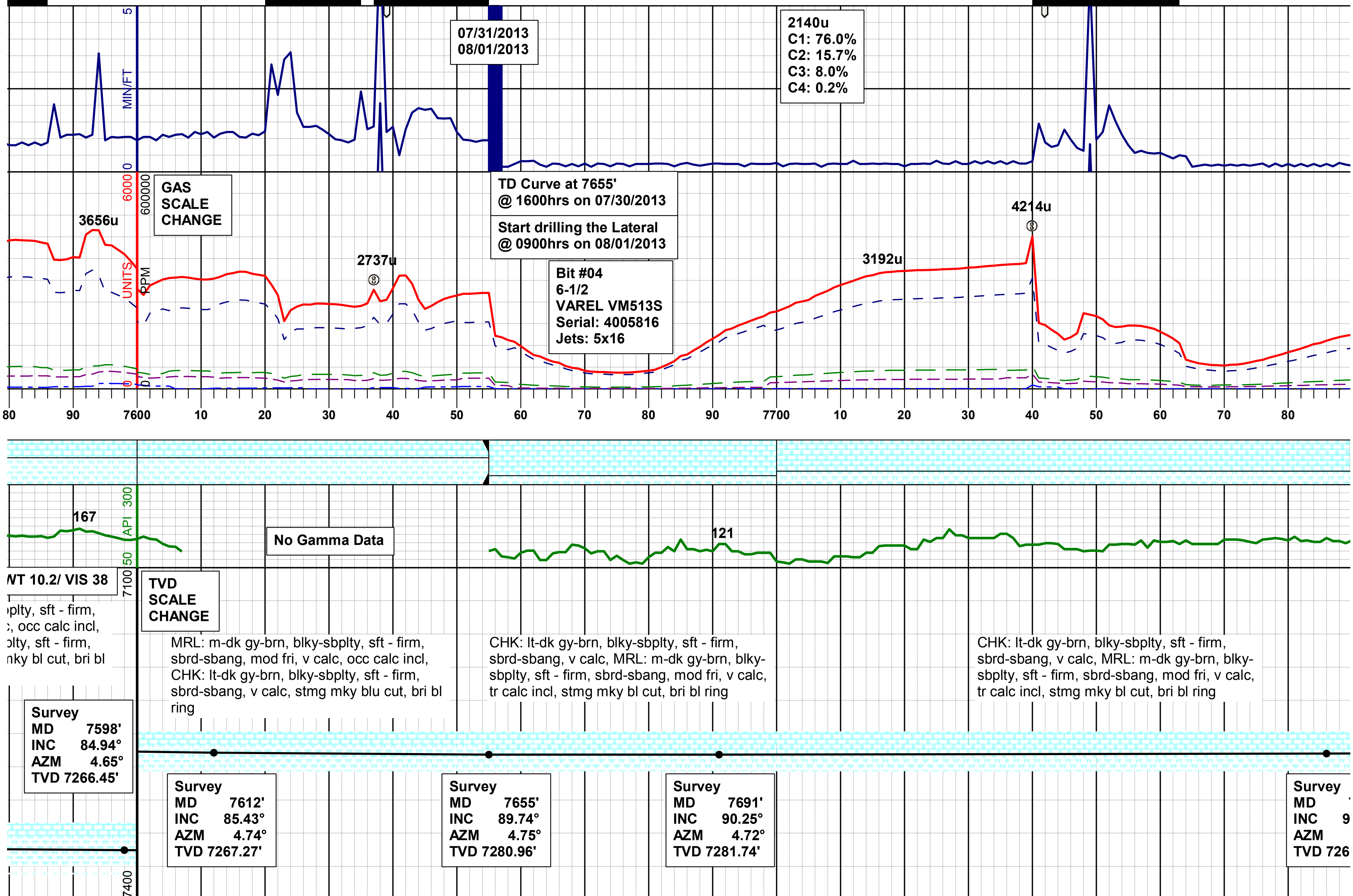
7400

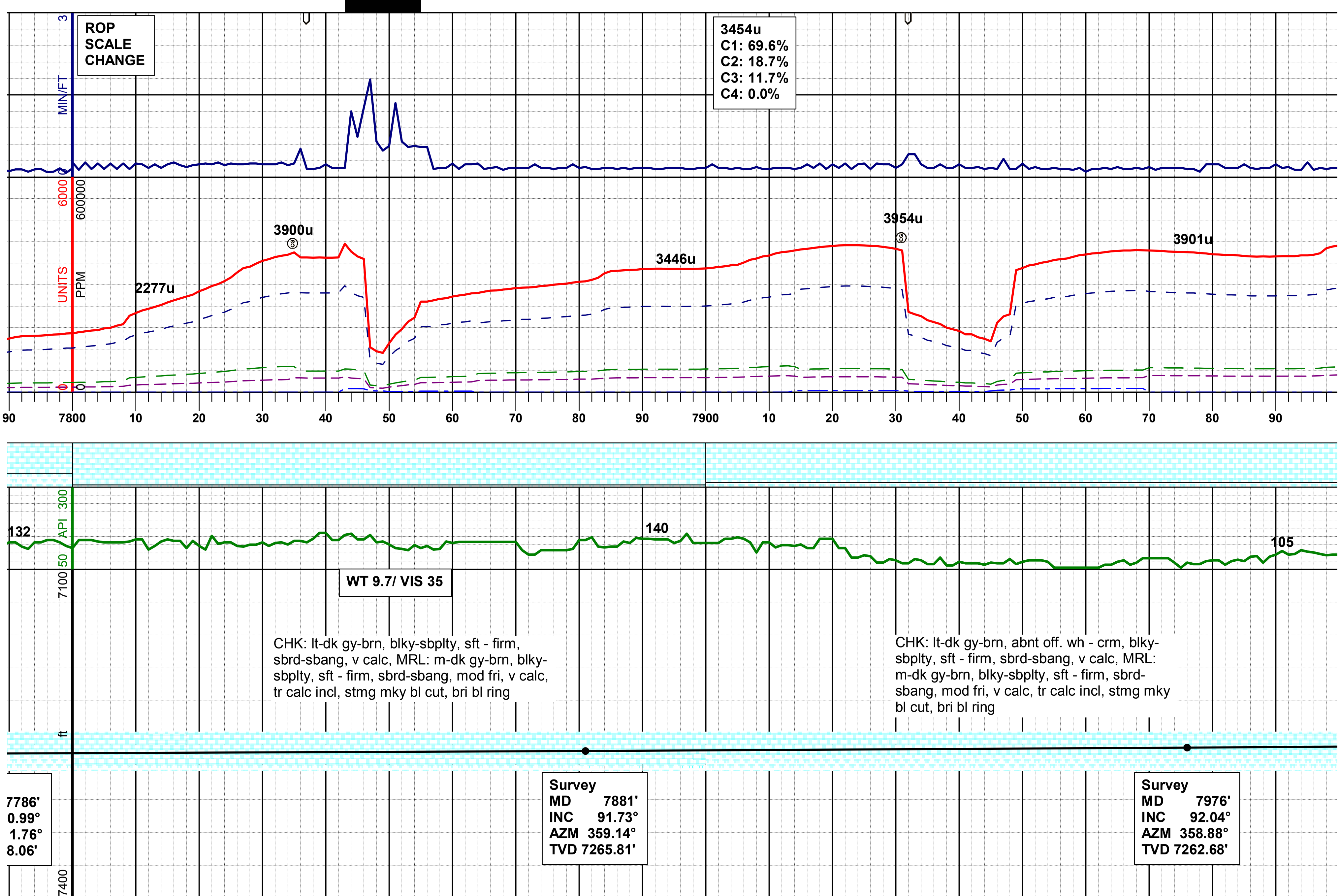
Survey	
MD	7408'
INC	68.63°
AZM	359.58°
TVD	7225.24'

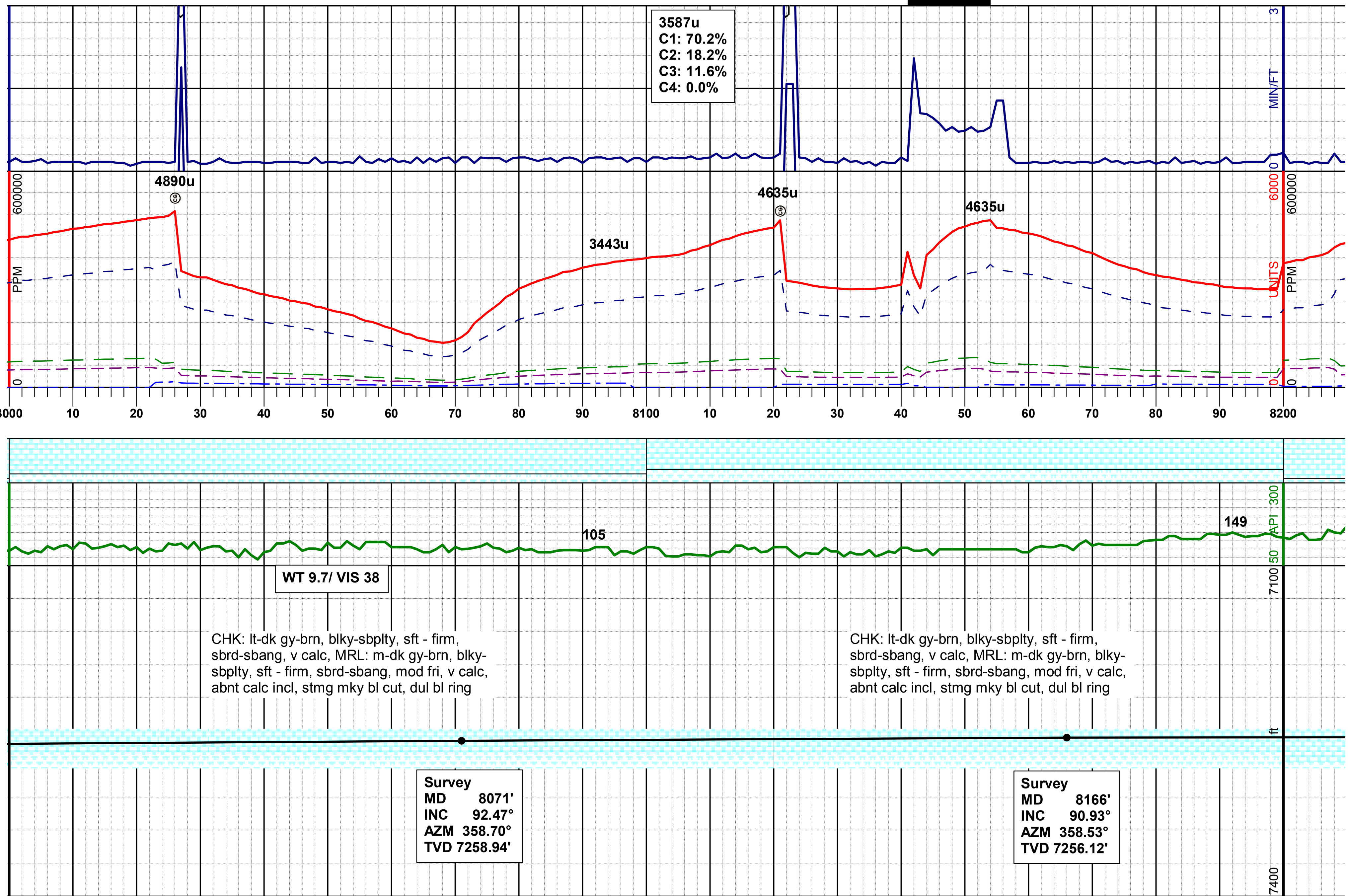
Survey	
MD	7456'
INC	74.06°
AZM	1.58°
TVD	7240.59'

