WATER QUALITY OF THREEMILE CREEK, BADGER CREEK, AND LITTLE RIVER WATERSHEDS, IOWA

U. S. GEOLOGICAL SURVEY

Open-File Report 79-1254

Prepared in cooperation with the

U. S. SOIL CONSERVATION SERVICE

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

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Iowa City, Iowa

1979

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CONVERSION FACTORS

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Inch-pound	Multiply	Metric (SI)
acre-foot (ac-ft)	1233	cubic meter (m^3)
cubic foot per second (ft^3/s)	2.832	liter per second (L/s)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)

WATER QUALITY OF THREEMILE CREEK, BADGER CREEK, AND LITTLE RIVER WATERSHEDS, ICWA

by Larry J. Slack

ABSTRACT

Generally, the water quality of Threemile Creek, Badger Creek, and Little River watersheds in south-central Iowa is suitable as a source of municipal and industrial water supply according to Federal and State criteria and is within State limits for Class A, B, and C waters. Fecal coliform bacteria concentrations ranged from 88 to 7,200 colonies per 100 milliliters, but insufficient data are available to determine background level. The water in all three basins is a calcium-magnesium bicarbonate type that is low in dissolved solids. The sample that represented the greatest storm runoff (Badger Creek) contained high concentrations of suspended solids, total ammonia plus organic nitrogen, and total phosphorus.

INTRODUCTION

The Soil Conservation Service, U.S. Department of Agriculture, intends to implement land-treatment and flood-prevention projects in the Threemile Creek, Badger Creek, and Little River watersheds, Iowa, under authority of the Watershed Protection and Flood Prevention Act (Public Law 566, U.S. 83d Congress, 1954, 2d session, 68 Stat. 666), as amended.

In addition to the primary goal of watershed protection, the proposed uses of structures in the three watersheds are: Threemile Creek, flood prevention and water supply; Badger Creek, flood prevention and recreation; and Little River, flood prevention, fish and wildlife development, and water supply.

The Soil Conservation Service requested the U.S. Geological Survey to assess the water quality of the three watersheds.

PURPOSE AND SCOPE

The primary purpose of the Geological Survey investigation is to assess the water quality of the Threemile Creek, Badger Creek, and Little River watersheds by (1) describing the water quality as it exists and (2) describing water-quality differences between sample stations. A secondary objective is to discuss probable effects of impoundment on water quality.

The investigation spanned one year (October 1977 to September 1978. The scope included the collection and analysis of four sets of samples at nine sites within the three basins.

AREA OF INVESTIGATION

The location of the three watersheds is shown in figure 1. Location of sampling stations within the individual basins is shown in figures 2-4.

All three watersheds are over 90 percent agricultural. The second largest land-use category is forest land.

The normal annual precipitation for stations operated by the Weather Service in south-central Iowa is 33.7 inches, but at various stations within the area it ranges from 32 to 35 inches (Cagle and Heinitz, 1978). The normal air temperature for south-central Iowa is about 10°C (Celsius). Monthly mean temperatures throughout the area range from about -5° to 24°C.

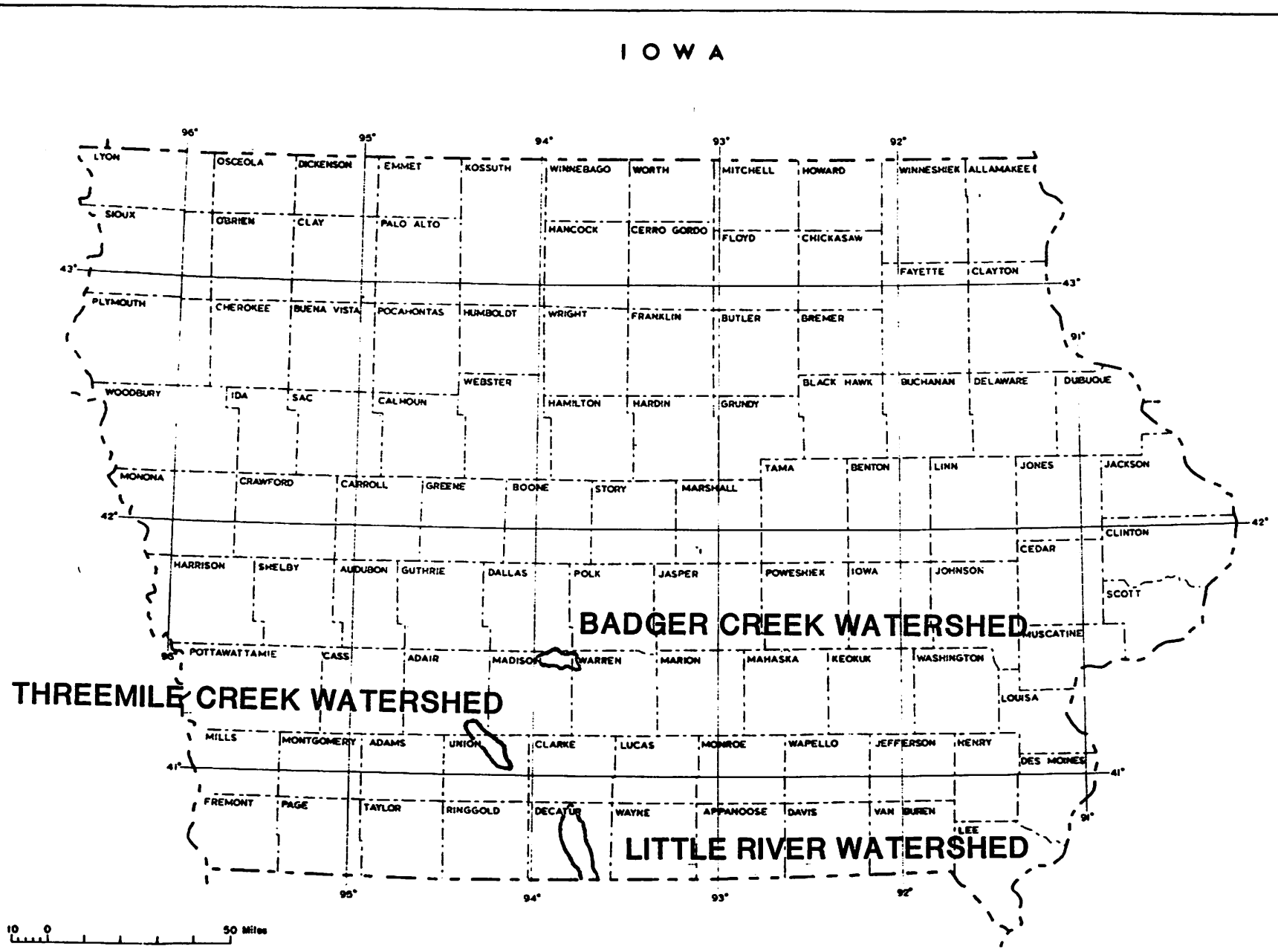

Figure 1.--Location of Threemile Creek, Badger Creek, and Little River watersheds.

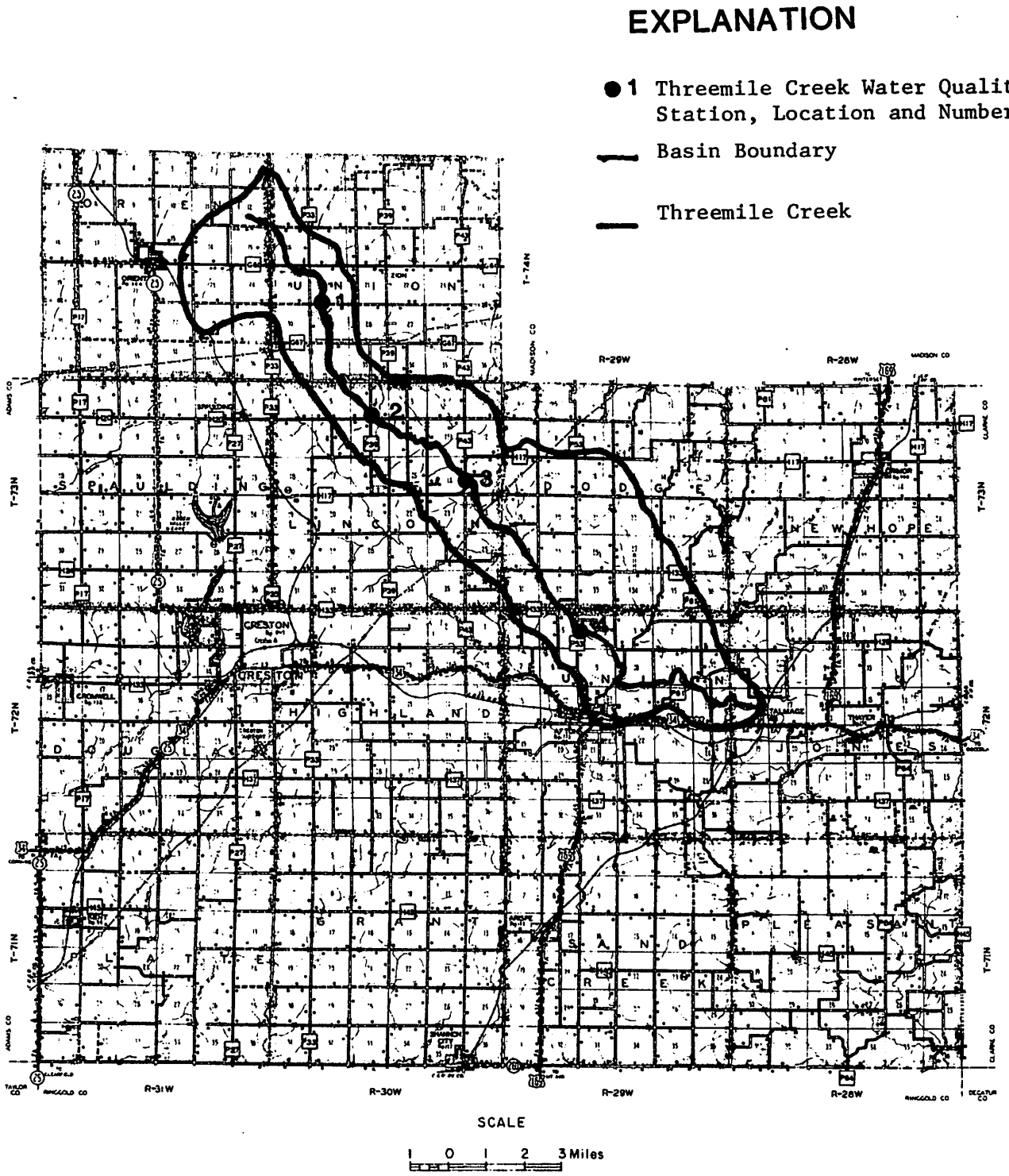

Figure 2.--Location of water-quality stations in Threemile Creek watershed.

