Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BA001	14.6	790	7.4		8.0	508	73	43	18	4.1	169	48	0.4	9.2	130
BA002	15.4	775	7.7		7.8	524	74	43	18	4.0	181	49	0.4	12	130
BA003	15.7	791	7.7		7.6	512	74	43	18	4.4	175	48	0.4	12	120
BA006	19.9	445	7.4			323	28	19	39	7.7	225	6.3	0.9	0.14	10
BA007	20.1	446	7.7			322	28	19	39	7.7	229	6.2	0.9	<0.1	11
BA008	19.9	427	7.7		0.1	325	29	19	40	7.1	230	6.1	0.8	<0.1	11
BA010	13.9	392	7.2			256	38	17	18	3.8	175	9.5	0.4	0.11	17
BA011	17.0	524	7.9			350	35	17	53	9.2	240	12	0.6	1.6	19
BA012	16.2	612	8.0			404	53	24	42	8.7	271	19	0.5	4.2	25
BA013	16.4	543	8.0			376	44	20	47	8.5	249	16	0.5	3.2	23
BA016	12.0	339	8.1			226.5	18.0	8.5	36	9.4	141	8.2	0.9	0.27	22
BA017	16.2	542	7.7		9.8	330	58	20	14	3.6	129	36	0.3	12	22
BA018	16.9	767	8.0		9.2	504	90	28	16	4.6	132	58	0.2	35	33
BA019	17.2	616	8.1		7.3	411	68	23	15	3.9	125	46	0.2	25	26
BA020	28.7	381	9.1		0.5	297	3.7	1.1	78	8.6	146	11	2.8	<0.1	21
BA021		398	8.0		1.9	282.5	15.3	9.8	47	16.2	153	9.77	0.67	1.15	31.5
BA022	21.0	403	8.0		1.5	278	16	11	50	15.0	150	8.7	0.6	1.1	32
BA023	24.2	400	7.7			297	10.0	4.7	54	29.0	144	13	0.8	0.03	49
BA025	25.4	348	8.3		1.0	259	9.3	4.9	57	7.0	141	9.8	1.8	0.18	18
BA026	25.6	341	8.4		0.8	254	9.5	4.8	57	7.1	144	9.1	1.8	<0.1	13
BA027	23.1	400	8.8		0.4	294	9.6	4.9	69	11.0	153	11	2.3	<0.1	29
BA028	24.9	379	8.7		0.7	283	7.0	3.7	68	10.0	146	13	3	<0.1	24
BA029	22.9	393	8.8		3.3	283	9.5	5.2	65	10.0	150	10	2.3	<0.1	28
BA030	22.7	396	7.8			286	14.0	6.9	54	13.0	138	11	1.7	<0.1	42
BA031	26.0	325	8.6		3.1	251	10.0	4.6	50	8.6	134	8.8	1.7	0.26	17
BA032	18.0	416	7.9			297	30	14	34	10.0	161	10	0.6	0.16	41
BA033	17.7	362	8.6		1.8	252	13	12	42	6.4	119	15	1	1.3	32
BA034	19.1	354	8.7			257	12	11	46	7.0	125	17	1.3	1.1	26
BA035	15.0	297	8.2			238.5	10.0	2.1	51	8.8	131	9	1.6	0.20	10
BA036	16.8	664	7.7		1.4	427.5	41	54	17	1.9	272	6.2	0.6	17	22
BA037	18.9	405	8.0		1.9	265	20	12	41	9.7	136	19	0.7	0.34	31
BA038	19.7	393	8.0			266	18	11	45	10.0	135	19	0.6	0.29	32
BA041	20.8	406	8.2			282	7.6	4.8	70	13.0	151	14	1.8	0.05	30
BA042	14.3	298	8.2		5.1	210	17	12	26	7.1	144	4.1	0.4	1.2	7.7
BA043	14.9	297	8.1		5.1	207	17	12	27	7.2	145	4.1	0.4	0.49	8
BA044	15.1	301	8.1		3.8	208	17	13	25	7.1	145	4.2	0.4	0.48	7
BA046	16.9	318	8.4		4.3	217	31	12	16	3.7	128	11	0.3	1.5	14
BA047	17.0	330	8.6		4.5	240	27.0	9.6	27	4.8	127	15	0.9	1.6	16
BA048	18.9	338	8.5		0.7	235	30	12	20	4.2	129	16	0.5	2.1	18
BA050	25.9	450	9.3		1.4	351	6.7	3.3	89	8.3	162	16	4.8	0.58	34
BA051	26.4	429	9.1		0.9	347	4.2	2.0	89	8.5	176	18	4.4	0.34	31
BA052	26.6	443	9.3		0.8	333	4.9	2.2	88	8.3	156	14	4.3	0.36	31
BA056			8.2			296.5	3.8	1.8	78	13.0	156	16	2.5	0.1	25
BA058	16.4	272	7.6		7.9	196	28	11	13	3.1	125	6.3	0.3	0.76	7.5
BA059	16.6	266	7.9		8.1	194	28	11	12	3.3	123	6.1	0.3	0.7	7.6
BA060		664	7.7		8.6	438	43.3	30.2	48	6.0	194	35.5	0.53	2.23	81.3
BA061	18.5	714	7.8		6.8	469	52	34	51	6.4	169	42	0.5	6	97
BA062	23.0	393	8.6			293.5	3.0	0.8	81	12.0	149	14	2.8	0.00	27
BA063	24.6	396	8.3		0.3	305	1.8	0.5	81	12.0	170	14	2.6	0.17	26
BA064	24.8	382	8.5			282	1.6	0.4	77	12.0	148	12	2.6	<0.1	26
BA065	15.8	266	7.4		8.2	192	26	11	12	2.9	123	4.8	0.3	1.8	6.2
BA066	15.9	260	7.9		8.4	190	27	11	12	2.7	127	4.9	0.3	0.54	6.3
BA067	15.9	266	7.9		8.8	187	26.0	10.0	12	2.9	121	4.7	0.3	0.56	6
BA068	16.0	404	8.1		6.3	269.5	16	25	30	2.7	150	5	0.5	5.5	30
BA069	15.5	352	8.1		8.2	254	12.8	22.2	28	2.2	146	3.47	0.58	4.86	21.8
BA070	21.3	378	9.0		5.3	294	6.8	2.6	68	11.0	151	11	1.8	0.25	22

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BA071	29.7	353	9.0	248	0.1	294	2.0	0.1	75	8.5	147	9.9	2.4	<0.1	15
BA072	30.0	348	9.0		1.2	291	1.9	0.2	75	8.1	145	11	2.5	<0.1	14
BA073	25.8	322	8.5		0.2	260	7.1	1.9	60	9.5	144	6.8	1.7	0.26	13
BA074	25.7	322	8.6	387	0.3	259	6.7	1.7	62	9.2	140	7.6	1.6	0.74	15
BA075	16.1	236	8.3			174	25.0	9.3	9.1	3.4	119	2.1	0.2	0.33	3.6
BA076	17.5	236	8.0				25.0	9.4	9.6	3.5	120	2.2	0.2	0.34	<5
BA077	17.6	243	7.8				25.0	9.1	9.6	3.6	116	2.2	0.2	0.27	<5
BA078	26.2	376	9.4		0.5	310	2.9	1.1	78	7.2	164	11	3.7	<0.1	14
BA079	26.2	362	9.2		0.7	303	2.9	1.1	77	7.4	164	12	2.8	0.1	12
BA080	24.4	399	8.3		0.3	295	17.0	4.8	57	11.0	146	18	1.5	0.24	31
BA081	12.3	288	7.9		7.4	207	23	13	20	3.4	141	2.8	0.5	0.37	8.3
BA082	20.1	282	7.8			202	22	13	20	3.5	139	3	0.4	0.51	9
BA083	19.6	290	8.0		6.9	208	23	13	20	3.5	139	2.8	0.4	0.5	10
BA084	15.5	373	7.9			254.5	15	19	32	1.7	118	24	0.8	0.63	33
BA085	16.0	405	8.1			269.5	18	25	26	2.2	125	22	0.7	0.38	44
BA087	23.0	313	8.2		0.9	250	14.0	3.9	50	7.8	128	10	1.5	0.57	16
BA088	22.9	308	8.3		0.7	241	13.0	3.5	46	8.3	132	9.7	1.5	0.77	12
BA089	23.4	313	8.1	332	0.2	245	12.0	3.1	47	8.7	130	8.8	1.5	0.35	13
BA090	14.3	355	8.2		8.9	232	43	13	8.5	2.6	143	11	0.2	4	14
BA091	13.9	341	7.6		9.3	226	44	13	8.3	2.7	137	13	0.2	3.5	12
BA092	14.2	343	7.8		7.3	225	43	12	8.2	2.5	134	13	0.2	3.6	13
BA093	14.6	354	7.7		4.4	260	23	12	32	9.1	143	10	0.6	0.32	24
BA094	19.8	356	7.9		5.1	265	22	12	32	9.2	148	12	0.5	0.68	25
BA095	20.1	365	7.9		4.4	256	22	12	31	9.0	143	12	0.5	0.35	26
BA096		540	7.7		5.2	349.5	48	32	17	5.7	216	7.2	0.6	3.9	39
BA097	14.8	707	7.8		8.0	489	52	37	44	9.2	218	21	0.7	5.9	110
BA098	16.8	661	7.9		7.1	460	44	29	50	11.0	198	23	0.6	6.9	100
BA099	15.2	396	8.0			258	39	16	12	3.1	114	26	0.3	6.6	19
BA100	17.3	377	7.6		8.8	254	40	15	13	3.3	112	27	0.3	6.1	17
BA101	17.2	386	7.8		8.3	256	39	15	14	3.2	114	23	0.3	6.4	19
BA102	15.1	817	7.4		8.0	499	64	39	33	13.0	278	18	0.3	5.7	83
BA103	15.8	743	7.7		7.8	504	63	38	33	13.0	283	20	0.3	8	80
BA104	15.1	716	7.7		7.8	469	62	39	29	8.4	275	12	0.4	9.3	60
BA105	15.9	725	7.9		1.4	465	58	30	47	6.2	225	54	0.4	3.7	80
BA106	14.9	798	7.6		7.6	506	75	38	34	3.6	241	55	0.3	6.1	80
BA107	12.0	410	8.0			268.5	18.0	8.0	46	17.0	116	12	0.6	0.02	62
BA110	18.5	378	8.1		4.5	280	22.0	7.7	43	8.8	144	11	1.1	2.4	30
BA111	18.0	377	8.1		5.2	272	23.0	7.9	42	8.9	134	13	1.1	2.6	27
BA112	14.0	217	8.2			149.5	12	15	11	1.0	99	1	0.3	0.14	13
BA114	14.0	258	8.1			179.5	16	17	13	1.3	121	2.2	0.4	0.29	14
BA115	14.6	639	7.7		7.7	416	47	30	43	5.3	236	12	0.4	8.8	53
BA116	14.8	696	7.9		6.9	457	51	34	45	4.8	235	31	0.4	12	53
BA117	14.8	998	7.6		6.2	584	76	48	48	3.4	261	61	0.4	22	50
BA119	19.6	295	8.3			255	8.6	1.9	56	7.7	139	8.1	2.1	0.02	5
BA120	14.6	251	7.7			184	22	11	13	3.2	123	3.4	0.4	1.1	5.3
BA121	14.7	259	7.7		8.0	183	22	11	13	3.1	123	3.7	0.4	1.1	5.5
BA122	15.3	349	7.7		7.8	231	31	16	15	3.4	156	7	0.3	1.6	11
BA123	19.1	307	8.2		1.0	244	9.5	2.4	55	7.5	134	10	0.5	0.35	7.7
BA124	19.2	305	7.8		0.6	237	9.0	2.2	52	7.5	131	10	1.9	0.22	7
BA125	19.2	305	8.3		1.0	236	8.8	2.3	52	7.7	137	10	2.1	0.24	7
BA126	27.9	298	8.3		0.1	245	11.0	2.9	50	7.8	143	6.5	1.5	<0.1	9.2
BA127	27.5	293	8.0		0.3	233	13.0	3.5	45	7.5	134	6.3	1.4	0.1	9
BA128	27.3	297	8.2	302	0.1	239	11.0	2.9	45	7.5	127	12	1.5	0.18	9
BA130	11.9	565	7.3		4.8	351	54	23	21	2.4	149	32	0.2	14	28
BA131	12.6	400	7.1		5.0	264	38	17	17	2.0	125	14	0.2	9	22
BA132	12.2	418	7.3		4.1	278	42	17	16	2.2	125	17	0.2	10	20

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Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BA133	26.6	282	8.0		1.3	222	12.0	3.3	41	7.4	133	5.6	1.7	0.15	5.9
BA134	26.7	283	8.2		1.5	222	13.0	3.4	42	7.4	132	5.6	1.6	0.15	6
BA135	23.6	307	8.3		8.3	244	9.2	3.0	52	7.4	148	6.8	1.6	<0.1	12
BA136	14.0	385	8.0			248.5	16	12	41	12.0	138	8	0.5	0.00	44
BA137	36.6	405	9.3		0.0	344	1.8	0.1	89	7.1	177	13	4.1	<0.1	12
BA138	36.7	394	9.2		0.2	327	1.9	0.3	87	6.8	173	13	3	<0.1	11
BA140	13.7	211	7.3		8.3	156	20.0	8.4	9.2	2.1	91	3.7	0.2	2.2	7.3
BA141	15.5	376	8.1			242.5	13.0	7.2	55	5.0	145	12	1.6	0.07	25
BA142	19.4	368	8.2		0.3	260	12.0	6.4	55	8.4	144	12	1.6	0.11	21
BA143	19.4	365	8.1		2.4	266	13.0	6.5	58	8.0	144	13	1.5	<0.1	19
BA144	17.7	350	8.3		0.4	247	13.0	4.8	48	14.0	136	10	0.6	<0.1	25
BA145	18.1	330	8.4		0.7	241	9.0	3.0	54	10.0	139	8.2	1.1	<0.1	15
BA146	18.6	304	8.3	287	0.1	214	6.9	2.1	53	9.5	134	6.9	1.3	<0.1	13
BA147	14.2	766	7.8		2.4	519	85	33	25	4.3	220	30	0.5	30	40
BA148	14.8	752	7.9		6.0	500	76	32	27	4.6	213	29	0.4	29	39
BA149	20.5	357	8.4		0.1	274	6.1	1.8	67	8.2	141	8.7	1.5	<0.1	32
BA150	21.6	377	8.3	217	0.2	275	5.8	1.6	69	8.7	169	10	1.5	<0.1	29
BA151	21.3	375	8.5		0.3	277	5.8	1.7	70	8.3	139	11	1.4	<0.1	31
BA152	18.7	310	8.2		2.6	228	14.0	8.4	38	5.6	134	7.3	1.4	2	9.2
BA153	15.7	322	8.3		5.5	233	21	13	26	5.1	135	10	0.7	3.4	13
BA154	18.7	320	8.2		2.5	241	17.0	9.3	36	5.7	134	8.5	1.2	3.7	12
BA155	14.6	411	7.6			282	34	16	29	4.7	188	8.9	0.3	2.8	14
BA156	17.3	333	8.0		4.1	238	24	11	25	7.8	119	7.6	0.5	3.9	25
BA157	17.7	326	8.0		5.7	232	21.0	10.0	27	9.1	121	6.1	0.5	3.2	22
BA158	18.2	357	8.2		5.5	248	26	13	22	7.4	127	8.1	0.4	5.1	25
BA159	14.9	333	7.9		8.4	227	34	15	15	2.1	147	7.8	0.2	2.6	10
BA160	12.9	275	7.9			182	31.0	7.4	9.1	2.0	88	12	0.1	4.9	16
BA161	14.5	245	8.2		6.0	160	24.0	7.1	12	2.6	87	9.6	0.3	2.2	11
BA162	14.1	234	8.0		6.8	161	24.0	6.6	12	2.5	82	9.4	0.3	2.2	12
BA163	19.6	368	8.0		0.2	264	18.0	8.3	43	9.9	146	12	1	0.19	28
BA164	20.9	333	8.1		0.5	251	17.0	7.2	43	8.7	140	9.6	1.2	0.13	20
BA165	21.1	333	7.9		0.4	251	16.0	6.9	43	9.1	140	9.1	1.3	<0.1	19
BA166	18.5	573	8.1		1.0	370	34	17	56	10.0	161	33	0.5	0.41	72
BA167	15.6	745	7.9		2.2	502.5	59.5	26.4	63	7.1	184	56.6	0.5	1.56	121
BA168	14.7	1245	7.6		7.4	841.5	111	47	84	7.7	239	117	0.43	4.04	241
BA170	25.9	368	8.6		0.1	287	3.9	0.5	76	8.0	149	13	1.9	<0.1	21
BA171	16.4	266	8.1			188	18.0	10.0	21	5.8	124	3.2	0.5	0.20	8.6
BA174	12.0	409	7.8			271.5	40.0	7.3	30	5.9	125	20	0.5	0.50	46
BA175	19.4	481	8.9		0.4	331	10.0	4.1	84	7.5	148	25	2.1	0.28	45
BA177	30.1	405	9.3		0.1	336	1.0	0.1	89	6.6	181	11	4.6	<0.1	5.1
BA178	32.3	408	9.4		0.3	331	1.0	0.0	90	6.6	185	12	4.9	<0.1	5
BA179	18.8	317	8.5			235.5	9.5	3.5	52	9.0	137	6.6	0.9	0.00	14
BA182	20.3	277	8.3		0.1	220	7.3	2.7	50	6.5	131	3.4	1.2	<0.1	12
BA183	20.6	277	8.2		0.1	214	7.1	2.7	49	6.8	127	3.6	1.1	0.22	10
BA185	21.0	298	9.0		0.3	241	4.6	1.5	58	7.2	151	5	2	<0.1	5.5
BA186	21.9	297	8.9	199	0.2		4.0	1.1	60	7.6	141	5.2	2.4	<0.1	<5
BA187	22.3	298	8.9		0.3		3.4	0.8	62	7.6	144	5.5	2.6	<0.1	<5
BA188	22.5	295	8.3		0.3	229	8.1	3.6	51	6.2	141	4.7	1.2	<0.1	11
BA189	12.0	350	8.0			229.5	22	11	33	8.3	144	9	0.7	0.05	25
BA190	18.0	735	7.9		6.3	457	58	24	50	9.1	121	79	0.5	3.1	110
BA191	12.3	439	7.6			287	42	16	27	3.8	193	8.3	0.3	0.72	25
BA192	24.3	319	8.8		0.2	249	4.4	1.7	62	8.0	149	6.8	2.6	<0.1	7.8
BA193	23.6	319	8.8		0.4	246	6.4	2.5	57	9.0	148	7.2	2.4	<0.1	9
BA194	31.3	319	9.0		0.1	258	2.1	0.5	67	6.9	150	6.1	3.2	<0.1	2.2
BA195	31.6	319	8.9		0.2		1.7	0.0	69	7.2	150	6.1	3.1	<0.1	<5
BA196	31.3	308	8.9		0.1		2.1	0.4	69	6.6	146	6.6	2.9	<0.1	<0.2

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BA197	15.5	602	7.8			380.5	50	20	34	9.6	120	48	0.7	3.39	80
BA198	13.5	497	8.0			330	38	14	37	10.0	124	32	0.6	1.33	65
BA199	17.2	368	8.1		4.4	246	26.0	10.0	32	6.5	130	14	0.6	0.41	31
BA200	17.1	376	7.6		2.3	253	26	11	34	6.4	130	15	0.5	0.47	33
BA201	11.6	791	7.3		7.1	501	61	28	64	4.0	243	52	0.3	7.4	74
BA202	11.9	769	7.5		9.5	494	57	26	67	3.7	243	49	0.3	9	67
BA203	12.6	798	7.4		6.9	505	63	25	69	3.5	234	49	0.3	10	70
BA204	12.3	425	7.6		9.0	269	42	18	12	1.9	117	26	0.3	7.2	28
BA205	14.8	423	7.8		8.7	268	42	18	11	1.8	114	29	0.3	7.4	29
BA206	15.9	337	8.1		7.8	233	25.0	10.0	27	8.5	124	11	0.5	0.34	31
BA207	18.3	348	8.3		4.3	239	20.0	7.1	38	9.3	119	13	0.6	0.17	35
BA208	18.3	343	8.2		4.5	244	20.0	7.4	38	9.0	123	16	0.6	0.32	34
BA209		281	7.9			204.5	22.0	8.5	25	5.0	122	7.8	0.5	0.34	11
BA210	17.8	279	7.8			202	22.0	8.0	23	5.2	123	5.5	0.4	0.43	11
BA211	18.0	287	8.0			214.5	15.0	5.8	36	6.4	128	5.5	0.9	0.18	13
BA212		273	7.8			195	21.0	8.4	23	5.1	121	5.5	0.4	0.45	11
BA213	17.8	269	7.8			198	22.0	8.2	23	4.6	121	5.2	0.4	0.50	11
BA214		273	7.9			199	22.0	8.0	23	5.2	121	4.2	0.6	0.43	12
BA215		267	7.9			190.5	21.0	8.3	22	5.1	121	4.5	0.3	0.34	10
BA216		274	7.9			199	20.0	9.1	24	5.4	124	5.2	0.4	0.41	11
BA217		284	7.8			207	22.0	8.4	25	5.1	120	7.5	0.5	0.47	11
BA218		285	8.1			208	22.0	8.2	26	5.0	123	8.2	0.5	0.41	12
BA219		272	8.1			198.5	22.0	8.0	23	5.1	122	4.5	0.5	0.41	11
BA220		274	8.1			200	22.0	8.1	23	5.1	122	6.5	0.4	0.45	9.6
BA221		271	8.0			199	22.0	8.1	23	5.1	122	5.2	0.5	0.45	10
BA222		274	7.9			198.5	22.0	7.8	23	5.1	122	5.2	0.4	0.50	11
BA223	13.1	513	7.8		8.9	338	54	21	19	1.9	180	27	0.4	11	13
BA224	13.5	366	8.0		10.6	247	39	15	13	1.6	152	13	0.4	4.5	9
BA225	13.8	310	7.9		9.2	214	35	14	10	1.6	149	5.9	0.4	1.9	6
BA226	21.3	297	8.2		1.6	232	10.0	4.8	46	5.6	151	7	1.9	0.26	8.9
BA227	22.1	291	8.1		1.4	222	9.7	4.1	48	5.6	132	7.2	1.9	0.17	9
BA228	21.1	290	8.4		2.4	214	11.0	5.0	45	5.2	130	7.1	1.6	0.3	8
BA229	11.5	608	7.8			392.5	53	24	23	4.9	107	42	0.2	27.1	30
BA231	14.1	614	8.0		3.5	377	34	24	51	8.7	192	53	0.6	5.9	24
BA232	15.4	591	8.0		3.6	370	34	23	51	8.2	171	49	0.5	6	34
BA233	14.8	587	8.1		4.7	378	34	23	52	8.8	179	53	0.5	5.3	37
BA234	20.7	327	8.4		0.8	241	9.6	3.6	54	7.0	131	12	2.3	0.2	18
BA236	14.7	355	8.0			237	21.0	6.1	43	6.5	139	14	0.3	0.33	29
BA238	15.7	328	8.1			234	9.2	1.1	62	7.4	146	11	1.5	<0.1	19
BA239	11.9	380	8.0		1.9	256	40	13	19	3.7	122	22	0.4	0.52	35
BA240	14.1	436	8.1		7.3	284	44	14	20	4.3	129	32	0.4	1.9	42
BA241	14.4	358	8.2		6.6	238	37	12	19	3.8	125	17	0.4	0.46	31
BA242	18.9	487	8.0		2.5	330	29	15	44	8.6	144	33	0.6	2.4	49
BA243	17.0	508	8.1			328	5.6	3.2	86	26.0	174	14	1	0.11	50
BA252	27.0	373	8.75	117.4	0.77		4.3	0.5	75	1.5	132	10.9	2.47	<0.1	18.2
BA253	21.1	319	8.69	118.1	0.02		3.8	0.4	68	1.2	136	6.2	2.38	<0.1	7.5
BA254	21.0	354	8.32	65.6	0.05		4.2	1.8	70	5.7	121	10.2	0.57	<0.1	25.4
BA255	30.1	377	9.07	131	0.56		0.9	0.0	83	5.7	147	6.8	3.22	<0.1	7.3
BA256	12.9	335	6.29	243.6	3.09		30.7	13.1	23	5.1	103	9.3	0.30	3.32	15.4
BF002	21.0	506	8.6			354	1.9	0.5	115	11.0	244	15	1.8	0.00	0
BF003	17.7	282	8.1		0.4	186	18.0	7.1	29	6.1	109	6.6	0.6	0.14	17
BF004	17.5	337	7.9		1.7	242	25.1	10.4	27	8.3	132	10.2	0.49	1.75	28.2
BF006	18.4	412	7.8		2.2	298	24	19	29	10.0	135	9.5	0.9	1.6	52
BF007	19.2	412	7.8		1.7	293	24	19	30	10.0	137	11	0.9	1.7	52
BF008	19.6	415	8.0		2.4	291	24	19	30	10.0	137	9.9	0.8	1.6	53
BF010	22.0	261	7.7		4.6	216	17.0	7.1	24	6.3	98	7	0.7	0.93	19

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BF011	22.8	261	7.9		4.9	217	17.0	7.4	25	6.7	100	7.3	0.6	1	20
BF012	23.0	261	8.0		4.8	213	17.0	6.9	24	6.5	98	7.2	0.6	0.87	21
BF013	17.3	616	8.0		7.2	412	61	23	31	6.6	180	31	0.4	5.6	87
BF014	19.1	716	7.9		10.2	483	46	25	61	9.4	114	74	0.4	11	92
BF016	15.0	503	7.7			327	51	18	31	2.5	198	11	0.2	0.09	53
BF019	16.4	586	8.3		2.6	415	33.0	8.9	80	19.0	162	34	0.3	1.9	100
BF020	17.4	598	8.3		0.6	396	29.0	8.1	80	20.0	164	29	0.4	1.6	89
BF021	17.7	568	8.2		0.8	403	30.0	8.5	81	18.0	162	31	0.3	1.7	94
BF022	14.0	843	7.7			570	90	39	21	4.6	172	51	0.4	7.46	158
BF023	21.1	384	7.8		3.3	309	19.0	7.3	47	11.0	144	8	1	4.1	27
BF024	22.2	373	8.0		3.2	293	19.0	7.2	46	11.0	130	8.6	1	3.4	27
BF025	21.4	375	8.2		3.4	297	18.0	6.9	46	11.0	139	8.7	0.9	3.4	27
BF027	14.5	570	7.8		8.8	373	53	22	29	6.9	214	23	0.3	4	68
BF029	12.3	387	8.3		3.4	285	6.8	1.9	72	13.0	167	14	1.7	<0.1	14
BF030	19.5	256	8.0			212.5	12.0	6.1	29	5.8	102	8.2	0.9	0.16	15
BF031	16.5	239	7.4		5.3	163.5	28.0	6.8	10	2.8	88	5.5	0.3	0.59	15
BF032	16.4	258	7.4		6.0	179	29.8	7.4	11	3.1	103	6.92	0.38	0.61	17.6
BF034	17.1	740	7.6		8.4	487	66	38	21	5.1		51	0.3	7.9	120
BF036	17.4	724	7.7		7.5	498	69	38	21	5.1	156	53	0.3	7.6	130
BF037	17.7	743	7.8		7.8	497	72	39	22	5.1	152	54	0.3	8.2	120
BF038	13.5	151	7.3			110	17.0	3.8	7.8	1.9	59	4	0.3	0.14	12
BF039	11.0	322	7.8			218	22	12	27	6.4	138	5.2	0.5	0.86	17
BF040	23.5	390	8.1			278	9.3	3.2	62	13.2	124	11.7	1.17	0.53	38.5
BF041	23.8	391	8.4		0.3	281.5	11.0	4.0	64	11.0	119	13	1.3	0.79	41
BF043	27.6	386	8.6			285	0.8	0.4	78	17.0	149	14	2.2	0.00	19
BF044	28.5	385	8.4		3.8	286	0.8	0.3	76	16.0	149	14	2.4	0.22	19
BF045	29.4	386	8.4			285	0.8	0.4	75	15.0	154	15	2.4	<0.1	20
BF047	9.4	310	8.0		7.7	231	27	12	18	4.7	127	10	0.6	1	19
BF048	19.3	311	7.9		6.4	221	27	13	18	5.1	127	8.6	0.5	0.99	20
BF049		310	8.0		7.4	212	25	12	18	4.9	125	9.2	0.5	0.95	21
BF050	14.0	355	7.8			237.5	32.0	10.0	27	4.6	151	8	0.6	2.49	14
BF051	17.2	407	8.8		0.1	277	9.5	2.2	76	6.9	161	9.2	0.8	<0.1	33
BF052	16.6	395	8.7	367	0.4	265	13.0	3.1	69	6.9	154	7.8	0.7	0.54	44
BF053	18.2	479	7.8		6.0	330	28	13	52	5.8	171	11	1.3	5.5	43
BF054	18.4	446	7.8		6.6	312	25	13	51	5.8	164	10	1.2	4.5	39
BF055	18.3	419	7.9		5.8	283	23	11	48	5.5	154	9.4	1.3	3.9	33
BF056	25.0	352	8.8			268	3.1	0.3	72	9.0	131	11	1.7	0.00	27
BF057	20.7	576	7.7		3.4	387	46	21	33	11.0	150	33	0.4	8.1	49
BF058	20.8	581	7.6		7.5	404.5	47.3	19.9	40	11.4	167	33.1	0.42	7.73	58.6
BF059	21.7	580	7.6		4.5	395	44.1	18.1	43	11.8	179	41	0.49	3.86	50.5
BF060	21.1	605	7.5		6.1	388.5	44.2	19.2	42	12.2	169	34.8	0.55	5.51	48.7
BF061	18.5	311	7.9			223.5	26	12	18	5.3	113	10	0.5	1.99	22
BF063	15.5	308	8.0			206	30	15	11	2.5	124	4.8	0.4	3.16	14
BF067	16.3	811	7.7		3.8	518	73	36	41	5.7	239	54	0.4	7	92
BF068	16.8	809	7.7		3.6	523	74	37	41	5.9	244	56	0.3	7	90
BF069	18.6	826	7.7		2.9	520	77	37	40	5.9	243	55	0.3	5.8	92
BF071	28.3	786	7.4		0.1	549	35	36	81	21.0	405	14	0.7	0.39	16
BF072	29.6	769	7.2		0.1	544	35	36	82	18.0	402	13	0.7	0.29	17
BF073	29.1	784	7.5		0.1	545	37	35	80	19.0	401	16	0.6	0.48	17
BF074	17.1	445	7.6		7.7	304	33	21	22	6.4	152	11	0.5	1.9	49
BF075	17.4	433	7.8			312	34	21	22	6.0	158	14	0.5	1.9	48
BF076	17.7	443	8.0		7.8	315	36	21	22	6.4	158	17	0.4	2	55
BF078	11.5	735	7.7			460.5	74	32	24	7.8	128	66	0.4	12.4	93
BF079		618	7.7		5.5	430.5	44.6	27.9	36	15.5	171	29.6	0.43	7.44	77.9
BF080	20.2	617	7.8		3.8	410	42	26	38	15.0	146	32	0.4	7.3	77
BF083	14.9	380	7.5		8.5	262	29	18	21	4.7	154	8.3	0.5	1.4	29

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BF085	16.7	377	7.7		8.2	265	28	19	21	5.1	159	7.9	0.5	1.3	31
BF086	16.5	379	7.7		7.6	261	30	19	22	4.8	156	7.7	0.4	1.2	28
BF087	13.5	1570	7.9			1130	140	106	42	7.8	241	128	0.3	22	368
BF088	22.3	395	7.9			275.5	21	12	43	7.9	152	13	1	0.36	31
BF089	15.6	395	8.2			269.5	20	12	45	8.0	149	14	1.1	0.25	30
BF090	23.5	411	8.0			277	21	11	43	8.2	152	10	1	0.43	29
BF091		377	8.2			269	19	11	45	7.8	154	11	1	0.226	24
BF092	23.9	377	7.9			267.5	20.0	10.0	45	8.1	152	12	1.1	0.18	25
BF093	21.7	386	7.9			270	20.0	10.0	45	7.6	155	11	1	0.226	24
BF094		398	8.0			270	21	12	43	8.1	153	13	0.9	0.45	30
BF095	21.1	389	8.1			247.5	20	11	44	7.7	149	14	1	0.20	28
BF096		388	7.9			269	21	12	42	7.8	148	14	1	0.52	28
BF097	15.5	373	8.0			268	15.0	10.0	48	7.5	149	13	1	0.16	26
BF098		410	8.0			277.5	22	12	44	8.0	148	17	1	0.47	34
BF100		407	7.9			279.5	20	12	43	8.3	148	14	1	0.32	32
BF101	22.3	403	7.8			281	22	11	44	8.2	149	14	1	0.41	33
BF102		412	7.9			293	22	12	44	7.0	148	17	0.7	0.59	34
BF103	22.8	378	7.9			264	18	11	45	7.8	153	11	1.1	0.14	24
BF104		378	7.7			271	21	12	43	6.9	154	12	1	0.11	27
BF105	21.5	385	8.1			266	20.0	10.0	44	7.6	153	13	1	0.18	25
BF106	20.5	386	8.1			265.5	20.0	9.9	44	7.6	152	11	0.9	0.20	24
BF108	20.2	532	7.6		3.2	352	52	21	24	6.7	226	18	0.4	2.2	30
BF109	20.4	542	7.6		3.1	367	55	23	26	7.2	232	21	0.3	2.3	31
BF110	20.4	559	7.6		3.0	346	53	22	25	7.3	228	19	0.3	2	32
BF111	22.5	319	8.72	125.6	0.09		3.4	1.1	67	3.6	129	3.8	0.37	<0.1	12.3
BF113	21.2	320	7.7	-62	3.2		20.3	10.1	28	32.6	122	4.8	0.35	0.83	15.8
BF114	21.0	488	7.57	169.4	3.46		36.5	14.1	45	10.9	115	24.5	0.53	3.96	52.7
BF115	22.5	460	7.5	181.8	2.03		41.6	14.8	33	7.7	148	16.8	0.67	2.82	30.1
BF116	21.2	320	7.7	-62	3.2		21.2	10.3	28	33.1	118	4.7	0.33	0.82	15.2
BF117	21.0	488	7.57	169.4	3.46		35.7	14.1	45	10.7	120	23.9	0.56	3.77	50.5
BG029	17.0	365	7.4		3.4	264	34	16	18	5.1	176	6.1	0.4	1.1	16
BG030	18.4	331	7.6		3.2	235	29	14	17	5.0	148	5.1	0.4	0.84	15
BG031	16.7	389	7.2		5.5	278	39	17	18	5.2	171	6.2	0.4	2.4	18
BG033	14.3	357	8.0			266	46	12	8.6	4.1	132	11	0.2	1.2	38
BG034	15.3	356	7.9		9.6	231	46	11	10	4.1	128	10	0.2	1.3	39
BG036	22.6	271	8.1		2.5	214	18.0	5.2	32	8.1	119	5.1	0.8	1.8	17
BG037	22.9	283	8.2		1.1	216	17.0	5.6	31	9.6	117	4.3	0.9	1.4	14
BG038	30.0	457	8.0			323.5	7.0	0.4	80	26.0	177	12	1.2	0.11	29
BG039		451	8.1			320.5	7.0	0.8	80	26.0	177	12	1.2	0.02	28
BG040	15.5	416	7.7		2.6	265.5	57	14	5.4	4.5	152	10	0.1	1.7	49
BG041	23.7	251	8.3		0.6	202	13.0	5.3	30	8.8	120	2.8	0.9	<0.1	12
BG042	23.2	247	8.3			200	13.0	5.2	30	9.3	112	2.6	0.9	<0.1	13
BG043	28.0	291	7.7			229.5	24.0	9.3	20	12.0	116	6.2	0.5	0.02	27
BG044		310	7.7			226.5	28	11	19	6.0	126	5.2	0.3	0.43	21
BG045	27.5	289	7.8			229	24.0	8.5	17	17.0	117	5.4	0.4	0.01	31
BG046	21.0	330	7.9			268	12.0	4.5	47	19.0	129	9.7	0.4	0.25	25
BG047	26.4	291	8.1			218.5	24.0	8.6	17	11.0	116	5	0.4	0.00	24
BG051	21.6	217	8.2		0.1	128	13.0	6.0	21	7.8	98	1.9	0.7	<0.1	13
BG052	21.7	215	8.1	215	0.1	174	13.0	5.7	20	7.9	95	1.7	0.7	<0.1	13
BG053	16.5	298	7.9			228.5	21.0	8.8	26	12.0	120	5.8	0.6	0.02	25
BG054		303	8.4			223	11.0	3.3	41	17.0	119	4.3	0.3	0.05	24
BG056	18.0	221	8.1			148.5	24.0	7.9	7.6	3.5	89	3.2	0.2	0.54	15
BG059	21.1	403	7.5		0.5	279	30	16	30	6.2	156	7.9	0.7	0.36	39
BG060	21.6	394	8.0		0.1	273	29	16	29	6.4	161	8	0.7	<0.1	38
BG061	21.4	396	8.0	36	0.1	284	30	16	30	6.5	158	8.1	0.6	<0.1	42
BG062	18.3	542	7.7		3.8	375	42	23	38	8.6	166	21	0.5	2.4	72

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BG063	20.5	513	8.0		0.5	354	36	18	41	11.0	166	21	0.6	1.3	71
BG064	20.9	513	7.9		0.6	337	32	15	45	12.0	165	18	0.6	0.31	70
BG066	23.5	566	7.9			383.5	40	24	45	10.0	207	19	0.6	0.02	69
BG067		590	8.0			385.5	40	24	49	10.0	207	21	0.6	0.07	70
BG068		587	8.0			386	39	24	49	10.0	208	22	0.7	0.05	69
BG069		584	8.0			385	40	23	48	11.0	207	20	0.7	0.1	72
BG070		587	8.2			385	40	24	48	10.0	207	20	0.6	0.1	73
BG071		617	7.9			414.5	40	28	50	11.0	200	22	0.6	0.05	95
BG072	15.6	598	7.9			389.5	40	24	49	10.0	208	22	0.6	0.00	72
BG073	23.5	575	7.7			382.5	38	24	45	9.6	205	19	0.7	0.02	68
BG074	24.5	581	7.9			374.5	40	24	45	10.0	208	18	0.8	0.05	70
BG075		776	7.7			519.5	58	37	50	11.0	192	37	0.6	1.22	156
BG076	23.3	584	7.9			395.5	40	24	49	11.0	204	20	0.6	0.09	82
BG077		606	8.0			409	42	27	49	11.0	203	18	0.6	0.07	97
BG078		612	7.9			411	41	26	49	11.0	202	20	0.6	0.09	95
BG079		612	7.8			413	40	27	50	12.0	198	22	0.7	0.18	93
BG080		639	7.9			433.5	44	27	52	11.0	199	26	0.7	0.16	100
BG081	17.5	941	7.3		3.5	658	72	62	36	11.0	188	31	0.5	5.2	250
BG082	16.7	801	7.7		4.3	554	61	53	28	7.9	217	24	0.6	3.9	180
BG083	18.1	985	7.6		4.1	674	73	63	35	9.5	215	29	0.5	4.8	260
BG084	12.8	1030	8.0			664.5	69	88	18	0.9	278	46	0.8	10.2	188
BG086		312	8.2			260	9.0	2.0	57	10.0	139	6.8	1.2	0.1	14
BG087	22.0	321	8.4			263.5	8.0	2.1	57	10.0	139	7.2	1.2	0.02	15
BG088	22.2	322	8.2			264	8.5	2.0	59	10.0	141	8	1.2	0.00	14
BG089	16.3	698	7.7		0.1	464	35	28	67	8.6	202	18	0.5	21	45
BG090		357	8.0			264.5	12.0	7.3	55	8.3	146	10	0.9	0.11	23
BG091	18.9	313	8.4			267.5	9.5	1.4	57	9.8	139	7.8	1.1	0.00	14
BG092		490	8.7			356	8.0	1.9	97	9.8	153	53	1.7	0.07	14
BG093	16.4	788	8.0		0.1	557	37	31	73	9.6	213	21	0.4	35	46
BG094		316	8.4			260	9.0	1.9	58	9.8	139	7.5	1.2	0.02	14
BG095	21.7	712	7.4		0.3	472	33	24	68	11.0	175	26	0.5	23	54
BG096		313	8.1			253.5	8.5	1.9	58	10.0	137	7.2	1.2	0.05	14
BG097		314	8.5			260	8.5	1.9	57	9.3	138	8	1.2	0.1	14
BG098	23.5	317	8.4			267	8.5	1.9	57	9.9	140	6.5	1.3	0.02	15
BG099		318	8.4			262.5	8.5	1.7	58	10.0	139	6.5	1.3	0.02	13
BG100		319	8.4			262.5	8.5	1.8	58	10.0	139	8.5	1.2	0.02	13
BG101		314	8.3			259.5	8.5	1.8	58	11.0	139	7.2	1.2	0.02	13
BG102		319	8.4			262.5	8.5	1.6	59	10.0	139	8.2	1.1	0.1	14
BG104	17.5	505	7.5		2.6	352	38	20	36	8.7	159	16	0.6	2.1	68
BG107	16.6	471	7.8		8.4	331	36	21	28	5.6	161	15	0.6	4.9	48
BG108	20.9	572	7.8		3.4	372	37	18	46	13.0	173	34	0.5	1.5	57
BG109	19.4	594	7.7			401.5	39	20	46	12.0	184	38	0.6	2.6	68
BG110	14.5	535	7.8			371	45	21	29	6.0	114	34	0.5	4.97	79
BG112	12.5	878	7.6		6.3	564.5	65	36	68	2.5	307	30	0.5	7	100
BG113	16.2	647	7.6		7.0	432	48	26	47	5.9	167	39	0.8	3.7	93
BG114	17.0	681	7.8		7.0	463	50	28	48	6.3	167	47	0.7	5	110
BG115	16.7	653	7.8		6.8	426	49	26	46	6.1	169	39	0.7	3.6	94
BG116	16.6	592	7.8		7.7	392	13	15	86	7.4	185	22	0.5	5.5	67
BG117	23.6	968	7.3		4.8	678	47	31	110	13.0	162	22	1.1	0.1	280
BG118	24.2	942	7.6		4.8	678	45	31	110	13.0	169	25	1.1	0.11	280
BG119	25.2	945	7.6		3.0	658	46	29	110	12.0	167	21	1	0.11	270
BG121	16.7	801	7.4		0.7	528	48	35	72	8.9	258	37	0.6	<0.1	120
BG122	14.9	872	7.7		7.5	585	58	55	38	6.2	249	46	0.4	14	110
BG124	16.5	432	7.9			287	30	25	25	2.6	177	6	0.8	0.16	43
BG127		579	7.7		7.7	397	40.9	31.1	32	7.1	189	27.1	0.47	7.9	55
BG128	19.2	611	7.7		8.0	406	43	31	31	7.6	185	28	0.4	8.1	61

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BG130	15.1	239	8.1		4.1	173.5	16	14	12	0.7	116	1.8	0.5	0.32	12
BG132	16.9	345	7.7		8.8	245	29	21	8.6	1.5	136	12	0.7	0.99	26
BG133	17.1	384	7.9		8.9	267	33	23	9.5	1.8	140	17	0.6	1.6	31
BG134	16.8	437	7.8		8.9	294	37	26	9.9	1.7	139	25	0.6	2.4	37
BG137	15.5	462	7.8			308	42	25	14	2.4	139	33	0.7	2.49	35
BG139	15.4	540	7.6		7.5	346	50	31	13	2.3	210	14	0.5	4.1	40
BG154	20.4	557	7.6		0.2	382	46	27	31	8.0	229	21	0.4	3.2	37
BG155	19.9	554	7.6		0.2	383	47	27	31	8.2	229	22	0.5	2.8	36
BG156	20.1	557	7.6		0.5	365	45	26	30	8.3	228	18	0.4	2.6	33
BG157	21.8	445	8.4		0.3	305	4.2	1.9	84	12.0	159	16	1.8	0.21	35
BG158	22.4	442	8.5		0.4	316	3.9	1.8	86	12.0	166	18	1.8	0.39	36
BG159	22.6	440	8.5		0.7	312	4.1	1.7	84	13.0	158	18	1.7	0.42	37
BG161	16.1	329	7.8		3.5	217.5	31	11	20	1.8	145	2.5	0.9	1.2	21
BG163	14.8	1110	7.6		7.6	719	87	59	46	4.2	136	100	0.5	19	200
BG164	14.8	1055	7.8		6.9	746	92	59	45	4.2	154	97	0.5	24	200
BG165	14.9	1095	7.7		6.3	726	89	55	44	4.5	153	93	0.5	26	180
BG166	15.0	637	7.9			446.5	53	34	28	3.5	148	38	0.6	16.0	65
BG168	15.5	745	7.9			512.5	63	36	29	3.6	131	62	0.5	21.0	76
BG170	16.0	461	7.9		5.5	304	25	16	47	5.8	156	14	0.4	3.1	47
BG171	16.0	351	8.1			241	16	11	42	6.1	129	6.8	0.4	1.2	36
BG172	13.4	430	7.8		9.0	302	11.0	10.0	67	3.0	139	12	0.7	2.5	52
BG173	14.3	460	8.0		8.8	335	9.5	9.5	79	2.2	176	13	0.6	3.5	42
BG174	14.7	403	7.7		8.5	278	11.0	9.3	60	2.6	156	7.7	0.6	2.1	33
BG175	17.1	389	7.7		8.9	266	34	18	16	2.7	136	14	0.5	5.1	25
BG176	15.7	447	7.8		8.4	301	40	23	15	3.0	162	16	0.5	4.4	36
BG177	16.0	452	7.8		7.6	300	41	23	15	2.9	161	13	0.5	4.4	35
BG178	15.5	612	7.8			411	54	36	20	3.3	190	32	0.5	5.42	62
BG179	16.0	351	7.8		3.1	246	28	17	21	3.5	132	5.4	0.6	0.82	31
BG183	20.1	422	7.5		0.4	303	30	15	36	9.3	182	6.9	0.5	2	26
BG184	20.2	412	7.7		0.4	297	30	15	34	8.5	182	6.5	0.5	2.2	23
BG185		508	7.8			339	32	20	43	6.4	150	26	0.5	3.62	58
BG186		340	7.9			236	29	19	12	3.5	145	6.9	0.4	2.19	15
BG187	19.2	492	7.7		7.2	350	38	21	33	4.6	180	10	0.5	5.5	51
BG188	19.6	458	7.6		5.0	329	36	19	32	5.0	170	8	0.5	4	43
BG191	15.8	1070	7.4			711	72	37	110	11.0	370	63	0.6	3.7	110
BG192		363	8.3			262.5	8.0	2.1	64	10.0	134	17	2.5	0.20	19
BG194	14.5	585	7.8		8.8	381	53	38	10	2.4	233	16	0.3	4.4	46
BG195	15.4	608	7.8		8.3	403	59	40	10	2.4	243	23	0.3	4.5	50
BG196	15.5	605	7.8		5.8	381	55	38	10	2.4	239	14	0.3	4.5	46
BG198	15.0	198	8.1			144.5	11.0	4.5	24	2.7	87	1	0.4	0.07	13
BG202	13.0	531	7.9			341	50	24	20	2.3	158	35	0.6	1.58	54
BG203		454	8.8		0.3	336	3.6	0.9	99	11.0	188	15	2.3	0.17	29
BG204	16.7	390	7.6		6.1	264.5	37	16	22	3.1	162	4.8	0.6	3.3	29
BG205	14.7	389	7.6		9.6	264.5	36	14.6	20	3.3	166	4.49	0.59	2.65	23.6
BG207	15.3	455	7.6		5.2	299.5	40.9	23.9	18	3.8	175	9.77	0.35	3.84	22.9
BG208	15.8	480	7.6		6.0	319.5	43.6	25.5	18	4.0	189	27.1	0.34	3.78	19.7
BG210	15.4	465	7.6		5.2	312	43.6	25.7	18	4.2	197	13.6	0.36	4.08	21.7
BG211	24.2	398	9.0		0.0	293	1.2	0.1	84	5.7	139	16	2.4	<0.1	27
BG212	23.3	405	8.9	95	0.4	289	4.0	0.9	79	8.0	138	17	2.1	<0.1	30
BG215	16.4	525	7.8		5.2	353	34	29	33	2.3	162	13	0.5	13	36
BG216	16.5	486	7.7		5.5	324.5	46	21	28	3.1	185	6	0.6	6.1	34
BG217	14.4	514	7.8			327	37	31	16	4.3	148	36	0.4	1.45	55
BG219	15.2	334	7.7		6.0	238	22	13	28	3.4	143	3.8	0.7	1.6	24
BG220	15.0	347	8.0		6.1	253	24	14	29	3.5	148	4	0.6	1.8	25
BG221	15.2	364	7.7		6.1	248	24	13	28	3.9	152	4.3	0.6	2	25
BG222	18.5	380	8.7			283.5	2.8	0.2	79	11.0	143	16	1.6	0.09	24

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Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BG224	15.5	394	8.1			259	31	25	11	2.7	144	17	0.6	0.93	29
BG225		403	8.0			263	27	18	32	5.9	181	6.8	0.6	0.02	27
BG228	23.1	370	9.0		0.2	286	1.3	0.3	79	6.6	139	18	2.3	<0.1	23
BG229	22.8	366	9.1		0.2	280	3.3	1.0	77	6.9	137	16	2	<0.1	22
BG230	22.9	441	8.0			309	28	18	30	6.6	129	24	0.5	4.6	44
BG231	21.7	436	7.9		5.8	288	28	18	29	6.7	130	22	0.4	4.5	41
BG232	16.2	609	7.6		5.5	393.5	41	35	26	4.5	177	23	0.5	11	70
BG233	14.4	352	8.2			240.5	15.0	7.2	46	9.8	129	12	0.8	0.02	28
BG234		371	8.1			249.5	16.0	6.7	50	10.0	133	14	1	0.1	32
BG235		372	8.1			251.5	16.0	6.6	50	10.0	133	14	1	0.02	32
BG236		350	8.1			248	16.0	6.9	46	10.0	130	14	0.8	0.1	29
BG237		362	8.0			254.5	16.0	7.1	50	10.0	133	14	0.9	0.05	33
BG238	19.5	386	7.8			273.5	33	12	32	5.2	170	5.5	0.5	0.59	24
BG241	21.6	393	9.2		0.0	302	4.3	1.4	80	6.4	149	20	3.1	0.22	22
BG242	21.2	392	9.2		0.2	289	3.9	1.2	78	6.5	151	19	2.8	0.1	15
BG243	21.9	344	8.8		0.1	259	4.0	0.9	66	9.5	140	17	2.2	<0.1	12
BG244	22.3	344	8.8		0.3	226	2.8	0.5	68	9.0	135	16	2.3	<0.1	10
BG245	22.4	335	8.8	194	0.2	252	2.4	0.3	68	8.9	133	14	2.2	<0.1	11
BG248	14.0	317	8.1			227.5	17.0	8.0	37	9.3	124	11	0.7	0.05	27
BG249	14.0	320	7.9			223	20.0	6.7	36	9.0	121	11	0.8	0.00	25
BG250	14.0	329	8.2			229	16.0	8.6	38	9.4	124	11	0.7	0.00	24
BG252	19.5	316	8.1			227	18.0	9.3	37	7.9	126	9.6	0.6	0.09	27
BG253		331	8.0			229	17.0	8.0	39	9.1	125	12	0.8	0.02	26
BG254	21.7	326	7.7		2.8	235	17.0	8.1	38	8.8	125	11	0.7	0.28	26
BG255	22.0	315	8.0			227.5	17.0	8.6	35	12.0	136	8.9	0.6	0.05	25
BG256		315	8.1			225.5	18.0	8.3	37	8.5	127	9	0.6	0.07	24
BG257		327	8.0			228.5	17.0	8.1	38	9.0	125	12	0.8	0.1	26
BG258		321	8.0			234	16.0	8.7	38	8.8	123	11	0.7	0.1	26
BG259		331	8.0			231	16.0	8.6	38	9.2	126	11	1	0.07	26
BG260	14.0	327	8.1			223	18.0	7.8	35	9.3	124	10	0.6	0.07	25
BG261	21.6	336	8.1		2.2	239	19.0	8.7	37	9.0	130	11	0.7	0.54	26
BG262	21.1	339	8.0		1.4	243	20.0	8.8	37	8.7	127	12	0.6	0.6	26
BG263	19.5	317	8.1			225	17.0	8.4	34	8.7	125	9	0.6	0.18	24
BG264	15.5	314	8.2			221	17.0	6.9	38	9.3	125	9.5	0.6	0.05	25
BG265	15.5	326	8.1			216	21.0	9.8	32	8.0	125	9	0.5	0.27	24
BG266	15.6	320	8.2			219.5	16.0	7.8	38	9.4	124	9.5	0.7	0.00	24
BG268		320	8.0			217	16.0	7.8	37	8.9	126	10	0.7	0.02	23
BG269		312	8.1			213.5	16.0	7.6	38	8.9	126	9	0.6	0.1	22
BG270		313	8.1			224	16.0	7.5	37	9.4	124	9.5	0.6	0.1	23
BG271		330	8.0			228.5	16.0	9.1	37	12.0	130	8.2	0.6	0.02	26
BG272	10.0	312	7.9			213.5	16.0	7.7	35	7.6	125	9	0.5	0.02	23
BG273	15.5	317	8.0			215	16.0	7.8	37	9.3	123	9.2	0.6	0.02	24
BG275	14.0	330	8.2			229.5	17.0	6.4	39	12.0	128	9.2	0.7	0.02	25
BG276	14.0	371	8.0			258.5	32	18	20	4.1	139	10	0.3	2.71	28
BG277	13.9	326	8.1			229	16.0	7.4	39	11.0	127	8.8	0.7	0.00	24
BG279	19.5	334	7.9			237	24	14	26	7.9	134	8.6	0.6	0.81	26
BG280		451	7.9			290.5	37	22	22	4.5	161	14	0.5	4.07	35
BG281	18.5	319	8.0			233.5	26	16	17	5.0	134	6.1	0.2	1.90	21
BG282		328	8.1			238.5	26	16	18	3.8	133	7.9	0.2	2.19	25
BG283		434	7.9			287	34	21	25	5.0	156	14	0.4	3.62	34
BG284		325	8.1			233	17.0	7.0	39	11.0	127	9.2	0.7	0.1	26
BG285		462	7.8			314	38	24	23	4.7	168	16	0.3	3.84	38
BG286	14.0	365	8.1			253	29	18	19	4.3	137	9.5	0.3	3.39	26
BG287		317	7.5			232.5	26	16	17	4.3	131	7.1	0.3	1.36	21
BG288		317	7.5			232.5	26	16	17	4.3	131	7.1	0.3	1.36	21
BG289	19.5	349	8.0			243	29	15	18	3.8	134	8	0.1	2.94	15

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BG290	15.5	237	8.0			181	8.5	5.6	35	4.2	104	1.5	0.6	0.20	15
BG291	20.9	342	7.7		4.2	257	25	11	30	6.1	148	4.6	0.5	2.9	17
BG292	20.7	343	7.6		3.8	247	23.0	10.0	28	6.0	148	4.5	0.5	2.8	17
BG293	14.0	276	7.5			209	24.0	9.7	16	3.2	100	7.2	0.3	2.94	17
BG294	14.0	269	8.1			206	25.0	9.9	16	2.6	99	7	0.3	2.49	17
BG295	13.9	273	8.0			208	22.0	10.0	16	2.9	98	7	0.4	2.49	17
BG297		283	7.8			211	24.0	10.0	17	2.9	98	8.2	0.4	2.94	20
BG298		271	7.9			216	24.0	10.0	16	2.7	98	7.5	0.4	2.49	17
BG299		281	7.7			213	23	11	17	2.9	100	7.5	0.3	2.71	18
BG301	14.0	266	8.0			211.5	24.0	10.0	16	2.7	98	7.5	0.4	3.62	17
BG302	13.0	509	8.0			327.5	48	17	33	7.3	203	13	0.3	1.65	40
BG303	13.0	515	7.8			336.5	55	17	31	7.4	204	16	0.2	0.93	47
BG304	12.8	531	8.0			340	50	18	35	7.7	225	11	0.3	1.13	36
BG306	13.5	440	7.7			295	42	15	29	7.0	180	10	0.2	1.22	34
BG307		478	7.7			305.5	46	17	31	6.9	207	8.2	0.4	1.97	28
BG308		398	7.8			268.5	37	13	30	6.2	176	6.5	0.3	0.93	23
BG309		471	7.8			303	44	17	32	7.3	205	8.8	0.5	1.79	29
BG310		438	7.7			289	40	16	32	6.9	193	7	0.4	1.40	26
BG311	13.0	538	7.9			343	54	20	32	7.1	199	21	0.3	0.93	51
BG312		344	8.0			236	31	12	21	4.5	119	13	0.3	4.52	21
BG315	15.4	858	8.1			603	82	33	36	5.5	102	120	0.4	8	140
BG317	13.0	501	7.6			319.5	44	17	36	9.2	217	6.8	0.3	2.94	28
BG318		609	7.8			381.5	59	22	40	11.0	280	10	0.4	1.56	34
BG319	13.7	560	7.5			350.5	50	20	39	10.0	261	3.8	0.4	2.49	23
BG320		609	7.8			381.5	59	22	40	11.0	280	10	0.4	1.56	34
BG321		584	7.6			372.5	56	21	42	11.0	284	6.5	0.4	2.15	23
BG322		516	7.6			338	49	18	37	9.8	235	9.5	0.3	1.18	32
BG323		604	7.7			385.5	57	24	41	11.0	280	11	0.3	1.29	35
BG328	14.4	535	8.1		8.8	360	23	48	18	2.6	192	20	0.6	3.6	62
BG329	16.1	575	7.9		7.4	370	27	49	18	3.1	186	21	0.6	4.3	69
BG330	16.4	424	7.7		8.1	276	45	18	19	2.3	210	1.8	0.4	1	19
BG335	15.6	550	7.7		8.1	367	50	20	31	4.1	158	25	0.4	4.3	64
BG336	16.6	517	7.5		7.9	369.5	49.4	19.7	33	3.9	157	21.9	0.42	6.61	59.9
BG337	16.0	537	7.5		9.6	370.5	49.2	19.5	33	4.2	154	23.8	0.43	5.83	61.4
BG338	16.2	545	7.4		7.5	381.5	51.6	20.7	32	4.1	181	24.3	0.43	6.51	64.1
BG345	18.2	362	8.0		0.3	244	19.0	8.9	40	8.3	136	12	0.6	<0.1	28
BG347	18.2	357	8.0	263	0.2	244	19.0	8.8	39	9.0	130	12	0.6	<0.1	30
BG348	14.9	207	7.4		8.4	136	22.0	8.5	5.0	3.5	85	2.2	0.2	0.78	15
BG349	15.7	206	7.1		8.3	143	23.0	7.9	7.8	3.4	93	1.8	0.2	0.56	14
BG350	14.7	204	7.3		8.1	136	22.0	7.7	8.1	3.1	92	1.7	0.2	0.49	13
BG351	15.5	323	7.5			235.5	36.0	8.7	17	3.5	115	8	0.7	0.52	36
BG352	15.7	388	7.7		9.1	264	35	13	26	5.2	154	7.6	0.3	3.9	22
BG353	13.4	658	7.5		9.5	431	63	31	25	7.4	249	29	0.3	5.6	44
BG354	23.6	377	8.7		0.4	286	15.0	2.4	57	11.0	131	20	1.1	<0.1	34
BG355	23.2	375	8.6		7.8	277	15.0	2.4	56	10.0	121	18	1.1	<0.1	33
BG356	23.1	372	8.6			278	16.0	2.4	55	11.0	110	20	0.9	<0.1	35
BG358	14.5	630	7.9			405.5	54	25	39	8.6	189	27	0.6	2.71	87
BG360	14.5	768	7.8			516	71	30	48	9.2	213	37	0.4	2.49	130
BG361	14.5	334	7.4			235	30	15	15	5.3	149	5.8	0.3	0.93	14
BG363	26.6	282	8.0		0.1	215	20.0	9.5	24	4.7	128	4.1	0.5	<0.1	16
BG364	25.3	282	8.1		0.1	217	20.0	9.9	24	4.5	133	4.4	0.5	<0.1	16
BG365	15.0	263	7.5			195.5	24.0	10.0	15	5.0	120	4	0.4	0.47	10
BG370	23.1	414	8.3		0.2	293	20.0	3.9	53	10.0	119	25	0.9	0.15	48
BG371	22.4	404	8.2		4.0	290	22.0	4.1	51	12.0	109	23	0.7	0.11	50
BG372	22.9	403	8.2	212	1.2	282	22.0	4.2	48	10.0	108	24	0.6	0.11	49
BG373	15.5	231	7.5			176.5	16.0	5.9	25	3.8	97	5	0.3	1.42	10

