2009 NUTRIENT AND SUSPENDED-SEDIMENT LOADS AND YIELDS

Loads and yields represent two methods for describing nutrient and SS amounts within a basin. Loads refer to the actual amount of the constituent being transported in the water column past a given point over a specific duration of time and are expressed in pounds. Yields compare the transported load with the acreage of the watershed and are expressed in lbs/acre. This allows for easy comparisons between watersheds. This project reports loads and yields for the constituents listed in Table 6 as computed by the Minimum Variance Unbiased Estimator (ESTIMATOR) described by Cohn and others (1989). This estimator relates the constituent concentration to water discharge, seasonal effects, and long-term trends, and computes the best-fit regression equation. Daily loads of the constituents then were calculated from the daily mean water discharge records. The loads were reported along with the estimates of accuracy.

Identifying sites where the percentage of LTM for a constituent was different than the percentage of LTM for discharge may show potential areas where improvements or degradations have occurred for that particular constituent. One item to note is that nutrients and SS increase with increased flow (Ott and others, 1991; Takita, 1996, 1998). This increase, however, is not as linear at higher flows as at lower ones. Individual high flow events tend to produce higher loads, especially for TP and SS, than would be predicted by a simple comparison with the LTM.

Tables 7-19 show the loads and yields for the Group A monitoring stations, as well as an associated error value. They also show the average annual concentration for each constituent. Comparisons have been made to the LTMs for all constituents. Seasonal loads and yields for all parameters and all sites are listed in Table 20 for loads and Table 21 for yields. For the purposes of this project, January through March is winter, April through June is spring, July through September is summer, and October through December is fall. Monthly loads and yields for TN, TP, and SS at all long-term sites are listed in Tables 22 through 25.

2009 SUMMARY STATISTICS FOR ALL SITES

Load and trend analyses were unable to be completed at Group B sites because samples have not been collected at the stations for a sufficient number of years. Therefore, summary statistics have been calculated for these sites, as well as the long-term sites for comparison. Summary statistics are listed in Tables 26 through 30 and include minimum, maximum, median, mean, and standard deviation values taken from the raw 2009 dataset.

Table 6. List of Analyzed Parameters, Abbreviations, and STORET Codes

Parameter	Abbreviation	STORET Code
Discharge	Q	00060
Total Nitrogen as N	TN	00600
Dissolved Nitrogen as N	DN	00602
Total Organic Nitrogen as N*	TON	00605
Dissolved Organic Nitrogen as N*	DON	00607
Total Ammonia as N	TNH_3	00610
Dissolved Ammonia as N	DNH_3	00608
Total Nitrate + Nitrite as N	TNOx	00630
Dissolved Nitrate + Nitrite as N	DNOx	00631
Total Phosphorus as P	TP	00665
Dissolved Phosphorus as P	DP	00666
Dissolved Orthophosphate as P	DOP	00671
Total Organic Carbon	TOC	00680
Suspended sediment (fine)	SSF	70331
Suspended sediment (sand)	SSS	70335
Suspended Sediment (total)	SS	80154

*These are calculated values and not directly analyzed.

Table 7. Annual Water Discharges, Annual Loads, Yields, and Average Concentration of Total Nitrogen, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85.3	16,749	61.0	3.2	3.357	5.502	0.848	71.5
Danville	14,903	90	28,134	65.3	3.5	3.918	6.003	0.959	72.2
Lewisburg	9,247	86	15,446	66.4	4.8	3.525	5.312	0.849	77.4
Newport	3,705	85	12,167	75.4	3.5	5.668	7.515	1.668	89.6
Marietta	34,659	89	93,634	72.7	4.2	5.629	7.741	1.372	81.7
Conestoga	642	95	7,692	74.8	3.5	25.571	34.203	6.086	78.7

Table 8. Annual Water Discharges and Annual Loads and Yields of Total Phosphorus, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	1,831	78.2	8.8	0.367	0.469	0.093	91.7
Danville	14,903	90	2,564	71.5	9.6	0.357	0.499	0.087	79.2
Lewisburg	9,247	86	876	69.7	13.0	0.200	0.287	0.048	81.3
Newport	3,705	85	512	65.8	10.2	0.238	0.362	0.070	78.2
Marietta	34,659	89	4,169	55.2	7.9	0.251	0.454	0.061	62.0
Conestoga	642	95	295	44.9	9.1	0.981	2.182	0.233	47.3

Table 9. Annual Water Discharges and Annual Loads and Yields of Total Suspended Sediment, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	687,675	23.6	14.6	137	584	34.8	27.7
Danville	14,903	90	993,839	30.8	12.5	138	449	33.9	34.1
Lewisburg	9,247	86	319,530	27.7	17.4	73	263	17.6	32.3
Newport	3,705	85	214,017	42.0	17.9	100	238	29.3	49.8
Marietta	34,659	89	2,422,253	37.0	14.8	146	394	35.5	41.5
Conestoga	642	95	87,968	25.2	19.6	292	1,162	69.6	26.5

Table 10. Annual Water Discharges and Annual Loads and Yields of Total Ammonia, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	617	45.6	12.6	0.124	0.271	0.031	53.4
Danville	14,903	90	1,067	49.8	12.4	0.149	0.299	0.036	55.1
Lewisburg	9,247	86	579	55.0	13.1	0.132	0.240	0.032	64.2
Newport	3,705	85	255	67.1	13.9	0.119	0.177	0.035	79.7
Marietta	34,659	89	2,826	61.5	13.6	0.170	0.277	0.041	69.0
Conestoga	642	95	147	57.6	15.4	0.490	0.852	0.117	60.6

Table 11. Annual Water Discharges and Annual Loads and Yields of Total Nitrate plus Nitrite, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	9,263	56.9	4.2	1.86	3.26	0.469	66.7
Danville	14,903	90	16,419	64.5	4.7	2.29	3.55	0.560	71.3
Lewisburg	9,247	86	11,023	73.2	4.6	2.52	3.44	0.606	85.3
Newport	3,705	85	9,072	75.8	3.5	4.23	5.57	1.244	84.2
Marietta	34,659	89	68,334	75.0	5.0	4.11	5.48	1.002	84.3
Conestoga	642	95	6,963	83.7	4.9	23.15	27.67	5.509	88.1

