

Figure 5-46. Aluminum Solubility Curve

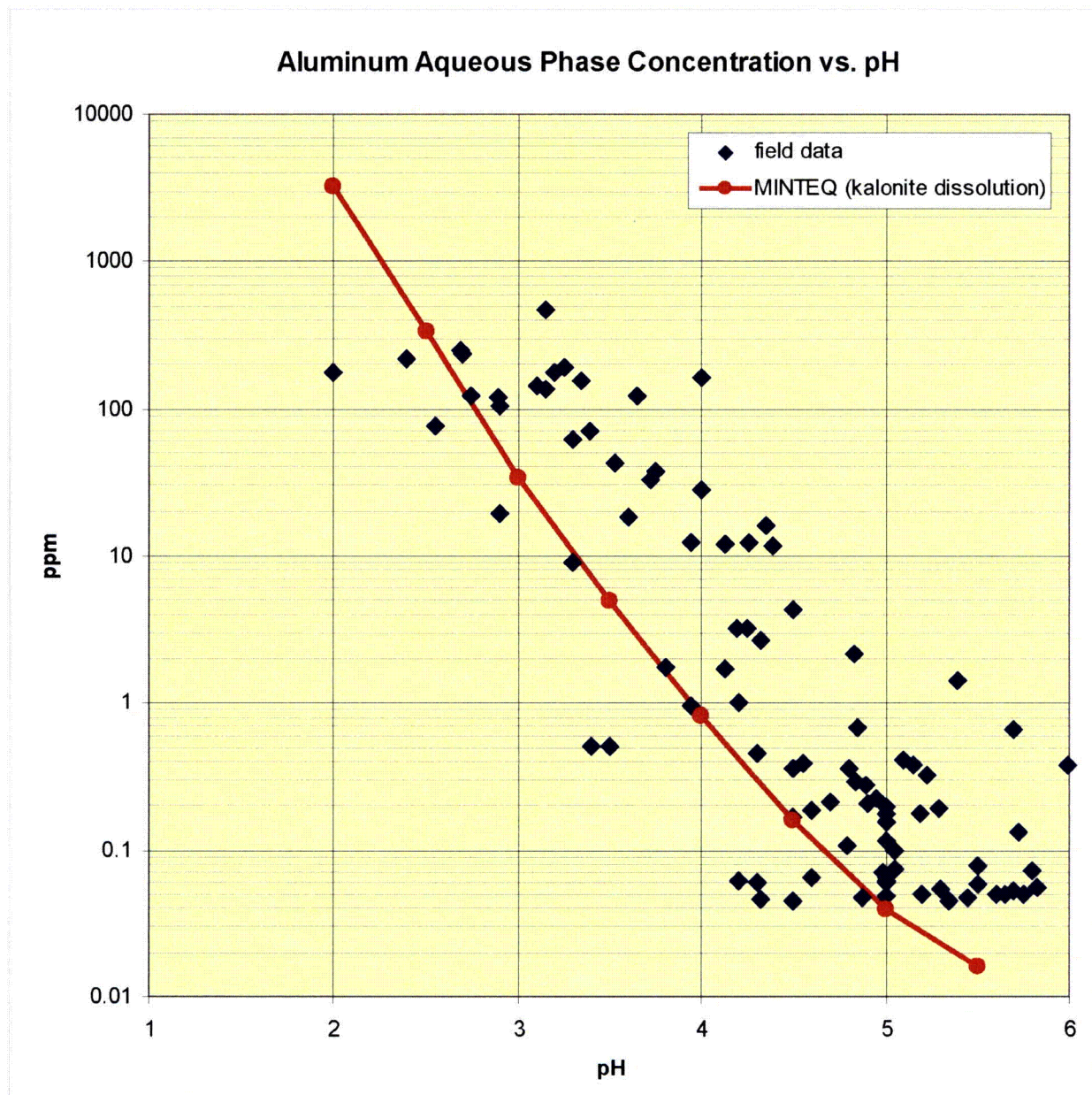


Figure 5-47. TCE Flux

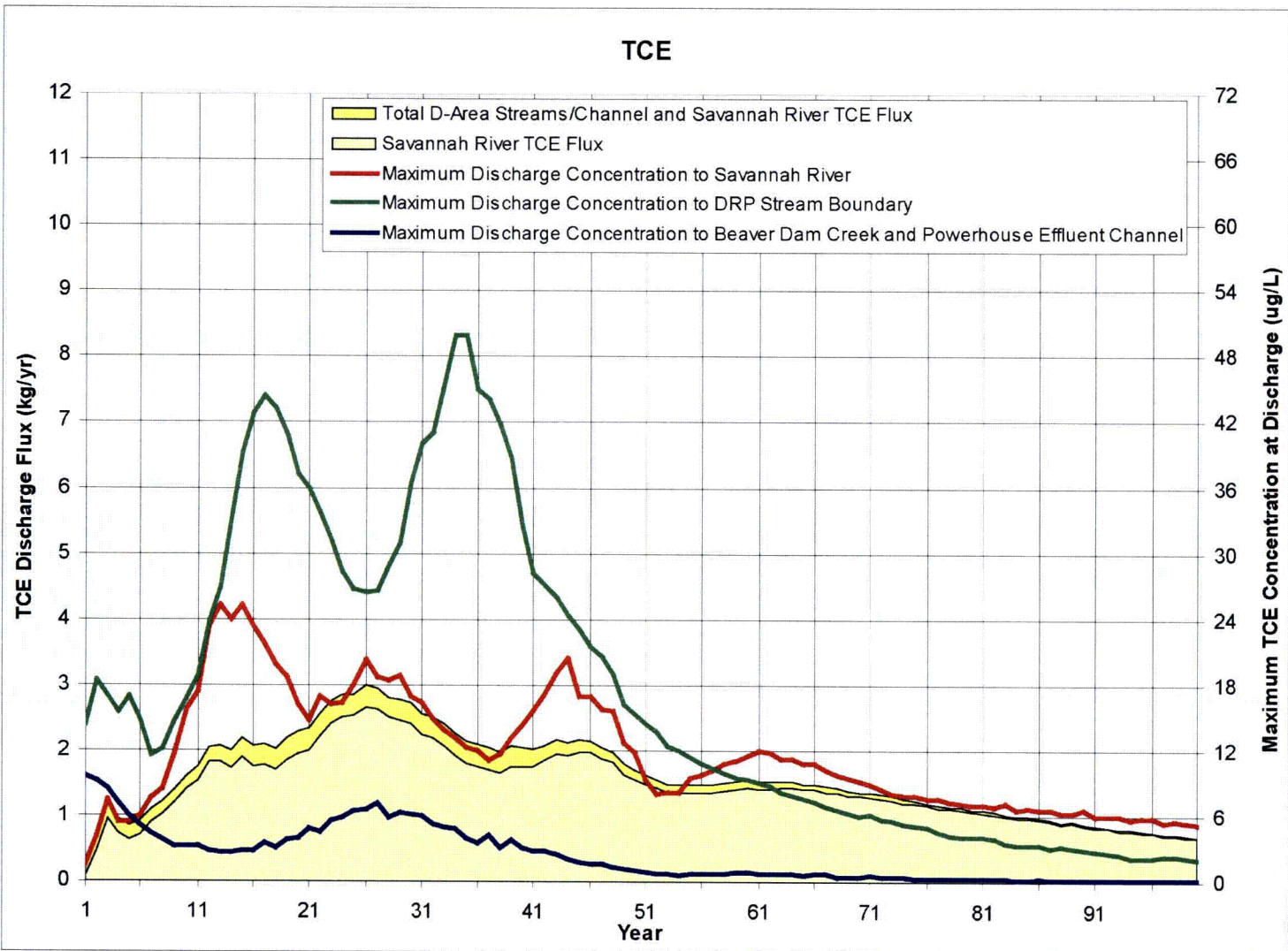


Figure 5-48. TCE Plume Summary

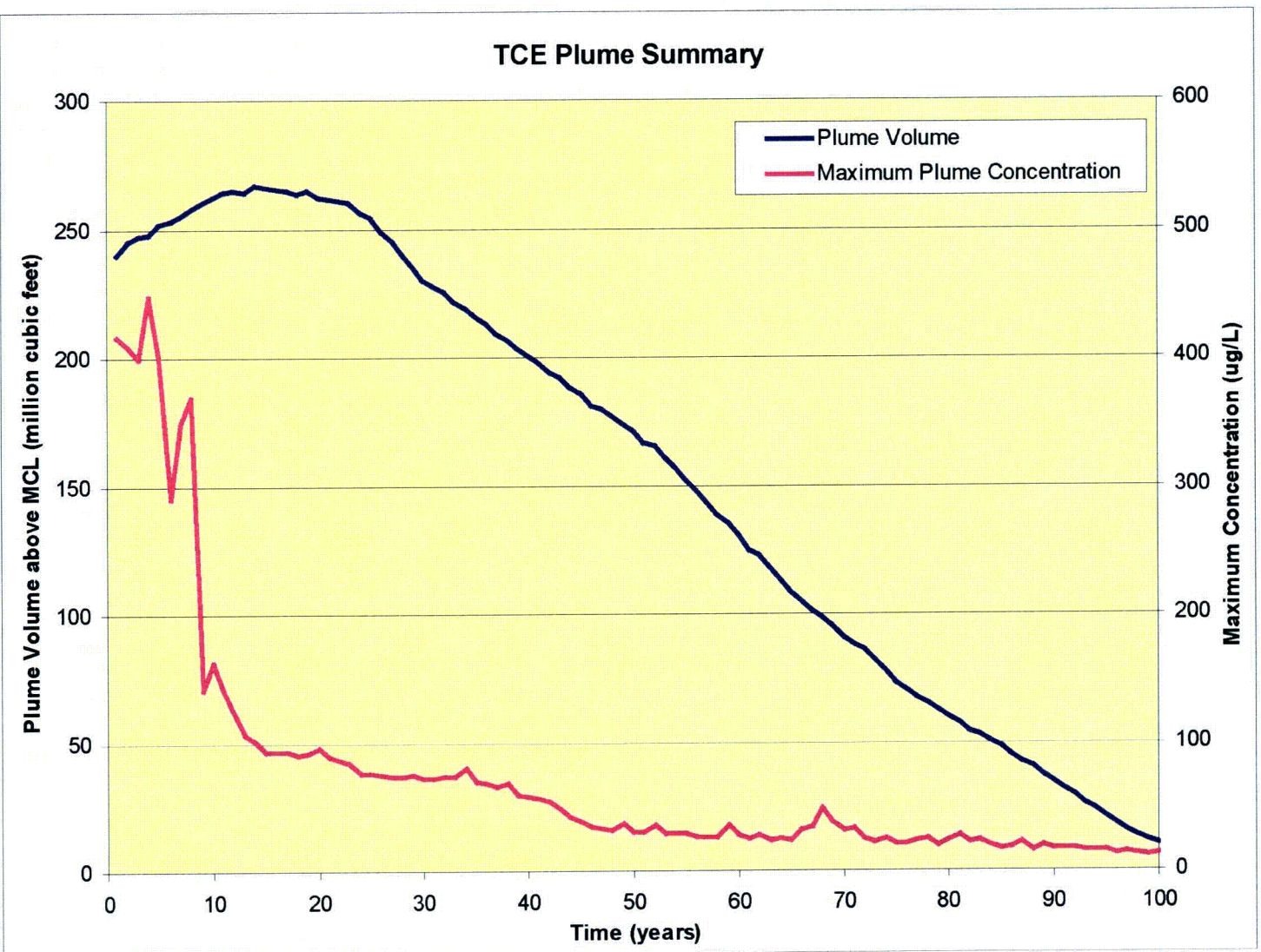


Figure 5-49. TCE Monitoring Well Forecast Summary

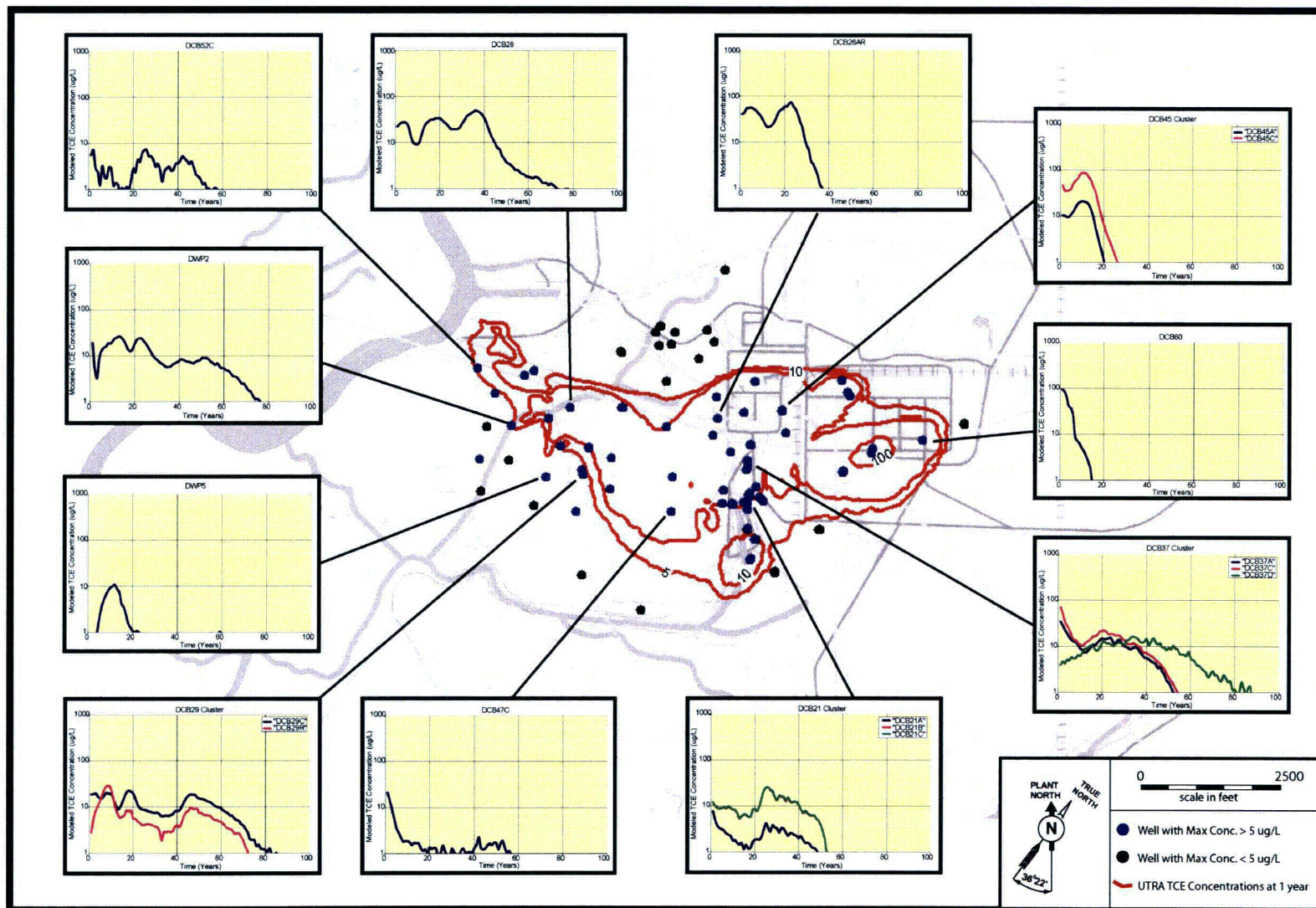


Figure 5-50. TCE Plume in Layer 3 During Simulation

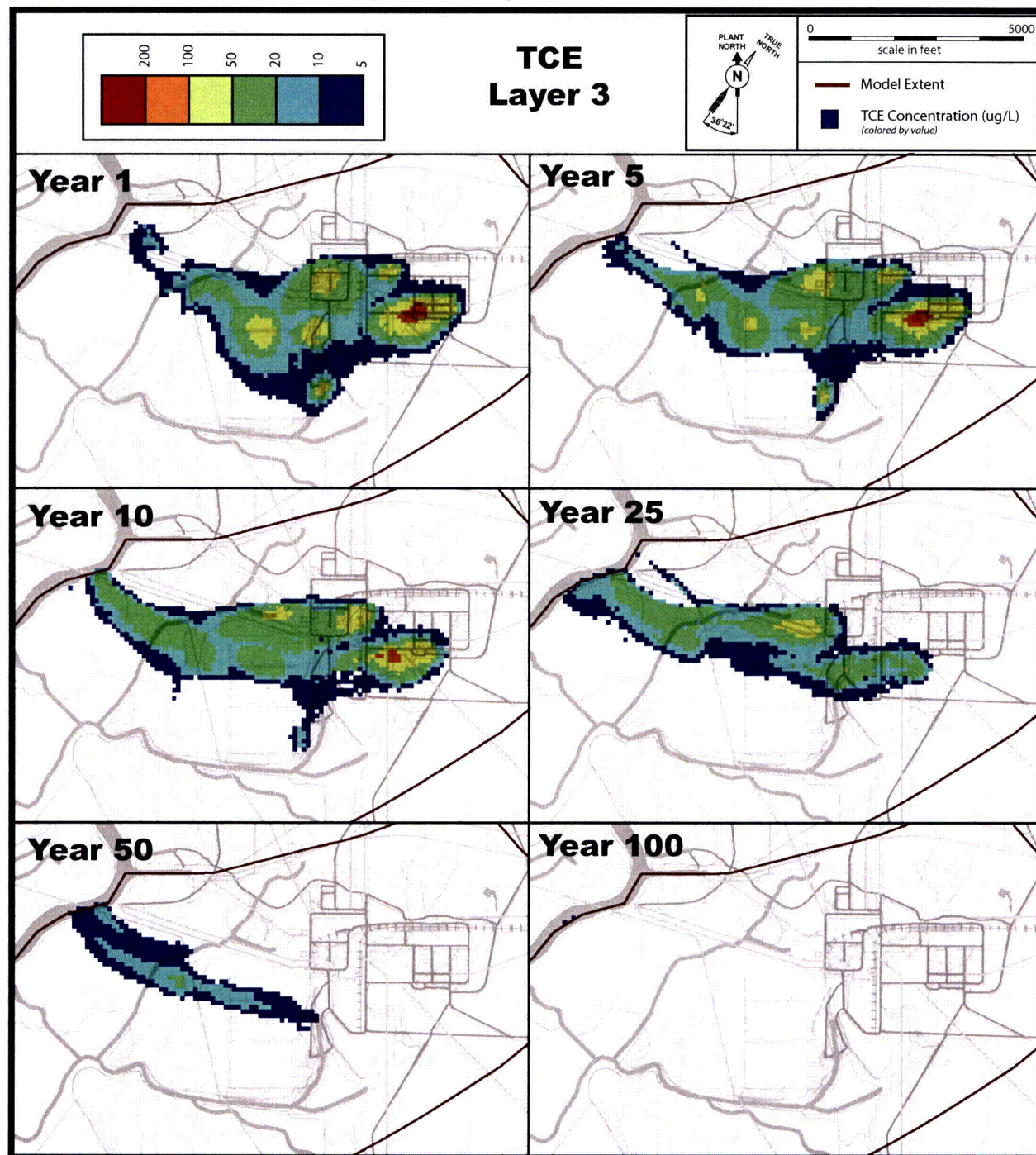


Figure 5-51. Tritium Flux

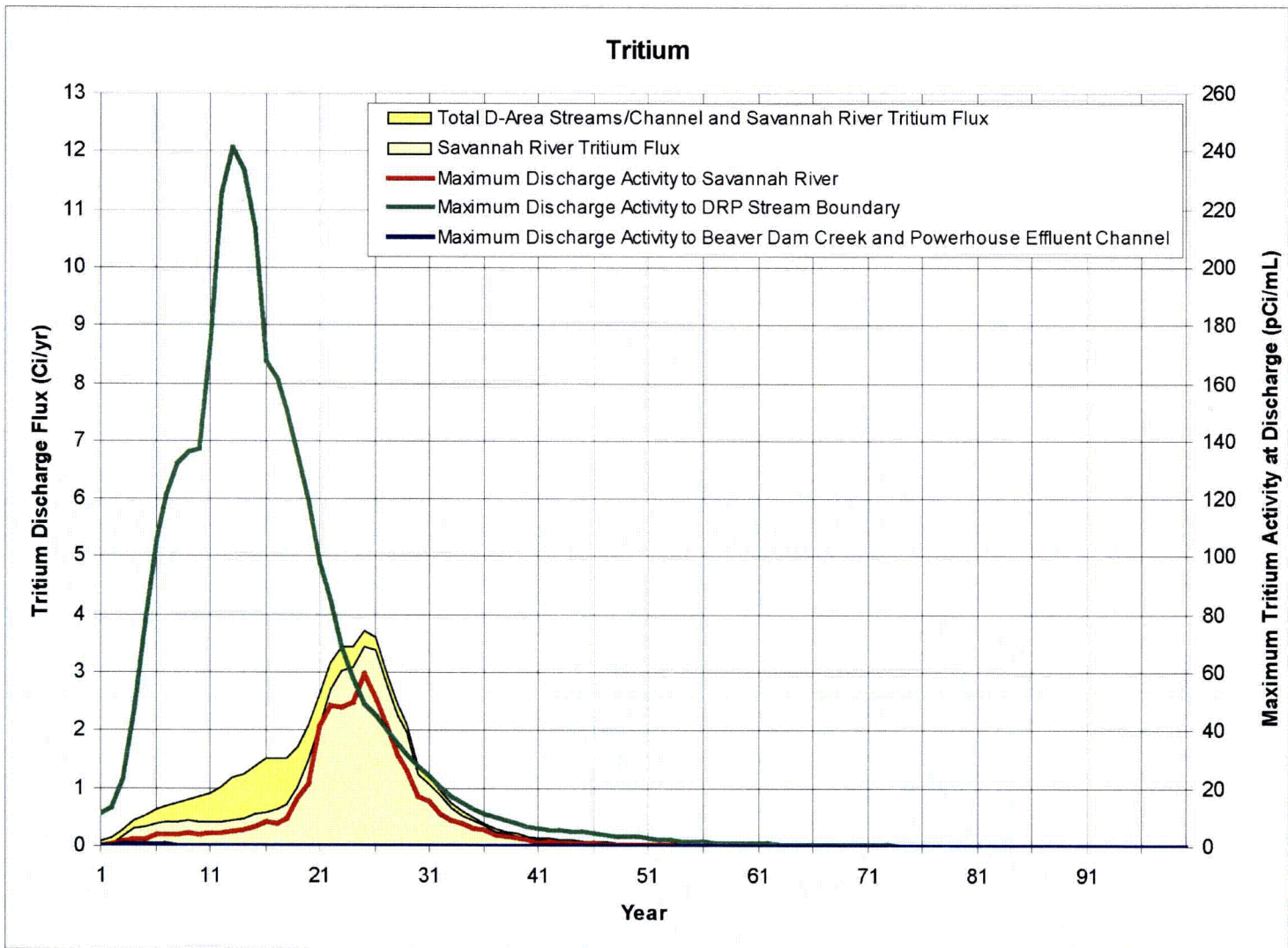


Figure 5-52. Tritium Plume Summary

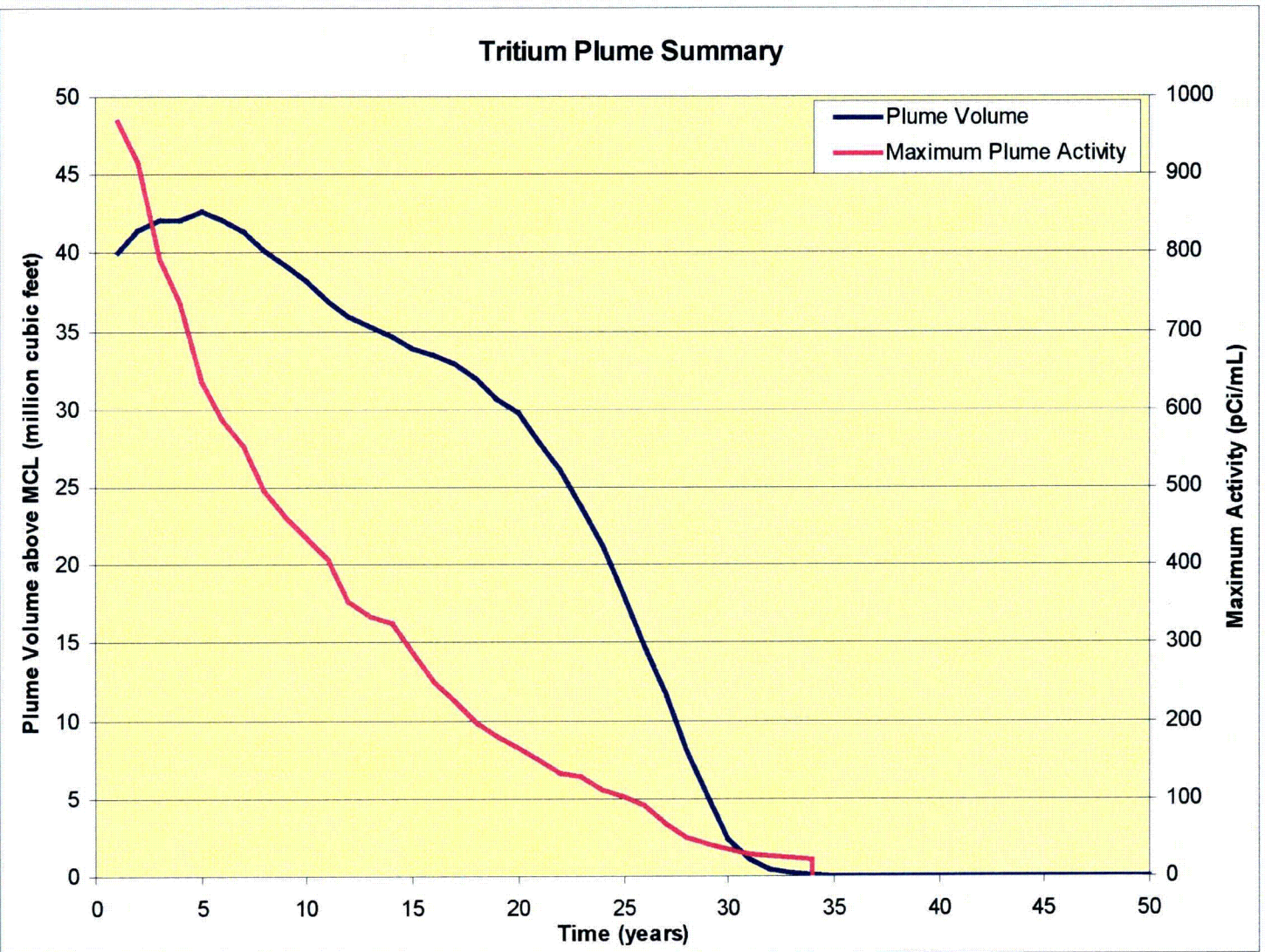


Figure 5-53. Tritium Monitoring Well Forecast Summary

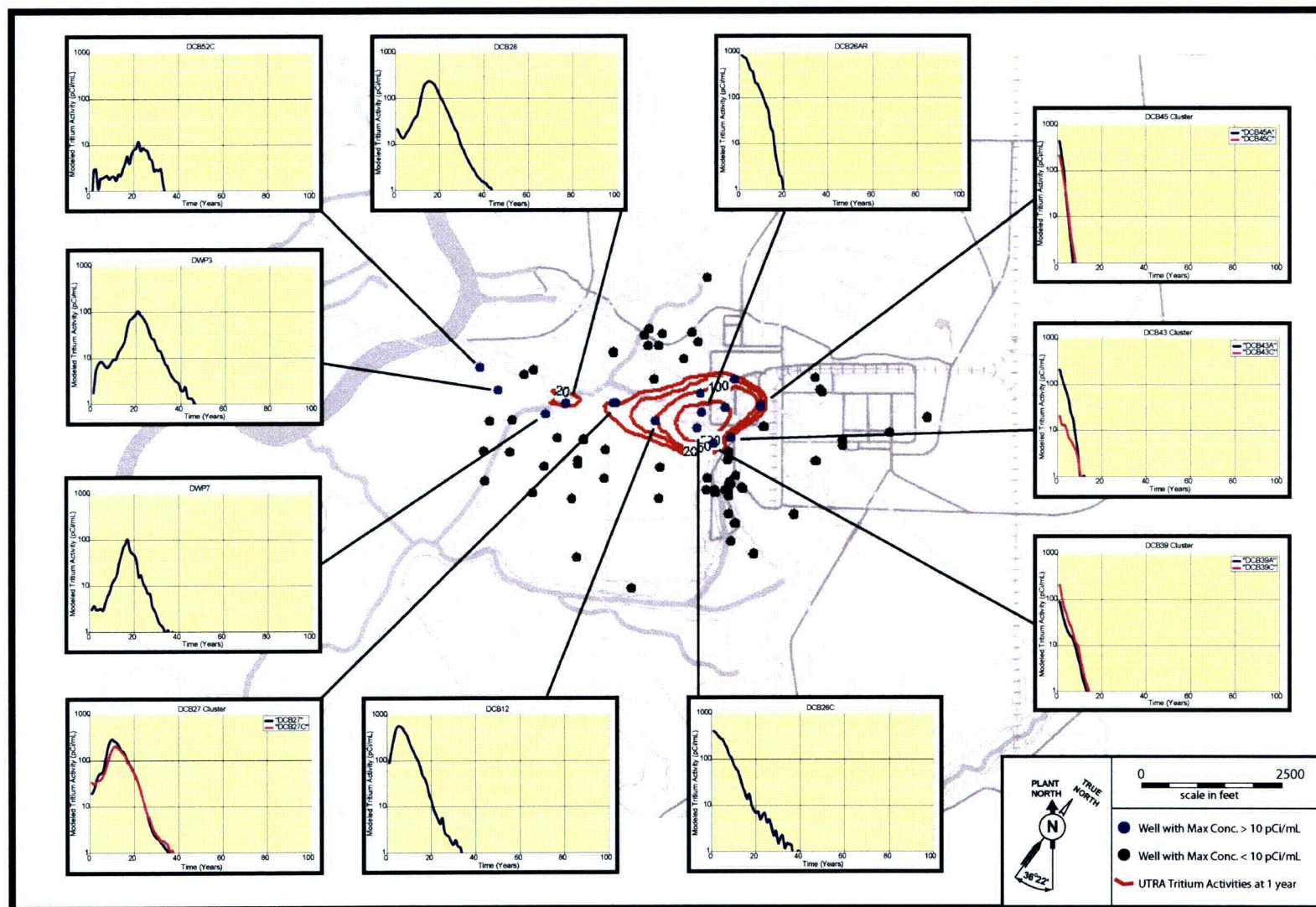


Figure 5-54. Tritium Plume in Layer 3 During Simulation

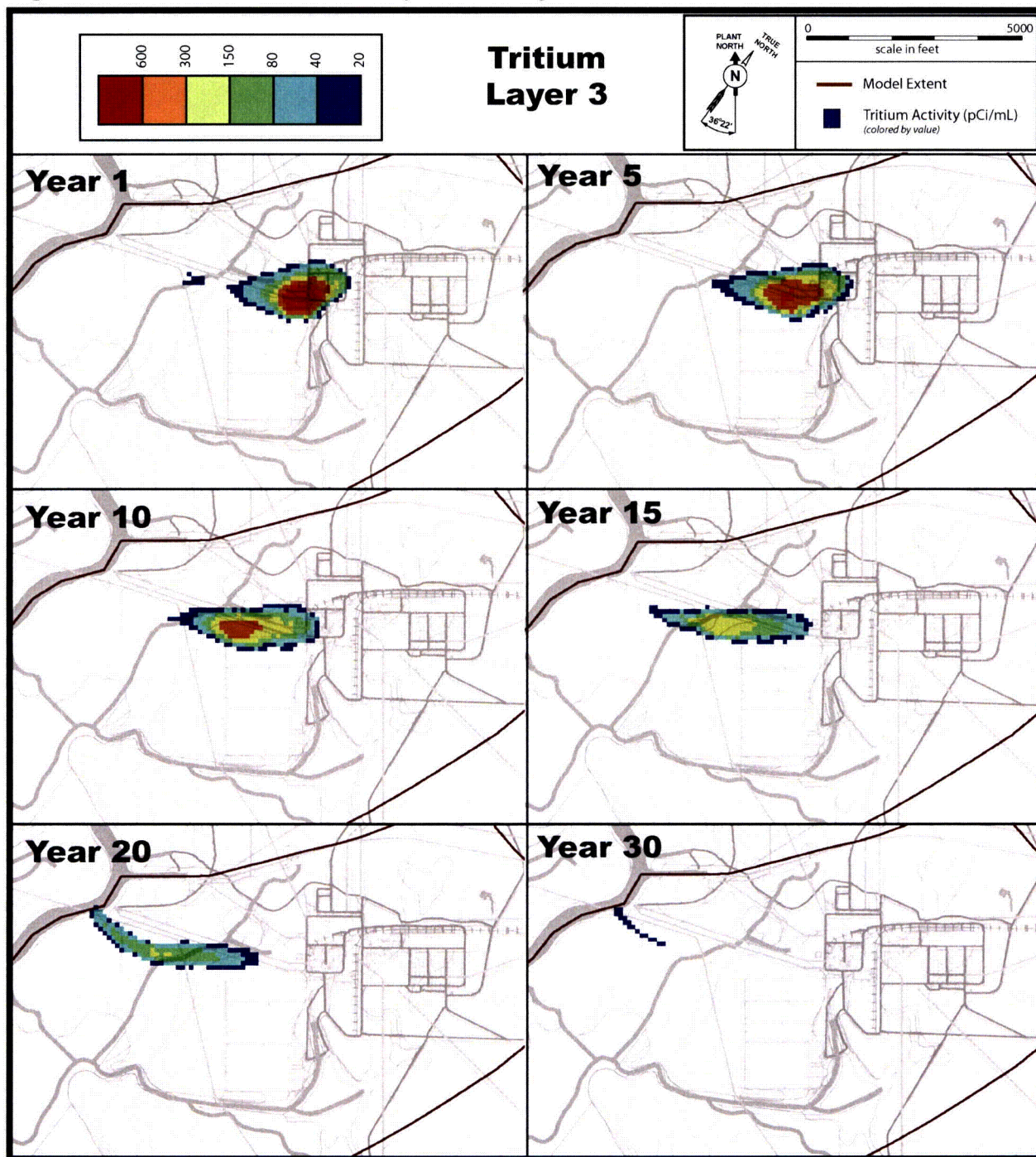


Figure 5-55. Beryllium Flux Summary

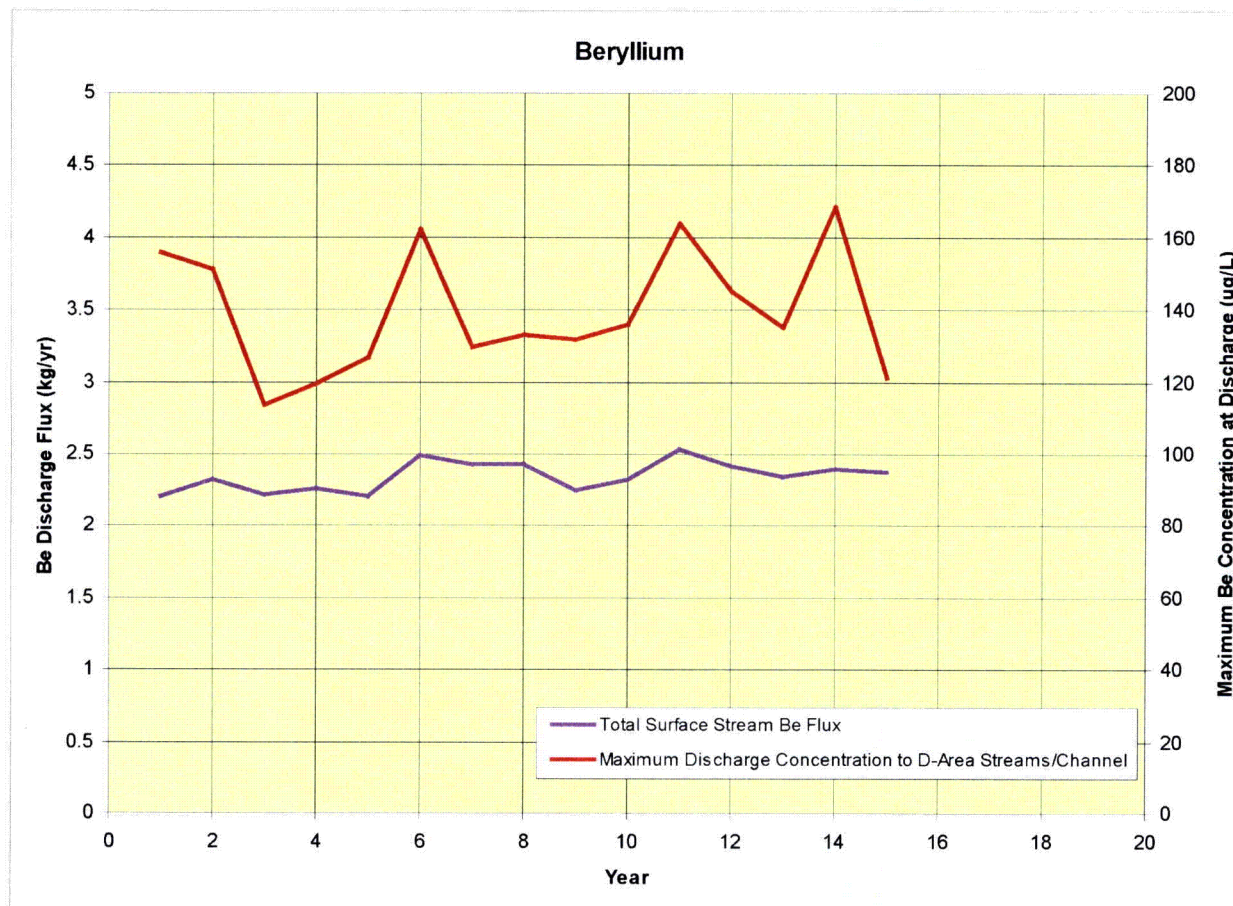


Figure 5-56. Nickel Flux Summary

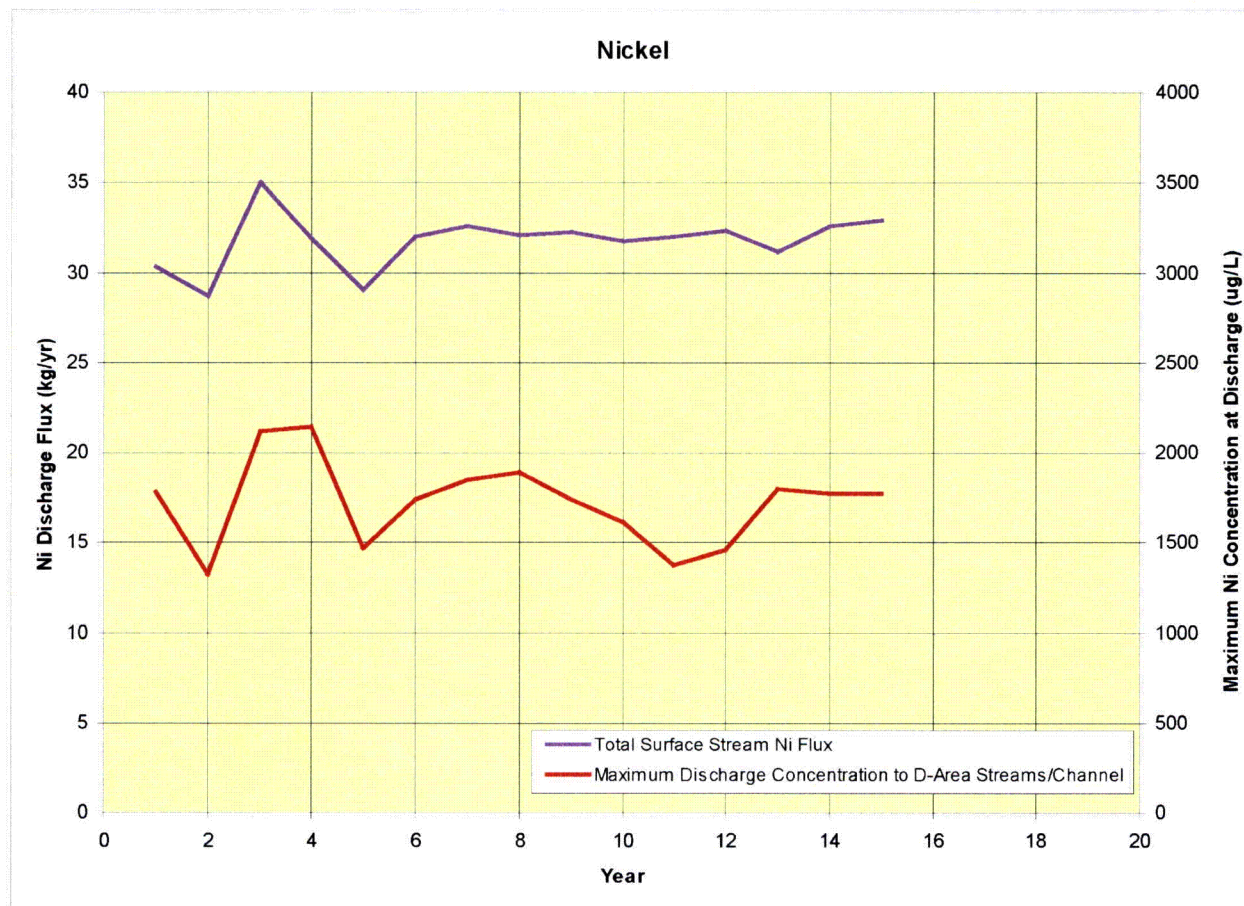


Figure 5-57. Uranium Flux Summary

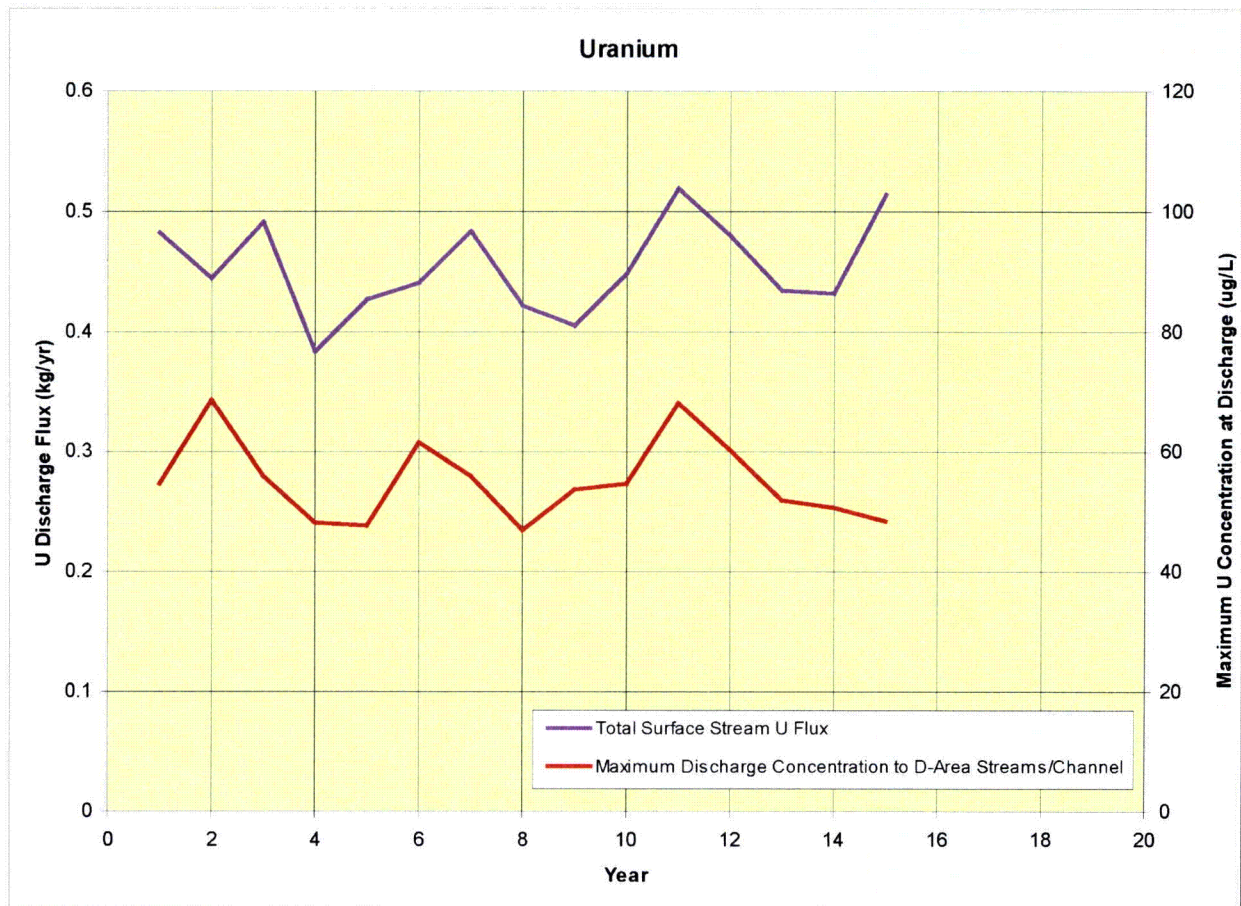


Figure 5-58. Beryllium Monitoring Well Forecast Summary

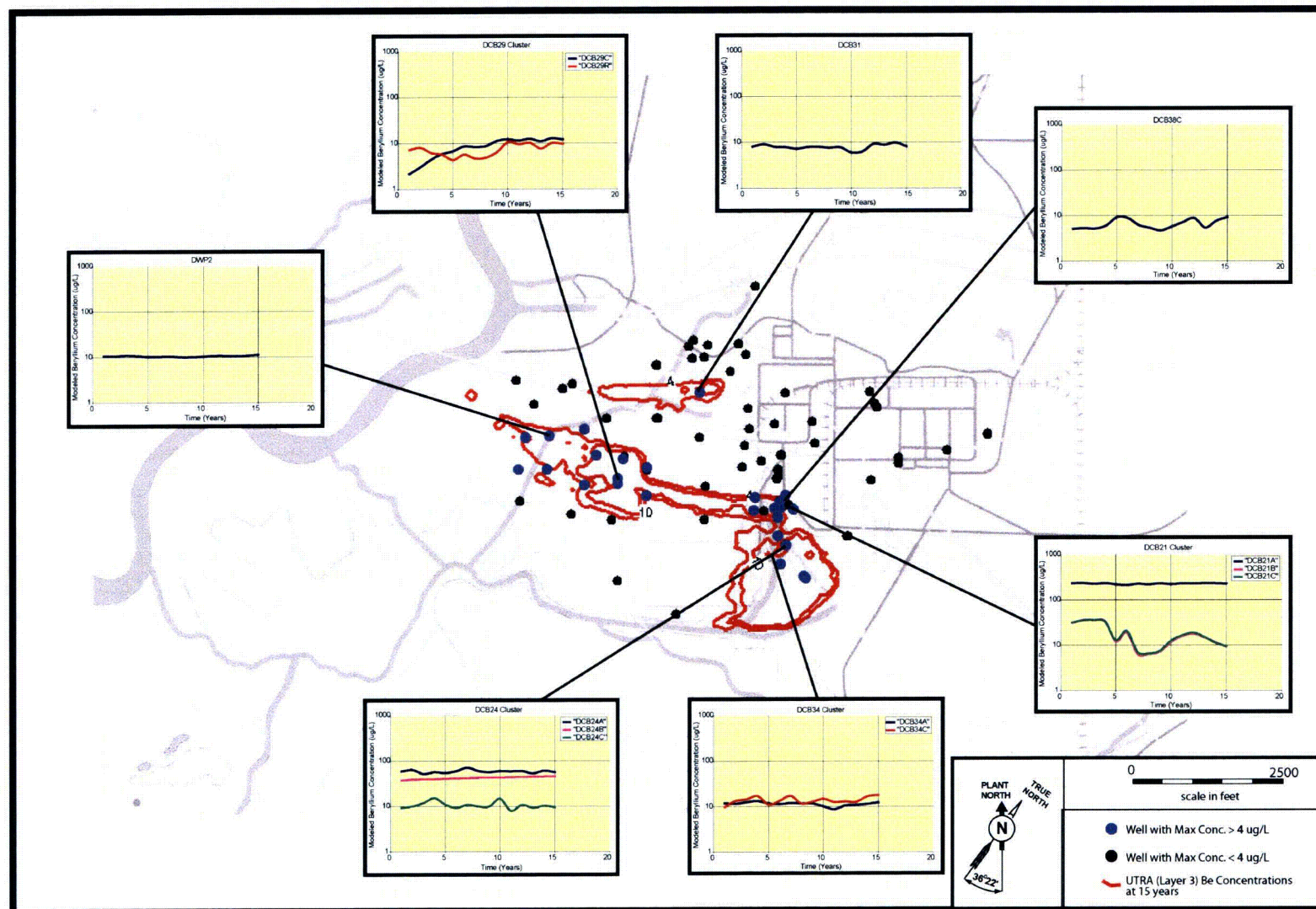


Figure 5-59. Nickel Monitoring Well Forecast Summary

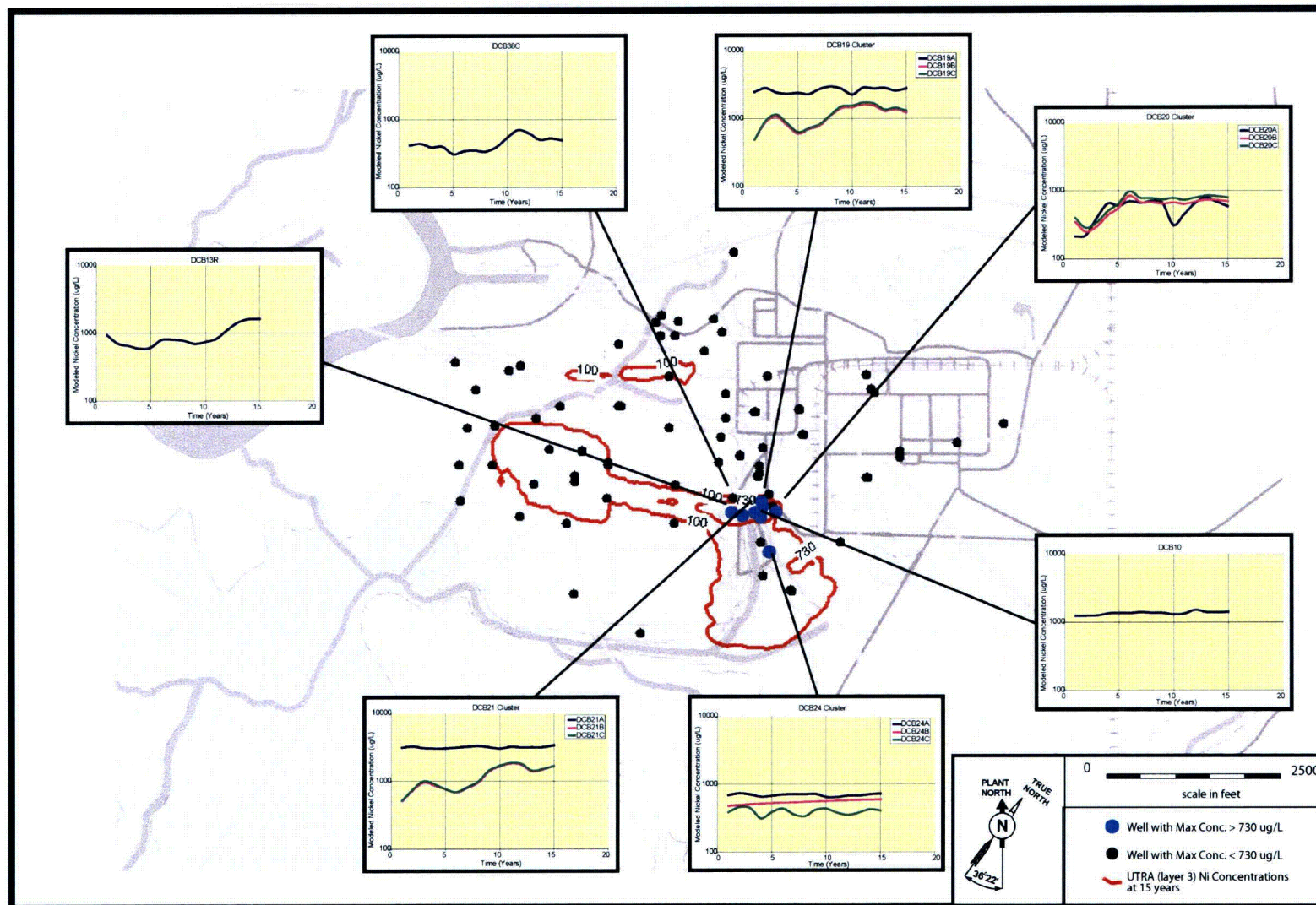


Figure 5-60. Uranium Monitoring Well Forecast Summary

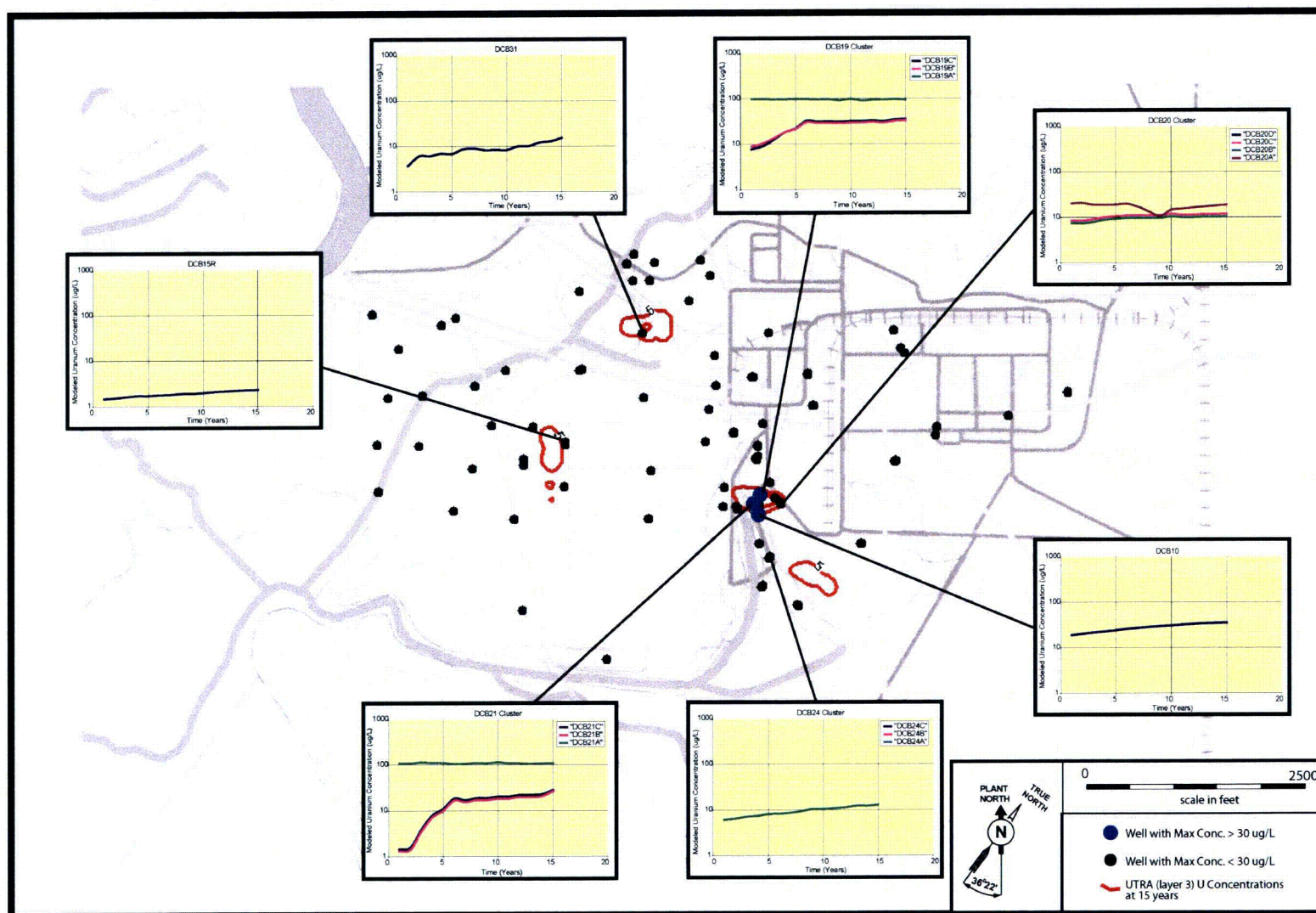


Figure 5-61. Local Model Sensitivity Analysis Particle Track Starting Locations

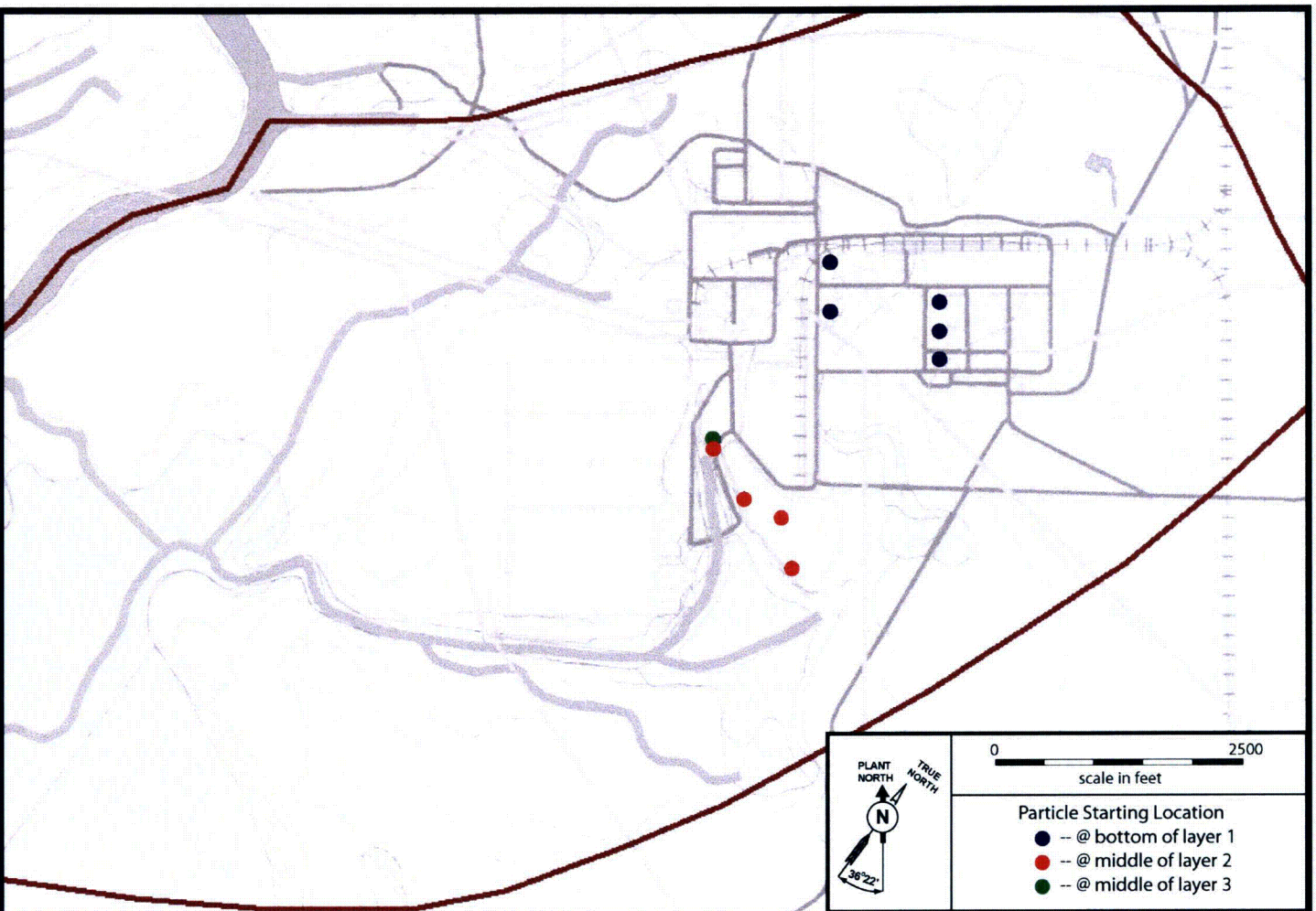


Figure 5-62. Local Model Sensitivity Results for K_h Parameters

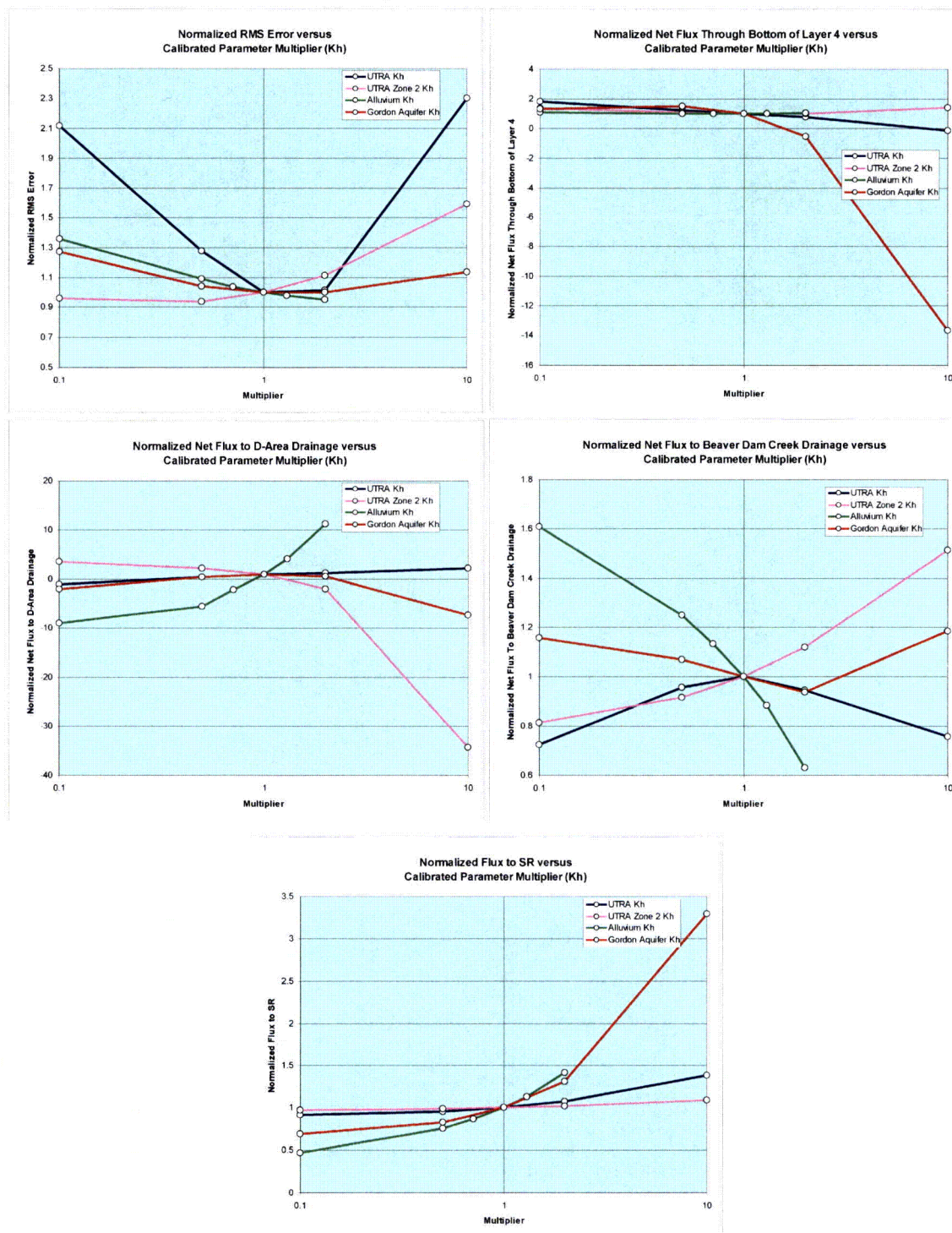


Figure 5-63. Local Model Sensitivity Results for K_v Parameters

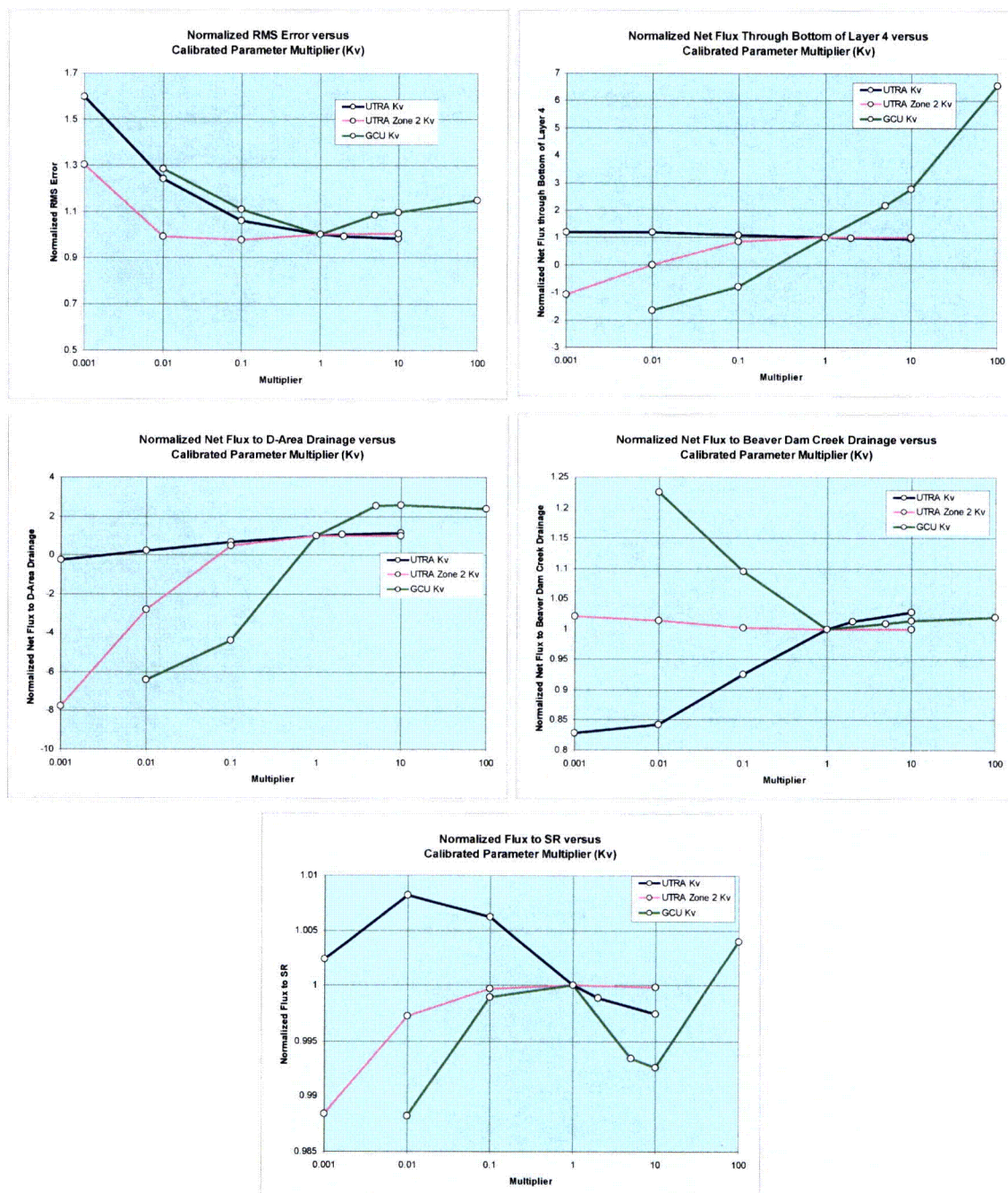


Figure 5-64. Local Model Sensitivity Results for Recharge Parameters

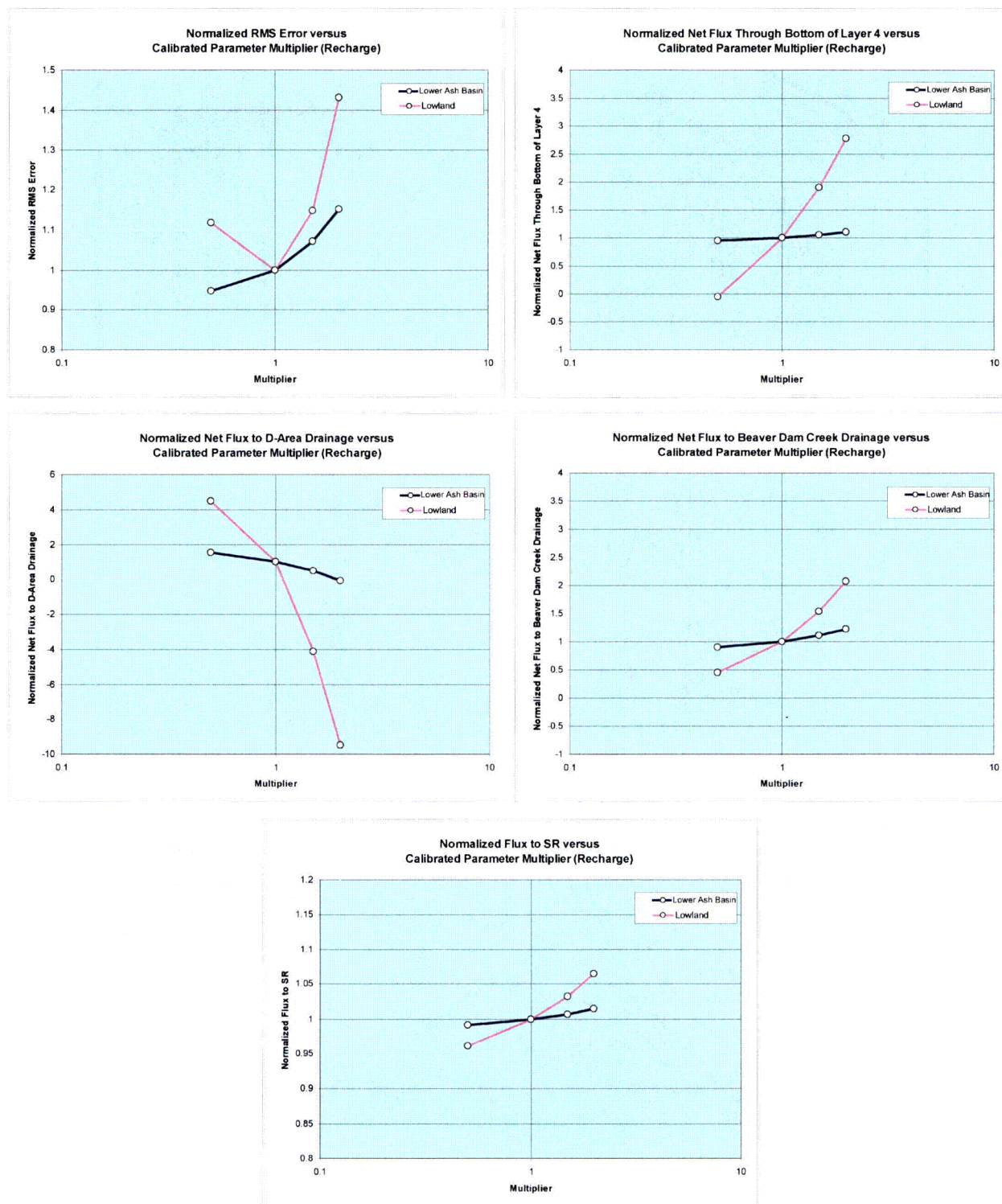


Figure 5-65. Local Model Sensitivity Analysis Paths – Calibrated Model

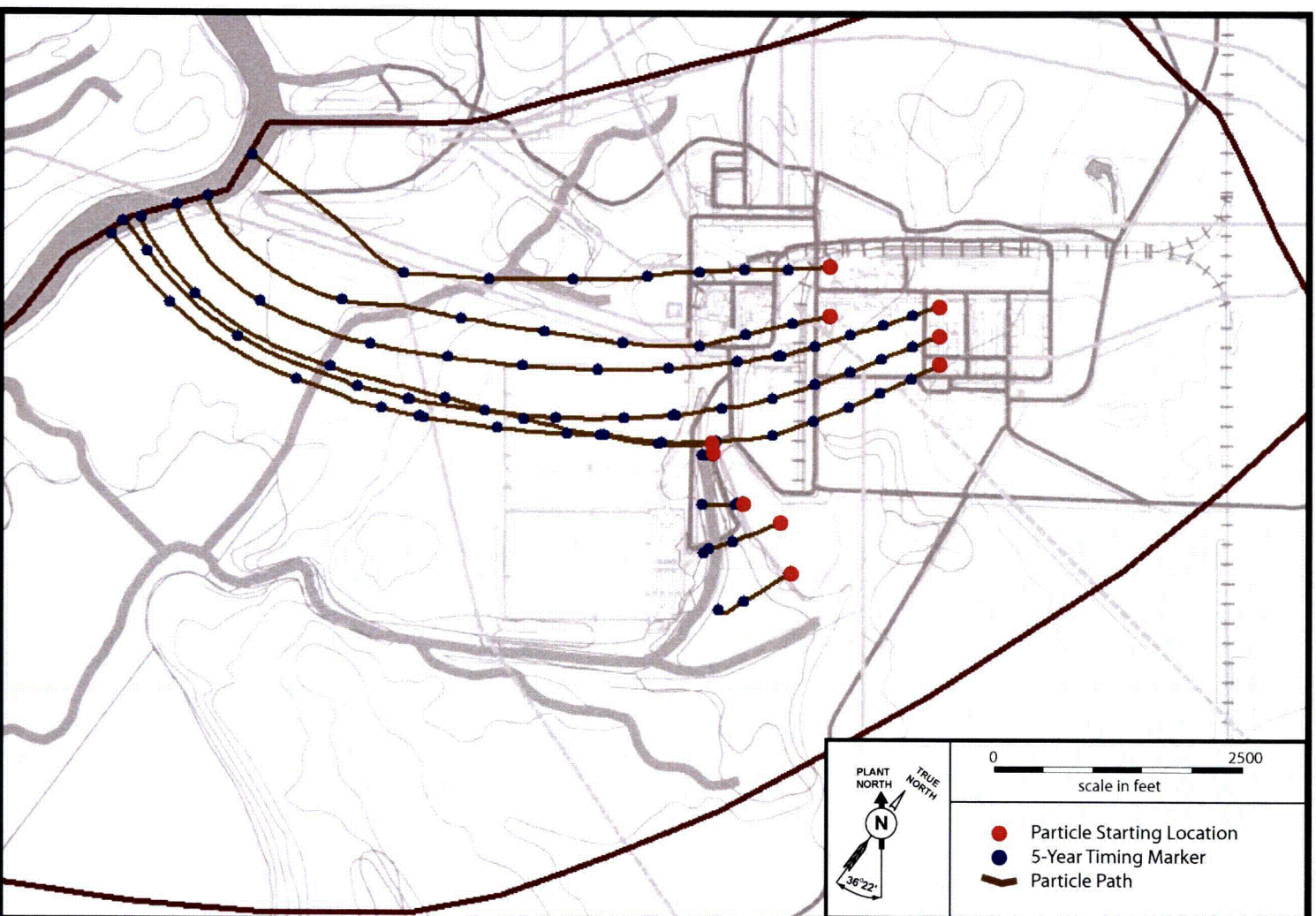


Figure 5-66. Dispersivity Sensitivity Analysis Results for TCE Transport

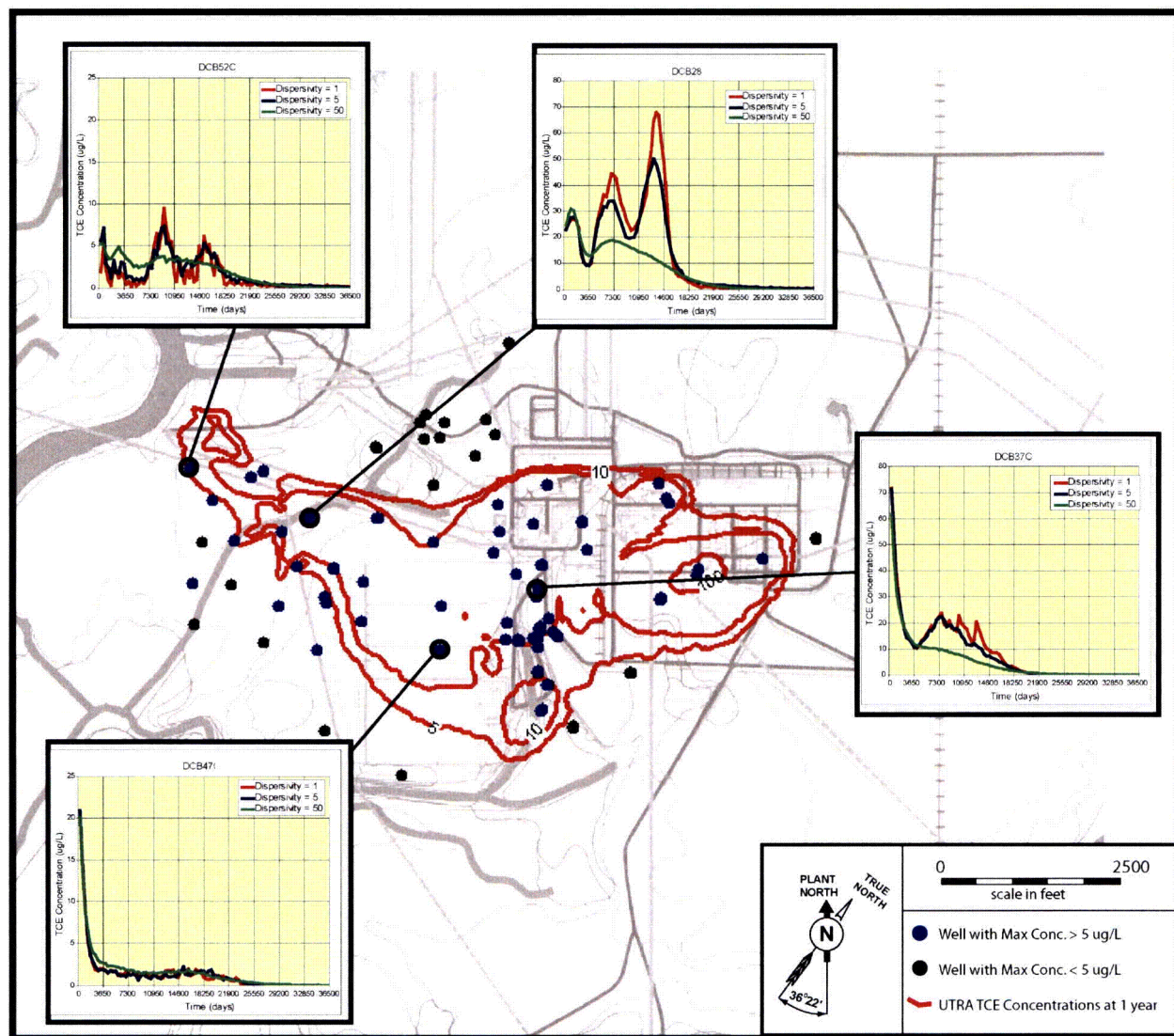


Figure 5-67. Dispersivity Sensitivity Analysis Results for Tritium Transport

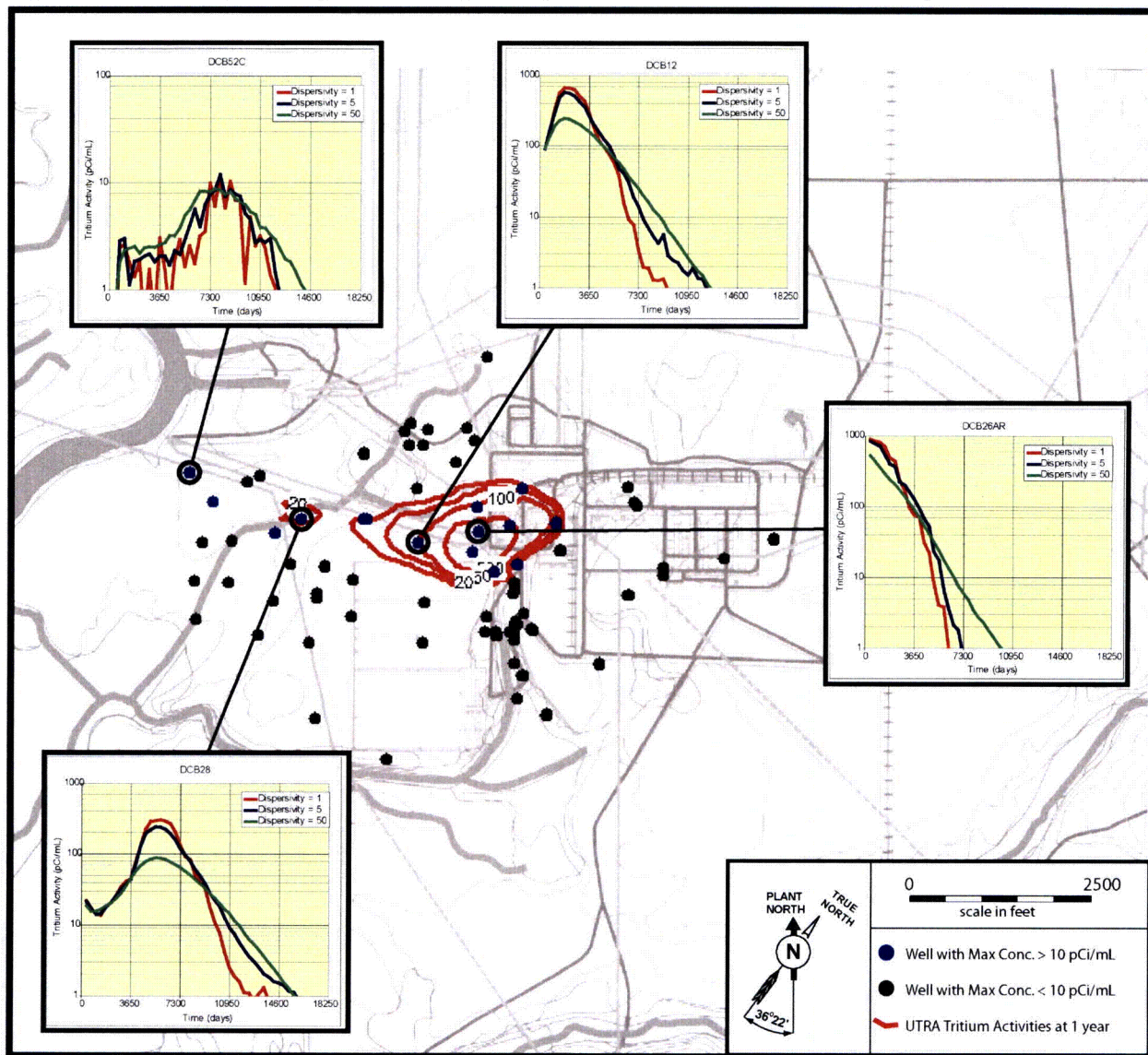
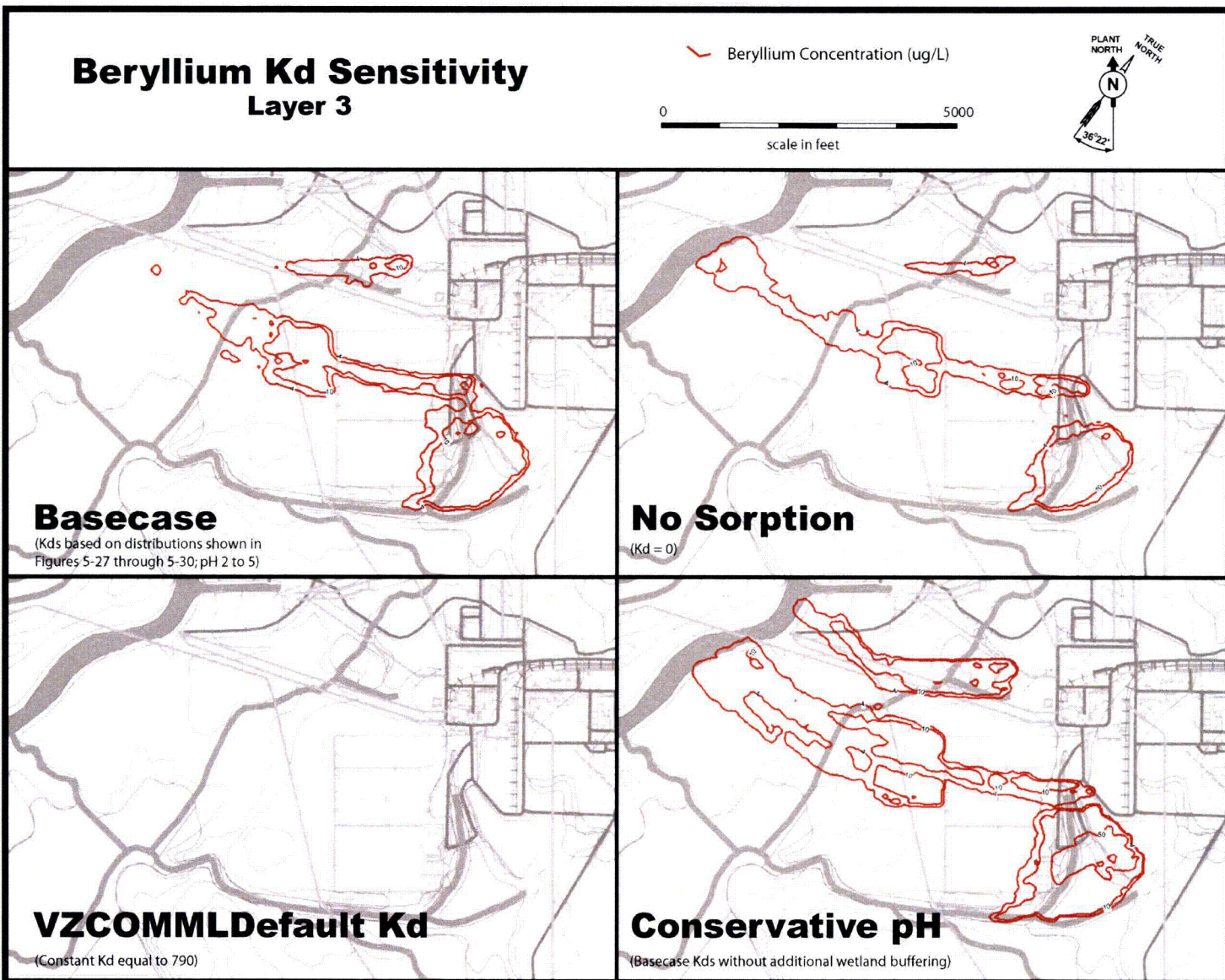


Figure 5-68. Beryllium Kd Sensitivity Analysis Results



Appendix A Hydrostratigraphic Information

Table A-1. Hydrostratigraphic Surface Picks

Well/Borehole Name	SRS_E	SRS_N	Ground Elevation (ft amsl)	Local Clay Top (ft amsl)	Local Clay Bottom (ft amsl)	Gordon Confining Unit (ft amsl)	Gordon Aquifer (ft amsl)	Crouch Branch Confining Unit (ft amsl)
DAB71	18363.80	64600.70	126.53	111.47	n/d	n/d	n/d	n/d
DCB11	19248.60	64638.30	128.80	109.52	105.43	n/d	n/d	n/d
DCB12COMP	18529.80	65150.00	115.00	112.65	107.23	73.55	n/d	n/d
DCB15COMP	17634.70	64639.90	125.50	117.60	104.55	n/d	n/d	n/d
DCB17A	19841.80	64583.20	127.40	n/d	n/d	71.39	55.59	0.50
DCB20	20106.50	63931.00	130.90	121.22	108.74	67.93	62.72	7.64
DCB23	19608.30	63870.40	119.00	116.70	99.83	71.53	53.18	8.64
DCB24	19983.10	63321.60	122.20	110.46	98.95	63.92	55.97	16.31
DCB26COMP	19287.20	65013.90	120.00	117.36	102.21	77.28	n/d	n/d
DCB27COMP	17801.00	65462.10	110.68	n/d	n/d	n/d	n/d	n/d
DCB28	16943.90	65458.50	100.00	n/d	n/d	n/d	n/d	n/d
DCB29COMP	17155.40	64372.30	108.10	n/d	n/d	63.25	n/d	n/d
DCB30	17133.90	62738.40	111.10	n/d	n/d	n/d	n/d	n/d
DCB31	18518.40	65883.70	116.60	n/d	n/d	n/d	n/d	n/d
DCB33D	21411.10	64412.30	140.50	n/d	n/d	68.94	52.91	n/d
DCB34C	20300.70	62781.10	127.60	119.93	113.38	n/d	n/d	n/d
DCB37C	19822.20	64451.70	126.50	114.51	111.57	n/d	n/d	n/d
DCB38C	19460.50	64133.80	131.10	113.70	106.41	n/d	n/d	n/d
DCB41C	19781.70	65376.20	130.80	n/d	n/d	85.19	n/d	n/d
DCB43C	19901.90	64844.50	131.50	119.60	114.50	n/d	n/d	n/d
DCB44C	20470.00	65045.70	134.70	124.63	122.19	89.52	n/d	n/d
DCB45COMP	20423.60	65401.60	134.80	131.57	128.77	88.80	n/d	n/d
DCB46C	18617.10	64316.90	128.00	112.66	105.06	n/d	n/d	n/d
DCB47C	18593.40	63765.00	128.20	112.05	106.30	n/d	n/d	n/d
DCB48	17261.40	64820.50	106.90	n/d	n/d	60.27	50.28	n/d
DCB51	23412.80	65205.90	157.69	143.01	140.49	97.62	83.13	n/d
DCB54COMP	17038.20	63759.00	111.13	n/d	n/d	56.45	n/d	n/d
DCB55	16205.40	65975.40	96.68	n/d	n/d	n/d	n/d	n/d
DCB56	19965.50	65887.20	130.78	118.11	114.39	n/d	n/d	n/d
DCB57COMP	19050.10	66252.00	127.22	111.67	110.77	73.26	n/d	n/d

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DCB58	21885.00	64765.00	145.00	136.56	131.81	85.67	n/d	n/d
DCB61	19471.10	67687.20	136.14	132.39	122.15	n/d	n/d	n/d
DCB63COMP	21477.40	65700.30	140.54	128.04	127.24	95.59	n/d	n/d
DCB65COMP	17789.00	66365.60	112.74	n/d	n/d	n/d	n/d	n/d
DCB66	18949.50	64630.10	127.87	110.48	n/d	n/d	n/d	n/d
DCB67B	18078.00	64576.70	127.34	109.02	n/d	n/d	n/d	n/d
DCB68A	18602.80	64316.50	127.79	112.46	n/d	n/d	n/d	n/d
DCB69COMP	18167.80	64317.50	127.36	n/d	n/d	75.68	n/d	n/d
DCB8COMP	21030.60	63476.80	134.74	128.79	120.14	n/d	n/d	n/d
DCP116	25068.20	67809.50	154.00	146.74	141.35	n/d	n/d	n/d
DCP117	25066.50	66609.60	156.00	148.08	139.39	100.31	n/d	n/d
DCP118	25023.60	65417.40	154.00	142.82	137.91	92.85	88.68	n/d
DCP119	25036.10	64216.60	154.00	147.08	142.33	86.05	79.37	n/d
DCP120	25017.50	63016.30	156.00	n/d	n/d	91.46	83.65	n/d
DCP121	20899.30	66782.80	143.00	n/d	n/d	87.03	n/d	n/d
DCP122	20782.40	62477.50	126.00	115.58	110.91	n/d	n/d	n/d
DCP123	19496.10	62298.40	120.60	114.12	102.20	n/d	n/d	n/d
DCP124	23112.70	65132.80	151.00	144.17	140.02	n/d	n/d	n/d
DCP126	22616.90	64679.70	148.00	142.18	138.41	90.47	80.46	n/d
DCP127	22118.50	64679.90	146.00	139.99	137.72	n/d	n/d	n/d
DCP128	21620.60	64679.60	142.00	127.85	123.33	n/d	n/d	n/d
DCP130	21122.40	65179.70	138.00	n/d	n/d	88.82	69.52	n/d
DCP131	21622.50	65179.70	138.00	131.36	126.80	87.26	n/d	n/d
DCP133A	21038.70	65844.70	138.00	125.37	122.45	89.13	n/d	n/d
DCP134	22046.20	65886.80	143.00	135.11	133.57	84.86	n/d	n/d
DCP135	22848.40	65890.00	149.00	139.88	136.52	83.74	n/d	n/d
DCP136	23322.10	66049.90	153.00	145.43	142.93	83.74	n/d	n/d
DCP137	23178.50	65520.80	152.00	145.61	142.18	n/d	n/d	n/d
DCP138	23176.90	64730.70	150.00	n/d	n/d	95.91	91.21	n/d
DCP140	19565.90	66147.50	130.00	116.45	109.65	73.19	n/d	n/d
DCP141	21093.10	66223.90	135.00	121.88	119.79	78.71	n/d	n/d
DCP142A	21742.70	66322.90	141.00	132.30	130.45	83.02	n/d	n/d
DCP144	22853.50	67839.00	145.00	139.73	138.30	n/d	n/d	n/d

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DCP145	23050.10	67801.60	147.00	140.17	138.92	101.72	81.57	n/d
DCP146	22591.50	66328.90	148.00	139.11	136.93	96.36	n/d	n/d
DCP147	23414.50	65205.20	157.26	142.59	140.34	97.38	83.15	n/d
DCP148	17795.10	66359.50	113.11	n/d	n/d	n/d	n/d	n/d
DCP149	18618.20	66202.40	121.77	114.03	102.41	63.32	n/d	n/d
DCP151	19055.50	66250.50	127.17	111.62	110.72	73.21	n/d	n/d
DCP153	21208.00	63273.90	134.21	126.49	103.78	69.92	54.73	n/d
DCP154	21694.80	63503.80	136.30	117.94	114.44	63.68	n/d	n/d
DCP155	22282.30	64076.90	147.98	133.29	130.35	n/d	n/d	n/d
DCP156	21442.90	64713.30	140.71	132.84	123.50	80.40	66.40	n/d
DCP157	21443.80	64825.00	140.55	128.72	122.68	81.90	66.14	n/d
DCP158	21604.90	64811.00	141.87	133.66	131.74	88.42	69.22	n/d
DCP159	18105.00	61990.10	114.96	108.20	105.54	n/d	n/d	n/d
DCP160	18100.00	61815.20	114.70	108.45	96.87	n/d	n/d	n/d
DCP161	21725.80	64795.00	143.21	136.66	133.05	88.17	71.79	n/d
DCP162	22071.60	64804.10	147.38	141.26	134.99	n/d	n/d	n/d
DCP163	17046.60	63750.80	111.89	n/d	n/d	57.21	n/d	n/d
DCP164	22096.80	65053.60	146.80	133.01	130.07	86.67	71.41	n/d
DCP165	22357.50	64918.20	147.22	140.79	133.50	93.19	79.68	n/d
DCP166	22356.90	65127.30	147.35	139.67	137.42	94.31	n/d	n/d
DCP167	22756.60	64926.60	149.14	142.93	138.90	92.03	81.49	n/d
DCP168	16552.20	65799.10	97.30	n/d	n/d	n/d	n/d	n/d
DCP169	17793.70	65407.50	112.17	n/d	n/d	n/d	n/d	n/d
DCP170	16123.20	65935.50	97.06	n/d	n/d	n/d	n/d	n/d
DCP172	15685.00	66005.80	97.11	n/d	n/d	n/d	n/d	n/d
DCP173A	19968.30	65644.10	132.62	125.53	122.65	n/d	n/d	n/d
DCP174	19964.70	65968.80	130.16	112.97	109.78	74.67	n/d	n/d
DCP175	19953.00	66068.80	125.87	102.81	99.53	74.20	n/d	n/d
DCP177	19962.20	66724.60	137.38	131.90	125.01	n/d	n/d	n/d
DCP183	18635.20	66840.60	131.57	125.99	113.08	n/d	n/d	n/d
DCP184	19388.40	66789.60	138.53	122.17	115.82	n/d	n/d	n/d
DCP188	19407.30	67340.90	136.91	131.06	119.70	n/d	n/d	n/d
DCP191	19469.30	67681.60	136.16	132.41	122.17	n/d	n/d	n/d

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DCP196	21454.30	65792.20	140.36	133.00	130.25	90.45	n/d	n/d
DCP197	21253.70	65595.60	139.35	117.95	116.35	83.22	n/d	n/d
DCP198	21421.00	65720.30	140.19	134.61	130.21	88.72	n/d	n/d
DCP199B	21257.00	65699.80	139.46	131.93	126.72	n/d	n/d	n/d
DCP200	21422.30	65673.70	140.12	118.39	115.17	81.57	n/d	n/d
DCP201	21616.20	65756.60	141.53	133.65	130.71	90.95	n/d	n/d
DCP202	21473.50	65702.30	140.51	129.77	128.94	94.63	n/d	n/d
DCP204	22544.70	65136.30	148.48	141.37	136.93	92.53	76.24	n/d
DCP205	19501.30	64836.90	129.05	n/d	n/d	74.05	n/d	n/d
DCP206	20143.00	65442.20	134.56	124.90	121.73	90.56	n/d	n/d
DCP207	17251.10	64812.40	107.09	n/d	n/d	60.82	n/d	n/d
DCP208	21886.00	64971.00	144.90	n/d	n/d	86.82	n/d	n/d
DCP209	21886.00	64771.00	145.00	139.94	137.16	86.30	70.89	n/d
DCP210	21886.00	64571.00	145.00	139.92	132.98	90.93	n/d	n/d
DCP23	18521.20	65236.10	114.00	112.30	106.51	72.86	n/d	n/d
DCP25	18244.60	65214.50	114.00	111.21	104.92	n/d	n/d	n/d
DCP26	17833.10	65453.80	112.00	n/d	n/d	n/d	n/d	n/d
DCP27	17785.80	65638.80	113.00	n/d	n/d	n/d	n/d	n/d
DCP29	17200.90	64315.70	109.00	n/d	n/d	64.15	n/d	n/d
DCP30	17645.90	64616.10	125.00	117.10	104.05	n/d	n/d	n/d
DCP31	17255.50	64759.30	107.00	n/d	n/d	n/d	n/d	n/d
DCP32	17259.00	64887.30	107.00	n/d	n/d	61.02	n/d	n/d
DCP33	17263.70	65072.30	105.00	n/d	n/d	n/d	n/d	n/d
DCP34	17308.80	65252.70	105.00	n/d	n/d	57.82	n/d	n/d
DCP35	17484.10	65353.70	108.00	n/d	n/d	n/d	n/d	n/d
DCP36	17687.40	65373.60	110.00	n/d	n/d	n/d	n/d	n/d
DCP37	18728.00	65110.70	116.00	112.59	107.35	n/d	n/d	n/d
DCP38	18772.80	65134.40	117.00	112.50	105.97	71.95	n/d	n/d
DCP39	19133.60	65055.10	118.00	n/d	108.00	78.81	n/d	n/d
DCP40	19300.10	65059.30	120.00	117.36	103.66	n/d	n/d	n/d
DCP41	19567.50	64618.40	129.00	112.94	111.83	n/d	n/d	n/d
DCP42	19449.00	64123.10	131.00	114.32	107.50	n/d	n/d	n/d
DCP43	19477.70	63903.10	127.00	118.14	116.29	n/d	n/d	n/d

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DCP44	17496.00	63903.10	116.00	n/d	n/d	n/d	n/d	n/d
DCP45	20099.40	63020.10	120.00	101.41	96.12	n/d	n/d	n/d
DCP46	18236.10	64325.30	127.50	n/d	n/d	75.82	n/d	n/d
DCP47	18903.80	64327.20	128.00	111.60	108.68	67.66	n/d	n/d
DCP49	18197.00	63780.90	127.20	n/d	n/d	68.69	n/d	n/d
DCP50	19580.40	63620.90	115.10	n/d	n/d	76.09	n/d	n/d
DCP51	19579.40	63798.10	116.00	106.06	102.14	n/d	n/d	n/d
DCP52	19582.00	63963.30	116.80	n/d	n/d	59.66	54.31	n/d
DCP53	19573.60	64066.10	116.80	n/d	106.47	67.23	53.39	n/d
DCP54	19572.90	64280.80	122.20	110.71	109.58	77.08	n/d	n/d
DCP55	19568.20	64412.40	125.30	113.65	110.94	70.63	n/d	n/d
DCP56	19557.50	64539.00	128.90	114.55	112.97	n/d	n/d	n/d
DCP58	19494.80	64851.40	128.90	113.60	111.26	66.80	n/d	n/d
DCP59	19475.30	64993.70	129.70	111.99	110.69	74.85	n/d	n/d
DCP60	19469.10	65118.90	128.20	114.10	111.60	76.88	n/d	n/d
DCP61	19473.20	65281.30	128.20	n/d	n/d	80.93	n/d	n/d
DCP62	19478.70	65422.70	129.20	n/d	n/d	79.77	n/d	n/d
DCP64	20012.30	65445.60	132.60	123.06	120.77	90.95	n/d	n/d
DCP65	20003.30	65298.90	133.00	111.31	109.27	83.53	n/d	n/d