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BG375	19.6	341	8.2			276.5	22.0	9.9	36	6.3	159	5.4	0.5	0.38	25
BG376	14.5	1370	7.7			1035	145	68	76	9.9	249	50	1.4	0.70	468
BG377	14.0	939	7.8			661	70	26	110	8.0	259	24	0.8	1.33	216
BG379	18.4	328	7.4			289	31	13	13	3.9	114	11	0.4	3.7	34
BG380	18.1	370	7.6		6.3	255.5	34	16	15	4.5	141	9.3	0.3	3.3	24
BG381		316	8.1			225	16.0	8.1	40	7.2	141	6.1	0.9	0.1	17
BG385	17.1	189	8.1		7.2	168	8.6	3.5	26	5.1	88	2.4	0.8	0.19	16
BG386	18.4	202	8.2		7.1	166	11.0	4.0	24	5.1	80	2.8	0.7	0.3	18
BG387	18.1	211	8.1		8.1	172	13.0	4.5	24	4.9	81	3.1	0.6	0.36	20
BG388	12.0	465	7.6			293	37	15	37	7.5	187	9.8	0.7	2.94	27
BG389	11.0	389	7.6			254	32	11	34	6.1	166	8.5	0.8	0.72	23
BG390	12.0	158	7.4			133	14.0	6.9	8.4	2.0	71	3.2	0.4	0.43	4.6
BG398	12.5	405	7.7			271.5	33	15	27	7.1	168	8	0.4	1.7	30
BG401	12.0	223	7.0		10.2	166	20.0	8.1	7.6	2.0	72	10	0.2	4	10
BG402	12.0	204	7.3		10.0	160	20.0	7.6	7.3	1.7	72	7.5	0.2	3.5	8.7
BG403	11.9	159	7.6		9.1		15.0	6.1	6.1	1.7	61	2.3	0.2	1.5	<5
BG405	19.2	278	8.0			219	19.0	8.6	28	5.4	134	4	0.6	<0.1	13
BG406	15.2	230	8.0		5.7	158.5	22.0	7.2	13	3.9	100	1.6	0.2	0.39	13
BG407	15.8	290	8.1		3.1	184	22	11.1	17	4.6	117	3.25	0.29	0.34	22.4
BG409	20.3	270	7.9		0.8	203	19.0	8.9	22	5.1	111	3.3	0.6	0.16	25
BG410	17.5	270	7.9		0.5	201	19.0	9.3	22	5.0	109	3.4	0.6	<0.1	23
BG411	13.1	697	7.8		7.2	432	39	26	55	9.2	139	65	0.5	12	54
BG412	12.8	894	7.8			584	53	38	65	11.0	160	100	0.5	20	86
BG413	17.7	269	8.0		4.0	204	21	11	19	4.9	147	3.5	0.4	0.29	13
BG414	18.5	291	7.8		4.6	211	21	11	20	5.1	130	3.4	0.4	0.32	13
BG415	18.2	266	8.0		3.7	200	20	11	19	4.9	125	3.5	0.4	0.27	13
BG416		604	7.9			404	46	23	43	4.9	170	35	0.5	4.1	80
BG498	26.4	361	9.0	36.7	0.7		3.0	0.1	78	0.3	125	13.4	2.18	<0.1	19.8
BG499	15.0	506	7.6	-95	4.8		35.3	20.9	39	8.1	184	16.9	0.67	2.21	23.0
BG500	24.4	427	9.0	-241	0.33		3.2	1.4	88	6.9	142	14.2	2.42	0.23	19.3
BG502	20.9	514	7.32	147	0.57		36.7	17.0	46	11.9	157	18.8	0.44	0.18	76.9
BG503	18.1	636	7.46	204	4.56		62.8	28.9	30	6.4	154	24.2	0.35	4.94	107
BG504	23.5	360	7.92	105.5	1.92		23.0	9.8	41	8.4	126	12.7	0.77	0.40	30.2
BG505	24.9	302	7.9	145.8	3.18		21.1	9.0	33	7.2	114	9.3	0.80	0.45	22.4
BG507	23.5	360	7.92	105.5	1.92		23.1	10.0	41	8.4	125	12.6	0.77	0.39	30.0
BL014	20.1	431	8.1		0.6	291	25	11	44	9.7	128	14	0.6	<0.1	63
BL015	19.9	411	8.2		7.4	285	24	11	45	10.0	127	15	0.5	0.17	56
BL016	15.3	404	8.0			273	25	18	29	3.6	161	13	0.5	4.5	18
BL017	15.1	406	8.0			277	27	19	27	3.5	156	19	0.4	4.5	17
BL018	15.2	384	7.8			251	24	17	27	3.5	150	13	0.5	3.4	13
BL019	14.4	360	7.9		0.4	234	22	14	29	3.7	139	11	0.8	0.21	24
BL020	15.0	331	8.1	255	0.2	238	23	13	29	3.9	139	9	0.7	0.16	22
BL021	14.5	357	8.0		0.1	228	22	14	29	3.7	137	10	0.8	0.16	22
BL022	19.8	470	8.0		0.2	312	40	16	39	5.7	234	7.9	0.6	<0.1	17
BL023	19.9	523	8.0		0.7	335	47	18	38	5.8	219	18	0.5	0.84	29
BL024	20.8	517	7.8		0.3	341	48	19	38	6.0	219	21	0.5	1	28
BL025	21.1	254	8.1		0.2	198	14.0	3.7	33	4.9	128	3	0.9	0.22	3
BL026	21.4	252	8.4	181	0.1		15.0	3.6	34	5.0	123	3	0.9	0.22	<5
BL027	20.9	250	8.4		0.1		14.0	3.8	35	5.2	129	3.1	1.1	<0.1	<5
BL028	10.5	252	8.0			176	27.0	7.9	13	3.7	109	3.8	0.3	1.15	16
BL029	13.6	1760	7.3		6.9	1080	140	64	110	7.1	221	260	0.3	19	240
BL030	13.4	1750	7.3		7.2	1100	150	64	110	6.7	208	250	0.3	21	250
BL031	14.1	1950	7.1			1250	180	75	120	7.2	232	300	0.3	24	290
BL032	15.2	397	7.9		0.8	243	27	17	21	5.8	128	38	0.4	0.24	15
BL033	16.1	370	8.2		0.7	234	26	16	21	5.9	124	32	0.4	0.2	16
BL034	15.6	349	8.2		1.5	228	25	16	21	5.4	129	29	0.4	0.16	12

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Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BL035	13.8	843	7.2		4.6	593	84	36	33	9.5	144	18	0.3	7.8	250
BL036	14.4	437	7.9		9.0	288	39	20	20	4.9	175	12	0.4	3.9	24
BL037	14.6	313	8.2			217	15.0	6.6	37	10.0	122	8.1	0.5	0.36	21
BL039	14.2	460	7.8		3.8	296	44	18	23	5.1	192	15	0.3	2.1	26
BL040	13.9	389	7.9		3.8	249	36	14	22	4.9	167	12	0.3	1.3	19
BL041	13.5	533	7.9		4.8	338	52	22	24	5.8	206	21	0.3	3.6	35
BL042	16.1	412	8.2		0.1	275	24.0	10.0	48	5.9	184	10	1	<0.1	21
BL043	16.0	410	8.2	168	0.4	270	24.0	10.0	48	6.3	178	10	0.9	<0.1	20
BL044	15.7	409	8.1		0.1	274	24	11	49	5.4	180	11	0.9	<0.1	20
BL045	12.2	206	7.6		6.2	147	18.0	7.7	13	3.2	96	4	0.4	0.05	9.2
BL046	18.3	204	6.6		2.3	154.5	14.0	8.7	17	2.7	102	1.5	0.4	0.02	5.2
BL047	6.7	123	6.7			102	11.0	4.0	6.0	3.0	42	2	0.2	0.54	12
BL048	12.2	206	7.3		3.0	155	13.0	9.6	17	2.5	101	1.5	0.6	0.05	5.4
BL049	16.0	278	7.5			218	13.0	4.6	37	6.1	112	6.2	0.7	1	14
BL050	26.8	494	8.2			404	7.6	2.6	100	6.6	173	16	13	0.2	19
BL052	12.2	199	7.6		0.8	155	13.0	8.4	17	2.8	99	2	0.5	0.05	5.2
BL053	15.6	194	7.4		2.1	146.5	14.0	8.2	15	2.7	95	1.5	0.4	0.05	6.6
BL054	8.3	195	7.4		3.2	146	15.0	7.6	10	3.0	58	2.8	0.4	3.84	18
BL055	11.7	206	7.1		4.5	148.5	16.0	8.2	10	2.8	64	4	0.4	2.49	17
BL056	8.3	391	8.5			268.5	35	15	26	6.2	174	8.7	0.3	1.8	23
BL058	13.9	195	7.3		3.2	137	15.0	9.0	8.9	2.9	72	2.8	0.3	0.57	7.8
BL059	14.4	193	7.7		1.8		16.0	9.4	9.6	2.8	95	1.6	0.3	<0.1	<5
BL060	13.8	197	7.6		3.4	143	15.0	9.6	9.8	2.7	95	1.7	0.3	<0.1	5
BL061	15.6	258	7.6		8.0	181.5	23.0	9.2	17	3.8	116	5	0.4	0.32	11
BL062	16.7	263	7.3		4.3	184	22.0	9.8	17	3.9	117	5.5	0.4	0.43	10
BL063	12.2	329	7.3		5.5	221	28	12	18	4.1	118	12	0.4	0.72	27
BL064	15.6	260	7.6		9.2	178	22.0	9.8	16	3.8	116	5.2	0.4	0.32	9.8
BL065	13.3	270	7.2		4.1	188	22.0	9.4	19	4.0	116	8.5	0.5	0.32	11
BL066	19.5	354	7.2		4.1	227.5	30	14	19	4.2	123	14	0.3	1.20	33
BL067	11.1	318	7.1		5.3	216	26	13	19	4.0	119	11	0.4	0.81	24
BL068	17.2	320	8.2			239	13.0	4.2	52	6.7	146	7.5	1	0.02	11
BL069	18.9	318	8.2		0.6	226	21.0	8.8	33	5.6	144	6.8	0.7	<0.1	16
BL073	11.1	345	7.7		5.2	226	29	13	19	3.4	130	15	0.4	1.7	22
BL074	13.1	332	7.6		6.0	239	37	13	20	3.5	132	12	0.4	1.3	20
BL075	12.2	342	7.6		4.7	216	28	13	19	3.7	129	12	0.4	1.5	19
BL077	21.9	332	8.1			241	11.0	3.7	54	6.4	144	8.6	0.9	<0.1	17
BL078	21.7	330	8.5		0.1	238	11.0	3.6	54	6.6	147	8.6	0.8	<0.1	15
BL079	11.8	865	7.5		1.0	547	40	19	120	6.4	312	49	0.7	<0.1	78
BL080	12.7	877	7.6		0.3	555	42	19	120	6.4	310	47	0.6	<0.1	85
BL081	12.2	889	7.7		0.2	576	41	20	130	6.4	310	50	0.6	1.6	89
BL082	13.2	381	7.2		5.7	254	26	16	23	3.9	106	20	0.3	1.3	53
BL083	12.5	385	7.0		3.9	270	28	16	24	4.0	95	17	0.3	1.7	66
BL084	12.2	431	7.2		4.9	287	31	20	26	4.3	107	19	0.3	1.2	74
BL085	15.2	546	7.7			347	47	20	37	7.1	252	12	0.5	0.17	24
BL086	14.5	547	7.5			360	49	20	37	7.4	247	11	0.5	0.13	25
BL087	14.1	515	7.9			339	46	19	36	7.7	251	14	0.5	0.13	21
BL088	15.7	319	8.1		1.4	219	17	12	33	3.8	156	5.1	0.6	0.32	8.9
BL089	15.3	329	8.0		2.5	227	20	12	33	3.9	156	5.1	0.6	0.55	11
BL090	16.8	324	7.9		2.2	226	20	12	33	3.5	160	5	0.6	0.56	11
BL091	12.9	471	7.7		8.0	314	45	17	23	3.5	144	23	0.3	9.8	28
BL092	13.1	453	7.9		9.9	304	43	15	22	3.8	130	24	0.3	11	25
BL093	13.1	480	7.6		8.6	315	47	17	23	3.7	130	27	0.2	11	26
BL095	19.3	318	8.7		3.0	239	8.2	3.3	56	5.7	145	8.1	1.4	<0.1	12
BL096	19.3	317	8.7		2.8	230	8.7	3.5	55	5.5	134	7.9	1.3	<0.1	12
BL097	19.4	314	8.9		3.3	235	9.0	3.7	56	5.6	137	8	1.2	0.11	12
BL098	9.0	429	7.9			277	40	18	26	2.0	187	10	0.3	3.84	12

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BL099	11.9	367	7.7		4.2	219	24	15	21	2.1	149	6.7	0.3	2.1	11
BL100	12.9	354	7.6		5.5	226	26	15	21	2.4	145	7.7	0.3	2.5	11
BL101	12.8	335	7.5		4.9	222	27	14	21	2.4	148	7.5	0.3	2.7	10
BL102	14.0	586	7.8		5.0	375	58	25	17	2.7	144	45	0.3	14	31
BL103	12.5	491	7.5		9.1	334	53	21	16	2.6	145	35	0.3	8.2	25
BL104	13.8	466	7.6		8.8	304	46	20	15	2.5	145	30	0.3	7.3	22
BL105	12.0	496	7.8		7.4	323	54	17	17	2.6	141	26	0.3	10	31
BL106	12.1	501	7.6		8.0	342	54	19	21	2.9	145	32	0.3	8.4	32
BL107	12.4	527	7.4		6.8	346	58	22	18	2.4	175	27	0.3	4.4	51
BL108	11.3	542	7.4			360	60	22	18	2.5	169	29	0.3	4.3	52
BL109	12.1	446	7.5		7.4	280	45	18	17	2.5	151	18	0.3	3.6	31
BL110	12.4	283	8.0		0.4	187	23	11	18	3.1	138	3.1	0.5	<0.1	10
BL111	12.7	279	8.0	135	0.2	191	23	11	18	3.2	132	3.3	0.5	<0.1	11
BL112	12.5	273	8.0		0.3	189	23	11	18	3.3	136	3.1	0.5	<0.1	11
BL113	13.5	400	8.3		3.8	254	18	16	36	11.0	166	11	0.5	0.19	24
BL114	14.1	389	8.2		2.8	257	17	16	37	11.0	167	13	0.5	0.16	24
BL115	14.5	360	8.2		2.0	220	19	13	30	6.9	150	7.4	0.4	<0.1	16
BL116	10.9	282	7.7			202	27.0	9.9	15	1.7	104	6.8	0.3	4.4	12
BL117	9.2	245	6.8			183	22.0	6.7	15	3.7	96	7.7	0.2	2.2	15
BL118	9.3	245	6.5		6.6	188	24.0	6.8	17	3.7	109	5.9	0.2	1.4	13
BL119	9.6	237	6.8			172	21.0	6.4	15	4.1	89	6.1	0.2	1.6	14
BL120	15.9	265	8.0			181	21.0	10.0	14	3.3	107	5.1	0.3	1.5	17
BL121	11.3	296	7.3		2.8	204	30	12	13	3.3	151	4	0.3	0.15	7
BL122	11.4	287	7.4		0.5	201	31	12	11	2.9	152	5.4	0.3	<0.1	5
BL123	11.6	278	7.6		3.5	192	28	12	12	2.9	147	3.5	0.3	<0.1	4.7
BL124	15.6	180	7.6		5.2	131	12.0	6.8	14	5.5	85	2.2	0.4	0.00	5.2
BL125	14.5	184	7.6		4.3	136.5	10.0	7.9	13	8.3	84	2.5	0.5	0.02	7.2
BL126	7.8	198	7.1		5.4	139.5	15.0	7.8	13	4.1	87	2.2	0.3	1.31	4
BL127	11.1	184	7.1		5.4	132	12.0	6.6	14	6.1	87	2	0.4	0.02	5
BL128	15.6	183	7.6		5.4	136.5	12.0	6.9	13	7.9	85	1.2	0.4	0.05	8
BL129	17.8	191	7.4		4.2	139.5	10.0	7.9	14	7.9	84	3	0.4	0.02	8.6
BL130	8.3	185	7.4		4.2	135	10.0	8.3	13	8.7	85	2.5	0.4	0.07	8
BL131	10.6	175	7.4		7.5	130.5	13.0	7.2	9.8	5.1	75	2	0.3	0.20	8.8
BL132	14.9	246	7.9		2.2	182	17	11	18	4.6	116	3.9	0.4	0.64	8.1
BL133	17.6	270	7.9			190	16.0	9.0	24	5.3	112	5.2	0.6	0.25	14
BL134	18.8	272	7.7			209.5	17.0	9.1	25	5.0	119	4.8	0.5	0.68	23
BL137	11.0	246	7.9			173.5	23.0	8.3	12	2.7	84	8.2	0.3	1.94	15
BL138	17.9	209	8.0			157	20.0	3.7	17	3.7	98	3.5	0.5	<0.1	18
BL139	14.0	270	9.4			176	22.0	0.1	38	4.5	114	3.7	0.7	<0.1	28
BL140	17.2	231	7.9			166	12.0	5.5	29	3.9	105	3.9	0.8	0.09	9
BL142	17.1	238	8.3			195.5	12.0	5.9	31	3.6	116	3.5	0.8	0.28	9.5
BL143	15.7	247	8.1			199	11.0	2.0	40	4.0	141	2.9	1.2	<0.1	3.6
BL144	14.6	275	8.2		0.9	194	12	11	27	7.7	129	5	0.7	<0.1	17
BL145	14.8	280	8.2	280	0.3	189	12	11	29	7.5		7	0.7	<0.1	18
BL146	15.1	269	8.2		0.4	187	12	11	27	6.8	121	4.9	0.7	<0.1	16
BL147	13.4	265	7.8		2.4	180	21.0	10.0	16	4.1	99	7.3	0.4	1.9	16
BL148	13.2	244	7.9		1.6	174	18.0	10.0	16	4.4	102	6.2	0.4	1.2	15
BL149	9.7	431	7.2		8.3	272	38	12	26	2.9	145	15	0.2	7.6	28
BL150	11.9	184	7.3		6.3	149	15.0	6.2	8.7	4.5	64	3.6	0.2	3.3	9.7
BL151	12.6	184	7.6		5.0	150	15.0	6.7	9.9	4.3	71	3.3	0.2	2.3	9
BL152	11.7	183	7.4		5.9	143	15.0	6.3	8.9	4.3	62	3.8	0.3	3	9.2
BL153	21.7	274	8.2		0.1	213	11.0	5.4	39	5.0	134	4.7	1	0.21	7.7
BL154	21.7	271	8.2		0.1	211	12.0	5.1	40	4.7	130	4.7	0.9	<0.1	7.5
BL155	21.3	271	8.2	61	0.6	205	12.0	5.3	39	4.8	124	4.6	0.8	<0.1	7
BL157	12.3	188	7.2		5.7	156	18.0	5.6	9.8	2.0	69	3.2	0.2	3.2	12
BL158	19.6	271	7.9		0.3	199	16.0	9.8	28	3.1	131	4.6	0.7	<0.1	11

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BL159	10.8	193	7.0		8.8	165	17.0	5.2	11	3.2	64	5.2	0.2	5.3	12
BL160	11.2	197	7.0			169	18.0	5.5	12	3.3	58	6.3	0.2	5.3	12
BL161	11.1	213	6.9		9.1	166	19.0	5.6	11	3.3	56	7.4	0.2	5.9	13
BL162	23.7	284	8.4		0.1	219	11.0	3.1	48	5.7		3.6	1.2	<0.1	4.3
BL163	22.3	294	8.2	102	0.4	209	15.0	5.8	40	4.8	143	4.3	0.9	<0.1	11
BL164	23.9	287	8.4		0.1	209	10.0	2.9	48	5.5	139	3.6	1.3	<0.1	4
BL165	13.9	278	7.8			196	17.0	8.7	25	8.0	105	8	0.5	1.81	15
BL166	14.3	235	7.4		2.8	184	24.0	8.5	16	3.2	111	2	0.4	0.71	10
BL167	14.1	351	7.3		7.7	245	34	14	16	3.0	123	12	0.2	4.3	22
BL168	10.9	438	7.0		9.5	300	43	13	27	2.0	130	20	0.2	8.4	33
BL169	12.0	423	7.2		7.7	301	43	12	26	2.0	125	18	0.2	8.8	30
BL170	11.2	415	7.2		8.9	280	40	12	26	2.1	121	21	0.3	6.3	32
BL172	11.9	414	6.6		4.7	279	39	12	24	3.8	123	11	0.2	11	19
BL173	11.6	403	6.7		6.2	273	37	11	23	3.8	123	13	0.2	12	19
BL174	11.7	408	7.0		5.1	274	38	12	24	4.0	125	14	0.2	10	17
BL175	10.6	382	7.4		8.3	253	35	12	22	2.8	112	18	0.3	4.3	33
BL176	11.7	357	7.3		8.4	252	36	12	18	2.8	109	18	0.2	4.2	31
BL177	11.5	354	7.3		8.5	239	34	11	17	2.5	104	19	0.3	4.4	30
BL178		391	7.8			252.5	28	16	30	3.8	164	11	0.8	0.38	24
BL179	11.7	219	8.4		1.8	155	14.0	9.5	17	3.2	108	2.4	0.5	<0.1	6.7
BL180	11.5	216	8.2		1.1	157	14.0	9.4	18	3.0	105	2.5	0.5	0.91	6
BL181	11.7	212	8.4		0.7	154	14.0	9.7	17	2.9	107	2.4	0.5	<0.1	6.3
BL184	14.4	204	8.0			150	12.0	9.6	16	3.2	98	2.8	0.5	0.07	5.8
BL185	14.4	250	7.4		3.9	179	18	12	15	4.0	109	6.5	0.5	0.81	8
BL186	12.2	246	7.6		12.4	171	18	12	14	3.8	109	5.2	0.5	0.72	8.8
BL187	8.3	259	7.4		3.9	182	20	12	15	4.0	109	6.2	0.5	1.38	12
BL188	12.2	269	7.0		5.8	186	19	13	15	4.1	110	6.8	0.5	0.99	11
BL189	15.6	222	7.4		4.8	161	20.0	8.6	12	2.7	96	5.2	0.3	0.72	8
BL190	13.3	227	7.6		11.0	170	20.0	9.1	13	3.0	95	6.2	0.4	0.81	8.8
BL191	7.8	228	7.4		4.8	163.5	19.0	9.7	13	4.0	101	6	0.3	0.88	6.8
BL192	12.8	238	7.2		5.2	168.5	20.0	9.0	14	2.9	100	6.2	0.5	0.66	7.4
BL193	12.7	749	7.6		2.8	463	66	33	38	5.4	230	35	0.3	3.2	90
BL194	12.6	559	7.1		2.9	366	50	24	29	4.4	183	25	0.3	2.6	59
BL195	14.0	857	7.5		2.7	543	78	38	43	5.2	283	42	0.3	3	110
BL196	14.3	877	7.7		10.2	597	99	36	22	4.9	139	120	0.3	24	80
BL197	17.8	849	7.6		8.3	511	85	30	23	4.9	125	91	0.3	20	64
BL198	13.9	861	7.4		10.1	573	96	36	24	4.3	122	110	0.3	24	78
BL199	15.6	241	6.4		3.5	170.5	27.0	8.7	9.4	3.3	113	1	0.2	0.95	6.6
BL200	15.6	250	7.2		11.0	176	27.0	8.5	11	3.2	113	4.2	0.2	0.54	6.8
BL201	5.0	248	7.0		3.5	167	28.0	9.1	8.5	3.6	116	1.5	0.3	0.77	6.8
BL202	11.7	272	7.0		3.8	185.5	26.0	9.5	15	3.1	117	8.5	0.5	0.63	6.8
BL203	13.3	237	7.0		4.6	168.5	27.0	7.9	9.5	3.4	113	2	0.2	0.75	6.6
BL204	13.9	260	6.0		10.0	183	27.0	8.5	14	3.4	116	7	0.6	0.54	7.8
BL205	5.0	248	7.0		4.6	167	28.0	9.1	8.5	3.6	116	1.5	0.3	0.77	6.8
BL206	12.2	245	7.1		4.7	171	28.0	8.7	9.1	3.0	116	1	0.3	0.72	6.6
BL207	11.1	362	7.9			226	42	14	13	4.3	168	3	0.3	0.88	18
BL208	15.6	277	7.4		6.4	196.5	23.0	7.2	24	2.3	113	12	0.4	1.08	6.4
BL209	12.8	256	7.6		10.4	188.5	27.0	7.2	17	2.3	116	1.5	0.6	1.58	7.6
BL210	12.2	313	6.8		6.0	218	27.0	7.9	27	2.0	125	14	0.9	1.67	8.2
BL211	16.7	626	7.4		6.2	386.5	23.0	6.7	100	2.5	130	85	0.3	1.38	6
BL212	13.3	213	7.6		10.4	162	22.0	6.5	14	2.3	102	1.5	0.4	0.72	4.6
BL213	7.8	209	7.2		6.0	155.5	20.0	6.9	14	2.3	101	2.5	0.5	0.61	4
BL214	12.2	246	7.2		5.8	177.5	24.0	7.8	14	2.1	111	2	0.5	1.29	6.2
BL215	11.1	289	8.3			178	20	17	13	4.5	128	0.9	0.5	0.88	16
BL216	13.9	1190	8.2			939.5	123	70	38	13.0	182	2.1	1.2	1.51	486
BL217	14.8	1350	7.7			1060	140	87	45	13.0	185	4	0.9	0.41	600

Appendix A - GWMA Hydrochemical Data

Sample ID	Temperature (°C)	Specific Conductance (uS/cm)	pH	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Total Dissolved Solids (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Alkalinity (mg/L $CaCO_3$)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)
BL223	28.3	409	8.95	-121	0.04		7.1	2.3	80	7.4	143	11.5	3.57	<0.1	13.1
BL224	21.7	379	8.2	-152	0.55		11.1	3.5	63	8.3	117	9.4	0.94	<0.1	33.8
BL225	15.1	2080	8.02	-159	10.5		34.6	41.7	137	134	231	245	0.13	52.3	212
BL226	31.8	300	8.54	45.7	1.24		4.6	0.2	55	0.3	112	5.4	1.13	<0.1	5.9
BL227	18.9	297	7.62	220	1.63		21.5	12.5	21	5.2	100	5.7	0.30	0.39	14.0
BL228	33.9	387	9.24	-336	0.03		1.2	0.1	85	5.9	140	11.5	4.82	<0.1	5.5
BL229	15.1	2115	7.57	-111	10.5		141	93.9	91	11.8	235	261	0.05	48.8	227
BL230	17.4	267	7.08	206.5	0.25		7.4	3.2	53	5.0	120	4.8	1.56	0.16	6.1
BL231	22.8	261	7.26	121.8	3.64		10.9	3.4	48	5.2	117	3.5	1.04	<0.1	3.2

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BA001		45			20												
BA002		44			20				<1								
BA003		45								590							
BA006		76			20		20		70								
BA007		73			20		10		80								
BA008		76						30	80	80							
BA010		47					20										
BA011		53			20												
BA012		50			20		20										
BA013		52					<3	30		180							
BA016		38					400										
BA017		43			20												
BA018		40			10				<1								
BA019		41					<3		10	330							
BA020	<0.5	83			50		30										
BA021		52.2	<1	2.9	21	57	<10	10.8	<0.1	105	1.3	9.6					
BA022		54					<3		<1								
BA023		68	<0.1		70		50	340	20	60		10					
BA025		66			50		10		<1								
BA026		65			50												
BA027		65			50		20		<10								
BA028		67			60		10										
BA029		63					<3	10	<1	60							
BA030		60			40		480		60								
BA031		66					<3	10		50							
BA032		65					610										
BA033		53			20		20		<10								
BA034		57			30				<1								
BA035		66					70										
BA036		59					<3		<1								
BA037		48			20		<3										
BA038		48			20		<3		<1								
BA041		56	<10		60		30	<20	<20	<50		<10					
BA042		44			30		20										
BA043		42			30												
BA044		44					<3	10		80							
BA046		44					<3		<1	150							
BA047		56			20		<3										
BA048		48			20		<3		<1								
BA050		87			90		40						-147.0	-18.0	-11.8	5.8	
BA051	<0.5	83			90		40		<1								
BA052		84					40	10		30							
BA056		57					50										
BA058		49			20		10		<1								
BA059		49			20												
BA060		56.1	<1	3.4	23	30	5	8.3	0.5	398	8.6	66.7					5.47
BA061		60					<3		<1								
BA062		62					<10										
BA063	<0.5	64			50		20		10								
BA064		62			50		20										
BA065		47			20				<1								
BA066		47			20				<1								
BA067		47					<3	<4	<1	130							
BA068		52					<3		<1								
BA069		53.9	<1	9.8	30	6	<10	2.2	<0.1	237	2.2	1.3					
BA070		79			50		60										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BA071	<0.5	93					10	20									
BA072		91			60		20		<1								
BA073	0.5	72			40		10						-142.0	-18.0	-11.7	30.2	
BA074		72					20	20		20				-17.9	-13.0	26.8	
BA075		49			20				<1								
BA076		49			20												
BA077		49					<3	10		140							
BA078	<0.5	93			70		30		<1								
BA079	<0.5	89			70		30		<1								
BA080	<0.5	66			40		<3										
BA081		48			20								-137.0	-18.0	-10.4	33.6	
BA082		46			20				<1								
BA083		48					<3		<1	130							
BA084		53					40										
BA085		53					<10										
BA087		68			40		30		<10								
BA088	<0.5	64			40				<1								
BA089	1.0	69					<3	20	<1	50							
BA090		36			10		10		<1				-126.0	-15.9	-11.2	89.0	
BA091		35			10				<1								
BA092		36					<3	<4		170				-15.8	-12.0	85.0	
BA093		59			30		30						-148.0	-19.0	-10.9	11.6	
BA094		61			20				<1								
BA095		57					20	10		120				-18.4	-11.7	13.5	
BA096		54					4		<1								
BA097		56			30		20										
BA098		53			20		30										
BA099		45			10		10		<1								
BA100		44			10				<1								
BA101		45					<3			170							
BA102		53			20		10										
BA103		52			10		<3		<1								
BA104		54					<3	10		590							
BA105		38			20												
BA106		44						20		460							
BA107		34					110										
BA110		59			30		<3										
BA111		57			30												
BA112		39					10										
BA114		41					10										
BA115		47			30		<3						-132.0	-17.0	-10.0	95.4	
BA116		44			30		<3		<1								
BA117		43					<3	20	<1	520				-16.5	-13.1	110.0	
BA119		77	100.0				80	30	<20	<50		<10					
BA120		47			10												
BA121		46			10												
BA122		46					<3		<1	20							
BA123	<0.5	68	<10	1.0	50	33	<3		<1				-142.0	-18.0	-14.8	16.0	
BA124		66					<3	30		30							
BA125	<0.5	63			50				<1								
BA126	<0.5	70			40				<1						-13.5	11.8	
BA127	<0.5	67	100.0		30				<1								
BA128	1.1	67					<3	20	<1	40				-18.0	-14.6	16.0	
BA130		39			10		20		<1								
BA131		39			10												
BA132		40						10		220							

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BA133		65			40		20										
BA134		63			40				<1								
BA135		63			40		10		<1								
BA136		33					80										
BA137	<0.5	110		<1	70	9	60		<1				-144.0	-18.5	-12.5	3.4	
BA138	<0.5	100			70		70										
BA140		41			<10		10										
BA141		30					110										
BA142	<0.5	57			30		<3										
BA143		60			30		10										
BA144	0.6	49			20												
BA145	<0.5	58			30												
BA146	1.4	62					<3	30	<1	20							
BA147		37			10		20										
BA148		36			10				20								
BA149	<0.5	64			30		<3										
BA150	0.6	65					<3	40		20							
BA151	<0.5	64			30												
BA152		55			60		<3										
BA153		48			40												
BA154		55					<3	10	<1	80							
BA155		46					60	<20	<20	90		<10					
BA156		46			20												
BA157		47					<3	20		110							
BA158		47			10				<1								
BA159		46						<4		170							
BA160		30			20		<3										
BA161		32			10				<1								
BA162		33					<3		<1	90							
BA163	<0.5	55			30												
BA164	<0.5	60			30												
BA165	0.6	62						10		70							
BA166		42					<3		2								
BA167		42.5	<1.6	2.2	13	37	<6	11.1	0.1	331	3.3	7.2					
BA168		43.7	<1	3.7	15	62	<10	10	0.1	681	7.9	17.6					0.91
BA170	<0.5	73			30												
BA171		44	100.0		10		330	<20	<20	<50		100					
BA174		48					350										
BA175		63			30		20								-12.1	11.6	
BA177	0.6	110			90		60										
BA178	<0.5	100			90		100										
BA179		53	100.0		10		40	<20	<20	<50		<10					
BA182	<0.5	58	10.0	<1	20	17						20					
BA183		56			20				<1								
BA185	<0.5	67			40		10		<1								
BA186	<0.5	73					10	30		20							
BA187	<0.5	74			50				<1								
BA188	<0.5	59			20		20										
BA189		40					10										
BA190		47					20	20		290							
BA191		44					<3			180							
BA192	<0.5	66			40		20										
BA193	<0.5	64			40												
BA194	<0.5	80			50		20						-144.0	-18.3	-13.9	3.9	
BA195	<0.5	82					10	20									
BA196	<0.5	83	200.0		60		20										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BA197		42					50										
BA198		46					<10										
BA199		46			10		30										
BA200		47			20												
BA201		39			30		20										
BA202		39			20				<1								
BA203		39					<3	10	<1	270							
BA204		39			10		20		<1								
BA205		36			10												
BA206		43			10				<1								
BA207		46						20		60							
BA208		44			10				<1								
BA209		50					50										
BA210		51					50										
BA211		55					570										
BA212		45					40		<50								
BA213		50					120										
BA214		50					60										
BA215		45					30										
BA216		49					100										
BA217		51					90										
BA218		52					30										
BA219		50					60										
BA220		50					10										
BA221		50					10										
BA222		50					40										
BA223		45			10		30		<1								
BA224		45			<10				<1								
BA225		47					<3	<4		170							
BA226		56			30		20										
BA227		57			30		10		<1								
BA228		55					30	20		50							
BA229		36			190		90	<20	<20	50		70					
BA231		40			20				10				-141.0	-18.2	-9.4	53.7	
BA232		41					<3	20	10	190							
BA233		39			20												
BA234	<0.5	55			20		<3										
BA236		33					10		<1								
BA238		35					220		10								
BA239		45			20		20						-133.0	-17.0	-11.6	25.8	
BA240		42			20												
BA241		45					<3	10		150							
BA242		54			20		<3		<1								
BA243		36					140										
BA252		135	4.0	1.9		14.1	<0.4		0.2	15.9	0.1	<8.4	-145.4	-18.4	-11.0	9.1	0.35
BA253		112	3.5	<0.2		10.1	15.0		0.9	10.9	<0.1	<8.4	-145.2	-18.4	-13.1	8.7	0.44
BA254		109	6.8	<0.2		16.6	3.9		0.3	15.0	<0.1	<8.4	-146.1	-18.4	-10.4	8.5	0.09
BA255		146	6.6	1.3		1.4	0.4		21.8	1.6	0.0	<8.4	-144.4	-18.3	-12.9	7.6	0.10
BA256		80	1.8	4.5		36.8	0.4		27.0	143	1.2	<8.4	-120.1	-14.9	-12.5	87.3	2.58
BF002		54			100		40	<20	<20	<50		<10					
BF003		39					4		<1								
BF004		48.3	<1	17.7	31	12	<10	6.2	<0.1	101	5.0	13.2					3.62
BF006		59			20				<1								
BF007		56					10										
BF008		58					<3	20		180							
BF010		69			30				<1								

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BF011		69															
BF012		69						10	<1	70							
BF013		39															
BF014		58					10										
BF016		37					250										
BF019		32			30				60								
BF020		35							60								
BF021		37						20	70	130							
BF022		45	<10		<10		20	<20	<20	750		<10					
BF023		84			40		20										
BF024		80															
BF025		85						20	<1	90							
BF027		41			30				<1								
BF029		61			80												
BF030		70					30										
BF031		37					<3		<1								
BF032		38.5	<1	2.0	21	15	<10	6.4	0.1	134	1.8	13.5					
BF034		56			20		<3						-135.0	-17.0	-10.4	53.9	
BF036		55							<1								
BF037		57						20		670				-16.6	-11.2	53.9	
BF038		25					40										
BF039		42					1200										
BF040		62.5	1.7	2.5	37	28	<10	11	5.1	53.9	0.4	4					
BF041		64					<3		<1								
BF043		67			120		40	<20	<20	<50		<10					
BF044		66	10.0		80		40										
BF045		64			80		40										
BF047		48	10.0	2.0	30	12	<3					120					
BF048		48					10		<1								
BF049		49						10	<1	150							
BF050		37					60										
BF051	<0.5	41	10.0		30		120		<10								
BF052	<0.5	39					40	30		40							
BF053		49			40		<3		<1				-137.0	-18.0	-12.8	66.9	
BF054		49							<1								
BF055		50					<3	20	<1	120				-17.6	-12.9	54.8	
BF056		70	<10		70		30	<20	<20	<50		<10					
BF057		57					<3		<1								
BF058		55.6	<1.6	2.7	50	33	8	13.2	0.2	232	3.7	2.1					
BF059		56.5	<1	3.3	43	29	<10	14.5	0.2	242	4.0	1.2					
BF060		60.8	0.9	3.4	53	31	<6	13.6	0.2	238	4.5	0.8					
BF061		48					560										
BF063		38					50										
BF067		42			40												
BF068		41					20										
BF069		42						20		350							
BF071		100			300		40		40								
BF072		99			300		20		40								
BF073		100					30	80	40	190							
BF074		58	10.0		40		10										
BF075		63			40		10										
BF076		58					<3	10		270							
BF078		25					510										
BF079		60.2	<1	2.8	23	61	<10	7.7	0.1	318	5.5	10.5					
BF080		59					<3		<1								
BF083		51			40		20										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BF085		51			40		10										
BF086		53								240							
BF087		40					810										
BF088		55					20		<50								
BF089		52					70		<50								
BF090		56					20										
BF091		62					20										
BF092		57					40										
BF093		57					90		<50								
BF094		49					210										
BF095		28					40		40								
BF096		60					80		<5								
BF097		59					20										
BF098		59					40		10								
BF100		58					30		40								
BF101		57					40		<50								
BF102		54	<10				10		<50								
BF103		56					150										
BF104		55					40										
BF105		56					<10										
BF106		55					<10										
BF108		54	10.0	2.0	30	28	<3						-134.0	-17.0	-14.2	83.2	
BF109		54															
BF110		54					<3	20		270				-16.8	-16.2	85.1	
BF111		115	3.3	3.7		9.0	2.33		0.2	13.2	0.3	<8.4	-140.5	-17.9	-10.6	18.9	0.14
BF113		89		3.6		19.3	4.2		0.3	91.4	2.5	<8.4	-140.8	-17.7	-10.3	32.6	2.01
BF114		106	3.2	5.3		27.4	0.1		17.5	277	3.1	<8.4	-131.2	-16.4	-10.7	64.4	3.11
BF115		121	0.7	2.2		20.6	0.1		13.3	352	5.4	<8.4	-134.5	-17.0	-12.4	65.5	2.65
BF116		88		3.6		19.3	4.2		0.3	91.4	2.5	<8.4	-140.4	-17.7	-10.7	33.2	1.94
BF117		105	1.2	5.3		27	<0.4		16.3	307	3.0	<8.4	-131.6	-16.4	-10.9	65.5	3.34
BG029		58			20		<3										
BG030		58						20		110							
BG031		61			10		<3										
BG033		62			<10		10										
BG034		31								200							
BG036		49			20		<3										
BG037		53					<3	10		60							
BG038		63					<10										
BG039		64					70										
BG040		20					17		4								
BG041	<0.5	57			20		20		20								
BG042		57					20	20	20	50							
BG043		61					160										
BG044		59					<10										
BG045		64	<0.1		<10		80	110	90	150		40					
BG046		75					220										
BG047		56			30		140	<20	<20	<50		<10					
BG051	<0.5	5.8			10		<3		<1								
BG052	<0.5	53					<3	10	20	40							
BG053		54					290										
BG054		54	<10		40		60		<20								
BG056		31					50										
BG059	<0.5	51			10		90		50								
BG060	<0.5	49			20		80		40								
BG061	1.6	52					50	20	40	130							
BG062		53			10		<3										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BG063		50			20		20										
BG064		50					<3	30		220							
BG066		51					260										
BG067		49					230										
BG068		51					100										
BG069		48					100										
BG070		48					130										
BG071		48					50										
BG072		48					70										
BG073		57					220										
BG074		50					220										
BG075		43					170		<50								
BG076		48					40										
BG077		45					160										
BG078		48					150										
BG079		49					90										
BG080		52					170										
BG081		56			10		20										
BG082		52			10		20		10								
BG083		54					10	20		530							
BG084		44					70	<20	<20	350		250					
BG086		78					10										
BG087		78					150										
BG088		76					30										
BG089	<0.5	44	10.0		30		10		70								
BG090		58					50		<50								
BG091		79					<10										
BG092		75					30										
BG093	<0.5	56			30		10		<1								
BG094		74					20										
BG095	<0.5	44					20	30	150	200							
BG096		68					30										
BG097		79					20										
BG098		79					450										
BG099		79					40										
BG100		77					20										
BG101		76					30										
BG102		77					10										
BG104		57			10												
BG107		59			20				<1								
BG108		56						30	90	230							
BG109		62					40	30	<20	120		<10					
BG110		56					10										
BG112		43					11		3								
BG113		52			<10				<1								
BG114		51			<10				<1								
BG115		52						10	20	270							
BG116		47					<3	10		80							
BG117		72			70		10										
BG118		71			70		10										
BG119		71						40	30	190				-18.7	-19.4	8.4	
BG121		55					140	20	160	430							
BG122		56					<3		<1								
BG124		51					20										
BG127		54.4	<1	4.9	18	34	<10	7.3	0.1	493	6.4	30.2					
BG128		55					<3		<1								

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BG130		52					6		<1								
BG132		60			10		20										
BG133		60			<10		10		20								
BG134		61					10			240				-17.2	-10.0	37.6	
BG137		55					10										
BG139		58					<3			360					-19.4	8.4	
BG154	<0.5	60	<10	2.0	20	16	<3		<1								
BG155	<0.5	62			20				<1								
BG156		62					<3	20		440							
BG157	<0.5	54			40		20						-145.0	-18.0	-11.5	19.2	
BG158	<0.5	55			40				<1								
BG159		55						30		20							
BG161		40					<3		<1								
BG163		54			30		20		<1				-133.0	-17.0	-7.7	54.7	
BG164		50			30		10		<1								
BG165		54					<3	30		760							
BG166		58					290										
BG168		59					50										
BG170		42			30		10		10								
BG171		40			20				<1								
BG172		50	10.0	17.0	30	8						30					
BG173		58			40				<1								
BG174		52					<3	10	<1	120							
BG175		52			<10		<3										
BG176		51			<10		<3		<1								
BG177		54					<3		<1	300							
BG178		54					40										
BG179		58					11		<1								
BG183		61					<3	10		230							
BG184		61			20		<3										
BG185		53					30										
BG186		55					30										
BG187		60			20		10										
BG188		62					<3		<1	330							
BG191		56	300.0				40	20	<20	330		<10					
BG192		60					20										
BG194		53	10.0		<10				<1								
BG195		53			<10				<1								
BG196		54					<3			420							
BG198		35					980										
BG202		47					10										
BG203		71					8		2								
BG204		46					<3		<1								
BG205		42	<1	4.9	16	25	6	2.7	0.1	207	2.7	<1					
BG207		53.4	<1	5.0	17	12	<10	4.1	<0.1	353	4.5	1.7					
BG208		51	<1.6	4.9	18	14	<6	3.8	<0.2	355	4.2	2.5					
BG210		56.6	<1.6	4.8	20	13	<6	4.3	<0.2	372	4.4	0.7					
BG211	<0.5	73			40		40										
BG212	1.0	72					30	30	20	10							
BG215		55					4		<1								
BG216		48					<3		<1								
BG217		43					40	<20	<20	100		50					
BG219		50			20												
BG220		56			20		20		20								
BG221		50					<3	10		170							
BG222		68					<10										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BG224		48					460										
BG225		44					70										
BG228	<0.5	72			40		60										
BG229	<0.5	69			40		40										
BG230		60			10		50		50								
BG231		52					<3	20		200							
BG232		47					10		<1								
BG233		45					60		<50								
BG234		39					40		<50								
BG235		41					20		<50								
BG236		44					40		<50								
BG237		43					10		<50								
BG238		59					60										
BG241	<0.5	74			50												
BG242	<0.5	72			50		30										
BG243	<0.5	64			40		20										
BG244	<0.5	36			40		30		20								
BG245	0.8	69					10	30	20								
BG248		43					40										
BG249		47					40										
BG250		47					60		<50								
BG252		46					50										
BG253		41					170		<50								
BG254		47			20												
BG255		49					20										
BG256		45					30										
BG257		43					20		<50								
BG258		47					<10		<50								
BG259		45					20		<50								
BG260		46					40										
BG261		47			20				<1								
BG262		49					<3		<1	100							
BG263		44					<10										
BG264		42					20										
BG265		40					770										
BG266		42					30		<50								
BG268		37					90		<50								
BG269		38					40		<50								
BG270		43					80		<50								
BG271		42					30		<50								
BG272		42					70										
BG273		40					60										
BG275		45					120										
BG276		50					20										
BG277		47					50		<50								
BG279		51					60										
BG280		47					30		<50								
BG281		56					10										
BG282		56					60										
BG283		48					20		<50								
BG284		49					30		<50								
BG285		52					<10		<50								
BG286		53					10										
BG287		56					10										
BG288		56					10										
BG289		50					10										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BG290		48					<10										
BG291		61			10				<1								
BG292		61					<3	20		190							
BG293		58					<10										
BG294		56					70										
BG295		60					<10		<50								
BG297		52					30		<50								
BG298		59					20		<50								
BG299		57					200		<50								
BG301		60					40										
BG302		39					<10										
BG303		39					20										
BG304		40					<10		<50								
BG306		42					<10										
BG307		36					40		<50								
BG308		39					60		<50								
BG309		36					440		<50								
BG310		38					40		<50								
BG311		38					20										
BG312		44					100										
BG315		63	<10				30	<20	<20	350		100					
BG317		34					630										
BG318		32					20		<50								
BG319		36					20		<50								
BG320		32					20		<50								
BG321		34					<10		<50								
BG322		36					<10		<50								
BG323		35					10		<50								
BG328		55			20				<1								
BG329		55					120		30	350							
BG330		47					<3	10	50	410							
BG335		52					<3		<1								
BG336		51.1	<1.6	1.5	17	13	<6	3.6	<0.2	218	2.4	6.3					
BG337		53.2	<1	1.7	17	12	<10	3.5	0.1	232	2.5	2.7					
BG338		57.1	<1.6	1.6	18	13	6	4	<0.2	238	2.7	22.1					
BG345	<0.5	46			20		10		10								
BG347	<0.5	46						10	20	90							
BG348		22			<10												
BG349		23						10		110							
BG350		23			<10				<1								
BG351		50					80										
BG352		42						10		180				-15.6	-12.4	103.3	
BG353		57	10.0	1.0	10	15			<1			40					
BG354	<0.5	67			20								-147.0	-19.0	-10.7	4.0	
BG355	<0.5	69			20		10										
BG356		68						30		50							
BG358		37					40										
BG360		40					60										
BG361		58					40										
BG363	<0.5	60					30	20	20	60				-17.2	-13.8	17.7	
BG364	<0.5	58			10		30		10								
BG365		55					30										
BG370	<0.5	60	20.0	<1	<10	34	<3					<3					
BG371		61	10.0	<1	10	43	10										
BG372	<0.5	60						30		60							
BG373		46					150										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BG375		67					50	30	<20	<50		<10					
BG376		41					50										
BG377		41					<10										
BG379		65	<10				1900	<20	<20	50		<10					
BG380		60					<3		<1								
BG381		49					200										
BG385		57	10.0		10		10										
BG386		54					<3	20	<1	40							
BG387		52			<10				<1								
BG388		30					740										
BG389		33					290										
BG390		49					40										
BG398		40	<10				60	<20	<20	100		<10					
BG401		47			<10		20										
BG402		48			<10		10										
BG403		48						<4		50							
BG405		57					30	20	20	60							
BG406		34					<3		<1								
BG407		34.9	<1	2.6	6	13	15	6.4	2.1	86.6	1.4	112					
BG409		56					20	20	10	60							
BG410	<0.5	53			10		90		10								
BG411		49							<1	220							
BG412		46			40				<1								
BG413		54			20												
BG414		56					70	20		80							
BG415		52			<10				<1								
BG416		49						10		230							
BG498		133	5.7	<0.2		2.0	<0.4		0.2	7.6	<0.1	<8.4	-145.8	-18.1	-10.9	7.5	<0.09
BG499		86	1.4	3.2		12.9	1.7		0.8	307	3.9	<8.4	-128.8	-16.3	-11.1	94.8	7.08
BG500		132	7.7	<0.2		8.0	22.5		0.5	18.0	0.3	<8.4	-143.8	-18.0	-12.3	24.5	3.97
BG502		89		1.3		74.8	16.5		0.6	447	2.0	<8.4	-144.9	-18.2	-11.0	37.6	5.45
BG503		92	1.1	2.6		103	2.7		35.9	914	8.1	<8.4	-138.3	-17.4	-9.8	61.3	10.6
BG504		112	7.2	2.6		53.3	1.1		15.2	127	2.1	<8.4	-133.0	-16.9	-10.6	65.3	6.34
BG505		117	1.7	2.2		12.7	0.1		<0.1	105	2.1	<8.4	-131.3	-16.9	-9.5	66.7	9.80
BG507		116	1.0	2.9		53.3	0.9		<0.1	127	2.1	<8.4	-132.6	-16.9	-10.7	65.6	5.06
BL014	<0.5	47			<10		<3		<1								
BL015	<0.5	47			<10		<3										
BL016		49			20		<3		<1								
BL017		50					<3	10	<1	200							
BL018		48			20				<1								
BL019	<0.5	45			10		<3										
BL020	<0.5	46						30		80							
BL021	<0.5	44			10		70		20								
BL022	<0.5	46	<10		10		10		10								
BL023		47						30		160							
BL024	<0.5	45			10				10								
BL025	<0.5	58			10								-136.0	-17.0	-12.8	12.6	
BL026	0.6	63					10	30		40				-17.0	-13.8	13.1	
BL027	<0.5	62			10												
BL028		34					<10										
BL029		38			30		20		<1								
BL030		39					10	30		650							
BL031		37			30		10										
BL032		41			<10		50		10				-128.0	-16.0	-13.0	43.0	
BL033		42					30	20		90				-16.0	-15.3	45.4	
BL034		41			<10		30										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BL035		41			20				<1								
BL036		46			<10												
BL037		42			<10		30	20	<20	<50		<10					
BL039		40			10		10		<1								
BL040		40						20	<1	130							
BL041		39			<10				<1								
BL042	<0.5	44			10		70		20								
BL043		44					70	30	20	60							
BL044	<0.5	44			10		60		20								
BL045		33					60		<50								
BL046		46					50		<50								
BL047		35					260		<50								
BL048		46					40		<50								
BL049		47															
BL050		87															
BL052		46					60		<50								
BL053		44					30		<50								
BL054		37					30		<50								
BL055		39					50		<50								
BL056		37	<10				30	<20	<20	150		<10					
BL058		44			<10		10										
BL059		43						10	10	60							
BL060		42			<10		10										
BL061		41					120		<50								
BL062		43					<10		<50								
BL063		48					110		<50								
BL064		42					<10		<50								
BL065		42					<10		<50								
BL066		38					60		<50								
BL067		42					70		<50								
BL068		55					250										
BL069	<0.5	48			10		<3										
BL073		39	<10	2.0	<10	36						300	-131.0	-16.9	-13.0	77.5	
BL074		42					30	10	10	130							
BL075		37			<10				<1								
BL077		53			20		20										
BL078	<0.5	50			10												
BL079		45			10		390		860								
BL080		47					320	20	880	200							
BL081	<0.5	45			<10		360		890								
BL082		43			10		<3										
BL083		45					30	10	30	90							
BL084		43			<10		30		10								
BL085		47			20		<3										
BL086		49					<3	30		180							
BL087		44			10												
BL088	<0.5	44			<10		10										
BL089		44						30		80							
BL090		43			<10												
BL091		44			<10		10										
BL092		45						10		220							
BL093		44			<10												
BL095	<0.5	57	<10	<1	30	9			<1			<3	-139.0	-17.5	-13.8	21.3	
BL096	<0.5	56			20		<3		<1								
BL097		59						10	<1	30							
BL098		38					50										

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BL099		40			<10		10										
BL100		41						20		110							
BL101		39			10		10										
BL102		47			<10		<3										
BL103		50					10	20		250							
BL104		49			<10		20										
BL105		46			10		<3		<1								
BL106		46						20		250							
BL107		43			<10		10										
BL108		44					10	20		280							
BL109		42			<10												
BL110		35			<10		200		20								
BL111		39					220	20	20	100							
BL112	<0.5	37			<10		160		20								
BL113		37			<10		10										
BL114		38						30		70							
BL115		37			<10		20										
BL116		41					10	10		120							
BL117		45			<10		50										
BL118		47					20	10		130							
BL119		44			<10		40										
BL120		46					<3		<1	110							
BL121		43			<10		20		20								
BL122		46					30	20	20	130							
BL123		41			<10		20		20								
BL124		36					60		<50								
BL125		38					<10		<50								
BL126		34					360		<50								
BL127		37					140		<50								
BL128		38					50		<50								
BL129		38					40		<50								
BL130		34					70		<50								
BL131		39					1100		<50								
BL132		46			<10												
BL133		47					50	<20	<20	50		<10					
BL134		54	<10				50	<20	20	<50		<10					
BL137		40															
BL138		32					20										
BL139		11							<1								
BL140		45					60	20	<20	<50		<10					
BL142		55					50	<20	<20	100		<10					
BL143		50			<10		20										
BL144	<0.5	36			10		20		10				-135.0	-17.6	-12.7	35.8	
BL145		37					10	20	20	50				-17.5	-12.8	35.5	
BL146	<0.5	36			<10				10								
BL147		37			<10		20		10								
BL148		37			<10												
BL149		38					20	20		190							
BL150		48			<10				<1								
BL151		45						20		70							
BL152		45			<10		<3										
BL153	<0.5	58			<10		30						-144.0	-17.9	-11.6	5.8	
BL154	<0.5	58			<10		20										
BL155	0.6	57					20	30		40				-17.8	-12.8	8.0	
BL157		49						10	20	90							
BL158		47	10.0		<10		30		10				-134.0	-17.0			

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BL159		49			<10		10		<1				-127.0	-16.3			
BL160		50					<3	10	<1	80							
BL161		47			<10				<1								
BL162	<0.5	53	<10		<10		30						-144.0	-18.6	-13.0	5.0	
BL163	0.6	50					20	40		70							
BL164	<0.5	51			<10		10										
BL165		42					70										
BL166		44					10	<10	300	140							
BL167		45						20		150							
BL168		47			<10		20		<1								
BL169		48						10		200							
BL170		46			<10												
BL172		48			<10		20						-121.0	-15.4	-17.7	51.5	
BL173		48						10	20	210							
BL174		46			10												
BL175		43			<10		20										
BL176		45						10		170							
BL177		43			<10												
BL178		43					1100										
BL179		37			<10		80		20				-130.0	-16.8	-14.4	39.0	
BL180		39					80	20	20	50				-16.6	-14.4	38.0	
BL181		37			<10		40		20								
BL184		41					30										
BL185		47					<10		<50								
BL186		37					<10		<50								
BL187		43					60		<50								
BL188		48					10		<50								
BL189		39					20		<50								
BL190		46					70		<50								
BL191		42					50		<50								
BL192		46					60		<50								
BL193		43			40		10		<1								
BL194		46					10	20	<1	240							
BL195		44			40				<1								
BL196		45			10		30										
BL197		47					50	20		390							
BL198		45			10		20										
BL199		42					100		<50								
BL200		42					<10		<50								
BL201		37					70		<50								
BL202		41					30		<50								
BL203		41					20		<50								
BL204		41					30		<50								
BL205		37					70		<50								
BL206		40					70		<50								
BL207		32		<10		<1000	120		<50			<500					
BL208		46					10		<50								
BL209		47					40		<50								
BL210		47					30		<50								
BL211		46					600		<50								
BL212		46					10		<50								
BL213		37					10		<50								
BL214		48					10		<50								
BL215		23		<10		<1000	190		<50			<500					
BL216		30		<10		<1000	140		<50			<500					
BL217		32	200.0				30	<20	<20	530		30					

