LOG created using LPLOT VH Version 3.0, July 01, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

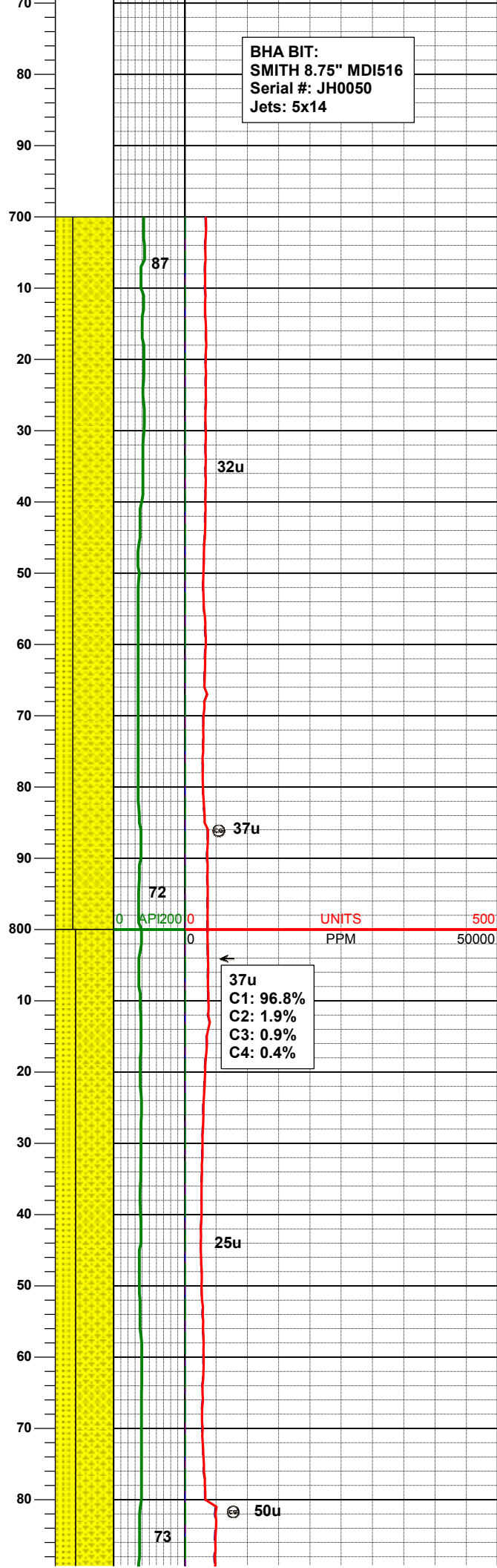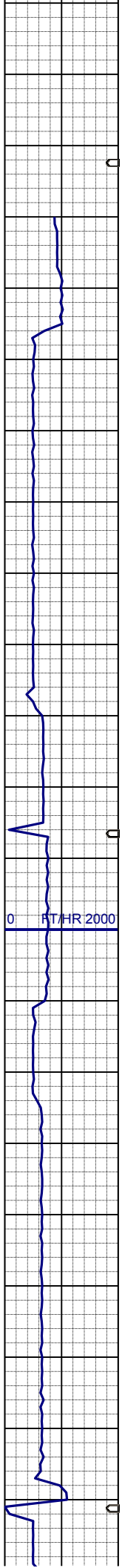|	
OPERATOR:	**NOBLE ENERGY INC.**
WELL:	**TIMBRO FEDERAL LD07-78HN**
LOCATION:	**SEC 7, T9N, R58W**
COUNTY:	**WELD**
STATE:	**COLORADO**
SPOT:	**255' FNL, 360' FWL**
ELEVATION:	**GR 4854', KB 4884'**
FIELD:	**WILDCAT**
SPUD DATE:	**06/25/2013**
TD DATE:	**06/27/2013**
DATES LOGGED:	**06/15/2013 - 06/27/2013**
DEPTHS LOGGED:	**700' MD - 5210' MD**
LOGGERS:	**ANDREA ZUIDEMA, MATTHEW HOPKINS**
DRILLING FLUID:	**LSND**
DRILLING RIG:	**H&P 326**
API:	**05-123-37002**
LOG TYPE:	**VERTICAL**
SCALE:	**1:240 (5 inches per 100 feet)**
REMARKS:	**WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.**

LITHOLOGIES

Sandstone	Shaly Sandstone	Silty Shale

ENGINEERING SYMBOLS

Connection	Connection Gas	Arrow	Midnight Depth

ROP	SLIDE / ROTATE	INTERPRETIVE LITHOLOGY	PICTURES	DEPTH (FEET)	CUTTINGS	GAMMA	GAS	C1	C2	C3	C4	LITHOLOGY DESCRIPTION
0 FT/HR 2000						0 API 200	0 UNITS 500	0 PPM 50000	0 PPM 50000	0 PPM 50000	0 PPM 50000	

COLUMBINE LOGGING INC. RIGGED UP ON 06/25/2013 MANNED 2-PERSON LOGGING WITH BLOODHOUND GAS CHROMATOGRAPH UNIT #0298 COLUMBINE BEGAN LOGGING ON 06/25/2013

Drilled out of Surface Casing @ 12:49 PM 06/26/2013

(Depth markers: 630, 40, 50, 60)
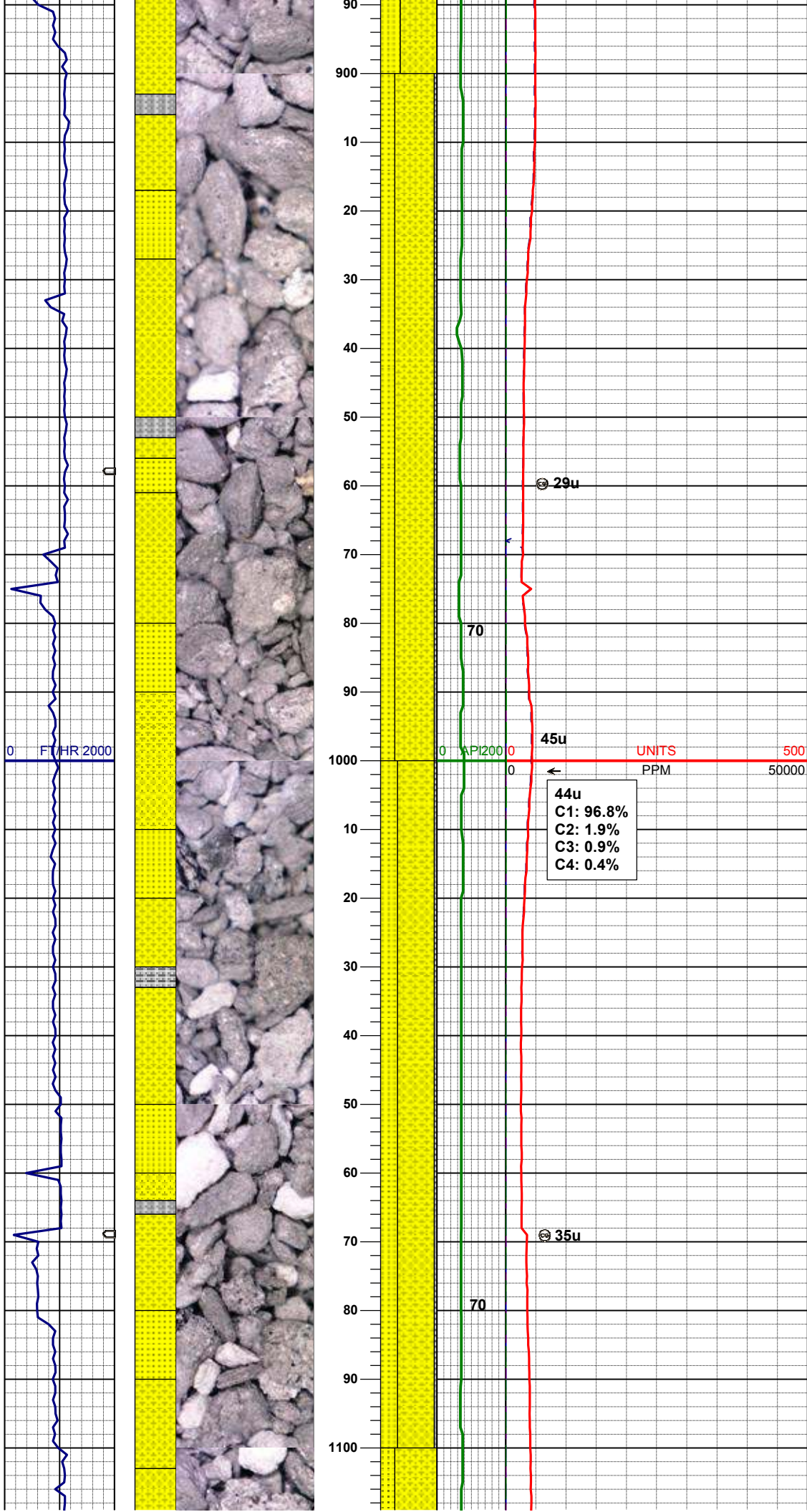
BHA BIT:
SMITH 8.75" MDI516
Serial #: JH0050
Jets: 5x14

87

32u

37u

72

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt

0 FT/HR 2000

0 API 200 0 UNITS 500

0 PPM 50000

37u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

25u

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt

50u

73

MD 926'
INC 0.3°
AZM 70.1°
TVD 926.00'

Depth scale (left track): 900, 10, 20, 30, 40, 50, 60, 70, 80, 90, 1000, 10, 20, 30, 40, 50, 60, 70, 80, 90, 1100