DCP66	20003.00	65129.70	133.00	109.27	107.99	n/d	n/d	n/d
DCP67	19996.90	65003.40	132.50	106.98	100.64	70.69	n/d	n/d
DCP68	20009.40	64859.10	132.10	109.42	107.38	75.90	n/d	n/d
DCP69	20020.50	64698.70	131.80	121.10	109.17	n/d	n/d	n/d
DCP70	20012.10	64553.70	131.30	119.67	116.44	n/d	n/d	n/d
DCP72	20011.60	64272.80	130.10	n/d	n/d	76.09	n/d	n/d
DCP74	20079.40	64000.30	130.10	n/d	n/d	75.73	n/d	n/d
DCP75	20146.80	63919.20	130.20	120.26	107.71	n/d	n/d	n/d
DCP76	20249.40	63795.00	130.60	125.51	121.54	n/d	n/d	n/d
DCP77	20809.50	63543.60	132.10	126.40	116.38	n/d	n/d	n/d
DCP80	20823.30	64151.00	133.00	119.94	117.44	69.71	n/d	n/d
DCP81	20818.40	64356.60	134.00	125.78	122.86	n/d	n/d	n/d
DCP84	20826.00	64944.80	136.00	127.50	122.10	n/d	n/d	n/d
DCP85	20824.60	65123.50	137.00	131.50	129.99	n/d	n/d	n/d

Flow and Transport Modeling for
D-Area Groundwater (U)

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Well/Borehole Name	SRS_E	SRS_N	Ground Elevation (ft amsl)	Local Clay Top (ft amsl)	Local Clay Bottom (ft amsl)	Gordon Confining Unit (ft amsl)	Gordon Aquifer (ft amsl)	Crouch Branch Confining Unit (ft amsl)
DCP86	20827.10	65299.30	138.00	n/d	n/d	86.72	n/d	n/d
DCP87	20822.90	65478.30	138.00	129.83	126.71	n/d	n/d	n/d
DCP88	21030.30	63478.20	135.00	128.79	120.14	n/d	n/d	n/d
DCP88A	21030.70	63478.40	135.00	128.79	120.14	n/d	n/d	n/d
DCP89	20308.10	62775.90	129.00	119.98	114.51	n/d	n/d	n/d
DOB15A	23187.20	68156.50	147.00	n/d	n/d	84.41	81.87	19.13
DOB19	22715.10	67819.00	144.39	n/d	n/d	81.55	78.22	n/d
DOB21GB	22314.20	67477.80	146.30	n/d	n/d	75.34	72.15	21.62
DWP2	15956.90	65323.80	95.99	n/d	n/d	n/d	n/d	n/d
DWP7	16590.50	65279.80	97.29	n/d	n/d	n/d	n/d	n/d
DWP9	15589.50	65140.20	95.83	n/d	n/d	n/d	n/d	n/d
LWN1SB	33690.80	68131.90	282.50	142.83	140.09	113.36	106.13	n/d
LWN2SB	34739.10	66548.60	231.00	141.27	137.59	110.53	107.87	n/d
LWN3SB	32092.10	66900.20	245.70	n/d	n/d	111.87	109.87	n/d
P26TA	18051.50	71958.60	152.20	n/d	n/d	108.42	106.21	16.32
PBF4	29985.30	58148.70	208.00	n/d	n/d	n/d	n/d	-71.44
PBF5	30319.00	53590.80	241.00	n/d	n/d	n/d	n/d	8.56
PW96G	16820.00	71838.00	145.00	n/d	n/d	n/d	n/d	49.64
PW97G	17520.00	71765.00	137.00	n/d	n/d	n/d	n/d	32.57
SSW1	33127.00	71282.60	311.00	n/d	n/d	125.61	123.31	n/d
SSW2	28236.70	72230.40	167.30	147.91	145.33	114.38	96.64	n/d
TNX1SB	17314.40	74187.90	144.17	n/d	n/d	119.28	117.10	34.69
TNX2SB	17322.70	71117.20	146.45	n/d	n/d	115.98	108.63	33.90
XSB3A	16901.30	70915.30	154.30	n/d	n/d	108.99	107.31	31.05

n/d: no data (either not existent, not reached, or not picked)

Table A-2. Artificial Picks

Well/Borehole Name	SRS_E	SRS_N	Ground Elevation (ft amsl)	Local Clay Top (ft amsl)	Local Clay Bottom (ft amsl)	Gordon Confining Unit (ft amsl)	Gordon Aquifer (ft amsl)	Crouch Branch Confining Unit (ft amsl)
ART01	10056.10	55208.50	300.00	n/d	n/d	50.00	45.00	0.00
ART02	16933.50	54987.80	300.00	n/d	n/d	70.00	65.00	15.00
ART03	23298.00	57411.40	300.00	n/d	n/d	80.00	75.00	20.00
ART04	30559.80	62102.00	300.00	n/d	n/d	105.00	95.00	20.00
ART05	39102.40	70733.30	300.00	n/d	n/d	130.00	120.00	20.00
ART06	33440.30	76743.80	300.00	n/d	n/d	130.00	120.00	20.00
ART07	26574.90	78255.30	300.00	n/d	n/d	120.00	110.00	20.00
ART08	20887.60	80135.80	300.00	n/d	n/d	120.00	110.00	20.00
ART09	14893.70	75987.10	300.00	n/d	n/d	120.00	110.00	20.00
ART10	14385.50	67533.20	300.00	n/d	n/d	78.00	70.00	10.00
ART11	6208.80	63144.50	300.00	n/d	n/d	45.00	40.00	0.00
ART12	28497.30	69443.80	300.00	n/d	n/d	110.00	100.00	n/d
ART13	22771.50	61477.10	300.00	n/d	n/d	75.00	65.00	n/d
ART14	25245.80	68561.90	300.00	n/d	n/d	95.00	85.00	n/d
ART15	14476.10	72033.70	300.00	n/d	n/d	115.00	108.00	n/d
ART16	20269.60	61584.00	300.00	n/d	n/d	75.00	65.00	n/d

n/d: not defined

Appendix B Calibration Target Adjustment Information

Table B-1. Computed Adjustment Factors for D-Area and TNX

Quarter/Year	D-Area Adjustment Factor	TNX Adjustment Factor
3Q1984	0.015563858	0.020216510
4Q1984	-0.003341719	0.011451052
1Q1985	0.004248577	0.015366097
2Q1985	-0.004397261	0.015366097
3Q1985	-0.006158501	0.005519758
4Q1985	-0.009745845	0.000522370
1Q1986	0.009380005	0.012432729
2Q1986	-0.003798414	0.005519758
3Q1986	-0.015511582	0.000019867
4Q1986	-0.022191151	-0.000080694
1Q1987	0.017671698	0.017214901
2Q1987	0.012203148	0.014780818
3Q1987	-0.006120727	0.000000000
4Q1987	0.000000000	-0.002096173
1Q1988	-0.016029690	0.003127263
2Q1988	-0.012262362	-0.000080694
3Q1988	-0.020782093	-0.009624611
4Q1988	-0.020924954	-0.011982484
1Q1989	-0.020282368	-0.016060425
2Q1989	-0.009896763	-0.017244843
3Q1989	-0.009793380	-0.016100098
4Q1989	-0.007941849	-0.011894760
1Q1990	-0.000281134	0.005386518
2Q1990	-0.013357259	-0.010857528
3Q1990	-0.009285380	-0.015879345
4Q1990	0.008181364	0.003560919
1Q1991	0.015702335	0.017581937
2Q1991	0.014168511	0.015992618
3Q1991	0.012870046	0.010957070
4Q1991	0.003565152	0.012064226
1Q1992	0.009325601	0.008094652
2Q1992	0.008524133	0.007068923
3Q1992	0.010315542	0.014983337
4Q1992	0.015706922	0.021641967
1Q1993	0.022795150	0.025682618
2Q1993	0.012162350	0.019256726
3Q1993	0.003408631	0.008526440
4Q1993	-0.000513861	0.005752333
1Q1994	0.014160034	0.009219955
2Q1994	0.001378824	0.007817486
3Q1994	-0.003928372	0.002659931
4Q1994	0.006255479	0.006412661

Quarter/Year	D-Area Adjustment Factor	TNX Adjustment Factor
1Q1995	0.020187418	0.019095548
2Q1995	0.011522979	0.015688193
3Q1995	0.000698347	0.011604790
4Q1995	-0.020818240	0.011812580
1Q1996	0.016693932	0.012737242
2Q1996	0.002569420	0.008199209
3Q1996	0.000000000	-0.001273776
4Q1996	0.008311455	-0.006250628
1Q1997	-0.002282547	0.004173907
2Q1997	0.007692312	-0.009410392
3Q1997	0.000000000	-0.021582357
4Q1997	0.005098321	-0.008926981
1Q1998	0.000000000	0.017503988
2Q1998	0.032271091	0.029279404
3Q1998	0.000000000	0.003573877
4Q1998	0.006421027	-0.012296456
1Q1999	-0.002235920	-0.011494985
2Q1999	0.001611659	-0.017951978
3Q1999	0.000000000	-0.019159101
4Q1999	-0.012301473	-0.028344253
1Q2000	0.000000000	-0.027274065
2Q2000	-0.032188418	-0.033258881
3Q2000	0.000000000	-0.030277110
4Q2000	-0.026464740	-0.028879621
1Q2001	0.003500824	-0.024744264
2Q2001	-0.006846709	-0.019899109
3Q2001	-0.028711319	-0.025913166
4Q2001	-0.033476994	-0.027908458

Table B-2. Computed UTRA Head Calibration Target Statistics

Well Name	Number of Quarterly Samples	Average Head Value (ft)	Standard Deviation	Adjusted Average Head Value (ft)	Adjusted Standard Deviation
DA11C	2	101.98	1.58	103.49	1.06
DA12C	4	104.20	1.08	105.89	0.86
DB10C	2	101.49	1.44	102.99	1.19
DB13C	2	103.45	1.78	104.98	0.90
DB15C	2	105.98	2.05	107.54	0.69
DBP1	50	118.99	2.76	119.09	1.53
DBP2	52	116.61	2.12	116.72	1.27
DBP3	53	120.07	2.80	120.13	2.04
DBP4	50	119.10	2.70	119.21	1.88
DBP5	19	117.16	2.47	117.20	1.15
DCB10	36	116.32	2.14	116.39	0.87
DCB11	36	122.03	1.53	122.13	1.19
DCB12	36	109.44	0.92	109.53	0.88
DCB14	8	110.23	1.36	111.49	1.23
DCB15	29	112.19	2.28	112.39	1.88
DCB15R	6	108.14	1.19	109.32	0.76
DCB16	33	111.95	1.24	111.79	0.89
DCB16R	10	106.79	1.02	107.15	1.38
DCB17A	8	118.15	0.61	119.08	1.25
DCB17B	8	118.32	0.55	119.25	1.30
DCB17C	8	117.44	0.59	118.37	1.20
DCB18A	8	117.52	1.62	118.43	0.60
DCB18B	7	114.87	1.18	115.92	0.82
DCB18C	8	114.28	1.02	115.18	0.83
DCB19A	8	117.51	2.07	118.42	0.77
DCB19B	8	115.34	1.22	116.24	0.83
DCB19C	8	114.28	1.21	115.17	0.78
DCB1A	43	115.22	0.92	115.44	0.90
DCB20B	8	118.07	0.88	118.99	1.06
DCB20C	8	117.55	0.90	118.47	1.03
DCB21A	8	117.82	1.80	118.73	0.95
DCB21B	8	114.37	0.98	115.27	0.90
DCB21C	8	114.14	0.97	115.03	0.92
DCB22A	8	114.28	1.22	115.17	0.80
DCB22B	8	113.82	0.97	114.71	0.89
DCB22C	8	113.91	1.13	114.80	0.95
DCB23A	8	113.42	1.00	114.31	1.13
DCB23B	8	110.53	0.95	111.39	0.83
DCB23C	8	110.42	0.95	111.28	0.80
DCB24A	8	117.14	0.88	118.06	1.08
DCB24B	7	116.91	0.89	118.04	1.06

Well Name	Number of Quarterly Samples	Average Head Value (ft)	Standard Deviation	Adjusted Average Head Value (ft)	Adjusted Standard Deviation
DCB24C	8	117.57	0.78	118.49	1.12
DCB25	4	117.12	1.38	119.02	1.22
DCB26AR	4	117.11	0.97	119.02	1.21
DCB26C	6	109.26	1.09	110.45	0.73
DCB27	7	104.43	1.14	105.32	1.74
DCB27C	3	94.81	1.80	96.97	0.81
DCB28	6	95.05	2.42	96.06	1.06
DCB29R	5	96.69	2.07	97.90	0.78
DCB2A	46	124.66	1.26	124.81	0.65
DCB30	6	101.78	1.46	102.88	0.67
DCB31	6	108.71	1.12	109.89	0.76
DCB32A	6	121.12	1.54	122.44	1.09
DCB33B	5	133.32	1.39	135.01	1.52
DCB33C	5	132.86	1.33	134.55	1.15
DCB34A	6	118.14	0.55	119.44	1.46
DCB34C	6	118.12	0.54	119.41	1.49
DCB35A	6	114.10	0.63	115.35	1.28
DCB35C	7	114.05	0.58	115.23	1.18
DCB36A	6	115.36	0.92	116.62	1.11
DCB36C	6	115.03	0.93	116.29	1.07
DCB37A	6	117.03	0.85	118.31	1.15
DCB37C	6	116.11	0.82	117.38	1.15
DCB38C	6	109.01	1.28	110.20	1.16
DCB39A	6	117.83	0.41	119.12	1.51
DCB39C	6	114.74	0.67	115.99	1.20
DCB3A	45	120.56	1.60	120.70	1.10
DCB40A	6	116.72	1.02	118.00	1.16
DCB41A	5	120.73	0.70	122.36	1.44
DCB41C	6	120.44	0.70	121.76	1.38
DCB43A	6	118.85	0.38	120.15	1.57
DCB43C	6	119.30	0.41	120.61	1.76
DCB44A	6	124.16	0.89	125.52	1.38
DCB44C	6	124.44	0.87	125.80	1.34
DCB45A	6	123.66	0.92	125.01	1.47
DCB45C	6	123.53	0.81	124.88	1.45
DCB46C	6	108.61	1.12	109.79	0.76
DCB47C	6	107.93	1.06	109.11	0.79
DCB48A	3	95.74	1.53	97.93	0.55
DCB49	4	117.18	1.15	119.09	1.13
DCB4A	48	118.96	0.85	119.09	0.94
DCB50	4	116.90	1.16	118.80	1.10
DCB51A	3	139.29	1.68	142.49	1.10
DCB53	3	103.45	0.72	105.82	0.87
DCB54	3	97.30	1.51	99.53	0.40

Well Name	Number of Quarterly Samples	Average Head Value (ft)	Standard Deviation	Adjusted Average Head Value (ft)	Adjusted Standard Deviation
DCB55	3	87.87	1.59	89.87	0.66
DCB56	3	121.08	0.59	123.86	1.21
DCB57A	3	114.56	1.06	117.19	0.86
DCB59A	3	117.92	1.30	120.63	0.85
DCB5A	48	118.69	0.85	118.82	0.92
DCB6	37	116.67	0.94	116.76	1.07
DCB61	3	122.32	1.55	125.12	0.57
DCB63	3	133.89	1.34	136.97	1.47
DCB64	3	132.81	1.18	135.86	1.38
DCB65A	2	100.33	0.16	103.45	0.18
DCB65C	2	93.03	0.64	95.92	0.35
DCB66A	3	120.77	0.41	123.54	1.35
DCB67A	3	117.22	0.85	119.91	0.92
DCB67B	3	108.29	1.50	110.77	0.99
DCB68A	3	119.24	0.87	121.98	0.98
DCB69A	3	118.81	1.07	121.53	1.06
DCB7	37	117.88	0.94	117.96	0.93
DCB8	36	126.32	1.54	126.41	0.61
DCB8C	6	124.65	1.13	126.34	1.24
DCB9	35	114.84	1.01	114.97	0.94
DOB1	52	142.84	2.70	142.64	1.31
DOB15	9	139.08	3.12	140.62	2.64
DOB2	52	142.66	2.91	142.45	1.49
DOB20	6	137.60	1.73	139.85	1.76
DOB21	6	137.73	1.62	139.99	1.79
DOB22	6	137.76	1.57	140.02	1.76
DOB3	49	142.88	2.95	142.79	1.39
DOB4	49	142.25	2.80	142.16	1.25
DWP1	2	91.25	1.44	92.86	0.05
DWP10	1	82.78	2.50	85.55	2.50
DWP11	1	82.84	2.50	85.61	2.50
DWP2	3	91.67	1.66	93.76	0.64
DWP3	2	90.64	0.11	92.25	1.29
DWP4	3	93.29	1.71	95.42	0.66
DWP5	3	97.93	1.79	100.17	1.44
DWP6	3	90.66	0.61	92.74	0.76
DWP7	3	93.07	2.05	95.19	0.92
DWP8	3	91.64	1.66	93.73	0.59
DWP9	2	89.55	1.58	91.12	0.22
P26D	44	117.42	3.24	117.38	2.10
TBG4	48	102.65	1.90	102.96	0.82
TNX12D	47	94.61	0.98	94.64	0.88
TNX14D	14	92.48	1.38	94.09	0.64
TNX1D	44	98.89	1.48	98.72	0.70

Well Name	Number of Quarterly Samples	Average Head Value (ft)	Standard Deviation	Adjusted Average Head Value (ft)	Adjusted Standard Deviation
TNX22D	14	91.12	1.01	92.48	0.59
TNX65D	2	83.68	1.39	85.23	1.49
TNX6D	45	104.83	2.90	104.75	1.44
TNX7D	46	100.38	1.84	100.38	0.69
TNX8D	48	93.63	1.26	93.70	0.93
XSB3A	60	99.39	1.71	99.28	0.40
YSB4A	56	119.08	2.22	118.59	1.33

