APPENDIX A

PETROGRAPHIC SUMMARY OF SAMPLES FROM THE WILD ROGUE WILDERNESS, SW OREGON

Table A1a: Petrographic summary of representative samples from the metagabbro unit

Sample-ID	Rock Type	A	Mineralogy Igneous (mode):	Metamorphic:	% Alt.	Texture	Grain size	Veins oldest → youngest
GH-97-19A	foliated hbl qz metagabbro	-	pl(48, An_{72}), hbl(41), qz^r(8), ox(2), ap	pl^Z → cz, ab, ep; hbl* → ep, ch,	30%	hypidomorphic granular, weak tectonic foliation	2.5 mm	ep+qzch
MRH-23.1	foliated hbl metagabbro (dike)	+	pl(42, An_{82}), hbl(55), ox(3), ap	pl^Z → cz, ab, ep, mu; hbl → ep, ch,	40%	hypidomorphic granular, igneous $foliation^t$/lineation	1.5 mm	ep+qzch
MRH-23.2	foliated leuko hbl metagabbro (schlieren layer)	-	pl(70), hbl (25), ox(5), qz, ap	pl^Z → cz, ab, ep, mu; hbl → ep, ch,	80%	hypidomorphic granular, igneous $foliation^t$/lineation	1.5 mm	ep+qzch
MRH-78.1	foliated hbl metagabbro (enclave)	+	pl(45, An_{78-49}), hbl(49), ox(6), ap	pl^Z → cz, ab, ep, mu; hbl → ep, ch, other: pu	30%	hypidomorphic granular, igneous $foliation^t$/lineation	1.8 mm	
MRH-78.2	foliated hbl metagabbro	+	pl(53, An_{76}), hbl(40), ox(5), qz(2), ap	pl^Z → cz, ab, ep, mu; hbl → ep, ch, other: pu	40%	hypidomorphic granular, igneous $foliation^t$/lineation	3 mm	ep, pr (probe data)
O/C-373A	foliated hbl metagabbro (dike 1)	+	pl(39, An_{81-16}), hbl(57), ox(4), ap	pl^Z → cz, ab, ep, ±mu, ch, ±ser; hbl → ep, ch	20%	hypidomorphic granular, igneous $foliation^t$/lineation	0.75 mm	sb (cz, ep, ch), ab
O/C-373A.1	foliated hbl metagabbro (dike 2)	-	pl(47, An_{81-63}), hbl(49), ox(4), ap	pl^Z → cz, ab, ep, ±mu, hbl → ep, ch other: pu	30%	hypidomorphic granular, weak igneous $foliation^t$/lineation	1 mm	sb (cz, ep, ch), ab
O/C-373B	foliated hbl metagabbro	+	pl(54, An_{81-59}), hbl(45), ox(<1), ap	pl^Z cz, ab, ep, ±ch; hbl ac, ep, ch,	55%	hypidiomorphic granular, igneous $foliation^t$/lineation	3 mm	ab
O/C-373C	foliated hbl metagabbro	-	pl(48), hbl(50), ox(2), ap, ti	pl → cz, ab, ep, ch, ±mu; hbl → ac, ch ±ep; other: pr	48%	hypidiomorphic granular, igneous $foliation^t$/lineation	3.5 mm	ab+cz

Table: A1a: Petrographic summary of representative samples from the metagabbro unit (continued)

