

APPENDIX A -- XRF ANALYSES OF MAFIC AND INTERMEDIATE ROCKS

SAMPLE	Unit	SiO[2]	Al[2]O[3]	TiO[2]	FeO	MnO	CaO	MgO	K[2]O	Na[2]O	P[2]O[5]
CR7-9	7	57.7	14.07	1.343	9.47	0.174	7.26	4.02	2.01	3.53	0.224
CR7-10	8	48.04	15.57	1.669	10.46	0.172	9.14	9.4	0.94	2.54	0.519
CR7-11	7	49.73	17.49	2.184	10.29	0.117	9.19	4.63	0.68	3.16	0.295
CR7-12	8	47.52	16.42	1.993	12	0.197	9.6	7.28	0.75	2.94	0.527
CR7-13	8	51.35	15.47	1.845	10.67	0.183	8.23	5.76	1.5	3.26	0.649
CR7-14	8	50.59	15.37	1.817	10.93	0.163	8.1	6.81	1.48	3.1	0.631
CR7-15	7	53.06	14.41	1.814	10.88	0.178	8.92	4.88	1.16	3.57	0.307
CR7-20	8	49.99	16.09	1.793	10.62	0.182	9.73	6.24	0.88	2.89	0.437
CR7-22	8	49.35	15.69	1.324	9.76	0.197	11.69	6.54	0.44	2.83	0.329
CR7-27	8	54.22	15.31	1.745	9.03	0.133	7.54	5.08	1.85	2.94	0.429
CR7-25A	7	49.32	15.99	2.237	13.01	0.192	8.21	5.73	0.89	3.53	0.328
CR7-30	7	56.07	14.66	2.066	8.86	0.192	8	3.97	1.7	3.35	0.331
CR7-31	7	52.17	14.31	1.818	10.97	0.184	9.2	5.14	1.03	3.33	0.297
CR7-32	8	48.3	15.5	1.63	10.04	0.175	9.6	8.47	0.99	2.72	0.513
CR7-33	8	46.79	15.62	2.314	12.38	0.201	9.29	7.3	0.76	2.87	0.611
CR7-34	7	50.34	16.82	2.319	11.14	0.162	9.17	5.24	0.87	3.41	0.32
CR7-35	8	46.61	15.93	2.359	12.73	0.233	10	6.46	0.72	3.03	0.645
CR7-36	8	46.82	15.68	2.236	12.78	0.202	9.45	7.14	0.78	2.95	0.598
CR7-37	8	46.72	15.75	2.353	12.19	0.207	9.93	7.13	0.76	3.01	0.63
CR7-38	8	49.51	16.55	1.08	10.22	0.158	10.09	7.97	0.47	2.74	0.272
CR7-39	8	52.43	15.65	1.478	9.85	0.166	8.18	6.02	1.44	3.01	0.547
CR7-40	7	50.31	15.43	2.086	12.33	0.162	8.79	5.2	0.66	3.11	0.311
CR7-47	7	50.37	14.54	2.354	12.12	0.223	9.49	5.37	0.67	2.95	0.362
CR7-49	7	62.42	15.37	0.767	6.62	0.118	4.98	2.76	2.79	3.49	0.155
CR7-50	8	49.52	16.48	1.05	10.02	0.167	10.15	8.74	0.45	2.85	0.25
CR7-79	8	47.7	15.17	2.175	12.47	0.202	9.2	7.85	0.82	2.77	0.607
CR7-80	8	47.85	15.66	2.228	12.82	0.208	9.72	6.73	0.7	2.76	0.636
CR7-90	7	52.14	14.53	1.816	10.2	0.221	9.68	5.1	1.08	3.16	0.298
CR7-52	8	48.06	16.06	1.956	11.46	0.174	9.66	7.14	0.62	2.75	0.469
CR7-54	8	47.4	15.4	1.647	11.53	0.181	9.01	9.89	0.58	2.45	0.372
CR7-55	8	49.06	16.73	2.106	11.09	0.185	10.06	5.67	0.83	3.16	0.492
CR7-56	8	48.1	16.06	1.979	11.49	0.17	9.28	7.27	0.77	2.78	0.464
CR7-57	8	54.31	15.49	1.873	9.6	0.149	7.36	4.79	1.79	3.27	0.527
CR7-60	8	49.06	16.52	1.963	10.6	0.19	9.84	6.88	0.77	2.97	0.478
CR7-61	8	48.75	16.13	2.013	11.43	0.191	9.95	6.87	0.76	3.03	0.503
CR7-73	7	48.66	16.08	3.138	13.95	0.123	8.35	2.65	1.15	3.32	0.473
CR7-74	7	50.54	16.82	2.363	11.22	0.156	8.74	4.42	1.13	3.34	0.346
CR7-75	7	49.18	16.85	1.859	12.23	0.181	9.04	5.86	0.72	3.51	0.273
CR7-76	7	50.13	16.54	2.613	11.32	0.166	8.76	4.26	1.11	3.28	0.384
CR7-77	7	52.4	14.49	1.824	10.76	0.186	9.18	5.13	1.05	3.29	0.311
CR7-93	7	53.17	14	2.438	12.12	0.188	7.06	3.89	2	3.41	0.448
CR7-94	7	49.16	17.09	2.005	12.01	0.18	8.98	6.01	0.81	3.43	0.313
CR7-95	7	48.82	17.02	1.971	11.98	0.176	8.99	5.8	0.78	3.43	0.306
CR7096	7	50.81	15.42	2.264	11.86	0.195	8.53	5.53	1.09	3.47	0.484
CR7-97	7	49.45	16.78	2.262	11.44	0.165	9.45	4.9	0.83	3.34	0.367
CR7-101	8	51.77	17.42	1.751	10.1	0.167	8.86	4.1	1.19	3.53	0.472
CR7-104	7	48.91	16.12	1.797	11.42	0.183	10	7.06	0.51	3.09	0.289
CR7-106	7	50.27	18.58	1.392	9.75	0.156	10.33	5.18	0.63	3.26	0.234
CR7-107	7	50.69	17.52	1.731	10.45	0.167	9.24	4.57	1.04	3.43	0.369
CR7-108	7	49.94	16.22	2.167	11.42	0.178	10.48	5.7	0.47	3.04	0.266
CR7-109	8	50.06	13.85	2.715	12.95	0.216	8.86	5.24	1.11	3.12	0.83
CR7-110	7	51.92	14.63	2.026	11.23	0.171	8.92	5.38	1.12	3.42	0.354
CR7-111	7	47.94	16.51	0.984	9.93	0.171	9.96	9.75	0.25	2.37	0.113
CR7-112	7	47.55	16.48	0.979	10.29	0.181	9.9	9.51	0.23	2.28	0.115
CR7-113	7	47.36	17.33	1.007	10.62	0.194	10.47	7.82	0.2	2.39	0.12
CR7-114	7	55.66	14.16	1.458	10.31	0.255	8.18	4.56	1.37	3.36	0.239
CR7-115	7	50.63	16.5	2.667	11.1	0.158	8.58	4.1	1.26	3.37	0.388
CR7-116	7	55.92	14.09	1.98	10.5	0.18	7.47	3.88	1.79	3.26	0.312
CR7-117	7	56.02	14.36	1.992	9.67	0.232	7.88	4.1	1.58	3.45	0.352
CR7-118	7	52.68	13.39	2.53	13.71	0.205	7.43	3.65	1.56	3.68	0.408
CR7-119	7	49.82	15.82	2.181	11.63	0.177	9.67	6.05	0.68	3.17	0.373
CR7-120	7	50.69	14.2	2.347	12.34	0.185	9.92	5.62	0.7	3.14	0.312
CR7-121	7	48.82	16.38	2.335	12.29	0.173	9.1	5.8	0.85	3.21	0.322
CR7-122	7	50.38	17.2	2.264	11.12	0.155	9.02	4.39	0.97	3.43	0.325
CR7-123	8	52.63	16.15	0.918	9.29	0.169	9.53	6.53	0.91	2.73	0.245
CR7-124	7	50.23	15.56	2.246	12.01	0.188	8.47	6	1.04	3.49	0.476
CR7-125	7	52.7	14.54	2.525	12.78	0.189	6.77	4.17	1.71	3.64	0.425
CR7-126	7	52.09	14.5	2.599	12.78	0.199	7.18	4.33	1.72	3.49	0.434
CR7-127	7	51.68	14.03	2.487	12.72	0.192	8.88	4.17	0.99	3.21	0.379
CR7-128	7	48.31	15.48	3.096	13.32	0.185	8.43	5.28	1.13	3.33	0.637
CR7-129	7	50.17	16.39	2.56	12.32	0.181	8.8	4.42	1	3.37	0.352
CR7-130	7	52.17	14.68	1.815	11.43	0.178	9.12	4.95	1.08	3.44	0.281
CR7-131	7	55.75	13.82	1.997	11.16	0.167	7.25	3.86	1.9	3.14	0.32
JC6-14	8	54.29	15.72	0.985	7.1	0.137	9.18	7.45	1.49	2.58	0.242
JC6-15	8	54.57	15.76	0.986	6.84	0.141	9.21	7.53	1.28	2.63	0.241
JC6-16	8	49.27	15.92	1.233	9.43	0.162	9.95	9.08	0.85	2.63	0.341
JC6-17	8	49.79	15.9	1.437	9.35	0.131	10.38	8.09	0.85	2.71	0.389
JC6-18	8	50.85	15.65	1.534	8.88	0.17	9.64	8.05	1.08	2.89	0.458
JC6-19	8	49.3	16.78	1.517	9.71	0.155	10.88	6.62	0.75	2.81	0.436
JC6-20	8	55.59	15.35	1.226	7.4	0.141	7.83	7.02	1.86	3.04	0.39
JC6-21	8	48.75	16.04	1.746	10.37	0.183	10.1	7.65	0.83	2.86	0.55
JC6-22	8	49.05	16.25	1.686	9.73	0.181	10.18	8.18	0.82	2.85	0.549
JC6-23	8	48.02	16.69	2.011	11.64	0.193	10.03	6.92	0.66	3.06	0.532
CR8-132	17	60.82	16.51	0.909	6.05	0.115	5.4	2.52	2.32	3.88	0.315
CR8-134	17	61.02	16.56	0.896	5.54	0.11	5.49	2.43	2.28	3.79	0.304
CR8-137	1	53.04	15.63	2.121	10.44	0.179	6.92	3.53	2.19	3.63	0.849

