

2023 Mississippi River Water Quality Data - Ford

Station	Sample Time	Sample Type	Air Temperature (°F)	Water Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous Biological Oxygen Demand 5-day (mg/L)	Total Biological Oxygen Demand 5-day (mg/L)	Chemical Oxygen Demand (mg/L)
Ford	05/04/2023 08:30	Grab	60	10.5	220.2	304.2	12.27	8.5	0.15	30	110	2.7	3.8	39
Ford	06/01/2023 08:40	Grab	82	23.1	369.9	384.1	9.10	8.3	0.18	58	142	1.8	2.7	33
Ford	09/07/2023 08:45	Grab	59	23.2	468.3	485.3	7.28	8.6	0.23	60	170	2.2	3.2	26
Ford	11/02/2023 08:40	Grab	30	4.8	272.8	444.2	12.84	8.4	0.21	> 100	142	1.6	1.1	23

2023 Mississippi River Water Quality Data - Meeker

Station	Sample Time	Sample Type	Air Temperature (°F)	Water Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous Biological Oxygen Demand 5-day (mg/L)	Total Biological Oxygen Demand 5-day (mg/L)	Chemical Oxygen Demand (mg/L)
Meeker	03/02/2023 11:00	Grab	25	1.3	289.5	529.0	13.64	10.4	0.25	> 100	195	0.8	1.0	19
Meeker	04/06/2023 08:30	Grab	25	2.7	282.8	492.8	14.05	8.2	0.24	90	152	1.2	1.7	19
Meeker	05/04/2023 09:00	Grab	60	10.4	212.7	294.8	11.98	8.4	0.14	35	104	2.6	3.1	41
Meeker	06/01/2023 08:55	Grab	82	23.3	374.2	386.6	9.02	8.3	0.18	47	142	1.8	2.7	35
Meeker	06/15/2023 08:05	Grab	63	23.4	417.9	430.9	8.72	8.4	0.21	66	158	2.5	2.8	26
Meeker	07/06/2023 08:25	Grab	64	26.1	439.2	430.4	8.27	8.5	0.21	66	156	2.4	2.6	25
Meeker	07/20/2023 08:30	Grab	68	23.3	423.3	437.1	8.18	8.7	0.21	70	165	2.6	2.8	25
Meeker	08/03/2023 08:45	Grab	83	27.1	470.3	451.8	6.73	8.7	0.22	58	158	3.8	4.0	25
Meeker	08/17/2023 08:25	Grab	67	22.5	414.7	435.6	8.97	8.6	0.21	64	151	3.1	3.2	25
Meeker	09/07/2023 09:05	Grab	60	23.7	472.6	484.5	7.34	8.6	0.23	60	167	2.0	3.2	26
Meeker	09/21/2023 08:40	Grab	70	20.6	456.1	497.5	8.28	8.6	0.24	73	179	2.0	2.3	19
Meeker	10/05/2023 08:30	Grab	58	20.0	422.8	467.5	9.38	8.3	0.23	68	165	1.9	1.6	22
Meeker	10/19/2023 08:35	Grab	51	12.7	341.4	446.3	11.12	8.4	0.22	92	155	1.6	1.4	21
Meeker	11/02/2023 09:00	Grab	30	5.0	274.6	444.5	13.06	8.4	0.21	> 100	162	1.4	1.2	21
Meeker	11/16/2023 09:15	Grab	57	7.8	298.1	444.2	12.12	8.5	0.21	> 100	158	1.2	1.4	22
Meeker	12/07/2023 10:00	Grab	40	2.4	261.0	459.8	13.97	8.3	0.22	> 100	180	1.3	1.5	22

2023 Mississippi River Water Quality Data - Ford

Station	Sample Time	Sample Type	Chlorophyll-a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
Ford	05/04/2023 08:30	Grab	50	13.9	< 0.02	< 0.01	0.08	103	< 0.06	1.20	0.69	< 0.06	0.69	14.5
Ford	06/01/2023 08:40	Grab	38	18.1	< 0.05	< 0.01	0.08	179	< 0.06	0.94	0.44	< 0.06	0.44	13.9
Ford	09/07/2023 08:45	Grab	54	36.4	< 0.05	< 0.01	0.09	160	< 0.06	0.87	< 0.20	< 0.06		19.4
Ford	11/02/2023 08:40	Grab		34.6	< 0.05	0.02	< 0.05	169	< 0.06	0.68	0.51	< 0.06	0.51	17.7

2023 Mississippi River Water Quality Data - Meeker

Station	Sample Time	Sample Type	Chlorophyll-a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
Meeker	03/02/2023 11:00	Grab	6.3	49.2	< 0.02	0.01	< 0.02	165	0.06	0.61	0.94	< 0.06	0.94	14.3
Meeker	04/06/2023 08:30	Grab	15	36.5	~ 0.02	< 0.01	~ 0.04	163	0.08	0.61	1.05	< 0.06	1.05	17.2
Meeker	05/04/2023 09:00	Grab	45	13.6	~ 0.02	< 0.01	0.07	117	< 0.06	1.00	0.57	< 0.06	0.57	13.4
Meeker	06/01/2023 08:55	Grab	39	18.9	< 0.05	< 0.01	0.08	145	< 0.06	0.95	0.46	< 0.06	0.46	14.1
Meeker	06/15/2023 08:05	Grab	26	22.4	< 0.05	< 0.01	0.05	196	< 0.06	0.76	0.48	< 0.06	0.48	17.5
Meeker	07/06/2023 08:25	Grab	49	25.8	< 0.05	< 0.01	0.09	189	< 0.06	0.71	< 0.20	< 0.06		15.7
Meeker	07/20/2023 08:30	Grab	32	26.1	< 0.05	< 0.01	< 0.05	191	< 0.06	0.78	< 0.20	< 0.06		16.4
Meeker	08/03/2023 08:45	Grab	55	30.6	< 0.05	< 0.01	0.09	180	< 0.06	0.78	< 0.20	< 0.06		16.5
Meeker	08/17/2023 08:25	Grab		32.6	< 0.05	< 0.01	0.05	169	< 0.06	0.73	< 0.20	< 0.06		15.8
Meeker	09/07/2023 09:05	Grab	56	34.4	< 0.05	< 0.01	0.05	158	< 0.06	0.68	< 0.20	< 0.06		19.1
Meeker	09/21/2023 08:40	Grab	26	35.9	< 0.05	< 0.01	< 0.05	179	< 0.06	0.63	0.35	< 0.06		19.1
Meeker	10/05/2023 08:30	Grab	23	35.4	0.05	0.02	0.07	175	< 0.06	0.58	0.38	< 0.06	0.38	15.2
Meeker	10/19/2023 08:35	Grab	15	32.5	< 0.05	0.01	0.05	188	< 0.06	0.59	0.39	< 0.06	0.39	16.7
Meeker	11/02/2023 09:00	Grab		32.7	< 0.05	0.02	< 0.05	211	< 0.06	0.58	0.51	< 0.06	0.51	17.5
Meeker	11/16/2023 09:15	Grab	19	29.4	< 0.05	< 0.01	< 0.05	201	< 0.06	0.57	0.48	< 0.06	0.48	17.6
Meeker	12/07/2023 10:00	Grab	14	27.6	< 0.05	< 0.01	< 0.05	218	< 0.06	0.59	0.59	< 0.06	0.59	17.1