Sample-ID	Rock Type	A	Mineralogy Igneous (mode):	Metamorphic:	% Alt.	Texture	Grain size	Veins oldest → youngest
O/C-374B.1	foliated hbl metagabbro	-	pl(63), hbl(36), ox(1), ap	pl → cz, ab, ep, ch; hbl → ch, ep ± ac	63%	hypidiomorphic granular, isotropic	4 mm	epqz
O/C-374B.2	foliated hbl metagabbro (dike 1)	+	pl(40, An_{82}), hbl(55), ox(5), ap	pl^{Z} → cz, ab, ep; hbl → ch, ep ±ac; other: pr	10%	hypidiomorphic granular, strong igneous foliation^{t}	0.25 mm	sb (cz, ep, ch), ep+qz+ch
O/C-374B.3	layered hbl metagabbro with schlieren layering	-	pl(45, An_{83}), hbl(51), ox(4), ap	pl → cz, ab, ep, ch ±mu; hbl → ch, ep ±ac;	30%	hypidiomorphic granular, igneous schlieren-type foliation^{t}	2 mm	sb (cz, ep, ch), ep+qz+ch
O/C-374B.4	foliated hbl metagabbro (dike or enclave)	-	pl(55), qz^{r}(4) hbl(40), ox(<1), ap	pl → ep, ab, ch, ±cz hbl → ep, ch, ac	60%	S/C-type foliation	1 mm	ep+qz+ch
O/C-385.1	foliated hbl metagabbro	-	pl(47, An_{69}), qz(8) hbl(39), ox(5), bio(1), ap	pl → cz, ab, ep, ±ch, ±mu hbl → ch, ep ± ac ±mt	40%	hypidiomorphic granular, weak igneous foliation^{t}	3 mm	ep
O/C-385.2	foliated hbl metagabbro (enclave)	-	pl(41), hbl(53), bio(2), ox(4)	pl → cz, ab, ep hbl → ch, ep ± ac	35%	hypidiomorphic granular, igneous foliation^{t}	0.8 mm	ep
GH-97-15a	foliated hbl qz metagabbro	-	pl(33, An_{68-48}), qz^{r}(15), hbl(50), bio(1), ox(1), ap	pl^{Z} → cz, ab, ±ch hbl → ch, ac	25%	relic igneous and strong tectonic foliation	1 mm	
GH-97-16b.1	metatonalite (host rock of GH-97-16b.2)	-	pl(54, An_{58}), qz^{r}(40), hbl(4), ox(2)	pl → cz, ab, ±ch hbl → ch, ac	50%	strong tectonic foliation, strongly recrystallized qz	3 mm	
GH-97-16b.2	metadiorite (enclave in GH-97-16b.1)	-	pl(46, An_{47}), qz^{r}(8), hbl(38), ox(8), ap	pl → cz, ab, ep; hbl → ac, ±ch, other: ep	15%	xenomorphic granular	0.3 mm	-

Table A1b: Petrographic summary of representative samples from the hornblende quartz diorite in the metagabbro unit

Sample-ID	Rock Type	A	Mineralogy		% Alt.	Texture	G	Veins
			Igneous (mode):	Metamorphic:				oldest → youngest
GH-97-14	foliated hbl qz metadiorite	+	pl(45, An_{68-58}), hbl(49), qz^r(6), ox(<1), bio, ap	pl^Z → cz, ab, ep, ch; hbl → ac, ep, ch;	40%	hypidomorphic granular, weak tectonic foliation	2 mm	ep+qz
SC-3	foliated hbl qz-metadiorite	-	pl(46, An_{68-38}), hbl(37), qz^r(14), ox(2), bio(1), ap	pl^Z → cz, ab, ep; hbl → ep, ch,	35%	hypidomorphic granular, weak tectonic foliation	2.5 mm	ep+qzch
O/C-229.1	foliated hbl qz metadiorite	-	pl(58, An_{68-42}), hbl(30), qz^r(6), ox(6), ap	pl^Z → cz, ab, ep, ±mu, hbl → ep, ch	50%	hypidomorphic granular, weak tectonic foliation	2 mm	sb (cz, ep, ch, qz)
O/C-229.2	foliated hbl qz metadiorite (enclave in 229.1)	-	pl(50, An_{68}), hbl(40), qz^r(6), ox(4), ap	pl → cz, ab, ep, ±mu, hbl → ep, ch	50%	hypidomorphic granular, weak tectonic foliation	0.5 mm	

Table A2: Petrographic summary of representative samples from the metatonalite unit

Sample-ID	Rock Type	A	Mineralogy Igneous (mode):	Metamorphic:	% Alt.	Ign. Texture	Grain size	Veins oldest → youngest
GH-97-2b	mylonite (protolith is trondhjemte)	+	pl(~50), qz^r(~45), hbl? Or cpx?(~5), ox<1	pl → cz, ab, ep, ch; hbl or cpx ep, ch, ac	55%	primary texture not preserved (mylonite)	0.1 mm	qz+ep, pr
GH-97-3	meta-trondhjemite	+	pl(55), qz^r(39), cpx*(5), ox(<1), ti, ap	pl → cz, ab, ep, ch; cpx → ac ±mg, other: pr	55%	hypidiomorphic granular	1.2 mm	qz
O/C-11S-16a	foliated meta-tonalite	+	pl(61), qz^r(28) hbl*(10), ox(1), ap, ti	pl → cz, ab, ep, ch; hbl → ac, ch ±ep	70%	primary texture not preserved (foliated)	1.0 mm	qtz+ep
O/C-11-S16b	foliated meta-quartz diorite ("pillow dike")	+	pl(50), qz^r(12), hbl*(35), ox(3), ap	pl → cz, ab, ep, ch; hbl → ac, ch ±ep; oxti	80%	primary texture not preserved (foliated)	0.5 mm	qtz+ep
O/C-62	metatonalite	-	pl(63), qz(20), hbl*(14), ox(3), ap, ti	pl → cz, ab, ep, ch ±mu; hbl → ac, ch, ep;	65%	granophyric	1.8 mm	
O/C-250	metatonalite	-	pl(57), qz(25), hbl*(15), ox(3), ap, ti	pl → cz, ab, ep, ch ±mu; hbl → ac, ch, ep;	65%	granophyric	2 mm	
O/C-367	metatonalite	+	pl(45), qz^r(40) hbl(14), ox(<1), ap	pl → ep, ab, ch, ±cz hbl → ep, ch, ac	60%	primary texture not preserved, strongly foliated	2 mm	qtz
O/C-368A	metatonalite	-	pl(44), qz(40) hbl*(12), ox(4), ap, ti	pl → cz, ab, ep hbl → ac, ch ±ep ±mg;	50%	granophyric	0.5 mm	
O/C-368B	meta quartz-diorite	-	pl(50), qz(13), hbl*(37), ox(4)	pl → cz, ab, ep hbl → ac, ch ±ep;	80%	hypidiomorphic granular	0.5 mm	

