Water use, 1965

[Results in millions of gallons per day; a, less than 0.1]

Source	Arkansas River basin					Upper Ouachita River basin to and including Saline River basin					Bayou Bartholomew, and Boeuf and Tensas River basins					Lower Ouachita River basin, below Saline River basin, except Bayou Bartholomew, Boeuf, Tensas, and Dugdemona River, and Castor Creek basins				
	Public supplies	Industrial supplies	Irrigation	Other	Total	Public supplies	Industrial supplies	Irrigation	Other	Total	Public supplies	Industrial supplies	Irrigation	Other	Total	Public supplies	Industrial supplies	Irrigation	Other	Total
Surface water	0	24.4	48.5	0.5	73.4	4.3	27.6	2.3	1.7	35.9	0.3	13.2	41.4	1.0	55.9	7.5	45.8	2.2	0.6	56.1
Tokio Formation						.3	0	0	.2	.5										
Oran Formation						0	0	0	.1	.1										
Nacatoch Sand						.2	0	0	.4	.6										
Clayton Formation						a	0	0	a	.0										
Minor Wilcox aquifers	.2	0	0	.1	.3	.1	.2	0	.0	.3										
Carrizo Sand	0	0	0	0	0	0	0	0	.1	.1										
Cane River Formation						a	0	0	.2	.2										
Sparta Sand	4.9	26.0	7.9	.2	32.0	4.8	8.3	0	1.0	14.1	2.9	8.6	a	.2	11.7	10.7	26.7	0	1.1	38.5
Cockfield Formation	0	0	0	.3	.3	a	a	0	.1	.1	1.7	3.0	0	.9	5.6	.3	.1	0	1.0	1.4
Jackson Group	0	0	0	.2	.2	0	0	0	.1	.1										
Quaternary deposits						0	0	0	.1	.1										
Quaternary deposits	3.8	58.8	132.5	2.0	197.1	.4	2.4	1.5	.6	4.9	2.6	26.2	127.2	5.0	165.0	.1	7.7	1.4	.1	9.3
Total	8.9	122.7	188.9	3.3	323.3	10.1	38.8	3.8	6.8	59.5	7.5	45.0	168.6	7.1	238.2	18.6	80.3	3.6	2.8	105.3

Maximum, minimum, and median concentrations of selected constituents in ground water in the Arkansas River basin

[Data in parts per million, except specific conductance, pH, color, and temperature]

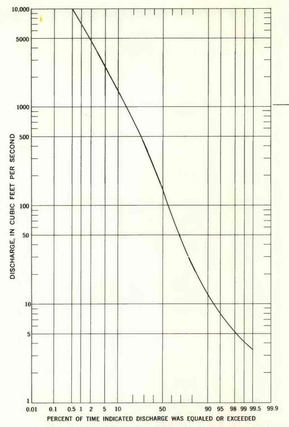
Constituent	Minor Wilcox aquifers			Sparta Sand			Cockfield Formation			Quaternary deposits		
	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
Silica (SiO_2)	16	9.7		24	7.7	14	38	2.0	12	49	8.3	21
Iron (Fe)	.79	.13		14	.00	1.2	8.7	.04	.12	52	.00	8.9
Calcium (Ca)	3.0	1.4		20	.3	6.0	99	.7	2.9	102	2.2	21
Magnesium (Mg)	1.5	1.2		5.4	.1	1.9	24	.2	.5	39	1.1	16
Sodium (Na)	2.7	1.8		141	6.6	20	128	12	84	123	3.4	24
Carbonate plus bicarbonate (CO_3+HCO_3)	15	7		456	38	84	356	27	245	472	4	292
Sulfate (SO_4)	4.8	.0		74	.6	3.5	250	.8	1.8	241	.0	12
Chloride (Cl)	4.1	2.0		28	2.0	4.0	20	3.5	5.2	207	.4	39
Fluoride (F)	.2	.0		.4	.0	.1	.2	.0	.1	.5	.0	.1
Nitrate (NO_3)	6.8	.0		1.3	.0	.2	2.8	.0	1.7	40	.0	.7
Dissolved solids	42	36		437	60	100	671	112	287	768	39	327
Hardness as $CaCO_3$	12	10		72	2	23	340	3	9	574	10	294
Specific conductance (micromhos at 25°C)	52	37		771	97	151	987	174	443	1,720	57	567
pH	7.0	6.9		8.6	6.6	7.7	8.8	7.0	8.2	8.7	5.6	7.5
Color	1	1		15	0	5	60	5	20	17	0	5
Temperature (°F)				79	64	75				74	57	64

