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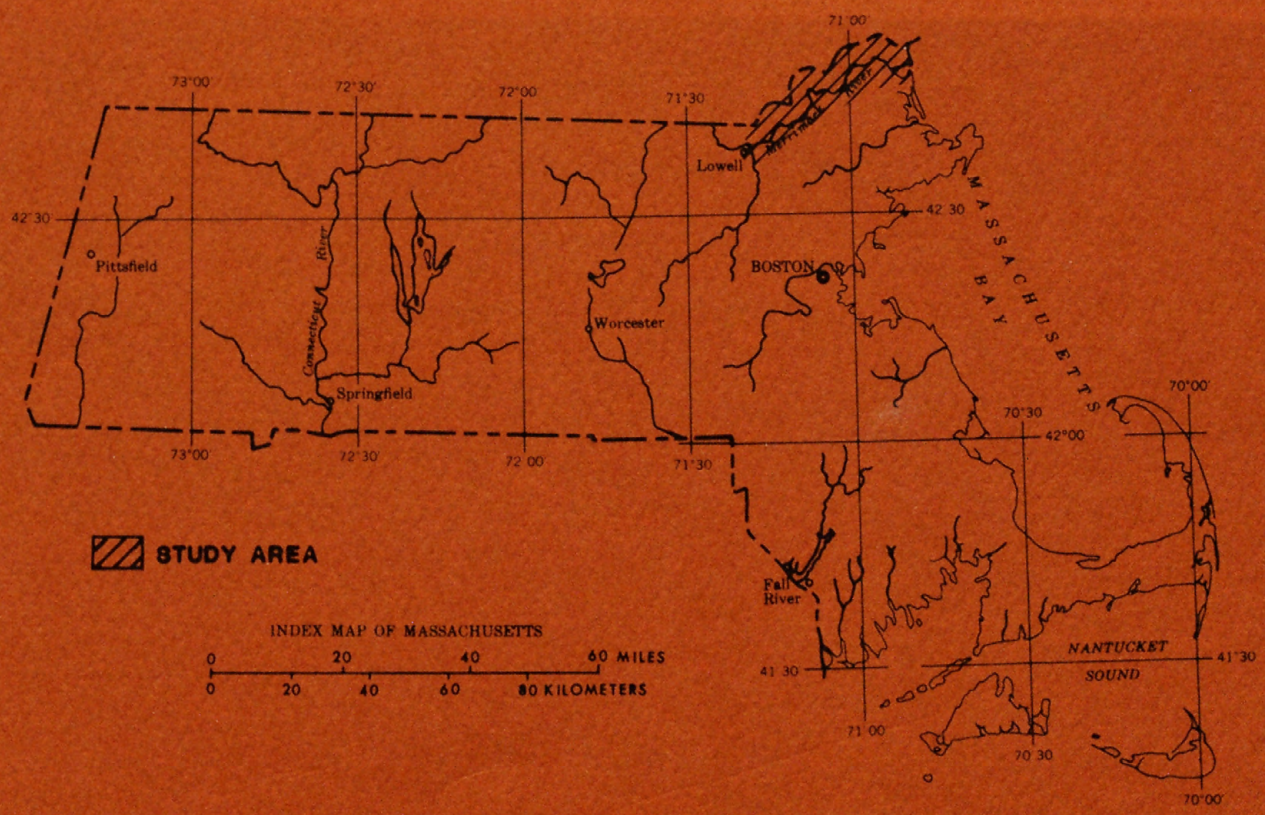
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MASSACHUSETTS HYDROLOGIC-DATA REPORT NO. 24

HYDROLOGIC DATA OF THE LOWER MERRIMACK RIVER BASIN, MASSACHUSETTS, FROM CONCORD RIVER, LOWELL, TO PLUM ISLAND, NEWBURYPORT



Prepared in cooperation with the
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
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UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

HYDROLOGIC DATA OF THE LOWER MERRIMACK RIVER BASIN, MASSACHUSETTS, FROM CONCORD RIVER, LOWELL, TO PLUM ISLAND, NEWBURYPORT

By

David F. Delaney and Frederick B. Gay

Massachusetts Hydrologic-Data Report No. 24

Open-file report
(Geological Survey
(U.S.)

Records of selected wells, borings, and chemical analyses of ground water

Prepared in cooperation with the

COMMONWEALTH OF MASSACHUSETTS, WATER RESOURCES COMMISSION

Boston, Massachusetts

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HYDROLOGIC DATA OF THE LOWER MERRIMACK RIVER BASIN, MASSACHUSETTS, FROM CONCORD RIVER, LOWELL, TO PLUM ISLAND, NEWBURYPORT

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INTRODUCTION

The lower Merrimack River basin study area drains approximately 180 square miles along the New Hampshire border in northeastern Massachusetts. This area includes parts of the Merrimack River basin within Massachusetts east of the Beaver Brook and Concord River basins, except for the Shawsheen River basin. Even though the Blackwater River basin within Massachusetts isn't part of the lower Merrimack River basin, it has been included in this report. Principal tributaries to the Merrimack River, which discharges to the Atlantic Ocean at Newburyport, Massachusetts, are: Bare Meadow, Bartlett, Cobbler Creek, Fish, Richardson, and Trull Brooks, Artichoke, East Meadow, Indian, Little, Powwow, and Spicket Rivers, and Johnson Creek. The area includes all or parts of the following cities and towns in Essex and Middlesex Counties:

Amesbury	Haverhill	Newburyport
Andover	Lawrence	North Andover
Boxford	Lowell	Salisbury
Dracut	Merrimac	Tewksbury
Georgetown	Methuen	West Newbury
Groveland	Newbury	

This report presents, in tabular form, selected records of wells, test wells, and borings; chemical analyses of ground water compiled from 1972 to 1974; and a list of publications containing data on ground-water levels in the study area.

Most streamflow data collected for this study are published separately in the U.S. Geological Survey annual water-data reports for the 1973, 1974, and 1975 water years. Daily mean discharge of the Merrimack River below Concord River at Lowell and the East Meadow River near Haverhill gaging stations, and discharge measurements at selected sites in the study area are published in U.S. Geological Survey (1975a, p. 66, 68, 256, 260, 266, 267; 1975b, p. 67, 69, 253, 254, 258, 264, 266, 267; 1976, p. 48, 258, 259, 262). Data collected at the Merrimack River at West Newbury water-quality monitoring station and chemical analyses of surface-water samples collected at selected sites in the lower Merrimack River basin are published in U.S. Geological Survey (1975a, p. 294-297, 393-401; 1975b, p. 295-301, 410-412; 1976, p. 50-58).

This report is released to make available hydrologic information that may aid in planning water-resources and related development. Records contained in this report, streamflow data published in the annual water-data reports, streamflow data published elsewhere (U.S. Geological Survey, 1954, et seq.), and water data in the files of the U.S. Geological Survey, Boston, Massachusetts, complement an interpretive report of the lower Merrimack River basin (Gay and Delaney, 1980).

The authors wish to acknowledge the public officials, well drillers, consulting firms, industrial concerns, and individual homeowners who have given their time and information to the study.

DEFINITION OF TERMS

Definition of terms related to streamflow, water quality, and other hydrologic data, as used in this report, are defined as follows:

Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892, p. 427-428). A unit of color is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion.

The extent to which water is colored by material in solution is reported as part of the water analysis because a significant color in water may indicate the presence of organic material that may have some bearing on the dissolved-solids content.

Discharge is the volume of water (or more broadly, total fluids) that passes a given point within a given period of time.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Milligrams per liter (mg/L) is a unit for expressing the concentration of chemical constituents in a sample. Milligrams per liter represents the weight of constituents per unit volume of sample. Milligrams per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in the table below.

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})	0.11119	Iron (Fe^{+3})	0.05372
Ammonia as NH_4^{+1}	.05544	Lead (Pb^{+2})	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})	.14411
Calcium (Ca^{+2})	.04990	Magnesium (Mg^{+2})	.08226
Carbonate (CO_3^{-2})	.03333	Manganese (Mn^{+2})	.03640
Chloride (Cl^{-1})	.02821	Nitrate (NO_3^{-1})	.01613
Chromium (Cr^{+6})	.11539	Nitrite (NO_2^{-1})	.02174
Cobalt (Co^{+2})	.03394	Potassium (K^{+1})	.02557
Copper (Cu^{+2})	.03148	Sodium (Na^{+1})	.04350
Fluoride (F^{-1})	.05264	Strontium (Sr^{+2})	.02283
Hydrogen (H^{+1})	.99209	Sulfate (SO_4^{-2})	.02082
Hydroxide (OH^{-1})	.05880	Zinc (Zn^{+2})	.03060

pH is a symbol denoting the relative concentration of hydrogen ions in a solution; pH values range from 0 to 14--the lower the value, the more acid the solution; that is, the more hydrogen ions it contains.

Refusal is a drilling term indicating the depth of a drill hole at which further penetration is impossible or impractical with the equipment being used.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content of the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

Water year is the 12-month period that begins with October 1 and ends with September 30.

CONVERSION FACTORS

The following table may be used to convert inch-pound units to International System of Units (SI).

Multiply inch-pound units	By	To obtain SI Units
	Length	
inch (in)	25.4	millimeter (mm)
	0.0254	meter (m)
foot (ft)	0.3048	meter (m)
yard (yd)	0.9144	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
square mile (mi^2)	2.590	square kilometer (km^2)
	Flow	
gallon per minute (gal/min)	0.06309	liter per second (L/s)
	0.06309	cubic decimeter per second (dm^3/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)

SELECTED REFERENCES

Gay, F. B., and Delaney, D. F., 1980, Hydrology and water resources of the lower Merrimack River basin, Massachusetts, from Concord River, Lowell, to Plum Island, Newburyport: U.S. Geological Survey Hydrologic Investigations Atlas HA-616.

Hazen, Allen, 1892, A new color standard for natural waters: American Chemical Journal, v. 12, p. 427-428.

Hem, J. D., 1970, Study and interpretation of the chemical characteristics of natural water; U.S. Geological Survey Water-Supply Paper 1473, 363 p., 2d ed.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geological Survey Water-Supply Paper 1541-A, 29 p.

Maevsky, Anthony, 1976, Ground-water levels in Massachusetts, 1936-74: U.S. Geological Survey open-file report, Massachusetts Hydrologic-Data Report No. 17, 107 p.

Massachusetts Department of Public Health, 1974, (and annually in previous years), Report of routine chemical and physical analyses of public water supplies in Massachusetts, 1974: Boston, Mass., Division of Environmental Health.

Sammel, Edward A., and Baker, John A., 1962, Lower Ipswich River drainage basin: U.S. Geological Survey open-file report, Massachusetts Basic-Data Report No. 2, 47 p.

U.S. Geological Survey, 1954, Compilation of records of surface waters of the United States through September 1950, part 1-A, North Atlantic slope basins, Maine to Connecticut: U.S. Geological Survey Water-Supply Paper 1301, 380 p., 1 pl.

_____1964, Compilation of records of surface waters of the United States, October 1950 to September 1960, part 1-A, North Atlantic slope basins, Maine to Connecticut: U.S. Geological Survey Water-Supply Paper 1721, 317 p., 1 pl.

_____1967, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1966: Boston, Mass., Water Resources Division, 291 p., 1 pl.

_____1968, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1967: Boston, Mass., Water Resources Division, 305 p., 1 pl.

_____1969a, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1968: Boston, Mass., Water Resources Division, 305 p., 1 pl.

_____1969b, Surface water supply of the United States, 1961-65, part 1, North Atlantic slope basins, v. 1, Basins from Maine to Connecticut: U.S. Geological Survey Water-Supply Paper 1901, 1027 p., 1 pl.

_____1970, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1969: Boston, Mass., Water Resources Division, 347 p., 1 pl.

_____1971, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1970: Boston, Mass., Water Resources Division, 373 p., 1 pl.

_____1973, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1971: Boston, Mass., Water Resources Division, 401 p., 1 pl.

_____1974, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1972: Boston, Mass., Water Resources Division, 394 p., 1 pl.

_____1975a, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1973: Boston, Mass., Water Resources Division, 433 p., 1 pl.

_____1975b, Water resources data for Massachusetts, New Hampshire, Rhode Island, Vermont, 1974: Boston, Mass., Water Resources Division, 429 p., 1 pl.

_____1976, Water resources data for Massachusetts and Rhode Island, MA-RI 75-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-75-1, 288 p.

_____1977, Water resources data for Massachusetts and Rhode Island, MA-RI 76-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-76-1, 300 p.

_____1978, Water resources data for Massachusetts and Rhode Island, MA-RI 77-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-77-1, 304 p.

_____1979, Water resources data for Massachusetts and Rhode Island, MA-RI 78-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-78-1, 310 p.

_____1980, Water resources data for Massachusetts and Rhode Island, MA-RI 79-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-79-1, 349 p.

_____1981, Water resources data for Massachusetts and Rhode Island, MA-RI 80-1: Boston, Mass., U.S. Geological Survey Water-Data Report MA-RI-80-1, 348 p.

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS

LOCAL WELL NUMBER: LETTER PREFIX INDICATES--A, U.S. GEOLOGICAL SURVEY AUGER BORING; B, BRIDGE BORING; R, ROADWAY BORING; W, WELL OR TEST WELL (THE "W" IS OMITTED FROM PLATE 1 TO CONSERVE SPACE); X, MISCELLANEOUS TEST BORING.

LATITUDE-LONGITUDE: NUMBER FOLLOWING DECIMAL POINT IS A SEQUENTIAL NUMBER FOR WELLS OR BORINGS IN A 1-SECOND GRID.

ALTITUDE OF LAND-SURFACE DATUM: ALTITUDES ARE EXPRESSED IN FEET ABOVE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD OF 1929), FORMERLY CALLED "MEAN SEA LEVEL;" NGVD OF 1929 IS REFERRED TO AS SEA LEVEL IN THIS REPORT; THOSE PRECEDED BY A MINUS SIGN ARE BELOW SEA LEVEL.

METHOD DRILLED: A, AIR-ROTARY; B, BORED OR AUGERED; C, CABLE TOOL; D, DUG; H, HYDRAULIC-ROTARY; J, JETTED; P, AIR-PERCUSSION; R, REVERSE-ROTARY; T, TRENCHED; V, DRIVEN; W, DRIVE-WASH.

WELL FINISH: C, POROUS CONCRETE; F, GRAVEL WALL WITH PERFORATED OR SLOTTED CASING; G, GRAVEL WALL WITH COMMERCIAL SCREEN; H, HORIZONTAL GALLERY OR COLLECTOR; O, OPEN END; P, PERFORATED OR SLOTTED CASING; S, SCREEN; T, SAND POINT; W, WALLED OR SHORED; X, OPEN HOLE IN AQUIFER (GENERALLY CASED TO AQUIFER).

WELL DEPTH: DEPTH OF FINISHED WELL, IN FEET BELOW LAND SURFACE.

WELL USE: A, ANODE; D, DRAINAGE; G, SEISMIC HOLE; H, HEAT RESERVOIR; O, OBSERVATION (PERIOD OF RECORD IS LISTED IN TABLE 4); P, OIL OR GAS; R, RECHARGE; T, TEST; U, UNUSED; W, WATER WITHDRAWAL; X, WASTE DISPOSAL; Z, DESTROYED.

WATER-BEARING MATERIAL: PRINCIPAL WATER-BEARING ZONE.

ADJECTIVE (FIRST CHARACTER)		LITHOLOGY (SECOND CHARACTER)	
1	VERY FINE GRAINED	A	ALLUVIUM
2	FINE GRAINED	B	SEDIMENTARY ROCK, UNCLASSIFIED
3	MEDIUM GRAINED	C	CONGLOMERATE
4	COARSE GRAINED	D	DOLOMITE
5	VERY COARSE GRAINED	E	GYPSUM OR ANHYDRITE
6	CLAYEY	F	SHALE
7	SILTY	G	GRAVEL
8	SANDY	H	IGNEOUS, GRANULAR (GABBRO, GRANITE, ETC.)
9	GRAVELLY	I	IGNEOUS, APHANITIC OR GLASSY (BASALT, ETC.)
0	CAVERNOUS	J	IGNEOUS, UNCONSOLIDATED (TUFF, VOLCANIC ASH)
A	ARGILLACEOUS	K	SAPROLITE
B	BOULDERY	L	LIMESTONE
C	CALCAREOUS	M	MARL OR SHELL MARL
D	DENSE	N	METAMORPHIC, CORASE GRAINED (GNEISS, MARBLE, QUARTZITE)
E	CONCRETIONARY	O	METAMORPHIC, FINE GRAINED (SCHIST, SLATE)
F	IRONSTAINED OR IRON CEMENTED	P	CLAY
G	GRANULAR	Q	SILT OR LOESS
H	HARD	R	SAND AND GRAVEL
I	INTERBEDDED	S	SAND
J	JOINTED OR FRACTURED	T	TILL
K	COLUMNAR	U	UNCONSOLIDATED SEDIMENT
L	LAMINATED OR BANDED	V	SANDSTONE
M	MASSIVE	W	SILTSTONE
N	NONCALCAREOUS	X	SILTY SAND
O	ORGANIC	Y	CLAYEY GRAVEL
P	POORLY SORTED	Z	OTHER
Q	CHERTY OR SILICEOUS		
R	REDBED		
S	SOFT		
T	"SALT AND PEPPER"		
U	UNCONSOLIDATED		
V	SEMICONSOLIDATED		
W	WELL SORTED		
X	CROSS BEDDED		
Y	SHALY OR SLATY		
Z	WEATHERED		

WATER LEVEL: LEVELS ARE GIVEN IN FEET BELOW LAND SURFACE; "+" INDICATES WATER LEVEL ABOVE LAND SURFACE; "D" INDICATES DRY WELL; "F" INDICATES FLOWING WELL.

WATER USE: A, AIR CONDITIONING; B, BOTTLING; C, COMMERICAL; D, DEWATERING; E, POWER GENERATION; F, FIRE PROTECTION; H, DOMESTIC; I, IRRIGATION; M, MEDICINAL; N, INDUSTRIAL (INCLUDES MINING); P, PUBLIC SUPPLY; R, RECREATION; S, STOCK; T, INSTITUTIONAL; U, UNUSED; V, REPRESSURIZATION; W, RECHARGE; X, DESALINATION--PUBLIC SUPPLIES; Y, DESALINATION--OTHER SUPPLIES.

PUMPAGE/YIELD: IN GALLONS PER MINUTE (GAL/MIN); "Z" INDICATES WELL DID NOT YIELD WATER.

PUMPAGE/DRAWDOWN: THE DIFFERENCE BETWEEN STATIC WATER LEVEL AND PUMPING LEVEL.

PUMPAGE/TIME: THE FOLLOWING CODES ARE USED FOR PUMPING PERIODS OF LESS THAN 1 HOUR: A, THROUGH 15 MINUTES; B, 16 to 30 MINUTES; C, 31 TO 45 MINUTES; D, 46 TO 59 MINUTES.

LOG: D, DRILLER'S LOG; E, ELECTRIC LOG; G, GEOLOGIST'S LOG AVAILABLE IN TABLE 2.

QW: TYPE OF CHEMICAL ANALYSIS AVAILABLE IN TABLE 3. C, COMPLETE; P, PARTIAL.

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL: DIAMETER (IN)	WELL: FINISH	WELL: DEPTH (FT)	WELL: USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER: LEVEL (FT)	WATER: DATE MEASURED	WATER: USE	PUMPAGE: YIELD (GPM)	PUMPAGE: DD (FT)	PUMPAGE: TIME (HR)	LOG	QW
							AMESBURY											
A 1	425230N0705456.1	50	US GEOL SURVEY	1963 B	4	X	98	T	--	1S	--	--	U	--	--	--	G	-
A 2	425220N0705450.1	50	US GEOL SURVEY	1963 B	4	X	97	T	--	1S	--	--	U	--	--	--	G	-
A 3	425144N0705445.1	90	US GEOL SURVEY	1963 B	4	X	8	T	--	--	--	--	U	--	--	--	G	-
A 4	425238N0705549.1	50	US GEOL SURVEY	1963 B	4	X	14	T	--	7P	3	8-63	U	--	--	--	G	-
A 5	425204N0705545.1	60	US GEOL SURVEY	1963 B	4	X	37	T	--	7P	7	8-63	U	--	--	--	G	-
A 6	425146N0705515.1	40	US GEOL SURVEY	1963 B	4	X	90	T	--	1X	11	8-63	U	--	--	--	G	-
A 7	425030N0705600.1	70	US GEOL SURVEY	1963 B	4	X	4	T	--	--	--	--	U	--	--	--	G	-
A 8	425020N0705558.1	95	US GEOL SURVEY	1963 B	4	X	56	T	--	R	--	--	U	--	--	--	G	-
A 9	425124N0705436.1	95	US GEOL SURVEY	1963 B	4	X	37	T	--	T	9	10-63	U	--	--	--	G	-
A 10	425136N0705759.1	95	US GEOL SURVEY	1963 B	4	X	56	T	--	1X	7	10-63	U	--	--	--	G	-
A 11	425136N0705814.1	105	US GEOL SURVEY	1963 B	4	X	52	T	--	2S	25	10-63	U	--	--	--	G	-
A 12	425139N0705954.1	112	US GEOL SURVEY	1963 B	4	X	48	T	--	R	10	10-63	U	--	--	--	G	-
A 14	425003N0705753.1	84	US GEOL SURVEY	1963 B	4	X	12	T	--	2S	8	11-63	U	--	--	--	G	-
B 1	425051N0705504.1	32	MDPW	1960 -	--	-	64	T	--	--	4	4-60	U	--	--	--	D	-
B 3	425104N0705445.1	92	MDPW	1960 -	--	-	30	T	18	--	D	-60	U	--	--	--	D	-
B 4	425049N0705405.1	56	MDPW	1951 -	--	-	74	T	--	--	--	--	U	--	--	--	D	-
B 5	425007N0705441.1	-10	MDPW	1950 -	--	-	37	T	26	--	+10	11-50	U	--	--	--	D	-
B 6	425010N0705438.1	55	MDPW	1950 -	--	-	25	T	15	--	--	--	U	--	--	--	D	-
B 7	425044N0705515.1	4	MDPW	1962 -	--	-	89	T	80	--	1	3-62	U	--	--	--	D	-
B 8	425047N0705518.1	14	MDPW	1962 -	--	-	103	T	88	--	7	5-62	U	--	--	--	D	-
B 9	425048N0705509.1	10	MDPW	1962 -	--	-	86	T	78	--	8	3-62	U	--	--	--	D	-
B 10	425003N0705759.1	81	MDPW	1960 -	--	-	35	T	30	--	0	1-60	U	--	--	--	D	-
B 11	425033N0705540.1	36	MDPW	1960 -	--	-	128	T	--	--	21	3-60	U	--	--	--	D	-
B 12	425022N0705613.1	70	MDPW	1960 -	--	-	60	T	--	--	10	4-60	U	--	--	--	D	-
B 13	425009N0705801.1	80	MDPW	1960 -	--	-	41	T	--	--	5	--	U	--	--	--	D	-
B 16	425041N0705410.1	57	MDPW	1952 -	--	-	132	T	--	--	4	6-52	U	--	--	--	D	-
B 17	425048N0705505.1	-4	MDPW	1928 -	--	-	48	T	--	--	+4	--	U	--	--	--	D	-
B 18	425111N0705525.1	49	MDPW	1948 W	--	-	41	T	--	--	--	--	U	--	--	--	D	-
B 19	425016N0705431.1	4	MDPW	1951 -	--	-	15	T	--	--	0	--	U	--	--	--	D	-
R 1	425029N0705420.1	18	MDPW	1965 -	--	-	10	T	--	--	3	6-65	U	--	--	--	D	-
R 2	425042N0705421.1	56	MDPW	1965 -	--	-	22	T	--	--	D	-65	U	--	--	--	D	-
R 10	425001N0705829.1	47	MDPW	1964 -	--	-	30	T	--	--	2	5-64	U	--	--	--	D	-
R 11	425002N0705811.1	108	MDPW	1960 -	--	-	32	T	--	--	21	2-60	U	--	--	--	D	-
R 13	425010N0705746.1	81	MDPW	1963 -	--	-	12	T	--	--	0	12-63	U	--	--	--	D	-
R 14	425008N0705725.1	81	MDPW	1963 -	--	-	11	T	--	--	0	12-63	U	--	--	--	D	-
R 15	425010N0705714.1	80	MDPW	1960 -	--	-	36	T	--	--	0	2-60	U	--	--	--	D	-
R 16	425011N0705659.1	98	MDPW	1963 -	--	-	11	T	--	--	2	12-63	U	--	--	--	D	-
R 17	425014N0705645.1	97	MDPW	1959 -	--	-	5	T	--	--	0	12-59	U	--	--	--	D	-
W 1	425010N0705548.1	15	MERRIMAC HAT CO	1936 C	8	X	700	W	--	--	20	-51	N	50	--	--	-	-
W 2	425010N0705548.2	15	MERRIMAC HAT CO	1941 C	8	X	700	W	--	--	20	-51	N	50	--	--	-	-
W 3	425140N0705919.1	110	AMESBURY	1953 W	2	-	33	T	--	--	5	--	U	100	8	8	D	-
W 5	425003N0705428.1	25	MELLOW JOHN	1960 C	6	X	356	W	5	--	27	6-60	R	8	--	--	-	-
W 6	424928N0705809.1	15	SYNDER ALTON	-- D	23	W	18	W	--	6S	4	3-62	H	--	--	--	-	C
W 7	425147N0705921.1	100	MILLS CHARLES G	1926 -	--	-	20	W	--	US	--	--	H	--	--	--	-	C
W 8	425129N0705915.1	110	AMESBURY	1953 W	2	-	41	T	--	UR	10	--	U	--	--	--	D	-
W 9	425114N0705932.1	105	AMESBURY	-- W	2	-	38	T	--	--	8	--	U	--	--	--	D	-
W 10	425100N0705814.1	105	AMESBURY	1953 W	2	-	31	T	--	--	0	--	U	--	--	--	D	-
W 11	425049N0705813.1	110	AMESBURY	-- W	2	-	22	T	--	T	0	--	U	--	--	--	D	-
W 12	425048N0705809.1	115	AMESBURY	1953 W	2	-	18	T	--	T	--	--	U	--	--	--	D	-
W 13	425045N0705808.1	110	AMESBURY	1953 W	2	-	49	T	--	T	--	--	U	--	--	--	D	-
W 14	425054N0705803.1	110	AMESBURY	1953 W	--	-	46	T	--	--	5	--	U	--	--	--	D	-
W 15	425039N0705809.1	120	AMESBURY	1953 W	2	-	55	T	--	--	--	--	U	--	--	--	D	-
W 16	425046N0705820.1	95	AMESBURY	1953 W	2	-	34	T	--	--	0	--	U	10	--	--	D	-
W 17	425141N0705817.1	95	AMESBURY	1953 W	2	-	66	T	--	--	5	--	U	--	--	--	D	-
W 18	425108N0705651.1	120	FORTIER JOHN	1920 D	24	W	14	W	--	7T	10	6-63	H	--	--	--	-	-
W 19	425127N0705720.1	140	WODSON JEWELL	1945 -	8	X	165	W	15	--	22	6-63	S	--	--	--	-	-
W 20	425155N0705449.1	193	PARKER FORREST	1928 -	4	X	210	W	--	--	--	--	H	2	--	--	-	-
W 21	424924N0705704.1	5	AMESBURY	1958 W	2	-	63	T	--	1X	5	--	U	--	--	--	D	-
W 22	424938N0705803.1	13	AMESBURY	1958 W	2	-	61	T	--	1X	10	--	U	--	--	--	D	-
W 23	424950N0705816.1	18	AMESBURY	1958 W	2	-	33	T	--	P	0	--	U	--	--	--	D	-
W 24	424947N0705811.1	18	AMESBURY	1958 W	2	-	30	T	--	P	0	--	U	--	--	--	D	-
W 25	424956N0705826.1	35	AMESBURY	1958 W	2	-	44	T	--	8P	0	--	U	--	--	--	D	-
W 26	425228N0705525.1	45	AMESBURY	1958 W	2	-	19	T	--	--	0	--	U	--	--	--	D	-
W 27	425141N0705910.1	115	AMESBURY	1959 W	2	S	40	T	--	3S	3	10-59	U	50	--	--	D	P
W 28	425138N0705913.1	90	AMESBURY	1959 W	2	O	28	T	--	R	4	10-59	U	40	--	--	D	P
W 29	425036N0705642.1	95	AMESBURY	1958 W	2	-	28	T	--	2G	2	4-58	U	20	4	--	D	-
W 30	425139N0705500.1	35	MELLON ALBIN S	-- D	24	O	6	W	--	--	3	6-63	I	--	--	--	-	-
W 31	424957N0705804.1	90	PENDER ROBERT	-- D	--	W	27	O	--	--	9	6-63	S	--	--	--	-	-
W 32	425219N0705540.1	90	VEDRANI PHILIP	-- D	--	W	17	W	--	T	9	6-63	S	--	--	--	-	-
W 33	425217N0705531.1	130	THERIAULT W	1926 D	30	-	46	W	--	7T	36	6-63	H	--	--	--	-	-
W 34	425221N0705519.1	100	GAMBLIN SAMUEL	-- D	30	W	14	U	--	7T	6	7-63	U	--	--	--	-	-
W 35	425024N0705813.1	185	RAYMOND C H	1919 D	60	W	41	O	--	7T	14	7-63	H	--	--	--	-	-
W 36	425224N0705522.1	80	ROY PHILLIP	-- D	20	O	7	W	--	7T	1	7-63	H	--	--	--	-	-
W 37	425010N0705428.1	10	KILLINGER ROSE	1887 D	24	W	13	W	--	1S	10	7-63	H	--	--	--	-	-
W 38	425019N0705722.1	109	CHERNICK ANNA	1904 D	28	W	22	O	--	1S	18	8-63	H	--	--	--	-	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ DRILLED	METHOD	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
			AMESBURY --CONTINUED																
W 39	425111N0705455.1	85	COTE M	--	D	24	O	11	O	--	1S	7	8-28	H	--	--	--	-	-
W 40	425003N0705714.1	100	LAVOIE GEORGE	1951	D	19	O	10	O	--	S	9	8-63	H	--	--	--	-	-
W 41	425125N0705437.1	100	BARCELOW A	--	D	32	W	16	O	--	--	10	8-63	H	--	--	--	-	-
W 42	425107N0705450.1	95	PARE ARMAND	--	D	24	W	12	W	--	1S	7	7-63	H	--	--	--	-	-
W 43	425057N0705440.1	73	EVANS WILLIAM V	--	D	36	W	24	O	--	1T	15	9-63	U	--	--	--	-	-
W 44	425019N0705547.1	113	FISHER HAROLD L	--	D	36	W	22	O	--	2S	19	9-63	U	--	--	--	-	-
W 45	425017N0705632.1	106	HART B	--	D	36	W	13	O	--	1T	12	9-63	H	--	--	--	-	-
W 46	425010N0705702.1	94	MOORE JOHN	1928	D	72	W	13	O	--	T	10	9-63	U	--	--	--	-	-
W 47	425142N0705823.1	95	AMESBURY	1911	W	2	-	53	W	--	--	5	--	P	425	--	--	D	-
W 48	425148N0705822.1	95	AMESBURY	1911	W	2	-	30	U	--	--	5	--	P	--	--	--	D	-
W 49	425135N0705823.1	85	AMESBURY	1958	W	2	-	39	W	--	2R	5	12-58	P	12	--	--	D	-
W 50	425133N0705821.1	85	AMESBURY	1958	W	2	-	36	W	--	2R	8	12-58	P	--	--	--	D	-
W 51	425135N0705827.1	85	AMESBURY	1959	W	2	-	40	W	--	R	4	1-59	P	35	--	--	D	-
W 52	425136N0705836.1	85	AMESBURY	1959	W	2	-	54	W	--	R	6	2-59	P	20	--	--	D	-
W 53	425016N0705602.1	35	AMESBURY	1958	-	8	S	50	T	--	R	3	10-58	U	182	21	43	D	-
W 55	424956N0705621.1	15	AMESBURY	1958	W	2	S	40	T	--	R	5	4-58	U	40	5	6	D	-
W 180	425102N0705441.1	95	COLLINS G E	1718	D	40	W	20	O	--	S	18	7-60	U	--	--	--	-	-
W 181	425202N0705714.1	185	BERNIER WILFRED	1860	D	36	O	13	O	--	T	8	7-60	U	--	--	--	-	-
W 182	425114N0705757.1	45	AMESBURY	1924	-	--	-	61	T	--	R	--	--	U	40	--	--	D	-
W 183	425040N0705828.1	100	AMESBURY	1924	-	--	-	35	T	--	--	--	--	U	Z	--	--	D	-
W 184	425207N0705513.1	15	AMESBURY	1925	-	--	-	44	T	--	--	--	--	U	Z	--	--	D	-
W 185	425138N0705841.1	85	AMESBURY	1974	-	12	S	50	W	--	R	2	4-74	P	510	12	51	D	P
			ANDOVER																
B 1	423846N0711112.1	169	MDPW	1956	-	--	-	15	T	--	--	8	9-56	U	--	--	--	D	-
B 6	424200N0711236.1	25	MDPW	1955	-	--	-	28	T	18	--	+19	10-55	U	--	--	--	D	-
B 7	424157N0711237.1	48	MDPW	1955	-	--	-	33	T	--	--	5	10-55	U	--	--	--	D	-
B 8	423939N0711155.1	113	MDPW	1959	-	--	-	52	T	--	--	0	8-59	U	--	--	--	D	-
B 10	423858N0711300.1	150	MDPW	1959	-	--	-	60	T	--	--	--	--	U	--	--	--	D	-
B 11	423931N0711206.1	162	MDPW	1959	-	--	-	22	T	--	--	--	--	U	--	--	--	D	-
B 13	423949N0711141.1	134	MDPW	1958	-	--	-	13	T	7	--	D	-58	U	--	--	--	D	-
B 14	424005N0711123.1	180	MDPW	1960	-	--	-	27	T	--	--	8	2-60	U	--	--	--	D	-
B 18	424000N0711122.1	185	MDPW	1960	-	--	-	26	T	--	--	6	1-60	U	--	--	--	D	-
B 19	423932N0711134.1	135	MDPW	1956	-	--	-	8	T	--	--	D	-56	U	--	--	--	D	-
B 20	424126N0711225.1	71	MDPW	1956	-	--	-	14	T	--	--	--	--	U	--	--	--	D	-
B 21	424039N0711201.1	139	MDPW	1956	-	--	-	13	T	--	--	4	9-56	U	--	--	--	D	-
R 1	423847N0711320.1	182	MDPW	1959	-	--	-	15	T	--	--	3	11-59	U	--	--	--	D	-
R 2	423901N0711245.1	126	MDPW	1959	-	--	-	30	T	--	--	D	11-59	U	--	--	--	D	-
R 3	423918N0711227.1	120	MDPW	1959	-	--	-	27	T	--	--	1	11-59	U	--	--	--	D	-
W 5	424129N0711143.1	60	CROWLEY JOHN	--	D	42	W	13	W	13	--	--	--	S	--	--	--	-	-
W 34	423923N0711324.1	218	JOHNSON A E	--	D	30	W	15	W	--	--	14	8-40	S	--	--	--	-	-
W 35	423951N0711341.1	180	ASOIAN JOHN	1940	D	42	W	13	W	7	P	9	8-40	H	--	--	--	-	-
W 38	423919N0711345.1	210	FLINT WILLIAM	1914	D	22	O	15	W	--	2S	0	--	S	--	--	--	-	-
W 48	423934N0711156.1	120	CHMIELECKI JOHN	1939	-	6	X	157	W	35	--	20	8-40	S	8	--	--	-	-
W 50	423947N0711116.1	140	KRIKORIAN HARRY	1937	D	36	O	16	W	--	--	13	8-40	H	--	--	--	-	-
W 51	423958N0711120.1	190	TISBERT A	1885	-	2	X	250	W	35	--	9	8-40	S	--	--	--	-	-
W 62	424129N0711204.1	71	BAILEY WILLIAM	--	D	24	W	19	U	--	--	13	8-40	U	--	--	--	-	-
W 478	424024N0711158.3	124	US GEOL SURVEY	1974	-	1	T	22	O	--	T	1	2-74	U	--	--	--	D	-
W 488	424023N0711201.1	101	US GEOL SURVEY	1974	-	1	T	10	O	--	T	0	2-74	U	--	--	--	D	-
W 514	424159N0711245.1	45	ANDOVER	1957	W	2	-	50	T	--	--	4	10-57	U	Z	--	--	D	-
W 515	424200N0711253.1	45	ANDOVER	1957	W	2	-	48	T	--	--	4	10-57	U	Z	--	--	D	-
W 531	423921N0711403.1	205	ANDOVER	1966	W	2	-	18	T	--	--	3	6-66	U	--	--	--	D	-
W 532	423925N0711400.1	205	ANDOVER	1966	W	2	-	17	T	--	--	5	--	U	--	--	--	D	-
W 541	424008N0711412.1	50	ANDOVER	1966	W	2	-	23	T	--	--	4	6-66	U	--	--	--	D	-
W 547	424116N0711330.1	50	ANDOVER	1966	W	2	-	22	T	--	--	3	6-66	U	--	--	--	D	-
			BOXFORD																
W 271	424326N0710405.1	135	MORSE STANWOOD	1933	D	42	W	24	W	--	8T	8	3-62	H	--	--	--	-	C
W 272	424325N0710300.1	130	PRICE ROSAMUND	1946	C	8	X	346	W	70	--	24	--	H	4	--	--	-	C
W 274	424315N0710425.1	148	US GEOL SURVEY	1962	B	4	X	4	T	--	--	D	7-62	U	--	--	--	G	-
W 276	424330N0710430.1	138	US GEOL SURVEY	1962	B	4	X	8	T	--	--	D	7-62	U	--	--	--	G	-
W 277	424331N0710418.1	120	US GEOL SURVEY	1962	B	4	X	15	T	--	--	D	-62	U	--	--	--	G	-
W 278	424320N0710345.1	105	US GEOL SURVEY	1962	B	4	X	3	T	--	--	D	7-62	U	--	--	--	G	-
W 279	424327N0710519.1	125	US GEOL SURVEY	1962	B	4	X	38	T	--	--	0	7-62	U	--	--	--	G	-
W 280	424330N0710524.1	125	US GEOL SURVEY	1962	B	4	X	32	T	--	--	0	7-62	U	--	--	--	G	-
W 281	424314N0710417.1	150	CHADWICK R P	1958	C	8	X	138	W	--	--	6	9-58	H	30	--	--	-	-
W 282	424306N0710455.1	180	HILL GEORGE H	1958	C	8	X	268	W	60	--	13	3-58	H	15	--	--	-	-
W 283	424356N0710452.1	100	EARLE NORMAN	1961	D	36	O	12	W	--	--	8	8-63	H	--	--	--	-	-
W 284	424248N0710455.1	155	NASON HENRY W	--	D	40	W	9	W	--	--	2	8-63	H	--	--	--	-	-
W 285	424335N0710352.1	120	SMALLMAN F A	--	V	8	W	63	W	--	--	20	8-63	H	--	--	--	-	-
W 287	424347N0710415.1	100	PAGE ARTHUR L	--	D	24	W	15	W	--	--	14	8-63	S	10	--	--	-	-
W 288	424346N0710435.1	90	BOXFORD	1967	W	2	-	38	T	--	--	5	1-67	U	--	--	--	D	-
W 289	424340N0710412.1	90	BOXFORD	1967	W	2	-	44	T	--	R	2	1-67	U	45	--	--	D	-
W 290	424305N0710425.1	135	BOXFORD	1967	W	2	-	15	T	--	--	0	--	U	--	--	--	-	-
W 291	424318N0710354.1	100	BOXFORD	1967	W	2	-	34	T	--	--	3	12-67	U	--	--	--	D	-
W 292	424410N0710451.1	105	BOXFORD	1961	W	2	-	20	T	--	--	5	--	U	--	--	--	-	-
W 293	424341N0710421.1	95	BOXFORD	1967	W	2	-	34	T	--	R	0	12-67	U	85	--	--	D	P

