TABLE A. EPIDOSITE MAJOR- AND TRACE-ELEMENT ANALYSES.

Sample	96-1-14	102-4-1	108-3-16	113-1-26
SiO_2	66.00	76.65	50.04	50.31
TiO_2	0.70	0.28	1.38	0.37
Al_2O_3	13.77	12.22	15.63	18.32
Fe_2O_3*	7.19	1.12	10.98	9.05
MnO	0.05	0.01	0.14	0.10
MgO	1.28	0.62	6.71	1.16
CaO	4.65	1.82	8.86	17.68
Na_2O	4.36	5.28	1.91	0.10
K_2O	0.01	0.40	0.01	0.01
P_2O_5	0.20	0.02	0.11	0.05
LOI	1.61	1.17	4.01	2.74
Total	99.83	99.60	99.79	99.90
Sr	125	122	122	360
Y	47	22	25	12
Pb	2	2	2	4
Nb	1	2	1	1
V	13	24	320	400
Cr	1	3	36	11
Co	27	29	36	29
Zn	44	8	87	10
Cu	2	2	4	57
La	5	8	2	1
Ce	15	19	8	3
Nd	16	11	8	3
Sm	5	3	3	1
Eu	2	1	1	1
Tb	1	BD	1	BD
Dy	8	3	4	2
Ho	2	1	1	BD
Er	5	2	3	1
Tm	1	BD	BD	BD
Yb	4	2	3	1
Lu	1	BD	BD	BD

Notes: Major-element data was collected by X-ray fluorescence spectrometry at Cominco Ltd. Exploration Research Laboratory. Trace-element data was collected by inductively coupled plasma mass spectrometry at the University of Victoria using an HF-HNO_3 technique, except for Cu and Zn, which were analysed by atomic absorption spectrometry at Cominco Ltd. Research Labratory using an HF-HClO4 total decomposition technique. Major-element values are in wt%; trace-element values are in ppm. LOI = loss on ignition; BD = below detection.

*Total iron calculated as ferric iron.

TABLE B. EPIDOSITE MODAL MINERALOGY

Sample	Protolith	Epidote	Quartz	Chlorite	Plagioclase	Opaques + Titanite
96-1-14	Plagiogranite	33	47	11	6	3
99-2-8	Diabase	58	27	8	0	7
102-4-1	Plagiogranite	28	41	2	28	1
108-3-16	Diabase	49	25	19	2	5
113-1-26	Plagiogranite	46	49	3	0	2

Notes: Modal data determined by counting 1200-1600 points per sample. Plagioclase in all samples is relict, and is almost pure albite. Plagioclase in sample 102-4-1 is mostly in the host rock of a shear hosted epidosite. Values in percent.