Maximum, minimum, and median concentrations of selected constituents in ground water in the upper Ouachita River basin to and including Saline River basin

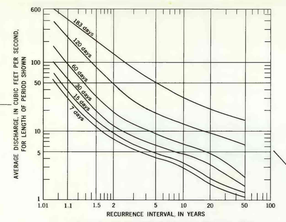
[Data in parts per million, except specific conductance, pH, color, and temperature]

Constituent	Tokio Formation[1]			Oran Formation[1]			Nacatoch Sand[1]			Minor Wilcox aquifers			Carrizo Sand			Cane River Formation			Sparta Sand			Cockfield Formation			Quaternary deposits		
	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
Silica (SiO_2)										51	7.7	12							53	3.9	12	53	6.5	11	36	5.6	13
Iron (Fe)	54	0.04	0.54	0.76	0.03	0.25	7.8	0.03	0.19	35.7	.00	.15	1.1	0.04	0.43	3.6	0.04	0.38	33	.00	.67	61	.00	.24	177	.00	.38
Calcium (Ca)										36	1.0	7.0	35	3.0	5.6	65	1.0	5.1	98	.5	4.1	77	.0	1.5	79	.4	4.0
Magnesium (Mg)										8.6	.2	1.4	7.0	.7	3.4	19	1.2	3.4	7.1	.0	1.0	7.1	.0	1.0	79	.4	4.0
Sodium (Na)										627	1.0	17	1,050	18	53	964	3.4	192	184	2.3	32	182	1.2	40	486	2.2	18
Carbonate plus bicarbonate (CO_3+HCO_3)	456	3	107	607	140	350	478	2	366	274	4	68	538	38	140	400	44	259	425	0	135	425	8	172	331	2	17
Sulfate (SO_4)	397	1.0	24	817	4.9	245	120	1.0	32	30	.0	2.6	12	.4	4.9	31	.2	1.3	26	.2	5.8	464	.0	4.6	1,000	.0	7.0
Chloride (Cl)	1,200	3.5	6.8	2,900	32	792	1,100	3.0	32	56	.0	4.1	1,300	3.8	7.3	1,410	4.0	304	1.6	0.4	107	2.2	5.1	845	4.1	38
Fluoride (F)										.4	.0	.2							4.2	.0	.6	.6	.0	.1	.2	.0	.1
Nitrate (NO_3)	18	.0	.5	8.4	.1	1.9	26	.0	1.0	3.4	.0	.2	4.7	.0	.1	7.0	.0	.2	2.5	.0	.6	9.5	.0	1.0	115	.2	11
Dissolved solids										1,170	17	150	2,820	90	187	2,720	55	612	464	20	163	598	20	185	1,680	38	130
Hardness as $CaCO_3$	196	3	23	356	24	105	382	6	30	130	4	14	79	10	20	230	21	42	102	3	21	131	3	20	1,190	4	38
Specific conductance (micromhos at 25°C)	4,760	41	236	7,390	997	3,300	3,010	64	551	1,810	116	178	4,400	147	327	4,610	82	933	740	43	320	1,060	37	321	3,150	52	297
pH	8.9	5.9	7.9	9.3	7.9	8.4	8.5	4.7	8.3	8.6	6.6	7.4	8.4	7.2	7.7	8.3	7.4	8.1	8.6	4.9	7.6	8.8	5.8	7.8	8.2	4.7	6.9
Color										15	0	5	15	0	5				15	0	5	15	0	5	15	0	5
Temperature (°F)	89	58	65	69	65	67	76	65	68	69	62	66	66	55	65	71	66	69	83	65	69	74	64	70	68	54	62

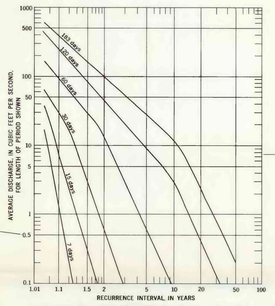
[1] Minor aquifer in Upper Cretaceous deposits; in subsurface, northern part of block 2.



