

UNIT 138
PIECE 1a-2



VESICULAR
CLAST 30%

5-5 vein, not 0.5mm
irreg, in clast

27-28
vein clast, not
2mm, not 0.5mm
irreg. in clast



47-50 vein clast, not 0.5mm
in clast

5ndritting clast

VESICULAR
CLAST 30%

UNIT 138

CONTD.

PIECE 1-2
0-67R 8 121cm
VOLCANICLASTIC

FRAGMENTED BRECCIA

▷ APHYRIC

BASALT BRECCIA

LATHS IN MANY
CLASTS

MOTTLED GREEN

- GRAY BLACK

FINE GRAINED

0.2mm (FELDSPALATHS)

VOLCANIC ATTRIBUTES:

100% CLASTS & MATRIX

4mm

LOW, SUBANGULAR

MODERATE SORTING

SMALLER CLASTS

HAVE SIMILAR

TEXTURE AS IN

CORE 66, i.e.

INDISTINCT SHADY

BOUNDARIES.

HOWEVER, IN THIS

CORE CLAST

PRESERVATION IS

BETTER IN PLACES

330-U1374A-67R-1-A_SHLF2830861_20110120213426



VEESICLES 0-
3% 67R 8 121cm
LOW, SUBROUNDED
20mm
0.1mm



34-38cm
clast with weak magmatic
foliation



NB piece continues into
section 67R-2-
BUT the split line
in 67R2 is rotated
about 10° relative to R1

UNIT 138

PIECE 1



SMALL
 CLASTS
 GENERALLY
 BETTER
 PRESERVED

CAUTION
 CONTINUE

UNIT 130

CONT'D.

PIECE 1a-1b



UNIT 138
CONTD.
PIECE 1a-3



SMALL
CLASTS
GENERALLY
BETTER
PRESERVED

48-50cm vein 0.5mm
curved 80→020°

59-61cm vein 1mm
straight 50→240°

CAUTION

UNIT (138)
CONTD.
PIECE 1a-3



51-52cm vein n=2 0.2mm
irreg

65-68 cm chilled contact
70-7340

65-67.5cm vein n=1 0.2mm
straight (along cleat banding)
70-7340

66-70cm vein 0.1mm n=1
straight 90-7220

71-74 cm vein 0.1mm n=1
straight 35-7060



75-80cm chilled contact
65-7340

125-127cm vein n=1 0.1mm
curved in clast

UNIT 138
CONT'D
PIECE 1a-1g



VESICULAR
CLAST
5%.

26-29cm ⁿ⁼¹ $\approx 0.1mm$
straight, in clast



VESICULAR
CLAST 10%.

UNIT (108)
CONTD.
PIECE 1a-26



50-55 μ m $n=3$ 0.2 to 0.1 μ m
straight, branch, in clut

123-125cm vein $n=1$
3-2mm straight in clut

139-140cm vein $n=2$ 1mm in clut
straight

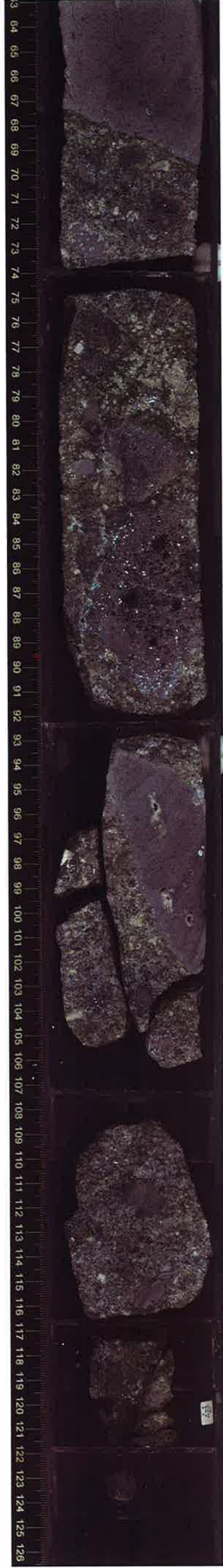
142-143cm vein $n=1$ 0.5mm irregular
in clut

UNIT 138
CONTD
PIECE 1a-6



9-12cm vein 2-1mm
15-108 straight

VESICULAR
CLAST
15%



65-68cm vein = 1 0.1mm
straight in clast

VESICULAR
CLAST 25%

94-105cm fracture = 1
curved 80-7260

117-121 cm drilling disturbance

UNIT (138)

(continued)

Volcaniclastic
breccia
(hyaloclastite)

