

UNIT 12 P.1-25
CONTINUED

▷ APHYRIC BASALT
BRECCIA

VOLCANIC BRECCIA
PILLOW LAVA OR FLOW
LOBE FRAGMENTS

DARK GRAY

0-19 R2 114cm
FINE-GRAINED
0.05cm GRAINS
APHYRIC

↳ FELDSPAR LATHS
AND OLIVINE IN
GROUNDMASS

VOLCANIC ATTRIBUTES

0-19 R2 56cm

VOLCANIC CLASTS
80% CLASTS/MATRIX
10mm MOD.
ANGULAR
POORLY SORTED

VESTICLES 0-36cm
0.01% high rounded
0.8mm MAX 0.2mm MOD

Vesicles
36-38cm
10% LOW SUBROUNDED
7mm MAX
1mm MOD

VESTICLES
fine 38cm to 19R3 128cm
0.01% high rounded
0.8mm MAX 0.2mm MOD

GLASSY
MARGIN!!
SLIGHTLY
ALTERED



Slight
alteration

GLASSY MARGIN
SLIGHTLY
ALTERED

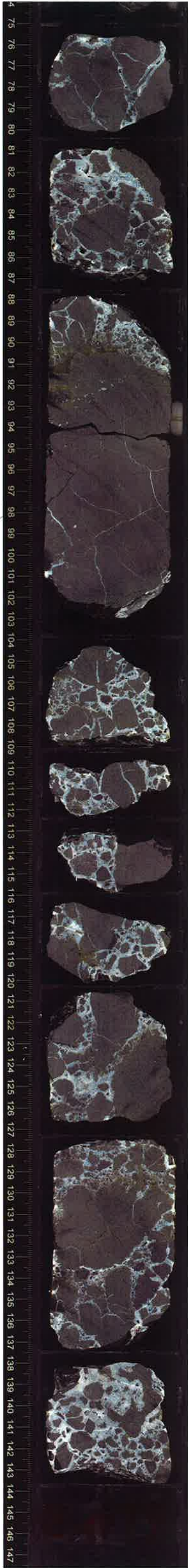
Calent

GLASS
SLIGHTLY
ALTERED
ON BACK

Slight
alteration

(K1005
K1006)
th/1# SL

53-58
vein network,
u=1, 1max, mod, 0.1mm
irreg. non-orient. ic clast



Calent

92-102
vein network u=17, 0.2mm
irreg. in clast

Slight alteration

P. 1-22



GLASSY
FRAGMENTS
SLIGHTLY
ALTERED

*Slight
alteration*

VOLCANIC
ATTRIBUTES
50% CLAST/MATRIX
5mm NODE
MOD. SPHERICITY
SUBANGULAR
MODERATELY SORTED

48-49 vein, straight, i. clast
50-55 vein, straight, i. clast
44-54 vein, 2mm, irreg.
in clast



VOLCANIC ATTRIBUTES
116-19R3 128
80% CLAST + MATRIX
MODERATE SPHERICITY
SUBANGULAR
POORLY SORTED
10mm NODE

114cm
TEXTURE-COLOUR
MOTTLED DARK GRAY-
ORANGE
FINE-GRAINED, 0.1mm
APHYRIC
MODERATELY ALTERED
GLASS, SOME FRESH
UNTIL 19R3 14cm