Table 12. Annual Water Discharges and Annual Loads and Yields of Total Organic Nitrogen, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	6,231	62.1	6.8	1.25	2.01	0.316	72.8
Danville	14,903	90	9,421	59.4	6.7	1.31	2.21	0.321	65.7
Lewisburg	9,247	86	4,308	58.4	12.7	0.98	1.68	0.237	68.1
Newport	3,705	85	2,870	72.6	12.4	1.34	1.84	0.393	86.2
Marietta	34,659	89	23,156	67.9	9.2	1.39	2.05	0.339	76.3
Conestoga	642	95	692	37.2	11.6	2.30	6.19	0.548	39.1

Table 13. Annual Water Discharges and Annual Loads and Yields of Dissolved Phosphorus, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	1,043	126.4	10.5	0.209	0.165	0.053	148.2
Danville	14,903	90	1,267	118.8	12.9	0.177	0.149	0.043	131.4
Lewisburg	9,247	86	507	104.7	18.8	0.116	0.111	0.028	122.1
Newport	3,705	85	245	66.4	10.0	0.114	0.172	0.034	78.8
Marietta	34,659	89	1,424	62.5	9.3	0.086	0.137	0.021	70.2
Conestoga	642	95	182	71.9	7.4	0.605	0.842	0.144	75.7

Table 14. Annual Water Discharges and Annual Loads and Yields of Dissolved Orthophosphate, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	849	183.9	12.3	0.170	0.093	0.043	215.5
Danville	14,903	90	980	165.3	16.9	0.136	0.083	0.033	183.0
Lewisburg	9,247	86	416	177.6	22.0	0.095	0.054	0.023	207.1
Newport	3,705	85	184	85.5	11.6	0.086	0.100	0.025	101.5
Marietta	34,659	89	1,032	82.9	10.3	0.062	0.075	0.015	93.2
Conestoga	642	95	152	72.6	7.7	0.506	0.696	0.120	76.5

Table 15. Annual Water Discharges and Annual Loads and Yields of Dissolved Ammonia, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	549	51.7	11.4	0.110	0.213	0.028	60.6
Danville	14,903	90	975	52.1	12.8	0.136	0.261	0.033	57.6
Lewisburg	9,247	86	550	60.6	12.2	0.126	0.207	0.030	70.6
Newport	3,705	85	185	56.5	14.3	0.086	0.152	0.025	67.1
Marietta	34,659	89	2,464	61.9	13.2	0.148	0.239	0.036	69.6
Conestoga	642	95	142	60.8	15.6	0.471	0.775	0.112	64.0

Table 16. Annual Water Discharges and Annual Loads and Yields of Dissolved Nitrogen, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	15,473	64.5	3.8	3.10	4.81	0.784	75.6
Danville	14,903	90	25,850	70.3	3.7	3.60	5.12	0.881	77.8
Lewisburg	9,247	86	14,786	71.7	4.5	3.37	4.71	0.812	83.6
Newport	3,705	85	11,204	76.8	3.3	5.22	6.80	1.536	91.2
Marietta	34,659	89	82,750	73.6	4.5	4.97	6.76	1.212	82.6
Conestoga	642	95	7,434	78.4	3.9	24.71	31.51	5.882	82.6

Table 17. Annual Water Discharges and Annual Loads and Yields of Dissolved Nitrate plus Nitrite Nitrogen, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	9,311	57.8	4.4	1.866	3.231	0.472	67.7
Danville	14,903	90	16,435	65.1	4.7	2.289	3.515	0.560	72.1
Lewisburg	9,247	86	11,007	73.6	4.6	2.512	3.411	0.605	85.9
Newport	3,705	85	9,096	76.6	3.5	4.237	5.531	1.247	91.0
Marietta	34,659	89	68,547	75.7	5.1	4.121	5.442	1.005	85.1
Conestoga	642	95	6,839	83.7	4.9	22.735	27.149	5.411	88.2

Table 18. Annual Water Discharges and Annual Loads and Yields of Dissolved Organic Nitrogen, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	4,838	68.6	7.7	0.970	1.413	0.245	80.4
Danville	14,903	90	7,029	70.5	6.2	0.979	1.388	0.240	78.0
Lewisburg	9,247	86	3,651	73.1	10.8	0.833	1.140	0.201	85.2
Newport	3,705	85	1,823	72.5	9.8	0.849	1.171	0.250	86.2
Marietta	34,659	89	13,248	68.6	10.1	0.797	1.161	0.194	77.0
Conestoga	642	95	493	43.2	10.6	1.638	3.794	0.390	45.5

Table 19. Annual Water Discharges and Annual Loads and Yields of Total Organic Carbon, Calendar Year 2009

Site	2009 Discharge cfs	Discharge % of LTM	2009 Load thousands of lbs	Load % of LTM	Prediction Error %	2009 Yield lbs/ac/yr	LTM Yield lb/ac/yr	2009 Ave. Conc. mg/l	Conc. % of LTM
Towanda	10,031	85	61,004	74.6	3.1	12.23	16.38	3.089	87.5
Danville	14,903	90	89,089	78.1	3.0	12.41	15.88	3.036	86.5
Lewisburg	9,247	86	37,288	82.5	4.5	8.51	10.32	2.048	96.2
Newport	3,705	85	23,575	84.4	4.9	10.98	13.02	3.232	100.2
Marietta	34,659	89	200,454	84.8	3.6	12.05	14.21	2.938	95.3
Conestoga	642	95	5,237	69.9	5.3	17.41	24.90	4.143	73.6

Table 20. Seasonal Mean Water Discharges and Loads of Nutrients and Suspended Sediment, Calendar Year 2009

