Table 4.1-1. Total volume of water pumped, specific conductance, and pool level (feet from surface) for Wadesville Mine Pool Water, May-November 2006.

Date		Daily Volume (MG)	Specific Conductance (µmhos/cm)	Pool Level (Feet)
5/30/2006				
5/31/2006		8.59	1160	461.00
6/1/2006		2.38	1178	463.00
6/2/2006	A	0.00	1056	460.00
6/3/2006	A	0.00	-	-
6/4/2006	A	0.00	-	-
6/5/2006	A	0.00	-	-
6/6/2006	A	0.00	-	-
6/7/2006	A	0.00	-	-
6/8/2006	A	0.00	-	-
6/9/2006	A	0.00	-	-
6/10/2006	A	0.00	-	-
6/11/2006	A	0.00	-	-
6/12/2006	A	0.00	-	-
6/13/2006	A	0.00	-	-
6/14/2006	A	0.00	-	-
6/15/2006	A	0.00	-	-
6/16/2006	A	0.00	-	-
6/17/2006	A	0.00	-	-
6/18/2006	A	0.00	-	-
6/19/2006		9.15	695	441.00
6/20/2006		8.74	1269	445.00
6/21/2006		8.67	1234	448.00
6/22/2006		8.49	1216	450.00
6/23/2006		3.22	1194	452.00
6/24/2006	A	0.00	-	-
6/25/2006	A	0.00	-	-
6/26/2006	A	0.00	-	-
6/27/2006	A	0.00	-	-
6/28/2006	A	0.00	-	-
6/29/2006	A	0.00	-	-
6/30/2006	A	0.00	-	-
7/1/2006	A	0.00	-	-
7/2/2006	A	0.00	-	-
7/3/2006	A	0.00	-	-

Table 4.1-1. Continued.

Date		Daily Volume (MG)	Specific Conductance (µmhos/cm)	Pool Level (Feet)
7/4/2006	A	0.00	-	-
7/5/2006	A	0.00	-	-
7/6/2006	A	0.00	-	-
7/7/2006	A	0.00	-	-
7/8/2006	A	0.00	-	-
7/9/2006	A	0.00	-	-
7/10/2006	A	0.00	-	-
7/11/2006	A	0.00	-	-
7/12/2006	A	0.00	-	-
7/13/2006	A	0.00	-	-
7/14/2006	A	0.00	-	-
7/15/2006	A	0.00	-	-
7/16/2006	A	0.00	-	-
7/17/2006	A	0.00	-	-
7/18/2006	A	0.00	-	-
7/19/2006	A	0.00	-	-
7/20/2006	A	0.00	-	-
7/21/2006	A	0.00	-	-
7/22/2006	A	0.00	-	-
7/23/2006	A	0.00	-	-
7/24/2006	A	0.00	-	-
7/25/2006	A	0.00	-	-
7/26/2006	A	0.00	-	-
7/27/2006	A	0.00	-	-
7/28/2006	A	0.00	-	-
7/29/2006	A	0.00	-	-
7/30/2006	A	0.00	-	-
7/31/2006	A	0.00	-	-
8/1/2006	A	0.00	-	-
8/2/2006	A	0.00	-	-
8/3/2006	A	0.00	-	-
8/4/2006	A	0.00	-	434.00
8/5/2006	A	0.00	-	-
8/6/2006	A	0.00	-	-
8/7/2006	A	0.00	-	-

Table 4.1-1. Continued.

Date		Daily Volume (MG)	Specific Conductance (µmhos/cm)	Pool Level (Feet)
8/8/2006	A	0.00	-	-
8/9/2006	A	0.00	-	-
8/10/2006	A	0.00	-	-
8/11/2006	A	0.00	-	-
8/12/2006	A	0.00	-	-
8/13/2006	A	0.00	-	-
8/14/2006	A	0.00	-	-
8/15/2006	A	0.00	-	-
8/16/2006	A	0.00	-	-
8/17/2006	A	0.00	-	-
8/18/2006	A	0.00	-	-
8/19/2006	A	0.00	-	-
8/20/2006	A	0.00	-	-
8/21/2006	A	0.00	-	-
8/22/2006	A	0.00	-	-
8/23/2006	B	7.16	1396	447.95
8/24/2006		8.69	1387	448.81
8/25/2006		8.65	1384	449.94
8/26/2006		8.65	-	-
8/27/2006		8.65	-	-
8/28/2006	A	0.00	1332	453.14
8/29/2006	A	0.00	-	-
8/30/2006	A	0.00	-	-
8/31/2006	A	0.00	-	-
9/1/2006	A	0.00	-	-
9/2/2006	A	0.00	-	-
9/3/2006	A	0.00	-	-
9/4/2006	A	0.00	-	-
9/5/2006	A	0.00	-	-
9/6/2006	A	0.00	-	-
9/7/2006	A	0.00	-	-
9/8/2006	A	0.00	-	-
9/9/2006	A	0.00	-	-
9/10/2006	A	0.00	-	-
9/11/2006	A	0.00	-	-

Table 4.1-1. Continued.

Date		Daily Volume (MG)	Specific Conductance (µmhos/cm)	Pool Level (Feet)
9/12/2006	A	0.00	-	-
9/13/2006	A	0.00	-	-
9/14/2006	A	0.00	-	-
9/15/2006	A	0.00	-	-
9/16/2006	A	0.00	-	-
9/17/2006	A	0.00	-	-
9/18/2006	A	0.00	-	-
9/19/2006	A	0.00	-	-
9/20/2006	A	0.00	-	-
9/21/2006	A	0.00	-	-
9/22/2006	A	0.00	-	-
9/23/2006	A	0.00	-	-
9/24/2006	A	0.00	-	-
9/25/2006	A	0.00	-	-
9/26/2006	A	0.00	-	-
9/27/2006	A	0.00	-	-
9/28/2006	A	0.00	-	-
9/29/2006	A	0.00	-	-
9/30/2006	A	0.00	-	-
10/1/2006	A	0.00	-	-
10/2/2006	A	0.00	-	-
10/3/2006	A	0.00	-	-
10/4/2006	A	0.00	-	-
10/5/2006	A	0.00	-	-
10/6/2006	A	0.00	-	-
10/7/2006	A	0.00	-	-
10/8/2006	A	0.00	-	-
10/9/2006	A	0.00	-	-
10/10/2006	A	0.00	-	-
10/11/2006	A	0.00	-	-
10/12/2006	A	0.00	-	-
10/13/2006	A	0.00	-	-
10/14/2006	A	0.00	-	-
10/15/2006	A	0.00	-	-
10/16/2006	A	0.00	-	-

Table 4.1-1. Continued.

Date		Daily Volume (MG)	Specific Conductance (µmhos/cm)	Pool Level (Feet)
10/17/2006	A	0.00	-	-
10/18/2006	A	0.00	-	-
10/19/2006	A	0.00	-	-
10/20/2006	A	0.00	-	-
10/21/2006	A	0.00	-	-
10/22/2006	A	0.00	-	-
10/23/2006	A	0.00	-	-
10/24/2006	A	0.00	-	-
10/25/2006	A	0.00	-	-
10/26/2006	A	0.00	-	-
10/27/2006	A	0.00	-	-
10/28/2006	A	0.00	-	-
10/29/2006	A	0.00	-	-
10/30/2006	A	0.00	-	-
10/31/2006	A	0.00	-	-
11/1/2006	A	0.00	-	-
11/2/2006	A	0.00	-	-
11/3/2006	A	0.00	-	-
11/4/2006	A	0.00	-	-
11/5/2006	A	0.00	-	-
May-October 2006				
Min		0.0	695	434.0
Max		9.1	1396	463.0
Mean		0.6	1208	450.3
May-October 2005				
Min		0.0	1050	430.9
Max		14.0	1639	598.6
Mean		5.0	1388	500.0
May-October 2004				
Min		0.0	1231	438.0
Max		10.0	1696	522.3
Mean		6.3	1414	494.3
July-October 2003				
Min		0.0	638	404.0
Max		11.9	2130	490.1
Mean		8.3	1437	461.5

A = Release stopped

Table 4.1-2. Monthly water quality measurements of Wadesville Mine Pool Water collected from the pump discharge, May-August 2006.

Constituent [1]	Sample Date[2]				May-August 2006[3]			May-September 2005[3]			May-October 2004[3]			July-October 2003[3]		
	5/31/06	6/22/06	7/27/06	8/25/06	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
Total Organic Carbon	<0.5	<0.5	0.6	<0.5												
Total Dissolved Solids	1,058	1,240	1,374	1,253	1,058	1,374	1,231	1129	1418	1250	1047	1474	1257	1138	1520	1303
Iron, Total	N/A	N/A	5.84	N/A												
Dissolved Oxygen	8.0	8.2	8.8	8.8	8.0	8.8	8.5	7.0	11.3	9.1						
Specific Conductance (µmhos/cm)	1,331	1,582	1,354	1,577	1331	1582	1461	1411	1990	1591	1438	1832	1654	1274	2109	1715
pH (Standard Units)	7.21	6.95	6.90	6.92	6.90	7.21	7.00	6.89	7.12	6.99	6.74	7.40	6.99	7.03	7.42	7.25
Temperature (°C)	13.9	14.0	14.0	14.0	13.9	14.0	14.0	13.5	14.8	14.2						

[1] Total concentration in mg/l unless otherwise indicated.
[2] No samples in September or October; pump out of service.
[3] No minimum or maximum listed, nor mean computed for parameters with all measurements below detection limits.

Table 4.1-3. Monthly water quality measurements (NPDES Permit parameters) of Wadesville Pool water, May-August 2006.