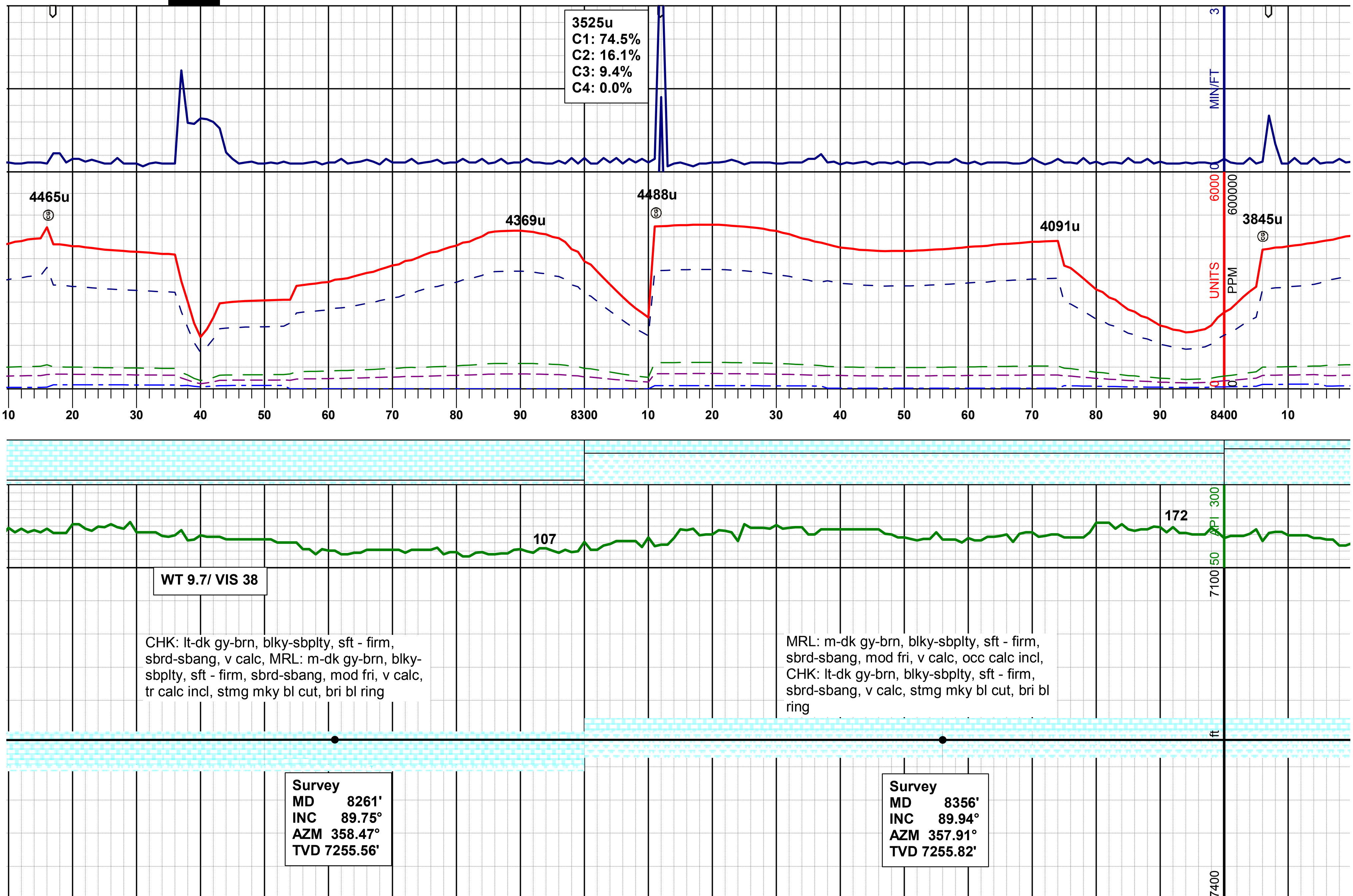
Survey	
MD	7503'
INC	78.23°
AZM	3.25°
TVD	7251.84'

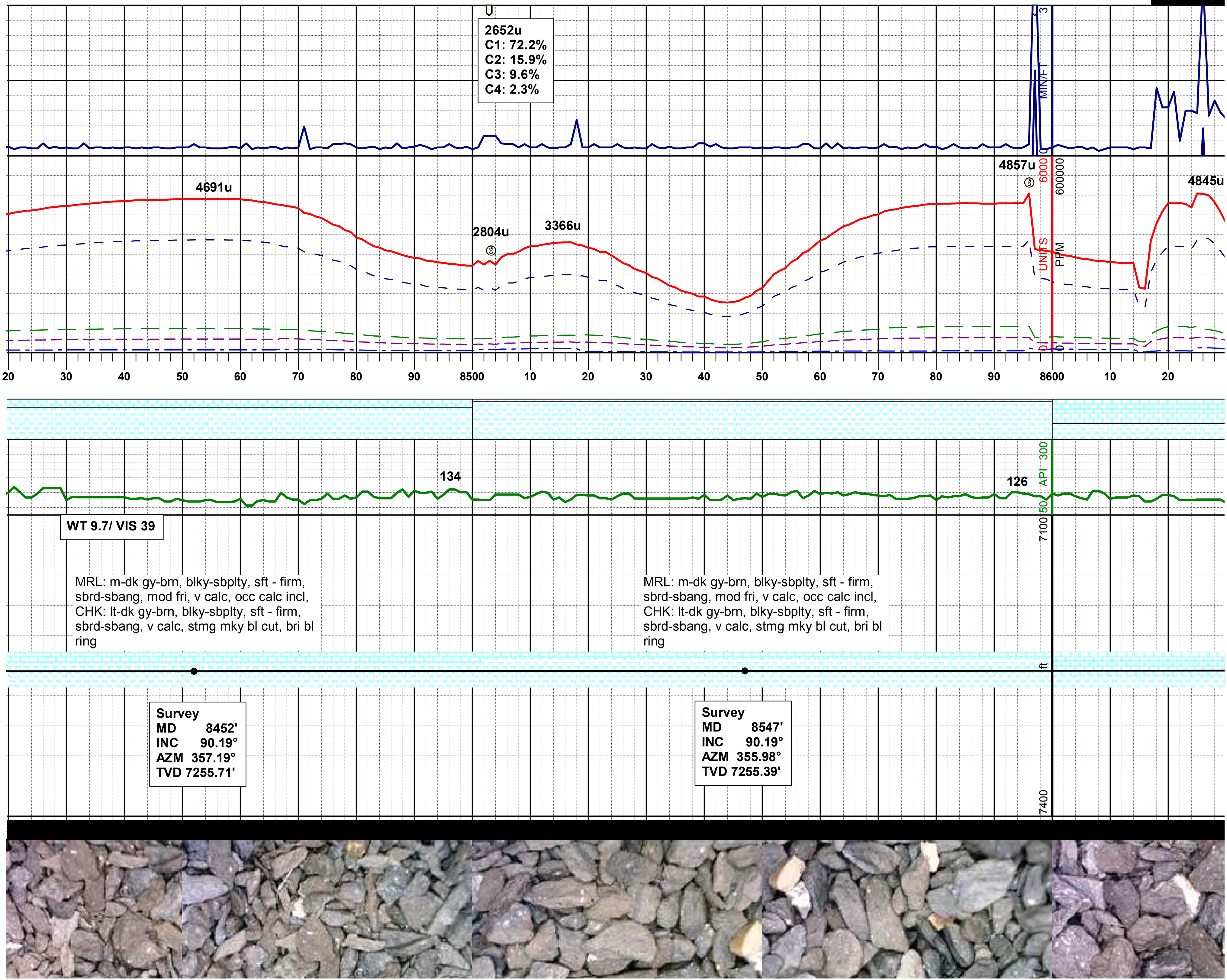
Survey	
MD	7551'
INC	81.18°
AZM	3.23°
TVD	7260.42'


0 MIN/FT 5
0 UNITS 6000
0 PPM 600000
GAS SCALE CHANGE
3656u
2737u
07/31/2013
08/01/2013
TD Curve at 7655'
@ 1600hrs on 07/30/2013
Start drilling the Lateral
@ 0900hrs on 08/01/2013
Bit #04
6-1/2
VAREL VM513S
Serial: 4005816
Jets: 5x16
3192u
4214u
2140u
C1: 76.0%
C2: 15.7%
C3: 8.0%
C4: 0.2%
80 90 7600 10 20 30 40 50 60 70 80 90 7700 10 20 30 40 50 60 70 80
50 API 300
167
No Gamma Data
121
7100
7400
WT 10.2/ VIS 38
TVD SCALE CHANGE
...plty, sft - firm, ..., occ calc incl, ...plty, sft - firm, ...mky bl cut, bri bl
MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky blu cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
Survey MD 7598' INC 84.94° AZM 4.65° TVD 7266.45'
Survey MD 7612' INC 85.43° AZM 4.74° TVD 7267.27'
Survey MD 7655' INC 89.74° AZM 4.75° TVD 7280.96'
Survey MD 7691' INC 90.25° AZM 4.72° TVD 7281.74'
Survey MD INC 9 AZM TVD 726

