Missouri Department of Natural Resources
No Creek - WBID 0550
Water Chemistry data by U.S. Geological Survey, 1999-2006

Org	Site	Site Name	Yr	Mo	Dy	Flow	C	DO	pH	NH3N	NO3N	TP	Ecoli	Rec. Season Log E. coli
USGS	550/17.7	No Cr. Nr. Dunlap	1999	10	25	0.01	8	7.3	7.5	3.3	0.09	0.19	970	6.88
USGS	550/17.7	No Cr. Nr. Dunlap	1999	11	29	0.01	5	8.1	7.7	0.53	0.02499	0.24	2200	
USGS	550/17.7	No Cr. Nr. Dunlap	1999	12	20	0.1	0	17	7.4	0.0099	0.02499	0.09	520	
USGS	550/17.7	No Cr. Nr. Dunlap	2000	1	24	0.1	2	19.8	7.8	0.09	0.06	0.12	29	
USGS	550/17.7	No Cr. Nr. Dunlap	2000	2	23	0.05	8	8.7	7.4	0.0099	0.02499	0.14	1.99	
USGS	550/17.7	No Cr. Nr. Dunlap	2000	4	20	0.81	12	7.7	8.1	0.05	0.02499	0.16	6000	8.70
USGS	550/17.7	No Cr. Nr. Dunlap	2000	5	9	0.17	17	6.3	8	4.2	0.14	0.3	88000	11.39
USGS	550/17.7	No Cr. Nr. Dunlap	2000	6	14	6.4	22	5.4	7.7	0.17	4.1	0.46	8000	8.99
USGS	550/17.7	No Cr. Nr. Dunlap	2000	6	22	0.4	21	7.5	8.1	0.13	0.26	0.18	610	6.41
USGS	550/17.7	No Cr. Nr. Dunlap	2000	7	25	0.11	26	7.2	8.8	0.04	0.23	0.15	1600	7.38
USGS	550/17.7	No Cr. Nr. Dunlap	1998	11	2	546	12	8.9	7.5	0.0099	0.635		26000	
USGS	550/17.7	No Cr. Nr. Dunlap	1999	3	30	4.4	16	9.6	8.1	0.023	0.06	0.05	8	
USGS	550/17.7	No Cr. Nr. Dunlap	1999	4	22	14	16	9	8	0.0099	0.096	0.13	700	6.55
USGS	550/17.7	No Cr. Nr. Dunlap	1999	6	21	0.25	26	9.2	8.3	0.0099	0.02499	0.14	2500	7.82
USGS	550/17.7	No Cr. Nr. Dunlap	1997	11	13	0.82	3	11.6	8	0.03	0.02499		49	
USGS	550/17.7	No Cr. Nr. Dunlap	1998	1	22	3.7	0.5	16.1	7.7	0.08	0.38		44	
USGS	550/17.7	No Cr. Nr. Dunlap	1998	3	18	340	1.5	14.5	7.6	0.06	0.56		1400	
USGS	550/17.7	No Cr. Nr. Dunlap	1998	4	27	11	13.5	10.6	8.1	0.05	0.02499		130	4.87
USGS	550/17.7	No Cr. Nr. Dunlap	1998	6	2	3.2	22.3	7.5	8	0.08	0.33		2050	7.63
USGS	550/17.7	No Cr. Nr. Dunlap	1998	8	24	0.04	25	6.2	8.1	0.65	0.07		740	6.61
USGS	550/17.7	No Cr. Nr. Dunlap	2000	10	24	0.37	18	7.1	7.9	0.03	0.09	0.67	8500	9.05
USGS	550/17.7	No Cr. Nr. Dunlap	2000	11	15	0.68	4	11.9	8	0.06	1.1	0.14	720	
USGS	550/17.7	No Cr. Nr. Dunlap	2000	12	19	0.08	0	9.1	7.7	0.19	0.04	0.05	190	
USGS	550/17.7	No Cr. Nr. Dunlap	2001	1	24	1.6	0	11.3	7.8	0.1	1.87	0.1	170	
USGS	550/17.7	No Cr. Nr. Dunlap	2001	2	15	40	0	12.7	7.7	0.19	1.41	0.34	200	
USGS	550/17.7	No Cr. Nr. Dunlap	2001	3	27	10	6	11.8	8.1	0.07	0.85	0.12	6	
USGS	550/17.7	No Cr. Nr. Dunlap	2001	4	24	19	15	10.8	8	0.0199	0.22	0.18	1200	7.09
USGS	550/17.7	No Cr. Nr. Dunlap	2001	5	22	9.8	16	8.9	8.1	0.07	0.38	0.15	8	2.08
