

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 5  
 DATE 06/10/2011  
 EXP.: 333  
 SITE/HOLE: 00029  
 CORE: 2R  
 SECTION: 2CW  
 TOP DEPTH (m CSF): 529.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1					vh
2					vh
3					vh
4					h
5					vh
6					vh
7					vh
8					h
9					h
150					

SECTION DESCRIPTION

OBSERVER: A.Y.

np,  $Pl+Px$ , <sup>pillow</sup> h+v Basalt

Comments:

- 1: top part: white-colored alteration (thickness = 1.4 cm)
- 1, 2, 3, 6, 7, 8: preserving glossy black rim
- 2, 8, 9: transparent euhedral crystal maybe analcime.
- 6: light-greenish rim.

Rock name: highly pyritic plagioclase-~~pyroxene~~ Basalt

probably

All seems to be continuous, but glassy parts are not sampled.

PMAG, PMP, XRD, XRF.

# Integrated Ocean Drilling Program

## Visual Core Description - Hard Rock -

NO. 6  
 DATE: 6/1/20 11  
 EXP.: 333  
 SITE/HOLE: 00029  
 CORE: 2R  
 SECTION: CC(M)  
 TOP DEPTH (m CSF): 524.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
4					
7					
14					M
18					
21					
24					
27					

**SECTION DESCRIPTION**

OBSERVER: A.T.

hp, Pl+Px, MV Pillow Basalt  
 (5.7.8: including whitish fragment.  
 Comments: (K 2 cm)  
 1: thin (<1mm) white vein.  
 3: pillow rim.

Rock name: highly phytic plagioclase-pyroxene  
 Basalt

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 17  
 DATE: 06/10/2011  
 EXP.: 333  
 SITE/HOLE: COO29  
 CORE: 3R  
 SECTION: 1  
 TOP DEPTH (m CSF): 539.0

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0-5					vh
5-18					
18-23					vh
23-26					
26-49					vh
49-50					
50-61					h

SECTION DESCRIPTION

OBSERVER: A.Y.

- 1: phylocryst, Pl + Px, mv. with zeolite & pyrite crystals
- 3: hp, Pl + Px, hv. transparent vein (analcite?) & zeolite amygdalae, heterogeneously altered
- 4: pyrite tubes
- 5: hp, Pl + Px, mv. Heterogeneously altered. Central part possess original(?) black color. Zeolite amygdalae are recognized. Dark-greenish clay veins with ~ 1mm rounded clasts(?).
- 6: hp, pl + Px, hv. Gravels

Rock name: Highly phytic plagiopyroxen Basalts.

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 8  
 DATE: 06/01/2011  
 EXP.: 333  
 SITE/HOLE: 0012G  
 CORE: 3R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0-6	0				
6-15	2	↑			ha
15-27	3	↑			ha
27-31	4	v v			ha

change "ha" → "h"

"h"

**SECTION DESCRIPTION**

OBSERVER: A.Y.

2: mp, Pl+Px, mv, pillow Basalts  
 heterogeneously altered, ~ 2mm zoisite crystals  
 - Comments  
 3: mp, Pl+Px, mv.  
 Nice pillow structure, ~ 3mm amygdales.  
 Heterogeneously altered. pillow rims are  
 filled with dark-greenish clay.

Rock name: moderate phyzic plag-Px  
 Basalts.

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 9  
 DATE: 07/06/2011  
 EXP.: 333  
 SITE/HOLE: C00129  
 CORE: KR  
 SECTION:  
 TOP DEPTH (m CSF): 543.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0-8	○				
8-14	∇				ha
14-26	∩	↑			ha
26-36	∩				ha
36-41	∩				ha
41-50	∩				ha
50-54	∇				ha

"ha" → "h"

SECTION DESCRIPTION

OBSERVER: A.Y.

pillow ~~Basalt~~ Basalt  
 2. hp, Pl+Px, mv.  
 3. hp, Pl+Px, hev.  
 pillow rim, alteration halo.  
 Inner pillow (grassy part): dark green  
 clay minerals with white vein.  
 4. hp, Pl+Px, hev, internal structure of  
 pillow.  
 5.6: hp, Pl+Px, hev.  
 rims are altered.  
 TSB (glass)  
 PWD  
 PMG  
 XRP  
 XRF.  
 Rock name: Highly phynz plog-Px Basalt

150

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 10  
 DATE: 07/10/2011  
 EXP.: 333  
 SITE/HOLE: C0012G  
 CORE: 4R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1					h
2					m
3	o				
4	■ ■				h
5	■ ■ ■				m
6	∨ ∨				m

**SECTION DESCRIPTION**

Pillow Basalts  
 1: hp, Pl + px, htv.  
 heterogeneously altered, black parts are surrounded by green part.  
 whitish crystal fills cavity.  
 2, 3: gravels.  
 4: hp, Pl + Px, mv.  
 rounded piece + grassy part.  
 hyaloclastite (or drilling mud?)  
 5: h.p. Pl, sv. subangular clasts are Hyaloclastite? subangular clasts are surrounded by dark-green matrix.  
 surrounded by dark green matrix  
 6: gravels.