*high
alteration*

P. 1 - 19

Slight
attraction



high

colorful

Moderate
attraction

Moderate
attraction

37-37
vein network of
mag. in clast

high
attraction

Slight
attraction

46-53
vein network, 0.1mm
mag. non-oriented
clast

high attraction

TEXTURE - COLOUR
19-21cm
MOTTLED ORANGE-WHITE-
DARK GRAY
FINE-GRAINED, 0.1mm,
APHYRIC
COMPLETELY ALTERED
GLASS

TEXTURE - COLOUR
DARK GRAY - ORANGE
FINE-GRAINED, 0.1mm,
APHYRIC
MODERATELY ALTERED
GLASS
OLIVINE IN GROUNDMASS

TEXTURE COLOUR
38-45cm
AS 19-21cm

TEXTURE - COLOUR
45-55cm
DARK GRAY
FINE GRAINED, 0.1mm,
APHYRIC
OLIVINES IN G-MASS
MODERATELY ALTERED
GLASS

TEXTURE - COLOUR
55-129cm
MOTTLED ORANGE-GRAY
FINE-GRAINED, 0.1mm,
APHYRIC
COMPLETELY ALTERED
GLASS



67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131

P. 1a-9

APHYRIC BASALT
BRECCIA

VOLCANIC BRECCIA
PILLOW LAVA OR FLOW
LOBES

PHENOCRYSTS

NONE
0-65cm
MOTTLED GRAY ORANGE
WHITE
FINE-GRAINED
0.1mm
PERVASIVELY ALTERED GLASS
APHYRIC

VOLCANIC CLASTS
0-20R 2 9cm
80% CLASTS/MATRIX
5mm MODE
SUBANGULAR, LOW SPHERICITY
POORLY SORTED



4-10
vein network, mag.
non-oriented,
in clast
highly
altered

VESICLES
0-20R 3 49.5cm
0.1%
MODERATE SPHERICITY
SUBROUNDED
3mm MAX
0.5mm MODE

34-50 vein network,
non-oriented, in clast
moderately
altered

highly
altered

65cm



TEXTURE - COLOUR
65-109cm
DARK GRAY - WHITE
FINE-GRAINED, 0.1mm
SLIGHTLY ALTERED GLASS
OLIVINE IN GROUNDMASS

calcite

46-96 vein network
with mag. clast
mod. 0.2 mm, mag.
non-oriented

moderately
altered

109cm

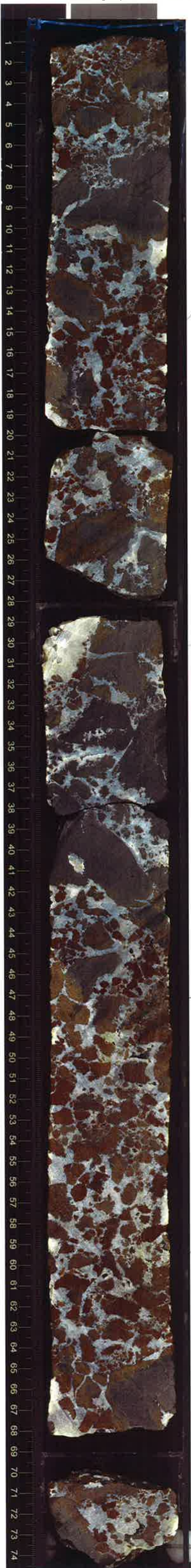
TEXTURE - COLOUR
109cm - 20R 3 49.5cm
MOTTLED GRAY - ORANGE -
WHITE
PERVASIVELY ALTERED GLASS
FINE GRAINED
0.1mm, APHYRIC
OLIVINE IN GROUNDMASS

MB10

UNI. 12
P. 1a-13

4cm

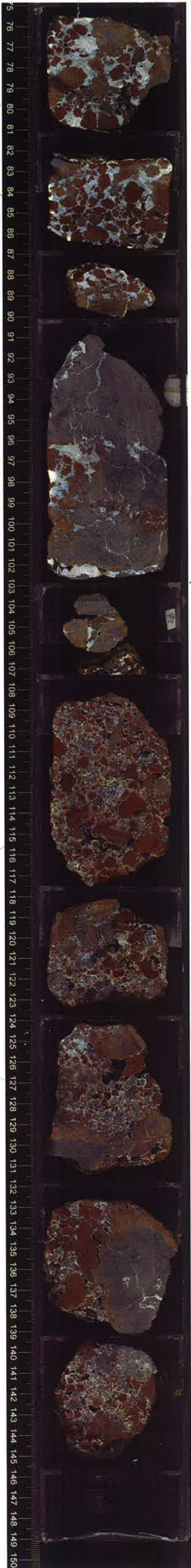
VOLCANIC
ATTRIBUTES
4-103cm
60% CLASTS v MATRIX
MODERATE SPHERICITY
SUBANGULAR
POORLY SORTED
8mm MODE



