

Olentangy River Watershed TMDLs

Appendix B: Accompanying Tables and Figures

Table B.1	Existing NPS and MS4 Pollutant Contributions	B.1
Table B.2	Minor WWTP Existing Loads	B.2
Table B.3	Miscellaneous Discharger Existing Loads.....	B.4
Table B.4	NPS and MS4 Allocations	B.5
Table B.5	HSTS Wasteload Allocations	B.6
Table B.6	Daily TMDL summary of the upper Olentangy watershed	B.7
Table B.7	Daily TMDL summary of the middle Olentangy watershed	B.8
Table B.8	Daily TMDL summary of the lower Olentangy watershed	B.9
Table B.9	Daily TMDL summary of the Whetstone Creek watershed	B.10
Table B.10	MWH Attributes	B.11
Figure B.1	Longitudinal Trend of Mean TP (mg/l) of the Olentangy River	B.15
Figure B.2	Longitudinal Trend of Mean TSS (mg/l) of the Olentangy River	B.16
Figure B.3	Longitudinal Trend of Mean FC (cnt/100 ml) of the Olentangy River	B.17
Figure B.4	Longitudinal Trend of Mean TP (mg/l) of Whetstone Creek	B.18
Figure B.5	Longitudinal Trend of Mean TSS (mg/l) of Whetstone Creek	B.19
Figure B.6	Longitudinal Trend of Mean FC (cnt/100 ml) of Whetstone Creek	B.20

Table B.1 Existing NPS and MS4 pollutant contributions

HUC14	NPS Areas			MS4 Areas		
	TP lb/yr	TSS tn/yr	FC cnt/seas	TP lb/yr	TSS tn/yr	FC cnt/seas
Upper Olentangy Watershed						
090-010	23,859	17,057	7.98E+14	227	29	3.90E+11
090-020	4,874	850	1.86E+15	-	-	-
090-030	17,966	5,322	1.41E+15	-	-	-
090-040	25,746	13,451	1.48E+14	-	-	-
Total	72,445	36,680	4.21E+15	227	29	3.90E+11
Whetstone Creek Watershed						
100-010	19,415	13,417	1.63E+15	-	-	-
100-020	17,121	8,203	4.66E+15	-	-	-
100-030	11,359	4,961	3.23E+13	-	-	-
Total	47,895	26,581	6.32E+15	-	-	-
Middle Olentangy Watershed						
110-010	13,455	4,323	2.30E+14	-	-	-
110-020	16,474	5,115	1.52E+14	-	-	-
110-030	12,424	3,637	3.71E+14	-	-	-
110-040	9,067	2,633	1.60E+13	88	14	1.20E+11
110-050	17,120	4,067	2.22E+15	-	-	-
110-060	16,061	3,805	2.18E+15	130	12	2.19E+11
110-070	7,239	2,112	1.42E+14	-	-	-
110-080	4,501	1,571	1.77E+13	-	-	-
Total	96,341	27,263	5.33E+15	218	26	3.39E+11
Lower Olentangy Watershed						
110-090	17,394	7,840	2.86E+13	226	47	3.43E+11
110-100	10,693	3,341	1.56E+13	16	3	2.31E+10
110-110	2,428	1,406	1.01E+13	216	35	3.21E+11
120-010	16,098	7,695	1.30E+13	217	44	2.36E+11
120-020	9,974	5,281	3.17E+13	759	105	4.20E+11
120-030	1,018	361	5.18E+12	1,697	254	1.26E+12
120-040	100	32	3.25E+12	3,360	427	1.95E+12
120-050	69	10	1.02E+12	1,662	222	1.55E+12
120-060	371	109	5.24E+11	3,300	461	8.09E+11
Total	58,144	26,074	1.09E+14	11,453	1,597	6.91E+12

Table B.2 Minor WWTP existing wasteloads

Facility	Permit #	Outfall #	Receiving Stream	Design Flow MGD	Days Active	TP lb/yr	TSS tn/yr	FC cnt/seas
Upper Olentangy Watershed								
Caledonia WWTP	2PA00035	001	Olentangy River	0.120	365	1,097	2.56	7.59E+11
General Mills Operations	2IH00106	001	Shumaker Ditch	0.002	250	13	0.03	1.26E+10
Glen Gery Corporation	2IJ00074	002	Flat Run	0.002	250	13	0.03	1.26E+10
Specialty Fertilizer Products	4IF00100	002	Thorn Run Trib. at 8.85	0.002	250	13	0.03	1.26E+10
Spring Valley MHP	2PY00023	001	Zimmerman Ditch	0.010	365	91	0.21	6.32E+10
Swiss Village MHP	2PR00099	001	Olentangy Trib. at 90.04	0.008	365	73	0.17	5.06E+10
Upper Olentangy Total:						1,299	3.03	9.10E+11
Whetstone Creek Watershed								
Edison WWTP	4PA00000	001	Whetstone Creek	0.069	30	52	0.12	4.36E+11
Northmoor Local Schools	4PT00110	001	Whetstone Trib. at 33.80	0.008	270	51	0.12	4.74E+10
Whetstone Total:						103	0.24	4.84E+11
Middle Olentangy Watershed								
Blue Willow MHP	2PR00039	001	Ulsh Ditch	0.015	365	137	0.32	9.48E+10
Marion Co. Sewer District #5A	2PG00035	001	QuQua Creek	0.100	365	914	2.13	6.32E+11
River Bend Corporation	2PR00189	001	Olentangy River	0.005	250	31	0.07	3.16E+10
River Bend Corporation	2PR00189	002	Olentangy River	0.008	250	47	0.11	4.74E+10
United Mobile Homes	2PY00015	001	Olentangy Trib. at 57.80	0.030	365	274	0.64	1.90E+11
Verizon North	2PR00115	001	Ulsh Ditch	0.025	250	156	0.37	1.58E+11
Waldo Duchess Store	2PR00062	001	Olentangy Trib. at 40.41	0.002	365	18	0.04	1.26E+10
Middle Olentangy Total:						1,578	3.68	1.17E+12