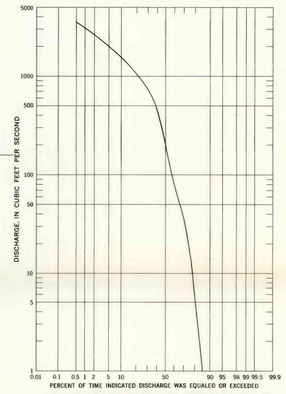
FLOW-DURATION CURVE FOR LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK. (7-3610), 1929-57 (DRAINAGE AREA 380 SQUARE MILES)



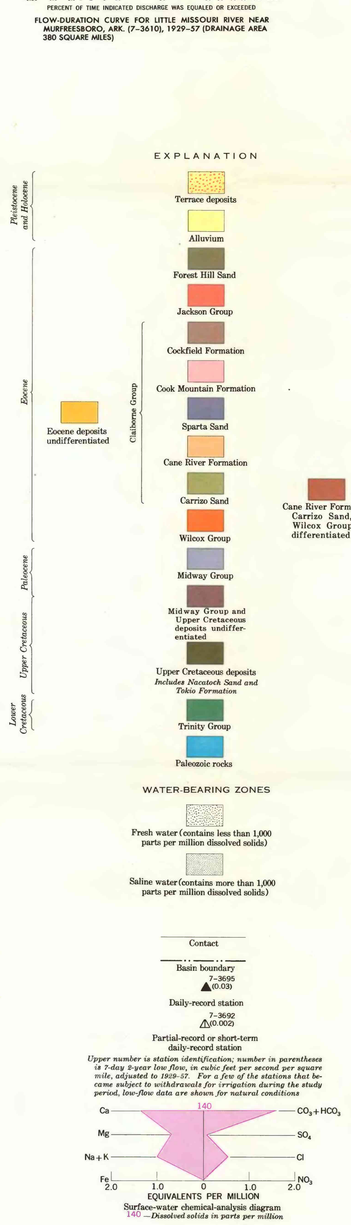
MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK. (7-3610), 1929-57