Parameter[1]	Sample Date[2]			May-August 2006[3]			May-September 2005[3]			May-October 2004[3]			July-October 2003[3]		
	6/23/2006	7/14/2006	8/14/2006	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
pH (Standard Units)	6.90	6.75	6.90	6.75	6.90	6.85	6.80	7.20	7.01	6.74	7.40	6.99	7.03	7.42	7.25
Specific Conductance (µmhos/cm)	1329	1580	1686	1329	1686	1532	1379	1720	1494	1438	1832	1654	1274	2109	1715
Iron, Total	6.95	6.47	2.69	2.69	6.95	5.37	1.49	3.36	2.27	0.97	4.04	1.98	0.94	2.46	1.64
Manganese, Total	2.89	2.31	2.28	2.28	2.89	2.49	2.08	2.35	2.21	1.84	2.84	2.30	1.96	5.10	2.96
Sulfate	655	784	720	655	784	720	361	643	473	429	788	581	404	1170	753
Acidity	<0.40	<0.40	<0.40												
Alkalinity	311	319	364	311	364	331	337	424	377	308	382	338	202	337	282
Total Suspended Solids	13	11	4	4	13	9	1	7	4	1	9	5	7	9	8

[1] Total concentration in mg/l unless otherwise indicated.

[2] No sample collected in May, September, October.

[3] No minimum or maximum listed, nor mean computed for parameters with all measurements below detection limits.

Table 4.2-1. Daily mean discharge measured at four USGS gages on the Schuylkill River, total daily rainfall measured at Landingville, and dissolved oxygen measured at Vincent Dam, March-November 2006.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
3/31/2006	114	254	517	781	0.00		
4/1/2006	124	276	521	781	0.00	14.9	10.0
4/2/2006	119	270	541	807	0.00	16.6	8.5
4/3/2006	122	263	540	795	0.00	12.9	8.9
4/4/2006	157	340	633	995	0.00	15.0	8.5
4/5/2006	132	303	614	930	0.00	15.6	9.5
4/6/2006	125	284	557	851	0.01	17.0	10.7
4/7/2006	126	270	542	824	0.21	14.8	10.9
4/8/2006	233	439	794	1090	0.66	12.6	9.9
4/9/2006	169	444	1020	1520	0.00	14.5	10.1
4/10/2006	153	367	781	1170	0.00	14.9	10.9
4/12/2006	151	344	657	957	0.00	13.1	9.2
4/13/2006	151	349	651	937	0.08	13.3	8.2
4/14/2006	146	365	663	936	0.11	9.8	7.5
4/15/2006	148	380	683	969	0.00	12.2	7.0
4/16/2006	138	379	669	953	0.00	13.0	7.6
4/17/2006	134	370	655	920	0.00	13.2	7.8
4/18/2006	130	365	635	908	0.00	13.4	7.8
4/19/2006	125	349	627	872	0.00	13.1	7.1
4/20/2006	120	337	645	887	0.00	13.0	7.1
4/21/2006	120	309	659	886	0.19	12.6	6.9
4/22/2006	322	469	1040	1420	2.11	9.3	6.8
4/23/2006	808	2350	3440	4460	0.21	8.3	7.6
4/24/2006	660	2060	3770	4760	0.76	9.2	7.6
4/25/2006	535	1690	3760	4810	0.02	9.4	8.7
4/26/2006	443	1360	3010	3920	0.00	9.6	8.6
4/27/2006	381	1130	2400	3110	0.00	9.6	8.7
4/28/2006	340	987	2010	2510	0.00	9.5	8.8
4/29/2006	306	850	1790	2210	0.00	9.9	8.6
4/30/2006	285	756	1650	2010	0.00	9.9	8.2
5/1/2006	264	690	1450	1830	0.00	10.0	8.7
5/2/2006	248	637	1260	1570	0.00	10.1	8.0

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
5/3/2006	233	595	1190	1490	0.00	10.0	8.0
5/4/2006	219	553	1110	1410	0.00	10.0	8.1
5/5/2006	202	518	1060	1330	0.00	10.3	7.8
5/6/2006	185	483	986	1260	0.00	10.5	7.6
5/7/2006	174	447	924	1200	0.00	11.3	8.0
5/8/2006	168	421	890	1140	0.00	11.4	8.0
5/9/2006	157	400	864	1120	0.00	11.4	8.4
5/10/2006	151	382	823	1080	0.00	11	8.2
5/11/2006	158	377	884	1070	0.72	9.3	7.4
5/12/2006	332	707	1330	1560	0.18	8.0	6.0
5/13/2006	194	495	1240	1700	0.38	7.5	5.8
5/14/2006	177	452	1130	1680	0.00	7.3	6.9
5/15/2006	187	437	1000	1470	0.25	8.1	6.9
5/16/2006	182	484	982	1300	0.01	8.2	7.7
5/17/2006	171	423	872	1230	0.02	8.2	7.6
5/18/2006	196	406	817	1120	0.48	8.8	7.2
5/19/2006	187	471	905	1190	0.06	9.0	7.6
5/20/2006	169	417	861	1160	0.00	9.4	8.2
5/21/2006	155	379	795	1080	0.00	9.5	8.5
5/22/2006	145	355	741	1000	0.00	9.8	8.6
5/23/2006	130	326	704	950	0.00	10.0	8.7
5/24/2006	127	310	672	909	0.00	9.7	8.4
5/25/2006	128	300	648	884	0.00	9.3	8.2
5/26/2006	134	307	640	862	0.24	9.2	7.7
5/27/2006	141	325	677	932	0.00	9.6	7.7
5/28/2006	127	294	621	868	0.00	9.4	7.6
5/29/2006	123	276	573	794	0.00	9.0	7.4
5/30/2006	118	264	557	741	0.00	8.6	6.6
5/31/2006	120	263	553	753	0.06	8.2	6.2
6/1/2006	160	264	-	834	0.50	Eqp	Eqp
6/2/2006	144	414	-	1640	0.12	Eqp	Eqp
6/3/2006	147	372	1340	3170	0.18	Eqp	Eqp
6/4/2006	123	329	1150	1610	0.03	Eqp	Eqp

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
6/5/2006	120	338	1010	1390	0.01	Eqp	Eqp
6/6/2006	110	295	809	1170	0.00	7.8	7.1
6/7/2006	106	269	642	962	0.16	7.6	6.8
6/8/2006	105	273	652	955	0.01	7.9	6.7
6/9/2006	108	268	658	974	0.09	7.8	6.7
6/10/2006	100	267	648	994	0.00	8.1	6.5
6/11/2006	95	236	575	874	0.00	8.7	6.7
6/12/2006	93	221	537	795	0.00	8.7	7.0
6/13/2006	91	213	522	761	0.00	-	-
6/14/2006	106	209	500	735	0.03	-	-
6/15/2006	99	267	573	763	0.00	-	-
6/16/2006	87	229	982	1120	0.00	8.6	6.8
6/17/2006	86	212	426	778	0.00	9.4	6.6
6/18/2006	83	203	403	594	0.00	9.2	6.7
6/19/2006	91	198	399	557	0.22	8.8	6.0
6/20/2006	102	274	450	596	0.01	8.3	5.5
6/21/2006	91	243	456	646	0.00	8.3	5.8
6/22/2006	91	225	-	611	0.28	8.1	5.7
6/23/2006	112	269	-	700	0.11	7.9	5.3
6/24/2006	106	257	558	880	0.27	7.1	4.5
6/25/2006	777	1160	1010	864	4.40	6.9	5.6
6/26/2006	1590	10100	13500	10500	2.44	Fld	Fld
6/27/2006	5070	17900	21300	21200	4.57	Fld	Fld
6/28/2006	9650	31900	46900	38900	1.53	Fld	Fld
6/29/2006	3290	13000	25400	38300	0.12	Fld	Fld
6/30/2006	1790	6110	12200	14900	0.01	Fld	Fld
7/1/2006	1160	4380	8570	9760	0.00	Fld	Fld
7/2/2006	903	3470	7860	8900	0.21	Fld	Fld
7/3/2006	760	3060	7200	8110	0.04	Fld	Fld
7/4/2006	621	2380	-	7280	0.00	Fld	Fld
7/5/2006	621	2350	-	6170	1.00	Fld	Fld
7/6/2006	539	2080	3680	4860	0.15	Fld	Fld
7/7/2006	444	1630	2900	3860	0.00	Fld	Fld

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
7/8/2006	394	1280	2330	2980	0.00	Fld	Fld
7/9/2006	386	1140	2120	2620	0.66	Fld	Fld
7/10/2006	385	1220	2200	2630	0.01	-	-
7/11/2006	337	1020	1930	2510	0.07	-	-
7/12/2006	317	933	1690	2140	0.29	-	-
7/13/2006	315	947	1790	2230	0.05	-	-
7/14/2006	279	809	1610	2100	0.00	Fld	Fld
7/15/2006	295	838	1450	1740	0.11	Fld	Fld
7/16/2006	272	880	1940	2410	0.00	Fld	Fld
7/17/2006	239	721	1510	1940	0.00	Fld	Fld
7/18/2006	237	660	1420	1660	0.58	Fld	Fld
7/19/2006	217	649	1570	1980	0.00	Fld	Fld
7/20/2006	201	580	1320	1740	0.00	Fld	Fld
7/21/2006	197	560	1140	1460	0.17	Fld	Fld
7/22/2006	439	886	2610	2930	0.20	Fld	Fld
7/23/2006	311	941	2270	3110	0.00	Fld	Fld
7/24/2006	231	656	1690	2170	0.00	Fld	Fld
7/25/2006	204	568	1500	1860	0.00	Fld	Fld
7/26/2006	190	533	1340	1680	0.00	Fld	Fld
7/27/2006	179	512	1190	1570	0.03	Fld	Fld
7/28/2006	216	528	1430	1990	0.35	Fld	Fld
7/29/2006	204	639	1490	1850	0.00	Fld	Fld
7/30/2006	171	497	1270	1590	0.00	Fld	Fld
7/31/2006	162	459	-	1450	0.00	Fld	Fld
8/1/2006	154	436	917	1240	0.00	Fld	Fld
8/2/2006	146	414	806	1110	0.00	Fld	Fld
8/3/2006	139	401	755	1060	0.00	Fld	Fld
8/4/2006	135	386	728	1020	0.00	Fld	Fld
8/5/2006	128	369	688	975	0.00	Fld	Fld
8/6/2006	123	353	658	928	0.00	Fld	Fld
8/7/2006	117	337	632	905	0.00	Fld	Fld
8/8/2006	120	349	632	889	0.00	Fld	Fld
8/9/2006	116	329	620	893	0.00	Fld	Fld

