

Supplementary Tables

Table S1. Raw material survey results of samples collected from select alluvial locations.

Select Survey Locations	Basalt		Rhyolite		Andesite		Chalcedony		Chert		Non-Knappable Materials		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Savage and Teklanika Confluence	20	16%	1	1%	0	0%	0	0%	0	0%	103	83%	124	100%
First Creek	15	12%	0	0%	21	17%	0	0%	1	1%	84	69%	121	100%
Dry Creek East	67	36%	0	0%	0	0%	0	0%	0	0%	119	64%	186	100%
Dry Creek Pt. 2	5	4%	0	0%	0	0%	0	0%	2	2%	107	94%	114	100%
Dry Creek Pt. 4	15	3%	0	0%	0	0%	0	0%	3	1%	473	96%	491	100%
Cottonwood Creek	8	5%	0	0%	0	0%	1	1%	0	0%	124	94%	132	100%
Tatlanika Creek	1	0%	0	0%	0	0%	0	0%	3	1%	438	99%	442	100%
California Creek	1	0%	1	0%	0	0%	0	0%	21	9%	204	90%	231	100%
Savage River	3	2%	0	0%	0	0%	0	0%	1	1%	192	98%	196	100%
Jenny Creek	0	0%	0	0%	0	0%	0	0%	0	0%	223	100%	223	100%
DENA 1	0	0%	0	0%	0	0%	0	0%	0	0%	166	100%	166	100%
DENA 2	0	0%	0	0%	0	0%	0	0%	0	0%	105	100%	105	100%
Riley Creek	1	1%	0	0%	0	0%	0	0%	0	0%	136	99%	137	100%
Upper Moose Creek	0	0%	0	0%	0	0%	0	0%	2	1%	190	99%	192	100%
Cindy and James Creek*	6	5%	0	0%	0	0%	0	0%	8	7%	100	88%	114	100%
Teklanika River	13	7%	10	6%	0	0%	0	0%	9	5%	142	82%	174	100%
Toklat River	22	13%	0	0%	0	0%	0	0%	0	0%	145	87%	167	100%
Rock Creek	5	3%	0	0%	0	0%	0	0%	0	0%	178	97%	183	100%
Little Panguingue Creek	9	5%	0	0%	0	0%	0	0%	2	1%	183	94%	194	100%
Carlo Creek	56	15%	0	0%	0	0%	0	0%	3	1%	310	84%	369	100%
Panguingue Creek	15	4%	0	0%	0	0%	0	0%	13	4%	324	92%	352	100%
Slate Creek	7	1%	0	0%	0	0%	0	0%	7	1%	475	97%	489	100%
NW Dry Creek	4	3%	0	0%	0	0%	0	0%	1	1%	149	97%	154	100%
Fish Creek	0	0%	0	0%	0	0%	0	0%	3	1%	401	99%	404	100%
Nenana River 1	1	0%	0	0%	0	0%	0	0%	8	2%	362	98%	371	100%
Nenana River 2	41	13%	0	0%	0	0%	0	0%	4	1%	267	86%	315	100%
Nenana River 3	33	23%	0	0%	0	0%	0	0%	0	0%	108	77%	141	100%
Nenana River 4	54	33%	0	0%	0	0%	0	0%	0	0%	109	67%	163	100%
Nenana River 5	87	20%	0	0%	0	0%	0	0%	2	0%	348	80%	437	100%
Chicken Creek	6	1%	0	0%	0	0%	0	0%	8	2%	423	97%	437	100%
Windy Creek	271	84%	0	0%	0	0%	0	0%	0	0%	51	16%	322	100%
Suntrana at Healy Creek	0	0%	0	0%	0	0%	0	0%	0	0%	508	100%	508	100%
Walker Creek	23	15%	0	0%	0	0%	0	0%	2	1%	131	84%	156	100%

*Cindy and James Creek is the informal name for the creek that flows from Walker Dome to the Nenana River, next to the Walker Road site.

Table S2. Eigenvalue, percentage of variance, and element score for each principal component calculated from the variance-covariance matrix of concentration data (log-10 ppm) for rhyolite outcrop samples.