Table B-3. Head Calibration Targets

Name	SRS E	SRS N	Elevation ^a	Layer	Head	Confidence Interval ^b	Confidence Percentage ^c	Comment ^d
DA11C	17650.90	62285.00	97.10	3	103.49	1.58	50	
DA12C	17654.60	62529.90	96.10	3	105.89	1.08	50	
DB10C	17635.90	62186.30	94.40	3	102.99	1.44	50	R,L
DB13C	17602.70	62531.10	94.80	3	104.98	1.78	50	
DB15C	17573.70	63372.20	97.90	3	107.54	2.05	50	R,L
DBP1	18662.60	66691.50	123.20	2	119.09	2.76	99	R
DBP2	18407.00	66479.80	114.30	2	116.72	2.12	99	R
DBP3	18428.40	66776.80	116.40	2	120.13	2.80	100	
DBP4	18342.40	66681.00	114.02	2	119.21	2.70	99	
DBP5	18605.80	66485.20	116.10	2	117.20	2.47	85	
DCB10	19852.50	63803.80	119.80	2	116.39	2.14	97	R,L
DCB11	19249.20	64636.70	126.80	2	122.13	1.53	97	
DCB12	18529.70	65148.30	112.00	2	109.53	0.92	97	R,L
DCB14	19391.70	64910.50	114.60	2	111.49	1.36	55	
DCB15	17635.50	64605.80	119.90	2	112.39	2.28	94	
DCB15R	17635.10	64638.70	94.50	2	109.32	1.19	50	R,L
DCB16	17613.30	63956.30	120.10	2	111.79	1.24	96	
DCB16R	17616.70	64128.40	97.00	2	107.15	1.02	63	R,L
DCB17A	19842.70	64582.20	119.40	1	119.08	0.61	55	
DCB17B	19843.90	64589.40	101.70	2	119.25	0.55	55	R,L
DCB17C	19847.80	64594.70	89.90	3	118.37	0.59	55	
DCB18A	19881.80	64050.40	119.81	1	118.43	1.62	55	
DCB18B	19875.30	64047.00	102.70	2	115.92	1.18	50	
DCB18C	19871.40	64041.70	90.20	3	115.18	1.02	55	
DCB19A	19890.70	64023.60	121.90	1	118.42	2.07	55	
DCB19B	19884.90	64015.60	104.40	2	116.24	1.22	55	
DCB19C	19881.10	64010.30	91.60	3	115.17	1.21	55	
DCB1A	19857.20	64027.70	120.10	1	115.44	0.92	99	R,L
DCB20B	20102.10	63934.70	102.80	2	118.99	0.88	55	
DCB20C	20098.70	63941.20	91.90	3	118.47	0.90	55	
DCB20D	20087.40	63953.50	48.70	5	115.76	1.06	55	R,L
DCB21A	19856.20	63914.80	120.10	1	118.73	1.80	55	
DCB21B	19850.90	63918.60	104.70	2	115.27	0.98	55	
DCB21C	19847.50	63925.20	90.80	3	115.03	0.97	55	
DCB22A	19793.90	63907.30	119.80	1	115.17	1.22	55	
DCB22B	19790.60	63913.90	103.40	2	114.71	0.97	55	
DCB22C	19789.80	63918.40	90.60	3	114.80	1.13	55	
DCB23A	19609.30	63871.20	115.70	1	114.31	1.00	55	
DCB23B	19608.60	63875.80	96.60	2	111.39	0.95	55	
DCB23C	19605.20	63882.30	89.10	3	111.28	0.95	55	R,L
DCB23D	19602.40	63900.70	51.60	5	112.63	1.10	55	R,L
DCB24A	19984.80	63321.90	119.20	1	118.06	0.88	55	

Name	SRS E	SRS N	Elevation ^a	Layer	Head	Confidence Interval ^b	Confidence Percentage ^c	Comment ^d
DCB24B	19973.70	63317.80	103.10	2	118.04	0.89	50	
DCB24C	19967.20	63314.40	90.10	3	118.49	0.78	55	R,L
DCB25	19965.70	63368.20	119.23	2	119.02	1.38	50	
DCB26AR	19363.40	65284.30	111.70	1	119.02	0.97	50	R,L
DCB26C	19288.50	65014.10	95.50	3	110.45	1.09	50	
DCB27	17826.80	65465.20	101.80	2	105.32	1.14	50	
DCB27C	17801.20	65463.50	70.53	3	96.97	1.80	50	
DCB28	16944.60	65457.90	92.10	2	96.06	2.42	50	R,L
DCB29R	17155.80	64370.60	90.10	2	97.90	2.07	50	
DCB2A	20894.90	63434.70	127.40	1	124.81	1.26	99	R,L
DCB30	17133.10	62739.10	101.20	2	102.88	1.46	50	R,L
DCB31	18517.30	65884.00	96.67	2	109.89	1.12	50	R,L
DCB32A	19192.00	66716.10	121.70	1	122.44	1.54	50	
DCB33B	21425.70	64420.30	114.00	2	135.01	1.39	50	R,L
DCB33C	21419.20	64416.90	78.70	3	134.55	1.33	50	
DCB33D	21410.70	64410.90	52.50	5	132.26	1.37	50	R,L
DCB34A	20306.40	62771.20	112.00	1	119.44	0.55	50	R,L
DCB34C	20300.40	62779.60	80.80	3	119.41	0.54	50	
DCB35A	19900.20	62993.80	103.40	1	115.35	0.63	50	
DCB35C	19889.10	62989.70	84.20	3	115.23	0.58	50	R,L
DCB36A	19859.90	63473.70	114.10	1	116.62	0.92	50	
DCB36C	19858.40	63482.90	97.30	3	116.29	0.93	50	
DCB37A	19823.10	64438.10	110.80	1	118.31	0.85	50	
DCB37C	19821.00	64451.90	92.40	3	117.38	0.82	50	
DCB38C	19460.50	64413.90	90.30	3	110.20	1.28	50	R,L
DCB39A	19572.10	64734.50	114.30	1	119.12	0.41	50	
DCB39C	19573.30	64741.80	92.30	3	115.99	0.67	50	R,L
DCB3A	20899.20	62676.60	126.20	1	120.70	1.60	99	R,L
DCB40A	19352.00	65625.40	115.50	1	118.00	1.02	50	R,L
DCB41A	19792.70	65377.70	108.28	1	122.36	0.70	50	
DCB41C	19783.50	65376.20	94.91	3	121.76	0.70	50	R,L
DCB43A	19890.90	64843.50	113.60	1	120.15	0.38	50	
DCB43C	19902.70	64843.00	99.50	3	120.61	0.41	50	
DCB44A	20481.40	65046.80	123.64	1	125.52	0.89	50	
DCB44C	20469.50	65047.30	97.70	3	125.80	0.87	50	
DCB45A	20423.60	65413.60	125.20	1	125.01	0.92	50	
DCB45C	20423.10	65401.80	98.80	3	124.88	0.81	50	R,L
DCB46C	18618.40	64316.60	96.00	3	109.79	1.12	50	R,L
DCB47C	18594.70	63765.50	96.40	3	109.11	1.06	50	R,L
DCB48A	17261.90	64800.70	81.28	1	97.93	1.53	50	R,L
DCB48D	17260.90	64821.70	50.90	5	94.65	1.61	50	
DCB49	20014.70	63430.00	118.65	2	119.09	1.15	50	
DCB4A	20494.80	62678.70	122.50	1	119.09	0.85	99	R,L
DCB50	20003.60	63425.90	118.46	2	118.80	1.16	50	

Name	SRS E	SRS N	Elevation ^a	Layer	Head	Confidence Interval ^b	Confidence Percentage ^c	Comment ^d
DCB51A	23390.50	65190.10	138.32	1	142.49	1.68	50	R,L
DCB51D	23400.90	65198.70	64.27	5	137.62	1.54	50	R,L
DCB53	18114.10	62162.90	87.58	2	105.82	0.72	50	R,L
DCB54	17038.50	63757.80	76.63	2	99.53	1.51	50	R,L
DCB55	16205.40	65975.70	72.68	2	89.87	1.59	50	
DCB56	19965.90	65888.90	107.78	2	123.86	0.59	50	R,L
DCB57A	19049.00	66251.90	107.22	1	117.19	1.06	50	
DCB59A	19304.80	66536.50	113.95	1	120.63	1.30	50	R,L
DCB5A	20139.80	63127.80	115.90	1	118.82	0.85	99	R,L
DCB6	19978.60	64166.60	129.50	2	116.76	0.94	98	R,L
DCB61	19471.60	67685.70	118.34	2	125.12	1.55	50	R,L
DCB63	21477.70	65701.70	132.54	2	136.97	1.34	50	
DCB64	21395.20	65911.90	128.65	2	135.86	1.18	50	R,L
DCB65A	17788.85	66365.52	103.98	1	103.45	0.16	50	R,L
DCB65C	17789.00	66365.60	75.39	3	95.92	0.64	50	
DCB66A	18950.50	64639.00	113.45	1	123.54	0.41	50	
DCB67A	18080.90	64582.00	114.81	1	119.91	0.85	50	
DCB67B	18077.10	64576.70	107.44	2	110.77	1.50	50	
DCB68A	18602.00	64316.40	115.79	1	121.98	0.87	50	
DCB69A	18167.40	64316.10	115.85	1	121.53	1.07	50	
DCB7	20037.40	64002.00	128.90	2	117.96	0.94	98	R
DCB8	21013.20	63474.40	130.30	2	126.41	1.54	97	
DCB8C	21031.50	63477.30	69.14	3	126.34	1.13	50	
DCB9	19808.30	64189.10	117.30	2	114.97	1.01	97	L
DOB1	23567.40	68438.60	144.70	2	142.64	2.70	99	
DOB15	23191.60	68139.80	115.70	2	140.62	3.12	59	R,L
DOB15PZ	23203.40	68139.30	54.75	5	135.87	1.03	50	R,L
DOB2	23340.40	68567.30	145.30	2	142.45	2.91	99	
DOB20	22256.60	67513.40	112.68	2	139.85	1.73	50	
DOB21	22308.20	67483.90	113.34	2	139.99	1.62	50	
DOB21PZ	22316.20	67478.10	46.29	5	126.84	1.01	50	R,L
DOB22	22366.10	67384.90	111.76	2	140.02	1.57	50	R,L
DOB3	23635.30	68693.60	145.90	2	142.79	2.95	99	R,L
DOB4	23816.40	68513.00	139.20	2	142.16	2.80	99	
DWP1	16367.00	66052.90	93.27	2	92.86	1.44	50	R,L
DWP10	15468.60	64612.40	84.12	2	85.55	2.50	50	
DWP11	15493.20	64083.00	85.22	2	85.61	2.50	50	
DWP2	15989.10	65171.20	90.99	2	93.76	1.66	50	
DWP3	15720.30	65699.70	93.08	2	92.25	0.11	50	
DWP4	16784.20	64835.90	94.79	2	95.42	1.71	50	
DWP5	16562.20	64335.90	95.06	2	100.17	1.79	50	
DWP6	16355.00	63861.60	91.67	2	92.74	0.61	50	R,L
DWP7	16352.50	65280.10	92.98	2	95.19	2.05	50	R,L
DWP8	15949.90	64598.90	92.14	2	93.73	1.66	50	

Name	SRS E	SRS N	Elevation ^a	Layer	Head	Confidence Interval ^b	Confidence Percentage ^c	Comment ^d
DWP9	15589.70	65141.20	91.85	2	91.12	1.58	50	R,L
P26A	18057.70	72011.00	32.00	5	118.07	2.10	99	
P26D	18043.20	71968.80	121.90	1	117.38	3.24	99	
TBG4	17178.90	71266.50	109.30	2	102.96	1.90	99	
TBG5	17353.50	71216.50	56.20	5	112.97	2.09	99	
TNX12D	16177.70	71597.50	93.10	1	94.64	0.98	99	R
TNX14D	15969.90	70932.90	87.80	1	94.09	1.38	75	R
TNX1D	16701.30	71614.20	99.60	1	98.72	1.48	99	
TNX22D	15758.70	70185.50	87.80	1	92.48	1.01	75	R
TNX65D	15545.60	71136.30	80.30	2	85.23	1.39	50	
TNX6D	17429.60	70718.70	109.80	1	104.75	2.90	99	
TNX7D	17080.90	71739.70	103.60	1	100.38	1.84	99	
TNX8D	16169.10	70593.10	94.00	1	93.70	1.26	99	
XSB1B	16873.30	71103.30	74.60	5	102.00	2.36	99	R
XSB3A	16902.90	70915.40	103.20	3	99.28	1.71	100	R
YSB4A	17739.80	71020.70	127.60	1	118.59	2.22	100	

a – Well elevation determined from screen zone top. If head was below top, screen zone bottom was used.

b – Confidence interval is equal to the standard deviation of the unadjusted head values.

c – Confidence percentage (C_p) was limited between 50 and 100, and was assumed to be related to the number of samples (s) via the equation:

$$C_p = 1 - e^{-s/10}$$

d – Comment key: Well used in regional (R) and/or local (L) flow model calibration statistics

Appendix C Hydrographs

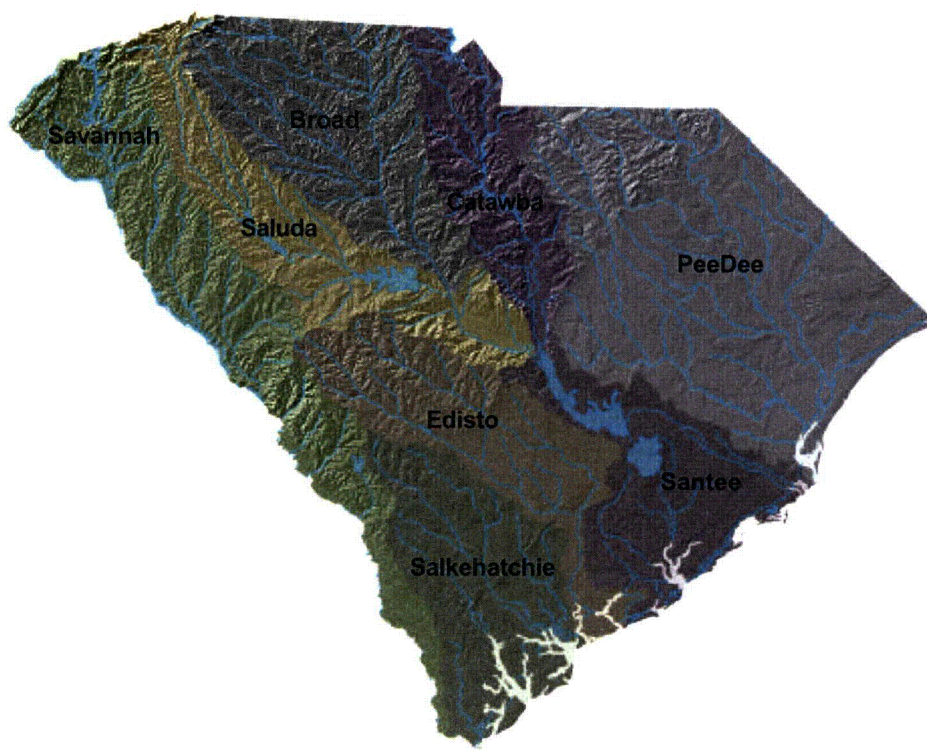
Bureau of Water

South Carolina Department of Health and Environmental Control



South Carolina Ambient Groundwater Quality Monitoring Network

2002 Annual Report



Catawba and Santee Basins

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South Carolina Ambient Groundwater Quality Report, 2002 Summary: Catawba – Santee Basins

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Abstract

An ambient groundwater quality monitoring network has been established in South Carolina for the purpose of obtaining statewide and aquifer-specific baseline values of groundwater quality. This network utilizes selected public and private water supply wells for obtaining groundwater samples. Initial sampling was performed in 1987 encompassing 19 wells in four counties. As of 2002, wells from various counties were added from all the major aquifers of South Carolina, and to date South Carolina has a comprehensive network of 116 wells sampling various depths and locations of the nine major aquifers.

The geology of South Carolina influences the quality and composition of the groundwater and dictates the methods of obtaining the water, and is separated neatly along the fall-line running along a SW-NE line through the middle of the state. Wells sampled in the Piedmont tap either the thin layer of saprolite at the surface, or the underlying fractured bedrock, consisting of low to medium grade metamorphic rocks with scattered granitic plutons. Wells sampled to the east of the fall line tap one of the seven extensive coastal plain aquifers that generally consist of sand, silt or permeable carbonate rocks.

Water quality data indicate that a high degree of variability exists throughout the coastal plain, with anion and cation concentrations generally increasing toward the coast. The presence and concentration of many chemical constituents are controlled by aquifer geology and geochemistry. It is the purpose of this report to describe and explain some of the trends in geochemistry that exist throughout the aquifers of the Catawba and Santee Basins and contrast those results with existing data from ambient groundwater samples previously obtained.

Introduction

The state of South Carolina depends upon its groundwater resources to supply an estimated 40 percent of its residents. To monitor the ambient quality of this valuable resource, a network of existing public and private water supply wells has been established which provide groundwater quality data representing all of the State's major aquifers.

Although a great deal of groundwater quality monitoring is presently being carried out within South Carolina, this is generally at regulated industrial or commercial sites which have known or potential groundwater contamination. In general, these sites are monitored for water quality only in the uppermost (water table) aquifer. The monitoring program described herein has been designed to avoid wells in these areas of known or potential contamination, thereby allowing for the assumption that variability in water chemistry reflects differences in any aquifer's background geochemistry caused by the natural heterogeneity of geologic materials and not anthropogenic causes for changes in aquifer chemistry.

Data derived from this monitoring network have been analyzed for the purpose of identifying variations in water chemistry among the State's major aquifers and developing an understanding of the ambient groundwater quality across South Carolina. The concentrations of certain chemical parameters in a region and/or aquifer may be used as a general indicator against which conditions of potential contamination can be assessed at sites within that area. It is not, however, intended to be used for all site specific comparisons of water quality.

This report is presented in two sections. The first section is an outline of the methods involved in establishing and operating the monitoring network. This includes details concerning well selection, sample collection, chemical analysis, data management, data analysis, and implementation schedules. The second section is a report of the results of the monitoring efforts since 1987. Results include a discussion of the geology and hydrogeology of the aquifers monitored, and in addition, a discussion of aquifer specific and geographic variations in water quality.

Objectives

The primary objective of the monitoring network is to develop a baseline for ambient groundwater quality for all of South Carolina's aquifers. Through utilization of this data many other objectives may be achieved. Included among these secondary objectives are:

- 1) To determine areal variations in regional groundwater quality.
- 2) To determine aquifer-specific variability in water quality.
- 3) To detect any significant changes in groundwater quality over time. These time related variations are capable of being determined on both a regional and a statewide level.
- 4) To supply ambient groundwater quality data for certain areas or aquifers which are in the initial phase of potential contamination investigations.

It is worthwhile to point out some applications for which these data are not intended. The water quality database is not intended to be used as a tool for locating previously unknown sites of groundwater contamination or for assuring compliance with regulations if such sites enter a monitoring phase. Because of natural areal variations in water chemistry, ambient data are also not intended for use as a substitute for on-site background water quality monitoring by facilities that may be in the general vicinity.

Methods and Organization

Well Selection

The ambient monitoring network is comprised exclusively of existing public and private water supply wells. Public wells are generally preferred and constitute a majority of the network. Preference is given to public supply wells because of their potential for greater longevity and continuity of ownership in comparison to private water sources. Public wells also offer the benefit of pumping large volumes of water, thus supplying water samples that represent a more sizeable portion of the aquifer than a private well. However, in certain rural areas, where public supply wells are not available, private water wells are utilized despite the fact that a general lack of construction details for these private wells can limit their value as monitoring points.

Initial well selection steps are governed by the availability and completeness of drilling records contained within state files. If complete records exist with respect to location, depth, aquifer, etc., a well may then be further considered for incorporation into the monitoring network. Although past water quality analysis data exist for many network wells, particularly public supply wells, no consideration is given to these data when selecting network wells. This avoidance is necessary to avoid creating a bias in water quality toward chemical constituent concentrations that are higher or lower than anticipated or simply due to lack of documentation on previous quality control.

In order to sample water from "all" portions of the State's major aquifers, well selection criteria also include consideration of which aquifer each well is utilizing, along with the geographic distribution of wells within each aquifer. A final consideration that is addressed when selecting network wells is the presence of, or potential for, contamination within the area. At the time of well sampling, a field check of the area surrounding the well site is performed. If a significant potential contamination source is located in the vicinity, the well is not included in the monitoring network.

Sample Collection and Chemical Analysis

Proper sampling protocol is essential for any monitoring program that is to provide meaningful and accurate data. The Department of Health and Environmental Control, Environmental Quality Control

(ECQ) Standard Operating Procedures and Quality Assurance Manual, *EQC SOP and QA Manual* for short, provides a thorough review of monitoring sampling considerations, many of which may be directly applied to an ambient monitoring program. *The EQC SOP and QA Manual* includes Sections 5 and 6, Groundwater Monitoring and Sampling, and Sampling of Public and Wells, respectively, that specifically outline sample capture, cross-contamination prevention, and preservation of grab samples. A brief outline of some of the practices and considerations is presented below.

The sampling must be performed in a manner that will allow collection of groundwater that has not been chemically altered by the well system. Public supply wells can normally be sampled from a blow-off pipe or sample cock that is situated between the wellhead and any treatment systems. Private well samples are ideally drawn from the tap closest to the well. Water should be allowed to flow for a time period that is sufficient to recycle water through the entire volume of any pressure tanks in the system if the sample is collected past a pressure tank. Unless a significant volume of water has been pumped from a well immediately prior to sampling, an amount of water equal to or greater than the well volume should also be flushed through the system in order to reduce the likelihood of chemical alteration from well casings, pumps or residence time in a well.

Samples are collected in appropriately prepared laboratory bottles that are compatible with the chemical constituent being measured. All samples are preserved with proper chemicals [such as sulfuric acid for total organic carbon (TOC) and nutrients, and nitric acid for metals] and refrigerated until submitted to the laboratory for analysis. Specific conductance, pH and temperature of the water sample are measured in the field at the time of collection.

Laboratory analyses of water samples cover a wide spectrum of parameters that, as a whole, provide the information that is required to characterize both aquifer and regional groundwater quality. Appendix A presents a list of the chemical parameters that were analyzed. The sampling frequency for all network wells is once every five years.

Well selection and initial sampling at each well are carried out by staff members from the Groundwater Management Section in the Water Monitoring, Assessment, and Protection Division. Any well samples that have chemical concentrations in excess of the National Primary Drinking Water Regulations (Appendix B) will be resampled and analyzed to confirm constituent concentrations. If it is determined that a well is contaminated by anthropogenic causes, the well will be removed from the ambient monitoring network, and the well owner will be referred to proper South Carolina Department of Health and Environmental Control (SCDHEC) personnel for assistance. Future sampling of any wells found to be contaminated will be performed as part of a contamination source investigation.

Data Management and Analysis

The ease with which information can be accessed is a critical factor in determining the success of any monitoring program. In the ambient monitoring network described here, all data related to well information and water quality are stored in an Access database and in STORET, the US Environmental Protection Agency's STOrage and RETrieval system for water quality data. Analyses of network groundwater samples may be presented by way of trilinear (Piper) diagrams and graphs. The statewide distribution of the various water types for the state's primary aquifers is shown in **Figure 11**. Discussion of various data analyses consider comparisons of water quality to factors such as geology of aquifers, variations of chemical constituent levels among regions, and changes in water quality over time.

Implementation Schedule

The ambient monitoring network was initiated in 1987 on a trial basis in a four county area. At that time, the network included 19 wells, both public and private, and was primarily intended to test and establish the network's methods. In 1988 and 1989, ten and sixteen additional counties were added,

respectively. Nineteen wells were added to the network in 1990, another nine wells were added in 1991, and one more in 2000 and 2001. Each year a selection of the wells from a specific aquifer were sampled on a five-year cycle, until 2000. The current strategy involves sampling all represented aquifers within one of the eight major watersheds (Figure 1). These and their scheduled sampling dates are as follows:

Schedule:

2000:	Savannah and Salkehatchie (25 wells): Piedmont Bedrock; Saprolite; Middendorf; Pee Dee/Black Creek; Tertiary Limestone
2001:	Saluda and Edisto (29 wells): Piedmont Bedrock; Saprolite; Middendorf; Black Mingo; Tertiary Limestone
2002:	Catawba and Santee (15 wells): Piedmont Bedrock; Middendorf; Black Creek; Pee Dee, Black Mingo
2003:	Pee Dee (28 wells): Piedmont Bedrock; Middendorf; Black Creek
2004:	Broad (16 wells): Piedmont Bedrock; Saprolite; Middendorf

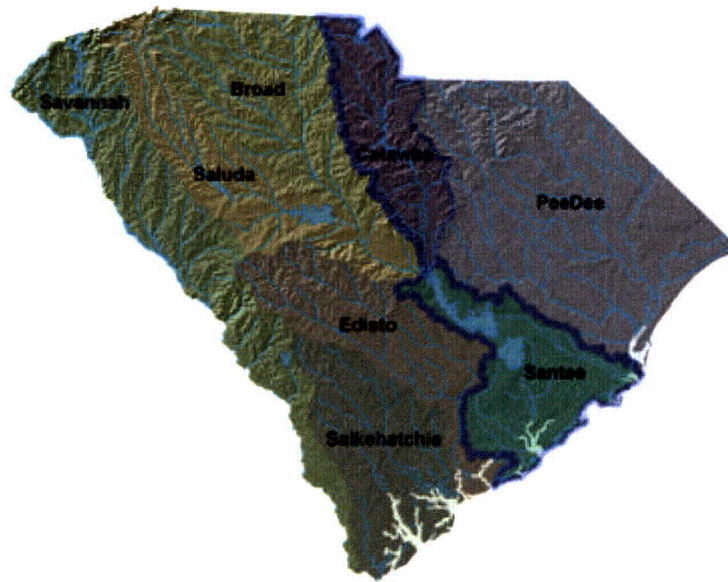


Figure 1: Locations of the eight major watersheds of South Carolina. This report highlights groundwater sampling conducted in the Catawba and Santee Basins (highlighted in blue).

2002 Monitoring Program

Location

As noted above, the 2002 groundwater quality monitoring consisted of sampling wells in the selected aquifers of the Catawba and Santee basins. Two new wells were added to replace stations that had either been taken offline or abandoned altogether since the last sampling run. These new stations were chosen for their proximity to the old stations and their comparable depth. Well locations are presented below in **Figure 2**.

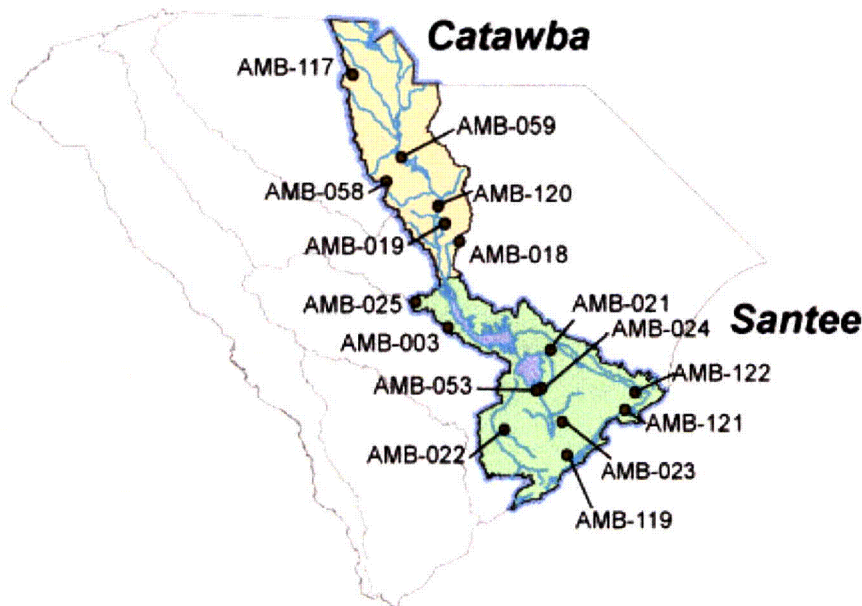


Figure 2: Locations of wells within the Catawba and Santee basins sampled during 2002.

Network Wells

The monitoring network includes water quality data from 122 wells (Appendix C). Of these, 85 are used for public supply purposes, 34 for commercial or domestic supplies, and the remaining 3 provide water for fish hatchery ponds and heating/cooling purposes. The complete construction records available for the network wells allow reasonably accurate determination of which aquifer is being utilized at each location, and to a lesser degree, the nature of subsurface stratigraphy throughout the well's depth range. The limiting factor for the latter is often times the incomplete nature of driller's logs.

Physiography and Subsurface Geology

The physiographic regions exhibit variations in topography, geomorphology, geology, hydrology and vegetation that directly affect the quantity, quality and availability of water resources in South Carolina. The state is divided roughly in half by the Fall Line (**Figure 3**), a distinct surface transition from the igneous and metamorphic rocks of the Piedmont and Blue Ridge to the sedimentary formations of the Coastal Plain. The sedimentary deposits that contain the various coastal plain aquifers are the result of various sea level fluctuations and concomitant differential sedimentation and erosion. **Figure 4** illustrates the relationship of the major aquifers and confining units. Present are the Black Creek, Pee Dee, Black Mingo, and the Tertiary limestone/sand aquifers, which respectively overlie the Middendorf and Cape Fear formations. The Cape Fear is not utilized in South Carolina because of its great depth and poor water quality and, as such, is not described in this report.

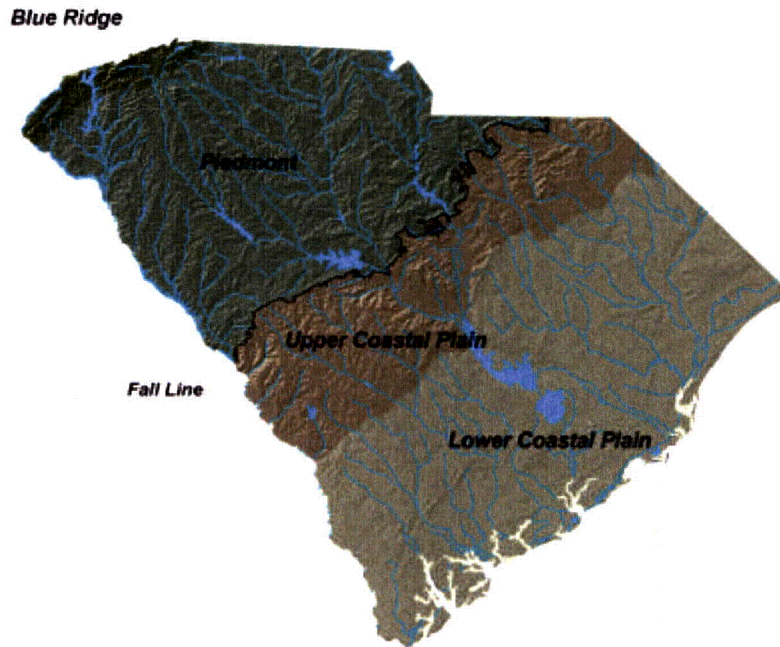


Figure 3: Physiographic regions of South Carolina. Note the Fall Line separating the Piedmont from the Coastal Plain.

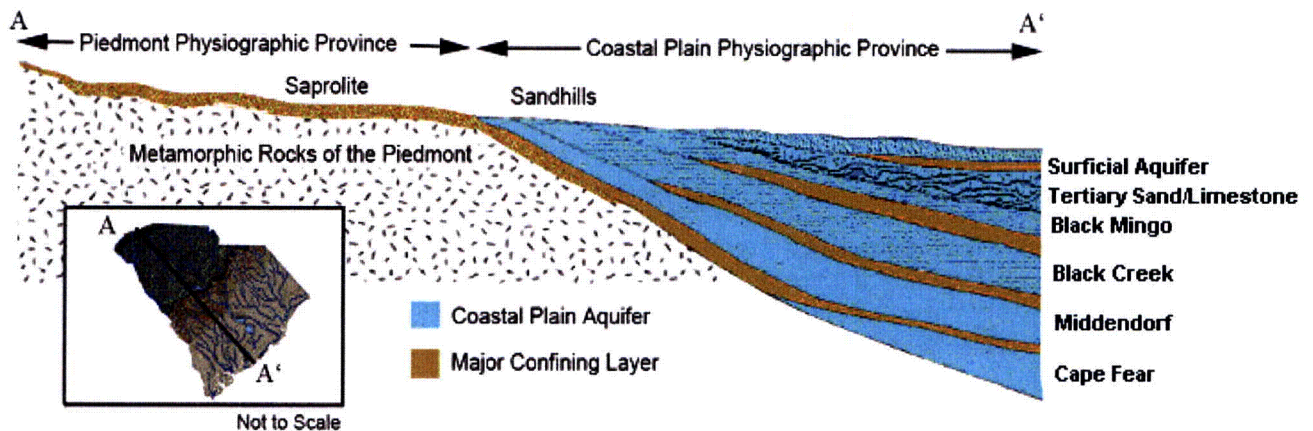


Figure 4: Generalized hydrogeologic cross-section through the Coastal Plain. The Pee Dee Aquifer, where present, is located below the Black Mingo Aquifer.

Hydrogeology and Water Quality

2002 Ambient Groundwater Quality Sampling Results

Results of laboratory analysis of groundwater samples obtained within the Catawba and Santee basins are presented in **Figures 5 and 6** by way of Piper trilinear diagrams. These diagrams display major trends of basic geochemistry by percentage of major cations and anions, not necessarily total abundance. Although an exacting interpretation of water quality is difficult using Piper diagrams, some trends, as evidenced by grouping or translation of data points along a common axis, are apparent. Further discussion of sampling results and geochemical interpretations are discussed by aquifer in the following section.

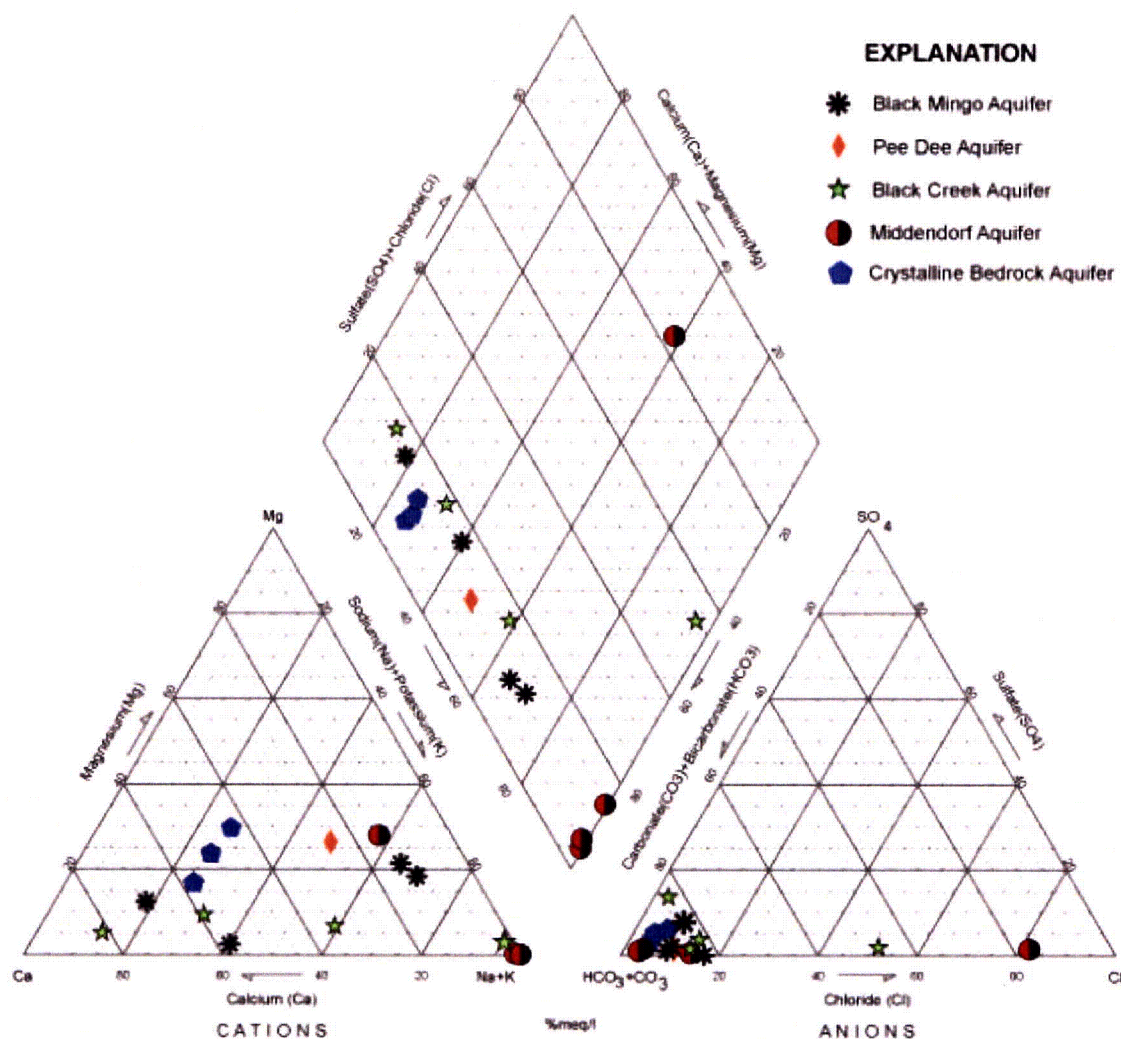


Figure 5: Piper diagram of 2002 ambient groundwater quality sampling results by aquifer.

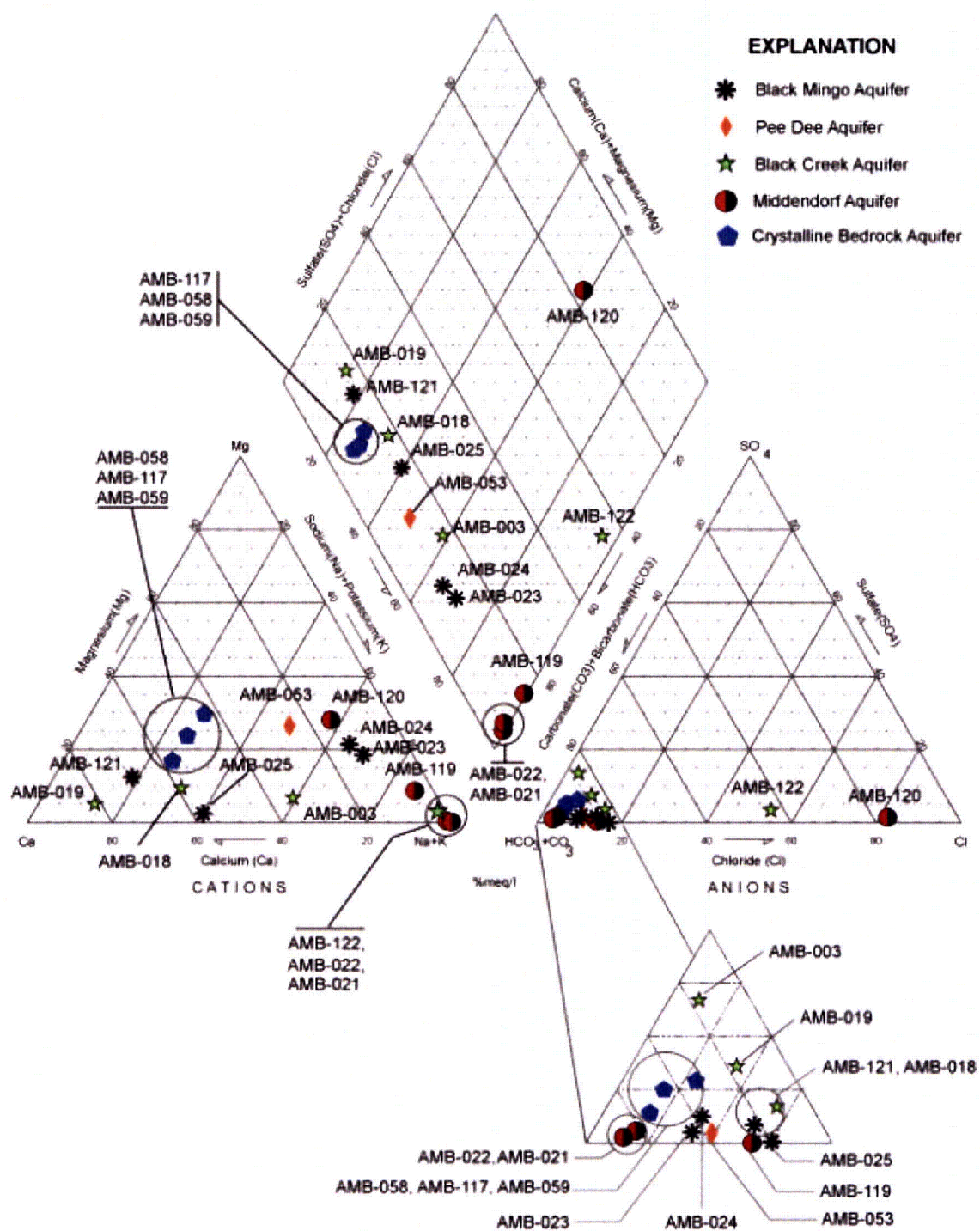


Figure 6: Piper diagram of 2002 ambient groundwater quality sampling results by well and aquifer. Refer to **Figure 2** for ambient groundwater well sampling locations.

Piedmont Bedrock Aquifer

Groundwater supplies in the Piedmont and Blue Ridge physiographic provinces of South Carolina come from three types of hydrogeologic environments. These include the unweathered fractured crystalline bedrock, the overlying saprolitic regolith, and to a limited extent the alluvial valley fill deposits. Most public and private wells are completed in the fractured crystalline bedrock. Although the bedrock exists in a variety of mineralogical assemblages and textures, it has not been hydraulically characterized to an extent that allows designation of separate or distinct aquifers within the bedrock. Indeed, separate aquifers may not exist. For these reasons, the water-bearing portion of the Piedmont bedrock has been collectively termed the "bedrock aquifer" (Oldham, 1986).

Yields from crystalline bedrock vary greatly among wells, depending primarily upon the existence of joints and fractures within the rock. If fractures do exist, yield and specific capacity further depend upon the size of fractures and degree of fracture interconnection. The overlying saprolite is hydraulically connected with the underlying bedrock and provides the primary source of recharge water to the bedrock aquifer. Yields of 4 to 170 gallons per minute (gpm) from the 30 network wells in the Piedmont bedrock have been recorded. This broad range in yield is an indicator of the great variability in the occurrence, size and interconnection of joints and other fractures that exist in this aquifer.

Analysis of three samples obtained from wells completed in the Piedmont Bedrock Aquifer in the Catawba basin show close agreement in geochemical composition (**Figure 6**). All samples display a neutral pH tendency (7.0-7.7), and low total dissolved solids (TDS). Calcium was the dominant cation while bicarbonate was the most abundant anion. All samples displayed a tendency towards a moderately hard state. As in other samples from the crystalline bedrock (**Figure 11**), concentrations of silica were high when compared to samples from other aquifers in the Catawba and Santee basins, with the exception of the Black Mingo aquifer. It is suspected that the high silica in the bedrock wells is a function of residence time and the weathering of more readily leachable silica minerals during clay mineral pedogenesis as a result of chemical weathering processes.

Middendorf Aquifer

The Middendorf Aquifer overlies the crystalline bedrock and associated saprolite and stretches from the upper coastal plain beyond the Atlantic coastline where it is buried by younger Coastal Plain sediments at maximum depths of over 3000 feet (**Figure 3, 4**). In the upper coastal plain, the Middendorf Aquifer provides groundwater to numerous domestic, municipal, and industrial users; however, it is tapped by only a few wells in the middle and lower coastal plain regions. The lower usage toward the coast is primarily a result of the presence of shallower, more economically developed aquifers such as the Black Creek and Tertiary Limestone (Floridan) Aquifers. Middendorf sediments are comprised of fine to coarse quartzitic and arkosic sands, with discontinuous interbeds of sandy clays, kaolins and gravel. Since the Middendorf Aquifer of the upper coastal plain is comprised of clean quartz sands that have been thoroughly leached, only a minimum concentration of ions are present in its water. Groce (1980) described water from the Middendorf Aquifer in the upper coastal plain as being generally soft, acidic, and low in dissolved solids, with locally high iron contents. The Middendorf Aquifer wells sampled in the upper coastal plain generally conform to this description. In contrast, lower coastal plain water from the Middendorf Aquifer is often highly mineralized. The downdip increase in ion concentration is thought to be largely a function of the residence time of the water in the aquifer (flow is from the updip recharge area in the upper coastal plain toward downdip, coastal area), as well as from the possible mixing of more mineralized water from adjacent aquifers.

Figure 7 illustrates the downdip increase in pH from the upper coastal plain (Elgin, AMB-120) to well in the lower Santee basin [e.g. Summerville (AMB-022), and Mt. Pleasant (AMB-119)]. This is in contrast to the much lower, acidic pH values found in the recharge area where buffering effects are not significant. Other changes in groundwater chemistry from the Middendorf's shallow recharge area

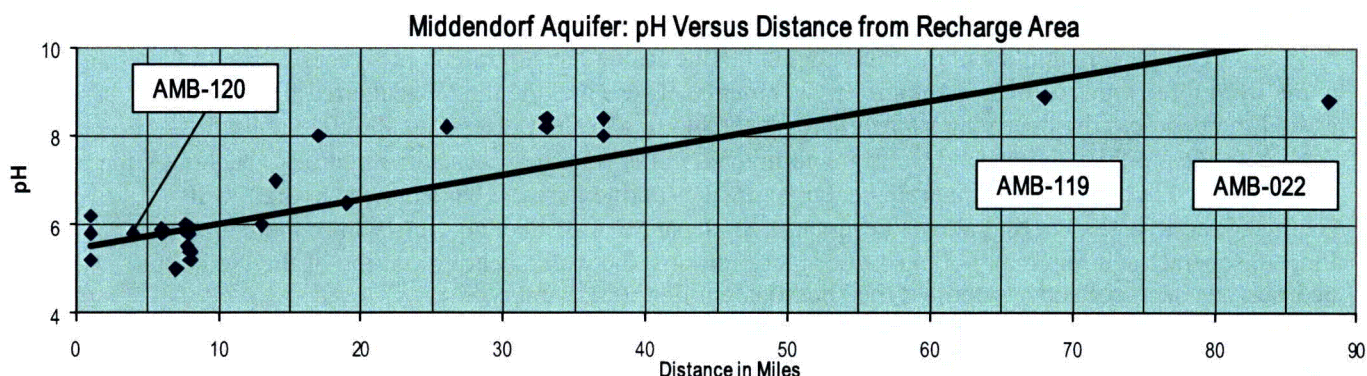


Figure 7: Graph representing the trend of pH in the Middendorf Aquifer relative to the distance from the aquifer's primary recharge area. Note that the average pH of rainwater is 5.65 (Hem, 1970).

to deeper portions of the aquifer include a less distinct downdip increase in fluoride concentrations (**Figure 8**). Ambient groundwater samples from wells open to the Middendorf Formation in the Catawba and Santee basins are predominantly soft sodium bicarbonate waters with high TDS and specific conductivity from the sodium and potassium content with the exception of AMB-120 from Elgin (**Figure 6**). Analysis of this sample returned results similar to rainwater or with a pH of 5.2 and low TDS, which is consistent with other samples from the Middendorf aquifer near the recharge area.

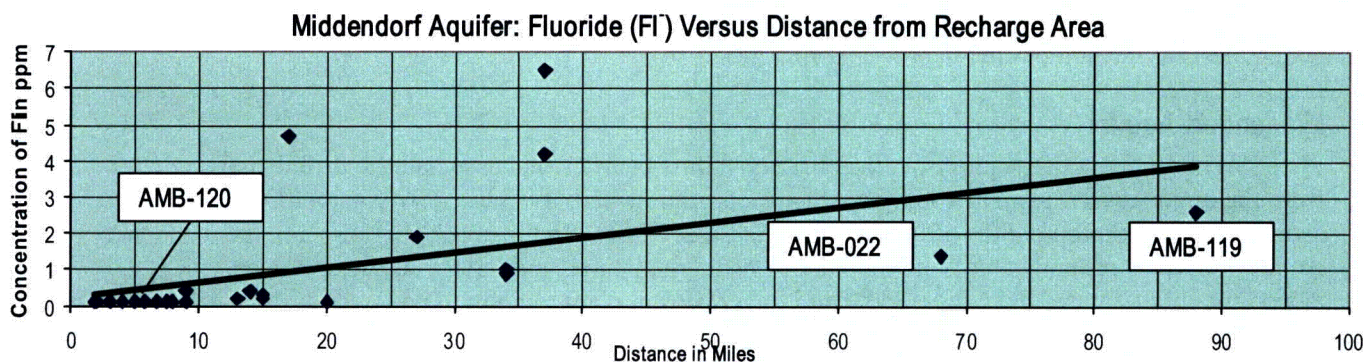


Figure 8: Fluoride concentration in parts per million versus distance from the Middendorf aquifer's primary recharge areas. The current MCL for fluoride is 4.0 ppm (EPA, 2005)

Black Creek Aquifer

The Black Creek Aquifer is an important source of groundwater in the central coastal plain portion of the Catawba and Santee basins, namely Berkeley, Clarendon, Orangeburg, and Sumter counties. This aquifer consists of medium to coarse-grained glauconitic and phosphatic quartz sands interbedded with lenses of lignitic and micaceous clays. In some areas, the Black Creek Aquifer is hydraulically similar to, and screened in the same well with, the underlying Middendorf Aquifer. Yields of over 1000 gpm from the Black Creek are quite common when wells are screened in both aquifers. Yields that were recorded for Black Creek wells in the monitoring network ranged from 50 to 1500 gpm.

Similar to the Middendorf Aquifer, Black Creek Aquifer water chemistry also indicates a relationship between distance from recharge area and certain chemical concentrations (**Figure 10**). The

high fluoride values in the Black Creek may be attributable to the presence of fluorapatite from the abundant fossilized shark teeth in the formation (Zack, 1980). Values of pH in the Black Creek Aquifer are generally alkaline, with a much less distinct trend toward higher down-dip values than those observed in the Middendorf Aquifer (**Figure 9**).

On a statewide basis, samples obtained from the Black Creek aquifer display high variability in their composition (**Figure 11**), and samples from the recharge areas through the middle coastal plain often show no dominant ionic affinity. With increased distance from the recharge area, Black Creek waters become more buffered and are typically a sodium bicarbonate type. Proximal to the coast, samples from the Black Creek become increasingly sodium chloride-type waters. Samples obtained from the Catawba and Santee basins followed this observed pattern with pH, TDS, sodium and fluoride increasing towards the coast. AMB-122 near Hampton Plantation State Park (~13 miles from the Atlantic Ocean) displayed the highest specific conductance, TDS, and chloride concentration of any sample analyzed during 2002, obvious signs of influence from seawater.

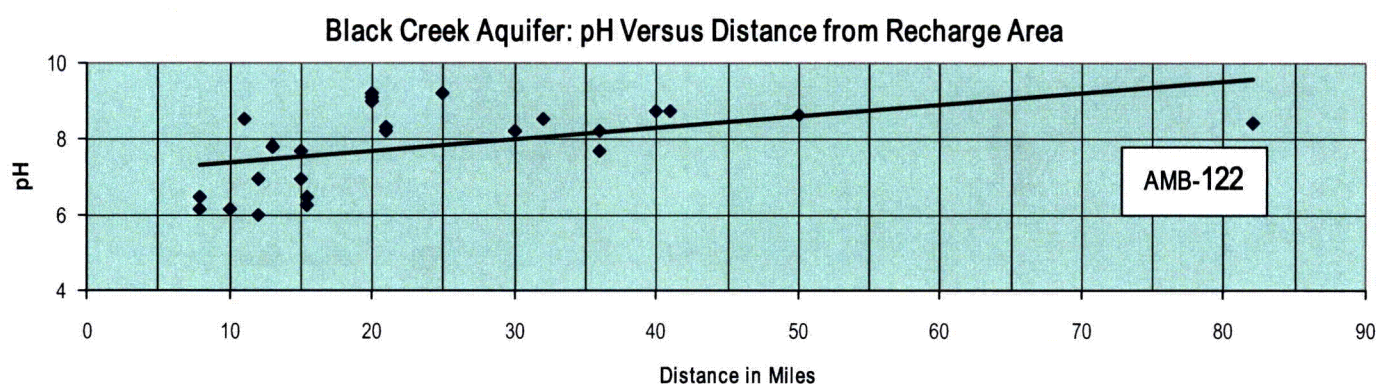


Figure 9: Graph representing the trend of pH in the Black Creek Aquifer relative to the distance from the aquifer's primary recharge area.

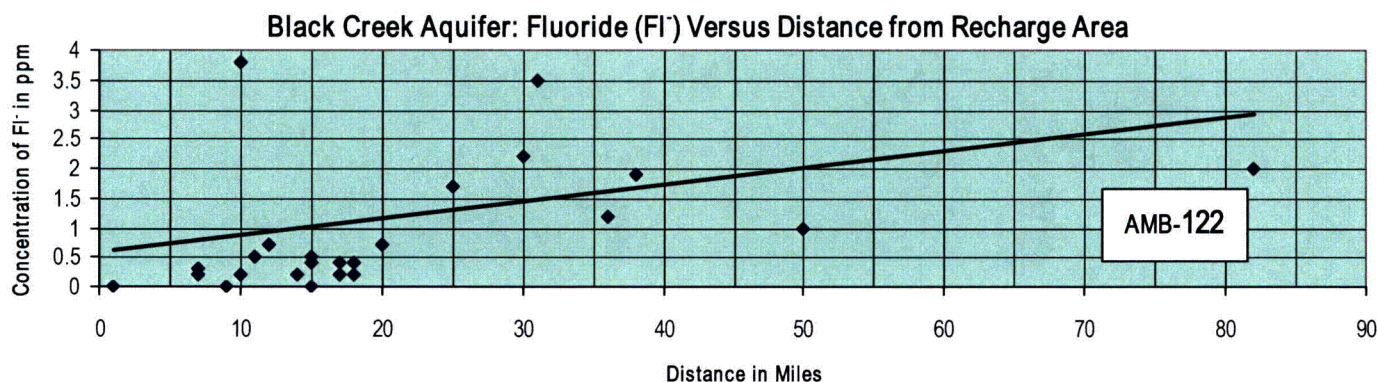


Figure 10: Graph representing the trend of fluoride in the Black Creek Aquifer relative to distance from the aquifer's primary recharge area. The current MCL for fluoride is 4.0 ppm (EPA, 2005).

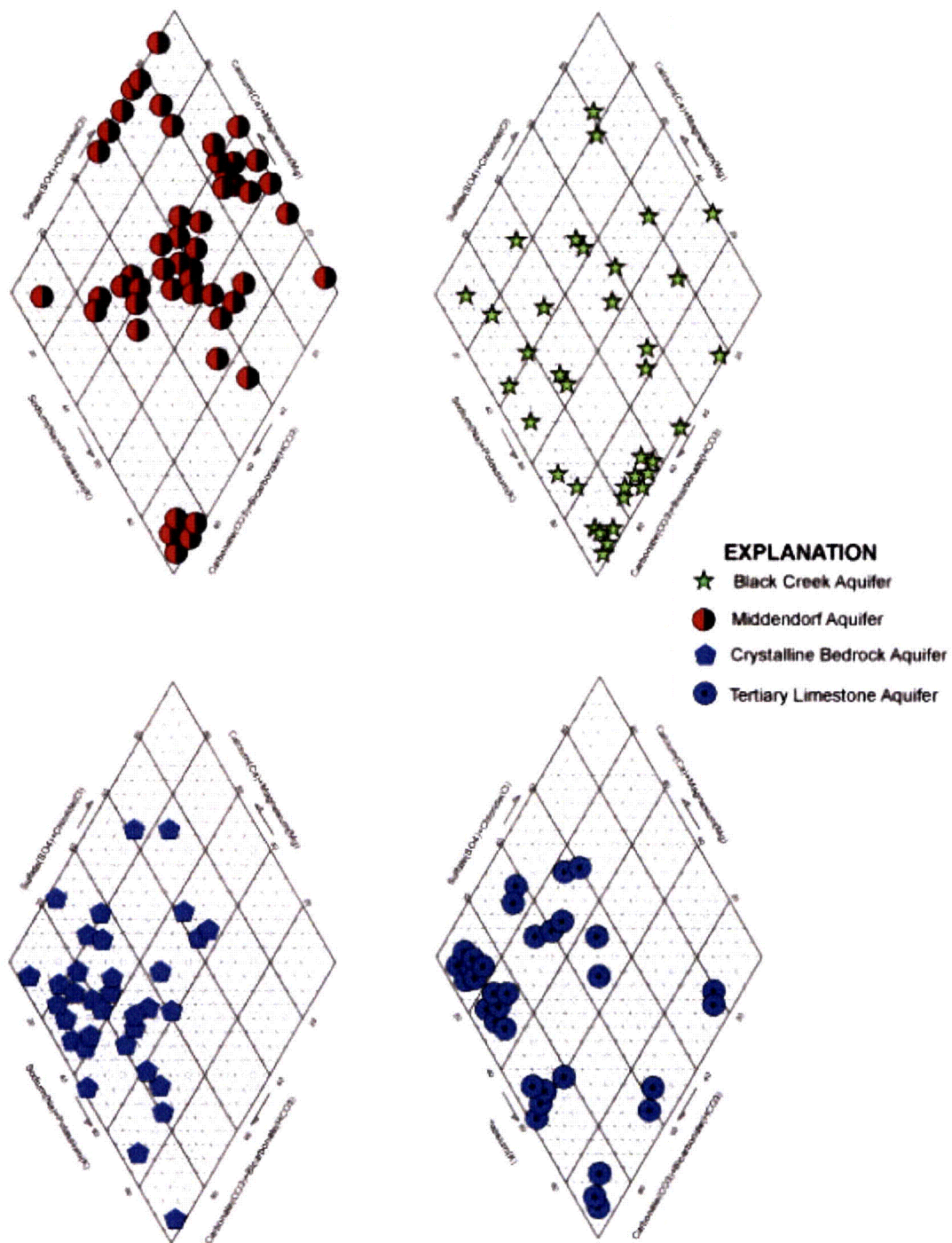


Figure 11: Statewide aquifer-specific water quality trends as determined from the Ambient Groundwater Quality Network between 1987 and 2002.

Pee Dee Aquifer

The Pee Dee Aquifer constitutes a minor water resource in the majority of the study area even though the Pee Dee Formation is present throughout the entire Santee basin. Within the study area the Pee Dee is generally a poor producing aquifer, as grain size and lithology are non-conductive to high yielding wells. Van Nieuwenhuise and Colquhoun (1982) described the lithology of the Pee Dee formation in southern Williamsburg County as consisting of sandy mud and very fine grained muddy sand with hard, indurated beds of calcareous muddy sandstone. Analysis of a core near Charleston averaged 60% sand with the remainder being clay, or silt (Gohn et al., 1977), while near Summerville, the Pee Dee has been described as a silty clay (Gohn et al., 2000), and appears to behave more as a confining unit than an aquifer. North of the study area, in Horry and northern Georgetown counties, the Pee Dee Formation contains a higher percentage composition of coarse-grained sand and the aquifer becomes increasingly utilized for irrigation needs, often in conjunction with the underlying Black Creek.

Water quality of the Pee Dee aquifer in the Santee basin has been documented from few wells completed in the formation. Of those wells, sodium bicarbonate-type water is the dominant species, becoming more saline with proximity to the Atlantic coast (Park, 1985). The single Pee Dee aquifer well (AMB-053) sampled during 2002 for the Ambient Groundwater Quality Network displayed an intermediate composition between calcium and sodium bicarbonate types (see **Figure 5**) and was hard due to an abundance of calcium and magnesium.

Black Mingo Aquifer

The Black Mingo Formation occurs stratigraphically above the Pee Dee Formation, and below the Santee limestone that comprises the Tertiary Limestone Aquifer. The Black Mingo is utilized in much of Berkeley and Dorchester Counties, and wells tapping the formation commonly also utilize the Tertiary Limestone Aquifer for additional capacity. Lithology of the Black Mingo is varied and is composed of several prominent members. Of those, black silty clay (shale), calcite- and silica-cemented sandstone beds, and grey limestone are common (Park, 1985, Van Nieuwenhuise et al. 1982)

As found in other aquifer systems near the coast, water quality varies with depth and/or proximity to sources of saline water. Because of the formation's varied lithology and water quality, Park (1985) recognized five distinct water quality types within the Black Mingo based on analysis of sample data from wells in Charleston, Berkeley, and Dorchester Counties. Those types are plotted on **Figure 12** with corresponding 2002 sample data obtained from the Ambient Groundwater Quality Network. Group I represents wells open predominantly in the sandy beds within the Black Mingo, while Group II represents a carbonate influence either through carbonate cementation of sand grains within a predominantly sandy aquifer, or the presence of limestone (or calcareous fossils) within or adjacent to sandy permeable zones. Group III represents samples from wells open to the limestone member and are dominantly calcium and bicarbonate with little sodic influence. The remaining groups represent the transition from fresh, potable water to marginal potability and increasing salinity (Group IV), to finally saline waters obtained from wells proximal to the coast (Group V).

