



I.D. 1039B 42X-1 22-24 cm Described by: jm/NLG Date: 11Nov 96  
 ROCK NAME: One pyroxene glomeroporphyritic gabbro  
 GRAIN SIZE: Fine grained matrix with medium plagioclase glomerocrysts  
 TEXTURE: Holocrystalline: Glomeroporphyritic with intergranular to sub-ophitic matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	20.0	19.0	≤ 4	An 95	glomerocrysts	frequently twinned
	33.0	32.0	≤ 0.2	An 78	laths and microlites	frequently in rosettes and sprays
Orthopyroxene						
Clinopyroxene	5.0	5.0	≤ 1	Augite	subhedral to euhedral stubby prisms	
	32.0	32.0	≤ 0.2	Augite	subhedral to anhedral	
Opaque	5.0	5.0	≤ 0.4	Ti-mag	cubic to subhedral and anhedral	Larger grains show exsolution lamellae, anhedral is interstitial

**GROUNDMASS**

Plagioclase  
 Olivine  
 Clinopyroxene  
 Mesostasis  
 Glass  
 Opaques  
 Pyrite  
 Chalcopyrite

0.0

**SECONDARY MINERALOGY**

TOTAL  
 Saponite  
 Chlorite  
 Carbonate

PERCENT	REPLACING/ FILLING
7	
5	
1	
1	

**COMMENTS:**

alteration along vein boundary, around vesicles and carbonates

**VESICLES/CAVITIES**

Vesicles  
 Vugs

PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE
5		≤.5	lined	irregular

**COMMENTS:**

? badly altered glass plucked by polishing?

**COMMENTS:**

Altered glass vein (saponite, tr. chlorite) cuts through slide, occasionally see grains broken and split apart by vein.  
 Sub-ophitic relationship occasionally seen between smaller plagioclase and pyroxene.

I.D. 1039C 7R-3 73-76 cm Described by: jm/NLG Date: 11 Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular to sub-ophitic matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	5.0	5.0	≤1		Glomerocrysts	often ragged or with inclusions of glass (altered to saponite) and opaques
	40.0	39.0	≤8		laths	
Orthopyroxene						
Clinopyroxene	40.0	40.0	≤6		euhedral-subhedral	
Opaque	5.0	5.0	≤0.2	Ti-Mag	cubic to subhedral	often with exsolution lamellae

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	5.0	2.0	0.05-0.5		interstitial pockets	green-brown devitrified glass, variably altered to saponite.
Opagues	5.0	5.0	≤2	Ti-mag	cubic to subhedral	
Pyrite						
Chalcopyrite						

**SECONDARY MINERALOGY**

TOTAL	PERCENT	REPLACING/ FILLING	COMMENTS:
Saponite	4	glass	

**VESICLES/  
CAVITIES**

Vesicles	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vugs						

COMMENTS:

I.D.	1039C	7R-2	31-34 cm		Described by:jm/NLG	11-Nov-96
ROCK NAME:	One pyroxene glomeroporphyritic gabbro					
GRAIN SIZE:	Microcrystalline matrix with medium plagioclase glomerocrysts					
TEXTURE:	Glomeroporphyritic with intergranular-intersertal matrix					
<b>PRIMARY MINERALOGY</b>	<b>PERCENT PRESENT</b>	<b>PERCENT ORIGINAL</b>	<b>SIZE (mm)</b>	<b>COMPOSITION</b>	<b>MORPHOLOGY</b>	<b>COMMENTS</b>
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	5.0	4.5	≤3	An 95	glomerocrysts	ragged, with altered glass and opaque inclusions
	16.0	16.0	≤0.3	An 78	laths	rosettes and sprays common
Orthopyroxene						
Clinopyroxene	6.0	6.0	≤0.3	augite	euhedral to subhedral	often stubby prisms
Opaque	4.0	4.0	≤0.3		cubic to anhedral	
<b>GROUNDMASS</b>						
Plagioclase	40.0	40.0	≤0.025		laths and anhedral grains	
Olivine						
Clinopyroxene	19.0	19.0	<0.02			
Mesostasis						
Glass	10.0	5.0			interstitial	green brown glass, always devitrified and often altered to saponite
Opakes	Tr					
Pyrite						
Chalcopyrite	Tr				euhedral-subhedral	interstitial
<b>SECONDARY MINERALOGY</b>						
	<b>PERCENT</b>	<b>REPLACING/ FILLING</b>				<b>COMMENTS:</b>
TOTAL	5.5					
Saponite	5.5	glass				
<b>VESICLES/CAVITIES</b>						
	<b>PERCENT</b>	<b>DISTRIBUTION</b>	<b>SIZE (mm)</b>	<b>FILLING</b>	<b>SHAPE</b>	<b>COMMENTS:</b>
Vesicles						
Vugs						
COMMENTS:	0.5 mm wide chilled margin with 3% gloms (<1mm), plagioclase laths ( 35%, <80micron) and pyroxene ( 10%, <60 micron), opaques (5%) in green brown glass((50%)					