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SAMPLE	Unit	SiO[2]	Al[2]O[3]	TiO[2]	FeO	MnO	CaO	MgO	K[2]O	Na[2]O	P[2]O[5]
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APPENDIX A -- XRF ANALYSES OF MAFIC AND INTERMEDIATE ROCKS

SAMPLE	Ni	Cr	Sc	V	Ba	Rb	Sr	Zr	Y	Nb	Ga	Cu	Zn	Pb	La	Ce	Th
CR7-9	20	45	27	293	488	32	207	134	33	12.4	18	135	84	Pb	22	Ce	2
CR7-10	151	330	28	229	425	17	282	142	28	20.6	18	51	85	Pb	19	Ce	5
CR7-11	78	77	24	248	366	10	443	161	30	13	23	67	92	Pb	18	Ce	2
CR7-12	84	71	26	290	455	10	329	142	32	16	19	48	105	Pb	11	Ce	3
CR7-13	88	137	29	212	825	19	310	202	39	20.8	20	44	101	Pb	32	Ce	6
CR7-14	98	150	26	216	753	26	301	194	37	18.3	19	26	105	Pb	27	Ce	6
CR7-15	37	107	32	318	519	20	395	140	32	9.4	19	87	98	Pb	13	Ce	4
CR7-20	90	75	29	253	420	14	305	130	30	15.4	22	43	90	Pb	11	Ce	4
CR7-22	119	246	38	298	271	6	328	92	27	6.2	16	141	88	Pb	13	Ce	4
CR7-27	64	68	22	215	701	31	301	150	29	18.3	19	43	87	Pb	29	Ce	5
CR7-25A	99	92	24	642	437	13	453	148	43	10.1	26	109	115	Pb	11	Ce	2
CR7-30	15	22	28	308	745	37	376	192	38	15.3	22	58	111	Pb	16	Ce	8
CR7-31	38	108	29	340	501	17	395	139	32	8.3	20	118	100	Pb	4	Ce	3
CR7-32	143	316	24	219	431	18	295	145	28	21	16	52	79	Pb	25	Ce	5
CR7-33	82	127	28	314	532	9	317	151	33	15.7	18	56	111	Pb	27	Ce	2
CR7-34	90	83	25	265	478	16	429	167	31	13.2	20	103	105	Pb	3	Ce	3
CR7-35	70	128	27	304	679	6	370	154	36	17.1	22	57	112	Pb	21	Ce	2
CR7-36	81	127	35	298	553	11	335	153	33	17.7	18	53	107	Pb	16	Ce	4
CR7-37	75	126	32	314	549	12	334	148	32	17	20	66	113	Pb	24	Ce	3
CR7-38	177	282	30	245	240	4	306	76	21	5.3	18	106	78	Pb	23	Ce	3
CR7-39	84	137	24	193	719	19	294	177	35	16.4	20	25	91	Pb	17	Ce	5
CR7-40	7	27	28	260	509	9	434	166	26	16.6	21	5	118	Pb	12	Ce	4
CR7-47	7	34	28	263	574	15	445	166	28	16.4	21	0	118	Pb	16	Ce	6
CR7-49	40	40	18	149	329	92	221	84	36	11.5	19	76	65	Pb	15	Ce	1
CR7-50	177	273	30	254	249	4	306	71	19	3.5	19	88	80	Pb	8	Ce	2
CR7-79	123	188	32	263	616	10	313	156	32	15.5	18	21	109	Pb	24	Ce	3
CR7-80	128	197	37	271	643	8	325	155	35	14	19	51	107	Pb	31	Ce	5
CR7-90	41	109	37	337	510	19	391	137	31	9.6	23	128	101	Pb	11	Ce	3
CR7-52	91	165	34	278	529	4	282	136	33	12.9	20	57	98	Pb	20	Ce	2
CR7-54	170	232	29	257	395	6	241	108	26	10.8	21	48	92	Pb	23	Ce	4
CR7-55	57	157	36	275	554	9	292	140	34	14.3	19	57	97	Pb	20	Ce	1
CR7-56	97	169	30	295	496	11	259	131	33	12.8	21	59	98	Pb	9	Ce	6
CR7-57	50	55	22	217	798	35	308	172	34	20.4	21	33	96	Pb	19	Ce	6
CR7-60	115	180	33	280	500	8	283	126	32	12.4	20	51	100	Pb	18	Ce	3
CR7-61	93	168	31	279	527	10	281	131	31	13.7	17	46	98	Pb	14	Ce	2
CR7-73	27	76	31	290	558	15	431	233	45	19.3	28	160	112	Pb	13	Ce	5
CR7-74	83	75	29	258	418	32	424	182	36	15.9	26	139	100	Pb	16	Ce	4
CR7-75	89	58	32	308	372	7	485	126	28	7.8	24	142	99	Pb	0	Ce	4
CR7-76	61	69	29	259	475	22	430	199	35	15.2	23	126	112	Pb	11	Ce	7
CR7-77	38	106	36	318	512	16	397	142	30	9.6	20	145	96	Pb	6	Ce	1
CR7-93	16	54	26	370	734	37	431	181	33	11.2	22	200	122	Pb	21	Ce	6
CR7-94	102	64	26	305	348	12	490	136	28	8.8	22	181	102	Pb	15	Ce	2
CR7-95	107	65	27	311	359	12	494	131	28	8.1	23	189	102	Pb	8	Ce	0
CR7096	65	46	28	327	520	19	469	179	34	13.2	23	92	118	Pb	23	Ce	1
CR7-97	74	105	28	282	382	13	512	176	32	17.1	22	67	117	Pb	19	Ce	5
CR7-101	41	56	26	258	531	22	528	156	30	12.6	22	61	94	Pb	20	Ce	0
CR7-104	136	201	34	291	286	7	391	125	27	9.4	21	98	96	Pb	16	Ce	4
CR7-106	98	159	30	243	280	10	449	111	22	6.7	19	146	78	Pb	0	Ce	1
CR7-107	52	61	31	283	438	19	461	147	29	13.4	24	94	88	Pb	11	Ce	7
CR7-108	60	191	29	321	304	7	383	143	34	11	21	124	101	Pb	15	Ce	2
CR7-109	31	57	33	392	608	20	390	145	38	9	19	67	111	Pb	29	Ce	4
CR7-110	35	142	34	327	526	24	383	153	31	8.9	19	135	104	Pb	24	Ce	2
CR7-111	180	307	34	246	119	3	186	56	21	2.1	18	120	67	Pb	2	Ce	3
CR7-112	173	289	39	239	89	1	185	55	22	0.4	18	103	71	Pb	3	Ce	0
CR7-113	171	302	35	250	123	2	202	57	23	2.5	20	111	72	Pb	9	Ce	1
CR7-114	20	43	33	327	434	22	226	122	36	12.2	21	173	89	Pb	13	Ce	2
CR7-115	52	71	26	256	474	33	412	201	36	16.3	24	124	114	Pb	13	Ce	3
CR7-116	10	23	32	294	629	50	346	179	34	12.7	21	47	113	Pb	11	Ce	7
CR7-117	10	25	27	312	741	43	355	183	35	14.5	24	63	109	Pb	22	Ce	4
CR7-118	1	52	33	432	671	33	370	180	41	11.2	26	200	125	Pb	21	Ce	3
CR7-119	66	71	28	288	371	12	461	171	30	15.4	20	21	112	Pb	19	Ce	5
CR7-120	24	100	34	320	369	14	411	169	31	13.9	24	40	114	Pb	20	Ce	4
CR7-121	99	89	30	261	399	17	413	172	30	13.7	23	88	107	Pb	0	Ce	1
CR7-122	76	93	27	237	439	23	450	168	31	12.3	22	133	103	Pb	11	Ce	1
CR7-123	158	269	33	226	619	14	253	80	23	4.5	15	131	70	Pb	0	Ce	0
CR7-124	83	76	24	310	518	18	520	170	30	12.4	22	65	122	Pb	29	Ce	6
CR7-125	57	59	25	276	793	40	392	210	39	18.8	22	120	127	Pb	22	Ce	6
CR7-126	49	67	25	301	497	40	412	208	37	18.3	23	71	127	Pb	25	Ce	5
CR7-127	2	52	31	304	571	21	397	204	37	16.5	23	28	122	Pb	15	Ce	4
CR7-128	98	103	29	291	511	24	430	260	40	22.6	23	180	133	Pb	26	Ce	3
CR7-129	50	58	30	306	487	21	439	176	34	13.5	24	114	118	Pb	7	Ce	5
CR7-130	39	113	35	305	526	22	405	137	29	8.6	20	68	99	Pb	8	Ce	5
CR7-131	10	22	27	291	757	58	340	190	34	14.9	20	54	108	Pb	24	Ce	8
JC6-14	127	282	24	191	411	37	235	104	21	12.4	16	59	59	Pb	0	Ce	5
JC6-15	132	274	28	200	435	28	237	104	22	12.5	15	54	60	Pb	24	Ce	3
JC6-16	177	376	28	218	313	15	273	105	23	14.4	14	82	71	Pb	12	Ce	2
JC6-17	160	357	32	255	354	15	279	113	24	15.7	15	52	76	Pb	21	Ce	1
JC6-18	166	338	27	244	449	18	288	136	28	19.2	18	48	79	Pb	17	Ce	2
JC6-19	157	396	30	257	365	12	305	118	26	15.3	14	58	73	Pb	3	Ce	2
JC6-20	138	281	20	162	566	38	271	138	25	18.7	12	46	69	Pb	32	Ce	4
JC6-21	165	349	29	247	497	13	330	145	29	20.3	16	54	90	Pb	18	Ce	2
JC6-22	154	333	31	253	463	10	320	137	28	17.8	18	46	86	Pb	20	Ce	3
JC6-23	89	69	29	287	495	7	350	132	31	15.1	19	31	100	Pb	8	Ce	1
CR8-132	22	12	15	142	1073	47	480	209	25	13.5	18	46	73	Pb	35	Ce	4
CR8-134	25	16	17	133	1127	46	489	206	24	14.3	19	39	72	Pb	27	Ce	2
CR8-137	9	15	22	223	1091	34	475	261	37	20.9	20	26	117	Pb	24	Ce	4