According to Park's groupings, samples obtained during 2002 reflect a carbonate rock influence and plot within Groups II

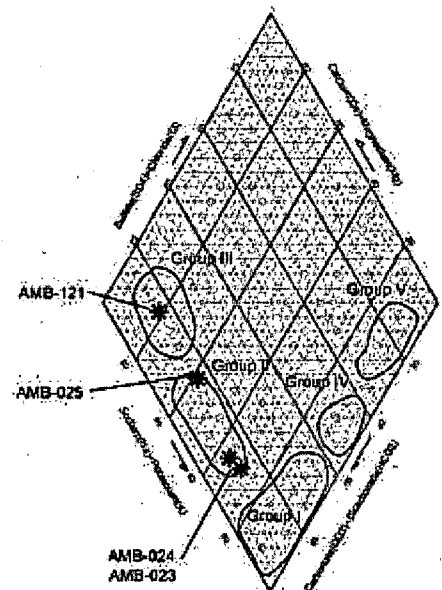


Figure 12: Piper diagram of samples from the Black Mingo Aquifer in the Santee Basin. Groups from Park (1985).

and III representing calcium to sodium bicarbonate-type water with high alkalinity. Of those samples, pH ranged between 6.6 near the recharge area to 8.0 reflecting the buffered bicarbonate nature of the water. Fluoride content in samples ranged between 0.1 ppm and 1.0 ppm, while dissolved silica concentrations in the samples from the Black Mingo Aquifer were high, with three of the four samples exceeding 40 ppm.

Tertiary Limestone Aquifer

Within the study area, the Tertiary Limestone Aquifer (also known as the Floridan Aquifer) is present only in the Santee basin and is utilized primarily in Berkeley, Charleston and Dorchester counties. The Tertiary Limestone Aquifer includes parts of the Cooper Group and the Santee Formation, and is composed of limestone that ranges from white, fossiliferous and pure to impure sandy and clayey varieties. Well yields vary from less than 10 gpm to greater than 400 gpm and are controlled by the occurrence of solution cavities and openings in the limestone. Wells in this aquifer are generally completed as "open holes", with a solid casing extended down into the top few feet of competent rock and grouted to the surface, often in conjunction with the top of the underlying Black Mingo Formation. Water from the Tertiary Limestone Aquifer can be distinguished from the other noncarbonate aquifers in the state by its high concentration of calcium and bicarbonate ions and basic pH. This elevated ion concentration is also reflected in specific conductance and total dissolved solids (TDS) levels. In wells adjacent to the coast, sodium is the dominant cation, apparently a result of seawater/freshwater mixing. As many wells that are drilled into the Santee limestone also utilize the Black Mingo aquifer (and thus mix aquifer chemistries), no wells in the watershed were located that were open only to the Santee Limestone, thus no samples are taken from this aquifer. What follows is a summary of the typical geochemistry as described in a previous investigation of the Tertiary Limestone Aquifer in the Santee basin.

In describing the water quality of the Tertiary Limestone Aquifer in Berkeley, Charleston, and Dorchester counties, Park (1985) recognized three distinct groups that characterize the water quality of the aquifer system (**Figure 13**). Group I waters are calcium bicarbonate type. Group II waters are less common and are a sodium bicarbonate type that occur to a limited extent in the southern portion of the Santee basin and presumably result from upward leakage of sodium bicarbonate waters from the underlying Black Mingo Formation. Group III represents a transitional stage towards sodium chloride type water that occurs near the coast as either Group I or Group II waters become more brackish under the influence of saline seawater. Results from statewide monitoring of wells completed in the Tertiary Limestone aquifer are presented in **Figure 11**.

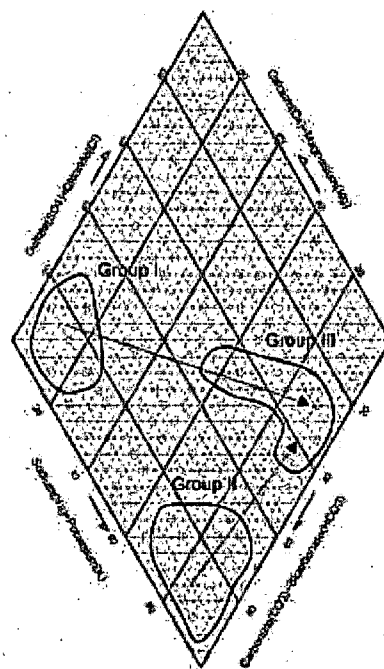


Figure 13: Primary compositional groups from the Tertiary Limestone Aquifer in the Santee Basin. Arrows indicate change in chemistry as a result of the influence of seawater. Modified from Park (1985).

Surficial Aquifer

The Surficial Aquifer is a shallow, lower coastal plain aquifer system that is utilized mainly as a source of private water supply for homes and small industry. The aquifer matrix is composed of sands deposited as dunes, barrier islands, near-shore deltas and submarine bars, and to a lesser extent alluvium adjacent to major rivers during the Pleistocene and Holocene epochs. The aquifer consists mainly of quartz sand with clay and silt lenses and is the water table aquifer over most of its extent. Due to its proximity to both the land surface and the ocean, the water from the Surficial Aquifer is predictably high in dissolved solids and displays elevated levels of sodium, chloride, some sulfur, and a widely varied pH ranging from 6.2 to 8.6. Amounts of dissolved solids are also widely varied, ranging from 80 to 2400 ppm. Water pumped from this aquifer typically has an obvious odor and distinct taste but is still within standards for drinking water, except where it has been influenced by tidal water bodies or contamination. Despite the higher levels of dissolved solids this aquifer is frequently utilized because its shallow nature allows for inexpensive well construction and yields are adequate for domestic use. It should be noted that due to the shallow, unconfined nature of the Surficial aquifer, the system is extremely susceptible to contamination, both natural and man-made. Such sources of contamination include septic tanks, above and underground petroleum storage tanks, brackish water from tidal creeks and wetlands, and other point and non-point sources from roadways, and agricultural and industrial operations.

Summary

An ambient groundwater quality-monitoring network for South Carolina's major aquifers has been outlined and established throughout the state. Network organization includes the consideration of factors such as well selection, sampling intervals and methods, chemical analysis, data management, a network implementation schedule and estimates of overall expenses.

As of the end of 2002, water samples have been collected at 122 wells, representing portions of nine different aquifers. Water quality and chemistry were found to be highly variable among the aquifers, as well as among differing regions of the same aquifer. Chemical results indicate that a general coastward trend of increasingly mineralized groundwater exists. Water from shallow and leached sedimentary units of the upper coastal plain are generally free of significant concentrations of the major ions and, because of a lack of buffering action, are acidic. The data generated from the groundwater-monitoring network provide both a baseline of information to be used in future groundwater investigations, and a better understanding of the chemical nature of one of South Carolina's most essential resources.

Acknowledgements

This report borrowed generously from the 2001 Ambient Groundwater Quality Monitoring Network report compiled by Chad Reihm. Thanks are also due to Rob Devlin for management of the water quality data through the STORET database. David Baize, Sally Knowles, and Alton Boozer contributed input on this and previous annual reports. The cooperation of municipal and private well owners was also a critical factor and well appreciated. This report has been funded by the U.S. Environmental Protection Agency, Region IV, through Section 106 of the Clean Water Act.

References Cited

- Environmental Protection Agency, National Primary Drinking Water Regulations – EPA's Drinking Water Standards, <http://www.epa.gov/safewater/mcl.html>. Maintained through 2005
- Foster, M.D., 1950, The origin of high sodium bicarbonate waters in the Atlantic and Gulf Coastal Plains, *Geochim. Et Cosmochim. Acta*, vol. 1, pp. 33-48.
- Gohn, G.S. , Higgins, B.B., Smith, C.C. , and Owen, J.P., 1977, Lithostratigraphy of the deep corehole (Clubhouse Crossroads Corehole 1) near Charleston, South Carolina, in D.W. Rankin, ed, *Studies related to the Charleston South Carolina Earthquake of 1886 – A Preliminary Report*: U.S. Geological Survey Prof. Paper 1028-E, p. 59 - 70
- Gohn, G. S., Edwards E.E., 2000 Preliminary Stratigraphic Database for the Subsurface Tertiary and Uppermost Cretaceous Sediments of Dorchester County, South Carolina. U.S. Geological Survey Open-File Report 00-049. CD-ROM Format
- Groce, W.G., 1980, Relationship of geology to groundwater resources in South Carolina, SC Technical Note - Engineering-2 (Geology), U.S.D.A. Soil Conservation Service, Columbia.
- Hem, John D., 1970, Study and Interpretation of the Chemical Characteristics of Natural Water, *Second Edition*, U.S. Geological Survey Water-Supply Paper 1473, U.S. Government Printing Office, Washington, D.C. pp. 91
- Legrand, H.E., 1958, Chemical character of water in the igneous and metamorphic rocks of North Carolina, *Economic Geology*, Vol. 53, pp. 178-179.
- Meadows, Kevin J., 1987, Groundwater Conditions in the Santee Limestone and Black Mingo Formation near Moncks Corner, Berkeley County South Carolina, South Carolina Water Resources Commission Report Number 156, pp. 38

- Nacht, S.J., 1983, Monitoring sampling protocol considerations, Groundwater Monitoring Review, pp. 23-29.
- Oldham, R.W., 1986, Designation of aquifer systems in the Piedmont province of South Carolina, South Carolina Department of Health and Environmental Control, Draft Copy, 71p.
- Overstreet, W.C., and Bell III, H., Geologic Map of the Crystalline Rocks of South Carolina, 1965, Miscellaneous Geologic Investigations, Map I-413, U.S. Geologic Survey.
- Park, Drennan A., The Ground-Water Resources of Charleston, Berkeley, and Dorchester Counties of South Carolina. South Carolina Water Resources Commission Report Number 139, 1985
- Van Nieuwenhuise, D.S., and Colquhoun, D.J., 1982, Contact Relationships of the Black Mingo and PeeDee Formations – The Cretaceous Tertiary Boundary in South Carolina, U.S.A. South Carolina Geology, Vol. 82, No. 1, pp 1-13
- Zack, A.L. Geochemistry of fluoride in the Black Creek aquifer system of Horry and Georgetown Counties, South Carolina – and its physiological implications: U.S. Geological Survey Water – Supply Paper 2067, 40 p.

Appendix A: Ambient Groundwater Quality Network Water Quality Parameters

nitrate + nitrite
hardness
chloride
sulfate
TDS
pH
alkalinity
fluoride
TOC
specific conductivity
aluminum
beryllium
boron
cobalt
strontium
mercury
molybdenum
TKN
silica
zinc
calcium
magnesium
sodium
potassium
arsenic
barium
copper
iron
lead
manganese
selenium
silver
tin
uranium
cadmium
chromium
nickel
antimony
lithium

Appendix B: Maximum Contaminant Levels

Maximum Contaminant Levels

The maximum contaminant levels for inorganic chemicals are as follows:

<u>Contaminant</u>	<u>Level (mg/l)</u>
Antimony	0.006
Arsenic	0.05
Barium	2.0
Beryllium	0.004
Cadium	0.005
Chromium	0.10
Fluoride	4.0
Lead	0.015
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Selenium	0.05

Secondary Maximum Contaminant Levels

The secondary maximum contaminant levels are applicable to both community and non-community water systems. The secondary maximum contaminant levels are as follows:

<u>Contaminant</u>	<u>Level</u>
Aluminum	0.05 to .2 mg/l
Chloride	250 mg/l
Color	15 color units
Copper	1 mg/l
Corrosivity	Noncorrosive
Fluoride	2.0 mg/l
Foaming Agents	0.5 mg/l
Iron	0.3 mg/l
Manganese	0.05 mg/l
Odor	3 threshold odor #
pH	6.5-8.5
Silver	0.10 mg/l
Sulfate	250 mg/l
Total Dissolved Solids (TDS)	500 mg/l
Zinc	5 mg/l

Source: National Primary Drinking Water Regulations – EPA’s Drinking Water Standards:
<http://www.epa.gov/safewater/mcl.html>

Appendix C: Ambient Groundwater Quality Wells and Locations

Well No.	Location	County	Well No.	Location	County
1	Bamberg	Bamberg	62	Fork Shoals.	Greenville
2	Williston	Barnwell	63	Gilbert	Lexington
3	Elloree	Orangeburg	64	Little Mountain	Newberry
4	Bowman	Orangeburg	65	East Cntrl Newberry	Newberry
5	Lake View #1	Dillon	66	Newberry	Newberry
6	Latta #1	Dillon	67	Whitmire	Newberry
7	Johnsonville	Florence	68	Chappells	Newberry
8	McLeod Med Center	Florence	69	Newberry	Newberry
9	Olanta	Florence	70	Mountain Rest	Oconee
10	Pamplico #1	Florence	71	Pickens	Pickens
11	Andrews #2	Georgetown	72	Ballentine	Richland
12	Georgetown #2	Georgetown	73	Union	Union
13	Conway #6	Horry	74	Guthries	York
14	Surfside-Poplar St.	Horry	75	Abbeville	Abbeville
15	Myrtlewood	Horry	76	Starr (deep)	Anderson
16	Longs #2	Horry	77	Blacksburg	Cherokee
17	Mullins-Gapway	Marion	78	Mauldin	Greenville
18	Oakland Plantation	Sumter	79	Fork Shoals	Greenville
19	Watson Correctional	Sumter	80	Newberry	Newberry
20	Kingstree RT 377	Williamsburg	81	Mountain Rest	Oconee
21	St. Stephens	Berkeley	82	Pickens	Pickens
22	Summerville #5	Dorchester	83	Union	Union
23	Cainhoy High School	Berkeley	84	McClellanville	Charlestown
24	Santee Cooper	Berkeley	85	Edisto Beach (13)	Colleton
25	St. Matthews	Calhoun	86	Bennetts Point	Colleton
26	Wagener	Aiken	87	North Santee	Georgetown
27	North Augusta	Aiken	88	Socastee	Horry
28	Montmorenci-Coucht	Aiken	89	Fairfax	Allendale
29	Parris Island	Beaufort	90	Frogmore	Beaufort
30	Patrick #1	Chesterfield	91	Sheldon	Beaufort
31	Walterboro (50)	Colleton	92	Hilton Head Island	Beaufort
32	Main Street	Darlington	93	Bluffton	Beaufort
33	Hartsville #4	Darlington	94	Walterboro (29)	Colleton
34	Timmonsville #2	Florence	95	Edisto Beach (4)	Colleton
35	S. Ballard Street	Florence	96	Lieber Correctional	Dorchester
36	Elgin	Kershaw	97	Hardeeville	Jasper
37	Bethune	Kershaw	98	Ridgeland	Jasper
38	Camden	Kershaw	99	Grays	Jasper
39	Bishopville #4	Lee	100	Cope	Orangeburg
40	Swansea	Lexington	101	Orng Fish Hatchery(2)	Orangeburg
41	Summit	Lexington	102	Blackville	Barnwell
42	Hidden Valley	Lexington	103	Lex-Oak Grove Elem	Lexington
43	Clio	Marlboro	104	North	Orangeburg
44	Orng Fish Hatchery(1)	Orangeburg	105	Pickney Estates	Sumter
45	Fort Jackson	Richland	106	Hamilton Branch	McCormick
46	Spring Valley	Richland	107	N.W. Edgefield Co.	Edgefield
47	Hopkins	Richland	108	Cacсар's Head	Greenville
48	North of Eastover	Richland	109	Spartanburg	Spartanburg
49	Sumter Plant 1 - #3	Sumter	110	Chester State Park	Chester
50	Hemingway	Williamsburg	111	White Bluff Baptist	Lancaster
51	Allendale	Allendale	112	Westside Estates	Chesterfield
52	Eutaw Springs	Orangeburg	113	Amick Poultry	Saluda
53	Moncks Corner	Berkeley	114	WSBH Radio	Hampton
54	Abbeville	Abbeville	115	McCormick	McCormick
55	Starr	Anderson	116	Pelion	Lexington
56	Blacksburg	Cherokee	117	Brattons ville	York
57	Jenkinsville #11	Fairfield	118	Orangeburg Co.	Orangeburg
58	Ridgeway	Fairfield	119	Mt. Pleasant	Charleston
59	Lake Wateree St Pk	Fairfield	121	Elgin	Kershaw
60	Jenkinsville #4	Fairfield	121	McClellanville	Charleston
61	Mauldin	Greenville	122	Hampton State Park	Charleston

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-001	City of Bamberg	33.2885222	-81.040775	Bamberg	Sav-Salk	Black Creek
AMB-001	City of Bamberg	33.2885222	-81.040775	Bamberg	Sav-Salk	Black Creek
AMB-001	City of Bamberg	33.2885222	-81.040775	Bamberg	Sav-Salk	Black Creek
AMB-001	City of Bamberg	33.2885222	-81.040775	Bamberg	Sav-Salk	Black Creek
AMB-002	Town of Williston	33.397225	-81.4020056	Barnwell	Saluda-Edisto	Black Creek
AMB-002	Town of Williston	33.397225	-81.4020056	Barnwell	Saluda-Edisto	Black Creek
AMB-002	Town of Williston	33.397225	-81.4020056	Barnwell	Saluda-Edisto	Black Creek
AMB-002	Town of Williston	33.397225	-81.4020056	Barnwell	Saluda-Edisto	Black Creek
AMB-003	Town of Ellore	33.5265861	-80.5715139	Orangeburg	Catawba	Black Creek
AMB-003	Town of Ellore	33.5265861	-80.5715139	Orangeburg	Catawba	Black Creek
AMB-003	Town of Ellore	33.5265861	-80.5715139	Orangeburg	Catawba	Black Creek
AMB-003	Town of Ellore	33.5265861	-80.5715139	Orangeburg	Catawba	Black Creek
AMB-004	Town of Bowman	33.3891806	-80.2710056	Orangeburg	Saluda-Edisto	Black Creek
AMB-004	Town of Bowman	33.3891806	-80.2710056	Orangeburg	Saluda-Edisto	Black Creek
AMB-004	Town of Bowman	33.3891806	-80.2710056	Orangeburg	Saluda-Edisto	Black Creek
AMB-004	Town of Bowman	33.3891806	-80.2710056	Orangeburg	Saluda-Edisto	Black Creek
AMB-005	Town of Lake View	34.3344528	-79.1670417	Dillon	Pee Dee	Black Creek
AMB-006	Town of Latta Well #1	34.335625	-79.4330667	Dillon	Pee Dee	Black Creek
AMB-006	Town of Latta Well #1	34.335625	-79.4330667	Dillon	Pee Dee	Black Creek
AMB-006	Town of Latta Well #1	34.335625	-79.4330667	Dillon	Pee Dee	Black Creek
AMB-007	Town of Johnsonville	33.8158	-79.4633333	Florence	Pee Dee	Black Creek
AMB-007	Town of Johnsonville	33.8158	-79.4633333	Florence	Pee Dee	Black Creek
AMB-007	Town of Johnsonville	33.8158	-79.4633333	Florence	Pee Dee	Black Creek
AMB-008	McLeod Medical Center	34.335625	-79.4330667	Florence	Pee Dee	Black Creek
AMB-008	McLeod Medical Center	34.335625	-79.4330667	Florence	Pee Dee	Black Creek
AMB-008	McLeod Medical Center	34.335625	-79.4330667	Florence	Pee Dee	Black Creek
AMB-009	Town of Olanta	34.3344528	-79.1670417	Florence	Pee Dee	Black Creek
AMB-009	Town of Olanta	34.3344528	-79.1670417	Florence	Pee Dee	Black Creek
AMB-009	Town of Olanta	34.3344528	-79.1670417	Florence	Pee Dee	Black Creek
AMB-010	Town of Pamplico	34.1977139	-79.7584861	Florence	Pee Dee	Black Creek
AMB-010	Town of Pamplico	34.1977139	-79.7584861	Florence	Pee Dee	Black Creek
AMB-010	Town of Pamplico	34.1977139	-79.7584861	Florence	Pee Dee	Black Creek
AMB-011	City of Andrews	34.1977139	-79.7584861	Georgetown	Pee Dee	Black Creek
AMB-011	City of Andrews	34.1977139	-79.7584861	Georgetown	Pee Dee	Black Creek
AMB-011	City of Andrews	34.1977139	-79.7584861	Georgetown	Pee Dee	Black Creek
AMB-012	Georgetown # 2	33.9333722	-79.9397222	Georgetown	Pee Dee	Black Creek
AMB-012	Georgetown # 2	33.9333722	-79.9397222	Georgetown	Pee Dee	Black Creek
AMB-012	Georgetown # 2	33.9333722	-79.9397222	Georgetown	Pee Dee	Black Creek
AMB-013	Conway #6	33.995675	-79.5677778	Horry	Pee Dee	Black Creek
AMB-013	Conway #6	33.995675	-79.5677778	Horry	Pee Dee	Black Creek
AMB-013	Conway #6	33.995675	-79.5677778	Horry	Pee Dee	Black Creek
AMB-014	Surfside-Poplar St	33.44105	-79.5619333	Horry	Pee Dee	Black Creek
AMB-014	Surfside-Poplar St	33.44105	-79.5619333	Horry	Pee Dee	Black Creek
AMB-014	Surfside-Poplar St	33.44105	-79.5619333	Horry	Pee Dee	Black Creek
AMB-015	City of Myrtle Beach-MyrtleWood	33.3301528	-79.3104389	Horry	Pee Dee	Black Creek
AMB-015	City of Myrtle Beach-MyrtleWood	33.3301528	-79.3104389	Horry	Pee Dee	Black Creek
AMB-016	Longs #2	33.8512278	-79.0161639	Horry	Pee Dee	Black Creek
AMB-016	Longs #2	33.8512278	-79.0161639	Horry	Pee Dee	Black Creek
AMB-016	Longs #2	33.8512278	-79.0161639	Horry	Pee Dee	Black Creek
AMB-017	Town of Mullins	33.6135028	-78.97815	Marion	Pee Dee	Black Creek
AMB-017	Town of Mullins	33.6135028	-78.97815	Marion	Pee Dee	Black Creek
AMB-017	Town of Mullins	33.6135028	-78.97815	Marion	Pee Dee	Black Creek
AMB-018	Oakland Plantation	33.7265444	-78.8791694	Sumter	Catawba	Black Creek
AMB-018	Oakland Plantation	33.7265444	-78.8791694	Sumter	Catawba	Black Creek
AMB-018	Oakland Plantation	33.7265444	-78.8791694	Sumter	Catawba	Black Creek
AMB-018	Oakland Plantation	33.7265444	-78.8791694	Sumter	Catawba	Black Creek
AMB-019	Wateree Correctional Institute	33.9570667	-78.7375361	Sumter	Catawba	Black Creek
AMB-019	Wateree Correctional Institute	33.9570667	-78.7375361	Sumter	Catawba	Black Creek
AMB-019	Wateree Correctional Institute	33.9570667	-78.7375361	Sumter	Catawba	Black Creek
AMB-019	Wateree Correctional Institute	33.9570667	-78.7375361	Sumter	Catawba	Black Creek
AMB-020	Town of Kingstree	34.1937194	-79.2563111	Williamsburg	Pee Dee	Black Creek
AMB-020	Town of Kingstree	34.1937194	-79.2563111	Williamsburg	Pee Dee	Black Creek
AMB-020	Town of Kingstree	34.1937194	-79.2563111	Williamsburg	Pee Dee	Black Creek
AMB-021	St. Stephens	33.9870833	-80.4954389	Berkeley	Catawba	Black Creek/ Middendorf
AMB-021	St. Stephens	33.9870833	-80.4954389	Berkeley	Catawba	Black Creek/ Middendorf
AMB-021	St. Stephens	33.9870833	-80.4954389	Berkeley	Catawba	Black Creek/ Middendorf
AMB-021	St. Stephens	33.9870833	-80.4954389	Berkeley	Catawba	Black Creek/ Middendorf

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SP_CD	TDS	Hard	TOC	CL_ppm	CL_epm	CL_-%	SO4_ppm	SO4_epm	SO4_-%	ALK_ppm	ALK_epm	ALK_-%
AMB-001	01-Jul-00	6.7	65.4	60	15	<2	1.8	0.05	9.62	9	0.19	36.54	17	0.28	53.85
AMB-001	01-May-98	6.3		60	15	<2	1.4	0.04	10	7	0.15	37.5	13	0.21	52.5
AMB-001	01-May-93	6.3	54	42	10	3.1	1.3	0.04	8.89	10	0.21	46.67	12	0.2	44.44
AMB-001	01-May-88	6.5	53	50	11	<1	2.0	0.06	13.64	<10	0	0	23	0.38	86.36
AMB-002	15-May-01	6.8	114	84		<2	6.2	0.17	15.89	15	0.31	28.97	36	0.59	55.14
AMB-002	01-May-98	6.7		170	32	<2	2.3	0.06	8.33	7	0.15	20.83	31	0.51	70.83
AMB-002	01-May-93	6.3	75	54	32	4.6	1.9	0.05	7.25	10	0.21	30.43	26	0.43	62.32
AMB-002	01-May-88	6.4	74	46	35	<1	2.0	0.06	12.24	<10	0	0	26	0.43	87.76
AMB-003	01-May-02	8.2	123	86	26	<2	1.9	0.05	4.55	9.4	0.2	18.18	52	0.85	77.27
AMB-003	01-May-98	8.4	132	90	26		2.3	0.06	6	8	0.17	17	47	0.77	77
AMB-003	01-May-93	8.2	126	82	27	4.4	1.6	0.05	4.55	10	0.21	19.09	51	0.84	76.36
AMB-003	01-May-88	8.1	121	200	26	<1	2.0	0.06	6.59	<10	0	0	52	0.85	93.41
AMB-004	15-May-01	9.3	141	68		<2	1.6	0.05	3.76	11	0.23	17.29	64	1.05	78.95
AMB-004	01-May-98	9.0	148	88	10	22	2.5	0.07	7.37	9	0.19	20	42	0.69	72.63
AMB-004	01-May-93	9.2	142	90	5	3.5	1.5	0.04	3.15	11	0.23	18.11	61	1	78.74
AMB-004	01-May-88	9.1	140	72	4	<1	2.0	0.06	5.5	<10	0	0	63	1.03	94.5
AMB-005	01-May-89	6.9	151	96	2	<1	2.5	0.07	5.51	<10	0	0	73	1.2	94.49
AMB-006	01-Jul-99	7.0	151	88	18	<2	3.1	0.09	6.43	5	0.1	7.14	74	1.21	86.43
AMB-006	01-Jul-94	6.9	156	99	18	3.3	3.5	0.1	7.52	<5	0	0	75	1.23	92.48
AMB-006	01-May-89	6.9	154	100	17	1.5	2.7	0.08	6.35	<10	0	0	72	1.18	93.65
AMB-007	01-Jul-99	8.8	380	250	4	<2	3.9	0.11	3.46	7	0.15	4.72	178	2.92	91.82
AMB-007	01-Jul-94	9.2	396	240	6	4.8	3.9	0.11	3.36	<5	0	0	193	3.16	96.64
AMB-007	01-May-89	9.2	380	220	4	3.5	3.1	0.09	2.77	11	0.23	7.08	179	2.93	90.15
AMB-008	01-Jul-99	5.9	130	140	37	<2	19.4	0.55	61.11	9	0.19	21.11	10	0.16	17.78
AMB-008	01-Jul-94	5.9	127	110	37	2.4	23.4	0.66	62.26	7	0.15	14.15	15	0.25	23.58
AMB-008	01-May-89	6.0	161	150	44	<1	30.5	0.86	60.56	12	0.25	17.61	19	0.31	21.83
AMB-009	01-Jul-99	7.5	140	120	34	<2	2.3	0.06	5.04	7	0.15	12.61	60	0.98	82.35
AMB-009	01-Jul-94	7.6	145	100	41	2.2	1.7	0.05	4.2	8	0.17	14.29	59	0.97	81.51
AMB-009	01-May-89	7.6	130	94	40	<1	2.0	0.06	6.06	<10	0	0	57	0.93	93.94
AMB-010	01-Jul-99	8.8	150	130	4	2.8	2.4	0.07	5.51	8	0.17	13.39	63	1.03	81.1
AMB-010	01-Jul-94	8.9	169	120	5	2.5	2.2	0.06	4.2	8.0	0.17	11.89	73	1.2	83.92
AMB-010	01-May-89	8.9	178	130	6	5.5	3.0	0.08	4.73	17	0.35	20.71	77	1.26	74.56
AMB-011	01-Jul-99	8.9	589	350	4	<2	5.8	0.16	3.13	<5	0	0	302	4.95	96.87
AMB-011	01-Jul-94	9.1	598	340	6	6.7	7.2	0.2	3.77	<5	0	0	311	5.1	96.23
AMB-011	01-May-89	8.9	570	350	4	3.2	7.7	0.22	4.28	<10	0	0	300	4.92	95.72
AMB-012	01-Jul-99	8.6	1011	550	7	<2	76.8	2.16	23.87	8	0.17	1.88	410	6.72	74.25
AMB-012	01-Jul-94	8.7	1030	570	7	8.4	77.2	2.17	23.28	7	0.15	1.61	427	7	75.11
AMB-012	01-May-89	8.7	990	550	7	1.0	66.7	1.88	27.25	11	0.23	3.33	292	4.79	69.42
AMB-013	01-Jul-99	8.0	1507	810	53	<2	296	8.34	56.09	13	0.27	1.82	382	6.26	42.1
AMB-013	01-Jul-94	7.6	261	140	26	4.6	19	0.54	45	<5	0	0	40	0.66	55
AMB-013	01-May-89	8.6	1180	670	8	1.5	102	2.87	27.49	<10	0	0	462	7.57	72.51
AMB-014	01-Jul-99	8.7	985	730	8	<2	25.6	0.72	6.84	<5	0	0	598	9.8	93.16
AMB-014	01-Jul-94	8.7	965	550	6	12.1	26.4	0.74	8.31	<5	0	0	498	8.16	91.69
AMB-014	01-May-89	8.8	990	580	6	2.5	25.1	0.71	8.22	<10	0	0	484	7.93	91.78
AMB-015	01-Jul-94	8.1	775	430	77	7.1	85.8	2.42	34.18	27	0.56	7.91	250	4.1	57.91
AMB-015	01-May-89	7.6	261	160	66	8.2	12.9	0.36	16.9	58	1.21	56.81	34	0.56	26.29
AMB-016	01-Jul-99	8.2	2338	1300	51	<2	514	14.48	62.68	59	1.23	5.32	451	7.39	31.99
AMB-016	01-Jul-94	8.3	2360	1300	30	11.3	673	18.96	69.4	26	0.54	1.98	477	7.82	28.62
AMB-016	01-May-89	8.5	1550	870	17	1.7	210	5.92	44.78	18	0.37	2.8	423	6.93	52.42
AMB-017	01-Jul-99	7.3	193	140	15	<2	9.4	0.26	14.86	5	0.1	5.71	85	1.39	79.43
AMB-017	01-Jul-94	7.7	248	180	6	3.1	13.7	0.39	18.66	<5	0	0	104	1.7	81.34
AMB-017	01-May-89	7.7	248	170	6	2.0	12.1	0.34	16.67	<10	0	0	104	1.7	83.33
AMB-018	01-May-02	6.2	66.8	42	14	<2	3.4	0.1	21.74	<5	0	0	22	0.36	78.26
AMB-018	01-Jul-99	4.8	21.5	24	2	<2	2.5	0.07	100	<5	0	0	<1	0	0
AMB-018	01-Jul-94	4.9	24	10	2	2.8	2.6	0.07	70	<5	0	0	2.0	0.03	30
AMB-018	01-May-89	4.1	29	28	3	<1	2.5	0.07	50	<10	0	0	4	0.07	50
AMB-019	01-May-02	7.6	155	100	61	<2	5.4	0.15	12.61	5.6	0.12	10.08	56	0.92	77.31
AMB-019	01-Jul-99	4.2	45.1	28	3	<2	3.2	0.09	42.86	6	0.12	57.14	0	0	0
AMB-019	01-Jul-94	4.3	38	14	2	1.4	2.7	0.08	100	<5	0	0	0	0	0
AMB-019	01-May-89	5.0	42	58	5	<1	4.5	0.13	81.25	<10	0	0	2	0.03	18.75
AMB-020	01-Jul-99	8.8	390	240	6	<2	3.7	0.1	3.09	6	0.12	3.7	184	3.02	93.21
AMB-020	01-Jul-94	8.9	394	230	6	4.8	18.7	0.53	15.06	14	0.29	8.24	165	2.7	76.7
AMB-020	01-May-89	8.3	339	230	6	<1	3.8	0.11	3.29	11	0.23	6.89	183	3	89.82
AMB-021	01-May-02	8.9	586	320	3.9	<2	11	0.31	5.98	5.6	0.12	2.32	290	4.75	91.7
AMB-021	01-Jul-99	8.7	567	340	4	<2	10.8	0.3	5.86	5	0.1	1.95	288	4.72	92.19
AMB-021	01-Jul-94	9.0	578	320	4	7.9	11	0.31	6.16	<5	0	0	288	4.72	93.84
AMB-021	01-May-89	8.3	450	320	4	<1	13.2	0.37	7.74	<10	0	0	269	4.41	92.26

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-001	4.9	0.24	48.98	0.64	0.05	10.2	1.2	0.05	6	0.15	40.82	<.1	<.005
AMB-001	4.8	0.24	45.28	0.69	0.06	11.32	1.1	0.05	7	0.18	43.4	0.14	<.005
AMB-001	3.2	0.16	39.02	0.55	0.05	12.2	1.2	0.05	6	0.15	48.78	<.1	<.005
AMB-001	3.4	0.17	62.96	0.57	0.05	18.52	1.1	0.05	<1	0	18.52	0.30	<.005
AMB-002	9.7	0.48	41.38	1	0.08	6.9	13	0.57	1.2	0.03	51.72	<.1	<.005
AMB-002	12	0.6	60	0.56	0.05	5	8	0.35	<1	0	35	0.13	<.005
AMB-002	12	0.6	84.51	0.55	0.05	7.04	1.4	0.06	<1	0	8.45	0.14	<.005
AMB-002	13	0.65	85.53	0.55	0.05	6.58	1.4	0.06	<1	0	7.89	0.20	<.005
AMB-003	8.8	0.44	34.65	0.95	0.08	6.3	13	0.57	7.1	0.18	59.06	0.14	<.005
AMB-003	8.9	0.44	34.11	1	0.08	6.2	13	0.57	8	0.2	59.69		<.005
AMB-003	9.2	0.46	35.66	0.95	0.08	6.2	13	0.57	7	0.18	58.14	0.15	<.005
AMB-003	8.9	0.44	38.94	0.92	0.08	7.08	14	0.61	<1	0	53.98	0.30	<.005
AMB-004	1.6	0.08	5.44	0	0	0	31	1.35	1.4	0.04	94.56	0.12	<.005
AMB-004	1.6	0.08	5.48	<.05	0	0	31	1.35	1	0.03	94.52		<.005
AMB-004	1.7	0.08	5.37	0.09	0.01	0.67	31	1.35	2	0.05	93.96	0.16	<.005
AMB-004	1.6	0.08	5.44	0.06	0	0	32	1.39	<1	0	94.56	0.20	<.005
AMB-005	0.38	0.02	1.37	0.16	0.01	0.68	33	1.43	<1	0	97.95	0.40	<.005
AMB-006	2.5	0.12	7.64	2.8	0.23	14.65	24	1.04	7	0.18	77.71	0.15	<.005
AMB-006	2.4	0.12	7.55	2.80	0.23	14.47	25	1.09	6	0.15	77.99	0.16	<.005
AMB-006	2.6	0.13	9.7	2.60	0.21	15.67	23	1	<1	0	74.63	0.20	<.005
AMB-007	1.3	0.06	1.79	0.24	0.02	0.6	73	3.17	4	0.1	97.61	1.61	<.005
AMB-007	2	0.1	2.5	0.20	0.02	0.5	87	3.78	4	0.1	97	1.39	<.005
AMB-007	1.3	0.06	1.57	0.17	0.01	0.26	86	3.74	<1	0	98.16	1.68	<.005
AMB-008	12	0.6	59.41	1.8	0.15	14.85	4.2	0.18	3	0.08	25.74	0.33	<.005
AMB-008	12	0.6	62.5	1.80	0.15	15.62	3.7	0.16	2	0.05	21.88	0.34	<.005
AMB-008	14	0.7	66.67	2.10	0.17	16.19	4.2	0.18	<1	0	17.14	0.46	<.005
AMB-009	8.7	0.43	37.39	3	0.25	21.74	3.2	0.14	13	0.33	40.87	<.1	<.005
AMB-009	11	0.55	40.74	3.40	0.28	20.74	3.7	0.16	14	0.36	38.52	<.1	<.005
AMB-009	11	0.55	41.98	3.00	0.25	19.08	3.5	0.15	14	0.36	38.93	0.10	<.005
AMB-010	1.2	0.06	3.47	0.28	0.02	1.16	35	1.52	5	0.13	95.38	0.43	<.005
AMB-010	1.4	0.07	4	0.33	0.03	1.71	35	1.52	5	0.13	94.29	0.49	<.005
AMB-010	1.9	0.09	5.33	0.36	0.03	1.78	36	1.57	<1	0	92.9	0.66	<.005
AMB-011	1.2	0.06	0.9	0.22	0.02	0.3	150	6.52	3	0.08	98.8	1.58	<.005
AMB-011	2	0.1	1.49	0.24	0.02	0.3	150	6.52	3	0.08	98.21	1.52	<.005
AMB-011	1.2	0.06	0.97	0.19	0.02	0.32	140	6.09	<1	0	98.7	1.80	<.005
AMB-012	2	0.1	0.93	0.56	0.05	0.47	240	10.43	6	0.15	98.6	1.01	<.005
AMB-012	1.9	0.09	0.84	0.51	0.04	0.37	240	10.43	5	0.13	98.78	0.9	<.005
AMB-012	2.2	0.11	1.13	0.44	0.04	0.41	220	9.57	<1	0	98.46	0.98	<.005
AMB-013	17	0.85	7.33	2.6	0.21	1.81	240	10.43	4	0.1	90.85	1.63	<.005
AMB-013	8.6	0.43	19.46	1.1	0.09	4.07	37	1.61	3	0.08	76.47	1	<.005
AMB-013	2.1	0.1	0.81	0.62	0.05	0.41	280	12.17	<1	0	98.78	3.40	<.005
AMB-014	2.2	0.11	1.36	0.5	0.04	0.5	180	7.83	3	0.08	98.14	3.46	<.005
AMB-014	1.5	0.07	0.69	0.48	0.04	0.39	230	10	3	0.08	98.92	3.1	<.005
AMB-014	1.6	0.08	0.76	0.54	0.04	0.38	240	10.43	<1	0	98.86	1.80	<.005
AMB-015	26	1.3	16.82	2.90	0.24	3.1	140	6.09	4	0.1	80.08	1.54	<.005
AMB-015	24	1.2	51.72	1.50	0.12	5.17	23	1	<1	0	43.1	1.06	<.005
AMB-016	12	0.6	2.8	5.2	0.43	2.01	460	20	16	0.41	95.2	1.85	<.005
AMB-016	6.2	0.31	1.48	3.60	0.3	1.43	460	20	12	0.31	97.08	1.83	<.005
AMB-016	3.5	0.17	1.11	2.10	0.17	1.11	340	14.78	9	0.23	97.79	3.80	<.005
AMB-017	3.8	0.19	9.55	1.4	0.12	6.03	34	1.48	8	0.2	84.42	0.5	<.005
AMB-017	1.4	0.07	2.65	0.64	0.05	1.89	55	2.39	5	0.13	95.45	0.65	<.005
AMB-017	1.4	0.07	2.99	0.61	0.05	2.14	51	2.22	<1	0	94.87	0.66	<.005
AMB-018	4.8	0.24	57.14	0.44	0.04	9.52	2.2	0.1	1.4	0.04	33.33	<.1	<.005
AMB-018	0.41	0.02	16.67	0.29	0.02	16.67	1.8	0.08	<1	0	66.67	<.1	<.005
AMB-018	0.42	0.02	13.33	0.30	0.02	13.33	1.8	0.08	1	0.03	73.33	0.10	<.005
AMB-018	0.55	0.03	21.43	0.35	0.03	21.43	1.9	0.08	<1	0	57.14	<.1	<.005
AMB-019	23.0	1.15	80.42	0.94	0.08	5.59	3.6	0.16	1.4	0.04	13.99	<.1	<.005
AMB-019	0.37	0.02	10.53	0.44	0.04	21.05	3.1	0.13	<1	0	68.42	<.1	<.005
AMB-019	0.33	0.02	15.38	0.26	0.02	15.38	2	0.09	<1	0	69.23	0.11	<.005
AMB-019	1.1	0.05	20	0.54	0.04	16	3.6	0.16	<1	0	64	<.1	<.005
AMB-020	2	0.1	2.29	0.37	0.03	0.69	95	4.13	4	0.1	97.02	2.42	<.005
AMB-020	2	0.1	2.54	0.26	0.02	0.51	86	3.74	3	0.08	96.95	1.37	<.005
AMB-020	1.9	0.09	2.28	0.30	0.02	0.51	88	3.83	<1	0	97.21	2.10	<.005
AMB-021	1.3	0.06	0.97	0.16	0.01	0.16	140	6.09	1.3	0.03	98.87	1.4	<.005
AMB-021	1.2	0.06	1.13	0.19	0.02	0.38	120	5.22	1	0.03	98.5	1.52	<.005
AMB-021	1.4	0.07	1.13	0.17	0.01	0.16	140	6.09	1	0.03	98.71	1.25	<.005
AMB-021	1.5	0.07	1.22	0.18	0.01	0.17	130	5.65	<1	0	98.6	1.52	<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-001	0.08	<.01	2.1	<.05	0.04	0.02	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-001	0.08	<.01	1.7	<.05	0.03	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-001	0.08	<.05	1.3	<.05	0.03	0.01	<.05	<.001	<.05	<.05	<.0002	0.04
AMB-001	<.05	<.05	2.6	<.05	0.06	0.12	<.05	<.001	<.05	<.05	<.0002	<.01
AMB-002	<.05	<.01	0.13	<.05	0.024	0.046	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-002	<.05	<.01	1	<.05	<.01	0.02	<.1	0.004	<.03	<.02	<.0002	<.02
AMB-002	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-002	<.05	<.05	0.29	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-003	<.05	<.01	0.041	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-003	<.05	<.01	0.06	<.05	<.01	<.01	<.1	<.003	0.04	<.02	<.0002	<.02
AMB-003	<.05	<.05	0.08	0.01	0.01	<.05	<.05	<.001	<.05	<.05	<.0002	0.06
AMB-003	<.05	<.05	0.09	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.01
AMB-004	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-004	<.05	0.04	0.08	<.05	<.01	<.01	<.1	<.003	0.06	<.02	<.0002	<.02
AMB-004	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-004	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.01
AMB-005	<.05	<.01	0.42	<.05	0.01	<.01	<.05	<.001	0.08	<.02	<.0002	<.02
AMB-006	0.1	0.01	1	<.05	0.03	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-006	0.10	0.01	0.86	<.05	0.02	<.01	<.05	<.003	0.06	<.02	<.0002	0.07
AMB-006	0.10	<.01	0.94	<.05	0.02	<.01	<.05	<.001	0.05	<.02	<.0002	<.02
AMB-007	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.23	<.02	<.0002	<.02
AMB-007	<.05	<.01	<.02	0.08	<.01	<.01	0.06	<.003	0.22	<.02	<.0002	<.02
AMB-007	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	0.22	<.02	<.0002	<.02
AMB-008	<.05	<.01	4.4	<.05	0.08	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-008	<.05	<.01	4.60	<.05	0.08	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-008	0.05	<.01	5.80	<.05	0.10	0.02	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-009	<.05	<.01	0.25	<.05	0.02	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-009	<.05	<.01	0.25	<.05	0.02	<.01	<.05	<.003	0.04	<.02	<.0002	<.02
AMB-009	<.05	<.01	0.24	<.05	0.02	<.01	<.05	<.001	0.05	<.02	<.0002	<.02
AMB-010	<.05	0.05	0.31	<.05	<.01	0.03	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-010	<.05	0.02	0.08	<.05	<.01	0.02	<.05	<.003	0.10	<.02	<.0002	<.02
AMB-010	<.05	0.06	0.21	<.05	<.01	0.11	<.05	<.001	0.09	<.02	<.0002	<.02
AMB-011	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	1.3	<.02	<.0002	<.02
AMB-011	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	1.2	<.02	<.0002	<.02
AMB-011	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	1.1	<.02	<.0002	<.02
AMB-012	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.75	<.02	<.0002	<.02
AMB-012	<.05	<.01	0.03	<.05	<.02	<.01	<.05	<.003	0.65	<.02	<.0002	<.02
AMB-012	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	0.60	<.02	<.0002	<.02
AMB-013	0.08	<.01	1.9	<.05	0.04	0.04	<.1	<.003	2	<.02	<.0002	<.02
AMB-013	<.05	<.01	0.26	0.10	0.03	0.03	0.17	<.003	0.21	<.02	<.0002	<.02
AMB-013	<.05	<.01	0.14	<.05	<.01	<.01	<.05	<.001	0.28	<.02	<.0002	<.02
AMB-014	<.05	<.01	0.19	<.05	<.01	0.03	<.1	<.003	2.1	<.02	<.0002	<.02
AMB-014	<.05	<.01	0.02	<.05	<.01	<.01	<.05	<.003	2.20	<.02	<.0002	0.06
AMB-014	<.05	<.01	0.01	<.05	<.01	<.01	<.05	<.001	2.20	<.02	<.0002	<.02
AMB-015	<.05	<.01	1.40	<.05	0.13	0.03	0.20	<.003	0.38	<.02	<.0002	<.02
AMB-015	<.05	0.01	0.60	<.05	0.04	<.01	0.33	<.001	0.03	<.02	<.0002	<.02
AMB-016	<.05	<.01	0.22	<.05	0.04	0.06	<.1	<.003	3.4	<.02	<.0002	<.02
AMB-016	<.05	<.01	<.03	<.05	<.01	<.01	<.05	<.003	2.90	<.02	<.0002	<.02
AMB-016	<.05	<.01	0.01	<.05	<.01	<.01	<.05	<.001	2.60	<.02	<.0002	<.02
AMB-017	<.05	<.01	0.16	<.05	0.02	0.01	<.1	<.003	0.11	<.02	<.0002	<.02
AMB-017	<.05	<.01	0.06	<.05	0.01	<.01	<.05	<.003	0.18	<.02	<.0002	<.02
AMB-017	<.05	<.01	0.22	<.05	0.01	<.01	<.05	<.001	0.17	<.02	<.0002	<.02
AMB-018	<.06	<.01	1.8	<.05	0.028	0.49	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-018	<.05	0.01	0.4	<.05	<.01	0.02	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-018	<.05	0.02	0.26	<.05	0.01	0.02	<.05	<.003	0.01	<.02	<.0002	<.02
AMB-018	0.05	<.01	0.85	<.05	0.02	0.01	0.09	<.001	<.02	<.02	<.0002	<.02
AMB-019	0.082	0.016	0.097	<.05	0.023	0.016	0.28	<.003	<.1	<.02	<.0002	<.02
AMB-019	<.05	<.01	0.05	<.05	<.01	0.02	220	<.003	<.1	<.02	<.0002	<.02
AMB-019	<.05	0.02	0.02	<.05	0.01	0.08	0.18	<.003	0.01	<.02	<.0002	<.02
AMB-019	0.07	0.01	0.02	<.05	0.01	0.03	0.19	<.001	<.02	<.02	<.0002	<.02
AMB-020	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.64	<.02	<.0002	<.02
AMB-020	<.05	<.01	0.03	<.05	<.01	<.01	<.05	<.003	0.47	<.02	<.0002	0.05
AMB-020	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	0.56	<.02	<.0002	<.02
AMB-021	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	1.2	<.02	<.0002	<.02
AMB-021	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	1.2	<.02	<.0002	<.02
AMB-021	<.05	<.01	0.04	<.05	<.01	<.01	<.05	<.003	1.2	<.02	<.0002	0.04
AMB-021	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	<.05	<.02	<.0002	<.02

Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-001	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	16	0.04	<.02	ND
AMB-001	<.005	<.03	<.5	0.28	<.01	<.01	<.02	0.03	<.05	16	0.03	<.02	ND
AMB-001	<.005	<.05	<.5	<.15	<.01	<.05	<.05	0.03	<.02		0.03	<.02	0.11
AMB-001	<.005	<.05	<.1	<.15	<.01	<.05	<.05	<.05	<.02	15	<.05	<.02	0.15
AMB-002	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	12	0.03	0.34	
AMB-002	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.02	<.02	ND
AMB-002	<.005	<.05	<.5	<.15	<.01	<.05	<.05	<.05	<.02		0.02	<.02	ND
AMB-002	<.005	<.05	<.5	<.15	<.01	<.05	<.05	<.05	<.02	14	<.05	<.02	ND
AMB-003	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	0.11	<.02	<.1
AMB-003	<.005	<.03	<.5	0.23	<.01	<.01	<.02	<.01	<.05	17	0.11	<.02	ND
AMB-003	<.005	<.05	<.5	<.15	<.01	<.05	<.05	<.05	<.05		1.1	<.02	ND
AMB-003	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	17	0.12	<.02	0.11
AMB-004	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.025	<.02	ND
AMB-004	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.02	<.02	ND
AMB-004	<.005	<.05	<.5	<.15	<.01	<.05	<.05	<.05	<.02		0.03	<.02	0.14
AMB-004	<.005	<.05	<.1	<.15	<.01	<.05	<.05	<.05	<.02	14	<.05	<.02	0.15
AMB-005	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	36	0.01	<.02	0.14
AMB-006	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	21	0.04		0.41
AMB-006	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	22	0.04	<.02	1.75
AMB-006	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	0.04	<.02	0.28
AMB-007	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	0.02	<.02	0.2
AMB-007	<.005	<.03	<.5	<.15	<.01	<.01	0.03	<.01	<.05	23	0.03	<.02	0.7
AMB-007	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	22	0.02	<.02	0.34
AMB-008	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	35	0.06	0.6	ND
AMB-008	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.06	<.02	0.34
AMB-008	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	37	0.08	<.02	0.10
AMB-009	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	29	0.1	<.02	0.2
AMB-009	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	39	0.11	<.02	0.13
AMB-009	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	36	0.11	<.02	0.26
AMB-010	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	37	0.01	<.02	0.16
AMB-010	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	39	0.01	<.02	1.5
AMB-010	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	35	0.02	<.02	0.30
AMB-011	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.03	<.02	0.26
AMB-011	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.05	<.02	ND
AMB-011	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	14	0.04	<.02	0.34
AMB-012	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	14	0.08	<.02	0.39
AMB-012	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	14	0.08	<.02	0.28
AMB-012	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	13	0.08	<.02	0.26
AMB-013	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	9.3	0.19		0.4
AMB-013	<.005	<.03	<.5	<.15	<.01	<.01	0.04	<.01	<.05	9.8	0.05	0.08	0.52
AMB-013	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	14	0.08	<.02	0.42
AMB-014	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	13	0.06	<.02	0.36
AMB-014	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	15	0.06	<.02	0.87
AMB-014	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	16	0.07	<.02	0.38
AMB-015	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.8	0.18	<.02	1.01
AMB-015	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	4.4	0.07	0.59	0.42
AMB-016	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	12	0.43	<.02	0.9
AMB-016	<.005	<.03	<.5	<.15	<.01	<.01	0.02	0.02	<.05	12	0.34	<.02	0.89
AMB-016	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	12	0.17	<.02	0.70
AMB-017	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	45	0.07		ND
AMB-017	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	42	0.04	<.02	0.55
AMB-017	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	39	0.04	<.02	0.20
AMB-018	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	12	<.01	0.1	<.2
AMB-018	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	10	<.01	0.21	ND
AMB-018	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.3	0.01	0.17	ND
AMB-018	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	11	0.01	0.28	ND
AMB-019	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	10	0.022	1.3	<.1
AMB-019	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.9	<.01	0.62	ND
AMB-019	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	4.4	0.01	0.16	ND
AMB-019	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	9.1	0.01	1.24	ND
AMB-020	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	23	0.04	<.02	0.16
AMB-020	<.005	<.03	<.5	<.15	<.01	<.01	0.02	<.01	<.05	23	0.04	<.02	0.54
AMB-020	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	22	0.04	<.02	0.38
AMB-021	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	16	0.03	<.02	0.14
AMB-021	<.005	<.03	<.5	<.15	<.01	10	<.02	<.01	<.05	13	0.03	<.02	0.11
AMB-021	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.03	<.02	ND
AMB-021	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.04	<.02	0.44

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-022	Town of Summerville	34.080875	-80.5877028	Dorchester	Catawba	Black Creek/ Middendorf
AMB-022	Town of Summerville	34.080875	-80.5877028	Dorchester	Catawba	Black Creek/ Middendorf
AMB-022	Town of Summerville	34.080875	-80.5877028	Dorchester	Catawba	Black Creek/ Middendorf
AMB-022	Town of Summerville	34.080875	-80.5877028	Dorchester	Catawba	Black Creek/ Middendorf
AMB-023	Cainhoy High School	33.6586111	-79.8192389	Berkeley	Catawba	Black Mingo
AMB-023	Cainhoy High School	33.6586111	-79.8192389	Berkeley	Catawba	Black Mingo
AMB-023	Cainhoy High School	33.6586111	-79.8192389	Berkeley	Catawba	Black Mingo
AMB-023	Cainhoy High School	33.6586111	-79.8192389	Berkeley	Catawba	Black Mingo
AMB-024	Town of Moncks Corner-Santee Cooper	33.4054083	-79.9255833	Berkeley	Catawba	Black Mingo
AMB-024	Town of Moncks Corner-Santee Cooper	33.4054083	-79.9255833	Berkeley	Catawba	Black Mingo
AMB-024	Town of Moncks Corner-Santee Cooper	33.4054083	-79.9255833	Berkeley	Catawba	Black Mingo
AMB-024	Town of Moncks Corner-Santee Cooper	33.4054083	-79.9255833	Berkeley	Catawba	Black Mingo
AMB-025	Town of St. Matthews	32.9838028	-80.2183889	Calhoun	Catawba	Black Mingo
AMB-025	Town of St. Matthews	32.9838028	-80.2183889	Calhoun	Catawba	Black Mingo
AMB-025	Town of St. Matthews	32.9838028	-80.2183889	Calhoun	Catawba	Black Mingo
AMB-025	Town of St. Matthews	32.9838028	-80.2183889	Calhoun	Catawba	Black Mingo
AMB-026	Town of Wagner	33.648725	-81.3557222	Aiken	Saluda-Edisto	Middendorf
AMB-026	Town of Wagner	33.648725	-81.3557222	Aiken	Saluda-Edisto	Middendorf
AMB-027	City of North Augusta	33.5139583	-81.9414444	Aiken	Sav-Salk	Middendorf
AMB-028	Montmorenci Couchton	33.5803194	-81.6751944	Aiken	Saluda-Edisto	Middendorf
AMB-028	Montmorenci Couchton	33.5803194	-81.6751944	Aiken	Saluda-Edisto	Middendorf
AMB-028	Montmorenci Couchton	33.5803194	-81.6751944	Aiken	Saluda-Edisto	Middendorf
AMB-028	Montmorenci Couchton	33.5803194	-81.6751944	Aiken	Saluda-Edisto	Middendorf
AMB-029	Parris Island	33.0210444	-79.8524306	Beaufort	Sav-Salk	Middendorf
AMB-029	Parris Island	33.0210444	-79.8524306	Beaufort	Sav-Salk	Middendorf
AMB-029	Parris Island	33.0210444	-79.8524306	Beaufort	Sav-Salk	Middendorf
AMB-029	Parris Island	33.0210444	-79.8524306	Beaufort	Sav-Salk	Middendorf
AMB-030	Town of Patrick #1	33.2021306	-79.9816778	Chesterfield	Pee Dee	Middendorf
AMB-030	Town of Patrick #1	33.2021306	-79.9816778	Chesterfield	Pee Dee	Middendorf
AMB-030	Town of Patrick #1	33.2021306	-79.9816778	Chesterfield	Pee Dee	Middendorf
AMB-031	City of Walterboro	33.6649222	-80.7743528	Collecton	Sav-Salk	Middendorf
AMB-031	City of Walterboro	33.6649222	-80.7743528	Collecton	Sav-Salk	Middendorf
AMB-031	City of Walterboro	33.6649222	-80.7743528	Collecton	Sav-Salk	Middendorf
AMB-031	City of Walterboro	33.6649222	-80.7743528	Collecton	Sav-Salk	Middendorf
AMB-032	City of Darlington-Main St.	32.3298417	-80.7078778	Darlington	Pee Dee	Middendorf
AMB-032	City of Darlington-Main St.	32.3298417	-80.7078778	Darlington	Pee Dee	Middendorf
AMB-032	City of Darlington-Main St.	32.3298417	-80.7078778	Darlington	Pee Dee	Middendorf
AMB-033	City of Hartsville	34.5632861	-80.0312139	Darlington	Pee Dee	Middendorf
AMB-033	City of Hartsville	34.5632861	-80.0312139	Darlington	Pee Dee	Middendorf
AMB-033	City of Hartsville	34.5632861	-80.0312139	Darlington	Pee Dee	Middendorf
AMB-034	Town of Timmons ville	32.9022972	-80.6589889	Florence	Pee Dee	Middendorf
AMB-034	Town of Timmons ville	32.9022972	-80.6589889	Florence	Pee Dee	Middendorf
AMB-034	Town of Timmons ville	32.9022972	-80.6589889	Florence	Pee Dee	Middendorf
AMB-034	Town of Timmons ville	32.9022972	-80.6589889	Florence	Pee Dee	Middendorf
AMB-035	City of Florence-S. Ballard St.	34.3074528	-79.8760806	Florence	Pee Dee	Middendorf
AMB-035	City of Florence-S. Ballard St.	34.3074528	-79.8760806	Florence	Pee Dee	Middendorf
AMB-035	City of Florence-S. Ballard St.	34.3074528	-79.8760806	Florence	Pee Dee	Middendorf
AMB-036	City of Elgin	34.3540778	-80.1164333	Kershaw	Catawba	Middendorf
AMB-036	City of Elgin	34.3540778	-80.1164333	Kershaw	Catawba	Middendorf
AMB-037	Town of Bethune	34.1372278	-79.9384611	Kershaw	Pee Dee	Middendorf
AMB-037	Town of Bethune	34.1372278	-79.9384611	Kershaw	Pee Dee	Middendorf
AMB-037	Town of Bethune	34.1372278	-79.9384611	Kershaw	Pee Dee	Middendorf
AMB-038	City of Camden	34.19695	-79.7517833	Kershaw	Catawba	Middendorf
AMB-038	City of Camden	34.19695	-79.7517833	Kershaw	Catawba	Middendorf
AMB-038	City of Camden	34.19695	-79.7517833	Kershaw	Catawba	Middendorf
AMB-039	City of Bishopville	34.175375	-80.7715889	Lee	Pee Dee	Middendorf
AMB-039	City of Bishopville	34.175375	-80.7715889	Lee	Pee Dee	Middendorf
AMB-039	City of Bishopville	34.175375	-80.7715889	Lee	Pee Dee	Middendorf
AMB-040	Town of Swansea	34.3971278	-80.7743528	Lexington	Saluda-Edisto	Middendorf
AMB-040	Town of Swansea	34.3971278	-80.7743528	Lexington	Saluda-Edisto	Middendorf
AMB-040	Town of Swansea	34.3971278	-80.7743528	Lexington	Saluda-Edisto	Middendorf
AMB-040	Town of Swansea	34.3971278	-80.7743528	Lexington	Saluda-Edisto	Middendorf
AMB-041	Town of Summit	34.2112611	-80.5461389	Lexington	Saluda-Edisto	Middendorf
AMB-041	Town of Summit	34.2112611	-80.5461389	Lexington	Saluda-Edisto	Middendorf
AMB-041	Town of Summit	34.2112611	-80.5461389	Lexington	Saluda-Edisto	Middendorf
AMB-041	Town of Summit	34.2112611	-80.5461389	Lexington	Saluda-Edisto	Middendorf
AMB-042	Hidden Valley	34.1961667	-80.2088361	Lexington	Saluda-Edisto	Middendorf
AMB-042	Hidden Valley	34.1961667	-80.2088361	Lexington	Saluda-Edisto	Middendorf
AMB-042	Hidden Valley	34.1961667	-80.2088361	Lexington	Saluda-Edisto	Middendorf

