Submitted to ASWCC,

TIME-VARIANT WATER NEEDS OF THE BOEUF-TENSAS BASIN

by

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and

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Prepared for the
Arkansas Soil and Water
Conservation Commission

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ACKNOWLEDGEMENTS

Many individuals and organizations have willingly provided us with information or counsel as we have prepared this report. The more significant contributions are mentioned where appropriate in the report. We are grateful to all, and recognize that without their aid, the report could not have been properly accomplished.

I. Project Objectives

1. Prepare maps showing the annual, monthly and peak weekly volume of irrigation water required in each 3 mile by 3 mile cell of the study area for the selected cropping pattern. Maps are required for "average" and "dry" climatological conditions.
2. Prepare maps showing the annual and monthly volume of water needed for existing industries and municipalities in each 3 mile by 3 mile cell in average and dry years.

II. Procedures

1. Review the characteristics of the soil associations in the delineated area.
2. Determine the most water intensive reasonable crop which can be grown in each quarter square kilometer sub cell.
3. Develop irrigated water balances for the selected crops.
4. Estimate the maximum potential annual, monthly and peak weekly irrigation water demand for average and dry years for each 3 mile by 3 mile cell.
5. Estimate the annual and monthly water requirements for municipalities and industries under current conditions for each 3 mile by 3 mile cell.
6. Prepare a written report and necessary maps.

III. Results

The potential crop usage of each quarter kilometer square in the Boeuf-Tensas Basin (Map 1) was determined based on soil designations from the 1977 Arkansas Resource Data Information System (RIDS) study and crop recommendations from the Soil Conservation Service's County Soil Surveys. Table 1 contains crop recommendations for particular soil types. Total acreages of soybeans, cotton and rice were determined by aggregation for each 3 mile by 3 mile cell.

The Boeuf-Tensas Basin was assessed using a wheat-soybean single year double-cropping system for those areas recommended by the Soil Conservation Service for soybeans but not recommended for rice. A single crop system was used for cotton since cotton land is generally not in rotation, nor is it double-cropped with wheat. For those areas which are recommended for rice, a fallow-rice-wheat-soybean two year rotation was utilized. These assumptions were made in order to obtain estimates of the maximum practical potential need for irrigation water in the study area.

Estimates of pumping for average and dry seasons are found in Table 2. (A more detailed description of the water balances used is contained in Arkansas Agricultural Experiment Station Report Series No. 285 "Assessment of Potential Irrigation Needs in the Bayou Meto Watershed".) Estimates do not include amounts which may be necessary for leaching to correct any potential salt build up problems. Nor are losses incurred prior to delivery to the field included. Efficiencies of the irrigation system are considered in the calculation. Footnotes following the table contain references important in the following discussion.

1. <u>Rice</u>

An average irrigation period of June 1st to September 1st was used, based on the recommendation of the Extension Service expert on rice. Data from the period 1965-1979 was averaged and used to represent an average season. The study area experienced the least amount of summer rainfall in 1980 since the mid-50's drought. 1980's summer climatological data was therefore selected to represent a typical dry summer season. A daily water balance program was written and used to determine the irrigation water requirements for both an average and the 1980 season.

Leakage through the levees of flood irrigated rice is included in the seepage term. Other than that, a contoured levee irrigation system for flood irrigated rice is essentially 100% efficient. Therefore, the pumping requirements (in acre in./acre) are identical to the irrigation water requirements computed. Pumping requirements are listed in Table 2.

2. Cotton

An average irrigation period of June 1st to August 25th was used for an average season and June 1st to September 30th for a dry season based on information from Dr. Bradford A. Waddle, University of Arkansas. (The extended irrigation in a dry season is necessary to prevent premature boll opening due to heat and moisture stress.) Irrigation water requirements were established by utilizing a daily simulated water balance. Cotton acreage in the study area is generally furrow irrigated at a system efficiency of 55%. "Seepage" (deep percolation) is insignificant in the soils used for all crops except rice in this study area. Again 1980 climatological data was used as the base for a typical dry season. Pumping requirements are listed in Table 2.

3. Soybeans

An average irrigation period of June 1st to September 9th was used. Irrigation water requirements were established by utilizing a daily simulated water balance. Approximately 60% of the soybean acreage is furrow irrigated at a system efficiency of 55% and approximately 40% is flood irrigated (in contour levees) at a system efficiency of 75%. Again 1980 climatological data was used as the base for a typical dry season. Pumping requirements are listed in Table 2.

4. Wheat

An average irrigation period of April 1st to May 25th was used based on information from Dr. Fred C. Collins, University of Arkansas. As with soybeans, a water balance approach was utilized in establishing irrigation water requirements. The model indicated that wheat would have required more irrigation in 1977 than any other year because of the temporal distribution of rainfall in that growing season. A center pivot sprinkler system with an 82% system efficiency was chosen as the most practical if wheat is to be irrigated. Pumping requirements are listed in Table 2.

5. Computations

The monthly irrigation water value for each cell was computed in the following manner: The water need for "rice" was determined by summing the monthly rice and soybean needs and dividing by two to yield a spatially average need. This reflects the fact that, due to the two year rotation, one half the "rice" land is in rice and one half in soybeans in any given year. This need was multiplied by the number of square miles of "rice" land per cell to yield the water need for land assigned to rice in that cell. The cotton water need was multiplied by the number of square miles of cotton land per cell to determine a monthly irrigation water need for the land assigned to cotton in that cell. The soybean water need was multiplied by the number of square miles of soybean land per cell to determine a monthly irrigation water need for the land assigned to soybeans in that cell. The sum of the rice, cotton, and soybean irrigation needs were calculated for each cell for June through September.

In April and May only wheat may need irrigation. It was assumed that all the soybean land and half the "rice" land would be double-cropped with wheat. The monthly irrigation water need for wheat was based on those assumptions

The peak weekly need occurs during the first week in June when the rice fields are initially flooded. Soil moisture conditions at that time of year are no different in a dry season than in an average season. Therefore, the number of square miles of "rice" land per cell was divided by two and multiplied by the amount necessary for initial flooding to yield the values for peak weekly need per cell.

Maps 2-7 show the boundaries and 3 mile by 3 mile cells for each county in the study area, overlain with the RIDS quarter square kilometer subcells. Figures 1-6 show the monthly potential irrigation water needs of the northern half of the Boeuf-Tensas Basin for an average season in acre-feet. Figures 7-12 show comparable data for the southern half of the Boeuf-Tensas Basin. Figures 13 and 14 show the annual potential irrigation water needs of the northern and southern halves of the study area respectively for an average season. Figures 15 and 16 show the potential irrigation water need per cell for the peak week for the northern and southern halves of the study area respectively. Figures 17-22 and 23-28 show the monthly potential irrigation water needs of the northern and southern halves of the Boeuf-Tensas Basin respectively for a dry season in acre-feet. The dry season values are a composite of the 1977 wheat season and 1980 rice, cotton, and soybean seasons. They should be treated as such. Figures 29 and 30 show the annual potential irrigation water needs of the northern and southern halves of the study area respectively for a dry season.

It is emphasized that these agricultural water requirements represent upper limits on potential irrigation needs. They are based upon maximum use of existing soils for intensive production of rice, soybeans, wheat and cotton.

Water required to support current municipal and industrial users in climatically average years are shown in Figures 31-56. Water requirements of dry years are shown in Figures 57-82. The procedure for estimating these requirements is described below.

Teddy Watts, manager of the McGehee Water and Sewer system provided monthly use data of his system from 1970-1981. The fraction of the annual use occurring in each month of an average year was computed using the data from all years except 1980. The fraction of the annual use occurring in a particular month of a dry year was considered to be that fraction occurring in 1980.

The average annual demand for McGehee for years 1970-1981, excluding 1980, was 201.6 million gallons. The demand in 1980 was 278 million gallons. The ratio of dry year annual demand to typical year annual demand is 1.379. For other water users, this ratio was used to estimate dry year demand from known typical year demand, or vice versa.

Terry Holland of the USGS provided volumes and locations of water use by self-supplied industry in 1980. These included: Corps of Engineers Lock and Dam #3 south of Swan Lake (I,J) = (18,6), Cummins Prison near Varner (21,8), L. B. Magnum and Sons and the Potlatch Corp. in McGhee (30,12), Well Lamont Co. in Dermott (33,11), and Lake Chicot State Park near Fairview (39,15). The water use of Lock and Dam #3, L. B. Magnum and Sons, Potlatch Corp. and Well Lamont Co. were assumed to be invariant from month to month and year to year. Monthly water demand at Cummins Prison and Lake Chicot State Park were assumed to vary in the same fashion as that of the McGehee system.

Data on the water use of public systems was obtained from Appendix E of the 1978 Arkansas State Water Plan. The plan presents the water use in either 1976 or 1977, depending on the particular system. These values, and "average" year estimates derived from Terry Holland's 1980 data, were located in the cells from which the water distribution originates. Figures 31 and 32 shown the annual demand for a typical year for the northern and southern parts of the study area respectively. These annual values were then multiplied by the appropriate monthly fractions to estimate the monthly demand in typical years. Figures 33-44 and 45-56 show those monthly volumes for the northern and southern regions respectively.

A similar procedure was used to develop Figures 57 and 58. These show the annual demand for a dry year for the northern and southern halves of the study area respectively. Figures 59-70 and 71-82 contain the monthly demand values for the northern and southern parts respectively.

IV. Summary

Maximum potential irrigation water requirements for the Boeuf Tensas region for average and dry climatologic conditions are found in Figures 1-14 and 17-30 respectively. These are based upon maximum use of existing soils for intensive production of irrigated rice, soybeans, wheat and cotton. Peak potential weekly demand is found in Figures 15-16. To derive these values it was assumed that all the rice acreage might be initially flooded during the same week.

Current municipal and industrial water needs for typical and dry years are shown in Figures 31-56 and 57-82 respectively.

REFERENCES

1. Arkansas Resource Information Data System (RIDS), Arkansas Soil and Water Conservation Commission, Little Rock (1977).

2. Soil Survey of Ashley County, Arkansas, USDA/SCS (1979).

3. Soil Survey of Chicot County, Arkansas, USDA/SCS (1967).

4. Soil Survey of Desha County, Arkansas, USDA/SCS (1972).

5. Soil Survey of Drew County, Arkansas, USDA/SCS (1976).

6. Soil Survey of Jefferson and Lincoln Counties, USDA/SCS (1980).

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9. Newman, James S. Report of Progress: 1965-66. In-house report of the Southlands Research and Extension Center of the Texas Agricultural Experiment Station, January 1966.

10. Arkansas State Water Plan, Appendix "E", Public Water Supply Inventory, Arkansas Soil and Water Conservation Commission, Little Rock (1978).

11. Peralta, R. and Dutram, P. W. "Assessment of Potential Irrigation Needs in the Bayou Meto Watershed." Arkansas Agricultural Experiment Station Report Series No. 285 (1984).

TABLE 1: Crop Recommendations By Soil Type
Ref: USDA/SCS County Soil Surveys

Amy silt loam - Soybeans
Amy silt loam (0-1% slopes) - Soybeans
Amy silt loam, frequently flooded - Woodland
Amy soils, frequently flooded - Woodland
Amy Urban Land Complex - no capability
Ariel silt loam, frequently flooded - Soybeans
Arkabutla silt loam, frequently flooded - Soybeans
Bowdre silty clay loam (0-1% slopes) - Cotton
Bowdre silty clay loam, gently undulating - Cotton
Bowdre, Desha and Robinsonville soils, gently undulating - Cotton
Bruno loamy sand, gently undulating - Pasture
Bude silt loam (0-2% slopes) - Rice
Cahaba fine sandy loam (1-3% slopes) - Cotton
Cahaba fine sandy loam (3-8% slopes) - Cotton
Cahaba fine sandy loam (8-12% slopes) - Pasture
Calhoun silt loam - Rice
Calhoun silt loam (0-1% slopes) - Rice
Calloway silt loam (0-1% slopes) - Rice
Calloway silt loam (1-3% slopes) - Cotton
Calloway - Urban Land Complex - no capability
Calloway - Grenada silt loams (0-3% slopes) - Cotton
Calloway - Henry silt loams (0-2% slopes) - Cotton
Caspiana silt loam (0-1% slopes) - Cotton
Commerce silty clay loam - Cotton
Commerce loam - Cotton
Commerce silt loam (0-1% slopes) - Cotton
Commerce silt loam, gently undulating - Cotton
Coushatta Complex (0-1% slopes) - Cotton
Coushatta silt loam - Cotton
Coushatta soils, occasionally flooded - Cotton
Coushatta Urban Land Complex - no capability
Crevasse loamy fine sand - Small Grain
Crevasse soils, frequently flooded - Pasture
Crowley silt loam - Rice
Crowley silt loam (0-1% slopes) - Rice
Desha clay - Rice
Desha clay, occasionally flooded - Rice
Desha silt loam - Rice
Dundee silt loam (0-1% slopes) - Cotton
Dundee silt loam, gently undulating - Cotton
Fluvaquents, frequently flooded - Soybeans
Gallion fine sandy loam (1-3% slopes) - Cotton
Gallion silt loam (0-1% slopes) - Cotton
Gallion silt loam (1-3% slopes) - Cotton
Gallion and Pulaski fine sandy loams (0-1% slopes) - Cotton
Grenada silt loam (0-1% slopes) - Cotton
Grenada silt loam (1-3% slopes) - Cotton
Grenada silt loam (1-3% slopes) eroded - Cotton

TABLE 1: Continued

Grenada silt loam (3-8% slopes) - Cotton
Grenada silt loam (3-8% slopes) eroded - Cotton
Grenada silt loam (8-12% slopes) - Pasture
Grenada silt loam (8-12% slopes) eroded - Pasture
Grenada Urban Land Complex (1-3% slopes) - no capability
Grenada Urban Land Complex (3-8% slopes) - no capability
Grenada Association, undulating - Soybeans
Gullied land - Pasture
Guyton silt loam (0-1% slopes) - Soybeans
Guyton soils, frequently flooded - Soybeans
Hebert silt loam - Rice
Hebert silt loam (0-1% slopes) - Rice
Hebert and Crowley silt loams - Cotton
Henry silt loam (0-1% slopes) - Rice
Henry-Calloway Association - Rice
Henry Urban Land Complex - no capability
Lafe silt loam - Pasture
Lafe silt loam (0-1% slopes) - Pasture
Leaf silt loam - Pasture
Lonoke silt loam - Cotton
McGehee silt loam - Rice
McGehee silt loam (0-1% slopes) - Cotton
McGehee silt loam, occasionally flooded - Soybeans
McGehee silt loam, gently undulating - Cotton
Mixed alluvial land - Pasture
Newellton clay (0-1% slopes) - Rice
Newellton clay, gently undulating - Cotton
Oklared find sandy loam, occasionally flooded - Soybeans
Ouachita silt loam - Soybeans
Ouachita soils, occasionally flooded - Pasture
Ouachita silt loam, frequently flooded - Pasture
Perry clay - Rice
Perry clay (0-1% slopes) - Rice
Perry clay, gently undulating - Cotton
Perry clay - occasionally flooded - Soybeans
Perry silt loam - Rice
Perry silt loam overwash - Cotton
Pheba silt loam - Soybeans
Pheba silt loam (0-2% slopes) - Cotton
Pheba Urban Land Complex (0-2% slopes) - no capability
Pikeville fine sandy loam (3-8% slopes)
Portland clay - Rice
Portland clay (0-1% slopes) - Rice
Portland clay, gently undulating - Cotton
Portland clay, occasionally flooded - Rice
Portland silt loam (0-1% slopes) - Rice
Portland silty clay (0-1% slopes) - Rice
Portland Urban Land Complex - no capability
Providence silt loam (1-3% slopes) - Cotton

TABLE 1: Continued

Rilla silt loam (0-1% slopes) - Cotton
Rilla silt loam (1-3% slopes) - Cotton
Rilla silt loam, undulating - Cotton
Robinsonville loam, gently undulating - Cotton
Roxana silt loam - Cotton
Roxana silt loam, occasionally flooded - Cotton
Roxana Urban Land Complex - no capability
Ruston fine sandy loam (1-3% slopes) - Cotton
Ruston fine sandy loam (3-8% slopes) - Cotton
Sacual fine sandy loam (1-3% slopes) - Soybeans
Sacual fine sandy loam (3-8% slopes) - Pasture
Sacual loam (8-12% slopes) - Pasture
Sacual soils (1-3% slopes) eroded - Soybeans
Saffell gravelly fine sandy loam (3-8% slopes) - Small Grain
Saffell gravelly fine sandy loam (8-12% slopes) - Pasture
Savannah fine sandy loam (1-3% slopes) - Cotton
Savannah fine sandy loam (3-8% slopes) - Cotton
Savannah fine sandy loam (8-12% slopes) - Cotton
Savannah Urban Land Complex (1-3% slopes) - no capability
Savannah Urban Land Complex (3-8% slopes) - no capability
Sawyer silt loam (1-3% slopes) - Cotton
Sawyer silt loam (3-8% slopes) - Cotton
Sharkey clay - Rice
Sharkey clay (1-3% slopes) - Rice
Sharkey clay, gently undulating - Cotton
Sharkey-Commerce-Coushatta Association, frequently flooded - Pasture
Sharkey and Desha silt loams - Rice
Sharkey and Desha clay (0-1% slopes) - Rice
Sharkey and Desha clays, gently undulating - Cotton
Smithdale fine sandy loam (3-8% slopes) - Cotton
Smithdale fine sandy loam (8-12% slopes) - Cotton
Spadra Variant fine sandy loam, occasionally flooded - Pasture
Tichonor Arkabutla soils, frequently flooded - Pasture
Tappah silt loam (1-3% slopes - Cotton
Tippah silt loam (3-8% slopes) - Cotton
Tunica Clay (0-1% slopes) - Rice
Tunica clay (1-3% slopes) - Rice
Tunica clay, frequently flooded - Woodland
Tutwiler silt loam - Cotton
Udorthents and Grenada soils (8-20% slopes) severely eroded - Pasture
Udults and Udorthents (8-20% slopes) severely eroded - Pasture
Waverly silt loam - Pasture
Wabbaseka-Latanier Complex, undulating - Rice
Wabbaseka-Latanier Complex, occasionally flooded - Soybeans
Yorktown silty clay (0-1% slopes) - no capability

TABLE 2: Irrigation Water Pumping Estimates by Water Balance (in)

Crop	Period	Conditions	Evapotrans -piration[1]	Precipi- tation	Seepage[3]	Runoff[4]	Change in in Soil Moisture[5]	Irrig. Water Required[6]	Irrig. Sys. Efficiency[7]	Pumping Required[8]	Irrigation Period[9]
Rice	June	avg	6.5	3.7	1.6	1.8	---	11.2*	100%	11.2*	
		dry	7.2	1.5	1.6	0.0	---	12.3*	100%	12.3*	
	July	avg	7.6	3.4	1.7	0.4	---	6.3	100%	6.3	
		dry	9.7	0.3	1.7	0.0	---	11.1	100%	11.1	
	August	avg	6.9	3.4	1.7	1.1	---	6.3	100%	6.3	
		dry	9.0	0.2	1.7	0.0	---	10.5	100%	10.5	
	Seasonal	avg	21.0	10.5	5.0	3.3	---	23.8*	100%	23.8*	6/1 - 9/1
		dry	25.9	2.0	5.0	0.0	---	33.9*	100%	33.9*	6/1 - 9/1
Cotton	June	avg	4.9	3.7	---	1.4	-0.7	1.9	55%	3.5	
		dry	5.2	1.5	---	0.0	-1.2	2.5	55%	4.5	
	July	avg	6.1	3.4	---	0.7	+0.2	3.6	55%	6.5	
		dry	7.9	0.3	---	0.0	-0.1	7.5	55%	13.6	
	August	avg	2.7	2.8	---	1.1	+0.0	1.0	55%	1.8	
		dry	4.1	0.2	---	0.0	-0.1	3.8	55%	6.9	
	September	avg	---	---	---	---	---	---	---	---	
		dry	1.4	5.5	---	3.4	+1.9	1.2	55%	2.2	
	Seasonal	avg	13.7	9.9	---	3.2	-0.5	6.5	55%	11.8	6/1 - 8/25
		dry	18.6	7.5	---	3.4	+0.5	15.0	55%	27.2	6/1 - 9/30

TABLE 2: Continued

Crop	Period	Conditions	Evapotrans-piration[1]	Precipi-tation	Seepage[3]	Runoff[4]	Change in in Soil Moisture[5]	Irrig. Water Required[6]	Irrig. Sys. Efficiency[7]	Pumping Required[8]	Irrigation Period[9]
Soy-beans	June	avg	2.4	3.7	---	2.2	-0.9	0.0	61.6%	0.0	
		dry	2.6	1.5	---	0.0	-1.1	0.0	61.6%	0.0	
	July	avg	4.6	3.4	---	0.7	-0.6	1.3	61.6%	2.1	
		dry	5.9	0.3	---	0.0	-0.6	5.0	61.6%	8.1	
	August	avg	5.1	3.4	---	1.0	0.0	2.7	61.6%	4.4	
		dry	6.7	0.2	---	0.0	-0.2	6.3	61.6%	10.2	
	September	avg	0.9	1.1	---	0.2	+0.3	0.3	61.6%	0.5	
		dry	1.3	0.1	---	0.0	0.0	1.2	61.6%	2.0	
	Seasonal	avg	13.0	11.6	---	4.1	-1.2	4.3	61.6%	7.0	6/1 - 9/9
		dry	16.5	2.1	---	0.0	-1.9	12.5	61.6%	20.3	6/1 - 9/9
Wheat	April	avg	4.6	4.8	---	2.2	-1.1	0.9	82%	1.1	
		dry	5.1	4.6	---	2.7	-1.7	1.5	82%	1.8	
	May	avg	4.4	4.4	---	1.9	-0.4	1.5	82%	1.8	
		dry	5.1	0.6	---	0.0	0.0	4.5	82%	5.5	
	Seasonal	avg	9.0	9.2	---	4.1	-1.5	2.4	82%	2.9	4/1 - 5/25
		dry	10.2	5.2	---	2.7	-1.7	6.0	82%	7.3	4/1 - 5/25

@ to convert from in. to cm. multiply by 2.54
* includes 5 acre-inch irrigation (1 inch to attain saturation and 4 inches of cover flood)

NOTE: All climatological data is from NOAA records for Stuttgart 9ESE, Arkansas, (1965-1979 for rice, cotton and soybeans, and 1965-1980 excluding 1977 for wheat for an average season; 1980 for rice, cotton and soybeans, and 1977 for wheat for a dry season) during the irrigation periods stated.

TABLE 2: Continued

1. All evapotranspiration was pan evaporation x .80 x the appropriate crop coefficients (with respect to its phenologic development). Crop coefficients: rice - see 2; soybeans - modified from N. Dakota Research Report #66, Stegman et al (Jan. 1977); cotton - modified from Southlands Research and Extension Center Report of Progress: 1965-66, Newman (Jan. 1966); wheat - modified from N. Dakota Research Report #66, Stegman et al (Jan. 1977).

2. Personal communication, James A. Ferguson, University of Arkansas, Fayetteville, Arkansas.

3. Daily portion of 5" seasonal loss.[2]

4. By computer model. For rice: runoff equaled all impounded water on a rice field whenever the flood exceeded 6" (levees drained to prevent overflow damage)[2] For cotton, soybeans and wheat: runoff equalled any amount which at any time exceeded soil moisture at field capacity or the maximum amount which can infiltrate in a single event.

5. By computer model. Initial soil moisture for soybeans equalled 5" (assuming 2 1/2 ft. rooting depth), and for cotton and wheat equalled 4" (assuming 2 ft. rooting depth).

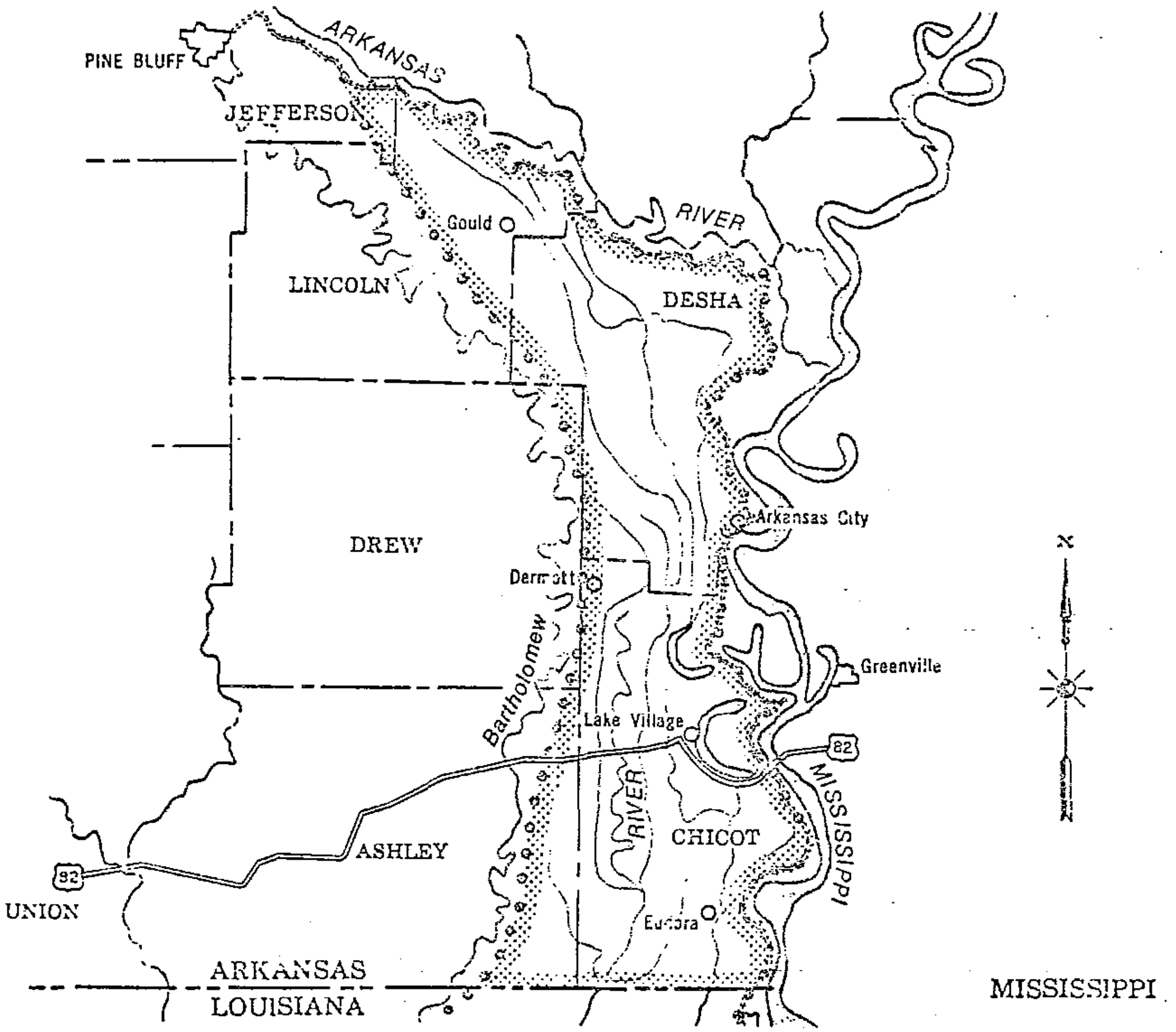
6. Rice: evapotranspiration - rainfall + seepage + runoff.
   Cotton, Soybeans and Wheat: evapotranspiration -rainfall + change in soil moisture + runoff.

7. Rice: any losses due to inefficiency were included in the seepage term.[2] Cotton: using furrow irrigation system at 65% efficiency[10]. Soybeans: combination of estimates of 60 percent furrow irrigated at 55% efficiency and 40% flood irrigated at 75% efficiency[10]. Wheat: using center pivot sprinkler irrigation system[10].

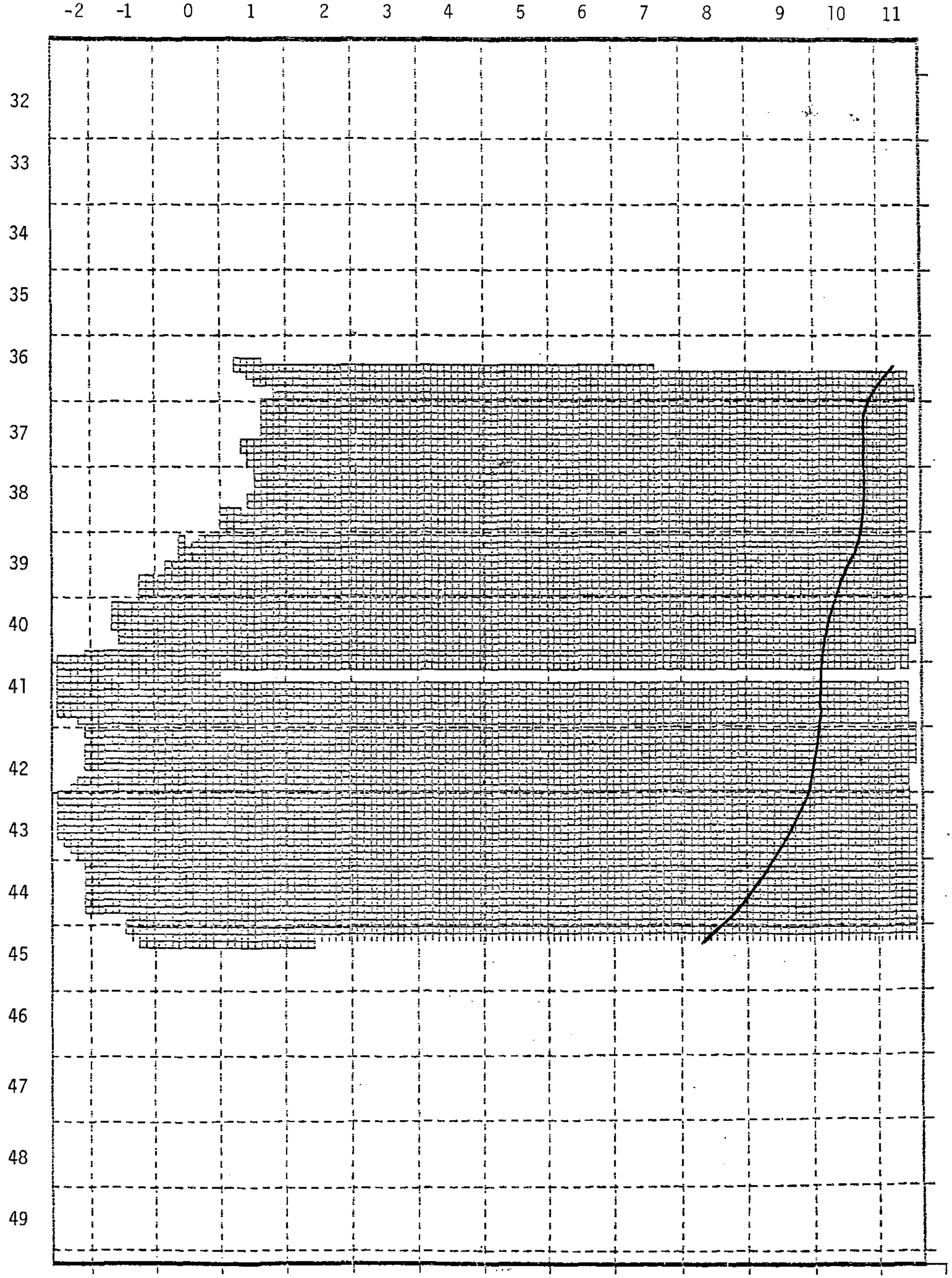
8. Irrigation water required ÷ irrigation system efficiency.

9. Rice: personal communication, Bobby A. Huey, University of Arkansas, Rice Research & Extension Center, Stuttgart, Arkansas.
   Cotton: personal communication, B. A. Waddle, University of Arkansas, Fayetteville, Arkansas.
   Soybeans: personal communication, H. Don Scott, University of Arkansas, Fayetteville, Arkansas.
   Wheat: personal communication, Fred C. Collins, University of Arkansas, Fayetteville, Arkansas.

