

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August 22–September 13, 2001.

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Date sampled	Easting (m)	Northing (m)	Latitude (° ′ ″)	Longitude (° ′ ″)	Distance from shore (ft)	Water depth (ft)	Drive depth (ft)	Altitude of bottom of drive point (ft)
300S-000	8/27/01	280001.783	820808.182	41 38 00.05	70 32 25.43	0	0.0	1.4	42.1
300S-005	8/27/01	280004.398	820807.605	41 38 00.04	70 32 25.31	5	0.5	2.0	41.0
300S-010	8/27/01	280006.206	820807.546	41 38 00.03	70 32 25.24	10	0.5	1.8	41.2
300S-025	8/27/01	280017.464	820805.707	41 37 59.97	70 32 24.75	25	0.7	1.3	41.5
300S-050	8/27/01	280026.836	820803.471	41 37 59.89	70 32 24.35	50	1.9	1.3	40.3
300S-075	8/27/01	280026.882	820803.679	41 37 59.90	70 32 24.34	75	3.1	1.2	39.2
300S-100	8/27/01	280033.425	820801.818	41 37 59.84	70 32 24.06	100	2.4	1.1	40.0
300S-125	8/27/01	280041.217	820799.459	41 37 59.76	70 32 23.73	125	2.2	1.4	39.9
300S-150	8/27/01	280048.713	820797.341	41 37 59.69	70 32 23.40	150	1.7	1.8	40.0
300S-175	8/27/01	280055.751	820795.586	41 37 59.63	70 32 23.10	175	1.0	1.9	40.6
300S-200	8/27/01	280061.941	820794.706	41 37 59.60	70 32 22.83	200	0.7	1.1	41.7
200S-000	8/27/01	279984.247	820832.006	41 38 00.83	70 32 26.17	0	0.0	1.6	41.9
200S-005	8/27/01	279985.875	820831.588	41 38 00.82	70 32 26.10	5	0.4	1.7	41.4
200S-010	8/27/01	279986.849	820831.419	41 38 00.81	70 32 26.06	10	0.5	2.2	40.8
200S-025	8/27/01	279991.162	820829.752	41 38 00.76	70 32 25.88	25	1.2	1.9	40.4
200S-050	8/27/01	279999.208	820828.657	41 38 00.72	70 32 25.53	50	1.7	1.4	40.4
200S-075	8/27/01	280007.111	820827.792	41 38 00.69	70 32 25.19	75	2.4	1.7	39.4
200S-100	8/27/01	280013.988	820825.211	41 38 00.60	70 32 24.89	100	2.9	1.2	39.4
200S-125	8/27/01	280020.610	820822.556	41 38 00.51	70 32 24.61	125	3.4	1.2	38.9
100S-000	8/24/01	279956.706	820847.204	41 38 01.34	70 32 27.36	0	0.0	2.0	41.5
100S-005	8/24/01	279959.494	820846.007	41 38 01.30	70 32 27.24	5	0.2	2.0	41.3
100S-010	8/24/01	279961.261	820844.894	41 38 01.26	70 32 27.16	10	0.3	2.0	41.2
100S-025	8/24/01	279965.587	820847.211	41 38 01.33	70 32 26.97	25	0.4	1.7	41.4
100S-075	9/13/01	279982.338	820845.289	41 38 01.26	70 32 26.25	50	1.0	2.0	40.5
100S-200	9/13/01	280020.818	820835.815	41 38 00.94	70 32 24.59	200	4.6	2.0	36.9
000-000	8/24/01	279945.211	820878.074	41 38 02.34	70 32 27.84	0	0.0	2.0	41.6
000-005	8/24/01	279947.710	820878.102	41 38 02.34	70 32 27.73	5	0.6	1.8	41.1
000-010	8/24/01	279949.594	820878.181	41 38 02.34	70 32 27.65	10	1.3	1.6	40.6
000-025	8/24/01	279953.865	820876.345	41 38 02.28	70 32 27.46	25	3.7	1.5	38.3
000-050	8/24/01	279960.501	820873.400	41 38 02.18	70 32 27.18	50	2.4	1.7	39.4
000-075	8/24/01	279968.523	820872.115	41 38 02.14	70 32 26.83	75	2.9	2.3	38.3
000-100	8/24/01	279975.564	820870.740	41 38 02.09	70 32 26.53	100	3.5	1.8	38.2
000-125	8/24/01	279983.138	820869.114	41 38 02.04	70 32 26.20	125	3.8	1.1	38.6
050N-025	9/13/01	279954.746	820889.390	41 38 02.70	70 32 27.42	25	1.3	2.0	40.2
050N-125	9/13/01	279985.315	820882.007	41 38 02.45	70 32 26.10	125	3.2	2.0	38.3
100N-000	8/23/01	279949.021	820906.704	41 38 03.27	70 32 27.66	0	0.0	2.0	41.5
100N-005	8/23/01	279950.108	820906.616	41 38 03.26	70 32 27.61	5	0.6	1.6	41.3
100N-010	8/23/01	279950.996	820906.139	41 38 03.25	70 32 27.57	10	1.0	1.6	40.9
100N-025	8/23/01	279956.170	820905.108	41 38 03.21	70 32 27.35	25	1.9	1.6	40.0
