

The background of the cover is a photograph of a river. Several tall, thin cypress trees with green foliage are partially submerged in the water. The water is dark and reflects the sky. The sky is filled with large, grey clouds, with a small patch of blue visible. The riverbank on the right is covered in green grass and reeds. The overall scene is a natural, outdoor setting.

WATER QUALITY IN OKLAHOMA

2016

INTEGRATED REPORT

PREPARED PURSUANT TO SECTION 303(D) AND SECTION 305(B) OF THE CLEAN WATER ACT

BY

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Acronyms and Definitions

Agencies

ODAFF	Oklahoma Department of Agriculture Food and Forestry
OCC	Oklahoma Conservation Commission
Corporation Commission	Oklahoma Corporation Commission
OSDH	Oklahoma State Department of Health
OSE	Office of the Oklahoma Secretary of Energy & Environment
DEQ	Oklahoma Department of Environmental Quality
OWRB	Oklahoma Water Resources Board
Wildlife Department	Oklahoma Department of Wildlife Conservation

Terminologies

303(d)	This section of the Clean Water Act requires each state to identify waters that do not or are not expected to meet applicable Water Quality Standards with technology-based controls alone. States are required to establish a priority ranking for the waters, taking into account the pollution severity and designated uses of the waters. Once identification and priority ranking are completed, states are to develop Total Maximum Daily Loads at a level necessary to achieve the applicable state Water Quality Standards.
304(l)	This section of the Clean Water Act requires each state to identify those waters that fail to meet Water Quality Standards due to toxic pollutants and other sources of toxicity. It also requires the preparation of individual control strategies that will reduce point source discharges of toxic pollutants.
305(b)	This section of the Clean Water Act requires each state to report its water quality on a biennial cycle.
314	This section of the Clean Water Act requires each state to establish a Lake Water Quality Assessment Report. This section provides federal funds for each state to submit a classification of lakes according to trophic condition, develop processes and methods to control sources of pollution and to work with other agencies in restoring the quality of those lakes. Section 314 establishes the guidelines for conducting Clean Lake Studies Phase I and II.
319(h)	This section of the Clean Water Act requires each state to develop a State Assessment Report and a Management Program for Nonpoint Source pollution problems. The Assessment Report is to describe the nature, extent, and effects of Nonpoint Source pollution, the causes and sources of such pollution, and programs and methods used for controlling this pollution.

BMPs	Best Management Practices: A technique that is determined to be the most effective, practical means of preventing or reducing pollutants from nonpoint sources in order to achieve water quality goals.
BOD₅	Biochemical Oxygen Demand (5-Day): The oxygen used in meeting the metabolic needs of aerobic microorganisms in water rich in organic matter -- called also biological oxygen demand; the test requires five days of laboratory time and results may vary when toxic substances are present which effect bacteria.
CBOD₅	Carbonaceous Biochemical Oxygen Demand (5-Day): That portion of the BOD that is not due to oxidation of nitrogenous compounds.
CTSI	Carlson's Trophic State Index (CTSI = $9.81 \ln[\text{chl-}\alpha] + 30.6$).
CWA	Clean Water Act: Public Law 92-500 enacted in 1972 provides for a comprehensive program of water pollution control; two goals are proclaimed in this Act: (1) to achieve swimmable, fishable waters wherever attainable by July 1, 1983, and (2) by 1985 eliminate the discharge of pollutants into navigable waters.
DDT	Dichlorodiphenyltrichloroethane: A colorless odorless water-insoluble crystalline insecticide $\text{C}_{14}\text{H}_9\text{Cl}_5$ that tends to accumulate in ecosystems and has toxic effects on many vertebrates.
DO	Dissolved Oxygen: The amount of oxygen dissolved in water. DO concentrations range from a few parts per million up to about 10 ppm for most Oklahoma streams. A level of DO around 7 ppm is essential to sustain desired species of game fish. If DO drops below 5 ppm the danger of a fish kill is present and malodorous conditions will result. The major factors determining DO levels in water are temperature, atmospheric pressure, plant photosynthesis, rate of aeration and the presence of oxygen demanding substances such as organic wastes. In addition to its effect on aquatic life, DO also prevents the chemical reduction and subsequent movement of iron and manganese from the sediments and thereby reduces the cost of water treatment.
µg/L	Microgram/liter.
NPDES	National Pollutant Discharge Elimination System: A permit program established by Section 402 of the Clean Water Act. This program regulates discharges into the nation's water from point sources, including municipal, industrial, commercial and certain agricultural sources.
NTU	Nephelometric Turbidity Units: The measurement of the extent or degree of cloudiness by means of a nephelometer (an instrument for determining the concentration or particle size of suspensions by means of transmitted or reflected light).
OKWBID	Oklahoma Waterbody Identification number: A unique identifier assigned to each waterbody in Oklahoma. For a complete description of OKWBIDs, please see Appendix A.
PCB(s)	Polychlorinated Biphenyl(s): Any of several compounds that are produced by replacing hydrogen atoms in biphenyl with chlorine, have various industrial applications, and are poisonous environmental pollutants which tend to accumulate in animal tissues.
pH	The negative logarithm of the effective hydrogen ion concentration or hydrogen-ion activity in gram equivalents per liter used in expressing both acidity and alkalinity on a scale whose values run from 0 to 14 with 7 representing neutrality, numbers less

	than 7 increasing acidity, and numbers greater than 7 increasing alkalinity.
Playa Lakes / Prairie Potholes	Shallow, small, ephemeral to permanent closed basin lake, typically found in high plains and deserts.
TDS	Total Dissolved Solids: The complete amount of solid matter dissolved in water or wastewater.
TMDL	Total Maximum Daily Load: The sum of individual wasteload allocations for point sources, safety, reserves, and loads from nonpoint source and natural backgrounds.
WLA	Wasteload Allocation: The assignment of target loads to point sources so as to achieve Water Quality Standards in the most efficient manner. The wasteload allocation is designed to allocate or allow certain quantities, rates or concentration of pollutants discharged from contributing point sources which empty their effluent into the same river segment. The purpose of the wasteload allocation is to eliminate an undue "wasteload burden" on a given stream segment.
WQS	Water Quality Standards: rules which establish classifications of uses of waters of the State, criteria to maintain and protect such classifications, and other standards or policies pertaining to the quality of such waters. The purpose of the Standards is to promote and protect as many beneficial uses as are attainable and to assure that degradation of existing quality of waters of the State does not occur. These rules can be found at OAC 785:45.

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Executive Summary/Overview

Clean Water Act (CWA) Section 303(d) Requirements

The 1972 amendments to the Clean Water Act include Section 303(d). The regulations implementing Section 303(d) require states to develop lists of water bodies that do not meet Water Quality Standards and to submit updated lists to the U. S. Environmental Protection Agency (EPA) every two years. Water quality standards, as defined in the Code of Federal Regulations, include beneficial uses, water quality objectives (narrative and numerical) and anti-degradation requirements. The EPA is required to review impaired water body lists submitted by each state and approve or disapprove all or part of the list.

For waterbodies on the 303(d) list, the Clean Water Act requires that a pollutant load reduction plan or TMDL be developed to correct each cause of impairment. TMDLs must document the nature of the water quality impairment, determine the maximum amount of a pollutant which can be discharged and still meet standards, and identify allowable loads from the contributing sources. The elements of a TMDL include a problem statement, description of the desired future condition (numeric target), pollutant source analysis, load allocations, description of how allocations relate to meeting targets, and margin of safety.

CWA Section 305(b) Requirements

The 1972 amendments to the Clean Water Act also include Section 305(b). The regulations implementing Section 305(b) require states to develop an inventory of the water quality of all water bodies in the state and to submit an updated report to the EPA every two years. This process was established as a means for the EPA and the U. S. Congress to determine the status of the nation's waters.

The 305(b) Report also includes: an analysis of the extent to which water bodies comply with the “fishable/swimmable” goal of the CWA; an analysis of the extent to which the elimination of the discharge of pollutants and a level of water quality achieving the “fishable/swimmable” goal have been or will be attained, with recommendations of additional actions necessary to achieve this goal; an estimate of a) the environmental impact, b) the economic and social costs, c) the economic and social benefits, and d) the estimated date of such achievement; and finally, a description of the nature and extent of nonpoint sources of pollutants, and recommendations of programs needed to control them- including an estimate of the costs of implementing such programs.

Integrated Report Guidance

The US Environmental Protection Agency (EPA) issued guidance (EPA, 2005) for the development of an Integrated Water Quality Monitoring and Assessment Report (Integrated Report) by the states. This guidance recommends that states integrate their Water Quality Inventory Report (Section 305(b) of the CWA) and their Impaired Waterbodies List (Section 303(d) of the CWA). The Integrated Report is intended to provide an effective tool for maintaining high quality waters and improving the quality of waters that do not attain Water Quality Standards. The Integrated Report will also provide water resources managers and citizens with detailed information regarding the following:

- Delineation of water quality assessment units providing geographic display of assessment results
- Progress toward achieving comprehensive assessment of all waters
- Water quality standards attainment status
- Methods used to assess Water Quality Standards attainment status
- Additional monitoring needs and schedules
- Pollutants and watersheds requiring Total Maximum Daily Loads (TMDLs)
- Pollutants and watersheds requiring alternative pollution control measures
- Management strategies (including TMDLs) under development to attain Water Quality Standards
- TMDL development schedules

The Integrated Report will streamline water quality reporting since data sources and assessment methods will be described in detail, providing a sound technical basis for assessment decisions. Assessment results will also be conveyed in a spatial context, allowing a clearer picture of water quality status and issues. Monitoring needs and

schedules will be described, facilitating the articulation of monitoring priorities and identifying opportunities for cooperation with other agencies and watershed partners. TMDL needs and schedules will be defined to convey plans for water quality improvements. The public participation aspects will provide opportunities for data submittal and open discussion of water quality assessment methods and results.

The Integrated Report combines the non-regulatory requirements of the Water Quality Inventory Report (305b) with regulation driven List of Impaired Waterbodies (303d) (i.e., only the latter mandates TMDL development). Successful integration into a single report requires a careful meshing of requirements and procedures. In general, Category 5 of the Integrated Report satisfies EPA reporting requirements under Section 303d (Impaired Waterbodies) and combined with the remaining Categories document assessment under Section 305b (Water Quality Inventory). Therefore, the regulatory requirements (i.e., EPA approval and adoption; public participation, etc.) for 303d impaired waterbodies listing only apply to Category 5 of the Integrated Report.

The methods used to develop the 2016 Integrated Report (and subsequent Reports) are described in the Continuing Planning Process (CPP). One goal of the CPP is to provide an objective and scientifically sound waterbody assessment listing methodology including:

- A description of the data that the State will use to assess attainment of surface Water Quality Standards
- The quality assurance aspects of the data
- A detailed description of the methods used to evaluate Water Quality Standards attainment
- The placement of waterbodies in one of 5 Categories:

Category 1 - Attaining the water quality standard and no use is threatened.

Waterbodies listed in this category are characterized by data and information that meet the requirements of the CPP to support a determination that the water quality standard is attained and no use is threatened. Consideration will be given to scheduling these waterbodies for future monitoring to determine if the water quality standard continues to be attained.

Category 2 - Attaining some of the designated uses; no use is threatened; and insufficient or no data and information is available to determine if the remaining uses are attained or threatened.

Waterbodies listed in this category are characterized by data and information which meet the requirements of the CPP to support a determination that some, but not all, uses are attained and none are threatened. Attainment status of the remaining uses is unknown because there is insufficient or no data or information. Monitoring shall be scheduled for these waterbodies to determine if the uses previously found to be in attainment remain in attainment, and to determine the attainment status of those uses for which data and information was previously insufficient to make a determination.

Category 3 - Insufficient or no data and information to determine if any designated use is attained.

Waterbodies are listed in this category when the data or information to support an attainment determination for any use is not available, consistent with the requirements of the CPP. To assess the attainment status of these waterbodies, supplementary data and information shall be obtained, or monitoring shall be scheduled as needed.

Category 4 - Impaired or threatened for one or more designated uses but does not require the development of a TMDL.

4A - TMDL has been completed.

Waterbodies are listed in this subcategory once all TMDL(s) have been developed and approved by EPA that, when implemented, are expected to result in full attainment of the standard. Where more than one pollutant is associated with the impairment of a waterbody, the waterbody will remain in Category 5 until all TMDLs for each pollutant have been completed and approved by EPA. Monitoring shall be scheduled for these waterbodies to verify that the water quality standard is met when the water quality management actions needed to achieve all TMDLs are implemented.

4B - Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard in the near future.

Consistent with the regulation under 130.7(b)(i),(ii), and (iii), waterbodies are listed in this subcategory when other pollution control requirements required by local, state, or federal authority are stringent enough to implement any water quality standard (WQS) applicable to such waters. These requirements must be specifically applicable to the particular water quality problem. Monitoring shall be scheduled for these waterbodies to verify that the water quality standard is attained as expected.

4C - Impairment is not caused by a pollutant.

Waterbodies are listed in this subcategory if the impairment is not caused by a pollutant. Scheduling of these waterbodies for monitoring to confirm that there continues to be no pollutant-caused impairment and to support water quality management actions necessary to address the cause(s) of the impairment, shall be considered.

Category 5 - The water quality standard is not attained. The waterbody is impaired or threatened for one or more designated uses by a pollutant(s), and requires a TMDL.

This category constitutes the Section 303(d) list of waters impaired or threatened by a pollutant(s) for which one or more TMDL(s) are needed. A waterbody is listed in this category if it is determined, in accordance with the CPP, that a pollutant has caused, is suspected of causing, or is projected to cause an impairment. Where more than one pollutant is associated with the impairment of a single waterbody, the waterbody will remain in Category 5 until TMDLs for all pollutants have been completed and approved by EPA. For waterbodies listed in this category, monitoring schedules shall be provided that describe when data and information will be collected to support TMDL establishment and to determine if the standard is attained. While the waterbody is being monitored for a specific pollutant to develop a TMDL, the watershed shall also be monitored to assess the attainment status of other uses. A schedule for the establishment of TMDLs for all waters in Category 5 shall be submitted. This schedule shall reflect the priority ranking of the listed waters. Category 5 waterbodies are further divided into the following subcategories:

5A – TMDL is underway or will be scheduled.

5B – A review of the Water Quality Standards will be conducted before a TMDL is scheduled.

5C – Additional data and information will be collected before a TMDL or review of the Water Quality Standards is scheduled.

The CPP will provide a companion to the 2016 Integrated Report. It is anticipated that this will be a living document and will be modified, as appropriate, to accompany subsequent Integrated Reports.

Oklahoma's comprehensive waterbody category list is available in Appendix B. Impaired waterbodies (Category 4 & 5) can be viewed exclusively in Appendix C.

Synopsis

During the 2015/2016 reporting cycle, there were a total of 4,212 waterbodies delineated into the Oklahoma Assessment Database (ADB). These waters include approximately 621,051 lake acres, and 33,016 river and stream miles, of which approximately 517 miles form the border with the State of Texas.

The water quality data used in this report was collected by the Oklahoma Conservation Commission (OCC), Oklahoma Department of Environmental Quality (DEQ), Oklahoma Corporation Commission (Corp. Comm.), Oklahoma Water Resources Board (OWRB), United States Geological Survey, City of Tulsa, Cherokee Nation, and citizens of the State. Only data collected prior to April 30, 2015 was utilized for this report.

Data used in this report came from several sources, including the *Toxics Monitoring Survey of Oklahoma Reservoirs* (OSDH, 1995), *Nonpoint Source Pollution Assessment Report (Section 319(h))* (OCC, 1988, 1994), *Clean Lakes Programs (Section 314)* (OCC & OWRB), *Lake Water Quality Assessment Report* (OCC & OWRB, 1994), *The Water Quality of Oklahoma 2014 Integrated Report* (DEQ, 2014), *Data Gaps Monitoring Projects* (OCC 2002, 2003), *Beneficial Use Monitoring Program*, *Rotating Basin Monitoring Program*, intensive and rapid bio-assessment surveys. Historical data and assessments (prior to May 1, 2008) were only used when insufficient current data was available to assess a waterbody.

The State considers data gathered by interested citizens of the State of Oklahoma to be an important part of the water quality assessment process. Blue Thumb volunteers collect water quality samples on a monthly basis to screen for potential problems in streams. They also participate in fish and macroinvertebrate collections with OCC staff and these results are used for biological assessment. For more information on Blue Thumb, contact the Oklahoma Conservation Commission.

Additional monitoring will allow the State agencies to refine and modify the descriptions of the quality of the State's waters. This report reflects water quality determinations made in the past and such determinations will be confirmed or modified, as additional monitoring data becomes available. Where some waterbodies are indicated to be impaired, and suspected cause of impairment is listed, this information is also subject to confirmation or modification based on additional studies and evaluation by State agencies.

Table 1 shows the size and number of lakes in the State of Oklahoma designated as one of the five available categories outlined in the Integrated List Guidance above, while Table 2 does the same for river and stream miles.

TABLE 1. LAKE CATEGORY SUMMARY

Category	Size (Acres)	Number of Waterbodies
1	1,086	3
2	68,672	38
3	20,506	258
4a	9,820	4
5a	509,521	116
5b	10	1
5c	11,436	9

TABLE 2. RIVER AND STREAM CATEGORY SUMMARY

Category	Size (Miles)	Number of Waterbodies
1	98	3
2	3,080	267
3	18,860	2,854
4a	2,231	109
5a	6,538	346
5b	1,382	135
5c	827	69

Table 3 details the attainment status of each designated beneficial use assigned to lake acres in Oklahoma, while Table 4 does the same for river and stream miles. Each beneficial use for a waterbody must have only one attainment status associated with that use: supporting, not supporting, insufficient information, or not assessed (no information). The methodology for assigning the attainment status of a beneficial use of a waterbody is outlined in the Assessment Methodology and Summary Data section of this report.

TABLE 3. LAKE BENEFICIAL USE SUPPORT SUMMARY

Use	Lake Acres				
	Total Size	Size Fully Supporting	Size Not Supporting	Size Not Assessed	Size with Insufficient Info
Aesthetic	621,051	464,959	25,251	13,476	117,365
Agriculture	611,911	564,871	21,605	13,341	12,094
Fish Consumption	621,051	105,504	252,805	13,714	249,028
Warm Water Aquatic Community	621,051	3,521	488,480	13,485	115,565
Navigation	84,440	84,440	0	0	0
Primary Body Contact Recreation	621,051	305,896	9,602	13,826	291,727
Public and Private Water Supply	570,403	76,007	71,586	2,477	420,333
Emergency Water Supply	12,950	12,950	0	0	0

TABLE 4. RIVER AND STREAM BENEFICIAL USE SUPPORT SUMMARY

USE	River Miles				
	Total Size	Size Fully Supporting	Size Not Supporting	Size Not Assessed	Size with Insufficient Info
Aesthetic	32,989	5,571	190	17,927	9,301
Agriculture	32,918	7,782	3,165	18,220	3,751
Emergency Water Supply	1,601	1,573	0	28	0
Fish Consumption	32,920	2,431	999	28,865	625
Cool Water Aquatic Community Subcategory	1,630	546	502	442	140
Habitat Limited Aquatic Community Subcategory	885	93	122	548	122
Trout Fishery	34	0	11	23	0
Warm Water Aquatic Community Subcategory	30,467	2,807	6,566	15,481	5,613
Navigation	214	214	0	0	0
Primary Body Contact Recreation	31,767	1,189	7,775	21,603	1,200
Public and Private Water Supply	14,828	1,670	233	6,617	6,308
Secondary Body Contact Recreation	1,249	195	47	883	123

Table 5 shows the number of lake acres impaired by specific pollutant and Table 6 shows the same for the number of river and stream miles.

TABLE 5. LAKE ACRES IMPAIRED BY SPECIFIC POLLUTANT

Cause	Size (Acres)
Turbidity	391,529
Mercury	214,483
Dissolved Oxygen	135,124
Chlorophyll- α	71,586
pH	63,341
Lead	49,511
Phosphorus (Total)	25,251
Chloride	19,224
Cadmium	14,200
Enterococcus	9,602
Sulfates	2,381
Copper	352

TABLE 6. RIVER AND STREAM MILES IMPAIRED BY SPECIFIC POLLUTANT

Impairment	Size (Miles)
Enterococcus	7,537
Dissolved Oxygen	2,960
Escherichia coli	2,731
Turbidity	2,477
Sulfates	1,913
Chloride	1,759
Total Dissolved Solids	1,750
Fishes Bioassessments	1,660
Benthic Macroinvertebrate Bioassessments	1,383
Lead	1,165
pH	847
Selenium	612
Sedimentation/Siltation	436
Silver	198
Oil and Grease	128
Mercury	121
Chromium (total)	116
Total Phosphorus	95
Zinc	101
Copper	74
Cadmium	63
Nitrates	63
Ammonia	41
DDT	30
Toxaphene	30
Dieldrin	18
Diazinon	11
Arsenic	6
Barium	4

Table 7 shows the number of lake acres impaired by potential sources, and Table 8 shows the number of river and stream miles impaired by potential sources.

TABLE 7. LAKE ACRES IMPAIRED BY POTENTIAL SOURCE

Potential Source	Size (Acres)
Source Unknown	530,735
Mine Tailings	38,322
Rangeland Grazing	22,554
Wildlife Other than Waterfowl	22,554
Natural Sources	18,249
Grazing in Riparian or Shoreline Zones	17,522
Wastes from Pets	17,522
Animal Feeding Operations	9,476
Impacts from Land Application of Wastes	9,476
Sources Outside State Jurisdiction or Borders	9,476
On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	4,870
Petroleum/Natural Gas Activities (Legacy)	35
Silviculture Harvesting	25

TABLE 8. RIVER AND STREAM MILES IMPAIRED BY POTENTIAL SOURCE

Potential Source	Size (Miles)
Source Unknown	11,344
Grazing in Riparian or Shoreline Zones	7,703
Wildlife Other than Waterfowl	7,517
Rangeland Grazing	7,322
On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	7,298
Residential Districts	5,807
Wastes from Pets	5,467
Highway/Road/Bridge Runoff (Non-construction Related)	3,982
Non-Irrigated Crop Production	3,893
Impacts from Land Application of Wastes	3,871
Municipal Point Source Discharges	3,574
Petroleum/Natural Gas Activities (Legacy)	3,024
Drought-related impacts	1,418
Total Retention Domestic Sewage Lagoons	966
Agriculture	870
Permitted Runoff from Confined Animal Feeding Operations (CAFOs)	704
Animal Feeding Operations (NPS)	647
Clean Sediments	331
Impacts from Hydrostructure Flow Regulation/Modification	296
Natural Sources	258
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Potential Source	Size (Miles)
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Surface Mining	14
Irrigated Crop Production	14
CERCLA NPL (Superfund) Sites	12
Habitat Modification – other than Hydromodification	5

Statewide probabilistic estimates of fish communities, macroinvertebrate communities, benthic algae, and sestonic algae in rivers and streams are depicted in Tables 9 through 12, respectively. A description of the State of Oklahoma's probabilistic monitoring program can be found in Appendix F of this report. The full report can be found on the OWRB website at:

http://www.owrb.ok.gov/studies/reports/reports_pdf/StatewideStreamProbMonitoringNetwork2008-2011.pdf

TABLE 9. STATEWIDE PROBABILISTIC ASSESSMENT OF FISH IN RIVERS AND STREAMS

Resource	Unit	Study Period	Cause Name	State Attainment Category	Size in Category	Conf Level	Lower Conf	Upper Conf
Rivers/Streams	Miles	2008-2011	Fish	Good	12,232	95%	9,499	15,165
Rivers/Streams	Miles	2008-2011	Fish	Fair	1,215	95%	577	1,854
Rivers/Streams	Miles	2008-2011	Fish	Poor	7,470	95%	4,656	10,285

TABLE 10. STATEWIDE PROBABILISTIC ASSESSMENT OF MACROINVERTEBRATES IN RIVERS AND STREAMS

Resource	Unit	Study Period	Cause Name	State Attainment Category	Size in Category	Conf Level	Lower Conf	Upper Conf
Rivers/Streams	Miles	2008-2011	Macroinvertebrates	Good	4,693	95%	2,419	6,966
Rivers/Streams	Miles	2008-2011	Macroinvertebrates	Fair	8,954	95%	6,178	11,729
Rivers/Streams	Miles	2008-2011	Macroinvertebrates	Poor	7,371	95%	4,854	9,888

TABLE 11. STATEWIDE PROBABILISTIC ASSESSMENT OF BENTHIC ALGAE IN RIVERS AND STREAMS

Resource	Unit	Study Period	Cause Name	State Attainment Category	Size in Category	Conf Level	Lower Conf	Upper Conf
Rivers/Streams	Miles	2008-2011	Benthic Algae	Good	16,326	95%	14,613	18,038
Rivers/Streams	Miles	2008-2011	Benthic Algae	Fair	2,554	95%	1,193	3,916
Rivers/Streams	Miles	2008-2011	Benthic Algae	Poor	2,138	95%	1,030	3,246

TABLE 12. STATEWIDE PROBABILISTIC ASSESSMENT OF SESTONIC ALGAE IN RIVERS AND STREAMS

Resource	Unit	Study Period	Cause Name	State Attainment Category	Size in Category	Conf Level	Lower Conf	Upper Conf
Rivers/Streams	Miles	2008-2011	Sestonic Algae	Good	11,543	95%	8,879	14,207
Rivers/Streams	Miles	2008-2011	Sestonic Algae	Fair	4,841	95%	2,555	7,127
Rivers/Streams	Miles	2008-2011	Sestonic Algae	Poor	4,634	95%	3,108	6,160

Surface Water Quality

Oklahoma's Water Quality Standards (WQS) are set forth under statutory authority of the OWRB authorized under 82 O.S. § 1085.30. Under these statutes, OWRB "is required to set Water Quality Standards which are practical and in the best public interest and to classify the State's waters with respect to their best present and future uses. These WQS are designed to enhance the quality of the waters, to protect their beneficial uses, and to aid in the prevention, control and abatement of water pollution in the State of Oklahoma" (OWRB, 2006). The WQS have established designated beneficial uses and standards for all of Oklahoma's waters.

The overall support and attainment of the "fishable/swimmable" goals of the CWA is based upon "total waters." The EPA requires all states to report their attainment of the goals of the CWA based on total waters. Relying solely upon this portrayal probably overly inflates estimates of the impaired and threatened conditions of the State's waters since monitoring efforts are typically focused on known problem areas. It would be too cost prohibitive to assess all of the waters within the State. Therefore, all assessment work performed in the State is conducted in a manner that will best utilize available funding resources. For lake total water reporting, the acreage includes Natural Resource Conservation Service (NRCS) (formerly the Soil Conservation Service) assisted farm ponds. Oklahoma lists approximately 1,041,884 total lake acres for the State. Of this number, 330,000 acres comprise approximately 220,000 NRCS assisted farm ponds. These farm ponds are not included in EPA's total water database. Although not considered as "significant lakes," Oklahoma considers them as important natural resources for the agricultural and rural communities. These farm ponds provide a significant amount of water for livestock, a source of primary recreation for many, used as flood control devices, sediment catchments, and add to the recharge of groundwater aquifers.

Canals, laterals and most all of the wetlands have not been assessed for the goals of the CWA nor have they been assessed for their beneficial uses. Canals and laterals are manmade watercourses and have not been included in the Appendix A of the WQS. By default, these waters would be assigned primary protection under the 2008 WQS (OWRB, 2008). Due to a lack of funding, no assessment projects have been initiated on these types of waterbodies. Wetlands have not been assigned specific WQS and therefore fall under the same scenario as canals and laterals. Several projects and ventures have been initiated to inventory the wetlands within the State, but little assessment work has been completed.

The major factors affecting the overall use support of the rivers and streams of the State were from the following causes: pathogens, turbidity and low dissolved oxygen. The major factors affecting the overall use support of the lakes of the State were from the following causes: oxygen depletion, turbidity and color.

All unlisted waters, not included in Appendix A of the WQS, are assumed to have the beneficial uses consistent with the CWA's primary protection requirements. All beneficial use determinations are subject to administrative proceedings including the public hearing process.

Currently, DEQ develops draft National Pollutant Discharge Elimination System (NPDES) permits for the control and abatement of municipal and industrial pollution. DEQ issues the final NPDES permit for municipalities and industrial dischargers. Permit compliance is monitored by both the discharger and inspectors for DEQ.

Since the inception of the CWA in 1972 and its amendments, EPA administered the National Pollutant Discharge Elimination System (NPDES) program, which addresses the management of industrial and municipal wastewater discharges. Previously, the functions related to wastewater were found in the OSDH, for municipal wastewater, and OWRB for industrial wastewater. The scattering of the NPDES jurisdiction between two agencies that were independently pursuing delegation of their portion from the NPDES program did not appear to be conducive for Oklahoma to assume the program from EPA. Consolidation of the two agencies into DEQ in July 1993 solved this problem and the work began for the agency to develop its required program documents, rules and statute changes in preparation of submitting its formal NPDES application to EPA, Region 6 office in Dallas, Texas.

DEQ obtained NPDES program assumption from EPA on November 19, 1996. This is indicative of the agency having jurisdiction over the basic permitting, compliance and enforcement elements of the NPDES program, in addition to having authority over toxicity reduction, sewage sludge and pretreatment programs. In September 1997, program assumption to issue storm water permits was obtained from EPA.

ODAFF received delegation of a partial NPDES program from EPA on December 20, 2012. ODAFF is the NPDES permitting authority for discharges from concentrated animal feeding operations (CAFOs), discharges from the application of biological or chemical pesticides, discharges from silviculture activities, and construction stormwater discharges at agricultural operations.

Ground Water Quality

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.) Several State agencies are involved in the protection of Oklahoma's groundwater. These include DEQ, ODAFF, Corporation Commission, OCC, and OWRB. DEQ is designated as the lead agency for the Wellhead Protection Program (WHPP).

There are instances of man induced groundwater pollution in the State. Except in a few old oilfields, they appear to be isolated instances and not general contamination of groundwater drinking water supplies. Historical data indicates water is of good quality from most aquifers.

Oklahoma has Groundwater Standards located in OAC 785:45-7. Designated beneficial uses for the groundwaters of the State are determined by Total Dissolved Solids (TDS). Groundwater with a mean concentration of TDS of less than 3,000 milligrams per liter has assigned beneficial uses of Public and Private Water Supply, Agriculture, and Industrial and Municipal Process and Cooling Water. Groundwater with a mean concentration of TDS of greater than or equal to 3,000 milligrams per liter but less than 10,000 milligrams per liter has assigned beneficial uses of Agriculture and Industrial and Municipal Process and Cooling Water. Groundwater is protected to background quality and, once polluted as a result of human activities, is restored to a quality to support its designated beneficial uses. Ensuring that groundwater meets Water Quality Standards is an important reason for developing and continuing a Water Quality monitoring Program.

- The Oklahoma Legislature passed Senate Bill 1627 (SB1627) in 2008 requiring OWRB to establish a technical work group to analyze the potential for expanded use of "Marginal Quality Water" (MQW) from various sources throughout Oklahoma. SB1627 required that the group include representatives from State and federal agencies, industry, and other stakeholders. Through facilitated discussions, the group defined MQW as water that historically may have been unusable because of technological or economic issues with diverting, treating, and/or conveying the water. Five categories of MQWs were identified for further characterization and technical analysis.
- Work on this project is ongoing. In 2012, its results were integrated into the overall Oklahoma Comprehensive Water Plan as a Supplemental Report of the issues, ultimately residing as part of the Conservation, Efficiency and Reuse Priority Recommendation. A statewide screening analysis was conducted to accomplish the following: Quantifying and characterizing MQW sources temporally through 2060 and geographically across the State
- Assessing constraints to MQW use
- Matching projected water shortages across Oklahoma with MQW sources and assessing the feasibility of utilizing MQW

This screening provided some insights as to viability for meeting the state's future needs resulting in general strategies and recommendations for moving forward. Those recommendations, paraphrased in brief, are:

- Treated wastewater effluent: PWS and Users should consider this option where socially acceptable and the state develop a detailed reuse regulatory framework.
- Stormwater runoff: examine potential for storage to meet future non-potable demand, probably in areas of fairly high precipitation and existing infrastructure.
- Oil and gas flowback/produced water: Continue to seek cost-effective opportunities to reuse *produced water to help meet drilling and fracking water needs (see below).
- Brackish surface and groundwater: follow the ongoing USGS study to characterize accessible brackish water and spatially connect potential supply with potential demands for various levels of quality.

- Water with elevated levels of key constituents: State should support research and development of cost-effective advanced treatment for use of MQW sources. This may have the greatest practical use statewide.

Produced water (PW) from the O&G industry is currently the focus of a new Produced Water Working Group initiative by Governor Fallin to find solutions and options for PW other than injecting it into deep disposal wells currently seen as the major source for Oklahoma's momentous uptick in seismicity around the state. While the earlier study addressed PW, priorities and economics have changed to the point where PW may be feasible for non-potable uses other than just the O&G industry.

Marginal Quality Water is expected to play an indispensable role in the quest to meet the goals of the Water for 2060 Initiative to use no more freshwater in 2060 than the state used in 2010. These recommendations will be addressed as resources and funding allow over these remaining years to 2060.

Background

Diversity and Ecology

Oklahoma is a diverse State in its ecology, geology, hydrology, and its rainfall. Oklahoma is comprised of the following ecoregions: Arkansas Valley, Boston Mountains, Central Great Plains, Central Irregular Plains, Central Oklahoma/Texas Plains, Flint Hills, Ouachita Mountains, Ozark Highlands, South Central Plains, Southwestern Tablelands, and Western High Plains. These ecoregions (Figure 1) range from short grass prairies to Loblolly Pine (*Pinus taeda*)/Short-leaf Pine (*P. echinata*)/Oak (*Quercus* spp.) mixed community.

Much of Oklahoma's original plant and some animal species are either extinct or are greatly reduced in their distribution. The reduction in native vegetation is mainly due to urban development, cultivation, conversion of native prairie to pasture, timber cutting, and erosion. There are approximately 2,540 species of plants, 81 species of reptiles, 53 species of amphibians, 101 species of mammals, 400 species of birds, and 175 species of fish. Agriculture is the number one land use business in Oklahoma. Wheat is the number one cash grain crop grown in Oklahoma. Wheat is valuable during the winter as pasture feed for cattle, sheep and dairy stock. Other important grain crops for the State include fall and spring oats, barley, rye, sorghum, soybeans, and corn. In addition, pecans, fruits, vegetables, cotton, and timber all constitute a significant source of income for the State. Other important agricultural land use practices include cattle, dairy stock, sheep, horses, goats, poultry, and select exotics (e.g., llamas and ostriches).

The latitude and longitude coordinate for the corners of the State, excluding the Panhandle are: Southeast 033°38'15"/ 094°29'08"; Northeast 036°59'54"/094°37'04"; Southwest 034°33'38"/100°00'00"; and Northwest 037°00'00"/100°00'00". The coordinates for the Panhandle are: Southeast 036°30'00"/ 100°00'00"; Northeast 037°00'00"/100°00'00"; Southwest 036°30'00"/103°00'00"; and Northwest 037°00'00"/103°00'00". Oklahoma runs approximately 481.51 miles east to west and 230.16 miles north to south. The surface area of Oklahoma occupies approximately 69,919 square miles or 44,000,000 acres. Oklahoma varies in its elevation from its lowest point of 287 feet above sea level on the Little River in McCurtain County on the border with Arkansas to its highest point of 4,973 feet above sea level, near Black Mesa in Cimarron County on the border with New Mexico. There are ten major geologic provinces in Oklahoma with the Northern Shelf Areas being the largest (Figure 2) (Oklahoma Geological Survey, 1972). Oklahoma is composed of 77 counties with Osage being the largest (Figure 3). Basic statistics on Oklahoma can be found in Table 9.

Information contained in Table 9 came from a variety of sources including the 2010 U.S. Census, United States Geological Survey data, OWRB data, Oklahoma Water Atlas, Reach File 3/Digital Line Graph Data, ground surveys, the Wildlife Department, United States Fish and Wildlife Service, and planimeter data. For the lakes information, Oklahoma uses the information from the *Oklahoma Water Atlas*. Oklahoma's environmental agencies feel that the information contained in the *Oklahoma Water Atlas* better represents the total of lakes and lake acres contained within the State. For the remaining rivers, creeks, canals and laterals we will be using a combination of sources for our data.

The total of fresh-water wetland acres was derived from information obtained from the Wildlife Department and United States Fish and Wildlife Service reports *Riparian Areas of Western Oklahoma* and *Bottomland Hardwoods of Eastern Oklahoma*. These reports contain information on 58 of the 77 counties in the State. The information in Table 11 was derived from taking the total of the largest most recent estimate for each county listed in the two reports. This total underestimates the actual number of wetland acres for the State and should be used with extreme caution when making comparison or trend analysis on Oklahoma's loss of wetlands.

FIGURE 1. ECOREGIONS OF OKLAHOMA

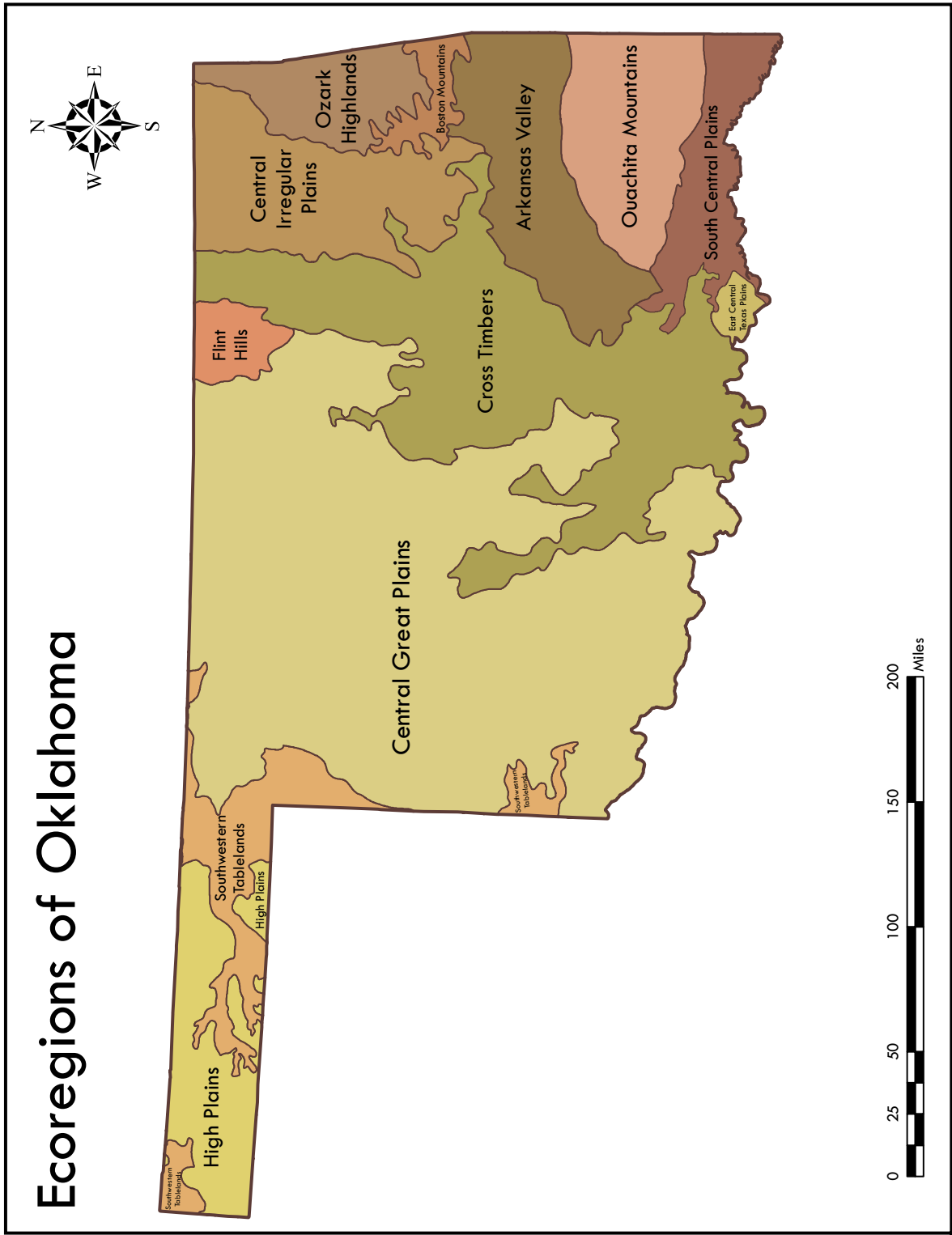


FIGURE 2. OKLAHOMA GEOLOGY

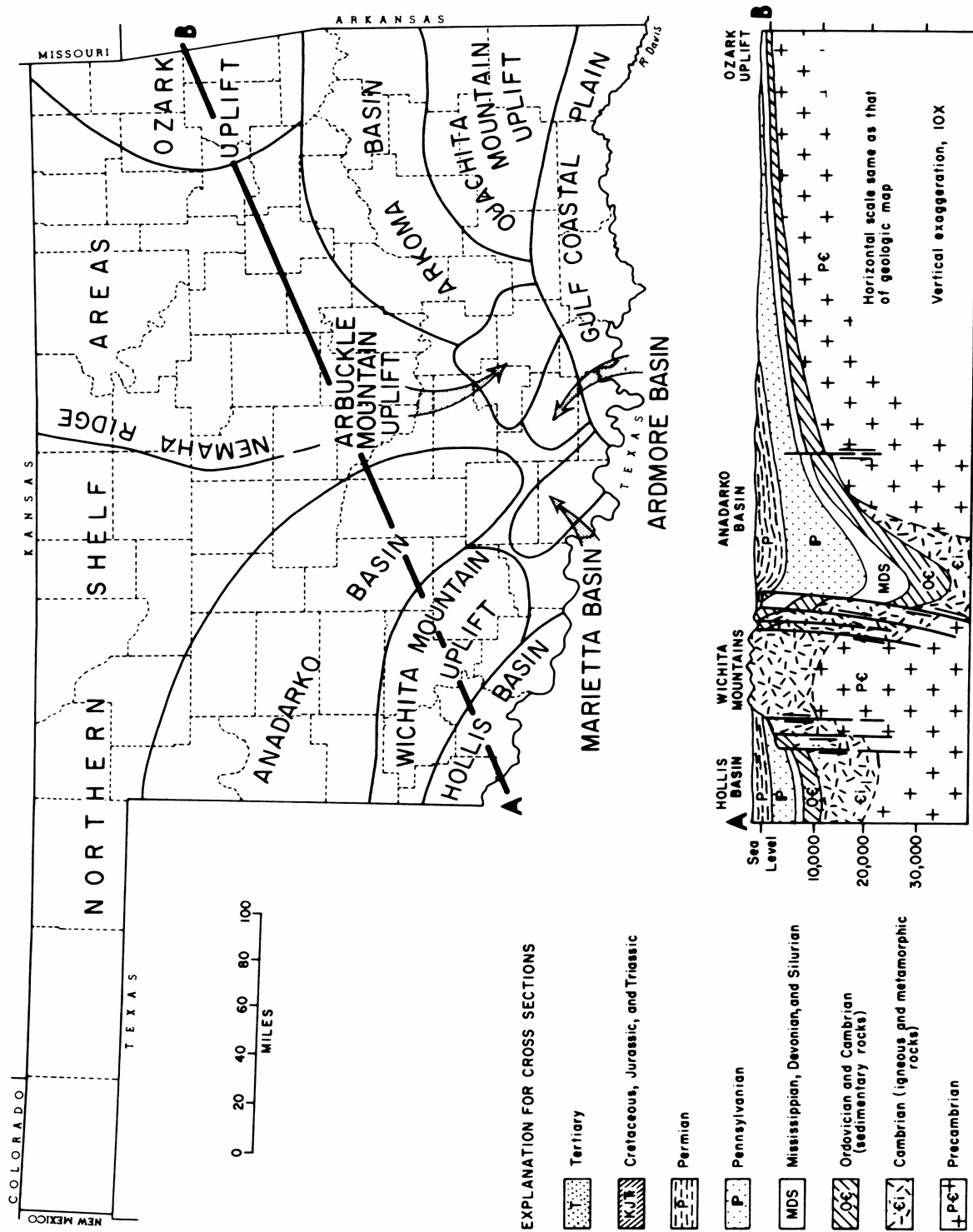


FIGURE 3. OKLAHOMA COUNTIES

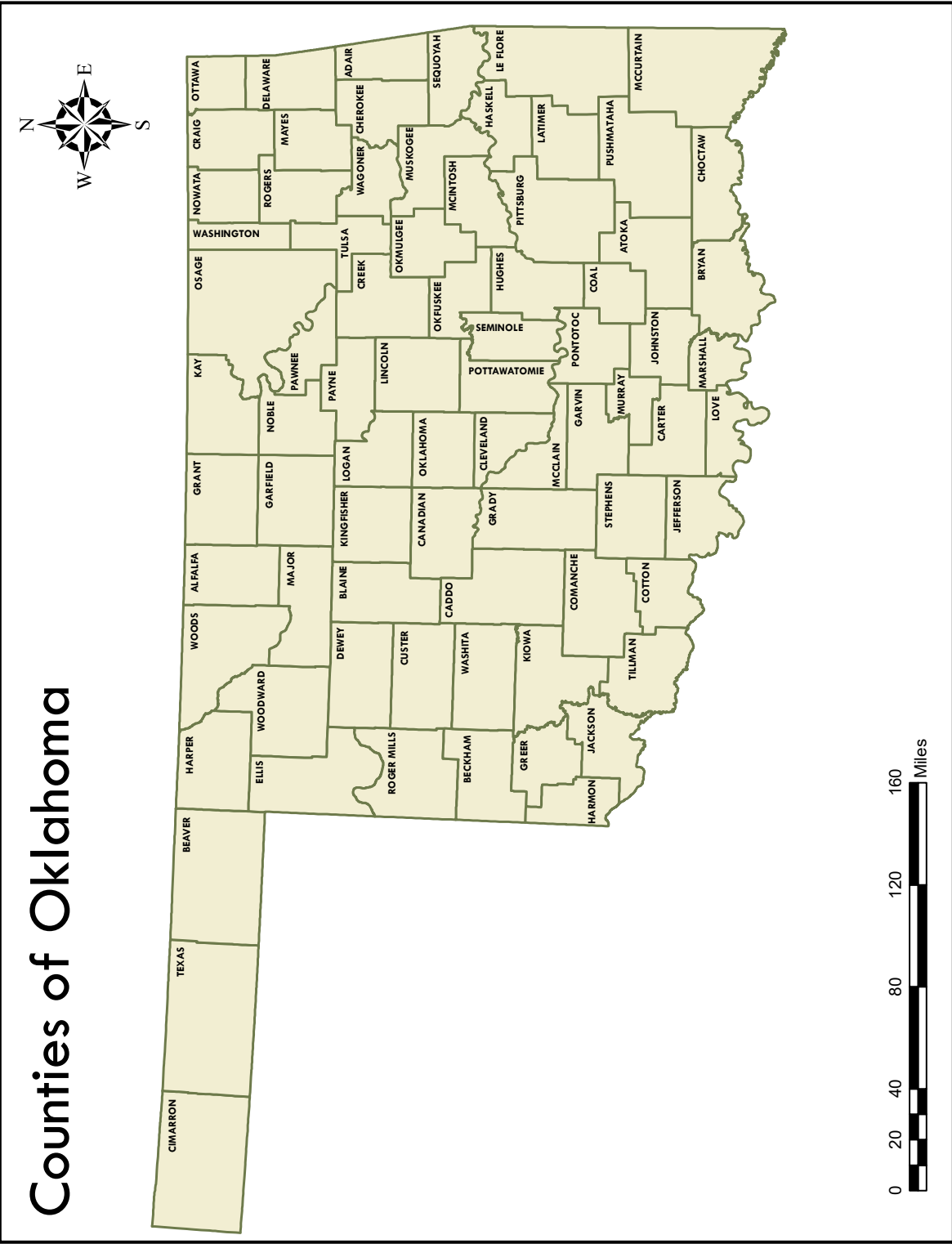


TABLE 13. ATLAS OF OKLAHOMA

State Population*	3,911,338
State Surface Area, Square Miles**	69,919
Number of Major Watershed Basins	7
Total Number of River and Stream Miles*	78,778
Number of Perennial River and Stream Miles*	22,386
Number of Intermittent Stream Miles*	55,413
Number of Canals or Ditches*	175
Number of River Border Miles***	517
Total Number of Lakes/Reservoirs/Playa/Ponds**	224,948
Number of Large Lakes**	34
Number of Public & Private Lakes**	2,303
Number of Watershed Protection Lakes**	1,964
Number of Playa Lakes (wet season only)**	585
Number of Oxbow Lakes (≥ 10 Acres)**	62
Number of Farm Ponds (Soil Conservation Service assisted)**	220,000
Total Number of Lakes/Reservoirs/Playa/Ponds Acres**	1,041,884
Major Lake Acres**	555,450
Public & Private Lake Acres**	89,836
Watershed Protection Lake Acres**	54,261
Playa Lakes Acres**	9,572
Oxbow Lake Acres**	2,765
Farm Pond Acres**	330,000
Total Number of Freshwater Wetland Acres***	733,895

- * 2015 U.S. Census Bureau Estimates
- ** Based upon United States Geological Survey information
- *** OWRB Data
- * Reach File 3/Digital Line Graph Data
- ** Oklahoma Water Atlas, 1990
- *** Estimates compiled from the Wildlife Department & U.S. Fish & Wildlife Service

Climate

Oklahoma has a continental type of climate. There are pronounced seasonal and geographical ranges in both temperature and precipitation. Average annual temperature varies from 53.6°F in the western part of the Panhandle up to 63.8°F in the southeast part of the State. Annual rainfall varies from approximately 17 inches in the far western part of the Panhandle to over 55 inches per year near the LeFlore County/McCurtain County/Arkansas border. The average growing season varies from 180 days in the Panhandle to 240 days in the southeast corner. Typically, 75% of Oklahoma's annual precipitation falls during the growing season.