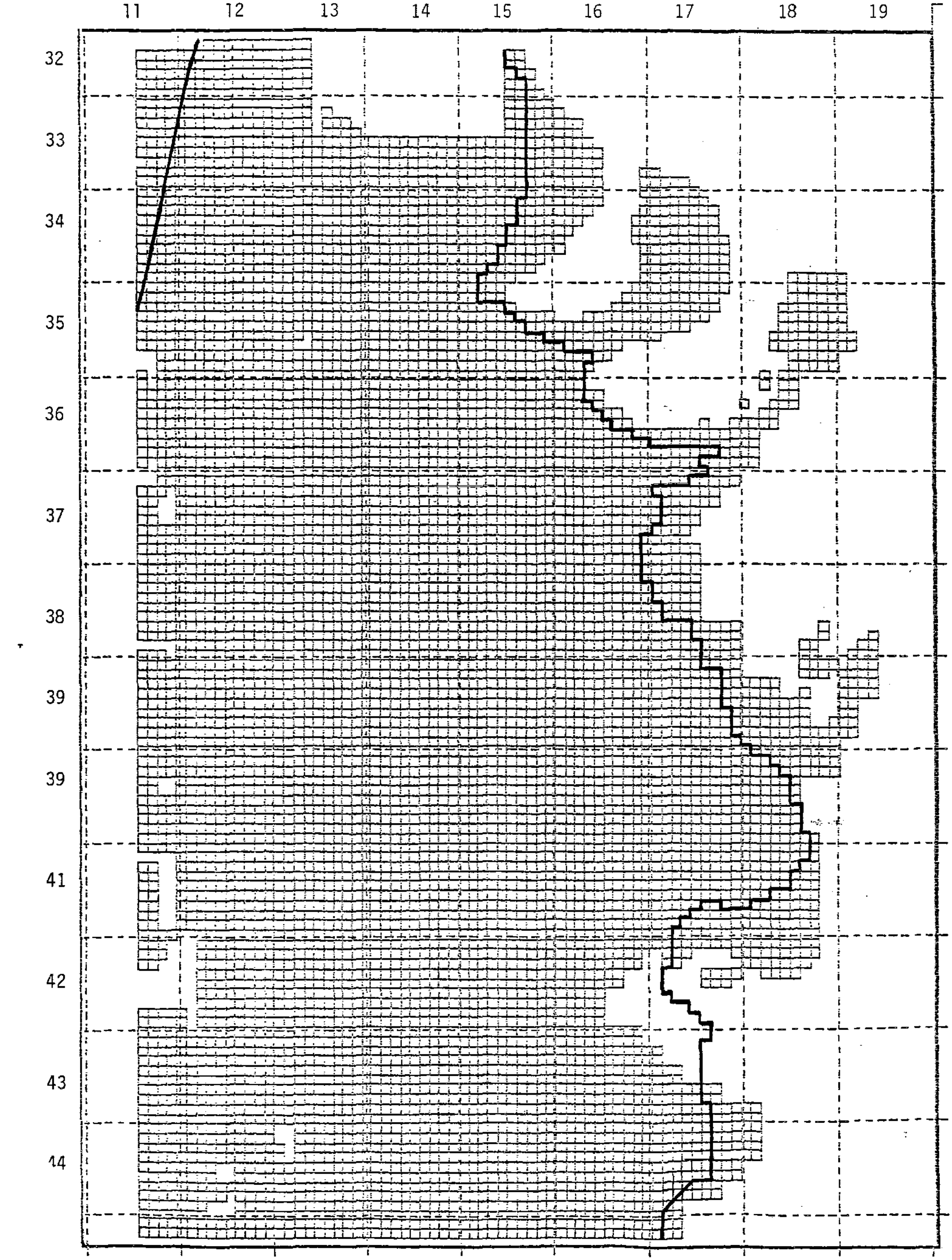
10. Ferguson, J. A., and Langston, J. "Energy and Irrigation System Selection." Arkansas Extension Service Leaflet (1981).



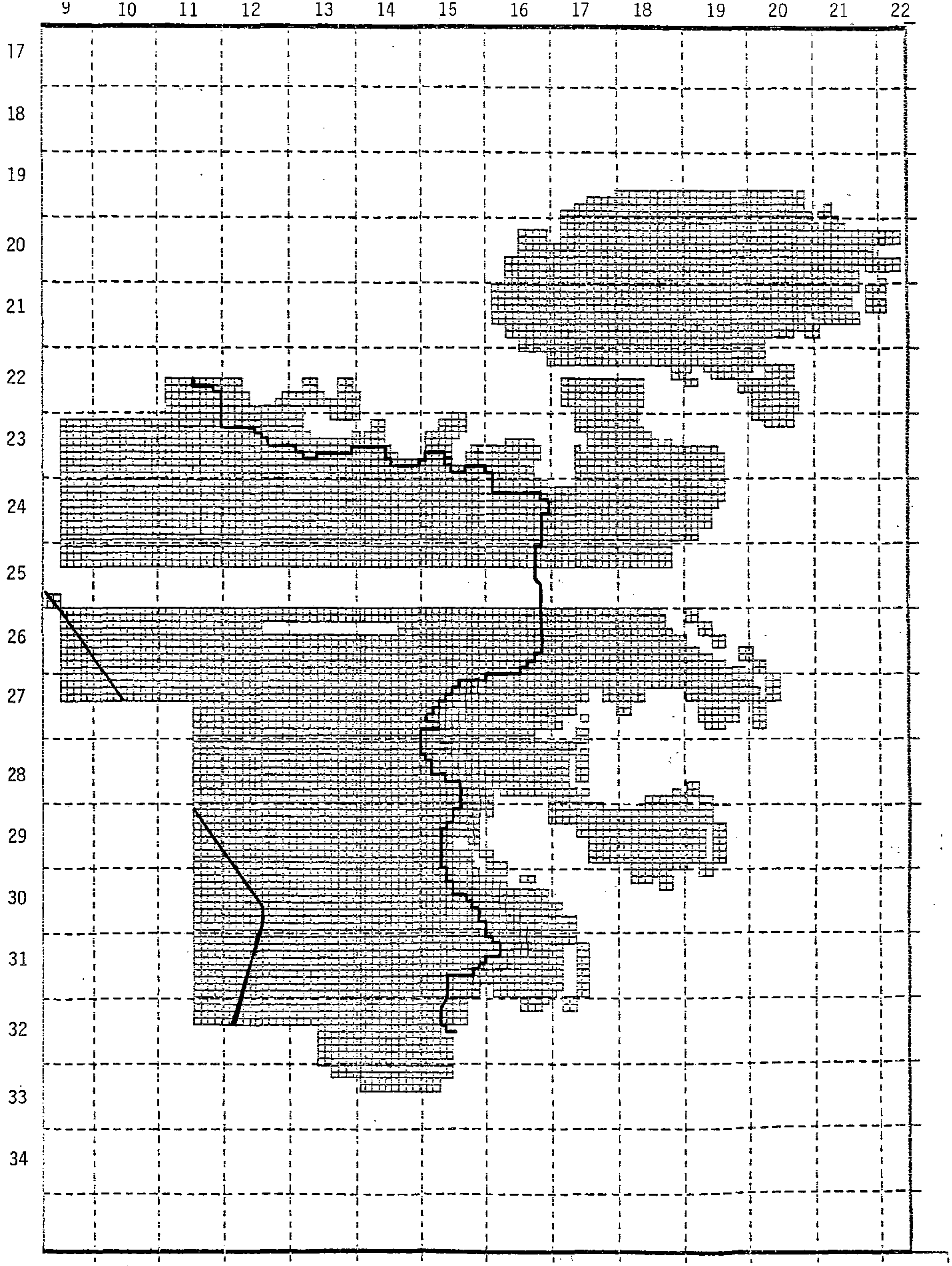
Map #1: Boeuf-Tensas Basin Study Area



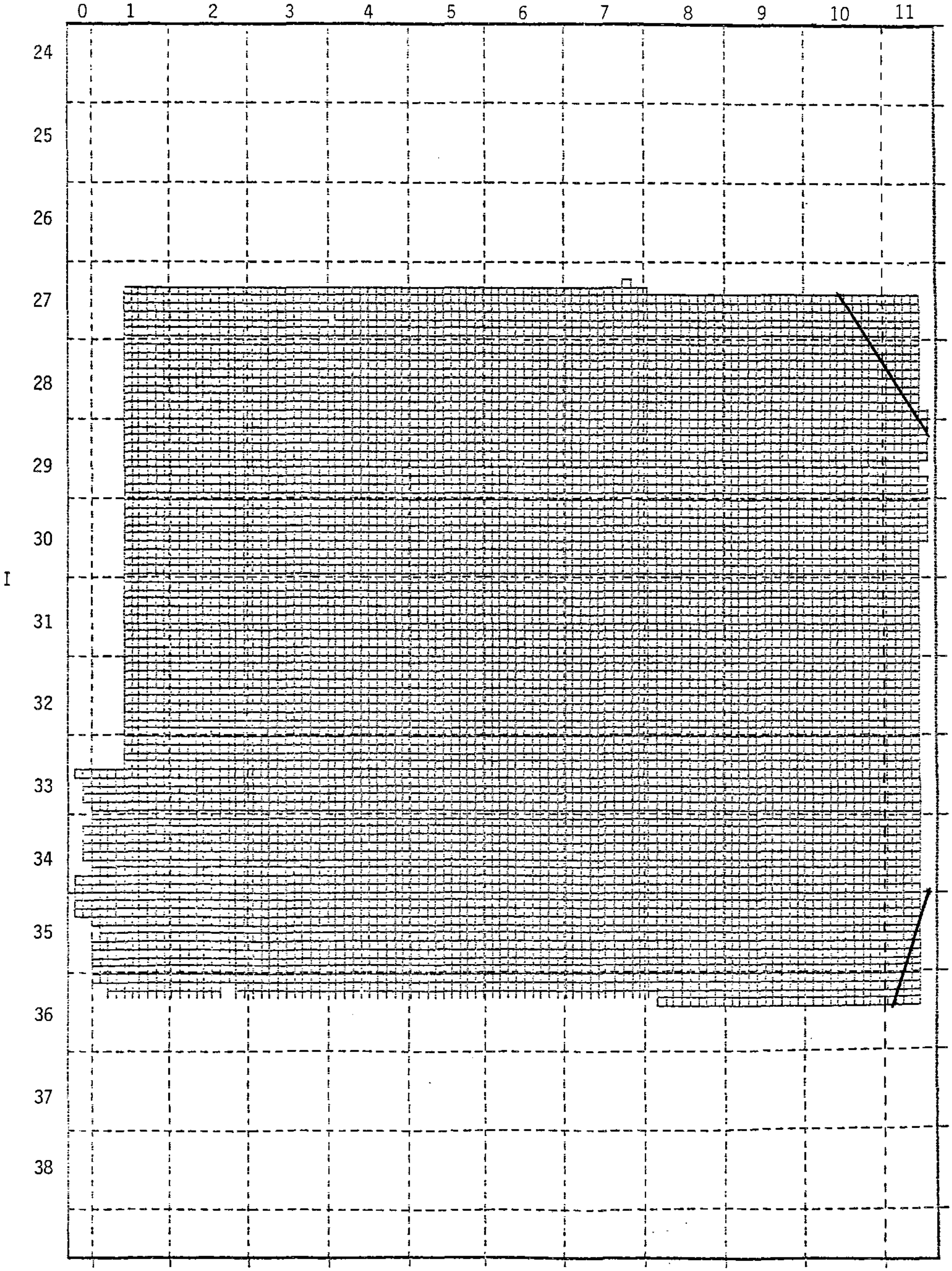
Map #2: Ashley County



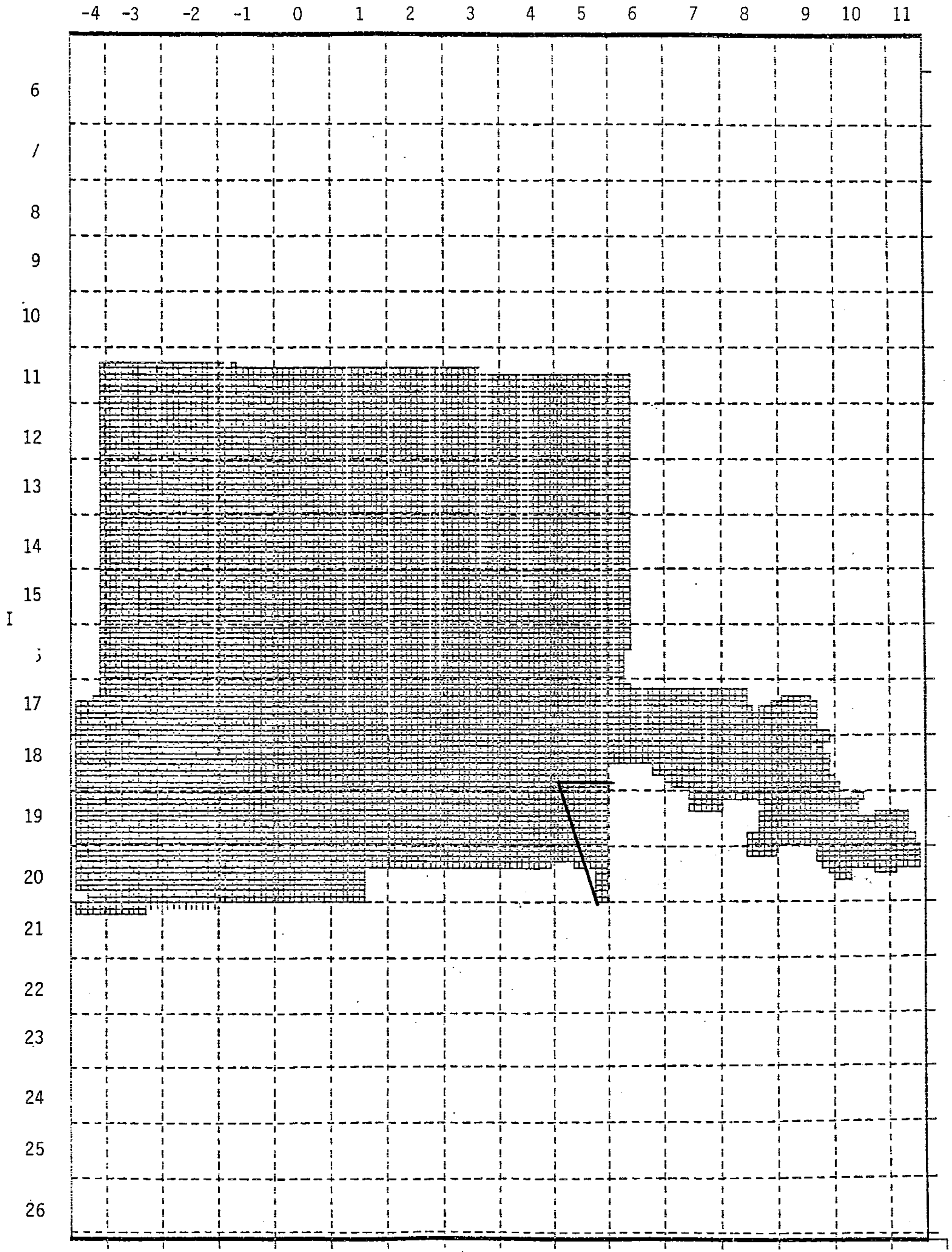
Map #3: Chicot County



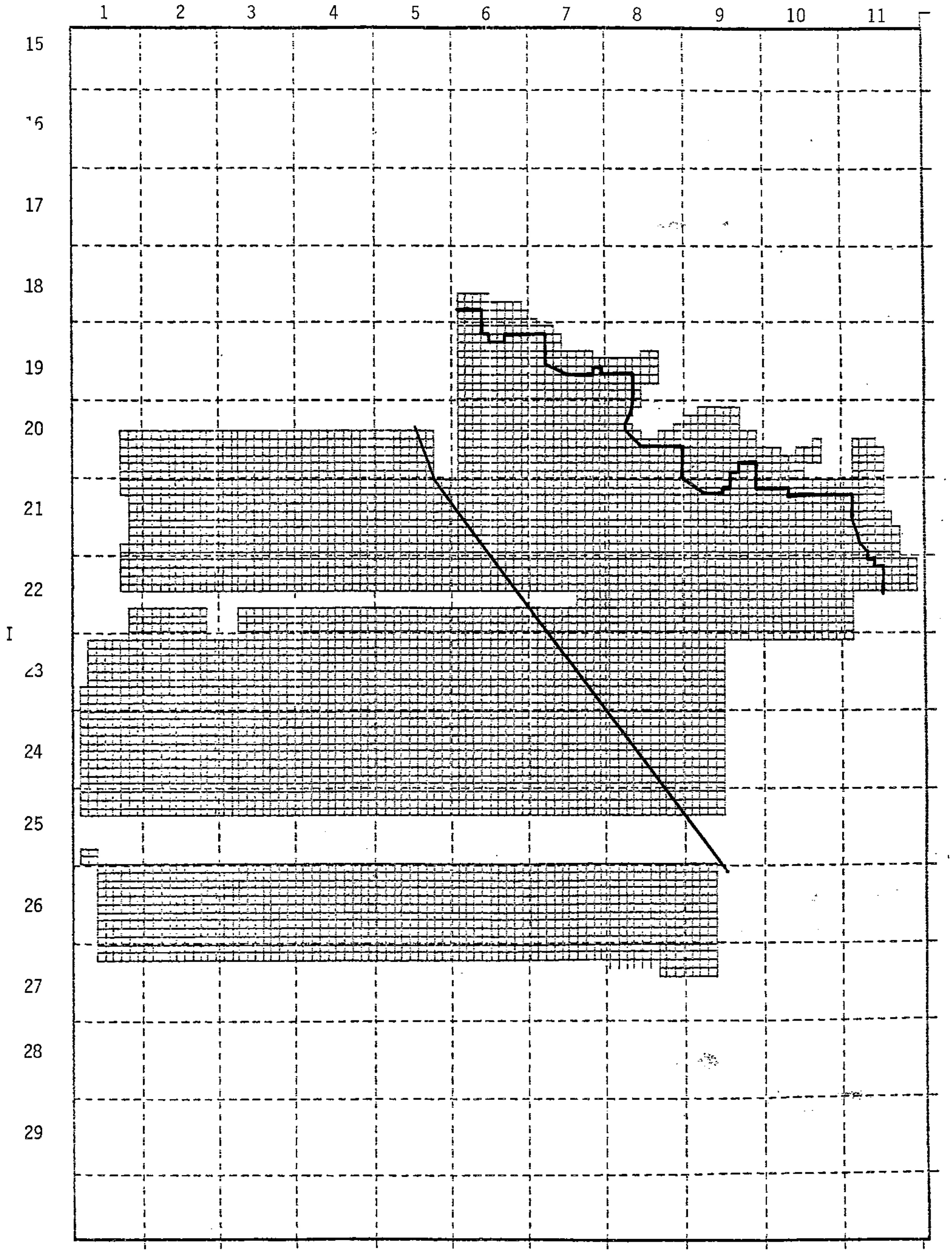
Map #4: Desha County



Map #5: Drew County



Map #6: Jefferson County



Map #7: Lincoln County

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	20.0	0										
19	103.0	147.0	80.0	25.0								
20	52.0	164.0	212.0	116.0	3.0							
21	9.0	156.0	176.0	221.0	203.0	131.0	8.0					
22		45.0	198.0	198.0	227.0	224.0	116.0					
23			85.0	202.0	242.0	256.0	215.0	135.0	42.0	36.0	44.0	3.0
24				108.0	184.0	245.0	227.0	241.0	229.0	198.0	212.0	173.0
25				18.0	214.0	166.0	215.0	229.0	249.0	256.0	215.0	166.0
26					34.0	181.0	215.0	232.0	210.0	227.0	212.0	133.0
27						102.0	175.0	241.0	255.0	220.0	62.0	
28						6.0	116.0	229.0	258.0	235.0	68.0	
29							44.0	176.0	207.0	213.0	99.0	
30								129.0	184.0	229.0	146.0	
31								119.0	237.0	204.0	142.0	11.0

Fig. 1: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in April for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	32.0	0										
19	168.0	240.0	131.0	40.0								
20	86.0	269.0	346.0	190.0	5.0							
21	15.0	256.0	287.0	361.0	331.0	214.0	14.0					
22		74.0	324.0	324.0	371.0	366.0	189.0					
23			139.0	331.0	395.0	419.0	352.0	220.0	69.0	59.0	72.0	5.0
24				176.0	301.0	401.0	371.0	394.0	375.0	324.0	347.0	283.0
25				30.0	350.0	271.0	352.0	375.0	407.0	419.0	352.0	271.0
26					56.0	297.0	352.0	380.0	344.0	371.0	347.0	218.0
27						167.0	286.0	394.0	417.0	359.0	102.0	
28						9.0	190.0	375.0	422.0	385.0	111.0	
29							72.0	287.0	338.0	349.0	162.0	
30								211.0	301.0	375.0	239.0	
31								195.0	387.0	334.0	232.0	19.0

Fig. 2: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in May for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	316.0	72.0										
19	1508.0	2009.0	1070.0	201.0								
20	668.0	2339.0	2462.0	1434.0	101.0							
21	100.0	1964.0	2292.0	2537.0	2281.0	1820.0	285.0					
22		488.0	2325.0	2424.0	2577.0	2485.0	1619.0					
23			973.0	2467.0	2638.0	2651.0	2467.0	1496.0	811.0	638.0	608.0	29.0
24				1483.0	2302.0	2512.0	2433.0	2559.0	2516.0	2397.0	2496.0	1804.0
25				187.0	2312.0	2200.0	2444.0	2534.0	2622.0	2618.0	2462.0	1885.0
26					526.0	2296.0	2480.0	2562.0	2402.0	2496.0	2451.0	1752.0
27						1218.0	2262.0	2559.0	2613.0	2478.0	815.0	
28						67.0	1642.0	2426.0	2624.0	2492.0	710.0	
29							456.0	2238.0	2353.0	2273.0	1009.0	
30								1407.0	2235.0	2516.0	1746.0	
31								1409.0	2525.0	2346.0	1838.0	133.0

Fig. 3: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in June for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	364.0	134.0										
19	1762.0	2083.0	1125.0	285.0								
20	764.0	2501.0	2197.0	1361.0	156.0							
21	80.0	1893.0	2287.0	2234.0	1965.0	1911.0	433.0					
22		399.0	2093.0	2277.0	2244.0	2105.0	1709.0					
23			854.0	2315.0	2191.0	2052.0	2171.0	1269.0	1029.0	780.0	638.0	22.0
24				1547.0	2210.0	1917.0	1976.0	2052.0	2099.0	2227.0	2252.0	1412.0
25				142.0	1895.0	2228.0	2124.0	2132.0	2082.0	1987.0	2157.0	1642.0
26					596.0	2230.0	2190.0	2154.0	2102.0	2093.0	2169.0	1760.0
27						1119.0	2240.0	2052.0	1993.0	2139.0	814.0	
28						60.0	1746.0	1931.0	1982.0	1991.0	556.0	
29							354.0	2187.0	2050.0	1831.0	762.0	
30								1168.0	2085.0	2099.0	1607.0	
31								1283.0	2036.0	2070.0	1825.0	121.0

Fig. 4: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in July for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	250.0	37.0										
19	1226.0	1684.0	904.0	205.0								
20	571.0	1931.0	2205.0	1252.0	64.0							
21	93.0	1703.0	1957.0	2284.0	2071.0	1517.0	184.0					
22		452.0	2074.0	2125.0	2330.0	2270.0	1346.0					
23			877.0	2165.0	2427.0	2498.0	2222.0	1366.0	605.0	488.0	506.0	27.0
24				1240.0	2000.0	2378.0	2256.0	2383.0	2311.0	2111.0	2225.0	1694.0
25				178.0	2137.0	1866.0	2211.0	2320.0	2450.0	2483.0	2220.0	1704.0
26					421.0	1984.0	2229.0	2347.0	2168.0	2288.0	2202.0	1491.0
27						1078.0	1939.0	2383.0	2474.0	2247.0	695.0	
28						59.0	1359.0	2264.0	2492.0	2324.0	666.0	
29							429.0	1929.0	2126.0	2114.0	958.0	
30								1295.0	1965.0	2311.0	1545.0	
31								1252.0	2347.0	2111.0	1573.0	119.0

Fig. 5: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in August for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	10.0	0										
19	50.0	72.0	39.0	12.0								
20	25.0	81.0	104.0	57.0	1.0							
21	5.0	77.0	86.0	108.0	99.0	64.0	4.0					
22		22.0	97.0	97.0	111.0	110.0	57.0					
23			42.0	99.0	118.0	126.0	105.0	66.0	21.0	18.0	21.0	1.0
24				53.0	90.0	120.0	111.0	118.0	113.0	97.0	104.0	85.0
25				9.0	105.0	81.0	106.0	113.0	122.0	126.0	106.0	81.0
26					17.0	89.0	106.0	114.0	103.0	111.0	104.0	65.0
27						50.0	86.0	118.0	125.0	108.0	31.0	
28						3.0	57.0	113.0	126.0	115.0	33.0	
29							22.0	86.0	101.0	105.0	49.0	
30								63.0	90.0	113.0	72.0	
31								58.0	116.0	100.0	69.0	6.0

Fig. 6: Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in September for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					157.0	219.0	223.0	114.0			
33				1.0	154.0	91.0	137.0	125.0			
34				35.0	160.0	181.0	82.0	46.0			
35				103.0	256.0	227.0	84.0	62.0	5.0		
36				186.0	239.0	222.0	168.0	118.0	42.0	13.0	
37			28.0	169.0	231.0	251.0	174.0	55.0	99.0	17.0	
38			30.0	152.0	255.0	214.0	198.0	78.0	58.0	6.0	
39			82.0	109.0	230.0	251.0	174.0	208.0	195.0	120.0	
40			149.0	98.0	208.0	240.0	215.0	178.0	232.0	241.0	86.0
41			200.0	176.0	206.0	225.0	168.0	165.0	253.0	130.0	36.0
42			134.0	177.0	204.0	246.0	164.0	148.0	222.0	25.0	
43		67.0	191.0	128.0	115.0	241.0	198.0	179.0	108.0	40.0	
44	16.0	154.0	185.0	154.0	97.0	222.0	201.0	138.0	168.0	124.0	
45	28.0	63.0	60.0	42.0	34.0	52.0	51.0	18.0	59.0	8.0	

Fig. 7: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in April for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					256.0	359.0	365.0	186.0			
33				2.0	251.0	149.0	225.0	205.0			
34				58.0	262.0	297.0	134.0	75.0			
35				169.0	419.0	371.0	137.0	101.0	8.0		
36				303.0	390.0	363.0	275.0	193.0	68.0	21.0	
37			46.0	276.0	378.0	411.0	285.0	89.0	162.0	28.0	
38			48.0	249.0	417.0	350.0	323.0	128.0	95.0	10.0	
39			134.0	179.0	376.0	411.0	285.0	340.0	319.0	197.0	
40			244.0	160.0	341.0	393.0	351.0	292.0	379.0	394.0	141.0
41			327.0	288.0	336.0	367.0	275.0	270.0	414.0	213.0	59.0
42			219.0	290.0	333.0	402.0	268.0	241.0	364.0	41.0	
43		110.0	312.0	209.0	189.0	394.0	324.0	292.0	176.0	65.0	
44	27.0	252.0	302.0	253.0	159.0	364.0	328.0	225.0	275.0	203.0	
45	46.0	104.0	98.0	68.0	56.0	86.0	84.0	30.0	96.0	13.0	

Fig. 8: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in May for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					1998.0	2470.0	2514.0	1210.0			
33				96.0	2276.0	2025.0	2169.0	1620.0			
34				559.0	2222.0	2318.0	1964.0	924.0			
35				1262.0	2681.0	2490.0	1968.0	1426.0	204.0		
36				1907.0	2465.0	2391.0	2346.0	2031.0	1142.0	351.0	
37			378.0	1869.0	2407.0	2559.0	2335.0	1544.0	1906.0	295.0	
38			440.0	1578.0	2651.0	2397.0	2468.0	1583.0	1663.0	286.0	
39			1030.0	1426.0	2589.0	2609.0	2377.0	2485.0	2244.0	1825.0	
40			1805.0	1426.0	2464.0	2525.0	2452.0	2314.0	2483.0	2494.0	1121.0
41			2207.0	2034.0	2418.0	2483.0	2127.0	2098.0	2573.0	1732.0	719.0
42			2159.0	2142.0	2463.0	2566.0	2233.0	2120.0	2453.0	446.0	
43		848.0	2398.0	1958.0	1518.0	2503.0	2340.0	2269.0	1825.0	967.0	
44	173.0	2048.0	2251.0	1932.0	1087.0	2412.0	2283.0	2006.0	2150.0	1352.0	
45	301.0	681.0	631.0	497.0	346.0	583.0	563.0	459.0	625.0	97.0	

Fig. 9: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in June for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					1956.0	2128.0	2167.0	969.0			
33				161.0	2503.0	2741.0	2487.0	1606.0			
34				640.0	2331.0	2272.0	2729.0	1204.0			
35				1185.0	2105.0	2079.0	2769.0	1956.0	323.0		
36				1460.0	1902.0	1955.0	2494.0	2445.0	1651.0	508.0	
37			385.0	1580.0	1878.0	1933.0	2382.0	2256.0	2427.0	357.0	
38			484.0	1221.0	2062.0	2048.0	2365.0	2064.0	2438.0	459.0	
39			991.0	1421.0	2302.0	2030.0	2463.0	2281.0	1982.0	2038.0	
40			1676.0	1627.0	2240.0	1996.0	2148.0	2296.0	2014.0	1931.0	1112.0
41			1858.0	1805.0	2184.0	2094.0	2063.0	2041.0	1944.0	1755.0	930.0
42			2506.0	1992.0	2291.0	2010.0	2310.0	2281.0	2061.0	550.0	
43		819.0	2312.0	2202.0	1525.0	1947.0	2123.0	2210.0	2183.0	1351.0	
44	139.0	2076.0	2107.0	1856.0	930.0	1986.0	1987.0	2180.0	2110.0	1120.0	
45	244.0	554.0	496.0	455.0	261.0	495.0	470.0	649.0	502.0	93.0	

Fig. 10: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in July for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					1721.0	2242.0	2282.0	1128.0			
33				55.0	1852.0	1445.0	1724.0	1387.0			
34				444.0	1852.0	1996.0	1373.0	678.0			
35				1107.0	2515.0	2287.0	1382.0	1006.0	127.0		
36				1803.0	2326.0	2212.0	1950.0	1569.0	772.0	237.0	
37			320.0	1708.0	2263.0	2430.0	1973.0	1036.0	1419.0	227.0	
38			357.0	1487.0	2494.0	2182.0	2146.0	1160.0	1113.0	175.0	
39			894.0	1218.0	2349.0	2455.0	1994.0	2200.0	2017.0	1472.0	
40			1590.0	1163.0	2190.0	2363.0	2212.0	1981.0	2304.0	2350.0	959.0
41			2021.0	1826.0	2155.0	2272.0	1839.0	1812.0	2444.0	1468.0	530.0
42			1704.0	1886.0	2169.0	2409.0	1875.0	1745.0	2247.0	339.0	
43		735.0	2079.0	1573.0	1293.0	2354.0	2083.0	1959.0	1416.0	673.0	
44	161.0	1736.0	1977.0	1678.0	989.0	2226.0	2064.0	1642.0	1850.0	1244.0	
45	279.0	631.0	591.0	441.0	329.0	532.0	517.0	316.0	582.0	85.0	

Fig. 11: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in August for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					77.0	108.0	109.0	56.0			
33				1.0	75.0	45.0	67.0	61.0			
34				17.0	79.0	89.0	40.0	22.0			
35				51.0	126.0	111.0	41.0	30.0	2.0		
36				91.0	117.0	109.0	82.0	58.0	21.0	6.0	
37			14.0	83.0	113.0	123.0	85.0	27.0	49.0	8.0	
38			15.0	75.0	125.0	105.0	97.0	38.0	28.0	3.0	
39			40.0	54.0	113.0	123.0	85.0	102.0	96.0	59.0	
40			73.0	48.0	102.0	118.0	105.0	88.0	114.0	118.0	42.0
41			98.0	86.0	101.0	110.0	83.0	81.0	124.0	64.0	18.0
42			66.0	87.0	100.0	121.0	80.0	72.0	109.0	12.0	
43		33.0	94.0	63.0	57.0	118.0	97.0	88.0	53.0	19.0	
44	8.0	76.0	91.0	76.0	48.0	109.0	99.0	68.0	82.0	61.0	
45	14.0	31.0	30.0	21.0	17.0	26.0	25.0	9.0	29.0	4.0	

