

Raw Water Quality Data for 2009 River Interstate Sites

Parameter	Units	CHEM 12.0	CHEM 12.0	CHEM 12.0	CHEM 12.0	CHEM 12.0	COWN 1.0	COWN 1.0	COWN 1.0	COWN 1.0	COWN 1.0
Date	mm-dd-yyy	02-10-2009	05-19-2009	07-14-2009	07-14-2009	10-19-2009	02-11-2009	05-18-2009	07-13-2009	07-13-2009	10-20-2009
Time	hh:mm	12:10:00	09:45:00	10:20:00	10:30:00	15:45:00	09:00:00	12:45:00	15:10:00	15:15:00	10:30:00
Aluminum, Total	µg/l	721.0	<200	304.00	314.00	<200	307.0	<200	<200	<200	<200
Ammonia, Total	mg/l	0.09	0.02	0.02	0.02	<0.02	0.04	0.03	0.03	0.04	0.07
Calcium	mg/l	26.2	24.10	37.30	38.10	45.20	21.9	17.20	20.60	20.50	22.900
Chloride	mg/l	35.9	24.40	43.30	43.30	53.40	15.3	11.10	10.90	10.80	11.20
Iron, Total	µg/l	1019.0	187.00	195.00	248.00	89.0	186.0	234.00	120.00	147.00	180.0
Magnesium	mg/l	5.56	5.421	7.830	7.880	10.50	4.46	3.70	4.00	3.990	4.50
Manganese, Total	µg/l	78.0	54.00	58.00	59.00	<10	61.0	66.00	61.00	60.00	224.0
Nitrate, Total	mg/l	0.78	0.25	0.08	0.08	0.46	0.57	0.26	0.19	0.19	0.08
Nitrite, Total	mg/l	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nitrogen, Total	mg/l	1.21	0.52	0.53	0.54	0.57	0.8	0.56	0.60	0.60	0.41
Orthophosphate, Total	mg/l	0.031	0.019	0.022	0.022	0.041	0.016	0.019	0.021	0.023	0.014
Phosphorus, Total	mg/l	0.068	0.042	0.040	0.045	0.049	0.02	0.019	0.036	0.035	0.015
Solids, Total	mg/l	186.0	166	234	230	270	134.0	110	112	112	122
Sulfate	mg/l	17.0	22.60	16.20	16.20	21.50	14.8	13.60	11.50	12.90	9.83
Organic Carbon, Total	mg/l	3.7	2.73	3.22	3.23	2.26	3.12	3.21	4.30	4.38	3.99
Turbidity	ntu	16.74	3.19	3.61	3.47	<0.30	5.43	4.49	2.27	2.55	2.77
Acidity	mg/l	4	4	2	2	0	4	2	4	4	2
Alkalinity	mg/l	60	64	112	112	122	56	44	52	52	64
Dissolved Oxygen	mg/l	9.88	9.45	8.5	8.5	12.37	15.05	10.64	9.43	9.43	10.04
Discharge	cfs	3830	2,000	793	793	618	566	224	69	69	86
pH		7.8	7.4	8.1	8.1	8.4	7.3	7.8	7.8	7.8	7.3
Conductance	umhos/cm	267	245	379	379	452	183	155	174	174	185
Total Chlorine	mg/l						0.09		0.1	0.1	0.08
Water Temperature	degree C	1.1	12.9	20.9	20.9	9.9	2.7	15.7	25.3	25.3	12.6

