APPENDIX B

Long Term Plots of Turbidity and TSS

Table B.1. Observed Turbidity and TSS Data for West Fork White River at WHI0051.

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
7/23/1991	9.4	11	0.41	0.00	6.08E-02	99.72%	Base flow	10	Yes	
8/4/1998	5.7	2.5	0.80	0.00	2.71E-02	99.51%	Base flow	10	Yes	
9/25/1990	56	36	1.00	0.00	4.85E-01	99.33%	Base flow	10	No	
8/29/1995	9	7.5	1.18	0.00	1.19E-01	99.21%	Base flow	10	Yes	
9/10/1996	14	12	2.36	0.01	3.81E-01	97.52%	Base flow	10	No	
10/7/1997	13	11.5	2.75	0.01	4.26E-01	96.58%	Base flow	10	No	
10/12/1999	3.9	2	3.10	0.01	8.36E-02	96.05%	Base flow	10	Yes	
7/29/2003	21.1	12.5	3.80	0.01	6.40E-01	94.81%	Base flow	10	No	
8/27/1991	20	14.5	4.20	0.01	8.21E-01	94.13%	Base flow	10	No	
8/15/2000	8.3	15	4.20	0.01	8.49E-01	94.13%	Base flow	10	Yes	
8/3/1993	26	37	4.30	0.01	2.15E+00	94.01%	Base flow	10	No	
9/9/1997	19	15	4.32	0.01	8.73E-01	93.94%	Base flow	10	No	
10/22/1991	9.4	12	4.60	0.01	7.44E-01	93.37%	Base flow	10	Yes	
11/19/2002	3.38	1.5	4.90	0.01	9.91E-02	92.75%	Base flow	10	Yes	
8/10/1999	1.4	28	6.70	0.02	2.53E+00	89.58%	Base flow	10	Yes	
8/5/1997	14	14	6.77	0.02	1.28E+00	89.54%	Base flow	10	No	
10/22/2002	4.71	1.8	6.80	0.02	1.65E-01	89.47%	Base flow	10	Yes	
10/13/1992	20	22	7.10	0.02	2.11E+00	88.82%	Base flow	10	No	
9/24/2002	8.2	5.7	7.10	0.02	5.46E-01	88.82%	Base flow	10	Yes	
8/30/1993	81	37	7.90	0.02	3.94E+00	87.52%	Base flow	10	No	
9/25/1995	14	10.5	8.54	0.02	1.21E+00	86.63%	Base flow	10	No	
6/30/1998	8.4	11.5	9.81	0.02	1.52E+00	84.94%	Base flow	10	Yes	
10/5/2004	13.9	9.8	10.00	0.03	1.32E+00	84.53%	Base flow	10	No	
11/22/1999	7.3	7	12.00	0.03	1.13E+00	82.55%	Base flow	10	Yes	
10/10/2000	4.1	4.5	13.00	0.03	7.89E-01	81.54%	Base flow	10	Yes	
10/24/1995	12	11.5	13.74	0.03	2.13E+00	81.13%	Base flow	10	No	
9/12/2000	33	40	14.00	0.04	7.55E+00	80.66%	Base flow	10	No	
8/9/1994	16	28.5	15.00	0.04	5.76E+00	79.81%	Base flow	10	No	
10/7/2003	9.78	5.5	15.00	0.04	1.11E+00	79.81%	Base flow	10	Yes	
9/13/1999	21	15	17.00	0.04	3.44E+00	78.42%	Base flow	10	No	

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
8/28/2001	15	6.3	17.00	0.04	1.44E+00	78.42%	Base flow	10	No	
12/9/2002	12.8	2.3	17.00	0.04	5.27E-01	78.42%	Base flow	10	No	
7/2/1996	17	18	22.57	0.06	5.48E+00	75.69%	Base flow	10	No	
9/19/1994	7.8	13.5	26.00	0.07	4.73E+00	74.25%	Base flow	10	Yes	
7/8/2003	35.2	10.7	26.00	0.07	3.75E+00	74.25%	Base flow	10	No	
10/10/1994	14	12.5	29.44	0.07	4.96E+00	73.13%	Base flow	10	No	
11/14/1995	9.5	3.5	32.39	0.08	1.53E+00	72.23%	Base flow	10	Yes	
7/12/1994	18	17	33.00	0.08	7.56E+00	72.08%	Base flow	10	No	
7/24/2001	20	21	34.00	0.09	9.63E+00	71.79%	Base flow	10	No	
7/21/1992	34	30	36.00	0.09	1.46E+01	71.19%	Base flow	10	No	
6/7/1994	28	26.5	39.00	0.10	1.39E+01	70.30%	Base flow	10	No	
6/2/1998	18	19	43.19	0.11	1.11E+01	69.02%	Base flow	10	No	
9/15/1992	31	30	45.00	0.11	1.82E+01	68.62%	Base flow	10	No	
7/18/2000	6.5	9	45.00	0.11	5.46E+00	68.62%	Base flow	10	Yes	
11/4/1997	12	9.5	47.11	0.12	6.03E+00	68.06%	Base flow	10	No	
6/25/1991	14	11	48.00	0.12	7.12E+00	67.94%	Base flow	10	No	
2/11/2003	14.7	14.5	48.00	0.12	9.38E+00	67.94%	Base flow	10	No	
2/11/2003	8.66	2.2	48.00	0.12	1.42E+00	67.94%	Base flow	10	Yes	
8/18/1992	24	27	53.00	0.13	1.93E+01	66.81%	Base flow	10	No	
9/24/1991	230	78	57.00	0.14	5.99E+01	66.13%	Base flow	10	No	
3/19/1996	15	11	59.87	0.15	8.88E+00	65.62%	Base flow	10	No	
9/25/2001	22	8.8	62.00	0.16	7.36E+00	65.13%	Base flow	10	No	
10/23/1990	7	11	64.00	0.16	9.49E+00	64.83%	Base flow	10	Yes	
11/19/1990	6.4	9	65.00	0.16	7.89E+00	64.67%	Base flow	10	Yes	
8/1/1995	26	38	68.70	0.17	3.52E+01	64.15%	Base flow	10	No	
2/27/1996	11	3	73.61	0.18	2.98E+00	63.25%	Base flow	10	No	
7/6/1993	11	15	83.00	0.21	1.68E+01	61.74%	Base flow	10	No	
2/7/2000	4.1	3	83.00	0.21	3.36E+00	61.74%	Base flow	10	Yes	
9/2/2003	49.8	37.2	93.00	0.23	4.66E+01	60.09%	Base flow	10	No	
5/29/2001	16	17.5	94.00	0.24	2.22E+01	59.95%	Storm-flow	17		Yes
11/9/1993	4	2	96.00	0.24	2.59E+00	59.72%	Storm-flow	17		Yes
7/8/1997	76	36.5	98.15	0.25	4.83E+01	59.41%	Storm-flow	17		No

Table B.1. TSS and Turbidity data
WHI0051

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
8/31/2004	15.8	13	103.00	0.26	1.81E+01	58.57%	Storm-flow	17		Yes
5/13/1997	9.8	12	107.96	0.27	1.75E+01	58.01%	Storm-flow	17		Yes
8/20/1996	18	12	109.93	0.27	1.78E+01	57.62%	Storm-flow	17		No
1/11/1994	4.6	2	110.00	0.28	2.97E+00	57.54%	Storm-flow	17		Yes
7/23/2002	9.7	12.8	116.00	0.29	2.00E+01	56.87%	Storm-flow	17		Yes
8/20/2002	12	14.3	133.00	0.33	2.56E+01	54.77%	Storm-flow	17		Yes
10/5/1993	60	41	135.00	0.34	7.46E+01	54.47%	Storm-flow	17		No
1/14/2003	4.04	<1	135.00	0.34	1.82E+00	54.47%	Storm-flow	17		Yes
1/22/2002	3.5	1.3	141.00	0.35	2.47E+00	53.84%	Storm-flow	17		Yes
6/26/2001	12	11.5	146.00	0.37	2.26E+01	53.27%	Storm-flow	17		Yes
6/7/1999	8.3	7	147.00	0.37	1.39E+01	53.16%	Storm-flow	17		Yes
7/12/1999	8.5	5.5	151.00	0.38	1.12E+01	52.69%	Storm-flow	17		Yes
11/19/2001	43	40	156.00	0.39	8.41E+01	52.21%	Storm-flow	17		No
1/27/1997	8.2	1.5	167.84	0.42	3.39E+00	51.21%	Storm-flow	17		Yes
6/27/1995	25	18	174.71	0.44	4.24E+01	50.60%	Storm-flow	17		No
6/15/2004	18.2	14	177.00	0.44	3.34E+01	50.38%	Storm-flow	17		No
10/22/1996	120	121	182.56	0.46	2.98E+02	49.90%	Storm-flow	17		No
8/10/2004	7.21	11.2	184.00	0.46	2.78E+01	49.79%	Storm-flow	17		Yes
11/3/1992	270	198	187.00	0.47	4.99E+02	49.52%	Storm-flow	17		No
4/8/2003	19.6	15.2	188.00	0.47	3.85E+01	49.41%	Storm-flow	17		No
2/26/1991	7	8	194.00	0.49	2.09E+01	48.82%	Storm-flow	17		Yes
5/16/2000	9	12.5	194.00	0.49	3.27E+01	48.82%	Storm-flow	17		Yes
12/8/1992	8	4	199.00	0.50	1.07E+01	48.24%	Storm-flow	17		Yes
10/13/1998	13	9.5	202.00	0.51	2.59E+01	47.91%	Storm-flow	17		Yes
6/10/2003	18.2	11.2	204.00	0.51	3.08E+01	47.69%	Storm-flow	17		No
3/27/2001	5.9	4.5	214.00	0.54	1.30E+01	46.69%	Storm-flow	17		Yes
1/10/1995	5.4		215.93	0.54		46.49%	Storm-flow	17		Yes
6/22/1992	74	35	216.00	0.54	1.02E+02	46.43%	Storm-flow	17		No
12/6/1994	12	8	220.84	0.55	2.38E+01	45.93%	Storm-flow	17		Yes
5/5/1998	26	16	230.65	0.58	4.98E+01	44.66%	Storm-flow	17		No
11/3/1998	18	15	248.00	0.62	5.02E+01	42.91%	Storm-flow	17		No
4/24/2001	10	14	251.00	0.63	4.74E+01	42.61%	Storm-flow	17		Yes

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
6/17/1997	200		251.26	0.63		42.57%	Storm-flow	17		No
1/28/1992	4.8	4	260.00	0.65	1.40E+01	41.83%	Storm-flow	17		Yes
1/9/1996	10	1.5	261.08	0.65	5.28E+00	41.74%	Storm-flow	17		Yes
7/20/2004	15.5	6	266.00	0.67	2.15E+01	41.30%	Storm-flow	17		Yes
12/5/2000	2.8	<1	267.00	0.67	3.60E+00	41.23%	Storm-flow	17		Yes
3/17/1992	7.8	12	285.00	0.71	4.61E+01	39.79%	Storm-flow	17		Yes
12/7/1999	43	14	290.00	0.73	5.47E+01	39.35%	Storm-flow	17		No
4/20/2004	13.7	8.8	294.00	0.74	3.49E+01	39.02%	Storm-flow	17		Yes
2/1/2005	5.35	1.8	297.00	0.74	7.21E+00	38.79%	Storm-flow	17		Yes
5/26/1992	32	31	298.00	0.75	1.25E+02	38.71%	Storm-flow	17		No
6/4/1996	56	36	308.19	0.77	1.50E+02	37.92%	Storm-flow	17		No
1/12/1999	4.9	1.5	312.00	0.78	6.31E+00	37.60%	Storm-flow	17		Yes
4/18/2000	15	16	314.00	0.79	6.77E+01	37.44%	Storm-flow	17		Yes
12/2/2003	15.2	3.8	316.00	0.79	1.62E+01	37.33%	Storm-flow	17		Yes
6/15/1993	12	30	322.00	0.81	1.30E+02	36.87%	Storm-flow	17		Yes
6/13/2000	18	18	323.00	0.81	7.84E+01	36.79%	Storm-flow	17		No
5/10/1994	14	8	353.00	0.88	3.81E+01	34.69%	Storm-flow	17		Yes
5/18/2004	16.7	9	353.00	0.88	4.28E+01	34.69%	Storm-flow	17		Yes
5/14/2002	38	27.5	365.00	0.91	1.35E+02	33.89%	Storm-flow	17		No
1/23/2001	3.2	1.5	370.00	0.93	7.48E+00	33.55%	Storm-flow	17		Yes
3/16/2004	23.2	18.2	370.00	0.93	9.08E+01	33.55%	Storm-flow	17		No
2/14/1994	2.9	2	380.00	0.95	1.02E+01	32.94%	Storm-flow	17		Yes
1/4/2000	74	49.5	400.00	1.00	2.67E+02	31.80%	Storm-flow	17		No
1/29/1991	6.6	6	401.00	1.00	3.24E+01	31.75%	Storm-flow	17		Yes
2/27/1995	24	18	446.58	1.12	1.08E+02	29.27%	Storm-flow	17		No
4/19/1999		3	451.00	1.13	1.82E+01	29.03%	Storm-flow	17		
3/7/2000		12	451.00	1.13	7.30E+01	29.03%	Storm-flow	17		
10/16/2001	17	9.5	457.00	1.14	5.85E+01	28.81%	Storm-flow	17		Yes
3/4/2003	13	3	459.00	1.15	1.86E+01	28.66%	Storm-flow	17		Yes
5/13/2003	29.3	21.8	461.00	1.15	1.35E+02	28.53%	Storm-flow	17		No
12/1/1998	39	28	473.00	1.18	1.79E+02	27.95%	Storm-flow	17		No
5/3/1999	11	7	474.00	1.19	4.47E+01	27.91%	Storm-flow	17		Yes

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
1/6/2004	30	8.8	511.00	1.28	6.06E+01	26.29%	Storm-flow	17		No
3/9/1993	13	12	520.00	1.30	8.41E+01	25.80%	Storm-flow	17		Yes
12/2/1997	1.5	10	527.06	1.32	7.11E+01	25.52%	Storm-flow	17		Yes
3/1/2005	12.5	4	536.00	1.34	2.89E+01	25.19%	Storm-flow	17		Yes
12/30/1991	7.9	6	549.00	1.37	4.44E+01	24.76%	Storm-flow	17		Yes
6/11/2002	52	18	592.00	1.48	1.44E+02	23.13%	Storm-flow	17		No
2/10/2004	20.3	12	604.00	1.51	9.77E+01	22.69%	Storm-flow	17		No
2/18/1992	14	14	625.00	1.56	1.18E+02	21.97%	Storm-flow	17		Yes
5/14/1996	19	7.5	661.53	1.65	6.69E+01	20.77%	Storm-flow	17		No
5/7/1991	34	27	665.00	1.66	2.42E+02	20.64%	Storm-flow	17		No
3/12/2002	8	3	672.00	1.68	2.72E+01	20.45%	Storm-flow	17		Yes
2/11/1997	13	2	702.75	1.76	1.89E+01	19.63%	Storm-flow	17		Yes
2/3/1998	13	3	747.90	1.87	3.03E+01	18.41%	Storm-flow	17		Yes
1/11/2005	16.6	7	759.00	1.90	7.16E+01	18.13%	Storm-flow	17		Yes
11/12/1996	20	8.5	802.87	2.01	9.20E+01	17.12%	Storm-flow	17		No
3/3/1998	12	2	819.55	2.05	2.21E+01	16.73%	Storm-flow	17		Yes
1/22/1996	19	7.5	919.66	2.30	9.30E+01	14.80%	Storm-flow	17		No
4/23/1991	24	20	925.00	2.31	2.49E+02	14.69%	Storm-flow	17		No
3/26/1991	18	17	973.00	2.43	2.23E+02	13.85%	Storm-flow	17		No
4/6/1994	37	20	1000.00	2.50	2.70E+02	13.38%	Storm-flow	17		No
3/8/1999	30	44.2	1000.00	2.50	5.96E+02	13.38%	Storm-flow	17		No
11/8/1994	29	15	1040.39	2.60	2.10E+02	12.75%	Storm-flow	17		No
3/15/1994	18	7	1200.00	3.00	1.13E+02	10.79%	Storm-flow	17		No
1/12/1993	26	19	1240.00	3.10	3.18E+02	10.40%	Storm-flow	17		No
3/4/1997	25	6.5	1374.10	3.44	1.20E+02	9.11%	Storm-flow	17		No
12/3/1996	23	13	1393.73	3.48	2.44E+02	8.96%	Storm-flow	17		No
11/7/2000	33	28.5	1450.00	3.63	5.57E+02	8.52%	Storm-flow	17		No
2/20/2002	97	39.5	1500.00	3.75	7.99E+02	8.13%	Storm-flow	17		No
2/27/2001	17	13	1520.00	3.80	2.66E+02	7.95%	Storm-flow	17		Yes
11/18/2003	95.3	60.5	1520.00	3.80	1.24E+03	7.95%	Storm-flow	17		No
12/14/1993	5.8	22	1590.00	3.98	4.72E+02	7.47%	Storm-flow	17		Yes
2/22/1993	39	12	1610.00	4.03	2.60E+02	7.35%	Storm-flow	17		No

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
9/15/1998	18	13.5	1737.25	4.34	3.16E+02	6.73%	Storm-flow	17		No
4/20/1993	48	24	1770.00	4.43	5.73E+02	6.54%	Storm-flow	17		No
4/8/1997	53	99.5	1943.37	4.86	2.61E+03	5.77%	Storm-flow	17		No
4/11/1995	100	140	2139.67	5.35	4.04E+03	5.13%	Storm-flow	17		No
4/21/1992	46	45	2280.00	5.70	1.38E+03	4.66%	Storm-flow	17		No
2/8/1999	36	28	2370.00	5.93	8.95E+02	4.47%	Storm-flow	17		No
12/18/1990	48	43	2430.00	6.08	1.41E+03	4.25%	Storm-flow	17		No
11/2/2004	78.2	31	2500.00	6.25	1.04E+03	4.11%	Storm-flow	17		No
11/19/1991	26	20	2830.00	7.08	7.63E+02	3.44%	Storm-flow	17		No
12/7/2004	165	80.8	3320.00	8.30	3.62E+03	2.71%	Storm-flow	17		No
12/18/2001	31	23.2	3390.00	8.48	1.06E+03	2.65%	Storm-flow	17		No
5/9/1995	39	34	4828.97	12.07	2.21E+03	1.54%	Storm-flow	17		No
3/31/1998	100	81	5888.99	14.72	6.43E+03	1.12%	Storm-flow	17		No
1/6/1998	250		7910.87	19.78		0.66%	Storm-flow	17		No
4/23/1996	120	105	9098.48	22.75	1.29E+04	0.50%	Storm-flow	17		No
							Number exceeding applicable water quality standard for turbidity =		38	59
							Total number of observations in each category =		59	112
							Percent exceeding applicable water quality standard for turbidity =		64%	53%

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI51-DEC2005.XLS

Table B.1. TSS and Turbidity data
WHI0051

Table B.2. Observed Turbidity and TSS Data for White River at WHI0052.