Fig. 12: Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in September for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	992.0	243.0										
19	4817.0	6234.0	3348.0	768.0								
20	2167.0	7284.0	7524.0	4411.0	330.0							
21	302.0	6048.0	7085.0	7746.0	6950.0	5657.0	929.0					
22		1481.0	7112.0	7446.0	7859.0	7559.0	5036.0					
23			2970.0	7578.0	8011.0	8001.0	7531.0	4550.0	2578.0	2018.0	1888.0	87.0
24				4606.0	7088.0	7573.0	7373.0	7746.0	7642.0	7355.0	7637.0	5449.0
25				564.0	7012.0	6812.0	7451.0	7703.0	7930.0	7890.0	7511.0	5749.0
26					1650.0	7077.0	7572.0	7789.0	7329.0	7585.0	7485.0	5418.0
27						3734.0	6987.0	7746.0	7877.0	7550.0	2518.0	
28						204.0	5110.0	7338.0	7903.0	7542.0	2145.0	
29							1376.0	6903.0	7175.0	6884.0	3040.0	
30								4273.0	6860.0	7642.0	5353.0	
31								4316.0	7646.0	7164.0	5679.0	408.0

Fig. 13: Annual Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin for an Average Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					6165.0	7525.0	7659.0	3663.0			
33				317.0	7111.0	6495.0	6809.0	5003.0			
34				1754.0	6904.0	7153.0	6321.0	2949.0			
35				3876.0	8102.0	7565.0	6380.0	4580.0	668.0		
36				5749.0	7438.0	7251.0	7314.0	6414.0	3696.0	1135.0	
37			1172.0	5684.0	7270.0	7707.0	7233.0	5005.0	6062.0	931.0	
38			1374.0	4762.0	8003.0	7296.0	7596.0	5051.0	5395.0	940.0	
39			3171.0	4406.0	7959.0	7878.0	7378.0	7616.0	6851.0	5711.0	
40			5538.0	4521.0	7544.0	7633.0	7482.0	7149.0	7525.0	7526.0	3461.0
41			6710.0	6215.0	7400.0	7551.0	6554.0	6467.0	7751.0	5362.0	2292.0
42			6787.0	6573.0	7560.0	7754.0	6930.0	6607.0	7455.0	1413.0	
43		2614.0	7385.0	6132.0	4697.0	7557.0	7165.0	6995.0	5760.0	3114.0	
44	524.0	6341.0	6912.0	5948.0	3308.0	7318.0	6962.0	6257.0	6634.0	4103.0	
45	911.0	2065.0	1906.0	1524.0	1042.0	1774.0	1710.0	1480.0	1893.0	300.0	

Fig. 14: Annual Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin for an Average Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	90.0	0										
19	428.0	667.0	351.0	48.0								
20	199.0	746.0	962.0	528.0	13.0							
21	42.0	710.0	798.0	1004.0	920.0	595.0	39.0					
22		206.0	901.0	901.0	1029.0	1016.0	526.0					
23			386.0	918.0	1097.0	1163.0	976.0	611.0	193.0	164.0	199.0	13.0
24				489.0	836.0	1113.0	1029.0	1094.0	1042.0	901.0	965.0	785.0
25				84.0	971.0	753.0	978.0	1042.0	1129.0	1164.0	978.0	753.0
26					154.0	823.0	978.0	1055.0	955.0	1029.0	965.0	605.0
27						463.0	795.0	1094.0	1158.0	997.0	283.0	
28						26.0	528.0	1042.0	1171.0	1068.0	309.0	
29							199.0	798.0	939.0	968.0	450.0	
30								585.0	836.0	1042.0	663.0	
31								540.0	1074.0	926.0	643.0	51.0

Fig. 15: Peak Weekly Potential Irrigation Water Need for the Northern Boeuf-Tensas Basin in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					711.0	996.0	1013.0	518.0			
33				6.0	698.0	413.0	624.0	568.0			
34				161.0	727.0	823.0	372.0	207.0			
35				469.0	1164.0	1031.0	362.0	280.0	23.0		
36				843.0	1084.0	1007.0	756.0	537.0	190.0	58.0	
37			129.0	766.0	1050.0	1142.0	791.0	248.0	450.0	77.0	
38			135.0	692.0	1159.0	973.0	898.0	355.0	264.0	29.0	
39			373.0	497.0	1020.0	1140.0	791.0	945.0	885.0	547.0	
40			679.0	418.0	946.0	1090.0	975.0	811.0	1052.0	1094.0	392.0
41			908.0	799.0	934.0	1020.0	764.0	751.0	1148.0	592.0	164.0
42			609.0	804.0	925.0	1116.0	744.0	671.0	1010.0	113.0	
43		306.0	867.0	581.0	524.0	1094.0	901.0	811.0	489.0	180.0	
44	74.0	700.0	840.0	701.0	441.0	1010.0	912.0	626.0	762.0	563.0	
45	127.0	288.0	273.0	190.0	154.0	238.0	233.0	82.0	267.0	35.0	

Fig. 16: Peak Weekly Potential Irrigation Water Need for the Southern Boeuf-Tensas Basin in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	32.0	0										
19	168.0	240.0	131.0	40.0								
20	86.0	269.0	346.0	190.0	5.0							
21	15.0	256.0	287.0	361.0	331.0	214.0	14.0					
22		74.0	324.0	324.0	371.0	366.0	189.0					
23			139.0	331.0	395.0	419.0	352.0	220.0	69.0	59.0	72.0	5.0
24				176.0	301.0	401.0	371.0	394.0	375.0	324.0	347.0	283.0
25				30.0	350.0	271.0	352.0	375.0	407.0	419.0	352.0	271.0
26					56.0	297.0	352.0	380.0	344.0	371.0	347.0	218.0
27						167.0	286.0	394.0	417.0	359.0	102.0	
28						9.0	190.0	375.0	422.0	385.0	111.0	
29							72.0	287.0	338.0	349.0	162.0	
30								211.0	301.0	375.0	239.0	
31								195.0	387.0	334.0	232.0	19.0

Fig. 17: Potential Irrigation Water need fro the Northern Boeuf-Tensas Basin in April for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	99.0	0										
19	513.0	734.0	401.0	123.0								
20	262.0	821.0	1058.0	580.0	14.0							
21	47.0	781.0	878.0	1104.0	1012.0	655.0	42.0					
22		226.0	991.0	991.0	1132.0	1118.0	578.0					
23			425.0	1010.0	1207.0	1279.0	1074.0	672.0	212.0	180.0	219.0	14.0
24				538.0	920.0	1224.0	1132.0	1203.0	1147.0	991.0	1062.0	863.0
25				92.0	1069.0	828.0	1076.0	1147.0	1242.0	1281.0	1076.0	828.0
26					170.0	906.0	1076.0	1161.0	1051.0	1132.0	1062.0	665.0
27						510.0	874.0	1203.0	1274.0	1097.0	311.0	
28						28.0	580.0	1147.0	1288.0	1175.0	340.0	
29							219.0	878.0	1033.0	1065.0	495.0	
30								644.0	920.0	1147.0	729.0	
31								595.0	1182.0	1019.0	708.0	57.0

Fig. 18: Potential Irrigation Water need for the Northern Boeuf-Tensas Basin in May for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	368.0	93.0										
19	1759.0	2302.0	1227.0	239.0								
20	775.0	2693.0	2760.0	1622.0	124.0							
21	110.0	2226.0	2612.0	2840.0	2546.0	2090.0	350.0					
22		541.0	2610.0	2737.0	2880.0	2768.0	1861.0					
23			1089.0	2786.0	2931.0	2919.0	2761.0	1666.0	961.0	751.0	698.0	32.0
24				1701.0	2608.0	2762.0	2695.0	2830.0	2796.0	2703.0	2803.0	1989.0
25				206.0	2564.0	2512.0	2731.0	2819.0	2896.0	2877.0	2754.0	2107.0
26					612.0	2605.0	2777.0	2851.0	2687.0	2776.0	2745.0	1998.0
27						1371.0	2575.0	2830.0	2873.0	2766.0	928.0	
28						75.0	1889.0	2680.0	2881.0	2755.0	783.0	
29							502.0	2542.0	2630.0	2516.0	1108.0	
30								1563.0	2521.0	2796.0	1966.0	
31								1585.0	2794.0	2627.0	2093.0	150.0

Fig. 19: Potential Irrigation Water need for the Northern Boeuf-Tensas Basin in June for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	789.0	280.0										
19	3843.0	4560.0	2468.0	655.0								
20	1687.0	5460.0	4888.0	3008.0	330.0							
21	181.0	4176.0	5027.0	4979.0	4391.0	4178.0	919.0					
22		897.0	4653.0	5038.0	5008.0	4713.0	3736.0					
23			1904.0	5122.0	4917.0	4646.0	4839.0	2840.0	2212.0	1681.0	1394.0	49.0
24				3385.0	4878.0	4349.0	4448.0	4625.0	4707.0	4933.0	5005.0	3193.0
25				322.0	4260.0	4889.0	4740.0	4777.0	4698.0	4512.0	4810.0	3664.0
26					1294.0	4916.0	4880.0	4827.0	4688.0	4693.0	4830.0	3865.0
27						2481.0	4927.0	4625.0	4522.0	4779.0	1788.0	
28						134.0	3813.0	4357.0	4502.0	4491.0	1257.0	
29							802.0	4817.0	4574.0	4125.0	1731.0	
30								2622.0	4616.0	4707.0	3563.0	
31								2848.0	4586.0	4612.0	4014.0	268.0

Fig. 20: Potential Irrigation Water need for the Northern Boeuf-Tensas Basin in July for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	597.0	142.0										
19	2930.0	3769.0	2034.0	514.0								
20	1338.0	4397.0	4577.0	2677.0	195.0							
21	184.0	3668.0	4290.0	4715.0	4234.0	3418.0	550.0					
22		904.0	4325.0	4520.0	4785.0	4608.0	3042.0					
23			1808.0	4601.0	4887.0	4893.0	4584.0	2774.0	1543.0	1211.0	1141.0	53.0
24				2784.0	4299.0	4634.0	4501.0	4731.0	4661.0	4467.0	4644.0	3331.0
25				346.0	4280.0	4122.0	4537.0	4696.0	4846.0	4828.0	4573.0	3500.0
26					993.0	4290.0	4608.0	4750.0	4462.0	4626.0	4555.0	3280.0
27						2269.0	4233.0	4731.0	4820.0	4599.0	1525.0	
28						124.0	3085.0	4483.0	4837.0	4607.0	1311.0	
29							842.0	4184.0	4369.0	4204.0	1860.0	
30								2607.0	4166.0	4661.0	3253.0	
31								2623.0	4669.0	4360.0	3439.0	248.0

Fig. 21: Potential Irrigation Water need for the Northern Boeuf-Tensas Basin in August for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	108.0	45.0										
19	534.0	593.0	325.0	105.0								
20	235.0	722.0	583.0	373.0	51.0							
21	20.0	522.0	641.0	588.0	512.0	547.0	140.0					
22		101.0	558.0	620.0	588.0	543.0	491.0					
23			225.0	630.0	558.0	500.0	572.0	327.0	316.0	236.0	183.0	5.0
24				442.0	608.0	463.0	497.0	512.0	536.0	603.0	601.0	347.0
25				34.0	479.0	628.0	555.0	548.0	516.0	478.0	567.0	430.0
26					176.0	617.0	578.0	553.0	552.0	537.0	573.0	495.0
27						301.0	625.0	512.0	481.0	558.0	228.0	
28						16.0	503.0	480.0	475.0	496.0	137.0	
29							87.0	607.0	537.0	458.0	183.0	
30								298.0	566.0	536.0	433.0	
31								344.0	510.0	546.0	510.0	32.0

Fig. 22: Potential Irrigation Water need for the Northern Boeuf-Tensas Basin in September for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					256.0	359.0	365.0	186.0			
33				2.0	251.0	149.0	225.0	205.0			
34				58.0	262.0	297.0	134.0	75.0			
35				169.0	419.0	371.0	137.0	101.0	8.0		
36				303.0	390.0	363.0	275.0	193.0	68.0	21.0	
37			46.0	276.0	378.0	411.0	285.0	89.0	162.0	28.0	
38			48.0	249.0	417.0	350.0	323.0	128.0	95.0	10.0	
39			134.0	179.0	376.0	411.0	285.0	340.0	319.0	197.0	
40			244.0	160.0	341.0	393.0	351.0	292.0	379.0	394.0	141.0
41			327.0	288.0	336.0	367.0	275.0	270.0	414.0	213.0	59.0
42			219.0	290.0	333.0	402.0	268.0	241.0	364.0	41.0	
43		110.0	312.0	209.0	189.0	394.0	324.0	292.0	176.0	65.0	
44	27.0	252.0	302.0	253.0	159.0	364.0	328.0	225.0	275.0	203.0	
45	46.0	104.0	98.0	68.0	56.0	86.0	84.0	30.0	96.0	13.0	

Fig. 23: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in April for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					782.0	1095.0	1115.0	570.0			
33				7.0	768.0	455.0	687.0	625.0			
34				177.0	800.0	906.0	409.0	228.0			
35				516.0	1281.0	1134.0	419.0	308.0	25.0		
36				927.0	1193.0	1108.0	839.0	591.0	209.0	64.0	
37			142.0	842.0	1155.0	1256.0	871.0	272.0	495.0	85.0	
38			148.0	761.0	1275.0	1070.0	988.0	390.0	290.0	32.0	
39			411.0	546.0	1150.0	1254.0	870.0	1040.0	973.0	602.0	
40			747.0	488.0	1040.0	1200.0	1072.0	892.0	1157.0	1203.0	432.0
41			999.0	879.0	1028.0	1122.0	841.0	826.0	1263.0	651.0	180.0
42			670.0	885.0	1017.0	1228.0	819.0	738.0	1111.0	124.0	
43		337.0	954.0	639.0	577.0	1203.0	991.0	893.0	538.0	198.0	
44	81.0	770.0	924.0	771.0	485.0	1111.0	1004.0	688.0	839.0	619.0	
45	140.0	317.0	301.0	209.0	170.0	262.0	256.0	90.0	294.0	39.0	

Fig. 24: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in May for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					2270.0	2757.0	2806.0	1338.0			
33				120.0	2633.0	2430.0	2526.0	1844.0			
34				651.0	2551.0	2634.0	2369.0	1101.0			
35				1425.0	2958.0	2768.0	2378.0	1715.0	252.0		
36				2097.0	2714.0	2651.0	2699.0	2385.0	1388.0	426.0	
37			432.0	2081.0	2654.0	2810.0	2669.0	1881.0	2261.0	346.0	
38			509.0	1737.0	2921.0	2672.0	2795.0	1886.0	2027.0	355.0	
39			1167.0	1624.0	2900.0	2875.0	2724.0	2797.0	2513.0	2116.0	
40			2035.0	1657.0	2770.0	2787.0	2743.0	2634.0	2750.0	2746.0	1276.0
41			2456.0	2279.0	2716.0	2764.0	2413.0	2381.0	2826.0	1978.0	855.0
42			2519.0	2415.0	2778.0	2830.0	2559.0	2444.0	2729.0	526.0	
43		962.0	2718.0	2273.0	1732.0	2758.0	2630.0	2576.0	2141.0	1167.0	
44	191.0	2339.0	2541.0	2189.0	1212.0	2676.0	2552.0	2315.0	2443.0	1501.0	
45	333.0	755.0	696.0	560.0	380.0	649.0	626.0	555.0	692.0	110.0	

Fig. 25: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in June for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					4308.0	4756.0	4841.0	2184.0			
33				340.0	5449.0	5860.0	5392.0	3532.0			
34				1388.0	5097.0	5004.0	5823.0	2583.0			
35				2622.0	4757.0	4664.0	5917.0	4178.0	682.0		
36				3310.0	4308.0	4396.0	5451.0	5279.0	3513.0	1080.0	
37			845.0	3539.0	4248.0	4390.0	5223.0	4794.0	5214.0	769.0	
38			1054.0	2765.0	4665.0	4581.0	5221.0	4426.0	5180.0	969.0	
39			2187.0	3124.0	5144.0	4594.0	5393.0	5060.0	4416.0	4430.0	
40			3712.0	3548.0	4975.0	4508.0	4789.0	5050.0	4534.0	4372.0	2446.0
41			4162.0	4018.0	4853.0	4691.0	4548.0	4498.0	4415.0	3851.0	1996.0
42			5427.0	4412.0	5074.0	4545.0	5059.0	4976.0	4618.0	1185.0	
43		1807.0	5101.0	4783.0	3350.0	4407.0	4715.0	4870.0	4715.0	2880.0	
44	312.0	4556.0	4663.0	4096.0	2079.0	4461.0	4435.0	4751.0	4646.0	2514.0	
45	549.0	1247.0	1121.0	1010.0	594.0	1108.0	1054.0	1383.0	1132.0	206.0	

Fig. 26: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in July for a Dry Season in Acre-Feet

	8	9	10	11	12	13	14	15	16	17	18
32					3736.0	4584.0	4666.0	2237.0			
33				186.0	4287.0	3874.0	4097.0	3031.0			
34				1055.0	4171.0	4334.0	3765.0	1763.0			
35				2353.0	4953.0	4614.0	3815.0	2730.0	395.0		
36				3517.0	4549.0	4426.0	4422.0	3850.0	2196.0	674.0	
37			709.0	3465.0	4445.0	4718.0	4376.0	2973.0	3628.0	559.0	
38			828.0	2912.0	4894.0	4446.0	4608.0	3019.0	3203.0	555.0	
39			1923.0	2668.0	4865.0	4817.0	4460.0	4628.0	4170.0	3440.0	
40			3363.0	2743.0	4586.0	4665.0	4555.0	4330.0	4594.0	4603.0	2097.0
41			4091.0	3782.0	4500.0	4603.0	3973.0	3920.0	4744.0	3244.0	1370.0
42			4081.0	3992.0	4591.0	4740.0	4190.0	3987.0	4546.0	847.0	
43		1585.0	4479.0	3693.0	2843.0	4621.0	4356.0	4240.0	3459.0	1854.0	
44	320.0	3837.0	4197.0	3607.0	2016.0	4466.0	4239.0	3774.0	4020.0	2503.0	
45	556.0	1261.0	1165.0	926.0	638.0	1081.0	1043.0	881.0	1156.0	182.0	

Fig. 27: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in August for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					543.0	554.0	564.0	241.0			
33				54.0	731.0	858.0	737.0	449.0			
34				190.0	667.0	631.0	861.0	373.0			
35				323.0	518.0	532.0	881.0	615.0	105.0		
36				353.0	463.0	494.0	719.0	738.0	527.0	162.0	
37			109.0	407.0	460.0	463.0	674.0	722.0	746.0	108.0	
38			141.0	298.0	504.0	531.0	650.0	639.0	781.0	150.0	
39			273.0	398.0	615.0	497.0	702.0	614.0	523.0	598.0	
40			454.0	487.0	600.0	494.0	564.0	642.0	506.0	471.0	311.0
41			477.0	477.0	583.0	538.0	570.0	565.0	466.0	495.0	287.0
42			746.0	540.0	621.0	494.0	657.0	660.0	529.0	167.0	
43		226.0	638.0	648.0	429.0	476.0	568.0	612.0	657.0	427.0	
44	35.0	586.0	573.0	511.0	241.0	503.0	520.0	633.0	587.0	285.0	
45	61.0	140.0	122.0	122.0	63.0	128.0	120.0	206.0	125.0	26.0	

Fig. 28: Potential Irrigation Water need for the Southern Boeuf-Tensas Basin in September for a Dry Season in Acre-Feet

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
18	1994.0	560.0										
19	9748.0	12199.0	6587.0	1676.0								
20	4382.0	14363.0	14214.0	8451.0	718.0							
21	557.0	11630.0	13736.0	14588.0	13027.0	11102.0	2015.0					
22		2743.0	13462.0	14232.0	14765.0	14116.0	9897.0					
23			5589.0	14481.0	14896.0	14657.0	14182.0	8500.0	5315.0	4119.0	3706.0	158.0
24				9026.0	13615.0	13833.0	13644.0	14296.0	14223.0	14022.0	14463.0	10006.0
25				1029.0	13002.0	13251.0	13991.0	14363.0	14605.0	14396.0	14131.0	10801.0
26					3300.0	13632.0	14271.0	14521.0	13784.0	14134.0	14113.0	10521.0
27						7099.0	13521.0	14296.0	14387.0	14159.0	4883.0	
28						387.0	10061.0	13523.0	14405.0	13909.0	3939.0	
29							2524.0	13315.0	13481.0	12717.0	5541.0	
30								7945.0	13090.0	14223.0	10183.0	
31								8189.0	14128.0	13498.0	10996.0	773.0

Fig. 29: Annual Potential Irrigation Water Needs for the Northern Boeuf-Tensas Basin for a Dry Season in Acre-Feet

I \ J	8	9	10	11	12	13	14	15	16	17	18
32					11897.0	14105.0	14357.0	6757.0			
33				709.0	14119.0	13626.0	13664.0	9685.0			
34				3519.0	13548.0	13807.0	13362.0	6123.0			
35				7408.0	14886.0	14083.0	13548.0	9648.0	1467.0		
36				10509.0	13617.0	13437.0	14405.0	13036.0	7901.0	2428.0	
37			2283.0	10609.0	13341.0	14049.0	14097.0	10732.0	12507.0	1895.0	
38			2728.0	8724.0	14677.0	13651.0	14587.0	10489.0	11577.0	2072.0	
39			6096.0	8540.0	15051.0	14449.0	14434.0	14479.0	12914.0	11384.0	
40			10556.0	9084.0	14313.0	14046.0	14075.0	13841.0	13921.0	13789.0	6702.0
41			12512.0	11724.0	14016.0	14086.0	12621.0	12462.0	14128.0	10433.0	4749.0
42			13663.0	12533.0	14416.0	14240.0	13552.0	13047.0	13897.0	2890.0	
43		5028.0	14202.0	12245.0	9120.0	13859.0	13585.0	13483.0	11687.0	6592.0	
44	966.0	12340.0	13200.0	11428.0	6192.0	13582.0	13079.0	12388.0	12810.0	7626.0	
45	1686.0	3823.0	3504.0	2895.0	1900.0	3314.0	3183.0	3145.0	3495.0	575.0	

Fig. 30: Annual Potential Irrigation Water Needs for the Southern Boeuf-Tensas Basin for a Dry Season in Acre-Feet

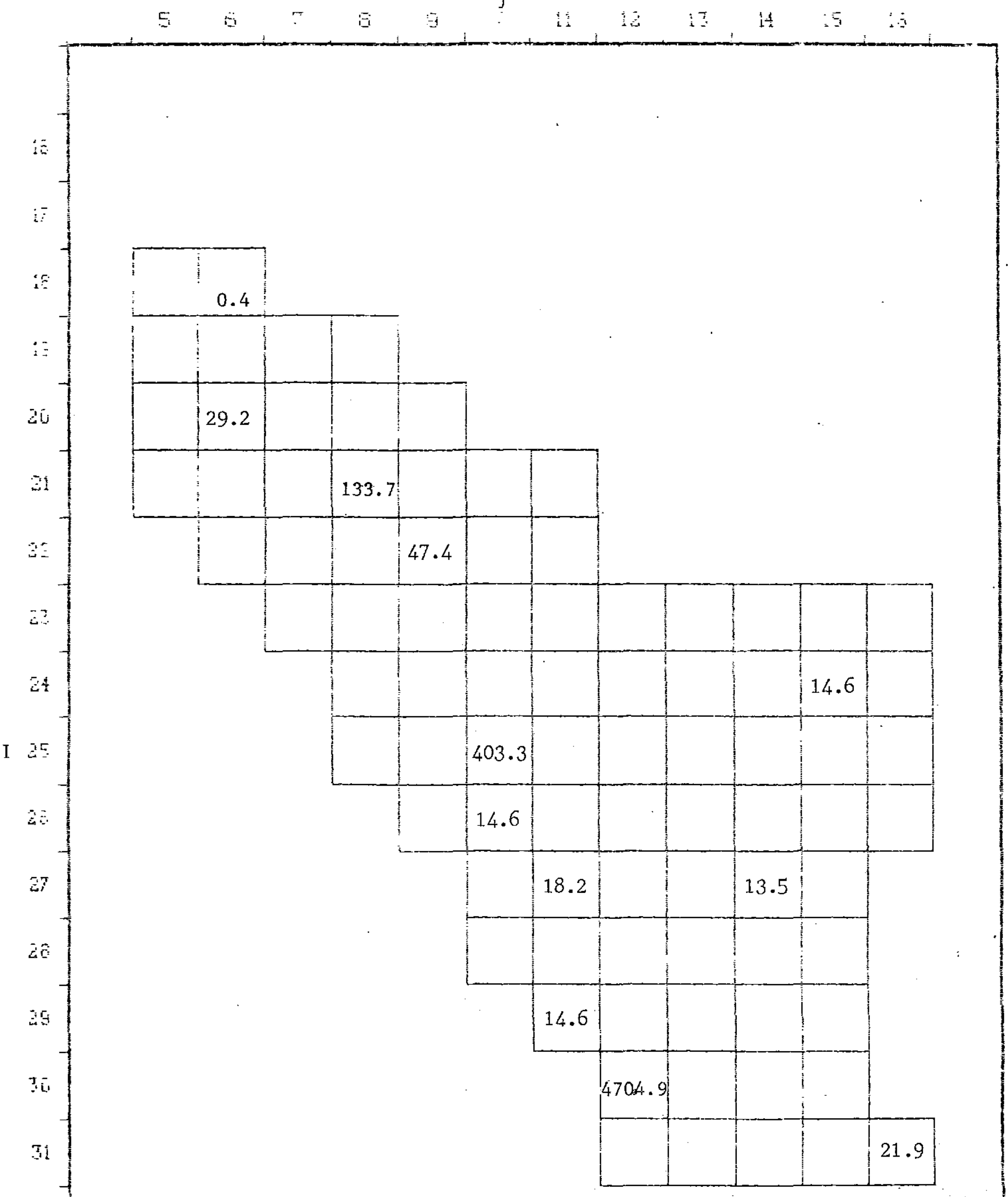


Fig. 31: Annual Municipal and Industrial Water Needs in 1976/77 for the Northern Boeuf–Tensas Basin in Millions of Gallons

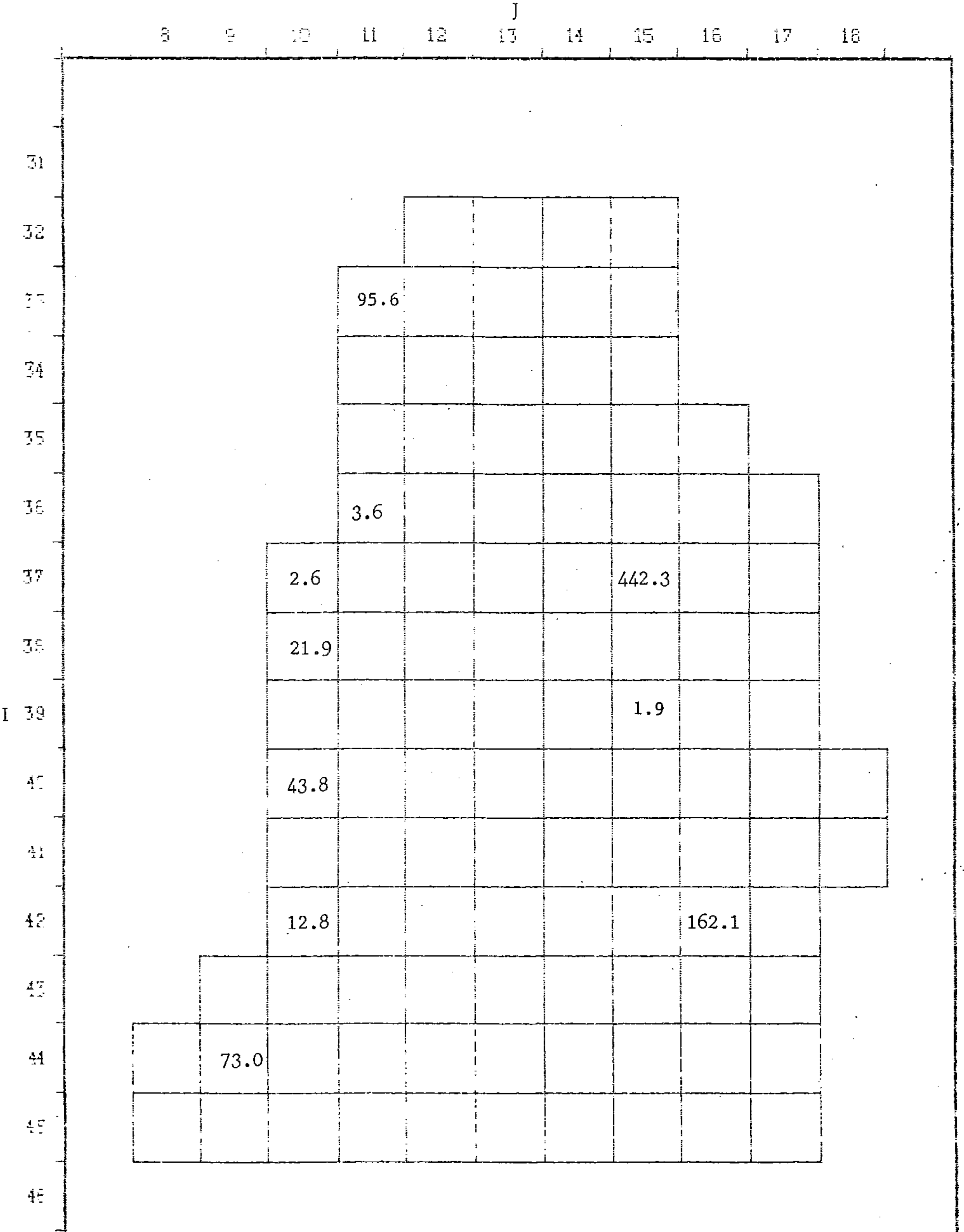


Fig. 32: Annual Municipal and Industrial Water Needs in 1976/77 for the Southern Boeuf–Tensas Basin in Millions of Gallons

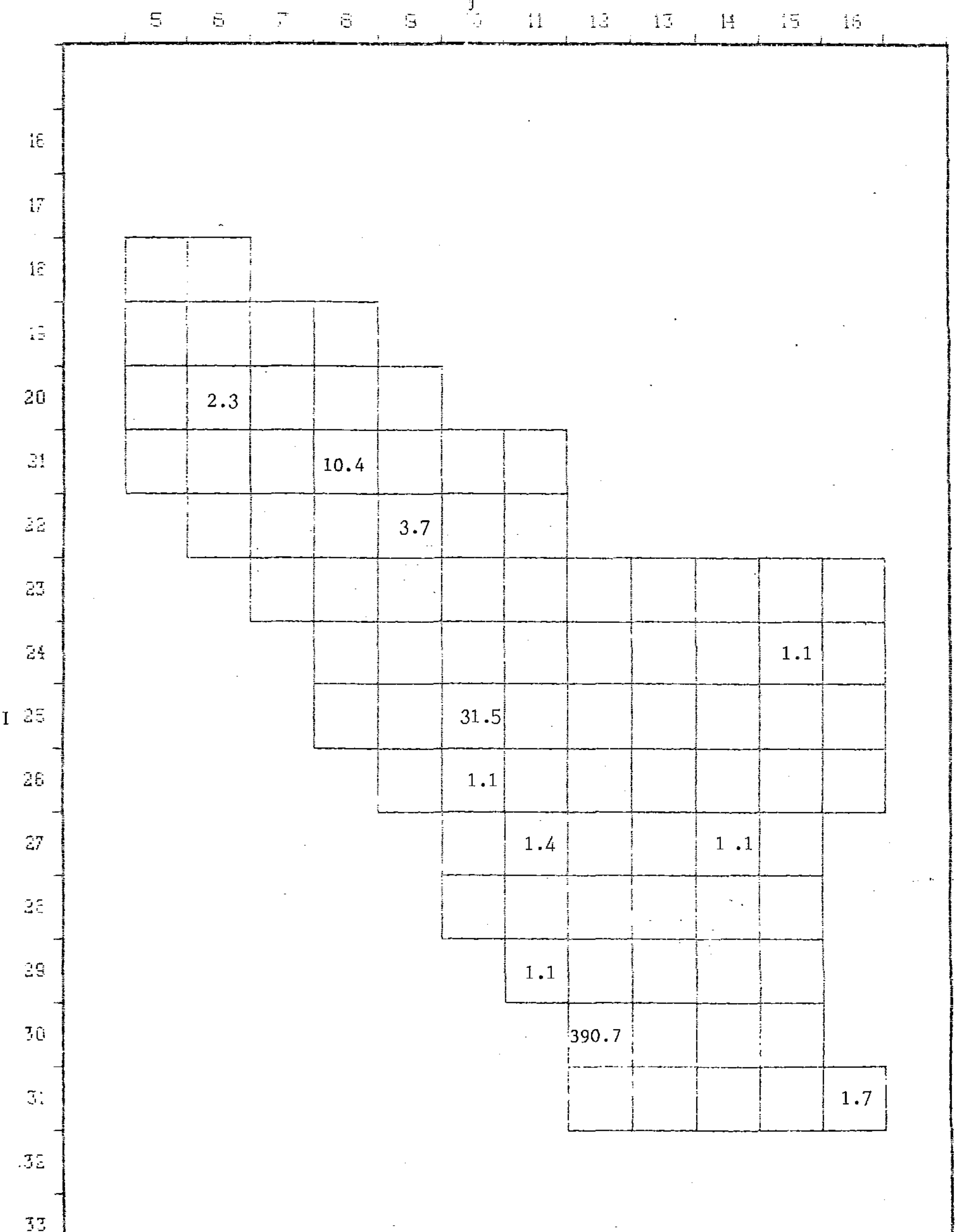


Fig. 33: Municipal and Industrial Water Needs for January (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