OBSERVER: A.Y.

Rock Name: Moderate phytic plag-Px Basalt.

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

PP, PL, PR, PM, PA  
 XRD XRF  
 TSB

NO. 11  
 DATE: 07/01/2011  
 EXP.: 333  
 SITE/HOLE: Coo 129  
 CORE: 5R  
 SECTION: 1  
 TOP DEPTH (m CSF): 553.0

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0-3	□				
3-8	∇				ha
8-21	∩	↑	⊥		ha
21-26	∇				ha
26-35	∇				ha

SECTION DESCRIPTION

Pillow Basalts

1: Gravel.

2: hp, Pl+Px, sv

3: hp, Pl+Px, htr

Vesicles in light-green parts are amygdaloid. Subvertical greenish thin vein connects to green to white gently-dipping vein at the top.

4, 5: hp, Pl+Px, htr

Amygdaloid vesicles up to ~3mm diameter

Rock name:

Highly phyric plag-Px Basalt.

OBSERVER: A.Y.

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 12  
 DATE 07/20/2011  
 EXP.: 333  
 SITE/HOLE: 600/2 G  
 CORE: 5R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
10	○				ha
13	○				ha
18	✓				ha
27	○				ha
29					
50					
100					
150					

SECTION DESCRIPTION

Gravels  
 2, mpi. Pl + Px, H+V.  
 greenish part: vesicular survives.  
 Blackish part: amygdalae.

OBSERVER: A.Y.

Rock name =  
 phric clay-Px Basalt.



Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -

NO.  
DATE: 07/01/2011  
EXP.: 333  
SITE/HOLE: Coo12 G  
CORE: 6R  
SECTION: 1  
TOP DEPTH (m CSF): 502.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					ha
2.5	V V				ha
10	V				ha
16	O				ha
22	V	↑			ha
29	V				ha
37	V				ha
42	V	↑			ha
50	O				ha
57	O				ha
63	V				ha
68	V				ha
73	V				ha
100					
150					

SECTION DESCRIPTION

Massive sheet flow Basalt  
OBSERVER: A.Y.

1: hp. Pl+Px, mv.  
red-colored alteration inside the chip

2: hp. Pl+Px, sv.  
heterogeneous alteration

3: Gravels including red-colored alteration & zeolite veins.

4: hp. Pl+Px, mv.  
Reddish material (Fe-oxide or hydroxide?)  
develop in the rim. In altered part,  
groundmass is replaced, only aggregation of Pl  
survive.

Rock Name:

Highly phytic plag-Px Basalt

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 13  
 DATE 07/12/2011  
 EXP.: 333  
 SITE/HOLE: 00012G  
 CORE: 6R  
 SECTION: CC  
 TOP DEPTH (m CSF): 1

PP, PWD, PMF.  
 XRD, XRF.

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
4	✓				ha
2	✓	↑			ha
11	✓				ha
16	✓				ha
20	✓				ha
24	✓			TSB	ha
29	✓				ha
34	✓				vha
40	✓				ha

SECTION DESCRIPTION

Massive sheet flow Basalts  
 OBSERVER: A. Y.  
 2. hp. Pl+Px, hv.  
 red alteration at the rim.  
 vesicles are filled with white mineral  
 (zeolite?) & green-colored clay/calcite  
 fibrous.

3. Gravels with calc-white amygdale.  
 4, 5: hp. Pl+Px, hv.  
 red & green alteration halo at the edge.



6-8: hp. Pl+Px, hv.  
 calcite & zeolite amygdales.

Rock name: highly phytic plag-px  
 Basalts.

Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -

NO.  
DATED 7/10/20 01  
EXP.: 333  
SITE/HOLE: Co-129  
CORE: 9R  
SECTION: 1  
TOP DEPTH (m CSF): 572

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1	✓				ha
13					
20	✓				ha
25	✓				ha
33	✓	↑			ha
50	✓		⊙		ha
59			⊙		
64	✓				ha
100					
150					

SECTION DESCRIPTION

Massive sheet flow basalt.  
OBSERVER: A.Y.  
1: hp. Pl+Px, zeolite(?) amygdalae.  
3.  
4. hp. Pl+Px, thin white vein (zeolite?)  
Red & dark green alt. halo at the edge.  
5. Gravels with thin white (zeolite?) vein  
6. hp. Pl+Px, ~ 2mm red & thin white vein  
\* white vein truncates red one!!

PP, PWVD, PNE  
XRP, XRF

Rock name: Highly phytic plagioclase  
Basalt.

# Integrated Ocean Drilling Program

## Visual Core Description - Hard Rock -

NO.  
 DATE: 07/10/2011  
 EXP.: 333  
 SITE/HOLE: 00129  
 CORE: 7R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0	✓				ha
1	✓			RESO	
50					
100					
150					

**SECTION DESCRIPTION**  
 Massive sheet flow Basalts  
 1: red vein at the edge  
 OBSERVER: A.Y.

Rock Name:  
 Moderately phytic plug-pr Basalts

Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -

No. 12  
DATE 07/01/2011  
EXP.: 333  
SITE/HOLE: 0012G  
CORE: JR  
SECTION: 1  
TOP DEPTH (m CSF): 581.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1	✓ ✓ ✓ ✓	↑			ha
41					
2	✓ ✓				ha
50					
3	✓ ✓	↑			ha
59					
4	✓ ✓	↑			ha
69					
5	✓ ✓				
84					
6	✓ ✓	↑			
94					
100					
150					

PP, TVD, PMAQ.  
XRD, XRF.  
Massive sheet flow  
Basalt.

SECTION DESCRIPTION  
grainsize  $\leq 2\mu m$

OBSERVER: A.Y.

1: hp, Pl+Px, h+V. good continuous piece  
alteration halos along initial cracks.  
red → green → yellowgreen  
dark intact rock.

most of vesicles are filled with green (celadon or white (zeolite?) minerals.

2, 3: small (~7m) pieces.  
lithological features are same as 1.

4: hp, Pl+Px, h+V.  
similar to 1-3. amygdalae are surrounded by red minerals (Fe-oxide hydroxide).

5: Fractals with green to yellowgreen alteration.

6: hp, Pl+Px, h+V.  
red vein (Fe-hydroxide?) at the edge.  
No compositional zoning along the vein.

Rock name: Highly phytic plagioclase  
Basalt.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 13  
 DATE 07/11/2011  
 EXP.: 323  
 SITE/HOLE: 000/29  
 CORE: PR  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1	✓				ha
29	✓				ha
38	✓	↑	↙		ha
48	✓		↙		ha
50					
100					
150					

**SECTION DESCRIPTION**

Massive sheet flow Basalt OBSERVER: A.Y.  
 1: Gravel with yellowish alteration.  
 2: hp, Pl + Px, mv  
 greenish & reddish altered rock  
 cut by red vein. Vein wall rock shows  
 irregular shape. vein includes fragments  
 of wall rock. small  
 3: Same as 2, 2 small pieces including  
 red veins.

Rock Name: highly phytic plag-Px  
 Basalt.

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. K4  
 DATE: 07/10/2011  
 EXP.: 333  
 SITE/HOLE: Coo 129  
 CORE: 9R  
 SECTION: 1  
 TOP DEPTH (m CSF): 591

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1	✓	↑			hgx
19					
2	✓	↑			vhgx
50					
66					
74					vhgx
88					vhgx
100					
127					vhgx
150					

PP, PWVD, PMAG,  
 XRD, XRF

SECTION DESCRIPTION  
 Massive sheet flow Basalts with pillow inter layer  
 OBSERVER: A. Y.

1: hp, Pl + Px + Op, sv  
 heterogeneously altered, including Fe mineral

2: hp, Pl + Px + Ze, htv.  
 beautiful pillow, zeolite mineralization  
 in the rim & interpillow. yellowish-colored  
 alteration.

3. continuous to 2,

4: yellowish gravels including minor white  
 (zeolite?) veins.

5. hp, Pl + Px + Ze, hev.  
 beautiful pillow, Interpillow (Copper half)  
 filled with transparent crystal (analcime?)  
 angular fragments of pillow, and light  
 material.  
 Interpillow (lower half): filled with dark  
 green clay mineral & white veins.