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
7/23/1991	14	14	0.41	0.00	7.74E-02	99.72%	Base flow	10	No	
8/4/1998	11	12	0.80	0.00	1.30E-01	99.51%	Base flow	10	No	
9/25/1990	38	30	1.00	0.00	4.04E-01	99.33%	Base flow	10	No	
8/29/1995	11	13.5	1.18	0.00	2.14E-01	99.22%	Base flow	10	No	
10/7/1997	14	15	2.75	0.01	5.56E-01	96.58%	Base flow	10	No	
10/12/1999	8.5	11	3.10	0.01	4.60E-01	96.03%	Base flow	10	Yes	
8/27/1991	7.2	16.5	4.20	0.01	9.34E-01	94.13%	Base flow	10	Yes	
8/15/2000	7.1	9.5	4.20	0.01	5.38E-01	94.15%	Base flow	10	Yes	
8/3/1993	12	14	4.30	0.01	8.12E-01	94.04%	Base flow	10	No	
9/9/1997	14	11.5	4.32	0.01	6.70E-01	93.93%	Base flow	10	No	
8/5/2003	18.9	13.8	4.40	0.01	8.19E-01	93.79%	Base flow	10	No	
10/22/1991	7.8	12.5	4.60	0.01	7.75E-01	93.34%	Base flow	10	Yes	
9/6/1994	22	29.5	4.60	0.01	1.83E+00	93.38%	Base flow	10	No	
11/19/2002	13.6	10.7	4.90	0.01	7.07E-01	92.69%	Base flow	10	No	
9/17/2002	8.1	8.3	6.60	0.02	7.39E-01	89.67%	Base flow	10	Yes	
8/5/1997	14	14	6.77	0.02	1.28E+00	89.54%	Base flow	10	No	
10/22/2002	17.1	10.8	6.80	0.02	9.90E-01	89.43%	Base flow	10	No	
10/13/1992	11	12	7.10	0.02	1.15E+00	88.81%	Base flow	10	No	
8/9/1999	5.4	4.5	7.10	0.02	4.31E-01	88.84%	Base flow	10	Yes	
8/31/1993	24	24	7.90	0.02	2.56E+00	87.50%	Base flow	10	No	
9/25/1995	21	21.5	8.54	0.02	2.48E+00	86.63%	Base flow	10	No	
6/30/1998	7.8	14	9.81	0.02	1.85E+00	84.96%	Base flow	10	Yes	
11/22/1999	8.5	8	12.00	0.03	1.29E+00	81.97%	Base flow	10	Yes	
10/10/2000	6.2	10	13.00	0.03	1.75E+00	81.31%	Base flow	10	Yes	
9/12/2000	9.1		14.00	0.04		80.62%	Base flow	10	Yes	
9/9/2003	14.4	10	14.00	0.04	1.89E+00	80.63%	Base flow	10	No	
8/9/1994	18	21	15.00	0.04	4.25E+00	79.83%	Base flow	10	No	
12/10/2002	11.5	4.8	16.00	0.04	1.04E+00	78.76%	Base flow	10	No	
9/13/1999	7.3	7.5	17.00	0.04	1.72E+00	78.38%	Base flow	10	Yes	
8/28/2001	11	13.7	17.00	0.04	3.14E+00	78.42%	Base flow	10	No	

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
10/23/1995	15	18	17.67	0.04	4.29E+00	78.13%	Base flow	10	No	
10/11/1994	22	18	19.63	0.05	4.76E+00	77.11%	Base flow	10	No	
7/8/2003	24.6	8.2	26.00	0.07	2.87E+00	74.33%	Base flow	10	No	
12/5/1995	11	11.5	27.48	0.07	4.26E+00	73.77%	Base flow	10	No	
10/19/2004	19.8	15.7	28.00	0.07	5.93E+00	73.56%	Base flow	10	No	
11/14/1995	11	13	32.39	0.08	5.68E+00	72.22%	Base flow	10	No	
7/12/1994	6.1	8	33.00	0.08	3.56E+00	72.15%	Base flow	10	Yes	
7/24/2001	18	16	34.00	0.09	7.33E+00	71.83%	Base flow	10	No	
7/21/1992	18	17	36.00	0.09	8.25E+00	71.22%	Base flow	10	No	
6/7/1994	15	14	39.00	0.10	7.36E+00	70.40%	Base flow	10	No	
6/2/1998	10	10.5	43.19	0.11	6.11E+00	69.02%	Base flow	10	Yes	
9/15/1992	24	29	45.00	0.11	1.76E+01	68.59%	Base flow	10	No	
7/18/2000	6.3	9.5	45.00	0.11	5.76E+00	68.62%	Base flow	10	Yes	
11/4/1997	7.1	11	47.11	0.12	6.99E+00	68.05%	Base flow	10	Yes	
6/25/1991	9	10	48.00	0.12	6.47E+00	67.98%	Base flow	10	Yes	
8/18/1992	17	18	53.00	0.13	1.29E+01	66.80%	Base flow	10	No	
9/24/1991	43	36	57.00	0.14	2.77E+01	66.06%	Base flow	10	No	
3/19/1996	6.2	7.5	59.87	0.15	6.05E+00	65.62%	Base flow	10	Yes	
6/24/1997	12	14	60.85	0.15	1.15E+01	65.42%	Base flow	10	No	
10/23/1990	8.2	14	64.00	0.16	1.21E+01	64.78%	Base flow	10	Yes	
11/19/1990	5.8	10	65.00	0.16	8.76E+00	64.61%	Base flow	10	Yes	
9/11/2001	33	25	66.00	0.17	2.22E+01	64.49%	Base flow	10	No	
8/1/1995	14	10.5	68.70	0.17	9.73E+00	64.14%	Base flow	10	No	
2/26/1996	7.6	6	74.59	0.19	6.03E+00	63.11%	Base flow	10	Yes	
9/28/2004	21.2	18.2	77.00	0.19	1.89E+01	62.59%	Base flow	10	No	
2/8/2000	4.6	5.5	81.00	0.20	6.01E+00	62.03%	Base flow	10	Yes	
7/6/1993	9.8	16	83.00	0.21	1.79E+01	61.71%	Base flow	10	Yes	
5/29/2001	12	16.5	94.00	0.24	2.09E+01	59.98%	Storm-flow	17		Yes
11/9/1993	5.5	1	96.00	0.24	1.29E+00	59.69%	Storm-flow	17		Yes
7/8/1997	180	71.5	98.15	0.25	9.46E+01	59.41%	Storm-flow	17		No
6/24/2003	0.74	<1	106.00	0.27	1.43E+00	58.20%	Storm-flow	17		Yes
1/11/1994	6.4	3	110.00	0.28	4.45E+00	57.61%	Storm-flow	17		Yes

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
7/23/2002	8.5	6	116.00	0.29	9.38E+00	56.86%	Storm-flow	17		Yes
8/24/2004	17.9	8.8	117.00	0.29	1.39E+01	56.69%	Storm-flow	17		No
8/20/2002	16	8.2	133.00	0.33	1.47E+01	54.75%	Storm-flow	17		Yes
10/5/1993	52	30	135.00	0.34	5.46E+01	54.45%	Storm-flow	17		No
1/14/2003	15.6	5	135.00	0.34	9.10E+00	54.52%	Storm-flow	17		Yes
1/22/2002	4.7	2.5	141.00	0.35	4.75E+00	53.90%	Storm-flow	17		Yes
6/26/2001	8.5	12.3	146.00	0.37	2.42E+01	53.25%	Storm-flow	17		Yes
7/12/1999	7.9	8	151.00	0.38	1.63E+01	52.66%	Storm-flow	17		Yes
11/19/2001	6.2	5.5	156.00	0.39	1.16E+01	52.16%	Storm-flow	17		Yes
1/27/1997	22	6	167.84	0.42	1.36E+01	51.20%	Storm-flow	17		No
2/9/1993	11	7	186.00	0.47	1.76E+01	49.63%	Storm-flow	17		Yes
11/3/1992	29	27	187.00	0.47	6.81E+01	49.50%	Storm-flow	17		No
4/8/2003	17.2	12.8	188.00	0.47	3.24E+01	49.41%	Storm-flow	17		No
5/6/1997	4.8	5.5	190.41	0.48	1.41E+01	49.17%	Storm-flow	17		Yes
2/26/1991	7.2	9	194.00	0.49	2.35E+01	48.86%	Storm-flow	17		Yes
5/16/2000	10	9	194.00	0.49	2.35E+01	48.82%	Storm-flow	17		Yes
12/8/1992	13	6	199.00	0.50	1.61E+01	48.20%	Storm-flow	17		Yes
4/4/2000	11	16.5	200.00	0.50	4.45E+01	48.13%	Storm-flow	17		Yes
10/13/1998	13	11	202.00	0.51	3.00E+01	47.88%	Storm-flow	17		Yes
3/27/2001	7.7	5.5	214.00	0.54	1.59E+01	46.67%	Storm-flow	17		Yes
1/10/1995	5.8		215.93	0.54		46.50%	Storm-flow	17		Yes
12/6/1994	12	4.5	220.84	0.55	1.34E+01	45.91%	Storm-flow	17		Yes
5/25/2004	8.99	5.5	224.00	0.56	1.66E+01	45.45%	Storm-flow	17		Yes
6/23/1992	35	28	228.00	0.57	8.61E+01	44.96%	Storm-flow	17		No
5/5/1998	10	8	230.65	0.58	2.49E+01	44.67%	Storm-flow	17		Yes
2/24/2004	18.7	7.8	239.00	0.60	2.51E+01	43.74%	Storm-flow	17		No
3/15/2005	12.1	7.2	243.00	0.61	2.36E+01	43.36%	Storm-flow	17		Yes
11/3/1998	29	20	248.00	0.62	6.69E+01	42.89%	Storm-flow	17		No
4/24/2001	10	12	251.00	0.63	4.06E+01	42.61%	Storm-flow	17		Yes
1/28/1992	6.6	5	260.00	0.65	1.75E+01	41.87%	Storm-flow	17		Yes
12/5/2000	6.4	3.5	267.00	0.67	1.26E+01	41.19%	Storm-flow	17		Yes
3/17/1992	9.2	12	285.00	0.71	4.61E+01	39.79%	Storm-flow	17		Yes

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
12/7/1999	29	17.5	290.00	0.73	6.84E+01	39.30%	Storm-flow	17		No
6/15/1993	13	21	322.00	0.81	9.12E+01	36.85%	Storm-flow	17		Yes
6/17/2003	65.1	23.2	322.00	0.81	1.01E+02	36.84%	Storm-flow	17		No
6/13/2000	7	19.5	323.00	0.81	8.49E+01	36.79%	Storm-flow	17		Yes
5/10/1994	12	7	353.00	0.88	3.33E+01	34.68%	Storm-flow	17		Yes
2/15/1994	3.4	2.5	364.00	0.91	1.23E+01	33.98%	Storm-flow	17		Yes
5/14/2002	20	10.5	365.00	0.91	5.17E+01	33.88%	Storm-flow	17		No
1/23/2001	5.1	2.5	370.00	0.93	1.25E+01	33.57%	Storm-flow	17		Yes
6/3/1996	27	17.5	381.80	0.95	9.01E+01	32.81%	Storm-flow	17		No
1/4/2000	30	22.5	400.00	1.00	1.21E+02	31.83%	Storm-flow	17		No
1/29/1991	7.4	5	401.00	1.00	2.70E+01	31.76%	Storm-flow	17		Yes
7/27/2004	30.1	10	414.00	1.04	5.58E+01	31.01%	Storm-flow	17		No
2/27/1995	16	4.5	446.58	1.12	2.71E+01	29.27%	Storm-flow	17		Yes
3/7/2000		8.5	451.00	1.13	5.17E+01	29.04%	Storm-flow	17		
10/16/2001	27	17	457.00	1.14	1.05E+02	28.80%	Storm-flow	17		No
2/26/2002	13	5.5	457.00	1.14	3.39E+01	28.81%	Storm-flow	17		Yes
3/4/2003	20.9	5.2	459.00	1.15	3.22E+01	28.68%	Storm-flow	17		No
5/13/2003	21.7	17.5	461.00	1.15	1.09E+02	28.53%	Storm-flow	17		No
3/21/1995	12	7.5	468.17	1.17	4.73E+01	28.17%	Storm-flow	17		Yes
12/1/1998	36	31	473.00	1.18	1.98E+02	27.95%	Storm-flow	17		No
12/4/2001	1.8	9.5	475.00	1.19	6.08E+01	27.87%	Storm-flow	17		Yes
6/2/1992	21	16	477.00	1.19	1.03E+02	27.66%	Storm-flow	17		No
11/16/2004	21.5	6.5	498.00	1.25	4.36E+01	26.78%	Storm-flow	17		No
12/14/2004	16.5	5	502.00	1.26	3.38E+01	26.63%	Storm-flow	17		Yes
12/16/2003	17.2	5	507.00	1.27	3.42E+01	26.40%	Storm-flow	17		No
3/9/1993	12	8	520.00	1.30	5.61E+01	25.81%	Storm-flow	17		Yes
12/2/1997	9.5	9.5	527.06	1.32	6.75E+01	25.52%	Storm-flow	17		Yes
6/11/2002	23	11.5	592.00	1.48	9.18E+01	23.12%	Storm-flow	17		No
2/18/1992	20	12	625.00	1.56	1.01E+02	21.99%	Storm-flow	17		No
5/7/1991	30	18	665.00	1.66	1.61E+02	20.63%	Storm-flow	17		No
3/12/2002	22	8	672.00	1.68	7.25E+01	20.46%	Storm-flow	17		No
1/27/2004	23.6	4.8	672.00	1.68	4.35E+01	20.46%	Storm-flow	17		No

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
2/11/1997	19	3.5	702.75	1.76	3.32E+01	19.63%	Storm-flow	17		No
2/8/2005	18.2	6.2	731.00	1.83	6.11E+01	18.93%	Storm-flow	17		No
12/17/1991	19	6	738.00	1.85	5.97E+01	18.60%	Storm-flow	17		No
2/3/1998	17	4.5	747.90	1.87	4.54E+01	18.41%	Storm-flow	17		Yes
1/11/2005	24.6	9	759.00	1.90	9.21E+01	18.14%	Storm-flow	17		No
4/5/1994	23	8	779.00	1.95	8.40E+01	17.72%	Storm-flow	17		No
1/23/1996	21	8	817.59	2.04	8.82E+01	16.81%	Storm-flow	17		No
3/3/1998	16	3.5	819.55	2.05	3.87E+01	16.73%	Storm-flow	17		Yes
5/13/1996	39	15	834.27	2.09	1.69E+02	16.44%	Storm-flow	17		No
4/2/1991	20	14	851.00	2.13	1.61E+02	16.09%	Storm-flow	17		No
4/16/1996	28	12	857.83	2.14	1.39E+02	16.01%	Storm-flow	17		No
4/23/1991	8.6	12	925.00	2.31	1.50E+02	14.70%	Storm-flow	17		Yes
11/8/1994	39	18.5	1040.39	2.60	2.59E+02	12.75%	Storm-flow	17		No
6/6/1995	29	16	1158.17	2.90	2.50E+02	11.31%	Storm-flow	17		No
3/15/1994	17	6	1200.00	3.00	9.71E+01	10.84%	Storm-flow	17		Yes
1/12/1993	19	10	1240.00	3.10	1.67E+02	10.45%	Storm-flow	17		No
3/4/1997	31	10	1374.10	3.44	1.85E+02	9.12%	Storm-flow	17		No
12/3/1996	19	5.5	1393.73	3.48	1.03E+02	8.95%	Storm-flow	17		No
3/30/2004	65.1	21	1400.00	3.50	3.96E+02	8.92%	Storm-flow	17		No
11/7/2000	69	40.5	1450.00	3.63	7.92E+02	8.51%	Storm-flow	17		No
2/27/2001	22	13.5	1520.00	3.80	2.77E+02	7.97%	Storm-flow	17		No
11/18/2003	312	328	1520.00	3.80	6.72E+03	7.93%	Storm-flow	17		No
12/14/1993	29	16	1590.00	3.98	3.43E+02	7.45%	Storm-flow	17		No
9/15/1998	14	23.5	1737.25	4.34	5.50E+02	6.73%	Storm-flow	17		Yes
4/20/1993	105	98	1770.00	4.43	2.34E+03	6.54%	Storm-flow	17		No
4/8/1997	26	7	1943.37	4.86	1.83E+02	5.77%	Storm-flow	17		No
4/11/1995	88	113	2139.67	5.35	3.26E+03	5.13%	Storm-flow	17		No
4/21/1992	47	35	2280.00	5.70	1.08E+03	4.66%	Storm-flow	17		No
6/22/2004	84.1	42.8	2420.00	6.05	1.40E+03	4.28%	Storm-flow	17		No
12/18/1990	53	50	2430.00	6.08	1.64E+03	4.24%	Storm-flow	17		No
11/19/1991	32	14	2830.00	7.08	5.34E+02	3.44%	Storm-flow	17		No
5/11/1993	43	30	3020.00	7.55	1.22E+03	3.06%	Storm-flow	17		No

Date	Observed turbidity (NTU)	Observed TSS (mg/L)	Flow at USGS gage(cfs)	Flow per unit area (cfs/mi2)	Load per unit area (lbs/day/mi2)	Percent of days flow exceeded	Applicable category	Applicable water quality standard (NTU)	Turbidity meeting base flow standard?	Turbidity meeting storm-flow standard?
4/27/2004	53.6	18.7	4130.00	10.33	1.04E+03	1.98%	Storm-flow	17		No
4/9/2002	85	73	4610.00	11.53	4.54E+03	1.68%	Storm-flow	17		No
5/9/1995	62	48	4828.97	12.07	3.13E+03	1.54%	Storm-flow	17		No
3/31/1998	340	458	5888.99	14.72	3.64E+04	1.11%	Storm-flow	17		No
1/6/1998	68		7910.87	19.78		0.66%	Storm-flow	17		No
								Number exceeding applicable water quality standard for turbidity =	35	59
								Total number of observations in each category =	57	105
								Percent exceeding applicable water quality standard for turbidity =	61%	56%

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI52-DEC2005.XLS

Table B.2. TSS and Turbidity data
WHI0052

Figure B.1. Long term TSS plot for West Fork White River east of Fayetteville (WHI0051)

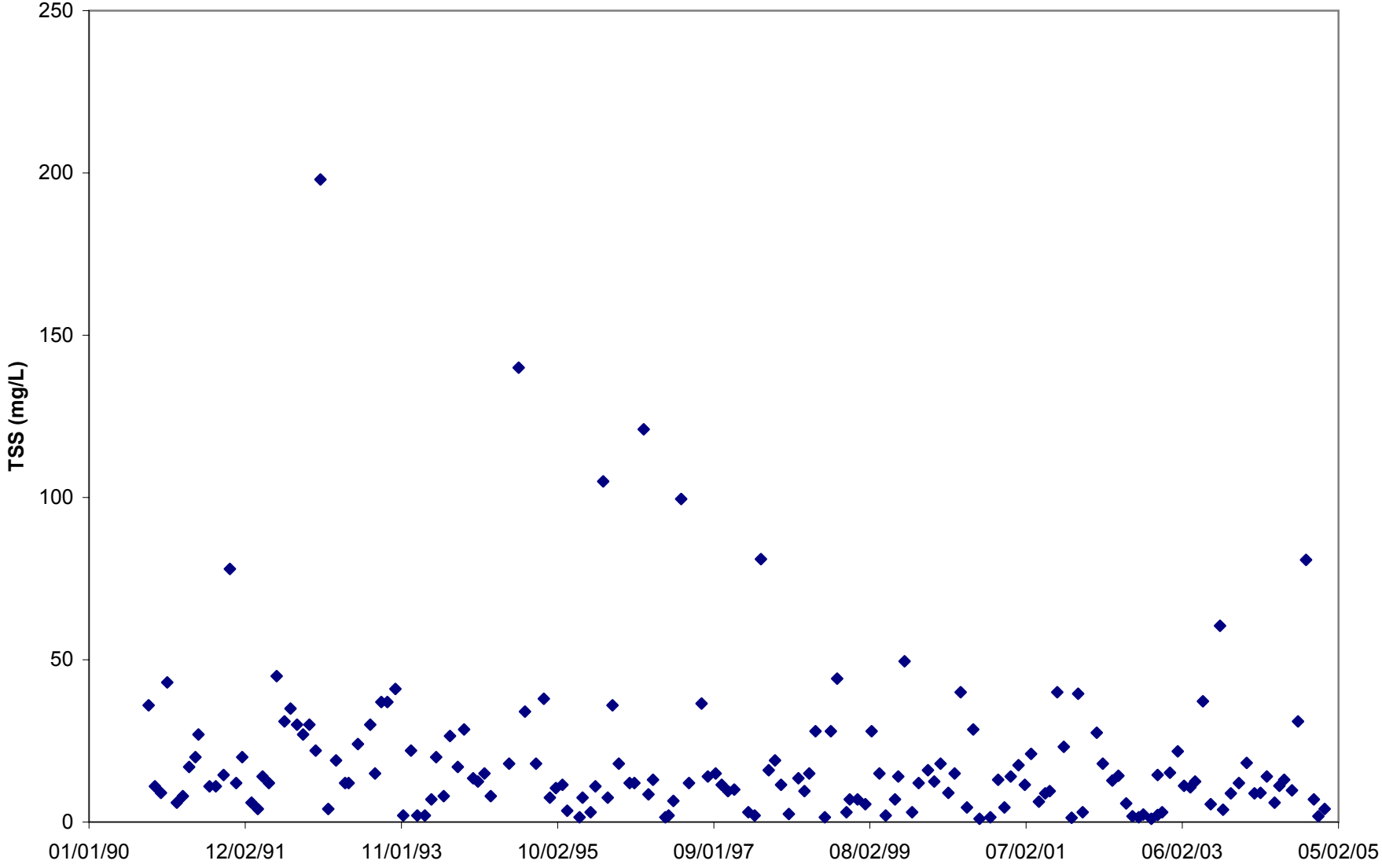


Figure B.2. Long term turbidity plot for West Fork White RIver east of Fayetteville (WHI0051)