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
							HOXFORD --CONTINUED											
W 294	424403N0710457.1	125	CYR JOE S	1970	-	6	X	235	W	25	--	7	4-70	H	20	--	--	-	-
							DRACUT											
W 25	423931N0711605.1	60	QUINE	1930	-	6	X	66	W	20	--	--	--	H	--	--	--	-	-
W 26	423946N0711522.1	65	ARNOLD	1930	-	8	X	122	W	0	--	--	--	H	--	--	--	-	-
W 33	424202N0711536.1	140	BROX K	1934	D	48	-	14	W	--	--	--	--	S	--	--	--	-	-
W 37	423956N0711652.1	130	MCMANMON J J	1930	-	--	X	105	W	3	--	--	--	H	--	--	--	-	-
W 38	423934N0711546.1	55	GUILMOTT JOSEPH	1932	-	8	X	114	W	60	--	4	-38	H	--	--	--	-	-
W 40	423939N0711538.1	80	MC PHERSON JOHN	1930	-	6	X	109	W	85	--	--	--	H	10	36	8	-	-
W 42	424158N0711500.1	80	BROX ABRAHAM	1935	D	48	W	12	W	--	G	2	-38	S	44	--	--	-	-
W 60	423945N0711510.1	55	JOHNSON H	--	D	24	W	10	W	--	S	1	12-38	H	--	--	--	-	-
W 61	423932N0711556.1	60	GARLICK L	1916	D	72	W	30	W	--	--	--	--	H	--	--	--	-	-
W 149	424308N0711534.1	127		--	D	36	W	10	W	--	T	2	4-54	H	--	--	--	-	-
W 150	424251N0711525.1	165	DUFRESNE E	1949	-	6	X	173	W	10	--	--	--	H	5	--	--	-	C
W 156	424200N0711515.1	95	BROX ABRAHAM	1953	D	40	O	15	W	--	2R	8	4-54	H	--	--	--	-	-
W 160	424236N0711535.1	160	LEBRUN J	1933	D	30	W	20	W	--	T	3	4-54	H	--	--	--	-	C
W 168	423945N0711609.1	90	KENWOOD	1954	-	6	X	107	W	10	--	2	5-54	H	6	--	--	-	-
W 169	424118N0711618.1	180	MAILLE E	1953	-	6	X	173	W	20	--	--	--	H	--	--	--	-	-
W 170	424056N0711553.1	145	JUSCAZ JOHN	1951	D	24	W	14	W	--	--	6	5-54	H	--	--	--	-	-
W 176	424039N0711551.1	150	SPELCZAR	1924	-	6	X	145	W	30	--	15	--	H	12	--	--	-	-
W 177	423942N0711517.1	70	CLOUGH HENRY	--	D	36	W	20	W	--	--	12	5-54	H	--	--	--	-	-
W 181	423937N0711614.1	80	NALIFF	1954	-	6	X	61	W	8	--	4	5-54	H	2	--	--	-	-
W 185	423922N0711647.1	100	SHEEHAN JOSEPH	1930	-	6	O	95	W	--	--	16	5-54	H	--	--	--	-	-
W 192	423935N0711734.1	170	DUPREE HAROLD	1947	-	6	X	189	W	160	--	23	6-54	N	20	--	--	-	C
							GROVELAND											
B 1	424549N0710202.1	-6	MDPW	1949	-	--	-	48	T	--	--	+6	7-49	U	--	--	--	D	-
W 1	424425N0710208.1	60	US GEOL SURVEY	1962	B	4	X	33	T	--	--	5	--	U	--	--	--	G	-
W 2	424355N0710236.1	90	GEORGE L E	--	D	30	W	14	W	--	--	10	8-63	H	--	--	--	-	-
W 3	424611N0710140.1	10	US GEOL SURVEY	1962	B	4	X	58	T	--	--	8	--	U	--	--	--	G	-
W 4	424520N0710221.1	10	US GEOL SURVEY	1962	B	4	X	41	T	--	--	10	--	U	--	--	--	G	-
W 5	424442N0710202.1	60	US GEOL SURVEY	1962	B	4	X	69	T	--	--	2	7-62	U	--	--	--	G	-
W 6	424501N0710213.1	47	US GEOL SURVEY	1962	B	4	X	89	T	--	--	25	7-62	U	--	--	--	G	-
W 7	424557N0710133.1	36	US GEOL SURVEY	1962	B	4	X	28	T	22	--	0	7-62	U	--	--	--	G	-
W 8	424419N0710208.1	58	US GEOL SURVEY	1962	B	4	X	35	T	--	--	1	7-62	U	--	--	--	G	-
W 18	424506N0710210.1	10	GROVELAND	1965	R	24	G	93	W	--	2R	14	5-65	P	609	50	48	D	P
W 19	424506N0710232.1	10	GROVELAND	1973	-	24	G	56	W	--	--	7	9-71	P	500	--	--	D	P
W 20	424424N0710212.1	45	GROVELAND	1971	W	2	-	26	T	--	R	4	5-71	U	--	--	--	D	-
W 21	424416N0710210.1	75	GROVELAND	1971	W	2	-	15	T	--	--	--	--	U	--	--	--	D	-
W 22	424606N0710143.1	15	GROVELAND	1970	W	2	-	32	T	--	--	10	--	U	Z	--	--	D	-
W 23	424440N0710212.1	80	MASS WAT RES	1973	W	2	-	36	T	--	--	2	1-73	U	--	--	--	D	-
W 24	424440N0710207.1	80	MASS WAT RES	1973	W	2	-	45	T	--	--	2	1-73	U	Z	--	--	D	-
W 25	424440N0710158.1	80	MASS WAT RES	1973	W	2	-	36	T	--	--	2	1-73	U	--	--	--	D	-
W 26	424448N0710139.1	60	MASS WAT RES	1973	W	2	-	18	T	--	--	--	--	U	--	--	--	D	-
W 27	424457N0710152.1	40	MASS WAT RES	1973	W	2	-	18	T	--	--	5	--	U	--	--	--	D	-
W 28	424459N0710217.1	40	GROVELAND	1970	W	2	-	65	T	--	R	8	5-70	U	60	--	--	D	P
W 29	424501N0710201.1	30	GROVELAND	1970	W	2	-	15	T	--	--	5	5-70	U	--	--	--	-	-
W 30	424430N0710217.1	40	GROVELAND	1971	W	2	-	27	T	--	--	10	--	U	--	--	--	D	-
W 31	424450N0710240.1	30	GROVELAND	1971	W	2	-	55	T	--	--	10	--	U	--	--	--	D	-
							HAVERHILL											
A 1	424534N0710227.1	10	US GEOL SURVEY	1962	B	4	X	92	T	--	--	10	--	U	--	--	--	G	-
A 2	424611N0710157.1	10	US GEOL SURVEY	1962	B	4	X	74	T	--	--	10	--	U	--	--	--	G	-
A 3	424801N0710941.1	85	US GEOL SURVEY	1962	B	4	X	6	T	--	--	D	8-62	U	--	--	--	G	-
A 4	424641N0710131.1	10	US GEOL SURVEY	1962	B	4	X	45	T	--	--	10	--	U	--	--	--	G	-
A 5	424750N0710820.1	100	US GEOL SURVEY	1962	B	4	X	20	T	--	--	D	8-62	U	--	--	--	G	-
A 6	424826N0710004.1	10	US GEOL SURVEY	1962	B	4	X	86	T	--	--	10	--	U	--	--	--	G	-
A 7	424822N0710110.1	90	US GEOL SURVEY	1962	B	4	X	22	T	--	--	D	7-62	U	--	--	--	G	-
A 8	424802N0710121.1	50	US GEOL SURVEY	1962	B	4	X	18	T	--	--	12	7-62	U	--	--	--	G	-
A 9	424757N0710118.1	60	US GEOL SURVEY	1962	B	4	X	50	T	--	S	20	7-62	U	--	--	--	G	-
A 10	424648N0710159.1	45	US GEOL SURVEY	1962	B	4	X	18	T	--	G	3	7-62	U	--	--	--	G	-
A 11	424809N0710711.1	93	US GEOL SURVEY	1962	B	4	X	36	T	--	S	4	8-62	U	--	--	--	G	-
A 12	424717N0710139.1	100	US GEOL SURVEY	1962	B	4	X	64	T	--	--	D	7-62	U	--	--	--	G	-
A 13	424647N0710207.1	45	US GEOL SURVEY	1962	B	4	X	28	T	--	G	3	7-62	U	--	--	--	G	-
A 14	424524N0710258.1	18	US GEOL SURVEY	1962	B	4	X	39	T	--	G	18	7-62	U	--	--	--	G	-
A 15	424715N0710824.1	138	US GEOL SURVEY	1868	B	4	X	16	T	--	T	4	8-62	U	--	--	--	G	-
A 16	424402N0710336.1	78	US GEOL SURVEY	1962	B	4	X	32	T	--	G	8	7-62	U	--	--	--	G	-
A 17	424443N0710314.1	45	US GEOL SURVEY	1962	B	4	X	26	T	--	R	2	7-62	U	--	--	--	G	-
A 18	424403N0710351.1	92	US GEOL SURVEY	1962	B	4	X	23	T	--	--	12	--	U	--	--	--	G	-
A 19	424620N0710747.1	27	US GEOL SURVEY	1962	B	4	X	62	T	--	--	22	--	U	--	--	--	G	-
A 20	424541N0710615.1	22	US GEOL SURVEY	1962	B	4	X	57	T	--	R	19	8-62	U	--	--	--	G	-
A 21	424512N0710358.1	100	US GEOL SURVEY	1962	B	4	X	33	T	--	--	10	--	U	--	--	--	G	-
A 22	424503N0710251.1	65	US GEOL SURVEY	1962	B	4	X	23	T	--	--	--	--	U	--	--	--	G	-
A 23	424738N0710956.1	238	US GEOL SURVEY	1962	B	4	X	30	T	--	--	--	--	U	--	--	--	G	-
B 1	424608N0710715.1	53	MDPW	1959	-	--	-	47	T	42	--	3	10-59	U	--	--	--	D	-
B 2	424601N0710718.1	41	MDPW	1960	-	--	-	31	T	--	--	D	-60	U	--	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
				HAVERHILL --CONTINUED														
B 3	424604N0710718.1	1	MDPW	1960	-	--	-	48	T	42	--	+6	--	U	--	--	--	D	-
B 4	424541N0710724.1	35	MDPW	1960	-	--	-	16	T	8	--	0	-60	U	--	--	--	D	-
B 5	424503N0710637.1	65	MDPW	1959	-	--	-	30	T	--	--	2	-59	U	--	--	--	D	-
B 6	424807N0710305.1	130	MDPW	1959	-	--	-	24	T	--	--	0	10-59	U	--	--	--	D	-
B 7	424754N0710536.1	50	MDPW	1959	-	--	-	15	T	--	--	7	10-59	U	--	--	--	D	-
B 8	424808N0710524.1	65	MDPW	1959	-	--	-	16	T	--	--	4	10-59	U	--	--	--	D	-
B 9	424800N0710538.1	66	MDPW	1959	-	--	-	16	T	--	--	13	10-59	U	--	--	--	D	-
B 10	424747N0710537.1	31	MDPW	1959	-	--	-	13	T	--	--	0	11-59	U	--	--	--	D	-
B 11	424801N0710534.1	75	MDPW	1959	-	--	-	50	T	44	--	14	11-59	U	--	--	--	D	-
B 12	424747N0710609.1	22	MDPW	1959	-	--	-	32	T	27	--	2	10-59	U	--	--	--	D	-
B 13	424744N0710606.1	33	MDPW	1959	-	--	-	52	T	47	--	9	10-59	U	--	--	--	D	-
B 15	424734N0710629.1	100	MDPW	1959	-	--	-	40	T	35	--	8	10-59	U	--	--	--	D	-
B 16	424717N0710648.1	148	MDPW	1959	-	--	-	43	T	36	--	4	10-59	U	--	--	--	D	-
B 17	424700N0710658.1	90	MDPW	1959	-	--	-	57	T	52	--	2	10-59	U	--	--	--	D	-
B 18	424825N0710158.1	47	MDPW	1959	-	--	-	68	T	--	--	0	10-59	U	--	--	--	D	-
B 19	424822N0710157.1	47	MDPW	1959	-	--	-	24	T	--	--	0	10-59	U	--	--	--	D	-
B 20	424900N0710124.1	105	MDPW	1959	-	--	-	22	T	--	--	4	10-59	U	--	--	--	D	-
B 21	424901N0710121.1	111	MDPW	1959	-	--	-	9	T	--	--	5	10-59	U	--	--	--	D	-
B 22	424816N0710506.1	94	MDPW	1959	-	--	-	69	T	64	--	11	10-59	U	--	--	--	D	-
B 23	424816N0710400.1	123	MDPW	1959	-	--	-	36	T	--	--	16	10-59	U	--	--	--	D	-
B 24	424828N0710150.1	79	MDPW	1959	-	--	-	12	T	--	--	0	-59	U	--	--	--	D	-
B 25	424519N0710736.1	30	MDPW	1959	-	--	-	33	T	--	--	24	12-59	U	--	--	--	D	-
B 26	424551N0710210.1	6	MDPW	1949	-	--	-	60	T	--	--	4	7-49	U	--	--	--	D	-
B 27	424632N0710742.1	26	MDPW	1959	-	--	-	46	T	--	--	16	10-59	U	--	--	--	D	-
B 28	424532N0710727.1	40	MDPW	1960	-	--	-	10	T	--	--	5	-60	U	--	--	--	D	-
B 29	424451N0710635.1	58	MDPW	1960	-	--	-	10	T	--	--	0	-60	U	--	--	--	D	-
B 30	424627N0710437.1	-1	MDPW	1922	-	--	-	22	T	--	--	0	--	U	--	--	--	D	-
B 31	424622N0710435.1	00	MDPW	1922	-	--	-	48	T	--	--	0	--	U	--	--	--	D	-
B 32	424524N0710733.1	29	MDPW	1960	-	--	-	20	T	--	--	12	-64	U	--	--	--	D	-
B 33	424536N0710722.1	40	MDPW	1960	-	--	-	10	T	--	--	3	-60	U	--	--	--	D	-
B 34	424537N0710718.1	43	MDPW	1960	-	--	-	5	T	--	--	2	-60	U	--	--	--	D	-
B 35	424546N0710722.1	36	MDPW	1960	-	--	-	5	T	--	--	2	-60	U	--	--	--	D	-
B 36	424542N0710757.1	19	MDPW	1936	B	--	-	45	T	--	--	13	-36	U	--	--	--	D	-
R 1	424807N0710239.1	155	MDPW	1960	-	--	-	10	T	--	--	0	-60	U	--	--	--	D	-
R 2	424811N0710229.1	123	MDPW	1960	-	--	-	43	T	--	--	0	-60	U	--	--	--	D	-
R 4	424815N0710210.1	189	MDPW	1960	-	--	-	58	T	--	--	6	-60	U	--	--	--	D	-
R 5	424836N0710142.1	92	MDPW	1960	-	--	-	18	T	--	--	0	-60	U	--	--	--	D	-
R 6	424906N0710112.1	174	MDPW	1960	-	--	-	19	T	--	--	0	-60	U	--	--	--	D	-
R 7	424558N0710718.1	46	MDPW	1960	-	--	-	40	T	--	--	6	-60	U	--	--	--	D	-
R 8	424533N0710706.1	68	MDPW	1960	-	--	-	9	T	--	--	2	-60	U	--	--	--	D	-
R 9	424527N0710700.1	85	MDPW	1960	-	--	-	11	T	--	--	2	-60	U	--	--	--	D	-
R 10	424522N0710656.1	107	MDPW	1960	-	--	-	18	T	--	--	0	-60	U	--	--	--	D	-
R 11	424515N0710648.1	126	MDPW	1960	-	--	-	35	T	--	--	4	-60	U	--	--	--	D	-
R 12	424508N0710643.1	146	MDPW	1960	-	--	-	36	T	--	--	0	-60	U	--	--	--	D	-
R 13	424848N0710130.1	99	MDPW	1960	-	--	-	12	T	--	--	0	4-60	U	--	--	--	D	-
R 14	424618N0710711.1	71	MDPW	1959	-	--	-	35	T	--	--	14	10-59	U	--	--	--	D	-
R 15	424624N0710712.1	67	MDPW	1959	-	--	-	20	T	--	--	10	10-59	U	--	--	--	D	-
R 16	424619N0710708.1	53	MDPW	1959	-	--	-	10	T	--	--	4	10-59	U	--	--	--	D	-
R 17	424634N0710709.1	52	MDPW	1959	-	--	-	10	T	--	--	4	11-59	U	--	--	--	D	-
R 18	424634N0710713.1	42	MDPW	1959	-	--	-	26	T	--	--	10	11-59	U	--	--	--	D	-
R 19	424635N0710704.1	88	MDPW	1959	-	--	-	22	T	--	--	14	11-59	U	--	--	--	D	-
R 20	424609N0710646.1	50	MDPW	1959	-	--	-	15	T	--	--	9	11-59	U	--	--	--	D	-
R 22	424632N0710730.1	95	MDPW	1959	-	--	-	46	T	--	--	16	11-59	U	--	--	--	D	-
W 1	424544N0710638.1	80	FREEMAN CHARLES	--	D	84	W	10	W	--	--	1	3-62	H	30	--	--	-	P
W 2	424533N0710633.1	100	BOWE ELVIN	1952	C	6	X	403	W	--	--	31	-52	H	30	--	--	-	P
W 3	424832N0710309.1	240	MCCLAINE E	1927	D	30	O	28	W	--	--	11	9-64	H	--	--	--	-	-
W 4	424757N0710939.1	195	HALE JAMES	--	D	24	W	17	U	--	T	9	7-62	H	--	--	--	-	-
W 5	424842N0710855.1	80	ANTON STANLEY	--	D	30	W	14	W	--	7T	12	8-63	H	--	--	--	-	-
W 6	424703N0710833.1	145	COTE LEONARD J	--	D	42	W	9	W	--	7T	7	8-63	H	--	--	--	-	-
W 7	424834N0710907.1	195	LANGTON JOSEPH	--	D	32	W	21	W	--	1T	14	9-63	H	--	--	--	-	-
W 8	424749N0710902.1	205	MCLAUGHLIN E P	1951	D	38	W	18	W	--	1T	13	9-63	H	--	--	--	-	-
W 9	424742N0710902.1	200	BURNS DORIA S	1961	C	6	X	250	W	100	--	30	10-61	H	5	--	--	-	-
W 11	424642N0710755.1	125	GARDELLA C	--	D	60	W	17	W	--	7T	10	9-63	H	--	--	--	-	-
W 12	424646N0710231.1	55		--	D	30	W	8	U	--	--	3	3-64	H	--	--	--	-	-
W 13	424733N0710227.1	125	LEAVITT W H	1959	C	2	X	142	W	5	--	4	1-59	H	6	--	--	-	-
W 14	424921N0710159.1	95	ADAMS CHESTER	--	D	24	W	21	W	--	R	16	3-64	H	--	--	--	-	-
W 15	424845N0710228.1	100	SEAVER R S	1938	C	--	X	150	W	13	--	14	--	H	6	--	--	-	-
W 23	424841N0710043.1	100	HAMM BENJAMIN	1920	D	12	O	15	O	--	S	12	7-60	U	--	--	--	-	-
W 24	424806N0710408.1	170	ARAMIAN BERTHA	--	D	48	W	20	O	--	T	12	7-60	U	--	--	--	-	-
W 110	424706N0710131.1	70	YOKLEY,J	1948	D	--	O	--	W	--	--	--	--	H	--	--	--	-	C
W 162	424828N0710315.1	320	KIRBY	1920	D	12	O	29	O	--	T	15	9-62	H	--	--	--	-	C
W 175	424436N0710440.1	100	HAVERHILL	1959	W	2	-	14	T	--	--	5	--	U	--	--	--	D	-
W 176	424441N0710439.1	100	HAVERHILL	1959	W	2	-	15	T	--	--	5	--	U	--	--	--	D	-
W 177	424437N0710444.1	100	HAVERHILL	1959	W	2	-	14	T	--	--	5	--	U	--	--	--	D	-
W 178	424414N0710454.1	100	HAVERHILL	1959	W	2	-	36	T	--	--	8	--	U	--	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
			HAVERHILL --CONTINUED															
W 179	424414N0710500.1	110	HAVERHILL	1959 W	2	-	20	T	--	--	--	--	U	--	--	--	D	-
W 180	424414N0710506.1	115	HAVERHILL	1959 W	2	-	11	T	--	--	--	--	U	--	--	--	D	-
W 181	424437N0710507.1	110	HAVERHILL	1959 W	2	-	22	T	--	--	--	--	U	--	--	--	D	-
W 182	424441N0710507.1	100	HAVERHILL	1959 W	2	-	16	T	--	--	5	--	U	--	--	--	D	-
W 183	424408N0710420.1	100	HAVERHILL	1959 W	2	-	20	T	--	--	5	--	U	--	--	--	D	-
W 184	424435N0710356.1	85	HAVERHILL	1959 W	2	-	19	T	--	--	5	--	U	--	--	--	D	-
W 185	424418N0710348.1	90	HAVERHILL	1959 W	2	-	15	T	--	--	3	--	U	--	--	--	D	-
W 186	424416N0710351.1	90	HAVERHILL	1959 W	2	-	33	T	--	--	3	--	U	--	--	--	D	-
W 187	424405N0710351.1	80	HAVERHILL	1959 W	2	-	24	T	--	--	3	--	U	--	--	--	D	-
W 188	424410N0710355.1	85	HAVERHILL	1959 W	2	-	24	T	--	--	5	--	U	--	--	--	D	-
W 189	424752N0710127.1	50	HAVERHILL	1959 W	2	-	37	T	--	--	10	--	U	--	--	--	D	-
W 190	424757N0710138.1	45	HAVERHILL	1959 W	2	-	40	T	--	--	0	--	U	--	--	--	D	-
W 191	424821N0710148.1	60	HAVERHILL	1959 W	2	-	36	T	--	--	15	--	U	--	--	--	D	-
W 192	424819N0710155.1	50	HAVERHILL	1959 W	2	-	40	T	--	R	0	--	U	60	1	2	D	P
W 193	424747N0710152.1	55	HAVERHILL	1959 W	2	-	19	T	--	--	0	--	U	--	--	--	D	-
W 194	424723N0710157.1	50	HAVERHILL	1959 W	2	-	22	T	--	--	0	--	U	--	--	--	D	-
W 195	424709N0710204.1	50	HAVERHILL	1959 W	2	-	18	T	--	--	D	-59	U	--	--	--	D	-
W 196	424701N0710158.1	25	HAVERHILL	1959 W	2	-	17	T	--	--	3	--	U	--	--	--	D	-
W 197	424724N0710142.1	50	HAVERHILL	1959 W	2	-	56	T	--	R	9	-59	U	60	1	6	D	-
W 198	424619N0710225.1	25	HAVERHILL	1959 W	2	-	23	T	--	--	0	--	U	--	--	--	D	-
W 199	424820N0710137.1	60	HAVERHILL	1959 W	2	-	28	T	--	--	--	--	U	--	--	--	D	-
W 200	424816N0710133.1	55	HAVERHILL	1959 W	2	-	35	T	--	--	10	--	U	--	--	--	D	-
W 201	424806N0710126.1	50	HAVERHILL	1959 W	2	-	51	T	--	R	4	-59	U	62	3	2	D	P
W 202	424813N0710129.1	50	HAVERHILL	1971 W	2	-	40	T	--	--	5	--	U	--	--	--	D	P
W 203	424537N0710623.1	25	HAVERHILL	1965 W	2	-	50	T	--	--	5	--	U	--	--	--	D	-
W 204	424541N0710621.1	25	HAVERHILL	1965 W	2	-	16	T	--	--	5	--	U	Z	--	--	D	-
W 205	424709N0710734.1	45	HAVERHILL	1965 W	2	-	49	T	--	--	--	--	U	--	--	--	D	-
W 206	424742N0710542.1	25	HAVERHILL	1965 W	2	-	87	T	--	--	--	--	U	--	--	--	D	-
W 207	424803N0710612.1	35	HAVERHILL	1965 W	2	-	56	T	--	--	--	--	U	--	--	--	D	-
W 208	424800N0710623.1	25	HAVERHILL	1965 W	2	-	59	T	--	--	--	--	U	Z	--	--	D	-
W 209	424738N0710544.1	25	HAVERHILL	1965 W	2	-	79	T	--	--	5	--	U	Z	--	--	D	-
W 210	424533N0710243.1	15	HAVERHILL	1965 W	2	-	73	T	--	--	10	--	U	--	--	--	D	-
W 211	424532N0710232.1	15	HAVERHILL	1965 W	2	-	86	T	--	--	10	--	U	Z	--	--	D	-
W 212	424927N0710239.1	55	HAVERHILL	1971 W	2	-	41	T	--	--	0	--	U	--	--	--	D	-
W 213	424919N0710228.1	65	HAVERHILL	1971 W	2	-	49	T	--	--	5	--	U	Z	--	--	D	-
W 214	424916N0710224.1	65	HAVERHILL	1971 W	2	-	38	T	--	--	10	--	U	--	--	--	D	-
W 215	424922N0710238.1	55	HAVERHILL	1971 W	2	-	35	T	--	--	0	--	U	--	--	--	D	-
W 216	424553N0710655.1	88	AVCO	1961 -	--	X	300	W	58	--	--	--	N	50	--	--	-	-
W 217	424600N0710353.1	25	CONTINENTAL CAN	1968 -	2	S	74	T	--	7S	20	10-68	U	5	1	1	D	P
W 218	424553N0710356.1	25	CONTINENTAL CAN	1968 -	2	-	27	T	--	--	2	10-68	U	Z	--	--	D	-
W 219	424522N0710703.1	75	VERNON PLASTICS	1966 -	2	-	12	T	--	--	3	11-66	U	--	--	--	D	-
X 1	424626N0710442.1	12	MDPW	1936 -	--	-	46	T	25	--	10	--	U	--	--	--	D	-
X 2	424624N0710452.1	14	MDPW	1936 -	--	-	70	T	55	--	10	--	U	--	--	--	D	-
X 3	424620N0710505.1	15	MDPW	1936 -	--	-	61	T	54	--	10	--	U	--	--	--	D	-
X 5	424829N0710057.1	140	WHITIER REG SCH	1968 -	--	-	16	T	--	--	12	12-68	U	--	--	--	G	-
X 6	424830N0710033.1	110	WHITIER REG SCH	1968 -	--	-	16	T	--	--	1	9-68	U	--	--	--	G	-
X 7	424823N0710106.1	100	WHITIER REG SCH	1969 -	--	-	35	T	--	--	2	4-69	U	--	--	--	G	-
X 8	424825N0710128.1	105	WHITIER REG SCH	1969 -	--	-	74	T	--	--	53	4-69	U	--	--	--	G	-
X 9	424839N0710104.1	175	WHITIER REG SCH	1969 -	--	-	65	T	--	--	2	4-69	U	--	--	--	G	-
X 10	424858N0710120.1	105	WHITIER REG SCH	1969 -	--	-	44	T	--	--	4	4-69	U	--	--	--	G	-
X 11	424846N0710112.1	95	WHITIER REG SCH	1969 -	--	-	22	T	--	--	0	4-69	U	--	--	--	G	-
X 12	424838N0710132.1	105	WHITIER REG SCH	1969 -	--	-	20	T	--	--	2	4-69	U	--	--	--	D	-
X 13	424746N0710249.1	135	N ESSEX COM COL	1966 W	2	-	35	T	--	--	D	1-66	U	--	--	--	D	-
X 14	424742N0710241.1	140	N ESSEX COM COL	1966 W	2	-	20	T	--	--	18	1-66	U	--	--	--	D	-
X 15	424747N0710257.1	130	N ESSEX COM COL	1971 W	2	-	12	T	--	--	5	5-71	U	--	--	--	D	-
X 16	424742N0710248.1	130	N ESSEX COM COL	1966 W	2	-	24	T	--	--	8	1-66	U	--	--	--	D	-
X 17	424557N0710622.1	35	HAVERHILL	1972 -	2	-	24	T	--	--	12	11-72	U	--	--	--	D	-
X 18	424553N0710608.1	35	HAVERHILL	1972 -	2	-	31	T	--	--	12	11-72	U	--	--	--	D	-
X 19	424552N0710556.1	29	HAVERHILL	1972 -	2	-	20	T	--	--	18	12-72	U	--	--	--	D	-
X 20	424612N0710524.1	26	HAVERHILL	1972 -	2	-	17	T	--	--	14	12-72	U	--	--	--	D	-
X 21	424618N0710515.1	40	HAVERHILL	1972 -	2	-	25	T	--	--	--	--	U	--	--	--	D	-
X 22	424627N0710411.1	25	HAVERHILL	1972 -	2	-	28	T	18	--	13	11-72	U	--	--	--	D	-
X 23	424611N0710349.1	20	HAVERHILL	1972 -	2	-	28	T	17	--	8	11-72	U	--	--	--	D	-
X 24	424606N0710337.1	16	HAVERHILL	1972 -	2	-	27	T	--	--	8	11-72	U	--	--	--	D	-
X 25	424603N0710331.1	16	HAVERHILL	1972 -	2	-	21	T	11	--	12	11-72	U	--	--	--	D	-
X 26	424557N0710324.1	19	HAVERHILL	1972 -	2	-	28	T	18	--	10	11-72	U	--	--	--	D	-
X 27	424548N0710310.1	23	HAVERHILL	1972 -	2	-	25	T	--	--	16	11-72	U	--	--	--	D	-
X 28	424544N0710305.1	22	HAVERHILL	1972 -	2	-	25	T	--	--	17	11-72	U	--	--	--	D	-
X 29	424536N0710222.1	15	HAVERHILL	1972 -	2	-	20	T	--	--	12	11-72	U	--	--	--	D	-
X 30	424601N0710536.1	16	HAVERHILL	1972 -	2	-	40	T	--	--	10	11-72	U	--	--	--	D	-
X 31	424609N0710513.1	42	HAVERHILL	1972 -	2	-	38	T	--	--	D	12-72	U	--	--	--	D	-
X 32	424622N0710459.1	15	HAVERHILL	1972 -	2	-	42	T	--	--	12	11-72	U	--	--	--	D	-
X 33	424614N0710356.1	22	HAVERHILL	1972 -	2	-	33	T	22	--	13	11-72	U	--	--	--	D	-
X 34	424612N0710359.1	-10	HAVERHILL	1972 -	2	-	27	T	--	--	+15	12-72	U	--	--	--	D	-
X 35	424552N0710534.1	21	HAVERHILL	1972 -	2	-	42	T	--	--	16	11-72	U	--	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
							HAVERHILL --CONTINUED											
X 36	424555N0710533.1	22	HAVERHILL	1972	-	2	-	25	T	15	--	D	12-72	U	--	--	--	D	-
X 37	424616N0710412.1	20	HAVERHILL	1972	-	2	-	25	T	--	--	D	12-72	U	--	--	--	D	-
X 38	424608N0710402.1	23	HAVERHILL	1972	-	2	-	82	T	72	--	12	--	U	--	--	--	D	-
X 39	424603N0710357.1	16	HAVERHILL	1972	-	2	-	35	T	--	--	10	12-72	U	--	--	--	D	-
X 40	424557N0710352.1	22	HAVERHILL	1972	-	2	-	46	T	--	--	12	12-72	U	--	--	--	D	-
X 41	424533N0710331.1	21	HAVERHILL	1972	-	2	-	42	T	32	--	14	12-72	U	--	--	--	D	-
X 42	424536N0710326.1	10	HAVERHILL	1972	-	2	-	32	T	--	--	6	12-72	U	--	--	--	D	-
X 43	424542N0710318.1	17	HAVERHILL	1972	-	2	-	42	T	--	--	16	12-72	U	--	--	--	D	-
X 44	424545N0710315.1	-6	HAVERHILL	1972	-	2	-	37	T	--	--	+12	11-72	U	--	--	--	D	-
X 45	424630N0710508.1	32	HAVERHILL	1972	-	2	-	35	T	--	--	18	12-72	U	--	--	--	D	-
							LAWRENCE											
B 1	424130N0711003.1	62	MDPW	1935	-	--	-	29	T	--	--	13	12-35	U	--	--	--	D	-
B 2	424249N0710816.1	31	MDPW	1962	-	--	-	43	T	35	--	16	7-62	U	--	--	--	D	-
B 8	424213N0710826.1	32	MDPW	1959	-	--	-	52	T	--	--	20	7-59	U	--	--	--	D	-
B 14	424257N0710815.1	29	MDPW	--	-	--	-	39	T	--	--	10	--	U	--	--	--	D	-
B 15	424219N0710822.1	26	MDPW	1958	W	2	-	50	T	--	--	24	8-58	U	--	--	--	D	-
B 16	424240N0710816.1	35	MDPW	1959	W	2	-	49	T	--	--	23	-59	U	--	--	--	D	-
B 17	424240N0710823.1	39	MDPW	1961	W	2	-	39	T	--	--	15	12-61	U	--	--	--	D	-
R 1	424313N0710814.1	51	MDPW	1960	-	--	-	46	T	--	--	14	5-60	U	--	--	--	D	-
R 2	424236N0710818.1	32	MDPW	1962	-	--	-	39	T	--	--	17	8-62	U	--	--	--	D	-
R 3	424244N0710814.1	30	MDPW	1962	-	--	-	45	T	--	--	15	8-62	U	--	--	--	D	-
R 4	424231N0710817.1	40	MDPW	1962	-	--	-	29	T	--	--	20	1-62	U	--	--	--	D	-
R 5	424232N0710812.1	56	MDPW	1962	-	--	-	50	T	--	--	--	--	U	--	--	--	D	-
R 6	424238N0710811.1	48	MDPW	1962	-	--	-	33	T	--	--	--	--	U	--	--	--	D	-
W 2	424222N0710956.1	45	WOOLWORTH CO	1953	-	8	S	45	W	--	--	18	-53	C	100	8	--	-	-
W 3	424232N0710926.1	70	CICERO VINCENT	1948	-	--	X	95	W	36	--	15	-48	H	2	--	--	-	-
W 4	424228N0710945.1	45	SUTHERLANDS	1956	-	8	X	430	W	34	--	18	7-56	C	160	--	7	-	-
W 5	424238N0710900.1	85	LAWRNCE GEN HSP	1963	-	6	X	500	W	54	--	15	11-63	T	--	--	--	-	-
W 6	424257N0711045.1	85	MALDEN SPIN DYE	1965	-	8	X	700	W	115	--	10	4-65	N	23	--	--	-	-
W 7	424221N0710904.1	45	AGAWAM DYE CO	1948	-	8	S	42	T	--	--	22	8-48	U	6	6	10	D	-
W 9	424119N0711018.1	80	DIAMOND SP BREW	1934	-	18	G	36	W	--	BG	14	--	N	340	12	--	D	-
							MERRIMAC											
A 1	425142N0710052.1	128	US GEOL SURVEY	1963	B	4	X	60	T	--	--	7	8-63	U	--	--	--	G	-
A 2	425145N0710032.1	125	US GEOL SURVEY	1963	B	4	X	52	T	--	--	2	8-63	U	--	--	--	G	-
A 3	425015N0705908.1	105	US GEOL SURVEY	1963	B	4	X	102	T	--	--	14	11-63	U	--	--	--	G	-
B 1	424938N0710009.1	101	MDPW	1960	-	--	-	52	T	--	--	21	2-60	U	--	--	--	D	-
B 2	424947N0705936.1	32	MDPW	1960	-	--	-	52	T	--	--	4	1-60	U	--	--	--	D	-
B 3	424949N0705929.1	20	MDPW	1960	-	--	-	50	T	--	--	0	1-60	U	--	--	--	D	-
B 4	424958N0705848.1	98	MDPW	1960	-	--	-	61	T	--	--	--	--	U	--	--	--	D	-
B 5	425000N0710002.1	78	MDPW	1960	-	--	-	20	T	15	--	9	2-60	U	--	--	--	D	-
R 1	424915N0710103.1	208	MDPW	1960	-	--	-	44	T	--	--	8	-60	U	--	--	--	D	-
R 2	424920N0710046.1	208	MDPW	1960	-	--	-	46	T	--	--	10	2-60	U	--	--	--	D	-
R 3	424928N0710034.1	196	MDPW	1963	-	--	-	52	T	--	--	--	--	U	--	--	--	D	-
R 4	424932N0710025.1	181	MDPW	1960	-	--	-	48	T	--	--	29	2-60	U	--	--	--	D	-
R 5	424934N0710015.1	95	MDPW	1963	W	--	-	21	T	--	--	4	11-63	U	--	--	--	D	-
R 6	424942N0705957.1	86	MDPW	1963	W	--	-	38	T	--	--	--	--	U	--	--	--	D	-
R 8	424951N0705925.1	97	MDPW	1960	W	--	-	62	T	--	--	--	--	U	--	--	--	D	-
R 9	424954N0705917.1	36	MDPW	1963	W	--	-	52	T	--	--	7	11-63	U	--	--	--	D	-
R 18	424956N0705904.1	42	MDPW	1963	W	--	-	13	T	--	--	0	11-63	U	--	--	--	D	-
R 19	425001N0705843.1	97	MDPW	1960	W	--	-	35	T	--	--	6	2-60	U	--	--	--	D	-
W 1	425030N0705907.1	105	MERRIMAC	1956	W	2	-	46	W	--	R	12	7-56	P	400	--	--	D	P
W 2	425030N0710232.1	180	SCHERBON W	1962	D	24	O	13	W	--	--	7	6-63	H	--	--	--	-	-
W 3	425111N0710028.1	235	SAKGENT G W	1909	-	6	X	304	W	150	--	70	--	S	20	30	2	-	-
W 4	425119N0710100.1	155	PERKINS WALTER	1945	D	32	W	7	W	--	1S	2	6-63	H	--	--	--	-	-
W 5	425101N0710109.1	130	PALMER M H	1953	D	24	O	6	W	--	7T	0	6-63	H	--	--	--	-	-
W 6	425057N0710204.1	180	BROWN PHILLIS	--	D	30	W	11	W	--	7T	6	6-63	H	--	--	--	-	-
W 7	424859N0710015.1	50	ZALENSKI A	1955	D	24	O	4	W	--	8T	0	3-62	H	--	--	--	-	P
W 8	425041N0705947.1	190	LAMBERT LIONEL	--	D	36	W	26	W	--	7T	16	6-63	H	--	--	--	-	-
W 9	424923N0710119.1	200	GOODWIN E A	--	D	24	W	12	O	--	7T	6	7-63	I	--	--	--	-	-
W 10	425057N0705919.1	105	MORSE FORREST	1915	D	12	O	12	W	--	R	6	6-63	H	--	--	--	-	-
W 11	425110N0705932.1	100	MERRIMAC	1953	W	2	-	30	T	--	--	0	--	U	--	--	--	D	-
W 13	425143N0710041.1	125	MERRIMAC	1974	-	8	S	35	W	--	R	2	4-73	P	350	--	--	D	P
W 14	425005N0710015.1	106	GOODWIN T L	1895	V	1	S	75	W	--	S	16	--	H	--	--	--	-	-
							METHUEN											
A 1	424513N0711049.1	115	US GEOL SURVEY	1962	B	4	X	42	T	--	--	6	8-62	U	--	--	--	G	-
A 2	424523N0711015.1	208	US GEOL SURVEY	1962	B	4	X	20	T	--	--	3	8-62	U	--	--	--	G	-
A 3	424602N0710931.1	150	US GEOL SURVEY	1962	B	4	X	24	T	--	--	10	--	U	--	--	--	G	-
A 4	424602N0710952.1	125	US GEOL SURVEY	1962	B	4	X	8	T	--	--	4	8-62	U	--	--	--	G	-
A 5	424555N0711037.1	135	US GEOL SURVEY	1962	B	4	X	18	T	--	--	2	8-62	U	--	--	--	G	-
A 6	424636N0711020.1	45	US GEOL SURVEY	1962	B	4	X	28	T	--	--	4	8-62	U	--	--	--	G	-
A 7	424638N0711012.1	155	US GEOL SURVEY	1962	B	4	X	10	T	--	--	5	8-62	U	--	--	--	G	-
A 8	424729N0711059.1	198	US GEOL SURVEY	1962	B	4	X	16	T	--	--	D	-62	U	--	--	--	G	-
A 9	424518N0710821.1	88	US GEOL SURVEY	1962	B	4	X	44	T	--	--	20	--	U	--	--	--	G	-
A 10	424516N0710812.1	55	US GEOL SURVEY	1962	B	4	X	29	T	--	--	8	8-62	U	--	--	--	G	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
