

Table 9. Analytical and other data for rocks from intrusive body XIII (Jag) in Clearwater Mountains, Alaska.

Sample No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Field No.	69-AST-231	69-AST-232	69-AST-233	69-AST-234	69-AST-235	69-AST-236	69-AST-237	69-AST-238	69-AST-239	69-AST-240	69-AST-241	69-AST-242	68-ASb-134	68-ASb-135b	68-ASb-136	68-ASb-153	68-ASb-243	68-ASb-389	68-ASb-160a	
Rock type ^a	Th	Th	MZG	Ex	MZG	MZG	MZG	MZ	MZG	MZD	MZG	MZG	MZD	Th	MZD	MZG	MZD	MZG	Ex	
Major oxide analyses (weight percent)^b																				
SiO ₂	40.1	46.6	42.1	47.1	46.4	48.0	47.9	53.0	51.0	56.2	63.2	61.1	49.7	40.9	44.9	59.2	52.3	46.9	40.4	
Al ₂ O ₃	7.8	9.9	12.3	13.7	14.8	16.5	17.0	18.4	17.4	18.7	19.3	20.5	17.9	7.7	17.9	19.1	17.0	14.1	14.6	
Fe ₂ O ₃	9.2	1.5	10.5	4.7	4.6	4.0	5.5	4.4	3.9	4.0	1.0	1.2	4.8	10.2	6.1	2.1	3.5	5.9	7.2	
FeO	8.4	5.7	3.6	8.9	6.8	6.1	4.5	2.8	4.9	1.5	1.2	1.5	4.6	8.4	5.0	1.7	5.3	5.7	8.4	
MgO	10.5	14.6	7.7	7.6	5.8	4.6	4.3	2.7	3.5	2.0	0.80	0.95	3.9	12.2	4.8	1.5	3.8	5.8	7.8	
CaO	17.5	13.8	16.6	9.3	12.8	11.1	11.2	7.8	8.9	6.0	3.1	4.1	9.9	15.6	13.0	5.1	7.2	13.4	13.9	
Na ₂ O	0.64	0.41	1.3	2.2	2.2	2.9	3.0	3.6	3.5	4.1	5.4	5.0	2.9	0.36	2.0	4.8	3.5	2.1	1.4	
K ₂ O	1.3	3.7	1.3	3.0	2.6	2.6	2.4	4.7	3.3	5.0	4.4	4.4	2.5	1.6	1.5	4.7	2.6	2.1	1.5	
H ₂ O ⁺	1.0	2.3	1.5	1.2	1.3	1.5	1.3	1.2	1.1	1.0	0.84	0.92	1.3	1.5	1.9	1.0	2.4	1.1	1.4	
H ₂ O ⁻	0.08	0.27	0.09	0.05	0.05	0.05	0.07	0.03	0.07	0.08	0.14	0.08	0.11	0.12	0.13	0.07	0.18	0.07	0.07	
TiO ₂	1.1	0.67	0.92	1.0	0.88	0.88	0.83	0.56	0.67	0.35	0.18	0.20	0.71	1.1	0.83	0.29	1.0	0.81	1.1	
P ₂ O ₅	1.5	0.14	0.93	0.33	0.93	0.79	0.79	0.51	0.57	0.30	0.11	0.13	0.76	0.09	0.88	0.19	0.65	0.99	1.2	
MnO	0.25	0.02	0.26	0.19	0.23	0.22	0.21	0.20	0.21	0.21	0.14	0.08	0.25	0.17	0.24	0.09	0.18	0.26	0.25	
CO ₂	0.05	0.05	0.08	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.34	0.05	0.11	
Sum	99	100	99	99	99	99	99	100	99	99	100	100	99	100	99	100	100	99	99	
Semiquantitative spectrographic analyses (parts per million)^c																				
B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	30	N	N	
Ba	1000	1500	1000	1500	2000	1500	2000	3000	3000	5000	5000	5000	1500	1000	1000	3000	700	1500	700	
Be	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Co	70	70	70	70	50	30	30	20	30	15	7	2	30	100	50	7	30	50	70	
Cr	200	1500	150	50	100	30	20	10	10	15	7	10	15	150	20	7	15	50	70	
Cu	3	3	2	150	70	30	20	2	30	1	< 1	< 1	70	30	200	7	30	30	15	
La	N	N	30	N	30	50	30	50	30	30	30	30	N	N	N	N	N	N	N	
Ni	30	200	20	50	20	15	10	7	10	5	3	3	10	200	15	1	15	15	30	
Pb	N	N	N	N	10	7	10	10	15	15	20	20	N	N	N	20	N	7	N	
Sc	150	150	100	100	70	50	50	20	30	20	5	5	30	150	30	7	30	70	70	
