

208 Factsheet regarding Bacteria and Turbidity TMDLs for Southeast Oklahoma

Watershed: This TMDL Study Area is located in the southeastern part of Oklahoma. The waterbodies and their watersheds addressed in this report are scattered over Atoka, Choctaw, Hughes, Latimer, Le Flore, McCurtain, McIntosh, Pittsburg, Pushmataha, and Sequoyah counties.

Beneficial Uses in This Watershed: According to Oklahoma's [2022 Integrated Report](#), the designated beneficial uses for the Oklahoma streams addressed in this TMDL are Aesthetics (AES), Agriculture (AG), Fish & Wildlife Propagation (Warm Water Aquatic Community Subcategory (WWAC) or Cool Warm Water Aquatic Community Subcategory (CWAC)), Fish Consumption, Primary Body Contact Recreation (PBCR), Public & Private Water Supply (PPWS), Sensitive Public and Private Water Supplies (SWS), and High Quality Water (HQW).

Based on an assessment of water quality monitoring data for the 2022 IR, Oklahoma DEQ has placed the following waterbodies in Category 5 for not supporting the PBCR and/or Fish & Wildlife Propagation beneficial uses.

Waterbody ID	Waterbody Name	AES	AG	WWAC	CWAC	FISH	PBCR	PPWS	SWS	HQW
OK220100010010_00	Poteau River	F	F	N		F	N	I		
OK220100010010_10	Poteau River	F	F	F		F	N	I		
OK220100020010_10	Poteau River	F	F	N		F	N	I		
OK220200050010_00	Lee Creek	I	F		N	X	N	I		X
OK220600010100_20	Mill Creek	F	F	N		X	F	I		
OK220600030010_00	Brushy Creek	N	F	N		N	N	N		
OK220600040030_00	Beaver Creek	N	I	N		X	N			
OK410210020150_00	Terrapin Creek	F	F		N	X	F	I		X
OK410400010010_20	Red River	F	F	N		F	N	I		
OK410400020200_00	Caney Creek	N	F	N		X	N			
OK410400080010_00	Boggy Creek, North	F	F	N		X	I	I	X	
F – Fully supporting		N – Not supporting		I – Insufficient		X – Not assessed		Source: DEQ 2022 Integrated Report		

Possible Sources of Impairments:

Point Source:

- **OPDES regulated municipal and industrial wastewater treatment facilities:** The four (three municipal and one industrial) wastewater treatment facilities in the Poteau River (OK220100010010_00 and OK220100020010_10) watersheds will receive WLAs for their bacteria TMDL. This information can be found in Table 3-1 of the TMDL report.
- **OPDES regulated stormwater discharges:** DEQ regulates stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s), industrial sites, and construction sites.

- **MS4s:** There is only one Phase II MS4 in the TMDL Study Area [the Town of Arkoma (OKR040046)]. The Town of Arkoma's Phase II MS4 will have a MS4 WLA in the Poteau River (OK220100010010_00) bacterial TMDL calculation.
- **Multi-Sector General Permit (MSGP):** There are nine MSGP facilities in the Study Area. These can be found in Table 3-2 of the TMDL report.
- **Construction Sites:** There were six OKR10 permits for construction projects in the Study Area. These can be found in Table 3-3 of the TMDL report..
- **No-Discharge Facilities:** There are no facilities in the Study Area.
- **Sanitary Sewer Overflows (SSO):** Between 1990 and 2021, 272 SSO occurrences were reported with amounts ranging from a minimal quantity to 10 million gallons.
- **NPDES regulated Animal Feeding Operations (AFOs):** There are 66 PFOs and no CAFOs or SFOs located in the Study Area.

Nonpoint Sources:

- **Wildlife** –Estimated numbers of wild deer are summarized in Table 3-6 of the TMDL report.
- **Farm animals** –Estimated numbers of farm animals are summarized in Table 3-10 of the TMDL report.
- **Pets** –Estimated numbers of pets are summarized in Table 3-8 of the TMDL report.
- **Failing Septic Systems** –Estimated numbers of failing septic systems are summarized in Table 3-13 of the TMDL report.