			METHUEN --CONTINUED															
A 11	424427N0710702.1	25	US GEOL SURVEY	1962 B	4	X	58	T	--	--	--	--	U	--	--	--	G	-
A 12	424433N0710715.1	80	US GEOL SURVEY	1962 B	4	X	29	T	--	--	--	--	U	--	--	--	G	-
A 13	424509N0710752.1	32	US GEOL SURVEY	1962 B	4	X	52	T	--	--	--	--	U	--	--	--	G	-
B 1	424206N0711238.1	48	MDPW	1955 -	--	-	23	T	--	--	4	10-55	U	--	--	--	D	-
B 2	424435N0710835.1	47	MDPW	1960 -	--	-	10	T	--	--	4	4-60	U	--	--	--	D	-
B 3	424445N0710816.1	55	MDPW	1960 -	--	-	96	T	--	--	8	4-60	U	--	--	--	D	-
B 4	424441N0710829.1	29	MDPW	1960 -	--	-	49	T	--	--	1	4-60	U	--	--	--	D	-
B 5	424440N0710845.1	87	MDPW	1960 -	--	-	34	T	--	--	13	8-60	U	--	--	--	D	-
B 6	424511N0710743.1	28	MDPW	1959 -	--	-	58	T	--	--	23	11-59	U	--	--	--	D	-
B 7	424514N0710741.1	0	MDPW	1960 -	--	-	54	T	48	--	+9	6-60	U	--	--	--	D	-
B 8	424339N0710821.1	95	MDPW	1960 -	--	-	52	T	--	--	2	4-60	U	--	--	--	D	-
B 9	424432N0711009.1	182	MDPW	1960 -	--	-	28	T	--	--	9	12-60	U	--	--	--	D	-
B 10	424356N0711130.1	123	MDPW	1957 -	--	-	29	T	--	--	11	-57	U	--	--	--	D	-
B 11	424354N0711141.1	103	MDPW	1958 -	--	-	24	T	--	--	0	8-58	U	--	--	--	D	-
B 12	424402N0711205.1	105	MDPW	1958 -	--	-	57	T	--	--	2	8-58	U	--	--	--	D	-
B 13	424353N0711203.1	103	MDPW	1959 -	--	-	30	T	--	--	+2	2-59	U	--	--	--	D	-
B 14	424435N0711232.1	108	MDPW	1958 -	--	-	55	T	--	--	4	8-58	U	--	--	--	D	-
B 15	424433N0711233.1	109	MDPW	1958 -	--	-	30	T	--	--	6	8-58	U	--	--	--	D	-
B 16	424427N0711225.1	107	MDPW	1959 -	--	-	73	T	--	--	2	2-59	U	--	--	--	D	-
B 17	424235N0711239.1	195	MDPW	1958 -	--	-	44	T	--	--	0	7-58	U	--	--	--	D	-
B 18	424340N0711219.1	105	MDPW	1958 -	--	-	56	T	--	--	2	7-58	U	--	--	--	D	-
B 19	424215N0711238.1	75	MDPW	1958 -	--	-	16	T	--	--	2	6-58	U	--	--	--	D	-
B 20	424220N0711240.1	78	MDPW	1958 -	--	-	6	T	--	--	2	6-58	U	--	--	--	D	-
B 21	424406N0711215.1	94	MDPW	1958 -	--	-	48	T	--	--	+8	8-58	U	--	--	--	D	-
B 22	424354N0711214.1	104	MDPW	1958 -	--	-	70	T	--	--	0	8-58	U	--	--	--	D	-
B 26	424428N0710828.1	34	MDPW	1960 -	--	-	28	T	--	--	1	4-60	U	--	--	--	D	-
R 1	424336N0710818.1	107	MDPW	1960 -	--	-	44	T	--	--	10	5-60	U	--	--	--	D	-
R 2	424329N0710808.1	53	MDPW	1960 -	--	-	16	T	--	--	2	5-60	U	--	--	--	D	-
R 3	424348N0710826.1	93	MDPW	1960 -	--	-	24	T	--	--	2	5-60	U	--	--	--	D	-
R 5	424418N0710835.1	101	MDPW	1960 -	--	-	22	T	--	--	4	5-60	U	--	--	--	D	-
R 6	424421N0710829.1	82	MDPW	1960 -	--	-	24	T	--	--	7	5-60	U	--	--	--	D	-
R 7	424444N0710851.1	108	MDPW	1960 -	--	-	43	T	--	--	--	--	U	--	--	--	D	-
R 8	424450N0710814.1	50	MDPW	1960 -	--	-	113	T	--	--	18	5-60	U	--	--	--	D	-
R 9	424410N0710831.1	126	MDPW	1960 -	--	-	35	T	--	--	5	5-60	U	--	--	--	D	-
R 10	424456N0710803.1	48	MDPW	1960 -	--	-	114	T	--	--	--	--	U	--	--	--	D	-
R 11	424507N0710754.1	33	MDPW	1960 -	--	-	41	T	--	--	12	5-60	U	--	--	--	D	-
W 1	424424N0710705.1	25	METHUEN	1931 C	16	G	57	U	47	2S	20	1-31	P	250	--	482	-	P
W 2	424424N0710705.2	25	METHUEN	1930 C	16	-	56	U	56	2S	11	5-30	P	225	29	24	-	-
W 3	424424N0710705.3	25	METHUEN	1931 C	16	-	92	U	52	S	24	1-31	P	305	21	482	-	P
W 4	424424N0710705.4	30	METHUEN	1931 C	16	-	79	U	58	--	28	1-31	P	200	11	482	-	P
W 5	424424N0710705.5	55	METHUEN	1932 -	16	-	83	U	58	R	--	--	P	200	--	--	D	P
W 6	424426N0711250.1	110	METHUEN	1933 C	18	G	49	U	--	--	8	6-33	P	700	28	--	D	P
W 7	424426N0711245.1	110	METHUEN	1934 C	18	G	47	U	--	S	8	4-34	P	350	10	--	D	-
W 8	424115N0711346.1	45	METHUEN	1922 W	2	-	30	U	--	--	5	--	P	625	--	--	-	P
W 9	424434N0710809.1	55	ALSES CATHERINE	-- D	30	O	6	O	--	--	4	10-62	U	--	--	--	-	-
W 10	424417N0710822.1	72	GISSARO JOSEPH	1954 C	8	X	146	W	36	--	21	-58	H	8	--	--	-	-
W 11	424413N0710840.1	110		-- D	36	W	8	-	--	T	2	10-62	-	--	--	--	-	-
W 12	424656N0711010.1	160	O'BRIEN THOMAS	-- D	24	W	12	W	--	7T	10	8-63	H	--	--	--	-	-
W 13	424440N0711333.1	120	HAIDAICHUK P	-- D	40	W	11	W	--	2S	10	8-63	H	--	--	--	-	-
W 14	424403N0711449.1	180	PETZOLD EMYL	1951 -	7	X	150	W	40	--	8	8-63	H	5	--	--	-	-
W 15	424116N0711435.1	125	ASABOORAIN A	1923 D	24	W	16	W	--	--	12	8-63	H	--	--	--	-	-
W 16	424149N0711434.1	120	SICARD ALBERT	1907 D	24	O	22	W	--	T	14	8-63	H	--	--	--	-	-
W 17	424330N0711448.1	155		-- D	18	O	16	W	--	T	12	9-63	H	--	--	--	-	-
W 18	424334N0711410.1	185	RICHARDSON E	-- -	--	X	61	U	18	--	16	9-63	H	--	--	--	-	-
W 19	424133N0711346.1	55	BRAGDON W D	-- D	32	W	18	U	--	S	16	9-63	H	--	--	--	-	-
W 20	424051N0711358.1	72	ALLEN ROBERT H	1918 D	30	W	15	W	--	2R	0	9-63	H	--	--	--	-	-
W 21	424328N0710759.1	41	JANKOWSKI JOHN	-- D	--	-	14	O	--	2S	8	11-63	U	--	--	--	-	-
W 22	424408N0710920.1	80	FEATHER J L	1950 -	2	X	130	W	70	--	3	3-64	H	--	--	--	-	-
W 23	424437N0711010.1	190	BEAUSOLEIL J F	-- D	24	W	15	W	--	T	3	3-64	H	--	--	--	-	-
W 24	424620N0710936.1	200	VAIKSNOVAS	-- D	26	W	10	U	--	T	5	3-64	H	--	--	--	-	-
W 25	424614N0710954.1	140	NAPOLI SANTO J	-- D	24	W	10	W	--	T	2	3-64	H	--	--	--	-	-
W 26	424322N0710932.1	65	ENOS JOHN	1961 -	6	X	130	W	110	--	3	9-61	H	20	--	--	-	-
W 27	424019N0711417.1	65	LARIGNE A	-- -	6	X	145	W	15	--	--	--	H	5	--	--	-	-
W 28	424115N0711432.1	115	ASADOARIAN A	1963 -	6	X	155	W	16	--	8	8-63	H	7	18	3	-	-
W 29	424307N0711148.1	160	TITONE G	1965 -	6	S	60	W	--	--	16	3-65	H	10	--	--	-	-
W 30	424410N0710922.1	80	MORASSE ALFRED	1949 D	24	O	10	W	--	T	3	3-64	H	--	--	--	-	-
W 31	424322N0711254.1	112	METHUEN IND PK	1968 -	2	-	23	T	--	--	0	8-68	U	--	--	--	D	-
W 32	424319N0711304.1	112	METHUEN IND PK	1968 -	2	-	22	T	--	--	0	8-68	U	--	--	--	D	-
W 33	424316N0711314.1	112	METHUEN IND PK	1968 -	2	-	19	T	--	--	0	8-68	U	--	--	--	D	-
W 34	424326N0711309.1	112	METHUEN IND PK	1968 -	2	-	22	T	--	--	0	8-68	U	--	--	--	D	-
W 35	424311N0711258.1	112	METHUEN IND PK	1968 -	2	-	20	T	--	--	0	8-68	U	--	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
							NEWBURY											
A 3	424755N0705139.1	16	US GEOL SURVEY	1963 B	4	X	83	T	--	--	3	10-63	U	--	--	--	G	-
A 5	424726N0705057.1	20	US GEOL SURVEY	1963 B	4	X	12	T	--	--	6	8-63	U	--	--	--	G	-
A 6	424737N0705122.1	50	US GEOL SURVEY	1959 B	4	X	15	T	--	--	--	--	U	--	--	--	G	-
A 7	424742N0705107.1	20	US GEOL SURVEY	1959 B	4	X	25	T	--	--	--	--	U	--	--	--	G	-
B 1	424647N0705539.1	52	MDPW	1950 -	--	-	13	T	--	--	--	--	U	--	--	--	D	-
B 2	424751N0704917.1	-2	MDPW	1969 -	--	-	116	T	106	--	+2	4-67	U	--	--	--	D	-
W 2	424736N0705109.1	25	WALSH RICHARD	-- -	--	-	35	W	--	2S	--	--	I	--	--	--	-	-
W 3	424739N0705100.1	15	WALSH RICHARD	1955 -	8	G	35	W	--	2S	8	7-60	I	200	--	--	-	-
W 4	424746N0705122.1	35	MASS WAT RES	1972 W	2	-	7	T	--	--	--	--	U	--	--	--	-	-
W 5	424731N0705050.1	15	MASS WAT RES	1972 W	2	-	69	T	--	--	--	--	U	--	--	--	D	-
W 9	424723N0704835.1	5	NAT PARK SERV	1972 W	2	-	61	T	--	--	5	5-72	U	--	--	--	D	-
W 10	424723N0704831.1	15	NAT PARK SERV	-- W	--	-	8	W	--	--	5	--	H	--	--	--	-	P
W 40	424723N0705412.1	50	HUDSON DONALD	1955 C	6	X	194	W	0	--	--	--	H	15	--	--	-	C
							NEWBURYPORT											
A 1	424804N0705138.1	37	US GEOL SURVEY	1963 B	4	X	102	T	--	--	24	10-64	U	--	--	--	G	-
A 2	424910N0705459.1	95	US GEOL SURVEY	1963 B	4	X	47	T	--	--	30	10-63	U	--	--	--	G	-
A 3	424809N0705126.1	20	US GEOL SURVEY	1963 B	4	X	12	T	--	--	D	8-63	U	--	--	--	G	-
B 1	424958N0705448.1	47	MDPW	1950 -	--	-	42	T	32	--	--	--	U	--	--	--	D	-
B 2	425003N0705445.1	-8	MDPW	1950 -	--	-	17	T	6	--	+8	10-50	U	--	--	--	D	-
B 3	424944N0705457.1	81	MDPW	1950 -	--	-	36	T	--	--	--	--	U	--	--	--	D	-
B 4	424903N0705454.1	82	MDPW	1950 -	--	-	17	T	--	--	--	--	U	--	--	--	D	-
B 6	424855N0705225.1	-14	MDPW	1946 -	--	-	45	T	--	--	--	--	U	--	--	--	D	-
B 7	424845N0705232.1	15	MDPW	1934 -	--	-	29	T	--	--	--	--	U	--	--	--	D	-
B 9	424836N0705239.1	59	MDPW	-- -	--	-	35	T	--	--	--	--	U	--	--	--	D	-
B 10	424849N0705554.1	1	MDPW	1972 -	--	-	53	T	--	--	+6	-72	U	--	--	--	D	-
R 1	424736N0705509.1	17	MDPW	1970 W	2	-	56	T	--	--	0	4-70	U	--	--	--	D	-
W 2	424940N0705335.1	15	BOLEN KENNARD	-- D	60	O	11	W	--	--	7	7-60	H	--	--	--	-	-
W 3	424913N0705615.1	15	MOSELEY HELEN C	-- D	290	O	19	W	--	--	10	6-63	H	--	--	--	-	C
W 6	424847N0704845.1	25	US COAST GUARD	-- V	2	S	21	W	--	S	--	--	F	--	--	--	-	-
W 7	424847N0704845.2	25	US COAST GUARD	1946 V	2	T	9	W	--	S	--	--	H	--	--	--	-	-
W 20	424935N0705439.1	70	NEWBURYPORT	1956 W	2	-	32	T	--	--	5	--	U	20	--	--	D	P
W 21	424931N0705433.1	70	NEWBURYPORT	1956 -	8	S	52	T	--	R	18	6-56	U	205	4	240	D	P
W 22	424938N0705449.1	75	NEWBURYPORT	1956 W	2	-	16	T	--	--	10	-56	U	Z	--	--	D	-
W 23	424951N0705512.1	25	NEWBURYPORT	1956 W	2	-	67	T	--	R	30	11-56	U	6	--	--	D	P
W 33	424934N0705449.1	85	NEWBURYPORT	1956 W	2	-	30	T	--	R	10	-56	U	Z	--	--	D	-
W 35	424953N0705507.1	45	NEWBURYPORT	1950 -	24	G	50	W	--	R	9	4-58	P	610	19	--	D	P
W 36	424937N0705435.1	70	NEWBURYPORT	1958 -	24	G	52	W	--	--	20	3-58	P	710	13	25	-	P
W 37	425009N0705503.1	35	BODLEY R V C	1964 -	6	X	300	W	113	--	14	9-64	H	60	40	--	-	-
W 38	424849N0705228.1	10	FENNER STEIGER	1974 -	2	S	42	T	--	6R	8	4-74	U	40	--	1	D	P
W 39	425001N0705453.1	10	NEWBURYPORT	1891 D	270	O	25	W	--	7R	5	--	P	300	--	--	-	-
W 40	424847N0705550.1	15	NEWBURYPORT	1941 -	2	-	37	T	--	--	5	--	U	Z	--	--	D	-
							NORTH ANDOVER											
A 2	424302N0710536.1	115	US GEOL SURVEY	1962 B	4	X	32	T	--	--	2	7-62	U	--	--	--	G	-
A 3	424332N0710636.1	135	US GEOL SURVEY	1962 B	4	X	56	T	--	--	D	7-62	U	--	--	--	G	-
A 4	424318N0710624.1	138	US GEOL SURVEY	1962 B	4	X	18	T	--	--	3	7-62	U	--	--	--	G	-
W 5	424318N0710758.1	30	NORTH ANDOVER	1968 C	18	G	42	W	--	R	12	10-68	P	554	17	24	D	-
W 6	424318N0710758.2	30	NORTH ANDOVER	1969 C	18	G	42	W	--	R	18	9-69	P	302	13	24	D	-
W 7	424345N0710702.1	35	WESTERN ELECT	1962 W	2	-	36	T	--	--	--	--	U	--	--	--	D	-
W 8	424351N0710710.1	35	WESTERN ELECT	1962 W	2	-	26	T	--	--	--	--	U	--	--	--	D	-
W 9	424351N0710714.1	35	WESTERN ELECT	1962 W	2	-	45	T	--	--	--	--	U	--	--	--	D	-
W 10	424400N0710711.1	35	WESTERN ELECT	1962 W	2	-	86	T	--	--	21	8-62	U	--	--	--	D	-
W 11	424403N0710707.1	35	WESTERN ELECT	1962 W	2	-	41	T	--	--	21	8-62	U	--	--	--	D	-
W 12	424407N0710703.1	35	WESTERN ELEC	1966 -	16	G	50	W	--	--	18	11-66	N	315	14	48	-	P
W 13	424356N0710658.1	40	WESTERN ELECT	1962 W	2	-	80	T	--	--	26	8-62	U	--	--	--	D	-
W 14	424400N0710657.1	35	WESTERN ELECT	1962 W	2	-	60	T	--	--	21	8-62	U	--	--	--	D	-
W 15	424410N0710659.1	30	WESTERN ELECT	1962 W	2	-	52	T	--	--	20	8-62	U	--	--	--	D	-
W 16	424344N0710657.1	41	WESTERN ELECT	1962 W	2	-	49	T	--	--	8	9-62	U	--	--	--	D	-
W 17	424350N0710720.1	30	WESTERN ELECT	1962 W	2	-	10	T	--	--	--	--	U	--	--	--	D	-
W 18	424354N0710705.1	25	WESTERN ELECT	1962 W	2	-	57	T	--	--	16	9-62	U	--	--	--	D	-
W 21	424044N0710601.1	190	WILCOX CHARLES	-- D	36	W	11	U	--	T	6	7-57	H	--	--	--	-	-
W 22	424048N0710605.1	185	ADAM JAMES	-- D	36	W	16	U	--	T	12	7-57	H	--	--	--	-	-
W 23	424049N0710543.1	190	SMITH R A	-- D	36	W	14	O	--	T	12	7-57	H	--	--	--	-	-
W 172	424212N0710437.1	180	DONAHO J	1965 -	6	X	148	W	14	--	14	4-65	H	8	--	--	-	-
X 1	424342N0710718.1	33	WESTERN ELECT	1954 -	--	-	34	T	--	--	12	-54	U	--	--	--	D	-
X 4	424339N0710701.1	50	WESTERN ELECT	1954 -	--	-	20	T	--	--	8	-54	U	--	--	--	D	-
X 7	424409N0710652.1	36	WESTERN ELECT	1954 -	--	-	22	T	--	--	6	-54	U	--	--	--	D	-
X 8	424349N0710701.1	37	WESTERN ELECT	1954 -	--	-	83	T	--	--	10	-54	U	--	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL: DIAMETER (IN)	WELL: FINISH	WELL: DEPTH (FT)	WELL: USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER: LEVEL (FT)	WATER: DATE MEASURED	WATER: USE	PUMPAGE: YIELD (GPM)	PUMPAGE: DD (FT)	PUMPAGE: TIME (HR)	LOG	QW
							SALISBURY											
A 1	425208N0705335.1	105	US GEOL SURVEY	1963 B	4	X	78	T	--	--	25	8-63	U	--	--	--	G	-
A 2	425244N0705312.1	65	US GEOL SURVEY	1963 B	4	X	42	T	--	--	11	11-63	U	--	--	--	G	-
A 3	425015N0705056.1	20	US GEOL SURVEY	1963 B	4	X	88	T	--	--	6	8-63	U	--	--	--	G	-
A 4	425208N0705312.1	80	US GEOL SURVEY	1963 B	4	X	94	T	--	--	13	8-63	U	--	--	--	G	-
A 5	424952N0705113.1	22	US GEOL SURVEY	1963 B	4	X	97	T	--	--	6	8-63	U	--	--	--	G	-
A 6	425052N0705402.1	53	US GEOL SURVEY	1963 B	4	X	98	T	--	--	10	--	U	--	--	--	G	-
A 7	425246N0705425.1	55	US GEOL SURVEY	1964 B	4	X	44	T	--	--	4	8-64	U	--	--	--	G	-
A 8	425240N0705421.1	100	US GEOL SURVEY	1963 B	4	X	12	O	--	--	--	--	U	--	--	--	G	-
A 9	425254N0705444.1	50	US GEOL SURVEY	1963 B	4	X	96	O	--	--	--	--	U	--	--	--	G	-
A 10	425034N0704949.1	5	US GEOL SURVEY	1963 B	4	X	98	T	--	--	6	8-63	U	--	--	--	G	-
B 1	425204N0705325.1	86	MDPW	1951 B	--	-	19	T	--	--	4	1-51	U	--	--	--	D	-
B 2	425224N0705316.1	84	MDPW	1951 B	--	-	22	T	--	--	--	--	U	--	--	--	D	-
B 3	425125N0705349.1	48	MDPW	1960 B	--	-	32	T	24	--	5	6-60	U	--	--	--	D	-
B 4	425122N0705350.1	52	MDPW	1960 B	--	-	58	T	--	--	6	6-60	U	--	--	--	D	-
B 5	424957N0705116.1	27	MDPW	1970 -	--	-	137	T	127	--	6	8-70	U	--	--	--	D	-
B 6	424958N0705147.1	9	MDPW	1970 -	--	-	58	T	48	--	8	8-70	U	--	--	--	D	-
B 7	424958N0705202.1	5	MDPW	1970 -	--	-	76	T	66	--	3	11-70	U	--	--	--	D	-
B 8	425039N0705358.1	44	MDPW	1970 -	--	-	155	T	145	--	7	8-70	U	--	--	--	D	-
R 1	425106N0705357.1	50	MDPW	1965 B	--	-	9	T	--	--	6	6-65	U	--	--	--	D	-
R 2	425118N0705350.1	55	MDPW	1965 B	--	-	15	T	--	--	D	-65	U	--	--	--	D	-
R 3	425211N0705322.1	94	MDPW	1965 B	--	-	18	T	--	--	D	-65	U	--	--	--	D	-
R 4	425231N0705313.1	64	MDPW	1965 B	--	-	12	T	--	--	D	-65	U	--	--	--	D	-
R 5	425245N0705304.1	63	MDPW	1965 B	--	-	23	T	--	--	--	--	U	--	--	--	D	-
R 6	425023N0704916.1	11	MDPW	1970 -	--	-	23	T	--	--	7	9-70	U	--	--	--	D	-
R 7	425026N0704933.1	6	MDPW	1970 -	--	-	22	T	--	--	1	10-70	U	--	--	--	D	-
R 8	425010N0705007.1	9	MDPW	1970 -	--	-	21	T	--	--	4	10-70	U	--	--	--	D	-
R 9	425003N0705219.1	4	MDPW	1970 -	--	-	25	T	--	--	1	10-70	U	--	--	--	D	-
R 10	425036N0705331.1	50	MDPW	1970 -	--	-	26	T	--	--	6	8-70	U	--	--	--	D	-
R 11	425001N0705037.1	11	MDPW	1970 -	--	-	17	T	--	--	6	10-70	U	--	--	--	D	-
R 12	425016N0704949.1	8	MDPW	1970 -	--	-	17	T	--	--	3	9-70	U	--	--	--	D	-
R 13	425013N0705244.1	10	MDPW	1970 -	--	-	48	T	--	--	1	10-70	U	--	--	--	D	-
R 14	425021N0705306.1	44	MDPW	1970 -	--	-	34	T	24	--	5	9-70	U	--	--	--	D	-
W 1	425241N0705244.1	50	SALISBURY WATER	-- D	480	O	22	U	--	S	5	--	P	300	--	--	-	-
W 3	425304N0705409.1	45	SALISBURY WATER	1955 W	2	-	36	T	--	R	1	-55	U	60	2	--	D	-
W 4	425018N0705107.1	20	SALISBURY WATER	-- V	--	-	98	T	--	--	--	--	U	--	--	--	-	-
W 5	425115N0705224.1	20	SALISBURY WATER	-- -	--	-	37	T	--	--	--	--	U	--	--	--	-	-
W 6	425146N0705243.1	50	SALISBURY WATER	-- V	--	-	17	T	--	--	--	--	U	--	--	--	-	-
W 7	425205N0705255.1	80	SALISBURY WATER	-- V	--	-	35	T	--	--	--	--	U	--	--	--	-	-
W 8	425011N0705208.1	20	OLIVEIRA EDWIN	-- D	30	W	18	O	--	--	9	7-60	U	--	--	--	-	C
W 9	425103N0705134.1	25	FOLSUM EUGENE G	1939 D	30	O	11	O	--	S	6	7-60	H	--	--	--	-	-
W 11	425207N0705212.1	60	SALISBURY WATER	-- V	--	-	18	T	--	--	--	--	U	--	--	--	-	-
W 13	425236N0705322.1	90	SALISBURY WATER	-- V	--	-	38	T	--	--	--	--	U	--	--	--	-	-
W 14	425144N0705220.1	60	SALISBURY WATER	-- V	--	-	57	T	--	--	--	--	U	Z	--	--	-	-
W 15	425142N0705216.1	50	SALISBURY WATER	-- V	--	-	90	T	--	--	--	--	U	--	--	--	-	-
W 16	425140N0705211.1	50	SALISBURY WATER	-- V	--	-	47	T	--	--	--	--	U	--	--	--	-	-
W 17	425125N0705341.1	40	SALISBURY WATER	-- -	--	-	17	T	--	--	--	--	U	--	--	--	-	-
W 18	425245N0705249.1	50	SALISBURY WATER	-- V	--	-	46	T	--	--	--	--	U	63	--	--	-	-
W 19	425239N0705248.1	50	SALISBURY WATER	-- V	--	-	42	T	--	--	--	--	U	65	--	--	-	-
W 21	425238N0705435.1	50	SANBORN TR T	1950 D	30	O	14	W	--	--	8	7-63	H	--	--	--	-	-
W 22	425254N0705417.1	70	PHILCRANTZ A H	1962 D	24	O	9	W	--	--	2	7-63	H	--	--	--	-	-
W 23	425115N0705037.1	25	EATON HOWARD	-- D	36	W	10	W	--	--	6	7-63	H	--	--	--	-	-
W 24	425021N0705047.1	15	CERASI FRANK	-- D	36	W	11	U	--	--	9	7-63	H	--	--	--	-	-
W 25	425013N0705027.1	15	JOHNSON CHARLES	1850 D	30	W	12	U	--	--	12	7-63	H	--	--	--	-	-
W 26	425053N0705153.1	19		-- D	18	W	19	W	--	--	9	7-63	H	--	--	--	-	-
W 27	424856N0705200.1	15	RHODES RUPERT	1935 D	--	X	32	U	10	--	11	7-63	H	--	--	--	-	-
W 28	425010N0705154.1	20	MILLER ERNEST	-- D	17	W	22	U	--	--	6	7-63	H	--	--	--	-	-
W 29	425245N0705437.1	50	SANBORN GEORGE	1959 D	40	O	12	W	--	S	7	6-63	H	--	--	--	-	-
W 30	425154N0705319.1	55	JOHNSON BIRGER	1947 D	36	O	16	W	--	7P	4	6-63	H	--	--	--	-	C
W 31	425232N0705305.1	70	SALISBURY WATER	1950 -	24	G	64	U	--	--	7	--	P	400	32	--	-	P
W 32	425236N0705302.1	70	SALISBURY WATER	1956 -	24	G	42	W	--	R	10	--	P	400	8	48	D	P
W 33	425232N0705309.1	70	SALISBURY WATER	1961 -	24	G	55	W	--	R	2	4-61	P	608	28	48	D	P
W 34	425305N0705401.1	70	SALISBURY WATER	1966 -	24	G	54	W	--	R	3	5-66	P	800	13	161	D	P
W 37	425049N0705350.1	55	VAUGHN CORP	1971 A	1	S	14	W	--	--	6	12-71	N	15	--	3	D	-
W 38	424937N0704911.1	5	SAILSBURY BEACH	1972 W	2	S	78	T	--	6S	4	1-72	U	20	--	3	D	-
W 39	424919N0704936.1	5	SAILSBURY BEACH	1972 W	2	-	45	T	--	--	3	1-72	U	--	--	--	D	-
W 40	424943N0704904.1	5	SAILSBURY BEACH	1972 W	2	S	34	T	--	6R	5	9-72	U	50	0	--	D	P
							TEWKSBURY											
B 4	423739N0711622.1	132	MDPW	1958 -	--	-	35	T	--	--	14	10-58	U	--	--	--	D	-
B 6	423750N0711542.1	105	MDPW	1958 -	--	-	29	T	--	--	0	6-58	U	--	--	--	D	-
B 7	423753N0711540.1	107	MDPW	1958 -	--	-	16	T	--	--	3	6-58	U	--	--	--	D	-
W 7	423725N0711452.1	120	NE POWER CONST	-- D	48	O	22	W	--	R	7	--	C	17	--	--	-	-
W 59	423700N0711431.1	120	CASCIANO C	-- D	42	W	12	W	--	--	4	12-38	H	--	--	--	-	-
W 69	423845N0711602.1	130	REID ROBERT	-- D	72	W	11	W	--	--	7	12-38	H	--	--	--	-	-
W 70	423854N0711559.1	145	AMIOT LOUIS	-- D	54	W	10	W	--	--	2	12-38	H	--	--	--	-	-
W 73	423803N0711532.1	140	GELINAS	-- -	8	X	120	W	30	--	28	--	H	--	--	--	-	-
W 74	423857N0711553.1	140	THOMPSON G H	1935 -	6	X	118	W	25	--	16	--	H	6	--	--	-	-
W 108	423855N0711514.1	205	TRULL ARTHUR	1910 C	6	X	208	W	35	--	6	--	H	--	--	--	-	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
							TEWKSBURY --CONTINUED											
W 121	423806N0711547.1	110	TEWKSBURY	1960 W	2	-	13	T	--	--	--	--	U	--	--	--	D	-
W 122	423816N0711546.1	120	TEWKSBURY	1960 W	2	-	49	T	--	--	9	-60	U	Z	--	--	D	-
W 123	423819N0711547.1	110	TEWKSBURY	1960 W	2	-	57	T	--	--	6	-60	U	Z	--	--	D	-
W 124	423819N0711558.1	110	TEWKSBURY	1960 W	2	-	49	T	--	--	4	-60	U	35	--	--	D	-
W 125	423822N0711541.1	110	TEWKSBURY	1960 W	2	-	42	T	--	--	2	-60	U	Z	--	--	D	-
W 126	423818N0711542.1	110	TEWKSBURY	1960 W	2	-	37	T	--	--	2	-60	U	--	--	--	D	-
W 127	423812N0711542.1	110	TEWKSBURY	1960 W	2	-	37	T	--	--	5	-60	U	Z	--	--	D	-
W 128	423809N0711600.1	110	TEWKSBURY	1960 W	2	-	46	T	--	--	6	-60	U	35	--	--	D	-
W 129	423805N0711600.1	110	TEWKSBURY	1960 W	2	-	24	T	--	--	5	-60	U	Z	--	--	D	-
W 130	423801N0711602.1	105	TEWKSBURY	1960 W	2	-	26	T	--	--	2	-60	U	30	--	--	D	-
W 131	423756N0711606.1	105	TEWKSBURY	1961 -	8	S	32	T	--	R	2	6-61	U	174	16	408	D	P
W 132	423754N0711603.1	105	TEWKSBURY	1961 -	8	S	45	T	--	R	3	6-61	U	174	15	408	D	P
W 133	423802N0711613.1	105	TEWKSBURY	1960 W	2	-	24	T	--	--	5	--	U	--	--	--	D	-
W 134	423921N0711520.1	55	TEWKSBURY	1960 W	2	-	28	T	--	--	8	-60	U	Z	--	--	D	-
W 135	423919N0711529.1	50	TEWKSBURY	1960 W	2	-	21	T	--	--	7	-60	U	--	--	--	D	-
W 136	423916N0711523.1	60	TEWKSBURY	1960 W	2	-	27	T	--	--	--	--	U	Z	--	--	D	-
W 142	423741N0711542.1	110	TEWKSBURY	1960 W	2	-	5	T	--	--	5	--	U	--	--	--	D	-
W 143	423736N0711539.1	110	TEWKSBURY	1960 W	2	-	18	T	--	--	5	--	U	--	--	--	D	-
W 184	423640N0711458.1	120	TEWKSBURY	1959 W	2	-	5	T	--	--	5	--	U	--	--	--	-	-
W 185	423645N0711458.1	120	TEWKSBURY	1959 W	2	-	34	T	--	--	6	2-59	U	Z	--	--	D	-
W 186	423635N0711458.1	120	TEWKSBURY	1959 W	2	-	57	T	--	--	3	2-59	U	Z	--	--	D	-
W 207	423720N0711553.1	175	GOLEN LOUIS	1972 -	6	X	170	W	30	--	--	--	H	6	--	--	-	-
W 213	423906N0711535.1	80	TRULL BK GOLF	1966 W	2	-	19	T	--	T	--	--	U	--	--	--	D	-
W 214	423900N0711537.1	80	TRULL BK GOLF	1966 W	2	-	16	T	--	S	6	6-66	U	20	--	3	D	-
W 215	423753N0711441.1	130	WANG LABS	1970 W	2	S	15	T	--	--	10	11-70	U	Z	--	--	D	-
							WEST NEWBURY											
A 1	424800N0710005.1	20	US GEOL SURVEY	1962 B	4	X	25	T	--	--	--	--	U	--	--	--	G	-
A 2	424738N0710051.1	15	US GEOL SURVEY	1962 B	4	X	65	T	--	--	--	--	U	--	--	--	G	-
A 3	424835N0705948.1	10	US GEOL SURVEY	1962 B	4	X	41	T	--	--	--	--	U	--	--	--	G	-
A 4	424721N0705553.1	15	US GEOL SURVEY	1963 B	4	X	48	T	--	--	2	10-63	U	--	--	--	G	-
A 7	424745N0705725.1	55	US GEOL SURVEY	1963 B	4	X	58	T	--	--	--	--	U	--	--	--	G	-
A 12	424656N0705717.1	47	US GEOL SURVEY	1963 B	1	X	42	T	--	--	3	4-64	U	4	--	--	G	-
B 1	424840N0705957.1	20	W NEWBURY	1913 -	--	-	22	T	--	--	--	--	U	--	--	--	D	-
R 1	424708N0705524.1	16	MDPW	1970 W	2	-	37	T	--	--	0	5-70	U	--	--	--	D	-
R 2	424713N0705522.1	15	MDPW	1970 W	2	-	92	T	--	--	+2	5-70	U	--	--	--	D	-
R 3	424718N0705519.1	16	MDPW	1970 W	2	-	77	T	--	--	+1	4-70	U	--	--	--	D	-
R 4	424727N0705515.1	16	MDPW	1970 W	2	-	68	T	--	--	0	5-70	U	--	--	--	D	-
R 5	424655N0705533.1	77	MDPW	1970 W	2	-	21	T	11	--	D	5-70	U	--	--	--	D	-
W 3	424819N0705853.1	135	W NEWBURY	1882 D	170	W	42	O	--	O	14	7-60	H	--	--	--	-	-
W 4	424800N0705945.1	65	CLIMO WILLIAM	1900 D	96	W	21	O	--	--	11	7-60	U	--	--	--	-	-
W 6	424716N0705844.1	215	HURLD DANIEL	1960 -	6	X	237	W	86	--	30	3-60	H	4	--	--	-	-
W 8	424632N0705722.1	85	ELWELL ARTHUR M	1730 D	36	W	14	W	--	T	9	8-60	H	--	--	--	-	-
W 13	424733N0705905.1	205	WEIGEL RAYMOND	1954 C	6	X	237	W	119	--	--	--	H	--	--	--	D	-
W 14	424654N0705544.1	65	MCGANN JAMES	1953 C	6	X	123	W	5	--	14	-53	H	10	--	--	-	-
W 48	424859N0705941.1	100	PLATTS HOWARD M	-- D	36	W	15	U	--	7T	8	7-63	H	--	--	--	-	-
W 49	424841N0705816.1	50	CULLIFORD SYDNY	1700 D	36	W	17	W	--	7T	12	7-63	H	--	--	--	-	-
W 50	424852N0705827.1	85	POSSANT A	-- -	8	O	14	U	--	7T	2	7-63	H	--	--	--	-	-
W 51	424902N0705806.1	25	CHADWICK JOEL O	-- D	41	O	20	W	--	7T	12	7-63	H	--	--	--	-	-
W 52	424845N0705707.1	100	LEAVEY GEORGE	-- D	60	W	19	W	--	7T	15	7-63	H	--	--	--	-	-
W 53	424737N0705733.1	85	THOMSON WARREN	-- D	5	O	16	W	--	7T	12	7-63	H	--	--	--	-	-
W 54	424814N0705632.1	80	POORE HOWARD	-- D	48	O	17	W	--	7T	11	7-63	H	--	--	--	-	-
W 55	424752N0705648.1	85	BEARD WILLIAM	-- D	40	O	16	W	--	7T	8	7-63	H	--	--	--	-	-
W 56	424743N0705800.1	210	POORE LYDIA C	-- D	72	W	16	W	--	7T	9	7-63	H	--	--	--	-	-
W 57	424918N0705910.1	35	ROSS HOWARD L	1945 -	9	X	175	W	18	--	12	7-63	H	45	--	--	-	-
W 58	424828N0705905.1	140	MERRILL C A	1915 D	36	W	15	U	--	7T	15	7-63	H	--	--	--	-	-
W 59	424705N0710102.1	35	BERKINBUSH JEAN	-- D	40	W	18	W	--	S	7	3-64	H	--	--	--	-	-
W 60	424648N0710045.1	25	W NEWBURY	1955 W	2	-	44	T	--	--	0	6-55	U	--	--	--	D	-
W 61	424815N0705947.1	23	W NEWBURY	1955 W	2	-	68	T	--	S	16	6-55	U	10	--	--	D	-
W 63	424837N0705947.1	15	W NEWBURY	1955 W	2	-	49	T	--	R	4	6-55	U	--	--	--	D	-
W 64	424839N0705941.1	15	W NEWBURY	1955 W	2	-	14	T	--	R	2	6-55	U	--	--	--	D	-
W 69	424852N0705558.1	12	W NEWBURY	1955 W	2	-	30	T	--	R	2	7-55	U	25	12	--	D	-
W 70	424846N0705606.1	20	W NEWBURY	1955 W	2	-	58	T	--	R	3	7-55	U	20	19	--	D	-
W 77	424907N0705616.1	10	W NEWBURY	1964 W	2	P	23	T	--	7S	5	7-64	U	--	--	--	D	-
W 78	424903N0705612.1	10	W NEWBURY	1964 W	2	P	27	T	--	--	5	7-64	U	--	--	--	D	-
W 79	424657N0705711.1	45	W NEWBURY	1964 W	2	P	97	T	--	--	+4	7-64	U	3	--	--	D	-
W 80	424659N0705721.1	55	W NEWBURY	1964 W	2	P	57	T	--	--	2	7-64	U	--	--	--	D	-
W 81	424900N0705646.1	10	W NEWBURY	1964 W	2	P	17	T	--	--	5	7-64	U	--	--	--	D	-
W 82	424903N0705643.1	10	W NEWBURY	1964 W	2	P	23	T	--	--	8	7-64	U	--	--	--	D	-
W 83	424913N0705622.1	5	W NEWBURY	1964 W	2	P	16	T	--	--	4	7-64	U	--	--	--	D	-
W 84	424742N0710041.1	10	W NEWBURY	1964 W	2	P	75	T	--	--	1	7-64	U	--	--	--	D	-
W 85	424744N0710035.1	12	W NEWBURY	1964 W	2	P	90	T	--	--	9	7-64	U	--	--	--	D	-
W 86	424736N0710052.1	12	W NEWBURY	1964 W	2	S	36	T	--	--	14	7-64	U	10	--	--	D	-
W 87	424721N0710103.1	12	W NEWBURY	1964 W	2	P	23	T	--	--	15	7-64	U	--	--	--	D	-
W 88	424708N0710105.1	15	W NEWBURY	1964 W	2	P	14	T	--	--	--	--	U	--	--	--	D	-
W 89	424739N0710040.1	15	W NEWBURY	1964 W	2	P	57	T	--	--	8	7-64	U	--	--	--	D	-
W 90	424748N0710023.1	15	W NEWBURY	1964 W	2	P	38	T	--	--	0	7-64	U	20	--	--	D	-

