

DETAILED METHODS

Energy-Dispersive X-Ray Fluorescence

Whole-rock samples ($n=252$) were analyzed using standards-based energy-dispersive X-ray fluorescence (ED-XRF) at the University of Missouri Research Reactor (Missouri, United States) using an Elva-X table-top spectrometer, operated at 40kV. Calibration curves were established from obsidian source specimens previously analyzed by NAA, inductively-coupled plasma mass spectrometry (ICP-MS), and ED-XRF (Glascock and Ferguson, 2012). The accuracies of elements measured by ED-XRF ranged from 2-4% of the reported values.

Neutron Activation Analysis

Descriptions of neutron activation analysis (NAA) procedures and standards are provided by [Glascock et al. \(2007\)](#). Accuracies of individual NAA determinations ranged from 1% to 10% of the reported values.

Wavelength-Dispersive X-Ray Fluorescence

Samples were milled to powder by hand using an agate mortar and pestle, which were cleaned thoroughly with acetone to prevent cross-sample contamination. Next, 0.5 grams of sample were combined with 5.5 grams of lithium meta-tetraborate flux in a platinum crucible and fused into glass discs using a Phoenix™ fusion machine, which employs a pre-set menu for pre-melting, melting (at 1030°C), and swirling to homogenize each sample, then pours the melt into pre-heated platinum molds to cool.

The glass discs were analyzed for ten major and eight trace elements using a Bruker S4 Pioneer™ X-Ray Fluorescence Spectrometer at the University of Maine at Farmington (Maine, United States). The S4 Pioneer™ uses standard wavelength-dispersive X-ray fluorescence (WD XRF) methodology with SpectraPlus™ software to collect and process data. Calibration lines were constructed using USGS reference materials G2, GSP-2, AGV-2, W2a, and BIR-1. Internal lab standards NJQ-2 and SBG-12 were used to monitor accuracy and precision.

Portable Energy-Dispersive X-Ray Fluorescence (P-XRF)

In October 2012 we analyzed 35 whole-rock Alca source samples in a lab in Arequipa, Peru using a Bruker Tracer III-SD™ P-XRF. Data were collected at 40 keV, 14 μ A at 2048 channels for 300 seconds per sample. Peak intensities for all analyses were normalized to the backscatter Compton peak of Rh. Calibration was established from 40 obsidian source specimens previously analyzed by NAA, ICP-MS, and ED-XRF (Glascock and Ferguson, 2012) and evaluated by Speakman (2012). We collected three different spot measurements on each sample

and calculated mean RSDs for each element. Mean RSDs for elements of interest include the instrumental uncertainty, plus uncertainty due to sample effects: Fe=1.6%, Rb=1.3%, Sr=1.6%, Zr=2.0%.

Statistical Cluster Analysis

To test sample assignments we used Gauss statistical software to conduct i) hierarchical cluster analysis using mean Euclidean distance and average linking on the entire suite of element and oxide data obtained by each geochemical technique, yielding dendograms, and ii) Mahalanobis distance analysis using a sub-set of elements and oxides obtained by each geochemical technique to yield group membership probabilities for each sample.

Data was log transformed prior to hierarchical cluster analysis. Dendograms for NAA and P-XRF datasets correspond perfectly with sample assignments to sub-sources on the basis of bivariate plots and geographic sample clustering, but ED-XRF and WD-XRF dendograms fail to discriminate samples in any logical way with respect to bivariate plots and geographic clustering. This disparity is due to differences in the overall suites of element and oxide data collected by each technique and incorporated in the hierarchical cluster analysis. Many element concentrations in the suites obtained by NAA and P-XRF discriminate the Alca sub-sources relative to the suites obtained by ED-XRF and WD-XRF.

Mahalanobis distance analysis was performed for all geochemical techniques, producing tables of group membership probabilities (Tables SI07-SI10). The analysis takes as input the hypothetical groups defined by bivariate plots, geographic sample clusters, and dendograms and generates jackknife probabilities for membership of all specimens to each group. Higher jackknife probabilities of group membership are assigned to samples at the furthest distance from the other groups. Computation of the Mahalanobis distance metric requires that groups contain at least two more samples than variables. For each geochemical technique, the elements and oxides chosen were those measured most precisely by each technique and which discriminated sub-sources most clearly based on bivariate plots (Figure 3). Alca-2 was the only Alca sub-source with insufficient samples for this analysis.

Mahalanobis distance analysis confirms that nearly all samples analyzed with all geochemical techniques were assigned to the correct sub-source:

ED-XRF – Rb (ppm) vs Sr (ppm), 99.6% correct (n=249)
NAA – Eu (ppm) vs Th (ppm), 100% correct (n=29)
WD-XRF – TiO₂ (wt %) vs Sr (ppm), 98.4% correct (n=62)
P-XRF – Rb (ppm) vs Sr (ppm), 100% correct (n=32)

In summary, the cluster analysis shows that although a small suite of element and oxide concentrations can be used to discriminate Alca sub-sources, the sub-sources are in fact distinct, and sub-source assignments for analyzed samples are replicable using any of the four techniques.

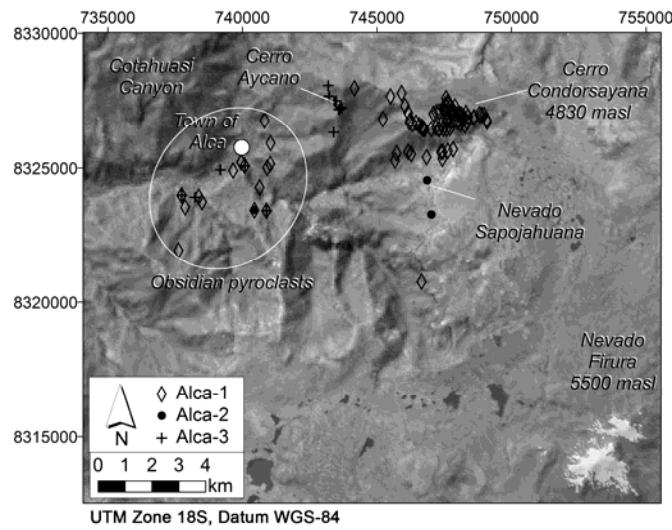


Figure DR1. Detail map of Cotahuasi Canyon area with Alca obsidian samples. Shuttle Radar Topography Mission 90-m digital elevation model and LANDSAT image.

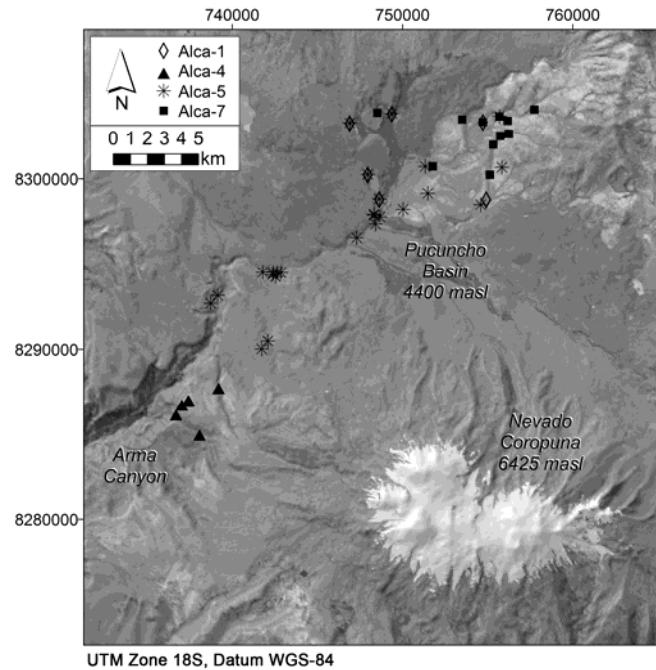


Figure DR2. Detail map of Pucuncho Basin area with Alca obsidian samples. Shuttle Radar Topography Mission 90-m digital elevation model and LANDSAT image.

Table DR1. Mean concentration data for all techniques

ED-XRF	Alca-1	Alca-2	Alca-3	Alca-4	Alca-5	Alca-7	All Alca
Element	n=133	n=3	n=30	n=13	n=42	n=31	n=252
K (%)	3.70 ± 0.22	3.79 ± 0.04	3.63 ± 0.18	3.10 ± 0.10	3.62 ± 0.23	3.73 ± 0.18	3.65 ± 0.25
Ti (ppm)	843 ± 180	1196 ± 79	1385 ± 93	862 ± 150	908 ± 169	1065 ± 142	953 ± 241
Mn (ppm)	434 ± 56	388 ± 82	387 ± 58	515 ± 27	422 ± 60	349 ± 48	419 ± 71
Fe (ppm)	5326 ± 258	7037 ± 87	8135 ± 319	5590 ± 210	5243 ± 269	5083 ± 181	5654 ± 977
Zn (ppm)	39 ± 3	43 ± 3	48 ± 6	33 ± 2	39 ± 5	33 ± 5	39 ± 6
Ga (ppm)	17 ± 2	16 ± 1	15 ± 2	15 ± 4	15 ± 2	17 ± 1	16 ± 2
Rb (ppm)	133 ± 4	139 ± 5	129 ± 5	103 ± 3	128 ± 5	159 ± 4	133 ± 12
Sr (ppm)	84 ± 9	150 ± 7	236 ± 16	169 ± 12	130 ± 11	151 ± 6	123 ± 52
Y (ppm)	13 ± 2	16 ± 3	15 ± 2	11 ± 2	13 ± 2	15 ± 1	13 ± 2
Zr (ppm)	100 ± 10	145 ± 10	160 ± 11	95 ± 9	97 ± 9	97 ± 6	107 ± 22
Nb (ppm)	13 ± 2	13 ± 2	12 ± 1	12 ± 3	14 ± 3	13 ± 2	13 ± 2
 NAA	Alca-1	Alca-2	Alca-3	Alca-4	Alca-5	Alca-7	All Alca
Element	n=10	n=2	n=5	n=5	n=9	n=2	n=33
short-count							
Na (%)	3.08 ± 0.08	3.30 ± 0.09	3.25 ± 0.05	3.18 ± 0.02	3.14 ± 0.06	2.89 ± 0.04	3.14 ± 0.11
Al (%)	7.13 ± 0.31	7.87 ± 0.42	7.56 ± 0.35	7.14 ± 0.17	7.22 ± 0.18	6.61 ± 0.07	7.23 ± 0.36
Cl (ppm)	542 ± 70	534 ± 110	599 ± 34	404 ± 61	538 ± 68	414 ± 0	520 ± 87
K (%)	3.64 ± 0.24	3.32 ± 0.03	3.27 ± 0.18	3.05 ± 0.13	3.56 ± 0.16	3.33 ± 0.31	3.44 ± 0.28
Dy (ppm)	1.99 ± 0.27	1.99 ± 0.07	2.05 ± 0.33	1.63 ± 0.22	1.96 ± 0.20	2.12 ± 0.33	1.94 ± 0.27
long-count							
Sc (ppm)	1.78 ± 0.02	2.01 ± 0.01	1.86 ± 0.02	1.83 ± 0.02	1.76 ± 0.03	1.85 ± 0.00	1.81 ± 0.07
Mn (ppm)	473 ± 7	443 ± 2	561 ± 6	552 ± 3	480 ± 4	447 ± 1	497 ± 42
Fe (ppm)	5431 ± 48	7398 ± 173	8053 ± 81	5838 ± 172	5362 ± 166	4970 ± 16	5962 ± 1038
Co (ppm)	0.27 ± 0.06	0.43 ± 0.03	0.53 ± 0.06	0.39 ± 0.06	0.14 ± 0.02	0.33 ± 0.01	0.31 ± 0.14
Zn (ppm)	43 ± 2	47 ± 3	46 ± 1	37 ± 2	42 ± 2	32 ± 1	42 ± 4
Rb (ppm)	138 ± 2	145 ± 0	128 ± 2	107 ± 1	131 ± 2	159 ± 0	132 ± 13
Sr (ppm)	92 ± 7	181 ± 1	270 ± 7	184 ± 10	134 ± 10	160 ± 15	154 ± 61
Zr (ppm)	113 ± 5	170 ± 5	164 ± 7	100 ± 2	112 ± 9	113 ± 13	122 ± 5
Sb (ppm)	0.16 ± 0.01	0.13 ± 0.00	0.27 ± 0.01	0.39 ± 0.01	0.16 ± 0.00	0.35 ± 0.00	0.22 ± 0.09
Cs (ppm)	2.81 ± 0.02	2.78 ± 0.02	3.43 ± 0.05	2.70 ± 0.01	2.82 ± 0.06	4.98 ± 0.00	3.02 ± 0.56
Ba (ppm)	999 ± 11	979 ± 7	1026 ± 15	1024 ± 8	1014 ± 18	819 ± 10	999 ± 50
Lu (ppm)	0.16 ± 0.01	0.22 ± 0.01	0.19 ± 0.01	0.17 ± 0.03	0.15 ± 0.00	0.18 ± 0.00	0.17 ± 0.03
Hf (ppm)	3.57 ± 0.07	4.89 ± 0.11	4.67 ± 0.07	3.04 ± 0.04	3.31 ± 0.13	3.05 ± 0.02	3.64 ± 0.62
Ta (ppm)	0.95 ± 0.01	0.96 ± 0.00	0.90 ± 0.00	0.67 ± 0.00	0.93 ± 0.02	1.17 ± 0.00	0.91 ± 0.12
La (ppm)	29.1 ± 1.0	43.8 ± 0.0	37.0 ± 0.5	23.7 ± 0.2	31.4 ± 1.7	30.6 ± 0.1	31.1 ± 5.1
Ce (ppm)	58.5 ± 1.6	82.4 ± 0.2	69.6 ± 0.8	46.2 ± 0.4	62.3 ± 3.0	57.1 ± 0.0	60.7 ± 9.0
Nd (ppm)	19.1 ± 1.0	25.3 ± 1.7	22.7 ± 0.8	15.4 ± 1.0	20.8 ± 0.9	18.3 ± 2.1	19.9 ± 2.8
Sm (ppm)	3.57 ± 0.54	4.26 ± 0.02	3.83 ± 0.05	2.78 ± 0.03	3.64 ± 0.07	3.38 ± 0.02	3.54 ± 0.38
Eu (ppm)	0.50 ± 0.01	0.65 ± 0.02	0.69 ± 0.01	0.48 ± 0.01	0.57 ± 0.02	0.47 ± 0.01	0.55 ± 0.08
Tb (ppm)	0.36 ± 0.01	0.37 ± 0.01	0.38 ± 0.01	0.30 ± 0.01	0.35 ± 0.01	0.35 ± 0.00	0.35 ± 0.03
Yb (ppm)	1.11 ± 0.03	1.28 ± 0.04	1.32 ± 0.05	0.99 ± 0.01	1.08 ± 0.03	1.28 ± 0.00	1.14 ± 0.11
Th (ppm)	13.9 ± 0.1	16.5 ± 0.0	13.7 ± 0.1	8.0 ± 0.0	13.8 ± 0.2	13.3 ± 2.5	17.1 ± 0.1
U (ppm)	3.42 ± 0.16	4.02 ± 0.02	3.34 ± 0.12	2.13 ± 0.22	3.61 ± 0.09	4.82 ± 0.13	3.39 ± 0.66

Table DR1. Mean concentration data for all techniques

WD-XRF	Alca-1	Alca-2	Alca-3	Alca-4	Alca-5	Alca-7	All Alca
Element/Oxide	n=19	n=3	n=11	n=7	n=17	n=9	n=66
Na ₂ O (wt %)	4.3 ± 0.1	4.5 ± 0.0	4.5 ± 0.1	4.4 ± 0.0	4.2 ± 0.1	3.9 ± 0.0	4.3 ± 0.2
MgO (wt %)	0.11 ± 0.01	0.18 ± 0.02	0.23 ± 0.02	0.18 ± 0.01	0.10 ± 0.01	0.10 ± 0.01	0.14 ± 0.05
SiO ₂ (wt %)	70.9 ± 2.4	73.7 ± 0.2	71.6 ± 2.3	72.6 ± 3.2	75.5 ± 0.03	74.4 ± 2.6	73.0 ± 2.8
Al ₂ O ₃ (wt %)	12.6 ± 0.3	13.7 ± 0.1	13.9 ± 0.3	13.2 ± 0.3	13.4 ± 0.1	12.9 ± 0.3	13.2 ± 0.5
P ₂ O ₅ (wt %)	0.027 ± 0.002	0.034 ± 0.002	0.046 ± 0.004	0.041 ± 0.002	0.026 ± 0.002	0.021 ± 0.002	0.031 ± 0.009
K ₂ O (wt %)	4.4 ± 0.1	4.3 ± 0.0	4.1 ± 0.0	3.8 ± 0.0	4.4 ± 0.1	4.3 ± 0.0	4.3 ± 0.2
CaO (wt %)	0.62 ± 0.01	0.88 ± 0.02	1.17 ± 0.02	0.91 ± 0.01	0.75 ± 0.02	0.90 ± 0.01	0.82 ± 0.19
TiO ₂ (wt %)	0.128 ± 0.003	0.189 ± 0.004	0.196 ± 0.017	0.127 ± 0.004	0.113 ± 0.004	0.099 ± 0.003	0.134 ± 0.034
Cr (ppm)	6 ± 5	7 ± 5	11 ± 5	8 ± 5	6 ± 5	7 ± 4	7 ± 5
MnO (wt %)	0.062 ± 0.001	0.058 ± 0.003	0.072 ± 0.004	0.073 ± 0.002	0.062 ± 0.001	0.059 ± 0.001	0.064 ± 0.006
Fe ₂ O ₃ (wt %)	0.93 ± 0.05	1.20 ± 0.02	1.33 ± 0.04	1.04 ± 0.14	0.89 ± 0.05	0.83 ± 0.07	1.00 ± 0.18
Zn (ppm)	39 ± 6	36 ± 2	41 ± 3	32 ± 3	34 ± 2	23 ± 5	35 ± 7
Rb (ppm)	154 ± 5	150 ± 8	134 ± 8	117 ± 5	132 ± 4	166 ± 10	143 ± 16
Sr (ppm)	81 ± 2	157 ± 3	222 ± 4	157 ± 3	117 ± 4	139 ± 3	133 ± 48
Y (ppm)	14 ± 2	13 ± 2	15 ± 2	12 ± 2	12 ± 2	14 ± 2	13 ± 2
Zr (ppm)	102 ± 7	146 ± 3	155 ± 14	88 ± 9	75 ± 4	74 ± 6	101 ± 31
Nb (ppm)	14 ± 1	13 ± 1	12 ± 2	9 ± 1	11 ± 1	13 ± 2	12 ± 2
Ba (ppm)	1070 ± 22	1046 ± 24	1110 ± 27	1108 ± 25	1091 ± 27	886 ± 19	1060 ± 75