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Parameter	Units	COWN 2.2	COWN 2.2	COWN 2.2	COWN 2.2	COWN 2.2	SUSQ 10.0	SUSQ 10.0	SUSQ 10.0	SUSQ 10.0	SUSQ 10.0
Date	mm-dd-yyy	02-11-2009	02-11-2009	05-18-2009	07-13-2009	10-20-2009	02-18-2009	05-12-2009	05-12-2009	07-28-2009	11-03-2009
Time	hh:mm	08:30:00	08:45:00	12:30:00	14:15:00	10:00:00	10:10:00	11:30:00	11:45:00	10:00:00	10:15:00
Aluminum, Total	µg/l	341.0	340.0	<200	226.00	<200	711.0	368.0	331.0	<200	268.000
Ammonia, Total	mg/l	0.03	0.02	0.02	0.07	0.12	0.06	0.03	0.03	0.16	0.05
Calcium	mg/l	21.8	21.6	17.30	19.90	22.90	17.4	23.30	23.70	27.50	19.200
Chloride	mg/l	15.2	15.2	10.80	9.47	11.20	21.5	17.70	17.80	23.10	12.10
Iron, Total	µg/l	158.0	177.0	175.00	175.00	244.0	1040.0	264.0	230.0	268.0	521.0
Magnesium	mg/l	4.47	4.35	3.740	4.040	4.520	4.33	6.140	6.180	7.360	4.384
Manganese, Total	µg/l	67.0	66.0	60.00	190.00	354.00	78.0	88.0	89.0	161.0	62.000
Nitrate, Total	mg/l	0.58	0.57	0.26	0.07	0.06	0.87	1.15	1.15	0.70	1.05
Nitrite, Total	mg/l	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nitrogen, Total	mg/l	0.79	0.79	0.60	0.47	0.45	1.16	1.56	1.54	1.20	1.44
Orthophosphate, Total	mg/l	0.015	0.015	0.020	0.016	0.014	0.019	0.023	0.023	0.023	0.032
Phosphorus, Total	mg/l	0.019	0.018	0.016	0.024	0.016	0.044	0.037	0.037	0.037	0.048
Solids, Total	mg/l	130.0	126.0	128	108	126	128.0	158	164	180	138
Sulfate	mg/l	14.8	14.7	13.60	10.90	9.73	19.6	24.90	24.90	30.20	15.80
Organic Carbon, Total	mg/l	3.1	3.08	3.01	4.13	3.92	2.82	3.32	3.39	2.50	3.68
Turbidity	ntu	5.55	5.5	5.42	3.05	3.60	18.82	4.22	5.56	6.92	12.08
Acidity	mg/l	4	4	2	4	4	4	4	4	6	4
Alkalinity	mg/l	52	52	44	60	44	32	46	46	64	44
Dissolved Oxygen	mg/l	14.83	14.83	9.31	7.3	10.16	12.48	8.51	8.51	7.2	10.65
Discharge	cfs	566	566	224	69	90	78400	63,700	63,700	5,830	82700
pH		7.15	7.15	7.2	7.7	7.4	7.3	7.3	7.3	6.95	7.25
Conductance	umhos/cm	179	179	152	167	188	217	203	203	286	183
Total Chlorine	mg/l										
Water Temperature	degree C	2.4	2.4	15.0	22.7	12.6	3.8	18.2	18.2	28.0	13.7

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Parameter	Units	SUSQ 10.0	SUSQ 44.5	SUSQ 44.5	SUSQ 44.5	SUSQ 44.5	SUSQ 289.1	SUSQ 289.1	SUSQ 289.1	SUSQ 289.1
Date	mm-dd-yyy	11-03-2009	02-18-2009	05-12-2009	07-28-2009	10-22-2009	02-10-2009	05-19-2009	07-14-2009	10-19-2009
Time	hh:mm	10:30:00	13:00:00	13:30:00	14:15:00	12:45:00	10:15:00	12:00:00	11:30:00	15:15:00
Aluminum, Total	µg/l	273.0	709.0	350.0	284.0	<200	336.0	658.00	284.00	<200
Ammonia, Total	mg/l	0.05	0.05	0.03	0.02	<0.02	<0.02	0.02	<0.02	<0.02
Calcium	mg/l	19.80	18.1	28.10	27.10	29.50	33.1	16.80	28.40	32.400
Chloride	mg/l	12.10	18.4	27.30	18.80	17.40	46.7	16.50	22.10	23.00
Iron, Total	µg/l	554.0	851.0	336.0	417.0	336.0	164.0	1209.00	341.00	135.0
Magnesium	mg/l	4.454	4.71	7.250	7.360	7.480	5.142	2.801	3.990	4.890
Manganese, Total	µg/l	63.000	141.0	130.0	75.0	45.0	17.0	93.00	40.00	<10
Nitrate, Total	mg/l	1.05	0.92	1.34	0.81	1.35	1.01	0.29	0.23	0.31
Nitrite, Total	mg/l	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nitrogen, Total	mg/l	1.39	1.15	1.79	1.20	1.67	1.11	0.62	0.61	0.46
Orthophosphate, Total	mg/l	0.034	0.012	0.012	0.022	0.022	0.024	0.011	0.024	0.018
Phosphorus, Total	mg/l	0.048	0.038	0.034	0.037	0.032	0.025	0.051	0.036	0.020
Solids, Total	mg/l	136	132.0	188	182	162	192.0	132	154	146
Sulfate	mg/l	15.80	21.4	29.30	35.30	34.10	11.5	7.82	7.58	8.32
Organic Carbon, Total	mg/l	3.70	2.21	2.95	3.51	2.76	1.84	3.66	3.01	2.49
Turbidity	ntu	8.68	9.55	5.29	8.49	4.26	2.06	17.76	5.24	1.03
Acidity	mg/l	4	4	4	4	4	4	6	4	2
Alkalinity	mg/l	44	32	60	56	60	80	44	72	44
Dissolved Oxygen	mg/l	10.65	12.14	9.48	8.09	10.81	10.38	9.47	8.44	12.66
Discharge	cfs	82700	59000	39,200	16,200	23200	4910	11,500	5,390	3540
pH		7.25	7.1	7.65	8.0	7.3	7.85	7.0	7.7	8.0
Conductance	umhos/cm	183	215	286	268	267	320	159	237	262
Total Chlorine	mg/l									
Water Temperature	degree C	13.7	2.5	17.0	28.8	13.6	1.0	14.9	21.3	9.3