2023 Mississippi River Water Quality Data - Ford

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Ford	05/04/2023 08:30	Grab	< 0.1	< 2.5	< 1	< 0.5	1.1	< 5	195	12.0	17	7
Ford	06/01/2023 08:40	Grab	< 0.1	< 2.5	1.6	< 0.5	1.4	< 5	323	10.5	14	6
Ford	09/07/2023 08:45	Grab	< 0.1	< 2.5	< 1	< 0.5	1.1	7.3	263	6.3	13	8
Ford	11/02/2023 08:40	Grab	< 0.1	< 2.5	< 1	< 0.5	0.63	< 5	273	8.3	< 3	< 3

2023 Mississippi River Water Quality Data - Meeker

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Meeker	03/02/2023 11:00	Grab	< 0.1	< 2.5	< 1	< 0.5	0.51	< 5	295	6.7	< 3	< 3
Meeker	04/06/2023 08:30	Grab	< 0.1	< 2.5	< 1	< 0.5	0.68	< 5	265	7.2	3	< 3
Meeker	05/04/2023 09:00	Grab	< 0.1	< 2.5	< 1	< 0.5	1.1	< 5	182	12.6	18	7
Meeker	06/01/2023 08:55	Grab	< 0.1	< 2.5	< 1	< 0.5	1.2	< 5	230	10.7	14	5
Meeker	06/15/2023 08:05	Grab							254	8.7	7	4
Meeker	07/06/2023 08:25	Grab	< 0.1	< 2.5	1	< 0.5	0.81	< 5	264	6.6	8	5
Meeker	07/20/2023 08:30	Grab							260	6.4	8	5
Meeker	08/03/2023 08:45	Grab	< 0.1	< 2.5	1.1	< 0.5	0.89	< 5	243	7.1	14	9
Meeker	08/17/2023 08:25	Grab							259	6.2	11	6
Meeker	09/07/2023 09:05	Grab	< 0.1	< 2.5	< 1	< 0.5	0.81	< 5	279	6.3	9	6
Meeker	09/21/2023 08:40	Grab							284	6.2	8	5
Meeker	10/05/2023 08:30	Grab	< 0.1	< 2.5	1	< 0.5	0.73	< 5	270	6.5	7	4
Meeker	10/19/2023 08:35	Grab							273	7.6	7	3
Meeker	11/02/2023 09:00	Grab	< 0.1	< 2.5	< 1	< 0.5	0.74	< 5	274	8.3	3	< 3
Meeker	11/16/2023 09:15	Grab							245	7.6	7	3
Meeker	12/07/2023 10:00	Grab	< 0.1	< 2.5	1.2	< 0.5	0.65	5.9	247	8.5	3	< 3

2023 Mississippi River Water Quality Data - Wash

Station	Sample Time	Sample Type	Air Temperature (°F)	Water Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous Biological Oxygen Demand 5-day (mg/L)	Total Biological Oxygen Demand 5-day (mg/L)	Chemical Oxygen Demand (mg/L)
Wash	03/02/2023 11:25	Grab	24	2.2	306.9	544.0	13.22	12.7	0.26	> 100	186	0.9	1.0	19
Wash	04/06/2023 09:00	Grab	25	3.2	297.2	509.0	13.58	8.2	0.24	82	170	1.2	1.8	21
Wash	04/20/2023 09:55	Grab	38	5.3	165.6	265.8	13.01	7.9	0.13	30	92	1.7	2.4	37
Wash	05/04/2023 09:25	Grab	65	10.4	225.5	312.4	12.38	8.5	0.15	28	102	3.0	3.0	37
Wash	06/01/2023 09:05	Grab	82	23.4	372.9	384.5	9.11	8.3	0.18	45	148	1.9	2.3	34
Wash	06/15/2023 08:30	Grab	63	22.8	412.8	430.7	8.56	8.4	0.21	78	166	2.1	2.5	43
Wash	07/06/2023 08:45	Grab	64	26.1	439.5	430.6	8.62	8.5	0.21	66	157	2.4	2.6	37
Wash	07/20/2023 08:45	Grab	68	24.4	428.4	433.8	8.53	8.8	0.21	72	161	2.3	2.8	25
Wash	08/03/2023 09:00	Grab	83	27.7	466.2	443.5	7.91	8.7	0.21	45	154	3.1	3.7	25
Wash	08/17/2023 08:40	Grab	67	23.5	425.6	438.5	8.99	8.7	0.21	58	140	2.7	3.5	23
Wash	09/07/2023 09:20	Grab	60	24.1	476.8	485.6	7.80	8.6	0.23	60	159	2.3	3.1	26
Wash	09/21/2023 08:55	Grab	70	21.4	463.5	497.5	8.53	8.6	0.24	80	174	1.5	1.9	17
Wash	10/05/2023 08:45	Grab	60	19.6	422.2	470.8	8.92	8.3	0.23	67	166	1.4	1.5	20
Wash	10/19/2023 08:55	Grab	51	12.5	343.5	450.9	11.23	8.4	0.22	90	152	1.3	1.4	21
Wash	11/02/2023 09:15	Grab	30	4.9	274.0	445.5	13.10	8.4	0.21	> 100	161	1.4	1.2	21
Wash	11/16/2023 09:40	Grab	59	7.7	291.6	436.0	11.97	8.5	0.21	> 100	174	1.2	1.4	20
Wash	12/07/2023 10:25	Grab	42	2.5	254.7	446.9	14.09	8.4	0.21	> 100	167	1.5	1.5	31