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SP, °C/D	TDS	Hard	TOC	Cl ⁻ ppm	Cl ⁻ ppm	Cl ⁻ %	SO ₄ ⁻ ppm	SO ₄ ⁻ ppm	SO ₄ ⁻ %	Alk ⁻ ppm	Alk ⁻ ppm	Alk ⁻ %
AMB-022	01-May-02	8.8	938	560	2.6	<2	16	0.45	4.93	7.1	0.15	1.64	520	8.52	93.42
AMB-022	01-Jul-99	8.8	960	590	2	<2	17.1	0.48	5.44	7	0.15	1.7	500	8.2	92.87
AMB-022	01-Jul-94	8.9	983	530	3	8.3	19	0.54	6.18	<5	0	0	500	8.2	93.82
AMB-022	01-May-89	8.5	1050	570	2	1.0	20	0.56	6.39	<10	0	0	500	8.2	93.61
AMB-023	01-May-02	8	538	310	86	<2	22	0.62	13.14	8.1	0.17	3.6	240	3.93	83.26
AMB-023	01-Jul-99	7.8	520	290	110	2.4	17.2	0.48	10.15	7	0.15	3.17	250	4.1	86.68
AMB-023	01-Jul-94	7.9	513	280	110	6.3	19.1	0.54	11.59	7	0.15	3.22	242	3.97	85.19
AMB-023	01-May-89	7.7	483	310	100	1.0	17.8	0.5	10.78	10	0.21	4.53	240	3.93	84.7
AMB-024	01-May-02	7.9	647	360	120	<2	27	0.76	12.36	6.7	0.14	2.28	320	5.25	85.37
AMB-024	01-Jul-99	7.8	628	380	120	<2	26.2	0.74	12.46	7	0.15	2.53	308	5.05	85.02
AMB-024	01-Jul-94	8.1	597	320	130	4.3	26.3	0.74	14.1	<5	0	0	275	4.51	85.9
AMB-024	01-May-89	7.5	480	340	120	1.0	24.6	0.69	12.83	12	0.25	4.65	271	4.44	82.53
AMB-025	01-May-02	6.6	122	76	45	<2	6.1	0.17					34	0.56	
AMB-025	01-May-98	7.0	137	86	61	<2	7	0.2	20.2	<5	0	0	48	0.79	79.8
AMB-025	01-May-93	6.8	149	100	64	4.8	9.0	0.25	23.36	<10	0	0	50	0.82	76.64
AMB-025	01-May-88	6.7	132	100	61	<1	8.5	0.24	22.64	<10	0	0	50	0.82	77.36
AMB-026	01-May-93	5.6	15	12	3.0	2	1.4	0.04	36.36	<10	0	0	4	0.07	63.64
AMB-026	01-May-88	5.3	14	20	2.0	<1	1.5	0.04	57.14	<10	0	0	2.0	0.03	42.86
AMB-027	01-May-88	5.5	27	18	5.0	<1	2.5	0.07	58.33	<10	0	0	3	0.05	41.67
AMB-028	15-May-01	5.5	19.2	12		<2	2.1	0.06	75	<5	0	0	1.1	0.02	25
AMB-028	01-May-98	5.4		24	3	<2	1.7	0.05	100	<5	0	0	<1	0	0
AMB-028	01-May-93	5.4	35	24	4.0	1.7	1.8	0.05	50	<10	0	0	3	0.05	50
AMB-028	01-May-88	5.4	21	16	3.0	<1	2.5	0.07	58.33	<10	0	0	3	0.05	41.67
AMB-029	01-Jul-00	9.0	1771	1100	2	3.8	35.3	0.99	5.92	8	0.17	1.02	949	15.56	93.06
AMB-029	01-May-98	8.9	1740	110	3	56	34.8	0.98	5.93	7	0.15	0.91	940	15.41	93.17
AMB-029	01-May-93	8.6	1850	1100	6.0	86	42.1	1.19	10.98	13	0.27	2.49	572	9.38	86.53
AMB-029	01-May-88	8.4	2280	1200	6.0	<1	39.5	1.11		<10	0				
AMB-030	01-Jul-99	5.3	12.6	16	1	<2	1.8	0.05	71.43	<5	0	0	1	0.02	28.57
AMB-030	01-Jul-94	5.1	13	4	1.0	1.5	1.23	0.03	50	<5	0	0	2	0.03	50
AMB-030	01-May-89	5.2	12	12	1.0	<1	1.0	0.03	50	<10	0	0	2	0.03	50
AMB-031	01-Jul-00	8.8	396	240	10	2.3	4	0.11	3.18	8	0.17	4.91	194	3.18	91.91
AMB-031	01-May-93	8.9	388	240	10	9.2	4.7	0.13	3.87	<10	0	0	197	3.23	96.13
AMB-031	01-May-88	9.2	340	240	2.0	<1	2.0	0.06	2.12	<10	0	0	169	2.77	97.88
AMB-032	01-Jul-99	4.9	29.6	28	4		1.7	0.05	26.32	6	0.12	63.16	1	0.02	10.53
AMB-032	01-Jul-94	4.8	31	22	3.0	1.5	<1	0	0	6.0	0.12	85.71	1	0.02	14.29
AMB-032	01-May-89	4.8	32	26	3.0	<1	1.0	0.03	50	<10	0	0	2	0.03	50
AMB-033	01-Jul-99	5.0	14.2	28	2		1.8	0.05	71.43	<5	0	0	1	0.02	28.57
AMB-033	01-Jul-94	7.1	55	29	25	1.5	1.43	0.04	8.89	<5	0	0	25	0.41	91.11
AMB-033	01-May-89	5.9	17	8	3.0	<1	1.5	0.04	33.33	<10	0	0	5	0.08	66.67
AMB-034	01-Jul-99	6.2	52	44	8	<2	2	0.06	14.63	9	0.19	46.34	10	0.16	39.02
AMB-034	01-Jul-94	6.1	51	42	8.0	2.0	1.7	0.05	11.63	8	0.17	39.53	13	0.21	48.84
AMB-034	01-May-89	5.9	51	36	7.0	<1	1.5	0.04	16.67	<10	0	0	12	0.2	83.33
AMB-035	01-Jul-99	8.0	180	140	30	<2	16.4	0.46	25.7	17	0.35	19.55	60	0.98	54.75
AMB-035	01-Jul-94	7.2	170	100	31	1.7	12.5	0.35	24.65	16	0.33	23.24	45	0.74	52.11
AMB-035	01-May-89	6.8	298	150	12	<1	42	1.18	46.83	15	0.31	12.3	63	1.03	40.87
AMB-036	01-Jul-94	5.2	18	4	2.0	2.1	1.4	0.04	57.14	<5	0	0	2	0.03	42.86
AMB-036	01-May-89	4.2	16	34	2.0	<1	1.5	0.04	57.14	<10	0	0	2	0.03	42.86
AMB-037	01-Jul-99	4.7	35.8	24	6		2.8	0.08					<1	0	
AMB-037	01-Jul-94	5.0	36	12	7.0	1.2	2.8	0.08	80	<5	0	0	1	0.02	20
AMB-037	01-May-89	3.9	81	76	21	<1	4.5	0.13	81.25	<10	0	0	2	0.03	18.75
AMB-038	01-Jul-99	4.7	26.3	16	2		3.5	0.1					<1	0	
AMB-038	01-Jul-94	5.1	29	16	2.0	2.0	4.8	0.14	66.67	<5	0	0	4	0.07	33.33
AMB-038	01-May-89	4.0	51	54	7.0	<1	7.5	0.21	91.3	<10	0	0	1	0.02	8.7
AMB-039	01-Jul-99	5.0	12.9	14	1	<2	2.1	0.06	100	<5	0	0	<1	0	0
AMB-039	01-Jul-94	5.1	16	9	2.0	1.4	2.0	0.06	66.67	<5	0	0	2	0.03	33.33
AMB-039	01-May-89	4.8	24	44	6.0	<1	2.0	0.06	37.5	<10	0	0	6	0.1	62.5
AMB-040	15-May-01	5.6	14.5	26		<2	1.9	0.05	62.5	<5	0	0	2	0.03	37.5
AMB-040	01-May-97	5.2	13	<1	2.0	<2	1.3	0.04	100	<5	0	0	<1	0	0
AMB-040	01-Dec-91	7.1	75	42	3.0	2.3	1.9	0.05	7.25	<10	0	0	39	0.64	92.75
AMB-040	01-May-87	5.3	10	10	1.0	<1	1.5	0.04	57.14	<10	0	0	2	0.03	42.86
AMB-041	15-May-01	4.8	43.6	36		<2	3.7	0.1	100	<5	0	0	<1	0	0
AMB-041	01-May-97	4.8		9	7.0	<2	3.1	0.09	100	<5	0	0	<1	0	0
AMB-041	01-Dec-91	4.9	30	38	5.0	2.0	3.0	0.08	80	<10	0	0	1	0.02	20
AMB-041	01-May-87	4.9	28	20	4.0	<1	2.5	0.07	77.78	<10	0	0	1	0.02	22.22
AMB-042	15-May-01	5.4	14.2	32		<2	1.7	0.05	100	<5	0	0	<1	0	0
AMB-042	01-May-97	5.3	14	<1	2.0	<2	1.4	0.04	100	<5	0	0	<1	0	0
AMB-042	01-Dec-91	5.3	14	30	2.0		1.6	0.05	16.13	11	0.23	74.19	2	0.03	9.68

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-022	0.8	0.04	0.38	0.18	0.01	0.09	240	10.43	2.1	0.05	99.53	2.6	<.005
AMB-022	0.73	0.04	0.48	0.18	0.01	0.12	190	8.26	2	0.05	99.4	3.16	<.005
AMB-022	0.74	0.04	0.36	0.16	0.01	0.09	250	10.87	2	0.05	99.54	4.0	<.005
AMB-022	0.73	0.04	0.37	0.11	0.01	0.09	250	10.87	<1	0	99.54	2.80	<.005
AMB-023	13.0	0.65	11.55	13	1.07	19.01	80	3.48	17	0.43	69.45	1	<.005
AMB-023	16	0.8	13.31	17	1.4	23.29	77	3.35	18	0.46	63.39	1.08	<.005
AMB-023	16	0.8	14.44	16	1.32	23.83	70	3.04	15	0.38	61.73	0.94	<.005
AMB-023	16	0.8	14.6	15	1.23	22.45	71	3.09	14	0.36	62.96	1.02	<.005
AMB-024	18.0	0.9	13.24	18	1.48	21.76	90	3.91	20	0.51	65	0.76	<.005
AMB-024	17	0.85	12.88	20	1.65	25	83	3.61	19	0.49	62.12	0.67	<.005
AMB-024	21	1.05	16.43	20	1.65	25.82	75	3.26	17	0.43	57.75	0.70	<.005
AMB-024	20	1	16.56	18	1.48	24.5	72	3.13	17	0.43	58.94	0.98	<.005
AMB-025	17.0	0.85	56.67	0.55	0.05	3.33	13	0.57	1	0.03	40		<.005
AMB-025	23	1.15	82.14	0.91	0.07	5	3.1	0.13	2	0.05	12.86		<.005
AMB-025	24	1.2	81.63	0.93	0.08	5.44	3.6	0.16	1	0.03	12.93	<0.1	<.005
AMB-025	23	1.15	74.19	0.90	0.07	4.52	7.7	0.33	<1	0	21.29	3	<.005
AMB-026	0.84	0.04	40	0.18	0.01	10	1.1	0.05	<1	0	50		<.005
AMB-026	0.36	0.02	25	0.16	0.01	12.5	1.1	0.05	<1	0	62.5	<0.1	<.005
AMB-027	0.98	0.05	25	0.55	0.05	25	2.2	0.1	<1	0	50	<0.1	<.005
AMB-028	0.64	0.03	27.27	0	0	0	1.8	0.08	<1	0	72.73	<1	<.005
AMB-028	0.6	0.03	27.27	0.3	0.02	18.18	1.4	0.06	<1	0	54.55	<0.1	<.005
AMB-028	0.89	0.04	28.57	0.36	0.03	21.43	1.6	0.07	<1	0	50		<.005
AMB-028	0.69	0.03	25	0.30	0.02	16.67	1.7	0.07	<1	0	58.33	<0.1	<.005
AMB-029	0.57	0.03	0.16	0.18	0.01	0.05	440	19.13	4	0.1	99.79		<.005
AMB-029	0.69	0.03	0.1	0.29	0.02	0.06	450	19.57	450	11.51	99.84		<.005
AMB-029	1.5	0.07	0.56	0.46	0.04	0.32	4	0.17	480	12.28	99.12	6.5	<.005
AMB-029	1.5	0.07	0.32	0.43	0.04	0.18	500	21.74	<1	0	99.5	3.90	<.005
AMB-030	0.23	0.01	16.67	0.13	0.01	16.67	1	0.04	<1	0	66.67	<1	<.005
AMB-030	0.24	0.01	50	0.17	0.01	50	<1	0	<1	0	0	<0.1	<.005
AMB-030	0.21	0.01	50	0.13	0.01	50	<1	0	<1	0	0	<0.1	<.005
AMB-031	2.4	0.12	3.02	1.1	0.09	2.26	82	3.57	8	0.2	94.72	1.01	<.005
AMB-031	2.4	0.12	2.81	0.99	0.08	1.87	89	3.87	8	0.2	95.32	1.04	<.005
AMB-031	0.56	0.03	0.92	<.05	0	0	74	3.22	<1	0	99.08	0.80	<.005
AMB-032	0.71	0.04	22.22	0.43	0.04	22.22	1.7	0.07	1	0.03	55.56	<1	<.005
AMB-032	0.65	0.03	23.08	0.37	0.03	23.08	1.5	0.07	<1	0	53.85	<0.1	<.005
AMB-032	0.68	0.03	23.08	0.37	0.03	23.08	1.6	0.07	<1	0	53.85	<0.1	<.005
AMB-033	0.52	0.03	27.27	0.19	0.02	18.18	1.3	0.06	<1	0	54.55	<1	<.005
AMB-033	9.6	0.48	84.21	0.22	0.02	3.51	1.5	0.07	<1	0	12.28	<0.1	<.005
AMB-033	0.92	0.05	50	0.14	0.01	10	1	0.04	<1	0	40	<0.1	<.005
AMB-034	1.4	0.07	17.5	1	0.08	20	2.8	0.12	5	0.13	62.5	<1	<.005
AMB-034	1.5	0.07	20	1.10	0.09	25.71	2.5	0.11	3	0.08	54.29	<0.1	<.005
AMB-034	1.4	0.07	28	0.96	0.08	32	2.4	0.1	<1	0	40	<0.1	<.005
AMB-035	10	0.5	30.86	1.3	0.11	6.79	21	0.91	4	0.1	62.35	0.98	<.005
AMB-035	9	0.45	28.66	2	0.16	10.19	19	0.83	5	0.13	61.15	0.11	<.005
AMB-035	2.7	0.13	4.98	1.30	0.11	4.21	51	2.22	6	0.15	90.8	0.28	<.005
AMB-036	0.36	0.02	16.67	0.30	0.02	16.67	1.9	0.08	<1	0	66.67	0.11	<.005
AMB-036	0.36	0.02	50	0.30	0.02	50	<1	0	<1	0	0	<0.1	<.005
AMB-037	1.2	0.06	26.09	0.76	0.06	26.09	2.6	0.11	<1	0	47.83	<1	<.005
AMB-037	1.4	0.07	28	0.94	0.08	32	2.4	0.1	<1	0	40	0.10	<.005
AMB-037	3.8	0.19	40.43	2.70	0.22	46.81	1.4	0.06	<1	0	12.77	<0.1	<.005
AMB-038	0.28	0.01	5.56	0.31	0.03	16.67	3.2	0.14	<1	0	77.78	<1	<.005
AMB-038	0.53	0.03	15	0.30	0.02	10	3.4	0.15	<1	0	75	0.12	<.005
AMB-038	1.4	0.07	25	0.96	0.08	28.57	3.1	0.13	<1	0	46.43	<0.1	<.005
AMB-039	0.31	0.02	22.22	0.17	0.01	11.11	1.4	0.06	<1	0	66.67	<1	<.005
AMB-039	0.30	0.01	11.11	0.20	0.02	22.22	1.3	0.06	<1	0	66.67	0.12	<.005
AMB-039	1.9	0.09	47.37	0.21	0.02	10.53	1.9	0.08	<1	0	42.11	0.30	<.005
AMB-040	0.30	0.01	12.5	0	0	0	1.7	0.07	<1	0	87.5	<1	<.005
AMB-040	0.28	0.01	10	0.2	0.02	20	1.5	0.07	<1	0	70	<0.1	<.005
AMB-040	0.97	0.05	9.62	0.17	0.01	1.92	<1	0	18	0.46	88.46		<.005
AMB-040	0.25	0.01	12.5	0.20	0.02	25	1.1	0.05	<1	0	62.5		<.005
AMB-041	1.2	0.06	17.14	2	0.16	45.71	2.1	0.09	1.6	0.04	37.14	<1	<.005
AMB-041	0.88	0.04	17.39	1.1	0.09	39.13	2.3	0.1	<1	0	43.48	<0.1	<.005
AMB-041	0.66	0.03	15.79	0.79	0.07	36.84	2.1	0.09	<1	0	47.37	<0.1	<.005
AMB-041	0.53	0.03	16.67	0.60	0.05	27.78	2.2	0.1	<1	0	55.56	<0.1	<.005
AMB-042	0.36	0.02	28.57	0	0	0	1.2	0.05	<1	0	71.43	<1	<.005
AMB-042	0.38	0.02	20	0.25	0.02	20	1.3	0.06	<1	0	60	<0.1	<.005
AMB-042	0.34	0.02	25	0.24	0.02	25	1	0.04	<1	0	50		<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-022	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	1.9	<.02	<.0002	<.02
AMB-022	<.05	<.01	0.1	<.05	0.01	<.01	<.1	<.003	1.9	<.02	<.0002	<.02
AMB-022	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	1.0	<.02	<.0002	<.02
AMB-022	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	1.9	<.02	<.0002	<.02
AMB-023	<.05	<.01	.33	<.05	<.01	0.016	<.05	<.003	0.22	<.02	<.0002	<.02
AMB-023	<.05	0.02	0.03	<.05	<.01	0.02	<.1	<.003	0.19	<.02	<.0002	<.02
AMB-023	<.05	<.01	0.08	<.05	<.01	<.01	<.05	<.003	0.17	<.02	<.0002	<.02
AMB-023	<.05	<.01	0.02	<.05	<.01	<.01	<.05	<.001	0.18	<.02	<.0002	<.02
AMB-024	<.05	<.01	0.25	<.05	<.01	0.011	<.1	<.003	0.2	<.02	<.0002	<.02
AMB-024	<.05	<.01	0.12	<.05	<.01	<.01	<.1	<.003	0.21	<.02	<.0002	<.02
AMB-024	<.05	<.01	0.03	<.05	<.01	<.01	<.05	<.003	0.18	<.02	<.0002	<.02
AMB-024	<.05	<.01	0.03	<.05	<.01	<.01	<.05	<.001	0.18	<.02	<.0002	<.02
AMB-025	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-025	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-025	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-025	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-026			0.03			0.11						
AMB-026	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-027	<.05	<.05	0.09	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-028	<.05	0.018	0.046	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-028	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-028		0.01	0.02									
AMB-028	<.05	<.05	0.55	<.05	<.05	<.05	0.11	<.001	<.05	<.05	<.0002	<.02
AMB-029	<.05	<.01	0.1	<.05	<.01	<.01	<.1	<.003	4.2	<.02	<.0002	<.02
AMB-029	<.05	<.01	0.14	<.05	<.01	<.01	<.1	<.003	4.4	<.02	<.0002	<.02
AMB-029	<.05	<.01	0.60	<.05	<.01	<.01	<.05	<.003	4.6	<.02	<.0002	<.02
AMB-029	<.05	<.05	0.11	<.05	<.05	0.11	<.05	<.001	4.20	<.05	<.0002	<.02
AMB-030	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-030	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-030	<.05	0.02	0.01	<.05	<.01	<.01	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-031	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.2	<.02	<.0002	<.02
AMB-031	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.19	<.05	<.0002	<.02
AMB-031	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.41	<.05	<.0002	<.02
AMB-032	<.05	<.01	0.96	<.05	0.02	0.02	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-032	<.05	<.01	0.70	<.05	0.01	0.03	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-032	<.05	<.01	0.81	<.05	0.01	0.03	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-033	<.05	0.03	<.02	<.05	<.01	0.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-033	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.003	<.02	<.02	<.0002	0.03
AMB-033	<.05	0.01	<.01	<.05	<.01	0.03	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-034	<.05	<.01	2.3	<.05	0.02	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-034	0.06	0.01	2.4	<.05	0.03	0.02	<.05	<.003	<.03	<.02	<.0002	0.07
AMB-034	0.06	<.01	1.80	<.05	0.02	<.01	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-035	0.06	0.04	12	<.05	0.14	0.03	1.4	<.003	<.1	<.02	<.0002	<.02
AMB-035	<.05	<.01	0.03	<.05	<.01	<.01	<.05	<.003	0.05	<.02	<.0002	<.02
AMB-035	0.05	<.01	0.41	<.05	0.02	0.03	<.05	<.001	0.09	<.02	<.0002	<.02
AMB-036	<.05	<.01	0.13	<.05	0.02	0.04	<.05	<.003	<.02	<.02	<.0002	<.02
AMB-036	<.05	<.01	0.01	<.05	<.01	<.04	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-037	<.05	<.01	<.02	<.05	<.01	0.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-037	<.05	<.01	<.02	<.05	0.01	0.01	0.04	<.003	<.03	<.02	<.0002	<.02
AMB-037	0.09	<.01	0.01	<.05	0.03	0.01	0.16	<.001	<.02	<.02	<.0002	<.02
AMB-038	<.05	0.02	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-038	<.05	0.02	0.38	<.05	0.01	0.05	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-038	<.05	0.01	0.24	<.05	0.01	0.04	0.22	<.001	<.02	<.02	<.0002	<.02
AMB-039	<.05	0.02	<.02	<.05	<.01	0.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-039	<.05	0.04	<.05	<.01	0.03	<.05	<.05	0.01	<.02	<.02	<.0002	<.02
AMB-039	<.05	0.02	0.01	<.05	<.01	0.02	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-040	<.05	<.01	0.033	<.05	<.01	<.01	<.1	0.0042	<.1	<.02	<.0002	<.02
AMB-040	<.05	<.01	<.02	<.05	<.01	<.01	0.09	<.003	0.22	<.02	<.0002	<.02
AMB-040		0.01	0.06			0.02					<.0002	
AMB-040		<.05	0.11	<.05	<.05							
AMB-041	<.05	0.033	0.094	<.05	<.01	0.024	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-041	<.05	0.01	<.02	<.05	<.01	<.01	0.08	<.003	0.08	<.02	<.0002	<.02
AMB-041		0.02	0.02			0.03			0.03		<.0002	0.03
AMB-041	<.05	<.05	<.05	0.06	<.05							
AMB-042	<.05	0.019	<.02	<.05	<.01	0.015	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-042	<.05	<.01	<.02	<.05	<.01	<.01	0.06	<.003	0.06	<.02	<.0002	<.02
AMB-042	<.05	<.01	0.03			0.06	0.05				<.0002	

Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-022	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.011	<.05	18	0.02	<.03	0.35
AMB-022	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	14	0.02	<.02	0.36
AMB-022	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	<.03	<.02	<.02	0.22
AMB-022	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	16	0.02	<.02	1.22
AMB-023	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.013	<.05	39	0.19	0.037	0.21
AMB-023	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	34	0.23	0.08	0.53
AMB-023	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	36	0.25	<.02	0.49
AMB-023	<.005	<.03	<.5	<.15	<.01	0.01	<.02	0.01	<.05	34	0.24	<.02	0.62
AMB-024	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.016	<.05	43	0.15	<.02	0.37
AMB-024	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	38	0.15	<.02	0.33
AMB-024	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	0.04	0.20	<.02	0.25
AMB-024	<.005	<.03	<.5	<.15	<.01	0.01	<.02	0.02	<.05	36	0.20	<.02	1.18
AMB-025	<.005	<.03	<.5	1.17	<.01	<.01	<.02	<.01	<.05	14	0.015	2.9	<.1
AMB-025	<.005	<.03	<.5	0.17	<.01	<.01	<.02	<.01	<.05	14	0.02	1.96	ND
AMB-025	<.005	<.05	<.5	<.15	<.01	<.05	<.05	<.05	<.05		0.02	1.99	ND
AMB-025	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	14	<.05	2.20	0.13
AMB-026													ND
AMB-026	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	7.7	<.05	<.02	ND
AMB-027	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	5.7	<.05	1.36	ND
AMB-028	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.8	<.01	0.70	
AMB-028	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.3	<.01	0.46	ND
AMB-028												0.74	
AMB-028	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	6.9	<.05	0.87	ND
AMB-029	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	9.1	0.04	<.02	0.71
AMB-029	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	1	0.05	<.02	0.86
AMB-029	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05		0.07	0.02	0.87
AMB-029	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	19	0.07	<.02	0.73
AMB-030	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.4	<.01	<.02	ND
AMB-030	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.6	<.01	0.09	ND
AMB-030	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.2	<.01	<.02	ND
AMB-031	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	31	0.05	<.02	0.24
AMB-031	<.005	<.05	<.1	<.15	<.01	<.05	<.05	<.05	<.02		0.05	<.02	0.27
AMB-031	<.005	<.05	<.1	<.05	<.01	<.05	<.05	<.05	<.02	18	<.05	<.02	0.39
AMB-032	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	10	<.01	<.02	ND
AMB-032	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	11	0.01	<.02	ND
AMB-032	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	10	0.01	<.02	0.34
AMB-033	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.7	<.01	10	ND
AMB-033	<.005	<.03	<.5	<.15	<.01	0.01	<.02	<.01	<.05	8.2	0.01	0.09	ND
AMB-033	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.6	<.01	0.05	ND
AMB-034	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	15	0.02	<.02	ND
AMB-034	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	16	0.03	0.02	0.22
AMB-034	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	15	0.03	<.02	0.12
AMB-035	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	21	0.05	<.02	ND
AMB-035	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	21	0.07	<.02	0.69
AMB-035	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	17	0.07	<.02	0.12
AMB-036	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	2.6	<.01	1.02	ND
AMB-036	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.5	<.01	0.71	0.12
AMB-037	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6	0.01	1.88	ND
AMB-037	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	3.1	0.01	3.7	ND
AMB-037	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.8	0.04	5.80	ND
AMB-038	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.6	<.01	0.6	ND
AMB-038	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	2.9	<.01	0.49	ND
AMB-038	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.1	0.01	1.89	0.12
AMB-039	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.2	<.01	0.05	ND
AMB-039	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	4.3	<.01	<.02	ND
AMB-039	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.4	<.01	<.02	ND
AMB-040	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.4	<.01	0.021	ND
AMB-040	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.3	<.01	<.02	ND
AMB-040													
AMB-040					<.01	<.05						<.02	
AMB-041	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	1.6	0.017	2.8	
AMB-041	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	4.9	0.11	1.33	ND
AMB-041					<.01						0.01	1.80	
AMB-041					<.01	<.05						1.76	
AMB-042	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.4	<.01	0.41	ND
AMB-042	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.1	<.01	0.39	ND
AMB-042										3.1		0.30	0.33

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-042	Hidden Valley	34.1961667	-80.2088361	Lexington	Saluda-Edisto	Middendorf
AMB-043	Town of Clio	33.7332917	-81.0938167	Marlboro	Pee Dee	Middendorf
AMB-043	Town of Clio	33.7332917	-81.0938167	Marlboro	Pee Dee	Middendorf
AMB-043	Town of Clio	33.7332917	-81.0938167	Marlboro	Pee Dee	Middendorf
AMB-044	Orangeburg Fish Hatchery #1	33.9286778	-81.4191889	Orangeburg	Saluda-Edisto	Middendorf
AMB-044	Orangeburg Fish Hatchery #1	33.9286778	-81.4191889	Orangeburg	Saluda-Edisto	Middendorf
AMB-044	Orangeburg Fish Hatchery #1	33.9286778	-81.4191889	Orangeburg	Saluda-Edisto	Middendorf
AMB-044	Orangeburg Fish Hatchery #1	33.9286778	-81.4191889	Orangeburg	Saluda-Edisto	Middendorf
AMB-045	Fort Jackson-Twin Lakes	33.8347722	-81.1312833	Richland	Saluda-Edisto	Middendorf
AMB-045	Fort Jackson-Twin Lakes	33.8347722	-81.1312833	Richland	Saluda-Edisto	Middendorf
AMB-045	Fort Jackson-Twin Lakes	33.8347722	-81.1312833	Richland	Saluda-Edisto	Middendorf
AMB-045	Fort Jackson-Twin Lakes	33.8347722	-81.1312833	Richland	Saluda-Edisto	Middendorf
AMB-046	Spring Valley	34.5789583	-79.5478	Richland	Saluda-Edisto	Middendorf
AMB-046	Spring Valley	34.5789583	-79.5478	Richland	Saluda-Edisto	Middendorf
AMB-046	Spring Valley	34.5789583	-79.5478	Richland	Saluda-Edisto	Middendorf
AMB-047	Hopkins	33.4685667	-80.8550722	Richland	Saluda-Edisto	Middendorf
AMB-047	Hopkins	33.4685667	-80.8550722	Richland	Saluda-Edisto	Middendorf
AMB-047	Hopkins	33.4685667	-80.8550722	Richland	Saluda-Edisto	Middendorf
AMB-047	Hopkins	33.4685667	-80.8550722	Richland	Saluda-Edisto	Middendorf
AMB-048	North of Eastover	33.9946611	-80.9047556	Richland	Catawba	Middendorf
AMB-048	North of Eastover	33.9946611	-80.9047556	Richland	Catawba	Middendorf
AMB-049	Sumter Plant #1	34.1131583	-80.8801528	Sumter	Pee Dee	Middendorf
AMB-049	Sumter Plant #1	34.1131583	-80.8801528	Sumter	Pee Dee	Middendorf
AMB-049	Sumter Plant #1	34.1131583	-80.8801528	Sumter	Pee Dee	Middendorf
AMB-049	Sumter Plant #1	34.1131583	-80.8801528	Sumter	Pee Dee	Middendorf
AMB-050	Town of Hemingway	33.9875444	-80.8393056	Williamsburg	Pee Dee	Middendorf
AMB-050	Town of Hemingway	33.9875444	-80.8393056	Williamsburg	Pee Dee	Middendorf
AMB-050	Town of Hemingway	33.9875444	-80.8393056	Williamsburg	Pee Dee	Middendorf
AMB-051	Allendale Industrial Park	32.9820444	-81.2763917	Allendale	Sav-Salk	PeeDee/Black Creek
AMB-051	Allendale Industrial Park	32.9820444	-81.2763917	Allendale	Sav-Salk	PeeDee/Black Creek
AMB-052	Eutaw Springs- Gaillard primary school	33.952	-80.713075	Orangeburg		Pee Dee
AMB-053	Town of Moncks Corner	33.9335417	-80.3461667	Berkeley	Catawba	Pee Dee
AMB-053	Town of Moncks Corner	33.9335417	-80.3461667	Berkeley	Catawba	Pee Dee
AMB-053	Town of Moncks Corner	33.9335417	-80.3461667	Berkeley	Catawba	Pee Dee
AMB-053	Town of Moncks Corner	33.9335417	-80.3461667	Berkeley	Catawba	Pee Dee
AMB-054	Abbeville Deep Well	34.1439222	-82.4035861	Abbeville	Sav-Salk	Piedmont Bedrock Well
AMB-054	Abbeville Deep Well	34.1439222	-82.4035861	Abbeville	Sav-Salk	Piedmont Bedrock Well
AMB-054	Abbeville Deep Well	34.1439222	-82.4035861	Abbeville	Sav-Salk	Piedmont Bedrock Well
AMB-055	Starr Shallow Well	34.3965833	-82.7532778	Anderson	Sav-Salk	Saprolite
AMB-055	Starr Shallow Well	34.3965833	-82.7532778	Anderson	Sav-Salk	Saprolite
AMB-055	Starr Shallow Well	34.3965833	-82.7532778	Anderson	Sav-Salk	Saprolite
AMB-056	Blacksburg-walker	33.7477111	-79.4511417	Cherokee	Broad	Saprolite
AMB-056	Blacksburg-walker	33.7477111	-79.4511417	Cherokee	Broad	Saprolite
AMB-057	Town of Jenkinsville #11	33.3891806	-80.2710056	Fairfield	Broad	Piedmont Bedrock
AMB-057	Town of Jenkinsville #11	33.3891806	-80.2710056	Fairfield	Broad	Piedmont Bedrock
AMB-057	Town of Jenkinsville #11	33.3891806	-80.2710056	Fairfield	Broad	Piedmont Bedrock
AMB-058	Town of Ridgeway	33.1922361	-80.0174944	Fairfield	Catawba	Piedmont Bedrock
AMB-058	Town of Ridgeway	33.1922361	-80.0174944	Fairfield	Catawba	Piedmont Bedrock
AMB-058	Town of Ridgeway	33.1922361	-80.0174944	Fairfield	Catawba	Piedmont Bedrock
AMB-058	Town of Ridgeway	33.1922361	-80.0174944	Fairfield	Catawba	Piedmont Bedrock
AMB-059	Lake Wateree State Park	35.1532222	-81.4396167	Fairfield	Catawba	Piedmont Bedrock
AMB-059	Lake Wateree State Park	35.1532222	-81.4396167	Fairfield	Catawba	Piedmont Bedrock
AMB-059	Lake Wateree State Park	35.1532222	-81.4396167	Fairfield	Catawba	Piedmont Bedrock
AMB-059	Lake Wateree State Park	35.1532222	-81.4396167	Fairfield	Catawba	Piedmont Bedrock
AMB-060	Town of Jenkinsville #4	34.3944028	-81.2921	Fairfield	Broad	Piedmont Bedrock
AMB-060	Town of Jenkinsville #4	34.3944028	-81.2921	Fairfield	Broad	Piedmont Bedrock
AMB-060	Town of Jenkinsville #4	34.3944028	-81.2921	Fairfield	Broad	Piedmont Bedrock
AMB-061	Town of Mauldin	34.3052833	-80.9610556	Greenville	Broad	Saprolite
AMB-062	Fork Shoals	34.3676472	-81.29315	Greenville	Saluda-Edisto	Saprolite-ABANDONED
AMB-062	Fork Shoals	34.3676472	-81.29315	Greenville	Saluda-Edisto	Saprolite-ABANDONED
AMB-063	Town of Gilbert	34.7795722	-82.2184889	Lexington	Saluda-Edisto	Piedmont Bedrock
AMB-063	Town of Gilbert	34.7795722	-82.2184889	Lexington	Saluda-Edisto	Piedmont Bedrock
AMB-063	Town of Gilbert	34.7795722	-82.2184889	Lexington	Saluda-Edisto	Piedmont Bedrock
AMB-063	Town of Gilbert	34.7795722	-82.2184889	Lexington	Saluda-Edisto	Piedmont Bedrock
AMB-064	Town of Little Mountain	34.7797444	-82.2192278	Newberry	Broad	Piedmont Bedrock
AMB-064	Town of Little Mountain	34.7797444	-82.2192278	Newberry	Broad	Piedmont Bedrock
AMB-064	Town of Little Mountain	34.7797444	-82.2192278	Newberry	Broad	Piedmont Bedrock
AMB-065	East Central Newberry County	34.5639889	-82.3274444	Newberry	Broad	Piedmont Bedrock

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SP_CD	TDS	Hard	TOC	CL_ppm	CL_epm	CL_%	SO4_ppm	SO4_epm	SO4_%	ALK_ppm	ALK_epm	ALK_%
AMB-042	01-May-87	5.6	22	28	2.0	1.4	1.5	0.04	11.76	11	0.23	67.65	4	0.07	20.59
AMB-043	01-Jul-99	5.2	44.5	40	6	<2	3.4	0.1	29.41	8	0.17	50	4	0.07	20.59
AMB-043	01-Jul-94	5.9	52	24	6.0	1.8	3.5	0.1	25	7.0	0.15	37.5	9	0.15	37.5
AMB-043	01-May-89	5.5	48	30	6.0	1.4	4.0	0.11	57.89	<10	0	0	5	0.08	42.11
AMB-044	15-May-01	6.3	61.4	28		<2	1.6	0.05	10.87	11	0.23	50	11	0.18	39.13
AMB-044	01-May-98	6.5	59.3	44	10	<2	1.6	0.05	11.9	9	0.19	45.24	11	0.18	42.86
AMB-044	01-May-93	6.0	55	44	8.0	2.5	1.4	0.04	8.89	11	0.23	51.11	11	0.18	40
AMB-044	01-May-88	6.1	58	50	8.0	<1	1.5	0.04	23.53	<10	0	0	8	0.13	76.47
AMB-045	15-May-01	5.4	15.8	34		<2	1.7	0.05	71.43	<5	0	0	1	0.02	28.57
AMB-045	01-May-97	5.2	13	4	2.0	<2	1.2	0.03	60	<5	0	0	1	0.02	40
AMB-045	01-Dec-91	5.3	15	36	2.0	<2	1.6	0.05	13.51	13	0.27	72.97	3	0.05	13.51
AMB-045	01-May-87	6.0	15	0	2.0	1.7	2.5	0.07	21.21	10	0.21	63.64	3	0.05	15.15
AMB-046	01-May-97	5.6	29	14	3.0	<2	1.9	0.05	71.43	<5	0	0	1	0.02	28.57
AMB-046	01-Dec-91	5.6	22	12	2.0	1.5	1.9	0.05	62.5	<10	0	0	2	0.03	37.5
AMB-046	01-May-87	5.7	23	<1	2.0	<1	1.5	0.04	44.44	<10	0	0	3	0.05	55.56
AMB-047	15-May-01	5.2	12.6	32		<2	1.6	0.05	100	<5	0	0	<1	0	0
AMB-047	01-May-97	5.1	11	25	1.0	<2	1.2	0.03	60	<5	0	0	1	0.02	40
AMB-047	01-Dec-91	5.3	13	6	1.0	0.7	1.3	0.04	66.67	<10	0	0	1	0.02	33.33
AMB-047	01-May-87	5.1	10	<1	1.0	<1	1.0	0.03	50	<10	0	0	2	0.03	50
AMB-048	01-Dec-91	5.1	27	50	3.0	1.8	2.0	0.06	15	14	0.29	72.5	3	0.05	12.5
AMB-048	01-May-87	5.5	25	<1	3.0	<1	2.0	0.06	14.63	13	0.27	65.85	5	0.08	19.51
AMB-049	01-Jul-99	5.4	35.2	32	5	<2	2.5	0.07	21.88	7	0.15	46.88	6	0.1	31.25
AMB-049	01-Jul-94	5.7	41	24	6.0	2.5	2.7	0.08	19.51	8	0.17	41.46	10	0.16	39.02
AMB-049	01-May-89	5.6	41	64	5.0	<1	2.5	0.07	35	<10	0	0	8	0.13	65
AMB-050	01-Jul-99	8.6	680	400	4	<2	37.2	1.05	17.16	7	0.15	2.45	300	4.92	80.39
AMB-050	01-Jul-94	8.6	714	400	3.0	7.7	36.6	1.03	16.4	5.7	0.12	1.91	313	5.13	81.69
AMB-050	01-May-89	8.7	690	410	3.0	3.2	31	0.87	14.57	12	0.25	4.19	296	4.85	81.24
AMB-051	01-Jul-00	7.3	116	80	25	<2	2.2	0.06	6	12	0.25	25	42	0.69	69
AMB-051	01-May-88	7.2	117	64	24	<1	2.0	0.06	7.89	<10	0	0	43	0.7	92.11
AMB-052	01-May-88	8.9	160	110	34	<1	3.0	0.08	5.13	<10	0	0	90	1.48	94.87
AMB-053	01-May-02	7.9	512	290	130	<2	21	0.59	13.11	6.5	0.14	3.11	230	3.77	83.78
AMB-053	01-Jul-99	7.6	509	310	140	<2	23.1	0.65	13.18	6	0.12	2.43	254	4.16	84.38
AMB-053	01-Jul-94	7.8	475	250	160	4.2	21.8	0.61	14.7	<5	0	0	216	3.54	85.3
AMB-053	01-May-89	7.8	1300	840	21	1.0	71.2	2.01	15.27	<10	0	0	680	11.15	84.73
AMB-054	01-Jul-00	6.4	71.4	64	20	<2	3	0.08	15.38	<5	0	0	27	0.44	84.62
AMB-054	01-Apr-95	6.4	72	56	19	2.6	2.7	0.08	17.39	<5	0	0	23	0.38	82.61
AMB-054	01-Apr-90	6.6	70	76	22	2.1	2.8	0.08	17.02	<10	0	0	24	0.39	82.98
AMB-055	01-Jul-00	6.3	131	88	36	<2	13.2	0.37	46.25	<5	0	0	26	0.43	53.75
AMB-055	01-Apr-95	6.5	50	42	17	1.8	1.8	0.05	14.29	<5	0	0	18	0.3	85.71
AMB-055	01-Apr-90	6.5	46	48	19	2.9	1.9	0.05	8.77	10	0.21	36.84	19	0.31	54.39
AMB-056	01-Apr-95	6.4	68	44	27	1.9	3.6	0.1	17.86	<5	0	0	28	0.46	82.14
AMB-056	01-Apr-90	6.4	62	34	28	1.6	3.3	0.09	16.98	<10	0	0	27	0.44	83.02
AMB-057	01-May-97	6.3	86	90	17	2.1	3.1	0.09	13.43	7	0.15	22.39	26	0.43	64.18
AMB-057	01-Dec-91	6.4	82	86	17		2.5	0.07	63.64	<10	0	0	2.5	0.04	36.36
AMB-057	01-May-87	6.5	140	96	43	<1	10.5	0.3	23.08	<10	0	0	61	1	76.92
AMB-058	01-May-02	7.7	181	110	67	<2	3.4	0.1	6.41	5.9	0.12	7.69	82	1.34	85.9
AMB-058	01-May-97	7.6	170	130	23	4.2	3.0	0.08	5.41	9	0.19	12.84	74	1.21	81.76
AMB-058	01-Dec-91	7.6	145	110	60		3.2	0.09	7.56	<10	0	0	67	1.1	92.44
AMB-058	01-May-87	6.3	245	<1	100	1.4	21.5	0.61	26.41	13	0.27	11.69	87	1.43	61.9
AMB-059	01-May-02	7	144	120	55	<2	2.6	0.07	5.98	<5	0	0	67	1.1	94.02
AMB-059	01-May-97	6.9	137	95	65	<2	2.4	0.07	7.07	<5	0	0	56	0.92	92.93
AMB-059	01-Dec-91	7.1	153	110	26		2.4	0.07	5.47	<10	0	0	74	1.21	94.53
AMB-059	01-May-87	6.3	120	<1	51	<1	3.0	0.08	6.78	<10	0	0	67	1.1	93.22
AMB-060	01-May-97	6.6	91	80	26	<2	4.7	0.13	27.66	<5	0	0	21	0.34	72.34
AMB-060	01-Dec-91	6.8	104	92	34		4.9	0.14	19.18	<10	0	0	36	0.59	80.82
AMB-060	01-May-87	7.1	103	72	37	<1	4.0	0.11	14.29	<10	0	0	40	0.66	85.71
AMB-061	01-Apr-90	5.2	180	48	9.0	1.1	5.7	0.16	38.1	11	0.23	54.76	2	0.03	7.14
AMB-062	01-Apr-95	6.8	75	66	23	2.7	2.7	0.08	15.38	<5	0	0	27	0.44	84.62
AMB-062	01-Apr-90	6.7	143	62	20	1.4	2.9	0.08	16.33	<10	0	0	25	0.41	83.67
AMB-063	15-May-01	6.9	58.1	34		3.1	2.5	0.07	21.88	<5	0	0	15	0.25	78.12
AMB-063	01-May-97	7.9		110	28	<2	1.6	0.05	5.26	7	0.15	15.79	46	0.75	78.95
AMB-063	01-Dec-91	8.0	110	120	28	2.3	1.4	0.04	3.33	14	0.29	24.17	53	0.87	72.5
AMB-063	01-May-87	8.0	108	92	27	<1	1.5	0.04	3.67	10	0.21	19.27	51	0.84	77.06
AMB-064	01-May-97	6.9	160	130	56	2.5	5.8	0.16	14.04	<5	0	0	60	0.98	85.96
AMB-064	01-Dec-91	6.9		42	7.0	1.9	13.8	0.39	21.67	0	0	0	86	1.41	78.33
AMB-064	01-May-87	6.8	130	84	44	1.1	5.0	0.14	13.21	<10	0	0	56	0.92	86.79
AMB-065	01-May-97	7.3	126	76	44	<2	3.0	0.08	8.89	<5	0	0	50	0.82	91.11

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-042	0.43	0.02	25	0.20	0.02	25	1	0.04	<1	0	50	<0.1	<.005
AMB-043	1.7	0.08	24.24	0.42	0.03	9.09	3.9	0.17	2	0.05	66.67	<.1	<.005
AMB-043	1.9	0.09	22.5	0.42	0.03	7.5	5.2	0.23	2	0.05	70	<.1	<.005
AMB-043	1.8	0.09	32.14	0.41	0.03	10.71	3.7	0.16	<1	0	57.14	<.1	<.005
AMB-044	2.6	0.13	26.53	1	0.08	16.33	2.1	0.09	7.5	0.19	57.14	<.1	<.005
AMB-044	2.9	0.14	28	0.76	0.06	12	2.2	0.1	8	0.2	60		<.005
AMB-044	2.2	0.11	26.83	0.59	0.05	12.2	2.2	0.1	6	0.15	60.98	<.1	<.005
AMB-044	2.2	0.11	42.31	0.56	0.05	19.23	2.2	0.1	<1	0	38.46	<.1	<.005
AMB-045	0.40	0.02	33.33	0	0	0	1	0.04	<1	0	66.67	<.1	<.005
AMB-045	0.38	0.02	25	0.22	0.02	25	1	0.04	<1	0	50	<.1	<.005
AMB-045	0.37	0.02	50	0.20	0.02	50	<1	0	<1	0	0	<.1	<.005
AMB-045	0.42	0.02	22.22	0.24	0.02	22.22	1.1	0.05	<1	0	55.56	<.1	<.005
AMB-046	0.48	0.02	8.33	0.45	0.04	16.67	4.1	0.18	<1	0	75	<.1	<.005
AMB-046	0.32	0.02	11.76	0.32	0.03	17.65	2.8	0.12	<1	0	70.59	0.10	<.005
AMB-046	0.37	0.02	10	0.35	0.03	15	3.4	0.15	<1	0	75	<.1	<.005
AMB-047	0.26	0.01	20	0	0	0	0.90	0.04	<1	0	80	<.1	<.005
AMB-047	0.27	0.01	50	0.15	0.01	50	<1	0	<1	0	0	<.1	<.005
AMB-047	0.25	0.01	50	0.14	0.01	50	<1	0	<1	0	0	<.1	<.005
AMB-047	0.26	0.01	50	0.17	0.01	50	<1	0	<1	0	0	<.1	<.005
AMB-048	0.30	0.01	6.25	0.56	0.05	31.25	1.1	0.05	2	0.05	62.5	0.15	<.005
AMB-048	0.32	0.02	15.38	0.57	0.05	38.46	1.3	0.06	<1	0	46.15	0.10	<.005
AMB-049	0.86	0.04	16.67	0.65	0.05	20.83	2.4	0.1	2	0.05	62.5	<.1	<.005
AMB-049	1.1	0.05	20	0.77	0.06	24	2.1	0.09	2	0.05	56	0.16	<.005
AMB-049	0.81	0.04	22.22	0.64	0.05	27.78	2	0.09	<1	0	50	<.1	<.005
AMB-050	1.1	0.05	0.63	0.3	0.02	0.25	180	7.83	2	0.05	99.12	1.82	<.005
AMB-050	1	0.05	0.67	0.24	0.02	0.27	170	7.39	1	0.03	99.07	1.46	<.005
AMB-050	0.97	0.05	0.71	0.21	0.02	0.28	160	6.96	<1	0	99	1.88	<.005
AMB-051	8.1	0.4	37.38	1.1	0.09	8.41	10	0.43	6	0.15	54.21	0.25	<.005
AMB-051	8.1	0.4	40	1.00	0.08	8	12	0.52	<1	0	52	0.30	<.005
AMB-052	11	0.55	29.73	1.60	0.13	7.03	27	1.17	<1	0	63.24	0.20	<.005
AMB-053	26.0	1.3	24.76	17	1.4	26.67	51	2.22	13	0.33	48.57	0.85	<.005
AMB-053	23	1.15	20.65	19	1.56	28.01	57	2.48	15	0.38	51.35	0.87	<.005
AMB-053	31	1.55	30.69	20	1.65	32.67	36	1.57	11	0.28	36.63	0.84	<.005
AMB-053	4.6	0.23	1.45	2.30	0.19	1.2	350	15.22	8	0.2	97.35	1.76	<.005
AMB-054	6.2	0.31	43.06	1.1	0.09	12.5	6.3	0.27	2	0.05	44.44	<.1	<.005
AMB-054	6.1	0.3	47.62	1.0	0.08	12.7	5.7	0.25	<1	0	39.68	<.1	<.005
AMB-054	7	0.35	48.61	1.20	0.1	13.89	6.3	0.27	<1	0	37.5	0.14	<.005
AMB-055	8.1	0.4	38.46	3.8	0.31	29.81	6.5	0.28	2	0.05	31.73	<.1	<.005
AMB-055	4.2	0.21	45.65	1.5	0.12	26.09	2.2	0.1	1.1	0.03	28.26	<.1	<.005
AMB-055	4.8	0.24	48	1.6	0.13	26	2.3	0.1	1.3	0.03	26	<.1	<.005
AMB-056	6.3	0.31	48.44	2.7	0.22	34.37	1.2	0.05	2.2	0.06	17.19	<.1	<.005
AMB-056	6.7	0.33	48.53	2.8	0.23	33.82	1.1	0.05	2.7	0.07	17.65	0.18	<.005
AMB-057	5	0.25	30.12	1.2	0.1	12.05	11	0.48	<1	0	57.83	0.14	<.005
AMB-057	4.9	0.24	32	1.1	0.09	12	9.7	0.42	<1	0	56	0.17	<.005
AMB-057	10	0.5	32.05	4.4	0.36	23.08	16	0.7	<1	0	44.87	0.20	<.005
AMB-058	16.0	0.8	43.96	6.6	0.54	29.67	9	0.39	3.6	0.09	26.37	0.14	<.005
AMB-058	6.5	0.32	42.11	1.7	0.14	18.42	7	0.3	<1	0	39.47	0.12	<.005
AMB-058	14	0.7	42.68	6	0.49	29.88	8.6	0.37	3.1	0.08	27.44	0.15	<.005
AMB-058	25	1.25	49.02	10	0.82	32.16	11	0.48	<1	0	18.82	<.1	<.005
AMB-059	17.0	0.85	57.43	3	0.25	16.89	8.1	0.35	1.2	0.03	25.68	0.49	<.005
AMB-059	15	0.75	42.37	6.6	0.54	30.51	9.1	0.4	3	0.08	27.12	0.21	<.005
AMB-059	7.4	0.37	45.68	1.8	0.15	18.52	6.7	0.29	<1	0	35.8	0.28	<.005
AMB-059	16	0.8	57.55	2.8	0.23	16.55	8.3	0.36	<1	0	25.9	0.50	<.005
AMB-060	6.1	0.3	33.71	2.5	0.21	23.6	7.7	0.33	2	0.05	42.7	0.27	<.005
AMB-060	8.5	0.42	41.18	3	0.25	24.51	7.2	0.31	1.5	0.04	34.31	0.43	<.005
AMB-060	9.6	0.48	44.86	3.1	0.26	24.3	7.7	0.33	<1	0	30.84	0.50	<.005
AMB-061	2.9	0.14	31.82	0.34	0.03	6.82	5.5	0.24	1.2	0.03	61.36	<.1	<.005
AMB-062	8.4	0.42	58.33	0.5	0.04	5.56	4.9	0.21	2	0.05	36.11	<.1	<.005
AMB-062	7	0.35	54.69	0.61	0.05	7.81	4.7	0.2	1.5	0.04	37.5	0.20	<.005
AMB-063	1.2	0.06	10.53	1	0.08	14.04	8.8	0.38	1.8	0.05	75.44	<.1	<.005
AMB-063	8.1	0.4	33.33	1.8	0.15	12.5	13	0.57	3	0.08	54.17	0.57	<.005
AMB-063	8	0.4	35.4	1.9	0.16	14.16	12	0.52	2	0.05	50.44	0.56	<.005
AMB-063	7.7	0.38	34.55	1.8	0.15	13.64	13	0.57	<1	0	51.82	0.60	<.005
AMB-064	13	0.65	41.67	5.6	0.46	29.49	9.7	0.42	1	0.03	28.85	<.1	<.005
AMB-064	40.1	2	44.64	28.5	2.35	52.46	1.2	0.05	3.1	0.08	2.9		<.005
AMB-064	10	0.5	38.17	4.6	0.38	29.01	10	0.43	<1	0	32.82	<.1	<.005
AMB-065	14	0.7	53.85	2.2	0.18	13.85	8.4	0.37	2	0.05	32.31	0.17	<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-042		<.05	0.06	<.05	<.05							
AMB-043	<.05	<.01	0.49	<.05	0.02	0.03	<.1	<.003	<.1	<.02	<.0002	20
AMB-043	<.05	<.01	0.40	<.05	0.02	0.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-043	<.05	0.01	0.35	<.05	0.02	0.02	<.05	<.003	<.02	<.02	<.0002	<.02
AMB-044	0.088	<.01	1.2	<.05	0.03	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-044	0.09	<.01	1.5	<.05	0.04	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-044	0.08	<.05	1.2	<.05	0.03	<.05	<.05	<.001	<.05	<.02		
AMB-044	<.05	<.05	0.98	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-045	<.05	0.021	0.35	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-045	<.05	<.01	0.17	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-045	<.05	0.03	0.09	<.05	<.01	0.17	0.09				<.0002	
AMB-045		0.09	0.15	<.05	<.05							
AMB-046	<.05	<.01	<.02	<.05	<.01	<.01	0.06	<.003	0.13	<.02	<.0002	<.02
AMB-046		0.01				<.01			0.03		<.0002	
AMB-046		<.05	<.05	<.05	<.05							
AMB-047	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-047	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-047		0.01	<.05	<.05	<.05	<.01					<.0002	
AMB-047		<.05	<.05	<.05	<.05							
AMB-048	0.05		1.9		0.02	0.47	0.09				<.0002	
AMB-048		<.05	1.8	<.05	<.05							
AMB-049	<.05	<.01	2.9	<.05	0.04	0.02	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-049	0.07	<.01	3.30	<.05	0.05	0.02	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-049	0.07	<.01	3.20	<.05	0.04	0.02	<.05	0.00	<.02	<.02	<.0002	<.02
AMB-050	0.06	<.01	<.02	<.05	<.01	<.01	<.1	<.003	2	<.02	<.0002	<.02
AMB-050	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	1.80	<.02	<.0002	<.02
AMB-050	<.05	<.01	0.06	<.05	<.01	<.01	<.05	<.001	1.70	<.02	<.0002	<.02
AMB-051	0.06	<.01	0.56	<.05	0.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-051	<.05	<.05	1.1	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-052	<.05	<.05	0.13	<.05	<.05	1.70	<.05	<.001	0.07	<.05	<.0002	<.02
AMB-053	<.05	<.01	0.082	<.05	<.01	<.01	<.1	<.003	0.13	<.02	<.0002	<.02
AMB-053	<.05	<.01	0.08	<.05	<.01	<.01	<.1	<.003	0.15	<.02	<.0002	<.02
AMB-053	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	0.10	<.02	<.0002	<.02
AMB-053	<.05	<.01	<.01	<.05	<.01	<.01	<.05	<.001	2.50	<.02	<.0002	<.02
AMB-054	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-054	<.05	<.01	<.02	<.01	<.01	<.05	<.05	<.003	<.02	<.02	<.0002	<.02
AMB-054	<.05	<.01	<.01	<.05	0.01	0.01	<.05	<.001	0.02	<.02	<.0002	<.02
AMB-055	0.07	0.02	1.8	<.05	<.01	0.16	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-055	<.05	0.02	0.06	<.05	<.01	<.01	0.13	<.003	<.03	<.02	<.0002	<.02
AMB-055	<.05	0.04	0.06	<.05	0.01	0.01	0.15	<.001	0.05	<.02	<.0002	<.02
AMB-056	<.05	<.01	0.02	<.05	<.01	0.03	<.05	<.003	<.05	<.02	<.0002	<.02
AMB-056	<.05	<.01	0.01	<.05	<.01	0.04	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-057	<.05	<.01	0.06	<.05	<.01	<.01	0.06	<.003	0.91	<.02	<.0002	<.02
AMB-057	<.05	0.01	<.05	<.05	<.05	0.14	<.05	<.001	<.05		<.0002	
AMB-057	<.05	<.05	0.14	<.05	<.05	<.01	<.05	<.001	<.05			
AMB-058	<.05	<.01	0.028	<.05	0.011	0.012	<.05	<.003	<.1	<.02	<.0002	<.02
AMB-058	<.05	<.01	0.03	<.05	<.01	0.03	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-058	<.05	<.05	<.05	<.05	<.05	0.02	<.05	<.001	<.02		<.0002	
AMB-058	<.05	<.05	<.05	<.05	<.05	<.01	<.05	<.001	<.02			
AMB-059	<.05	<.01	<.02	<.05	0.03	0.016	<.05	<.003	<.1	<.02	<.0002	<.02
AMB-059	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-059	<.05	<.05	<.05	<.05	<.05	0.32	<.05	<.001	<.02		<.0002	
AMB-059	<.05	<.05	<.05	<.05	<.05	<.01	<.05	<.001	<.02	<.02		
AMB-060	<.05	<.01	0.24	<.05	<.01	<.01	0.09	<.003	0.12	<.02	<.0002	<.02
AMB-060	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05		<.0002	
AMB-060	<.05	<.05	<.05	<.05	<.05	<.01	<.01	<.001	<.05			
AMB-061	<.05	0.08	1.20	<.05	0.02	0.21	0.45	<.001	<.02	<.02	<.0002	<.02
AMB-062	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-062	<.05	<.01	0.02	<.05	<.01	<.01	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-063	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-063	<.05	<.01	<.02	<.05	0.08	0.07	0.06	<.003	0.12	<.02	<.0002	<.02
AMB-063	<.05	<.05	<.05	<.05	0.07	0.07	<.05	<.001	<.02		<.0002	
AMB-063	<.05	<.05	<.05	<.05	0.07	<.01	<.05	<.001	<.02			
AMB-064	<.05	<.01	<.02	<.05	<.01	0.02	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-064	<.05	<.05	<.05	<.05	<.05	0.02	<.05	<.001	<.02		<.0002	
AMB-064	<.05	<.05	<.05	<.05	<.05	<.01	<.05	<.001	<.02			
AMB-065	<.05	<.01	<.02	<.05	<.01	0.4	0.07	<.003	0.08	<.02	<.0002	<.02

Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-042					<.01	<.05						0.38	
AMB-043	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	12	0.02	<.02	ND
AMB-043	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	14	0.01	0.14	ND
AMB-043	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	12	0.02	0.24	ND
AMB-044	<.002	<.03	<.5	<.15	<.01	<.01	<.02	0.032	<.05	21	0.040	<.02	ND
AMB-044	<.005	<.03	<.5	180	<.01	<.01	<.02	0.02	<.05	16	0.04	0.02	ND
AMB-044								0.03					
AMB-044	<.005	<.05	<.1	<.0.5	<.01	<.05	<.05	<.05	<.0.2	17	<.05	<.02	0.13
AMB-045	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.5	<.01	0.35	0.13
AMB-045	<.005	<.03	<.5	<.15	<.01	<.05	<.02	<.01	<.05	6.3	<.01	0.36	ND
AMB-045					<.01	<.05				3.6		0.17	0.18
AMB-045					<.01	<.05						0.36	
AMB-046	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	4.7	<.01	1.55	0.12
AMB-046												1.03	
AMB-046					<.01	<.05						1.34	
AMB-047	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.7	<.01	0.21	0.15
AMB-047	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.3	<.01	0.20	ND
AMB-047												0.16	
AMB-047					<.01	<.05						0.22	
AMB-048								0.02			0.01	0.02	
AMB-048					<.01	<.05						0.03	
AMB-049	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	12	0.01	<.02	ND
AMB-049	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	6.2	0.01	0.02	ND
AMB-049	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	16	0.01	0.03	0.14
AMB-050	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.03	<.02	0.22
AMB-050	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	13	0.03	<.02	0.7
AMB-050	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	15	0.03	0.28	0.18
AMB-051	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.06	<.02	ND
AMB-051	<.005	<.05	<.1	<.0.5	<.01	<.05	<.05	<.05	<.0.2	13	0.06	<.02	0.17
AMB-052	<.005	<.05	<.1	0.07	<.01	<.05	<.05	<.05	<.0.2	11	0.07	0.18	0.15
AMB-053	<.002	<.03	<.5	<.15	<.01	<.01	<.02	0.012	<.05	39	0.25	<.02	0.45
AMB-053	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	34	0.25	4.4	0.29
AMB-053	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	0.04	0.36	<.02	0.17
AMB-053	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.03	<.05	19	0.18	0.02	0.52
AMB-054	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.03	1.79	ND
AMB-054	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	23	0.02	2	0.01
AMB-054	<.005	<.03	<.5	<.17	<.01	<.01	<.02	0.01	<.05	28	0.02	1.54	0.17
AMB-055	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	13	0.05	2.4	0.51
AMB-055	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	17	0.02	0.86	ND
AMB-055	<.005	<.03	<.5	<.17	<.01	0.01	<.02	0.01	<.05	17	0.02	0.68	0.14
AMB-056	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	34	0.01	0.43	ND
AMB-056	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	12	<.01	0.29	ND
AMB-057	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	49	0.07	0.84	0.12
AMB-057										24	0.05	0.92	1.42
AMB-057					<.01	<.05						0.20	
AMB-058	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.055	0.053	<.1
AMB-058	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	45	0.05	0.05	ND
AMB-058								0.01		16	0.05	0.06	
AMB-058					<.01	<.05						5.40	
AMB-059	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	45	0.1	0.37	<.1
AMB-059	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	32	<.01	0.91	ND
AMB-059										22	0.05	0.78	
AMB-059					<.01	<.05						0.86	
AMB-060	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	37	0.07	2.4	0.12
AMB-060										18	0.06	1.85	
AMB-060					<.01	<.05						2.80	
AMB-061	<.005	<.03	<.5	<.17	<.01	<.01	<.02	0.01	<.05	5.2	<.01	1.20	0.16
AMB-062	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.06	1.62	ND
AMB-062	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	22	0.05	1.32	0.16
AMB-063	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.2	0.011	2.1	
AMB-063	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.04	<.05	49	0.05	<.02	ND
AMB-063								0.04			0.05		
AMB-063					<.01	<.05						0.05	
AMB-064	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.07	1.53	ND
AMB-064										18	0.06	1.85	
AMB-064					<.01	<.05						2.40	
AMB-065	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.09	0.88	ND

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-065	East Central Newberry County	34.5639889	-82.3274444	Newberry	Broad	Piedmont Bedrock
AMB-065	East Central Newberry County	34.5639889	-82.3274444	Newberry	Broad	Piedmont Bedrock
AMB-066	Newberry County water systems	33.9177333	-81.3937	Newberry	Broad	Piedmont Bedrock
AMB-067	Town of Whitmire	34.1950722	-81.4126389	Newberry	Broad	Piedmont Bedrock
AMB-067	Town of Whitmire	34.1950722	-81.4126389	Newberry	Broad	Piedmont Bedrock
AMB-067	Town of Whitmire	34.1950722	-81.4126389	Newberry	Broad	Piedmont Bedrock
AMB-068	Chappels	34.3928889	-81.4605	Newberry	Saluda-Edisto	Piedmont Bedrock
AMB-068	Chappels	34.3928889	-81.4605	Newberry	Saluda-Edisto	Piedmont Bedrock
AMB-068	Chappels	34.3928889	-81.4605	Newberry	Saluda-Edisto	Piedmont Bedrock
AMB-068	Chappels	34.3928889	-81.4605	Newberry	Saluda-Edisto	Piedmont Bedrock
AMB-069	Newberry-Edna Martin	34.3130194	-81.5713028	Newberry	Broad	Saprolite
AMB-069	Newberry-Edna Martin	34.3130194	-81.5713028	Newberry	Broad	Saprolite
AMB-070	Mountain rest	34.5143194	-81.6449278	Oconee	Sav-Salk	Saprolite
AMB-070	Mountain rest	34.5143194	-81.6449278	Oconee	Sav-Salk	Saprolite
AMB-070	Mountain rest	34.5143194	-81.6449278	Oconee	Sav-Salk	Saprolite
AMB-071	Town of Pickens	34.1899444	-81.9066417	Pickens	Saluda-Edisto	Saprolite
AMB-071	Town of Pickens	34.1899444	-81.9066417	Pickens	Saluda-Edisto	Saprolite
AMB-071	Town of Pickens	34.1899444	-81.9066417	Pickens	Saluda-Edisto	Saprolite
AMB-072	Town of Ballentine	34.3293472	-81.5367778	Richland	Saluda-Edisto	Piedmont Bedrock
AMB-072	Town of Ballentine	34.3293472	-81.5367778	Richland	Saluda-Edisto	Piedmont Bedrock
AMB-072	Town of Ballentine	34.3293472	-81.5367778	Richland	Saluda-Edisto	Piedmont Bedrock
AMB-073	Town of Union	34.8125389	-83.1410861	Union	Broad	Union
AMB-073	Town of Union	34.8125389	-83.1410861	Union	Broad	Union
AMB-074	Guthries	35.0411694	-82.6571528	York	Catawba	Piedmont Bedrock
AMB-074	Guthries	35.0411694	-82.6571528	York	Catawba	Piedmont Bedrock
AMB-075	Abbeville Shallow Well	34.140875	-82.4037083	Abbeville	Saluda-Edisto	Saprolite
AMB-075	Abbeville Shallow Well	34.140875	-82.4037083	Abbeville	Saluda-Edisto	Saprolite
AMB-075	Abbeville Shallow Well	34.140875	-82.4037083	Abbeville	Saluda-Edisto	Saprolite
AMB-076	Starr Deep Well	34.3965833	-82.7562083	Anderson	Saluda-Edisto	Piedmont Bedrock
AMB-076	Starr Deep Well	34.3965833	-82.7562083	Anderson	Saluda-Edisto	Piedmont Bedrock
AMB-076	Starr Deep Well	34.3965833	-82.7562083	Anderson	Saluda-Edisto	Piedmont Bedrock
AMB-077	Town of Blacksburg	34.1236306	-81.2602361	Cherokee	Broad	Piedmont Bedrock
AMB-077	Town of Blacksburg	34.1236306	-81.2602361	Cherokee	Broad	Piedmont Bedrock
AMB-078	Town of Mauldin #2	34.4357361	-80.8634917	Greenville	Broad	Piedmont Bedrock
AMB-079	Fork Shoals	34.7375222	-81.6614389	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-079	Fork Shoals	34.7375222	-81.6614389	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-079	Fork Shoals	34.7375222	-81.6614389	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-080	Newberry	34.9077528	-81.1939972	Newberry	Broad	Piedmont Bedrock
AMB-080	Newberry	34.9077528	-81.1939972	Newberry	Broad	Piedmont Bedrock
AMB-081	Mountain Rest	35.1547944	-81.4397694	Oconee	Sav-Salk	Piedmont Bedrock
AMB-081	Mountain Rest	35.1547944	-81.4397694	Oconee	Sav-Salk	Piedmont Bedrock
AMB-081	Mountain Rest	35.1547944	-81.4397694	Oconee	Sav-Salk	Piedmont Bedrock
AMB-082	Pickens	34.5645194	-82.3274861	Pickens	Saluda-Edisto	Piedmont Bedrock
AMB-082	Pickens	34.5645194	-82.3274861	Pickens	Saluda-Edisto	Piedmont Bedrock
AMB-082	Pickens	34.5645194	-82.3274861	Pickens	Saluda-Edisto	Piedmont Bedrock
AMB-083	Union	34.32895	-81.5378472	Union	Broad	Piedmont Bedrock
AMB-083	Union	34.32895	-81.5378472	Union	Broad	Piedmont Bedrock
AMB-084	McClellanville	34.8121667	-83.1412083	Charleston	Catawba	Surf sands
AMB-085	Town of Edisto Beach #13	35.0365667	-82.6772222	Colleton	Saluda-Edisto	Surf Sands
AMB-086	Bennets Point-Baily	34.7394278	-81.664425	Collenton	Sav-Salk	Surf sands
AMB-086	Bennets Point-Baily	34.7394278	-81.664425	Collenton	Sav-Salk	Surf sands
AMB-086	Bennets Point-Baily	34.7394278	-81.664425	Collenton	Sav-Salk	Surf sands
AMB-086	Bennets Point-Baily	34.7394278	-81.664425	Collenton	Sav-Salk	Surf sands
AMB-087	Community of North Santee	33.0907139	-79.4555278	Gerogetown	Catawba	Surf sands
AMB-088	Socastee	32.5143056	-80.309125	Horry	Pee Dee	Surf Sands
AMB-088	Socastee	32.5143056	-80.309125	Horry	Pee Dee	Surf Sands
AMB-089	Town of Fairfax	32.9429611	-81.2393611	Allendale	Sav-Salk	Tertiary Limestone
AMB-089	Town of Fairfax	32.9429611	-81.2393611	Allendale	Sav-Salk	Tertiary Limestone
AMB-089	Town of Fairfax	32.9429611	-81.2393611	Allendale	Sav-Salk	Tertiary Limestone
AMB-090	Frogmore	32.553375	-80.4566139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-090	Frogmore	32.553375	-80.4566139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-091	Sheldon	33.2482778	-79.4018056	Beaufort	Sav-Salk	Tertiary Limestone
AMB-091	Sheldon	33.2482778	-79.4018056	Beaufort	Sav-Salk	Tertiary Limestone
AMB-091	Sheldon	33.2482778	-79.4018056	Beaufort	Sav-Salk	Tertiary Limestone
AMB-091	Sheldon	33.2482778	-79.4018056	Beaufort	Sav-Salk	Tertiary Limestone
AMB-092	Hilton Head Island-Wexford	33.6662222	-78.997825	Beaufort	Sav-Salk	Tertiary Limestone
AMB-092	Hilton Head Island-Wexford	33.6662222	-78.997825	Beaufort	Sav-Salk	Tertiary Limestone

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SPHCD	TDS	Hard	TOC	CL ppm	CL ppm	CL %	SO4 ppm	SO4 ppm	SO4 %	ALK ppm	ALK ppm	ALK %
AMB-065	01-Dec-91	7.2	132	140	44		3.9	0.11	10.09	<10	0	0	60	0.98	89.91
AMB-065	01-May-87	6.5	122	<1	47	<1	3.0	0.08	6.25	11	0.23	17.97	59	0.97	75.78
AMB-066	01-May-87	6.6	109	74	31	<1	5.0	0.14	16.87	<10	0	0	42	0.69	83.13
AMB-067	01-May-97	7.0	272	170	100	5.4	4.3	0.12	5.24	6	0.12	5.24	125	2.05	89.52
AMB-067	01-Dec-91	6.8	211	180	75		60	1.69	49.85	<10	0	0	104	1.7	50.15
AMB-067	01-May-87	6.5	170	<1	68	<1	3.5	0.1	5.26	11	0.23	12.11	96	1.57	82.63
AMB-068	15-May-01	6.9	197	150		<2	5.1	0.14	7.45	5.8	0.12	6.38	99	1.62	86.17
AMB-068	01-May-97	7.0	186	130	75	3.5	4.6	0.13	8.61	<5	0	0	84	1.38	91.39
AMB-068	01-Dec-91	7.2	195	180	72		5.8	0.16	7.62	12	0.25	11.9	103	1.69	80.48
AMB-068	01-May-87	7.3	176	130	65	<1	5.0	0.14	7.61	<10	0	0	104	1.7	92.39
AMB-069	01-Apr-95	6.2	183	130	41	3.5	17.6	0.5	50.51	<5	0	0	30	0.49	49.49
AMB-069	01-Apr-90	5.9	140	110	28	2.7	16.1	0.45	57.69	<10	0	0	20	0.33	42.31
AMB-070	01-Jul-00	5.3	27.2		4	<2	2.1	0.06	42.86	<5	0	0	5	0.08	57.14
AMB-070	01-Apr-95	5.3	32	22	5.0	3.0	2.2	0.06	42.86	<5	0	0	5	0.08	57.14
AMB-070	01-Apr-90	5.2	38	26	6.0	3.9	6.6	0.19	35.19	13	0.27	50	5	0.08	14.81
AMB-071	15-May-01	5.9	22.5	4		<2	1	0.03	20	<5	0	0	7.6	0.12	80
AMB-071	01-Apr-95	5.9	22	8	2	2.2	1.0	0.03	16.67	<5	0	0	9	0.15	83.33
AMB-071	01-Apr-90	6.4	36	24	15	1.1	1.5	0.04	11.76	<10	0	0	18	0.3	88.24
AMB-072	15-May-01	6.8	458	250		<2	72	2.03	46.77	8.6	0.18	4.15	130	2.13	49.08
AMB-072	01-Dec-91	6.0	142	110	45	7.8	14.1	0.4	29.41	13	0.27	19.85	42	0.69	50.74
AMB-072	01-May-87	6.5	178	110	86	<1	9.5	0.27	14.14	10	0.21	10.99	87	1.43	74.87
AMB-073	01-Apr-95	6.3	62	50	17	2.2	2.3	0.06	12.24	<5	0	0	26	0.43	87.76
AMB-073	01-Apr-90	6.8	60	60	23	2.4	1.8	0.05	8.93	<10	0	0	31	0.51	91.07
AMB-074	01-Apr-95	7.0	94	78	35	1.1	2.2	0.06	7.89	<5	0	0	43	0.7	92.11
AMB-074	01-Apr-90	7.1	98	90	45	1.4	1.8	0.05	5.62	<10	0	0	51	0.84	94.38
AMB-075	01-Jul-00	5.9	47.8	36	12	<2	2.5	0.07	21.21	<5	0	0	16	0.26	78.79
AMB-075	01-Apr-95	6.4	49	42	16	2.1	3.6	0.1	25	<5	0	0	18	0.3	75
AMB-075	01-Apr-90	7.8	88	70	30	2.1	2.2	0.06	5.66	10	0.21	19.81	48	0.79	74.53
AMB-076	01-Jul-00	7.3	133	100	49	<2	2.9	0.08	10.13	7	0.15	18.99	34	0.56	70.89
AMB-076	01-Apr-95	6.7	106	83	39	1.8	3.6	0.1	16.95	<5	0	0	30	0.49	83.05
AMB-076	01-Apr-90	11.0	220	110	25	2.2	2.7	0.08	4.85	<10	0	0	96	1.57	95.15
AMB-077	01-Apr-95	7.6	147	95	67	3.3	1.9	0.05	3.85	<5	0	0	76	1.25	96.15
AMB-077	01-Apr-90	7.7	131	98	68	1.8	1.3	0.04	3.6	<10	0	0	65	1.07	96.4
AMB-078	01-Apr-90	6.1	260	42	9.0	1.6	1.5	0.04	23.53	<10	0	0	8	0.13	76.47
AMB-079	15-May-01	7.6	154	130		<2	2.2	0.06	4.17	6.0	0.12	8.33	77	1.26	87.5
AMB-079	01-Apr-95	7.5	168	120	60	2.7	1.9	0.05	3.62	<5	0	0	81	1.33	96.38
AMB-079	01-Apr-90	7.5	79	120	67	2.3	1.9	0.05	4	<10	0	0	73	1.2	96
AMB-080	01-Apr-95	6.6	97	90	33	2.7	3.0	0.08	10.26	<5	0	0	43	0.7	89.74
AMB-080	01-Apr-90	6.8	90	82	34	1.5	3.2	0.09	11.54	<10	0	0	42	0.69	88.46
AMB-081	01-Jul-00	5.1	34.2		5	<2	2	0.06	54.55	<5	0	0	3	0.05	45.45
AMB-081	01-Apr-95	5.2	34	18	5.0	3.3	2.7	0.08	53.33	<5	0	0	4	0.07	46.67
AMB-081	01-Apr-90	5.1	33	24	5.0	3.6	4.4	0.12	63.16	<10	0	0	4	0.07	36.84
AMB-082	15-May-01	6.4	50.1	28		<2	1.4	0.04	9.3	<5	0	0	24	0.39	90.7
AMB-082	01-Apr-95	6.2	36	32	9.0	2.2	<1	0	0	<5	0	0	17	0.28	100
AMB-082	01-Apr-90	6.3	31	36	8.0	1.0	<1	0	0	12	0.25	47.17	17	0.28	52.83
AMB-083	01-Apr-95	6.2	114	96	26	1.7	12.8	0.36	53.73	<5	0	0	19	0.31	46.27
AMB-083	01-Apr-90	6.2	124	120	36	1.2	16.7	0.47	61.04	<10	0	0	18	0.3	38.96
AMB-084	01-May-89	7.2	4450	290	210	4.5	20.7	0.58	13.43	<10	0	0	228	3.74	86.57
AMB-085	01-May-88	6.9	1540	1100	450	13.2	240	6.76	49.71	170	3.54	26.03	201	3.3	24.26
AMB-086	01-Jul-00	8.5	2098	1300	33	5.1	37	1.04					398	6.52	
AMB-086	01-May-98	8.6		990	29	20	235	6.62	50.69	33	0.69	5.28	351	5.75	44.03
AMB-086	01-May-93	8.1	4	2400	97	39	295	8.31	45.36	100	2.08	11.35	484	7.93	43.29
AMB-086	01-May-88	8.5	1500	200	19	<1	215	6.06	44.66	30	0.62	4.57	420	6.89	50.77
AMB-087	01-May-89	7.3	559	360	210	5.2	12.8	0.36	7.39	<10	0	0	275	4.51	92.61
AMB-088	01-Jul-94	6.3	129	79	21	3.2	22.9	0.65	31.55	38	0.79	38.35	38	0.62	30.1
AMB-088	01-May-89	6.2	124	80	20	<1	17	0.48	47.06	<10	0	0	33	0.54	52.94
AMB-089	01-May-98	8.2	197	140	50		2.7	0.08	5.3	<5	0	0	87	1.43	94.7
AMB-089	01-May-93	8.4	200	140	41	3.8	2.2	0.06	3.37	10.00	0.21	11.8	92	1.51	84.83
AMB-089	01-May-88	8.4	170	110	42	<1	2.0	0.06	3.8	<10	0	0	93	1.52	96.2
AMB-090	01-Jul-00	8.0	308	190	110	2.1	29.5	0.83	28.14	5	0.1	3.39	123	2.02	68.47
AMB-090	01-May-88	7.9	262	200	120	1.0	26	0.73	26.26	<10	0	0	125	2.05	73.74
AMB-091	01-Jul-00	8.1	288	180	93	<2	5.5	0.15	5.98	5	0.1	3.98	138	2.26	90.04
AMB-091	01-May-98	8.0	275	37	96		6.1	0.17	7.33	<5	0	0	131	2.15	92.67
AMB-091	01-May-93	8.1	274	150	97	11.4	5.6	0.16	6.61	<10	0	0	138	2.26	93.39
AMB-091	01-May-88	8.0	230	170	99	<1	5.0	0.14	5.79	<10	0	0	139	2.28	94.21
AMB-092	01-Jul-00	7.6	751	440	260	7.4	77.6	2.19	32.4	22	0.46	6.8	251	4.11	60.8
AMB-092	01-May-98	7.5	628	390	240		76.2	2.15	36.5	<5	0	0	228	3.74	63.5

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-065	14	0.7	55.56	2.3	0.19	15.08	7.7	0.33	1.6	0.04	29.37	0.22	<.005
AMB-065	15	0.75	57.69	2.2	0.18	13.85	8.4	0.37	<1	0	28.46	0.20	<.005
AMB-066	7.8	0.39	38.61	2.7	0.22	21.78	9.1	0.4	<1	0	39.6	0.20	<.005
AMB-067	27	1.35	48.21	8.9	0.73	26.07	13	0.57	6	0.15	25.71	0.33	<.005
AMB-067	18	0.9	42.25	7.4	0.61	28.64	11	0.48	5.6	0.14	29.11	0.30	<.005
AMB-067	15	0.75	39.89	7.4	0.61	32.45	12	0.52	<1	0	27.66	0.30	<.005
AMB-068	18	0.9	41.67	10	0.82	37.96	9.4	0.41	1.2	0.03	20.37	0.1	<.005
AMB-068	16	0.8	41.45	8.6	0.71	36.79	9.6	0.42	<1	0	21.76	0.1	<.005
AMB-068	0.50	0.02	1.83	8.5	0.7	64.22	8.6	0.37	<6	0	33.94	0.02	<.005
AMB-068	14	0.7	41.67	7.3	0.6	35.71	8.8	0.38	<1	0	22.62	0.10	<.005
AMB-069	12	0.6	37.97	2.7	0.22	13.92	14	0.61	6	0.15	48.1	<0.1	<.005
AMB-069	8	0.4	32.79	2	0.16	13.11	12	0.52	5.6	0.14	54.1	<0.1	<.005
AMB-070	0.64	0.03	15.79	0.65	0.05	26.32	2.6	0.11	<1	0	57.89	<.1	<.005
AMB-070	0.7	0.03	14.29	0.68	0.06	28.57	2.8	0.12	<1	0	57.14	<0.1	<.005
AMB-070	1.1	0.05	16.13	0.86	0.07	22.58	3.7	0.16	1.3	0.03	61.29	<0.1	<.005
AMB-071	2.3	0.11	57.89	0	0	0	1	0.04	1.7	0.04	42.11	<.1	<.005
AMB-071	2.3	0.11	68.75	0.13	0.01	6.25	1	0.04	<1	0	25	<0.1	<.005
AMB-071	5.9	0.29	72.5	0.17	0.01	2.5	1.3	0.06	1.4	0.04	25	<0.1	<.005
AMB-072	0.15	0.01	0.23	0	0	0	100	4.35	<1	0	99.77	<.1	0.0073
AMB-072	12	0.6	46.15	3.7	0.3	23.08	9.2	0.4	<1	0	30.77		<.005
AMB-072	29	1.45	69.38	3.30	0.27	12.92	8.5	0.37	<1	0	17.7	<0.1	<.005
AMB-073	5.7	0.28	47.46	0.75	0.06	10.17	4.6	0.2	2	0.05	42.37	<0.1	<.005
AMB-073	8.2	0.41	57.75	0.67	0.06	8.45	4.4	0.19	1.8	0.05	33.8	0.12	<.005
AMB-074	9.5	0.47	50.54	2.8	0.23	24.73	4.4	0.19	1.5	0.04	24.73	<0.1	<.005
AMB-074	13	0.65	57.02	3	0.25	21.93	4.8	0.21	1	0.03	21.05	0.12	<.005
AMB-075	3.8	0.19	42.22	0.51	0.04	8.89	4	0.17	2	0.05	48.89	<.1	<.005
AMB-075	5.7	0.28	57.14	0.41	0.03	6.12	2.9	0.13	2	0.05	36.73	<0.1	<.005
AMB-075	11	0.55	53.4	0.5	0.04	3.88	4.9	0.21	8.9	0.23	42.72	<0.1	<.005
AMB-076	14	0.7	51.85	3.4	0.28	20.74	7.3	0.32	2	0.05	27.41	0.14	<.005
AMB-076	8.8	0.44	45.83	4.1	0.34	35.42	3.2	0.14	1.7	0.04	18.75	<0.1	<.005
AMB-076	10	0.5	23.15	0.07	0.01	0.46	35	1.52	5	0.13	76.39	0.1	<.005
AMB-077	19	0.95	63.33	4.7	0.39	26	2.4	0.1	2.5	0.06	10.67	<0.1	<.005
AMB-077	19	0.95	60.51	5.1	0.42	26.75	2.8	0.12	3.3	0.08	12.74	0.20	<.005
AMB-078	2.3	0.11	32.35	0.68	0.06	17.65	3	0.13	1.5	0.04	50	<0.1	<.005
AMB-079	18	0.9	51.72	3	0.25	14.37	12	0.52	2.6	0.07	33.91	1.3	<.005
AMB-079	19	0.95	53.67	3	0.25	14.12	12	0.52	2	0.05	32.2	1.49	<.005
AMB-079	17	0.85	43.15	6	0.49	24.87	11	0.48	5.9	0.15	31.98	1.20	<.005
AMB-080	7.3	0.36	37.5	3.6	0.3	31.25	6.3	0.27	1	0.03	31.25	0.12	<.005
AMB-080	7.5	0.37	36.63	3.80	0.31	30.69	6.6	0.29	1.7	0.04	32.67	0.14	<.005
AMB-081	0.85	0.04	16	0.82	0.07	28	2.6	0.11	1	0.03	56	<.1	<.005
AMB-081	0.80	0.04	18.18	0.75	0.06	27.27	2.8	0.12	<1	0	54.55	<0.1	<.005
AMB-081	0.84	0.04	17.39	0.71	0.06	26.09	3	0.13	<1	0	56.52	<0.1	<.005
AMB-082	4.2	0.21	40.38	1	0.08	15.38	3.7	0.16	2.9	0.07	44.23	<.1	<.005
AMB-082	2.9	0.14	40	0.4	0.03	8.57	3.4	0.15	1	0.03	51.43	<0.1	<.005
AMB-082	2.5	0.12	40	0.32	0.03	10	3.4	0.15	<1	0	50	<0.1	<.005
AMB-083	7.5	0.37	38.14	1.8	0.15	15.46	9.4	0.41	1.7	0.04	46.39	<0.1	<.005
AMB-083	10	0.5	38.76	2.6	0.21	16.28	12	0.52	2.3	0.06	44.96	0.12	<.005
AMB-084	71	3.54	72.24	8	0.66	13.47	16	0.7	<1	0	14.29	<0.1	<.005
AMB-085	148	7.38	48.55	20	1.65	10.86	142	6.17	<1	0	40.59	1.10	<.005
AMB-086	4.6	0.23	1.19	5.3	0.44	2.28	420	18.26	14	0.36	96.53	3.15	<.005
AMB-086	3.7	0.18	1.03	4.9	0.4	2.29	380	16.52	15	0.38	96.68	0.72	<.005
AMB-086	11	0.55	1.22	17	1.4	3.1	980	42.61	22	0.56	95.68	2.6	<.005
AMB-086	2.5	0.12	0.91	3	0.25	1.89	290	12.61	10	0.26	97.21	2.90	<.005
AMB-087	73	3.64	66.91	7	0.58	10.66	28	1.22	<1	0	22.43	0.28	<.005
AMB-088	7.1	0.35	33.02	0.79	0.07	6.6	14	0.61	1	0.03	60.38	<0.1	<.005
AMB-088	6.8	0.34	32.38	0.77	0.06	5.71	15	0.65	<1	0	61.9	<0.1	<.005
AMB-089	13	0.65	30.23	4.3	0.35	16.28	23	1	6	0.15	53.49	0.37	<.005
AMB-089	11	0.55	26.07	3.4	0.28	13.27	26	1.13	6	0.15	60.66	0.38	<.005
AMB-089	11	0.55	28.5	3.5	0.29	15.03	25	1.09	<1	0	56.48	0.50	<.005
AMB-090	36	1.8	58.06	4.5	0.37	11.94	19	0.83	4	0.1	30	0.29	<.005
AMB-090	40	2	60.61	5.2	0.43	13.03	20	0.87	<1	0	26.36	0.20	<.005
AMB-091	23	1.15	40.64	8.7	0.72	25.44	18	0.78	7	0.18	33.92	0.3	<.005
AMB-091	22	1.1	37.16	10	0.82	27.7	19	0.83	8.2	0.21	35.14	0.31	<.005
AMB-091	23	1.15	38.21	9.6	0.79	26.25	20	0.87	8	0.2	35.55	0.26	<.005
AMB-091	23	1.15	36.62	10	0.82	26.11	21	0.91	10	0.26	37.26	0.30	<.005
AMB-092	92	4.59	62.96	7.6	0.63	8.64	47	2.04	1	0.03	28.4		<.005
AMB-092	80	3.99	56.84	8.8	0.72	10.26	52	2.26	2	0.05	32.91	0.22	<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-065		0.02				0.34					<.0002	
AMB-065	<.05	<.05	<.05	<.05	<.05							
AMB-066	<.05	<.05	<.05	<.05	0.15	<.01	<.05	<.001	<.02			
AMB-067	<.05	<.01	0.15	<.05	0.13	<.01	0.09	<.003	0.13	<.02	<.0002	<.02
AMB-067	<.05	0.02	0.23	<.05	0.06	<.01	<.05	<.001	<.02	<.02	<.0002	
AMB-067	<.05	<.05	0.90	<.05	0.08	<.01	<.05	<.001	<.02	<.02		
AMB-068	<.05	0.05	1.4	<.05	0.017	0.53	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-068	<.05	<.01	0.85	<.05	0.02	0.9	0.05	<.003	0.06	<.02	<.0002	<.02
AMB-068			0.45		0.04	4.70					<.0002	
AMB-068		<.05	0.11	<.05	0.11							
AMB-069	0.34	<.01	0.03	<.05	<.01	0.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-069	0.32	<.01	0.02	<.05	0.02	0.01	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-070	<.05	0.01	0.02	<.05	0.02	0.02	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-070	<.05	0.02	<.02	<.05	0.03	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-070	<.05	0.09	0.01	<.05	0.05	0.04	0.06	<.001	0.02	<.02	<.0002	<.02
AMB-071	<.05	<.01	0.073	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-071	<.05	<.01	<.02	<.05	0.01	<.01	<.05	<.003	<.02	<.02	<.0002	<.02
AMB-071	<.05	<.01	0.07	<.05	0.02	0.01	0.17	<.001	0.03	<.02	<.0002	<.02
AMB-072	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	0.00032	0.047
AMB-072		0.13	0.02		0.03	0.02					<.0002	
AMB-072		0.12	0.05	<.05	<.05							
AMB-073	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-073	<.05	<.01	0.22	<.05	<.01	0.01	0.47	<.001	<.02	<.02	<.0002	<.02
AMB-074	<.05	<.01	0.18	<.05	<.01	0.32	0.13	<.003	<.03	<.02	<.0002	<.02
AMB-074	<.05	<.01	<.01	<.05	<.01	0.65	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-075	<.05	0.01	0.37	<.05	0.06	<.01	0.94	<.003	<.1	<.02	<.0002	<.02
AMB-075	<.05	<.01	0.27	<.05	0.04	<.01	0.56	<.003	<.05	<.02	<.0002	<.02
AMB-075	<.05	0.01	0.01	<.05	0.02	0.01	0.11	<.001	0.06	<.02	<.0002	<.02
AMB-076	<.05	<.01	0.04	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-076	<.05	<.01	0.23	<.05	<.01	<.01	0.14	<.003	<.03	<.02	<.0002	<.02
AMB-076	<.05	0.01	0.15	<.05	0.01	0.01	0.10	<.001	0.07	<.02	<.0002	<.02
AMB-077	<.05	0.01	0.14	<.05	<.01	1.3	0.11	<.003	<.05	<.02	<.0002	<.02
AMB-077			0.05		0.01	1.1					<.0002	
AMB-078	<.05	<.01	0.01	<.05	0.02	0.20	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-079	<.05	<.01	0.051	<.05	0.016	0.039	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-079	<.05	<.01	0.03	<.05	0.01	0.08	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-079	0.08	<.01	7.2	<.05	0.14	0.33	4.60	<.001	<.02	<.02	<.0002	<.02
AMB-080	0.06	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.01	<.0002	<.02
AMB-080	0.06	0.03	0.02	<.05	<.01	0.18	<.05	<.001	0.02	<.02	<.0002	<.02
AMB-081	<.05	<.01	<.02	<.05	0.05	<.01	0.1	<.003	<.1	<.02	<.0002	<.02
AMB-081	<.05	0.01	<.02	<.05	0.06	<.01	0.06	<.003	<.03	<.02	<.0002	<.02
AMB-081	<.05	0.01	<.01	<.05	0.06	0.01	0.05	<.001	0.02	<.02	<.0002	<.02
AMB-082	<.05	0.013	0.027	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-082	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-082	<.05	0.01	<.01	<.05	<.01	0.07	<.05	<.001	0.03	<.02	<.0002	<.02
AMB-083	<.05	0.04	0.47	<.05	0.01	0.02	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-083	<.05	0.03	0.70	<.05	0.01	0.10	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-084	<.05	<.01	0.67	<.05	0.10	0.02	<.05	<.001	0.04	<.02	<.0002	<.02
AMB-085	<.05	<.05	0.023	<.05	0.13	<.05	<.05	<.001	0.19	0.05	<.0002	<.02
AMB-086	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	1.3	<.02	<.0002	<.02
AMB-086	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-086	<.05	<.01	0.12	<.05	<.01	<.01	<.05	<.003	2.30	<.02	<.0002	<.02
AMB-086	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.96	<.05	<.0002	<.01
AMB-087	<.05	<.01	0.10	<.05	0.01	0.90	<.05	<.001	0.05	<.02	<.0002	<.02
AMB-088	<.05	<.01	4.60	0.11	0.04	0.48	0.15	<.003	<.03	<.02	<.0002	<.02
AMB-088	<.05	<.01	7.40	<.05	0.05	1.50	<.05	<.001	0.04	<.02	<.0002	<.02
AMB-089	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.08	<.02	<.0002	<.02
AMB-089	<.05	<.05	<.05	<.05	<.05	0.01	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-089	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.10	<.05	<.0002	<.02
AMB-090	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-090	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.05	<.05	<.0002	<.02
AMB-091	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-091	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-091	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-091	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-092	<.05	0.01	5	<.05	0.17	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-092	<.05	<.01	2.4	<.05	0.12	<.01	<.1	<.003	<.1	<.02	<.0002	<.02

Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-065										17	0.10	0.82	
AMB-065					<.01	<.05						0.94	
AMB-066					<.01	<.05						2.10	
AMB-067	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	54	0.15	<.02	ND
AMB-067								0.01		25	0.12		0.11
AMB-067					<.01	<.05						0.04	
AMB-068	<.002	<.03	32	<.15	<.01	<.01	<.02	<.01	<.05	57	0.11	0.13	ND
AMB-068	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	55	0.1	0.16	0.27
AMB-068								0.01		27	0.09	0.18	0.14
AMB-068					<.01	<.05						0.18	
AMB-069	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	0.1	8.1	ND
AMB-069	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	16	0.06	8.30	0.10
AMB-070	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	10	<.01	0.85	ND
AMB-070	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	9	<.01	1.2	ND
AMB-070	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	8.7	<.01	1.30	0.16
AMB-071	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	6.9	<.01	0.060	ND
AMB-071	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.5	<.01	0.08	ND
AMB-071	<.005	<.03	<.5	<.17	<.01	0.01	<.02	0.01	<.05	6.4	<.01	0.12	ND
AMB-072	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	<.01	0.39	
AMB-072											0.05	1.77	
AMB-072						<.05						0.76	
AMB-073	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.07	0.86	ND
AMB-073	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	26	0.07	0.78	0.18
AMB-074	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	34	0.07	0.55	ND
AMB-074	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	33	0.07	0.29	0.12
AMB-075	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	20	0.04	1.34	ND
AMB-075	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	19	0.04	0.83	ND
AMB-075	<.005	<.03	<.5	<.17	<.01	0.01	<.02	0.01	<.05	22	0.08	1.04	0.20
AMB-076	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	23	0.05	1.42	ND
AMB-076	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.04	3.6	1.5
AMB-076	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	27	0.53	<.02	0.26
AMB-077	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.02	<.02	ND
AMB-077								0.01		25	0.03		
AMB-078	<.005	<.03	<.5	<.17	<.01	<.01	<.02	0.01	<.05	6.7	<.01	2.00	0.20
AMB-079	0.0022	<.03	<.5	<.15	<.01	<.01	<.02	0.054	<.05	35	0.087	0.061	0.14
AMB-079	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.06	<.05	37	0.09	<.02	ND
AMB-079	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.08	<.05	55	0.09	0.06	0.16
AMB-080	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	50	0.09	0.72	ND
AMB-080	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	50	0.09	0.56	ND
AMB-081	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	9.2	<.01	1.76	ND
AMB-081	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.7	<.01	1.56	ND
AMB-081	<.005	<.03	<.5	<.17	<.01	<.01	<.02	0.01	<.05	9.1	<.01	1.10	0.10
AMB-082	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	23	0.018	0.28	ND
AMB-082	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	21	0.02	0.04	ND
AMB-082	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	22	<.01	0.05	ND
AMB-083	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	36	0.17	4.0	ND
AMB-083	<.005	<.03	<.5	<.17	<.01	<.01	<.02	<.01	<.05	38	0.22	7.40	0.10
AMB-084	<.005	<.03	<.5	0.21	<.01	0.01	<.02	0.01	<.05	39	0.32	<.02	0.92
AMB-085	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02	21	0.87	<.02	1.11
AMB-086	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	34	0.14	<.02	0.7
AMB-086	<.005	<.03	<.5	0.26	<.01	<.01	<.02	0.01	<.05	32	0.11	<.02	0.52
AMB-086	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.05	<.05		1.20	<.02	1.26
AMB-086	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02	30	0.07	<.02	0.65
AMB-087	<.005	<.03	<.5	0.18	<.01	0.01	<.02	0.01	<.05	59	0.35	<.02	0.58
AMB-088	<.005	<.03	<.5	<.15	<.01	<.01	0.04	<.01	<.05	18	0.05	0.04	0.06
AMB-088	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	18	0.04	<.02	0.26
AMB-089	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	27	0.14	<.02	0.24
AMB-089	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02		0.12	<.02	0.16
AMB-089	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02	25	0.12	<.02	0.27
AMB-090	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	24	0.24	0.19	0.21
AMB-090	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02	24	0.26	<.02	0.27
AMB-091	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	30	0.46	0.14	0.21
AMB-091	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	30	0.49	<.02	0.38
AMB-091	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02		0.46	<.02	0.35
AMB-091	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<.02	31	0.49	<.02	0.32
AMB-092	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	26	0.74	<.02	0.74
AMB-092	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	31	0.79	<.02	0.71

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-092	Hilton Head Island-Wexford	33.6662222	-78.997825	Beaufort	Sav-Salk	Tertiary Limestone
AMB-092	Hilton Head Island-Wexford	33.6662222	-78.997825	Beaufort	Sav-Salk	Tertiary Limestone
AMB-093	Bluffton	32.4070611	-80.5357139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-093	Bluffton	32.4070611	-80.5357139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-093	Bluffton	32.4070611	-80.5357139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-093	Bluffton	32.4070611	-80.5357139	Beaufort	Sav-Salk	Tertiary Limestone
AMB-094	City of Walterboro 29	32.5989944	-80.7948806	Collenton	Sav-Salk	Tertiary Limestone
AMB-094	City of Walterboro 29	32.5989944	-80.7948806	Collenton	Sav-Salk	Tertiary Limestone
AMB-094	City of Walterboro 29	32.5989944	-80.7948806	Collenton	Sav-Salk	Tertiary Limestone
AMB-094	City of Walterboro 29	32.5989944	-80.7948806	Collenton	Sav-Salk	Tertiary Limestone
AMB-095	Town of Edisto Beach #4	32.1619972	-80.7517667	Collenton	Saluda-Edisto	Tertiary Limestone
AMB-095	Town of Edisto Beach #4	32.1619972	-80.7517667	Collenton	Saluda-Edisto	Tertiary Limestone
AMB-095	Town of Edisto Beach #4	32.1619972	-80.7517667	Collenton	Saluda-Edisto	Tertiary Limestone
AMB-095	Town of Edisto Beach #4	32.1619972	-80.7517667	Collenton	Saluda-Edisto	Tertiary Limestone
AMB-096	Lieber Correctional Institute	32.2790306	-80.8162444	Dorchester	Catawba	Tertiary Limestone
AMB-096	Lieber Correctional Institute	32.2790306	-80.8162444	Dorchester	Catawba	Tertiary Limestone
AMB-096	Lieber Correctional Institute	32.2790306	-80.8162444	Dorchester	Catawba	Tertiary Limestone
AMB-097	Town of Hardeeville	32.9076556	-80.6678111	Jasper	Sav-Salk	Tertiary Limestone
AMB-097	Town of Hardeeville	32.9076556	-80.6678111	Jasper	Sav-Salk	Tertiary Limestone
AMB-097	Town of Hardeeville	32.9076556	-80.6678111	Jasper	Sav-Salk	Tertiary Limestone
AMB-097	Town of Hardeeville	32.9076556	-80.6678111	Jasper	Sav-Salk	Tertiary Limestone
AMB-098	Town of Ridgeland	32.5140389	-80.3093472	Jasper	Sav-Salk	Tertiary Limestone
AMB-098	Town of Ridgeland	32.5140389	-80.3093472	Jasper	Sav-Salk	Tertiary Limestone
AMB-098	Town of Ridgeland	32.5140389	-80.3093472	Jasper	Sav-Salk	Tertiary Limestone
AMB-098	Town of Ridgeland	32.5140389	-80.3093472	Jasper	Sav-Salk	Tertiary Limestone
AMB-099	Town of Grays	33.0863778	-80.2939667	Jasper	Sav-Salk	Tertiary Limestone
AMB-099	Town of Grays	33.0863778	-80.2939667	Jasper	Sav-Salk	Tertiary Limestone
AMB-099	Town of Grays	33.0863778	-80.2939667	Jasper	Sav-Salk	Tertiary Limestone
AMB-099	Town of Grays	33.0863778	-80.2939667	Jasper	Sav-Salk	Tertiary Limestone
AMB-100	Cope Vocation Center	32.2719167	-81.08335	Orangeburg	Saluda-Edisto	Tertiary Limestone
AMB-100	Cope Vocation Center	32.2719167	-81.08335	Orangeburg	Saluda-Edisto	Tertiary Limestone
AMB-100	Cope Vocation Center	32.2719167	-81.08335	Orangeburg	Saluda-Edisto	Tertiary Limestone
AMB-101	Orangeburg National Fish Hatchery #2	32.4859833	-80.9698694	Orangeburg	Saluda-Edisto	
AMB-101	Orangeburg National Fish Hatchery #2	32.4859833	-80.9698694	Orangeburg	Saluda-Edisto	
AMB-101	Orangeburg National Fish Hatchery #2	32.4859833	-80.9698694	Orangeburg	Saluda-Edisto	
AMB-101	Orangeburg National Fish Hatchery #2	32.4859833	-80.9698694	Orangeburg	Saluda-Edisto	
AMB-102	Town of Blackville	33.353575	-81.269725	Barnwell	Saluda-Edisto	Tertiary Sand
AMB-102	Town of Blackville	33.353575	-81.269725	Barnwell	Saluda-Edisto	Tertiary Sand
AMB-102	Town of Blackville	33.353575	-81.269725	Barnwell	Saluda-Edisto	Tertiary Sand
AMB-102	Town of Blackville	33.353575	-81.269725	Barnwell	Saluda-Edisto	Tertiary Sand
AMB-103	Oak Grove Elementary	32.6663278	-81.0232278	Lexington	Saluda-Edisto	Tertiary Sands
AMB-103	Oak Grove Elementary	32.6663278	-81.0232278	Lexington	Saluda-Edisto	Tertiary Sands
AMB-103	Oak Grove Elementary	32.6663278	-81.0232278	Lexington	Saluda-Edisto	Tertiary Sands
AMB-103	Oak Grove Elementary	32.6663278	-81.0232278	Lexington	Saluda-Edisto	Tertiary Sands
AMB-104	Town of North	33.3744389	-81.0067222	Orangeburg	Saluda-Edisto	Tertiary Sands
AMB-104	Town of North	33.3744389	-81.0067222	Orangeburg	Saluda-Edisto	Tertiary Sands
AMB-104	Town of North	33.3744389	-81.0067222	Orangeburg	Saluda-Edisto	Tertiary Sands
AMB-104	Town of North	33.3744389	-81.0067222	Orangeburg	Saluda-Edisto	Tertiary Sands
AMB-105	Pickney estates	33.4675139	-80.8588972	Sumter	Pee Dee	Tertiary Sands
AMB-105	Pickney estates	33.4675139	-80.8588972	Sumter	Pee Dee	Tertiary Sands
AMB-106	Hamilton Branch	33.9855083	-81.1580722	McCormick	Sav-Salk	Piedmont Bedrock
AMB-106	Hamilton Branch	33.9855083	-81.1580722	McCormick	Sav-Salk	Piedmont Bedrock
AMB-107	Fairview Forest Manor	33.6457361	-81.0949083	Edgefield	Sav-Salk	Piedmont Bedrock
AMB-108	Caesar's Head	33.8654889	-80.3426278	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-108	Caesar's Head	33.8654889	-80.3426278	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-108	Caesar's Head	33.8654889	-80.3426278	Greenville	Saluda-Edisto	Piedmont Bedrock
AMB-109	City of Spartanburg	33.7541778	-82.2039722	Spartanburg	Broad	Piedmont Bedrock
AMB-109	City of Spartanburg	33.7541778	-82.2039722	Spartanburg	Broad	Piedmont Bedrock
AMB-110	Chester State Park	33.9347889	-82.1223944	Chester	Broad	Piedmont Bedrock
AMB-110	Chester State Park	33.9347889	-82.1223944	Chester	Broad	Piedmont Bedrock
AMB-111	White Bluff Baptist Church	35.1074667	-82.6312611	Lancaster	Pee Dee	Piedmont Bedrock
AMB-111	White Bluff Baptist Church	35.1074667	-82.6312611	Lancaster	Pee Dee	Piedmont Bedrock
AMB-112	Westside Estates	34.9524111	-81.9354889	Chesterfield	Pee Dee	Piedmont Bedrock
AMB-112	Westside Estates	34.9524111	-81.9354889	Chesterfield	Pee Dee	Piedmont Bedrock
AMB-113	Amick Poultry	34.6841167	-81.2444389	Saluda	Saluda-Edisto	Piedmont Bedrock
AMB-113	Amick Poultry	34.6841167	-81.2444389	Saluda	Saluda-Edisto	Piedmont Bedrock
AMB-113	Amick Poultry	34.6841167	-81.2444389	Saluda	Saluda-Edisto	Piedmont Bedrock

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SP_CD	TDS	Hard	TOC	CL_ppm	CL_epm	CL %	SO4_ppm	SO4_epm	SO4 %	ALK_ppm	ALK_epm	ALK %
AMB-092	01-May-93	7.6	559	330	150	26	74	2.08	41.43	20	0.42	8.37	154	2.52	50.2
AMB-092	01-May-88	8.0	400	300	100	<1	45	1.27	37.8	6	0.12	3.57	120	1.97	58.63
AMB-093	01-Jul-00	7.9	579	330	190	2.1	94.3	2.66	49.53	9	0.19	3.54	154	2.52	46.93
AMB-093	01-May-98	7.9	586	280	190		84.4	2.38	47.13	7	0.15	2.97	154	2.52	49.9
AMB-093	01-May-93	7.8	450	250	190	13.3	42.3	1.19	30.2	<10	0	0	168	2.75	69.8
AMB-093	01-May-88	7.7	430	350	230	<1	45	1.27	32.73	<10	0	0	159	2.61	67.27
AMB-094	01-Jul-00	8.8	392	250	11	2.3	5	0.14	4.05	9	0.19	5.49	191	3.13	90.46
AMB-094	01-May-98	8.7		250	12	22	4.9	0.14	2.82	82	1.71	34.48	190	3.11	62.7
AMB-094	01-May-93	9.0	356	220	8.0	11.7	4.4	0.12	3.82	<10	0	0	184	3.02	96.18
AMB-094	01-May-88	8.7	342	240	11	<1	4.5	0.13	3.79	<10	0	0	201	3.3	96.21
AMB-095	15-May-01	8.0	0.767	2000		<2	1100	30.99	75.24	96	2	4.86	500	8.2	19.91
AMB-095	01-May-98	8.2		2300	100	6.2	1300	36.62	82.98	<5	0	0	458	7.51	17.02
AMB-095	01-May-93	8.5	1970	1200	31	37	568	16	64.8	85	1.77	7.17	422	6.92	28.03
AMB-095	01-May-88	8.7	4020	2300	78	4.1	750	21.13	68.51	65	1.35	4.38	510	8.36	27.11
AMB-096	01-Jul-99	8.0	310	170	78	<2	5.1	0.14	5.09	<5	0	0	159	2.61	94.91
AMB-096	01-Jul-94	8.1	316	160	74	3.0	5.5	0.15	5.43	<5	0	0	159	2.61	94.57
AMB-096	01-May-89	7.6	270	170	68	1.0	<1	0	0	<10	0	0	152	2.49	100
AMB-097	01-Jul-00	8.2	235	140	78	<2	3.7	0.1	5.03	7	0.15	7.54	106	1.74	87.44
AMB-097	01-May-98	8.1	210	150	82		3.6	0.1	5.68	<5	0	0	101	1.66	94.32
AMB-097	01-May-93	7.9	234	160	88	7.7	7.4	0.21	10.71	<10	0	0	107	1.75	89.29
AMB-097	01-May-88	8.1	213	150	80	<1	3.5	0.1	5.35	<10	0	0	108	1.77	94.65
AMB-098	01-Jul-00	7.7	2	200	120	<2	5.5	0.15	5.79	5	0.1	3.86	143	2.34	90.35
AMB-098	01-May-98	7.9	288	190	130		5.4	0.15	6.1	<5	0	0	141	2.31	93.9
AMB-098	01-May-93	7.8	294	190	130	1.7	5.1	0.14	5.38	<10	0	0	150	2.46	94.62
AMB-098	01-May-88	7.8	250	180	140	<1	5.0	0.14	5.26	<10	0	0	154	2.52	94.74
AMB-099	01-Jul-00	7.9	269	180	110	<2	4.1	0.12	5.19	6	0.12	5.19	126	2.07	89.61
AMB-099	01-May-98	7.9	249	190	120		4	0.11	4.6	11	0.23	9.62	125	2.05	85.77
AMB-099	01-May-93	8.0	262	160	120	70	4.0	0.11	4.7	<10	0	0	136	2.23	95.3
AMB-099	01-May-88	7.9	238	180	120	<1	3.5	0.1	4.24	<10	0	0	138	2.26	95.76
AMB-100	01-May-98	7.4		140	77	<2	1.6	0.05	3.42	7	0.15	10.27	77	1.26	86.3
AMB-100	01-May-93	7.4	188	140	78	5.8	0.22	0.01	0.64	11	0.23	14.65	81	1.33	84.71
AMB-100	01-May-88	7.1	147	140	74	1.1	2.0	0.06	4.84	<10	0	0	72	1.18	95.16
AMB-101	15-May-01	7.7	241	160		<2	5.9	0.17	7.91	8.6	0.18	8.37	110	1.8	83.72
AMB-101	01-May-98	8.1	242	160	110	<2	4.9	0.14	9.52	<5	0	0	81	1.33	90.48
AMB-101	01-May-93	7.3	56	120	96	8.3	2.7	0.08	5.03	<10	0	0	92	1.51	94.97
AMB-101	01-May-88	7.4	205	170	110	<1	6.0	0.17	9.09	<10	0	0	104	1.7	90.91
AMB-102	15-May-01	7.7	217	170		<2	2.8	0.08	3.98	6.1	0.13	6.47	110	1.8	89.55
AMB-102	01-May-98	7.7		64	110	<2	2.6	0.07	3.91	<5	0	0	105	1.72	96.09
AMB-102	01-May-93	7.7	223	160	120	7.8	2.5	0.07	4.02	<10	0	0	102	1.67	95.98
AMB-102	01-May-88	7.6	198	140	110	<1	2.5	0.07	3.61	<10	0	0	114	1.87	96.39
AMB-103	15-May-01	4.8	26.1	32		<2	2.4	0.07	100	<5	0	0	<1	0	0
AMB-103	01-May-97	7.7		120	3.0	2.8	3.4	0.1	5.49	<5	0	0	105	1.72	94.51
AMB-103	01-Dec-91	7.7	290	170	2.0	1.4	71.1	2	58.65	12	0.25	7.33	71	1.16	34.02
AMB-103	01-May-87	4.9	18	12	2.0	<1	2.0	0.06	66.67	<10	0	0	2.0	0.03	33.33
AMB-104	15-May-01	5.3	28.7	38		<2	3.0	0.08	100	<5	0	0	<1	0	0
AMB-104	01-May-98	5.5		20	4	<2	2.8	0.08	72.73	<5	0	0	2	0.03	27.27
AMB-104	01-May-93	5.2	25	20	3.0	1.8	2.6	0.07	100	<10	0	0	<1	0	0
AMB-104	01-May-88	5.1	22	22	3.0	<1	2.5	0.07	70	<10	0	0	2.0	0.03	30
AMB-105	01-Jul-94	6.2	69	38	22	1.8	2.8	0.08	12.5	11	0.23	35.94	20	0.33	51.56
AMB-105	01-May-89	6.2	62	78	19	<1	2.5	0.07	20	<10	0	0	17	0.28	80
AMB-106	01-Jul-96	7.2	120	91	35	2.4	4.7	0.13	12.75	<5	0	0	54	0.89	87.25
AMB-106	01-Jun-91	7.0	114	86	36	2.3	5.1	0.14	14.14	<10	0	0	52	0.85	85.86
AMB-107	01-Jun-91	6.2	70	84	9.0	2.2	3.8	0.11	22	<10	0	0	24	0.39	78
AMB-108	15-May-01	6.2	63.1	28		<2	9.9	0.28	60.87	<5	0	0	11	0.18	39.13
AMB-108	01-Jul-96	6.6	40	22	12	<2	1.3	0.04	13.79	<5	0	0	15	0.25	86.21
AMB-108	01-Jun-91	8.4	681	370	5.0	3.4	6.0	0.17	2.6	12	0.25	3.83	373	6.11	93.57
AMB-109	01-Jul-96	7.8	220	140	66	3.1	5.5	0.15	7.94	16	0.33	17.46	86	1.41	74.6
AMB-109	01-Jun-91	7.8	217	140	63	3.0	5.1	0.14	8.59	<10	0	0	91	1.49	91.41
AMB-110	01-Jul-96	7.3	540	350	220	8.9	18	0.51	9.92	50	1.04	20.23	219	3.59	69.84
AMB-110	01-Jun-91	7.5	506	340	250	4.5	17.9	0.5	11.14	38	0.79	17.59	195	3.2	71.27
AMB-111	01-Jul-96	6.5	61	86	9	<2	4.4	0.12	24	<5	0	0	23	0.38	76
AMB-111	01-Jun-91	6.6	65	72	9.0	1.9	4.5	0.13	25.49	<10	0	0	23	0.38	74.51
AMB-112	01-Jul-96	7.6	129	120	39	2.4	2.2	0.06	5	8	0.17	14.17	59	0.97	80.83
AMB-112	01-Jun-91	7.7	131	110	42	1.5	2.2	0.06	5.41	<10	0	0	64	1.05	94.59
AMB-113	15-May-01	6.5	211	150		<2	7.1	0.2	10.36	47	0.98	50.78	46	0.75	38.86
AMB-113	01-Jul-96	6.3	256	180	87	5	8.8	0.25	11.01	50	1.04	45.81	60	0.98	43.17
AMB-113	01-Jun-91	6.4	117	78	30	2.5	6.4	0.18	14.63	15	0.31	25.2	45	0.74	60.16