90

0 FT/HR 2000

0 API 200 0 UNITS 500
0 PPM 50000

29u

70

45u

44u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

35u

70

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky,
occ plty, arg-rthy mtx, noncalc

WT IN 8.70/ OUT 8.70
VIS IN 27/ OUT 27

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky,
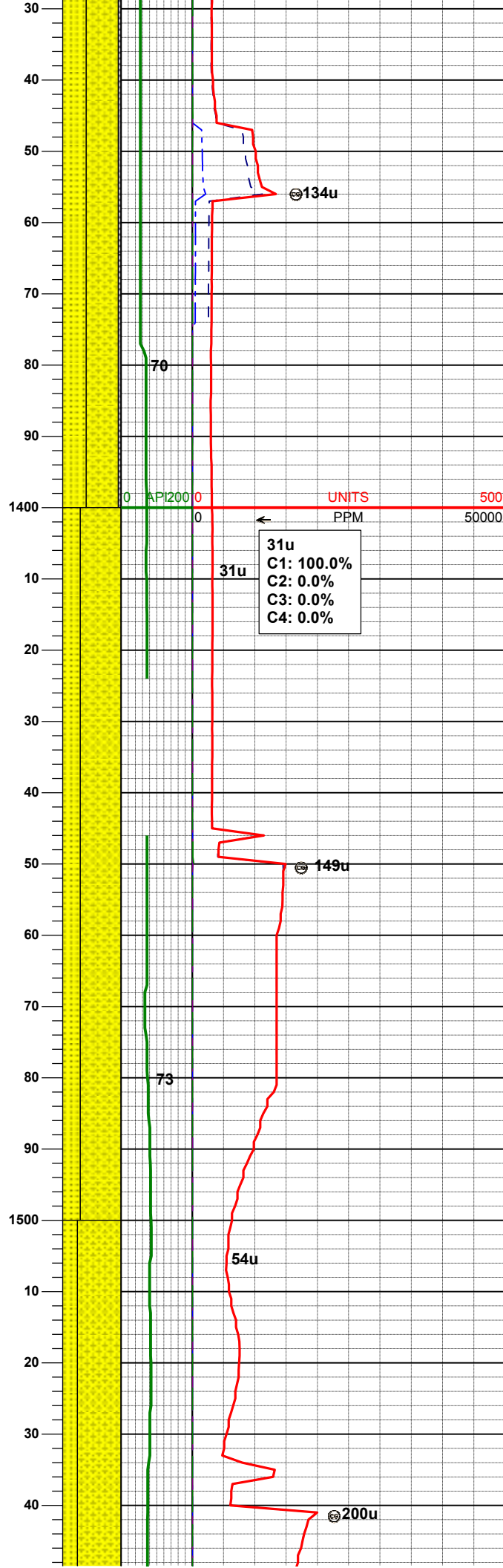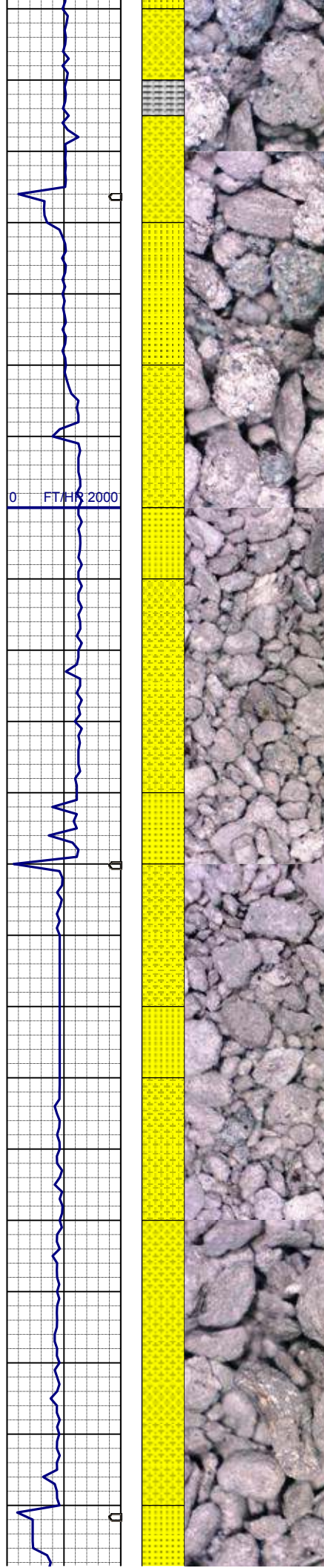occ plty, arg-rthy mtx, noncalc
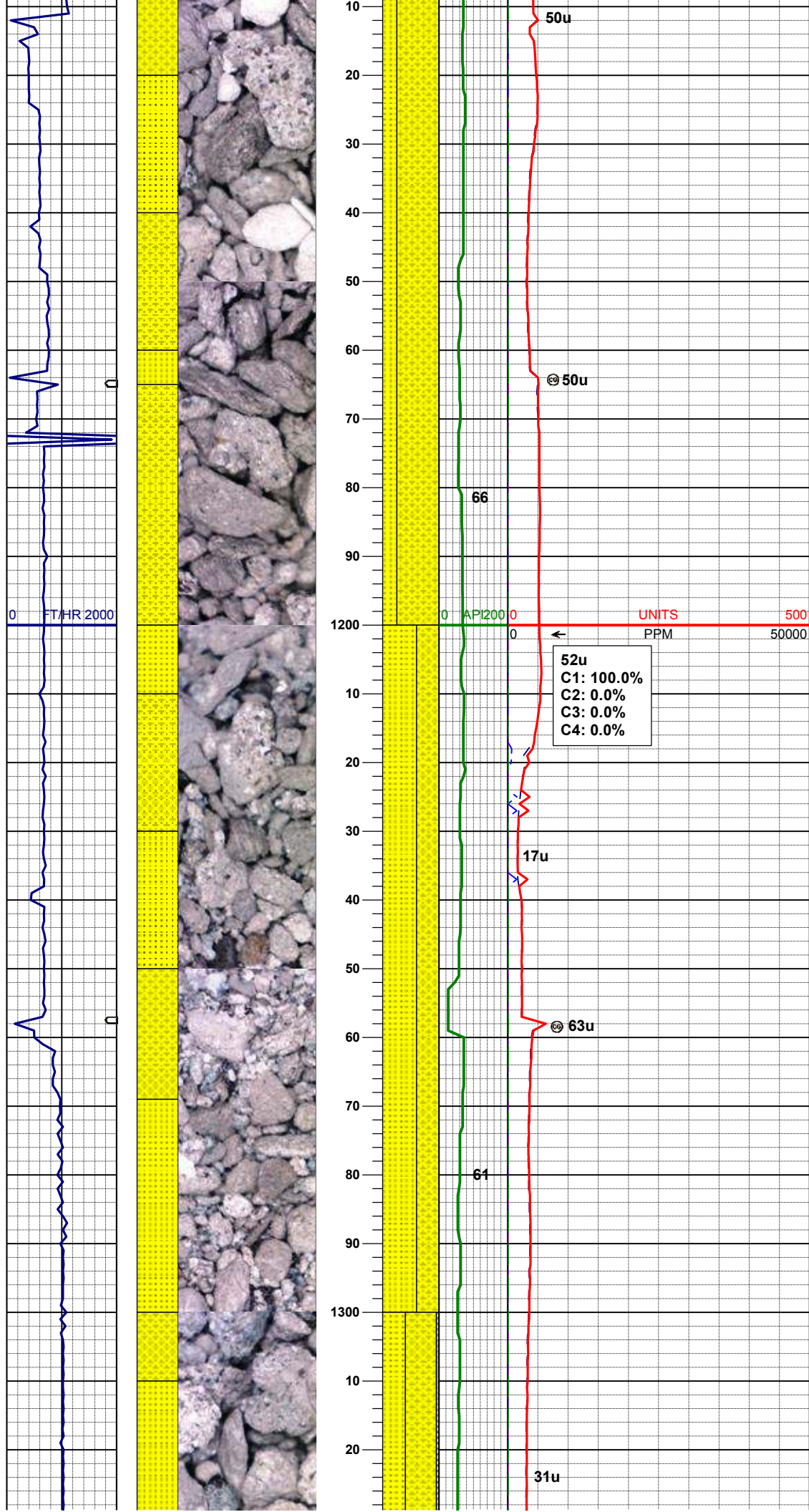
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, t sltysh

50u

⊚ **50u**

66

0	FT/HR	2000

0	API	200	0			UNITS	500
			0			PPM	50000

52u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

MD	1209'
INC	0.3°
AZM	13.8°
TVD	1208.99'

17u

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, tr glau, arg cmt
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

⊚ **63u**

61

WT IN 8.60/ OUT 8.60
VIS IN 27/ OUT 27

31u

This is a well log / mud log display consisting of multiple track columns.