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Parameter	Units	SUSQ 340.0	SUSQ 340.0	SUSQ 340.0	SUSQ 340.0	SUSQ 365.0	SUSQ 365.0	SUSQ 365.0	SUSQ 365.0	TIOG 10.8
Date	mm-dd-yy	02-09-2009	05-20-2009	07-15-2009	10-19-2009	02-09-2009	05-20-2009	07-15-2009	10-19-2009	02-10-2009
Time	hh:mm	14:30:00	08:00:00	15:45:00	12:00:00	15:45:00	11:30:00	11:15:00	11:15:00	15:45:00
Aluminum, Total	µg/l	269	356.00	<200	<200	289.0	309.00	210.00	<200	311.0
Ammonia, Total	mg/l	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	0.05
Calcium	mg/l	28.2	15.30	22.20	31.60	31.4	18.80	23.50	32.50	21.1
Chloride	mg/l	23.2	12.60	15.40	17.50	29.3	14.50	15.10	17.70	15.8
Iron, Total	µg/l	268	695.00	315.00	182.0	285.0	427.00	374.00	215.0	172.0
Magnesium	mg/l	3.159	2.081	2.564	3.10	3.347	2.215	2.638	3.120	4.59
Manganese, Total	µg/l	33	46.00	37.00	16.0	31.0	37.00	35.00	14.0	246.0
Nitrate, Total	mg/l	0.74	0.24	0.23	0.30	0.77	0.29	0.28	0.35	0.56
Nitrite, Total	mg/l	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nitrogen, Total	mg/l	0.90	0.53	0.50	0.32	0.95	0.54	0.58	0.35	1.07
Orthophosphate, Total	mg/l	0.015	0.036	0.017	0.011	0.016	0.021	0.016	0.012	0.026
Phosphorus, Total	mg/l	0.019	0.032	0.025	0.017	0.014	0.039	0.032	0.031	<0.01
Solids, Total	mg/l	138	110	120	138	156	120	120	142	146
Sulfate	mg/l	10.4	7.59	6.49	7.94	10.2	7.22	6.59	8.07	26.9
Organic Carbon, Total	mg/l	1.76	3.28	2.88	2.20	1.75	3.07	3.08	2.12	2.69
Turbidity	ntu	2.2	10.65	3.21	1.27	2.46	4.88	2.80	1.08	5.76
Acidity	mg/l	4	8	6	2	6	6	8	4	4
Alkalinity	mg/l	50	40	60	80	68	44	68	72	40
Dissolved Oxygen	mg/l	10.87	10.47	8.96	11.88	9.89	9.83	8.34	11.74	10.68
Discharge	cfs	4370	3,870	2,780	1330	4415	3,299	2,499	1515	952.5
pH		7.6	6.7	7.5	7.7	7.55	7.2	7.4	7.7	7.25
Conductance	umhos/cm	213	134	184	228	238	160	181	232	194
Total Chlorine	mg/l									
Water Temperature	degree C	1.8	12.3	22.3	8.6	0.4	14.6	19.0	7.4	3.7

**Raw Water Quality Data for 2009 River Interstate Sites**

<b>Parameter</b>	<b>Units</b>	<b>TIOG 10.8</b>	<b>TIOG 10.8</b>	<b>TIOG 10.8</b>
Date	mm-dd-yy	05-18-2009	07-13-2009	10-20-2009
Time	hh:mm	12:45:00	16:30:00	09:30:00
Aluminum, Total	µg/l	406.00	230.00	<200
Ammonia, Total	mg/l	<0.02	0.02	0.05
Calcium	mg/l	15.80	21.80	24.10
Chloride	mg/l	9.39	11.30	12.40
Iron, Total	µg/l	277.00	203.00	193.0
Magnesium	mg/l	4.11	4.230	5.320
Manganese, Total	µg/l	312.00	97.00	143.0
Nitrate, Total	mg/l	0.15	0.19	0.11
Nitrite, Total	mg/l	<0.04	<0.04	<0.04
Nitrogen, Total	mg/l	0.37	0.54	0.39
Orthophosphate, Total	mg/l	0.017	0.012	0.013
Phosphorus, Total	mg/l	0.017	0.014	0.014
Solids, Total	mg/l	118	118	138
Sulfate	mg/l	31.20	22.10	25.80
Organic Carbon, Total	mg/l	2.28	3.14	3.09
Turbidity	ntu	3.76	<0.30	2.24
Acidity	mg/l	4	4	2
Alkalinity	mg/l	28	48	56
Dissolved Oxygen	mg/l	10.05	9.90	9.22
Discharge	cfs	843.5	203.9	287.4
pH		6.9	7.75	7.2
Conductance	umhos/cm	155	184	206
Total Chlorine	mg/l			
Water Temperature	degree C	14.9	22.4	10.4