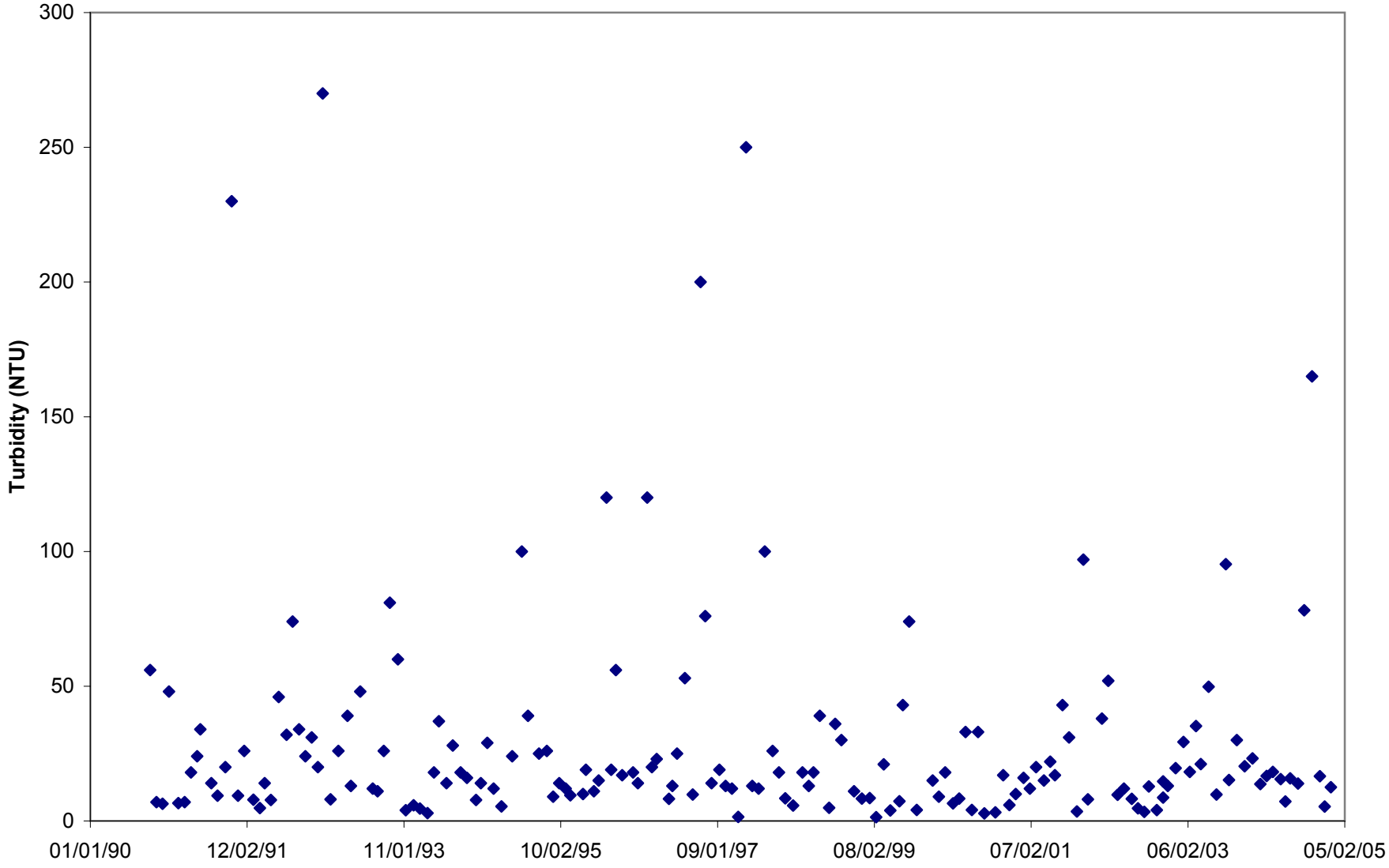


Figure B.3. Long Term plot of TSS for White River Near Goshen, AR (WHI0052)

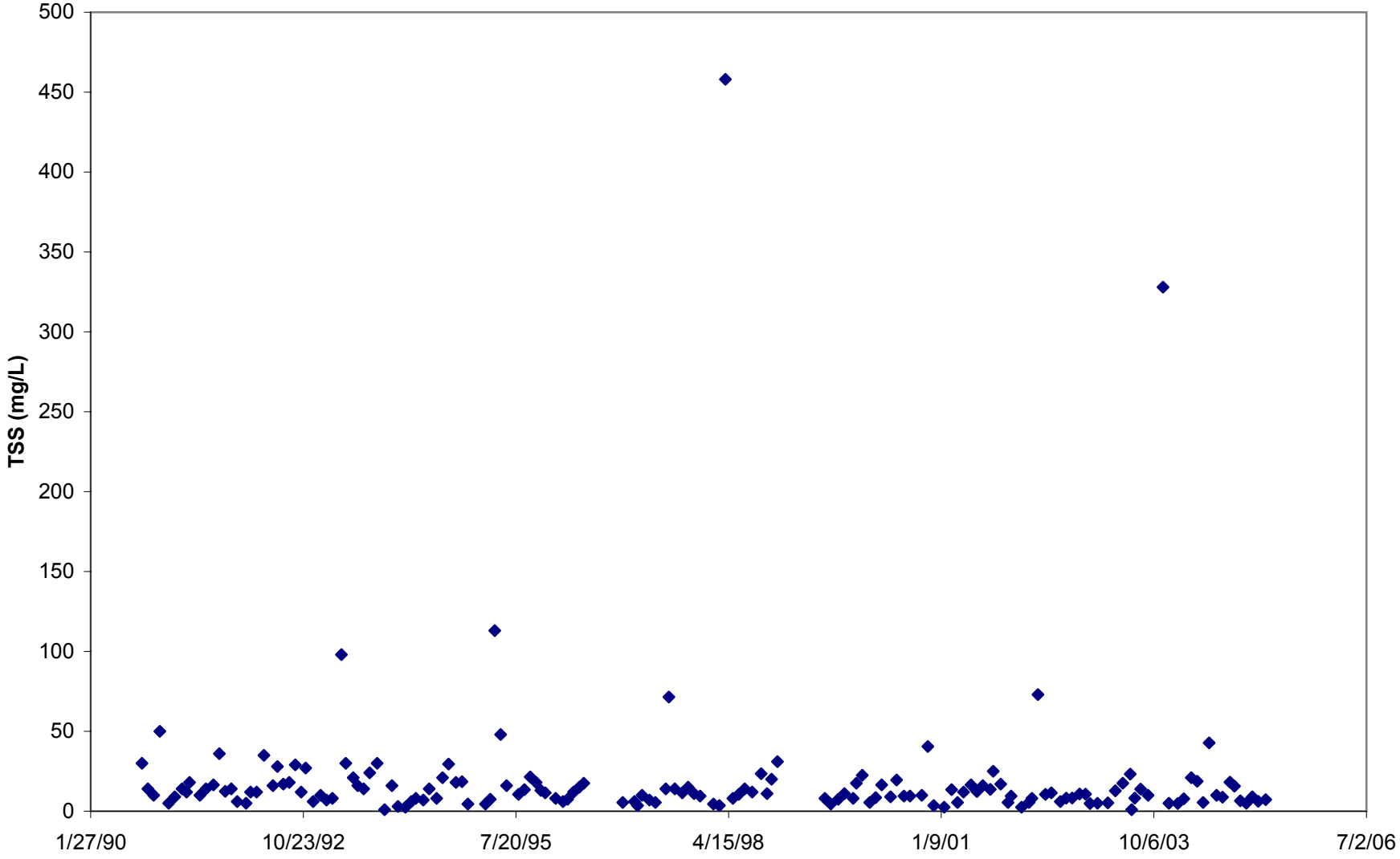
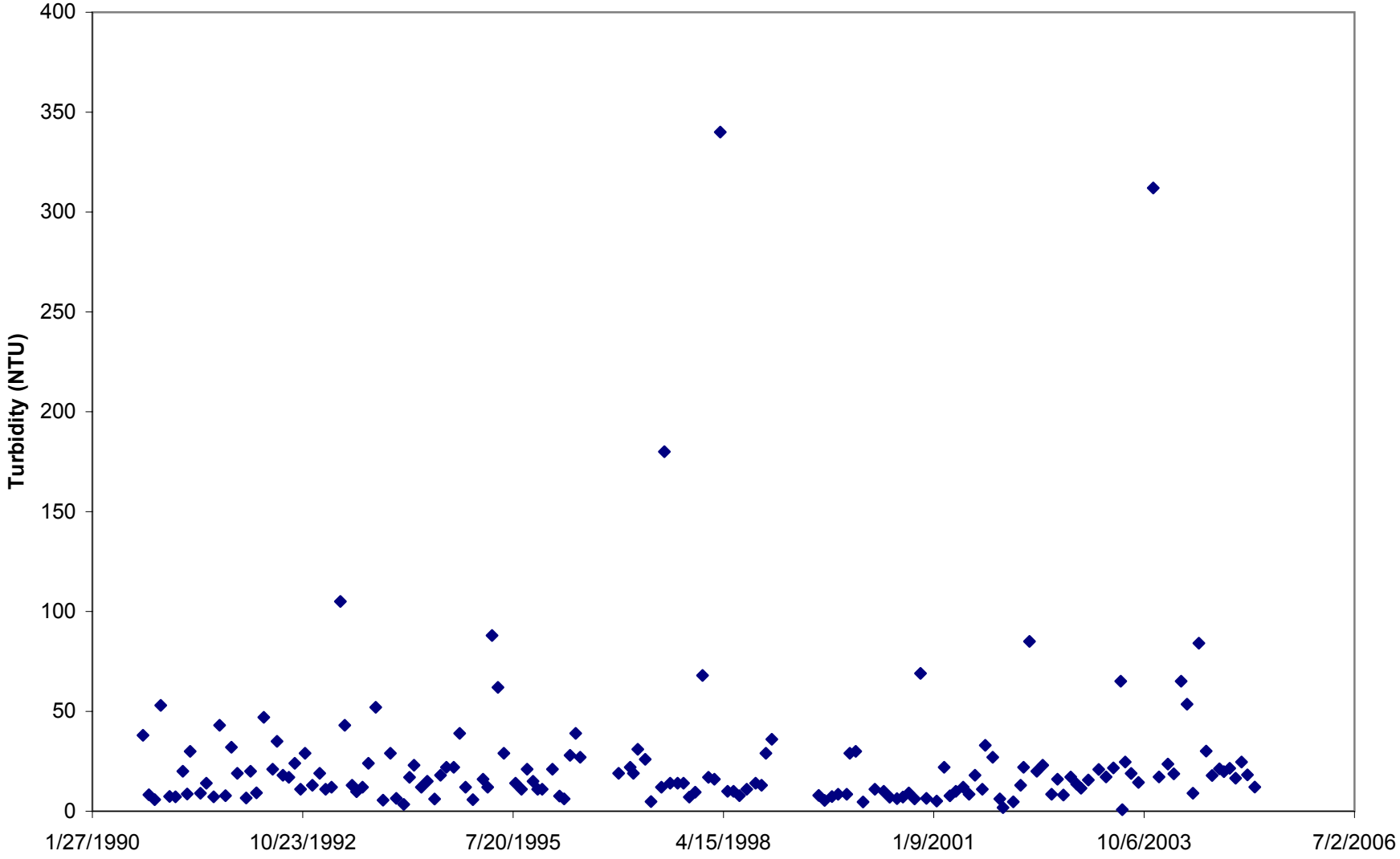


Figure B.4. Long Term Plot of Turbidity for WHite River Near Goshen, AR (WHI0052)



APPENDIX C

Seasonal Plots of Turbidity and TSS

Figure C.1. Seasonal plot of TSS for West Fork White River east of Fayetteville (WHI0051)

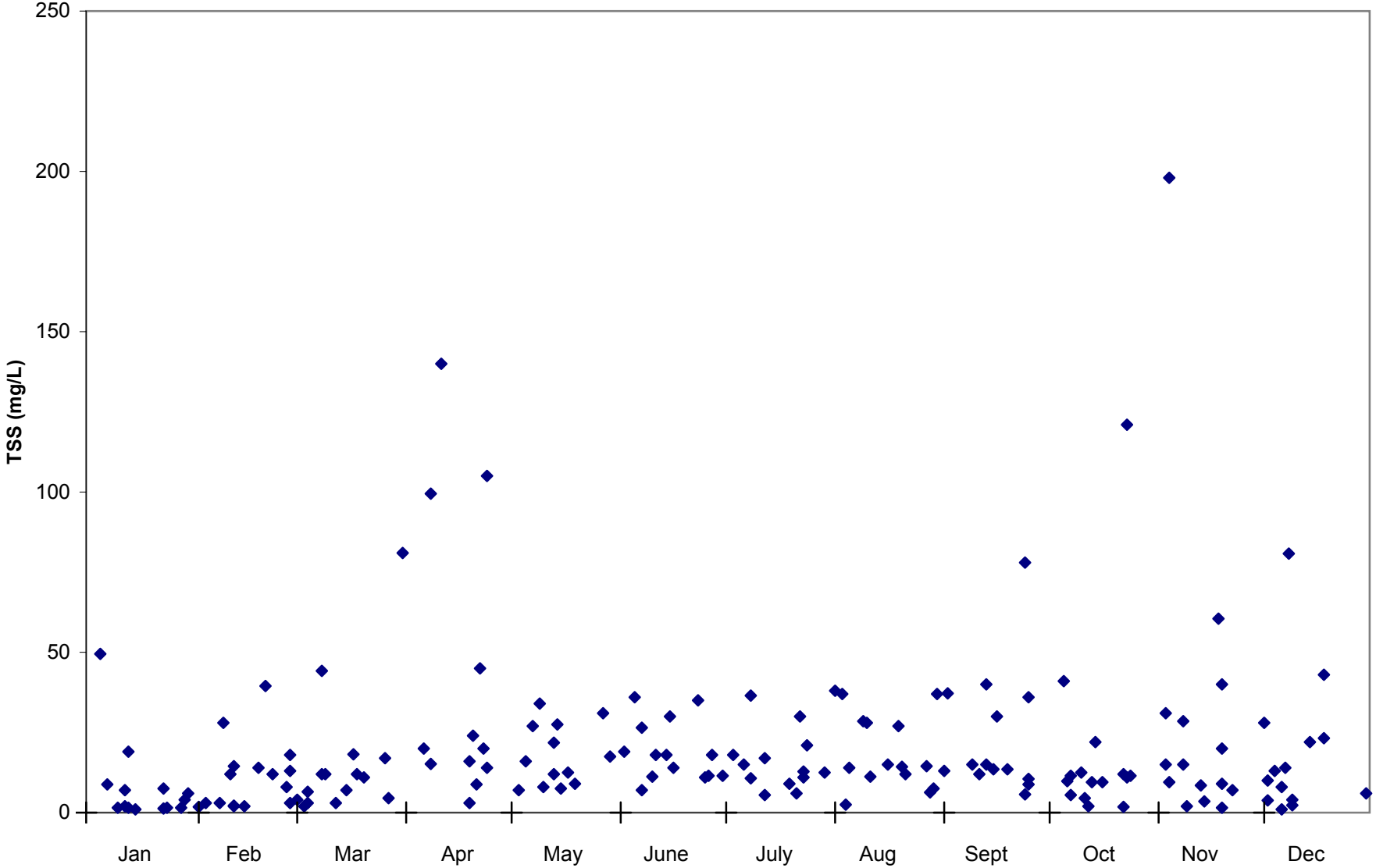


Figure C.2. Seasonal plot of turbidity for West Fork White River east of Fayetteville (WHI0051)

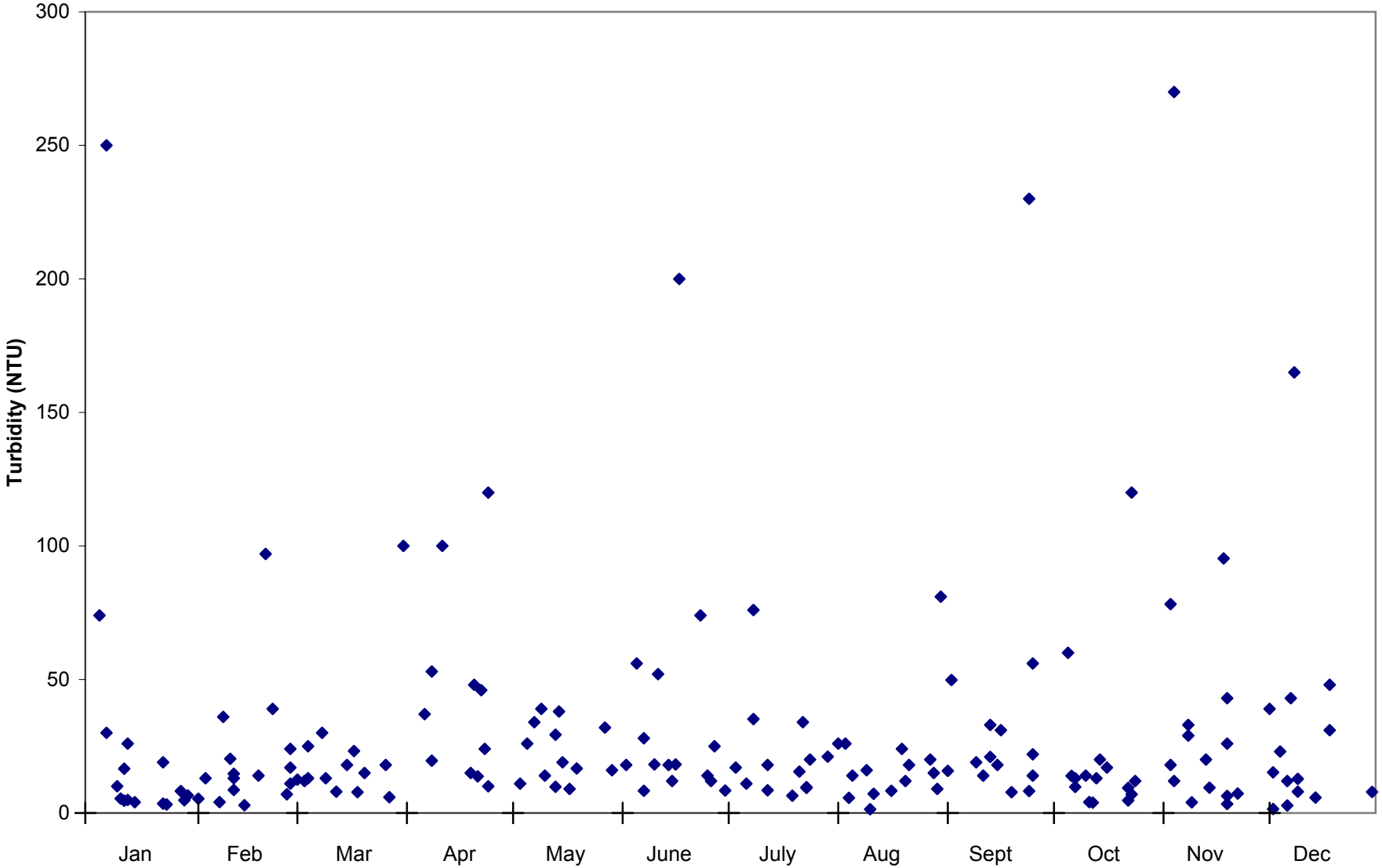


Figure C.3. Seasonal plot of TSS for White River near Goshen, AR (WHI0052)