Track 1 (ROP): scale 0 FT/HR 2000

Track 5 (Gamma / Gas): 0 API 200 | 0 UNITS 500 | 0 PPM 50000

Depth markers (ft): 30, 40, 50, 60, 70, 80, 90, 1400, 10, 20, 30, 40, 50, 60, 70, 80, 90, 1500, 10, 20, 30, 40

Gas show annotations:
- 134u
- 70
- 31u
- 31u
  C1: 100.0%
  C2: 0.0%
  C3: 0.0%
  C4: 0.0%
- 149u
- 73
- 54u
- 200u

Lithology descriptions:

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
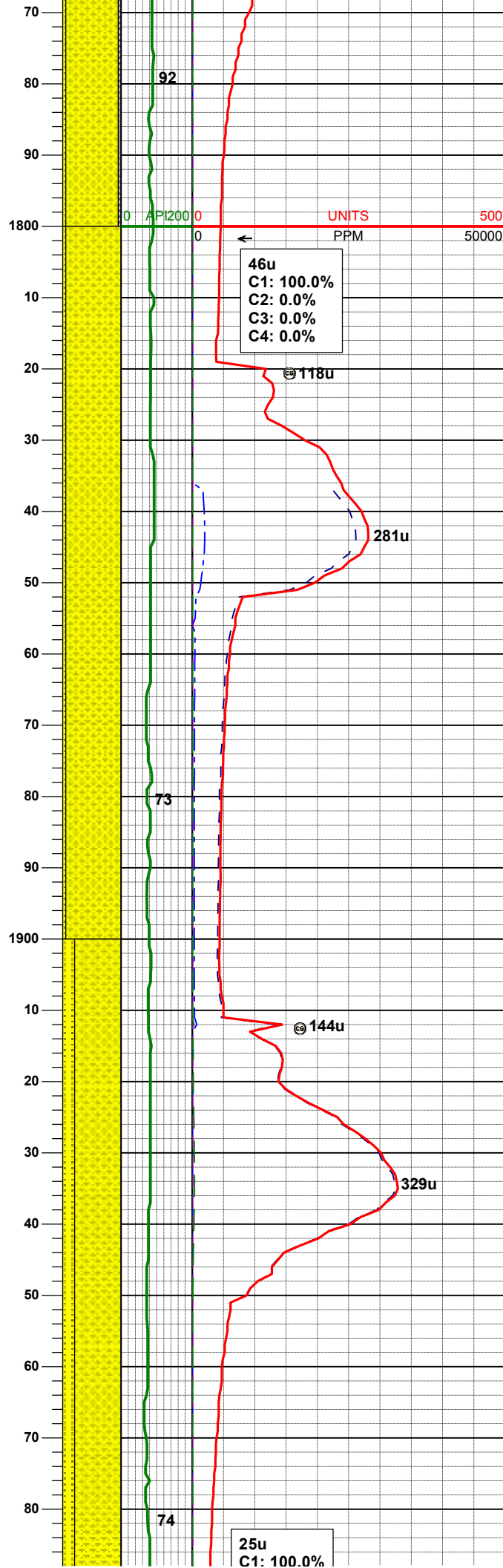SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog tr glau, arg cmt
SLTYSH: lt to dk gy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
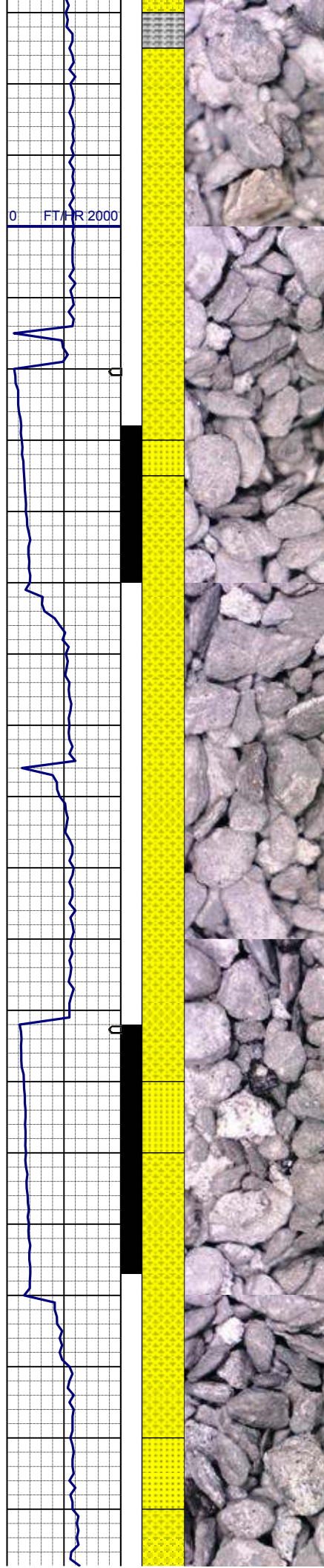SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog tr glau, arg cmt

MD	1493'
INC	0.3°
AZM	27.2°
TVD	1492.99'

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

This is a mud log / well log display.

Depth track (feet): 50, 60, 70, 80, 90, 1600, 10, 20, 30, 40, 50, 60, 70, 80, 90, 1700, 10, 20, 30, 40, 50, 60

Left track (ROP): 0 FT/HR 2000

Center scales: 0 API 200 | 0 UNITS 500 | 0 PPM 50000

Gas/chromatograph annotations:
61u
71
54u
C1: 98.4%
C2: 0.8%
C3: 0.0%
C4: 0.8%
41u
234u
47u
71
269u
126u
126u

Top lithology description:
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog tr glau, arg cmt

Right side descriptions:

WT IN 8.60/ OUT 8.60
VIS IN 27/ OUT 27

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
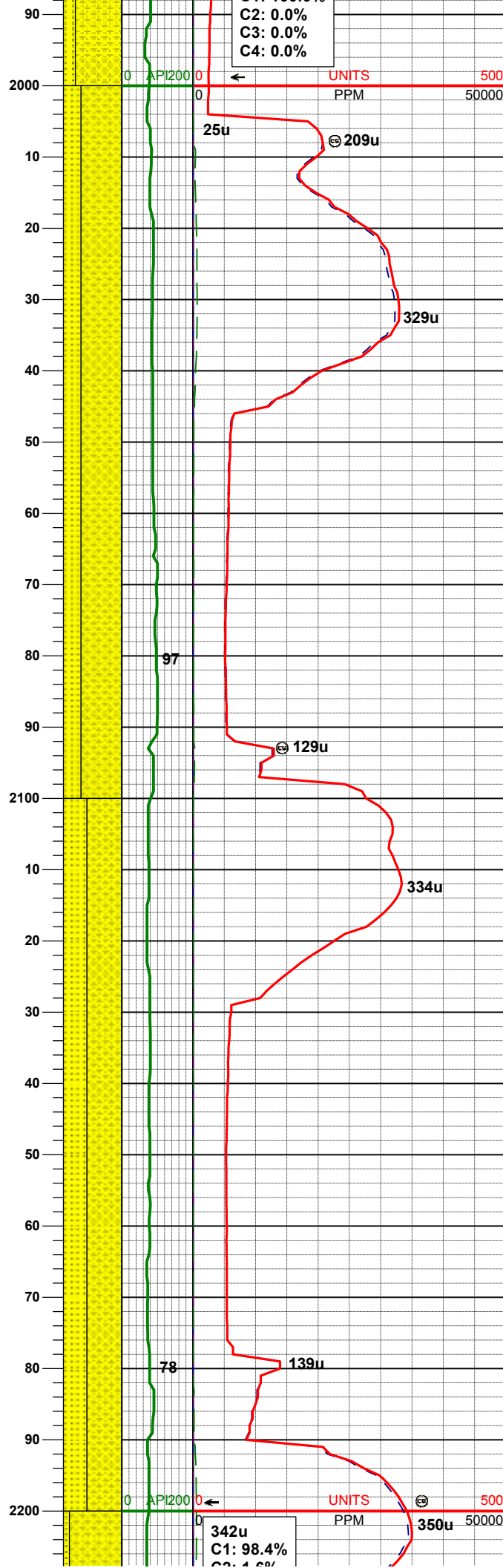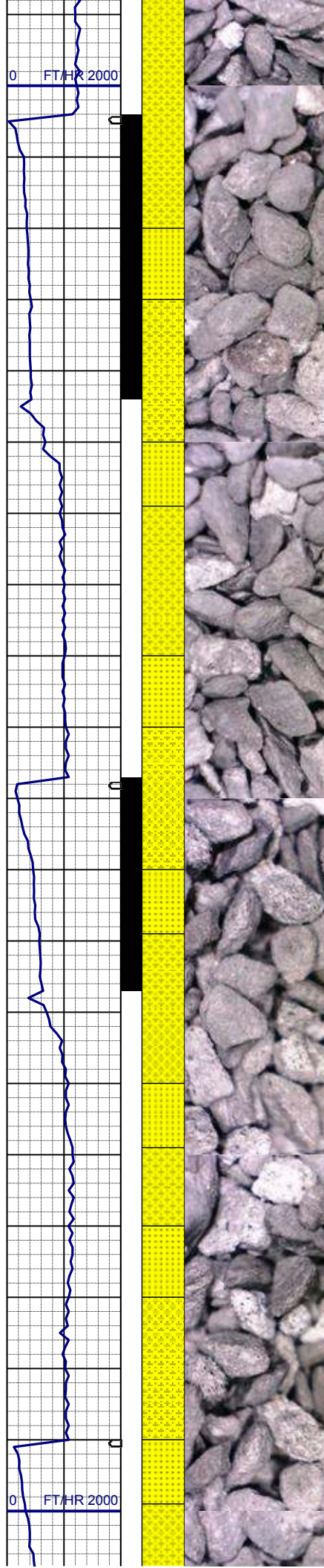
MD   1771'

INC 0.5°
AZM 7.5°
TVD 1770.98'

92

0 FT/HR 2000

0 API 200 0 UNITS 500
1800
0 PPM 50000

46u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

118u

281u

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr sltysh

MD 1863'
INC 2.4°
AZM 51.3°
TVD 1862.95'

73

144u

329u

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr sltysh

MD 1955'
INC 4.2°
AZM 63.2°
TVD 1954.79'