Table A2: Petrographic summary of representative samples from the metatonalite unit (continued)

Sample-ID	Rock Type	A	Mineralogy			% Alt.	Ign. Texture	Grain size	Veins
			Igneous (mode):	Metamorphic:					oldest → youngest
O/C-368F	meta quartz diorite (enclave)	+	pl(54), qz(18), hbl*(23), ox(5)	pl → cz, ab, ep → ac, ch ±ep; oxti	hbl	55%	hypidiomorphic granular	0.3 mm	qz+ep, qz+su
O/C-368G	meta-trondhjemite	-	pl(52), qz(39) cpx*(9), ox(<1), ap, ti	pl → cz, ab, ep; → acmg, other: ch	cpx	68%	granophyric and myrmekitic	1.3 mm	
SC-2	meta-trondhjemite	-	pl(55), qz(40), cpx*(5), ox(<1), ap, ti	pl → cz, ab, ep; → acmg, other: ch	cpx	58%	granophyric	1.0 mm	

Table A3a: Petrographic summary of representative samples from the sheeted dike complex (gabbroic screens)

Sample-ID	Rock Type	A	Mineralogy (mode):	Igneous / Metamorphic:	% Alt.	Texture	Grain size	Veins oldest → youngest
GH-97-21	pl-cpx cumulate gabbro	-	pl(49), cpx*(50), ox(1), ol?	Pl → cz+ab, cpx → amph other: ep, ac, ch, mu	90%	poikilitic mesocumulate pref. Orient. Of pl	pl.. 2mm cpx ~5mm	-
GH-97-22	pl-cpx cumulate gabbro	-	pl(55), cpx(45), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch	100%	mesocumulate, weak pref. Orient. Of pl	2 mm	qz, cc
GH-97-23	pl-cpx cumulate leucogabbro	+	pl(87), cpx(12), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch	100%	mesocumulate, weak pref. Orient. Of pl	1 mm	pr+qz
GH-97-24	pl-cpx cumulate gabbro	-	pl(58), cpx(41), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch	99%	adcumulate, weak pref. Orient. Of plag	1 mm	ep
GH-97-25.1	plagioclasite	+	pl(95), cpx(5), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch	100%	adcumulate, weak pref. Orient. Of plag	1.5 mm	-
GH-97-25.2	pl-cpx cumulate gabbro	-	pl(58), cpx(41), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch, ti	99%	mesocumulate, pref. Orient. Of pl	2 mm	cz, qz
GH-97-27	anorthosite/ plagiogranite?	+	pl, qz, ox(<1), zr	pl → cz+ab, cpx → amph other: ep, ac, ch	100%	primary texture not preserved (epidosite)	?	cz, qz
MRH-76	pl-cpx cumulate leucogabbro	-	pl(66), cpx*(33), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch, mu	95%	adcumulate, strong pref. Orient. Of pl	pl 1.5 mm cpx~ 4mm	amph, ep
O/C-358	pl-cpx cumulate gabbro	+	pl(53), cpx(47), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch	100%	poikilitic mesocumulate pref. Orient. Of pl	pl.. 1 mm cpx~4mm	amph, ep
O/C-358b	plagioclasite (anorthosite?)	-	pl(96), cpx(4), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac	100%	adcumulate, weak pref. Orient. Of plag	0.8 mm	ep
O/C-359	pl-cpx cumulate gabbro	-	pl(55), cpx(45), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch, mu	100%	poikilitic orthocumulate	pl.. 1mm px~4mm	ep, ab

Table A3a: Petrographic summary of representative samples from the sheeted dike complex (gabbroic screens) continued