highly altered

moderately altered

highly altered



92-102
vein netw only, worn
angular, irreg. in
clast

VOLCANIC ATTRIBUTES
103-20R 3 65
80% CLASTS v MATRIX
MODERATE SPHERICITY
SUBANGULAR
POORLY SORTED
6mm MODAL SIZE

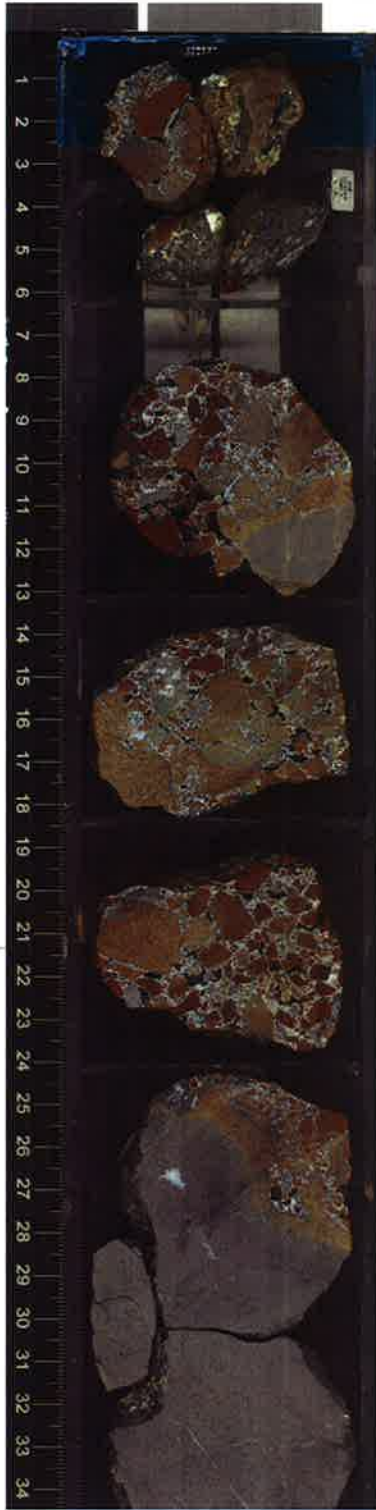
135-138
vein netw. $\alpha = 6$
in clast non-venter

UNIT 12

P. 1 - 10

330-U1374A-20R-3-A_SHLF2758841_20110110172334

highly
altered



26-36
vein velvety
n=10, integ. -
non-oxidized



49.5

TEXTURE COLOUR 49.5-65cm
MOTTLED WHITE - GRAY -
ORANGE

FINE-GRAINED OLIVINE
FELDSPAR LATHS AND
OLIVINE IN GROUNDMASS
moderately altered

VESICLES 49.5-65cm
25%
ELONGATE SPHERICITY
SUBANGULAR
20mm MAX
4mm MODE

65

UNIT 12
0-142 cm
P. 1-21

VOLCANIC BRECCIA
PROBABLY FRAGMENTED
PILLOWS OR FLOW LOBES

PHENOCRYSTS-LITHO.