P-XRF	Alca-1	Alca-2	Alca-3	Alca-4	Alca-5	Alca-7	All Alca
Element	n=6	n=3	n=7	n=6	n=6	n=7	n=35
Mn (ppm)	458 ± 12	447 ± 15	542 ± 10	538 ± 14	489 ± 13	448 ± 13	491 ± 42
Fe (ppm)	5614 ± 124	7624 ± 592	8004 ± 51	5918 ± 43	5563 ± 267	5215 ± 68	6228 ± 1108
Zn (ppm)	46 ± 1	49 ± 1	52 ± 2	41 ± 1	48 ± 3	36 ± 2	45 ± 6
Ga (ppm)	17 ± 1	18 ± 1	17 ± 1	17 ± 1	20 ± 2	19 ± 1	18 ± 2
Rb (ppm)	134 ± 1	142 ± 1	126 ± 1	106 ± 1	132 ± 4	157 ± 2	133 ± 16
Sr (ppm)	72 ± 1	136 ± 4	202 ± 1	141 ± 2	109 ± 5	127 ± 1	133 ± 42
Y (ppm)	14 ± 1	15 ± 0	16 ± 0	13 ± 0	14 ± 0	15 ± 0	15 ± 1
Zr (ppm)	100 ± 2	155 ± 3	154 ± 1	94 ± 3	93 ± 6	86 ± 1	110 ± 29
Nb (ppm)	11 ± 0	12 ± 0	11 ± 0	9 ± 0	11 ± 1	12 ± 0	11 ± 1
Th (ppm)	13 ± 0	15 ± 0	13 ± 0	8 ± 1	13 ± 1	16 ± 1	13 ± 3

Table DR2. ED-XRF concentration data

ANID	Sub-source	Date	K (ppm)	Ca (ppm)	Ti (ppm)	Mn (ppm)	Fe (ppm)	Zn (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)
KRA001	ALCA-1	11/20/2007	35561	4103	833	482	5260	41	18	131	86	12	98	12
KRA002	ALCA-1	11/20/2007	37747	4348	788	495	5461	41	17	138	85	16	102	13
KRA005	ALCA-1	11/20/2007	38409	4199	804	470	5366	41	17	133	86	14	97	13
KRA006	ALCA-1	11/20/2007	38187	4306	763	485	5440	41	13	131	68	12	95	11
KRA007	ALCA-1	11/20/2007	36331	3860	717	453	5272	40	17	129	74	11	95	12
KRA008	ALCA-1	11/20/2007	39249	4170	788	474	5668	41	19	135	86	13	98	14
KRA009	ALCA-1	11/20/2007	36535	4177	758	469	5354	40	17	134	80	12	98	12
KRA014	ALCA-1	11/20/2007	33988	4022	724	434	5228	39	16	130	79	13	91	11
KRA015	ALCA-1	11/20/2007	39527	4476	743	499	5412	40	17	136	79	13	95	13
KRA016	ALCA-1	11/20/2007	29837	3659	711	480	5068	38	15	130	76	13	94	10
KRA017	ALCA-1	11/20/2007	37112	4082	707	480	5295	39	16	132	77	13	93	12
KRA018	ALCA-1	11/20/2007	37661	4014	683	465	5299	39	16	135	71	12	93	12
KRA019	ALCA-1	11/20/2007	34402	3956	681	464	5086	36	18	128	80	12	87	12
KRA020	ALCA-1	11/20/2007	37653	4301	770	444	5416	40	17	130	81	12	99	13
KRA021	ALCA-1	11/20/2007	36470	3824	685	482	5234	41	13	134	71	12	94	11
KRA022	ALCA-1	11/20/2007	37113	4290	711	451	5290	41	13	134	70	13	94	11
KRA023	ALCA-1	11/20/2007	40812	4640	860	509	5530	46	20	137	88	14	102	14
KRA024	ALCA-1	11/20/2007	36892	3991	703	468	5234	39	17	132	79	12	96	12
KRA025	ALCA-1	11/20/2007	35619	3883	774	438	5225	39	21	128	88	11	95	13
KRA026	ALCA-1	11/20/2007	38176	4132	746	451	5344	42	15	132	72	12	95	12
KRA027	ALCA-1	11/20/2007	35206	3862	794	433	5567	39	17	133	85	13	95	13
KRA028	ALCA-1	11/20/2007	37147	3726	749	462	5235	40	16	131	76	10	93	12
KRA029	ALCA-1	11/20/2007	35419	3908	669	444	5136	36	16	132	82	13	91	12
KRA030	ALCA-1	11/20/2007	37802	4041	770	478	5367	40	16	132	80	12	93	12
KRA031	ALCA-1	11/28/2007	36484	4043	853	501	5200	40	19	133	95	12	99	13
KRA032	ALCA-1	11/28/2007	37747	4183	790	491	5282	42	17	135	78	12	103	12
KRA033	ALCA-1	11/28/2007	38959	4242	790	469	5523	41	15	136	82	14	94	13
KRA034	ALCA-1	11/28/2007	35954	3718	750	467	5237	38	19	129	81	11	102	12
KRA035	ALCA-1	11/28/2007	37548	4228	840	492	5369	42	20	131	91	14	100	13
KRA036	ALCA-1	11/28/2007	34406	3747	784	470	5135	39	20	128	83	11	95	12
KRA037	ALCA-1	11/28/2007	33480	3656	683	475	4997	34	15	128	77	12	94	11
KRA038	ALCA-6	11/28/2007	32001	3354	668	434	4768	35	16	126	76	10	89	11
KRA039	ALCA-1	11/28/2007	37403	4298	708	453	5278	38	14	133	74	12	93	12
KRA040	ALCA-1	11/28/2007	37587	3981	769	442	5230	41	20	130	87	11	94	13
KRA041	ALCA-6	11/28/2007	30127	3233	549	396	4404	32	13	121	63	10	84	9
KRA042	ALCA-1	11/28/2007	37678	3940	672	460	5092	36	14	133	77	12	90	12
KRA043	ALCA-1	11/28/2007	35656	3706	723	441	4936	39	17	130	80	12	90	12
KRA044	ALCA-1	11/28/2007	37118	4125	774	495	5280	40	14	133	75	12	94	11
KRA045	ALCA-1	11/28/2007	37314	3833	703	462	5212	39	17	130	78	11	90	12
KRA046	ALCA-6	11/28/2007	31336	3313	590	439	4412	32	19	119	74	9	82	11
KRA047	ALCA-1	11/28/2007	38953	4219	791	482	5431	42	20	129	81	12	94	13
KRA048	ALCA-1	11/28/2007	36533	4064	729	449	5320	41	11	136	68	15	96	11
KRA049	ALCA-1	11/28/2007	37929	4236	721	437	5384	39	16	134	78	12	92	13
KRA050	ALCA-1	11/28/2007	37164	3950	770	447	5220	40	15	134	73	12	95	12
KRA051	ALCA-1	11/28/2007	38261	4275	705	493	5150	39	16	131	76	12	92	12
KRA052	ALCA-1	11/28/2007	37053	4178	742	454	5282	41	16	131	80	13	100	12
KRA053	ALCA-1	11/28/2007	34749	3998	734	462	5099	38	16	128	82	17	93	12
KRA054	ALCA-1	11/28/2007	39124	4578	754	491	5412	41	18	136	84	14	96	13
KRA055	ALCA-1	11/28/2007	36800	4173	762	432	5337	39	17	134	83	13	97	13
KRA056	ALCA-1	11/28/2007	37013	4226	656	469	5354	38	15	133	70	13	91	12
KRA057	ALCA-1	11/28/2007	37651	4027	724	482	5382	40	15	136	75	13	95	12
KRA058	ALCA-1	11/28/2007	38901	3979	755	501	5331	42	16	137	83	14	98	13
KRA059	ALCA-1	11/28/2007	36995	3972	747	480	5186	41	14	133	73	13	97	11
KRA060	ALCA-1	11/28/2007	40362	4193	734	480	5181	40	21	132	89	12	94	14

Table DR2. ED-XRF concentration data

ANID	Sub-source	Date	K (ppm)	Ca (ppm)	Ti (ppm)	Mn (ppm)	Fe (ppm)	Zn (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)
KRA061	ALCA-1	11/28/2007	38480	4333	752	483	5361	40	16	137	78	13	95	13
KRA062	ALCA-6	11/28/2007	37697	3663	631	449	4977	35	21	121	76	10	89	13
KRA063	ALCA-1	11/28/2007	37380	4042	678	487	5288	38	15	129	76	11	90	12
KRA064	ALCA-1	11/28/2007	38202	4238	784	505	5459	40	19	132	86	13	95	13
KRA065	ALCA-1	11/28/2007	34415	3575	645	453	4919	36	15	129	72	11	87	11
KRA066	ALCA-1	11/28/2007	35724	3760	683	469	5302	37	18	133	81	11	91	12
KRA067	ALCA-1	11/28/2007	35915	3883	750	466	5307	39	18	133	83	11	98	13
KRA068	ALCA-1	11/28/2007	40070	4336	768	507	5797	42	18	133	85	12	96	13
KRA069	ALCA-1	11/28/2007	36308	4120	759	475	5271	39	19	132	87	13	97	13
KRA070	ALCA-6	11/28/2007	32238	3122	678	418	4773	36	15	124	70	9	85	10
KRA071	ALCA-1	11/28/2007	34124	3471	681	455	5030	39	17	129	80	10	97	11
KRA072	ALCA-1	11/28/2007	35006	3682	730	442	4996	41	17	129	76	11	97	11
KRA073	ALCA-1	11/28/2007	33788	4059	729	465	5437	37	15	135	76	12	97	12
KRA074	ALCA-1	11/28/2007	41363	4259	747	451	5250	43	17	129	77	12	98	13
KRA075	ALCA-1	11/28/2007	38804	4375	677	468	5069	40	14	132	74	14	97	12
KRA076	ALCA-1	11/28/2007	35071	4063	723	463	5312	39	17	134	82	12	102	12
KRA077	ALCA-1	11/28/2007	34788	3264	676	449	4885	38	14	129	73	11	90	11
KRA078	ALCA-1	11/28/2007	43175	4902	818	491	5909	44	17	138	81	14	100	14
KRA079	ALCA-1	11/28/2007	38495	4117	817	458	5307	43	20	141	89	13	104	14
KRA080	ALCA-6	11/28/2007	31016	3435	599	450	4938	32	14	119	67	9	80	10
KRA081	ALCA-1	11/28/2007	39889	4515	893	513	5633	41	23	137	98	14	99	15
KRA082	ALCA-1	11/28/2007	37288	4205	782	489	5284	40	19	134	84	12	94	13
KRA083	ALCA-1	11/28/2007	39060	4419	853	451	5467	42	23	135	96	12	99	15
KRA084	ALCA-1	11/28/2007	35909	3887	741	435	5038	38	16	131	80	14	93	12
KRA085	ALCA-1	11/28/2007	37785	4250	824	451	5300	42	18	132	87	14	103	13
KRA086	ALCA-1	11/28/2007	33623	3652	700	440	4765	35	20	128	88	10	90	12
KRA087	ALCA-1	11/28/2007	34747	3822	790	458	5204	40	22	131	93	14	100	13
KRA088	ALCA-1	11/28/2007	36992	4091	733	441	5264	40	16	127	80	12	94	12
KRA089	ALCA-1	11/28/2007	38126	4213	682	447	5359	38	15	127	74	12	89	12
KRA090	ALCA-1	11/28/2007	35647	3879	669	431	5043	34	18	126	75	11	87	12
KRA091	ALCA-6	11/29/2007	32588	3492	676	449	4790	35	20	125	80	10	86	12
KRA092	ALCA-1	11/29/2007	34265	3715	774	473	5082	39	21	128	88	12	91	12
KRA093	ALCA-1	11/29/2007	37706	4226	802	493	5401	40	17	135	84	14	99	13
KRA095	ALCA-1	11/29/2007	37003	4056	729	449	5010	39	20	130	83	12	96	13
KRA096	ALCA-1	11/29/2007	39088	4195	678	443	5237	36	20	133	78	13	89	14
KRA113	ALCA-1	11/29/2007	36297	4030	704	475	5191	39	16	132	81	12	94	12
KRA114	ALCA-1	9/23/2008	39752		1146	424	5285	46	19	137	96	13	116	14
KRA115	ALCA-1	9/23/2008	36726		1150	332	5381	40	17	135	94	14	116	14
KRA116	ALCA-1	9/23/2008	36093		1084	384	5387	34	16	134	91	13	110	13
KRA117	ALCA-1	9/23/2008	37659		1101	363	5402	41	17	135	91	14	114	15
KRA118	ALCA-1	9/23/2008	40653		1153	376	5815	46	19	136	96	15	116	13
KRA119	ALCA-1	9/23/2008	35868		1135	394	5580	36	16	138	94	13	117	14
KRA120	ALCA-1	9/23/2008	37627		1093	378	5495	42	17	137	93	13	118	13
KRA121	ALCA-1	9/23/2008	36243		1133	366	5505	37	16	137	94	14	112	13
KRA122	ALCA-1	9/23/2008	37623		1127	324	5335	41	17	136	90	14	117	15
KRA123	ALCA-1	9/23/2008	36517		1139	356	5400	43	16	137	97	12	116	13
KRA126	ALCA-1	9/23/2008	36145		1144	373	5252	37	16	135	91	13	111	13
KRA127	ALCA-1	9/23/2008	40999		1185	371	5425	50	19	137	96	11	116	15
KRA128	ALCA-1	9/23/2008	37773		1120	380	5466	39	17	133	88	13	118	13
KRA129	ALCA-1	9/23/2008	38877		1141	383	5448	42	18	135	92	13	116	14
KRA130	ALCA-1	9/23/2008	37541		1070	351	5502	43	17	137	90	13	114	15
KRA131	ALCA-1	9/23/2008	37475		1101	397	5435	35	17	136	93	14	108	12
KRA132	ALCA-1	9/23/2008	39128		1121	377	5525	39	18	131	87	13	114	14
KRA133	ALCA-1	9/23/2008	37031		1088	375	5523	38	16	135	88	14	110	16

Table DR2. ED-XRF concentration data

ANID	Sub-source	Date	K (ppm)	Ca (ppm)	Ti (ppm)	Mn (ppm)	Fe (ppm)	Zn (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)
KRA134	ALCA-1	9/23/2008	39677		1238	379	5658	38	19	140	93	16	115	13
KRA135	ALCA-1	9/23/2008	37103		1128	407	5372	41	16	137	93	14	117	15
KRA136	ALCA-1	9/23/2008	38243		1085	379	5269	43	17	134	88	12	116	16
KRA137	ALCA-1	9/23/2008	35340		1149	362	5671	37	15	126	94	13	113	13
KRA139	ALCA-1	9/23/2008	38076		1105	360	5477	39	17	137	90	15	114	14
KRA140	ALCA-1	9/23/2008	38012		1154	388	5445	42	17	139	97	13	116	13
KRA141	ALCA-1	9/23/2008	40583		1070	383	5435	48	19	137	90	14	115	14
KRA142	ALCA-1	9/23/2008	37631		1126	402	5519	38	17	134	96	12	116	13
KRA143	ALCA-1	9/23/2008	39880		1109	368	5466	46	18	138	94	12	114	17
KRA144	ALCA-1	9/23/2008	37854		1137	412	5545	36	17	137	91	14	117	13
KRA145	ALCA-1	9/23/2008	38339		1109	382	5403	48	18	138	95	13	119	14
KRA146	ALCA-1	9/23/2008	41619		1124	447	5519	47	19	142	92	12	111	17
KRA149	ALCA-1	9/23/2008	36224		1082	367	5618	39	16	137	95	13	117	12
KRA150	ALCA-1	9/23/2008	38670		1075	402	5680	40	17	138	96	13	114	13
KRA152	ALCA-1	9/24/2008	37847		1118	306	5469	37	17	135	94	13	114	13
KRA153	ALCA-1	9/24/2008	37890		1092	355	5479	39	17	136	89	14	117	13
KRA175	ALCA-1	9/24/2008	37470		1195	483	5645	41	17	140	97	13	118	14
KRA196	ALCA-1	9/30/2008	36285		1121	296	5398	33	16	135	87	13	108	13
KRA226	ALCA-1	1/21/2009	34331		713	440	5535	36	13	136	95	14	110	18
KRA228	ALCA-1	1/20/2009	35524		798	387	5782	40	14	140	101	16	113	20
KRA230	ALCA-1	1/20/2009	37794		855	214	5944	35	15	132	98	10	96	9
KRA236	ALCA-1	1/20/2009	35120		800	271	5614	33	13	132	96	8	90	10
KRA237	ALCA-1	1/20/2009	36240		781	462	5613	40	15	136	95	14	114	21
KRA239	ALCA-1	1/20/2009	34478		763	407	5688	39	13	135	100	15	111	23
KRA241	ALCA-1	1/20/2009	39664		748	221	6039	35	16	131	94	9	92	11
KRA003	ALCA-2	11/20/2007	37658	5495	1154	441	7117	43	16	134	142	17	141	14
KRA004	ALCA-2	11/20/2007	38347	5507	1147	430	6945	40	14	138	153	19	137	14
KRA151	ALCA-2	9/24/2008	37698		1286	293	7048	46	16	144	156	13	156	12
KRA010	ALCA-3	11/20/2007	33407	6198	1310	484	7731	43	13	121	199	18	148	12
KRA011	ALCA-3	11/20/2007	34497	6502	1280	471	7816	43	14	121	195	17	152	12
KRA012	ALCA-3	11/20/2007	32075	5931	1316	466	7388	37	21	119	238	16	140	14
KRA013	ALCA-3	11/20/2007	34693	6556	1321	484	7694	40	17	122	215	16	148	13
KRA094	ALCA-3	11/29/2007	36183	7145	1562	484	7786	43	24	121	262	19	151	15
KRA124	ALCA-3	9/23/2008	34874		1319	388	8122	44	14	131	239	14	162	11
KRA125	ALCA-3	9/23/2008	39563		1266	426	8379	57	15	129	237	14	160	12
KRA138	ALCA-3	9/23/2008	35809		1671	263	9163	49	14	140	270	16	205	13
KRA147	ALCA-3	9/23/2008	38901		1361	398	8215	55	15	130	237	13	157	13
KRA148	ALCA-3	9/23/2008	36387		1239	305	7900	42	15	127	235	14	153	10
KRA154	ALCA-3	9/24/2008	38006		1524	318	8607	51	15	137	203	12	180	14
KRA155	ALCA-3	9/24/2008	37860		1377	370	8136	50	15	131	236	15	155	12
KRA156	ALCA-3	9/24/2008	36497		1396	418	7853	50	14	123	233	15	150	12
KRA157	ALCA-3	9/24/2008	36653		1388	324	8241	43	15	132	240	14	159	11
KRA158	ALCA-3	9/24/2008	35608		1305	341	7849	47	14	125	230	13	158	10
KRA159	ALCA-3	9/24/2008	34570		1417	387	8085	44	14	132	237	13	161	12
KRA160	ALCA-3	9/24/2008	38946		1400	397	8390	56	16	133	250	16	163	13
KRA161	ALCA-3	9/24/2008	37385		1436	309	8172	57	14	129	238	13	161	14
KRA162	ALCA-3	9/24/2008	38152		1361	417	8199	53	15	131	238	14	162	13
KRA163	ALCA-3	9/24/2008	36313		1295	309	8063	44	15	128	234	15	155	11
KRA164	ALCA-3	9/24/2008	38876		1395	382	8297	57	15	133	249	13	162	13
KRA165	ALCA-3	9/24/2008	33513		1341	377	8094	40	13	130	238	13	155	11
KRA166	ALCA-3	9/24/2008	37325		1439	412	8215	54	15	131	241	16	161	13
KRA167	ALCA-3	9/24/2008	35073		1410	348	8324	50	14	130	245	14	167	11