Sample-ID	Rock Type	A	Mineralogy (mode):	Metamorphic:	Igneous	% Alt.	Texture	Grain size	Veins oldest → youngest
O/C-360	pl-cpx cumulate gabbro	+	pl(48), cpx(59), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch, mu		99%	poikilitic mesocumulate pref. Orient. Of pl	pl 0.8 mm cpx 3 mm	ep, pr+qz
O/C-360.1	pl-cpx cumulate leuco gabbro	-	pl(73), cpx(27), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch, mu		100%	adcumulate, weak pref. Orient. Of plag	pl..0.8 mm cpx ~1.5 mm	cz, ab+qz
SC-1	anorthosite	-	pl(95), px(5), ox(<1)	pl → cz+ab, cpx → amph other: ep, ac, ch		100%	adcumulate, weak pref. Orient. Of pl	1 mm	pr

Table A3b: Petrographic summary of representative samples from the sheeted dike complex (diabasic and microdioritic dikes)

Sample ID	Rock Type	A	Mineralogy		% Alt.	Texture	grain size	% phenocrysts	size	Veins oldest → youngest
			Igneous (mode)	Metamorphic						
Three samples from same dike: MRH-45a.1, MRH-45a.3, MRH-45a.3										
MRH-45a.1	Microdiorite	+	pl(44), cpx(50), qz(5), ox(1), sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz	95%	hyp. Granular to subophitic	0.15 mm	2% xenocrysts[2]	0.5 mm	epqz, qz+s, prqz, qz
MRH-45a.2	Metadiabase	-	pl(44), cpx(53), qz(2), ox(1), sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, ti	97%	hyp. Granular to subophitic	0.25 mm	5% xenocrysts[2]	1 mm	-
MRH-45a.3	Metadiabase	-	pl(45), cpx(55), ox(1), ±qz, sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, py	100 %	subophitic	0.5 mm	10% xenocrysts[2]	3 mm	-
MRH-45b	Microdiorite	+	pl(47), cpx(41), qz(12), ±ox	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, ti	88%	hypidiomorphic granular	0.2 mm	1% xenocrysts[2]	1 mm	ep, prqz
MRH-111	Metadiabase	+	pl, px	ac, cz, ep, ab, ch	100 %	chilled marg. (micro-cryst.)	-	2% cpx[3]	0.05 mm	ep+qz, pr
O/C-1-S1	Metadiabase	+	pl, px, ox(1)	ac, cz, ep, ab, ch, qz	99%	1 cm dike, (micro-cryst.)	-	-	-	ep, pr, qz+py
O/C-1-S2	Metadiabase	+	pl(45), cpx(51), ox(4), ti	pl → cz+ab, cpx → amph other: ep, ac, ch, qz	96%	subophitic	0.3 mm	-	-	epqz
Three samples taken from same dike: O/C-4-S3.1, O/C-4-S3.2, O/C-4-S3.3										
O/C-4-S3.1	Microdiorite	+	pl(41), cpx(53), qz(4), ox(2), sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, ti	94%	hyp. Granular to subophitic	0.4 mm	6% xenocrysts[2]	1.5 mm	-
O/C-4-S3.2	Metadiabase	-	pl(40), cpx(55), qz(3), ox(2), sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz	95%	hyp. Granular to subophitic	0.5 mm	10% xenocrysts[2]	2 mm	-
O/C-4-S3.3	Metadiabase	-	pl(41), cpx(56), ±qz, ox(2), sp[1]	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, py	95%	ophitic	0.5 mm	19% xenocrysts[2]	3 mm	-
O/C-5-S4	Metadiabase	+	pl(45), cpx(54), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, pu	99%	subophitic to ophitic	0.3 mm	-	-	ep, pr+qz, qz

Table A3b: Petrographic summary of representative samples from the sheeted dike complex (diabasic and microdioritic dikes) continued

