FELDSPAR ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	25		26		27		28	
SiO2	68.95		63.77		67.85		66.00	
A2O3	19.17		18.69		20.30		20.74	
CaO	.05		.00		.34		1.03	
Na2O	.17		.80		11.70		11.37	
K2O	12.27		16.01		.23		.29	
SUM	100.61		99.27		100.42		99.43	
Si	3.067	*	2.973	*	2.959	*	2.917	*
Al	1.005	4.072	1.027	4.000	1.043	4.002	1.080	3.998
Ca	.002	*	.000	*	.016	*	.049	*
Na	.015	*	.072	*	.989	*	.974	*
K	.696	.713	.952	1.024	.013	1.018	.016	1.040
O	8.000	*	8.000	*	8.000	*	8.000	*
AN	.33		.00		1.56		4.69	
AB	2.06		7.06		97.18		93.73	
OR	97.61		92.94		1.26		1.57	

25 ED1-834 ALKALI FELDSPAR (USC)
26 ED1-872 ALKALI FELDSPAR, wide area analysis (USC)
27 ED1-872 PLAGIOCLASE (USC)
28 ED1-872 PLAGIOCLASE (USC)

	29		30	
SiO2	67.44		64.48	
A2O3	20.11		18.82	
CaO	.33		.00	
Na2O	10.89		1.06	
K2O	.18		15.82	
SUM	98.95		100.18	
Si	2.973	*	2.976	*
Al	1.045	4.018	1.023	3.999
Ca	.016	*	.000	*
Na	.931	*	.095	*
K	.010	.957	.931	1.026
O	8.000	*	8.000	*
AN	1.63		.00	
AB	97.31		9.24	
OR	1.06		90.76	

29 ED1-926 PLAGIOCLASE (USC)
30 ED1-926 ALKALI FELDSPAR, wide area analysis (USC)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	33.93	35.97	36.15	37.21
TiO2	.18	.30	.20	.07
A2O3	21.31	20.65	20.34	20.78
FeO	9.23	11.56	12.06	12.79
MnO	34.24	31.49	30.53	30.82
MgO	.12	.22	.23	.21
CaO	.74	.61	.58	.48
Na2O	.02	.02	.03	.00
K2O	.00	.01	.00	.00
F	.00	.00	.00	.00
SUM	99.77	100.83	100.12	102.36
-O= F	.00	.00	.00	.00
SUM	99.77	100.83	100.12	102.36
Si	2.837 *	2.951 *	2.981 *	2.999 *
Al	.163 3.000	.049 3.000	.019 3.000	.001 3.000
Al	1.936 *	1.948 *	1.958 *	1.972 *
Ti	.011 *	.019 *	.012 *	.004 *
Fe	.052 2.000	.034 2.000	.030 2.000	.023 2.000
Fe	.593 *	.760 *	.802 *	.839 *
Mg	.015 *	.027 *	.028 *	.025 *
Mn	2.425 *	2.188 *	2.133 *	2.104 *
Ca	.066 *	.054 *	.051 *	.041 *
Na	.003 *	.003 *	.005 *	.000 *
K	.000 3.102	.001 3.033	.000 3.019	.000 3.009
O	12.000 *	12.000 *	12.000 *	12.000 *
ALM	19.14	25.09	26.61	27.88
PY	.48	.89	.93	.83
SPS	78.25	72.24	70.77	69.92
GRAN	2.13	1.78	1.69	1.36
A	.1957	.1915	.1889	.1955
Mg/FeMg	.0226	.0328	.0329	.0284
Mn/FeMn	.7898	.7339	.7194	.7093

1 CB7-15 B GARNET RIM (VPI)
2 CB7-15 C GARNET CORE (VPI)
3 CB7-15 C GARNET CORE (VPI)
4 CB7-15 C GARNET RIM (VPI)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	36.50		36.11		36.87		35.09	
TiO2	.00		.15		.13		.09	
A2O3	21.86		19.93		19.92		20.66	
FeO	13.63		9.98		10.35		10.09	
MnO	29.65		32.58		32.87		32.63	
MgO	.15		.23		.25		.21	
CaO	.52		.88		.82		.78	
Na2O	.00		.05		.06		.02	
K2O	.06		.01		.00		.01	
F	.00		.00		.00		.00	
SUM	102.37		99.92		101.27		99.58	
-O= F	.00		.00		.00		.00	
SUM	102.37		99.92		101.27		99.58	
Si	2.940	*	2.989	*	3.011	*	2.922	*
Al	.060	3.000	.011	3.000	.000	3.011	.078	3.000
Al	2.015	*	1.933	*	1.917	*	1.950	*
Ti	.000	*	.009	*	.008	*	.006	*
Fe	.000	2.015	.058	2.000	.075	2.000	.045	2.000
Fe	.918	*	.633	*	.631	*	.658	*
Mg	.018	*	.028	*	.030	*	.026	*
Mn	2.023	*	2.284	*	2.273	*	2.302	*
Ca	.045	*	.078	*	.072	*	.070	*
Na	.000	*	.008	*	.009	*	.003	*
K	.006	3.010	.001	3.033	.000	3.016	.001	3.060
O	12.000	*	12.000	*	12.000	*	12.000	*
ALM	30.56		20.94		20.99		21.53	
PY	.60		.94		.99		.85	
SPS	67.34		75.53		75.62		75.33	
GRAN	1.49		2.59		2.40		2.29	
A	.2509		.2288		.2268		.2374	
Mg/FeMg	.0192		.0395		.0413		.0357	
Mn/FeMn	.6878		.7678		.7628		.7661	