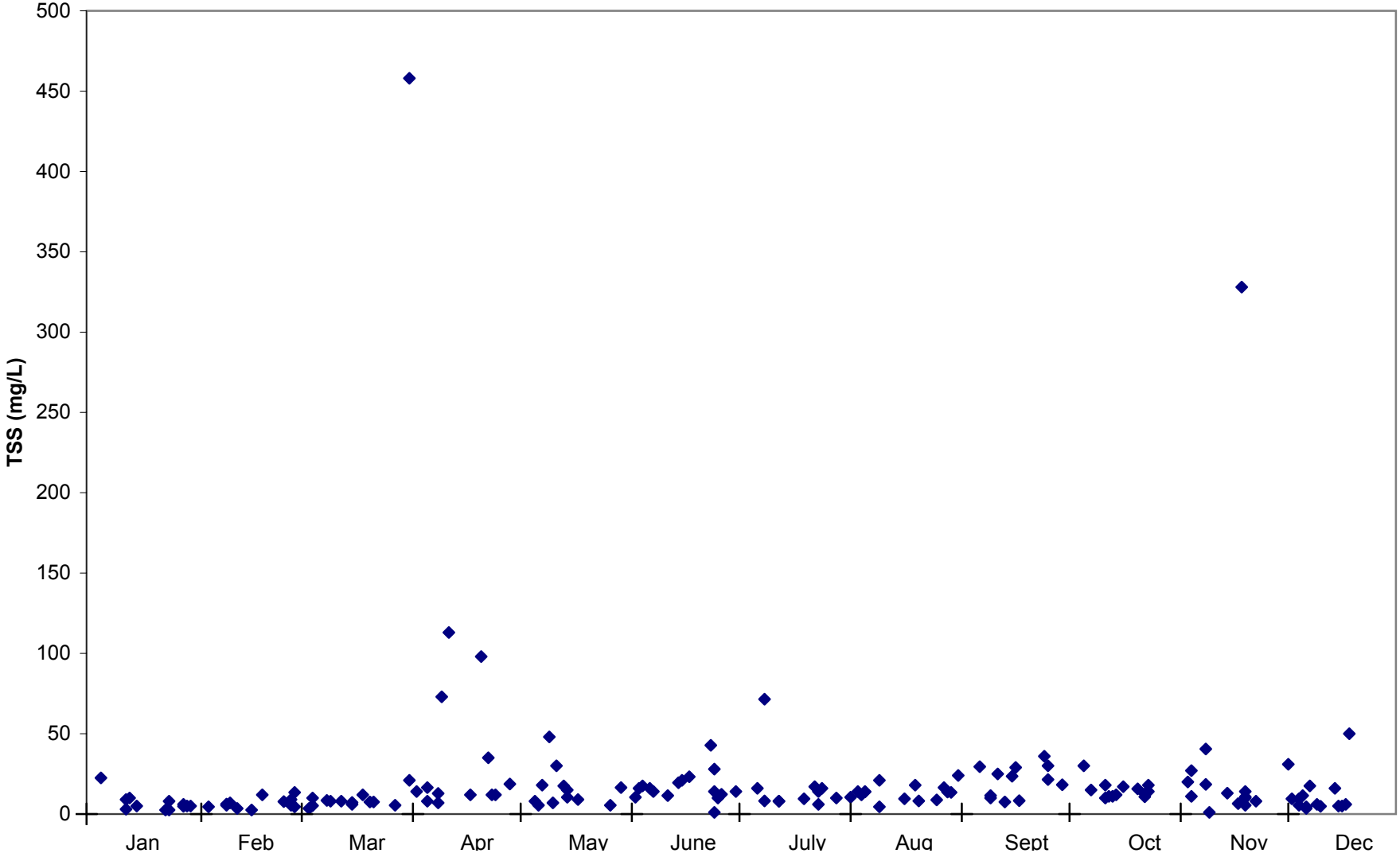
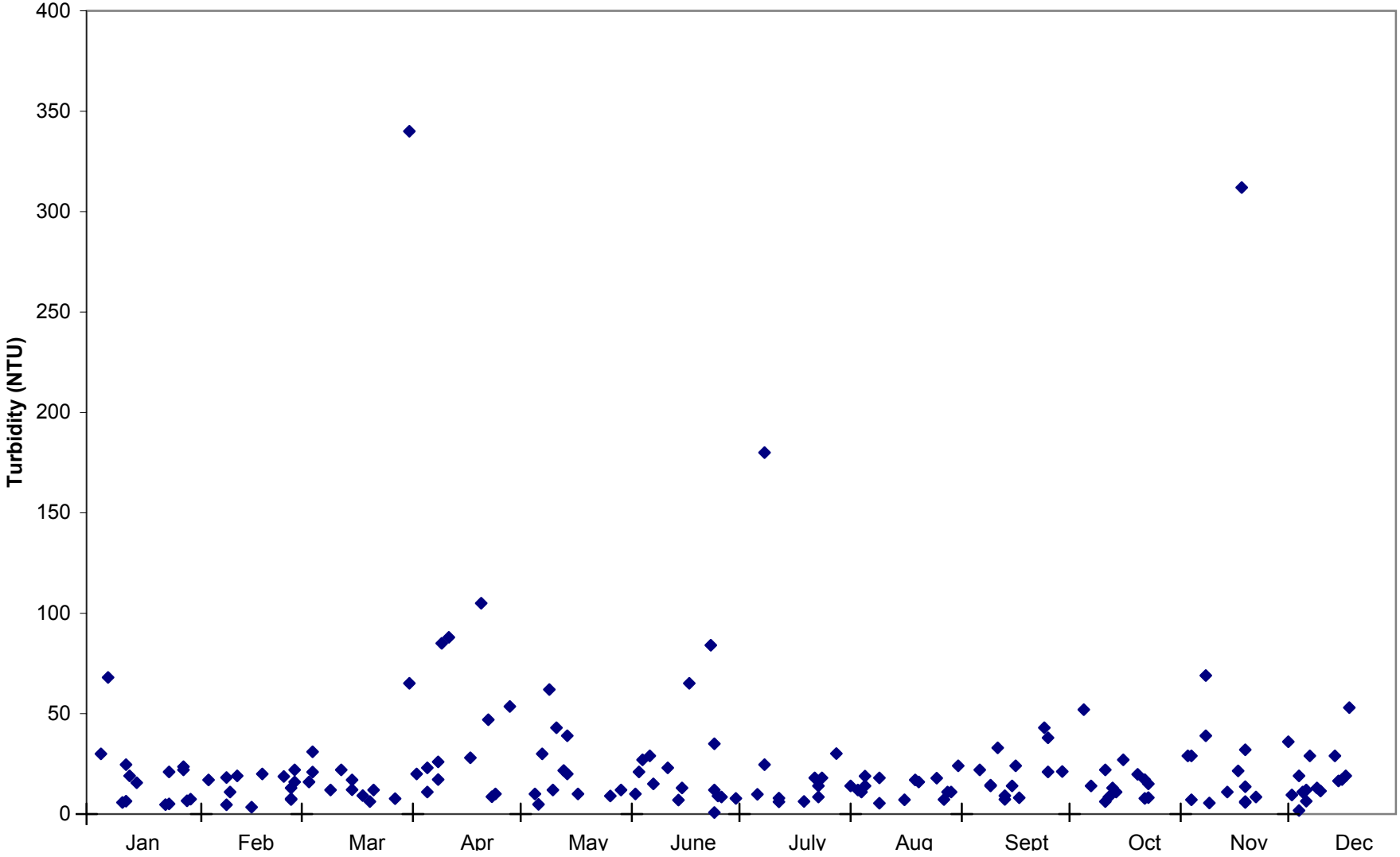


Figure C.4. Seasonal plot of Turbidity for White River near Goshen, AR (WHI0052)



APPENDIX D

Plots of Turbidity and TSS vs Flow

Figure D.1. TSS vs. flow for West Fork White River east of Fayetteville (WHI0051)

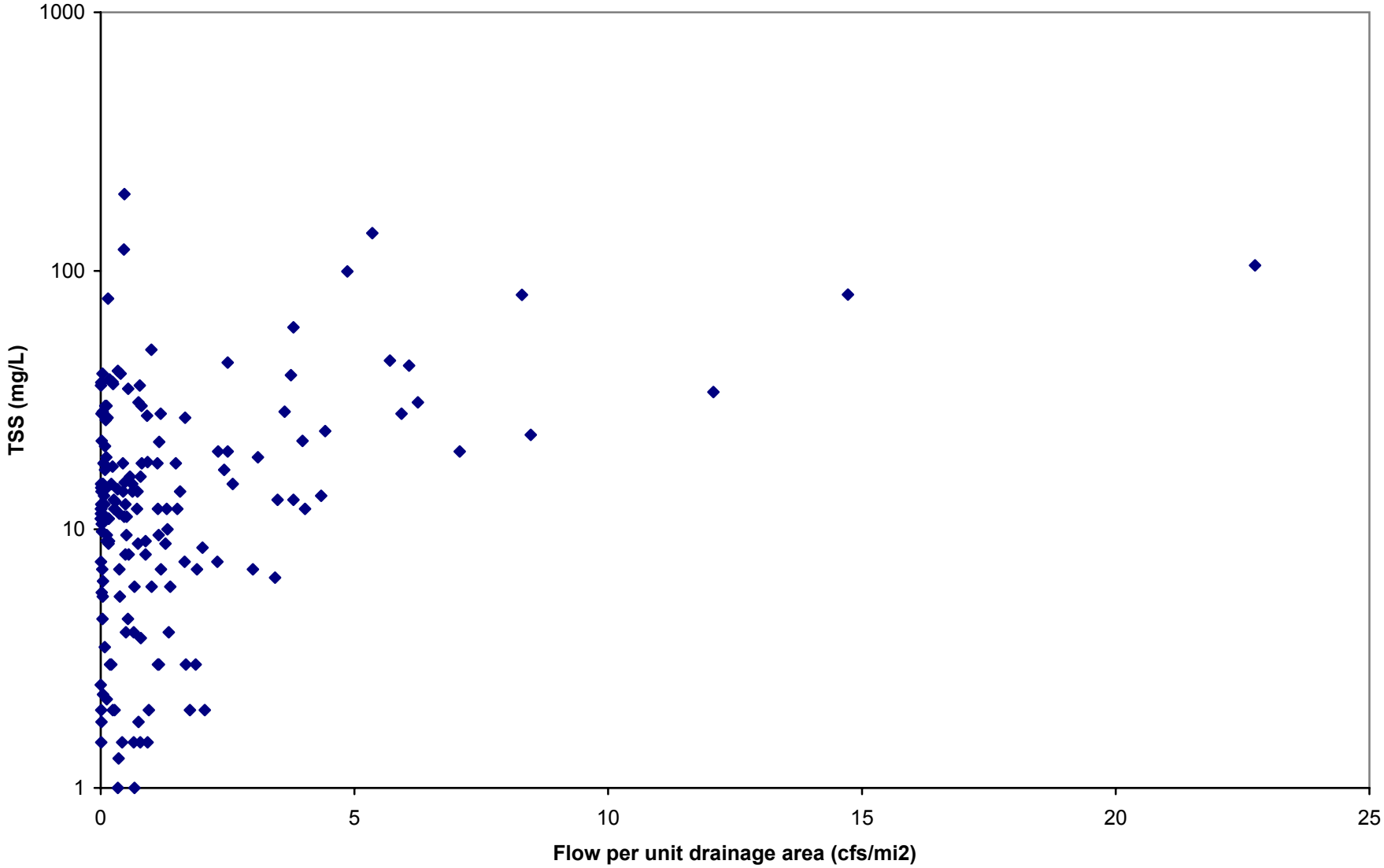


Figure D.2. Turbidity vs flow for West Fork White River east of Fayetteville (WHI0051)

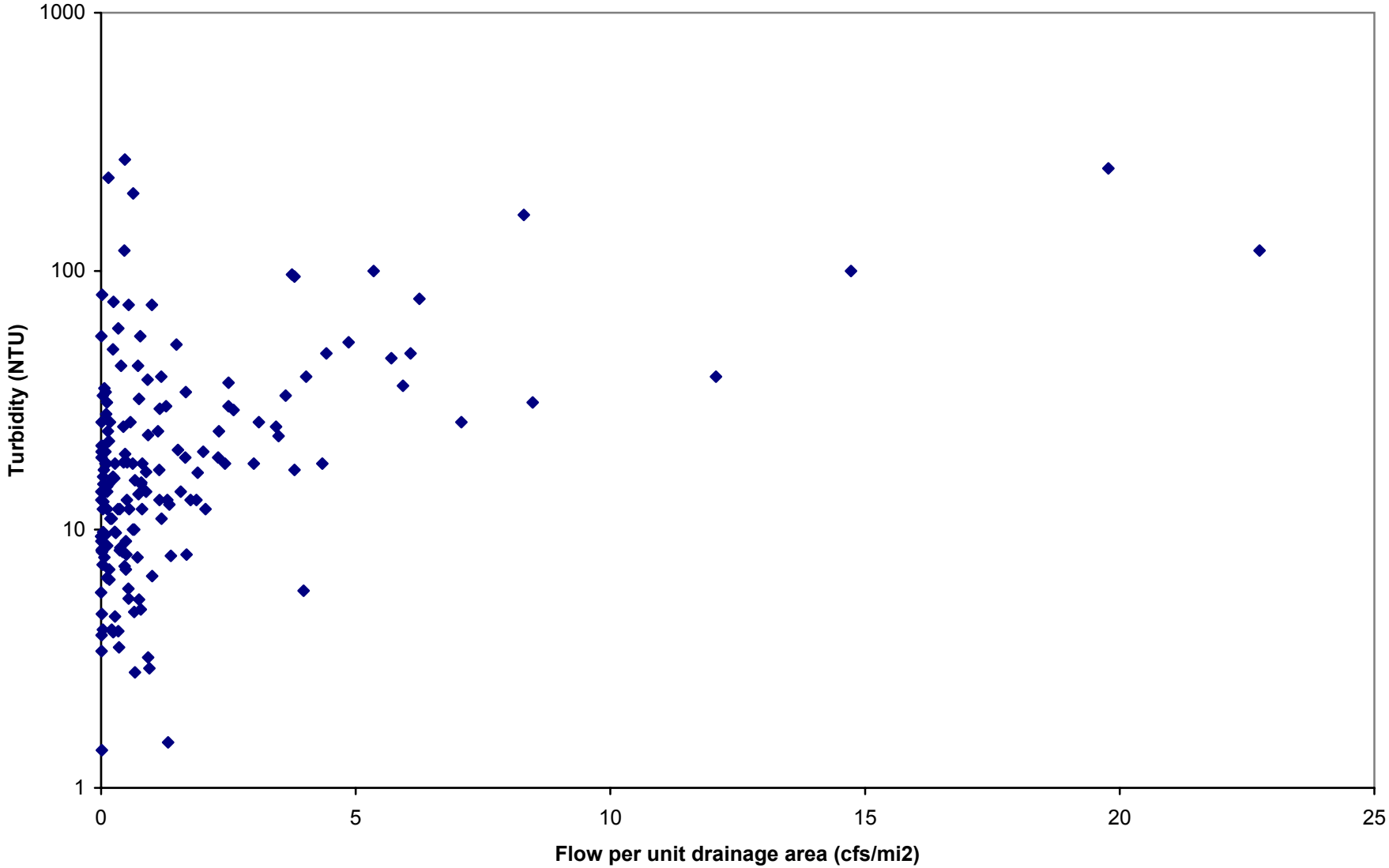


Figure D.3. TSS vs. flow for White River near Goshen, AR (WHI0052)

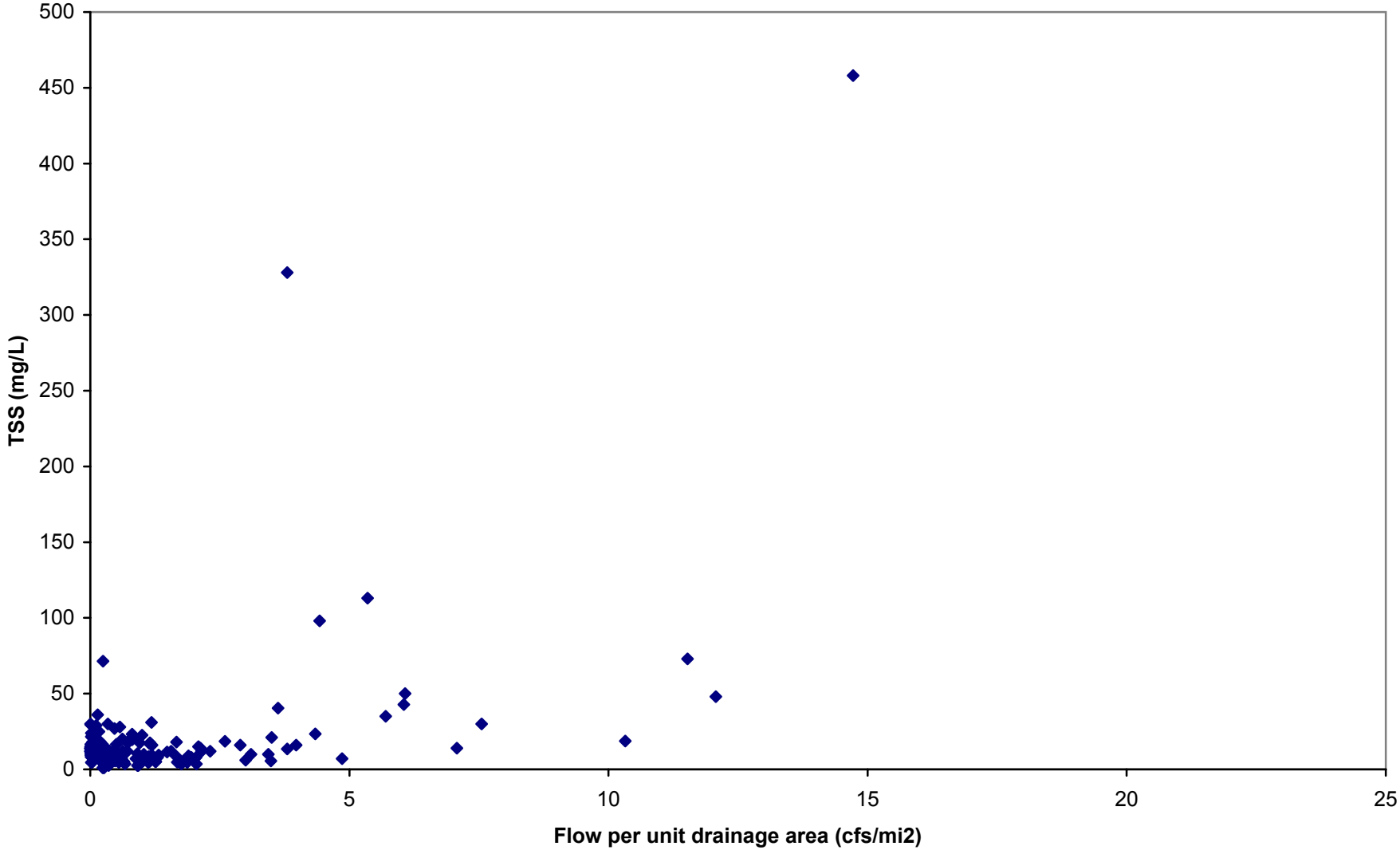
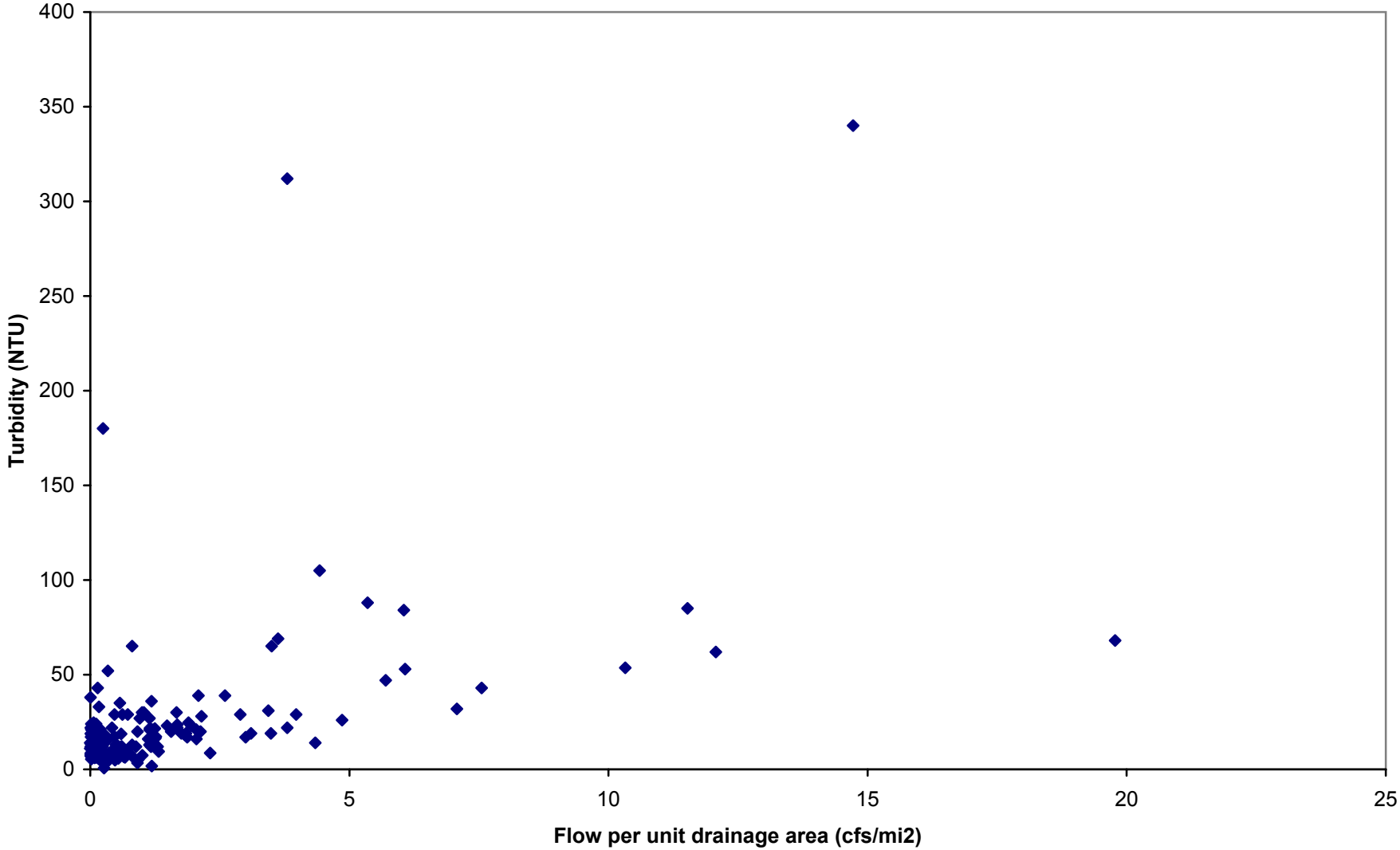