100N-050	8/23/01	279962.611	820902.620	41 38 03.13	70 32 27.07	50	2.8	1.3	39.4
100N-075	8/23/01	279970.805	820900.417	41 38 03.06	70 32 26.72	75	3.2	1.5	38.8
100N-100	8/23/01	279977.261	820899.235	41 38 03.02	70 32 26.44	100	3.4	1.6	38.5
100N-125	8/23/01	279984.201	820897.427	41 38 02.95	70 32 26.14	125	3.6	1.7	38.2
100N-150	8/23/01	279991.406	820895.773	41 38 02.90	70 32 25.83	150	4.0	1.1	38.4
100N-175	8/31/01	279999.720	820892.312	41 38 02.78	70 32 25.48	175	3.8	3.0	36.7
100N-200	8/31/01	280008.902	820889.735	41 38 02.70	70 32 25.08	200	4.5	2.5	36.5
100N-225	8/31/01	280016.876	820890.427	41 38 02.72	70 32 24.73	225	5.4	2.0	36.1
100N-250	9/13/01	280023.111	820888.199	41 38 02.64	70 32 24.47	250	5.8	1.0	36.7
150N-000	8/29/01	279952.304	820920.551	41 38 03.72	70 32 27.51	0	0.0	2.0	41.5
150N-005	8/29/01	279956.408	820921.525	41 38 03.75	70 32 27.33	10	0.5	1.4	41.6
150N-010	8/29/01	279960.142	820919.476	41 38 03.68	70 32 27.17	25	0.8	1.2	41.5
150N-025	8/29/01	279954.540	820921.023	41 38 03.73	70 32 27.41	50	1.2	1.5	40.8
150N-050	8/29/01	279968.285	820918.165	41 38 03.63	70 32 26.82	75	2.7	1.4	39.4
150N-075	8/29/01	279975.416	820916.327	41 38 03.57	70 32 26.51	100	2.8	1.3	39.4

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August 22–September 13, 2001—*Continued*

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Measured in field, unfiltered			Measured in laboratory, filtered						
	Specific conductance (μS/cm)	Oxygen, dissolved (mg/L)	Orthophosphate (mg/L as P)	Phosphorus (mg/L as P)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Nitrate (mg/L as N)	Nitrite (mg/L as N)	Ammonia (mg/L as N)
300S-000	145.0	0.045	< 0.098	< 0.075	0.025	0.064	0.108	< 0.070	< 0.010	< 0.070
300S-005	150	.045	< .098	< .075	.130	.022	.133	.705	.110	.076
300S-010	147	.055	< .098	< .075	.133	.018	1.21	< .070	< .010	.233
300S-025	210	.000	.130	.099	.237	.421	.130	< .070	< .010	.878
300S-050	215	.000	.163	< .075	.302	2.31	.083	< .070	< .010	4.05
300S-075	171	.000	< .098	< .075	.160	.796	.082	< .070	< .010	2.73
300S-100	137	.000	< .098	< .075	.059	1.06	.276	< .070	< .010	1.24
300S-125	126	.005	< .098	< .075	.094	.941	.471	< .070	< .010	.730
300S-150	110	.060	.196	< .075	.072	.491	.218	< .070	< .010	1.20
300S-175	79.1	.045	< .098	< .075	.042	.486	.063	< .070	< .010	.089
300S-200	82.8	.050	.196	< .075	.036	.177	.032	< .070	< .010	.073
200S-000	79.4	.500	< .098	< .075	.058	.006	< .002	.176	< .010	< .070
200S-005	134	.045	< .098	< .075	.170	.019	1.96	1.23	< .010	.147
200S-010	168	.045	< .098	< .075	.196	.016	3.00	.321	< .010	.222
200S-025	201	.050	< .098	< .075	.262	.019	4.12	.110	< .010	.549
200S-050	217	.055	< .098	< .075	.273	.067	5.24	< .070	< .010	.166
200S-075	232	.000	.163	.132	.244	1.90	.342	< .070	< .010	.915
200S-100	222	.020	< .098	.086	.248	1.05	.470	< .070	< .010	1.12
200S-125	215	.000	< .098	< .075	.224	.647	.060	< .070	< .010	3.40
100S-000	110	.035	< .098	< .075	.069	.156	.011	< .070	< .010	.224
100S-005	129	.020	< .098	< .075	.027	.202	.020	< .070	< .010	.670
100S-010	113	.030	< .098	< .075	.045	.048	.013	< .070	< .010	.245
100S-025	69.8	1.10	< .098	< .075	.036	.011	.007	.850	< .010	< .070
100S-075	162	.325	< .098	< .075	.170	.143	2.47	< .070	< .010	.110
100S-200	237	.375	< .098	< .075	.303	.279	5.91	< .070	< .010	.082
000-000	55.8	1.20	< .098	< .075	.016	.016	.010	1.01	< .010	< .070