1 CB7-15 C GARNET RIM (VPI)
2 CB7-15 D GARNET (VPI)
3 CB7-15 D GARNET (VPI)
4 CB7-15 D GARNET (VPI)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	36.14	36.39	35.07	36.36
TiO2	.23	.21	.32	.34
A2O3	20.63	26.84	26.94	26.56
FeO	12.95	9.66	10.54	10.89
MnO	29.85	27.15	26.03	25.85
MgO	.39	.14	.14	.16
CaO	.66	.72	.61	.56
Na2O	.15	.00	.00	.00
K2O	.09	.03	.02	.02
F	.43	.00	.00	.00
SUM	101.53	101.14	99.67	100.74
-O= F	.18	.00	.00	.00
SUM	101.34	101.14	99.67	100.74
Si	2.942 *	2.861 *	2.806 *	2.870 *
Al	.058 3.000	.139 3.000	.194 3.000	.130 3.000
Al	1.922 *	2.348 *	2.345 *	2.340 *
Ti	.014 *	.012 *	.019 *	.020 *
Fe	.064 2.000	.000 2.360	.000 2.365	.000 2.360
Fe	.818 *	.635 *	.705 *	.719 *
Mg	.047 *	.016 *	.017 *	.019 *
Mn	2.058 *	1.808 *	1.764 *	1.728 *
Ca	.058 *	.061 *	.052 *	.047 *
Na	.024 *	.000 *	.000 *	.000 *
K	.009 3.014	.003 2.523	.002 2.540	.002 2.515
O	12.000 *	12.000 *	12.000 *	12.000 *
ALM	27.44	25.20	27.78	28.61
PY	1.58	.63	.67	.76
SPS	69.04	71.75	69.50	68.76
GRAN	1.95	2.42	2.05	1.87
A	.2348	.3248	.3389	.3253
Mg/FeMg	.0509	.0252	.0231	.0255
Mn/FeMn	.7001	.7400	.7144	.7062

1 CB7-15 G GARNET (VPI)
2 S7-50a C GARNET RIM, Bad analysis - high alumina (VPI)
3 S7-50a C GARNET BETWEEN CORE AND RIM, Bad analysis - high alumina (VPI)
4 S7-50a C GARNET CORE, Bad analysis - high alumina (VPI)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	35.99		36.69		34.89		35.25	
TiO2	.27		.26		.32		.31	
A2O3	25.48		26.26		19.81		20.18	
FeO	10.69		11.12		9.88		10.10	
MnO	26.69		27.19		32.01		33.81	
MgO	.00		.00		.42		.40	
CaO	.75		.65		.99		.91	
Na2O	.00		.00		.15		.15	
K2O	.01		.02		.10		.09	
F	.00		.00		.94		.98	
SUM	99.88		102.19		99.51		102.18	
-O= F	.00		.00		.39		.41	
SUM	99.88		102.19		99.12		101.17	
Si	2.883	*	2.873	*	2.907	*	2.876	*
Al	.117	3.000	.127	3.000	.093	3.000	.124	3.000
Al	2.288	*	2.296	*	1.851	*	1.817	*
Ti	.016	*	.015	*	.020	*	.019	*
Fe	.000	2.305	.000	2.312	.129	2.000	.164	2.000
Fe	.716	*	.728	*	.560	*	.525	*
Mg	.000	*	.000	*	.052	*	.049	*
Mn	1.811	*	1.803	*	2.259	*	2.337	*
Ca	.064	*	.055	*	.088	*	.080	*
Na	.000	*	.000	*	.024	*	.024	*
K	.001	2.593	.002	2.588	.011	2.994	.009	3.023
O	12.000	*	12.000	*	12.000	*	12.000	*
ALM	27.63		28.50		18.93		17.55	
PY	.00		.00		1.76		1.64	
SPS	69.89		69.72		76.34		78.13	
GRAN	2.47		2.13		2.97		2.67	
A	.3108		.3138		.2245		.2216	
Mg/FeMg	.0000		.0000		.0704		.0659	
Mn/FeMn	.7166		.7123		.7664		.7722	

1 S7-54 GARNET, Bad analysis - high alumina (VPI)
2 S7-54 GARNET, Bad analysis - high alumina (VPI)
3 S7-55 A GARNET (VPI)
4 S7-55 A GARNET (VPI)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	34.92	34.95	34.95	35.00
TiO2	.35	.33	.18	.23
A2O3	19.77	20.00	20.14	19.24
FeO	9.87	9.90	9.82	9.98
MnO	32.77	32.45	33.16	33.17
MgO	.41	.41	.15	.14
CaO	.97	.96	.72	.98
Na2O	.15	.14	.00	.02
K2O	.09	.09	.00	.00
F	.90	.86	.00	.00
SUM	100.20	100.09	99.12	98.76
-O= F	.00	.36	.00	.00
SUM	99.82	99.73	99.12	98.76
Si	2.898 *	2.898 *	2.931 *	2.956 *
Al	.102 3.000	.102 3.000	.069 3.000	.044 3.000
Al	1.831 *	1.852 *	1.922 *	1.871 *
Ti	.022 *	.021 *	.011 *	.015 *
Fe	.147 2.000	.127 2.000	.067 2.000	.115 2.000
Fe	.538 *	.559 *	.622 *	.590 *
Mg	.051 *	.051 *	.019 *	.018 *
Mn	2.303 *	2.279 *	2.356 *	2.373 *
Ca	.086 *	.085 *	.065 *	.089 *
Na	.024 *	.023 *	.000 *	.003 *
K	.010 3.012	.010 3.006	.000 3.061	.000 3.073
O	12.000 *	12.000 *	12.000 *	12.000 *
ALM	18.06	18.80	20.31	19.22
PY	1.71	1.71	.62	.59
SPS	77.33	76.63	76.94	77.30
GRAN	2.88	2.86	2.12	2.89
A	.2216	.2253	.2333	.2191
Mg/FeMg	.0689	.0687	.0265	.0244
Mn/FeMn	.7708	.7685	.7737	.7709