2023 Mississippi River Water Quality Data - Wash

Station	Sample Time	Sample Type	Chlorophyll-a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
Wash	03/02/2023 11:25	Grab	12	40.6	< 0.02	< 0.01	~ 0.03	216	0.06	0.60	0.96	< 0.06	0.96	13.8
Wash	04/06/2023 09:00	Grab	17	40.6	~ 0.03	< 0.01	~ 0.03	165	0.1	0.67	1.07	< 0.06	1.07	17.2
Wash	04/20/2023 09:55	Grab	11	12.8	0.12	0.09	0.16	94	0.12	1.20	1.86	< 0.06	1.86	11.7
Wash	05/04/2023 09:25	Grab	55	14.5	< 0.02	< 0.01	0.07	110	< 0.06	0.99	0.74	< 0.06	0.74	15.1
Wash	06/01/2023 09:05	Grab	37	17.6	< 0.05	< 0.01	0.09	151	< 0.06	0.90	0.44	< 0.06	0.44	13.9
Wash	06/15/2023 08:30	Grab	23	21.4	< 0.05	0.01	0.06	195	< 0.06	0.77	0.53	< 0.06	0.53	17.5
Wash	07/06/2023 08:45	Grab	44	23.9	< 0.05	< 0.01	< 0.05	190	< 0.06	0.70	< 0.20	< 0.06		15.5
Wash	07/20/2023 08:45	Grab	33	26	< 0.05	< 0.01	< 0.05	173	< 0.06	0.68	< 0.20	< 0.06		16.3
Wash	08/03/2023 09:00	Grab	58	30.3	< 0.05	< 0.01	0.07	177	< 0.06	0.80	< 0.20	< 0.06		16.2
Wash	08/17/2023 08:40	Grab		33.2	< 0.05	< 0.01	0.05	181	< 0.06	0.79	< 0.20	< 0.06		15.7
Wash	09/07/2023 09:20	Grab	57	37.2	< 0.05	< 0.01	0.08	245	< 0.06	0.80	< 0.20	< 0.06		19.0
Wash	09/21/2023 08:55	Grab	22	36.3	< 0.05	< 0.01	< 0.05	160	< 0.06	0.60	0.36	< 0.06		19.2
Wash	10/05/2023 08:45	Grab	19	35	< 0.05	0.03	0.07	175	< 0.06	< 0.10	0.39	< 0.06	0.39	15.3
Wash	10/19/2023 08:55	Grab	14	32.4	< 0.05	0.01	< 0.05	186	< 0.06	0.61	0.39	< 0.06	0.39	16.7
Wash	11/02/2023 09:15	Grab		34	< 0.05	0.01	< 0.05	188	< 0.06	0.64	0.51	< 0.06	0.51	17.7
Wash	11/16/2023 09:40	Grab	19	28.4	< 0.05	< 0.01	< 0.05	207	< 0.06	0.58	0.48	< 0.06	0.48	17.6
Wash	12/07/2023 10:25	Grab	14	23.8	< 0.05	< 0.01	< 0.05	198	< 0.06	0.57	0.57	< 0.06	0.57	16.1

2023 Mississippi River Water Quality Data - Wash

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Wash	03/02/2023 11:25	Grab	< 0.1	< 2.5	< 1	< 0.5	0.58	< 5	271	6.9	< 3	< 3
Wash	04/06/2023 09:00	Grab	< 0.1	< 2.5	< 1	< 0.5	0.64	< 5	273	7.1	4	< 3
Wash	04/20/2023 09:55	Grab							143	10.4	27	7
Wash	05/04/2023 09:25	Grab	< 0.1	< 2.5	< 1	< 0.5	1.1	< 5	184	12.2	16	6
Wash	06/01/2023 09:05	Grab	< 0.1	< 2.5	< 1	< 0.5	1.1	< 5	227	10.7	14	5
Wash	06/15/2023 08:30	Grab							260	8.7	7	4
Wash	07/06/2023 08:45	Grab	< 0.1	< 2.5	1.3	< 0.5	0.8	< 5	273	6.6	7	5
Wash	07/20/2023 08:45	Grab							234	6.4	8	4
Wash	08/03/2023 09:00	Grab	< 0.1	< 2.5	1.2	0.55	1	5.5	245	7.0	16	9
Wash	08/17/2023 08:40	Grab							256	6.3	12	7
Wash	09/07/2023 09:20	Grab	< 0.1	< 2.5	< 1	< 0.5	0.8	5.4	278	6.2	10	7
Wash	09/21/2023 08:55	Grab							286	6.2	7	4
Wash	10/05/2023 08:45	Grab	< 0.1	< 2.5	< 1	< 0.5	0.73	< 5	266	6.7	8	4
Wash	10/19/2023 08:55	Grab							274	7.7	8	3
Wash	11/02/2023 09:15	Grab	< 0.1	< 2.5	< 1	< 0.5	0.64	6.4	267	8.3	3	3
Wash	11/16/2023 09:40	Grab							235	7.7	7	3
Wash	12/07/2023 10:25	Grab	< 0.1	< 2.5	1.4	< 0.5	0.72	5.9	246	8.3	3	3

2023 Mississippi River Water Quality Data - Boom

Station	Sample Time	Sample Type	Air Temperature (°F)	Water Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous	Total Biological Oxygen Demand 5-day (mg/L)	Chemical
												Oxygen Demand 5-day (mg/L)		Oxygen Demand (mg/L)
Boom	03/02/2023 12:00	Grab	26	1.8	259.6	466.6	13.45	9.3	0.22	> 100	178	0.9	1.1	19
Boom	04/06/2023 09:40	Grab	28	5.5	295.7	471.9	13.63	8.2	0.23	88	152	1.1	1.6	19
Boom	04/20/2023 10:15	Grab	38	5.3	167.1	267.9	12.10	7.9	0.13	33	97	1.9	2.8	37
Boom	05/04/2023 09:40	Grab	66	10.4	230	318.6	12.26	8.6	0.15	38	122	2.9	3.3	39
Boom	05/18/2023 09:30	Grab	64	17.4	275.2	321.6	9.55	8.1	0.15	81	108	1.4	1.6	37
Boom	06/01/2023 09:55	Grab	84	23.6	369.8	379.8	8.69	8.3	0.18	51	143	2.2	2.3	32
Boom	06/15/2023 08:55	Grab	63	23.0	418.4	434.8	8.04	8.3	0.21	77	156	2.2	2.5	22
Boom	07/06/2023 09:05	Grab	65	25.0	430.2	430.0	7.61	8.4	0.21	77	161	2.1	2.7	25
Boom	07/20/2023 10:00	Grab	69	24.1	407.9	414.8	7.45	8.7	0.20	74	141	2.8	3.3	25
Boom	08/03/2023 09:50	Grab	82	27.7	443.3	421.4	7.33	8.7	0.20	55	145	3.1	3.5	25
Boom	08/17/2023 09:50	Grab	65	23.0	412.2	428.9	8.62	8.6	0.21	62	147	2.4	2.9	23
Boom	09/07/2023 09:55	Grab	60	23.9	459.2	469.3	8.10	8.6	0.23	63	176	1.9	2.8	26
Boom	09/21/2023 09:45	Grab	73	21.9	453.9	482.7	10.24	8.7	0.23	85	175	1.7	2.2	17
Boom	10/05/2023 09:45	Grab	61	18.5	406.4	464.4	8.52	8.3	0.22	93	165	1.2	1.2	18
Boom	11/02/2023 10:05	Grab	31	4.7	265.4	433.4	12.67	8.5	0.21	> 100	152	1.3	1.2	22
Boom	11/16/2023 10:00	Grab	60	7.4	289.6	435.7	12.05	8.5	0.21	> 100	164	1.0	1.3	22
Boom	12/07/2023 11:35	Grab	42	2.7	255.5	445.3	13.68	8.3	0.21	> 100	166	1.4	1.4	20