Water Pollution Control Programs

The myriad and complex water quality problems remaining today require a more comprehensive approach to find workable and effective solutions. As we continue to have success reducing impacts from point sources, pollution from nonpoint sources takes on more significance. Non-traditional concerns such as habitat degradation and conservation of biological diversity also call for a comprehensive approach.

The watershed approach provides such a management framework. Utilizing support from the 104(b)(3) program, Oklahoma has taken the first steps to implement the watershed approach for water quality management in the State. The following accomplishments have been achieved:

- A Whole Basin Planning Approach Working Group was established to coordinate planning and implementation of the watershed approach in Oklahoma. Representatives of the various state and federal agencies with a role in water quality management were represented on the Working Group.
- A cooperative project with USGS produced a new digital elevation model and digital watershed maps for the state. Existing 8-digit cataloging units were subdivided into 11-digit watersheds. These watershed maps are the basis for the state program. The maps have been published on CD-ROM and are available to all agencies and the public.
- Utilizing the new watershed boundaries, the Working Group delineated 11 Watershed Management Units that are used to implement the watershed approach. The intent is that planning, monitoring, permitting, and other water quality programs will eventually be coordinated and organized at this scale when the watershed approach is fully implemented.
- Accurate locational data on all dischargers has been gathered using the Global Positioning System. These data have been built into a GIS-compatible format for analysis. Links to permitting and monitoring data in the PCS system have been established for analysis and assessment purposes.
- A technical committee was established to develop an implementation plan to utilize the new Watershed Management Units and watershed boundaries in the various reporting and planning programs. Water Quality Standards, the 303(d) list, the 208 Plan, and the 305(b) Report were targeted for this effort.

Water Quality Standards Program

Oklahoma's WQS are set forth under statutory authority of OWRB authorized under 82 O.S. § 1085.30. Under these statutes, OWRB "is required to set Water Quality Standards which are practical and in the best public interest and to classify the State's waters with respect to their best present and future uses. These WQS are designed to enhance the quality of the waters, to protect their beneficial uses, and to aid in the prevention, control and abatement of water pollution in the State of Oklahoma" (OWRB, 2006). The WQS have established designated beneficial uses and standards for all of Oklahoma's waters.

Oklahoma defines waters of the State to mean "all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this State or any portion thereof 82 O.S. § 1084.2(3)."

Much of the work developing WQS over the past three decades has been dedicated to the control of point source discharges through chemical-specific criteria and permit limits. Over the past three reporting cycles, biological water quality criteria have also been used to determine use support assessment and manage water quality in streams and lakes. Oklahoma continues to refine the use of biological criteria to more holistically determine use support and develop stressor/response models to implement water quality management strategies. Additionally, Oklahoma continues work to develop both translators and criteria endpoints to manage nutrients in Oklahoma's waters.

Point Source Control Program

Oklahoma's point source pollution control programs are administered and carried out by DEQ. DEQ administers both municipal and industrial dischargers and issues permits. DEQ is responsible for monitoring the dischargers to ensure compliance with permit limitations and conditions as well as to receive and review the permittee's self-monitoring data.

For industrial dischargers, DEQ relies on a two-step process for permit development. In the first step, minimum treatment level standards, based on the industry type, are established. These are termed "technology-based limits." The technology-based limits are evaluated to determine if a potential exists to violate the WQS. If the potential to violate the WQS exists, more stringent "water quality-based limits" will be selected for use in the permit.

Each permit specifies both monitoring and reporting requirements for the facility. The permit provides the effective dates of limits, parameters to be tested, applicable limits for each parameter, frequency of analysis, and sample type of monitoring. Monitoring results are summarized on a monitoring report form and submitted to DEQ according to the schedule in the permit. All Discharge Monitoring Reports (DMR) and reports from the permittee are reviewed and violations noted. The permittee's compliance is tracked using the Permit Compliance System (PCS). The administrative staff utilizes violation review criteria to screen for significant violations. This screening process assures that limited enforcement resources concentrate on the most significant violations. The following criteria are used to identify significant violations:

- Two or more excursions of 40% or more for inorganic and oxygen demanding pollutants during a six-month period.
- Two or more excursions of 20% or more for toxic pollutants during a six-month period.
- Non-reporting violations.
- Chronic violations, any violation of any monthly effluent limit for any four or more months in a six month period.
- Any effluent violation that causes or has potential to cause a water quality or human health problem.
- Permit schedule violations.
- Violations of enforcement orders
- Any unauthorized bypass, unpermitted discharge, or pass through of pollutants which may cause a water quality or human health problem.
- Construction or modification of sewage treatment works, Publicly Owned Treatment Works conveyance system or industrial wastewater impoundment, without a permit.

The criteria used for determining significant violations are based on the EPA's current policy, which is used to evaluate all major and minor permits under DEQ's jurisdiction.

Quality assurance strategies are used by DEQ to ensure that facilities comply with their permit. Field inspections are conducted on a regular basis with samples of the discharge collected for analyses. The Customer Assistance Division maintains the laboratory certification program. This program assures that industries follow all Quality Assurance and Quality Control methods when analyzing their effluent samples. All permits require that all analyses used to determine permit compliance be performed by a DEQ certified lab.

The limits for the permits are "water quality based" and are designed to protect the beneficial uses of the receiving stream. All permits are tracked through the State's Water Quality Management Plan. The plan is updated as needed. The updates to the Plan occur on a regular basis with the last full annual update to the Plan being in 1984.

Each permit is written for a single facility. Most facilities have only one discharge; however, some do have multiple discharges. The information found in each permit includes: latitude and longitude for the facility and/or its point of discharge; effective date(s) of the permit; limits; self-monitoring frequency and sampling type for each discharge point; etc. In addition, the permit also requires the permittee to prepare and submit monthly Discharge Monitoring Reports, which give a summary of the results of the self-monitoring. The Discharge Monitoring Reports are submitted to DEQ.

All Discharge Monitoring Reports from the permittee are reviewed with violations being noted. The permittee's compliance is then tracked using the PCS (an EPA computer database system). DEQ screens the DMR for significant violations. This screening process allows DEQ to concentrate its funding where it is needed most.

Quality Assurance/Quality Control practices are used by DEQ to ensure that publicly owned treatment works are complying with permit conditions. Regular inspections of publicly owned treatment works facilities are conducted by DEQ and/or EPA inspectors with samples of a facility discharge collected for analysis. DEQ requires that all operators and laboratory technicians of publicly owned treatment works be properly trained and certified.

Nonpoint Source Control Program

The Oklahoma Conservation Commission (OCC) serves as the lead technical agency for Oklahoma's Nonpoint Source (NPS) Management program with specific jurisdictional exceptions such as: 1) oil and gas activities and petroleum storage tanks, which are under Corp. Comm. jurisdiction; 2) silviculture and pesticides which are under ODAFF jurisdiction; and 3) industrial and municipal stormwater which is under DEQ jurisdiction. The OCC is the statutory pass through recipient of EPA Clean Water Act Section 319 monies, which fund annual base programming for technical support, water quality monitoring, education and implementation to abate priority NPS pollutants. Oklahoma's NPS program is a cooperative effort of state, federal and local agencies/partners, including but not limited to OCC, ODEQ, ODAFF, OWRB, Corp. Comm., US EPA, USDA-NRCS, conservation districts, and local landowners/producers. Oklahoma's NPS Management Program Plan (<https://www.ok.gov/conservation/documents/2014%20NPS%20Mgmt%20Plan.pdf>) details goals and related actions as it regards four key program areas: assessment, planning, education, and implementation. It also identifies principle state, federal and local agencies and other entities and their associated roles in NPS management.

The 2014 revision of the NPS Management Program document outlines the State's stepwise pattern to address NPS water quality problems:

1. The process begins with assessment of physical, chemical, and biological health of waters of the state to identify threats and impairments, along with their cause, source, and extent. This is largely accomplished through both OCC's and OWRB's ambient monitoring programs. For details, the reader is encouraged to reference the "Assessment of NPS Pollution" section of the document.
2. The second step involves prioritization and planning. The State maintains a Unified Watershed Assessment (UWA) to prioritize waterbodies listed as impaired in the current Integrated Report. The NPS Program, through the NPS Working Group, narrows this list to watersheds prioritized for NPS action. These NPS Priority watersheds are selected because sufficient historical information has been collected to identify the nature of the problem, corrective actions are most likely to be successful, the water quality problem primarily stems primarily from NPS-related causes and sources, and a significant portion of the watershed is in Oklahoma where the program could affect practices independent of the actions of another state. Following prioritization, a TMDL, Watershed Based Plan, or some other implementation plan is developed to reduce or remedy the problem.
3. The third step, implementation, involves the application of remedial efforts, such as conservation practices (CPs), educational activities, and other innovative efforts tailored to address NPS water quality pollution. There are three basic classes of BMPs: 1.) practices that reduce the pollutants available for transport by the normal rainfall/runoff process (changes in management), 2.) devices that reduce the amount of pollutants in the runoff before it is discharged to a surface water body (structural practices), and 3.) vegetative practices. Education is a critical portion of implementation and is accomplished through the Blue Thumb program as well as through project-specific workshops, tours, and trainings. In general, the goal of most implementation projects is to achieve a level of change in an entire watershed. NPS programs rely on

voluntary cooperation of landowners to implement projects, and landowners must understand the importance of their cooperation, and how participation can help them protect their assets and improve their return.

4. The fourth stage of the process involves evaluation of the program to determine its successes and failures and to recommend changes for the next round of the process. This involves post-implementation monitoring of the water resources and other evaluations of the success of the program (such as percent of priority areas with implemented practices or extent of education programs). Once this step has been completed and the outcome evaluated, the process can begin anew.

Current and recent NPS projects/efforts are ongoing in the watersheds of Lake Eucha, Illinois River, Grand Lake, the North Canadian River between Canton Lake and Lake Overholser, Lake Thunderbird, New Spiro Lake, Little Beaver Creek, and Elk City Lake in cooperation with the Natural Resources Conservation Service (NRCS), USEPA, ODAFF, GRDA, local conservation districts, and state universities, among other entities. The OCC also oversees the implementation of the Conservation Reserve Enhancement Program (CREP). CREP is a \$20.6 million cooperative conservation partnership agreement between USDA and Oklahoma. The program pays eligible landowners to establish and protect riparian buffers along streams for 10 – 15 years. Focused in Northeast Oklahoma, CREP will protect approximately 9,000 acres of riparian land in the Eucha/Spavinaw and Illinois River Watersheds. Key CREP partners include City of Tulsa's Metropolitan Utility Authority, OSRC, Conservation Districts in Adair, Cherokee, and Delaware counties, the USDA Farm Services Agency, NRCS, and USEPA.

The ODAFF has authorities under the Oklahoma Concentrated Animal Feeding Operations (CAFO) Act, the Oklahoma Swine Feeding Operations (SFO) Act and the Registered Poultry Feeding Operations (RPFO) Act to enforce regulations governing the owners and/or operators of concentrated animal feeding operations, swine feeding operations and poultry feeding operations. The CAFO Act and SFO Act require all animal wastes and wastewaters from such operations be held in a total retention system preventing its discharge to the waters of the State and that waste generated in these operations be disposed of in a proper manner. The CAFO Act and SFO Act also require owners/operators to develop and implement Pollution Prevention Plans that include Best Management Practices (BMPs) at these operations. Site-specific Animal Waste Management Plans (AWMPs) containing equivalent requirements of the PPP may substitute for BMPs for CAFO facilities, and site-specific Swine Waste Management Plans could be used in place of BMPs for SFOs. Similarly, the RPFO Act requires poultry feeding operations to develop and implement AWMPs in storing, handling and utilizing poultry litter. The CAFO, SFO and RPFO Acts also require minimum education and training in waste management and related fields be obtained by owners/operators of these facilities. The Oklahoma Poultry Waste Applicators Certification (PWAC) Act requires the applicators be certified by ODAFF, obtain the latest soil and litter tests to determine the proper application rates on any field to which they apply litter, and attend educational courses on poultry waste handling. Applicators shall report to ODAFF each year the amounts of litter and locations where litter is applied. All four Acts require that land applications of either manure, litter or liquid animal waste be performed at agronomic rates. More rigorous requirements are imposed on land applications in the nutrient limited watersheds or in the areas designated as nutrient vulnerable ground water. The CAFO, SFO and RPFO Acts were designed to prevent and abate pollution from entering and contaminating any surface or groundwater. Under these Acts, the ODAFF is required to conduct annual inspections of these operations as well as investigate any complaints filed against such operations. The ODAFF can take regulatory action against a violator as deemed necessary.

The ODAFF has authorities under the Oklahoma Fertilizer Law to enforce the proper handling and storage of commercial fertilizers. The ODAFF licenses all bulk fertilizer storage facilities. All fertilizer materials shall be stored, applied, and handled in a manner, which prevents pollution of groundwater by minimizing losses of the fertilizer materials. This law is designed to prevent and abate the pollution of surface and groundwater within the State. Under this law, the ODAFF has the authority to conduct routine inspections of bulk storage facilities as well as investigate complaint received on a facility. The ODAFF can take regulatory action against a violator as deemed necessary.

The ODAFF has authorities under the Combined Pesticide Law and Rules to enforce the proper handling, storage, and use of commercial pesticides. These laws give the ODAFF authority to mandate regulations for the use of pesticides, how they are to be stored, and who can purchase them for application. These laws are designed to prevent or abate pollution of the waters of the State. Under these laws, the ODAFF must conduct routine inspections and investigates complaints on all facilities or individuals who store, sell, or apply pesticides. The ODAFF can take regulatory action against a violator as deemed necessary.

The ODAFF is also funding a program to collect and properly dispose of unwanted pesticides. All Oklahoma farmers, ranchers, pesticide dealers, commercial applicators and non-commercial applicators are eligible to participate in this program. The ODAFF has contracted a licensed hazardous waste company to collect and properly dispose of waste pesticides in Oklahoma.

Under Oklahoma Forestry Codes, ODAFF's Forestry Services' water quality program monitors the effects of forest practices on water quality, administers silvicultural best management practices and provides training and education of landowners, loggers and forest managers.

Corp Comm has worked with the Integrated Petroleum Environmental Consortium (IPEC), a consortium of the University of Tulsa (TU), the University of Oklahoma (OU), Oklahoma State University (OSU), and the University of Arkansas (UA) at Fayetteville, and the Marginal Well Commission to develop and disseminate best management practices for the hundreds of small oil and gas operators in the State. IPEC and Well Commission meetings and workshops, along with the brochures, checklists, kits, videos, and other materials provided by IPEC, have helped producers reduce the environmental impacts from their oil and gas activities. In addition, Corp Comm has adopted and enforced rules on site operation, pollution containment BMPs, land application, and spill cleanup with site restoration that help to minimize non-point source impacts.

There are other nonpoint source projects that affect either a specific watershed area, or are Statewide projects that will affect several waterbodies. In addition, there are projects planned in other areas of concern other than agriculturally related problems. Continuation of this program is dependent largely on federal grant support.

Nonpoint Source Management Program Success Stories

Led by the Oklahoma Conservation Commission (OCC), Oklahoma's Nonpoint Source Management program ranks second in the nation for the number of waterbody improvements documented on the Environmental Protection Agency's (EPA) "Nonpoint Source Success Stories" website (<https://www.epa.gov/nps/nonpoint-source-success-stories>). As of late 2016, these 53 stories represent the results of cooperative efforts between the local Natural Resources Conservation Service (NRCS), OCC, Conservation Districts, and volunteer landowners/producers to implement conservation practices to improve water quality. These successes represent streams that have been removed from the State's list of impaired waters (i.e., 303d List) for documented improvement in one or more water quality parameters. Candidates for success stories must meet stringent criteria that support likelihood of improvement due to conservation activities and management in the upstream watershed.

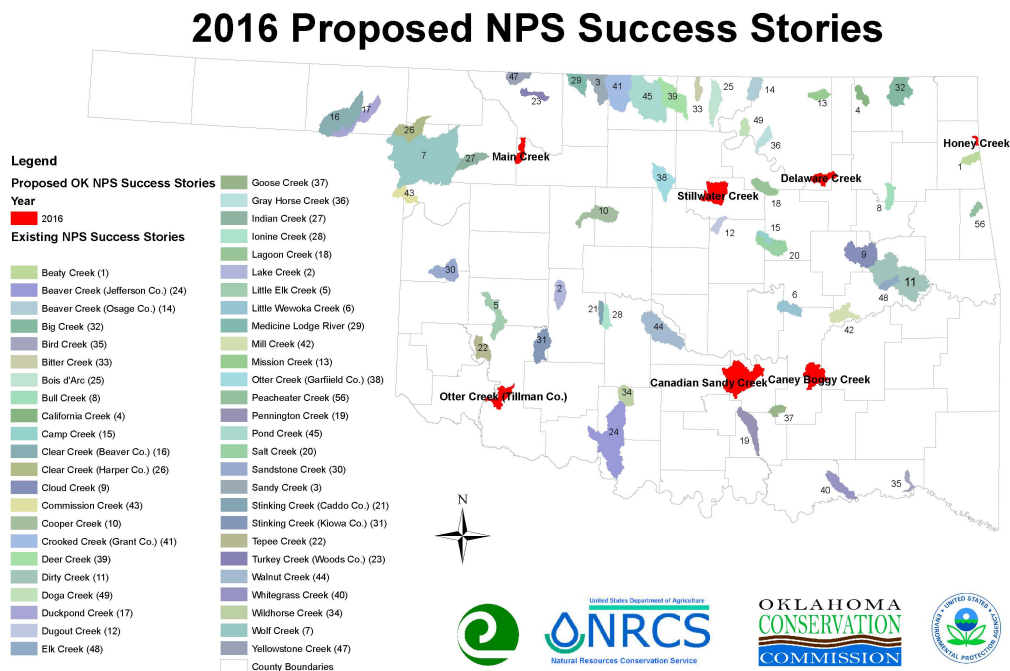
These stories reflect the synergistic efforts and funding of the Conservation Partnership in planning, implementation, and monitoring of instream water quality to document any improvements that result. Principle partners and their roles include: USDA-NRCS (financial and technical assistance); OCC (planning, monitoring, education, financial and technical assistance), US EPA (financial and technical assistance to OCC), local conservation districts (technical assistance, local management), state legislature (funding), local landowner/producer (voluntary participation in conservation implementation and cost share). Most success stories to date represent improvements due to reductions in bacteria, sediment, and nutrient loading from watersheds in the middle of "working lands" Oklahoma. Typical conservation practices which have led to the improvements chronicled in these stories include:

- Grazing Management
- Cross-fencing
- Alternative water supplies
- Supplemental hay planting
- Brush and weed management
- Nutrient management
- Heavy use area protection
- Conservation tillage (no-till, mulch till, strip till)
- Conservation crop rotations
- Waste storage facilities
- Contour farming (terraces, diversions, waterways)
- Riparian fencing

Funding for the implementation of these practices came from NRCS programs (federal funds), local cost-share (state funds), and from the landowners themselves. Funding for the monitoring that allowed documentation of the improvements was primarily from the EPA through the Section 319 Nonpoint Source Program. Please refer to Figure 4 for a map of NPS success stories

(https://www.ok.gov/conservation/News/2016_Water_Quality_Success_Stories.html).

FIGURE 4. OKLAHOMA NON-POINT SOURCE MANAGEMENT SUCCESS STORIES



Superfund Program

Historical hazardous waste problems did not fit into the regulatory hazardous waste system until the passage of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) of 1980. This act created a large scale national program to identify and remediate sites contaminated from historical hazardous waste problems and whose owners were no longer available or financially solvent to pay for the cleanup, or whose owners were no longer around. The term "Superfund" was coined to describe the source of funding for this program. Funding for remedial action was initially obtained from a national revolving fund. The fund obtained its monies through taxes paid on chemical feedstocks used in the manufacture of chemical products that were likely to become hazardous waste. This fund has not been reauthorized since 1996 and funding now relies on general appropriations from Congress. Superfund also established a mechanism to recover cleanup costs from potentially responsible parties.

DEQ's Superfund Program conducts and oversees pre-remedial and remedial activities on several Superfund sites. The Oklahoma Superfund Program relies on federal monies awarded through a cooperative agreement with EPA. There are fourteen sites (and one proposed site) in Oklahoma that are on the EPA National Priority List (NPL). EPA ranks sites for clean-up based on the actual or potential risks posed to human health or the environment.

DEQ's Voluntary Cleanup Program and Brownfields Program have several large Superfund-like sites that are undergoing investigation and cleanup. In addition to these larger sites the Voluntary Cleanup Program and the Brownfields program have dozens of sites that are undergoing remediation for groundwater contamination that are not listed here. There are also many RCRA sites that are undergoing corrective action for groundwater contamination that are not listed here.

DEQ also has authority under 27A O.S. §2-7-123 for risk based remediations, and/or 27A O.S. §2-15-107 for Brownfields sites to place notices on property deeds of risk-based remediation and also allows for restrictions on certain uses, including the use of groundwater if appropriate. Some of the sites listed below have such notices and restrictions filed in their respective county land records.

Refer to Table 14, "Superfund, NPL, and Non-NPL Sites Impacting on Groundwater and Surface Water" for a listing of sites within Oklahoma.

TABLE 14. SUPERFUND, NPL, AND NON-NPL SITES IMPACTING ON GROUNDWATER AND SURFACE WATER

Sites	Legal	County	Contaminant of Concern	Groundwater Impacted (Yes/No)	Surface Water Impacted (Yes/No)
Tar Creek Mining Activities	R24E T29N S16-21 R24E T29N S29-32 R24E T28N S5-6 R23E T28N S05-08 R23E T28N S18-19 R23E T28N S30 R23E T29N S13-36 R22E T28N S01 R22E T28N S12-13 R22E T28N S24-25 R22E T28N S30 R22E T29N S13 R22E T29N S24 R22E T29N S25 R22E T29N S36	Ottawa	Acid Water Cadmium Iron Lead Sulfates Zinc	Boone Aquifer Yes Roubidoux Aquifer, yes (locally near Picher and Quapaw)	Tar Creek Yes

Sites	Legal	County	Contaminant of Concern	Groundwater Impacted (Yes/No)	Surface Water Impacted (Yes/No)
Sand Springs Petrochemical Complex Refinery/ Solvent Recycling	R11E T19N S13-14	Tulsa	Volatile Organic Compounds	Arkansas River Alluvium Yes	Arkansas River (receives discharges but no identifiable impacts)
Compass Municipal Landfill	R12E T19N S18	Tulsa	Benzene Bleaches Caustics Jet Fuel PCBs Pesticides Solvents	Not Applicable	Arkansas River No
Hardage-Criner Industrial Landfill	R04W T06N S24	McClain	Acids Alcohols Caustics Metals Pesticides Solvents	North Criner Creek Alluvium Yes	North Criner Creek Yes
Tenth Street Salvage Yard	R02W T12N S31	Oklahoma	PCBs	North Canadian Alluvium No	North Canadian River No
Tinker AFB Aircraft Maintenance	R02W T11N S14 R02W T11N S23	Oklahoma	Organic Solvents (TCE) Chromium Petroleum Fuels	Garber- Wellington Aquifer Yes	Soldier Creek Yes
Fourth Street Refinery	SE4 SEC35 T12N R3W & SW4 SEC36 T12N R3W	Oklahoma	Lead BTEX Volatile Organic Compounds	Garber- Wellington Aquifer Yes North Canadian Alluvium Yes	North Canadian River No identifiable impacts
Mosley Road Landfill Municipal Landfill	R02W T12N S21	Oklahoma	Volatile Organic Compounds	Garber- Wellington Aquifer Yes North Canadian Alluvium Yes	North Canadian River No

Sites	Legal	County	Contaminant of Concern	Groundwater Impacted (Yes/No)	Surface Water Impacted (Yes/No)
Double Eagle Refinery Refinery	SE4 SEC35 T12N R3W & SW4 SEC36 T12N R3W	Oklahoma	Lead BTEX Volatile Organic Compounds	Garber-Wellington Aquifer Yes North Canadian Alluvium Yes	North Canadian River No
Oklahoma Refining Co Refinery	R09W T05N S18-19	Caddo	Metals VOCs Petroleum Organics Aromatic Hydrocarbons	Rush Springs Aquifer Yes	Gladys Creek Yes
Kerr-McGee Cushing Refinery Refinery	R05W T18N S22&27	Payne	Acid Oil Sludge Heavy Hydrocarbons	Unconfined Aquifer Yes Vamoosa-Ada Aquifer No	Skull Creek Yes
Kerr-McGee Cleveland Refinery Refinery	R08E T21N S18	Pawnee	Petroleum Coke Asbestos Acid Sludges	Cedar Creek Alluvium Yes Vamoosa-Ada Aquifer Yes	Cedar Creek Yes
Blackwell Zinc Smelter	R01W T27N S21	Kay	Metals	Chikaskia River Alluvium Yes	Unnamed tributary of Chikaskia River Yes
National Zinc	R12E T26N S11	Washington	Metals	Not Applicable	Unnamed tributary of Eliza Creek Cleaned up
Ringling Gasoline Spill	NW4 Sec.35 T4S R4W	Jefferson	BTEX and TPH-GRO	Yes	No
Tulsa Fuels & Manufacturing Smelter	NE4 SE4 NE4 SEC 31 & SW4 NW4 SEC32 T22N R14E 1M	Tulsa	Metals	No	Unnamed drainages Yes (sediment only)

Sites	Legal	County	Contaminant of Concern	Groundwater Impacted (Yes/No)	Surface Water Impacted (Yes/No)
Hudson Refining Refinery	SW4 SEC33 T18N R05E & NE4 NW4 SEC04 T17N R05E 1m	Payne	Hydrocarbons metals	Vanoss Aquifer Yes	Wastewater Ponds On-Site Cleaned up Skull Creek No
Duncan Refinery Refinery	R7W T1S S32	Stephens	Hydrocarbons	Garber Yes Alluvium Yes	Claridy Creek Yes
Collinsville Smelter Smelter	R14E T22N S32	Tulsa	Metals	No	Blackjack Creek Yes (sediment only)
U.S. Zinc Company Smelter	R13E T11N S6	Okmulgee	Metals	No	Yes
Coltec, Inc. Manufacturing	R13E T11N S3	Sequoyah	Solvent (PCE)	Boggy Formation Yes	No
Rab Valley Lumber	R25E T8N S15, S16	LeFlore	PAHs	Yes	Yes
Union Pacific Railroad	R7W T17N S14	Kingfisher	Carbon Tetrachloride	Yes	Yes
Okmulgee Refinery	R13E T13N S31 R13E T12N S6	Okmulgee	BTEX, Metals, PAHs	Yes	Yes
Imperial Refining Corporation	R2E T4S S20, S21	Carter	BTEX, Metals, PAHs	No	Wetlands Cleaned up
Clinton-Sherman Industrial Airpark Airbase	R19W T10N S10-11 R19W T10N S14-15	Washita	Trichloro- ethylene (TCE)	Elk City Sandstone Aquifer Yes	Not Applicable

Sites	Legal	County	Contaminant of Concern	Groundwater Impacted (Yes/No)	Surface Water Impacted (Yes/No)
Dobson Ranch	NW4 SEC 17 T11N R26W IM	Roger Mills	Benzene	Ogallala Yes	No
Cornerstone Shopping Center	SE4 SEC16 T 12N R 4W approx 6 acres of West Park Addition to Oklahoma City	Oklahoma	Tetrachloro-ethene	Quaternary Terrace Deposits Yes	No
Oklahoma City Urban Renewal - Phase I	21.6 acres of the NW4 SEC 3 T11N R3W	Oklahoma	Hydrocarbons	Alluvium and Terrace Deposits Yes	No
Blackstar Performance	SE4 SEC25 T20N R8E & NE4 SEC25 T20N R8E	Pawnee	Chlorinated solvents	Tallant Formation Yes	No
OKC Solvent Plume	80 acres in NE/4 S27 T12N R4W & NW/4 S27 T12N R4W	Oklahoma	Chlorinated solvents	N. Canadian Terrace Deposits Yes	No
Compass Industries Landfill	R12E T9N SEC18 & NE4 SE4 SEC 13 T 19N R 11E	Tulsa	SVOC	Yes	Yes
Anadarko Petroleum	NW1/4 Sec4 T22N R6W	Garfield	Petroleum Hydrocarbons and metals	Yes (Terrace Deposits)	No
Michelin/BFG	N1/2 SW1/4 T28N R22E	Ottawa	VOC	Yes	No
Halliburton Osage Road	SE 1/4 of Section 8 Township 1N and Range 7W	Stephens County	Perchlorate, Nitrate	Yes, in the Chickasha and Duncan Formations	No, continues to be monitored
Wilcox Oil Company Refinery	N1/2 Section 29 T16N R9E	Creek	Hydrocarbons Metals	Yes	Sand Creek Unknown, under investigation
Eagle Industries	SESE Section 7 T11N R1W	Oklahoma	TCE	Yes	No

Surface Water Assessment

Surface Water Monitoring Program

The two agencies primarily responsible for carrying out Oklahoma's surface water monitoring programs are the OCC and OWRB.

Brief Summary of Oklahoma Conservation Commission Monitoring Activities

The Oklahoma Conservation Commission (OCC) operates an extensive monitoring program expanding to all areas of Oklahoma. Though OCC conducts several distinct types of monitoring activities, efforts are primarily focused on determining the occurrence, extent, and probable source(s) of non-point source (NPS) pollution and the effect(s) of conservation measures that abate it. Following is a summary of types of monitoring activities OCC conducts across the State.

1. Ambient Monitoring
 - a. Routine effort to collect information about the physical, chemical, and biological characteristics of streams.
 - b. Monitoring occurs at fixed stations over time to document status and trends. Fulfilled through OCC's Rotating Basin Monitoring Program (RBMP) through which approximately 250 sites are monitored for 24 months on a rotational basis every five years.
 - c. Includes collection of physical, chemical, instream habitat, and biological data.
 - d. Fulfills the Clean Water Act Section 319 mandate, "to monitor and assess the State's waters for the effects of NPS pollution."
 - e. Primary reporting of assessment results occurs in OCC's Rotating Basin final reports (https://www.ok.gov/conservation/Agency_Divisions/Water_Quality_Division/WQ_Monitoring/WQ_Assessment_Rotating_Basin_Monitoring_Program.html) and in the State's biennial Integrated Report.
2. Diagnostic Monitoring
 - a. Designed to examine issues discovered during ambient monitoring.
 - b. Involves more refined sampling to determine suspected NPS pollution problems, identify most probable sources, and more accurately document cause(s) and effect(s) of discovered issues.
 - c. May include land use assessment, modeling, more intensive water quality and biological assessments.
3. Implementation Monitoring
 - a. Designed to determine the effects of conservation practices on water quality.
 - b. Involves sampling before and after implementation efforts.
 - c. Includes physical, chemical, and/or biological assessments and often involves use of automated sampling devices to collect continuous flow weighted samples.
4. Reference Condition Monitoring
 - a. Designed to determine what conditions a healthy waterbody should exhibit as a scientific basis for comparison.
 - b. Data collection ensures sufficient physical, chemical, and biological assessments to facilitate a ranking process for determination of high quality sites.
 - c. Reference monitoring data will be made available to OWRB to help establish/refine biological criteria as part of State Water Quality Standards.
5. Volunteer Monitoring
 - a. Designed to provide a continuing opportunity for applied water quality and environmental education.
 - b. Volunteers are trained and certified for collection of select physical, chemical, and biological data used for basic assessment and general trend monitoring. OCC staffers supervise all biological collections at volunteer sites, allowing this information to be used for waterbody assessments.

The OCC conducts additional, specialized types of monitoring, although rather infrequently and generally at the request of other agencies/partners. Examples of specialized monitoring include support for:

- Protection of endangered species
- Total maximum daily load (TMDL) development
- Fluvial geomorphology (establishing the relationship between stream shape, climate, and the stream's location in the watershed)
- Documentation of pre- and post-restoration projects to assess effects (e.g., bank restoration or stabilization, in-stream habitat improvement)
- Community assessments for delisting streams when existing data is deemed insufficient or ambiguous
- Investigation of fish kills

All OCC monitoring is conducted in accordance with EPA-approved Quality Assurance Project Plans (QAPPs). These QAPPs are subject to peer agency review and approval by the Office of the Oklahoma Secretary of Energy & Environment. OCC monitoring efforts are coordinated with other state and federal environmental agencies to maximize the use of public resources.

Brief Summary of Oklahoma Water Resources Board Monitoring Activities

OWRB conducts routine monitoring throughout the State. The major monitoring program is the Beneficial Use Monitoring Program (BUMP) out of which an annual report is generated and distributed to all State legislators. BUMP targets sites on lakes and streams in cooperation with DEQ, OCC, and other State agencies. Parameters are selected in order to establish the overall health of State waters and to discover ambient trends, develop TMDLs, and support development of Water Quality Standards. The primary purpose of the BUMP is to assess the beneficial use support status of State surface waters.

In addition to BUMP, OWRB conducts several special monitoring efforts across the State. Parameters, sites, and frequency of monitoring are established on a case-by-case basis for each of these programs. All are established under formal contracts with the various entities.

- Statewide and Regional Probabilistic Monitoring
 - OWRB has completed and reported the second and third Statewide streams probabilistic study in Oklahoma. The report has been submitted to DEQ for inclusion the State's Integrated Report to fulfill OWRB's 305(b) reporting requirement
 - OWRB embarks on a fourth and fifth Statewide stream study in 2013 and will complete in 2015 and 2017, respectively. As before, the study will encompass a 4-year span of all sized flowing waterbodies as well as subsidiary assessment of condition for smaller and larger waterbodies and three large ecoregion groupings within the state.
 - OWRB is completing work on the second Statewide lakes probabilistic study in Oklahoma. The report will be submitted to EPA in 2015 and results will be included in the State's Integrated Report as necessary.
- Clean Lakes & Technical Studies
 - Eucha Lake
 - 319 NPS project installed 6,400 ft² of floating wetlands made from recycled plastic bottles
 - Assessing efficacy of floating wetlands to reduce the impact of nutria
 - Ft Cobb Lake
 - Established native aquatic plants in lacustrine fringe area in collaboration with the ODWC as part of a 319 NPS project
 - ODWC will maintain established founder colonies to assist with this long-term effort
 - Lake Thunderbird
 - Monitoring of lake to assess impact of installed SDOX system and determine additional actions to mitigate cultural eutrophication
 - Lake managers, COMCD, installed a liquid oxygen device to oxygenate the hypolimnion of the lake to improve raw drinking water quality through lowered organic content (algae growth) and more complete breakdown of detritus trapped in the hypolimnion
 - Ardmore City Lakes, Jean Neustadt; Scott King, Ardmore City and Mountain Lakes
 - Completed bathymetric/sedimentation surveys for all lakes
 - Complete firm yield analysis for incorporation into Ardmore's long range planning process

- Waurika Lake
 - Collected bathymetric data of raw water intake area for dredging to ensure water availability during extreme drought (low water) conditions
 - OWRB will perform post dredging bathymetry for verification
- Lake Stanley Draper
 - OWRB has assisted the City of Oklahoma City to extirpate the invasive aquatic plant, Giant Reed *Phragmites australis*, from the shoreline reducing long term sedimentation, nutrient enrichment and aesthetics.
- Biological Assessments
 - Aimed at establishing biological criteria for inclusion in the Water Quality Standards
 - Combines physical, chemical, and biological measurements in a holistic approach
 - Are making condition assessments for fish, macroinvertebrates, and sestonic and benthic chlorophyll- α in flowing waters, as well as sestonic chlorophyll- α in lakes. Eventually, will make assessments for periphyton communities in flowing waters and zooplankton in lakes.
- Impaired Waterbody Monitoring – 303(d) List
 - Site-specific monitoring under various contracts with DEQ, OCC, and Oklahoma Corporation Commission
 - Aimed at verifying impaired waters listings and/or developing TMDLs
 - All monitoring activities are coordinated with the other state and federal agencies that collect water quality data in order minimize duplication of efforts.

Brief Summary of Oklahoma Corporation Commission Monitoring Activities

The Corporation Commission (Corp Comm) does four types of environmental monitoring:

1. Soil sampling at spill and other potential pollution case sites;
2. Well water sampling near spill and other potential pollution source sites (ground water impacts are discussed in the Ground Water Quality section);
3. Stream water sampling near spills, pits, purging wells, and other potential pollution sources;
4. Stream, and other surface water sampling in historic oilfield areas, to determine the overall impact of historical oilfield activity on the waters of the State; and

Corp Comm continues to perform and work with partners on general stream water quality and standards sampling. Currently, the majority of Corp Comm's surface water sampling has been in relation to nearby pollution cases, due to budgetary constraints. However, all surface water sampling results are considered in making recommendations and providing support for water quality decisions for the Integrated Report, including the 303(d) impaired stream listings.

Assessment Methodology

The following methodologies, along with the procedures described in Figure 5 near the end of this section, shall be used to determine the attainment status of a waterbody's designated beneficial uses and its subsequent categorization in this Integrated Water Quality Report.

A waterbody that is listed on the State's current 303(d) list may only be placed in category 1,2, or 3 of the Integrated Report for "good cause" or if it is demonstrated that new data or information indicate that the waterbody is attaining its designated beneficial uses. "Good cause" shall mean that the State will provide a reasonable basis for the recommendation such as flaws in the original analysis that led to the water being listed; more recent or accurate data; more sophisticated water quality modeling; changes in conditions (e.g., new control equipment or elimination of discharges); or data is insufficient or non-existent to assess that all uses are met and the water should more appropriately be in Category 2 or 3.

Waterbodies in categories 2 & 3 will be prioritized in a manner similar to the category 5 waterbodies. A monitoring schedule will be included for categories 2 & 3 as part of the Integrated Report. Waterbodies included on the most recent 303(d) list will receive the highest priority for future monitoring.

Use Support Assessment Protocol

These procedures closely follow those set forth in the State's Use Support Assessment Protocol (USAP), which can be found in OAC 785:46-15. Where the USAP is silent, this listing methodology should be used. Where there are discrepancies between this methodology and the USAP, the USAP controls.

Beneficial Uses

The Listing Methodology is categorized into beneficial uses. Each beneficial use has a procedure for determining attainment of that use based on various kinds of biological, chemical, and historical data. The result of applying this methodology for any given beneficial use must be one of three choices: "attained", "not attained," and "not enough data to make a determination."

Some beneficial uses have procedures for several different types of data, all of which must be determinable – unless otherwise specified – in order to determine that the beneficial use is attained. Otherwise, the attainment decision must be designated "not enough data to make a determination."

Data Requirements

The data used to make a determination must meet various quantity, quality, spatial, and temporal requirements in order to satisfy the attainment procedures. The following general requirements apply unless otherwise specified in the use-specific procedures that follow. If neither an "attained" nor "not attained" determination can be made, then the overall determination for that beneficial use or subcategory shall be "not enough data to make a determination."

Spatial

- In general, stream sampling locations should take into consideration existing data, spatial distribution of monitoring sites, sources of pollution, and major hydrological features such as tributaries and dams.
- Non-wadable stream samples may represent a maximum of 25 stream miles.
- Wadable stream samples may represent a maximum of 10 stream miles.
- Lake samples may represent a maximum of 250 acres per sample. Arms or portions of lakes may be treated separately from the main body of a lake.
- Samples may not be taken within regulatory mixing zones.

Temporal

- Sampling must represent seasonal variation. Temporal bias should be avoided.
- Multiple samples for a parameter collected on the same stream segment on the same date will be aggregated into one average value representative of the stream condition on that date. This sample aggregation is performed to prevent temporal bias.
- Stream data older than five (5) years should not be used to make use attainment determinations unless insufficient data exists for the previous five (5) year period.
- Lake data older than ten (10) years should not be used to make use attainment determinations unless insufficient data exists for the previous ten (10) year period.

Quantity

- For streams, a minimum of ten (10) samples is required to determine use attainment for parameters such as DO, pH, temperature, coliform bacteria, dissolved solids, and salts.
- For lakes of more than 250 surface acres, a minimum of twenty (20) samples is required to determine use attainment for parameters such as DO, pH, temperature, coliform bacteria, chlorophyll- α , and dissolved solids. For lakes of 250 surface acres or less, a minimum of ten (10) samples is required.
- For toxicants, a minimum of five (5) samples is required to determine use attainment.

- For any type of sample, if existing samples already assure a "not attained" determination, the minimum sample quantity requirement does not apply.

PQLs

Criteria above PQL

If sample values are below the PQL (Practical Quantitation Limit) for a parameter whose criterion is above the PQL, appropriate nonparametric statistical measures shall be used to determine the reporting value.

For waterbodies identified as impaired on the current Integrated Report, if sample values are nondetectable for a parameter whose criterion is above the PQL, then such value shall be deemed to be one-half ($1/2$) of the parameter PQL.

All sample values that are above the PQL shall be the reported values.

Criteria below PQL

If sample values are below the PQL for a criterion which is less than one-half ($1/2$) of the PQL, then the values shall be deemed to be zero (0) until the first test result above the PQL appears. After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as zero (0) until the next test result appears above the PQL.

For those parameters whose criteria are at least two (2) orders of magnitude below the PQL, evidence considered with respect to assessment of use support shall include fish tissue analysis, biological community analysis, biological thresholds wherever available, or other holistic indicators which are appropriate for the beneficial use in question.

If sample values are below the PQL for a criterion which is greater than or equal to one-half ($1/2$) of the PQL but less than the PQL, then the values shall be deemed to be one-half ($1/2$) of the criterion value until the first test result above the PQL appears. After that time, sample values which are below the PQL shall be deemed to be equal to the criterion value until four (4) subsequent contiguous samples are shown to be below the PQL. Any subsequent sample values which are nondetectable may be treated as equal to one-half ($1/2$) of the criterion value until the next test result appears above the PQL.

For waterbodies identified as impaired in the current Integrated Report, if sample values are nondetectable for a parameter whose criterion is below the PQL, then such value shall be deemed to be one-half ($1/2$) of the criterion value.

All sample values that are above the PQL shall be the reported values.

Magnitude of Exceedance

- For toxicants, if two or more samples exceed water quality criteria or screening levels by two orders of magnitude or more, the associated beneficial use is determined to be "not attained."
- For DO, if more than two samples in a stream are below 2 mg/L in a given year, the Fish & Wildlife Propagation beneficial use is determined to be "not attained."

Quality Assurance

Data collected for purposes of use support assessment shall be collected using documented programmatic quality assurance and quality control methods substantially in accordance with those required by "EPA Requirements for Quality Assurance Project Plans", EPA publication no. EPA/240/B-01/003 (March 2001).

The methods used shall include protections for sample integrity and the documentation of details on analysis methodologies.

Default Protocol

This method for determining beneficial use attainment should be used where another, more specific method is not provided.

Short Term Average Parameters

Short term average parameters are based on exposure periods of less than seven days, such as sample standards (agriculture beneficial use) and turbidity.

A beneficial use is considered *attained based on the default protocol for a given short term average parameter* if:

10% or fewer of the samples exceed the appropriate screening level or water quality criterion

or

the determination using the default protocol yields "fully supporting but threatened" and the threat will not yield a determination of other than fully supporting within two years of the determination.

A beneficial use is considered *not attained based on the default protocol for a given short term average parameter* if:

greater than 10% of the samples exceed the appropriate screening level or water quality criterion

or

the determination using the default protocol yields "fully supporting but threatened" and the threat will yield a determination of other than fully supporting within two years of the determination.

Long Term Average Parameters

Long term average parameters are based on exposure periods of seven days or longer, such as yearly mean standards (agriculture beneficial use) and fish consumption water column numerical criteria.

A beneficial use is considered *attained based on the default protocol for a given long term average parameter* if:

each 2-year rolling average of the sample results does not exceed the long term average criterion or screening level

or

the determination using the default protocol yields "fully supporting but threatened" and the threat will not yield a determination of other than fully supporting within two years of the determination.

A beneficial use is considered *not attained based on the default protocol for a given long term average parameter* if:

any 2-year rolling average of the sample results exceeds the long term average criterion or screening level

or

the determination using the default protocol yields "fully supporting but threatened" and the threat will yield a determination of other than fully supporting within two years of the determination.

Fish & Wildlife Propagation (F&WP)

The methodology for the Fish & Wildlife Propagation (F&WP) beneficial use consists of eight types of data, each with its own attainment methodology.

The F&WP beneficial use is considered *attained* if:

in the absence of biological data, all six chemical methodologies (DO, Toxicants, pH, Turbidity, Oil & Grease, and Toxicants Not Assessed & Not Likely to Occur or Violate Criteria) result in a determination of *attained*

or

in the absence of adequate data for all six chemical data types, the biological data methodology results in a determination of *attained*.

The F&WP beneficial use is considered *not attained* if **any** of the eight data type methodologies result in a determination of *not attained*.

Dissolved Oxygen (DO)

Streams

A minimum of ten (10) samples is required to make an attainment determination.

The F&WP beneficial use is considered *attained with respect to dissolved oxygen* if 10% or fewer of the samples from a waterbody have a DO concentration of less than:

- 4.0 mg/L from April 1 - June 15 (3.0 mg/L from June 16-March 31) for habitat limited aquatic communities (HLAC)
- 6.0 mg/L from April 1 - June 15 (5.0 mg/L from June 16 – March 31) for warm water aquatic communities (WWAC)
- 7.0 mg/L from March 1 - May 31 (6.0 mg/L for the remainder of the year) for trout fisheries and cool water aquatic communities (CWAC)

The F&WP beneficial use is considered to be *undetermined* if the sample results show:

- More than 10% of samples are less than 6.0 mg/L from April 1 – June 15 (5.0 from June 16 – October 15) and 10% or fewer of the samples are less than 5.0 mg/L from April 1 – June 15 (4.0 from June 16 – October 15) for warm water aquatic communities (WWAC)
- More than 10% of samples are less than 7.0 mg/L from March 1 – May 31 (6.0 from June 1 – October 15) and 10% or fewer of the samples are less than 6.0 mg/L from March 1 – May 31 (5.0 from June 1 – October 15) for trout fisheries and cool water aquatic communities (CWAC).

The F&WP beneficial use is considered *not attained with respect to dissolved oxygen* if more than 10% of the samples from a waterbody have DO concentrations less than the criteria listed below or if more than 2 samples in a given year are below 2 mg/L.

- 4.0 mg/L from April 1 – June 15 (3.0 from June 16 – March 31) for habitat limited aquatic communities (HLAC)
- 5.0 mg/L from October 16 – June 15 (4.0 mg/L from June 16 – October 15) for warm water aquatic communities (WWAC)
- 5.0 mg/L from June 1 – Oct 15 (6.0 mg/L during the remainder of the year) for trout fisheries and cool water aquatic communities (CWAC)

Lakes

For lakes or arms of 250 acres or less, a minimum of ten (10) samples is required to make an attainment determination. For lakes or arms of greater than 250 acres, a minimum of twenty (20) samples is required.

The Warm Water Aquatic Community subcategory of the Fish and Wildlife Propagation designated use for a lake shall be deemed to be attained with respect to dissolved oxygen if both the Surface Criteria and the Water Column Criteria listed below are satisfied. If either the Surface or Water Column criteria produce an undetermined result, the lake beneficial use will be considered *undetermined* with respect to dissolved oxygen. If either the Surface or Water Column criteria produce a result of not attained, the Fish and Wildlife Propagation designated use will be considered *not attained* with respect to dissolved oxygen.

Surface Criteria for WWAC Lakes

The F&WP beneficial use is considered *attained with respect to dissolved oxygen* if:

10% or less of the samples from the epilimnion during periods of thermal stratification, or the entire water column when no stratification is present, are less than 6.0 mg/L from April 1 – June 15 (5.0 mg/L during the remainder of the year).

The F&WP beneficial use is considered *undetermined with respect to dissolved oxygen* if:

More than 10% of the samples from the epilimnion during periods of thermal stratification, or the entire water column when no stratification is present, are less than 5.0 mg/L from June 16 through October 15 (6.0 mg/L from April 1 – June 15)

and

10% or less of the samples are less than 4 mg/L from June 16 through October 15 (5.0 mg/L from April 1 – June 15),

The F&WP beneficial use is considered *not attained with respect to dissolved oxygen* if:

More than 10% of the samples from the epilimnion during periods of thermal stratification, or the entire water column when no stratification is present, are less than 4.0 mg/L from June 16 – October 15 (5.0 mg/L during the remainder of the year).

Water Column Criteria for WWAC Lakes

The F&WP beneficial use is considered *attained with respect to dissolved oxygen* if:

Less than 50% of the lake volume has a DO concentration below 2.0 mg/L

or

If no volumetric data is available, 50% or less of the water column of all sample sites in the lake have a DO concentration below 2.0 mg/L.

The F&WP beneficial use is considered *undetermined with respect to dissolved oxygen* if:

50% or more, but not greater than 70%, of the lake water column at any sample site has a DO concentration of less than 2.0 mg/L

The F&WP beneficial use is considered *not attained with respect to dissolved oxygen* if:

50% or more of the water volume has a DO concentration of less than 2.0 mg/L

or

If no volumetric data is available, more than 70% of the water column at any given sample site has a DO concentration of less than 2 mg/L.

Toxicants

A minimum of five (5) samples is required to make an attainment determination.

The following screening values shall be used to make attainment decisions for toxicants:

- the acute and/or chronic criteria for a given toxicant, as described in Appendix G, Table 2 of the Oklahoma Water Quality Standards, OAC 785:45
- the chronic ammonia toxicity value shown in Table 15 corresponding to the stream pH and temperature at the time of sampling

For metals, preference shall be given to attainment decisions based on dissolved metals in accordance with the procedures specified in OAC 785:46-15-5(h).