Appendix A - GWMA Hydrochemical Data

Sample ID	Sulfide (mg/L)	Silica (mg/L)	Aluminum (ug/L)	Arsenic (ug/L)	Boron (ug/L)	Bromide (ug/L)	Iron (ug/L)	Lithium (ug/L)	Manganese (ug/L)	Strontium (ug/L)	Uranium (ug/L)	Zinc (ug/L)	δD (per mil)	$\delta^{18}O$ (per mil)	$\delta^{13}C$ (per mil)	^{14}C (pmc)	^{3}H (TU)
BL223		134	13.7	<0.2		9.0	58.7		4.0	24.9	<0.1	<8.4	-143.1	-17.9	-21.8	9.4	0.16
BL224		105	4.2	<0.2		11.5	<0.4		0.8	35.8	1.9	<8.4	-145.6	-18.3	-10.6	11.9	0.24
BL225		73	1.6	7.2		66.3	16.7		1.0	839	15.4	80.0	-134.9	-17.0	-8.2	67.0	2.11
BL226		121	2.1	3.3		3.2	1.2		5.7	6.3	<0.1	<8.4	-143.2	-18.3	-11.6	7.4	<0.09
BL227		79	1.3	3.7		4.6	0.3		17.2	62.0	1.5	<8.4	-130.1	-16.5	-12.3	59.6	0.22
BL228		174	10.7	0.7		1.2	1.5		102	2.1	<0.1	<8.4	-141.0	-17.6	-14.1	12.0	0.20
BL229		88	1.4	7.6		68.9	0.9		42.7	687	22.3	68.6	-124.7	-15.2	-9.7	76.9	3.85
BL230		112	5.5	0.4		11.4	2.0		14.1	31.9	0.4	<8.4	-140.0	-17.8	-11.9	18.3	<0.09
BL231		99	40.9	0.5		5.4	3.5		24.3	54.5	<0.1	<8.4	-143.3	-18.4	-15.3	8.9	0.09

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BA001	464415118575301	3/14/1983	-118.9658382	46.73736257	Adams	1117	304	TOB, Tem, Tpr, Tr, Tf	W
BA002	464415118575301	7/27/1983	-118.9658382	46.73736257	Adams	1117	304	TOB, Tem, Tpr, Tr, Tf	W
BA003	464415118575301	8/10/1982	-118.9658382	46.73736257	Adams	1117	304	TOB, Tem, Tpr, Tr, Tf	W
BA006	464507118175501	5/24/1983	-118.2996943	46.75181320	Adams	1028	510	TOB, Tf, Tgsb	G
BA007	464507118175501	8/26/1983	-118.2996943	46.75181320	Adams	1028	510	TOB, Tf, Tgsb	G
BA008	464507118175501	9/8/1982	-118.2996943	46.75181320	Adams	1028	510	TOB, Tf, Tgsb	G
BA010	464518118185201	5/1/1962	-118.3144174	46.75320190	Adams	1009	144	TOB, Tf	W
BA011	464518118185202	5/24/1983	-118.3144174	46.75320190	Adams	1009	380	TOB, Tf, Tgsb	G
BA012	464518118185202	8/22/1983	-118.3144174	46.75320190	Adams	1009	380	TOB, Tf, Tgsb	G
BA013	464518118185202	8/6/1982	-118.3144174	46.75320190	Adams	1009	380	TOB, Tf, Tgsb	G
BA016	464638119001901	3/11/1958	-119.0063954	46.77708510	Adams	1170	500	TOB, Tem, Tpr, Tr, Tf	W
BA017	464650118401401	3/16/1983	-118.6722146	46.78041988	Adams	1419	480	TOB, Tpr, Tr, Tf	W
BA018	464650118401401	8/1/1983	-118.6722146	46.78041988	Adams	1419	480	TOB, Tpr, Tr, Tf	W
BA019	464650118401401	8/7/1982	-118.6722146	46.78041988	Adams	1419	480	TOB, Tpr, Tr, Tf	W
BA020	464727118560501	5/26/1983	-118.9388927	46.79347430	Adams	1257	1410	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA021	464728119094701	7/22/2002	-119.1647806	46.79124167	Adams	1040	450	TOB, Tem, Terr, Tpr	W
BA022	464728119094701	8/3/1994	-119.1647806	46.79124167	Adams	1040	450	TOB, Tem, Terr, Tpr	W
BA023	464740119180601	10/6/1971	-119.3030739	46.79347320	Adams	1043	865	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr, Tr, Tf	SW
BA025	464752118500801	5/20/1983	-118.8366662	46.79764120	Adams	1302	1900	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA026	464752118500801	8/2/1983	-118.8366662	46.79764120	Adams	1302	1900	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA027	464753118573901	5/19/1983	-118.9619492	46.79597429	Adams	1219	1030	TOB, Tpr, Tr, Tf, Tgsb	WG
BA028	464753118573901	7/29/1983	-118.9619492	46.79597429	Adams	1219	1030	TOB, Tpr, Tr, Tf, Tgsb	WG
BA029	464753118573901	8/10/1982	-118.9619492	46.79597429	Adams	1219	1030	TOB, Tpr, Tr, Tf, Tgsb	WG
BA030	464759118563302	5/26/1983	-118.9458374	46.80180770	Adams	1278	1210	TOB, Tpr, Tr, Tf, Tgsb	WG
BA031	464802118495501	8/9/1982	-118.8324994	46.80069680	Adams	1307	1980	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA032	464815119203701	10/18/1960	-119.3452981	46.80319507	Adams	843	415	TOB, Tem, Terr, Tp, Tes, Tpr, Tr	SW
BA033	464830118595901	5/19/1983	-118.9950060	46.79930758	Adams	1247	1380	TOB, Tem, Tpr, Tr, Tf, Tgsb	WG
BA034	464830118595901	7/29/1983	-118.9950060	46.79930758	Adams	1247	1380	TOB, Tem, Tpr, Tr, Tf, Tgsb	WG
BA035	464842118434601	10/18/1960	-118.7302728	46.81125286	Adams	1360	353	TOB, Tpr, Tr, Tf	W
BA036	464857119040701	9/28/1994	-119.0697083	46.81564440	Adams	1147	198	TOB, Tpr, Tr	W
BA037	464903118571601	5/27/1983	-118.9530599	46.81375226	Adams	1255	1330	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA038	464903118571601	8/1/1983	-118.9530599	46.81375226	Adams	1255	1330	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA041	464906119091601	10/27/1970	-119.1550126	46.81791860	Adams	1094	905	TOB, Tpr, Tr, Tf	W
BA042	464920118235201	5/24/1983	-118.3969214	46.82320180	Adams	1709	342	TOB, Tpr, Tr, Tf	W
BA043	464920118235201	8/3/1983	-118.3969214	46.82320180	Adams	1709	342	TOB, Tpr, Tr, Tf	W
BA044	464920118235201	8/7/1982	-118.3969214	46.82320180	Adams	1709	342	TOB, Tpr, Tr, Tf	W
BA046	464924118374501	8/7/1982	-118.6302678	46.82319850	Adams	1490	830	TOB, Tpr, Tr, Tf, Tgsb	WG
BA047	464924118374502	3/16/1983	-118.6302678	46.82319850	Adams	1490	1200	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA048	464924118374502	8/1/1983	-118.6302678	46.82319850	Adams	1490	1200	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA050	464928119103201	3/15/1983	-119.1761246	46.82430750	Adams	1050	1210	TOB, Tem, Terr, Tp, Tpr, Tr, Tf, Tgsb	WG
BA051	464928119103201	7/27/1983	-119.1761246	46.82430750	Adams	1050	1210	TOB, Tem, Terr, Tp, Tpr, Tr, Tf, Tgsb	WG
BA052	464928119103201	8/10/1982	-119.1761246	46.82430750	Adams	1050	1210	TOB, Tem, Terr, Tp, Tpr, Tr, Tf, Tgsb	WG
BA056	464933119103001	4/6/1939	-119.1761246	46.82458528	Adams	1050	561	TOB, Tem, Terr, Tp, Tpr, Tr	W
BA058	464940118273002	5/27/1983	-118.4627589	46.82764516	Adams	1580	1100	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA059	464940118273002	9/6/1983	-118.4627589	46.82764516	Adams	1580	1100	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA060	464942119074701	7/24/2002	-119.1300083	46.82724720	Adams	1120	260	TOB, Tpr	W
BA061	464942119074701	9/7/1994	-119.1300083	46.82724720	Adams	1120	260	TOB, Tpr	W
BA062	464945119092601	5/4/1961	-119.1583461	46.82958536	Adams	1111	900	TOB, Tpr, Tr, Tf	W
BA063	465020119102301	5/27/1983	-119.1744580	46.83986319	Adams	1080	1040	TOB, Tem, Terr, Tp, Temb, Tpr, Tr, Tf, Tgsb	WG
BA064	465020119102301	8/22/1983	-119.1744580	46.83986319	Adams	1080	1040	TOB, Tem, Terr, Tp, Temb, Tpr, Tr, Tf, Tgsb	WG
BA065	465022118282001	5/24/1983	-118.4724815	46.83931180	Adams	1580	620	TOB, Tpr, Tr, Tf	W
BA066	465022118282001	8/30/1983	-118.4724815	46.83931180	Adams	1580	620	TOB, Tpr, Tr, Tf	W
BA067	465022118282001	8/7/1982	-118.4724815	46.83931180	Adams	1580	620	TOB, Tpr, Tr, Tf	W
BA068	465032119030301	8/30/1994	-119.0538360	46.84206110	Adams	1192	476	TOB, Tpr, Tr, Tf	W

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BA069	465032119030301	8/6/2002	-119.0538360	46.84206110	Adams	1192	476	TOB, Tpr, Tr, Tf	W
BA070	465100119001503	5/19/1983	-119.0055620	46.85208590	Adams	1366	1060	TOB, Tpr, Tr, Tf, Tgsb	WG
BA071	465100119001503	8/10/1982	-119.0055620	46.85208590	Adams	1366	1060	TOB, Tpr, Tr, Tf, Tgsb	WG
BA072	465100119001503	8/30/1983	-119.0055620	46.85208590	Adams	1366	1060	TOB, Tpr, Tr, Tf, Tgsb	WG
BA073	465206118524401	5/24/1983	-118.8880572	46.87347516	Adams	1423	1340	TOB, Tr, Tf, Tgsb, Tgu	WG
BA074	465206118524401	9/9/1982	-118.8880572	46.87347516	Adams	1423	1340	TOB, Tr, Tf, Tgsb, Tgu	WG
BA075	465212118212401	5/24/1983	-118.4835927	46.86986760	Adams	1690	400	TOB, Tpr, Tr, Tf	W
BA076	465212118212401	8/2/1983	-118.4835927	46.86986760	Adams	1690	400	TOB, Tpr, Tr, Tf	W
BA077	465212118212401	8/9/1982	-118.4835927	46.86986760	Adams	1690	400	TOB, Tpr, Tr, Tf	W
BA078	465227118502203	5/26/1983	-118.8433330	46.87736410	Adams	1577	1540	TOB, Tr, Tf, Tgsb, Tgu	WG
BA079	465227118502203	8/3/1983	-118.8433330	46.87736410	Adams	1577	1540	TOB, Tr, Tf, Tgsb, Tgu	WG
BA080	465245118461201	5/27/1983	-118.7708300	46.87847530	Adams	1379	1310	TOB, Tr, Tf, Tgsb, Tgu	WG
BA081	465253118420202	3/17/1983	-118.7030488	46.88069820	Adams	1653	600	TOB, Tr, Tf, Tgsb	W
BA082	465253118420202	8/2/1983	-118.7030488	46.88069820	Adams	1653	600	TOB, Tr, Tf, Tgsb	W
BA083	465253118420202	8/9/1982	-118.7030488	46.88069820	Adams	1653	600	TOB, Tr, Tf, Tgsb	W
BA084	465258119052701	10/18/1960	-119.0919548	46.88264156	Adams	1186	392	TOB, Tpr, Tr, Tf	W
BA085	465258119052701	5/4/1961	-119.0919548	46.88264156	Adams	1186	392	TOB, Tpr, Tr, Tf	W
BA087	465317118461002	5/19/1983	-118.7699966	46.89597545	Adams	1472	1410	TOB, Tr, Tf, Tgsb, Tgu	WG
BA088	465317118461002	8/2/1983	-118.7699966	46.89597545	Adams	1472	1410	TOB, Tr, Tf, Tgsb, Tgu	WG
BA089	465317118461002	8/9/1982	-118.7699966	46.89597545	Adams	1472	1410	TOB, Tr, Tf, Tgsb, Tgu	WG
BA090	465342118145402	5/25/1983	-118.2471884	46.89348360	Adams	1558	200	TOB, Tpr, Tr, Tf	W
BA091	465342118145402	8/2/1983	-118.2471884	46.89348360	Adams	1558	200	TOB, Tpr, Tr, Tf	W
BA092	465342118145402	8/5/1982	-118.2471884	46.89348360	Adams	1558	200	TOB, Tpr, Tr, Tf	W
BA093	465347118531301	3/15/1983	-118.9344480	46.82347460	Adams	1300	540	TOB, Tpr, Tr, Tf	W
BA094	465347118531301	7/28/1983	-118.9344480	46.82347460	Adams	1300	540	TOB, Tpr, Tr, Tf	W
BA095	465347118531301	9/8/1982	-118.9344480	46.82347460	Adams	1300	540	TOB, Tpr, Tr, Tf	W
BA096	465349119200401	4/5/1994	-119.3352167	46.89733330	Adams	1052	203	TOB, Tem, Temb, Tpr	W
BA097	465355119202501	3/15/1983	-119.3436329	46.89764035	Adams	995	290	TOB, Tem, Temb, Tpr	W
BA098	465355119202501	7/28/1983	-119.3436329	46.89764035	Adams	995	290	TOB, Tem, Temb, Tpr	W
BA099	465433118210501	5/25/1983	-118.3427497	46.91209320	Adams	1681	560	TOB, Tpr, Tr, Tf, Tgsb	WG
BA100	465433118210501	8/2/1983	-118.3427497	46.91209320	Adams	1681	560	TOB, Tpr, Tr, Tf, Tgsb	WG
BA101	465433118210501	8/5/1982	-118.3427497	46.91209320	Adams	1681	560	TOB, Tpr, Tr, Tf, Tgsb	WG
BA102	465440119183001	3/15/1983	-119.3114093	46.91208520	Adams	1025	179	TOB, Tem, Temb, Tpr	W
BA103	465440119183001	7/28/1983	-119.3114093	46.91208520	Adams	1025	179	TOB, Tem, Temb, Tpr	W
BA104	465440119183001	8/12/1982	-119.3114093	46.91208520	Adams	1025	179	TOB, Tem, Temb, Tpr	W
BA105	465447118021302	8/30/1983	-118.0410624	46.91432099	Adams	1630	300	TOB, Tr, Tf	W
BA106	465447118021302	8/6/1982	-118.0410624	46.91432099	Adams	1630	300	TOB, Tr, Tf	W
BA107	465616118581801	3/12/1958	-118.9727830	46.93764240	Adams	1347	337	TOB, Tr, Tf	W
BA110	465814118524101	5/20/1983	-118.8861126	46.97208718	Adams	1213	1130	TOB, Tf, Tgsb, Tgu	WG
BA111	465814118524101	8/2/1983	-118.8861126	46.97208718	Adams	1213	1130	TOB, Tf, Tgsb, Tgu	WG
BA112	465818118563401	10/19/1960	-118.9433373	46.97153160	Adams	1257	155	TOB, Tr, Tf	W
BA114	465818118563401	5/3/1961	-118.9433373	46.97153160	Adams	1257	155	TOB, Tr, Tf	W
BA115	465840118584601	3/17/1983	-118.9811167	46.97764280	Adams	1261	126	TOB, Tr, Tf	W
BA116	465840118584601	8/1/1983	-118.9811167	46.97764280	Adams	1261	126	TOB, Tr, Tf	W
BA117	465840118584601	8/11/1982	-118.9811167	46.97764280	Adams	1261	126	TOB, Tr, Tf	W
BA119	465850118364601	9/28/1971	-118.6138762	46.98042266	Adams	1519	567	TOB, Tr, Tf, Tgsb	WG
BA120	465852118215503	5/25/1983	-118.3660833	46.98098286	Adams	1642	349	TOB, Tr, Tf	W
BA121	465852118215503	8/30/1983	-118.3660833	46.98098286	Adams	1642	349	TOB, Tr, Tf	W
BA122	465852118215503	8/6/1982	-118.3660833	46.98098286	Adams	1642	349	TOB, Tr, Tf	W
BA123	465853118365101	3/17/1983	-118.6152652	46.98125599	Adams	1542	1020	TOB, Tr, Tf, Tgsb, Tgu	WG
BA124	465853118365101	8/10/1982	-118.6152652	46.98125599	Adams	1542	1020	TOB, Tr, Tf, Tgsb, Tgu	WG
BA125	465853118365101	8/2/1983	-118.6152652	46.98125599	Adams	1542	1020	TOB, Tr, Tf, Tgsb, Tgu	WG
BA126	465900118522701	5/24/1983	-118.8750010	46.98319838	Adams	1261	1950	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg	WG
BA127	465900118522701	7/29/1983	-118.8750010	46.98319838	Adams	1261	1950	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg	WG

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BA128	465900118522701	8/10/1982	-118.8750010	46.98319838	Adams	1261	1950	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg	WG
BA130	465935117592801	5/24/1983	-117.9905032	46.99237850	Adams	1639	140	TOB, Tr, Tf	W
BA131	465935117592801	8/3/1983	-117.9905032	46.99237850	Adams	1639	140	TOB, Tr, Tf	W
BA132	465935117592801	8/4/1982	-117.9905032	46.99237850	Adams	1639	140	TOB, Tr, Tf	W
BA133	465947118433301	5/25/1983	-118.7266607	46.99625436	Adams	1774	1200	TOB, Tr, Tf, Tgsb	WG
BA134	465947118433301	8/2/1983	-118.7266607	46.99625436	Adams	1774	1200	TOB, Tr, Tf, Tgsb	WG
BA135	465954118542001	5/24/1983	-118.9069468	46.99542070	Adams	1420	1360	TOB, Tr, Tf, Tgsb, Tgu	WG
BA136	465959118503401	3/12/1958	-118.8438885	46.99958739	Adams	1430	588	TOB, Tr, Tf, Tgsb	WG
BA137	470048118561701	5/19/1983	-118.9388927	47.01264310	Adams	1421	2400	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg	WG
BA138	470048118561701	8/1/1983	-118.9388927	47.01264310	Adams	1421	2400	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg	WG
BA140	470102118023901	8/30/1983	-118.0452293	47.01710000	Adams	1684	155	TOB, Tr, Tf	W
BA141	470229118534401	3/12/1958	-118.8763901	47.04125446	Adams	1436	355	TOB, Tr, Tf	W
BA142	470309118522401	5/24/1983	-118.8747235	47.05014340	Adams	1381	982	TOB, Tr, Tf, Tgsb	WG
BA143	470309118522401	8/31/1983	-118.8747235	47.05014340	Adams	1381	982	TOB, Tr, Tf, Tgsb	WG
BA144	470323118473101	3/17/1983	-118.8033314	47.05653238	Adams	1422	280	TOB, Tr, Tf	W
BA145	470323118473101	8/1/1983	-118.8033314	47.05653238	Adams	1422	280	TOB, Tr, Tf	W
BA146	470323118473101	8/10/1982	-118.8033314	47.05653238	Adams	1422	280	TOB, Tr, Tf	W
BA147	470344118205501	5/25/1983	-118.3505276	47.05987265	Adams	1811	256	TOB, Tr, Tf	W
BA148	470344118205501	9/6/1983	-118.3505276	47.05987265	Adams	1811	256	TOB, Tr, Tf	W
BA149	470355118592602	5/19/1983	-118.9800060	47.06542130	Adams	1355	1170	TOB, Tr, Tf, Tgsb	WG
BA150	470355118592602	8/12/1982	-118.9800060	47.06542130	Adams	1355	1170	TOB, Tr, Tf, Tgsb	WG
BA151	470355118592602	8/3/1983	-118.9800060	47.06542130	Adams	1355	1170	TOB, Tr, Tf, Tgsb	WG
BA152	470356118221901	5/20/1983	-118.3752514	47.06626100	Adams	1840	747	TOB, Tr, Tf, Tgsb	WG
BA153	470356118221901	8/3/1983	-118.3752514	47.06626100	Adams	1840	747	TOB, Tr, Tf, Tgsb	WG
BA154	470356118221901	8/9/1982	-118.3752514	47.06626100	Adams	1840	747	TOB, Tr, Tf, Tgsb	WG
BA155	470402118102901	10/5/1971	-118.1757944	47.06709826	Adams	1893	527	TOB, Tr, Tf	W
BA156	470415118364801	3/17/1983	-118.6144324	47.07264560	Adams	1820	500	TOB, Tr, Tf	W
BA157	470415118364801	8/11/1982	-118.6144324	47.07264560	Adams	1820	500	TOB, Tr, Tf	W
BA158	470415118364801	8/4/1983	-118.6144324	47.07264560	Adams	1820	500	TOB, Tr, Tf	W
BA159	470433118094501	9/9/1982	-118.1666272	47.07293177	Adams	1756	294	TOB, Tr, Tf	W
BA160	470512118245101	5/19/1983	-118.4188656	47.08737128	Adams	1747	180	TOB, Tr, Tf	W
BA161	470512118245101	8/3/1983	-118.4188656	47.08737128	Adams	1747	180	TOB, Tr, Tf	W
BA162	470512118245101	8/9/1982	-118.4188656	47.08737128	Adams	1747	180	TOB, Tr, Tf	W
BA163	470514118562001	5/19/1983	-118.9411149	47.00014300	Adams	1339	1260	TOB, Tr, Tf, Tgsb, Tgu	WG
BA164	470514118562001	7/29/1983	-118.9411149	47.00014300	Adams	1339	1260	TOB, Tr, Tf, Tgsb, Tgu	WG
BA165	470514118562001	8/11/1982	-118.9411149	47.00014300	Adams	1339	1260	TOB, Tr, Tf, Tgsb, Tgu	WG
BA166	470518118523601	8/18/1994	-118.8751194	47.08859440	Adams	1253	430	TOB, Tr, Tf, Tgsb	WG
BA167	470518118523601	8/2/2006	-118.8751194	47.08859440	Adams	1253	430	TOB, Tr, Tf, Tgsb	WG
BA168	470518118523601	8/6/2002	-118.8751194	47.08859440	Adams	1253	430	TOB, Tr, Tf, Tgsb	WG
BA170	470637118540902	5/23/1983	-118.9055586	47.10819946	Adams	1472	1410	TOB, Tr, Tf, Tgsb, Tgu	WG
BA171	470650118431201	10/3/1970	-118.7211054	47.11375560	Adams	1751	433	TOB, Tr, Tf	W
BA174	470653118533001	3/12/1958	-118.8927802	47.11458840	Adams	1514	365	TOB, Tr, Tf	W
BA175	470659118511501	5/19/1983	-118.8569453	47.12264409	Adams	1471	1060	TOB, Tr, Tf, Tgsb, Tgu	WG
BA177	470703118413701	5/26/1983	-118.7444400	47.11569980	Adams	1697	2240	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg, Tgwr	WG
BA178	470703118413701	7/30/1983	-118.7444400	47.11569980	Adams	1697	2240	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg, Tgwr	WG
BA179	470710118441001	10/3/1970	-118.7372174	47.11931105	Adams	1741	807	TOB, Tr, Tf, Tgsb	WG
BA182	470752118181802	5/20/1983	-118.3060818	47.12931830	Adams	1865	1030	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA183	470752118181802	8/3/1983	-118.3060818	47.12931830	Adams	1865	1030	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA185	470752118385701	5/19/1983	-118.5652636	47.13153550	Adams	1858	1120	TOB, Tr, Tf, Tgsb, Tgu	WG
BA186	470752118385701	8/11/1982	-118.5652636	47.13153550	Adams	1858	1120	TOB, Tr, Tf, Tgsb, Tgu	WG
BA187	470752118385701	8/4/1983	-118.5652636	47.13153550	Adams	1858	1120	TOB, Tr, Tf, Tgsb, Tgu	WG
BA188	470758118173502	5/26/1983	-118.2916365	47.12931860	Adams	1814	1280	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA189	470805118482901	10/19/1960	-118.8105543	47.13708870	Adams	1393	101	TOB, Tr, Tf	W
BA190	470831118524403	8/14/1982	-118.8758352	47.14069978	Adams	1429	630	TOB, Tr, Tf, Tgsb	WG

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BA191	470836117590301	8/9/1982	-117.9874490	47.14099090	Adams	1786	200	TOB, Tr, Tf	W
BA192	470846118423001	5/25/1983	-118.7086049	47.14542278	Adams	1792	1720	TOB, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA193	470846118423001	8/3/1983	-118.7086049	47.14542278	Adams	1792	1720	TOB, Tr, Tf, Tgsb, Tgu, Tgo	WG
BA194	470849118413801	5/25/1983	-118.6927707	47.14681188	Adams	1842	2430	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg, Tgwr	WG
BA195	470849118413801	8/13/1982	-118.6927707	47.14681188	Adams	1842	2430	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg, Tgwr	WG
BA196	470849118413801	8/30/1983	-118.6927707	47.14681188	Adams	1842	2430	TOB, Tr, Tf, Tgsb, Tgu, Tgo, Tgg, Tgwr	WG
BA197	471011118575601	10/19/1960	-118.9650064	47.18736660	Adams	1436	270	TOB, Tf	W
BA198	471011118575601	5/3/1961	-118.9650064	47.18736660	Adams	1436	270	TOB, Tf	W
BA199	471013118535601	5/24/1983	-118.7908313	47.16820020	Adams	1619	710	TOB, Tr, Tf, Tgsb	WG
BA200	471013118535601	8/30/1983	-118.7908313	47.16820020	Adams	1619	710	TOB, Tr, Tf, Tgsb	WG
BA201	471032118183001	5/20/1983	-118.3063605	47.17431850	Adams	1850	155	TOB, Tr, Tf	W
BA202	471032118183001	8/2/1983	-118.3063605	47.17431850	Adams	1850	155	TOB, Tr, Tf	W
BA203	471032118183001	8/9/1982	-118.3063605	47.17431850	Adams	1850	155	TOB, Tr, Tf	W
BA204	471039118242201	5/25/1983	-118.4071999	47.18264969	Adams	1887	320	TOB, Tr, Tf	W
BA205	471039118242201	8/3/1983	-118.4071999	47.18264969	Adams	1887	320	TOB, Tr, Tf	W
BA206	471111118574301	3/18/1983	-118.9641730	47.18653329	Adams	1440	620	TOB, Tf, Tgsb	WG
BA207	471111118574301	8/11/1982	-118.9641730	47.18653329	Adams	1440	620	TOB, Tf, Tgsb	WG
BA208	471111118574301	8/5/1983	-118.9641730	47.18653329	Adams	1440	620	TOB, Tf, Tgsb	WG
BA209	471117118491301	10/16/1960	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA210	471117118491301	10/30/1962	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA211	471117118491301	12/1/1959	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA212	471117118491301	3/17/1965	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA213	471117118491301	4/2/1963	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA214	471117118491301	6/15/1962	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA215	471117118491301	6/4/1963	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA216	471117118491301	7/3/1963	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA217	471117118491301	8/27/1963	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA218	471117118491301	9/13/1963	-118.8213884	47.18792256	Adams	1747	502	TOB, Tr, Tf	W
BA219	471118118491201	6/15/1962	-118.8211106	47.18792256	Adams	1747	510	TOB, Tr, Tf	W
BA220	471118118491201	7/12/1962	-118.8211106	47.18792256	Adams	1747	510	TOB, Tr, Tf	W
BA221	471118118491201	8/14/1962	-118.8211106	47.18792256	Adams	1747	510	TOB, Tr, Tf	W
BA222	471118118491201	9/2/1962	-118.8211106	47.18792256	Adams	1747	510	TOB, Tr, Tf	W
BA223	471126118113101	5/24/1983	-118.1927423	47.19043190	Adams	1994	180	TOB, Tpr, Tr	W
BA224	471126118113101	8/2/1983	-118.1927423	47.19043190	Adams	1994	180	TOB, Tpr, Tr	W
BA225	471126118113101	8/9/1982	-118.1927423	47.19043190	Adams	1994	180	TOB, Tpr, Tr	W
BA226	471158118234001	5/24/1983	-118.3869214	47.20515020	Adams	1997	1260	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA227	471158118234001	8/31/1983	-118.3869214	47.20515020	Adams	1997	1260	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA228	471158118234001	9/9/1982	-118.3869214	47.20515020	Adams	1997	1260	TOB, Tpr, Tr, Tf, Tgsb, Tgu	WG
BA229	471309118315601	10/3/1970	-118.5333187	47.21903636	Adams	1846	95	TOB, Tr	W
BA231	471315118282201	5/24/1983	-118.4727600	47.22042619	Adams	1930	340	TOB, Tr, Tf	W
BA232	471315118282201	8/10/1982	-118.4727600	47.22042619	Adams	1930	340	TOB, Tr, Tf	W
BA233	471315118282201	8/4/1983	-118.4727600	47.22042619	Adams	1930	340	TOB, Tr, Tf	W
BA234	471330118465804	5/26/1983	-118.7877758	47.22208967	Adams	1711	1040	TOB, Tr, Tf, Tgsb, Tgu	WG
BA236	471347118410103	7/19/1983	-118.6847153	47.22959050	Adams	1671	310	TOB, Tr, Tf	W
BA238	471347118410106	7/19/1983	-118.6847153	47.22959050	Adams	1671	704	TOB, Tr, Tf, Tgsb	WG
BA239	471347118471701	3/18/1983	-118.7894426	47.22986750	Adams	1597	220	TOB, Tr, Tf	W
BA240	471347118471701	7/30/1983	-118.7894426	47.22986750	Adams	1597	220	TOB, Tr, Tf	W
BA241	471347118471701	8/13/1982	-118.7894426	47.22986750	Adams	1597	220	TOB, Tr, Tf	W
BA242	471421118573702	5/19/1983	-118.9600065	47.23820030	Adams	1582	800	TOB, Tr, Tf, Tgsb	WG
BA243	485304119200901	3/11/1958	-119.3369657	46.88430696	Adams	925	304	TOB, Tem, Temb, Tpr, Tr	W
BA252	GB06180802	6/18/2008	-118.7379000	46.76611700	Adams	1330	2195	Tgsb, Tgu, Tgo	G
BA253	GB06190801	6/19/2008	-118.7786670	47.13050000	Adams	1661	1025	Tr, Tf, Tgsb	WG
BA254	GB06190804	6/19/2008	-118.9537330	47.26083300	Adams	1648	608	Tr, Tf, Tgsb	WG
BA255	GB06250801	6/25/2008	-118.7506500	47.10103300	Adams	1642	2197	Tgsb, Tgu, Tgo, Tgg, Tgwr	G

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Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BA256	GB07080805	7/8/2008	-118.264767	47.25665	Adams	1786	132	Tr, Tf	W
BF002	461555119054501	8/28/1970	-119.0994547	46.26041280	Franklin	410	1030	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Tu, Temb, Tpr, Tr	SW
BF003	461638118500401	8/31/1994	-118.8364583	46.27882778	Franklin	445	220	TOB, Tf	W
BF004	461638118500401	8/6/2002	-118.8364583	46.27882778	Franklin	445	220	TOB, Tf	W
BF006	461814118575001	3/9/1983	-118.9650044	46.30402470	Franklin	541	350	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Tpr	SW
BF007	461814118575001	7/20/1983	-118.9650044	46.30402470	Franklin	541	350	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Tpr	SW
BF008	461814118575001	8/30/1982	-118.9650044	46.30402470	Franklin	541	350	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Tpr	SW
BF010	462002118460101	3/8/1983	-118.7674950	46.33319290	Franklin	558	300	TOB, Tf	W
BF011	462002118460101	7/20/1983	-118.7674950	46.33319290	Franklin	558	300	TOB, Tf	W
BF012	462002118460101	8/30/1982	-118.7674950	46.33319290	Franklin	558	300	TOB, Tf	W
BF013	462219118570101	7/21/1983	-118.9513928	46.37180330	Franklin	539	310	TOB, Tp, Tes, Tpr, Tr, Tf	W
BF014	462300118472201	7/19/1983	-118.7886075	46.37124865	Franklin	859	540	TOB, Tf	W
BF016	462537118493301	3/13/1958	-118.8269430	46.42680449	Franklin	809	156	TOB, Tr, Tf	W
BF019	462730119001501	3/9/1983	-119.0052842	46.45847080	Franklin	619	410	TOB, Tp, Tpr, Tr, Tf	W
BF020	462730119001501	7/21/1983	-119.0052842	46.45847080	Franklin	619	410	TOB, Tp, Tpr, Tr, Tf	W
BF021	462730119001501	8/30/1982	-119.0052842	46.45847080	Franklin	619	410	TOB, Tp, Tpr, Tr, Tf	W
BF022	462735119011901	12/14/1970	-119.0230627	46.45958187	Franklin	706	614	TOB, Tem, Terr, Tp, Tes, Tpr, Tr, Tf	W
BF023	462737118562501	5/18/1983	-118.9413926	46.46013770	Franklin	859	1310	TOB, Tem, Terr, Tp, Tes, Tpr, Tr, Tf, Tgsb	WG
BF024	462737118562501	7/21/1983	-118.9413926	46.46013770	Franklin	859	1310	TOB, Tem, Terr, Tp, Tes, Tpr, Tr, Tf, Tgsb	WG
BF025	462737118562501	8/30/1982	-118.9413926	46.46013770	Franklin	859	1310	TOB, Tem, Terr, Tp, Tes, Tpr, Tr, Tf, Tgsb	WG
BF027	462747119004701	3/10/1983	-119.0122290	46.46291528	Franklin	600	124	TOB, Tpr	W
BF029	462925119094002	3/11/1983	-119.1602905	46.48985946	Franklin	921	997	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Tu, Temb, Tpr	SW
BF030	463003118484101	3/13/1958	-118.8124985	46.50069407	Franklin	1065	792	TOB, Tpr, Tr, Tf	W
BF031	463205118344001	8/31/1994	-118.5782472	46.53455556	Franklin	489	100	TOB, Tgsb	G
BF032	463205118344001	8/6/2002	-118.5782472	46.53455556	Franklin	489	100	TOB, Tgsb	G
BF034	463340119043901	3/10/1983	-119.0755648	46.5612494	Franklin	914	457	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Temb, Tpr	SW
BF036	463340119043901	7/22/1983	-119.0755648	46.56124940	Franklin	914	457	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Temb, Tpr	SW
BF037	463340119043901	9/1/1982	-119.0755648	46.56124940	Franklin	914	457	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Temb, Tpr	SW
BF038	463347118324301	9/1/1961	-118.5463749	46.56291825	Franklin	536	117	TOB, Tf, Tgsb	G
BF039	463529118513201	3/13/1958	-118.8600005	46.59125036	Franklin	1173	537	TOB, Tem, Tr, Tf	W
BF040	463535119084501	7/25/2002	-119.1464000	46.59384440	Franklin	723	747	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Temb, Tpr, Tr, Tf	SW
BF041	463535119084501	9/7/1994	-119.1464000	46.59384440	Franklin	723	747	TOB, Tih, Tel, Tem, Terr, Tp, Tes, Teq, Temb, Tpr, Tr, Tf	SW
BF043	463625119152801	11/10/1970	-119.2611276	46.60569375	Franklin	951	1120	TOB, Tem, Terr, Tp, Tes, Teq, Tu, Temb, Tpr, Tr	SW
BF044	463625119152801	3/14/1983	-119.2611276	46.60569375	Franklin	951	1120	TOB, Tem, Terr, Tp, Tes, Teq, Tu, Temb, Tpr, Tr	SW
BF045	463625119152801	7/26/1983	-119.2611276	46.60569375	Franklin	951	1120	TOB, Tem, Terr, Tp, Tes, Teq, Tu, Temb, Tpr, Tr	SW
BF047	463748118511501	3/10/1983	-118.8550003	46.63013960	Franklin	1069	652	TOB, Tpr, Tr, Tf	W
BF048	463748118511501	7/21/1983	-118.8550003	46.63013960	Franklin	1069	652	TOB, Tpr, Tr, Tf	W
BF049	463748118511501	8/31/1982	-118.8550003	46.63013960	Franklin	1069	652	TOB, Tpr, Tr, Tf	W
BF050	463822118440401	10/17/1960	-118.7355509	46.63930679	Franklin	760	220	TOB, Tf	W
BF051	463828118434702	3/10/1983	-118.7305506	46.64097350	Franklin	807	380	TOB, Tf, Tgsb	WG
BF052	463828118434702	9/2/1982	-118.7305506	46.64097350	Franklin	807	380	TOB, Tf, Tgsb	WG
BF053	463857118474101	5/18/1983	-118.7849974	46.64597330	Franklin	786	300	TOB, Tf	W
BF054	463857118474101	7/21/1983	-118.7849974	46.64597330	Franklin	786	300	TOB, Tf	W
BF055	463857118474101	8/31/1982	-118.7849974	46.64597330	Franklin	786	300	TOB, Tf	W
BF056	463915118513001	9/24/1970	-118.8594449	46.65402870	Franklin	859	1100	TOB, Tf, Tgsb, Tgu	WG
BF057	463943118511001	8/16/1994	-118.8530167	46.66312500	Franklin	860	1000	TOB, Tr, Tf, Tgsb, Tgu	WG
BF058	463943118511001	8/3/2006	-118.8530167	46.66312500	Franklin	860	1000	TOB, Tr, Tf, Tgsb, Tgu	WG
BF059	463943118511001	8/7/2002	-118.8530167	46.66312500	Franklin	860	1000	TOB, Tr, Tf, Tgsb, Tgu	WG
BF060	463943118511001	9/15/2004	-118.8530167	46.66312500	Franklin	860	1000	TOB, Tr, Tf, Tgsb, Tgu	WG
BF061	463943118511002	10/17/1960	-118.8538892	46.66180660	Franklin	876	502	TOB, Tr, Tf	W
BF063	463946118515001	3/13/1958	-118.8677786	46.66263990	Franklin	901	276	TOB, Tr, Tf	W
BF067	463951119292102	5/20/1983	-118.4952619	46.66458670	Franklin	981	220	TOB, Tf, Tgsb	WG
BF068	463951119292102	7/21/1983	-118.4952619	46.66458670	Franklin	981	220	TOB, Tf, Tgsb	WG
BF069	463951119292102	9/2/1982	-118.4952619	46.66458670	Franklin	981	220	TOB, Tf, Tgsb	WG

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Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BF071	464042118212101	5/20/1983	-118.3538638	46.67931107	Franklin	1342	940	TOB, Tr, Tf, Tgsb	WG
BF072	464042118212101	8/3/1983	-118.3538638	46.67931107	Franklin	1342	940	TOB, Tr, Tf, Tgsb	WG
BF073	464042118212101	9/1/1982	-118.3538638	46.67931107	Franklin	1342	940	TOB, Tr, Tf, Tgsb	WG
BF074	464132118581701	3/11/1983	-118.9711162	46.69291769	Franklin	1115	320	TOB, Tpr, Tr	W
BF075	464132118581701	7/27/1983	-118.9711162	46.69291769	Franklin	1115	320	TOB, Tpr, Tr	W
BF076	464132118581701	9/2/1982	-118.9711162	46.69291769	Franklin	1115	320	TOB, Tpr, Tr	W
BF078	464136119040901	3/13/1958	-119.0699722	46.69373056	Franklin	991	717	TOB, Tem, Twc, Temb, Tpr, Tr, Tf	SW
BF079	464136119040901	7/25/2002	-119.0699722	46.69373056	Franklin	991	717	TOB, Tem, Twc, Temb, Tpr, Tr, Tf	SW
BF080	464136119040901	8/30/1994	-119.0699722	46.69373056	Franklin	991	717	TOB, Tem, Twc, Temb, Tpr, Tr, Tf	SW
BF083	464232119020801	3/14/1983	-119.0419523	46.70930659	Franklin	1021	433	TOB, Tem, Twc, Tpr, Tr, Tf	W
BF085	464232119020801	7/26/1983	-119.0419523	46.70930659	Franklin	1021	433	TOB, Tem, Twc, Tpr, Tr, Tf	W
BF086	464232119020801	8/31/1982	-119.0419523	46.70930659	Franklin	1021	433	TOB, Tem, Twc, Tpr, Tr, Tf	W
BF087	464304119043801	3/13/1958	-119.0783425	46.71763995	Franklin	940	371	TOB, Tem, Twc, Temb, Tpr, Tr	SW
BF088	464321119104101	1/26/1965	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF089	464321119104101	1/27/1966	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF090	464321119104101	10/19/1960	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF091	464321119104101	10/28/1953	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF092	464321119104101	10/5/1961	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF093	464321119104101	10/9/1962	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF094	464321119104101	11/8/1957	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF095	464321119104101	2/13/1967	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF096	464321119104101	3/15/1967	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF097	464321119104101	3/20/1952	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF098	464321119104101	3/4/1968	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF100	464321119104101	4/26/1967	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF101	464321119104101	4/29/1964	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF102	464321119104101	6/12/1969	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF103	464321119104101	6/28/1960	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF104	464321119104101	8/18/1954	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF105	464321119104101	9/13/1956	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF106	464321119104101	9/29/1955	-119.1811242	46.72236209	Franklin	1271	863	TOB, Tem, Terr, Tp, Tes, Twc, Temb, Tpr, Tr	SW
BF108	465152118383801	3/10/1983	-118.8744456	46.64291748	Franklin	861	1320	TOB, Tr, Tf, Tgsb, Tgu	WG
BF109	465152118383801	7/21/1983	-118.8744456	46.64291748	Franklin	861	1320	TOB, Tr, Tf, Tgsb, Tgu	WG
BF110	465152118383801	8/31/1982	-118.8744456	46.64291748	Franklin	861	1320	TOB, Tr, Tf, Tgsb, Tgu	WG
BF111	GB06180801	6/18/2008	-118.8467500	46.71386700	Franklin	1101	820	Tpr, Tr, Tf, Tgsb	W
BF113	GB06230803	6/23/2008	-118.856817	46.706833	Franklin	1113	805	Tf	W
BF114	GB07080801	7/8/2008	-118.8529500	46.66303300	Franklin	884	1000	Tf, Tgsb, Tgu	WG
BF115	GB07080803	7/8/2008	-118.8747830	46.64348300	Franklin	875	1325	Tgsb, Tgu, Tgo	G
BF116	GB06230803	6/23/2008	-118.856817	46.706833	Franklin	1113	805	Tf	W
BF117	GB07080802	7/8/2008	-118.8529500	46.66303300	Franklin	884	1000	Tf, Tgsb, Tgu	WG
BG029	422155119300501	5/17/1983	-119.4975357	47.36541780	Grant	1214	451	TOB, Tf, Tgsb	WG
BG030	422155119300501	7/27/1982	-119.4975357	47.36541780	Grant	1214	451	TOB, Tf, Tgsb	WG
BG031	422155119300501	9/2/1983	-119.4975357	47.36541780	Grant	1214	451	TOB, Tf, Tgsb	WG
BG033	463844119541601	7/28/1983	-119.8883766	46.65707678	Grant	548	236	TOB, Tp, Tes, Tpr, Tr	W
BG034	463844119541601	8/12/1982	-119.8883766	46.65707678	Grant	548	236	TOB, Tp, Tes, Tpr, Tr	SW
BG036	464039119534801	7/27/1983	-119.8983775	46.67735445	Grant	626	410	TOB, Tp, Tes, Temb, Tpr, Tr	W
BG037	464039119534801	8/12/1982	-119.8983775	46.67735445	Grant	626	410	TOB, Tp, Tes, Temb, Tpr, Tr	W
BG038	464132119225101	10/28/1959	-119.3802989	46.69291579	Grant	868	1400	TOB, Tem, Terr, Tp, Tes, Ta, Twc, Temb, Tpr, Tr	SW
BG039	464132119225101	3/23/1959	-119.3802989	46.69291579	Grant	868	1400	TOB, Tem, Terr, Tp, Tes, Ta, Twc, Temb, Tpr, Tr	SW
BG040	464205119561501	4/4/1994	-119.9383860	46.70226940	Grant	517	115	TOB, Tpr	W
BG041	464223119533001	7/28/1983	-119.8905999	46.70457677	Grant	743	970	TOB, Tp, Tes, Temb, Tpr, Tr	W
BG042	464223119533001	8/13/1982	-119.8905999	46.70457677	Grant	743	970	TOB, Tp, Tes, Temb, Tpr, Tr	W
BG043	464408119382401	10/28/1954	-119.6394773	46.73485760	Grant	661	938	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW
BG044	464408119382401	10/28/1959	-119.6394773	46.73485760	Grant	661	938	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG045	464408119382401	10/8/1971	-119.6394773	46.73485760	Grant	661	938	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW
BG046	464408119382401	8/7/1952	-119.6394773	46.73485760	Grant	661	938	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW
BG047	464408119382401	9/17/1970	-119.6394773	46.73485760	Grant	661	938	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW
BG051	464423119542101	7/27/1983	-119.9075458	46.73929880	Grant	748	993	TOB, Tem, Terr, Tp, Tes, Ta, Tpr, Tr, Tf	W
BG052	464423119542101	8/12/1982	-119.9075458	46.73929880	Grant	748	993	TOB, Tem, Terr, Tp, Tes, Ta, Tpr, Tr, Tf	W
BG053	464444119282801	10/28/1954	-119.4716915	46.74652646	Grant	741	1120	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr, Tr	SW
BG054	464518119335001	5/14/1969	-119.5650293	46.75485870	Grant	797	892	TOB, Tem, Terr, Tp, Tes, Ta, Temb, Tpr	SW
BG056	465000119554301	10/18/1960	-119.9297706	46.83318767	Grant	557	141	TOB, Tf	W
BG059	465137119564701	3/16/1983	-119.9436606	46.86068757	Grant	530	173	TOB, Tf	W
BG060	465137119564701	7/27/1983	-119.9436606	46.86068757	Grant	530	173	TOB, Tf	W
BG061	465137119564701	8/13/1982	-119.9436606	46.86068757	Grant	530	173	TOB, Tf	W
BG062	465359119373701	3/15/1983	-119.6283688	46.89930340	Grant	1029	907	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG063	465359119373701	7/27/1983	-119.6283688	46.89930340	Grant	1029	907	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG064	465359119373701	8/17/1982	-119.6283688	46.89930340	Grant	1029	907	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG066	465426119451701	1/24/1960	-119.7553198	46.90680139	Grant	1214	800	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG067	465426119451701	6/15/1962	-119.7553198	46.90680139	Grant	1214	800	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG068	465426119451701	7/12/1962	-119.7553198	46.90680139	Grant	1214	800	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG069	465426119451701	8/15/1962	-119.7553198	46.90680139	Grant	1214	800	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG070	465426119451701	9/15/1965	-119.7553198	46.90680139	Grant	1214	800	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG071	465428119451701	10/15/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG072	465428119451701	10/30/1962	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG073	465428119451701	11/17/1959	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG074	465428119451701	12/12/1959	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG075	465428119451701	3/17/1965	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG076	465428119451701	3/28/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG077	465428119451701	6/4/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG078	465428119451701	7/3/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG079	465428119451701	8/22/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG080	465428119451701	9/11/1963	-119.7558754	46.90763470	Grant	1210	915	TOB, Tem, Temb, Tpr, Tr, Tf, Tgsb	WG
BG081	465433119484001	3/15/1983	-119.8122667	46.90874506	Grant	1235	811	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG082	465433119484001	7/27/1983	-119.8122667	46.90874506	Grant	1235	811	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG083	465433119484001	8/17/1982	-119.8122667	46.90874506	Grant	1235	811	TOB, Tem, Temb, Tpr, Tr, Tf	W
BG084	465455119370001	12/3/1970	-119.7480974	46.91513487	Grant	1189	110	TOB, Tem, Temb, Tpr	W
BG086	465501119031401	10/16/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG087	465501119031401	10/28/1959	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG088	465501119031401	10/30/1962	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG089	465501119031401	3/16/1983	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG090	465501119031401	3/17/1965	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG091	465501119031401	4/9/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG092	465501119031401	6/4/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG093	465501119031401	7/28/1983	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG094	465501119031401	7/3/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG095	465501119031401	8/11/1982	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG096	465501119031401	8/27/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG097	465501119031401	9/13/1963	-119.0550088	46.91680867	Grant	1340	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG098	465502119031401	1/24/1960	-119.0541755	46.91680868	Grant	1343	981	TOB, Tpr, Tr, Tf, Tgsb	WG
BG099	465502119031401	6/15/1962	-119.0541755	46.91680868	Grant	1343	981	TOB, Tpr, Tr, Tf, Tgsb	WG
BG100	465502119031401	7/12/1962	-119.0541755	46.91680868	Grant	1343	981	TOB, Tpr, Tr, Tf, Tgsb	WG
BG101	465502119031401	8/14/1962	-119.0541755	46.91680868	Grant	1343	981	TOB, Tpr, Tr, Tf, Tgsb	WG
BG102	465502119031401	9/4/1962	-119.0541755	46.91680868	Grant	1343	981	TOB, Tpr, Tr, Tf, Tgsb	WG
BG104	465531119292001	3/11/1983	-119.4900291	46.92569479	Grant	1161	810	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG107	465531119292001	7/28/1983	-119.4900291	46.92569479	Grant	1161	810	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG108	465531119292001	8/18/1982	-119.4900291	46.92569479	Grant	1161	810	TOB, Tem, Temb, Tpr, Tr, Tf	SW
BG109	465531119292001	9/24/1971	-119.4900291	46.92569479	Grant	1161	810	TOB, Tem, Temb, Tpr, Tr, Tf	SW

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG110	465540119384201	5/4/1961	-119.6461480	46.92763667	Grant	1066	340	TOB, Tem, Temb, Tpr	SW
BG112	465649119513901	4/6/1994	-119.8621278	46.94321940	Grant	1101	90	TOB, Tr	W
BG113	465657119483501	3/15/1983	-119.8064339	46.94902308	Grant	1231	280	TOB, Tr, Tf	W
BG114	465657119483501	7/30/1983	-119.8064339	46.94902308	Grant	1231	280	TOB, Tr, Tf	W
BG115	465657119483501	8/18/1982	-119.8064339	46.94902308	Grant	1231	280	TOB, Tr, Tf	W
BG116	465717119064201	8/11/1982	-119.1241789	46.95458658	Grant	1272	210	TOB, Tpr, Tr, Tf	W
BG117	465717119535802	3/16/1983	-119.9000491	46.95679958	Grant	1253	905	TOB, Tr, Tf, Tgsb	WG
BG118	465717119535802	7/30/1983	-119.9000491	46.95679958	Grant	1253	905	TOB, Tr, Tf, Tgsb	WG
BG119	465717119535802	8/19/1982	-119.9000491	46.95679958	Grant	1253	905	TOB, Tr, Tf, Tgsb	WG
BG121	465800119360801	8/18/1982	-119.6011467	46.96735999	Grant	1192	310	TOB, Tpr	W
BG122	465809119204101	8/24/1994	-119.3442194	46.96744720	Grant	1088	98	TOB, Tem, Temb, Tpr	W
BG124	465833119383501	10/18/1960	-119.6442046	46.97569260	Grant	1189	285	TOB, Tpr, Tr	W
BG127	465852119210801	7/24/2002	-119.3535167	46.98128610	Grant	1060	180	TOB, Tpr	W
BG128	465852119210801	8/24/1994	-119.3535167	46.98128610	Grant	1060	180	TOB, Tpr	W
BG130	465925119455101	4/1/1994	-119.7591167	46.98682500	Grant	1211	84	TOB, Tpr	W
BG132	465948119542001	5/16/1983	-119.9047722	46.99902187	Grant	1496	364	TOB, Tpr, Tr, Tf	W
BG133	465948119542001	7/28/1983	-119.9047722	46.99902187	Grant	1496	364	TOB, Tpr, Tr, Tf	W
BG134	465948119542001	8/19/1982	-119.9047722	46.99902187	Grant	1496	364	TOB, Tpr, Tr, Tf	W
BG137	470031119523501	10/18/1960	-119.8778268	47.00818890	Grant	1302	669	TOB, Tpr, Tr, Tf	W
BG139	470031119523501	8/19/1982	-119.8778268	47.00818890	Grant	1302	669	TOB, Tpr, Tr, Tf	W
BG154	470050119352301	5/20/1983	-119.5903137	47.01347150	Grant	1127	450	TOB, Tpr, Tr	W
BG155	470050119352301	8/1/1983	-119.5903137	47.01347150	Grant	1127	450	TOB, Tpr, Tr	W
BG156	470050119352301	8/17/1982	-119.5903137	47.01347150	Grant	1127	450	TOB, Tpr, Tr	W
BG157	470140119161901	5/17/1983	-119.2730756	47.02208626	Grant	1110	801	TOB, Tpr, Tr, Tf	W
BG158	470140119161901	7/28/1983	-119.2730756	47.02208626	Grant	1110	801	TOB, Tpr, Tr, Tf	W
BG159	470140119161901	8/12/1982	-119.2730756	47.02208626	Grant	1110	801	TOB, Tpr, Tr, Tf	W
BG161	470233119490501	7/7/1993	-119.8147278	47.03970278	Grant	1205	184	TOB, Tpr	W
BG163	470236119024101	3/18/1983	-119.0461202	47.04264310	Grant	1203	185	TOB, Tr, Tf	W
BG164	470236119024101	7/28/1983	-119.0461202	47.04264310	Grant	1203	185	TOB, Tr, Tf	W
BG165	470236119024101	8/12/1982	-119.0461202	47.04264310	Grant	1203	185	TOB, Tr, Tf	W
BG166	470237119121901	10/19/1960	-119.2064059	47.04347559	Grant	1161	342	TOB, Tpr, Tr	W
BG168	470237119121901	5/3/1961	-119.2064059	47.04347559	Grant	1161	342	TOB, Tpr, Tr	W
BG170	470508119062701	5/18/1983	-119.1086237	47.08542070	Grant	1271	510	TOB, Tr, Tf	W
BG171	470508119062701	7/29/1983	-119.1086237	47.08542070	Grant	1271	510	TOB, Tr, Tf	W
BG172	470510119075201	3/17/1983	-119.1322360	47.08597610	Grant	1252	270	TOB, Tpr, Tr	W
BG173	470510119075201	7/28/1983	-119.1322360	47.08597610	Grant	1252	270	TOB, Tpr, Tr	W
BG174	470510119075201	8/13/1982	-119.1322360	47.08597610	Grant	1252	270	TOB, Tpr, Tr	W
BG175	470510119494801	5/16/1983	-119.8294924	47.08485600	Grant	1200	280	TOB, Tpr, Tr	W
BG176	470510119494801	7/28/1983	-119.8294924	47.08485600	Grant	1200	280	TOB, Tpr, Tr	W
BG177	470510119494801	8/16/1982	-119.8294924	47.08485600	Grant	1200	280	TOB, Tpr, Tr	W
BG178	470513119161901	10/18/1960	-119.2730764	47.08680845	Grant	1140	126	TOB, Tpr	W
BG179	470515119025801	9/22/1994	-119.0485583	47.08743889	Grant	1181	104	TOB, Tf	W
BG183	470559119302601	8/13/1982	-119.5083664	47.09958370	Grant	1230	515	TOB, Tpr, Tr	W
BG184	470559119302601	8/29/1983	-119.5083664	47.09958370	Grant	1230	515	TOB, Tpr, Tr	W
BG185	470603119101401	4/15/1950	-119.1716826	47.10069810	Grant	1252	285	TOB, Tpr, Tr	W
BG186	470619119494401	5/1/1950	-119.8300482	47.10513376	Grant	1225	210	TOB, Tpr	W
BG187	470620119292001	5/16/1983	-119.4875321	47.10597280	Grant	1220	460	TOB, Tpr, Tr	W
BG188	470620119292001	8/13/1982	-119.4875321	47.10597280	Grant	1220	460	TOB, Tpr, Tr	W
BG191	470627119182501	9/24/1971	-119.3053005	47.10736366	Grant	1073	1000	TOB, Tpr, Tr, Tf, Tgsb	WG
BG192	470720119161601	12/4/1959	-119.2769660	47.13041950	Grant	1066	920	TOB, Tpr, Tr, Tf, Tgsb	WG
BG194	470720119561901	3/16/1983	-119.9367190	47.12263220	Grant	1271	111	TOB, Tpr, Tr	W
BG195	470720119561901	7/28/1983	-119.9367190	47.12263220	Grant	1271	111	TOB, Tpr, Tr	W
BG196	470720119561901	8/16/1982	-119.9367190	47.12263220	Grant	1271	111	TOB, Tpr, Tr	W
BG198	470741119095001	10/19/1960	-119.1650158	47.12792045	Grant	1270	352	TOB, Tpr, Tr, Tf	W