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-092	41	2.04	36.43	11	0.91	16.25	59	2.57	3	0.08	47.32	0.39	<.005
AMB-092	23	1.15	22.77	12	0.99	19.6	67	2.91	<1	0	57.62	0.60	<.005
AMB-093	46	2.29	40.67	18	1.48	26.29	41	1.78	3	0.08	33.04		<.005
AMB-093	45	2.24	41.71	18	1.48	27.56	36	1.57	3	0.08	30.73	0.29	<.005
AMB-093	46	2.29	48.93	18	1.48	31.62	19	0.83	3	0.08	19.44	0.3	<.005
AMB-093	54	2.69	50.09	22	1.81	33.71	20	0.87	<1	0	16.2	0.40	<.005
AMB-094	2.4	0.12	3.05	1.2	0.1	2.54	81	3.52	8	0.2	94.42	1.09	<.005
AMB-094	2.6	0.13	3.02	1.3	0.11	2.56	88	3.83	9	0.23	94.42	1.12	<.005
AMB-094	2	0.1	2.59	0.69	0.06	1.55	82	3.57	5	0.13	95.85	0.84	<.005
AMB-094	2.5	0.12	3.17	1.1	0.09	2.38	82	3.57	<1	0	94.44	1.40	<.005
AMB-095				0	0							2.6	<.005
AMB-095	11	0.55	1.52	18	1.48	4.09	770	33.48	25	0.64	94.38	2.43	<.005
AMB-095	4	0.2	1.04	5.2	0.43	2.23	420	18.26	14	0.36	96.73	2.9	<.005
AMB-095	9.8	0.49	1.7	13	1.07	3.7	617	26.83	20	0.51	94.6	1.40	<.005
AMB-096	20	1	28.01	6.8	0.56	15.69	41	1.78	9	0.23	56.3	0.21	<.005
AMB-096	19	0.95	27.94	6.5	0.53	15.59	40	1.74	7	0.18	56.47	0.28	<.005
AMB-096	18	0.9	28.12	5.7	0.47	14.69	38	1.65	7	0.18	57.19	0.28	<.005
AMB-097	17	0.85	37.12	8.6	0.71	31	15	0.65	3	0.08	31.88		<.005
AMB-097	18	0.9	37.19	9	0.74	30.58	16	0.7	3	0.08	32.23	0.46	<.005
AMB-097	21	1.05	42.17	8.6	0.71	28.51	15	0.65	3	0.08	29.32	0.41	<.005
AMB-097	18	0.9	40.18	8.4	0.69	30.8	15	0.65	<1	0	29.02	0.70	<.005
AMB-098	40	2	66.67	5.7	0.47	15.67	11	0.48	2	0.05	17.67	0.2	<.005
AMB-098	42	2.09	64.71	6.9	0.57	17.65	12	0.52	2	0.05	17.65	0.1	<.005
AMB-098	43	2.14	66.67	6.2	0.51	15.89	11	0.48	3	0.08	17.45	0.19	<.005
AMB-098	44	2.19	66.97	6.8	0.56	17.13	12	0.52	<1	0	15.9	0.20	<.005
AMB-099	39	1.95	73.31	3.7	0.3	11.28	8.2	0.36	2	0.05	15.41	0.16	<.005
AMB-099	41	2.04	70.83	4.5	0.37	12.85	8.6	0.37	4	0.1	16.32	0.13	<.005
AMB-099	41	2.04	72.6	4.2	0.35	12.46	8.6	0.37	2	0.05	14.95	0.14	<.005
AMB-099	41	2.04	73.91	4.4	0.36	13.04	8.3	0.36	<1	0	13.04	0.30	<.005
AMB-100	26	1.3	69.89	3	0.25	13.44	2.6	0.11	8	0.2	16.67	0.16	<.005
AMB-100	26	1.3	69.52	3.1	0.26	13.9	2.6	0.11	8	0.2	16.58	0.22	<.005
AMB-100	25	1.25	78.12	2.9	0.24	15	2.5	0.11	<1	0	6.87	0.20	<.005
AMB-101	43	2.14	81.68	2	0.16	6.11	3.9	0.17	6.0	0.15	12.21	<.1	<.005
AMB-101	40	2	79.37	2.6	0.21	8.33	3.6	0.16	6	0.15	12.3		<.005
AMB-101	35	1.75	78.48	2.2	0.18	8.07	2.8	0.12	7	0.18	13.45	0.16	<.005
AMB-101	42	2.09	84.27	2.4	0.2	8.06	4.3	0.19	<1	0	7.66	0.10	<.005
AMB-102	42	2.09	91.67	1	0.08	3.51	1.8	0.08	1.3	0.03	4.82	<.1	<.005
AMB-102	43	2.14	90.68	1.3	0.11	4.66	1.8	0.08	1	0.03	4.66	0.14	<.005
AMB-102	44	2.19	90.87	1.3	0.11	4.56	1.8	0.08	1	0.03	4.56	0.10	<.005
AMB-102	43	2.14	92.24	1.2	0.1	4.31	1.80	0.08	<1	0	3.45	0.10	<.005
AMB-103	0.47	0.02	11.76	1	0.08	47.06	1.7	0.07	<1	0	41.18	<.1	<.005
AMB-103	0.44	0.02	0.83	0.5	0.04	1.66	54	2.35	<1	0	97.51	<0.1	<.005
AMB-103	0.33	0.02	0.68	0.39	0.03	1.01	67	2.91	0	0	98.31	0.12	<.005
AMB-103	0.27	0.01	10	0.33	0.03	30	1.40	0.06	<1	0	60	<0.1	<.005
AMB-104	0.77	0.04	25	0	0	0	2.8	0.12	<1	0	75	<.1	<.005
AMB-104	0.82	0.04	18.18	0.56	0.05	22.73	3.1	0.13	<1	0	59.09	<0.1	<.005
AMB-104	0.62	0.03	18.75	0.41	0.03	18.75	2.3	0.1	<1	0	62.5	<0.1	<.005
AMB-104	0.60	0.03	18.75	0.37	0.03	18.75	2.20	0.1	<1	0	62.5	<0.1	<.005
AMB-105	7.6	0.38	62.3	0.84	0.07	11.48	1.90	0.08	3	0.08	26.23	0.19	<.005
AMB-105	6.1	0.3	66.67	0.81	0.07	15.56	1.80	0.08	<1	0	17.78	0.10	<.005
AMB-106	6.2	0.31	25.41	4.7	0.39	31.97	12	0.52	<1	0	42.62	0.1	<.005
AMB-106	6.5	0.32	25.81	4.9	0.4	32.26	12	0.52	<1	0	41.94	0.16	<.005
AMB-107	3.1	0.15	23.08	0.20	0.02	3.08	11	0.48	<1	0	73.85	2.60	<.005
AMB-108	2.2	0.11	18.97	1	0.08	13.79	7.8	0.34	2	0.05	67.24	<.1	<.005
AMB-108	3	0.15	44.12	1.2	0.1	29.41	2	0.09	<1	0	26.47	<0.1	<.005
AMB-108	1.5	0.07	0.99	0.41	0.03	0.42	160	6.96	<6	0	98.58	0.10	<.005
AMB-109	20	1	46.51	3.9	0.32	14.88	18	0.78	2	0.05	38.6	<0.1	<.005
AMB-109	19	0.95	47.74	3.7	0.3	15.08	17	0.74	<1	0	37.19	0.14	<.005
AMB-110	57	2.84	51.54	19	1.56	28.31	22	0.96	6	0.15	20.15	0.36	<.005
AMB-110	67	3.34	55.57	19	1.56	25.96	22	0.96	6	0.15	18.47	0.43	<.005
AMB-111	2.5	0.12	22.22	0.68	0.06	11.11	7.7	0.33	1	0.03	66.67	<0.1	<.005
AMB-111	2.6	0.13	25.49	0.71	0.06	11.76	7.4	0.32	<1	0	62.75	0.20	<.005
AMB-112	13	0.65	50.39	1.6	0.13	10.08	11	0.48	1	0.03	39.53	1.1	<.005
AMB-112	14	0.7	53.03	1.7	0.14	10.61	11	0.48	<1	0	36.36	1.26	<.005
AMB-113	5.2	0.26	17.45	10	0.82	55.03	8.0	0.35	2.3	0.06	27.52	<.1	<.005
AMB-113	20	1	43.67	9	0.74	32.31	12	0.52	1	0.03	24.02	0.08	0.006
AMB-113	1.7	0.08	9.64	6.20	0.51	61.45	5.5	0.24	<1	0	28.92	0.14	<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-092	<.05	<.01	0.44	<.05	0.02	0.01	<.05	<.003	0.07	<.02	<.0002	0.08
AMB-092	<.05	<.05	0.14	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-093	<.05	<.01	<.02	<.05	0.02	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-093	<.05	<.01	<.02	<.05	0.02	<.01	<.1	<.003	0.03	<.02	<.0002	<.02
AMB-093	<.05	<.01	<.02	<.05	0.02	0.07	<.05	<.003	0.03	<.02	<.0002	<.02
AMB-093	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-094	<.05	<.01	<.02	<.05	<.01	<.01	0.2	<.003	0.2	<.02	<.0002	<.02
AMB-094	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.2	<.02	<.0002	<.02
AMB-094	<.05	0.04	0.09	<.05	<.05	0.02	<.05	<.001	0.28	<.05	<.0002	0.04
AMB-094	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	0.16	<.05	<.0002	<.01
AMB-095											<.0002	
AMB-095	<.05	<.01	0.1	<.05	<.01	<.01	<.1	<.003	2.4	<.02	<.0002	<.02
AMB-095	<.05	<.01	<.02	<.05	<.01	<.01	<.05	.003	<.02	<.02	<.0002	<.03
AMB-095	<.05	<.05	0.60	<.05	<.05	0.09	<.05	<.001	1.90	<.05	<.0002	<.02
AMB-096	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-096	<.05	<.01	<.02	<.05	<.01	<.01	<.05	<.003	0.06	<.02	<.0002	<.02
AMB-096	<.05	<.05	0.01	<.05	<.01	<.01	<.05	<.001	0.06	<.02	<.0002	<.02
AMB-097	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-097	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	0.03	<.02	<.0002	<.02
AMB-097	<.05	<.05	<.05	<.05	<.05	0.01	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-097	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-098	<.05	<.01	<.02	<.05	0.05	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-098	<.05	<.01	<.02	<.05	0.05	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-098	<.05	<.05	<.05	<.05	0.06	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-098	<.05	<.05	<.05	<.05	0.06	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-099	<.05	<.01	<.02	<.05	0.03	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-099	<.05	<.01	<.02	<.05	0.03	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-099	<.05	<.05	<.05	<.05	0.04	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-099	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-100	<.05	0.04	0.98	<.05	0.07	4.2	<.1	0.003	<.03	<.02	<.0002	<.02
AMB-100	<.05	<.05	1.1	<.05	0.06	0.04	<.05	<.001	<.05			
AMB-100	<.05	<.05	1.70	<.05	0.05	0.60	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-101	<.05	<.01	0.079	<.05	0.060	0.023	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-101	<.05	<.01	0.08	<.05	<.01	0.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-101	0.16	<.01	0.75		0.05							
AMB-101	<.05	<.05	0.38	<.05	0.07	0.06	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-102	0.21	<.01	0.29	<.05	0.026	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-102	0.34	<.01	0.32	<.05	0.02	<.01	<.1	<.003	<.03	<.02	<.0002	<.02
AMB-102	<.05	<.05	0.63	<.05	0.03	<.05	<.05	<.001	<.05	<.05	<.0002	
AMB-102	<.05	<.05	0.60	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.01
AMB-103	<.05	0.065	0.062	<.05	0.015	0.021	<.1	0.0039	<.1	<.02	<.0002	<.02
AMB-103	<.05	<.01	<.02	<.05	0.01	<.01	0.08	<.003	0.09	<.02	<.0002	<.02
AMB-103	<.05	<.05	<.05	<.05	<.05	0.03	0.09	<.001	<.05	<.05	<.0002	
AMB-103	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	
AMB-104	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-104	<.05	0.01	<.02	<.05	<.01	0.02	<.1	0.004	<.03	<.02	<.0002	<.02
AMB-104	<.05	0.01	<.05	<.05	<.05	0.02	<.05	<.001	<.05	<.05	<.0002	
AMB-104	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.001	<.05	<.05	<.0002	<.01
AMB-105	0.06	<.01	1.00	<.05	0.02	0.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-105	0.06	<.01	1.20	<.05	0.02	0.01	<.05	<.001	<.02	<.02	<.0002	<.02
AMB-106	<.05	<.01	<.02	<.05	<.01	0.02	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-106	<.05	<.05	<.05	<.05	<.05	<.01	<.05	<.001	<.05	<.05	<.0002	
AMB-107	<.05	0.03	<.05	<.05	<.01	0.01	0.75	0.07	0.01	0.00	<.0002	
AMB-108	<.05	<.01	0.081	<.05	<.01	0.036	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-108	<.05	<.01	0.21	<.05	<.01	0.57	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-108											<.0002	
AMB-109	<.05	<.01	0.42	<.05	0.08	0.17	0.17	<.003	<.03	<.02	<.0002	<.02
AMB-109	<.05	0.02	0.10	<.05	0.05	0.12	<.05	<.001	0.04		<.0002	
AMB-110	0.08	<.01	0.84	<.05	0.48	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-110	0.07		0.46		0.39	0.01					<.0002	
AMB-111	<.05	<.01	0.15	<.05	<.01	0.65	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-111	<.05	<.05	0.13	<.05	0.02	0.64	<.05	<.001	<.02	<.02	<.0002	
AMB-112	<.05	<.01	<.02	<.05	0.06	0.02	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-112	<.05	<.05	0.08	<.05	0.03	0.11	<.05	<.003	<.02		<.0002	
AMB-113	<.05	0.015	16	<.05	1.2	0.03	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-113	<.05	<.01	21	<.05	0.29	0.39	0.18	<.003	<.03	<.02	<.0002	<.02
AMB-113			13		0.54	0.03					<.0002	

Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-092	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	0.46		0.73	0.12	0.10
AMB-092	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	39	0.54	<.02	0.20
AMB-093	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	29	1.1	<.02	0.2
AMB-093	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	28	0.99	<.02	0.24
AMB-093	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05		1.10	<.02	0.22
AMB-093	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	30	1.20	<.02	0.31
AMB-094	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	29	0.06	<.02	0.22
AMB-094	<.005	<.03	<.5	0.21	<.01	<.01	<.02	<.01	<.05	29	0.06	<.02	0.17
AMB-094	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2		0.04	0.07	0.15
AMB-094	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	28	0.06	<.02	0.37
AMB-095	<.002									28		<.02	1
AMB-095	<.005	<.03	<.5	0.16	<.01	<.01	<.02	0.05	<.05	29	1.1	<.02	1.07
AMB-095	<.005	<.05	<1	<.01	<.01	<.01	<.02	0.02	<.05		0.12	<.02	0.72
AMB-095	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	12	<1	0.02	1.53
AMB-096	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	22	0.12	1.8	0.26
AMB-096	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	0.03	0.12	<.02	ND
AMB-096	<.005	<.05	<.5	<.15	<.01	<.01	<.02	<.01	<.05	22	0.11	<.02	0.46
AMB-097	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	42	0.49	<.02	ND
AMB-097	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	41	0.48	<.02	1.2
AMB-097	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2		0.46	<.02	ND
AMB-097	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	39	0.49	<.02	0.15
AMB-098	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	34	0.33	0.95	ND
AMB-098	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	35	0.34	<.02	0.11
AMB-098	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2		0.32	<.02	0.12
AMB-098	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	35	0.36	<.02	0.15
AMB-099	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	30	0.18	0.27	ND
AMB-099	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	31	0.19	<.02	0.26
AMB-099	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2		0.19	<.02	0.28
AMB-099	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	30	0.20	<.02	0.17
AMB-100	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	24	0.14	<.02	ND
AMB-100											0.14	<.02	0.10
AMB-100	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	40	0.14	<.02	0.13
AMB-101	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	34	0.18	0.85	
AMB-101	<.005	<.03	<.5	0.39	<.01	<.01	<.02	<.01	<.05	37	0.17	0.38	ND
AMB-101											0.17	<.02	
AMB-101	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	35	0.18	0.84	0.17
AMB-102	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	37	0.076	<.02	ND
AMB-102	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	41	0.1	<.02	ND
AMB-102											0.10	<.02	0.13
AMB-102	<.005	<.05	<1	<.15	<.01	<.01	<.05	<.05	<0.2	39	0.10	<.02	0.13
AMB-103	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.5	<.01	1.3	ND
AMB-103	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.5	<.01	0.84	ND
AMB-103										19	0.06	1.26	0.01
AMB-103					<.01	<.05						0.42	
AMB-104	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	27	<.01	1.4	ND
AMB-104	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8.1	<.01	1.26	ND
AMB-104												1.05	0.10
AMB-104	<.005	<.05	<1	<.15	<.01	<.01	<.05	<.05	<0.2	7.9	<.05	0.98	0.13
AMB-105	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	8	0.05	0.02	ND
AMB-105	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	12	0.04	0.03	ND
AMB-106	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	28	0.04	0.35	ND
AMB-106										32	0.04		
AMB-107										70			
AMB-108	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	15	0.023	0.12	ND
AMB-108	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	15	0.02	<.02	ND
AMB-108										8		0.11	
AMB-109	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.20	0.15	ND
AMB-109										39	0.19	0.06	0.10
AMB-110	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	43	0.19	<.02	ND
AMB-110										46	0.17		0.13
AMB-111	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	38	0.03	0.07	ND
AMB-111										45	0.02		
AMB-112	<.005	<.03	<.5	<.15	<.01	<.01	<.02	0.01	<.05	37	0.06	0.16	ND
AMB-112			0.06					0.01		42	0.06	0.21	
AMB-113	<.002	<.03	<.5	<.15	<.01	<.01	<.02	0.040	<.05	22	0.071	<.02	ND
AMB-113	<.005	<.03	<.5	<.15	<.01	<.01	0.04	0.03	<.05	26	0.1	0.02	ND
AMB-113								0.03		27	0.03	0.06	0.14

Appendix D: Ambient Well Network Water Quality Data

Well	Location	Latitude	Longitude	County	Sub-Basin	Aquifer
AMB-114	WSHB Radio	34.6617583	-80.5575444	Hampton	Sav-Salk	Tertiary Limestone
AMB-114	WSHB Radio	34.6617583	-80.5575444	Hampton	Sav-Salk	Tertiary Limestone
AMB-114	WSHB Radio	34.6617583	-80.5575444	Hampton	Sav-Salk	Tertiary Limestone
AMB-115	McCormick CPW	34.75565	-80.4063778	McCormick	Sav-Salk	Piedmont Bedrock
AMB-116	Pelion	33.9483333	-81.6302833	Lexington	Saluda-Edisto	Black Creek
AMB-117	Brattonsville	32.6821	-81.1292778	York		
AMB-118	Orangeburg Co.	0	0	Orangeburg		
AMB-119	Mt. Pleasant	33.6948056	-81.2295	Charleston		
AMB-120	Elgin	34.8708333	-81.175	Kershaw		
AMB-121	McClellanville	32.8452778	-79.8266667	Charleston		
AMB-122	Hampton Plantation State Park	33.4980556	-80.8527778	Charleston		

Appendix D: Ambient Well Network Water Quality Data

Well	Date	pH	SP, °C/D	TDS	Hard	CaCO ₃	Ca, ppm	Cl, ppm	Cl, %	SO ₄ , ppm	SO ₄ , ppm	SO ₄ , %	Alk, ppm	Alk, ppm	Alk, %
AMB-114	01-Jul-00	7.9	252	170	110	<2	4.2	0.12	5.56	6	0.12	5.56	117	1.92	88.89
AMB-114	01-Jul-96	7.7	254	160	100	<2	4.5	0.13	5.75	5	0.1	4.42	124	2.03	89.82
AMB-114	01-Jun-91	7.0	237	170	110	4.1	4.4	0.12	5.66	<10	0	0	122	2	94.34
AMB-115	01-Jul-00	8.3	536	380	230	<2	16.4	0.46	8.76	150	3.12	59.43	102	1.67	31.81
AMB-116	15-May-01	4.6	28.0	26		<2	2.4	0.07	100	<5	0	0	0.0	0	0
AMB-117	01-May-02	7.1	159	110	55	<2	4.1	0.12	9.37	5.5	0.11	8.59	64	1.05	82.03
AMB-118	01-May-02	8.7	170	100	19	<2	1.6	0.05	3.6	7.8	0.16	11.51	72	1.18	84.89
AMB-119	01-May-02	8.6	1970	1100	5.7	<2	120	3.38	19.31	8.9	0.19	1.09	850	13.93	79.6
AMB-120	01-May-02	5.2	20.7	24	2.6	<2	2	0.06	100	<5	0	0	<1	0	0
AMB-121	01-May-02	7.6	565	320	230	5.1	33	0.93	18.71	5.4	0.11	2.21	240	3.93	79.07
AMB-122	01-May-02	8.4	2940	1400	39	<2	540	15.21	61.16	23	0.48	1.93	560	9.18	36.91

Appendix D: Ambient Well Network Water Quality Data

Well	CA_ppm	CA_epm	CA_%	MG_ppm	MG_epm	MG_%	NA_ppm	NA_epm	K_ppm	K_epm	NA_K%	F_ppm	AS_ppm
AMB-114	39	1.95	78.31	2.4	0.2	8.03	7.2	0.31	1	0.03	13.65	0.14	<.005
AMB-114	37	1.85	75.51	2.9	0.24	9.8	7.7	0.33	1	0.03	14.69	0.12	<.005
AMB-114	39	1.95	76.47	3.2	0.26	10.2	7.8	0.34	<1	0	13.33	0.18	<.005
AMB-115	81	4.04	76.37	7.8	0.64	12.1	14	0.61	<1	0	11.53	0.22	<.005
AMB-116	0.27	0.01	11.11	0	0	0	1.8	0.08	<1	0	88.89	<.1	<.005
AMB-117	15	0.75	50.68	4.3	0.35	23.65	7.2	0.31	2.6	0.07	25.68	0.18	<.005
AMB-118	6	0.3	18.07	0.93	0.08	4.82	26	1.13	6	0.15	77.11	0.23	<.005
AMB-119	1.5	0.07	0.35	0.48	0.04	0.2	460	20	3	0.08	99.46	4.7	<.005
AMB-120	0.36	0.02	16.67	0.41	0.03	25	1.6	0.07	<1	0	58.33	<.1	<.005
AMB-121	79	3.94	69.49	8.5	0.7	12.35	20	0.87	6.4	0.16	18.17	0.11	<.005
AMB-122	6.1	0.3	1.26	5.8	0.48	2.01	520	22.61	18	0.46	96.73	2	<.005

Appendix D: Ambient Well Network Water Quality Data

Well	BA_ppm	CU_ppm	FE_ppm	PB_ppm	MN_ppm	ZN_ppm	AL_ppm	BE_ppm	B_ppm	CO_ppm	HG_ppm	MO_ppm
AMB-114	<.05	<.01	<.02	<.05	0.02	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-114	<.05	<.01	<.02	<.05	0.02	<.01	<.05	<.003	<.03	<.02	<.0002	<.02
AMB-114	<.05	<.05	0.01	<.05	0.02	0.02	<.05	<.001	<.05	<.05	<.0002	<.02
AMB-115	0.07	<.01	0.06	<.05	0.15	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-116	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-117	<.05	<.01	<.02	<.05	<.01	2.3	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-118	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-119	<.05	<.01	<.02	<.05	<.01	<.01	<.1	<.003	3	<.02	<.0002	<.02
AMB-120	<.05	<.01	0.033	<.05	<.01	<.01	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-121	<.05	<.01	0.8	<.05	0.18	0.019	<.1	<.003	<.1	<.02	<.0002	<.02
AMB-122	<.05	<.01	0.27	<.05	<.01	0.17	<.1	<.003	1.8	<.02	<.0002	<.02

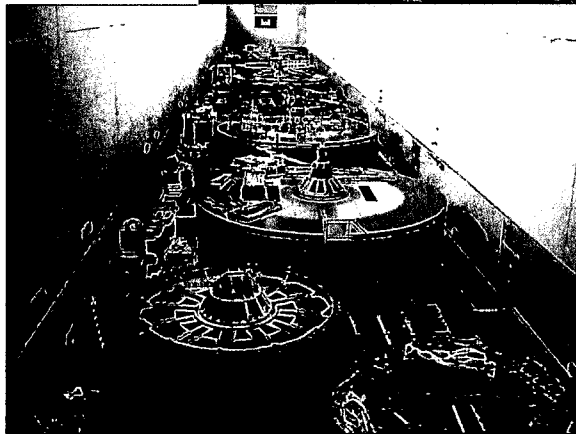
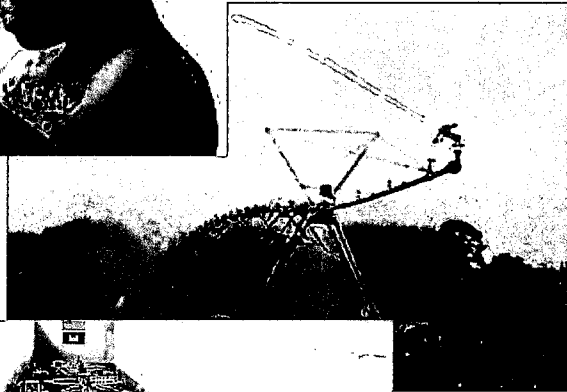
Appendix D: Ambient Well Network Water Quality Data

Well	SE_ppm	AG_ppm	SN_ppm	U_ppm	CD_ppm	CR_ppm	NI_ppm	LI_ppm	SB_ppm	SI_ppm	SR_ppm	NO3_ppm	TNK_ppm
AMB-114	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	28	0.18	0.43	ND
AMB-114	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	25	0.19	<.02	ND
AMB-114	<.005	<.05	<1	<.15	<.01	<.05	<.05	<.05	<0.2	29	0.20	<.02	0.22
AMB-115	<.005	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	37	0.42	0.34	ND
AMB-116	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	7.2	<.01	0.85	ND
AMB-117	0.01	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	42	0.082	1.2	0.12
AMB-118	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	14	0.071	<.02	<.1
AMB-119	<.002	<.03	<.5	<.15	<.01	<.01	<.02	0.02	<.05	17	0.62	<.02	0.4
AMB-120	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	5.4	<.01	1	<.1
AMB-121	<.002	<.03	<.5	<.15	<.01	<.01	<.02	<.01	<.05	47	0.39	<.02	0.89
AMB-122	<.002	<.03	<.5	<.15	<.01	<.01	<.02	0.029	<.05	20	0.38	<.02	0.68

Bureau of Water

South Carolina Department of Health and Environmental Control

South Carolina Water Use Report 2005 Annual Summary



Sec 2.3 Ref 4



South Carolina Water Use Report 2005 Summary

**South Carolina Department of Health and
Environmental Control
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**Bureau of Water
April 2006**

Forward

The South Carolina Department of Health and Environmental Control (DHEC) is committed to the responsible management of South Carolina's water resources by encouraging continued conservation and reasonable use to ensure a sustainable supply for present and future demands. The South Carolina *Surface Water Withdrawal and Reporting Act*, §49-4-10 et. seq., and the South Carolina *Groundwater Use and Reporting Act*, §49-5-10 et. seq., require water users that withdraw three (3) million gallons or greater in any month to register with and report use annually to the Water Use Program at DHEC.

Water Use data is used by the State of South Carolina to better define the distribution and demand for our surface and groundwater resources across the state. Data from the Water Use Program at DHEC is shared between other local, state, and federal regulatory and scientific agencies to establish a common understanding of the demands placed upon our water resources. This common database has proven critical in water management decisions and water use conflict resolution.

Statistics utilized in this report represent data obtained from registered users of the Water Use Program. Consumptive use from private domestic wells, small surface water irrigation intakes, facilities that do not meet the reporting threshold, or data from facilities failing to report their annual water use are not included in this annual summary. For the year 2005, compliance of reporting facilities exceeded 99.9%, with eight (8) facilities failing to report water use prior to the writing of this report.

If you have questions about this or previous Annual Water Use Reports, or would like to obtain further information about reported water withdrawals in South Carolina, please contact:

**Water Use Program
SCDHEC Bureau of Water
2600 Bull Street
Columbia, SC 29201
www.scdhec.net/water**

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Introduction

South Carolinians have enjoyed an available fresh water supply that is clean, abundant, easily attainable and, for all practical purposes, inexhaustible. In South Carolina today, close to 1.2 million people rely on groundwater and 2.8 million people rely on surface water for their drinking water and sundry uses. According to the U.S. Census Bureau, South Carolina will increase its population by 600,000 people by 2025 and the U.S. Department of Agriculture reports development converts approximately 100,000 acres per year to urban uses. This growth and development in the state has placed increasing demand on our water supplies.

In conjunction with natural conditions, the continued impact to groundwater systems through human induced contamination (physical and chemical) or natural impact demonstrate the vulnerability of this finite resource and the continuing need to closely monitor, manage and preserve the resource in South Carolina for current and future generations. The state General Assembly declared that,

“...the groundwater resources of the State be put to beneficial use to the fullest extent to which they [are] capable and to provide and maintain conditions which are conducive to the development and use of all water resources.”

Consistent and accurate data collection is requisite in establishing water use trends and implementing reasonable management strategies. Water use reporting outside of designated Capacity Use Areas has been historically voluntary. As of January 1, 2001, anyone withdrawing groundwater or surface water in excess of three (3) million gallons per month (in any month) must register and report that use annually to the South Carolina Department of Health and Environmental Control (Department). Registration and reporting is now a requirement of law and the Department has authority to take enforcement action against those not reporting.

Purpose and Methodology

The purpose of the annual *South Carolina Water Use Report* is to summarily present reported water use in South Carolina by county and use category during calendar year 2005. The Department maintains and continually updates the water use and facility databases utilized in this report. Water use data were collected by annual reporting of water use by registered users, as required and mandated by state law, and are reported in **million gallons** unless stated otherwise.

South Carolina Climate

The climate in South Carolina is affected by many factors, notably its location in the mid-latitudes and its proximity to the Appalachian Mountains and the Atlantic Ocean. During the summer, ocean current-driven air masses such as the Bermuda High routinely push tropical air from the Gulf of Florida upland from the coast. These warm, moist currents collide with cooler, drier air masses to generate rainfall, and at times, severe thunderstorms. In contrast, the Appalachian region in the northwest portion of the state experiences cooler temperatures, owing in part to orographic lifting of air masses and subsequent cooling effect provided by the increase in altitude. Altitude change also causes the additional phenomenon of down-slope heating as air masses from the mountains settle and compress over the eastern Blue Ridge and Piedmont region. During the winter months, the highlands of the Blue Ridge escarpment deflect northerly cold air to the southwest, often lessening the impact of major cold fronts and winter storms.

The vast majority of the state is classified as humid subtropical except in the Blue Ridge physiographic province, where it is humid continental. Average temperature varies from the mid-50s °F in the mountains to low-60s °F along the coast. The average annual precipitation is approximately 48 inches, with an annual total in the mountains of 70 to 80 inches, an annual total in the Midlands of 42 to 47 inches and an annual total along the coast of 50 to 52 inches. According to the South Carolina State Climatology Office, no month in South Carolina averages less than two inches of precipitation, regardless of location within the state. Measurable snowfall is rare, occurring one to three times a year with accumulations seldom remaining more than a day or two. Since 1900 severe droughts have occurred statewide in 1925, 1933, 1954, 1977, 1983, 1986, 1990, 1993, and most recently 1998. The latest multiyear drought was one of the most severe in South Carolina's history, with average precipitation, groundwater levels, and stream flows at or near record lows. In 2005 the average statewide temperature was 62.6°F, and the average rainfall for 2005 was 49.08 inches¹.

¹ Southeast Regional Climate Center, 1885-2006, "Monthly and Seasonal Climate Information"

South Carolina Geography and Hydrology

Geography and Physiography

South Carolina has a distinct natural beauty and an ecological diversity covering nearly 31,189 square miles, with approximately 30,111 square miles land area, 1,078 square miles inland or coastal waterways and 135 miles of coastline. The diversity we experience is resultant of climatic conditions, geology and three major physiographic regions: the Blue Ridge, the Piedmont and the Coastal Plain (**Figure 1**). The physiographic regions exhibit variations in topography, geology, hydrology and vegetation that directly affect the quantity, quality and availability of water resources in South Carolina.

Blue Ridge

The Blue Ridge physiographic province is located in the extreme northwest portion of Oconee and Pickens counties, and is distinguished from other parts of South Carolina by greater elevations (1,000 – 3,300 feet) and surface relief. Dissected mountains, rugged hills and thick forest regions characterize the land surface. Surface water in the Blue Ridge takes the form of high gradient creeks and streams and natural or man-made lakes, while groundwater occurs in the fractures of the bedrock and a thin veneer of soil and saprolite. In general, water quality of streams and groundwater is excellent in the Blue Ridge owing to the constant replenishment from abundant local rainfall.

Piedmont

The Piedmont physiographic province includes all counties, or portions of counties, northwest of and to the Fall Line, exclusive of those counties within the Blue Ridge province. Although similar to the Blue Ridge, the region demonstrates lower topographic relief, and therefore lower gradient streams, while elevations range from between 450 to 1000 feet above sea level. Counties in the Piedmont and Blue Ridge physiographic provinces depend primarily on the abundant regional rainfall that recharges lakes, reservoirs and major river systems. These surface water bodies constitute the primary source of water for public supply, industry, agriculture, and power production in the Piedmont Region. Similar to the Blue Ridge Province, groundwater occurs in the fractures of the bedrock and overlying soil and saprolite, and is also of good quality, except in locations where its chemical quality has been impacted by man.

Coastal Plain

The Coastal Plain physiographic province includes all counties, or portions of counties, extending from the Fall Line east to the Atlantic Ocean. Elevations of the exposed Coastal Plain range between 450 feet to sea level. Once below the Fall Line, rivers and streams assume a different character than found in the Piedmont. Where streams once rolled across exposed Piedmont rocks and tumbled down the occasional stretch of whitewater, the Coastal Plain dictates a slower pace and quiet meandering river channels with adjacent wetlands are common. Regional geology of the Coastal Plain is characterized by aquifers developed in layers of sands, silts, or high-permeability limestone confined by units of clay and silts or low-permeability limestone. The vast majority of South Carolina's water resources are contained as groundwater in the Coastal Plain, and in general, reliance on groundwater for irrigation, industrial uses, and public water supply increases dramatically east of the Fall Line (**Figure 7**). A generalized cross-section for the Coastal Plain aquifers is presented as **Figure 2**, and a brief outline of the major aquifers in South Carolina follows.

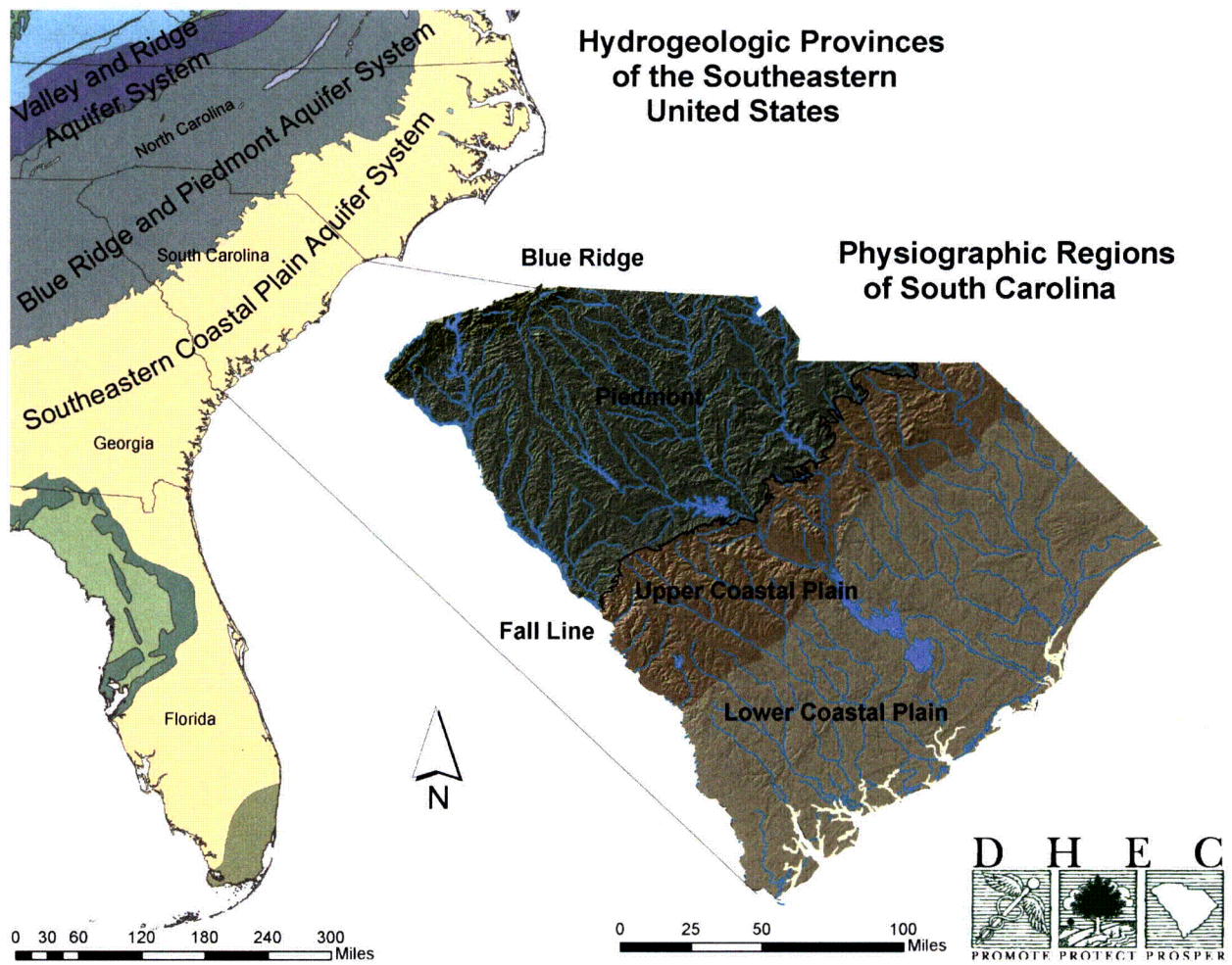


Figure 1: Hydrogeologic and Physiographic Setting for Water Use in South Carolina

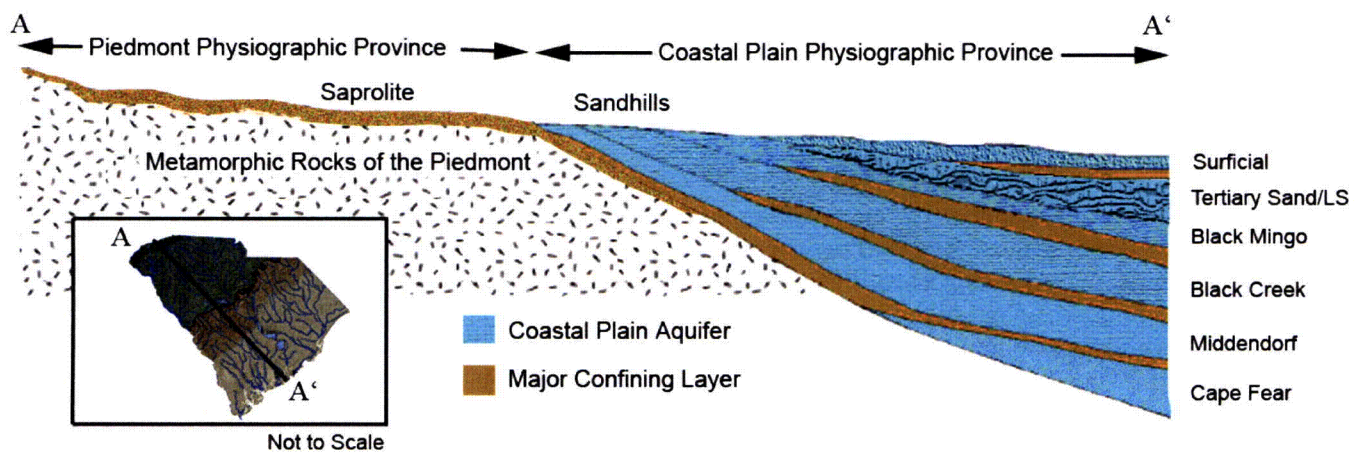


Figure 2: Generalized Hydrogeologic Cross-Section from the Blue Ridge through the Lower Coastal Plain in South Carolina

Groundwater Resources

Groundwater resources are found throughout the subsurface of South Carolina in varying quantities, qualities, and depths that reflect the nature of the geologic materials that host the respective aquifers. The following is a brief description of the State's major groundwater resources.

Crystalline Rock Aquifer System of the Blue Ridge and Piedmont

Geology of the Blue Ridge is typically characterized by clayey saprolite, ranging in depth from several feet to tens of feet, overlying metamorphic crystalline rock. The saprolite grades downward through a highly permeable transition zone to unaltered parent bedrock. Groundwater conditions of the bedrock are dependent on the number of fractures and degree of interconnection of the fracture systems. Groundwater moves slowly through the saprolite and discharges to surface water bodies, wells, or is released from storage to the underlying bedrock through fractures. Geology of the Piedmont is similar to that of the Blue Ridge, but the diminished relief allows for greater thickness of saprolite development. In general, wells in the Blue Ridge and Piedmont regions yield little water when compared to wells drilled in the Coastal Plain owing to the inherently low porosity and permeability of the crystalline rock present in the upstate.

Surficial Aquifer System

Shallow sands that comprise the Surficial aquifer are among the youngest of the Coastal Plain sediments and are found exclusively in the Lower Coastal Plain (**Figure 1**). This system is capable of producing water in modest amounts for irrigation and private drinking water supply, but is especially susceptible to contamination due to its shallow, unconfined nature. The Surficial sands are highly influenced by local precipitation and river stage and are especially prone to dramatic water level declines during times of drought.

Tertiary Limestone/Sand Aquifer System (Floridan Aquifer System)

In the southern half of the Coastal Plain, Tertiary aquifers consisting of sand grade southeastward into an ever thickening wedge of limestone. Development of the aquifer system is common in the Charleston, Dorchester, and Berkeley County area. Southwest of the Combahee and Salkehatchie Rivers, upper sections of the limestone become increasingly permeable owing to abundant voids created from dissolved marine fossils, and are capable of storing and supplying tremendous amounts of water. The majority of utilization of the aquifer occurs near the upper, highly permeable zone that supplies the majority of residential wells in Beaufort and Jasper Counties, and is the primary source of water for public supply, irrigation, and industry in the Low Country. This southern section of the Tertiary Limestone correlates regionally with the Upper Floridan Aquifer that extends from southern South Carolina to the southern keys of Florida.

Black Mingo Aquifer

Development of the Black Mingo is common in the vicinity of Charleston, Dorchester, and Berkeley counties, but has been largely overlooked south of Dorchester County owing to the increasingly prolific nature of the more shallow Tertiary Limestone (Floridan Aquifer System). Like the majority of Coastal Plain sediments, the nature of the aquifer differs dramatically from one area to the next. In the Charleston area, the aquifer is composed of permeable sand and limestone, while within the Upper Coastal Plain the Black Mingo is often a poorly producing aquifer composed of fine silt and clay, and therefore is unused in favor of the Middendorf or Tertiary Sand Aquifer.

Pee Dee Aquifer

The Pee Dee aquifer, where present, generally produces quality water at moderate rates. The aquifer matrix is composed of sand and silt separated by discontinuous intervals of clay. Development of the Pee Dee aquifer usually takes place in conjunction with the more prolific Black Creek aquifer and has become an excellent alternative to the often-overburdened Black

Creek for many uses, especially irrigation. The Pee Dee aquifer is most utilized in the northeast portion of the State, with the most demand centered between Florence and Horry Counties.

Black Creek Aquifer

Though present throughout much of the Coastal Plain, development of the Black Creek aquifer has been conducted primarily in the mid-to-northern portions of the Coastal Plain. The aquifer is composed of silt and fine sand with coarse sand in the Upper Coastal Plain. The Black Creek aquifer is an important source of water for public supply, irrigation, and industry from Marion County southeast to Georgetown County.

Middendorf Aquifer

The Middendorf Aquifer is a prolific source of water throughout the majority of the coastal plain and consists of coarse-grained fluvial sands near the Fall Line that grade to fine-grained marine sands and clay in the northern and eastern Lower Coastal Plain. The majority of the Pee Dee region, including Chesterfield, Darlington, Florence, and Marlboro Counties, as well as Orangeburg and Sumter Counties rely heavily on the Middendorf for irrigation, public supply, and industrial use. In the past decade, use of the Middendorf has increased along the southern coast in areas such as Charleston County.

Cape Fear Aquifer

Little published information exists from this deep sand aquifer owing to the few wells that have penetrated the formation. In general, water quality from the Cape Fear aquifer is poor over much of its extent owing to ancient, unflushed seawater and extensive mineralization. In South Carolina, the Cape Fear aquifer is largely unused.

Surface Water Resources

South Carolina's land surface is drained by eight (8) major river basins, all of which are critical to public water supply, irrigation, industry, and/or power generation. These major watersheds are shown as **Figure 3**, and a brief description of each major watershed follows.

Broad River Basin

The Broad River Watershed encompasses portions of North and South Carolina and drains the majority of Cherokee, Union, Spartanburg, and Greenville Counties. Portions of Chester, Fairfield, Richland and York counties are also included in the basin, and are drained by the Enoree, Pacolet, and Tyger Rivers, major tributary streams to the Broad River.

Catawba River Basin

Similar to the Broad River Basin, the watershed of the Catawba River drains counties in North and South Carolina east of a hydrologic divide in York, Chester, and Fairfield Counties. All or portions of the following counties lie within the basin: Chester, Fairfield, Kershaw, Lancaster, Richland, Sumter and York. The Catawba basin hosts Lake Wylie, Fishing Creek Reservoir, Lake Wateree, the Catawba and Wateree Rivers and associated tributary streams.

Edisto River Basin

The Edisto River Basin encompasses nearly all of Orangeburg County and portions of Aiken, Berkeley, Calhoun, Dorchester, and Lexington counties. The basin drains the central Coastal Plain and contains the North and South Forks of the Edisto River and tributaries, as well as numerous ecologically important wetland areas.

Pee Dee River Basin

The Pee Dee River Basin is the largest of South Carolina's watersheds and drains all or portions of Chesterfield, Darlington, Dillon, Georgetown, Horry, Kershaw, Lancaster, Lee, Marion, Marlboro, Williamsburg counties, and portions of southeastern North Carolina. The

Greater Pee Dee Watershed encompasses 5.1 million acres and includes the Pee Dee, Lynches, Waccamaw, and Sampit watersheds, as well as the Intracoastal Waterway and Winyah Bay.

Salkehatchie River Basin

The Salkehatchie basin is located entirely in the Coastal Plain and drains portions of Bamberg, Barnwell, Beaufort, Colleton, Hampton, and Jasper counties. The Coosawhatchie, Salkehatchie and Little Salkehatchie Rivers, along with their associated tributaries and local wetlands drain the basin and form tide-dominated distributary channels near the coast.

Saluda River Basin

The Saluda River Basin drains the central portion of South Carolina's Piedmont Region and encompasses major portions of Greenville and Pickens counties, as well as portions of Abbeville, Greenwood, Laurens, Lexington, Richland, and Saluda Counties. The basin includes all tributary streams to the Saluda River and Lakes Greenwood and Murray, the latter being a critical source for public water supply and hydroelectric power in central South Carolina.

Santee River Basin

The Santee River basin originates near the confluence of the Catawba and Broad River Basins and includes two of the State's largest reservoirs, Lake Marion and Lake Moultrie. These two major surface water resources are important power generating assets for the South Carolina. The basin drains Berkeley, Calhoun, Charleston, Clarendon, Dorchester, and small portions of Georgetown and Sumter Counties via tributaries of the Cooper, Santee and Ashley Rivers.

Savannah River Basin

The Savannah River Basin stretches from the Blue Ridge to the Atlantic Ocean and encompasses the border counties of South Carolina. The watershed drains major portions of Abbeville, Aiken, Allendale, Anderson, Edgefield, Greenwood, Hapton, McCormick, Oconee, and Pickens County, as well as adjacent counties in Georgia. The watershed includes the Savannah, Chatooga, Seneca, Little River, Stevens Creek, Rocky, and Tugaloo Rivers, and discharges approximately 8.0 billion gallons per day.

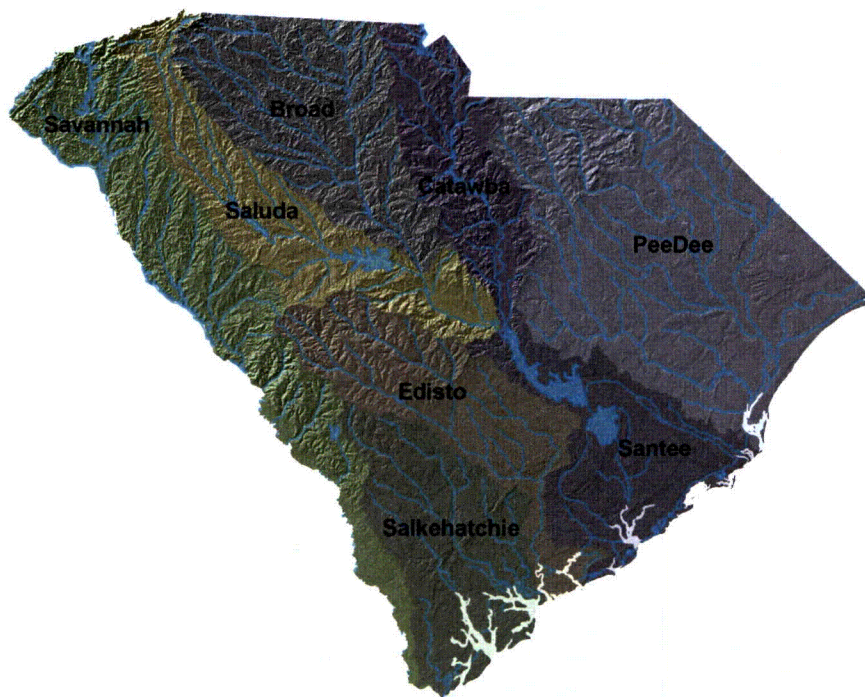


Figure 3: Major River Basins of South Carolina

Demographics

According to the 2000 Census, South Carolina's estimated population is 4,012,012. Approximately 54.6% of the population resides in an urban setting and approximately 45.4% reside in rural communities (**Figure 4**). South Carolina has approximately 25,000 farms, occupying 4,846,000 acres (7,572 square miles). Of this, approximately 2,270,000 acres (3,547 square miles) are cropland². Major manufacturing industries are located along the I-26/I-85 corridor, specifically in the Greenville-Spartanburg Metropolitan Statistical Area (MSA), Columbia MSA, Charlotte-Gastonia-Rock Hill MSA and the Charleston MSA. Other manufacturing concentrations are located in the Augusta-Aiken MSA, and the Florence area³. South Carolina is served by 47 electric utilities and nine (9) generating utility companies with 51 power plants (206 generators) with a total rating capacity of 18,827.4 megawatts. Power production in the State (2005) totaled 94,363 million kilowatt hours⁴.

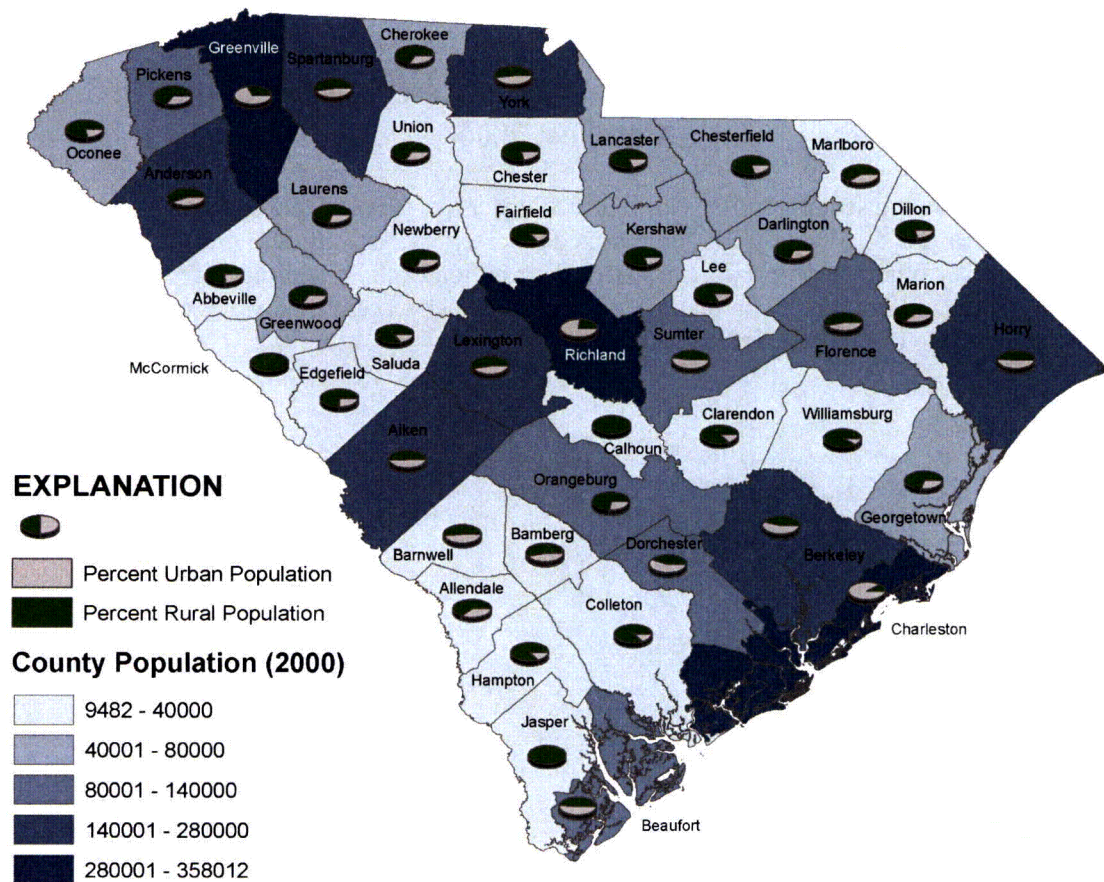


Figure 4: Population by County in South Carolina, 2000

² 2002 Census of Agriculture, Volume 1 Geographic Area Series, Historical Highlights: "Table 1: 2002 and Earlier Census Years"

³ S.C. Department of Commerce, 2000/2001 "South Carolina Industrial Directory."

⁴ S.C. Budget and Control Board Statistical Abstract 2004

2005 Water Use Profile

Surface and Groundwater Use Summary by Category and County in South Carolina, 2005

The following section outlines all reported water use for the State of South Carolina for the calendar year 2005. Water use is summarized by category, and further tabulated on a county-by-county basis. Where appropriate, the spatial distribution of the magnitude of water use is demonstrated on an accompanying map with a breakdown chart of groundwater and surface water use as a percentage of total use for the category.

Reporting Water Withdrawers

For the reporting year 2005, South Carolina had registered 862 water withdrawers with 2,506 sources, 481 surface water facilities with 702 sources and 541 groundwater facilities with 1,804 sources.

Water Use Category	Facilities	GW Source	SW Source
Golf Course	248	262	272
Water Supply	223	770	78
Irrigation	222	491	237
Industrial	93	222	52
Hydroelectric	31	1	32
Thermoelectric	19	8	16
Mining	12	10	7
Aquaculture	9	11	8
Other	5	29	0
Total	862	1,804	702

Total Reported Water Use

Total water use reported for 2005 was more than 20 trillion gallons from 862 reporting facilities. Surface water withdrawal from 481 facilities accounted for approximately 20.4 trillion gallons, approximately 99.6% of total water use. Groundwater withdrawal from 541 reporting facilities accounted for approximately 72.1 billion gallons or approximately 0.4% of total use.

Water Use Category	Groundwater	Surface Water	Total	Percentage
Aquaculture	182.93	227.37	410.31	0.0020%
Golf Courses	3,099.41	8,808.68	11,908.10	0.0583%
Industrial	11,830.92	140,255.88	152,086.80	0.7445%
Irrigation	14,065.22	7,858.81	21,924.04	0.1073%
Mining	2,709.77	595.40	3,305.18	0.0162%
Other	105.63	NR	105.63	0.0005%
Hydroelectric	0.33	15,766,866.75	15,766,867.08	77.1793%
Thermoelectric	2,043.32	4,254,461.12	4,256,504.44	20.8357%
Water Supply	38,113.35	177,657.70	215,771.05	1.0562%

NR = None Reported

Water Use	2000	2001	2002	2003	2004	2005
Hydroelectric	10,281,681.91	9,796,267.91	11,415,081.44	18,958,207.77	15,203,000.521	15,766,867.08
Thermoelectric	2,240,508.37	1,624,984.88	2,467,042.32	3,558,474.88	3,232,104.071	4,256,504.44
Water Supply	148,265.21	193,525.29	212,402.79	197,088.27	209,464.303	215,771.05
Industrial	157,463.33	180,579.90	167,051.34	168,334.76	157,309.024	152,086.80
Irrigation	3,182.73	27,121.14	29,668.39	12,172.86	24,119.869	21,924.04
Golf Course	6,806.35	13,302.54	14,022.92	10,373.47	13,230.462	11,908.10
Mining	3,056.08	2,691.75	3,159.88	4,935.07	3,241.623	3,305.18
Aquaculture	13.67	865.17	2,283.95	1,451.98	1,355.631	410.31
Other	223.61	204.84	106.22	59.033	85.505	105.63
Total	12,841,201.26	11,839,543.42	14,310,819.25	22,911,098.09	18,843,911.009	20,428,882.61
Facilities	577	931	848	833	848	862

Water Use in Power Production

According to the 2001 Energy Use Profile, South Carolina has 9 power generating utility companies with 51 power plants containing 206 generators with a total rating capacity of 18,827.4 megawatts (2000). The type generators are as follows:

- 96- Hydraulic Turbine (conventional)
- 54- Gas Combustion Turbine
- 37- Steam Turbine (boiler)
- 16- Hydraulic Turbine (pump storage)
- 3- Internal Combustion (diesel)

The primary energy source for the generators is as follows:

- 112- Water
- 32- Diesel Fuel Oil
- 28- Coal
- 25- Natural Gas
- 7- Nuclear
- 2- Residual Fuel Oil

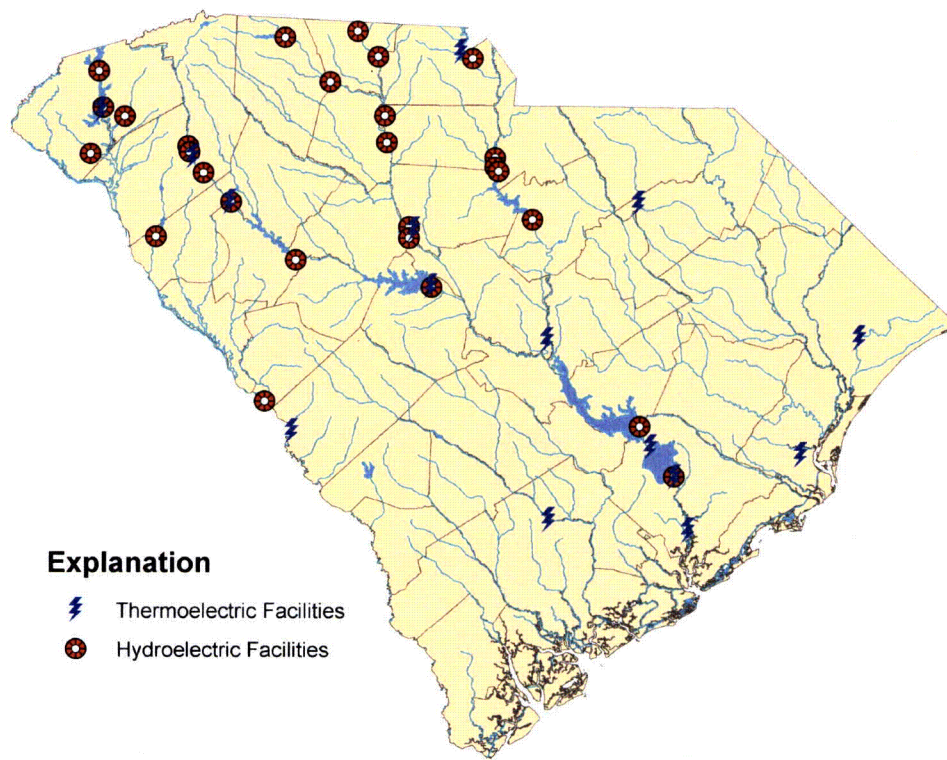


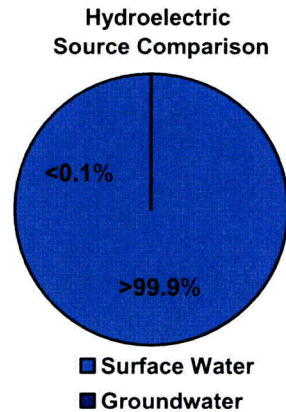
Figure 5: Distribution of Hydroelectric and Thermoelectric Facilities in South Carolina

Hydroelectric Water Use

Hydroelectric facilities employ energy from flowing water to generate electricity. Hydroelectric facilities utilize *impoundments* (reservoirs), *diversion* (run-of river), or *pumped storage* (reversible turbines). Water use is typically non-consumptive flow-through, with temporary diversion from down stream users. Reported water use for 31 hydroelectric sources accounted for approximately 15.766 trillion gallons, approximately 78.7% of reported water use for power production and 77.1% of total reported water use for the year.

County	Surface Water	Groundwater	County Total
Abbeville	37,686.0	NR	37,686.0
Anderson	191,000.0	NR	191,000.0
Berkeley	1,251,619.0	0.3	1,251,619.3
Cherokee	407,518.0	NR	407,518.0
Chester	2,067,474.0	NR	2,067,474.0
Edgefield	1,150,053.5	NR	1,150,053.5
Fairfield	2,944,701.1	NR	2,944,701.1
Greenwood	363,517.0	NR	363,517.0
Kershaw	1,242,431.0	NR	1,242,431.0
Lancaster	1,204,198.0	NR	1,204,198.0
Laurens	120,000.0	NR	120,000.0
Lexington	371,476.6	NR	371,476.6
Oconee	12,700.0	NR	12,700.0
Pickens	2,769,742.0	NR	2,769,742.0
Richland	469,660.9	NR	469,660.9
Spartanburg	17,962.7	NR	17,962.7
Union	186,662.0	NR	186,662.0
York	958,465.0	NR	958,465.0

NR = None Reported



	Surface Water	Groundwater
Source Total:	15,766,866.7	0.3

Total Hydro Power Use (million gallons):	15,766,867.0
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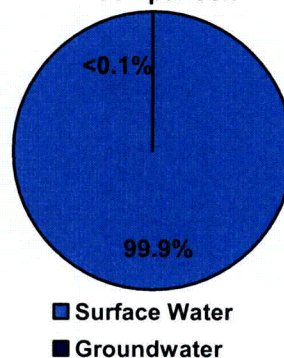
Thermoelectric Water Use

Thermoelectric facilities generate electricity by superheating water to steam then passing the steam under pressure to turbines. Boilers are fired by coal, nuclear power or residual fuel oil. Large volumes of cooling water are required to condense the steam to the liquid state. Reported water use for 19 thermoelectric sources accounted for more than 4.254 trillion gallons, approximately 21.3% of reported water use for power production and 20.8% of total reported water use for the year.