Figure D.4. Turbidity vs flow for White River nerar Goshen, AR (WHI0052)



APPENDIX E

Plots of TSS vs Turbidity

Figure E.1. Base flow TSS vs. Turbidity for West Fork White River (WHI0051)

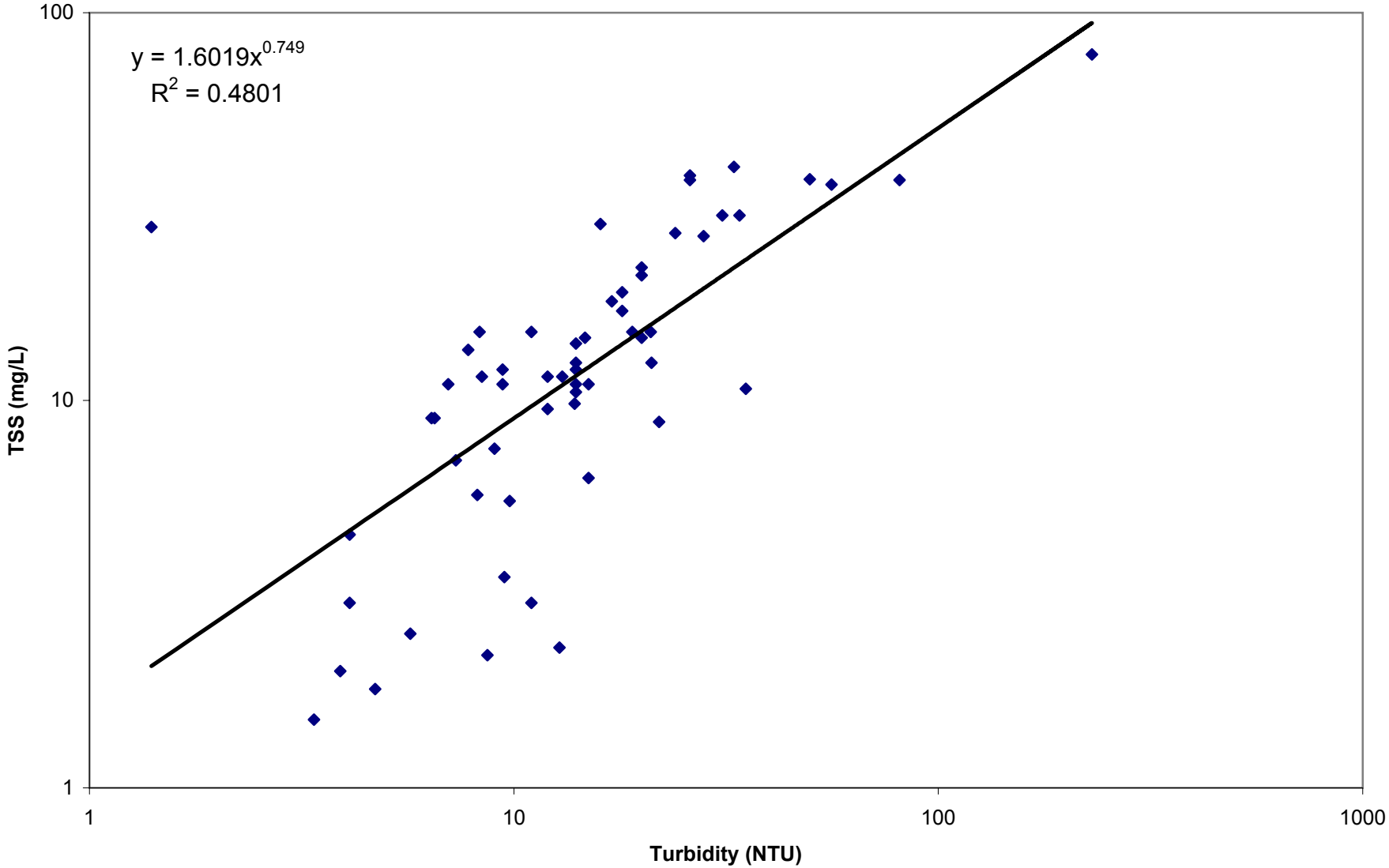


Figure E.2. Storm-flow TSS vs. Turbidity for West Fork White River (WHI0051)

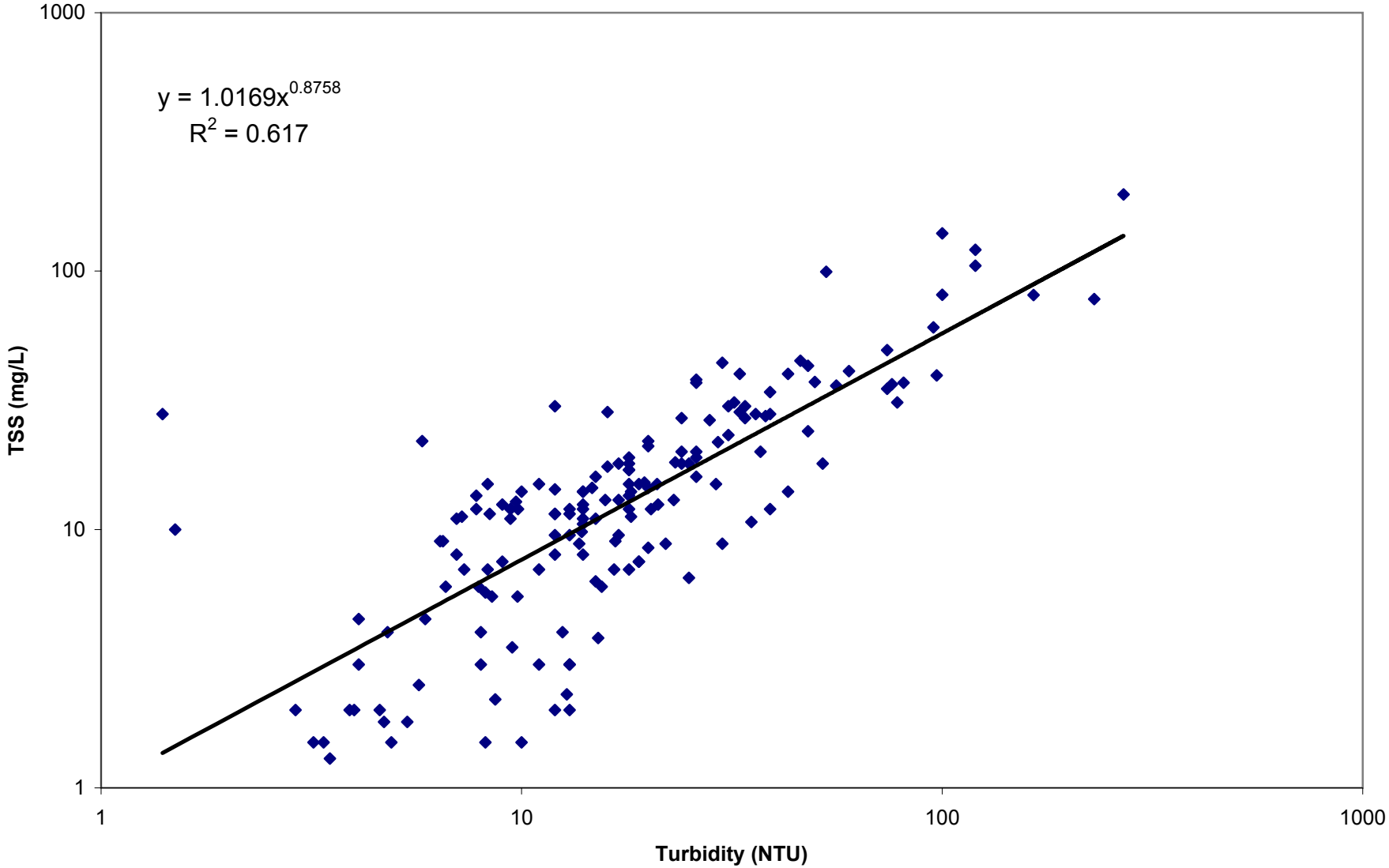


Figure E.3. Base flow TSS vs. Turbidity for White River near Goshen (WHI0052)

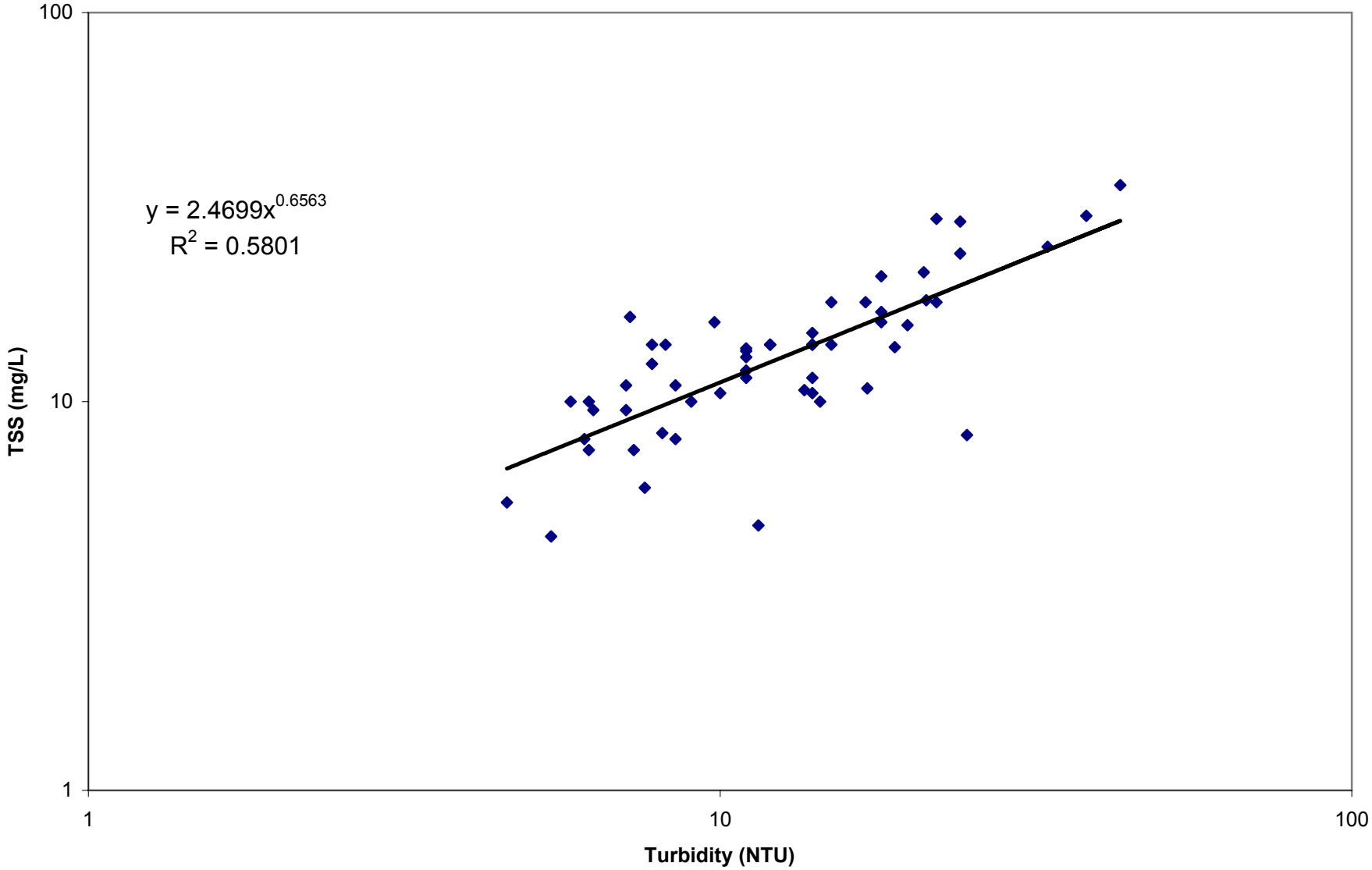
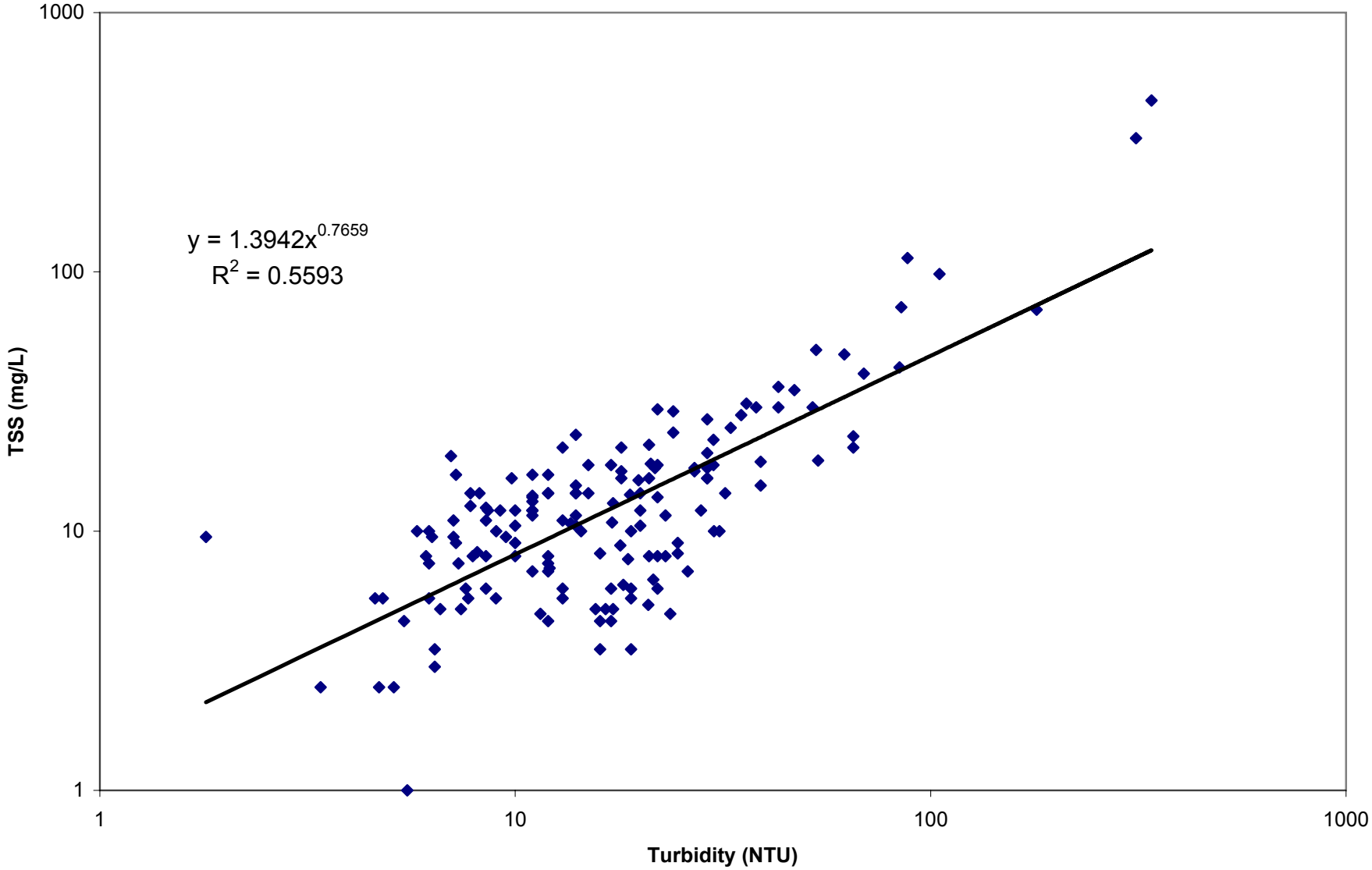


Figure E.4. Storm-flow TSS vs. Turbidity for White River near Goshen (WHI0052)



APPENDIX F

Load Duration Curves and TMDL Calculations

Figure F.1. Flow Duration Curve For White River near Fayetteville, AR (USGS 07048600)