Station	Season	Mean Q cfs	TN	TNOx	TON	TNH_3	DN	DNOx	DON	DNH_3	TP	DP	DOP	TOC	SS
			Thousands of pounds												
Towanda	Fall	9,356	3,733	2,099	1,302	143	3,573	2,120	1,069	120	405	273	229	14,686	105,575
	Winter	14,545	6,838	4,132	2,099	276	6,355	4,149	1,614	244	679	331	272	18,969	358,010
	Spring	10,392	4,168	2,155	1,714	134	3,796	2,165	1,339	126	454	259	204	15,738	148,998
	Summer	5,934	2,011	878	1,116	65	1,747	878	816	59	293	180	141	11,610	75,094
Danville	Fall	14,305	6,865	4,205	2,068	255	6,499	4,218	1,690	235	629	333	265	22,303	229,083
	Winter	20,165	10,771	6,887	2,917	460	10,125	6,902	2,256	430	872	407	313	25,153	375,641
	Spring	15,821	6,910	3,650	2,670	238	6,182	3,647	1,890	211	640	316	238	23,273	233,944
	Summer	9,609	3,589	1,677	1,766	115	3,045	1,668	1,194	99	423	212	164	18,360	155,171
Lewisburg	Fall	10,533	4,425	3,247	1,193	160	4,264	3,251	1,032	148	261	146	115	11,821	98,603
	Winter	12,140	5,577	4,052	1,455	229	5,343	4,054	1,193	227	294	155	129	10,753	130,929
	Spring	9,284	3,581	2,459	1,063	129	3,423	2,446	917	123	204	130	111	8,485	57,176
	Summer	5,196	1,864	1,264	598	61	1,756	1,256	508	53	117	77	61	6,230	32,823
Newport	Fall	4,717	4,392	3,235	1,014	77	4,022	3,256	643	55	209	101	79	8,542	97,293
	Winter	3,127	2,560	2,074	434	44	2,446	2,076	316	33	55	32	23	3,820	14,036
	Spring	5,708	4,378	3,178	1,167	107	3,954	3,183	679	78	201	85	61	8,833	95,627
	Summer	1,318	838	584	254	27	782	581	184	19	45	28	21	2,380	7,061
Marietta	Fall	37,953	28,818	21,089	6,766	863	25,752	21,266	3,965	752	1,391	532	397	59,845	849,782
	Winter	40,946	29,276	22,680	5,876	1,003	26,552	22,744	3,594	889	1,030	318	221	48,275	664,247
	Spring	40,265	23,938	16,908	6,707	658	20,518	16,869	3,600	565	1,107	324	229	56,573	627,549
	Summer	20,048	11,603	7,657	3,806	303	9,928	7,669	2,090	258	640	249	186	35,762	280,675
Conestoga	Fall	917	2,675	2,382	253	70	2,520	2,344	146	67	132	77	65	1,998	47,530
	Winter	466	1,586	1,463	128	21	1,567	1,430	112	20	28	20	17	729	4,745
	Spring	693	2,043	1,823	199	33	1,988	1,791	151	32	65	37	30	1,387	20,523
	Summer	496	1,387	1,295	112	23	1,359	1,274	84	22	68	48	41	1,122	15,169

Table 21. Seasonal Mean Water Discharges and Yields of Nutrients and Suspended Sediment, Calendar Year 2009

Station	Season	Mean Q cfs	TN	TNOx	TON	TNH_3	DN	DNOx	DON	DNH_3	TP	DP	DOP	TOC	SS
			Lbs/acre												
Towanda	Fall	9,356	0.75	0.42	0.26	0.03	0.72	0.42	0.21	0.02	0.081	0.055	0.046	2.94	21.16
	Winter	14,545	1.37	0.83	0.42	0.06	1.27	0.83	0.32	0.05	0.136	0.066	0.055	3.80	71.74
	Spring	10,392	0.84	0.43	0.34	0.03	0.76	0.43	0.27	0.03	0.091	0.052	0.041	3.15	29.86
	Summer	5,934	0.24	0.18	0.22	0.01	0.35	0.18	0.16	0.01	0.059	0.036	0.028	2.33	15.05
Danville	Fall	14,305	0.96	0.59	0.29	0.04	0.91	0.59	0.24	0.03	0.088	0.046	0.037	3.11	31.90
	Winter	20,165	1.50	0.96	0.41	0.06	1.41	0.96	0.31	0.06	0.121	0.057	0.044	3.50	52.31
	Spring	15,821	0.96	0.51	0.37	0.03	0.86	0.51	0.26	0.03	0.089	0.044	0.033	3.24	32.58
	Summer	9,609	0.50	0.23	0.25	0.02	0.42	0.23	0.17	0.01	0.059	0.030	0.023	2.56	21.61
Lewisburg	Fall	10,533	1.01	0.74	0.27	0.04	0.97	0.74	0.24	0.03	0.060	0.033	0.026	2.70	22.50
	Winter	12,140	1.27	0.92	0.33	0.05	1.22	0.93	0.27	0.05	0.067	0.035	0.029	2.45	29.88
	Spring	9,284	0.82	0.56	0.24	0.03	0.78	0.56	0.21	0.03	0.047	0.030	0.025	1.94	13.05
	Summer	5,196	0.43	0.29	0.14	0.01	0.40	0.29	0.12	0.01	0.027	0.018	0.014	1.42	7.49
Newport	Fall	4,717	2.05	1.51	0.47	0.04	1.87	1.52	0.30	0.03	0.097	0.047	0.037	3.98	45.33
	Winter	3,127	1.19	0.97	0.20	0.02	1.14	0.97	0.15	0.02	0.026	0.015	0.011	1.78	6.54
	Spring	5,708	2.04	1.48	0.54	0.05	1.84	1.48	0.32	0.04	0.094	0.040	0.028	4.11	44.55
	Summer	1,318	0.39	0.27	0.12	0.01	0.36	0.27	0.09	0.01	0.021	0.013	0.010	1.11	3.29
Marietta	Fall	37,953	1.73	1.27	0.41	0.05	1.55	1.28	0.24	0.05	0.084	0.032	0.024	3.60	51.09
	Winter	40,946	1.76	1.36	0.35	0.06	1.60	1.37	0.22	0.05	0.062	0.019	0.013	2.90	39.93
	Spring	40,265	1.44	1.02	0.40	0.04	1.23	1.01	0.22	0.03	0.067	0.019	0.014	3.40	37.73
	Summer	20,048	0.70	0.46	0.23	0.02	0.60	0.46	0.13	0.02	0.038	0.015	0.011	2.15	16.87
Conestoga	Fall	917	8.89	7.92	0.84	0.23	8.38	7.79	0.49	0.22	0.439	0.256	0.216	6.64	158.01
	Winter	466	5.27	4.86	0.43	0.07	5.21	4.75	0.37	0.07	0.093	0.066	0.057	2.42	15.77
	Spring	693	6.79	6.06	0.66	0.11	6.61	5.95	0.50	0.11	0.216	0.123	0.100	4.61	68.23
	Summer	496	4.61	4.31	0.37	0.08	4.52	4.24	0.28	0.07	0.226	0.160	0.136	3.73	50.43

Table 22. 2009 Monthly Flow in CFS and TN, TP, and SS in Thousands of Pounds at Susquehanna River Sites: Towanda, Danville, and Marietta