000-005	119	.580	< .098	< .075	.048	.009	.728	1.30	.050	< .070
000-010	92.9	1.94	< .098	< .075	.026	.014	.009	< .070	< .010	< .070
000-025	95.2	.240	.179	< .075	.029	.016	.010	.934	.050	< .070
000-050	239	.000	.147	< .075	.067	--	--	< .070	< .010	4.88
000-075	284	.010	< .098	.110	.176	.252	.056	< .070	< .010	6.95
000-100	180	.100	< .098	< .075	.204	.259	.027	< .070	< .010	.594
000-125	246	.005	.245	.120	.226	.145	.026	< .070	< .010	6.26
050N-025	77.8	.200	< .098	< .075	.042	.111	.045	< .070	< .010	< .070
050N-125	149	.380	.147	< .075	.130	.199	.251	< .070	< .010	< .070
100N-000	54.4	1.20	< .098	< .075	.016	.019	.043	.673	< .010	< .070
100N-005	112	.150	< .098	< .075	.050	.014	.019	2.60	< .010	< .070
100N-010	161	.065	< .098	< .075	.079	.016	.051	1.08	< .010	< .070
100N-025	157	.055	< .098	< .075	.077	.030	1.56	< .070	< .010	< .070
100N-050	113	.045	.196	.140	.072	.214	.034	< .070	< .010	1.01
100N-075	313	.040	.179	.126	.187	.230	.040	< .070	< .010	7.23
100N-100	231	.020	.245	< .075	.200	.287	.038	< .070	.070	2.06
100N-125	154	.115	.179	< .075	.160	.030	1.53	< .070	< .010	< .070
100N-150	168	.050	< .098	< .075	.155	.044	1.94	< .070	< .010	.174
100N-175	84.0	2.24	.114	< .075	.031	.043	2.25	1.70	< .010	1.60
100N-200	154	2.71	< .098	< .075	.200	.063	2.24	< .070	< .010	.481
100N-225	94.0	2.82	< .098	< .075	.082	.066	2.03	.941	< .010	.435
100N-250	169	.145	.326	.118	.106	.154	2.26	< .070	< .010	1.67
150N-000	80.3	4.17	< .098	< .075	.015	.021	.010	.129	< .010	< .070
150N-005	86.2	1.02	< .098	< .075	.047	.018	.005	.697	< .010	< .070
150N-010	150	.050	< .098	< .075	.071	.014	.036	.572	.040	< .070
150N-025	166	.070	< .098	< .075	.094	.015	2.30	< .070	< .010	.070
150N-050	177	.060	< .098	< .075	.126	.021	2.52	< .070	< .010	.077
150N-075	246	.015	.163	.140	.299	.213	.643	< .070	< .010	1.38

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August 22–September 13, 2001—continued

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Date sampled	Easting (m)	Northing (m)	Latitude (° ′ ″)	Longitude (° ′ ″)	Distance from shore (ft)	Water depth (ft)	Drive depth (ft)	Altitude of bottom of drive point (ft)
150N-125	8/29/01	279989.643	820912.869	41 38 03.45	70 32 25.90	150	3.4	1.6	38.5
150N-150	8/29/01	279997.543	820910.846	41 38 03.38	70 32 25.56	200	3.6	1.6	38.3
150N-175	9/13/01	280007.182	820910.326	41 38 03.36	70 32 25.14	175	3.5	2.5	37.5
150N-200	9/13/01	280017.083	820914.838	41 38 03.51	70 32 24.71	225	4.6	2.0	36.9
150N-225	9/13/01	280019.990	820907.072	41 38 03.25	70 32 24.59	250	5.0	2.0	36.5
200N-000	8/23/01	279957.498	820937.151	41 38 04.25	70 32 27.28	0	0.0	1.3	42.2
200N-005	8/23/01	279959.290	820935.967	41 38 04.21	70 32 27.20	5	0.3	1.9	41.3
200N-010	8/23/01	279960.783	820935.373	41 38 04.19	70 32 27.14	10	0.7	1.4	41.4
200N-025	8/23/01	279963.661	820933.626	41 38 04.13	70 32 27.01	25	1.7	1.6	40.2
200N-050	8/23/01	279972.849	820932.199	41 38 04.09	70 32 26.62	50	2.5	1.5	39.5
200N-075	8/23/01	279980.257	820930.684	41 38 04.03	70 32 26.30	75	2.8	1.8	38.9
200N-100	8/23/01	279987.315	820928.355	41 38 03.96	70 32 25.99	100	3.0	1.3	39.2
200N-125	8/23/01	279994.633	820925.889	41 38 03.87	70 32 25.68	125	3.2	0.6	39.7
200N-150	8/23/01	280002.316	820924.741	41 38 03.83	70 32 25.35	150	3.4	1.5	38.6
200N-175	9/12/01	280009.907	820921.300	41 38 03.72	70 32 25.02	175	3.0	2.0	38.5
200N-225	9/13/01	280025.921	820921.248	41 38 03.71	70 32 24.33	225	4.7	1.5	37.3