Table B.2 (Cont'd) Minor WWTP existing wasteloads

Facility	Permit #	Outfall #	Receiving Stream	Design Flow MGD	Days Active	TP lb/yr	TSS tn/yr	FC cnt/season
Lower Olentangy Watershed								
Adrian Subdivision	4PW00005	001	Olentangy River	0.030	365	274	0.64	1.90E+11
Buckeye Valley School	4PT00107	001	Olentangy Trib. at 28.80	0.035	270	237	0.55	2.21E+11
Chef-Is-In, Inc.	4PX00001	001	Olentangy Trib.	0.004	365	37	0.09	2.53E+10
City of Delaware WTP	4IW00050	002	Olentangy River	0.004	365	37	0.09	2.53E+10
Crystal Lake MHP	4PV00010	001	Horseshoe Run	0.024	365	219	0.51	1.52E+11
Delaware JVS	4IM00006	001	Olentangy Trib. at 20.70	0.010	270	68	0.16	6.32E+10
Delaware MHP	4PV00106	001	Olentangy River	0.010	365	91	0.21	6.32E+10
Methodist Theological School	4PR00025	001	Olentangy River	0.025	270	169	0.39	1.58E+11
Nissan North	4PX00012	001	Olentangy Trib.	0.002	250	13	0.03	1.26E+10
Olentangy Local Schools	4PT00002	001	Olentangy Trib.	0.035	270	237	0.55	2.21E+11
Shroyers MHP	4PV00095	001	Olentangy River	0.020	365	183	0.43	1.26E+11
Speedway Super America	4PX00024	001	Olentangy Trib.	0.002	365	14	0.03	9.48E+09
USDA Forest Exp. Station	4PN00001	001	Olentangy Trib. at 32.12	0.012	250	75	0.18	7.59E+10
Worthington Arms MHP	4PV00093	001	Olentangy Trib. at 18.19	0.039	365	356	0.83	2.47E+11
Lower Olentangy Total:						2,008	4.69	1.59E+12

Table B.3 Existing Loads for Miscellaneous Dischargers

Facility Name	Permit #	Outfall #	Receiving Stream	Type of Discharge	Design Flow MGD	Days Active	TP lb/yr	TSS tn/yr	FC cnt/season
Upper Olentangy Watershed									
Glen Gery Corporation	2IJ00074	001	Flat Run	Process/Quarry Dewatering	1.760	250	91.8	4.59	0
Marathon Ashland Pipeline	2IG00028	001	Olentangy Trib. at 65.6	Treated Stormwater	0.002	365	1.8	0.02	0
Upper Olentangy Total:							93.6	4.61	0
Whetstone Creek Watershed									
Marathon Ashland Pipeline	4IN00029	001	Shaw Creek Trib. at 10.37	Treated Stormwater	0.002	365	1.8	0.02	0
Whetstone Creek Total:							1.8	0.02	0
Middle Olentangy Watershed									
BP Oil Co.	4IN00168	001	Olentangy via storm sewer	Treated Stormwater	0.000	365	0.1	0.00	0
City of Delaware WTP	4IW00050	001	Olentangy River	WTP Process Water	0.050	365	3.8	0.46	0
Wilamette Industries	4IN00031	001	UT to Olentangy	Non-Contact Cooling	0.005	250	0.3	0.03	0
Middle Olentangy Total:							4.2	0.48	0
Lower Olentangy Watershed									
Battelle Institute	4IN00012	002	Olentangy River	Non-Contact Cooling	0.216	250	11.3	1.13	0
City of Delaware WTP	4IW00050	001	Olentangy River	WTP Process Water	0.050	365	3.8	0.46	0
Del Co Water	4IW00052	001	Olentangy River	WTP Process Water	0.120	365	9.1	0.37	0
Evans Adhesives	4IN00099	001	Olentangy via storm sewer	Non-Contact Cooling	0.013	250	0.7	0.07	0
National Electric Coil	4IS00012	001	Olentangy via storm sewer	Non-Contact Cooling	0.002	250	0.1	0.01	0
National Electric Coil	4IS00012	004	Olentangy via storm sewer	Non-Contact Cooling	0.002	250	0.1	0.24	0
Ohio DOT Aviation	4IN00177	001	Olentangy Trib.	Treated Stormwater	0.029	365	26.3	0.22	0
Sunsprout Farms	4IN00051	001	Olentangy via storm sewer	Process Water	0.008	250	0.4	0.03	0
Worthington Hills WTP	4IW00021	001	Olentangy River	WTP Process Water	0.099	365	7.5	0.30	0
Lower Olentangy Total:							59.3	2.82	0

Table B.4 NPS and MS4 allocations

HUC14	NPS Areas			MS4 Areas		
	TP lb/yr	TSS tn/yr	FC cnt/seas	TP lb/yr	TSS tn/yr	FC cnt/seas
Upper Olentangy Watershed						
090-010	4,905	1,647	6.34E+13	47	2.8	3.10E+10
090-020	1,002	82	1.47E+14	-	-	-
090-030	3,694	514	1.12E+14	-	-	-
090-040	5,293	1,299	1.18E+13	-	-	-
Total	14,894	3,542	3.34E+14	47	2.8	3.10E+10
Whetstone Creek Watershed						
100-010	7,941	1,803	8.62E+13	-	-	-
100-020	7,003	1,102	2.47E+14	-	-	-
100-030	4,646	667	1.71E+12	-	-	-
Total	19,589	3,571	3.35E+14	-	-	-
Middle Olentangy Watershed						
110-010	5,863	1,358	1.58E+13	-	-	-
110-020	7,179	1,607	1.04E+13	-	-	-
110-030	5,414	1,142	2.55E+13	-	-	-
110-040	3,951	827	1.10E+12	38	4.4	8.27E+09
110-050	7,460	1,277	1.53E+14	-	-	-
110-060	6,999	1,195	1.50E+14	57	3.8	1.51E+10
110-070	3,155	663	9.74E+12	-	-	-
110-080	1,961	493	1.22E+12	-	-	-
Total	41,982	8,564	3.66E+14	94.9	8.2	2.33E+10
Lower Olentangy Watershed						
110-090	15,854	2,715	2.86E+13	206	16	3.43E+11
110-100	9,747	1,157	1.56E+13	15	0.9	2.31E+10
110-110	2,213	487	1.01E+13	196	12	3.21E+11
120-010	14,673	2,665	1.30E+13	198	15	2.36E+11
120-020	9,091	1,829	3.17E+13	692	36	4.20E+11
120-030	928	125	5.18E+12	1,547	88	1.26E+12
120-040	91	11	3.25E+12	3,062	148	1.95E+12
120-050	63	3.4	1.02E+12	1,515	77	1.55E+12
120-060	338	38	5.24E+11	3,007	160	8.09E+11
Total	52,999	9,029	1.09E+14	10,439	553	6.91E+12