TABLE 1.--DESCRIPTION OF SELECTED WELLS, TEST WELLS, AND BORINGS -- CONTINUED

LOCAL WELL NUMBER	LATITUDE-LONGITUDE	ALTITUDE OF LSD (FT)	OWNER OR USER	YEAR/ METHOD DRILLED	WELL DIAMETER (IN)	WELL FINISH	WELL DEPTH (FT)	WELL USE	FEET TO BEDROCK	WATER-BEARING MATERIAL	WATER LEVEL (FT)	WATER DATE MEASURED	WATER USE	PUMPAGE YIELD (GPM)	PUMPAGE DD (FT)	PUMPAGE TIME (HR)	LOG	QW
				WEST NEWBURY --CONTINUED														
W 91	424754N0710008.1	25	W NEWBURY	1964 W	2	P	63	T	--	--	7	8-64	U	--	--	--	D	-
W 92	424855N0705747.1	8	W NEWBURY	1964 W	2	P	76	T	--	--	10	8-64	U	--	--	--	D	-
W 93	424843N0705602.1	10	W NEWBURY	1959 -	8	S	42	T	--	R	0	--	U	65	20	--	D	-
W 94	424840N0705601.1	5	W NEWBURY	1967 W	2	-	23	T	--	R	1	9-67	U	75	7	13	D	P
W 103	424827N0705736.3	155	US GEOL SURVEY	1974 A	1	T	20	O	--	T	5	4-74	U	--	--	--	D	-
W 110	424824N0705736.2	125	US GEOL SURVEY	1974 -	1	T	27	O	--	T	+2	4-74	U	--	--	--	D	-
W 120	424831N0705737.1	185	US GEOL SURVEY	1974 -	1	T	38	O	--	T	6	7-74	U	--	--	--	D	-
W 121	424856N0705955.1	10	MASS WAT RES	1973 W	2	-	64	T	--	--	3	2-73	U	--	--	--	D	-
W 122	424901N0705951.1	15	MASS WAT RES	1973 W	2	-	40	T	--	--	2	2-73	U	--	--	--	D	-
W 123	424859N0705953.1	5	MASS WAT RES	1973 W	2	-	25	T	--	--	5	--	U	--	--	--	D	-
W 124	424856N0705949.1	5	MASS WAT RES	1973 W	2	-	80	T	--	--	3	2-73	U	--	--	--	D	-
W 125	424854N0705952.1	5	MASS WAT RES	1973 W	2	-	44	T	--	--	3	2-73	U	--	--	--	D	-
W 126	424903N0705954.1	15	MASS WAT RES	1973 W	2	-	62	T	--	--	4	2-73	U	--	--	--	D	-
W 127	424643N0705606.1	75	KATKNIS	1969 -	6	X	250	W	3	--	30	2-69	H	15	200	--	-	-
W 128	424750N0705813.1	130	THOMPSON GEORGE	1963 -	6	X	210	W	27	--	15	12-63	H	15	--	--	-	-
W 129	424715N0705810.1	135	ALLEN L V	1967 -	6	X	107	W	15	--	15	8-67	H	3	--	--	-	-
W 130	424711N0705725.1	105	CHERRY HILL NUR	1969 -	6	X	295	W	132	--	87	6-69	H	4	--	--	-	-

Table 2.--Logs of selected wells and borings
(Depths are given in feet below land surface.)

	Depth
AMESBURY A1.	
Sand, very fine to medium; some gravel	0 - 11
Silt and sand	11 - 18
Sand, fine	18 - 45
Silt; some clay	45 - 82
Till, gray	82 - 98
AMESBURY A2.	
Sand, very fine	0 - 37
Silt, gray and very fine sand	37 - 75
Clay, silty, gray	75 - 97
AMESBURY A3.	
Gravel; some boulders	0 - 5.5
Gravel, hard	5.5 - 8.5
AMESBURY A4.	
Silt, clayey, brown-gray	0 - 12.5
Till	12.5 - 14.5
Refusal	at 14.5
AMESBURY A5.	
Artificial fill	0 - 4
Silt, clayey, brown-gray	4 - 22.5
Till	22.5 - 36.5
Refusal	at 36.5
AMESBURY A6.	
Silt; some very fine sand	0 - 32
Clay, silty, gray	32 - 63
Gravel, fine; some sand and clay	63 - 78
Till	78 - 89.5
AMESBURY A7.	
Till	0 - 4
AMESBURY A8.	
Sand and gravel, loose	0 - 24
Sand, medium to coarse	24 - 53
Sand and gravel	53 - 56
Refusal	at 56
AMESBURY A9.	
Till, brown-gray	0 - 37
Refusal	at 37
AMESBURY A10.	
Artificial fill	0 - 5
Silt; some fine sand and clay	5 - 45
Silt, fine sand, and gravel	45 - 54
Till	54 - 55.5
Refusal	at 55.5
AMESBURY A11.	
Artificial fill	0 - 2.5
Sand, fine	2.5 - 34
Silt, gray	34 - 46
Sand, fine	46 - 51
Gravel, hard	51 - 52.5
Refusal in gravel	at 52.5
AMESBURY A12.	
Sand and gravel	0 - 13
Sand	13 - 26
Sand and gravel, gray	26 - 46.5
Till, gray	46.5 - 48
Refusal	at 48
AMESBURY A14	
Sand, fine; some silt	0 - 9
Till	9 - 12
AMESBURY B1.	
Artificial fill	0 - 2.5
Sand, fine to very fine, silty, firm, yellow; trace of fine gravel and clay	2.5 - 17.5
Clay, soft, gray; some fine gray sand	17.5 - 46
Sand, fine to medium, yellow; some clay and gravel	46 - 53
Sand, fine-medium, silty, gray; clay; gravel	53 - 64
AMESBURY B3.	
Top soil	0 - 1
Sand, fine to medium, loamy, yellow, firm; some gravel; trace of silt; boulders	1 - 8
Sand, fine to medium, silty, yellow; some soft clay; trace of gravel	8 - 11
Sand, fine to medium, compact; some clay and gravel	11 - 17.5
Bedrock, gray siltstone	17.5 - 25.5

	Depth
AMESBURY B4.	
Artificial fill	0 - 3
Sand, very fine to coarse, compact	3 - 32.7
Clay, soft	32.7 - 71.6
Clay; sand; gravel; compact	71.6 - 73.7
Refusal	at 73.7
AMESBURY B5.	
Sand, loose	0 - 8.8
Sand and gravel; compact; some clay	8.8 - 17.5
Sand, compact; trace of clay	17.5 - 24.3
Clay; sand; gravel; very compact	24.3 - 26.3
Bedrock	26.3 - 36.8
AMESBURY B6.	
Artificial fill	0 - 6
Clay, sand; gravel; very compact	6 - 15
Bedrock	15 - 25
AMESBURY B7.	
Peat	0 - 18
Sand, fine, silty, loose	18 - 30
Sand	30 - 78
Sand, coarse; gravel; boulders	78 - 80
Bedrock, shale	80 - 89
AMESBURY B8.	
Artificial fill, sand and gravel	0 - 8.5
Sand, medium, loose; gravel; trace of silt	8.5 - 12
Sand, coarse; gravel, loose	12 - 15
Sand, fine, loose	15 - 19.5
Sand, fine, loose; trace of clay	19.5 - 33
Sand, fine, blue; clay	33 - 88.5
Bedrock, shale	88.5 - 103
AMESBURY B9.	
Artificial fill, sand and gravel	0 - 12
Peat, silty, soft, brown	12 - 15
Peat, sandy, silty, soft, brown	15 - 20
Sand, very fine to fine, silty, loose, brown; trace of gravel and peat	20 - 24
Sand, coarse, loose, gray; trace medium sand and fine gravel	24 - 34
Clay, sandy, silty, soft, gray	34 - 67
Sand, medium to coarse, gray; gravel; clay; some fine sand and boulders	67 - 75
Bedrock, weathered	75 - 77.5
Bedrock, soapstone	77.5 - 85.5
AMESBURY B10.	
Sand, medium, brown	0 - 15
Sand, fine, gray	15 - 21
Gravel, coarse; fine sand; silt	21 - 21.5
Sand, coarse, gray; rock fragments	21.5 - 30.3
Bedrock	30.3 - 35.3
AMESBURY B11.	
Artificial fill, sand and gravel	0 - 3
Sand, very fine, yellow; trace of silt	3 - 13
Sand, very fine, yellow, loose; trace of silt and clay	13 - 25
Sand, very fine to fine, yellow, firm; trace of silt	25 - 37
Clay, soft, gray; trace of fine sand	37 - 98
Sand, very fine to fine, loose, gray; trace of silt	98 - 126
Sand, medium to fine, gray; gravel; some coarse sand; trace of silt and boulders	126 - 128
Refusal	at 128
AMESBURY B12.	
Loam, sandy	0 - 1.5
Sand, medium to coarse, loose, yellow; trace of fine gravel and fine sand	1.5 - 8.5
Sand, fine to medium, firm, yellow; some fine gravel and coarse sand	8.5 - 15.5
Sand, fine to medium, loose, yellow; trace of fine gravel and silt	15.5 - 25
Sand, coarse, loose, yellow; fine gravel; trace of medium yellow sand	25 - 37
Sand, fine, firm, yellow; trace of fine gravel and silt	37 - 41

	Depth
AMESBURY B12. (Continued)	
Sand, fine to medium, compact, yellow; some gravel; trace of coarse sand	41 - 46.5
Sand, fine to medium, compact, yellow; some gravel; trace of clay	46.5 - 54
Sand, fine to medium, compact, gray; gravel; some clay and boulders	54 - 60
Refusal	at 60
AMESBURY B13.	
Top soil, peat and sand	0 - 2.5
Sand, medium, gray; trace of silt, varved	2.5 - 6.5
Clay and silt, gray	6.5 - 11
Sand, fine, gray; silt; trace of varved clay	11 - 12
Silt, clayey, gray	12 - 35
Sand, coarse, gray; rock fragments	35 - 41
AMESBURY B16.	
Sand, loamy	0 - 1
Sand, coarse, firm, yellow	1 - 10
Clay, yellow; fine sand	10 - 14.5
Sand, medium, firm, blue	14.5 - 20.5
Sand, fine, loose; blue clay	20.5 - 40
Sand, fine, blue; very little clay	40 - 47.5
Clay, soft, blue; some fine sand	47.5 - 124.5
Sand, hard; gravel; boulders; little clay	124.5 - 131.5
Refusal	at 131.5
AMESBURY B17.	
Clay, soft, blue	0 - 28.8
Till, (fine sand, gravel, and clay) hard	28.8 - 48
AMESBURY B18.	
Sand, medium, loamy	0 - 9
Clay; fine sand; compact	9 - 15.5
Clay, soft	15.5 - 40.8
Refusal	at 40.8
AMESBURY B19.	
Mud	0 - 7.6
Sand, fine, silty; some clay	7.6 - 11.5
Clay; sand; gravel; compact	11.5 - 14.7
Refusal	at 14.7
AMESBURY R1.	
Sand, fine, brown; silt; trace of peat	0 - 2
Clay, blue; some silt; trace of fine sand	2 - 7
Sand, fine, brown; some silt	7 - 10
AMESBURY R2.	
Top soil	0 - 1
Sand, fine, rust color	1 - 2.5
Sand, fine, brown; some coarse sand; trace of silt	2.5 - 5.5
No record	5.5 - 8
Sand, fine, compact, gray; some silt	8 - 22
AMESBURY R10.	
Top soil	0 - 2
Sand, very fine to fine, loose, brown; trace of silt	2 - 4
Clay; very fine to fine yellow sand	4 - 11.5
Clay, sandy, silty, gray	11.5 - 30
AMESBURY R11.	
Sand, fine, brown	0 - 4
Sand, fine to coarse, brown; small fine gravel and rock fragments	4 - 13
Sand, fine to coarse, brown; silt; some fine gravel and rock fragments	13 - 20.5

Table 2.--Logs of selected wells and borings (Continued)