Month	Towanda				Danville				Marietta			
	Q	TN	TP	SS	Q	TN	TP	SS	Q	TN	TP	SS
January	8,315	1,318	85	16,003	14,602	2,683	179	49,964	32,594	8,607	258	131,831
February	11,166	1,652	131	44,730	16,884	2,849	204	71,706	39,018	8,747	293	185,161
March	23,827	3,868	463	297,277	28,694	5,239	489	253,971	51,039	11,922	479	347,255
April	12,764	1,847	165	47,626	18,108	2,886	224	69,604	45,647	9,455	364	203,461
May	8,238	1,102	110	26,335	13,660	1,981	176	57,266	39,516	7,846	365	205,307
June	10,244	1,219	179	75,037	15,766	2,043	240	107,074	35,657	6,637	378	218,781
July	5,808	674	90	19,452	9,634	1,208	133	43,129	19,623	3,609	184	72,057
August	8,437	951	152	48,394	13,282	1,672	220	94,679	27,348	5,517	342	173,733
September	3,479	386	51	7,248	5,787	709	70	17,363	12,943	2,477	114	34,885
October	8,510	1,066	159	60,771	12,447	1,844	223	110,736	31,465	7,686	492	346,831
November	8,667	1,104	112	21,438	13,711	2,094	190	62,420	32,297	7,890	356	191,123
December	10,867	1,563	134	23,366	16,739	2,927	216	55,927	49,916	13,242	543	311,828
Annual#	10,027	16,750	1,831	687,677	14,943	28,135	2,564	993,839	34,755	93,635	4,168	2,422,253

Annual flow is average for the year

Table 23. 2009 Monthly Flow in CFS and TN, TP, and SS in Thousands of Pounds at Susquehanna River Tributary Sites: Lewisburg, Newport, and Conestoga

Month	Lewisburg				Newport				Conestoga			
	Q	TN	TP	SS	Q	TN	TP	SS	Q	TN	TP	SS
January	7,533	1,282	50	11,936	3,157	953	21	5,477	597	702	14	2,889
February	13,293	1,922	104	49,454	3,769	979	21	6,057	460	492	8	1,155
March	15,705	2,373	140	69,539	2,517	628	13	2,502	340	392	6	701
April	11,457	1,555	83	24,410	6,349	1,655	57	23,517	628	649	15	4,184
May	9,192	1,184	68	17,988	6,662	1,734	91	52,142	756	752	25	8,697
June	7,207	842	53	14,778	4,081	989	53	19,968	694	642	25	7,642
July	4,628	565	32	6,883	1,573	336	17	3,073	425	405	16	2,773
August	8,198	936	68	23,459	1,311	281	16	2,430	551	513	27	6,332
September	2,680	363	17	2,481	1,062	221	12	1,558	512	469	25	6,064
October	9,182	1,203	85	41,105	3,820	1,181	74	36,167	753	715	43	14,425
November	7,876	1,091	56	15,138	2,957	850	32	7,760	659	653	24	4,718
December	14,457	2,131	120	42,360	7,316	2,361	103	53,366	1,332	1,307	65	28,387
Annual#	9,284	15,447	876	319,531	3,715	12,168	510	214,017	642	7,691	293	87,967

Annual flow is average for the year

Table 24. 2009 Monthly Flow in CFS and TN, TP, and SS Yields in lbs/acre at Susquehanna River Sites: Towanda, Danville, and Marietta

Month	Towanda				Danville				Marietta			
	Q	TN	TP	SS	Q	TN	TP	SS	Q	TN	TP	SS
January	8,315	0.26	0.017	3.21	14,602	0.37	0.025	6.96	32,594	0.52	0.016	7.93
February	11,166	0.33	0.026	8.96	16,884	0.40	0.028	9.99	39,018	0.53	0.018	11.13
March	23,827	0.78	0.093	59.57	28,694	0.73	0.068	35.37	51,039	0.72	0.029	20.88
April	12,764	0.37	0.033	9.54	18,108	0.40	0.031	9.69	45,647	0.57	0.022	12.23
May	8,238	0.22	0.022	5.28	13,660	0.28	0.025	7.97	39,516	0.47	0.022	12.34
June	10,244	0.24	0.036	15.04	15,766	0.28	0.033	14.91	35,657	0.40	0.023	13.15
July	5,808	0.14	0.018	3.90	9,634	0.17	0.019	6.01	19,623	0.22	0.011	4.33
August	8,437	0.19	0.030	9.70	13,282	0.23	0.031	13.19	27,348	0.33	0.021	10.44
September	3,479	0.08	0.010	1.45	5,787	0.10	0.010	2.42	12,943	0.15	0.007	2.10
October	8,510	0.21	0.032	12.18	12,447	0.26	0.031	15.42	31,465	0.46	0.030	20.85
November	8,667	0.22	0.022	4.30	13,711	0.29	0.026	8.69	32,297	0.47	0.021	11.49
December	10,867	0.31	0.027	4.68	16,739	0.41	0.030	7.79	49,916	0.80	0.033	18.75
Annual#	10,027	3.36	0.367	137.81	14,943	3.92	0.357	138.40	34,755	5.63	0.251	145.62

Annual flow is average for the year

Table 25. 2009 Monthly Flow in CFS and TN, TP, and SS Yields in lbs/acre at Susquehanna River Tributary Sites: Lewisburg, Newport, and Conestoga

Month	Lewisburg				Newport				Conestoga			
	Q	TN	TP	SS	Q	TN	TP	SS	Q	TN	TP	SS
January	7,533	0.29	0.011	2.72	3,157	0.44	0.010	2.55	597	2.33	0.047	9.60
February	13,293	0.44	0.024	11.29	3,769	0.46	0.010	2.82	460	1.64	0.027	3.84
March	15,705	0.54	0.032	15.87	2,517	0.29	0.006	1.17	340	1.30	0.020	2.33
April	11,457	0.35	0.019	5.57	6,349	0.77	0.027	10.96	628	2.16	0.050	13.91
May	9,192	0.27	0.016	4.10	6,662	0.81	0.042	24.29	756	2.50	0.083	28.91
June	7,207	0.19	0.012	3.37	4,081	0.46	0.025	9.30	694	2.13	0.083	25.41
July	4,628	0.13	0.007	1.57	1,573	0.16	0.008	1.43	425	1.35	0.053	9.22
August	8,198	0.21	0.016	5.35	1,311	0.13	0.007	1.13	551	1.71	0.090	21.05
September	2,680	0.08	0.004	0.57	1,062	0.10	0.006	0.73	512	1.56	0.083	20.16
October	9,182	0.27	0.019	9.38	3,820	0.55	0.034	16.85	753	2.38	0.143	47.96
November	7,876	0.25	0.013	3.45	2,957	0.40	0.015	3.62	659	2.17	0.080	15.68
December	14,457	0.49	0.027	9.67	7,316	1.10	0.048	24.86	1,332	4.35	0.216	94.37
Annual#	9,284	3.53	0.200	72.92	3,715	5.67	0.238	99.70	642	25.57	0.974	292.44