200N-250	9/13/01	280035.190	820917.892	41 38 03.60	70 32 23.93	250	5.7	2.0	35.8
250N-000	8/29/01	279966.323	820949.518	41 38 04.65	70 32 26.89	0	0.0	1.5	42.0
250N-005	8/29/01	279968.444	820949.224	41 38 04.64	70 32 26.80	5	0.4	1.6	41.5
250N-010	8/29/01	279969.125	820949.332	41 38 04.64	70 32 26.77	10	0.8	1.5	41.2
250N-025	8/29/01	279973.717	820947.292	41 38 04.57	70 32 26.57	25	1.8	1.3	40.4
250N-050	8/29/01	279981.139	820946.012	41 38 04.53	70 32 26.25	50	1.9	1.7	39.9
250N-075	8/29/01	279988.364	820944.045	41 38 04.46	70 32 25.94	75	2.1	1.4	40.0
250N-100	8/29/01	279995.971	820941.085	41 38 04.36	70 32 25.61	100	1.8	1.7	40.0
250N-125	8/29/01	280003.743	820939.381	41 38 04.31	70 32 25.28	125	2.2	2.0	39.3
250N-150	8/29/01	280010.165	820937.022	41 38 04.23	70 32 25.00	150	2.8	2.0	38.7
250N-175	8/29/01	280017.445	820934.998	41 38 04.16	70 32 24.69	175	3.5	1.0	39.0
250N-200	9/13/01	280027.218	820936.467	41 38 04.20	70 32 24.27	200	3.6	1.5	38.4
250N-250	9/13/01	280044.064	820933.457	41 38 04.10	70 32 23.54	250	5.3	2.0	36.2
300N-000	8/23/01	280002.258	820952.203	41 38 04.72	70 32 25.34	0	0.0	1.2	42.3
300N-005	8/23/01	280003.856	820949.804	41 38 04.64	70 32 25.27	5	0.4	1.6	41.5
300N-010	8/23/01	280004.170	820949.930	41 38 04.65	70 32 25.25	10	0.6	1.4	41.5
300N-025	8/23/01	280009.740	820949.103	41 38 04.62	70 32 25.01	25	1.1	1.2	41.2
300N-050	8/23/01	280016.285	820946.918	41 38 04.55	70 32 24.73	50	1.8	1.2	40.5
300N-075	8/23/01	280024.942	820945.677	41 38 04.50	70 32 24.36	75	2.4	1.7	39.4
300N-100	8/23/01	280031.372	820942.796	41 38 04.41	70 32 24.08	100	3.7	1.2	38.6
300N-125	8/31/01	280039.659	820941.509	41 38 04.36	70 32 23.73	125	4.2	3.0	36.3
300N-150	8/31/01	280046.986	820936.754	41 38 04.21	70 32 23.41	150	5.2	2.0	36.3
350N-005	8/28/01	280023.734	820960.076	41 38 04.97	70 32 24.40	5	0.4	1.3	41.8
350N-025	8/28/01	280031.695	820955.790	41 38 04.83	70 32 24.06	25	1.3	1.9	40.3
350N-050	8/28/01	280039.043	820951.911	41 38 04.70	70 32 23.75	50	1.2	2.4	39.9
350N-075	8/28/01	280048.025	820948.033	41 38 04.57	70 32 23.36	75	3.5	1.0	39.0
350N-100	9/12/01	280057.525	820954.991	41 38 04.79	70 32 22.95	100	4.3	2.0	37.2
350N-125	9/12/01	280064.020	820953.259	41 38 04.73	70 32 22.67	125	6.2	2.0	35.3
350N-150	9/12/01	280070.824	820949.219	41 38 04.60	70 32 22.38	150	8.2	2.0	33.3
350N-175	9/12/01	280077.601	820947.985	41 38 04.56	70 32 22.08	175	11.0	2.0	30.5
350N-200	9/12/01	280081.786	820942.524	41 38 04.38	70 32 21.91	200	12.3	2.0	29.2
400N-000	8/23/01	280037.708	820968.581	41 38 05.24	70 32 23.80	0	0.0	1.4	42.1
400N-005	8/23/01	280040.016	820968.908	41 38 05.25	70 32 23.70	5	0.4	1.8	41.3
400N-010	8/23/01	280040.743	820966.871	41 38 05.18	70 32 23.67	10	0.8	1.6	41.1
400N-025	8/23/01	280045.603	820965.147	41 38 05.13	70 32 23.46	25	1.8	1.4	40.3
400N-050	8/23/01	280052.281	820963.256	41 38 05.06	70 32 23.17	50	3.4	1.5	38.6
400N-075	8/31/01	280061.741	820961.658	41 38 05.01	70 32 22.76	75	4.4	2.0	37.1
400N-100	8/31/01	280068.985	820959.012	41 38 04.92	70 32 22.45	100	7.6	2.0	33.9
450N-000	8/28/01	280047.617	820979.060	41 38 05.58	70 32 23.36	0	0.0	2.0	41.5
450N-005	8/28/01	280048.433	820978.244	41 38 05.55	70 32 23.33	5	0.3	2.0	41.2
450N-010	8/28/01	280050.475	820977.631	41 38 05.53	70 32 23.24	10	0.9	2.0	40.6
450N-025	8/28/01	280054.149	820976.203	41 38 05.48	70 32 23.08	25	1.7	2.0	39.8

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August 22–September 13, 2001—*continued*