1 S7-55 C GARNET (VPI)
2 S7-55 C GARNET (VPI)
4 S7-55 B GARNET CORE (VPI)
3 S7-55 B GARNET CORE (VPI)

GARNET ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	34.06	33.93	35.70	35.81
TiO2	.10	.10	.42	.44
A2O3	19.83	19.91	20.18	20.39
FeO	10.26	9.59	10.36	10.48
MnO	33.06	33.61	26.32	26.62
MgO	.60	.71	1.25	1.26
CaO	.13	.11	.34	.22
Na2O	.00	.00	.14	.07
K2O	.00	.00	.03	.03
F	.00	.00	.00	.00
SUM	98.04	97.96	94.74	95.32
-O= F	.00	.00	.00	.00
SUM	98.04	97.96	94.74	95.32
Si	2.900 *	2.890 *	3.037 *	3.029 *
Al	.100 3.000	.110 3.000	.000 3.037	.000 3.029
Al	1.889 *	1.889 *	2.023 *	2.033 *
Ti	.006 *	.006 *	.027 *	.028 *
Fe	.104 2.000	.105 2.000	.000 2.050	.000 2.061
Fe	.626 *	.578 *	.737 *	.741 *
Mg	.076 *	.090 *	.159 *	.159 *
Mn	2.384 *	2.425 *	1.897 *	1.907 *
Ca	.012 *	.010 *	.031 *	.020 *
Na	.000 *	.000 *	.023 *	.011 *
K	.000 3.098	.000 3.103	.003 2.850	.003 2.842
O	12.000 *	12.000 *	12.000 *	12.000 *
ALM	20.21	18.63	26.10	26.21
PY	2.45	2.90	5.63	5.62
SPS	76.95	78.15	67.17	67.46
GRAN	.39	.32	1.10	.71
A	.2358	.2365	.2576	.2608
Mg/FeMg	.0944	.1165	.1770	.1765
Mn/FeMn	.7654	.7802	.7201	.7201

1 ED1-872 GARNET (USC)
2 ED1-872 GARNET RIM (USC)
3 ED1-909 1 GARNET (USC)
4 ED1-909 1 GARNET (USC)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	50.13		49.11		49.27		48.41	
TiO2	.69		.49		.42		.31	
A2O3	30.00		29.70		29.79		31.63	
FeO	6.44		6.69		6.26		5.40	
MnO	.87		.85		.90		.45	
MgO	2.08		2.33		2.28		1.84	
CaO	.00		.00		.00		.00	
Na2O	.27		.23		.28		.19	
K2O	7.93		8.08		8.48		8.11	
H2O	4.60		4.54		4.55		4.53	
SUM	103.01		102.02		102.23		100.87	
Si	6.530	*	6.484	*	6.494	*	6.408	*
Al	1.470	8.000	1.516	8.000	1.506	8.000	1.592	8.000
Al	3.135	*	3.104	*	3.120	*	3.341	*
Ti	.068	*	.049	*	.042	*	.031	*
Fe	.702	*	.739	*	.690	*	.598	*
Mn	.096	*	.095	*	.100	*	.050	*
Mg	.404	4.404	.458	4.445	.448	4.400	.363	4.383
Ca	.000	*	.000	*	.000	*	.000	*
Na	.068	*	.059	*	.072	*	.049	*
K	1.318	1.386	1.361	1.419	1.426	1.497	1.369	1.418
H	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	58.40		57.16		55.72		59.11	
Mg	33.62		35.48		36.17		35.90	
Mn	7.99		7.36		8.11		4.99	
A	.5731		.5538		.5587		.6353	
Mg/FeMg	.3653		.3830		.3936		.3778	
Mn/FeMn	.1203		.1140		.1271		.0778	

1 S7-50a MUSCOVITE INTERGROWN W/ CHLORITE (USC)
2 S7-50a MUSCOVITE INTERGROWN W/ CHLORITE (USC)
3 S7-50a MUSCOVITE INTERGROWN WITH CHLORITE (USC)
4 S7-50a MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	51.20		51.71		46.63		49.44	
TiO2	.63		.64		.76		.63	
A2O3	30.03		30.06		31.36		29.35	
FeO	7.46		7.98		6.20		7.91	
MnO	1.11		1.11		.58		.94	
MgO	2.12		1.93		1.82		2.17	
CaO	.00		.00		.00		.00	
Na2O	.09		.11		.24		.15	
K2O	4.45		4.71		9.59		5.10	
H2O	4.62		4.66		4.48		4.51	
SUM	101.71		102.91		101.66		100.20	
Si	6.637	*	6.647	*	6.233	*	6.561	*
Al	1.363	8.000	1.353	8.000	1.767	8.000	1.439	8.000
Al	3.224	*	3.201	*	3.172	*	3.151	*
Ti	.061	*	.062	*	.076	*	.063	*
Fe	.809	*	.858	*	.693	*	.878	*
Mn	.122	*	.121	*	.066	*	.106	*
Mg	.410	4.626	.370	4.611	.363	4.370	.429	4.627
Ca	.000	*	.000	*	.000	*	.000	*
Na	.023	*	.027	*	.062	*	.039	*
K	.736	.758	.772	.800	1.635	1.697	.863	.902
H	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	60.34		63.62		61.81		62.14	
Mg	30.56		27.42		32.34		30.38	
Mn	9.09		8.96		5.86		7.48	
A	.5886		.5823		.5916		.5666	
Mg/FeMg	.3362		.3012		.3435		.1074	
Mn/FeMn	.1309		.1235		.0865		.1074	