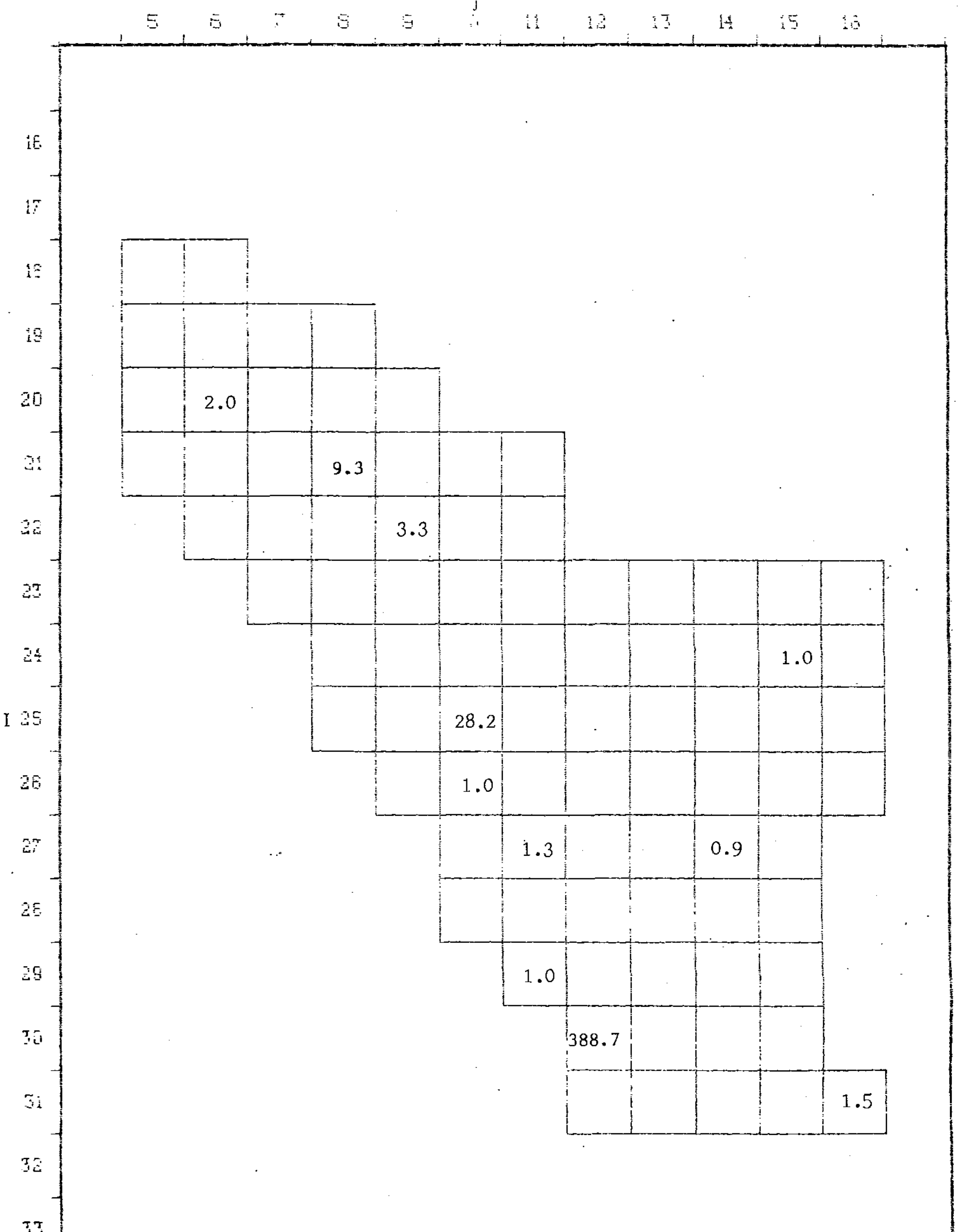


Fig. 34: Municipal and Industrial Water Needs for February (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

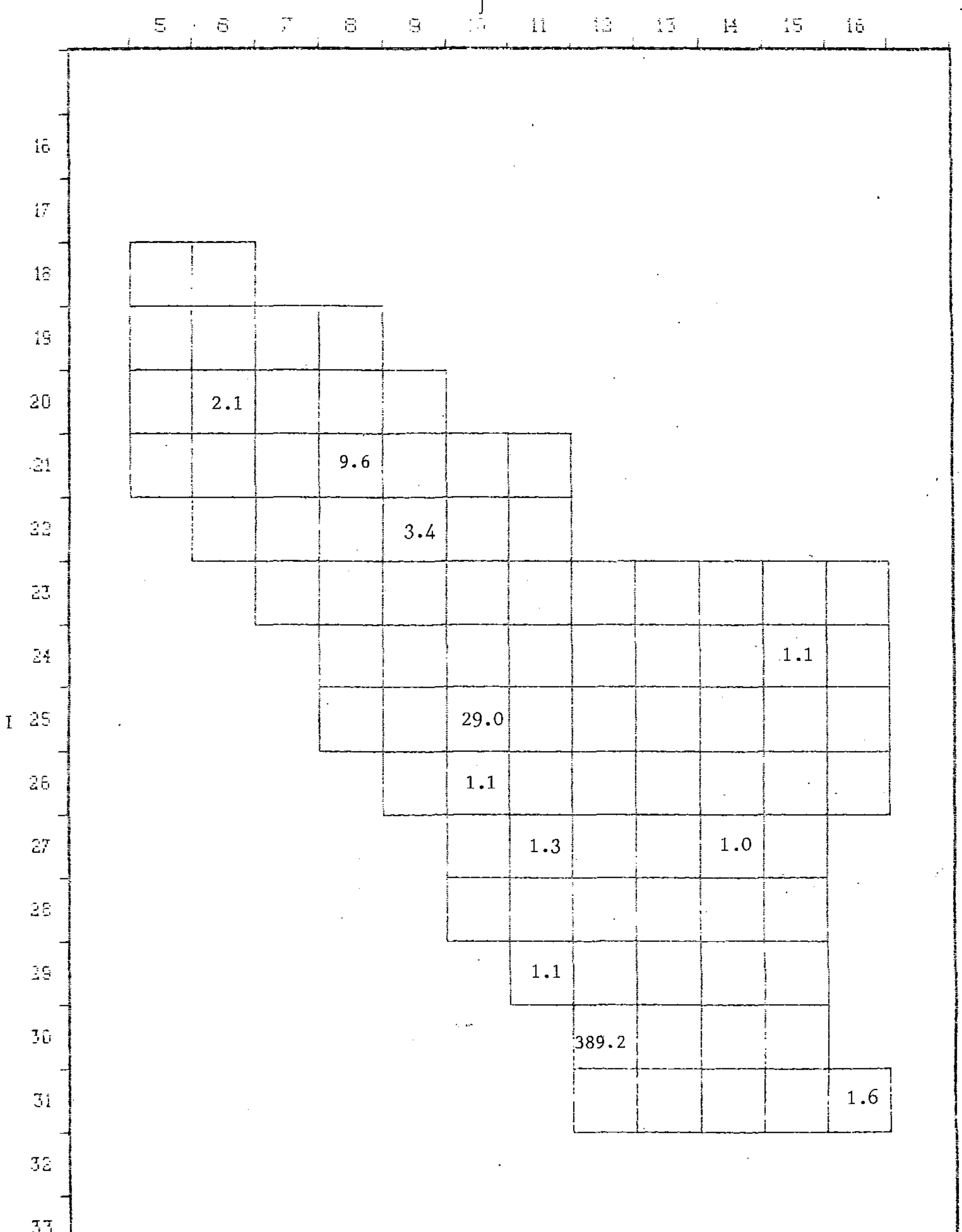


Fig. 35: Municipal and Industrial Water Needs for March (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

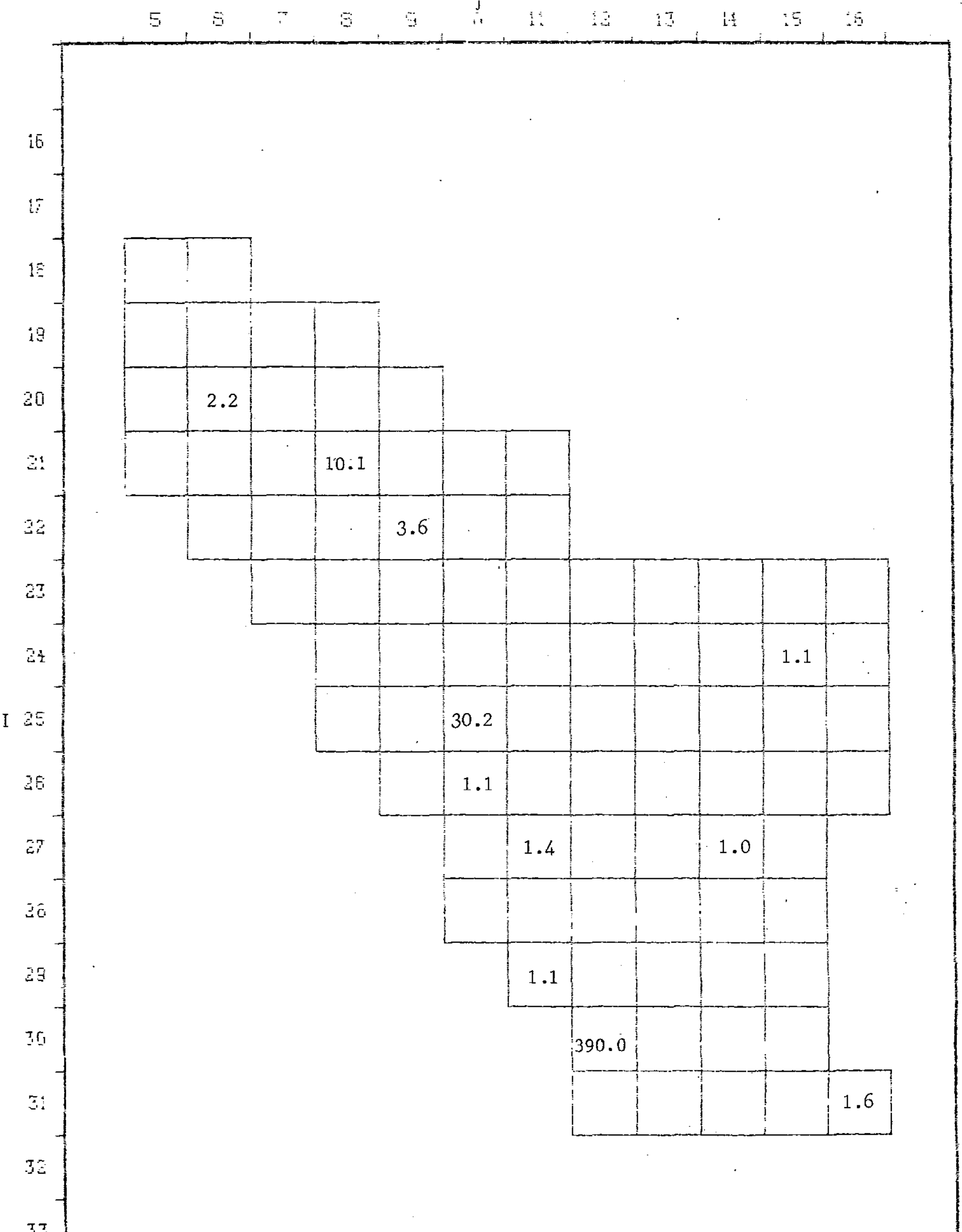


Fig. 36: Municipal and Industrial Water Needs for April (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

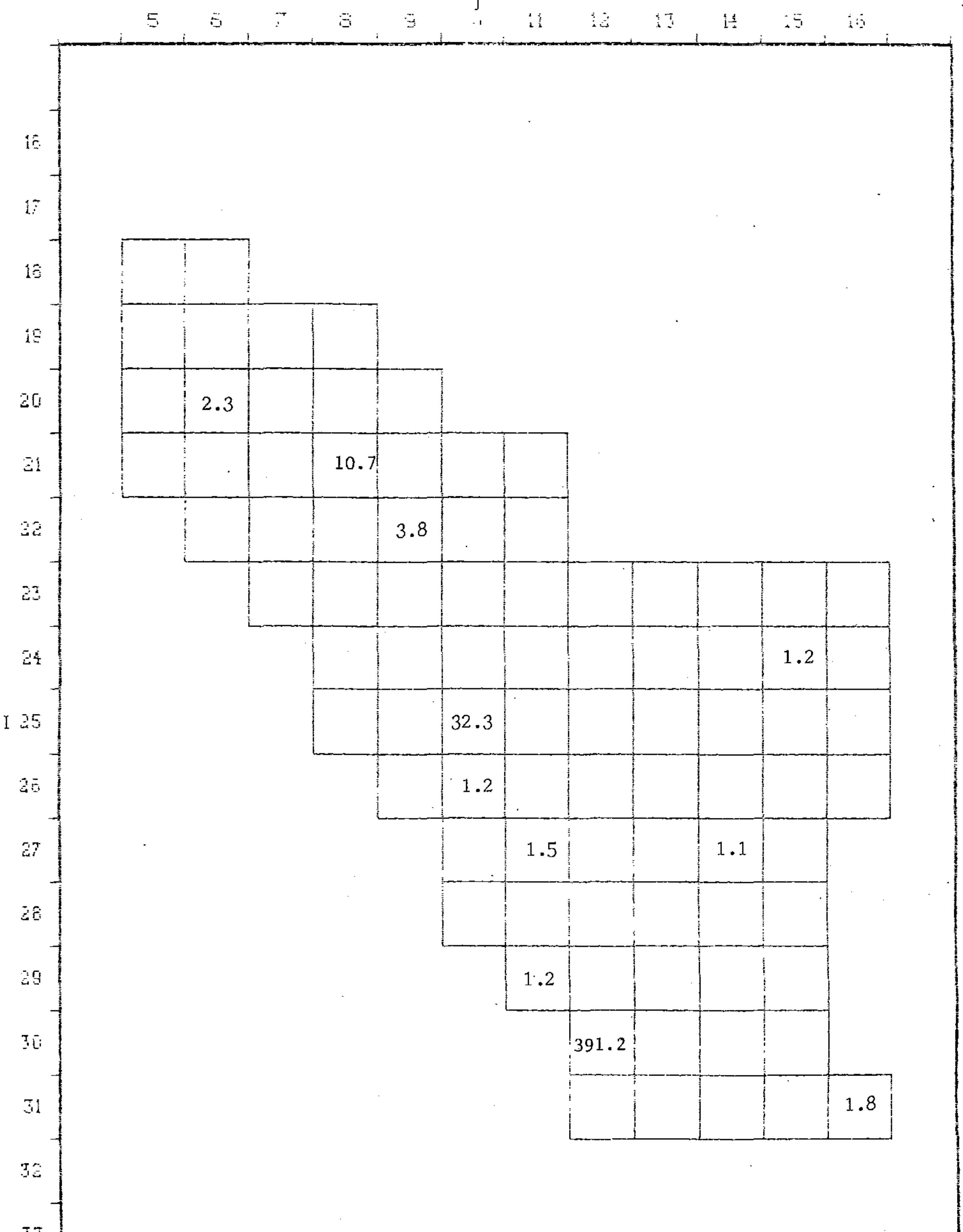


Fig. 37: Municipal and Industrial Water Needs for May (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

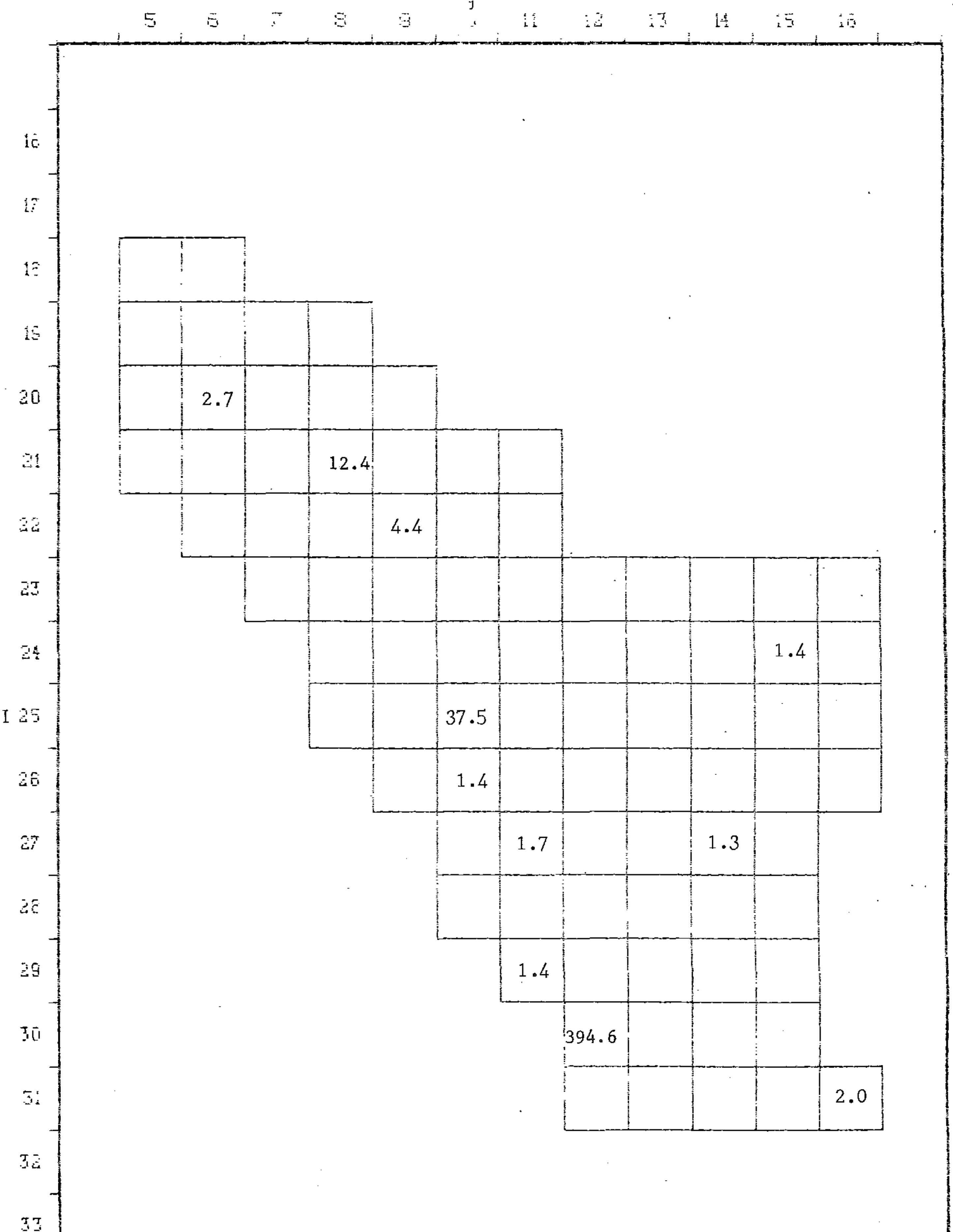


Fig. 38: Municipal and Industrial Water Needs for June (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

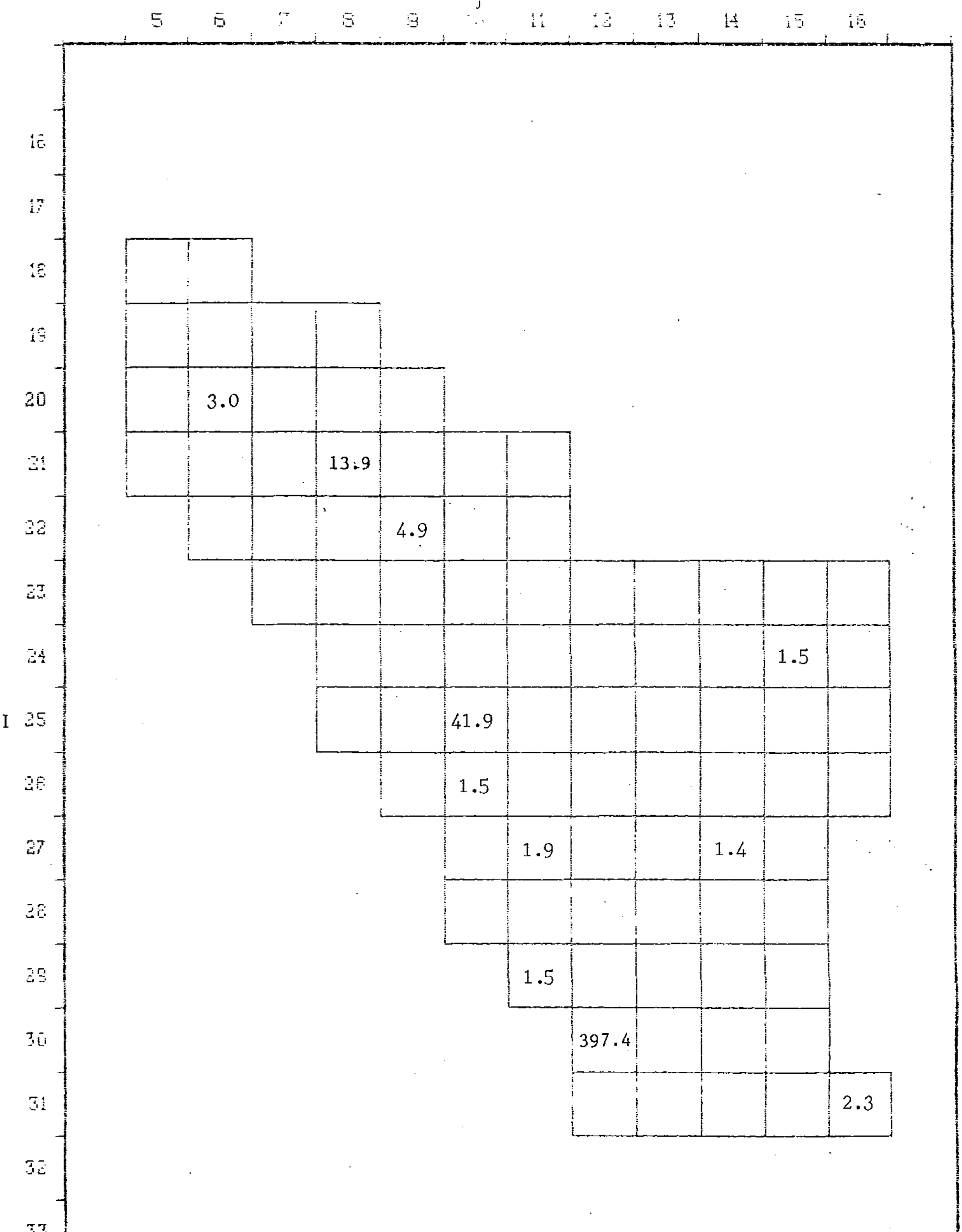


Fig. 39: Municipal and Industrial Water Needs for July (1976/77) for the Northern Boeuf–Tensas Basin in Millions of Gallons

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
16												
17												
18												
19												
20		3.1										
21				14.1								
22					5.0							
23												
24											1.5	
25						42.3						
26						1.5						
27							1.9			1.4		
28												
29							1.5					
30								397.6				
31												2.3
32												
33												

Fig. 40: Municipal and Industrial Water Needs for August (1976/77) for the Northern Boeuf–Tensas Basin in Millions of Gallons

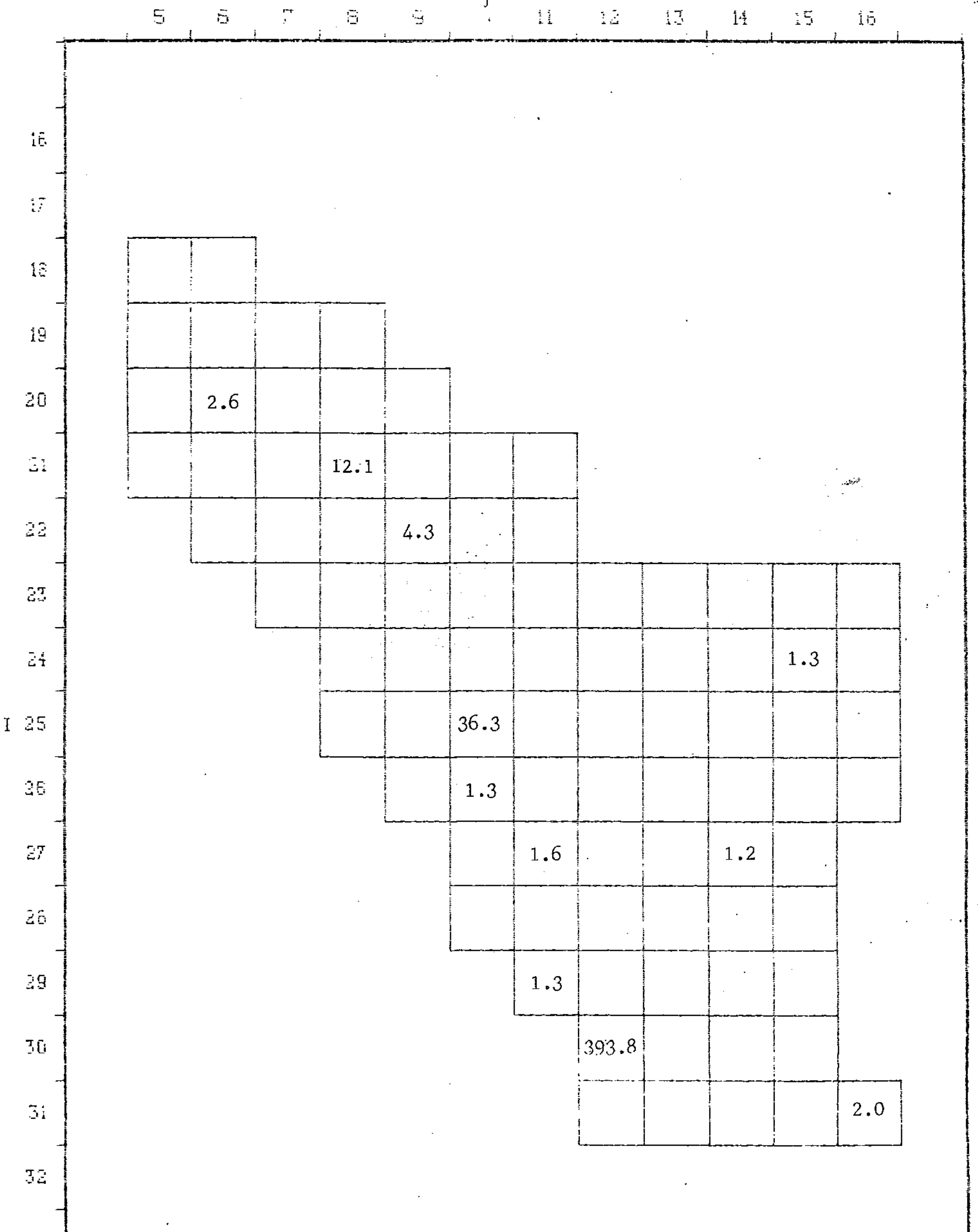


Fig. 41: Municipal and Industrial Water Needs for September (1976/77) for the Northern Boeuf–Tensas Basin in Millions of Gallons

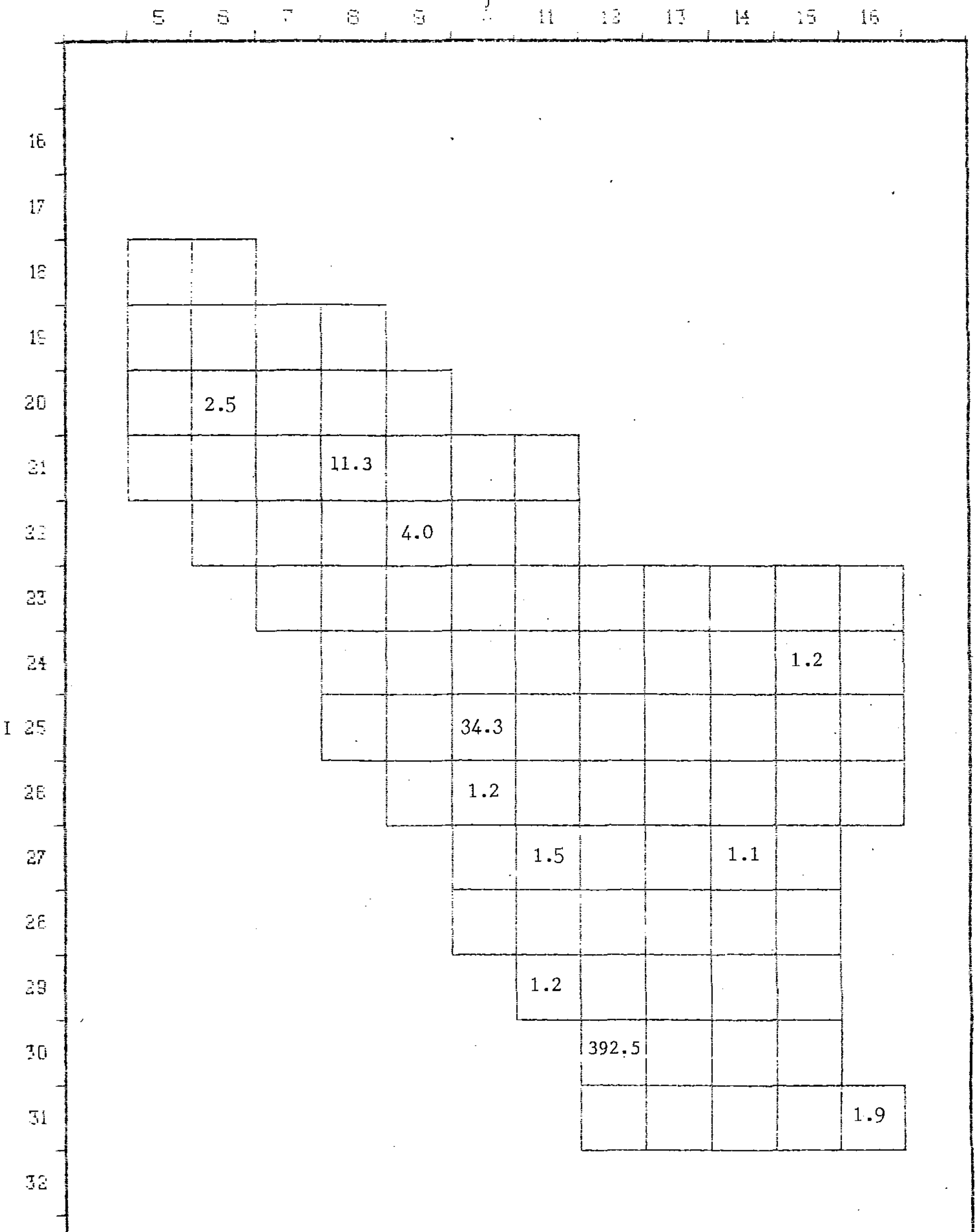


Fig. 42: Municipal and Industrial Water Needs for October (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
16												
17												
18												
19												
20		2.1										
21				9.6								
22					3.4							
23												
24											1.1	
25						29.0						
26						1.1						
27							1.3			1.0		
28												
29							1.1					
30								389.2				
31												1.6
32												
33												