Annual flow is average for the year

Table 26. Temperature, Dissolved Oxygen, Conductivity, and pH Summary Statistics of Samples Collected During 2009

Station	Temperature (C°)					Dissolved Oxygen (mg/L)					Conductivity (umhos/cm)					pH (S.U.)				
	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD
Chemung	0.1	24.4	10.7	11.2	8.0	6.25	13.33	10.59	10.33	2.34	169	483	302	310	76	7.1	8.4	7.6	7.7	0.45
Cohocton	0.4	26.5	10.7	11.5	8.3	7.60	13.15	9.72	10.52	1.75	273	756	460	459	124	7.0	8.0	7.4	7.4	0.32
Conklin	0.1	24.7	13.1	13.0	8.5	7.62	13.50	10.60	10.15	1.69	108	231	191	176	36	6.6	7.6	7.1	7.1	0.33
Smithboro	0.1	21.8	10.7	11.5	7.4	7.17	13.15	10.19	10.18	1.93	115	283	194	197	53	6.8	8.5	7.4	7.5	0.56
Unadilla	0.1	23.7	9.4	11.9	8.4	7.82	13.55	10.27	10.32	1.80	139	292	242	235	41	6.8	7.8	7.3	7.3	0.25
Castanea	0.2	21.5	11.4	11.8	7.3	8.26	17.33	10.91	11.33	2.67	195	371	276	276	55	6.8	8.8	7.5	7.4	0.52
Conestoga	3.2	24.5	11.9	13.5	6.6	8.41	17.26	10.16	10.78	2.39	378	840	575	573	110	7.5	8.3	7.8	7.9	0.21
Danville	0.1	26.7	13.7	15.9	9.3	6.95	12.70	9.85	9.95	1.76	133	287	210	207	37	6.6	7.8	7.1	7.1	0.33
Dromgold	0.9	22.5	11.7	9.0	6.9	7.68	14.78	11.06	11.58	2.04	102	240	161	160	40	6.9	8.5	7.7	7.6	0.51
Hershey	3.2	23.0	14.6	14.7	6.5	8.11	13.04	10.19	9.96	1.56	155	311	251	255	46	7.5	7.9	7.7	7.7	0.14
Hogestown	2.0	24.1	13.5	12.7	6.4	6.81	13.86	10.66	11.13	2.07	212	526	380	385	100	7.5	8.5	7.9	7.8	0.31
Jersey Shore	0.1	23.4	12.3	11.5	8.3	8.11	19.02	11.39	10.78	3.02	138	314	221	203	57	6.7	7.7	7.1	7.0	0.28
Karthaus	0.2	26.1	12.2	11.9	7.9	7.47	17.39	10.80	10.52	2.62	273	615	379	340	103	6.0	7.2	6.7	6.7	0.31
Lewisburg	0.1	24.3	12.4	12.0	8.7	7.82	19.12	10.93	10.46	2.92	115	268	201	202	40	6.5	7.8	6.9	6.8	0.32
Manchester	3.4	28.7	14.3	13.8	6.9	8.06	14.55	11.07	11.17	1.93	172	339	258	258	46	7.4	8.6	7.6	7.8	0.37
Marietta	3.8	27.0	12.0	14.6	7.5	8.05	15.54	10.97	11.01	2.08	147	299	222	218	33	7.5	8.5	7.9	7.9	0.29
Martic Forge	4.7	21.2	10.8	12.7	5.3	8.84	14.58	11.48	11.38	1.92	268	527	416	423	85	7.5	8.4	7.9	7.9	0.24
Newport	1.9	26.6	13.4	14.0	6.8	6.72	14.68	10.41	10.57	2.21	177	312	243	243	39	7.3	9.1	8.0	8.0	0.48
Penns Creek	0.1	22.5	10.0	10.8	6.9	6.67	18.52	11.35	11.08	2.88	145	242	199	194	31	6.8	8.1	7.3	7.3	0.45
Saxton	0.8	27.4	12.4	12.9	8.0	9.40	13.98	11.32	11.28	1.16	126	399	237	253	90	7.4	8.8	7.9	7.9	0.42
Towanda	0.1	24.3	11.6	12.7	8.9	7.07	13.68	10.10	10.27	1.94	130	333	233	232	53	6.7	8.2	7.2	7.3	0.37
Wilkes-Barre	0.1	25.1	12.8	13.6	9.0	7.37	13.33	9.97	9.99	1.72	133	334	226	226	49	6.8	7.9	7.3	7.3	0.33
Richardsmere	3.8	26.6	12.1	14.0	7.0	9.17	15.05	11.20	11.34	1.69	175	276	248	237	30	7.3	8.7	7.8	7.9	0.35

Table 27. Total Nitrogen Species Summary Statistics of Samples Collected During 2009, in mg/L