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
8/10/2006	113	320	576	842	0.00	Fld	Fld
8/11/2006	108	314	540	803	0.00	Fld	Fld
8/12/2006	105	301	497	739	0.00	Fld	Fld
8/13/2006	104	295	483	698	0.00	Fld	Fld
8/14/2006	104	290	476	696	0.00	Fld	Fld
8/15/2006	224	457	482	691	0.96	Fld	Fld
8/16/2006	126	409	729	871	0.00	Fld	Fld
8/17/2006	112	316	560	843	0.00	Fld	Fld
8/18/2006	109	300	517	758	0.00	Fld	Fld
8/19/2006	109	290	474	697	0.00	Fld	Fld
8/20/2006	113	301	479	701	0.06	Fld	Fld
8/21/2006	104	286	469	685	0.00	Fld	Fld
8/22/2006	101	270	442	645	0.00	Fld	Fld
8/23/2006	98	263	418	613	0.00	Fld	Fld
8/24/2006	102	262	406	604	0.09	Fld	Fld
8/25/2006	99	280	422	552	0.03	Fld	Fld
8/26/2006	103	339	503	680	0.12	Fld	Fld
8/27/2006	168	374	698	902	1.80	Fld	Fld
8/28/2006	353	929	2110	3840	0.43	Fld	Fld
8/29/2006	240	530	-	4060	0.62	Fld	Fld
8/30/2006	263	780	-	3430	0.10	Fld	Fld
8/31/2006	178	520	2000	2450	0.00	Fld	Fld
9/1/2006	155	426	2020	2930	0.21	Fld	Fld
9/2/2006	311	693	1510	4170	1.28	Fld	Fld
9/3/2006	335	1120	2580	4970	0.05	Fld	Fld
9/4/2006	240	750	1790	2930	0.00	Fld	Fld
9/5/2006	205	606	1440	2110	0.08	Fld	Fld
9/6/2006	186	552	1370	2010	0.00	Fld	Fld
9/7/2006	160	476	1220	1760	0.00	Fld	Fld
9/8/2006	151	426	1060	1550	0.00	Fld	Fld
9/9/2006	143	390	935	1370	0.00	Fld	Fld
9/10/2006	134	366	859	1260	0.00	Fld	Fld
9/11/2006	129	346	768	1180	0.00	Fld	Fld

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
9/12/2006	125	333	676	1040	0.00	Fld	Fld
9/13/2006	121	321	653	998	0.07	Fld	Fld
9/14/2006	215	504	1040	1770	1.41	Fld	Fld
9/15/2006	224	976	1960	3750	0.77	Fld	Fld
9/16/2006	215	1170	2990	4500	0.07	Fld	Fld
9/17/2006	174	837	2290	3480	0.00	Fld	Fld
9/18/2006	160	676	1850	2690	0.00	Fld	Fld
9/19/2006	151	586	1520	2220	0.01	Fld	Fld
9/20/2006	148	532	1310	1880	0.00	Fld	Fld
9/21/2006	140	477	1140	1650	0.00	Fld	Fld
9/22/2006	135	441	1010	1500	0.00	Fld	Fld
9/23/2006	136	433	922	1370	0.09	Fld	Fld
9/24/2006	136	425	891	1340	0.05	Fld	Fld
9/25/2006	129	411	835	1260	0.00	Fld	Fld
9/26/2006	120	375	764	1160	0.00	Fld	Fld
9/27/2006	117	353	714	1100	0.00	Fld	Fld
9/28/2006	136	353	-	1070	0.83	Fld	Fld
9/29/2006	225	692	-	3000	0.06	Fld	Fld
9/30/2006	141	487	1280	1970	0.02	Fld	Fld
10/1/2006	133	437	1070	1540	0.06		
10/2/2006	124	403	935	1410	0.00		
10/3/2006	118	374	836	1210	0.00		
10/4/2006	149	370	800	1150	1.05		
10/5/2006	297	853	1580	1740	0.01		
10/6/2006	175	620	1550	2240	0.01		
10/7/2006	154	517	1190	1690	0.00		
10/8/2006	146	472	1070	1470	0.00		
10/9/2006	139	437	993	1380	0.00		
10/10/2006	134	416	916	1290	0.00		
10/11/2006	131	399	842	1200	0.04		
10/12/2006	133	412	853	1180	0.01		
10/13/2006	128	391	803	1150	0.00		
10/14/2006	122	368	733	1070	0.00		

Table 4.2-1. Continued.

Date	Daily Mean Discharge (cubic feet/second)				Rainfall (inches)	Dissolved Oxygen (mg/l) Vincent Dam	
	Landingville	Berne	Reading	Pottstown	Landingville	Max	Min
10/15/2006	117	348	694	1010	0.00		
10/16/2006	117	341	707	981	0.00		
10/17/2006	185		997	1230	2.05		
10/18/2006	248	871	1680	2120	0.00		
10/19/2006	171	594	1550	2110	0.03		
10/20/2006	254	568	1500	2030	0.68		
10/21/2006	248	758	1770	2250	0.00		
10/22/2006	218	620	1610	2110	0.13		
10/23/2006	220	605	1560	1970	0.00		
10/24/2006	203	545	1500	1910	0.37		
10/25/2006	191	496	1320	1790	0.00		
10/26/2006	183	453	1080	1450	0.00		
10/27/2006	179	427	1040	1380	0.11		
10/28/2006	1260	3400	4360	4420	1.13		
10/29/2006	811	3270	6290	8160	0.00		
10/30/2006	568	2050	4420	5700	0.00		
10/31/2006	461	1560	3520	4550	0.00		
11/1/2006	398	1260	3010	3910	0.06		
11/2/2006		1530	3130	4060	0.35		
11/3/2006	387	1230	2450	3420	0.00		
11/4/2006	351	1050	2050	2690	0.00		

Eqp - Equipment malfunction
Fld - Flood conditions
Provisional 2006 Data Subject to Change by USGS

Table 4.2-2. Mean monthly flow of the Schuylkill River at the USGS Landingville and Pottstown gages during the 2003-2006 Demonstration periods and mean monthly flows for the period of record.

	LANDINGVILLE GAGE					POTTSTOWN GAGE				
MONTH	2003	2004	2005	2006	Period of Record	2003	2004	2005	2006	Period of Record
April	-	-	278	238	417	-	-	2350	1662	2858
May	-	336	165	174	342	-	1941	1359	1183	2236
June	-	259	109	824	258	-	1664	863	4959	1654
July	285	359	141	369	179	2356	3436	1157	3203	1298
August	389	489	87	139	144	1967	4009	591	1155	1067
September	377	560	73	170	165	3348	3952	487	2133	1129
October	419	292	185	231	182	2764	2460	2619	1884	1205

Table 4.3-1 Instantaneous minimum, maximum, and mean dissolved oxygen concentrations for each month of the Demonstration measured at five stations on the Schuylkill River, April-October 2006.

	Dissolved Oxygen (mg/l)				
	Limerick Intake	Pennsylvania American	Black Rock Pool	Norristown Pool	Vincent Dam
April					
Min	6.54		5.73	6.35	6.80
Max	15.85		14.65	13.27	13.40
Mean	10.13		9.51	9.35	9.41
May					
Min	5.87		4.88	3.73	5.80
Max	12.07		11.08	10.45	11.40
Mean	8.78		7.45	7.62	8.52
June					
Min	5.64	6.80	4.41	3.55	4.50
Max	9.77	11.48	8.59	8.44	9.40
Mean	8.23	8.81	6.29	6.71	7.20
July					
Min	6.66	6.25		5.52	
Max	12.12	11.95		9.33	
Mean	8.70	8.76		7.71	
August					
Min	5.40	5.06	5.29	4.79	
Max	11.92	10.87	8.17	8.42	
Mean	7.18	7.68	6.55	6.57	
September					
Min	6.09	7.79	5.99	6.14	
Max	12.45	11.22	9.01	9.73	
Mean	7.99	9.19	7.83	7.93	
October					
Min	7.64	8.41	7.29	7.34	
Max	17.16	16.54	13.29	13.55	
Mean	10.37	11.33	9.58	9.90	

Table 4.3-2. Instantaneous minimum, maximum, and mean observations of pH for each month of the Demonstration measured at four stations on the Schuylkill River, April-October 2006.

	pH			
	Limerick Intake	Pennsylvania American	Black Rock Pool	Norristown Pool
April				
Min	7.49		7.19	6.93
Max	9.37		9.33	8.82
Mean	8.24		7.85	7.49
May				
Min	7.35		6.94	6.75
Max	8.65		7.88	7.39
Mean	7.80		7.30	7.06
June				
Min	6.84	6.92	6.75	6.47
Max	8.30	8.29	9.12	7.66
Mean	7.60	7.78	7.77	7.00
July				
Min	7.11	6.84		6.76
Max	8.93	8.82		7.58
Mean	7.69	7.66		7.06
August				
Min	7.18	6.92	6.68	6.48
Max	8.50	8.29	8.17	7.64
Mean	7.82	7.80	7.54	7.14
September				
Min	7.18	7.24	6.85	6.71
Max	8.67	8.11	8.38	8.05
Mean	7.71	7.64	7.53	7.38
October				
Min	7.25	7.02	6.83	6.95
Max	9.04	8.80	8.35	8.43
Mean	7.88	7.72	7.36	7.50

Table 4.3-3. Mean, minimum, maximum, and maximum daily range of water temperature for Limerick, Pennsylvania American, Black Rock, and Norristown Pool stations, April through October 2006.

	Temperature (°F)			
	Limerick Intake	Pennsylvania American[a]	Black Rock[b]	Norristown
Mean	67.2	68.2	67.5	69.7
Minimum	44.3	44.5	46.2	46.8
Maximum	88.9	86.9	89.5	91.6
Range	11.7	8.7	11.6	9.5

[a] Monitoring initiated on June 10

[b] Monitoring equipment removed June 24 through August 9

Table 4.4-1. Measurements of pH and specific conductance made in Schuylkill River intake water at the Borough of Pottstown's Water Treatment Plant, April-October 2006.