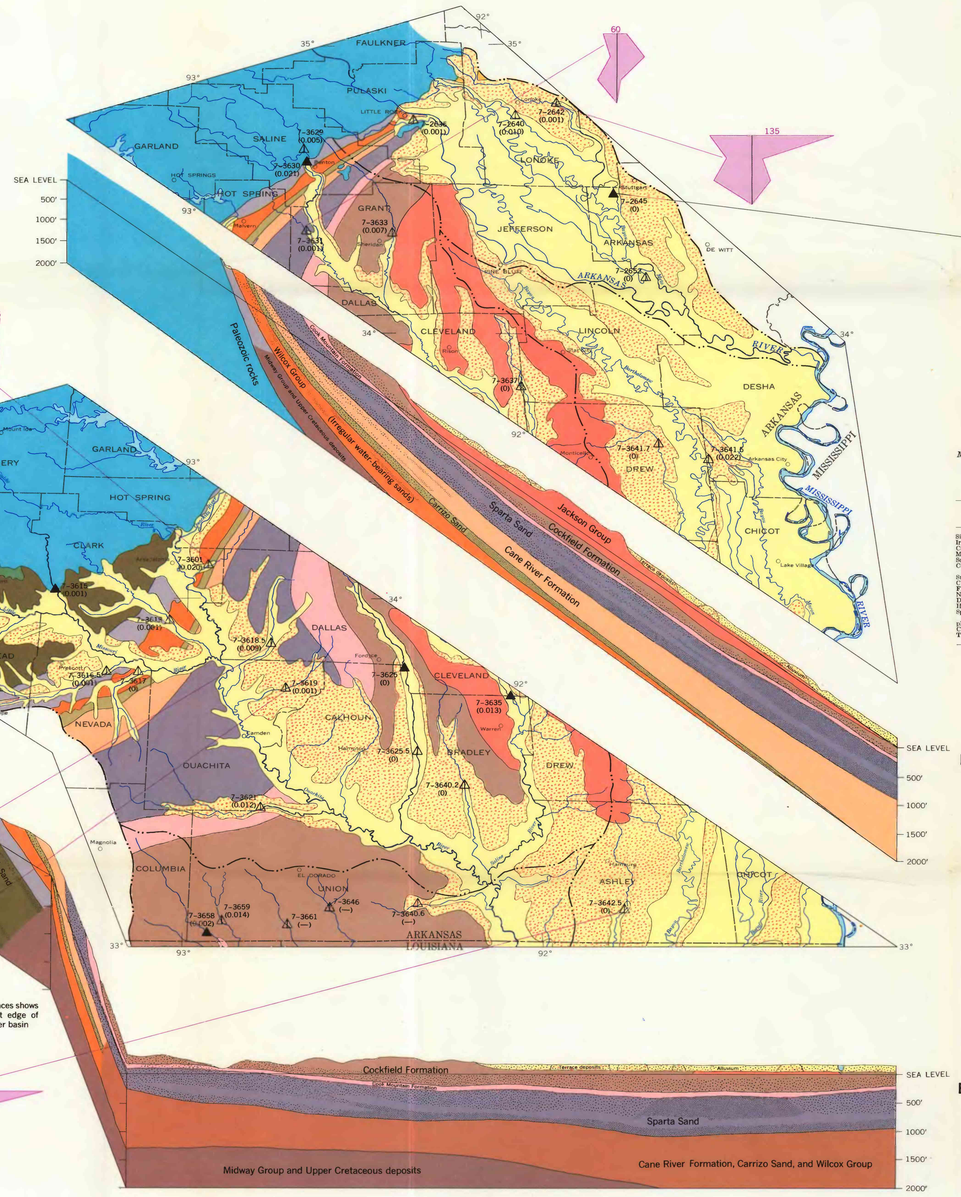


MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, BAYOU METO NEAR STUTTGART, ARK. (7-2645), 1929-57



FLOW-DURATION CURVE FOR BAYOU METO NEAR STUTTGART, ARK. (7-2645), 1929-57 (DRAINAGE AREA, 560 SQUARE MILES)





BLOCK 1.—ARKANSAS RIVER BASIN, NORTHERN PART OF UPPER OUACHITA RIVER BASIN INCLUDING NORTHERN PART OF SALINE RIVER BASIN, AND NORTHERN PARTS OF BAYOU BARTHOLOMEW, AND BOEUF AND TENSAS RIVER BASINS

Maximum, minimum, and median concentrations of selected constituents in ground water in the lower Ouachita River basin, below Saline River basin, except Bayou Bartholomew, Boeuf, Tensas, and Dugdemona River and Castor Creek basins

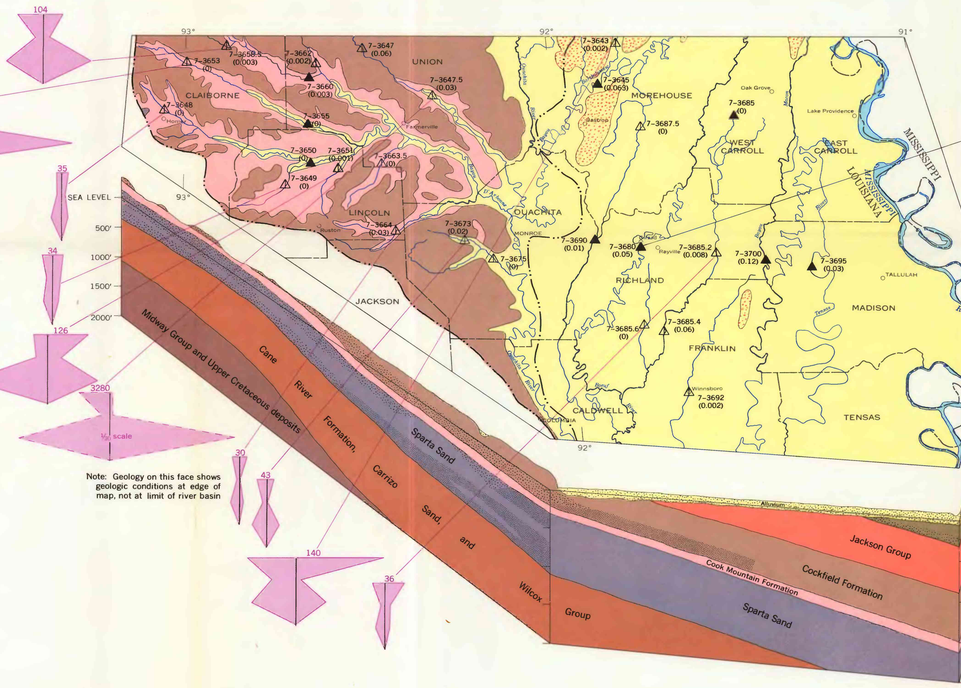
[Data in parts per million, except specific conductance, pH, color, and temperature]