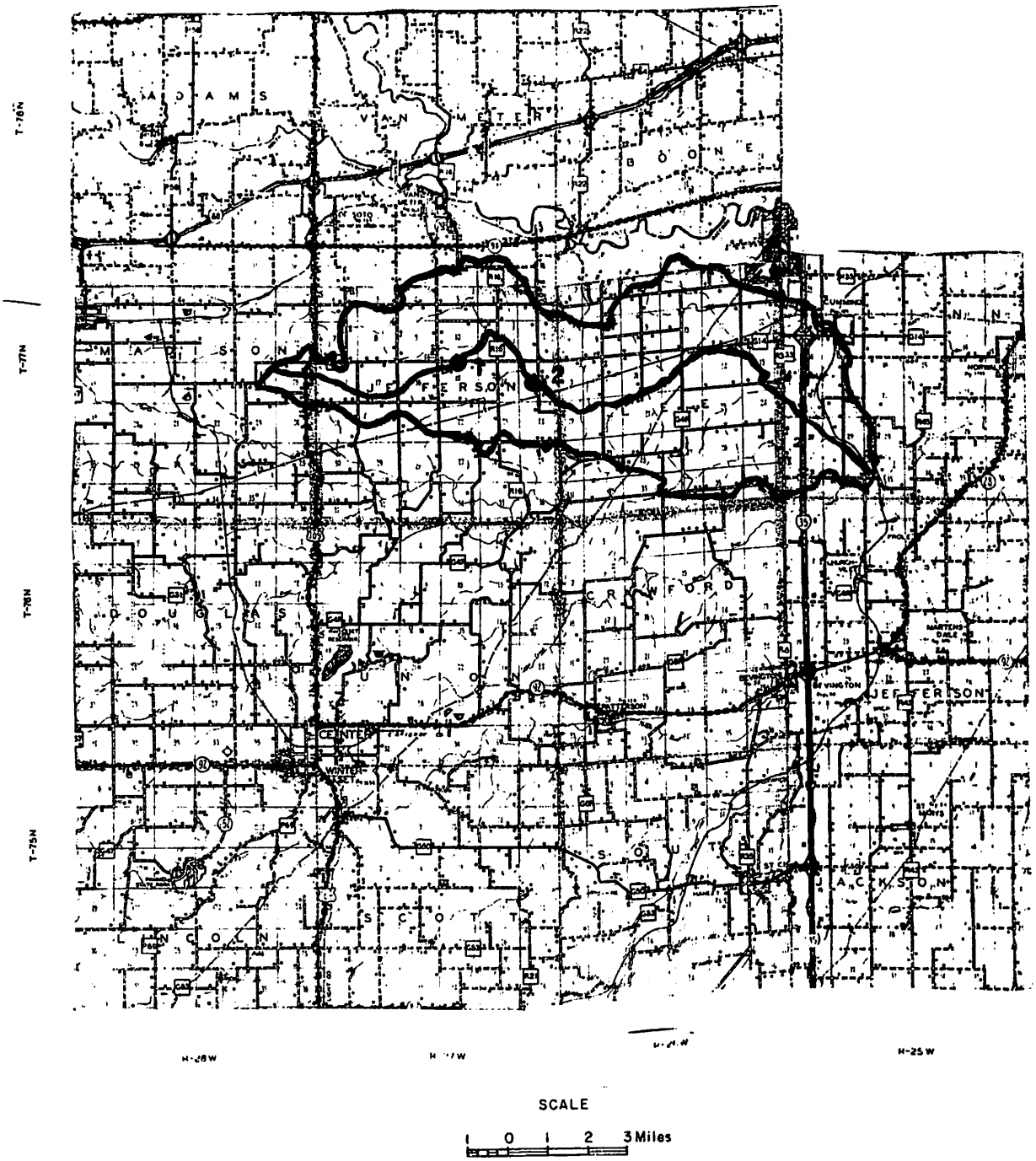

Figure 3.--Location of water-quality stations in Badger Creek watershed.

EXPLANATION

● 1 Little River Water Quality Station, Location and Number

Basin Boundary

Little River

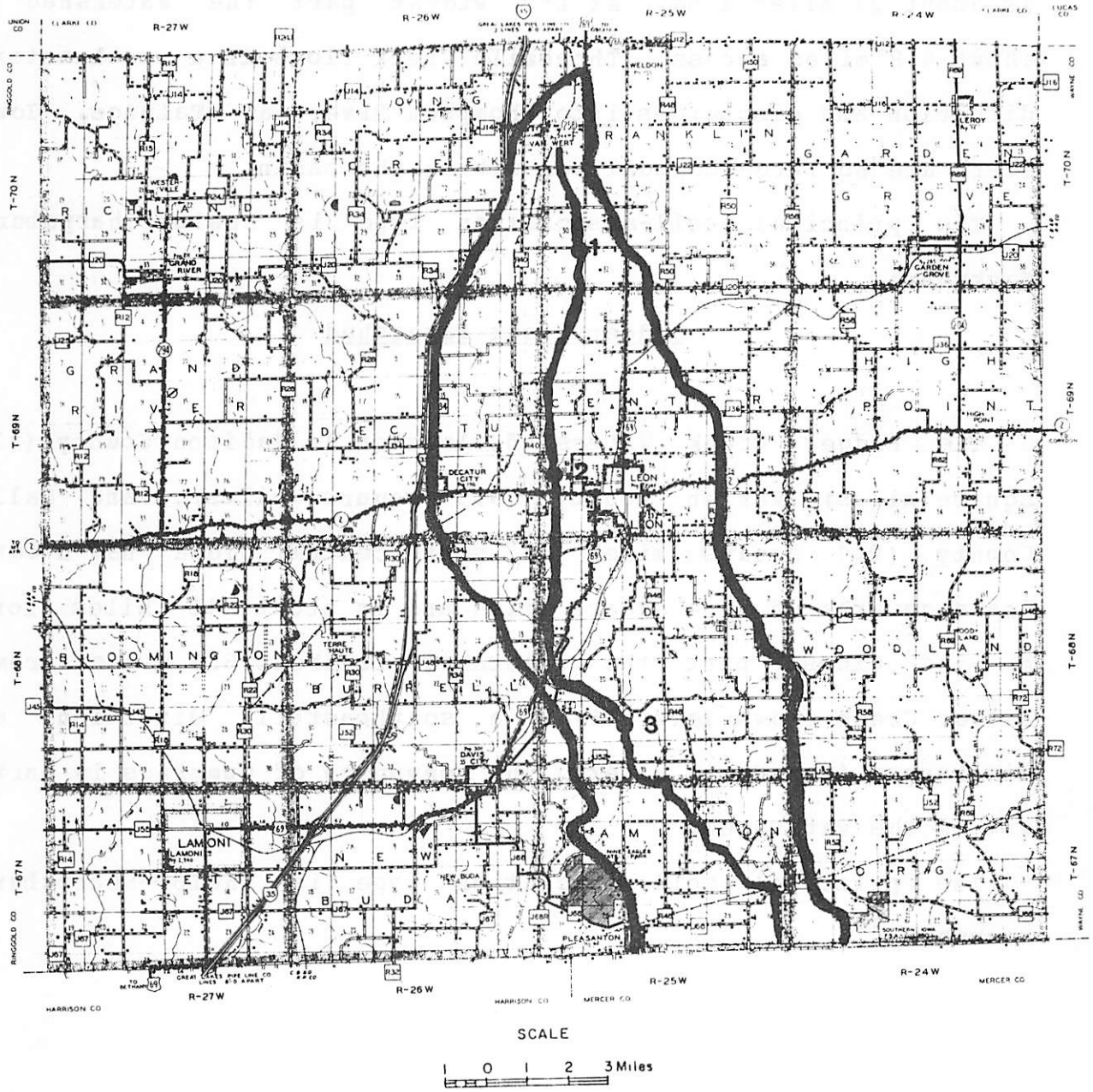

Figure 4.--Location of water-quality stations in Little River watershed.

Threemile Creek Watershed

The Threemile Creek watershed, located in Adair County (13.4 square miles) and Union County (43.4 square miles) in south-central Iowa has a total drainage area of 56.8 square miles and is about 21 miles long. At its widest part the watershed is about 4.8 miles across. Threemile Creek flows in a southeasterly direction and discharges into Thompson River at Talmage, Iowa. There are no large communities within the basin.

The principal soil-association type is Shelby-Sharpsburg-Macksburg.

Badger Creek Watershed

The Badger Creek watershed, located in Madison County (42.4 square miles), Warren County (9.9 square miles), and Dallas County (0.1 square mile) in south-central Iowa has a total drainage area of 52.4 square miles and is about 18 miles long. At its widest part the watershed is about 5.8 miles across. Badger Creek flows generally in a southeasterly direction, and discharges into North River. The community of Cummings is partly within the watershed.

The principal soil-association type is Shelby-Sharpsburg-Macksburg.

Little River Watershed

The Little River watershed, located almost entirely in Decatur County in extreme south-central Iowa, has a drainage area at the Iowa-Missouri state line of 102 square miles and is about 22 miles long. At its widest part the watershed is about 6.8 miles across. The Little River flows in a southerly direction and discharges into the Weldon River near Mercer, Missouri. The cities of Leon (1970 population 2,142), Van Wert (244), Decatur City (198), and Pleasanton (62) are entirely or partly within the watershed.

The principal soil-association type is Lindley-Keswick-Weller.

WATER-QUALITY DATA

Location of Stations and Frequency of Sampling

The number and location of sampling stations were jointly determined by the Geological Survey and the Soil Conservation Service on the basis of the following criteria:

1. Location of dams--it was desired to have at least one station above and one station below existing or proposed floodwater-retarding structures.
2. Location of roads--all the stations must be accessible during adverse sampling conditions.
3. Hydrologic factors--the streams must be flowing during water-quality sampling and the samples should accurately represent the conditions existing during sampling.
4. Availability of funding--the most limiting factor in determining number and types of water-quality data to be collected.

Water-quality data were collected at nine stations for this investigation. A brief description of each station is given in table 1. Average discharges for the stations were calculated from the equation $Q=0.77\ (A)^{0.94}$ based on the average discharge-to-drainage area relationship for selected south-central Iowa streams (Cagle and Heinitz, 1978); Q = average discharge, in cubic feet per second, and A = drainage area, in square miles.

Flow Conditions During Sampling

Threemile Creek Watershed

Four water-quality samples were collected at each of the four Threemile Creek stations. The November 16, 1977; July 18 and August 30, 1978, samples were collected during low-flow conditions. The April 11, 1978, samples were collected during near- or above-average flow conditions, due to a period of scattered thundershowers throughout the watershed.

Badger Creek Watershed

Four water-quality samples were collected at each of the two Badger Creek stations. The November 15, 1977, and the July 17, 1978, samples were collected during low-flow conditions. The April 10 and July 20, 1978, samples were collected during above-average flow conditions, due to a period of scattered thunderstorms throughout the watershed.

Little River Watershed

Four water-quality samples were collected at each of the three Little River stations. The November 18, 1977; July 18 and August 31, 1978, samples were collected during low-flow conditions. The April 12, 1978, samples were collected during above-average flow conditions, due to a period of scattered thundershowers throughout the watershed.

Analytical Data

The water-quality data collected for this investigation are listed in table 2. Table abbreviations are:

DEG_C -- degrees Celsius

SQ_MI -- square miles

CFS -- cubic feet per second

NTU -- nephelometric turbidity units

MG/L -- milligrams per liter

UG/L -- micrograms per liter

COLS./100 ML

and

COLS._PER_100_ML both mean colonies per 100 milliliters

TOT -- total

DIS -- dissolved

AC-FT -- acre-feet

INTERPRETATIONS AND CONCLUSIONS

Water-Quality Standards

Water-quality standards of the Iowa Department of Environmental Quality for Class A (Primary Body Contact Recreation), Class B (Wildlife, Aquatic Life, and Secondary Body Contact) and Class C (Raw-water Source of Potable Supply) waters are summarized in tables 3 and 4.

Federal water-quality criteria are summarized in table 5.

Results

Most of the constituents for which maximum contaminant levels (MCL) have been established by the National Interim Primary Drinking Water Regulations (table 5) were not determined as a part of this investigation due to limited available funding.

The combined summary-comparison of all the water-quality data with water-quality criteria is given in table 6.

Only 1 of the 28 samples analyzed had a concentration of total recoverable chromium equal to or exceeding the MCL of 50 ug/L (micrograms per liter). The July 20 Badger Creek No. 2 sample had a concentration of 70 ug/L. The mean concentration for all 28 samples was 7.7 ug/L.

None of the 27 samples analyzed had total recoverable copper concentrations equal to or exceeding the 1,000 ug/L criteria recommended for domestic water supplies in the U.S. Environmental Protection Agency's (EPA) "Quality Criteria for Water". The mean concentration of all 27 samples was 13 ug/L.

Although dissolved lead was not determined, total recoverable lead was. Only 1 of 26 samples had a total recoverable lead concentration equal to or exceeding the Interim Primary Drinking Water MCL for dissolved lead of 50 ug/L. The July 20 Badger Creek No. 2 sample had a concentration of 97 ug/L, however, this watershed is not proposed as a source of water supply. The mean concentration of all 26 samples was 15 ug/L.

None of the 28 samples analyzed equalled or exceeded the Interim Primary Drinking Water MCL for total recoverable mercury of 2.0 ug/L. The mean concentration of all 28 samples was 0.47 ug/L.