Acute Effects

The F&WP beneficial use is considered *attained with respect to an individual toxicant* if no more than one (1) of the samples have concentrations of a toxicant that exceed the acute criterion or screening value for that toxicant.

The F&WP beneficial use is considered not attained with respect to an individual toxicant if more than one (1) of the samples have concentrations of a toxicant that exceed the acute criterion or screening value for that toxicant.

Chronic Effects

The F&WP beneficial use is considered *attained with respect to an individual toxicant* if:

not more than one (1) of the samples have concentrations of a toxicant that exceed the chronic criterion or screening value for that toxicant

or

not more than 10% of the samples have concentrations of a toxicant that exceed the chronic criterion or screening value for that toxicant

The F&WP beneficial use is considered *not attained with respect to an individual toxicant* if more than 10% of the samples have concentrations of a toxicant that exceed the chronic criterion or screening value.

TABLE 15. TEMPERATURE- AND pH-DEPENDENT SCREENING VALUES FOR AMMONIA

pH	Temperature (°C)									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773

8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

pH

A minimum of ten (10) samples is required to make an attainment determination.

The F&WP beneficial use is considered *attained with respect to pH* if 10% or fewer of the samples fall outside the screening range of 6.5 (minimum) and 9.0 (maximum).

The F&WP beneficial use is considered *not attained with respect to pH* if more than 10% of the samples fall outside the screening range of 6.5 (minimum) and 9.0 (maximum).

Biological Data

Following are two stand-alone methods for determining impairment based on biological samples—one for benthic macroinvertebrates (BML) and another for fish. Each acts independent of the other because of the availability of separate cause codes for bioassessments. A cause code does exist for a combined bioassessment, but that particular scenario is not addressed in this methodology. Oklahoma has implemented narrative biocriteria for fish in its Use Support Assessment Protocols (OAC 785:46-15-5(i)), and these biocriteria are included as part of the assessment tool outlined below. However, the same section (OAC 785:46-15-5(i)(1)) states “If data demonstrate that an assemblage of fish or macro invertebrates from a waterbody is significantly degraded, according to 785:45-5-12(f)(5), from that expected for the subcategory of Fish and Wildlife Propagation designated in OAC 785:45 for that waterbody, then that subcategory may be deemed by the appropriate State environmental agency to be not supported.” Because of this, it is imperative that a method be developed to assess the large of amount of BML data collected to date and in the future. Also, it is important to utilize fish data across the State, when the fish biocriteria is either inconclusive (i.e., “undetermined”) or unavailable in a particular ecoregion or for a particular aquatic life designation within a promulgated ecoregion. For this reason an alternative fish assessment method has been developed and included in the following methodology. However, the Oklahoma biocriteria trumps the alternative method whenever it returns an assessment of attaining or not attaining.

Biological criteria have been established for various ecoregions in Oklahoma under OAC 785:46-15-5 (see Figure 5). These biocriteria must be referenced when making Fish and Wildlife beneficial use attainment determinations for fish in accordance with method below. OAC 785:46 Appendix C Index of Biological Integrity should be used for these ecoregions. This methodology is only applicable to wadable streams.

For waterbodies where no biological data is available, a resulting determination of “*attained*” with respect to all six chemical data type methodologies (DO, pH, Toxicants, Turbidity, Oil & Grease, and Toxicants Not Assessed & Not Likely to Occur or Violate Criteria) may serve to determine attainment of the F&WP beneficial use.

For waterbodies where *only* biological data is available, a determination of “*attained*” with respect to biological assessment(s) (in accordance with method below) may serve to determine attainment of the F&WP beneficial use. Determinations of attainment of F&WP for both/either fish and/or benthic macroinvertebrates may be made in accordance with the following methods:

Assessment of F&WP Beneficial Use with Fish Collection Data

- Data requirements: Fish collections must be made in accordance with methods outlined in OWRB Technical Report 99-3, Oklahoma Conservation Commission Standard Operating Procedures (SOPs), Oklahoma Water Resources Board SOPs or equivalent and collected under an EPA approved Quality Assurance Project Plan. Collections should be made during a defined seasonal index period (index) in

flowing water. A maximum of 5 collections are allowed for assessment determination for the reporting period (1 index period per year, 5 year reporting period).

Definitions:

- **Collection** – all fish obtained from a single site on a given date.
- **Index** – one seasonal period prescribing defined temporal limits for collection. (Late Spring – Early Fall index – May 15-October 31).
- Collections must be completely enumerated and identified to species. Taxonomic identifications should be performed using keys contained in The Fishes of Oklahoma, The Fishes of Arkansas, or The Fishes of Missouri. Adequate voucher samples should be maintained through specimen collections and/or photo-documentation per SOPs in Section 1.
- Collections must be analyzed using an Index of Biotic Integrity (IBI) approach (EPA, 1989, 1999) comprised of the seven following metrics: number of species, number of sensitive benthic species, number of sunfish species, number of intolerant species, proportion tolerant individuals, proportion insectivorous cyprinid individuals, proportion individuals as lithophilic spawners. The metrics must be derived and scored for each sample in accordance with methods outlined in EPA's Rapid Bioassessment Protocol (EPA 1989 and 1999) (see Table 16). Consult ecoregion reference metric scores (available from OWRB or OCC Water Quality Division offices) as necessary to facilitate scoring process. This method will be known as "OKIBI".

TABLE 16. MATRIX TO DETERMINE METRIC SCORES FOR EACH SAMPLE OF FISH

Metrics	5	3	1
Number of species*	>67%	33-67%	<33%
Number of sensitive benthic species*	>67%	33-67%	<33%
Number of sunfish species*	>67%	33-67%	<33%
Number of intolerant species*	>67%	33-67%	<33%
Proportion tolerant individuals**	<10%	10-25%	>25%
Proportion insectivorous cyprinid individuals**	>45%	20-45%	<20%
Proportion individuals as lithophilic spawners**	>36%	18-36%	<18%

* Sample metric divided by the reference metric for the applicable ecoregion

** Score based on actual value

1. Metric scores for each collection must then be summed to compute a "total OKIBI score." Scores for multiple collections made during the same index for a given year must be averaged to render a single per year score. Total OKIBI scores will then be compared to reference OKIBI scores (available from OWRB or OCC Water Quality Division offices) for the appropriate ecoregion in order to determine final fish support status (Table 17) (adapted from EPA RBP, 1989):

TABLE 17. BIOLOGICAL CONDITION AND ASSOCIATED SUPPORT STATUS BASED UPON FISH COLLECTIONS

% of Reference OKIBI score	Biological Condition Category	Sample Support Status
>80%	Not impaired	Attaining
50-80%	Possible impairment to no impairment	Undetermined
<50	Impaired	Not Attaining

2. Overall fish support status for the OKIBI is determined considering support status of all collections obtained within the reporting period as follows:
 - a. If only one sample was collected - support status stands as called
 - b. If two or more samples were collected:
 - Determine support status based on majority

- In instances when no majority exists, the final result is undetermined
3. Use Table 18 to determine the final Fish and Wildlife Propagation (FWP) beneficial use assessment for fish. In the following table, fish biocriteria that have been promulgated in Oklahoma's USAP are referred to as OKBIOCRIT, while the method outlined in this document is referred to as OKIBI. *You must determine an OKBIOCRIT result for all collections where applicable. The OKIBI can only be used when the OKBIOCRIT returns an undetermined result or is not promulgated in rule for a particular ecoregion or aquatic life tier.*

TABLE 18. FINAL FWP USE ASSESSMENT BASED UPON FISH COLLECTIONS

OKBIOCRIT Result	OKIBI Result	Final Fish Assessment
Not Available	Attaining	Attaining
Not Available	Not Attaining	Not Attaining
Not Available	Undetermined	Undetermined
Undetermined	Attaining	Attaining
Undetermined	Not Attaining	Not Attaining
Undetermined	Undetermined	Undetermined
Attaining	Undetermined	Attaining
Not Attaining	Undetermined	Not Attaining

Assessment of F&WP Beneficial Use with Benthic Macroinvertebrate Data

1. Data requirements: Macroinvertebrate collections must be made in accordance with methods outlined in OWRB Technical Report 99-3, Oklahoma Conservation Commission (OCC) Standard Operating Procedures (SOPs), Oklahoma Water Resources Board (OWRB) SOPs or equivalent and collected under an EPA approved Quality Assurance Project Plan. Collections should be made during defined seasonal index periods (index) in flowing water and target best available habitats in the following order of importance: rocky riffles, streamside root masses, and woody debris. A minimum of four macroinvertebrate samples (collected over at least a two year period) is required for assessment. A maximum of 10 collections are allowed for the reporting period (2 index periods per year, 5 year reporting period).

Definitions:

- **Sample** – macroinvertebrates resulting from a single habitat type (riffle, vegetation, wood) from a single site on a given date.
 - **Collection** – all samples obtained from a single site on a given date. A single collection may include up to three samples, one from each habitat type.
 - **Index** – one of two seasonal periods prescribing defined temporal limits for collection. (Summer index – June 1-September 15; Winter Index – January 1-March 15th).
2. Samples must be picked in accordance with EPA approved SOPs to achieve either a 100 or 300 organism sub-sample to be sent to professionals for identification to genus (when possible). Taxonomic identifications should be performed using keys by Merritt and Cummins, Pennak, or other regional guides with justification.
 3. Samples must be analyzed using an Index of Biotic Integrity (IBI) approach (EPA, 1989, 1999) comprised of the six following metrics: total number of taxa, number of EPT taxa, proportion EPT taxa, proportion dominant two taxa, modified Hilsenhoff Biotic Index (HBI), and Shannon Diversity. The metrics must be derived and scored for each sample (e.g., summer-riffle, winter-wood) in accordance with methods outlined in EPA's Rapid Bioassessment Protocol (EPA 1989 and 1999) (see Table 19). Consult ecoregion reference metric scores (available from OWRB or OCC Water Quality Division offices) as necessary to facilitate scoring process.

TABLE 19. MATRIX TO DETERMINE METRIC SCORES FOR EACH SAMPLE OF MACROINVERTEBRATES

Metrics	6	4	2	0
Taxa Richness*	>80%	60-80%	40-60%	<40%
Modified HBI**	>85%	70-85%	50-70%	<50%
EPT/Total***	>30%	20-30%	10-20%	<10%
EPT Taxa*	>90%	80-90%	70-80%	<70%
% Dominant 2 Taxa***	<20%	20-30%	30-40%	>40%
Shannon-Weaver***	>3.5	2.5-3.5	1.5-2.5	<1.5

* sample metric divided by the reference metric for the applicable ecoregion

** reference metric value for the applicable ecoregion divided by the sample metric value

***score based on actual value

4. Metric scores for each sample must then be summed to compute a “total IBI score.” Scores for multiple collections made during the same index for a given year must be averaged to render a single index-habitat score per year (e.g., only one score for summer-riffle or winter-wood per year). Total IBI scores will then be compared to reference IBI scores (available from OWRB or OCC Water Quality Division offices) for the appropriate index-habitat and ecoregion to determine final macroinvertebrate support status (Table 20) (adapted from the EPA RBP, 1989). If the macroinvertebrate sample was made as part of a probabilistic monitoring project use Table 19 to determine sample support status.

TABLE 20. BIOLOGICAL CONDITION & ASSOCIATED SUPPORT STATUS BASED UPON MACROINVERTEBRATE SAMPLES

% of Reference IBI score	Biological Condition Category	Sample Attainment Status
>80%	Non-impaired	Attaining
50-80%	Possible impairment to no impairment	Undetermined
<50	Impaired	Not attaining

TABLE 21. BIOLOGICAL CONDITION & ASSOCIATED SUPPORT STATUS BASED UPON PROBABILISTIC MACROINVERTEBRATE SAMPLES

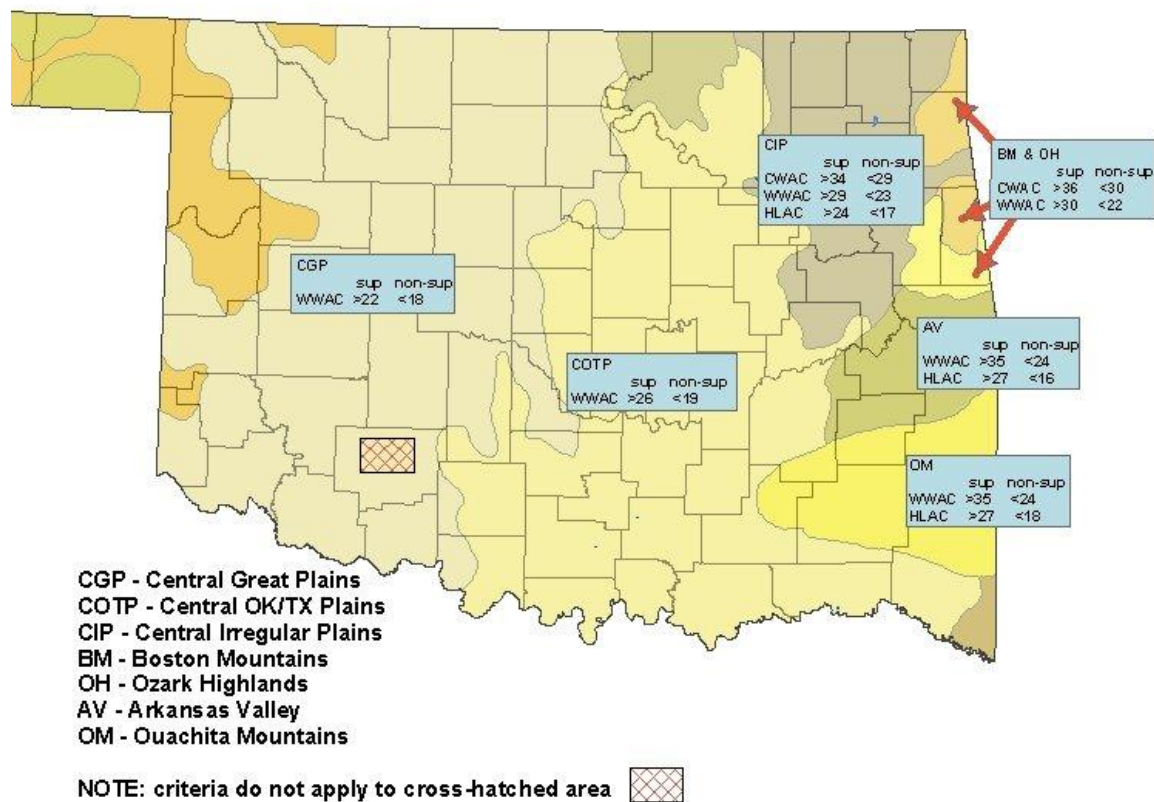
% of Reference IBI score	Biological Condition Category	Sample Attainment Status
>85%	Non-impaired	Attaining
40-85%	Possible impairment to no impairment	Undetermined
<40	Impaired	Not attaining

5. With support status of samples determined, render macroinvertebrate support status for each **collection** as follows:
 - a. If a riffle sample was collected, use the support status of the riffle sample to represent the collection.
 - b. If riffle sample status is “undetermined,” then the support status of the collection will be determined by the better of vegetation or wood scores.
 - c. If all samples are “undetermined,” then the macroinvertebrate support status for the collection is “undetermined.”
6. A minimum of four macroinvertebrate samples (collected over at least a two year period) is required for assessment. Overall Fish and Wildlife Propagation (FWP) beneficial use attainment for macroinvertebrates is determined considering support status of all collections obtained within the reporting period in accordance with Table 22.

TABLE 22. FINAL FWP USE ATTAINMENT DETERMINATION BASED UPON MACROINVERTEBRATES.

Minimum number of "Attaining" collections	Number of "Undetermined" collections	Number of "Not Attaining" collections	Final Macroinvertebrate Assessment
2	any	0	Attaining
any	any	1	Undetermined
any	any	2 or more	not attaining

FIGURE 5. ECOREGIONS WHERE BIOCRITERIA HAVE BEEN ESTABLISHED



Turbidity

A minimum of ten (10) samples collected under seasonal base flow conditions is required to make an attainment determination.

The following numerical criteria shall be used to make attainment decisions for turbidity:

- 10 Nephelometric Turbidity Units (NTUs) for cool water aquatic communities and trout fisheries
- 25 NTUs for lakes
- 50 NTUs for other surface waters

The F&WP beneficial use is considered *attained with respect to turbidity* if:

10% or fewer of the samples exceed the appropriate screening level or water quality criterion.

or

the numerical criteria yield a determination of "fully supporting but threatened" and the threat will not yield a determination of other than fully supporting within two years of the determination.

The F&WP beneficial use is considered *not attained with respect to turbidity* if:

Greater than 10% of the samples exceed the appropriate screening level or water quality criterion

or

the numerical criteria yield a determination of "fully supporting but threatened" and the threat will yield a determination of other than fully supporting within two years of the determination.

The determination of seasonal base flow conditions should be made in accordance with the following methods:

- For recording gaged sites (including ones with gages at the site or near to the site with no intervening inflows):
 1. Calculate the mean and median discharge of the 30 days surrounding the sampling event.
 2. If Q at sampling event not greater than median—**considered baseflow conditions, use in assessment**; OR
If Q at sampling event greater than median—look at mean
 3. If Q at sampling event not greater than mean, go to step 4; OR
If Q at sampling event greater than mean - **considered above baseflow conditions, exclude from assessment**.
 4. If Q is greater than the median but not the mean, use the weight of evidence method described below.
- For non-recording gaged or ungaged sites use a weight of evidence of coincident parameters (e.g., instantaneous discharge, turbidity, conductivity, total phosphorus, and total suspended solids), relevant weather station information (as available and applicable), and observational data (e.g., presence of a defined periphyton line, site comments, quantitative flow rating such as "elevated" or "heavy"). Perform the following steps:
 1. Compile concurrent turbidity, turbidity cause qualifier (i.e., abiotic, biotic), Inst. Q, TP, TSS, conductivity, and site observation data (which includes qualitative stream stage and site comments). Sort by site and date.
 2. For each site, move through the data looking for inflections in Inst. Q supported by similar inflections in concurrent parameters (e.g., increase in TP, TSS; decrease in conductivity). Quite a few of the elevated flows are indicated by the qualitative stream stage and site comments (e.g., "recent rainfall"), so the determination is immediate. Mark these events as exceeding baseflow.
 3. Where applicable and practical, compare analysis to nearby mesonet data. This cannot be used to preclude the above analysis but can be used as a confirmation step to add to the weight of evidence approach.
 4. Remove the "elevated flows" and perform the analysis.

For sites where all turbidity values are below the applicable criterion, determination of events exceeding baseflow conditions is not necessary.

Oil & Grease

A minimum of ten (10) visual observations made over a period of at least ten (10) months is required to make an attainment determination.

Any of the following visual characteristics shall indicate the presence of oil or grease:

- a rainbow sheen that flows when stirred, rather than crackling
- a golden tan to dark brown coating or globules on the water or in stream sediment

The F&WP beneficial use is considered *attained with respect to oil & grease* if 10% or fewer observations reveal the presence of oil or grease.

The F&WP beneficial use is considered *not attained with respect to oil & grease* if more than 10% of the observations reveal the presence of oil or grease.

Sediment

The F&WP beneficial use is considered *attained with respect to sediment* if the use is also attained with respect to biological criteria.

If the biological data assessment results in a determination of "not attained," a habitat assessment must be conducted using the habitat assessment protocols found in OWRB Technical Report TRWQ2001-1, "Unified Protocols for Beneficial Use Assignment for Oklahoma Wadable Streams."

The results of the habitat assessment shall then be compared to either historical conditions or regional reference conditions in order to determine attainment with respect to sediment. The method for establishing reference conditions shall meet the following requirements:

- a minimum of five (5) reference streams or reaches shall be assessed
- the reference streams or reaches must be within the same ecoregion as the test stream
- the reference streams or reaches must be within streams with similar flow regimes no more than two (2) stream orders (as defined in 46:1-2) removed from the test stream
- the reference streams or reaches shall be selected from the least impacted streams within the ecoregion whose watersheds contain soils, vegetation, land uses, and topography typical of the watershed of the test stream.

The F&WP beneficial use is considered *not attained with respect to sediment* if any of the following habitat parameters deviate from the reference conditions by the specified amount:

- Pool Bottom Substrate – the total percent of clay, silt, and loose sand in the test stream is increased by more than 30% over the reference condition
- Cobble Embeddedness – cobble embeddedness is increased by 15% or more over the reference condition
- Point Bars and/or Islands – reach length percentage containing fresh (non-vegetated) point bars and/or islands is 20 or more percentage points above that of the reference condition
- Deep Pools – percentage of reach dominated by deep (0.5 meters or more) pools is less than 70% of that of the reference condition

If all of the habitat parameters identified above deviate from the reference conditions by less than the amounts specified, then the Fish and Wildlife Propagation beneficial use is not impaired due to suspended and bedded sediments.

Toxicants Not Assessed and Not Likely to Occur or Violate Criteria

The data required to assess every water quality criterion – specifically toxicants – associated with the F&WP use do not always exist for a particular waterbody. The following procedure may be used to determine attainment of the F&WP beneficial use with respect to toxicants that have not been assessed, but are not likely to occur or violate criteria.

The following three types of information must be available in order to apply this procedure:

1. The results of a review of watershed-specific landuse and historical data that yields patterns of use or nonuse of the toxicant(s) not assessed.
2. A result of either “attained” or “not enough information” for the Toxicants methodology.
3. A result of either “attained” or “not enough information” for the Biological Data methodology.

NOTE: The decision matrix below may be used to determine *attainment of the F&WP beneficial use with respect to the unassessed toxicants* **only if** the landuse and historical data review yields no indication that the unassessed toxicants are present or likely to impact the waterbody in question.

TABLE 23. DECISION MATRIX FOR TOXICANTS NOT ASSESSED OR LIKELY TO OCCUR OR VIOLATE F&WP CRITERIA

		Biological Data	
		Attained	Not Enough Information
Toxicants	Attained	F&WP Attained With Respect To Unassessed Toxicants	F&WP Attained With Respect To Unassessed Toxicants
	Not Enough Information	F&WP Attained With Respect To Unassessed Toxicants	Not Enough Information to Determine F&WP Attainment With Respect to Unassessed Toxicants

Primary Body Contact Recreation (PBCR)

A minimum of ten (10) samples is required to make an attainment determination. Samples must be taken during the recreation period of May 1 – September 30.

Geometric means will be calculated using all data meeting the temporal data requirements. The geometric means will be compared to the appropriate screening value.

Escherichia coli (*E. coli*)

The PBCR beneficial use is considered *attained with respect to E. coli* if:

the geometric mean of the samples does not exceed 126 colonies/100 mL

The PBCR beneficial use is considered *not attained with respect to E. coli* if:

the geometric mean of the samples exceeds 126 colonies/100 mL

Enterococci

The PBCR beneficial use is considered *attained with respect to Enterococci* if:

the geometric mean of the samples does not exceed 33 colonies/100 mL

The PBCR beneficial use is considered *not attained with respect to Enterococci* if:

the geometric mean of the samples exceeds 33 colonies/100 mL

Secondary Body Contact

Attainment for the SBCR beneficial use is identical to the PBCR attainment methodology, but using five times (5x) the PBCR numerical criteria and screening levels.

Public and Private Water Supply (PPWS)

In order to determine attainment of the PPWS beneficial use, samples must be taken at the point of a drinking water intake.

Toxicants

A minimum of ten (10) samples is required to make an attainment determination.

The PPWS beneficial use is considered *attained with respect to any individual toxicant* for which there is a water quality criterion established if:

10% or fewer of the samples have concentrations of a toxicant that exceed the criterion for that toxicant

and

no drinking water use restrictions related to source water contamination are in effect

The PPWS beneficial use is considered *not attained with respect to any individual toxicant* for which there is a water quality criterion established if:

more than 10% of the samples have concentrations of a toxicant that exceed the criterion for that toxicant

or

a drinking water use restriction related to source water contamination is in effect

Total Coliform

A minimum of ten (10) samples is required to make an attainment determination.

The following numerical criterion shall be used to make attainment decisions for bacteria:

- 5000 colonies/100 mL

The PPWS beneficial use is considered *attained with respect to bacteria* if:

the numerical criterion yields a determination of "fully supporting" using the default protocol

or

the numerical criterion yields a determination of "fully supporting but threatened" using the default protocol if the threat will not yield a determination of other than fully supporting within two years of the determination

or

the Primary Body Contact Recreation use is attained.

The PPWS beneficial use is considered *not attained with respect to bacteria* if:

the numerical criterion yields a determination of "not supporting" using the default protocol

or

the numerical criterion yields a determination of "fully supporting but threatened" using the default protocol *if* the threat will yield a determination of other than fully supporting within two years of the determination.

Oil & Grease

A minimum of ten (10) visual observations made over a period of at least ten (10) months is required to make an attainment determination.

Any of the following visual characteristics shall indicate the presence of oil or grease:

- a rainbow sheen that flows when stirred, rather than crackling
- a golden tan to dark brown coating or globules on the water or in stream sediment

The PPWS beneficial use is considered *attained with respect to oil & grease* if 10% or fewer observations reveal the presence of oil or grease.

The PPWS beneficial use is considered *not attained with respect to oil & grease* if more than 10% of the observations reveal the presence of oil or grease.

Parameters Not Assessed and Not Likely to Occur or Violate Criteria

The data required to assess every water quality criterion associated with PPWS does not always exist for a particular waterbody. In those cases, the following procedure should be followed in order to make an attainment decision.

For parameters not assessed or which are not likely to occur or violate criteria, attainment decisions should be made based on two kinds of information:

1. the results of analysis of chemical-specific parameters routinely monitored by the State's Beneficial Use Monitoring Program (BUMP) as compared to State criteria associated with PPWS
2. the results of a review of watershed-specific landuse and historical data that yields patterns of use for the pollutant in question

The PPWS beneficial use is considered *attained with respect to unassessed parameters* if:

the waterbody is attaining the PPWS use for BUMP parameters according to the Toxicants section of this listing methodology

and

no suspicion of the presence of the unassessed parameters exists based on landuse and historical data review

Chlorophyll- α and Phosphorus

Certain water supplies have specific criteria for chlorophyll- α and/or total phosphorus as specified in OAC 785:45-5-10(7) and (8). Attainment of these criteria will be evaluated using the specified criteria and the long-term average default protocol.

Emergency Water Supply (EWS)

All waterbodies designated with the Emergency Water Supply beneficial use shall be deemed to be attaining the beneficial use for all water quality related issues.

Agriculture

Total dissolved solids (TDS)

A minimum of ten (10) samples is required to make an attainment determination.

The Agriculture beneficial use is considered *attained with respect to TDS* if:

no TDS sample exceeds 700 mg/l

or

the mean of all TDS samples does not exceed the yearly mean standard (YMS) for TDS as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria (if the YMS in Appendix F is below 700 mg/L, then 700 mg/L shall be used for assessment)

and

10% or fewer TDS samples exceed the sample standard (SS) for TDS as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the SS in Appendix F is below 700 mg/L, then 700 mg/L shall be used for assessment)

The Agriculture beneficial use is considered *not attained with respect to TDS* if:

At least one TDS sample exceeds 700 mg/l

and

more than 10% of the samples exceed the sample standard (SS) for TDS as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria (if the SS in Appendix F is below 700 mg/L, then 700 mg/L shall be used for assessment)

or

the mean of all samples exceeds the yearly mean standard (YMS) for TDS as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the YMS in Appendix F is below 700 mg/L, then 700 mg/L shall be used for assessment)

Chlorides

A minimum of ten (10) samples is required to make an attainment determination.

The Agriculture beneficial use is considered *attained with respect to chlorides* if:

no chloride sample exceeds 250 mg/l

or

the mean of all samples does not exceed the yearly mean standard (YMS) for chlorides as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria (if the YMS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

and

10% or fewer samples exceed the sample standard (SS) for chlorides as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the SS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

The Agriculture beneficial use is considered *not attained with respect to chlorides* if:

At least one chloride sample exceeds 250 mg/l

and

more than 10% of the samples exceed the sample standard (SS) for chlorides as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria (if the SS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

or

the mean of all samples exceeds the yearly mean standard (YMS) for chlorides as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the YMS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

Sulfates

A minimum of ten (10) samples is required to make an attainment determination.

The Agriculture beneficial use is considered *attained with respect to sulfates* if:

no sulfate sample exceeds 250 mg/l

or

the mean of all samples does not exceed the yearly mean standard (YMS) for sulfates as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-

specific criteria (if the YMS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

and

10% or fewer samples exceed the sample standard (SS) for sulfates as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the SS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

The Agriculture beneficial use is considered *not attained with respect to sulfates* if:

At least one sulfate sample exceeds 250 mg/l

and

more than 10% of the samples exceed the sample standard (SS) for sulfates as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria (if the SS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

or

the mean of all samples exceeds the yearly mean standard (YMS) for sulfates as listed in the Oklahoma Water Quality Standards (OAC 785:45 Appendix F) or site-specific/watershed-specific criteria. (if the YMS in Appendix F is below 250 mg/L, then 250 mg/L shall be used for assessment)

Navigation

All waterbodies designated with the Navigation beneficial use shall be deemed to be attaining the beneficial use for all water quality related issues.

Aesthetics

Nutrients

The Aesthetics beneficial use is considered *attained with respect to nutrients* if a nutrient impairment study yields a result of "fully supporting."

The Aesthetics beneficial use is considered *not attained with respect to nutrients* if a nutrient impairment study yields a result of "impaired."

Only a nutrient impairment study may be used to make a determination of *not attained* for aesthetics with respect to nutrients.

Wadable Streams

The aesthetics beneficial use for wadable streams is considered *attained with respect to nutrients* if application of the dichotomous process or application of the alternative to dichotomous process specified in OAC 785:46-15-10 yields a result of "not threatened."

Lakes and Nonwadable Streams

The aesthetics beneficial use for lakes and nonwadable streams is considered *attained with respect to nutrients* if planktonic chlorophyll-a values in the water column indicate a Carlson's Trophic State Index of less than 62.

Phosphorus

The phosphorus water quality standard applies to waters designated as a Scenic River.

A minimum of ten (10) samples is required to make an attainment determination. Samples must meet the data requirements of OAC 785:46-15-10(h)(2).

Attainment decisions will be made using the procedure specified in OAC 785:46-15-10(h).

Oil & Grease

A minimum of ten (10) visual observations made over a period of at least ten (10) months is required to make an attainment determination.

Any of the following visual characteristics shall indicate the presence of oil or grease:

- a rainbow sheen that flows when stirred, rather than crackling
- a golden tan to dark brown coating or globules on the water or in stream sediment

The aesthetics beneficial use is considered *attained with respect to oil & grease* if 10% or fewer observations reveal the presence of oil or grease.

The aesthetics beneficial use is considered *not attained with respect to oil & grease* if more than 10% of the observations reveal the presence of oil or grease.

Fish Consumption

The Fish Consumption beneficial use is considered *attained* if:

the numerical criteria for fish consumption in the Oklahoma Water Quality Standards [OAC 785:45-5-20(b)] yields a determination of "fully supporting" using the default protocol for long-term average numerical parameters

or

the numerical criteria for fish consumption in the Oklahoma Water Quality Standards [OAC 785:45-5-20(b)] yields a determination of "fully supporting but threatened" using the default protocol for long-term average numerical parameters if the threat will not yield a determination of other than fully supporting within two years of the determination.

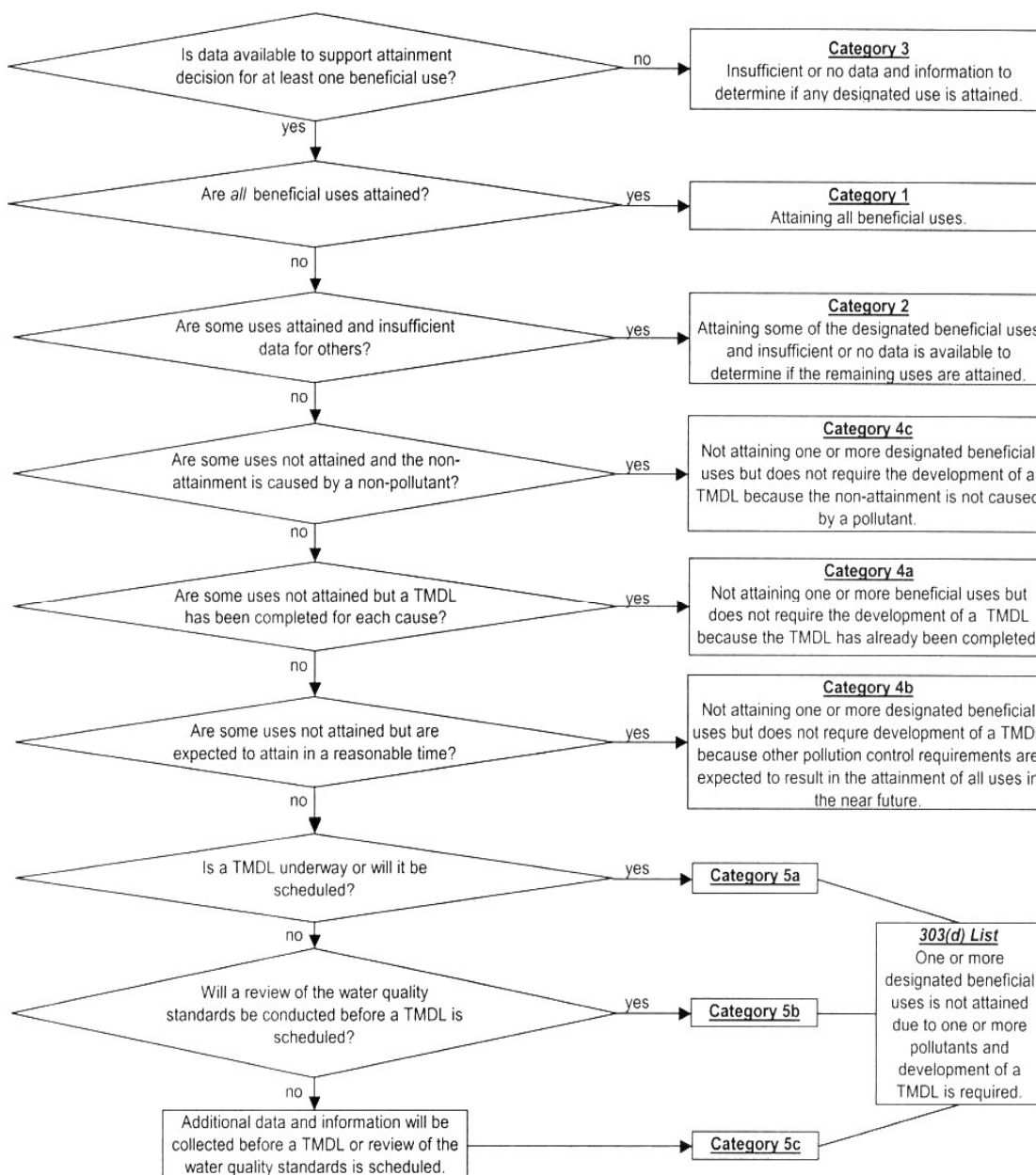
The Fish Consumption beneficial use is considered *not attained* if any of the following conditions apply:

- The numerical criteria for fish consumption in the Oklahoma Water Quality Standards [OAC 785:45-5-20(B)] yields a determination of "not supporting" or "partially supporting" using the default protocol for long-term average numerical parameters.
- a site-specific consumption restriction is imposed
- a site-specific fish or shellfish ban is in effect for a sub-population thereof
- a site-specific aquatic life closure is in effect
- a site-specific "no consumption" advisory is in effect

Category Decision Methodology

The Integrated Water Quality Report contains five categories that describe different levels of beneficial use attainment in each of the State's waters. Each waterbody should be assessed for attainment of each of its individual designated beneficial uses using the methodology outlined above. Following that assessment, the decision tree in Figure 6 below should be used to assign each waterbody to an appropriate category.

FIGURE 6. INTEGRATED REPORT CATEGORY DECISION TREE



Causes of Non-Attainment

The previous methodology outlines the procedures for determining attainment of each designated beneficial use assigned to a waterbody. Causes of non-attainment must also be included in the State's Integrated Water Quality Assessment Report.

The causes and cause codes shown in Table 17 should be applied where applicable to each waterbody upon making a determination of non-attainment for any given designated beneficial use or subcategory of that use. Additional cause codes may be added to the State's Integrated Report in order to provide for numerical criteria in the State's Water Quality Standards not already represented with a cause code.

Sources of Non-Attainment

Sources are the activities, facilities, or conditions that contribute pollutants or stressors resulting in impairment of designated uses in a waterbody.

Determining the sources of designated use impairment can be a difficult process. Ambient monitoring data can give good evidence of the causes of impairment. In some cases, field observations can provide information on obvious, nearby problems; e.g., land use, substrate, and habitat may provide a basis for identifying sources. This is especially the case for "hydromodification" sources.

In most cases, additional information is needed – watershed land use inventories, records of permit compliance, locations of areas with highly erodible soils, areas with poor BMP (best management practice) implementation, measurements of in-place contaminants, or loadings from atmospheric transport or ground water.

For some waterbodies, potential non-point sources have been assigned to a cause using GIS data. Initially, an extensive list of potential sources for each cause is compiled. Geographical information such as the location of permitted activities (e.g., NPDES sources, CAFOs, oil & gas wells) and land use information (e.g., roads, pastures, cropland, municipal boundaries) is then compared to each watershed. Subsequently, potential sources not indicated by the geographic data are removed from the list of potential sources for a watershed. Potential sources not eliminated by the geographic information remain on the list as a potential source of impairment for waterbodies in the watershed.

This method of assigning potential sources has not been applied to all waterbodies and/or causes on the 2016 303(d) list. The intent is to use this methodology to assign potential sources to all 303(d) waterbodies for subsequent 303(d) lists.

A partial list of potential sources is shown in Table 18. Other source codes may be added as the need arises.

TABLE 24. CAUSE CODES

Cause	Cause Code
Ammonia (Unionized) - Toxin	91
Arsenic	96
Barium	104
Cadmium	127
Chloride	138
Chlorophyll- α	150
Chlorpyrifos	153
Chromium (total)	154
Color	160
Copper	163
DDT	214
Diazinon	187
Dieldrin	198
Enterococcus	215
Escherichia coli	217
Fishes Bioassessments (Streams)	230
Lead	267
Nitrates	302
Oil and Grease	317
Oxygen, Dissolved	322
Selenium	372
Sedimentation/Siltation	371
Silver	375
Sulfates	385
Temperature, water	388
Thallium	393
Total Dissolved Solids	399
Toxaphene	496
Fecal Coliform	400
Turbidity	413
Zinc	423
pH	441
Phosphorus (Total)	462

TABLE 25. SOURCE CODES

Potential Source	Source Code
Acid Mine Drainage	2
Agriculture	156
Animal Feeding Operations (NPS)	4
Atmospheric Deposition – Acidity	8
Atmospheric Deposition - Toxics	10
CERCLA NPL (Superfund) Sites	16
Clean Sediments	21
Discharges from Biosolids (SLUDGE) Storage, Application or Disposal	33
Discharges from Municipal Separate Storm Sewer Systems (MS4)	34
Dredging (E.g. for Navigation Channels)	38
Drought-related impacts	39
Grazing in Riparian or Shoreline Zones	46
Highway/Road/Bridge Runoff (Non-construction related)	49
Impacts from Land Application of Wastes	59
Impacts from Abandoned Mine Lands (Inactive)	56
Impacts from Hydrostructure Flow Regulation/Modification	58
Industrial Point Source Discharge	62
Irrigated Crop Production	66
Land Application of Wastewater Biosolids (Non-agricultural)	68
Landfills	69
Leaking Underground Storage Tanks	70
Mine Tailings	82
Municipal (Urbanized High Density Area)	84
Municipal Point Source Discharges	85
Natural Sources	155
Non-irrigated Crop Production	87
On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	92
Other Spill Related Impacts	97
Permitted Runoff from Confined Animal Feeding Operations (CAFOs) ¹	100
Petroleum/Natural Gas Production Activities (Legacy)	102
Rangeland Grazing	108
Releases from Waste Sites or Dumps	110

Residential Districts	111
Silviculture Harvesting	119
Spills from Trucks or Trains	124
Surface Mining	127
Source Unknown	140
Sources Outside State Jurisdiction or Borders	146
Total Retention Domestic Sewage Lagoons	128
Wastes from Pets	133
Wildlife Other than Waterfowl	136

TABLE 26. USEFUL INFORMATION IN DETERMINING SOURCES OF BENEFICIAL USE NON-ATTAINMENT

Source Category	Example Types of Information
<u>Industrial Point Sources</u>	<p>Permit compliance records</p> <ul style="list-style-type: none"> analysis of DMRs compliance monitoring or special monitoring in permits WET or TIE bioassay tests <p>Monitoring/modeling studies</p> <ul style="list-style-type: none"> upstream/downstream chemical, biological, and habitat monitoring intensive surveys combined with WLA/TMDL modeling complaint investigations data from volunteer monitoring
<u>Municipal Point Sources</u>	<p>Permit compliance records</p> <ul style="list-style-type: none"> analysis of routine DMRs compliance monitoring or special monitoring in permits WET or TIE toxicity bioassay tests <p>Monitoring/modeling studies</p> <ul style="list-style-type: none"> upstream/downstream chemical, biological, and habitat monitoring intensive surveys combined with WLA/TMDL modeling complaint investigations data from volunteer monitoring
<u>Combined Sewer Overflows (CSOs)</u>	<p>Permit compliance records</p> <ul style="list-style-type: none"> records of nonachievement of targets for frequency of wet weather overflows implementation of other minimum control and pollution prevention methods (as in EPA CSO Control Policy) <p>Monitoring/modeling studies</p> <ul style="list-style-type: none"> upstream/downstream chemical, biological, or physical monitoring comparing wet weather and normal flow conditions intensive surveys combined with WLA/TMDL modeling complaint investigations

Source Category	Example Types of Information
<u>Agricultural Point Sources</u> (e.g., CAFOs)	<p>Permit compliance records</p> <ul style="list-style-type: none"> • observation of overflows from total retention (non-discharge) facilities • compliance with provisions for off-site disposal of animal wastes (e.g., land application, composting) <p>Monitoring studies</p> <ul style="list-style-type: none"> • upstream/downstream chemical, biological, or physical monitoring (especially for nutrients and pathogens) • complaint investigations
<u>Agriculture</u> (NPS)	<p>Information from monitoring and field observations (e.g., to document bad actors)</p> <ul style="list-style-type: none"> • edge of field monitoring of runoff from animal holding areas, cropped areas, or pastures • monitoring of inputs from irrigation return flows, sub-surface drains, or drainage ditches • proper installation of screens or other measures to avoid fish losses in drainage/irrigation ditches • serious rill or gully erosion in agricultural fields • sedimentation problems in agricultural watersheds • indications of unmanaged livestock in streamside management zones • complaint investigations or data from volunteer monitoring or inventories <p>Records on watershed BMP implementation status</p> <ul style="list-style-type: none"> • documented low implementation level (e.g., less than a 70% target) of recommended water quality BMPs • documented problems with specific agricultural operators <p>Modeling</p> <ul style="list-style-type: none"> • use of such models as AGNPS, SWAT or ANSWERS to estimate pollutant loads and improvement from BMP implementation • intensive surveys combined with WLA/TMDL modeling
<u>Silviculture</u> (NPS)	<p>Monitoring and field observations documenting instances of high sediment delivery to receiving waters</p> <ul style="list-style-type: none"> • BMPs not followed on logging road, skid paths, or stream crossings • BMPs not followed to protect streamside management zones • serious sedimentation problems (cobble embeddedness or interstitial D.O. problems) in watersheds that are largely silvicultural <p>Records on watershed BMP/management measure)</p> <ul style="list-style-type: none"> • implementation status • documented low implementation level of recommended water quality-oriented BMPs <p>Results of modeling or cumulative effects analyses</p> <ul style="list-style-type: none"> • use of such models as WRENS to estimate pollutant loads and likely improvement from BMP implementation • use of water temperature models to help quantify impacts on cold water fisheries • use of landscape analysis techniques (e.g., the RAPID method or Integrated Riparian Area Evaluation method) to document cumulative effects • intensive surveys combined with WLA/ TMDL modeling

Source Category	Example Types of Information
<u>Construction</u>	<p>Information from monitoring and field observations (primarily to document problem areas or bad actors)</p> <ul style="list-style-type: none"> • sedimentation problems documented in watersheds with major construction activity • complaint investigations and volunteer monitoring data <p>Information from sediment control management agencies</p> <ul style="list-style-type: none"> • records of implementation of sediment control measures
<u>Urban Runoff & Storm Sewers</u>	<p>Monitoring/modeling studies</p> <ul style="list-style-type: none"> • upstream/downstream chemical, biological, or habitat monitoring comparing wet weather and normal flow conditions near outfalls • special monitoring for BMP effectiveness-wet ponds, artificial wetlands, grass swales • intensive surveys combined with WLA/ TMDL modeling and catchment models such as SWMM • complaint investigations <p>Information from management agencies</p> <ul style="list-style-type: none"> • documented low implementation level of recommended/required water quality-oriented BMPs • documented problems with BMP operation and maintenance information from monitoring and field observations (primarily to document problem areas or bad actors)
<u>Resource Extraction (Petroleum)</u>	<p>Information from monitoring and field observations (primarily to document problem areas or bad actors)</p> <ul style="list-style-type: none"> • evidence of oil and brine spills affecting areas near receiving waters; elevated TDS, toxicity, oil and grease aesthetic impacts; increased erosion and sedimentation problems • complaint investigations and volunteer monitoring data <p>Electro-Magnetic (EM) surveys, land or helicopter (HEM) based</p> <ul style="list-style-type: none"> • Detect high conductivity/high cation/anion levels in soil • Detect high conductivity/high cation/anion levels in groundwater, up to ~60 m deep • High ion levels can be due to Na and Cl (natural, O&G brines), excess litter/fertilizer application, leaking waste pits, etc. <p>Information from petroleum management agencies monitoring data in streams, shallow wells, and springs in oilfield areas</p> <ul style="list-style-type: none"> • records of problems with spills, pipeline breaks, over-topping of pit berms, land application violations
<u>Resource Extraction (mainly surface mining)</u>	<p>Information from monitoring and field observations (primarily to document problem areas or bad actors)</p> <ul style="list-style-type: none"> • evidence of decreases in pH, toxicity from heavy metals, excessive sedimentation, or stream reaches with iron bacteria in watersheds with active mining • complaint investigations and volunteer monitoring data <p>Information from mining management agencies</p> <ul style="list-style-type: none"> • records of recurrent permit violations (e.g., over-berming of settling ponds, failure to contain leachates, or failure to revegetate or restore mined areas)

Source Category	Example Types of Information
<u>Land Disposal</u>	<p>Monitoring and field observations (primarily to document problem areas or bad actors)</p> <ul style="list-style-type: none"> • monitoring indicates leachate migration from disposal area or industrial or domestic leach field failures • complaint investigations and volunteer monitoring <p>Modeling</p> <ul style="list-style-type: none"> • solute transport or plume models (e.g., PRIZM) indicate high potential for pollutants to reach receiving water
<u>Hydromodification (dams, flow regulation)</u>	<p>Monitoring and field observations</p> <ul style="list-style-type: none"> • recurring problems with inadequate instream flows (e.g., dewatering of streams, reduced pollutant assimilation, unnatural water temperatures) • documented interference with fish migration and spawning movements (e.g., for such anadromous fish as salmon or rockfish but also for inland fish that seek spawning habitat outside lakes or large rivers) <p>Modeling</p> <ul style="list-style-type: none"> • analysis using PHABSIM or other instream flow models to document adverse impacts • analysis related to FERC permit renewal and State 401 Certification, habitat recovery plans under the ESA, or TMDL studies (e.g., problems with anoxic or nutrient-laden releases from hydrostructures)
<u>Hydromodification (channelization, dredging, removal of riparian vegetation, streambank modification, draining/filling of wetlands)</u>	<p>Monitoring (usually over considerable period of time) documenting adverse changes:</p> <ul style="list-style-type: none"> • severe channel downcutting or widening • elimination of vegetation in streamside management zones • excessive streambank erosion and sloughing • loss of significant wetland area in watershed • failure of wetland mitigation projects <p>Modeling studies</p> <ul style="list-style-type: none"> • decreases in pollutant assimilation from habitat modification • adverse impacts on hydrology, water temperatures, or habitat
<u>Natural</u>	<p>Monitoring and field observations of the presence of sources that are clearly not anthropogenic</p> <ul style="list-style-type: none"> • saline water due to natural mineral salt deposits • low DO or pH caused by poor aeration and natural organic materials • excessive siltation due to glacial deposits • high temperatures due to low flow conditions or drought <p>Note: the Natural Sources category should be reserved for waterbodies impaired due to naturally occurring conditions</p>

Prioritization of TMDL Development

After the final determination of beneficial use attainment is made, a four-level priority ranking for TMDL development will be established including waters targeted for TMDL development within the next two years (Priority 1). In accordance with EPA guidelines, priority determinations will take into account the severity of the impairments and the designated uses of the waters impacted. Waters in Category 5 (the State's 303(d) list) will be aggregated and prioritized according to their eleven digit hydrologic unit code (HUC11) watershed. The prioritization process will closely follow that used to develop the Unified Watershed Assessment except where changes are necessary due to programmatic and logistical differences between the two programs. Primary and secondary criteria were developed to evaluate and prioritize watersheds for TMDL development. The primary evaluation criteria used were the vulnerability of waters to degradation, the risks to public health and the threat to aquatic life.