1 S7-50a MUSCOVITE (USC)
2 S7-50a MUSCOVITE IN PL (USC)
3 S7-50a C MUSCOVITE (VPI)
4 S7-50a D MUSCOVITE (USC)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	49.64		53.46		54.80		49.05	
TiO2	.62		.13		.36		.47	
A2O3	29.03		30.90		26.17		30.57	
FeO	8.21		5.30		4.57		6.59	
MnO	1.00		.14		.01		.60	
MgO	2.19		2.53		3.89		2.09	
CaO	.00		.00		.03		.00	
Na2O	.14		.02		.03		.00	
K2O	5.92		4.42		8.08		7.49	
H2O	4.53		4.71		4.66		4.54	
SUM	101.28		101.61		102.60		101.40	
Si	6.562	*	6.802	*	7.040	*	6.470	*
Al	1.438	8.000	1.198	8.000	.960	8.000	1.530	8.000
Al	3.083	*	3.434	*	3.001	*	3.222	*
Ti	.062	*	.012	*	.035	*	.047	*
Fe	.908	*	.564	*	.491	*	.727	*
Mn	.112	*	.015	*	.001	*	.067	*
Mg	.431	4.596	.480	4.506	.745	4.273	.411	4.474
Ca	.000	*	.000	*	.004	*	.000	*
Na	.036	*	.005	*	.007	*	.000	*
K	.998	1.034	.717	.722	1.324	1.335	1.260	1.260
H	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	62.55		53.26		39.69		60.33	
Mg	29.74		45.31		60.22		34.10	
Mn	7.72		1.42		.09		5.56	
A	.5463		.6491		.5151		.5921	
Mg/FeMg	.3222		.4597		.6027		.3611	
Mn/FeMn	.1098		.0261		.0221		.0844	

1 S7-50a D MUSCOVITE (USC)
2 S7-53 MUSCOVITE INTERGROWN W/ CHLORITE (USC)
3 S7-53 MUSCOVITE INTERGROWN W/ CHLORITE (USC)
4 S7-54 MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	47.43		49.21		50.53		51.05	
TiO2	.64		.67		.62		.32	
A2O3	31.02		28.29		29.34		30.82	
FeO	7.61		8.01		7.27		6.39	
MnO	.83		1.24		1.09		.76	
MgO	1.73		2.09		1.94		1.69	
CaO	.01		.00		.00		.00	
Na2O	.15		.30		.16		.21	
K2O	7.58		8.69		7.73		7.68	
H2O	4.50		4.52		4.60		4.65	
SUM	101.50		103.02		103.28		103.57	
Si	6.312	*	6.516	*	6.584	*	6.580	*
Al	1.688	8.000	1.484	8.000	1.416	8.000	1.420	8.000
Al	3.177	*	2.930	*	3.088	*	3.261	*
Ti	.064	*	.067	*	.061	*	.031	*
Fe	.847	*	.887	*	.792	*	.689	*
Mn	.094	*	.139	*	.120	*	.083	*
Mg	.343	4.524	.412	4.435	.377	4.438	.325	4.388
Ca	.001	*	.000	*	.000	*	.000	*
Na	.039	*	.077	*	.040	*	.052	*
K	1.287	1.327	1.468	1.545	1.285	1.325	1.263	1.315
H	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	65.98		61.66		61.45		62.82	
Mg	26.73		28.67		29.22		29.61	
Mn	7.29		9.67		9.33		7.57	
A	.5798		.4999		.5527		.6060	
Mg/FeMg	.2883		.3174		.3223		.3204	
Mn/FeMn	.0995		.1355		.1318		.1075	

1 S7-54 MUSCOVITE (VPI)
2 S7-55 MUSCOVITE (USC)
3 S7-55 MUSCOVITE INTERGROWN W/ CHLORITE (USC)
4 S7-55 MUSCOVITE INTERGROWN WITH CHLORITE (USC)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	50.36		50.72		50.49		50.91	
TiO2	.34		.60		.52		.62	
A2O3	30.06		30.69		30.18		30.33	
FeO	7.14		6.24		6.24		6.57	
MnO	1.00		.91		.84		.86	
MgO	2.18		2.24		2.25		2.16	
CaO	.00		.00		.00		.00	
Na2O	.13		.23		.26		.20	
K2O	3.97		7.09		7.90		6.93	
H2O	4.55		4.65		4.62		4.64	
SUM	99.73		103.37		103.30		103.22	
Si	6.630	*	6.537	*	6.545	*	6.571	*
Al	1.370	8.000	1.463	8.000	1.455	8.000	1.429	8.000
Al	3.293	*	3.199	*	3.156	*	3.185	*
Ti	.034	*	.058	*	.051	*	.060	*
Fe	.786	*	.673	*	.677	*	.709	*
Mn	.112	*	.099	*	.092	*	.094	*
Mg	.428	4.652	.430	4.459	.435	4.410	.416	4.464
Ca	.000	*	.000	*	.000	*	.000	*
Na	.033	*	.057	*	.065	*	.050	*
K	.667	.700	1.166	1.223	1.306	1.372	1.141	1.191
H	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	59.31		55.94		56.21		58.19	
Mg	32.28		35.79		36.12		34.10	
Mn	8.41		8.26		7.66		7.71	
A	.5996		.5889		.5742		.5845	
Mg/FeMg	.3524		.3901		.3912		.3694	
Mn/FeMn	.1242		.1287		.1199		.1170	