74

25u
C1: 100.0%

C2: 0.0%
C3: 0.0%
C4: 0.0%

0 FT/HR 2000

0 API 200

0 UNITS 500
PPM
0 50000

90

2000

25u

⊙ 209u

10

20

30

329u

40

50

60

70

80

97

90

⊙ 129u

2100

10

334u

20

30

40

50

60

70

80

78

139u

90

2200

0 FT/HR 2000

0 API 200

0 UNITS 500
PPM
50000

342u
C1: 98.4%

350u

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr sltysh

MD	2048'
INC	7.1°
AZM	56.3°
TVD	2047.33'

MD	2141'
INC	8.6°
AZM	65.5°
TVD	2139.46'

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
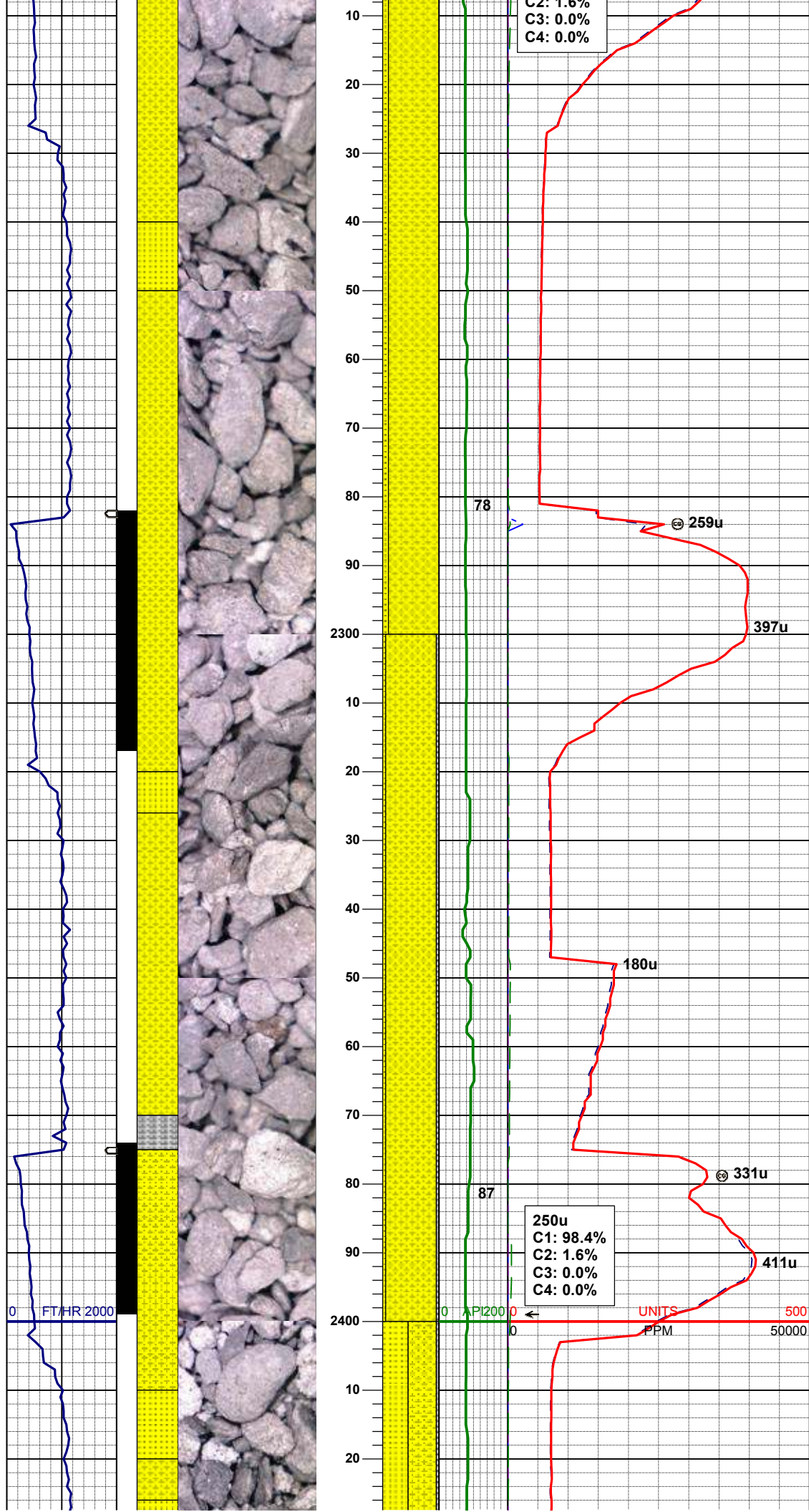mod srt, tr phlog, arg cmt, tr sltysh

C2: 1.6%
C3: 0.0%
C4: 0.0%

10

20

30

40

50

60

70

80

2300

10

20

30

40

50

60

70

80

90

2400

10

20

78

259u

397u

180u

331u

87

250u
C1: 98.4%
C2: 1.6%
C3: 0.0%
C4: 0.0%

411u

0   FT/HR 2000

0   API 200   0 ←   UNITS   500
0   PPM   50000
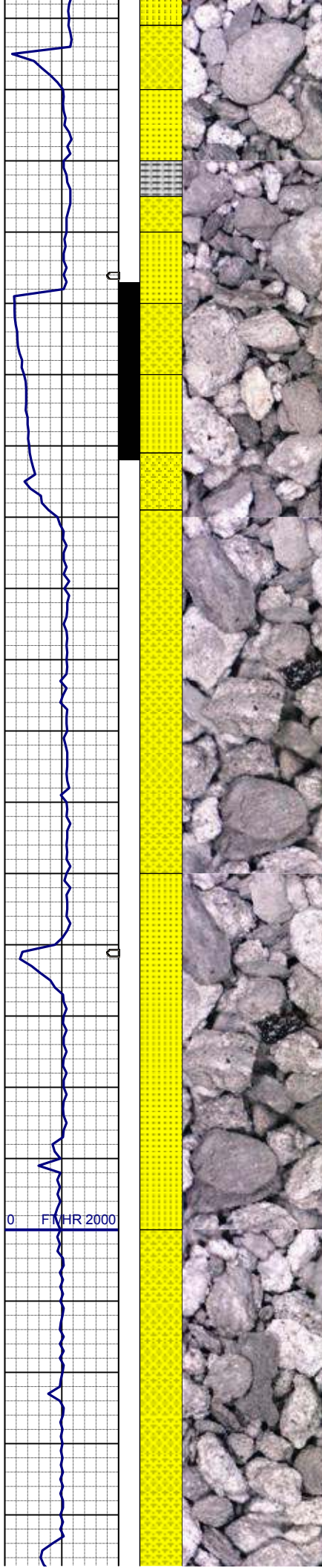
MD   2233'
INC   10.6°
AZM   62.2°
TVD   2230.17'

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr sltysh

MD   2325'
INC   12.1°
AZM   56.7°
TVD   2320.37'

SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky,
occ plty, arg-rthy mtx, noncalc

MD   2418'
INC   12.9°
AZM   58.3°
TVD   2411.17'

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt
SLTYSH: lt gy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
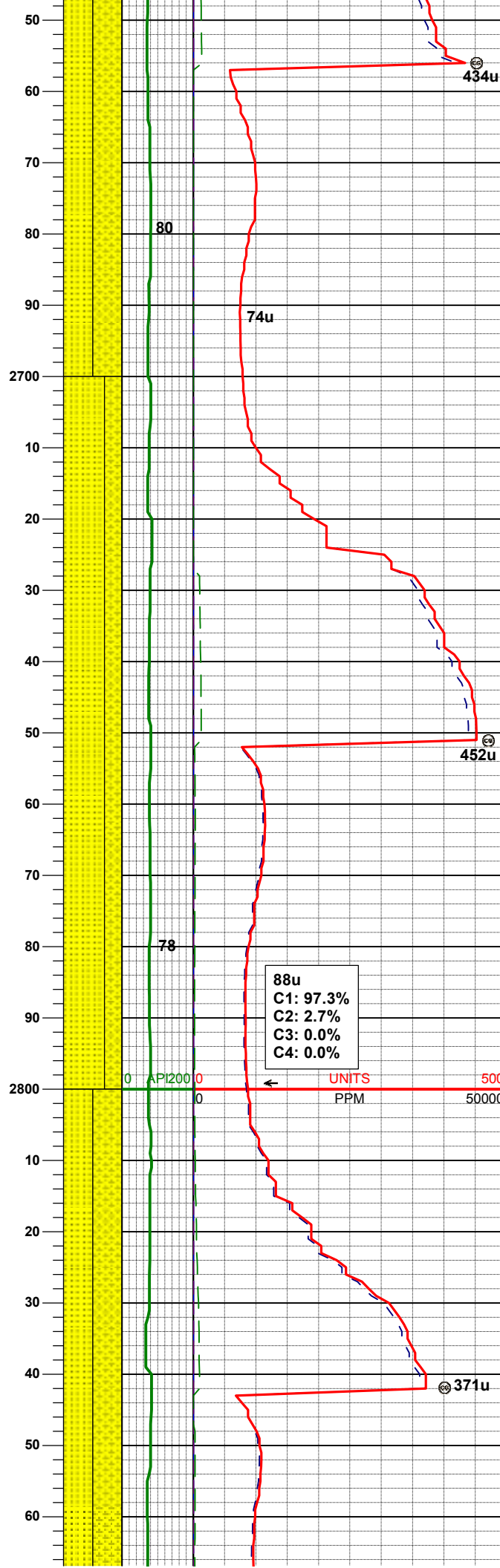
WT IN 8.75/ OUT 8.75
VIS IN 28/ OUT 28