2023 Mississippi River Water Quality Data - Boom

Station	Sample Time	Sample Type	Chlorophyll- a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
Boom	03/02/2023 12:00	Grab	11	29.8	< 0.02	< 0.01	~ 0.02	173	0.06	0.58	0.97	< 0.06	0.97	13.0
Boom	04/06/2023 09:40	Grab	12	31.5	< 0.02	< 0.01	~ 0.05	176	0.06	0.65	1.07	< 0.06	1.07	16.1
Boom	04/20/2023 10:15	Grab	13	12.1	0.11	0.09	0.17	79	0.12	1.20	1.48	< 0.06	1.48	12.1
Boom	05/04/2023 09:40	Grab	54	14.7	~ 0.04	< 0.01	0.07	113	< 0.06	1.00	0.85	< 0.06	0.85	16.2
Boom	05/18/2023 09:30	Grab	20	13.7	~ 0.02	0.01	0.07	117	< 0.06	0.85	0.45	< 0.06	0.45	11.0
Boom	06/01/2023 09:55	Grab	34	17.1	< 0.05	0.02	0.08	168	< 0.06	0.90	0.50	< 0.06	0.50	13.8
Boom	06/15/2023 08:55	Grab	21	22.4	< 0.05	0.01	0.06	198	< 0.06	0.80	0.58	< 0.06	0.58	17.7
Boom	07/06/2023 09:05	Grab	38	23.5	< 0.05	< 0.01	0.06	45	< 0.06	0.67	< 0.20	< 0.06		15.4
Boom	07/20/2023 10:00	Grab	36	24.2	< 0.05	< 0.01	< 0.05	187	< 0.06	0.66	< 0.20	< 0.06		15.1
Boom	08/03/2023 09:50	Grab	52	27.2	< 0.05	< 0.01	0.06	172	< 0.06	0.93	< 0.20	< 0.06		15.1
Boom	08/17/2023 09:50	Grab		31.6	< 0.05	< 0.01	0.06	153	< 0.06	0.74	< 0.20	< 0.06		15.0
Boom	09/07/2023 09:55	Grab	53	31.4	< 0.05	< 0.01	< 0.05	155	< 0.06	0.66	< 0.20	< 0.06		17.6
Boom	09/21/2023 09:45	Grab	27	33.4	< 0.05	< 0.01	< 0.05	161	< 0.06	0.61	0.36	< 0.06		18.2
Boom	10/05/2023 09:45	Grab	15	34.7	< 0.05	0.02	0.06	178	< 0.06	0.58	0.45	< 0.06	0.45	15.1
Boom	11/02/2023 10:05	Grab		29.5	< 0.05	0.02	< 0.05	207	< 0.06	0.59	0.57	< 0.06	0.57	17.1
Boom	11/16/2023 10:00	Grab	16	28.0	< 0.05	< 0.01	< 0.05	201	< 0.06	0.56	0.50	< 0.06	0.50	17.4
Boom	12/07/2023 11:35	Grab	15	24.3	< 0.05	< 0.01	< 0.05	194	< 0.06	0.51	0.61	< 0.06	0.61	16.0

2023 Mississippi River Water Quality Data - Boom

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Boom	03/02/2023 12:00	Grab	< 0.1	< 2.5	< 1	< 0.5	< 0.50	< 5.0	262	6.8	< 3	< 3
Boom	04/06/2023 09:40	Grab	< 0.1	< 2.5	< 1	< 0.5	0.62	5.4	281	7.3	< 3	< 3
Boom	04/20/2023 10:15	Grab							129	10.2	23	7
Boom	05/04/2023 09:40	Grab	< 0.1	< 2.5	< 1	< 0.5	1.10	< 5.0	194	12.0	18	6
Boom	05/18/2023 09:30	Grab							198	12.9	12	3
Boom	06/01/2023 09:55	Grab	< 0.1	< 2.5	1.1	< 0.5	1.10	5.4	224	10.6	14	5
Boom	06/15/2023 08:55	Grab							256	8.6	8	4
Boom	07/06/2023 09:05	Grab	< 0.1	< 2.5	< 1	< 0.5	0.84	< 5.0	264	6.7	6	4
Boom	07/20/2023 10:00	Grab							238	6.4	9	5
Boom	08/03/2023 09:50	Grab	< 0.1	< 2.5	1.5	< 0.5	0.93	5.5	247	6.8	11	7
Boom	08/17/2023 09:50	Grab							248	6.3	10	6
Boom	09/07/2023 09:55	Grab	< 0.1	< 2.5	< 1	< 0.5	0.82	5.8	273	6.3	8	5
Boom	09/21/2023 09:45	Grab							284	6.2	7	4
Boom	10/05/2023 09:45	Grab	< 0.1	< 2.5	< 1	< 0.5	0.72	< 5.0	268	6.5	6	3
Boom	11/02/2023 10:05	Grab	< 0.1	< 2.5	< 1	< 0.5	0.89	< 5.0	260	8.2	3	< 3
Boom	11/16/2023 10:00	Grab							242	7.8	6	4
Boom	12/07/2023 11:35	Grab	< 0.1	< 2.5	< 1	< 0.5	0.64	18.8	245	8.5	3	< 3