Massive sheet

Pillow

Massive sheet

Rock Name:

⊕ Highly phytic plagioclase Basalts

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 15  
 DATE 07/01/2011  
 EXP.: 333  
 SITE/HOLE: COO129  
 CORE: 9R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1		↑			
16					
2					ha
28					
3					ha
36					
4					
41					
50					
100					
150					

SECTION DESCRIPTION

Massive sheet flow ~~basalts~~ OBSERVER: A. Y.  
 1. mp. Pl + Px + Ze, mv. veins  
~~Pit~~, ~~inter-pit~~ are filled with dark green & light green minerals.  
 Zeolite (?) amygdales.

3. mp. Pl + Px, mv.  
~~Pit~~ with dark-green rim & zeolite vein.

Rock Name:  
 Moderately phyriz plug - Px Basalts



Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -

NO. 16  
DATE: 8/20/11  
EXP.: 333  
SITE/HOLE: C00129  
CORE: 10R  
SECTION: 1  
TOP DEPTH (m CSF): 6010

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1	✓ ✓				ha
11 19	✓ ✓	↑			ma
28	✓ ✓	↑			ma

SECTION DESCRIPTION

Massive sheet flow Basalts  
OBSERVER: A. Y.

1: 2 Yellowgreen pieces (hp. Pl+Px, hV) with vein in the surface & 1 Grey piece (hp. Pl+Pz) with zeolite (?) amygdales.

2: hp. Pl+Px, h+V. cut by red & green cracks. white & grey (large, diameter ~ 3mm) amygdales.

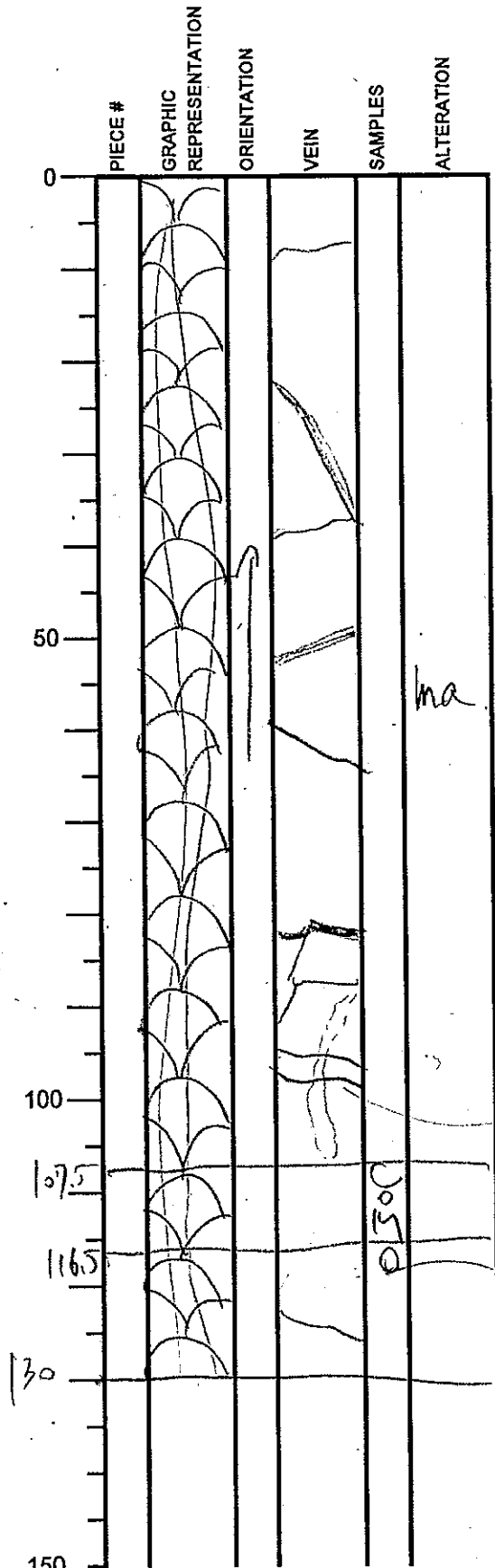
3: hp. Pl+Px, SV. cut by green vein including shell fragments.