A watershed's vulnerability for degradation was evaluated by first calculating the percentage of impaired waters for each HUC11 watershed based on the stream miles or equivalent stream miles (for lakes) listed as impaired divided by the total equivalent stream miles within the watershed. A Pollutant Priority Score was also developed and used based on a pairwise comparison matrix rank of all pollutant(s) and then calculating the mean of the values for those pollutants causing impairments within each watershed. The presence of protected waters or EQIP local emphasis areas were also used to evaluate watershed vulnerability.

The threat to public health was also considered in the prioritization by evaluating both the population served by Public Water Supplies (PWS) and number of PWS intakes in the watershed. In both cases the more population served and the higher the number of intakes the more weight given to the risks to public health.

In assessing of the threats to aquatic life within a watershed consideration was given to the presence of threatened or endangered species along with the area of waters of recreational and/or ecological significance listed in Appendix B of the Oklahoma Water Quality Standards. Calculating the percent change in wetland area for each HUC11 watershed along with the presence of priority wetlands designated by the United States Fish and Wildlife Service were also used to evaluate the threats to aquatic life.

The outline below summarizes both the primary and secondary criteria used to establish the TMDL priority for each HUC11 watershed.

- 1) Vulnerability of waterbodies to degradation**
 - a) Percent Stream Length/Lake Area Impaired
 - b) Pollutant Priority Score (Pairwise pollutant comparison rating)
 - c) Pristine Waters
 - i) Scenic Rivers
 - ii) Outstanding Resource Waters
 - iii) High Quality Waters
 - iv) Sensitive Water Supplies
 - d) EQIP Local Emphasis Area
- 2) Risks to public health**
 - a) Public Water Supply Customers
 - b) Public Water Supply Intakes
- 3) Threat to aquatic life and other water-dependent wildlife**
 - a) Presence of threatened and endangered species.
 - b) Area of Waters of Recreational and/or Ecological Significance (Appendix B)
 - c) Wetland Area
 - i) Presence of USFWS Priority Wetlands
 - ii) Change in Wetland Area

The priority ranking was established by giving each of the criteria above a ranking/points based on its overall importance. The criteria rankings or points were then totaled to give an overall score for each watershed. Table 27 below contains a more detailed summary of the actual weight given to each criterion.

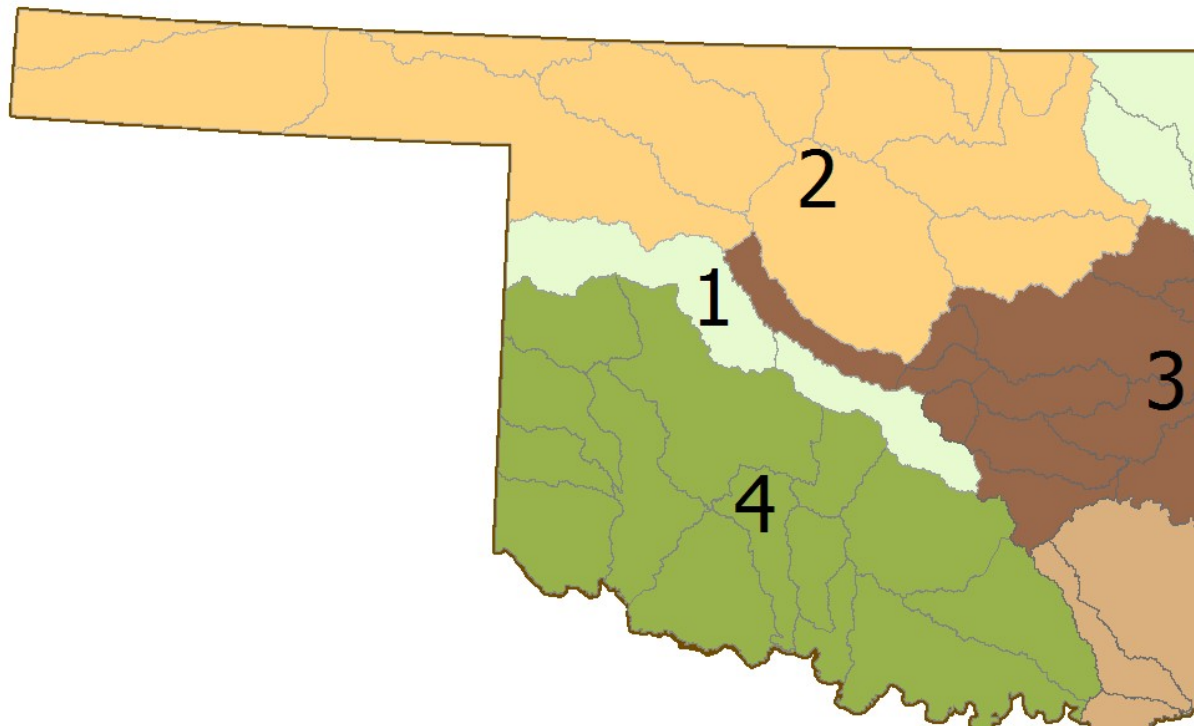
TABLE 27. TMDL PRIORITIZATION-POINT RANKING

Points	Total Percent Impaired	Pollutant Priority Score	Wetland Percent Change	USFWS T&E Species	USFWS Wetland Priority	EQIP Local Emphasis Area	Highest Designated Protected Waterbody	Percent Appendix B Areas	PWS Intakes in HUC	PWS Customers Served
15	85	> 75th Quartile	>20%	≥ 3			Scenic R or ORW		≥ 4	≥ 100,000
10	65	Median to 75th Quartile	>10% to 20%	2			HQW		3	99,999 to 10,000
5	45	25th Quartile to Median	>5 to 10%	1	Yes	Yes	SWS	Upper 50th Percentile	2	9,999 to 1,000
3	25	< 25th Quartile	1 to 5%					Lower 50th Percentile	1	999 to 1
0	0	No Impairments	Gain or <1%		No	No		None	0	0

Future Monitoring

Where practicable, the State's Rotating Basin plan (Figure 7) will be used to schedule data collection projects for Oklahoma Conservation Commission stream monitoring activities.

FIGURE 7. ROTATING BASIN PLAN WATERSHEDS BY YEAR



Coordination, Review, And Approval

DEQ has coordinated the development and submittal of the Integrated Water Quality Report. The process began with a notice and request for input sent to EPA Region 6, State environmental agencies, and Tribal environmental offices. A series of interagency meetings were conducted to review the listing methodology, review and discuss the draft list along with priority rankings and scheduling, and facilitate the exchange of information. The draft list will be circulated to EPA Region 6, and state environmental agencies for comment prior to release for public participation.

Public participation will be undertaken in two phases. When the process to identify candidate waters began, nominations from the public were solicited. This involved distribution of the mailout shown in Figure 8 in August, 2015. Once the final draft list is compiled, it shall be submitted for formal public review with notice and a 30-day comment period. Upon the close of the comment period, a responsiveness summary will be prepared. DEQ will coordinate public participation activities. After the public review period and finalization of the list, it will be formally submitted to EPA Region 6 for review and approval.

FIGURE 8. MAILOUT REQUEST FOR PUBLIC INPUT

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How to Provide WQ Info

DEQ invites you to provide water quality information to be considered in Oklahoma's 2016 Integrated Report. All information must be submitted either in writing or by e-mail before the end of the solicitation period. A summary of DEQ's decisions regarding the water quality information that was submitted will be included in the final 2016 Integrated Report presented to EPA Region 6.

In order to be considered, all data and information must be received at DEQ BEFORE 4:30 p.m., Wednesday, September 30, 2015.

Submit your water quality information to:

Elena Jigoulina
Water Quality Division
Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677
Water.Comments@deq.ok.gov


To Obtain More Information

Copies of the State's *Continuing Planning Process*, the most recent 303(d) list, and *Integrated Report* are available at:
www.deq.state.ok.us/WQDnew/303b_303d/index.htm

The Use Support Assessment Protocols can be found in Subchapter 15 of the *Implementation of Oklahoma's Water Quality Standards* (Title 785, Chapter 46). It is available for download at:
<http://www.owrb.ok.gov/rules/pdf/current/Ch46.pdf>

Oklahoma's *Water Quality Standards* (Title 785, Chapter 46) are available for download at:
<http://www.owrb.ok.gov/rules/pdf/current/Ch45.pdf>

If you are receiving this in paper form, please help save money and the environment by receiving the notice in PDF format via e-mail. Just send your name & e-mail address to Water.Comments@deq.ok.gov.




Oklahoma Department of
Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

Public Solicitation for Water Quality Information for the Water Quality in Oklahoma 2016 Integrated Report

(Includes the 303(d) List of
Impaired Waterbodies)

August 26, 2015



Water Quality Division
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677
Ph: 405-702-8100 • Fax: 405-702-8101
<http://www.deq.state.ok.us>

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BACKGROUND

The Oklahoma Department of Environmental Quality is in the process of developing Oklahoma's 2016 Integrated Report. The Integrated Report combines into one document the reporting requirements under the Federal Clean Water Act (CWA) Section 305(b) - *Surface Water Quality Assessment* - and the reporting requirements under CWA Section 303(d) - *List of Impaired Waters*.

The *Integrated Report* is a biennial assessment of all Oklahoma waterbodies. The methods used to develop/revise the Integrated Report are described in the *Continuing Planning Process* (CPP) document. One goal of the CPP is to provide an objective and scientifically sound waterbody assessment listing methodology. The CWA requires states to develop *Water Quality Standards* (WQS) and have designated beneficial uses assigned to all waterbodies. Beneficial uses are the kinds of activities that a waterbody can be used for including but not limited to drinking, fishing, swimming, recreation, and irrigation.

The waterbodies that can't meet minimum WQS are considered to be "impaired" and are listed as such on the 303(d) List of Impaired Waters. DEQ develops plans - known as Total Maximum Daily Loads (TMDLs) - with goals and pollution control targets for improving water quality in impaired waterbodies so that the waterbodies can achieve their WQS beneficial uses. The 303(d) list is also used to establish priorities for TMDL development.

Federal regulations governing the 303(d) listing process and TMDL development are found in 40 CFR Part 130. The Environmental Protection Agency (EPA) releases their Integrated Reporting guidance to assist states in developing Integrated Reports. EPA emphasized that their Integrated Reporting guidance does not alter the statutory provisions in sections 305b and 303d of the

CWA, nor does it change existing rules governing development of impaired waterbodies lists previously discussed.

WATER QUALITY DATA REQUIREMENTS

This solicitation notice serves as a means of gaining information about water quality from the public. Once the information is reviewed, then a draft of the Integrated Report is submitted for public review which includes a 30-day comment period. Near the end of the public comment period, there will be a public meeting to go over the draft Report and answer any questions about the Report.

EPA regulations (40 CFR 130.7) require that "all existing and readily available water quality related data and information" must be evaluated in developing the 303(d) list. A complete list of criteria and information necessary for consideration is found in the *Integrated Water Quality Report Listing Methodology* section of the current CPP.

In general, water quality data must meet the following criteria to be considered:

- The data cannot be more than 5 years old for rivers (10 years for lakes) for parameters associated with designated uses.
- Only data collected before **April 30, 2015** will be used in use attainment determinations.
- Impairments must be due to specific pollutants for which TMDLs can be developed. The specific cause of the impairment must be noted in the submittal, if known.

All nominations must include the following information:

- ✓ **Waterbody Identification**
Oklahoma uses a 14-digit waterbody identification (WBID) system. If you do not

know the appropriate WBID number for your particular segment, you can provide latitude and longitude coordinates for your segment of concern. In addition, please supply the common name for the waterbody as it is listed on a United States Geological Survey topographical map.

- ✓ **Justification for Listing Decision**
All decisions about a waterbody's listing in the Integrated Report are based on ample data and documentation to prove whether or not that waterbody meets WQS. As a result, your submittal should include a summary of the data used to support the decision, the complete data set (or reference to the complete data set if it is contained in a published report), and an analysis showing a violation of WQS or proof the waterbody is no longer impaired. Oklahoma's WQS (Title 785, Chapter 45), Use Support Assessment Protocols (Subchapter 15, Title 785, Chapter 46), and the procedures in the CPP should be consulted and utilized in your justification and analysis.
- ✓ **QA/QC Procedures Used**
Data submitted should include information on sampling and analyses, including Quality Assurance and Quality Control (QA/QC) procedures used. DEQ will evaluate the QA/QC protocols used in gathering and analyzing the samples to decide if and how that data will be used. To be used, data must use QA/QC methods that are in accordance with *"EPA Requirements for QA Project Plans"* (QA/R5, December 2002).

Groundwater Quality

Overview

Groundwater is an important natural resource in Oklahoma. There are twenty-one major groundwater basins in the State and approximately 150 minor basins. These major basins are used as primary source of community drinking water and are estimated to hold over 320 million acre-feet of fresh water. See Figure 9 for a detailed map of the "Major Groundwater Aquifers in Oklahoma".

The Oklahoma CAFO and Swine Feeding Operation (SFO) Acts puts measures into place that prohibit a hydrologic connection between generated wastewater and waters of the State. The SFO Act further states that samples of water from Licensed Managed Feeding Operations (LMFO) monitoring wells located around swine lagoons shall be collected by the ODAFF and tested at least annually. LMFOs licensed on or after August 1, 1998 had to install a monitoring "system" (leak detection or wells) before using the retention structure to store liquid wastes. The main goal of the monitoring program is to ascertain if groundwater resources at or near the LMFOs are being subject to any degradation as result of the operation of the facilities and storage of the liquid animal waste. The baseline data for the facilities serves as a reference point to potential change in groundwater quality over time. Beginning in the Fall of 1999 to present date, the Department has been involved with the annual sampling and evaluation of over 1,000 monitoring wells at swine LMFOs as required by provisions in the Act.

The Corporation Commission continues to collect and analyze groundwater samples near known and suspected oil and gas spill sites and/or in response to complaints from citizens. These are taken in domestic and other water wells; in monitoring wells installed to investigate possible groundwater pollution; from water seeping into borings and dug trenches; from springs and seeps where groundwater emerges at the surface; and from other sources.

Samples are analyzed for TDS, chlorides, sulfates, petroleum, metals, or other parameters as appropriate, in order to determine what actions are needed in each case. Because sampling is usually done in response to a complaint, following a known spill, or because of a problem noticed by a field inspector, and is in or near historic oil and gas areas, this data may be biased. In other words, our sampling data is more likely to show water quality problems much more often than random sampling would.

In 1984, OWRB established a monitoring network to determine the ambient quality of major aquifers for the development of numeric groundwater quality standards. Between 1984 and 1992, OWRB collected annual samples from a network of more than 200 domestic, irrigation, stock, and municipal water wells. Samples were analyzed for major ions and metals. Unfortunately, this program was discontinued after nine years of data collection due to lack of funding. However, in 2012 OWRB received funding for development and implementation of a statewide, aquifer-based water quality program. The Groundwater Monitoring and Assessment Program (GMAP) began its baseline phase in 2013. As of 2016, 690 wells from 21 major aquifers had been sampled, with an additional major aquifer scheduled for characterization in 2017. Beginning in 2018, a subset of wells from all major aquifers will be sampled semiannually to monitor long-term and seasonal trends in water quality. Samples are analyzed for major ions, nutrients, and metals.

OWRB has also conducted Statewide monitoring of groundwater *quantity* since 1937 through the mass measurement program, which has been expanded through implementation of GMAP. The historical network of 550 wells had increased to approximately 800 wells measured annually in 2016 in order to assess long-term trends in groundwater levels and aquifer storage. Approximately 290 of those wells are measured three times per year in order to assess seasonal trends.

OWRB contracts with Oklahoma Department of Agriculture (with the assistance of an EPA grant) to perform compliance groundwater monitoring at swine Licensed Managed Feeding Operations and the number of observation wells in the annual water level measurement program is approximately 500 beginning 2008.

DEQ has two monitoring programs that address groundwater: the Public Water Supply Compliance Sampling and a 106 Ambient Groundwater Monitoring program. Public water supplies must collect samples at various intervals and locations to determine if the water they serve the public complies with primary drinking water standards as set forth in the Safe Drinking Water Act. Most of these samples are collected at points of entry into the distribution system. The water entering the system at the points of entry can represent one or several groundwater sources. This data is compiled and used to determine areas of contamination and to set expected concentration ranges of various chemical contaminants. Historic data has been compiled going back to the 1920's and future data can be compared to

historic ranges to determine changes over time. Intentions are to identify potential concerns before they become major problems.

DEQ's 106 Groundwater Monitoring Program used public water supply operators to collect samples from 420 randomly selected PWS wells. Samples were analyzed for secondary drinking water parameters and major ions. Data was used to evaluate and classify groundwater quality and determine aquifer homogeneity. The three years of monitoring data, analyzed, verified, and compiled are available to State agencies, federal agencies, and the citizens of Oklahoma for their use. This information is available on the Oklahoma Department of Environmental Quality's website at <http://www.deq.state.ok.us/WQDnew/groundwater/index.html>. Maps of water quality are included here for nitrates, sulfates, and total dissolved solids in the major aquifers. Trends established by this ambient monitoring program can be used to identify sources of polluted runoff that potentially could adversely impact vulnerable groundwater resources.

DEQ has several remediation programs that identify, monitor, and when needed, remediate local sources of ground water pollution from releases at regulated facilities, historical releases, and spills. Most of these sources are very localized and are not included as areas with problems or concerns.

Major Aquifers with Anthropogenic Water Quality Problems or Concerns

Major aquifers are defined as aquifers which can effectively yield 150 gallons per minute or greater. The following information is based on samples submitted to DEQ of domestic wells and through the PWS program. This information is based upon the most recent information provided to this division as of December of 2002. For location of the major groundwater aquifers of Oklahoma, please refer to Figure 9.

Alluvium and Terrace Deposits of the Salt Fork of the Arkansas River

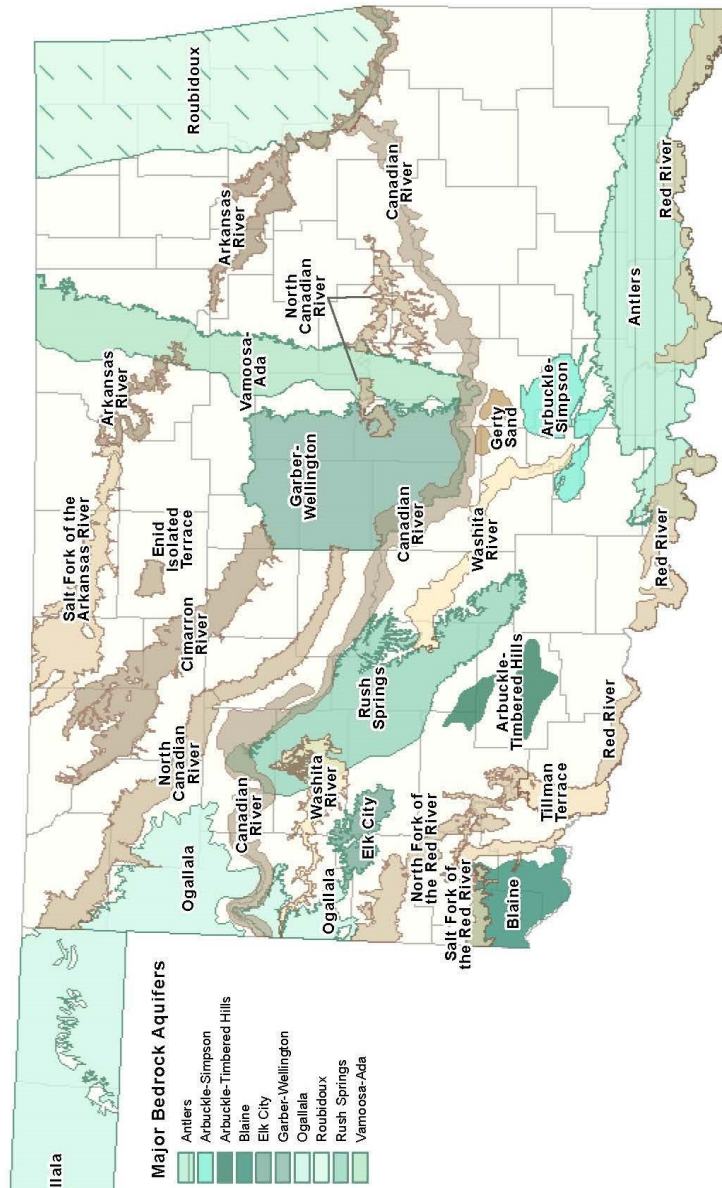
DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Arkansas River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

FIGURE 9. GROUNDWATER AQUIFERS OF OKLAHOMA

Oklahoma Groundwater Resources Major Aquifers of Oklahoma



Alluvium and Terrace Deposits of the Enid Isolated Terrace Deposits

DEQ has identified a well in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Cimarron River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Beaver-North Canadian River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Canadian River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Washita River

DEQ has identified a well field in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the North Fork of the Red River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Alluvium and Terrace Deposits of the Red River

DEQ has identified several wells and well fields in this aquifer with elevated nitrate levels.

Ogallala Formation

DEQ has identified a well field in this aquifer with elevated nitrate levels. Some of the wells showed elevated levels of selenium, probably of natural origin.

Antlers Sandstone

DEQ has identified several monitoring wells in this aquifer with elevated nitrate levels. Some of the wells showed consistently low pH values.

Rush Springs Sandstone

DEQ has identified several wells, monitoring wells and well fields in this aquifer with elevated nitrate levels and a well field with hydrocarbon and chloride contaminations. The contamination is the result of historic oil and gas activities (extraction, refinement, and salt-water disposal).

Garber Sandstone and Wellington Formation

DEQ has identified several wells in this aquifer with gross alpha activity above the maximum allowable limit of 15 pCi/L. The Department has also identified several wells and well fields with selenium contamination. Localized wells and monitoring wells have been identified with industrial solvent contamination. Several wells have been detected with elevated levels of nitrates and chlorides. Arsenic is naturally occurring within this aquifer and several excursions above the new MCL of 10 µg/L have been noted via DEQ source monitoring actions.

Roubidoux Formation

DEQ has identified several newly installed wells in this aquifer that show local elevated iron, sulfate, and total dissolved solid levels in Ottawa County attributed to mine water contamination from historical mining from the Tar Creek Superfund site. The intervening Boone Formation is heavily impacted by the mining and is the source for localized problems within the Roubidoux. DEQ and EPA continue to monitor water quality in this area under the After Action Monitoring Program.

Vamoosa Formation

DEQ has identified several wells in this aquifer with elevated fluoride levels. DEQ, OWRB, and the and the United States Geological Survey (USGS) have identified several wells and well fields with chloride contamination.

The Arbuckle Formation

DEQ has identified several monitoring wells in this aquifer with elevated fluoride levels and a tendency towards excessive hardness. There are no known groundwater based community public drinking water systems experiencing

water quality problems. The source appears to be natural and has therefore limited the usefulness of this formation as a drinking water source.

Non-major Aquifers with Anthropogenic Water Quality Problems or Concerns

Non-major aquifers are defined as aquifers which effectively yield less than 150 gallons per minute. The following information is based primarily on individual wells or well fields that were affected by problems. These wells may or may not constitute a public water supply. In most cases, the problem wells are not in use, or have had their water blended with other sources to reduce the contaminant(s) to acceptable level(s). For location of the major aquifers, please refer to the maps "Alluvium and Terrace Deposits in Oklahoma" and "Major Bedrock Aquifers in Oklahoma".

The Boone Formation/Boone Chert/Keokuk and Reeds Springs Formation

DEQ and OWRB have identified several monitoring wells in this aquifer at the Tar Creek Superfund site in Ottawa County with low pH levels and heavy metal contamination. The source of contamination is from historic mining operations. This formation overlays the Roubidoux Formation. The Roubidoux Formation is threatened and locally impacted near several monitoring wells due to the severity of the contamination in the overlaying formations.

The Oscar "A" Formation

DEQ has identified several wells in this aquifer with elevated nitrate levels and gross alpha activity above the maximum allowable limit of 15 pCi/L. These concerns are similar to those expressed for the Garber/Wellington Formation.

McAlester and Hartshorne Formation-Savanna Formation/McAlester Formation/Hartshorne Sandstone Formation

DEQ has identified several monitoring wells in this aquifer with low pH levels, heavy metal contamination, chlorides, and some controlled industrial wastes. The source of contamination is from historic mining operations and off-site disposal pits for oil field and industrial waste.

Walnut Creek Alluvium Deposits

DEQ has identified two well fields in this aquifer with elevated nitrate levels.

Tillman Terrace Deposits

DEQ has identified two well fields in this aquifer with elevated nitrate levels and elevated levels of selenium.

Little Sandy Creek Alluvium Deposits

DEQ has identified a well field in this aquifer with elevated nitrate levels.

West Cache Creek Terrace

DEQ has identified a well field in this aquifer with elevated nitrate levels.

Major Sources of Contamination

The major sources of contamination within the State are listed in Table 28. The basis used for establishing the priority ranking system was based upon information collected from the various monitoring programs (e.g. the monitoring network, the ambient monitoring program and the wellhead protection program and the Tar Creek After-Action Monitoring Program).

TABLE 28. MAJOR SOURCES OF CONTAMINATION

Contaminant Sources	Highest Priority Sources	Factors Considered in Selecting a Contaminant Source ¹	Contaminants ²
Agricultural Activities			
Agricultural Chemical Facilities			
Animal Feedlots	√	A - C - D - E	E - J
Drainage Wells			
Fertilizer Applications	√	C - E	E
Irrigation Practices	√	C - E	E
Pesticide Applications			
Storage and Treatment Activities			
Land Application	√	C - D - E	D - E - H - J - L
Material Stockpiles			
Storage Tanks (Above Ground)			
Storage Tanks (Underground)	√	A - C - E	D
Surface Impoundments	√	A - C - D - E	D - E - G - H - J - L
Waste Piles	√	C - D	H
Waste Tailings	√	C - D	H
Disposal Activities			
Deep Injection Wells	√	C - D - E	C - D - G - H
Landfills			
Septic Systems	√	A - C - D - E	E - J - L
Shallow Injection Wells			
Other			
Hazardous Waste Generators			
Hazardous Waste Sites			
Industrial Facilities			
Material Transfer Operations			
Mining and Mine Drainage	√	A - C - D - E	H
Pipelines and Sewer Lines			
Salt Storage and Road Salting			
Salt Water Intrusion	√	C - D - E	G - D
Spills		D	D - G
Transportation of Materials		D	D
Urban Runoff			
Other Sources Abandon Wells (Unplugged)	√	A - C - D - E	A - B - D - E - G - J - L - M

KEY TO TABLE 21

1	2
A. Human health and/or environmental risk (toxicity)	A. Inorganic Pesticides
B. Size of the population at risk	B. Organic Pesticides
C. Location of the sources relative to drinking water sources	C. Halogenated Solvents
D. Number and/or size of contaminant sources	D. Petroleum Compounds
E. Hydrogeologic sensitivity	E. Nitrate
F. State findings, other findings	F. Fluoride
G. Other	G. Salinity/Brine
	H. Metals
	I. Radionuclides
	J. Bacteria
	K. Protozoa
	L. Viruses
	M. Any Unlisted Surface Contaminants

Overview of State Groundwater Protection Programs

Table 29 contains a summary of the State groundwater protection programs.

DEQ received authority under HB 2227 and 1002 and S. B. 361 (clean-up bill for HB 1002) to be the lead agency for Oklahoma's Wellhead Protection Program. Due to the variety of potential causes and sources of groundwater contamination, other State environmental agencies are involved in this program. These include the ODAFF, OWRB, OCC, Corporation Commission, Wildlife Department, and the Department of Mines.

TABLE 29. SUMMARY OF THE STATE GROUNDWATER PROTECTION PROGRAMS

Program or Activities	Check if active	Implementation Status	Responsible Agency
Active SARA Title III Program	√	FE	DEQ
Ambient groundwater monitoring system	√	CE	DEQ
Aquifer vulnerability assessment	√	FE	DEQ*
Aquifer mapping	√	CE	OWRB*
Aquifer characterization	√	CE	OWRB*
Comprehensive data management system	√	CE	DEQ
EPA - endorsed Core Comprehensive State Groundwater Protection Program (CSGWPP)	√	CE	DEQ*
Groundwater discharge permits	√	FE	DEQ*
Groundwater Best Management Practices	√	CE - UR	DEQ*
Groundwater legislation	√	CE	OWRB*
Groundwater classification	√	CE	OWRB*
Groundwater quality standards	√	CE	OWRB*
Interagency coordination for groundwater protection initiatives	√	CE	OSE*
Nonpoint source controls	√	UD	OCC*
Pesticides State Management Plan	√	FE	ODAFF
Pollution Prevention Program	√	FE	DEQ
Resource Conservation and Recovery Act (RCRA) Primacy	√	FE	DEQ

Program or Activities	Check if active	Implementation Status	Responsible Agency
Source Water Assessment and Protection Program (SWAP)	√	FE	DEQ
State Superfund	√	CE	DEQ
State RCRA Program incorporating more stringent requirements than RCRA Primacy	√	CE	DEQ
State septic system regulations	√	FE	DEQ
Underground storage tank installation requirements	√	FE	Corp. Comm
Underground Storage Tank Remediation Fund	√	FE	Corp. Comm
Underground Storage Tank Permit Program	√	FE	Corp. Comm
Oil & Gas well drilling, commercial mud pit, and land application permit programs	√	FE	Corp. Comm.
Special protective rules for pit liners and O&G well casing when close to water wells	√	FE	Corp. Comm.
Oil & Gas injection well UIC Program	√	FE	Corp. Comm.
Oil & Gas State abandoned well plugging fund program	√	FE	Corp. Comm.
Oil & Gas surface and groundwater assessment and remediation oversight programs	√	FE	Corp. Comm.
Oil & Gas orphaned and abandoned well site cleanup program (State authorized industry funded)	√	FE	OERB
Oil & Gas base of fresh/treatable water mapping program	√	CE	Corp. Comm.
Underground Injection Control Program	√	FE	DEQ*
Vulnerability assessment for drinking water / wellhead protection	√	CE	DEQ
Well abandonment regulations	√	FE	OWRB*
Wellhead Protection Program (EPA - approved)	√	CE - FE	DEQ
Well installation regulations	√	FE	OWRB*
LMFO Monitoring Well Sampling Program	√	CE	ODAFF

KEY TO TABLE 29

Implementation Status		Responsible Agency	
CE	Continuing Efforts	DEQ	Oklahoma Dept. of Environmental Quality
FE	Fully Established	OCC	Oklahoma Conservation Commission
NA	Not Applicable	Corp Comm	Oklahoma Corporation Commission
P	Pending	OWRB	Oklahoma Water Resources Board
UD	Under Development	OSE	Office of the Secretary of Environment
UR	Under Revision	OERB	Oklahoma Energy Resources Board
		ODAFF	Oklahoma Dept. of Agriculture Food and Forestry

Oklahoma's Wellhead Protection Program

DEQ developed its Wellhead Protection Program in accordance with the EPA guidelines set forth under the Safe Drinking Water Act ' 1428 (as amended in 1986). Oklahoma's Wellhead Protection Program is a mechanism to assist local communities in protecting their groundwater based drinking supplies. The goal of the Wellhead Protection Program is to delineate protected areas around a drinking water wellhead. In these protected areas, potential causes and sources of groundwater contamination can be identified and managed thus reducing or eliminating the risk of well contamination.

Under Oklahoma's Wellhead Protection Program, managers of groundwater based drinking water systems may contact DEQ to request technical assistance. The State will also offer technical assistance for such tasks as evaluating the potential for groundwater contamination, determining possible sources of contamination, proposing model ordinances for control of potential sources of contamination, and/or preparing a contingency plan in the event of well contamination. The program advocates land use restrictions around the wellhead. At present, emphasis is placed on the development of contingency plans, educational programs and voluntary implementation of best management practices to reduce or eliminate the need for restrictive regulatory protection.

Groundwater Indicators

DEQ routinely monitors finished water for nitrates, coliform bacteria, volatile organic compounds and other drinking water quality parameters. DEQ has regulatory authority for public water supplies under 63 O.S. 1981, ' 1-901 *et seq.* The regulations were last amended by the Oklahoma State Board of Health on February 8, 1990 (effective May 25, 1990) and incorporated into DEQ on January 1, 1993 (effective July 1, 1993 and amended July 1, 2003). Table 30 lists the various supply systems with standards violations within the last 5 years. With the exception of nitrate as nitrogen, most of the contaminants are of natural origin. Note that in the "Date Violation Confirmed" column, some violations are of recent discovery and others have been known for several years.

TABLE 30. PUBLIC WATER SUPPLY STANDARDS VIOLATIONS

System Name	County	Aquifer	Date Violation Confirmed	Current Level (mg/L or pCi/L)	Date of Last Analysis Showing Violation
<i>Nitrate, Maximum Allowable Limit – 10 mg/L (ppm)</i>					
Aline	Alfalfa	Cimarron Terrace	2000	11	12/31/2015
Apache	Caddo	Marlow Formation	2011	29.9	6/14/2011
All 4 One Stop	Caddo	Unknown	2015	15.2	5/1/2015
Apex Fitness	Grady	Unknown	2014	11	11/14/2014
Bethel Baptist Church	Tillman	Tillman Terrace	2010	14	12/13/2011
Blue Ridge MHP	Payne	Unknown	2009	23	12/11/2015
Canadian Co RWD # 1	Canadian	North Canadian River Alluvium	1994	14	11/3/2015
Canute	Washita	Elk City Sandstone	2009	11	8/6/2015
Carmen	Alfalfa	Cimarron Terrace	1995	11	10/15/2015
Cotton Co RWD # 2	Cotton	Red River Terrace	2011	15.5	10/23/2013
Country East MHP	Custer	Rush Springs Sandstone	2010	11	8/7/2013
Currys Bar	Cotton	Red River Terrace	2013	15.5	10/23/2013
Custer County RWD #3	Custer	Rush Springs	2015	11	8/20/2015
Davidson	Tillman	Tillman	2014	16	5/15/2014
Deer Creek	Grant	Arkansas River, Salt Fork Alluvium	1993	11	10/12/2015
Dill City	Washita	Elk City SS	2015	13	7/13/2015

System Name	County	Aquifer	Date Violation Confirmed	Current Level (mg/L or pCi/L)	Date of Last Analysis Showing Violation
Fairhaven TP	Garfield	Enid Terrace	2014	12	3/26/2014
Firehouse BBQ Fairhaven TP	Garfield	Unknown Enid Terrace	2013	12	4/18/2013
Fairview	Major	Cimarron Terrace	2012	11	10/12/2012
Felt Schools	Cimarron	Unknown	2013	13	8/7/2013
Fort Cobb	Caddo	Rush Springs Sandstone	2013	11	10.4.2013
Garber Municipal Authority	Garfield	Garber-Wellington	2010	11	6/4/2013
Geary	Blaine	North Canadian Alluvium	2013	1817	10/19/2015
Grandfield	Tillman	Red River Terrace	2009	17	11/14/2013
Hang the Rock LLC	Cherokee	Unknown	2012	12	11/3/2015
Harmon Water Corporation	Harmon	Red River, Salt Fork Terrace	2012	12	2/27/2012
Hennessey	Kingfisher	Red River, Salt Fork Terrace	2013	13	5/23/2013
Herb Rousey	Cleveland	Cimarron River Terrace	2008	12	12/5/2014
Hollis	Harmon	Unknown	2013	13	7/17/2013
Hydro PWA	Caddo	Red River, Salt Fork Terrace	1993	11	1/5/2016
		Rush Springs SS	2015	11	9/23/2015
Jacks General Store	Major	Cedar Hills Sandstone	2010	11	6/13/2013
Logan Co RWD #2	Logan	Cimarron River Terrace	1993	11	4/12/2013
Loyal	Kingfisher	North Canadian River Alluvium	1998	11	1/4/2016
Magnum PWS	Greer	Red River, North Fork Terrace	2012	11	11/27/2012
Major Co RWD #1	Major	Cimarron Terrace	1996	12	11/2/2015
Margarita Island	Oklahoma	Unknown	2011	21.5	7/1/2011
Mooreland	Woodward	North Canadian River Terrace	1993	11	6/7/2011
Mycoland RV & Mobile Home Park	Osage	Arkansas River Alluvium	1993	12.5	2/7/2011
North Blaine Water	Blaine	North Canadian River Alluvium	1993	11	1/5/2016
Okarche	Kingfisher	North Canadian River Alluvium	2001	14	10/27/2015
Okarche RWD	Kingfisher	North Canadian River Alluvium	1988	15	11/16/2015
Old #9	Cleveland	Garber-Wellington	2012	11	7/16/14
Quartz Mountain Reg Water Authority	Kiowa	Unknown	2011	11	10/19/2015
Skate Fever	Grady	Unknown	2012	11.9	10.1.2012
Shady Acres Custer County	Custer	Unknown	2015	11	8/6/2015
Snyder	Kiowa	Red River, North Fork Terrace	2015	11	1/28/2015
Thirsty Water Corp.	Greer	Red River, North Fork Terrace	2005	11	10/27/2015
Tillman CO RWD#1	Tillman	Cache Creek Alluvium	2013	11	2/13/2013
Tipton	Tillman	Tillman Terrace	2010	13	7/3/2012

System Name	County	Aquifer	Date Violation Confirmed	Current Level (mg/L or pCi/L)	Date of Last Analysis Showing Violation
U.S. Gypsum	N. Canadian River Alluvium	Blaine	2011	14	12/22/2015
Watonga	Blaine	North Canadian Terrace	2012	11	5/23/2012
Willow	Greer	Red River, North Fork Terrace	2015	16	12/1/2015
Woodward CO RWD #2	Woodward	Ogallala	2012	11	2/26/2015
Alpha Particles, Maximum Allowable Limits – 15pCi/L					
Bernice	Delaware	Unknown	2015	17	5/1/2015
Brooksville	Pottawatomie	Oscar "A" Formation	2015	17	2/20/2015
Carney	Lincoln	Oscar "A" Formation	2015	20	5/14/2015
Clearview	Cleveland	Garber-Wellington	2015	18	9/21/2015
Colcord PWA	Delaware	Boone Formation	2010	21	6/25/2014
Cookson Hills Christian School	Adair	Roubidoux	2010	16	3/16/2011
Coyle	Logan	Unknown	2014	24	6/9/2014
Deer Creek	Oklahoma	Garber-Wellington	2014	16-24	6/27/2014
Edmond PWA	Oklahoma	Garber-Wellington	2010	17	1/19/2010
Harrah	Oklahoma	Garber-Wellington	2009	17-24	2/26/2016
Logan Co RWD #1	Logan	Garber-Wellington	2011	16-36	9/4/2012
Meadow Ridge MHP	Pottawatomie	Oscar "A" Formation	2011	40-191	7/29/2011
Meridian	Logan	Unknown	2015	18-38	9/21/2015
Norman	Cleveland	Garber-Wellington	2010	16-26	3/2/2015
Oklahoma Christian University	Oklahoma	Garber-Wellington	2012	17-23	6/9/2014
Pecan Tree estates	Cleveland	Garber Wellington	2011	17-30	9/21/2015
Piedmont	Canadian	Garber-Wellington	2009	57	3/18/2016
Tipton	Tillman	Tillman Terrace	2011	22	12/10/2012
Welch PWA	Craig	Roubidoux	2011	16-25	6/25/2014
Arsenic, Maximum Allowable Limit – 0.010 mg/L (ppm)					
Caddo CO RWD #1 (Lookeba)	Caddo	Rush Springs Sandstone	2012	0.011-0.031	3/14/2016
Clearview MHP	Cleveland	Garber-Wellington	2016	0.011	3/18/2016
Corn PWA	Washita	Rush Springs Sandstone	2007	0.012	3/14/2016
Cotton CO RWD # 2	Cotton	Red River Terrace	2012	0.012	3/14/2016
Country east MHP	Custer	Rush Springs Sandstone	2012	0.011	7/19/2012
Deer Creek	Grant	Arkansas River, Salt Fork Alluvium	2008	0.011	8/22/2013
Eakly Development Corp	Caddo	Rush Springs Sandstone	2009	0.016	3/14/2016
Fairmont	Garfield	Garber-Wellington	2009	0.011	5/23/2013
Hinton	Caddo	Rush Springs Sandstone	2009	0.011	3/14/2016
Meridian Water Supply	Logan	Unknown	2010	0.017-0.035	3/18/2016
Moore	Cleveland	Garber-Wellington	2008	0.012	6/5/2012

System Name	County	Aquifer	Date Violation Confirmed	Current Level (mg/L or pCi/L)	Date of Last Analysis Showing Violation
Mustang	Canadian	Garber-Wellington	2014	0.011 - 0.015	6/2/2014
Norman	Cleveland	Garber-Wellington	2014	0.011 - 0.013	6/2/2014
Oklahoma Christian University SA	Oklahoma	Garber-Wellington	2011	0.018	5/9/2012
Weatherford	Custer	Rush Springs Sandstone	2009	0.016	1/13/2012
Benzene, Maximum Allowable Limits - 0.005 mg/L (ppm)					
Texas CO RWD#1	Texas	Ogallala	2013	0.014	1/30/2013
Beta Particles, Maximum Allowable Limits – 50 pCi/L					
Meadow Ridge MHP	Pottawatomie	Oscar "A" Formation	2009	55-76	7/29/2011
Carbon Tetrachloride, Maximum Allowable Limit – 0.005 mg/L (ppm)					
Garber	Garfield	Garber-Wellington	2009	0.006-0.007	2/29/2016
Fluoride, Maximum Allowable Limit – 4.0 mg/L (ppm)					
Three Springs Farm	Cherokee	Unknown	2005	4.1-5.0	2/29/2016
Radium combined, Maximum Allowable Limit – 5 pCi/L					
Choctaw Co RWD #1	Choctaw	Antlers Sand	2009	6	6/25/2014
Colcord PWA	Delaware	Boone Formation	2010	6-7	6/25/2014
Cookson Hills Christian School	Adair	Roubidoux	2010	6-12	3/14/2016
Welch PWA	Graig	Roubidoux	2011	6-10	2/29/2016
Tetrachloroethylene, Maximum Allowable Limit – 0.005 mg/L (ppm)					
Hillside MHPO Oklahoma CO	Oklahoma	Unknown	2013	0.029	7/12/2013
Selenium, Maximum Allowable Limit – 0.05 mg/L					
Tipton	Tillman	Tillman Terrace	2011	0.053	10/27/2011
Uranium, Maximum Allowable Limit – 0.03 mg/L					
Apache	Caddo	Marlow Formation	2015	0.031-0.032	5/1/2015
Brooksville	Pottawatomie	Oskar "A" Formation	2012	0.031-0.042	2/20/2015
Coyle	Logan	Cimarron River Alluvium	2009	0.031-0.035	9/21/2015
Harrah	Oklahoma	Garber-Wellington	2009	0.032	2/24/2011
Holiday Outt MHP	Oklahoma	N. Canadian River Alluvium	2011	0.031-0.035	2/20/2015
Logan Co RWD #1	Logan	Garber-Wellington	2009	0.208	11/8/2012
Meadow Ridge MHP	Pottawatomie	Oscar "A" Formation	2009	0.228	7/29/2011
Meridian Water Supply	Logan	Unknown	2011	0.040-0.069	4/1/2016

System Name	County	Aquifer	Date Violation Confirmed	Current Level (mg/L or pCi/L)	Date of Last Analysis Showing Violation
Pecan Tree Estates Addition	Cleveland	Garber-Wellington	2009	0.032-0.043	3/18/2016
Piedmont	Canadian	Garber-Wellington	2009	0.096	3/18/2016
Ringwood	Major	Cedar Hills SS	2014	0.032-0.037	3/2/2015
Tipton	Tillman	Tillman Terrace	2010	0.034-0.082	12/10/2012

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Appendix A

Oklahoma Waterbody Identification (WBID) System

Waterbody identification (WBID) numbers are established based on a waterbody's location in the State's Water Quality Management Plan. WBIDs are unique identifiers that offer a convenient, unambiguous method of referencing waterbodies within the State of Oklahoma. A complete WBID consists of a two-letter, fourteen-digit identifier.

Example: **OK311500030010_00** - Elk Creek in southwest Oklahoma

The first two characters define the state code as required by EPA.

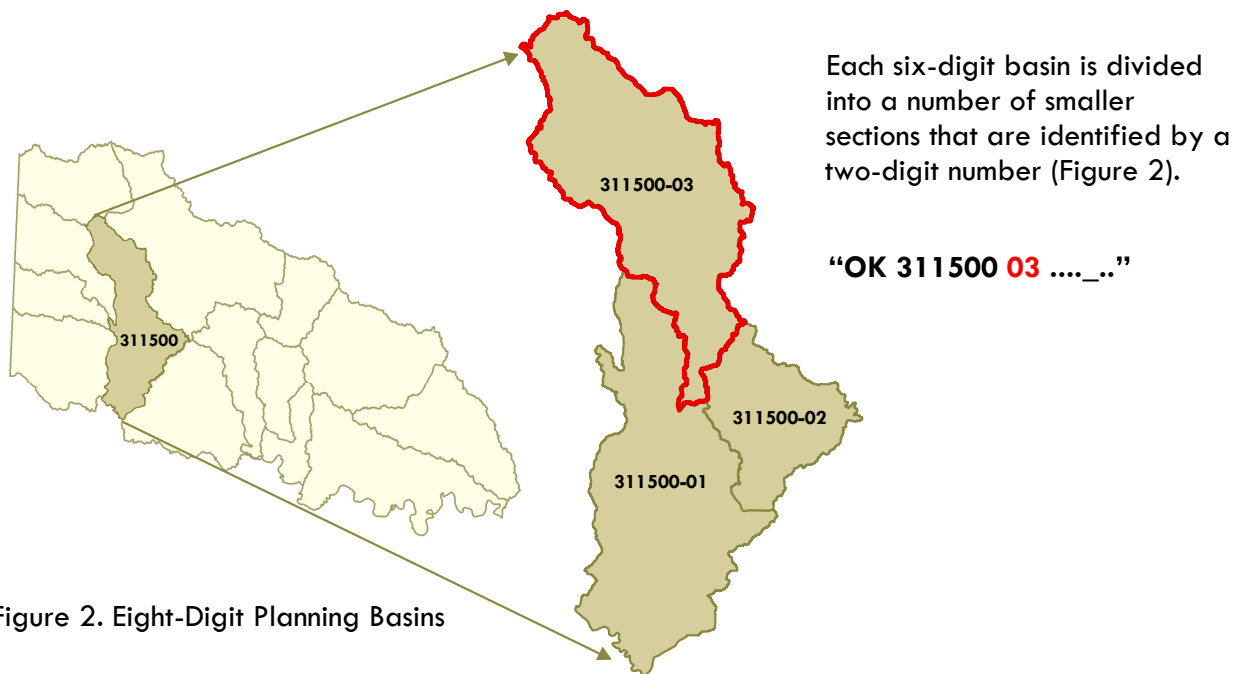
"OK**.."**

The next six digits are derived from Oklahoma's Water Quality Management Planning Basins. The State's seven large, one-digit planning basins are broken down into smaller basins, each identified with a six-digit number.