Table DR2. ED-XRF concentration data

ANID	Sub-source	Date	K (ppm)	Ca (ppm)	Ti (ppm)	Mn (ppm)	Fe (ppm)	Zn (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)
KRA168	ALCA-3	9/24/2008	36164		1435	425	8229	46	15	132	237	14	159	11
KRA169	ALCA-3	9/24/2008	35760		1299	370	8076	44	14	130	237	15	159	11
KRA170	ALCA-3	9/24/2008	37672		1472	420	8293	51	15	134	249	14	162	12
KRA171	ALCA-3	9/24/2008	35985		1450	392	8172	45	15	132	240	16	160	14
KRA172	ALCA-3	9/24/2008	36091		1438	353	8345	50	14	135	246	15	167	13
KRA173	ALCA-3	9/24/2008	36738		1338	385	8208	47	15	130	238	14	160	11
KRA097	ALCA-4	11/29/2007	28994	4461	1016	503	5401	32	25	99	180	10	90	11
KRA098	ALCA-4	11/29/2007	29944	4603	954	505	5408	32	17	100	151	12	89	10
KRA099	ALCA-4	11/29/2007	31032	4614	921	518	5556	33	20	102	163	13	93	11
KRA100	ALCA-4	11/29/2007	31381	5034	937	501	5504	32	19	101	171	14	90	11
KRA103	ALCA-4	11/29/2007	31927	4899	899	517	5985	32	18	101	147	12	85	11
KRA221	ALCA-4	9/30/2008	31656		1150	446	5635	33	13	107	163	12	106	10
KRA242	ALCA-4	1/20/2009	30639		804	549	5515	31	11	98	177	7	88	13
KRA253	ALCA-4	1/21/2009	29961		783	703	6023	36	12	106	163	13	108	15
KRA254	ALCA-4	1/21/2009	30971		863	585	5560	35	12	105	166	10	101	14
KRA255	ALCA-4	1/21/2009	31990		794	549	5582	31	13	103	187	11	101	16
KRA256	ALCA-4	1/21/2009	32677		522	233	5341	34	13	105	185	7	82	7
KRA257	ALCA-4	1/21/2009	31877		772	359	5443	34	12	103	179	8	91	11
KRA258	ALCA-4	1/20/2009	30446		796	720	5719	33	12	105	168	11	107	18
KRA104	ALCA-5	11/29/2007	34962	4409	877	453	5291	37	19	123	134	13	99	12
KRA105	ALCA-5	11/29/2007	33894	4253	860	457	5120	39	16	119	116	14	95	11
KRA106	ALCA-5	11/29/2007	34721	3974	838	441	4962	38	20	118	122	11	86	12
KRA107	ALCA-5	11/29/2007	35498	4143	839	474	4993	40	18	124	114	12	89	12
KRA108	ALCA-5	11/29/2007	37668	4557	782	460	5040	38	18	124	117	13	91	13
KRA109	ALCA-5	11/29/2007	38715	4336	836	450	4986	41	17	128	117	15	89	12
KRA110	ALCA-5	11/29/2007	37836	4216	764	459	4952	38	18	126	111	14	88	12
KRA111	ALCA-5	11/29/2007	36685	4214	770	485	4951	38	14	124	99	13	87	11
KRA112	ALCA-5	11/29/2007	35636	4340	709	465	5019	35	13	124	101	16	83	11
KRA174	ALCA-5	9/24/2008	37417		1221	383	5765	46	16	126	137	13	114	14
KRA176	ALCA-5	9/24/2008	33836		1071	263	4372	31	14	134	130	12	90	14
KRA190	ALCA-5	9/30/2008	38601		1074	387	5184	46	17	132	125	13	105	15
KRA209	ALCA-5	9/30/2008	42234		1163	437	6037	59	19	144	155	14	121	16
KRA210	ALCA-5	9/30/2008	39736		1163	357	5502	42	18	131	137	12	112	14
KRA211	ALCA-5	9/30/2008	38201		1127	411	5249	36	17	135	126	14	103	13
KRA212	ALCA-5	9/30/2008	38060		1143	418	5179	44	17	131	130	12	108	13
KRA213	ALCA-5	9/30/2008	35710		1063	411	5188	40	15	128	130	13	104	12
KRA214	ALCA-5	9/30/2008	36708		1127	399	5010	44	17	132	132	12	109	12
KRA215	ALCA-5	9/30/2008	39940		1154	434	5352	44	18	136	135	13	106	14
KRA217	ALCA-5	9/30/2008	36173		1161	417	5070	41	16	133	131	13	109	13
KRA218	ALCA-5	9/30/2008	42173		1105	414	5141	51	20	131	129	12	106	12
KRA219	ALCA-5	9/30/2008	38533		1107	378	5247	47	17	132	129	13	106	15
KRA220	ALCA-5	9/30/2008	34052		1194	433	5195	41	14	126	130	13	108	16
KRA222	ALCA-5	1/20/2009	35403		857	475	5315	37	14	129	134	11	89	19
KRA223	ALCA-5	1/20/2009	33423		717	459	5204	36	13	131	128	13	109	18
KRA224	ALCA-5	1/20/2009	37190		818	425	5283	36	15	129	127	14	95	19
KRA225	ALCA-5	1/21/2009	34406		774	408	5316	33	14	124	144	14	94	14
KRA227	ALCA-5	1/21/2009	33359		781	287	5186	32	12	128	141	10	84	8
KRA229	ALCA-5	1/20/2009	35221		839	352	5483	37	14	133	135	12	90	16
KRA231	ALCA-5	1/20/2009	34433		800	509	5653	46	14	129	142	11	104	20
KRA232	ALCA-5	1/21/2009	34395		766	337	5349	33	13	126	124	10	83	10
KRA233	ALCA-5	1/20/2009	32510		856	456	5341	34	12	123	139	12	97	18
KRA234	ALCA-5	1/20/2009	35522		733	552	5323	41	15	129	127	13	97	23

Table DR2. ED-XRF concentration data

ANID	Sub-source	Date	K (ppm)	Ca (ppm)	Ti (ppm)	Mn (ppm)	Fe (ppm)	Zn (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)
KRA235	ALCA-5	1/20/2009	34224		798	417	5637	41	14	126	141	11	96	14
KRA240	ALCA-5	1/20/2009	33737		823	450	5106	34	13	128	131	12	95	16
KRA244	ALCA-5	1/21/2009	34805		790	381	5637	37	14	125	142	10	97	10
KRA246	ALCA-5	1/21/2009	34532		749	380	5284	34	13	133	136	10	90	15
KRA247	ALCA-5	1/20/2009	34888		807	512	5181	37	14	128	129	15	96	23
KRA248	ALCA-5	1/21/2009	36628		756	478	5358	35	16	128	131	14	95	18
KRA249	ALCA-5	1/21/2009	35830		657	358	5242	40	15	130	135	14	92	15
KRA250	ALCA-5	1/21/2009	37509		860	491	5281	36	16	127	131	15	98	22
KRA251	ALCA-5	1/21/2009	34234		822	308	5209	33	13	132	137	9	84	14
KRA101	ALCA-7	11/29/2007	34722	4942	741	462	4870	28	20	150	151	18	79	14
KRA102	ALCA-7	11/29/2007	37418	5115	772	436	4836	33	18	150	145	17	83	14
KRA177	ALCA-7	9/24/2008	37668		1069	331	5232	29	17	160	143	15	94	11
KRA178	ALCA-7	9/24/2008	38481		1130	355	4976	39	18	161	151	15	101	13
KRA179	ALCA-7	9/24/2008	39261		1089	375	5089	33	18	159	147	15	96	12
KRA180	ALCA-7	9/24/2008	41438		1091	352	5267	42	19	164	155	15	100	14
KRA181	ALCA-7	9/24/2008	36539		1111	347	5073	28	16	162	150	15	96	12
KRA182	ALCA-7	9/24/2008	37491		1111	342	5078	36	17	157	149	15	101	14
KRA183	ALCA-7	9/24/2008	38497		1117	345	5010	37	17	158	146	16	96	16
KRA184	ALCA-7	9/24/2008	39420		1143	332	4944	36	17	157	148	13	96	17
KRA185	ALCA-7	9/24/2008	38273		1096	357	4918	31	17	160	147	16	95	12
KRA186	ALCA-7	9/24/2008	37836		1092	340	5067	43	17	150	150	15	100	11
KRA187	ALCA-7	9/24/2008	36881		1123	351	5013	28	16	157	150	15	95	12
KRA188	ALCA-7	9/30/2008	35337		1087	329	5004	28	15	156	149	15	97	11
KRA189	ALCA-7	9/30/2008	39179		1065	265	5105	37	17	155	147	15	97	14
KRA191	ALCA-7	9/30/2008	36471		1074	308	4949	31	16	157	143	14	95	11
KRA192	ALCA-7	9/30/2008	37331		1103	332	4887	28	17	160	146	17	94	12
KRA193	ALCA-7	9/30/2008	38429		1102	377	5016	42	17	158	156	14	105	13
KRA195	ALCA-7	9/30/2008	37040		1136	362	5049	36	16	159	154	14	100	15
KRA197	ALCA-7	9/30/2008	37127		1096	360	5097	33	16	159	149	14	96	14
KRA198	ALCA-7	9/30/2008	39534		1066	321	4959	32	18	159	149	18	95	11
KRA199	ALCA-7	9/30/2008	38822		1218	272	5598	34	17	169	158	15	99	15
KRA200	ALCA-7	9/30/2008	34369		1086	318	5078	24	15	157	145	15	92	11
KRA201	ALCA-7	9/30/2008	37378		1116	320	5100	31	17	158	150	14	98	12
KRA202	ALCA-7	9/30/2008	34976		1263	340	5523	31	15	167	160	17	105	14
KRA203	ALCA-7	9/30/2008	37452		1120	338	5175	27	17	166	156	13	97	12
KRA204	ALCA-7	9/30/2008	35309		1193	311	5460	32	15	156	156	15	100	12
KRA205	ALCA-7	9/30/2008	38322		1105	324	5035	41	17	160	148	14	101	16
KRA207	ALCA-7	9/30/2008	37247		1141	339	4978	32	16	160	148	15	97	13
KRA238	ALCA-7	1/20/2009	33174		690	507	4944	31	14	155	164	18	103	19
KRA243	ALCA-7	1/21/2009	35406		675	366	5233	28	15	159	169	13	88	13

Table DR3. Alca obsidian NAA concentration data

SANID	Sub-source	Short_rdf	Short_Date	Al (ppm)	Cl (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)
KRA001	ALCA-1	RAM1-S	1/17/2008	68844	517	1.92	33352	467	30770
KRA002	ALCA-1	RAM1-S	1/17/2008	70101	609	1.42	38394	477	31500
KRA005	ALCA-1	CGR1-S	2/16/2008	76561	460	2.04	36386	486	31825
KRA038	ALCA-6	RAM1-S	1/17/2008	71582	446	2.41	37644	478	31609
KRA041	ALCA-6	RAM1-S	1/17/2008	68659	494	1.92	34049	466	30776
KRA046	ALCA-6	RAM1-S	1/17/2008	73438	593	2.18	39705	469	29662
KRA062	ALCA-6	RAM1-S	1/17/2008	74240	488	2.03	39260	479	29382
KRA070	ALCA-6	RAM1-S	1/17/2008	66509	645	1.75	33172	471	30939
KRA080	ALCA-6	RAM1-S	1/17/2008	69709	606	1.99	36389	462	30840
KRA091	ALCA-6	RAM1-S	1/17/2008	73131	563	2.25	35896	471	30698
KRA003	ALCA-2	RAM1-S	1/17/2008	75738	612	2.04	33020	445	32368
KRA004	ALCA-2	RAM1-S	1/17/2008	81677	456	1.94	33403	442	33637
KRA010	ALCA-3	RAM1-S	1/17/2008	70236	549	2.36	34424	559	32394
KRA011	ALCA-3	RAM1-S	1/17/2008	76144	643	1.65	31618	559	32645
KRA012	ALCA-3	RAM1-S	1/17/2008	77933	607	1.76	31768	570	32964
KRA013	ALCA-3	RAM1-S	1/17/2008	74456	594	2.28	30949	554	31631
KRA094	ALCA-3	RAM1-S	1/17/2008	79193	601	2.22	34984	564	32740
KRA097	ALCA-4	RAM1-S	1/17/2008	71006	448	1.42	28831	553	31839
KRA098	ALCA-4	RAM1-S	1/17/2008	68686	343	1.73	31799	556	32141
KRA099	ALCA-4	RAM1-S	1/17/2008	72710	362	1.97	31604	554	31653
KRA100	ALCA-4	RAM1-S	1/17/2008	71478	487	1.51	29571	549	31687
KRA103	ALCA-4	RAM1-S	1/17/2008	72882	382	1.53	30827	550	31612
KRA104	ALCA-5	RAM1-S	1/17/2008	70145	551	2.01	35345	483	31948
KRA105	ALCA-5	RAM1-S	1/17/2008	73258	554	2.08	34790	473	31460
KRA106	ALCA-5	RAM1-S	1/17/2008	73364	597	1.84	36951	474	30310
KRA107	ALCA-5	RAM1-S	1/17/2008	72223	611	1.76	35454	479	31651
KRA108	ALCA-5	RAM1-S	1/17/2008	68747	610	1.92	32738	476	30801
KRA109	ALCA-5	CGR1-S	2/16/2008	71277	476	1.59	38243	484	31521
KRA110	ALCA-5	CGR1-S	2/16/2008	73561	412	2.05	36539	482	31102
KRA111	ALCA-5	CGR1-S	2/16/2008	73654	486	2.24	35960	481	31503
KRA112	ALCA-5	CGR1-S	2/16/2008	73436	546	2.11	34706	483	32321
KRA101	ALCA-7	RAM1-S	1/17/2008	65593	414	1.88	35452	448	28583
KRA102	ALCA-7	RAM1-S	1/17/2008	66516	414	2.35	31105	446	29144