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Measured in field, unfiltered			Measured in laboratory, filtered						
	Specific conductance (μS/cm)	Oxygen, dissolved (mg/L)	Orthophosphate (mg/L as P)	Phosphorus (mg/L as P)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Nitrate (mg/L as N)	Nitrite (mg/L as N)	Ammonia (mg/L as N)
150N-125	101.0	0.095	0.880	0.650	0.088	0.019	0.572	< 0.070	< 0.010	0.693
150N-150	95.7	.055	< .098	< .075	.055	.012	1.09	2.06	< .010	.963
150N-175	201	.110	< .098	< .075	.057	.058	6.78	.959	< .010	.845
150N-200	171	.150	< .098	< .075	.074	.042	4.95	.968	< .010	.719
150N-225	210	.070	< .098	< .075	.041	.077	6.10	1.86	< .010	1.05
200N-000	71.3	.250	< .098	< .075	.032	.014	.009	.354	< .010	< .070
200N-005	121	.850	.212	.088	.062	.023	.006	1.92	< .010	< .070
200N-010	202	.035	.701	.255	.090	.276	.033	1.48	.030	< .070
200N-025	273	.115	.489	.422	.100	.017	.911	2.63	.050	< .070
200N-050	185	.010	1.11	.984	.103	.015	1.10	< .070	< .010	.074
200N-075	193	.035	1.14	.466	.071	.051	3.57	< .070	< .010	.785
200N-100	267	.045	.636	.091	.067	.055	6.30	< .070	< .010	1.00
200N-125	275	.010	.130	< .075	.071	.131	6.62	< .070	< .010	.851
200N-150	229	.005	.098	< .075	.132	.345	5.84	< .070	< .010	.887
200N-175	292	1.08	< .098	< .075	.067	.195	8.55	< .070	< .010	1.65
200N-225	125	.695	< .098	< .075	.078	.730	.710	< .070	< .010	.669
200N-250	156	.860	< .098	--	--	--	--	--	< .010	1.09
250N-000	77.1	.525	< .098	< .075	.013	.023	.020	.144	< .010	< .070
250N-005	78.2	3.35	< .098	< .075	.016	.012	.010	.174	< .010	< .070
250N-010	102	3.05	< .098	< .075	.033	.019	.006	1.23	< .010	< .070
250N-025	252	.630	.473	.125	.075	.024	4.45	5.25	.080	< .070
250N-050	155	.070	.147	< .075	.063	.016	3.60	.176	.080	< .070
250N-075	130	.070	1.01	.507	.055	.023	3.70	< .070	< .010	< .070
250N-100	129	.075	< .098	< .075	.068	.021	3.57	< .070	< .010	< .070
250N-125	125	.500	.945	.522	.061	.016	3.11	< .070	< .010	< .070
250N-150	160	.035	.310	.082	.070	.031	3.28	< .070	< .010	1.02
250N-175	157	.055	.114	< .075	.060	.022	3.09	< .070	< .010	.762
250N-200	148	.060	< .098	< .075	.096	.245	3.17	< .070	< .010	1.69
250N-250	145	.100	< .098	< .075	.049	.044	3.96	.913	< .010	.604
300N-000	68.8	.205	.179	< .075	.050	.845	.478	< .070	< .010	< .070
300N-005	122	.100	< .098	< .075	.060	.021	.017	1.64	< .010	< .070
300N-010	142	.045	.212	.095	.051	.015	1.94	.263	.040	< .070
300N-025	134	.010	.799	.379	.062	.018	3.18	< .070	< .010	< .070
300N-050	132	.000	1.19	.319	.044	.028	3.63	< .070	< .010	< .070
300N-075	136	.035	.375	.084	.080	.050	4.45	< .070	< .010	< .070
300N-100	159	.070	.228	< .075	.062	.015	3.64	< .070	< .010	2.66
300N-125	142	.635	.571	< .075	.261	.519	.039	< .070	< .010	.717
300N-150	140	.565	< .098	< .075	.039	.024	4.15	1.14	< .010	.986
350N-005	83.1	4.47	< .098	< .075	.023	.018	.025	.513	< .010	.071
350N-025	100	2.12	.538	< .075	.046	.009	.022	1.65	< .010	< .070
350N-050	159	.050	--	--	--	--	--	--	< .010	1.03
350N-075	82.1	.060	.375	.231	.033	.030	1.22	.618	< .010	1.02
350N-100	101	3.21	.114	.171	.028	.086	1.24	2.44	< .010	1.50
350N-125	96.5	2.36	.147	< .075	.030	.073	.381	2.40	< .010	2.01
350N-150	96.5	1.75	< .098	< .075	.034	.160	.294	2.21	< .010	.767
350N-175	91.4	1.88	.228	.083	.060	.200	.029	.269	< .010	2.83
350N-200	89.0	--	< .098	< .075	.026	.137	.021	< .070	< .010	< .070