Station	Sample Time	Sample Type	Air	Water	Conductivity (µS/cm)	Specific	Dissolved	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous	Total Biological	Chemical
			Temperature (°F)	Temperature (°C)		Conductivity (µS/cm)	Oxygen (mg/L)					Biological Oxygen Demand 5-day (mg/L)	Oxygen Demand 5- day (mg/L)	Oxygen Demand (mg/L)
MWMO	01/05/2023 12:00	Grab	25	2.1	231.9	412.7	13.89	8.3	0.2	> 100	185	1.0	0.9	21
MWMO	03/02/2023 14:00	Grab	28	2.0	261.8	467.6	13.36	11.4	0.2	> 100	176	0.8	1.0	19
MWMO	04/06/2023 11:30	Grab	30	2.5	268.1	470.9	14.15	8.3	0.2		161	1.2	1.8	21
MWMO	04/20/2023 11:15	Grab	38	6.0	153.3	240.3	11.91	7.8	0.1	38	98	1.7	2.5	35
MWMO	05/04/2023 10:15	Grab	70	10.4	202.6	280.7	11.81	8.4	0.1	32	106	2.2	2.5	39
MWMO	05/18/2023 09:45	Grab	64	17.4	280.5	328.1	9.65	8.1	0.2	63	120	1.3	1.6	37
MWMO	06/01/2023 10:15	Grab	84	23.7	374.9	384.4	8.86	8.3	0.2	52	143	1.5	2.2	32
MWMO	06/15/2023 09:30	Grab	65	21.8	401.1	427.4	8.61	8.4	0.2	76	155	2.0	2.4	24
MWMO	07/06/2023 09:35	Grab	65	24.6	425.9	429.1	8.07	8.4	0.2	75	170	1.9	2.1	25
MWMO	07/20/2023 10:10	Grab	70	23.9	424.0	433.1	7.66	8.6	0.2	70	148	2.5	2.6	23
MWMO	08/03/2023 10:05	Grab	85	27.4	471.0	450.6	6.75	8.6	0.2	60	158	2.4	2.9	23
MWMO	08/17/2023 10:00	Grab	67	23.6	416.8	428.7	8.41	8.6	0.2	64	147	2.2	3.1	27
MWMO	09/07/2023 10:10	Grab	60	23.5	454.8	468.2	8.14	8.6	0.2	68	183	1.7	2.7	20
MWMO	09/21/2023 09:55	Grab	73	23.5	469.7	483.7	9.40	8.7	0.2	85	180	1.5	1.9	17
MWMO	10/05/2023 10:00	Grab	61	18.4	407.6	466.3	8.66	8.3	0.2	73	171	1.5	1.2	20
MWMO	10/19/2023 11:30	Grab	53	13.2	343.4	443.4	10.17	8.4	0.2	> 100	156	1.5	1.4	23
MWMO	11/02/2023 10:15	Grab	31	4.5	263.9	433.5	12.69	8.5	0.2	> 100	150	1.5	1.1	22
MWMO	11/16/2023 10:30	Grab	60	9.9	306.7	431.1	11.35	8.4	0.2	> 100	166	1.6	1.7	22
MWMO	12/07/2023 10:45	Grab	42	4.2	265.6	439.9	13.80	8.3	0.2	> 100	171	1.5	1.4	24

Station	Sample Time	Sample Type	Chlorophyll- a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total			Sulfate (mg/L)	
										Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)		
MWMO	01/05/2023 12:00	Grab	7.8	21.3	< 0.02	< 0.01	~ 0.02	184	0.11	0.66	0.79	< 0.06	0.79	11.8
MWMO	03/02/2023 14:00	Grab	9.4	29.4	< 0.02	< 0.01	~ 0.02	223	0.06	0.58	0.96	< 0.06	0.96	12.8
MWMO	04/06/2023 11:30	Grab	15	30.7	< 0.02	< 0.01	~ 0.04	162	< 0.06	0.65	1.09	< 0.06	1.09	16.1
MWMO	04/20/2023 11:15	Grab	10	11.5	0.09	0.07	0.17	97	0.12	1.30	2.00	< 0.06	2.00	10.2
MWMO	05/04/2023 10:15	Grab	41	14.2	~ 0.03	< 0.01	0.06	108	< 0.06	0.93	0.46	< 0.06	0.46	11.6
MWMO	05/18/2023 09:45	Grab	19	12.9	0.07	0.01	0.09	114	< 0.06	0.82	0.48	< 0.06	0.48	11.4
MWMO	06/01/2023 10:15	Grab	35	18.3	< 0.05	0.02	0.06	156	< 0.06	0.95	0.52	< 0.06	0.52	14.4
MWMO	06/15/2023 09:30	Grab	25	21.2	< 0.05	0.01	0.06	218	< 0.06	0.78	0.58	< 0.06	0.58	17.4
MWMO	07/06/2023 09:35	Grab	41	23.1	< 0.05	< 0.01	< 0.05	183	< 0.06	0.66	< 0.20	< 0.06		15.5
MWMO	07/20/2023 10:10	Grab	36	26.3	< 0.05	< 0.01	< 0.05	204	< 0.06	0.69	< 0.20	< 0.06		15.8
MWMO	08/03/2023 10:05	Grab	39	29.0	< 0.05	< 0.01	< 0.05	184	< 0.06	0.75	< 0.20	< 0.06		16.2
MWMO	08/17/2023 10:00	Grab		30.4	< 0.05	< 0.01	0.06	167	< 0.06	0.72	< 0.20	< 0.06		15.0
MWMO	09/07/2023 10:10	Grab	43	31.2	< 0.05	< 0.01	0.07	174	< 0.06	0.73	< 0.20	< 0.06		17.6
MWMO	09/21/2023 09:55	Grab	22	34.0	< 0.05	< 0.01	< 0.05	161	< 0.06	0.57	0.38	< 0.06		18.1
MWMO	10/05/2023 10:00	Grab	15	33.0	< 0.05	0.02	0.05	172	< 0.06	0.62	0.42	< 0.06	0.42	15.2
MWMO	10/19/2023 11:30	Grab	17	29.0	< 0.05	0.01	< 0.05	182	< 0.06	0.58	0.35	< 0.06	0.35	16.5
MWMO	11/02/2023 10:15	Grab		28.8	< 0.05	0.02	0.07	194	< 0.06	1.87	0.55	< 0.06	0.55	17.7
MWMO	11/16/2023 10:30	Grab	19	26.2	< 0.05	< 0.01	< 0.05	201	< 0.06	0.59	0.52	< 0.06	0.52	17.1
MWMO	12/07/2023 10:45	Grab	19	22.0	< 0.05	< 0.01	< 0.05	180	< 0.06	0.60	0.59	< 0.06	0.59	15.3