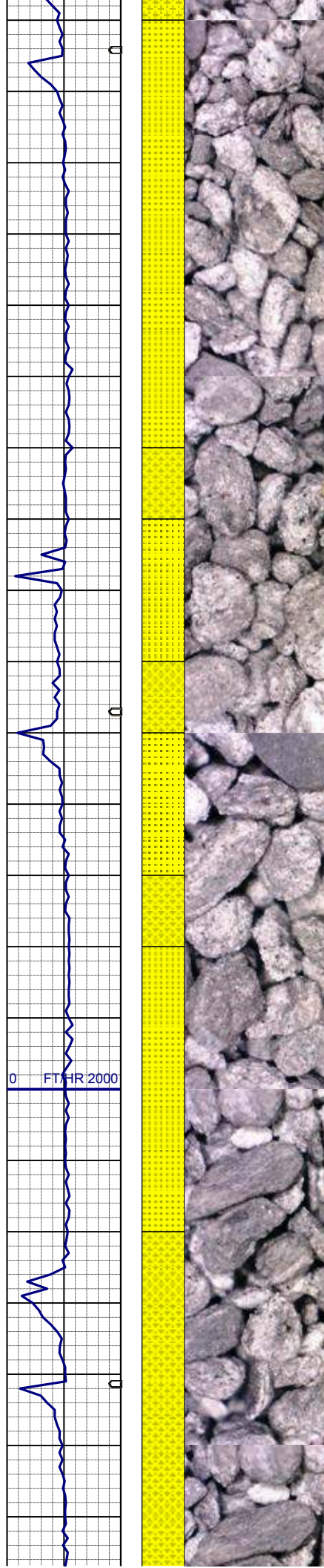| MD	2511'
INC	14.3°
AZM	58.3°
TVD	2501.56'

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt

69u
C1: 96.7%
C2: 3.3%
C3: 0.0%
C4: 0.0%

MD	2605'
INC	14.5°
AZM	59.0°
TVD	2592.60'

SHYSS: lt gy - wh, s&p, f gr, sbang -

147u
434u
53u
82
447u
77

0 FT/HR 2000
0 API 200   0   UNITS   500
0   PPM   50000

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt

434u

80

74u

MD	2698'
INC	14.9°
AZM	59.3°
TVD	2682.56'

2700

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

452u

78

88u
C1: 97.3%
C2: 2.7%
C3: 0.0%
C4: 0.0%

MD	2792'
INC	14.5°
AZM	57.8°
TVD	2773.48'

0   FT/HR 2000

0   API 200   0   UNITS   500
                  0   PPM   50000

2800

371u

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

Depth track (center):
70
80
90
2900
10
20
30
40
50
60
70
80
90
3000
10
20
30
40
50
60
70
80

Left track (ROP):
0 FT/HR 2000

Gas curve labels:
72
105u
463u
21u
88
85u
C1: 97.8%
C2: 2.2%
C3: 0.0%
C4: 0.0%

0 API200 0 UNITS 1000
0 PPM 100000

GAS SCALE CHANGE

521u
120u
74

Right lithology descriptions:

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh

Survey boxes:

MD	2885'
INC	14.3°
AZM	57.8°
TVD	2863.56'

MD	2980'
INC	13.4°
AZM	56.0°
TVD	2955.80'

MD	3075'
INC	11.8°
AZM	54.4°
TVD	3048.51'

SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh

MD	3170'
INC	9.4°
AZM	54.2°
TVD	3141.88'

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr sltysh
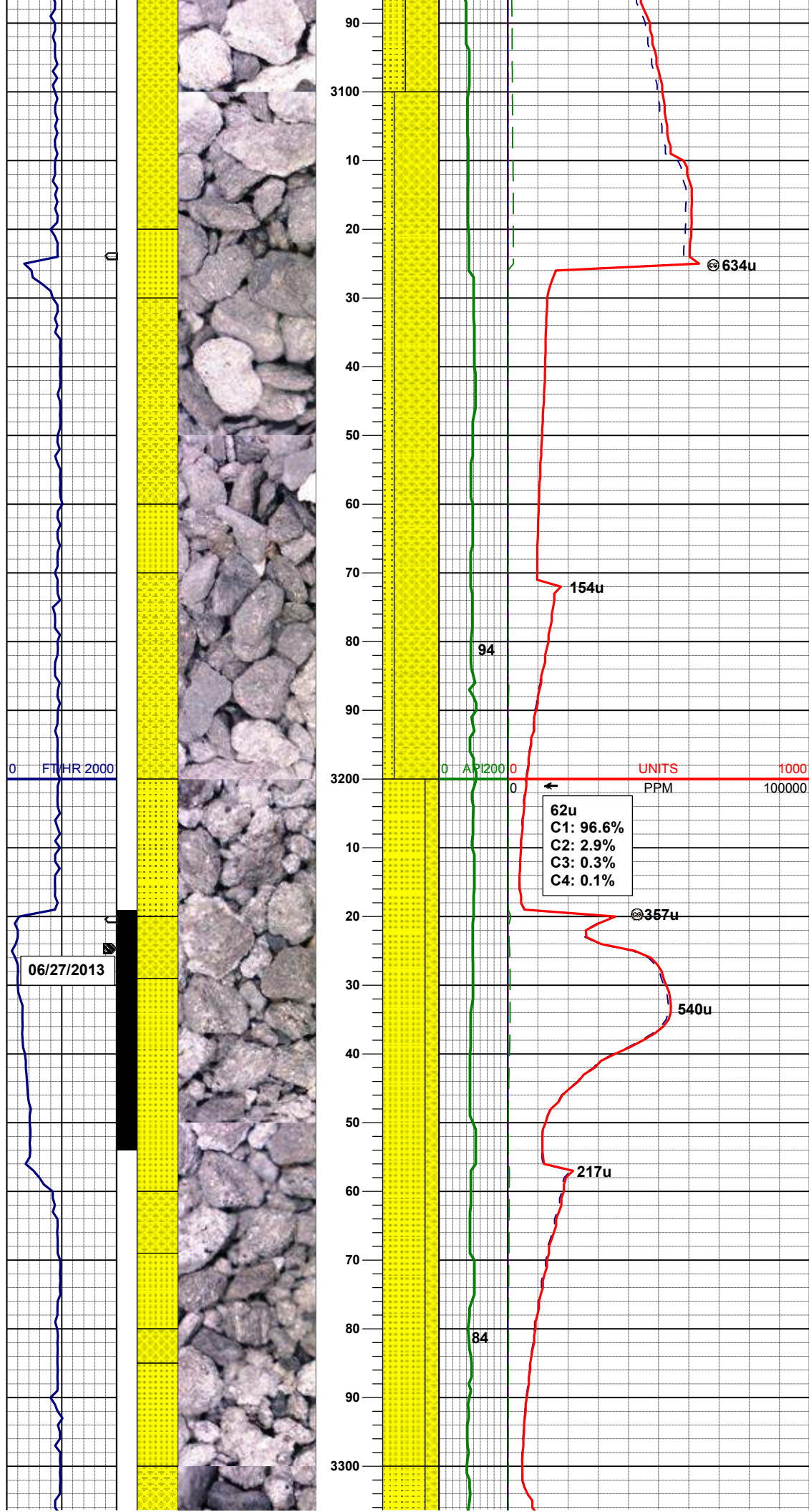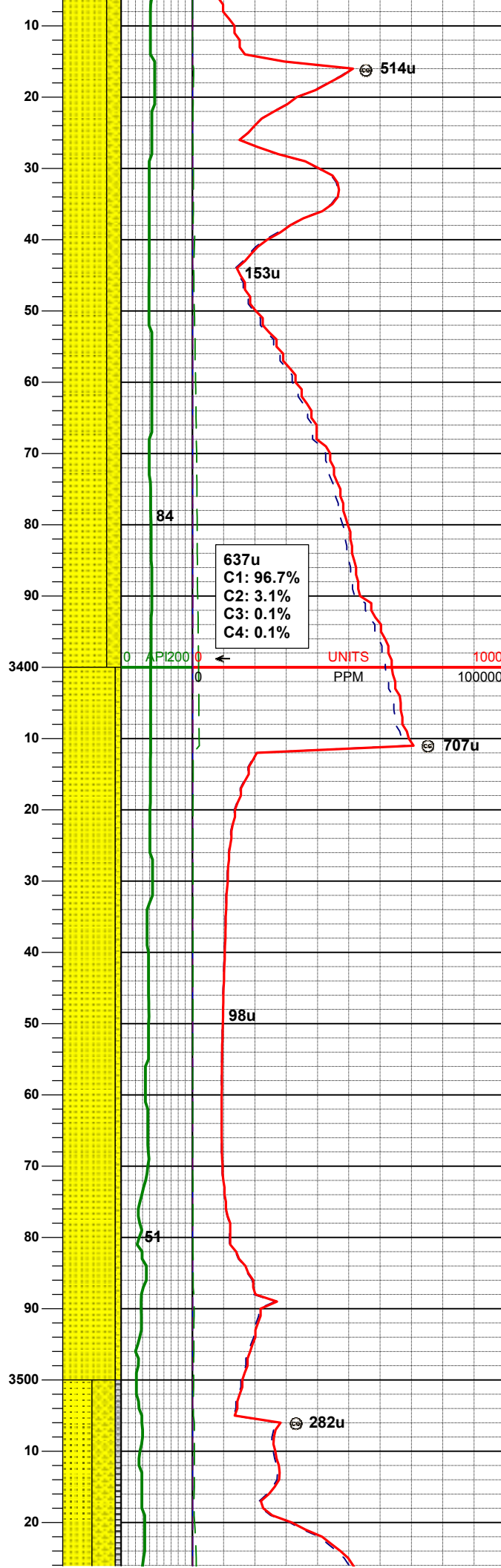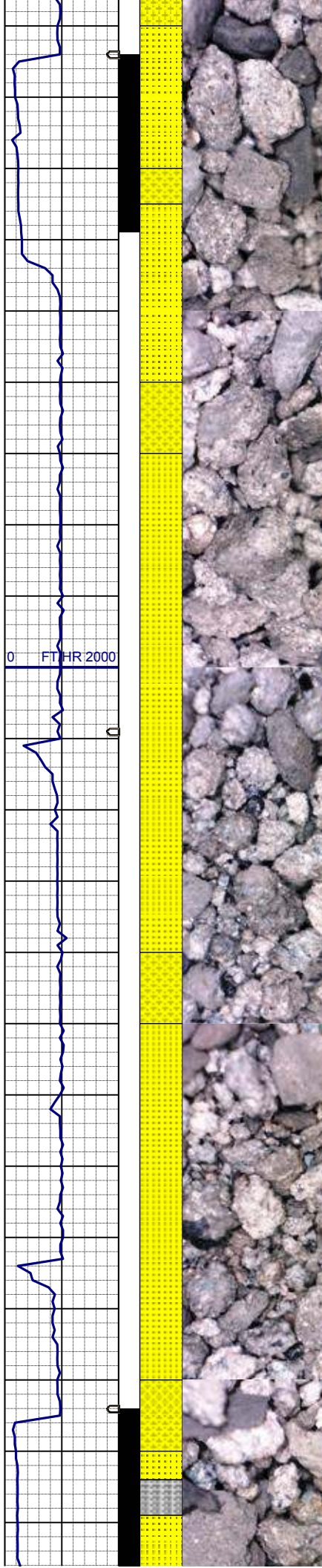SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