4mm modal
clasts up to 40mm

mottled green and
medium gray

100% volcanic clasts
poorly sorted

clasts indistinct
due to alteration
of glass

low sphericity
subangular

Most clasts
are highly
vesicular (frothy)

typically 30%
vesicles

moderate sphericity
rounded

3mm max

0.2mm modal

100/cm²

50% filled

Clasts:

aphyric basalt

glassy to

aphanitic

medium gray

no obvious
phenocrysts



1

2

3

4

5

6

7

8

9

10

11

12

15 → 25cm
fractured



13

14

15

16

17

18a

18b

19

20

21

22

Unit (138)
(Continued)

as for section 1



73-76cm vein n=1 1mm

10

MB10

95-99cm vein n=1 2-1mm
straight 90-100°

11

101-106cm vein n=1 2mm
straight, branched, non-oriented

12

108-115cm vein n=1 0.2mm
straight 80-112°

13

110-114cm vein n=1 1mm
straight 90-100°

117-121 vein n=1 4-3mm
straight non-oriented

14

123-126cm vein n=1 3mm
straight, non-oriented

15

16

17

end of Unit (138)

UNIT (139)

18
Aphyric basalt
intrusive sheet
Top in piece 18

135 cm

133.5 138cm chilled contact
straight, non-oriented

134-138cm vesicle band (parallel to chilled contact)

UNIT (139)

(Continued)

Aphyric basalt
intrusive sheet

medium gray
fine grained
(0.2 mm)

no phenocrysts

Vesicles:

typically 5%
in patches

5 mm max

0.5 mm modal

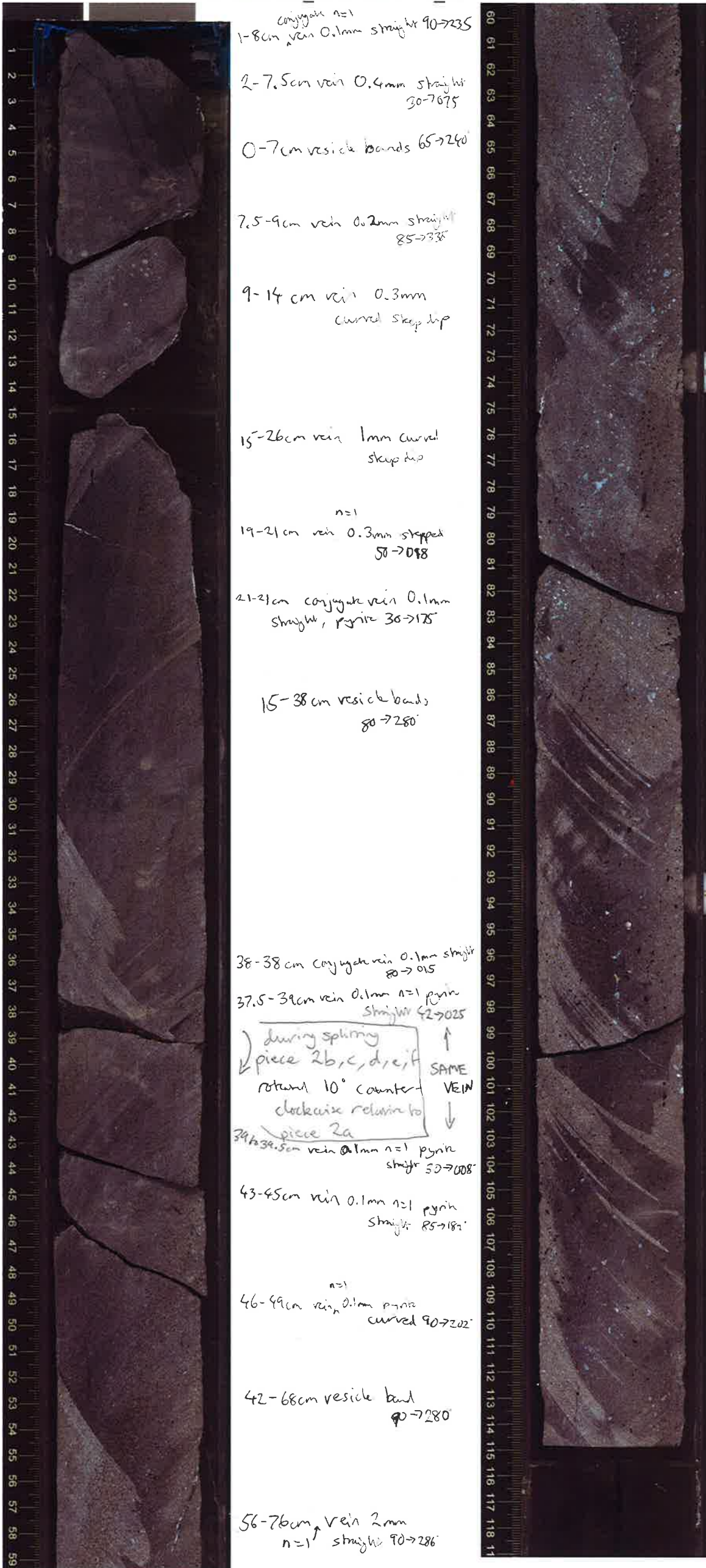
moderate sphericity
rounded

20/cm²

50% filled

NOTE:

sheet is brecciated
in 68R-5, 20-56cm



conjugate n=1
1-8cm vein 0.1mm straight 90→235

2-7.5cm vein 0.4mm straight
30→7675

0-7cm vesicle bands 65→240

7.5-9cm vein 0.2mm straight
85→238

9-14cm vein 0.3mm
curved steep dip

15-26cm vein 1mm curved
steep dip

n=1
19-21cm vein 0.3mm stepped
50→2098

21-21cm conjugate vein 0.1mm
straight, pyrite 30→175

15-38cm vesicle bands
80→280

38-38cm conjugate vein 0.1mm straight
80→015

37.5-39cm vein 0.1mm n=1 pyrite
straight 42→2025

during splitting
piece 2b, c, d, e
rotated 10° counter-
clockwise relative to
piece 2a

↑ SAME VEIN
↓

39-39.5cm vein 0.1mm n=1 pyrite
straight 50→2008

43-45cm vein 0.1mm n=1 pyrite
straight 85→181

n=1
46-49cm vein 0.1mm pyrite
curved 90→2202

42-68cm vesicle band
90→280

56-76cm vein 2mm
n=1 straight 90→286

68-115cm vesicle band
90→280

n=2
70-71cm conjugate vein 0.2mm
straight, brown 70→010

81-83cm vein n=1 0.1mm (material
straight 65→204 last during
drilling)

87-89cm vein 0.3mm
irregular 88→2205

90-100cm vein n=1 1mm max
0.5mm avg
90→280

98-100cm vein n=1 0.1mm
curved 90→160

100-101cm vein n=1 0.2mm
straight 80→214

100-105cm vein n=1 0.1mm
straight 80→130

UNIT 139
(Continued)

as in section 3



9.5cm vein ⁿ⁼¹ 0.5mm straight
70 → 034°

11cm vein n=1 0.1mm straight
90 → 180°

15-34cm vein network
n=20/0.2-0.1mm
branch recomb

34-35cm vein n=1 1mm
straight 45-015°

36-65cm vein n=1 2-1mm
straight 80 → 102°

57-65cm vein ⁿ⁼¹ 2-1mm
curved steep → 245°

68-80cm vein n=1 1-0.5mm
straight 80 → 105°

68-77cm vein n=1 1mm
on schist 80 → 245°



68-88cm vesicle band
85 → 015°

89.5cm vein n=1 0.1mm straight
80 → 185°

90-113cm vein network
n=10 max 2mm
avg 0.5mm
curved
branched

116-124cm vein n=1 1 to 0.5mm
straight 75 → 080°

114-132cm vesicle band 90 → 250°

130-131cm vein n=1 0.1mm
curved 80 → 015°

68R 4A

Unit 139

as in section 3

20

also entered into structural description (in veins + vesicles)
20-50 cm peperitic brecciation at margin (?) of intrusive sheet

end of 139
UNIT 140

UNIT 140
Aphyric basalt in clined intrusive sheet. separated from Unit 139 by thin sliver of breccia.



