TMDL Synopsis

State: Kentucky
Major River Basin: Green River
HUC8: 05110001
Counties: Adair, Green, Taylor, Hart, Metcalfe and Taylor
Pollutant of Concern: Fecal Coliform
Impaired Waterbodies: See Table S.1
Impaired Use: See Table S.2

Table S.1 Impaired Waterbodies Addressed in this TMDL Document

Waterbody Name, River Miles (RM)	Segment Length (miles)	County	GNIS ID	Suspected Source
Big Brush Creek of Green River, RM 0.0-5.0	5.0	Green	KY487146_01	Unknown
Big Brush Creek of Green River, RM 7.1-13.0	5.9	Green	KY487146_03	Unknown
Big Pitman Creek of Green River, RM 13.9-17.8	3.9	Green	KY487227_02	Unknown
Big Pitman Creek of Green River, RM 17.8-23.65	5.85	Taylor	KY487227_03	Unknown
Brush Creek of Big Brush Creek, RM 0.0-2.15	2.15	Green	KY488077_01	Unknown
East Fork Little Barren River of Little Barren River, RM 0.0-15.9	15.9	Metcalfe	KY491468_01	Unknown
East Fork Little Barren River of Little Barren River, RM 20.7-30.0	9.3	Metcalfe	KY491468_03	Unknown
Little Barren River of Green River, RM 9.8-15.7	5.9	Green	KY496604_02	Unknown
Little Brush Creek of Big Brush Creek, RM 3.2-13.2	10.0	Green	KY496646_01	Unknown
Little Pitman Creek of Big Pitman Creek, RM 0.0-10.1	10.1	Taylor	KY496827_01	Unknown
Little Pitman Creek of Big Pitman Creek, RM 10.1-11.2	1.1	Taylor	KY496827_02	Unknown
Little Russell Creek of Green River, RM 0.0-5.1	5.1	Green	KY496854_01	Unknown
Lynn Camp Creek of Green River, RM 0.0-8.3	8.3	Hart	KY497374_01	Unknown

Waterbody Name, River Miles (RM)	Segment Length (miles)	County	GNIS ID	Suspected Source
Middle Pitman Creek of Big Pitman Creek, RM 0.0-7.7	7.7	Taylor	KY498146_01	Unknown
Middle Pitman Creek of Big Pitman Creek, RM 8.2-10.1	1.9	Taylor	KY498146_02	Unknown
Russell Creek of Green River, RM 23.8-40.0	16.2	Adair	KY502521_04	Unknown
Russell Creek of Green River, RM 60.4-66.3	5.9	Adair	KY502521_07	Unknown
South Fork Little Barren River of Little Barren River, RM 0.0-23.1	23.1	Metcalfe	KY503933_01	Unknown
South Fork Little Barren River of Little Barren River, RM 23.1-30.1	7.0	Metcalfe	KY503933_02	Unknown
Sulphur Creek of Russell Creek, RM 0.0-10.7	10.7	Adair	KY504734_01	Unknown

TMDL Endpoints (e.g., Water Quality Standard): 360 colonies/100ml (400 colonies/100ml minus a 10% explicit Margin of Safety)

Table S.2 Impaired Uses

Waterbody Name, River Miles	GNIS ID	Impaired Use(s)
Big Brush Creek of Green River, RM 0.0-5.0	KY487146_01	Primary Contact Recreation (Nonsupport)
Big Brush Creek of Green River, RM 7.1-13.0	KY487146_03	Primary Contact Recreation (Nonsupport)
Big Pitman Creek of Green River, RM 13.9-17.8	KY487227_02	Primary Contact Recreation (Partial Support)
Big Pitman Creek of Green River, RM 17.8-23.65	KY487227_03	Primary Contact Recreation (Nonsupport)
Brush Creek of Big Brush Creek, RM 0.0-2.15	KY488077_01	Primary Contact Recreation (Partial Support)
East Fork Little Barren River of Little Barren River, RM 0.0-15.9	KY491468_01	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Partial Support)
East Fork Little Barren River of Little Barren River, RM 20.7-30.0	KY491468_03	Primary Contact Recreation (Partial Support)
Little Barren River of Green River, RM 9.8-15.7	KY496604_02	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Nonsupport)