Fig. 43: Municipal and Industrial Water Needs for November (1976/77) for the Northern Boeuf-Tensas Basin in Millions of Gallons

I \ J	5	6	7	8	9	10	11	12	13	14	15	16
16												
17												
18												
19												
20		2.2										
21				10.2								
22					3.6							
23												
24											1.1	
25						30.7						
26						1.1						
27							1.4			1.0		
28												
29							1.1					
30								390.2				
31												1.7
32												
33												

Fig. 44: Municipal and Industrial Water Needs for December (1976/77) for the Northern Boeuf–Tensas Basin in Millions of Gallons

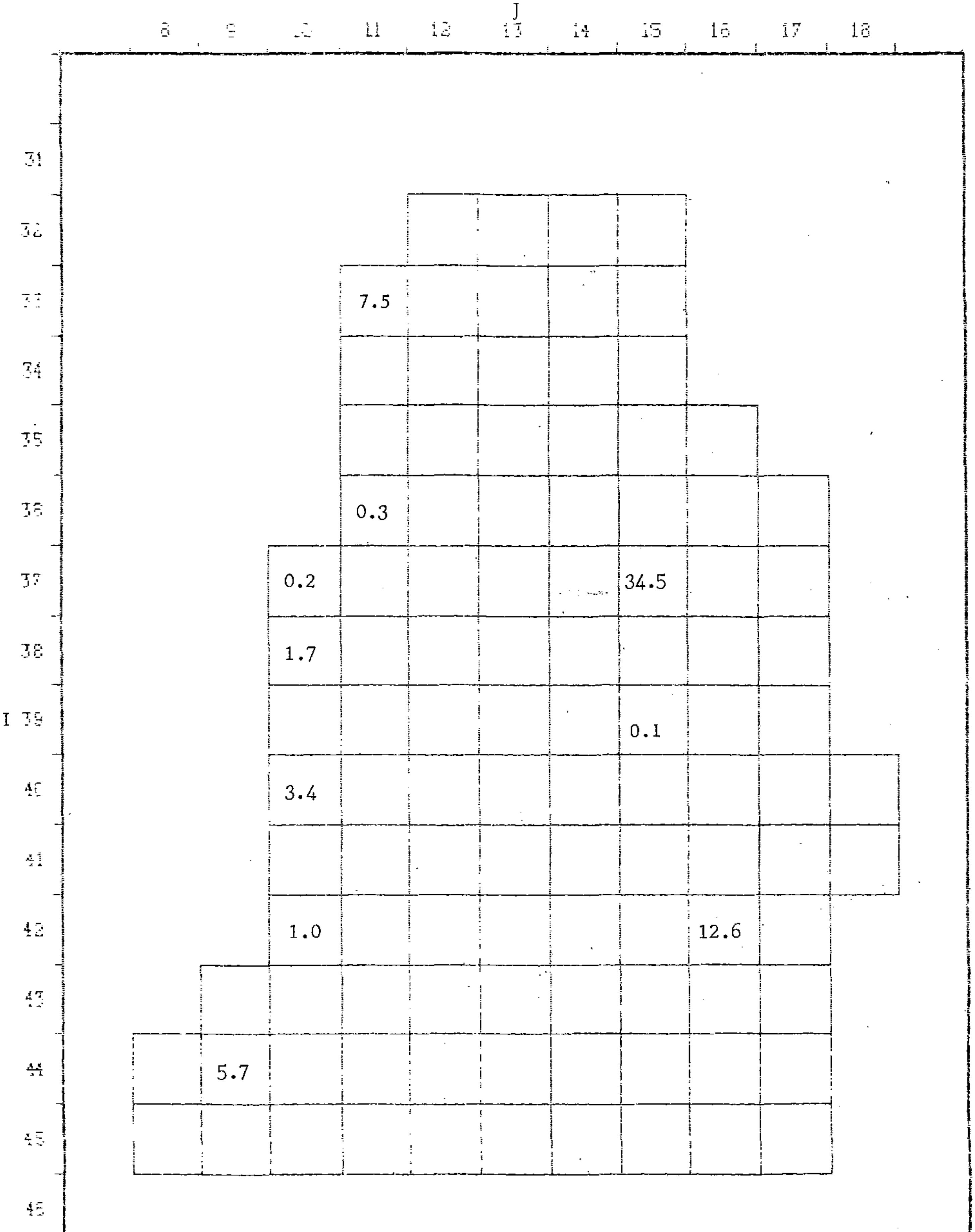


Fig. 45: Municipal and Industrial Water Needs for January (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

I \ J	8	9	10	11	12	13	14	15	16	17	18
31											
32											
33				6.7							
34											
35											
36				0.3							
37			0.2					31.0			
38			1.5								
39								0.1			
40			3.1								
41											
42			0.9						11.3		
43											
44		5.1									
45											
46											

Fig. 46: Municipal and Industrial Water Needs for February (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

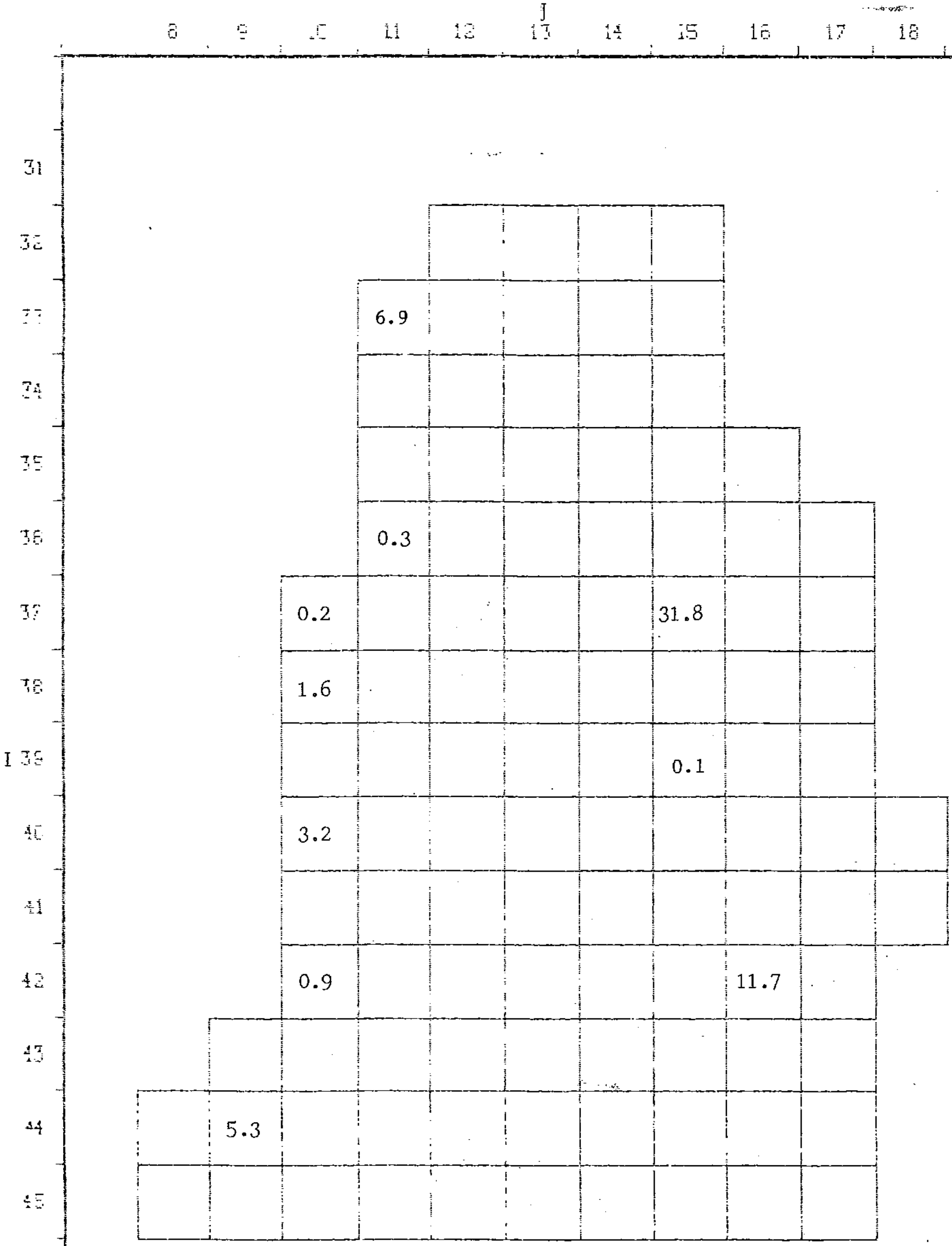


Fig. 47: Municipal and Industrial Water Needs for March (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

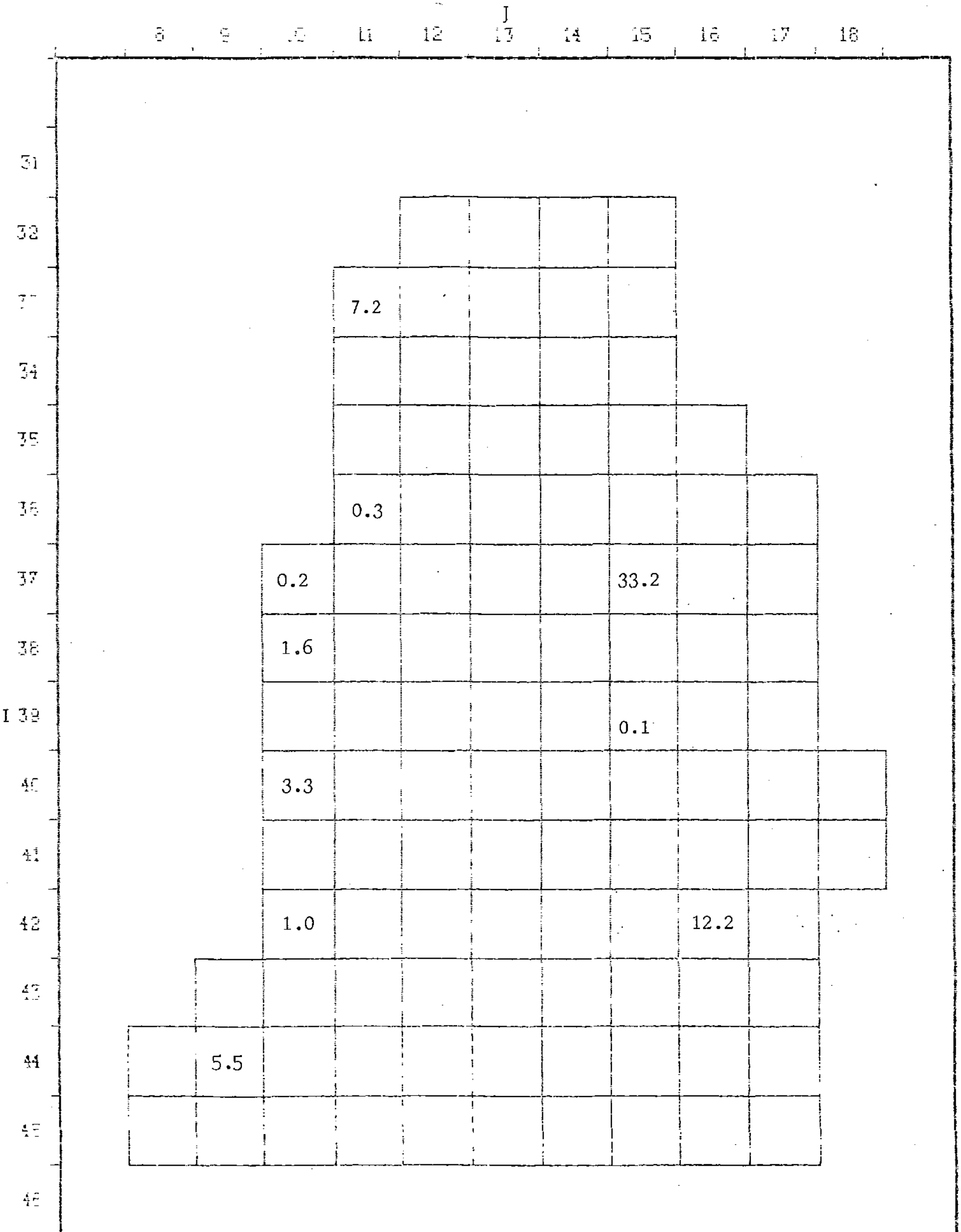


Fig. 48: Municipal and Industrial Water Needs for April (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

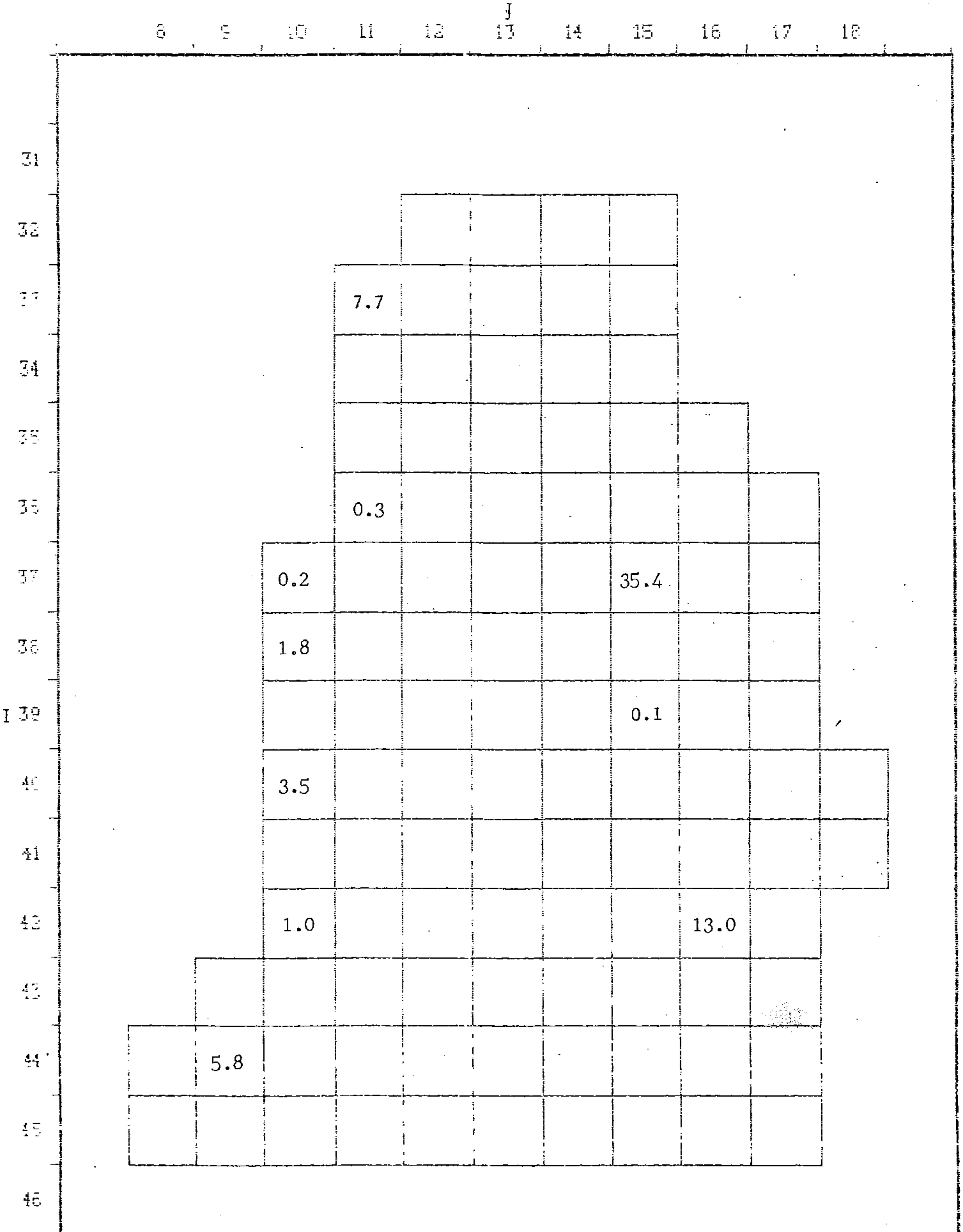


Fig. 49: Municipal and Industrial Water Needs for May (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

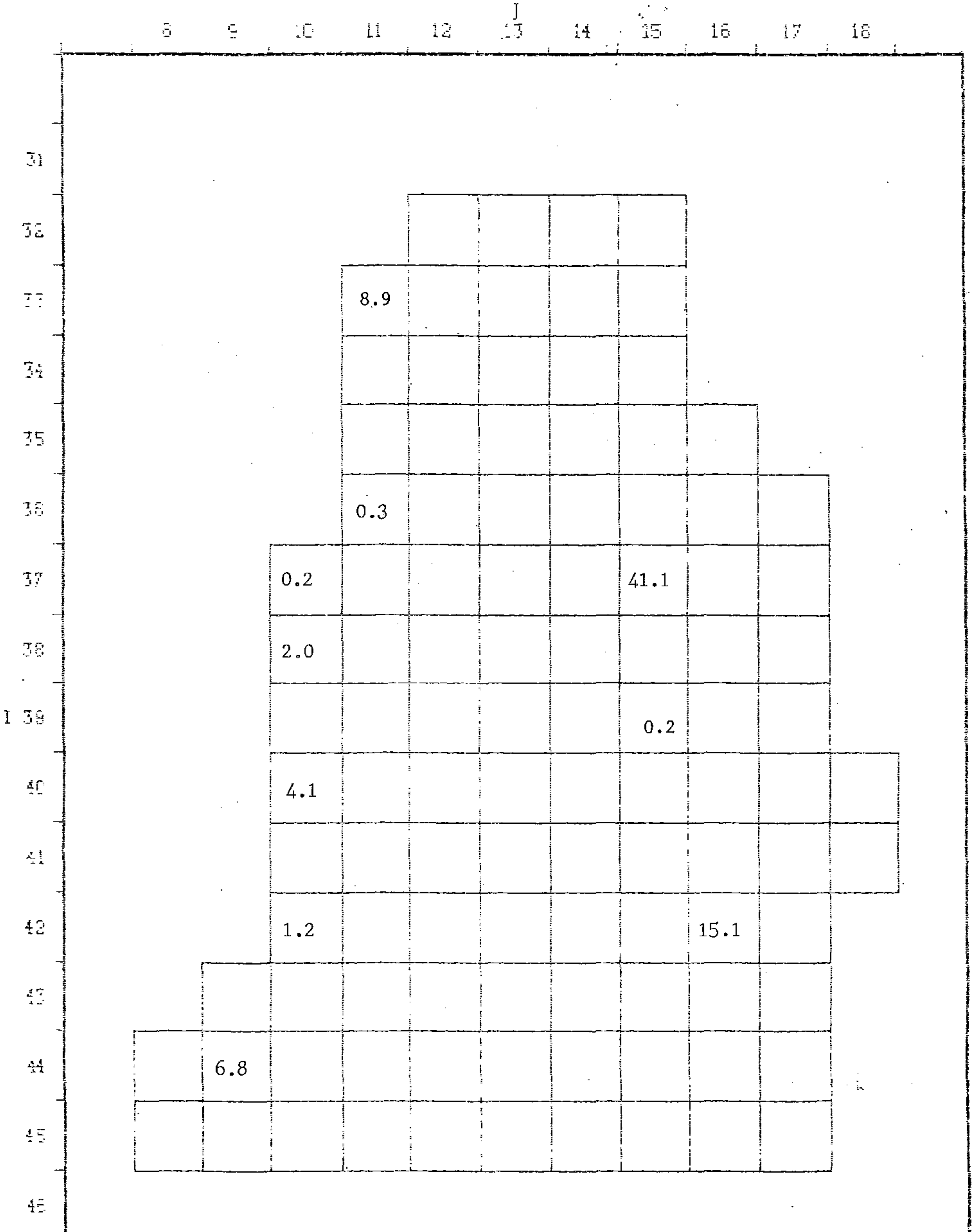


Fig. 50: Municipal and Industrial Water Needs for June (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

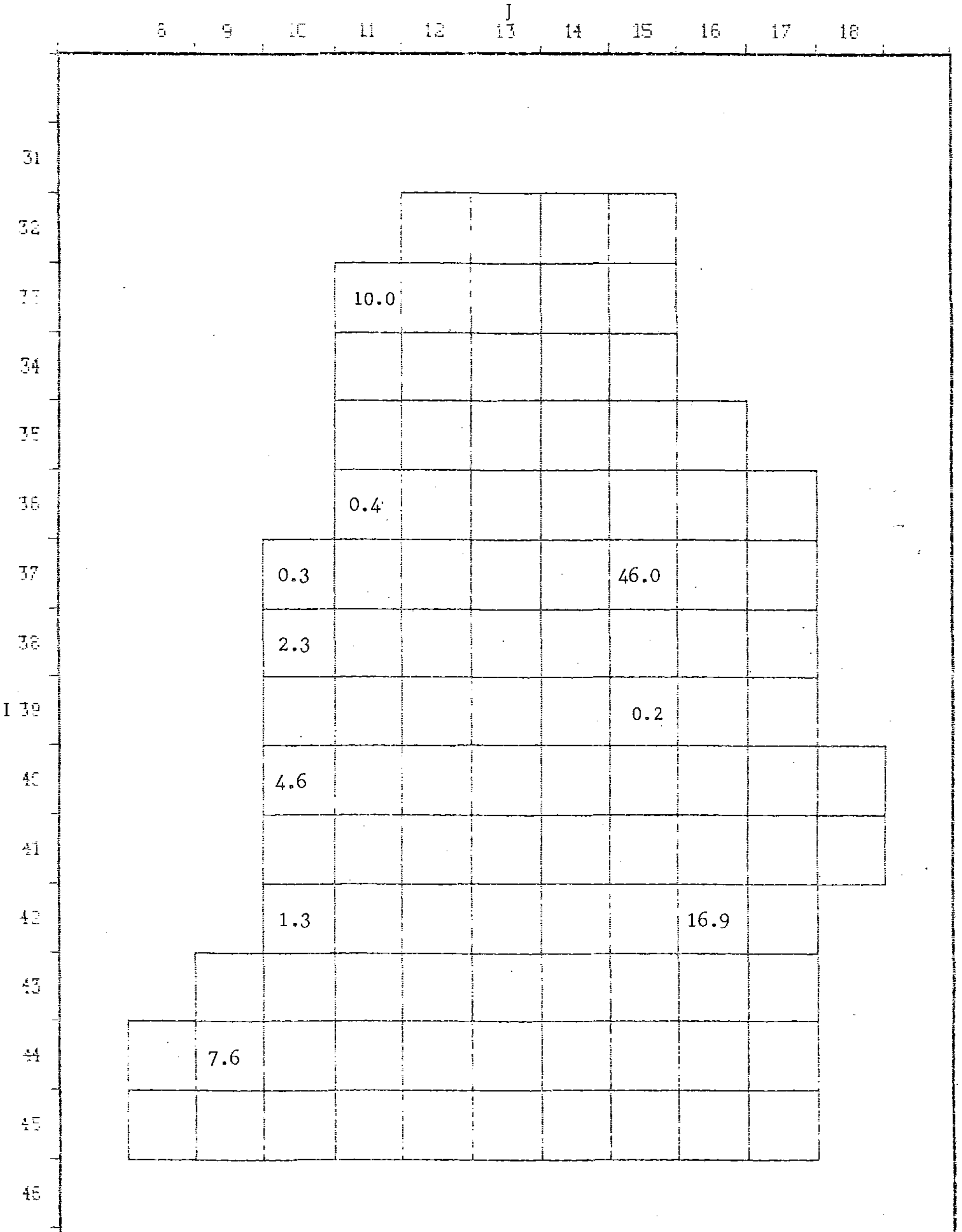


Fig. 51: Municipal and Industrial Water Needs for July (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

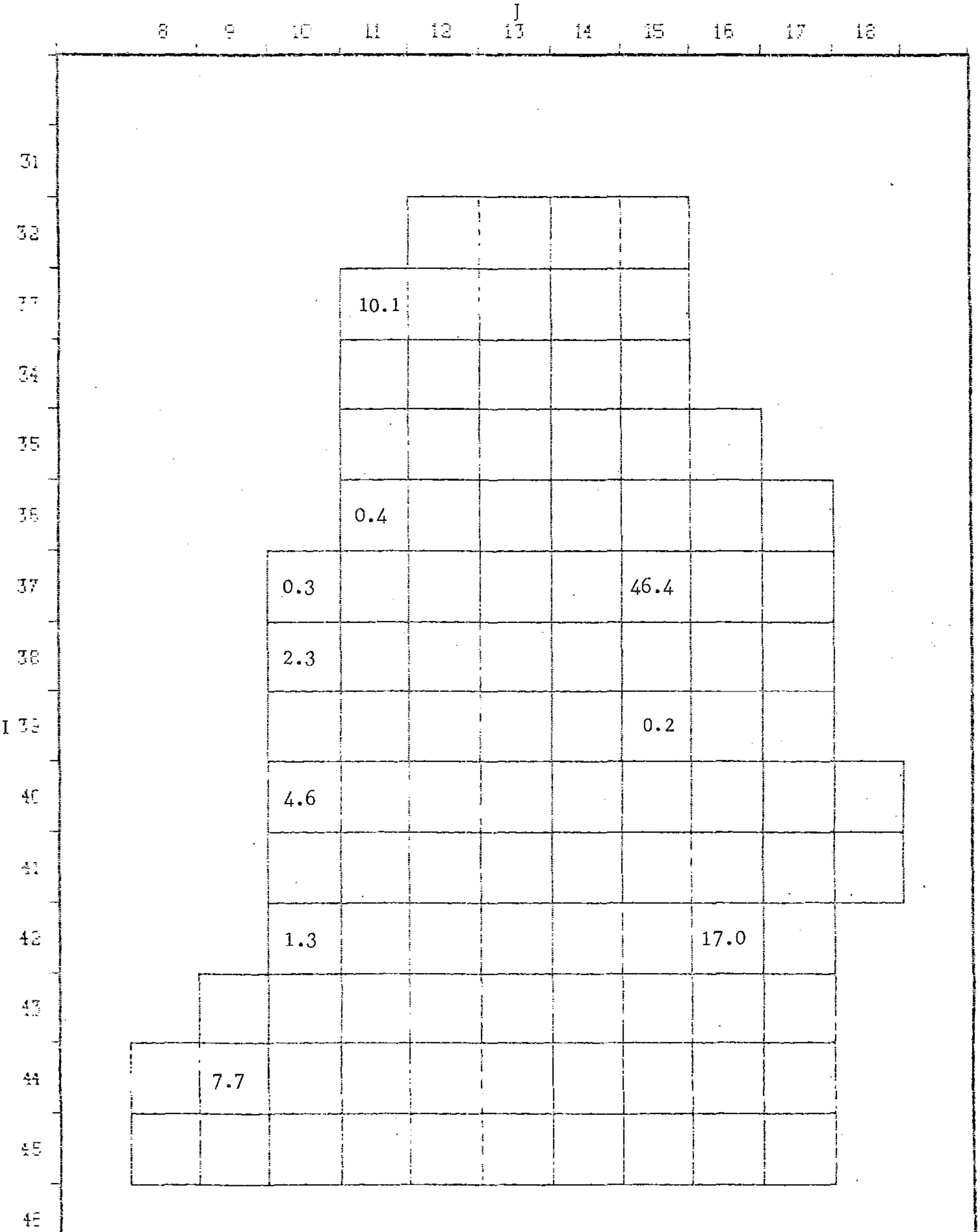


Fig. 52: Municipal and Industrial Water Needs for August (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

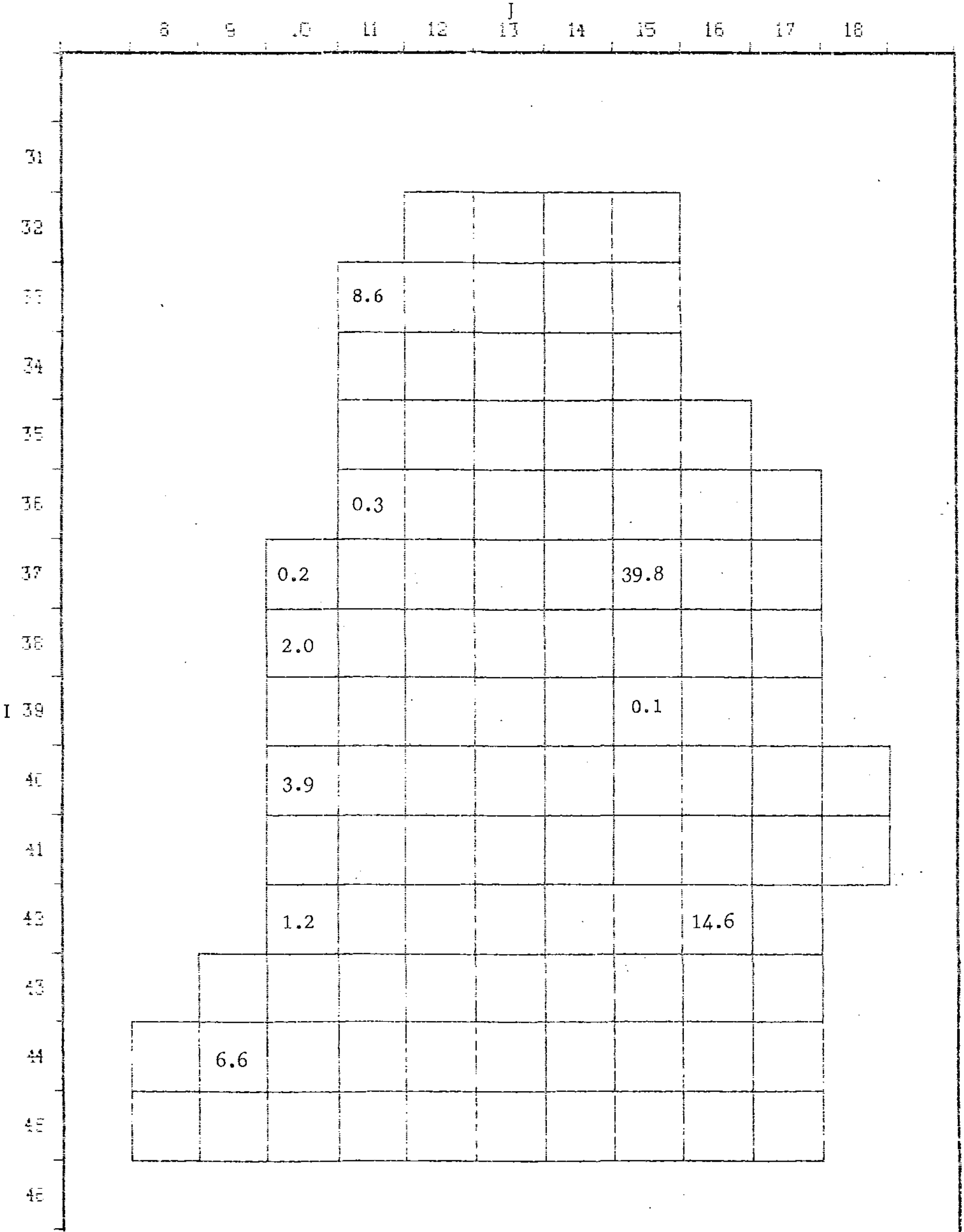


Fig. 53: Municipal and Industrial Water Needs for September (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