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SAMPLE	Ni	Cr	Sc	V	Ba	Rb	Sr	Zr	Y	Nb	Ga	Cu	Zn	Pb	La	Ce	Th
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CR8-138	8	47.55	14.94	2.714	12.53	0.208	9.82	6.36	0.95	2.82	0.8
CR8-139	1	53.18	15.76	2.146	9.99	0.175	7.01	3.5	2.09	3.64	0.85
CR8-140	8	54.65	16.81	1.207	8.37	0.115	8.08	4.1	1.42	3.35	0.373
CR8-142	7	55.1	14.62	1.534	11.08	0.192	8.35	5.09	1.26	3.46	0.248
CR8-143	8	52.18	15.75	1.12	8.18	0.156	9.48	7.86	1.39	2.51	0.283
CR8-144	8	46.39	15.87	2.297	12.58	0.199	9.31	7.02	0.81	3.16	0.627
CR8-145	8	59.08	14.98	1.499	7.91	0.145	5.24	2.96	2.98	3.7	0.365
CR8-151	1	56.16	15.35	1.829	8.7	0.142	6.38	2.89	2.7	3.52	0.726
CR8-154	1	56.68	15.64	1.882	8.01	0.14	6.34	2.77	2.61	3.94	0.742
CR8-157	8	50.11	14.42	2.739	12.21	0.189	8.45	5.19	0.86	2.73	0.752
CR8-158	8	50.59	14.55	2.619	12.48	0.19	8.3	5.21	0.88	3	0.725
CR8-159	1	55.98	15.76	1.86	9.06	0.156	6.38	3.25	2.39	3.47	0.739
CR8-160	1	56.27	15.4	1.805	8.91	0.16	6.15	3.07	2.59	3.82	0.715
CR8-161	1	56.25	15.68	1.852	8.94	0.147	6.35	2.76	2.56	4.35	0.735
CR8-162	8	47.92	15.89	2.044	11.11	0.194	10.1	7.03	0.57	2.28	0.578
CR8-163	1	55.69	15.5	1.825	9.25	0.154	6.28	3.17	2.55	3.5	0.72
CR8-165	8	50.77	13.56	3.218	13.47	0.208	8.03	4.39	1.61	2.95	0.794
CR8-166	8	50.52	14.46	2.656	12.11	0.193	8.27	5.3	1.17	2.81	0.728
CR8-168	8	50.03	14.51	2.739	12.66	0.191	8.46	4.64	1.29	2.79	0.744
CR8-169	17	58.37	16.98	0.999	6.13	0.163	6.55	3.15	1.99	3.75	0.351
CR8-170	8	53.4	14.44	2.413	11.19	0.17	7.32	4.33	1.82	2.84	0.587
CR8-172	8	50.18	14.54	2.76	12.02	0.206	8.5	4.8	1.19	2.85	0.737
CR8-179	8	47.29	15.74	1.506	9.56	0.174	9.53	9.19	1.6	2.14	0.453
CR8-182	8	51.28	15.69	1.153	8.28	0.144	9.58	8.57	1.19	2.43	0.304
CR8-183	7	51.85	14.97	1.712	11.12	0.175	9.21	5.34	0.94	3.27	0.27
CR8-185	17	57.13	16.82	1.07	7.3	0.12	6.89	3.48	1.96	3.76	0.424
CR8-187	17	56.65	17.23	1.09	7.12	0.097	7	3.21	1.89	3.78	0.434
CR8-188	17	58.76	16.89	0.994	6.38	0.138	6.42	2.94	2.14	4.08	0.351
CR8-190	8	54.49	15.03	2.029	10.48	0.181	6.26	3.65	2.38	3.54	0.496
CR8-194	17	55.69	16.63	1.174	7.66	0.146	7.4	4.2	1.74	3.6	0.478
CR8-195	17	55.57	16.83	1.222	7.33	0.14	7.57	4.38	1.72	3.52	0.488
CR8-196	17	55.65	16.68	1.094	7.32	0.142	7.3	4.22	1.93	3.36	0.458
CR8-199	8	50.99	16.04	1.994	10.48	0.172	7.9	4.3	1.57	3.43	0.593
CR8-200	17	56.27	17.09	1.143	7.06	0.146	7.31	4.01	1.86	3.6	0.473
CR8-203	7	47.32	14.47	3.124	14.43	0.202	9.22	5.64	0.71	2.56	0.643
CR8-204	7	48.9	16.24	2.085	11.66	0.176	9.26	5.04	1.15	3.01	0.328
CR8-205	18	58.55	17.21	0.995	6.23	0.125	6	3.08	2.16	4.06	0.458
CR8-206	8	48.46	15.93	2.137	11.86	0.191	9.22	5.43	0.91	2.75	0.621
CR8-210	6	54.4	13.26	2.331	12.65	0.212	6.86	3.16	1.86	3.06	0.454
CR8-212	4	53.31	16.56	0.674	7.7	0.16	9.78	7.3	0.85	2.45	0.129
CR8-214	6	55.15	13.54	2.329	11.41	0.199	6.89	3.22	1.89	3.09	0.453
CR8-216	6	54.51	13.31	2.305	12.71	0.202	6.86	3.22	2.03	3.04	0.449
CR8-217	6	54.74	13.86	2.331	10.7	0.256	7.43	3.25	1.75	3.25	0.447
CR8-218	4	53.05	16.3	0.669	7.71	0.139	9.55	7.33	0.88	2.4	0.128
CR8-220	17	56.41	16.86	1.05	7.06	0.144	7.1	3.99	1.99	3.45	0.41
CR8-221	7	55.34	13.4	2.353	11.55	0.279	6.7	3.24	1.94	3.21	0.497
CR8-222	7	53	13.34	2.363	12.96	0.201	7.33	3.37	1.4	3.27	0.431
CR8-223	7	52.85	13.2	2.338	13.23	0.202	7.27	3.65	1.52	3.38	0.371
CR8-224	7	54.32	13.15	2.325	11.93	0.247	6.76	3.02	1.77	3.4	0.489
CR8-225	7	52.78	13.38	2.347	12.85	0.206	7.35	3.49	1.37	3.6	0.424
CR8-226	7	52.91	13.23	2.325	12.95	0.182	7.26	3.59	1.53	3.35	0.368
VC96-13	7	48.07	14.33	3.33	13.43	0.19	9.43	6.22	0.7	2.54	0.65
VC96-2	8	50.9	13.53	3.198	12.84	0.209	8.24	4.17	0.95	2.93	0.801
JC96-25	8	48.25	11.5	4.659	16.05	0.246	8.9	4.15	1.24	2.71	1.064
JC96-24	18	59.71	16.94	0.954	5.51	0.143	6.25	3.16	1.93	4.31	0.409
BH96-25	8	50.14	14.31	2.701	12.5	0.158	8.37	5.11	1.25	2.74	0.69
BH96-17	18	58.47	17.24	1.018	5.58	0.094	6.4	1.59	1.99	4.5	0.484
BH96-15	18	58.11	17.67	1.001	6.67	0.117	6.41	2.79	1.83	4.66	0.477
BH96-10	18	59.06	16.9	0.919	6.35	0.112	5.95	3.05	1.85	4.52	0.39
BH96-6	18	58.07	17.59	0.985	6.31	0.122	6.28	3.11	2.09	4.28	0.463
BH96-16	18	58.69	17.56	0.951	5.73	0.126	6.34	3.12	1.98	4.23	0.474
BH96-4B	18	59.45	17.24	0.96	5.94	0.089	5.74	2.71	1.98	4.63	0.412
BH96-27	18	60.46	17.2	0.852	5.6	0.112	5.73	2.87	2.08	4.4	0.354
BH96-36	18	59.6	17.26	1.014	4.81	0.115	6.19	2.74	1.91	4.43	0.52
BH96-12	7	46.5	14.01	3.009	14.36	0.204	9.16	7.28	0.77	2.81	0.585
BH96-18	18	58.64	17.09	0.979	6.23	0.119	5.89	2.97	2.41	4.07	0.455
BH96-23	18	58.13	16.91	0.968	6.2	0.083	5.62	2.25	2.1	4.44	0.449
BH96-24	8	51.28	14.68	2.719	11.38	0.179	8.26	4.87	1.56	3.28	0.719
BH96-13	18	60.45	17.1	0.853	5.51	0.111	5.64	2.77	2.46	4.24	0.357
BH96-14	18	58.26	17.7	1	6.14	0.11	6.22	2.79	1.89	4.81	0.456
BH96-19	8	53.24	14.27	2.357	11.1	0.17	7.11	4.46	1.84	3.21	0.563
BH96-29	18	59.23	17.08	0.933	6.19	0.083	5.76	3.14	1.93	4.6	0.4
BH96-11	18	55.85	16.74	0.914	5.96	0.299	8.66	3.23	1.99	4.03	0.436
BH96-32	18	58.43	16.83	0.924	6.08	0.114	5.96	2.96	2.26	4.37	0.385
BH96-8	18	59.78	16.97	0.853	5.78	0.112	5.83	2.76	2.31	4.34	0.37
BH96-9	18	59.07	16.66	0.833	5.52	0.11	5.73	2.68	2.37	3.99	0.35
BH96-35	18	59.19	17.17	0.923	5.91	0.115	6.13	3.14	1.75	4.25	0.384
BH96-31	18	57.31	17.23	0.958	6.41	0.132	6.39	3.21	1.95	4.35	0.451
BH96-37	18	57.38	16.82	0.916	5.95	0.309	7.66	2.96	1.86	4.52	0.393
BH96-7	7	46.88	13.75	3.401	14.72	0.223	9.16	5.92	0.74	2.95	0.698
JC96-27	18	58.66	17.19	0.998	5.83	0.124	5.9	2.85	2.28	4.61	0.462
JC96-28	18	58.55	17.17	0.99	6.21	0.12	5.95	2.99	2.41	4.01	0.456
BH96-33	18	60.75	17.29	0.87	5.49	0.091	5.56	2.42	2.14	4.55	0.419
BH96-28	18	59.96	17.39	0.968	5.99	0.09	5.79	2.73	2	4.67	0.416
BH97-39	1	56.71	15.57	1.825	9.13	0.155	6.19	3.41	2.53	3.76	0.724