Rock name:

Highly phytic plag-Px Basalts

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 17  
 DATE: 9/1/2011  
 EXP.: 333  
 SITE/HOLE: COO12G  
 CORE: 10R  
 SECTION: 2  
 TOP DEPTH (m CSF):



<long coherent section>

SECTION DESCRIPTION

Massive sheet flow Basalts  
 OBSERVER: A.Y.  
 hp. Pl + Px + Op. Sr ~ hrv. flow  
 Massive ~~pillow~~ <sup>sheet flow</sup> lava: ~~pillow~~ nms show darker  
 matrix color. Interpillows are filled with  
 dark green clay mineral and grey clast  
 with no phenocrysts. (Fragments or precipitation)  
 41-44, 68-72m: amygdale filled with  
 reddish minerals.  
 85-107m: subvertical compositional layering  
 characterized by red (orange) Fe minerals.  
 94-96m: red vein with NO reaction rims  
~~dark~~

sheet flow

Rock Name:

Highly phyritic plag-Px Basalts

PP, PWD, PMAG,  
 XRD, XRF.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 18  
 DATE: 10/20/11  
 EXP.: 333  
 SITE/HOLE: Coo/29  
 CORE: 10R  
 SECTION: 3  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					ma
10					ha
20					
50					
100					
150					

**SECTION DESCRIPTION**

Basalt  
 OBSERVER: A.Y.  
 Massive sheet flow  
 hp. Pl + Px + Op, hev.  
 Red & Green alteration.  
 (orange)  
 They show overlapped distribution, but red alteration develops wider area.

Rock Name:  
 Highly phytic plag-Basalt.

Integrated Ocean Drilling Program  
 Visual Core Description - Hard Rock -

NO. 19  
 DATE 08/20/11  
 EXP.: 333  
 SITE/HOLE: Coo129  
 CORE: 10R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
5					ha
6					ma

SECTION DESCRIPTION

OBSERVER:

Massive Sheet flow Basalt A.Y.

hp. Pl + Px + Op, h.v.

Dark grey part & greenish part (celadonic)  
 Greenish parts are more permeable than  
 dark grey part. Light red (or orange) alter  
 develops anastomosingly in the groundmass of  
 dark grey part. Dark red vein occurs  
 in P.G. part.

Rock Name:

Highly phyrlic plag-px Basalt

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 20  
 DATE: 8/10/11  
 EXP.: 333  
 SITE/HOLE: 00129  
 CORE: 11R  
 SECTION: CC  
 TOP DEPTH (m CSF): 601.0

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
3					vha
4		↑			vha
19					vha
29					vha
39		↑			vha

SECTION DESCRIPTION: Massive sheet flow basalt  
 OBSERVER: A.Y.

1. mp. Pl + Py + Ze, hv  
 light grey rock with pyrite crystals

2. mp. Pl + Py + Ze, hv.  
 light grey altered rock, pyrite grains accumulated at the edge.

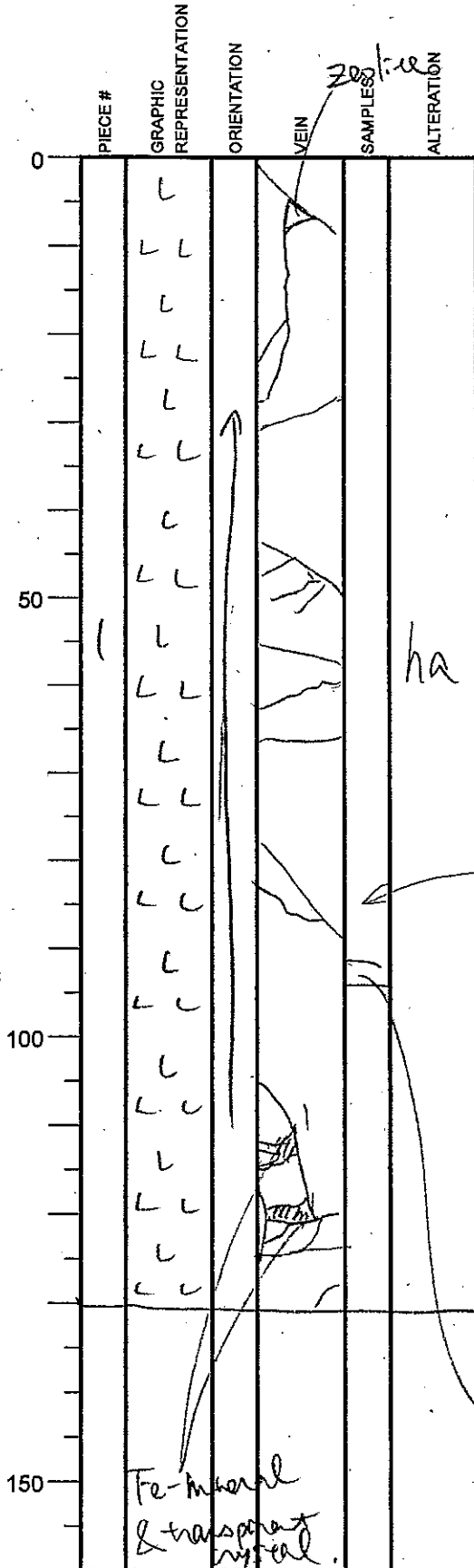
3. mp. Pl + Ze, hv  
 similar to 1 & 2, but no pyrite.