NONE
APHYRIC BASALT BRECCIA

TEXTURE-COLOR

MOTTLED ORANGE
GRAY

FINE-GRAINED

0.1 mm

APHYRIC

GLASS: COMPLETELY
ALTERED

FELDSPAR LATHS
& OLIVINES IN GROUND
MASS

VOLCANIC ATTRIBUTES

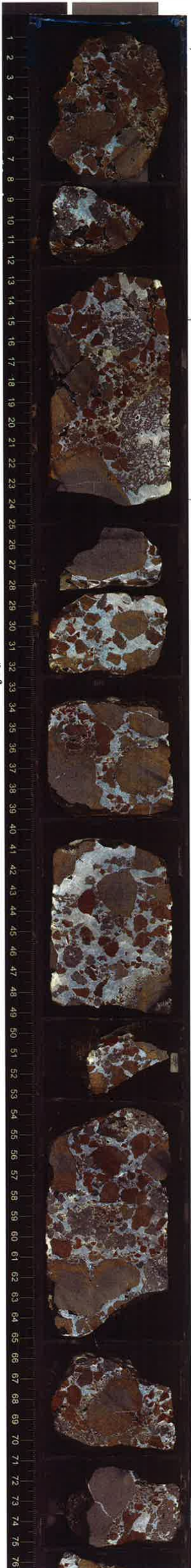
VOLCANIC CLASTS
70%

MOD: 5 mm

MODERATE

SUBROUNDED

POOR



VESICLES

0-15 cm

140
MODERATE

ROUNDED

MAX: 1 mm

MOD: 0.5 mm

VESICLES 15-24 cm

25%

ELONGATE

SUBROUNDED

MAX: 15 mm

MOD: 1 mm

VESICLES 24-142 cm

140

MODERATE

ROUNDED

MAX: 3 mm

MOD: 1 mm



89-93cm vein 0.1mm
in clast branching

142
↑
145
GLASS
Pervasively
ALTERED

LOWER BOUNDARY
BRECCIATED/SPALLED
GLASS/CHILLED MARGIN

UNIT (13) 143-148.5 cm

P. 21 143-212

LAVA FLOW 103cm

LOWER BOUNDARY
NOT RECOVERED

142-148cm vein 55-7265°
3mm branched

UNIT (13)
 P. 1-
 LAVA FLOW
 PILLOW LAVA
 OR
 SMALL LAVA FLOW?
 (ISC1 1)
 PHENOCRYSTS - LITHOLOGY
 NONE
 APHYRIC BASALT
 TEXTURE - COLOR
 DARK GRAY
 FINE-GRAINED 0.1mm
 APHYRIC

21R1 143cm - 103cm



34.5-38cm vein 0.5mm straight n=1 70-845

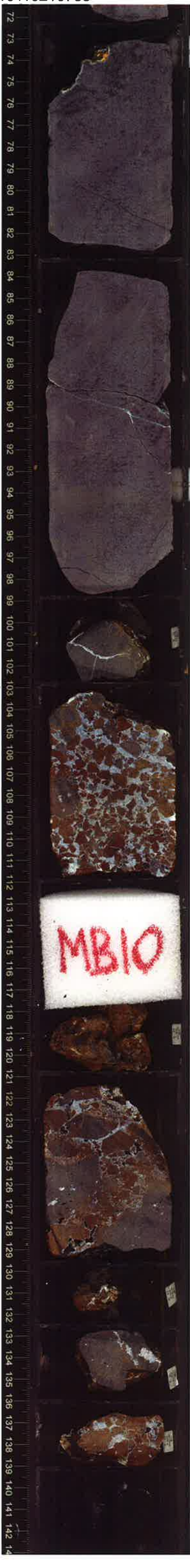
36.5-42cm conjugate vein 0.1mm 90-290

43.5-46cm vein 1mm 85-220

69-71cm Vug

VESICLE
 21R1 143cm - 21R-2-30cm
 1%
 MODERATE SUBROUNDED
 MAX: 0.7 mm
 MOD: 0.2 mm
 6 to 13cm vein
 1-2mm wide
 steep dip
 15-18cm vein network
 1-4mm wide n=9
 19-29cm vein network
 max 4mm
 avg 2mm
 n=6