CR8-138	53	164	32	324	592	10	368	186	39	21.2	24	39	126	Pb	16	Ce	3
CR8-139	9	12	24	226	1111	34	472	260	37	20.2	21	25	119	Pb	34	Ce	4
CR8-140	45	77	23	218	930	16	554	175	26	11.7	19	40	85	Pb	31	Ce	4
CR8-142	19	51	34	341	356	25	226	120	36	13.4	22	188	95	Pb	9	Ce	3
CR8-143	158	337	26	206	390	28	254	108	23	15.9	17	64	66	Pb	16	Ce	5
CR8-144	78	124	30	295	471	11	318	150	33	18.3	22	59	110	Pb	19	Ce	3
CR8-145	50	58	20	147	1390	62	266	377	50	30.5	20	26	107	Pb	41	Ce	8
CR8-151	18	23	19	200	1113	58	425	268	39	23.9	22	25	113	Pb	38	Ce	6
CR8-154	17	25	18	190	1154	45	433	272	41	24	20	23	112	Pb	43	Ce	4
CR8-157	51	129	27	294	852	32	405	250	44	25.3	23	37	137	Pb	23	Ce	6
CR8-158	54	131	25	274	810	35	369	237	42	25	23	39	131	Pb	38	Ce	3
CR8-159	17	31	20	180	1108	42	432	263	38	23.2	23	27	114	Pb	36	Ce	3
CR8-160	19	27	20	182	1085	48	417	264	40	23.3	23	24	118	Pb	32	Ce	4
CR8-161	17	28	20	193	1074	46	427	261	39	21.6	21	19	118	Pb	42	Ce	5
CR8-162	96	262	29	258	467	5	328	153	33	18.1	18	57	102	Pb	30	Ce	3
CR8-163	19	31	18	190	1088	44	428	267	40	23.8	17	20	110	Pb	32	Ce	6
CR8-165	15	59	28	334	805	32	272	270	50	24.7	22	42	136	Pb	38	Ce	0
CR8-166	48	126	28	274	784	38	353	242	43	23	19	34	130	Pb	22	Ce	6
CR8-168	45	126	30	281	800	25	354	245	43	24.3	21	38	131	Pb	41	Ce	7
CR8-169	41	41	19	162	993	30	522	195	24	11.5	21	39	79	Pb	28	Ce	3
CR8-170	53	106	18	257	870	41	322	235	40	22	23	35	117	Pb	16	Ce	7
CR8-172	45	129	28	287	827	30	356	242	42	22.7	23	43	135	Pb	13	Ce	5
CR8-179	163	345	25	235	338	54	904	147	26	17.8	14	30	79	Pb	15	Ce	2
CR8-182	160	342	31	210	365	24	269	108	22	14.8	18	62	64	Pb	0	Ce	5
CR8-183	48	104	36	316	398	14	400	130	30	8.1	18	104	96	Pb	14	Ce	3
CR8-185	46	76	24	161	875	33	517	193	25	14.5	21	29	84	Pb	43	Ce	2
CR8-187	46	75	18	158	896	26	538	195	24	14	19	55	86	Pb	36	Ce	1
CR8-188	38	38	22	153	995	29	525	197	26	12.8	23	37	81	Pb	19	Ce	3
CR8-190	37	48	16	493	1219	46	313	328	51	29.9	21	25	122	Pb	44	Ce	9
CR8-194	43	90	19	168	842	22	522	190	26	13.9	20	40	90	Pb	12	Ce	4
CR8-195	46	89	22	180	868	20	527	191	26	13.3	21	47	86	Pb	35	Ce	4
CR8-196	42	81	26	162	892	30	531	192	24	12.5	18	55	84	Pb	24	Ce	2
CR8-199	36	60	22	238	835	18	537	185	32	15.8	23	38	122	Pb	25	Ce	3
CR8-200	33	57	20	164	878	26	567	204	26	14.9	18	43	90	Pb	37	Ce	5
CR8-203	78	161	30	325	556	5	495	191	45	17.6	23	47	155	Pb	30	Ce	3
CR8-204	72	133	31	262	539	12	446	170	32	20.8	18	50	113	Pb	20	Ce	4
CR8-205	23	33	20	138	1269	20	740	175	22	13.2	19	46	82	Pb	31	Ce	4
CR8-206	74	135	33	266	524	9	436	175	34	19.5	19	46	113	Pb	35	Ce	1
CR8-210	0	22	0	366	769	49	320	206	43	16.9	23	11	134	Pb	40	Ce	6
CR8-212	179	340	25	186	335	19	221	73	21	4.2	16	110	56	Pb	3	Ce	4
CR8-214	0	21	32	361	780	48	341	203	41	14.9	24	5	138	Pb	18	Ce	5
CR8-216	0	22	28	378	743	49	321	207	43	15.9	23	6	135	Pb	33	Ce	8
CR8-217	3	35	31	379	877	45	343	202	42	16.5	22	15	142	Pb	22	Ce	6
CR8-218	173	319	32	201	405	19	224	73	22	4.2	18	448	58	Pb	5	Ce	2
CR8-220	43	66	22	165	862	28	523	192	24	13.2	18	46	82	Pb	24	Ce	3
CR8-221	2	18	32	321	761	44	329	219	48	16	21	33	135	Pb	40	Ce	7
CR8-222	1	26	31	374	595	30	348	489	38	14.8	23	36	128	Pb	16	Ce	5
CR8-223	0	27	29	404	587	37	313	198	41	14.5	21	66	125	Pb	11	Ce	6
CR8-224	0	13	26	319	734	42	327	220	48	16.1	23	34	134	Pb	15	Ce	6
CR8-225	3	26	28	386	587	26	348	185	38	14.1	22	40	128	Pb	15	Ce	5
CR8-226	5	28	34	394	567	37	311	197	40	15.1	21	73	126	Pb	5	Ce	4
VC96-13	59	159	28	335	725	6	301	199	42	18	19	40	139	Pb	20	Ce	1
VC96-2	14	57	30	342	891	35	275	273	51	25.1	20	36	144	Pb	29	Ce	6
JC96-25	0	22	34	435	1020	15	262	298	60	29.1	25	42	192	Pb	41	Ce	2
JC96-24	25	35	17	141	860	22	711	169	20	12.2	17	38	78	Pb	11	Ce	2
BH96-25	58	140	27	286	817	19	350	233	42	22.1	20	36	127	Pb	30	Ce	6
BH96-17	29	31	18	136	951	23	758	179	28	12.1	21	37	86	Pb	26	Ce	0
BH96-15	22	30	16	148	851	24	705	170	22	16.6	21	40	77	Pb	28	Ce	2
BH96-10	25	35	18	135	837	21	694	163	19	9.4	18	21	77	Pb	20	Ce	3
BH96-6	21	33	21	131	852	21	693	172	23	16.1	21	48	79	Pb	25	Ce	3
BH96-16	23	27	14	129	1034	23	694	172	22	14.5	19	49	78	Pb	29	Ce	3
BH96-4B	23	37	13	140	900	24	743	170	21	11.1	20	46	82	Pb	20	Ce	3
BH96-27	22	33	19	123	869	23	587	170	20	10.3	17	46	76	Pb	27	Ce	0
BH96-36	20	27	18	109	916	21	739	175	23	11.7	19	15	72	Pb	19	Ce	2
BH96-12	87	188	29	316	652	9	298	182	38	16.4	21	35	135	Pb	17	Ce	5
BH96-18	22	33	22	141	1009	22	718	172	21	11.9	21	48	83	Pb	26	Ce	2
BH96-23	22	30	21	126	931	25	662	173	21	12.1	20	43	84	Pb	31	Ce	3
BH96-24	55	135	27	274	884	27	342	240	42	22.6	22	36	129	Pb	37	Ce	8
BH96-13	20	29	19	121	886	22	584	172	21	10.6	20	46	72	Pb	23	Ce	1
BH96-14	24	34	12	141	860	23	710	170	21	16.6	19	51	78	Pb	22	Ce	4
BH96-19	50	96	20	241	957	38	324	235	40	21.3	20	37	118	Pb	36	Ce	3
BH96-29	21	33	16	132	855	23	733	168	19	10.6	21	45	80	Pb	15	Ce	1
BH96-11	21	30	21	133	812	21	659	161	20	14.3	19	45	76	Pb	43	Ce	3
BH96-32	22	34	17	136	816	23	710	164	19	10.4	19	47	80	Pb	27	Ce	2
BH96-8	23	33	19	126	870	23	600	168	20	10.5	18	48	72	Pb	31	Ce	5
BH96-9	23	30	16	123	876	23	596	168	20	10	17	46	78	Pb	15	Ce	4
BH96-35	25	35	18	135	900	15	677	164	20	10	19	40	74	Pb	36	Ce	3
BH96-31	23	32	15	132	817	23	695	166	21	15	18	49	78	Pb	5	Ce	3
BH96-37	21	34	19	135	850	22	792	163	22	10.5	17	36	79	Pb	21	Ce	4
BH96-7	59	134	31	346	726	6	473	208	49	19.9	23	57	157	Pb	19	Ce	1
JC96-27	23	31	18	133	929	22	739	175	20	12.8	20	42	84	Pb	19	Ce	1
JC96-28	21	22	15	139	867	20	714	173	21	12.6	19	42	88	Pb	25	Ce	2
BH96-33	27	40	19	116	986	26	540	196	23	16.3	21	44	73	Pb	47	Ce	3
BH96-28	23	37	16.5	140	879	23.1	756	170	21.94	10.58	20	46	82	Pb	26.21	Ce	1.76
BH97-39	15	26	22	175	1136	40	417	264	39	22.6	24	23	108	Pb	35	Ce	6