TMDL Calculation:

The TMDL, WLA, LA, and MOS will vary with flow condition, and are calculated at every 5th flow interval percentile. The below tables summarize the TMDL, WLA, LA and MOS loadings at the 50% flow percentile.

Summaries of Bacterial TMDLs

Stream Name	Waterbody ID	Pollutant	TMDL (colonies /day)	WLA _{WWTF} (colonies /day)	WLA _{MS4} (colonies /day)	WLA _{Growth} (colonies /day)	LA (colonies /day)	MOS (colonies /day)
Poteau River	OK220100010010_00	ENT	4.58E+11	2.75E+09	3.86E+09	4.58E+10	3.60E+11	4.58E+10
Poteau River	OK220100020010_10	ENT	4.57E+10	9.12E+08	0.00E+00	4.57E+09	3.57E+10	4.57E+09
Poteau River	OK220100020010_10	EC	1.75E+11	3.48E+09	0.00E+00	1.75E+10	1.36E+11	1.75E+10

Summaries of TSS TMDLs

Waterbody ID and Waterbody Name	Pollutant	TMDL (lbs/day)	WLA _{WWTF} (lbs/day)	WLA _{MS4} (lbs/day)	WLA _{Growth} (lbs/day)	LA (lbs/day)	MOS (lbs/day)
OK220600010100_20 Mill Creek	TSS	152.9	0	0	1.5	120.8	30.6
OK220600030010_00 Brushy Creek	TSS	4,519.9	0	0	45.2	3,796.7	678.0
OK220600040030_00 Beaver Creek	TSS	824.6	0	0	8.2	733.9	82.5
OK410210020150_00 Terrapin Creek	TSS	719.1	0	0	7.2	604.1	107.9
OK410400010010_20 Red River	TSS	1,149,183.6	0	0	11,491.8	1,022,773.4	114,918.4
OK410400020200_00 Caney Creek	TSS	425.7	0	0	4.3	315.0	106.4
OK410400080010_00 North Boggy Creek	TSS	549.7	0	0	5.5	434.3	109.9

Each pollutant will need to be reduced [Percent Reduction Goal (PRG)] in order for an impaired waterbody to meet water quality standards and its designated beneficial uses:

PRG Needed for Waterbody to meet Water Quality Standards

WBID	Waterbody Name	These impairments must be reduced by the following amounts in order to meet water quality standards.		
		<i>E. coli</i>	Enterococci	Turbidity
OK220100010010_00	Poteau River		65.8%	
OK220100020010_10	Poteau River	38.8%	91.9%	
OK220600010100_20	Mill Creek			80.1%
OK220600030010_00	Brushy Creek			53.7%
OK220600040030_00	Beaver Creek			15.2%
OK410210020150_00	Terrapin Creek			49.1%
OK410400010010_20	Red River			18.3%
OK410400020200_00	Caney Creek			55.5%
OK410400080010_00	North Boggy Creek			52.8%

OPDES-permitted facilities are allocated a daily wasteload calculated as their permitted flow rate multiplied by the in-stream geometric mean water quality criterion for bacterial WLA. There are no facilities given TSS WLA.

WBID and Waterbody Name	Facility Name	OPDES Permit No.	Disinfection	Design Flow (MGD)	Wasteload Allocation (x10 ⁸ colonies/day)	
					ENT	<i>E. coli</i>
OK220100010010_00 Poteau River	OG&E River Valley Generating Station	OK0040169	Yes	1.65	20.6	-

WBID and Waterbody Name	Facility Name	OPDES Permit No.	Disinfection	Design Flow (MGD)	Wasteload Allocation (x10 ⁸ colonies/day)	
					ENT	<i>E. coli</i>
OK220100010010_00 Poteau River	Town of Pocola	OK0034134	Yes	0.55	6.9	-
OK220100020010_10 Poteau River	Heavener Utilities Authority	OK0038407	Yes	0.65	8.1	31.0
OK220100020010_10 Poteau River	Jim E. Hamilton Correctional Center	OK0022951	No	0.08	1.0	3.8

The Southeast Oklahoma TMDL Report can be found on the following DEQ webpage:
<https://www.deq.ok.gov/water-quality-division/watershed-planning/tmdl/>.

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