

Appendix A-21

Region 21

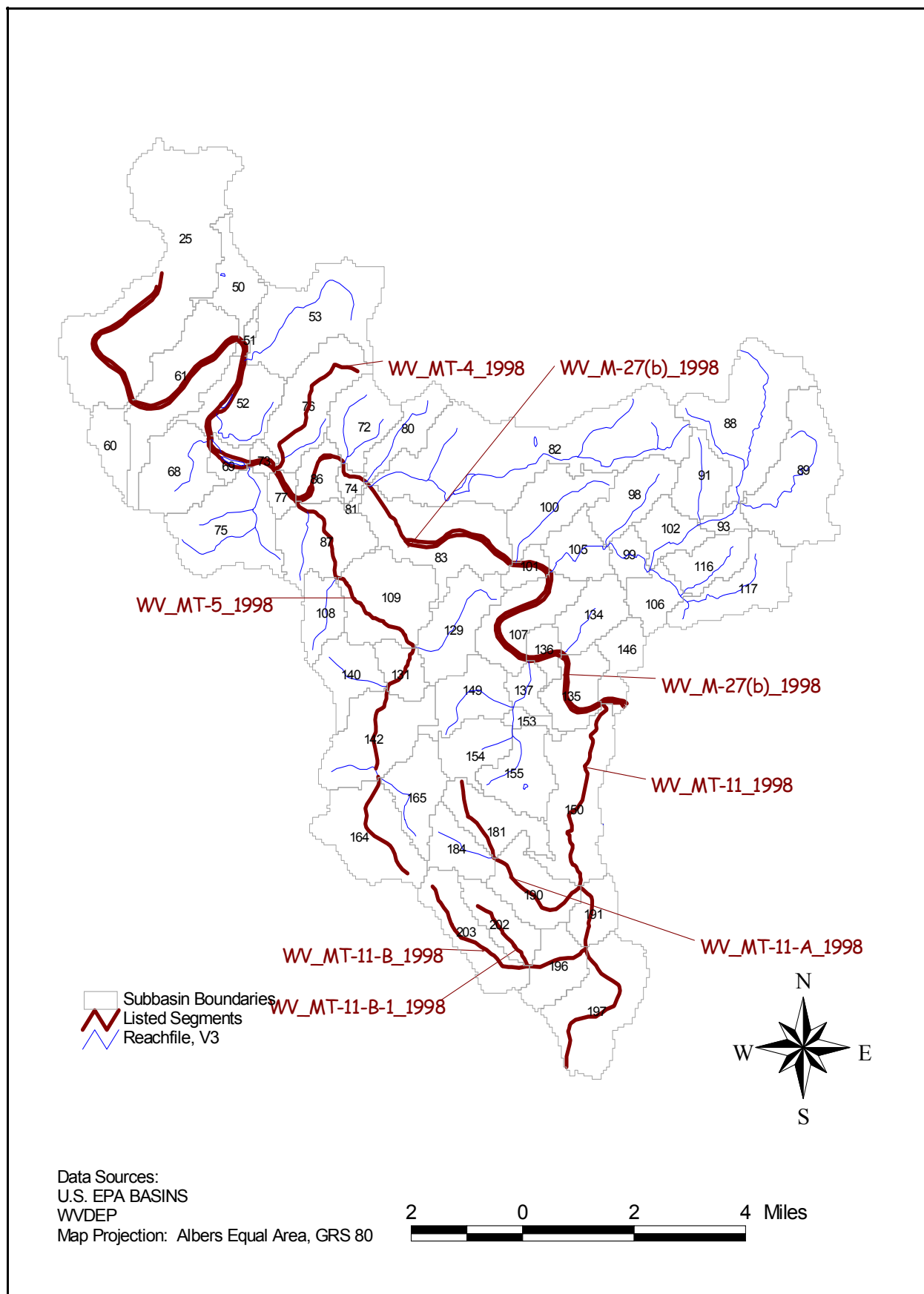


Figure 1. Region 21-The most downstream portion of the Tygart Valley River, Taylor County

Table 1. Impaired waterbodies in Region 21

Stream Name	Stream Code	Pollutant	Contributing SWS	Contributing Regions	Aquatic Life
Berkely RN	MT-11	pH, Metals	150,191,197,196, 203, 202,190, 184, 181		B-1
Berry RN	MT-11B-1	pH , Metals	202		B-1
Long RN	MT-11-B	pH , Metals	196,203,202		B-1
Shelby RN	MT-11-A	pH, Metals	190,184,181		B-1
Goose CK	MT-4	pH, Metals	76		B-1
Lost RN	MT-5	pH, Metals	87,108,109,129,131,140,142,164,165		B-1
Tygart River	M-27-(b)	pH, Metals	50,51,53,25,52,76,72,73,80,69,60,86,74,88,61,81,82,68,77,91,93,98,89,100,102,75,105,101,99,87,116,83,117,106,109,134,108,107,129,136,131,137,146,135,140,149,153,142,154,155,165,181,184,150,164,190,191,202,203,196,197	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	B-1