USGS	550/17.7	No Cr. Nr. Dunlap	2001	6	19	2.7	22	6.3	7.5	0.03	0.33	0.23	6600	8.79
USGS	550/17.7	No Cr. Nr. Dunlap	2001	6	25	5.2	26	7.9	8	0.06	0.24	0.18	240	5.48
USGS	550/17.7	No Cr. Nr. Dunlap	2001	7	26	67	24	6.7	7.5	0.04	0.27	0.35	4200	8.34
USGS	550/17.7	No Cr. Nr. Dunlap	2001	8	9	0.47	31	8.4	8.3	0.03	0.04	0.12	390	5.97
USGS	550/17.7	No Cr. Nr. Dunlap	2001	9	13	0.1	18	7.4	8.2	0.13	0.04	0.15	170	5.14
USGS	550/17.7	No Cr. Nr. Dunlap	2001	10	23	38	16	6	7.8	0.0199	0.1	0.72	37000	10.52
USGS	550/17.7	No Cr. Nr. Dunlap	2001	11	29	0.28	4.5	12.8	8.2	0.04	0.02499	0.19	3900	
USGS	550/17.7	No Cr. Nr. Dunlap	2001	12	13	1	6	12.3	8.3	0.0199	0.02499	0.1	470	
USGS	550/17.7	No Cr. Nr. Dunlap	2002	2	28	1.7	1	14.6	8.1	0.0199	0.64	0.07	7	
USGS	550/17.7	No Cr. Nr. Dunlap	2002	3	21	2.1	4	13.7	7.9	0.0199	0.02499	0.03	47	
USGS	550/17.7	No Cr. Nr. Dunlap	2002	4	18	4.3	21.5	9.1	8.2	0.0199	0.07	0.12	93	4.53
USGS	550/17.7	No Cr. Nr. Dunlap	2002	5	23	2.4	17	8.5	8	0.0199	0.04	0.07	160	5.08
USGS	550/17.7	No Cr. Nr. Dunlap	2002	6	13	0.53	23.5	8.8	8.2	0.04	0.08	0.1	670	6.51
USGS	550/17.7	No Cr. Nr. Dunlap	2002	6	28	0.07	27.5	12.8	8.5	0.0199	0.02499	0.11	510	6.23
USGS	550/17.7	No Cr. Nr. Dunlap	2002	7	23	0.01	23	11.7	8.3	5.91	0.03	0.17	380	5.94
USGS	550/17.7	No Cr. Nr. Dunlap	2002	8	22	1	25.5	5.1	7.8	0.5	1.87	0.91	15000	9.62
USGS	550/17.7	No Cr. Nr. Dunlap	2002	12	19	0.01	1.5	6.2	7.9	0.57	0.0299	0.16	1300	
USGS	550/17.7	No Cr. Nr. Dunlap	2003	3	13	0.41	1	11.4	8.1	0.0199	0.0299	0.17	150	
USGS	550/17.7	No Cr. Nr. Dunlap	2003	3	20	0.34	7	9.6	8.1	0.03	0.0299	0.15	140	
USGS	550/17.7	No Cr. Nr. Dunlap	2003	4	25	2.1	11.5	8.1	8.1	0.0199	0.12	0.22	1900	7.55
USGS	550/17.7	No Cr. Nr. Dunlap	2003	4	30	0.62	22.5	10.7	8.4	0.0199	0.0299	0.14	680	6.52
USGS	550/17.7	No Cr. Nr. Dunlap	2003	5	6	6.4	18	6.4	7.6	0.18	1.43	0.38	4700	8.46
USGS	550/17.7	No Cr. Nr. Dunlap	2003	6	12	3	21.5	7	7.8	0.23	6.38	0.24	1100	7.00
USGS	550/17.7	No Cr. Nr. Dunlap	2003	7	9	0.01	26.5	8.4	8	3.03	0.14	0.27	1600	7.38
USGS	550/17.7	No Cr. Nr. Dunlap	2003	9	19	0.26	14	10.4	8.1	0.03	0.15	0.28	6200	8.73
USGS	550/17.7	No Cr. Nr. Dunlap	2003	10	23	0.03	10.5	7.2	8	0.71	0.0299	0.28	750	6.62
USGS	550/17.7	No Cr. Nr. Dunlap	2003	11	18	0.1	13.5	10.3	8.1	0.03	0.0299	0.22	2200	
USGS	550/17.7	No Cr. Nr. Dunlap	2003	12	11	22	0.5	14.3	7.7	0.04	1.94	0.43	2900	
USGS	550/17.7	No Cr. Nr. Dunlap	2004	1	8	1	0.5	12.2	7.8	0.05	1.61	0.11	46	
USGS	550/17.7	No Cr. Nr. Dunlap	2004	2	27	5.8	1.5	12.9	8.2	0.02	1.18	0.11	18	