4. mp. Pl + Py + Ze, hv.  
 altered rock with little amount of pyrite.

Rock Name:  
 Moderately phytic plug - Basalt.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 22  
 DATE 07/01/2011  
 EXP.: 333  
 SITE/HOLE: C0012G  
 CORE: 12R  
 SECTION: 2  
 TOP DEPTH (m CSF):



**SECTION DESCRIPTION**

**Basalts**  
 OBSERVER: A. Y.  
 Massive sheet flow  
 1: hp, Pl + Px + Ze + Op, Sv.  
 Similar to sec. 1. Intragranular texture  
 Dark grey to greenish colored groundmass,  
 red veins & orange reaction halos.  
 Triangle-shape zeolite occurs at 7-9cm,  
 Dark red material occur within transparent vein  
 at 112-115, 119-121cm.

**Rock name:**

basically red veins. Highly pyritic plagioclase  
 Basalt.

91-93cm  
 PP, PWD, MAG,  
 XRD, XRF

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 23  
 DATE: 8/1/2011  
 EXP.: 333  
 SITE/HOLE: Coo/2G  
 CORE: 12R  
 SECTION: 3  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1	L	↑			ha
2	L L	↑			ha
3	L L L	↑			ha

SECTION DESCRIPTION

Massive sheet flow Basalt  
 OBSERVER: A.Y.

1: hp, Pl + Px + Ze (+ Py?), mv.  
 zeolite amygdale. Brownish alteration

2: hp, Pl + Px, mv.  
 dark gray to greenish alteration

3: hp, Pl + Px, mv.  
 with red vein

Lava flow

Rock Name:

Highly phytic plagioclase Basalt

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 24  
 DATE: 08/20/11  
 EXP.: 333  
 SITE/HOLE: C00129  
 CORE: 12R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1	L	↑			ha
2	L				ha

SECTION DESCRIPTION: Massive sheet flow Basalts  
 OBSERVER: A.Y.  
hp. Pl + K + Ze + op, h.v.

Intergranular texture. Alteration halo  
along red veins. orange  
Red vein appear to show brownish  
color; possibly reflect rednized fluid  
after oxic mineralization  
(Fe-hydroxide).

Rock name:  
Highly phytic plag-Bs Basalt.



**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 25  
 DATE: 8/1/2011  
 EXP.: 333  
 SITE/HOLE: COO126  
 CORE: 13R  
 SECTION: 1  
 TOP DEPTH (m CSF): 615.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1		↑			ha
2		↑	⊙		ha
3		↑			vha
4		↑			vha
5		↑			vha
6		↑			vha
7		↑			vha
8		↑			vha
9		↑			vha
10		↑			ha
11		↑			ha

Sheet flow

Massive sheet flow Basalts

SECTION DESCRIPTION

OBSERVER: A.Y.

1. mp. Pl + Px + Ze + Py, hvr. grey to yellowgreenish fine-grained pillow rim with Ze amygdale. Py at rim
2. Gravels (same lithology as 1) with pyrite at the edge
3. mp. Pl + Px + Ze + Py, hvr - hvr.
4. Pillow rim with Ze amygdale, light grey to yellowgreenish color, amastomosing white diffusive veins, small amount of pyrites.
5. mp. Pl + Px + Ze + Py, sv. pillow rim with no vesicles. white - transparent & green veins. Small amount of pyrite.
6. mp. Pl + Px + Py, hvr. gravels with Py at the edge
7. mp. Pl + Px, hvr, pillow rim with no Py.
8. mp. Pl + Px + Ze + Py, hvr. pillow rim with partially pyritized red vein (now brown vein)
9. hp. Pl + Px + Ze, hvr. intergranular, similar lithology to 12R, but red veins are brown now.
10. hp. Pl + Px + Ze. mvr. orange reaction halos
11. hp. Pl + Px + Ze. hvr. brown (originally red) vein & orange alb. halos.

9-11: brown (red) vein.  
 PP, PVD, PMS, XRF, XRF

Rock name: ~~Basalt~~

Moderately pyritic plagi-Px Basalt.