Date	pH Range[1] (Standard Units) Min	Max	Specific Conductance (µmhos/cm)
4/13/2006	7.6	8.9	
4/14/2006	7.4	7.9	
4/15/2006	7.4	8.5	
4/16/2006	7.3	8.7	
4/17/2006	7.0	8.7	
4/18/2006	7.6	8.7	
4/19/2006	7.7	8.9	
4/20/2006	7.8	8.6	300
4/21/2006	7.7	8.6	
4/22/2006	7.3	7.6	
4/23/2006	7.4	7.5	
4/24/2006	7.5	7.7	330
4/25/2006	7.6	7.7	
4/26/2006	7.5	7.7	
4/27/2006	7.6	7.8	310
4/28/2006	7.5	7.7	
4/29/2006	7.5	7.7	
4/30/2006	7.2	7.7	
5/1/2006	7.4	7.8	
5/2/2006	7.4	7.9	
5/3/2006	7.5	7.9	330
5/4/2006	7.2	7.9	
5/5/2006	7.5	8.1	330
5/6/2006	7.4	8.1	
5/7/2006	7.3	8.0	
5/8/2006	7.6	8.2	
5/9/2006	7.7	8.0	320
5/10/2006	7.3	7.9	
5/11/2006	7.4	7.7	
5/12/2006	7.4	7.5	
5/13/2006	7.3	7.5	
5/14/2006	7.4	7.4	
5/15/2006	7.3	7.6	
5/16/2006	7.5	7.6	

Table 4.4-1. Continued.

Date	pH Range[1] (Standard Units) Min	Max	Specific Conductance (µmhos/cm)
5/17/2006	7.3	7.5	
5/18/2006	7.2	7.5	360
5/19/2006	7.2	7.8	370
5/20/2006	7.5	7.6	
5/21/2006	7.5	7.6	
5/22/2006	7.4	7.8	
5/23/2006	7.6	7.9	
5/24/2006	7.6	8.1	
5/25/2006	7.5	7.7	
5/26/2006	7.5	7.7	410
5/27/2006	7.3	7.7	
5/28/2006	7.4	7.8	
5/29/2006	7.4	7.7	
5/30/2006	7.3	7.6	400
5/31/2006	7.4	7.8	
6/1/2006	7.3	7.8	
6/2/2006	7.1	7.6	380
6/3/2006	7.2	7.3	
6/4/2006	7.3	7.6	
6/5/2006	7.4	7.8	
6/6/2006	7.6	7.7	
6/7/2006	7.5	7.6	400
6/8/2006	7.6	7.7	
6/9/2006	7.6	7.8	400
6/10/2006	7.4	7.5	
6/11/2006	7.5	7.8	
6/12/2006	7.7	7.9	420
6/13/2006	7.5	8.0	
6/14/2006	7.6	7.8	
6/15/2006	7.4	7.9	
6/16/2006	7.3	7.7	450
6/17/2006	7.5	7.8	
6/18/2006	7.5	7.7	
6/19/2006	7.3	7.8	

Table 4.4-1. Continued.

Date	pH Range[1] (Standard Units) Min	Max	Specific Conductance (µmhos/cm)
6/20/2006	7.4	7.7	
6/21/2006	7.4	8.0	
6/22/2006	7.4	7.8	460
6/23/2006	7.4	7.8	460
6/24/2006	7.4	7.5	
6/25/2006	7.4	7.5	
6/26/2006	7.1	7.6	
6/27/2006	7.2	7.4	400
6/28/2006	7.0	7.2	
6/29/2006	6.9	7.0	
6/30/2006	7.0	7.2	
7/1/2006	7.0	7.2	
7/2/2006	7.0	7.2	
7/3/2006	7.1	7.4	
7/4/2006	7.2	7.4	
7/5/2006	7.2	7.5	
7/6/2006	7.1	7.5	410
7/7/2006	7.1	7.3	
7/8/2006	7.3	7.4	
7/9/2006	7.4	7.5	
7/10/2006	7.4	7.6	
7/11/2006	7.5	7.6	370
7/12/2006	7.5	7.7	
7/13/2006	7.4	7.6	
7/14/2006	7.5	7.9	360
7/15/2006	7.4	7.7	
7/16/2006	7.4	7.8	
7/17/2006	7.4	8.5	360
7/18/2006	7.6	8.7	
7/19/2006	7.5	8.4	
7/20/2006	7.5	8.5	390
7/21/2006	7.6	8.5	
7/22/2006	7.6	7.9	
7/23/2006	7.4	7.6	

Table 4.4-1. Continued.

Date	pH Range[1] (Standard Units) Min	Max	Specific Conductance (µmhos/cm)
7/24/2006	7.4	8.0	
7/25/2006	7.6	7.9	400
7/26/2006	7.6	8.0	
7/27/2006	7.8	8.1	420
7/28/2006	7.3	7.9	
7/29/2006	7.6	7.8	
7/30/2006	7.5	7.8	
7/31/2006	7.5	8.1	450
8/1/2006	7.5	8.1	
8/2/2006	7.5	7.9	
8/3/2006	7.5	7.6	
8/4/2006	7.4	7.7	460
8/5/2006	7.6	7.7	
8/6/2006	7.4	7.7	
8/7/2006	7.6	7.7	500
8/8/2006	7.6	7.9	
8/9/2006	7.3	7.8	
8/10/2006	7.5	7.9	500
8/11/2006	7.6	7.8	
8/12/2006	7.6	7.8	
8/13/2006	7.5	7.9	
8/14/2006	7.8	8.2	
8/15/2006	7.6	8.0	
8/16/2006	7.5	8.0	
8/17/2006	7.5	8.0	
8/18/2006	7.6	8.0	540
8/19/2006	7.8	8.0	
8/20/2006	7.7	8.0	
8/21/2006	7.6	8.2	
8/22/2006	7.8	8.2	540
8/23/2006	7.7	8.2	
8/24/2006	7.8	8.4	520
8/25/2006	7.8	8.3	
8/26/2006	7.6	7.7	

Table 4.4-1. Continued.

Date	pH Range[1] (Standard Units) Min	Max	Specific Conductance (µmhos/cm)
8/27/2006	7.5	7.6	
8/28/2006	7.1	7.6	530
8/29/2006	7.3	7.5	
8/30/2006	7.1	7.4	
8/31/2006	7.3	7.5	510
9/1/2006	7.5	7.6	
9/2/2006	7.3	7.7	
9/3/2006	7.4	7.5	
9/4/2006	7.5	7.6	
9/5/2006	7.5	7.7	500
9/6/2006	7.6	7.7	
9/7/2006	7.6	7.7	
9/8/2006	7.6	7.7	490
9/9/2006	7.6	7.8	
9/10/2006	7.7	7.8	
Overall Range			
2006	6.9	8.7	300-540
2005	6.5	8.3	370-570
2004	5.9	7.8	210-440

[1] pH is taken every 2 hours during the day.

Table 4.4-2. Water quality analyses of selected constituents from samples collected at the Pennsylvania American Water Treatment Plant intake during Schuylkill River low flow, April-October 2006.

	SAMPLE DATES						
Constituent	4/29/2006	5/18/2006	6/23/2006	7/21/2006	8/18/2006	9/29/2006	10/31/2006
River Flow, Pottstown (cfs)	2210	1120	700	1490	758	3000	4550
Total Dissolved Solids (mg/l)	118	194	291	225	350	221	135
Dissolved Oxygen (mg/l)	10.1	9.8	8.3	9.7	9.0	7.8	12.2
Specific Conductance (µmhos/cm)	275	338	446	328	518	342	257
pH (Standard Units)	7.72	7.85	8.24	8.55	8.11	8.19	7.27
Temperature (°C)	17.0	18.1	27.8	25.9	25.6	17.3	9.8

Table 4.5-1. Water quality measurements made in East Norwegian Creek and in the Schuylkill River, May-October 2006.

Stations/Parameters	Sample Dates 5/31/06	6/22/06	7/27/06	8/25/06	9/30/06	10/31/06	May-October 2006 Min	Max	Mean	May-November 2005 Min	Max	Mean	May-October 2004 Min	Max	Mean	July-October 2003 Min	Max	Mean
Schuylkill River at Station 106 [1] *(upstream)*																		
Total Dissolved Solids	155	N/A*	N/A*	285	N/A*	N/A*	155	285	220	196	312	247	169	229	202	222	310	268
Total Alkalinity	20	N/A*	N/A*	18	N/A*	N/A*	18	20	19	12	20	17	19	37	26	5	20	15
Dissolved Oxygen	10.4	8.8	8.5	9.2	10.4	11.1	8.5	11.1	9.7	7.8	12.1	10.1	9.5	10.7	10.0	8.7	10.3	9.3
Spec. Cond. (µmhos/cm)	224	321	387	402	461	408	224	461	367	359	516	429	226	491	315	298	353	320
pH (SU)	7.04	7.13	6.93	7.03	6.22	7.16	6.22	7.16	6.92	6.67	7.17	6.83	5.70	6.95	6.50	6.22	7.30	6.75
Temp (°C)	18.4	16.3	18.8	16.2	11.5	9.0	9.0	18.8	15.0	7.4	19.2	15.3	11.3	16.5	14.6	11.6	17.0	15.1
East Norwegian Creek [2]																		
Total Dissolved Solids	955	N/A*	N/A*	1235	N/A*	N/A*	955	1235	1095	243	1294	801	105	1287	725	252	1496	941
Total Alkalinity	282	N/A*	N/A*	326	N/A*	N/A*	282	326	304	57	396	241	62	306	232	78	306	173
Dissolved Oxygen	8.8	9.9	9.0	9.6	9.6	11.2	8.8	11.2	9.7	8.0	12.0	10.1	9.6	10.5	10.0	8.5	10.0	9.1
Spec. Cond. (µmhos/cm)	1265	1608	1261	1815	571	493	493	1815	1169	493	1701	1189	369	1500	1206	494	1660	1186
pH (SU)	8.28	8.05	8.10	8.13	6.81	7.14	6.81	8.28	7.75	6.80	7.89	7.42	6.83	7.95	7.47	7.40	7.97	7.75
Temp (°C)	16.8	15.2	16.7	15.0	12.3	9.3	9.3	16.8	14.2	8.7	19.4	15.4	11.2	16.5	14.8	13.0	17.5	15.9
Schuylkill River at Station 109 [3] *(downstream)*																		
Total Dissolved Solids	288	N/A*	N/A*	497	N/A*	N/A*	288	497	392.5	213	476	373	205	339	258	282	402	329
Total Alkalinity	59	N/A*	N/A*	96	N/A*	N/A*	59	96	77.5	28	125	77	24	68	41	38	53	44
Dissolved Oxygen	10.3	8.7	8.5	10.3	10.2	11.6	8.5	11.6	9.9	9.2	12.2	10.5	9.1	10.9	10.2	8.6	10.3	9.2
Spec. Cond. (µmhos/cm)	381	483	499	631	505	450	381	631	492	392	910	651	254	497	372	383	498	439
pH (SU)	7.37	7.55	7.64	7.94	7.16	7.11	7.11	7.94	7.46	6.60	7.92	7.22	5.98	7.39	6.77	7.05	7.40	7.16
Temp (°C)	20.1	18.6	19.4	16.9	12.2	9.1	9.1	20.1	16.1	8.0	22.0	17.5	10.7	17.5	15.3	11.3	17.2	15.1

Concentration in mg/l unless otherwise indicated.
* taken only during months of biological sampling

[1] Station 106 is located in the Schuylkill River and is approximately 0.5 miles upstream of the Norwegian Creek confluence.