"OK 311500**.."**

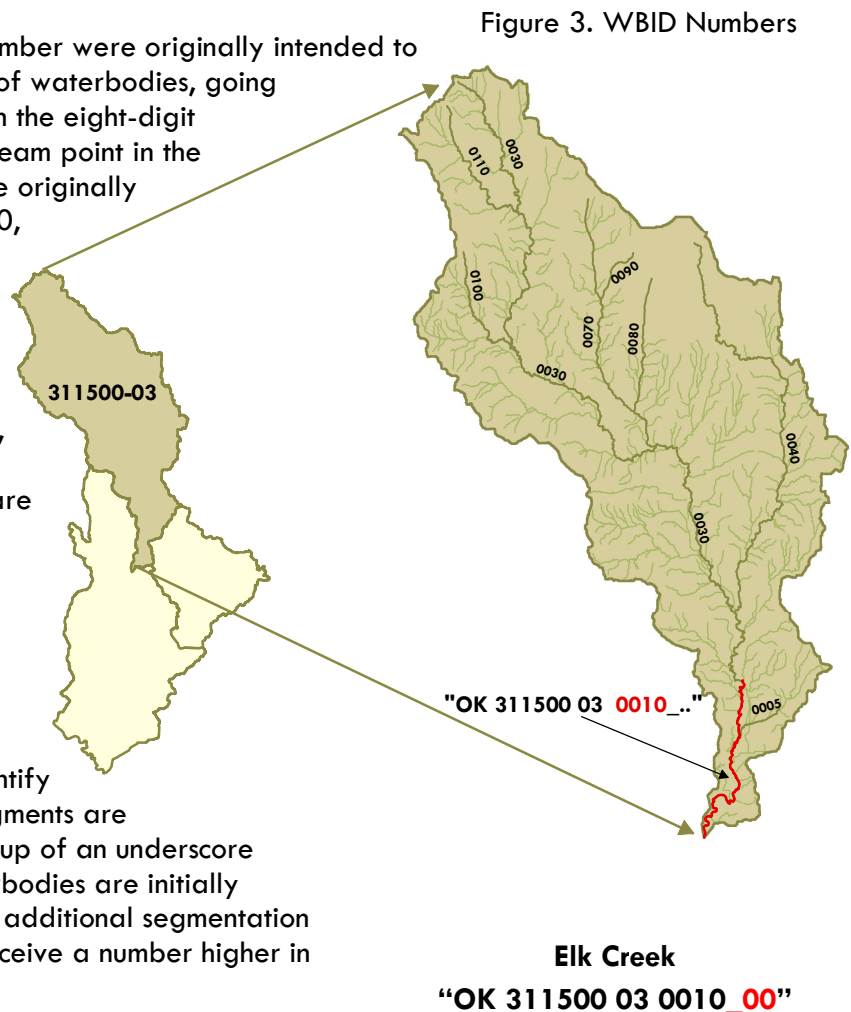


Figure 1. Six-Digit Planning Basins

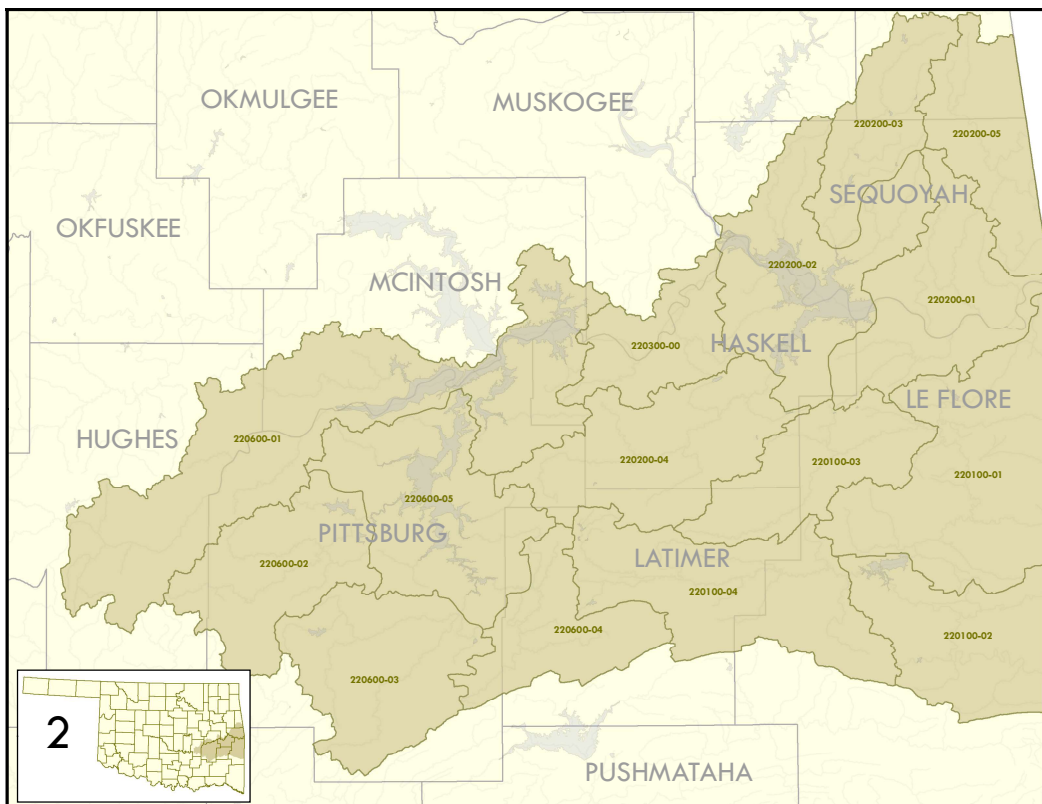


The next four digits of a WBID number were originally intended to represent a hydrologic sequence of waterbodies, going from the most downstream point in the eight-digit watershed up to the furthest upstream point in the watershed. These four digits were originally selected by tens (e.g., 0010, 0020, 0030). This provided for the addition of waterbodies while maintaining the hydrologic sequence as much as possible. Not all waterbodies have been assigned an identification number, primarily due to limited resources and need. As more waterbodies are assessed, the WBID system is designed to incorporate a unique identifier for these waterbodies (Figure 3).

The last two digits of a WBID number allow a waterbody to be segmented further in order to identify specific portions. Waterbody segments are identified by a segment ID made up of an underscore and two additional digits. Waterbodies are initially assigned a segment ID of _00. If additional segmentation is required, upstream segments receive a number higher in value (e.g., _10, _20, _30).



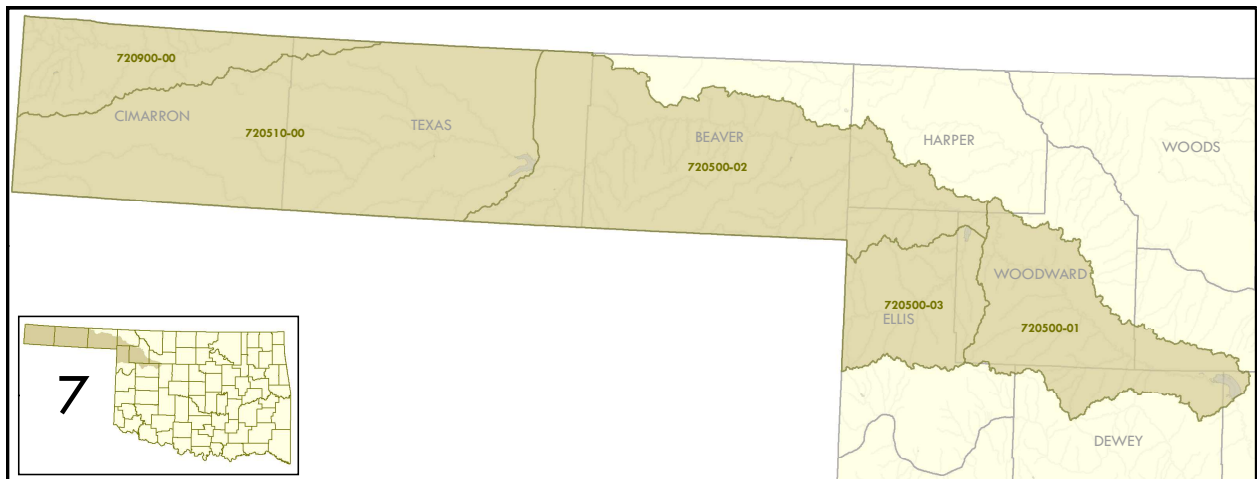
Elk Creek
"OK 311500 03 0010_00"



Oklahoma 8-digit Planning Basins 1 and 2



Oklahoma 8-digit Planning Basins 3 and 4



Oklahoma 8-digit Planning Basins 5, 6, and 7

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Appendix B - 2016 Comprehensive Waterbody Assessment

Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK120400010010_00	Arkansas River	8.59	R	2	I	X				X	X	F	X			F			
OK120400010030_00	Dog Branch Creek	4.65	R	3	X	X				X	X		X						
OK120400010035_00	Arkansas River, Unnamed Tributary of	1.62	R	3	X	X				X	X		X						
OK120400010040_00	Taylor Creek	4.01	R	3	X	X				X	X		X						
OK120400010050_00	Cedar Creek	4.44	R	3	X	X				X	X		X						
OK120400010070_00	Webbers Falls Lake	11600	L	5a	F	F				N	F	F	F			F			
OK120400010080_00	Big Branch	1.41	R	3	X	X				X	X		X						
OK120400010090_00	Sulphur Branch	4.17	R	3	X	X				X	X		X						
OK120400010110_00	Little Greenleaf Creek	6.96	R	3	X	X				X	X		X						
OK120400010120_00	Greenleaf Creek	15.31	R	2	I	F				F	X		I		X				*
OK120400010130_00	Greenleaf Lake	920	L	5a	F	F				N	F		F		N				*
OK120400010140_00	Deep Branch	3.92	R	3	X	X				X	X		X		X				*
OK120400010150_00	Spaniard Creek	1.31	R	3	X	X				X	X		X		X				*
OK120400010160_00	Spaniard Creek, East	6.21	R	3	X	X				X	X		X		X				*
OK120400010170_00	Spaniard Creek, West	5.97	R	3	X	X				X	X		X		X				*
OK120400010180_00	White Oak Creek	3.88	R	3	X	X				X	X		X		X				*
OK120400010190_00	Gibson Hollow Creek	2.72	R	3	X	X				X	X		X		X				*
OK120400010200_00	Bob Warren Creek	5.00	R	3	X	X				X	X		X		X				*
OK120400010210_00	Spaniard Creek	5.76	R	3	X	X				X	X		X						
OK120400010220_00	Coal Creek	3.93	R	3	X	X				X	X		X						
OK120400010230_00	Star Oxbow Lake	1	L	3	X	X				X	X		X						
OK120400010240_00	Sand Creek	5.12	R	3	X	X		X			X			X					
OK120400010250_00	Salt Creek	3.84	R	3	X	X				X	X		X						
OK120400010260_00	Arkansas River	11.17	R	1	F	F				F	F	F	F			F			
OK120400010270_00	Bondinot Creek	7.50	R	3	X	X				X	X		X						
OK120400010280_00	Bayou Manard	14.02	R	5c	X	X				N	X		I		X				
OK120400010290_00	Shimoon Creek	2.27	R	3	X	X				X	X		X						
OK120400010300_00	Fort Gibson Creek	3.85	R	3	X	X				X	X		X						
OK120400010310_00	Walker Branch	4.99	R	3	X	X				X	X		X						
OK120400010320_00	Fourmile Branch	4.27	R	3	X	X				X	X		X						
OK120400010330_00	Brooks Branch (Limestone Hollow Creek)	4.26	R	3	X	X				X	X		X						
OK120400010340_00	Hicks Branch	4.87	R	3	X	X				X	X		X						

F = Fully Supporting I = Insufficient Information X = Not Assessed **N = Not Supporting**

Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK120400010350_00	Fire Branch	2.74	R	3	X	X				X	X		X						
OK120400010360_00	Mill Creek	5.65	R	3	X	X				X	X		X						
OK120400010370_00	Bobtail Creek	6.85	R	3	X	X				X	X		X						
OK120400010380_00	Gulager Spring Branch	4.60	R	3	X	X				X	X		X						
OK120400010390_00	Eureka Springs Branch	3.75	R	3	X	X				X	X		X		X				
OK120400010400_00	Coody Creek	16.16	R	4a	F	F				I	X		N		I				
OK120400010410_00	Sam Creek	9.24	R	3	X	X				X	X		X						
OK120400010420_00	Corta Creek	5.54	R	3	X	X				X	X		X						
OK120400010425_00	Arkansas River, Unnamed Trib of	2.23	R	3	X	X				X	X		X						
OK120400010430_00	Bacone Creek	2.07	R	3	X	X				X	X		X						
OK120400010440_00	Ross Lake	1	L	3	X	X				X	X		X						
OK120400010450_00	Horseshoe Lake	1	L	3	X	X				X	X		X						
OK120400010460_00	Hyde Park Creek!	1.30	R	3	X	X				X	X		X						
OK120400020010_00	Dirty Creek	44.18	R	5a	I	F				N	X		N		F				
OK120400020015_00	Dirty Creek, Unnamed Tributary of	3.39	R	3	X	X		X			X			X					
OK120400020020_00	Sulphur Creek	4.45	R	3	X	X				X	X		X						
OK120400020030_00	Dirty Creek, South Fork	15.55	R	5a	F	N				N	X		N						
OK120400020040_00	Starvilla Creek	4.68	R	3	X	X				X	X		X						
OK120400020050_00	Pourum Creek	2.11	R	3	X	X				X	X		X						
OK120400020060_00	Pourum Creek, East	4.21	R	3	X	X		X			X			X					
OK120400020070_00	Pourum Creek, West	3.33	R	3	X	X				X	X		X						
OK120400020080_00	Gap Prairie Creek	3.81	R	3	X	X				X	X		X						
OK120400020090_00	Tiener Branch	3.52	R	3	X	X				X	X		X						
OK120400020100_00	Salt Springs Creek	3.35	R	3	X	X				X	X		X						
OK120400020110_00	Dirty Creek, Georges Fork	10.05	R	5a	F	F				N	X		N		I	F			
OK120400020120_00	Howland Creek	5.21	R	3	X	X		X						X		X			
OK120400020130_00	Warner Creek	5.92	R	3	X	X				X	X		X						
OK120400020140_00	Warner Lake	13	L	3	X	X				X	X		X		X				
OK120400020150_00	Nebo Creek	6.78	R	3	X	X				X	X		X						
OK120400020160_00	Butler Creek	10.34	R	5a	I	F				N	X		N						
OK120400020170_00	Timberley Creek	4.90	R	3	X	X				X	X		X						
OK120400020180_00	Anderson Creek	10.64	R	3	X	X				X	X		X						
OK120400020190_00	Elk Creek	13.96	R	5a	I	N				N	X		I						
OK120400020200_00	Wayside Creek	12.53	R	3	X	X				X	X		X						
OK120400020210_00	Honey Springs Branch	2.17	R	3	X	X				X	X		X						
OK120400020220_00	Council Hill Creek	9.93	R	3	X	X				X	X		X						

F = Fully Supporting I = Insufficient Information X = Not Assessed N = Not Supporting

Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK120400020230_00	Checotah Creek	7.09	R	3	X	X				X	X		X						
OK120400020240_00	Shady Grove Creek	10.80	R	5a	I	N				N	X		N						
OK120400020250_00	Unnamed Trib of Dirty Creek	5.21	R	3	X	X				X	X		X						
OK120400020260_00	Elk Creek, Unnamed Trib of	1.43	R	3	X	X				X	X		X						
OK120410010010_00	Arkansas River	1.80	R	2	X	X				X	X	F	X			F			
OK120410010020_00	Muskogee Creek, North	8.51	R	3	X	X				X	X		X						
OK120410010030_00	Pecan Creek	17.01	R	5a	X	X				N	X		I		X				
OK120410010040_00	Taft Creek	3.42	R	3	X	X				X	X		X						
OK120410010050_00	Taft Institute Lake	1	L	3	X	X				X	X		X						
OK120410010060_00	Blue Creek	7.43	R	3	X	X				X	X		X						
OK120410010070_00	Porter Creek	4.89	R	3	X	X				X	X		X						
OK120410010080_00	Arkansas River	41.89	R	4a	I	F				I	F	F	N			F			
OK120410010080_10	Arkansas River	4.83	R	2	X	X				I	X	F	I			F			
OK120410010090_00	Yellow Water Ditch	8.08	R	3	X	X				X	X		X						
OK120410010100_00	Cloud Creek	4.77	R	4a	I	F				I	X		N		I				
OK120410010110_00	Ash Creek	17.71	R	5a	I	F				I	X		N		I				
OK120410010120_00	Salt Creek	12.27	R	3	X	X				X	X		X						
OK120410010130_00	Coal Creek	8.18	R	3	X	X				X	X		X						
OK120410010140_00	Haskell Lake	14	L	3	X	X				X	X		X						
OK120410010150_00	Concharty Creek	20.36	R	3	X	X				X	X		X						
OK120410010160_00	Coweta Creek	8.17	R	3	X	X				X	X		X						
OK120410010170_00	Cedar Creek	8.50	R	3	X	X				X	X		X						
OK120410010180_00	Mountain Creek	7.19	R	3	X	X				X	X		X		X				
OK120410010190_00	Bixhoma Lake	110	L	2	F	F				I	F		F		X				
OK120410010200_00	Broken Arrow Creek	9.85	R	3	I	I				I	X		X						
OK120410010210_00	Haikey Creek	10.90	R	5a	I	I				N	X		N						
OK120410010220_00	Snake Creek	31.43	R	4a	F	F				I	X		N		I				
OK120410010230_00	Haikey Creek, Unnamed Trib of	8.50	R	3	X	X				X	X		X						
OK120410010240_00	Haikey Creek, Unnamed Trib of	5.33	R	3	X	X				X	X		X						
OK120410010250_00	Ash Creek, Unnamed Trib of	1.61	R	3	X	X				X	X		X						
OK120410010260_00	Coal Creek, Unnamed Trib of	6.10	R	3	X	X				X	X		X						
OK120410020010_00	Cloud Creek	11.69	R	2	F	F				I	X		X						
OK120410020020_00	Cane Creek	21.96	R	3	I	X				I	X		X						
OK120410020030_00	Walnut Creek	6.22	R	3	X	X				X	X		X						
OK120410020040_00	Little Cane Creek	10.94	R	3	X	X				X	X		X						
OK120410020050_00	Coal Creek	8.65	R	3	X	X				X	X		X						

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Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK120410020060_00	Boynton Creek	1.53	R	3	X	X				X	X		X						
OK120410020070_00	Boynton Lake	100	L	3	X	X				X	X		X						
OK120410030020_00	Rock Creek	6.12	R	3	X	X				X	X		X		X				
OK120410030030_00	Duck Creek	12.60	R	2	X	X				F	X		X						
OK120410030040_00	Eagle Creek	11.64	R	3	X	X				X	X		X						
OK120410030050_00	Duck Creek, North	7.56	R	3	X	X				X	X		X						
OK120410030060_00	Duck Creek, Middle	8.80	R	3	X	X				X	X		X						
OK120410030065_00	Middle Duck Creek, Unnamed Trib of	3.20	R	3	X	I				X	X		X						
OK120410030070_00	Duck Creek, South	9.26	R	3	X	X				X	X		X						
OK120410030080_00	Boren Lake	16	L	3	X	X				X	X		X		X				
OK120410030090_00	Bruner Creek	4.29	R	3	X	X				X	X		X						
OK120410030100_00	Rock Creek	6.04	R	3	X	X				X	X		X						
OK120420010010_00	Arkansas River	16.74	R	5a	F	F				N	F	F	N			F			
OK120420010010_10	Arkansas River	7.32	R	5a	X	X				N	I	F	I			F			
OK120420010020_00	Twin Hills Creek	10.10	R	3	X	X				X	X		X						
OK120420010025_00	Twin Hills Creek, Unnamed Trib of	1.30	R	5c	X	X				N	X		X						
OK120420010030_00	Posey Creek	7.42	R	2	X	X				F	X		X						
OK120420010050_00	Joe Creek	8.38	R	5c	I	I				N	X		I						
OK120420010060_00	Fred Creek	2.87	R	5a	I	I				N	X		N						
OK120420010070_00	Mooser Creek	3.79	R	5a	I	I				N	X		N						
OK120420010080_00	Cherry Creek	4.38	R	3	X	X				X	X		X						
OK120420010090_00	Crow Creek	2.99	R	5a	I	I				N	X		N						
OK120420010110_00	Swan Lake	15	L	3	X	X				X	X		X						
OK120420010120_00	Berryhill Creek	4.28	R	3	X	X				X	X		X						
OK120420010130_00	Arkansas River	12.65	R	5a	F	F				N	F	F	F			F			
OK120420010140_00	Bigheart Creek	4.48	R	5a	I	X				N	X		N						
OK120420010150_00	Sand Springs Creek, East	2.66	R	3	X	X				X	X		X						
OK120420010160_00	Sand Springs Lake	14	L	3	X	X				X	X		X						
OK120420010170_00	Harlow Creek	5.69	R	5a	I	X				N	X		N						
OK120420010180_00	Prattville Creek	5.63	R	3	X	X				X	X		X						
OK120420010190_00	Sand Springs Creek, West	3.85	R	3	X	X				X	X		X						
OK120420010200_00	Fisher Creek	7.99	R	3	X	X				X	X		X						
OK120420010210_00	Anderson Creek	8.35	R	3	X	X				X	X		X						
OK120420010220_00	Euchee Creek	5.56	R	3	X	X				X	X		X						
OK120420010230_00	Shell Creek	3.62	R	3	X	X				X	X		X		X				
OK120420010240_00	Shell Creek	4.82	R	3	X	X				X	X		X		X				*

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OK120420010250_00	Shell Lake	573	L	5a	F	F				I	F		F		N				*
OK120420010260_00	Phillips Creek	2.51	R	3	X	X				X	X		X		X				*
OK120420010270_00	Phillips Lake	1	L	3	X	X				X	X		X		X				*
OK120420010280_00	Mud Creek	5.09	R	3	X	X				X	X		X						
OK120420010290_00	Sand Creek	4.07	R	3	X	X				X	X		X						
OK120420010300_00	Little Sand Creek	2.83	R	3	X	X				X	X		X						
OK120420010310_00	Brush Creek	2.20	R	3	X	X				X	X		X						
OK120420010320_00	Reed Park Creek!	2.52	R	3	X	X				X	X		X						
OK120420010330_00	Little Joe Creek	3.13	R	3	X	X				X	X		X						
OK120420010340_00	Little Joe Creek, Unnamed Trib of	2.19	R	5c	X	X				N	X		X						
OK120420020010_00	Polecat Creek	7.16	R	2	F	F				F	X		F						
OK120420020020_00	Hager Creek	4.04	R	3	X	X				X	X		X						
OK120420020030_00	Coal Creek	2.58	R	3	X	X				X	X		X		X				
OK120420020030_10	Coal Creek	5.51	R	2	I	F		I			X		X		I				
OK120420020040_00	Nickel Creek	12.29	R	5a	I	I				N	X		N						
OK120420020050_00	Polecat Creek	7.68	R	5c	I	F				N	X		N						
OK120420020050_10	Polecat Creek	29.83	R	2	I	F				I	X		X						
OK120420020060_00	Rock Creek	4.05	R	5c	X	X				N	X		X						
OK120420020065_00	Rock Creek, Davis Park Trib!	0.59	R	3	X	X				X	X		X						
OK120420020070_00	Biven Creek	5.74	R	3	X	X				I	X		X						
OK120420020080_00	Euchee Creek	1.41	R	3	X	X				X	X		X						
OK120420020090_00	Middle Lake	1	L	3	X	X				X	X		X		X				
OK120420020100_00	Euchee Creek	7.68	R	3	X	X				X	X		X						
OK120420020110_00	Sapulpa Lake	67	L	3	X	X				X	X		X		X				
OK120420020120_00	Rock Creek	15.03	R	2	I	X				F	X		X		X				*
OK120420020130_00	Sahoma Lake	312	L	5a	F	F				N	F		F		F				*
OK120420020140_00	Pretty Water Creek	1.84	R	3	X	X				X	X		X		X				*
OK120420020150_00	Pretty Water Lake	16	L	3	X	X				X	X		X		X				*
OK120420020160_00	Childres Creek	7.18	R	5b	I	N		X			X			X					
OK120420020170_00	Skull Creek	3.74	R	3	X	X				X	X		X						
OK120420020180_00	Euchee Creek	6.45	R	3	X	X				X	X		X						
OK120420020190_00	Kenyon Creek	4.31	R	3	X	X				X	X		X						
OK120420020200_00	Jackson Creek	1.38	R	3	X	X				X	X		X		X				
OK120420020210_00	Jackson Lake	55	L	3	X	X				X	X		X						
OK120420020220_00	Jay Bird Hollow Creek	2.38	R	3	X	X				X	X		X						
OK120420020230_00	Mountain Creek	5.42	R	3	X	X				X	X		X						

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OK120420020240_00	Clear Creek	6.38	R	2	I	F				I	X		X						
OK120420020250_00	Warner Creek	1.97	R	2	I	F				I	X		X						
OK120420020260_00	Little Polecat Creek	8.24	R	3	X	X				X	X			X					
OK120420020270_00	Neversweat Creek	4.39	R	3	X	X				X	X		X						
OK120420020280_00	Kettle Creek	3.80	R	3	X	X				X	X		X						
OK120420020290_00	Polecat Creek	20.52	R	3	I	I				I	X		X		X				*
OK120420020300_00	Heyburn Lake	880	L	5a	F	F				N	N		F		I				*
OK120420020310_00	Browns Creek	7.40	R	2	I	F				I	X		X		I				*
OK120420020320_00	Tiger Creek	5.64	R	3	X	X				X	X		X		X				*
OK120420020330_00	Turkey Creek	5.86	R	3	X	X				X	X		X		X				*
OK120420020340_00	Rowland Creek	2.79	R	3	X	X				X	X		X		X				*
OK120420020350_00	Mosquito Creek	5.92	R	3	X	X				X	X		X		X				*
OK120420020360_00	Winkey Branch, East	1.94	R	3	X	X				X	X		X		X				*
OK120420020370_00	Winkey Branch	3.61	R	3	X	X				X	X		X		X				*
OK120420020380_00	Dog Creek	5.75	R	3	X	X				X	X		X		X				*
OK120420020390_00	Figure Eight Creek	6.16	R	3	X	X				X	X		X		X				*
OK120420020400_00	Deep Creek	4.66	R	3	X	X				X	X		X		X				*
OK120420020410_00	Scholar Creek	5.55	R	3	X	X				X	X		X		X				*
OK121300010010_00	Bird Creek	23.81	R	4a	F	F				F	F		N		F				
OK121300010020_00	Elm Creek	8.71	R	3	X	X				X	X		X						
OK121300010030_00	Mingo Creek	12.69	R	2	X	X				I	X		F			F			
OK121300010035_00	Mingo Creek, Unnamed Tributary of	1.50	R	3	X	X		X						X		X			
OK121300010040_00	Knudson Creek	2.34	R	3	X	X				X	X		X						
OK121300010050_00	Mill Creek	3.68	R	5c	I	N				N	X		X						
OK121300010055_00	Owasso Creek	2.85	R	3	X	X		X			X			X					
OK121300010057_00	Owasso Creek, Unnamed Tributary of	1.10	R	3	X	X		X			X			X					
OK121300010060_00	Ranch Creek	6.94	R	4a	I					I	X		N						
OK121300010080_00	Owasso Lake	18	L	3	X	X				X	X		X						
OK121300010090_00	Coal Creek	6.71	R	5c	I	I				N	X		N						
OK121300010100_00	Recreation Creek	2.38	R	3	X	X				X	X		X						
OK121300010110_00	Recreation Lake	32	L	3	X	X				X	X		X						
OK121300010120_00	Flat Rock Creek	9.91	R	5c	I	I				N	X			X					
OK121300010130_00	Yahola Lake	431	L	3	X	X				X	X		X		X				*
OK121300010140_00	Dirty Butter Creek	4.21	R	5c	X	I		N			X			X					
OK121300010150_00	Delaware Creek	26.26	R	5a	F	F				N	X		N		I				
OK121300010160_00	Goose Creek	3.08	R	3	X	X				X	X		X						

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OK121300010170_00	Turkey Creek	6.24	R	3	X	X				X	X		X						
OK121300010180_00	Dirty Butter Creek, Unknown Trib of	1.61	R	3	X	X				X	X		X						
OK121300010220_00	Elm Creek, Unnamed Trib of	2.43	R	3	X	X				X	X		X						
OK121300020010_00	Bird Creek	4.24	R	2	F	F				I	F		I		F				
OK121300020010_10	Bird Creek	35.63	R	4a	F	F				F	X		N		I				
OK121300020030_00	Charley Creek	5.56	R	3	X	X				X	X		X						
OK121300020040_00	Panther Creek	3.01	R	3	X	X				X	X		X						
OK121300020050_00	Skunk Creek	4.33	R	3	X	X				X	X		X						
OK121300020060_00	Skalall Creek	8.28	R	3	X	X				X	X		X						
OK121300020070_00	Tyner Creek	10.35	R	3	X	X				X	X		X						
OK121300020080_00	Candy Creek	16.95	R	2	F	F				I	X		I		I				
OK121300020090_00	Pecan Hollow Creek	0.38	R	3	X	X				X	X		X		X				*
OK121300020100_00	Avant Public Utility Lake	6	L	3	X	X				X	X		X		X				
OK121300020110_00	Avant Municipal Lake	1	L	3	X	X				X	X		X						
OK121300020120_00	Little Candy Creek	6.61	R	3	X	X				X	X		X						
OK121300020130_00	Tucker Creek	5.29	R	3	X	X				X	X		X						
OK121300020140_00	Avant Creek	2.67	R	3	X	X				X	X		X						
OK121300020150_00	Bull Creek	8.01	R	3	X	X				X	X		X						
OK121300020160_00	Clem Creek	4.09	R	3	X	X				X	X		X						
OK121300020170_00	Dog Thresher Creek	8.25	R	3	X	X				X	X		X						
OK121300020180_00	Dog Thresher Creek, Unnamed Trib of	0.98	R	3	X	X				X	X		X						
OK121300020190_00	Waxhoma Lake	197	L	2	F	F				I	F		F		F				
OK121300030010_00	Bird Creek	25.11	R	2	F	F				F	X		I		I				
OK121300030020_00	Birch Creek	0.93	R	3	X	X				X	X		X		X				
OK121300030030_00	Birch Creek	11.44	R	3	X	X				X	X		X		X				*
OK121300030040_00	Birch Lake	1137	L	5a	F	F				N	F		F		F				*
OK121300030050_00	Fourmile Creek	5.80	R	3	X	X				X	X		X		X				*
OK121300030055_00	Birch Creek, Unnamed Tributary of	3.15	R	3	X	X		X			X			X					*
OK121300030060_00	Choteau Creek	7.68	R	3	X	X				X	X		X						
OK121300030070_00	Bird Creek, Unnamed Tributary of	2.68	R	3	X	X		X			X			X					
OK121300030080_00	Pennel Creek	2.89	R	3	X	X				X	X		X						
OK121300030090_00	Red Eagle Branch	3.12	R	3	X	X				X	X		X						
OK121300030100_00	Cedar Creek	4.80	R	3	X	X				X	X		X						
OK121300030110_00	Cochahee Creek	3.94	R	3	X	X				X	X		X						
OK121300030120_00	Nelagone Creek	5.17	R	3	X	X				X	X		X						
OK121300030130_00	Buffalo Creek	5.32	R	3	X	X				X	X		X						

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OK121300030140_00	Saucy Calf Creek	4.05	R	3	X	X				X	X		X						
OK121300030150_00	McCormick Creek	2.86	R	3	X	X				X	X		X						
OK121300030160_00	Quapaw Creek	4.43	R	3	X	X				X	X		X						
OK121300030170_00	Rush Creek	2.43	R	3	X	X				X	X		X						
OK121300030180_00	Soldier Creek	4.02	R	3	X	X				X	X		X						
OK121300030190_00	Mud Creek	2.53	R	3	X	X				X	X		X						
OK121300030200_00	Clear Creek	20.09	R	2	F	F				I	X		I		X				
OK121300030210_00	Cedar Canyon Creek	3.37	R	3	X	X				X	X		X						
OK121300030220_00	Pawhuska Creek	1.97	R	3	X	X				X	X		X						
OK121300030230_00	Pawhuska Lake	96	L	2	F	F				I	I		F		I				
OK121300030240_00	Higgins Creek	3.07	R	3	X	X				X	X		X						
OK121300030250_00	Maher Creek	2.84	R	3	X	X				X	X		X						
OK121300030260_00	Baconrind Creek	5.81	R	3	X	X				X	X		X						
OK121300030270_00	Mud Creek	5.02	R	3	X	X				X	X		X						
OK121300030280_00	Bird Creek, Middle	2.19	R	3	X	X				X	X		X		X				*
OK121300030290_00	Bird Creek, Middle	10.44	R	3	X	X				I	X		X		X				*
OK121300030300_00	Bluestem Lake	762	L	5a	F	F				N	F		F		F				*
OK121300030310_00	Bird Creek, South	5.39	R	3	X	X				X	X		X		X				*
OK121300030320_00	Bird Creek, North	19.55	R	2	F	F				I	X		I						
OK121300030330_00	Hickory Creek	4.11	R	3	X	X				X	X		X						
OK121300040010_00	Hominy Creek	12.75	R	5a	F	F				N	X		N		I				
OK121300040020_00	Rock Creek	10.40	R	3	X	X				X	X		X						
OK121300040030_00	Quapaw Creek	8.84	R	2	X	X				F	X		X						
OK121300040040_00	Battle Creek	6.31	R	3	X	X				X	X		X						
OK121300040050_00	Quapaw Creek, East Prong	4.80	R	3	X	X				X	X		X						
OK121300040060_00	Quapaw Creek, West Prong	3.57	R	3	X	X				X	X		X						
OK121300040070_00	Hominy Creek	1.81	R	3	X	X				X	X		X		X				
OK121300040070_10	Hominy Creek	4.93	R	3	X	X				X	X		X		X				*
OK121300040080_00	Skiatook Lake	10190	L	5c	F	F				I	N		F		F				*
OK121300040090_00	Tall Chief Creek	2.16	R	3	X	X				X	X		X						
OK121300040140_00	Tall Chief Creek Lake	8	L	3	X	X				X	X		X						
OK121300040150_00	Lost Creek	5.57	R	3	X	X				X	X		X						
OK121300040160_00	Turkey Creek	4.79	R	3	X	X				X	X		X						
OK121300040170_00	Cedar Creek	2.34	R	3	X	X				X	X		X						
OK121300040180_00	Bull Creek	4.53	R	3	X	X				X	X		X						
OK121300040190_00	Cedar Canyon Creek	5.03	R	3	X	X				X	X		X						

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OK121300040200_00	Eagle Creek	2.00	R	3	X	X				X	X		X						
OK121300040210_00	Wildhorse Creek	8.40	R	3	X	X				X	X		X						
OK121300040220_00	Buck Creek	8.51	R	3	X	X				X	X		X						
OK121300040230_00	Boar Creek	12.12	R	3	X	X				X	X		X						
OK121300040240_00	Cedar Creek	5.46	R	3	X	X				X	X		X						
OK121300040250_00	Sand Creek	6.82	R	3	X	X				X	X		X						
OK121300040260_00	Mahala Creek	8.92	R	3	X	X				X	X		X						
OK121300040270_00	Sunset Creek	7.28	R	3	X	X				X	X		X						
OK121300040280_00	Hominy Creek	33.89	R	5b	I	N				I	X		N		I				*
OK121300040290_00	Penn Creek	13.06	R	3	X	X				X	X		X						
OK121300040300_00	Moshetomoie Creek	6.54	R	3	X	X				X	X		X						
OK121300040310_00	Blackbird Creek	6.91	R	3	X	X				X	X		X						
OK121300040320_00	Claremore Creek	5.14	R	3	X	X				X	X		X		X				*
OK121300040330_00	Hominy Municipal Lake	165	L	2	F	F				I	F		F		F				*
OK121300040340_00	Hominy Lake, Lower	19	L	3	X	X				X	X		X						
OK121300040350_00	Hominy Lake	165	L	2	F	F				I	F		F		F				
OK121300040360_00	Twomile Creek	8.37	R	3	X	X				X	X		X						
OK121300040370_00	Little Hominy Creek	18.91	R	3	X	X				X	X		X						
OK121300040380_00	Bitter Creek	7.83	R	3	X	X				X	X		X						
OK121300040390_00	Happy Hollow Creek	3.03	R	3	X	X				X	X		X						
OK121300040400_00	Niciola Creek (Ninicold)	8.86	R	3	X	X				X	X		X						
OK121300040410_00	Hellroaring Creek	2.48	R	3	X	X				X	X		X						
OK121300040420_00	Rainbow Creek	4.57	R	3	X	X				X	X		X						
OK121300040430_00	Turkey Run	3.02	R	3	X	X				X	X		X						
OK121300040440_00	Dollie Hollow Creek	3.05	R	3	X	X				X	X		X						
OK121300040450_00	Moraledge Gulch	2.45	R	3	X	X				X	X		X						
OK121300040460_00	Daniels Run	3.29	R	3	X	X				X	X		X						
OK121400010010_00	Caney River	17.66	R	3	X	X				X	X		X		X				
OK121400010010_10	Caney River	46.50	R	5a	F	F				N	N		N		I				
OK121400010020_00	Hobbs Creek	1.46	R	3	X	X				X	X		X						
OK121400010040_00	Collinsville Lake	10	L	3	X	X				X	X		X						
OK121400010050_00	East Creek	5.46	R	3	X	X				X	X		X						
OK121400010060_00	Horsepen Creek	9.75	R	3	X	X				X	X		X						
OK121400010070_00	Blackjack Creek	6.31	R	3	I	X				I	X		X						
OK121400010080_00	Cherry Creek	4.87	R	3	X	X				X	X		X						
OK121400010090_00	Rabb Creek	5.64	R	2	I	F				F	X		F		X				

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OK121400010100_00	Saunders Creek	8.19	R	3	X	X				X	X		X						
OK121400010110_00	Lacy Creek	5.37	R	3	X	X				X	X		X						
OK121400010120_00	Bevan Creek	7.52	R	3	X	X				X	X		X						
OK121400010130_00	Buck Creek	7.48	R	3	X	X				X	X		X						
OK121400010140_00	Double Creek	7.17	R	3	X	X				X	X		X						
OK121400010150_00	Double Creek, North Fork	7.86	R	3	X	X				X	X		X						
OK121400010160_00	Double Creek Lake # 1	1	L	3	X	X				X	X		X						
OK121400010170_00	Double Creek Lake # 6	1	L	3	X	X				X	X		X						
OK121400010180_00	Nellie Bly Creek	3.99	R	3	X	X				X	X		X		X				
OK121400010200_00	Todd Lake	14	L	3	X	X				X	X		X						
OK121400010210_00	Double Creek Lake # 4	1	L	3	X	X				X	X		X						
OK121400010220_00	Double Creek, South Fork	4.74	R	3	X	X				X	X		X						
OK121400010230_00	Double Creek Lake # 3	1	L	3	X	X				X	X		X						
OK121400010240_00	Double Creek Lake # 2	1	L	3	X	X				X	X		X						
OK121400010250_00	Stick Creek (Slick)	2.53	R	3	X	X				X	X		X						
OK121400010260_00	Timberlake Creek	3.54	R	2	I	F				I	I		F						
OK121400010270_00	Curl Creek	17.27	R	5a	F	F				N	X		N						
OK121400010280_00	Fourmile Creek	9.92	R	3	X	X				X	X		X						
OK121400010290_00	Purgatory Creek	6.92	R	3	X	X				X	X		X						
OK121400010300_00	Hogshooter Creek	20.02	R	5a	F					N	X		N						
OK121400010310_00	Fish Creek	12.04	R	3	X	X				X	X		X						
OK121400010320_00	Keeler Creek	5.44	R	3	X	X				X	X		X						
OK121400010322_00	East Keeler Creek	2.25	R	3	X	X		X			X			X					
OK121400010330_00	Rice Creek	5.71	R	3	X	X				X	X		X						
OK121400020010_00	Caney River	4.50	R	3	X	X				X	X		X		X				
OK121400020010_10	Caney River	25.54	R	5c	X	X				N	I		X		I				
OK121400020030_00	Turkey Creek	5.34	R	3	X	X				X	X		X						
OK121400020040_00	Coon Creek	21.05	R	3	X	X				X	X		X		X				
OK121400020050_00	Deer Creek	6.47	R	3	X	X				X	X		X						
OK121400020060_00	Limestone Draw	5.47	R	3	X	X				X	X		X						
OK121400020070_00	Cedar Creek	8.35	R	3	X	X				X	X		X						
OK121400020080_00	Butler Creek	12.28	R	3	X	X				X	X		X						
OK121400020090_00	Hudson Lake	250	L	2	F	F				I	F		F		F				
OK121400020100_00	Johnson Lake	1	L	3	X	X				X	X		X						
OK121400020120_00	Bar-Dew Lake	34	L	3	X	X				X	X		X						
OK121400020130_00	Post Oak Creek	8.05	R	3	X	X				X	X		X						

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OK121400020140_00	Little Caney River (Caney Creek)	6.85	R	4a	F	F				N	X		N		I				
OK121400020150_00	Brush Creek	8.36	R	3	X	X				X	X		X						
OK121400020160_00	Long Lake Creek	0.50	R	3	X	X				X	X		X						
OK121400020170_00	Long Lake	1	L	3	X	X				X	X		X						
OK121400020180_00	Young Lake	1	L	3	X	X				X	X		X						
OK121400020190_00	Mission Creek	18.22	R	4a	F	F				F	X		N						
OK121400020200_00	Hay Hollow Creek	3.27	R	3	X	X				X	X		X						
OK121400020210_00	Coon Creek	9.23	R	3	X	X				X	X		X						
OK121400020220_00	Lost Creek	4.11	R	3	X	X				X	X		X						
OK121400020230_00	Possum Creek	4.60	R	3	X	X				X	X		X						
OK121400030010_00	Caney River	13.46	R	2	X	X				F	X		X		X				
OK121400030020_00	Hulah Lake	3570	L	5a	I	F				N	I		F		I				
OK121400030030_00	Skull Creek	3.26	R	3	X	X				X	X		X		X				
OK121400030040_00	Hickory Creek	2.28	R	3	X	X				X	X		X		X				
OK121400030050_00	Thunderbolt Creek	0.95	R	3	X	X				X	X		X		X				
OK121400030060_00	Hickory Creek, East	0.53	R	3	X	X				X	X		X		X				
OK121400030080_00	Turkey Creek	6.24	R	3	X	X				X	X		X		X				
OK121400030090_00	Pond Creek	22.25	R	2	X	X				F	X		X		X				
OK121400030100_00	Birch Creek	7.19	R	3	X	X				X	X		X		X				
OK121400030110_00	Spring Creek	6.77	R	3	X	X				X	X		X		X				
OK121400030120_00	Fox Creek, North	3.54	R	2	X	X				F	X		X		X				
OK121400030130_00	Dry Creek	5.70	R	3	X	X				X	X		X		X				
OK121400030140_00	Pond Creek, South Fork	4.71	R	3	X	X				X	X		X		X				
OK121400030150_00	Coon Creek	0.82	R	3	X	X				X	X		X		X				
OK121400030160_00	Cedar Creek	0.78	R	3	X	X				X	X		X		X				
OK121400030170_00	Buck Creek	22.22	R	5a	I	F				N	X		N		I				
OK121400030180_00	Smith Creek	5.64	R	3	X	X				X	X		X		X				
OK121400030190_00	Dog Creek	7.04	R	3	X	X				X	X		X		X				
OK121400030200_00	Buck Creek, South	5.81	R	3	X	X				X	X		X		X				
OK121400040010_00	Sand Creek	59.85	R	5a	I	F				N	X		N		I				
OK121400040020_00	Eliza Creek	5.62	R	3	X	X				X	X		X						
OK121400040030_00	Jessie Creek	4.38	R	3	X	X				X	X		X						
OK121400040040_00	Panther Creek	7.39	R	3	X	X				X	X		X						
OK121400040050_00	Buck Creek	17.61	R	2	I	F				I	X		I		I				
OK121400040060_00	Turkey Creek	2.83	R	3	X	X				X	X		X						
OK121400040070_00	Doe Creek	3.09	R	3	X	X				X	X		X						

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OK121400040080_00	Cedar Creek	3.71	R	3	X	X				X	X		X						
OK121400040090_00	Ranch Creek	2.76	R	3	X	X				X	X		X						
OK121400040100_00	Little Rock Creek	8.61	R	3	X	X				X	X		X						
OK121400040120_00	Higo Lake (Wah Shah She)	8	L	3	X	X				X	X		X						
OK121400040130_00	Clyde Lake	70	L	3	X	X				X	X		X						
OK121400040140_00	Ponce de Leon Spring Lake	1	L	3	X	X				X	X		X						
OK121400040150_00	Whisky Hollow Creek	2.27	R	3	X	X				X	X		X						
OK121400040160_00	Paula Creek	5.71	R	3	X	X				X	X		X						
OK121400040170_00	Lost Creek	4.96	R	3	X	X				X	X		X						
OK121400040180_00	Peters Lake	8	L	3	X	X				X	X		X						
OK121400040190_00	Lookout Lake	7	L	3	X	X				X	X		X						
OK121400040200_00	Rock Creek	13.00	R	2	X	X				F	X		X						
OK121400040210_00	Dry Hollow Creek	2.54	R	3	X	X				X	X		X						
OK121400040220_00	Elm Creek	5.03	R	3	X	X				X	X		X						
OK121400040230_00	Sunset Lake	68	L	2	F	I				I	I		F						
OK121400040250_00	Deer Lake	12	L	3	X	X				X	X		X						
OK121400040260_00	Cedar Creek	8.22	R	3	X	X				X	X		X						
OK121400040270_00	Little Sand Creek	4.64	R	3	X	X				X	X		X						
OK121400040280_00	Mud Creek	5.71	R	3	X	X				X	X		X						
OK121400040290_00	Wild Hog Creek	3.42	R	3	X	X				X	X		X						
OK121400040300_00	Dry Creek	5.90	R	3	X	X				X	X		X						
OK121400050010_00	Little Caney River (Caney Creek)	7.18	R	3	X	X				X	X		X		X				*
OK121400050020_00	Copan Lake	4850	L	5a	I	F				N	F		F		N				*
OK121400050030_00	Copan Creek	2.64	R	3	X	X				X	X		X		X				*
OK121400050040_00	Cotton Creek	16.03	R	3	X	X				X	X		X		X				*
OK121400050050_00	Pooler Creek	6.29	R	3	X	X				X	X		X		X				*
OK121400050060_00	Cotton Creek, North Fork	6.07	R	3	X	X				X	X		X		X				*
OK121400050070_00	Cotton Valley Creek	5.50	R	3	X	X				X	X		X		X				*
OK121400050080_00	Owen Creek	1.03	R	3	X	X				X	X		X		X				*
OK121500010005_00	Arkansas River	0.89	R	2	X	X				X	X	F	X			F			
OK121500010010_00	Verdigris River	3.68	R	3	X	X				X	X		X		X				
OK121500010020_00	Clingham Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010030_00	Clingham Creek	4.91	R	3	X	X				X	X		X						
OK121500010040_00	Big Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010050_00	Big Creek	5.07	R	3	X	X				X	X		X						
OK121500010060_00	Verdigris River	10.82	R	2	X	X				F	X		X		F				

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OK121500010070_00	Chouteau Lake	1	L	3	X	X				X	X		X						
OK121500010080_00	Vans Creek	1.48	R	3	X	X				X	X		X						
OK121500010090_00	Vans Lake	1	L	3	X	X				X	X		X						
OK121500010100_00	Coal Creek	9.99	R	3	X	X				X	X		X		X				
OK121500010120_00	Coal Creek Cutoff # 1 Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010130_00	Coal Creek Cutoff # 2 Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010140_00	Tullahassee Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010150_00	Tullahassee Creek	4.41	R	3	X	X				X	X		X						
OK121500010160_00	Strawberry Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010170_00	Strawberry Creek	4.13	R	3	X	X		X			X			X					
OK121500010175_00	Verdigris River, Unnamed Trib of	6.57	R	3	X	X				X	X		X						
OK121500010180_00	Billy Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010190_00	Billy Creek	10.21	R	3	X	X				X	X		X						
OK121500010200_00	Verdigris River	6.11	R	4a	F	F				N	F		N		F				
OK121500010220_00	Afton Landing Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010230_00	Verdigris Cutoff # 1a Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010240_00	Verdigris Cutoff # 1b Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500010250_00	Gar Creek	9.39	R	3	X	X				X	X		X						
OK121500010260_00	Fife Creek	9.04	R	3	X	X				X	X		X						
OK121500010270_00	Coal Creek	16.14	R	3	X	X				X	X		X		X				
OK121500010280_00	Okay Creek!	2.62	R	3	X	X		X			X			X					
OK121500020010_00	Verdigris River	5.73	R	2	X	X				F	X		X		F				
OK121500020030_00	Osage Mound Cutoff	1	L	3	X	X				X	X		X						
OK121500020050_00	Flagg Lake	1	L	3	X	X				X	X		X						
OK121500020070_00	Legas Lake	1	L	3	X	X				X	X		X						
OK121500020080_00	Bull Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020090_00	Bull Creek	17.55	R	5a	F	F				N	X		N						
OK121500020100_00	Pea Creek	10.23	R	4a	I	X				I	X		N						
OK121500020110_00	Inola Creek	13.79	R	3	X	X				X	X		X						
OK121500020120_00	Verdigris River	2.47	R	3	X	X				X	X		X		X				
OK121500020130_00	Newt Graham Lake	1	L	3	X	X				X	X		X						
OK121500020150_00	Adams Creek	18.02	R	5a	I	I				N	X		N		X				
OK121500020160_00	Snake Den Lake	1	L	3	X	X				X	X		X						
OK121500020170_00	Long Creek	3.13	R	3	X	X				X	X		X						
OK121500020190_00	Runaround Lake	1	L	3	X	X				X	X		X						
OK121500020200_00	Long Lake	1	L	3	X	X				X	X		X						

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OK121500020210_00	Pecan Slough	1.79	R	3	X	X				X	X		X						
OK121500020220_00	Commodore Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020230_00	Commodore Creek	4.55	R	3	X	X				X	X		X						
OK121500020240_00	Big Bottom Cutoff # 1 (33.10) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020250_00	Big Bottom Cutoff # 2 (33.50) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020260_00	Verdigris River	18.71	R	4a	F	F				N	F		N		I				
OK121500020260_10	Verdigris River	4.46	R	3	X	X				X	X		X		X				
OK121500020270_00	Salt Creek	7.60	R	3	X	X				X	X			X					
OK121500020275_00	Salt Creek, Unnamed Tributary of	3.14	R	3	X	X		X			X			X					
OK121500020280_00	Fin & Feather Lake	1	L	2	F	I				I	I		F						
OK121500020290_00	Highway 33 Cutoff (37.05) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020300_00	Big Flag Creek Cutoff (38.15) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020320_00	Big Flag Lake	1	L	3	X	X				X	X		X						
OK121500020330_00	Little Flag Lake	1	L	3	X	X				X	X		X						
OK121500020340_00	Horseshoe Lake	1	L	3	X	X				X	X		X						
OK121500020350_00	Dog Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020360_00	Dog Creek	10.08	R	5c	F	F				N	X		N		I				
OK121500020370_00	Otter Creek	8.32	R	3	X	X				X	X		X						
OK121500020380_00	Panther Creek	13.49	R	3	X	X				X	X		X						
OK121500020390_00	Cat Creek	7.04	R	5a	I	N				N	X		N			F			
OK121500020400_00	Chambers Creek	8.33	R	3	X	X				X	X		X						
OK121500020410_00	Canyon Lake	1	L	3	X	X				X	X		X						
OK121500020420_00	Cutoff (44.66) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020430_00	Mossy Creek	1.72	R	2	X	X		X			X			X		F			
OK121500020440_00	Big Lake Creek	1.25	R	3	X	X				X	X		X						
OK121500020450_00	Big Lake	1	L	3	X	X				X	X		X						
OK121500020460_00	Cutoff (46.95) Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020465_00	Verdigris River, Unnamed Tributary of	2.18	R	3	X	X		X			X			X					
OK121500020470_00	Spunky Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK121500020480_00	Spunky Creek	11.93	R	5b	I	N				I	X		F						
OK121500020490_00	Yonkipin Lake	33	L	3	X	X				X	X		X						
OK121500020500_00	Spunky Creek, Unnamed Trib of	4.65	R	3	X	X		X						X					
OK121500030010_00	Verdigris River	10.43	R	4a	F	F				F	F		N		I				