Table 2. Locations of abandoned mines (seep, deep mine, and/or leaching)

SWS
181, 202, and 203

Table 3a. Water quality data for aluminum

SWS	WQ station	Avg (ug/L)	Min (ug/L)	Max (ug/L)	Count	Start Date	End Date
100	MT-07	50	50	50	1	26-Aug-97	26-Aug-97
105	MT-08	50	50	50	1	26-Aug-97	26-Aug-97
135	4TYG13019	314	80	650	17	08-Apr-81	02-Feb-84
146	550451	290	80	760	10	11-Mar-80	12-Sep-84
190	MT-11-A	50	50	50	1	26-Aug-97	26-Aug-97
196	MT-11-B	360	360	360	1	26-Aug-97	26-Aug-97
197	MT-11-{06.63}	130	130	130	1	27-Aug-97	27-Aug-97
202	MT-11-B-1	130	130	130	1	26-Aug-97	26-Aug-97
25	4OPW12010	152	50	320	8	22-Aug-83	24-Aug-92
25	4OPW12011	150	150	150	1	26-Aug-85	26-Aug-85
52	4TYG13006	286	50	1280	18	08-Apr-81	15-May-86
52	550574	358	20	1940	143	11-Mar-80	14-Jun-95
52	WA96-M03	523	50	1200	12	12-Mar-96	03-Dec-98
76	MT-04	1200	1200	1200	1	25-Feb-97	25-Feb-97
91	MT-12-{10.20}	7300	7300	7300	1	02-Sep-97	02-Sep-97

Metals and pH TMDLs for the Tygart Valley River Watershed

Table 3b. Water quality data for iron

SWS	WQ station	Avg (ug/L)	Min (ug/L)	Max (ug/L)	Count	Start Date	End Date
100	MT-07	87	87	87	1	26-Aug-97	26-Aug-97
105	MT-08	220	220	220	1	26-Aug-97	26-Aug-97
135	4TYG13019	315	100	800	17	08-Apr-81	02-Feb-84
146	550451	463	130	1240	20	11-Mar-80	12-Sep-84
190	MT-11-A	180	180	180	1	26-Aug-97	26-Aug-97
196	MT-11-B	1100	1100	1100	1	26-Aug-97	26-Aug-97
197	MT-11-{06.63}	370	370	370	1	27-Aug-97	27-Aug-97
202	MT-11-B-1	500	500	500	1	26-Aug-97	26-Aug-97
25	4OPW12010	168	100	400	7	04-Aug-86	24-Aug-92
25	4OPW12011	100	100	100	1	26-Aug-85	26-Aug-85
51	392615080075539	1719	150	6900	9	17-Jan-80	18-Sep-80
52	4TYG13006	289	100	1200	18	08-Apr-81	15-May-86
52	550574	497	20	8400	150	11-Mar-80	14-Jun-95
52	WA96-M03	607	65	1340	12	12-Mar-96	03-Dec-98
76	MT-04	430	430	430	1	25-Feb-97	25-Feb-97
91	MT-12-{10.20}	170	170	170	1	02-Sep-97	02-Sep-97

Table 3c. Water quality data for manganese

SWS	WQ station	Avg (ug/L)	Min (ug/L)	Max (ug/L)	Count	Start Date	End Date
100	MT-07	20	20	20	1	26-Aug-97	26-Aug-97
105	MT-08	20	20	20	1	26-Aug-97	26-Aug-97
135	4TYG13019	224	20	500	17	08-Apr-81	02-Feb-84
146	550451	195	60	434	18	11-Mar-80	14-Jun-84
190	MT-11-A	91	91	91	1	26-Aug-97	26-Aug-97
196	MT-11-B	420	420	420	1	26-Aug-97	26-Aug-97
197	MT-11-{06.63}	87	87	87	1	27-Aug-97	27-Aug-97
202	MT-11-B-1	450	450	450	1	26-Aug-97	26-Aug-97
25	4OPW12010	76	50	134	8	22-Aug-83	24-Aug-92
25	4OPW12011	60	60	60	1	26-Aug-85	26-Aug-85
51	392615080075539	176	80	310	8	17-Jan-80	18-Sep-80
52	4TYG13006	115	10	250	18	08-Apr-81	15-May-86
52	550574	177	20	800	152	11-Mar-80	14-Jun-95
52	WA96-M03	120	10.2	190	12	12-Mar-96	03-Dec-98
76	MT-04	630	630	630	1	25-Feb-97	25-Feb-97
91	MT-12-{10.20}	2100	2100	2100	1	02-Sep-97	02-Sep-97