[2] Sample station is located in East Norwegian Creek immediately upstream of the long culvert which conveys the stream under Pottsville.

[3] Station 109 is located in the Schuylkill River approximately 3.0 miles downstream of the Norwegian Creek confluence.

Table 4.6-1. Fish collected by electrofishing at Stations 106[1] and 109[2] in the Schuylkill River, May-August 2006.

	Sample Date:	May 31				August 25			
	Sample Station:	106		109		106		109	
		Upstream		Downstream		Upstream		Downstream	
Scientific Name	Common Name	Total No.	Length Range (mm)	Total No.	Length Range (mm)	Total No.	Length Range (mm)	Total No.	Length Range (mm)
Onchorynchus mykiss	rainbow trout (stocked fingerlings)			108	-				
Onchorynchus mykiss	rainbow trout (hatchery carryover)							34	115-327
Salmo trutta	brown trout	1	337						
Salmo trutta	brown trout (carryover)			77	105-345			17	93-380
Salvelinus fontinalis	brook trout (wild)	4	135-255			17	85-265		
Rhinichthys atratulus	blacknose dace	274	*30-90	179	*40-85	332	*44-87	110	35-86
Notemigonus crysoleucas	golden shiner			1	75	2	68-83	1	102
Notropis hudsonius	spottail shiner			1	75				
Semotilus atromaculatus	creek chub	115	*37-207	9	47-99	114	*51-172	3	80-95
Catostomus commersoni	white sucker	200	*74-395	520	*52-423	350	*68-420	195	*85-360
Ameiurus nebulosus	brown bullhead			1	122			1	135
Ameiurus natalis	yellow bullhead			1	177				
Lepomis cyanellus	green sunfish	37	30-107	20	70-121	45	39-142	19	48-127
Lepomis gibbosus	pumpkinseed	1	61			6	67-104	4	73-110
Lepomis machrochirus	bluegill	1	178			1	43	3	63-127
Lepomis spp.	sunfish hybrid			1	100			2	87-147
Micropterus salmoides	largemouth bass							2	60-295
Etheostoma olmstedi	tessellated darter			3	60-65	2	76-81	2	70-71
	Total Species:	8		12		9		13	
	Total Individuals:	633		921		869		393	
Physicochemical data:	Time:	13:38		9:03		11:35		11:02	
	Water Temperature (°C):	19.5		19.0		16.2		16.9	
	Dissolved Oxygen (mg/l):	8.5		10.0		9.2		10.3	
	pH (Standard Units):	7.50		7.60		7.03		7.94	
	Specific Conductance (µmhos/cm):	323		351		402		631	
	Total Alkalinity:	20		59					

[1] Station 106 is located in the Schuylkill River approximately 0.5 mile upstream of the Norwegian Creek confluence.
[2] Station 109 is located in the Schuylkill River approximately 3 miles downstream of the Norwegian Creek confluence.
* 100 measured

Table 4.6-2. Total number of fish collected by electrofishing at Station 106 in the Schuylkill River, 2003 through 2006.

		Total Number Collected			
Scientific Name	Common Name	2006[a]	2005[b]	2004[c]	2003[c]
Onchorynchus mykiss	rainbow trout		2		
Salmo trutta	brown trout	1		1	
Salvelinus fontinalis	brook trout	21	68	45	1
Rhynichthys atratulus	blacknose dace	606	1,166	549	444
Cyprinus carpio	common carp				1
Semotilus atromaculatus	creek chub	229	330	336	368
Notemigonus crysoleucas	golden shiner	2		4	
Catostomus commersoni	white sucker	550	961	307	284
Ameiurus natalis	yellow bullhead				1
Ameiurus nebulosus	brown bullhead		1	1	
Carassius auratus	gold fish				
Lepomis cyanellus	green sunfish	82	297	614	148
Lepomis gibbosus	pumpkinseed	7	62	16	11
Lepomis macrochirus	bluegill	2	2	16	3
Notropis hudsonius	spottail shiner				
Lepomis spp.	sunfish hybrid		1	4	
Micropterus salmoides	largemouth bass				
Etheostoma olmstedi	tessellated darter	2		1	
Total Number		1,502	2,890	1,894	1,261
Species Richness		10	10	12	9

[a] two sampling events

[b] six sampling events

[c] four sampling events

Table 4.6-3. Total number of fish collected by electrofishing at Station 109 in the Schuylkill River, 2003 through 2006.

		Total Number Collected			
Scientific Name	Common Name	2006[a]	2005[b]	2004[c]	2003[c]
Onchorynchus mykiss	rainbow trout	34	7	7	3
Onchorynchus mykiss	rainbow trout (fingerling)[s]	108			
Salmo trutta	brown trout (adult)	94	17	16	10
Salmo trutta	brown trout (fingerling)[s]		1,148		6
Salvelinus fontinalis	brook trout		86	19	5
Rhynichthys atratulus	blacknose dace	289	436	147	177
Semotilus atromaculatus	creek chub	12	35	38	23
Catostomus commersoni	white sucker	715	2,493	460	157
Ictalurus punctatus	channel catfish				1
Ameiurus natalis	yellow bullhead	1	0	3	1
Ameiurus nebulosus	brown bullhead	2	1	3	
Lepomis auritus	redbreast sunfish			1	
Carassius auratus	gold fish		3		1
Notemigonus crysoleucas	golden shiner	2			
Lepomis cyanellus	green sunfish	39	260	350	33
Lepomis gibbosus	pumpkinseed	4	2	15	6
Lepomis macrochirus	bluegill	3	2	3	17
Lepomis spp.	sunfish hybrid	3	0	1	
Micropterus salmoides	largemouth bass	2	4	3	
Notropis hudsonius	spotail shiner	1			
Etheostoma olmstedi	tessellated darter	5	10	1	
Total Number		1,314	4,504	1,067	440
Species Richness		16	16	15	13

[s] stocked fingerlings

[a] two sampling events

[b] six sampling events

[c] four sampling events

Table 4.6-4. Benthic macroinvertebrates collected at Stations 106[1] and 109[2] in the Schuylkill River, May-August 2006.

Sample Date:	31 May		25 August	
	Station No.		Station No.	
	106	109	106	109
Taxon	Upstream	Downstream	Upstream	Downstream
Amphipoda (scuds)				
Crangonyx	1			80
Arhynchobdelli				
Erpobdella				2
Bassomatophora				
Physa	1			1
Coleoptera (beetles)				
Dubiraphia				3
Psephenus				1
Stenelmis				1
Decapoda				
Cambarus		3		1
Diptera (true flies)				
Chironomidae	840	636	182	1332
Dicranota		5	3	2
Hemerodromia			2	28
Palpomyia		2		
Psychoda			10	
Simulium	1			16
Tipula	1	1		
Ephemeroptera (mayflies)				
Acentrella				9
Baetis	2			1
Hoplonemertea (proposcus worms)				
Prostoma	3			1
Isopoda (sowbugs)				
Caecidotea	129			46
Lumbricida				
Lumbricidae		1		47
Lumbriculida				
Lumbriculidae	12		1	
Megaloptera (dobsonflies)				
Nigronia		2	2	3

Table 4.6-4 Continued.

Sample Date:	31 May		25 August	
	Station No.		Station No.	
	106	109	106	109
Taxon	Upstream	Downstream	Upstream	Downstream
Trichoptera (caddisflies)				
Ceratopsyche	45			
Cheumatopsyche			1	2
Hydropsyche		3	9	19
Tricladida				
Dugesia				2
Tubificida				
Naichidae	6			1
Tubificidae	1			10
Veneroida				
Pisidium	13			
Total Taxa	13	8	8	22
Total Individuals	1055	653	210	1608

[1] Station 106 is located in the Schuylkill River approximately 0.5 mile upstream of the Norwegian Creek confluence.

[2] Station 109 is located in the Schuylkill River approximately 3 miles downstream of the Norwegian Creek confluence.

Table 4.6-5. Total number of macroinvertebrates collected at Station 106 in the Schuylkill River, 2003 through 2006.

Taxon	Total Number			
	2006[a]	2005[b]	2004[c]	2003[c]
Amphipoda (scuds)				
Crangonyx	1			
Stygonectes		29	12	10
Coleoptera				
Stenelmis		1		
Hydrophilidae				2
Crustacea				
Cambarus		2		1
Orconectes		1		
Diptera (true flies)				
Antocha				
Bezzia			4	
Chironomidae	1,022	1,261	608	183
Chelifera		1	5	
Dicranota	3	18	8	2
Hemerodromia	2	10	3	
Ormosia		1	3	3
Limnophora			1	
Palpomyia gr.		4		1
Psychoda	10	3	3	
Probezzia			3	
Simulium	1			
Tipula	1	13	20	21
Ephemeroptera (mayflies)				
Baetis	2			
Gastropoda				
Physa	1			
Isopoda				
Caecidotea	129	1		2
Lumbricida				
Lumbricidae			11	3
Lumbriculida				
Lumbriculidae	13	1	3	
Megaloptera				
Corydalus				
Nigronia	2	49	3	2
Sialis		10	4	4

Table 4.6-5. Continued.