Sample ID	Rock Type	A	Mineralogy Igneous (mode)	Metamorphic	% Alt.	Texture	grain size	% phenocrysts	size	Veins oldest → youngest
O/C-6-S5	Microdiorite	+	pl(47),cpx(42), qz(10), ti(1)	pl^{Z}cz+ab, cpxamph other: ep, ac, ch	89%	hypidiomorphi cgranular	1 mm	-	-	-
O/C-58	Metadiabase	-	pl(43), cpx(56), ox(1)	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, ti	99%	ophitic	0.3 mm	-	-	ep+qz, ab+qz
O/C-325	Metadiabase (cumulate)	+	pl, cpx, sp[1], ox(2)	ac, cz, ep, ab, ch, qz, cc	95%	foliated, stretched xeno.	0.3 mm	15% xenocrysts	3 mm	qz+cc
O/C-333	Metadiabase	+	pl(49), cpx(50) ox(<1), ti	pl → cz+ab, cpx → amph other: ep, ac, ch, qz	99%	subophitic	0.4 mm	-	-	ep, pr, ch+qz
O/C-356	Metadiabase	+	pl, cpx, ox(1)	ac, cz, ep, ab, ch, qz	99%	5 cm wide dike (microcrystal.)	-	2% pl[4], 2% cpx[3]	0.01 mm	ep+qz, pu+qz
O/C-357a	Metadiabase	-	pl, cpx, ox(<1)	ac, cz, ep, ab, ch, qz, ti	100 %	chilled margin (microcrystal.)	0.35 mm	2% pl[4], 4% cpx[3]	-	ep+qz, ch
O/C-357b	Metadiabase	+	pl(42), cpx(55), ox(3)	pl^{Z} → cz+ab, cpx → amph other: ep, ac, ch, qz, sp	98%	subophitic to ophitic	0.3 mm	-	-	ep, pr+qz
O/C-357c	Metadiabase	-	pl(43), cpx(55), ox(2)	pl → cz+ab, cpx → amph other: ep, ac, ch, qz, ti	95%	subophitic to ophitic	0.5 mm	-	-	-
O/C-362	Microdiorite	+	pl(45), cpx(40), ox(14), ti (1)	pl → cz+ab, cpx → amph other: ep, ac, ch, qz	99%	hypidiomorphi cgranular	0.2 mm	-	-	pr, cc
O/C-362b	Metadiabase	-	pl, cpx, ox(<1)	ac, cz, ep, ab, ch, qz	100 %	chilled margin (microcrystal.)	-	2% pl[4]	-	pr, cc

Table A4: Petrographic summary of representative samples from the pillow unit

Sample ID	Rock Type	A	Mineralogy		% Alt.	Ign. Texture	grain size	Phenocrysts	size	Veins oldest → youngest
			Igneous (mode)	Metamorphic						
O/C-113	metadiabase (dike)	+	pl(53), cpx(45), ox(1), qz?(1)	pl ep, cz, ab, qz, ±ch; cpxamph ±mg; other: ti, py	65%	subophitic	0.2	aphyric	-	ep+qz, pr+cc
O/C-186	metadiabase (dike)	+	pl(47), cpx(47), ox(6)	pl cz, ep, ch, ab, ±qz; cpx*amph, ch, mg, ep	75%	subophitic	0.15	aphyric	-	ep+qz, qz+cc
O/C-224A	metabasalt (pillow)	-	pl, cpx, ox(2) gl?	pl ep, cz, ch, ab, ±mu; cpx*amph, ch, ±mg; other: ti, qz, py	50%	intergranular (intersertal?)	-	pl: 5.6% cpx: 2.1%	0.8 1.0	ep, ep+qz Am: ep, ch, qz, ti
O/C-224B	metabasalt (pillow)	+	pl, cpx, ox(2), sp, gl?	pl cz, ep, ab, ch; cpx*amph, ch, ±mg; other: py, qz	60%	intergranular (intersertal?)	-	pl: 3.5% cpx: 1.4%	1.0 1.0	ep, ep+qz Am: ep, ch, qz, ab
O/C-226A	meta-microdiorite (dike)	-	pl(55), cpx(30), qz(10), ox(5)	pl ep, cz, ab, ±ch, ±mu; cpx ch, ±mg; other: qz, py	70%	granophyric	0.5	aphyric	-	ep, pr+cc
O/C-226B	metabasalt (pillow)	-	pl, cpx, ox(2), gl?	pl cz, ep, ab, ±ch; cpx amph, ch, cc, ±mg; other: qz, ep, py	80%	intergranular (intersertal?)	-	pl: 24% cpx: 14%	2.0 1.2	ep+qz, cc, Am: ch, ep, qz, su
O/C-226C	metadiabase (dike)	-	pl(50), qz(8), cpx(35), ox(7)	pl ep, cz, ab, ± ch; cpx ch, ±mg; other: ac, qz, pr	70%	hypidiomorph. granular	0.25	aphyric	-	ep+qz, cc+qz, prcc
O/C-227A	metabasalt (pillow)	+	pl, cpx, ox(<1), gl?	pl cz, ab, ±ep, cpx*ch, cc, other: pr	55%	intergranular (intersertal?)	-	cpx:1.5%	0.25	ep, ep+qz, pr+cc, Am: cc, ep, ch, qz
O/C-227B	meta microdiorite (dike)	+	pl(50), cpx(40), qz(6), ox(4)	pl cz, ab, ±ch, ±mu; cpx*ch, cc, amph; other: pr, qz, py	65%	hypidiomorph. granular	0.5	aphyric	-	pr+cc

Table A4: Petrographic summary of representative samples from the pillow unit (continued)