ANID	Sub-source	Long_rdf	Long_Date	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)	Th (ppm)	Zn (ppm)	Zr (ppm)
KRA001	ALCA-1	GRR2	16-Dec-07	995	30.5	0.15	19.1	3.61	3.49	1.12	60.1	0.36	2.84	0.50	5404	3.55	137	0.17	1.77	99	0.95	0.36	13.9	46	116
KRA002	ALCA-1	GRR2	16-Dec-07	989	28.4	0.16	19.7	3.56	3.33	1.09	57.1	0.36	2.82	0.49	5375	3.52	136	0.15	1.77	98	0.95	0.35	13.8	45	109
KRA095	ALCA-1	GRR2	16-Dec-07	1022	31.2	0.15	20.6	3.64	3.30	1.15	62.1	0.24	2.85	0.50	5501	3.60	140	0.17	1.81	88	0.96	0.38	14.2	47	119
KRA038	ALCA-6	GRR2	16-Dec-07	988	28.4	0.14	18.2	3.52	3.51	1.06	57.3	0.23	2.79	0.50	5402	3.54	137	0.16	1.77	91	0.96	0.36	13.8	41	109
KRA041	ALCA-6	GRR2	16-Dec-07	1010	28.4	0.15	18.6	3.56	3.31	1.15	57.9	0.23	2.81	0.50	5438	3.55	138	0.16	1.78	106	0.95	0.36	13.8	41	122
KRA046	ALCA-6	GRR2	16-Dec-07	999	29.1	0.16	19.0	3.58	3.28	1.14	58.3	0.22	2.80	0.49	5409	3.60	137	0.17	1.78	84	0.94	0.35	13.9	41	111
KRA062	ALCA-6	GRR2	16-Dec-07	1005	28.7	0.16	18.9	3.55	3.50	1.10	57.6	0.36	2.82	0.50	5450	3.71	143	0.17	1.79	89	0.95	0.35	13.9	41	112
KRA070	ALCA-6	GRR2	16-Dec-07	997	29.5	0.16	20.8	3.59	3.66	1.14	59.0	0.22	2.82	0.51	5496	3.56	138	0.17	1.81	93	0.94	0.35	13.9	43	108
KRA080	ALCA-6	GRR2	16-Dec-07	992	29.0	0.16	17.4	3.54	3.20	1.11	58.7	0.24	2.81	0.50	5473	3.67	138	0.16	1.80	93	0.95	0.37	13.9	42	119
KRA091	ALCA-6	GRR2	16-Dec-07	989	28.3	0.16	18.7	3.54	3.62	1.08	56.9	0.23	2.78	0.48	5364	3.45	137	0.17	1.76	82	0.93	0.35	13.7	41	107
KRA003	ALCA-2	GRR2	16-Dec-07	984	43.8	0.27	24.1	4.27	4.00	1.25	82.5	0.41	2.77	0.66	7275	4.81	145	0.13	2.01	180	0.96	0.36	16.5	44	167
KRA004	ALCA-2	GRR2	16-Dec-07	974	43.8	0.17	26.5	4.24	4.03	1.31	82.3	0.45	2.80	0.64	7520	4.96	145	0.13	2.02	181	0.96	0.38	16.5	49	174
KRA010	ALCA-3	GRR2	16-Dec-07	1004	36.5	0.20	22.7	3.79	3.40	1.26	70.3	0.46	3.48	0.69	8091	4.74	129	0.28	1.87	279	0.91	0.38	13.7	47	169
KRA011	ALCA-3	GRR2	16-Dec-07	1041	36.8	0.19	23.5	3.80	3.26	1.30	68.9	0.58	3.41	0.69	8011	4.73	128	0.27	1.85	260	0.90	0.38	13.6	46	166
KRA012	ALCA-3	GRR2	16-Dec-07	1019	37.7	0.19	21.9	3.90	3.40	1.31	70.5	0.58	3.48	0.70	8152	4.66	128	0.27	1.89	273	0.91	0.38	13.8	47	171
KRA013	ALCA-3	GRR2	16-Dec-07	1029	37.3	0.19	23.4	3.80	3.18	1.40	69.5	0.48	3.44	0.70	8072	4.59	129	0.26	1.87	265	0.90	0.39	13.8	46	163
KRA094	ALCA-3	GRR2	16-Dec-07	1037	36.5	0.21	21.9	3.86	3.46	1.31	68.8	0.56	3.36	0.68	7939	4.63	126	0.25	1.84	273	0.90	0.37	13.6	45	153
KRA097	ALCA-4	GRR2	16-Dec-07	1029	23.6	0.17	13.9	2.76	2.33	0.98	46.0	0.41	2.69	0.48	6077	3.06	105	0.38	1.85	177	0.66	0.30	7.9	37	96
KRA098	ALCA-4	GRR2	16-Dec-07	1033	23.9	0.21	16.6	2.80	2.16	1.00	46.7	0.35	2.71	0.49	5952	3.07	108	0.40	1.84	194	0.67	0.31	8.0	37	101
KRA099	ALCA-4	GRR2	16-Dec-07	1022	23.5	0.14	15.1	2.74	2.22	0.98	45.8	0.31	2.69	0.47	5690	3.06	107	0.40	1.80	174	0.67	0.30	7.9	38	100
KRA100	ALCA-4	GRR2	16-Dec-07	1014	23.8	0.14	16.0	2.81	1.76	0.98	46.4	0.42	2.71	0.48	5683	3.04	107	0.39	1.82	178	0.67	0.30	8.0	39	101
KRA103	ALCA-4	GRR2	16-Dec-07	1020	23.6	0.21	15.6	2.79	2.17	0.99	46.1	0.48	2.68	0.49	5788	2.97	107	0.38	1.83	197	0.67	0.29	8.0	35	102
KRA104	ALCA-5	GRR2	16-Dec-07	1029	34.0	0.16	22.0	3.72	3.58	1.05	67.1	0.18	2.72	0.58	5585	3.51	129	0.16	1.77	149	0.92	0.35	13.9	42	119
KRA105	ALCA-5	GRR2	16-Dec-07	1017	34.6	0.15	21.3	3.77	3.55	1.10	67.7	0.18	2.76	0.60	5643	3.47	130	0.15	1.79	153	0.92	0.36	14.1	43	121
KRA106	ALCA-5	GRR2	16-Dec-07	973	30.3	0.15	19.6	3.58	3.62	1.04	61.0	0.15	2.80	0.55	5350	3.15	131	0.15	1.75	135	0.92	0.36	13.6	41	102
KRA107	ALCA-5	GRR2	16-Dec-07	1038	30.8	0.16	20.7	3.62	3.61	1.07	62.5	0.13	2.90	0.57	5413	3.33	134	0.16	1.79	121	0.96	0.36	13.9	42	110
KRA108	ALCA-5	GRR2	16-Dec-07	1014	30.6	0.15	21.9	3.58	3.45	1.12	61.2	0.14	2.90	0.58	5308	3.26	133	0.16	1.76	132	0.94	0.34	13.8	42	122
KRA109	ALCA-5	GRR2	16-Dec-07	1012	30.9	0.15	20.4	3.66	3.77	1.08	60.7	0.13	2.83	0.56	5310	3.27	132	0.16	1.76	130	0.93	0.35	13.7	41	101
KRA110	ALCA-5	GRR2	16-Dec-07	1018	30.5	0.16	21.0	3.63	3.71	1.07	59.9	0.13	2.82	0.54	5202	3.33	131	0.15	1.73	131	0.92	0.35	13.6	41	104
KRA111	ALCA-5	GRR2	16-Dec-07	1009	30.8	0.15	20.2	3.60	3.61	1.10	61.3	0.12	2.84	0.56	5318	3.39	132	0.16	1.77	134	0.95	0.36	13.8	46	108
KRA112	ALCA-5	GRR2	16-Dec-07	1013	29.8	0.15	19.8	3.57	3.59	1.06	59.3	0.12	2.79	0.54	5127	3.11	129	0.16	1.70	125	0.92	0.34	13.4	40	120
KRA101	ALCA-7	GRR2	16-Dec-07	812	30.7	0.18	19.8	3.37	4.72	1.28	57.1	0.32	4.98	0.46	4959	3.06	159	0.35	1.85	150	1.17	0.35	17.0	31	122
KRA102	ALCA-7	GRR2	16-Dec-07	826	30.6	0.18	16.8	3.39	4.91	1.28	57.1	0.33	4.98	0.48	4982	3.04	159	0.35	1.85	171	1.17	0.34	17.2	33	104

Rademaker Table DR4. WD-XRF concentration data

ANID	Sub-source	Date	Al2O3 (%)	CaO (%)	Fe2O3 (%)	K2O (%)	MgO (%)	MnO (%)	Na2O (%)	P2O5 (%)	SiO2 (%)	TiO2 (%)	Ba (PPM)	Cr (PPM)	Nb (PPM)	Rb (PPM)	Sr (PPM)	Y (PPM)	Zn (PPM)	Zr (PPM)	Sum (%)
KRA-001	Alca-1	12/22/06 10:54 AM	12.5	0.61	0.89	4.4	0.11	0.063	4.3	0.026	70.2	0.129	1047	12	14	154	81	14	45	104	93.40
KRA-001	Alca-1	1/3/07 10:38 PM	12.5	0.61	0.84	4.4	0.10	0.062	4.3	0.028	69.7	0.128	1058	3	16	152	81	18	39	110	92.78
KRA-001 mean	Alca-1	12.5	0.61	0.87	4.4	0.11	0.063	4.3	0.027	70.0	0.129	1053	8	15	153	81	16	42	107	93.09	
		12/22/06 11:13 AM	12.7	0.61	1.00	4.4	0.12	0.063	4.2	0.027	70.9	0.131	1071	3	13	154	79	16	39	103	94.29
		12/22/06 11:51 AM	12.5	0.60	1.01	4.4	0.12	0.064	4.4	0.030	69.9	0.127	1050	7	14	153	82	16	40	111	93.29
		12/22/06 12:10 PM	12.6	0.61	1.00	4.4	0.12	0.064	4.2	0.027	69.9	0.129	1086	11	14	156	80	14	31	99	93.17
		12/22/06 12:29 PM	12.5	0.60	0.85	4.3	0.11	0.061	4.2	0.028	69.0	0.125	1068	0	14	159	78	13	41	108	91.85
		12/22/06 12:48 PM	12.5	0.62	0.94	4.4	0.12	0.063	4.3	0.026	69.9	0.127	1074	3	13	152	80	15	40	104	93.13
		1/3/07 3:08 PM	12.5	0.61	1.00	4.5	0.10	0.063	4.2	0.026	69.8	0.130	1072	3	12	155	80	15	40	106	92.99
		1/3/07 12:10 PM	12.5	0.61	0.93	4.4	0.11	0.063	4.2	0.028	69.7	0.133	1105	0	15	154	79	14	39	107	92.78
		1/3/07 1:07 PM	12.5	0.61	0.96	4.4	0.12	0.062	4.2	0.026	69.6	0.129	1068	12	15	161	79	16	38	107	92.79
		1/3/07 1:26 PM	12.6	0.62	0.95	4.5	0.11	0.062	4.2	0.026	70.0	0.124	1068	2	14	154	82	16	35	102	93.31
KRA-093	Alca-1	1/3/07 1:45 PM	12.5	0.63	0.91	4.4	0.11	0.062	4.2	0.027	69.5	0.123	1053	12	13	155	82	14	44	102	92.60
KRA-095	Alca-1	1/3/07 8:06 PM	12.5	0.61	0.93	4.4	0.12	0.064	4.3	0.029	69.9	0.126	1091	0	15	158	80	16	43	104	93.20
KRA-096	Alca-1	1/3/07 2:04 PM	12.5	0.62	0.93	4.5	0.11	0.063	4.2	0.025	69.8	0.128	1104	3	16	150	84	15	30	108	93.03
KRA-113	Alca-1	12/22/06 10:35 AM	12.6	0.62	0.95	4.4	0.12	0.063	4.3	0.027	70.3	0.129	1091	5	14	149	81	18	35	102	93.66
KRA-226	Alca-1	4/20/09 1:17 PM	13.2	0.63	0.87	4.4	0.12	0.061	4.3	0.027	76.3	0.125	1029	11	11	145	83	10	55	89	100.32
KRA-228	Alca-1	4/18/09 2:44 PM	13.2	0.62	0.90	4.4	0.12	0.062	4.3	0.026	76.1	0.128	1024	11	12	146	85	12	34	86	99.95
KRA-230	Alca-1	4/19/09 5:05 PM	13.2	0.62	0.91	4.5	0.12	0.060	4.3	0.029	76.3	0.130	1068	9	12	146	84	10	32	90	100.23
M04-072	Alca-1	1/3/07 12:29 PM	12.6	0.62	0.92	4.4	0.11	0.063	4.3	0.026	69.9	0.130	1071	14	13	157	77	14	43	106	93.17
M04-074	Alca-1	1/3/07 12:48 PM	12.5	0.62	0.87	4.4	0.11	0.061	4.3	0.023	69.9	0.127	1080	9	13	163	76	11	38	106	93.00
KRA-003	Alca-2	4/29/08 3:59 PM	13.8	0.88	1.22	4.3	0.19	0.058	4.5	0.033	73.6	0.193	1053	5	13	144	157	12	38	149	99.01
KRA-004	Alca-2	4/29/08 4:18 PM	13.7	0.87	1.20	4.3	0.16	0.061	4.5	0.034	73.6	0.190	1066	4	14	146	154	15	36	145	98.73
KRA-151	Alca-2	4/21/09 6:52 PM	13.7	0.90	1.18	4.3	0.18	0.056	4.5	0.036	73.9	0.185	1019	13	13	159	160	11	34	144	99.12
KRA-010	Alca-3	1/3/07 9:22 PM	13.4	1.18	1.29	4.0	0.23	0.074	4.5	0.046	68.0	0.196	1142	8	12	143	218	16	48	165	93.05
KRA-011	Alca-3	1/3/07 9:41 PM	13.5	1.17	1.30	4.0	0.23	0.074	4.5	0.046	68.3	0.191	1134	11	16	146	216	16	43	168	93.37
KRA-012	Alca-3	12/22/06 11:32 AM	13.4	1.16	1.29	4.0	0.24	0.073	4.4	0.045	68.0	0.193	1097	10	12	143	213	13	45	166	93.05
KRA-154	Alca-3	4/17/09 4:26 PM	14.1	1.12	1.40	4.1	0.28	0.060	4.7	0.056	73.1	0.248	1045	1	12	147	227	11	42	185	99.37
KRA-155	Alca-3	4/29/08 4:37 PM	14.1	1.17	1.33	4.1	0.22	0.073	4.4	0.047	72.9	0.191	1094	13	11	130	224	16	40	145	98.61
KRA-158	Alca-3	4/29/08 4:56 PM	14.1	1.19	1.35	4.1	0.22	0.074	4.5	0.040	73.3	0.190	1136	5	11	126	224	17	39	144	99.25
KRA-161	Alca-3	4/29/08 5:15 PM	14.1	1.18	1.39	4.0	0.22	0.073	4.4	0.047	73.0	0.191	1113	21	12	129	226	14	39	145	98.83
KRA-162	Alca-3	4/29/08 5:34 PM	14.0	1.16	1.34	4.1	0.21	0.073	4.4	0.046	72.5	0.192	1100	16	12	130	222	14	42	150	98.10
KRA-164	Alca-3	4/29/08 5:53 PM	14.1	1.17	1.31	4.1	0.21	0.072	4.4	0.046	73.0	0.189	1113	15	12	128	225	13	37	147	98.80
KRA-169	Alca-3	4/29/08 6:12 PM	14.0	1.17	1.36	4.1	0.22	0.074	4.4	0.044	73.1	0.189	1123	10	11	128	225	18	41	145	98.80
KRA-172	Alca-3	4/29/08 6:31 PM	14.1	1.17	1.27	4.1	0.22	0.074	4.4	0.045	72.9	0.190	1116	8	10	128	221	15	37	145	98.58
KRA-100	Alca-4	5/1/08 5:48 PM	13.4	0.91	0.97	3.8	0.16	0.071	4.4	0.041	74.3	0.120	1103	17	8	110	157	12	30	82	98.35
KRA-103	Alca-4	1/3/07 9:03 PM	12.9	0.94	1.32	3.7	0.19	0.076	4.4	0.045	68.9	0.132	1145	10	8	120	158	12	37	97	92.79
KRA-221	Alca-4	5/1/08 6:07 PM	13.5	0.92	1.00	3.8	0.16	0.072	4.4	0.040	74.6	0.127	1133	4	9	111	160	9	27	85	98.84
KRA-242	Alca-4	4/21/09 12:27 PM	13.6	0.91	0.92	3.8	0.18	0.071	4.5	0.038	75.9	0.123	1108	3	11	117	160	11	32	78	100.12
KRA-252	Alca-4	4/21/09 4:13 PM	13.5	0.90	0.93	3.8	0.19	0.074	4.4	0.042	75.4	0.127	1068	9	8	116	155	9	31	81	99.54
KRA-286	Alca-4	1/3/07 8:25 PM	12.8	0.90	1.04	3.8	0.18	0.073	4.3	0.040	69.4	0.130	1105	5	9	123	155	16	36	96	92.86
KRA-097	Alca-4	1/3/07 8:44 PM	12.9	0.90	1.08	3.8	0.18	0.076	4.4	0.040	69.4	0.131	1092	6	9	120	153	12	32	100	93.00