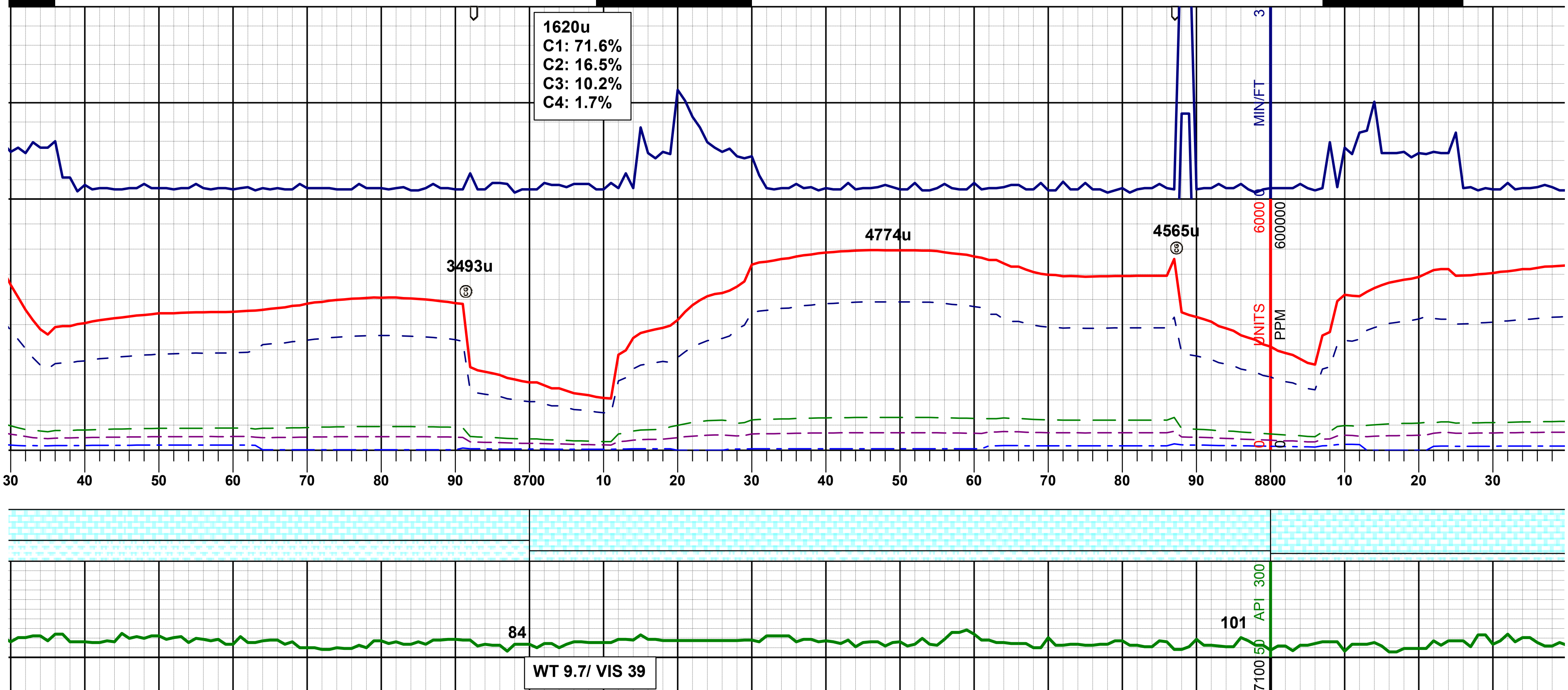

ROP SCALE CHANGE
MIN/FT
0
3
UNITS
0
6000
PPM
0
600000
2277u
3900u
3446u
3954u
3901u
3454u
C1: 69.6%
C2: 18.7%
C3: 11.7%
C4: 0.0%
90
7800
10
20
30
40
50
60
70
80
90
7900
10
20
30
40
50
60
70
80
90
API
50
300
132
140
105
7100
WT 9.7/ VIS 35
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, abnt off. wh - crm, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
ft
7400
7786'
0.99°
1.76°
8.06'
Survey
MD 7881'
INC 91.73°
AZM 359.14°
TVD 7265.81'
Survey
MD 7976'
INC 92.04°
AZM 358.88°
TVD 7262.68'


MIN/FT
0
3
3587u
C1: 70.2%
C2: 18.2%
C3: 11.6%
C4: 0.0%
PPM
0
600000
UNITS
6000
4890u
4635u
3443u
4635u
8000
10
20
30
40
50
60
70
80
90
8100
10
20
30
40
50
60
70
80
90
8200
API
50
300
105
149
WT 9.7/ VIS 38
7100
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, stmg mky bl cut, dul bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, stmg mky bl cut, dul bl ring
ft
Survey
MD 8071'
INC 92.47°
AZM 358.70°
TVD 7258.94'
Survey
MD 8166'
INC 90.93°
AZM 358.53°
TVD 7256.12'
7400



3525u
C1: 74.5%
C2: 16.1%
C3: 9.4%
C4: 0.0%
MIN/FT
0
3
4465u
4369u
4488u
4091u
3845u
UNITS
PPM
0
6000
600000
10
20
30
40
50
60
70
80
90
8300
10
20
30
40
50
60
70
80
90
8400
10
107
172
50
API
300
7100
ft
7400
WT 9.7/ VIS 38
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring
Survey
MD 8261'
INC 89.75°
AZM 358.47°
TVD 7255.56'
Survey
MD 8356'
INC 89.94°
AZM 357.91°
TVD 7255.82'



2652u
C1: 72.2%
C2: 15.9%
C3: 9.6%
C4: 2.3%
MIN/FT
0
3
4691u
2804u
3366u
4857u
4845u
UNITS
0
6000
PPM
0
600000
20
30
40
50
60
70
80
90
8500
10
20
30
40
50
60
70
80
90
8600
10
20
134
126
50
API
300
7100
ft
7400
WT 9.7/ VIS 39
MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring
MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring
Survey
MD 8452'
INC 90.19°
AZM 357.19°
TVD 7255.71'
Survey
MD 8547'
INC 90.19°
AZM 355.98°
TVD 7255.39'



CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring

CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring

CHK: lt-
sbrd-sba
sbplty, s
occ calc

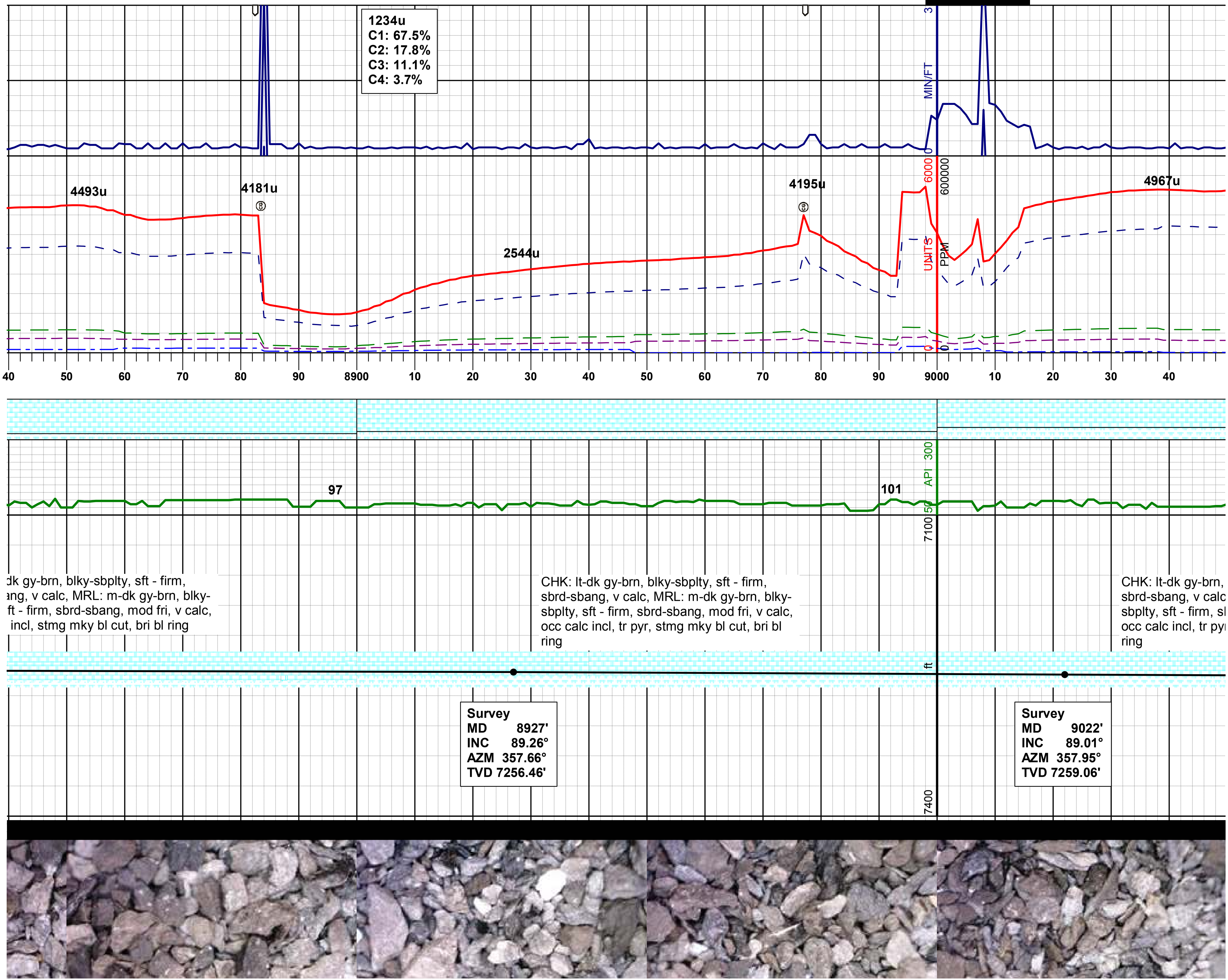
ft

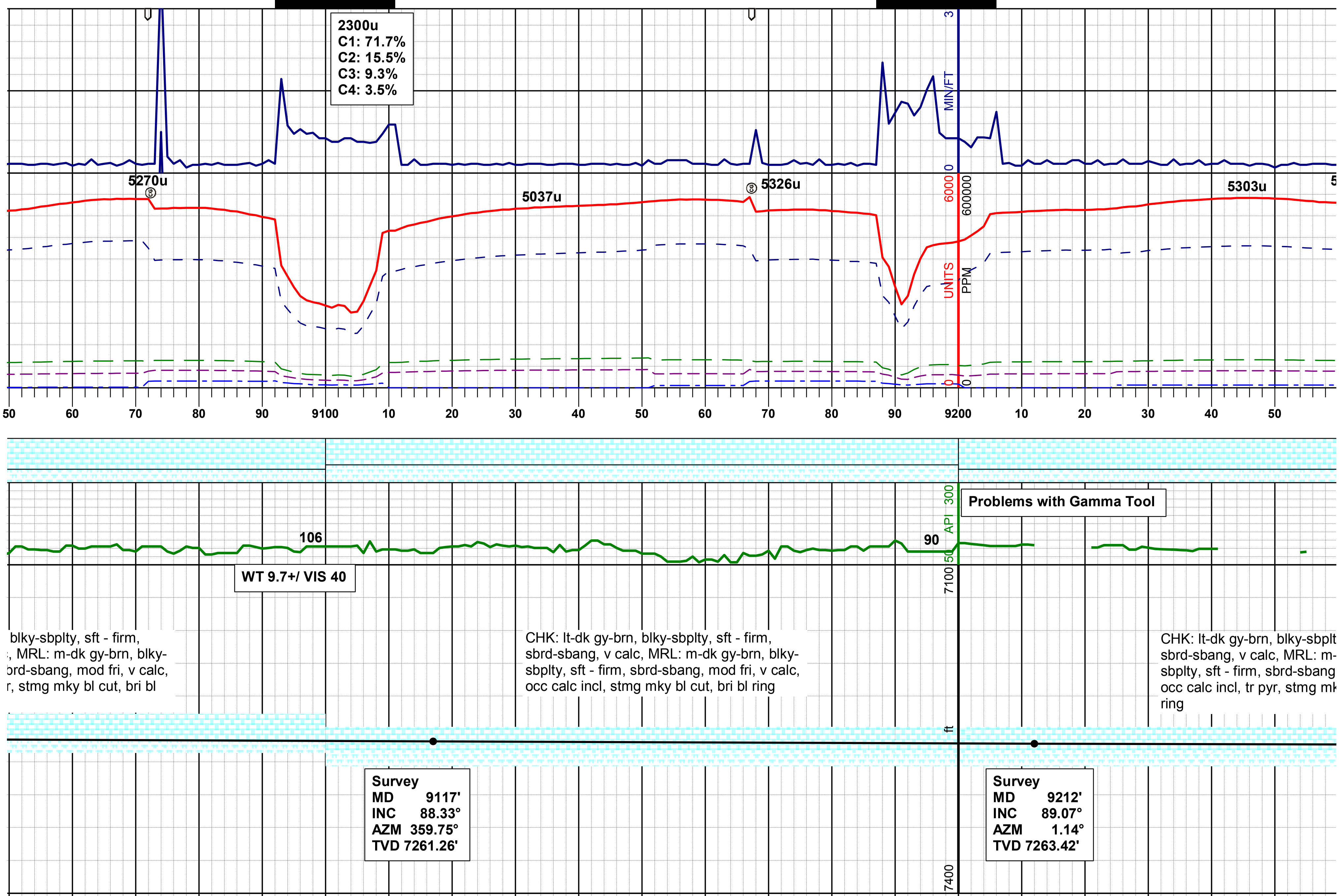
Survey	
MD	8642'
INC	90.25°
AZM	357.12°
TVD	7255.03'

Survey	
MD	8737'
INC	90.31°
AZM	358.86°
TVD	7254.56'