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG202	470755119511201	5/4/1961	-119.8544938	47.13180000	Grant	1235	112	TOB, Tpr	W
BG203	470758119152501	8/4/1994	-119.2572694	47.13245830	Grant	1150	796	TOB, Tpr, Tr, Tf, Tgsb	W
BG204	470759119143101	8/4/1994	-119.2169833	47.15806389	Grant	1198	170	TOB, Tpr, Tr	W
BG205	470759119143101	8/6/2002	-119.2169833	47.15806389	Grant	1198	170	TOB, Tpr, Tr	W
BG207	470805119140501	7/17/2002	-119.2366528	47.13425278	Grant	1198	568	TOB, Tpr, Tr, Tf	W
BG208	470805119140501	8/1/2006	-119.2366528	47.13425278	Grant	1198	568	TOB, Tpr, Tr, Tf	W
BG210	470805119140501	9/9/2004	-119.2366528	47.13425278	Grant	1198	568	TOB, Tpr, Tr, Tf	W
BG211	470814119020201	5/17/1983	-119.0347316	47.13708816	Grant	1442	1180	TOB, Tr, Tf, Tgsb	WG
BG212	470814119020201	8/14/1982	-119.0347316	47.13708816	Grant	1442	1180	TOB, Tr, Tf, Tgsb	WG
BG215	470820119480201	9/21/1994	-119.8012528	47.14156667	Grant	1228	196	TOB, Tpr, Tr	W
BG216	470848119125501	9/20/1994	-119.2172417	47.14720830	Grant	1182	62	TOB, Tpr, Tr	W
BG217	470851119522801	12/3/1970	-119.8756059	47.14735520	Grant	1250	135	TOB, Tpr	W
BG219	470857119122001	5/26/1983	-119.2061293	47.14903127	Grant	1220	273	TOB, Tpr, Tr, Tf	W
BG220	470857119122001	7/29/1983	-119.2061293	47.14903127	Grant	1220	273	TOB, Tpr, Tr, Tf	W
BG221	470857119122001	8/12/1982	-119.2061293	47.14903127	Grant	1220	273	TOB, Tpr, Tr, Tf	W
BG222	470858119171001	11/29/1955	-119.2858554	47.13403050	Grant	1072	909	TOB, Tpr, Tr, Tf, Tgsb	WG
BG224	470913119511701	10/18/1960	-119.8558830	47.15346658	Grant	1252	502	TOB, Tpr, Tr, Tf, Tgsb	W
BG225	470913119511701	5/15/1950	-119.8558830	47.15346658	Grant	1252	502	TOB, Tpr, Tr, Tf, Tgsb	W
BG228	470915119061501	5/23/1983	-119.0980682	47.15042105	Grant	1416	930	TOB, Tr, Tf, Tgsb	WG
BG229	470915119061501	9/6/1983	-119.0980682	47.15042105	Grant	1416	930	TOB, Tr, Tf, Tgsb	WG
BG230	470930119423001	7/29/1983	-119.7044880	47.15819108	Grant	1226	722	TOB, Tpr, Tr, Tf	W
BG231	470930119423001	8/17/1982	-119.7044880	47.15819108	Grant	1226	722	TOB, Tpr, Tr, Tf	W
BG232	470940119443901	8/31/1993	-119.7437528	47.15963889	Grant	1205	106	TOB, Tpr	W
BG233	470945119181401	11/27/1961	-119.3130794	47.16541905	Grant	1179	750	TOB, Tpr, Tr, Tf, Tgsb	WG
BG234	470945119181401	3/17/1965	-119.3130794	47.16541905	Grant	1179	750	TOB, Tpr, Tr, Tf, Tgsb	WG
BG235	470945119181401	3/9/1966	-119.3130794	47.16541905	Grant	1179	750	TOB, Tpr, Tr, Tf, Tgsb	WG
BG236	470945119181401	4/10/1963	-119.3130794	47.16541905	Grant	1179	750	TOB, Tpr, Tr, Tf, Tgsb	WG
BG237	470945119181401	4/9/1964	-119.3130794	47.16541905	Grant	1179	750	TOB, Tpr, Tr, Tf, Tgsb	WG
BG238	470948119293801	10/18/1960	-119.4942000	47.16347246	Grant	1257	459	TOB, Tpr	W
BG241	470959119021801	5/26/1983	-119.0394543	47.16653270	Grant	1432	1100	TOB, Tr, Tf, Tgsb	WG
BG242	470959119021801	7/30/1983	-119.0394543	47.16653270	Grant	1432	1100	TOB, Tr, Tf, Tgsb	WG
BG243	471023119092501	5/27/1983	-119.1572381	47.17319840	Grant	1334	1200	TOB, Tpr, Tr, Tf, Tgsb	WG
BG244	471023119092501	7/29/1983	-119.1572381	47.17319840	Grant	1334	1200	TOB, Tpr, Tr, Tf, Tgsb	WG
BG245	471023119092501	8/14/1982	-119.1572381	47.17319840	Grant	1334	1200	TOB, Tpr, Tr, Tf, Tgsb	WG
BG248	471050119191501	10/21/1959	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG249	471050119191501	10/31/1958	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG250	471050119191501	11/24/1961	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG252	471050119191501	12/4/1953	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG253	471050119191501	3/17/1965	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG254	471050119191501	3/17/1983	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG255	471050119191501	3/30/1951	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG256	471050119191501	3/6/1952	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG257	471050119191501	3/9/1966	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG258	471050119191501	4/10/1963	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG259	471050119191501	4/9/1964	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG260	471050119191501	6/20/1956	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG261	471050119191501	7/29/1983	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG262	471050119191501	8/13/1982	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG263	471050119191501	8/24/1955	-119.3208579	47.18347449	Grant	1175	712	TOB, Tpr, Tr, Tf, Tgsb	WG
BG264	471102119191401	10/21/1959	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG265	471102119191401	10/31/1958	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG266	471102119191401	11/27/1961	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG268	471102119191401	3/17/1965	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG269	471102119191401	3/9/1966	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG270	471102119191401	4/10/1963	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG271	471102119191401	4/9/1964	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG272	471102119191401	5/26/1955	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG273	471102119191401	6/20/1956	-119.3194689	47.18319670	Grant	1170	790	TOB, Tpr, Tr, Tf, Tgsb	WG
BG275	471112119195101	10/21/1959	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG276	471112119195101	10/31/1958	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG277	471112119195101	11/27/1961	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG279	471112119195101	12/4/1953	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG280	471112119195101	3/17/1965	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG281	471112119195101	3/30/1951	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG282	471112119195101	3/6/1952	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG283	471112119195101	3/9/1966	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG284	471112119195101	4/10/1963	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG285	471112119195101	4/9/1964	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG286	471112119195101	6/20/1956	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG287	471112119195101	7/13/1951	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG288	471112119195101	7/3/1951	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG289	471112119195101	8/24/1955	-119.3316918	47.18958545	Grant	1191	725	TOB, Tr, Tf, Tgsb	WG
BG290	471124119131301	10/19/1960	-119.2214083	47.18986450	Grant	1240	85	TOB, Tpr, Tr	W
BG291	471144119300001	7/29/1983	-119.5158683	47.19624970	Grant	1255	527	TOB, Tpr, Tr, Tf	W
BG292	471144119300001	8/12/1982	-119.5158683	47.19624970	Grant	1255	527	TOB, Tpr, Tr, Tf	W
BG293	471157119201501	10/21/1959	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG294	471157119201501	10/31/1958	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG295	471157119201501	11/27/1961	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG297	471157119201501	3/17/1965	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG298	471157119201501	4/10/1963	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG299	471157119201501	4/9/1964	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG301	471157119201501	6/20/1956	-119.3386368	47.19902980	Grant	1180	165	TOB, Tr	W
BG302	471158119175501	10/21/1959	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG303	471158119175501	10/31/1958	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG304	471158119175501	11/27/1961	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG306	471158119175501	3/28/1958	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG307	471158119175501	3/8/1966	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG308	471158119175501	4/10/1963	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG309	471158119175501	4/23/1965	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG310	471158119175501	4/9/1964	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG311	471158119175501	9/14/1956	-119.2986347	47.19958586	Grant	1154	134	TOB, Tpr	W
BG312	471255119094301	1/1/1950	-119.1630722	47.21514289	Grant	1320	165	TOB, Tr, Tf	W
BG315	471312119442601	5/21/1971	-119.7417128	47.21985690	Grant	1230	132	TOB, Tpr	W
BG317	471313119174001	10/21/1959	-119.3261364	47.22014100	Grant	1159	212	TOB, Tpr, Tr	W
BG318	471313119174001	3/17/1965	-119.3261364	47.22014100	Grant	1159	212	TOB, Tpr, Tr	W
BG319	471313119195401	11/27/1961	-119.3328034	47.22014090	Grant	1185	350	TOB, Tpr, Tr	W
BG320	471313119195401	3/17/1965	-119.3328034	47.22014090	Grant	1185	350	TOB, Tpr, Tr	W
BG321	471313119195401	3/8/1966	-119.3328034	47.22014090	Grant	1185	350	TOB, Tpr, Tr	W
BG322	471313119195401	4/10/1963	-119.3328034	47.22014090	Grant	1185	350	TOB, Tpr, Tr	W
BG323	471313119195401	4/9/1964	-119.3328034	47.22014090	Grant	1185	350	TOB, Tpr, Tr	W
BG328	471353119574001	7/29/1983	-119.9561650	47.23263160	Grant	1474	238	TOB, Tr, Tf	W
BG329	471353119574001	8/16/1982	-119.9561650	47.23263160	Grant	1474	238	TOB, Tr, Tf	W
BG330	471402119154001	8/18/1982	-119.2569662	47.23430860	Grant	1250	110	TOB, Tpr, Tr	W
BG335	471449119522801	8/17/1994	-119.8755444	47.24450830	Grant	1338	370	TOB, Tpr, Tr, Tf	W
BG336	471449119522801	8/2/2006	-119.8755444	47.24450830	Grant	1338	370	TOB, Tpr, Tr, Tf	W
BG337	471449119522801	8/5/2002	-119.8755444	47.24450830	Grant	1338	370	TOB, Tpr, Tr, Tf	W
BG338	471449119522801	9/8/2004	-119.8755444	47.24450830	Grant	1338	370	TOB, Tpr, Tr, Tf	W
BG345	471542119062701	5/17/1983	-119.1100144	47.26097698	Grant	1462	1360	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG347	471542119062701	8/12/1982	-119.1100144	47.26097698	Grant	1462	1360	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG348	471606119142901	3/18/1983	-119.2350209	47.26458679	Grant	1277	138	TOB, Tpr, Tr	W
BG349	471606119142901	7/26/1982	-119.2350209	47.26458679	Grant	1277	138	TOB, Tpr, Tr	W
BG350	471606119142901	7/29/1983	-119.2350209	47.26458679	Grant	1277	138	TOB, Tpr, Tr	W
BG351	471607119520001	10/18/1960	-119.8678290	47.26846616	Grant	1462	407	TOB, Tr, Tf, Tgsb	WG
BG352	471725119214501	7/26/1982	-119.3525275	47.30458568	Grant	1161	115	TOB, Tr, Tf	W
BG353	471745119333901	3/17/1983	-119.5575380	47.29569370	Grant	1241	65	TOB, Tr	W
BG354	471812119000002	5/18/1983	-119.0008424	47.29570060	Grant	1681	1330	TOB, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG355	471812119000002	9/1/1983	-119.0008424	47.29570060	Grant	1681	1330	TOB, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG356	471812119000002	9/8/1982	-119.0008424	47.29570060	Grant	1681	1330	TOB, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG358	471827119162301	10/19/1960	-119.2741900	47.30736450	Grant	1291	150	TOB, Tr, Tf	W
BG360	471827119162301	5/3/1961	-119.2741900	47.30736450	Grant	1291	150	TOB, Tr, Tf	W
BG361	471903119330201	4/29/1950	-119.5517046	47.31736070	Grant	1271	347	TOB, Tf, Tgsb	WG
BG363	471920119320501	7/27/1982	-119.5369817	47.31847210	Grant	1321	1850	TOB, Tf, Tgsb, Tgu, Tgo	G
BG364	471920119320501	9/2/1983	-119.5369817	47.31847210	Grant	1321	1850	TOB, Tf, Tgsb, Tgu, Tgo	G
BG365	471923119333801	10/19/1960	-119.5617050	47.32291610	Grant	1346	260	TOB, Tgsb	G
BG370	472008119021501	5/18/1983	-119.0414005	47.34208950	Grant	1671	1340	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG371	472008119021501	9/1/1983	-119.0414005	47.34208950	Grant	1671	1340	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG372	472008119021501	9/8/1982	-119.0414005	47.34208950	Grant	1671	1340	TOB, Tpr, Tr, Tf, Tgsb, Tgu, Tgo	WG
BG373	472031119022901	10/19/1960	-119.0425117	47.34181170	Grant	1675	651	TOB, Tpr, Tr, Tf, Tgsb	WG
BG375	472208119182001	9/28/1971	-119.3066922	47.36875365	Grant	1353	552	TOB, Tr, Tf, Tgsb	WG
BG376	472211119285201	10/19/1960	-119.4875352	47.37375137	Grant	1154	120	TOB, Tf	W
BG377	472211119285201	5/3/1961	-119.4875352	47.37375137	Grant	1154	120	TOB, Tf	W
BG379	472230119303101	9/24/1971	-119.5097586	47.37486215	Grant	1233	355	TOB, Tf, Tgsb	W
BG380	472235119300201	8/23/1994	-119.5027583	47.37491389	Grant	1201	473	TOB, Tf, Tgsb	WG
BG381	472302119225901	4/15/1950	-119.3841965	47.38375280	Grant	1191	258	TOB, Tr, Tf, Tgsb	WG
BG385	472330119242501	3/17/1983	-119.4103090	47.39153035	Grant	1200	345	TOB, Tf, Tgsb	WG
BG386	472330119242501	7/26/1982	-119.4103090	47.39153035	Grant	1200	345	TOB, Tf, Tgsb	WG
BG387	472330119242501	9/2/1983	-119.4103090	47.39153035	Grant	1200	345	TOB, Tf, Tgsb	WG
BG388	472402118585701	10/19/1960	-118.9836204	47.40042370	Grant	1407	42	TOB, Tf	W
BG389	472402118585701	5/3/1961	-118.9836204	47.40042370	Grant	1407	42	TOB, Tf	W
BG390	472414119371001	10/19/1960	-119.6205972	47.40374919	Grant	2063	118	TOB, Tf, Tgsb	G
BG398	472540119170001	5/20/1971	-119.2844693	47.42764346	Grant	1281	170	TOB, Tgsb	G
BG401	472627119335901	5/17/1983	-119.5683728	47.44069507	Grant	2273	105	TOB, Tr, Tf	W
BG402	472627119335901	9/1/1983	-119.5683728	47.44069507	Grant	2273	105	TOB, Tr, Tf	W
BG403	472627119335901	9/9/1982	-119.5683728	47.44069507	Grant	2273	105	TOB, Tr, Tf	W
BG405	472943119073001	7/27/1982	-119.1908539	47.49070060	Grant	1578	935	TOB, Tpr, Tr, Tf, Tgsb, Tgo	WG
BG406	473008119174901	8/23/1994	-119.2977110	47.50190000	Grant	1344	147	TOB, Tpr, Tr, Tf, Tgsb	WG
BG407	473008119174901	9/26/2002	-119.2977110	47.50190000	Grant	1344	147	TOB, Tpr, Tr, Tf, Tgsb	WG
BG409	473044119243101	7/27/1982	-119.4116989	47.51236505	Grant	1855	830	TOB, Tpr, Tr, Tf, Tgsb	WG
BG410	473044119243101	8/12/1983	-119.4116989	47.51236505	Grant	1855	830	TOB, Tpr, Tr, Tf, Tgsb	WG
BG411	473224119093001	7/27/1982	-119.1594643	47.53986789	Grant	1806	242	TOB, Tpr, Tr, Tf	W
BG412	473224119093001	8/11/1983	-119.1594643	47.53986789	Grant	1806	242	TOB, Tpr, Tr, Tf	W
BG413	473632119165201	3/17/1983	-119.2822493	47.60875610	Grant	1610	550	TOB, Tpr, Tr, Tf, Tgsb	WG
BG414	473632119165201	7/27/1982	-119.2822493	47.60875610	Grant	1610	550	TOB, Tpr, Tr, Tf, Tgsb	WG
BG415	473632119165201	8/12/1983	-119.2822493	47.60875610	Grant	1610	550	TOB, Tpr, Tr, Tf, Tgsb	WG
BG416	474100119040001	7/27/1982	-119.0736295	47.68820315	Grant	1881	220	TOB, Tpr, Tr, Tf	W
BG498	GB06190803	6/19/2008	-119.0011670	47.30481700	Grant	1586	2075	Tgsb, Tgo, Tgg	G
BG499	GB06240805	6/24/2008	-119.1932000	47.13070000	Grant	1226	585	Tf, Tgsb	W
BG500	GB06240806	6/24/2008	-119.1930830	47.12415000	Grant	1203	1250	Tgsb	G
BG502	GB07070803	7/7/2008	-119.6287000	46.89958300	Grant	1033	907	Temb, Tpr, Tr, Tf	SW
BG503	GB07070804	7/7/2008	-119.6296500	46.91035000	Grant	1131	1020	Temb, Tpr, Tr, Tf	SW
BG504	GB07150801	7/15/2008	-119.0368500	46.96990000	Grant	1279	830	Tf, Tgsb	WG
BG505	GB07150803	7/15/2008	-119.0269170	46.96576700	Grant	1283	857	Tgsb	G

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BG507	GB07150802	7/15/2008	-119.0368500	46.96990000	Grant	1279	830	Tf, Tgsb	WG
BL014	471625118503701	6/3/1983	-118.8411120	47.27403437	Lincoln	1812	744	TOB, Tr, Tf, Tgsb	WG
BL015	471625118503701	9/7/1983	-118.8411120	47.27403437	Lincoln	1812	744	TOB, Tr, Tf, Tgsb	WG
BL016	471630118292501	5/26/1983	-118.4905395	47.27487059	Lincoln	1974	337	TOB, Tpr, Tr, Tf	W
BL017	471630118292501	7/23/1982	-118.4905395	47.27487059	Lincoln	1974	337	TOB, Tpr, Tr, Tf	W
BL018	471630118292501	8/4/1983	-118.4905395	47.27487059	Lincoln	1974	337	TOB, Tpr, Tr, Tf	W
BL019	471647118155001	5/31/1983	-118.2635823	47.27876426	Lincoln	1911	200	TOB, Tpr, Tr, Tf	W
BL020	471647118155001	7/22/1982	-118.2635823	47.27876426	Lincoln	1911	200	TOB, Tpr, Tr, Tf	W
BL021	471647118155001	8/10/1983	-118.2635823	47.27876426	Lincoln	1911	200	TOB, Tpr, Tr, Tf	W
BL022	471737118322001	5/27/1983	-118.5397088	47.29348128	Lincoln	1939	737	TOB, Tr, Tf, Tgsb	WG
BL023	471737118322001	7/23/1982	-118.5397088	47.29348128	Lincoln	1939	737	TOB, Tr, Tf, Tgsb	WG
BL024	471737118322001	8/4/1983	-118.5397088	47.29348128	Lincoln	1939	737	TOB, Tr, Tf, Tgsb	WG
BL025	471741117590201	6/20/1983	-117.9821736	47.29682490	Lincoln	1912	502	TOB, Tpr, Tgsb	WG
BL026	471741117590201	7/21/1982	-117.9821736	47.29682490	Lincoln	1912	502	TOB, Tpr, Tgsb	WG
BL027	471741117590201	8/2/1983	-117.9821736	47.29682490	Lincoln	1912	502	TOB, Tpr, Tgsb	WG
BL028	471755117572801	5/2/1961	-117.9588384	47.29849220	Lincoln	1900	18	TOB, Tpr	W
BL029	471809118360801	5/26/1983	-118.6033230	47.30236960	Lincoln	1668	120	TOB, Tr, Tf	W
BL030	471809118360801	7/23/1982	-118.6033230	47.30236960	Lincoln	1668	120	TOB, Tr, Tf	W
BL031	471809118360801	8/4/1983	-118.6033230	47.30236960	Lincoln	1668	120	TOB, Tr, Tf	W
BL032	471835117583101	6/2/1983	-117.9755068	47.30960278	Lincoln	2022	178	TOB, Tpr	W
BL033	471835117583101	7/21/1982	-117.9755068	47.30960278	Lincoln	2022	178	TOB, Tpr	W
BL034	471835117583101	8/2/1983	-117.9755068	47.30960278	Lincoln	2022	178	TOB, Tpr	W
BL035	471847118300001	6/3/1983	-118.5038739	47.31098178	Lincoln	1612	150	TOB, Tr, Tf, Tgsb	WG
BL036	471901117592001	9/8/1983	-117.9938417	47.31293557	Lincoln	2180	353	TOB, Tpr	W
BL037	471916118485101	10/2/1970	-118.8183336	47.32209030	Lincoln	1590	550	TOB, Tr, Tf, Tgsb	WG
BL039	471926118432302	5/27/1983	-118.7266625	47.32959080	Lincoln	1542	225	TOB, Tf, Tgsb	WG
BL040	471926118432302	7/22/1982	-118.7266625	47.32959080	Lincoln	1542	225	TOB, Tf, Tgsb	WG
BL041	471926118432302	8/4/1983	-118.7266625	47.32959080	Lincoln	1542	225	TOB, Tf, Tgsb	WG
BL042	471928118412501	5/26/1983	-118.6899940	47.32320227	Lincoln	1691	595	TOB, Tr, Tf, Tgsb	WG
BL043	471928118412501	7/26/1982	-118.6899940	47.32320227	Lincoln	1691	595	TOB, Tr, Tf, Tgsb	WG
BL044	471928118412501	8/5/1983	-118.6899940	47.32320227	Lincoln	1691	595	TOB, Tr, Tf, Tgsb	WG
BL045	471936117540201	10/13/1961	-117.9027238	47.33266018	Lincoln	2099	381	TOB, Tpr, Tgsb	W
BL046	471936117540201	10/2/1962	-117.9027238	47.33266018	Lincoln	2099	381	TOB, Tpr, Tgsb	W
BL047	471936117540201	3/16/1965	-117.9027238	47.33266018	Lincoln	2099	381	TOB, Tpr, Tgsb	W
BL048	471936117540201	4/29/1964	-117.9027238	47.33266018	Lincoln	2099	381	TOB, Tpr, Tgsb	W
BL049	471937118544402	7/11/1972	-118.9133384	47.32653450	Lincoln	1610	735	TOB, Tr, Tf, Tgsb	WG
BL050	471937118544402	8/8/1972	-118.9133384	47.32653450	Lincoln	1610	735	TOB, Tr, Tf, Tgsb	WG
BL052	471939117535801	10/11/1961	-117.9027238	47.33266018	Lincoln	2099	368	TOB, Tpr	W
BL053	471939117535801	10/2/1962	-117.9027238	47.33266018	Lincoln	2099	368	TOB, Tpr	W
BL054	471939117535801	3/16/1965	-117.9027238	47.33266018	Lincoln	2099	368	TOB, Tpr	W
BL055	471939117535801	4/29/1964	-117.9027238	47.33266018	Lincoln	2099	368	TOB, Tpr	W
BL056	471959118434901	5/20/1971	-118.7313849	47.33292410	Lincoln	1521	41	TOB, Tf	W
BL058	472119117493101	6/2/1983	-117.8249403	47.35766207	Lincoln	2055	154	TOB, Tpr	W
BL059	472119117493101	7/20/1982	-117.8249403	47.35766207	Lincoln	2055	154	TOB, Tpr	W
BL060	472119117493101	8/9/1983	-117.8249403	47.35766207	Lincoln	2055	154	TOB, Tpr	W
BL061	472201118300201	10/13/1961	-118.4908182	47.36876030	Lincoln	2006	268	TOB, Tpr, Tr, Tf	W
BL062	472201118300201	10/3/1962	-118.4908182	47.36876030	Lincoln	2006	268	TOB, Tpr, Tr, Tf	W
BL063	472201118300201	4/29/1964	-118.4908182	47.36876030	Lincoln	2006	268	TOB, Tpr, Tr, Tf	W
BL064	472202118300001	10/13/1961	-118.4905404	47.36876030	Lincoln	2006	267	TOB, Tpr, Tr, Tf	W
BL065	472202118300001	10/3/1962	-118.4905404	47.36876030	Lincoln	2006	267	TOB, Tpr, Tr, Tf	W
BL066	472202118300001	3/16/1965	-118.4905404	47.36876030	Lincoln	2006	267	TOB, Tpr, Tr, Tf	W
BL067	472202118300001	4/29/1964	-118.4905404	47.36876030	Lincoln	2006	267	TOB, Tpr, Tr, Tf	W
BL068	472218118391702	5/1/1962	-118.6524926	47.37431410	Lincoln	1722	300	TOB, Tr, Tf, Tgsb	WG
BL069	472220118583801	6/3/1983	-118.8502800	47.37431280	Lincoln	1664	505	TOB, Tr, Tf, Tgsb	WG

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Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BL073	472307118224002	6/1/1983	-118.3785902	47.38542915	Lincoln	1918	346	TOB, Tpr, Tr, Tf, Tgsb	WG
BL074	472307118224002	7/22/1982	-118.3785902	47.38542915	Lincoln	1918	346	TOB, Tpr, Tr, Tf, Tgsb	WG
BL075	472307118224002	8/11/1983	-118.3785902	47.38542915	Lincoln	1918	346	TOB, Tpr, Tr, Tf, Tgsb	WG
BL077	472347118414401	6/3/1983	-118.6958282	47.39625827	Lincoln	1931	615	TOB, Tr, Tf, Tgsb	WG
BL078	472347118414401	8/5/1983	-118.6958282	47.39625827	Lincoln	1931	615	TOB, Tr, Tf, Tgsb	WG
BL079	472407118202001	6/1/1983	-118.3377550	47.39987440	Lincoln	1991	67	TOB, Tpr, Tr	W
BL080	472407118202001	7/22/1982	-118.3377550	47.39987440	Lincoln	1991	67	TOB, Tpr, Tr	W
BL081	472407118202001	8/10/1983	-118.3377550	47.39987440	Lincoln	1991	67	TOB, Tpr, Tr	W
BL082	472408118350501	6/1/1983	-118.5891565	47.39681498	Lincoln	1788	45	TOB, Tr, Tf	W
BL083	472408118350501	7/23/1982	-118.5891565	47.39681498	Lincoln	1788	45	TOB, Tr, Tf	W
BL084	472408118350501	8/5/1983	-118.5891565	47.39681498	Lincoln	1788	45	TOB, Tr, Tf	W
BL085	472420118530301	5/31/1983	-118.9280619	47.38820157	Lincoln	1330	100	TOB, Tgsb	G
BL086	472420118530301	7/26/1982	-118.9280619	47.38820157	Lincoln	1330	100	TOB, Tgsb	G
BL087	472420118530301	8/5/1983	-118.9280619	47.38820157	Lincoln	1330	100	TOB, Tgsb	G
BL088	472517118053502	6/1/1983	-118.0935740	47.42098900	Lincoln	2181	510	TOB, Tpr, Tgsb	WG
BL089	472517118053502	7/22/1982	-118.0935740	47.42098900	Lincoln	2181	510	TOB, Tpr, Tgsb	WG
BL090	472517118053502	8/6/1983	-118.0935740	47.42098900	Lincoln	2181	510	TOB, Tpr, Tgsb	WG
BL091	472538118371901	6/2/1983	-118.6222139	47.42764819	Lincoln	1930	165	TOB, Tr, Tf	W
BL092	472538118371901	7/25/1982	-118.6222139	47.42764819	Lincoln	1930	165	TOB, Tr, Tf	W
BL093	472538118371901	9/8/1983	-118.6222139	47.42764819	Lincoln	1930	165	TOB, Tr, Tf	W
BL095	472638118560101	6/2/1983	-118.9347295	47.44375750	Lincoln	1712	685	TOB, Tr, Tf, Tgsb	WG
BL096	472638118560101	8/12/1983	-118.9347295	47.44375750	Lincoln	1712	685	TOB, Tr, Tf, Tgsb	WG
BL097	472638118560101	9/8/1982	-118.9347295	47.44375750	Lincoln	1712	685	TOB, Tr, Tf, Tgsb	WG
BL098	472728118081501	5/2/1961	-118.1802470	47.45765460	Lincoln	2178	213	TOB, Tpr, Tr	W
BL099	472728118081501	6/2/1983	-118.1802470	47.45765460	Lincoln	2178	213	TOB, Tpr, Tr	W
BL100	472728118081501	7/22/1982	-118.1802470	47.45765460	Lincoln	2178	213	TOB, Tpr, Tr	W
BL101	472728118081501	8/10/1983	-118.1802470	47.45765460	Lincoln	2178	213	TOB, Tpr, Tr	W
BL102	472737118271401	6/2/1983	-118.4544284	47.45959500	Lincoln	2113	240	TOB, Tpr, Tr	W
BL103	472737118271401	7/23/1982	-118.4544284	47.45959500	Lincoln	2113	240	TOB, Tpr, Tr	W
BL104	472737118271401	8/11/1983	-118.4544284	47.45959500	Lincoln	2113	240	TOB, Tpr, Tr	W
BL105	472846118133801	6/2/1983	-118.2283060	47.47932080	Lincoln	2294	247	TOB, Tpr, Tr	W
BL106	472846118133801	7/22/1982	-118.2283060	47.47932080	Lincoln	2294	247	TOB, Tpr, Tr	W
BL107	472848118195902	6/1/1983	-118.3349769	47.39320776	Lincoln	2033	212	TOB, Tpr, Tr, Tf	W
BL108	472848118195902	7/22/1982	-118.3349769	47.39320776	Lincoln	2033	212	TOB, Tpr, Tr, Tf	W
BL109	472848118195902	8/10/1983	-118.3349769	47.39320776	Lincoln	2033	212	TOB, Tpr, Tr, Tf	W
BL110	473025117570701	6/20/1983	-117.9532888	47.50543527	Lincoln	2336	100	TOB, Tpr	W
BL111	473025117570701	7/21/1982	-117.9532888	47.50543527	Lincoln	2336	100	TOB, Tpr	W
BL112	473025117570701	8/6/1983	-117.9532888	47.50543527	Lincoln	2336	100	TOB, Tpr	W
BL113	473052118224202	6/1/1983	-118.3788700	47.51654119	Lincoln	2320	445	TOB, Tpr, Tr, Tgsb	W
BL114	473052118224202	7/23/1982	-118.3788700	47.51654119	Lincoln	2320	445	TOB, Tpr, Tr, Tgsb	W
BL115	473052118224202	8/11/1983	-118.3788700	47.51654119	Lincoln	2320	445	TOB, Tpr, Tr, Tgsb	W
BL116	473103117533901	7/21/1982	-117.8935618	47.51849240	Lincoln	2400	300	TOB, Tpr, Tgsb	WG
BL117	473117118110901	6/1/1983	-118.1935849	47.59932230	Lincoln	2362	165	TOB, Tpr	W
BL118	473117118110901	7/21/1982	-118.1935849	47.59932230	Lincoln	2362	165	TOB, Tpr	W
BL119	473117118110901	8/11/1983	-118.1935849	47.59932230	Lincoln	2362	165	TOB, Tpr	W
BL120	473227118341001	7/27/1982	-118.4980439	47.55792900	Lincoln	2245	596	TOB, Tpr, Tr, Tgsb	WG
BL121	473230117460301	6/2/1983	-117.8502256	47.53988260	Lincoln	2440	100	TOB, Tpr	W
BL122	473230117460301	7/20/1982	-117.8502256	47.53988260	Lincoln	2440	100	TOB, Tpr	W
BL123	473230117460301	8/10/1983	-117.8502256	47.53988260	Lincoln	2440	100	TOB, Tpr	W
BL124	473317118094201	10/13/1961	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL125	473317118094201	10/2/1962	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL126	473317118094201	3/16/1965	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL127	473317118094201	4/29/1964	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL128	473317118094202	10/13/1961	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG

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Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BL129	473317118094202	10/2/1962	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL130	473317118094202	3/16/1965	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL131	473317118094202	4/29/1964	-118.1627485	47.55459988	Lincoln	2302	400	TOB, Tpr, Tgsb	WG
BL132	473427118420001	9/8/1983	-118.7011092	47.57653780	Lincoln	1984	350	TOB, Tpr, Tr, Tf, Tgsb	W
BL133	473433118560301	1/8/1971	-118.9352872	47.57542538	Lincoln	1836	317	TOB, Tpr, Tr, Tf	W
BL134	473433118560301	5/11/1971	-118.9352872	47.57542538	Lincoln	1836	317	TOB, Tpr, Tr, Tf	W
BL137	473442118162204	10/23/1970	-118.2752554	47.57793237	Lincoln	2371	261	TOB, Tpr, Tr	W
BL138	473442118162204	7/18/1983	-118.2752554	47.57793237	Lincoln	2371	261	TOB, Tpr, Tr	W
BL139	473442118162205	7/19/1983	-118.2752554	47.57793237	Lincoln	2371	365	TOB, Tpr, Tr, Tgsb	W
BL140	473442118162207	1/14/1971	-118.2752554	47.57793237	Lincoln	2371	635	TOB, Tpr, Tr, Tgsb	WG
BL142	473442118162208	5/14/1971	-118.2752554	47.57793237	Lincoln	2371	750	TOB, Tpr, Tr, Tgsb	WG
BL143	473442118162208	7/18/1983	-118.2752554	47.57793237	Lincoln	2371	750	TOB, Tpr, Tr, Tgsb	WG
BL144	473443118531501	6/3/1983	-118.8897294	47.57514777	Lincoln	1893	250	TOB, Tpr, Tr	W
BL145	473443118531501	7/23/1982	-118.8897294	47.57514777	Lincoln	1893	250	TOB, Tpr, Tr	W
BL146	473443118531501	8/11/1983	-118.8897294	47.57514777	Lincoln	1893	250	TOB, Tpr, Tr	W
BL147	473549118421501	6/22/1983	-118.7052766	47.59681587	Lincoln	2031	185	TOB, Tpr, Tr, Tf	W
BL148	473549118421501	9/7/1983	-118.7052766	47.59681587	Lincoln	2031	185	TOB, Tpr, Tr, Tf	W
BL149	473625117592401	7/20/1982	-117.9927406	47.61126886	Lincoln	2398	85	TOB, Tpr	W
BL150	473644118161701	6/1/1983	-118.2699782	47.61209950	Lincoln	2381	125	TOB, Tpr	W
BL151	473644118161701	7/21/1982	-118.2699782	47.61209950	Lincoln	2381	125	TOB, Tpr	W
BL152	473644118161701	8/11/1983	-118.2699782	47.61209950	Lincoln	2381	125	TOB, Tpr	W
BL153	473648118452301	6/4/1983	-118.7563904	47.61320437	Lincoln	2133	1140	TOB, Tpr, Tr, Tgsb	WG
BL154	473648118452301	8/31/1983	-118.7563904	47.61320437	Lincoln	2133	1140	TOB, Tpr, Tr, Tgsb	WG
BL155	473648118452301	9/9/1982	-118.7563904	47.61320437	Lincoln	2133	1140	TOB, Tpr, Tr, Tgsb	WG
BL157	473754118152001	7/21/1982	-118.2566447	47.63154436	Lincoln	2365	324	TOB, Tpr, Tgsb	W
BL158	473829118381901	6/3/1983	-118.6397194	47.64126187	Lincoln	2316	850	TOB, Tpr, Tr, Tgsb	WG
BL159	473832118081801	5/31/1983	-118.1394164	47.63848995	Lincoln	2417	100	TOB, Tpr	W
BL160	473832118081801	7/21/1982	-118.1394164	47.63848995	Lincoln	2417	100	TOB, Tpr	W
BL161	473832118081801	8/11/1983	-118.1394164	47.63848995	Lincoln	2417	100	TOB, Tpr	W
BL162	473848118091901	6/1/1983	-118.156362	47.64654545	Lincoln	2410	975	TOB, Tpr, Tgsb, Tgwr	WG
BL163	473848118091901	7/21/1982	-118.1563620	47.64654545	Lincoln	2410	975	TOB, Tpr, Tgsb, Tgwr	WG
BL164	473848118091901	8/10/1983	-118.1563620	47.64654545	Lincoln	2410	975	TOB, Tpr, Tgsb, Tgwr	WG
BL165	473904118091301	5/1/1962	-118.1546954	47.65098996	Lincoln	2420	503	TOB, Tpr, Tgsb	WG
BL166	473913118261702	7/22/1982	-118.4399884	47.65404248	Lincoln	2251	410	TOB, Tpr, Tr, Tgsb	W
BL167	473943118483401	7/23/1982	-118.8125055	47.66264920	Lincoln	2062	300	TOB, Tpr, Tr, Tgsb	W
BL168	473946118003701	6/2/1983	-118.0116325	47.65960240	Lincoln	2487	121	TOB, Tpr	W
BL169	473946118003701	7/20/1982	-118.0116325	47.65960240	Lincoln	2487	121	TOB, Tpr	W
BL170	473946118003701	8/10/1983	-118.0116325	47.65960240	Lincoln	2487	121	TOB, Tpr	W
BL172	474142118235502	6/2/1983	-118.3997097	47.69487690	Lincoln	2329	200	TOB, Tpr, Tgsb	WG
BL173	474142118235502	7/22/1982	-118.3997097	47.69487690	Lincoln	2329	200	TOB, Tpr, Tgsb	WG
BL174	474142118235502	8/11/1983	-118.3997097	47.69487690	Lincoln	2329	200	TOB, Tpr, Tgsb	WG
BL175	474159118360101	6/3/1983	-118.6024973	47.69820770	Lincoln	2281	60	TOB, Tpr	W
BL176	474159118360101	7/22/1982	-118.6024973	47.69820770	Lincoln	2281	60	TOB, Tpr	W
BL177	474159118360101	8/31/1983	-118.6024973	47.69820770	Lincoln	2281	60	TOB, Tpr	W
BL178	474236118562101	12/3/1959	-118.9402903	47.70987117	Lincoln	1920	208	TOB, Tpr, Tr, Tgsb	WG
BL179	474337118454201	6/4/1983	-118.7627826	47.72653927	Lincoln	2067	166	TOB, Tpr, Tr	W
BL180	474337118454201	7/23/1982	-118.7627826	47.72653927	Lincoln	2067	166	TOB, Tpr, Tr	W
BL181	474337118454201	9/7/1983	-118.7627826	47.72653927	Lincoln	2067	166	TOB, Tpr, Tr	W
BL184	474458118423901	5/1/1962	-118.7119478	47.74931800	Lincoln	2260	900	TOB, Tpr, Tr, Tgsb	WG
BL185	474550118363801	10/1/1962	-118.6116663	47.76376420	Lincoln	2404	294	TOB, Tpr	W
BL186	474550118363801	10/12/1961	-118.6116663	47.76376420	Lincoln	2404	294	TOB, Tpr	W
BL187	474550118363801	3/18/1965	-118.6116663	47.76376420	Lincoln	2404	294	TOB, Tpr	W
BL188	474550118363801	4/29/1964	-118.6116663	47.76376420	Lincoln	2404	294	TOB, Tpr	W
BL189	474550118363802	10/1/1962	-118.6116663	47.76376420	Lincoln	2404	292	TOB, Tpr	W

Appendix B - Geology of Wells in GWMA Hydrochemistry Database

Sample ID	Site Number	Sample Date	Latitude	Longitude	County	Ground Surface Elevation (ft msl)	Well Bottom Depth (ft msl)	Geologic Units Encountered	Formations
BL190	474550118363802	10/12/1961	-118.6116663	47.76376420	Lincoln	2404	292	TOB, Tpr	W
BL191	474550118363802	3/18/1965	-118.6116663	47.76376420	Lincoln	2404	292	TOB, Tpr	W
BL192	474550118363802	4/29/1964	-118.6116663	47.76376420	Lincoln	2404	292	TOB, Tpr	W
BL193	474556118431101	6/21/1983	-118.7200042	47.76570710	Lincoln	2158	154	TOB, Tpr, Tr	W
BL194	474556118431101	7/23/1982	-118.7200042	47.76570710	Lincoln	2158	154	TOB, Tpr, Tr	W
BL195	474556118431101	8/11/1983	-118.7200042	47.76570710	Lincoln	2158	154	TOB, Tpr, Tr	W
BL196	474748118381601	6/2/1983	-118.6383265	47.50487086	Lincoln	2077	146	TOB, Tpr, Tr	W
BL197	474748118381601	7/27/1982	-118.6383265	47.50487086	Lincoln	2077	146	TOB, Tpr, Tr	W
BL198	474748118381601	8/12/1983	-118.6383265	47.50487086	Lincoln	2077	146	TOB, Tpr, Tr	W
BL199	474800117501001	10/1/1962	-117.8371797	47.79988630	Lincoln	2338	265	TOB, Tgsb	G
BL200	474800117501001	10/9/1961	-117.8371797	47.79988630	Lincoln	2338	265	TOB, Tgsb	G
BL201	474800117501001	3/16/1965	-117.8371797	47.79988630	Lincoln	2338	265	TOB, Tgsb	G
BL202	474800117501001	4/29/1964	-117.8371797	47.79988630	Lincoln	2338	265	TOB, Tgsb	G
BL203	474802117501101	10/1/1962	-117.8374575	47.80044187	Lincoln	2326	121	TOB, Tgsb	G
BL204	474802117501101	10/9/1961	-117.8374575	47.80044187	Lincoln	2326	121	TOB, Tgsb	G
BL205	474802117501101	3/16/1965	-117.8374575	47.80044187	Lincoln	2326	121	TOB, Tgsb	G
BL206	474802117501101	4/29/1964	-117.8374575	47.80044187	Lincoln	2326	121	TOB, Tgsb	G
BL207	474904118193001	9/27/1967	-118.3260976	47.81765730	Lincoln	1579	44	TOB, Tgsb	G
BL208	474933118131801	10/1/1962	-118.2227587	47.82626950	Lincoln	2522	327	TOB, Tpr, Tgsb	WG
BL209	474933118131801	10/12/1961	-118.2227587	47.82626950	Lincoln	2522	327	TOB, Tpr, Tgsb	WG
BL210	474933118131801	4/29/1964	-118.2227587	47.82626950	Lincoln	2522	327	TOB, Tpr, Tgsb	WG
BL211	474935118132301	10/1/1962	-118.2241477	47.82710288	Lincoln	2560	357	TOB, Tpr, Tgsb	WG
BL212	474935118132301	10/12/1961	-118.2241477	47.82710288	Lincoln	2560	357	TOB, Tpr, Tgsb	WG
BL213	474935118132301	3/18/1965	-118.2241477	47.82710288	Lincoln	2560	357	TOB, Tpr, Tgsb	WG
BL214	474935118132301	4/29/1964	-118.2241477	47.82710288	Lincoln	2560	357	TOB, Tpr, Tgsb	WG
BL215	474935118181501	10/13/1967	-118.3052633	47.82626876	Lincoln	2467	202	TOB, Tpr	W
BL216	475601118561801	10/24/1967	-118.9394632	47.93348570	Lincoln	1388	173	TOB, Tgsb, Tgg	G
BL217	475601118561801	10/7/1971	-118.9394632	47.93348570	Lincoln	1388	173	TOB, Tgsb, Tgg	G
BL223	GB06230802	6/23/2008	-118.7769000	47.29191700	Lincoln	1833	2245	Tgsb, Tgu, Tgo, Tgg, Tgwr, Tgud	G
BL224	GB06240802	6/24/2008	-118.8624000	47.26853300	Lincoln	1768	845	Tgsb	G
BL225	GB06240803	6/24/2008	-118.899233	47.275483	Lincoln	1781	300	Tr, Tf	W
BL226	GB06240810	6/24/2008	-118.6247500	47.55171700	Lincoln	2084	1653	Tgsb, Tgg, Tgwr	G
BL227	GB06240811	6/24/2008	-118.6574	47.51635	Lincoln	2057	449	Tpr, Tr, Tf, Tgsb	WG
BL228	GB06250802	6/25/2008	-118.8467170	47.30173300	Lincoln	1710	2430	Tgsb, Tgu, Tgo, Tgg, Tgwr, Tgud	G
BL229	GB06250803	6/25/2008	-118.8523500	47.28251700	Lincoln	1782	200	Tr, Tf	W
BL230	GB07080804	7/8/2008	-118.2676330	47.27580000	Lincoln	1908	605	Tpr, Tr, Tf, Tgsb	WG
BL231	GB07140801	7/14/2008	-118.1562170	47.64786700	Lincoln	2428	975	Tgsb, Tgwr	G

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BA001	7.40	NA	0.0118	-0.3	-2.96	-2.97	-3.16	-4.03	-2.53	-3.15	-4.74					-3.13
BA002	7.70	NA	0.0121	-3.1	-2.96	-2.98	-3.16	-4.04	-2.51	-3.15	-4.74					-3.14
BA003	7.70	NA	0.0119	-0.7	-2.95	-2.97	-3.16	-4.00	-2.52	-3.19	-4.74					-3.13
BA006	7.40	NA	0.0063	-0.9	-3.32	-3.26	-2.81	-3.74	-2.39	-4.19	-4.37		-7.70		-6.10	-2.90
BA007	7.70	NA	0.0063	-1.8	-3.32	-3.26	-2.81	-3.74	-2.39	-4.15	-4.37		-8.80		-6.08	-2.92
BA008	7.70	NA	0.0064	-1.2	-3.30	-3.26	-2.80	-3.78	-2.38	-4.15	-4.42				-6.08	-2.90
BA010	7.20	NA	0.0058	0.2	-3.17	-3.30	-3.14	-4.05	-2.50	-3.95	-4.72		-7.25			-3.11
BA011	7.90	NA	0.0072	0.1	-3.23	-3.32	-2.68	-3.67	-2.37	-3.91	-4.55					-3.06
BA012	8.00	NA	0.0089	-1.0	-3.07	-3.19	-2.78	-3.70	-2.33	-3.83	-4.63		-9.33			-3.08
BA013	8.00	NA	0.0079	-0.5	-3.14	-3.26	-2.73	-3.70	-2.36	-3.85	-4.63					-3.07
BA016	8.10	NA	0.0044	-2.4	-3.49	-3.59	-2.84	-3.65	-2.59	-3.79	-4.36		-8.26			-3.20
BA017	7.70	NA	0.0073	3.3	-3.01	-3.24	-3.26	-4.08	-2.64	-3.87	-4.85					-3.15
BA018	8.00	NA	0.0108	1.0	-2.85	-3.13	-3.21	-3.98	-2.65	-3.74	-5.03					-3.18
BA019	8.10	NA	0.0086	-0.9	-2.95	-3.20	-3.23	-4.04	-2.67	-3.81	-5.03				-7.02	-3.17
BA020	9.10	NA	0.0043	0.8	-4.26	-4.53	-2.51	-3.69	-2.67	-3.80	-3.86		-12.73			-2.94
BA022	8.00	NA	0.0052	3.0	-3.55	-3.50	-2.70	-3.45	-2.57	-3.65	-4.54					-3.05
BA023	7.70	NA	0.0050	-4.1	-3.76	-3.88	-2.66	-3.16	-2.58	-3.45	-4.41		-8.15		-6.66	-2.95
BA025	8.30	NA	0.0041	-0.8	-3.78	-3.84	-2.64	-3.78	-2.60	-3.87	-4.06		-10.66			-2.97
BA026	8.40	NA	0.0040	0.4	-3.78	-3.84	-2.64	-3.77	-2.60	-4.01	-4.06					-2.98
BA027	8.80	NA	0.0048	0.8	-3.81	-3.86	-2.56	-3.58	-2.60	-3.67	-3.95		-11.87			-3.00
BA028	8.70	NA	0.0044	-1.0	-3.93	-3.98	-2.56	-3.62	-2.61	-3.75	-3.83		-11.88			-2.98
BA029	8.80	NA	0.0046	-0.2	-3.81	-3.84	-2.58	-3.63	-2.61	-3.69	-3.95					-3.01
BA030	7.80	NA	0.0049	-1.0	-3.61	-3.70	-2.66	-3.51	-2.60	-3.52	-4.08		-7.44		-6.19	-3.00
BA031	8.60	NA	0.0039	-2.0	-3.76	-3.87	-2.69	-3.69	-2.64	-3.89	-4.08					-2.98
BA032	7.90	NA	0.0059	0.0	-3.29	-3.40	-2.87	-3.63	-2.54	-3.56	-4.54		-7.57			-2.97
BA033	8.60	NA	0.0046	0.2	-3.65	-3.46	-2.77	-3.82	-2.69	-3.64	-4.31		-11.17			-3.07
BA034	8.70	NA	0.0045	0.3	-3.69	-3.50	-2.73	-3.78	-2.68	-3.73	-4.20					-3.05
BA035	8.20	NA	0.0035	-1.0	-3.73	-4.19	-2.68	-3.68	-2.62	-4.11	-4.10		-9.37			-2.97
BA036	7.70	NA	0.0103	-0.3	-3.19	-2.84	-3.18	-4.36	-2.33	-3.92	-4.56					-3.01
BA037	8.00	NA	0.0051	0.7	-3.45	-3.46	-2.78	-3.64	-2.61	-3.67	-4.47					-3.10
BA038	8.00	NA	0.0050	0.8	-3.50	-3.49	-2.74	-3.63	-2.61	-3.65	-4.54					-3.10
BA041	8.20	NA	0.0048	0.3	-3.88	-3.86	-2.55	-3.51	-2.57	-3.66	-4.06		-9.82			-3.04
BA042	8.20	NA	0.0041	-1.9	-3.51	-3.44	-2.98	-3.77	-2.59	-4.25	-4.71		-9.90			-3.14
BA043	8.10	NA	0.0041	-0.7	-3.51	-3.44	-2.96	-3.77	-2.58	-4.24	-4.71					-3.16
BA044	8.10	NA	0.0041	-0.5	-3.51	-3.40	-3.00	-3.77	-2.58	-4.30	-4.71					-3.14
BA046	8.40	NA	0.0045	0.7	-3.26	-3.44	-3.19	-4.06	-2.65	-4.01	-4.84					-3.15
BA047	8.60	NA	0.0045	-0.4	-3.32	-3.55	-2.96	-3.94	-2.67	-3.94	-4.36					-3.05
BA048	8.50	NA	0.0047	-1.7	-3.28	-3.45	-3.09	-4.00	-2.66	-3.90	-4.62					-3.11
BA050	9.30	NA	0.0053	0.0	-4.05	-4.08	-2.45	-3.71	-2.68	-3.61	-3.63		-13.23			-2.95
BA051	9.10	NA	0.0052	-4.9	-4.23	-4.29	-2.45	-3.70	-2.59	-3.64	-3.67		-12.57			-2.93
BA052	9.30	NA	0.0050	0.6	-4.18	-4.25	-2.46	-3.71	-2.70	-3.64	-3.68		-13.24			-2.97
BA058	7.60	NA	0.0041	0.9	-3.28	-3.47	-3.28	-4.13	-2.64	-4.27	-4.84		-8.46			-3.09
BA059	7.90	NA	0.0040	1.0	-3.29	-3.47	-3.31	-4.10	-2.65	-4.27	-4.84					-3.09
BA061	7.80	NA	0.0102	5.3	-3.09	-3.06	-2.70	-3.83	-2.53	-3.26	-4.64					-3.00
BA062	8.60	NA	0.0045	-0.6	-4.30	-4.64	-2.49	-3.55	-2.59	-3.69	-3.86					-3.01
BA063	8.30	NA	0.0045	-6.2	-4.51	-4.84	-2.49	-3.55	-2.52	-3.70	-3.90		-10.35		-7.11	-2.98
BA064	8.50	NA	0.0042	-2.7	-4.56	-4.94	-2.51	-3.54	-2.58	-3.70	-3.89		-10.96			-3.00
BA065	7.40	NA	0.0039	-1.2	-3.31	-3.47	-3.31	-4.16	-2.65	-4.35	-4.84					-3.11
BA066	7.90	NA	0.0040	-0.3	-3.30	-3.47	-3.31	-4.19	-2.64	-4.35	-4.84					-3.11
BA067	7.90	NA	0.0038	-0.4	-3.31	-3.51	-3.31	-4.16	-2.66	-4.36	-4.83					-3.11
BA068	8.10	NA	0.0057	0.6	-3.56	-3.14	-2.92	-4.20	-2.57	-3.70	-4.62					-3.07
BA069	8.10	NA	0.0051	-1.5	-3.65	-3.18	-2.95	-4.28	-2.58	-3.83	-4.54					-3.05
BA070	9.00	NA	0.0043	-1.5	-3.97	-4.14	-2.56	-3.58	-2.63	-3.78	-4.06		-12.00			-2.93
BA071	9.00	4.20	0.0039	-1.2	-4.51	-5.56	-2.52	-3.69	-2.65	-3.93	-3.93		-13.10	-21.85		-2.87
BA072	9.00	NA	0.0039	-0.7	-4.53	-5.25	-2.52	-3.71	-2.66	-3.96	-3.91		-12.60			-2.88
BA073	8.50	NA	0.0038	-1.4	-3.91	-4.25	-2.61	-3.64	-2.60	-4.00	-4.08		-11.28			-2.94
BA074	8.60	6.56	0.0038	-0.9	-3.94	-4.30	-2.60	-3.66	-2.62	-3.94	-4.10		-13.84	-20.29		-2.94
BA075	8.30	NA	0.0035	-1.0	-3.33	-3.54	-3.43	-4.09	-2.67	-4.58	-5.01					-3.10
BA076	8.00	NA	0.0035	-1.6	-3.33	-3.53	-3.41	-4.08	-2.66	-4.44	-5.01					-3.09
BA077	7.80	NA	0.0035	-0.4	-3.33	-3.54	-3.41	-4.06	-2.67	-4.44	-5.01					-3.09
BA078	9.40	NA	0.0044	-3.6	-4.42	-4.55	-2.51	-3.77	-2.70	-3.97	-3.74		-13.69			-2.95
BA079	9.20	NA	0.0042	-3.2	-4.38	-4.53	-2.51	-3.75	-2.64	-4.04	-3.86		-13.02			-2.92
BA080	8.30	NA	0.0049	-2.0	-3.53	-3.86	-2.64	-3.58	-2.59	-3.65	-4.14					-2.97
BA081	7.90	NA	0.0042	0.8	-3.37	-3.40	-3.09	-4.09	-2.59	-4.23	-4.61					-3.10
BA082	7.80	NA	0.0042	0.5	-3.39	-3.40	-3.09	-4.08	-2.60	-4.20	-4.71					-3.12
BA083	8.00	NA	0.0042	1.1	-3.38	-3.40	-3.09	-4.08	-2.60	-4.15	-4.71					-3.10
BA084	7.90	NA	0.0051	-0.8	-3.57	-3.25	-2.89	-4.40	-2.67	-3.64	-4.41		-8.72			-3.06
BA085	8.10	NA	0.0057	0.6	-3.51	-3.15	-2.98	-4.29	-2.66	-3.54	-4.48					-3.06
BA087	8.20	NA	0.0039	1.5	-3.60	-3.93	-2.69	-3.73	-2.64	-3.92	-4.13		-9.85			-2.95
BA088	8.30	NA	0.0038	-2.3	-3.63	-3.97	-2.73	-3.70	-2.63	-4.04	-4.13					-2.98
BA089	8.10	5.63	0.0037	-1.8	-3.66	-4.02	-2.72	-3.68	-2.63	-4.01	-4.13					-2.95
BA090	8.20	NA	0.0053	-1.3	-3.12	-3.41	-3.47	-4.21	-2.60	-4.02	-5.02		-10.20			-3.23
BA091	7.60	NA	0.0053	1.2	-3.10	-3.41	-3.48	-4.19	-2.61	-4.09	-5.02					-3.24
BA092	7.80	NA	0.0051	-0.3	-3.11	-3.44	-3.48	-4.23	-2.62	-4.05	-5.02					-3.22
BA093	7.70	NA	0.0049	1.0	-3.39	-3.45	-2.89	-3.67	-2.59	-3.77	-4.54		-8.24			-3.01
BA094	7.90	NA	0.0049	-2.3	-3.41	-3.45	-2.89	-3.66	-2.57	-3.76	-4.62					-3.00
BA095	7.90	NA	0.0049	-1.7	-3.41	-3.45	-2.90	-3.67	-2.59	-3.74	-4.62		-9.08			-3.03
BA097	7.80	NA	0.0107	0.6	-3.10	-3.03	-2.77	-3.68	-2.42	-3.20	-4.49		-8.72			-3.03
BA098	7.90	NA	0.0097	-1.2	-3.17	-3.13	-2.71	-3.60	-2.46	-3.23	-4.55		-8.86			-3.06
BA099	8.00	NA	0.0055	-0.4	-3.16	-3.33	-3.32	-4.14	-2.69	-3.90	-4.84		-9.61			-3.13
BA100	7.60	NA	0.0055	0.9	-3.15	-3.35	-3.28	-4.11	-2.69	-3.95	-4.84					-3.14
BA101	7.80	NA	0.0054	1.0	-3.16	-3.35	-3.25	-4.12	-2.69	-3.90	-4.84					-3.13
BA102	7.40	NA	0.0114	-0.3	-3.01	-3.01	-2.89	-3.53	-2.32	-3.34	-4.86		-7.97			-3.06
BA103	7.70	NA	0.0113	-2.8	-3.02	-3.02	-2.89	-3.53	-2.31	-3.35	-4.86					-3.06