TABLE C. REPRESENTATIVE MINERAL ANALYSES

Sample	96-1-14	102-4-1	108-3-16	113-1-26	96-1-14	99-2-8	102-4-1	108-3-16	113-1-26	108-3-16	108-3-16	108-3-16	108-3-16
Analysis	B3	D2	C3	A1	B5	B4	D4	A4	A1	A2	A5	D6	D7
Mineral	chlorite	chlorite	chlorite	chlorite	epidote	epidote	epidote	epidote	epidote	amphibole	amphibole	amphibole	amphibole
SiO_2	25.58	28.60	29.79	29.92	38.09	37.91	37.32	37.41	38.26	51.07	50.51	51.07	51.99
TiO_2	0.14	BD	BD	0.04	0.22	0.16	0.09	0.09	0.04	0.72	0.63	0.97	0.62
Al_2O_3	19.96	20.66	17.75	16.31	24.82	26.28	23.12	25.50	26.83	3.36	3.37	3.20	2.35
Cr_2O_3	—	BD	BD	—	0.01	BD	0.01	0.02	0.04	BD	BD	BD	0.01
FeO*	31.70	14.74	20.00	18.64	—	—	—	—	—	18.11	20.08	17.15	16.86
Fe_2O_3†	—	—	—	—	12.00	10.99	14.37	11.65	9.43	—	—	—	—
MnO	0.23	0.12	0.32	0.27	0.08	0.46	0.19	0.21	0.04	0.31	0.32	0.27	0.33
MgO	11.71	24.44	21.00	21.80	0.03	0.04	0.05	0.02	0.03	13.68	13.22	13.94	14.99
CaO	0.12	BD	0.07	0.11	23.68	22.99	23.14	23.20	23.88	9.25	8.70	9.68	8.24
Na_2O	0.03	BD	0.01	BD	0.01	BD	0.01	0.02	BD	1.14	1.17	1.57	2.39
K_2O	—	0.02	0.01	—	0.01	0.01	0.01	0.01	BD	0.28	0.27	0.34	0.36
Cl	0.03	0.02	BD	0.03	BD	BD	0.01	BD	BD	0.15	0.27	0.06	0.07
F	0.05	0.19	BD	0.08	0.04	BD	0.02	BD	BD	0.16	0.13	0.48	1.24
Total	89.55	88.79	88.95	87.20	98.98	98.83	98.32	98.15	98.54	98.12	98.50	98.51	98.90
Si	5.47	5.62	5.99	6.11	2.99	2.96	2.97	2.95	2.98	7.56	7.50	7.56	7.74
Al^{IV}	2.53	2.39	2.02	1.89	0.01	0.04	0.03	0.05	0.02	0.44	0.50	0.44	0.26
Al^{VI}	2.49	2.39	2.19	2.03	2.28	2.38	2.15	2.33	2.45	0.15	0.09	0.12	0.15
Cr	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ti	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.08	0.07	0.11	0.07
Mg	3.73	7.15	6.29	6.63	0.00	0.00	0.01	0.00	0.00	3.02	2.93	3.08	3.33
Fe^{2+}	5.67	2.42	3.36	3.18	—	—	—	—	—	2.24	2.49	2.12	2.10
Fe^{3+}	—	—	—	—	0.71	0.65	0.86	0.69	0.55	0.00	0.00	0.00	0.00
Mn	0.04	0.02	0.05	0.05	0.01	0.03	0.01	0.01	0.00	0.04	0.04	0.03	0.04
Ca	0.03	0.00	0.02	0.02	1.99	1.92	1.98	1.96	1.99	1.47	1.38	1.54	1.31
Na	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.34	0.45	0.69
K	—	0.01	0.00	—	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.06	0.07
Cl	0.02	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.02	0.02
F	0.07	0.24	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.08	0.06	0.23	0.58
Total Cations	19.99	20.00	19.92	19.92	8.00	7.99	8.02	8.00	7.99	15.38	15.39	15.52	15.76
O	28	28	28	28	12.5	12.5	12.5	12.5	12.5	23	23	23	23

Notes: BD = below detection; — = not determined. Amphibole analyses were recalculated using the 15-NK method outlined in Robinson et al. (1982) in order to satisfy crystal-chemical limits.

*Total iron calculated as ferrous iron

†Total iron calculated as ferric iron.

Robinson, P., Schumacher, J. C., and Spear, F. S., 1982, Formulation of electron probe analyses, *in* Veblen, D. R., and Ribbe, P. H., Amphiboles: Petrology and experimental phase relations: Mineralogical Society of America Reviews in Mineralogy, Volume 9B, p. 6-9.

TABLE D. FLUID-INCLUSION HOMOGENIZATION TEMPERATURES AND SALINITIES FROM TONGAN EPIDOSITES

Inclusion type*	n	T_h (°C)†			Salinity (wt% NaCl)		
		Min.	Max.	Ave.	Min.	Max.	Ave.
1 (All data)	95	160	391	297	1.0	22.3	5.6
1 (Quartz)	77	160	391	299	1.0	22.3	6.0
1 (Epidote)	18	245	385	287	3.8	5.0	4.1
2a	14	305	404	347	0.8	7.4	3.5
2b§	4	380	415	398	0.3	4.4	3.4
3a	8	184	300	274	29.1	33.9	30.8
3b	6	275	>500#	437	36.3	>59.8#	52.7
All data	127	160	>500#	316	1.0	>59.8#	10.3

Notes: Abbreviations: Min. = minimum; Max. = maximum; Ave. = average.

*See text for explanation.

†T_h = homogenization temperature.

§ Homogenization temperatures represent minimum values due to difficulties in observing phase transitions.

#Three inclusions were still unhomogenized at 500 °C, therefore, salinity values are minimum estimates. See also Figure 4.