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OK121500030010_10	Verdigris River	11.99	R	3	X	X				X	X		X		X				
OK121500030030_00	Boggy Creek	4.14	R	3	X	X				X	X		X						
OK121500030040_00	Honey Creek	3.73	R	3	X	X				X	X		X						
OK121500030050_00	Keetonville Creek	3.36	R	3	X	X		X			X			X					
OK121500030060_00	Sweetwater Creek	6.58	R	3	X	X				X	X		X						
OK121500030070_00	Fourmile Creek	13.93	R	3	X	X				X	X		X						
OK121500040010_00	Dog Creek	16.87	R	5a	I	F				N	X		I		I				*
OK121500040020_00	Claremore Lake	470	L	4a	I	F				I	F		F		N				*
OK121500040030_00	Little Dog Creek	5.90	R	3	X	X				X	X		X		X				*
OK121510010010_00	Verdigris River	6.08	R	2	X	X				I	X	F	X		X				
OK121510010020_00	Oologah Lake	29460	L	5a	F	F				N	I	F	F		I				
OK121510010030_00	Blue Creek	2.68	R	3	X	X				X	X		X		X				
OK121510010040_00	Spencer Creek	4.31	R	5b	I	N				I	X		X		I				*
OK121510010060_00	Chelsea Lake	50	L	3	X	X				X	X		X		X				*
OK121510010070_00	Talala Creek	1.04	R	3	X	X				X	X		X						
OK121510010080_00	Talala Creek, South Fork	10.36	R	3	X	X				X	X		X						
OK121510010090_00	Talala Creek, North Fork	6.19	R	3	X	X				X	X		X						
OK121510010110_00	Campbell Creek	3.79	R	5b	I	N				I	X		X						
OK121510010120_00	Plumb Creek	5.52	R	5b	I	N				I	X		X						
OK121510010130_00	Lightning Creek	14.40	R	5b	I	N				F	X		F		I				
OK121510010140_00	Panther Creek	6.97	R	5b	I	N				F	X		X						
OK121510010150_00	Madden Creek	8.24	R	3	X	X				X	X		X						
OK121510010160_00	Double Creek	0.97	R	3	X	X				X	X		X						
OK121510010170_00	Double Creek, South Fork	7.97	R	3	X	X				X	X		X						
OK121510010180_00	Double Creek, North Fork	8.13	R	3	X	X				X	X		X						
OK121510010190_00	Salt Creek	16.25	R	3	X	X				X	X		X		X				
OK121510010200_00	Kentucky Creek	4.33	R	3	X	X				X	X		X						
OK121510010210_00	Little Salt Creek	6.47	R	3	X	X				X	X		X						
OK121510010220_00	Western Branch	4.30	R	2	I	F				I	X		X		X				
OK121510010230_00	Riley Lake	1	L	3	X	X				X	X		X						
OK121510010240_00	Winganon Creek	2.37	R	2	I	F				I	X		X						
OK121510020010_00	Verdigris River	37.43	R	5a	F	F				N	N	F	N		I				
OK121510020030_00	Riley Creek	3.78	R	3	X	X				X	X		X						
OK121510020050_00	California Creek	25.39	R	5a	F	F				N	X		N		I				
OK121510020060_00	Delaware Creek	4.11	R	2	X	X		X			X			X		F			
OK121510020070_00	Morman Creek	9.20	R	3	X	X				X	X		X						

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OK121510020080_00	Wolf Creek	4.03	R	3	X	X				X	X		X						
OK121510020090_00	Wolf Creek, South Fork	3.31	R	3	X	X				X	X		X						
OK121510020100_00	Wolf Creek, North Fork	4.17	R	3	X	X				X	X		X						
OK121510020110_00	Little California Creek	6.70	R	3	X	X				X	X		X						
OK121510020120_00	Steamboat Creek	2.66	R	3	X	X				X	X		X						
OK121510020130_00	Cedar Creek	9.23	R	3	X	X				X	X		X						
OK121510020140_00	Fool Creek	1.90	R	3	X	X				X	X		X						
OK121510020150_00	Tucker Creek	5.92	R	3	X	X				X	X		X						
OK121510020170_00	Lenapah Creek	4.89	R	3	X	X				X	X		X						
OK121510020180_00	Goose Neck Creek, East	4.67	R	3	X	X				X	X		X						
OK121510020200_00	Goose Neck Lake	1	L	3	X	X				X	X		X						
OK121510020220_00	Taylor Lake	1	L	3	X	X				X	X		X						
OK121510020230_00	Goose Neck Creek, West	3.56	R	3	X	X				X	X		X						
OK121510020240_00	Hickory Creek	7.66	R	3	X	X				X	X		X						
OK121510020250_00	Snow Creek	7.29	R	2	I	F				I	X		I		I				
OK121510020260_00	Crow Hollow Creek	6.13	R	3	X	X				X	X		X						
OK121510020270_00	Rock Creek (Ross)	7.35	R	3	X	X				X	X		X						
OK121510020280_00	Melton Lake	1	L	3	X	X				X	X		X						
OK121510020290_00	Opossum Creek	15.72	R	3	X	X				X	X		X						
OK121510020300_00	Noxie Creek	5.44	R	3	X	X				X	X		X						
OK121510020310_00	Vinegar Creek	4.50	R	3	X	X				X	X		X						
OK121510020330_00	Chouteau Lake	1	L	3	X	X				X	X		X						
OK121510020340_00	Onion Creek	0.95	R	3	X	X				X	X		X		X				
OK121510030010_00	Big Creek	34.74	R	4a	F	F				F	X		N		I				
OK121510030020_00	Childers Creek	2.41	R	3	X	X				X	X		X						
OK121510030030_00	Rogers Mound Creek	2.67	R	3	X	X				X	X		X						
OK121510030040_00	Coal Creek	4.60	R	3	X	X				X	X		X						
OK121510030050_00	Looney Branch	5.46	R	3	X	X				X	X		X						
OK121510030060_00	Blue Canyon Creek	4.53	R	3	X	X				X	X		X						
OK121510030070_00	Notch Mound Creek	5.34	R	3	X	X				X	X		X						
OK121510030080_00	Clear Creek	6.49	R	3	X	X				X	X		X						
OK121510030090_00	Brush Creek	14.59	R	3	X	X				X	X		X						
OK121510030100_00	Big Creek, East Fork	9.60	R	3	X	X				X	X		X						
OK121510030110_00	Boggs Creek (Boggs Branch)	6.27	R	3	X	X				X	X		X						
OK121510030120_00	Bethel Creek	2.71	R	3	X	X				X	X		X						
OK121510030130_00	Labette Creek	5.80	R	3	X	X				X	X		X						

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OK121510030140_00	Little Labette Creek	3.73	R	3	X	X				X	X		X						
OK121600010010_00	Neosho River	1.00	R	4a	I	X				I	I		N		X				
OK121600010020_00	Dry Branch	4.82	R	3	X	X				X	X		X						
OK121600010030_00	Flower Creek	5.68	R	3	X	X				X	X		X						
OK121600010040_00	Neosho River	7.25	R	3	I	X				I	X		X		X				
OK121600010050_00	Fort Gibson Lake	12464	L	5a	I	F				N	I		I		I				
OK121600010060_00	Ranger Creek	7.94	R	4a	F	F				F	X		N		X				
OK121600010070_00	Rattlesnake Branch	4.59	R	3	X	X				X	X		X						
OK121600010080_00	Pecan Creek	9.19	R	2	X	X				F	X		X						
OK121600010090_00	Double Springs Creek	15.49	R	2	X	X				F	X		X		X				
OK121600010100_00	Fourteenmile Creek	25.45	R	4a	F	F	F				F		N		F		*		
OK121600010110_00	Wolf Hollow Creek	2.54	R	3	X	X				X	X		X						
OK121600010120_00	Lost City Creek	1.19	R	3	X	X				X	X		X						
OK121600010130_00	Black Bird Creek	10.27	R	3	X	X	X				X		X		X				
OK121600010140_00	Money Bean Hollow Creek	2.03	R	3	X	X				X	X		X						
OK121600010160_00	Hickory Creek	3.74	R	3	X	X				X	X		X						
OK121600010200_00	Fort Gibson Lake, Upper	4814	L	5a	I	F				N	I		I		I				
OK121600010210_00	Clear Creek	12.60	R	3	I	I	I				X		X		X				
OK121600010220_00	Little Clear Creek	8.16	R	3	X	X				X	X		X						
OK121600010230_00	Jane Dennis Creek	3.61	R	3	X	X				X	X		X						
OK121600010250_00	Flat Rock Creek	8.57	R	3	X	X				X	X		X						
OK121600010260_00	Cat Creek	4.48	R	3	X	X				X	X		X						
OK121600010270_00	Big Hollow Creek	2.89	R	3	X	X				X	X		X						
OK121600010280_00	Neosho River	14.26	R	5a	F	F				N	F		F		F				
OK121600010290_00	Spring Creek	39.70	R	1	F	F	F				F		F		F		*		
OK121600010300_00	Pipe Springs Branch (Davis Hollow Creek)	7.01	R	3	X	X				X	X		X						
OK121600010310_00	Hogskin Hollow Creek	1.60	R	3	X	X				X	X		X						
OK121600010320_00	Ballou Branch	2.96	R	3	X	X				X	X		X						
OK121600010330_00	Snake Creek	15.19	R	3	X	X	X				X		X				*		
OK121600010340_00	Little Spring Creek	4.29	R	3	X	X	X				X		X		X		*		
OK121600010350_00	Bryant Creek	5.38	R	3	X	X				X	X		X						
OK121600010360_00	Blacksmith Hollow Creek	5.04	R	3	X	X				X	X		X						
OK121600010370_00	Dry Hollow Creek	2.54	R	3	X	X				X	X		X						
OK121600010380_00	Yokum Hollow Creek	2.05	R	3	X	X				X	X		X						
OK121600010390_00	Double Spring Creek	8.12	R	3	X	X	I				X		X		X				

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OK121600010400_00	Lowrey Creek	5.11	R	3	X	X				X	X		X						
OK121600010410_00	Twin Oaks Creek	5.20	R	3	X	X				X	X		X						
OK121600010420_00	Brush Creek	9.70	R	3	X	X				X	X		X						
OK121600010430_00	Chouteau Creek	22.25	R	5a	I	F				N	X		N		I				
OK121600010432_00	Chouteau Creek, Unnamed Trib of	3.31	R	3	X	X		X			X			X					
OK121600010435_00	Chouteau Creek Tributary	4.44	R	3	X	X				X	X			X					
OK121600010440_00	Crutchfield Branch	5.07	R	4a	I	X				I	X		N						
OK121600010450_00	Chapel Branch	4.25	R	3	X	X				X	X		X						
OK121600020010_00	Neosho River	1.26	R	3	X	X				I	X		X		X				
OK121600020020_00	Hudson Lake, Lower	5802	L	5a	F	F				N	I		F		I				
OK121600020030_10	Saline Creek	28.12	R	4a	F	I	F				F		N		F		*		
OK121600020040_00	Chimney Rock Lake Creek	0.23	R	3	X	X				X	X		X						
OK121600020050_00	WR Holway Reservoir (Chimney Rock Lake)	712	L	1	F	F				F	F		F		F				
OK121600020060_00	Wickliffe Creek	9.34	R	3	X	X				X	X		X						
OK121600020070_00	Little Saline Creek	10.50	R	4a	F	I	F				X		N		I		*		
OK121600020080_00	Spade Hollow Creek	6.93	R	3	X	X	X				X		X		X				
OK121600020090_00	Proctor Hollow Creek	6.31	R	3	X	X				X	X		X						
OK121600020100_00	Ben Smith Hollow Creek	2.16	R	3	X	X				X	X		X						
OK121600020110_00	Big Acorn Hollow Creek	2.33	R	3	X	X				X	X		X						
OK121600020120_00	Wolf Creek	6.02	R	3	X	X				X	X		X						
OK121600020140_00	Hudson Lake, Upper	4021	L	2	F	F				I	I		F		I				
OK121600020150_00	Spavinaw Creek	1.69	R	3	X	X	X				X		X		X				*
OK121600020160_00	Benge Branch	3.82	R	3	X	X				X	X		X						
OK121600020170_00	Neosho River	10.89	R	5a	F	F				N	N		F		I				
OK121600020180_00	Rock Creek	12.77	R	3	X	X				X	X		X		X				
OK121600020200_00	Summerfield Creek	10.38	R	2	X	X				F	X		X						
OK121600020210_00	Round Spring Hollow Creek	5.49	R	3	X	X				X	X		X						
OK121600030020_00	Grand Lake O' the Cherokees, Lower	10051	L	5a	F	F				N	N		I		I				
OK121600030030_00	Grand Lake O' the Cherokees, Middle	19584	L	5a	F	F				I	N		I		I				
OK121600030040_00	Grand Lake O' The Cherokees, Upper	8670	L	5a	F	F				N	N		I		I				
OK121600030070_00	Duck Creek	5.20	R	3	X	X				X	X		X						
OK121600030090_00	Drowning Creek	8.66	R	4a	F	F	F				X		N		I				
OK121600030100_00	Woods Springs Branch	3.98	R	3	X	X				X	X		X						
OK121600030110_00	Muskrat Hollow Creek	5.45	R	3	X	X				X	X		X						
OK121600030120_00	Jay Creek	3.35	R	3	X	X		X			X		X						

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OK121600030130_00	Sweetwater Hollow Creek	2.41	R	3	X	X				X	X		X						
OK121600030160_00	Horse Creek	10.06	R	5a	I	N				N	X		N			F			
OK121600030180_00	Fly Creek	3.36	R	2	F	F				I	X		I						
OK121600030190_00	Little Horse Creek	6.46	R	5a	I	F				N	X		N						
OK121600030200_00	Oseuma Creek	4.28	R	3	X	X				X	X		X						
OK121600030230_00	Woodward Hollow Creek	3.78	R	3	X	X				X	X		X						
OK121600030250_00	Courthouse Hollow Creek	2.01	R	3	X	X				X	X		X						
OK121600030295_00	Scraper Creek!	4.60	R	3	X	X				X	X		X						
OK121600030310_00	Elm Creek	6.18	R	3	X	X	X				X		X		X				
OK121600030320_00	Whitewater Creek	14.74	R	2	I	F	F				X		I		I				
OK121600030330_00	Snail Creek	3.93	R	3	X	X				X	X		X						
OK121600030340_00	Cave Springs Branch	4.48	R	5b	I	N	I				I		N		I		*		
OK121600030390_00	Wolf Creek	7.06	R	3	X	X				X	X		X						
OK121600030410_00	Spring Branch	3.01	R	3	X	X				X	X		X						
OK121600030420_00	Hickory Creek	4.34	R	3	X	X				X	X		X						
OK121600030440_00	Elk River	3.29	R	2	F	F	F				F		F		I				
OK121600030445_00	Honey Creek	4.85	R	4a	F	F	F				F		N		I		*		
OK121600030445_10	Honey Creek	4.64	R	4a	I	I	F				X		N		X		*		
OK121600030460_00	Carr Branch	4.97	R	3	X	X				X	X		X						
OK121600030470_00	Buffalo Creek	2.51	R	3	I	I				X	X		X						
OK121600030490_00	Council Hollow Creek	5.22	R	3	X	X	X				X		X		X				
OK121600030510_00	Sycamore Creek	7.36	R	4a	I	F	I				X		N		I				
OK121600030520_00	Brush Creek	6.55	R	3	I	I	I				X		X		X				
OK121600030530_00	Roark Creek	2.41	R	3	X	X				X	X		X						
OK121600030540_00	Mason Springs Valley Creek	1.50	R	3	X	X				X	X		X						
OK121600030550_00	Ogeechee Creek	3.65	R	3	X	X				X	X		X						
OK121600030560_00	Lost Creek	10.23	R	2	F	F	F				X		I		I				
OK121600030570_00	Modoc Valley Creek	5.53	R	3	X	X				X	X		X						
OK121600040010_00	Neosho River	16.57	R	5a	I	F				N	F		F		I				
OK121600040040_00	Hudson Creek	8.28	R	5a	F	F				N	X		I						
OK121600040043_00	Hudson Creek, Unnamed Tributary of	4.21	R	3	X	X		X			X			X					
OK121600040050_00	Little Elm Creek	6.92	R	3	I	I				I	X		X						
OK121600040060_00	Tar Creek	11.67	R	5a				N			X			F					
OK121600040062_00	Blue Goose Mill Pond	5	L	5a	X	X				X	N		X						
OK121600040063_00	Northwest Western Chat Pile Pond	1	L	5a	X	X				X	N		X						
OK121600040064_00	Western Chat Pile Mill Pond	1	L	5a	X	X				X	N		X						

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OK121600040070_00	Miami Creek	3.41	R	3	X	X				X	X		X						
OK121600040080_00	Garrett Creek	3.39	R	3	X	X				X	X		X						
OK121600040090_00	Quapaw Creek	4.47	R	3	X	X				X	X		X						
OK121600040100_00	Lytle Creek	4.20	R	3	X	X				X	X		X						
OK121600040105_00	Atlas Chat Pile Pond	10	L	5a	X	X				X	N		X						
OK121600040110_00	Coal Creek	9.75	R	3	X	X				X	X		X						
OK121600040120_00	Neosho River	3.36	R	3	X	X				X	X		X		X				
OK121600040130_00	Cow Creek	12.42	R	5a	F	F				N	X		I						
OK121600040140_00	Windy Creek	4.77	R	3	X	X				X	X		X						
OK121600040150_00	Elm Creek	10.76	R	3	X	X				X	X		X						
OK121600040160_00	Mud Creek	3.25	R	3	X	X				X	X		X						
OK121600040170_00	Fourmile Creek	7.10	R	5a	I	F				N	X		I						
OK121600040175_00	Mud Creek	10.00	R	3	X	X				X	X		X						
OK121600040180_00	Squaw Creek	5.88	R	3	X	X				X	X		X						
OK121600040190_00	Slow Creek	3.97	R	3	X	X				X	X		X						
OK121600040200_00	Russell Creek	11.48	R	5a	F	N				N	X		I						
OK121600040210_00	Elm Creek	5.42	R	3	X	X				X	X		X						
OK121600040220_00	Neosho River	13.97	R	5a	F	F				N	F		N		I				
OK121600050020_00	Spavinaw Lake	1584	L	5a	N	F				N	F		I		N				*
OK121600050030_00	Chicken Hollow Creek	2.12	R	3	X	X	X				X		X		X				*
OK121600050040_00	Black Hollow Creek	3.70	R	3	X	X	X				X		X		X				*
OK121600050050_00	Groundhog Hollow Creek	2.48	R	3	X	X	X				X		X		X				*
OK121600050060_00	Spavinaw Creek	3.96	R	3	X	X	X				X		X		X				*
OK121600050070_00	Eucha Lake (Upper Spavinaw)	2860	L	5a	N	F				N	F		F		N				*
OK121600050080_00	Galcatcher Hollow Creek	1.50	R	3	X	X	X				X		X		X				*
OK121600050090_00	Soldier Hollow Creek	1.26	R	3	X	X	X				X		X		X				*
OK121600050100_00	Rattlesnake Creek	4.44	R	3	X	X	X				X		X		X				*
OK121600050110_00	Runaway Hollow Creek	1.69	R	2	I	F	F				X		I		I				*
OK121600050120_00	Dry Creek	8.34	R	3	X	X	X				X		X		X				*
OK121600050130_00	Teesquatnee Hollow Creek	3.79	R	3	X	X	X				X		X		X				*
OK121600050140_00	Brush Creek	16.51	R	2	I	I	F				X		X		X		*		
OK121600050150_00	Spavinaw Creek	15.00	R	2	F	I	F				X		F		I				*
OK121600050160_00	Beaty Creek	12.44	R	4a	F	I	F				X		N		I		*		
OK121600050170_00	Town Creek	0.57	R	3	X	X	X				X		X		X				*
OK121600050180_00	Cloud Creek	12.93	R	4a	I	I	F				X		N		X				*
OK121600050190_00	Beartoter Hollow Creek	3.51	R	3	X	X	X				X		X		X				*

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OK121600050200_00	Hog Eye Creek	5.83	R	3	X	X	X				X		X		X				*
OK121600050210_00	Beamer Hollow Creek	3.03	R	3	X	X	X				X		X		X				*
OK121600050220_00	Cherokee Creek	7.50	R	3	X	X	X				X		X		X				*
OK121600050230_00	Coon Creek	0.28	R	3	X	X	X				X		X		X				*
OK121600060010_00	Big Cabin Creek	6.13	R	2	I	F				I	I		I		I				
OK121600060020_00	Granny Branch	3.24	R	3	X	X				X	X		X						
OK121600060030_00	Elm Creek	6.13	R	3	X	X				X	X		X						
OK121600060040_00	Mustang Creek	8.78	R	3	X	X				X	X		X						
OK121600060060_00	Big Cabin Creek	5.34	R	2	I	F				I	I		F		I				
OK121600060060_10	Big Cabin Creek	4.16	R	5b	F	N				F	F			F					
OK121600060070_00	White Oak Creek	14.24	R	3	I	I				I	X		X						
OK121600060080_00	Little Cabin Creek	32.31	R	5a	F	F				N	X		N						
OK121600060090_00	Locust Creek	11.42	R	3	X	X				X	X		X						
OK121600060100_00	Success Creek	5.82	R	3	X	X				X	X		X						
OK121600060110_00	Cornatzar Creek	3.63	R	3	X	X				X	X		X						
OK121600060120_00	Shawnee Creek	7.39	R	3	X	X				X	X		X						
OK121600060130_00	Coal Creek	6.16	R	3	X	X				X	X		X						
OK121600060140_00	Jones Creek	6.75	R	3	X	X				X	X		X						
OK121600060150_00	Possum Branch	2.69	R	3	X	X				X	X		X						
OK121600060160_00	Wolf Creek	7.64	R	3	X	X				X	X		X						
OK121600060170_00	Crow Creek	6.12	R	3	X	X				X	X		X						
OK121600060180_00	Bluejacket Creek	4.82	R	3	X	X				X	X		X						
OK121600060190_00	Welch Creek	3.32	R	3	X	X				X	X		X						
OK121600060200_00	Bull Creek	10.83	R	5a	F	N				N	X		I						
OK121600060210_00	Kelso Creek	3.09	R	3	X	X				X	X		X						
OK121600060220_00	Big Cabin Creek	11.58	R	5b	I	N				F	X			F					
OK121600060230_00	Pecan Creek	9.61	R	3	X	X				X	X		X						
OK121600060240_00	Pawpaw Creek	18.40	R	5a	F	N				N	X		I						
OK121600060250_00	White Creek	8.48	R	3	X	X				X	X		X						
OK121600060260_00	Thompson Creek	4.64	R	3	X	X				X	X		X						
OK121600060270_00	Elm Creek	6.90	R	3	X	X				X	X		X						
OK121600060280_00	Big Cabin Creek, West Fork	14.68	R	2	X	X				F	X		X						
OK121600060290_00	Big Cabin Creek, Middle Fork	9.15	R	3	I	I				I	X		X						
OK121600060300_00	Big Cabin Creek	3.82	R	3	X	X				X	X			X					
OK121600060300_10	Big Cabin Creek	25.58	R	2	X	I				F	I		X						
OK121600060310_00	Mill Creek	4.99	R	3	X	X				X	X		X						

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OK121600060320_00	Frazier Branch	5.90	R	3	X	X				X	X		X						
OK121600060330_00	Whisky Branch	3.39	R	3	X	X				X	X		X						
OK121600060340_00	McDonald Branch	4.92	R	3	X	X				X	X		X						
OK121600060350_00	Deer Creek	6.21	R	3	X	X				X	X		X						
OK121600060360_00	Wolfe Creek	3.79	R	3	X	X				X	X		X						
OK121600060370_00	Willow Creek	2.73	R	3	X	X				X	X		X						
OK121600060380_00	Banzet Creek	4.46	R	3	X	X				X	X		X						
OK121600070010_00	Spring River	22.11	R	5a	F	F	N				N		F		I				
OK121600070020_00	Shawnee Branch	3.41	R	3	X	X	X				X		X		X				
OK121600070030_00	Shawnee Lake	1	L	3	X	X				X	X		X						
OK121600070040_00	Flint Branch	5.45	R	3	X	X	X				X		X		X				
OK121600070050_00	Warren Branch	9.10	R	2	I	F	F				X		I		I		*		
OK121600070060_00	Rock Creek	3.82	R	3	X	X				X	X		X						
OK121600070070_00	Devil's Hollow Creek	3.50	R	3	X	X	X				X		X		X				
OK121600070080_00	Elgin Creek	3.10	R	3	X	X				X	X		X						
OK121600070090_00	Hockerville Creek	3.77	R	3	X	X				X	X		X						
OK121600070100_00	Ontario Creek	3.53	R	3	X	X				X	X		X						
OK121600070110_00	Fivemile Creek	5.81	R	4a	F	F	F				F		N		F				
OK121600070120_00	Little Fivemile Creek	4.16	R	2	I	F				F	X		I						
OK121600070130_00	Rock Branch	0.40	R	3	X	X				X	X		X						
OK121610000010_00	Pryor Creek	7.00	R	3	X	X				X	X		X						
OK121610000020_00	Sulphur Creek	5.33	R	3	X	X				X	X		X						
OK121610000040_00	Scarbow Lake	150	L	3	X	X				X	X		X						
OK121610000050_00	Pryor Creek	3.93	R	2	X	X				F	X		X						
OK121610000050_10	Pryor Creek	4.97	R	5a	I	F				N	X		N		I				
OK121610000060_00	Midamerica Creek	4.24	R	3	X	X				X	X		X						
OK121610000070_00	Seminole Creek	8.55	R	3	X	X				X	X		X						
OK121610000080_00	Mud Creek	7.70	R	3	X	X				X	X		X						
OK121610000090_00	Pryor Creek	2.35	R	5a	F	F				N	X			I					
OK121610000090_10	Pryor Creek	12.12	R	5a	X	X				N	X			X					
OK121610000100_00	Salt Branch	6.08	R	3	X	X				X	X		X						
OK121610000120_00	Adair Creek	4.83	R	3	X	X				X	X		X						
OK121610000130_00	Bitter Creek	5.88	R	3	X	X				X	X		X						
OK121610000140_00	Osage Creek	5.34	R	3	X	X				X	X		X						
OK121610000150_00	Pryor Creek, Upper	25.16	R	2	X	X				F	X		X						
OK121610000160_00	Little Pryor Creek	12.42	R	3	X	X				X	X		X						

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OK121610000170_00	Diver Creek	4.94	R	3	X	X				X	X		X						
OK121610000180_00	Chelsea Creek	0.82	R	3	X	X				X	X		X						
OK121610000190_00	Chelsea Creek, East	4.56	R	3	X	X				X	X		X						
OK121610000200_00	Chelsea Creek, West	4.15	R	3	X	X				X	X		X						
OK121700010010_00	Illinois River	9.47	R	5a	I	I			N		X	F	I		X		*		
OK121700010020_00	Deep Branch	8.71	R	5a	X	F				N	X		I						
OK121700010030_00	Larue Branch	5.39	R	3	X	X				X	X		X						
OK121700010040_00	Red Bird Smith Creek	8.48	R	3	X	X				X	X		X						
OK121700010050_00	Pot Hollow	2.57	R	3	X	X				X	X		X						
OK121700020020_00	Tenkiller Ferry Lake	8442	L	5a	N	F				N	I		F		I		*		
OK121700020030_00	Pine Creek	1.60	R	3	X	X				X	X		X						
OK121700020040_00	Sawmill Hollow Creek	2.34	R	3	X	X				X	X		X						
OK121700020050_00	Linder Bend Creek	1.28	R	3	X	X				X	X		X						
OK121700020060_00	Salt Branch	1.07	R	3	X	X				X	X		X						
OK121700020070_00	Burnt Cabin Creek	1.71	R	3	X	X				X	X		X						
OK121700020080_00	Dogwood Creek	1.16	R	3	X	X				X	X		X						
OK121700020090_00	Cato Creek	4.30	R	3	X	X				X	X		X		X				
OK121700020100_00	Snake Creek	2.66	R	3	X	X				X	X		X						
OK121700020110_00	Chicken Creek	3.54	R	5c	I	I				N	X		X						
OK121700020130_00	Terrapin Creek	6.55	R	3	X	X				X	X		X		X				
OK121700020140_00	Sixshooter Creek / Branch	2.73	R	3	X	X				X	X		X						
OK121700020150_00	Sismore Creek	2.86	R	3	X	X				X	X		X						
OK121700020160_00	Pettit Creek	2.48	R	3	X	X				X	X		X						
OK121700020170_00	Big Hollow Creek	1.09	R	3	X	X				X	X		X						
OK121700020180_00	Elk Creek	8.46	R	3	X	X				X	X		X						
OK121700020190_00	Dry Creek	8.83	R	3	X	X				X	X		X						
OK121700020200_00	Cave Springs Creek (Bolin Hollow)	5.60	R	3	X	X				X	X		X						
OK121700020220_00	Tenkiller Ferry Lake, Illinois River Arm	5032	L	5a	N	F				I	I		F		N		*		
OK121700020240_00	Carters Creek	4.06	R	3	X	X				X	X		X						
OK121700020250_00	Mining Camp Hollow Creek, South	4.04	R	3	X	X				X	X		X						
OK121700020260_00	Dripping Spring Hollow Creek	3.94	R	3	X	X				X	X		X						
OK121700020270_00	Park Hill Branch	6.86	R	5c	I	I				N	X		X						
OK121700020280_00	Manes Hollow Creek	3.21	R	3	X	X				X	X		X						
OK121700020290_00	Ross Hollow Creek	1.35	R	3	X	X				X	X		X						
OK121700020300_00	Illinois River	2.12	R	3	X	X	X				X		X		X		*		
OK121700020300_10	Illinois River	2.55	R	3	X	X	X				X		X		X			*	

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OK121700020320_00	Indian Meadows Creek	2.34	R	3	X	X				X	X		X						
OK121700020330_00	Indian Meadows Lake	1	L	3	X	X				X	X		X						
OK121700030010_00	Illinois River	7.68	R	5a	N	F	I				F		N		F			*	
OK121700030020_00	Tahlequah Creek	1.84	R	2	X	I	F				X		I		X			*	
OK121700030030_00	Stick Ross Creek (Ross Branch)	4.54	R	2	I	I				F	X		X					*	
OK121700030040_00	Tahlequah Creek (Town Branch)	6.21	R	5a	I	I	I				X		N		X			*	
OK121700030050_00	Red Oak Hollow Creek	2.68	R	3	X	X				X	X		X						
OK121700030060_00	Little Steely Hollow Creek	2.00	R	3	X	X				X	X		X						
OK121700030070_00	Briggs Hollow Creek, North	1.85	R	3	X	X				X	X		X						
OK121700030080_00	Illinois River	31.68	R	5a	N	F	F				F		N		F			*	
OK121700030090_00	Pumpkin Hollow Creek	9.27	R	3	X	X				X	X		X						
OK121700030100_00	Tully Hollow Creek (Borgen)	3.79	R	3	X	X				X	X		X						
OK121700030110_00	Cedar Hollow Creek	3.60	R	5c	X	X				N	X		X						
OK121700030120_00	Steely Hollow Creek	3.12	R	3	I	I				I	X		X						
OK121700030130_00	Combs Hollow Creek	2.52	R	3	X	X				X	X		X						
OK121700030140_00	Telamay Hollow Creek	2.54	R	3	I	I				I	X		X						
OK121700030150_00	Molly Field Hollow Creek	2.67	R	3	X	X				X	X		X						
OK121700030160_00	Peavine Hollow Creek	3.35	R	3	X	X				X	X		X						
OK121700030170_00	Dog Hollow Creek	4.05	R	3	X	X				X	X		X						
OK121700030180_00	Scraper Hollow Creek	2.96	R	3	X	X				X	X		X						
OK121700030190_00	Kirk Springs Hollow Creek	3.36	R	3	X	X				X	X		X						
OK121700030200_00	Sawmill Hollow Creek	2.32	R	3	X	X				X	X		X						
OK121700030210_00	Falls Branch	4.75	R	3	X	X				X	X		X						
OK121700030220_00	Black Fox Hollow Creek	6.18	R	3	X	X				X	X		X						
OK121700030230_00	Winset Hollow Creek	4.95	R	3	X	X				X	X		X		X				
OK121700030240_00	Hasting Hollow Branch	2.53	R	3	X	X				X	X		X						
OK121700030250_00	Fall Branch	5.23	R	3	I	X				I	X		X						
OK121700030260_00	Luna Branch	5.06	R	3	X		X				X		X						
OK121700030270_00	Cherokee Mission Creek	2.54	R	3	X	X				X	X		X						
OK121700030280_00	Illinois River	15.65	R	5a	N	F	N				F		N		F			*	
OK121700030290_00	Flint Creek	1.60	R	5a	N	F	N				X		I		X			*	
OK121700030300_00	Kill Hollow Creek	4.41	R	3	X	X				X	X		X						
OK121700030310_00	Dripping Springs Branch	5.04	R	3	X	X				X	X		X						
OK121700030320_00	Rock Branch	3.40	R	3	X	X				X	X		X						
OK121700030330_00	Tate Parris Branch	3.71	R	3	X	X				X	X		X						
OK121700030340_00	Beaver Creek (Indiagrave Hollow)	2.33	R	3	X	X				X	X		X						

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OK121700030350_00	Illinois River	5.18	R	5a	N	F	F				F		F		F			*	
OK121700030360_00	Frances Lake	562	L	3	X	X				X	X		X						
OK121700030370_00	Ballard Creek	12.60	R	5a	I	F	N				X		N		X			*	
OK121700040010_00	Caney Creek	20.92	R	5a	F	F	N				F		N		F				
OK121700040020_00	Negro Jake Hollow Creek	5.74	R	3	X	X	X				X		X						
OK121700040030_00	Tailholt Creek	3.83	R	3	X	X				X	X		X						
OK121700040040_00	Bidding Creek	5.77	R	3	X	I				I	X		I						
OK121700040050_00	Spade Creek	5.23	R	3	X	X				X	X		X						
OK121700040060_00	Spade Branch	3.83	R	3	X	X				X	X		X						
OK121700040070_00	Smith Hollow Creek	4.22	R	2	X	X				F	X		X						
OK121700040080_00	Goat Mountain Creek	3.61	R	3	X	X				X	X		X						
OK121700040090_00	Mulberry Hollow Creek	3.55	R	3	X	X				X	X		X						
OK121700050005_00	Illinois River, Baron Fork	1.08	R	3	I	I	X				X		X					*	
OK121700050010_00	Illinois River, Baron Fork	25.15	R	5a	N	F	I				F		F		F			*	
OK121700050030_00	Welling Creek	3.53	R	3	X	X				X	X		X						
OK121700050040_00	Mining Camp Hollow Creek, North	2.91	R	3	X		X				X		X						
OK121700050050_00	Willow Branch Creek	2.94	R	3	X	X				X	X		X						
OK121700050052_00	Field Hollow Creek	3.01	R	3	X	X				X	X		X						
OK121700050060_00	Briggs Hollow Creek, South	5.39	R	3	X	X				X	X		X						
OK121700050070_00	Walltrip Branch	6.90	R	2	X	X				F	X		X						
OK121700050080_00	Proctor Mountain Creek	4.07	R	3	X	I				I	X		I						
OK121700050090_00	Tyner Creek	15.92	R	5a	I	I	F				X		N		X			*	
OK121700050100_00	South Proctor Creek, West	4.11	R	3	X	X				X	X		X						
OK121700050110_00	Dennison Hollow Creek	2.64	R	3	X	X	X				X		X		X			*	
OK121700050111_00	South Proctor Creek, East	4.61	R	3	X	X				X	X		X						
OK121700050120_00	Peacheater Creek	10.95	R	5a	I	I	F				X		N		I			*	
OK121700050130_00	Scraper Hollow Creek	2.78	R	3	I	I	X				X		X		X			*	
OK121700050140_00	England Hollow Creek	6.08	R	3	X	X	X				X		X		X			*	
OK121700050150_00	Green Creek	7.82	R	3	X	I	I				X		I		X			*	
OK121700050160_00	Westville Lake	1	L	3	X	X				X	X		X						
OK121700050170_00	Illinois River, Baron Fork	3.27	R	3	I	X	X				X		X					*	
OK121700050170_10	Illinois River, Baron Fork	7.78	R	5a	X	I	F				X		N		X			*	
OK121700050180_00	Shell Branch	7.77	R	3	I	I	I				X		X		X			*	
OK121700050190_00	Peavine Creek	7.19	R	3	X	X	I				X		I						
OK121700050200_00	Evansville Creek	13.47	R	3	X	X	X				X		X		X			*	
OK121700050210_00	West Branch	1.51	R	3	X	X				X	X		X						

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OK121700060010_00	Flint Creek	7.75	R	5a	N	F	F				F		N		F			*	
OK121700060010_10	Flint Creek	3.54	R	3	I	X	I				X		X		X			*	
OK121700060020_00	Fivemile Hollow Creek	4.97	R	3	X	X				X	X		X						
OK121700060030_00	Calunchety Hollow Creek	3.67	R	3	X	X				X	X		X						
OK121700060040_00	Battle Creek (Battle Branch)	5.43	R	5a	F	F	F				X		N						
OK121700060050_00	Blue Spring Branch	1.97	R	3	X	X				X	X		X						
OK121700060060_00	Hazelnut Hollow Creek	1.99	R	3	X	X				X	X		X						
OK121700060070_00	Crazy Creek (Glasby)	5.51	R	3	X	X				X	X		X						
OK121700060080_00	Sager Creek	4.15	R	5a	I	F	N				F		N		F			*	
OK121700060100_00	Fagan Creek	2.78	R	3	X	X	X				X		X		X			*	
OK220100010010_00	Poteau River	23.89	R	5a	F	F				N	N		N		I				
OK220100010010_05	Poteau River	3.35	R	3	X	X				X	X		X		X				
OK220100010010_10	Poteau River	1.55	R	5a	F	F				F	F		N		I				
OK220100010010_20	Poteau River	9.21	R	3	X	X				X	X		X		X				
OK220100010010_30	Poteau River	2.24	R	3	X	X				X	X		X		X				
OK220100010010_40	Poteau River	21.35	R	5a	X	X				N	N		X		I				
OK220100010020_00	Cedar Creek	3.15	R	3	X	X				X	X		X						
OK220100010030_00	Cedar Creek, Trib	1.51	R	3	X	X				X	X		X						
OK220100010040_00	Holi-Tuska Creek	9.95	R	3	X	X				X	X		X		X				*
OK220100010042_00	Holi-Tuska Creek, NW Trib of	4.42	R	3	X	X				X	X		X		X				*
OK220100010045_00	Unnamed Trib to Holi-Tuska Creek	1.74	R	3	X	X				X	X		X		X				*
OK220100010050_00	New Spiro Lake	254	L	5a	I	F				N	F		F		N				*
OK220100010060_00	Coal Creek	6.77	R	3	X	X				X	X		X						
OK220100010070_00	Poteau River, James Fork	16.87	R	3	I	I				I	X		X		X				
OK220100010080_00	Poteau River, James Fork, Trib	3.97	R	3	X	X				X	X		X						
OK220100010110_00	Rock Creek	7.13	R	3	X	X				X	X		X						
OK220100010120_00	Riddle Creek	12.59	R	3	X	X		X			X			X					
OK220100010130_00	Cameron Creek	3.40	R	3	X	X		X			X			X					
OK220100010140_00	Polk Creek	5.33	R	3	X	X				X	X		X						
OK220100010150_00	Town Creek	4.31	R	3	X	X				X	X		X						
OK220100010160_00	Sugarloaf Creek	15.00	R	5a	I	I				N	X		F		X				
OK220100010170_00	Morris Creek	13.63	R	3	X	X				X	X		X						
OK220100010180_00	Caston Creek	14.43	R	5b	X	N				N	X		F		X				
OK220100010190_00	Mountain Creek	8.75	R	3	X	X				I	X		X						
OK220100010200_00	Coal Creek	8.99	R	2	X	X				X	X		X			F			
OK220100010210_00	Coal Creek, Trib	2.47	R	3	X	X				X	X		X						

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Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK220100010220_00	Coal Creek, Trib	3.44	R	3	X	X				X	X		X						
OK220100010240_00	Nail Creek	12.30	R	3	I	X				I	X		X						
OK220100010250_00	Double Branch Creek	4.34	R	2	I	X				F	X		X						
OK220100010260_00	Rock Creek	3.89	R	3	X	X				X	X		X						
OK220100010265_00	Rock Creek Tributary!	2.01	R	5c	I	X				N	X		X						
OK220100010270_00	Little Mountain Creek	6.21	R	2	X	X				F	X		X						
OK220100020010_10	Poteau River	27.04	R	5a	F	F				F	F		N		I				
OK220100020020_00	Wister Lake	7333	L	5a	N	F				N	N		F		N				
OK220100020030_00	Poteau River, Black Fork	1.96	R	3	I	I				I	X		X		X				
OK220100020040_00	Poteau River, Black Fork	28.60	R	5a	I	F				N	X		I		I				
OK220100020050_00	Cedar Creek	6.96	R	2	I	X				F	X		X		X				
OK220100020060_00	Cedar Lake	78	L	5a	F	F				N	N		F						
OK220100020070_00	Shawnee Creek	7.75	R	3	X	X				X	X		X		X				
OK220100020080_00	Big Creek	12.57	R	5a	X	F	N				X		F		X				
OK220100020090_00	Big Creek, Trib	5.97	R	2	X	X				X	X		X		X	F			
OK220100020100_00	Oil Branch	5.39	R	3	X	X				X	X		X		X				
OK220100020110_00	Oil Branch, Trib	4.33	R	3	X	X				X	X		X		X				
OK220100030010_00	Brazil Creek	17.83	R	4a	F	F				I	X		N		I				
OK220100030010_10	Brazil Creek	30.29	R	3	I	X				X	X		X		X				
OK220100030020_00	Buck Creek	8.89	R	3	X	X				X	X		X						
OK220100030030_00	Doe Creek	1.83	R	3	X	X				X	X		X						
OK220100030040_00	Bokoshe Lake	21	L	3	X	X				X	X		X						
OK220100030050_00	Owl Creek	11.78	R	3	X	X				X	X		X						
OK220100030060_00	Wolf Creek	6.26	R	2	I	X				F	X		X						
OK220100030070_00	Wolf Creek, Trib	1.32	R	3	X	X				X	X		X						
OK220100030080_00	Reese Lake	17	L	3	X	X				X	X		X						
OK220100030100_00	Opossum Creek	6.19	R	3	X	X				X	X		X						
OK220100040010_00	Fourche Maline Creek	3.99	R	3	I	I				I	X		X		I				
OK220100040020_00	Fourche Maline Creek	36.94	R	5a	F	F				N	F		N		I				
OK220100040020_10	Fourche Maline Creek	21.35	R	3	I	X				I	X		X		X				
OK220100040030_00	Holson Creek	17.38	R	2	I	F				F	X		X		X				
OK220100040040_00	Long Creek	13.16	R	3	I	I				I	X		X		X				
OK220100040050_00	Red Oak Creek	10.95	R	5a	I					N	X		X						
OK220100040060_00	Pigeon Creek	6.16	R	3	I	I				I	X		X		X				
OK220100040070_00	Little Fourche Maline Creek	13.67	R	2	I	I				F	X		X		I				
OK220100040080_00	Bandy Creek	12.44	R	5c	I	I				N	X		X						

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OK220100040090_00	Bandy Creek, Unnamed Trib of	4.98	R	3	X	X				X	X		X		X				*
OK220100040100_00	Lloyd Church Lake (Wilburton City)	160	L	5a	F	F				N	N		F		F				*
OK220100040110_00	Fourche Maline Creek, Trib	1.97	R	3	X	X		X			X			X					
OK220100040120_00	Coon Creek	3.13	R	3	X	X				X	X		X		X				*
OK220100040130_00	Coon Creek Lake	32	L	3	X	X				X	X		X		X				*
OK220100040140_00	Carlton Lake	52	L	5c	X	X				X	N		X						
OK220100040150_00	Wayne Wallace Lake	94	L	5a	F	F				N	N		F		F				
OK220100040160_00	Rough Canyon Creek	2.28	R	3	X	X				X	X		X		X				
OK220100040170_00	Smooth Creek	0.73	R	3	X	X				X	X		X		X				
OK220100040180_00	Coal Creek	10.49	R	3	X	X				X	X		X		X				
OK220100040190_00	Spring Creek	6.35	R	3	X	X				X	X		X						
OK220200010010_00	Arkansas River	20.59	R	2	F	F				F	F	F	F		X				
OK220200010020_00	Camp Creek	11.45	R	3	X	X	X				X		X		X				
OK220200010025_00	Muldrow Lake	76	L	2	F	I				I	I		I		I				
OK220200010030_00	Big Skin Bayou	7.83	R	3	I	I				I	X		X		X				
OK220200010030_10	Big Skin Bayou	18.51	R	5a	I	F				N	X		F		X				
OK220200010040_00	Little Skin Bayou	11.22	R	3	X	X				X	X		X						
OK220200010050_00	Center Point Cemetery Creek!	2.77	R	3	X	X				X	X		X						
OK220200010060_00	Cache Creek	20.75	R	2	I	F				F	X		X		I				
OK220200010070_00	Redbank Creek	4.73	R	3	X	X				X	X		X						
OK220200010090_00	Coal Creek	13.19	R	3	X	X				X	X		X						
OK220200010100_00	Onion Creek	11.15	R	3	X	X		X			X			X					
OK220200010110_00	Rabbit Branch	5.74	R	3	X	X				X	X		X						
OK220200020010_00	Arkansas River	8.51	R	2	X	X				X	X	F	X		X				
OK220200020020_00	Robert S. Kerr Lake	43380	L	5a	F	F				N	I	F	F		I				
OK220200020040_00	Little Sallisaw Creek	17.59	R	3	I	I				I	X		X		I				
OK220200020050_00	Hog Creek	8.84	R	3	X	X				X	X		X						
OK220200020055_00	Hog Creek Trib!	2.92	R	3	X	X				X	X		X						
OK220200020070_00	Mule Creek	8.91	R	3	X	X				X	X		X						
OK220200020090_00	Club Lake	1	L	3	X	X				X	X		X						
OK220200020110_00	Lone Star Steel Lake	1	L	3	X	X				X	X		X						
OK220200020120_00	Little Sans Bois Creek	9.80	R	3	X	X				X	X		X						
OK220200020130_10	Vian Creek	21.42	R	5a	I	I	N				X		F		X				
OK220200020140_00	Little Vian Creek	12.78	R	3	X	X	X				X		X		X				
OK220200020150_00	Pheasant Creek	5.03	R	3	X	X				X	X		X						
OK220200020160_00	Brier Creek	6.43	R	3	X	X				X	X		X						

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OK220200030010_10	Sallisaw Creek	9.00	R	5a	F	F	N				X		N		I		*		
OK220200030010_20	Sallisaw Creek	13.30	R	4a	I	F	F				X		N		I		*		
OK220200030010_30	Sallisaw Creek	14.80	R	2	X	F	I				X		I				*		
OK220200030020_00	Shiloh Branch	3.65	R	3	X	X				X	X		X						
OK220200030030_00	Brushy Creek	13.17	R	3	X	X	X				X		X		X				*
OK220200030035_00	Shiloh Branch, Unnamed Tributary of	3.33	R	3	X	X		X			X			X					
OK220200030040_00	Brushy Creek Lake	358	L	5a	F	F				N	I		F		N				*
OK220200030050_00	Brushy Lake	227	L	3	X	X				X	X		X		X				*
OK220200030060_00	Dry Creek	8.52	R	3	X	X				X	X		X						
OK220200030070_00	Marble City Lake	1	L	3	X	X				X	X		X						
OK220200030080_00	Greasy Creek	9.15	R	3	X	X	X				X		X		X				
OK220200030100_00	Greasy Lake	1	L	3	X	X				X	X		X						
OK220200030120_00	Stilwell City Lake	188	L	5a	F	F				N	F		F		X				
OK220200030130_00	McEachin Hollow	4.29	R	2	I	X				F	X		X						
OK220200040010_00	Sans Bois Creek	6.08	R	3	I	I				I	X		I		I				
OK220200040010_10	Sans Bois Creek	10.76	R	5b	I	N				F	X		N		I				
OK220200040010_20	Sans Bois Creek	5.38	R	3	X	X				X	X		X		X				
OK220200040010_30	Sans Bois Creek	7.14	R	3	X	X				X	X		X		X				
OK220200040010_40	Sans Bois Creek	27.80	R	5a	I	F				N	X		N		I				
OK220200040020_00	Pruit Valley Creek (John Wells (Stigler))	10.02	R	3	X	X				X	X		X						
OK220200040030_00	John Wells Lake (Stigler)	194	L	1	F	F				F	F		F		F				*
OK220200040050_00	Sans Bois Creek, Mountain Fork	13.63	R	4a	F	F				I	X		N						
OK220200040060_00	Beaver Creek	13.04	R	2	X	X				X	X		X			F			
OK220200040070_00	Sans Bois Creek, Unnamed Trib of	1.06	R	3	X	X				X	X		X						
OK220200040080_00	Quinton City Lake	25	L	3	X	X				X	X		X						
OK220200040090_00	Sans Bois Creek, Unnamed Trib of	3.61	R	3	X	X				X	X		X						
OK220200050010_00	Lee Creek	1.87	R	5a	I	F	N				X		N		I		*		
OK220200050010_10	Lee Creek	15.66	R	2	I	F	F				F		F		F			*	
OK220200050020_00	Webber Creek	1.97	R	3	X	X	X				X		X		X			*	
OK220200050030_00	Briar Creek (Bear)	5.81	R	3	X	X	X				X		X		X			*	
OK220200050035_00	Mission Branch	6.47	R	3	X	X				X	X		X						
OK220200050040_00	Little Lee Creek	23.66	R	2	I	F	F				F		F		F			*	
OK220200050050_00	Jenkins Creek	6.67	R	2	I	I	F				X		X		X			*	
OK220200050060_00	Garrison Creek	2.97	R	3	X	X				X	X		X		X				
OK220200050060_10	Garrison Creek	4.16	R	3	X	X				X	X		X		X				
OK220200050070_00	Garrison Creek, Unnamed Tributary of	6.29	R	3	X			X						X					