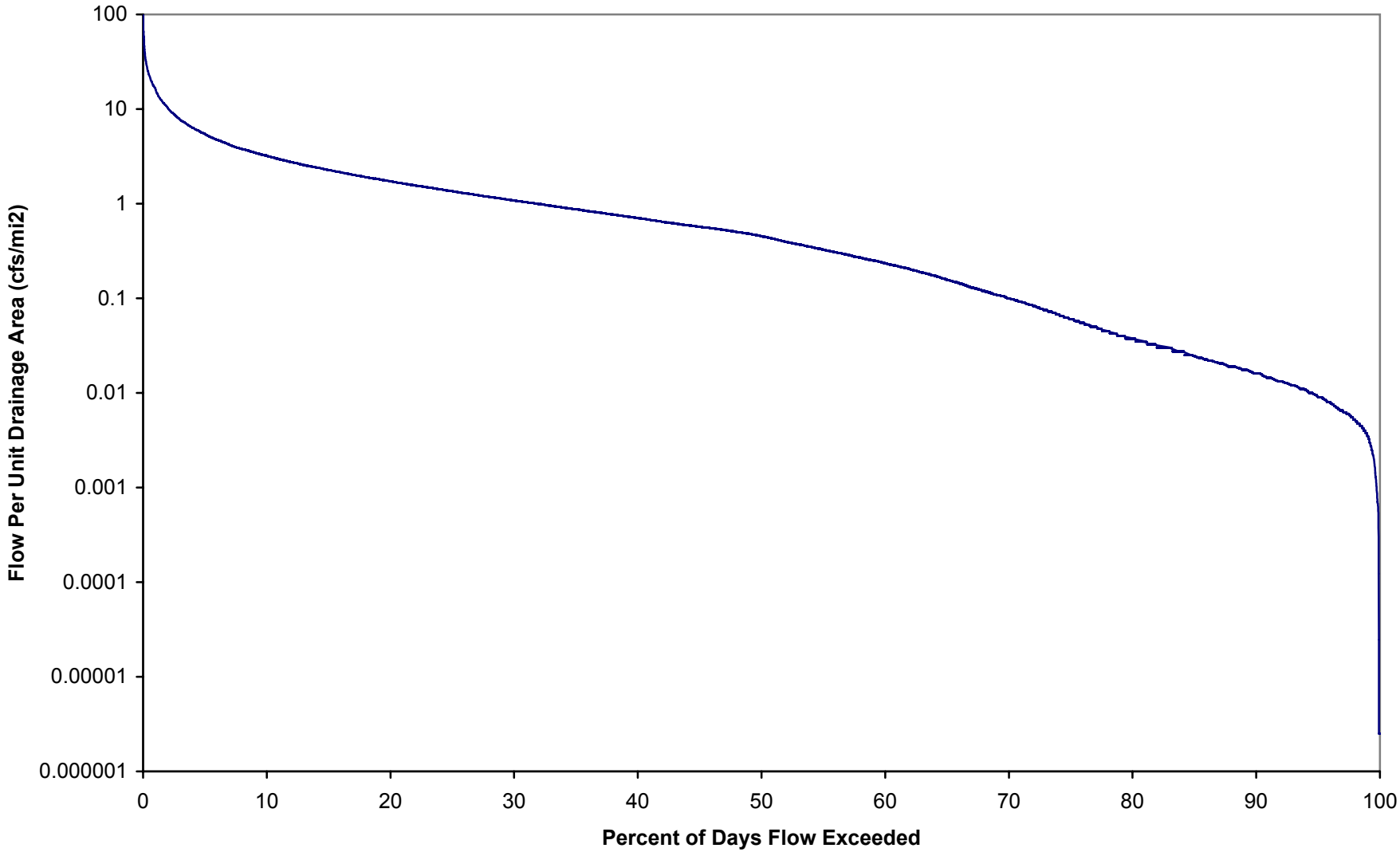


Figure F.2. Storm-flow Load Duration Curve For West Fork White River (WHI0051)

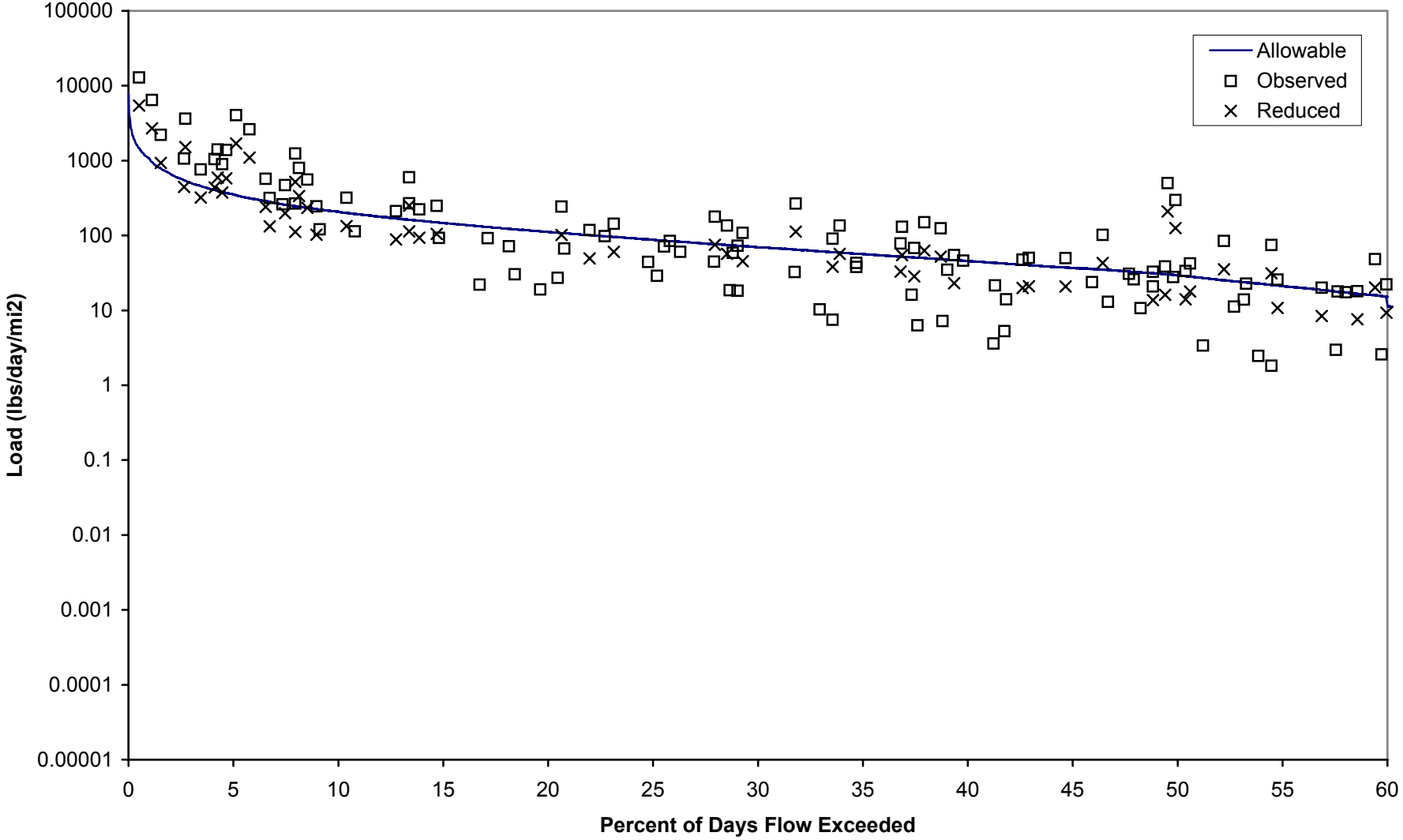


Figure F.3. Base Flow Load Duration Curve for West Fork White River (WHI0051)

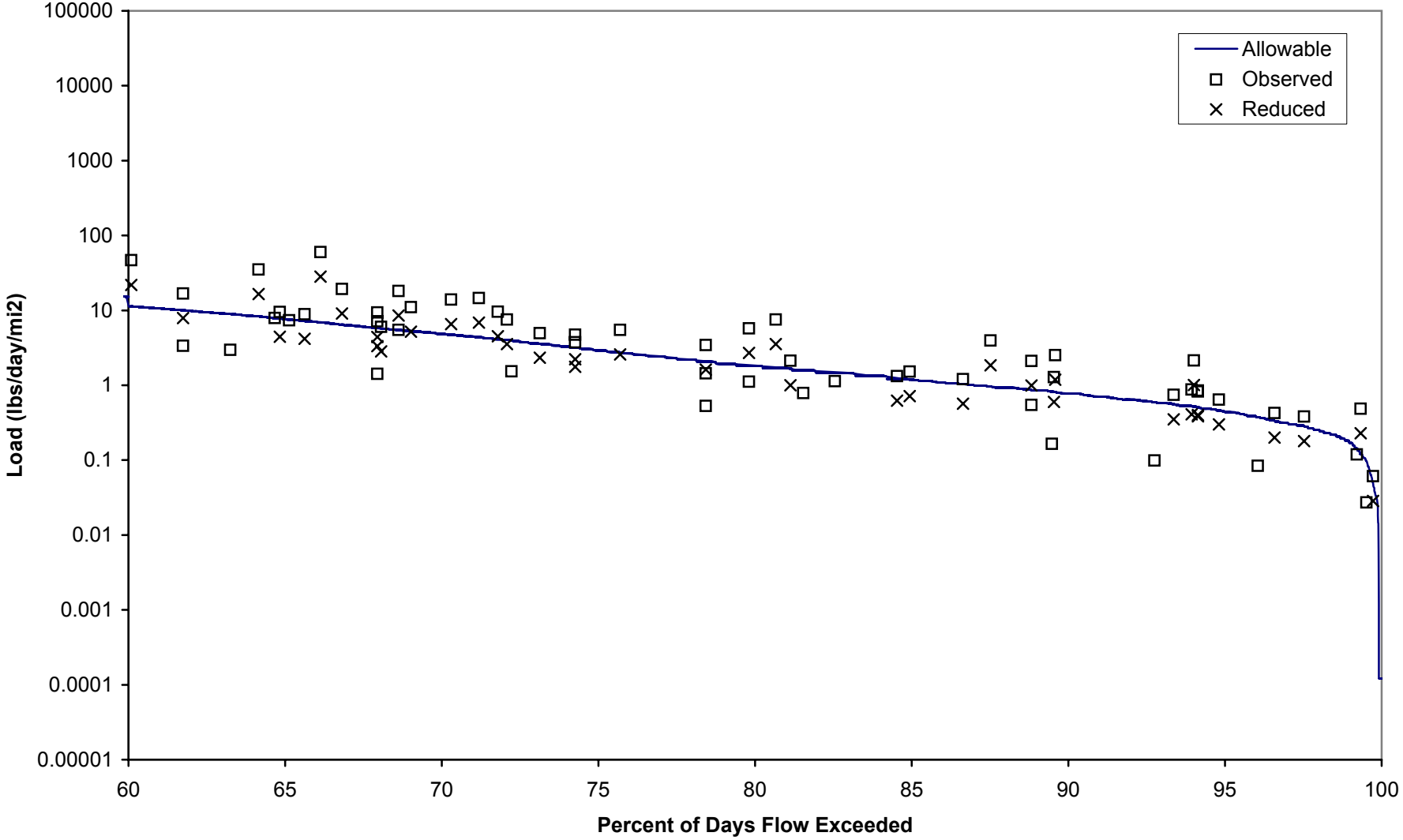


Figure F.4. Storm-flow Load Duration Curve for White River (WHI0052)

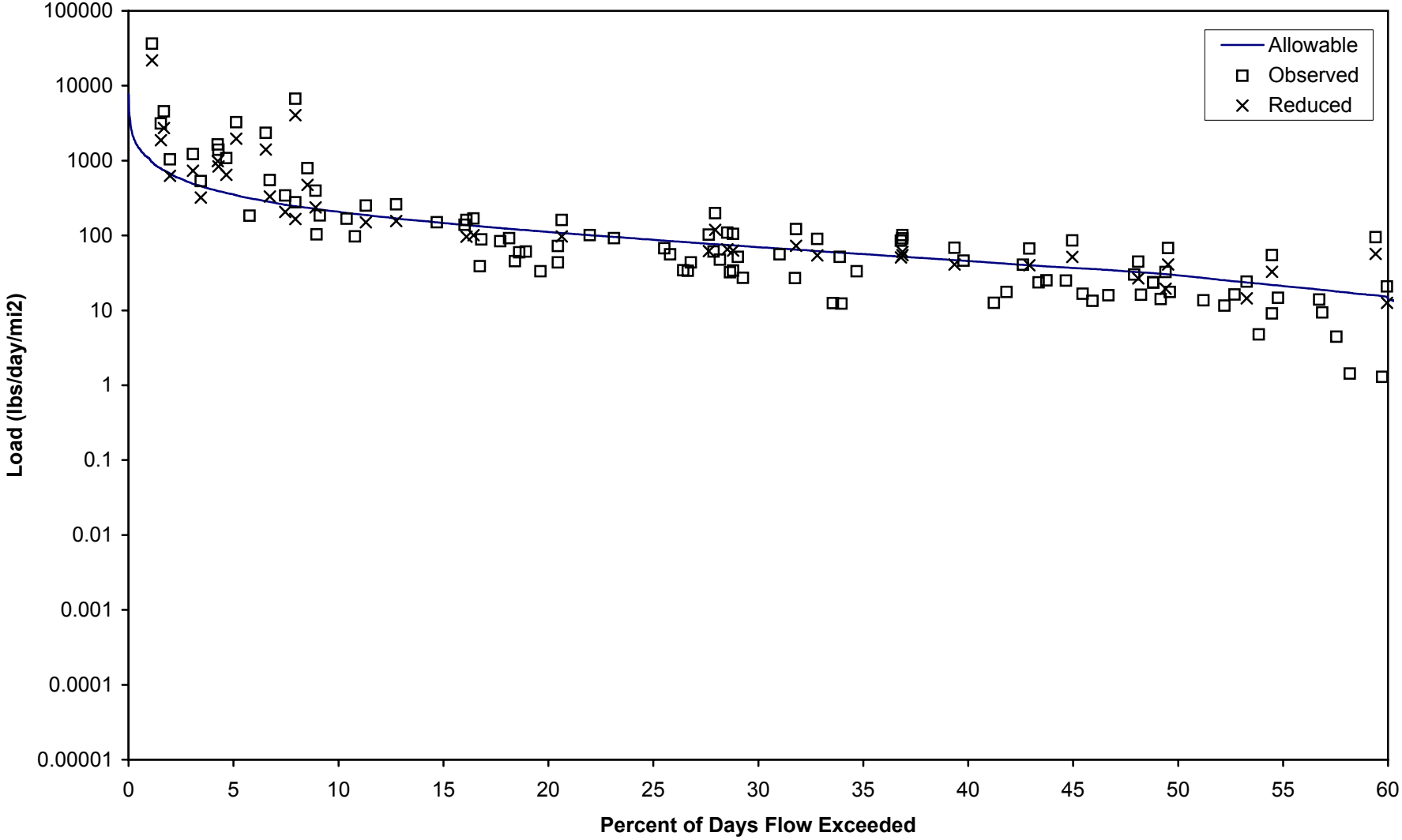


Figure F.5. Base Flow Load Duration Curve for White River (WHI0052)

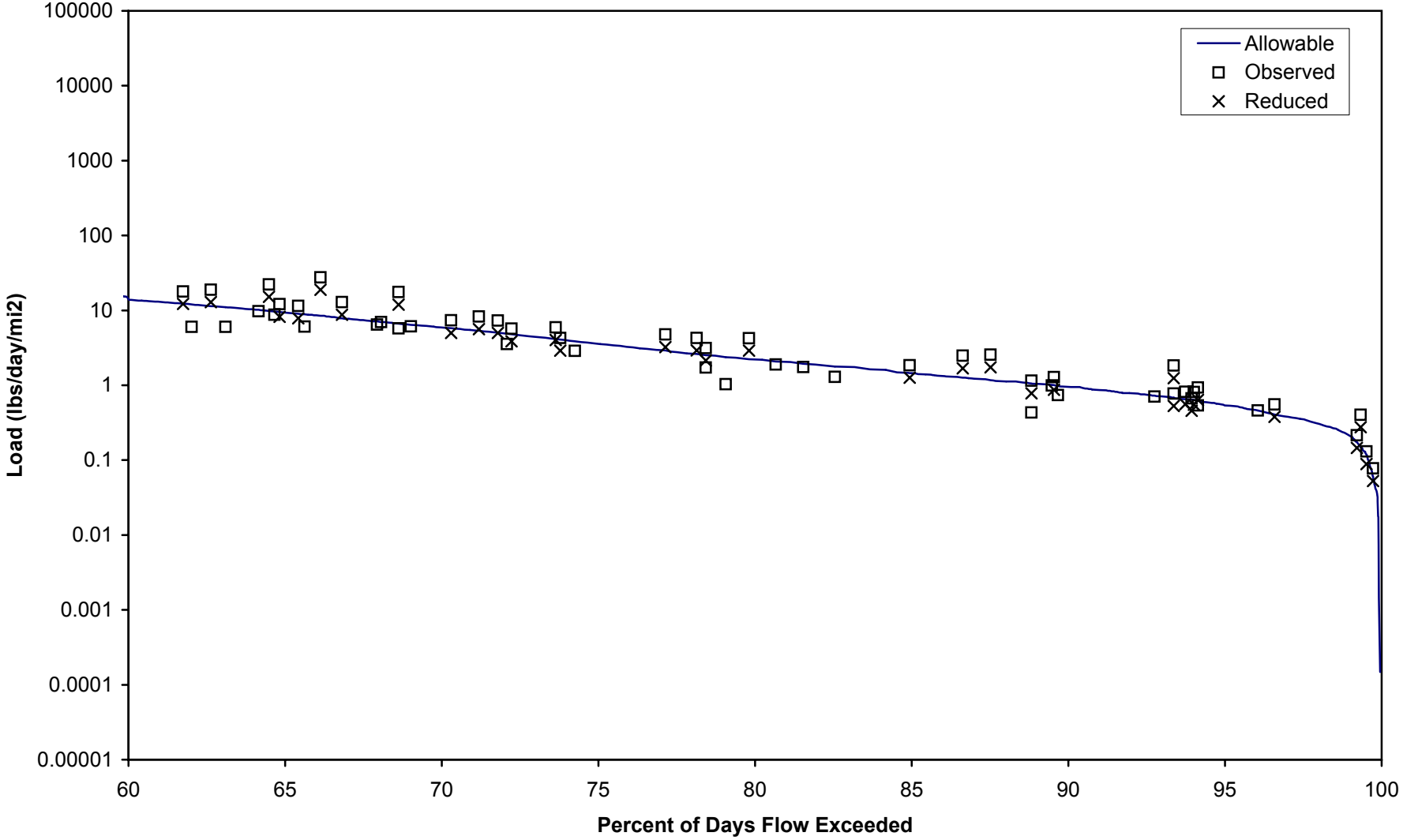


Table F.1. Allowable TSS load for West Fork White River east of Fayetteville (WHI0051).
drainage area at USGS flow gage = 400 mi2, (White River near Fayetteville)

Date	flow (cfs)	Flow per unit area (cfs/mi2)	Percent of days flow exceeded	Category for WQ standard	WQ Standard (NTU)	Target TSS (mg/L)	Allowable TSS load (lbs/day/mi2)
08/06/98	1.000E-03	2.50E-06	99.95%	Base flow	10	9	1.21E-04
09/06/98	1.000E-03	2.50E-06	99.95%	Base flow	10	9	1.21E-04
09/07/95	1.000E-03	2.50E-06	99.95%	Base flow	10	9	1.21E-04
The rows between 99.95 and 80.23 percent flow exceedances are not shown for the sake of brevity.							
08/15/96	1.472E+01	3.68E-02	80.23%	Base flow	10	9	1.79E+00
08/16/96	1.472E+01	3.68E-02	80.23%	Base flow	10	9	1.79E+00
08/28/97	1.472E+01	3.68E-02	80.23%	Base flow	10	9	1.79E+00
The rows between 80.23 and 60.09 percent flow exceedances are not shown for the sake of brevity.							
12/31/64	9.300E+01	2.33E-01	60.09%	Base flow	10	9	1.13E+01
05/28/97	9.324E+01	2.33E-01	60.01%	Base flow	10	9	1.13E+01
07/12/97	9.324E+01	2.33E-01	60.01%	Base flow	10	9	1.13E+01
01/02/82	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
01/26/72	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
02/07/67	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
The rows between 59.95 and 30.04 percent flow exceedances are not shown for the sake of brevity.							
11/06/77	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
12/08/90	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
12/27/01	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
The rows between 30.04 and 0.01 percent flow exceedances are not shown for the sake of brevity.							
05/03/90	4.530E+04	1.13E+02	0.01%	Storm-flow	17	12	7.33E+03
04/24/04	4.740E+04	1.19E+02	0.01%	Storm-flow	17	12	7.67E+03
11/19/85	4.800E+04	1.20E+02	0.00%	Storm-flow	17	12	7.77E+03