	Depth
AMESBURY R11.(Continued)	
Silt, gray; fine to medium sand; trace of fine gravel and rock fragments	20.5 - 28.2
Silt, gray; fine to coarse sand; some rock fragments	28.2 - 32.5
AMESBURY R13.	
Muck	0 - 1.5
Clay, stiff, gray	1.5 - 5
Clay, stiff, gray; trace of sand	5 - 8
Clay, brown; trace of fine sand	8 - 10
Sand, brown; trace of gravel	10 - 11.5
AMESBURY R14.	
Muck and peat	0 - 1
Sand, brown; some clay; trace of gravel	1 - 3
Clay, stiff, brown; trace of fine sand	3 - 5.5
Clay, stiff, blue	5.5 - 11
AMESBURY R15.	
Sand, medium to coarse, gray; some rock fragments	0 - 5
Sand, fine to coarse, brown; some rock fragments	5 - 8
Sand, fine to coarse, brown; some gravel	8 - 13.5
Sand, fine to coarse, brown; fine to medium gravel	13.5 - 21.5
Sand, fine to coarse, brown	21.5 - 28.7
Sand, fine to medium, gray	28.7 - 35.7
AMESBURY R16.	
Sand, fine; some coarse sand	0 - 1.8
Sand, coarse; some fine brown sand; trace of fine gravel	1.8 - 5
Sand; some gravel; cemented	5 - 9
Sand, brown; some silt and gravel; compact	9 - 11
AMESBURY R17.	
Peat	0 - 3.5
Sand, fine to medium; gravel	3.5 - 5
AMESBURY W3.	
Sand; gravel; stones; clay, brown	0 - 8
Sand; gravel; some gray clay and silt	8 - 28
Sand and gravel, silty, gray	28 - 33
AMESBURY W8.	
Sand and stones	0 - 7
Sand and gravel, brown	7 - 19
Clay and gravel, gray	19 - 21
Sand and gravel, gray; some clay	21 - 25
Clay, blue	25 - 26
Sand and gravel; some clay	26 - 28
Clay and gravel, gray	28 - 33
Clay; sand; gravel; gray	33 - 41
Refusal	at 41
AMESBURY W9.	
Sand and loam	0 - 3
Sand and gravel, brown	3 - 14
Sand and gravel; some gray clay	14 - 17
Sand and gravel, silty, brown	17 - 21
Sand and gravel; some gray clay	21 - 26
Sand, silty, brown	26 - 31
Clay; silt; sand; gravel; gray	31 - 38
AMESBURY W10.	
Muck; clay; sand	0 - 4
Sand, coarse, brown; gravel	4 - 13
Gravel, clayey, gray	13 - 31
Refusal	at 3'
AMESBURY W11.	
Loam and stones	0 - 2
Clay and brown sand; some gravel	2 - 12
Clay, gray; very little gravel	12 - 21.5
Refusal	at 21.5
AMESBURY W12.	
Till (clay, loam, sand, gravel and stones)	0 - 18
AMESBURY W13.	
Clay; loam; sand; stones	0 - 14
Clay, blue	14 - 49
AMESBURY W14.	
Loam; sand; stones; brown	0 - 3
Clay; sand; gravel	3 - 14
Gravel; some gray clay	14 - 24
Clay; sand; gravel	24 - 30
Sand, very fine	30 - 46
AMESBURY W15.	
Sand, brown	0 - 31
Sand and gravel; some gray clay	31 - 33
Clay and gravel	33 - 55
Refusal	at 55
AMESBURY W16.	
Sand, white	0 - 3
Sand and muck	3 - 11
Sand and gravel, gray	11 - 30
Clay, blue; gravel	30 - 34
Refusal	at 34
AMESBURY W17.	
Loam and sand	0 - 2
Sand and muck	2 - 9
Sand, yellow	9 - 23
Sand, fine, white	23 - 30
Clay, blue; sand	30 - 66
Refusal	at 66
AMESBURY W21.	
Clay and brown sand	0 - 6
Clay, blue	6 - 52
Till	52 - 63
Refusal	at 63
AMESBURY W22.	
Clay, brown	0 - 10
Sand, fine, gray	10 - 27
Clay, blue	27 - 61
Refusal	at 61
AMESBURY W23.	
Clay, brown	0 - 10
Clay, blue	10 - 30
Gravel, compact	30 - 33
Refusal	at 33
AMESBURY W24.	
Clay, brown	0 - 8
Clay, blue	8 - 30
Refusal	at 30
AMESBURY W25.	
Clay, sandy, brown	0 - 15
Clay, blue	15 - 40
Clay and gravel	40 - 44
Refusal	at 44
AMESBURY W26.	
Gravel	0 - 10
Clay and gravel	10 - 19
Refusal	at 19
AMESBURY W27.	
Sand; gravel; boulders	0 - 17
Sand and gravel	17 - 33
Sand, medium, brown	33 - 40
Sand, fine, gray; gravel	40 - 43
Refusal	at 43
AMESBURY W28.	
Sand; gravel; boulders	0 - 17
Sand and gravel	17 - 19
Sand; gravel; boulders	19 - 29
Sand, fine, gray; gravel	29 - 32
Refusal	at 32
AMESBURY W29.	
Clay, sandy, brown	0 - 17
Gravel, fine, brown	17 - 28
Clay, blue	28 - 57
AMESBURY W47.	
Top soil, loam	0 - 3
Sand, fine	3 - 16
Clay and sand	16 - 32
Sand, fine	32 - 45
Sand and gravel	45 - 53
AMESBURY W48.	
Top soil, loam	0 - 8
Sand	8 - 17
Clay and sand	17 - 30
Refusal	at 30
AMESBURY W49.	
Sand, fine to medium, brown; gravel; some clay	0 - 22
Sand, fine, brown; some gravel and clay	22 - 27
Sand, fine, brown; gravel	27 - 39
Refusal	at 39
AMESBURY W50.	
Sand, fine, brown; gravel	0 - 22
Sand, fine, gray; some clay	22 - 28
Sand, fine, gray; some clay; some gravel	28 - 36
Refusal	at 36
AMESBURY W51.	
Sand, fine to medium, brown; gravel; some clay	0 - 22
Sand, fine to medium, brown; gravel	22 - 39.5
AMESBURY W52.	
Sand, fine, gray; some gravel and clay	0 - 22
Clay, gray	22 - 27.5
Clay, gray; gray sand	27.5 - 38.5
Sand, fine to medium, gray	38.5 - 43.5
Sand, fine to medium, gray; some gravel	43.5 - 53.5
AMESBURY W53.	
Sand, fine to medium	0 - 10
Sand, coarse	10 - 20
Sand, coarse; gravel	20 - 30
Gravel, coarse	30 - 50
AMESBURY W55.	
Sand, medium	0 - 10
Loam	10 - 13
Sand and clay	13 - 20
Sand, medium to coarse	20 - 40
Clay and gravel	40 - 52
Refusal	at 52
AMESBURY W182.	
Sand, fine; clay	0 - 59
Sand, coarse; gravel	59 - 61
AMESBURY W183.	
Sand	0 - 18
Clay; coarse sand; gravel	18 - 35
Refusal	at 35
AMESBURY W184.	
Top soil, loam	0 - 2
Sand, fine	2 - 7.5
Clay, soft	7.5 - 21
Clay; fine sand	21 - 28
Clay; sand; gravel	28 - 44
AMESBURY W185.	
Artificial fill	0 - 2
Peat	2 - 4
Clay, blue to brown	4 - 29
Sand, fine, gray	29 - 32
Sand, fine to coarse	32 - 45
Sand, fine to coarse; gravel	45 - 50.5
Clay; fine sand	at 50.5
ANDOVER B1.	
Top soil (sandy loam)	0 - 2
Sand, fine; some silt and gravel; compact	2 - 15
ANDOVER B6.	
Sand, coarse, loose, yellow	0 - 7.5
Sand, medium, hard, yellow; gravel; stones and boulders	7.5 - 18
Bedrock	18 - 22

Table 2.--Logs of selected wells and borings (Continued)

	Depth
ANDOVER B7.	
Top soil, loam	0 - 1
Sand, fine, yellow	1 - 3.5
Sand, fine; trace of silt	3.5 - 28.5
Sand, very coarse, yellow; gravel; stones and boulders	28.5 - 33
Refusal	at 33
ANDOVER B8.	
Top soil, loam	0 - 2
Sand, fine to medium, loose, yellow	2 - 4
Sand, medium to coarse, loose, gray; trace of fine gravel	4 - 7.5
Sand, medium to coarse, loose, gray; trace of fine sand; trace of fine gravel	7.5 - 15
Sand, fine to medium, loose, gray; some coarse gray sand; trace of fine gravel	15 - 22
Sand, very fine to fine, loose, yellow; trace of silt	22 - 29
Sand, very fine to fine, silty, loose, yellow to gray	29 - 34
Sand, very fine to fine, silty, loose, gray; trace of clay	34 - 52
Refusal	at 52
ANDOVER B10.	
Sand, fine to medium, brown	0 - 10
Sand, fine, gray	10 - 15
Sand, fine, brown; trace of silt	15 - 45
Silt; trace of clay	45 - 50
Sand, fine to medium, gray; trace of clay	50 - 55
Sand, fine to medium, gray; trace of gravel	55 - 60
Refusal	at 60
ANDOVER B11.	
Top soil (loam, sand, gravel, and boulders)	0 - 2.5
Sand, fine to medium, compact, yellow; some gravel and coarse yellow sand; trace of silt and boulders	2.5 - 10
Sand, fine to medium, silty, compact, gray; some gray clay and gravel; trace of coarse sand and boulders	10 - 22
ANDOVER B13.	
Sand, coarse; some loose, yellow, gravel fill	0 - 2.5
Sand, fine; some compact, yellow, gravel	2.5 - 7
Bedrock	7 - 13
ANDOVER B14.	
Sand, fine, brown; some coarse gravel and cobbles	0 - 7.5
Sand, fine, brown; some coarse gravel and cobbles; trace of silt	7.5 - 13.5
Till (gray-brown fine sand; some medium gravel, boulders, trace of silt; cemented)	13.5 - 27
ANDOVER B18.	
Top soil; brown loamy very fine sand	0 - 3.5
Sand, fine, gray-brown; trace of silt and fine gravel	3.5 - 9.4
Till (gray-brown fine sand; trace of silt and medium tc fine gravel; cemented)	9.4 - 26
ANDOVER B19.	
Sand, fine, gray; gravel; trace of silt; compact	0 - 8
ANDOVER B20.	
Silt, gray; some fine sand	0 - 6
Sand, fine; gravel; some silt; compact	6 - 11
Sand, fine; some silt and gravel; compact	11 - 14
ANDOVER B21.	
Sand, fine; some silt and gravel; compact	0 - 13
ANDOVER R1.	
Top soil	0 - 1
Sand, fine to medium, brown; gravel	1 - 10
Sand, fine to medium, gray; gravel; trace of silt	10 - 15
ANDOVER R2.	
Sand, fine, gray	0 - 5.5
Sand, medium, gray	5.5 - 30
ANDOVER R3.	
Peat	0 - 5
Sand, fine, brown; loose gravel	5 - 8
Sand, coarse, brown	8 - 12
Sand, fine, brown; gravel; hard	12 - 27
Refusal	at 27
ANDOVER W478.	
Till, brown	0 - 16
Till, gray	16 - 22
Refusal	at 22
ANDOVER W488.	
Sand, yellow; gravel	0 - 2
No record	2 - 5
Sand, yellow; gravel	5 - 7
No record	7 - 8
Silt; sand; gravel; gray and stiff	8 - 10
ANDOVER W514.	
Top soil	0 - 4
Clay; brown sand and gravel	4 - 14
Clay, brown	14 - 29
Clay; brown sand, and gravel	29 - 34
Clay, gray	34 - 50
Refusal	at 50
ANDOVER W515.	
Top soil	0 - 2
Clay, gray; fine sand	2 - 29
Clay and gravel	29 - 36
Clay, gray	36 - 48
ANDOVER W531.	
Top soil	0 - 3
Sand, fine, silty; trace of clay	3 - 12
Clay; sand and gravel	12 - 18
Refusal	at 18
ANDOVER W532.	
Top soil	0 - 3
Silt and fine sand; trace of clay	3 - 12
Clay; sand and gravel	12 - 17
Refusal	at 17
ANDOVER W541.	
Silt	0 - 15
Clay; fine sand and gravel	15 - 23
Refusal	at 23
ANDOVER W547.	
Silt and fine sand	0 - 10
Clay; sand and gravel	10 - 22
Refusal	at 22
BOXFORD W274.	
Till (very fine to very coarse sand; gravel; pebbles; cobbles; boulders)	0 - 4.5
BOXFORD W276.	
Till (very fine to very coarse sand; gravel; pebbles)	0 - 8.5
BOXFORD W277.	
Sand, very fine to coarse; some pebbles	0 - 7
Till (gray silt; very fine to very coarse sand; gravel; pebbles; cobbles)	7 - 15
Refusal	at 15
BOXFORD W278.	
Very fine to very coarse sand; gravel and cobbles; poor sorting	0 - 3
Refusal in gravel	at 3
BOXFORD W279.	
Artificial fill	0 - 5.5
Peat	5.5 - 15
Clay, gray	15 - 22.5
Till (some clay; gray silt; very fine to very course sand; gravel; pebbles; small cobbles)	22.5 - 38
Refusal	at 38
BOXFORD W280.	
Artificial fill	0 - 3.5
Peat; some silt and fine sand	3.5 - 15
Clay, gray	15 - 29.5
BOXFORD W280. (Continued)	
Till, sandy gray gravel and pebbles	29.5 - 32.5
Refusal	at 32.5
BOXFORD W288.	
Sand, fine, brown; clay and broken gravel	0 - 31
Sand, fine, brown; some gravel; trace of clay	31 - 38
Refusal	at 38
BOXFORD W289.	
Sand, fine to medium, brown; gravel; some clay	0 - 36
Sand, fine, brown; gravel; some clay	36 - 44
Refusal	at 44
BOXFORD W291.	
Sand, fine to medium, brown; gravel; trace of clay	0 - 23
Clay, gray; fine sand; gravel	23 - 33
No record	33 - 34.2
Refusal	at 34.2
BOXFORD W293.	
Sand, fine to medium, brown; gravel; trace of clay	0 - 34
Clay, gray; fine sand; gravel	34 - 39
No record	39 - 41.6
Refusal	at 41.6
GROVELAND B1.	
Sand; gravel; shells; wood	0 - 2.5
Sand, loose; gravel	2.5 - 10
Sand, medium, yellow	10 - 16.5
Sand, coarse, yellow; gravel	16.5 - 27
Sand, loose, yellow; gravel; small boulders	27 - 41
Sand, firm, blue; gravel; boulders	41 - 48.3
Refusal	at 48.3
GROVELAND W1.	
Sand, fine to very coarse; gravel; poorly sorted	0 - 33
Refusal	at 33
GROVELAND W3.	
Sand, very fine to fine, yellow; some silt	0 - 16
Gravel, loose with sand lenses; changing with depth to sand with gravel lenses	16 - 58
Gravel, tight	58 - 58.5
Refusal	at 58.5
GROVELAND W4.	
Clay and silt, brown and black	0 - 25
Sand, very fine, gray; some clay and silt	25 - 33.7
Till, stony and compact	33.7 - 41
Refusal	at 41
GROVELAND W5.	
Sand, fine to very coarse; some silt	0 - 61.5
Till (sand, very fine to medium; gravel; pebbles; cobbles)	61.5 - 69
Refusal	at 69
GROVELAND W6.	
Sand, very fine to fine, well sorted	0 - 42
Sand, very fine to medium, well sorted	42 - 79.5
Till (sand, very fine to coarse, gray; gravel; pebbles)	79.5 - 87.5
Refusal	at 87.5
GROVELAND W7.	
Artificial fill	0 - 2
Peat	2 - 9
Sand, fine to medium, well sorted	9 - 19.5
Till	19.5 - 22.5
Bedrock, micaceous schist	22.5 - 28
GROVELAND W8.	
Sand, fine to very coarse, poorly sorted; some pebbles	0 - 28.5
Till (silt, very fine to very coarse sand; gray gravel; pebbles; some clay)	28.5 - 35
Refusal	at 35

Table 2.--Logs of selected wells and borings (Continued)

	Depth
GROVELAND W18.	
Artificial fill	0 - 14
Clay; silt and sand	14 - 30
Silt and sand	30 - 34
Silt and sand; trace of gravel	34 - 46
Sand, silty, brown	46 - 58
Sand, fine; some gravel	58 - 75
Sand, fine; coarse gravel	75 - 87
Sand, fine, brown-red	87 - 93
Sand, fine, silty, gray	93 - 98
Refusal	at 98
GROVELAND W19.	
Top soil	0 - 5
Sand, medium to coarse; broken gravel	5 - 15
Broken stone	15 - 19
Sand, fine, silty, red; gravel	19 - 30
Sand, fine to coarse, silty, red; gravel	30 - 56
Clay and broken stone	56 - 57
GROVELAND W20.	
Sand, fine to coarse, brown; gravel	0 - 26
Refusal	at 26
GROVELAND W21.	
Sand, fine to coarse; gravel; boulders	0 - 15
Refusal	at 15
GROVELAND W22.	
Sand, fine, brown	0 - 30
Sand, fine, gray; broken stone	30 - 32
GROVELAND W23.	
Sand, fine, red; broken gravel	0 - 25
Clay; fine, red-brown sand; broken gravel	25 - 32
Bedrock	32 - 36
GROVELAND W24.	
Silt and fine sand, red-brown	0 - 23
Silt and fine sand, brown	23 - 45
Clay and broken stone	45 - 64
GROVELAND W25.	
Silt and fine brown sand	0 - 25
Silt and fine gray-brown sand	25 - 30
Silt and fine red sand	30 - 34
Clay and broken stones	34 - 36
Refusal	at 36
GROVELAND W26.	
Sand and sharp gravel	0 - 16
Clay and broken stone	16 - 18
GROVELAND W27.	
Sand and sharp gravel	0 - 16
Clay and broken stone	16 - 18
GROVELAND W28.	
Sand, fine; trace of gravel	0 - 25
Sand, fine; gravel	25 - 26.5
Sand, gray; red gravel	26.5 - 34
Sand, fine, gray; red gravel	34 - 40
Sand, fine; trace of gravel	40 - 45
Gravel; some fine sand	45 - 50
Sand, fine, gray	50 - 55
Sand, very fine, gray	55 - 64.6
GROVELAND W30.	
Sand, fine, brown; gravel	0 - 15
Clay and stone	15 - 27
GROVELAND W31.	
Peat	0 - 6
Clay; silt; trace of red-brown sand	6 - 18
Silt; trace of fine brown sand	18 - 30
Silt; trace of red-brown sand	30 - 41
Silt; trace of brown sand	41 - 50
Gravel, silty, broken, black	50 - 53
Clay and broken stone, black	53 - 54.8
HAVERHILL A1.	
Sand, very fine, yellow; some silt; coarse sand; pebbles	0 - 83
Gravel	83 - 92.5
Refusal	at 92.5
HAVERHILL A2.	
Silt and very fine yellow sand	0 - 27.5
Gravel	27.5 - 68
Till (clay and silt, gray; boulders)	68 - 74
Refusal	at 74

	Depth
HAVERHILL A3.	
Till (sandy brown gravel and pebbles)	0 - 6
Refusal	at 6
HAVERHILL A4.	
Silt and very fine yellow sand	0 - 15
Sand, gray	15 - 23
Gravel	23 - 43
Till	43 - 45
Refusal	at 45
HAVERHILL A5.	
Till (silt, sand, gravel, pebbles, and cobbles)	0 - 19.5
Refusal	at 19.5
HAVERHILL A6.	
Silt; fine gray sand; some pebbles	0 - 6.2
Gravel, very coarse; cobbles and boulders	6.2 - 18
Clay and silt, gray; some sand and pebbles	18 - 56
Clay, silty, gray	56 - 69
Clay, silty; some gravel	69 - 74
Clay and silt, gray	74 - 83
Till, stoney, clayey, gray	83 - 86.5
Refusal	at 86.5
HAVERHILL A7.	
Till (sand, very fine to very coarse, poorly sorted; gravel; rocks	0 - 21.5
HAVERHILL A8.	
Sand, very fine	0 - 4.5
Gravel, tight	4.5 - 6.5
Sand, coarse	6.5 - 7.5
Gravel; some fine to very coarse sand; some pebbles	7.5 - 18
Refusal	at 18
HAVERHILL A9.	
Sand, very fine to coarse; some cobbles	0 - 11.5
Gravel; some cobbles	11.5 - 13
Sand, medium to very coarse	13 - 36
Sand, fine	36 - 50
Refusal	at 50
HAVERHILL A10.	
Clay, gray	0 - 9.5
Silt; medium to very coarse sand; pebbles	9.5 - 17.5
Boulders	17.5 - 18
Refusal	at 18
HAVERHILL A11.	
Silt; sand, very fine to medium	0 - 16.5
Till (clay, silt, very fine to very coarse sand, gravel, pebbles)	16.5 - 35.5
Refusal	at 35.5
HAVERHILL A12.	
Sand, very fine to coarse	0 - 4.5
Gravel and cobbles	4.5 - 6.5
Sand, very fine to coarse; some pebbles	6.5 - 17
Sand, very fine to fine; some very coarse sand	17 - 35.5
Gravel	35.5 - 36
Sand, very fine to very coarse	36 - 53.5
Gravel; some cobbles	53.5 - 64
Refusal	at 64
HAVERHILL A13.	
Clay, gray	0 - 19.5
Gravel; some clay, sand, pebbles and small cobbles	19.5 - 27.5
Refusal	at 27.5
HAVERHILL A14.	
Artificial fill, sand and gravel	0 - 3.5
Sand, very fine to medium; some coarse sand	3.5 - 15.5
Sand, fine to very coarse; some pebbles and cobbles	15.5 - 20.5
Gravel; some medium to very coarse sand and pebbles	20.5 - 24
Till (clay, silt to small cobbles, gray)	24 - 39
Refusal	at 39

	Depth
HAVERHILL A15.	
Till (sand, very fine to very coarse; gravel, pebbles, stones)	0 - 15.5
Refusal	at 15.5
HAVERHILL A16.	
Sand, very fine to very coarse; fine gravel; pebbles and cobbles	0 - 21.5
Gravel, fine to coarse	21.5 - 30.5
Till (sand, gravel and pebbles, gray)	30.5 - 31.5
Refusal	at 31.5
HAVERHILL A17.	
Sand, fine to medium	0 - 12.5
Gravel	12.5 - 14
Clay, gray; some sand	14 - 19.5
Till (clay, silt, very fine to very coarse sand, gravel, pebbles, and small cobbles)	19.5 - 25.5
Refusal	at 25.5
HAVERHILL A18.	
Sand, very fine to very coarse	0 - 14
Gravel, fine; some fine to very coarse sand, pebbles and small cobbles	14 - 19.5
Till (sand, gravel, and pebbles, gray)	19.5 - 22.5
Refusal	at 22.5
HAVERHILL A19.	
Sand, very fine to fine	0 - 13.5
Gravel	13.5 - 28.5
Silt, sandy	28.5 - 31
Gravel	31 - 33
Silt; some sand	33 - 39.5
Till (sand, gravel, and cobbles, gray)	39.5 - 61.5
Refusal	at 61.5
HAVERHILL A20.	
Silt; very fine sand	0 - 14.5
Gravel	14.5 - 22.5
Sand, fine to coarse	22.5 - 28
Clay, gray	28 - 51.5
Gravel; some pebbles and cobbles	51.5 - 55
No record	55 - 57
Refusal	at 57
HAVERHILL A21.	
Sand, very fine to medium	0 - 22
Sand, fine to coarse; some very fine sand	22 - 33
Till, sandy, gray	at 33
HAVERHILL A22.	
Sand, very fine to coarse	0 - 2.5
Till (sand, gravel, pebbles, and cobbles, gray)	2.5 - 23
Refusal	at 23
HAVERHILL A23.	
Till (silt, very fine to very coarse sand, gravel, pebbles, small cobbles, gray)	0 - 29.5
Refusal	at 29.5
HAVERHILL B1.	
Top soil; fine to medium sand; trace of silt	0 - 3
Clay, blue	3 - 19
Sand, very fine, gray; trace of silt	19 - 29
Sand, very fine, gray; some blue clay	29 - 32
Clay, blue; some fine gravel	32 - 37
Till (very fine sand; some silt and fine gravel; gray; cemented)	37 - 42.2
Bedrock, sandy shale, seamy, gray	42.2 - 48.2
HAVERHILL B2.	
Loam	0 - 0.5
Sand, fine, yellow; gravel, rocks, and boulders	0.5 - 20
Sand, fine, yellow; gravel, rocks, and boulders; trace of clay	20 - 31

Table 2.--Logs of selected wells and borings (Continued)

	Depth
HAVERHILL B3.	
Sand, coarse; gravel, rocks, and boulders	0 - 1
Sand, fine, gray; some clay; trace of gravel	1 - 6
Sand, very fine, gray; trace of clay and gravel	6 - 20
Sand, coarse, yellow; some gravel	20 - 41.5
Bedrock	41.5 - 47.5
HAVERHILL B4.	
Loam, brown	0 - 1
Sand, fine, yellow; trace of silt	1 - 2.5
Sand, medium, yellow; gravel, rocks, and boulders	2.5 - 8
Bedrock	8 - 16
HAVERHILL B5.	
Sand, fine, brown; some gravel; trace of loam	0 - 4
Sand, fine, yellow; trace of silt	4 - 13
Sand, fine, yellow; trace of gravel	13 - 16.5
Sand, fine, yellow; gravel	16.5 - 19.5
Sand, fine, yellow; some gravel	19.5 - 25.5
Sand, fine, yellow; some gravel and rocks	25.5 - 30.5
Refusal	at 30.5
HAVERHILL B6.	
Peat, silty, brown	0 - 7
Sand, medium, yellow; some fine yellow sand; trace of silt and fine gravel	7 - 19
Sand, fine to medium, gray; some coarse gray sand; trace of clay, silt, fine gravel and boulders	19 - 23.5
Refusal	at 23.5
HAVERHILL B7.	
Sand, fine, loamy, brown	0 - 3.6
Sand, fine, brown; some fine gravel	3.6 - 8.8
Till (fine gray sand; some silt and fine gravel; cemented)	8.8 - 15
HAVERHILL B8.	
Top soil and silt	0 - 1
Clay, blue	1 - 5
Sand, medium to coarse, brown	5 - 12
Sand, fine, gray; some silt and fine gravel	12 - 16.5
HAVERHILL B9.	
Top soil, loamy, brown	0 - 2
Sand, fine, brown; some silt, fine gravel and cobbles	2 - 16.5
HAVERHILL B10.	
Sand, fine, brown; some silt	0 - 2
Sand, fine, brown; some silt and medium to coarse gravel	2 - 10
Sand, fine, brown; boulders; some silt and fine gravel	10 - 13
HAVERHILL B11.	
Sand, fine, loamy, brown; some fine to medium gravel	0 - 3
Sand, fine, brown; some medium to coarse gravel	3 - 8
Sand, very fine, brown; some silt and fine gravel	8 - 13
Sand, fine, brown; some silt and fine gravel	13 - 17
Till (brown fine sand; some silt and fine to medium gravel; cemented)	17 - 44.5
Bedrock, sandstone	44.5 - 49.5
HAVERHILL B12.	
Top soil, brown	0 - 1
Sand, very fine, gray; some silt	1 - 5
Clay, blue	5 - 15.5
Sand, very fine, brown; some silt	15.5 - 18
Clay, blue	18 - 24
Sand, very fine, gray; some sandy shale fragments	24 - 27
Bedrock, sandy shale to sandstone	27 - 32
HAVERHILL B13.	
Artificial fill, cinders	0 - 0.5
Sand, fine, brown; trace of fine gravel, artificial fill	0.5 - 5
Sand, very fine, brown; some silt	5 - 5.5
Sand, fine, brown; trace of silt and fine gravel	5.5 - 8
HAVERHILL B13. (Continued)	
Sand, fine to medium, brown; some silt and fine gravel	8 - 13
Sand, fine, brown; trace of silt and fine gravel	13 - 23
Till (very fine gray sand; some silt and fine gravel; cemented)	23 - 47
Bedrock, gray shale and sandstone	47 - 52
HAVERHILL B15.	
Sand, fine, loamy, brown; some fine gravel	0 - 3
Sand, fine, brown; some fine gravel	3 - 7
Sand, very fine, brown; some silt and fine gravel	7 - 22
Sand, very fine, gray; some silt and fine gravel	22 - 26
Till (fine gray sand, silt, gravel and boulders; cemented)	26 - 35.3
Bedrock, gray sandstone	35.3 - 40.3
HAVERHILL B16.	
Top soil, black	0 - 2
Sand, fine, brown; some silt	2 - 10
Till (fine gray sand; some silt and fine gravel; cemented)	10 - 36
Bedrock, gray sandstone	36 - 43
HAVERHILL B17.	
Sand, very fine, brown; some silt	0 - 8
Sand, very fine, brown; some silt and fine gravel	8 - 12
Boulders	12 - 14
Till (gray fine sand; some silt and fine gravel; cemented)	14 - 52
Bedrock, gray sandy shale	52 - 57
HAVERHILL B18.	
Peat, soft, black	0 - 4.5
Silt, clayey, gray	4.5 - 20
Sand, medium to coarse, yellow; some fine sand; trace of gravel	20 - 31
Sand, fine to medium, yellow; trace of silt, coarse sand, and fine gravel	31 - 43
Sand, fine to medium, yellow; trace of coarse sand	43 - 50.5
Sand, fine to medium, gray; trace of coarse sand and fine gravel	50.5 - 68
Refusal	at 68
HAVERHILL B19.	
Peat, soft, black	0 - 1.5
Sand, medium to coarse, yellow; some fine sand; trace of gravel	1.5 - 3
Sand, medium to coarse, yellow; some fine yellow sand; trace of fine gravel	3 - 11
Sand, medium to coarse, yellow; some fine yellow sand and fine gravel	11 - 17
Sand, medium to coarse, yellow; some fine gravel; trace of fine sand and boulders	17 - 24.5
Refusal	at 24.5
HAVERHILL B20.	
Loam, soft, sandy	0 - 1
Sand, fine to medium, silty, yellow; trace of coarse sand and fine gravel	1 - 3.5
Sand, medium to coarse, gray; some gravel	3.5 - 6.5
Sand, coarse to very coarse, yellow; fine gravel	6.5 - 13.5
Sand, fine to coarse, yellow; trace of gravel	13.5 - 15
Clay, gray; fine silty gray sand; trace of coarse gravel and boulders	15 - 22
Refusal	at 22
HAVERHILL B21.	
Loam, sandy	0 - 2.5
Sand, fine to medium, yellow; some coarse yellow sand; trace of fine gravel and boulders	2.5 - 9
Refusal	at 9
HAVERHILL B22.	
Loam, sandy, brown	0 - 1
Sand, fine to medium, brown; trace of fine gravel	1 - 8
Silt, fine sand, coarse to medium gravel, and boulders	8 - 13
Sand, very fine, brown; some silt, coarse gravel, and boulders	13 - 18
Sand, fine, gray; some silt, fine to medium gravel, and boulders	18 - 29.5
Boulders	29.5 - 30.7
Sand, fine, gray; some medium to coarse gravel and boulders	30.7 - 36.5
Till (gray fine sand; some silt, fine gravel and boulders)	36.5 - 47
Sand, fine, brown; some fine to medium gravel; some silt	47 - 51
Till (gray fine sand; some silt, fine gravel, and boulders; cemented)	51 - 64
Bedrock, brown sandy shale	64 - 69
HAVERHILL B23.	
Loam and sand	0 - 2
Sand, coarse to very coarse, yellow; some fine gravel	2 - 8
Sand, fine to medium, micaceous, yellow; trace of silt and fine gravel	8 - 31
Sand, fine to medium, brown; some coarse brown sand and gravel; trace of silt and boulders	31 - 36
HAVERHILL B24.	
Loam, sand, and gravel	0 - 1.5
Sand, fine to medium, yellow; some coarse sand; trace of silt and gravel	1.5 - 3.5
Sand, fine to medium, yellow; some coarse sand; trace of silt, gravel, and boulders	3.5 - 11.5
Refusal	at 11.5
HAVERHILL B25.	
Sand, fine, yellow	0 - 12
Sand, fine, yellow; some gravel	12 - 18
Sand, medium, yellow; gravel; some rocks	18 - 24
Sand, fine, yellow; some gravel	24 - 29
Sand, fine, yellow; trace of sand	29 - 33
Refusal	at 33
HAVERHILL B26.	
Artificial fill (sand, gravel and riprap)	0 - 5
Sand and gravel	5 - 17
Clay and fine sand	17 - 32
Fine sand	32 - 60
HAVERHILL B27.	
Sand, fine, loamy, brown; some fine gravel	0 - 4
Sand, fine, loamy, brown	4 - 7
Silt, brown; trace of very fine sand	7 - 13
Sand, very fine, gray; trace of silt	13 - 18
Clay, gray; some fine sand	18 - 23
Sand, very fine, brown; trace of fine gravel	23 - 29
Clay, brown; trace of very fine sand	29 - 31
Sand, fine, brown; some fine to medium gravel; some silt	31 - 37
Sand, medium to coarse, brown; some fine gravel	37 - 42
Sand, fine, gray; trace of silt and fine gravel	42 - 46.5
HAVERHILL B28.	
Sand, fine, brown; trace of loam	0 - 3
Sand, fine, yellow	3 - 7
Sand, fine, yellow; some gravel	7 - 10
Refusal	at 10
HAVERHILL B29.	
Loam, brown	0 - 1.5
Sand, very fine, yellow	1.5 - 4.5
Sand, fine, yellow; gravel; some rocks	4.5 - 10
Refusal	at 10

Table 2.--Logs of selected wells and borings (Continued)