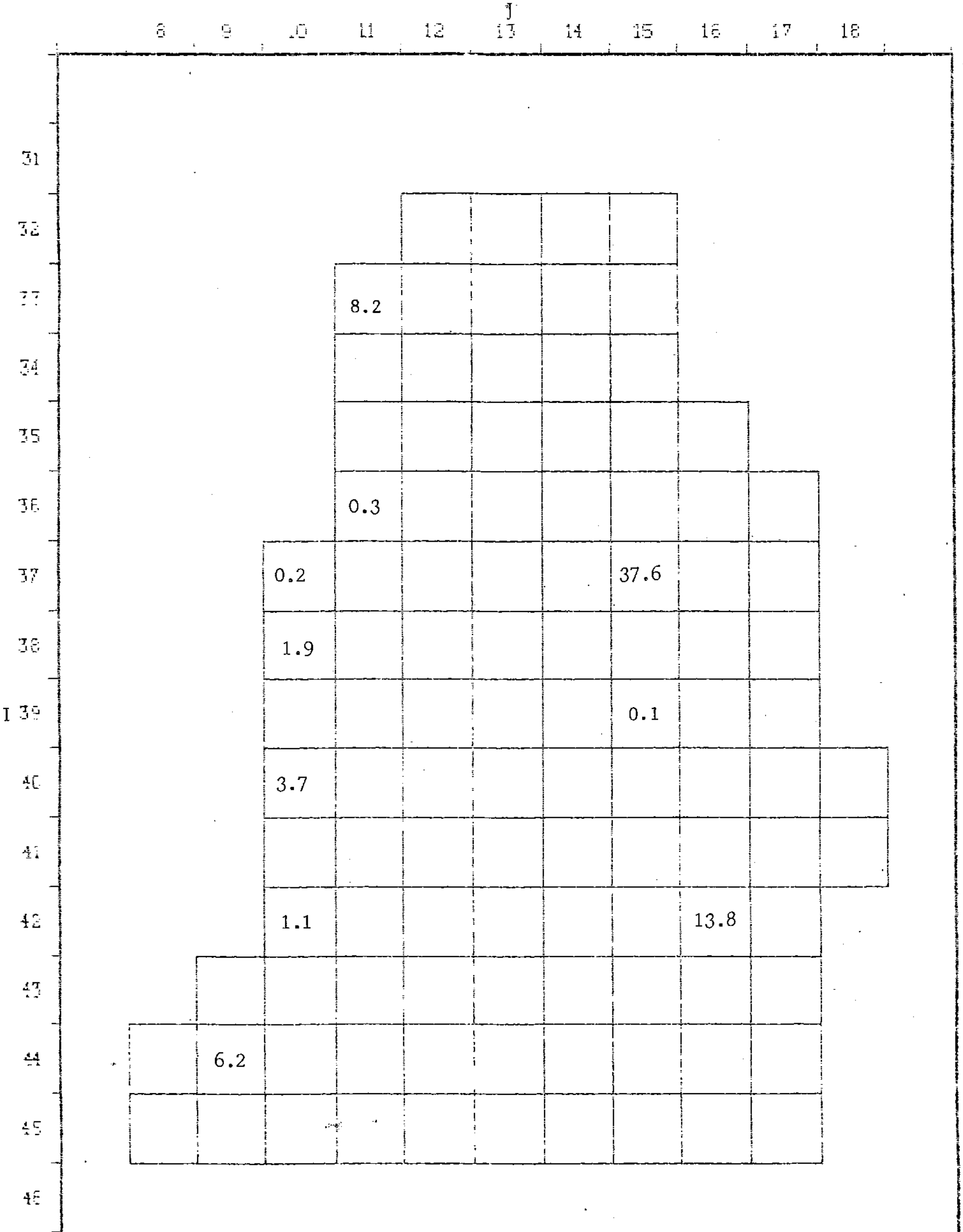


Fig. 54: Municipal and Industrial Water Needs for October (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

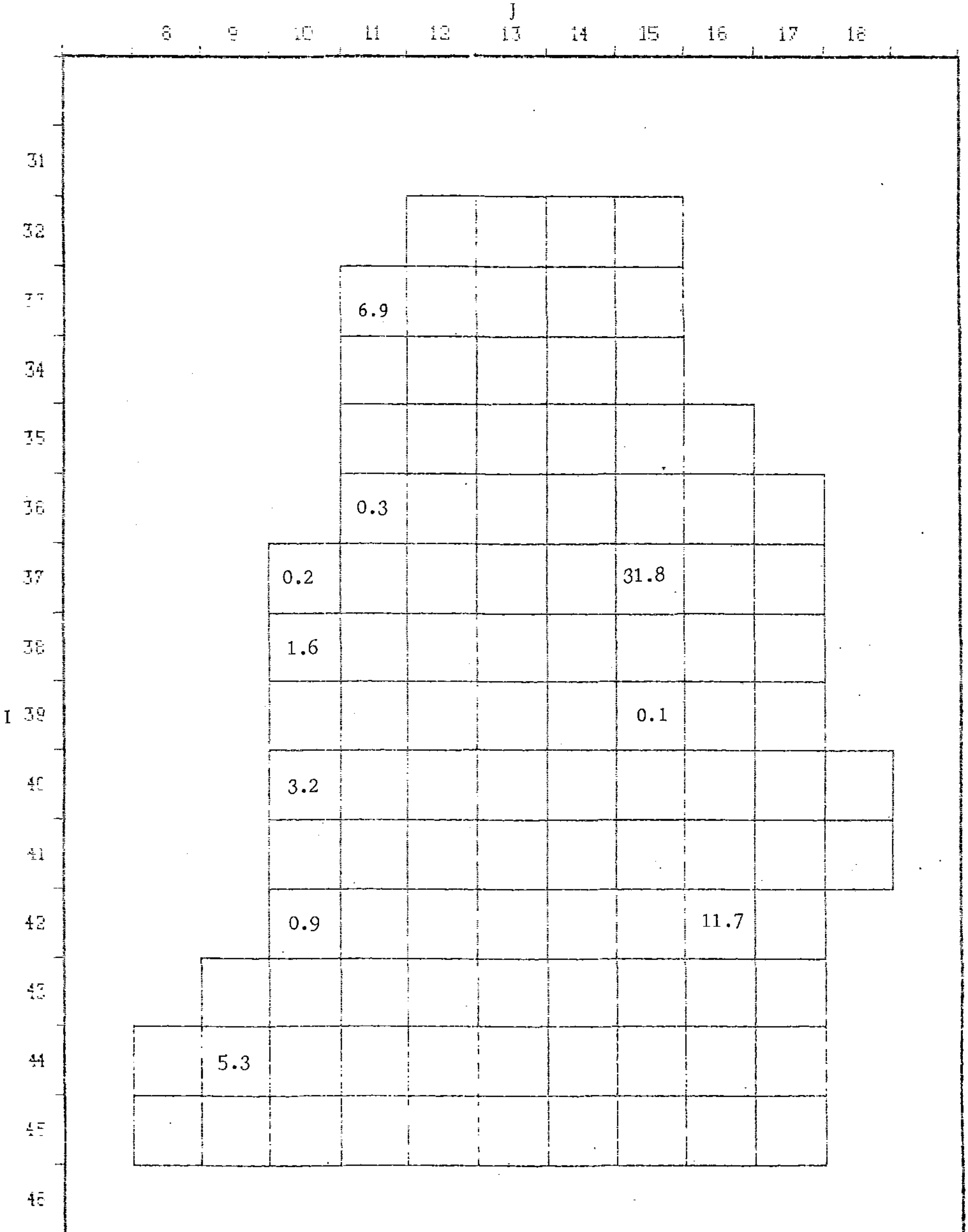


Fig. 55: Municipal and Industrial Water Needs for November (1976/77) for the Southern Boeuf–Tensas Basin in Millions of Gallons

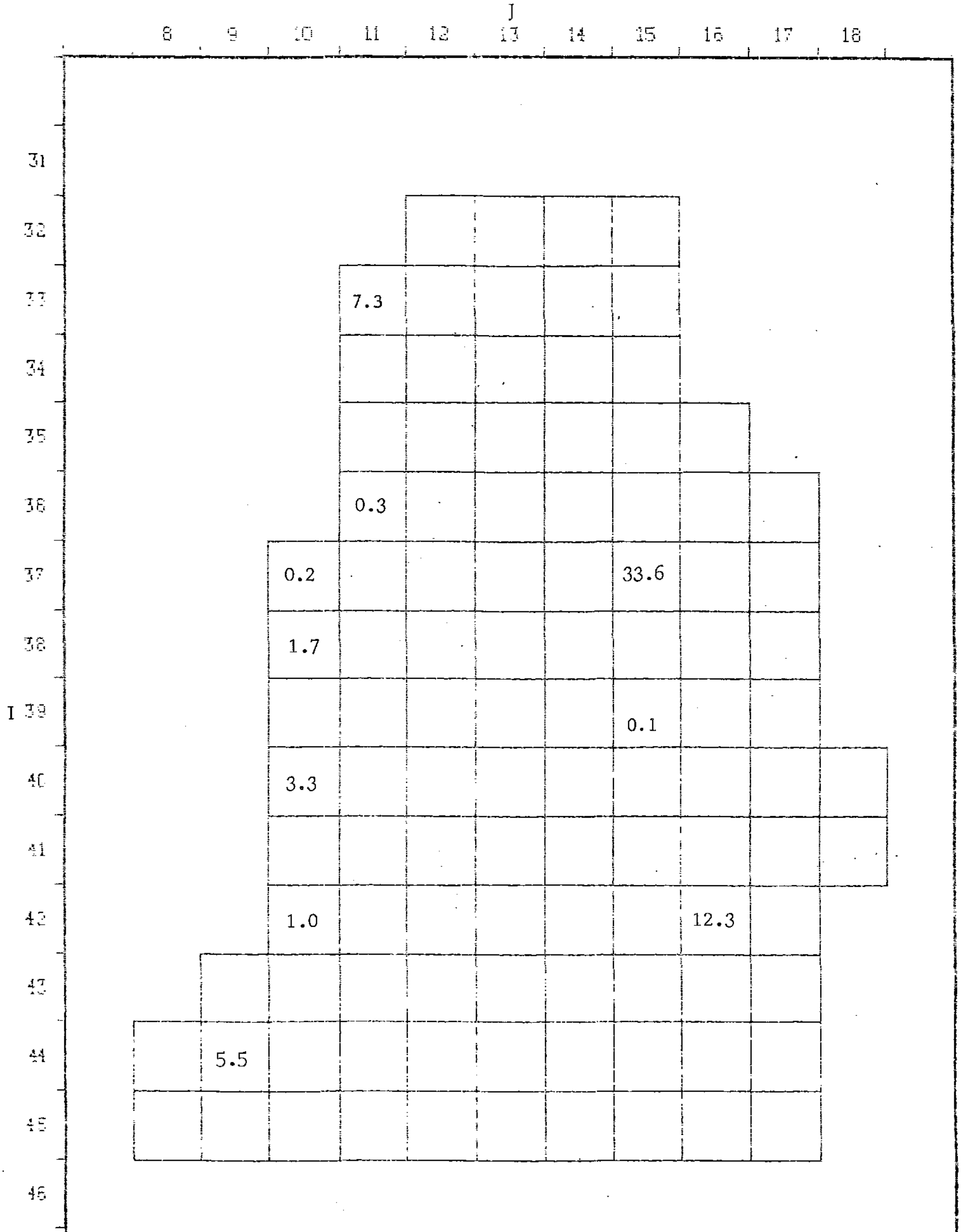


Fig. 56: Municipal and Industrial Water Needs for December (1976/77) for the Southern Boeuf-Tensas Basin in Millions of Gallons

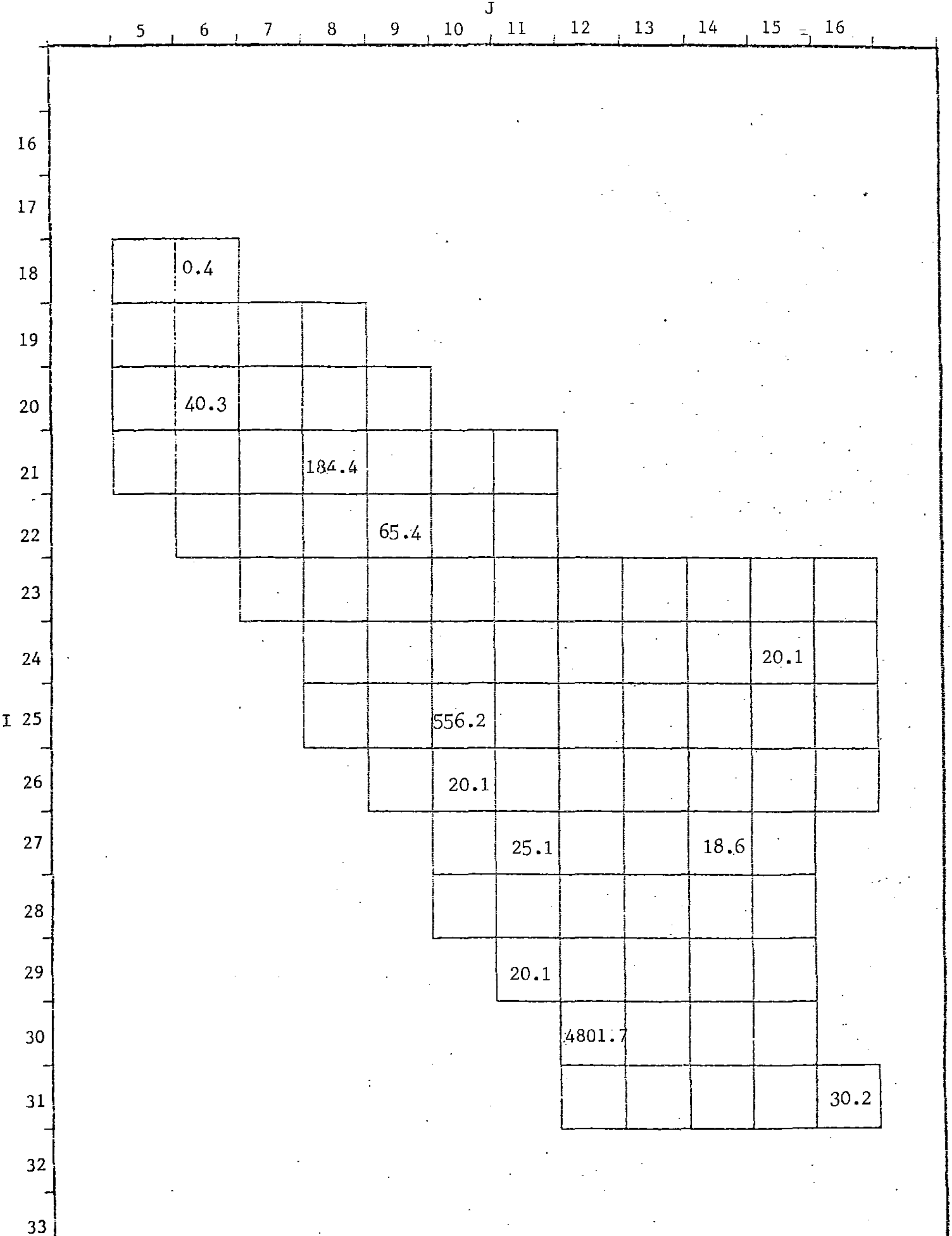


Fig. 57: Annual Municipal and Industrial Water Needs in 1980 for the Northern Boeuf–Tensas Basin in Millions of Gallons

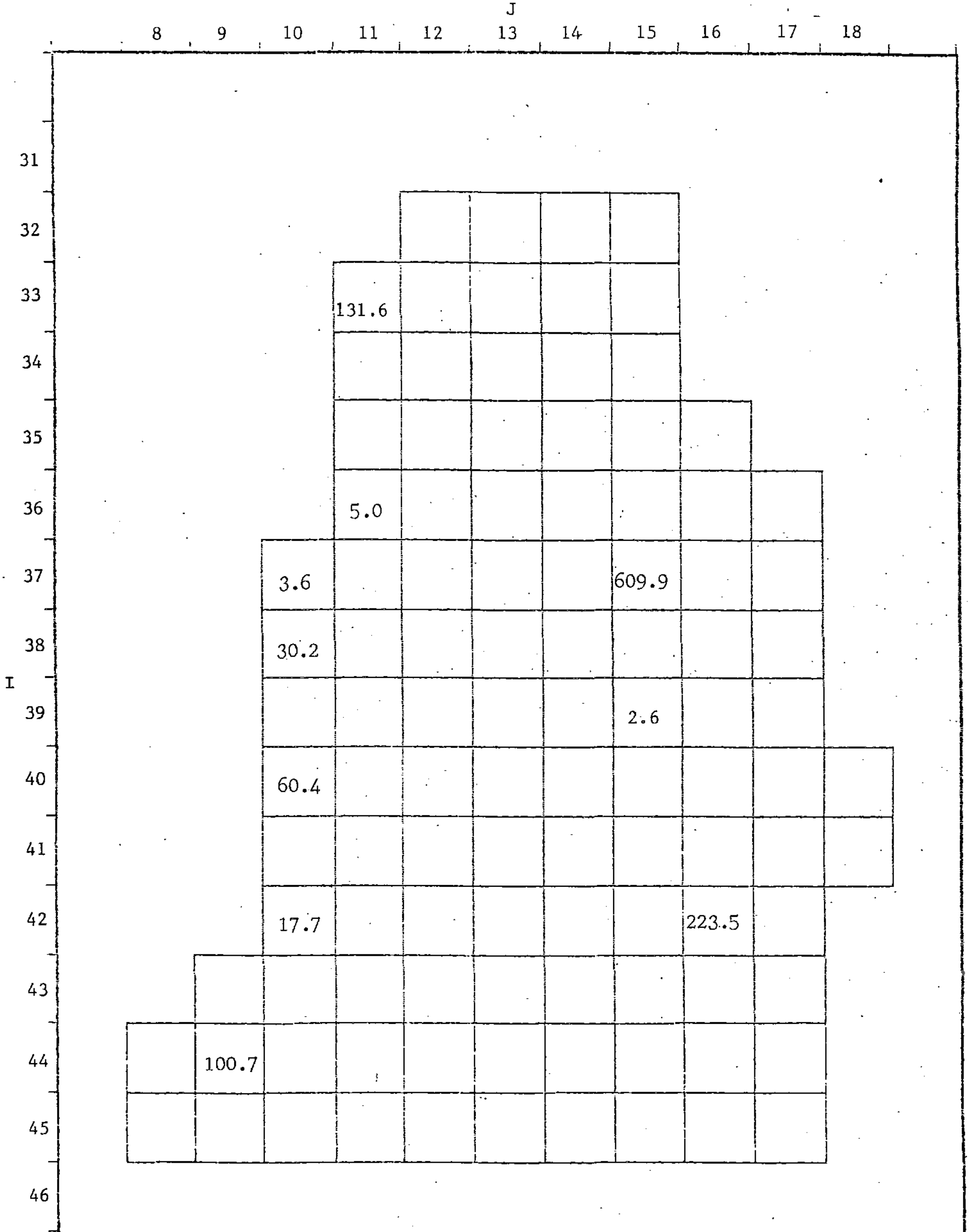


Fig. 58: Annual Municipal and Industrial Water Needs in 1980 for the Southern Boeuf-Tensas Basin in Millions of Gallons

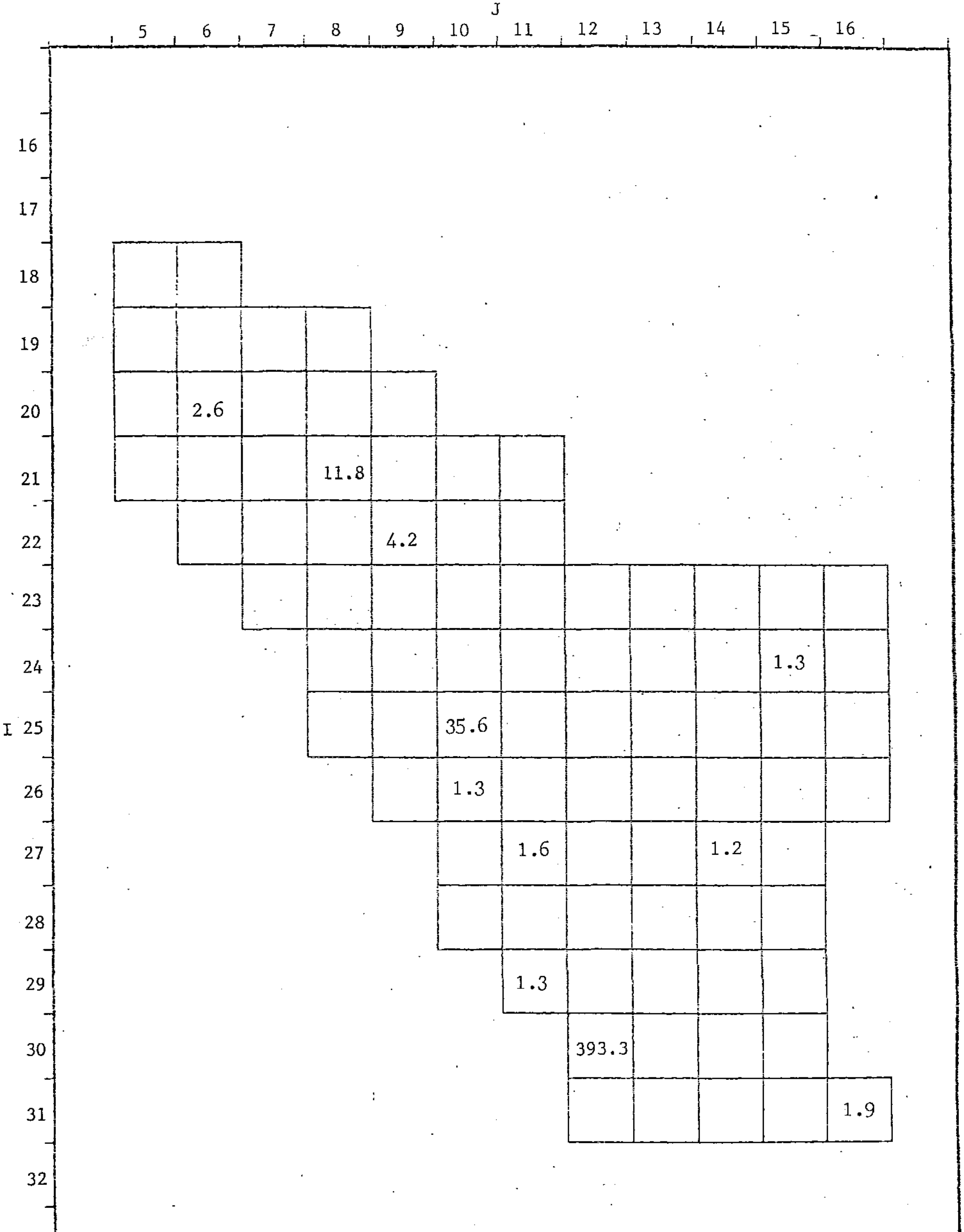


Fig. 59: Municipal and Industrial Water Needs for January (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

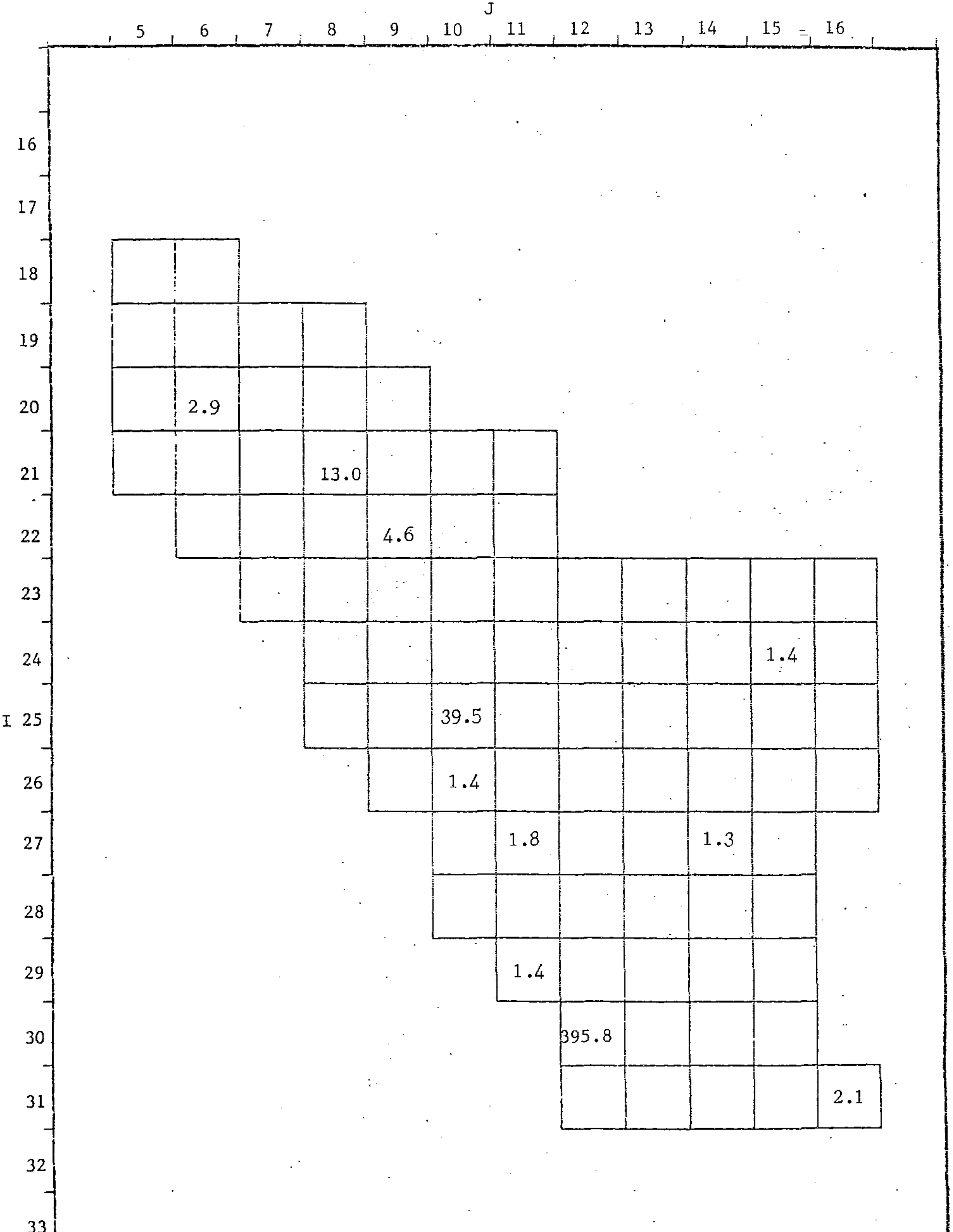


Fig. 60 : Municipal and Industrial Water Needs for February (1980) for the Northern Boeuf–Tensas Basin in Millions of Gallons

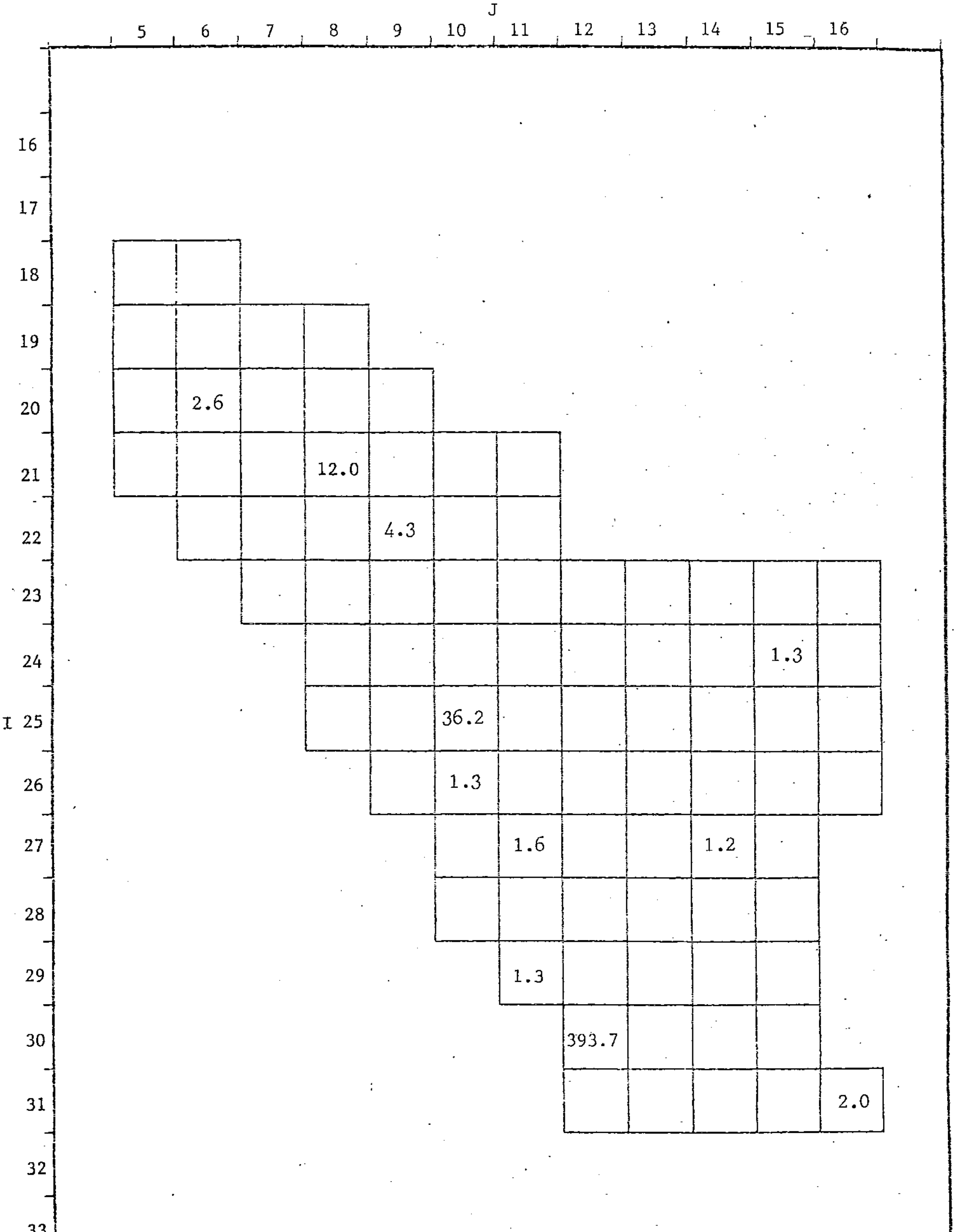


Fig. 61 : Municipal and Industrial Water Needs for March (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

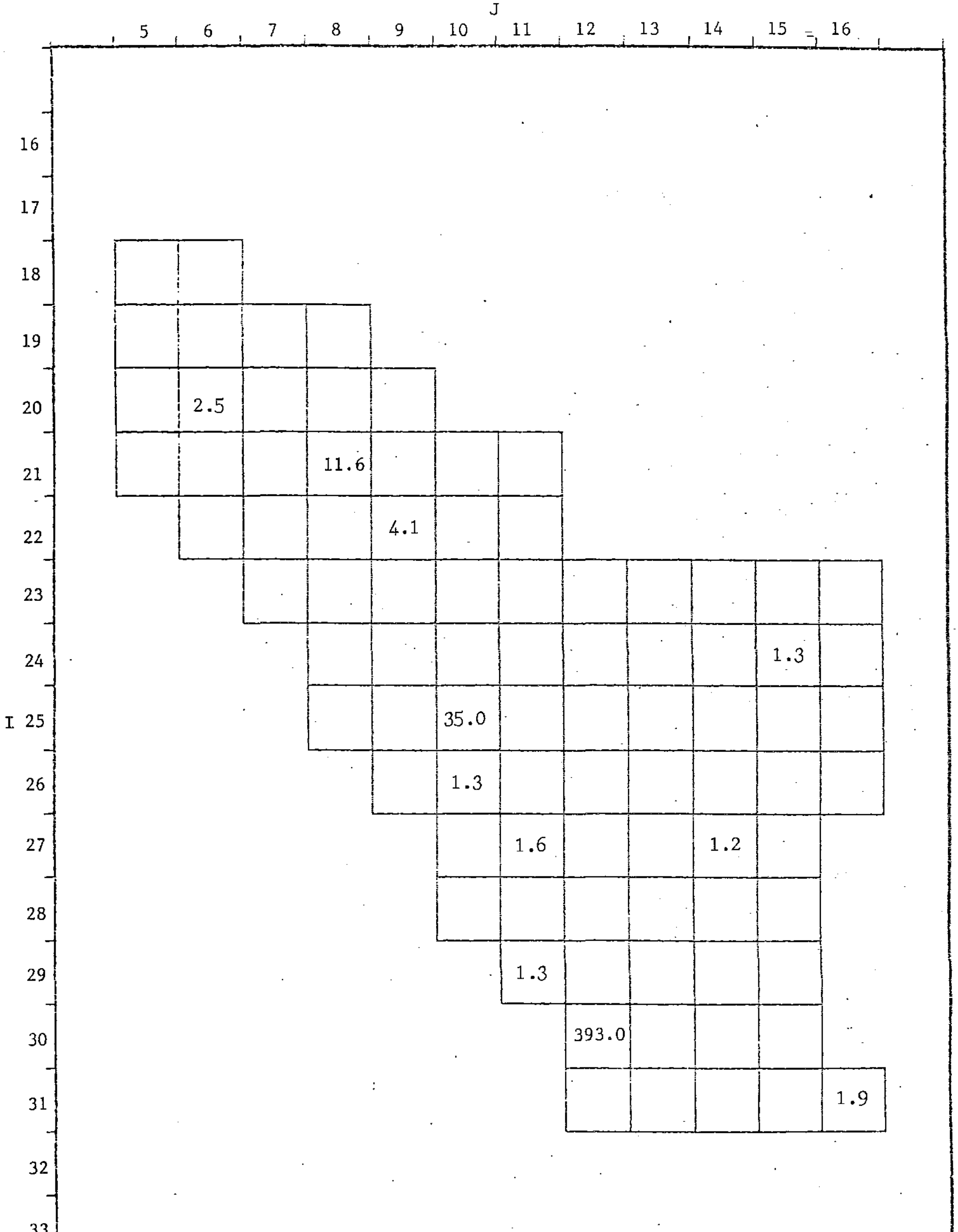


Fig. 62: Municipal and Industrial Water Needs for April (1980) for the Northern Boeuf–Tensas Basin in Millions of Gallons