None of the 36 samples analyzed for total nitrite plus nitrate had concentrations equal to or exceeding the Interim Primary Drinking Water MCL of 10 mg/L (milligrams per liter) as N. The mean concentration of all 36 samples was 2.9 mg/L; the maximum, 8.5 mg/L. Therefore, the nitrate concentration never exceeded the 10 mg/L MCL.

No malathion was detected in 26 samples. Only 1 sample of 26 analyzed had any parathion present. The Little River No. 2 July 18 sample had 0.07 ug/L, barely exceeding the 0.04 ug/L Interim

Primary Drinking Water MCL. None of 11 samples analyzed had methoxychlor present.

The maximum chloride concentration for 12 samples was 17 mg/L, far below the 250 mg/L Secondary MCL and Iowa Department of Environmental Quality limit for Class C waters.

Seven of 28 samples had color exceeding the Secondary MCL level of 15 units, but none of the samples had color equal to or exceeding the "Quality Criteria for Water" limit of 75 units.

All 28 total recoverable iron samples exceeded the 0.3 mg/L (300 ug/L) secondary MCL. The maximum iron concentration was 90,000 ug/L; the minimum, 360 ug/L.

None of the 28 samples analyzed for total dissolved solids (TDS residue on evaporation at 180° Celsius) equalled or exceeded the 500 mg/L Secondary MCL. The TDS ranged from 142 to 429 mg/L and averaged 272 mg/L.

None of the 34 dissolved oxygen determinations were below the Iowa Department of Environmental Quality minimum of 5.0 mg/L for Class B waters.

The pH of 35 samples ranged from 6.8 to 8.6 units, within the Iowa Department of Environmental Quality limits of 6.5 to 9.0 units for Class A, B, or C waters.

Fecal coliform bacteria were present in 34 samples in densities ranging from 88 to 7,200 colonies per 100 mL (milliliters), averaging 1,600 colonies per 100 mL. The Iowa Department of Environmental Quality limits for Class A and B

waters are based on "background level" and whether "materially affected by surface runoff". Insufficient data are available for the study area to determine "background level."

Frequency data for selected constituents (combined data for all 9 stations) are summarized in table 7.

Threemile Creek Water Quality

The water quality for all four of the Threemile Creek stations is basically the same. The prevalent chemical type is calcium-magnesium bicarbonate. The water is low in dissolved solids, ranging from 222 to 303 mg/L. None of 23 pesticides analyzed for (in 8 samples) was detected.

The turbidity, total solids, suspended solids, total recoverable iron and total phosphorus were much higher during the April 11 near- or above-average flow conditions, resulting from scattered thundershowers throughout the basin, than during base flow. Due to dilution, a slight reduction generally occurred in specific conductance, bicarbonate, hardness, calcium, and magnesium during the April sampling.

Badger Creek Water Quality

The water quality for each of the Badger Creek stations is basically the same. The prevalent chemical type is calcium-magnesium bicarbonate. The water is low in dissolved solids, ranging from 142 to 274 mg/L. Of 24 pesticides analyzed for, (in 7 samples), only 2 were detected -- dieldrin and heptachlor epoxide -- both in low concentrations. No PCB's were detected in 7 samples analyzed.

The turbidity, total solids (residue at 105°C), suspended solids (residue at 105°C), color, total ammonia plus organic nitrogen, total recoverable iron, total phosphorus and orthophosphorus were all considerably higher during storm runoff than during low flow. Nitrite plus nitrate, specific conductance, hardness, calcium, magnesium, and dissolved solids were considerably lower during the July 20 sampling than for the other three samplings, reflecting the effects of dilution. The July 20 sampling was during a period of intense thundershowers following a period of base flow.

Little River Water Quality

The water quality for all three of the Little River stations is basically the same. The prevalent chemical type is calcium-magnesium bicarbonate. The water is low in dissolved solids, ranging from 243 to 429 mg/L. Of 22 pesticides analyzed for (in 11 samples), only 4 were detected--dieldrin, toxaphene, parathion and diazinon--all in very low concentrations. No PCB's were present in 11 samples analyzed.

Generally, the turbidity, suspended solids, total nitrite plus nitrate, and total nitrogen were higher during the April 12 above-average flow conditions, resulting from scattered thundershowers throughout the basin than during base flow. Due to dilution, a slight decrease generally occurred in specific conductance, hardness, calcium, and dissolved solids.

The July 18 sample collected at Little River No. 1 was unusual in that although it was collected during extreme low-flow conditions (0.01 cfs), it was relatively high in turbidity, total solids, suspended solids, ammonia plus organic nitrogen, total recoverable chromium, total recoverable copper, and total dissolved solids.

Impoundment Effects

Some of the probable beneficial effects of impounding water reported by Love (1961), Churchill (1957), and Hartung (1958) include: (1) an averaging or "evening out" of sharp variations in dissolved minerals, hardness, pH, and alkalinity; (2) a reduction in concentrations of turbidity, silica, and perhaps color; (3) a reduction in temperature; (4) a reduction in coliform densities; and (5) a sink-effect whereby the suspended sediments (and attached chemicals) would drop out of the water due to a reduction in velocity of the in-flowing turbid water.

Some of the probable detrimental effects reported by Fish (1959), Love (1961), Chirchill (1947), and Hull (1961) include: (1) reduced dissolved-oxygen concentrations, expecially in the summer and in the deeper parts of the reservoir; (2) much wider variations in dissolved-oxygen concentrations; (3) increased growth of algae and associated undesirable tastes and odors; (4) increased carbon dioxide and frequently iron, manganese, and other trace metals, and alkalinity, especially near the bottom; and (5) reductions in temperature.

After impoundment, the water in all three basins probably would remain a calcium-manganese bicarbonate type, but would be lower in concentrations of suspended solids and fecal coliform bacteria densities. However, fecal coliform bacteria densities would probably occasionally continue to exceed 200 colonies per 100 milliliters. Care would have to be exercised so that drinking-water supplies would not be withdrawn from the lower (poorer quality) sections of the reservoirs.

SELECTED REFERENCES

Cagle, J. W. , and Heinitz, A. J., 1978, Water resources of south-central Iowa: Iowa Geological Survey Water Atlas no. 5, 97p.

Churchill, M. A., 1947, Effects of density currents upon raw water quality: American Water Works Association Journal, v. 39, p. 357-360.

_____ 1957, Effects of storage impoundments on water quality: American Society of Civil Engineers Proceedings, Journal, Sanitary Engineering Division, v. 83, p. 1171-1175.

Fish, F. F. , 1959, Effects of impoundment on downstream water quality, Roanoke River, N.C.: American Water Works Association Journal, v. 51, p. 47-50.

Hartung, H. O., 1958, Water quality at St. Louis County: American Water Works Association Journal, v. 50, p. 1198-1200.

Hull, C. H. J., 1961, Public water policy on low-flow augmentation for stream-pollution abatement: industrial waste conference, 15th, Proceedings, Purdue University, v. 45, sec. 2, p. 289-291.

Iowa Administrative Code, 1977, Water quality standard (excerpted from Chapter 16, effective August 31, 1977).

Love, S. K., 1961, Relatiohship of impoundment to water quality: American Water Works Association Journal, v. 53, p. 559-568.

U.S. Environmental Protection Agency, 1975, National interim primary drinking water regulations: Federal Register, v. 40, no. 248, p. 59655-59687.

_____ 1976, Interim primary drinking water regulations-promulgation of regulations on radionuclides: Federal Register, v. 41, no. 133, p. 28402-29409.

_____ 1977a, National secondary drinking water regulations: Federal Register, v. 42. no. 62. p. 17143-17147.

_____ 1977b, Quality criteria for water: U.S. Government Printing office, 256 p.

_____ 1978, Interim primary drinking water regulations-control of organic chemical contaminants in drinking water: Federal Register, v. 43, no. 28, p. 5756-5780.

Table 1.--Description of water quality sites

Station no.	Station name	Location	Drainage area (mi^2)	Q (ft^3/s)	Remarks
05485985	Badger C. No. 1 nr Booneville, Iowa	Lat 41°28'30", long 093°56'50", at midpoint of section line 10/15, T.77 N., R. 27 W., Madison Co.	4.42	3.1	
05485990	Badger C. No. 2 nr Booneville, Iowa	Lat 41°28'10", long 093°54;30", in SE 1/4 of NW 1/4 sec. 13, T.77N., R.27W., Madison Co.	19.1	12.3	Approximately 1/8 mi below proposed floodway retarding structure.
06897780	Threemile C. No. 1 nr Creston, Iowa	Lat 41°11'00", long 094°20'00" on sec. line 20/29, 0.3 mi east of sec. line 19/20, T.74 N., R.30 W., Adair Co.	11.6	7.7	
06897785	Threemile C. No. 2 nr Creston, Iowa	Lat 41°08'30", long 094°18'40", at midpoint of sec. line 4/9, T.74 N., R.30 W., Union Co.	15.5	10.1	Approximately 1/4 mi below proposed floodway inlet.
06897790	Threemile C, No. 3 nr Afton, Iowa	Lat 41°07'10", long 094°15'40", at midpoint of sec. line 13/14, T.73 N., R.30 W., Union Co.	20.9	13.4	
06897795	Threemile C. No. 4 nr Afton, Iowa	Lat 41°03'40", long 094°12'10" at midpoint of sec. line 4/5, T.72 N., R.29 W., Union Co.	37.2	23.1	Approximately 1/2 mi below proposed multipurpose structure.
06898460	Little R. No. 1 nr Leon, Iowa	Lat 40°49'30", long 093°46'00", on sec. line 30/31, 0.2 mi west of sec. line 29/30, T.70 N., R.25 W., Decatur Co.	6.0	4.2	
06898465	Little R. No. 2 nr Leon, Iowa	Lat 40°45'00", long 092°46'30", SE 1/4 of NW 1/4 of sec. 30, T.69 N., R.25 W., Decatur Co.	19.5	12.6	Approximately 1/8 mi below proposed multipurpose structure.
06898470	Little R. [No. 3] nr Leon, Iowa	Lat 40°39'36", long 093°44'59", in SE 1/4 sec. 29, T.68 N., R.25 W., Decatur Co.	69.2	41.3	USGS low-flow partial-record station.

a/ Using $Q = 0.77 (A)^{0.94}$, from average discharge in relation to drainage area for selected south-central Iowa streams (Cagle and Heinitz, 1978).

Table 2.--Water-quality data for Threemile Creek, Badger Creek, and Little River watersheds

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
05485985 - BADGER C NO. 1 NR BOONEVILLE, IA (LAT 41 28 30 LONG 093 56 50)												
NOV , 1977												
15...	1600	2.4	450	7.8	7.0	8	11	10.1	86	88	100	220
APR , 1978												
10...	1630	15	380	7.1	12.5	13	400	8.9	86	110	270	180
JUL												
17...	1415	.61	440	8.6	31.0	6	27	7.4	103	1700	--	220
20...	1415	9.6	174	7.2	23.0	40	650	7.6	110	--	--	100
05485990 - BADGER C NO. 2 NR BOONEVILLE, IA (LAT 41 28 10 LONG 093 54 30)												
NOV , 1977												
15...	1330	8.1	450	7.8	7.0	8	11	9.0	77	120	140	200
APR , 1978												
10...	1400	50	350	6.9	12.0	23	240	8.7	83	180	410	170
JUL												
17...	1230	1.6	440	8.3	27.5	5	38	6.0	76	1040	--	220
20...	1230	200	195	7.0	23.0	70	1800	7.0	83	--	--	85
06897780 - THREE MILE C NO. 1 NR CRESTON, IA (LAT 41 11 00 LONG 094 20 00)												
NOV , 1977												
16...	1030	2.1	400	8.3	7.0	--	13	10.4	89	120	290	200
APR , 1978												
11...	1330	6.0	360	7.0	13.0	--	70	10.1	98	540	480	170
JUL												
18...	0845	.50	440	8.0	24.0	--	10	5.0	61	1180	--	200
AUG												
30...	1000	.04	450	7.6	20.0	--	30	--	--	6200	4100	210