Station	Total Nitrogen					Total Ammonium					Total Nitrate plus Nitrite					Total Organic Nitrogen				
	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD
Chemung	0.59	1.30	0.89	0.91	0.23	0.01	0.118	0.035	0.046	0.036	0.209	0.983	0.453	0.480	0.206	0.216	0.757	0.364	0.387	0.154
Cohocton	0.71	1.75	1.13	1.15	0.30	0.02	0.092	0.045	0.049	0.026	0.274	1.250	0.795	0.727	0.290	0.231	0.725	0.300	0.377	0.157
Conklin	0.40	0.92	0.63	0.64	0.15	0.01	0.104	0.030	0.039	0.024	0.148	0.728	0.260	0.341	0.173	0.078	0.549	0.241	0.262	0.131
Smithboro	0.54	1.05	0.75	0.76	0.14	0.01	0.075	0.031	0.032	0.022	0.184	0.815	0.382	0.398	0.196	0.117	0.619	0.322	0.329	0.150
Unadilla	0.55	1.17	0.81	0.83	0.20	0.01	0.086	0.030	0.035	0.022	0.106	0.986	0.437	0.512	0.245	0.088	0.869	0.240	0.283	0.195
Castanea	0.87	2.41	1.36	1.39	0.41	0.02	0.060	0.020	0.028	0.013	0.600	1.600	1.070	1.105	0.306	0.030	1.400	0.200	0.277	0.360
Conestoga	4.41	9.16	6.63	6.72	1.37	0.02	0.520	0.060	0.088	0.102	3.720	8.700	6.340	6.239	1.569	0.030	1.250	0.340	0.469	0.341
Danville	0.57	2.01	0.94	0.86	0.33	0.02	0.090	0.036	0.020	0.022	0.180	2.000	0.614	0.490	0.393	0.120	0.590	0.304	0.320	0.123
Dromgold	1.32	3.19	1.75	1.60	0.49	0.02	0.050	0.026	0.020	0.011	0.930	2.120	1.430	1.430	0.297	0.080	1.650	0.324	0.155	0.413
Hershey	2.82	4.09	3.49	3.53	0.35	0.02	0.150	0.047	0.030	0.040	1.890	3.940	3.108	3.265	0.529	0.080	0.960	0.333	0.200	0.297
Hogestown	2.54	4.95	3.89	3.96	0.71	0.02	0.070	0.030	0.030	0.014	1.760	4.670	3.465	3.580	0.789	0.060	1.900	0.396	0.250	0.458
Jersey Shore	0.40	1.47	0.67	0.65	0.27	0.02	0.060	0.030	0.020	0.016	0.290	0.790	0.454	0.415	0.133	0.040	1.140	0.185	0.085	0.283
Karthaus	0.25	1.75	0.57	0.49	0.38	0.02	0.110	0.041	0.030	0.027	0.170	0.680	0.334	0.310	0.133	0.020	1.400	0.198	0.110	0.351
Lewisburg	0.47	2.02	0.89	0.82	0.31	0.02	0.110	0.034	0.020	0.023	0.330	1.010	0.651	0.640	0.208	0.040	1.020	0.210	0.155	0.196
Manchester	1.00	3.88	2.57	2.53	0.69	0.02	0.110	0.030	0.045	0.032	0.670	3.390	2.000	1.863	0.649	0.210	1.940	0.350	0.622	0.503
Marietta	0.96	2.02	1.30	1.34	0.28	0.02	0.110	0.030	0.038	0.022	0.530	1.610	0.980	1.012	0.296	0.110	0.660	0.260	0.295	0.140
Martic Forge	5.21	9.44	6.51	7.04	1.33	0.02	0.240	0.060	0.097	0.078	3.180	9.510	6.155	6.336	1.966	0.010	1.900	0.900	0.964	0.567
Newport	0.98	3.33	1.49	1.61	0.47	0.02	0.110	0.030	0.034	0.020	0.810	1.750	1.180	1.200	0.248	0.060	2.210	0.230	0.380	0.439
Penns Creek	0.92	2.18	1.43	1.49	0.41	0.02	0.110	0.030	0.039	0.026	0.760	1.900	1.075	1.135	0.357	0.030	0.840	0.250	0.316	0.236
Saxton	1.18	2.69	1.64	1.73	0.36	0.02	0.060	0.020	0.027	0.014	0.890	1.830	1.410	1.389	0.274	0.080	1.480	0.160	0.337	0.430
Towanda	0.45	1.23	0.75	0.80	0.20	0.02	0.060	0.020	0.025	0.010	0.090	1.070	0.440	0.474	0.258	0.090	0.740	0.300	0.299	0.144
Wilkes-Barre	0.51	1.07	0.78	0.79	0.19	0.02	0.070	0.025	0.033	0.018	0.040	1.010	0.380	0.408	0.258	0.010	0.590	0.395	0.351	0.158
Richardsmere	4.68	8.50	6.35	6.48	1.18	0.02	0.210	0.095	0.094	0.065	3.810	8.260	5.630	5.896	1.458	0.030	1.670	0.600	0.574	0.449

Table 28. Dissolved Nitrogen Species Summary Statistics of Samples Collected During 2009, in mg/L