Table B.5 HSTS wasteload allocations

HUC14	TP <i>lb/yr</i>	TSS <i>tn/yr</i>	FC <i>cnt/seas</i>
Upper Olentangy Watershed			
090-010	180	0.9	9.39E+10
090-020	37	0.2	1.96E+10
090-030	29	0.1	1.49E+10
090-040	653	3.3	3.41E+11
Total	899	4.5	4.69E+11
Whetstone Creek Watershed			
100-010	534	2.7	2.79E+11
100-020	139	0.7	7.27E+10
100-030	154	0.8	8.02E+10
Total	827	4.1	4.32E+11
Middle Olentangy Watershed			
110-010	89	0.4	4.65E+10
110-020	108	0.5	5.65E+10
110-030	99	0.5	5.19E+10
110-040	80	0.4	4.19E+10
110-050	64	0.3	3.32E+10
110-060	274	1.4	1.43E+11
110-070	224	1.1	1.17E+11
110-080	51	0.3	2.68E+10
Total	991	5.0	5.17E+11
Lower Olentangy Watershed			
110-090	227	1.1	1.18E+11
110-100	136	0.7	7.10E+10
110-110	112	0.6	5.86E+10
120-010	173	0.9	9.02E+10
120-020	883	4.4	4.61E+11
120-030	410	2.1	2.14E+11
120-040	422	2.1	2.20E+11
120-050	67	0.3	3.48E+10
120-060	10	0.0	5.21E+09
Total	2,439	12.2	1.27E+12

Table B.6 Daily TMDL summary of the upper Olentangy watershed

Class	Line	Source	TP lb/day	TSS tn/day	FC cnt/day	Calculation (Lines or Section)
Existing Loads	1	Major NPDES	43.06	0.08	3.75E+09	§ 7.1.2
	2	Minor NPDES	3.56	0.01	5.42E+09	§ 7.1.2
	3	Miscellaneous NPDES	0.26	0.01	0.00E+00	§ 7.1.2
	4	MS4	0.62	0.08	2.32E+09	§ 7.1.1
	5	HSTS	6.16	0.02	2.79E+13	§ 7.1.3
	6	CSO	0.00	0.00	0.00E+00	-
	7	Livestock Access	0.00	0.00	2.03E+12	§ 7.1.4
	8	SSO	0.00	0.00	0.00E+00	-
	9	Runoff, GW, Tile	198.48	100.49	2.51E+13	§ 7.1.1
	10	Wasteload Existing	53.65	0.20	2.79E+13	1+2+3+4+5+6+8
	11	Load Existing	198.48	100.49	2.71E+13	7+9
	12	Total Existing	252.13	100.70	5.50E+13	10+11
TMDL	13	TMDL	69.74	9.83	2.00E+12	§ 8.1
Allocations	14	Major NPDES	22.53	0.08	3.75E+09	§ 8.2.1
	15	Minor NPDES	3.56	0.01	5.42E+09	§ 8.2.1
	16	Miscellaneous NPDES	0.26	0.01	0.00E+00	§ 8.2.1
	17	MS4	0.13	0.01	1.85E+08	§ 7.2
	18	HSTS	2.46	0.01	2.79E+09	§ 8.2.2
	19	CSO	0.00	0.00	0.00E+00	-
	20	Livestock Access	0.00	0.00	0.00E+00	§ 8.2.3
	21	SSO	0.00	0.00	0.00E+00	-
	22	Runoff, GW, Tile	40.81	9.70	1.99E+12	§ 8.2.4
	23	Total Wasteload Allocation	28.94	0.12	1.22E+10	14+15+16+17+18+19+21
	24	Total Load Allocation	40.81	9.70	1.99E+12	20+22
Percent Reductions	25	Major NPDES	48%	0%	0%	(1-14)/1
	26	Minor NPDES	0%	0%	0%	(2-15)/2
	27	Miscellaneous NPDES	0%	0%	-	(3-16)/3
	28	MS4	79%	90%	92%	(4-17)/4
	29	HSTS	60%	47%	100%	(5-18)/5
	30	CSO	-	-	-	(6-19)/6
	31	Livestock Access	-	-	100%	(7-20)/7
	32	SSO	-	-	-	(8-21)/8
	33	Runoff, GW, Tile	79%	90%	92%	(9/22)/9

Table B.7 Daily TMDL summary of the middle Olentangy watershed

Group	Line	Source	TP lb/day	TSS tn/day	FC cnt/day	Calculation (Lines or Section)
Existing Loads	1	Major NPDES	10.43	0.01	2.00E+09	§ 7.2.2
	2	Minor NPDES	4.32	0.01	6.94E+09	§ 7.2.2
	3	Miscellaneous NPDES	0.00	0.00	0.00E+00	§ 7.2.2
	4	MS4	0.60	0.07	2.02E+09	§ 7.2.1
	5	HSTS	6.79	0.03	3.08E+13	§ 7.2.3
	6	CSO	0.00	0.00	0.00E+00	-
	7	Livestock Access	0.00	0.00	8.91E+12	§ 7.2.4
	8	SSO	0.00	0.00	0.00E+00	-
	9	Runoff, GW, Tile	263.95	74.69	3.17E+13	§ 7.2.1
	10	Wasteload Existing	22.14	0.11	3.08E+13	1+2+3+4+5+6+8
	11	Load Existing	263.95	74.69	4.06E+13	7+9
	12	Total Existing	286.08	74.81	7.14E+13	10+11
TMDL	13	TMDL	136.92	23.51	2.19E+12	§ 8.1
Allocations	14	Major NPDES	14.60	0.01	2.00E+09	§ 8.2.1
	15	Minor NPDES	4.32	0.01	6.94E+09	§ 8.2.1
	16	Miscellaneous NPDES	0.00	0.00	0.00E+00	§ 8.2.1
	17	MS4	0.26	0.02	1.39E+08	§ 7.2
	18	HSTS	2.71	0.01	3.08E+09	§ 8.2.2
	19	CSO	0.00	0.00	0.00E+00	-
	20	Livestock Access	0.00	0.00	0.00E+00	§ 8.2.3
	21	SSO	0.00	0.00	0.00E+00	-
	22	Runoff, GW, Tile	115.02	23.46	2.18E+12	§ 8.2.4
	23	Total Wasteload Allocation	21.90	0.05	1.22E+10	14+15+16+17+18+19+21
	24	Total Load Allocation	115.02	23.46	2.18E+12	20+22
Percent Reductions	25	Major NPDES	-40%	0%	0%	(1-14)/1
	26	Minor NPDES	0%	0%	0%	(2-15)/2
	27	Miscellaneous NPDES	0%	0%	-	(3-16)/3
	28	MS4	56%	69%	93%	(4-17)/4
	29	HSTS	60%	47%	100%	(5-18)/5
	30	CSO	-	-	-	(6-19)/6
	31	Livestock Access	-	-	100%	(7-20)/7
	32	SSO	-	-	-	(8-21)/8
	33	Runoff, GW, Tile	56%	69%	93%	(9/22)/9