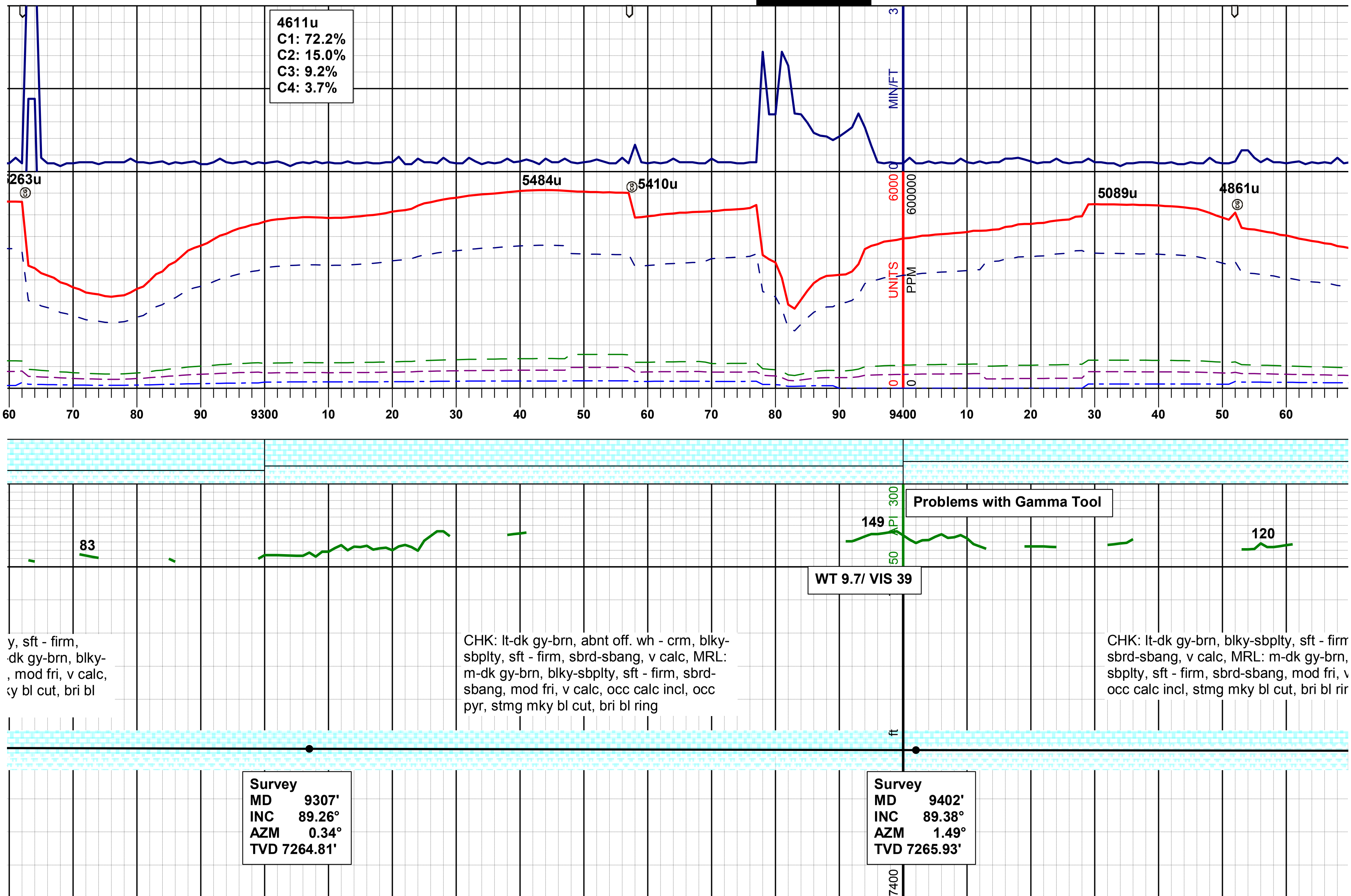
Survey	
MD	8832'
INC	89.07°
AZM	359.86°
TVD	7255.08'

7400

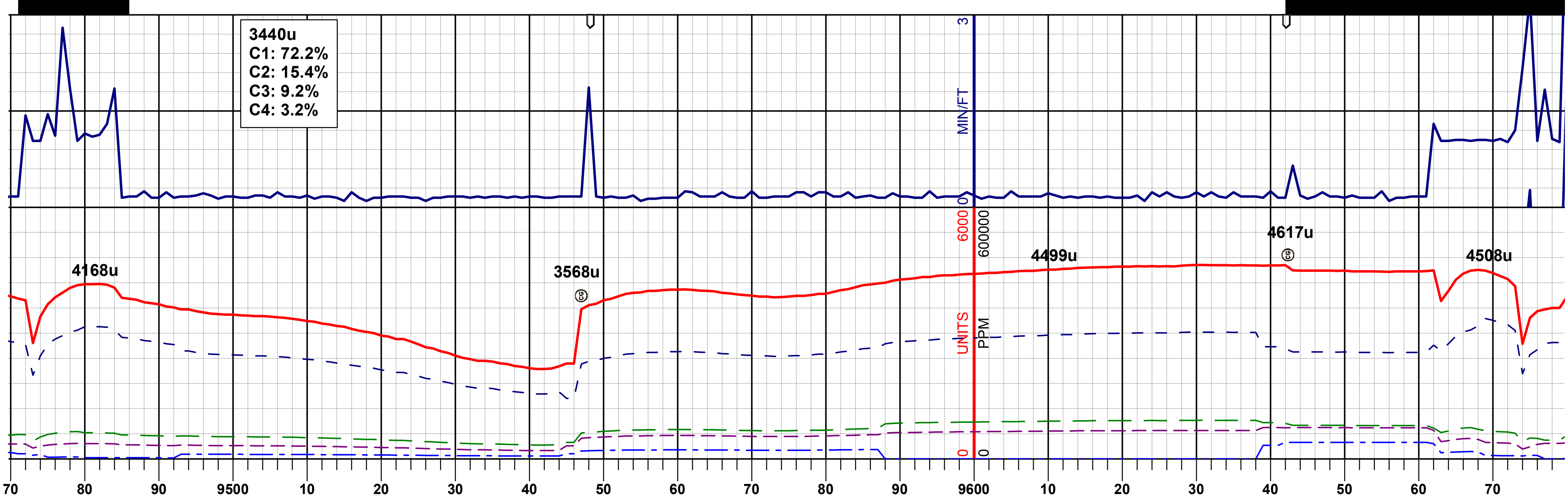

1234u
C1: 67.5%
C2: 17.8%
C3: 11.1%
C4: 3.7%
MIN/FT
0
3
4493u
4181u
2544u
4195u
4967u
UNITS
0
6000
PPM
0
600000
40
50
60
70
80
90
8900
10
20
30
40
50
60
70
80
90
9000
10
20
30
40
API
50
300
97
101
7100
7400
ft
dk gy-brn, blky-sbplty, sft - firm,
ang, v calc, MRL: m-dk gy-brn, blky-
ft - firm, sbrd-sbang, mod fri, v calc,
incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, tr pyr, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn,
sbrd-sbang, v calc
sbplty, sft - firm, sl
occ calc incl, tr pyı
ring
Survey
MD 8927'
INC 89.26°
AZM 357.66°
TVD 7256.46'
Survey
MD 9022'
INC 89.01°
AZM 357.95°
TVD 7259.06'



2300u
C1: 71.7%
C2: 15.5%
C3: 9.3%
C4: 3.5%
MIN/FT
0
3
5270u
5037u
5326u
5303u
UNITS
0
6000
PPM
0
600000
50
60
70
80
90
9100
10
20
30
40
50
60
70
80
90
9200
10
20
30
40
50
106
90
API
50
300
WT 9.7+/ VIS 40
Problems with Gamma Tool
7100
ft
7400
blky-sbplty, sft - firm,
, MRL: m-dk gy-brn, blky-
brd-sbang, mod fri, v calc,
r, stmg mky bl cut, bri bl
CHK: lt-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-
sbplty, sft - firm, sbrd-sbang, mod fri, v calc,
occ calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplt
sbrd-sbang, v calc, MRL: m-
sbplty, sft - firm, sbrd-sbang
occ calc incl, tr pyr, stmg mk
ring
Survey
MD 9117'
INC 88.33°
AZM 359.75°
TVD 7261.26'
Survey
MD 9212'
INC 89.07°
AZM 1.14°
TVD 7263.42'



4611u
C1: 72.2%
C2: 15.0%
C3: 9.2%
C4: 3.7%
263u
5484u
5410u
5089u
4861u
MIN/FT
0
3
UNITS
0
6000
PPM
0
600000
60
70
80
90
9300
10
20
30
40
50
60
70
80
90
9400
10
20
30
40
50
60
83
149
120
50
API
300
Problems with Gamma Tool
WT 9.7/ VIS 39
y, sft - firm,
-dk gy-brn, blky-
, mod fri, v calc,
ky bl cut, bri bl
CHK: lt-dk gy-brn, abnt off. wh - crm, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, occ pyr, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm sbrd-sbang, v calc, MRL: m-dk gy-brn, sbplty, sft - firm, sbrd-sbang, mod fri, v occ calc incl, stmg mky bl cut, bri bl rir
ft
7400
Survey
MD 9307'
INC 89.26°
AZM 0.34°
TVD 7264.81'
Survey
MD 9402'
INC 89.38°
AZM 1.49°
TVD 7265.93'



Problems with Gamma Tool

API 50 300

82

WT 9.7/ VIS 41

7100

CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring

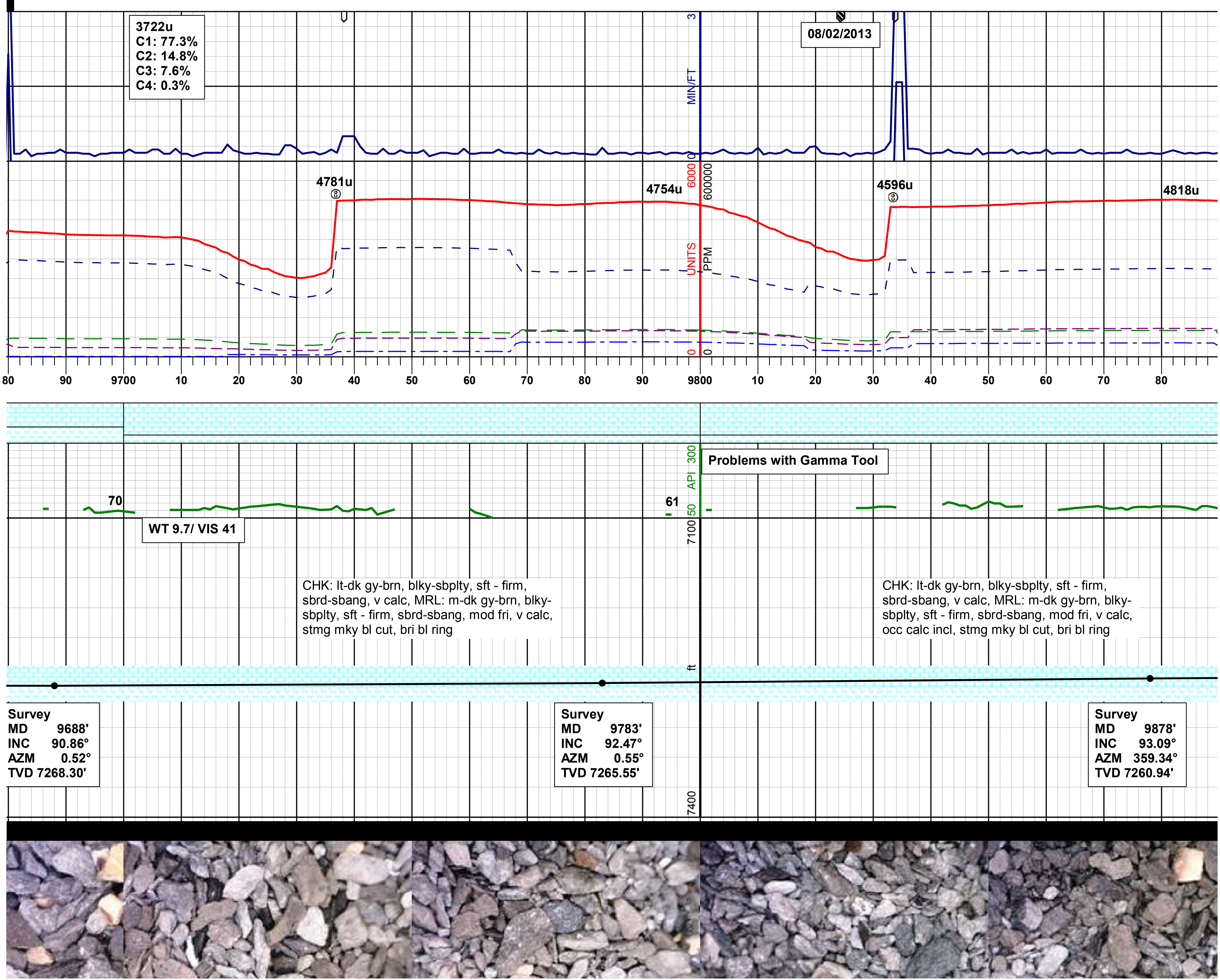
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring

ft

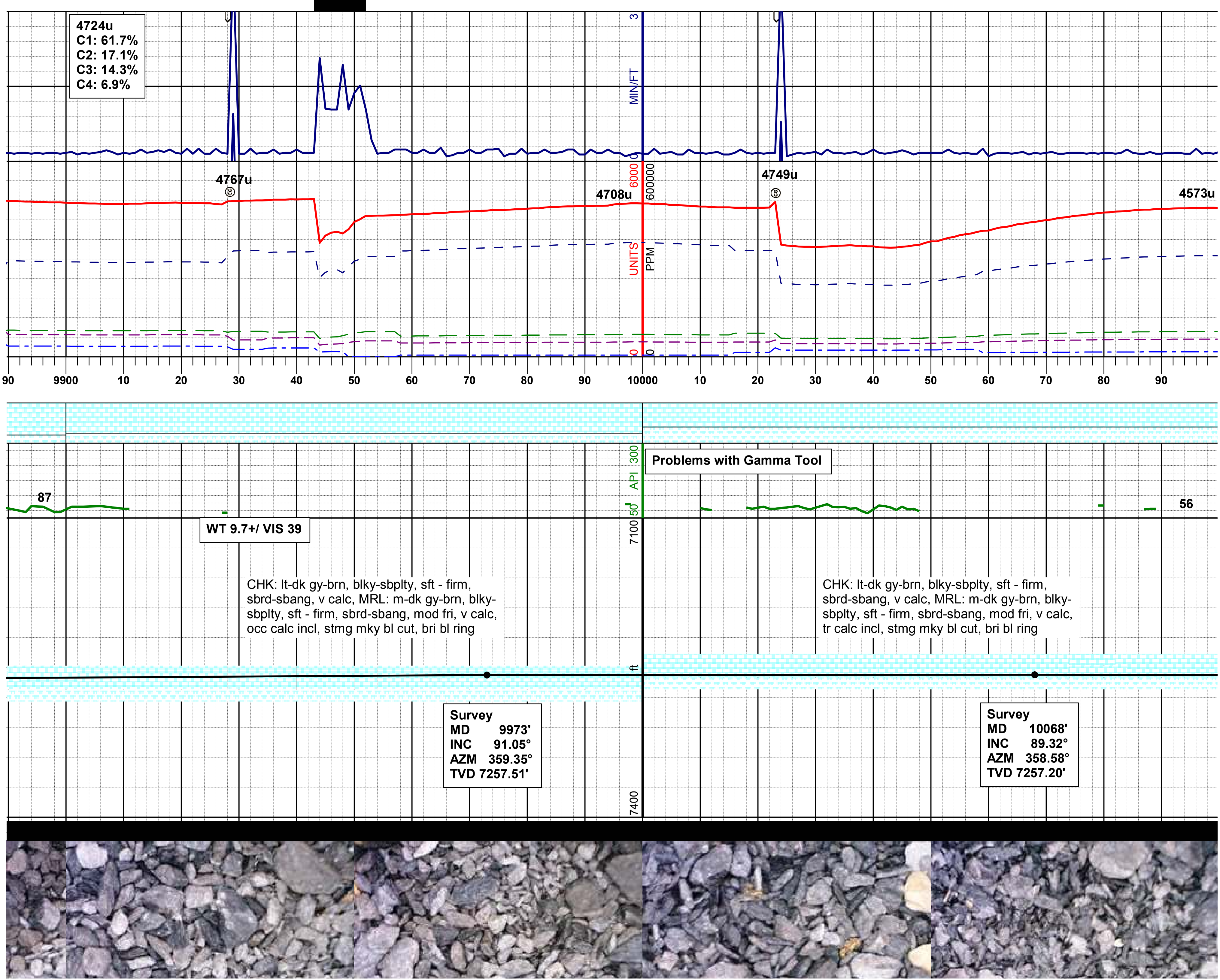
Survey	
MD	9497'
INC	89.75°
AZM	1.78°
TVD	7266.65'

Survey	
MD	9592'
INC	88.70°
AZM	0.66°
TVD	7267.94'

7400



3722u
C1: 77.3%
C2: 14.8%
C3: 7.6%
C4: 0.3%
08/02/2013
0 MIN/FT 3
0 UNITS 6000
0 PPM 600000
4781u
4754u
4596u
4818u
80
90
9700
10
20
30
40
50
60
70
80
90
9800
10
20
30
40
50
60
70
80
50 API 300
7100
ft
7400
70
61
WT 9.7/ VIS 41
Problems with Gamma Tool
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, strng mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, strng mky bl cut, bri bl ring
Survey
MD 9688'
INC 90.86°
AZM 0.52°
TVD 7268.30'
Survey
MD 9783'
INC 92.47°
AZM 0.55°
TVD 7265.55'
Survey
MD 9878'
INC 93.09°
AZM 359.34°
TVD 7260.94'