1 ED1-834 MUSCOVITE (USC)
2 ED1-872 MUSCOVITE (USC)
3 ED1-872 MUSCOVITE (USC)
4 ED1-872 MUSCOVITE (USC)

MUSCOVITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3	
SiO2	49.87		50.35		49.42	
TiO2	.29		.43		.64	
A2O3	33.61		29.35		29.05	
FeO	6.46		7.27		7.85	
MnO	.21		.91		1.11	
MgO	.04		2.01		2.03	
CaO	.00		.00		.00	
Na2O	.04		.16		.20	
K2O	4.40		7.46		6.83	
H2O	4.58		4.58		4.53	
SUM	99.50		102.52		101.66	
Si	6.527	*	6.593	*	6.540	*
Al	1.473	8.000	1.407	8.000	1.460	8.000
Al	3.711	*	3.122	*	3.070	*
Ti	.029	*	.042	*	.064	*
Fe	.707	*	.796	*	.869	*
Mn	.023	*	.101	*	.124	*
Mg	.008	4.477	.392	4.454	.400	4.527
Ca	.000	*	.000	*	.000	*
Na	.010	*	.041	*	.051	*
K	.735	.745	1.246	1.287	1.153	1.204
H	4.000	4.000	4.000	4.000	4.000	4.000
O	24.000	*	24.000	*	24.000	*
Fe	95.79		61.75		62.34	
Mg	1.06		30.43		28.73	
Mn	3.15		7.83		8.93	
A	.7567		.5575		.5445	
Mg/FeMg	.0109		.3301		.3155	
Mn/FeMn	.0318		.1125		.1253	

1 ED1-872 MUSCOVITE IN PLAGIOCLASE (USC)(2N SESSION)
2 ED1-926 MUSCOVITE W/ CHLORITE pseudomorph after magnetite (USC)
3 ED1-926 MUSCOVITE W/ CHLORITE pseudomorph after magnetite (USC)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	47.11		47.27		48.20		45.40	
TiO2	.10		.28		.14		.57	
A2O3	32.81		27.48		32.42		31.22	
FeO	4.00		6.03		6.43		7.96	
MnO	.76		1.09		.63		.98	
MgO	.37		1.72		1.02		1.88	
CaO	.12		.14		.00		.03	
Na2O	.41		.43		.14		.31	
K2O	9.71		8.74		7.99		7.90	
BaO	.21		.19		.00		.00	
F	.73		1.23		2.37		2.81	
Cl	.03		.03		.00		.00	
H2O	4.10		3.72		3.42		3.10	
SUM	100.46		98.35		102.76		102.16	
-O= F+Cl	.31		.52		1.00		1.18	
SUM	100.15		97.83		101.76		100.98	
Si	6.331	*	6.570	*	6.365	*	6.145	*
Al	1.669	8.000	1.430	8.000	1.635	8.000	1.855	8.000
Al	3.527	*	3.071	*	3.409	*	3.125	*
Ti	.010	*	.029	*	.014	*	.058	*
Fe	.450	*	.701	*	.710	*	.901	*
Mn	.087	*	.128	*	.070	*	.112	*
Mg	.074	4.147	.356	4.285	.201	4.404	.379	4.576
Ca	.017	*	.021	*	.000	*	.004	*
Na	.107	*	.116	*	.036	*	.081	*
K	1.664	*	1.549	*	1.346	*	1.364	*
Ba	.011	1.800	.010	1.696	.000	1.382	.000	1.450
F	.310	*	.541	*	.990	*	1.203	*
Cl	.007	*	.007	*	.000	*	.000	*
H	3.676	3.993	3.449	3.997	3.013	4.002	2.799	4.002
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	73.68		59.12		72.36		64.70	
Mg	12.15		30.06		20.46		27.23	
Mn	14.18		10.82		7.18		8.07	
A	.7357		.5415		.6516		.5597	
Mg/FeMg	.1415		.3370		.2204		.2962	
Mn/FeMn	.1614		.1547		.0903		.1108	

1 CB7-15 MUSCOVITE IN PLAGIOCLASE (VPI)
2 CB7-15 B MUSCOVITE (VPI)
3 S7-54 MUSCOVITE (VPI)
4 S7-54 MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	45.70	45.84	45.99	45.84
TiO2	.01	.46	.03	.17
A2O3	37.20	33.25	37.12	35.86
FeO	.36	3.26	.87	1.50
MnO	.59	.61	.43	.54
MgO	.01	.04	.03	.03
CaO	.03	.03	.03	.03
Na2O	.82	.12	.54	.49
K2O	10.27	10.47	10.38	10.37
F	.76	.36	.49	.54
Cl	.04	.00	.02	.02
H2O	4.14	4.22	4.28	4.21
SUM	99.93	98.66	100.21	99.60
-O= F+Cl	.33	.15	.21	.23
SUM	99.60	98.51	100.00	99.37