Table B.8 Daily TMDL summary of the lower Olentangy watershed

Group	Line	Source	TP lb/day	TSS tn/day	FC cnt/day	Calculation (Lines or Section)
Existing Loads	1	Major NPDES	65.43	0.07	5.41E+09	§ 7.3.2
	2	Minor NPDES	5.50	0.01	9.46E+09	§ 7.3.2
	3	Miscellaneous NPDES	0.16	0.01	0.00E+00	§ 7.3.2
	4	MS4	31.38	4.38	4.11E+10	§ 7.3.1
	5	HSTS	16.71	0.06	7.58E+13	§ 7.3.3
	6	CSO	0.55	0.06	9.05E+11	§ 7.3.4
	7	Livestock Access	0.00	0.00	0.00E+00	-
	8	SSO	0.42	0.02	2.83E+12	§ 7.3.4
	9	Runoff, GW, Tile	159.30	71.44	6.50E+11	§ 7.3.1
	10	Wasteload Existing	119.27	4.56	7.63E+13	1+2+3+4+5+6+8
	11	Load Existing	159.72	71.45	6.50E+11	7+9
	12	Total Existing	278.99	76.01	7.98E+13	10+11
TMDL	13	TMDL	292.00	26.40	8.29E+12	§ 8.1
Allocations	14	Major NPDES	105.54	0.07	5.41E+09	§ 8.2.1
	15	Minor NPDES	5.50	0.01	9.46E+09	§ 8.2.1
	16	Miscellaneous NPDES	0.16	0.01	0.00E+00	§ 8.2.1
	17	MS4	28.60	1.52	4.11E+10	§ 7.2
	18	HSTS	6.68	0.03	7.58E+09	§ 8.2.2
	19	CSO	0.31	0.02	4.53E+09	-
	20	Livestock Access	0.00	0.00	0.00E+00	-
	21	SSO	0.00	0.00	0.00E+00	-
	22	Runoff, GW, Tile	145.20	24.74	6.50E+11	§ 8.2.4
	23	Total Wasteload Allocation	146.80	1.66	6.81E+10	14+15+16+17+18+19+21
	24	Total Load Allocation	145.20	24.74	6.50E+11	20+22
Percent Reductions	25	Major NPDES	-61%	0%	0%	(1-14)/1
	26	Minor NPDES	0%	0%	0%	(2-15)/2
	27	Miscellaneous NPDES	0%	0%	0%	(3-16)/3
	28	MS4	9%	65%	0%	(4-17)/4
	29	HSTS	60%	47%	100%	(5-18)/5
	30	CSO	44%	75%	100%	(6-19)/6
	31	Livestock Access	-	-	-	(7-20)/7
	32	SSO	100%	100%	100%	(8-21)/8
	33	Runoff, GW, Tile	9%	65%	0%	(9/22)/9

Table B.9 Daily TMDL summary of the Whetstone Creek watershed

Group	Line	Source	TP lb/day	TSS tn/day	FC cnt/day	Calculation (Lines or Section)
Existing Loads	1	Major NPDES	0.00	0.00	0.00E+00	§ 7.4.2
	2	Minor NPDES	24.99	0.03	8.17E+09	§ 7.4.2
	3	Miscellaneous NPDES	0.01	0.00	0.00E+00	§ 7.4.2
	4	MS4	0.00	0.00	0.00E+00	§ 7.4.1
	5	HSTS	5.67	0.02	2.57E+13	§ 7.4.3
	6	CSO	0.00	0.00	0.00E+00	-
	7	Livestock Access	0.00	0.00	1.84E+12	§ 7.4.4
	8	SSO	0.00	0.00	0.00E+00	-
	9	Runoff, GW, Tile	131.22	72.83	3.76E+13	§ 7.4.1
	10	Wasteload Existing	30.66	0.05	2.57E+13	1+2+3+4+5+6+8
	11	Load Existing	131.22	72.83	3.95E+13	7+9
	12	Total Existing	161.88	72.88	6.52E+13	10+11
TMDL	13	TMDL	69.74	9.83	2.00E+12	§ 8.1
Allocations	14	Major NPDES	0.00	0.00	0.00E+00	§ 8.2.1
	15	Minor NPDES	13.80	0.03	8.17E+09	§ 8.2.1
	16	Miscellaneous NPDES	0.01	0.00	0.00E+00	§ 8.2.1
	17	MS4	0.00	0.00	0.00E+00	§ 7.2
	18	HSTS	2.27	0.01	2.57E+09	§ 8.2.2
	19	CSO	0.00	0.00	0.00E+00	-
	20	Livestock Access	0.00	0.00	0.00E+00	§ 8.2.3
	21	SSO	0.00	0.00	0.00E+00	-
	22	Runoff, GW, Tile	53.67	9.78	1.99E+12	§ 8.2.4
	23	Total Wasteload Allocation	16.07	0.04	1.07E+10	14+15+16+17+18+19+21
	24	Total Load Allocation	53.67	9.78	1.99E+12	20+22
Percent Reductions	25	Major NPDES	-	-	-	(1-14)/1
	26	Minor NPDES	45%	0%	0%	(2-15)/2
	27	Miscellaneous NPDES	0%	0%	-	(3-16)/3
	28	MS4	-	-	-	(4-17)/4
	29	HSTS	60%	47%	100%	(5-18)/5
	30	CSO	-	-	-	(6-19)/6
	31	Livestock Access	-	-	100%	(7-20)/7
	32	SSO	-	-	-	(8-21)/8
	33	Runoff, GW, Tile	59%	87%	95%	(9/22)/9

Table B.10 MWH attributes

RM	QHEI	High-Influence					Total High-Influence MWH Attributes	Moderate-Influence										Total Moderate-Influence MWH Attributes	Total MWH Attributes
		Recent Channelization or No Recovery	Silt or Muck Substrate	Low or No Sinuosity and Drainage Area ≤ 20 sq. mi.	Sparse or Nearly Absent Cover	< 40 cm Max. Pool Depth and Wadeable or Headwater Site		Recovering Channelization	Silt Heavy or Silt Moderate	Sand Substrate and Boat Site	Hardpan Substrate Origin	Fair or Poor Development	Low or No Sinuosity and Drainage Area > 20 sq. mi.	Two or Less Cover Types	Intermittent Pools and Max. Pool Depth < 40 cm	No Fast Current Velocity	Extensive or Moderate Substrate Embeddedness		
Olentangy River (WWH)																			
89.3	83.0					0		o										1	1
86.1	59.5	o		o	o	3		o			o							2	5
85.9	78.0			o		1	o	o			o					o	o	5	6
85.2	82.5					0										o		1	1
79.7	69.0		o			1		o				o			o	o		4	5
74.0	58.5		o			1		o						o	o	o		4	5
68.1	57.0		o			1		o			o			o	o	o		5	6
63.4	58.5		o			1		o			o			o	o	o		5	6
59.5	40.5	o	o			2		o		o	o			o	o		o	6	8
56.6	37.0	o	o		o	3		o		o	o			o	o		o	6	9
54.7	77.5					0		o							o	o		3	3
50.1	83.5					0												0	0
45.5	84.5					0					o							1	1
40.8	63.0					0		o			o	o		o	o		o	6	6
32.1	66.0					0	o	o	o		o	o		o	o		o	7	7
28.1	55.5	o				1		o		o	o			o	o		o	6	7
27.5	76.5					0	o	o			o			o	o			5	5
24.5	75.5					0	o	o			o			o	o			5	5
Olentangy River (EWH)																			
19.4	81.5					0		o			o			o	o			4	4
15.0	78.0					0	o	o			o			o	o			5	5
12.4	73.5					0		o			o			o	o	o		5	5
Olentangy River (WWH)																			
7.8	87.0					0					o							1	1
3.9	71.0					0		o	o		o	o			o	o		6	6
Olentangy River (MWH)																			
2.1	32.5	o	o		o	3		o		o	o			o	o		o	6	9
Olentangy River (WWH)																			
1.8	75.0					0		o						o	o			3	3
0.9	79.5					0		o	o		o			o	o			5	5