I.D. 1039C 7R-2 43-46 cm Described by: jm/NLG Date: 11Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Microcrystalline matrix with medium to coarse plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-interstitial matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	10.0	9.5	≤7	An 93	glomerocrysts	some zoned; fractured and pitted with altered glass and opaques along twin planes
	43.0	43.0	≤0.6	An 83	laths	often rosettes or sprays
Orthopyroxene						
Clinopyroxene	40.0	40.0	≤0.2	Augite	Euhedral to anhedral	stubby prisms or interstitial grains
Opaque	3.0	3.0	≤.05	Ti-mag	cubic to anhedral	anhedral grains typically are interstitial

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	2.0	0.0			Interstitial pockets	
Opagues	<1					
Pyrite						
Chalcopyrite						

**SECONDARY MINERALOGY**

	PERCENT	REPLACING/ FILLING	COMMENTS:			
TOTAL	4.5					
Saponite	4	glass				
Amphibole	0.25	pyroxene				
chlorite	0.25	glass				

**VESICLES/CAVITIES**

	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles						
Vugs						

COMMENTS: Plagioclase glomerocryst with included augite, poikilitic

I.D. 1039C 8R-3 90-93 cm Piece 1B Described by: jm/NLG Date: 12Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-intersertal matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	5.0	4.5	≤4	An84-94	glomerocrysts	frequently with inclusions of altered glass and opaques
	50.0	50.0	≤0.2		laths	rosettes and sprays common
Orthopyroxene						
Clinopyroxene	40.0	40.0	≤0.3	augite	euhedral to subhedral	sometimes partly enclosed within plagioclase laths
Opaque	3.0	3.0	≤0.2	Ti-mag	cubic to subhedral	

**GROUNDMASS**

Plagioclase

Olivine

Clinopyroxene

Mesostasis

Glass 2.0 1.0 ≤0.2

interstitial in glass green-brown devitrified glass

Opaques trace

Pyrite

Chalcopyrite

**SECONDARY MINERALOGY**

PERCENT REPLACING/  
FILLING

COMMENTS:

TOTAL 1.5

Saponite 1.5 glass

**VESICLES/  
CAVITIES**

PERCENT DISTRIBUTION SIZE (mm) FILLING SHAPE COMMENTS:

Vesicles

Vugs

COMMENTS: Very fresh

I.D. 1039C 8R-1 7-10 cm Piece 3 Described by: jm/NLG Date: 12Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained to very fine grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-interstitial matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	25.0	24.0	≤5	An 90	glomerocrysts	
	27.0	26.0	<.08		laths	rosettes and sprarys common
Orthopyroxene						
Clinopyroxene	2.0	2.0	< 1	augite	euhedral to subhedral	stubby prisms
	24.0	24.0	<.02	augite	anhedral	in spaces between laths in rosettes
Opaque	5.0	5.0	<.01	Il/Mag	cubic to anhedral	often interstitial

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	14.0	1.5			interstitial	green-brown glass generally altered to saponite; some merely devitrified
Opaques	tr					
Pyrite						
Chalcopyrite						

**SECONDARY MINERALOGY**

	PERCENT	REPLACING/ FILLING	COMMENTS:
TOTAL	15.5		
Saponite	15	glass	
chlorite	tr	lining vesicles	

**VESICLES/  
CAVITIES**

	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles	2		<0.05		irregular	
Vugs						

COMMENTS: 5 mm chilled margin with ≈15% plagioclase glomerocrysts (<1.5mm), 10% plagioclase laths (<40 microns), 10% clinopyroxene (<20microns), 5% opaques in 58% green-brown devitrified glass with 2% irregular, unconnected vesicles