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 26  
 DATE: 06/20/11  
 EXP.: 333  
 SITE/HOLE: Coo129  
 CORE: 13R  
 SECTION: CC  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0	✓	↑			vha
15	✓		↘		
50					
100					
150					

SECTION DESCRIPTION: Massive sheet flow Basalt  
 OBSERVER: A.Y.  
 1: hp. Pl+Px + Qtz + Ze. hrv+hv.  
 Intergranular. red amygdales. (Iron).  
 Orange alt. halo. & Orange reaction zone  
 Rock Name:  
 Highly phyriz plag-px Basalt.

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 27  
 DATE: 9/10/2011  
 EXP.: 333  
 SITE/HOLE: C00129  
 CORE: 14R  
 SECTION: 1  
 TOP DEPTH (m CSF): 620.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1					ha
2		↑		SOC 22 24 XRF XRF PP PMD PXF	
3			green		ha white
4					ha
5					ha
6					ha
			red veins		

Sheet flow Basalt

SECTION DESCRIPTION

Massive sheet flow Basalt.  
 OBSERVER: A. Y.  
 Continuous coherent pieces  
 hp. Pl + Px (+Op), htr.  
 intergranular green/orange alt.,  
 red veins.  
 Rock Name:  
 highly phynic plag-Px Basalt.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 21  
 DATE: 8/10/2011  
 EXP.: 333  
 SITE/HOLE: COO129  
 CORE: 12R  
 SECTION: 1  
 TOP DEPTH (m CSF): 61.5

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1					vha
2					ha
2					ha
2					ha

SECTION DESCRIPTION

Massive sheet flow basalt  
 OBSERVER: A.Y.

1: Gravels up to 5cm long. Relatively less dense; possibly hyaloclastite or pillow breccia.

2: Anc (17-76cm)<sub>Op.</sub>  
 hp. Pl + Px + Ze, Her. Intergranular texture. Large (< 4mm) vesicles filled by zeolite & celadonite. Orange reaction halo develops <sup>along</sup> ~~side~~ of red veins.

Anc (76-134cm): same petrology as anc, but less vesicles, some of vesicles are filled by Fe mineral (red) at 96-100cm.

Basically showing dark grey to greenish (A/W mislocated) color.

Rock name:  
 red var. Highly phytic plag-px Basalt.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 28  
 DATED 1/10/2011  
 EXP.: 333  
 SITE/HOLE: Coo 12G  
 CORE: 14R  
 SECTION: 2

TOP DEPTH (m CSF):

*Massive sheet flow basalt*

SECTION DESCRIPTION

OBSERVER: A.Y.

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0					
1		↑			vha
2					vha
3		↑			cha
4		↑			ha
5					ha
6		↑			ha
7		↑			ha
8					ha
9		↑			vha
10					vha
11		↑			vha
150					

*sheet flow*

1, 3: mp. Pl + Px + Ze, sv.  
 pillow rit & interpillow (#3)  
 interpillow: fragments of basalt & dark-green mineral.  
 2: planar zeolite vein with dark-green clay (wallrock) (Murchieson)  
 4-7: mp. Pl + Px + Ze + Op, hrv. grey-green, with red veins  
 8-10: pillow rit & white thick (~3m) zeolite vein. No red veins.  
 11: grey & light-green alteration mp. Pl + Px, hrv. thin white & red veins.

Rock Name:  
 Moderately phytic plug - Px basalt

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 29  
 DATE: 11/20/11  
 EXP.: 333  
 SITE/HOLE: G00129  
 CORE: KER  
 SECTION: 3  
 TOP DEPTH (m CSF):

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
1		↑			h
2		↑			vh
3		↑			h

sheet flow

Massive sheet flow Basalt

SECTION DESCRIPTION

OBSERVER: A.T.

1, 2 : mp. Pl+Px, hv

3 : hp. Pl+Px, hv

0-29m : many vesicles filled with calcite & zeolites.

22-35m : curved-shape transparent + white vein with dark green clay

37-42m : red vein

50-57 : alt. vein

Rock name:

Moderately - highly phyzic  
 plag - px basalt.