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OK220200050080_00	Candy Mink Creek	1.89	R	3	X	X	X				X		X		X			*	
OK220300000010_00	Canadian River	25.72	R	2	F	F				I	F	F	F		I				
OK220300000020_00	Taloka Creek	16.00	R	3	I	X				I	X		X		X				
OK220300000030_00	Snake Creek	7.25	R	3	X	X				X	X			X					
OK220300000040_00	Emachaya Creek	16.27	R	5a	X	X				N	X		F		X				
OK220600010015_00	Mud Creek	5.66	R	3	X	X				X	X		X		X				
OK220600010020_00	Eufaula Lake	14689	L	5a	F	F				N	N		I		I				
OK220600010030_00	Brooken Creek	5.75	R	3	X	X				X	X		X						
OK220600010040_00	Brooken Creek, Trib	2.28	R	3	X	X				X	X		X						
OK220600010050_00	Eufaula Lake, Canadian River Arm	19040	L	5a	F	F				N	N		I		I				
OK220600010060_00	Eufaula Lake, Longtown Creek Arm	3857	L	5a	F	I				N	N		I		I				
OK220600010070_10	Longtown Creek	12.14	R	5a	F	F				N	X		N		F				
OK220600010080_00	Lick Creek	2.37	R	3	X	X				X	X		X						
OK220600010100_10	Mill Creek	3.28	R	3	X	X				X	X		X		X				
OK220600010100_20	Mill Creek	24.16	R	4a	I	F				N	X		N		I				
OK220600010110_00	Flat Rock Creek	6.43	R	3	X	X				X	X		X						
OK220600010119_00	Canadian River	5.41	R	3	X	X				X	X		X		X				
OK220600010119_10	Canadian River	39.08	R	5a	I	F				N	N		N		I				
OK220600010120_00	Scipio Creek	20.25	R	3	X	X				X	X		X						
OK220600010128_00	Canadian River, Unnamed Tributary of	1.79	R	3	X	X		X			X			X					
OK220600010130_00	Hay Creek	4.70	R	5c	N	I				N	X		X						
OK220600010140_00	Cindy Creek	7.01	R	2	I	F				I	X		X						
OK220600010150_00	Pond Creek	5.55	R	2	F	F				I	X		X						
OK220600010160_00	Gobbler Creek	7.80	R	5c	I	I				N	X		X		I				
OK220600010170_00	Big Creek	11.00	R	3	I	I				I	X		X						
OK220600010180_00	Leader Creek	6.26	R	3	X					X	X		X						
OK220600010190_00	Middle Creek	11.64	R	5c	X	X				N	X		X						
OK220600010200_00	Coal Creek	8.55	R	2	X	X				F	X		X						
OK220600010210_00	Salt Creek	14.67	R	3	X	X				X	X				X				
OK220600010220_00	Shell Creek	9.50	R	3	X	X				X	X		X						
OK220600010230_00	Shell Creek, Unnamed Trib of	1.56	R	3	X	X				X	X		X						
OK220600020010_10	Coal Creek	9.77	R	5a	X	F				N	X		F		X				
OK220600020010_20	Coal Creek	33.18	R	3	X	X				X	X		X		X				
OK220600020020_00	Bull Creek	7.67	R	3	X	X				X	X		X		X				*
OK220600020030_00	McAlester Lake	1521	L	5a	F	F				N	N		F		I				*
OK220600020050_00	Talawanda 2 Lake	195	L	5a	F	F				N	N		F		X				

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OK220600020060_00	Talawanda 1 Lake	91	L	5a	F	F				N	I		F		X				
OK220600020070_00	Big Wildhorse Creek	23.43	R	3	X	X				X	X		X						
OK220600020080_00	Deer Creek	12.67	R	3	X	X				X	X		X						
OK220600020090_00	Sandy Creek	5.71	R	3	X	X				X	X			X					
OK220600020093_00	Sandy Creek, Unnamed Tributary of	5.19	R	2	I	X				F	X			X					
OK220600020100_00	Coal Creek, Trib A!	1.96	R	3	X	I				I	X		X						
OK220600030010_00	Brushy Creek	2.96	R	5a	N	F				N	N		N		N				
OK220600030010_10	Brushy Creek	25.03	R	5a	F	F				N	I		N		I				
OK220600030010_20	Brushy Creek	11.30	R	5a	I	X				N	X		X		X				
OK220600030020_00	Blue Creek	10.68	R	4a	I	X				I	X		N		X				
OK220600030022_00	Blue Creek, Unnamed Tributary of	2.37	R	3	X	X				X	X		X						
OK220600030025_00	Blue Creek, Hartshorne Trib!	1.66	R	3	X	X				X	X		X						
OK220600030030_00	Rock Creek	6.97	R	3	X	X				X	X		X						
OK220600030040_00	Hartshorne Lake	83	L	3	X	X				X	X		X						
OK220600030050_00	Peaceable Creek	17.14	R	5a	F	F				N	I		N		I				
OK220600030050_10	Peaceable Creek	5.62	R	3	X	X				X	X		X		X				
OK220600030050_20	Peaceable Creek	6.40	R	3	X	X				X	X		X		X				
OK220600030060_00	Chun Creek	3.03	R	2	X	X				X	X		X			F			
OK220600030060_10	Chun Creek	15.33	R	2	X	X				X	X			X		F			
OK220600030065_00	Chun Creek, Unnamed Tributary of	1.89	R	3	X	X		X			X			X					
OK220600030080_00	Bull Creek	3.29	R	5a	X	X				N	I		X						
OK220600030080_10	Bull Creek	6.85	R	3	X	X				X	X		X		X				*
OK220600030090_00	Brown Lake	139	L	5a	F	I				N	I		F		I				*
OK220600040010_00	Gaines Creek	38.22	R	5a	F	F				N	X		F		F				
OK220600040020_00	Boiling Springs Creek	8.04	R	3	X	X				X	X		X						
OK220600040030_00	Beaver Creek	9.11	R	5a	N	I				N	X		N						
OK220600040040_00	Pit Creek	7.65	R	5a	F	N				N	X		X						
OK220600040050_00	Cedar Creek	5.14	R	3	X	X				X	X		X		X				
OK220600040060_00	Buffalo Creek	14.95	R	3	X	X				X	X		X						
OK220600050010_00	Eufaula Lake, Gaines Creek Arm	24990	L	5a	I	F				N	N		I		I				
OK220600050020_00	Gibson Creek	4.97	R	3	X	X		X			X			X					
OK220600050023_00	Gibson Creek, Unnamed Tributary of	0.62	R	3	X	X		X			X			X					
OK220600050030_00	Rock Creek	10.18	R	3	X	X				X	X		X						
OK220600050040_00	Ash Creek	12.72	R	3	X	X				X	X		X		X				
OK220600050050_00	Jones Creek	6.49	R	3	X	X				X	X		X						
OK220600050060_00	Mud Creek	6.85	R	4a	X	X				N	I		X						

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OK220600050070_00	Buck Creek	4.02	R	3	X	X				X	X		X						
OK220600050080_00	Fish Creek	5.07	R	3	X	X				X	X		X						
OK220600050130_00	Wildhorse Creek	6.18	R	3	X	X				X	X		X						
OK220600050150_00	Wildhorse Creek Trib!	1.38	R	3	X	X				X	X		X						
OK310800010010_10	Washita River	32.96	R	3	X	X				X	X		X		X				
OK310800010011_00	Texoma Lake, Washita River Arm, Lower	19214	L	5a	F	N				N	I		I		I				
OK310800010012_00	Rock Creek	8.06	R	3	X	I				X	X		X						
OK310800010020_00	Glasses Creek	10.56	R	2	I	F				I	X		I		I				
OK310800010030_00	Little Glasses Creek	6.27	R	3	X	X				X	X		X						
OK310800010040_00	Carter Lake	108	L	2	F	F				F	I		F		I				
OK310800010050_00	Texoma Lake, Washita River Arm, Upper	6925	L	3	I	I				I	I		I		I				
OK310800010051_00	Old Channel (of Washita)	4.62	R	5b	F	N				I	X		X		F				
OK310800010052_00	Kansas Creek	3.85	R	3	X	X				X	X		X						
OK310800010055_00	Old Channel Washita, Unnamed Tributary of	5.85	R	3	X	X		X			X			X		X			
OK310800010060_00	Butcher Pen Creek	6.52	R	3	X	X				X	X		X						
OK310800010070_00	Polecat Creek	3.91	R	3	X	X				X	X		X						
OK310800010080_00	Bell Creek	4.38	R	3	X	X				X	X		X						
OK310800010090_00	Big Sandy Creek	13.57	R	5a	F	F				N	X		N						
OK310800010100_00	Little Sandy Creek	10.22	R	3	X	X				X	X		X						
OK310800010110_00	Buzzard Creek	9.53	R	3	X	X				X	X		X						
OK310800010120_00	Pennington Creek	36.93	R	2	F	F	F				X		F		F		*		
OK310800010130_00	Cedar Creek	5.27	R	3	X	X				X	X		X						
OK310800010140_00	Reagan Branch	4.05	R	3	X	X				X	X		X						
OK310800010150_00	Keel Creek	2.57	R	3	X	X				X	X		X						
OK310800010160_00	Spring Creek	11.20	R	3	X	X				X	X		X		X				
OK310800010170_00	Rock Creek	17.11	R	3	X	X				X	X		X						
OK310800010180_00	Sandy Creek	6.19	R	3	X	X				X	X		X						
OK310800010190_00	Mill Creek	37.86	R	5a	I	F				I	X		N		I				
OK310800010200_00	Threemile Creek	4.30	R	3	X	X				X	X		X						
OK310800010205_00	Tributary of Threemile Creek	0.88	R	3	X	X		X			X			X					
OK310800010210_00	Turkey Creek	6.29	R	3	X	X				X	X		X						
OK310800010220_00	Camp Creek	6.87	R	3	X	X				X	X		X						
OK310800010230_00	Sycamore Creek	8.52	R	3	X	X				X	X		X						

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OK310800010240_00	Oil Creek	19.47	R	5a	F	F				N	X		N		I				
OK310800010250_00	Bee Branch	4.56	R	3	X	X				X	X		X						
OK310800020010_00	Washita River	31.58	R	5a	I	F				I	N		N		F				
OK310800020010_10	Washita River	16.66	R	2	X	X				F	X		X		X				
OK310800020020_00	Wolf Creek	7.38	R	3	X	X				X	X		X						
OK310800020040_00	Sand Branch	6.24	R	4a	F	F				N	X		I						
OK310800020050_00	Big Branch	12.43	R	3	X	X				X	X		X						
OK310800020060_00	Cool Creek	9.56	R	3	X	X				X	X		X						
OK310800020070_00	Board Hollow Creek	4.75	R	3	X	X				X	X		X						
OK310800020080_00	Rock Creek	4.45	R	3	X	X				X	X		X		X				*
OK310800020090_00	Rock Creek	4.58	R	2	X	X				F	X		X		X				*
OK310800020100_00	Arbuckle Lake (Lake of the Arbuckles)	2350	L	5a	F	F				N	N		F		F				*
OK310800020120_00	Veterans Lake	64	L	3	X	X				X	X		X						
OK310800020121_00	Travertine Creek	2.57	R	2	X	X				F	X		X						
OK310800020122_00	Rock Creek	12.50	R	5c	I	X				N	X		X		X				*
OK310800020124_00	Cochran Creek	7.02	R	3	X	X				X	X		X						
OK310800020130_00	Guy Sandy Creek	17.58	R	3	I	I				I	X		X		I		*		
OK310800020140_00	Falls Creek	6.18	R	3	X	X				X	X		X		X				
OK310800020150_00	Dry Sandy Creek	8.01	R	3	X	X				X	X		X		X				
OK310800020152_00	Dry Sandy Creek, Unnamed Tributary of	1.99	R	3	X	X		X			X			X					
OK310800020160_00	Honey Creek	13.04	R	3	X	X				X	X		X		X		*		
OK310800020170_00	Lick Creek	5.11	R	3	X	X				X	X		X						
OK310800020180_00	Colbert Creek	12.04	R	3	X	X				X	X		X						
OK310800020190_00	Chigley Sandy Creek	14.31	R	5a	I	F				N	X		N		I				
OK310800020200_00	Chigley Sandy Creek, East Branch	6.67	R	3	X	X				X	X		X		X				
OK310800020210_00	Chigley Sandy Creek, West Branch	5.20	R	3	X	X				X	X		X						
OK310800020220_00	Buckhorn Creek	8.54	R	2	X	X				F	X		X						
OK310800030010_00	Caddo Creek	44.08	R	4a	I	F				F	X		N		I				
OK310800030010_06	Caddo Creek	16.82	R	5b	I	N				I	X		X		I				
OK310800030020_00	Sand Creek	7.91	R	3	X	X				I	X		X						
OK310800030030_00	Deadman Branch	6.01	R	3	X	X				X	X		X						
OK310800030035_00	Caddo CreekTributary	2.40	R	3				X						X					
OK310800030040_00	Bullhead Creek	5.24	R	3	X	X				X	X		X						
OK310800030050_00	Buzzard Creek	9.05	R	3	X	X				X	X		X						
OK310800030060_00	Caddo Creek, Unnamed Trib of	3.03	R	3	X	X				X	X		X						

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OK310800030070_00	Ardmore City Lake (City)	142	L	2	F	F				I	F		F						
OK310800030090_00	Ardmore Lake	122	L	3	X	X				X	X		X						
OK310800030100_00	Rock Creek	1.31	R	3	X	X				X	X		X		X				*
OK310800030110_00	Rock Creek	3.42	R	3	X	X				X	X		X		X				*
OK310800030120_00	Site # 18 Lake (Rock Creek)	248	L	2	F	F				I	F		F		F				*
OK310800030130_00	Philips Creek	8.86	R	3	X	X				X	X		X						
OK310800030140_00	Jean Neustadt Lake	462	L	2	F	F				I	F		F		F				
OK310800030150_00	Grindstone Creek	6.32	R	3	X	X				X	X		X						
OK310800030160_00	Sullivan Creek	8.11	R	3	X	X				X	X		X						
OK310800030170_00	Henry House Creek	15.73	R	3	X	X				X	X		X						
OK310800030180_00	Red Branch	4.95	R	3	X	X				X	X		X						
OK310800030190_00	Hickory Creek	7.98	R	3	X	X				X	X		X		X				
OK310800030200_00	Mountain Lake	210	L	2	F	F				I	I		I		I				*
OK310800030210_00	Hickory Creek	4.70	R	3	X	X				X	X		X		X				*
OK310800030220_00	Spring Creek	9.89	R	3	X	X				X	X		X						
OK310800030230_00	Spring Creek, West	9.34	R	3	X	X				X	X		X						
OK310800030240_00	Hug-me-Tight Branch	6.15	R	3	X	X				X	X		X						
OK310800030250_00	Bear Creek	10.44	R	3	I	I				I	X		X						
OK310800030260_00	Russell Pretty Branch	5.17	R	5b	I	N				I	X		X						
OK310800030265_00	Briar Branch	3.88	R	5b	I	N				I	X		X						
OK310800030270_00	Flag Branch	5.70	R	2	I	F				I	X		X						
OK310800030280_00	Pruitt Branch	4.97	R	5b	I	N				I	X		X						
OK310800030285_00	Pruitt West Creek!	3.94	R	5b	I	N				I	X		X		X				
OK310800030290_00	Russell Pretty Branch, Trib A!	1.00	R	5b	I	N				I	X		X						
OK310800030300_00	Tar Branch	6.41	R	2	I	F				I	X		X						
OK310800030310_00	Caddo Creek Graham Branch!	3.31	R	3	I	I				I	X		X						
OK310800030320_00	Caddo Creek Graham Branch! Trib.!	0.99	R	3	X	X				X	X		X						
OK310800030330_00	Caddo Creek, Clemscott Branch!	3.04	R	5b	I	N				I	X		X						
OK310800030340_00	Briar Branch Trib.B!	1.16	R	5b	I	N				I	X		X						
OK310800030350_00	Briar Branch Trib.A!	1.42	R	5b	I	N				I	X		X						
OK310800030360_00	Caddo Creek, Fox Branch!	3.11	R	5b	I	N				I	X		X						
OK310800030370_00	Caddo Creek Trib.!	3.34	R	5b	I	N				I	X		X						
OK310800030380_00	Caddo Creek, North Branch	3.80	R	5b	I	N				I	X		X						
OK310800030390_00	Caddo Creek North Branch Trib!	1.46	R	5b	I	N				I	X		X						
OK310800030400_00	Caddo Creek North Fork!	2.90	R	3	I	I				I	X		X						
OK310800030410_00	Caddo Creek North Fork Trib!	1.08	R	5b	I	N				I	X		X						

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OK310810010010_00	Washita River	21.08	R	3	X	I				I	X		X		I				
OK310810010010_10	Washita River	32.87	R	4a	I	F				N	F		N		I				
OK310810010020_00	Wildhorse Creek	8.97	R	5a	I	F				I	X		N		I				
OK310810010030_00	Whiskey Creek	3.90	R	3	I	I				I	X		X						
OK310810010040_00	Garrison Creek	9.19	R	3	X	X				X	X		X						
OK310810010050_00	Kickapoo Sandy Creek	10.19	R	4a	I	F				F	X		N		I				
OK310810010060_00	Turkey Sandy Creek	7.05	R	3	X	X				X	X		X						
OK310810010062_00	Turkey Sandy Creek, Unnamed Tributary of	3.75	R	3	X	X				X	X		X						
OK310810010065_00	West Sandy Creek	1.40	R	3	X	X				X	X		X						
OK310810010065_10	West Sandy Creek	5.97	R	3	X	X		X			X			X					
OK310810010070_00	Red Branch	7.07	R	3	I	I				I	X			X					
OK310810010080_00	Negro Sandy Creek	7.46	R	3	I	I				I	X		X						
OK310810010090_00	Rush Creek	3.79	R	2	I	F		I			X			X					
OK310810010090_10	Rush Creek	10.30	R	5a	I	N				F	X		N						
OK310810010100_00	Cherokee Sandy Creek	16.34	R	3	I	I				I	X		X		I				
OK310810010110_00	Wolf Creek	4.72	R	2	I	F				I	X		X						
OK310810010120_00	Peavine Creek	3.81	R	3	I	I				I	X		X		I				
OK310810010130_00	Peavine Creek, East	9.71	R	3	X	X				X	X		X						
OK310810010150_00	Byars Lake	75	L	3	X	X				X	X		X						
OK310810010160_00	Little Peavine Creek	6.83	R	3	X	X				X	X		X						
OK310810010170_00	Washington Creek	0.62	R	3	X	X				X	X		X		X				
OK310810010180_00	Pauls Valley Lake	750	L	5a	F	F				N	I		F		I				*
OK310810010185_00	Keel Sandy Creek	6.49	R	3	X	X				X	X		X						
OK310810010186_00	RC Longmire Lake	918	L	5a	F	F				N	I		F						
OK310810010190_00	Washington Creek	6.49	R	5a	F	F				N	X		N		I				*
OK310810010200_00	Owl Creek	9.89	R	3	X	X				X	X		X						
OK310810010205_00	Cheek Creek	5.04	R	3	X	X				X	X		X						
OK310810010210_00	Gaddis Creek	8.05	R	3	X	X				X	X		X						
OK310810010220_00	Maysville Lake (Wiley Post)	302	L	5a	F	F				N	I		N		I				
OK310810010230_00	Beef Creek	6.88	R	2	X	X		X			X			X		F			
OK310810010232_00	Beef Creek, Unnamed Trib of	4.04	R	2	X	X		X						X		F			
OK310810010240_00	Brady creek	13.05	R	3	I	I				I	X		X						
OK310810010250_00	Gentle Horse Creek!	1.11	R	3	X	X				I	X		X						
OK310810010260_00	Meandering Creek!	4.31	R	3	X	X				X	X		X						
OK310810010270_00	Rush Creek, Trib G!	4.03	R	4a	I	N				I	X		X						

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OK310810010280_00	Washita River Trib 14-1N-1E!	1.71	R	5b	X	N				X	X		X						
OK310810010290_00	Washington Creek, Unnamed Trib of	6.15	R	3	X	X				X	X		X		X				*
OK310810020010_00	Washita River	63.16	R	5a	I	F				N	N		N		I				
OK310810020020_00	Finn Creek	14.15	R	4a	F	F				I	X		N		I				
OK310810020030_00	Turkey Creek	8.46	R	3	X	X				X	X		X						
OK310810020040_00	Second Creek	6.25	R	3	X	X				X	X		X						
OK310810020050_00	Criner Creek	11.76	R	2	F	I				I	X		X		F				
OK310810020060_00	Wolf Creek	4.00	R	3	X	X				X	X		X						
OK310810020070_00	Panther Creek	4.59	R	3	I	I				I	X		X						
OK310810020080_00	Wildcat Creek	2.78	R	3	X	X				X	X		X						
OK310810020090_00	Criner Creek, North	5.49	R	3	X	X				X	X		X						
OK310810020100_00	Happy Hollow Creek	6.55	R	2	I	F				I	X		X						
OK310810020110_00	Bear Creek	8.24	R	3	X	X				X	X		X						
OK310810020120_00	Hybarger Creek	6.16	R	3	X	X				X	X		X						
OK310810020130_00	Cavel Creek	5.70	R	3	X	X				X	X		X						
OK310810020140_00	Rounds Creek	7.96	R	3	X	X				X	X		X						
OK310810020150_00	Larimore Creek	6.49	R	3	X	X				X	X		X						
OK310810020155_00	Sandy Creek	8.98	R	3	X	X				X	X		X						
OK310810020160_00	Colbert Creek	8.59	R	3	X	X				X	X		X		X				
OK310810020170_00	Roaring Creek	18.27	R	5a	F	F				N	X		N		F				
OK310810020180_00	Roaring Creek, East	7.10	R	3	I	I				I	X		X						
OK310810020190_00	Middle Roaring Creek	5.92	R	3	X	X				X	X		X						
OK310810020200_00	Laflin Creek	12.60	R	5c	F	F				N	X		N		F				
OK310810020210_00	Soldier Creek	4.32	R	3	X	X				X	X		X						
OK310810020220_00	Winter Creek	12.44	R	5c	I	F				N	X		I		I				
OK310810020230_00	Dry Creek	8.85	R	3	X	X				X	X		X						
OK310810020250_00	Golden Trend Creek	5.74	R	2	F	F				I	X		X						
OK310810020260_00	Stealy Creek!	5.15	R	5b	I	N				I	X		X						
OK310810030010_00	Wildhorse Creek	22.30	R	5a	I	N				N	X		N		I				
OK310810030020_00	Sandy Creek	16.06	R	3	X	X				X	X		X		X				
OK310810030025_00	Squirrel Creek	8.26	R	3	I	I				I	X		X						
OK310810030030_00	Fivemile Creek	7.16	R	3	I	I				I	X		X						
OK310810030040_00	Rock Creek	9.29	R	3	X	X				X	X		X		X				
OK310810030060_00	Elmore City Lake	69	L	3	X	X				X	X		X		X				
OK310810030070_00	Eightmile Creek	10.46	R	3	I	I				I	X		X						
OK310810030080_00	Salt Creek	19.05	R	5a	I	N				N	X		N		I				

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OK310810030084_00	Honey Creek	6.86	R	2	I	F				I	X		X						
OK310810030090_00	Wildcat Creek	5.56	R	3	X	X				X	X		X						
OK310810030100_00	Massey Creek	7.40	R	3	X	X				X	X		X						
OK310810030110_00	Flat Creek	5.64	R	2	I	F				I	X		X						
OK310810030120_00	Sandy Bear Creek	10.37	R	2	I	F				I	X		X						
OK310810030130_00	Countyline Creek	4.44	R	5b	I	N				I	X		X						
OK310810030135_00	Pernell School Creek!	2.06	R	2	I	F				I	X		X						
OK310810030140_00	N. Pernell Creek, North	3.34	R	5b	I	N				I	X		X						
OK310810030145_00	Pernell Creek!	2.96	R	5b	I	N				I	X		X						
OK310810030150_00	Salt Creek, Eola Branch	3.75	R	2	I	F				I	X		X						
OK310810030160_00	Pernell Creek, Trib.B!	0.77	R	5b	I	N				I	X		X						
OK310810030170_00	Pernell Creek, Trib. A!	1.11	R	3	I	I				I	X		X						
OK310810030180_00	Sandy Bear Creek, West Fork!	5.46	R	5b	I	N				I	X		X						
OK310810030190_00	Flat Creek Trib.!	2.33	R	3	I	I				I	X		X						
OK310810030200_00	South Tatums!	1.57	R	5b	I	N				I	X		X						
OK310810030210_00	Ratliff East Creek!	4.42	R	5b	I	N				I	X		X						
OK310810030220_00	Ratliff East Creek! Trib!	2.21	R	2	I	F				I	X		X						
OK310810030230_00	Ratliff West Creek!	3.73	R	3	X	X				X	X		X						
OK310810030240_00	Ratliff West Creek! Trib.!	0.98	R	5b	I	N				I	X		X						
OK310810030250_00	Countyline Creek Trib.3!	1.15	R	5b	I	N				I	X		X						
OK310810030260_00	Wildhorse Creek Trib.B!	3.30	R	5b	I	N				I	X		X						
OK310810030270_00	Wildhorse Creek Trib. A!	2.09	R	5b	I	N				I	X		X						
OK310810040010_00	Wildhorse Creek	19.12	R	2	I	F				I	X		X		I				
OK310810040015_00	West County Line Creek	3.28	R	5b	I	N				I	X		X						
OK310810040020_00	Panther Creek	5.36	R	5b	I	N				I	X		X						
OK310810040030_00	Black Bear Creek	12.30	R	2	I	F				I	X		X		I				
OK310810040040_00	Black Bear Creek	5.82	R	3	X	X				X	X		X		X				*
OK310810040050_00	Fuqua Lake	1500	L	5a	F	F				N	F		F		F				*
OK310810040060_00	Bluff Creek	9.19	R	2	I	F				I	X		X						
OK310810040070_00	Fitzpatrick Creek	1.05	R	3	X	X				X	X		X		X				*
OK310810040080_00	Duncan Lake	500	L	5a	F	F				F	F		F		N				*
OK310810040090_00	Fitzpatrick Creek	5.03	R	3	X	X				X	X		X		X				*
OK310810040100_00	Dry Creek	7.90	R	3	I	I				I	X		X						
OK310810040110_00	Clear Creek	3.13	R	3	X	X				X	X		X		X				
OK310810040120_00	Clear Creek Lake (Chisholm)	722	L	5a	F	N				F	F		F		N				*
OK310810040130_00	Clear Creek	6.08	R	3	X	X				X	X		X		X				*

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OK310810040140_00	Wildhorse Creek	11.13	R	5c	I	F				N	X		N		I				*
OK310810040150_00	Humphreys Lake	882	L	4a	F	F				I	F		F		N				*
OK310810040160_00	McCubbin Creek	6.00	R	3	X	X				X	X		X		X				*
OK310810040170_00	Owens Creek	5.23	R	5c	I	F				N	X		X						
OK310810040180_00	West County Line Creek Trib.!	2.53	R	5b	I	N				I	X		X						
OK310810040190_00	Panther Creek E. Alma Branch!	2.42	R	3	I	I				I	X		X						
OK310810040200_00	Black Bear Trib 10!	2.65	R	5b	I	N				I	X		X						
OK310810040210_00	Black Bear Trib 27-1N-4W!	2.06	R	3	I	I				I	X		X						
OK310810040220_00	Black Bear Trib 6 1N-4W	2.21	R	3	I	I				I	X		X						
OK310810040230_00	Northwest Alma Creek	1.87	R	5b	I	N				I	X		X						
OK310810040240_00	Velma East Creek!	3.96	R	5b	I	N				I	X		X						
OK310810040250_00	Velma Creek!	2.42	R	5b	I	N				I	X		X						
OK310810040260_00	Velma Creek West Branch!	1.25	R	5b	I	N				I	X		X						
OK310810040270_00	Passmore Cemetery Creek!	3.75	R	3	I	I				I	X		X						
OK310810040280_00	Passmore Cemetery Creek Trib B!	2.03	R	5b	I	N				I	X		X						
OK310810040290_00	Wildhorse Creek Trib 10-1S-5W!	4.15	R	5b	I	N				I	X		X						
OK310810040300_00	Wildhorse Creek Trib 31-1N-5W!	1.29	R	3	I	I				I	X		X						
OK310810050010_00	Rush Creek	58.40	R	5c	F	F				N	X		X						
OK310810050020_00	Panther Creek	4.89	R	2	I	F				I	X		X						
OK310810050030_00	Coon Creek	3.86	R	3	I	I				I	X		X						
OK310810050040_00	Murray Creek	6.66	R	3	I	I				I	X		X						
OK310810050050_00	Fourmile Creek	4.66	R	3	I	I				I	X		X						
OK310810050060_00	Taylor Lake (Marlow City)	227	L	5a	I	F				N	F		F		F				
OK310810050080_00	Rush Creek, Trib A!	3.35	R	3	I	I				I	X		X						
OK310810050090_00	Rush Creek, Trib B!	3.41	R	3	I	I				I	X		X						
OK310810050100_00	Rush Creek, Trib C!	1.51	R	3	I	I				I	X		X						
OK310810050110_00	Rush Creek, Trib D!	0.71	R	3	I	I				I	X		X						
OK310810050120_00	Rush Creek, Trib E!	3.40	R	4a	I	N				I	X		X						
OK310810050130_00	Cox City!	3.21	R	4a	I	N				I	X		X						
OK310810050140_00	West Cox City!	1.50	R	4a	I	N				I	X		X						
OK310810050160_00	Rush Creek, Trib F!	1.91	R	3	I	I				I	X		X						
OK310820010010_00	Washita River	10.80	R	2	X	X				F	I		X		I				
OK310820010010_10	Washita River	40.49	R	3	I	I				I	I		X		I				
OK310820010030_00	Bitter Creek	6.02	R	4a	F	F				I	X		N		I				
OK310820010040_00	Bitter Creek, East	10.74	R	3	I	I				I	X		X		X				
OK310820010050_00	Spring Creek	6.33	R	3	X	X				X	X		X						

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OK310820010060_00	Bitter Creek, West	20.96	R	3	I	I				I	X		X		X				
OK310820010070_00	Brushy Creek	11.81	R	3	X	X				X	X		X						
OK310820010090_00	Shannon Springs Lake	40	L	3	X	X				X	X		X						
OK310820010100_00	Line Creek	9.54	R	3	I	I				I	X		X						
OK310820010110_00	Rock Hollow Creek	10.77	R	3	X	X				X	X		X						
OK310820010120_00	Tony Hollow Creek	7.33	R	3	X	X				X	X		X						
OK310820010130_00	Otter Creek	5.22	R	3	X	X				X	X		X						
OK310820010140_00	Salt Creek	18.52	R	3	I	I				I	X		X						
OK310820010150_00	Salt Creek, West Fork	12.47	R	3	X	X				X	X		X						
OK310820010160_00	Ionine Creek	6.45	R	5a	I	I				F	X		N		I				
OK310820010170_00	Jack Hollow Creek	4.87	R	5b	I	N				I	X		X		I				
OK310820010180_00	Jack Hollow Creek, East	6.43	R	3	X	X				X	X		X						
OK310820010190_00	Jack Hollow Creek, West	6.91	R	3	X	X				X	X		X						
OK310820010200_00	Ionine Creek, East	5.81	R	3	I	X				I	X		X						
OK310820010210_00	Ionine Creek, West	8.56	R	3	I	X				I	X		X						
OK310820010220_00	County Line Creek	3.05	R	3	X	X				X	X		X						
OK310820010230_00	Jack Hollow Creek, Trib A!	3.13	R	3	I	I				I	X		X						
OK310820020010_00	Little Washita River	36.98	R	5a	F	N				N	X		N		F				
OK310820020014_00	Erica's trib	4.39	R	3	I	I				I	X		X						
OK310820020016_00	Alejandra's Trib	2.07	R	3	I	I				I	X		X						
OK310820020020_00	Rock Creek	5.48	R	3	I	I				I	X		X						
OK310820020030_00	Hog Creek	3.84	R	3	X	X				X	X		X						
OK310820020040_00	Latheran Creek	6.70	R	3	X	X				X	X		X						
OK310820020050_00	Bills Creek	1.90	R	3	X	X				X	X		X						
OK310820020060_00	Bills Creek, East	7.27	R	2	I	F				I	X		X						
OK310820020070_00	Louis Burtschi Lake	180	L	1	F	F				F	F		F						
OK310820020080_00	Bills Creek, West	6.54	R	5b	I	N				I	X		X						
OK310820020090_00	Little Rush Creek	5.40	R	2	F	I				F	X		X						
OK310820020100_00	Charlie Creek	6.08	R	3	I	I				I	X		X						
OK310820020110_00	McCarty Creek	8.49	R	5b	F	N				I	X		X						
OK310820020120_00	Chetonia Creek	5.39	R	3	I	I				I	X		X						
OK310820020140_00	Allen's Lake	10	L	5b	X	N				X	X		X						
OK310820020150_00	Gladys Creek	2.08	R	3	X	X		X			X			X					
OK310820020150_10	Gladys Creek	2.41	R	3	X	X				X	X		X		X				
OK310830010010_00	Washita River	20.68	R	5a	I	F				N	F		N		F				
OK310830010010_10	Washita River	43.32	R	3	X	I				I	I		X		I				

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OK310830010030_00	Delaware Creek	11.68	R	5a	I	N				N	X			F					
OK310830010050_00	Tonkawa Creek	13.71	R	3	I	I				I	X		X						
OK310830010060_00	Hog Creek	7.93	R	3	I	I				I	X		X						
OK310830010070_00	Leaper Creek	2.92	R	3	X	X				X	X		X						
OK310830010080_00	Public Service #3 Lake	575	L	2	F	F				I	I		I						
OK310830010090_00	Deep Creek	7.48	R	3	X	X				X	X		X						
OK310830010100_00	Two Hatchet Creek	4.80	R	3	X	X				X	X		X						
OK310830010101_00	Dry Creek (Fast Runner)	7.32	R	3	X	X				X	X		X						
OK310830010120_00	Punjo Creek	5.21	R	3	X	X				X	X		X						
OK310830010130_00	Spring Creek	8.32	R	3	X	X				X	X		X						
OK310830010140_00	Gokey Creek	10.61	R	3	I	I				I	X		X						
OK310830010150_00	Cedar Creek	6.44	R	3	X	X				X	X		X						
OK310830010160_00	Cedar Creek	10.56	R	3	I	I				I	X		X						
OK310830020010_00	Washita River	29.70	R	5c	I	F				N	F		X		F				
OK310830020020_00	Stinking Creek	18.36	R	5b	F	N				N	X		N		I				
OK310830020030_00	Saddle Mountain Creek	21.19	R	3	I	I				I	X		X						
OK310830020040_00	Pecan Creek	14.53	R	3	X	X				X	X		X						
OK310830020050_00	Cottonwood Creek	4.35	R	3	X	X				X	X		X						
OK310830020055_00	Who Dat	1.63	R	3	X	X				X	X		X						
OK310830020060_00	Rainy Mountain Creek	2.18	R	3	I	I				I	X		X						
OK310830020060_10	Rainy Mountain Creek	32.33	R	5b	F	N				N	X			F					
OK310830020070_00	Sugar Creek	19.43	R	3	X	X				X	X		X						
OK310830020080_00	Longhorn Creek	10.95	R	3	X	X				X	X		X						
OK310830020090_00	Oak Creek	11.93	R	3	I	I				I	X		X		X				
OK310830020100_00	Gyp Creek	6.29	R	3	X	X				X	X		X						
OK310830020110_00	Vanderwork Lake	135	L	2	I	F				F	I		F						
OK310830020120_00	Spring Creek	7.44	R	3	X	X				X	X		X						
OK310830030010_00	Washita River	49.32	R	5b	I	N				N	F		N		F				
OK310830030010_10	Washita River	33.45	R	2	X	F				I	I		X		I				
OK310830030020_00	Gyp Creek	8.66	R	3	X	X				X	X		X						
OK310830030030_00	Friendship Creek	6.60	R	3	X	X				X	X		X						
OK310830030050_00	Cloud Chief Lake	80	L	3	X	X				X	X		X						
OK310830030060_00	Two Baby Creek	9.85	R	3	X	X				X	X		X						
OK310830030070_00	Cavalry Creek	20.30	R	5a	F	N				I	X		N		I				
OK310830030080_00	Cavalry Creek, South Fork	14.10	R	2	I	I				F	X		X						
OK310830030090_00	Cavalry Creek, North	9.85	R	2	X	X		X			X			X		F			

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OK310830030095_00	Cavalry Creek, Unnamed Tributary of North	6.84	R	2	X	X		X			X			X		F			
OK310830030100_00	Boggy Creek	24.89	R	4a	F	F				F	X		N						
OK310830030110_00	Boggy Creek, South	7.24	R	3	X	X				X	X		X						
OK310830030120_00	Boggy Creek, West	4.73	R	3	X	X				X	X		X						
OK310830030130_00	Adams Lake	150	L	3	X	X				X	X		X						
OK310830030140_00	Corn Creek	9.69	R	3	I	I				I	X		X						
OK310830030150_00	Coffee Creek	11.94	R	3	X	X				X	X		X						
OK310830030160_00	Gyp Creek	11.14	R	3	I	I				I	X		X						
OK310830030170_00	Bear Creek	17.68	R	3	X	X				X	X		X						
OK310830030180_00	Turtle Creek	15.24	R	3	X	X				X	X		X						
OK310830030190_00	Beaver Creek	22.54	R	5a	F	N				N	X			F					
OK310830030200_00	Barnitz Creek	8.87	R	5a	F	N				N	X		N		I				
OK310830030210_00	Barnitz Creek, East	26.48	R	5b	I	N				I	X		N		X				
OK310830030220_00	Dry Creek	15.44	R	3	X	X				X	X		X						
OK310830030230_00	Barnitz Creek, West	38.35	R	5a	F	N				N	X		N		I				
OK310830030240_00	Leedey Lake	80	L	3	X	X				X	X		X						
OK310830030250_00	Sand Creek	6.01	R	3	X	X				X	X		X						
OK310830030260_00	Turkey Creek	12.78	R	3	I	I				I	X		X						
OK310830030270_00	Turkey Creek	5.79	R	3	X	X				X	X		X						
OK310830030280_00	Clinton Lake	335	L	5a	I	F				N	F		I		N				*
OK310830030290_00	Monument Creek	3.78	R	3	X	X				X	X		X						
OK310830030300_00	Comet Creek	8.52	R	3	X	X				X	X		X						
OK310830030310_00	Oak Creek	22.15	R	3	I	I				I	X		X		X				
OK310830040010_00	Spring Creek	16.76	R	5a	I	N				N	X		N		I				
OK310830040020_00	Chickasha Lake	820	L	2	I	F				I	F		F		F				
OK310830040030_00	Stinking Creek	11.33	R	5a	F	N				I	X		N		I				
OK310830050010_00	Sugar Creek	32.40	R	5a	I	N				N	X			F					
OK310830050020_00	Camp Creek	3.13	R	3	X	X				X	X		X						
OK310830050030_00	Yellow Creek	4.69	R	3	X	X				X	X		X						
OK310830050040_00	White Bread Creek	9.52	R	3	X	X				X	X		X						
OK310830050050_00	Keechi Creek	8.01	R	3	X	X				X	X		X						
OK310830050060_00	Wildcat Creek	8.38	R	3	X	X				X	X		X						
OK310830050070_00	Medicine Creek	7.40	R	3	X	X				X	X		X						
OK310830050080_00	Kickapoo Creek	7.65	R	3	X	X				X	X		X						
OK310830050090_00	Devil's Canyon Creek	7.67	R	3	X	X				X	X		X						

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OK310830050100_00	Red Rock Canyon Creek	5.43	R	3	X	X				X	X		X						
OK310830050110_00	Zobisch Lake Creek	2.35	R	3	X	X				X	X		X						
OK310830050120_00	Zobisch Lake	9	L	3	X	X				X	X		X						
OK310830060010_00	Cobb Creek	8.13	R	3	X	X				I	X		X		X				*
OK310830060020_00	Fort Cobb Lake	4100	L	5a	I	F				N	F		F		N				*
OK310830060030_00	Willow Creek	9.24	R	4a	F	F				I	X		N		F				*
OK310830060040_00	Lake Creek	16.27	R	2	F	F				I	X		X		I				*
OK310830060050_00	Cobb Creek	17.34	R	4a	F	F				F	X		N		I				*
OK310830060060_00	Camp Creek	4.42	R	3	X	X				X	X		X		X				*
OK310830060070_00	Crooked Creek	6.05	R	3	X	X				X	X		X		X				*
OK310830060080_00	Fivemile Creek	12.22	R	4a	F	F				F	X		N		I				*
OK310830060090_00	Buck Creek	6.59	R	3	X	X				X	X		X		X				*
OK310830060100_00	Spring Creek	7.00	R	3	X	X				X	X		X		X				*
OK310830060110_00	Bull Creek	4.29	R	3	X	X				X	X		X		X				*
OK310830060120_00	Cobb Creek	7.32	R	3	X	X				X	X		X		X				*
OK310830060130_00	Crowder Lake	158	L	5a	I	F				N	F		F		N				*
OK310830060140_00	Possum Hollow Creek	4.05	R	3	X	X				X	X		X		X				*
OK310830060150_00	Crowder Lake, NW Trib to	2.00	R	3	X	X				X	X		X		X				*
OK310830060160_00	Crowder Lake, SW Trib to	1.18	R	3	X	X				X	X		X		X				*
OK310840010010_00	Washita River	18.62	R	5a	F	F				N	N		N		F				
OK310840010020_00	Foss Lake	8800	L	5a	F	F				N	I		I		I				
OK310840010030_00	Soldier Creek	6.47	R	3	X	X				X	X		X						
OK310840010040_00	Little Panther Creek	9.20	R	3	I	I				I	X		X						
OK310840010050_00	Panther Creek	10.94	R	3	I	I				I	X		X		X				
OK310840010060_00	Quartermaster Creek	32.98	R	5a	I	N				N	X		N		I				
OK310840010070_00	Wild Horse Creek	10.88	R	3	X	X				I	X		X						
OK310840010080_00	North Branch	18.97	R	3	X	X		X			X			X					
OK310840010090_00	Dry Branch	5.45	R	3	X	X				X	X		X						
OK310840010100_00	Hay Creek	13.42	R	3	X	X				X	X		X		X				
OK310840010110_00	Cyclone Creek	6.47	R	3	X	X				X	X		X						
OK310840010120_00	White Shield Creek	18.19	R	3	I	X		I			X			X					
OK310840010130_00	Ninemile Creek	18.05	R	3	I	I				I	X		X						
OK310840010140_00	Big Kiowa Creek	14.93	R	3	X	X				X	X		X						
OK310840020010_00	Washita River	61.94	R	4a	F	F				N	X		I		I				
OK310840020020_00	Sandstone Creek	14.59	R	5b	F	N				F	X		N		I				
OK310840020040_00	Sandstone Creek, East Fork	9.57	R	3	X	X				X	X		X						

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OK310840020050_00	Currant Creek	8.04	R	3	X	X				X	X		X						
OK310840020060_00	Taylor Lake	100	L	3	X	X				X	X		X						
OK310840020070_00	Sandstone Creek	8.43	R	2	I	X				F	X		X		X				
OK310840020080_00	Baker Lake	118	L	3	X	X				X	X		X						
OK310840020090_00	Marshall Lake	80	L	3	X	X				X	X		X						
OK310840020100_00	Beaverdam Creek	8.61	R	3	X	X				X	X		X						
OK310840020110_00	Wild Horse Creek	11.28	R	3	X	X				X	X		X						
OK310840020120_00	Dead Indian Creek	15.65	R	2	X	F				I	X		F		X				
OK310840020130_00	Dead Indian Lake	79	L	3	X	X				X	X		X						
OK310840020140_00	Sergeant Major Creek	11.55	R	3	I	I		X			X			X	I				
OK310840020150_00	Dry Creek	5.33	R	3	X	X				X	X		X						
OK310840020160_00	Sergeant Major Creek, East Fork	5.70	R	2	F	F				X	X		X						
OK310840020170_00	Plum Creek	4.11	R	3	X	X				X	X		X						
OK310840020180_00	Brokenleg Creek	8.00	R	3	X	X				X	X		X						
OK310840020190_00	Croton Creek	16.14	R	3	X	X				X	X		X		X				
OK310840020200_00	Croton Creek, East	7.30	R	3	X	X				X	X		X						
OK310840020210_00	Rush Creek	16.33	R	5a	I	I				N	X		X		X				
OK310840020220_00	Croton Creek, Unnamed Trib of	3.91	R	3	X	X				X	X		X						
OK310840020230_00	Skipout Lake (S-53)	47	L	3	X	X				X	X		X						
OK310840020240_00	Spring Creek	5.90	R	5a	I	F				N	X		N						
OK310840020250_00	Spring Creek Lake (S-42)	40	L	3	X	X				X	X		X						
OK310840020260_00	Turkey Creek	8.14	R	3	X	X				X	X		X						
OK310840020270_00	Trunk Creek	5.25	R	3	X	X				X	X		X						
OK311100010020_00	Texoma Lake	15743	L	2	F	F				I	I		I		I				
OK311100010030_00	Texoma Lake, Red River Arm, Lower	31081	L	2	F	F				I	I		I		I				
OK311100010040_00	McLaughlin Creek	2.37	R	3	X	X				X	X		X						
OK311100010050_00	Caney Creek	5.28	R	3	X	X				X	X		X						
OK311100010060_00	Happy Hollow Creek	2.05	R	3	X	X				X	X		X						
OK311100010070_00	Buncombe Creek	9.90	R	3	X	X				X	X		X						
OK311100010080_00	Texoma Lake, Red River Arm, Upper	11466	L	5a	I	F				N	I		I		I				
OK311100010090_00	Brier Creek	12.08	R	3	X	X				X	X		X						
OK311100010100_00	House Creek	7.07	R	3	X	X				X	X		X						
OK311100010110_00	Hauani Creek	1.25	R	3	X	X				X	X		X						
OK311100010120_00	Little Hauani Creek	12.26	R	3	X	X				X	X		X						
OK311100010130_00	Hauani Creek	10.03	R	3	X	X				X	X		X		X				
OK311100010140_00	Hauani Lake	300	L	3	X	X				X	X		X		X				

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OK311100010150_00	Wilson Creek	12.68	R	3	X	X				X	X		X						
OK311100010170_00	Pumpkin Creek	7.01	R	3	X	X				X	X		X						
OK311100010180_00	Oil Creek	8.40	R	3	X	X				X	X		X						
OK311100010190_00	Red River	47.84	R	5a	I	F				I	N		I		F				
OK311100010190_10	Red River	31.99	R	3	X	X				X	X		X		X				
OK311100010190_20	Red River	46.43	R	5a	I	F				N	N		N		I				
OK311100010190_30	Red River	10.36	R	3	X	X				X	X		X		X				
OK311100010200_00	Corcoran Creek	11.75	R	3	I	I				I	X		X						
OK311100010210_00	Leeper Lake	150	L	2	I	I				I	I		F						
OK311100010220_00	Clouds Branch	9.02	R	3	X	X				X	X		X						
OK311100010230_00	Bills Creek	8.43	R	5a	I	X				I	X		N						
OK311100010240_00	Rock Creek	5.82	R	3	X	X				X	X		X						
OK311100010250_00	Walnut Bayou	10.82	R	5a	I	F				N	F		N		F				
OK311100010260_00	Dry Creek	7.23	R	3	X	X				X	X		X						
OK311100010270_00	Coffeepot Creek	6.76	R	3	X	X				X	X		X						
OK311100010290_00	Red Creek	17.42	R	5a	F	F				N	X		N		I				
OK311100010295_00	Cat Creek	5.82	R	3	X	X				X	X		X						
OK311100010300_00	Fleetwood Creek	10.91	R	5a	I	F				N	X		N		I				
OK311100020010_10	Hickory Creek	37.28	R	5a	I	F				F	I		N		I				
OK311100020010_20	Hickory Creek (East)	3.57	R	3	X	X				X	X		X						
OK311100020020_00	Anadarche Creek	2.28	R	3	X	X				X	X		X		X				
OK311100020050_00	Anadarche Creek, East	3.18	R	3	X	X				X	X		X		X				*
OK311100020070_00	Fourche Maline Creek	4.56	R	3	X	X				X	X		X		X				*
OK311100020080_00	Anadarche Creek, West	4.51	R	3	X	X				X	X		X		X				*
OK311100020090_00	Lake Murray	5458	L	5a	F	F				N	F		F		F				*
OK311100020100_00	Little Hickory Creek	9.13	R	3	X	X				X	X		X						
OK311100020110_00	Hickory Creek, South Branch	7.28	R	3	X	X				X	X		X						
OK311100020120_00	Spring Branch	6.10	R	3	X	X				X	X		X						
OK311100030010_00	Walnut Bayou	14.97	R	3	I	I				X	X		I		X				
OK311100030020_00	Simon Creek	19.84	R	2	I	F				I	X		X		I				
OK311100030030_00	Simon Creek, North	5.44	R	3	X	X				X	X		X						
OK311100030032_00	Sparks Branch	4.38	R	3	X	X				X	X		X						
OK311100030040_00	Cherokee Creek	3.62	R	3	X	X				X	X		X						
OK311100030050_00	Polecat Creek	5.32	R	3	I	I				I	X		X						
OK311100030060_00	Bull Creek	7.04	R	3	X	X		X			X			X					
OK311100030070_00	Walnut Creek (Walnut Bayou)	28.38	R	3	I	I				I	X		X		I				