APPENDIX A -- XRF ANALYSES OF MAFIC AND INTERMEDIATE ROCKS

SAMPLE	Unit	SiO ₂	Al ₂ O ₃	TiO ₂	FeO	MnO	CaO	MgO	K ₂ O	Na ₂ O	P ₂ O ₅
BH97-46	8	54.26	14.43	2.379	11.57	0.172	7.22	4.5	1.84	3.05	0.578
BH97-47	1	54.25	15.73	2.313	10.36	0.182	7.2	3.15	1.97	3.96	0.879
BH97-48	8	49.56	15.61	2.503	12.32	0.189	8.82	6.08	1.22	2.98	0.705
JC6-1	17	56.1	16.45	1.19	7.7	0.152	7.44	4.44	1.89	3.47	0.476
JC6-2	17	58.02	16.97	1.071	6.28	0.119	7	3.84	1.93	3.82	0.42
JC6-4	17	57.59	16.79	1.064	6.73	0.137	7.16	4.11	1.91	3.56	0.415
JC6-5	17	57.23	16.87	1.101	7.01	0.132	7.16	4.09	1.86	3.69	0.407
HC-1	17	56.37	16.9	1.104	7.32	0.1	6.89	3.72	1.85	4.16	0.426
HC-2	17	55.8	16.91	1.186	7.32	0.139	7.26	4.2	1.76	4.05	0.473
HC-3	17	55.24	16.91	1.193	7.4	0.134	7.29	4.02	1.69	3.92	0.477
HC-4	17	55.09	16.89	1.258	7.74	0.141	7.36	4.07	1.73	4.18	0.517
HC-5	17	56.81	16.67	1.105	7.14	0.134	6.75	3.72	2.1	4.11	0.438
HC-6	17	60.46	16.93	0.984	6.01	0.089	5.82	2.68	2.33	4.48	0.347
CR9-234	6	55.09	13.46	2.36	11.65	0.2	7.02	3.13	1.93	3.02	0.48
CR9-241	6	54.58	13.27	2.318	12.74	0.218	6.98	3.19	1.82	3.02	0.447
CR9-242	6	54.85	13.42	2.313	12.59	0.209	6.99	3.17	1.78	3.12	0.451
CR9-246	4	52.21	16.59	0.795	8.42	0.172	10.15	7.27	0.81	2.4	0.166
CR9-249	3	48.87	16.39	0.919	9.99	0.172	10.93	8.57	0.36	2.29	0.18
CR9-250	3	49.87	16.58	0.896	9.6	0.153	10.85	8.3	0.43	2.32	0.183
CR9-251	3	49.35	16.72	0.936	9.66	0.165	11.03	7.94	0.35	2.36	0.18
CR9-252	17	57.08	16.66	1.136	7.37	0.142	6.73	3.59	2.03	3.55	0.454
CR9-254	17	56.53	16.87	1.046	6.98	0.132	7.48	4	1.75	3.42	0.435
CR8-255	17	57	16.97	1.058	6.54	0.125	7.35	4.02	1.98	3.27	0.421
CR9-257	8	51.21	16.72	1.178	11	0.189	8.72	5.35	1.09	3.11	0.342
CR9-259	17	54.99	16.54	1.174	7.86	0.145	7.44	4.33	1.7	3.49	0.478
CR9-260	17	55.34	16.53	1.22	7.5	0.149	7.61	4.26	1.79	3.32	0.498
CR9-261	17	56.54	16.9	1.086	6.98	0.144	7.32	3.96	1.89	3.42	0.441
CR9-262	17	56.22	16.78	1.092	7.15	0.134	7.19	3.87	1.9	3.33	0.435
CR9-263	17	56	16.78	1.152	7.5	0.152	7.29	3.9	2	3.36	0.472
CR9-265	4	52.8	16.38	0.709	8.19	0.149	9.52	7.86	0.86	2.38	0.136
CR9-266	4	53.06	16.57	0.707	7.95	0.149	9.87	7.64	0.86	2.41	0.139
CR9-267	4	52.87	16.71	0.733	7.58	0.149	9.96	7.24	0.99	2.4	0.145
CR9-269	4	52.87	16.46	0.714	7.98	0.172	9.63	8.17	0.89	2.48	0.139
CR9-270	7	51.46	15.44	1.897	10.61	0.153	9.77	5.01	0.72	3.11	0.301
CR9-271	17	55.85	16.75	1.243	7.65	0.146	7.58	4.44	1.87	3.37	0.505
CR8-275	17	57.5	17.05	1.058	6.72	0.142	7.11	4.05	1.25	3.36	0.399
CR9-278	17	56.37	16.7	1.116	7.32	0.161	7.88	4.17	1.05	3.29	0.462
CR9-279	6	53.88	13.47	2.241	12.64	0.289	7.69	3.98	1.2	3.29	0.375
CR9-280	17	58.14	16.96	1	6.6	0.117	6.69	3.72	1.59	3.48	0.34
CR0-324	17	57.7	17.2	1.06	6.89	0.15	6.89	4.19	1.95	3.65	0.4
CR0-326	17	57.78	17.27	1.06	6.74	0.13	6.97	4.3	1.77	3.97	0.41
CR0-358	17	57.63	17.02	1.01	6.66	0.13	7	3.82	1.87	3.73	0.37
CR7-3A	11	49.88	16.22	1.394	10.62	0.17	10.89	7.69	0.37	2.65	0.165
CR7-5	12	48.5	16.79	1.769	11.03	0.188	10.64	7.91	0.37	3.04	0.378
CR8-135	12	50.95	16.56	1.346	9.38	0.17	9.58	7.24	1.14	2.83	0.328
CR8-141	12	51.65	16.12	1.364	9.21	0.167	8.98	6.44	1.42	2.86	0.329
CR8-178	12	53.98	16.84	1.095	7.93	0.145	8.6	6.44	1.55	2.82	0.15
CR8-181	12	53.13	16.85	1.14	8.32	0.147	8.87	6.55	1.4	3.06	0.142
CR8-193	12	47.96	16.07	1.827	11.05	0.191	10.51	7.63	0.67	2.57	0.363
CR8-198	12	46.2	15.43	1.739	11.48	0.189	10.72	8.54	0.45	2.28	0.4
BH96-22	12	47.77	16.56	1.479	10.64	0.184	10.92	7.38	0.59	2.94	0.303
BH96-34	11	47.91	16.53	0.894	9.6	0.17	10.95	9.66	0.28	2.89	0.12
BH96-5	11	47.13	16.6	0.879	9.21	0.161	10.98	9.7	0.25	2.68	0.118
CR9-247	12	48	16.46	1.327	10.28	0.193	11.15	8.33	0.58	2.36	0.257
CR9-268	12	48.22	16.82	1.304	10.03	0.189	11.16	8.44	0.54	2.47	0.257
CR9-264	11	48.68	16.79	0.9	9.24	0.16	11.11	9.72	0.31	2.53	0.14
CR0-318	11	48.26	16.54	0.9	9.45	0.17	11.12	9.81	0.3	2.75	0.13
CR0-322	12	49.35	16.99	1.37	9.35	0.19	11.27	8.61	0.6	2.78	0.26

XRF Analyses were conducted at the GeoAnalytical Laboratory at Washington State University, Pullman, Washington