**Integrated Ocean Drilling Program  
Visual Core Description - Hard Rock -**

NO. 30  
 DATE 09/01/2011  
 EXP.: 333  
 SITE/HOLE: C00129  
 CORE: 14R  
 SECTION: CC  
 TOP DEPTH (m CSF):

sheet  
flow

PIECE #	GRAPHIC REPRESENTATION	ORIENTATION	VEIN	SAMPLES	ALTERATION
0-8		↑			
8-23					
23-29		↑			
29-150					

SECTION DESCRIPTION

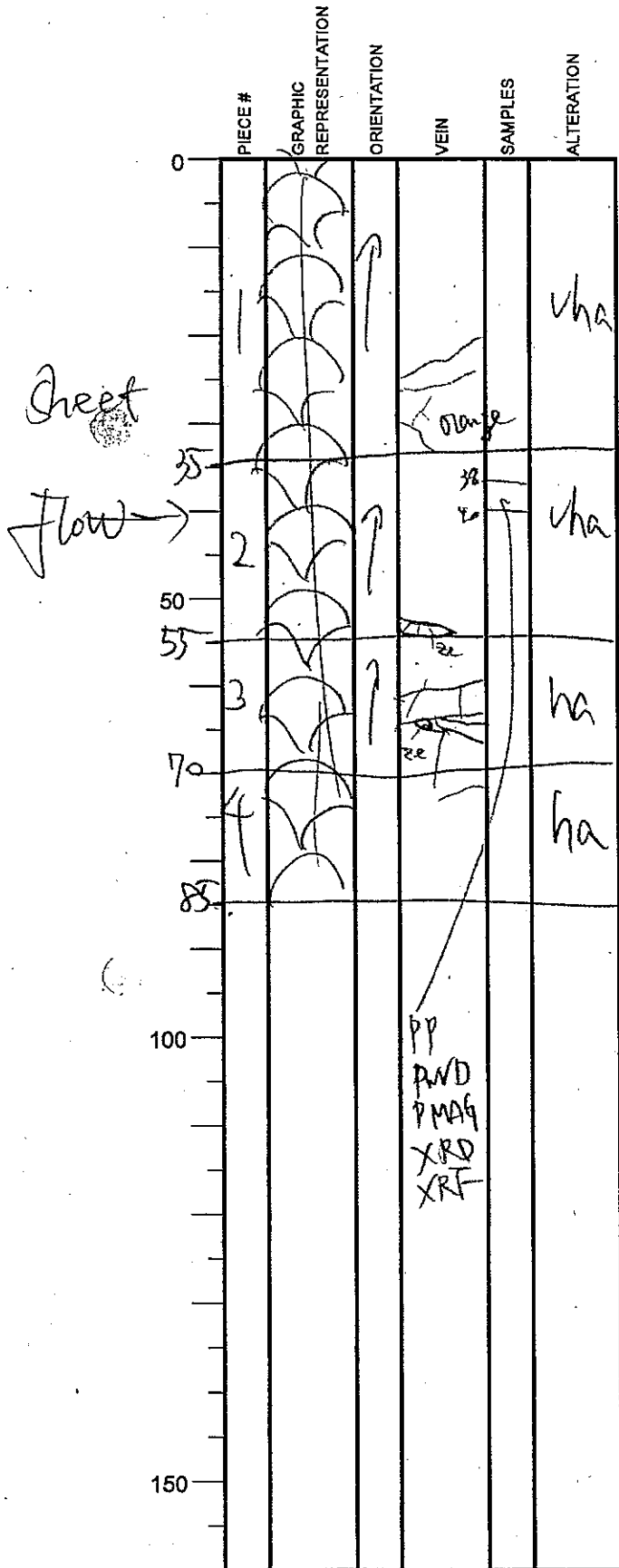
massive sheet flow Basalt  
 OBSERVER: A.Y.  
 hp ~~pl~~ Pl+Px, srx hcv.  
 one red vein (#1) & heterogeneous  
 grey-yellow-green alteration

Rock name:

Moderately - highly phric plog-px  
 Basalt.

**Integrated Ocean Drilling Program**  
**Visual Core Description - Hard Rock -**

NO. 37  
 DATE: 9/20/2011  
 EXP.: 333  
 SITE/HOLE: C00129  
 CORE: 15R  
 SECTION:  
 TOP DEPTH (m-CSF): 625.5



**SECTION DESCRIPTION**  
 Massive sheet flow Basalt  
 hp, Pl+Px, h+V. OBSERVER: A.Y.

- 1: green (eladonite) amygdalites & reaction patches.
- 2: green alt. vein along orange vein
- 3 bottom: thick (~1m) orange vein.
- 4: subhorizontal & subvertical dark green vein with zeolite crystal at intersection point.
- 5: gravels.

15R-CC (29m):  
 Gravels including two large pieces  
 (length ~3m)

Rock Name:  
 Moderately-highly phytic plagioclase  
 Basalt.