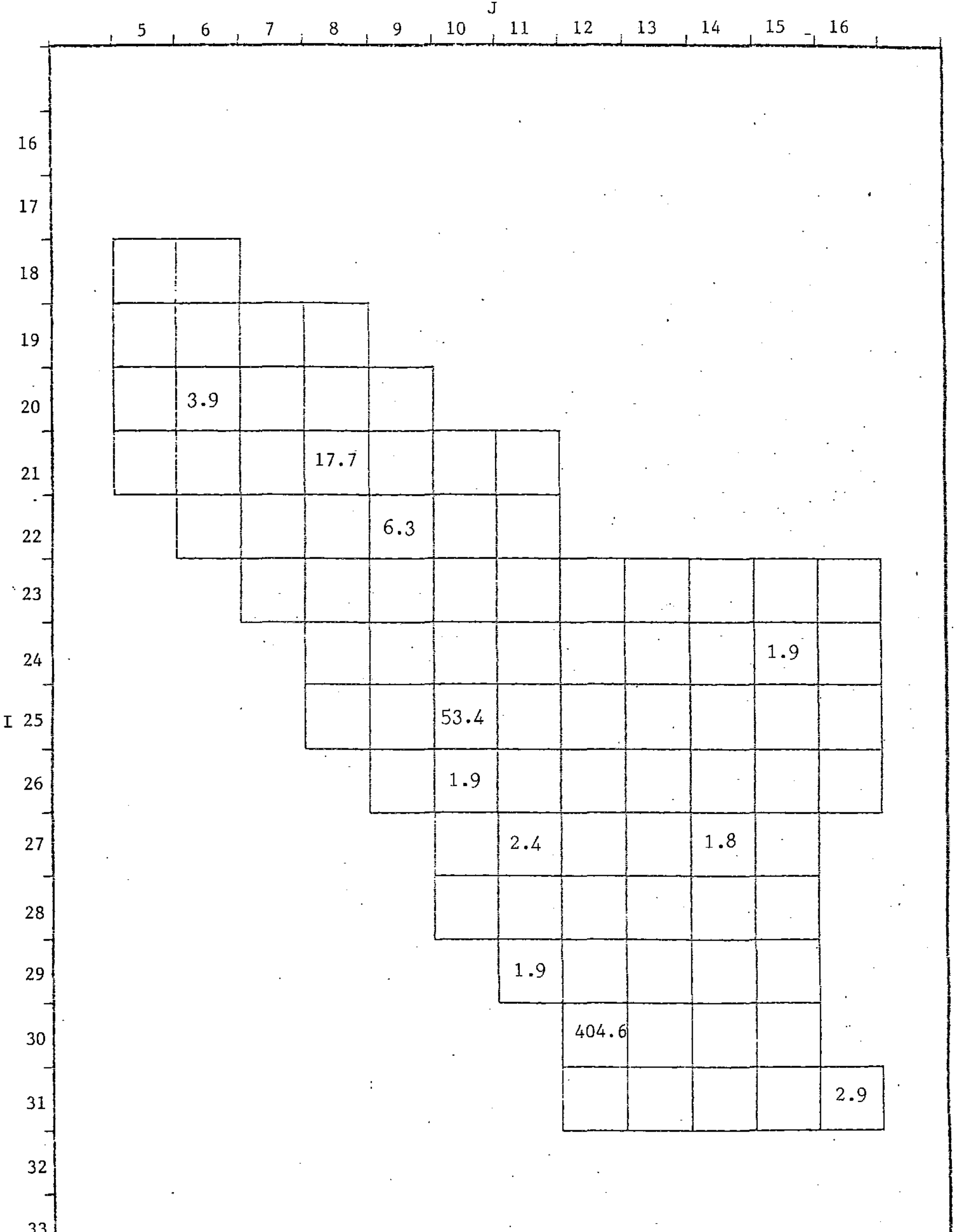


Fig. 63: Municipal and Industrial Water Needs for May (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

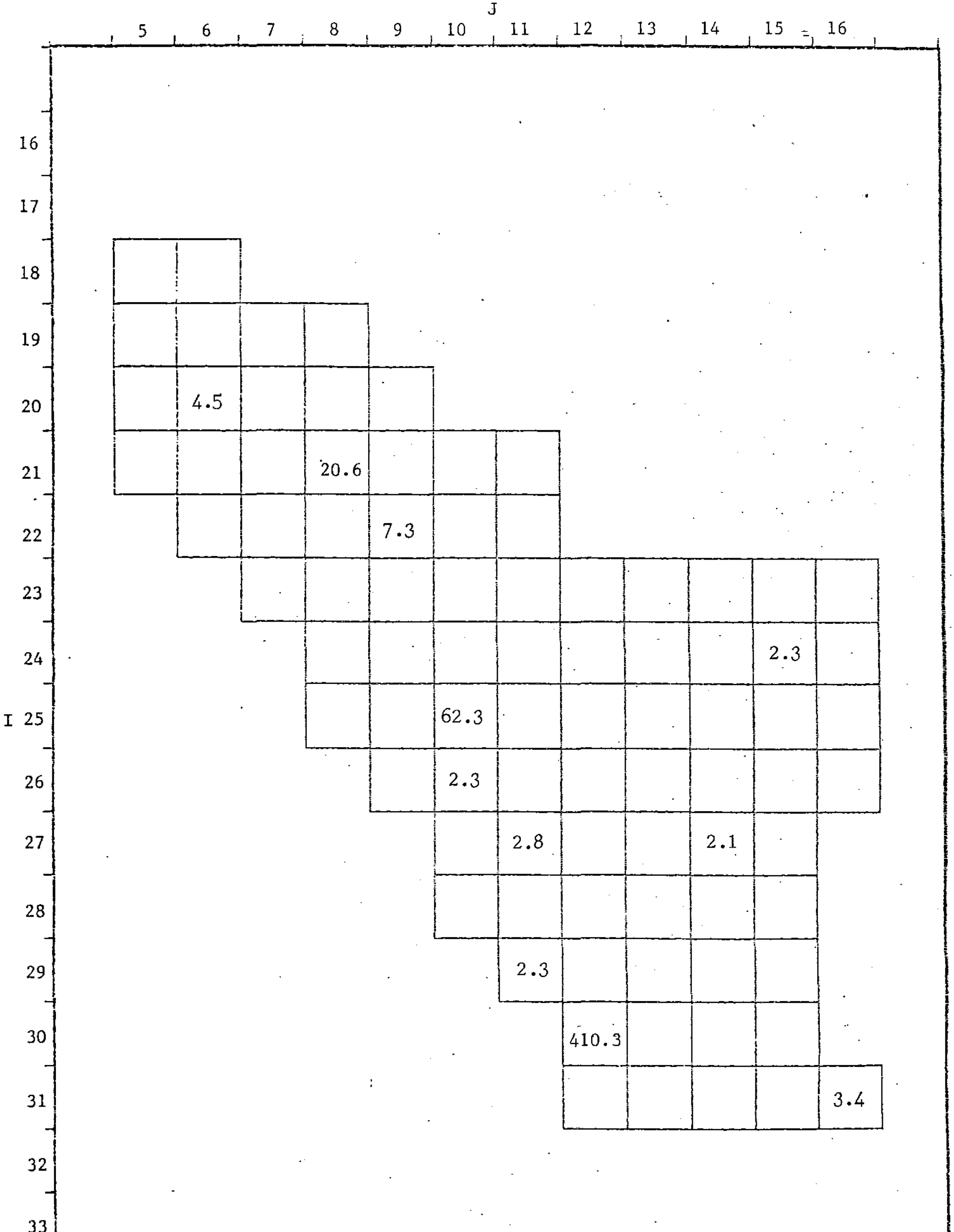


Fig. 64: Municipal and Industrial Water Needs for June (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

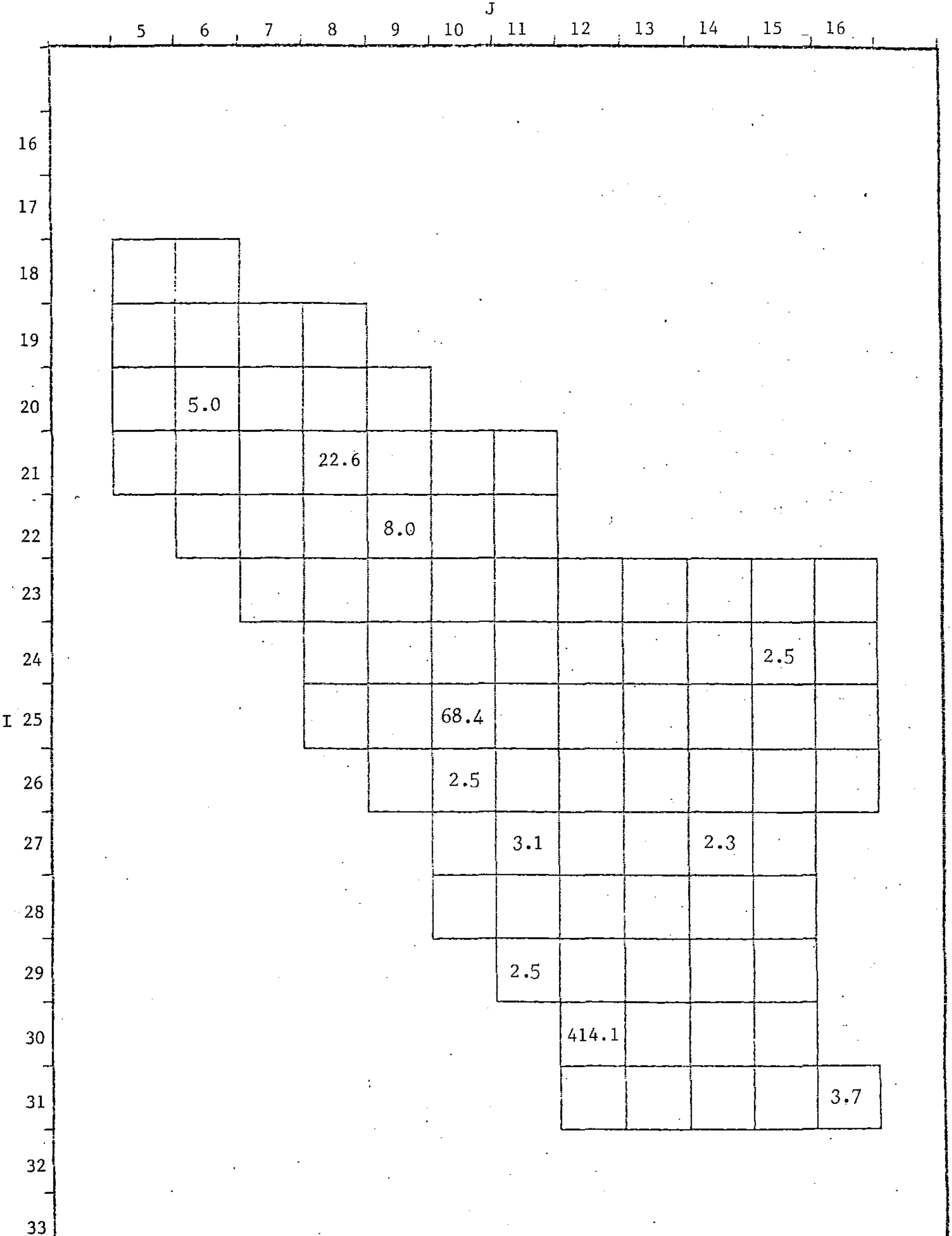


Fig. 65: Municipal and Industrial Water Needs for July (1980) for the Northern Boeuf–Tensas Basin in Millions of Gallons

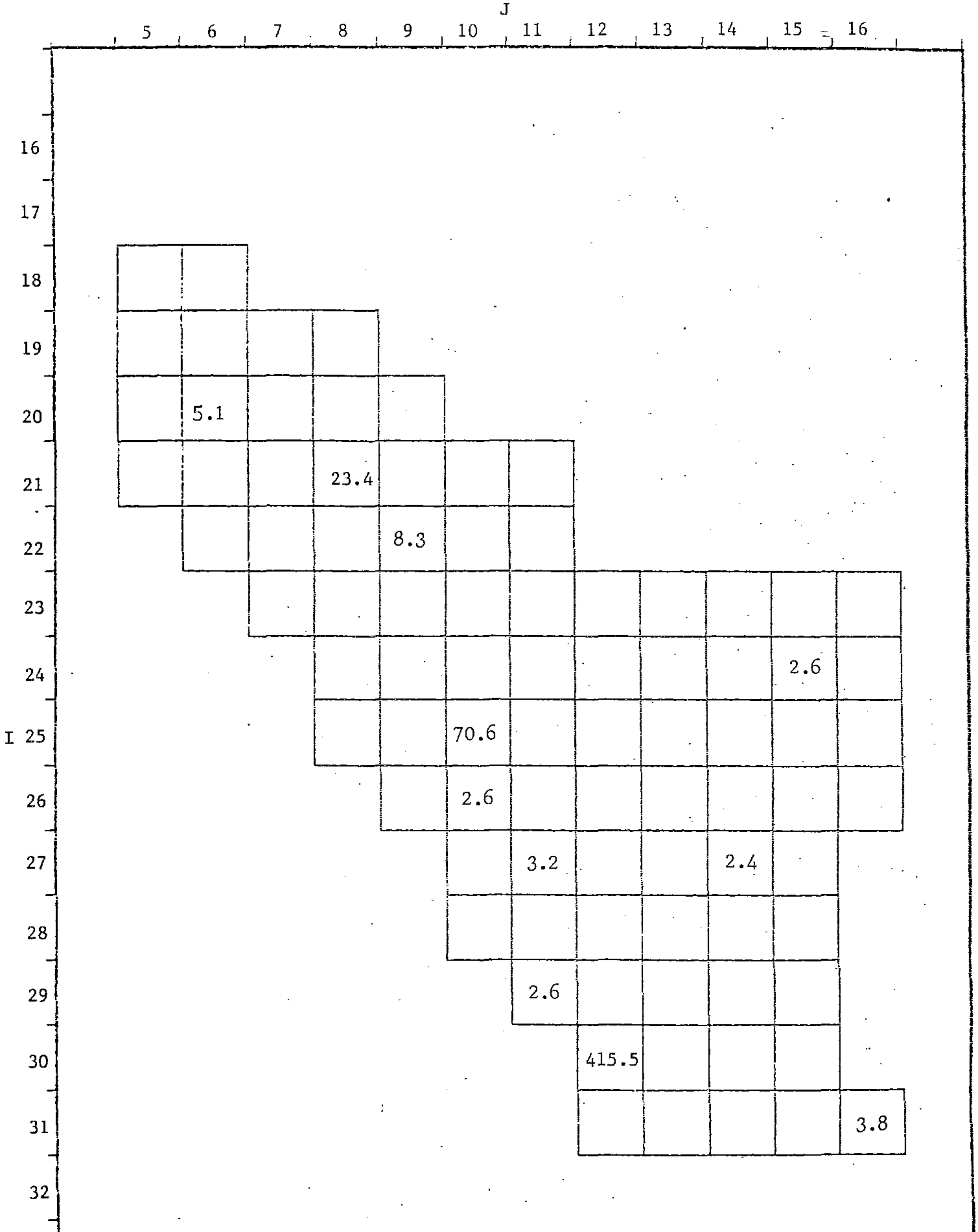


Fig. 66: Municipal and Industrial Water Needs for August (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

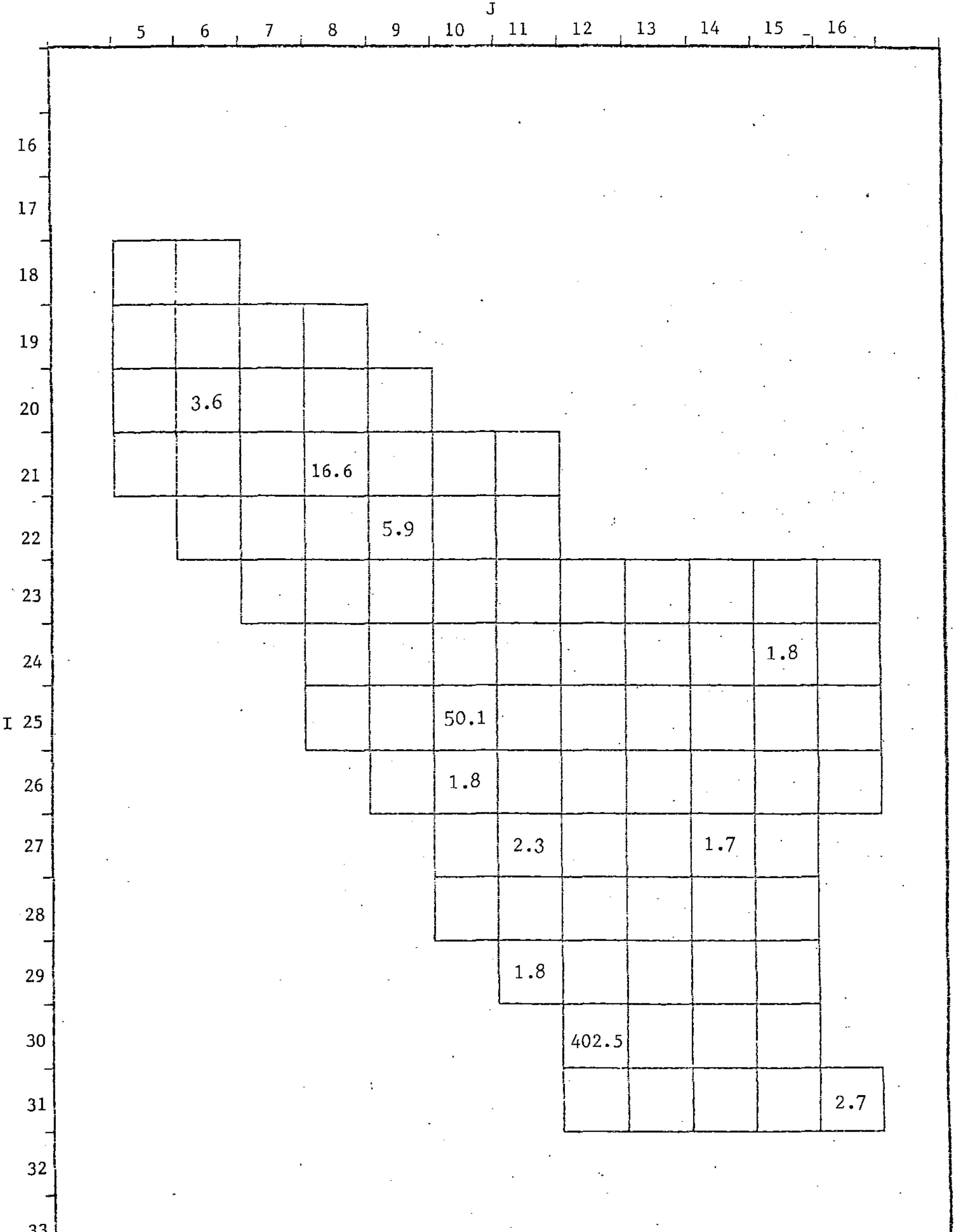


Fig. 67: Municipal and Industrial Water Needs for September (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

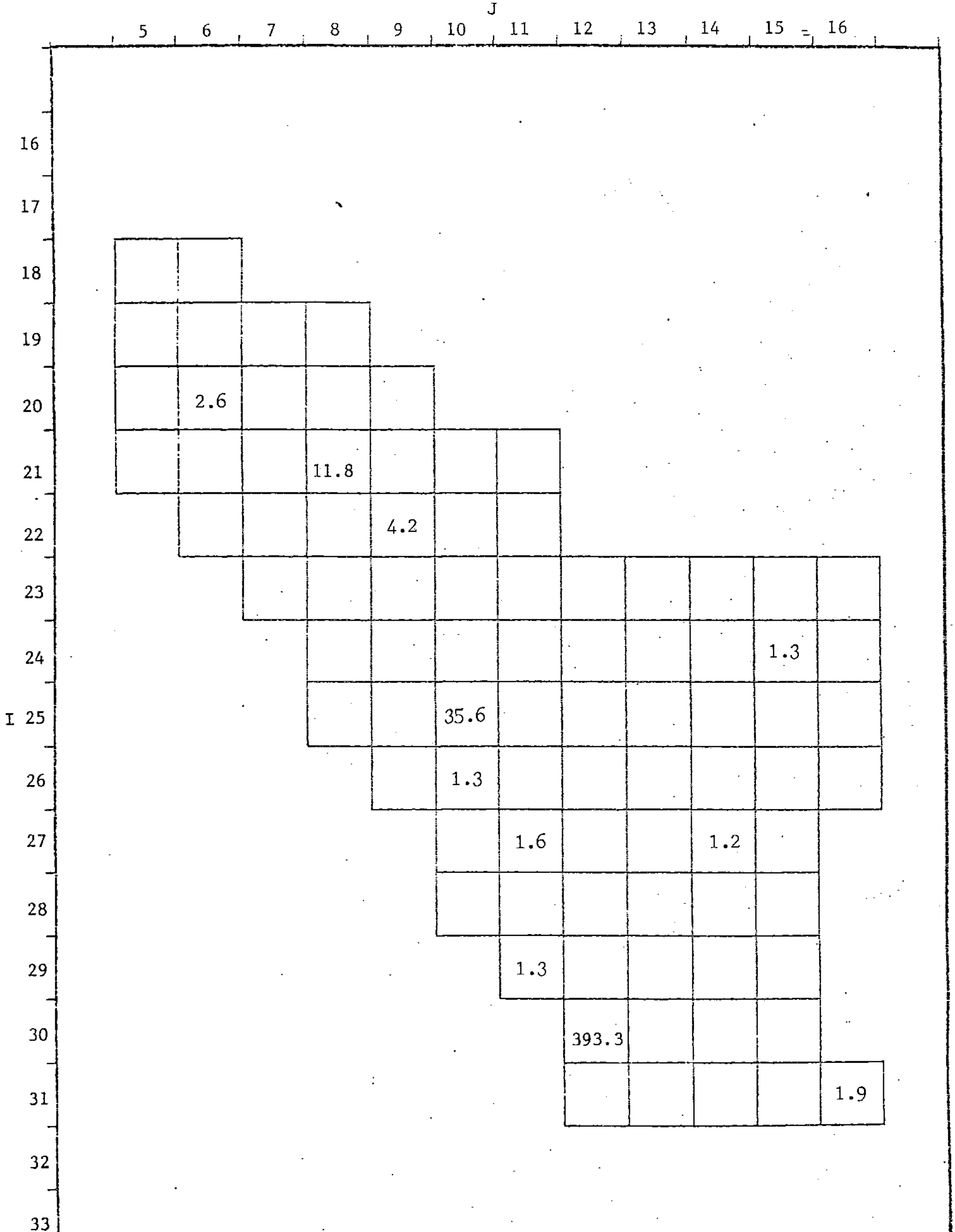


Fig. 68 : Municipal and Industrial Water Needs for October (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

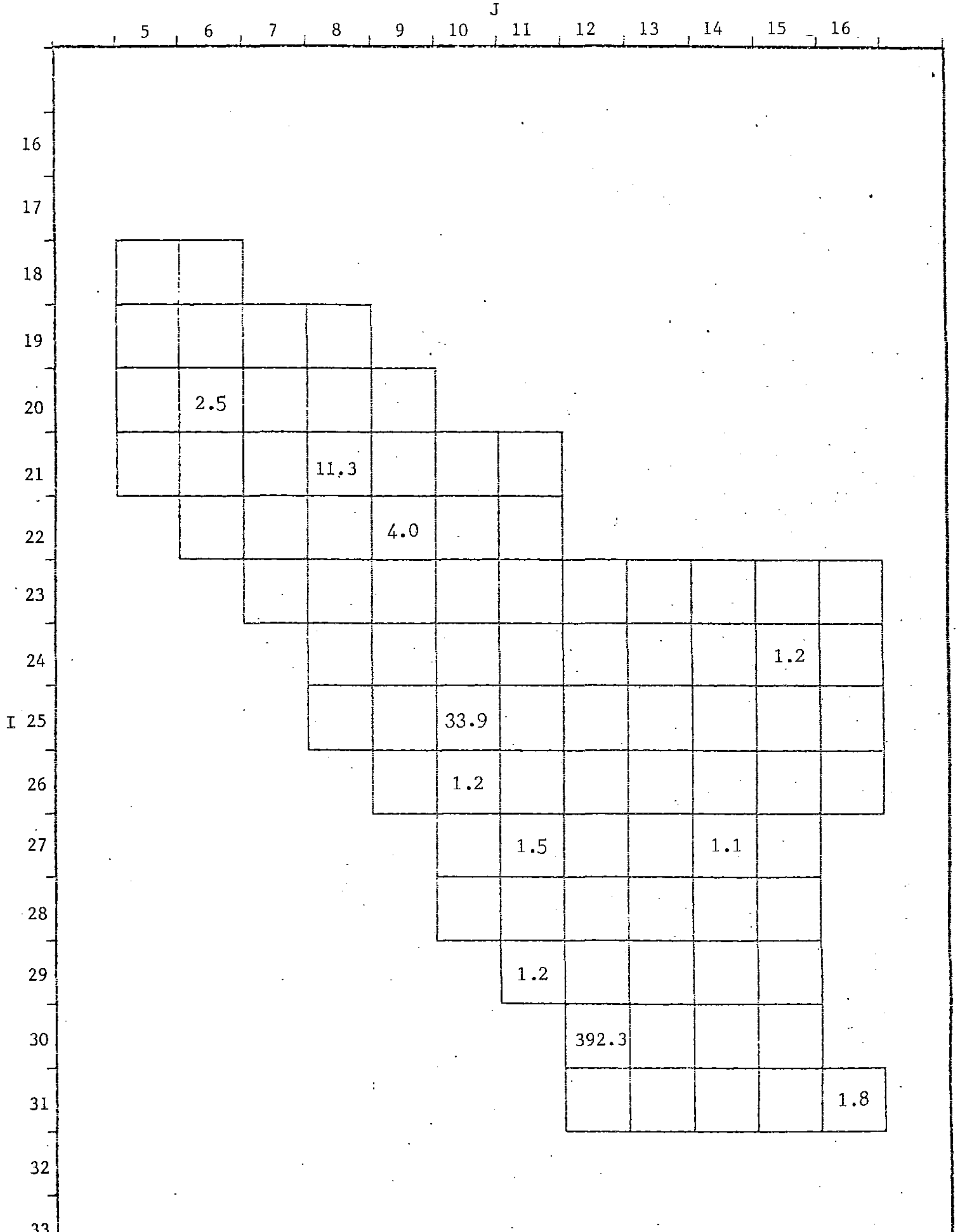


Fig. 69: Municipal and Industrial Water Needs for November (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

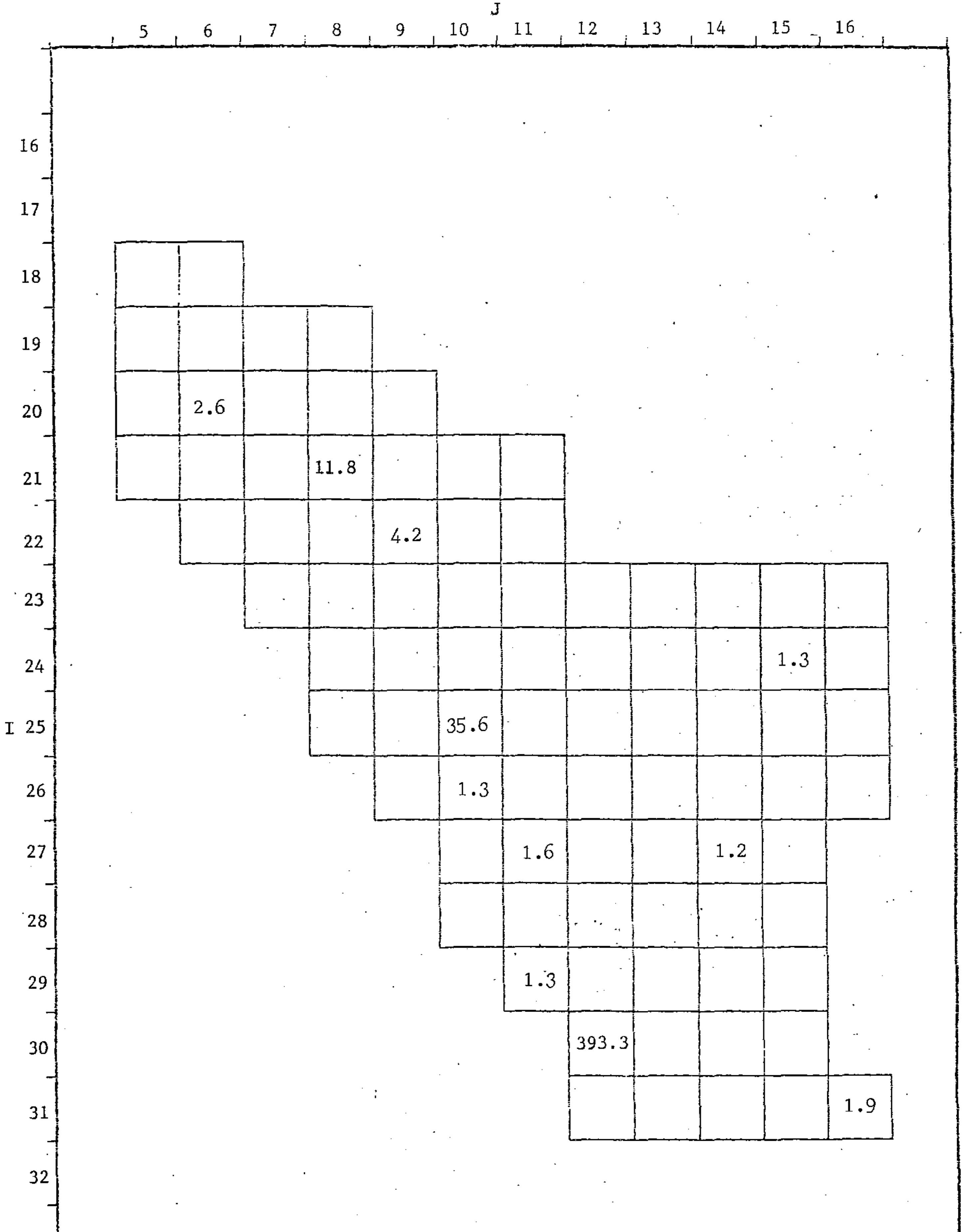


Fig. 70: Municipal and Industrial Water Needs for December (1980) for the Northern Boeuf-Tensas Basin in Millions of Gallons