4724u
C1: 61.7%
C2: 17.1%
C3: 14.3%
C4: 6.9%
MIN/FT
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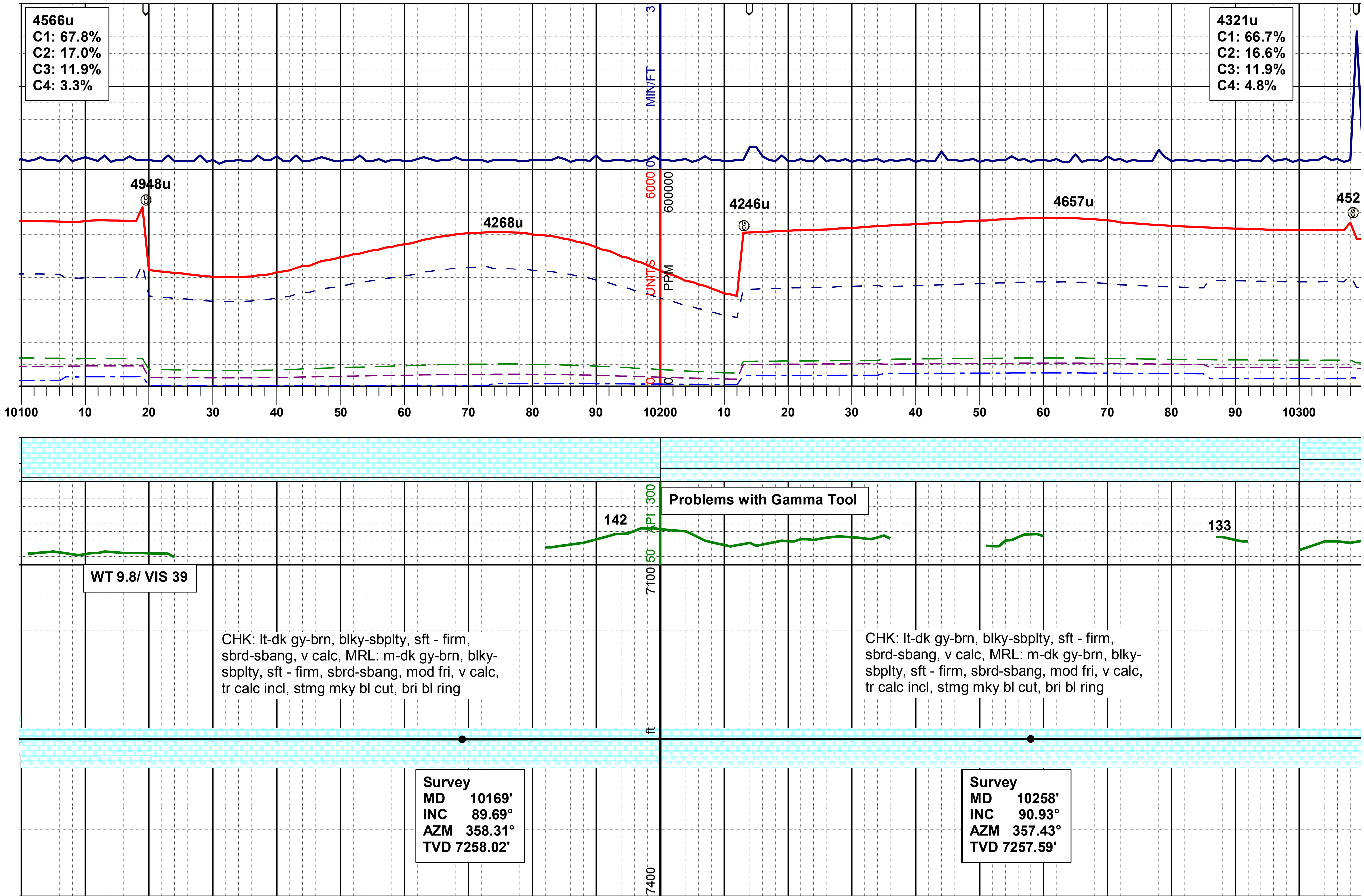
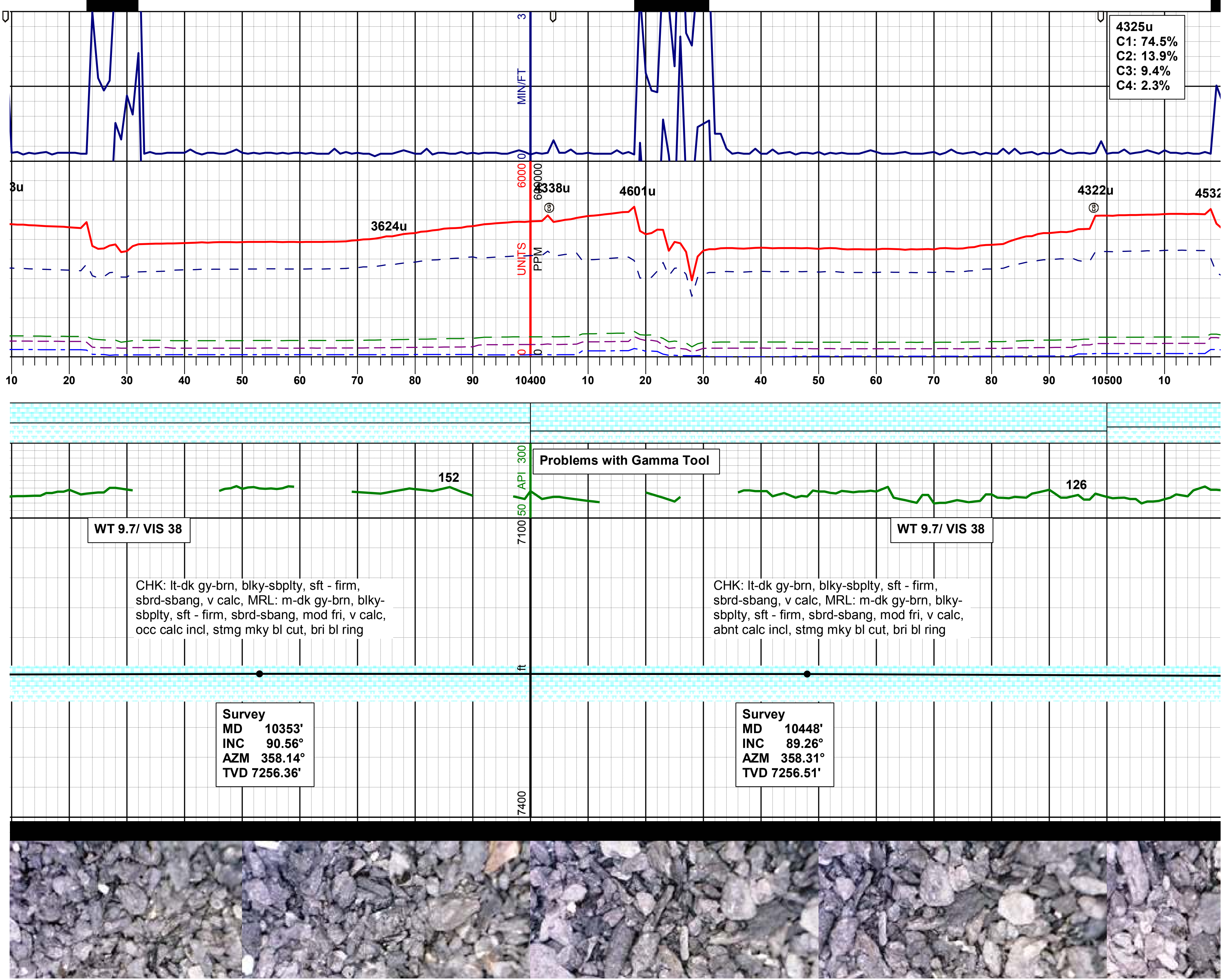
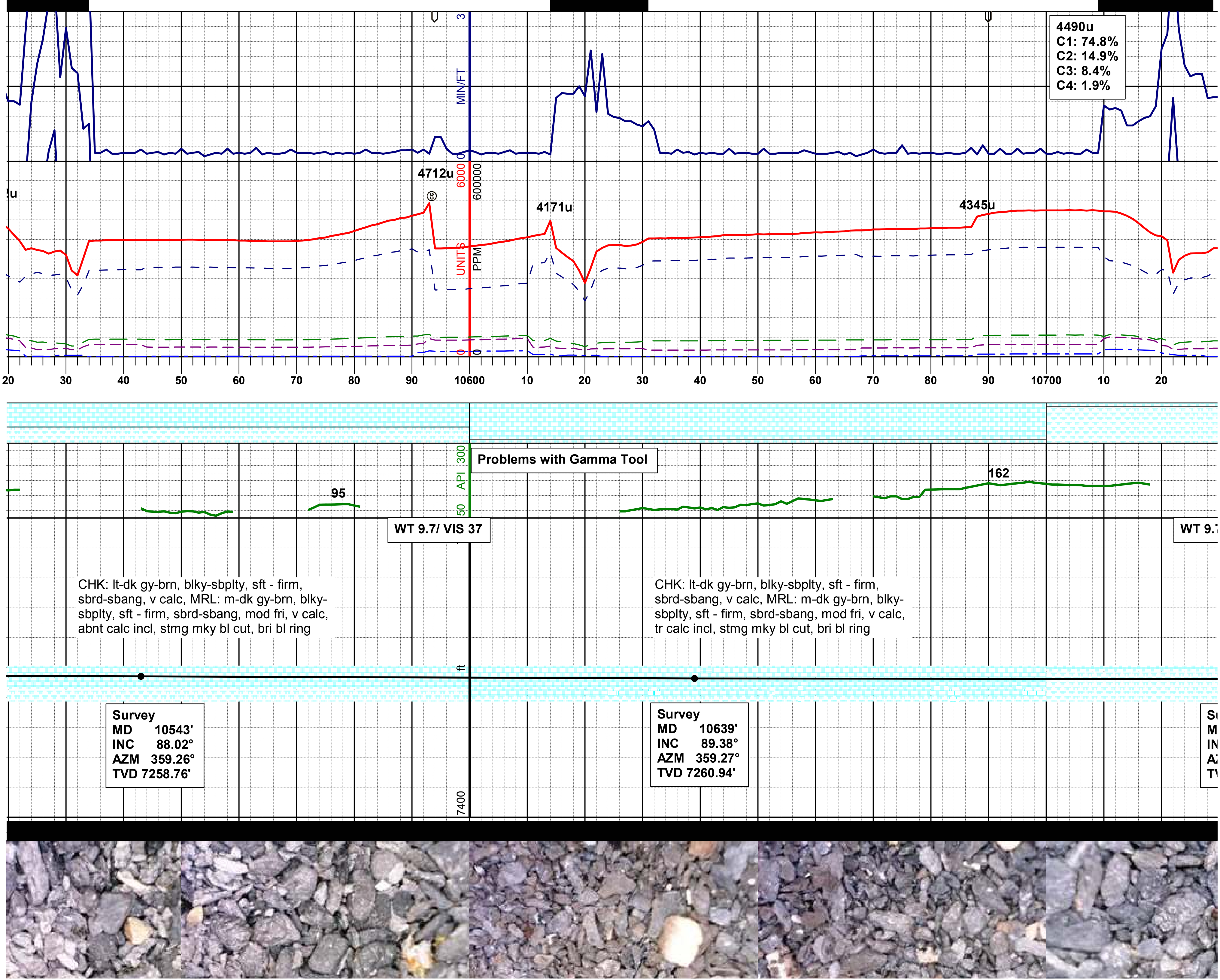
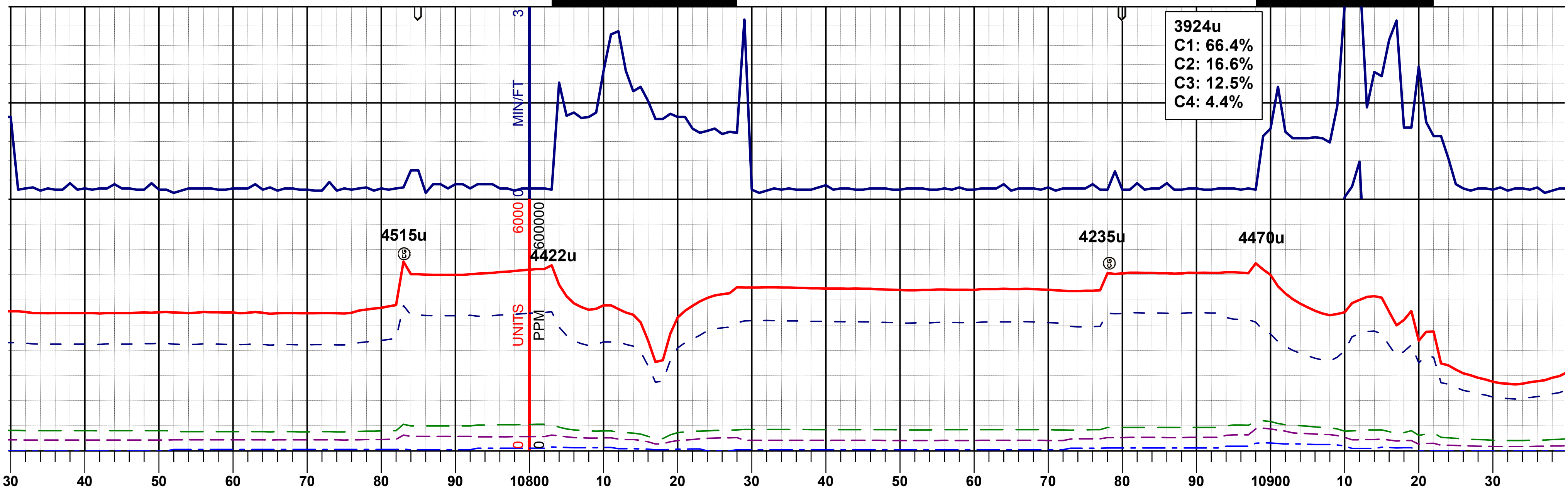
3
4767u
4708u
4749u
4573u
UNITS
0
6000
PPM
0
600000
90
9900
10
20
30
40
50
60
70
80
90
10000
10
20
30
40
50
60
70
80
90
Problems with Gamma Tool
API
50
300
87
56
WT 9.7+/ VIS 39
7100
ft
7400
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
Survey
MD 9973'
INC 91.05°
AZM 359.35°
TVD 7257.51'
Survey
MD 10068'
INC 89.32°
AZM 358.58°
TVD 7257.20'

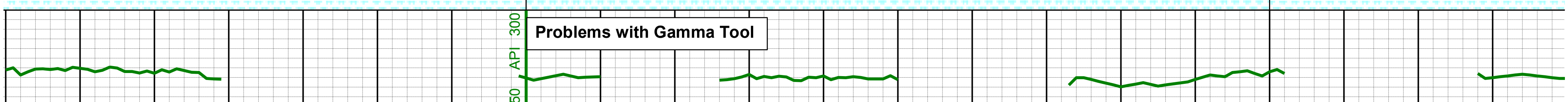

4566u
C1: 67.8%
C2: 17.0%
C3: 11.9%
C4: 3.3%
4321u
C1: 66.7%
C2: 16.6%
C3: 11.9%
C4: 4.8%
MIN/FT
0
3
4948u
4268u
4246u
4657u
452
UNITS
0
6000
PPM
0
600000
10100
10
20
30
40
50
60
70
80
90
10200
10
20
30
40
50
60
70
80
90
10300
142
133
50
API
300
Problems with Gamma Tool
WT 9.8/ VIS 39
7100
ft
7400
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
Survey
MD 10169'
INC 89.69°
AZM 358.31°
TVD 7258.02'
Survey
MD 10258'
INC 90.93°
AZM 357.43°
TVD 7257.59'

4325u
C1: 74.5%
C2: 13.9%
C3: 9.4%
C4: 2.3%
MIN/FT
0
3
UNITS
6000
PPM
600000
3624u
4338u
4601u
4322u
10
20
30
40
50
60
70
80
90
10400
10
20
30
40
50
60
70
80
90
10500
10
API
50
300
152
126
Problems with Gamma Tool
7100
ft
7400
WT 9.7/ VIS 38
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, stmg mky bl cut, bri bl ring
Survey
MD 10353'
INC 90.56°
AZM 358.14°
TVD 7256.36'
WT 9.7/ VIS 38
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, stmg mky bl cut, bri bl ring
Survey
MD 10448'
INC 89.26°
AZM 358.31°
TVD 7256.51'