Table 4a. Aluminum baseline conditions and allocations (WLAs) for permitted mining point sources

SWS	Permit ID	Baseline (lbs/yr)	Allocation(lbs/yr)	Allocation (mg/L)
76	o100187	5302	1539	1.2
76	r074600	2627	763	1.2
77	e012500	3480	3480	4.3
77	r074700	968	968	4.3

Table 4b. Iron baseline conditions and allocations (WLAs) for permitted mining point sources

SWS	Permit ID	Baseline (lbs/yr)	Allocation(lbs/yr)	Allocation (mg/L)
76	o100187	3946	1110	0.9
76	r074600	1955	550	0.9
77	e012500	2590	2590	3.2
77	r074700	721	721	3.2

Table 4c. Manganese baseline conditions and allocations (WLAs) for permitted mining point sources

SWS	Permit ID	Baseline (lbs/yr)	Allocation(lbs/yr)	Allocation (mg/L)
76	o100187	2423	2108	1.7
76	r074600	1201	1045	1.7
77	e012500	1388	1388	2.0
77	r074700	866	382	2.0

Table 5a. Aluminum baseline conditions and allocations (LAs) for nonpoint sources

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
100	0	0	1235	1235	0	0	
101	0	0	212	212	0	0	
102	0	0	601	601	0	0	
105	0	0	626	626	0	0	
106	0	0	622	622	0	0	
107	0	0	952	952	0	0	
108	0	0	512	512	0	0	
109	0	0	1475	1475	0	0	
116	0	0	753	753	0	0	
117	0	0	1307	1307	0	0	
129	0	0	1192	1192	0	0	
131	0	0	470	470	0	0	
134	0	0	736	736	0	0	
135	0	0	687	687	0	0	
136	0	15	271	271	0	0	
137	0	4	324	324	0	0	
140	0	0	790	790	0	0	
142	0	0	1715	1715	0	0	
146	0	0	706	706	0	0	
149	18	18	1027	1027	0	0	x
150	22	22	1893	1893	0	0	x
153	0	0	174	174	0	0	
154	7	7	933	933	0	0	x
155	0	0	1252	1252	0	0	
164	38	38	1659	1659	0	0	
165	30	30	1229	1229	0	0	
181	964	33	1071	1071	2619	916	x
184	83	83	673	673	0	0	
190	16	16	1049	1049	0	0	
191	17	17	503	503	0	0	
196	5	5	674	674	0	0	
197	1	1	1980	1980	0	0	

Metals and pH TMDLs for the Tygart Valley River Watershed

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
202	695	399	682	682	0	0	x
203	763	88	1081	1081	978	978	
25	213	213	4456	4456	0	0	
50	0	0	639	639	0	0	
51	0	0	75	75	0	0	
52	312	312	1124	1124	0	0	
53	0	0	2095	2095	0	0	
60	7	7	616	616	0	0	
61	7	7	1784	1784	0	0	
68	7	7	1382	1382	0	0	
69	71	71	238	238	0	0	
72	34	34	848	848	0	0	
73	97	97	143	143	0	0	
74	11	11	104	104	0	0	
75	0	0	1785	1785	0	0	
76	40	40	1302	1302	0	0	
77	12	12	9	9	0	0	
80	22	22	608	608	0	0	
81	0	0	36	36	0	0	
82	0	0	4520	4520	0	0	
83	51	51	1547	1547	0	0	
86	0	0	383	383	0	0	
87	0	0	1066	1066	0	0	
88	0	0	2120	2120	0	0	
89	0	0	2253	2253	0	0	
91	0	0	646	646	0	0	
93	0	0	181	181	0	0	
98	0	0	774	774	0	0	
99	0	0	325	325	0	0	
Total	3595	1693	62127	62127	3597	1894	

Table 5b. Iron baseline conditions and allocations (LAs) for nonpoint sources

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
100	0	0	1111	1111	0	0	
101	0	0	204	204	0	0	
102	0	0	548	548	0	0	
105	0	0	600	600	0	0	
106	0	0	553	553	0	0	
107	0	0	914	914	0	0	
108	0	0	499	499	0	0	
109	0	0	1397	1397	0	0	
116	0	0	698	698	0	0	
117	0	0	1187	1187	0	0	
129	0	0	1111	1111	0	0	
131	0	0	440	440	0	0	
134	0	0	691	691	0	0	
135	0	0	713	713	0	0	