	Depth
HAVERHILL B30.	
Sand and gravel; some silt	0 - 2.8
Clay, sand, and gravel	2.8 - 8.2
Clay, blue; fine sand	8.2 - 14.4
Sand and gravel; some clay	14.4 - 24.4
Refusal	at 24.4
HAVERHILL B31.	
Sand and gravel	0 - 4
Sand and gravel; some clay	4 - 6
Clay and fine sand	6 - 15.5
Sand, fine; trace of clay	15.5 - 26
Sand, fine; some clay	26 - 32.5
Clay and sand; some gravel	32.5 - 42
Clay, fine sand and gravel	42 - 47.6
HAVERHILL B32.	
Sand, fine, brown; some loam	0 - 3
Sand, fine, yellow	3 - 20
HAVERHILL B33.	
Sand, fine, brown; some loam	0 - 2.5
Sand, fine, yellow	2.5 - 7
Sand, fine, yellow; gravel and rocks	7 - 10.5
Refusal	at 10.5
HAVERHILL B34.	
Sand, fine, brown; loam	0 - 1
Sand, fine, yellow	1 - 2
Sand, fine; some gravel	2 - 4.5
Refusal	at 4.5
HAVERHILL B35.	
Sand, fine, yellow; loam	0 - 1.5
Sand, fine, yellow	1.5 - 2.5
Sand, fine; gravel and rocks	2.5 - 5
Refusal	at 5
HAVERHILL B36.	
Artificial fill (sand and riprap)	0 - 3.5
Sand, silty	3.5 - 13
Sand, silty; some gravel	13 - 14.5
Clay, blue; some fine sand	14.5 - 34.5
Sand, fine; gravel	34.5 - 41.5
Clay, sand, gravel and boulders	41.5 - 45
HAVERHILL R1.	
Top soil; silty sand	0 - 2
Sand, fine, brown; some gravel; trace of coarse sand	2 - 4
Sand, fine; gravel and boulders	4 - 8
Sand, fine; gravel	8 - 10
Refusal	at 10
HAVERHILL R2.	
Peat	0 - 34
Clay and silt	34 - 35
Sand, fine, gray; some coarse gravel; trace of coarse sand	35 - 38
Sand, fine, gray; some gravel	38 - 40
Sand, fine, gray; some coarse sand and rock fragments	40 - 43
Refusal	at 43
HAVERHILL R4.	
Sand, fine, yellow; some gravel	0 - 12
Sand, fine, yellow; gravel; some rocks	12 - 18
Sand, fine, gray; gravel and rocks; trace of clay	18 - 30
Sand, fine, gray; gravel; some clay	30 - 35
Clay and fine gray sand; some gravel	35 - 40
Sand, fine, gray; some clay and gravel	40 - 50
Sand, fine, gray; gravel; some clay	50 - 58
HAVERHILL R5.	
Sand, fine, brown; some gravel; trace of loam	0 - 2
Sand, medium, yellow; some gravel	2 - 6
Sand, fine, yellow	6 - 18
HAVERHILL R6.	
Sand, brown; loam; trace of gravel	0 - 2.5
Sand, fine, yellow; gravel	2.5 - 10
Sand, fine, yellow; gravel; trace of clay	10 - 19
HAVERHILL R7.	
Sand, fine, yellow	0 - 4.5
Sand, fine, yellow; trace of clay and gravel	4.5 - 10
Sand, fine, gray; some gravel and rocks; trace of clay	10 - 17.5
HAVERHILL R7. (Continued)	
Sand, fine, gray; trace of clay and gravel	17.5 - 25
Sand, fine, gray; gravel; some clay	25 - 30.5
Sand, fine, gray; some gravel; trace of clay	30.5 - 40.5
HAVERHILL R8.	
Sand, fine, brown; some loam	0 - 2
Sand, fine, brown	2 - 4
Sand, fine, brown; gravel	4 - 9
Refusal	at 9
HAVERHILL R9.	
Loam; trace of brown sand	0 - 2.5
Sand, fine, yellow	2.5 - 6
Sand, fine, yellow; gravel; some boulders	6 - 11
Refusal	at 11
HAVERHILL R10.	
Loam; loamy brown sand	0 - 2.5
Sand, fine, yellow	2.5 - 8
Sand; some fine gravel and rocks	8 - 13
Sand, yellow; some fine gravel	13 - 18
Refusal	at 18
HAVERHILL R11.	
Sand, fine, brown; some loam; trace of gravel	0 - 5
Sand, fine, yellow; some gravel and rocks	5 - 12
Sand, fine, gray; some gravel and rocks; trace of clay	12 - 25
Sand, fine, gray; some clay; trace of gravel and rocks	25 - 30
Sand, fine, gray; some gravel and rocks; trace of clay	30 - 35
HAVERHILL R12.	
Sand, fine, brown; some loam	0 - 3
Sand, fine, yellow; some gravel and rocks	3 - 28
Sand, fine, gray; some gravel and rocks	28 - 36
HAVERHILL R13.	
Peat	0 - 2
Sand, fine, brown	2 - 4
Sand, fine to coarse, brown	4 - 8
Sand, fine to coarse, gray; some gravel	8 - 12
HAVERHILL R14.	
Loam, brown; coarse gravel and cobbles	0 - 5
Sand, fine, gray; trace of silt	5 - 9
Till (brown fine sand; some silt and fine gravel; cemented)	9 - 32
Boulders, granitic schist	32 - 35
HAVERHILL R15.	
Loam, sandy, brown; some fine gravel	0 - 3
Sand, fine, brown; some fine gravel; trace of silt	3 - 7.5
Gravel, coarse; some silt, fine sand and boulders	7.5 - 13.5
Sand, fine, gray; some fine to medium gravel; trace of silt	13.5 - 18.5
Sand, fine, brown; some fine gravel; some silt	18.5 - 20
HAVERHILL R16.	
Top soil; fine brown sand; trace of silt	0 - 3
Sand, fine, brown; trace of silt and fine gravel	3 - 7
Sand, fine, brown; some silt and boulders	7 - 10
HAVERHILL R17.	
Sand, very fine, brown; some silt	0 - 3
Sand, very fine, brown; trace of fine gravel	3 - 7.5
Sand, fine, brown; some fine to medium gravel; trace of silt	7.5 - 10
HAVERHILL R18.	
Sand, very fine, gray; some silt and fine gravel	0 - 22
Sand, fine, gray; some silt and fine gravel	22 - 26.5
HAVERHILL R19.	
Sand, fine, brown	0 - 7
Sand, fine, brown; broken rock	7 - 13
Sand, fine, gray; some fine gravel; trace of silt	13 - 18
Sand, fine, gray; some medium to coarse gravel; trace of silt	18 - 21.5
HAVERHILL R20.	
Sand, fine, loamy, brown; some silt and artificial fill	0 - 2.5
Sand, fine, gray; some silt and fine to medium gravel	2.5 - 8
Sand, fine, brown; some silt and fine gravel	8 - 15
HAVERHILL R22.	
Loam, brown	0 - 3
Sand, very fine, brown; some silt	3 - 9
Sand, very fine, brown; some silt, coarse gravel	9 - 14.5
Till (sand, fine, gray; some silt and fine gravel; cemented)	14.5 - 46.5
HAVERHILL W175.	
Loam	0 - 2
Sand	2 - 14
Till, silty, hard	14 - 14.2
Refusal	at 14.2
HAVERHILL W176.	
Loam	0 - 2
Sand	2 - 14.6
Refusal	at 14.6
HAVERHILL W177.	
Loam	0 - 2
Silt and fine sand	2 - 14.5
Refusal	at 14.5
HAVERHILL W178.	
Loam	0 - 2
Clay, sand and gravel	2 - 36
Refusal	at 36
HAVERHILL W179.	
Clay and silt	0 - 20
Refusal, hardpan	at 20
HAVERHILL W180.	
Clay and silt	0 - 11
Refusal, till	at 11
HAVERHILL W181.	
Loam	0 - 2
Clay and silt	2 - 22
Refusal, till	at 22
HAVERHILL W182.	
Loam	0 - 2
Clay and silt	2 - 16
Refusal, till	at 16
HAVERHILL W183.	
Loam	0 - 1
Clay and silt	1 - 19.5
Refusal, till	at 19.5
HAVERHILL W184.	
Loam	0 - 1
Clay and rocks	1 - 19
Refusal	at 19
HAVERHILL W185.	
Loam	0 - 1
Clay and sand	1 - 15
Refusal	at 15
HAVERHILL W186.	
Loam	0 - 1
Sand, fine	1 - 30
Sand, coarse	30 - 31
Till	31 - 33
Refusal	at 33
HAVERHILL W187.	
Sand, fine; some gravel	0 - 24
Refusal, till	at 24
HAVERHILL W188.	
Loam	0 - 1
Sand, fine	1 - 24
Refusal, till	at 24

Table 2.--Logs of selected wells and borings (Continued)

	Depth
HAVERHILL W189.	
Loam	0 - 2
Sand, fine; some clay and coarse sand	2 - 25
Sand, fine to coarse; some clay and gravel	25 - 37
Refusal	at 37
HAVERHILL W190.	
Loam and clay	0 - 2
Clay	2 - 31
Sand and gravel	31 - 40
Refusal	at 40
HAVERHILL W191.	
Loam	0 - 1
Clay and sand	1 - 32
Sand and gravel	32 - 36
Refusal	at 36
HAVERHILL W192.	
Peat	0 - 1
Sand, fine; gravel	1 - 25
Sand, coarse	25 - 31
Sand, coarse; gravel	31 - 41
Sand, fine	41 - 46
HAVERHILL W193.	
Peat	0 - 2
Sand	2 - 19
Refusal	at 19
HAVERHILL W194.	
Top soil	0 - 1
Sand and gravel	1 - 22
Refusal	at 22
HAVERHILL W195.	
Sand, gravel and boulders	0 - 18
HAVERHILL W196.	
Loam	0 - 1
Sand	1 - 17
Refusal	at 17
HAVERHILL W197.	
Sand and rocks	0 - 13
Clay	13 - 19
Sand, brown; gravel	19 - 26
Sand, gray; gravel	26 - 40
Sand, fine	40 - 56
HAVERHILL W198.	
Sand, fine	0 - 23
Refusal	at 23
HAVERHILL W199.	
Sand, fine	0 - 25
Till	25 - 28
Refusal	at 28
HAVERHILL W200.	
Sand, fine; some gravel	0 - 35
Refusal	at 35
HAVERHILL W201.	
Loam	0 - 2
Sand, fine; gravel	2 - 20
Clay, gray	20 - 39
Sand, brown; gravel	39 - 51
HAVERHILL W202.	
Sand, fine to medium, brown; gravel	0 - 20
Sand, fine to medium, reddish brown; gravel	20 - 40
HAVERHILL W203.	
Sand, fine to medium	0 - 12
Sand, fine to medium; gravel	12 - 27
Sand, medium; gravel	27 - 35
Sand, fine; gravel	35 - 50
Refusal	at 50
HAVERHILL W204.	
Sand, fine to medium	0 - 13
Till, tight; gravel	13 - 16
Refusal	at 16
HAVERHILL W205.	
Clay	0 - 33
Clay, fine sand, gravel	33 - 49
Refusal	at 49
HAVERHILL W206.	
Sand, fine to coarse; gravel	0 - 7
Clay	7 - 46
Clay and fine sand	46 - 74
HAVERHILL W206. (Continued)	
Clay, fine to medium sand, and gravel	74 - 87
Refusal	at 87
HAVERHILL W207.	
Top soil	0 - 8
Clay	8 - 50
Clay and gravel	50 - 56
Refusal	at 56
HAVERHILL W208.	
Top soil	0 - 9
Clay	9 - 40
Clay and sand	40 - 55
Sand and gravel, tight	55 - 59
Refusal	at 59
HAVERHILL W209.	
Sand, fine	0 - 12
Sand, fine, gray	12 - 60
Sand, fine to medium; trace of gravel	60 - 79
Refusal	at 79
HAVERHILL W210.	
Sand	0 - 7
Sand, fine to coarse; gravel	7 - 35
Clay and fine sand	35 - 43
Sand, fine to medium; gravel	43 - 70
Sand, coarse; gravel	70 - 73
Refusal	at 73
HAVERHILL W211.	
Clay and sand	0 - 86
HAVERHILL W212.	
Top soil	0 - 5
Sand, fine, brown; gravel	5 - 21
Sand, fine to medium, brown; gravel; some silt	21 - 42
Sand, fine, gray; gravel; trace of clay	42 - 51
HAVERHILL W213.	
Top soil	0 - 5
Sand, fine, silty, brown; gravel	5 - 22
Sand, fine to medium, silty, brown; gravel; trace of clay	22 - 46
Till	46 - 49
HAVERHILL W214.	
Top soil	0 - 5
Sand, fine, silty, brown; trace of fine gravel	5 - 20
Sand, fine, silty, gray; some gravel	20 - 38
HAVERHILL W215.	
Top soil	0 - 5
Sand, fine to medium, silty, brown; gravel; trace of clay and till	5 - 20
Sand, fine, silty, brown; gravel	20 - 30
Sand, fine to medium, very silty, brown; gravel	30 - 35
HAVERHILL W217.	
Sand, brown; some clay	0 - 20
Clay, blue	20 - 42
Clay and sand	42 - 44
Clay, blue	44 - 62
Sand, medium to coarse; some clay and silt	62 - 74
HAVERHILL W218.	
Top soil, peat	0 - 12
Clay, gray; silt, sand and gravel	12 - 27.2
HAVERHILL W219.	
Clay, blue; rocks	0 - 5
Clay, brown; gravel	5 - 9
Till	9 - 12
Refusal	at 12
HAVERHILL X1.	
Artificial fill (fine brown sand, wood, brick, etc.)	0 - 16
Sand, very fine to fine, gray; small boulders	16 - 21
Sand, very fine to medium; some silt and gravel	21 - 25
Bedrock, schist	25 - 46
HAVERHILL X2.	
Artificial fill	0 - 18
Gravel, medium	18 - 20
Sand, fine, yellow; some medium sand and fine to medium gravel	20 - 30
Sand, very fine to coarse, gray; some gravel and boulders	30 - 34
Gravel, fine to medium, sandy, gray	34 - 36
Sand, very fine to fine, gray; trace of silt	36 - 43
Silt, sandy, gray; trace of fine gravel and pebbles	43 - 52
Sand, fine, gray; trace of silt, gravel, pebbles and cobbles	52 - 55
Schist, siliceous	55 - 71
HAVERHILL X3.	
Artificial fill	0 - 9
Sand, very fine to medium, silty, brown; trace of gravel	9 - 15
Sand, very fine to medium, silty, gray	15 - 18
Sand, fine to coarse, very silty, yellow; gravel and cobbles	18 - 21
Sand, very fine to medium, yellow; small boulders; trace of silt	21 - 29
Sand, fine to medium, yellow	29 - 31
Sand, fine to coarse; some gravel and cobbles; trace of silt	31 - 35
Silt, gray; very fine sand; some fine to medium sand	35 - 39
Sand, very fine, silty, gray; some fine to medium sand; trace of gravel and cobbles	39 - 50
Silt, gray; very fine sand; some gravel and cobbles	50 - 54
Schist	54 - 61
HAVERHILL X5.	
Loam	0 - 2
Sand, medium; gravel; some boulders	2 - 16.5
Refusal	at 16.5
HAVERHILL X6.	
Loam, black	0 - 1
Sand, fine, silty, brown	1 - 5
Clay, fine to coarse brown sand, and gravel	5 - 15
Clay, sand, gravel, gray	15 - 16
HAVERHILL X7.	
Top soil	0 - 2.5
Silt, yellow; fine to coarse sand; some fine to coarse gravel	2.5 - 7
Sand, fine to medium, brown; some silt, coarse sand, and fine to medium gravel	7 - 13
Till	13 - 35
HAVERHILL X8.	
Top soil	0 - 2
Sand, fine to medium, finer with depth	2 - 69
Till	69 - 74
HAVERHILL X9.	
Top soil	0 - 3.5
Silt and fine brown sand	3.5 - 9
Silt, fine to coarse sand, and gravel	9 - 15
Till	15 - 65
HAVERHILL X10.	
Top soil	0 - 1.5
Sand, fine to coarse; fine to coarse gravel	1.5 - 16
Till	16 - 44
HAVERHILL X11.	
Peat, black	0 - 5.5
Sand, fine to coarse, brown; trace of silt	5.5 - 14
Sand, fine to coarse, brown; some fine gravel; trace of silt	14 - 22
Till	at 22
HAVERHILL X12.	
Loam	0 - 1.5
Sand, fine to coarse	1.5 - 9
Sand, coarse, yellow	9 - 13
Till, yellow	13 - 20

Table 2.--Logs of selected wells and borings (Continued)

	Depth
HAVERHILL X13.	
Sand, fine, yellow; some fine to medium gravel	0 - 23
Sand, fine, brown; some fine to medium gravel; some silt	23 - 35
Refusal	at 35
HAVERHILL X14.	
Sand, fine to medium; gravel	0 - 20
Refusal	at 20
HAVERHILL X15.	
Gravel, fine to medium	0 - 2
Sand, fine; some silt, fine to medium gravel, and cobbles	2 - 11
Sand, fine to coarse; some fine gravel and soft rock	11 - 12
Refusal	at 12
HAVERHILL X16.	
Sand, fine, yellow; fine to medium gravel; some silt	0 - 19
Sand and gravel; some silt, cobbles, and boulders	19 - 24
Refusal	at 24
HAVERHILL X17.	
Pavement	0 - 1
Sand, very fine, silty	1 - 9
Silt and fine to medium sand; some clay	9 - 14
Sand, fine to medium; some clay, silt, and fine to medium gravel	14 - 18
Sand, fine to coarse; some clay and fine to medium gravel	18 - 24
HAVERHILL X18.	
Pavement and artificial fill	0 - 5
Sand, very fine, silty	5 - 7
Sand and fine to coarse gravel	7 - 9
Sand, very fine, silty	9 - 13
Clay, silty, yellow	13 - 18
Clay, silty, yellow; some fine sand	18 - 24
Clay, silty, gray	24 - 29
Clay, gray; some fine sand	29 - 31
HAVERHILL X19.	
Pavement and artificial fill	0 - 4.5
Sand, fine to coarse; some silt and fine to coarse gravel	4.5 - 8.5
Sand, very fine, silty	8.5 - 15
Sand, very fine, silty; some clay	15 - 20
HAVERHILL X20.	
Pavement and artificial fill	0 - 10
Sand, very fine, silty	10 - 13.5
Sand, fine to medium; fine to coarse gravel; some silt	13.5 - 17
HAVERHILL X21.	
Artificial fill	1 - 15
Sand, fine to medium; trace of fine gravel	15 - 25
HAVERHILL X22.	
Cobbles	0 - 1
No record	1 - 5
Sand, very fine, silty	5 - 10.5
Boulders	10.5 - 11
Sand, fine to coarse; trace of fine to medium gravel	11 - 18.3
Bedrock	18.3 - 28.3
HAVERHILL X23.	
Pavement and artificial fill	0 - 8.5
Sand, very fine, silty	8.5 - 13.5
Sand, fine to medium; trace of fine gravel	13.5 - 17
Bedrock	17 - 28
HAVERHILL X24.	
Pavement and artificial fill	0 - 4
Silt and very fine brown sand	4 - 10
Sand, very fine, silty	10 - 13.5
Clay, silty, yellow	13.5 - 17
Clay, silty, gray	17 - 27
HAVERHILL X25.	
Pavement and artificial fill	0 - 3
Sand, very fine, silty	3 - 8
Sand, very fine, silty; trace of fine to medium gravel	8 - 11
Bedrock	11 - 21

	Depth
HAVERHILL X26.	
Pavement and artificial fill	0 - 4
Sand, very fine, silty	4 - 9
Sand, fine; some silt	9 - 14
Sand, fine to medium; some silt and fine to medium gravel	14 - 18
Bedrock	18 - 28
HAVERHILL X27.	
Pavement and artificial fill	0 - 8.5
Sand, fine to medium; some silt and fine to medium gravel	8.5 - 18
Boulders	18 - 20.5
Sand, fine to coarse; some silt and fine to coarse gravel	20.5 - 25.5
HAVERHILL X28.	
Pavement	0 - 0.4
Sand, fine, silty	0.4 - 5
Sand, very fine; some silt	5 - 10
Sand, fine; trace of silt	10 - 15
Silt and very fine sand	15 - 18
Sand, fine to coarse; some fine to medium gravel	18 - 25
HAVERHILL X29.	
Top soil, loamy	0 - 1.5
Sand, very fine, silty	1.5 - 8
Sand, fine; trace of silt	8 - 13
Sand, very fine, silty	13 - 17
Sand, fine to medium; some fine to medium gravel	17 - 20
HAVERHILL X30.	
Artificial fill	0 - 1.5
Sand, very fine, silty (possibly artificial fill)	1.5 - 9.5
Sand, fine to medium; trace of fine to medium gravel (possibly artificial fill)	9.5 - 14
Sand, very fine, silty	14 - 21
Sand, fine to coarse; some fine to medium gravel; trace of silt	21 - 30
Sand, fine to medium; trace of silt	30 - 38
Sand, fine to coarse; some fine to coarse gravel	38 - 39
Silt, gray and very fine sand	39 - 40
HAVERHILL X31.	
Top soil	0 - 0.5
Sand, fine; some silt; trace of fine gravel	0.5 - 15
Sand, fine to medium; trace of fine to coarse gravel	15 - 24
Sand, fine; trace of silt and fine gravel	24 - 30
Sand, fine to medium; trace of fine gravel	30 - 36
Sand, fine; some silt; trace of fine gravel	36 - 38
HAVERHILL X32.	
Top soil	0 - 0.4
Artificial fill, sand and gravel	0.4 - 17
Sand, fine to medium; some silt and fine to coarse gravel	17 - 25
Boulders	25 - 26
Sand, fine to medium; fine to medium gravel; some silt	26 - 36
Sand, fine; some silt and fine gravel	36 - 42
HAVERHILL X33.	
Artificial fill, sand, gravel and loam	0 - 7.5
Sand, very fine; some silt	7.5 - 15
Sand, fine to coarse; fine gravel	15 - 19
Clay, yellow; fine to coarse sand; trace of fine gravel	19 - 22.8
Bedrock	22.8 - 32.8
HAVERHILL X34.	
Sand, fine to coarse; some silt and fine to coarse gravel	0 - 2
Clay, silty, stiff, gray; fine sand lenses	2 - 15
Clay, silty, soft, gray; fine sand lenses	15 - 27
HAVERHILL X35.	
Top soil	0 - 0.5
Sand, very fine, silty	0.5 - 14
Sand, fine to medium; some fine to medium gravel	14 - 20
Sand, fine to coarse; some silt and fine to coarse gravel	20 - 22

	Depth
HAVERHILL X35. (Continued)	
Boulders	22 - 23
Sand, very fine, silty	23 - 27
Sand, fine, silty; some fine to medium gravel	27 - 35
Boulders	35 - 36
Sand, fine, silty; some fine to medium gravel	36 - 42
HAVERHILL X36.	
Artificial fill; silt, loam, sand and gravel	0 - 4
Sand, very fine, silty; trace of loam	4 - 10
Sand, very fine, silty; trace of clay	10 - 15
Bedrock	15 - 25
HAVERHILL X37.	
Artificial fill; sand and gravel	0 - 5
Sand, very fine; some silt	5 - 18.5
Clay, hard, yellow-gray; silt	18.5 - 25
HAVERHILL X38.	
Artificial fill; silt, sand, gravel and cinders	0 - 18.5
Sand, fine to medium; trace of medium gravel	18.5 - 24
Clay, stiff, gray; silt with fine sand lenses	24 - 35
Clay, silty, gray; fine sand lenses	35 - 62.5
Clay, hard, yellow; decomposed boulders	62.5 - 67
Boulders	67 - 68.5
Till	68.5 - 72.5
Bedrock	72.5 - 82.5
HAVERHILL X39.	
Pavement and artificial fill; silt, sand, cinders and wood	0 - 20
Sand, fine; some clay and fine gravel	20 - 24.5
Clay, silty, soft, gray; fine sand lenses	24.5 - 35
HAVERHILL X40.	
Pavement and artificial fill; clayey silt, peat, sand, gravel, bricks, cinders & wood	0 - 34
Clay and silt	34 - 36
HAVERHILL X41.	
Sand, very fine; some silt	0 - 15
Sand, fine to medium; trace of silt	15 - 25
Till; silt, fine to coarse sand, fine to coarse gravel and decomposed rock	25 - 32.5
Bedrock	32.5 - 42.5
HAVERHILL X42.	
Top soil	0 - 0.5
Sand, very fine; some silt	0.5 - 9
Sand, fine; some silt	9 - 13.5
Clay	13.5 - 15
Sand, fine to coarse; trace of silt and fine gravel	15 - 22.5
Sand, fine, silty; trace of clay	22.5 - 32
HAVERHILL X43.	
Sand, very fine, silty	0 - 4.5
Sand, fine; trace of silt	4.5 - 13
Sand, fine to coarse; some fine gravel; trace of silt	13 - 35
Sand, fine to medium; trace of silt	35 - 39
Sand, very fine, silty; some clay	39 - 42
HAVERHILL X44.	
Sand, fine to medium; trace of silt and fine to medium gravel	0 - 2
Clay and silt, gray	2 - 20
Clay, silty, gray	20 - 22
Sand, fine, silty; some clay	22 - 33.5
Sand, fine to coarse; trace of silt and fine gravel	33.5 - 37
HAVERHILL X45.	
Artificial fill; sand, gravel, cinders and bricks	0 - 23
Sand, fine to coarse; some silt and fine to medium gravel	23 - 29
Sand, fine to medium; some silt and fine to coarse gravel	29 - 35

Table 2.--Logs of selected wells and borings (Continued)

	Depth
LAWRENCE B1.	
Artificial fill (sand; gravel; miscellaneous fill)	0 - 5
Sand, silty, loose	5 - 15.7
Sand and gravel, firm	15.7 - 22.2
Sand, fine, hard	22.2 - 26.8
Sand and gravel, hard; some clay	26.8 - 29.3
Refusal	at 29.3
LAWRENCE B2.	
Sand, fine, brown	0 - 15.5
Sand, coarse, brown; trace of gravel	15.5 - 24.5
Sand, fine, brown; some gravel	24.5 - 30
Sand, fine to coarse, brown; some gravel; trace of silt	30 - 35
Bedrock	35 - 42
LAWRENCE B8.	
Artificial fill (sand, gravel, cinders; dry, loose, black)	0 - 24.5
Sand, coarse, gray; trace of gravel	24.5 - 28
Sand, very fine, gray; trace of gravel	28 - 41.5
Sand, very fine, hard, gray	41.5 - 51.5
LAWRENCE B14.	
Top soil, loam	0 - 2
Sand, very fine to fine, loose, yellow	2 - 12.5
Sand, medium to coarse, yellow; gravel; some fine sand	12.5 - 16
Sand, very fine, silty, yellow; some soft clay	16 - 23
Sand, loose, firm, yellow; some medium sand	23 - 32
Sand, fine to medium, compact, yellow; gravel; some coarse sand	32 - 39
Refusal	at 39
LAWRENCE B15.	
Artificial fill, fine brown sand and cinders	0 - 15.5
Sand, fine to medium, brown; fine to medium gravel; some silt	15.5 - 22.5
Sand, fine, brown; some silt; trace of fine gravel; cemented	22.5 - 33.5
Sand, fine, gray-brown; some silt and fine to medium gravel; cemented	33.5 - 42
Sand, fine to medium, gray; some silt and fine to coarse gravel; partially cemented	42 - 47
Sand, fine, gray; some silt and fine gravel; cemented	47 - 50
Refusal	at 50
LAWRENCE B16.	
Artificial fill (sand, gravel, loam, cinders)	0 - 10
Sand, fine, loose, brown	10 - 15
Sand, fine, loose, yellow	15 - 20
Sand, medium, brown; gravel	20 - 30
Sand, fine, loose, yellow	30 - 38
Sand, fine, hard, brown; gravel	38 - 44
Sand, fine, gray; some gravel; trace of clay	44 - 49
LAWRENCE B17.	
Top soil, loam	0 - 3.5
Sand, fine, yellow	3.5 - 28
Sand, fine to medium, yellow; gravel; some coarse sand and boulders	28 - 36.5
Sand, fine to medium; some clay, gravel and boulders	36.5 - 39
LAWRENCE R1.	
Artificial fill	0 - 23
Silt, gray; fine sand	23 - 29.6
Sand, fine, black	29.6 - 34
Sand, coarse; gravel	34 - 45.6
Refusal	at 45.6
LAWRENCE R2.	
Top soil	0 - 2
Sand, fine, brown; trace of silt	2 - 8
Sand, coarse, brown; some fine sand	8 - 12
Sand, coarse, brown; some fine sand; trace of gravel	12 - 25
Sand, fine, brown; trace of silt	25 - 35
Sand, fine to coarse, gray; trace of silt and gravel	35 - 39
Refusal	at 39
LAWRENCE R3.	
Top soil	0 - 2
Sand, fine, brown; trace of silt	2 - 15
Sand, fine to coarse, brown; trace of gravel	15 - 25
Sand, coarse, loose, brown	25 - 30
Sand, fine, brown; trace of silt	30 - 45
LAWRENCE R4.	
Artificial fill, fine sand	0 - 7.5
Sand, fine, hard	7.5 - 26
Sand, coarse, hard; gravel; boulders	26 - 29
Refusal	at 29
LAWRENCE R5.	
Artificial fill (medium sand, ash, cinders, wood, glass)	0 - 42
Sand, fine, firm	42 - 45.5
Sand, medium, hard	45.5 - 50.5
LAWRENCE R6.	
Artificial fill (ash, cinders, wood)	0 - 23.5
Sand, fine, firm	23.5 - 28
Sand, medium, compact; some gravel	28 - 33
LAWRENCE W7.	
Sand, fine	0 - 15
Gravel	15 - 35
Clay and till	35 - 39
Clay and gravel	39 - 52
Refusal	at 52
LAWRENCE W9.	
Top soil	0 - 8
Sand, fine; clay	8 - 16
Gravel and boulders	16 - 36
MERRIMACK A1.	
Sand and gravel	0 - 29
Sand, very fine	29 - 55
Gravel, loose	55 - 57.5
Refusal (till)	at 57.5
MERRIMACK A2.	
Gravel, loose	0 - 0.5
Sand, fine to coarse	0.5 - 36
Sand and gravel	36 - 51
Till	51 - 52.5
Refusal	at 52.5
MERRIMACK A3.	
Sand, medium	0 - 10
Sand, fine	10 - 80
Silt; some clay	80 - 90.5
Till	90.5 - 102
Refusal	at 102
MERRIMACK B1.	
Top soil	0 - 1
Sand, fine to medium, brown	1 - 5
Silt and fine brown sand; trace of rock fragments	5 - 10
Silt; fine sand; stones	10 - 15
Sand, very fine, gravel; rock fragments	15 - 52
MERRIMACK B2.	
Top soil and boulders	0 - 2
Sand, fine to medium, brown; some silt; trace of medium to fine gravel	2 - 7.5
Sand, fine to coarse, gray; some rock fragments	7.5 - 12.3
Sand, fine to coarse, gray; some fine to medium gravel and rock fragments	12.3 - 28.4
Silt, gray; fine to coarse sand; some rock fragments	28.4 - 39.5
Silt; fine sand; trace of clay and fine gravel	39.5 - 44.3
Silt; fine sand; trace of clay	44.3 - 46.5
Sand, fine, gray; some clay; trace of silt	46.5 - 51.5
MERRIMACK B3.	
Peat, black	0 - 2
Sand, fine, brown; trace of peat	2 - 4
Sand, fine, gray; trace of peat and fine gravel	4 - 5.5
Sand, fine, brown	5.5 - 7
Sand, fine, gray; silt; some clay	7 - 12
Clay, blue; some silt; trace of sand	12 - 21
Clay, blue; trace of silt	21 - 27.5
MERRIMACK B3. (Continued)	
Clay, blue	27.5 - 42.7
Silt, gray; fine to coarse sand; some fine to medium gravel and clay	42.7 - 48.2
Sand, fine to coarse, gray; gravel; rock fragments	48.2 - 50.5
MERRIMACK B4.	
Top soil	0 - 1
Sand, fine, brown	1 - 4.5
Sand, medium to coarse, brown; gravel	4.5 - 9
Sand, medium, brown; trace of gravel	9 - 15
Sand, medium, brown	15 - 20
Sand, fine to medium, brown	20 - 30
Sand, fine, gray	30 - 39
Sand, fine, gray; trace of silt	39 - 45.3
Clay and silt, gray	45.3 - 56
Clay, silty; rock fragments	56 - 61
MERRIMACK B5.	
Top soil	0 - 1
Sand, medium to coarse, brown; rock fragments	1 - 10
Sand, medium to coarse, brown; rock fragments; some brown silt and fine sand	10 - 12
Sand, medium to coarse, gray; shale fragments	12 - 15
Bedrock, shale	15 - 20.1
MERRIMACK R1.	
Top soil (loam and sand; trace of gravel)	0 - 2
Sand, fine, yellow; gravel	2 - 9
Sand, fine, yellow; gravel; some clay	9 - 18
Sand, fine, gray; gravel; trace of clay	18 - 23
Sand, fine, gray; gravel; some clay	23 - 44
MERRIMACK R2.	
Top soil	0 - 1
Sand, fine, brown	1 - 4
Sand, fine to coarse, brown; trace of gravel	4 - 19
Silt and fine gray sand	19 - 28.8
Boulders	28.8 - 33.8
Silt	33.8 - 34.9
Boulders	34.9 - 44.4
Sand, coarse, gray; rock fragments	44.4 - 44.5
MERRIMACK R3.	
Top soil	0 - 1
Sand, fine, brown; some silt	1 - 4
Sand, fine, brown; some gravel; trace of clay	4 - 35
Sand, fine, gray; some gravel; trace of clay	35 - 52
MERRIMACK R4.	
Sand, fine to coarse, brown; some rock fragments and boulders	0 - 48.5
MERRIMACK R5.	
Top soil	0 - 1
Sand, loose, brown; some silt	1 - 3
Sand, fine, brown; trace of silt	3 - 6
Sand, fine, compact, brown	6 - 8.5
Clay, gray; trace of sand	8.5 - 12
Clay, gray	12 - 21
MERRIMACK R6.	
Artificial fill	0 - 28
Sand, brown; some gravel	28 - 32
Sand, fine, compact, gray; some silt and fine gravel	32 - 35
Sand, fine, compact, gray; some clay; trace of gravel	35 - 38
MERRIMACK R8.	
Sand, fine to medium, gray-brown	0 - 1.5
Sand, fine to medium, brown	1.5 - 37.6
Sand, fine to medium, varved, brown	37.6 - 43
Sand, fine to medium, brown	43 - 57
Sand, fine to medium, varved, brown	57 - 61.5