Si	6.079	*	6.253	*	6.097	*	6.142	*
Al	1.921	8.000	1.747	8.000	1.903	8.000	1.858	8.000
Al	3.909	*	3.598	*	3.895	*	3.803	*
Ti	.001	*	.047	*	.003	*	.017	*
Fe	.040	*	.372	*	.096	*	.168	*
Mn	.066	*	.070	*	.048	*	.062	*
Mg	.002	4.019	.008	4.095	.006	4.049	.005	4.054
Ca	.004	*	.004	*	.004	*	.004	*
Na	.211	*	.032	*	.139	*	.128	*
K	1.742	1.958	1.822	1.858	1.755	1.898	1.773	1.905
F	.320	*	.155	*	.205	*	.227	*
Cl	.009	*	.000	*	.004	*	.005	*
H	3.673	4.002	3.840	3.995	3.785	3.995	3.766	3.997
O	24.000	*	24.000	*	24.000	*	24.000	*

Fe	36.91	82.55	64.02	71.46
Mg	1.83	1.81	3.93	2.27
Mn	61.26	15.64	32.05	26.27
A	.9497	.7967	.9308	.8923
Mg/FeMg	.0472	.0214	.0579	.0344
Mn/FeMn	.6240	.1593	.3336	.2672

1 S7-53 MUSCOVITE INCLUSION E IN QTZ (VPI)
2 S7-53 MUSCOVITE INCLUSION F IN QTZ (VPI)
3 S7-53 MUSCOVITE INCLUSION G IN QTZ (VPI)
4 AVERAGE

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1
SiO2	46.50
TiO2	.59
A2O3	27.11
FeO	6.76
MnO	.70
MgO	2.41
CaO	.01
Na2O	.27
K2O	10.87
F	1.14
Cl	.02
H2O	3.79
SUM	100.17
-O= F+Cl	.48
SUM	99.69

Si	6.439	*
Al	1.561	8.000
Al	2.862	*
Ti	.061	*
Fe	.783	*
Mn	.082	*
Mg	.497	4.286
Ca	.001	*
Na	.072	*
K	1.920	1.994
F	.499	*
Cl	.005	*
H	3.501	4.005
O	24.000	*

Fe	57.46
Mg	36.51
Mn	6.03

A	.4795
Mg/FeMg	.3885
Mn/FeMn	.0949

1 S7-53 MATRIX MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	46.21		45.50		46.45		45.10	
TiO2	.73		.78		.72		.60	
A2O3	26.49		26.10		26.70		26.01	
FeO	7.55		7.51		7.10		7.25	
MnO	1.26		1.24		1.00		1.23	
MgO	2.21		2.17		2.10		2.07	
CaO	.12		.12		.10		.14	
Na2O	.40		.45		.40		.44	
K2O	8.48		8.93		8.40		9.33	
BaO	.19		.17		.19		.19	
F	2.04		1.90		1.80		2.08	
Cl	.03		.03		.04		.04	
H2O	3.31		3.32		3.42		3.20	
SUM	99.02		98.22		98.42		97.68	
-O= F+Cl	.87		.81		.77		.88	
SUM	98.15		97.41		97.65		96.80	
Si	6.473	*	6.449	*	6.507	*	6.447	*
Al	1.527	8.000	1.551	8.000	1.493	8.000	1.553	8.000
Al	2.846	*	2.809	*	2.914	*	2.829	*
Ti	.077	*	.083	*	.076	*	.065	*
Fe	.884	*	.890	*	.832	*	.867	*
Mn	.150	*	.149	*	.119	*	.149	*
Mg	.461	4.418	.458	4.389	.438	4.379	.441	4.350
Ca	.018	*	.018	*	.015	*	.021	*
Na	.109	*	.124	*	.109	*	.122	*
K	1.515	*	1.614	*	1.501	*	1.701	*
Ba	.010	1.652	.009	1.766	.010	1.635	.011	1.855
F	.904	*	.852	*	.797	*	.940	*
Cl	.007	*	.007	*	.009	*	.010	*
H	3.093	4.004	3.139	3.998	3.196	4.003	3.052	4.002
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	59.15		59.45		59.89		59.50	
Mg	30.86		30.61		31.57		30.28	
Mn	10.00		9.94		8.54		10.22	
A	.4762		.4638		.4997		.4639	
Mg/FeMg	.3428		.3399		.3452		.3372	
Mn/FeMn	.1446		.1433		.1248		.1466	

1 S7-55 B MUSCOVITE (VPI)
2 S7-55 B MUSCOVITE (VPI)
3 S7-55 B MUSCOVITE (VPI)
4 S7-55 E MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
SiO2	45.06		46.76		45.98		46.72	
TiO2	.13		.08		.07		.23	
A2O3	31.87		37.05		35.33		35.54	
FeO	5.28		.94		1.84		1.56	
MnO	.80		.44		.42		.72	
MgO	.03		.04		.11		.04	
CaO	.00		.01		.00		.01	
Na2O	.23		.83		.50		.44	
K2O	10.46		10.09		10.24		10.59	
F	.23		.39		.54		.52	
Cl	.01		.01		.01		.02	
H2O	4.21		4.38		4.24		4.26	
SUM	98.31		101.02		99.28		100.65	
-O= F+Cl	.10		.17		.23		.22	
SUM	98.21		100.85		99.05		100.43	
Si	6.247	*	6.137	*	6.178	*	6.200	*
Al	1.753	8.000	1.863	8.000	1.822	8.000	1.800	8.000
Al	3.453	*	3.867	*	3.772	*	3.758	*
Ti	.014	*	.008	*	.007	*	.023	*
Fe	.612	*	.103	*	.207	*	.173	*
Mn	.094	*	.049	*	.048	*	.081	*
Mg	.006	4.179	.008	4.035	.022	4.056	.008	4.043
Ca	.000	*	.001	*	.000	*	.001	*
Na	.062	*	.211	*	.130	*	.113	*
K	1.850	1.911	1.689	1.902	1.755	1.885	1.793	1.907
F	.101	*	.162	*	.229	*	.218	*
Cl	.002	*	.002	*	.002	*	.004	*
H	3.893	3.997	3.835	3.999	3.800	4.032	3.771	3.994
O	24.000	*	24.000	*	24.000	*	24.000	*
Fe	85.94		64.52		74.75		66.09	
Mg	.87		4.89		7.96		3.02	
Mn	13.19		30.59		17.28		30.89	
A	.7025		.9268		.8743		.8781	
Mg/FeMg	.0100		.0705		.0963		.0437	
Mn/FeMn	.1330		.3216		.18978		.3185	