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BA104	7.70	NA	0.0108	0.0	-3.02	-3.00	-2.95	-3.72	-2.32	-3.48	-4.73					-3.05
BA105	7.90	NA	0.0105	-2.8	-3.05	-3.12	-2.74	-3.85	-2.41	-3.34	-4.73					-3.20
BA106	7.60	NA	0.0118	-0.3	-2.94	-3.02	-2.88	-4.09	-2.38	-3.36	-4.86					-3.14
BA107	8.00	NA	0.0052	0.1	-3.50	-3.64	-2.73	-3.40	-2.68	-3.35	-4.54		-8.52			-3.25
BA110	8.10	NA	0.0050	-2.9	-3.41	-3.65	-2.76	-3.68	-2.59	-3.67	-4.27					-3.01
BA111	8.10	NA	0.0049	0.1	-3.39	-3.63	-2.77	-3.68	-2.62	-3.72	-4.27					-3.03
BA112	8.20	NA	0.0033	0.7	-3.65	-3.33	-3.35	-4.62	-2.74	-4.02	-4.83		-10.20			-3.19
BA114	8.10	NA	0.0039	-0.4	-3.53	-3.28	-3.28	-4.51	-2.66	-4.00	-4.71		-9.89			-3.17
BA115	7.70	NA	0.0092	0.1	-3.13	-3.10	-2.77	-3.91	-2.38	-3.50	-4.73					-3.11
BA116	7.90	NA	0.0101	-0.9	-3.10	-3.05	-2.76	-3.96	-2.39	-3.52	-4.73					-3.14
BA117	7.60	NA	0.0134	1.9	-2.94	-2.92	-2.73	-4.11	-2.35	-3.59	-4.74					-3.15
BA119	8.30	NA	0.0035	0.0	-3.80	-4.23	-2.64	-3.73	-2.60	-4.41	-3.99	-15.20	-9.68			-2.90
BA120	7.70	NA	0.0037	-2.1	-3.38	-3.46	-3.28	-4.12	-2.65	-4.41	-4.71					-3.11
BA121	7.70	NA	0.0037	-2.4	-3.38	-3.46	-3.28	-4.13	-2.65	-4.40	-4.71					-3.12
BA122	7.70	NA	0.0050	-0.9	-3.25	-3.32	-3.22	-4.09	-2.55	-4.13	-4.84					-3.12
BA123	8.20	NA	0.0036	1.4	-3.76	-4.13	-2.65	-3.75	-2.62	-4.23	-4.61					-2.95
BA124	7.80	NA	0.0035	-1.3	-3.77	-4.16	-2.67	-3.75	-2.62	-4.27	-4.03					-2.96
BA125	8.30	NA	0.0035	-3.2	-3.79	-4.15	-2.68	-3.73	-2.61	-4.27	-3.99					-2.99
BA126	8.30	NA	0.0037	-2.3	-3.71	-4.06	-2.69	-3.73	-2.60	-4.16	-4.13					-2.95
BA127	8.00	NA	0.0036	-0.3	-3.62	-3.97	-2.74	-3.75	-2.62	-4.17	-4.16	-14.85				-2.96
BA128	8.20	5.12	0.0035	-3.7	-3.70	-4.05	-2.74	-3.75	-2.64	-4.16	-4.13					-2.96
BA130	7.30	NA	0.0078	0.8	-3.04	-3.19	-3.08	-4.25	-2.58	-3.76	-5.03		-7.38			-3.19
BA131	7.10	NA	0.0057	0.9	-3.17	-3.30	-3.17	-4.33	-2.64	-3.83	-5.02					-3.19
BA132	7.30	NA	0.0059	1.7	-3.13	-3.30	-3.19	-4.29	-2.65	-3.88	-5.02					-3.18
BA133	8.00	NA	0.0034	-3.4	-3.65	-3.99	-2.78	-3.75	-2.62	-4.35	-4.08		-9.47			-2.97
BA134	8.20	NA	0.0035	-1.3	-3.62	-3.98	-2.77	-3.75	-2.62	-4.34	-4.10					-2.99
BA135	8.30	NA	0.0037	-5.0	-3.78	-4.04	-2.68	-3.75	-2.58	-4.04	-4.10		-10.64			-2.99
BA136	8.00	NA	0.0051	-0.7	-3.55	-3.46	-2.78	-3.55	-2.60	-3.51	-4.62		-8.69			-3.26
BA137	9.30	NA	0.0046	-2.8	-4.66	-5.61	-2.45	-3.77	-2.67	-4.04	-3.70		-13.19			-2.89
BA138	9.20	NA	0.0045	-1.8	-4.62	-5.12	-2.46	-3.79	-2.64	-4.08	-3.83		-12.79			-2.90
BA140	7.30	NA	0.0031	-2.3	-3.41	-3.57	-3.42	-4.30	-2.77	-4.26	-5.01		-7.66			-3.17
BA141	8.10	NA	0.0046	-1.2	-3.63	-3.67	-2.65	-3.93	-2.58	-3.74	-4.11		-8.88			-3.31
BA142	8.20	NA	0.0044	-0.3	-3.67	-3.72	-2.65	-3.70	-2.59	-3.81	-4.11					-3.03
BA143	8.10	NA	0.0045	2.4	-3.63	-3.71	-2.63	-3.72	-2.58	-3.86	-4.14		-9.97			-3.01
BA144	8.30	NA	0.0042	-1.0	-3.63	-3.85	-2.71	-3.48	-2.61	-3.73	-4.53					-3.10
BA145	8.40	NA	0.0038	-1.2	-3.79	-4.04	-2.66	-3.62	-2.61	-3.94	-4.27					-3.03
BA146	8.30	4.86	0.0035	-2.6	-3.90	-4.19	-2.67	-3.64	-2.62	-4.00	-4.19					-3.00
BA147	7.80	NA	0.0115	-0.5	-2.88	-3.06	-3.01	-4.01	-2.42	-3.66	-4.64		-8.71			-3.21
BA148	7.90	NA	0.0109	-1.7	-2.93	-3.07	-2.98	-3.98	-2.44	-3.66	-4.73				-6.75	-3.23
BA149	8.40	NA	0.0042	-3.3	-3.97	-4.28	-2.57	-3.71	-2.60	-3.61	-4.13					-2.99
BA150	8.30	3.68	0.0045	-8.9	-4.00	-4.33	-2.56	-3.68	-2.52	-3.66	-4.13					-2.98
BA151	8.50	NA	0.0042	-1.8	-4.00	-4.31	-2.55	-3.70	-2.61	-3.63	-4.16					-2.99
BA152	8.20	NA	0.0040	-1.8	-3.59	-3.59	-2.81	-3.87	-2.62	-4.17	-4.17					-3.05
BA153	8.30	NA	0.0045	-2.3	-3.42	-3.41	-2.98	-3.92	-2.62	-4.04	-4.47					-3.11
BA154	8.20	NA	0.0042	-2.7	-3.51	-3.55	-2.84	-3.87	-2.62	-4.06	-4.23					-3.05
BA155	7.60	NA	0.0059	-1.3	-3.23	-3.33	-2.94	-3.96	-2.47	-4.03	-4.84		-7.66			-3.12
BA156	8.00	NA	0.0046	-0.4	-3.36	-3.48	-3.00	-3.73	-2.67	-3.75	-4.62					-3.12
BA157	8.00	NA	0.0043	-0.5	-3.42	-3.52	-2.96	-3.66	-2.66	-3.80	-4.61					-3.11
BA158	8.20	NA	0.0048	-2.3	-3.34	-3.42	-3.05	-3.76	-2.65	-3.76	-4.71					-3.11
BA159	7.90	NA	0.0050	1.2	-3.21	-3.35	-3.22	-4.30	-2.58	-4.17	-5.02					-3.12
BA160	7.90	NA	0.0038	-3.4	-3.24	-3.64	-3.43	-4.32	-2.80	-3.93	-5.31					-3.30
BA161	8.20	NA	0.0033	-0.8	-3.34	-3.65	-3.31	-4.20	-2.80	-4.08	-4.83					-3.28
BA162	8.00	NA	0.0032	0.0	-3.34	-3.68	-3.31	-4.22	-2.82	-4.04	-4.83					-3.26
BA163	8.00	NA	0.0047	-2.7	-3.50	-3.61	-2.76	-3.63	-2.58	-3.70	-4.31					-3.04
BA164	8.10	NA	0.0044	-0.4	-3.52	-3.67	-2.76	-3.68	-2.60	-3.84	-4.23					-3.01
BA165	7.90	NA	0.0043	-0.9	-3.54	-3.68	-2.76	-3.66	-2.59	-3.86	-4.20					-2.99
BA166	8.10	NA	0.0076	0.8	-3.26	-3.34	-2.66	-3.63	-2.55	-3.34	-4.63				-7.76	-3.16
BA167	7.90	NA	0.0109	0.7	-3.04	-3.18	-2.61	-3.79	-2.50	-3.16	-4.63				-9.06	-3.15
BA168	7.60	NA	0.0182	-0.6	-2.83	-2.99	-2.50	-3.77	-2.40	-2.93	-4.75				-9.08	-3.14
BA169	7.80	NA	0.0231	-10.7	-2.78	-2.91	-2.48	-3.71	-2.16	-2.87	-4.76		-9.24		-8.70	-3.10
BA170	8.60	NA	0.0042	-2.0	-4.18	-4.84	-2.51	-3.72	-2.59	-3.79	-4.03					-2.94
BA171	8.10	NA	0.0036	0.3	-3.48	-3.51	-3.07	-3.86	-2.65	-4.20	-4.61	-14.05	-8.41			-3.14
BA174	7.80	NA	0.0056	-0.2	-3.16	-3.68	-2.92	-3.86	-2.65	-3.50	-4.62		-7.43			-3.10
BA175	8.90	NA	0.0055	-0.5	-3.80	-3.95	-2.48	-3.75	-2.62	-3.49	-3.99		-12.14			-3.02
BA177	9.30	NA	0.0045	-2.2	-4.89	-5.59	-2.45	-3.80	-2.64	-4.41	-3.65		-13.11			-2.86
BA178	9.40	NA	0.0046	-3.2	-4.93	-5.61	-2.45	-3.81	-2.66	-4.42	-3.62		-13.25			-2.94
BA179	8.50	NA	0.0037	-0.1	-3.77	-3.98	-2.68	-3.67	-2.62	-3.97	-4.35	-15.91	-10.58			-3.07
BA182	8.30	NA	0.0034	-1.8	-3.87	-4.08	-2.69	-3.81	-2.63	-4.03	-4.23	-16.27				-3.02
BA183	8.20	NA	0.0033	-0.7	-3.88	-4.08	-2.70	-3.79	-2.64	-4.11	-4.27					-3.04
BA185	9.00	NA	0.0035	-5.1	-4.12	-4.36	-2.63	-3.76	-2.62	-4.37	-4.01		-12.78			-3.00
BA186	8.90	3.37	0.0034	-1.9	-4.17	-4.49	-2.61	-3.74	-2.63	-4.41	-3.93		-11.84	-21.53		-2.96
BA187	8.90	NA	0.0034	-2.4	-4.24	-4.63	-2.60	-3.74	-2.63	-4.40	-3.89					-2.95
BA188	8.30	NA	0.0036	-2.8	-3.83	-3.96	-2.68	-3.83	-2.60	-4.07	-4.23		-10.32			-3.02
BA189	8.00	NA	0.0048	-0.7	-3.41	-3.49	-2.88	-3.71	-2.58	-3.75	-4.47		-9.56			-3.18
BA190	7.90	NA	0.0100	0.6	-3.04	-3.22	-2.71	-3.68	-2.68	-3.19	-4.63		-9.05			-3.11
BA191	7.60	NA	0.0064	0.2	-3.14	-3.34	-2.97	-4.05	-2.46	-3.79	-4.84					-3.14
BA192	8.80	NA	0.0036	-3.4	-4.13	-4.30	-2.60	-3.72	-2.60	-4.22	-3.89		-11.89			-2.99
BA193	8.80	NA	0.0037	-3.7	-3.97	-4.13	-2.64	-3.67	-2.61	-4.16	-3.93					-3.01
BA194	9.00	NA	0.0035	-2.2	-4.49	-4.85	-2.57	-3.78	-2.64	-4.76	-3.80		-12.61			-2.94
BA195	8.90	NA	0.0035	-2.5	-4.57	-5.54	-2.55	-3.76	-2.62	-4.41	-3.82		-12.60			-2.92
BA196	8.90	NA	0.0034	0.8	-4.47	-4.93	-2.55	-3.80	-2.64	-5.80	-3.84	-18.53	-12.29			-2.91
BA197	7.80	NA	0.0081	1.6	-3.09	-3.27	-2.87	-3.65	-2.68	-3.31	-4.48		-8.32			-3.16
BA198	8.00	NA	0.0067	0.6	-3.19	-3.41	-2.83	-3.63	-2.66	-3.37	-4.54					-3.12
BA199	8.10	NA	0.0049	-0.4	-3.34	-3.53	-2.89	-3.81	-2.63	-3.66	-4.54		-9.46			-3.12

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BA200	7.60	NA	0.0051	0.9	-3.34	-3.49	-2.86	-3.82	-2.63	-3.64	-4.62					-3.11
BA201	7.30	NA	0.0111	-1.1	-3.03	-3.14	-2.61	-4.04	-2.37	-3.37	-4.86		-7.43			-3.19
BA202	7.50	NA	0.0107	-1.9	-3.05	-3.17	-2.58	-4.07	-2.37	-3.41	-4.86					-3.19
BA203	7.40	NA	0.0110	0.3	-3.01	-3.19	-2.57	-4.10	-2.39	-3.39	-4.86					-3.19
BA204	7.60	NA	0.0060	-0.5	-3.13	-3.28	-3.32	-4.35	-2.68	-3.74	-4.84		-8.10			-3.19
BA205	7.80	NA	0.0060	-1.7	-3.13	-3.28	-3.36	-4.37	-2.69	-3.72	-4.84					-3.22
BA206	8.10	NA	0.0047	-0.2	-3.35	-3.53	-2.96	-3.70	-2.65	-3.66	-4.62					-3.15
BA207	8.30	NA	0.0045	-0.7	-3.45	-3.68	-2.82	-3.66	-2.68	-3.60	-4.53					-3.12
BA208	8.20	NA	0.0046	-2.6	-3.45	-3.66	-2.82	-3.67	-2.66	-3.61	-4.54					-3.14
BA210	7.80	NA	0.0038	0.0	-3.39	-3.61	-3.03	-3.91	-2.65	-4.09	-4.71		-8.36			-3.07
BA211	8.00	NA	0.0037	-1.3	-3.56	-3.75	-2.84	-3.82	-2.63	-4.01	-4.36		-7.90			-3.04
BA213	7.80	NA	0.0038	0.6	-3.39	-3.60	-3.03	-3.96	-2.65	-4.09	-4.71		-7.98			-3.08
BA223	7.80	NA	0.0075	-1.2	-3.04	-3.22	-3.12	-4.35	-2.50	-4.09	-4.72		-8.51			-3.13
BA224	8.00	NA	0.0054	-2.1	-3.16	-3.35	-3.28	-4.42	-2.56	-4.22	-4.72					-3.13
BA225	7.90	NA	0.0048	-0.8	-3.20	-3.37	-3.40	-4.42	-2.57	-4.38	-4.71					-3.11
BA226	8.20	NA	0.0038	-7.4	-3.74	-3.83	-2.73	-3.87	-2.56	-4.17	-4.03		-10.00			-3.04
BA227	8.10	NA	0.0036	-1.5	-3.75	-3.90	-2.71	-3.87	-2.62	-4.16	-4.03		-10.01			-3.03
BA228	8.40	NA	0.0036	-0.5	-3.70	-3.81	-2.74	-3.90	-2.63	-4.22	-4.10		-10.43			-3.05
BA229	7.80	NA	0.0081	-1.2	-3.05	-3.17	-3.04	-3.94	-2.73	-3.74	-5.03		-8.01			-3.22
BA231	8.00	NA	0.0080	-1.4	-3.25	-3.18	-2.70	-3.69	-2.47	-3.83	-4.55				-7.04	-3.18
BA232	8.00	NA	0.0078	0.4	-3.25	-3.20	-2.70	-3.72	-2.52	-3.67	-4.63				-7.03	-3.17
BA233	8.10	NA	0.0080	-1.4	-3.25	-3.20	-2.69	-3.69	-2.51	-3.64	-4.63					-3.19
BA234	8.40	NA	0.0039	-2.5	-3.77	-3.97	-2.66	-3.78	-2.63	-3.87	-3.95					-3.05
BA236	8.00	NA	0.0046	-3.0	-3.43	-3.74	-2.76	-3.81	-2.60	-3.68	-4.84		-9.60			-3.26
BA238	8.10	NA	0.0040	-3.8	-3.78	-4.48	-2.60	-3.75	-2.58	-3.84	-4.13		-8.58		-7.01	-3.24
BA239	8.00	NA	0.0056	1.9	-3.15	-3.42	-3.12	-4.06	-2.66	-3.63	-4.72		-9.26			-3.13
BA240	8.10	NA	0.0062	-2.1	-3.12	-3.40	-3.10	-4.00	-2.64	-3.56	-4.72					-3.16
BA241	8.20	NA	0.0052	1.0	-3.19	-3.45	-3.12	-4.05	-2.65	-3.67	-4.71					-3.13
BA242	8.00	NA	0.0065	-2.3	-3.31	-3.38	-2.76	-3.70	-2.59	-3.49	-4.54					-3.05
BA243	8.10	NA	0.0057	-0.2	-4.02	-4.05	-2.46	-3.21	-2.50	-3.44	-4.31		-8.79			-3.23
BA252	8.80	1.99	0.0038	1.5	-4.14	-4.84	-2.52	-4.45	-2.68	-3.85	-3.91	-19.38			-9.01	-2.69
BA253	8.70	2.00	0.0034	0.6	-4.17	-4.92	-2.56	-4.54	-2.64	-4.23	-3.93	-18.41	-9.66	-20.73	-8.30	-2.76
BA254	8.30	1.11	0.0038	3.9	-4.12	-4.27	-2.55	-3.87	-2.67	-3.71	-4.53	-16.52	-8.26	-20.22	-8.53	-2.75
BA255	9.10	2.22	0.0038	4.7	-4.87	-5.55	-2.48	-3.87	-2.70	-4.25	-3.80	-20.69	-12.82	-23.55	-7.13	-2.70
BA256	6.30	4.13	0.0047	13.0	-3.25	-3.40	-3.03	-3.92	-2.72	-3.97	-4.84	-10.30	-8.56	-17.63	-6.44	-2.88
BF002	8.60	NA	0.0055	0.2	-4.52	-4.85	-2.34	-3.59	-2.37	-5.83	-4.06		-10.92			-3.07
BF003	8.10	NA	0.0037	2.4	-3.48	-3.66	-2.93	-3.84	-2.70	-3.90	-4.53		-10.35			-3.19
BF004	7.90	NA	0.0048	-2.2	-3.35	-3.51	-2.96	-3.71	-2.62	-3.70	-4.62					-3.10
BF005	7.90	NA	0.0069	-15.4	-3.39	-3.36	-2.81	-3.52	-2.41	-3.42	-4.54					-3.03
BF006	7.80	NA	0.0058	0.8	-3.39	-3.27	-2.94	-3.63	-2.61	-3.46	-4.37					-3.01
BF007	7.80	NA	0.0059	0.3	-3.39	-3.27	-2.92	-3.63	-2.61	-3.46	-4.37		-9.08			-3.03
BF008	8.00	NA	0.0059	0.6	-3.39	-3.27	-2.92	-3.63	-2.61	-3.46	-4.42					-3.02
BF009	8.20	NA	0.0068	-13.9	-3.41	-3.50	-2.71	-3.59	-2.47	-3.28	-4.54					-3.08
BF010	7.70	NA	0.0035	-0.1	-3.50	-3.66	-3.01	-3.82	-2.75	-3.85	-4.46					-2.94
BF011	7.90	NA	0.0036	-0.1	-3.50	-3.64	-2.99	-3.80	-2.74	-3.83	-4.53					-2.94
BF012	8.00	NA	0.0035	-1.1	-3.50	-3.67	-3.01	-3.81	-2.75	-3.81	-4.53					-2.94
BF013	8.00	NA	0.0092	-2.1	-3.02	-3.23	-2.92	-3.82	-2.51	-3.29	-4.73					-3.19
BF014	7.90	NA	0.0096	1.2	-3.14	-3.19	-2.62	-3.67	-2.70	-3.27	-4.73		-9.37			-3.02
BF015	8.00	NA	0.0058	-15.6	-3.45	-3.59	-2.75	-3.59	-2.43	-3.67	-4.36					-2.91
BF016	7.70	NA	0.0075	0.6	-3.07	-3.31	-2.91	-4.24	-2.46	-3.48	-5.02		-7.33			-3.21
BF017	8.00	NA	0.0059	-15.7	-3.41	-3.55	-2.77	-3.64	-2.42	-3.70	-4.41					-2.93
BF018	7.80	NA	0.0060	-14.7	-3.39	-3.55	-2.75	-3.66	-2.42	-3.69	-4.47					-2.91
BF019	8.30	NA	0.0082	-0.7	-3.29	-3.64	-2.50	-3.36	-2.55	-3.19	-4.85				-6.35	-3.28
BF020	8.30	NA	0.0077	0.2	-3.34	-3.68	-2.50	-3.33	-2.55	-3.23	-4.72				-6.35	-3.24
BF021	8.20	NA	0.0079	-0.3	-3.32	-3.66	-2.50	-3.38	-2.55	-3.21	-4.85				-6.25	-3.22
BF022	7.70	NA	0.0128	0.0	-2.88	-3.03	-3.09	-3.98	-2.53	-3.07	-4.74		-8.41			-3.13
BF023	7.80	NA	0.0049	-1.8	-3.47	-3.67	-2.72	-3.58	-2.58	-3.72	-4.31		-8.80			-2.86
BF024	8.00	NA	0.0047	1.6	-3.47	-3.67	-2.73	-3.58	-2.63	-3.71	-4.31					-2.88
BF025	8.20	NA	0.0047	-1.6	-3.50	-3.69	-2.73	-3.58	-2.61	-3.71	-4.36					-2.86
BF027	7.80	NA	0.0086	-6.3	-3.07	-3.23	-2.94	-3.80	-2.42	-3.38	-4.85					-3.17
BF028	7.60	NA	0.0180	-10.0	-2.78	-2.93	-2.78	-4.03	-2.21	-3.38	-4.87					-3.09
BF029	8.30	NA	0.0044	-2.1	-3.92	-4.25	-2.54	-3.51	-2.52	-3.97	-4.08					-3.00
BF030	8.00	NA	0.0032	-2.8	-3.65	-3.72	-2.93	-3.86	-2.73	-3.94	-4.35		-9.20			-2.94
BF031	7.40	NA	0.0034	3.8	-3.27	-3.67	-3.39	-4.17	-2.79	-3.95	-4.83					-3.21
BF032	7.40	NA	0.0038	-1.1	-3.25	-3.64	-3.37	-4.13	-2.72	-3.89	-4.71				-8.89	-3.19
BF036	7.70	NA	0.0112	-1.8	-2.98	-3.03	-3.09	-3.93	-2.57	-3.15	-4.86					-3.04
BF037	7.80	NA	0.0113	1.6	-2.96	-3.01	-3.07	-3.93	-2.59	-3.18	-4.86					-3.03
BF038	7.30	NA	0.0022	-0.5	-3.47	-3.90	-3.49	-4.34	-2.95	-4.02	-4.83		-7.03			-3.38
BF039	7.80	NA	0.0045	1.5	-3.40	-3.44	-2.96	-3.82	-2.60	-3.91	-4.62		-6.88			-3.16
BF040	8.10	NA	0.0044	1.0	-3.78	-4.03	-2.60	-3.50	-2.65	-3.54	-4.23	-16.59			-7.30	-2.99
BF041	8.40	NA	0.0046	2.9	-3.72	-3.94	-2.59	-3.58	-2.68	-3.52	-4.20					-2.99
BF043	8.60	NA	0.0042	0.1	-4.87	-4.94	-2.50	-3.39	-2.59	-3.84	-3.97		-11.01			-2.98
BF044	8.40	NA	0.0041	-1.6	-4.86	-5.06	-2.51	-3.42	-2.58	-3.83	-3.93	-17.55	-10.41			-2.98
BF045	8.40	NA	0.0041	-4.4	-4.86	-4.94	-2.52	-3.45	-2.56	-3.81	-3.93		-10.42			-2.99
BF046	7.90	NA	0.0104	-11.7	-2.93	-3.16	-3.37	-4.19	-2.36	-3.29	-4.86					-3.16
BF047	8.00	NA	0.0045	-1.2	-3.31	-3.44	-3.14	-3.95	-2.64	-3.87	-4.54	-13.85				-3.10
BF048	7.90	NA	0.0046	0.6	-3.31	-3.41	-3.14	-3.92	-2.64	-3.86	-4.62		-9.37			-3.10
BF050	7.80	NA	0.0049	-0.4	-3.24	-3.52	-2.96	-3.96	-2.56	-4.01	-4.54		-8.22			-3.21
BF051	8.80	NA	0.0048	-0.9	-3.81	-4.21	-2.52	-3.79	-2.57	-3.61	-4.41	-17.93	-11.01			-3.19
BF052	8.70	6.22	0.0050	-2.4	-3.67	-4.06	-2.56	-3.79	-2.58	-3.49	-4.47		-13.39	-20.30		-3.21
BF053	7.80	NA	0.0064	-2.2	-3.32	-3.44	-2.68	-3.87	-2.51	-3.54	-4.21					-3.09
BF054	7.80	NA	0.0060	-0.8	-3.37	-3.43	-2.69	-3.87	-2.53	-3.58	-4.24					-3.09
BF055	7.90	NA	0.0055	-1.2	-3.40	-3.50	-2.72	-3.89	-2.56	-3.64	-4.20					-3.08
BF056	8.80	NA	0.0039	-0.5	-4.29	-5.07	-2.54	-3.67	-2.66	-3.68	-4.08		-11.72			-2.97

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BF057	7.70	NA	0.0077	1.7	-3.12	-3.24	-2.89	-3.59	-2.58	-3.52	-4.72					-3.03
BF058	7.60	NA	0.0082	-0.3	-3.11	-3.27	-2.80	-3.58	-2.53	-3.45	-4.72		-8.62		-8.68	-3.04
BF059	7.60	NA	0.0079	-2.0	-3.14	-3.31	-2.77	-3.56	-2.50	-3.51	-4.63				-8.68	-3.03
BF060	7.50	NA	0.0079	1.1	-3.14	-3.28	-2.78	-3.55	-2.52	-3.52	-4.55	-14.25			-8.66	-3.00
BF061	7.90	NA	0.0044	0.7	-3.33	-3.44	-3.14	-3.90	-2.69	-3.81	-4.62		-7.61			-3.10
BF063	8.00	NA	0.0046	2.0	-3.26	-3.34	-3.35	-4.23	-2.65	-4.01	-4.71		-8.92			-3.20
BF067	7.70	NA	0.0119	-1.2	-2.96	-3.05	-2.80	-3.89	-2.39	-3.30	-4.74					-3.16
BF068	7.70	NA	0.0121	-1.1	-2.95	-3.04	-2.80	-3.87	-2.38	-3.31	-4.86		-8.46			-3.17
BF069	7.70	NA	0.0121	0.2	-2.94	-3.04	-2.81	-3.87	-2.38	-3.31	-4.86					-3.16
BF071	7.40	NA	0.0109	-0.7	-3.27	-3.03	-2.50	-3.32	-2.15	-4.06	-4.49		-7.54		-6.41	-2.78
BF072	7.20	NA	0.0108	-0.5	-3.27	-3.03	-2.50	-3.39	-2.15	-4.04	-4.49		-7.49		-6.38	-2.78
BF073	7.50	NA	0.0108	-1.1	-3.25	-3.05	-2.51	-3.36	-2.16	-4.04	-4.56		-7.91		-6.42	-2.78
BF074	7.60	NA	0.0064	-0.5	-3.25	-3.23	-3.06	-3.82	-2.56	-3.50	-4.62	-13.16	-8.47			-3.02
BF075	7.80	NA	0.0065	-2.1	-3.24	-3.23	-3.06	-3.85	-2.55	-3.51	-4.62		-9.05			-2.98
BF076	8.00	NA	0.0067	-3.3	-3.22	-3.24	-3.06	-3.83	-2.55	-3.45	-4.72					-3.02
BF078	7.70	NA	0.0107	2.3	-2.94	-3.08	-3.03	-3.75	-2.66	-3.28	-4.73		-6.97			-3.38
BF080	7.80	NA	0.0084	2.7	-3.17	-3.16	-2.83	-3.46	-2.59	-3.34	-4.73					-3.01
BF082	7.70	NA	0.0065	-16.8	-3.31	-3.27	-3.06	-3.92	-2.40	-3.64	-4.72					-3.07
BF083	7.50	NA	0.0055	-1.1	-3.29	-3.28	-3.08	-3.96	-2.55	-3.71	-4.62		-7.87			-3.07
BF085	7.70	NA	0.0056	-2.0	-3.31	-3.26	-3.08	-3.92	-2.54	-3.69	-4.62		-8.75			-3.07
BF086	7.70	NA	0.0057	1.5	-3.28	-3.26	-3.06	-3.95	-2.55	-3.73	-4.72					-3.06
BF087	7.90	NA	0.0248	0.2	-2.76	-2.67	-2.81	-3.77	-2.42	-2.81	-4.89		-7.38			-3.18
BF088	7.90	NA	0.0053	-0.4	-3.44	-3.46	-2.76	-3.73	-2.56	-3.67	-4.32		-9.12			-3.04
BF089	8.20	NA	0.0052	0.9	-3.46	-3.46	-2.74	-3.72	-2.58	-3.68	-4.28		-9.37			-3.07
BF090	8.00	NA	0.0051	0.5	-3.44	-3.50	-2.76	-3.71	-2.57	-3.70	-4.32		-9.43			-3.04
BF092	7.90	NA	0.0050	0.1	-3.45	-3.54	-2.74	-3.72	-2.56	-3.76	-4.27		-8.84			-3.03
BF093	7.90	NA	0.0050	0.0	-3.45	-3.53	-2.74	-3.75	-2.55	-3.77	-4.32		-8.45			-3.03
BF095	8.10	NA	0.0051	-0.1	-3.46	-3.50	-2.75	-3.74	-2.57	-3.71	-4.32		-9.40		-6.42	-3.34
BF097	8.00	NA	0.0048	-1.4	-3.57	-3.53	-2.71	-3.75	-2.57	-3.73	-4.31		-9.32			-3.01
BF101	7.80	NA	0.0053	-0.2	-3.42	-3.50	-2.75	-3.71	-2.57	-3.64	-4.32		-8.52			-3.03
BF103	7.90	NA	0.0049	0.3	-3.50	-3.49	-2.74	-3.73	-2.56	-3.78	-4.27		-8.25			-3.03
BF105	8.10	NA	0.0050	-1.1	-3.46	-3.54	-2.75	-3.75	-2.56	-3.76	-4.32					-3.04
BF106	8.10	NA	0.0049	0.0	-3.45	-3.54	-2.75	-3.74	-2.56	-3.77	-4.36					-3.04
BF108	7.60	NA	0.0078	-2.7	-3.07	-3.24	-3.02	-3.81	-2.40	-3.74	-4.72	-13.50				-3.05
BF109	7.60	NA	0.0082	-0.9	-3.05	-3.20	-2.99	-3.78	-2.39	-3.73	-4.85					-3.05
BF110	7.60	NA	0.0080	-1.7	-3.06	-3.22	-3.01	-3.77	-2.39	-3.71	-4.85					-3.05
BF111	8.70	2.13	0.0034	4.7	-4.22	-4.48	-2.57	-4.06	-2.66	-4.01	-4.70	-18.58	-10.61	-21.54	-8.95	-2.74
BF112	8.00	3.41	0.0048	21.1	-3.31	-3.40	-3.12	-3.00	-2.70	-4.06	-5.02	-14.80	-8.55	-18.24	-7.08	-2.91
BF113	7.70	-1.05	0.0044	13.6	-3.43	-3.52	-2.95	-3.11	-2.65	-3.95	-4.84		-7.58	-21.71	-8.45	-2.83
BF114	7.60	2.87	0.0065	8.9	-3.21	-3.41	-2.75	-3.59	-2.69	-3.47	-4.62	-14.09	-9.47	-19.67	-6.70	-2.76
BF115	7.50	3.08	0.0063	7.2	-3.15	-3.38	-2.88	-3.74	-2.58	-3.71	-4.48	-14.52	-9.81	-19.78	-6.81	-2.70
BF116	7.70	-1.05	0.0044	16.2	-3.41	-3.51	-2.95	-3.10	-2.67	-3.97	-4.84	-14.71	-7.49	-21.61	-8.22	-2.84
BF117	7.60	2.87	0.0065	8.0	-3.22	-3.41	-2.75	-3.60	-2.67	-3.48	-4.54	-14.51			-6.74	-2.76
BG029	7.40	NA	0.0055	-2.5	-3.22	-3.33	-3.14	-3.92	-2.50	-3.97	-4.72					-3.02
BG030	7.60	NA	0.0048	-0.2	-3.28	-3.38	-3.17	-3.93	-2.57	-3.99	-4.71					-3.02
BG031	7.20	NA	0.0059	1.2	-3.16	-3.30	-3.14	-3.91	-2.51	-3.93	-4.72					-2.99
BG033	8.00	NA	0.0056	-1.0	-3.10	-3.46	-3.46	-4.01	-2.63	-3.59	-5.02		-9.60			-2.99
BG034	7.90	NA	0.0055	-0.2	-3.09	-3.50	-3.40	-4.01	-2.64	-3.58	-5.02					-3.29
BG036	8.10	NA	0.0037	-2.0	-3.48	-3.80	-2.89	-3.71	-2.67	-3.90	-4.41					-3.09
BG037	8.20	NA	0.0036	0.0	-3.51	-3.77	-2.90	-3.64	-2.68	-3.98	-4.36					-3.06
BG038	8.00	NA	0.0050	-0.3	-3.92	-4.95	-2.49	-3.21	-2.50	-3.67	-4.23					-2.99
BG040	7.70	NA	0.0065	-1.5	-3.01	-3.41	-3.67	-3.98	-2.56	-3.50	-5.32		-8.50		-7.36	-3.48
BG041	8.30	NA	0.0033	-3.3	-3.62	-3.79	-2.91	-3.68	-2.67	-4.04	-4.35		-10.34		-6.74	-3.03
BG042	8.30	NA	0.0032	-0.4	-3.62	-3.79	-2.91	-3.65	-2.70	-4.00	-4.35		-10.33		-6.73	-3.03
BG043	7.70	NA	0.0042	0.8	-3.36	-3.56	-3.09	-3.54	-2.67	-3.72	-4.61		-7.70			-3.00
BG045	7.80	NA	0.0042	-1.4	-3.36	-3.60	-3.16	-3.39	-2.67	-3.66	-4.71		-8.29		-5.99	-2.98
BG046	7.90	NA	0.0041	1.5	-3.66	-3.87	-2.72	-3.34	-2.63	-3.73	-4.71		-8.06			-2.91
BG047	8.10	NA	0.0040	-0.9	-3.36	-3.59	-3.16	-3.58	-2.69	-3.77	-4.71		-8.92			-3.04
BG051	8.20	NA	0.0029	-1.8	-3.61	-3.72	-3.07	-3.73	-2.75	-4.00	-4.46					-4.02
BG052	8.10	3.64	0.0029	-1.7	-3.61	-3.74	-3.09	-3.72	-2.76	-4.00	-4.46				-6.65	-3.06
BG053	7.90	NA	0.0042	1.7	-3.42	-3.58	-2.98	-3.54	-2.66	-3.74	-4.53		-7.87			-3.05
BG056	8.10	NA	0.0032	1.2	-3.34	-3.61	-3.51	-4.08	-2.79	-3.95	-5.01		-9.25			-3.29
BG059	7.50	NA	0.0058	0.8	-3.28	-3.34	-2.92	-3.84	-2.55	-3.59	-4.47		-7.30		-6.24	-3.07
BG060	8.00	NA	0.0057	-1.0	-3.30	-3.34	-2.94	-3.82	-2.54	-3.60	-4.47		-8.80		-6.41	-3.09
BG061	8.00	0.61	0.0058	-0.2	-3.29	-3.35	-2.92	-3.82	-2.55	-3.56	-4.54		-6.66	-19.12	-6.41	-3.07
BG062	7.70	NA	0.0079	2.4	-3.17	-3.21	-2.82	-3.70	-2.53	-3.35	-4.63					-3.06
BG063	8.00	NA	0.0073	-1.6	-3.23	-3.32	-2.79	-3.59	-2.54	-3.35	-4.55		-9.39			-3.08
BG064	7.90	NA	0.0069	-2.2	-3.28	-3.39	-2.75	-3.55	-2.53	-3.34	-4.54					-3.08
BG066	7.90	NA	0.0082	0.5	-3.20	-3.20	-2.75	-3.64	-2.44	-3.38	-4.55		-8.02			-3.08
BG072	7.90	NA	0.0085	0.3	-3.19	-3.20	-2.72	-3.64	-2.44	-3.36	-4.55		-8.48			-3.10
BG073	7.70	NA	0.0081	-0.1	-3.21	-3.20	-2.75	-3.65	-2.44	-3.39	-4.48		-7.51			-3.03
BG074	7.90	NA	0.0083	0.1	-3.20	-3.20	-2.75	-3.64	-2.44	-3.38	-4.43		-8.10			-3.08
BG076	7.90	NA	0.0085	0.0	-3.20	-3.21	-2.72	-3.60	-2.45	-3.31	-4.55		-8.83			-3.10
BG081	7.30	NA	0.0149	1.7	-3.00	-2.86	-2.86	-3.61	-2.49	-2.90	-4.65		-7.47			-3.03
BG082	7.70	NA	0.0128	-1.6	-3.06	-2.91	-2.97	-3.75	-2.43	-3.02	-4.56		-8.46		-7.06	-3.06
BG083	7.60	NA	0.0153	-1.6	-3.00	-2.86	-2.88	-3.67	-2.44	-2.89	-4.65		-8.50			-3.05
BG084	8.00	NA	0.0165	-0.2	-3.02	-2.70	-3.17	-4.70	-2.34	-3.05	-4.45		-8.73			-3.14
BG087	8.40	NA	0.0037	-0.9	-3.84	-4.20	-2.64	-3.62	-2.61	-3.94	-4.23		-9.74			-2.90
BG088	8.20	NA	0.0038	0.1	-3.81	-4.22	-2.62	-3.62	-2.59	-3.97	-4.23		-9.84			-2.91
BG089	7.70	NA	0.0092	1.2	-3.25	-3.12	-2.58	-3.70	-2.45	-3.57	-4.63	-13.47	-8.75		-6.16	-3.14
BG091	8.40	NA	0.0037	-0.4	-3.77	-4.37	-2.64	-3.63	-2.61	-3.97	-4.27					-2.89
BG093	8.00	NA	0.0103	-3.3	-3.24	-3.09	-2.55	-3.66	-2.43	-3.57	-4.73		-9.63			-3.03
BG095	7.40	NA	0.0089	-1.2	-3.28	-3.19	-2.57	-3.60	-2.51	-3.49	-4.63		-7.71		-5.79	-3.14
BG098	8.40	NA	0.0037	-0.7	-3.82	-4.24	-2.64	-3.63	-2.61	-3.94	-4.19		-9.29			-2.89

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BG104	7.50	NA	0.0073	1.0	-3.20	-3.27	-2.85	-3.69	-2.55	-3.37	-4.55					-3.02
BG107	7.80	NA	0.0068	-1.4	-3.22	-3.23	-2.95	-3.88	-2.54	-3.51	-4.55					-3.01
BG108	7.80	NA	0.0075	-0.7	-3.22	-3.31	-2.74	-3.52	-2.51	-3.45	-4.63				-6.05	-3.03
BG109	7.70	NA	0.0081	-4.0	-3.20	-3.28	-2.74	-3.56	-2.49	-3.38	-4.55		-8.19			-2.99
BG110	7.80	NA	0.0076	1.2	-3.13	-3.25	-2.94	-3.86	-2.70	-3.30	-4.63		-9.01			-3.03
BG112	7.60	NA	0.0126	-2.1	-3.02	-3.05	-2.58	-4.25	-2.28	-3.26	-4.64		-8.39		-7.57	-3.15
BG113	7.60	NA	0.0092	0.4	-3.12	-3.17	-2.74	-3.87	-2.53	-3.26	-4.43					-3.06
BG114	7.80	NA	0.0099	-2.2	-3.11	-3.15	-2.73	-3.84	-2.54	-3.19	-4.49					-3.07
BG115	7.80	NA	0.0093	0.1	-3.11	-3.17	-2.75	-3.85	-2.53	-3.25	-4.49				-6.72	-3.07
BG116	7.80	NA	0.0073	-2.8	-3.67	-3.39	-2.47	-3.76	-2.48	-3.35	-4.62					-3.11
BG117	7.30	NA	0.0134	1.4	-3.19	-3.18	-2.38	-3.54	-2.55	-2.81	-4.30		-7.82			-2.92
BG118	7.60	NA	0.0134	-0.3	-3.21	-3.19	-2.38	-3.54	-2.54	-2.81	-4.30		-8.57			-2.93
BG119	7.60	NA	0.0131	0.9	-3.20	-3.21	-2.38	-3.57	-2.54	-2.83	-4.34				-6.59	-2.93
BG121	7.40	NA	0.0116	-0.6	-3.14	-3.07	-2.56	-3.69	-2.35	-3.17	-4.56		-6.84		-5.81	-3.04
BG122	7.70	NA	0.0130	-2.0	-3.07	-2.87	-2.84	-3.85	-2.37	-3.24	-4.74					-3.03
BG124	7.90	NA	0.0065	0.6	-3.30	-3.16	-3.00	-4.22	-2.50	-3.56	-4.42		-9.03			-3.07
BG128	7.70	NA	0.0087	-0.9	-3.16	-3.08	-2.91	-3.76	-2.49	-3.44	-4.73					-3.04
BG130	8.10	NA	0.0036	-3.3	-3.52	-3.36	-3.31	-4.78	-2.68	-4.06	-4.61		-10.13			-3.07
BG132	7.70	NA	0.0053	-1.7	-3.29	-3.21	-3.46	-4.45	-2.61	-3.76	-4.47		-8.45			-3.00
BG133	7.90	NA	0.0058	-0.9	-3.24	-3.18	-3.42	-4.37	-2.60	-3.70	-4.54		-9.34		-6.68	-3.00
BG134	7.80	NA	0.0065	0.2	-3.20	-3.13	-3.40	-4.40	-2.61	-3.63	-4.55		-9.04			-3.00
BG137	7.80	NA	0.0068	1.8	-3.15	-3.15	-3.26	-4.25	-2.61	-3.66	-4.48		-9.02			-3.04
BG139	7.60	NA	0.0082	-0.6	-3.09	-3.07	-3.29	-4.27	-2.43	-3.62	-4.63					-3.02
BG154	7.60	NA	0.0083	-1.0	-3.13	-3.14	-2.91	-3.73	-2.39	-3.66	-4.73					-3.00
BG155	7.60	NA	0.0084	-0.4	-3.12	-3.14	-2.91	-3.72	-2.39	-3.67	-4.63					-2.99
BG156	7.60	NA	0.0081	-0.5	-3.13	-3.15	-2.93	-3.72	-2.39	-3.70	-4.73					-2.99
BG157	8.40	NA	0.0049	-1.7	-4.15	-4.27	-2.47	-3.55	-2.55	-3.58	-4.06		-10.62			-3.06
BG158	8.50	NA	0.0051	-3.4	-4.19	-4.30	-2.46	-3.55	-2.54	-3.57	-4.06					-3.06
BG159	8.50	NA	0.0050	-2.7	-4.16	-4.32	-2.47	-3.51	-2.56	-3.56	-4.08					-3.06
BG161	7.80	NA	0.0047	-2.6	-3.25	-3.48	-3.09	-4.37	-2.58	-3.83	-4.36					-3.18
BG163	7.60	NA	0.0159	1.1	-2.91	-2.87	-2.76	-4.03	-2.64	-3.00	-4.65		-8.14			-3.05
BG164	7.80	NA	0.0164	-1.0	-2.89	-2.87	-2.77	-4.03	-2.59	-3.01	-4.65		-9.02			-3.08
BG165	7.70	NA	0.0157	-1.6	-2.90	-2.89	-2.78	-4.00	-2.59	-3.05	-4.65					-3.05
BG166	7.90	NA	0.0094	1.6	-3.07	-3.04	-2.96	-4.09	-2.59	-3.42	-4.55		-7.85			-3.02
BG168	7.90	NA	0.0106	-0.1	-3.01	-3.03	-2.95	-4.08	-2.65	-3.37	-4.64		-8.62			-3.01
BG170	7.90	NA	0.0062	0.3	-3.37	-3.35	-2.73	-3.87	-2.56	-3.50	-4.72		-9.33		-7.00	-3.16
BG171	8.10	NA	0.0047	0.9	-3.55	-3.49	-2.77	-3.84	-2.63	-3.59	-4.71					-3.18
BG172	7.80	NA	0.0054	-0.7	-3.72	-3.54	-2.57	-4.15	-2.60	-3.43	-4.47	-13.53				-3.08
BG173	8.00	NA	0.0058	-3.1	-3.79	-3.57	-2.50	-4.29	-2.50	-3.53	-4.54					-3.02
BG174	7.70	NA	0.0050	-2.6	-3.71	-3.57	-2.62	-4.21	-2.55	-3.62	-4.54					-3.06
BG175	7.70	NA	0.0056	-1.1	-3.22	-3.28	-3.19	-4.20	-2.61	-3.78	-4.62					-3.06
BG176	7.80	NA	0.0067	-1.9	-3.17	-3.19	-3.23	-4.15	-2.54	-3.64	-4.63					-3.07
BG177	7.80	NA	0.0067	0.2	-3.16	-3.19	-3.22	-4.17	-2.54	-3.65	-4.63					-3.05
BG178	7.80	NA	0.0093	1.7	-3.06	-3.02	-3.11	-4.12	-2.48	-3.45	-4.63		-8.42			-3.05
BG179	7.80	NA	0.0052	3.9	-3.30	-3.30	-3.07	-4.08	-2.62	-3.68	-4.54		-8.99			-3.02
BG183	7.50	NA	0.0060	-0.1	-3.28	-3.37	-2.84	-3.66	-2.48	-3.76	-4.62					-2.99
BG184	7.70	NA	0.0058	-0.6	-3.28	-3.36	-2.87	-3.70	-2.49	-3.82	-4.62					-3.00
BG187	7.70	NA	0.0072	-1.7	-3.20	-3.24	-2.88	-3.97	-2.50	-3.49	-4.63		-8.79			-3.00
BG188	7.60	NA	0.0066	0.4	-3.22	-3.28	-2.90	-3.93	-2.52	-3.56	-4.62					-2.99
BG191	7.40	NA	0.0150	-0.1	-2.99	-3.06	-2.38	-3.61	-2.20	-3.24	-4.57	-11.29	-7.41			-3.03
BG194	7.80	NA	0.0091	-1.0	-3.07	-2.99	-3.41	-4.26	-2.39	-3.58	-4.86	-13.66				-3.06
BG195	7.80	NA	0.0098	-1.1	-3.03	-2.98	-3.41	-4.26	-2.38	-3.55	-4.86					-3.06
BG196	7.80	NA	0.0092	-0.7	-3.06	-2.99	-3.41	-4.26	-2.38	-3.58	-4.86					-3.05
BG198	8.10	NA	0.0026	-0.4	-3.67	-3.84	-3.01	-4.19	-2.80	-3.99	-4.70		-7.92			-3.24
BG202	7.90	NA	0.0077	-0.2	-3.08	-3.18	-3.10	-4.27	-2.56	-3.48	-4.55		-9.28			-3.11
BG204	7.60	NA	0.0059	-0.6	-3.19	-3.34	-3.06	-4.14	-2.53	-3.72	-4.54					-3.12
BG205	7.60	NA	0.0056	-2.6	-3.20	-3.37	-3.09	-4.11	-2.52	-3.80	-4.54		-8.66		-8.94	-3.16
BG207	7.60	NA	0.0067	3.9	-3.15	-3.17	-3.15	-4.05	-2.51	-3.84	-4.72					-3.05
BG208	7.60	NA	0.0073	-1.0	-3.13	-3.14	-3.15	-4.03	-2.47	-3.91	-4.85					-3.07
BG209	7.80	NA	0.0060	16.6	-3.17	-3.17	-3.17	-4.02	-2.68	-3.80	-4.85					-3.07
BG210	7.60	NA	0.0072	1.0	-3.13	-3.14	-3.15	-4.01	-2.46	-3.87	-4.72					-3.03
BG211	9.00	NA	0.0043	-0.7	-4.72	-5.56	-2.47	-3.87	-2.66	-3.68	-3.93		-12.22			-2.97
BG212	8.90	1.61	0.0044	-0.9	-4.19	-4.60	-2.50	-3.72	-2.65	-3.64	-3.99		-9.62	-21.06	-7.06	-2.96
BG215	7.80	NA	0.0075	2.5	-3.25	-3.09	-2.88	-4.27	-2.54	-3.65	-4.63		-9.44			-3.04
BG216	7.70	NA	0.0072	2.8	-3.11	-3.23	-2.96	-4.14	-2.48	-3.67	-4.55					-3.10
BG217	7.80	NA	0.0075	-0.3	-3.21	-3.07	-3.20	-4.00	-2.58	-3.47	-4.73		-8.41			-3.15
BG219	7.70	NA	0.0047	-2.0	-3.40	-3.41	-2.95	-4.09	-2.59	-3.77	-4.47					-3.08
BG220	8.00	NA	0.0050	-0.8	-3.37	-3.38	-2.93	-4.08	-2.57	-3.76	-4.54		-9.31		-6.70	-3.03
BG221	7.70	NA	0.0049	-3.6	-3.37	-3.42	-2.95	-4.03	-2.56	-3.76	-4.54					-3.08
BG222	8.70	NA	0.0042	-0.3	-4.32	-5.24	-2.50	-3.58	-2.61	-3.73	-4.11					-2.97
BG224	8.10	NA	0.0059	1.2	-3.27	-3.14	-3.36	-4.20	-2.60	-3.73	-4.54		-8.25			-3.10
BG228	9.00	NA	0.0041	-2.6	-4.68	-5.07	-2.50	-3.80	-2.66	-3.75	-3.95		-12.03			-2.97
BG229	9.10	NA	0.0042	0.1	-4.29	-4.56	-2.51	-3.78	-2.68	-3.77	-4.01		-12.52			-3.01
BG230	8.00	NA	0.0060	-1.9	-3.32	-3.30	-2.92	-3.81	-2.64	-3.54	-4.62		-9.02		-6.30	-3.01
BG231	7.90	NA	0.0059	-1.3	-3.32	-3.29	-2.94	-3.80	-2.63	-3.57	-4.72					-3.07
BG232	7.60	NA	0.0089	-2.4	-3.18	-3.03	-2.99	-3.98	-2.51	-3.39	-4.63		-8.46			-3.11
BG233	8.20	NA	0.0044	0.8	-3.57	-3.67	-2.73	-3.63	-2.64	-3.69	-4.41		-9.42			-3.13
BG238	7.80	NA	0.0055	0.4	-3.24	-3.46	-2.89	-3.91	-2.51	-3.79	-4.62		-8.30			-3.01
BG241	9.20	NA	0.0045	-2.6	-4.19	-4.42	-2.49	-3.82	-2.67	-3.78	-3.82					-2.99
BG242	9.20	NA	0.0043	-2.1	-4.23	-4.48	-2.51	-3.81	-2.66	-3.94	-3.86		-12.95			-3.00
BG243	8.80	NA	0.0038	-3.7	-4.17	-4.58	-2.57	-3.64	-2.63	-4.03	-3.97		-11.85			-3.00
BG244	8.80	NA	0.0037	-1.7	-4.32	-4.83	-2.56	-3.67	-2.64	-4.11	-3.95		-11.68		-7.00	-3.26
BG245	8.80	3.29	0.0036	-1.2	-4.39	-5.05	-2.56	-3.67	-2.65	-4.06	-3.96		-11.45	-21.22	-6.99	-2.97
BG248	8.10	NA	0.0043	-0.5	-3.51	-3.62	-2.83	-3.66	-2.65	-3.70	-4.47		-9.29			-3.15

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BG249	7.90	NA	0.0042	0.6	-3.44	-3.69	-2.84	-3.67	-2.66	-3.74	-4.41		-8.69			-3.11
BG250	8.20	NA	0.0043	1.1	-3.54	-3.59	-2.81	-3.65	-2.65	-3.76	-4.47		-9.42			-3.11
BG252	8.10	NA	0.0044	1.2	-3.49	-3.56	-2.83	-3.73	-2.64	-3.71	-4.54		-9.28			-3.12
BG254	7.70	NA	0.0043	-0.3	-3.51	-3.62	-2.81	-3.68	-2.64	-3.73	-4.47					-3.11
BG255	8.00	NA	0.0044	-2.1	-3.52	-3.59	-2.85	-3.54	-2.61	-3.75	-4.53		-9.41			-3.09
BG260	8.10	NA	0.0042	-0.2	-3.49	-3.63	-2.85	-3.65	-2.65	-3.74	-4.53		-9.29			-3.12
BG261	8.10	NA	0.0045	-0.4	-3.47	-3.59	-2.83	-3.67	-2.63	-3.73	-4.47					-3.11
BG262	8.00	NA	0.0045	0.9	-3.45	-3.58	-2.83	-3.69	-2.64	-3.73	-4.54					-3.09
BG263	8.10	NA	0.0042	-1.0	-3.51	-3.60	-2.86	-3.68	-2.65	-3.76	-4.53					-3.14
BG264	8.20	NA	0.0042	-0.1	-3.51	-3.68	-2.81	-3.65	-2.65	-3.74	-4.53		-9.92			-3.16
BG265	8.10	NA	0.0044	2.6	-3.42	-3.53	-2.89	-3.72	-2.65	-3.76	-4.61		-8.03			-3.18
BG266	8.20	NA	0.0042	0.7	-3.54	-3.63	-2.81	-3.65	-2.65	-3.75	-4.47		-9.74			-3.16
BG272	7.90	NA	0.0041	-1.6	-3.53	-3.63	-2.85	-3.74	-2.64	-3.77	-4.61		-8.39			-3.16
BG273	8.00	NA	0.0041	0.6	-3.54	-3.63	-2.83	-3.65	-2.65	-3.75	-4.53		-8.84			-3.18
BG275	8.20	NA	0.0042	0.1	-3.51	-3.72	-2.80	-3.54	-2.64	-3.73	-4.47		-9.12			-3.13
BG276	8.00	NA	0.0056	2.6	-3.25	-3.28	-3.10	-4.01	-2.60	-3.73	-4.84		-9.29			-3.08
BG277	8.10	NA	0.0042	0.8	-3.54	-3.65	-2.80	-3.58	-2.64	-3.75	-4.47		-9.19			-3.11
BG279	7.90	NA	0.0049	1.8	-3.37	-3.38	-2.98	-3.73	-2.62	-3.75	-4.54		-8.60			-3.07
BG281	8.00	NA	0.0048	0.6	-3.33	-3.32	-3.17	-3.93	-2.62	-3.84	-5.02		-9.66			-3.03
BG286	8.10	NA	0.0053	0.8	-3.29	-3.28	-3.12	-3.99	-2.61	-3.76	-4.84		-9.89			-3.06
BG289	8.00	NA	0.0048	2.1	-3.28	-3.35	-3.14	-4.05	-2.62	-3.99	-5.32		-9.67			-3.08
BG290	8.00	NA	0.0030	0.7	-3.79	-3.75	-2.85	-4.00	-2.72	-3.93	-4.53					-3.10
BG291	7.70	NA	0.0048	-1.0	-3.35	-3.48	-2.92	-3.84	-2.57	-3.93	-4.62					-3.00
BG292	7.60	NA	0.0045	-4.6	-3.38	-3.52	-2.95	-3.85	-2.57	-3.92	-4.62					-3.00
BG293	7.50	NA	0.0039	-0.1	-3.35	-3.52	-3.19	-4.12	-2.73	-3.91	-4.83					-3.02
BG294	8.10	NA	0.0039	1.8	-3.33	-3.52	-3.19	-4.21	-2.75	-3.91	-4.83		-9.05			-3.04
BG295	8.00	NA	0.0037	-0.5	-3.39	-3.51	-3.19	-4.16	-2.75	-3.90	-4.71					-3.00
BG301	8.00	NA	0.0039	-0.1	-3.35	-3.51	-3.19	-4.19	-2.75	-3.91	-4.71		-8.99			-3.00
BG302	8.00	NA	0.0073	0.2	-3.10	-3.33	-2.88	-3.77	-2.45	-3.59	-4.85					-3.19
BG303	7.80	NA	0.0078	0.9	-3.04	-3.33	-2.91	-3.76	-2.44	-3.53	-5.02		-8.69			-3.19
BG304	8.00	NA	0.0077	0.3	-3.08	-3.30	-2.86	-3.75	-2.40	-3.64	-4.85					-3.18
BG306	7.70	NA	0.0065	1.1	-3.14	-3.37	-2.94	-3.78	-2.49	-3.65	-5.02					-3.16
BG311	7.90	NA	0.0081	1.8	-3.05	-3.26	-2.90	-3.78	-2.46	-3.50	-4.85		-8.98			-3.20
BG315	8.10	NA	0.0124	-2.5	-2.91	-3.09	-2.86	-3.90	-2.77	-3.12	-4.74		-9.44			-2.98
BG317	7.60	NA	0.0072	0.7	-3.13	-3.32	-2.85	-3.67	-2.41	-3.75	-4.85		-6.62			-3.25
BG319	7.50	NA	0.0080	0.8	-3.08	-3.26	-2.81	-3.63	-2.33	-3.85	-4.72		-7.88			-3.22
BG328	8.10	NA	0.0085	-0.3	-3.43	-2.89	-3.15	-4.22	-2.48	-3.44	-4.56					-3.04
BG329	7.90	NA	0.0089	1.4	-3.36	-2.89	-3.15	-4.15	-2.49	-3.40	-4.56		-8.25		-6.56	-3.04
BG330	7.70	NA	0.0065	-1.3	-3.11	-3.29	-3.12	-4.27	-2.43	-3.91	-4.72				-6.28	-3.11
BG335	7.70	NA	0.0078	0.6	-3.09	-3.27	-2.91	-4.02	-2.55	-3.40	-4.72					-3.06
BG336	7.50	NA	0.0078	1.2	-3.09	-3.27	-2.88	-4.04	-2.55	-3.43	-4.72					-3.07
BG337	7.50	NA	0.0077	1.2	-3.09	-3.28	-2.89	-4.01	-2.56	-3.42	-4.72				-8.96	-3.05
BG338	7.40	NA	0.0083	-3.0	-3.08	-3.26	-2.90	-4.02	-2.49	-3.41	-4.73		-8.18			-3.02
BG345	8.00	NA	0.0046	-0.7	-3.47	-3.58	-2.79	-3.71	-2.61	-3.70	-4.54		-9.66		-6.99	-3.12
BG347	8.00	4.46	0.0046	-0.1	-3.47	-3.59	-2.80	-3.67	-2.63	-3.67	-4.54				-6.68	-3.12
BG348	7.40	NA	0.0031	-1.0	-3.37	-3.57	-3.69	-4.07	-2.80	-3.95	-5.01					-3.44
BG349	7.10	NA	0.0032	-0.9	-3.36	-3.60	-3.50	-4.09	-2.76	-3.98	-5.01					-3.42
BG350	7.30	NA	0.0031	-0.9	-3.37	-3.61	-3.48	-4.13	-2.77	-4.01	-5.01					-3.42
BG351	7.50	NA	0.0048	0.0	-3.19	-3.59	-3.16	-4.08	-2.68	-3.60	-4.47		-7.27			-3.08
BG352	7.70	NA	0.0055	0.4	-3.21	-3.42	-2.98	-3.91	-2.56	-3.83	-4.84					-3.16
BG353	7.50	NA	0.0098	-1.2	-3.00	-3.08	-3.01	-3.77	-2.36	-3.59	-4.86	-12.37				-3.02
BG354	8.70	NA	0.0045	-3.3	-3.60	-4.17	-2.64	-3.58	-2.66	-3.60	-4.27					-2.98
BG355	8.60	NA	0.0044	-0.5	-3.59	-4.16	-2.65	-3.62	-2.69	-3.61	-4.27		-11.55			-2.96
BG356	8.60	NA	0.0044	1.8	-3.56	-4.16	-2.65	-3.58	-2.73	-3.59	-4.36					-2.97
BG358	7.90	NA	0.0092	0.8	-3.07	-3.19	-2.82	-3.70	-2.48	-3.28	-4.55		-8.70			-3.21
BG360	7.80	NA	0.0115	0.8	-2.97	-3.13	-2.73	-3.68	-2.44	-3.14	-4.73		-8.23			-3.18
BG361	7.40	NA	0.0049	0.0	-3.27	-3.35	-3.22	-3.90	-2.57	-4.02	-4.84		-7.32			-3.02
BG363	8.00	NA	0.0039	-1.6	-3.44	-3.54	-3.01	-3.95	-2.64	-3.94	-4.61		-9.30		-6.67	-3.01
BG364	8.10	NA	0.0040	-2.9	-3.44	-3.53	-3.01	-3.97	-2.62	-3.94	-4.61		-9.58		-7.00	-3.02
BG365	7.50	NA	0.0038	0.3	-3.35	-3.51	-3.22	-3.92	-2.65	-4.14	-4.71		-7.69			-3.04
BG370	8.30	NA	0.0050	-3.3	-3.46	-3.96	-2.67	-3.63	-2.68	-3.46	-4.36	-16.28				-3.01
BG371	8.20	NA	0.0050	0.6	-3.42	-3.93	-2.69	-3.55	-2.71	-3.45	-4.47	-16.11	-10.32			-3.00
BG372	8.20	3.59	0.0049	-1.5	-3.42	-3.92	-2.72	-3.63	-2.72	-3.45	-4.54					-3.01
BG373	7.50	NA	0.0031	1.5	-3.51	-3.73	-2.99	-4.04	-2.75	-4.12	-4.83		-6.99			-3.12
BG375	8.20	NA	0.0048	-3.6	-3.41	-3.54	-2.84	-3.83	-2.55	-3.75	-4.62		-9.58			-2.96
BG376	7.70	NA	0.0229	0.5	-2.76	-2.88	-2.55	-3.67	-2.39	-2.68	-4.21		-8.03			-3.17
BG377	7.80	NA	0.0141	0.7	-3.01	-3.23	-2.38	-3.75	-2.35	-2.92	-4.44					-3.17
BG379	7.40	NA	0.0049	-3.9	-3.26	-3.42	-3.28	-4.03	-2.69	-3.63	-4.71		-5.68			-2.97
BG380	7.60	NA	0.0054	-0.7	-3.22	-3.33	-3.22	-3.97	-2.59	-3.79	-4.84					-3.00
BG385	8.10	NA	0.0026	-5.6	-3.78	-3.95	-2.97	-3.91	-2.79	-3.89	-4.40	-15.12	-9.94			-3.03
BG386	8.20	NA	0.0027	-1.6	-3.68	-3.90	-3.01	-3.91	-2.83	-3.85	-4.46					-3.05
BG387	8.10	NA	0.0028	0.1	-3.60	-3.85	-3.01	-3.93	-2.83	-3.81	-4.53					-3.07
BG388	7.60	NA	0.0064	0.8	-3.20	-3.37	-2.83	-3.75	-2.47	-3.75	-4.48		-6.54			-3.30
BG389	7.60	NA	0.0054	0.3	-3.25	-3.49	-2.87	-3.84	-2.52	-3.80	-4.41		-6.93			-3.26
BG390	7.40	NA	0.0023	0.7	-3.55	-3.64	-3.46	-4.31	-2.87	-4.44	-4.70		-7.25			-3.09
BG398	7.70	NA	0.0058	-1.3	-3.24	-3.36	-2.97	-3.78	-2.52	-3.69	-4.72		-7.91			-3.18
BG401	7.00	NA	0.0030	-4.3	-3.41	-3.58	-3.51	-4.32	-2.87	-4.12	-5.01		-6.90			-3.11
BG402	7.30	NA	0.0029	-2.7	-3.41	-3.61	-3.52	-4.39	-2.87	-4.18	-5.01		-7.63			-3.10
BG403	7.60	NA	0.0022	2.0	-3.52	-3.69	-3.60	-4.38	-2.94	-4.40	-5.00					-3.10
BG405	8.00	NA	0.0039	-1.3	-3.46	-3.58	-2.95	-3.89	-2.62	-4.02	-4.53		-9.19		-6.67	-3.03
BG406	8.00	NA	0.0033	0.0	-3.38	-3.64	-3.28	-4.03	-2.74	-4.01	-5.01					-3.25
BG407	8.10	NA	0.0040	-1.3	-3.40	-3.47	-3.16	-3.96	-2.67	-3.79	-4.84		-9.74		-7.67	-3.24
BG409	7.90	NA	0.0038	-1.9	-3.46	-3.57	-3.05	-3.91	-2.70	-3.74	-4.53		-9.09		-6.94	-3.03
BG410	7.90	NA	0.0038	0.2	-3.45	-3.55	-3.05	-3.92	-2.70	-3.77	-4.53		-8.39		-6.94	-3.06