Taxon	Total Number			
	2006[a]	2005[b]	2004[c]	2003[c]
Nematoda				
Nemertea				
Prostoma	3			1
Plecoptera (stoneflies)				
Allocapnia				2
Amphinemura			1	
Leuctra		32	5	1
Trichoptera (caddisflies)				
Ceratopsyche	45	267	7	
Cheumatopsyche	1	94	1	3
Diplectrona		44	7	
Hydropsyche	9	341	18	1
Lepidostoma			1	
Rhyacophila			1	
Tubificida				
Enchytraeidae		3	2	3
Naididae	6			
Tubificidae	1	3	1	3
Veneroida				
Pisidium	13			
Total Number	1,265	2,189	735	248
Species Richness	19	23	25	19

[a] two sampling events

[b] six sampling events

[c] four sampling events

Table 4.6-6. Total number of macroinvertebrates collected at Station 109 in the Schuylkill River, 2003 through 2006.

Taxon	Total Number			
	2006[a]	2005[b]	2004[c]	2003[c]
Amphipoda (scuds)				
Crangonyx	80	244	75	38
Stygonectes		3		
Coleoptera				
Dubiraphia	3	2		
Stenelmis	1		3	
Promoresia			1	
Psephenus	1			1
Crustacea				
Cambarus	4	1	1	1
Orconectes				
Diptera (true flies)				
Antocha		8	4	
Chironomidae	1968	3888	2449	748
Empididae			3	
Chelifera			2	6
Dicranota	7	1		1
Hemerodromia	28	7	8	19
Ormosia				
Palpomyia gr.	2			1
Psychoda		1		4
Pseudolimnophila				1
Simuliidae		846		
Simulium	16	4		
Tipulidae			3	
Tipula	1	3	12	
Ephemeroptera (mayflies)				
Acentrella		3		
Baetis		270	9	2
Epeorus		1		
Gastropoda				
Physa		3		
Isopoda				
Caecidotea	46	533	146	83

Table 4.6-6. Continued.

Taxon	Total Number			
	2006[a]	2005[b]	2004[c]	2003[c]
Lumbricida				
Lumbricidae	48	41	108	172
Lumbriculida				
Lumbriculidae			6	
Megaloptera				
Corydalus		1		
Nigronia	5	1	2	1
Sialis			2	5
Nematoda		3		
Nemertea				
Prostoma	1	3		1
Plecoptera (stoneflies)				
Amphinemura			1	
Leuctra		6		
Allocapnia				1
Trichoptera (caddisflies)				
Ceratopsyche		1429	222	38
Cheumatopsyche	2	829	202	239
Diplectrona			4	
Glossosoma			2	
Hydropsyche	22	356	370	190
Hydroptila				1
Tubificida				
Enchytraeidae			3	4
Naididae	1	7		
Tubificidae	10	3	2	21
Veneroida				
Pisidium			1	1
Hirudinea (leeches)				
Mooreobdella				1
Erpobdella	2			
Bassomatophora				
Physa	1			

Table 4.6-6. Continued.

Taxon	Total Number			
	2006[a]	2005[b]	2004[c]	2003[c]
Tricladida				
Dugesia	2			
Total Number	2,251	8,497	3,641	1,580
Species Richness	22	28	26	25

[a] two sampling events

[b] six sampling events

[c] four sampling events

Table 4.7-1. Measurements of daily total discharge, daily water surface elevation, and weekly dissolved oxygen made at the Tamaqua Water Authority's Still Creek Reservoir, May-October 2006.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
5/4/2006	0.0	1182.1	-
5/5/2006	4.7	1182.1	-
5/6/2006	6.9	1182.1	-
5/7/2006	7.3	-	-
5/8/2006	6.9	1182.0	-
5/9/2006	7.1	1181.8	-
5/10/2006	6.9	1181.8	-
5/11/2006 A	0.0	1181.8	11.9
5/12/2006 A	0.0	-	-
5/13/2006 A	0.0	-	-
5/14/2006 A	0.0	-	-
5/15/2006 A	0.0	-	-
5/16/2006 A	0.0	-	-
5/17/2006 A	0.0	-	-
5/18/2006 A	0.0	-	-
5/19/2006 A	0.0	-	-
5/20/2006 A	0.0	-	-
5/21/2006 A	0.0	-	-
5/22/2006 A	0.0	-	-
5/23/2006 A	0.0	-	-
5/24/2006 A	0.0	-	-
5/25/2006 A	0.0	-	-
5/26/2006 A	0.0	-	-
5/27/2006 A	0.0	-	-
5/28/2006 A	0.0	-	-
5/29/2006 A	0.0	-	-
5/30/2006 A	0.0	-	-
5/31/2006 A	0.0	-	-
6/1/2006 A	0.0	-	-
6/2/2006 A	0.0	-	-
6/3/2006 A	0.0	-	-
6/4/2006 A	0.0	-	-
6/5/2006 A	0.0	-	-

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.7-1. Continued.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
6/6/2006 A	0.0	-	-
6/7/2006 A	0.0	-	-
6/8/2006 A	0.0	-	-
6/9/2006 A	0.0	-	-
6/10/2006 A	0.0	-	-
6/11/2006 A	0.0	-	-
6/12/2006 A	0.0	-	-
6/13/2006 A	0.0	-	-
6/14/2006 A	0.0	-	-
6/15/2006 A	10.1	1182.1	-
6/16/2006	10.0	1182.0	9.4
6/17/2006	9.6	1181.9	-
6/18/2006	10.2	1181.7	-
6/19/2006	30.6	1181.7	-
6/20/2006	29.1	1181.5	-
6/21/2006 B	21.7	1181.2	-
6/22/2006	18.5	1181.0	-
6/23/2006	2.0	1180.9	9.4
6/24/2006 A	0.0	-	-
6/25/2006 A	0.0	-	-
6/26/2006 A	0.0	-	-
6/27/2006 A	0.0	-	-
6/28/2006 A	0.0	-	-
6/29/2006 A	0.0	-	-
6/30/2006 A	0.0	-	-
7/1/2006 A	0.0	-	-
7/2/2006 A	0.0	-	-
7/3/2006 A	0.0	-	-
7/4/2006 A	0.0	-	-
7/5/2006 A	0.0	-	-
7/6/2006 A	0.0	-	-
7/7/2006 A	0.0	-	-
7/8/2006 A	0.0	-	-

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.7-1. Continued.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
7/9/2006 A	0.0	-	-
7/10/2006 A	0.0	-	-
7/11/2006 A	0.0	-	-
7/12/2006 A	0.0	-	-
7/13/2006 A	0.0	-	-
7/14/2006 A	0.0	-	-
7/15/2006 A	0.0	-	-
7/16/2006 A	0.0	-	-
7/17/2006 A	0.0	-	-
7/18/2006 A	0.0	-	-
7/19/2006 A	0.0	-	-
7/20/2006 A	0.0	-	-
7/21/2006 A	0.0	-	-
7/22/2006 A	0.0	-	-
7/23/2006 A	0.0	-	-
7/24/2006 A	0.0	-	-
7/25/2006 A	0.0	-	-
7/26/2006 A	0.0	-	-
7/27/2006 A	0.0	-	-
7/28/2006 A	0.0	-	-
7/29/2006 A	0.0	-	-
7/30/2006 A	0.0	-	-
7/31/2006 A	0.0	-	-
8/1/2006 A	0.0	-	-
8/2/2006 A	0.0	-	-
8/3/2006 A	0.0	-	-
8/4/2006 A	0.0	-	-
8/5/2006 A	0.0	-	-
8/6/2006 A	0.0	-	-
8/7/2006 A	0.0	-	-
8/8/2006 A	0.0	-	-
8/9/2006 A	0.0	-	-
8/10/2006 A	0.0	-	-

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.7-1. Continued.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
8/11/2006 A	0.0	-	-
8/12/2006 A	0.0	-	-
8/13/2006 A	0.0	-	-
8/14/2006 A	0.0	-	-
8/15/2006 A	0.0	-	-
8/16/2006 A	0.0	-	-
8/17/2006 A	0.0	-	-
8/18/2006 A	0.0	-	-
8/19/2006 A	0.0	-	-
8/20/2006 A	0.0	-	-
8/21/2006 A	0.0	-	-
8/22/2006 A	0.0	-	-
8/23/2006 B	0.0	-	-
8/24/2006	8.2	1181.8	-
8/25/2006	14.9	1181.7	9.1
8/26/2006	9.8	1181.6	-
8/27/2006	9.3	1181.5	-
8/28/2006	0.0	1181.6	-
8/29/2006 A	0.0	-	-
8/30/2006 A	0.0	-	-
8/31/2006 A	0.0	-	-
9/1/2006 A	0.0	-	-
9/2/2006 A	0.0	-	-
9/3/2006 A	0.0	-	-
9/4/2006 A	0.0	-	-
9/5/2006 A	0.0	-	-
9/6/2006 A	0.0	-	-
9/7/2006 A	0.0	-	-
9/8/2006 A	0.0	-	-
9/9/2006 A	0.0	-	-
9/10/2006 A	0.0	-	-
9/11/2006 A	0.0	-	-
9/12/2006 A	0.0	-	-

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.7-1. Continued.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
9/13/2006 A	0.0	-	-
9/14/2006 A	0.0	-	-
9/15/2006 A	0.0	-	-
9/16/2006 A	0.0	-	-
9/17/2006 A	0.0	-	-
9/18/2006 A	0.0	-	-
9/19/2006 A	0.0	-	-
9/20/2006 A	0.0	-	-
9/21/2006 A	0.0	-	-
9/22/2006 A	0.0	-	-
9/23/2006 A	0.0	-	-
9/24/2006 A	0.0	-	-
9/25/2006 A	0.0	-	-
9/26/2006 A	0.0	-	-
9/27/2006 A	0.0	-	-
9/28/2006 A	0.0	-	-
9/29/2006 A	0.0	-	-
9/30/2006 A	0.0	-	-
10/1/2006 A	0.0	-	-
10/2/2006 A	0.0	-	-
10/3/2006 A	0.0	-	-
10/4/2006 A	0.0	-	-
10/5/2006 A	0.0	-	-
10/6/2006 A	0.0	-	-
10/7/2006 A	0.0	-	-
10/8/2006 A	0.0	-	-
10/9/2006 A	0.0	-	-
10/10/2006 A	0.0	-	-
10/11/2006 A	0.0	-	-
10/12/2006 A	0.0	-	-
10/13/2006 A	0.0	-	-
10/14/2006 A	0.0	-	-
10/15/2006 A	0.0	-	-

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.7-1. Continued.