Table 2.--Continued

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
05485985 - BADGER C NO. 1 NR BOONEVILLE, IA (LAT 41 28 30 LONG 093 56 50)												
NOV , 1977												
15...	59	17	--	--	--	--	--	--	274	16	297	--
APR , 1978												
10...	49	13	--	--	--	--	--	--	225	1190	1580	--
JUL												
17...	59	18	--	--	--	--	--	--	264	69	304	--
20...	28	8.0	--	--	--	--	--	--	142	1680	2580	--
05485990 - BADGER C NO. 2 NR BOONEVILLE, IA (LAT 41 28 10 LONG 093 54 30)												
NOV , 1977												
15...	55	16	8.0	2.0	190	36	9.6	.0	263	13	290	--
APR , 1978												
10...	47	13	6.7	4.2	150	28	8.3	.3	219	492	779	--
JUL												
17...	57	18	8.0	2.3	210	28	7.5	.4	264	47	293	--
20...	23	6.7	3.2	5.4	170	11	8.5	.4	146	4760	2460	--
06897780 - THREE MILE C NO. 1 NR CRESTON, IA (LAT 41 11 00 LONG 094 20 00)												
NOV , 1977												
16...	58	14	--	--	--	--	--	--	--	--	--	--
APR , 1978												
11...	48	12	--	--	--	--	--	--	--	--	--	--
JUL												
18...	56	15	--	--	--	--	--	--	--	--	--	5.0
AUG												
30...	55	17	--	--	--	--	--	--	--	--	--	--

Table 2.--Continued

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHO. TOTAL (MG/L AS P) (70507)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	PHENOLS (UG/L) (32730)
05485985 - BADGER C NO. 1 NR BOONEVILLE, IA (LAT 41 28 30 LONG 093 56 50)												
NOV , 1977												
15...	--	8.5	1.2	9.7	.10	.04	4	11	590	5	1.2	0
APR , 1978												
10...	--	7.9	2.3	10	.68	.10	30	43	28000	21	.0	1
JUL												
17...	--	7.7	.82	8.5	.08	.01	0	8	2100	20	1.5	2
20...	--	3.0	5.2	8.2	.69	.18	30	57	90000	39	.5	2
05485990 - BADGER C NO. 2 NR BOONEVILLE, IA (LAT 41 28 10 LONG 093 54 30)												
NOV , 1977												
15...	--	7.3	.91	8.2	.10	.04	0	4	780	8	.1	0
APR , 1978												
10...	--	6.1	1.6	7.7	.43	.12	10	29	20000	13	.0	0
JUL												
17...	--	6.2	.94	7.1	.13	.04	10	11	2700	20	.9	5
20...	--	1.6	13	15	1.6	.26	70	13	89000	97	1.2	4
06897780 - THREE MILE C NO. 1 NR CRESTON, IA (LAT 41 11 00 LONG 094 20 00)												
NOV , 1977												
16...	--	7.4	--	--	--	.10	--	--	--	--	--	--
APR , 1978												
11...	--	4.2	--	--	--	.05	--	--	--	--	--	--
JUL												
18...	.00	5.0	--	--	--	.05	--	--	--	--	--	--
AUG												
30...	--	.05	--	--	--	.04	--	--	--	--	--	--

Table 2.--Continued

DATE	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
05485985 - BADGER C NO. 1 NR BOONEVILLE, IA (LAT 41 28 30 LONG 093 56 50)												
NOV , 1977												
15...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978												
10...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUL												
17...	.00	.0	.00	.0	.00	.00	.00	.00	.01	.00	.00	.00
20...	.00	.0	.00	.0	.00	.00	.00	.00	.04	.00	.00	.00
05485990 - BADGER C NO. 2 NR BOONEVILLE, IA (LAT 41 28 10 LONG 093 54 30)												
NOV , 1977												
15...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978												
10...	.00	.0	.00	.0	.00	.00	.00	.00	.01	.00	.00	.00
JUL												
17...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.0	.00	.0	.00	.00	.00	.00	.10	.00	.00	.00
06897780 - THREE MILE C NO. 1 NR CRESTON, IA (LAT 41 11 00 LONG 094 20 00)												
NOV , 1977												
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR , 1978												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
30...	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--Continued

DATE	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	PERTHANE TOTAL (UG/L) (39034)	MIREX, TOTAL (UG/L) (39755)	TOXAPHENE, TOTAL (UG/L) (39400)	TOTAL TRITHION (UG/L) (39786)
05485985 - BADGER C NO. 1 NR BOONEVILLE, IA (LAT 41 28 30 LONG 093 56 50)												
NOV , 1977												
15...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978												
10...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL												
17...	.00	.00	.00	.00	--	.00	.00	.00	--	.00	0	.00
20...	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
05485990 - BADGER C NO. 2 NR BOONEVILLE, IA (LAT 41 28 10 LONG 093 54 30)												
NOV , 1977												
15...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978												
10...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL												
17...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.01	.00	.00	.00	.00	.00	.00	--	.00	0	.00
06897780 - THREE MILE C NO. 1 NR CRESTON, IA (LAT 41 11 00 LONG 094 20 00)												
NOV , 1977												
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR , 1978												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
30...	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
06897785 - THREE MILE C NO. 2 NR CRESTON, IA (LAT 41 08 30 LONG 094 18 40)												
NOV , 1977												
16...	1330	6.8	360	7.8	7.5	--	15	9.1	78	200	250	180
APR , 1978												
11...	1230	16	360	6.9	13.5	--	120	10.1	99	620	580	180
JUL												
18...	0935	1.0	420	8.1	24.0	--	4.1	7.6	93	1960	--	200
AUG												
30...	1120	.04	450	8.5	24.0	--	3.6	--	--	7200	1000	200
06897790 - THREE MILE C NO. 3 NR AFTON, IA (LAT 41 07 10 LONG 094 15 40)												
NOV , 1977												
16...	1600	14	420	8.0	7.5	9	12	10.1	87	190	330	190
APR , 1978												
11...	1500	29	370	6.9	12.5	10	100	10.2	98	740	600	170
JUL												
18...	1015	1.6	400	8.2	24.0	7	1.9	8.2	93	900	--	200
AUG												
30...	1410	.13	480	8.0	26.0	14	2.3	9.4	115	3300	1680	230
06897795 - THREE MILE C NO. 4 NR AFTON, IA (LAT 41 03 40 LONG 094 12 10)												
NOV , 1977												
17...	1000	21	420	8.0	6.5	13	15	9.8	83	180	760	200
APR , 1978												
11...	1030	34	360	6.8	9.5	27	180	10.2	91	980	620	170
JUL												
18...	1050	2.0	410	8.2	24.5	5	3.4	8.4	102	1400	--	220
AUG												
30...	1315	.26	500	8.2	27.0	11	1.8	8.5	108	3200	2400	240

Table 2.--Continued

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
06897785 - THREE MILE C NO. 2 NR CRESTON, IA (LAT 41 08 30 LONG 094 18 40)												
NOV , 1977												
16...	50	13	--	--	--	--	--	--	--	--	--	--
APR , 1978												
11...	51	12	--	--	--	--	--	--	--	--	--	--
JUL												
18...	55	15	--	--	--	--	--	--	--	--	--	--
AUG												
30...	53	16	--	--	--	--	--	--	--	--	--	--
06897790 - THREE MILE C NO. 3 NR AFTON, IA (LAT 41 07 10 LONG 094 15 40)												
NOV , 1977												
16...	52	14	--	--	--	--	--	--	241	23	266	--
APR , 1978												
11...	48	12	--	--	--	--	--	--	222	292	519	--
JUL												
18...	53	16	--	--	--	--	--	--	231	13	251	--
AUG												
30...	62	18	--	--	--	--	--	--	291	7	313	--
06897795 - THREE MILE C NO. 4 NR AFTON, IA (LAT 41 03 40 LONG 094 12 10)												
NOV , 1977												
17...	59	13	9.1	1.9	200	46	6.7	.0	260	16	289	--
APR , 1978												
11...	48	12	7.8	4.3	170	29	17	.5	256	464	685	--
JUL												
18...	59	17	12	3.0	240	33	6.5	.4	253	25	262	--
AUG												
30...	66	19	11	3.5	270	44	5.1	.4	303	9	311	--

Table 2.--Continued

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHO. TOTAL (MG/L AS P) (70507)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	PHENOLS (UG/L) (32730)
06897785 - THREE MILE C NO. 2 NR CRESTON, IA (LAT 41 08 30 LONG 094 18 40)												
NOV , 1977 16...	--	5.5	--	--	--	.10	--	--	--	--	--	--
APR , 1978 11...	--	3.3	--	--	--	.05	--	--	--	--	--	--
JUL 18...	--	.76	--	--	--	.06	--	--	--	--	--	--
AUG 30...	--	--	--	--	--	--	--	--	--	--	--	--
06897790 - THREE MILE C NO. 3 NR AFTON, IA (LAT 41 07 10 LONG 094 15 40)												
NOV , 1977 16...	--	4.5	.72	5.2	.12	.03	0	5	1300	5	.0	1
APR , 1978 11...	--	3.0	1.0	4.0	.29	.06	10	20	8600	7	.0	3
JUL 18...	--	1.1	.90	2.0	.01	.02	0	7	510	12	.2	6
AUG 30...	--	.04	1.5	1.5	.07	.01	10	6	640	0	1.6	4
06897795 - THREE MILE C NO. 4 NR AFTON, IA (LAT 41 03 40 LONG 094 12 10)												
NOV , 1977 17...	--	3.4	.85	4.3	.10	.02	4	5	1400	5	.0	2
APR , 1978 11...	--	2.6	1.4	4.0	.40	.06	10	20	9100	10	.0	3
JUL 18...	--	.02	1.2	1.2	.01	.01	0	7	580	9	.3	0
AUG 30...	--	.02	.60	.62	.04	.02	0	7	360	13	.6	3

Table 2.--Continued

DATE	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
06897785 - THREE MILE C NO. 2 NR CRESTON, IA (LAT 41 08 30 LONG 094 18 40)												
NOV , 1977												
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR , 1978												
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
30...	--	--	--	--	--	--	--	--	--	--	--	--
06897790 - THREE MILE C NO. 3 NR AFTON, IA (LAT 41 07 10 LONG 094 15 40)												
NOV , 1977												
16...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978												
11...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUL												
18...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
AUG												
30...	.00	.0	.00	.0	.00	.00	.00	.00	.00	--	.00	.00
06897795 - THREE MILE C NO. 4 NR AFTON, IA (LAT 41 03 40 LONG 094 12 10)												
NOV , 1977												
17...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978												
11...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUL												
18...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
AUG												
30...	.00	.0	.00	.0	.00	.00	.00	.00	.00	--	.00	.00

Table 2.--Continued

DATE	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	PERTHANE TOTAL (UG/L) (39034)	MIREX, TOTAL (UG/L) (39755)	TOXAPHENE, TOTAL (UG/L) (39400)	TOTAL TRITHION (UG/L) (39786)
06897785 - THREE MILE C NO. 2 NR CRESTON, IA (LAT 41 08 30 LONG 094 18 40)												
NOV , 1977 16...	--	--	--	--	--	--	--	--	--	--	--	--
APR , 1978 11...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 30...	--	--	--	--	--	--	--	--	--	--	--	--
06897790 - THREE MILE C NO. 3 NR AFTON, IA (LAT 41 07 10 LONG 094 15 40)												
NOV , 1977 16...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978 11...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL 18...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
AUG 30...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
06897795 - THREE MILE C NO. 4 NR AFTON, IA (LAT 41 03 40 LONG 094 12 10)												
NOV , 1977 17...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978 11...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL 18...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
AUG 30...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00