Units: 1, basaltic trachyandesite of Cobb Creek; 3, Tims Peak basalt (Grasshopper Flat); 4, Tims Peak basalt (Bull Canyon); 5, Hunter Creek basalt; 7, Steens basalt and the basalt of Malheur Gorge undifferentiated; 8, Venator Ranch basalt, 10, Drinkwater basalt; 11, Voltage flow; 17, Basaltic andesite of Buck Mountain; 18, Trachyandesite of Riverside

APPENDIX A -- XRF ANALYSES OF MAFIC AND INTERMEDIATE ROCKS

SAMPLE	Ni	Cr	Sc	V	Ba	Rb	Sr	Zr	Y	Nb	Ga	Cu	Zn	Pb	La	Ce	Th
BH97-46	52	101	24	225	954	39	320	233	39	20.4	20	33	124	Pb	38	Ce	2
BH97-47	0	9	25	225	1147	27	466	271	43	27.3	19	9	120	Pb	38	Ce	2
BH97-48	53	127	29	273	713	13	459	200	38	21.5	19	39	119	Pb	22	Ce	4
JC6-1	45	89	19	180	853	28	515	192	25	14.4	19	45	86	Pb	5	Ce	3
JC6-2	45	66	20	155	871	27	513	189	24	13.5	19	48	82	Pb	30	Ce	3
JC6-4	43	68	16	156	880	29	517	190	25	13.7	21	43	78	Pb	11	Ce	5
JC6-5	33	54	19	151	890	25	553	194	25	13.8	18	30	84	Pb	39	Ce	3
HC-1	34	54	20	165	873	28	554	197	25	12.7	17	45	86	Pb	46	Ce	3
HC-2	30	57	19	157	879	22	548	199	26	14.7	18	26	88	Pb	15	Ce	2
HC-3	32	57	19	175	868	21	560	202	26	13.4	19	49	91	Pb	23	Ce	5
HC-4	29	55	22	180	897	20	567	208	29	16.5	19	37	95	Pb	32	Ce	5
HC-5	31	27	17	160	925	31	547	202	26	13.2	19	55	88	Pb	31	Ce	6
HC-6	31	26	15	152	1001	42	495	199	25	12.5	19	36	74	Pb	43	Ce	3
CR9-234	2	20	30	355	869	50	337	214	45	17	23	18	140	Pb	30	Ce	6
CR9-241	5	27	35	371	733	49	315	205	43	15.1	19	13	133	Pb	26	Ce	5
CR9-242	8	24	31	359	761	48	323	209	42	15.1	21	14	136	Pb	37	Ce	7
CR9-246	172	294	31	195	281	15	242	64	21	4.9	14	108	66	Pb	2	Ce	1
CR9-249	186	316	36	241	278	4	280	58	21	4.4	15	110	73	Pb	9	Ce	2
CR9-250	180	320	27	241	258	7	271	58	20	3.5	17	109	71	Pb	14	Ce	2
CR9-251	182	312	31	225	680	3	296	59	23	4.4	17	126	73	Pb	13	Ce	0
CR9-252	35	24	15	168	1011	29	551	206	29	14	18	51	88	Pb	41	Ce	4
CR9-254	45	68	21	163	1283	25	537	192	25	12.6	19	45	83	Pb	27	Ce	2
CR8-255	43	66	15	146	930	29	532	191	26	12.2	21	47	81	Pb	30	Ce	3
CR9-257	78	15	27	262	549	11	385	115	28	6.8	20	171	101	Pb	21	Ce	1
CR9-259	45	85	18	166	865	22	520	192	26	12.8	19	57	93	Pb	14	Ce	2
CR9-260	44	89	22	183	839	24	525	189	26	13.8	20	53	87	Pb	25	Ce	3
CR9-261	34	52	13	158	987	28	577	196	26	13.2	18	39	83	Pb	25	Ce	3
CR9-262	36	54	16	159	948	29	578	196	28	12.8	19	50	87	Pb	32	Ce	4
CR9-263	33	59	15	156	882	28	560	201	27	14.2	19	55	92	Pb	32	Ce	3
CR9-265	158	271	23	181	337	16	229	70	22	4	15	102	62	Pb	16	Ce	3
CR9-266	168	277	29	197	335	16	229	68	21	3.2	15	102	59	Pb	5	Ce	4
CR9-267	168	286	35	198	349	18	238	70	22	4	14	103	66	Pb	12	Ce	0
CR9-269	165	285	34	181	354	17	221	70	21	4.4	16	103	59	Pb	9	Ce	2
CR9-270	41	149	35	286	454	12	417	142	33	9.6	23	83	89	Pb	8	Ce	3
CR9-271	47	87	19	179	867	25	511	190	27	14.1	18	53	88	Pb	31	Ce	2
CR8-275	43	63	12	167	920	27	511	195	25	12.7	17	47	83	Pb	21	Ce	2
CR9-278	47	80	20	151	887	11	612	193	26	13.5	19	54	85	Pb	29	Ce	1
CR9-279	13	28	36	393	593	29	320	199	43	14.2	22	82	125	Pb	31	Ce	3
CR9-280	39	36	19	138	1381	18	536	196	26	13.5	17	35	74	Pb	42	Ce	3
CR0-324	45	63	17	162	1722	27	540	191	26	12	16	40	83	Pb	19	Ce	3
CR0-326	45	63	21	140	1130	26	509	189	30	12	17	47	84	Pb	46	Ce	4
CR0-358	37	51	16	159	921	31	488	190	27	11	19	44	80	Pb	22	Ce	1
CR7-3A	120	162	34	263	193	5	292	98	24	6.7	20	75	83	Pb	12	Ce	6
CR7-5	122	156	35	272	286	4	253	113	31	8.7	18	70	84	Pb	13	Ce	2
CR8-135	115	168	33	208	515	18	285	136	30	8	17	57	76	Pb	17	Ce	5
CR8-141	95	136	32	204	618	22	282	155	29	10.5	17	65	73	Pb	20	Ce	2
CR8-178	92	77	28	180	689	24	229	125	25	6.3	15	32	61	Pb	14	Ce	3
CR8-181	96	86	30	173	546	22	225	122	26	6.6	19	62	63	Pb	6	Ce	2
CR8-193	101	221	35	262	1477	6	313	160	34	11.2	17	60	93	Pb	17	Ce	1
CR8-198	161	238	38	259	267	5	223	111	30	12.5	18	77	84	Pb	0	Ce	2
BH96-22	116	243	35	279	418	5	227	140	27	8.6	17	81	80	Pb	16	Ce	4
BH96-34	176	345	35	209	116	4	197	67	18	2.7	16	89	68	Pb	3	Ce	2
BH96-5	187	354	33	214	142	2	199	66	19	2.6	19	77	66	Pb	5	Ce	5
CR9-247	125	275	37	250	571	4	224	134	28	8.2	18	68	75	Pb	9	Ce	1
CR9-268	133	275	40	240	543	3	223	129	27	8.1	17	75	75	Pb	21	Ce	2
CR9-264	188	346	36	215	141	5	205	64	19	3.1	14	89	66	Pb	2	Ce	1
CR0-318	179	354	35	219	128	5	191	62	20	4	15	66	69	Pb	10	Ce	3
CR0-322	125	269	32	247	338	6	208	133	26	9	15	78	78	Pb	9	Ce	3