Table B.10 (cont'd) MWH attributes

RM	QHEI	High-Influence					Total High-Influence MWH Attributes	Moderate-Influence										Total Moderate-Influence MWH Attributes	Total MWH Attributes
		Recent Channelization or No Recovery	Silt or Muck Substrate	Low or No Sinuosity and Drainage Area ≤ 20 sq. mi.	Sparse or Nearly Absent Cover	< 40 cm Max. Pool Depth and Wadeable or Headwater Site		Recovering Channelization	Silt Heavy or Silt Moderate	Sand Substrate and Boat Site	Hardpan Substrate Origin	Fair or Poor Development	Low or No Sinuosity and Drainage Area > 20 sq. mi.	Two or Less Cover Types	Intermittent Pools and Max. Pool Depth < 40 cm	No Fast Current Velocity	Extensive or Moderate Substrate Embeddedness		
Rocky Fork (WWH)																			
2.9	75.0					0		o								o	2	2	
0.4	74.0	o				1										o	1	2	
Flat Run (WWH)																			
12.6	57.0			o		2									o		2	4	
7.3	84.0					0											0	0	
0.6	71.5					0										o	1	1	
Thorn Run (WWH)																			
1.1	57.5				o	2		o								o	3	5	
Mud Run (MWH)																			
6.7	35.0	o		o	o	4		o			o			o	o	o	5	9	
2.7	37.0	o	o	o	o	4		o			o			o	o	o	5	9	
Bee Run (WWH)																			
4.9	33.0	o	o	o		4		o			o			o	o	o	5	9	
0.3	60.0				o	2	o				o				o	o	4	6	
Otter Creek (WWH)																			
1.1	43.0		o	o	o	4	o	o			o			o	o	o	6	10	
Grave Creek (MWH)																			
3.2	40.0	o	o	o	o	4		o			o			o	o	o	5	9	
Grave Creek (WWH)																			
1.4	45.5	o		o	o	3		o			o			o	o	o	5	8	
0.8	78.0					0										o	1	1	
0.3	80.0					1											0	1	
Riffle Creek (MWH)																			
4.4	33.5	o	o	o	o	4		o			o				o		4	8	
Riffle Creek (WWH)																			
1.4	54.5					0	o	o						o	o	o	5	5	
QuQua Creek (MWH)																			
4.6	29.0	o		o	o	4		o			o			o	o	o	6	10	
0.1	75.0			o		1	o				o						2	3	

Table B.10 (cont'd) MWH attributes

RM	QHEI	High-Influence				Total High-Influence MWH Attributes	Moderate-Influence										Total Moderate-Influence MWH Attributes	Total MWH Attributes	
		Recent Channelization or No Recovery	Silt or Muck Substrate	Low or No Sinuosity and Drainage Area ≤ 20 sq. mi.	Sparse or Nearly Absent Cover		Pool Depth and Wadeable or Headwater Site < 40 cm Max.	Recovering Channelization	Silt Heavy or Silt Moderate	Sand Substrate and Boat Site	Hardpan Substrate Origin	Fair or Poor Development	Low or No Sinuosity and Drainage Area > 20 sq. mi.	Two or Less Cover Types	Intermittent Pools and Max. Pool Depth < 40 cm	No Fast Current Velocity			Extensive or Moderate Substrate Embeddedness
Brondige Run (WWH)																			
0.7	75.5					0		o								o	o	3	3
Whetstone Creek (EWH)																			
30.5	78.5					0		o								o	o	3	3
29.3	74.0					0										o	o	2	2
28.1	79.0					0											o	1	1
25.5	75.5					0	o				o	o					o	4	4
22.4	72.0	o				1	o	o			o				o		o	5	6
21.7	66.5					0	o				o	o				o	o	5	5
21.5	67.0				o	1					o	o			o		o	4	5
18.2	74.5					0		o										1	1
13.5	65.5					0	o				o	o				o	o	5	5
9.2	69.5					0		o			o	o				o	o	5	5
2.5	61.5		o			1		o			o				o	o	o	5	6
Trib. to Whetstone Creek (RM 33.71) (WWH)																			
0.4	57.5					0	o	o			o				o	o	o	6	6
East Branch Whetstone Creek (WWH)																			
0.4	78.0					0									o	o	o	3	3
Sams Creek (WWH)																			
1.4	66.5			o		1					o				o			2	3
13.2	35.5	o	o	o	o	4		o			o				o	o	o	5	9
10.6	52.5	o	o	o		3		o			o				o	o	o	5	8
5.2	65.0					0		o							o	o		3	3
1.6	69.5					0	o	o							o	o		4	4
Mitchell Run (WWH)																			
0.2	72.0					0	o										o	2	2
Big Run (WWH)																			
0.1	65.0					0	o	o							o	o	o	5	5
Claypool Run (WWH)																			
1.2	56.0	o	o			2		o			o				o	o		4	6

Table B.10 (cont'd) MWH attributes

RM	QHEI	High-Influence					Total High-Influence MWH Attributes	Moderate-Influence										Total Moderate-Influence MWH Attributes	Total MWH Attributes
		Recent Channelization or No Recovery	Silt or Muck Substrate	Low or No Sinuosity and Drainage Area ≤ 20 sq. mi.	Sparse or Nearly Absent Cover	< 40 cm Max. Pool Depth and Wadeable or Headwater Site		Recovering Channelization	Silt Heavy or Silt Moderate	Sand Substrate and Boat Site	Hardpan Substrate Origin	Fair or Poor Development	Low or No Sinuosity and Drainage Area > 20 sq. mi.	Two or Less Cover Types	Intermittent Pools and Max. Pool Depth < 40 cm	No Fast Current Velocity	Extensive or Moderate Substrate Embeddedness		
Indian Run (WWH)																			
0.9	69.0			o		1	o	o							o	o	o	6	7
Norris Run (WWH)																			
1.3	62.0	o				1		o							o	o		4	5
Sugar Run (WWH)																			
1.3	69.0					0		o							o			2	2
Mill Run (WWH)																			
0.9	69.0					0									o	o		2	2
Trib. to Olentangy R. (RM 20.71) (WWH)																			
0.2	53.5			o	o	3					o							1	4
Trib. to Olentangy R. (RM 18.19) (WWH)																			
0.1	69.0			o	o	2										o		1	3
Deep Run (WWH)																			
1.1	47.5			o	o	2		o							o			2	4
Turkey Run (WWH)																			
0.7	55.0			o	o	2					o			o		o		3	5
Walhalla Ravine (NA)																			
0.9	58.5			o	o	2					o			o				2	4
Glen Echo Ravine (WWH)																			
1.0	61.0			o		1	1											1	2