VESICLES 30-103cm 0.01%
 High ROUNDED
 MAX: 1mm
 MOD: 1mm
 VESICLES 103-138 1%
 MODERATE SUBROUNDED
 MAX 5mm
 MOD 1mm
 43-46cm conjugate vein 1mm 70-128° straight
 46-51cm vein 1.5mm 90-090
 Same vein, different orientation
 51-52cm conjugate vein 1mm 70-030°
 51-54cm vein n=1 1mm straight 80-115°
 Same vein
 55-60cm vein n=1 1mm straight 80-120°
 63-64cm fracture n=2 50-015
 69-71cm vein 2mm n=1 straight 75-335



73-76cm Vug
 79-82cm fracture 80-220
 89-90cm vein 1mm 75-114°
 89-91cm vein 0.5mm 78-200°
 90-93cm vein 0.5mm 60-054°
 LOWER BOUNDARY NOT RECOVERED

UNIT (14)
 103-139cm
 P. 12-17
 VOLCANIC BRACCA
 UPPER: NOT RECOVERED
 LOWER: BRACCA DOMINANTLY SEDIMENT SUPPORTED (@ 21R2 59cm)

MBIO

PHENOCRYSTS - LITHOLOGY
 NONE
 APHYRIC BASALT BRACCA
 TEXTURE - COLOR
 103-138
 MOTTLED ORANGE GRAY
 FINE-GRAINED 0.1mm
 GLASS: COMPLETELY ALTERED
 APHYRIC
 FELDSPAR LATHS & OLIVINE IN GROUND MASSES
 VOLCANIC ATTRIBUTES
 80%
 MOD = 6mm
 MODERATE SUBANGULAR
 POOR

UNIT 14 0-59cm

P. 1-3

VOLCANIC BRECCIA

PHENOCRYSTS - LITHOLOG

NONE
APHYRIC BASALT BRECCIA

TEXTURE - COLOR

0-34cm

MOTTLED GRAY

PALE GRAY

FINE-GRAINED D.I.L.
GLASS: Pervasively

APHYRIC

FELDSPAR LATHS 20L
IN QM

34-59cm

MOTTLED ORANGE
GRAY

FINE-GRAINED D.I.L.

APHYRIC

FELDSPAR LATHS

GLASS: COMPLETELY

VOLCANIC ATTRIBUTES

0-34cm

65%

MOD: 10mm

LOW

SUBANGULAR

POOR

34-59cm

50%

MOD: 8mm

LOW

SUBROUNDED

POOR

END OF UNIT 14

BECOME DOMINANTLY SEDIMENT
SUPPORTED

VESICLES
0-59cm

1/4

MODERATE

SUBROUNDED

MAX: 5mm

MOD: 1mm

22cm geopedal 180°

54cm geopedal 180°

59.5cm geopedal 180°

Type S
124-125cm

Type S
85-89cm

Type S
94-100cm

101-103.5cm bedding
85-205

Contains fossils

128cm geopedal (on other
180° side of core)