4490u
C1: 74.8%
C2: 14.9%
C3: 8.4%
C4: 1.9%
MIN/FT
0
3
4712u
4171u
4345u
UNITS
0
6000
PPM
0
600000
20
30
40
50
60
70
80
90
10600
10
20
30
40
50
60
70
80
90
10700
10
20
Problems with Gamma Tool
50
API
300
95
162
WT 9.7/ VIS 37
WT 9.7
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, tr calc incl, stmg mky bl cut, bri bl ring
ft
7400
Survey
MD 10543'
INC 88.02°
AZM 359.26°
TVD 7258.76'
Survey
MD 10639'
INC 89.38°
AZM 359.27°
TVD 7260.94'





7/ VIS 38

WT 9.7/ VIS 39

7100

MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring

MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, abnt calc incl, CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, stmg mky bl cut, bri bl ring

MRL: m-
sbrd-sba
CHK: lt-c
sbrd-sba
stmg mk

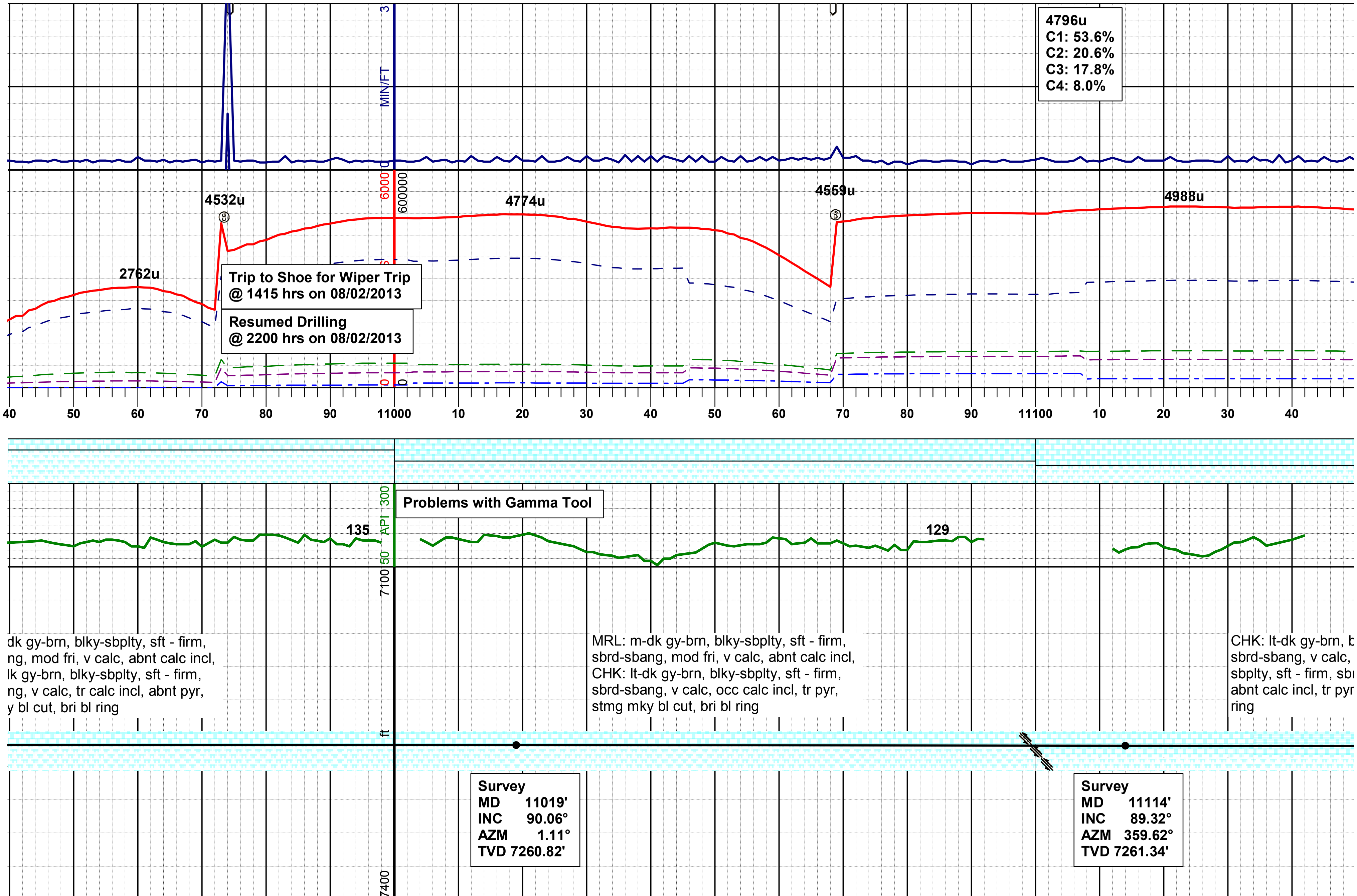
ft

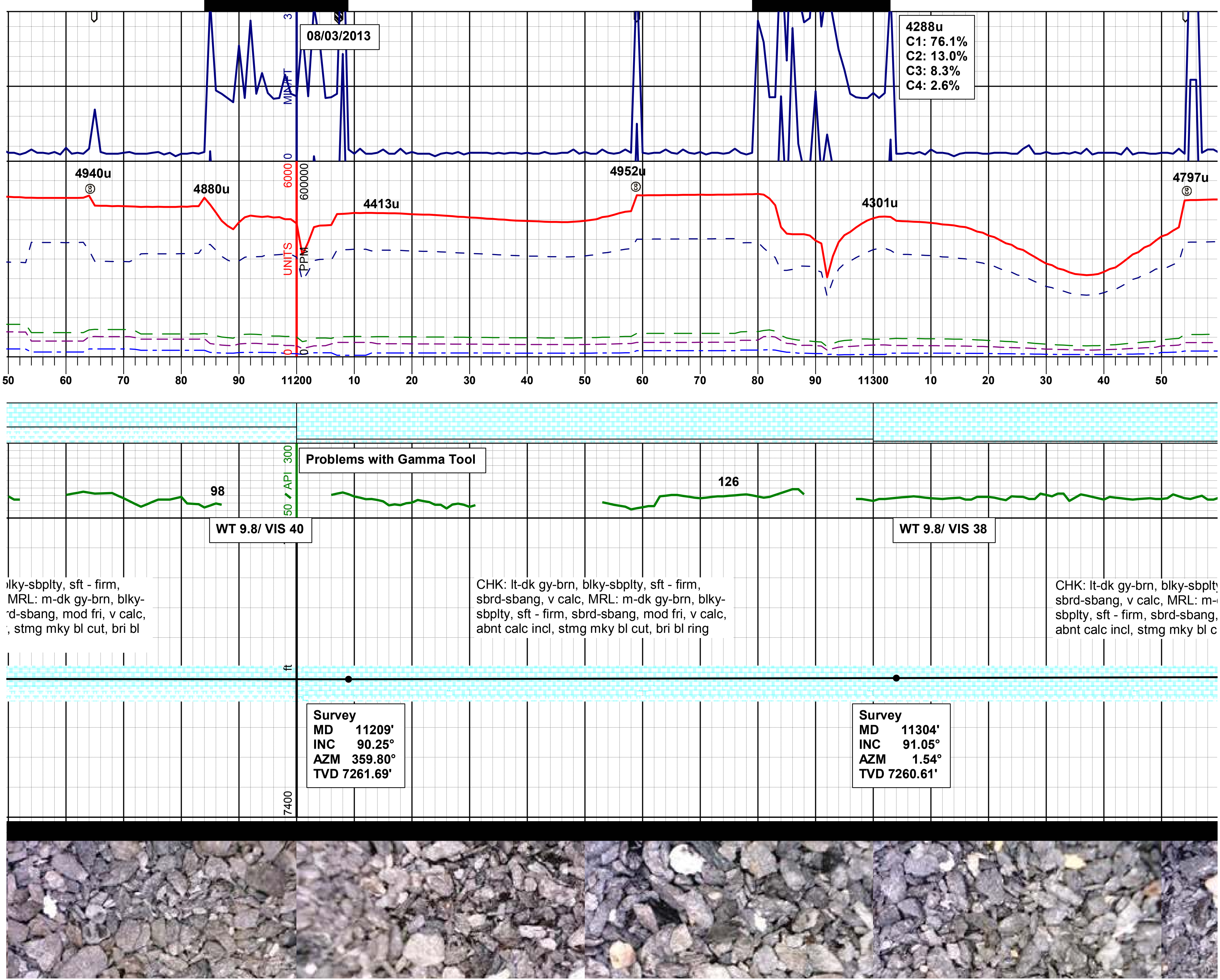
urvey
D 10734'
IC 89.81°
ZM 359.74°
VD 7261.53'

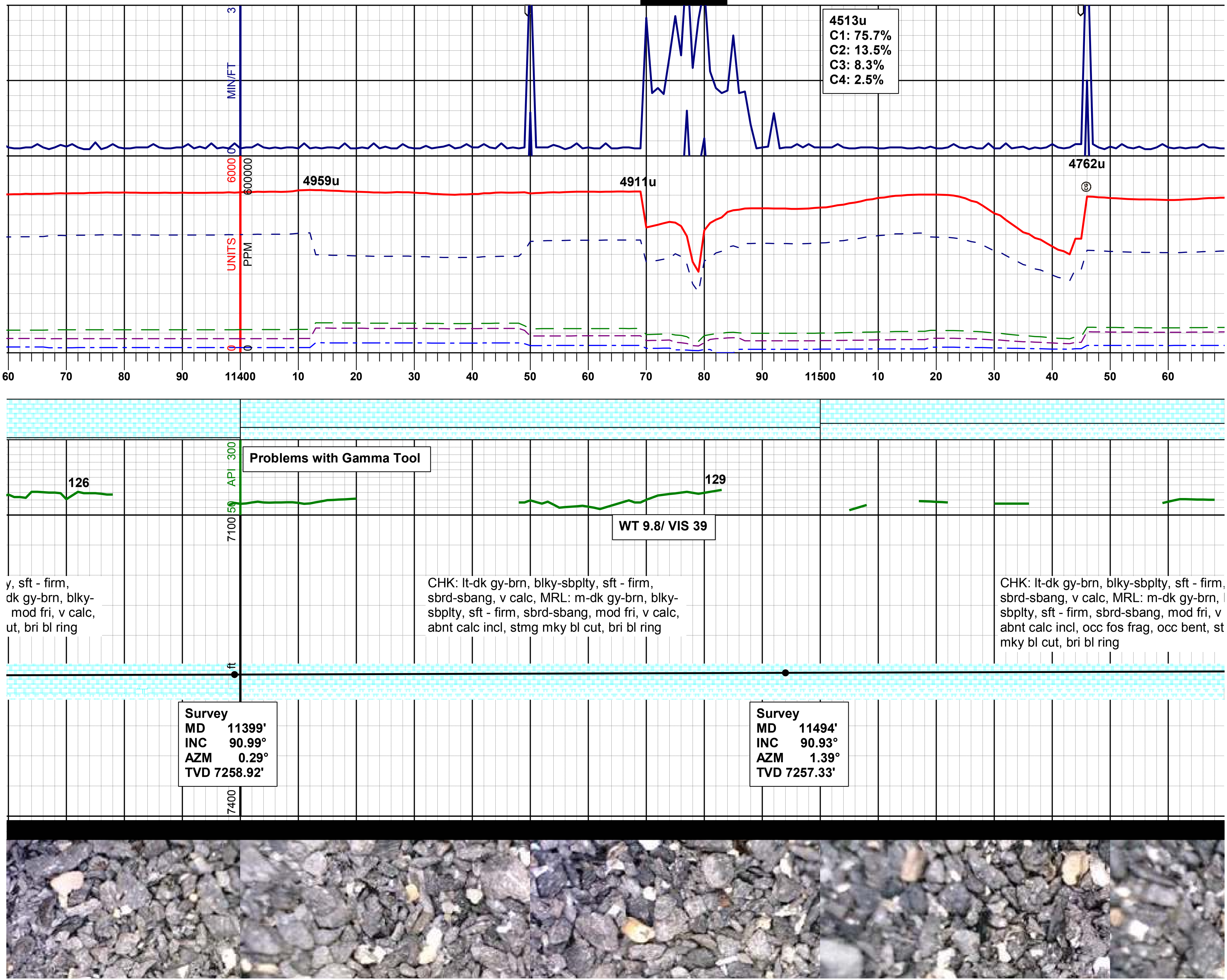
Survey
MD 10829'
INC 90.68°
AZM 0.79°
TVD 7261.12'