														Rec. Season
Org	**Site**	**Site Name**	**Yr**	**Mo**	**Dy**	**Flow**	**C**	**DO**	**pH**	**NH3N**	**NO3N**	**TP**	**Ecoli**	**Log E. coli**
USGS	550/17.7	No Cr. Nr. Dunlap	2004	3	18	52	4.5	12.8	7.8	0.0199	0.8	0.25	830	
USGS	550/17.7	No Cr. Nr. Dunlap	2004	4	20	2.7	17.5	8.3	8.2	0.0199	0.0299	0.1	2000	7.60
USGS	550/17.7	No Cr. Nr. Dunlap	2004	5	11	1.3	22.5	11.4	8.2	0.02	0.0299	0.08	130	4.87
USGS	550/17.7	No Cr. Nr. Dunlap	2004	6	22	9.1	21.5	7.4	8	0.0199	0.3	0.17	500	6.21
USGS	550/17.7	No Cr. Nr. Dunlap	2004	7	16	0.41	23.5	7.1	8	0.0199	0.05	0.14	2300	7.74
USGS	550/17.7	No Cr. Nr. Dunlap	2004	8	23	0.72	20.5	7.7	8.1	0.0199	0.03	0.14	7800	8.96
USGS	550/17.7	No Cr. Nr. Dunlap	2004	9	14	0.76	25.5	6.3	8	0.0199	0.06	0.79	14000	9.55
USGS	550/17.7	No Cr. Nr. Dunlap	2004	10	26	1	15	6.5	7.9	0.0199	0.0299	0.28	3500	8.16
USGS	550/17.7	No Cr. Nr. Dunlap	2004	11	16	3.7	10	10.5	8.1	0.0199	0.09	0.06	550	
USGS	550/17.7	No Cr. Nr. Dunlap	2004	12	14	6.2	0.5	15.8	8	0.04	0.2	0.08	190	
USGS	550/17.7	No Cr. Nr. Dunlap	2005	1	25	0.08	0.5	12.6	7.6	0.21	0.33	0.14		
USGS	550/17.7	No Cr. Nr. Dunlap	2005	2	10	21	0.5	14.3	7.9	0.07	0.47	0.16	100	
USGS	550/17.7	No Cr. Nr. Dunlap	2005	3	17	2.9	10.5	12.2	8.3	0.0199	0.0299	0.04	13	
USGS	550/17.7	No Cr. Nr. Dunlap	2005	4	5	3.6	13.5	8.2	8.2	0.0199	0.0299	0.04	62	4.13
USGS	550/17.7	No Cr. Nr. Dunlap	2005	5	12	2	17	6.8	7.6	0.0199	0.0299	0.14	2100	7.65
USGS	550/17.7	No Cr. Nr. Dunlap	2005	6	30	0.86	23.5	6.9	8.1	0.0199	0.06	0.12	4600	8.43
USGS	550/17.7	No Cr. Nr. Dunlap	2005	7	13	0.03	21	6.3	8	0.03	0.0299	0.06	400	5.99
USGS	550/17.7	No Cr. Nr. Dunlap	2005	8	19	0.02	25.5	5.8	8	0.03	0.0299	0.09	1400	7.24
USGS	550/17.7	No Cr. Nr. Dunlap	2005	9	21	0.05	23	8.2	8.2	0.0199	0.0299	0.12	200	5.30
USGS	550/17.7	No Cr. Nr. Dunlap	2005	10	5	0.08	22	4.2	8	0.38	0.0299	0.49	12000	9.39
USGS	550/17.7	No Cr. Nr. Dunlap	2005	11	3	0.01	9.5	2.7	7.7	2.28	0.0299	1.94	49000	
USGS	550/17.7	No Cr. Nr. Dunlap	2005	12	14	0.1	1	12	8	0.16	0.0299	0.19	500	
USGS	550/17.7	No Cr. Nr. Dunlap	2006	1	25	0.03	2	18.8	8.1	0.0199	0.0299	0.11	33	
USGS	550/17.7	No Cr. Nr. Dunlap	2006	2	14	0.01	3	18.4	8.3	0.0199	0.0299	0.1	10	
USGS	550/17.7	No Cr. Nr. Dunlap	2006	3	9	0.2	8	15.6	8.6	0.0199	0.0299	0.07	110	
USGS	550/17.7	No Cr. Nr. Dunlap	2006	4	12	2.1	17.5	10.6	8.1	0.0199	0.16	0.16	260	5.56
USGS	550/17.7	No Cr. Nr. Dunlap	2006	5	9	2.8	21.5	8.7	7.9	0.0199	0.19	0.13	240	5.48
USGS	550/17.7	No Cr. Nr. Dunlap	2006	6	15	0.23	24.5	10.1	8.4	0.052	4.29	0.13	1100	7.00
USGS	550/17.7	No Cr. Nr. Dunlap	2006	7	19	0.002	28	6.4	8	5.98	0.0299	0.59	8400	9.04
USGS	550/17.7	No Cr. Nr. Dunlap	2006	8	10	3.1	25	6.2	7.3	0.086	0.23	0.34	1100	7.00
USGS	550/17.7	No Cr. Nr. Dunlap	2006	9	21	0.02	14.5	7.5	7.9	0.874	0.0299	0.31	5600	8.63
											Log Mean			7.17
											Log Standard Deviation			1.74
											Number of Samples			53

