

Supplementary File 5. Trace elements

Trace elements results obtained by ICP-MS and XRF. The strongly immobile elements were used for tectonic setting calculation. In some samples, the hydrothermal alteration provoked a lixiviation of important trace elements. nm = no measured. DL = Detection Limits (inferior). IGLa-1 standard and DL from Lozano and Bernal (2005). ICP-MS DL from ALS CHEMEX laboratories. Sample AB10-06 is a microbasalt flow, it represents the lava flows which the volcaniclastic units were generated from.

Locallity	Cerros de la Ciénega					Cerro Calaveras				Cerro San Agustín			Cerro Rajón					DL		Standard
Method	XRF	ICP-MS	XRF	XRF	ICP-MS	ICP-MS	ICP-MS	XRF	ICP-MS	ICP-MS	ICP-MS	ICP-MS	XRF	XRF	ICP-MS	ICP-MS	ICP-MS	ICP-MS	XRF	XRF
SAMPLE	AB11-20C	AB11-20F	AB11-20O	AB11-20D	AB11-20L	AB11-40C	AB11-39	AB11-47C	AB16-O2A	AB14-05A	AB14-05B	AB10-06B	AB15-08A	AB15-05B	AB15-08B	AB15-05A	AB16-49B	-	-	IGLa-1
Ba	215	119	464	199	411	100	545	1148	2760	215	297	719	1926	803	1175	1895	796	0.5	11	930
Co	22	4	14	24	8	32	70	43	38	63	65	67	50	46	46	31	56	1	3	10
Cr	919	990	355	792	230	870	220	645	300	640	660	400	549	345	250	10	90	10	2	27
Cs	nm	0	nm	nm	1	1	2	nm	1	2	1	0	nm	nm	7	6	2	0.01	nm	nm
Cu	58	26	72	37	17	81	11	5	36	25	256	316	3624	15	29	70	5	1	0.7	17
Ga	nm	21	nm	nm	14	11	28	nm	19	18	18	19	nm	nm	20	16	22	0.1	nm	nm
Hf	nm	8	nm	nm	9	8	13	nm	10	8	7	8	nm	nm	7	8	12	0.2	nm	nm
Li	nm	nm	nm	nm	10	10	nm	nm	10	30	50	nm	nm	nm	40	20	20	10	nm	nm
Nb	75	63	113	64	82	63	164	42	70	92	65	75	62	60	79	61	97	0.2	0.7	20
Ni	99	40	51	165	61	178	173	178	167	301	341	236	292	132	134	19	213	1	0.5	7
Pb	6	5	5	5	2	10	9	3	2	5	2	9	3	4	<2	<2	4	2	4	11
Rb	5	2	2	6	7	24	89	7	19	47	21	24	71	54	64	71	57	0.2	2	32
Sc	nm	nm	nm	nm	28	29	nm	nm	27	25	28	nm	nm	nm	24	11	28	1	nm	nm
Sn	nm	3	nm	nm	3	2	4	nm	4	3	2	3	nm	nm	2	2	3	1	nm	nm
Sr	252	155	226	167	270	541	345	294	733	529	547	647	219	326	306	590	266	0.1	1	592
Ta	nm	5	nm	nm	5	4	12	nm	5	8	4	5	nm	nm	5	4	6	0.1	nm	nm
Th	3	4	12	2	5	4	16	2	9	12	5	6	3	3	8	5	8	0.05	2	<2
U	nm	1	nm	nm	2	1	3	nm	2	1	1	2	nm	nm	10	1	2	0.05	nm	nm
V	500	487	317	454	475	319	448	228	400	463	439	519	344	358	445	325	513	5	5	97
Y	29	27	43	28	31	23	40	20	33	24	26	32	19	20	30	29	39	0.5	0.5	22
Zn	52	126	12	32	26	140	188	74	63	253	168	177	135	105	131	93	120	2	1.5	74
Zr	281	290	450	254	363	319	548	205	366	303	272	316	171	222	313	313	450	2	0.5	224
Th/Ta	nm	1.0	nm	nm	1.0	0.9	1.4	nm	2.0	1.6	1.3	1.2	nm	nm	1.5	1.2	1.3	-	-	-
REE	AB11-20C	AB11-20F	AB11-20O	AB11-20D	AB11-20L	AB11-40C	AB11-39	AB11-47C	AB16-O2A	AB14-05A	AB14-05B	AB10-06B	AB15-08A	AB15-05B	AB15-08B	AB15-05A	AB16-49B	-		
La	nm	52.8	nm	nm	65.5	52.0	122.0	nm	60.5	66.9	52.3	54.5	nm	nm	51.7	50.3	73.2	0.5		
Ce	nm	118.0	nm	nm	139.0	113.5	266.0	nm	132.0	153.0	109.0	123.0	nm	nm	119.0	101.0	176.0	0.5		
Pr	nm	12.2	nm	nm	16.5	13.8	31.3	nm	15.8	18.9	13.2	15.4	nm	nm	14.5	12.5	21.8	0.03		
Nd	nm	49.2	nm	nm	67.3	56.8	121.0	nm	68.1	78.1	56.0	60.8	nm	nm	60.2	52.2	91.3	0.1		
Sm	nm	9.5	nm	nm	13.6	10.6	21.8	nm	12.7	14.1	11.6	12.0	nm	nm	12.3	10.4	16.7	0.03		
Eu	nm	2.9	nm	nm	3.9	3.4	6.0	nm	3.9	4.1	3.3	3.5	nm	nm	3.6	3.3	5.0	0.03		
Gd	nm	7.4	nm	nm	11.2	8.8	15.5	nm	11.6	10.9	9.8	9.8	nm	nm	10.8	9.7	14.8	0.05		
Tb	nm	1.1	nm	nm	1.4	1.1	2.1	nm	1.5	1.4	1.3	1.4	nm	nm	1.5	1.2	1.8	0.01		
Dy	nm	6.2	nm	nm	7.5	5.4	10.2	nm	8.4	6.6	6.1	7.6	nm	nm	7.1	6.6	9.7	0.05		
Ho	nm	1.2	nm	nm	1.3	0.9	1.8	nm	1.4	1.0	1.0	1.4	nm	nm	1.2	1.2	1.6	0.01		
Er	nm	2.7	nm	nm	3.0	2.3	3.7	nm	3.6	2.3	2.5	3.3	nm	nm	2.9	2.8	3.9	0.03		
Tm	nm	0.4	nm	nm	0.4	0.3	0.5	nm	0.4	0.3	0.3	0.4	nm	nm	0.4	0.4	0.4	0.01		
Yb	nm	1.9	nm	nm	2.4	1.8	2.5	nm	2.6	1.6	1.9	2.2	nm	nm	2.3	2.2	2.5	0.03		
Lu	nm	0.3	nm	nm	0.3	0.2	0.4	nm	0.4	0.2	0.2	0.3	nm	nm	0.3	0.3	0.3	0.01		