Sample ID	Rock Type	A	Mineralogy		% Alt.	Ign. Texture	grain size	Phenocrysts	size	Veins oldest → youngest
			Igneous (mode)	Metamorphic						
O/C-231A	metadacite (dike)	+	pl, qz, cpx ox(<<1)	pl ab, cz, ep; cpx*chl, other: qz, pu	50%	xenomorph. granular	-	pl: 14%, qz: 5.5%	1.2 1.0	-
O/C-232B	metadacite (dike)	-	pl, qz, cpx, ox(<<1)	pl ab, cz, ep; cpx*chl, other: qz	60%	xenomorph. granular	-	pl: 17% qz: 6.8%	1.0 0.8	ep
O/C-379	metabasalt (pillow)	+	pl, cpx, gl? ox(6)	pl ab, pr, ch; other: qz, pu	65%	intergranular (intersertal?)	-	aphyric	-	pr, cc; Am: pr, ch, cc
O/C-380	metabasalt (pillow)	+	pl, cpx?, gl?, ox(8)	pl ab, pr, ch; other qz, pu, cc, py	55%	intergranular (intersertal?)	-	aphyric	-	qz, cc
Pb-1	metabasalt (pillow)	+	pl, cpx, gl?, ox(<1)	pl ab, cz, ep, ch; cpxamph; other: ti, pu, py	70%	intergranular (intersertal?)	-	pl: <<1%	0.15	ep+qz, pr+pu+py+qz+ch, Am: ep, ab, qz, ch, pu, ti

Table A5: Petrographic summary of representative samples from the Mule Mountain volcanics

Sample ID	Rock Type	A	Mineralogy		% Alt.	Ign. Texture (groundmass)	grain size	Phenocrysts	size	Veins oldest → youngest
			Igneous (mode)	Metamorphic						
GDH-1	metadacite	+	pl, qz, cpx, ox (<1)	pl cz, pr, ab, ±ch ±mu; cpx*ch, pr, pu other: py	50%	trachytic		pl: 12.3% qz^r: 9.1% cpx: 3.2%	0.8 2.5 0.5	
GDH-2a	metadacite	+	pl, hbl, qz, ox(2), ap,	pl cz, ab, ±ch, ±mu; hbl*ch, pu, pr; other: py	40%	xenomorphic granular		pl: 14.7% hbl: 5.6%	1.0 0.8	
GDH-2b	metadacite with broken qz phenocrysts	+	pl, qz, cpx, ap, ox (<1)	pl cz, ab, ±ch, ±mu; cpx*ch other: ti	45%	trachytic		pl: 16.2% qz^r: 10.4% cpx: 2.3%	1.0 2.0 0.5	
GDH-4	metadacite	-	pl, cpx, qz, ox (1)	pl cz, ab, ±ch, ±mu; cpx*ch, pr	55%	xenomorphic granular		pl: 30.6% cpx: 15.2% qz^r: <1%	1.5 0.9 0.2	
GDH-5a	metadacite	+	pl, hbl, ap, qz ox(1.5)	pl cz, ab, ±ch, ±mu; hbl*ch, pu, pr; other: ti	50%	xenomorphic granular		pl: 19.5% hbl: 4.5%	0.5 0.7	ch
GDH-7	metabasalt	+	pl, cpx, ox(2), gl?	plab, cc, ch, mu; cpx* ch, cc; gl?ch	50%	intergranular (intersertal?)		pl: 7.9% cpx: 2.3%	0.4 0.3	qz+ep, ch, pr, Am: ch, qz, cc
GDH-8	metabasalt	+	pl, cpx, ox(3),	pl ab, ep, ch; cpx* ch, ep, pr;	45%	intergranular		pl: 13.7% cpx: 2.3%	0.7 0.8	ep+qz, ch+qz, pr;
O/C-80	metaandesite	+	pl, gl, qz? ox(2)	pl ab, ep, ch; glch+qz	55%	trachytic		-		ep+az, cc; Am: qz, ch
O/C-81B	metabasalt	+	cpx, pl, ol, ox(1), sp (sp in cpx and ol)	plab, cz, pr, ch; cpx* ch, amph, qz ol^2qz, cc, ch	45%	intergranular (intersertal?)		pl: 6.3% cpx: 10.5% ol: 6.9%	1.0 2.0 1.0	Am: ch, qz

Table A5: Petrographic summary of representative samples from the Mule Mountain volcanics (continued)