Table 2.--Logs of selected wells and borings (Continued)

	Depth
MERRIMACK R9.	
Sand and gravel, brown	0 - 4
Sand, brown; some silt	4 - 7
Peat; trace of brown sand	7 - 10
Sand, silty, black	10 - 11
Peat; trace of sand	11 - 14
Sand, coarse; some gravel	14 - 15
Clay, gray; sand; some gravel	15 - 17
Clay, gray; trace of sand	17 - 39
Clay, gray	39 - 44
Sand, fine, compact, gray; some silt; trace of fine gravel	44 - 51.5
MERRIMACK R18.	
Peat, sandy	0 - 3
Sand, fine, brown	3 - 6
Clay, gray	6 - 10
Sand, fine, gray	10 - 13
MERRIMACK R19.	
Top soil	0 - 1
Sand, fine, brown	1 - 2
Sand, fine to coarse, brown; some fine to medium gravel	2 - 6
Sand, fine, brown	6 - 23
Clay, blue; trace of silt	23 - 33.5
Sand, fine, gray; some clay, silt, and rock fragments	33.5 - 35.2
MERRIMACK W1.	
Sand and gravel	0 - 18
Sand, coarse	18 - 31
Sand, medium	31 - 39
Sand; some gravel	39 - 45.6
MERRIMACK W11.	
Muck	0 - 6
Sand, white; gravel	6 - 10
Sand, silty, gray; gravel	10 - 14
Sand, silty, gray	14 - 17
Sand, white; gravel	17 - 19
Clay and sand	19 - 20
Sand, silty, gray; gravel	20 - 30
Till	at 30
MERRIMACK W13.	
Sand, fine, brown; gravel; trace of clay	0 - 42
Sand, gray; gravel; trace of clay	42 - 63
Refusal	at 63
METHUEN A1.	
Peat	0 - 25
Clay, silty	25 - 35.5
Till, silty, sandy, gray	35.5 - 42.5
Refusal	at 42.5
METHUEN A2.	
Artificial fill	0 - 1
Till, gray	1 - 19.5
Refusal	at 19.5
METHUEN A3.	
Till, silty, sandy, brown-gray	0 - 24.5
Refusal	at 24.5
METHUEN A4.	
Sand, very fine to fine; some medium to coarse sand; well sorted	0 - 5
Till, gray	5 - 7.5
METHUEN A5.	
Sand, very fine to coarse; some silt	0 - 8.5
Gravel or rocks in till	8.5 - 9
Till, silty, sandy, gray	9 - 18
Refusal	at 18
METHUEN A6.	
Sand, very fine to very coarse; some silt and pebbles	0 - 4.5
Gravel; cobbles, tight	4.5 - 13.5
Gravel, fine, loose	13.5 - 17.5
Till, gray	17.5 - 28
Refusal	at 28
METHUEN A7.	
Artificial fill	0 - 2
Till, silty, sandy, brown-gray	2 - 9.5
Refusal	at 9.5
METHUEN A8.	
Artificial fill	0 - 1
Till, silty, sandy, brown-gray	1 - 16.5
Refusal	at 16.5

	Depth
METHUEN A9.	
Sand, very fine to fine; some silt, well sorted	0 - 38.5
Clay, silty	38.5 - 40.5
Gravel, loose	40.5 - 44
Refusal	at 44
METHUEN A10.	
Sand, very fine to coarse	0 - 12.5
Silt; very fine to fine sand	12.5 - 18
Gravel, loose	18 - 19.5
Silt; very fine sand; some clay	19.5 - 27
Till, sandy, gray	27 - 29
Refusal	at 29
METHUEN A11.	
Silt; very fine sand	0 - 15.5
Gravel, fine, loose; pebbles; cobbles	15.5 - 18.5
Sand, medium to coarse; loose fine gravel; pebbles	18.5 - 56
Gravel, tight	56 - 58
Refusal	at 58
METHUEN A12.	
Sand, fine to coarse, well sorted	0 - 3.5
Gravel; pebbles; cobbles; tight	3.5 - 5
Sand	5 - 8.5
Gravel, loose	8.5 - 9
Sand	9 - 13.5
Gravel, loose	13.5 - 17.5
Till, silty, sandy; some gravel, pebbles, and cobbles	17.5 - 29
Refusal	at 29
METHUEN A13.	
Sand, very fine to fine, well sorted	0 - 28.5
Sand, medium to coarse; loose fine gravel; pebbles	28.5 - 31
Till, sandy, gray; some pebbles and rocks	31 - 51.5
Refusal	at 51.5
METHUEN B1.	
Sand, fine, yellow	0 - 8.5
Sand, fine, yellow; gravel; rocks	8.5 - 15
Sand, fine, gray; gravel; rocks	15 - 17.5
Sand, fine, yellow; gravel; rocks	17.5 - 21
Sand, fine, yellow; some gravel	21 - 23
Refusal	at 23
METHUEN B2.	
Sand, coarse, brown	0 - 3
Sand, fine to coarse, brown; gravel	3 - 7.5
Sand, fine, compact, gray	7.5 - 10
Refusal	at 10
METHUEN B3.	
Top soil	0 - 1
Sand, medium, compact, brown	1 - 8
Silt; fine gray-brown sand; compact	8 - 20
Silt, brown; fine sand; compact	20 - 35
Silt, compact, gray-brown; trace of fine sand	35 - 55.6
Silt, compact, gray	55.6 - 90
Silt, gray; brown sand and gravel	90 - 96.3
Refusal	at 96.3
METHUEN B4.	
Sand, medium, brown	0 - 5.5
Sand, coarse, brown; trace of gravel	5.5 - 15
Sand, fine to medium, brown	15 - 20
Sand, fine, gray	20 - 40
Sand, fine, brown	40 - 45
Sand, medium, brown-gray	45 - 47.8
Sand, coarse; gravel	47.8 - 48.8
Refusal	at 48.8
METHUEN B5.	
Sand, gravel and cobbles	0 - 3
Sand, fine, compact, brown; some silt and gravel	3 - 13
Till	13 - 33.5
Refusal	at 33.5
METHUEN B6.	
Sand, fine, loose, brown, dry; trace of loam	0 - 5
Sand, fine, firm, yellow, dry	5 - 8.5

	Depth
METHUEN B6. (Continued)	
Sand, fine, yellow; some gravel	8.5 - 16.5
Sand, fine, brown; some gravel	16.5 - 22.5
Sand, very fine, yellow	22.5 - 25.5
Sand, very fine, gray; some silt	25.5 - 34.5
Sand, fine, gray; some gravel	34.5 - 58
Refusal	at 58
METHUEN B7.	
Sand, coarse; gravel, cobbles, and boulders	0 - 2
Sand, fine, loose, brown; some gravel	2 - 7
Sand, very fine, loose, gray; trace of clay	7 - 12
Sand, very fine, gray; some fine gravel	12 - 17
Sand, fine, gray; gravel, cobbles, and boulders	17 - 32
Sand, very fine, gray; some gravel and boulders; trace of clay	32 - 42
Sand, medium, gray; gravel, cobbles, and boulders	42 - 47.5
Bedrock	47.5 - 53.5
METHUEN B8.	
Top soil	0 - 2
Sand, medium to coarse, brown; trace of gravel	2 - 7
Sand, fine, compact, brown; some silt	7 - 12.5
Silt; fine compact gray sand; trace of gravel; cemented	12.5 - 25
Silt; fine gray sand; cemented	25 - 51.5
METHUEN B9.	
Sand, fine to medium, silty, yellow; some gravel; trace of coarse sand and boulders	0 - 8
Sand, fine to medium, silty, yellow; gravel; some coarse sand; trace of clay and boulders	8 - 21
Sand, very fine to fine, yellow; gravel; some medium to coarse sand; trace of clay and boulders	21 - 28
METHUEN B10.	
Artificial fill (sand, gravel, and boulders)	0 - 17
Sand, fine, yellow; gravel; some clay	17 - 26
Sand, fine; gravel; till; cemented	26 - 29
Refusal	at 29
METHUEN B11.	
Peat, soft, black	0 - 11
Silt, loose, gray	11 - 15.5
Sand, fine, yellow; trace of gravel; some boulders	15.5 - 18
Sand, coarse, gray; gravel; boulders	18 - 24
Refusal	at 24
METHUEN B12.	
Sand, fine, brown; trace of peat	0 - 5
Sand, fine, loose, brown	5 - 15
Silt, gray; some fine sand	15 - 26
Sand, fine, gray; trace of silt	26 - 31
Clay, blue; some fine sand	31 - 36
Clay, blue	36 - 47.5
Sand, fine, gray; some clay and gravel	47.5 - 51
Sand, coarse; gravel	51 - 57
Refusal	at 57
METHUEN B13.	
Peat	0 - 2
Peat and sand	2 - 4
Sand, fine	4 - 10
Clay and very fine sand	10 - 21
Clay, fine sand, and gravel; compact	21 - 22.5
Sand, fine to coarse; gravel	22.5 - 26.5
Sand, fine; gravel; some clay	26.5 - 30.5
Refusal	at 30.5

Table 2.--Logs of selected wells and borings (Continued)

	Depth
METHUEN B14.	
Sand, loamy, brown	0 - 2
Sand, fine, yellow	2 - 23.5
Silt, gray; some clay	23.5 - 53
Sand, fine, gray; gravel	53 - 55
Refusal	at 55
METHUEN B15.	
Sand, loamy, brown	0 - 3
Sand, fine, yellow	3 - 12.5
Sand, very fine, yellow	12.5 - 14
Silt, gray	14 - 20
Sand, coarse, gray; gravel and rocks; trace of clay	20 - 23.5
Sand, medium; gravel, rocks and boulders; trace of clay	23.5 - 30
Refusal	at 30
METHUEN B16.	
Peat and fine sand	0 - 10
Sand, fine; some peat	10 - 20
Sand, medium	20 - 25
Sand, fine; trace of peat	25 - 30
Sand, fine; trace of clay	30 - 50
Clay, blue	50 - 65
Sand, fine; some clay and gravel	65 - 72
Sand, fine; gravel; some clay	72 - 73
Refusal	at 73
METHUEN B17.	
Loam; brown sand	0 - 4
Sand, fine, yellow; some gravel	4 - 16
Sand, fine, gray; some gravel	16 - 32
Sand, fine, yellow; some gravel	32 - 44
Refusal	at 44
METHUEN B18.	
Artificial fill and peat	0 - 6
Sand, medium, brown	6 - 10
Sand, fine, gray	10 - 25
Sand, very fine, gray	25 - 48
Sand, fine, gray; some gravel	48 - 53
Sand, fine, gray; gravel	53 - 56
Refusal	at 56
METHUEN B19.	
Sand, medium, yellow; some gravel	0 - 1.5
Sand, fine, brown; some gravel and rocks	1.5 - 6
Sand, fine, brown; some gravel	6 - 9.5
Sand, fine, gray; some clay; trace of gravel	9.5 - 16
Refusal	at 16
METHUEN B20.	
Loam and brown sand	0 - 3.5
Sand, fine, brown; some gravel and rocks	3.5 - 6
Refusal	at 6
METHUEN B21.	
Sand, fine, brown; trace of peat	0 - 5.5
Sand, medium, gray	5.5 - 11
Sand, coarse, yellow	11 - 17
Sand, medium, yellow	17 - 21
Silt, gray; trace of clay and fine sand	21 - 26.5
Sand, fine, gray	26.5 - 38
Silt, gray; some fine sand; trace of clay	38 - 42
Sand, fine, gray; gravel and rocks	42 - 48
Refusal	at 48
METHUEN B22.	
Peat, soft, black	0 - 2
Sand, fine, yellow	2 - 4
Sand, coarse, gray; trace of gravel	4 - 9
Sand, medium, yellow	9 - 46
Sand, fine, gray	46 - 57.5
Sand, fine, gray; gravel	57.5 - 70
Refusal	at 70
METHUEN B26.	
Top soil, muck	0 - 3
Silt and fine brown sand	3 - 8.5
Sand, fine to medium, brown	8.5 - 16
Sand, coarse, brown; gravel	16 - 25.5
Silt, gray; gravel	25.5 - 28.5
Refusal	at 28.5
METHUEN R1.	
Sand, fine, gray; trace of gravel	0 - 25
Silt, gray; fine sand	25 - 27
Sand, fine, gray; silt and cobbles	27 - 44
METHUEN R2.	
Top soil	0 - 1
Sand, fine, brown; cobbles	1 - 9
Sand, medium, brown; cobbles	9 - 15
Till, sandy	15 - 16
METHUEN R3.	
Top soil, peat	0 - 1.5
Sand, fine to medium, brown	1.5 - 19.5
Till, gravel, and cobbles	19.5 - 24
Refusal	at 24
METHUEN R5.	
Top soil	0 - 1
Sand, medium to coarse, brown	1 - 11
Sand, medium to coarse, brown; cobbles	11 - 19
Sand, fine to medium, brown; cobbles	19 - 22
METHUEN R6.	
Top soil	0 - 1
Sand, fine, brown; trace of silt	1 - 24
Gravel, brown	24 - 24.5
Refusal	at 24.5
METHUEN R7.	
Top soil	0 - 0.5
Sand, fine to coarse; gravel	0.5 - 9
Sand, fine, brown; trace of gravel	9 - 13
Sand, fine, yellow; trace of silt and gravel; cemented	13 - 43
METHUEN R8.	
Top soil	0 - 1
Sand, medium, brown	1 - 9
Sand, fine, brown; some silt	9 - 28
Sand, fine, gray; some silt	28 - 73
Sand, medium, gray; some gravel; trace of silt	73 - 77
Sand, fine, gray; some silt	77 - 113
Refusal	at 113
METHUEN R9.	
Top soil	0 - 1
Sand, fine to medium, brown	1 - 9
Sand, fine, brown; silt, cobbles and boulders	9 - 35
Sand, medium, gray; gravel	at 35
METHUEN R10.	
Top soil	0 - 1
Sand, medium, brown	1 - 8
Sand, fine, brown	8 - 68
Sand, fine, gray; trace of silt	68 - 114
Refusal	at 114
METHUEN R11.	
Sand, fine, brown	0 - 13.5
Sand, medium, brown	13.5 - 28
Sand, fine, gray; some gravel	28 - 41
Refusal	at 41
METHUEN W5.	
Sand, fine; gravel	0 - 34
Clay	34 - 36
Sand, coarse; gravel	36 - 48
Clay, blue	48 - 49
Clay, gravel and boulders	49 - 55
Sand, fine; gravel	55 - 58
Bedrock	58 - 83
METHUEN W6.	
Artificial fill	0 - 9
Mud	9 - 11
Clay and sand	11 - 14
Clay and fine sand	14 - 30
Gravel	30 - 31
Clay and fine sand	31 - 34
Gravel	34 - 36
Sand, fine	36 - 38
Sand and gravel	38 - 49
Refusal	at 49
METHUEN W7.	
Loam	0 - 9
Sand	9 - 19
Sand, coarse	19 - 21
Sand, fine	21 - 36
Sand, coarse	36 - 43
Till and boulders	43 - 47
Refusal	at 47
METHUEN W31.	
Peat	0 - 12
Sand, fine to medium, gray; gravel; trace of clay	12 - 20
No Record	20 - 23
Refusal	at 23
METHUEN W32.	
Peat	0 - 5
Sand, fine to medium, gray; gravel; trace of clay	5 - 21.8
Refusal	at 21.8
METHUEN W33.	
Peat	0 - 4
Sand, fine, gray; gravel; trace of clay	4 - 19
Refusal	at 19
METHUEN W34.	
Peat	0 - 6
Sand, fine, gray; gravel; trace of clay	6 - 22
Refusal	at 22
METHUEN W35.	
Peat	0 - 3
Sand, fine, gray; gravel; trace of clay	3 - 20
Refusal	at 20
NEWBURY A3.	
Artificial fill	0 - 3.5
Peat	3.5 - 10.5
Sand and gravel	10.5 - 13.5
Gravel	13.5 - 14
Sand and gravel	14 - 16
Silt and very fine sand	16 - 68
Gravel, fine; some sand	68 - 81.5
Gravel	81.5 - 83
Refusal	at 83
NEWBURY A5.	
Silt and very fine sand	0 - 2.5
Gravel	2.5 - 5
Silt and very fine sand	5 - 11.5
Till	11.5 - 12.5
Refusal	at 12.5
NEWBURY A6.	
Sand, fine to medium, silty, brown; some gravel	0 - 15
Refusal	at 15
NEWBURY A7.	
Sand, fine to coarse; some gravel	0 - 20
Sand, fine to coarse; some gravel and rocks	20 - 25
Refusal	at 25
NEWBURY B1.	
Loam, clayey	0 - 2
Clay; some sand	2 - 12.6
Refusal	at 12.6
NEWBURY B2.	
Silt, gray; fine to coarse sand	0 - 15
Clay, yellow	15 - 16
Sand, fine to coarse	16 - 52.5
Clay, blue	52.5 - 80
Silt; fine to coarse sand and gravel	80 - 106
Bedrock (granite)	106 - 116
NEWBURY W5.	
Sand and gravel	0 - 26
Sand, fine; trace of clay	26 - 36.5
Clay and fine sand	36.5 - 69
Refusal	at 69
NEWBURY W9.	
Sand, fine to medium, reddish brown; gravel	0 - 21
Sand, fine, silty, gray; some gravel	21 - 51
Clay, blue; silty sand; gravel	51 - 61
NEWBURYPORT A1.	
Sand, fine; some gravel	0 - 59
Sand and gravel, loose	59 - 102
NEWBURYPORT A2.	
Artificial fill	0 - 2
Sand, medium to coarse; some pebbles	2 - 6
Sand, medium to coarse; fine gravel	6 - 46

Table 2.--Logs of selected wells and borings (Continued)

	Depth
NEWBURYPORT A3.	
Silt and very fine sand	0 - 2
Gravel, tight	2 - 11.5
Refusal	at 11.5
NEWBURYPORT B1.	
Loam	0 - 2.2
Sand, fine	2.2 - 12.3
Sand and gravel; some clay; compact	12.3 - 17.5
Sand and gravel	17.5 - 20.6
Clay, sand, and gravel; compact	20.6 - 24
Sand and gravel; compact	24 - 32.3
Bedrock	32.3 - 42.3
NEWBURYPORT B2.	
Clay, sand, and gravel; compact	0 - 6
Bedrock	6 - 16.8
NEWBURYPORT B3.	
Loam	0 - 3
Sand, fine	3 - 8
Sand, fine; trace of clay; compact	8 - 18
Sand, fine; some clay; compact	18 - 26.3
Sand and gravel; some clay; compact	26.3 - 35.5
NEWBURYPORT B4.	
Sand, fine; possibly artificial fill	0 - 4
Sand, fine; some gravel	4 - 7.4
Clay and very fine sand; compact	7.4 - 17.2
NEWBURYPORT B6.	
Sand, silty	0 - 2.5
Sand, coarse; fine gravel	2.5 - 19
Sand, coarse; some gravel	19 - 32
Sand, coarse	32 - 38.5
Sand, coarse; gravel	38.5 - 45
Refusal	at 45
NEWBURYPORT B7.	
Artificial fill and gravel	0 - 8
Clay	8 - 18
Clay and sand	18 - 24.6
Clay and gravel	24.6 - 29
NEWBURYPORT B9.	
Sand and gravel	0 - 3
Gravel, hard	3 - 17
Sand, medium	17 - 20
Sand and gravel	20 - 24
Sand, medium	24 - 31
Sand and gravel	31 - 35
NEWBURYPORT B10.	
Mud and peat	0 - 5
Sand, fine, gray; some silt	5 - 13
Sand, fine to medium, gray; some silt and gravel	13 - 15
Clay, silty; very fine to medium gray sand	15 - 25
Clay and silt, sandy, gray	25 - 39
Silt, gray; fine sand; trace of coarse gravel	39 - 44
Silt, gray; fine sand; trace of clay and coarse gravel	44 - 53
Refusal	at 53
NEWBURYPORT R1.	
Clay and silt	0 - 2.5
Clay, mottled	2.5 - 7
Clay, brown	7 - 15
Clay, gray	15 - 40.5
Sand, fine, gray; some clay	40.5 - 46
Sand, fine, gray; some silt; trace of gravel	46 - 51.5
Silt, gray; some gravel and cobbles; trace of sand	51.5 - 56
NEWBURYPORT W20.	
Sand, fine, brown	0 - 20
Sand, medium, brown	20 - 24
Sand, coarse, brown, some gravel	24 - 32
Sand, fine; some gravel; trace of clay	32 - 42
Sand, medium; gravel; trace of clay	42 - 48
Clay; fine brown sand; gravel	48 - 52
NEWBURYPORT W21.	
Clay, brown; fine sand; boulders	0 - 16
Clay and fine brown sand	16 - 24
Sand, fine, brown; some gravel	24 - 30
Sand and gravel, brown	30 - 68
Refusal	at 68
NEWBURYPORT W22.	
Clay, tight	0 - 16
Refusal	at 16
NEWBURYPORT W23.	
Sand, brown; gravel	0 - 67.3
Clay, gray; sand; gravel	67.3 - 84
Refusal	at 84
NEWBURYPORT W33.	
Sand, coarse, brown; gravel	0 - 16
Clay, brown; coarse sand; gravel	16 - 29.5
Refusal	at 29.5
NEWBURYPORT W35.	
Sand and gravel, brown	0 - 23
Sand and gravel, gray	23 - 38
Sand, coarse; gravel	38 - 47
Sand, medium; gravel	47 - 50
NEWBURYPORT W38.	
Artificial fill	0 - 10
Clay, brown; fine sand; gravel	10 - 42
NEWBURYPORT W40.	
Loam	0 - 2
Clay, brown; gravel	2 - 19
Clay, blue; gravel	19 - 36.8
NORTH ANDOVER A2.	
Till	0 - 31.5
NORTH ANDOVER A3.	
Sand, fine to coarse	0 - 3.5
Till	3.5 - 55.6
Refusal	at 55.6
NORTH ANDOVER A4.	
Till, sandy	0 - 7
Till	7 - 17.5
NORTH ANDOVER W5.	
Sand, fine	0 - 2
Gravel; some stones and boulders	2 - 12
Clay, blue; boulders	12 - 27
Sand, medium	27 - 30
Sand, medium to coarse; gravel	30 - 42
Refusal	at 42
NORTH ANDOVER W6.	
Sand, fine	0 - 8
Gravel and boulders	8 - 13
Clay, blue; boulders	13 - 25
Sand, medium; gravel	25 - 42
Refusal	at 42
NORTH ANDOVER W7.	
Clay, brown; broken rock	0 - 36
Refusal	at 36
NORTH ANDOVER W8.	
Sand, silty, brown; broken rock	0 - 10
Clay, blue; broken rock	10 - 26
Refusal	at 26
NORTH ANDOVER W9.	
Clay, brown; some gravel and boulders	0 - 26
Clay, blue; broken rock	26 - 45
Refusal	at 45
NORTH ANDOVER W10.	
Sand, brown; gravel	0 - 26
Clay, blue; brown sand	26 - 32
Clay, blue	32 - 73
Clay, blue; brown silty sand	73 - 78
Clay, blue; broken rock	78 - 86
Refusal	at 86
NORTH ANDOVER W11.	
Sand, brown; some gravel	0 - 31
Sand, brown; some gravel; trace of clay	31 - 36
Clay, blue	36 - 41
NORTH ANDOVER W13.	
Clay, brown; broken rock	0 - 21
Sand, brown; gravel; some clay and silt	21 - 41
Clay, brown; gravel	41 - 51
Sand and gravel, silty, brown; some blue clay	51 - 57
Clay, blue; brown sand; fine gravel	57 - 80
Refusal	at 80
NORTH ANDOVER W14.	
Clay, brown sand and gravel	0 - 26
Clay, brown	26 - 31
Clay, blue	31 - 41
Clay, blue; silty brown sand	41 - 47
Clay, brown; silty sand; some gravel	47 - 60
Refusal	at 60
NORTH ANDOVER W15.	
Sand, silty, brown; boulders	0 - 31
Clay, brown; broken rock	31 - 42
Clay, blue; silty brown sand	42 - 47
Clay, blue; silty gray sand	47 - 52
NORTH ANDOVER W16.	
Clay; silty brown sand; gravel	0 - 21
Sand, silty, brown	21 - 42
Clay, blue; broken rock	42 - 49
Refusal	at 49
NORTH ANDOVER W17.	
Clay; silty brown sand; gravel	0 - 10
Refusal	at 10
NORTH ANDOVER W18.	
Clay; brown sand; some gravel	0 - 36
Sand, silty, brown	36 - 52
Clay, blue	52 - 57
NORTH ANDOVER X1.	
Sand, loamy	0 - 2
Sand, fine, yellow; mica	2 - 18
Sand, fine, gray; some mica	18 - 32
Sand, fine; gravel; rocks	32 - 34
NORTH ANDOVER X4.	
Sand, loamy	0 - 2.5
Sand, very fine, yellow; some clay	2.5 - 18
Sand, fine, yellow; gravel	18 - 20
NORTH ANDOVER X7.	
Sand, loamy	0 - 1
Sand, medium, yellow	1 - 14.5
Sand, fine, yellow	14.5 - 22
NORTH ANDOVER X8.	
Sand, loamy	0 - 1.5
Sand, medium, yellow	1.5 - 7.5
Sand, medium, yellow; gravel	7.5 - 8.5
Sand, very fine, yellow	8.5 - 18
Sand, very fine, gray; some clay	18 - 27.5
Sand, fine, yellow	27.5 - 38
Sand, fine, gray	38 - 51.5
Sand, fine, yellow	51.5 - 71.5
Sand, fine, yellow; gravel	71.5 - 77
Sand, medium, yellow	77 - 82
Shale, sandy, hard	82 - 83
Refusal	at 83
SALISBURY A1.	
Gravel, tight, poorly sorted	0 - 11
Sand, very fine to very coarse; gravel and pebbles	11 - 22
Sand, medium; some pebbles	22 - 26
Sand, very fine to medium; well sorted	26 - 38
Sand, gravelly	38 - 41
Sand, very fine to medium	41 - 66.5
Till, gray	66.5 - 78.5
SALISBURY A2.	
Gravel	0 - 18
Sand, gravelly	18 - 24
Gravel	24 - 36.5
Sand	36.5 - 38.5
Till, gray	38.5 - 42
Refusal	at 42
SALISBURY A3.	
Sand, very fine to fine	0 - 45
Silt, clayey	45 - 88.5
Refusal	at 88.5
SALISBURY A4.	
Sand	0 - 2
Gravel	2 - 9
Silt, very fine to very coarse sand; some pebbles	9 - 81
Till	81 - 94.5
Refusal	at 94.5
SALISBURY A5.	
Sand, very fine to fine	0 - 30.5
Sand	30.5 - 45
Silt, clayey	45 - 97

Table 2.--Logs of selected wells and borings (Continued)

	Depth
SALISBURY A6.	
Artificial fill	0 - 4
Silt and sand	4 - 42
Silt, clayey	42 - 94
Till	94 - 98
SALISBURY A7.	
Artificial fill	0 - 1
Sand	1 - 2
Gravel	2 - 3.5
Sand, gravelly	3.5 - 5.5
Sand, gravel and pebbles	5.5 - 10.5
Sand; some pebbles	10.5 - 14.5
Silt, clayey, gray	14.5 - 22.5
Till, gray	22.5 - 43.5
Refusal	at 43.5
SALISBURY A8.	
Sand, very fine to fine	0 - 7.5
Gravel	7.5 - 8.5
Sand	8.5 - 9
Till	9 - 11.5
Refusal	at 11.5
SALISBURY A9.	
Sand, very fine to coarse	0 - 6
Sand, very fine; some silt	6 - 39.5
Silt, clayey, gray	39.5 - 71.5
Till, gray	71.5 - 95.5
SALISBURY A10.	
Sand, very fine to coarse, well sorted	0 - 20
Sand, very fine to medium, well sorted	20 - 30
Sand, very fine to fine, well sorted	30 - 52
Clay, silty	52 - 97.5
SALISBURY B1.	
Loam	0 - 2
Sand and gravel; some clay	2 - 7.5
Clay, sand, and gravel	7.5 - 19
Refusal	at 19
SALISBURY B2.	
Loam	0 - 1
Sand and gravel	1 - 13
Sand, fine; some clay	13 - 21.7
Refusal	at 21.7
SALISBURY B3.	
Loam and fine sand	0 - 3.5
Clay, yellow; sandy silt	3.5 - 9.5
Clay, gray; some very fine gray sand	9.5 - 19
Boulders	19 - 22
Sand, medium to coarse, gray; gravel	22 - 24
Bedrock, porphoritic diabase	24 - 32
SALISBURY B4.	
Loam, sandy	0 - 2
Clay, silty, sandy, yellow	2 - 4
Sand, fine, silty, yellow; some yellow clay	4 - 10
Clay, yellow; very fine silty yellow sand	10 - 17
Sand, very fine, silty, gray; some gray clay	17 - 25
Clay, gray; very fine sand	25 - 35
Clay, gray	35 - 51
Sand, gravel, and boulders	51 - 58
SALISBURY B5.	
Top soil	0 - 1
Sand, fine, brown; trace of silt	1 - 37
Clay, gray; some silt	37 - 115
Silt, sand, fine gray gravel, and cobbles	115 - 127
Bedrock, granite	127 - 137
SALISBURY B6.	
Silt, brown; medium sand; gravel	0 - 3
Silt, sand, and gravel	3 - 6.5
Clay; some silt	6.5 - 13
Clay; trace of silt and sand	13 - 23
Clay, gray; some silt	23 - 46
No record	46 - 48.5
Bedrock, granite	48.5 - 58.5
SALISBURY B7.	
Peat	0 - 7
Silt and peat; trace of sand	7 - 27
Clay, gray	27 - 32
Clay and silt, gray; some fine sand	32 - 56.5
SALISBURY B7. (Continued)	
Sand and gravel, gray; some silt and cobbles	56.5 - 66
Bedrock, granite	66 - 76
SALISBURY B8.	
Top soil, silt and fine sand	0 - 3
Silt and fine sand	3 - 13
Clay, gray; silt; trace of sand	13 - 22
Clay, gray; silt; trace of fine sand	22 - 142
Till	142 - 145
Bedrock, granite	145 - 155
SALISBURY R1.	
Top soil	0 - 0.5
Sand, fine, gray; some silt; trace of brown sand	0.5 - 9
SALISBURY R2.	
Top soil	0 - 0.5
Sand, fine, gray; some silt and brown sand	0.5 - 5
Silt, gray; some clay	5 - 7.5
Clay, sand, and gravel, gray	7.5 - 15
SALISBURY R3.	
Top soil	0 - 0.5
Sand, fine, brown; trace of silt and fine gravel	0.5 - 3
Sand, fine, brown; trace of coarse sand and fine gravel	3 - 13
Sand, fine, gray; gravel	13 - 16
No Record	16 - 18
SALISBURY R4.	
Sand, fine, brown	0 - 1.5
Sand, fine, brown; some coarse sand and gravel	1.5 - 4
Sand, fine, brown; some gravel; trace of coarse sand	4 - 12
SALISBURY R5.	
Sand, fine, brown	0 - 1.6
Sand, fine, brown; some gravel	1.6 - 10
Sand, fine, gray; some silt and fine gravel	10 - 12
Silt, gray; fine gray sand; trace of fine gravel	12 - 23
SALISBURY R6.	
Sand and gravel	0 - 3.5
Sand, medium, brown; some silt and gravel	3.5 - 13
Sand, fine, brown; some silt	13 - 23
SALISBURY R7.	
Peat and muck	0 - 1.5
Silt and peat	1.5 - 9
Sand, fine to medium, brown; some silt	9 - 12
Sand, fine, brown; some silt	12 - 17
Silt, gray; fine gray sand	17 - 22.5
Refusal	at 22.5
SALISBURY R8.	
Top soil	0 - 1
Sand, fine, brown; trace of silt	1 - 5.5
Sand, fine to medium,brown; some silt; trace of clay	5.5 - 8.5
Sand, medium to coarse, brown; trace of silt	8.5 - 13
Sand, fine, brown; trace of silt	13 - 15
Silt and fine brown sand	15 - 21
Refusal	at 21
SALISBURY R9.	
Peat	0 - 13
Clay, gray; silt; peat	13 - 15
Clay, gray; some silt	15 - 23.5
Clay, brown; silt and fine sand	23.5 - 25
SALISBURY R10.	
Silt and sand	0 - 2
Sand, medium to coarse, brown	2 - 10.5
Silt, gray; sand	10.5 - 14.5
Clay, gray; some silt; trace of sand	14.5 - 26.5
SALISBURY R11.	
Silt, black; some sand	0 - 1.5
Silt; fine sand	1.5 - 3
Silt and sand; cemented	3 - 6
Sand, fine, brown; some silt	6 - 16.75
SALISBURY R12.	
Sand, fine, brown; trace of peat and gravel	0 - 4.5
Sand, medium to fine, brown; trace of silt	4.5 - 7
Sand, fine, brown; some silt	7 - 14.8
Sand, fine, gray; trace of silt	14.8 - 17
Refusal	at 17
SALISBURY R13.	
Top soil and muck	0 - 1
Silt and fine sand	1 - 5
Sand, fine to medium, brown; some clay and silt	5 - 10
Clay, brown	10 - 13.5
Clay, gray	13.5 - 48.5
SALISBURY R14.	
Top soil	0 - 0.5
Sand, fine to medium, brown	0.5 - 7.5
Clay, silt and fine sand	7.5 - 16.5
Silt, gray; fine sand; trace of gravel	16.5 - 22.5
Boulders	22.5 - 24
Till	24 - 24.5
Bedrock, granite	24.5 - 34.5
SALISBURY W3.	
Peat	0 - 3
Clay	3 - 19
Gravel, brown	19 - 39
Refusal	at 39
SALISBURY W32.	
Sand and gravel	0 - 22
Sand, medium; gravel	22 - 27.3
No Record	27.3 - 32.5
Sand, fine to medium; gravel; trace of clay	32.5 - 38
Sand, fine to medium; gravel	38 - 53.8
No Record	53.8 - 58
Refusal	at 58
SALISBURY W33.	
Sand, brown	0 - 21
Sand, fine to medium, brown	21 - 30
Sand, brown; some gravel	30 - 38
Sand and gravel, brown	38 - 55
SALISBURY W34.	
Sand, fine, brown	0 - 3
Clay, gray; some sand and boulders	3 - 14
Sand, coarse, gray; boulders	14 - 20
Sand, fine to coarse; gravel and boulders	20 - 30
Sand, medium to coarse, brown; gravel and boulders	30 - 40
Sand, medium to coarse; gravel	40 - 50
Sand, fine to coarse, gray; gravel	50 - 54
SALISBURY W37.	
Sand, fine to medium	0 - 12
Clay, gray	12 - 14
SALISBURY W38.	
Sand, fine, brown; gravel	0 - 21
Sand, fine, gray; gravel; trace of clay	21 - 35
Clay, gray; fine sand	35 - 42
Clay; fine brown sand	42 - 49
Clay, gray	49 - 70
Clay, gray; sand	70 - 78.2
Refusal	at 78.2
SALISBURY W39.	
Sand, fine, brown; gravel	0 - 7
Sand, fine, gray; gravel	7 - 21
Sand, fine, gray; clay	21 - 28
Sand, fine, brown; clay	28 - 35
Clay, gray; some fine brown sand	35 - 45.2
Refusal	at 45.2
SALISBURY W40.	
Sand, fine, brown; gravel	0 - 21
Sand, fine, brown; gravel; some gray sand; trace of clay	21 - 34
TEWKSBURY B4.	
Sand, medium, brown	0 - 7.5
Sand, fine, yellow	7.5 - 17.5
Sand, medium, yellow	17.5 - 33
Sand, coarse, yellow; gravel	33 - 35
Refusal	at 35