400N-000	65.6	3.30	.228	< .075	.016	.012	.015	.425	< .010	< .070
400N-005	147	.080	1.89	1.71	.064	.015	2.61	.628	.050	< .070
400N-010	189	.060	1.45	.527	.068	.012	6.71	.622	.060	< .070
400N-025	163	.045	1.24	.706	.077	.018	3.43	< .070	< .010	1.87
400N-050	81.3	.045	1.32	.702	.029	.018	1.90	.617	< .010	.831
400N-075	107	.245	< .098	< .075	.023	.025	1.12	2.66	< .010	1.39
400N-100	98.2	.390	< .098	< .075	.030	.066	.252	2.44	< .010	2.26
450N-000	71.0	5.81	< .098	< .075	.012	.027	.045	.247	< .010	.071
450N-005	140	.970	1.78	2.14	.042	.016	.641	.685	< .010	.218
450N-010	149	.085	2.54	2.18	.063	.015	4.79	< .070	< .010	.101
450N-025	182	.120	1.39	.945	.063	.021	4.51	< .070	< .010	1.70

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August–September 2001—continued

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Date sampled	Easting (m)	Northing (m)	Latitude (° ′ ″)	Longitude (° ′ ″)	Distance from shore (ft)	Water depth (ft)	Drive depth (ft)	Altitude of bottom of drive point (ft)
450N-075	9/13/01	280073.972	820973.461	41 38 05.39	70 32 22.23	75	5.4	2.0	36.1
450N-100	9/12/01	280080.345	820968.178	41 38 05.21	70 32 21.96	100	8.1	2.5	32.9
450N-125	9/12/01	280088.346	820970.611	41 38 05.29	70 32 21.61	125	10.0	2.5	31.0
500N-000	8/22/01	280058.482	820991.146	41 38 05.96	70 32 22.89	0	0.0	2.0	41.5
500N-005	8/22/01	280060.260	820991.086	41 38 05.96	70 32 22.81	5	0.4	2.0	41.1
500N-010	8/22/01	280061.578	820990.967	41 38 05.96	70 32 22.75	10	0.8	2.0	40.7
500N-025	8/23/01	280065.901	820987.909	41 38 05.86	70 32 22.57	25	1.8	1.8	39.9
500N-050	8/23/01	280073.449	820986.462	41 38 05.81	70 32 22.24	50	3.7	1.2	38.6
500N-075	8/30/01	280081.806	820985.284	41 38 05.77	70 32 21.88	75	5.4	2.0	36.1
500N-100	8/30/01	280089.217	820983.116	41 38 05.69	70 32 21.56	100	8.1	2.0	33.4
550N-000	8/28/01	280066.359	821003.860	41 38 06.37	70 32 22.54	0	0.0	1.8	41.7
550N-005	8/28/01	280068.190	821003.040	41 38 06.35	70 32 22.46	5	0.5	1.6	41.4
550N-010	8/28/01	280071.188	821002.138	41 38 06.32	70 32 22.33	10	0.8	2.0	40.7
550N-025	8/28/01	280076.974	820999.780	41 38 06.24	70 32 22.09	25	1.9	1.9	39.7
550N-050	8/28/01	280084.119	820997.530	41 38 06.16	70 32 21.78	50	3.5	1.3	38.7
550N-100	9/12/01	280098.204	820996.521	41 38 06.12	70 32 21.17	100	7.4	2.0	34.1
550N-125	9/12/01	280105.183	820991.115	41 38 05.95	70 32 20.87	125	11.3	2.0	30.2
600N-000	8/22/01	280075.807	821016.575	41 38 06.78	70 32 22.13	0	0.0	2.0	41.5
600N-005	8/22/01	280076.993	821015.594	41 38 06.75	70 32 22.08	5	0.5	1.5	41.5
600N-010	8/22/01	280078.462	821015.369	41 38 06.74	70 32 22.01	10	1.0	1.8	40.7
600N-025	8/22/01	280082.639	821013.801	41 38 06.69	70 32 21.83	25	1.9	1.5	40.1
600N-050	8/22/01	280089.965	821011.727	41 38 06.62	70 32 21.52	50	3.6	1.4	38.5
600N-075	8/30/01	280098.175	821007.211	41 38 06.47	70 32 21.17	75	5.6	2.0	35.9
600N-100	8/30/01	280106.335	821009.819	41 38 06.55	70 32 20.81	100	7.1	2.3	34.1
600N-150	8/30/01	280122.356	821010.550	41 38 06.57	70 32 20.12	150	9.7	1.8	32.0
650N-000	8/28/01	280082.000	821034.000	41 38 07.34	70 32 21.85	0	0.0	1.5	42.0
650N-005	8/28/01	280082.000	821032.000	41 38 07.28	70 32 21.85	5	0.4	1.5	41.6
650N-010	8/28/01	280083.500	821030.195	41 38 07.22	70 32 21.79	10	1.0	1.6	40.9
650N-025	8/28/01	280086.360	821030.195	41 38 07.22	70 32 21.67	25	2.0	1.9	39.6
650N-050	8/28/01	280091.050	821028.560	41 38 07.17	70 32 21.46	50	3.7	1.3	38.5