Date	Reservoir Release, Daily Discharge (MG)	Reservoir Water Surface Elevation[1] (feet)	Dissolved Oxygen (mg/l)
10/16/2006 A	0.0	-	-
10/17/2006 A	0.0	-	-
10/18/2006 A	0.0	-	-
10/19/2006 A	0.0	-	-
10/20/2006 A	0.0	-	-
10/21/2006 A	0.0	-	-
10/22/2006 A	0.0	-	-
10/23/2006 A	0.0	-	-
10/24/2006 A	0.0	-	-
10/25/2006 A	0.0	-	-
10/26/2006 A	0.0	-	-
10/27/2006 A	0.0	-	-
10/28/2006 A	0.0	-	-
10/29/2006 A	0.0	-	-
10/31/2006 A	0.0	-	-
11/1/2006 A	0.0	-	-
11/2/2006 A	0.0	-	-
11/3/2006 A	0.0	-	-
11/4/2006 A	0.0	-	-
11/5/2006 A	0.0	-	-

[1] Reservoir Surface Level = Elevation above Mean Sea Level.

A - release stopped
B - flow integrator issue resulted in meter reset

Table 4.8-1. Water quality analyses of selected constituents measured in Little Schuylkill River downstream of the Still Creek confluence, in Still Creek, and in Little Schuylkill River upstream of Still Creek, May-October 2006.

Sampling Date/Constituents[1]	Little Schuylkill River Downstream[2]	Still Creek[3]	Little Schuylkill River Upstream[4]
5/31/2006			
Total Dissolved Solids*	7	<5	2
Total Alkalinity*	37	6	97
Dissolved Oxygen	9.5	7.2	10.5
Specific Conductance (µmhos/cm)	148	33	159
pH (Standard Units)	6.55	6.95	5.88
Temperature (°C)	18.2	21.2	13.5
6/22/2006			
Total Dissolved Solids	61	36	167
Total Alkalinity	6	6	<2
Dissolved Oxygen	10.0	9.8	10.7
Specific Conductance (µmhos/cm)	203	41.4	259
pH (Standard Units)	6.35	6.96	5.15
Temperature (°C)	14.1	13.6	12.4
7/29/2006			
Total Dissolved Solids	83	31	166
Total Alkalinity	5	6	<2
Dissolved Oxygen	9.1	7.2	9.9
Specific Conductance (µmhos/cm)	118.4	34.3	189.6
pH (Standard Units)	6.98	6.27	5.32
Temperature (°C)	18.3	25.4	14.7
8/26/2006			
Total Dissolved Solids	63	23	150
Total Alkalinity	6	8	<2
Dissolved Oxygen	9.7	7.8	9.2
Specific Conductance (µmhos/cm)	88.6	33.2	238
pH (Standard Units)	6.23	6.63	4.59
Temperature (°C)	15.8	15.2	13.5

Table 4.8-1. Continued.

Sampling Date/Constituents[1]	Little Schuylkill River Downstream[2]	Still Creek[3]	Little Schuylkill River Upstream[4]
9/30/2006			
Total Dissolved Solids	74	36	144
Total Alkalinity	4	6	<2
Dissolved Oxygen	10.1	8.4	10.9
Specific Conductance (µmhos/cm)	288	81.1	355
pH (Standard Units)	5.77	7.01	4.77
Temperature (°C)	11.9	15.5	10.6
10/31/2006			
Total Dissolved Solids	127	36	50
Total Alkalinity	<2	6	4
Dissolved Oxygen	10.3	10.8	11.7
Specific Conductance (µmhos/cm)	312	101.2	398
pH (Standard Units)	6.03	7.46	5.21
Temperature (°C)	10.0	10.3	10.5

[1] Concentration in mg/l unless otherwise indicated.
[2] Little Schuylkill River - Route 54 - Just below PA Route 54 Bridge
[3] Still Creek - Upstream of PA Route 309 Bridge
[4] Little Schuylkill River - Upsteam - Just below SR1020 Bridge
* suspected erroneous values

Table 4.8-2. Aquatic habitat observations and water quality data for Still Creek, Little Schuylkill River (LSR) upstream of Still Creek, LSR downstream of Still Creek at the Route 54 bridge, and LSR near Tamaqua.

Date	Site	Dissolved Oxygen (mg/l)	Specific Conductance (µmhos/cm)	Temperature (°C)	pH (Standard Units)	Comments/Observation
4/7/2006	LSR - Tamaqua[1]	13.3	91	5.8	6.07	water clear, rocky bottom, flow low, nothing abnormal
	LSR - Downstream[2]	12.1	101	6.0	6.00	water clear, rocky bottom, milky white coloring on rocks, low flow
	LSR - Upstream[3]	12.2	156	6.8	4.91	water clear, rocky bottom, iron staining
	Still Creek[4]	11.5	34	6.3	6.57	water clear, low flow, nothing abnormal
5/31/2006	LSR - Tamaqua[1]	9.2	105	18.1	7.16	water clear, rocky bottom, no algal growth, nothing abnormal
	LSR - Downstream[2]	9.5	148	18.2	6.55	water clear, rocky bottom, no algal growth, nothing abnormal
	LSR - Upstream[3]	10.5	159	10.5	5.88	water clear, rocky bottom, no algal growth, iron staining
	Still Creek[4]	7.2	33	21.2	6.95	water clear, no algal growth, nothing abnormal
6/22/2006	LSR - Tamaqua[1]	9.4	120.1	15.4	6.78	water clear, rocky bottom, no algal growth, nothing abnormal
	LSR - Downstream[2]	10.0	203	14.1	6.35	water clear, rocky bottom, little algal growth, nothing abnormal
	LSR - Upstream[3]	10.7	259	12.4	5.15	water clear, rocky bottom, no algal growth, iron staining
	Still Creek[4]	9.8	41.4	13.6	6.96	water clear, no algal growth, nothing abnormal
7/29/2006	LSR - Tamaqua[1]	8.8	102.1	20.4	7.07	water clear, rocky bottom, no algal growth, nothing abnormal, low flow ridge of rocks has been deposited during recent high flows, more flow is being diverted towards the far bank, no changes in depth or velocity
	LSR - Downstream[2]	9.1	118.4	18.3	6.98	water clear, rocky bottom, no algal growth, nothing abnormal, low flow no significant changes from recent high flows
	LSR - Upstream[3]	9.9	189.6	14.7	5.32	water clear, rocky bottom, no algal growth, iron staining large amount of larger stones have been moved or deposited at site during the recent high flows, also large amount of new pebbles and sand deposited at the site. Site appears to be approx 6" deeper than in past
	Still Creek[4]	7.2	34.3	25.4	6.27	water clear, no algal growth, nothing abnormal, low flow two large trees have fallen across stream from recent storms but are not blocking stream flow in any way
8/26/2006	LSR - Tamaqua[1]	9.4	86.4	17.2	7.17	water clear, rocky bottom, no algal growth, nothing abnormal, mod. flow
	LSR - Downstream[2]	9.7	88.6	15.8	6.23	water clear, rocky bottom, no algal growth, nothing abnormal, mod. flow
	LSR - Upstream[3]	9.2	238	13.5	4.59	water murky, rocky bottom, no algal growth, iron staining
	Still Creek[4]	7.8	33.2	15.2	6.63	water clear, no algal growth, nothing abnormal, moderate flow

Table 4.8-2. Continued.

Date	Site	Dissoved Oxygen (mg/l)	Specific Conductance (µmhos/cm)	Temperature (°C)	pH (Standard Units)	Comments/Observation
9/30/2006	LSR - Tamaqua[1]	8.9	138.3	12.6	6.92	water clear, rocky bottom, no algal growth, nothing abnormal, mod. flow
	LSR - Downstream[2]	10.1	288	11.9	5.77	water clear, rocky bottom, no algal growth, nothing abnormal, mod. flow
	LSR - Upstream[3]	10.9	355	10.6	4.77	water clear, rocky bottom, no algal growth, iron staining, mod.flow
	Still Creek[4]	8.4	81.1	15.5	7.01	water clear, no algal growth, nothing abnormal, low flow
10/31/2006	LSR - Tamaqua[1]	10.9	217	8.9	7.25	water murky, rocky bottom, no algal growth, nothing abnormal, high flow
	LSR - Downstream[2]	10.3	312	10.0	6.03	water murky, rocky bottom, no algal growth, nothing abnormal, high flow
	LSR - Upstream[3]	11.7	398	10.5	5.21	water murky, rocky bottom, no algal growth, nothing abnormal, high flow
	Still Creek[4]	10.8	101.2	10.3	7.46	water clear, no algal growth, nothing abnormal, mod. flow

[1] Little Schuylkill River - Tamaqua - Downstream of Tuscarora Road Bridge
[2] Little Schuylkill River - Route 54 - Just below PA Route 54 Bridge
[3] Little Schuylkill River - Upsteam - Just below SR1020 Bridge
[4] Still Creek - Upstream of PA Route 309 Bridge

Performed During Visits to Download Temperature Monitoring Data

Table 4.9-1. Fish captured by electrofishing in the Little Schuylkill River watershed near Hometown (S.R. 54), Pennsylvania, May 18 and August 14, 2006.

