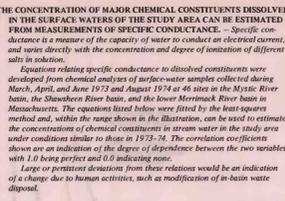
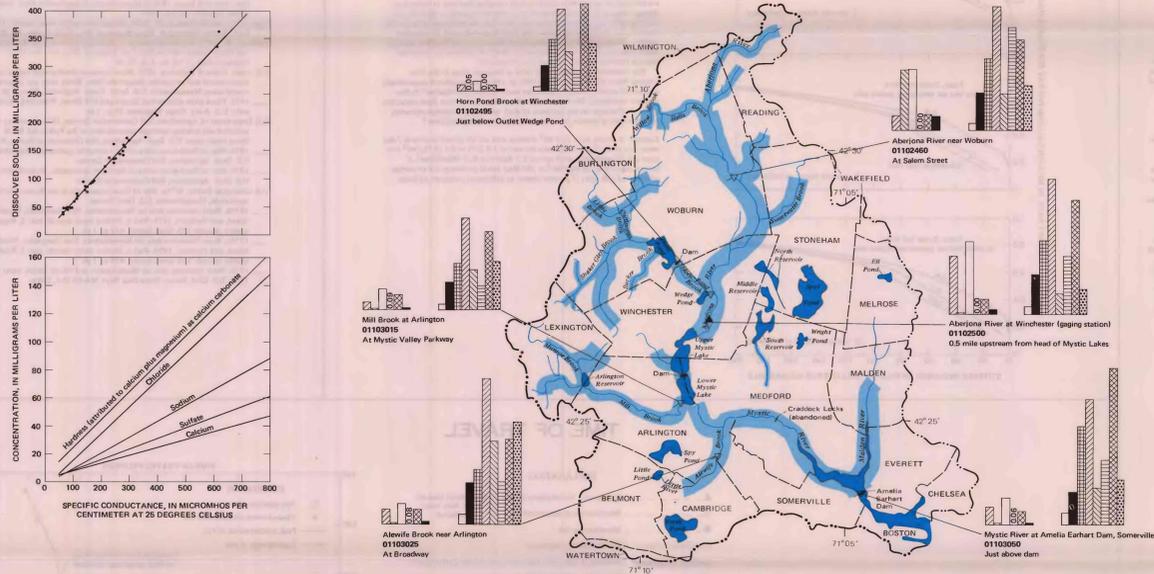


QUALITY OF WATER

SURFACE WATER



THE CONCENTRATION OF MAJOR CHEMICAL CONSTITUENTS DISSOLVED IN THE SURFACE WATERS OF THE STUDY AREA CAN BE ESTIMATED FROM MEASUREMENTS OF SPECIFIC CONDUCTANCE. Specific conductance is a measure of the capacity of water to conduct an electrical current, and varies directly with the concentration and degree of ionization of different salts in solution.

MAJOR DISSOLVED-SOLIDS CONCENTRATION IN STREAM WATER OF THE ABERJONA AND MYSTIC RIVER BASINS DOES NOT VARY GREATLY THROUGHOUT THE AREA EXCEPT IN A FEW TRIBUTARIES, WHERE RELATIVELY LOW VALUES WERE OBSERVED.

Before completion of the Cradock Locks, 2.30 river miles downstream from the outlet of the Lower Mystic Lake, the lake, the upper half of the Mystic River, and Alewife Brook were part of the tidalwater area of Boston Harbor.

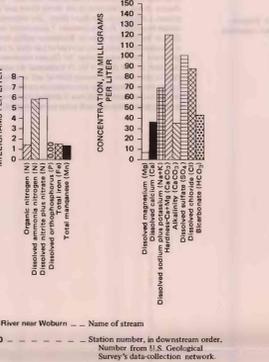
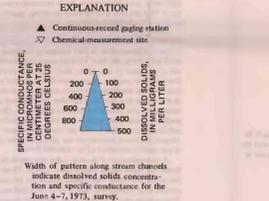


Table 3. - HARDNESS CLASSIFICATION¹

Hardness range, in milligrams per liter of calcium carbonate (CaCO ₃)	Description
0 - 60	Soft
61 - 120	Moderately hard
121 - 180	Hard
More than 180	Very hard