MD	3265'
INC	10.8°
AZM	52.7°
TVD	3235.41'

62u
C1: 96.6%
C2: 2.9%
C3: 0.3%
C4: 0.1%

634u
154u
94
357u
540u
217u
84

0   FT/HR 2000
06/27/2013

0   API 200 0   UNITS   1000
0   PPM   100000

3100
10
20
30
40
50
60
70
80
90
3200
10
20
30
40
50
60
70
80
90
3300

90

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr glau
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

MD	3360'
INC	12.7°
AZM	52.5°
TVD	3328.41'

514u

153u

84

637u
C1: 96.7%
C2: 3.1%
C3: 0.1%
C4: 0.1%

0   FT/HR 2000

0   API 200   0   ←   UNITS   1000
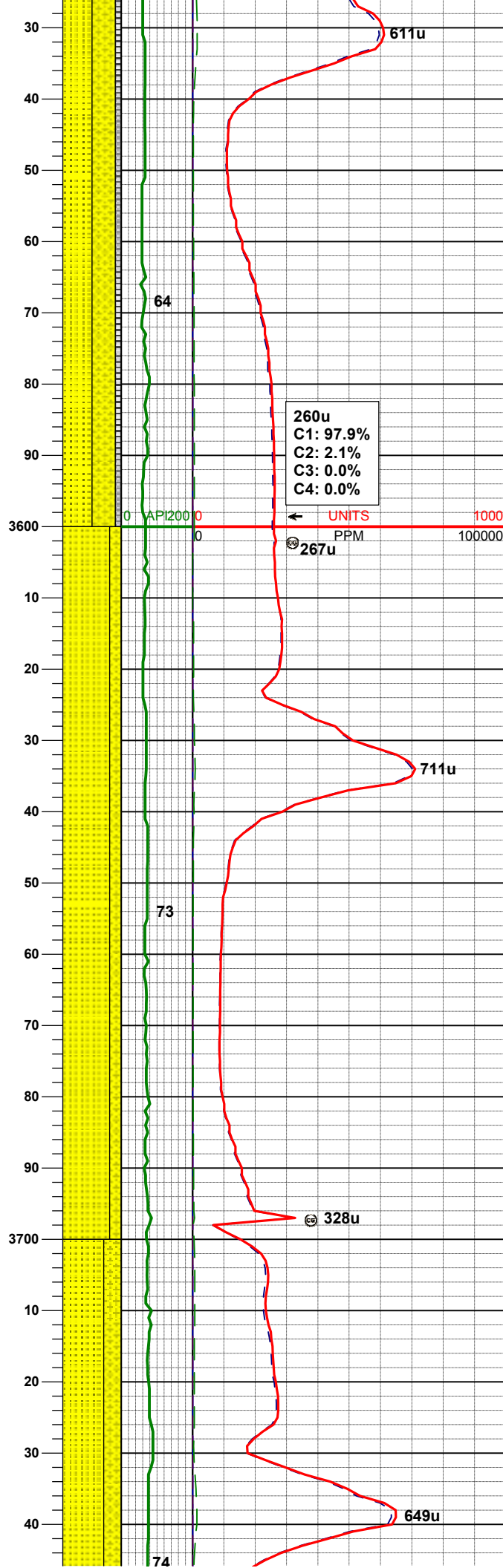0   PPM   100000

707u

98u

SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr glau
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

MD	3455'
INC	13.6°
AZM	52.5°
TVD	3420.92'

51

282u

SS: wh-trnsl, s&p, modf gr, sbang -
sbrndd, mod srt, tr phlog, abnt glau,
arg cmt
SHYSS: lt-m gy, s&p, f gr, sbang -
sbrndd, mod srt, abnt glau, arg cmt
SLTYSH: dkgy, sft - mod firm, sbblky,
occ plty, arg-rthy mtx, noncalc

MD	3550'
INC	11.5°
AZM	56.0°
TVD	3513.65'

611u

64

260u
C1: 97.9%
C2: 2.1%
C3: 0.0%
C4: 0.0%

0   FT/HR 2000

0   API 200   0   UNITS   1000
0   PPM   100000
3600
267u

10

20

30

711u

73

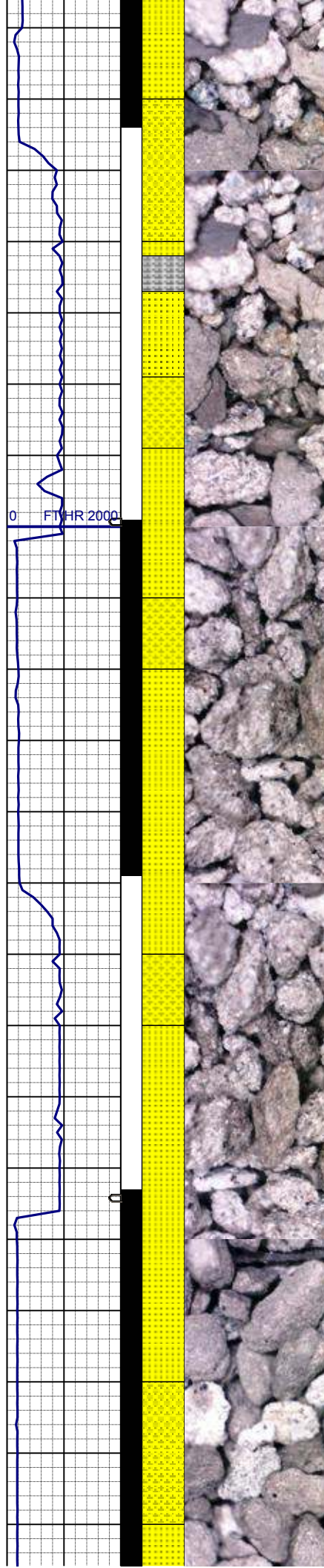| MD	3645'
INC	9.2°
AZM	56.7°
TVD	3607.09'

SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr glau
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt, tr
sltysh

40

50

60

70

80

90

328u

3700

10

20

30

649u

74

SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, occ glau

30

40

50

60

70

80

90

3600

50

60

70

80

90 · ☺ **240u**

0 FT/HR 2000

3800 — 0 API200 0 UNITS 1000

← 0 PPM 100000

197u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

10

20

430u

30

89

40

MD	3834'
INC	3.3°
AZM	43.7°
TVD	3794.81'

50

SLTYSH: dkgy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, occ glau

60

70

80

☺ **465u**

90

818u

3900

10

20

78

30

107u

MD	3929'
INC	1.5°
AZM	27.5°
TVD	3889.72'