650N-075	9/12/01	280107.169	821024.519	41 38 07.03	70 32 20.77	75	5.0	2.5	36.0
650N-100	9/11/01	280114.857	821021.168	41 38 06.92	70 32 20.44	100	6.3	3.0	34.2
650N-125	9/11/01	280121.285	821020.334	41 38 06.89	70 32 20.16	125	7.5	3.0	33.0
650N-150	9/11/01	280129.554	821023.532	41 38 06.99	70 32 19.80	150	8.9	3.0	31.6
650N-175	9/11/01	280137.511	821019.345	41 38 06.85	70 32 19.46	175	11.3	0.8	31.4
700N-000	8/22/01	280089.179	821043.013	41 38 07.63	70 32 21.54	0	0.0	1.0	42.5
700N-005	8/22/01	280090.380	821043.774	41 38 07.66	70 32 21.48	5	0.6	1.5	41.4
700N-010	8/22/01	280091.798	821042.497	41 38 07.62	70 32 21.42	10	1.1	2.5	39.9
700N-025	8/22/01	280095.950	821041.663	41 38 07.59	70 32 21.25	25	2.1	1.4	40.0
700N-050	9/12/01	280106.808	821041.805	41 38 07.59	70 32 20.78	50	3.7	2.0	37.8
700N-075	9/11/01	280113.071	821038.375	41 38 07.48	70 32 20.51	75	4.0	2.0	37.5
700N-100	9/11/01	280120.075	821038.563	41 38 07.48	70 32 20.20	100	4.8	2.0	36.7
700N-125	9/11/01	280127.340	821028.940	41 38 07.16	70 32 19.90	125	6.2	2.0	35.3
700N-150	9/11/01	280136.600	821033.426	41 38 07.31	70 32 19.49	150	7.9	3.0	32.6
750N-000	8/28/01	280093.740	821058.078	41 38 08.12	70 32 21.33	0	0.0	1.3	42.2
750N-005	8/29/01	280097.078	821057.332	41 38 08.10	70 32 21.19	5	0.5	1.1	41.9
750N-010	8/29/01	280098.594	821057.082	41 38 08.09	70 32 21.12	10	0.9	1.2	41.4
750N-025	8/29/01	280102.821	821055.710	41 38 08.04	70 32 20.94	25	2.0	1.7	39.8
750N-050	8/29/01	280110.332	821053.802	41 38 07.98	70 32 20.62	50	2.8	1.7	39.0
750N-075	8/29/01	280117.823	821052.639	41 38 07.94	70 32 20.29	75	3.7	1.2	38.6
800N-000	8/22/01	280106.187	821068.717	41 38 08.46	70 32 20.79	0	0.0	2.0	41.5
800N-005	8/22/01	280108.053	821067.439	41 38 08.42	70 32 20.71	5	0.5	2.0	41.0
800N-010	8/22/01	280109.161	821066.581	41 38 08.39	70 32 20.66	10	0.7	2.0	40.8
800N-025	8/22/01	280113.555	821064.736	41 38 08.33	70 32 20.47	25	1.3	1.5	40.7
800N-050	8/22/01	280121.122	821062.994	41 38 08.27	70 32 20.15	50	2.2	1.5	39.8

**Table 2.** Physical properties of sampling locations and chemical analyses of groundwater samples collected from temporary drive points below the pond bottom, Ashumet Pond, Cape Cod, Massachusetts, August–September 2001—*continued*

[Easting and Northing: State plane coordinates are for North American Datum of 1983 (NAD83). Latitude and longitude in degrees (°), minutes (′), and seconds (″). Altitude refers to distance above or below the National Geodetic Vertical Datum of 1929. Source of phosphorus, boron, iron, and manganese data: Douglas B. Kent, U.S. Geological Survey, National Research Program, Menlo Park, California. Source of nitrogen data: Richard L. Smith, U.S. Geological Survey, National Research Program, Boulder, Colorado. ft, foot; m, meter; μS/cm, microsiemens per centimeter at 25 degrees Celsius; <, actual value less than value shown; --, no data. Pond stage on 8/27/2001 was 43.50 ft. Locations of sites shown in figure 3]

Site identifier	Measured in field, unfiltered			Measured in laboratory, filtered						
	Specific conductance (μS/cm)	Oxygen, dissolved (mg/L)	Orthophosphate (mg/L as P)	Phosphorus (mg/L as P)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Nitrate (mg/L as N)	Nitrite (mg/L as N)	Ammonia (mg/L as N)
450N-075	113.2	0.810	< 0.098	< 0.075	0.024	0.082	0.247	3.319	< 0.010	3.48
450N-100	90.8	2.72	.147	< .075	.028	.047	.109	2.14	.010	< .070