Rademaker Table DR4. WD-XRF concentration data

ANID	Sub-source		Al2O3 (%)	CaO (%)	Fe2O3 (%)	K2O (%)	MgO (%)	MnO (%)	Na2O (%)	P2O5 (%)	SiO2 (%)	TiO2 (%)	Ba (PPM)	Cr (PPM)	Nb (PPM)	Rb (PPM)	Sr (PPM)	Y (PPM)	Zn (PPM)	Zr (PPM)	Sum (%)
KRA-190	Alca-5	3/21/08 10:59 AM	13.5	0.75	0.88	4.5	0.09	0.061	4.2	0.025	75.8	0.115	1120	19	11	131	120	12	29	71	100.03
KRA-190	Alca-5	5/1/08 6:26 PM	13.3	0.74	0.83	4.4	0.09	0.063	4.1	0.025	74.4	0.113	1093	13	12	133	116	13	34	77	98.28
KRA-190 mean			13.4	0.75	0.86	4.5	0.09	0.062	4.2	0.025	75.1	0.114	1107	16	12	132	118	13	32	74	99.16
KRA-106	Alca-5	3/21/08 10:02 AM	13.3	0.76	0.87	4.3	0.10	0.061	4.2	0.027	75.2	0.113	1087	7	10	131	120	11	31	73	99.10
KRA-107	Alca-5	3/21/08 9:24 AM	13.4	0.75	0.82	4.3	0.10	0.062	4.3	0.027	75.3	0.112	1103	0	11	129	114	14	36	77	99.34
KRA-109	Alca-5	3/21/08 8:08 AM	13.4	0.74	0.87	4.5	0.10	0.062	4.1	0.028	75.4	0.114	1125	8	12	131	116	12	35	75	99.52
KRA-111	Alca-5	3/21/08 8:27 AM	13.4	0.75	0.95	4.3	0.10	0.062	4.2	0.027	75.4	0.111	1127	14	11	129	119	11	30	71	99.50
KRA-112	Alca-5	3/21/08 9:05 AM	13.5	0.76	0.85	4.5	0.09	0.061	4.2	0.024	75.6	0.110	1113	8	10	126	122	15	33	73	99.83
KRA-209	Alca-5	3/20/08 5:28 PM	13.5	0.79	1.00	4.3	0.11	0.062	4.3	0.031	74.6	0.122	1109	5	11	128	124	13	29	87	98.83
KRA-211	Alca-5	3/21/08 10:40 AM	13.4	0.72	0.84	4.5	0.09	0.063	4.1	0.024	75.4	0.110	1046	1	10	133	115	10	34	77	99.45
KRA-212	Alca-5	3/20/08 6:44 AM	13.5	0.75	0.95	4.5	0.10	0.063	4.3	0.027	75.6	0.115	1097	0	11	132	119	14	34	71	99.99
KRA-217	Alca-5	3/20/08 7:03 PM	13.5	0.75	0.93	4.4	0.09	0.063	4.3	0.025	75.9	0.115	1119	13	10	131	113	13	36	79	100.14
KRA-219	Alca-5	3/20/08 7:22 PM	13.5	0.75	0.92	4.3	0.09	0.064	4.3	0.023	75.9	0.111	1114	8	10	127	117	13	35	74	100.18
KRA-220	Alca-5	3/20/08 5:47 PM	13.5	0.75	0.89	4.5	0.10	0.062	4.1	0.026	75.6	0.109	1067	3	10	129	112	12	32	76	99.78
KRA-225	Alca-5	4/20/09 10:54 AM	13.3	0.73	0.86	4.3	0.11	0.060	4.3	0.026	76.0	0.114	1050	0	12	136	112	10	38	73	99.99
KRA-227	Alca-5	4/20/09 2:54 PM	13.3	0.74	0.85	4.3	0.11	0.061	4.3	0.023	75.6	0.113	1078	10	12	140	116	10	34	73	99.46
KRA-229	Alca-5	4/18/09 3:56 PM	13.2	0.73	0.85	4.3	0.11	0.061	4.2	0.025	75.3	0.116	1090	10	11	137	116	9	33	79	99.11
KRA-231	Alca-5	4/20/09 8:03 PM	13.5	0.78	0.88	4.3	0.11	0.062	4.4	0.027	75.6	0.123	1075	2	11	137	126	11	35	81	99.99
KRA-232	Alca-5	4/21/09 10:21 AM	13.3	0.72	0.91	4.2	0.11	0.061	4.3	0.026	75.4	0.106	1048	5	9	137	116	10	34	68	99.32
KRA-101	Alca-7	1/3/07 10:00 PM	12.4	0.90	0.96	4.2	0.12	0.060	3.9	0.021	70.0	0.102	907	5	16	183	137	17	28	85	92.80
KRA-102	Alca-7	1/3/07 10:19 PM	12.4	0.90	0.93	4.4	0.11	0.060	3.8	0.020	69.8	0.099	907	11	14	178	139	17	31	82	92.61
KRA-189	Alca-7	3/20/08 6:25 PM	13.1	0.91	0.81	4.3	0.11	0.059	3.9	0.021	75.9	0.100	879	7	13	154	139	13	24	74	99.38
KRA-195	Alca-7	3/20/08 7:41 PM	13.1	0.91	0.80	4.3	0.10	0.059	3.9	0.020	75.8	0.101	877	2	11	160	142	13	19	73	99.27
KRA-197	Alca-7	3/21/08 9:43 AM	13.1	0.91	0.78	4.3	0.10	0.058	3.9	0.021	75.8	0.096	896	9	12	158	142	13	20	75	99.16
KRA-198	Alca-7	3/20/08 4:50 PM	13.0	0.89	0.78	4.3	0.09	0.059	3.9	0.024	75.2	0.102	869	9	13	159	136	15	20	69	98.42
KRA-205	Alca-7	3/20/08 5:09 PM	13.0	0.89	0.81	4.3	0.09	0.060	3.9	0.019	75.7	0.101	899	7	13	164	140	13	19	67	98.93
KRA-208	Alca-7	4/17/09 4:45 PM	12.9	0.88	0.82	4.3	0.11	0.059	3.9	0.019	76.1	0.094	851	0	11	169	137	11	17	68	99.29
KRA-238	Alca-7	4/22/09 12:47 PM	12.9	0.89	0.80	4.3	0.11	0.060	3.9	0.021	75.5	0.097	891	9	12	172	143	13	26	72	98.64
ANID Standards	Sub-source		Al2O3 (%)	CaO (%)	Fe2O3 (%)	K2O (%)	MgO (%)	MnO (%)	Na2O (%)	P2O5 (%)	SiO2 (%)	TiO2 (%)	Ba (PPM)	Cr (PPM)	Nb (PPM)	Rb (PPM)	Sr (PPM)	Y (PPM)	Zn (PPM)	Zr (PPM)	Sum (%)
SBG12		12/22/06 1:07 PM	14.9	1.14	1.48	5.8	0.29	0.063	3.7	0.172	65.7	0.186	468	8	28	474	100	18	40	164	93.50
SBG12		1/3/07 2:23 PM	14.8	1.15	1.48	5.8	0.30	0.063	3.7	0.165	65.6	0.185	434	18	29	475	104	17	40	170	93.39
SBG12		1/3/07 10:57 PM	14.8	1.15	1.50	5.8	0.30	0.064	3.8	0.163	65.6	0.190	465	8	28	478	106	20	45	168	93.42
mean			14.8	1.15	1.49	5.8	0.30	0.063	3.7	0.167	65.7	0.187	456	11	28	476	103	18	42	167	93.44
std dev			0.0	0.01	0.01	0.0	0.01	0.001	0.0	0.005	0.1	0.003	19	6	1	2	3	2	3	0.06	
RSD			0.1	0.5	0.8	0.1	1.9	0.9	0.7	2.8	0.1	1.4	4.1	50.9	2.0	0.4	3.0	8.3	6.9	1.8	0.1
SBG standard mean values			15.4	1.14	1.43	5.6	0.29	0.06	3.8	0.171	71.1	0.184	451	4	24	422	106	17	42	138	N.A.
% dev		12/22/06 1:07 PM	3.8	0.0	3.5	2.0	0.0	5.0	1.1	0.6	7.6	1.1	3.8	100.0	16.7	12.3	5.7	5.9	4.8	18.8	N.A.
% dev		1/3/07 2:23 PM	4.0	0.9	3.5	2.0	3.4	5.0	0.8	3.5	7.7	0.5	3.8	350.0	20.8	12.6	1.9	0.0	4.8	23.2	N.A.
% dev		1/3/07 10:57 PM	3.9	0.9	4.9	2.1	3.4	6.7	0.3	4.7	7.7	3.3	3.1	100.0	16.7	13.3	0.0	17.6	7.1	21.7	N.A.
G2		3/21/08 8:46 AM	15.2	1.95	2.67	4.5	0.75	0.032	4.0	0.138	68.7	0.490	1952	14	13	171	493	11	70	320	98.76
G2		4/29/08 6:50 PM	15.1	1.94	2.67	4.5	0.76	0.034	4.0	0.144	68.1	0.486	1940	6	13	171	493	11	88	326	98.06
G2		5/1/08 5:29 PM	15.1	1.95	2.68	4.5	0.75	0.035	3.9	0.142	68.0	0.489	1993	15	13	171	491	10	84	329	97.96
mean			15.2	1.95	2.67	4.5	0.75	0.034	4.0	0.141	68.3	0.488	1962	12	13	171	492	11	81	325	98.26
std dev			0.0	0.01	0.01	0.0	0.01	0.002	0.0	0.003	0.4	0.002	28	5	0	1	1	9	5	0.44	
RSD			0.3	0.3	0.2	0.2	0.8	4.5	0.7	2.2	0.5	0.4	1.4	42.3	0.0	0.0	0.2	5.4	11.7	1.4	0.4
USGS G2 standard mean values			15.4	1.96	2.66	4.5	0.75	0.030	4.1	0.140	69.1	0.480	1880	N.D.	N.D.	170	478	11	N.D.	309	N.A.
% dev		3/21/08 8:46 AM	1.1	0.5	0.4	0.7	0.0	6.7	2.2	1.4	0.6	2.1	3.8	N.D.	N.D.	0.6	3.1	0.0	N.D.	3.6	N.A.
% dev		4/29/08 6:50 PM	1.7	1.0	0.4	0.4	1.3	13.3	2.2	2.9	1.5	1.3	3.2	N.D.	N.D.	0.6	3.1	0.0	N.D.	5.5	N.A.
% dev		5/1/08 5:29 PM	1.6	0.5	0.8	0.2	0.0	16.7	3.4	1.4	1.6	1.9	6.0	N.D.	N.D.	0.6	2.7	9.1	N.D.	6.5	N.A.

Rademaker Table S105. P-XRF concentration data

Table DR5. Alca obsidian P-XRF concentration data

Sub-source	Sample	Mo (ppm)	Fe (ppm)	Zr (ppm)	Ga (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Mo (ppm)	Th (ppm)
Alc-1	KRA-001-1	442	5547	45	19	134	71	14	97	11	14
Alc-1	KRA-001-2	442	5547	45	19	133	71	14	97	11	14
Alc-1	KRA-001-mean	442	5547	45	19	134	71	14	97	11	14
Alc-1	KRA-001-RSD	2.8	0.3	3.9	7.7	0.7	0.3	3.3	2.9	2.8	9.7
Alc-1	KRA-001-1	460	5630	46	19	135	74	14	96	11	12
Alc-1	KRA-001-2	460	5630	46	19	135	73	14	96	11	12
Alc-1	KRA-001-3	450	5644	46	19	134	73	14	96	11	12
Alc-1	KRA-001-mean	450	5644	46	19	134	73	14	96	11	12
Alc-1	KRA-001-RSD	4.3	1.2	1.6	7.0	0.9	3.9	5.1	0.6	2.3	6.3
Alc-1	KRA-001-1	501	5604	47	19	136	72	15	107	12	12
Alc-1	KRA-001-2	501	5604	47	19	136	73	15	107	12	12
Alc-1	KRA-001-3	490	5620	47	19	136	73	15	107	12	12
Alc-1	KRA-001-mean	490	5620	47	19	136	73	15	107	12	12
Alc-1	KRA-001-RSD	5.3	0.9	3.8	7.0	0.5	1.7	6.7	3.8	3.8	7.6
Alc-1	KRA-001-1	459	5570	50	15	131	71	15	100	11	12
Alc-1	KRA-001-2	459	5570	50	15	131	71	15	100	11	12
Alc-1	KRA-001-3	450	5610	49	15	130	74	15	100	11	12
Alc-1	KRA-001-mean	450	5610	49	15	130	74	15	100	11	12
Alc-1	KRA-001-RSD	1.5	0.9	8.9	11.8	2.0	1.9	5.0	1.1	2.9	4.6
Alc-1	KRA-001-1	450	5446	46	16	134	75	15	97	11	14
Alc-1	KRA-001-2	450	5446	46	16	134	75	15	97	11	14
Alc-1	KRA-001-3	445	5526	47	16	134	72	15	96	11	14
Alc-1	KRA-001-mean	445	5526	47	16	134	72	15	96	11	14
Alc-1	KRA-001-RSD	0.7	1.2	2.5	4.3	0.1	1.8	4.5	1.3	2.3	3.4
Alc-1	KRA-112-1	467	5745	47	19	134	74	15	97	12	13
Alc-1	KRA-112-2	467	5745	47	19	134	74	15	97	12	13
Alc-1	KRA-112-3	484	5747	50	19	130	74	14	98	11	14
Alc-1	KRA-112-mean	484	5747	50	19	130	74	14	98	11	14
Alc-1	KRA-112-RSD	3.1	3.2	7.3	3.0	1.8	1.9	0.8	1.2	3.7	3.6
Alc-2	KRA-001-1	443	7080	46	18	130	148	15	159	12	14
Alc-2	KRA-001-2	443	8617	46	18	130	145	15	159	12	14
Alc-2	KRA-001-3	443	8622	46	18	130	145	15	159	12	14
Alc-2	KRA-001-mean	443	8622	46	18	130	145	15	159	12	14
Alc-2	KRA-001-RSD	5.5	4.2	2.5	2.4	1.1	2.4	0.5	2.3	2.4	2.4
Alc-2	KRA-001-1	420	7589	51	20	143	141	14	156	12	15
Alc-2	KRA-001-2	423	7589	51	20	143	141	14	156	12	15
Alc-2	KRA-001-3	433	7614	48	18	130	138	16	151	12	15
Alc-2	KRA-001-mean	433	7614	48	18	130	138	16	151	12	15
Alc-2	KRA-001-RSD	2.0	2.7	4.9	2.8	2.2	2.9	2.2	6.1	2.4	2.4
Alc-2	KRA-001-1	463	7061	52	17	144	120	14	153	13	14
Alc-2	KRA-001-2	454	6996	47	18	137	134	15	147	12	15
Alc-2	KRA-001-3	453	7045	50	17	141	121	15	147	12	15
Alc-2	KRA-001-mean	453	7045	50	17	141	121	15	147	12	15
Alc-2	KRA-001-RSD	2.2	1.0	3.2	7.5	1.1	2.4	1.1	2.4	1.1	2.4
Alc-3	KRA-001-1	550	8037	48	19	138	201	16	158	11	13
Alc-3	KRA-001-2	550	7988	48	19	138	200	16	158	11	13
Alc-3	KRA-001-3	545	8029	49	19	138	200	16	158	11	13
Alc-3	KRA-001-mean	545	8029	49	19	138	200	16	158	11	13
Alc-3	KRA-001-RSD	2.5	0.3	3.7	11.0	1.1	0.6	3.7	1.5	3.2	2.4
Alc-3	KRA-001-1	543	7991	60	17	138	205	16	155	11	14
Alc-3	KRA-001-2	547	7988	59	17	138	205	16	155	11	14
Alc-3	KRA-001-3	547	7988	59	17	138	205	16	155	11	14
Alc-3	KRA-001-mean	547	7988	59	17	138	205	16	155	11	14
Alc-3	KRA-001-RSD	3.1	0.8	3.3	9.0	0.4	2.9	1.0	2.9	2.1	11.5
Alc-3	KRA-001-1	562	8047	49	17	136	201	16	153	11	14
Alc-3	KRA-001-2	562	8047	49	17	136	201	16	153	11	14
Alc-3	KRA-001-3	562	8047	49	17	136	201	16	153	11	14
Alc-3	KRA-001-mean	562	8047	49	17	136	201	16	153	11	14
Alc-3	KRA-001-RSD	2.4	1.0	3.2	3.1	0.3	0.6	4.3	0.8	2.6	6.1
Alc-3	KRA-001-1	566	7650	51	18	134	202	17	154	12	13
Alc-3	KRA-001-2	566	7650	51	18	134	202	17	154	12	13
Alc-3	KRA-001-3	566	8033	50	18	136	204	15	151	10	13
Alc-3	KRA-001-mean	566	7650	51	18	134	202	17	154	12	13
Alc-3	KRA-001-RSD	2.5	0.4	4.2	8.7	1.3	0.4	3.9	0.4	4.1	2.3
Alc-3	KRA-001-1	520	7524	54	16	136	202	17	156	11	13
Alc-3	KRA-001-2	526	7519	53	18	136	200	17	156	11	13
Alc-3	KRA-001-3	526	7519	53	18	136	200	17	156	11	13
Alc-3	KRA-001-mean	526	7519	53	18	136	200	17	156	11	13
Alc-3	KRA-001-RSD	2.8	0.6	3.8	7.7	0.4	0.6	4.6	0.2	4.7	7.4
Alc-3	KRA-001-1	562	8075	51	16	138	202	17	156	11	13
Alc-3	KRA-001-2	562	8075	51	16	138	202	17	156	11	13
Alc-3	KRA-001-3	562	8075	51	16	138	202	17	156	11	13
Alc-3	KRA-001-mean	562	8075	51	16	138	202	17	156	11	13
Alc-3	KRA-001-RSD	2.5	0.6	4.2	8.5	1.5	0.9	4.7	1.3	4.1	2.3
Alc-4	KRA-001-1	519	6861	36	16	105	137	13	99	9	7
Alc-4	KRA-001-2	519	6861	45	17	107	137	13	99	9	8
Alc-4	KRA-001-3	519	6861	45	17	107	137	13	99	9	8
Alc-4	KRA-001-mean	519	6861	45	17	107	137	13	99	9	8
Alc-4	KRA-001-RSD	1.5	1.2	3.4	1.1	1.1	1.1	2.2	2.2	5.7	6.3
Alc-4	KRA-001-1	519	6861	36	16	105	137	13	99	9	8
Alc-4	KRA-001-2	517	5877	40	17	107	137	13	99	9	8
Alc-4	KRA-001-3	517	5877	40	17	107	137	13	99	9	8
Alc-4	KRA-001-mean	517	5877	40	17	107	137	13	99	9	8
Alc-4	KRA-001-RSD	3.4	3.4	4.2	8.7	1.3	0.4	3.9	0.9	6.6	6.7
Alc-4	KRA-001-1	516	6732	41	18	104	140	12	94	9	8
Alc-4	KRA-001-2	516	6589	41	18	104	140	12	94	9	8
Alc-4	KRA-001-3	516	6589	41	18	104	140	12	94	9	8
Alc-4	KRA-001-mean	516	6589	41	18	104	140	12	94	9	8
Alc-4	KRA-001-RSD	2.7	2.7	4.0	4.1	1.2	1.2	2.0	2.1	2.4	4.1
Alc-4	KRA-001-1	516	6569	46	18	108	140	14	95	10	14
Alc-4	KRA-001-2	516	6569	46	18	108	140	14	95	10	14
Alc-4	KRA-001-3	516	6569	46	18	108	140	14	95	10	14
Alc-4	KRA-001-mean	516	6569	46	18	108	140	14	95	10	14
Alc-4	KRA-001-RSD	8.6	8.6	4.5	5.5	2.4	2.4	2.1	4.3	8.2	9.2
Alc-4	KRA-001-1	480	6568	47	18	138	162	14	91	11	12
Alc-4	KRA-001-2	477	5338	47	18	138	162	14	91	11	12
Alc-4	KRA-001-3	485	5301	45	18	138	162	14	91	11	12
Alc-4	KRA-001-mean	485	5301	45	18	138	162	14	91	11	12
Alc-4	KRA-001-RSD	2.4	2.4	4.3	4.4	1.8	1.8	2.2	2.3	2.7	7.2
Alc-4	KRA-001-1	485	5301	45	18	138	162	14	91	11	12
Alc-4	KRA-001-2	485	5277	45	18	138	162	14	91	11	12
Alc-4	KRA-001-3	485	5277	45	18	138	162	14	91	11	12
Alc-4	KRA-001-mean	485	5277	45	18	138	162	14	91	11	12
Alc-4	KRA-001-RSD	3.8	3.8	4.2	3.5	0.8	3.4	1.9	0.8	3.4	2.7
Alc-4	KRA-001-1	485	5274	44	18	139	162	14	91	11	12
Alc-4	KRA-001-2	484	5274	44	18	139	162	14	91	11	12
Alc-4	KRA-001-3	484	5274	44	18	139	162	14	91	11	12
Alc-4	KRA-001-mean	484	5274	44	18	139	162	14	91	11	12
Alc-4	KRA-001-RSD										