Station	Dissolved Nitrogen					Dissolved Ammonium					Dissolved Nitrate plus Nitrite					Dissolved Organic Nitrogen				
	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD
Chemung	0.50	1.29	0.75	0.82	0.25	0.010	0.111	0.051	0.052	0.034	0.209	0.983	0.465	0.509	0.243	0.159	0.405	0.240	0.258	0.069
Cohocton	0.69	1.59	1.22	1.18	0.33	0.019	0.089	0.039	0.045	0.025	0.274	1.250	0.795	0.726	0.291	0.231	0.718	0.401	0.408	0.131
Conklin	0.41	0.90	0.61	0.63	0.17	0.013	0.066	0.029	0.033	0.018	0.148	0.730	0.261	0.341	0.173	0.081	0.467	0.232	0.256	0.114
Smithboro	0.45	1.00	0.63	0.69	0.21	0.010	0.076	0.029	0.035	0.023	0.184	0.815	0.384	0.423	0.241	0.131	0.334	0.216	0.230	0.064
Unadilla	0.39	1.32	0.78	0.83	0.30	0.010	0.060	0.025	0.032	0.018	0.106	0.986	0.436	0.511	0.246	0.113	0.739	0.215	0.282	0.173
Castanea	0.78	2.13	1.35	1.34	0.36	0.020	0.060	0.020	0.025	0.011	0.590	1.570	1.070	1.095	0.303	0.050	1.120	0.165	0.238	0.283
Conestoga	4.34	9.16	6.58	6.57	1.43	0.020	0.500	0.050	0.081	0.098	3.720	8.700	6.310	6.162	1.564	0.090	0.830	0.290	0.386	0.240
Danville	0.35	1.99	0.86	0.81	0.35	0.020	0.080	0.031	0.020	0.017	0.180	2.000	0.609	0.490	0.394	0.120	0.410	0.229	0.210	0.091
Dromgold	1.29	2.90	1.71	1.56	0.41	0.020	0.040	0.023	0.020	0.007	0.930	2.120	1.423	1.430	0.298	0.050	1.390	0.282	0.145	0.340
Hershey	2.39	4.09	3.41	3.50	0.45	0.020	0.160	0.045	0.030	0.041	1.900	3.940	3.100	3.245	0.523	0.070	0.760	0.268	0.190	0.237
Hogestown	2.38	4.95	3.84	3.93	0.74	0.020	0.050	0.028	0.025	0.009	1.760	4.670	3.461	3.570	0.794	0.030	1.830	0.356	0.170	0.448
Jersey Shore	0.32	1.47	0.64	0.60	0.27	0.020	0.060	0.025	0.020	0.012	0.290	0.770	0.448	0.415	0.129	0.010	1.150	0.178	0.080	0.297
Karthaus	0.24	1.63	0.54	0.46	0.35	0.020	0.080	0.033	0.025	0.019	0.170	0.680	0.329	0.300	0.133	0.010	1.290	0.182	0.110	0.324
Lewisburg	0.47	1.16	0.82	0.82	0.21	0.020	0.090	0.031	0.020	0.020	0.330	0.960	0.648	0.640	0.205	0.010	0.340	0.147	0.120	0.089
Manchester	0.95	3.64	2.34	2.35	0.64	0.020	0.110	0.030	0.044	0.031	0.650	3.390	2.000	1.849	0.651	0.130	1.400	0.280	0.458	0.321
Marietta	0.76	2.02	1.22	1.22	0.32	0.020	0.060	0.030	0.030	0.013	0.530	1.610	0.980	1.007	0.295	0.040	0.370	0.160	0.178	0.079
Martic Forge	4.25	9.17	6.46	6.78	1.54	0.020	0.220	0.045	0.081	0.072	3.180	9.480	6.080	6.263	1.895	0.280	1.230	0.625	0.656	0.275
Newport	0.95	3.33	1.42	1.49	0.46	0.020	0.100	0.020	0.027	0.016	0.810	1.760	1.150	1.191	0.246	0.060	2.220	0.140	0.275	0.410
Penns Creek	0.92	1.98	1.30	1.39	0.34	0.020	0.110	0.020	0.033	0.024	0.700	1.880	1.080	1.115	0.366	0.040	0.530	0.220	0.245	0.151
Saxton	1.09	2.69	1.59	1.64	0.37	0.020	0.060	0.020	0.024	0.011	0.890	1.830	1.420	1.389	0.278	0.050	1.480	0.145	0.241	0.366
Towanda	0.27	1.21	0.68	0.71	0.23	0.020	0.040	0.020	0.022	0.005	0.090	1.060	0.440	0.471	0.255	0.030	0.430	0.200	0.212	0.101
Wilkes-Barre	0.28	1.04	0.67	0.69	0.24	0.020	0.070	0.020	0.029	0.015	0.040	1.010	0.385	0.408	0.257	0.150	0.460	0.240	0.267	0.096
Richardsmere	4.48	8.43	6.18	6.32	1.27	0.020	0.210	0.095	0.090	0.063	3.810	8.260	5.560	5.838	1.462	0.030	0.850	0.465	0.466	0.271

Table 29. Phosphorus Species and Total Suspended Solids Summary Statistics of Samples Collected During 2009, in mg/L

Station	Total Phosphorus					Dissolved Phosphorus					Orthophosphorus					Total Suspended Solids				
	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD
Chemung	0.029	0.156	0.088	0.090	0.039	0.032	0.090	0.050	0.058	0.024	0.023	0.088	0.049	0.055	0.026	2.2	111	6.8	22.6	32.6
Cohocton	0.020	0.132	0.061	0.070	0.033	0.016	0.068	0.048	0.046	0.016	0.015	0.068	0.038	0.042	0.017	1.4	103	4.0	15.7	26.9
Conklin	0.014	0.128	0.066	0.066	0.035	0.008	0.087	0.031	0.039	0.023	0.008	0.079	0.031	0.035	0.024	2.4	77	7.5	16.6	20.9
Smithboro	0.023	0.183	0.052	0.064	0.045	0.012	0.060	0.025	0.032	0.017	0.012	0.059	0.023	0.029	0.018	1.6	71	13.1	23.6	22.2
Unadilla	0.012	0.191	0.054	0.067	0.045	0.008	0.071	0.037	0.039	0.020	0.008	0.070	0.037	0.037	0.021	2.6	149	6.1	19.5	39.0
Castanea	0.013	0.108	0.028	0.037	0.026	0.010	0.091	0.012	0.024	0.023	0.010	0.078	0.010	0.019	0.019	5.0	18	5.0	7.2	4.1
Conestoga	0.044	0.468	0.156	0.187	0.116	0.027	0.314	0.109	0.128	0.073	0.018	0.274	0.091	0.107	0.064	5.0	150	16.0	27.4	34.2
Danville	0.020	0.142	0.075	0.071	0.032	0.010	0.121	0.042	0.037	0.026	0.010	0.106	0.032	0.022	0.024	5.0	60	18.7	14.0	17.1
Dromgold	0.013	0.147	0.038	0.028	0.034	0.010	0.091	0.025	0.018	0.021	0.010	0.070	0.018	0.014	0.015	5.0	30	9.1	5.0	7.5
Hershey	0.024	0.352	0.072	0.049	0.089	0.018	0.110	0.035	0.028	0.025	0.013	0.089	0.029	0.025	0.020	5.0	178	24.9	9.0	48.8
Hogestown	0.010	0.136	0.037	0.024	0.034	0.010	0.094	0.022	0.016	0.021	0.010	0.043	0.016	0.014	0.010	5.0	106	16.9	5.5	25.9
Jersey Shore	0.010	0.076	0.037	0.033	0.024	0.010	0.072	0.027	0.010	0.023	0.010	0.059	0.022	0.010	0.017	5.0	26	8.9	5.0	6.9
Karthaus	0.010	0.065	0.026	0.019	0.019	0.010	0.037	0.014	0.010	0.008	0.010	0.034	0.014	0.010	0.007	5.0	48	11.1	6.0	11.9
Lewisburg	0.012	0.114	0.040	0.036	0.028	0.010	0.099	0.026	0.012	0.024	0.010	0.083	0.021	0.010	0.019	5.0	38	9.5	5.0	9.3
Manchester	0.046	0.470	0.091	0.157	0.128	0.028	0.265	0.074	0.109	0.076	0.019	0.236	0.057	0.091	0.066	5.0	260	8.0	33.2	63.5
Marietta	0.021	0.200	0.046	0.061	0.047	0.010	0.050	0.014	0.019	0.011	0.010	0.034	0.011	0.015	0.008	5.0	160	12.0	25.3	37.7
Martic Forge	0.032	1.042	0.159	0.364	0.382	0.017	0.676	0.114	0.218	0.223	0.012	0.629	0.099	0.192	0.201	5.0	350	19.0	77.3	114.8
Newport	0.019	0.137	0.042	0.051	0.031	0.012	0.058	0.018	0.026	0.015	0.010	0.045	0.015	0.021	0.012	5.0	74	8.0	15.1	17.2
Penns Creek	0.010	0.296	0.034	0.058	0.075	0.010	0.155	0.021	0.036	0.040	0.010	0.135	0.018	0.028	0.035	5.0	86	7.0	16.9	21.9
Saxton	0.010	0.268	0.021	0.043	0.065	0.010	0.027	0.010	0.013	0.005	0.010	0.024	0.010	0.012	0.004	5.0	292	5.0	31.3	73.8
Towanda	0.019	0.195	0.060	0.073	0.043	0.013	0.101	0.042	0.044	0.023	0.012	0.077	0.035	0.036	0.019	5.0	174	10.0	25.4	38.0
Wilkes-Barre	0.020	0.156	0.053	0.068	0.043	0.011	0.066	0.028	0.032	0.018	0.010	0.055	0.021	0.025	0.014	5.0	106	13.0	25.6	29.1
Richardsmere	0.063	0.546	0.128	0.174	0.136	0.030	0.195	0.092	0.101	0.053	0.021	0.173	0.075	0.084	0.048	5.0	266	7.0	33.6	66.0