2023 Mississippi River Water Quality Data - MWMO

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
MWMO	01/05/2023 12:00	Grab	< 0.1	< 2.5	< 1	< 0.5	< 0.50	< 5	247	7.7	< 3	< 3
MWMO	03/02/2023 14:00	Grab	< 0.1	< 2.5	< 1	< 0.5	< 0.50	< 5	260	6.7	< 3	< 3
MWMO	04/06/2023 11:30	Grab	< 0.1	< 2.5	< 1	< 0.5	0.61	< 5	286	7.2	5	< 3
MWMO	04/20/2023 11:15	Grab							152	10.2	26	6
MWMO	05/04/2023 10:15	Grab	< 0.1	< 2.5	< 1	< 0.5	1.10	< 5	176	12.3	15	< 6
MWMO	05/18/2023 09:45	Grab							207	12.7	12	4
MWMO	06/01/2023 10:15	Grab	< 0.1	< 2.5	< 1	< 0.5	1.20	< 5	226	10.5	13	5
MWMO	06/15/2023 09:30	Grab							253	9.0	7	4
MWMO	07/06/2023 09:35	Grab	< 0.1	< 2.5	< 1	< 0.5	0.84	< 5	268	6.9	7	4
MWMO	07/20/2023 10:10	Grab							246	6.4	8	4
MWMO	08/03/2023 10:05	Grab	< 0.1	< 2.5	1	< 0.5	0.85	< 5	250	6.8	9	5
MWMO	08/17/2023 10:00	Grab							245	6.2	8	4
MWMO	09/07/2023 10:10	Grab	< 0.1	< 2.5	< 1	< 0.5	0.73	< 5	266	6.4	4	3
MWMO	09/21/2023 09:55	Grab							278	6.2	6	4
MWMO	10/05/2023 10:00	Grab	< 0.1	< 2.5	< 1	< 0.5	0.71	< 5	269	6.6	7	3
MWMO	10/19/2023 11:30	Grab							257	7.8	6	3
MWMO	11/02/2023 10:15	Grab	< 0.1	< 2.5	< 1	< 0.5	0.62	< 5	262	8.3	< 3	< 3
MWMO	11/16/2023 10:30	Grab							240	7.7	6	3
MWMO	12/07/2023 10:45	Grab	< 0.1	< 2.5	1.1	< 0.5	0.65	8.3	240	8.5	< 3	< 3

2023 Mississippi River Water Quality Data - Shingle Up

Station	Sample Time	Sample Type	Air Temperature (°F)	Water Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous Biological Oxygen Demand 5-day (mg/L)	Total Biological Oxygen Demand 5-day (mg/L)	Chemical Oxygen Demand 5-Day (mg/L)
Shingle Up	03/02/2023 14:55	Grab	29	2.0	257.8	459.7	14.20	8.1	0.22	> 100	173	0.7	0.7	19
Shingle Up	04/06/2023 10:20	Grab	30	4.8	292.0	475.5	14.15	8.3	0.23	82	171	1.1	1.7	21
Shingle Up	05/04/2023 10:35	Grab	73	10.8	259.5	356.2	12.52	8.6	0.17	33	117	2.9	3.4	37
Shingle Up	05/18/2023 10:10	Grab	64	17.4	281.5	329.3	9.78	8.1	0.16	68	113	1.4	1.5	39
Shingle Up	06/01/2023 10:25	Grab	87	23.4	364.9	376.4	9.08	8.3	0.18	52	141	1.4	2.0	32
Shingle Up	06/15/2023 10:10	Grab	67	22.1	404.7	428.4	8.99	8.4	0.21	76	164	2.1	2.5	24
Shingle Up	07/06/2023 10:05	Grab	67	23.2	408.5	422.7	9.04	8.5	0.20	77	165	2.3	2.5	23
Shingle Up	07/20/2023 10:20	Grab	70	22.8	404.7	422.4	8.66	8.7	0.20	78	162	2.3	2.4	23
Shingle Up	08/03/2023 10:20	Grab	85	26.6	462.7	448.7	7.92	8.6	0.21	58	163	2.4	2.7	23
Shingle Up	08/17/2023 10:10	Grab	67	22.0	405.5	430.3	9.22	8.6	0.21		145	2.2	3.5	25
Shingle Up	09/07/2023 10:20	Grab	60	21.9	438.1	466.1	7.91	8.5	0.22	70	177	1.7	2.1	26
Shingle Up	09/21/2023 10:10	Grab	75	20.4	437.1	479.6	8.48	8.6	0.23	89	180	1.4	1.8	19
Shingle Up	10/05/2023 10:15	Grab	61	18.6	396.3	451.3	9.06	8.3	0.22	80	160	1.6	1.1	20
Shingle Up	10/19/2023 10:35	Grab	55	12.9	334.5	434.9	10.27	8.4	0.22	> 100	152	1.4	1.6	21
Shingle Up	11/02/2023 10:30	Grab	33	4.5	260.1	424.2	12.93	8.5	0.20	> 100	151	1.6	1.1	19
Shingle Up	11/16/2023 11:10	Grab	60	10.2	307.1	428.5	11.50	8.5	0.21	> 100	170	1.3	1.5	20
Shingle Up	12/07/2023 11:20	Grab	45	4.2	259.7	431.2	13.86	8.4	0.21	> 100	170	1.5	1.3	22

2023 Mississippi River Water Quality Data - Shingle Up

Station	Sample Time	Sample Type	Chlorophyll-a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total			Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
										Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)		
Shingle Up	03/02/2023 14:55	Grab	11	29.4	< 0.02	< 0.01	~ 0.03	228	0.07	0.59	0.95	< 0.06	0.95	12.7
Shingle Up	04/06/2023 10:20	Grab	11	31.9	~ 0.03	< 0.01	~ 0.03	148	< 0.06	0.60	0.97	< 0.06	0.97	16.4
Shingle Up	05/04/2023 10:35	Grab	56	24.0	~ 0.03	< 0.01	0.09	142	< 0.06	1.00	0.88	< 0.06	0.88	18.9
Shingle Up	05/18/2023 10:10	Grab	19	12.2	< 0.02	0.01	0.07	105	< 0.06	0.84	0.50	< 0.06	0.50	11.9
Shingle Up	06/01/2023 10:25	Grab	34	16.9	< 0.05	0.02	0.08	155	< 0.06	0.88	0.53	< 0.06	0.53	14.5
Shingle Up	06/15/2023 10:10	Grab	24	20.2	< 0.05	0.01	0.06	205	< 0.06	0.77	0.61	< 0.06	0.61	17.9
Shingle Up	07/06/2023 10:05	Grab	41	21.6	< 0.05	< 0.01	0.05	193	< 0.06	0.66	< 0.20	< 0.06		15.3
Shingle Up	07/20/2023 10:20	Grab	36	24.1	< 0.05	< 0.01	< 0.05	197	< 0.06	0.64	< 0.20	< 0.06		15.3
Shingle Up	08/03/2023 10:20	Grab	36	27.6	< 0.05	< 0.01	0.05	178	< 0.06	0.79	< 0.20	< 0.06		16.4
Shingle Up	08/17/2023 10:10	Grab		30.1	< 0.05	< 0.01	0.06	167	< 0.06	0.70	< 0.20	< 0.06		15.0
Shingle Up	09/07/2023 10:20	Grab	38	30.7	< 0.05	< 0.01	0.05	166	< 0.06	0.77	0.24	< 0.06		17.4
Shingle Up	09/21/2023 10:10	Grab	22	32.3	< 0.05	< 0.01	< 0.05	161	< 0.06	0.62	0.41	< 0.06		17.7
Shingle Up	10/05/2023 10:15	Grab	18	30.4	0.07	0.02	0.07	176	< 0.06	0.57	0.44	< 0.06	0.44	14.8
Shingle Up	10/19/2023 10:35	Grab	17	28.4	< 0.05	0.01	< 0.05	180	< 0.06	0.59	0.36	< 0.06	0.36	16.3
Shingle Up	11/02/2023 10:30	Grab		26.0	< 0.05	0.01	< 0.05	200	< 0.06	0.70	0.54	< 0.06	0.54	16.7
Shingle Up	11/16/2023 11:10	Grab	23	25.0	< 0.05	< 0.01	< 0.05	201	< 0.06	0.58	0.50	< 0.06	0.50	17.1
Shingle Up	12/07/2023 11:20	Grab	16	21.7	< 0.05	< 0.01	< 0.05	191	< 0.06	0.52	0.58	< 0.06	0.58	14.7