I.D. 1039C 8R-5 63-67 cm Piece 2 Described by: jm/NLG Date:12 Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-intersertal matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	3.0	2.0	≤2		Glomerocrysts	altered glass + opaque inclusions along twin planes common rosettes and sprays common
	42.0	35.5	≤0.3		laths	
Orthopyroxene						
Clinopyroxene	42.0	42.0	≤0.2	augite	euhedral, subhedral, and anhedral	rare euhedral grains to 0.6 mm
Opaque	3.0	3.0	≤0.2	Ti-mag	cubic and anhedral	frequently interstitial
Amphibole	2.0	2.0	0.2		euhedral	pale green with weak yellow-brown pleochroism

**GROUNDMASS**

Plagioclase

Olivine

Clinopyroxene

Mesostasis

Glass	5.0	0.0	<0.2		interstitial	completely altered to saponite
Opakes	Tr				in glass	
Pyrite	Tr				in glass	
Chalcopyrite	Tr				in glass	

**SECONDARY MINERALOGY**

TOTAL

Saponite

PERCENT	REPLACING/ FILLING	COMMENTS:
12.5		
12.5		around vesicles, replacing glass and around cleavage fragments of broken grains

**VESICLES/  
CAVITIES**

Vesicles

Vugs

COMMENTS: larger mineral grains frequently fractured, with undulose extinction

I.D. 1039C 9R-1 2-4 cm Piece 1A Described by: jm Date: 12Nov96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-intersertal matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	5.0	4.0	≤3		Glomerocrysts	
	34.0	30.0	≤0.5		laths	
Orthopyroxene						
Clinopyroxene	44.0	44.0	≤0.3	augite	euhedral, subhedral, and anhedral	
Opaque	5.0	5.0	≤0.1	Ti-mag	cubic (rarely) and anhedral. Larger grains with exsolution lamellae	

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	10.0	0.0	0.1-0.3		interstitial	
Opagues	tr				in glass	
Pyrite	tr				in glass	
Chalcopyrite	tr				in glass	

**SECONDARY MINERALOGY**

	PERCENT	REPLACING/ FILLING			COMMENTS:
TOTAL	14				
Saponite	14				replacing glass, around vesicles and around cleavage fragments of broken grains
Chlorite	tr				

**VESICLES/  
CAVITIES**

	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles	2	unconnected			irregular	
Vugs						

COMMENTS: Larger mineral grains often fractured



I.D. 1039C 9R-2 45-48 cm Piece 1B Described by: NLG/jm Date: 11Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-interstitial matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	3.0	2.8	≤4	An85	euhedral-subhedral	glomerocrysts with many inclusions rosettes and sprays common
	47.0	47.0	≤0.5		laths	
Orthopyroxene						
Clinopyroxene	40.0	40.0	≤0.3	Augite	subhedral	
Opaque	5.0	5.0	≤0.1	Ti-mag	subhedral to interstitial	larger grains with exsolution lamellae

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	5.0	0.0			Interstitial	
Opagues	Tr				acicular	in glass
Pyrite						
Chalcopyrite	Tr				subhedral	on edges of glass pockets

**SECONDARY MINERALOGY**

TOTAL	PERCENT	REPLACING/FILLING			COMMENTS:
TOTAL	6				
Saponite	3	glass		Intercumulus	
Chlorite?	1	glass		"	
Amphibole	2	Pyroxene		subhedral	Dark green; ? hydrothermal

**VESICLES/CAVITIES**

Vesicles	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vugs						

COMMENTS: Poikilitic nature of some pyroxene suggests partial cumulate origin with crystal sequence: Plf I, clinopyroxene, Plf II, glass

I.D. 1039C 10R-1 64-68 cm Piece 1D Described by: jm Date: 15Nov96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-intersertal matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine	1.0	1.0	<0.05		anhedral	
Plagioclase	5.0	5.0	<3		glomerocrysts	
	75.0	60.0	≤0.5		laths	rosettes and sprays common
Orthopyroxene						
Clinopyroxene	11.0	11.0	≤0.1	augite	subhedral to anhedral	mostly interstitial
Opaque	3.0	3.0	≤0.1	Ti-mag	cubic-anhedral	

**GROUNDMASS**

Plagioclase

Olivine

Clinopyroxene

Mesostasis

Glass 5.0 0.0 .05-0.4 interstitial completely altered to saponite

Opaques tr

Pyrite

Chalcopyrite

**SECONDARY MINERALOGY**

TOTAL 20 PERCENT REPLACING/FILLING COMMENTS:

Saponite 15 glass, feldspar

Vein 5 dark brown saponite, opaques, tr. chlorite, tr zeolites (?natrolite), milky feldspars, tr sulfides (?pyrite and chalcopyrite).