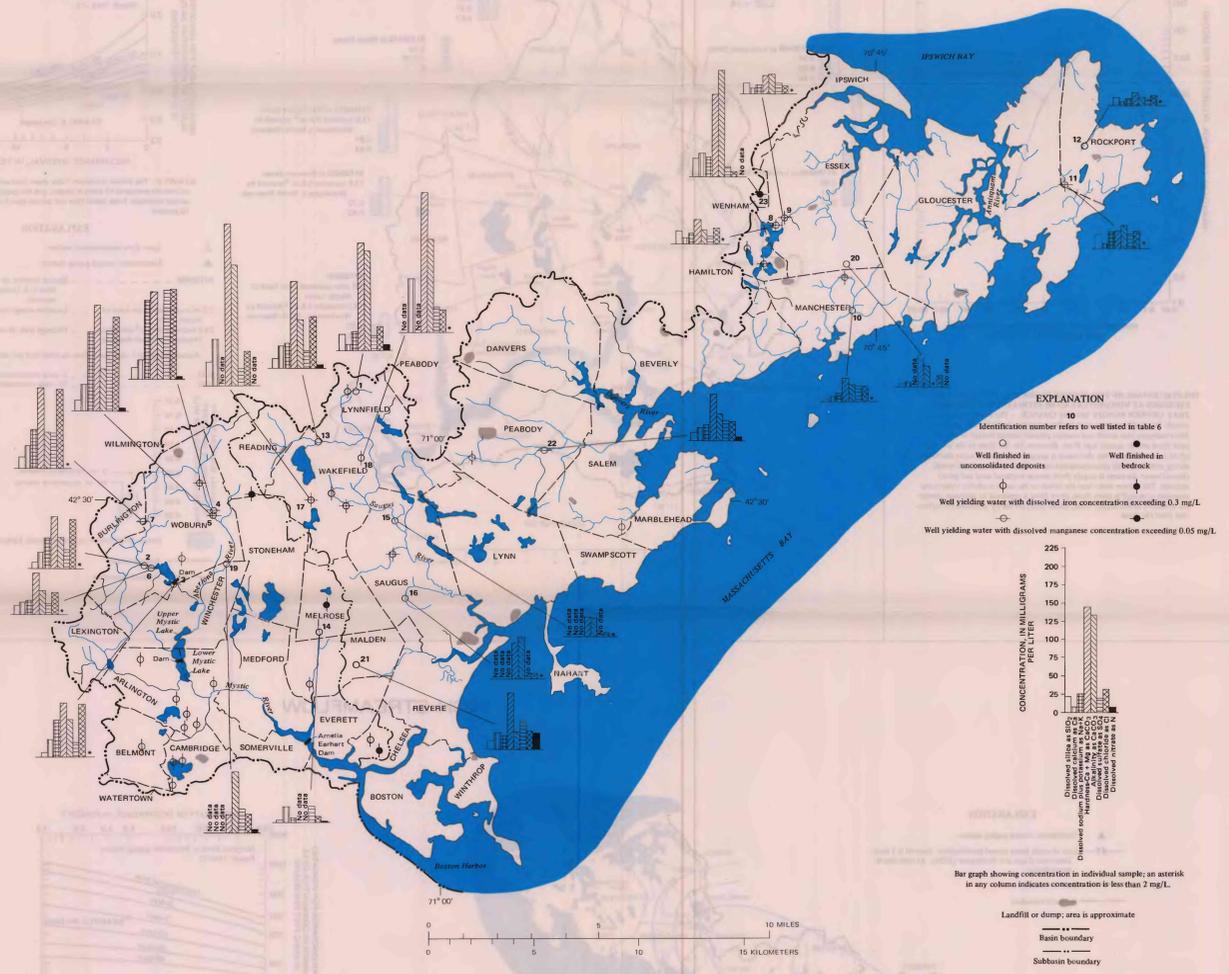
¹Durfee and Becker, 1964.

SELECTED REFERENCES

Beauregard, D. G., 1975. Mystic River 1973 water quality analysis, part C. Massachusetts Water Resources Commission, Div. Water Pollution Control, 61 p., 1 app., containing 4 pages.

Durfee, C. N., and Becker, Edith, 1964. Public water supplies of the 100 largest cities in the United States, 1962. U.S. Geol. Survey Water-Supply Paper 1812, 364 p.