		18 May 2006				14 August 2006			
	Sample Station	Little Schuylkill River Above Pine Creek		Little Schuylkill River Below Still Creek		Little Schuylkill River Above Pine Creek		Little Schuylkill River Below Still Creek	
Scientific Name	Common Name	Total No.	Length Range (mm)	Total No.	Length Range (mm)	Total No.	Length Range (mm)	Total No.	Length Range (mm)
Salvelinus fontinalis	brook trout (hatchery)	1	209			1	230		
Salvelinus fontinalis	brook trout (wild)	9	109-243	4	126-247	45	60-271		
Salvelinus fontinalis	brook trout (wild yoy)	11	29-48						
Catostomus commersoni	white sucker					19	115-180		
Esox niger	chain pickerel	1	409						
Lepomis gibbosus	pumpkinseed sunfish	1	119						
Etheostoma olmstedi	tessellated darter	1	20						
Rhinichthys cataractae	longnose dace					4	78-97		
Perca flavescens	yellow perch					1	90	3	47-107
Semotilus atromaculatus	creek chub					5	79-135		
Ameiurus nebulosus	brown bullhead							3	136-158
Total species			4		1		5		2
Total individuals			24		4		75		6
Physicochemical Data:	Time:		8:40		10:16		14:00		11:45
	Water Temperature (C):		10.5		12.5		18.5		13
	Dissolved Oxygen (mg/l):		10.7		10.4		9.1		10.6
	pH (Standard Units):		6.2		5.0		5.5		4.8
	Specific Conductance (µmhos/cm@k25):		133		126		201		257

Table 4.10-1. Water quality measurements made in the Bradshaw Reservoir outfall to the East Branch Perkiomen Creek and at three locations in East Branch Perkiomen Creek April-October 2006.

	200 ft. Upstream of Bradshaw Outfall				Outfall from Bradshaw Reservoir				Downstream at Bucks Road USGS gage				Downstream at Rt. 73 Bridge			
Date	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)
4/18/2006	9.3	11.7	99	120	8.7	15.6	1	44	10.2	16.0	45	58	12.1	15.3	35	36
4/27/2006	9.4	8.2	100	160	10.0	13.0	13	24	10.2	11.2	25	52	10.5	11.7	190	370
5/3/2006	8.2	11.6	52	56	11.1	15.3	2	6	10.6	15.4	21	28	11.1	14.8	41	62
5/11/2006	8.3	15.7	18	44	9.3	18.1	<1	<2	9.3	18.0	36	42	10.9	19.0	17	20
5/17/2006	10.3	15.3	550	440	11.5	15.7	11	12	10.0	16.3	130	140	11.5	16.7	1600	2200
5/18/2006	10.0	14.8	260	310	11.3	15.8	10	10	10.3	16.8	52	58	10.4	17.6	120	160
5/25/2006	5.8	15.8	1000	1400	10.7	20.2	79	110	9.8	20.0	67	72	10.0	18.1	46	50
6/1/2006	4.7	19.9	54	70	9.0	24.1	3	7	7.3	23.3	66	74	7.9	24.1	58	120
6/8/2006	8.9	17.0	730	1900	10.6	20.2	11	15	9.1	20.0	180	230	9.7	20.2	51	170
6/14/2006	9.6	18.6	730	930	10.0	19.8	3	7	9.5	20.3	34	44	9.5	20.3	21	46
6/15/2006	7.5	17.2	520	540	10.5	19.9	3	10	9.2	19.8	51	54	10.1	20.5	56	58
6/21/2006	6.4	19.2	160	840	9.4	24.2	3	3	8.4	23.6	79	88	9.0	22.7	25	40
7/11/2006	10.0	24.5	580	590	9.6	22.8	250	470	8.8	24.8	61	140	11.0	28.0	11	68
7/12/2006	7.8	24.8	330	350	9.4	23.5	20	88	8.9	24.8	80	88	10.2	27.4	13	20
7/19/2006	9.0	25.3	1400	1400	8.4	25.8	15	23	8.6	26.3	260	270	8.7	28.3	47	140
7/20/2006	9.6	25.1	120	200	8.9	26.5	3	7	8.6	27.6	79	80	9.5	28.4	22	100
7/25/2006	8.9	22.5	340	470	8.6	25.2	28	48	8.2	25.5	50	100	8.7	25.9	23	120
8/2/2006	8.8	27.5	210	590	8.1	28.4	12	12	7.6	29.9	93	98	8.0	32.5	17	50
8/8/2006	7.5	24.0	980	1000	8.3	26.9	13	15	7.9	27.8	150	180	8.5	27.9	230	980
8/10/2006	8.8	22.1	160	160	8.1	26.1	4	8	7.6	26.9	67	100	9.1	25.9	240	550
8/16/2006	8.5	21.1	29	40	9.0	24.5	<1	22	8.5	26.1	53	64	9.3	26.8	20	40
8/17/2006	8.3	21.6	31	44	8.5	24.8	3	3	8.2	26.2	160	180	9.5	25.7	180	180
9/14/2006	9.5	16.8	>2400	4700	9.6	20.3	28	34	9.0	19.9	410	510	9.8	17.9	980	990
9/19/2006	9.0	19.0	330	370	9.8	19.8	30	49	9.2	20.3	70	76	9.5	20.3	140	140
9/21/2006	10.3	14.1	330	330	9.8	19.7	23	28	9.1	19.4	55	76	9.7	17.4	49	50
9/27/2006	9.5	12.8	290	310	9.9	18.5	20	32	9.2	17.4	35	35	9.5	15.0	62	64
9/28/2006	10.7	16.7	100	110	10.0	18.3	40	16	11.0	19.3	29	33	11.0	17.6	10	27

Table 4.10-1. Continued.

Date	200 ft. Upstream of Bradshaw Outfall				Outfall from Bradshaw Reservoir				Downstream at Bucks Road USGS gage				Downstream at Rt. 73 Bridge			
	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)	Dissolved Oxygen (mg/l)	Temp (°C)	*E. coli* (mpn/ 100ml)	Fecal Coliforms (no./100ml)
10/3/2006	10.3	15.1	68	70	10.0	17.2	27	37	9.6	17.9	52	60	11.0	16.8	19	20
10/4/2006	9.9	15.6	20	22	10.5	17.2	46	58	9.6	17.5	41	42	9.8	17.3	30	37
10/10/2006	9.5	12.9	290	290	9.6	16.1	130	380	9.4	15.0	170	210	9.5	14.7	100	100
10/11/2006	9.8	15.0	250	330	9.7	16.6	120	230	9.8	16.4	110	150	9.5	16.3	100	190
10/12/2006	8.7	15.8	>2400	>600	9.6	16.6	310	350	10.2	16.8	980	1500	10.3	17.3	460	490
April-October 2006																
Min	4.7	8.2	18	22	8.1	13.0	<1	<2	7.3	11.2	21	28	7.9	11.7	10	20
Max	10.7	27.5	>2400	4700	11.5	28.4	310	470	11.0	29.9	980	1500	12.1	32.5	1600	2200
Mean	8.8	18.0	338	587	9.6	20.5	42	70	9.2	20.8	118	154	9.8	20.9	157	240
April-October 2005																
Min	5.5	10.2	32	40	8.2	12.1	1	2	7.7	12.2	6	12	8.2	12.5	10	10
Max	13.8	26.2	1000	1600	13.9	28.7	650	860	13.2	29.8	330	470	13.3	31.0	310	1300
Mean	8.2	18.6	310	442	10.1	21.6	46	63	9.8	21.9	79	110	10.8	21.9	68	129
May-October 2004																
Min	4.8	8.7	54	70	8.2	12.2	1	2	7.2	11.7	10	13	8.3	10.4	8	15
Max	10.9	23.9	2420	1700	11.0	26.0	816	860	11.8	27.6	687	1000	11.1	27.6	1120	2600
Mean	8.9	18.7	486	528	9.7	20.3	71	91	9.1	20.7	87	117	9.7	21.4	159	261
July-October 2003																
Min	6.5	8.6	39	60	8.9	11.6	1	2	8.5	11.3	6	7	8.5	9.5	17	44
Max	12.7	25.6	2400	6000	13.2	25.0	200	340	12.4	25.3	920	1800	12.5	26.0	260	400
Mean	9.4	18.3	507	853	10.7	20.1	49	77	10.0	20.3	90	152	10.1	19.0	78	126

Table 4.10-2. Monthly water quality measurements made in the Perkiomen Creek near the East Branch Perkiomen Creek confluence, April-October 2006.

Sampling Date	Dissolved Oxygen (mg/l)	Temperature (°C)	*E. coli* (mpn/100ml)	Fecal Coliforms (no./100ml)
Perkiomen Creek upstream of East Branch Perkiomen Creek confluence, Rt 73 Bridge Schwenksville				
April 18	11.1	15.2	39	46
May 18	11.5	17.0	110	210
June 15	10.0	20.4	76	180
July 20	8.5	28.1	45	200
August 10	8.6	26.2	280	440
September 27	9.8	16.6	86	250
October 12	10.6	17.6	120	230
April-October 2006				
Min	8.5	15.2	39	46
Max	11.5	28.1	280	440
Mean	10.0	20.2	108	222
April-October 2005				
Min	8.7	14.3	11	16
Max	13.7	28.0	870	3000
Mean	10.7	21.0	290	636
May-October 2004				
Min	8.8	12.3	39	80
Max	11.0	26.0	308	400
Mean	10.0	22.4	130	179
July-October 2003				
Min	8.7	15.4	18	56
Max	11.8	26.4	1100	2000
Mean	9.8	22.2	319	559
Perkiomen Creek downstream of East Branch Perkiomen Creek confluence, Graterford Intake Pumphouse				
April 18	10.2	15.0	20	32
May 18	10.2	17.9	110	210
June 15	7.4	21.4	180	240
July 20	8.9	28.6	62	190
August 10	9.0	25.1	130	220
September 27	8.9	16.3	130	170
October 12	9.6	17.7	410	420
April-October 2006				
Min	7.4	15.0	20	32
Max	10.2	28.6	410	420
Mean	9.2	20.3	149	212
April-October 2005				
Min	7.0	13.6	15	26
Max	14.2	28.2	920	1000
Mean	9.9	21.4	241	328
May-October 2004				
Min	7.7	12.3	30	80
Max	10.1	26.5	579	1055
Mean	9.2	22.8	207	318
July-October 2003				
Min	8.1	15.3	21	60
Max	12.7	25.9	1100	1500
Mean	10.0	21.7	305	435