Sample ID	Rock Type	A	Mineralogy		% Alt.	Ign. Texture (groundmass)	grain size	Phenocrysts	size	Veins oldest → youngest
			Igneous (mode)	Metamorphic						
O/C-81A	metabasalt	+	pl, cpx, ox(<1)	pl cz, ab, ch, mu; cpx*ch, qz, amph ol²qz, cc, ch	40%	intergranular		pl: 2%, cpx: 3% ol: 2%	0.8 1.0 0.7	qz+ch
O/C-82	metaandesite	+	pl, cpx, ox(2)	pl ab, ±cz, ±ep, ±ch; cpx*chl, other: qz	50%	intergranular		pl: 1.9% cpx 0.5%	0.2 0.2	qz+ch A: qz, ch, ep
O/C-104	metaandesite	-	pl, cpx, ox(3), gl?	pl ab, ±cz, ±ep, ±pr; cpxch, qz	60%	intergranular (intersertal?)		pl: 4.1% cpx: 21%	0.1 0.1	Am: pr, ch, qz, cc
O/C-147	metaandesite	+	pl, cpx?, gl?, ox(5)	pl ab, ±ep, ±cz,; glch; other: pr, cc,	65%	trachytic		aphyric		ep, cc, Am: qz, ch, gar
O/C-217	metaandesite	+	pl, cpx, gl?, ox(3)	pl ab, cz, ep, ±ch, ±mu; cpxch, pr, qz;	55%	trachytic		pl: 12.5%, cpx: 1.8% ox: 2%	0.8 0.3	qz+ep, lau, Am: qz, ch, pr

Table A6 Petrographic summary of representative samples from tonaltic dikes in the metagabbro unit (muscovitebiotitegarnet bearing dikes)

Sample-ID	Rock Type	A	Mineralogy		% Alt.	Texture	Grain size	Veins oldest → youngest
			Igneous (mode):	Metamorphic:				
GH-97-6	s/c-augen metatonalite	+	pl(45), qz(45), mu(8), bio(2), gar	pl cz, ab, ±ep ±ch, other: pr	55%	mylonitic fabric, S/C-type foliation	4 mm	ep^{boud}., pr
GH-97-20	metatonalite	+	pl(42, An_{12}), mu(15), qz(36), gar(7)	pl cz, ab, ep, ±ch	10%	tectonic foliation, recryst. qz	2.5 mm	
O/C-30-S37	metatonalite	-	pl(50, An_{12}), qz(48), mafic?(2)	pl cz, ab, ±ep, maficch; other: pr	49%	tectonic foliation and cataclastic overprint	3 mm	ep^{def}, ch, pr
O/C-12-S20	metatonalite	-	pl(50, An), qz(45), mu(1), bio(4), ox(<1)	pl cz, ab other: ch, ep, pr	47%	tectonic foliation	3 mm	pr
O/C-372b	metatonalite	-	pl(50), qz(40), mu(10)	pl cz, ab, ep other: ch, ep, pr	55%	mylonitic fabric	1.5 mm	pr
O/C-417a	metatonalite	-	pl(48), qz(38), bio(7), hbl(2), mu(2), ox(2), ap	pl cz, ab, ±ep other: ch, pr	45%	mylonitic fabric	1.5 mm	

Table A7: Petrographic summary of representative samples from the Half Moon Bar diorite

Sample-ID	Rock Type	A	Mineralogy Igneous (mode):	Metamorphic:	% Alt.	Ign. Texture	phenocrysts (%, size)	m-gs	Veins oldest → youngest
SC-11	Leuco-hornblende-diorite (dike)	-	pl(73, An_{82}), cpx/hbl(27), ox(1.7), qz(1.2)	pl → chl, mu, ab; cpx → amph ±mt; other: ti,	60%	seriate hypidiomorphic granular texture	pl (20, 2)	1	
SC-12	meta-trondhjemite	-	pl(50), qz(47), hbl+bio(3), ox(<1)	pl* → cz, ab, ±ep, ±ch; hbl*+bio* → ac ±chl, mt, other: pr	50%	xenomorphic granular	-	1.5	qz+ep
SC-13	meta-trondhjemite	-	pl(50), qz(46) hbl(2), ox(1), bio, ap, ti	pl → cz, ab, ±ep, ±ch; hbl* → ac, ch ±ep	50%	xenomorphic granular	-	1.0	qz+ep, qz+ch
O/C-118a	quartz bearing hornblende-diorite	+	pl(55, An_{76-18}) cpx/hbl(39), qz(2), ox(4)	pl → cz, ep, chmu, ab; cpx → ac, ch ±ep;	80%	hypidiomorphic granular	-	3	qtz+ep, pr, lau
O/C-118b	diabase (dike)	-	pl($An_{78-?}$), cpx, ox(3)	pl → cz, ab, ep, ch ±mu; cpx* ac+mt, ±ch	65%	porphyritic, cpx pseudomorphs	pl (15, 0.8) cpx (9, 0.7) ox(1.5, 0.4)		ep+qz, qz
O/C-174A	quartz-hornblende-diorite	+	pl(45, $An_{78-?}$), cpx+hbl?(45), qz(7), ox(3)	pl → cz, ab, ep, ch ±mu; cpx* → ac, ch, ep;	60%	hypidiomorphic granular	-	2	
O/C-174B	diabase (dike)	+	pl, cpx, ox(4)	pl → ep, cz, ab, ch, ±mu cpx* → ac, mt, ±ch,; other: pr	60%	porphyritic	pl (22, 0.6) cpx(19, 0.7) ox: (3, 0.4)		pr, lau
O/C-174C	dacitic dike with xenoliths of O/C-174a &b	-	pl(35), qz(20) hbl(3), ox(1)	pl → ep, cz, ab hbl → ac, ch ±ep ±mt;	85%	porphyritic, many broken phenocrysts	pl (30, 0.5) qz (20, 0.6) hbl (3, 0.4)		qtz+ep, lau
O/C-176A	leuco-hornblende diorite	+	pl(70, An_{76}), hbl/ cpx?(30), ox(2)	pl → cz, ab, ep, ch cpx → ac, mt, ch ±ep;	80%	hypidiomorphic granular		0.5	ep, pr