450N-125	96.7	3.23	< .098	< .075	.026	.066	.138	2.40	< .010	2.30
500N-000	62.1	2.57	.098	< .075	.010	.029	.041	< .070	< .010	< .070
500N-005	122	.080	.603	.484	.031	.010	.018	.503	< .010	< .070
500N-010	133	.015	2.35	2.99	.040	.020	.804	.145	< .010	< .070
500N-025	192	.010	1.87	1.49	.055	.020	3.28	< .070	< .010	1.31
500N-050	95.2	.100	2.05	1.87	.021	.013	1.77	1.12	< .010	.798
500N-075	112	.065	.098	< .075	.021	.028	.888	2.99	< .010	3.38
500N-100	103	.020	.114	< .075	.024	.235	.473	2.45	< .010	2.35
550N-000	69.7	6.25	.130	< .075	.010	.038	.032	< .070	< .010	.077
550N-005	189	3.63	.864	.854	.017	.021	.009	.624	< .010	.073
550N-010	137	6.29	1.63	1.18	.020	.021	7.51	.711	< .010	.149
550N-025	209	.120	1.81	1.41	.033	.115	4.44	< .070	< .010	2.51
550N-050	103	.080	1.52	1.18	.020	.022	2.27	1.45	< .010	1.18
550N-100	122	3.08	< .098	< .075	.023	.066	.051	2.55	< .010	3.85
550N-125	82.0	9.39	.391	< .075	.016	.059	.014	.446	< .010	< .070
600N-000	85.6	1.24	< .098	< .075	.011	.025	.038	.223	< .010	< .070
600N-005	128	4.69	.375	.260	.021	.012	.013	.629	< .010	< .070
600N-010	174	.005	1.84	1.34	.028	.011	3.37	1.34	< .010	.876
600N-025	133	.050	2.77	2.44	.024	.012	1.84	1.29	< .010	1.59
600N-050	113	1.30	.945	.545	.015	.013	2.28	.991	< .010	< .070
600N-075	135	.630	< .098	< .075	.016	.063	.140	2.44	< .010	3.71
600N-100	99.2	2.24	< .098	< .075	.008	.068	.016	.600	< .010	< .070
600N-150	97.7	.000	.212	.179	.033	.615	.541	< .070	< .010	1.15
650N-000	124	8.75	< .098	< .075	.014	.023	.033	1.64	< .010	.073
650N-005	110	7.07	.913	.960	.027	.016	.006	.404	< .010	< .070
650N-010	163	.080	1.52	1.37	.020	.012	2.39	1.58	< .010	1.22
650N-025	89.9	.540	.652	.451	.019	.012	2.45	2.00	< .010	< .070
650N-050	98.1	7.93	.261	< .075	.016	.022	.073	.790	< .010	< .070
650N-075	105	--	< .098	< .075	.012	.110	.038	.628	< .010	< .070
650N-100	102	8.89	< .098	< .075	.011	.093	.007	.706	< .010	< .070
650N-125	125	2.25	< .098	< .075	.030	.348	.035	< .070	< .010	.082
650N-150	93.7	8.21	.261	< .075	.017	.110	.010	.673	< .010	< .070
650N-175	123	--	.815	.105	.032	.415	4.93	< .070	< .010	.982
700N-000	90.7	1.50	< .098	< .075	.022	.023	.048	< .070	< .010	< .070
700N-005	127	1.60	.391	.369	.021	.005	.010	.342	< .010	< .070
700N-010	158	1.91	.734	.501	.020	.009	.023	.560	< .010	< .070
700N-025	79.9	1.31	< .098	< .075	.015	.010	.593	.766	< .010	< .070
700N-050	101	8.96	< .098	< .075	.015	.042	.039	.704	< .010	< .070
700N-075	92.6	9.12	< .098	< .075	.015	.034	.024	.709	< .010	< .070
700N-100	91.9	9.75	< .098	< .075	.012	.069	.027	.747	< .010	< .070
700N-125	101	9.73	< .098	< .075	.027	.130	.026	.675	< .010	< .070
700N-150	94.9	1.90	< .098	.081	.057	.616	.047	< .070	< .010	1.15
750N-000	93.0	5.03	< .098	< .075	.011	.061	.078	.204	< .010	.138
750N-005	117	8.99	< .098	< .075	.016	.044	.048	.437	< .010	< .070
750N-010	112	9.61	< .098	< .075	.018	.016	.018	.455	< .010	< .070
750N-025	77.2	10.6	.130	< .075	.014	.009	.010	.347	< .010	< .070
750N-050	66.5	10.9	.391	< .075	.015	.014	.009	.435	< .010	< .070
750N-075	136	6.38	< .098	< .075	.034	.025	.005	.897	< .010	< .070
800N-000	93.0	1.20	< .098	< .075	.011	.115	.087	.863	< .010	< .070
800N-005	87.9	1.38	< .098	< .075	.011	.037	.063	.947	< .010	< .070
800N-010	86.3	1.40	< .098	< .075	.012	.043	.069	1.36	< .010	< .070
800N-025	93.5	1.38	< .098	< .075	.033	.023	.034	.330	< .010	< .070
800N-050	105	.190	< .098	< .075	.030	.018	.028	.895	< .010	< .070