praczenie	Sample	Mi (g/m ²)	Pi (g/m ²)	Ga (g/m ²)	Ge (g/m ²)	Dm (g/m ²)	Dp (g/m ²)	Sp (g/m ²)	Sp (g/m ²)	Ti (g/m ²)	Tp (g/m ²)
RSD-KO-001	4	0.5	3.9	17	17	0.5	3.5	1.5	3.5	2.0	2.8
RSD-KO-001	4.6	4.5	6.1	6.7	1.3	4.2	1.6	4.3	5.6	6.3	
RSD-KO-002	2.8	0.6	3.4	15	0.6	3.4	1.6	3.4	1.6	2.7	
RSD-KO-002	2.8	0.6	3.6	2.7	0.6	3.6	1.6	3.7	2.7	2.7	
RSD-KO-003	6.2	1.2	1.6	7.0	0.9	3.9	5.1	6.0	2.3	6.0	
RSD-KO-003	1.5	0.9	8.9	11.8	2.0	1.9	5.0	5.1	2.1	4.6	
RSD-KO-003	0.7	1.2	4.5	4.3	0.1	1.8	4.5	4.3	2.3	2.4	
RSD-KO-003	0.7	1.2	4.5	4.3	0.1	1.8	4.5	4.3	2.3	2.4	
RSD-KO-004	0.7	2.7	6.0	24	1.6	4.0	6.0	5.3	2.8	6.3	
RSD-KO-004	4.6	0.7	6.7	3.5	0.9	3.4	1.8	1.8	2.4	2.7	
RSD-KO-005	2.1	0.8	4.9	5.0	5.2	2.0	2.7	2.7	2.3	2.4	
RSD-KO-005	1.1	0.8	4.9	5.0	5.2	2.0	2.7	2.7	2.3	2.4	
RSD-KO-011	1.6	1.9	4.9	3.4	0.2	0.7	3.6	3.8	2.4	5.3	
RSD-KO-011	3.1	2.2	7.3	3.0	1.8	1.9	0.8	1.2	3.7	3.6	
RSD-KO-012	3.9	0.4	7.6	4.6	1.1	1.0	5.7	5.2	6.3	21.5	
RSD-KO-012	2.1	0.5	1.3	1.4	0.4	0.5	1.3	1.4	2.1	2.1	
RSD-KO-012	2.1	0.5	1.3	1.4	0.4	0.5	1.3	1.4	2.1	2.1	
RSD-KO-016	4.7	0.7	0.1	7.5	2.5	1.3	1.3	1.6	4.1	4.4	
RSD-KO-016	1.8	3.4	4.2	9.7	1.3	5.4	3.8	3.8	6.3	6.7	
RSD-KO-017	2.4	0.8	7.7	1.7	0.4	2.7	5.5	5.8	2.2	5.7	
RSD-KO-027	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
My (g/m ²)	Pi (g/m ²)	Ga (g/m ²)	Ge (g/m ²)	Dm (g/m ²)	Dp (g/m ²)	Sp (g/m ²)	Sp (g/m ²)	Ti (g/m ²)	Tp (g/m ²)		
KSD-KO-001	445	5552	49	14	14	71	11	68	68	11	12
KSD-KO-001	475	5552	49	14	14	71	11	68	68	11	12
KSD-KO-002	5552	445	49	14	14	72	12	14	14	12	12
KSD-KO-002	5552	445	49	14	14	72	12	14	14	12	12
KSD-KO-003	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-003	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-004	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-004	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-005	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-005	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-006	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-006	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-007	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-007	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-008	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-008	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-009	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-009	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-010	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-010	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-011	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-011	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-012	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-012	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-013	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-013	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-014	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-014	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-015	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-015	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-016	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-016	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-017	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-017	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-018	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-018	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-019	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-019	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-020	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-020	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-021	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-021	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-022	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-022	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-023	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-023	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-024	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-024	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-025	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-025	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-026	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-026	5552	445	49	14	14	73	13	15	15	12	12
KSD-KO-027	5552	445	49	14	14	73	13	15	15	12	12
My (g/m ²)	Pi (g/m ²)	Ga (g/m ²)	Ge (g/m ²)	Dm (g/m ²)	Dp (g/m ²)	Sp (g/m ²)	Sp (g/m ²)	Ti (g/m ²)	Tp (g/m ²)		
KSD-KO-001	543	5552	89	17	17	106	20	16	15	9	11
KSD-KO-001	565	8055	89	17	17	127	20	16	15	9	11
KSD-KO-002	543	5552	89	17	17	146	20	16	15	9	11
KSD-KO-002	575	5552	89	17	17	146	20	16	15	9	11
KSD-KO-003	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-003	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-004	541	5552	89	17	17	147	20	16	15	9	11
KSD-KO-004	563	5552	89	17	17	147	20	16	15	9	11
KSD-KO-005	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-005	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-006	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-006	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-007	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-007	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-008	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-008	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-009	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-009	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-010	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-010	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-011	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-011	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-012	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-012	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-013	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-013	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-014	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-014	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-015	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-015	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-016	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-016	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-017	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-017	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-018	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-018	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-019	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-019	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-020	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-020	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-021	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-021	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-022	543	5552	89	17	17	147	20	16	15	9	11
KSD-KO-022	565	5552	89	17	17	147	20	16	15	9	11
KSD-KO-023	543</td										

Table DR6. Geographic coordinates for Alca obsidian source samples.
 All coordinates are UTM Zone 18S, Datum WGS-84

ANID	Alca sub-source	Northing	Easting	Elev (masl)	ED-XRF	INAA	WD-XRF	P-XRF
KRA-001	Alca-1	8325947	741049	3150	X	X	X	X
KRA-002	Alca-1	8326797	740828	3050	X	X	X	
KRA-005	Alca-1	8325363	747436	4448		X		
KRA-006	Alca-1	8327982	744167	4419		X		
KRA-007	Alca-1	8326848	745229	4128		X		
KRA-008	Alca-1	8325570	745737	4139		X		
KRA-009	Alca-1	8325606	747379	4292		X		
KRA-014	Alca-1	8325622	746169	4146		X		
KRA-015	Alca-1	8326935	748391	4805		X		
KRA-016	Alca-1	8327066	748307	4826		X		
KRA-017	Alca-1	8327309	747901	4830		X		
KRA-018	Alca-1	8327339	747738	4827		X		
KRA-019	Alca-1	8327291	747603	4818		X		
KRA-020	Alca-1	8327444	747676	4811		X		
KRA-021	Alca-1	8327617	747569	4808		X		
KRA-022	Alca-1	8327617	747569	4808		X		
KRA-023	Alca-1	8327805	745923	4703		X		
KRA-024	Alca-1	8327685	745507	4673		X		
KRA-025	Alca-1	8327330	746049	4674		X		
KRA-026	Alca-1	8327071	746168	4642		X		X
KRA-027	Alca-1	8326798	746241	4725		X		
KRA-028	Alca-1	8326724	746214	4749		X		
KRA-029	Alca-1	8326724	746214	4749		X		
KRA-030	Alca-1	8326885	748248	4756		X		
KRA-031	Alca-1	8326877	748175	4770		X		
KRA-032	Alca-1	8327005	748138	4781		X		
KRA-033	Alca-1	8327016	748085	4775		X		
KRA-034	Alca-1	8327033	748023	4769		X		
KRA-035	Alca-1	8327049	747914	4772		X		
KRA-036	Alca-1	8327076	747823	4766		X		
KRA-037	Alca-1	8327090	747822	4774		X		
KRA-038	Alca-6 (Alca-1)	8327090	747822	4774		X		X
KRA-039	Alca-1	8327096	747750	4772		X		
KRA-040	Alca-1	8327086	747723	4763		X		
KRA-041	Alca-6 (Alca-1)	8327086	747723	4763		X		X
KRA-042	Alca-1	8327086	747723	4763		X		
KRA-043	Alca-1	8327095	747610	4757		X		
KRA-044	Alca-1	8327097	747578	4786		X		
KRA-045	Alca-1	8327142	747514	4783		X		
KRA-046	Alca-6 (Alca-1)	8327198	747488	4765		X		X
KRA-047	Alca-1	8327231	747479	4754		X		
KRA-048	Alca-1	8327375	747536	4773		X		
KRA-049	Alca-1	8327434	747616	4778		X		
KRA-050	Alca-1					X		
KRA-051	Alca-1	8327115	747306	4722		X		
KRA-052	Alca-1	8327093	747214	4708		X		
KRA-053	Alca-1	8327038	747108	4709		X		
KRA-054	Alca-1	8320775	746662	4726		X		
KRA-055	Alca-1	8326707	746460	4744		X		
KRA-056	Alca-1	8326653	746339	4761		X		
KRA-057	Alca-1	8326608	746578	4748		X		
KRA-058	Alca-1	8326539	746681	4783		X		
KRA-059	Alca-1	8326539	746681	4783		X		
KRA-060	Alca-1	8326491	746696	4755		X		

Table DR6. Geographic coordinates for Alca obsidian source samples.
All coordinates are UTM Zone 18S, Datum WGS-84

ANID	Alca sub-source	Northing	Easting	Elev (masl)	ED-XRF	INAA	WD-XRF	P-XRF
KRA-061	Alca-1	8326485	746729	4799	X		X	
KRA-062	Alca-6 (Alca-1)	8326461	746774	4820	X	X		
KRA-063	Alca-1	8326461	747018	4791	X			
KRA-064	Alca-1	8326533	747199	4808	X			
KRA-065	Alca-1	8326481	747303	4817	X		X	X
KRA-066	Alca-1	8326755	747976	4791	X			
KRA-067	Alca-1	8326781	747846	4786	X			
KRA-068	Alca-1	8326787	747759	4785	X		X	
KRA-069	Alca-1	8326814	747653	4781	X			
KRA-070	Alca-6 (Alca-1)	8326756	747577	4782	X	X		X
KRA-071	Alca-1	8326483	747470	4816	X			
KRA-072	Alca-1	8326476	747585	4818	X			
KRA-073	Alca-1	8326664	748102	4783	X			
KRA-074	Alca-1	8326467	747321	4818	X			
KRA-075	Alca-1	8326467	747321	4818	X			
KRA-076	Alca-1	8326604	748270	4745	X			
KRA-077	Alca-1	8326725	748358	4757	X			
KRA-078	Alca-1	8326894	748596	4759	X			
KRA-079	Alca-1	8326906	748626	4763	X			
KRA-080	Alca-6 (Alca-1)	8327016	748803	4750	X	X		
KRA-081	Alca-1	8327009	748884	4754	X			
KRA-082	Alca-1	8327001	748978	4737	X			
KRA-083	Alca-1	8326813	749084	4697	X			
KRA-084	Alca-1	8326745	749096	4672	X			
KRA-085	Alca-1	8325716	747831	4394	X			
KRA-086	Alca-1	8325655	747640	4376	X			
KRA-087	Alca-1	8325613	747447	4355	X			
KRA-088	Alca-1	8325420	746850	4187	X			
KRA-089	Alca-1	8325536	746278	4109	X			
KRA-090	Alca-1	8325296	745677	4009	X			
KRA-091	Alca-6 (Alca-1)	8325168	741040	3237	X	X	X	
KRA-092	Alca-1	8325033	740927	3093	X		X	
KRA-093	Alca-1	8323426	740899	3318	X		X	
KRA-095	Alca-1				X	X	X	X
KRA-096	Alca-1				X		X	
KRA-113	Alca-1	8324296	740642	2889	X		X	X
KRA-114	Alca-1	8325762	739902	2720	X			
KRA-115	Alca-1	8325762	739902	2720	X			
KRA-116	Alca-1	8325762	739902	2720	X			
KRA-117	Alca-1	8325762	739902	2720	X			
KRA-118	Alca-1	8325762	739902	2720	X			
KRA-119	Alca-1	8325230	739956	2737	X			
KRA-120	Alca-1	8325230	739956	2737	X			
KRA-121	Alca-1	8325230	739956	2737	X			
KRA-122	Alca-1	8325230	739956	2737	X			
KRA-123	Alca-1	8324919	739655	2773	X			
KRA-126	Alca-1	8323949	738382	2794	X			
KRA-127	Alca-1	8324000	737743	2981	X			
KRA-128	Alca-1	8324000	737743	2981	X			
KRA-129	Alca-1	8324000	737743	2981	X			
KRA-130	Alca-1	8324000	737743	2981	X			
KRA-131	Alca-1	8324000	737743	2981	X			
KRA-132	Alca-1	8324000	737743	2981	X			
KRA-133	Alca-1	8324000	737743	2981	X			

Table DR6. Geographic coordinates for Alca obsidian source samples.
All coordinates are UTM Zone 18S, Datum WGS-84

ANID	Alca sub-source	Northing	Easting	Elev (masl)	ED-XRF	INAA	WD-XRF	P-XRF
KRA-134	Alca-1	8324000	737743	2981	X			
KRA-135	Alca-1	8324000	737743	2981	X			
KRA-136	Alca-1	8324000	737743	2981	X			
KRA-137	Alca-1	8324000	737743	2981	X			
KRA-139	Alca-1	8323558	737878	3113	X			
KRA-140	Alca-1	8321946	737625	3853	X			
KRA-141	Alca-1	8321946	737625	3853	X			
KRA-142	Alca-1	8321946	737625	3853	X			
KRA-143	Alca-1	8321946	737625	3853	X			
KRA-144	Alca-1	8321946	737625	3853	X			
KRA-145	Alca-1	8325096	740087	2836	X			
KRA-146	Alca-1	8325096	740087	2836	X			
KRA-149	Alca-1	8323444	740450	3368	X			
KRA-150	Alca-1	8323444	740450	3368	X			
KRA-152	Alca-1	8323751	738500	2867	X			
KRA-153	Alca-1	8323751	738500	2867	X			
KRA-175	Alca-1	8298810	754916	4441	X			
KRA-196	Alca-1	8303340	754715	4462	X			
KRA-226	Alca-1	8298823	748641	4367	X		X	
KRA-228	Alca-1	8298823	748641	4367	X		X	
KRA-230	Alca-1	8300257	747957	4365	X		X	
KRA-236	Alca-1	8303276	746901	4510	X			
KRA-237	Alca-1	8303276	746901	4510	X			
KRA-239	Alca-1	8303836	749375	4454	X			
KRA-241	Alca-1	8303836	749375	4454	X			
M04-072	Alca-1	8326510	747717	4819			X	
M04-074	Alca-1	8326644	747403	4795			X	
KRA-003	Alca-2	8323276	747030	4768	X	X	X	X
KRA-004	Alca-2	8324546	746865	4422	X	X	X	X
KRA-151	Alca-2	8323444	740450	3368	X		X	X
KRA-010	Alca-3	8327253	743697	4254	X	X	X	X
KRA-011	Alca-3	8327194	743602	4322	X	X	X	X
KRA-012	Alca-3	8327516	743412	4302	X	X	X	X
KRA-013	Alca-3	8326353	743397	4141	X	X		X
KRA-094	Alca-3	8323426	740899	3318	X	X		X
KRA-124	Alca-3	8324946	739177	2711	X			
KRA-125	Alca-3	8324946	739177	2711	X			
KRA-138	Alca-3	8324000	737743	2981	X			
KRA-147	Alca-3	8325096	740087	2836	X			
KRA-148	Alca-3	8325096	740087	2836	X			
KRA-154	Alca-3	8323925	738233	2848	X		X	
KRA-155	Alca-3	8327250	743695	4270	X		X	
KRA-156	Alca-3	8327250	743695	4270	X			
KRA-157	Alca-3	8327250	743695	4270	X			
KRA-158	Alca-3	8327258	743675	4289	X		X	
KRA-159	Alca-3	8327258	743675	4289	X			
KRA-160	Alca-3	8327258	743675	4289	X			
KRA-161	Alca-3	8327281	743643	4300	X		X	
KRA-162	Alca-3	8327203	743587	4330	X		X	X
KRA-163	Alca-3	8327203	743587	4330	X			
KRA-164	Alca-3	8327517	743487	4339	X		X	X

Table DR6. Geographic coordinates for Alca obsidian source samples.
All coordinates are UTM Zone 18S, Datum WGS-84

ANID	Alca sub-source	Northing	Easting	Elev (masl)	ED-XRF	INAA	WD-XRF	P-XRF
KRA-165	Alca-3	8327517	743487	4339	X			
KRA-166	Alca-3	8327690	743223	4330	X			
KRA-167	Alca-3	8327690	743223	4330	X			
KRA-168	Alca-3	8327690	743223	4330	X			
KRA-169	Alca-3	8327690	743223	4330	X		X	
KRA-170	Alca-3	8327690	743223	4330	X			
KRA-171	Alca-3	8328085	743190	4337	X			
KRA-172	Alca-3	8328085	743190	4337	X		X	
KRA-173	Alca-3	8328085	743190	4337	X			
KRA-097	Alca-4	8286722	737031	4233	X	X	X	X
KRA-098	Alca-4	8286722	737031	4233	X	X		X
KRA-099	Alca-4	8286722	737031	4233	X	X		
KRA-100	Alca-4	8286722	737031	4233	X	X	X	X
KRA-103	Alca-4	8286987	737432	4395	X	X	X	
KRA-221	Alca-4	8286722	737031	4233	X		X	
KRA-242	Alca-4				X		X	
KRA-252	Alca-4	8287708	739198	4342			X	X
KRA-253	Alca-4	8287708	739198	4342	X			
KRA-254	Alca-4	8287708	739198	4342	X			X
KRA-255	Alca-4	8284949	738076	4229	X			
KRA-256	Alca-4	8286139	736690	4138	X			
KRA-257	Alca-4	8286942	737381	4381	X			X
KRA-258	Alca-4	8268056	737073	4152	X			
KRA-286	Alca-4						X	
KRA-104	Alca-5	8300667	755833	4519	X	X		X
KRA-105	Alca-5	8296562	747304	4332	X	X		
KRA-106	Alca-5	8293168	739142	4082	X	X	X	
KRA-107	Alca-5	8292697	738733	4138	X	X	X	X
KRA-108	Alca-5	8294521	742651	4286	X	X		X
KRA-109	Alca-5	8294521	742651	4286	X	X	X	X
KRA-110	Alca-5	8294521	742651	4286	X	X		X
KRA-111	Alca-5	8294514	742404	4276	X	X	X	X
KRA-112	Alca-5	8294265	742539	4295	X	X	X	X
KRA-174	Alca-5	8298483	754589	4435	X			
KRA-176	Alca-5	8300246	755124	4453	X			
KRA-190	Alca-5	8303670	755690	4511	X		X	
KRA-209	Alca-5	8299145	751486	4372	X		X	
KRA-210	Alca-5	8299145	751486	4372	X			
KRA-211	Alca-5	8297773	748682	4332	X		X	
KRA-212	Alca-5	8297361	748424	4345	X		X	
KRA-213	Alca-5	8294505	742852	4283	X			
KRA-214	Alca-5	8294505	742852	4283	X			
KRA-215	Alca-5	8294505	742852	4283	X			
KRA-217	Alca-5	8294505	742852	4283	X		X	
KRA-218	Alca-5	8294505	742852	4283	X			
KRA-219	Alca-5	8294387	742375	4283	X		X	
KRA-220	Alca-5	8294530	741794	4266	X		X	
KRA-222	Alca-5	8297876	748327	4404	X			
KRA-223	Alca-5	8297876	748327	4404	X			
KRA-224	Alca-5	8297935	748327	4408	X			
KRA-225	Alca-5	8298823	748641	4367	X		X	
KRA-227	Alca-5	8298823	748641	4367	X		X	