Waterbody Name, River Miles	GNIS ID	Impaired Use(s)
Little Brush Creek of Big Brush Creek, RM 3.2-13.2	KY496646_01	Primary Contact Recreation (Nonsupport)
Little Pitman Creek of Big Pitman Creek, RM 0.0-10.1	KY496827_01	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Partial Support)
Little Pitman Creek of Big Pitman Creek, RM 10.1-11.2	KY496827_02	Primary Contact Recreation (Nonsupport)
Little Russell Creek of Green River, RM 0.0-5.1	KY496854_01	Primary Contact Recreation
Lynn Camp Creek of Green River, RM 0.0-8.3	KY497374_01	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Nonsupport)
Middle Pitman Creek of Big Pitman Creek, RM 0.0-7.7	KY498146_01	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Nonsupport)
Middle Pitman Creek of Big Pitman Creek, RM 8.2-10.1	KY498146_02	Primary Contact Recreation (Nonsupport)
Russell Creek of Green River, RM 23.8-40.0	KY502521_04	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Partial Support)
Russell Creek of Green River, RM 60.4-66.3	KY502521_07	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Nonsupport)
South Fork Little Barren River of Little Barren River, RM 0.0-23.1	KY503933_01	Primary Contact Recreation (Nonsupport); Secondary Contact Recreation (Nonsupport)
South Fork Little Barren River of Little Barren River, RM 23.1-30.1	KY503933_02	Primary Contact Recreation (Nonsupport)
Sulphur Creek of Russell Creek, RM 0.0-10.7	KY504734_01	Primary Contact Recreation (Partial Support)

Table S.3 TMDL Allocation Table

TMDL	MOS[1]	WLA[6]				LA[6]	Percent Reduction[5]
		Wastewater[2,3]		MS4			
Big Brush Creek of Green River, RM 0.0-5.0							
1.06×10^{12} col/day	1.06×10^{11} col/day	0.0 col/day		0.0 col/day		9.56×10^{11} col/day	55%
Big Brush Creek of Green River, RM 7.1-13.0							
5.02×10^{11} col/day	5.02×10^{10} col/day	0.0 col/day		0.0 col/day		4.52×10^{11} col/day	64%
Big Pitman Creek of Green River, RM 13.9-17.8							
1.56×10^{12} col/day	1.56×10^{11} col/day	0.0 col/day		0.0 col/day		1.40×10^{12} col/day	87%
Big Pitman Creek of Green River, RM 17.8-23.65							
7.46×10^{11} col/day	7.46×10^{10} col/day	0.0 col/day		0.0 col/day		6.71×10^{11} col/day	83%
Brush Creek of Big Brush Creek, RM 0.0-2.15							
1.98×10^{11} col/day	1.98×10^{10} col/day	0.0 col/day		0.0 col/day		1.78×10^{11} col/day	34%
East Fork Little Barren River of Little Barren River, RM 0.0-15.9							
1.25×10^{12} col/day	1.25×10^{11} col/day	0.0 col/day		0.0 col/day		1.13×10^{12} col/day	96%
East Fork Little Barren River of Little Barren River, RM 20.7-30.0							
6.56×10^{10} col/day	6.56×10^{09} col/day	0.0 col/day		0.0 col/day		5.90×10^{10} col/day	94%
Little Barren River of Green River, RM 9.8-15.7							
3.01×10^{12} col/day	3.01×10^{11} col/day	Edmonton STP KY0054437	7.70×10^{09} col/day	0.0 col/day		2.70×10^{12} col/day	96%
Little Brush Creek of Big Brush Creek, RM 3.2-13.2							
3.13×10^{11} col/day	3.13×10^{10} col/day	0.0 col/day		0.0 col/day		2.82×10^{11} col/day	94%
Little Pitman Creek of Big Pitman Creek, RM 0.0-10.1							
4.70×10^{11} col/day	4.70×10^{10} col/day	Campbellsville STP KY0022039	6.36×10^{10} col/day	City of Campbellsville KYG200015[4]	6.39×10^{10} col/day	2.95×10^{11} col/day	93%
Little Pitman Creek of Big Pitman Creek, RM 10.1-11.2							
1.64×10^{11} col/day	1.64×10^{10} col/day	0.0 col/day		City of Campbellsville KYG200015[4]	1.63×10^{10} col/day	1.32×10^{11} col/day	94%
Little Russell Creek of Green River, RM 0.0-5.1							
1.20×10^{11} col/day	1.20×10^{10} col/day	0.0 col/day		0.0 col/day		1.08×10^{11} col/day	80%
Lynn Camp Creek of Green River, RM 0.0-8.3							
4.47×10^{11} col/day	4.47×10^{10} col/day	0.0 col/day		0.0 col/day		4.03×10^{11} col/day	96%
Middle Pitman Creek of Big Pitman Creek, RM 0.0-7.7							
3.16×10^{11} col/day	3.16×10^{10} col/day	0.0 col/day		0.0 col/day		2.84×10^{11} col/day	86%