2023 Mississippi River Water Quality Data - Shingle Up

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Shingle Up	03/02/2023 14:55	Grab	< 0.1	< 2.5	< 1	< 0.5	< 0.50	< 5	250	6.8	< 3	< 3
Shingle Up	04/06/2023 10:20	Grab	< 0.1	< 2.5	< 1	< 0.5	0.73	< 5	282	7.1	3	< 3
Shingle Up	05/04/2023 10:35	Grab	< 0.1	< 2.5	< 1	< 0.5	1.20	< 5	220	11.6	17	6
Shingle Up	05/18/2023 10:10	Grab							203	12.5	12	3
Shingle Up	06/01/2023 10:25	Grab	< 0.1	< 2.5	< 1	< 0.5	1.10	< 5	230	10.8	14	5
Shingle Up	06/15/2023 10:10	Grab							252	8.8	7	4
Shingle Up	07/06/2023 10:05	Grab	< 0.1	< 2.5	< 1	< 0.5	0.87	< 5	252	6.8	7	4
Shingle Up	07/20/2023 10:20	Grab							249	6.4	7	4
Shingle Up	08/03/2023 10:20	Grab	< 0.1	< 2.5	1	< 0.5	0.87	< 5	248	6.8	8	5
Shingle Up	08/17/2023 10:10	Grab							242	6.1	9	5
Shingle Up	09/07/2023 10:20	Grab	< 0.1	< 2.5	< 1	< 0.5	0.73	< 5	268	6.3	7	5
Shingle Up	09/21/2023 10:10	Grab							279	6.5	5	4
Shingle Up	10/05/2023 10:15	Grab	< 0.1	< 2.5	< 1	< 0.5	0.84	< 5	260	6.5	7	3
Shingle Up	10/19/2023 10:35	Grab							256	7.9	4	< 3
Shingle Up	11/02/2023 10:30	Grab	< 0.1	< 2.5	< 1	< 0.5	0.62	< 5	266	8.1	< 3	< 3
Shingle Up	11/16/2023 11:10	Grab							245	7.7	6	3
Shingle Up	12/07/2023 11:20	Grab	< 0.1	< 2.5	1.1	< 0.5	0.57	< 5	241	8.4	3	< 3

2023 Mississippi River Water Quality Data - Upper

Station	Sample Time	Sample Type	Air	Water	Conductivity (µS/cm)	Specific	Dissolved	pH	Salinity (ppt)	Transparency (cm)	Alkalinity (mg/L)	Carbonaceous	Total Biological Oxygen Demand 5-day (mg/L)	Chemical
			Temperature (°F)	Temperature (°C)		Conductivity (µS/cm)	Oxygen (mg/L)					Oxygen Demand 5-day (mg/L)		Oxygen Demand (mg/L)
Upper	01/05/2023 11:20	Grab	25	1.9	378.6	677.0	12.88	9.1	0.33	> 100	181	1.1	0.8	27
Upper	02/02/2023 14:35	Grab	6	0.0	241.5	461.5	15.01	7.5	0.22	> 100	203	1.2	1.0	19
Upper	03/02/2023 15:30	Grab	29	2.1	271.3	482.0	14.73	7.8	0.23	> 100	172	0.8	0.9	19
Upper	04/06/2023 10:45	Grab	31	4.9	316.1	513.0	14.43	8.4	0.25	92	169	1.3	1.6	21
Upper	04/20/2023 10:50	Grab	38	5.4	173.0	276.4	12.23	7.9	0.13	36	88	1.7	2.4	34
Upper	05/04/2023 11:00	Grab	75	10.8	251.2	344.6	12.54	8.6	0.17	36	130	2.9	3.4	41
Upper	05/18/2023 10:20	Grab	63	17.3	276.5	323.9	9.66	8.1	0.16	81	110	1.4	1.5	39
Upper	06/01/2023 10:35	Grab	90	23.4	360.1	371.7	9.14	8.3	0.18	54	134	1.9	2.0	30
Upper	06/15/2023 10:35	Grab	68	22.6	428.9	449.1	9.87	8.4	0.22	72	160	2.1	2.4	22
Upper	07/06/2023 10:40	Grab	68	24.6	425.8	429.4	9.97	8.5	0.21	63	168	2.2	2.4	21
Upper	07/20/2023 11:30	Grab	78	23.1	410.2	426.0	9.53	8.7	0.20		151	2.0	2.6	22
Upper	08/03/2023 10:10	Grab	85	29.4	493.5	455.3	8.3	8.6	0.22	62	162	2.4	2.5	22
Upper	08/17/2023 09:50	Grab	68	22.1	397.0	420.3	9.51	8.5	0.20	83	144	2.0	3.4	27
Upper	09/07/2023 10:20	Grab	62	20.5	426.9	467.5	8.82	8.6	0.23	88	170	1.5	2.1	24
Upper	09/21/2023 10:00	Grab	76	22.0	458.6	486.8	8.9	8.6	0.23	97	173	1.4	1.9	21
Upper	10/05/2023 10:05	Grab	61	18.7	407.7	464.0	9.23	8.3	0.22	100	173	1.3	1.3	18
Upper	10/19/2023 11:15	Grab	55	12.9	356.2	462.8	10.31	8.4	0.21	> 100	156	1.3	1.3	21
Upper	11/02/2023 10:15	Grab	37	6.3	289.4	450.2	12.57	8.5	0.22	> 100	165	1.4	1.2	21
Upper	11/16/2023 11:35	Grab	63	8.5	304.6	445.0	13.65	8.6	0.22	> 100	176	1.2	1.3	22
Upper	12/07/2023 11:15	Grab	45	2.0	255.8	456.9	14.45	8.4	0.22	> 100	161	1.4	1.3	22