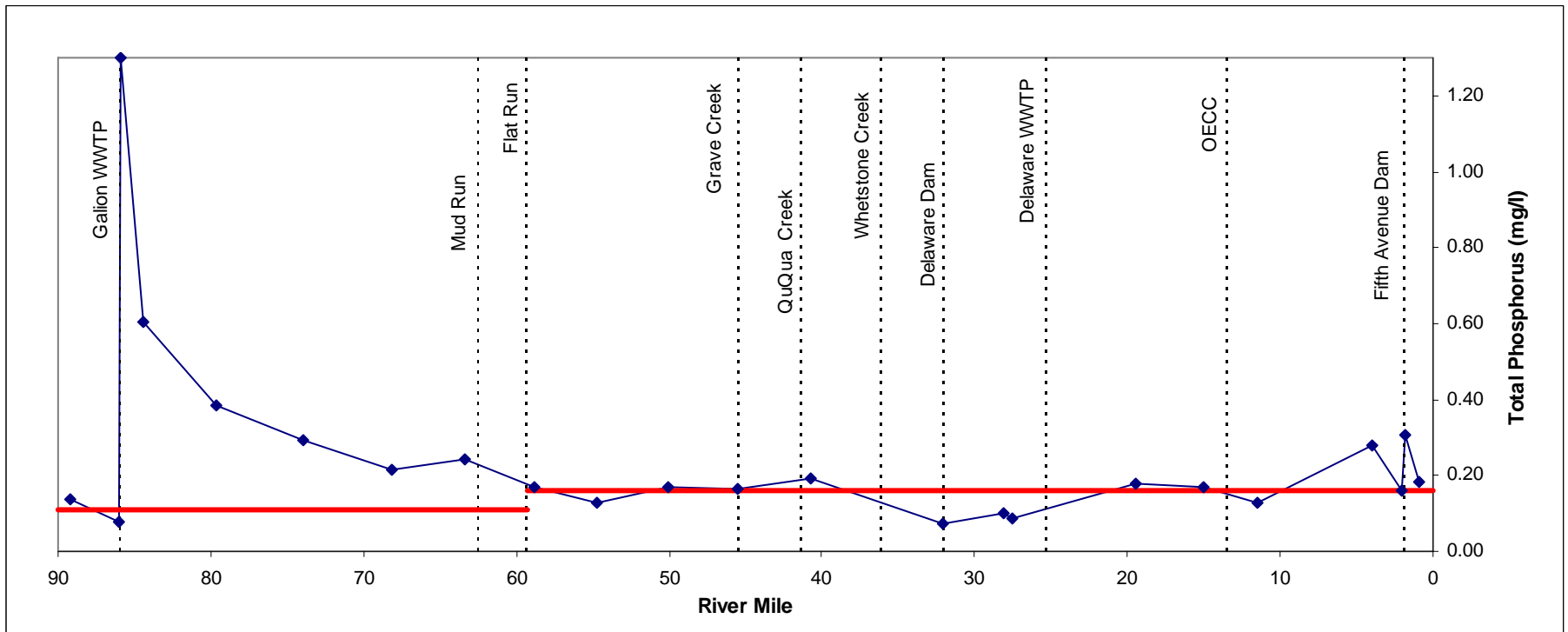


Figure B.1 Longitudinal trend of mean TP (mg/l) of the Olentangy River

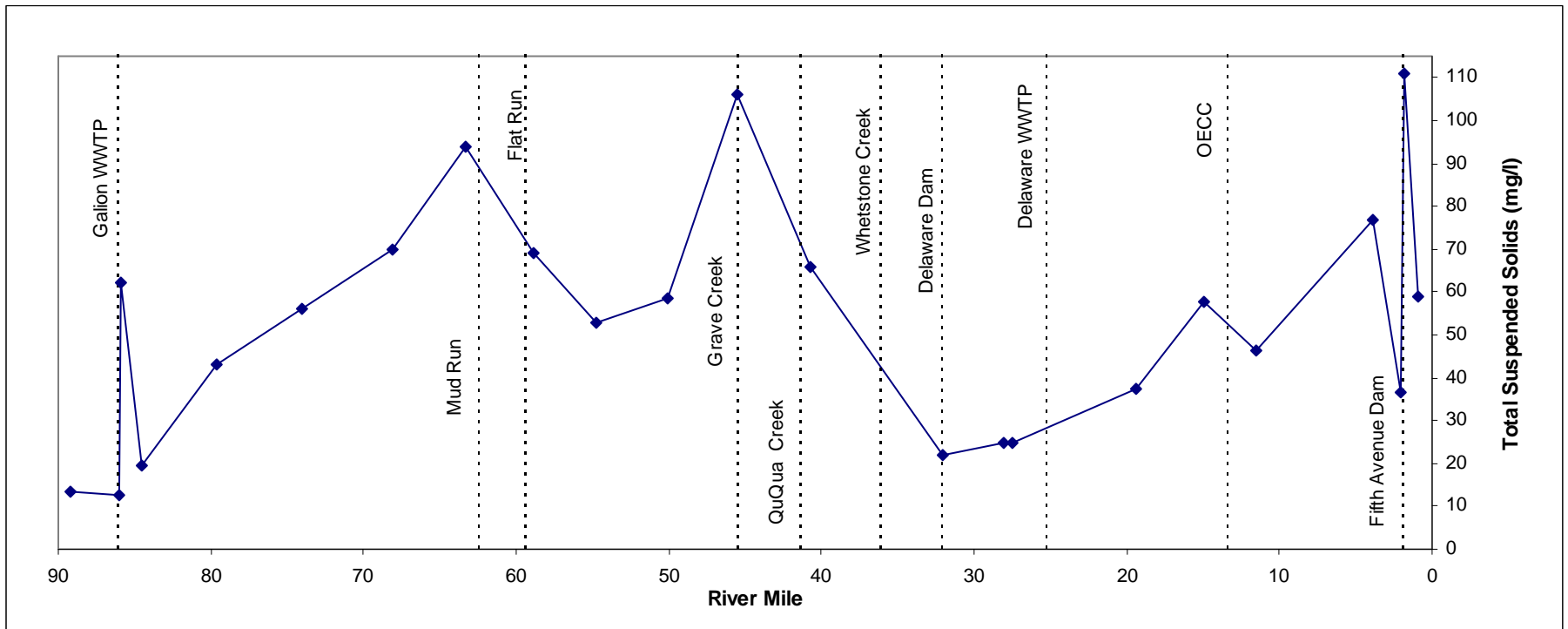


Figure B.2 Longitudinal trend of mean TSS (mg/l) of the Olentangy River