Table 30. Flow, Total Organic Carbon, Total Kjeldahl, and Dissolved Kjeldahl Summary Statistics of Samples Collected During 2009, in mg/L

Station	Flow (cfs)					Total Organic Carbon					Total Kjeldahl Nitrogen					Dissolved Kjeldahl Nitrogen				
	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD	Min	Max	Med	Mn	SD
Chemung	308	18,575	2,096	3,468	4,627	2.4	4.6	3.4	3.6	0.79	0.24	0.80	0.38	0.43	0.17	0.25	0.47	0.29	0.31	0.07
Cohocton	65	3,158	281	532	805	2.8	6.7	3.7	4.1	1.16	0.26	0.77	0.33	0.43	0.17	0.30	0.74	0.44	0.45	0.12
Conklin	1,009	17,469	3,331	4,360	4,061	1.5	5.4	3.0	3.3	1.25	0.10	0.58	0.27	0.30	0.14	0.10	0.48	0.27	0.29	0.12
Smithboro	2,728	49,359	8,405	11,088	11,066	1.7	5.6	3.1	3.4	1.28	0.13	0.69	0.35	0.36	0.16	0.16	0.41	0.27	0.27	0.07
Unadilla	273	4,711	517	1,137	1,408	1.5	5.4	3.2	3.1	1.14	0.14	0.91	0.27	0.32	0.20	0.14	0.76	0.24	0.31	0.17
Castanea	314	1,602	549	771	442	1.4	2.4	1.8	1.8	0.33	0.08	1.42	0.23	0.01	0.36	0.07	1.14	0.19	0.26	0.28
Conestoga	299	2,190	563	767	505	1.9	6.2	3.3	3.7	1.34	0.03	1.29	0.51	0.54	0.35	0.13	0.90	0.46	0.47	0.25
Danville	4,819	70,814	15,999	11,966	13,155	1.6	5.6	2.9	2.7	0.98	0.01	0.61	0.33	0.35	0.13	0.14	0.45	0.26	0.23	0.09
Dromgold	53	1,044	427	241	370	1.2	5.9	2.6	2.3	1.38	0.10	1.67	0.35	0.18	0.41	0.07	1.41	0.31	0.17	0.34
Hershey	337	5,333	1,320	758	1,379	1.4	9.7	3.0	2.6	2.18	0.10	1.06	0.38	0.23	0.31	0.09	0.78	0.31	0.21	0.24
Hogestown	169	3,659	1,067	595	1,160	1.4	6.5	2.7	2.1	1.38	0.08	1.94	0.43	0.28	0.46	0.05	1.87	0.38	0.20	0.45
Jersey Shore	1,443	22,904	8,053	6,748	6,289	1.1	2.9	1.6	1.4	0.53	0.08	1.16	0.22	0.13	0.28	0.03	1.17	0.19	0.10	0.29
Karthaus	424	4,815	2,040	1,871	1,462	0.9	2.9	1.5	1.3	0.58	0.04	1.43	0.24	0.17	0.35	0.03	1.31	0.22	0.15	0.32
Lewisburg	2,423	25,991	9,096	7,229	6,257	1.2	3.8	1.8	1.6	0.68	0.01	1.08	0.24	0.19	0.20	0.01	0.39	0.17	0.16	0.09
Manchester	110	9,109	682	1,701	2,355	2.4	12.3	4.3	5.7	3.10	0.23	2.03	0.37	0.67	0.53	0.15	1.49	0.32	0.50	0.35
Marietta	9,623	135,571	29,672	37,955	27,015	1.7	4.9	2.6	2.8	0.92	0.15	0.71	0.28	0.32	0.14	0.10	0.51	0.20	0.22	0.10
Martic Forge	97	791	160	287	222	1.3	11.3	3.7	4.7	3.50	0.07	2.03	0.97	1.08	0.63	0.30	1.39	0.73	0.75	0.32
Newport	982	23,016	3,547	5,354	5,332	1.8	5.9	2.5	2.8	1.03	0.08	2.26	0.27	0.41	0.44	0.08	2.26	0.16	0.30	0.41
Penns Creek	128	2040	348	544	543	1.4	6.4	2.1	2.8	1.44	0.08	0.95	0.30	0.36	0.25	0.08	0.55	0.25	0.28	0.16
Saxton	86	13,995	721	2,015	3,648	1.6	9.5	2.4	2.9	1.96	0.10	1.51	0.19	0.37	0.44	0.07	1.51	0.17	0.27	0.37
Towanda	2,487	67,929	6,655	11,005	12,411	1.8	6.7	2.6	3.1	1.23	0.11	0.76	0.32	0.32	0.14	0.05	0.45	0.22	0.23	0.10
Wilkes-Barre	3,762	74,402	12,339	17,243	16,921	2.0	6.0	3.6	3.5	1.19	0.06	0.61	0.42	0.38	0.16	0.03	0.50	0.25	0.28	0.12
Richardsmere	85	1,511	225	395	399	2.3	11.6	3.7	4.4	2.34	0.12	1.88	0.65	0.68	0.47	0.05	0.98	0.49	0.53	0.31