**VESICLES/CAVITIES** PERCENT DISTRIBUTION SIZE (mm) FILLING SHAPE COMMENTS:

Vesicles

Vugs

COMMENTS: Anastomosing 1-mm green-brown vein cutting thin section, shouldering aside broken grains, and disaggregating fractured wall-rock minerals. Combination of habit and mineralogy suggests this was a melt vein. Larger grains frequently broken.

I.D. 1039C 10R-3 25-29 cm Piece 1B Described by: jm/NLG Date: 15 Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-interstitial matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	5.0	4.5	≤3		glomerocrysts	
	51.0	48.0	≤0.4		laths	often in rosettes or sprays
Orthopyroxene						
Clinopyroxene	5.0	5.0	≤3		subhedral	
	29.0	29.0	<0.1		anhedral	often interstitial, in pockets between laths of plagioclase sprays
Opaque	5.0	5.0	<0.25	Ti-mag	cubic to anhedral	anhedral concentrated in glass; sometimes occurring as chains

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	5.0	0.0	0.1-0.5		interstitial, and as anastomosing dikelet	completely altered to saponite and chlorite
Opaques						
Pyrite	Tr				blebs in glass	
Chalcopyrite	Tr				blebs-cubes in glass	

**SECONDARY MINERALOGY**

	PERCENT	REPLACING/ FILLING			COMMENTS:
TOTAL	8.5				
Saponite	8	glass			plagioclase laths near glass
Chlorite	0.5	glass			

**VESICLES/  
CAVITIES**

	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles						
Vugs						

COMMENTS: Large grains badly fractured

I.D. 1039C 11R-1 58-61 cm Piece 5 Described by: jm Date: 16Nov96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Microcrystalline matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>	50					
Olivine						
Plagioclase	15.0	15.0	≤5		Euhedral to subhedral	in glomerocrysts
	14.0	11.0	≤0.2		laths	
Orthopyroxene	1.0	1.0	<0.25		euhedral	
Clinopyroxene	1.0	1.0	<1.5	augite	euhedral-subhedral,	in glomerocrysts
	14.0	14.0	<0.25	augite	subhedral	as microphenocrysts
Opaque	5.0	5.0	≤0.05	Ti-mag	cubic to subhedral	larger grains with exsolution lamellae, interstitial opaques rare
<b>GROUNDMASS</b>	50.0					
Plagioclase	25.0	20.0	≤0.02		anhedral	crystallizing from intercumulus liquid
Olivine						
Clinopyroxene	20.0	20.0	<0.01		anhedral	crystallizing from intercumulus liquid
Mesostasis						
Glass	5.0	0.0	<0.1		Interstitial	completely altered to saponite
Opaques						
Pyrite						
Chalcopyrite						
<b>SECONDARY MINERALOGY</b>	PERCENT	REPLACING/ FILLING				COMMENTS:
TOTAL	13					
Saponite	12.5	glass				replacing interstitial glass pockets, and traces of glass around microphenocrysts
Chlorite	0.5	glass				
<b>VESICLES/CAVITIES</b>	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles						
Vugs						
COMMENTS:	Glomerocrysts of plagioclase, plagioclase plus pyroxene and of subhedral pyroxene (augite). Often with sub-ophitic texture in plagioclase-pyroxene glomerocrysts. Larger grains often show fracture into cleavage fragments, and undulose extinction. Clear groundmass of glass plus microphenocrysts recognized.					

I.D. 1039C 11R-1 82-86 cm Piece 7 Described by: jm Date: 16 Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Microcrystalline matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>	40					
Olivine						
Plagioclase	15.0	14.0	≤4		euhedral-subhedral	glomerocrysts
	21.0	20.0	0.1-0.2		laths	frequently in rosettes and sprays
Orthopyroxene						
Clinopyroxene	4.0	4.0	<1.5	augite	euhedral	stubby prisms, often twinned; frequently in glomerocrysts
Opaque						
<b>GROUNDMASS</b>	60.0					
Plagioclase	40.0	25.0	≤0.08		laths, subhedral-anhedral	
Olivine						
Clinopyroxene	21.0	15.0	≤0.02		anhedral	
Mesostasis						
Glass	15.0	0.0	≤0.05		interstitial	completely altered to saponite with few % chlorite
Opakes	5.0	5.0	<.025	Ti-mag	cubic to subhedral	
Pyrite						
Chalcopyrite						
<b>SECONDARY MINERALOGY</b>	PERCENT	REPLACING/ FILLING				COMMENTS:
TOTAL	17					
Saponite	16	glass				
Chlorite	1	glass selvages				and lining vesicles
<b>VESICLES/ CAVITIES</b>	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles	3	unconnected	0.1-7	lined	irregular	lined with chlorite
Vugs						

