

208 Factsheet regarding Bacteria and Turbidity TMDLs for the Arkansas-White-Red Region in 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 Latimer, LeFlore, McCurtain, and Pushmataha counties.

Beneficial Uses in This Watershed: According to Oklahoma's [2022 Integrated Report](#), the designated beneficial uses for Oklahoma streams in the Arkansas-White-Red Region 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 Water Supplies (SWS), High Quality Water (HQW), and Outstanding Resource Water (ORW).

Based on an assessment of water quality monitoring data for the 2022 IR, Oklahoma DEQ has placed the below waterbodies in Category 5 for nonsupport of PBCR or Fish & Wildlife Propagation beneficial uses.

Waterbody ID	Waterbody Name	AES	AG	WWAC	CWAC	FISH	PBCR	PPWS	SWS	HQW	ORW
OK410100010010_10	Red River	I	F	N		F	N	I			
OK410100010340_00	Waterhole Creek	F	F	N		X	N	I			
OK410210060010_10	Little River, Mountain Fork	I	F		N	F	F	F			*
OK410300030020_10	Cedar Creek	F	F		N	X	N	I		*	
OK410300030060_00	One Creek	F	F	N		X	N				
OK410310030030_00	Buffalo Creek	F	F	N		X	N	I	*		
F – Fully supporting		N – Not supporting		I – Insufficient		X – Not assessed		* - Listed		Source: DEQ 2022 Integrated Report	

Possible Sources of Impairments:

Point Source:

- **OPDES regulated municipal and industrial wastewater treatment facilities:** There are two wastewater facilities (Town of Haworth and Weyerhaeuser Company). The bacteria WLA was given to the Town of Haworth, but no WLA was given to Weyerhaeuser Company because it wasn't considered as a bacteria source. This 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 are no MS4s in the study area.

- ◆ **Multi-Sector General Permit (MSGP):** There are three MSGP facilities in the study area. These can be found in Table 3-2 of the TMDL report.
- ◆ **Construction Sites:** There were four 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 1992 and 2022, 37 SSO occurrences were reported with amounts ranging from a minimal quantity to four million gallons.
- **NPDES regulated Animal Feeding Operations (AFOs):** In the study area, there are 25 PFOs and no CAFOs or SFOs.

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)
Red River	OK410100010010_10	ENT	3.59E+12	1.94E+08	0.00	3.59E+11	2.87E+12	3.59E+11
Waterhole Creek	OK410100010340_00	EC	4.43E+09	0.00	0.00	4.43E+08	3.54E+09	4.43E+08
Cedar Creek	OK410300030020_10	EC	2.30E+09	0.00	0.00	2.30E+08	1.84E+09	2.30E+08
One Creek	OK410300030060_00	EC	7.35E+08	0.00	0.00	7.35E+07	5.88E+08	7.35E+07
Buffalo Creek	OK410310030030_00	EC	4.18E+09	0.00	0.00	4.18E+08	3.35E+09	4.18E+08

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)
OK410210060010_10 Little River, Mountain Fork	TSS	9,500.0	0.00	0.00	95.0	8,455.0	950.0

Each pollutant will need to reduce [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
OK410100010010_10	Red River		39.4%	
OK410100010340_00	Waterhole Creek	42.2%		
OK410210060010_10	Little River, Mountain Fork			23.7%
OK410300030020_10	Cedar Creek	17.3%		
OK410300030060_00	One Creek	40.3%		
OK410310030030_00	Buffalo Creek	32.8%		

OPDES-permitted facility is allocated a daily wasteload calculated as its 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 (mg/d)	Wasteload Allocation (x10 ⁸ cfu/day)	
					ENT	<i>E. coli</i>
OK410100010010_10 Red River	Town of Haworth	OK0100650	No	0.155	1.94	-

The Arkansas-White-Red Region TMDL Report can be found on the following DEQ webpage:

<https://oklahoma.gov/deq/divisions/water-quality/watershed-planning/tmdl.html>.

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