Table 2.--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
06898460 - LITTLE R NO. 1 NR LEON, IA (LAT 40 49 30 LONG 093 46 00)												
NOV , 1977												
17...	1400	.92	470	8.2	6.0	12	7.6	11.0	91	170	200	230
APR , 1978												
12...	0840	4.6	400	6.9	10.0	12	21	8.2	75	180	330	190
JUL												
18...	1200	.01	540	8.1	25.0	15	60	5.0	61	1900	--	250
AUG												
31...	1030	.30	420	7.8	18.0	20	5.0	8.8	96	5600	2200	200
06898465 - LITTLE R NO. 2 NR LEON, IA (LAT 40 45 00 LONG 093 46 30)												
NOV , 1977												
17...	1700	2.2	480	8.0	6.0	13	20	10.8	89	400	280	240
APR , 1978												
12...	1130	27	420	7.3	12.5	12	65	8.4	79	190	240	100
JUL												
18...	1320	.11	490	8.1	25.0	12	6.0	7.0	85	540	--	240
AUG												
31...	0920	1.0	400	7.8	18.0	21	5.0	7.8	85	6100	4200	170
06898470 - LITTLE R NR LEON, IOWA (LAT 40 39 36 LONG 093 44 59)												
NOV , 1977												
18...	1045	10	700	7.8	4.5	8	15	11.1	88	410	330	280
APR , 1978												
12...	1330	49	480	7.0	14.5	10	100	8.1	79	320	270	210
JUL												
18...	1415	1.5	650	8.0	26.0	9	4.9	7.8	98	140	--	240
AUG												
31...	1100	2.9	700	7.8	19.0	24	5.0	8.4	93	5900	4700	210

Table 2.--Continued

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
06898460 - LITTLE R NO. 1 NR LEON, IA (LAT 40 49 30 LONG 093 46 00)												
NOV , 1977 17...	66	15	--	--	--	--	--	--	306	14	315	--
APR , 1978 12...	53	13	--	--	--	--	--	--	255	51	309	--
JUL 18...	72	18	--	--	--	--	--	--	322	164	466	--
AUG 31...	58	13	--	--	--	--	--	--	277	19	297	--
06898465 - LITTLE R NO. 2 NR LEON, IA (LAT 40 45 00 LONG 093 46 30)												
NOV , 1977 17...	70	16	--	--	--	--	--	--	306	36	357	--
APR , 1978 12...	20	13	--	--	--	--	--	--	254	203	430	--
JUL 18...	70	16	--	--	--	--	--	--	289	41	320	--
AUG 31...	51	11	--	--	--	--	--	--	243	17	262	--
06898470 - LITTLE R NR LEON, IOWA (LAT 40 39 36 LONG 093 44 59)												
NOV , 1977 18...	82	19	38	5.1	270	78	35	.3	429	17	463	--
APR , 1978 12...	62	14	20	5.8	210	46	20	.2	304	223	479	--
JUL 18...	71	16	37	6.9	250	62	42	.4	372	16	434	--
AUG 31...	60	14	45	9.5	200	80	57	.4	404	14	419	--

Table 2.--Continued

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHO. TOTAL (MG/L AS P) (70507)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	PHENOLS (UG/L) (32730)
06898460 - LITTLE R NO. 1 NR LEON, IA (LAT 40 49 30 LONG 093 46 00)												
NOV , 1977												
17...	--	1.6	.53	2.1	.07	.02	0	6	550	8	.1	1
APR , 1978												
12...	--	2.3	.68	3.0	.13	.05	0	4	1500	2	.0	1
JUL												
18...	--	.48	1.9	2.4	.11	.15	10	16	4800	16	.3	12
AUG												
31...	--	.13	1.0	1.1	.08	.01	0	9	660	--	1.4	3
06898465 - LITTLE R NO. 2 NR LEON, IA (LAT 40 45 00 LONG 093 46 30)												
NOV , 1977												
17...	--	1.3	.68	2.0	.08	.03	8	5	1300	5	.1	1
APR , 1978												
12...	--	2.1	.75	2.9	.18	.06	0	11	4800	4	.0	0
JUL												
18...	--	.72	.77	1.5	.10	.06	0	--	670	--	.1	1
AUG												
31...	--	.14	.83	.97	.09	.05	0	8	800	17	1.1	3
06898470 - LITTLE R NR LEON, IOWA (LAT 40 39 36 LONG 093 44 59)												
NOV , 1977												
18...	--	1.6	.92	2.5	.20	.06	0	16	1600	13	.1	0
APR , 1978												
12...	--	2.0	1.3	3.3	.30	.08	0	14	5900	6	.0	0
JUL												
18...	--	.37	.67	1.0	.06	.01	10	8	1500	12	.4	0
AUG												
31...	--	.70	.90	1.6	.21	.11	0	8	1400	15	1.5	2

Table 2.--Continued

DATE	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
06898460 - LITTLE R NO. 1 NR LEON, IA (LAT 40 49 30 LONG 093 46 00)												
NOV , 1977 17...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978 12...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUL 18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 31...	.00	.0	.00	.0	.00	.00	.00	.00	.00	--	.00	.00
06898465 - LITTLE R NO. 2 NR LEON. IA (LAT 40 45 00 LONG 093 46 30)												
NOV , 1977 17...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR , 1978 12...	.00	.0	.00	.0	.00	.00	.00	.00	.01	.00	.00	.00
JUL 18...	.00	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
AUG 31...	.00	.0	.00	.0	.00	.00	.00	.00	.00	--	.00	.00
06898470 - LITTLE R NR LEON, IOWA (LAT 40 39 36 LONG 093 44 59)												
NOV , 1977 18...	.00	.0	.00	.0	.00	.00	.00	.01	.00	.00	.00	.00
APR , 1978 12...	.00	.0	.00	.0	.00	.00	.00	.02	.00	.00	.00	.00
JUL 18...	.00	.0	.00	.0	.00	.00	.00	.01	.00	.00	.00	.00
AUG 31...	.00	.0	.00	.0	.00	.00	.00	.01	.01	--	.00	.00

Table 2.--Continued

DATE	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	PERTHANE TOTAL (UG/L) (39034)	MIREX, TOTAL (UG/L) (39755)	TOXAPHENE, TOTAL (UG/L) (39400)	TOTAL TRITHION (UG/L) (39786)
06898460 - LITTLE R NO. 1 NR LEON, IA (LAT 40 45 30 LONG 093 46 00)												
NOV , 1977												
17...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978												
12...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL												
18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
31...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
06898465 - LITTLE R NO. 2 NR LEON, IA (LAT 40 45 00 LONG 093 46 30)												
NOV , 1977												
17...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978												
12...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL												
18...	.00	.00	.00	.00	.00	.00	.00	.07	--	.00	1	.00
AUG												
31...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
06898470 - LITTLE R NR LEON, IOWA (LAT 40 39 35 LONG 093 44 59)												
NOV , 1977												
18...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
APR , 1978												
12...	.00	.00	.00	.00	--	.00	.00	.00	--	--	0	.00
JUL												
18...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00
AUG												
31...	.00	.00	.00	.00	.00	.00	.00	.00	--	.00	0	.00

Table 3.--Biological and physical-chemical criteria of the Iowa Department of Environmental Quality (excerpted from Iowa Administrative Code, Environmental Quality (400), Chapter 16, effective August 31, 1977)

Class A waters

a. From April 1 through October 31 fecal coliform content shall not exceed 200 organisms/100 mL, except when the waters are materially affected by surface runoff; but in no case shall fecal coliform levels downstream from a discharge which may contain human pathogens be more than 200 organisms/100 mL higher than the background level upstream from the discharge.

b. The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

Class B waters

a. The dissolved oxygen shall not be less than 5.0 mg/L during at least 16 hours of any 24-hour period and not less than 4.0 mg/L at any time during the 24-hour period.

b. In areas designated as cold water fisheries the dissolved oxygen shall not be less than 7.0 mg/L during at least 16 hours of any 24-hour period and not less than 5.0 mg/L at any time during the 24-hour period.

c. All substances toxic or detrimental to aquatic life shall be limited to nontoxic or nondetrimental concentrations in the surface water.

d. From April 1 through October 31, the fecal coliform content shall not exceed 2,000 organisms per 100 mL, except when the waters are materially affected by surface runoff.

e. The pH shall be not less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

f. Temperature. (section deleted from this report).

g. The waters shall contain no substances which will impart any undesirable taste to fish flesh, or in any other way make fish inedible.

Class C waters

a. All substances toxic or detrimental to humans or detrimental to treatment process shall be limited to nontoxic or nondetrimental concentrations in the surface water.

b. The pH shall not be less than 6.5 nor greater than 9.0.

Table 4.--Chemical criteria of the Iowa Department of Environmental Quality (excerpted from Iowa Administrative Code, Environmental Quality (400), Chapter 16, effective August 31, 1977)

Chemical Constituent	Class B[1] (milligrams per liter)	Class C[2] (milligrams per liter)
Arsenic	0.1	0.05
Barium (total)	1.0	1.0
Cadmium (total)	0.01	0.01
Chloride	---	250
Chromium (total hexavalent)	0.05	0.05
Copper (total)	0.02	1.0
Cyanide	0.02[3]	0.02[3]
Fluoride	---	2.0
Lead (total)	0.1	0.05
Mercury (total)	0.2	0.002
Nitrate (as NO)	---	45
Phenol	0.1	0.1
Selenium	0.1	0.01
Silver (total)	---	0.05
Zinc (total)	1.0	1.0

	Water Uses	
Ammonia Nitrogen (as N)	B (Warm)	B (Cold)
November 1 to March 31	5 mg/l	2.5 mg/l
April 1 to October 31	2 mg/l	1 mg/l

[1]Not to be exceeded any time the flow equals or exceeds the seven-day, ten-year low flow unless the material is from uncontrollable nonpoint sources.
[2]Not to be exceeded at point of withdrawal.
[3]Lowest detectable concentration.

Table 5.--Federal water quality criteria

I. Enforceable by EPA or the States.

LIMITING VALUE	UNITS	PARAMETER NAME	(*)	(**)
****GENERAL INORGANIC****				
50.	UG/L	ARSENIC, DIS	1,3,4	A,B
50.	UG/L	ARSENIC, TOT	1,3,4	A,B
1000.	UG/L	BARIUM, DIS	1,3	A,B
1000.	UG/L	BARIUM, TOT R	1,3	A,B
11.	UG/L	BERYLLIUM, DIS	3,4	B
11.	UG/L	BERYLLIUM, TOT R	3,4	B
10.	UG/L	CADMIUM, DIS	1,3,4	A
10.	UG/L	CADMIUM, TOT R	1,3,4	A
50.	UG/L	CHROMIUM, DIS	1,3,4	A,B
50.	UG/L	CHROMIUM, HEX DIS	1,3,4	A,B
50.	UG/L	CHROMIUM, TOT R	1,3,4	A,B
1000.	UG/L	COPPER, DIS	3,4	B
1000.	UG/L	COPPER, TOT R	3,4	B
50.	UG/L	LEAD, DIS	1,3,4	A,B
2.0	UG/L	MERCURY, DIS	1,3,4	A
2.0	UG/L	MERCURY, TOT R	1,3,4	A
100.	UG/L	NICKEL, DIS	3,4	B
100.	UG/L	NICKEL, TOT R	3,4	B
10.	MG/L	NITRATE, DIS AS N	1,3	A,B
10.	MG/L	NITRATE, TOT AS N	1,3	A,B
10.	MG/L	NO2 + NO3, DISS AS N	1,3	A,B
10.	MG/L	NO2 + NO3, TOT AS N	1,3	A,B
1.0	MG/L	NO2, DISS AS N	3	B
1.0	MG/L	NO2, TOT AS N	3	B
10.	UG/L	SELENIUM, DIS	1,3,4	A,B
10.	UG/L	SELENIUM, TOT	1,3,4	A,B
50.	UG/L	SILVER, DIS	1,3,4	A,B
50.	UG/L	SILVER, TOT R	1,3,4	A,B
5000.	UG/L	ZINC, Dis	3,4	B
5000.	UG/L	ZINC, TOT R	3,4	B
****PESTICIDES AND OTHER ORGANICS****				
.1	UG/L	MALATHION, DIS	3	B
.1	UG/L	MALATHION, TOT	3	B
.03	UG/L	METHOXYCHLOR, TOT	1,3	B
.04	UG/L	PARATHION, DIS	3	B
.04	UG/L	PARATHION, TOT	3	B
10.	UG/L	SILVEX (2,4,5,TP) DISS	1,3	A,B

Table 5.--Continued

10.	UG/L	SILVEX (2,4,5,TP), TOT	1,3		A,B
100.	UG/L	2,4-D, DISS	1,3		A,B
100.	UG/L	2,4-D, TOT	1,3		A,B

****RADIOCHEMICALS****

5.	PCI/L	RADIUM 226, TOT	2		A
5.	PCI/L	RADIUM 226, DIS	2		A
8.	PCI/L	STRONTIUM 90, DIS	2		A
8.	PCI/L	STRONTIUM 90, TOT	2		A
20000.	PCI/L	TRITIUM, DIS	2		A
20000.	PCI/L	TRITIUM, TOT	2		A
15.	PCI/L	GROSS ALPHA, DIS	2		A

EXPLANATION OF FOOTNOTES:

(*) BASIS FOR SELECTING CONSTITUENT

1. MAXIMUM CONTAMINANT LEVELS (MCL) HAVE BEEN ESTABLISHED BY: NATIONAL INTERIM PRIMARY DRINKING WATER REGULATIONS; FEDERAL REGISTER, WEDNESDAY, DECEMBER 24, 1975, PAGES 59566-73.