No Creek is a Class B whole body contact recreational water with an *E. coli* standard of 548 colonies/100 ml. Thisstandard is for the geometric (log) mean of all bacterial samples taken during the recreational season, April 1 to Oct. 31. For E. coli bacteria, a water is judged to be unimpaired if the 60 percent Upper Confidence Limit, or UCL, of the mean is less than the appropriate water quality standard. The formula for the 60 percent UCL is:

60% UCL = (sample mean) + ((0.253)(standard deviation)/(square root of sample size)

The E. coli data is normalized by natural log transformation and the UCL calcuation is as follows:

60% UCL = (7.17) + ((0.253)(1.74)/(7.28) 7.23 Antilog of 7.23 = 1380.2

Since 1,380.2 is greater than the standard of 548, this stream is judged to be **impaired** by E. coli bacteria.

The water quality standard for ammonia varies with water temperature and pH. For typical water temperatures and pHs ranges in Missouri waters, the standard ranges between 0.5-6.0 mg/L. This chronic standard was exceeded four times since 1997 but never in consecutive months, indicating that individual exceedences are less than a month in duration. Since the ammonia value must be continuously above the criterion for at least 30 days to be considered a criteria violation, this stream is in compliance with the chronic criterion for ammonia. One ammonia value (5.91 mg/L July, 23, 2002) exceeded the acute criterion. There have been no exceedences of the acute criterion in the last three years. Thus, this stream is judged to be **unimpaired** by ammonia.

The water quality standard for the protection of aquatic life is 5.0 mg/L as a minimum. The Listing Methodology Document allows a water to be judged as impaired if more than 10 percent of the days monitored fail to meet the water quality standard. Two of 89 dissolved Oxygen measurements, or 2.2 percent, exceeded the standard. Since 2.2 percent is far less than 10 percent, this stream is judged to be **unimpaired** by low dissolved oxygen.