County	Surface Water	Groundwater	County Total
Aiken	45,545.000	NR	45,545.000
Anderson	49,744.210	NR	49,744.210
Berkeley	12.283	NR	12.283
Berkeley	203,543.688	NR	203,543.688
Cherokee	NR	1.022	1.022
Colleton	0.677	NR	0.677
Colleton	1,484.532	NR	1,484.532
Darlington	277,346.000	362.284	277,708.284
Fairfield	561,069.950	NR	561,069.950
Georgetown	4,324.245	NR	4,324.245
Horry	44,742.870	NR	44,742.870
Lexington	56,018.900	NR	56,018.900
Oconee	2,814,848.000	NR	2,814,848.000
Orangeburg	NR	1,667.052	1,667.052
Richland	158,609.723	NR	158,609.723
York	37,184.000	NR	37,184.000

NR = None Reported

Thermoelectric Source Comparison



	Surface Water	Groundwater
Source Total:	4,254,474.08	2,030.36
Total Thermoelectric Use (million gallons):	4,256,504.44	

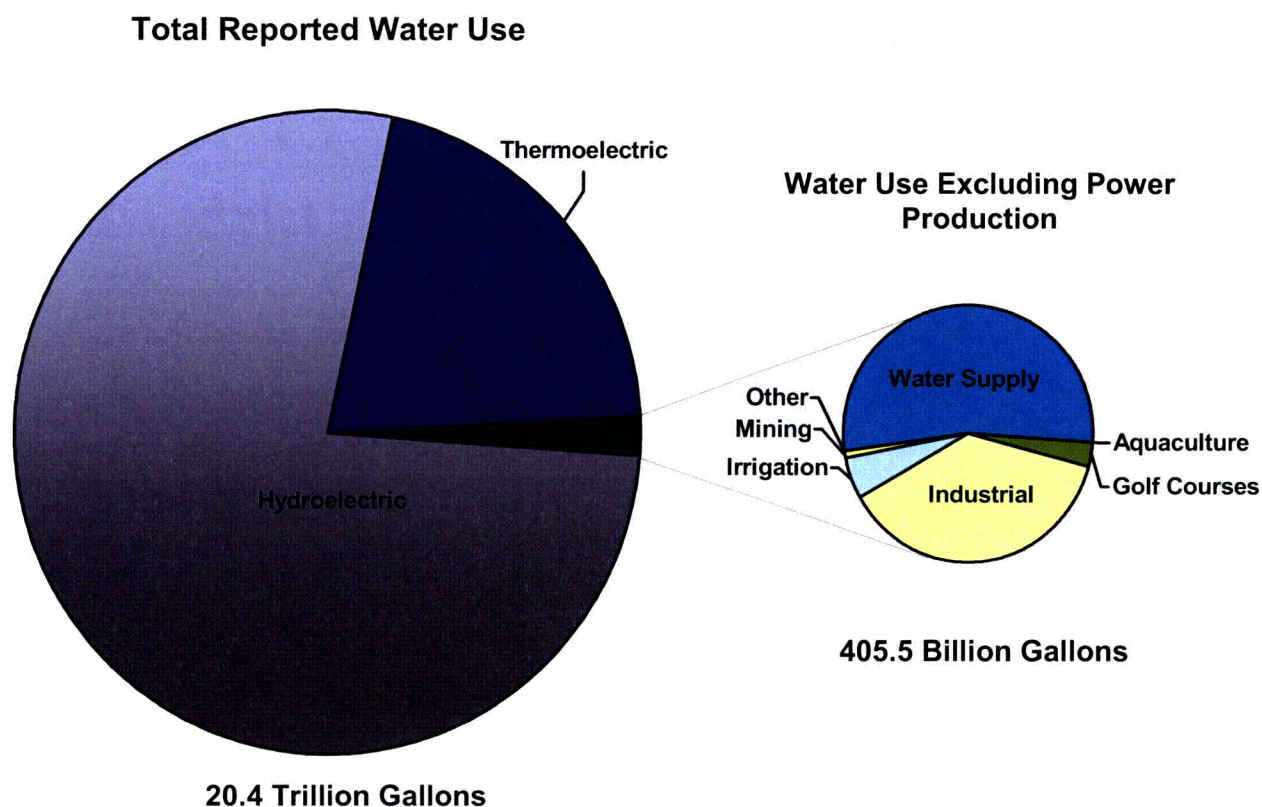


Figure 6: Reported Water Use by Category in South Carolina, 2005

Reported Water Use Excluding Power Production

During 2005, reported water use (excluding power production) totaled more than 405.5 billion gallons with surface water withdrawal accounting for 335.4 billion gallons or approximately 82.7%, and groundwater withdrawal accounting for 70.1 billion gallons or approximately 17.3%. Non-power production-oriented water use accounted for 1.9% of all reported water use in 2005.

	Groundwater	Surface Water	Total	Percentage of Total Non-Power Use
Aquaculture	182.93	227.37	410.31	0.10%
Golf Courses	3,099.41	8,808.68	11,908.10	2.94%
Industrial	11,830.92	140,255.88	152,086.80	37.50%
Irrigation	14,065.22	7,858.81	21,924.04	5.41%
Mining	2,709.77	595.40	3,305.18	0.82%
Other	105.63	NR	105.63	0.03%
Water Supply	38,113.35	177,657.70	215,771.05	53.21%
Total Non-Power Water Use			405,511.10	million gallons

NR = None Reported

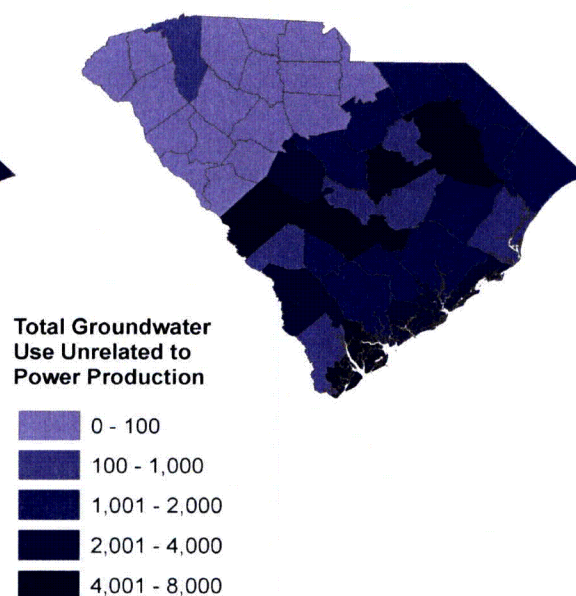
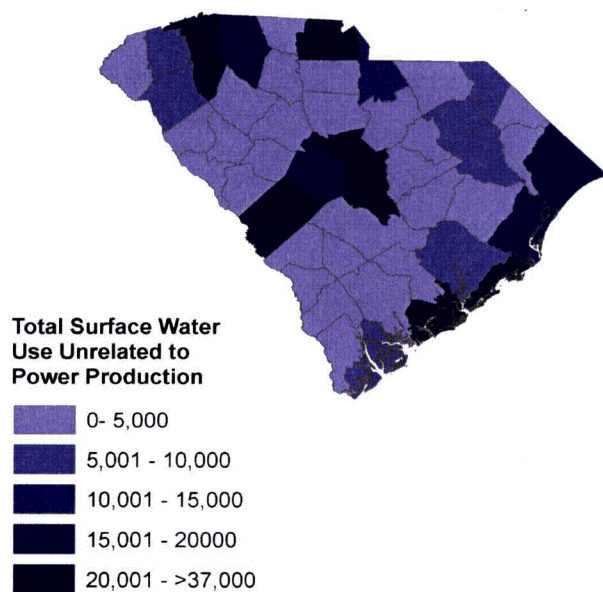
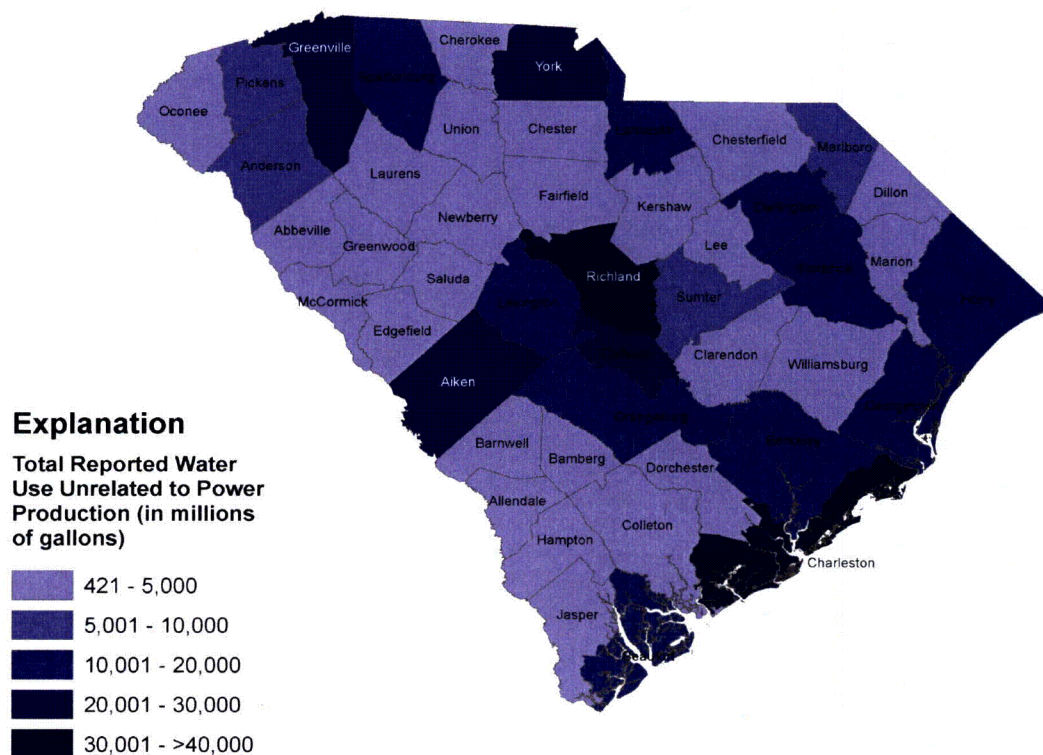


Figure 7: Distribution of Reported Water Usage Unrelated to Power Production, 2005. Figures in millions of gallons per year.

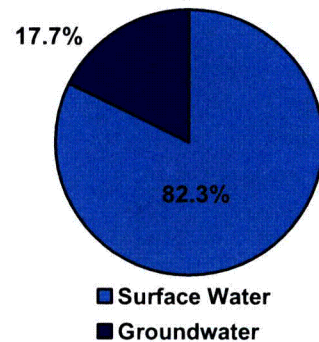
Water Supply

South Carolina has federally 1,551 defined public water systems, of which 685 are community water systems. The public water systems provide water to 3,450,928 citizens. Water withdrawal for public water supply from 223 reporting suppliers totaled 209.464 billion gallons, with 82 surface water sources accounting for 169.699 billion gallons and 745 groundwater sources accounting for 39.764 billion gallons.

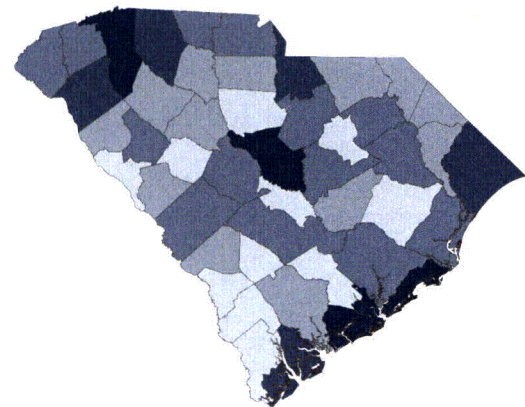
County	Groundwater	Surface Water	County Total
Abbeville	3.31	1,033.64	1,036.95
Aiken	4,786.54	2,395.24	7,181.78
Allendale	383.40	NR	383.40
Anderson	NR	7,664.00	7,664.00
Bamberg	477.66	NR	477.66
Barnwell	830.31	NR	830.31
Beaufort	3,906.87	7,096.70	11,003.57
Berkeley	195.05	5,071.40	5,266.45
Calhoun	133.34	NR	133.34
Charleston	2,398.08	27,901.81	30,299.88
Cherokee	NR	2,561.60	2,561.60
Chester	NR	1,192.20	1,192.20
Chesterfield	851.34	768.53	1,619.87
Clarendon	695.59	NR	695.59
Colleton	731.80	NR	731.80
Darlington	2,361.41	NR	2,361.41
Dillon	1,594.17	NR	1,594.17
Dorchester	655.46	NR	655.46
Edgefield	NR	1,450.00	1,450.00
Fairfield	67.82	568.29	636.12
Florence	3,927.20	1,461.58	5,388.78
Georgetown	853.25	2,268.05	3,121.30
Greenville	34.71	24,125.50	24,160.21
Greenwood	7.93	4,496.20	4,504.13
Hampton	534.26	NR	534.26
Horry	782.16	14,890.15	15,672.31
Jasper	334.03	NR	334.03
Kershaw	624.70	1,711.02	2,335.72
Lancaster	NR	8,081.36	8,081.36
Laurens	NR	1,624.37	1,624.37
Lee	604.46	NR	604.46
Lexington	434.25	5,102.52	5,536.78
Marion	1,315.39	NR	1,315.39
Marlboro	956.03	0.00	956.03
McCormick	NR	388.65	388.65
Newberry	21.63	1,928.53	1,950.16
Oconee	53.88	3,557.52	3,611.40
Orangeburg	625.79	3,153.58	3,779.37
Pickens	NR	3,454.32	3,454.32
Richland	325.04	22,683.18	23,008.22
Saluda	79.02	NR	79.02
Spartanburg	24.85	14,045.89	14,070.74
Sumter	5,921.14	NR	5,921.14
Union	NR	1,200.99	1,200.99
Williamsburg	551.86	NR	551.86
York	29.63	5,780.89	5,810.52

NR = None Reported

Water Supply Use Source Comparison



Average daily use for any reporting water supply facility (223 total) in 2005 equaled 468,251 gallons of groundwater and 2,182,661 gallons of surface water per day.



Distribution of reported water supply water use in South Carolina, 2005. Darker shades indicate the highest use areas.

	Groundwater	Surface Water
Source Total:	38,113.35	177,657.70

Total Water Supply Use (millions of gallons): 215,771.05

Industrial Use

Water withdrawal for industrial use from 93 reporting industries totaled 152.086 billion gallons, with 52 surface water sources accounting for 140.255 billion gallons and 222 groundwater sources accounting for 11.830 billion gallons. Water use at industrial facilities is predominantly cooling water (contact and non-contact) with return to surface water systems through permitted NPDES discharges.

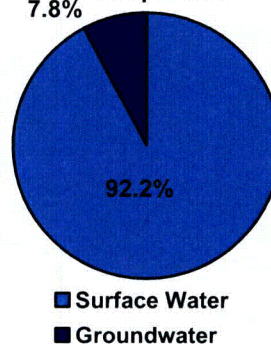
County	Groundwater	Surface Water	County Total
Aiken	1,323.157	20,847.091	22,170.248
Allendale	817.910	NR	817.910
Anderson	NR	89.900	89.900
Beaufort	139.794	NR	139.794
Berkeley	1,200.791	3,110.428	4,311.219
Calhoun	132.610	26,392.680	26,525.290
Charleston	42.456	8,873.806	8,916.262
Cherokee	NR	504.126	504.126
Chester	1.963	94.377	96.340
Darlington	1,488.859	7,036.072	8,524.931
Dorchester	998.879	54.703	1,053.582
Florence	718.343	7,652.703	8,371.046
Georgetown	112.980	12,294.862	12,407.842
Greenville	59.315	NR	59.315
Greenwood	8.000	53.600	61.600
Hampton	488.500	NR	488.500
Horry	160.116	15.880	175.996
Kershaw	499.542	978.150	1,477.692
Lancaster	NR	2,212.771	2,212.771
Lexington	409.109	9,691.832	10,100.941
Marion	NR	NR	0.000
Marlboro	280.237	7,609.400	7,889.637
Oconee	NR	583.026	583.026
Orangeburg	1,044.567	171.420	1,215.987
Pickens	NR	3,279.949	3,279.949
Richland	660.463	10,260.403	10,920.866
Spartanburg	13.673	NR	13.673
Sumter	318.687	NR	318.687
Union	2.780	571.500	574.280
Williamsburg	902.648	NR	902.648
York	5.539	17,877.200	17,882.739

NR = None Reported

	Groundwater	Surface Water
Source Total:	11,830.92	140,255.88

Total Industrial Use (millions of gallons):	152,086.80
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Industrial Use Source Comparison



Average daily use for any reporting industrial facility (93 total) in 2005 equaled 348,532 gallons of groundwater and 4,131,856 gallons of surface water per day.



Distribution of reported industrial water use in South Carolina, 2005. Darker shades indicate the highest use areas.

Irrigation Use

Water withdrawal for irrigation use from 222 reporting entities totaled 21.924 billion gallons, with 491 surface water sources accounting for 7.858 billion gallons and 413 groundwater sources accounting for 14.065 billion gallons.

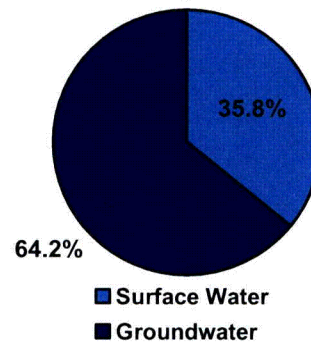
County	Groundwater	Surface Water	County Total
Aiken	161.33	17.59	178.92
Allendale	2,791.02	156.01	2,947.03
Bamberg	744.07	493.16	1,237.24
Barnwell	112.83	83.84	196.67
Beaufort	659.45	18.29	677.74
Berkeley	0.24	1,110.14	1,110.38
Calhoun	541.10	113.13	654.22
Charleston	0.25	26.99	27.23
Chesterfield	230.03	23.23	253.26
Clarendon	44.83	49.03	93.86
Colleton	756.50	227.00	983.50
Darlington	5.13	221.68	226.80
Dillon	34.40	NR	34.40
Edgefield	21.00	456.05	477.05
Florence	253.64	7.20	260.84
Georgetown	21.80	2,025.72	2,047.52
Greenville	0.40	19.00	19.40
Greenwood	1.20	NR	1.20
Hampton	1,246.03	18.00	1,264.03
Horry	145.60	66.33	211.93
Jasper	425.15	0.00	425.15
Lee	79.86	7.00	86.86
Lexington	1,794.75	513.97	2,308.72
Marion	25.60	0.01	25.61
Marlboro	117.01	74.77	191.78
McCormick	NR	0.00	0.00
Newberry	55.23	122.50	177.73
Oconee	NR	287.75	287.75
Orangeburg	2,664.31	738.56	3,402.87
Pickens	NR	0.00	0.00
Richland	14.69	0.20	14.89
Saluda	NR	367.52	367.52
Spartanburg	NR	105.06	105.06
Sumter	1,117.81	504.40	1,622.22
Williamsburg	NR	2.15	2.15
York	NR	2.55	2.55

NR = None Reported

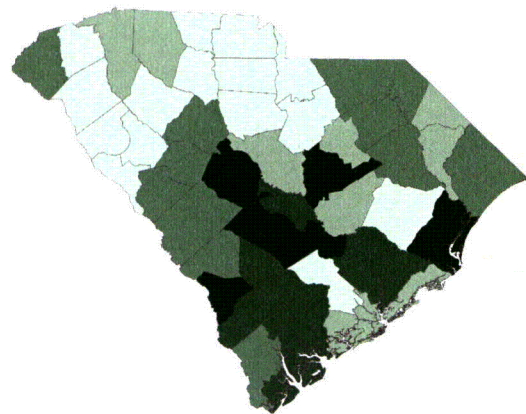
	Groundwater	Surface Water
Source Total:	14,065.22	7,858.81

Total Irrigation Use (millions of gallons):	21,924.04
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Irrigation Use Source Comparison



Average daily use for any reporting irrigation facility (222 total) in 2005 equaled 173,580 gallons of groundwater and 96,986 gallons of surface water per day.



Distribution of reported irrigation water use in South Carolina, 2005. Darker shades indicate the highest use areas.

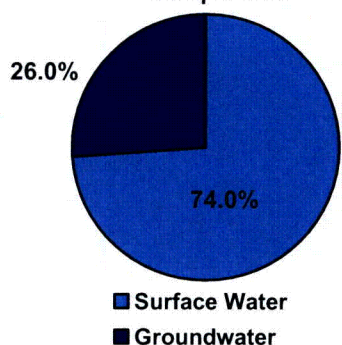
Golf Course Use

Water withdrawal from 248 reporting courses for golf course irrigation totaled 13.230 billion gallons, with 272 surface water sources accounting for 8.808 billion gallons and 262 groundwater sources accounting for 3.099 billion gallons.

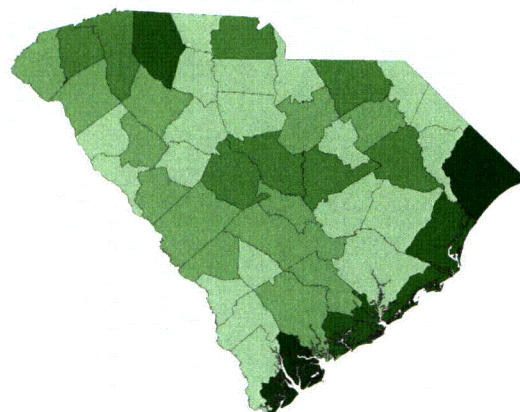
County	Groundwater	Surface Water	County Total
Aiken	13.10	100.33	113.43
Anderson	NR	76.37	76.37
Barnwell	NR	59.62	59.62
Beaufort	1,115.37	1,418.36	2,533.73
Berkeley	19.20	6.42	25.62
Calhoun	28.30	41.10	69.40
Charleston	648.03	199.50	847.52
Chester	22.50	9.00	31.50
Chesterfield	NR	268.48	268.48
Clarendon	5.08	37.90	42.98
Colleton	63.03	1.37	64.40
Darlington	3.00	126.90	129.90
Dorchester	44.00	NR	44.00
Edgefield	43.61	39.00	82.61
Florence	128.95	61.41	190.37
Georgetown	0.00	775.90	775.90
Greenville	30.77	171.35	202.12
Greenwood	10.20	59.54	69.74
Hampton	34.75	NR	34.75
Horry	587.00	2,899.80	3,486.80
Kershaw	39.52	54.80	94.32
Lancaster	0.73	8.92	9.65
Laurens	NR	84.08	84.08
Lexington	28.95	173.59	202.54
Marion	0.00	21.31	21.31
McCormick	NR	32.65	32.65
Newberry	12.00	6.00	18.00
Oconee	NR	86.50	86.50
Orangeburg	18.67	90.77	109.45
Pickens	NR	229.76	229.76
Richland	24.53	320.87	345.40
Spartanburg	10.51	1,009.38	1,019.89
Sumter	120.57	175.31	295.87
Union	NR	9.00	9.00
York	47.06	153.41	200.47

NR = None Reported

Golf Course Use Source Comparison



Average daily use for any reporting golf course (248 total) in 2005 equaled 34,240 gallons of groundwater and 97,311 gallons of surface water per day.



Distribution of reported golf course water use in South Carolina, 2005. Darker shades indicate the highest use areas.

	Groundwater	Surface Water
Source Total:	3,099.41	8,808.68

Total Golf Course Use (million gallons):	11,908.10
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Mining Use

Water withdrawal associated with mining activities at 12 reporting facilities totaled 3.305 billion gallons, with 10 surface water sources accounting for 595.40 million gallons and 7 groundwater sources accounting for 2,709.77 billion gallons.

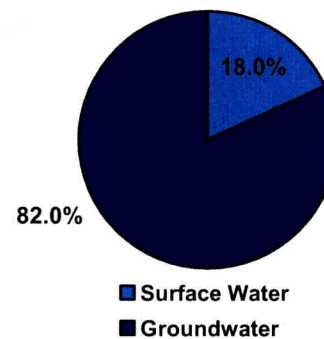
County	Groundwater	Surface Water	County Total
Aiken	21.310	NR	21.310
Berkeley	2.982	NR	2.982
Colleton	NR	2.164	2.164
Horry	NR	177.600	177.600
Lexington	446.870	415.640	862.510
Orangeburg	1,909.200	NR	1,909.200
Richland	312.850	NR	312.850
York	16.560	NR	16.560

NR = None Reported

	Groundwater	Surface Water
Source Total:	2,709.772	595.404

Total Irrigation Use (million gallons):	3,305.176
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Mining Use Source Comparison



Aquaculture Use

Water withdrawal from 9 reporting aquaculture-farming facilities totaled 0.410 billion gallons, with 8 surface water sources accounting for 227.37 million gallons and 11 groundwater sources accounting for 182.93 million gallons.

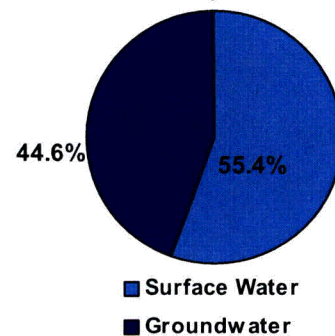
County	Groundwater	Surface Water	County Total
Beaufort	9.273	63.037	72.310
Berkeley	3.277	99.695	102.972
Charleston	NR	2.300	2.300
Dillon	35.600	NR	35.600
Hampton	122.283	NR	122.283
Richland	12.500	27.300	39.800
Spartanburg	NR	35.040	35.040

NR = None Reported

	Groundwater	Surface Water
Source Total:	182.933	227.372

Total Aquaculture Use (million gallons):	410.305
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Aquaculture Use Source Comparison



Other Use

Water withdrawal for other, non-specific use from 5 reporting facilities totaled 105.63 million gallons, with groundwater withdrawn from 29 sources accounting for all reported use.

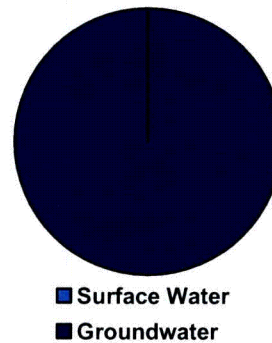
County	Groundwater	Surface Water	County Total
Beaufort	34.760	NR	34.760
Charleston	1.564	NR	1.564
Darlington	0.465	NR	0.465
Dorchester	0.989	NR	0.989
Horry	67.856	NR	67.856

NR = None Reported

	Groundwater	Surface Water
Source Total:	105.634	NR

Total Other Use (million gallons):	105.634
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Other Use Source
Comparison



Appendix A: Surface and Groundwater Use Summary Tables

Surface Water Use Summary Table (Figures in Millions of Gallons)

County	County Total	Hydroelectric	Thermoelectric	Aquaculture	Golf Course	Industry	Irrigation	Mining	Water Supply
Abbeville	38,719.64	37,686.00	NR	NR	NR	NR	NR	NR	1,033.64
Aiken	68,905.24	NR	45,545.00	NR	100.33	20,847.09	17.59	NR	2,395.24
Allendale	156.01	NR	NR	NR	NR	NR	156.01	NR	NR
Anderson	248,574.47	191,000.00	49,744.21	NR	76.37	89.90	NR	NR	7,664.00
Bamberg	493.16	NR	NR	NR	NR	NR	493.16	NR	NR
Barnwell	143.46	NR	NR	NR	59.62	NR	83.84	NR	NR
Beaufort	8,596.38	NR	NR	63.04	1,418.36	NR	18.29	NR	7,096.70
Berkeley	1,464,560.78	1,251,619.01	203,543.69	99.70	6.42	3,110.43	1,110.14	NR	5,071.40
Calhoun	26,546.91	NR	NR	NR	41.10	26,392.68	113.13	NR	NR
Charleston	37,004.39	NR	NR	2.30	199.50	8,873.81	26.99	NR	27,901.81
Cherokee	410,583.73	407,518.00	NR	NR	NR	504.13	NR	NR	2,561.60
Chester	2,068,769.58	2,067,474.00	NR	NR	9.00	94.38	NR	NR	1,192.20
Chesterfield	1,060.24	NR	NR	NR	268.48	NR	23.23	NR	768.53
Clarendon	86.93	NR	NR	NR	37.90	NR	49.03	NR	NR
Colleton	1,715.07	NR	1,484.53	NR	1.37	NR	227.00	2.16	NR
Darlington	284,730.65	NR	277,346.00	NR	126.90	7,036.07	221.68	NR	NR
Dorchester	54.70	NR	NR	NR	0.00	54.70	NR	NR	NR
Edgefield	1,151,998.50	1,150,053.45	NR	NR	39.00	NR	456.05	NR	1,450.00
Fairfield	3,506,339.36	2,944,701.12	561,069.95	NR	NR	NR	NR	NR	568.29
Florence	9,182.90	NR	NR	NR	61.41	7,652.70	7.20	NR	1,461.58
Georgetown	21,688.77	NR	4,324.25	NR	775.90	12,294.86	2,025.72	NR	2,268.05
Greenville	24,315.85	0.00	NR	NR	171.35	NR	19.00	NR	24,125.50
Greenwood	368,126.34	363,517.00	0.00	NR	59.54	53.60	NR	NR	4,496.20
Hampton	18.00	NR	NR	NR	NR	NR	18.00	NR	NR
Horry	62,792.63	NR	44,742.87	NR	2,899.80	15.88	66.33	177.60	14,890.15
Jasper	0.00	NR	NR	NR	NR	NR	0.00	NR	NR
Kershaw	1,245,174.97	1,242,431.00	NR	NR	54.80	978.15	NR	NR	1,711.02
Lancaster	1,214,501.04	1,204,198.00	NR	NR	8.92	2,212.77	NR	NR	8,081.36
Laurens	121,708.45	120,000.00	NR	NR	84.08	NR	NR	NR	1,624.37
Lee	7.00	NR	NR	NR	NR	NR	7.00	NR	NR
Lexington	443,393.01	371,476.55	56,018.90	NR	173.59	9,691.83	513.97	415.64	5,102.52
Marion	21.31	NR	NR	NR	21.31	NR	0.01	NR	NR
Marlboro	7,684.17	NR	NR	NR	NR	7,609.40	74.77	NR	0.00
McCormick	421.30	NR	NR	NR	32.65	NR	0.00	NR	388.65
Newberry	2,057.03	NR	NR	NR	6.00	NR	122.50	NR	1,928.53
Oconee	2,832,062.80	12,700.00	2,814,848.00	NR	86.50	583.03	287.75	NR	3,557.52
Orangeburg	4,154.34	NR	0.00	NR	90.77	171.42	738.56	NR	3,153.58
Pickens	2,776,706.04	2,769,742.00	NR	NR	229.76	3,279.95	0.00	NR	3,454.32
Richland	661,562.56	469,660.89	158,609.72	27.30	320.87	10,260.40	0.20	NR	22,683.18
Saluda	367.52	NR	NR	NR	NR	NR	367.52	NR	NR
Spartanburg	33,158.09	17,962.72	NR	35.04	1,009.38	NR	105.06	NR	14,045.89
Sumter	679.71	NR	NR	NR	175.31	NR	504.40	NR	NR
Union	188,443.50	186,662.01	NR	NR	9.00	571.50	NR	NR	1,200.99
Williamsburg	2.15	NR	NR	NR	NR	NR	2.15	NR	NR
York	1,019,463.06	958,465.00	37,184.00	NR	153.41	17,877.20	2.55	NR	5,780.89
Grand Total:	20,356,731.72	15,766,86.75	4,254,461.12	227.37	8,808.68	140,255.88	7,858.81	595.40	177,657.70

NR = None Reported

Groundwater Use Summary Table (Figures in Millions of Gallons)

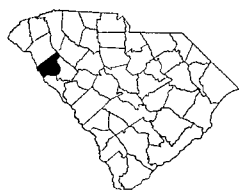
County	County Total	Hydroelectric	Thermoelectric	Aquaculture	Golf Course	Industry	Irrigation	Mining	Other	Water Supply
Abbeville	3.31	NR	NR	NR	NR	NR	NR	NR	NR	3.31
Aiken	6305.436	NR	NR	NR	13.1	1323.157	161.33	21.31	NR	4786.539
Allendale	3992.331	NR	NR	NR	NR	817.91	2791.018	NR	NR	383.403
Bamberg	1221.734	NR	NR	NR	NR	NR	744.073	NR	NR	477.661
Barnwell	943.142	NR	NR	NR	NR	NR	112.831	NR	NR	830.311
Beaufort	5865.52	NR	NR	9.273	1115.368	139.794	659.452	NR	34.76	3906.873
Berkeley	1434.151	0.329	12.283	3.277	19.2	1200.791	0.24	2.982	NR	195.049
Calhoun	835.351	NR	NR	NR	28.3	132.61	541.097	NR	NR	133.344
Charleston	3090.368	NR	NR	NR	648.027	42.456	0.245	NR	1.564	2398.076
Cherokee	1.022	NR	1.022	NR	NR	NR	NR	NR	NR	NR
Chester	24.463	NR	NR	NR	22.5	1.963	NR	NR	NR	NR
Chesterfield	1081.367	NR	NR	NR	NR	NR	230.032	0	NR	851.335
Clarendon	745.499	NR	NR	NR	5.08	NR	44.825	NR	NR	695.594
Colleton	1552.005	NR	0.677	NR	63.027	NR	756.5	NR	NR	731.801
Darlington	4221.139	NR	362.284	NR	3	1488.859	5.125	NR	0.465	2361.406
Dillon	1664.173	NR	NR	35.6	NR	NR	34.4	NR	NR	1594.173
Dorchester	1699.324	NR	NR	NR	44	998.879	NR	NR	0.989	655.456
Edgefield	64.605	NR	NR	NR	43.605	NR	21	NR	NR	NR
Fairfield	67.823	NR	NR	NR	NR	NR	NR	NR	NR	67.823
Florence	5028.126	NR	NR	NR	128.951	718.343	253.637	NR	NR	3927.195
Georgetown	988.028	NR	NR	NR	0	112.98	21.797	NR	NR	853.251
Greenville	125.195	NR	NR	NR	30.773	59.315	0.4	NR	NR	34.707
Greenwood	27.328	NR	NR	NR	10.2	8	1.2	NR	NR	7.928
Hampton	2425.814	NR	NR	122.283	34.75	488.5	1246.025	NR	NR	534.256
Horry	1742.73	NR	NR	NR	586.996	160.116	145.598	NR	67.856	782.164
Jasper	759.179	NR	NR	0	NR	NR	425.146	NR	NR	334.033
Kershaw	1163.758	NR	NR	NR	39.52	499.542	NR	NR	NR	624.696
Lancaster	0.734	NR	NR	NR	0.734	NR	NR	NR	NR	NR
Lee	684.318	NR	NR	NR	NR	NR	79.858	NR	NR	604.46
Lexington	3113.93	NR	NR	NR	28.95	409.109	1794.748	446.87	NR	434.253
Marion	1340.989	NR	NR	NR	0	NR	25.6	NR	NR	1315.389
Marlboro	1353.281	NR	NR	NR	NR	280.237	117.01	NR	NR	956.034
Newberry	88.853	NR	NR	NR	12	NR	55.228	NR	NR	21.625
Oconee	53.88	NR	NR	NR	NR	NR	NR	NR	NR	53.88
Orangeburg	7929.589	NR	1667.052	NR	18.672	1044.567	2664.31	1909.2	NR	625.788
Richland	1350.066	NR	NR	12.5	24.53	660.463	14.686	312.85	NR	325.037
Saluda	79.02	NR	NR	NR	NR	NR	NR	NR	NR	79.02
Spartanburg	49.032	NR	NR	NR	10.51	13.673	NR	NR	NR	24.849
Sumter	7478.204	NR	NR	NR	120.565	318.687	1117.811	NR	NR	5921.141
Union	2.78	NR	NR	NR	NR	2.78	NR	NR	NR	NR
Williamsburg	1454.508	NR	NR	NR	NR	902.648	NR	NR	NR	551.86
York	98.784	NR	NR	NR	47.055	5.539	NR	16.56	NR	29.63
Grand Total:	72,150.89	0.33	2,043.32	182.93	3,099.41	11,830.92	14,065.22	2,709.77	105.63	38,113.35

NR = None Report

Appendix B: Surface and Groundwater Use Summary by County in South Carolina, 2005

The following tables list reported surface water and groundwater withdrawals for the 2005 calendar year by county. Water usage data are shown by water use category, and in the case of power generation, include surface water use that is typically considered non-consumptive. As presented throughout this report, all water use figures presented are in millions of gallons.

Abbeville County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	3.31
Other:	NR
Total:	3.31

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	37,686.30
Industrial:	NR
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	1,033.64
Total:	38,719.64

Aiken County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	13.10
Industrial:	1323.16
Irrigation:	161.33
Mining:	21.31
Water Supply:	4786.54
Other:	NR
Total:	6,305.44

Surface Water Use

Aquaculture:	NR
Golf Course:	100.33
Hydroelectric:	NR
Industrial:	20,847.09
Irrigation:	17.585
Mining:	NR
Thermal Power:	45,545
Water Supply:	2,395.24
Total:	68,905.24

Allendale County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	817.91
Irrigation:	2,791.02
Mining:	NR
Water Supply:	383.40
Other:	NR
Total:	3,992.33

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	156.01
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	156.01

Anderson County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	NR

Surface Water Use

Aquaculture:	NR
Golf Course:	76.37
Hydroelectric:	191,000
Industrial:	89.9
Irrigation:	NR
Mining:	NR
Thermal Power:	49,744.21
Water Supply:	7,663.995
Total:	248,574.47

NR = None Reported

Bamberg County



Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	744.07
Mining:	NR
Water Supply:	477.661
Other:	NR
Total:	1,221.73

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	493.16
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	493.16

Barnwell County



Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	112.83
Mining:	NR
Water Supply:	830.31
Other:	NR
Total:	943.14

Surface Water Use

Aquaculture:	NR
Golf Course:	59.62
Hydroelectric:	NR
Industrial:	NR
Irrigation:	83.84
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	143.46

Beaufort County



Groundwater Use

Aquaculture:	9.27
Golf Course:	1,115.37
Industrial:	139.794
Irrigation:	659.45
Mining:	NR
Water Supply:	3906.87
Other:	34.76
Total:	5,865.52

Surface Water Use

Aquaculture:	63.04
Golf Course:	1,418.36
Hydroelectric:	NR
Industrial:	NR
Irrigation:	18.29
Mining:	NR
Thermal Power:	NR
Water Supply:	7096.70
Total:	8,596.38

Berkeley County



Groundwater Use

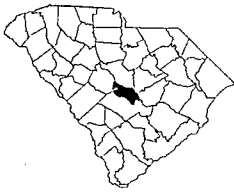
Aquaculture:	3.28
Golf Course:	19.20
Industrial:	1,200.79
Irrigation:	0.24
Mining:	2.98
Water Supply:	195.05
Hydroelectric:	0.33
Thermal Power:	12.28
Total:	1,434.15

Surface Water Use

Aquaculture:	99.70
Golf Course:	6.42
Hydroelectric:	1,251,619.01
Industrial:	3110.43
Irrigation:	1110.14
Mining:	NR
Thermal Power:	203,543.69
Water Supply:	5,071.4
Total:	1,464,560.78

NR = None Reported

Calhoun County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	28.30
Industrial:	132.61
Irrigation:	541.097
Mining:	NR
Water Supply:	133.34
Other:	NR
Total:	835.35

Surface Water Use

Aquaculture:	NR
Golf Course:	41.10
Hydroelectric:	NR
Industrial:	26,392.68
Irrigation:	113.125
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	26,546.91

Charleston County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	648.03
Industrial:	42.46
Irrigation:	0.25
Mining:	NR
Water Supply:	2398.07
Other:	1.56
Total:	3,090.37

Surface Water Use

Aquaculture:	2.30
Golf Course:	199.49
Hydroelectric:	NR
Industrial:	8,873.81
Irrigation:	26.99
Mining:	NR
Thermal Power:	NR
Water Supply:	27,901.80
Total:	37,004.39

Cherokee County

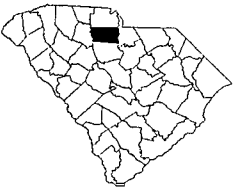
**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Thermal Power:	1.02
Total:	1.02

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	407,518.00
Industrial:	504.13
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	2,561.6
Total:	410,583.73

Chester County

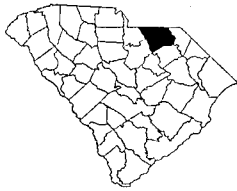
**Groundwater Use**

Aquaculture:	NR
Golf Course:	22.50
Industrial:	1.96
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	24.46

Surface Water Use

Aquaculture:	NR
Golf Course:	9.00
Hydroelectric:	2,067,474.00
Industrial:	94.38
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	1192.2
Total:	2,068,769.58

NR = None Reported



Chesterfield County

Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	230.03
Mining:	NR
Water Supply:	851.34
Other:	NR
Total:	1,081.37

Surface Water Use

Aquaculture:	NR
Golf Course:	268.48
Hydroelectric:	NR
Industrial:	NR
Irrigation:	23.23
Mining:	NR
Thermal Power:	NR
Water Supply:	768.53
Total:	1,060.24



Clarendon County

Groundwater Use

Aquaculture:	NR
Golf Course:	5.08
Industrial:	NR
Irrigation:	44.83
Mining:	NR
Water Supply:	695.59
Other:	NR
Total:	745.50

Surface Water Use

Aquaculture:	NR
Golf Course:	37.90
Hydroelectric:	NR
Industrial:	NR
Irrigation:	49.03
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	86.93



Colleton County

Groundwater Use

Aquaculture:	NR
Golf Course:	63.03
Industrial:	NR
Irrigation:	756.50
Mining:	NR
Water Supply:	731.80
Thermal Power:	0.68
Other:	NR
Total:	1,552.01

Surface Water Use

Aquaculture:	NR
Golf Course:	1.37
Hydroelectric:	NR
Industrial:	NR
Irrigation:	227.00
Mining:	2.16
Thermal Power:	1,484.53
Water Supply:	NR
Total:	1,715.07



Darlington County

Groundwater Use

Aquaculture:	NR
Golf Course:	3.00
Industrial:	1,488.86
Irrigation:	5.13
Mining:	NR
Nuclear Power:	362.28
Water Supply:	2505.969
Other:	0.47
Total:	4,221.14

Surface Water Use

Aquaculture:	NR
Golf Course:	126.90
Hydroelectric:	NR
Industrial:	7,036.07
Irrigation:	221.68
Mining:	NR
Nuclear Power:	277,346.00
Water Supply:	NR
Total:	284,730.65

NR = None Reported

Dillon County

**Groundwater Use**

Aquaculture:	35.60
Golf Course:	NR
Industrial:	NR
Irrigation:	34.40
Mining:	NR
Water Supply:	1,594.17
Other:	NR
Total:	1,664.17

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	NR

Dorchester County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	44.00
Industrial:	998.88
Irrigation:	NR
Mining:	NR
Water Supply:	655.46
Other:	.99
Total:	1,699.32

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	54.70
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	54.70

Edgefield County

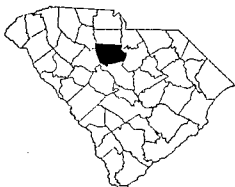
**Groundwater Use**

Aquaculture:	NR
Golf Course:	43.61
Industrial:	NR
Irrigation:	21.000
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	64.61

Surface Water Use

Aquaculture:	NR
Golf Course:	39.00
Hydroelectric:	1,150,053.45
Industrial:	NR
Irrigation:	456.05
Mining:	NR
Thermal Power:	NR
Water Supply:	1450.00
Total:	1,151,998.50

Fairfield County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	67.82
Other:	NR
Total:	67.82

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	2,944,701.12
Industrial:	NR
Irrigation:	NR
Mining:	NR
Nuclear Power:	561,069.95
Water Supply:	568.29
Total:	3,506,339.36

NR = None Reported



Florence County

Groundwater Use

Aquaculture:	NR
Golf Course:	128.95
Industrial:	718.34
Irrigation:	253.64
Mining:	NR
Water Supply:	3,927.20
Other:	NR
Total:	5,028.13

Surface Water Use

Aquaculture:	NR
Golf Course:	61.41
Hydroelectric:	NR
Industrial:	7,652.70
Irrigation:	7.20
Mining:	NR
Thermal Power:	NR
Water Supply:	1,461.58
Total:	9,182.90



Georgetown County

Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	112.98
Irrigation:	21.80
Mining:	NR
Water Supply:	853.25
Other:	NR
Total:	988.03

Surface Water Use

Aquaculture:	NR
Golf Course:	775.90
Hydroelectric:	NR
Industrial:	12,294.86
Irrigation:	2,025.72
Mining:	NR
Thermal Power:	4,324.25
Water Supply:	2,268.05
Total:	21,688.77



Greenville County

Groundwater Use

Aquaculture:	NR
Golf Course:	30.77
Industrial:	59.32
Irrigation:	NR
Mining:	NR
Water Supply:	34.70
Other:	NR
Total:	125.20

Surface Water Use

Aquaculture:	NR
Golf Course:	171.35
Hydroelectric:	NR
Industrial:	NR
Irrigation:	19.00
Mining:	NR
Thermal Power:	NR
Water Supply:	24,125.5
Total:	24,315.85



Greenwood County

Groundwater Use

Aquaculture:	NR
Golf Course:	10.20
Industrial:	8.00
Irrigation:	1.200
Mining:	NR
Water Supply:	7.93
Other:	NR
Total:	27.33

Surface Water Use

Aquaculture:	NR
Golf Course:	59.54
Hydroelectric:	363,517.00
Industrial:	53.60
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	4,496.20
Total:	368,126.34

NR = None Reported

Hampton County

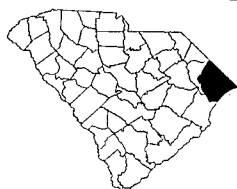
**Groundwater Use**

Aquaculture:	122.28
Golf Course:	34.75
Industrial:	488.50
Irrigation:	1,246.03
Mining:	NR
Water Supply:	534.26
Other:	NR
Total:	2,425.81

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	18.00
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	18.00

Horry County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	586.00
Industrial:	160.12
Irrigation:	145.60
Mining:	NR
Water Supply:	782.164
Other:	67.86
Total:	1,742.73

Surface Water Use

Aquaculture:	NR
Golf Course:	2,899.80
Hydroelectric:	NR
Industrial:	15.88
Irrigation:	66.33
Mining:	177.60
Thermal Power:	44,742.87
Water Supply:	14,890.15
Total:	62,792.63

Jasper County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	425.146
Mining:	NR
Water Supply:	334.03
Other:	NR
Total:	759.18

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	NR

Kershaw County

**Groundwater Use**

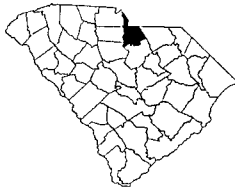
Aquaculture:	NR
Golf Course:	39.52
Industrial:	499.54
Irrigation:	NR
Mining:	NR
Water Supply:	624.70
Other:	NR
Total:	1,163.76

Surface Water Use

Aquaculture:	NR
Golf Course:	54.80
Hydroelectric:	1,242,431.00
Industrial:	978.15
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	1,711.02
Total:	1,245,174.97

NR = None Reported

Lancaster County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	0.73
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	0.73

Surface Water Use

Aquaculture:	NR
Golf Course:	8.92
Hydroelectric:	1,204,198.00
Industrial:	2,212.77
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	8,081.36
Total:	1,214,501.04

Laurens County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	NR

Surface Water Use

Aquaculture:	NR
Golf Course:	84.08
Hydroelectric:	120,000
Industrial:	NR
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	1,624.37
Total:	121,708.45

Lee County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	79.86
Mining:	NR
Water Supply:	604.46
Other:	NR
Total:	684.32

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	7.00
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	7.00

Lexington County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	28.95
Industrial:	409.11
Irrigation:	1,794.75
Mining:	446.87
Water Supply:	434.25
Other:	NR
Total:	3,113.93

Surface Water Use

Aquaculture:	NR
Golf Course:	173.59
Hydroelectric:	371,476.55
Industrial:	9,691.83
Irrigation:	513.97
Mining:	415.64
Thermal Power:	56018.9
Water Supply:	5,102.52
Total:	443,393.01

NR = None Reported

Marion County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	25.60
Mining:	NR
Water Supply:	1,315.39
Other:	NR
Total:	1,340.99

Surface Water Use

Aquaculture:	NR
Golf Course:	21.31
Hydroelectric:	NR
Industrial:	NR
Irrigation:	0.001
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	21.31

Marlboro County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	280.24
Irrigation:	117.01
Mining:	NR
Water Supply:	956.03
Other:	NR
Total:	1,353.28

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	7,609.4
Irrigation:	74.77
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	7,684.17

McCormick County

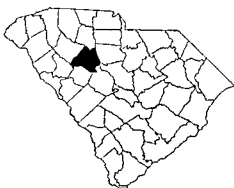
**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	NR

Surface Water Use

Aquaculture:	NR
Golf Course:	32.65
Hydroelectric:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	388.65
Total:	421.30

Newberry County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	12.00
Industrial:	NR
Irrigation:	55.23
Mining:	NR
Water Supply:	21.63
Other:	NR
Total:	88.85

Surface Water Use

Aquaculture:	NR
Golf Course:	6.00
Hydroelectric:	NR
Industrial:	NR
Irrigation:	122.50
Mining:	NR
Thermal Power:	NR
Water Supply:	1,928.53
Total:	2,057.03

NR = None Reported

Oconee County



Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	53.88
Other:	NR
Total:	53.88

Surface Water Use

Aquaculture:	NR
Golf Course:	86.50
Hydroelectric:	12,700.00
Industrial:	583.03
Irrigation:	287.75
Mining:	NR
Nuclear Power:	2,814,848.00
Water Supply:	3,557.52
Total:	2,832,062.80

Orangeburg County



Groundwater Use

Aquaculture:	NR
Golf Course:	18.67
Industrial:	1,044.57
Irrigation:	2,664.31
Mining:	1,909.20
Thermal Power:	1,667.05
Water Supply:	625.79
Other:	NR
Total:	7,929.59

Surface Water Use

Aquaculture:	NR
Golf Course:	90.77
Hydroelectric:	12,700.00
Industrial:	171.42
Irrigation:	738.56
Mining:	NR
Thermal Power:	NR
Water Supply:	3,153.58
Total:	4,154.34

Pickens County



Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	NR

Surface Water Use

Aquaculture:	NR
Golf Course:	229.76
Hydroelectric:	2,769,742.00
Industrial:	3,279.95
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	3,454.32
Total:	2,776,706.04

Richland County



Groundwater Use

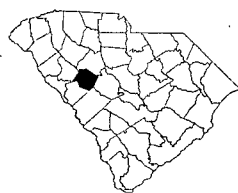
Aquaculture:	12.50
Golf Course:	24.53
Industrial:	660.46
Irrigation:	14.69
Mining:	312.85
Water Supply:	325.04
Other:	NR
Total:	1,350.07

Surface Water Use

Aquaculture:	27.30
Golf Course:	320.87
Hydroelectric:	469,660.89
Industrial:	10,260.40
Irrigation:	0.20
Mining:	NR
Thermal Power:	158,609.72
Water Supply:	22,683.18
Total:	661,562.56

NR = None Reported

Saluda County

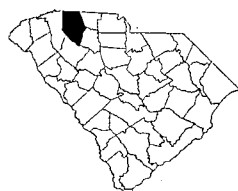
**Groundwater Use**

Aquaculture:	NR
Golf Course:	NR
Industrial:	NR
Irrigation:	NR
Mining:	NR
Water Supply:	79.02
Other:	NR
Total:	79.02

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	367.52
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	367.52

Spartanburg County

**Groundwater Use**

Aquaculture:	NR
Golf Course:	10.51
Industrial:	13.67
Irrigation:	NR
Mining:	NR
Water Supply:	24.85
Other:	NR
Total:	49.03

Surface Water Use

Aquaculture:	35.04
Golf Course:	1,009.375
Hydroelectric:	17,962.72
Industrial:	NR
Irrigation:	105.06
Mining:	NR
Thermal Power:	NR
Water Supply:	14,045.89
Other:	33,158.09

Sumter County

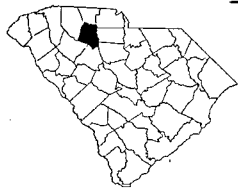
**Groundwater Use**

Aquaculture:	NR
Golf Course:	120.56
Industrial:	318.69
Irrigation:	1,117.81
Mining:	NR
Water Supply:	5,921.14
Other:	NR
Total:	7,478.20

Surface Water Use

Aquaculture:	NR
Golf Course:	175.31
Hydroelectric:	NR
Industrial:	NR
Irrigation:	504.40
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	679.71

Union County

**Groundwater Use**

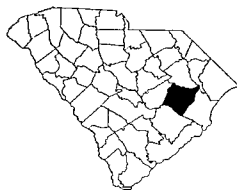
Aquaculture:	NR
Golf Course:	NR
Industrial:	2.78
Irrigation:	NR
Mining:	NR
Water Supply:	NR
Other:	NR
Total:	NR

Surface Water Use

Aquaculture:	NR
Golf Course:	9.00
Hydroelectric:	186,662.01
Industrial:	571.5
Irrigation:	NR
Mining:	NR
Thermal Power:	NR
Water Supply:	1200.99
Total:	188,443.50

NR = None Reported

Williamsburg County



Groundwater Use

Aquaculture:	NR
Golf Course:	NR
Industrial:	902.65
Irrigation:	NR
Mining:	NR
Water Supply:	551.86
Other:	NR
Total:	1,454.51

Surface Water Use

Aquaculture:	NR
Golf Course:	NR
Hydroelectric:	NR
Industrial:	NR
Irrigation:	2.15
Mining:	NR
Thermal Power:	NR
Water Supply:	NR
Total:	2.15

York County



Groundwater Use

Aquaculture:	NR
Golf Course:	47.06
Industrial:	5.54
Irrigation:	NR
Mining:	16.56
Water Supply:	29.63
Other:	NR
Total:	98.78

Surface Water Use

Aquaculture:	NR
Golf Course:	153.41
Hydroelectric:	958,465.00
Industrial:	17,877.20
Irrigation:	2.55
Mining:	NR
Nuclear Power:	37,184.00
Water Supply:	5,780.89
Total:	1,019,463.06

NR = None Reported

Appendix C: Population by County

Population and Projections by County

County	2000	2005	2010	2015	2020	2025
Abbeville	26,167	26,740	27,610	28,480	29,350	30,210
Aiken	142,552	153,900	163,950	174,000	184,060	194,110
Allendale	11,211	11,820	11,960	12,110	12,260	12,400
Anderson	165,740	172,120	180,280	188,440	196,590	204,750
Bamberg	16,658	16,130	15,740	15,340	14,950	14,560
Barnwell	23,478	24,350	25,390	26,440	27,490	28,540
Beaufort	120,937	132,760	146,440	160,110	173,790	187,460
Berkeley	142,651	156,610	167,520	178,420	189,330	200,230
Calhoun	15,185	15,570	16,350	17,130	17,910	18,690
Charleston	309,969	320,080	328,570	337,070	345,560	354,060
Cherokee	52,537	54,770	57,860	60,960	64,050	67,140
Chester	34,068	34,630	35,500	36,370	37,240	38,110
Chesterfield	42,768	43,100	44,310	45,520	46,730	47,940
Clarendon	32,502	33,300	34,650	35,990	37,330	38,680
Colleton	38,264	39,910	41,590	43,260	44,940	46,610
Darlington	67,394	67,910	69,260	70,610	71,960	73,310
Dillon	30,722	30,220	30,280	30,340	30,400	30,460
Dorchester	96,413	106,590	115,430	124,280	133,130	141,980
Edgefield	24,595	25,490	27,400	29,320	31,230	33,150
Fairfield	23,454	24,260	25,010	25,770	26,520	27,280
Florence	125,761	130,140	134,510	138,870	143,230	147,590
Georgetown	55,797	58,300	61,770	65,240	68,710	72,190
Greenville	379,616	397,580	421,210	444,840	468,470	492,100
Greenwood	66,271	68,590	71,170	73,750	76,330	78,910
Hampton	21,386	21,810	22,690	23,570	24,450	25,330
Horry	196,629	215,850	239,020	262,190	285,360	308,530
Jasper	20,678	21,390	23,000	24,610	26,220	27,830
Kershaw	52,647	55,300	58,880	62,460	66,040	69,620
Lancaster	61,351	61,940	63,940	65,950	67,950	69,950
Laurens	69,567	72,800	77,190	81,580	85,960	90,350
Lee	20,119	20,540	21,010	21,480	21,960	22,430
Lexington	216,014	233,060	252,580	272,090	291,600	311,120
McCormick	9,958	10,670	11,290	11,910	12,530	13,150
Marion	35,466	35,930	36,390	36,840	37,300	37,760
Marlboro	28,818	28,100	27,460	26,820	26,170	25,530
Newberry	36,108	37,270	38,530	39,790	41,050	42,320
Oconee	66,215	70,910	75,470	80,040	84,600	89,160
Orangeburg	91,582	94,260	96,890	99,510	102,140	104,770
Pickens	110,757	119,040	127,110	135,190	143,260	151,330
Richland	320,677	331,810	345,660	359,520	373,370	387,220
Saluda	19,181	19,400	20,090	20,790	21,480	22,180
Spartanburg	253,791	267,390	280,590	293,790	306,990	320,190
Sumter	104,646	112,030	116,100	120,180	124,260	128,330
Union	29,881	29,720	29,480	29,240	29,010	28,770
Williamsburg	37,217	36,960	36,820	36,680	36,540	36,400
York	164,614	177,420	192,290	207,160	222,030	236,900
South Carolina:	4,012,012	4,218,460	4,446,240	4,674,050	4,901,810	5,129,630

Appendix D: Glossary

Aquifer – A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs. An alternate definition includes saturated material capable of providing economically viable amounts of water to wells or springs.

Aquaculture water use (water use category) – Water used for raising, farming and/or harvesting of organisms that live in water, such as fish, shrimp and other shellfish and vegetal matter (seaweed).

Consumptive water use – The amount of water withdrawn that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment.

Effluent (wastewater) – Water conveyed out of a wastewater treatment facility or other works used for the purpose of treating, stabilizing, or holding wastewater. Effluent is often highly treated and is an excellent option for reuse of wastewater for irrigation.

Evapotranspiration – Collective term, including water discharged to the atmosphere as a result of evaporation from the soil and surface-water bodies and plant transpiration.

Fall Line – The geologic and physiographic surface boundary separating the sedimentary deposits of the Coastal Plain from the metamorphic and igneous rocks of the Piedmont.

Farm – Any operation from which \$1000.00 or more of agricultural products were sold or normally would be sold during the year.

Golf course irrigation (water use category) – Water applied to maintain golf course turf, including tee boxes, fairways, putting greens, associated practice areas and periphery aesthetic landscaping.

Groundwater – Generally, all subsurface water as distinct from surface water; specifically, that part of the subsurface water in the saturated zone.

Hydroelectric water use (water use category) – Water used in generating electricity where turbine generators are driven by falling water.

Industrial water use (water use category) – Water used for commercial and industrial purposes, including fabrication, processing, washing, in-plant conveyance and cooling.

Irrigated acreage – Acreage capable of being irrigated, with regard to availability of water, suitable soils and topography of land.

Irrigation water use (water use category) – Water that is used for agricultural and landscaping purposes including turf farming and livestock management.

Mining water use (water use category) – Water that is used for in conjunction with surface or subsurface mining of minerals or natural materials

Other use (water use category) – Any use of surface water or groundwater not specifically identified in any of the other categories.

Reclaimed water – Wastewater treatment plant effluent that has been diverted, intercepted, or otherwise conveyed for use before it reaches a natural waterway or aquifer.

Surface water – Water flowing or stored on the earth's surface such as a stream, lake, or reservoir.

Thermoelectric water use (water use category) – Water used in generating electricity from fossil fuel (coal, oil, natural gas), geothermal, biomass, solid waste, or nuclear energy.

Water supply (water use category) – Water withdrawn by public and private water suppliers and conveyed to users or groups of users. Water suppliers provide water for a variety of uses including domestic, commercial, industrial and public water use.

Water usage rates – As utilized in this report, measurements to quantitatively represent volumetric withdrawals per unit of time; as in gallons per minute (gpm), gallons per day (gpd) and gallons per year (gpy). Unless otherwise stated, figures in this report are presented in millions of gallons per year.

Water use – Generally, water that is used for a specific purpose (i.e., domestic use, industrial, etc.). Broadly, human interaction with and influence on the hydrologic cycle, and includes water withdrawal, distribution, consumptive use, wastewater collection and return flow.

Withdrawal – The removal of surface water or groundwater from its current setting in the natural hydrologic system for use, including, but not limited to, water supply, industrial use, commercial use, domestic use, irrigation, livestock, power generation