Table 2.--Logs of selected wells and borings (Continued)

	Depth
TEWKSBURY B6.	
Silt, black	0 - 2.6
Sand, fine, brown; trace of silt	2.6 - 4
Sand, fine to medium, brown; some fine to medium gravel	4 - 8
Sand, fine, brown	8 - 29
Refusal	at 29
TEWKSBURY B7.	
Silt, black	0 - 1
Sand, fine, brown	1 - 3
Sand, fine to medium, gray; some fine gravel	3 - 10
Silt, clayey, gray; some sand and gravel	10 - 12
Sand, fine to coarse; gravel	12 - 15
Micaschist, decomposed	15 - 16
Refusal	at 16
TEWKSBURY W121.	
Hardpan and boulders	0 - 13.6
Refusal	at 13.6
TEWKSBURY W122.	
Sand, fine to medium, brown; some clay and gravel	0 - 21
Clay and fine brown sand	21 - 37
Clay, brown sand, and gravel	37 - 42
Clay, fine to medium brown sand, and gravel	42 - 47
Refusal	at 47
TEWKSBURY W123.	
Clay, fine to medium brown sand, and gravel	0 - 21
Sand, fine, brown	21 - 47
Sand, fine to medium, brown; some gravel	47 - 52.5
Clay; fine to medium brown sand	52.5 - 57
Refusal	at 57
TEWKSBURY W124.	
Peat	0 - 2
Sand, fine, brown; gravel	2 - 21
Clay and fine brown sand	21 - 32
Clay, fine brown sand, and gravel	32 - 37
Clay, fine to medium gray sand, and gravel	37 - 48
Refusal	at 48
TEWKSBURY W125.	
Peat	0 - 2
Sand, fine to medium, brown; gravel	2 - 21
Clay and fine brown sand	21 - 37
Clay, fine brown sand, and gravel	37 - 42
Refusal	at 42
TEWKSBURY W126.	
Clay, fine brown sand, and gravel	0 - 26
Clay, fine to medium brown sand, and gravel	26 - 37.5
Refusal	at 37.5
TEWKSBURY W127.	
Clay, fine to medium brown sand, and gravel	0 - 31.5
Sand, fine to coarse, brown; gravel	31.5 - 36.8
Refusal	at 36.8
TEWKSBURY W128.	
Sand, fine to medium, brown	0 - 20
Sand, fine, brown	20 - 42
Clay, fine to medium brown sand, and gravel	42 - 55
Refusal	at 55
TEWKSBURY W129.	
Clay and fine brown sand	0 - 20
Clay, fine to medium brown sand, and gravel	20 - 24.2
Refusal	at 24.2
TEWKSBURY W130.	
Peat	0 - 3
Sand, fine to medium, gray; gravel	3 - 21
Sand, fine to medium,brown; gravel	21 - 26.5
No Record	26.5 - 30.8
Refusal	at 30.8
TEWKSBURY W131.	
Sand, coarse; gravel and boulders	0 - 25
Sand and gravel	25 - 32
No Record	32 - 34
Refusal	at 34
TEWKSBURY W132.	
Sand, fine to medium, brown gravel	0 - 26.5
Sand, fine; gravel	26.5 - 45
TEWKSBURY W133.	
Boulders	0 - 24.3
Refusal	at 24.3
TEWKSBURY W134.	
Sand, fine, brown	0 - 22
Clay, fine gray sand, and gravel	22 - 27.8
Refusal	at 27.8
TEWKSBURY W135.	
Hardpan and boulders	0 - 21.5
Refusal	at 21.5
TEWKSBURY W136.	
Clay, fine brown sand, and gravel	0 - 21
No Record	21 - 27
Refusal	at 27
TEWKSBURY W142.	
Boulders	0 - 5.5
Refusal	at 5.5
TEWKSBURY W143.	
Hardpan and boulders	0 - 17.6
Refusal	at 17.6
TEWKSBURY W185.	
Sand, fine to medium, brown; some gravel	0 - 20.5
Sand, fine to medium, brown	20.5 - 26
Sand, fine to medium, gray; some gravel	26 - 31
No Record	31 - 34
Refusal	at 34
TEWKSBURY W186.	
Sand, fine to medium, brown	0 - 21
Sand, fine, brown	21 - 42
Sand, fine, gray	42 - 47
Sand, fine, gray; some gravel	47 - 52.5
No Record	52.5 - 56.8
Refusal	at 56.8
TEWKSBURY W213.	
Till	0 - 19
TEWKSBURY W214.	
Till	0 - 16
Clay and fine sand	16 - 19
Refusal	at 19
TEWKSBURY W215.	
Sand, fine; some clay	0 - 16
WEST NEWBURY A1.	
Silt; very fine yellow sand	0 - 5.5
Sand and gravel	5.5 - 21
Silt, sandy, brown; coarse sand and pebbles	21 - 25
Refusal	at 25
WEST NEWBURY A2.	
Sand, very fine, yellow	0 - 20
Sand, medium to coarse, yellow; some very fine sand	20 - 60
Gravel	60 - 65
Refusal	at 65
WEST NEWBURY A3.	
Silt; very fine yellow sand	0 - 22
Gravel	22 - 32
Silt, clayey, gray; some very coarse sand; occasional cobble	32 - 41
Refusal	at 41
WEST NEWBURY A4.	
Silt, clayey, gray	0 - 13.5
Gravel, fine	13.5 - 15
Sand; fine gravel lenses	15 - 21
Gravel	21 - 23
Sand	23 - 25
Sand, gravelly	25 - 32
Sand	32 - 37.5
Till	37.5 - 48
Refusal	at 48
WEST NEWBURY A7.	
Artificial fill	0 - 1
Silt, clayey, gray	1 - 25
Gravel	25 - 27
Sand	27 - 28
Sand, gravelly	28 - 31
Gravel	31 - 34
Sand	34 - 39
Till	39 - 57.5
Refusal	at 57.5
WEST NEWBURY A12.	
Silt, clayey	0 - 26
Sand and gravel	26 - 37
Till	37 - 42
Refusal	at 42
WEST NEWBURY B1.	
Loam	0 - 1
Sand, coarse; gravel	1 - 5
Clay, blue; sand; gravel	5 - 27
Refusal	at 27
WEST NEWBURY R1.	
Top soil and muck	0 - 0.5
Clay and muck	0.5 - 3
Clay; trace of silt and sand	3 - 5
Clay	5 - 10.5
Clay, gray; trace of silt and sand	10.5 - 27
Silt, gray; fine sand and gravel	27 - 37
WEST NEWBURY R2.	
Muck, black	0 - 2.5
Silt, gray; fine sand; trace of clay	2.5 - 6
Silt, gray; fine sand; some clay	6 - 12
Clay, gray; trace of sand	12 - 82
Silt, gray; sand and gravel	82 - 92
WEST NEWBURY R3.	
Peat	0 - 1.5
Clay; trace of silt and sand	1.5 - 10
Clay, brown; some silt and sand	10 - 18
Clay, gray; trace of fine sand	18 - 73
Silt, gray; sand and gravel	73 - 75.5
Rock, weathered	75.5 - 77
Refusal	at 77
WEST NEWBURY R4.	
Top soil	0 - 0.5
Peat; some clay	0.5 - 2.5
Clay; trace of silt and sand	2.5 - 5.5
Clay, brown	5.5 - 15
Clay, gray; trace of fine sand	15 - 43
Clay, gray; some sand	43 - 57.5
Sand, fine, gray; trace of silt and gravel	57.5 - 64
Silt, gray; fine sand and gravel	64 - 67.5
WEST NEWBURY R5.	
Silt, brown; some sand and cobbles	0 - 3
Silt, brown; some sand, gravel and cobbles	3 - 11
Bedrock, Igneous	11 - 21
WEST NEWBURY W13.	
Till	0 - 119
Bedrock	119 - 237
WEST NEWBURY W60.	
Top soil	0 - 2
Clay, blue	2 - 17
Sand, fine, brown	17 - 20
Sand, medium to coarse, brown	20 - 30
Sand, coarse, gray; gravel; some clay	30 - 44
Refusal	at 44
WEST NEWBURY W61.	
Sand, fine to medium, brown	0 - 14
Clay, blue	14 - 62
Sand, coarse, brown	62 - 67.8
Clay and gray sand	67.8 - 69.5
Refusal	at 69.5
WEST NEWBURY W63.	
Top soil	0 - 3
Sand, medium to coarse, brown; gravel	3 - 27
Clay, gray sand, and gravel	27 - 49
Refusal	at 49

Table 2.--Logs of selected wells and borings (Continued)

	Depth
WEST NEWBURY W64.	
Top soil	0 - 2
Sand and gravel	2 - 14.5
Refusal	at 14.5
WEST NEWBURY W69.	
Top soil	0 - 2
Sand, medium, brown; gravel	2 - 15
Sand, medium to coarse, brown; gravel	15 - 26
Sand, coarse; gravel	26 - 30.5
Refusal	at 30.5
WEST NEWBURY W70.	
Sand, brown; gravel	0 - 20
Clay and gray sand	20 - 35
Clay, gray	35 - 47
Sand, medium to coarse; gravel	47 - 56
Sand, fine to medium, brown	56 - 58.5
Refusal	at 58.5
WEST NEWBURY W77.	
Clay, brown; silty sand	0 - 15
Clay, brown; silty sand; broken rock	15 - 23
Refusal	at 23
WEST NEWBURY W78.	
Clay, brown; silty sand	0 - 15
Clay, gray; sand and gravel	15 - 27
WEST NEWBURY W79.	
Clay, brown	0 - 10
Clay, blue	10 - 83
Sand, gray; gravel; trace of clay	83 - 97
Refusal	at 97
WEST NEWBURY W80.	
Clay, brown	0 - 10
Clay, blue	10 - 42
Clay, blue; gray silty sand; some fine gravel	42 - 57
WEST NEWBURY W81.	
Clay; silty brown sand; broken rock; boulders	0 - 17
WEST NEWBURY W82.	
Clay; silty brown sand; broken rock; boulders	0 - 23
WEST NEWBURY W83.	
Clay, brown; broken rock	0 - 16
Refusal	at 16
WEST NEWBURY W84.	
Sand, brown; some fine gravel	0 - 26
Clay, blue	26 - 75
WEST NEWBURY W85.	
Sand and gravel, brown	0 - 21
Clay, blue	21 - 83
Sand, silty, brown	83 - 90
Refusal	at 90
WEST NEWBURY W86.	
Sand, fine, brown	0 - 36
Clay, blue; broken rock	36 - 42
Refusal	at 42
WEST NEWBURY W87.	
Clay, blue; some sand and broken rock	0 - 23
WEST NEWBURY W88.	
Clay; silty brown sand; boulders	0 - 14
Refusal	at 14
WEST NEWBURY W89.	
Clay, blue	0 - 36
Clay, blue; broken rock	36 - 41
Sand, silty, gray; silty gravel; trace of clay	41 - 52
Sand, silty, brown; gravel	52 - 57
Refusal	at 57
WEST NEWBURY W90.	
Sand, brown	0 - 15
Clay, blue	15 - 31
Sand, silty; broken rock	31 - 38
Refusal	at 38
WEST NEWBURY W91.	
Sand, brown	0 - 10
Clay, blue	10 - 47
Sand, silty, gray; fine gravel; trace of clay	47 - 63
Refusal	at 63
WEST NEWBURY W92.	
Sand, silty, brown	0 - 10
Clay, blue	10 - 68
Sand, gray; gravel; trace of clay	68 - 76
Refusal	at 76
WEST NEWBURY W93.	
Sand, fine; medium gravel	0 - 11
Clay, blue	11 - 35
Gravel, medium	35 - 44.5
Till	44.5 - 52
Refusal	at 52
WEST NEWBURY W94.	
Top soil	0 - 5
Sand, fine, brown; some gravel	5 - 9
Sand, brown; gravel and boulders	9 - 23
Sand, fine, brown	23 - 33
WEST NEWBURY W103.	
Till	0 - 20
WEST NEWBURY W110.	
Till	0 - 27.1
WEST NEWBURY W120.	
Till	0 - 38.2
WEST NEWBURY W121.	
Clay and broken gravel	0 - 15
Silt and fine brown sand	15 - 20
Clay, silt, and fine gray sand	20 - 40
Clay, gray	40 - 50
Clay, silt, and fine gray sand	50 - 64
Rocks, broken, black	at 64
WEST NEWBURY W122.	
Top soil	0 - 2
Clay and broken gravel	2 - 20
Clay, fine sand and gravel	20 - 40
Refusal	at 40
WEST NEWBURY W123.	
Clay, silt, and broken rock	0 - 25
Refusal	at 25
WEST NEWBURY W124.	
Silt and fine sand	0 - 15
Clay, silt, fine sand, and broken rock	15 - 27
Clay, gray	27 - 65
Clay, gray; fine sand	65 - 70
Clay and broken rock	70 - 80
Refusal	at 80
WEST NEWBURY W125.	
Sand, gray; broken gravel	0 - 12
Clay, broken gravel, and till	12 - 44
Refusal	at 44
WEST NEWBURY W126.	
Clay, brown sand, gravel, and broken rock	0 - 27
Clay, gray; fine sand	27 - 62
Refusal	at 62

TABLE 3. CHEMICAL ANALYSES OF GROUND WATER

SOURCE OF DATA: 1, U.S. GEOLOGICAL SURVEY; 2, U.S. PUBLIC HEALTH SERVICE; 3, STATE HEALTH DEPARTMENT; 4, STATE (OTHER THAN HEALTH DEPARTMENT); 5, INDUSTRIAL; 6, PRIVATE; 7, EDUCATIONAL; AND 8, OTHER.

LOCAL WELL NUMBER	DATE OF SAMPLE	COLOR	PH	ALKALINITY AS CACO3 (MG/L)	HARDNESS (MG/L)	CALCIUM (MG/L)	MAGNESIUM (MG/L)	SODIUM (MG/L)	POTASSIUM (MG/L)	IRON (MG/L)	MANGANESE (MG/L)	SILICA (MG/L)	SULFATE (MG/L)	CHLORIDE (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	NITRATE AS N (MG/L)	COPPER (MG/L)	SOURCE OF DATA
									AMESBURY									
W 6	3-19-62	2	6.6	33	37	13	1.0	3.3	0.9	0.05	0.00	7.3	10	1.9	97	0.1	--	1
W 7	6- -63	--	7.3	62	66	20	3.9	6.6	2.6	.01	.25	16	14	6.3	172	.0	--	1
W 27	10- -59	--	--	--	--	--	--	--	--	--	1.8	--	--	--	--	--	--	3
W 28	10- -59	--	--	--	--	--	--	--	--	6.0	--	--	--	--	--	--	--	3
W 185	9-16-74	45	6.6	12	20	5.5	1.4	9	1.0	.30	.07	1.6	9	14	90	.0	0.03	3
									BOXFORD									
W 271	3- -62	3	6.5	22	77	23	4.8	7.7	6.9	.12	.00	12	13	9.5	246	15	--	1
W 272	3- -62	2	7.5	75	170	48	12	7.1	.14	.30	.20	14	90	12	382	--	--	1
W 293	2-02-68	0	7.2	39	54	--	--	--	--	.02	.02	--	--	12	--	--	--	3
									DRACUT									
W 150	6-16-54	2	7.3	--	56	20	1.6	2.2	--	.34	.0	9.8	17	5	146	.1	--	1
W 160	1-12-55	3	7.8	--	71	22	3.6	3.2	4.8	.13	.0	7.6	8.5	1.5	162	1.5	.0	1
W 192	6-14-54	3	8.1	--	54	18	2.3	11	--	.33	.01	9.5	12	8	174	.4	--	1
									GROVELAND									
W 18	12-04-74	10	6.8	43	61	17	4.3	7.0	1.7	.17	.06	12	22	15	175	.4	.01	3
W 19	6-03-74	10	6.5	67	92	27	6.0	9.0	3.5	.12	.36	18	32	21	250	.2	.02	3
W 28	5-15-70	--	6.8	--	35	--	--	--	--	.10	.05	--	--	--	--	--	--	3
									HAVERHILL									
W 1	3-14-62	2	6.2	25	32	9.6	2.0	4.4	2.2	.04	.00	9.5	13	4.5	109	--	--	1
W 2	3-15-62	2	8.0	116	70	25	1.7	28	2.1	.08	.00	12	14	2.5	258	.0	--	1
W 110	3-16-62	2	6.3	--	53	16	3.1	8.2	4.9	.05	.0	10	13	24	186	3.2	--	1
W 162	6-12-63	2	7.5	--	80	19	7.9	11	2	.0	.01	19	63	5.7	224	.4	--	1
W 192	6- -59	2	7.4	40	50	--	--	--	--	.07	.00	--	--	3.6	--	--	--	3
W 201	6- -59	0	5.9	15	36	--	--	--	--	.05	.00	--	--	8.0	--	--	--	3
W 202	8- -71	6	7.2	44	44	--	--	--	--	.17	.02	--	--	3.0	--	--	--	3
W 217	10-08-68	--	6.2	--	127	--	--	--	--	1.3	.00	--	--	--	--	--	--	5
									MERRIMAC									
W 1	1-21-75	30	6.5	25	49	15	2.7	22	2.5	2.4	.65	13	--	37	220	.4	.00	3
W 7	3-16-62	4	6.6	43	56	18	2.6	5	1.1	.30	.00	8.2	15	6	141	.2	--	1
W 13	4-12-74	0	6.2	18	35	9	2.8	9.0	2.0	.05	.00	13	12	23	118	.3	.00	3
									METHUEN									
W 1	- -33	--	--	--	33	--	--	--	--	.08	--	--	--	6	--	.2	--	3
W 3	1- -31	27	6.4	--	--	--	--	--	--	.70	1.3	--	--	--	--	--	--	3
W 4	1- -31	11	6.8	--	--	--	--	--	--	.24	.63	--	--	--	--	--	--	3
W 5	6-10-32	5	6.8	--	--	--	--	--	--	.10	.14	--	--	--	--	--	--	3
W 6	- -36	--	--	--	38	--	--	--	--	.54	--	--	--	7.3	--	.9	--	3
W 8	- -33	--	--	--	54	--	--	--	--	.32	--	--	--	10	--	2	--	3
									NEWBURY									
W 10	9-20-66	5	7.2	6	26	--	--	--	--	.04	.00	--	--	22	--	.6	--	8
W 40	4- -60	2	7.5	--	156	26	22	5.5	1.6	.04	.01	9.7	22	7.5	320	.5	--	1
									NEWBURYPORT									
W 3	6-13-63	2	6.6	16	17	6.4	0.20	5.2	.80	.01	.00	12	4.4	6.8	69	.3	--	1
W 20	11-15-56	0	6.5	15	40	--	--	--	--	.05	.02	--	--	7.2	--	1.1	--	3
W 21	6- -57	0	7.1	29	40	--	--	--	--	.01	.00	--	--	7.6	--	.5	--	3
W 23	11-30-56	8	6.7	20	26	--	--	--	--	.35	.02	--	--	6.8	--	.0	--	3
W 35	7-10-74	0	7.1	23	27	8.0	1.8	7.0	1.6	.02	.00	14	10	11	110	.7	.04	3
W 36	3-18-74	0	7.3	57	232	60	20	32	8.4	.04	.04	13	114	140	680	1.3	.05	3
W 38	4-25-74	0	6.6	60	123	41	5.1	13	--	.0	.0	15	53	25	--	--	.0	6
									NORTH ANDOVER									
W 12	8-06-65	--	6.2	27	64	--	--	--	--	.07	.00	--	--	33	--	--	--	6
									SALISBURY									
W 8	9-27-63	4	6.5	100	117	27	12	50	9.9	.11	.57	14	17	86	502	.2	--	1
W 30	6- -63	18	7.6	53	54	14	4.5	9.1	2.3	.00	.19	12	11	8.5	158	.1	--	1
W 31	8-15-55	28	7.1	39	64	--	--	--	--	.69	--	--	--	11	--	--	--	3
W 32	11-18-74	0	6.7	45	59	15	5	20	2.2	.00	.00	13	--	31	226	.3	.25	3
W 33	11-18-74	0	6.3	38	116	30	10	100	4.0	.00	.00	10	--	192	680	1.1	--	3
W 34	11-18-74	3	7.2	74	154	40	13	10	5.0	.10	.20	8.1	--	22	360	.2	.00	3
W 40	1-20-72	--	--	--	--	--	--	--	--	--	--	--	--	3000	--	--	--	3
									TEWKSBURY									
W 131	9-03-60	3	6.3	14	18	--	--	--	--	.01	.00	--	--	4.0	--	.1	--	3
W 132	9-09-60	3	6.0	9	24	--	--	--	--	.07	.00	--	--	3.0	--	.7	--	3
									WEST NEWBURY									
W 94	9-14-67	--	6.8	--	50	--	--	--	--	.00	.00	--	--	--	--	--	--	3

Table 4.--Observation wells and availability of water-level data

U.S. Geological Survey well number	Period of record From	To	Publication media[1]
Amesbury W-31	1963	1966	Unpublished.
Amesbury W-35	1963	1965	Unpublished.
Amesbury W-38	1963	1966	Unpublished.
Amesbury W-39	1963	1964	Unpublished.
Amesbury W-40	1965	1966	Unpublished.
Amesbury W-41	1963	1966	Unpublished.
Amesbury W-43	1963	1966	Unpublished.
Amesbury W-44	1963	1966	Unpublished.
Amesbury W-45	1963	1966	Unpublished.
Amesbury W-46	1963	1966	Unpublished.
Amesbury W-180	1960	1964	Unpublished.
Amesbury W-181	1960	1962	Unpublished.
Andover W-478	1974	1977	Unpublished.
Andover W-488	1972	1977	Unpublished.
Haverhill W-23	1960	(2)	Maevsky (1976); U.S. Geological Survey, 1976-81.
Haverhill W-24	1960	1965	Unpublished.
Haverhill W-162	1962	1963	Unpublished.
Merrimac W-9	1963	1966	Unpublished.
Methuen W-9	1964	1965	Unpublished.
North Andover W-23	1957	1959	Sammel and Baker, 1962.
Salisbury W-8	1960	1965	U.S. Geological Survey, 1978.
Salisbury W-9	1960	(2)	Maevsky (1976); U.S. Geological Survey, 1976-81.
West Newbury W-3	1960	1965	Unpublished.
West Newbury W-4	1960	1965	Unpublished.
West Newbury W-103	1974	1977	Unpublished.
West Newbury W-110	1974	1977	Unpublished.
West Newbury W-120	1974	1977	Unpublished.

[1]Published and unpublished water-level data are available in reports and files of

Table 5.--Hydrologic-data reports for Massachusetts, New Hampshire, and Maine

An asterisk indicates that the report is out of print but may be consulted at the above offices and at many public and educational institution libraries. These reports are available, free of charge, at the following U.S. Geological Survey offices:

U.S. Geological Survey Water Resources Division 150 Causeway Street, Suite 1001 Boston, MA 02114 (Massachusetts reports only)	U.S. Geological Survey Clinton Street, NH Rt. 13, Bow, NH 03301 Mailing address: RFD 2, Box 352A Concord, NH 03301 (New Hampshire reports only)	U.S. Geological Survey Water Resources Division 26 Ganneston Drive Augusta, ME 04330 (Maine reports only)

MASSACHUSETTS

*1 Wilmington-Reading Area, by John A. Baker and Edward A. Sammel, 1961, 50 p., 2 figs. Covers an area of about 43 square miles in the upper part of the Ipswich River basin in northeastern Massachusetts.

*2 Lower Ipswich River basin, by Edward A. Sammel and John A. Baker, 1962, 47 p., 2 figs. Covers an area of about 110 square miles in northeastern Massachusetts.

*3 Lowell Area, by John A. Baker and Richard G. Petersen, 1962, 28 p., 2 figs. Covers an area of about 115 square miles and includes most of the metropolitan area of the City of Lowell.

*4 Parker and Rowley River basins, by Edward A. Sammel, 1962, 33 p., 2 figs. The rivers drain an area of about 77 square miles in northeastern Massachusetts.

*5 Brockton-Pembroke Area, by Richard G. Petersen, 1962, 46 p., 2 figs. Covers an area of about 112 square miles in the northern part of Plymouth County.

*6 Western Massachusetts, by Richard G. Petersen and Anthony Maevsky, 1962, 21 p., 1 fig. Covers an area of about 2,865 square miles and includes all of Berkshire, Franklin, Hampshire, and Hampden Counties.

*7 Southeastern Massachusetts, by Anthony Maevsky and Janet A. Drake, 1963, 55 p., 2 figs. Covers an area of about 1,930 square miles and includes all of Barnstable, Bristol, Dukes, Nantucket, and Plymouth Counties (exclusive of the Brockton-Pembroke Area).

*8 Assabet River basin, by Samuel J. Pollock and William B. Fleck, 1964, 45 p., 1 pl. Covers an area of approximately 177 square miles and includes parts of Middlesex and Worcester Counties.

*9 Housatonic River basin, by Ralph F. Norvitch and Mary E. S. Lamb, 1966, 50 p., 1 pl. Covers an area of about 530 square miles in the upper part of the basin, which is north of the Connecticut-Massachusetts State line.

*10 Northern part, Ten Mile and Taunton River basins, by John R. Williams and Richard E. Willey, 1967, 56 p., 1 pl., 1 fig. Covers an area of about 195 square miles within Bristol, Norfolk, and Plymouth Counties.

*11 Millers River basin, by Donald R. Wiesnet and William B. Fleck, 1967, 29 p., 1 pl., 1 fig. Covers an area of about 392 square miles within Franklin and Worcester Counties, Massachusetts, and Hillsborough and Cheshire Counties, New Hampshire.

*12 Taunton River basin, by John R. Williams and Richard E. Willey, 1970, 102 p., 1 pl., 1 fig. Covers an area of about 528 square miles in Bristol, Norfolk, and Plymouth Counties.

13 Deerfield River basin, by Bruce P. Hansen, Frederick B. Gay, and L. G. Toler, 1973, 59 p., 1 fig., 1 pl. Covers an area of 348 square miles in northwestern Massachusetts.

14 Neponset and Weymouth River basins, by R. A. Brackley, William B. Fleck, and Richard E. Willey, 1973, 51 p., 1 fig., 1 pl. Covers an area of 183 square miles in eastern Massachusetts south of Boston.

15 Hoosic River basin, by Bruce P. Hansen, Frederick B. Gay, and L. G. Toler, 1974, 33 p., 1 pl., 1 fig. Covers an area of 164 square miles in northwestern Massachusetts.

16 Weir River, Hingham, to Jones River, Kingston, by John R. Williams, Richard E. Willey, and Gary D. Tasker, 1975, 63 p., 1 pl., 1 fig. Principal basins covered are those of Weir River, James Brook, Bound Brook, North River, South River, and Jones River.

17 Ground-water levels in Massachusetts, 1936-74, by Anthony Maevsky, 1976, 107 p., 2 figs. Documents both short-term and long-term ground-water-level trends in typical hydrologic situations and different geographic areas of the Commonwealth.

18 Plymouth to Weweantic River, Wareham, by John R. Williams, Gary D. Tasker, and Richard E. Willey, 1977, 31 p., 1 pl., 1 fig. Principal basins are Town Brook, Eel River, and Beaverdam Brook, all draining to Cape Cod Bay; Herring Brook draining to the Cape Cod Canal; and Red Brook, Agawam River, Wankinco River, and Weweantic River, all draining to Buzzards Bay.

19 Charles River basin, by Eugene H. Walker, William W. Caswell, and S. William Wandle, Jr., 1977, 53 p., 1 pl., 1 fig. Covers an area of about 300 square miles of eastern and southeastern Massachusetts within the counties of Middlesex, Norfolk, Suffolk, and Worcester.

20 Northwest Shore of Buzzards Bay, by John R. Williams, Richard E. Willey, and Gary D. Tasker, 1980, 30 p., 1 pl. Principal drainage basins are Sipican River, Aucoot Brook, Mattapoisett River, Acushnet River, and Paskamansett River.

21 Coastal drainage basins of northeastern Massachusetts, from Castle Neck River, Ipswich, to Mystic River, Boston, by David F. Delaney and Frederick B. Gay, 1980, 40 p., 1 pl. Principal streams are the Annisquam, Castle Neck, Danvers, Essex, Mystic, and Saugus Rivers, which flow into Ipswich and Massachusetts Bays.

22 Shawsheen River basin by David F. Delaney and Frederick B. Gay, 1981, 22 p., 1 pl. Principal tributaries are Content, Elm, Heath, Hussey, Kiln, Rogers, Spring, Strong Water, Vine and Webb Brooks.

23 Lake Cochituate drainage basin, Framingham-Natick, Massachusetts, by Frederick B. Gay, 1981, 61 p., 1 pl. Covers 17.7 square miles above the outlet of Lake Cochituate which includes Beaverdam, Course, Pegan, and Snake Brooks, and Fisk Pond.

NEW HAMPSHIRE

*1 Southeastern Area, by Edward Bradley and Richard G. Petersen, 1962, 53 p., 5 figs. Covers an area of about 390 square miles in parts of Rockingham and Strafford Counties.

2 Lower Merrimack River valley, by James M. Weigle and Richard Kranes, 1966, 44 p., 1 pl. Covers an area of about 396 square miles in central-southern New Hampshire.

3 Ashuelot River basin, by Harold A. Whitcomb, 1973, 25 p., 1 pl. Covers an area of about 420 square miles in southwestern New Hampshire.

MAINE

*1 Southwestern Area, by Glenn C. Prescott, Jr., and Janet A. Drake, 1962, 35 p., 2 figs. Covers an area of about 800 square miles in York County.

2 Lower Penobscot Basin, by Glenn C. Prescott, Jr., 1964, 40 p., 3 figs. Covers an area of about 825 square miles in Penobscot, Hancock, and Waldo Counties.

3 Lower Androscoggin River basin, by Glenn C. Prescott, Jr., 1967, 63 p., 2 figs. Covers most of Androscoggin County, a large part of Oxford County, and portions of Cumberland, Kennebec, and Sagadahoc Counties.

4 Lower Kennebec River basin, by Glenn C. Prescott, Jr., 1968, 38 p., 2 figs. Covers most of Kennebec County, more than half of Sagadahoc County, and portions of Androscoggin, Franklin, Lincoln, and Somerset Counties.

5 Lower Aroostook River basin, by Glenn C. Prescott, Jr., 1970, 30 p., 2 figs. Covers an area of about 536 square miles in northeastern Aroostook County.

6 Lower St. John River valley, by Glenn C. Prescott, Jr., 1971, 22 p., 2 figs. Covers an area of about 204 square miles at the northern border of Maine.

7 Meduxnekeag River-Prestile Stream basins, by Glenn C. Prescott, Jr., 1971, 17 p., 2 figs. Covers an area of about 312 square miles in Aroostook County.

8 Southern Washington County, by Glenn C. Prescott, Jr., 1973, 40 p., 2 figs. Covers an area of about 720 square miles in Washington County and about 10 square miles in Hancock County.

9 Windham-Freeport-Portland Area, by Glenn C. Prescott, Jr., 1976, 48 p., 2 figs. Covers an area of about 450 square miles in Cumberland County.

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POCKET CONTAINS:
1 ITEMS

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3 1818 00018699 7

Delaney and Gay—HYDROLOGIC DATA OF THE LOWER MERRIMACK RIVER BASIN, MASSACHUSETTS