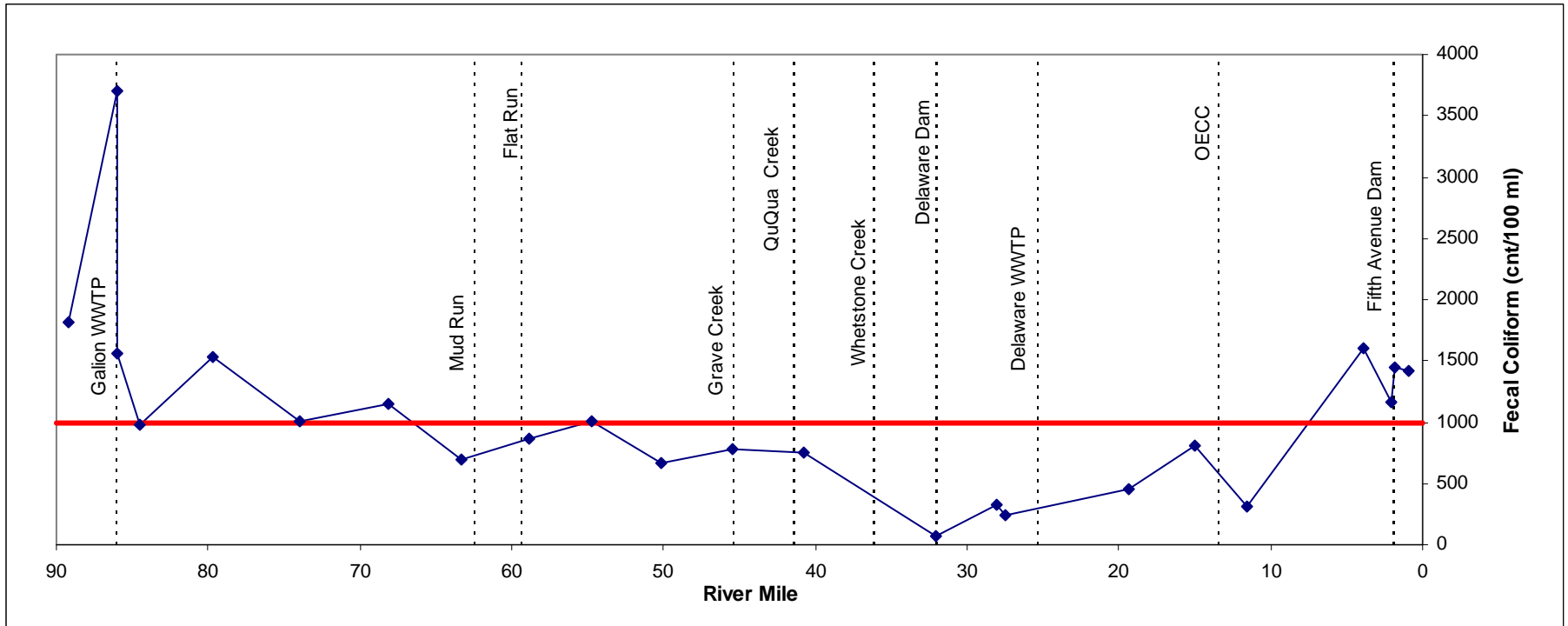


Figure B.3 Longitudinal trend of mean FC (cnt/100 ml) of the Olentangy River

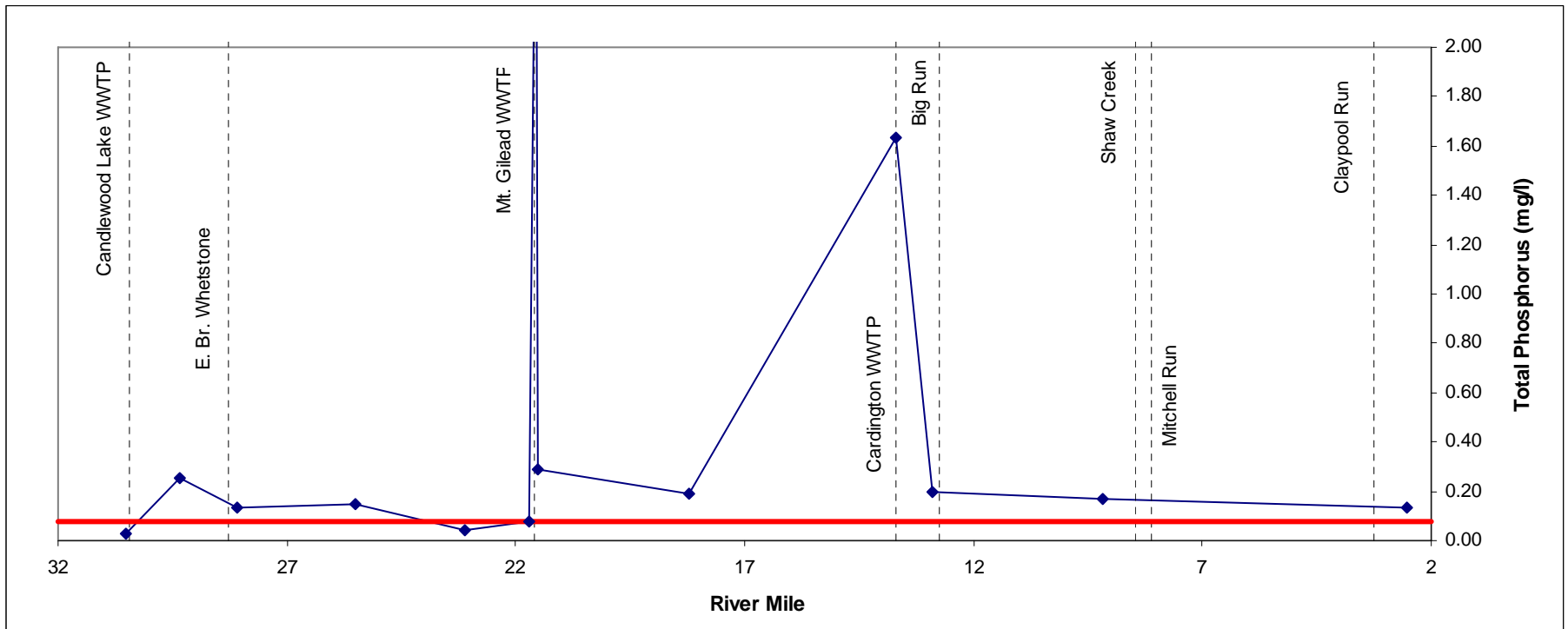


Figure B.4 Longitudinal trend of mean TP (mg/l) of Whetstone Creek