2. MAXIMUM CONTAMINANT LEVELS (MCL) HAVE BEEN ESTABLISHED BY: NATIONAL INTERIM PRIMARY DRINKING WATER REGULATIONS; RADIONUCLIDES; FEDERAL REGISTER, FRIDAY, JULY 9, 1976, PAGES 28402-9.

3. MAXIMUM LEVELS FOR SEVERAL WATER USES HAVE BEEN RECOMMENDED BY: QUALITY CRITERIA FOR WATER, 1976, U.S. ENVIRONMENTAL PROTECTION AGENCY REPORT EPA-440/9-76-023; AVAILABLE FROM NTIS AS PUBLICATION NO. PB-263-943.

4. CONSTITUENT IS ON LIST OF TOXIC SUBSTANCES ESTABLISHED BY EPA PERSUANT TO SECTION 307 OF PUBLIC LAW 92-500.

(**) BASIS FOR SELECTING LIMITING VALUE

A. MAXIMUM LEVEL PERMITTED BY THE "SAFE DRINKING WATER ACT" (FOOTNOTES 1 AND 2).

B. MOST STRINGENT CRITERIA RECOMMENDED IN "QUALITY CRITERIA FOR WATER" (FOOTNOTE 3).

Table 5.--Continued

II. Not Federally enforceable - Secondary Maximum Contaminant Levels for public water systems.

CONTAMINANT:	LEVEL
CHLORIDE	250 MG/L
COLOR	15 COLOR UNITS
COPPER	1 MG/L
CORROSIVITY	NON-CORROSIVE
FOAMING AGENTS	0.5 MG/L
HYDROGEN SULFIDE	0.05 MG/L
IRON	0.3 MG/L
MANGANESE	0.05 MG/L
ODOR	3 THRESHOLD ODOR NUMBER
pH	6.5 - 8.5
SULFATE	250 MG/L
TDS	500 MG/L
ZINC	5 MG/L

Table 6.--Summary comparison of water-quality data with water-quality criteria.

No. of analyses & no. exceeding criteria	Parameter	Criteria [1]	Reference
28 (1)	Chromium	50 ug/L	MCL, Primary
27 (0)	Copper	1000 ug/L	Qual. Crit. for Water
26 (1)	Lead	50 ug/L	MCL, Primary
28 (0)	Mercury	2.0 ug/L	MCL, Primary
36 (0)	Nitrate	10 mg/L	MCL, Primary
26 (1)	Parathion	0.04 ug/L	MCL, Primary
12 (0)	Chloride	250 mg/L	MCL, Secondary
28 (7)	Color	15 units	MCL, Secondary
28 (28)	Iron	300 ug/L	MCL, Secondary
28 (0)	Dis. solids	500 mg/L	MCL, Secondary
34 (0)	Dis. oxygen	[2] 5.0 mg/L	IDEQ, Class B
35 (0)	pH	[3] 6.5 to 9.0	IDEQ, Class A,B,C

[1] Criteria are explained in tables 3-5.

[2] Minimum.

[3] Range.

Table 7.--Frequency data for selected constituents--combined data for all stations

STATION RANGE 05485985 THROUGH 06898470

TEMPERATURE (DEG C)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	0	36	100.00
2	1.00	0	36	100.00
3	2.00	0	36	100.00
4	3.00	0	36	100.00
5	4.00	1	36	100.00
6	5.00	0	35	97.22
7	6.00	8	35	97.22
8	8.00	1	27	75.00
9	10.00	1	26	72.22
10	12.00	6	25	69.44
11	14.00	1	19	52.78
12	16.00	0	18	50.00
13	18.00	3	18	50.00
14	20.00	1	15	41.67
15	22.00	2	14	38.89
16	24.00	7	12	33.33
17	26.00	4	5	13.89
18	28.00	0	1	2.78
19	30.00	1	1	2.78
20	32.00	0	0	0.00
21	34.00	0	0	0.00
22	36.00	0	0	0.00
23	38.00	0	0	0.00
24	40.00	0	0	0.00
25	42.00	0	0	0.00

MEAN = 16.61

MAX = 31.00

MIN = 4.50

TENTH PERCENTILE = 6.25

TWENTY-FIFTH PERCENTILE = 8.00

FIFTIETH PERCENTILE = 18.00

SEVENTY-FIFTH PERCENTILE = 24.86

NINTIETH PERCENTILE = 26.50

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

STREAMFLOW, INSTANTANEOUS (CFS)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	0.03	2	35	97.22
3	0.05	0	33	91.67
4	0.07	0	33	91.67
5	0.10	2	33	91.67
6	0.14	0	31	86.11
7	0.19	0	31	86.11
8	0.26	2	31	86.11
9	0.35	0	29	80.56
10	0.48	2	29	80.56
11	0.65	0	27	75.00
12	0.89	3	27	75.00
13	1.20	3	24	66.67
14	1.70	3	21	58.33
15	2.30	2	18	50.00
16	3.10	0	16	44.44
17	4.20	1	16	44.44
18	5.70	2	15	41.67
19	7.80	3	13	36.11
20	11.00	1	10	27.78
21	15.00	2	9	25.00
22	20.00	1	7	19.44
23	27.00	3	6	16.67
24	37.00	2	3	8.33
25	51.00	1	1	2.78

MEAN = 14.62

MAX = 200.00

MIN = 0.01

TENTH PERCENTILE = 0.10

TWENTY-FIFTH PERCENTILE = 0.89

FIFTIETH PERCENTILE = 2.30

SEVENTY-FIFTH PERCENTILE = 15.00

NINTIETH PERCENTILE = 31.66

Table 7.--Continued

STATION RANGE 05485985 THROUGH 05898470

TURBIDITY (NTU)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	1.90	2	35	97.22
3	2.50	0	33	91.67
4	3.20	2	33	91.67
5	4.10	5	31	86.11
6	5.20	1	26	72.22
7	6.80	1	25	69.44
8	8.70	1	24	66.67
9	11.00	4	23	63.89
10	14.00	3	19	52.78
11	19.00	2	16	44.44
12	24.00	2	14	38.89
13	31.00	1	12	33.33
14	40.00	0	11	30.56
15	51.00	2	11	30.56
16	66.00	1	9	25.00
17	85.00	2	8	22.22
18	110.00	1	6	16.67
19	140.00	0	5	13.89
20	180.00	1	5	13.89
21	240.00	1	4	11.11
22	300.00	0	3	8.33
23	390.00	1	3	8.33
24	500.00	0	2	5.56
25	650.00	2	2	5.56

MEAN = 113.16

MAX = 1800.00

MIN = 1.80

TENTH PERCENTILE = 3.20

TWENTY-FIFTH PERCENTILE = 4.82

FIFTIETH PERCENTILE = 15.00

SEVENTY-FIFTH PERCENTILE = 66.00

NINTIETH PERCENTILE = 240.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06698470

COLOR (UNITS)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	28	100.00
2	6.00	1	26	92.86
3	6.50	1	25	89.29
4	7.10	0	24	85.71
5	7.70	3	24	85.71
6	8.40	2	21	75.00
7	9.10	0	19	67.86
8	9.80	2	19	67.86
9	11.00	1	17	60.71
10	12.00	4	16	57.14
11	13.00	3	12	42.86
12	14.00	1	9	32.14
13	15.00	1	8	28.57
14	16.00	0	7	25.00
15	18.00	0	7	25.00
16	19.00	1	7	25.00
17	21.00	1	6	21.43
18	22.00	1	5	17.86
19	24.00	1	4	14.29
20	26.00	1	3	10.71
21	29.00	0	2	7.14
22	31.00	0	2	7.14
23	34.00	0	2	7.14
24	37.00	0	2	7.14
25	40.00	2	2	7.14

MEAN = 15.61

MAX = 70.00

MIN = 5.00

TENTH PERCENTILE = 6.00

TWENTY-FIFTH PERCENTILE = 8.40

FIFTIETH PERCENTILE = 12.50

SEVENTY-FIFTH PERCENTILE = 19.00

NINTIETH PERCENTILE = 26.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

SPEC COND (MICROMHOS AT 25 DEG C)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	194.90	1	35	97.22
3	210.00	0	34	94.44
4	220.00	0	34	94.44
5	230.00	0	34	94.44
6	240.00	0	34	94.44
7	250.00	0	34	94.44
8	270.00	0	34	94.44
9	280.00	0	34	94.44
10	300.00	0	34	94.44
11	310.00	0	34	94.44
12	330.00	0	34	94.44
13	350.00	5	34	94.44
14	370.00	2	29	80.55
15	390.00	4	27	75.00
16	410.00	6	23	63.89
17	430.00	4	17	47.22
18	450.00	3	13	36.11
19	470.00	5	10	27.78
20	500.00	1	5	13.89
21	530.00	1	4	11.11
22	560.00	0	3	8.33
23	590.00	0	3	8.33
24	620.00	0	3	8.33
25	650.00	3	3	8.33

MEAN = 434.14

MAX = 700.00

MIN = 174.00

TENTH PERCENTILE = 354.00

TWENTY-FIFTH PERCENTILE = 390.00

FIFTIETH PERCENTILE = 426.66

SEVENTY-FIFTH PERCENTILE = 474.00

NINTIETH PERCENTILE = 530.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

OXYGEN,DISSOLVED (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	34	100.00
2	5.90	1	32	94.12
3	6.20	0	31	91.18
4	6.30	0	31	91.18
5	6.50	0	31	91.18
6	6.70	0	31	91.18
7	6.80	0	31	91.18
8	7.00	2	31	91.18
9	7.20	0	29	85.29
10	7.40	1	29	85.29
11	7.60	2	28	82.35
12	7.80	2	26	76.47
13	8.00	1	24	70.59
14	8.20	5	23	67.65
15	8.50	1	18	52.94
16	8.70	2	17	50.00
17	8.90	2	15	44.12
18	9.10	1	13	38.24
19	9.40	1	12	35.29
20	9.60	1	11	32.35
21	9.90	0	10	29.41
22	10.00	8	10	29.41
23	11.00	2	2	5.88

MEAN = 8.65

MAX = 11.10

MIN = 5.00

TENTH PERCENTILE = 7.00

TWENTY-FIFTH PERCENTILE = 7.80

FIFTIETH PERCENTILE = 8.70

SEVENTY-FIFTH PERCENTILE = 10.01

NINTIETH PERCENTILE = 10.08

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

PERCENT SATURATION
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	34	100.00
2	74.90	1	32	94.12
3	76.00	2	31	91.18
4	78.00	1	29	85.29
5	79.00	2	28	82.35
6	80.00	0	26	76.47
7	82.00	0	26	76.47
8	83.00	3	26	76.47
9	84.00	2	23	67.65
10	86.00	2	21	61.76
11	87.00	2	19	55.88
12	89.00	2	17	50.00
13	90.00	2	15	44.12
14	92.00	0	13	38.24
15	93.00	3	13	38.24
16	95.00	0	10	29.41
17	96.00	1	10	29.41
18	98.00	4	9	26.47
19	100.00	3	5	14.71
20	110.00	2	2	5.88