Constituent	Sparta Sand			Cockfield Formation			Quaternary deposits		
	Max	Min	Median	Max	Min	Median	Max	Min	Median
Silica (SiO_2)	58	8.0	14	36	4.6	11	51	12	30
Iron (Fe)	4.0	.00	.12	2.3	.02	.25	22	.02	.06
Calcium (Ca)	30	.2	5.0	20	4.2	12	100	1.2	10
Magnesium (Mg)	13	.0	1.4	6.6	1.0	1.6	20	.7	2.6
Sodium (Na)	500	15	133	238	63	166	73	4.2	26
Carbonate plus bicarbonate (CO_3+HCO_3)	665	70	296	336	158	236	429	8	117
Sulfate (SO_4)	47	.0	2.0	8.5	.3	.7	21	.4	4.1
Chloride (Cl)	638	4.0	36	206	72	154	91	3.5	36
Fluoride (F)	2.0	.0	.3	.3	.0	.2	.4	.0	.1
Nitrate (NO_3)	8.8	.0	.9	.2	.2	.2	4.2	.0	.5
Dissolved solids	1,320	71	370	646	202	427	564	51	204
Hardness as $CaCO_3$	139	7	14	160	14	56	340	6	78
Specific conductance (micromhos at 25°C)	2,460	192	618	1,110	402	845	998	44	278
pH	8.0	6.8	8.3	8.1	6.8	7.5	7.4	5.8	6.7
Color	160	0	40					0	
Temperature (°F)	79	65	72				68	65	65

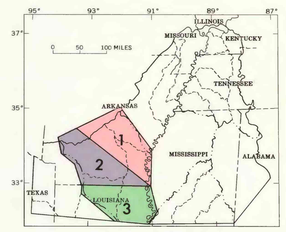
Hydraulic characteristics of aquifers

[Averaged by aquifer; number in parentheses denotes number of tests used to compute average. gpd—gallons per day; gpm—gallons per minute]

Aquifer	Coefficient: Transmissibility (gpd per ft)	Coefficient: Storage	Coefficient: Permeability (gpd per ft of drawdown) sq ft	Specific capacity (gpm per ft of drawdown)
Upper Ouachita River basin to and including Saline River basin				
Trinity Group (Pike Gravel)	(1) 10,000	(1) 0.0004		
Minor Wilcox aquifers	(1) 18,000	(1) .00002	(1) 450	
Carrizo Sand	(1) 15,000		(1) 150	(1) 27
Sparta Sand	(8) 35,000	(2) .0002	(5) 660	(7) 10
Lower Ouachita River basin, below Saline River basin, except Bayou Bartholomew, Boeuf, Tensas, and Dugdemona River, and Castor Creek basins				
Sparta Sand	(11) 28,000	(5) 0.004	(11) 160	(3) 14
Cockfield Formation	(1) 29,000			
Arkansas River basin				
Sparta Sand	(5) 100,000	(2) 0.0002		
Quaternary deposits	(11) 170,000	(4) .01	(8) 1,650	
Bayou Bartholomew, and Boeuf and Tensas River basins				
Sparta Sand	(2) 17,000	(1) 0.0024		
Cockfield Formation	(5) 42,000	(2) .0006	(2) 590	(6) 7
Quaternary deposits	(15) 160,000	(14) .007	(14) 1,700	(45) 54



BLOCK 2.—SOUTHERN PART OF UPPER OUACHITA RIVER BASIN INCLUDING SOUTHERN PART OF SALINE RIVER BASIN, NORTHERN PART OF LOWER OUACHITA RIVER BASIN, AND CENTRAL PARTS OF BAYOU BARTHOLOMEW, AND BOEUF AND TENSAS RIVER BASINS