1 ED1-834 MUSCOVITE INCLUSION B IN QTZ (VPI)
2 ED1-834 MUSCOVITE INCLUSION D IN QTZ (VPI)
3 ED1-834 MUSCOVITE INCLUSION D IN QTZ (VPI)
4 ED1-834 MUSCOVITE INCLUSION A IN QTZ (VPI)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	5	6	7
SiO2	46.13	46.82	45.44
TiO2	.13	.19	.06
A2O3	34.95	36.84	33.05
FeO	2.40	4.10	.71
MnO	.60	.76	.43
MgO	.05	.09	.02
CaO	0.00	.01	.00
Na2O	.50	.72	.28
K2O	10.34	10.54	10.15
F	.42	.54	.30
Cl	.01	.02	.01
H2O	4.27	4.34	4.21
SUM	99.81	104.96	94.67
-O= F+Cl	.18	.23	.13
SUM	99.64	104.73	94.54

Si	6.190	*	6.040	*	6.352	*
Al	.000	6.190	.000	6.040	.000	6.352
Al	5.526	*	5.601	*	5.445	*
Ti	.013	*	.019	*	.007	*
Fe	.270	*	.442	*	.083	*
Mn	.068	*	.083	*	.051	*
Mg	.011	5.887	.017	6.161	.005	5.590
Ca	.001	*	.001	*	.000	*
Na	.130	*	.179	*	.077	*
K	1.771	1.901	1.734	1.914	1.810	1.887
F	.178	*	.222	*	.131	*
Cl	.003	*	.004	*	.002	*
H	3.824	4.005	3.732	3.958	3.924	4.057
O	24.000	*	24.000	*	24.000	*

Fe	77.44	81.54	60.09
Mg	3.16	3.09	3.45
Mn	19.40	15.37	36.46

5 AVERAGE
6 AVERAGE PLUS SIGMA
7 AVERAGE MINUS SIGMA

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1
SiO2	45.01
TiO2	.58
A2O3	27.49
FeO	7.18
MnO	1.00
MgO	1.84
CaO	.08
Na2O	.39
K2O	9.50
F	1.18
Cl	.01
H2O	3.68
SUM	97.94
-O= F+Cl	.50
SUM	97.44

Si	6.363	*
Al	1.637	8.000
Al	2.942	*
Ti	.062	*
Fe	.849	*
Mn	.120	*
Mg	.388	4.360
Ca	.012	*
Na	.107	*
K	1.713	1.832
F	.528	*
Cl	.002	*
H	3.470	4.000
O	24.000	*

Fe	62.59
Mg	28.59
Mn	8.83

A	.5144
Mg/FeMg	.3135
Mn/FeMn	.1236

1 ED1-834 MATRIX MUSCOVITE (VPI)

MUSCOVITE ANALYSES (H2O INPUTTED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1	2	3	4
SiO2	45.12	47.14	46.84	46.27
TiO2	.27	.11	.65	.70
A2O3	30.64	35.35	28.95	27.87
FeO	5.75	2.01	5.67	6.62
MnO	.44	.41	.97	1.01
MgO	.22	.17	.97	1.33
CaO	.13	.13	.14	.13
Na2O	.24	.21	.34	.45
K2O	9.12	9.64	9.55	9.27
BaO	.17	.17	.18	.21
F	.43	.33	.82	2.28
Cl	.04	.03	.04	.04
H2O	4.05	4.35	3.94	3.22
SUM	96.62	100.05	99.06	99.40
-O= F+Cl	.19	.15	.35	.97
SUM	96.43	99.90	98.71	98.43
Si	6.340 *	6.256 *	6.462 *	6.449 *
Al	1.660 8.000	1.744 8.000	1.538 8.000	1.551 8.000
Al	3.413 *	3.784 *	3.168 *	3.026 *
Ti	.029 *	.011 *	.067 *	.073 *
Fe	.676 *	.223 *	.654 *	.772 *
Mn	.052 *	.046 *	.113 *	.119 *
Mg	.046 4.215	.034 4.098	.199 4.202	.276 4.267
Ca	.020 *	.018 *	.021 *	.019 *
Na	.065 *	.054 *	.091 *	.122 *
K	1.634 *	1.632 *	1.680 *	1.648 *
Ba	.009 1.729	.009 1.713	.010 1.802	.011 1.800
F	.191 *	.139 *	.358 *	1.005 *
Cl	.010 *	.007 *	.009 *	.009 *
H	3.796 3.997	3.851 3.996	3.626 3.993	2.994 4.008
O	24.000 *	24.000 *	24.000 *	24.000 *
Fe	87.28	73.67	67.65	66.11
Mg	5.95	11.11	20.63	23.67
Mn	6.76	15.22	11.72	10.22
A	.6834	.8629	.5999	.5432
Mg/FeMg	.0638	.1309	.2336	.2636
Mn/FeMn	.0719	.1712	.1477	.1338