2023 Mississippi River Water Quality Data - Upper

Station	Sample Time	Sample Type	Chlorophyll-a (µg/l)	Chloride (mg/L)	Dissolved Phosphorus (mg/L)	Ortho Phosphate (mg/L)	Total Phosphorus (mg/L)	Hardness (mg/L CaCO3)	Ammonia Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate- Nitrite (mg/L)	Sulfate (mg/L)
Upper	01/05/2023 11:20	Grab	5.5	88.0	< 0.02	< 0.01	~ 0.03	202	0.11	0.64	0.77	< 0.06	0.77	18.6
Upper	02/02/2023 14:35	Grab		27.9	< 0.02	< 0.01	< 0.02	187	0.07	0.60	0.94	< 0.06	0.94	16.4
Upper	03/02/2023 15:30	Grab	9.5	35.7	< 0.02	< 0.01	~ 0.02	181	< 0.06	0.60	0.93	< 0.06	0.93	14.5
Upper	04/06/2023 10:45	Grab	10.0	41.0	~ 0.02	< 0.01	~ 0.02	164	< 0.06	0.59	1.01	< 0.06	1.01	19.1
Upper	04/20/2023 10:50	Grab	12.0	12.6	0.12	0.10	0.19	99	0.12	1.10	2.07	< 0.06	2.07	13.0
Upper	05/04/2023 11:00	Grab	52.0	15.5	< 0.02	< 0.01	0.09	142	< 0.06	1.10	0.92	< 0.06	0.92	18.5
Upper	05/18/2023 10:20	Grab	18.0	13.4	~ 0.03	0.02	0.07	105	< 0.06	0.80	0.51	< 0.06	0.51	11.5
Upper	06/01/2023 10:35	Grab	33.0	15.7	< 0.05	0.01	0.07	173	< 0.06	0.83	0.50	< 0.06	0.50	12.9
Upper	06/15/2023 10:35	Grab	21.0	23.8	< 0.05	0.01	0.10	198	< 0.06	1.00	0.61	< 0.06	0.61	19.8
Upper	07/06/2023 10:40	Grab	38.0	23.2	< 0.05	< 0.01	< 0.05	184	< 0.06	0.70	< 0.20	< 0.06		15.8
Upper	07/20/2023 11:30	Grab	35.0	25.9	< 0.05	< 0.01	< 0.05	204	< 0.06	0.72	0.22	< 0.06		15.8
Upper	08/03/2023 10:10	Grab	37.0	28.9	< 0.05	< 0.01	0.05	208	< 0.06	0.74	< 0.20	< 0.06		16.7
Upper	08/17/2023 09:50	Grab		27.6	< 0.05	< 0.01	0.06	155	< 0.06	0.70	0.94	< 0.06		15.3
Upper	09/07/2023 10:20	Grab	35.0	31.4	< 0.05	< 0.01	0.05	164	< 0.06	0.70	0.24	< 0.06		18.5
Upper	09/21/2023 10:00	Grab	20.0	33.8	< 0.05	< 0.01	< 0.05	162	< 0.06	0.58	0.39	< 0.06		18.4
Upper	10/05/2023 10:05	Grab	14.0	32.4	0.05	0.03	0.06	191	< 0.06	0.57	0.44	< 0.06	0.44	15.8
Upper	10/19/2023 11:15	Grab	18.0	35.5	< 0.05	0.01	< 0.05	187	< 0.06	0.59	0.36	< 0.06	0.36	18.0
Upper	11/02/2023 10:15	Grab		31.2	< 0.05	0.01	< 0.05	195	< 0.06	0.56	0.53	< 0.06	0.53	19.9
Upper	11/16/2023 11:35	Grab	18.0	28.3	< 0.05	< 0.01	< 0.05	182	< 0.06	0.57	0.49	< 0.06	0.49	19.0
Upper	12/07/2023 11:15	Grab	12.0	25.6	< 0.05	< 0.01	< 0.05	194	< 0.06	0.58	0.57	< 0.06	0.57	17.7

2023 Mississippi River Water Quality Data - Upper

Station	Sample Time	Sample Type	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Copper (µg/L)	Total Lead (µg/L)	Total Nickel (µg/L)	Total Zinc (µg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)
Upper	01/05/2023 11:20	Grab	< 0.1	< 2.5	< 1	< 0.5	0.52	< 5	357	6.8	< 3	< 3
Upper	02/02/2023 14:35	Grab	< 0.2	< 5	< 2	< 1	< 1.00	< 10	271	7.2	< 3	< 3
Upper	03/02/2023 15:30	Grab	< 0.1	< 2.5	< 1	< 0.5	0.50	< 5	268	6.6	< 3	< 3
Upper	04/06/2023 10:45	Grab	< 0.1	< 2.5	< 1	< 0.5	0.62	< 5	286	6.9	3	< 3
Upper	04/20/2023 10:50	Grab							154	10.3	24	7
Upper	05/04/2023 11:00	Grab	< 0.1	< 2.5	< 1	< 0.5	1.20	< 5	202	11.7	17	7
Upper	05/18/2023 10:20	Grab							204	12.9	12	3
Upper	06/01/2023 10:35	Grab	< 0.1	< 2.5	< 1	< 0.5	1.00	< 5	228	10.6	13	5
Upper	06/15/2023 10:35	Grab							266	8.7	7	4
Upper	07/06/2023 10:40	Grab	< 0.1	< 2.5	1	< 0.5	0.83	< 5	269	6.7	8	4
Upper	07/20/2023 11:30	Grab							242	6.4	7	4
Upper	08/03/2023 10:10	Grab	< 0.1	< 2.5	< 1	< 0.5	0.88	< 5	257	6.8	8	5
Upper	08/17/2023 09:50	Grab							245	6.3	9	5
Upper	09/07/2023 10:20	Grab	< 0.1	< 2.5	< 1	< 0.5	0.76	< 5	271	6.2	7	4
Upper	09/21/2023 10:00	Grab							282	6.2	5	4
Upper	10/05/2023 10:05	Grab	< 0.1	< 2.5	< 1	< 0.5	0.69	< 5	268	6.5	5	3
Upper	10/19/2023 11:15	Grab							270	7.7	3	< 3
Upper	11/02/2023 10:15	Grab	< 0.1	< 2.5	< 1	< 0.5	0.66	9.6	273	8.1	3	< 3
Upper	11/16/2023 11:35	Grab							247	7.7	5	3
Upper	12/07/2023 11:15	Grab	< 0.1	< 2.5	< 1	< 0.5	0.59	< 5	248	8.4	< 3	< 3