Flow per unit area in middle of base flow range (80% exceedance) =	0.037	cfs/mi2
Cumulative drainage area at downstream end of reach 024 =	124	mi2
Flow at downstream end of reach 024 for base flow conditions =	4.56	cfs
Target TSS for base flow conditions for reach 024 =	9	mg/L
Allowable TSS load for base flow conditions for reach 024 =	0.111	tons/day
Flow per unit area in middle of stormwater range (30% exceedance) =	1.075	cfs/mi2
Cumulative drainage area at downstream end of reach 024 =	124	mi2
Flow at downstream end of reach 024 for stormwater conditions =	133	cfs
Target TSS for stormwater conditions for reach 024 =	12	mg/L
Allowable TSS load for stormwater conditions for reach 024 =	4.31	tons/day

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI51-DEC2005.XLS

Table F.2. Calculations for Allowable load for White River at Goshen (WHI0052)
drainage area at USGS flow gage = 400 mi2, (White River near Fayetteville)

Date	Flow at USGS gage (cfs)	Flow per unit area (cfs/mi2)	Percent of days flow exceeded	Category for WQ standard	WQ Standard (NTU)	Target TSS (mg/L)	Allowable TSS load (lbs/day/mi2)
08/06/98	1.000E-03	2.50E-06	99.95%	Base flow	10	11	1.48E-04
09/06/98	1.000E-03	2.50E-06	99.95%	Base flow	10	11	1.48E-04
09/07/95	1.000E-03	2.50E-06	99.95%	Base flow	10	11	1.48E-04
The rows between 99.95 and 80.23 percent flow exceedances are not shown for the sake of brevity.							
08/15/96	1.472E+01	3.68E-02	80.23%	Base flow	10	11	2.18E+00
08/16/96	1.472E+01	3.68E-02	80.23%	Base flow	10	11	2.18E+00
08/28/97	1.472E+01	3.68E-02	80.23%	Base flow	10	11	2.18E+00
The rows between 80.23 and 60.01 percent flow exceedances are not shown for the sake of brevity.							
12/31/64	9.300E+01	2.33E-01	60.09%	Base flow	10	11	1.38E+01
05/28/97	9.324E+01	2.33E-01	60.01%	Base flow	10	11	1.38E+01
07/12/97	9.324E+01	2.33E-01	60.01%	Base flow	10	11	1.38E+01
01/02/82	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
01/26/72	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
02/07/67	9.400E+01	2.35E-01	59.95%	Storm-flow	17	12	1.52E+01
The rows between 59.95 and 30.04 percent flow exceedances are not shown for the sake of brevity.							
11/06/77	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
12/08/90	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
12/27/01	4.300E+02	1.08E+00	30.04%	Storm-flow	17	12	6.96E+01
The rows between 30.04 and 0.01 percent flow exceedances are not shown for the sake of brevity.							
05/03/90	4.530E+04	1.13E+02	0.01%	Storm-flow	17	12	7.33E+03
04/24/04	4.740E+04	1.19E+02	0.01%	Storm-flow	17	12	7.67E+03
11/19/85	4.800E+04	1.20E+02	0.00%	Storm-flow	17	12	7.77E+03

Flow per unit area in middle of base flow range (80% exceedance) =	0.037	cfs/mi2
Cumulative drainage area at downstream end of reach 023 =	555	mi2
Flow at downstream end of reach 023 for base flow conditions =	20.4	cfs
Target TSS for base flow conditions for reach 023 =	11	mg/L
Allowable TSS load for base flow conditions for reach 023 =	0.606	tons/day
Flow in middle of stormwater range (30% exceedance) =	1.075	cfs/mi2
Cumulative drainage area at downstream end of reach 023 =	555	mi2
Flow at downstream end of reach 023 for stormwater conditions =	597	cfs
Target TSS for stormwater conditions for reach 023 =	12	mg/L
Allowable TSS load for stormwater conditions for reach 023 =	19.3	tons/day

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI52-DEC2005.XLS

TABLE F.3. CALCULATIONS FOR PERCENT REDUCTION FOR STORM-FLOW CONDITIONS
FOR WEST FORK WHITE RIVER (STATION WHI0051)

Storm-flow target TSS conc. = 12 mg/L
Percent reduction needed = 58%

Error check for reduction is / is not needed: ok
Error check for less or more reduction needed: ok

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	5/29/2001	17.5	0.24	59.95%	22.18	9.31	15.21	Yes
Storm-flow	11/9/1993	2	0.24	59.72%	2.59	1.09	15.53	Yes
Storm-flow	7/8/1997	36.5	0.25	59.41%	48.30	20.29	15.88	No
Storm-flow	8/31/2004	13	0.26	58.57%	18.05	7.58	16.66	Yes
Storm-flow	5/13/1997	12	0.27	58.01%	17.47	7.34	17.47	Yes
Storm-flow	8/20/1996	12	0.27	57.62%	17.78	7.47	17.78	Yes
Storm-flow	1/11/1994	2	0.28	57.54%	2.97	1.25	17.80	Yes
Storm-flow	7/23/2002	12.8	0.29	56.87%	20.02	8.41	18.77	Yes
Storm-flow	8/20/2002	14.3	0.33	54.77%	25.64	10.77	21.52	Yes
Storm-flow	10/5/1993	41	0.34	54.47%	74.62	31.34	21.84	No
Storm-flow	1/14/2003	<1	0.34	54.47%	1.82	0.76	21.84	Yes
Storm-flow	1/22/2002	1.3	0.35	53.84%	2.47	1.04	22.81	Yes
Storm-flow	6/26/2001	11.5	0.37	53.27%	22.64	9.51	23.62	Yes
Storm-flow	6/7/1999	7	0.37	53.16%	13.87	5.83	23.78	Yes
Storm-flow	7/12/1999	5.5	0.38	52.69%	11.20	4.70	24.43	Yes
Storm-flow	11/19/2001	40	0.39	52.21%	84.13	35.33	25.24	No
Storm-flow	1/27/1997	1.5	0.42	51.21%	3.39	1.43	27.15	Yes
Storm-flow	6/27/1995	18	0.44	50.60%	42.40	17.81	28.27	Yes
Storm-flow	6/15/2004	14	0.44	50.38%	33.41	14.03	28.64	Yes
Storm-flow	10/22/1996	121	0.46	49.90%	297.82	125.08	29.54	No
Storm-flow	8/10/2004	11.2	0.46	49.79%	27.78	11.67	29.77	Yes

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	11/3/1992	198	0.47	49.52%	499.19	209.66	30.25	No
Storm-flow	4/8/2003	15.2	0.47	49.41%	38.53	16.18	30.42	Yes
Storm-flow	2/26/1991	8	0.49	48.82%	20.92	8.79	31.39	Yes
Storm-flow	5/16/2000	12.5	0.49	48.82%	32.69	13.73	31.39	Yes
Storm-flow	12/8/1992	4	0.50	48.24%	10.73	4.51	32.20	Yes
Storm-flow	10/13/1998	9.5	0.51	47.91%	25.87	10.87	32.68	Yes
Storm-flow	6/10/2003	11.2	0.51	47.69%	30.80	12.94	33.00	Yes
Storm-flow	3/27/2001	4.5	0.54	46.69%	12.98	5.45	34.62	Yes
Storm-flow	6/22/1992	35	0.54	46.43%	101.93	42.81	34.95	No
Storm-flow	12/6/1994	8	0.55	45.93%	23.82	10.00	35.73	Yes
Storm-flow	5/5/1998	16	0.58	44.66%	49.76	20.90	37.32	Yes
Storm-flow	11/3/1998	15	0.62	42.91%	50.15	21.06	40.12	Yes
Storm-flow	4/24/2001	14	0.63	42.61%	47.38	19.90	40.61	Yes
Storm-flow	1/28/1992	4	0.65	41.83%	14.02	5.89	42.06	Yes
Storm-flow	1/9/1996	1.5	0.65	41.74%	5.28	2.22	42.24	Yes
Storm-flow	7/20/2004	6	0.67	41.30%	21.52	9.04	43.04	Yes
Storm-flow	12/5/2000	<1	0.67	41.23%	3.60	1.51	43.20	Yes
Storm-flow	3/17/1992	12	0.71	39.79%	46.11	19.37	46.11	Yes
Storm-flow	12/7/1999	14	0.73	39.35%	54.74	22.99	46.92	Yes
Storm-flow	4/20/2004	8.8	0.74	39.02%	34.88	14.65	47.57	Yes
Storm-flow	2/1/2005	1.8	0.74	38.79%	7.21	3.03	48.05	Yes
Storm-flow	5/26/1992	31	0.75	38.71%	124.55	52.31	48.21	No
Storm-flow	6/4/1996	36	0.77	37.92%	149.58	62.83	49.86	No
Storm-flow	1/12/1999	1.5	0.78	37.60%	6.31	2.65	50.48	Yes
Storm-flow	4/18/2000	16	0.79	37.44%	67.73	28.45	50.80	Yes
Storm-flow	12/2/2003	3.8	0.79	37.33%	16.19	6.80	51.12	Yes
Storm-flow	6/15/1993	30	0.81	36.87%	130.24	54.70	52.10	No

Table F.3. Storm-flow percent reductions
WHI0051

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	6/13/2000	18	0.81	36.79%	78.39	32.92	52.26	Yes
Storm-flow	5/10/1994	8	0.88	34.69%	38.07	15.99	57.11	Yes
Storm-flow	5/18/2004	9	0.88	34.69%	42.83	17.99	57.11	Yes
Storm-flow	5/14/2002	27.5	0.91	33.89%	135.33	56.84	59.05	Yes
Storm-flow	1/23/2001	1.5	0.93	33.55%	7.48	3.14	59.86	Yes
Storm-flow	3/16/2004	18.2	0.93	33.55%	90.79	38.13	59.86	Yes
Storm-flow	2/14/1994	2	0.95	32.94%	10.25	4.30	61.48	Yes
Storm-flow	1/4/2000	49.5	1.00	31.80%	266.95	112.12	64.71	No
Storm-flow	1/29/1991	6	1.00	31.75%	32.44	13.62	64.88	Yes
Storm-flow	2/27/1995	18	1.12	29.27%	108.38	45.52	72.25	Yes
Storm-flow	4/19/1999	3	1.13	29.03%	18.24	7.66	72.97	Yes
Storm-flow	3/7/2000	12	1.13	29.03%	72.97	30.65	72.97	Yes
Storm-flow	10/16/2001	9.5	1.14	28.81%	58.53	24.58	73.94	Yes
Storm-flow	3/4/2003	3	1.15	28.66%	18.57	7.80	74.26	Yes
Storm-flow	5/13/2003	21.8	1.15	28.53%	135.49	56.91	74.58	Yes
Storm-flow	12/1/1998	28	1.18	27.95%	178.56	74.99	76.53	Yes
Storm-flow	5/3/1999	7	1.19	27.91%	44.73	18.79	76.69	Yes
Storm-flow	1/6/2004	8.8	1.28	26.29%	60.63	25.46	82.67	Yes
Storm-flow	3/9/1993	12	1.30	25.80%	84.13	35.33	84.13	Yes
Storm-flow	12/2/1997	10	1.32	25.52%	71.06	29.85	85.27	Yes
Storm-flow	3/1/2005	4	1.34	25.19%	28.91	12.14	86.72	Yes
Storm-flow	12/30/1991	6	1.37	24.76%	44.41	18.65	88.82	Yes
Storm-flow	6/11/2002	18	1.48	23.13%	143.67	60.34	95.78	Yes
Storm-flow	2/10/2004	12	1.51	22.69%	97.72	41.04	97.72	Yes
Storm-flow	2/18/1992	14	1.56	21.97%	117.97	49.55	101.12	Yes
Storm-flow	5/14/1996	7.5	1.65	20.77%	66.89	28.09	107.03	Yes
Storm-flow	5/7/1991	27	1.66	20.64%	242.07	101.67	107.59	Yes

Table F.3. Storm-flow percent reductions
WHI0051

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	3/12/2002	3	1.68	20.45%	27.18	11.42	108.72	Yes
Storm-flow	2/11/1997	2	1.76	19.63%	18.95	7.96	113.70	Yes
Storm-flow	2/3/1998	3	1.87	18.41%	30.25	12.71	121.00	Yes
Storm-flow	1/11/2005	7	1.90	18.13%	71.63	30.09	122.80	Yes
Storm-flow	11/12/1996	8.5	2.01	17.12%	92.01	38.64	129.89	Yes
Storm-flow	3/3/1998	2	2.05	16.73%	22.10	9.28	132.59	Yes
Storm-flow	1/22/1996	7.5	2.30	14.80%	92.99	39.06	148.79	Yes
Storm-flow	4/23/1991	20	2.31	14.69%	249.42	104.76	149.65	Yes
Storm-flow	3/26/1991	17	2.43	13.85%	223.01	93.66	157.42	Yes
Storm-flow	4/6/1994	20	2.50	13.38%	269.64	113.25	161.79	Yes
Storm-flow	3/8/1999	44.2	2.50	13.38%	595.91	250.28	161.79	No
Storm-flow	11/8/1994	15	2.60	12.75%	210.40	88.37	168.32	Yes
Storm-flow	3/15/1994	7	3.00	10.79%	113.25	47.57	194.14	Yes
Storm-flow	1/12/1993	19	3.10	10.40%	317.64	133.41	200.62	Yes
Storm-flow	3/4/1997	6.5	3.44	9.11%	120.42	50.58	222.31	Yes
Storm-flow	12/3/1996	13	3.48	8.96%	244.28	102.60	225.49	Yes
Storm-flow	11/7/2000	28.5	3.63	8.52%	557.15	234.00	234.59	Yes
Storm-flow	2/20/2002	39.5	3.75	8.13%	798.82	335.51	242.68	No
Storm-flow	2/27/2001	13	3.80	7.95%	266.41	111.89	245.92	Yes
Storm-flow	11/18/2003	60.5	3.80	7.95%	1239.83	520.73	245.92	No
Storm-flow	12/14/1993	22	3.98	7.47%	471.61	198.08	257.24	Yes
Storm-flow	2/22/1993	12	4.03	7.35%	260.48	109.40	260.48	Yes
Storm-flow	9/15/1998	13.5	4.34	6.73%	316.20	132.80	281.06	Yes
Storm-flow	4/20/1993	24	4.43	6.54%	572.73	240.54	286.36	Yes
Storm-flow	4/8/1997	99.5	4.86	5.77%	2606.99	1094.94	314.41	No
Storm-flow	4/11/1995	140	5.35	5.13%	4038.65	1696.23	346.17	No
Storm-flow	4/21/1992	45	5.70	4.66%	1383.28	580.98	368.87	No

Table F.3. Storm-flow percent reductions
WHI0051

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	2/8/1999	28	5.93	4.47%	894.68	375.77	383.43	Yes
Storm-flow	12/18/1990	43	6.08	4.25%	1408.76	591.68	393.14	No
Storm-flow	11/2/2004	31	6.25	4.11%	1044.87	438.85	404.47	No
Storm-flow	11/19/1991	20	7.08	3.44%	763.09	320.50	457.86	Yes
Storm-flow	12/7/2004	80.8	8.30	2.71%	3616.69	1519.01	537.13	No
Storm-flow	12/18/2001	23.2	8.48	2.65%	1060.35	445.35	548.46	Yes
Storm-flow	5/9/1995	34	12.07	1.54%	2213.58	929.70	781.26	No
Storm-flow	3/31/1998	81	14.72	1.12%	6431.13	2701.08	952.76	No
Storm-flow	4/23/1996	105	22.75	0.50%	12880.13	5409.66	1472.02	No

Total number of values =	111
Allowable % of exceedances =	20%
Allowable no. of exceedances =	23
No. of exceedances before reductions =	58
No. of exceedances after reductions =	22

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI51-DEC2005.XLS

Table F.3. Storm-flow percent reductions
WHI0051

TABLE F.4. CALCULATIONS FOR PERCENT REDUCTION FOR BASE FLOW CONDITIONS
FOR WEST FORK WHITE RIVER (STATION WHI0051)

Base flow target TSS conc. =	9 mg/L	Error check for reduction is / is not needed:	ok
Percent reduction needed =	53%	Error check for less or more reduction needed:	ok

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	7/23/1991	11	0.00	99.72%	0.06	0.03	0.05	Yes
Base flow	8/4/1998	2.5	0.00	99.51%	0.03	0.01	0.10	Yes
Base flow	9/25/1990	36	0.00	99.33%	0.49	0.23	0.12	No
Base flow	8/29/1995	7.5	0.00	99.21%	0.12	0.06	0.14	Yes
Base flow	9/10/1996	12	0.01	97.52%	0.38	0.18	0.29	Yes
Base flow	10/7/1997	11.5	0.01	96.58%	0.43	0.20	0.33	Yes
Base flow	10/12/1999	2	0.01	96.05%	0.08	0.04	0.38	Yes
Base flow	7/29/2003	12.5	0.01	94.81%	0.64	0.30	0.46	Yes
Base flow	8/27/1991	14.5	0.01	94.13%	0.82	0.39	0.51	Yes
Base flow	8/15/2000	15	0.01	94.13%	0.85	0.40	0.51	Yes
Base flow	8/3/1993	37	0.01	94.01%	2.15	1.01	0.52	No
Base flow	9/9/1997	15	0.01	93.94%	0.87	0.41	0.52	Yes
Base flow	10/22/1991	12	0.01	93.37%	0.74	0.35	0.56	Yes
Base flow	11/19/2002	1.5	0.01	92.75%	0.10	0.05	0.59	Yes
Base flow	8/10/1999	28	0.02	89.58%	2.53	1.19	0.81	No
Base flow	8/5/1997	14	0.02	89.54%	1.28	0.60	0.82	Yes
Base flow	10/22/2002	1.8	0.02	89.47%	0.17	0.08	0.83	Yes
Base flow	10/13/1992	22	0.02	88.82%	2.11	0.99	0.86	No
Base flow	9/24/2002	5.7	0.02	88.82%	0.55	0.26	0.86	Yes
Base flow	8/30/1993	37	0.02	87.52%	3.94	1.85	0.96	No
Base flow	9/25/1995	10.5	0.02	86.63%	1.21	0.57	1.04	Yes
Base flow	6/30/1998	11.5	0.02	84.94%	1.52	0.72	1.19	Yes
Base flow	10/5/2004	9.8	0.03	84.53%	1.32	0.62	1.21	Yes
Base flow	11/22/1999	7	0.03	82.55%	1.13	0.53	1.46	Yes