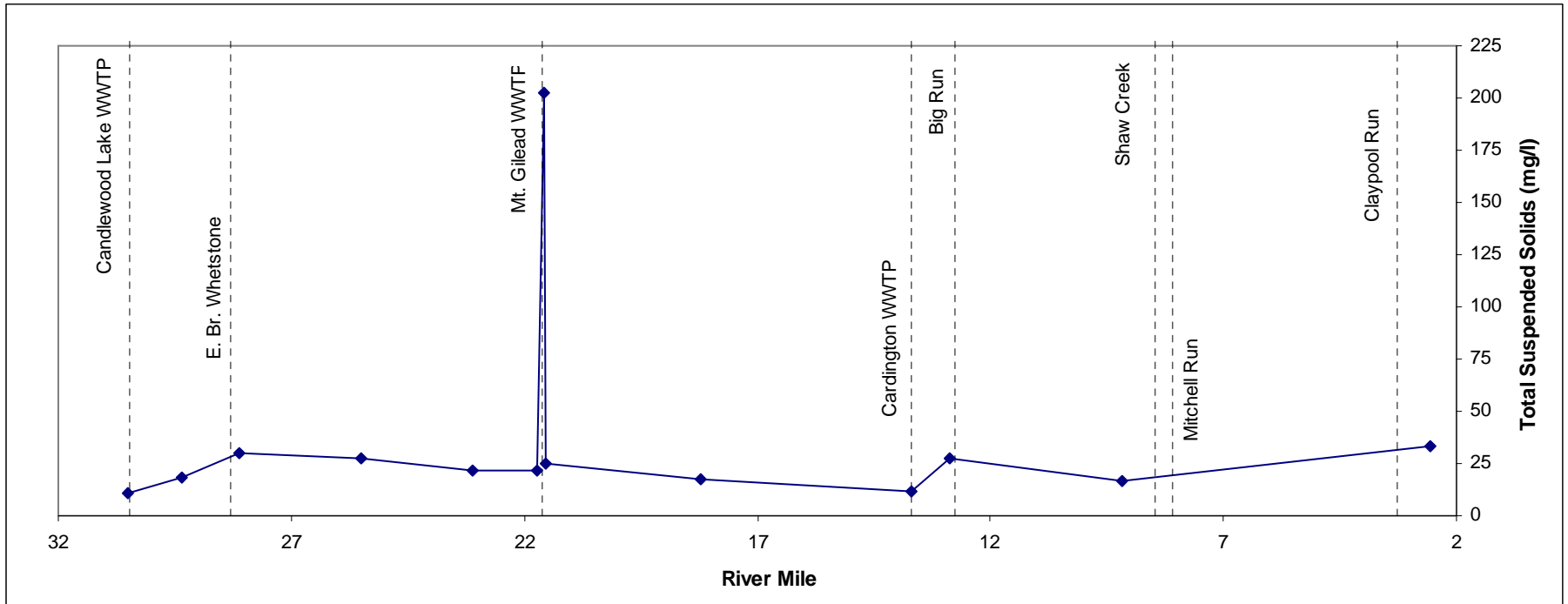


Figure B.5 Longitudinal trend of mean TSS (mg/l) of Whetstone Creek

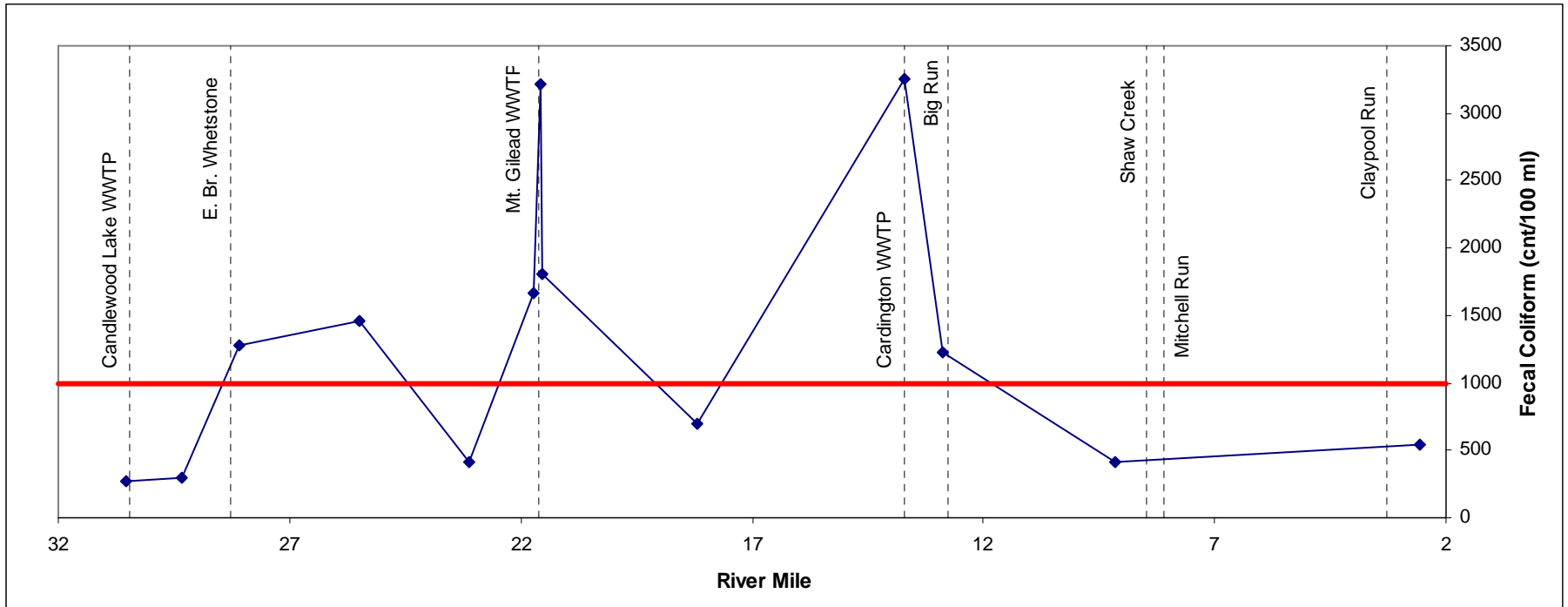


Figure B.6 Longitudinal trend of mean FC (cnt/100 ml) of Whetstone Creek