COMMENTS: Few clinopyroxene-rich glomerocrysts present. Igneous layering apparent in hand sample: in thin section, layering is formed by alternating glass- and microphenocryst-rich layers with glomerocryst- and phenocryst-rich layers. Glass-rich areas: 30% glass, 10% gloms (<2mm), 35% plagioclase laths (<0.05mm), 25% clinopyroxene (<0.2)

I.D. 1039C 11R-2 47-50 cm Piece 1A Described by: jm/NLG Date: 16Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro

GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts

TEXTURE: Glomeroporphyritic with intergranular-intersertal matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine						
Plagioclase	10.0	9.5	≤4	An85	euhedral to subhedra	in glomerocrysts
	40.0	40.0	≤0.4		laths	frequently in rosettes or sprays
Orthopyroxene						
Clinopyroxene	5.0	5.0	<0.8	augite	euhedral	
	35.0	35.0	<0.1		subhedral	between laths in plagioclase rosettes and sprays
Opaque	5.0	5.0	<0.05	Timag	cubic, subhedral, anhedral	larger grains with exsolution lamellae. Rare Ti-mag blades in sprays or cruciform rosettes

**GROUNDMASS**

Plagioclase						
Olivine						
Clinopyroxene						
Mesostasis						
Glass	3.0	0.0	≤0.1		interstitial pockets	replaced by saponite
Glass	2.0	0.0	≤1		ovoids-glass filled vugs	replaced by saponite, chlorite and tr zeolites
Opagues						
Pyrite	Tr					
Chalcopyrite	Tr					

**SECONDARY MINERALOGY**

	PERCENT	REPLACING/ FILLING			COMMENTS:
TOTAL	5.5				
Saponite	3	glass			
Chlorite	2	glass			
Zeolite	tr	glass			

<b>VESICLES/ CAVITIES</b>	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles						
Vugs	2	irregular	<1	altered glass	rounded-ovoid	

COMMENTS: Clinopyroxene glomerocrysts to 2 mm; nearly straight grain boundaries between clinopyroxenes and nearly equal angle triple junctions suggest recrystallization.

I.D. 1039C 11R-2 74-76 cm Described by: jm/NLG Date: 16Nov 96

ROCK NAME: One pyroxene glomeroporphyritic gabbro  
 GRAIN SIZE: Fine-grained matrix with medium plagioclase glomerocrysts  
 TEXTURE: Glomeroporphyritic with intersertal- seriate porphyritic matrix

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>	60					
Olivine						
Plagioclase	10.0	10.0	≤3	An 94	euhedral to subhedral laths	in glomerocrysts commonly in rosettes and sprays
	23.0	23.0	≤0.6			
Orthopyroxene						
Clinopyroxene	22.0	22.0	<1		euhedral and subhedral	rarely growing in rosettes or sprays
Opaque	5.0	5.0	<0.1	Ti-mag	cubic to subhedral	sometimes in rosettes
<b>GROUNDMASS</b>						
Plagioclase	16.0	16.0	≤0.05		laths and anhedral	anhedral grains crystallizing between smaller plagioclase laths
Olivine						
Clinopyroxene	15.0	15.0	≤0.025		anhedral	often crystallizing between plagioclase laths
Mesostasis						
Glass	7.0	4.0	<.05		interstitial	devitrified and partially replaced by saponite
Glass	2.0	0.0				Several 1-2mm wide altered glass vein with chlorite and ?tr zeolites
Opaques	tr					euhedral and skeletal magnetite? w/exsolution lamellae
Pyrite						
Chalcopyrite	tr					

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS:
TOTAL	5		
Saponite	4	glass	
Chlorite	1	glass	

VESICLES/ CAVITIES	PERCENT	DISTRIBUTION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Vesicles						
Vugs						

COMMENTS: Plagioclase-clinopyroxene glomerocrysts; plagioclase is sometimes zoned (unlike laths). Pyroxenes within clots show straight grain boundaries and equal angle triple junctions suggesting recrystallization. Pyroxenes in groundmass with more irregular boundaries suggesting primary crystallization of groundmass pyroxene. A large pyroxene grain poikilitically encloses small euhedral-subhedral plagioclase grains which appear partly resorbed--?cumulate evidence.