TMDL	MOS[1]	WLA[6]			LA[6]	Percent Reduction[5]
		Wastewater[2,3]		MS4		
Middle Pitman Creek of Big Pitman Creek, RM 8.2-10.1						
1.52×10^{11} col/day	1.52×10^{10} col/day	0.0 col/day		0.0 col/day	1.37×10^{11} col/day	86%
Russell Creek of Green River, RM 23.8-40.0						
2.52×10^{12} col/day	2.52×10^{11} col/day	Columbia STP KY0024317	1.82×10^{10} col/day	0.0 col/day	2.25×10^{12} col/day	85%
Russell Creek of Green River, RM 60.4-66.3						
2.42×10^{11} col/day	2.42×10^{10} col/day	0.0 col/day		0.0 col/day	2.18×10^{11} col/day	94%
South Fork Little Barren River of Little Barren River, RM 0.0-23.1						
1.34×10^{12} col/day	1.34×10^{11} col/day	Edmonton STP KY0054437	7.70×10^{09} col/day	0.0 col/day	1.19×10^{12} col/day	97%
South Fork Little Barren River of Little Barren River, RM 23.1-30.1						
2.47×10^{11} col/day	2.47×10^{10} col/day	0.0 col/day		0.0 col/day	2.22×10^{11} col/day	85%
Sulphur Creek of Russell Creek, RM 0.0-10.7						
4.91×10^{11} col/day	4.91×10^{10} col/day	0.0 col/day		0.0 col/day	4.42×10^{11} col/day	76%

Notes:

(1). MOS is an explicit 10% of the TMDL.

(2). Any future KPDES wastewater permitted sources must meet permit limits based on the Water Quality Standards in 401 KAR 5:031, and must not cause or contribute to an existing impairment.

(3). WLA value is based on design flow and acute permit limits and represents the maximum one-day load that can be discharged to the stream segment.

(4). The MS4 discharges to two impaired segments; therefore, it must meet the lower of the two WLAs. However, if the MS4 complies with its storm water permit, KDOW regards the MS4 as being in compliance with 401 KAR Chapter 5.

(5). Overall reduction required to achieve the TMDL Target of 360 colonies/100ml.

(6). In the event that compliance with the WQC is determined using E. coli concentrations as opposed to fecal coliform concentrations, the final fecal coliform allocations can be converted to E. coli by multiplying by the figure (240/400). While this calculation can be used to determine allocations for E. coli, it cannot be used to convert ambient fecal coliform concentrations to E. coli concentrations.

Table S.4 KPDES Permits Addressed in These TMDLs

Facility Name	KPDES No.	Design Flow (MGD)	Facility Type	Permit Limits (col/100ml)(2)		WLA
				Monthly Avg.	Max Weekly Avg.	
Little Barren River of Green River, RM 9.8-15.7						
Edmonton STP	KY0054437	0.51	Sanitary Wastewater Treatment Plant	200	400	7.72×10^{9} col/day
Little Pitman Creek of Green River, RM 0.0-10.1						
City of Campbellsville	KYG200015	n/a	MS4 Municipal entity(1)	n/a	n/a	6.39×10^{10} col/day
Campbellsville STP	KY0022039	4.2	Sanitary Wastewater Treatment Plant	200	400	6.36×10^{10} col/day
Little Pitman Creek of Green River, RM 10.1-11.2						
City of Campbellsville	KYG200015	n/a	MS4 Municipal entity(1)	n/a	n/a	1.63×10^{10} col/day
Russell Creek of Green River, RM 23.8-40.0						
Columbia STP	KY0024317	1.2	Sanitary Wastewater Treatment Plant	200	400	1.82×10^{10} col/day
South Fork Little Barren River of Little Barren River, RM 0.0-23.1						
Edmonton STP	KY0054437	0.51	Sanitary Wastewater Treatment Plant	200	400	7.70×10^{09} col/day

(1) The MS4 discharges to two impaired segments; therefore, it must meet the higher of the two percent reductions, and the lower of the two WLAs. However, if the MS4 complies with its storm water permit, KDOW regards the MS4 as being in compliance with 401 KAR Chapter 5.

(2) In the event that compliance with the WQC is determined using E. coli concentrations as opposed to fecal coliform concentrations, the final fecal coliform allocations can be converted to E. coli by multiplying by the figure (240/400) for the acute limit, or (130/200) for the chronic limit. While this calculation can be used to determine allocations for E. coli, it cannot be used to convert ambient fecal coliform concentrations to E. coli concentrations.