Table DR6. Geographic coordinates for Alca obsidian source samples.
All coordinates are UTM Zone 18S, Datum WGS-84

ANID	Alca sub-source	Northing	Easting	Elev (masl)	ED-XRF	INAA	WD-XRF	P-XRF
KRA-229	Alca-5	8300257	747957	4365	X		X	
KRA-231	Alca-5	8300257	747957	4365	X		X	
KRA-232	Alca-5	8300257	747957	4365	X		X	
KRA-233	Alca-5	8298214	750038	4346	X			
KRA-234	Alca-5	8298214	750038	4346	X			
KRA-235	Alca-5	8303276	746901	4510	X			
KRA-240	Alca-5	8303836	749375	4454	X			
KRA-244	Alca-5	8300714	751333	4375	X			
KRA-246	Alca-5	8290483	742087	4398	X			
KRA-247	Alca-5	8290483	742087	4398	X			
KRA-248	Alca-5	8290483	742087	4398	X			
KRA-249	Alca-5	8290483	742087	4398	X			
KRA-250	Alca-5	8290483	742087	4398	X			
KRA-251	Alca-5	8290018	741723	4464	X			
KRA-101	Alca-7	8304076	757739	4594	X	X	X	X
KRA-102	Alca-7	8304076	757739	4594	X	X	X	X
KRA-177	Alca-7	8300246	755124	4453	X			
KRA-178	Alca-7	8300246	755124	4453	X			
KRA-179	Alca-7	8302013	755328	4512	X			
KRA-180	Alca-7	8302013	755328	4512	X			
KRA-181	Alca-7	8302517	755735	4531	X			
KRA-182	Alca-7	8302517	755735	4531	X			
KRA-183	Alca-7	8302640	756235	4536	X			
KRA-184	Alca-7	8302640	756235	4536	X			
KRA-185	Alca-7	8302640	756235	4536	X			
KRA-186	Alca-7	8303416	756172	4585	X			
KRA-187	Alca-7	8303416	756172	4585	X			
KRA-188	Alca-7	8303416	756172	4585	X			
KRA-189	Alca-7	8303670	755690	4511	X		X	X
KRA-191	Alca-7	8303670	755690	4511	X			
KRA-192	Alca-7	8303670	755690	4511	X			
KRA-193	Alca-7	8303670	755690	4511	X			
KRA-195	Alca-7	8303340	754715	4462	X		X	X
KRA-197	Alca-7	8303340	754715	4462	X		X	X
KRA-198	Alca-7	8303340	754715	4462	X		X	X
KRA-199	Alca-7	8300740	751770	4394	X			
KRA-200	Alca-7	8300740	751770	4394	X			
KRA-201	Alca-7	8300740	751770	4394	X			
KRA-202	Alca-7	8300740	751770	4394	X			
KRA-203	Alca-7	8300740	751770	4394	X			
KRA-204	Alca-7	8300740	751770	4394	X			
KRA-205	Alca-7	8300740	751770	4394	X		X	X
KRA-207	Alca-7	8300740	751770	4394	X			
KRA-208	Alca-7	8300740	751770	4394			X	
KRA-238	Alca-7	8303889	748521	4473	X		X	
KRA-243	Alca-7	8303494	753496	4457	X			

Table DR7. Mahalanobis distance results for ED-XRF

MAHALANOBIS DISTANCE CALCULATION AND POSTERIOR CLASSIFICATION
FOR TWO OR MORE GROUPS.

Date: 10/21/12

File: Maha8.txt

Groups are:

- 1 EDALCA1
- 2 EDALCA3
- 3 EDALCA4
- 4 EDALCA5
- 5 EDALCA7

Variables used:

Rb Sr

Probabilities are jackknifed for specimens included in each group.

The following specimens are in the file EDALCA1

Probabilities:

ID. NO.	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	From:
Intro:						
KRA001 1	78.860	0.000	0.000	0.013	0.000	1
KRA002 1	43.042	0.000	0.000	0.000	0.000	1
KRA005 1	97.687	0.000	0.000	0.006	0.000	1
KRA006 1	12.835	0.000	0.000	0.000	0.000	1
KRA007 1	48.963	0.000	0.000	0.001	0.000	1
KRA008 1	82.279	0.000	0.000	0.002	0.000	1
KRA009 1	71.612	0.000	0.000	0.001	0.000	1
KRA014 1	74.614	0.000	0.000	0.002	0.000	1
KRA015 1	40.767	0.000	0.000	0.000	0.000	1
KRA016 1	59.025	0.000	0.000	0.001	0.000	1
KRA017 1	67.519	0.000	0.000	0.001	0.000	1
KRA018 1	7.304	0.000	0.000	0.000	0.000	1
KRA019 1	43.792	0.000	0.000	0.008	0.000	1
KRA020 1	78.304	0.000	0.000	0.005	0.000	1
KRA021 1	11.832	0.000	0.000	0.000	0.000	1

KRA022	9.642	0.000	0.000	0.000	0.000	1
1						
KRA023	55.186	0.000	0.000	0.001	0.000	1
1						
KRA024	81.532	0.000	0.000	0.001	0.000	1
1						
KRA025	19.030	0.000	0.000	0.078	0.000	1
1						
KRA026	29.312	0.000	0.000	0.000	0.000	1
1						
KRA027	99.098	0.000	0.000	0.005	0.000	1
1						
KRA028	64.326	0.000	0.000	0.001	0.000	1
1						
KRA029	96.052	0.000	0.000	0.002	0.000	1
1						
KRA030	89.935	0.000	0.000	0.002	0.000	1
1						
KRA031	31.775	0.000	0.000	0.095	0.000	1
1						
KRA032	42.583	0.000	0.000	0.000	0.000	1
1						
KRA033	46.425	0.000	0.000	0.000	0.000	1
1						
KRA034	72.211	0.000	0.000	0.005	0.000	1
1						
KRA035	41.917	0.000	0.000	0.062	0.000	1
1						
KRA036	39.769	0.000	0.000	0.017	0.000	1
1						
KRA037	45.569	0.000	0.000	0.003	0.000	1
1						
KRA038	22.893	0.000	0.000	0.003	0.000	1
1						
KRA039	35.426	0.000	0.000	0.000	0.000	1
1						
KRA040	53.436	0.000	0.000	0.027	0.000	1
1						
KRA041	1.017	0.000	0.000	0.000	0.000	1
1						
KRA042	58.164	0.000	0.000	0.000	0.000	1
1						
KRA043	78.242	0.000	0.000	0.003	0.000	1
1						
KRA044	43.025	0.000	0.000	0.000	0.000	1
1						
KRA045	75.725	0.000	0.000	0.001	0.000	1
1						
KRA046	0.289	0.000	0.001	0.005	0.000	1
1						
KRA047	63.824	0.000	0.000	0.006	0.000	1
1						
KRA048	0.992	0.000	0.000	0.000	0.000	1
1						

KRA049	48.469	0.000	0.000	0.000	0.000	1
1						
KRA050	21.213	0.000	0.000	0.000	0.000	1
1						
KRA051	64.305	0.000	0.000	0.001	0.000	1
1						
KRA052	87.335	0.000	0.000	0.002	0.000	1
1						
KRA053	48.183	0.000	0.000	0.011	0.000	1
1						
KRA054	75.506	0.000	0.000	0.001	0.000	1
1						
KRA055	87.407	0.000	0.000	0.001	0.000	1
1						
KRA056	10.864	0.000	0.000	0.000	0.000	1
1						
KRA057	18.199	0.000	0.000	0.000	0.000	1
1						
KRA058	48.280	0.000	0.000	0.000	0.000	1
1						
KRA059	30.130	0.000	0.000	0.000	0.000	1
1						
KRA060	68.549	0.000	0.000	0.025	0.000	1
1						
KRA061	24.404	0.000	0.000	0.000	0.000	1
1						
KRA062	1.287	0.000	0.001	0.007	0.000	1
1						
KRA063	56.500	0.000	0.000	0.001	0.000	1
1						
KRA064	90.396	0.000	0.000	0.010	0.000	1
1						
KRA065	38.438	0.000	0.000	0.000	0.000	1
1						
KRA066	93.046	0.000	0.000	0.002	0.000	1
1						
KRA067	98.968	0.000	0.000	0.003	0.000	1
1						
KRA068	98.402	0.000	0.000	0.006	0.000	1
1						
KRA069	87.670	0.000	0.000	0.012	0.000	1
1						
KRA070	8.454	0.000	0.000	0.001	0.000	1
1						
KRA071	61.602	0.000	0.000	0.005	0.000	1
1						
KRA072	56.537	0.000	0.000	0.001	0.000	1
1						
KRA073	27.131	0.000	0.000	0.000	0.000	1
1						
KRA074	57.904	0.000	0.000	0.002	0.000	1
1						
KRA075	40.140	0.000	0.000	0.000	0.000	1
1						

KRA076	91.749	0.000	0.000	0.002	0.000	1
1						
KRA077	41.725	0.000	0.000	0.000	0.000	1
1						
KRA078	21.031	0.000	0.000	0.000	0.000	1
1						
KRA079	9.723	0.000	0.000	0.000	0.000	1
1						
KRA080	0.452	0.000	0.001	0.001	0.000	1
1						
KRA081	25.570	0.000	0.000	0.033	0.000	1
1						
KRA082	92.196	0.000	0.000	0.002	0.000	1
1						
KRA083	38.040	0.000	0.000	0.042	0.000	1
1						
KRA084	84.597	0.000	0.000	0.002	0.000	1
1						
KRA085	86.771	0.000	0.000	0.012	0.000	1
1						
KRA086	25.541	0.000	0.000	0.060	0.000	1
1						
KRA087	23.995	0.000	0.000	0.137	0.000	1
1						
KRA088	43.367	0.000	0.000	0.007	0.000	1
1						
KRA089	32.109	0.000	0.000	0.002	0.000	1
1						
KRA090	23.014	0.000	0.000	0.003	0.000	1
1						
KRA091	18.938	0.000	0.000	0.012	0.000	1
1						
KRA092	27.661	0.000	0.000	0.057	0.000	1
1						
KRA093	88.773	0.000	0.000	0.002	0.000	1
1						
KRA095	77.407	0.000	0.000	0.009	0.000	1
1						
KRA096	70.041	0.000	0.000	0.001	0.000	1
1						
KRA113	92.398	0.000	0.000	0.002	0.000	1
1						
KRA114	37.260	0.000	0.000	0.014	0.000	1
1						
KRA115	46.743	0.000	0.000	0.039	0.000	1
1						
KRA116	72.873	0.000	0.000	0.018	0.000	1
1						
KRA117	69.651	0.000	0.000	0.011	0.000	1
1						
KRA118	39.607	0.000	0.000	0.032	0.000	1
1						
KRA119	45.084	0.000	0.000	0.006	0.000	1
1						

KRA120	53.789	0.000	0.000	0.009	0.000	1
1						
KRA121	48.201	0.000	0.000	0.011	0.000	1
1						
KRA122	74.003	0.000	0.000	0.005	0.000	1
1						
KRA123	31.154	0.000	0.000	0.021	0.000	1
1						
KRA126	71.070	0.000	0.000	0.014	0.000	1
1						
KRA127	36.023	0.000	0.000	0.022	0.000	1
1						
KRA128	85.780	0.000	0.000	0.013	0.000	1
1						
KRA129	62.763	0.000	0.000	0.014	0.000	1
1						
KRA130	63.814	0.000	0.000	0.004	0.000	1
1						
KRA131	56.672	0.000	0.000	0.013	0.000	1
1						
KRA132	80.473	0.000	0.000	0.015	0.000	1
1						
KRA133	83.404	0.000	0.000	0.004	0.000	1
1						
KRA134	25.014	0.000	0.000	0.002	0.000	1
1						
KRA135	51.891	0.000	0.000	0.008	0.000	1
1						
KRA136	87.877	0.000	0.000	0.007	0.000	1
1						
KRA137	1.454	0.000	0.000	0.628	0.000	1
1						
KRA139	54.483	0.000	0.000	0.003	0.000	1
1						
KRA140	26.516	0.000	0.000	0.010	0.000	1
1						
KRA141	63.171	0.000	0.000	0.004	0.000	1
1						
KRA142	32.299	0.000	0.000	0.072	0.000	1
1						
KRA143	42.724	0.000	0.000	0.006	0.000	1
1						
KRA144	58.220	0.000	0.000	0.005	0.000	1
1						
KRA145	34.490	0.000	0.000	0.008	0.000	1
1						
KRA146	9.526	0.000	0.000	0.000	0.000	1
1						
KRA149	40.343	0.000	0.000	0.017	0.000	1
1						
KRA150	33.413	0.000	0.000	0.008	0.000	1
1						
KRA152	50.214	0.000	0.000	0.025	0.000	1
1						

KRA153 1	68.266	0.000	0.000	0.003	0.000	1
KRA175 1	20.268	0.000	0.000	0.005	0.000	1
KRA196 1	89.355	0.000	0.000	0.003	0.000	1
KRA226 1	47.553	0.000	0.000	0.017	0.000	1
KRA228 1	11.927	0.000	0.000	0.015	0.000	1
KRA230 1	9.759	0.000	0.000	0.369	0.000	1
KRA236 1	22.747	0.000	0.000	0.155	0.000	1
KRA237 1	46.338	0.000	0.000	0.022	0.000	1
KRA239 1	14.403	0.000	0.000	0.177	0.000	1
KRA241 1	20.975	0.000	0.000	0.163	0.000	1

The following specimens are in the file EDALCA3

Probabilities:

ID. NO. Into:	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	From:
KRA010 2	0.000	3.897	0.017	0.000	0.000	2
KRA011 2	0.000	1.923	0.020	0.000	0.000	2
KRA012 2	0.000	5.020	0.004	0.000	0.000	2
KRA013 2	0.000	25.942	0.005	0.000	0.000	2
KRA094 2	0.000	0.358	0.001	0.000	0.000	2
KRA124 2	0.000	91.505	0.000	0.000	0.000	2
KRA125 2	0.000	99.830	0.000	0.000	0.000	2
KRA138 2	0.000	2.696	0.000	0.000	0.000	2
KRA147 2	0.000	97.858	0.000	0.000	0.000	2
KRA148 2	0.000	92.288	0.000	0.000	0.000	2
KRA154 2	0.000	0.070	0.000	0.000	0.000	2
KRA155 2	0.000	95.461	0.000	0.000	0.000	2
KRA156 2	0.000	44.626	0.002	0.000	0.000	2
KRA157 2	0.000	83.668	0.000	0.000	0.000	2

KRA158 2	0.000	63.999	0.001	0.000	0.000	2
KRA159 2	0.000	86.648	0.000	0.000	0.000	2
KRA160 2	0.000	66.778	0.000	0.000	0.000	2
KRA161 2	0.000	99.420	0.000	0.000	0.000	2
KRA162 2	0.000	96.154	0.000	0.000	0.000	2
KRA163 2	0.000	96.306	0.000	0.000	0.000	2
KRA164 2	0.000	66.605	0.000	0.000	0.000	2
KRA165 2	0.000	97.886	0.000	0.000	0.000	2
KRA166 2	0.000	93.661	0.000	0.000	0.000	2
KRA167 2	0.000	85.150	0.000	0.000	0.000	2
KRA168 2	0.000	80.967	0.000	0.000	0.000	2
KRA169 2	0.000	99.790	0.000	0.000	0.000	2
KRA170 2	0.000	61.679	0.000	0.000	0.000	2
KRA171 2	0.000	90.101	0.000	0.000	0.000	2
KRA172 2	0.000	57.630	0.000	0.000	0.000	2
KRA173 2	0.000	97.570	0.000	0.000	0.000	2

The following specimens are in the file EDALCA4

Probabilities:

ID. NO. Into:	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	From:
KRA097 3	0.000	0.001	28.556	0.000	0.000	3
KRA098 3	0.000	0.000	15.666	0.000	0.000	3
KRA099 3	0.000	0.002	88.060	0.000	0.000	3
KRA100 3	0.000	0.002	76.932	0.000	0.000	3
KRA103 3	0.000	0.000	14.160	0.000	0.000	3
KRA221 3	0.000	0.008	29.897	0.000	0.000	3
KRA242 3	0.000	0.001	17.735	0.000	0.000	3
KRA253 3	0.000	0.006	48.916	0.000	0.000	3

KRA254 3	0.000	0.006	67.107	0.000	0.000	3
KRA255 3	0.000	0.008	33.895	0.000	0.000	3
KRA256 3	0.000	0.019	31.273	0.000	0.000	3
KRA257 3	0.000	0.007	73.447	0.000	0.000	3
KRA258 3	0.000	0.007	74.720	0.000	0.000	3

The following specimens are in the file EDALCA5

Probabilities:

ID. NO.	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	From:
Into:						
KRA104 4	0.000	0.000	0.007	29.972	0.000	4
KRA105 4	0.000	0.000	0.017	10.183	0.000	4
KRA106 4	0.000	0.000	0.029	8.137	0.000	4
KRA107 4	0.000	0.000	0.002	33.951	0.000	4
KRA108 4	0.000	0.000	0.003	45.450	0.000	4
KRA109 4	0.000	0.000	0.001	42.405	0.000	4
KRA110 4	0.001	0.000	0.001	22.776	0.000	4
KRA111 4	0.039	0.000	0.001	1.343	0.000	4
KRA112 4	0.012	0.000	0.002	2.532	0.000	4
KRA174 4	0.000	0.000	0.003	47.961	0.000	4
KRA176 4	0.000	0.000	0.000	42.496	0.002	4
KRA190 4	0.000	0.000	0.000	54.034	0.000	4
KRA209 5	0.000	0.000	0.000	0.130	0.451	4
KRA210 4	0.000	0.000	0.000	76.751	0.001	4
KRA211 4	0.000	0.000	0.000	26.192	0.001	4
KRA212 4	0.000	0.000	0.000	81.904	0.000	4
KRA213 4	0.000	0.000	0.001	98.548	0.000	4
KRA214 4	0.000	0.000	0.000	79.557	0.001	4
KRA215 4	0.000	0.000	0.000	25.704	0.010	4

KRA217	0.000	0.000	0.000	54.951	0.001	4
4						
KRA218	0.000	0.000	0.000	82.989	0.000	4
4						
KRA219	0.000	0.000	0.000	72.881	0.000	4
4						
KRA220	0.000	0.000	0.002	81.408	0.000	4
4						
KRA222	0.000	0.000	0.001	89.515	0.000	4
4						
KRA223	0.000	0.000	0.000	78.566	0.000	4
4						
KRA224	0.000	0.000	0.001	92.656	0.000	4
4						
KRA225	0.000	0.001	0.006	8.668	0.000	4
4						
KRA227	0.000	0.000	0.002	46.614	0.000	4
4						
KRA229	0.000	0.000	0.000	66.279	0.001	4
4						
KRA231	0.000	0.000	0.001	45.370	0.000	4
4						
KRA232	0.000	0.000	0.002	81.929	0.000	4
4						
KRA233	0.000	0.001	0.010	13.989	0.000	4
4						
KRA234	0.000	0.000	0.001	96.584	0.000	4
4						
KRA235	0.000	0.001	0.003	29.751	0.000	4
4						
KRA240	0.000	0.000	0.001	95.696	0.000	4
4						
KRA244	0.000	0.001	0.004	20.670	0.000	4
4						
KRA246	0.000	0.000	0.000	59.534	0.002	4
4						
KRA247	0.000	0.000	0.001	97.982	0.000	4
4						
KRA248	0.000	0.000	0.001	98.900	0.000	4
4						
KRA249	0.000	0.000	0.001	85.560	0.000	4
4						
KRA250	0.000	0.000	0.002	90.975	0.000	4
4						
KRA251	0.000	0.000	0.000	75.418	0.001	4
4						

The following specimens are in the file EDALCA7

Probabilities:

ID. NO.	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	From:
Into:						
KRA101	0.000	0.000	0.000	0.038	10.599	5
5						

KRA102	0.000	0.000	0.000	0.035	11.324	5
5						
KRA177	0.000	0.000	0.000	0.000	29.390	5
5						
KRA178	0.000	0.000	0.000	0.000	82.237	5
5						
KRA179	0.000	0.000	0.000	0.000	73.336	5
5						
KRA180	0.000	0.000	0.000	0.000	46.784	5
5						
KRA181	0.000	0.000	0.000	0.000	66.087	5
5						
KRA182	0.000	0.000	0.000	0.000	94.872	5
5						
KRA183	0.000	0.000	0.000	0.000	67.497	5
5						
KRA184	0.000	0.000	0.000	0.000	89.225	5
5						
KRA185	0.000	0.000	0.000	0.000	69.610	5
5						
KRA186	0.000	0.000	0.000	0.042	10.678	5
5						
KRA187	0.000	0.000	0.000	0.000	91.859	5
5						
KRA188	0.000	0.000	0.000	0.001	88.280	5
5						
KRA189	0.000	0.000	0.000	0.001	69.136	5
5						
KRA191	0.000	0.000	0.000	0.000	41.037	5
5						
KRA192	0.000	0.000	0.000	0.000	66.697	5
5						
KRA193	0.000	0.000	0.000	0.000	66.638	5
5						
KRA195	0.000	0.000	0.000	0.000	85.100	5
5						
KRA197	0.000	0.000	0.000	0.000	91.463	5
5						
KRA198	0.000	0.000	0.000	0.000	92.956	5
5						
KRA199	0.000	0.000	0.000	0.000	4.290	5
5						
KRA200	0.000	0.000	0.000	0.000	59.283	5
5						
KRA201	0.000	0.000	0.000	0.000	97.276	5
5						
KRA202	0.000	0.000	0.000	0.000	6.602	5
5						
KRA203	0.000	0.000	0.000	0.000	23.486	5
5						
KRA204	0.000	0.000	0.000	0.001	43.584	5
5						
KRA205	0.000	0.000	0.000	0.000	81.008	5
5						

KRA207	0.000	0.000	0.000	0.000	81.443	5
5						
KRA238	0.000	0.000	0.000	0.002	1.992	5
5						
KRA243	0.000	0.000	0.000	0.000	0.355	5
5						

Summary of Classification Success:

Into:

From:	EDALCA1	EDALCA3	EDALCA4	EDALCA5	EDALCA7	Total
EDALCA1	133	0	0	0	0	133
EDALCA3	0	30	0	0	0	30
EDALCA4	0	0	13	0	0	13
EDALCA5	0	0	0	41	1	42
EDALCA7	0	0	0	0	31	31
Total	133	30	13	41	32	249

Table DR8. Mahalanobis distance results for NAA

MAHALANOBIS DISTANCE CALCULATION AND POSTERIOR CLASSIFICATION
FOR TWO OR MORE GROUPS.

Date: 10/20/12

File: Maha5.txt

Groups are:

- 1 ALCA1NAA
- 2 ALCA3NAA
- 3 ALCA4NAA
- 4 ALCA5NAA

Variables used:

Eu Th

Probabilities are jackknifed for specimens included in each group.

The following specimens are in the file ALCA1NAA

Probabilities:

ID. NO.	ALCA1NAA	ALCA3NAA	ALCA4NAA	ALCA5NAA	From:	Into:
KRA001	78.933	0.015	0.000	0.004	1	1
KRA002	67.607	0.016	0.000	0.005	1	1
KRA095	1.694	0.011	0.000	0.001	1	1
KRA038	57.491	0.017	0.000	0.007	1	1
KRA041	66.439	0.016	0.000	0.006	1	1
KRA046	45.878	0.012	0.000	0.001	1	1
KRA062	98.870	0.015	0.000	0.003	1	1
KRA070	23.979	0.016	0.000	0.006	1	1
KRA080	90.673	0.013	0.000	0.002	1	1
KRA091	6.555	0.014	0.000	0.002	1	1

The following specimens are in the file ALCA3NAA

Probabilities:

ID. NO.	ALCA1NAA	ALCA3NAA	ALCA4NAA	ALCA5NAA	From:	Into:
KRA010	0.000	55.828	0.000	0.000	2	2
KRA011	0.000	19.437	0.000	0.000	2	2
KRA012	0.000	58.804	0.000	0.000	2	2
KRA013	0.000	59.479	0.000	0.000	2	2
KRA094	0.000	56.452	0.000	0.000	2	2

The following specimens are in the file ALCA4NAA

Probabilities:

ID. NO.	ALCA1NAA	ALCA3NAA	ALCA4NAA	ALCA5NAA	From:	Into:
KRA-097	0.000	0.002	21.454	0.000	3	3
KRA098	0.000	0.002	41.947	0.000	3	3
KRA099	0.000	0.002	7.576	0.000	3	3
KRA100	0.000	0.002	99.986	0.000	3	3
KRA103	0.000	0.002	79.037	0.000	3	3

The following specimens are in the file ALCA5NAA

Probabilities:

ID. NO.	ALCA1NAA	ALCA3NAA	ALCA4NAA	ALCA5NAA	From:	Into:

KRA104	0.004	0.056	0.000	82.246	4	4
KRA105	0.001	0.053	0.000	17.968	4	4
KRA106	0.015	0.057	0.000	85.945	4	4
KRA107	0.011	0.044	0.000	13.287	4	4
KRA108	0.003	0.068	0.000	26.716	4	4
KRA109	0.007	0.064	0.000	71.294	4	4
KRA110	0.037	0.051	0.000	34.441	4	4
KRA111	0.011	0.051	0.000	82.515	4	4
KRA112	0.020	0.063	0.000	22.859	4	4

Summary of Classification Success:

Into:

From:	ALCA1NAA	ALCA3NAA	ALCA4NAA	ALCA5NAA	Total
ALCA1NAA	10	0	0	0	10
ALCA3NAA	0	5	0	0	5
ALCA4NAA	0	0	5	0	5
ALCA5NAA	0	0	0	9	9
Total	10	5	5	9	29

Table DR9. Mahalanobis distance results for WD-XRF

MAHALANOBIS DISTANCE CALCULATION AND POSTERIOR CLASSIFICATION
FOR TWO OR MORE GROUPS.

Date: 10/21/12

File: Maha7.txt

Groups are:

- 1 ALCA1V2
- 2 ALCA3V2
- 3 ALCA4V2
- 4 ALCA5V2
- 5 ALCA7V2

Variables used:

TiO₂ Sr

Probabilities are jackknifed for specimens included in each group.

The following specimens are in the file ALCA1V2

Probabilities:

ID. NO.	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	From:
Intro:						
KRA001 1	95.110	0.000	0.002	0.000	0.000	1
KRA002 1	42.743	0.000	0.002	0.000	0.000	1
KRA026 1	83.678	0.000	0.002	0.000	0.000	1
KRA042 1	89.695	0.000	0.002	0.000	0.000	1
KRA058 1	19.643	0.000	0.002	0.000	0.000	1
KRA061 1	89.498	0.000	0.002	0.000	0.000	1
KRA065 1	70.836	0.000	0.002	0.000	0.000	1
KRA068 1	10.471	0.000	0.002	0.000	0.000	1
KRA091 1	76.674	0.000	0.002	0.000	0.000	1
KRA092 1	29.585	0.000	0.002	0.000	0.000	1
KRA093 1	13.790	0.000	0.002	0.000	0.000	1
KRA095 1	70.516	0.000	0.002	0.000	0.000	1
KRA096 1	35.321	0.000	0.003	0.000	0.000	1
KRA113 1	88.258	0.000	0.002	0.000	0.000	1
KRA226 1	39.478	0.000	0.003	0.000	0.000	1

KRA228 1	16.065	0.000	0.003	0.000	0.000	1
KRA230 1	17.834	0.000	0.003	0.000	0.000	1
M04072 1	27.141	0.000	0.002	0.000	0.000	1
M04074 1	9.907	0.000	0.002	0.000	0.000	1

The following specimens are in the file ALCA3V2
 Probabilities:

ID. NO. Into:	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	From:
KRA010 2	0.000	68.211	0.002	0.000	0.000	2
KRA011 2	0.000	42.554	0.003	0.000	0.000	2
KRA012 2	0.000	8.752	0.003	0.000	0.000	2
KRA154 3	0.000	0.000	0.001	0.000	0.000	2
KRA155 2	0.000	81.729	0.002	0.000	0.000	2
KRA158 2	0.000	79.402	0.002	0.000	0.000	2
KRA161 2	0.000	56.106	0.002	0.000	0.000	2
KRA162 2	0.000	96.748	0.002	0.000	0.000	2
KRA164 2	0.000	64.956	0.002	0.000	0.000	2
KRA169 2	0.000	64.956	0.002	0.000	0.000	2
KRA172 2	0.000	93.775	0.002	0.000	0.000	2

The following specimens are in the file ALCA4V2
 Probabilities:

ID. NO. Into:	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	From:
KRA100 3	0.000	0.000	25.322	0.000	0.005	3
KRA103 3	0.000	0.000	42.143	0.000	0.001	3
KRA221 3	0.000	0.000	55.020	0.000	0.001	3
KRA242 3	0.000	0.000	50.328	0.000	0.002	3
KRA252 3	0.000	0.000	58.662	0.000	0.002	3
KRA286 3	0.000	0.000	50.328	0.000	0.002	3

The following specimens are in the file ALCA5V2

ID. NO. Into:	Probabilities:					From:
	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	
KRA190 4	0.000	0.000	0.026	98.641	0.028	4
KRA106 4	0.000	0.000	0.031	68.877	0.050	4
KRA107 4	0.000	0.000	0.018	70.196	0.012	4
KRA109 4	0.000	0.000	0.022	87.678	0.018	4
KRA111 4	0.000	0.000	0.027	57.870	0.045	4
KRA112 4	0.000	0.000	0.035	7.913	0.112	4
KRA209 4	0.000	0.000	0.056	8.559	0.028	4
KRA211 4	0.000	0.000	0.018	72.799	0.017	4
KRA212 4	0.000	0.000	0.029	91.129	0.032	4
KRA217 4	0.000	0.000	0.017	25.353	0.009	4
KRA219 4	0.000	0.000	0.022	82.678	0.027	4
KRA220 4	0.000	0.000	0.014	38.673	0.008	4
KRA225 4	0.000	0.000	0.015	20.701	0.007	4
KRA227 4	0.000	0.000	0.021	94.127	0.019	4
KRA229 4	0.000	0.000	0.022	59.569	0.015	4
KRA231 4	0.000	0.000	0.072	2.392	0.030	4
KRA232 4	0.000	0.000	0.019	14.117	0.024	4

The following specimens are in the file ALCA7V2

ID. NO. Into:	Probabilities:					From:
	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	
KRA101 5	0.000	0.000	0.151	0.000	47.027	5
KRA102 5	0.000	0.000	0.168	0.000	98.364	5
KRA189 5	0.000	0.000	0.177	0.000	95.522	5
KRA195 5	0.000	0.000	0.281	0.000	38.294	5
KRA197 5	0.000	0.000	0.204	0.000	42.040	5
KRA198 5	0.000	0.000	0.133	0.001	29.740	5

KRA205	0.000	0.000	0.213	0.000	76.692	5
5						
KRA208	0.000	0.000	0.102	0.000	1.382	5
5						
KRA238	0.000	0.000	0.247	0.000	33.551	5
5						

Summary of Classification Success:

Into:

From:	ALCA1V2	ALCA3V2	ALCA4V2	ALCA5V2	ALCA7V2	Total
ALCA1V2	19	0	0	0	0	19
ALCA3V2	0	10	1	0	0	11
ALCA4V2	0	0	6	0	0	6
ALCA5V2	0	0	0	17	0	17
ALCA7V2	0	0	0	0	9	9
Total	19	10	7	17	9	62

Table DR10. Mahalanobis distance results for P-XRF

MAHALANOBIS DISTANCE CALCULATION AND POSTERIOR CLASSIFICATION
FOR TWO OR MORE GROUPS.

Date: 2/20/13
File: PXRF Maha RbSR SD.txt

Groups are:

1	SDALCA1
2	SDALCA3
3	SDALCA4
4	SDALCA5
5	SDALCA7

Variables used:

Rb	Sr
----	----

Probabilities are jackknifed for specimens included in each group.

The following specimens are in the file SDALCA1

Probabilities:

ID. NO.	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	From:	Into:
KRA-001	36.984	0.000	0.000	0.479	0.000	1	1
KRA-026	81.766	0.000	0.000	0.521	0.000	1	1
KRA-065	75.361	0.000	0.000	0.487	0.000	1	1
KRA-070	84.567	0.000	0.000	0.523	0.000	1	1
KRA-095	9.814	0.000	0.000	0.589	0.000	1	1
KRA-113	14.436	0.000	0.000	0.490	0.000	1	1

The following specimens are in the file SDALCA3

Probabilities:

ID. NO.	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	From:	Into:
KRA-010	0.000	44.642	0.001	0.015	0.000	2	2
KRA-011	0.000	47.006	0.001	0.014	0.000	2	2
KRA-012	0.000	62.898	0.001	0.015	0.000	2	2
KRA-013	0.000	95.034	0.001	0.015	0.000	2	2
KRA-094	0.000	53.930	0.001	0.015	0.000	2	2
KRA-162	0.000	9.365	0.001	0.014	0.000	2	2
KRA-164	0.000	25.461	0.001	0.014	0.000	2	2

The following specimens are in the file SDALCA4

Probabilities:

ID. NO.	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	From:	Into:
KRA-097	0.000	0.000	29.969	0.146	0.002	3	3
KRA-098	0.000	0.000	41.050	0.172	0.002	3	3
KRA-100	0.000	0.000	15.230	0.114	0.001	3	3
KRA-252	0.000	0.000	76.185	0.137	0.002	3	3
KRA-254	0.000	0.000	38.994	0.151	0.002	3	3
KRA-257	0.000	0.000	92.118	0.142	0.002	3	3

The following specimens are in the file SDALCA5

Probabilities:

ID. NO.	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	From:	Into:
KRA-104	0.000	0.000	0.002	1.668	0.016	4	4
KRA-108	0.001	0.000	0.002	76.200	0.003	4	4
KRA-109	0.000	0.000	0.001	51.042	0.019	4	4

KRA-110	0.001	0.000	0.001	42.302	0.015	4	4
KRA-111	0.001	0.000	0.002	60.330	0.002	4	4
KRA-112	0.001	0.000	0.002	69.453	0.002	4	4

The following specimens are in the file SDALCA7

Probabilities:

ID. NO.	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	From:	Into:
KRA-101	0.000	0.000	0.000	3.539	14.303	5	5
KRA-102	0.000	0.000	0.000	2.493	72.885	5	5
KRA-189	0.000	0.000	0.000	1.727	22.521	5	5
KRA-195	0.000	0.000	0.000	2.314	87.746	5	5
KRA-197	0.000	0.000	0.000	1.758	71.433	5	5
KRA-198	0.000	0.000	0.000	1.413	39.358	5	5
KRA-205	0.000	0.000	0.000	1.715	30.351	5	5

Summary of Classification Success:

Into:

From:	SDALCA1	SDALCA3	SDALCA4	SDALCA5	SDALCA7	Total
SDALCA1	6	0	0	0	0	6
SDALCA3	0	7	0	0	0	7
SDALCA4	0	0	6	0	0	6
SDALCA5	0	0	0	6	0	6
SDALCA7	0	0	0	0	7	7
Total	6	7	6	6	7	32