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	10/10/2000	4.5	0.03	81.54%	0.79	0.37	1.58	Yes
Base flow	10/24/1995	11.5	0.03	81.13%	2.13	1.00	1.67	Yes
Base flow	9/12/2000	40	0.04	80.66%	7.55	3.55	1.70	No
Base flow	8/9/1994	28.5	0.04	79.81%	5.76	2.71	1.82	No
Base flow	10/7/2003	5.5	0.04	79.81%	1.11	0.52	1.82	Yes
Base flow	9/13/1999	15	0.04	78.42%	3.44	1.62	2.06	Yes
Base flow	8/28/2001	6.3	0.04	78.42%	1.44	0.68	2.06	Yes
Base flow	12/9/2002	2.3	0.04	78.42%	0.53	0.25	2.06	Yes
Base flow	7/2/1996	18	0.06	75.69%	5.48	2.57	2.74	Yes
Base flow	9/19/1994	13.5	0.07	74.25%	4.73	2.22	3.15	Yes
Base flow	7/8/2003	10.7	0.07	74.25%	3.75	1.76	3.15	Yes
Base flow	10/10/1994	12.5	0.07	73.13%	4.96	2.33	3.57	Yes
Base flow	11/14/1995	3.5	0.08	72.23%	1.53	0.72	3.93	Yes
Base flow	7/12/1994	17	0.08	72.08%	7.56	3.55	4.00	Yes
Base flow	7/24/2001	21	0.09	71.79%	9.63	4.52	4.13	No
Base flow	7/21/1992	30	0.09	71.19%	14.56	6.84	4.37	No
Base flow	6/7/1994	26.5	0.10	70.30%	13.93	6.55	4.73	No
Base flow	6/2/1998	19	0.11	69.02%	11.06	5.20	5.24	Yes
Base flow	9/15/1992	30	0.11	68.62%	18.20	8.55	5.46	No
Base flow	7/18/2000	9	0.11	68.62%	5.46	2.57	5.46	Yes
Base flow	11/4/1997	9.5	0.12	68.06%	6.03	2.84	5.72	Yes
Base flow	6/25/1991	11	0.12	67.94%	7.12	3.35	5.82	Yes
Base flow	2/11/2003	14.5	0.12	67.94%	9.38	4.41	5.82	Yes
Base flow	2/11/2003	2.2	0.12	67.94%	1.42	0.67	5.82	Yes
Base flow	8/18/1992	27	0.13	66.81%	19.29	9.07	6.43	No
Base flow	9/24/1991	78	0.14	66.13%	59.94	28.17	6.92	No
Base flow	3/19/1996	11	0.15	65.62%	8.88	4.17	7.26	Yes
Base flow	9/25/2001	8.8	0.16	65.13%	7.36	3.46	7.52	Yes
Base flow	10/23/1990	11	0.16	64.83%	9.49	4.46	7.77	Yes
Base flow	11/19/1990	9	0.16	64.67%	7.89	3.71	7.89	Yes

Table F.4. Base flow percent reductions
WHI0051

Category	Date	Observed TSS at WHI0051 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	8/1/1995	38	0.17	64.15%	35.20	16.54	8.34	No
Base flow	2/27/1996	3	0.18	63.25%	2.98	1.40	8.93	Yes
Base flow	7/6/1993	15	0.21	61.74%	16.79	7.89	10.07	Yes
Base flow	2/7/2000	3	0.21	61.74%	3.36	1.58	10.07	Yes
Base flow	9/2/2003	37.2	0.23	60.09%	46.64	21.92	11.28	No

Total number of values =	59
Allowable % of exceedances =	25%
Allowable no. of exceedances =	15
No. of exceedances before reductions =	41
No. of exceedances after reductions =	15

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI51-DEC2005.XLS

Table F.4. Base flow percent reductions
WHI0051

TABLE F.5. CALCULATIONS FOR PERCENT REDUCTION FOR STORM-FLOW CONDITIONS
FOR WHITE RIVER (STATION WHI0052)

Storm-flow target TSS conc. = 12 mg/L
Percent reduction needed = 40%

Error check for reduction is / is not needed: ok
Error check for less or more reduction needed: ok

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	5/29/2001	16.5	0.24	59.95%	20.91	12.55	15.21	Yes
Storm-flow	11/9/1993	1	0.24	59.72%	1.29	0.78	15.53	Yes
Storm-flow	7/8/1997	71.5	0.25	59.41%	94.61	56.77	15.88	No
Storm-flow	6/24/2003	<1	0.27	58.19%	1.43	0.86	17.15	Yes
Storm-flow	1/11/1994	3	0.28	57.54%	4.45	2.67	17.80	Yes
Storm-flow	7/23/2002	6	0.29	56.87%	9.38	5.63	18.77	Yes
Storm-flow	8/24/2004	8.8	0.29	56.72%	13.88	8.33	18.93	Yes
Storm-flow	8/20/2002	8.2	0.33	54.77%	14.70	8.82	21.52	Yes
Storm-flow	10/5/1993	30	0.34	54.47%	54.60	32.76	21.84	No
Storm-flow	1/14/2003	5	0.34	54.47%	9.10	5.46	21.84	Yes
Storm-flow	1/22/2002	2.5	0.35	53.84%	4.75	2.85	22.81	Yes
Storm-flow	6/26/2001	12.3	0.37	53.27%	24.21	14.53	23.62	Yes
Storm-flow	7/12/1999	8	0.38	52.69%	16.29	9.77	24.43	Yes
Storm-flow	11/19/2001	5.5	0.39	52.21%	11.57	6.94	25.24	Yes
Storm-flow	1/27/1997	6	0.42	51.21%	13.58	8.15	27.15	Yes
Storm-flow	2/9/1993	7	0.47	49.60%	17.55	10.53	30.09	Yes
Storm-flow	11/3/1992	27	0.47	49.52%	68.07	40.84	30.25	No
Storm-flow	4/8/2003	12.8	0.47	49.41%	32.44	19.47	30.42	Yes
Storm-flow	5/6/1997	5.5	0.48	49.17%	14.12	8.47	30.81	Yes
Storm-flow	2/26/1991	9	0.49	48.82%	23.54	14.12	31.39	Yes
Storm-flow	5/16/2000	9	0.49	48.82%	23.54	14.12	31.39	Yes
Storm-flow	12/8/1992	6	0.50	48.24%	16.10	9.66	32.20	Yes
Storm-flow	4/4/2000	16.5	0.50	48.10%	44.49	26.69	32.36	Yes
Storm-flow	10/13/1998	11	0.51	47.91%	29.96	17.97	32.68	Yes

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	3/27/2001	5.5	0.54	46.69%	15.87	9.52	34.62	Yes
Storm-flow	12/6/1994	4.5	0.55	45.93%	13.40	8.04	35.73	Yes
Storm-flow	5/25/2004	5.5	0.56	45.45%	16.61	9.97	36.24	Yes
Storm-flow	6/23/1992	28	0.57	44.97%	86.07	51.64	36.89	No
Storm-flow	5/5/1998	8	0.58	44.66%	24.88	14.93	37.32	Yes
Storm-flow	2/24/2004	7.8	0.60	43.73%	25.13	15.08	38.67	Yes
Storm-flow	3/15/2005	7.2	0.61	43.36%	23.59	14.15	39.31	Yes
Storm-flow	11/3/1998	20	0.62	42.91%	66.87	40.12	40.12	Yes
Storm-flow	4/24/2001	12	0.63	42.61%	40.61	24.37	40.61	Yes
Storm-flow	1/28/1992	5	0.65	41.83%	17.53	10.52	42.06	Yes
Storm-flow	12/5/2000	3.5	0.67	41.23%	12.60	7.56	43.20	Yes
Storm-flow	3/17/1992	12	0.71	39.79%	46.11	27.67	46.11	Yes
Storm-flow	12/7/1999	17.5	0.73	39.35%	68.42	41.05	46.92	Yes
Storm-flow	6/15/1993	21	0.81	36.87%	91.17	54.70	52.10	No
Storm-flow	6/17/2003	23.2	0.81	36.87%	100.72	60.43	52.10	No
Storm-flow	6/13/2000	19.5	0.81	36.79%	84.92	50.95	52.26	Yes
Storm-flow	5/10/1994	7	0.88	34.69%	33.31	19.99	57.11	Yes
Storm-flow	2/15/1994	2.5	0.91	33.96%	12.27	7.36	58.89	Yes
Storm-flow	5/14/2002	10.5	0.91	33.89%	51.67	31.00	59.05	Yes
Storm-flow	1/23/2001	2.5	0.93	33.55%	12.47	7.48	59.86	Yes
Storm-flow	6/3/1996	17.5	0.95	32.81%	90.08	54.05	61.77	Yes
Storm-flow	1/4/2000	22.5	1.00	31.80%	121.34	72.80	64.71	No
Storm-flow	1/29/1991	5	1.00	31.75%	27.03	16.22	64.88	Yes
Storm-flow	7/27/2004	10	1.04	31.01%	55.82	33.49	66.98	Yes
Storm-flow	2/27/1995	4.5	1.12	29.27%	27.09	16.26	72.25	Yes
Storm-flow	3/7/2000	8.5	1.13	29.03%	51.68	31.01	72.97	Yes
Storm-flow	10/16/2001	17	1.14	28.81%	104.74	62.85	73.94	Yes
Storm-flow	2/26/2002	5.5	1.14	28.81%	33.89	20.33	73.94	Yes
Storm-flow	3/4/2003	5.2	1.15	28.66%	32.18	19.31	74.26	Yes
Storm-flow	5/13/2003	17.5	1.15	28.53%	108.77	65.26	74.58	Yes

Table F.5. Storm flow percent reductions
WHI0052

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	3/21/1995	7.5	1.17	28.17%	47.34	28.40	75.74	Yes
Storm-flow	12/1/1998	31	1.18	27.95%	197.69	118.61	76.53	No
Storm-flow	12/4/2001	9.5	1.19	27.87%	60.84	36.50	76.85	Yes
Storm-flow	6/2/1992	16	1.19	27.65%	102.90	61.74	77.17	Yes
Storm-flow	11/16/2004	6.5	1.25	26.79%	43.64	26.19	80.57	Yes
Storm-flow	12/14/2004	5	1.26	26.65%	33.84	20.30	81.22	Yes
Storm-flow	12/16/2003	5	1.27	26.43%	34.18	20.51	82.03	Yes
Storm-flow	3/9/1993	8	1.30	25.80%	56.09	33.65	84.13	Yes
Storm-flow	12/2/1997	9.5	1.32	25.52%	67.51	40.50	85.27	Yes
Storm-flow	6/11/2002	11.5	1.48	23.13%	91.79	55.07	95.78	Yes
Storm-flow	2/18/1992	12	1.56	21.97%	101.12	60.67	101.12	Yes
Storm-flow	5/7/1991	18	1.66	20.64%	161.38	96.83	107.59	Yes
Storm-flow	3/12/2002	8	1.68	20.45%	72.48	43.49	108.72	Yes
Storm-flow	1/27/2004	4.8	1.68	20.45%	43.49	26.09	108.72	Yes
Storm-flow	2/11/1997	3.5	1.76	19.63%	33.16	19.90	113.70	Yes
Storm-flow	2/8/2005	6.2	1.83	18.93%	61.10	36.66	118.27	Yes
Storm-flow	12/17/1991	6	1.85	18.61%	59.70	35.82	119.40	Yes
Storm-flow	2/3/1998	4.5	1.87	18.41%	45.38	27.23	121.00	Yes
Storm-flow	1/11/2005	9	1.90	18.13%	92.10	55.26	122.80	Yes
Storm-flow	4/5/1994	8	1.95	17.71%	84.02	50.41	126.03	Yes
Storm-flow	1/23/1996	8	2.04	16.81%	88.18	52.91	132.27	Yes
Storm-flow	3/3/1998	3.5	2.05	16.73%	38.67	23.20	132.59	Yes
Storm-flow	5/13/1996	15	2.09	16.44%	168.72	101.23	134.97	Yes
Storm-flow	4/2/1991	14	2.13	16.10%	160.63	96.38	137.68	Yes
Storm-flow	4/16/1996	12	2.14	16.01%	138.79	83.27	138.79	Yes
Storm-flow	4/23/1991	12	2.31	14.69%	149.65	89.79	149.65	Yes
Storm-flow	11/8/1994	18.5	2.60	12.75%	259.49	155.70	168.32	Yes
Storm-flow	6/6/1995	16	2.90	11.31%	249.84	149.90	187.38	Yes
Storm-flow	3/15/1994	6	3.00	10.79%	97.07	58.24	194.14	Yes
Storm-flow	1/12/1993	10	3.10	10.40%	167.18	100.31	200.62	Yes

Table F.5. Storm flow percent reductions
WHI0052

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Storm-flow	3/4/1997	10	3.44	9.11%	185.26	111.16	222.31	Yes
Storm-flow	12/3/1996	5.5	3.48	8.96%	103.35	62.01	225.49	Yes
Storm-flow	3/30/2004	21	3.50	8.91%	396.38	237.83	226.50	No
Storm-flow	11/7/2000	40.5	3.63	8.52%	791.74	475.05	234.59	No
Storm-flow	2/27/2001	13.5	3.80	7.95%	276.66	165.99	245.92	Yes
Storm-flow	11/18/2003	328	3.80	7.95%	6721.70	4033.02	245.92	No
Storm-flow	12/14/1993	16	3.98	7.47%	342.99	205.79	257.24	Yes
Storm-flow	9/15/1998	23.5	4.34	6.73%	550.42	330.25	281.06	No
Storm-flow	4/20/1993	98	4.43	6.54%	2338.63	1403.18	286.36	No
Storm-flow	4/8/1997	7	4.86	5.77%	183.41	110.04	314.41	Yes
Storm-flow	4/11/1995	113	5.35	5.13%	3259.76	1955.86	346.17	No
Storm-flow	4/21/1992	35	5.70	4.66%	1075.88	645.53	368.87	No
Storm-flow	6/22/2004	42.8	6.05	4.29%	1396.44	837.86	391.52	No
Storm-flow	12/18/1990	50	6.08	4.25%	1638.09	982.86	393.14	No
Storm-flow	11/19/1991	14	7.08	3.44%	534.17	320.50	457.86	Yes
Storm-flow	5/11/1993	30	7.55	3.07%	1221.49	732.89	488.60	No
Storm-flow	4/27/2004	18.7	10.33	1.98%	1041.25	624.75	668.18	Yes
Storm-flow	4/9/2002	73	11.53	1.68%	4537.18	2722.31	745.84	No
Storm-flow	5/9/1995	48	12.07	1.54%	3125.06	1875.03	781.26	No
Storm-flow	3/31/1998	458	14.72	1.12%	36363.70	21818.22	952.76	No

Total number of values =	104
Allowable % of exceedances =	20%
Allowable no. of exceedances =	21
No. of exceedances before reductions =	41
No. of exceedances after reductions =	21

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI52-DEC2005.XLS

Table F.5. Storm flow percent reductions
WHI0052

TABLE F.6. CALCULATIONS FOR PERCENT REDUCTION FOR BASE FLOW CONDITIONS
FOR WHITE RIVER (STATION WHI0052)

Base flow target TSS conc. = 11 mg/L
Percent reduction needed = 32%

Error check for reduction is / is not needed: ok
Error check for less or more reduction needed: ok

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	7/23/1991	14	0.00	99.72%	0.08	0.05	0.06	Yes
Base flow	8/4/1998	12	0.00	99.51%	0.13	0.09	0.12	Yes
Base flow	9/25/1990	30	0.00	99.33%	0.40	0.28	0.15	No
Base flow	8/29/1995	13.5	0.00	99.21%	0.21	0.15	0.17	Yes
Base flow	10/7/1997	15	0.01	96.58%	0.56	0.38	0.41	Yes
Base flow	10/12/1999	11	0.01	96.05%	0.46	0.31	0.46	Yes
Base flow	8/27/1991	16.5	0.01	94.13%	0.93	0.64	0.62	No
Base flow	8/15/2000	9.5	0.01	94.13%	0.54	0.37	0.62	Yes
Base flow	8/3/1993	14	0.01	94.01%	0.81	0.55	0.64	Yes
Base flow	9/9/1997	11.5	0.01	93.94%	0.67	0.46	0.64	Yes
Base flow	8/5/2003	13.8	0.01	93.73%	0.82	0.56	0.65	Yes
Base flow	10/22/1991	12.5	0.01	93.37%	0.78	0.53	0.68	Yes
Base flow	9/6/1994	29.5	0.01	93.37%	1.83	1.24	0.68	No
Base flow	11/19/2002	10.7	0.01	92.75%	0.71	0.48	0.73	Yes
Base flow	9/17/2002	8.3	0.02	89.67%	0.74	0.50	0.98	Yes
Base flow	8/5/1997	14	0.02	89.54%	1.28	0.87	1.00	Yes
Base flow	10/22/2002	10.8	0.02	89.47%	0.99	0.67	1.01	Yes
Base flow	10/13/1992	12	0.02	88.82%	1.15	0.78	1.05	Yes
Base flow	8/9/1999	4.5	0.02	88.82%	0.43	0.29	1.05	Yes
Base flow	8/31/1993	24	0.02	87.52%	2.56	1.74	1.17	No
Base flow	9/25/1995	21.5	0.02	86.63%	2.48	1.68	1.27	No
Base flow	6/30/1998	14	0.02	84.94%	1.85	1.26	1.46	Yes
Base flow	11/22/1999	8	0.03	82.55%	1.29	0.88	1.78	Yes
Base flow	10/10/2000	10	0.03	81.54%	1.75	1.19	1.93	Yes

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	9/9/2003	10	0.04	80.66%	1.89	1.28	2.08	Yes
Base flow	8/9/1994	21	0.04	79.81%	4.25	2.89	2.22	No
Base flow	12/10/2002	4.8	0.04	79.06%	1.04	0.70	2.37	Yes
Base flow	9/13/1999	7.5	0.04	78.42%	1.72	1.17	2.52	Yes
Base flow	8/28/2001	13.7	0.04	78.42%	3.14	2.14	2.52	Yes
Base flow	10/23/1995	18	0.04	78.13%	4.29	2.92	2.62	No
Base flow	10/11/1994	18	0.05	77.14%	4.76	3.24	2.91	No
Base flow	7/8/2003	8.2	0.07	74.25%	2.87	1.95	3.86	Yes
Base flow	12/5/1995	11.5	0.07	73.78%	4.26	2.90	4.08	Yes
Base flow	10/19/2004	15.7	0.07	73.64%	5.93	4.03	4.15	Yes
Base flow	11/14/1995	13	0.08	72.22%	5.68	3.86	4.80	Yes
Base flow	7/12/1994	8	0.08	72.08%	3.56	2.42	4.89	Yes
Base flow	7/24/2001	16	0.09	71.79%	7.33	4.99	5.04	Yes
Base flow	7/21/1992	17	0.09	71.19%	8.25	5.61	5.34	No
Base flow	6/7/1994	14	0.10	70.30%	7.36	5.01	5.78	Yes
Base flow	6/2/1998	10.5	0.11	69.02%	6.11	4.16	6.40	Yes
Base flow	9/15/1992	29	0.11	68.62%	17.59	11.96	6.67	No
Base flow	7/18/2000	9.5	0.11	68.62%	5.76	3.92	6.67	Yes
Base flow	11/4/1997	11	0.12	68.06%	6.99	4.75	6.99	Yes
Base flow	6/25/1991	10	0.12	67.94%	6.47	4.40	7.12	Yes
Base flow	8/18/1992	18	0.13	66.81%	12.86	8.75	7.86	No
Base flow	9/24/1991	36	0.14	66.13%	27.67	18.81	8.45	No
Base flow	3/19/1996	7.5	0.15	65.62%	6.05	4.12	8.88	Yes
Base flow	6/24/1997	14	0.15	65.42%	11.49	7.81	9.02	Yes
Base flow	10/23/1990	14	0.16	64.83%	12.08	8.21	9.49	Yes
Base flow	11/19/1990	10	0.16	64.66%	8.76	5.96	9.64	Yes
Base flow	9/11/2001	25	0.17	64.49%	22.25	15.13	9.79	No
Base flow	8/1/1995	10.5	0.17	64.15%	9.73	6.61	10.19	Yes
Base flow	2/26/1996	6	0.19	63.10%	6.03	4.10	11.06	Yes
Base flow	9/28/2004	18.2	0.19	62.63%	18.89	12.85	11.42	No

Table F.6. Base flow percent reductions
WHI0052

Category	Date	Observed TSS at WHI0052 (mg/L)	Flow per unit area on sampling day (cfs/mi2)	Percent exceedance for flow on sampling day	Current TSS load (lbs/day)/mi2	Reduced TSS load (lbs/day)/mi2	Allowable TSS load (lbs/day)/mi2	Reduced load less than or equal to allow. load?
Base flow	2/8/2000	5.5	0.20	62.01%	6.01	4.08	12.01	Yes
Base flow	7/6/1993	16	0.21	61.74%	17.90	12.18	12.31	Yes

Total number of values =	56
Allowable % of exceedances =	25%
Allowable no. of exceedances =	14
No. of exceedances before reductions =	34
No. of exceedances after reductions =	14

FILE: R:\PROJECTS\2110-615\TECH\TMDL\WHITE RIVER\WHITE RIVER TMDL-WHI52-DEC2005.XLS

Table F.6. Base flow percent reductions
WHI0052