Principal Component	Eigenvalue	% Variance	Cumulative % Variance		
1	0.4372	55.93	55.93		
2	0.2759	35.30	91.23		
3	0.0341	4.36	95.59		
4	0.0227	2.90	98.49		
5	0.0118	1.51	100.00		
Element	PC 1	PC 2	PC3	PC4	PC5
Rb	0.60	0.35	-0.69	-0.19	0.12
Sr	0.52	-0.83	0.09	-0.17	0.10
Y	0.30	0.37	0.61	-0.63	-0.11
Zr	0.18	-0.05	-0.07	0.16	-0.97
Nb	0.50	0.23	0.38	0.72	0.18

Table S3. Eigenvalue, percentage of variance, and element score for each principal component calculated from the variance-covariance matrix of concentration data (log-10 ppm) for outcrop and alluvial samples.

Principal Component	Eigenvalue	% Variance	Cumulative % Variance		
1	0.4098	51.23	51.23		
2	0.2617	32.71	83.94		
3	0.0843	10.53	94.47		
4	0.0263	3.29	97.76		
5	0.0719	2.24	100.00		
Element	PC 1	PC 2	PC3	PC4	PC5
Rb	0.54	0.02	-0.69	-0.45	-0.18
Sr	0.23	-0.95	0.07	0.17	-0.11
Y	0.43	0.29	0.09	0.62	-0.58
Zr	0.37	0.07	0.71	-0.57	-0.19
Nb	0.58	0.10	0.09	0.25	0.76

Table S4. Eigenvalue, percentage of variance, and element score for each principal component calculated from the variance-covariance matrix of concentration data (log-10 ppm) for rhyolite artifact samples.

Principal Component	Eigenvalue	% Variance	Cumulative % Variance		
1	0.2663	59.09	59.09		
2	0.1311	29.10	88.19		
3	0.0292	6.50	94.69		
4	0.0157	3.50	98.19		
5	0.0081	1.81	100.00		
Element	PC 1	PC 2	PC3	PC4	PC5
Rb	0.30	0.41	-0.07	-0.83	0.22
Sr	-0.93	0.29	0.07	-0.20	-0.01
Y	0.19	0.57	0.39	0.14	-0.69
Zr	-0.01	0.26	-0.92	0.14	-0.27
Nb	0.07	0.59	0.05	0.49	0.64

Table S5. Eigenvalue, percentage of variance, and element score for each principal component calculated from the variance-covariance matrix of concentration data (log-10 ppm) for rhyolite artifact and alluvial samples.

Principal Component	Eigenvalue	% Variance	Cumulative % Variance		
1	0.2587	80.28	80.28		
2	0.0347	10.79	91.07		
3	0.0147	4.56	95.63		
4	0.0104	3.23	98.86		
5	0.0036	1.14	100.00		

Element	PC 1	PC 2	PC3	PC4	PC5
Rb	0.28	0.27	0.33	0.85	-0.12
Sr	-0.93	0.26	0.19	0.16	0.03
Y	0.20	0.50	0.42	-0.29	0.67
Zr	0.01	0.49	-0.82	0.20	0.23
Nb	0.10	0.61	0.08	-0.36	-0.70

Table S6. Eigenvalues, percentage of variance, and element scores for each principal component calculated from the variance-covariance matrix of concentration data (log-10 ppm) for rhyolite artifact and outcrop samples.

Principal Component	Eigenvalue	% Variance	Cumulative % Variance		
1	0.2664	59.70	59.70		
2	0.1358	30.44	90.14		
3	0.0236	5.29	95.43		
4	0.0127	2.85	98.28		
5	0.0077	1.72	100.00		

Element	PC 1	PC 2	PC3	PC4	PC5
Rb	0.27	0.55	0.32	0.69	0.20
Sr	-0.95	0.23	0.19	0.08	0.11
Y	0.15	0.46	0.12	-0.65	0.58
Zr	-0.07	0.39	-0.91	0.13	0.04
Nb	0.04	0.53	0.15	-0.29	-0.78

Table S7. Group probabilities of artifact membership in each rhyolite outcrop group based on Mahalanobis distance calculations.

Artifact	Rhyolite Outcrop Group Membership Probabilities		
	<i>Ferry 3</i>	<i>Ferry 5</i>	<i>Triple Lakes</i>
MC	0.006	32.306	68.241
OR2	0.001	0.373	31.569