Sr	700	500	1500	1000	2000	2000	2000	2000	2000	3000	2000	3000	3000	300	3000	3000	2000	2000	2000	
V	1000	200	700	700	700	500	500	300	500	200	70	100	500	700	500	100	300	500	700	
Y	30	10	30	20	30	30	30	30	20	20	15	10	30	N	20	7	30	30	20	
Zr	50	20	30	70	50	50	30	50	50	30	100	100	30	N	20	30	100	50	20	
Ga	N	10	10	10	15	20	20	20	20	20	20	20	30	10	20	100	100	50	15	
Yb	3	1	3	3	3	3	3	3	3	2	1.5	1	3	N	2	0.7	3	3	3	
Barth cation norms																				
quartz	---	---	---	---	---	---	---	---	---	0.35	6.39	4.25	0.12	---	---	1.70	2.40	---	---	
orthoclase	---	1.44	8.05	18.26	15.86	15.83	14.64	28.09	19.96	29.82	25.82	25.78	15.19	---	9.26	27.70	15.82	12.85	9.25	
albite	---	---	5.61	16.43	12.07	20.63	23.79	28.51	29.28	17.17	48.15	44.53	26.79	---	18.77	42.99	32.38	18.20	3.78	
anorthite	15.30	14.38	25.05	19.21	23.57	25.07	26.67	20.40	22.55	18.03	14.25	19.33	29.26	15.31	37.05	16.65	23.69	23.67	30.41	
corundum	---	---	---	---	---	---	---	---	---	---	---	---	---	7.89	---	---	---	---	---	
leucite	6.45	16.50	---	---	---	---	---	---	---	---	0.43	0.40	---	---	---	---	---	---	---	
nepheline	3.62	4.23	3.98	2.35	4.99	3.72	2.41	2.52	1.74	---	---	---	---	2.02	---	---	---	0.80	5.61	
wollastonite	25.68	21.40	21.02	10.44	14.29	10.55	10.15	6.15	7.54	4.02	---	---	6.34	24.68	9.62	2.82	2.61	15.27	13.08	
enstatite	21.61	18.28	21.02	7.21	10.18	7.25	8.49	5.55	5.23	5.58	2.19	2.60	11.08	21.70	9.37	4.13	10.81	12.22	9.92	
ferrosilite	4.07	3.12	---	3.23	4.11	3.30	1.65	0.60	2.31	---	1.12	1.23	3.28	2.99	1.94	0.90	4.80	3.05	3.16	
forsterite	6.62	16.81	0.95	10.81	4.76	4.38	2.82	1.49	3.50	---	---	---	---	---	10.10	3.29	---	3.28	9.43	
fayalite	1.25	2.87	---	4.85	1.92	1.99	0.55	0.16	1.55	---	---	---	---	---	1.39	0.67	---	0.82	3.00	
magnetite	10.10	1.58	7.40	5.06	4.97	4.31	5.94	4.65	4.17	3.28	1.04	1.24	5.16	11.13	6.67	2.19	3.77	6.39	7.86	
ilmenite	1.61	0.94	1.34	1.44	1.27	1.27	1.19	0.79	0.96	0.49	0.25	0.28	1.02	1.21	1.21	0.40	1.44	1.17	1.60	
apatite	3.29	0.30	2.63	0.71	2.01	1.70	1.71	1.08	1.22	0.63	0.23	0.27	1.63	0.20	1.92	0.40	1.40	2.14	2.62	
calcite	---	0.13	0.21	---	---	---	---	---	---	---	0.13	---	0.13	0.13	0.13	0.13	0.89	0.13	0.29	

^aEx - essexite, MZ - monzonite, MZD - monzodiorite, MZG - monzogabbro, Th - theralite
^bAnalyses by P. Elmore, G. Chloé, L. Artis, S. Botts, H. Smith, J. Kelsey of U.S. Geological Survey using methods described by Shapiro and Brannock (1962). For sample location, refer to Appendix.
^cAnalyses by C. Heropoulos, U.S. Geological Survey. Elements looked for but not found: Ag, As, Au, Bi, Cd, Mo, Nb, Pd, Pt, Sb, Sn, Te, U, W, Zn, Ce, Ge, Hf, In, Li, Re, Ta, Th, Tl.