36-26 cm vein network n ≈ 10 max 2mm avg 0.5mm
branch

Medialite
20-50 cm peperitic breccia

22-29 cm vein 0.2mm n=1 straight 90-120°
if there are the same features, can result out piece

30.5-39 cm vein 0.2mm n=1 straight 70-120°

Contact between two sheets

42-57 vesicle banding parallel to margin 90-120°

41-52 cm chilled contact (lower, blaker unit at the base is the later unit) 90-120°

50-51 cm vein n=1 0.1mm pink straight 80-118°

51-56 cm vein n=1 10mm straight 90-120°

60-62 cm vein 16mm non-oriental

66-73 cm vein n=1 14mm straight 75-100°

67-73 cm vein n=1 0.3mm stopped 60-120°

68-73 cm vesicle base 60-120°



76-81 cm vein network n=5 max 2mm avg 1mm straight robust piece branched
76-81 cm vesicle bands ← parallel

Traces of breccia

Vesicular margin

83-89 cm vein n=2 straight parallel
83-89 cm vesicle band

UNIT 140

91-95 cm vein? 2.5mm wide medium gray fine grained (0.2mm) no phenocrysts
76-99 cm vein n=1 1mm straight to vesicles
vesicles: 96-99 cm vesicle band typically 5% in patches and bands moderate spherulites rounded 20/cm² 50% filler

107-117 cm vein n=5 max 15mm avg 5mm straight 90-120°

Zerolite-filled

fractures = veins

117-123 cm vein network n=10 max 10mm avg 3mm irregular

NOTE: Unit 140

in brecciated in 68R-6, 11-72 cm

126-142 cm vein network n=20 7-3mm

irregular 90-120°

UNIT (140)
(Continued)

10-72 cm
Peperitic
margin of
intrusion

end of Unit 140

72 cm

UNIT (140)



vesicle rich zone

10-12 cm vein network
75 → 345

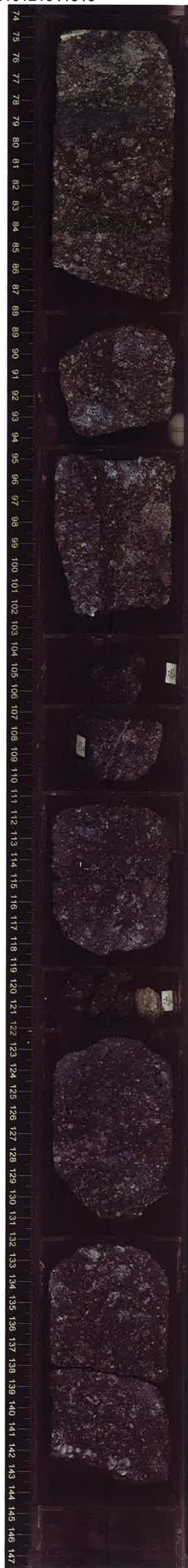
1
12-69 cm vein network
n = ? infill
breccia fragments
max 5 mm
avg 1 mm

matrix
of Unit

0-72 cm peperitic breccia

2
69-73 cm vein network n ≈ 10
70 → 195

72-73.5 cm chilled contact
70 → 196



UNIT (141)

Volcaniclastic
breccia

(hyaloclastite)
- same as (139)

4 mm modal
clasts up to 40 mm

3 mottled green
and medium gray

100% volcanic
clasts

4 poorly sorted

clasts indistinct
due to alteration of
glass.

5 low sphericity
Subangular

6
107-110 cm vein n = 11.5 mm straight
vein piece

7 Most clasts
are highly
vesicular (foamy)

Typically 30%
vesicles

8 moderate
sphericity

9 rounded
3 mm max
0.2 mm modal

100/cm²
50% filled

11 Clasts
aphysic basalt
glassy to aphanitic
medium gray

12 no obvious
phenocrysts

13 slightly altered
glass

Unit (141)

(continued)

as in section 6

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Stubby
in
5.000



UNIT (142)

Vitric - lithic
volcanic sand
and gravel
(hyalodartite)

top of unit
set arbitrarily
at top of Core
69R. Proportion
of angular blocks
declines through
lower part of

Unit 144 and
had dropped almost
to zero by end of
68R-7

dark greenish
gray

modal 4mm
mixture of highly
vesicular clasts and
altered glass particles

margin of clasts
difficult to see

aphyric basalt
clasts

glass pervasively
altered

Vesicles in
clasts 10%
moderate sphericity
rounds

1mm max
0.5mm modal
50/cm²

50% filled

15 pieces

Unit fines
downward
gravel at
top of
section

Sand at
bottom
of section

Becomes silty
in 69R-2,
98-102 cm

then coarsens
again to

gravel by
69R-3, 120 cm

to base of
unit in
69R-4

Slightly altered
w/ moderate
altered
small
clasts



Unit (142)
(continued)

mostly
volcanic sand
100% volcanic
clasts
modal 1mm



Long magnetic
apophysis, 60 um
straight 60 -> 31P

Unit (142)
(continued)
mostly volcanic
sand to
120 cm
then gravel



Coarsens
downward

120 cm ↓

Volcanic
gravel