40

50

SLTYSH: m-dkgy, sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt, tr ss

60

268u

GAS SCALE CHANGE

683u

0 API 200

0 UNITS 2000
0 PPM 200000

858u
C1: 95.1%
C2: 2.6%
C3: 1.3%
C4: 1.0%

84

FT/HR 2000

70
80
90
4000
10
20
30
40
50
60
70
80
90
4100
10
20
30
40
50
60
70
80

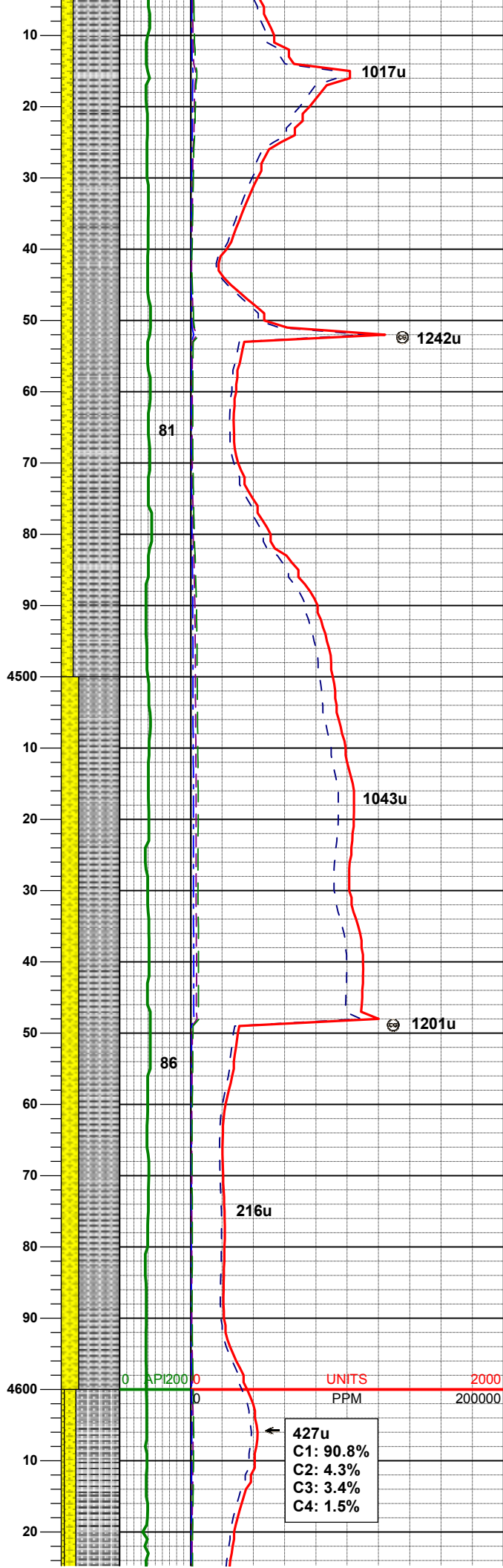| MD	4024'
INC	1.2°
AZM	186.6°
TVD	3984.71'

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt, tr ss

WT IN 8.80/ OUT 8.80
VIS IN 27/ OUT 27

1067u

79

MD	4119'
INC	1.0°
AZM	159.2°
TVD	4079.70'

219u

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt, tr ss

685u

516u

C1: 95.2%
C2: 2.8%
C3: 1.4%
C4: 0.6%

0 FT/HR 2000

4200

90

10

79

0 API200

0 UNITS 2000
0 PPM 200000

1011u

20

30

40

50

60

1126u

70

80

77

90

4300

10

1046u

20

30

40

50

972u

60

80

70

80

287u
C1: 91.4%
C2: 4.4%
C3: 2.8%
C4: 1.4%

90

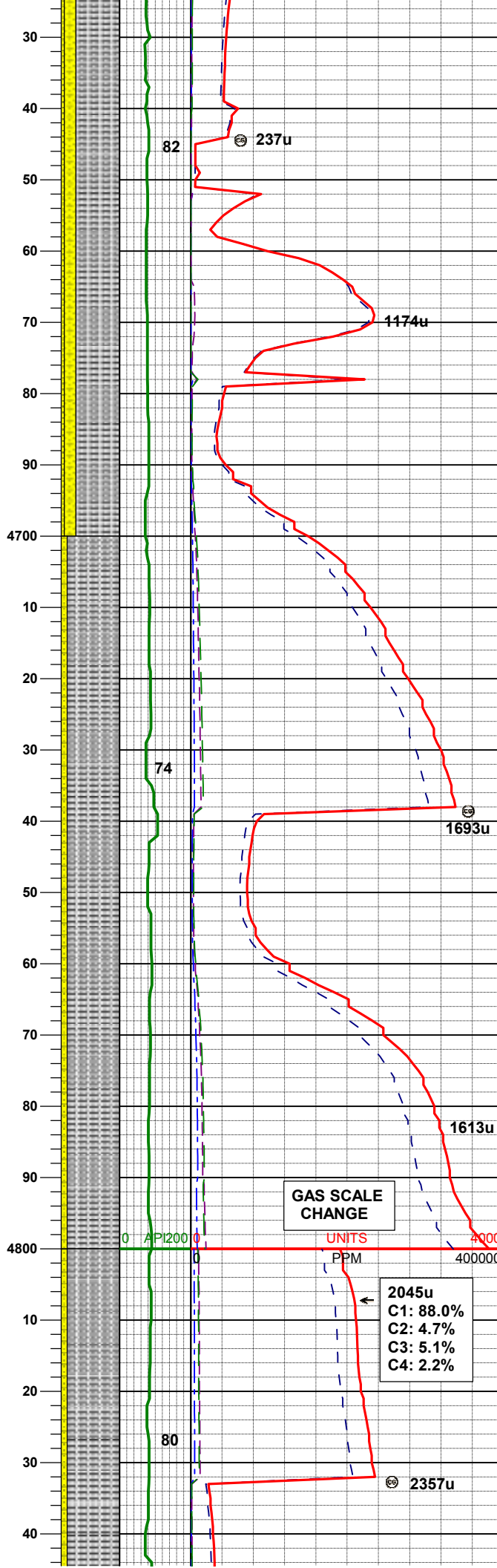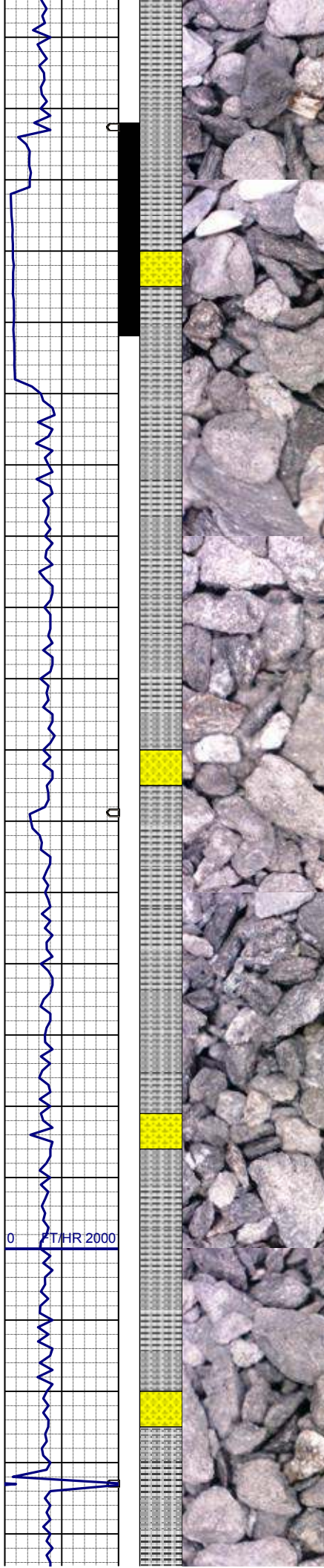4400

0 FT/HR 2000

0 API200

0 UNITS 2000
0 PPM 200000

SLTYSH: m-dkgy, occ brn,sft - mod
firm, sbblky, occ plty, arg-rthy mtx,
noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr glau

SLTYSH: m-dkgy, occ brn,sft - mod
firm, sbblky, occ plty, arg-rthy mtx,
noncalc
SS: wh-trnsl, s&p, f gr, sbang-sbrndd,
mod srt, tr phlog, arg cmt, tr glau
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt

MD	4213'
INC	1.4°
AZM	182.2°
TVD	4173.68'

MD	4308'
INC	0.5°
AZM	220.4°
TVD	4268.67'

MD	4403'
INC	0.5°
AZM	294.7°

1017u

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt, tr ss

1242u

81

MD   4498'
INC   1.3°
AZM   322.3°
TVD   4458.65'

1043u

1201u

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt, tr ss

86

216u

MD   4593'
INC   2.4°
AZM   332.3°
TVD   4553.60'