whole section
contains fossils

Type 8
2 - 13 cm



Type 8
11 - 20 cm

Type 8
18 - 31 cm

Type 8
40 - 44 cm



Type 8
68 - 75 cm

Type 8
80 - 84 cm



Type 9
39-42 cm
42-45 cm

Type 9
58-62 cm



Type 9
75-79 cm

Type 9
92-96 cm
92-96 cm vein network
ca. 5 mm, in clast

Type 9
104-109

NB: in working half.
have very nice shell
fossil in situ growth
position



Type 9
21 - 26 cm
31 - 36 cm

31-36 cm vein (in clast)
1mm 21-24

Type 9
36 - 53 cm

Type 9
62 - 67 cm
62.5-67 cm
vein 1mm (in clast)
15-20

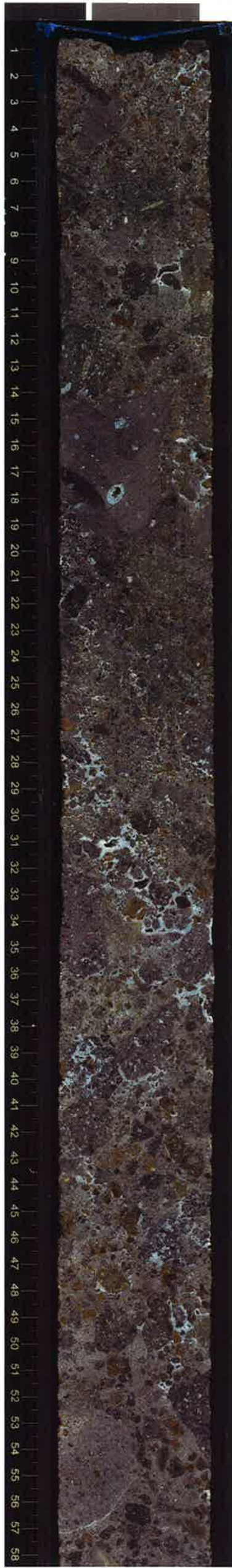


84.5 cm geopetal 20

Type 11
Moderately Plagioclase
olivine - Phyric basalt
greenish medium gray
3% Plagioclase
0.8% Olivine
2% Pyroxene
vesicles: 1%
fine grained
95 cm - 100 cm

Type 11
124 - 127 cm

Type 1
130 - 136 cm



Type 9
60 - 63 cm



Type 1
96 - 113 cm

Type 1
0-38cm



63cm vein in clast 0.1mm
40 → 008

Type 1
50-116cm



58-59cm vein 0.1mm
in clast 70 → 352

End of sed.
UNIT XI
Unit (15)



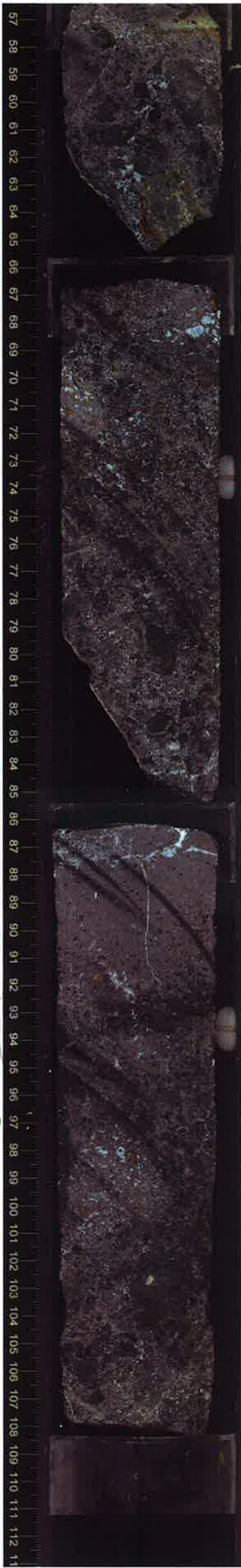
Weathered
horizon.

HICULT
plag - augite -
olivine - phytic
basalt breccia

greenish medium grey

38% proxent
37% olivine
15% Plagioclase
fine grained
* 1% vesicles

plag is inclusion-
filled.
olivine altered
augite fresh.



88-92 cm vein 0.5mm
slip 270°

Clasts
100 mm max
20 mm modal
low sphericity
subangular
Some lobate
margins
sandy matrix
Poorly sorted

peperitic
mingling of
basalt and
sediment

330-U1374A-23R-1-A_SHLF2762631_20110111074350



moderately
abundant

17-22
vein, irregular
steep dip \rightarrow 289
color

34-39
vein, irregular,
non-oriented
color

46-50
vein network,
irreg., non-oriented



yellowish-greenish
gray,

as Section 1

74-81
vein network,
irreg., non-oriented