XRF Analyses were conducted at the GeoAnalytical Laboratory at Washington State University, Pullman, Washington

APPENDIX B -- XRF ANALYSES OF THE FELSIC ROCKS

SAMPLE	Unit	SiO ₂	Al ₂ O ₃	TiO ₂	FeO	MnO	CaO	MgO	K ₂ O	Na ₂ O	P ₂ O ₅
CR8-147	4	77.76	11.77	0.075	0.88	0.009	0.46	0	4.75	3.57	0.031
CR8-148	3	74.14	13.78	0.057	0.94	0.084	1.13	0.06	4.53	4	0.031
CR8-149	4	74.09	12.22	0.078	1.18	0.025	0.51	0	6.18	2.78	0.015
CR8-152	7	72.05	13.16	0.283	2.02	0.04	1.12	0.27	6.16	2.65	0.071
CR8-153	4	78.56	10.97	0.065	0.88	0.008	0.43	0	4.5	3.21	0.019
CR8-156	7	76.08	12.81	0.268	0.95	0.007	0.92	0.06	5.06	3.26	0.067
CR8-167	6	67.19	15.96	0.787	3.69	0.046	2.91	0.5	3.53	4.57	0.256
CR8-189	4	77.38	11.18	0.07	1.07	0.015	0.3	0	4.71	3.03	0.033
CR8-191	3	73.49	14.03	0.062	1.01	0.027	1.1	0	4.59	3.63	0.032
CR8-192	7	72.3	13.45	0.115	1.32	0.029	0.78	0.03	6.43	3.09	0.022
CR8-211	1	77.34	11.39	0.15	1.55	0.008	0.24	0.05	3.79	4.26	0.03
CR8-213	1	74.21	10.75	0.183	2.71	0.056	0.18	0	5.05	4.26	0.019
CR8-215	1	74.58	12.27	0.172	3.04	0.019	0.38	0.27	3.7	4.37	0.032
CR7-2	8	76.22	10.95	0.204	2.58	0.078	0.33	0.36	4.54	4.38	0.037
CR7-4	8	74.22	10.99	0.228	2.82	0.043	0.7	0.33	5.84	2.97	0.041
CR7-41	3	75.83	14.09	0.064	0.98	0.084	1.21	0.43	4.44	4.25	0.029
CR7-42	1	78.36	12.66	0.165	0.53	0.002	0.19	0	3.99	4.83	0.027
CR7-43	1	77.14	12.64	0.172	1.37	0.013	0.32	0.19	3.94	4.72	0.079
CR7-46	8	75.16	10.94	0.189	2.76	0.059	0.31	0.31	5.81	3.17	0.028
CR7-48	1	77.95	12.59	0.168	0.75	0.009	0.25	0.12	3.92	4.88	0.035
CR7-58	0	74.95	11.6	0.108	1.69	0.033	0.32	0.56	6.6	2.11	0.017
CR7-62	2	74.6	13.29	0.193	1.33	0.046	1.13	0.65	5.21	3.18	0.102
CR7-63	2	74.51	13.2	0.199	1.47	0.05	1.23	0.75	5.52	2.95	0.07
CR7-64	2	74.58	13.14	0.162	1.2	0.048	1.12	0.65	5.5	3.14	0.061
CR7-65	8	75.74	11.03	0.179	2.69	0.053	0.24	0.15	5.16	4.15	0.024
CR7-66	8	76.17	11.45	0.186	2.6	0.051	0.29	0.36	6.26	2.8	0.025
CR7-67	2	76.6	13.18	0.066	0.7	0.047	0.89	0.65	5.46	3.19	0.026
CR7-68	2	73.7	13.45	0.235	1.55	0.05	1.34	0.56	5.23	3.04	0.078
CR7-69	2	74.42	13.35	0.191	1.35	0.046	1.17	0.63	5.12	3.24	0.059
CR7-71	2	76.06	13.17	0.069	0.71	0.046	0.88	0.34	5.31	3.11	0.026
CR7-72	3	77.18	13.75	0.054	0.67	0.021	1.17	0.3	4.3	4.1	0.03
CR7-78	3	74.54	14.35	0.126	1.19	0.01	1.1	0.47	4.21	3.35	0.058
CR7-83	5	64.04	14.23	0.796	5.24	0.117	4.54	2.53	3.33	3.19	0.259
CR7-85	5	69.18	14.11	0.522	3.5	0.093	2.99	2.15	3.71	3.81	0.138
CR7-86	5	70.69	13.83	0.411	2.78	0.088	2.41	1.32	4	3.71	0.144
CR7-87	5	66.85	13.3	0.509	3.31	0.092	4.29	2.11	4	3.19	0.154
CR7-88	5	63.17	14.56	0.913	5.99	0.129	4.8	3.15	2.98	3.35	0.22
CR7-103	3	75.64	14.14	0.065	0.99	0.083	1.22	0.2	4.43	4.02	0.031
CR7-105	8	75.63	10.96	0.184	2.8	0.045	0.47	0.08	4.59	4.38	0.123
VC96-1	6	67.77	15.85	0.752	3.34	0.069	2.98	0.84	3.79	4.14	0.24
CR9-228	1	78.69	10.91	0.143	1.82	0.006	0.23	0.19	3.8	3.94	0.028
CR9-231	8	74.84	10.73	0.178	2.87	0.052	0.19	0	5.58	3.66	0.015
CR9-236	14	77.07	12.29	0.089	1.36	0.024	0.14	0	4.74	4.13	0.03
CR9-238	14	77.11	12.34	0.089	1.35	0.016	0.15	0	4.72	4.1	0.02
CR9-239	1	79.21	10.79	0.14	1.37	0.012	0.25	0	3.4	4	0.052
CR9-240	1	77.55	11.7	0.162	1.82	0.044	0.33	0	3.73	4.26	0.022
CR9-243	14	77.11	12.57	0.1	1.05	0.007	0.15	0	4.81	3.8	0.038
CR9-244	8	76.07	10.75	0.177	2.76	0.06	0.27	0.02	4.55	4.23	0.081
CR9-245	14	77.06	12.7	0.13	1.07	0.004	0.15	0	4.72	3.98	0.024
CR9-248	1	78.65	11.27	0.158	1.38	0.022	0.24	0	3.47	4.19	0.02
CR9-253	8	76.14	10.85	0.19	2.71	0.058	0.31	0.08	4.57	4.26	0.075
CR9-258	6	67.45	15.49	0.73	3.47	0.078	2.85	0.57	4.17	3.92	0.235
CR9-272	14	79	11.45	0.084	0.77	0.004	0.12	0	4.46	3.84	0.024
CR9-274	1	79.09	10.66	0.146	1.36	0.015	0.25	0	3.66	3.7	0.018
CR9-276	8	76.6	10.85	0.178	2.55	0.053	0.2	0	4.54	4.44	0.042
CR9-277	1	75.17	12.05	0.326	2.57	0.049	0.82	0.06	3.59	4.18	0.05
CR0-321	8	75.13	11.24	0.214	2.62	0.059	0.41	0.28	4.83	4.64	0.05
CR0-323	0	69.46	13.65	0.608	3.9	0.124	1.75	0.99	4.7	4.55	0.16