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BG411	7.80	NA	0.0088	0.8	-3.20	-3.15	-2.67	-3.67	-2.61	-3.48	-4.63					-3.09
BG412	7.80	NA	0.0121	-2.2	-3.09	-3.01	-2.60	-3.60	-2.56	-3.32	-4.64					-3.12
BG413	8.00	NA	0.0041	-7.2	-3.42	-3.48	-3.11	-3.93	-2.58	-4.03	-4.71					-3.05
BG414	7.80	NA	0.0040	-0.7	-3.41	-3.47	-3.09	-3.91	-2.63	-4.03	-4.71		-8.22			-3.03
BG415	8.00	NA	0.0039	-0.8	-3.43	-3.47	-3.11	-3.93	-2.65	-4.03	-4.71					-3.07
BG498	9.00	0.62	0.0038	2.3	-4.31	-5.54	-2.50	-5.15	-2.74	-3.81	-3.97	-19.96			-9.02	-2.71
BG499	7.60	-1.61	0.0068	5.7	-3.22	-3.23	-2.81	-3.72	-2.48	-3.83	-4.48	-13.79	-8.09	-22.86	-8.05	-2.85
BG500	9.00	-4.08	0.0044	6.3	-4.30	-4.41	-2.45	-3.79	-2.68	-3.84	-3.93	-19.63	-7.31	-24.42	-8.69	-2.72
BG502	7.30	2.49	0.0074	2.2	-3.22	-3.34	-2.74	-3.56	-2.55	-3.31	-4.72		-7.07	-17.65	-8.18	-2.83
BG503	7.50	3.46	0.0096	5.0	-3.01	-3.13	-2.94	-3.83	-2.57	-3.21	-4.73	-13.86	-8.35	-18.01	-6.43	-2.82
BG504	7.90	1.79	0.0049	5.3	-3.39	-3.54	-2.78	-3.70	-2.65	-3.68	-4.41	-15.17	-8.51	-19.76	-6.78	-2.73
BG505	7.90	2.47	0.0042	5.5	-3.42	-3.57	-2.87	-3.77	-2.69	-3.80	-4.41	-15.95	-9.93	-20.47		-2.72
BG507	7.90	1.79	0.0049	6.1	-3.39	-3.53	-2.78	-3.70	-2.65	-3.68	-4.41	-16.03	-8.56	-19.81		-2.72
BL014	8.10	NA	0.0057	0.2	-3.37	-3.52	-2.76	-3.64	-2.64	-3.37	-4.54					-3.11
BL015	8.20	NA	0.0056	1.8	-3.39	-3.51	-2.75	-3.63	-2.65	-3.42	-4.62					-3.11
BL016	8.00	NA	0.0056	-2.9	-3.36	-3.28	-2.94	-4.07	-2.54	-3.92	-4.62					-3.09
BL017	8.00	NA	0.0057	-2.0	-3.33	-3.26	-2.97	-4.08	-2.56	-3.95	-4.72					-3.08
BL018	7.80	NA	0.0052	-0.6	-3.37	-3.30	-2.97	-4.08	-2.57	-4.05	-4.62					-3.10
BL019	7.90	NA	0.0048	-0.6	-3.40	-3.38	-2.93	-4.06	-2.60	-3.78	-4.41					-3.13
BL020	8.10	4.32	0.0047	0.7	-3.39	-3.41	-2.93	-4.03	-2.60	-3.81	-4.47					-3.12
BL021	8.00	NA	0.0048	1.1	-3.40	-3.38	-2.93	-4.06	-2.61	-3.81	-4.41		-8.76		-6.69	-3.14
BL022	8.00	NA	0.0068	-1.3	-3.17	-3.35	-2.81	-3.87	-2.39	-3.96	-4.54		-9.68		-7.06	-3.12
BL023	8.00	NA	0.0074	0.5	-3.11	-3.30	-2.82	-3.87	-2.42	-3.74	-4.63					-3.11
BL024	7.80	NA	0.0076	1.1	-3.10	-3.28	-2.82	-3.85	-2.41	-3.76	-4.63				-7.01	-3.13
BL025	8.10	NA	0.0032	-3.8	-3.58	-3.93	-2.87	-3.93	-2.63	-4.64	-4.35					-3.02
BL026	8.40	3.07	0.0032	-1.1	-3.56	-3.95	-2.86	-3.92	-2.66	-4.42	-4.35		-9.98	-19.98		-2.99
BL027	8.40	NA	0.0033	-3.0	-3.59	-3.93	-2.85	-3.90	-2.64	-4.42	-4.27					-3.00
BL028	8.00	NA	0.0038	-1.2	-3.30	-3.61	-3.28	-4.05	-2.70	-3.93	-4.83					-3.25
BL029	7.30	NA	0.0237	-2.8	-2.74	-2.86	-2.39	-3.81	-2.44	-2.97	-4.88		-7.45			-3.20
BL030	7.30	NA	0.0240	-0.7	-2.71	-2.87	-2.39	-3.84	-2.47	-2.96	-4.88		-7.75			-3.19
BL031	7.10	NA	0.0279	-0.8	-2.65	-2.81	-2.36	-3.81	-2.42	-2.92	-4.89		-7.53			-3.21
BL032	7.90	NA	0.0053	-2.2	-3.32	-3.30	-3.07	-3.86	-2.64	-3.99	-4.72		-8.62		-6.96	-3.17
BL033	8.20	NA	0.0050	-0.9	-3.33	-3.32	-3.07	-3.85	-2.66	-3.96	-4.72		-9.75			-3.16
BL034	8.20	NA	0.0049	-0.8	-3.35	-3.32	-3.07	-3.89	-2.64	-4.08	-4.71		-9.74			-3.17
BL035	7.20	NA	0.0133	-2.1	-2.92	-3.09	-2.90	-3.67	-2.60	-2.87	-4.86					-3.17
BL036	7.90	NA	0.0064	-0.4	-3.17	-3.24	-3.10	-3.94	-2.51	-3.81	-4.72					-3.12
BL037	8.20	NA	0.0039	-0.1	-3.56	-3.70	-2.82	-3.62	-2.66	-3.81	-4.61		-9.73			-3.16
BL039	7.80	NA	0.0067	-1.6	-3.13	-3.29	-3.04	-3.92	-2.47	-3.78	-4.85		-9.01			-3.18
BL040	7.90	NA	0.0056	-1.9	-3.20	-3.39	-3.06	-3.94	-2.52	-3.89	-4.84					-3.18
BL041	7.90	NA	0.0078	-1.0	-3.07	-3.22	-3.02	-3.87	-2.44	-3.66	-4.85					-3.19
BL042	8.20	NA	0.0054	-2.4	-3.38	-3.54	-2.72	-3.86	-2.48	-3.84	-4.32		-9.38		-6.78	-3.14
BL043	8.20	2.85	0.0053	-0.4	-3.38	-3.54	-2.72	-3.83	-2.50	-3.86	-4.36		-8.24	-18.53	-6.78	-3.14
BL044	8.10	NA	0.0055	-0.1	-3.38	-3.50	-2.71	-3.89	-2.49	-3.86	-4.36		-9.14		-6.75	-3.14
BL045	7.60	NA	0.0030	-1.5	-3.46	-3.61	-3.27	-4.11	-2.75	-4.15	-4.71		-7.62			-3.26
BL046	6.60	NA	0.0029	0.5	-3.57	-3.55	-3.16	-4.19	-2.72	-4.40	-4.71		-6.43			-3.12
BL047	6.70	NA	0.0017	1.6	-3.65	-3.87	-3.60	-4.14	-3.10	-4.00	-5.00		-5.58			-3.23
BL048	7.30	NA	0.0030	0.9	-3.60	-3.51	-3.16	-4.22	-2.73	-4.38	-4.53		-7.05			-3.12
BL049	7.50	NA	0.0034	-0.5	-3.61	-3.84	-2.82	-3.83	-2.68	-3.97	-4.46					-3.11
BL050	8.20	NA	0.0055	1.1	-3.89	-4.13	-2.40	-3.81	-2.51	-3.86	-3.20					-2.85
BL052	7.60	NA	0.0028	-0.6	-3.60	-3.57	-3.16	-4.17	-2.73	-4.40	-4.61		-7.62			-3.12
BL053	7.40	NA	0.0028	-0.2	-3.56	-3.58	-3.21	-4.19	-2.75	-4.29	-4.70		-7.43			-3.14
BL054	7.40	NA	0.0027	-0.6	-3.53	-3.61	-3.39	-4.14	-2.96	-3.85	-4.70		-7.33			-3.21
BL055	7.10	NA	0.0028	1.0	-3.51	-3.58	-3.39	-4.17	-2.92	-3.88	-4.70		-6.58			-3.19
BL056	8.50	NA	0.0058	-0.8	-3.22	-3.36	-2.98	-3.84	-2.52	-3.81	-4.84		-10.54			-3.22
BL058	7.30	NA	0.0026	5.8	-3.53	-3.53	-3.44	-4.15	-2.87	-4.22	-4.83		-7.65			-3.14
BL059	7.70	NA	0.0029	-0.3	-3.51	-3.52	-3.41	-4.17	-2.75	-4.42	-4.83				-6.89	-3.15
BL060	7.60	NA	0.0028	-1.0	-3.53	-3.51	-3.40	-4.19	-2.75	-4.42	-4.83		-8.42			-3.16
BL061	7.60	NA	0.0037	0.1	-3.37	-3.54	-3.16	-4.04	-2.67	-4.09	-4.71		-7.37			-3.17
BL062	7.30	NA	0.0037	-0.2	-3.38	-3.52	-3.16	-4.03	-2.66	-4.14	-4.71					-3.15
BL063	7.30	NA	0.0046	-0.9	-3.29	-3.44	-3.14	-4.01	-2.67	-3.72	-4.71		-6.62			-3.10
BL064	7.60	NA	0.0037	-0.1	-3.38	-3.51	-3.19	-4.04	-2.67	-4.14	-4.71					-3.16
BL065	7.20	NA	0.0038	-0.8	-3.38	-3.53	-3.11	-4.02	-2.67	-4.09	-4.61					-3.16
BL066	7.20	NA	0.0051	-0.8	-3.27	-3.39	-3.12	-4.00	-2.65	-3.65	-4.84		-6.78			-3.20
BL067	7.10	NA	0.0046	0.5	-3.32	-3.41	-3.12	-4.02	-2.66	-3.77	-4.71		-6.51			-3.16
BL068	8.20	NA	0.0040	0.3	-3.63	-3.89	-2.68	-3.80	-2.58	-4.08	-4.31		-8.85			-3.05
BL069	8.20	NA	0.0043	-1.5	-3.42	-3.58	-2.88	-3.88	-2.59	-3.94	-4.47					-3.10
BL071	7.90	NA	0.0041	13.9	-3.39	-3.52	-3.19	-3.04	-2.68	-4.10	-4.71		-9.01			-3.19
BL073	7.70	NA	0.0049	-2.6	-3.28	-3.41	-3.12	-4.09	-2.63	-3.81	-4.71					-3.19
BL074	7.60	NA	0.0052	5.1	-3.18	-3.41	-3.10	-4.08	-2.62	-3.86	-4.72		-7.94		-6.93	-3.16
BL075	7.60	NA	0.0047	-0.7	-3.29	-3.41	-3.12	-4.06	-2.63	-3.88	-4.71					-3.21
BL077	8.10	NA	0.0040	-2.5	-3.70	-3.95	-2.66	-3.82	-2.58	-3.89	-4.36		-9.71			-3.06
BL078	8.50	NA	0.0040	-2.6	-3.71	-3.97	-2.66	-3.80	-2.59	-3.95	-4.41					-3.10
BL079	7.50	NA	0.0112	-1.8	-3.22	-3.32	-2.33	-3.83	-2.26	-3.33	-4.49		-6.58		-5.09	-3.13
BL080	7.60	NA	0.0113	-1.4	-3.20	-3.32	-2.33	-3.84	-2.27	-3.30	-4.55		-6.93		-5.09	-3.11
BL081	7.70	NA	0.0117	-0.3	-3.21	-3.30	-2.30	-3.84	-2.27	-3.28	-4.55		-7.14		-5.11	-3.13
BL082	7.20	NA	0.0054	-2.4	-3.34	-3.34	-3.04	-4.04	-2.72	-3.44	-4.84					-3.15
BL083	7.00	NA	0.0056	-0.4	-3.31	-3.34	-3.02	-4.03	-2.76	-3.35	-4.84		-6.78		-6.44	-3.13
BL084	7.20	NA	0.0063	1.3	-3.28	-3.25	-2.99	-4.00	-2.71	-3.31	-4.84		-7.01		-6.93	-3.15
BL085	7.70	NA	0.0078	-1.3	-3.11	-3.26	-2.84	-3.78	-2.35	-3.83	-4.63					-3.11
BL086	7.50	NA	0.0078	0.8	-3.09	-3.26	-2.84	-3.76	-2.36	-3.81	-4.63					-3.09
BL087	7.90	NA	0.0076	-2.3	-3.12	-3.28	-2.85	-3.75	-2.35	-3.88	-4.63					-3.14
BL088	8.10	NA	0.0043	-1.9	-3.51	-3.44	-2.88	-4.04	-2.55	-4.20	-4.54		-9.92			-3.14
BL089	8.00	NA	0.0045	-0.6	-3.44	-3.44	-2.88	-4.03	-2.55	-4.11	-4.54					-3.14
BL090	7.90	NA	0.0046	-1.8	-3.44	-3.44	-2.88	-4.08	-2.54	-4.11	-4.54					-3.15

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BL091	7.70	NA	0.0066	-1.0	-3.11	-3.31	-3.04	-4.09	-2.59	-3.74	-4.85		-8.70			-3.14
BL092	7.90	NA	0.0062	-1.9	-3.13	-3.36	-3.06	-4.05	-2.63	-3.78	-4.84					-3.13
BL093	7.60	NA	0.0067	1.5	-3.09	-3.31	-3.04	-4.06	-2.63	-3.78	-5.02					-3.14
BL095	8.70	NA	0.0038	-3.0	-3.85	-4.01	-2.64	-3.87	-2.60	-4.04	-4.16					-3.05
BL096	8.70	NA	0.0037	0.5	-3.82	-3.98	-2.65	-3.88	-2.64	-4.04	-4.19					-3.05
BL097	8.90	NA	0.0038	0.7	-3.82	-3.96	-2.65	-3.87	-2.65	-4.04	-4.23					-3.04
BL098	7.90	NA	0.0063	1.2	-3.16	-3.28	-2.99	-4.33	-2.48	-4.10	-4.84		-8.52			-3.20
BL099	7.70	NA	0.0047	-2.4	-3.36	-3.34	-3.07	-4.30	-2.57	-4.11	-4.84		-8.68			-3.18
BL100	7.60	NA	0.0048	-0.5	-3.33	-3.34	-3.07	-4.24	-2.58	-4.12	-4.84					-3.17
BL101	7.50	NA	0.0048	-1.7	-3.31	-3.37	-3.07	-4.24	-2.57	-4.16	-4.84		-8.14			-3.19
BL102	7.80	NA	0.0082	-0.5	-3.02	-3.16	-3.17	-4.20	-2.60	-3.73	-4.85					-3.11
BL103	7.50	NA	0.0073	1.3	-3.04	-3.22	-3.20	-4.22	-2.59	-3.81	-4.85		-8.14			-3.08
BL104	7.60	NA	0.0067	-0.9	-3.10	-3.24	-3.22	-4.23	-2.59	-3.85	-4.85		-8.13			-3.09
BL105	7.80	NA	0.0070	-0.3	-3.04	-3.32	-3.17	-4.22	-2.60	-3.70	-4.85					-3.12
BL106	7.60	NA	0.0073	1.6	-3.04	-3.27	-3.08	-4.17	-2.59	-3.70	-4.85					-3.12
BL107	7.40	NA	0.0080	-0.9	-3.02	-3.22	-3.15	-4.25	-2.51	-3.50	-4.85		-7.91			-3.15
BL108	7.40	NA	0.0081	0.5	-3.00	-3.22	-3.15	-4.24	-2.52	-3.50	-4.85		-7.89			-3.14
BL109	7.50	NA	0.0064	1.0	-3.11	-3.29	-3.17	-4.23	-2.57	-3.70	-4.84					-3.16
BL110	8.00	NA	0.0040	-2.8	-3.37	-3.47	-3.14	-4.13	-2.60	-4.14	-4.61		-8.27		-6.68	-3.24
BL111	8.00	2.29	0.0040	-1.2	-3.37	-3.47	-3.14	-4.12	-2.62	-4.10	-4.61		-6.62	-17.52	-6.67	-3.19
BL112	8.00	NA	0.0040	-2.5	-3.37	-3.47	-3.14	-4.10	-2.61	-4.10	-4.61		-8.37		-6.67	-3.21
BL113	8.30	NA	0.0053	-1.4	-3.51	-3.33	-2.84	-3.59	-2.53	-3.78	-4.62		-10.49			-3.22
BL114	8.20	NA	0.0053	-2.4	-3.53	-3.33	-2.83	-3.59	-2.53	-3.78	-4.62					-3.20
BL115	8.20	NA	0.0046	-1.0	-3.47	-3.41	-2.92	-3.79	-2.57	-3.94	-4.71		-9.90			-3.22
BL116	7.70	NA	0.0040	0.1	-3.30	-3.51	-3.22	-4.39	-2.72	-4.06	-4.83		-8.66			-3.17
BL117	6.80	NA	0.0034	-4.4	-3.38	-3.68	-3.21	-4.05	-2.75	-3.95	-5.01		-6.45			-3.13
BL118	6.50	NA	0.0036	-2.6	-3.34	-3.67	-3.16	-4.05	-2.69	-4.01	-5.01		-6.84			-3.11
BL119	6.80	NA	0.0032	-0.9	-3.39	-3.69	-3.21	-4.01	-2.78	-3.97	-5.01		-6.53			-3.14
BL120	8.00	NA	0.0037	-3.6	-3.41	-3.51	-3.25	-4.10	-2.71	-3.90	-4.83					-3.12
BL121	7.30	NA	0.0044	-2.6	-3.26	-3.43	-3.28	-4.10	-2.56	-4.30	-4.84		-7.37		-6.59	-3.15
BL122	7.40	NA	0.0044	-3.5	-3.24	-3.43	-3.35	-4.16	-2.56	-4.45	-4.84		-7.41		-6.60	-3.12
BL123	7.60	NA	0.0042	-2.8	-3.29	-3.43	-3.31	-4.16	-2.57	-4.47	-4.84		-8.09		-6.62	-3.17
BL124	7.60	NA	0.0025	0.2	-3.63	-3.65	-3.24	-3.88	-2.80	-4.39	-4.70		-7.67			-3.22
BL125	7.60	NA	0.0025	0.2	-3.71	-3.59	-3.27	-3.70	-2.81	-4.25	-4.61					-3.20
BL126	7.10	NA	0.0027	2.0	-3.53	-3.59	-3.27	-4.00	-2.79	-4.51	-4.83		-5.73			-3.25
BL127	7.10	NA	0.0025	-0.2	-3.62	-3.66	-3.24	-3.83	-2.79	-4.40	-4.70		-6.16			-3.21
BL128	7.60	NA	0.0026	0.2	-3.63	-3.65	-3.27	-3.72	-2.80	-4.20	-4.70		-7.75			-3.20
BL129	7.40	NA	0.0026	-0.3	-3.71	-3.59	-3.24	-3.72	-2.80	-4.17	-4.70		-7.33			-3.20
BL130	7.40	NA	0.0026	0.1	-3.71	-3.57	-3.27	-3.68	-2.80	-4.20	-4.70		-6.97			-3.25
BL131	7.40	NA	0.0025	1.3	-3.59	-3.63	-3.39	-3.91	-2.85	-4.16	-4.83		-5.80			-3.19
BL132	7.90	NA	0.0035	-0.3	-3.50	-3.46	-3.14	-3.96	-2.67	-4.22	-4.71					-3.12
BL133	7.90	NA	0.0036	-0.2	-3.52	-3.55	-3.01	-3.90	-2.69	-3.98	-4.53		-8.65			-3.11
BL134	7.70	NA	0.0039	-4.4	-3.50	-3.56	-2.99	-3.92	-2.66	-3.77	-4.61		-8.08		-6.62	-3.05
BL137	7.90	NA	0.0034	1.2	-3.36	-3.58	-3.31	-4.19	-2.81	-3.95	-4.83					-3.18
BL138	8.00	NA	0.0031	-7.1	-3.42	-3.94	-3.16	-4.05	-2.75	-3.86	-4.61		-9.35			-3.28
BL139	9.40	NA	0.0036	-2.4	-3.46	-5.55	-2.81	-3.97	-2.80	-3.67	-4.46					-3.83
BL140	7.90	NA	0.0030	-0.6	-3.64	-3.76	-2.93	-4.03	-2.71	-4.16	-4.40		-8.56			-3.13
BL142	8.30	NA	0.0032	-3.1	-3.65	-3.73	-2.90	-4.06	-2.68	-4.14	-4.40		-9.85			-3.05
BL143	8.10	NA	0.0032	-8.8	-3.68	-4.20	-2.79	-4.02	-2.59	-4.55	-4.23		-9.62			-3.08
BL144	8.20	NA	0.0038	-4.0	-3.66	-3.47	-2.96	-3.74	-2.63	-3.90	-4.47		-9.90		-7.02	-3.23
BL146	8.20	NA	0.0037	-1.5	-3.66	-3.47	-2.96	-3.79	-2.66	-3.93	-4.47				-7.01	-3.23
BL147	7.80	NA	0.0037	-0.1	-3.40	-3.51	-3.19	-4.01	-2.74	-3.93	-4.71		-8.69		-6.92	-3.21
BL148	7.90	NA	0.0035	-2.2	-3.47	-3.51	-3.19	-3.98	-2.73	-3.95	-4.71					-3.21
BL149	7.20	NA	0.0058	-4.4	-3.18	-3.45	-2.98	-4.17	-2.58	-3.72	-5.02		-7.20			-3.20
BL150	7.30	NA	0.0025	-2.1	-3.53	-3.69	-3.45	-3.96	-2.92	-4.12	-5.00					-3.10
BL151	7.60	NA	0.0026	-1.1	-3.53	-3.66	-3.39	-3.98	-2.88	-4.15	-5.00					-3.13
BL152	7.40	NA	0.0025	-0.3	-3.53	-3.68	-3.44	-3.98	-2.93	-4.14	-4.83					-3.13
BL153	8.20	NA	0.0034	-3.7	-3.69	-3.78	-2.80	-3.92	-2.62	-4.23	-4.31		-9.83			-3.02
BL154	8.20	NA	0.0034	-0.9	-3.65	-3.80	-2.79	-3.95	-2.63	-4.24	-4.35		-10.01			-3.02
BL155	8.20	1.03	0.0034	1.0	-3.65	-3.78	-2.80	-3.94	-2.65	-4.27	-4.41		-7.31	-19.35		-3.03
BL157	7.20	NA	0.0027	-3.2	-3.45	-3.74	-3.40	-4.32	-2.89	-4.03	-5.00				-6.55	-3.09
BL158	7.90	NA	0.0038	-2.0	-3.53	-3.52	-2.94	-4.13	-2.62	-4.09	-4.47	-14.61	-8.90		-6.95	-3.11
BL159	7.00	NA	0.0027	-5.9	-3.48	-3.77	-3.35	-4.11	-2.92	-4.03	-5.00		-7.18			-3.09
BL160	7.00	NA	0.0027	-0.6	-3.45	-3.75	-3.31	-4.10	-2.96	-4.03	-5.00					-3.08
BL161	6.90	NA	0.0028	-1.3	-3.43	-3.74	-3.35	-4.10	-2.98	-4.00	-5.01					-3.11
BL163	8.20	1.73	0.0038	-2.7	-3.57	-3.75	-2.79	-3.94	-2.59	-4.09	-4.36		-7.82	-19.15		-3.09
BL164	8.40	NA	0.0034	-1.1	-3.74	-4.05	-2.71	-3.88	-2.61	-4.51	-4.19		-10.95			-3.08
BL165	7.80	NA	0.0037	1.2	-3.50	-3.57	-2.99	-3.72	-2.72	-3.95	-4.61		-8.15			-3.16
BL166	7.40	NA	0.0036	2.4	-3.34	-3.57	-3.19	-4.12	-2.69	-4.13	-4.71		-7.90		-5.41	-3.14
BL167	7.30	NA	0.0051	0.7	-3.21	-3.38	-3.19	-4.15	-2.65	-3.82	-5.02					-3.13
BL168	7.00	NA	0.0062	-0.1	-3.12	-3.42	-2.97	-4.33	-2.63	-3.66	-5.02		-6.99			-3.11
BL169	7.20	NA	0.0060	0.6	-3.12	-3.46	-2.98	-4.33	-2.65	-3.70	-5.02					-3.10
BL170	7.20	NA	0.0058	0.2	-3.15	-3.46	-2.98	-4.31	-2.66	-3.66	-4.84					-3.12
BL171	8.10	NA	0.0043	-10.8	-3.31	-3.52	-4.11	-3.30	-2.69	-3.86	-4.84		-9.36			-3.11
BL172	6.60	NA	0.0055	1.5	-3.16	-3.45	-3.02	-4.05	-2.65	-3.89	-5.02		-6.88			-3.10
BL173	6.70	NA	0.0054	-3.1	-3.18	-3.48	-3.04	-4.05	-2.65	-3.88	-5.02				-6.59	-3.10
BL174	7.00	NA	0.0055	0.8	-3.17	-3.45	-3.02	-4.02	-2.64	-3.94	-5.02					-3.12
BL175	7.40	NA	0.0053	0.0	-3.20	-3.45	-3.05	-4.18	-2.69	-3.64	-4.84		-7.56			-3.15
BL176	7.30	NA	0.0052	-0.1	-3.19	-3.45	-3.14	-4.18	-2.70	-3.67	-5.02					-3.13
BL177	7.30	NA	0.0049	-2.4	-3.21	-3.48	-3.17	-4.23	-2.72	-3.68	-4.84					-3.15
BL179	8.40	NA	0.0031	-1.9	-3.58	-3.52	-3.16	-4.11	-2.71	-4.29	-4.61		-9.86		-6.75	-3.22
BL180	8.20	NA	0.0031	-1.0	-3.57	-3.52	-3.13	-4.14	-2.72	-4.34	-4.61		-9.25		-6.68	-3.19
BL181	8.40	NA	0.0031	-1.2	-3.58	-3.51	-3.16	-4.16	-2.72	-4.32	-4.61		-10.17		-6.75	-3.22
BL184	8.00	NA	0.0029	-0.3	-3.63	-3.51	-3.18	-4.11	-2.75	-4.35	-4.61		-9.12			-3.17

Appendix C - Speciation Modeling Results

Sample ID	pH	pe	Ionic Strength	Charge Balance Error (%)	Ion Activities (log_{10})											
					Ca^{++}	Mg^{++}	Na^{+}	K^{+}	HCO_3^{-}	$SO4^{--}$	F^{-}	Al^{+++}	Fe^{++}	Fe^{+++}	Mn^{++}	SiO_2
BL185	7.40	NA	0.0036	0.6	-3.47	-3.42	-3.21	-4.02	-2.70	-4.23	-4.61					-3.11
BL186	7.60	NA	0.0036	0.1	-3.47	-3.42	-3.24	-4.04	-2.70	-4.19	-4.61					-3.21
BL187	7.40	NA	0.0038	0.2	-3.42	-3.43	-3.22	-4.02	-2.70	-4.05	-4.61		-7.05			-3.15
BL188	7.00	NA	0.0038	1.2	-3.45	-3.39	-3.22	-4.01	-2.69	-4.10	-4.61		-7.26			-3.10
BL189	7.40	NA	0.0032	0.0	-3.42	-3.56	-3.31	-4.19	-2.75	-4.22	-4.83		-7.61			-3.19
BL190	7.60	NA	0.0033	1.1	-3.42	-3.54	-3.28	-4.14	-2.75	-4.18	-4.71		-7.57			-3.12
BL191	7.40	NA	0.0033	0.2	-3.44	-3.51	-3.28	-4.02	-2.73	-4.29	-4.83		-7.12			-3.16
BL192	7.20	NA	0.0033	0.4	-3.42	-3.54	-3.24	-4.16	-2.73	-4.26	-4.61		-6.69			-3.12
BL193	7.60	NA	0.0108	0.6	-2.99	-3.07	-2.83	-3.91	-2.40	-3.29	-4.86		-8.42			-3.15
BL194	7.10	NA	0.0082	0.5	-3.09	-3.19	-2.94	-3.99	-2.49	-3.44	-4.85		-7.44			-3.12
BL195	7.50	NA	0.0127	-1.9	-2.94	-3.03	-2.78	-3.93	-2.31	-3.23	-4.86					-3.14
BL196	7.70	NA	0.0132	-3.3	-2.82	-3.04	-3.07	-3.95	-2.62	-3.38	-4.86		-8.24			-3.13
BL197	7.60	NA	0.0112	-0.1	-2.88	-3.11	-3.05	-3.95	-2.66	-3.46	-4.86		-7.78			-3.11
BL198	7.40	NA	0.0128	0.1	-2.83	-3.04	-3.03	-4.01	-2.68	-3.38	-4.86		-7.61			-3.13
BL199	6.40	NA	0.0036	1.2	-3.29	-3.56	-3.42	-4.10	-2.68	-4.32	-5.01		-6.14			-3.16
BL200	7.20	NA	0.0036	0.8	-3.29	-3.57	-3.35	-4.12	-2.68	-4.30	-5.01					-3.16
BL201	7.00	NA	0.0037	0.5	-3.27	-3.54	-3.46	-4.06	-2.67	-4.30	-4.83		-6.40			-3.21
BL202	7.00	NA	0.0038	0.3	-3.31	-3.53	-3.22	-4.13	-2.66	-4.30	-4.61		-6.79			-3.17
BL203	7.00	NA	0.0035	-0.3	-3.29	-3.60	-3.41	-4.09	-2.68	-4.31	-5.01		-6.97			-3.17
BL204	6.00	NA	0.0038	-0.2	-3.29	-3.58	-3.25	-4.09	-2.67	-4.24	-4.53		-6.67			-3.17
BL205	7.00	NA	0.0037	0.5	-3.27	-3.54	-3.46	-4.06	-2.67	-4.30	-4.83		-6.40			-3.21
BL206	7.10	NA	0.0036	0.6	-3.28	-3.56	-3.43	-4.14	-2.67	-4.31	-4.83		-6.51			-3.18
BL207	7.90	NA	0.0055	0.4	-3.13	-3.39	-3.28	-3.99	-2.52	-3.92	-4.84		-8.17			-3.28
BL208	7.40	NA	0.0037	0.2	-3.36	-3.65	-3.01	-4.26	-2.68	-4.33	-4.71		-7.92			-3.12
BL209	7.60	NA	0.0037	1.2	-3.29	-3.65	-3.16	-4.26	-2.67	-4.25	-4.53		-7.81			-3.11
BL210	6.80	NA	0.0042	0.0	-3.30	-3.61	-2.96	-4.32	-2.64	-4.23	-4.36		-6.73			-3.11
BL211	7.40	NA	0.0065	7.8	-3.39	-3.71	-2.40	-4.23	-2.63	-4.39	-4.84		-6.16			-3.12
BL212	7.60	NA	0.0031	1.4	-3.37	-3.68	-3.24	-4.26	-2.72	-4.46	-4.71		-8.41			-3.12
BL213	7.20	NA	0.0030	-0.1	-3.41	-3.65	-3.24	-4.26	-2.73	-4.51	-4.61		-7.43			-3.21
BL214	7.20	NA	0.0034	-0.6	-3.34	-3.61	-3.24	-4.30	-2.68	-4.34	-4.61		-7.48			-3.10
BL215	8.30	NA	0.0043	1.2	-3.44	-3.29	-3.28	-3.97	-2.64	-3.94	-4.62		-9.18			-3.42
BL216	8.20	NA	0.0202	-0.4	-2.82	-2.87	-2.85	-3.55	-2.54	-2.64	-4.28		-9.05			-3.31
BL217	7.70	NA	0.0236	0.3	-2.78	-2.80	-2.78	-3.55	-2.52	-2.58	-4.41	-12.12	-8.25			-3.28
BL223	9.00	-2.05	0.0043	7.6	-3.96	-4.19	-2.49	-3.75	-2.69	-4.01	-3.75	-19.79	-6.94	-21.97	-7.79	-2.72
BL224	8.20	-2.58	0.0042	6.0	-3.70	-3.99	-2.60	-3.70	-2.68	-3.60	-4.36	-16.40			-8.09	-2.77
BL225	8.00	-2.69	0.0205	-15.6	-3.35	-3.05	-2.29	-2.53	-2.42	-2.97	-5.35	-15.34	-7.24	-23.09	-8.14	-2.92
BL226	8.50	0.77	0.0028	1.6	-4.08	-5.21	-2.65	-5.14	-2.72	-4.32	-4.26	-18.96	-9.12	-21.28	-7.33	-2.72
BL227	7.60	3.73	0.0039	11.5	-3.40	-3.41	-3.08	-3.91	-2.74	-4.00	-4.84	-14.22	-9.76	-19.14	-6.66	-2.88
BL228	9.20	-5.69	0.0039	5.9	-4.76	-5.56	-2.47	-3.85	-2.79	-4.37	-3.63	-21.26	-8.53	-27.13	-6.46	-2.65
BL229	7.60	-1.88	0.0264	-3.4	-2.75	-2.70	-2.47	-3.59	-2.42	-3.03	-5.37	-13.83	-8.45	-23.49	-6.46	-2.84
BL230	7.10	3.50	0.0033	5.6	-3.85	-3.99	-2.66	-3.92	-2.65	-4.32	-4.10	-11.78	-7.94	-17.57	-6.72	-2.73
BL231	7.30	2.06	0.0032	8.9	-3.68	-3.97	-2.71	-3.90	-2.66	-4.61	-4.31	-11.99	-7.64	-18.62	-6.49	-2.78

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BA001												0.84
BA002												0.81
BA003												0.82
BA006												0.96
BA007												0.93
BA008												0.96
BA010												0.88
BA011												0.86
BA012												0.85
BA013												0.86
BA016												0.82
BA017												0.79
BA018												0.74
BA019												0.74
BA020												0.75
BA022												0.78
BA023												0.82
BA025												0.78
BA026												0.77
BA027												0.79
BA028												0.78
BA029												0.78
BA030												0.80
BA031												0.76
BA032												0.93
BA033												0.83
BA034												0.83
BA035												0.99
BA036												0.91
BA037												0.77
BA038												0.76
BA041												0.80
BA042												0.83
BA043												0.80
BA044												0.82
BA046												0.77
BA047												0.87
BA048												0.77
BA050												0.79
BA051												0.80
BA052												0.76
BA058												0.84
BA059												0.83
BA061												0.88
BA062												0.79
BA063												0.78
BA064												0.76
BA065												0.83
BA066												0.83
BA067												0.83
BA068												0.87
BA069												0.90
BA070												0.90
BA071												0.80
BA072												0.78
BA073												0.80
BA074												0.80
BA075												0.84
BA076												0.81
BA077												0.81
BA078												0.79
BA079												0.82
BA080												0.80
BA081												0.92
BA082												0.73
BA083												0.76
BA084												0.89
BA085												0.88
BA087												0.84
BA088												0.81
BA089												0.84
BA090												0.75
BA091												0.75
BA092												0.75
BA093												0.96
BA094												0.86
BA095												0.83
BA097												0.93
BA098												0.86
BA099												0.83
BA100												0.77
BA101												0.78
BA102												0.90
BA103												0.88

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BA104												0.91
BA105												0.74
BA106												0.82
BA107												0.77
BA110												0.87
BA111												0.87
BA112												0.79
BA114												0.81
BA115												0.86
BA116												0.82
BA117												0.82
BA119	3.84	2.53	-1.05	8.12	6.99	7.83	8.07	7.84	20.92	18.96	18.72	0.96
BA120												0.86
BA121												0.85
BA122												0.83
BA123												0.92
BA124												0.91
BA125												0.88
BA126												0.76
BA127	2.96	1.85	-1.27	7.30	6.21	6.93	7.29	6.93				0.75
BA128												0.75
BA130												0.84
BA131												0.82
BA132												0.84
BA133												0.76
BA134												0.74
BA135												0.79
BA136												0.72
BA137												0.67
BA138												0.65
BA140												0.82
BA141												0.64
BA142												0.84
BA143												0.86
BA144												0.80
BA145												0.87
BA146												0.89
BA147												0.76
BA148												0.74
BA149												0.86
BA150												0.85
BA151												0.84
BA152												0.84
BA153												0.84
BA154												0.84
BA155												0.85
BA156												0.79
BA157												0.79
BA158												0.78
BA159												0.84
BA160												0.70
BA161												0.69
BA162												0.71
BA163												0.82
BA164												0.83
BA165												0.84
BA166												0.72
BA167												0.79
BA168												0.83
BA169												0.86
BA170												0.80
BA171	2.96	1.83	-1.09	8.20	7.10	7.85	8.22	7.74	19.14	16.47	15.05	0.79
BA174												0.93
BA175												0.85
BA177												0.80
BA178												0.69
BA179	3.37	2.21	-1.31	7.24	6.04	6.98	7.24	6.95	18.83	17.12	16.50	0.81
BA182	2.37	1.23	-3.39	5.21	4.09	4.91	5.21	4.92				0.82
BA183												0.80
BA185												0.83
BA186												0.86
BA187												0.86
BA188												0.79
BA189												0.84
BA190												0.78
BA191												0.88
BA192												0.78
BA193												0.78
BA194												0.70
BA195												0.72
BA196	3.31	2.21	-1.53	5.70	4.42	5.42	5.67	5.51	16.84	14.84	15.59	0.73
BA197												0.79
BA198												0.87
BA199												0.79

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BA200												0.81
BA201												0.85
BA202												0.84
BA203												0.82
BA204												0.83
BA205												0.74
BA206												0.79
BA207												0.76
BA208												0.75
BA210												0.83
BA211												0.85
BA213												0.82
BA223												0.87
BA224												0.86
BA225												0.88
BA226												0.79
BA227												0.78
BA228												0.78
BA229												0.81
BA231												0.80
BA232												0.78
BA233												0.77
BA234												0.79
BA236												0.70
BA238												0.70
BA239												0.90
BA240												0.82
BA241												0.84
BA242												0.83
BA243												0.69
BA252	2.63	1.31	-4.01	3.45	2.17	2.93	3.37	3.23				1.03
BA253	2.79	1.43	-4.08	4.18	2.97	3.68	4.09	3.98	16.88	12.63	15.55	1.08
BA254	3.11	1.72	-3.45	5.67	4.59	5.38	5.68	5.47	18.02	16.04	16.64	1.08
BA255	2.63	1.36	-4.42	2.74	1.47	2.52	2.68	2.65	14.52	13.07	14.26	0.97
BA256	0.23	-1.07	-7.90	4.43	3.90	4.04	4.42	3.95	11.23	8.28	7.04	1.13
BF002												0.77
BF003												0.71
BF004												0.81
BF005												0.89
BF006												0.88
BF007												0.84
BF008												0.84
BF009												0.83
BF010												0.87
BF011												0.86
BF012												0.85
BF013												0.72
BF014												0.85
BF015												0.90
BF016												0.75
BF017												0.96
BF018												0.97
BF019												0.65
BF020												0.66
BF021												0.68
BF022												0.85
BF023												0.97
BF024												0.93
BF025												0.97
BF027												0.80
BF028												0.88
BF029												1.02
BF030												0.93
BF031												0.72
BF032												0.73
BF036												0.87
BF037												0.88
BF038												0.61
BF039												0.89
BF040	1.53	0.45	-4.90	3.44	2.36	3.20	3.44	3.16				0.80
BF041												0.79
BF043												0.73
BF044	2.06	1.02	-4.56	3.77	2.74	3.70	3.78	3.67	11.63	11.84	11.31	0.72
BF045												0.69
BF046												0.84
BF047	2.61	1.33	-2.58	7.42	6.36	7.06	7.41	6.94				0.98
BF048												0.77
BF050												0.77
BF051	2.29	1.24	-3.54	4.11	2.82	3.82	4.06	3.88	14.07	12.15	12.44	0.72
BF052												0.71
BF053												0.80
BF054												0.80
BF055												0.81
BF056												0.79

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BF057												0.82
BF058												0.80
BF059												0.79
BF060	1.21	0.10	-4.81	4.36	3.38	4.02	4.37	3.92				0.84
BF061												0.78
BF063												0.75
BF067												0.77
BF068												0.75
BF069												0.73
BF071												0.92
BF072												0.89
BF073												0.90
BF074	2.24	1.05	-2.72	7.16	6.18	6.77	7.19	6.66	17.46	14.45	12.99	0.90
BF075												0.93
BF076												0.88
BF078												0.65
BF080												0.84
BF082												0.89
BF083												0.89
BF085												0.85
BF086												0.87
BF087												0.81
BF088												0.77
BF089												0.88
BF090												0.75
BF092												0.75
BF093												0.79
BF095												0.49
BF097												0.94
BF101												0.78
BF103												0.76
BF105												0.79
BF106												0.80
BF108	1.93	0.83	-2.71	6.58	5.56	6.14	6.58	6.05				0.80
BF109												0.80
BF110												0.80
BF111	2.69	1.34	-4.20	3.94	2.73	3.59	3.93	3.74	16.40	13.77	15.06	1.06
BF112	2.54	1.28	-2.19	6.89	5.78	6.77	6.90	6.37	18.91	18.65	14.19	0.96
BF113												1.00
BF114	2.53	1.17	-3.28	6.35	5.34	6.00	6.35	5.93	18.23	15.61	14.59	1.08
BF115	1.78	0.43	-4.50	4.98	3.99	4.56	4.97	4.50	16.35	12.97	12.07	1.11
BF116	1.86	0.60	-4.07	5.31	4.30	5.15	5.32	4.85	15.88	15.29	11.88	0.99
BF117	2.08	0.74	-4.16	5.33	4.33	4.98	5.33	4.91				1.07
BG029												0.90
BG030												0.87
BG031												0.93
BG033												0.98
BG034												0.66
BG036												0.71
BG037												0.73
BG038												0.68
BG040												0.47
BG041												0.75
BG042												0.76
BG043												0.71
BG045												0.73
BG046												0.93
BG047												0.69
BG051												-0.20
BG052												0.76
BG053												0.88
BG056												0.60
BG059												0.76
BG060												0.73
BG061												0.76
BG062												0.83
BG063												0.76
BG064												0.75
BG066												0.71
BG072												0.85
BG073												0.76
BG074												0.68
BG076												0.69
BG081												0.87
BG082												0.86
BG083												0.85
BG084												0.87
BG087												0.91
BG088												0.90
BG089	2.43	1.31	-2.92	6.66	5.65	6.31	6.70	6.32	16.00	13.49	13.22	0.79
BG091												0.98
BG093												0.89
BG095												0.68
BG098												0.89

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BG104												0.88
BG107												0.91
BG108												0.80
BG109												0.88
BG110												0.94
BG112												0.87
BG113												0.87
BG114												0.84
BG115												0.86
BG116												0.82
BG117												0.86
BG118												0.84
BG119												0.82
BG121												0.88
BG122												0.93
BG124												0.85
BG128												0.83
BG130												0.89
BG132												0.92
BG133												0.91
BG134												0.92
BG137												0.91
BG139												0.93
BG154												0.84
BG155												0.87
BG156												0.86
BG157												0.76
BG158												0.75
BG159												0.75
BG161												0.76
BG163												0.92
BG164												0.88
BG165												0.91
BG166												0.94
BG168												0.94
BG170												0.78
BG171												0.76
BG172	2.87	1.63	-3.14	7.10	6.15	6.70	7.14	6.85				0.91
BG173												0.95
BG174												0.90
BG175												0.85
BG176												0.87
BG177												0.89
BG178												0.90
BG179												0.92
BG183												0.86
BG184												0.85
BG187												0.87
BG188												0.87
BG191	3.92	2.65	-0.58	9.93	8.98	9.58	9.94	9.62	21.37	18.78	18.87	0.91
BG194	2.00	0.81	-2.50	7.10	6.03	6.55	7.13	6.46				0.91
BG195												0.89
BG196												0.90
BG198												0.72
BG202												0.89
BG204												0.80
BG205												0.81
BG207												0.90
BG208												0.87
BG209												0.87
BG210												0.92
BG211												0.80
BG212												0.82
BG215												0.89
BG216												0.83
BG217												0.82
BG219												0.87
BG220												0.92
BG221												0.87
BG222												0.91
BG224												0.85
BG228												0.82
BG229												0.79
BG230												0.79
BG231												0.75
BG232												0.82
BG233												0.84
BG238												0.85
BG241												0.83
BG242												0.83
BG243												0.81
BG244												0.55
BG245												0.83
BG248												0.83

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BG249												0.87
BG250												0.87
BG252												0.74
BG254												0.71
BG255												0.72
BG260												0.86
BG261												0.71
BG262												0.74
BG263												0.72
BG264												0.79
BG265												0.77
BG266												0.78
BG272												0.91
BG273												0.77
BG275												0.85
BG276												0.90
BG277												0.87
BG279												0.79
BG281												0.85
BG286												0.92
BG289												0.78
BG290												0.85
BG291												0.84
BG292												0.85
BG293												0.96
BG294												0.95
BG295												0.98
BG301												0.98
BG302												0.81
BG303												0.81
BG304												0.83
BG306												0.83
BG311												0.80
BG315												0.97
BG317												0.75
BG319												0.76
BG328												0.93
BG329												0.89
BG330												0.82
BG335												0.88
BG336												0.85
BG337												0.88
BG338												0.91
BG345												0.77
BG347												0.77
BG348												0.52
BG349												0.53
BG350												0.55
BG351												0.87
BG352												0.79
BG353	2.56	1.29	-2.39	7.93	6.96	7.55	7.94	7.42				0.97
BG354												0.80
BG355												0.83
BG356												0.83
BG358												0.76
BG360												0.79
BG361												0.95
BG363												0.72
BG364												0.73
BG365												0.92
BG370	2.50	1.39	-2.46	5.58	4.38	5.25	5.53	5.22				0.78
BG371	2.27	1.15	-2.98	5.23	4.05	4.92	5.17	4.86	15.69	13.47	12.54	0.81
BG372												0.79
BG373												0.83
BG375												0.90
BG376												0.80
BG377												0.81
BG379												0.92
BG380												0.89
BG385	2.34	1.15	-3.19	6.13	5.07	5.80	6.13	5.75	16.53	14.14	13.27	0.89
BG386												0.83
BG387												0.82
BG388												0.72
BG389												0.79
BG390												0.94
BG398												0.84
BG401												0.92
BG402												0.93
BG403												0.93
BG405												0.84
BG406												0.70
BG407												0.70
BG409												0.81
BG410												0.85

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BG411												0.91
BG412												0.89
BG413												0.85
BG414												0.85
BG415												0.82
BG498	2.78	1.46	-3.89	3.39	2.08	2.67	3.22	3.21				1.02
BG499	2.31	0.94	-4.00	6.12	5.14	5.77	6.13	5.70	17.66	15.13	14.10	1.11
BG500	3.10	1.74	-3.56	3.97	2.67	3.72	3.99	3.82	17.26	15.57	16.36	1.05
BG502												1.00
BG503	1.89	0.56	-4.09	5.66	4.67	5.22	5.67	5.16	16.99	13.44	12.48	1.08
BG504	2.75	1.40	-2.75	6.30	5.21	5.93	6.31	5.89	18.73	15.84	15.17	1.05
BG505	1.97	0.66	-4.05	4.67	3.58	4.28	4.69	4.23	16.28	13.09	12.39	1.04
BG507	1.94	0.61	-4.42	4.37	3.28	4.00	4.38	3.96	16.01	13.11	12.45	1.07
BL014												0.74
BL015												0.74
BL016												0.86
BL017												0.87
BL018												0.85
BL019												0.84
BL020												0.84
BL021												0.83
BL022												0.74
BL023												0.74
BL024												0.71
BL025												0.81
BL026												0.83
BL027												0.84
BL028												0.81
BL029												0.79
BL030												0.81
BL031												0.77
BL032												0.79
BL033												0.77
BL034												0.77
BL035												0.82
BL036												0.85
BL037												0.81
BL039												0.80
BL040												0.80
BL041												0.80
BL042												0.79
BL043												0.80
BL044												0.80
BL045												0.76
BL046												0.77
BL047												0.91
BL048												0.90
BL049												0.83
BL050												0.87
BL052												0.90
BL053												0.81
BL054												0.90
BL055												0.84
BL056												0.89
BL058												0.85
BL059												0.82
BL060												0.83
BL061												0.78
BL062												0.78
BL063												0.92
BL064												0.79
BL065												0.84
BL066												0.66
BL067												0.89
BL068												0.87
BL069												0.77
BL071												0.76
BL073												0.86
BL074												0.84
BL075												0.81
BL077												0.76
BL078												0.72
BL079												0.90
BL080												0.90
BL081												0.89
BL082												0.85
BL083												0.89
BL084												0.87
BL085												0.85
BL086												0.88
BL087												0.84
BL088												0.80
BL089												0.81
BL090												0.77

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BL091												0.87
BL092												0.87
BL093												0.86
BL095												0.82
BL096												0.81
BL097												0.82
BL098												0.89
BL099												0.85
BL100												0.84
BL101												0.82
BL102												0.87
BL103												0.93
BL104												0.89
BL105												0.91
BL106												0.91
BL107												0.87
BL108												0.90
BL109												0.87
BL110												0.78
BL111												0.82
BL112												0.80
BL113												0.77
BL114												0.77
BL115												0.75
BL116												0.88
BL117												0.96
BL118												0.98
BL119												0.94
BL120												0.82
BL121												0.90
BL122												0.92
BL123												0.87
BL124												0.72
BL125												0.77
BL126												0.88
BL127												0.83
BL128												0.75
BL129												0.70
BL130												0.86
BL131												0.87
BL132												0.84
BL133												0.79
BL134												0.83
BL137												0.87
BL138												0.62
BL139												0.15
BL140												0.78
BL142												0.87
BL143												0.86
BL144												0.74
BL146												0.73
BL147												0.78
BL148												0.78
BL149												0.88
BL150												0.93
BL151												0.88
BL152												0.91
BL153												0.80
BL154												0.80
BL155												0.80
BL157												0.93
BL158	1.90	0.84	-3.21	5.84	4.79	5.38	5.87	5.41	14.86	11.05	11.14	0.75
BL159												0.96
BL160												0.96
BL161												0.94
BL163												0.72
BL164												0.69
BL165												0.82
BL166												0.84
BL167												0.85
BL168												0.94
BL169												0.93
BL170												0.93
BL171												0.95
BL172												0.93
BL173												0.94
BL174												0.92
BL175												0.91
BL176												0.91
BL177												0.89
BL179												0.81
BL180												0.84
BL181												0.81
BL184												0.80

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Albite	Analcime	Anorthite	Beidellite-Ca	Beidellite-H	Beidellite-K	Beidellite-Mg	Beidellite-Na	Clinoptilolite-Ca	Clinoptilolite-K	Clinoptilolite-Na	Chalcedony
BL185												0.86
BL186												0.81
BL187												0.96
BL188												0.92
BL189												0.76
BL190												0.88
BL191												0.97
BL192												0.89
BL193												0.86
BL194												0.90
BL195												0.84
BL196												0.85
BL197												0.79
BL198												0.86
BL199												0.79
BL200												0.79
BL201												0.98
BL202												0.87
BL203												0.83
BL204												0.82
BL205												0.98
BL206												0.84
BL207												0.77
BL208												0.83
BL209												0.90
BL210												0.91
BL211												0.81
BL212												0.88
BL213												0.91
BL214												0.92
BL215												0.62
BL216												0.67
BL217	3.13	2.07	-0.31	9.23	8.16	8.87	9.25	8.76	19.45	16.77	15.23	0.69
BL223	3.01	1.72	-2.85	4.03	2.65	3.70	4.03	3.79	17.51	15.01	15.70	0.98
BL224	2.75	1.40	-3.51	5.29	4.17	4.98	5.28	5.00				1.06
BL225	2.67	1.34	-4.15	5.17	4.08	5.23	5.24	4.95	16.61	18.43	15.06	1.04
BL226	1.78	0.59	-4.73	2.58	1.37	1.79	2.44	2.30	13.34	5.96	11.06	0.92
BL227	1.62	0.37	-4.39	5.33	4.37	4.93	5.35	4.84	15.54	12.34	11.16	1.00
BL228	2.72	1.46	-3.92	2.68	1.34	2.41	2.60	2.55	14.91	13.01	14.32	0.95
BL229	2.65	1.25	-3.57	6.16	5.10	5.77	6.18	5.77	18.50	15.60	15.28	1.12
BL230	2.90	1.44	-3.91	7.72	7.00	7.39	7.72	7.45	18.45	16.12	16.38	1.18
BL231	3.42	2.08	-1.71	9.01	8.18	8.63	9.00	8.68	20.12	17.09	17.34	1.01