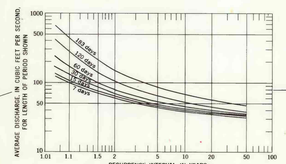
AREA COVERED BY BLOCK DIAGRAMS

Maximum, minimum, and median concentrations of selected constituents in ground water in the Bayou Bartholomew, and Boeuf and Tensas River basins

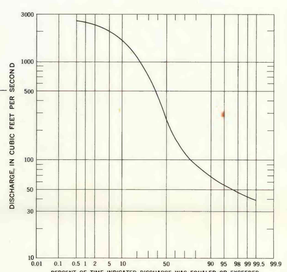
[Data in parts per million, except specific conductance, pH, color, and temperature]

Constituent	Sparta Sand			Cockfield Formation			Quaternary deposits		
	Max	Min	Median	Max	Min	Median	Max	Min	Median
Silica (SiO_2)	36	1.5	13	30	3.0	21	70	12	33
Iron (Fe)	14	.00	.10	5.4	.00	.30	48	.00	7.4
Calcium (Ca)	38	.2	1.0	120	.4	2.2	172	.1	19
Magnesium (Mg)	9.4	.0	.2	35	.0	.6	82	.1	18
Sodium (Na)	472	11	57	328	22	88	943	6.0	34
Carbonate plus bicarbonate (CO_3+HCO_3)	758	64	153	814	142	278	716	2	300
Sulfate (SO_4)	68	.2	1.7	13	.1	1.6	812	.0	10
Chloride (Cl)	43	1.4	5.2	355	2.0	11	1,880	2.2	33
Fluoride (F)	0.6	.0	.1	.6	.0	.1	.5	.0	.1
Nitrate (NO_3)	2.7	.0	.3	10	.0	1.0	120	.0	.5
Dissolved solids	1,230	80	162	1,020	141	275	4,190	28	372
Hardness as $CaCO_3$	72	1	4	395	0	10	1,700	0	202
Specific conductance (micromhos at 25°C)	2,160	119	250	1,590	232	422	6,430	51	625
pH	8.9	7.4	8.1	8.8	6.3	8.2	8.9	4.7	7.5
Color	100	5	10	360	0	12	15	0	5
Temperature (°F)	81	66	75	77	62	68	72	60	65

BLOCK 3.—SOUTHERN PARTS OF LOWER OUACHITA RIVER BASIN, BAYOU BARTHOLOMEW BASIN, AND BOEUF AND TENSAS RIVER BASINS



MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, BOEUF RIVER NEAR GIRARD, LA. (7-3680), 1929-57



FLOW-DURATION CURVE FOR BOEUF RIVER NEAR GIRARD, LA. (7-3680), 1929-57 (DRAINAGE AREA, 1,226 SQUARE MILES)

Note: The block diagrams are schematic and depths and distances are not exact. For more detailed information about the aquifers and low flow of streams in these basins, refer to Prof. Papers 448-C, D, E, F, and G (Counts and others, 1964; Boswell and others, 1968; Hosman and others, 1968, and Speer and others, 1968). Additional water information for these basins is contained in the following publications:

Arkansas

Albin (1960, 1964)
Baker (1964)
Baker, Hewitt, and Billingsley (1948)
Bedinger and Reed (1960)
Counts (1957)
Counts, Tait, Klein, and Billingsley (1959)
Engler, Thompson, and Kaczmarek (1945)
Hewitt, Baker, and Billingsley (1949)
Hosman (1966)
Klein, Baker, and Billingsley (1960)
Kriszinsky and Wire (1964)
Onellion (1962)
Onellion and Criner (1963)
Tait, Baker, and Billingsley (1953)

Louisiana

Foole (1963)
Rollo (1960)
Snider and Forbes (1963)
Snider, Winner, and Epstein (1962)
Turcan and Moyer (1957)

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1970—W62064

BLOCK DIAGRAMS, GRAPHS, AND CHEMICAL-ANALYSES DIAGRAMS SHOWING AVAILABILITY AND QUALITY OF WATER IN THE WEST-CENTRAL PART OF THE MISSISSIPPI EMBAYMENT