MEAN = 88.77

MAX = 115.00

MIN = 61.00

TENTH PERCENTILE = 76.00

TWENTY-FIFTH PERCENTILE = 83.00

FIFTIETH PERCENTILE = 89.00

SEVENTY-FIFTH PERCENTILE = 98.00

NINTIETH PERCENTILE = 100.67

Table 7.--Continued

STATION RANGE 05485965 THROUGH 06898470

PH (UNITS)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	0	36	100.00
2	6.80	5	36	100.00
3	7.00	3	31	86.11
4	7.10	1	28	77.78
5	7.20	1	27	75.00
6	7.30	1	26	72.22
7	7.40	0	25	69.44
8	7.50	0	25	69.44
9	7.60	1	25	69.44
10	7.70	0	24	66.67
11	7.80	7	24	66.67
12	7.90	0	17	47.22
13	8.00	6	17	47.22
14	8.10	3	11	30.56
15	8.20	4	8	22.22
16	8.30	2	4	11.11
17	8.40	0	2	5.56
18	8.50	2	2	5.56

MEAN = 7.72

MAX = 8.60

MIN = 6.80

TENTH PERCENTILE = 10.88

TWENTY-FIFTH PERCENTILE = 7.20

FIFTIETH PERCENTILE = 7.89

SEVENTY-FIFTH PERCENTILE = 8.17

NINTIETH PERCENTILE = 8.30

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

ALKALINITY (MG/L CACO3)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	12	100.00
2	140.00	2	11	91.67
3	150.00	0	9	75.00
4	160.00	3	9	75.00
5	170.00	2	6	50.00
6	180.00	0	4	33.33
7	190.00	0	4	33.33
8	200.00	1	4	33.33
9	210.00	3	3	25.00

MEAN = 172.50

MAX = 220.00

MIN = 120.00

TENTH PERCENTILE = 140.00

TWENTY-FIFTH PERCENTILE = 160.00

FIFTIETH PERCENTILE = 170.00

SEVENTY-FIFTH PERCENTILE = 210.00

NINTIETH PERCENTILE = 213.33

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

SOLIDS,105 DEG C, TOTAL (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	262.00	4	27	96.43
3	290.00	9	23	82.14
4	320.00	1	14	50.00
5	350.00	1	13	46.43
6	390.00	1	12	42.86
7	430.00	4	11	39.29
8	470.00	2	7	25.00
9	520.00	0	5	17.86
10	570.00	0	5	17.86
11	630.00	1	5	17.86
12	690.00	0	4	14.29
13	760.00	1	4	14.29
14	840.00	0	3	10.71
15	930.00	0	3	10.71
16	1000.00	0	3	10.71
17	1100.00	0	3	10.71
18	1200.00	0	3	10.71
19	1400.00	0	3	10.71
20	1500.00	1	3	10.71
21	1700.00	0	2	7.14
22	1800.00	0	2	7.14
23	2000.00	0	2	7.14
24	2200.00	1	2	7.14
25	2500.00	1	1	3.57

MEAN = 572.50

MAX = 2580.00

MIN = 251.00

TENTH PERCENTILE = 327.50

TWENTY-FIFTH PERCENTILE = 296.22

FIFTIETH PERCENTILE = 320.00

SEVENTY-FIFTH PERCENTILE = 470.00

NINTIETH PERCENTILE = 1500.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

SOLIDS, RESIDUE AT 105 DEG C, SUSPENDED, (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	9.00	1	27	96.43
3	11.00	2	26	92.86
4	14.00	7	24	85.71
5	18.00	1	17	60.71
6	22.00	2	16	57.14
7	28.00	0	14	50.00
8	35.00	2	14	50.00
9	44.00	2	12	42.86
10	55.00	1	10	35.71
11	70.00	0	9	32.14
12	87.00	0	9	32.14
13	110.00	0	9	32.14
14	140.00	1	9	32.14
15	170.00	1	8	28.57
16	220.00	1	7	25.00
17	270.00	1	6	21.43
18	340.00	0	5	17.86
19	430.00	2	5	17.86
20	540.00	0	3	10.71
21	680.00	0	3	10.71
22	850.00	0	3	10.71
23	1100.00	1	3	10.71
24	1300.00	1	2	7.14
25	1700.00	1	1	3.57

MEAN = 354.68

MAX = 4760.00

MIN = 7.00

TENTH PERCENTILE = 11.00

TWENTY-FIFTH PERCENTILE = 15.28

FIFTIETH PERCENTILE = 35.00

SEVENTY-FIFTH PERCENTILE = 220.00

NINTIETH PERCENTILE = 1100.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

NITROGEN, TOTAL (MG/L N)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	0.90	2	27	96.43
3	1.10	1	25	89.29
4	1.20	1	24	85.71
5	1.30	0	23	82.14
6	1.50	2	23	82.14
7	1.60	1	21	75.00
8	1.80	0	20	71.43
9	2.00	3	20	71.43
10	2.20	0	17	60.71
11	2.40	2	17	60.71
12	2.70	1	15	53.57
13	3.00	1	14	50.00
14	3.30	1	13	46.43
15	3.60	0	12	42.86
16	4.00	3	12	42.86
17	4.40	0	9	32.14
18	4.80	1	9	32.14
19	5.40	0	8	28.57
20	6.00	0	8	28.57
21	6.70	1	8	28.57
22	7.40	1	7	25.00
23	8.20	3	6	21.43
24	9.00	1	3	10.71
25	10.00	2	2	7.14

MEAN = 4.34

MAX = 15.00

MIN = 0.62

TENTH PERCENTILE = 1.35

TWENTY-FIFTH PERCENTILE = 1.60

FIFTIETH PERCENTILE = 3.00

SEVENTY-FIFTH PERCENTILE = 7.40

NINTIETH PERCENTILE = 9.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

NITROGEN, AMMONIA + ORGANIC (MG/L N)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	0.60	1	27	96.43
3	0.66	3	26	92.86
4	0.72	3	23	82.14
5	0.80	3	20	71.43
6	0.87	5	17	60.71
7	0.96	2	12	42.86
8	1.10	0	10	35.71
9	1.20	2	10	35.71
10	1.30	1	8	28.57
11	1.40	1	7	25.00
12	1.50	2	6	21.43
13	1.70	0	4	14.29
14	1.90	1	4	14.29
15	2.00	0	3	10.71
16	2.20	1	3	10.71
17	2.50	0	2	7.14
18	2.70	0	2	7.14
19	3.00	0	2	7.14
20	3.30	0	2	7.14
21	3.60	0	2	7.14
22	3.90	0	2	7.14
23	4.30	0	2	7.14
24	4.70	0	2	7.14
25	5.20	2	2	7.14

MEAN = 1.61

MAX = 13.00

MIN = 0.53

TENTH PERCENTILE = 0.66

TWENTY-FIFTH PERCENTILE = 0.76

FIFTIETH PERCENTILE = 0.91

SEVENTY-FIFTH PERCENTILE = 1.40

NINTIETH PERCENTILE = 2.20

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

NITROGEN, NO2 + NO3 (MG/L N)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	35	100.00
2	0.04	1	33	94.29
3	0.05	1	32	91.43
4	0.06	0	31	88.57
5	0.08	0	31	88.57
6	0.10	0	31	88.57
7	0.13	2	31	88.57
8	0.16	0	29	82.86
9	0.20	0	29	82.86
10	0.25	0	29	82.86
11	0.32	1	29	82.86
12	0.40	1	28	80.00
13	0.50	0	27	77.14
14	0.63	3	27	77.14
15	0.79	0	24	68.57
16	1.00	1	24	68.57
17	1.30	1	23	65.71
18	1.60	3	22	62.86
19	2.00	3	19	54.29
20	2.50	3	16	45.71
21	3.20	2	13	37.14
22	4.00	2	11	31.43
23	5.00	4	9	25.71
24	6.30	3	5	14.29
25	7.90	2	2	5.71

MEAN = 2.93

MAX = 8.50

MIN = 0.02

TENTH PERCENTILE = 0.05

TWENTY-FIFTH PERCENTILE = 0.63

FIFTIETH PERCENTILE = 2.13

SEVENTY-FIFTH PERCENTILE = 5.00

NINTIETH PERCENTILE = 6.73

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

PHOSPHORUS, TOTAL (MG/L P)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	28	100.00
2	0.04	1	26	92.86
3	0.05	0	25	89.29
4	0.06	1	25	89.29
5	0.07	2	24	85.71
6	0.08	4	22	78.57
7	0.10	4	18	64.29
8	0.11	1	14	50.00
9	0.12	3	13	46.43
10	0.14	0	10	35.71
11	0.16	0	10	35.71
12	0.18	1	10	35.71
13	0.20	2	9	32.14
14	0.23	0	7	25.00
15	0.26	0	7	25.00
16	0.29	2	7	25.00
17	0.33	0	5	17.86
18	0.37	1	5	17.86
19	0.42	1	4	14.29
20	0.48	0	3	10.71
21	0.54	0	3	10.71
22	0.61	1	3	10.71
23	0.69	2	2	7.14

MEAN = 0.23

MAX = 1.60

MIN = 0.01

TENTH PERCENTILE = 0.04

TWENTY-FIFTH PERCENTILE = 0.08

FIFTIETH PERCENTILE = 0.11

SEVENTY-FIFTH PERCENTILE = 0.29

NINTIETH PERCENTILE = 0.61

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

HARDNESS, DISS (MG/L CACO3)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	100.00	2	35	97.22
3	110.00	0	33	91.67
4	120.00	0	33	91.67
5	130.00	0	33	91.67
6	140.00	0	33	91.67
7	150.00	0	33	91.67
8	160.00	0	33	91.67
9	170.00	5	33	91.67
10	180.00	3	28	77.78
11	190.00	2	25	69.44
12	200.00	8	23	63.89
13	210.00	3	15	41.67
14	220.00	4	12	33.33
15	230.00	2	6	22.22
16	240.00	4	6	16.67
17	250.00	2	2	5.56

MEAN = 197.64

MAX = 280.00

MIN = 85.00

TENTH PERCENTILE = 170.00

TWENTY-FIFTH PERCENTILE = 183.33

FIFTIETH PERCENTILE = 206.25

SEVENTY-FIFTH PERCENTILE = 227.50

NINTIETH PERCENTILE = 245.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

CALCIUM, DISS (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	23.00	1	35	97.22
3	24.00	0	34	94.44
4	25.00	0	34	94.44
5	27.00	0	34	94.44
6	28.00	1	34	94.44
7	29.00	0	33	91.67
8	31.00	0	33	91.67
9	33.00	0	33	91.67
10	34.00	0	33	91.67
11	36.00	0	33	91.67
12	38.00	0	33	91.67
13	40.00	0	33	91.67
14	42.00	0	33	91.67
15	44.00	0	33	91.67
16	46.00	1	33	91.67
17	48.00	5	32	88.89
18	51.00	3	27	75.00
19	53.00	6	24	66.67
20	56.00	4	18	50.00
21	59.00	5	14	38.89
22	62.00	2	9	25.00
23	65.00	2	7	19.44
24	69.00	3	5	13.89
25	72.00	2	2	5.56

MEAN = 55.14

MAX = 82.00

MIN = 20.00

TENTH PERCENTILE = 46.00

TWENTY-FIFTH PERCENTILE = 51.00

FIFTIETH PERCENTILE = 56.00

SEVENTY-FIFTH PERCENTILE = 62.00

NINTIETH PERCENTILE = 70.33

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

MAGNESIUM, DISS (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	36	100.00
2	8.00	1	35	97.22
3	8.30	0	34	94.44
4	8.60	0	34	94.44
5	8.90	0	34	94.44
6	9.20	0	34	94.44
7	9.50	0	34	94.44
8	9.90	0	34	94.44
9	10.00	0	34	94.44
10	11.00	1	34	94.44
11	12.00	4	33	91.67
12	13.00	7	29	80.56
13	14.00	4	22	61.11
14	15.00	3	18	50.00
15	16.00	6	15	41.67
16	17.00	3	9	25.00
17	18.00	6	6	16.67