GROUND WATER



GROUND-WATER QUALITY IS GENERALLY GOOD THROUGHOUT THE COASTAL DRAINAGE BASINS, AND THE WATER IS SUITABLE FOR MOST USES.

Table 5. - SUMMARY OF CHEMICAL ANALYSES OF GROUND WATER

Table 4. - RECOMMENDED MAXIMUM CONCENTRATION OF SOLUBLE SUBSTANCES IN PUBLIC WATER-SUPPLY SOURCES¹

Soluble substance	Concentration, in milligram per liter
ammonia nitrogen	0.5
chloride	250
iron	0.3
manganese	05
nitrate nitrogen	10
nitrite nitrogen	1
sulfate	250

Table 5. - SUMMARY OF CHEMICAL ANALYSES OF GROUND WATER

Constituent	Concentration				Number of samples analyzed
	Maximum	Minimum	Median		
Silica (SiO ₂)	33	1.8	13	19	
Copper (Cu)	0.9	0	0.02	16	
Iron (Fe)	7.4	0	0.60	52	
Manganese (Mn)	6.0	0	0.11	29	
Calcium (Ca)	62	4.6	21	21	
Magnesium (Mg)	33	1.8	4.7	21	
Sodium (Na)	100	9	22	16	
Potassium (K)	6.0	1.0	2.2	15	
Bicarbonate (HCO ₃)	197.5	12.2	49	22	
Sulfate (SO ₄)	119	0	22	21	
Chloride (Cl)	125	5.3	25	23	
Nitrate (N)	20	0	1.1	20	
Hardness (Ca + Mg as CaCO ₃)	218	17	70	22	
Alkalinity (CaCO ₃)	162	10	41	21	
pH (units)	7.8	6.0	6.7	22	
Color (platinum-cobalt units)	160	0	5	20	
Specific conductance (micromhos per centimeter at 25°C)	800	82	287	16	

¹National Academy of Sciences and National Academy of Engineering, 1973.

Table 6. - DESCRIPTION OF SELECTED WELLS

Map Identification No.	U.S. Geological Survey well No.	Description of well(s)	Well type ¹	Date sampled ²	Aquifer (dominant material listed first)
1	L6W-7	Lynnfield, Phillips Road well field	T2 ¹	2-26-74	Sand and gravel
2	XRW-54	Woburn, well E	GP	12-10-74	Coarse sand and gravel
3	XRW-49	Woburn, well TA	GP	12-10-74	Gravel
4	XRW-419	Woburn, well G	GP	12-10-74	Medium sand and gravel
5	XRW-420	Woburn, well H	GP	12-10-74	Sand and gravel
6	XRW-421	Woburn, well F	GP	9-10-74	Do.
7	84W-8	Burlington, Wyman Street well field	T4	5-24-74	Do.
8	EXW-9	Essex, Central Green well 3	GP	6-04-74	Do.
9	EXW-15	Essex, Homans Drive well 2	GP	2-06-74	Sand and gravel
10	MCV-8	Manchester, Lincoln Street well	GP	10-13-74	Coarse sand and gravel
11	RHW-3	Rockport, test well	T2 ¹	10-17-73	Sand and gravel
12	RHW-9	Rockport, Millbrook Valley well field	T2 ¹	2-26-74	Do.
13	WAW-6	Wakefield, Bay State well	D	12-10-74	Do.
14	MCW-3	Wakefield Engineering Company well	T2 ¹	1-13-50	Gravel
15	SEW-2	Saugus, test well	T	1-18-39	Coarse sand and gravel
16	SEW-4	Saugus, test well	T	1-18-39	Sand and gravel
17	WAW-11	Wakefield Bearing Company well	S8	6-23-72	Do.
18	WAW-18	Wakefield Engineering Company well	T2	11-04-71	Coarse sand and gravel
19	XOW-27	Athletic Glatfelter well 1	S8	3-27-57	Sand and gravel
20	EXW-4	Glocester, emergency well 2	S8	12-30-65	Sand and gravel
21	MAW-14	Friend Brothers, Inc., well	GP	6-09-59	Coarse sand and gravel
22	PCW-4	Eastman Colgate Corporation well	S16	6-09-59	Coarse sand and gravel
23	HCW-188	U.S. Air Force well, 30 ft deep	R	8-23-63	Granite

¹T, driven well; GP, gravel-packed well; D, dug well; S, naturally developed, screened well; R, bedrock well; number is casing diameter, in inches.