1 ED1-877 B MUSCOVITE (VPI)
2 ED1-877 C MUSCOVITE (VPI)
3 ED1-877 G MUSCOVITE (VPI)
4 ED1-877 MUSCOVITE (VPI)

PYROPHYLLITE ANALYSES (H2O CALCULATED) FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2	
SiO2	52.40		49.93	
TiO2	.02		.00	
A2O3	42.60		40.43	
FeO	.59		.32	
MnO	.39		1.87	
MgO	.08		.01	
CaO	.03		.06	
Na2O	.03		.02	
K2O	.02		.13	
H2O	6.03		5.77	
SUM	102.19		98.54	
Si	5.206	*	5.184	*
Al	2.794	8.000	2.816	8.000
Al	2.194	*	2.130	*
Ti	.001	*	.000	*
Fe	.049	*	.028	*
Mn	.033	*	.164	*
Mg	.012	*	.002	*
Ca	.003	*	.007	*
Na	.006	*	.004	*
K	.003	2.300	.017	2.351
H	4.000	4.000	4.000	4.000
O	20.000	*	20.000	*
A	.9637	.9269		
Mg/FeMg	.1946	.0527		
Mn/FeMn	.4009	.8555		

1 ED1-464 UNKNOWN IN OPAQUE VEIN (USC)
2 ED1-464 UNKNOWN IN OPAQUE VEIN (USC)

RHODOCHROSITE ANALYSES FOR THE CUFFYTOWN CREEK PLUTON, S.C.

	1		2		3		4	
MgO	.04		.06		.05		.05	
CaO	7.49		2.53		7.39		5.80	
MnO	41.11		40.07		40.41		40.53	
FeO	13.13		18.01		13.25		14.80	
CO2	39.48		37.94		39.05		38.82	
SUM	101.25		98.61		100.15		100.00	
Mg	.001	*	.002	*	.001	*	.001	*
Ca	.149	*	.052	*	.149	*	.117	*
Mn	.646	*	.655	*	.642	*	.648	*
Fe	.204	1.000	.291	1.000	.208	1.000	.233	1.000
C	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
O	3.000	*	3.000	*	3.000	*	3.000	*
Rhodochrosite	64.62		65.52		64.22		64.78	
Siderite	20.38		29.08		20.79		23.35	
Calcite	14.89		5.23		14.85		11.73	
Magnesite	.11		.17		.14		.14	
Mn	.759		.691		.754			
Fe	.240		.307		.244			
Mg	.001		.002		.002			

1 ED1-872 CARBONATE (USC)
2 ED1-872 CARBONATE (USC)
3 ED1-872 CARBONATE (USC)
4 AVERAGE

RUTILE ANALYSES

	1		2	
TiO2	90.92		92.51	
A2O3	.00		.00	
FeO	6.12		3.30	
MnO	.00		.00	
MgO	.00		.00	
SUM	97.04		95.81	
Ti	.964	*	.981	*
Al	.000	*	.000	*
Fe	.000	*	.000	*
Mn	.000	*	.000	*
Mg	.000	*	.000	*
Fe	.072	1.036	.039	1.019
O	2.000	*	2.000	*

1 S7-50a RUTILE (USC)
2 ED1-872 RUTILE (USC)

HEMATITE ANALYSES

	1		2		3	
TiO2	.25		.07		.08	
A2O3	.01		.02		.01	
F2O3	98.21		100.70		100.50	
FeO	.23		.05		.07	
MnO	.00		.01		.00	
MgO	.00		.00		.00	
SUM	98.70		100.85		100.66	
Ti	.005	*	.001	*	.002	*
Al	.000	*	.001	*	.000	*
Fe3+	.000	*	.000	*	.000	*
Fe	.005	*	.001	*	.002	*
Mn	.000	*	.000	*	.000	*
Mg	.000	*	.000	*	.000	*
Fe3+	1.989	2.000	1.997	.000	1.996	2.000
O	3.000	*	3.000	*	3.000	*

1 S7-50a HEMATITE (USC)
2 ED1-499 HEMATITE (VPI)
3 ED1-499 HEMATITE (VPI)

MAGNETITE ANALYSES

	1		2		3		4	
TiO2	.03		.19		.09		.91	
A2O3	.00		.46		.00		.00	
F2O3	68.44		66.69		68.52		66.63	
FeO	30.80		32.48		30.99		31.55	
MnO	.02		.01		.01		.06	
MgO	.01		.00		.00		.00	
SUM	99.30		99.83		99.61		99.15	
Ti	.001	*	.006	*	.003	*	.027	*
Al	.000	*	.021	*	.000	*	.000	*
Fe3+	.000	*	.000	*	.000	*	.000	*
Fe	.999	*	1.049	*	1.003	*	1.025	*
Mn	.001	*	0.000	*	0.000	*	.002	*
Mg	.001	*	.000	*	.000	*	.000	*
Fe3+	1.998	3.000	1.939	3.015	1.995	3.000	1.947	3.000
O	4.000	*	4.000	*	4.000	*	4.000	*

1 S7-50a MAGNETITE (USC)
2 ED1-499 MAGNETITE (VPI)
3 ED1-499 MAGNETITE (VPI)
4 ED1-872 MAGNETITE (USC)

	5	
TiO2	.09	
A2O3	.00	
F2O3	68.03	
FeO	30.63	
MnO	.14	
MgO	.00	
SUM	98.89	
Ti	.003	*
Al	.000	*
Fe3+	.000	*
Fe	.998	*
Mn	.005	*
Mg	.000	*
Fe3+	1.995	3.000
O	4.000	*

5 ED1-872 MAGNETITE (USC)