MEAN = 14.52

MAX = 19.00

MIN = 6.70

TENTH PERCENTILE = 12.00

TWENTY-FIFTH PERCENTILE = 13.29

FIFTIETH PERCENTILE = 15.00

SEVENTY-FIFTH PERCENTILE = 17.00

NINTIETH PERCENTILE = 18.33

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

CHROMIUM, TOTAL (UG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	15	28	100.00
2	4.00	2	13	46.43
3	4.40	0	11	39.29
4	4.80	0	11	39.29
5	5.20	0	11	39.29
6	5.70	0	11	39.29
7	6.20	0	11	39.29
8	6.80	0	11	39.29
9	7.40	1	11	39.29
10	8.10	0	10	35.71
11	8.80	0	10	35.71
12	9.60	0	10	35.71
13	10.00	7	10	35.71
14	11.00	0	3	10.71
15	12.00	0	3	10.71
16	14.00	0	3	10.71
17	15.00	0	3	10.71
18	16.00	0	3	10.71
19	18.00	0	3	10.71
20	19.00	0	3	10.71
21	21.00	0	3	10.71
22	23.00	0	3	10.71
23	25.00	0	3	10.71
24	27.00	0	3	10.71
25	30.00	3	3	10.71

MEAN = 7.71

MAX = 70.00

MIN = 0.00

TENTH PERCENTILE = 0.00

TWENTY-FIFTH PERCENTILE = 0.00

FIFTIETH PERCENTILE = 0.00

SEVENTY-FIFTH PERCENTILE = 10.17

NINTIETH PERCENTILE = 30.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

COPPER, TOTAL (UG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	2	27	100.00
2	5.00	3	25	92.59
3	5.50	0	22	81.48
4	6.00	2	22	81.48
5	6.60	3	20	74.07
6	7.30	0	17	62.96
7	8.00	4	17	62.96
8	8.80	1	13	48.15
9	9.60	0	12	44.44
10	11.00	3	12	44.44
11	12.00	0	9	33.33
12	13.00	1	9	33.33
13	14.00	1	8	29.63
14	15.00	2	7	25.93
15	17.00	0	5	18.52
16	19.00	0	5	18.52
17	20.00	2	5	18.52
18	22.00	0	3	11.11
19	25.00	0	3	11.11
20	27.00	1	3	11.11
21	30.00	0	2	7.41
22	32.00	0	2	7.41
23	36.00	0	2	7.41
24	39.00	0	2	7.41
25	43.00	2	2	7.41

MEAN = 13.26

MAX = 57.00

MIN = 4.00

TENTH PERCENTILE = 5.00

TWENTY-FIFTH PERCENTILE = 6.25

FIFTIETH PERCENTILE = 8.53

SEVENTY-FIFTH PERCENTILE = 15.00

NINTIETH PERCENTILE = 27.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

COLIFORM, FECAL (COL/100 ML)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	34	100.00
2	109.90	3	33	97.06
3	130.00	1	30	88.24
4	160.00	4	29	85.29
5	190.00	3	25	73.53
6	220.00	0	22	64.71
7	260.00	0	22	64.71
8	310.00	1	22	64.71
9	380.00	2	21	61.76
10	450.00	0	19	55.88
11	530.00	3	19	55.88
12	630.00	1	16	47.06
13	760.00	1	15	44.12
14	900.00	2	14	41.18
15	1100.00	1	12	35.29
16	1300.00	1	11	32.35
17	1500.00	1	10	29.41
18	1800.00	2	9	26.47
19	2200.00	0	7	20.59
20	2600.00	0	7	20.59
21	3100.00	2	7	20.59
22	3700.00	0	5	14.71
23	4400.00	0	5	14.71
24	5200.00	4	5	14.71
25	6200.00	1	1	2.94

MEAN = 1585.23

MAX = 7200.00

MIN = 88.00

TENTH PERCENTILE = 183.09

TWENTY-FIFTH PERCENTILE = 182.50

FIFTIETH PERCENTILE = 583.28

SEVENTY-FIFTH PERCENTILE = 1800.00

NINTIETH PERCENTILE = 5400.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

STREPTOCOCCI, FECAL (COL/100 ML)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	25	100.00
2	139.90	1	24	96.00
3	160.00	0	23	92.00
4	190.00	1	23	92.00
5	220.00	1	22	88.00
6	250.00	4	21	84.00
7	290.00	4	17	68.00
8	340.00	0	13	52.00
9	390.00	1	13	52.00
10	460.00	1	12	48.00
11	530.00	2	11	44.00
12	610.00	1	9	36.00
13	710.00	1	8	32.00
14	830.00	0	7	28.00
15	960.00	1	7	28.00
16	1100.00	0	6	24.00
17	1300.00	0	6	24.00
18	1500.00	1	6	24.00
19	1700.00	0	5	20.00
20	2000.00	1	5	20.00
21	2300.00	1	4	16.00
22	2700.00	0	3	12.00
23	3100.00	0	3	12.00
24	3600.00	2	3	12.00
25	4200.00	1	1	4.00

MEAN = 1070.40

MAX = 4700.00

MIN = 100.00

TENTH PERCENTILE = 190.00

TWENTY-FIFTH PERCENTILE = 265.00

FIFTIETH PERCENTILE = 390.00

SEVENTY-FIFTH PERCENTILE = 960.00

NINTIETH PERCENTILE = 3600.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

LEAD, TOTAL (UG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	26	100.00
2	2.00	1	25	96.15
3	2.30	0	24	92.31
4	2.60	0	24	92.31
5	3.00	0	24	92.31
6	3.40	0	24	92.31
7	3.80	1	24	92.31
8	4.30	0	23	88.46
9	4.90	4	23	88.46
10	5.60	1	19	73.08
11	6.40	1	18	69.23
12	7.30	2	17	65.38
13	8.30	1	15	57.69
14	9.40	1	14	53.85
15	11.00	0	13	50.00
16	12.00	5	13	50.00
17	14.00	1	8	30.77
18	16.00	2	7	26.92
19	18.00	0	5	19.23
20	20.00	3	5	19.23
21	23.00	0	2	7.69
22	26.00	0	2	7.69
23	30.00	0	2	7.69
24	34.00	0	2	7.69
25	39.00	2	2	7.69

MEAN = 14.69

MAX = 97.00

MIN = 0.00

TENTH PERCENTILE = 3.80

TWENTY-FIFTH PERCENTILE = 5.35

FIFTIETH PERCENTILE = 12.00

SEVENTY-FIFTH PERCENTILE = 16.00

NINTIETH PERCENTILE = 21.33

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

MERCURY, TOTAL (UG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	9	28	100.00
2	0.10	5	19	67.86
3	0.11	0	14	50.00
4	0.13	0	14	50.00
5	0.14	0	14	50.00
6	0.16	0	14	50.00
7	0.18	0	14	50.00
8	0.20	1	14	50.00
9	0.23	0	13	46.43
10	0.26	0	13	46.43
11	0.29	2	13	46.43
12	0.32	0	11	39.29
13	0.37	1	11	39.29
14	0.41	0	10	35.71
15	0.46	1	10	35.71
16	0.52	0	9	32.14
17	0.58	1	9	32.14
18	0.66	0	8	28.57
19	0.74	0	8	28.57
20	0.83	1	8	28.57
21	0.94	0	7	25.00
22	1.10	1	7	25.00
23	1.20	2	6	21.43
24	1.30	1	4	14.29
25	1.50	3	3	10.71

MEAN = 0.47

MAX = 1.60

MIN = 0.00

TENTH PERCENTILE = 0.00

TWENTY-FIFTH PERCENTILE = 0.00

FIFTIETH PERCENTILE = 0.20

SEVENTY-FIFTH PERCENTILE = 1.10

NINTIETH PERCENTILE = 1.50

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

PHENOLS (UG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	8	28	100.00
2	1.00	6	20	71.43
3	1.10	0	14	50.00
4	1.20	0	14	50.00
5	1.30	0	14	50.00
6	1.40	0	14	50.00
7	1.50	0	14	50.00
8	1.60	0	14	50.00
9	1.70	0	14	50.00
10	1.90	0	14	50.00
11	2.00	4	14	50.00
12	2.20	0	10	35.71
13	2.40	0	10	35.71
14	2.60	0	10	35.71
15	2.80	0	10	35.71
16	3.00	5	10	35.71
17	3.20	0	5	17.86
18	3.50	0	5	17.86
19	3.80	2	5	17.86
20	4.10	0	3	10.71
21	4.40	0	3	10.71
22	4.80	1	3	10.71
23	5.10	0	2	7.14
24	5.60	0	2	7.14
25	6.00	2	2	7.14

MEAN = 2.14

MAX = 12.00

MIN = 0.00

TENTH PERCENTILE = 0.00

TWENTY-FIFTH PERCENTILE = 0.00

FIFTIETH PERCENTILE = 2.00

SEVENTY-FIFTH PERCENTILE = 3.12

NINTIETH PERCENTILE = 4.80

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

SOLIDS, ROE AT 180 DEG C (MG/L)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	146.00	1	27	96.43
3	150.00	0	26	92.86
4	160.00	0	26	92.86
5	170.00	0	26	92.86
6	180.00	0	26	92.86
7	190.00	0	26	92.86
8	200.00	0	26	92.86
9	210.00	1	26	92.86
10	220.00	2	25	89.29
11	230.00	1	23	82.14
12	240.00	2	22	78.57
13	250.00	4	20	71.43
14	260.00	4	16	57.14
15	270.00	2	12	42.86
16	280.00	2	10	35.71
17	300.00	4	8	28.57
18	310.00	0	4	14.29
19	320.00	1	4	14.29
20	340.00	0	3	10.71
21	350.00	0	3	10.71
22	370.00	1	3	10.71
23	390.00	0	2	7.14
24	400.00	2	2	7.14

MEAN = 271.96

MAX = 429.00

MIN = 142.00

TENTH PERCENTILE = 210.00

TWENTY-FIFTH PERCENTILE = 245.00

FIFTIETH PERCENTILE = 265.00

SEVENTY-FIFTH PERCENTILE = 305.00

NINTIETH PERCENTILE = 370.00

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

DISSOLVED SOLIDS (TONS PER ACRE-FT)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	1	28	100.00
2	0.20	1	27	96.43
3	0.21	0	26	92.86
4	0.22	0	26	92.86
5	0.23	0	26	92.86
6	0.24	0	26	92.86
7	0.25	0	26	92.86
8	0.26	0	26	92.86
9	0.27	0	26	92.86
10	0.28	0	26	92.86
11	0.30	2	26	92.86
12	0.31	2	24	85.71
13	0.32	2	22	78.57
14	0.34	1	20	71.43
15	0.35	7	19	67.86
16	0.37	2	12	42.86
17	0.39	1	10	35.71
18	0.40	3	9	32.14
19	0.42	2	6	21.43
20	0.44	1	4	14.29
21	0.46	0	3	10.71
22	0.48	0	3	10.71
23	0.50	1	3	10.71
24	0.53	0	2	7.14
25	0.55	2	2	7.14

MEAN = 0.37

MAX = 0.58

MIN = 0.19

TENTH PERCENTILE = 0.30

TWENTY-FIFTH PERCENTILE = 0.33

FIFTIETH PERCENTILE = 0.36

SEVENTY-FIFTH PERCENTILE = 0.41

NINTIETH PERCENTILE = 0.50

Table 7.--Continued

STATION RANGE 05485985 THROUGH 06898470

PHOSPHORUS, ORTHO TOTAL (MG/L P)
PERIOD 1977 11--1978 04

CLASS	PARAMETER VALUE	FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE CUMULATIVE FREQUENCY
1	0.00	5	35	100.00
2	0.02	4	30	85.71
3	0.03	2	26	74.29
4	0.04	4	24	68.57
5	0.05	5	20	57.14
6	0.06	6	15	42.86
7	0.07	0	9	25.71
8	0.08	1	9	25.71
9	0.09	0	8	22.86
10	0.10	3	6	22.86
11	0.11	1	5	14.29
12	0.12	1	4	11.43
13	0.14	0	3	8.57
14	0.15	1	3	8.57
15	0.16	0	2	5.71
16	0.18	2	2	5.71

MEAN = 0.06

MAX = 0.26

MIN = 0.01

TENTH PERCENTILE = 0.00

TWENTY-FIFTH PERCENTILE = 0.04

FIFTIETH PERCENTILE = 0.05

SEVENTY-FIFTH PERCENTILE = 0.08

NINTIETH PERCENTILE = 0.12