Metals and pH TMDLs for the Tygart Valley River Watershed

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
136	0	0	264	264	0	0	
137	0	0	298	298	0	0	
140	0	0	717	717	0	0	
142	0	0	1565	1565	0	0	
146	0	0	669	669	0	0	
149	17	17	916	916	0	0	
150	20	20	1801	1801	0	0	
153	0	0	159	159	0	0	
154	7	7	848	848	0	0	
155	0	0	1109	1109	0	0	
164	35	35	1526	1526	0	0	
165	28	28	1075	1075	0	0	
181	1055	34	926	926	2618	1570	x
184	76	76	625	625	0	0	
190	14	14	963	963	0	0	
191	15	15	496	496	0	0	
196	7	7	650	650	0	0	
197	2	2	1802	1802	0	0	
202	865	309	638	638	0	0	x
203	965	694	999	999	978	978	
25	196	196	4855	4855	0	0	
50	0	0	614	614	0	0	
51	0	0	76	76	0	0	
52	430	430	1083	1083	0	0	
53	0	0	1961	1961	0	0	
60	7	7	598	598	0	0	
61	7	7	1721	1721	0	0	
68	6	6	1248	1248	0	0	
69	97	97	243	243	0	0	
72	31	31	799	799	0	0	
73	133	133	143	143	0	0	
74	11	11	104	104	0	0	
75	0	0	1641	1641	0	0	
76	55	55	1183	1183	0	0	
77	17	17	14	14	0	0	
80	21	21	582	582	0	0	
81	0	0	36	36	0	0	
82	0	0	4071	4071	0	0	
83	47	47	1516	1516	0	0	
86	72	72	368	368	0	0	
87	0	0	1042	1042	0	0	
88	0	0	1972	1972	0	0	
89	0	0	2017	2017	0	0	
91	0	0	626	626	0	0	
93	0	0	176	176	0	0	
98	0	0	744	744	0	0	
99	0	0	309	309	0	0	
Total	4237	2389	58455	58455	3596	2549	

Table 5c. Manganese baseline conditions and allocations (LAs) for nonpoint sources

Metals and pH TMDLs for the Tygart Valley River Watershed

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
100	0	0	713	713	0	0	
101	0	0	112	112	0	0	
102	0	0	333	333	0	0	
105	0	0	349	349	0	0	
106	0	0	365	365	0	0	
107	0	0	503	503	0	0	
108	0	0	265	265	0	0	
109	0	0	821	821	0	0	
116	0	0	448	448	0	0	
117	0	0	778	778	0	0	
129	0	0	689	689	0	0	
131	0	0	267	267	0	0	
134	0	0	401	401	0	0	
135	0	0	380	380	0	0	
136	0	0	149	149	0	0	
137	0	0	175	175	0	0	
140	0	0	449	449	0	0	
142	0	0	1028	1028	0	0	
146	0	0	439	439	0	0	
149	27	27	600	600	0	0	
150	33	33	1071	1071	0	0	
153	0	0	97	97	0	0	
154	11	11	593	593	0	0	
155	0	0	798	798	0	0	
164	56	56	966	966	0	0	
165	45	45	783	783	0	0	
181	512	47	661	661	1761	1039	x
184	123	123	393	393	0	0	
190	23	23	600	600	0	0	
191	25	25	269	269	0	0	
196	4	4	355	355	0	0	
197	1	1	1167	1167	0	0	
202	1024	608	395	395	0	0	x
203	1084	424	616	616	657	657	x
25	316	316	2602	2602	0	0	
50	0	0	352	352	0	0	
51	0	0	38	38	0	0	
52	239	239	689	689	0	0	
53	0	0	1217	1217	0	0	
60	11	11	391	391	0	0	
61	11	11	1058	1058	0	0	
68	10	10	855	855	0	0	
69	54	54	147	147	0	0	
72	51	51	465	465	0	0	
73	74	74	97	97	0	0	
74	17	17	53	53	0	0	
75	0	0	1021	1021	0	0	
76	30	30	812	812	0	0	
77	9	9	4	4	0	0	
80	33	33	330	330	0	0	
81	0	0	18	18	0	0	

Metals and pH TMDLs for the Tygart Valley River Watershed

SWS	AML		Nonpoint		Revoked mine		Requires Reduction
	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	Baseline (lbs/yr)	Allocation (lbs/yr)	
82	0	0	2561	2561	0	0	
83	76	76	810	810	0	0	
86	40	40	206	206	0	0	
87	0	0	557	557	0	0	
88	0	0	1160	1160	0	0	
89	0	0	1341	1341	0	0	
91	0	0	336	336	0	0	
93	0	0	97	97	0	0	
98	0	0	412	412	0	0	
99	0	0	179	179	0	0	
Total	3938	2398	35837	35837	2418	1696	