Table A7: Petrographic summary of representative samples from the Half Moon Bar gabbro (continued)

Sample-ID	Rock Type	A	Mineralogy Igneous (mode):	Metamorphic:	% Alt.	Ign. Texture	phenocrysts (%, size)	m-gs	Veins oldest → youngest
O/C-176B	diabase (dike)	-	pl, cpx, ox(5)	pl → cz, ab, ep cpx → ac, mt, ch ±ep	80%	porphyritic (seriate in places)	pl (25, 1) cpx (7, 0.6) ox (2, 0.3)	-	ep, qz+ep+ch, pr
O/C-178	quartz bearing hornblende-diorite	-	pl(57, An_{75-17}), qz^r(3) cpx?/ hbl(38), ox(2), ap	pl → cz, ab, ep; cpx → acmg, other: ch hbl → ac, ch, ep	68%	idiomorphic granular	-	2.5	ductile-brittle shearbands
O/C-375B	hornblende-diorite	-	pl(53), hbl(45), cpx?, ox(2), ap	pl → cz, ab, ep; cpx → acmt, ch	90%	hypidiomorphic granular	-	2	
O/C-375C	diabase (dike)	+	pl(An_{76}), cpx, ox(1.5)	pl → cz, ab, ep; cpx → acmt, other: ch	85%	porphyritic, cpx pseudomorphs	pl (14, 0.5) cpx (4, 0.4) ox: (1, 0.1)	-	ep+qz+ch
O/C-375D	diabase (dike)	+	pl(An_{63}), cpx, ox(1.5)	pl → cz, ab, ep; cpx → acmt, other: ch	70%	porphyritic, cpx pseudomorphs	pl (12, 0.4) cpx (7, 0.3) ox (1, 0.1)		pr, lau, cc
O/C-376	quartz-hornblende-diorite	+	pl(64, An_{75-17}), hbl/cpx(30), qz(5), ox(1)	pl → cz, ab, ep, ch; cpx → acmt,	65%	idiomorphic granular	-	2.5	cz
O/C-377	quartz-hornblende-diorite	+	pl(58, $An_{77-?}$), hbl/cpx(28), qz(12), ox(2)	pl → cz, ab, ep, ch; cpx* → acmt,	75%	idiomorphic granular	-	2.5	

Explanation to tables A1 through A7

Mineral abbreviations

ab	albite	gar	garnet	pr	prehnite
ac	actinolite	gl	glass (altered to chlorite)	pu	pumpellyite
amph	amphibole (ac and ac-hbl)	hbl	hornblende	py	pyrite
An	anorthite	hbl*	relict igneous hbl present	qz	quartz
ap	apatite	lau	laumontite	qz^r	weakly recrystallized qz
bio	biotite	mt	magnetite	ser	sericite
cc	calcite	mu	muscovite	sp	Chromian spinel
ch	chlorite	ol	olivine	su	sulfide
cpx	clinopyroxene	opx	orthopyroxene	ti	titanite (sphene)
cpx*	relict igneous cpx present	ox	Fe-Ti oxide (opaque)		
cz	clinozoisite	pl	plagioclase		
ep	epidote	pl^Z	relict zoning in plagioclase		

Other

^{t} tectonic overprint of igneous foliation (commonly stress induced twinning in plagioclase)

^{1} cr-spinel in xenocrysts (olivine),

^{2} pseudomorphs after olivine, ^{3}..pseudomorphs after clinopyroxene,^{4}..pseudomorphs after plagioclase,

Veins: ^{boud}…boudinaged, ^{def}…deformed

Am amygdules

sb shear band

Row A + analyzed for major and trace elements, - not analyzed