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BA001	-0.08		-8.58											
BA002	0.26		-7.29											
BA003	0.26		-7.24											
BA006	-0.21	-0.49	-8.26		4.69									
BA007	0.09	-0.68	-7.06		4.50									
BA008	0.11		-7.06											
BA010	-0.47	-1.04	-10.11		4.22									
BA011	0.34		-6.90											
BA012	0.64	-0.56	-6.36		4.67									
BA013	0.54		-6.46											
BA016	-0.01	0.52	-7.43		5.81									
BA017	0.09		-7.74											
BA018	0.55		-6.24											
BA019	0.53		-5.94											
BA020	0.40	0.14	-2.96		5.21									
BA022	-0.01		-6.34											
BA023	-0.48	0.24	-7.81		5.36									
BA025	0.10	-0.39	-5.21		4.71									
BA026	0.21		-4.81											
BA027	0.54	-0.25	-3.57		4.88									
BA028	0.33	-0.45	-3.96		4.66									
BA029	0.53		-3.55											
BA030	-0.27	1.15	-7.30		6.29									
BA031	0.39		-4.01											
BA032	0.13	1.02	-6.84		6.22									
BA033	0.32	-0.50	-4.30		4.71									
BA034	0.42		-3.77											
BA035	-0.14	-0.08	-7.59		5.17									
BA036	0.23		-6.72											
BA037	0.01		-6.57											
BA038	-0.02		-6.55											
BA041	-0.14	-0.15	-6.27		5.02									
BA042	0.11	-0.66	-6.36		4.60									
BA043	0.03		-6.70											
BA044	0.03		-6.58											
BA046	0.54		-5.25											
BA047	0.66		-4.54											
BA048	0.64		-4.57											
BA050	0.76	0.07	-1.61		5.17									
BA051	0.48	0.16	-2.75		5.25									
BA052	0.63	0.11	-1.89		5.19									
BA058	-0.29	-0.88	-8.50		4.35									
BA059	0.01		-7.28											
BA061	0.25		-6.54											
BA062	-0.14		-5.94											
BA063	-0.56	-0.13	-7.33		4.98									
BA064	-0.47	-0.13	-6.71		4.98									
BA065	-0.53		-9.39											
BA066	0.00		-7.38											
BA067	-0.04		-7.46											
BA068	0.00		-5.88											
BA069	-0.10		-6.01											
BA070	0.52	0.10	-3.47		5.26									
BA071	0.08	-0.26	-5.24		4.79									
BA072	0.06	0.05	-4.61		5.10									
BA073	0.18	-0.39	-5.15		4.71									
BA074	0.23	-0.10	-4.87		5.00									
BA075	0.33		-5.88											
BA076	0.07		-6.89											
BA077	-0.14		-7.70											
BA078	0.48	-0.07	-2.11		5.02									
BA079	0.37	0.00	-2.84		5.09									
BA080	0.34		-5.37											
BA081	-0.09		-7.70											
BA082	-0.09		-7.13											
BA083	0.11		-6.38											
BA084	-0.32	-0.30	-6.95		4.94									
BA085	-0.03		-5.88											
BA087	0.11	-0.03	-6.06		5.10									
BA088	0.19		-5.79											
BA089	-0.04		-6.60											
BA090	0.49	-0.96	-6.40		4.29									
BA091	-0.11		-8.85											
BA092	0.07		-8.07											
BA093	-0.26	-0.48	-8.21		4.77									
BA094	0.01		-6.75											
BA095	0.00	-0.36	-6.74		4.82									
BA097	0.29	-0.64	-6.98		4.61									
BA098	0.32	-0.35	-6.55		4.87									
BA099	0.17	-0.91	-6.81		4.33									
BA100	-0.19		-8.20											
BA101	0.00		-7.41											
BA102	0.09	-1.08	-8.51		4.17									
BA103	0.40		-7.25											

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BA104	0.38		-7.29											
BA105	0.47		-6.77											
BA106	0.29		-7.84											
BA107	-0.21	-0.04	-7.98		5.25									
BA110	0.17		-6.52											
BA111	0.15		-6.57											
BA112	-0.19	-0.98	-6.23		4.28									
BA114	-0.09	-0.98	-6.52		4.28									
BA115	0.20		-7.61											
BA116	0.43		-6.72											
BA117	0.32		-7.66											
BA119	-0.01	0.22	-6.64	1.63	5.40	8.57	6.40	5.88	6.51	8.14	7.93	8.17	7.93	5.62
BA120	-0.32		-8.34											
BA121	-0.32		-8.34											
BA122	-0.08		-7.97											
BA123	-0.09		-6.95											
BA124	-0.50		-8.61											
BA125	-0.01		-6.61											
BA126	0.22		-5.32											
BA127	-0.03		-6.41	1.56		7.63	5.89	4.94	5.61	7.27	6.96	7.32	6.96	4.45
BA128	0.07		-5.80											
BA130	-0.35	-1.01	-9.82		4.28									
BA131	-0.74		-10.75											
BA132	-0.51		-10.00											
BA133	-0.07	-0.03	-6.57		5.06									
BA134	0.15		-5.75											
BA135	0.09	-0.48	-5.85		4.64									
BA136	-0.16	-0.07	-7.37		5.19									
BA137	0.31	0.76	-3.36		5.72									
BA138	0.29	0.86	-2.78		5.82									
BA140	-0.89	-1.16	-10.33		4.10									
BA141	-0.09	0.14	-7.24		5.38									
BA142	0.03		-6.17											
BA143	-0.03	-0.69	-6.53		4.49									
BA144	0.11		-6.30											
BA145	0.07		-6.17											
BA146	-0.14		-6.77											
BA147	0.50	-0.68	-7.30		4.58									
BA148	0.55		-6.85											
BA149	-0.07		-6.30											
BA150	-0.10		-6.67											
BA151	0.01		-5.86											
BA152	0.07		-6.01											
BA153	0.28		-5.69											
BA154	0.15		-5.93											
BA155	-0.09	-0.21	-8.48		5.05									
BA156	0.02		-6.85											
BA157	-0.02		-6.86											
BA158	0.28		-5.79											
BA159	0.12		-7.28											
BA160	-0.15		-8.31											
BA161	0.06		-6.90											
BA162	-0.16		-7.79											
BA163	0.01		-6.74											
BA164	0.10		-6.25											
BA165	-0.12		-7.04											
BA166	0.36		-6.06											
BA167	0.38		-6.90											
BA168	0.39		-7.81											
BA169	0.87	-1.18	-6.81		4.07									
BA170	0.02		-5.92											
BA171	0.01	0.67	-6.63	1.98	5.90	8.56	6.73	5.35	6.23	8.01	7.73	8.11	7.63	4.73
BA174	-0.04	0.45	-8.70		5.74									
BA175	0.56	-0.45	-3.82		4.73									
BA177	0.03	0.45	-4.05		5.50									
BA178	0.10	0.74	-3.51		5.76									
BA179	0.19	-0.14	-5.59	1.47	5.06	7.98	5.78	5.53	5.96	7.53	7.34	7.60	7.31	4.87
BA182	-0.10		-6.37	0.60		5.73	4.07	4.37	3.87	5.93	5.70	6.00	5.71	3.94
BA183	-0.21		-6.74											
BA185	0.37	-0.69	-4.02		4.47									
BA186	0.22	-0.63	-4.51		4.52									
BA187	0.16		-4.74											
BA188	0.01	-0.24	-5.85		4.91									
BA189	-0.02	-1.09	-7.60		4.20									
BA190	0.24	-0.47	-6.61		4.74									
BA191	-0.03		-8.82											
BA192	0.23	-0.19	-4.29		4.93									
BA193	0.38		-4.05											
BA194	0.14	0.12	-3.70		5.14									
BA195	-0.02	-0.15	-5.43		4.87									
BA196	0.06	0.14	-4.24	0.81	5.16	6.62	4.35	5.00	5.18	6.46	6.26	6.51	6.35	4.39
BA197	0.06	-0.21	-7.49		5.03									
BA198	0.14		-7.19											
BA199	0.18	-0.33	-6.56		4.89									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BA200	-0.31		-8.48											
BA201	-0.13	-1.09	-9.77		4.21									
BA202	0.04		-8.99											
BA203	-0.02		-9.33											
BA204	-0.24	-0.80	-8.75		4.48									
BA205	-0.01		-7.67											
BA206	0.13		-6.75											
BA207	0.24		-5.92											
BA208	0.16		-6.30											
BA210	-0.17	-0.08	-7.78		5.12									
BA211	-0.12	0.99	-7.21		6.20									
BA213	-0.18	0.30	-7.77		5.51									
BA223	0.25	-0.56	-7.68		4.72									
BA224	0.27		-7.08											
BA225	0.13		-7.46											
BA226	0.01	-0.30	-6.17		4.86									
BA227	-0.14	-0.55	-6.59		4.59									
BA228	0.18	-0.14	-5.36		5.02									
BA229	-0.02	-0.17	-7.87		5.13									
BA231	0.28		-6.70											
BA232	0.25		-6.57											
BA233	0.35		-6.27											
BA234	0.11		-5.72											
BA236	-0.01	-0.94	-7.84		4.31									
BA238	-0.22	0.46	-8.76		5.69									
BA239	0.15	-0.79	-7.43		4.50									
BA240	0.34		-6.73											
BA241	0.37		-6.37											
BA242	0.18		-6.37											
BA243	-0.38	0.33	-7.72		5.55									
BA252	0.18		-4.74	-0.60		3.85	2.11	3.71	3.44	5.17	4.72	5.17	5.03	4.50
BA253	0.00	-0.47	-6.07	-0.29	4.70	4.39	2.81	3.92	3.66	5.56	5.13	5.54	5.43	4.74
BA254	-0.37	-1.17	-6.38	0.40	4.00	6.12	4.19	4.89	4.30	6.55	6.34	6.63	6.42	5.06
BA255	-0.21	-1.64	-4.61	-0.82	3.40	3.70	1.56	4.20	2.80	4.58	4.42	4.58	4.56	4.13
BA256	-1.69	-4.99	-13.80	0.10	0.28	3.34	3.63	2.60	0.22	4.40	4.09	4.47	4.00	2.96
BF002	-0.17	-0.03	-6.67		5.13									
BF003	-0.02	-1.18	-6.82		4.03									
BF004	-0.01		-7.26											
BF005	0.15		-6.99											
BF006	-0.13		-6.97											
BF007	-0.11	-0.71	-6.90		4.48									
BF008	0.09		-6.04											
BF009	0.38		-5.99											
BF010	-0.41		-7.63											
BF011	-0.20		-6.71											
BF012	-0.11		-6.34											
BF013	0.53		-6.40											
BF014	0.14	-0.71	-6.33		4.48									
BF015	0.26		-6.24											
BF016	0.19	0.45	-8.08		5.70									
BF017	0.23		-6.71											
BF018	0.07		-7.43											
BF019	0.50		-6.24											
BF020	0.47		-6.14											
BF021	0.39		-6.44											
BF022	0.29	-0.70	-7.56		4.56									
BF023	-0.14	-0.31	-7.28		4.85									
BF024	0.03		-6.38											
BF025	0.21		-5.69											
BF027	0.31		-7.56											
BF028	0.62		-7.68											
BF029	-0.16		-7.70											
BF030	-0.28	-0.21	-6.86		4.97									
BF031	-0.62		-9.82											
BF032	-0.53		-9.75											
BF036	0.20		-7.04											
BF037	0.31		-6.56											
BF038	-1.13	-0.55	-11.23		4.72									
BF039	-0.25	0.93	-8.41		6.24									
BF040	-0.18		-6.65	-0.13		4.03	2.58	3.69	2.20	4.54	4.38	4.61	4.33	3.07
BF041	0.15		-5.22											
BF043	-0.64	0.30	-5.95		5.37									
BF044	-0.81	0.35	-6.88	0.12	5.42	4.59	2.95	4.14	2.21	4.58	4.59	4.67	4.56	3.05
BF045	-0.78	0.40	-6.55		5.45									
BF046	0.59		-7.18											
BF047	-0.02		-7.77	1.42		7.59	5.95	5.11	5.37	7.55	7.27	7.62	7.14	4.91
BF048	0.03	-0.70	-6.83		4.49									
BF050	0.00	-0.21	-8.24		5.05									
BF051	0.48	0.23	-5.18	0.25	5.44	5.00	3.13	4.19	3.60	5.27	5.06	5.31	5.12	3.53
BF052	0.50	-0.27	-5.38		4.95									
BF053	0.03		-7.42											
BF054	-0.03		-7.38											
BF055	0.01		-7.12											
BF056	0.02	0.02	-5.71		5.13									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BF057	0.11		-7.04											
BF058	0.07	-0.75	-7.50		4.42									
BF059	0.08		-7.46											
BF060	-0.05		-7.85	0.27		4.51	3.43	3.54	2.44	5.04	4.77	5.12	4.67	3.14
BF061	-0.04	1.01	-6.99		6.21									
BF063	0.11	-0.20	-6.88		5.04									
BF067	0.39		-7.34											
BF068	0.42	-0.55	-7.26		4.67									
BF069	0.46		-7.03											
BF071	0.20	0.21	-6.66		5.28									
BF072	0.02	-0.26	-7.31		4.79									
BF073	0.33	0.19	-6.19		5.25									
BF074	-0.16	-0.85	-7.86	1.41	4.37	7.19	5.81	4.65	4.79	7.15	6.84	7.26	6.73	4.37
BF075	0.07	-0.80	-6.99		4.41									
BF076	0.29		-6.20											
BF078	0.07	0.58	-8.25		5.87									
BF080	0.14		-6.54											
BF082	0.01		-7.90											
BF083	-0.33	-0.69	-8.70		4.55									
BF085	-0.11	-0.85	-7.63		4.37									
BF086	-0.09		-7.64											
BF087	0.71	0.90	-6.17		6.17									
BF088	0.03	-0.25	-6.50		4.90									
BF089	0.19	-0.05	-6.16		5.19									
BF090	0.15	-0.18	-6.02		4.95									
BF092	0.04	0.14	-6.44		5.26									
BF093	0.02	0.38	-6.71		5.53									
BF095	0.18	0.00	-6.22		5.16									
BF097	-0.12	-0.60	-7.06		4.64									
BF101	-0.05	0.05	-6.96		5.20									
BF103	-0.02	0.66	-6.50		5.79									
BF105	0.20		-5.94											
BF106	0.19		-6.08											
BF108	0.24		-7.52	1.26		6.62	5.35	4.27	4.51	6.66	6.30	6.74	6.21	3.91
BF109	0.27		-7.43											
BF110	0.25		-7.46											
BF111	-0.05	-1.20	-5.01	-0.38	3.94	4.57	2.61	4.27	3.46	5.53	5.26	5.59	5.40	4.60
BF112	0.09	-0.16	-6.19	1.12	5.02	7.70	5.37	5.79	5.36	7.33	7.28	7.41	6.88	4.81
BF113	-0.27	-4.44	-7.34		0.72									
BF114	-0.18	-2.71	-7.46	0.73	2.45	6.47	4.84	4.79	4.46	6.83	6.56	6.90	6.48	4.89
BF115	-0.09	-3.04	-7.56	0.09	2.10	4.95	3.63	3.99	3.25	5.84	5.50	5.91	5.44	4.35
BF116	-0.26	-4.34	-7.32	0.42	0.82	5.83	4.04	4.80	3.49	6.00	5.92	6.09	5.62	4.12
BF117	-0.17		-7.47	0.30		5.47	3.98	4.33	3.57	6.09	5.82	6.17	5.75	4.45
BG029	-0.27		-8.87											
BG030	-0.18		-7.99											
BG031	-0.43		-9.64											
BG033	0.28	-0.96	-7.05		4.30									
BG034	0.19		-7.70											
BG036	0.09		-6.40											
BG037	0.16		-5.86											
BG038	-0.17		-8.09											
BG040	0.15	-0.68	-8.48		4.56									
BG041	0.17	-0.18	-5.37		4.95									
BG042	0.13	-0.20	-5.45		4.93									
BG043	-0.12	0.93	-6.77		6.00									
BG045	-0.02	0.61	-6.49		5.69									
BG046	-0.28	0.73	-7.35		5.89									
BG047	0.25	0.81	-5.46		5.90									
BG051	-0.03		-6.89											
BG052	-0.14		-6.36											
BG053	-0.14	0.62	-7.46		5.84									
BG056	0.03	-0.07	-6.78		5.14									
BG059	-0.22	0.29	-8.04		5.45									
BG060	0.27	0.32	-6.00		5.48									
BG061	0.27	-0.94	-6.01		4.22									
BG062	0.07		-7.31											
BG063	0.34	-0.34	-6.08		4.83									
BG064	0.20		-6.58											
BG066	0.41	0.93	-5.87		6.06									
BG072	0.30	-0.05	-6.87		5.19									
BG073	0.19	0.84	-6.62		5.97									
BG074	0.43	0.91	-5.76		6.02									
BG076	0.40	0.11	-5.94		5.24									
BG081	-0.14	-0.72	-8.29		4.50									
BG082	0.26	-0.55	-6.91		4.67									
BG083	0.23	-0.80	-7.03		4.40									
BG084	0.62	-0.20	-5.87		5.08									
BG087	0.08	0.61	-5.87		5.76									
BG088	-0.08	-0.07	-6.69		5.07									
BG089	0.04	-0.87	-7.47	1.35	4.35	6.88	5.48	4.49	4.41	6.75	6.48	6.86	6.48	4.03
BG091	0.11		-6.60											
BG093	0.37	-0.85	-6.09		4.38									
BG095	-0.26	-0.38	-8.14		4.77									
BG098	0.13	1.16	-5.77		6.29									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BG104	-0.19		-8.29											
BG107	0.08		-7.13											
BG108	0.18		-6.77											
BG109	0.10	-0.11	-7.23		5.08									
BG110	-0.02	-0.96	-7.44		4.30									
BG112	0.28	-1.07	-8.23		4.21									
BG113	-0.01		-7.91											
BG114	0.20		-6.97											
BG115	0.20		-7.05											
BG116	-0.31		-7.55											
BG117	-0.29	-0.67	-8.07		4.46									
BG118	0.01	-0.48	-6.81		4.64									
BG119	0.04		-6.74											
BG121	-0.05	0.16	-8.41		5.38									
BG122	0.28		-7.04											
BG124	0.14	-0.55	-6.65		4.68									
BG128	0.14		-6.93											
BG130	-0.08	-1.14	-6.43		4.11									
BG132	-0.15	-0.54	-7.43		4.68									
BG133	0.11	-0.81	-6.55		4.40									
BG134	0.04	-0.84	-6.88		4.39									
BG137	0.07	-0.90	-7.13		4.34									
BG139	0.11		-7.76											
BG154	0.18		-7.25											
BG155	0.19		-7.29											
BG156	0.17		-7.29											
BG157	-0.17	-0.28	-6.19		4.87									
BG158	-0.09		-5.78											
BG159	-0.08		-5.80											
BG161	0.00		-7.86											
BG163	0.06	-0.67	-7.46		4.58									
BG164	0.33	-0.94	-6.70		4.31									
BG165	0.23		-7.10											
BG166	0.25	0.54	-6.56		5.78									
BG168	0.27	-0.20	-6.46		5.04									
BG170	0.01	-0.87	-7.18		4.36									
BG171	-0.05		-6.69											
BG172	-0.53		-8.23	1.40		7.06	5.81	4.52	4.52	7.09	6.77	7.21	6.92	4.55
BG173	-0.28		-7.30											
BG174	-0.54		-8.49											
BG175	-0.08		-7.61											
BG176	0.12		-7.21											
BG177	0.13		-7.15											
BG178	0.28	-0.30	-6.88		4.94									
BG179	-0.09	-0.84	-7.35		4.40									
BG183	-0.17		-8.14											
BG184	0.03		-7.32											
BG187	0.09	-0.72	-7.20		4.47									
BG188	-0.04		-7.61											
BG191	0.24	-0.47	-8.50	2.60	4.77	9.89	8.21	5.88	7.00	9.05	8.77	9.14	8.81	5.65
BG194	0.35		-6.96	1.34		7.04	5.69	4.37	5.13	7.32	6.86	7.43	6.76	4.42
BG195	0.42		-6.81											
BG196	0.39		-6.83											
BG198	-0.35	1.07	-7.57		6.32									
BG202	0.25	-1.03	-7.18		4.24									
BG204	-0.08		-8.23											
BG205	-0.11	-1.20	-8.59		4.05									
BG207	-0.04		-8.00											
BG208	0.03		-7.91											
BG209	-0.01		-7.11											
BG210	0.04		-7.91											
BG211	-0.22	0.07	-5.99		5.19									
BG212	0.21	-0.08	-4.58		5.05									
BG215	0.05	-1.26	-6.90		3.97									
BG216	0.15		-7.62											
BG217	0.01	-0.36	-7.22		4.89									
BG219	-0.27		-8.13											
BG220	0.07	-0.62	-6.86		4.62									
BG221	-0.21		-8.14											
BG222	-0.16		-7.25											
BG224	0.26	0.77	-5.98		6.01									
BG228	-0.20	0.19	-5.16		5.33									
BG229	0.27	-0.02	-3.79		5.12									
BG230	0.18	0.18	-5.66		5.32									
BG231	0.07		-6.26											
BG232	-0.05	-0.90	-7.67		4.33									
BG233	0.00	-0.18	-6.80		5.08									
BG238	0.14	0.08	-7.21		5.27									
BG241	0.46		-3.25											
BG242	0.43	-0.25	-3.44		4.91									
BG243	0.13	-0.31	-5.15		4.84									
BG244	-0.02	-0.11	-5.85		5.03									
BG245	-0.10	-0.59	-6.00		4.56									
BG248	-0.06	-0.38	-7.17		4.89									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BG249	-0.19	-0.38	-8.08		4.88									
BG250	0.01	-0.20	-6.67		5.06									
BG252	0.05	0.01	-6.32		5.20									
BG254	-0.33		-7.75											
BG255	0.00	-0.26	-6.45		4.89									
BG260	-0.03	-0.38	-7.16		4.89									
BG261	0.12		-6.12											
BG262	0.03		-6.55											
BG263	0.03		-6.42											
BG264	0.06	-0.60	-6.72		4.64									
BG265	0.05	0.99	-6.84		6.23									
BG266	0.04	-0.42	-6.60		4.82									
BG272	-0.34	-0.35	-8.52		4.97									
BG273	-0.16	-0.12	-7.43		5.12									
BG275	0.05	0.10	-6.95		5.36									
BG276	0.15	-0.68	-6.83		4.58									
BG277	-0.08	-0.28	-7.21		4.98									
BG279	0.00	0.09	-6.73		5.27									
BG281	0.12	-0.74	-6.29		4.46									
BG286	0.20	-0.98	-6.40		4.28									
BG289	0.18	-0.69	-6.27		4.50									
BG290	-0.48		-7.60											
BG291	-0.11		-7.47											
BG292	-0.24		-7.98											
BG293	-0.58		-9.24											
BG294	0.02	-0.13	-6.85		5.13									
BG295	-0.13		-7.22											
BG301	-0.10	-0.38	-7.21		4.89									
BG302	0.44		-7.16											
BG303	0.30	-0.74	-7.97		4.54									
BG304	0.49		-7.13											
BG306	0.06		-8.35											
BG311	0.37	-0.73	-7.44		4.54									
BG315	0.44	-0.43	-5.77		4.82									
BG317	0.04	0.72	-8.80		6.00									
BG319	0.08	-0.78	-8.96		4.48									
BG328	0.20		-5.56											
BG329	0.08	0.21	-6.13		5.44									
BG330	0.20		-7.76											
BG335	0.09		-7.77											
BG336	-0.10		-8.46											
BG337	-0.12		-8.53											
BG338	-0.13	-1.21	-8.83		4.02									
BG345	-0.01	-0.75	-6.93		4.45									
BG347	-0.03		-6.94											
BG348	-0.76		-10.04											
BG349	-0.99		-11.19											
BG350	-0.83		-10.53											
BG351	-0.34	-0.05	-9.25		5.19									
BG352	-0.04		-8.16											
BG353	0.13		-8.45	1.66		7.88	6.44	5.04	5.39	7.73	7.42	7.81	7.29	4.86
BG354	0.59		-4.49											
BG355	0.47	-0.52	-4.91		4.61									
BG356	0.46		-4.92											
BG358	0.36	-0.35	-7.11		4.90									
BG360	0.40	-0.18	-7.36		5.07									
BG361	-0.42	-0.47	-9.23		4.79									
BG363	0.12	0.15	-5.71		5.24									
BG364	0.21	0.08	-5.45		5.19									
BG365	-0.48	-0.50	-9.11		4.74									
BG370	0.30		-5.77	0.76		6.19	4.33	4.62	4.62	6.24	5.98	6.26	5.95	4.09
BG371	0.20	-0.54	-6.19	0.59	4.60	5.80	4.03	4.49	4.17	5.94	5.71	5.96	5.64	3.94
BG372	0.21		-6.12											
BG373	-0.73	0.23	-9.56		5.47									
BG375	0.33	0.01	-5.71		5.20									
BG376	0.56	-0.28	-7.25		4.98									
BG377	0.44		-7.62											
BG379	-0.47	1.44	-8.82		6.64									
BG380	-0.15		-7.92											
BG385	-0.42	-0.81	-7.32	0.95	4.41	6.42	4.87	4.57	4.30	6.51	6.26	6.58	6.20	4.23
BG386	-0.24		-6.67											
BG387	-0.27		-7.02											
BG388	-0.10	0.74	-9.08		6.03									
BG389	-0.22	0.28	-9.42		5.59									
BG390	-1.06	-0.58	-10.22		4.71									
BG398	-0.08	-0.30	-8.48		4.98									
BG401	-1.31	-1.42	-11.72		3.87									
BG402	-1.01	-1.25	-10.56		4.04									
BG403	-0.90		-9.54											
BG405	0.01	-0.23	-6.71		4.96									
BG406	-0.10		-7.57											
BG407	0.06	-0.70	-6.74		4.53									
BG409	-0.15	-0.35	-6.96		4.83									
BG410	-0.20	0.16	-7.29		5.37									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BG411	-0.02		-7.49											
BG412	0.13		-7.29											
BG413	0.07		-6.71											
BG414	-0.16	0.10	-7.39		5.30									
BG415	-0.01		-6.66											
BG498	0.15		-5.44	-0.62		3.38	2.05	3.15	3.55	5.00	4.36	4.91	4.90	4.54
BG499	-0.09	-6.21	-7.95	0.64	-0.97	6.18	4.70	4.61	4.01	6.66	6.40	6.76	6.33	4.77
BG500	0.20	-3.09	-3.41	-0.40	2.03	5.04	2.54	4.81	4.01	5.82	5.64	5.91	5.74	4.89
BG502	-0.36	-1.60	-8.63		3.56									
BG503	-0.01	-1.50	-7.74	0.47	3.71	5.60	4.30	4.15	3.74	6.31	5.94	6.39	5.88	4.44
BG504	0.02	-1.77	-6.21	0.70	3.36	6.60	4.74	4.89	4.86	6.97	6.67	7.05	6.63	5.01
BG505	-0.03	-2.42	-6.08	0.00	2.69	4.96	3.34	4.11	3.49	5.80	5.48	5.89	5.43	4.30
BG507	0.01	-1.82	-6.18	-0.16	3.31	4.69	3.06	4.08	3.22	5.61	5.31	5.69	5.27	4.28
BL014	0.18		-6.15											
BL015	0.26		-5.77											
BL016	0.12		-6.66											
BL017	0.14		-6.64											
BL018	-0.11		-7.52											
BL019	-0.10		-7.42											
BL020	0.13		-6.60											
BL021	0.00	-0.11	-7.02		5.15									
BL022	0.53	-0.67	-6.26		4.51									
BL023	0.57		-6.15											
BL024	0.40		-6.81											
BL025	0.00		-6.77											
BL026	0.30	-0.60	-5.54		4.56									
BL027	0.28		-5.56											
BL028	-0.06		-8.11											
BL029	0.11	-0.97	-8.96		4.30									
BL030	0.11	-1.27	-8.98		4.00									
BL031	0.03	-1.60	-9.61		3.66									
BL032	-0.03	-0.22	-7.19		5.03									
BL033	0.24	-0.39	-5.92		4.84									
BL034	0.24	-0.42	-5.99		4.82									
BL035	-0.33		-9.75											
BL036	0.23		-7.13											
BL037	-0.01	-0.47	-6.86		4.78									
BL039	0.21	-0.98	-7.72		4.28									
BL040	0.18		-7.55											
BL041	0.39		-7.27											
BL042	0.37	-0.02	-6.33		5.21									
BL043	0.35	-0.04	-6.34		5.20									
BL044	0.26	-0.11	-6.70		5.13									
BL045	-0.64	-0.33	-9.50		4.96									
BL046	-1.62	-1.72	-12.46		3.48									
BL047	-2.17	-1.38	-14.32		3.99									
BL048	-1.05	-0.65	-10.35		4.63									
BL049	-0.76		-9.72											
BL050	0.00		-5.91											
BL052	-0.76	-0.33	-9.27		4.96									
BL053	-0.89	-0.51	-9.67		4.73									
BL054	-1.19	-0.91	-10.77		4.43									
BL055	-1.37	-0.83	-11.43		4.47									
BL056	0.66	-0.83	-5.88		4.52									
BL058	-1.10	-1.14	-10.20		4.12									
BL059	-0.55		-8.51											
BL060	-0.69	-1.02	-8.98		4.25									
BL061	-0.41	0.16	-8.83		5.40									
BL062	-0.70		-9.81											
BL063	-0.69	-0.23	-10.20		5.06									
BL064	-0.43		-8.76											
BL065	-0.86		-10.70											
BL066	-0.63	-0.19	-9.66		5.00									
BL067	-0.93	-0.80	-11.13		4.51									
BL068	0.05	0.59	-6.81		5.81									
BL069	0.27		-6.02											
BL071	-0.15	-0.61	-7.66		4.63									
BL073	-0.26		-8.77											
BL074	-0.21	-0.58	-8.88		4.69									
BL075	-0.35		-9.04											
BL077	-0.06	-0.26	-6.75		4.89									
BL078	0.32		-5.25											
BL079	-0.01	0.39	-9.23		5.68									
BL080	0.12	0.40	-8.70		5.68									
BL081	0.19	0.45	-8.35		5.74									
BL082	-0.87		-10.30											
BL083	-1.10	-1.27	-11.19		4.02									
BL084	-0.82	-0.92	-10.27		4.37									
BL085	0.26		-7.85											
BL086	0.06		-8.72											
BL087	0.43		-7.26											
BL088	0.07	-0.89	-6.58		4.35									
BL089	0.03		-7.04											
BL090	-0.03		-7.26											

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BL091	-0.02	-1.06	-8.29		4.22									
BL092	0.13		-7.55											
BL093	-0.14		-8.66											
BL095	0.34		-4.77											
BL096	0.33		-4.72											
BL097	0.52		-3.87											
BL098	0.18	-0.56	-8.00		4.78									
BL099	-0.26	-1.11	-8.52		4.18									
BL100	-0.32		-8.78											
BL101	-0.40	-1.11	-9.27		4.17									
BL102	0.19		-7.41											
BL103	-0.15	-1.13	-8.91		4.15									
BL104	-0.09	-0.72	-8.38		4.54									
BL105	0.13		-7.99											
BL106	-0.06		-8.69											
BL107	-0.15	-1.20	-9.38		4.08									
BL108	-0.17	-1.26	-9.51		4.04									
BL109	-0.21		-9.16											
BL110	0.00	0.24	-7.57		5.52									
BL111	-0.01	0.20	-7.48		5.48									
BL112	0.00	0.15	-7.53		5.43									
BL113	0.26	-1.01	-5.93		4.26									
BL114	0.15		-6.24											
BL115	0.17	-0.65	-6.36		4.60									
BL116	-0.37	-1.16	-8.98		4.14									
BL117	-1.41	-1.77	-13.09		3.56									
BL118	-1.61	-3.05	-14.25		2.28									
BL119	-1.45	-1.82	-13.08		3.50									
BL120	-0.09		-7.08											
BL121	-0.56	-1.04	-10.35		4.26									
BL122	-0.44	-0.77	-9.91		4.53									
BL123	-0.29	-0.84	-9.13		4.45									
BL124	-0.80	-0.14	-9.11		5.10									
BL125	-0.90		-9.10											
BL126	-1.32	-0.25	-12.04		5.10									
BL127	-1.36	-0.45	-11.70		4.86									
BL128	-0.80	-0.22	-9.08		5.02									
BL129	-1.05	-0.26	-9.48		4.95									
BL130	-1.20	-0.56	-10.72		4.79									
BL131	-1.10	0.78	-10.47		6.09									
BL132	-0.25		-7.51											
BL133	-0.25	-0.09	-7.34		5.12									
BL134	-0.39	-0.04	-7.94		5.16									
BL137	-0.32		-8.32											
BL138	-0.10	-0.47	-7.83		4.74									
BL139	1.14		-6.51											
BL140	-0.40	-0.03	-7.82		5.19									
BL142	0.02	-0.12	-6.10		5.10									
BL143	-0.14	-0.59	-8.05		4.65									
BL144	-0.08	-0.65	-6.48		4.61									
BL146	-0.09		-6.41											
BL147	-0.35	-0.71	-8.29		4.56									
BL148	-0.31		-7.91											
BL149	-0.62	-1.28	-11.06		4.04									
BL150	-1.18		-10.74											
BL151	-0.83		-9.41											
BL152	-1.10		-10.38											
BL153	0.01	-0.10	-5.99		5.05									
BL154	0.04	-0.28	-6.04		4.88									
BL155	0.01	-0.57	-6.06		4.59									
BL157	-1.17		-11.17											
BL158	-0.16	-0.21	-7.02	1.02	4.98	5.94	4.76	3.84	3.92	6.16	5.78	6.27	5.81	3.58
BL159	-1.45	-1.78	-12.23		3.53									
BL160	-1.46		-12.12											
BL161	-1.56		-12.55											
BL163	0.18	-0.32	-5.93		4.82									
BL164	0.21	-0.47	-5.52		4.65									
BL165	-0.41	-0.14	-8.29		5.12									
BL166	-0.62	-1.07	-9.83		4.19									
BL167	-0.56		-9.86											
BL168	-0.80	-1.59	-11.54		3.71									
BL169	-0.60		-10.65											
BL170	-0.65		-10.78											
BL171	0.05	-0.69	-7.37		4.63									
BL172	-1.24	-2.61	-13.05		2.68									
BL173	-1.17		-12.76											
BL174	-0.85		-11.49											
BL175	-0.55	-0.98	-10.08		4.33									
BL176	-0.63		-10.31											
BL177	-0.67		-10.42											
BL179	0.07	-0.21	-6.14		5.09									
BL180	-0.13	-0.21	-6.95		5.09									
BL181	0.07	-0.51	-6.13		4.79									
BL184	-0.37	-0.48	-7.32		4.78									

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)													
	Calcite	$Fe(OH)_3$	Forsterite	Gibbsite	Goethite	Illite	Kaolinite	K-Feldspar	Laumontite	Montmor-Ca	Montmor-K	Montmor-Mg	Montmor-Na	Mordenite
BL185	-0.76		-9.49											
BL186	-0.59		-9.08											
BL187	-0.81	-0.63	-10.33		4.71									
BL188	-1.17	-1.77	-11.30		3.52									
BL189	-0.74	-0.69	-9.69		4.55									
BL190	-0.58	-0.20	-9.07		5.07									
BL191	-0.87	-0.74	-10.58		4.61									
BL192	-0.97	-0.56	-10.74		4.72									
BL193	0.19	-1.10	-8.25		4.18									
BL194	-0.49	-1.62	-10.45		3.66									
BL195	0.25		-8.38											
BL196	0.26	-0.50	-7.55		4.75									
BL197	0.12	-0.11	-7.62		5.10									
BL198	-0.11	-0.80	-8.79		4.46									
BL199	-1.54	-2.22	-13.66		3.02									
BL200	-0.74		-10.48											
BL201	-1.09	-1.43	-12.68		3.97									
BL202	-1.01	-1.34	-11.70		3.96									
BL203	-0.98	-1.40	-11.65		3.87									
BL204	-1.96	-4.06	-15.51		1.20									
BL205	-1.09	-1.43	-12.68		3.97									
BL206	-0.87	-0.72	-11.32		4.57									
BL207	0.20	-0.06	-8.01		5.24									
BL208	-0.62	-0.99	-9.79		4.25									
BL209	-0.38	-0.47	-9.34		4.81									
BL210	-1.17	-1.83	-12.55		3.45									
BL211	-0.58	0.84	-9.77		6.06									
BL212	-0.51	-1.04	-9.35		4.23									
BL213	-1.04	-1.65	-11.72		3.70									
BL214	-0.85	-1.39	-10.93		3.90									
BL215	0.17	0.14	-6.36		5.44									
BL216	0.84	0.16	-5.44		5.42									
BL217	0.41	-0.48	-7.15	2.60	4.77	9.52	7.77	5.57	6.86	8.55	8.27	8.65	8.15	4.69
BL223	0.58	-0.44	-2.51	-0.33	4.62	5.14	2.57	4.74	4.45	5.91	5.65	5.98	5.74	4.78
BL224	-0.06		-6.15	0.26		5.77	3.85	4.74	4.16	6.29	6.05	6.35	6.07	4.81
BL225	0.26	-5.24	-6.05	0.30	0.01	6.34	3.87	5.64	3.71	6.24	6.39	6.39	6.09	4.61
BL226	-0.02	-1.09	-6.14	-0.80	3.93	2.28	1.51	2.21	2.33	4.12	3.40	4.05	3.90	3.54
BL227	-0.45	-2.29	-7.87	0.46	2.91	5.31	4.12	3.93	3.26	5.94	5.61	6.04	5.52	3.98
BL228	-0.04	-4.74	-3.74	-0.88	0.25	3.72	1.43	4.24	3.14	4.64	4.45	4.63	4.59	4.20
BL229	0.45	-6.84	-6.88	0.61	-1.59	6.35	4.65	4.73	4.46	6.90	6.60	7.01	6.60	5.05
BL230	-1.34	-2.30	-11.07	1.31	2.92	7.17	6.19	4.81	4.15	7.28	7.04	7.36	7.09	5.21
BL231	-0.90	-2.47	-9.59	2.03	2.67	8.64	7.33	5.30	5.85	8.24	7.93	8.31	7.98	5.43

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BA001						1.12						-0.25
BA002						1.09						-0.27
BA003						1.10						-0.26
BA006						1.23						-0.09
BA007						1.21						-0.11
BA008						1.23						-0.09
BA010						1.16						-0.22
BA011						1.14						-0.21
BA012						1.13						-0.23
BA013						1.14						-0.21
BA016						1.11						-0.29
BA017						1.07						-0.29
BA018						1.02						-0.33
BA019						1.02						-0.33
BA020						1.02						-0.24
BA022						1.06						-0.26
BA023						1.09						-0.20
BA025						1.05						-0.23
BA026						1.04						-0.24
BA027						1.07						-0.23
BA028						1.05						-0.24
BA029						1.06						-0.24
BA030						1.07						-0.23
BA031						1.03						-0.25
BA032						1.20						-0.14
BA033						1.11						-0.24
BA034						1.10						-0.23
BA035						1.27						-0.09
BA036						1.19						-0.16
BA037						1.05						-0.28
BA038						1.03						-0.29
BA041						1.07						-0.24
BA042						1.11						-0.26
BA043						1.08						-0.29
BA044						1.10						-0.27
BA046						1.05						-0.30
BA047						1.15						-0.20
BA048						1.04						-0.29
BA050						1.06						-0.22
BA051						1.07						-0.21
BA052						1.03						-0.24
BA058						1.12						-0.24
BA059						1.11						-0.24
BA061						1.16						-0.18
BA062						1.06						-0.24
BA063						1.05						-0.24
BA064						1.03						-0.26
BA065						1.11						-0.25
BA066						1.11						-0.25
BA067						1.11						-0.25
BA068						1.15						-0.21
BA069						1.18						-0.19
BA070						1.17						-0.14
BA071						1.06						-0.19
BA072						1.05						-0.20
BA073						1.07						-0.21
BA074						1.07						-0.21
BA075						1.12						-0.24
BA076						1.09						-0.25
BA077						1.09						-0.25
BA078						1.06						-0.22
BA079						1.09						-0.19
BA080						1.07						-0.22
BA081						1.20						-0.19
BA082						1.01						-0.31
BA083						1.04						-0.29
BA084						1.17						-0.19
BA085						1.16						-0.20
BA087						1.11						-0.19
BA088						1.09						-0.21
BA089						1.11						-0.18
BA090						1.03						-0.34
BA091						1.03						-0.35
BA092						1.03						-0.34
BA093						1.24						-0.13
BA094						1.14						-0.19
BA095						1.10						-0.22
BA097						1.21						-0.16
BA098						1.14						-0.21
BA099						1.11						-0.26
BA100						1.05						-0.30
BA101						1.06						-0.29
BA102						1.18						-0.18
BA103						1.16						-0.20

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BA104						1.19						-0.18
BA105						1.02						-0.34
BA106						1.10						-0.26
BA107						1.06						-0.33
BA110						1.15						-0.19
BA111						1.14						-0.20
BA112						1.07						-0.31
BA114						1.09						-0.28
BA115						1.14						-0.23
BA116						1.11						-0.26
BA117						1.10						-0.27
BA119	18.54	17.42	18.26	18.50	18.26	1.24	4.97	3.84	4.68	4.93	4.69	-0.09
BA120						1.14						-0.23
BA121						1.13						-0.24
BA122						1.11						-0.25
BA123						1.20						-0.14
BA124						1.18						-0.15
BA125						1.16						-0.17
BA126						1.03						-0.24
BA127						1.02	4.46	3.36	4.08	4.45	4.09	-0.25
BA128						1.02						-0.25
BA130						1.12						-0.27
BA131						1.11						-0.28
BA132						1.13						-0.26
BA133						1.03						-0.25
BA134						1.01						-0.27
BA135						1.07						-0.23
BA136						1.00						-0.38
BA137						0.93						-0.27
BA138						0.91						-0.29
BA140						1.10						-0.27
BA141						0.92						-0.44
BA142						1.11						-0.22
BA143						1.14						-0.19
BA144						1.08						-0.26
BA145						1.14						-0.20
BA146						1.16						-0.17
BA147						1.04						-0.33
BA148						1.02						-0.35
BA149						1.13						-0.19
BA150						1.12						-0.19
BA151						1.11						-0.20
BA152						1.11						-0.22
BA153						1.12						-0.24
BA154						1.11						-0.22
BA155						1.13						-0.24
BA156						1.07						-0.28
BA157						1.07						-0.27
BA158						1.05						-0.28
BA159						1.12						-0.24
BA160						0.98						-0.40
BA161						0.97						-0.40
BA162						1.00						-0.38
BA163						1.10						-0.23
BA164						1.10						-0.21
BA165						1.12						-0.20
BA166						1.00						-0.34
BA167						1.07						-0.29
BA168						1.11						-0.26
BA169						1.15						-0.22
BA170						1.07						-0.21
BA171	19.01	17.92	18.66	19.03	18.55	1.07	4.83	3.73	4.48	4.86	4.37	-0.29
BA174						1.21						-0.18
BA175						1.12						-0.20
BA177						1.07						-0.18
BA178						0.95						-0.28
BA179	17.32	16.13	17.06	17.32	17.03	1.09	6.26	5.06	5.99	6.25	5.97	-0.25
BA182						1.10	4.69	3.57	4.39	4.69	4.40	-0.22
BA183						1.08						-0.24
BA185						1.11						-0.21
BA186						1.13						-0.17
BA187						1.13						-0.17
BA188						1.06						-0.24
BA189						1.13						-0.26
BA190						1.06						-0.28
BA191						1.16						-0.22
BA192						1.05						-0.24
BA193						1.05						-0.25
BA194						0.97						-0.27
BA195						0.98						-0.25
BA196	17.01	15.75	16.74	16.99	16.83	1.00	7.42	6.15	7.14	7.39	7.23	-0.24
BA197						1.07						-0.29
BA198						1.15						-0.23
BA199						1.07						-0.28

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BA200						1.08						-0.26
BA201						1.13						-0.27
BA202						1.12						-0.27
BA203						1.11						-0.28
BA204						1.11						-0.28
BA205						1.02						-0.35
BA206						1.07						-0.29
BA207						1.04						-0.30
BA208						1.02						-0.31
BA210						1.10						-0.24
BA211						1.13						-0.21
BA213						1.09						-0.25
BA223						1.16						-0.23
BA224						1.14						-0.23
BA225						1.16						-0.22
BA226						1.06						-0.25
BA227						1.06						-0.25
BA228						1.06						-0.26
BA229						1.10						-0.30
BA231						1.08						-0.29
BA232						1.06						-0.30
BA233						1.05						-0.32
BA234						1.06						-0.25
BA236						0.98						-0.39
BA238						0.98						-0.38
BA239						1.18						-0.21
BA240						1.10						-0.27
BA241						1.12						-0.25
BA242						1.10						-0.23
BA243						0.97						-0.38
BA252						1.30	7.05	5.78	6.54	6.98	6.84	0.03
BA253	17.00	15.79	16.50	16.91	16.80	1.35	5.44	4.23	4.94	5.35	5.24	0.04
BA254	15.73	14.65	15.44	15.74	15.53	1.36	5.09	4.01	4.81	5.11	4.90	0.04
BA255	13.82	12.56	13.60	13.76	13.73	1.23	6.89	5.62	6.66	6.83	6.80	-0.01
BA256	7.86	7.34	7.47	7.85	7.39	1.41	-6.22	-6.75	-6.61	-6.23	-6.69	0.02
BF002						1.04						-0.28
BF003						0.99						-0.36
BF004						1.09						-0.26
BF005						1.17						-0.18
BF006						1.15						-0.18
BF007						1.11						-0.22
BF008						1.12						-0.21
BF009						1.10						-0.24
BF010						1.15						-0.16
BF011						1.13						-0.17
BF012						1.12						-0.18
BF013						1.00						-0.35
BF014						1.13						-0.20
BF015						1.18						-0.13
BF016						1.03						-0.34
BF017						1.24						-0.10
BF018						1.25						-0.09
BF019						0.93						-0.43
BF020						0.94						-0.40
BF021						0.96						-0.38
BF022						1.13						-0.24
BF023						1.25						-0.07
BF024						1.20						-0.10
BF025						1.24						-0.07
BF027						1.08						-0.29
BF028						1.16						-0.21
BF029						1.30						-0.09
BF030						1.20						-0.13
BF031						0.99						-0.36
BF032						1.01						-0.34
BF036						1.15						-0.20
BF037						1.15						-0.19
BF038						0.89						-0.49
BF039						1.17						-0.23
BF040						1.07	3.80	2.71	3.56	3.80	3.52	-0.23
BF041						1.07						-0.23
BF043						1.00						-0.27
BF044	17.03	16.00	16.96	17.04	16.93	0.98	3.08	2.05	3.01	3.10	2.99	-0.27
BF045						0.95						-0.30
BF046						1.12						-0.26
BF047						1.27	3.65	2.59	3.29	3.65	3.17	-0.15
BF048						1.04						-0.29
BF050						1.05						-0.33
BF051	17.45	16.17	17.16	17.41	17.22	1.00	6.42	5.14	6.14	6.38	6.20	-0.35
BF052						0.99						-0.36
BF053						1.08						-0.26
BF054						1.07						-0.26
BF055						1.08						-0.26
BF056						1.06						-0.23

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BF057						1.09						-0.23
BF058						1.08						-0.24
BF059						1.07						-0.24
BF060						1.11	2.22	1.23	1.87	2.23	1.78	-0.20
BF061						1.06						-0.28
BF063						1.03						-0.34
BF067						1.05						-0.30
BF068						1.03						-0.32
BF069						1.00						-0.33
BF071						1.18						-0.08
BF072						1.16						-0.10
BF073						1.17						-0.09
BF074	16.05	15.07	15.66	16.07	15.55	1.18	2.88	1.90	2.49	2.91	2.38	-0.17
BF075						1.20						-0.14
BF076						1.16						-0.18
BF078						0.94						-0.46
BF080						1.11						-0.21
BF082						1.17						-0.20
BF083						1.17						-0.20
BF085						1.13						-0.22
BF086						1.15						-0.20
BF087						1.09						-0.28
BF088						1.04						-0.27
BF089						1.16						-0.20
BF090						1.02						-0.27
BF092						1.02						-0.27
BF093						1.07						-0.24
BF095						0.77						-0.55
BF097						1.22						-0.15
BF101						1.06						-0.25
BF103						1.04						-0.26
BF105						1.06						-0.25
BF106						1.07						-0.25
BF108						1.08	3.04	2.02	2.60	3.04	2.51	-0.24
BF109						1.07						-0.25
BF110						1.07						-0.25
BF111	15.39	14.19	15.04	15.38	15.19	1.33	6.90	5.70	6.56	6.90	6.71	0.03
BF112	17.60	16.49	17.47	17.61	17.08	1.23	5.44	4.33	5.32	5.46	4.92	-0.09
BF113						1.27						-0.04
BF114	12.65	11.65	12.31	12.65	12.24	1.35	3.49	2.49	3.15	3.50	3.08	0.04
BF115	11.81	10.82	11.39	11.81	11.33	1.38	3.12	2.13	2.70	3.12	2.64	0.08
BF116	8.97	7.97	8.81	8.98	8.52	1.27	3.41	2.40	3.25	3.43	2.96	-0.05
BF117						1.35	3.33	2.33	2.99	3.34	2.92	0.03
BG029						1.18						-0.17
BG030						1.15						-0.19
BG031						1.21						-0.14
BG033						1.27						-0.11
BG034						0.94						-0.42
BG036						0.98						-0.32
BG037						1.01						-0.29
BG038						0.95						-0.30
BG040						0.75						-0.61
BG041						1.02						-0.27
BG042						1.03						-0.27
BG043						0.97						-0.29
BG045						1.00						-0.26
BG046						1.20						-0.11
BG047						0.96						-0.31
BG051						0.07						-1.24
BG052						1.03						-0.28
BG053						1.16						-0.20
BG056						0.88						-0.46
BG059						1.03						-0.28
BG060						1.00						-0.31
BG061						1.03						-0.28
BG062						1.11						-0.23
BG063						1.03						-0.29
BG064						1.03						-0.29
BG066						0.98						-0.31
BG072						1.12						-0.24
BG073						1.03						-0.26
BG074						0.95						-0.34
BG076						0.96						-0.34
BG081						1.15						-0.19
BG082						1.14						-0.21
BG083						1.12						-0.22
BG084						1.15						-0.23
BG087						1.19						-0.12
BG088						1.18						-0.13
BG089	15.64	14.64	15.30	15.69	15.31	1.07	3.28	2.27	2.94	3.33	2.94	-0.28
BG091						1.26						-0.07
BG093						1.17						-0.18
BG095						0.96						-0.35
BG098						1.16						-0.13

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BG104						1.16						-0.19
BG107						1.19						-0.16
BG108						1.08						-0.24
BG109						1.15						-0.18
BG110						1.22						-0.15
BG112						1.15						-0.24
BG113						1.15						-0.21
BG114						1.12						-0.23
BG115						1.14						-0.22
BG116						1.09						-0.26
BG117						1.13						-0.16
BG118						1.11						-0.18
BG119						1.09						-0.19
BG121						1.16						-0.19
BG122						1.21						-0.16
BG124						1.13						-0.22
BG128						1.11						-0.22
BG130						1.17						-0.20
BG132						1.19						-0.16
BG133						1.19						-0.16
BG134						1.20						-0.15
BG137						1.19						-0.17
BG139						1.21						-0.15
BG154						1.12						-0.20
BG155						1.14						-0.18
BG156						1.14						-0.18
BG157						1.03						-0.28
BG158						1.02						-0.28
BG159						1.02						-0.28
BG161						1.04						-0.32
BG163						1.20						-0.17
BG164						1.16						-0.21
BG165						1.19						-0.17
BG166						1.22						-0.14
BG168						1.22						-0.14
BG170						1.06						-0.30
BG171						1.03						-0.32
BG172						1.19	2.49	1.55	2.10	2.54	2.25	-0.19
BG173						1.24						-0.14
BG174						1.18						-0.19
BG175						1.13						-0.22
BG176						1.15						-0.21
BG177						1.17						-0.19
BG178						1.18						-0.18
BG179						1.20						-0.16
BG183						1.13						-0.19
BG184						1.13						-0.19
BG187						1.14						-0.19
BG188						1.15						-0.18
BG191	17.26	16.32	16.91	17.27	16.95	1.19	2.37	1.42	2.02	2.38	2.06	-0.17
BG194						1.19	4.44	3.38	3.90	4.48	3.81	-0.18
BG195						1.17						-0.19
BG196						1.18						-0.18
BG198						1.00						-0.37
BG202						1.18						-0.21
BG204						1.08						-0.27
BG205						1.09						-0.28
BG207						1.18						-0.18
BG208						1.15						-0.21
BG209						1.15						-0.21
BG210						1.20						-0.16
BG211						1.07						-0.22
BG212						1.10						-0.20
BG215						1.17						-0.19
BG216						1.11						-0.25
BG217						1.11						-0.27
BG219						1.15						-0.21
BG220						1.20						-0.16
BG221						1.15						-0.21
BG222						1.19						-0.14
BG224						1.13						-0.24
BG228						1.09						-0.21
BG229						1.07						-0.24
BG230						1.06						-0.24
BG231						1.03						-0.28
BG232						1.10						-0.25
BG233						1.12						-0.25
BG238						1.13						-0.20
BG241						1.11						-0.20
BG242						1.11						-0.21
BG243						1.09						-0.22
BG244						0.83						-0.48
BG245						1.11						-0.20
BG248						1.11						-0.26

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BG249						1.15						-0.22
BG250						1.15						-0.23
BG252						1.02						-0.31
BG254						0.99						-0.33
BG255						0.99						-0.31
BG260						1.14						-0.23
BG261						0.98						-0.33
BG262						1.01						-0.30
BG263						1.00						-0.33
BG264						1.07						-0.30
BG265						1.05						-0.32
BG266						1.06						-0.30
BG272						1.20						-0.21
BG273						1.05						-0.31
BG275						1.13						-0.24
BG276						1.18						-0.20
BG277						1.15						-0.22
BG279						1.07						-0.26
BG281						1.13						-0.21
BG286						1.20						-0.17
BG289						1.06						-0.27
BG290						1.13						-0.24
BG291						1.12						-0.20
BG292						1.12						-0.20
BG293						1.25						-0.13
BG294						1.23						-0.15
BG295						1.26						-0.12
BG301						1.26						-0.12
BG302						1.09						-0.29
BG303						1.10						-0.29
BG304						1.11						-0.28
BG306						1.12						-0.26
BG311						1.08						-0.30
BG315						1.25						-0.12
BG317						1.04						-0.35
BG319						1.05						-0.33
BG328						1.21						-0.16
BG329						1.17						-0.18
BG330						1.10						-0.25
BG335						1.16						-0.20
BG336						1.13						-0.22
BG337						1.16						-0.19
BG338						1.19						-0.17
BG345						1.05						-0.29
BG347						1.05						-0.29
BG348						0.80						-0.56
BG349						0.81						-0.55
BG350						0.83						-0.54
BG351						1.15						-0.21
BG352						1.07						-0.29
BG353						1.25	2.39	1.42	2.01	2.40	1.89	-0.13
BG354						1.08						-0.22
BG355						1.10						-0.20
BG356						1.10						-0.20
BG358						1.04						-0.33
BG360						1.07						-0.30
BG361						1.23						-0.14
BG363						0.99						-0.28
BG364						1.00						-0.28
BG365						1.20						-0.17
BG370						1.05	5.51	4.31	5.18	5.47	5.16	-0.25
BG371	16.06	14.89	15.75	16.01	15.69	1.08	4.87	3.69	4.56	4.82	4.50	-0.23
BG372						1.06						-0.24
BG373						1.11						-0.25
BG375						1.18						-0.15
BG376						1.08						-0.29
BG377						1.09						-0.28
BG379						1.20						-0.14
BG380						1.17						-0.17
BG385	16.00	14.95	15.67	16.00	15.62	1.16	3.60	2.54	3.27	3.60	3.22	-0.18
BG386						1.11						-0.23
BG387						1.10						-0.24
BG388						1.01						-0.39
BG389						1.07						-0.33
BG390						1.22						-0.17
BG398						1.12						-0.27
BG401						1.20						-0.19
BG402						1.21						-0.18
BG403						1.21						-0.18
BG405						1.12						-0.21
BG406						0.98						-0.38
BG407						0.98						-0.38
BG409						1.09						-0.23
BG410						1.13						-0.22

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BG411						1.19						-0.19
BG412						1.17						-0.21
BG413						1.13						-0.21
BG414						1.13						-0.21
BG415						1.10						-0.24
BG498						1.29	6.02	4.71	5.30	5.86	5.84	0.01
BG499	5.91	4.94	5.57	5.93	5.50	1.39	3.04	2.07	2.70	3.07	2.63	0.03
BG500	11.61	10.31	11.35	11.62	11.45	1.32	9.30	7.99	9.04	9.32	9.14	0.03
BG502						1.28						-0.04
BG503	15.07	14.08	14.63	15.07	14.57	1.35	3.10	2.11	2.67	3.11	2.60	0.01
BG504	14.41	13.33	14.04	14.42	14.01	1.32	5.28	4.19	4.91	5.29	4.87	0.03
BG505	12.81	11.73	12.41	12.82	12.37	1.31	5.17	4.08	4.77	5.18	4.73	0.03
BG507	14.09	13.01	13.72	14.10	13.68	1.34	5.08	3.99	4.71	5.09	4.67	0.04
BL014						1.02						-0.31
BL015						1.02						-0.31
BL016						1.14						-0.22
BL017						1.15						-0.21
BL018						1.13						-0.23
BL019						1.12						-0.25
BL020						1.12						-0.25
BL021						1.11						-0.26
BL022						1.01						-0.31
BL023						1.02						-0.30
BL024						0.98						-0.33
BL025						1.09						-0.23
BL026						1.11						-0.20
BL027						1.11						-0.20
BL028						1.09						-0.31
BL029						1.07						-0.31
BL030						1.09						-0.29
BL031						1.05						-0.32
BL032						1.07						-0.30
BL033						1.05						-0.30
BL034						1.05						-0.31
BL035						1.10						-0.28
BL036						1.13						-0.24
BL037						1.09						-0.28
BL039						1.08						-0.29
BL040						1.08						-0.29
BL041						1.08						-0.30
BL042						1.07						-0.28
BL043						1.07						-0.28
BL044						1.08						-0.28
BL045						1.04						-0.35
BL046						1.05						-0.29
BL047						1.20						-0.24
BL048						1.19						-0.20
BL049						1.11						-0.25
BL050						1.14						-0.13
BL052						1.19						-0.20
BL053						1.09						-0.27
BL054						1.19						-0.24
BL055						1.13						-0.27
BL056						1.18						-0.25
BL058						1.13						-0.25
BL059						1.11						-0.27
BL060						1.11						-0.27
BL061						1.06						-0.30
BL062						1.06						-0.30
BL063						1.21						-0.18
BL064						1.07						-0.29
BL065						1.12						-0.26
BL066						0.94						-0.39
BL067						1.17						-0.23
BL068						1.14						-0.20
BL069						1.05						-0.28
BL071						1.04						-0.32
BL073						1.14						-0.26
BL074						1.13						-0.26
BL075						1.09						-0.30
BL077						1.03						-0.28
BL078						1.00						-0.31
BL079						1.19						-0.21
BL080						1.18						-0.20
BL081						1.18						-0.21
BL082						1.13						-0.25
BL083						1.17						-0.22
BL084						1.16						-0.23
BL085						1.13						-0.24
BL086						1.16						-0.21
BL087						1.12						-0.25
BL088						1.08						-0.28
BL089						1.09						-0.27
BL090						1.05						-0.30