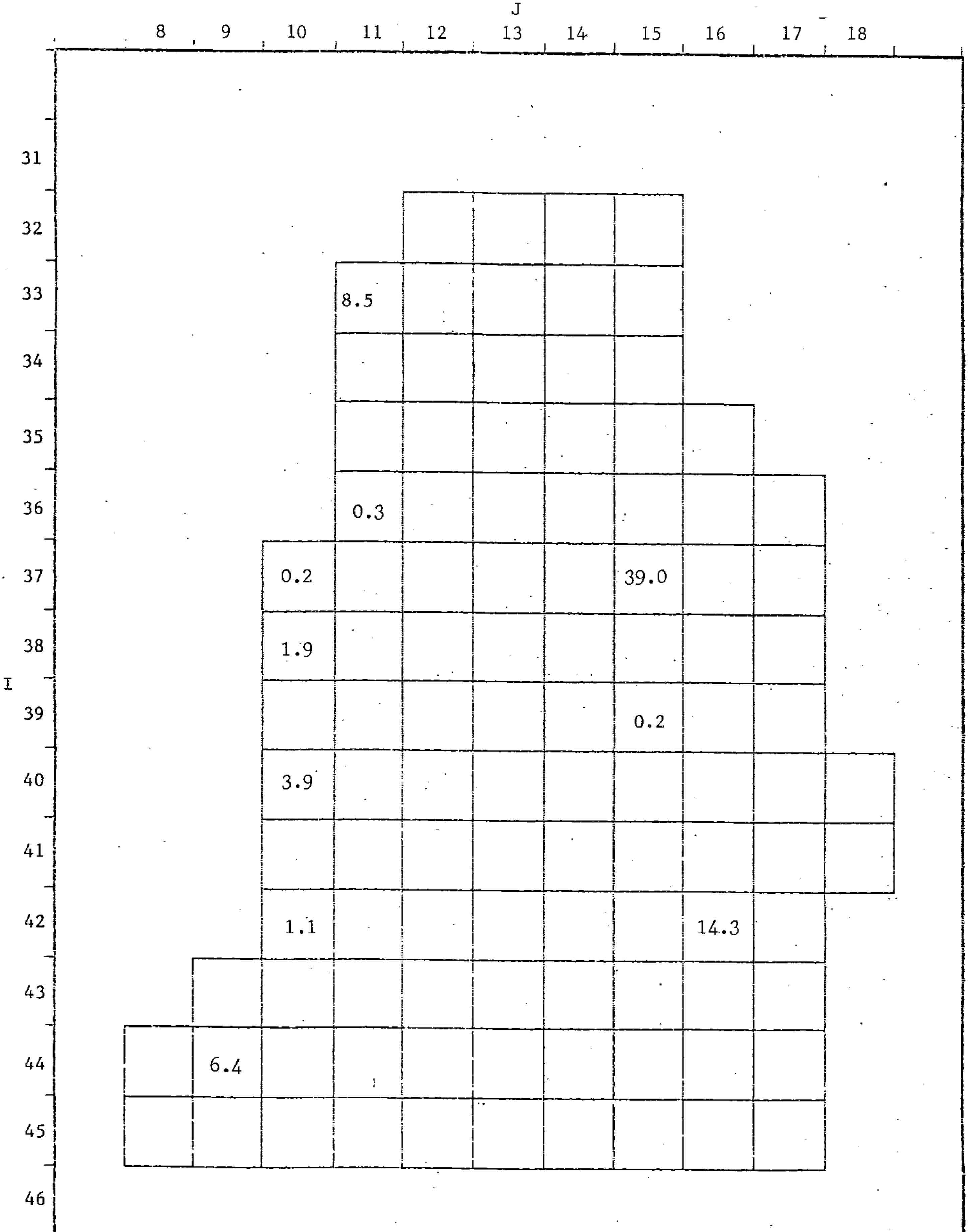


Fig. 71: Municipal and Industrial Water Needs for January (1980) for the Southern Boeuf–Tensas Basin in Millions of Gallons

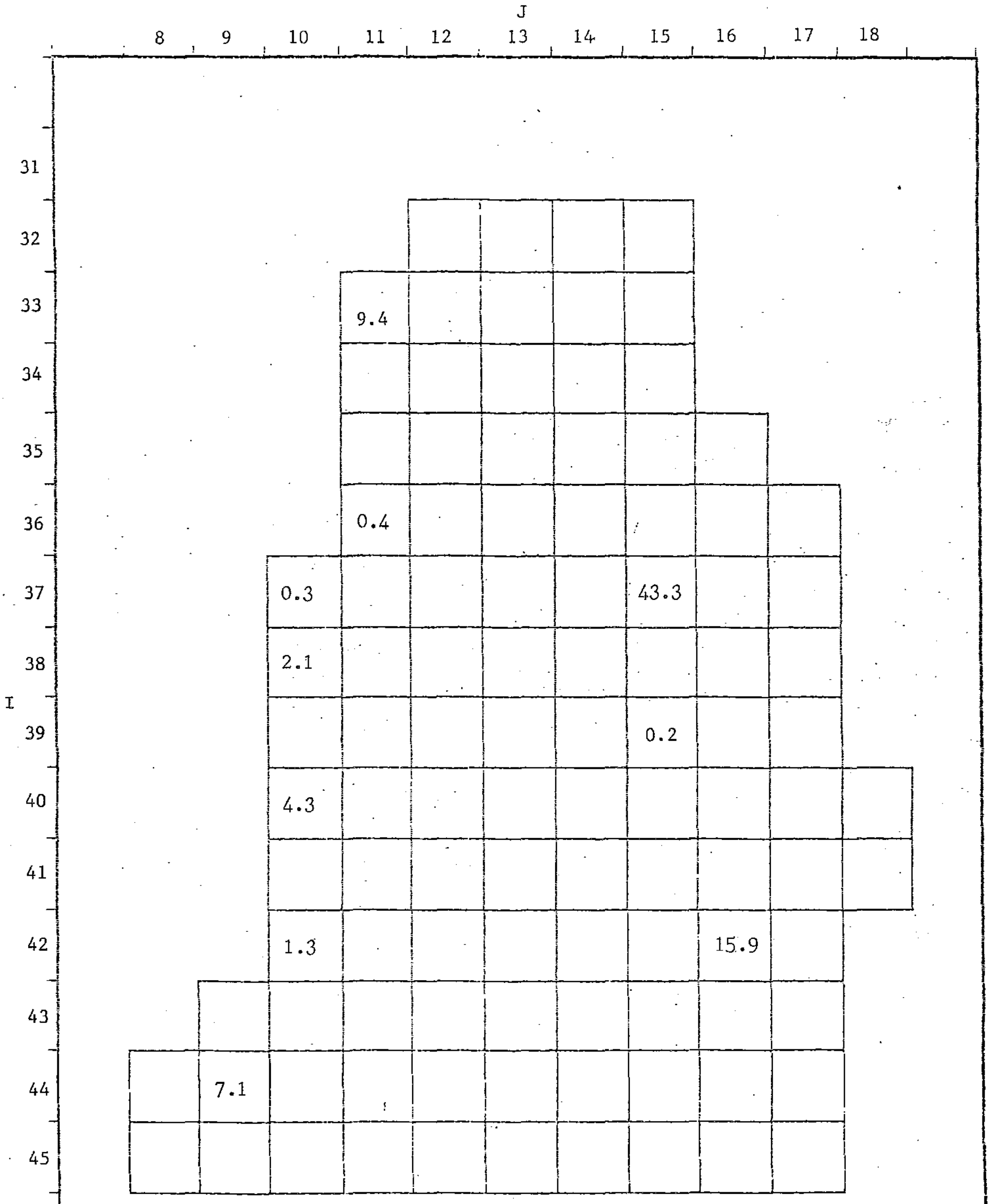


Fig. 72 : Municipal and Industrial Water Needs for February (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons

I \ J	8	9	10	11	12	13	14	15	16	17	18
31											
32											
33				8.6							
34											
35											
36				0.3							
37			0.2					39.6			
38			2.0								
39								0.2			
40			3.9								
41											
42			1.2						14.5		
43											
44		6.5									
45											
46											

Fig. 73: Municipal and Industrial Water Needs for March (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons

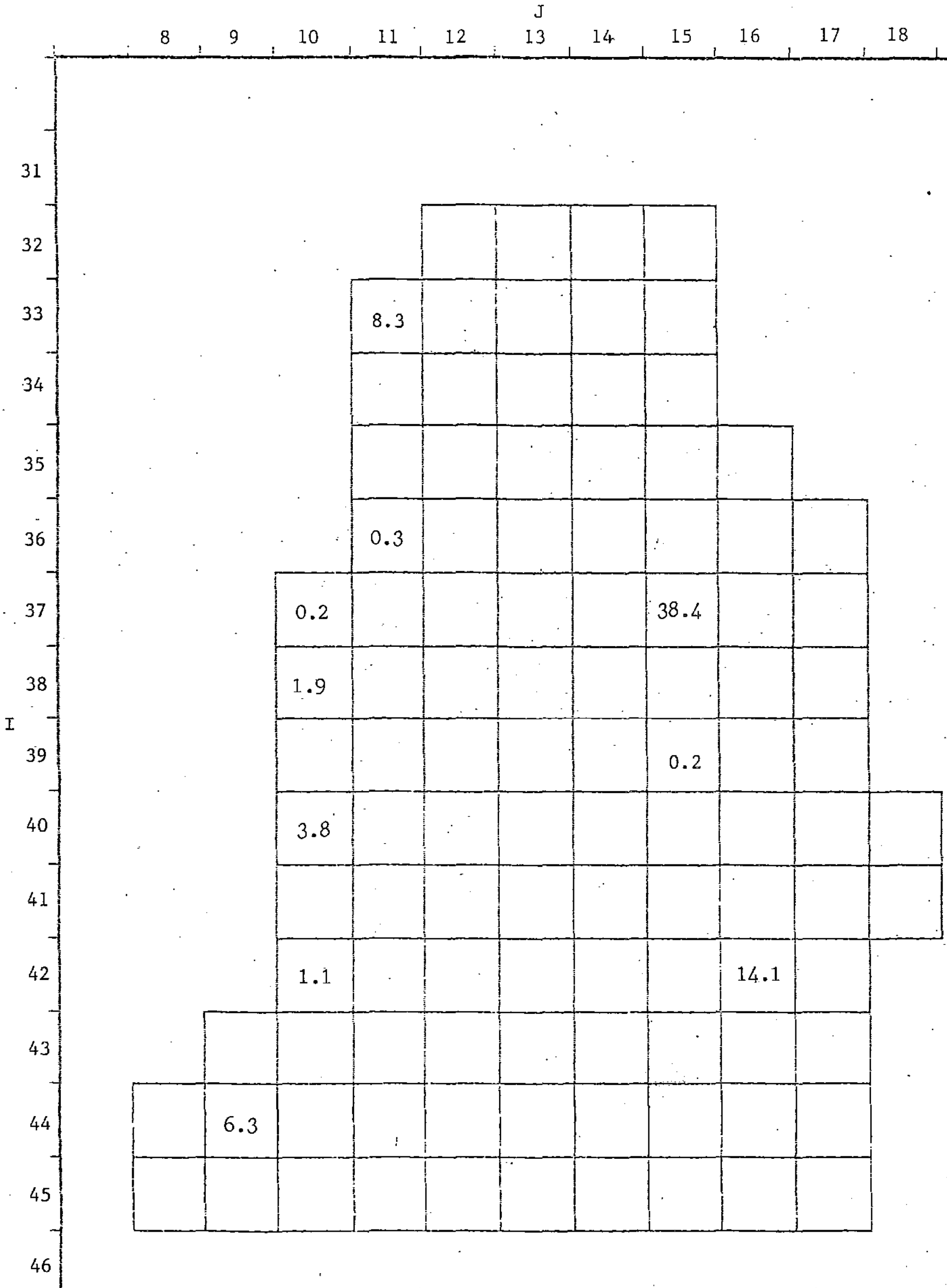


Fig. 74: Municipal and Industrial Water Needs for April (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons

I \ J	8	9	10	11	12	13	14	15	16	17	18
31											
32											
33				12.7							
34											
35											
36				0.5							
37			0.3					58.6			
38			2.9								
39								0.2			
40			5.8								
41											
42			1.7						21.5		
43											
44		9.7									
45											
46											

Fig. 75: Municipal and Industrial Water Needs for May (1980) for the Southern Boeuf–Tensas Basin in Millions of Gallons

I \ J	8	9	10	11	12	13	14	15	16	17	18
31											
32											
33				14.8							
34											
35											
36				0.6							
37			0.4					68.3			
38			3.4								
39								0.3			
40			6.8								
41											
42			2.0						25.0		
43											
44		11.3									
45											
46											

Fig. 76: Municipal and Industrial Water Needs for June (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons

I \ J	8	9	10	11	12	13	14	15	16	17	18
31											
32											
33				16.2							
34											
35											
36				0.6							
37			0.4					75.0			
38			3.7								
39								0.3			
40			7.4								
41											
42			2.2						27.5		
43											
44		12.4									
45											
46											

Fig. 77: Municipal and Industrial Water Needs for July (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons

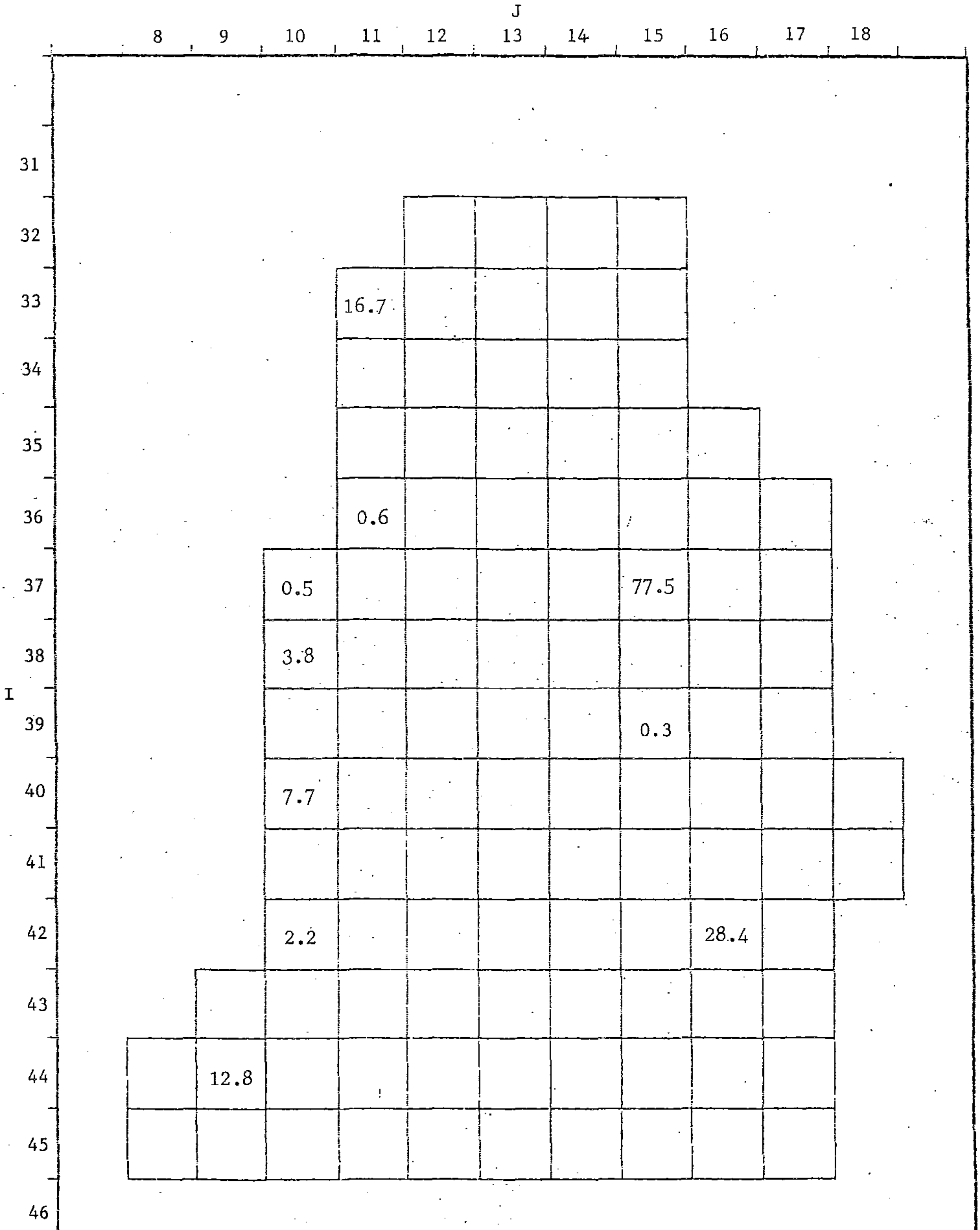


Fig. 78: Municipal and Industrial Water Needs for August (1980) for the Southern Boeuf–Tensas Basin in Millions of Gallons

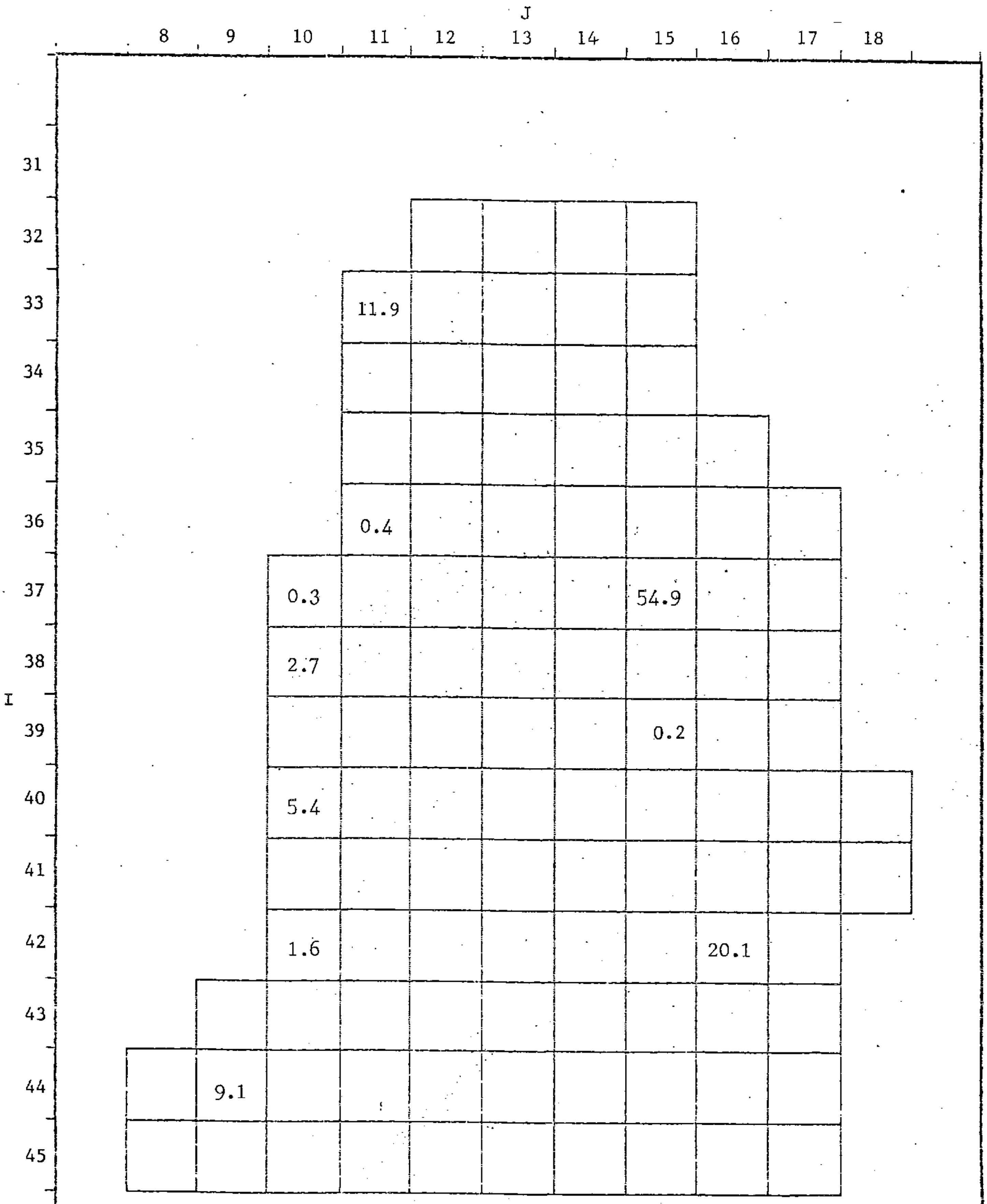


Fig. 79: Municipal and Industrial Water Needs for September (1980)
for the Southern Boeuf–Tensas Basin in Millions of Gallons

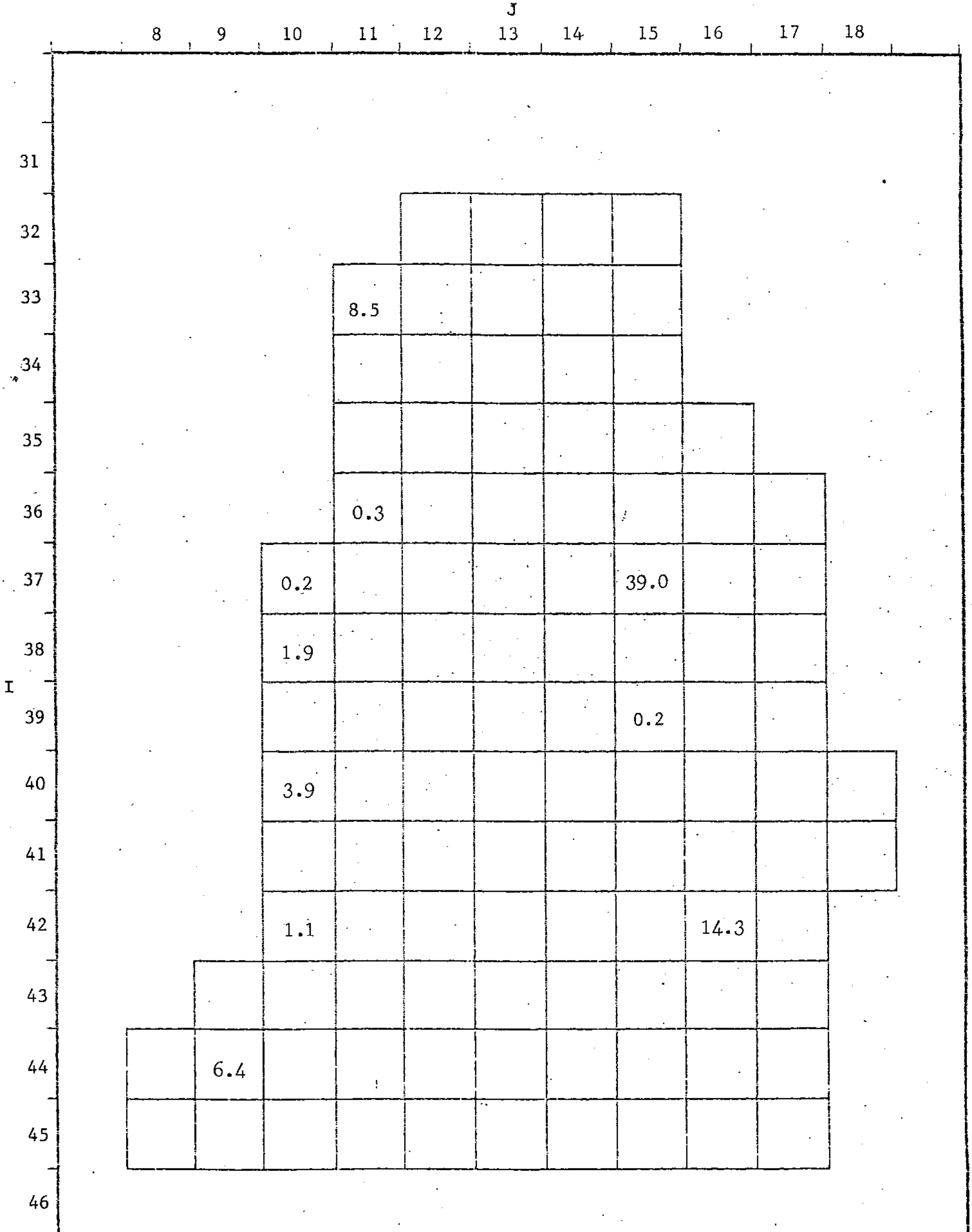


Fig. 80: Municipal and Industrial Water Needs for October (1980) for the Southern Boeuf–Tensas Basin in Millions of Gallons

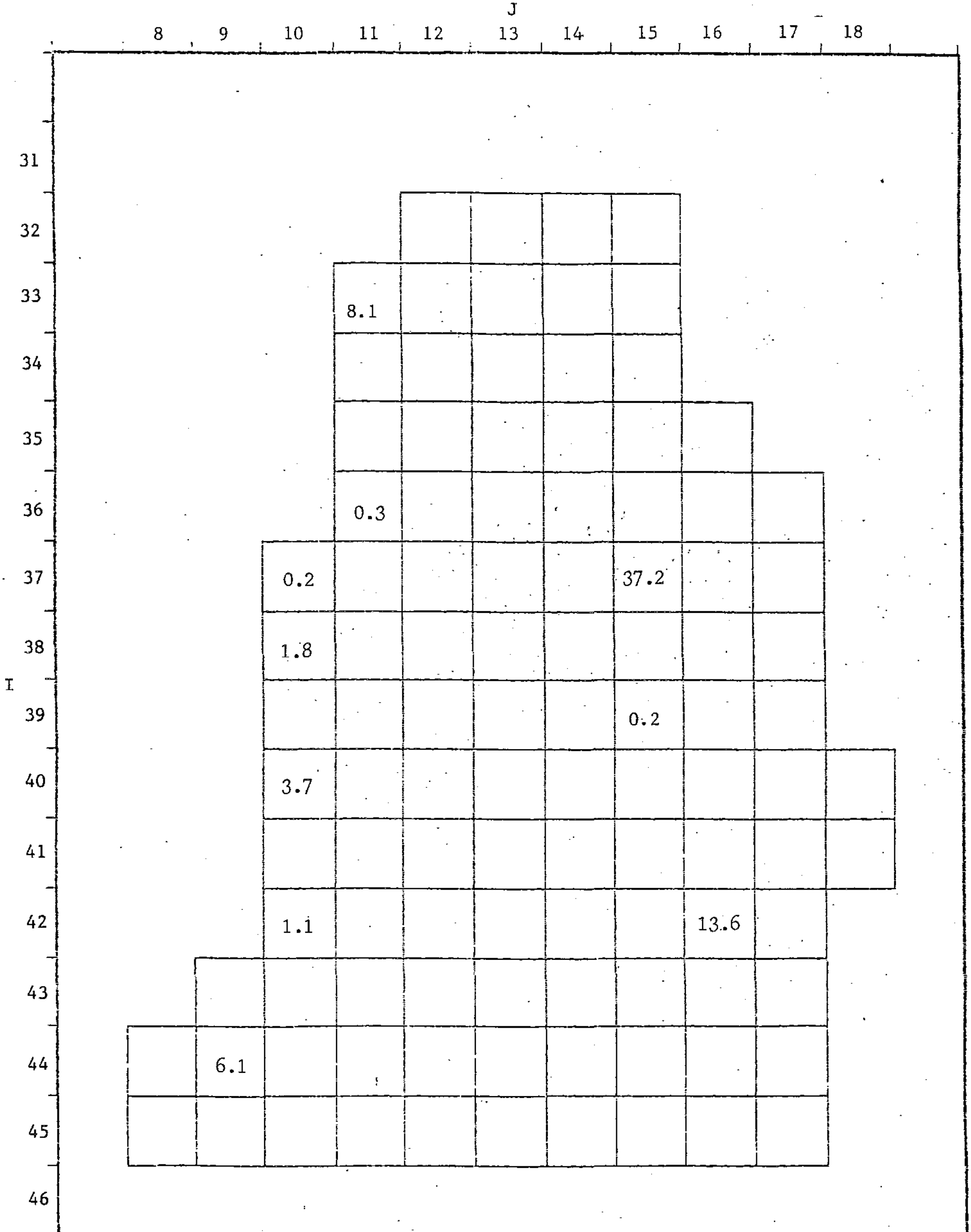


Fig. 81: Municipal and Industrial Water Needs for November (1980) for the Southern Boeuf–Tensas Basin in Millions of Gallons

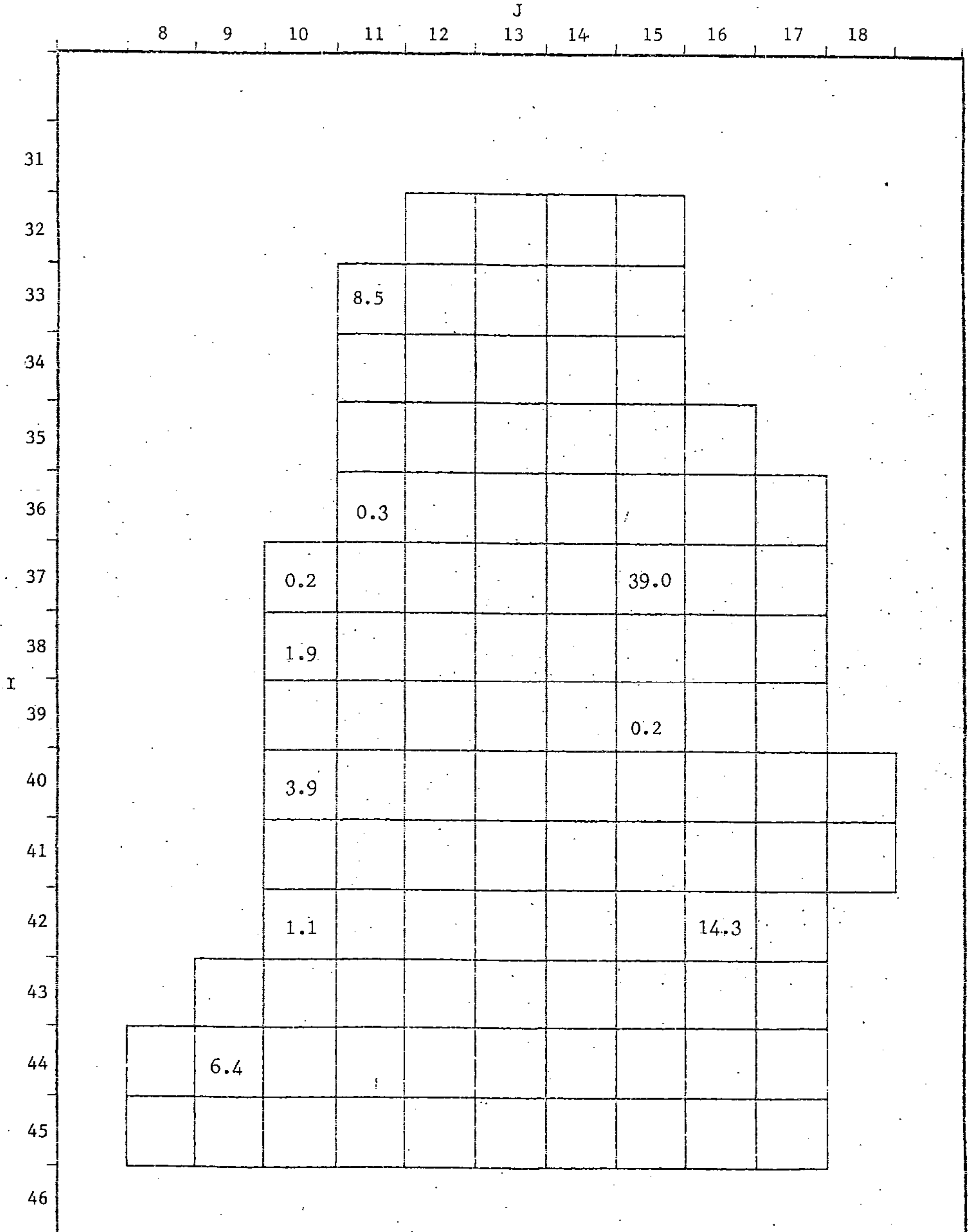


Fig. 82: Municipal and Industrial Water Needs for December (1980) for the Southern Boeuf-Tensas Basin in Millions of Gallons