XRF Analyses were conducted at the GeoAnalytical Laboratory at Washing State University, Pullman, Washington

Units: 0, Pumice lapilli from Kool Spring formation; 1, Dinner Creek Tuff; 2, Circle Bar Rhyolite; 3, Swamp Creek Rhyolite; 4 Visher Creek Rhyolite; 5, South Fork Dacite; 6, Oligo-Miocene Dacite; 7, McEwen Creek vitrophyre; 8 Devine Canyon Tuff; 14, Black Butte Rhyolite.

APPENDIX B -- XRF ANALYSES OF THE FELSIC ROCKS

SAMPLE	Ni	Cr	Sc	V	Ba	Rb	Sr	Zr	Y	Nb	Ga	Cu	Zn	Pb	La	Ce	Th
CR8-147	10	0	4	4	59	179	11	135	55	39.4	21	10	64	23	34	85	13
CR8-148	10	2	4	9	871	104	122	76	27	13.2	16	4	41	22	11	41	1
CR8-149	10	0	1	0	13	181	4	159	63	45.6	21	9	80	23	55	115	12
CR8-152	8	2	2	17	798	152	90	209	38	17.2	17	10	39	15	39	79	9
CR8-153	10	0	4	0	34	151	14	121	55	37.7	20	7	47	23	38	65	12
CR8-156	8	0	1	18	925	144	88	197	33	16.3	18	8	29	16	44	72	7
CR8-167	7	1	10	69	1671	66	374	245	33	15.2	18	7	59	9	40	58	5
CR8-189	12	0	1	0	15	157	7	141	55	40.3	19	11	53	23	32	92	11
CR8-191	12	0	5	2	931	105	131	77	20	12.7	15	18	28	19	20	21	1
CR8-192	11	8	1	6	496	151	34	224	52	36.1	17	6	69	20	59	125	9
CR8-211	12	0	5	5	1358	95	29	363	80	24	20	3	109	14	55	79	7
CR8-213	9	1	4	9	1434	75	32	382	69	26.1	20	3	131	19	48	78	10
CR8-215	9	1	4	9	1434	75	32	382	69	26.1	20	3	131	19	48	78	10
CR7-2	11	1	0	17	81	124	15	889	123	74.1	32	6	203	22	92	218	7
CR7-4	14	0	5	12	52	139	27	976	142	85.1	30	6	225	30	90	219	13
CR7-41	10	0	3	19	857	101	131	80	27	13.9	17	9	42	18	0	16	3
CR7-42	15	4	0	4	1482	81	29	394	87	26.3	22	3	44	13	48	63	5
CR7-43	12	0	3	10	1466	77	30	395	60	27.6	22	3	63	9	44	62	9
CR7-46	17	0	0	21	23	155	12	1116	162	95.6	30	8	255	33	88	209	12
CR7-48	15	0	1	8	1540	79	29	390	94	27.1	23	5	75	13	49	87	7
CR7-58	13	2	1	22	0	158	6	477	99	74.7	25	7	146	27	59	131	10
CR7-62	9	2	1	12	546	170	119	115	23	15.4	14	5	27	22	10	47	14
CR7-63	8	0	3	24	660	169	124	121	25	14.7	15	5	32	21	22	62	15
CR7-64	7	0	4	20	503	172	111	109	25	16.4	16	7	26	21	35	50	14
CR7-65	13	0	3	11	0	150	6	1061	153	93.8	27	7	248	33	83	204	10
CR7-66	13	0	1	16	0	119	11	952	125	74.4	29	6	201	26	109	201	9
CR7-67	13	0	3	0	143	193	62	77	24	14.7	16	7	22	24	8	20	13
CR7-68	8	2	3	22	734	163	155	127	23	12.9	16	4	31	20	36	47	15
CR7-69	9	0	4	15	585	172	129	117	23	15	17	4	27	19	37	40	11
CR7-71	10	0	3	6	141	193	64	78	25	14.5	16	5	20	20	9	38	14
CR7-72	11	1	5	19	849	99	129	74	20	13.6	17	8	29	17	18	26	3
CR7-78	7	0	2	9	2073	71	217	122	12	10.5	14	9	29	16	29	23	0
CR7-83	39	35	15	113	163	132	142	89	37	23.6	18	21	65	14	13	25	8
CR7-85	35	32	10	74	118	140	90	89	32	23.9	18	16	51	19	0	35	8
CR7-86	25	20	5	54	112	160	71	85	34	22.6	20	12	48	21	3	33	9
CR7-87	30	26	14	75	148	143	106	90	39	23	18	12	48	16	6	15	6
CR7-88	41	38	20	129	160	123	143	91	37	21.8	20	15	65	14	7	12	4
CR7-103	7	0	1	10	909	102	35	79	27	13.3	16	7	42	17	15	29	3
CR7-105	12	0	1	9	48	148	21	1066	118	92	30	1	231	26	78	168	13
VC96-1	3	0	8	56	1456	79	362	217	23	12.8	15	2	54	7	19	62	4
CR9-228	4	0	7	16	1287	101	28	372	59	21.4	21	0	50	9	34	81	8
CR9-231	11	0	0	9	0	167	5	1310	172	97.3	29	6	268	36	92	207	16
CR9-236	8	0	1	0	17	171	6	295	92	55.8	22	5	93	21	67	133	15
CR9-238	5	0	0	8	0	163	4	280	68	55.6	23	10	134	80	51	101	14
CR9-239	8	0	6	9	1289	71	26	370	74	22.1	18	0	70	10	36	93	5
CR9-240	7	0	4	9	1374	73	27	390	72	23.2	20	1	111	13	31	79	7
CR9-243	5	0	2	13	23	152	6	289	49	55.7	20	3	74	17	64	102	13
CR9-244	4	0	3	7	171	152	29	1234	52	90.3	28	4	241	26	59	120	13
CR9-245	8	1	2	0	13	162	8	297	55	55.5	23	3	89	21	50	82	14
CR9-248	5	1	7	12	1321	70	28	385	47	22.8	22	2	109	14	22	57	5
CR9-253	12	0	0	16	260	134	23	1100	148	78.2	28	8	213	27	121	206	13
CR9-258	4	2	11	60	1540	91	341	222	23	13	17	8	52	14	42	71	3
CR9-272	6	0	0	0	1	140	5	271	62	50.2	21	4	59	33	67	112	12
CR9-274	3	0	3	7	1670	65	37	370	37	23	22	0	77	11	24	58	7
CR9-276	11	0	1	8	75	157	11	1204	154	89.1	28	3	251	28	99	192	17
CR9-277	5	0	9	14	1135	83	72	361	57	25.3	15	7	60	8	31	54	7
CR0-321	12	0	3	8	39	135	16	1076	146	77.2	29	7	221	29	97	215	15
CR0-323	8	5	12	43	1024	86	110	395	66	25	21	13	130	14	62	98	7

XRF Analyses were conducted at the GeoAnalytical Laboratory at Washing State University, Pullman, Washington