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BL091						1.15						-0.23
BL092						1.15						-0.23
BL093						1.15						-0.24
BL095						1.10						-0.23
BL096						1.09						-0.24
BL097						1.10						-0.23
BL098						1.18						-0.24
BL099						1.13						-0.26
BL100						1.12						-0.26
BL101						1.10						-0.28
BL102						1.15						-0.22
BL103						1.22						-0.17
BL104						1.18						-0.20
BL105						1.19						-0.20
BL106						1.19						-0.20
BL107						1.15						-0.24
BL108						1.19						-0.21
BL109						1.15						-0.24
BL110						1.06						-0.33
BL111						1.10						-0.28
BL112						1.08						-0.30
BL113						1.06						-0.32
BL114						1.05						-0.32
BL115						1.03						-0.34
BL116						1.17						-0.23
BL117						1.25						-0.17
BL118						1.27						-0.15
BL119						1.23						-0.18
BL120						1.10						-0.26
BL121						1.18						-0.22
BL122						1.21						-0.19
BL123						1.15						-0.24
BL124						1.00						-0.36
BL125						1.05						-0.32
BL126						1.16						-0.27
BL127						1.12						-0.28
BL128						1.03						-0.34
BL129						0.98						-0.37
BL130						1.15						-0.28
BL131						1.15						-0.25
BL132						1.12						-0.24
BL133						1.07						-0.27
BL134						1.11						-0.23
BL137						1.15						-0.25
BL138						0.90						-0.44
BL139						0.44						-0.94
BL140						1.06						-0.29
BL142						1.15						-0.20
BL143						1.14						-0.22
BL144						1.02						-0.35
BL146						1.01						-0.36
BL147						1.06						-0.32
BL148						1.07						-0.31
BL149						1.16						-0.25
BL150						1.21						-0.18
BL151						1.17						-0.22
BL152						1.19						-0.21
BL153						1.07						-0.24
BL154						1.07						-0.24
BL155						1.07						-0.24
BL157						1.21						-0.18
BL158	16.64	15.60	16.18	16.67	16.22	1.03	3.65	2.60	3.19	3.68	3.22	-0.30
BL159						1.25						-0.15
BL160						1.25						-0.15
BL161						1.22						-0.18
BL163						0.99						-0.31
BL164						0.97						-0.33
BL165						1.11						-0.27
BL166						1.12						-0.25
BL167						1.13						-0.24
BL168						1.23						-0.17
BL169						1.21						-0.18
BL170						1.21						-0.19
BL171						1.23						-0.17
BL172						1.21						-0.18
BL173						1.22						-0.18
BL174						1.20						-0.20
BL175						1.20						-0.21
BL176						1.19						-0.21
BL177						1.17						-0.22
BL179						1.10						-0.30
BL180						1.13						-0.27
BL181						1.10						-0.30
BL184						1.08						-0.29

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)											
	Nontronite-Ca	Nontronite-H	Nontronite-K	Nontronite-Mg	Nontronite-Na	Quartz	Saponite-Ca	Saponite-H	Saponite-K	Saponite-Mg	Saponite-Na	SiO2(am)
BL185						1.15						-0.23
BL186						1.09						-0.30
BL187						1.25						-0.17
BL188						1.21						-0.18
BL189						1.04						-0.32
BL190						1.16						-0.22
BL191						1.25						-0.18
BL192						1.17						-0.21
BL193						1.15						-0.24
BL194						1.18						-0.21
BL195						1.13						-0.25
BL196						1.13						-0.24
BL197						1.07						-0.27
BL198						1.14						-0.24
BL199						1.07						-0.29
BL200						1.07						-0.29
BL201						1.27						-0.19
BL202						1.15						-0.25
BL203						1.11						-0.27
BL204						1.10						-0.28
BL205						1.27						-0.19
BL206						1.13						-0.26
BL207						1.05						-0.35
BL208						1.11						-0.25
BL209						1.18						-0.20
BL210						1.20						-0.19
BL211						1.08						-0.27
BL212						1.16						-0.22
BL213						1.20						-0.23
BL214						1.21						-0.18
BL215						0.91						-0.49
BL216						0.96						-0.42
BL217	16.58	15.51	16.22	16.60	16.11	0.97	4.09	3.02	3.73	4.11	3.62	-0.40
BL223	16.60	15.23	16.27	16.61	16.36	1.25	10.41	9.04	10.09	10.42	10.18	-0.01
BL224						1.33	5.34	4.22	5.04	5.33	5.06	0.02
BL225	7.59	6.51	7.66	7.66	7.37	1.32	5.73	4.65	5.80	5.81	5.51	-0.05
BL226	14.64	13.43	13.85	14.50	14.36	1.18	4.37	3.16	3.58	4.23	4.09	-0.05
BL227	13.13	12.17	12.73	13.16	12.65	1.27	2.67	1.71	2.27	2.70	2.19	-0.06
BL228	7.49	6.15	7.22	7.41	7.37	1.21	8.05	6.72	7.79	7.97	7.93	-0.01
BL229	4.77	3.72	4.39	4.80	4.39	1.40	4.74	3.69	4.36	4.77	4.36	0.04
BL230	13.87	13.16	13.55	13.87	13.60	1.46	-1.63	-2.34	-1.95	-1.62	-1.89	0.11
BL231	13.09	12.26	12.71	13.08	12.76	1.29	0.34	-0.49	-0.04	0.33	0.01	-0.02

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BA001				
BA002				
BA003				
BA006				
BA007				
BA008				
BA010				
BA011				
BA012				
BA013				
BA016				
BA017				
BA018				
BA019				
BA020				
BA022				
BA023				
BA025				
BA026				
BA027				
BA028				
BA029				
BA030				
BA031				
BA032				
BA033				
BA034				
BA035				
BA036				
BA037				
BA038				
BA041				
BA042				
BA043				
BA044				
BA046				
BA047				
BA048				
BA050				
BA051				
BA052				
BA058				
BA059				
BA061				
BA062				
BA063				
BA064				
BA065				
BA066				
BA067				
BA068				
BA069				
BA070				
BA071				
BA072				
BA073				
BA074				
BA075				
BA076				
BA077				
BA078				
BA079				
BA080				
BA081				
BA082				
BA083				
BA084				
BA085				
BA087				
BA088				
BA089				
BA090				
BA091				
BA092				
BA093				
BA094				
BA095				
BA097				
BA098				
BA099				
BA100				
BA101				
BA102				
BA103				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BA104				
BA105				
BA106				
BA107				
BA110				
BA111				
BA112				
BA114				
BA115				
BA116				
BA117				
BA119	4.78	6.04	14.15	1.93
BA120				
BA121				
BA122				
BA123				
BA124				
BA125				
BA126				
BA127			12.44	1.28
BA128				
BA130				
BA131				
BA132				
BA133				
BA134				
BA135				
BA136				
BA137				
BA138				
BA140				
BA141				
BA142				
BA143				
BA144				
BA145				
BA146				
BA147				
BA148				
BA149				
BA150				
BA151				
BA152				
BA153				
BA154				
BA155				
BA156				
BA157				
BA158				
BA159				
BA160				
BA161				
BA162				
BA163				
BA164				
BA165				
BA166				
BA167				
BA168				
BA169				
BA170				
BA171	5.05	6.04	13.42	1.55
BA174				
BA175				
BA177				
BA178				
BA179	4.48	5.69	13.20	1.36
BA182			10.91	-0.69
BA183				
BA185				
BA186				
BA187				
BA188				
BA189				
BA190				
BA191				
BA192				
BA193				
BA194				
BA195				
BA196	4.10	5.21	11.91	0.97
BA197				
BA198				
BA199				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BA200				
BA201				
BA202				
BA203				
BA204				
BA205				
BA206				
BA207				
BA208				
BA210				
BA211				
BA213				
BA223				
BA224				
BA225				
BA226				
BA227				
BA228				
BA229				
BA231				
BA232				
BA233				
BA234				
BA236				
BA238				
BA239				
BA240				
BA241				
BA242				
BA243				
BA252			10.84	-0.91
BA253	3.32	4.42	11.32	-0.87
BA254	4.17	5.20	12.04	-0.23
BA255	2.16	3.53	9.97	-1.45
BA256	-4.14	-1.15	7.77	-4.58
BF002				
BF003				
BF004				
BF005				
BF006				
BF007				
BF008				
BF009				
BF010				
BF011				
BF012				
BF013				
BF014				
BF015				
BF016				
BF017				
BF018				
BF019				
BF020				
BF021				
BF022				
BF023				
BF024				
BF025				
BF027				
BF028				
BF029				
BF030				
BF031				
BF032				
BF036				
BF037				
BF038				
BF039				
BF040			8.95	-2.26
BF041				
BF043				
BF044	2.04	3.28	8.75	-2.09
BF045				
BF046				
BF047			13.12	0.45
BF048				
BF050				
BF051	3.14	4.25	10.46	-1.05
BF052				
BF053				
BF054				
BF055				
BF056				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BF057				
BF058				
BF059				
BF060			9.31	-2.09
BF061				
BF063				
BF067				
BF068				
BF069				
BF071				
BF072				
BF073				
BF074	2.96	4.41	12.09	0.13
BF075				
BF076				
BF078				
BF080				
BF082				
BF083				
BF085				
BF086				
BF087				
BF088				
BF089				
BF090				
BF092				
BF093				
BF095				
BF097				
BF101				
BF103				
BF105				
BF106				
BF108			11.46	-0.05
BF109				
BF110				
BF111	3.26	4.44	11.04	-1.03
BF112	4.57	5.65	12.79	0.78
BF113				
BF114	2.15	3.88	12.12	-0.07
BF115	0.99	2.84	10.81	-1.23
BF116	2.46	3.74	10.84	-1.03
BF117			11.14	-0.96
BG029				
BG030				
BG031				
BG033				
BG034				
BG036				
BG037				
BG038				
BG040				
BG041				
BG042				
BG043				
BG045				
BG046				
BG047				
BG051				
BG052				
BG053				
BG056				
BG059				
BG060				
BG061				
BG062				
BG063				
BG064				
BG066				
BG072				
BG073				
BG074				
BG076				
BG081				
BG082				
BG083				
BG084				
BG087				
BG088				
BG089	2.85	4.26	11.50	-0.28
BG091				
BG093				
BG095				
BG098				

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BG104				
BG107				
BG108				
BG109				
BG110				
BG112				
BG113				
BG114				
BG115				
BG116				
BG117				
BG118				
BG119				
BG121				
BG122				
BG124				
BG128				
BG130				
BG132				
BG133				
BG134				
BG137				
BG139				
BG154				
BG155				
BG156				
BG157				
BG158				
BG159				
BG161				
BG163				
BG164				
BG165				
BG166				
BG168				
BG170				
BG171				
BG172			12.02	-0.26
BG173				
BG174				
BG175				
BG176				
BG177				
BG178				
BG179				
BG183				
BG184				
BG187				
BG188				
BG191	4.55	5.96	14.63	2.30
BG194			12.49	0.38
BG195				
BG196				
BG198				
BG202				
BG204				
BG205				
BG207				
BG208				
BG209				
BG210				
BG211				
BG212				
BG215				
BG216				
BG217				
BG219				
BG220				
BG221				
BG222				
BG224				
BG228				
BG229				
BG230				
BG231				
BG232				
BG233				
BG238				
BG241				
BG242				
BG243				
BG244				
BG245				
BG248				

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BG249				
BG250				
BG252				
BG254				
BG255				
BG260				
BG261				
BG262				
BG263				
BG264				
BG265				
BG266				
BG272				
BG273				
BG275				
BG276				
BG277				
BG279				
BG281				
BG286				
BG289				
BG290				
BG291				
BG292				
BG293				
BG294				
BG295				
BG301				
BG302				
BG303				
BG304				
BG306				
BG311				
BG315				
BG317				
BG319				
BG328				
BG329				
BG330				
BG335				
BG336				
BG337				
BG338				
BG345				
BG347				
BG348				
BG349				
BG350				
BG351				
BG352				
BG353			13.00	0.61
BG354				
BG355				
BG356				
BG358				
BG360				
BG361				
BG363				
BG364				
BG365				
BG370			11.54	0.15
BG371	2.76	4.09	11.12	-0.32
BG372				
BG373				
BG375				
BG376				
BG377				
BG379				
BG380				
BG385	2.60	4.09	11.57	-0.36
BG386				
BG387				
BG388				
BG389				
BG390				
BG398				
BG401				
BG402				
BG403				
BG405				
BG406				
BG407				
BG409				
BG410				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BG411				
BG412				
BG413				
BG414				
BG415				
BG498			10.94	-0.82
BG499	1.70	3.41	11.84	-0.72
BG500	5.90	6.14	11.60	-0.41
BG502				
BG503	2.21	3.74	11.35	-0.89
BG504	3.84	5.02	12.44	0.41
BG505	2.18	3.65	10.88	-0.92
BG507	2.80	4.00	10.68	-1.24
BL014				
BL015				
BL016				
BL017				
BL018				
BL019				
BL020				
BL021				
BL022				
BL023				
BL024				
BL025				
BL026				
BL027				
BL028				
BL029				
BL030				
BL031				
BL032				
BL033				
BL034				
BL035				
BL036				
BL037				
BL039				
BL040				
BL041				
BL042				
BL043				
BL044				
BL045				
BL046				
BL047				
BL048				
BL049				
BL050				
BL052				
BL053				
BL054				
BL055				
BL056				
BL058				
BL059				
BL060				
BL061				
BL062				
BL063				
BL064				
BL065				
BL066				
BL067				
BL068				
BL069				
BL071				
BL073				
BL074				
BL075				
BL077				
BL078				
BL079				
BL080				
BL081				
BL082				
BL083				
BL084				
BL085				
BL086				
BL087				
BL088				
BL089				
BL090				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BL091				
BL092				
BL093				
BL095				
BL096				
BL097				
BL098				
BL099				
BL100				
BL101				
BL102				
BL103				
BL104				
BL105				
BL106				
BL107				
BL108				
BL109				
BL110				
BL111				
BL112				
BL113				
BL114				
BL115				
BL116				
BL117				
BL118				
BL119				
BL120				
BL121				
BL122				
BL123				
BL124				
BL125				
BL126				
BL127				
BL128				
BL129				
BL130				
BL131				
BL132				
BL133				
BL134				
BL137				
BL138				
BL139				
BL140				
BL142				
BL143				
BL144				
BL146				
BL147				
BL148				
BL149				
BL150				
BL151				
BL152				
BL153				
BL154				
BL155				
BL157				
BL158	2.84	4.06	10.75	-0.66
BL159				
BL160				
BL161				
BL163				
BL164				
BL165				
BL166				
BL167				
BL168				
BL169				
BL170				
BL171				
BL172				
BL173				
BL174				
BL175				
BL176				
BL177				
BL179				
BL180				
BL181				
BL184				

Appendix C - Speciation Modeling Results

Sample ID	Mineral Saturation (<0 = undersaturated, >0 = supersaturated)			
	Smectite-high-Fe-Mg	Smectite-low-Fe-Mg	Stilbite	Wairakite
BL185				
BL186				
BL187				
BL188				
BL189				
BL190				
BL191				
BL192				
BL193				
BL194				
BL195				
BL196				
BL197				
BL198				
BL199				
BL200				
BL201				
BL202				
BL203				
BL204				
BL205				
BL206				
BL207				
BL208				
BL209				
BL210				
BL211				
BL212				
BL213				
BL214				
BL215				
BL216				
BL217	4.62	5.83	13.89	2.13
BL223	7.09	6.96	11.78	0.15
BL224			11.77	-0.35
BL225	3.61	4.70	11.43	-1.01
BL226	2.09	3.03	9.21	-1.86
BL227	1.14	2.93	10.62	-1.34
BL228	4.27	4.67	10.20	-0.99
BL229	2.08	3.76	12.37	-0.26
BL230	1.13	3.24	12.16	-0.50
BL231	2.88	4.56	13.46	1.37

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BA001	-3.400	2.146	0.637	2	3	5
BA002	-3.239	2.363	0.710	2	3	5
BA003	-3.141	2.305	0.673	2	3	5
BA006	0.695	0.771	-0.042	1	4	6
BA007	0.929	0.820	-0.228	1	4	6
BA008	0.859	0.817	-0.052	1	4	6
BA010	-1.353	-0.862	-0.363	1	1	3
BA011	-0.269	1.633	-0.497	1	4	6
BA012	-1.153	2.230	-0.280	1	4	6
BA013	-0.798	1.964	-0.245	1	4	6
BA016	0.355	-0.360	-1.635	1	1	1
BA017	-2.539	0.158	1.047	1	1	3
BA018	-3.227	1.432	1.025	1	1	3
BA019	-2.780	0.759	1.152	1	1	3
BA020	5.305	1.494	0.630	1	1	2
BA021	ND	ND	ND	1	1	1
BA022	0.851	1.139	-0.936	1	1	1
BA023	2.421	1.711	-1.732	1	1	1
BA025	2.954	0.748	0.206	1	1	1
BA026	3.209	0.528	0.055	1	1	1
BA027	3.391	1.532	-0.567	1	1	2
BA028	3.861	1.435	-0.204	1	1	2
BA029	3.303	1.361	-0.534	1	1	2
BA030	2.034	1.267	-0.948	1	1	1
BA031	3.146	0.662	0.127	1	1	1
BA032	0.336	0.988	-0.684	1	1	1
BA033	0.993	0.531	0.013	1	1	1
BA034	1.551	0.811	0.159	1	1	1
BA035	2.476	-0.187	-0.182	1	1	1
BA036	-2.111	0.815	1.952	1	4	6
BA037	0.492	0.763	-0.859	1	1	1
BA038	0.598	0.806	-0.909	1	1	1
BA041	2.835	1.298	-1.224	1	1	2
BA042	0.038	-1.355	-0.645	1	1	1
BA043	0.158	-1.426	-0.964	1	1	1
BA044	0.180	-1.473	-0.821	1	1	1
BA046	-0.729	-1.136	0.373	1	1	1
BA047	0.537	-0.069	0.629	1	1	1
BA048	-0.213	-0.320	0.592	1	1	1
BA050	4.447	2.655	0.920	1	1	2
BA051	4.745	2.521	0.803	1	1	2
BA052	4.815	2.266	0.794	1	1	2
BA056	ND	ND	ND	1	1	2
BA058	-0.928	-2.186	0.621	1	1	1
BA059	-0.692	-2.169	0.558	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BA060	ND	ND	ND	1	1	3
BA061	-1.527	2.995	0.566	1	1	3
BA062	4.528	1.326	-0.465	1	1	2
BA063	4.685	1.436	-0.141	1	1	2
BA064	5.109	1.034	-0.307	1	1	2
BA065	-1.225	-2.559	0.783	1	1	1
BA066	-0.695	-2.540	0.572	1	1	1
BA067	-0.603	-2.647	0.521	1	1	1
BA068	-0.716	-0.273	0.960	1	1	1
BA069	-0.445	-0.894	1.182	1	1	1
BA070	3.709	1.430	0.115	1	1	2
BA071	6.477	1.018	1.198	1	1	2
BA072	6.291	1.022	1.172	1	1	2
BA073	3.766	0.623	0.243	1	1	1
BA074	3.612	0.760	0.539	1	1	1
BA075	-0.194	-3.378	0.293	1	1	1
BA076	-0.360	-3.175	0.274	1	1	1
BA077	-0.427	-3.241	0.180	1	1	1
BA078	5.705	1.520	1.017	1	1	2
BA079	5.418	1.299	0.927	1	1	2
BA080	2.363	1.662	-0.193	1	1	1
BA081	-0.327	-2.094	-0.081	1	1	1
BA082	-0.051	-1.856	0.149	1	1	1
BA083	0.056	-1.757	0.190	1	1	1
BA084	-0.429	-0.273	1.264	1	1	1
BA085	-0.481	-0.012	0.852	1	1	1
BA087	2.327	0.511	0.388	1	1	1
BA088	2.434	0.306	0.343	1	1	1
BA089	2.624	0.281	0.242	1	1	1
BA090	-2.160	-1.650	0.650	1	1	1
BA091	-2.611	-1.866	0.516	1	1	1
BA092	-2.417	-1.869	0.698	1	1	1
BA093	0.047	0.114	-0.620	1	1	1
BA094	0.343	0.561	-0.160	1	1	1
BA095	0.408	0.370	-0.402	1	1	1
BA096	ND	ND	ND	1	4	6
BA097	-1.623	3.051	-0.215	1	1	3
BA098	-1.279	3.020	-0.399	1	1	3
BA099	-1.949	-0.731	1.114	1	1	1
BA100	-2.009	-0.772	1.058	1	1	1
BA101	-1.830	-0.673	1.065	1	1	1
BA102	-2.466	2.911	-0.720	1	4	6
BA103	-2.258	3.094	-0.587	1	4	6
BA104	-2.202	2.425	-0.102	1	4	6
BA105	-2.157	2.847	-0.420	1	4	6

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BA106	-3.069	2.628	0.518	1	4	6
BA107	0.418	0.314	-3.085	1	1	1
BA110	0.742	0.950	0.033	1	1	1
BA111	0.659	0.838	0.016	1	1	1
BA112	-0.430	-4.290	0.500	1	1	1
BA114	-0.670	-3.133	0.584	1	1	1
BA115	-2.036	1.861	0.057	1	4	6
BA116	-2.247	2.446	0.293	1	4	6
BA117	-3.118	3.113	0.872	1	4	6
BA119	3.824	-0.266	-0.024	1	1	1
BA120	-0.637	-2.721	0.456	1	1	1
BA121	-0.685	-2.693	0.474	1	1	1
BA122	-1.361	-1.374	0.422	1	1	1
BA123	2.066	-0.235	0.278	1	1	1
BA124	2.650	-0.261	0.187	1	1	1
BA125	2.987	-0.085	0.094	1	1	1
BA126	3.489	0.191	0.263	1	1	1
BA127	3.012	-0.091	0.168	1	1	1
BA128	3.126	0.146	0.463	1	1	1
BA130	-3.514	0.144	1.029	1	1	3
BA131	-3.128	-1.239	1.043	1	1	1
BA132	-3.078	-1.076	1.077	1	1	1
BA133	3.055	-0.489	0.227	1	1	1
BA134	3.109	-0.436	0.172	1	1	1
BA135	3.117	0.129	-0.104	1	1	1
BA136	0.084	-0.003	-2.456	1	1	1
BA137	7.523	1.957	1.992	1	1	2
BA138	6.894	1.777	1.770	1	1	2
BA140	-1.719	-3.823	0.844	1	1	1
BA141	1.066	-0.192	-1.594	1	1	1
BA142	2.111	0.664	-0.572	1	1	1
BA143	2.049	0.688	-0.439	1	1	1
BA144	1.600	0.306	-1.556	1	1	1
BA145	2.560	0.061	-0.782	1	1	1
BA146	2.954	-0.174	-0.532	1	1	1
BA147	-2.996	2.097	0.505	1	4	6
BA148	-2.885	2.015	0.372	1	4	6
BA149	3.171	0.757	-0.284	1	1	2
BA150	3.258	1.077	-0.289	1	1	2
BA151	3.322	0.862	-0.227	1	1	2
BA152	1.305	-0.374	0.427	1	1	1
BA153	-0.049	-0.489	0.296	1	1	1
BA154	0.878	-0.075	0.538	1	1	1
BA155	-1.446	-0.169	0.081	1	1	3
BA156	-0.384	-0.342	-0.262	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BA157	-0.073	-0.418	-0.438	1	1	1
BA158	-0.512	-0.210	-0.049	1	1	1
BA159	-1.719	-1.641	1.067	1	1	1
BA160	-2.665	-2.962	0.623	1	1	1
BA161	-1.092	-2.821	0.315	1	1	1
BA162	-1.229	-2.945	0.367	1	1	1
BA163	1.218	0.705	-0.778	1	1	1
BA164	1.784	0.420	-0.480	1	1	1
BA165	1.837	0.362	-0.529	1	1	1
BA166	-0.393	2.171	-1.209	1	1	3
BA167	-1.691	3.159	-0.598	2	3	5
BA168	-2.961	5.030	-0.470	2	3	7
BA170	4.633	1.030	0.428	1	1	2
BA171	0.516	-2.010	-0.764	1	1	1
BA174	-0.902	0.254	-0.426	1	1	1
BA175	2.708	2.079	0.008	1	1	1
BA177	7.886	1.118	2.073	1	1	2
BA178	7.856	1.276	1.919	1	1	2
BA179	2.422	-0.200	-0.872	1	1	1
BA182	2.873	-0.789	-0.353	1	1	1
BA183	2.674	-0.929	-0.220	1	1	1
BA185	4.383	-0.311	0.127	1	1	1
BA186	4.756	-0.312	0.318	1	1	1
BA187	5.010	-0.236	0.425	1	1	1
BA188	2.852	-0.439	-0.160	1	1	1
BA189	0.233	-0.426	-1.856	1	1	1
BA190	-1.496	2.834	-0.243	1	1	3
BA191	-1.703	-0.217	-0.273	1	1	3
BA192	4.514	0.182	0.100	1	1	1
BA193	4.064	0.330	-0.150	1	1	1
BA194	6.422	-0.124	1.184	1	1	2
BA195	6.867	0.097	1.238	1	1	2
BA196	6.879	-1.119	1.720	1	1	2
BA197	-1.499	1.879	-0.574	1	1	3
BA198	-0.916	1.386	-0.800	1	1	3
BA199	0.077	0.137	-0.549	1	1	1
BA200	-0.425	0.135	-0.498	1	1	1
BA201	-3.162	2.720	0.028	1	4	6
BA202	-2.937	2.635	0.157	1	4	6
BA203	-3.041	2.682	0.283	1	4	6
BA204	-2.884	-0.945	1.213	1	1	1
BA205	-2.695	-0.896	1.266	1	1	1
BA206	-0.061	-0.258	-1.079	1	1	1
BA207	0.863	0.201	-1.109	1	1	1
BA208	0.576	0.322	-0.960	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BA209	ND	ND	ND	1	1	1
BA210	0.141	-1.446	-0.066	1	1	1
BA211	1.400	-0.786	-0.373	1	1	1
BA212	ND	ND	ND	1	1	1
BA213	0.059	-1.586	0.058	1	1	1
BA214	ND	ND	ND	1	1	1
BA215	ND	ND	ND	1	1	1
BA216	ND	ND	ND	1	1	1
BA217	ND	ND	ND	1	1	1
BA218	ND	ND	ND	1	1	1
BA219	ND	ND	ND	1	1	1
BA220	ND	ND	ND	1	1	1
BA221	ND	ND	ND	1	1	1
BA222	ND	ND	ND	1	1	1
BA223	-2.436	0.057	1.593	1	1	3
BA224	-1.770	-1.420	1.570	1	1	1
BA225	-1.425	-2.321	1.414	1	1	1
BA226	2.448	-0.230	0.116	1	1	1
BA227	2.635	-0.431	0.119	1	1	1
BA228	2.393	-0.541	0.193	1	1	1
BA229	-3.173	0.527	0.409	1	1	3
BA231	-1.257	2.078	-0.472	1	1	3
BA232	-1.294	2.025	-0.352	1	1	3
BA233	-1.294	2.188	-0.570	1	1	3
BA234	2.700	0.377	-0.212	1	1	1
BA236	-0.399	-0.282	-1.330	1	1	1
BA238	2.121	-0.241	-1.437	1	1	1
BA239	-1.394	-0.411	0.010	1	1	1
BA240	-1.600	0.293	0.153	1	1	1
BA241	-0.918	-0.504	-0.004	1	1	1
BA242	-0.347	1.802	-0.009	1	1	1
BA243	2.013	1.725	-2.758	1	1	3
BA252	5.546	0.450	2.773	1	1	2
BA253	5.369	-0.919	2.299	1	1	2
BA254	3.203	0.559	1.231	1	1	2
BA255	7.615	0.794	2.485	1	1	2
BF002	5.368	-0.042	0.016	1	1	2
BF003	0.698	-1.322	-1.058	1	1	1
BF004	-0.299	0.018	-0.416	1	1	1
BF006	-0.063	0.919	-0.304	1	1	1
BF007	-0.063	1.042	-0.337	1	1	1
BF008	0.089	1.043	-0.313	1	1	1
BF010	0.894	-0.777	0.693	1	1	1
BF011	0.993	-0.585	0.647	1	1	1
BF012	1.089	-0.633	0.686	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BF013	-2.006	2.134	-0.310	1	1	3
BF014	-1.369	3.020	0.451	1	1	3
BF016	-1.863	0.149	-0.614	1	4	6
BF019	-0.731	2.729	-2.107	1	1	3
BF020	-0.253	2.666	-2.035	1	1	3
BF021	-0.481	2.702	-1.788	1	1	3
BF022	-3.246	2.549	0.416	2	3	5
BF023	1.102	1.272	0.641	1	1	1
BF024	1.320	1.157	0.570	1	1	1
BF025	1.417	1.298	0.693	1	1	1
BF027	-2.224	1.764	-0.500	1	1	3
BF029	2.712	0.798	-0.971	1	1	2
BF030	1.664	-0.876	0.395	1	1	1
BF031	-1.248	-3.053	0.116	1	1	1
BF032	-1.220	-2.453	0.145	1	1	1
BF036	-2.737	2.414	0.845	2	3	5
BF037	-2.615	2.464	0.963	2	3	5
BF038	-1.140	-5.224	-0.597	1	1	1
BF039	-0.660	-1.091	-0.895	1	1	1
BF040	2.386	1.198	-0.372	1	1	1
BF041	2.395	1.403	-0.038	1	1	1
BF043	5.804	1.212	-0.281	1	1	2
BF044	5.658	1.172	-0.027	1	1	2
BF045	5.717	1.250	-0.197	1	1	2
BF047	-0.887	-1.084	-0.105	1	1	1
BF048	-0.330	-0.792	0.084	1	1	1
BF049	ND	ND	ND	1	1	1
BF050	-0.912	-0.749	-0.290	1	1	1
BF051	2.174	0.593	-1.210	1	1	1
BF052	1.334	0.659	-1.029	1	1	1
BF053	-0.178	1.444	0.169	1	1	3
BF054	-0.064	1.174	0.122	1	1	3
BF055	0.202	0.882	0.216	1	1	1
BF056	4.904	0.802	0.249	1	1	2
BF057	-1.204	2.133	0.217	1	1	1
BF058	-1.227	2.481	0.051	1	1	3
BF059	-0.856	2.613	-0.055	1	1	3
BF060	-0.898	2.535	0.068	1	1	3
BF061	-0.489	-0.791	0.244	1	1	1
BF063	-1.399	-2.108	0.539	1	1	1
BF067	-2.611	3.142	-0.011	1	4	6
BF068	-2.761	3.149	-0.065	1	4	6
BF069	-2.602	3.174	-0.010	1	4	6
BF071	1.077	4.131	-0.149	1	4	8
BF072	1.046	4.008	-0.053	1	4	8

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BF073	1.002	4.161	0.040	1	4	8
BF074	-1.098	0.626	0.149	1	1	1
BF075	-0.929	0.890	0.458	1	1	1
BF076	-1.050	1.053	0.244	1	1	1
BF078	-3.511	1.762	-1.076	1	1	3
BF079	ND	ND	ND	1	1	3
BF080	-1.114	2.599	-0.203	1	1	3
BF083	-1.188	-0.288	0.124	1	1	3
BF085	-0.897	-0.081	0.051	1	1	3
BF086	-1.012	-0.199	0.138	1	1	3
BF087	-4.237	5.334	-0.195	2	2	4
BF088	0.926	0.959	-0.338	1	1	1
BF089	0.766	0.770	-0.713	1	1	1
BF090	1.158	0.910	-0.267	1	1	1
BF091	ND	ND	ND	1	1	1
BF092	1.418	0.881	-0.353	1	1	1
BF093	1.172	0.739	-0.324	1	1	1
BF094	ND	ND	ND	1	1	1
BF095	0.598	0.337	-1.752	1	1	1
BF096	ND	ND	ND	1	1	1
BF097	1.006	0.563	-0.538	1	1	1
BF098	ND	ND	ND	1	1	1
BF100	ND	ND	ND	1	1	1
BF101	0.872	1.058	-0.230	1	1	1
BF102	ND	ND	ND	1	1	1
BF103	1.396	0.726	-0.479	1	1	1
BF104	ND	ND	ND	1	1	1
BF105	1.275	0.821	-0.391	1	1	1
BF106	1.141	0.612	-0.472	1	1	1
BF108	-1.302	1.447	0.180	1	4	6
BF109	-1.491	1.673	0.120	1	4	6
BF110	-1.425	1.560	0.073	1	4	6
BF111	4.114	-0.559	1.420	1	1	2
BF114	-0.031	2.131	1.224	1	1	2
BF115	0.135	1.832	1.817	1	1	2
BF117	-0.008	2.141	1.192	1	1	2
BG029	-0.994	-0.477	0.290	1	1	3
BG030	-0.541	-0.938	0.313	1	1	1
BG031	-1.360	-0.293	0.565	1	1	3
BG033	-1.730	-0.735	0.814	1	1	1
BG034	-2.201	-1.274	-0.543	1	1	1
BG036	1.154	-0.474	-0.175	1	1	1
BG037	1.516	-0.538	-0.252	1	1	1
BG038	4.156	2.004	-1.013	1	1	2
BG039	ND	ND	ND	1	1	2

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG040	-3.624	-1.507	-1.354	1	1	1
BG041	2.419	-1.026	-0.605	1	1	1
BG042	2.412	-1.114	-0.711	1	1	1
BG043	1.479	-0.286	-0.962	1	1	1
BG044	ND	ND	ND	1	1	1
BG045	1.624	-0.250	-1.431	1	1	1
BG046	1.659	0.769	-0.668	1	1	1
BG047	1.184	-0.640	-0.747	1	1	1
BG051	0.037	-3.717	-5.074	1	1	1
BG052	1.838	-2.156	-0.787	1	1	1
BG053	0.983	-0.634	-1.660	1	1	1
BG054	ND	ND	ND	1	1	1
BG056	-0.942	-3.477	-0.505	1	1	1
BG059	-0.138	0.412	-0.361	1	1	3
BG060	0.460	0.429	-0.767	1	1	3
BG061	0.387	0.532	-0.651	1	1	3
BG062	-1.139	1.936	-0.256	1	1	3
BG063	-0.345	2.092	-0.665	1	1	3
BG064	0.072	1.954	-1.104	1	1	3
BG066	0.391	2.285	-1.434	1	1	3
BG067	ND	ND	ND	1	1	3
BG068	ND	ND	ND	1	1	3
BG069	ND	ND	ND	1	1	3
BG070	ND	ND	ND	1	1	3
BG071	ND	ND	ND	1	1	3
BG072	-0.503	2.230	-1.485	1	1	3
BG073	0.454	2.272	-1.155	1	1	3
BG074	0.464	2.403	-1.286	1	1	3
BG075	ND	ND	ND	2	3	5
BG076	0.079	2.542	-1.365	1	1	3
BG077	ND	ND	ND	1	1	3
BG078	ND	ND	ND	1	1	3
BG079	ND	ND	ND	1	1	3
BG080	ND	ND	ND	1	1	3
BG081	-2.565	3.771	-0.292	2	3	7
BG082	-2.186	3.200	-0.181	2	3	7
BG083	-2.422	3.922	-0.255	2	3	7
BG084	-3.635	2.760	2.056	2	3	7
BG086	ND	ND	ND	1	1	1
BG087	3.616	0.320	-0.383	1	1	1
BG088	3.185	0.467	-0.054	1	1	1
BG089	-1.568	2.514	-0.222	1	1	3
BG090	ND	ND	ND	1	1	1
BG091	3.132	0.318	-0.022	1	1	1
BG092	ND	ND	ND	1	1	2

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG093	-1.429	3.196	0.309	1	1	3
BG094	ND	ND	ND	1	1	1
BG095	-1.331	2.811	-0.190	1	1	3
BG096	ND	ND	ND	1	1	1
BG097	ND	ND	ND	1	1	1
BG098	3.792	0.382	-0.307	1	1	1
BG099	ND	ND	ND	1	1	1
BG100	ND	ND	ND	1	1	1
BG101	ND	ND	ND	1	1	1
BG102	ND	ND	ND	1	1	1
BG104	-0.985	1.640	-0.181	1	1	3
BG107	-1.102	1.187	0.565	1	1	1
BG108	-0.451	2.513	-0.464	1	1	3
BG109	-0.694	2.833	-0.135	1	1	3
BG110	-1.657	1.391	0.493	1	1	3
BG112	-2.790	3.100	0.529	1	4	6
BG113	-1.501	2.529	0.244	1	1	3
BG114	-1.543	2.898	0.246	1	1	3
BG115	-1.393	2.606	0.206	1	1	3
BG116	-0.514	2.282	-0.229	1	1	3
BG117	0.164	4.330	-0.848	2	3	7
BG118	0.376	4.520	-0.826	2	3	7
BG119	0.433	4.346	-0.747	2	3	7
BG121	-1.027	3.556	-1.113	1	4	6
BG122	-2.663	3.511	0.555	1	4	6
BG124	-0.466	-0.013	0.146	1	1	3
BG127	ND	ND	ND	1	1	3
BG128	-1.649	2.223	0.362	1	1	3
BG130	-0.343	-3.412	1.800	1	1	1
BG132	-1.228	-1.174	1.900	1	1	1
BG133	-1.354	-0.552	1.831	1	1	1
BG134	-1.709	-0.169	2.089	1	1	1
BG137	-1.667	0.242	1.464	1	1	1
BG139	-2.251	0.528	1.471	1	4	6
BG154	-1.226	2.077	0.281	1	4	6
BG155	-1.099	2.133	0.268	1	4	6
BG156	-1.102	1.903	0.201	1	4	6
BG157	3.293	1.577	-0.741	1	1	1
BG158	3.331	1.840	-0.512	1	1	1
BG159	3.310	1.807	-0.550	1	1	1
BG161	-0.647	-1.684	0.497	1	1	1
BG163	-3.177	3.635	1.139	2	3	5
BG164	-3.192	3.846	1.044	2	3	5
BG165	-3.131	3.797	1.132	2	3	5
BG166	-2.111	1.907	1.437	1	1	3

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG168	-2.401	2.273	1.610	1	1	3
BG170	-1.009	0.880	-0.340	1	1	3
BG171	-0.192	-0.244	-0.764	1	1	1
BG172	-0.248	0.532	0.561	1	1	1
BG173	-0.043	0.965	1.279	1	1	3
BG174	-0.149	0.058	0.786	1	1	1
BG175	-1.478	-0.404	1.333	1	1	1
BG176	-1.780	0.193	1.032	1	1	3
BG177	-1.705	0.103	1.145	1	1	3
BG178	-2.251	1.601	1.059	1	1	3
BG179	-0.578	-0.674	0.515	1	1	1
BG183	-0.275	0.888	-0.105	1	1	3
BG184	-0.165	0.781	0.039	1	1	3
BG185	ND	ND	ND	1	1	1
BG186	ND	ND	ND	1	1	1
BG187	-1.087	1.267	0.809	1	1	3
BG188	-0.889	0.948	0.682	1	1	3
BG191	-1.889	5.163	-0.485	1	4	8
BG192	ND	ND	ND	1	1	1
BG194	-2.791	0.635	1.258	1	4	6
BG195	-2.888	0.998	1.355	1	4	6
BG196	-2.712	0.672	1.313	1	4	6
BG198	0.811	-3.811	-0.918	1	1	1
BG202	-2.013	0.726	0.886	1	1	1
BG203	ND	ND	ND	1	1	2
BG204	-1.261	-0.440	0.497	1	1	3
BG205	-1.351	-0.794	0.139	1	1	3
BG207	-1.811	-0.062	0.726	1	1	3
BG208	-2.020	0.553	0.828	1	1	3
BG210	-1.863	0.408	0.808	1	1	3
BG211	5.791	0.835	0.949	1	1	2
BG212	4.395	1.369	0.303	1	1	2
BG215	-1.669	0.795	1.573	1	1	3
BG216	-1.497	0.407	0.680	1	1	3
BG217	-2.112	0.639	0.118	1	1	1
BG219	-0.438	-0.874	0.324	1	1	1
BG220	-0.350	-0.549	0.539	1	1	1
BG221	-0.615	-0.599	0.238	1	1	1
BG222	4.532	0.883	-0.188	1	1	2
BG224	-1.245	-0.528	0.764	1	1	1
BG225	ND	ND	ND	1	1	3
BG228	5.389	0.898	0.720	1	1	2
BG229	4.523	1.023	0.366	1	1	2
BG230	-0.339	1.292	0.774	1	1	1
BG231	-0.712	0.996	0.419	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG232	-2.239	1.633	0.568	1	1	3
BG233	1.252	0.001	-1.808	1	1	1
BG234	ND	ND	ND	1	1	1
BG235	ND	ND	ND	1	1	1
BG236	ND	ND	ND	1	1	1
BG237	ND	ND	ND	1	1	1
BG238	-0.027	0.149	0.111	1	1	3
BG241	4.358	1.509	0.717	1	1	2
BG242	4.577	1.171	0.535	1	1	2
BG243	4.354	0.663	-0.029	1	1	1
BG244	4.328	-0.090	-0.992	1	1	1
BG245	5.092	0.309	0.311	1	1	1
BG248	0.791	-0.342	-1.698	1	1	1
BG249	0.626	-0.337	-1.271	1	1	1
BG250	0.841	-0.250	-1.333	1	1	1
BG252	0.912	-0.141	-1.099	1	1	1
BG253	ND	ND	ND	1	1	1
BG254	0.797	0.051	-0.775	1	1	1
BG255	1.375	0.082	-1.465	1	1	1
BG256	ND	ND	ND	1	1	1
BG257	ND	ND	ND	1	1	1
BG258	ND	ND	ND	1	1	1
BG259	ND	ND	ND	1	1	1
BG260	0.670	-0.406	-1.475	1	1	1
BG261	0.863	0.287	-0.660	1	1	1
BG262	0.650	0.253	-0.515	1	1	1
BG263	0.853	-0.279	-1.100	1	1	1
BG264	0.952	-0.399	-1.711	1	1	1
BG265	0.128	-0.530	-1.256	1	1	1
BG266	0.911	-0.355	-1.521	1	1	1
BG268	ND	ND	ND	1	1	1
BG269	ND	ND	ND	1	1	1
BG270	ND	ND	ND	1	1	1
BG271	ND	ND	ND	1	1	1
BG272	0.316	-1.011	-1.851	1	1	1
BG273	0.910	-0.625	-1.971	1	1	1
BG275	1.216	-0.245	-2.053	1	1	1
BG276	-1.425	-0.437	0.397	1	1	1
BG277	0.894	-0.271	-1.546	1	1	1
BG279	0.074	-0.008	-0.373	1	1	1
BG280	ND	ND	ND	1	1	3
BG281	-0.860	-0.831	0.454	1	1	1
BG282	ND	ND	ND	1	1	1
BG283	ND	ND	ND	1	1	3
BG284	ND	ND	ND	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG285	ND	ND	ND	1	1	3
BG286	-1.283	-0.453	0.513	1	1	1
BG287	ND	ND	ND	1	1	1
BG288	ND	ND	ND	1	1	1
BG289	-1.393	-1.092	0.715	1	1	1
BG290	1.213	-2.294	-0.472	1	1	1
BG291	0.062	-0.153	0.509	1	1	1
BG292	0.031	-0.292	0.538	1	1	1
BG293	-1.242	-1.784	1.063	1	1	1
BG294	-0.900	-1.817	1.215	1	1	1
BG295	-0.668	-1.745	1.240	1	1	1
BG297	ND	ND	ND	1	1	1
BG298	ND	ND	ND	1	1	1
BG299	ND	ND	ND	1	1	1
BG301	-0.811	-1.650	1.423	1	1	1
BG302	-1.640	0.957	-0.971	1	4	6
BG303	-2.054	0.993	-1.105	1	4	6
BG304	-1.549	1.047	-1.141	1	4	6
BG306	-1.770	0.263	-0.859	1	1	3
BG307	ND	ND	ND	1	4	6
BG308	ND	ND	ND	1	1	3
BG309	ND	ND	ND	1	4	6
BG310	ND	ND	ND	1	1	3
BG311	-1.884	1.282	-1.056	1	4	6
BG312	ND	ND	ND	1	1	1
BG315	-2.258	3.010	1.151	2	3	5
BG317	-1.842	0.597	-1.457	1	4	6
BG318	ND	ND	ND	1	4	6
BG319	-1.614	0.790	-1.555	1	4	6
BG320	ND	ND	ND	1	4	6
BG321	ND	ND	ND	1	4	6
BG322	ND	ND	ND	1	4	6
BG323	ND	ND	ND	1	4	6
BG328	-1.642	1.034	1.174	1	1	3
BG329	-1.755	1.266	1.068	1	1	3
BG330	-1.288	-1.042	0.401	1	4	6
BG335	-1.887	1.365	0.663	1	1	1
BG336	-1.959	1.320	0.750	1	1	1
BG337	-1.929	1.361	0.760	1	1	1
BG338	-2.053	1.704	0.930	1	1	3
BG345	0.705	0.123	-1.146	1	1	1
BG347	0.713	0.138	-1.219	1	1	1
BG348	-2.073	-4.505	-1.201	1	1	1
BG349	-1.951	-4.236	-1.257	1	1	1
BG350	-1.801	-4.390	-1.230	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG351	-0.801	-1.004	0.280	1	1	1
BG352	-1.416	-0.355	-0.139	1	1	1
BG353	-2.498	2.141	0.216	1	4	6
BG354	2.863	1.445	-0.292	1	1	1
BG355	2.785	1.171	-0.166	1	1	1
BG356	2.635	1.087	-0.287	1	1	1
BG358	-1.749	2.226	-1.012	1	1	3
BG360	-2.253	3.083	-1.007	2	3	5
BG361	-1.206	-1.172	0.196	1	1	1
BG363	1.346	-0.921	0.217	1	1	1
BG364	1.241	-0.928	0.139	1	1	1
BG365	-0.451	-2.010	0.054	1	1	1
BG370	1.811	1.437	-0.371	1	1	1
BG371	1.649	1.285	-0.640	1	1	1
BG372	1.498	1.089	-0.455	1	1	1
BG373	-0.414	-2.315	0.271	1	1	1
BG375	0.815	0.269	0.108	1	1	1
BG376	-2.302	5.476	-1.463	2	5	9
BG377	-1.588	4.132	-1.228	2	3	7
BG379	-1.296	-0.566	1.319	1	1	1
BG380	-1.310	-0.414	0.918	1	1	1
BG381	ND	ND	ND	1	1	1
BG385	1.786	-2.233	-0.078	1	1	1
BG386	1.524	-2.203	-0.060	1	1	1
BG387	1.126	-2.117	-0.045	1	1	1
BG388	-1.489	0.408	-1.396	1	1	3
BG389	-0.982	-0.318	-1.328	1	1	3
BG390	-0.591	-4.621	0.934	1	1	1
BG398	-1.405	-0.026	-0.907	1	1	3
BG401	-2.307	-3.559	1.487	1	1	1
BG402	-2.017	-3.831	1.644	1	1	1
BG403	-1.174	-5.238	1.347	1	1	1
BG405	1.073	-1.071	-0.264	1	1	1
BG406	-0.664	-3.413	-0.836	1	1	1
BG407	-0.577	-2.060	-0.987	1	1	1
BG409	0.781	-1.298	-0.175	1	1	1
BG410	0.602	-1.530	-0.476	1	1	1
BG411	-1.755	2.456	0.003	1	1	3
BG412	-2.333	3.636	-0.216	1	1	3
BG413	0.199	-1.358	-0.112	1	1	1
BG414	0.196	-1.508	-0.020	1	1	1
BG415	0.289	-1.657	-0.146	1	1	1
BG416	ND	ND	ND	1	1	3
BG498	5.263	-0.223	5.352	1	1	2
BG499	-0.484	1.566	0.696	1	4	6

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BG500	4.997	1.842	1.849	1	1	2
BG502	-0.035	2.277	-0.121	1	1	3
BG503	-1.755	2.439	1.303	1	1	3
BG504	1.525	1.332	1.112	1	1	2
BG505	1.703	0.740	1.492	1	1	2
BG507	1.550	1.374	1.224	1	1	2
BL014	0.588	0.992	-1.283	1	1	1
BL015	0.509	0.949	-1.172	1	1	1
BL016	-0.928	0.045	0.685	1	1	1
BL017	-1.171	0.069	0.870	1	1	1
BL018	-0.939	-0.445	0.681	1	1	1
BL019	-0.159	-0.579	-0.298	1	1	1
BL020	0.101	-0.654	-0.364	1	1	1
BL021	-0.015	-0.692	-0.411	1	1	1
BL022	0.200	0.719	-0.838	1	4	6
BL023	-0.618	1.495	-0.209	1	4	6
BL024	-0.794	1.552	-0.251	1	4	6
BL025	2.160	-1.835	0.298	1	1	1
BL026	2.357	-1.479	0.399	1	1	1
BL027	2.577	-1.399	0.116	1	1	1
BL028	-1.321	-2.654	-0.551	1	1	1
BL029	-4.147	5.655	-0.176	2	2	4
BL030	-4.205	5.602	-0.065	2	2	4
BL031	-4.547	6.144	-0.182	2	2	4
BL032	-0.815	-0.316	-0.517	1	1	1
BL033	-0.412	-0.363	-0.533	1	1	1
BL034	-0.367	-0.612	-0.549	1	1	1
BL035	-3.355	2.545	-0.827	2	3	7
BL036	-1.577	0.132	0.160	1	1	3
BL037	0.568	-0.551	-1.341	1	1	1
BL039	-1.838	0.308	-0.313	1	1	3
BL040	-1.413	-0.407	-0.363	1	1	3
BL041	-2.182	0.969	-0.367	1	4	6
BL042	0.771	0.456	-1.014	1	1	3
BL043	0.738	0.383	-1.078	1	1	3
BL044	0.562	0.369	-0.920	1	1	3
BL045	-0.445	-3.618	-1.050	1	1	1
BL046	0.049	-3.910	-0.350	1	1	1
BL047	-1.869	-6.134	-0.391	1	1	1
BL048	0.185	-3.903	-0.305	1	1	1
BL049	0.486	-1.207	-0.284	1	1	1
BL050	4.577	2.385	1.032	1	1	2
BL052	0.343	-3.728	-0.359	1	1	1
BL053	0.200	-3.936	-0.363	1	1	1
BL054	-1.624	-4.047	0.137	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BL055	-1.590	-3.738	0.359	1	1	1
BL056	-1.396	-0.276	-0.969	1	1	3
BL058	-0.907	-4.216	0.303	1	1	1
BL059	-0.194	-4.252	-0.197	1	1	1
BL060	-0.321	-4.317	-0.213	1	1	1
BL061	-0.532	-2.247	-0.307	1	1	1
BL062	-0.666	-2.210	-0.114	1	1	1
BL063	-1.490	-1.137	0.041	1	1	1
BL064	-0.514	-2.356	-0.229	1	1	1
BL065	-0.839	-2.015	-0.308	1	1	1
BL066	-1.620	-0.717	-0.090	1	1	1
BL067	-1.776	-1.389	-0.240	1	1	1
BL068	2.208	-0.397	-0.865	1	1	1
BL069	1.013	-0.552	-0.648	1	1	1
BL073	-1.696	-1.061	0.045	1	1	1
BL074	-1.571	-0.971	0.111	1	1	1
BL075	-1.599	-1.248	-0.165	1	1	1
BL077	2.104	0.017	-0.427	1	1	1
BL078	2.307	0.009	-0.535	1	1	1
BL079	-0.993	3.547	-1.279	1	4	8
BL080	-0.939	3.618	-1.190	1	4	8
BL081	-1.451	3.934	-0.659	1	4	8
BL082	-2.045	-0.525	0.030	1	1	1
BL083	-2.285	-0.539	0.080	1	1	1
BL084	-2.296	-0.096	-0.197	1	1	1
BL085	-0.780	1.144	-1.038	1	4	6
BL086	-0.887	1.087	-1.104	1	4	6
BL087	-0.674	1.097	-1.310	1	4	6
BL088	0.364	-1.183	-0.263	1	1	1
BL089	0.055	-1.035	-0.216	1	1	1
BL090	0.035	-1.047	-0.091	1	1	1
BL091	-2.362	0.208	0.738	1	1	1
BL092	-2.104	0.101	0.779	1	1	1
BL093	-2.658	0.097	0.752	1	1	1
BL095	2.907	-0.078	-0.142	1	1	1
BL096	2.786	-0.256	-0.143	1	1	1
BL097	2.893	-0.101	-0.065	1	1	1
BL098	-2.241	-0.851	0.553	1	1	3
BL099	-1.633	-1.774	0.553	1	1	1
BL100	-1.658	-1.602	0.558	1	1	1
BL101	-1.768	-1.665	0.492	1	1	1
BL102	-2.816	0.694	1.449	1	1	3
BL103	-2.793	0.104	1.418	1	1	3
BL104	-2.511	-0.109	1.414	1	1	3
BL105	-2.649	0.056	1.198	1	1	3

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BL106	-2.724	0.362	1.017	1	1	3
BL107	-3.070	0.483	0.823	1	1	3
BL108	-3.143	0.493	0.786	1	1	3
BL109	-2.612	-0.432	0.682	1	1	1
BL110	-0.320	-2.506	-0.899	1	1	1
BL111	-0.212	-2.375	-0.705	1	1	1
BL112	-0.254	-2.397	-0.840	1	1	1
BL113	0.070	0.206	-1.907	1	1	3
BL114	0.109	0.306	-1.849	1	1	3
BL115	0.097	-0.849	-1.530	1	1	1
BL116	-1.873	-2.514	1.085	1	1	1
BL117	-2.222	-2.598	0.232	1	1	1
BL118	-2.255	-2.588	0.137	1	1	1
BL119	-2.020	-2.888	-0.005	1	1	1
BL120	-0.747	-2.082	0.430	1	1	1
BL121	-1.327	-2.558	-0.379	1	1	1
BL122	-1.199	-2.685	-0.050	1	1	1
BL123	-0.974	-2.992	-0.363	1	1	1
BL124	0.395	-3.911	-1.155	1	1	1
BL125	0.775	-3.642	-1.867	1	1	1
BL126	-1.421	-4.372	-0.613	1	1	1
BL127	0.066	-4.220	-1.738	1	1	1
BL128	0.627	-3.858	-1.777	1	1	1
BL129	0.704	-3.380	-1.722	1	1	1
BL130	-0.250	-3.868	-2.130	1	1	1
BL131	-0.613	-4.274	-0.965	1	1	1
BL132	-0.149	-2.227	-0.154	1	1	1
BL133	0.548	-1.568	-0.412	1	1	1
BL134	0.175	-1.030	0.084	1	1	1
BL137	-1.423	-2.787	0.449	1	1	1
BL138	0.409	-2.729	-0.955	1	1	1
BL139	1.617	-2.378	-3.212	1	1	1
BL140	1.249	-2.267	-0.398	1	1	1
BL142	1.440	-1.713	0.292	1	1	1
BL143	2.246	-2.020	-0.114	1	1	1
BL144	0.740	-1.327	-1.698	1	1	1
BL146	0.769	-1.529	-1.525	1	1	1
BL147	-1.054	-2.093	-0.156	1	1	1
BL148	-0.792	-2.213	-0.373	1	1	1
BL149	-2.967	-0.610	0.384	1	1	1
BL150	-1.358	-3.854	0.450	1	1	1
BL151	-1.060	-3.750	0.244	1	1	1
BL152	-1.117	-3.904	0.363	1	1	1
BL153	2.130	-0.931	0.190	1	1	1
BL154	2.174	-1.087	0.097	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BL155	2.103	-1.249	0.065	1	1	1
BL157	-1.666	-3.961	1.273	1	1	1
BL158	0.862	-1.602	-0.043	1	1	1
BL159	-1.834	-3.551	0.931	1	1	1
BL160	-1.804	-3.491	0.996	1	1	1
BL161	-2.059	-3.520	0.926	1	1	1
BL163	1.883	-0.856	-0.286	1	1	1
BL164	3.121	-1.176	-0.143	1	1	1
BL165	-0.301	-1.284	-0.665	1	1	1
BL166	-0.766	-2.876	-0.005	1	1	1
BL167	-2.371	-1.208	0.736	1	1	1
BL168	-3.103	-0.438	1.286	1	1	1
BL169	-2.827	-0.508	1.390	1	1	1
BL170	-2.613	-0.518	1.176	1	1	1
BL172	-2.912	-0.892	0.731	1	1	1
BL173	-2.873	-0.820	0.803	1	1	1
BL174	-2.656	-0.763	0.626	1	1	1
BL175	-2.365	-0.812	0.610	1	1	1
BL176	-2.603	-1.033	0.762	1	1	1
BL177	-2.430	-1.169	0.852	1	1	1
BL178	ND	ND	ND	1	1	3
BL179	0.416	-3.301	-0.771	1	1	1
BL180	-0.074	-3.165	-0.082	1	1	1
BL181	0.389	-3.380	-0.641	1	1	1
BL184	0.558	-3.471	-0.510	1	1	1
BL185	-0.660	-2.301	0.207	1	1	1
BL186	-0.866	-2.695	-0.348	1	1	1
BL187	-1.398	-2.342	-0.125	1	1	1
BL188	-1.234	-2.205	0.158	1	1	1
BL189	-1.032	-3.235	0.291	1	1	1
BL190	-0.810	-2.834	0.449	1	1	1
BL191	-1.458	-3.122	-0.177	1	1	1
BL192	-0.909	-2.881	0.433	1	1	1
BL193	-2.800	2.408	-0.282	1	4	6
BL194	-2.757	1.066	0.068	1	1	3
BL195	-2.958	3.130	-0.224	1	4	6
BL196	-3.549	2.578	0.948	1	1	3
BL197	-3.009	2.164	1.072	1	1	3
BL198	-3.731	2.255	1.058	1	1	3
BL199	-1.901	-3.996	-0.013	1	1	1
BL200	-1.379	-3.137	0.124	1	1	1
BL201	-2.190	-4.018	-0.648	1	1	1
BL202	-1.380	-2.520	0.122	1	1	1
BL203	-1.668	-3.669	-0.078	1	1	1
BL204	-1.780	-2.650	0.023	1	1	1

Appendix D - Multivariate Statistics

Sample ID	Principal Component Analysis (Scores)			Hierarchical Cluster Analysis (Groups)		
	PC1	PC2	PC3	H = 500	H = 300	H = 212
BL205	-2.190	-4.018	-0.648	1	1	1
BL206	-1.487	-3.922	-0.169	1	1	1
BL207	-1.815	-1.712	-0.973	1	1	3
BL208	-0.755	-2.015	0.950	1	1	1
BL209	-0.595	-2.947	0.629	1	1	1
BL210	-1.255	-1.575	1.100	1	1	1
BL211	-0.713	0.656	1.209	1	1	2
BL212	-0.441	-3.775	0.535	1	1	1
BL213	-1.139	-4.116	0.007	1	1	1
BL214	-1.004	-3.325	0.810	1	1	1
BL215	-0.970	-3.063	-1.877	1	1	1
BL216	-2.117	3.205	-2.560	2	5	9
BL217	-2.508	3.732	-2.639	2	5	9
BL223	5.186	1.907	1.706	1	1	2
BL224	3.087	0.911	0.194	1	1	2
BL226	4.827	-1.692	5.266	1	1	2
BL228	8.387	1.360	3.290	1	1	2
BL229	-4.327	6.388	1.156	2	2	4
BL230	2.385	-0.728	1.410	1	1	2
BL231	2.997	-1.374	0.684	1	1	2