0   FT/HR 2000

0   API 200   0   UNITS   2000
          0   PPM   200000
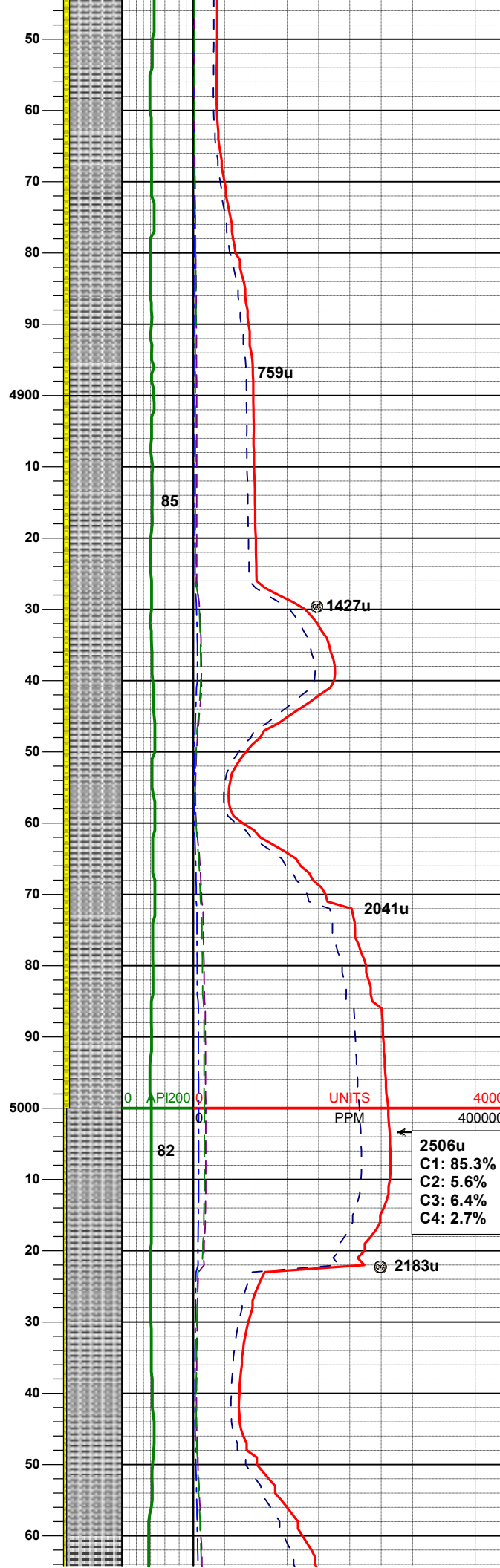
427u
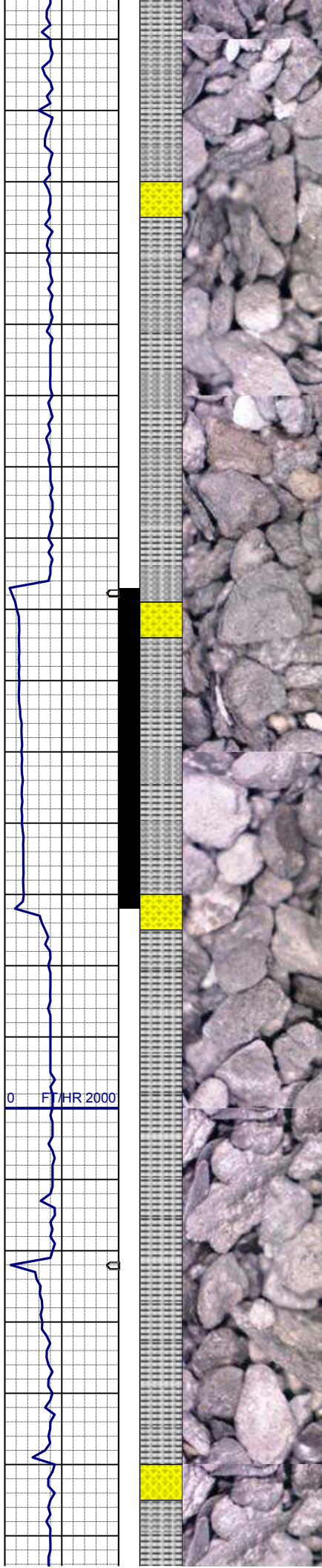C1: 90.8%
C2: 4.3%
C3: 3.4%
C4: 1.5%

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt
SS: wh-trnsl, s&p, f gr, sbang-sbrndd, mod srt, tr phlog, arg cmt, tr glau

MD	4688'
INC	2.1°
AZM	305.4°
TVD	4648.53'

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

MD	4783'
INC	2.5°
AZM	316.5°
TVD	4743.46'

237u
82
1174u
74
1693u
1613u

GAS SCALE CHANGE

2045u
C1: 88.0%
C2: 4.7%
C3: 5.1%
C4: 2.2%

80

2357u

0 FT/HR 2000
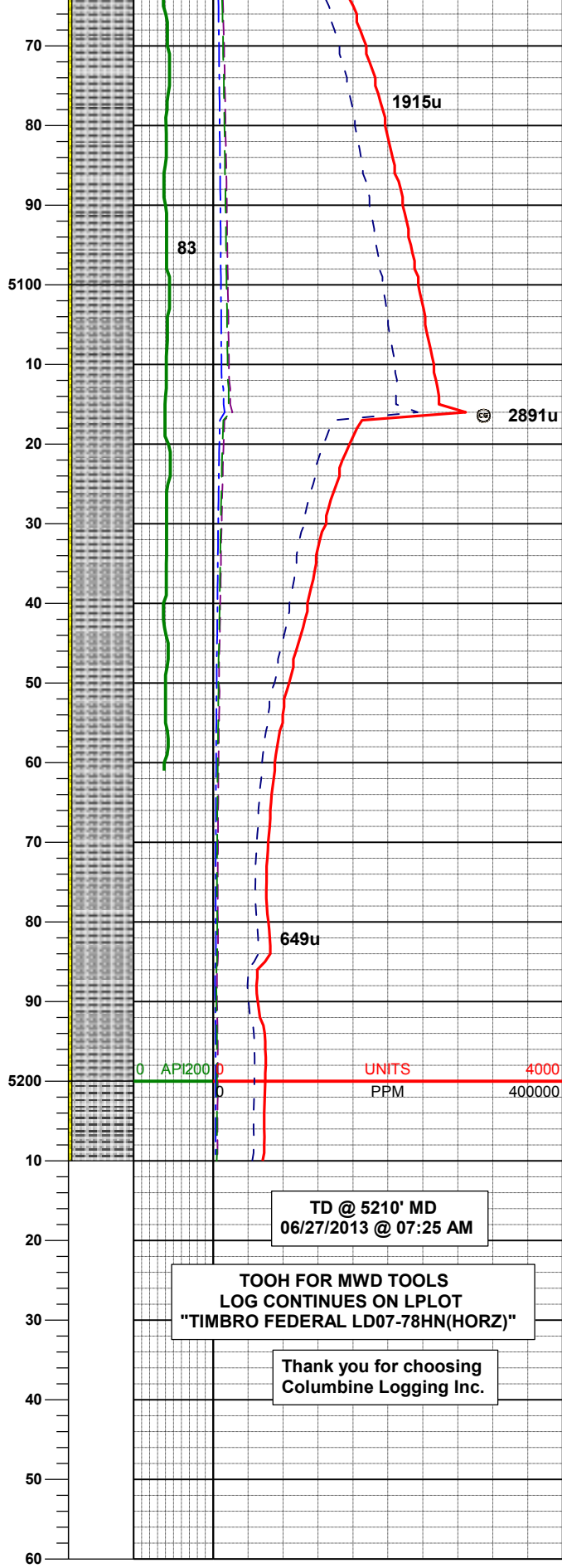0 API200
0 UNITS 4000
0 PPM 400000

SLTYSH: m-dkgy, occ brn,sft - mod
firm, sbblky, occ plty, arg-rthy mtx,
noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt

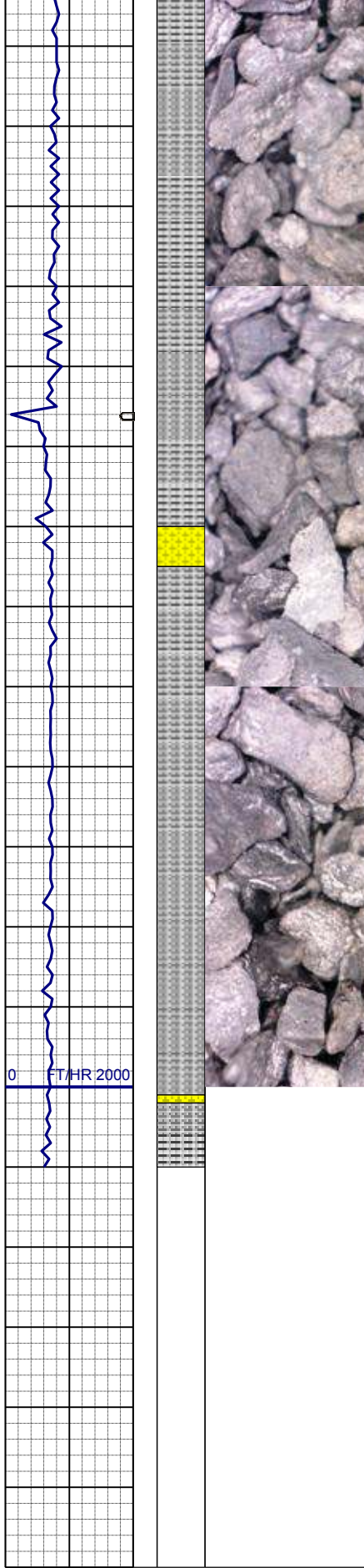| MD	4878'
INC	2.0°
AZM	310.7°
TVD	4838.38'

759u

85

⊛1427u

SLTYSH: m-dkgy, occ brn,sft - mod
firm, sbblky, occ plty, arg-rthy mtx,
noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt

MD	4972'
INC	1.4°
AZM	189.2°
TVD	4932.36'

2041u

0 FT/HR 2000

0 API 200 0   UNITS   4000
                0   PPM   400000

82

2506u
C1: 85.3%
C2: 5.6%
C3: 6.4%
C4: 2.7%

⊛ 2183u

SLTYSH: m-dkgy, occ brn,sft - mod
firm, sbblky, occ plty, arg-rthy mtx,
noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang -
sbrndd, mod srt, occ phlog, arg cmt

MD	5067'
INC	1.2°
AZM	173.2°
TVD	5027.34'

70

80

90

5100

10

20

30

40

50

60

70

80

90

5200

10

20

30

40

50

60

1915u

83

2891u

649u

0 FT/HR 2000

0 API 200

0 UNITS 4000

0 PPM 400000

SLTYSH: m-dkgy, occ brn,sft - mod firm, sbblky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, s&p, f gr, sbang - sbrndd, mod srt, occ phlog, arg cmt

MD	5162'
INC	1.2°
AZM	154.6°
TVD	5122.32'

TD @ 5210' MD
06/27/2013 @ 07:25 AM

TOOH FOR MWD TOOLS
LOG CONTINUES ON LPLOT
"TIMBRO FEDERAL LD07-78HN(HORZ)"

Thank you for choosing
Columbine Logging Inc.