Survey
MD 10924'
INC 89.81°
AZM 2.16°
TVD 7260.71'

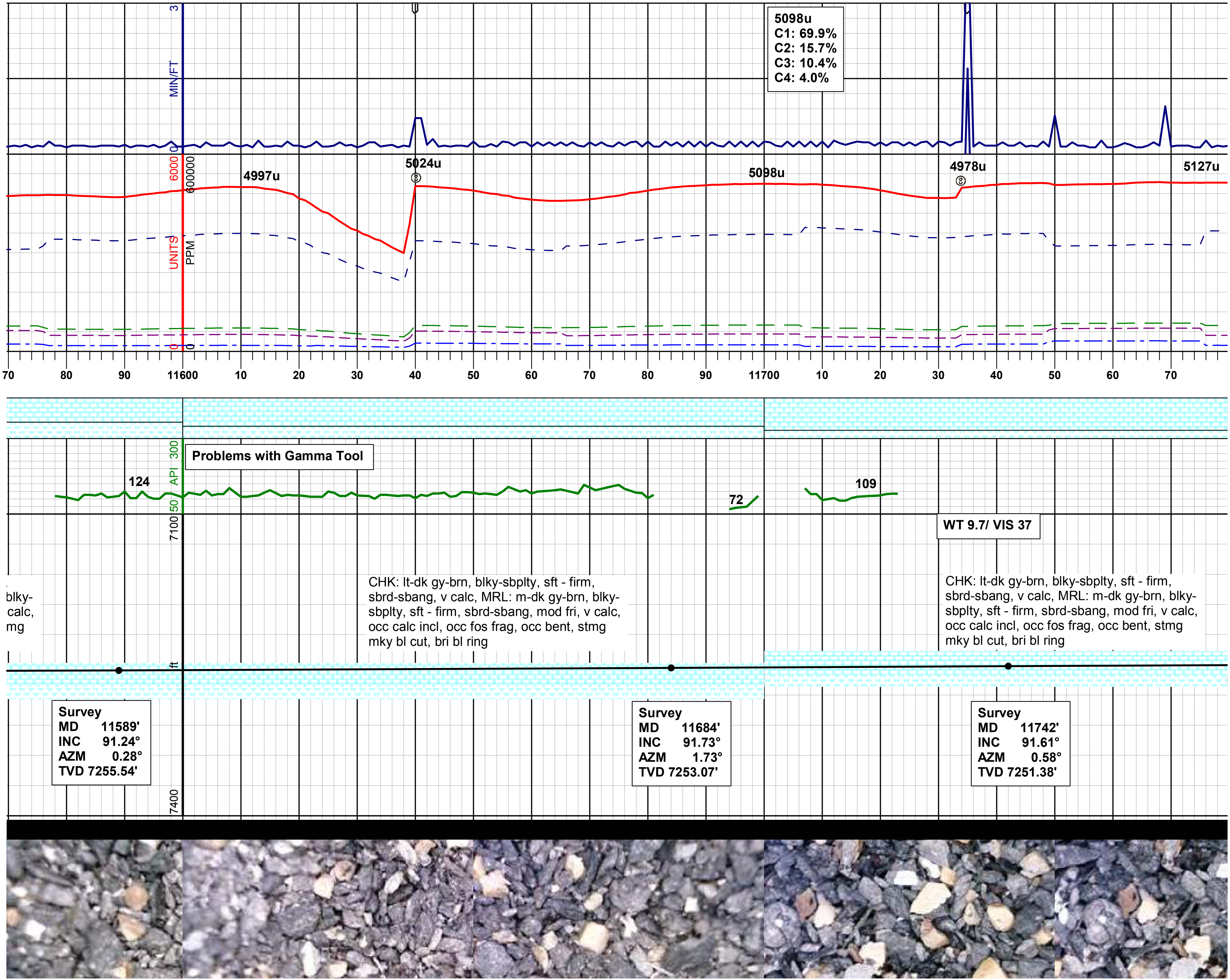
7400


MIN/FT
3
0
4796u
C1: 53.6%
C2: 20.6%
C3: 17.8%
C4: 8.0%
6000
600000
0
2762u
4532u
4774u
4559u
4988u
Trip to Shoe for Wiper Trip
@ 1415 hrs on 08/02/2013
Resumed Drilling
@ 2200 hrs on 08/02/2013
40
50
60
70
80
90
11000
10
20
30
40
50
60
70
80
90
11100
10
20
30
40
300
API
50
135
129
Problems with Gamma Tool
7100
dk gy-brn, blky-sbplty, sft - firm,
ng, mod fri, v calc, abnt calc incl,
lk gy-brn, blky-sbplty, sft - firm,
ng, v calc, tr calc incl, abnt pyr,
y bl cut, bri bl ring
MRL: m-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, mod fri, v calc, abnt calc incl,
CHK: lt-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, v calc, occ calc incl, tr pyr,
stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, b
sbrd-sbang, v calc,
sbplty, sft - firm, sbr
abnt calc incl, tr pyr
ring
ft
Survey
MD 11019'
INC 90.06°
AZM 1.11°
TVD 7260.82'
Survey
MD 11114'
INC 89.32°
AZM 359.62°
TVD 7261.34'
7400

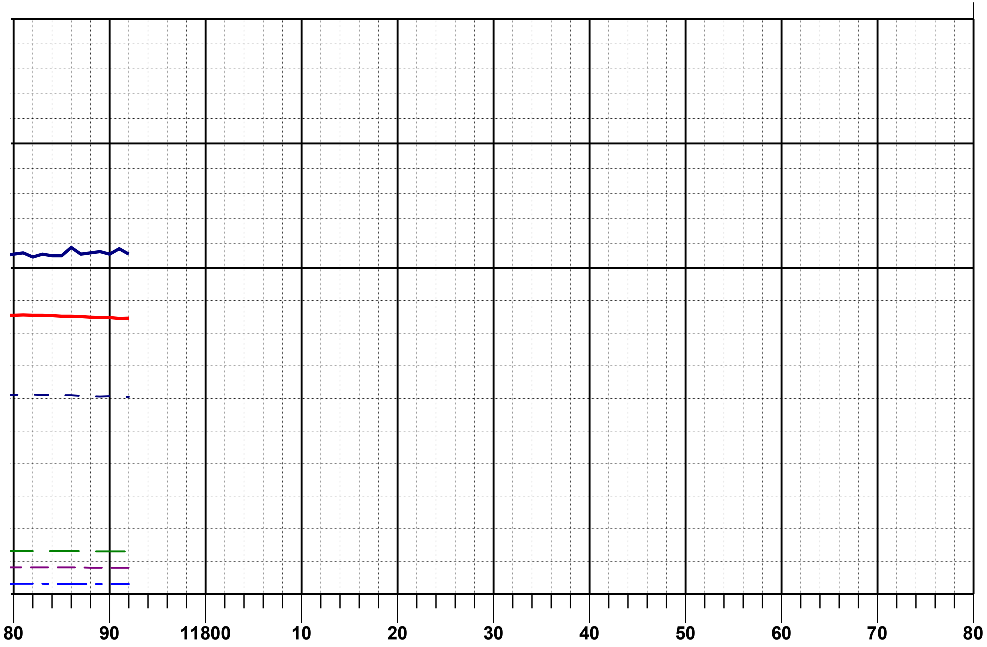

08/03/2013
4288u
C1: 76.1%
C2: 13.0%
C3: 8.3%
C4: 2.6%
MIN/FT
0
3
4940u
4880u
4413u
4952u
4301u
4797u
0
UNITS
6000
0
PPM
600000
50 60 70 80 90 11200 10 20 30 40 50 60 70 80 90 11300 10 20 30 40 50
50 API 300
Problems with Gamma Tool
98
126
WT 9.8/ VIS 40
WT 9.8/ VIS 38
blky-sbplty, sft - firm,
MRL: m-dk gy-brn, blky-
rd-sbang, mod fri, v calc,
, stmg mky bl cut, bri bl
CHK: lt-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-
sbplty, sft - firm, sbrd-sbang, mod fri, v calc,
abnt calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty
sbrd-sbang, v calc, MRL: m-
sbplty, sft - firm, sbrd-sbang,
abnt calc incl, stmg mky bl c
ft
7400
Survey
MD 11209'
INC 90.25°
AZM 359.80°
TVD 7261.69'
Survey
MD 11304'
INC 91.05°
AZM 1.54°
TVD 7260.61'



MIN/FT
0
3
UNITS
0
6000
PPM
0
600000
4959u
4911u
4762u
4513u
C1: 75.7%
C2: 13.5%
C3: 8.3%
C4: 2.5%
60
70
80
90
11400
10
20
30
40
50
60
70
80
90
11500
10
20
30
40
50
60
API
50
300
126
129
Problems with Gamma Tool
WT 9.8/ VIS 39
7100
7400
ft
y, sft - firm,
dk gy-brn, blky-
mod fri, v calc,
ut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-
sbplty, sft - firm, sbrd-sbang, mod fri, v calc,
abnt calc incl, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm,
sbrd-sbang, v calc, MRL: m-dk gy-brn,
sbplty, sft - firm, sbrd-sbang, mod fri, v
abnt calc incl, occ fos frag, occ bent, st
mky bl cut, bri bl ring
Survey
MD 11399'
INC 90.99°
AZM 0.29°
TVD 7258.92'
Survey
MD 11494'
INC 90.93°
AZM 1.39°
TVD 7257.33'



MIN/FT 0 3
UNITS 0 6000
PPM 0 600000
4997u
5024u
5098u
4978u
5127u
5098u
C1: 69.9%
C2: 15.7%
C3: 10.4%
C4: 4.0%
70 80 90 11600 10 20 30 40 50 60 70 80 90 11700 10 20 30 40 50 60 70
API 50 300
7100
Problems with Gamma Tool
124
72
109
WT 9.7/ VIS 37
blky-
calc,
mg
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, occ fos frag, occ bent, stmg mky bl cut, bri bl ring
CHK: lt-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, v calc, MRL: m-dk gy-brn, blky-sbplty, sft - firm, sbrd-sbang, mod fri, v calc, occ calc incl, occ fos frag, occ bent, stmg mky bl cut, bri bl ring
ft
Survey
MD 11589'
INC 91.24°
AZM 0.28°
TVD 7255.54'
Survey
MD 11684'
INC 91.73°
AZM 1.73°
TVD 7253.07'
Survey
MD 11742'
INC 91.61°
AZM 0.58°
TVD 7251.38'
7400



ANADARKO
USA FED 03N - 36HZ
WELL TD @ 11792' MD
ON 08/03/2013 @ 0500 HRS

THANK YOU FOR USING
COLUMBINE LOGGING INC

Projection to Bit
MD 11792'
INC 91.61°
AZM 0.59°
TVD 7249.98'