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OK311100030080_00	Demijohn Creek	9.82	R	3	X	X				X	X		X						
OK311100030090_00	Cottonwood Creek	11.37	R	3	I	I				I	X		X		I				
OK311100030100_00	Red Oak Creek	4.62	R	3	I	I				I	X		X						
OK311100030110_00	Oil Branch	0.84	R	2	I	F				I	X		X						
OK311100030120_00	Oil Branch	5.01	R	3	X	X				X	X		X						
OK311100030130_00	Healdton Municipal Lake	370	L	5a	F	F				N	I		F		I				
OK311100030140_00	Whiskey Creek	5.90	R	2	I	F		X			X			X					
OK311100030150_00	Red Branch	3.76	R	3	X	X				X	X		X						
OK311100030160_00	Rexroat Branch!	4.48	R	3	X	I				I	X		X						
OK311100030170_00	Healdton Branch!	2.37	R	3	I	I				I	X		X						
OK311100030180_00	Walnut Creek, Unnamed Tributary of	7.56	R	3	X	X		X			X			X					
OK311100030190_00	Cottonwood Creek, Unnamed Tributary of	4.90	R	3	X	X		X			X			X					
OK311100040010_00	Mud Creek	49.53	R	5a	I	F				N	N		N		I				
OK311100040020_00	Clear Creek	15.91	R	3	I	I				I	X		X		X				
OK311100040030_00	Mud Creek, North	27.87	R	3	I	I		I			X		I		I				
OK311100040035_00	North Mud Creek, Unnamed Tributary of	1.42	R	3	X	X		X			X			X					
OK311100040040_00	Post Oak Creek	11.07	R	3	X	X				X	X		X						
OK311100040045_00	Oak Creek!	3.04	R	5b	I	N				I	X		X						
OK311100040050_00	Long Branch	8.62	R	3	X	X				X	X		X						
OK311100040060_00	Fox Branch	5.31	R	2	F	I				I	X		X						
OK311100040070_00	Cottonwood Creek	7.33	R	2	I	F				I	X		X						
OK311100040080_00	Mud Creek, Lower West	27.81	R	5a	F	F				N	X		N						
OK311100040090_00	Post Oak Creek	7.53	R	5b	I	N				I	X		X						
OK311100040100_00	Negro Creek	14.33	R	3	I	I				I	X		X		I				
OK311100040110_00	Willow Branch	14.33	R	2	I	F				I	X		X		I				
OK311100040120_00	Crooked Creek	9.69	R	3	X	X				X	X		X		X				
OK311100040130_00	Deer Creek	13.63	R	3	I	I				I	X		X		I				
OK311100040140_00	Deer Creek, South Fork	5.28	R	3	I	I				I	X		X						
OK311100040150_00	Boardtree Creek	5.79	R	3	I	I				I	X		X						
OK311100040155_00	Boardtree Creek, Unnamed Trib of	4.31	R	3	I	I				I	X		X						
OK311100040160_00	Comanche Creek	7.80	R	3	X	X				X	X		X						
OK311100040170_00	Comanche Lake	184	L	2	F	F				I	F		F						
OK311100040180_00	Mud Creek, East	13.86	R	3	I	I				I	X		X						
OK311100040190_00	Weed Hollow Creek	3.70	R	3	X	X				X	X		X						

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OK311100040200_00	Mud Creek, West	14.07	R	3	I	I				I	X		X		I				
OK311100040210_00	Pine Creek	10.96	R	2	I	F				I	X		X						
OK311100040220_00	Mud Creek	17.96	R	3	X	X				X	X		X						
OK311200000010_00	Red River	30.02	R	5a	I	N				N	I		N		N				
OK311200000010_10	Red River	6.58	R	3	X	X				X	X		X		X				
OK311200000013_00	Little Rain	7.20	R	3	X	X				X	X		X						
OK311200000030_00	Beaver Creek	30.69	R	5a	I	N				N	F		N		F				
OK311200000040_00	Hackberry Creek	5.38	R	3	X	X				X	X		X						
OK311200000050_00	Squirrel Creek	7.54	R	3	X	X				X	X		X						
OK311200000060_00	Cow Creek	25.73	R	5a	I	F				N	F		N			F			
OK311200000070_00	Monument Creek	6.17	R	2	I	F				I	X		X						
OK311200000080_00	Dry Creek	20.96	R	5a	F	I				N	X		N		I				
OK311200000090_00	Cotton Creek	8.35	R	3	X	X				X	X		X		X				
OK311200000100_00	Cow Creek, East	12.21	R	2	X	X		X			X			X		F			
OK311200000110_00	Claridy Creek	8.43	R	5a	N					N	N		X			F			
OK311200000120_00	Willow Creek	7.32	R	5a	N	X				N	X		X						
OK311200000140_00	Jap Beaver Lake	65	L	3	X	X				X	X		X						
OK311200000150_00	Whiskey Creek	20.47	R	3	X	X				X	X		X						
OK311200000160_00	Cow Creek, East, Unnamed Tributary of	3.51	R	3	X	X		X			X			X		X			
OK311210000010_00	Beaver Creek	46.89	R	3	I	I				I	X		X		I				*
OK311210000020_00	Waurika Lake	10100	L	5a	F	F				N	F		F		N				*
OK311210000030_00	Walker Creek	10.02	R	5b	I	N				I	X		X		I				*
OK311210000040_00	Mills Creek	6.09	R	3	X	X				X	X		X						
OK311210000050_00	Little Beaver Creek	39.49	R	5b	F	N				I	X		N		I				*
OK311210000060_00	Stage Stand Creek	12.94	R	5c	I	I				N	X		X		I				*
OK311210000070_00	Rock Creek	9.36	R	3	X	X				X	X		X						
OK311210000080_00	Hell Creek	9.88	R	3	I	I				I	X		X		I				*
OK311210000090_00	Buckhorn Creek	5.62	R	3	X	X				X	X		X						
OK311210000100_00	Gooden Creek	14.47	R	3	X	X				X	X		X						
OK311210000110_00	Dry Beaver Creek	14.26	R	3	I	I				I	X		X						
OK311210000120_00	Armstrong Creek	9.20	R	2	I	X				F	X		X						
OK311210000130_00	Ninemile Beaver Creek	20.49	R	3	I	I				I	X		X		X				
OK311210000140_00	Whisky Creek	10.28	R	4a	F	I				I	X		N						
OK311210000143_00	Whisky Creek, West	5.09	R	3	I	X				X	X		X						
OK311210000150_00	Cottonwood Creek	7.21	R	5b	I	N				I	X		N						
OK311300010010_00	Cache Creek	8.85	R	3	I	I				I	X		X		I				

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OK311300010020_00	Cache Creek, East	9.05	R	5a	I	F				N	F		N		I				
OK311300010020_10	Cache Creek, East	17.11	R	5a	I	F				N	N		N		I				
OK311300010030_00	Temple Creek	4.25	R	3	X	X				X	X		X						
OK311300010040_00	Mooney Creek	3.20	R	3	X	X				X	X		X		X				*
OK311300010050_00	Temple Lake (Mooney)	26	L	3	X	X				X	X		X		X				*
OK311300010060_00	Soldier Creek	9.66	R	3	X	X				X	X		X						
OK311300010070_00	Walters Creek	4.70	R	3	X	X				X	X		X		X				*
OK311300010080_00	Walters Lake (Boyer)	148	L	5a	F	F				N	F		F		N				*
OK311300010090_00	Gravel Pits Creek!	4.14	R	3	X	X				X	X		X						
OK311300010100_00	Cache Creek, Unnamed Trib of East	8.57	R	5b	I	N				I	X		X						
OK311300020005_00	Sharon Stream	2.31	R	3	X	X				X	X		X						
OK311300020010_00	Cache Creek, East	27.89	R	3	X	X				X	X		X		X				
OK311300020010_05	Cache Creek, East	15.27	R	2	X	X				F	X		X		X				
OK311300020010_10	Cache Creek, East	17.08	R	5a	F	N				N	X		N		X				
OK311300020020_00	Snake Creek	19.80	R	3	I	I				I	X		X						
OK311300020030_00	Ninemile Creek	9.55	R	3	X	X				X	X		X						
OK311300020032_00	Ninemile Creek, Unnamed Tributary of	3.70	R	3	X					X	X		X						
OK311300020034_00	Ninemile Creek	3.33	R	3	I	I				I	X		X						
OK311300020040_00	Wolf Creek	10.20	R	5c	X	X				N	X		X		X				
OK311300020050_00	Wolf Creek, East Branch	7.58	R	3	X	X				X	X		X						
OK311300020060_00	Wolf Creek, West Branch	10.81	R	3	X	X				X	X		X						
OK311300020070_00	Numu Creek	9.72	R	3	X	X				X	X		X						
OK311300020090_00	Wrattan Creek	6.24	R	3	X	X				X	X		X						
OK311300020100_00	George Lake	150	L	3	X	X				X	X		X						
OK311300020110_00	Sitting Bear Creek	5.31	R	3	X	X				X	X		X						
OK311300020120_00	Beef Creek	9.79	R	3	X	X				X	X		X						
OK311300020130_00	Lime Creek	7.52	R	3	X	X				X	X		X						
OK311300020140_00	Rock Creek	5.46	R	3	X	X				X	X		X						
OK311300030010_10	Cache Creek, East	28.40	R	5a	X	X				N	X		X		X				*
OK311300030020_00	Ellsworth Lake	5600	L	5a	F	F				N	F		F		N				*
OK311300030030_00	Chandler Creek	10.50	R	2	I	X				F	X		X		X				*
OK311300030040_00	Tony Creek	5.73	R	3	X	X				X	X		X		X				*
OK311300030050_00	Mission Creek	12.91	R	3	X	X				X	X		X		X				*
OK311300030060_00	Box Elder Creek	9.95	R	3	I	I				I	X		X		X				*
OK311300030070_00	Tahoe Creek	16.79	R	5a	N	N				N	X		N		N				*
OK311300030080_00	Unnamed Tributary	6.73	R	3	X	X				X	X		X		X				*

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OK311300040010_00	Medicine Creek	11.95	R	3	X	X				X	X		X		X				
OK311300040020_00	Ketch Creek	12.81	R	3	X	X				X	X		X						
OK311300040030_00	Deer Creek	3.21	R	3	X	X				X	X		X						
OK311300040040_00	Little Medicine Creek	3.99	R	3	X	X				X	X		X		X				*
OK311300040050_00	Elmer Thomas Lake	334	L	5a	F	F				N	N		F		F				*
OK311300040060_00	Medicine Creek	17.71	R	5a	F	F				I	X		N		I				*
OK311300040070_00	Lawtonka Lake	2398	L	4a	F	F				I	F		F		N				*
OK311300040080_00	Canyon Creek	7.63	R	3	X	X				X	X		X		X				*
OK311300040090_00	Cedar Creek	4.34	R	3	X	X				X	X		X		X				*
OK311300040100_00	Jimmy Creek	7.02	R	3	X	X				I	X		X		X				*
OK311300040110_00	Medicine Creek, Unnamed Trib of	6.67	R	3	X	X				X	X		X		X				*
OK311310010010_00	Red River	88.02	R	5a	I	N				N	F		N			F			
OK311310010020_00	Rabbit Creek	13.98	R	2	I	I				F	X		X		X				
OK311310010025_00	Hound Creek	7.56	R	5b	I	N				X	X		X						
OK311310010030_00	Bird Creek	4.16	R	3	X	X				X	X		X						
OK311310010035_00	Red River, Unnamed Tributary of	4.60	R	3	X	X		X			X			X					
OK311310010040_00	Blue Creek	15.54	R	3	X	X				X	X		X		X				
OK311310010050_00	Curtis Creek	12.98	R	3	I	I				I	X		X						
OK311310010060_00	Cooper Creek	11.64	R	3	X	X				X	X		X						
OK311310010070_00	Suttle Creek	19.41	R	5b	I	N				N	X			I					
OK311310010080_00	Bottle Creek	5.11	R	3	X	X				X	X		X						
OK311310010080_01	Bottle Creek	3.60	R	3	X	X				X	X		X						
OK311310010090_00	Suttle Creek, Unnamed Tributary of	9.32	R	3	X	X		X			X			X					
OK311310010100_00	Grandma Ruth Creek	10.84	R	3	X	X				X	X		X						
OK311310020010_00	Cache Creek, West	9.10	R	5b	I	N				N	F		N		I				
OK311310020010_10	Cache Creek, West	19.17	R	5a	F	F				F	X		N		I				
OK311310020020_00	Cache Creek, West	16.45	R	3	X	X				I	X		X		X				
OK311310020020_10	Cache Creek, West	13.58	R	3	X	X				X	X		X		X				
OK311310020030_00	Pecan Creek	29.91	R	3	X	X				X	X		X		X				
OK311310020040_00	Spring Creek	10.25	R	3	X	X				X	X		X						
OK311310020043_00	Molly's Creek	2.29	R	3	X	X				X	X		X						
OK311310020050_00	Blue Beaver Creek	8.00	R	3	X	X				X	X		X		X				
OK311310020060_00	Blue Beaver Creek	18.33	R	5a	F	F				I	X		N		F				
OK311310020068_00	Rush Lake	53	L	5c	X	X				X	N		X						
OK311310020070_00	Post Oak Creek	24.86	R	3	I	X				I	X		X		X				
OK311310020080_00	Little Post Oak Creek	23.15	R	3	X	X				X	X		X						

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OK311310020090_00	Sandy Creek	25.11	R	3	X	X				X	X		X						
OK311310020100_00	Crater Creek	11.11	R	3	X	X				X	X		X		X		*		
OK311310020110_00	Rock Creek	8.78	R	3	X	X				X	X		X						
OK311310020120_00	Quanah Creek	7.44	R	3	X	X				X	X		X						
OK311310020130_00	Quanah Parker Lake	89	L	5c	X	X				X	N		X						
OK311310020140_00	Cache Creek, West	8.47	R	2	X	X				F	X		X		X		*		
OK311310020150_00	Panther Creek	7.48	R	5c	I	X				N	X		X		X		*		
OK311310020160_00	Lost Lake	7	L	3	X	X				X	X		X						
OK311310020170_00	French Lake	33	L	3	X	X				X	X		X						
OK311310020180_00	Deer Creek	3.84	R	3	X	X				X	X		X						
OK311310020190_00	Comanche Lake	46	L	3	I	X				I	X		X						
OK311310020200_00	Grama Lake	94	L	3	I	X				X	X		X						
OK311310020210_00	Kiowa Lake	9	L	3	X	X				X	X		X						
OK311310030010_00	Deep Red Creek	57.29	R	5b	I	N				N	F		N		I				
OK311310030020_00	Dry Red Creek	10.06	R	3	I	I				I	X		X						
OK311310030030_00	Jack Creek	23.87	R	5a	I	I				N	X		X		X				
OK311310030031_00	Whites Creek	2.42	R	3	X	X				X	X		X						
OK311310030032_00	Whites Lake	300	L	3	X	X				X	X		X						
OK311310030040_00	Little Deep Red Creek	33.57	R	5a	I	N				N	X		N		I				
OK311310030050_00	Brush Creek	11.64	R	5a	N	N				N	X		N						
OK311310030070_00	Jack Creek, East	12.08	R	3	X	X				X	X		X		X				
OK311310030080_00	Horse Creek	23.41	R	3	X	X				X	X		X		X				
OK311310030090_00	Deadman Creek	16.60	R	3	X	X				X	X		X		X				
OK311310030100_00	Coffin Creek	11.19	R	3	X	X				X	X		X						
OK311310030110_00	Deep Red Creek	21.47	R	3	I	I				I	X		X		X				
OK311310030120_00	Frederick Lake	925	L	5a	F	F				N	F		F		F				
OK311310030130_00	Deep Red Creek, East Fork	9.71	R	3	X	X				X	X		X						
OK311500010010_00	Red River	17.91	R	2	X	X				X	X		X			F			
OK311500010020_00	Red River, North Fork	22.72	R	5a	I	N				N	F		I		F				
OK311500010020_10	Red River, North Fork	61.70	R	5a	F	N				N	F		N		I				
OK311500010020_20	Red River, North Fork	2.96	R	3	X	X				X	X		X		X				
OK311500010023_00	Maxwell's Creek	2.83	R	3	X	X				X	X		X						
OK311500010030_00	White Creek	5.33	R	3	X	X				X	X		X						
OK311500010040_00	White Lake	10	L	3	X	X				X	X		X						
OK311500010042_00	Red Top	4.48	R	3	X	X				X	X		X						
OK311500010050_00	Stinking Creek	17.44	R	5a	F	N				N	X		N		N				

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OK311500010055_00	Stinking Creek, Unnamed Tributary of	11.93	R	3	X	X		X			X			X		X			
OK311500010060_00	Mimi Creek	2.57	R	3	X	X				X	X		X						
OK311500010070_00	Red Hollow	1.75	R	3	X	X				X	X		X						
OK311500010080_00	OTter Creek	23.13	R	5b	I	N				N	X		N		I				
OK311500010090_00	Owl Creek	7.70	R	3	I	I				I	X		X						
OK311500010110_00	Tepee Creek	19.44	R	5b	I	N				F	X		N						
OK311500020010_00	Otter Creek, East	20.21	R	3	I	I				I	X		X						
OK311500020020_00	Telephone Creek	10.11	R	3	X	X				X	X		X						
OK311500020030_00	Boggy Hollow Creek	5.62	R	3	X	X				X	X		X						
OK311500020040_00	OTter Creek, West	6.77	R	4a	F	F				I	X		N		F				
OK311500020050_00	Otter Creek, West	13.85	R	3	X	X				X	X		X		X				*
OK311500020060_00	Tom Steed Lake (Mountain Park)	6400	L	5a	I	F				N	F		F		N				*
OK311500020070_00	Glen Creek	14.15	R	3	I	I				I	X		X		X				*
OK311500030005_00	Wolfpack	3.67	R	3	X	X				X	X		X						
OK311500030010_00	Elk Creek	15.70	R	5a	I	F				N	F		N		I				
OK311500030030_00	Elk Creek	7.85	R	3	I	I				I	X		I		I				
OK311500030030_10	Elk Creek	62.97	R	2	X	X		F			X			X					
OK311500030040_00	Little Elk Creek	15.40	R	5a	F	F				N	X		N		I				
OK311500030050_00	Little Elk Creek	17.40	R	2	I	F				I	X		X						
OK311500030060_00	Rocky (Hobart) Lake	347	L	5a	I	F				N	F		F		N				*
OK311500030070_00	Trail Creek	19.15	R	5a	F	N				N	X		N		I				
OK311500030080_00	Spring Creek	8.96	R	3	X	X				X	X		X		X				
OK311500030090_00	George Creek	4.17	R	3	X	X				X	X		X						
OK311500030100_00	Sadler Creek	8.98	R	3	I	I				I	X		X						
OK311500030110_00	Elk Creek, West	9.68	R	3	I	I				I	X		X						
OK311500030120_00	Elk City Lake	240	L	2	I	F				I	F		F						
OK311510010010_10	Red River, North Fork	47.29	R	1	F	F				F	F		F		F				
OK311510010020_00	Altus Lake (Altus-Lugert)	6260	L	5a	F	F				N	I		F						
OK311510010030_00	Armstrong Creek	4.08	R	3	X	X				X	X		X						
OK311510010040_00	Lake Creek	13.33	R	4a	F	F				I	X		N						
OK311510010050_00	Boggy Creek	5.04	R	3	I	I				I	X		X						
OK311510010060_00	Spring Creek	9.65	R	3	X	X				X	X		X						
OK311510010070_00	Flat Creek	5.70	R	3	X	X				X	X		X						
OK311510010080_00	Indian Creek	13.51	R	3	X	X				X	X		X						
OK311510010090_00	Timber Creek	12.01	R	5a	F	F				N	X		N		I				
OK311510010100_00	Coffee Bean Creek	6.82	R	3	X	X				X	X		X						

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OK311510010110_00	Spring Creek	6.16	R	3	X	X				X	X		X						
OK311510010120_00	Timber Creek, East	5.11	R	3	X	X				X	X		X						
OK311510010130_00	Timber Creek, West	5.89	R	3	X	X				X	X		X						
OK311510020010_00	Red River, North Fork	37.86	R	5c	I	I				N	X		X		X				
OK311510020020_00	Deep Creek	7.80	R	3	X	X				X	X		X						
OK311510020030_00	Short Creek	9.58	R	3	X	X				X	X		X						
OK311510020040_00	Sand Creek	13.05	R	5c	I	X				N	X		X		I				
OK311510020050_00	Long Creek	17.28	R	3	I	I				I	X		X		X				
OK311510020060_00	Turkey Creek	19.42	R	4a	F	I				I	X		N		F				
OK311510020070_00	Starvation Creek	16.97	R	3	I	I				I	X		X		X				
OK311510020080_00	Little Turkey Creek	15.89	R	2	I	X				F	X		X						
OK311510020090_00	Buffalo Creek	20.32	R	5b	F	N				N	X		N		I				
OK311510020100_00	Buffalo Creek, West	7.90	R	3	X	X				X	X		X						
OK311510020110_00	Middle Buffalo Creek	11.16	R	3	X	X				X	X		X						
OK311510020120_00	Sweetwater Creek	16.43	R	4a	F	F				F	X		N		I				
OK311510020130_00	Salt Creek	5.26	R	3	I	I				I	X		X						
OK311510020140_00	Freezeout Creek	4.57	R	3	X	X				X	X		X						
OK311510020150_00	Meridan Creek	8.52	R	3	X	X				X	X		X						
OK311600010010_00	Red River	55.99	R	2	X	X				X	X		X			F			
OK311600010020_00	Gypsum Creek	28.10	R	5a	I	N				N	X		N		I				
OK311600010030_00	Mule Creek	5.98	R	3	X	X				X	X		X						
OK311600010032_00	Mule Creek	6.74	R	3	X	X				X	X		X						
OK311600010035_00	James Creek	5.64	R	3	X	X				X	X		X						
OK311600010040_00	Sandy Creek (Lebos)	39.65	R	5a	I	N		N			F			N		F			
OK311600010050_00	Sandy Creek, East Fork (Sandy)	14.16	R	3	X	X				X	X		X						
OK311600010060_00	Sandy Creek, West Fork (Lebos)	13.22	R	3	I	I		X			X			X					
OK311600010065_00	Lebos Creek, Unnamed Tributary of	2.30	R	3	X	X		X			X			X					
OK311600010070_00	Bitter Creek	7.83	R	3	I	I				I	X		X						
OK311600010080_00	Red River, Prairie Dog Town Fork	3.92	R	2	X	X				X	X		X			F			
OK311600010085_00	Paradiagn	1.03	R	3	X	X				X	X		X						
OK311600010090_00	Buck Creek	4.20	R	3	I	I				I	X		X						
OK311600020010_00	Red River, Salt Fork	13.67	R	5a	F	N				N	N		N		N				
OK311600020010_10	Red River, Salt Fork	69.63	R	5c	I	F				N	F		N		I				
OK311600020030_00	West Canal	4.87	R	3	X	X				X	X		X						
OK311600020060_00	Turkey Creek	51.64	R	5a	I	N				N	X		N		I				
OK311600020070_00	Horse Branch	21.29	R	3	I	I				I	X		X						

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OK311600020080_00	Spring Branch	6.55	R	3	X	X				X	X		X						
OK311600020090_00	Cottonwood Creek	13.22	R	3	X	X				X	X		X						
OK311600020110_00	Bitter Creek	3.60	R	5a	X	X				X	N			X		F			
OK311600020110_05	Bitter Creek	7.80	R	5a	F	N		N			N			N		F			
OK311600020110_10	Bitter Creek	18.57	R	5a	X	X		X			N			X		F			
OK311600020115_00	Ronnie's Run	3.70	R	3	X	X				X	X		X						
OK311600020120_00	Fish Creek	5.11	R	3	X	X				X	X		X						
OK311600020130_00	Mulberry Creek	6.37	R	3	I	I				I	X		X						
OK311600020140_00	Cave Creek	13.69	R	5b	F	N				I	X		N						
OK311600020150_00	Horse Creek	5.17	R	3	X	X				X	X		X						
OK311600020160_00	Hall Lake Creek	2.50	R	3	X	X				X	X		X						
OK311600020170_00	Hall Lake	50	L	3	X	X				X	X		X						
OK311600020180_00	Bear Creek	5.69	R	3	I	I				I	X		X						
OK311800000010_00	Red River, Elm Fork	36.63	R	5a	F	N				N	N		N		N				
OK311800000010_10	Red River, Elm Fork	25.69	R	5a	F	N				N	F		I		N				
OK311800000015_00	Tarheel	4.83	R	3	X	X				X	X		X						
OK311800000020_00	Left Ear creek	1.30	R	3	X	X				X	X		X						
OK311800000030_00	Tittle Creek	7.77	R	3	X	X				X	X		X						
OK311800000035_00	Good Golly	1.58	R	3	X	X				X	X		X						
OK311800000040_00	Haystack Creek	43.06	R	5b	F	N				N	X		N		I				
OK311800000045_00	Rising Dawn	2.64	R	3	X	X				X	X		X						
OK311800000050_00	Sleep John Creek	10.05	R	3	X	X				X	X		X						
OK311800000060_00	Station Creek	10.58	R	5b	F	N				F	X		N						
OK311800000070_00	Deer Creek	22.59	R	5b	F	N				N	X		N		F				
OK311800000080_00	Sulphur Creek	10.21	R	3	X	X				X	X		X						
OK311800000090_00	Root Creek	5.14	R	3	X	X				X	X		X						
OK311800000100_00	Dos Hollis Lake	50	L	3	X	X				X	X		X						
OK311800000110_00	Grape Creek	15.43	R	3	X	X				X	X		X						
OK311800000120_00	Hackberry Creek	2.09	R	3	X	X				X	X		X						
OK311800000130_00	Fish Creek	16.84	R	5a	F	N				N	X		N		I				
OK311800000140_00	Minnow Creek	4.27	R	3	X	X				X	X		X						
OK311800000150_00	Bull Creek	14.40	R	3	X	X				X	X		X		X				
OK311800000160_00	Elm Creek	5.38	R	3	X	X				X	X		X						
OK311800000170_00	Elm Creek, West	12.77	R	5a	F	N				N	X		N		I				
OK410100010010_00	Red River	13.36	R	3	X	X				X	X		X		X				
OK410100010010_10	Red River	22.99	R	5a	I	F				I	N		N		I				

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OK410100010010_20	Red River	13.76	R	3	X	X				X	X		X		X				
OK410100010010_30	Red River	12.83	R	3	X	X				X	X		X		X				
OK410100010010_40	Red River	11.18	R	3	X	X				X	X		X		X				
OK410100010010_50	Red River	7.03	R	3	X	X				X	X		X		X				
OK410100010020_00	Breedlove Lake	1	L	3	X	X				X	X		X						
OK410100010030_00	Bailey Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK410100010040_00	Caney Lake	1	L	3	X	X				X	X		X						
OK410100010050_00	Norwood Creek	20.15	R	5a	F	F				N	X		N		X				
OK410100010060_00	Push Creek	11.58	R	3	X	X				X	X		X						
OK410100010070_00	Norwood Creek, Trib	1.61	R	3	X	X				X	X		X						
OK410100010080_00	Ward Lake	331	L	3	X	X				X	X		X						
OK410100010090_00	Clear Lake	1	L	3	X	X				X	X		X						
OK410100010100_00	1908 Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK410100010110_00	Whitaker Bend Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK410100010120_00	Holly Branch	9.93	R	3	X	X				X	X		X						
OK410100010130_00	Deadman Lake Creek	0.40	R	3	X	X				X	X		X						
OK410100010140_00	Deadman Lake	1	L	3	X	X				X	X		X						
OK410100010150_00	Grassy Lake	1	L	3	X	X				X	X		X						
OK410100010160_00	Holly Branch Lake	1	L	3	X	X				X	X		X						
OK410100010170_00	Forty-One Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK410100010180_00	Waterfall Creek	8.92	R	3	X	X				X	X		X						
OK410100010190_00	Mintubbe Lake	1	L	3	X	X				X	X		X						
OK410100010210_00	U. T. Waterfall Creek Lake	1	L	3	X	X				X	X		X						
OK410100010230_00	Boss Creek	8.74	R	3	X	X				X	X		X						
OK410100010240_00	Charles Lake Creek	2.77	R	3	X	X				X	X		X						
OK410100010250_00	Charles Lake	1	L	3	I	I				I	I		I						
OK410100010260_00	Old River Oxbow Lake	1	L	3	X	X				X	X		X						
OK410100010270_00	Fish Pond Lake	1	L	3	X	X				X	X		X						
OK410100010280_00	Gilford Lake	1	L	3	X	X				X	X		X						
OK410100010290_00	Bryarly Lake	1	L	3	X	X				X	X		X						
OK410100010300_00	Colbert Lake	1	L	3	X	X				X	X		X						
OK410100010310_00	Red Lake	1	L	3	X	X				X	X		X						
OK410100010320_00	Horseshoe Lake, South	1	L	3	X	X				X	X		X						
OK410100010330_00	Horseshoe Lake, North	1	L	3	X	X				X	X		X						
OK410100010340_00	Waterhole Creek	16.61	R	5a	F	F				N	X		N		X				
OK410100010360_00	Lick-Skillet Lake	1	L	3	X	X				X	X		X						

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OK410100010370_00	Bad Branch	2.93	R	3	X	X				X	X		X						
OK410100010380_00	Perry Creek	6.77	R	3	X	X				X	X		X						
OK410100010390_00	Bokchito Creek	7.44	R	3	X	X				X	X		X						
OK410100010400_00	Whitegrass Creek	7.93	R	3	X	X				X	X		X						
OK410100010420_00	Garvin Creek	5.54	R	3	X	X				X	X		X						
OK410100010440_00	Clear Lake	1	L	3	X	X				X	X		X						
OK410100010450_00	Buzzard Creek	11.55	R	3	X	X				X	X		X						
OK410100010456_00	Millerton Trib!	2.45	R	3	X	X		I			X			X					
OK410100010460_00	Garland Creek	6.09	R	3		X				X	X		X						
OK410100010470_00	Valiant Creek	1.92	R	3	X	X		X			X			X					
OK410100010480_00	Clear Creek	2.51	R	5c	X	X				N	X		X						
OK410100010490_00	Clear Creek	9.34	R	3	I	I				I	X		X						
OK410100010500_00	Doaksville Creek	8.36	R	3	X	X				X	X		X						
OK410100020010_00	Walnut Bayou	4.19	R	3	X	X				X	X		X						
OK410100020020_00	Line Creek	2.99	R	3	X	X				X	X		X						
OK410100020030_00	McKinney Creek	9.67	R	3	X	X				X	X		X						
OK410100020040_00	Sandy Creek	2.27	R	3	X	X				X	X		X						
OK410100020050_00	Yellow Branch	3.60	R	3	X	X				X	X		X						
OK410100020060_00	Surratt Branch	4.88	R	3	X	X				X	X		X						
OK410100020070_00	Parker Creek	6.51	R	3	X	X				X	X		X						
OK410100020080_00	Pine Creek	6.86	R	3	X	X				X	X		X						
OK410200010010_00	Little River	19.74	R	3	X	X	X				X		X		X		*		
OK410200010020_00	Buck Creek	12.93	R	3	X	X				X	X		X						
OK410200010030_00	Camp Creek	1.10	R	3	X	X				X	X		X						
OK410200010050_00	Red Branch	3.08	R	3	X	X				X	X		X						
OK410200010060_00	Ponka Bok Creek	5.85	R	3	X	X				X	X		X						
OK410200010080_00	Black Creek	5.11	R	3	X	X				X	X		X						
OK410200010090_00	Crooked Creek	2.96	R	3	X	X				X	X		X						
OK410200010100_00	Forked Lake	1	L	3	X	X				X	X		X						
OK410200010120_00	Goodwater Creek	7.68	R	3	X	X				X	X		X						
OK410200010130_00	Terrapin Creek	5.16	R	3	X	X				X	X		X						
OK410200010140_00	Crooked Creek	10.94	R	3	X	X				X	X		X						
OK410200010150_00	Yanubbe Creek	10.53	R	3	I	I	I				X		X		X				
OK410200010155_00	Yanubbe Creek, Unnamed Tributary of	2.52	R	3	X	X		X			X			X					
OK410200010160_00	Coon Creek	5.61	R	3	X	X				X	X		X						
OK410200010170_00	Yanubbee Creek, West Fork	1.97	R	3	X	X				X	X		X						

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OK410200010180_00	Yanubbee Creek, East Fork	2.16	R	3	X	X				X	X		X						
OK410200010190_00	Yanubbee Creek, Middle Fork	2.16	R	3	X	X				X	X		X						
OK410200010200_00	Little River	8.20	R	5a	I	F	N				I		F		F		*		
OK410200010200_10	Little River	24.14	R	5a	F	F	N				F		F		F		*		
OK410200010210_00	Mud Creek	17.66	R	5a	I	I				N	N			X		F			
OK410200010218_00	Mud Creek, Unnamed Tributary of	0.70	R	3	X	X		X			X			X					
OK410200010220_00	Rock Creek	4.97	R	3	X	X				X	X		X		X				
OK410200010230_00	Yashoo Creek	19.80	R	5c	I	I	N				X		X		X				
OK410200010250_00	Long Branch	2.32	R	3	I	I				X	X		X		I				
OK410200010260_00	Holly Creek	9.62	R	3	X	X				X	X		X						
OK410200010280_00	Salt Creek	3.95	R	3	X	X				X	X		X						
OK410200010300_00	Pine Lake	1	L	3	X	X				X	X		X						
OK410200010320_00	Campbell Creek	2.30	R	3	X	X				X	X		X						
OK410200010330_00	Boktuklo Creek	9.25	R	3	X	X				X	X		X						
OK410200010340_00	Courthouse Creek	6.71	R	3	X	X				X	X		X						
OK410200020010_00	Caney Creek, North	9.27	R	3	X	X				X	X		X						
OK410200020020_00	White Oak Creek	6.11	R	3	X	X				X	X		X						
OK410200020030_00	Caney Creek, South	5.86	R	3	X	X				X	X		X						
OK410200020040_00	Caney Creek, Middle	4.25	R	3	X	X				X	X		X						
OK410200030010_00	Rock Creek	12.35	R	5a	I	F	N				X		N		X				
OK410200030020_00	Cane Creek	4.69	R	3	X	X				X	X		X						
OK410200030030_00	Twomile Creek	4.33	R	3	X	X				X	X		X						
OK410200030040_00	Slate Creek	2.76	R	3	X	X				X	X		X						
OK410200030050_00	Prairie Branch	2.27	R	3	X	X				X	X		X						
OK410200030060_00	Pero Creek	7.10	R	3	X	X				X	X		X						
OK410200030070_00	Little Rock Creek	4.16	R	3	X	X				X	X		X						
OK410200030080_00	Rock Creek, Middle	4.29	R	3	X	X				X	X		X						
OK410200030090_00	Rock Creek, West Fork	2.89	R	3	X	X				X	X		X						
OK410200030100_00	Robinson Creek	8.91	R	3	X	X				X	X		X						
OK410200030110_00	Ash Creek	5.36	R	3	X	X				X	X		X						
OK410200030120_00	Bull Creek	2.90	R	3	X	X				X	X		X						
OK410200030130_00	Cedar Branch	1.27	R	3	X	X				X	X		X						
OK410200030140_00	Rough Creek	5.90	R	3	X	X				X	X		X						
OK410200030150_00	Kings Branch	2.35	R	3	X	X				X	X		X						
OK410210010010_00	Little River	14.41	R	3	X	X	X				X		X		X		*		
OK410210010030_00	Sand Creek	3.85	R	3	X	X				X	X		X						

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OK410210010040_00	Wheelock Creek	3.46	R	3	X	X				X	X		X						
OK410210010050_00	Martin Creek	3.99	R	3	X	X				X	X		X						
OK410210010060_00	Horse Head Creek	8.85	R	2	I	I				F	X		X		X				
OK410210010065_00	Horse Head Creek, Unnamed Tributary of	1.33	R	3	X	X		X			X			X					
OK410210010070_00	Cypress Creek	20.73	R	5a	I	F	N				X		F		X		*		
OK410210010080_00	Rock Creek	6.42	R	3	X	X				X	X		X						
OK410210010090_00	Wolf Creek	4.21	R	3	X	X				X	X		X						
OK410210010100_00	Cypress Creek, North Fork	4.50	R	3	X	X	X				X		X		X		*		
OK410210010110_00	White Oak Creek	6.43	R	3	I	I				I	X		X						
OK410210010120_00	Sand Springs Branch	3.43	R	3	X	X				X	X		X						
OK410210010130_00	Little White Oak Creek	2.79	R	3	X	X				X	X		X						
OK410210010140_00	Stevens Creek	5.25	R	3	X	X				X	X		X						
OK410210020010_00	Little River	3.90	R	3	I	X	X				X		X		X		*		
OK410210020020_00	Pine Creek Lake	3750	L	5a	F	F				N	N		F		I		*		
OK410210020030_00	Pine Creek	6.01	R	3	X	X	X				X		X		X		*		
OK410210020040_00	Big Branch	2.44	R	3	X	X				X	X		X						
OK410210020050_00	Rock Creek	4.46	R	3	X	X				X	X		X						
OK410210020070_00	Long Creek	6.07	R	3	X	X				X	X		X						
OK410210020080_00	Wilson Creek	6.77	R	3	X	X				X	X		X						
OK410210020090_00	Long Creek, North	3.28	R	3	X	X				X	X		X						
OK410210020100_00	Long Creek, South	2.60	R	3	X	X				X	X		X						
OK410210020110_00	Turkey Creek	11.77	R	3	X	X				X	X		X						
OK410210020120_00	Turkey Creek, North	4.69	R	3	X	X				X	X		X						
OK410210020130_00	Little Turkey Creek	5.20	R	3	X	X				X	X		X						
OK410210020140_00	Little River	27.25	R	5a	F	F	N				N		F		F		*		
OK410210020150_00	Terrapin Creek	13.47	R	2	F	F	F				X		F		X		*		
OK410210020160_00	Deer Creek	4.73	R	3	X	X				X	X		X						
OK410210020170_00	Terrapin Creek, West	12.45	R	2	X	X	F				X		X						
OK410210020180_00	Terrapin Creek, Middle	5.66	R	3	X	X				X	X		X						
OK410210020190_00	Terrapin Creek, East	6.46	R	3	X	X				X	X		X						
OK410210020200_00	Salt Creek	5.16	R	3	X	X				X	X		X						
OK410210020210_00	Houston Creek	4.68	R	3	X	X	X				X		X		X		*		
OK410210020220_00	Rain Creek	4.33	R	3	X	X				X	X		X						
OK410210020230_00	Can Creek	3.57	R	3	X	X				X	X		X						
OK410210020240_00	Caney Creek	11.09	R	3	I	I	X				X		X						

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OK410210020250_00	Rock Pen Creek	5.27	R	3	X	X				X	X		X						
OK410210020260_00	Holly Creek	7.23	R	3	I	I				I	X		X						
OK410210020270_00	Holly Creek, South	6.38	R	3	X	X				X	X		X						
OK410210020280_00	Devil's Backbone Creek	3.52	R	3	X	X				X	X		X						
OK410210020290_00	Holly Creek, North	6.58	R	3	X	X				X	X		X						
OK410210020300_00	Cloudy Creek	25.63	R	5a	F	F	N				X		F		X		*		
OK410210020310_00	Big Branch	2.24	R	3	X	X				X	X		X						
OK410210020320_00	Brushy Creek	8.62	R	3	X	X				X	X		X						
OK410210020330_00	Bullpen Creek	3.24	R	3	X	X				X	X		X						
OK410210020340_00	Brushy Creek, North	5.02	R	3	X	X				X	X		X						
OK410210020350_00	Dog Creek	3.62	R	3	X	X				X	X		X						
OK410210020360_00	Harris Creek	3.11	R	3	X	X				X	X		X						
OK410210020370_00	Bear Canyon Creek	4.02	R	3	X	X				X	X		X						
OK410210020380_00	Pickens Creek	11.21	R	3	I	I				I	X		X						
OK410210020390_00	Buzzard Creek	4.14	R	3	X	X				X	X		X						
OK410210020400_00	Pickens Creek, North	4.83	R	3	X	X				X	X		X						
OK410210020410_00	Harris Creek	4.56	R	3	X	X				X	X		X						
OK410210020420_00	Harris Creek, North	3.88	R	3	X	X				X	X		X						
OK410210020430_00	Jack Creek	7.68	R	3	X	X	X				X		X		X		*		
OK410210020450_00	Watson Creek	6.03	R	3	I	I				I	X		X						
OK410210020460_00	Watson Creek, North	4.55	R	2	X	X	F				X		X						
OK410210020470_00	Watson Creek, South	4.03	R	3	X	X				X	X		X						
OK410210030010_00	Little River	39.68	R	3	X	X	X				X		X		X		*		
OK410210030020_00	Little River, Black Fork	31.00	R	5a	I	F	N				X		N		X		*		
OK410210030030_00	Cripple Creek	10.91	R	3	X	X				X	X		X						
OK410210030040_00	Buzzard Creek	5.97	R	3	X	X				X	X		X						
OK410210030050_00	Hardy Creek	4.42	R	3	X	X				X	X		X						
OK410210030060_00	Long Creek	7.58	R	3	X	X				X	X		X						
OK410210030070_00	Garland Creek	6.81	R	3		X				X	X		X						
OK410210030080_00	Davis Branch	4.60	R	3	X	X				X	X		X						
OK410210030090_00	Paley Creek	4.74	R	3	X	X				X	X		X						
OK410210030100_00	Le Flore Creek	3.83	R	3	X	X				X	X		X						
OK410210030110_00	Polecat Creek	2.14	R	3	X	X				X	X		X						
OK410210030120_00	Wildhorse Creek	8.21	R	3	X	X				X	X		X						
OK410210030130_00	Uphill Creek	5.01	R	3	X	X				X	X		X						
OK410210030140_00	Cedar Creek	2.86	R	3	X	X				X	X		X						

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OK410210030150_00	Honobia Creek	22.20	R	3	I	I				I	X		X						
OK410210030160_00	Crane Hollow Creek	3.55	R	3	X	X				X	X		X						
OK410210030170_00	Dutchman Ridge Creek	2.79	R	3	X	X				X	X		X						
OK410210030180_00	Deadman Hollow Creek	4.52	R	3	X	X				X	X		X						
OK410210030190_00	Brushy Creek	4.57	R	3	X	X				X	X		X						
OK410210030200_00	Holly Creek	4.06	R	3	X	X				X	X		X						
OK410210030220_00	Cowhead Divide Creek	2.53	R	3	X	X				X	X		X						
OK410210030230_00	Little Rock Creek	6.69	R	3	X	X				X	X		X						
OK410210030240_00	Fisher Branch	3.08	R	3	X	X				X	X		X						
OK410210030260_00	Cedar Creek	2.77	R	3	X	X				X	X		X						
OK410210030270_00	Rock Creek	5.28	R	3	X	X				X	X		X						
OK410210040010_00	Little River, Mountain Fork	8.73	R	3	X	X	X				X		X		X		*		
OK410210040010_10	Little River, Mountain Fork	1.14	R	5a	F	F			N		F		F		F		*		
OK410210040020_00	Luksuklo Creek	14.70	R	3	X	X				X	X		X						
OK410210040030_00	Lick Creek	8.98	R	3	X	X				X	X		X						
OK410210040040_00	Lick Creek Branch	1.66	R	3	X	X				X	X		X						
OK410210040050_00	Little River, Mountain Fork	9.08	R	3	X	X			X		X		X		X		*		
OK410210040060_00	Cooper Creek	6.16	R	3	X	X				X	X		X						
OK410210040070_00	Rough Branch	2.33	R	3	X	X				X	X		X						
OK410210040080_00	Horsepen Creek	1.80	R	3	X	X				X	X		X						
OK410210040090_00	Slate Branch	2.77	R	3	X	X				X	X		X						
OK410210040100_00	Carnasaw Creek	1.46	R	3	X	X				X	X		X						
OK410210040110_00	Beaver Creek	2.27	R	3	X	X				X	X		X						
OK410210040120_00	Bee Branch	1.83	R	3	X	X				X	X		X						
OK410210050010_00	Little River, Mountain Fork	2.21	R	3	X	X			X		X		X		X		*		
OK410210050020_00	Broken Bow Lake	14200	L	5a	F	F				N	N		F		F				*
OK410210050040_00	Biggam Creek	2.05	R	3	X	X				X	X		X						
OK410210050060_00	Walford Creek	2.26	R	3	X	X				X	X		X						
OK410210050090_00	Cedar Creek	3.09	R	3	X	X				X	X		X						
OK410210050100_00	Lower Cedar Creek	2.53	R	3	X	X				X	X		X						
OK410210050110_00	Cedar Creek, North	1.83	R	3	X	X				X	X		X						
OK410210050120_00	Fivemile Hollow Creek	2.75	R	3	X	X				X	X		X						
OK410210050130_00	Nancy Branch	2.07	R	3	X	X	X				X		X						
OK410210050140_00	Egypt Creek	3.41	R	3	X	X	X				X		X		X				*
OK410210050170_00	Bee Creek	3.12	R	3	X	X				X	X		X						
OK410210050180_00	Bee Creek, North	3.38	R	3	X	X				X	X		X						

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OK410210050190_00	Otter Creek	7.06	R	3	X	X	X				X		X		X				*
OK410210050200_00	Otter Creek, East	3.24	R	3	X	X				X	X		X						
OK410210050210_00	Bear Creek	2.11	R	3	X	X				X	X		X						
OK410210050220_00	Cane Creek	3.59	R	3	X	X				X	X		X						
OK410210050240_00	Holly Creek, North	4.83	R	3	X	X				X	X		X						
OK410210050250_00	Holly Creek, South	4.19	R	3	X	X				X	X		X						
OK410210050270_00	Linson Creek, North	7.02	R	3	X	X				X	X		X						
OK410210050280_00	Linson Creek, South	5.18	R	3	X	X				X	X		X						
OK410210050290_00	Gar Creek	3.23	R	3	X	X				X	X		X						
OK410210050300_00	Panther Branch	4.76	R	3	X	X				X	X		X						
OK410210050310_00	Chee Creek	2.01	R	3	X	X				X	X		X						
OK410210050320_00	Turkey Creek	6.38	R	3	X	X				X	X		X						
OK410210050330_00	Hee Creek	2.58	R	3	X	X				X	X		X						
OK410210050340_00	Buck Creek	3.87	R	3	X	X				X	X		X						
OK410210050350_00	Hudson Creek	2.05	R	3	X	X				X	X		X						
OK410210050360_00	Panther Creek	5.13	R	3	X	X	X				X		X		X			*	
OK410210060010_00	Little River, Mountain Fork	0.52	R	3	X	X	X				X		X		X				*
OK410210060010_10	Little River, Mountain Fork	28.08	R	5a	I	F	N				F		F		F			*	
OK410210060020_00	Buffalo Creek	23.38	R	5a	F	F	N				X		F		X				*
OK410210060030_00	Big Hudson Creek	6.28	R	3	I	I	X				X		X						
OK410210060040_00	Little Hudson Creek	3.18	R	3	X	X				X	X		X						
OK410210060050_00	Little Dry Creek	7.11	R	3	X	X				X	X		X						
OK410210060060_00	Mine Creek	3.21	R	3	I	I	X				X		X						
OK410210060080_00	Rock Creek	3.70	R	3	X	X				X	X		X						
OK410210060100_00	Boktuklo Creek	15.33	R	2	X	X	F				X		X		X			*	
OK410210060110_00	Blue Creek	3.05	R	3	X	X	X				X		X		X			*	
OK410210060120_00	Boktuklo Creek, East	9.90	R	3	I	I				I	X		X						
OK410210060130_00	Ward Creek	1.71	R	3	X	X				X	X		X						
OK410210060140_00	Ramos Creek	4.11	R	3	X	X				X	X		X						
OK410210060150_00	Roosevelt Creek	6.62	R	3	X	X				X	X		X						
OK410210060160_00	Big Eagle Creek	20.50	R	5a	F	F	N				X		F		X			*	
OK410210060170_00	Little Eagle Creek	10.11	R	3	I	I	I				X		X		X			*	
OK410210060190_00	Potts Creek	4.51	R	3	X	X				X	X		X						
OK410210060210_00	Cucumber Creek	10.72	R	2	I	I	F				X		X		X			*	
OK410210060220_00	Saddle Rock Creek	4.65	R	3	X	X				X	X		X						
OK410210060240_00	Rock Creek	9.98	R	2	I	I				F	X		X						

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OK410210060250_00	Hurricane Creek	9.64	R	3	X	X				X	X		X						
OK410210060270_00	Dry Creek	10.24	R	3	I	I				I	X		X						
OK410210060280_00	Mudlick Creek	3.48	R	3	X	X				X	X		X						
OK410210060290_00	Panther Creek	2.17	R	3	X	X				X	X		X						
OK410210060310_00	Sixmile Creek	3.89	R	3	I	I				I	X		X						
OK410210060320_00	Beech Creek	12.71	R	5a	F	F	N				X		F		X			*	
OK410210060330_00	Turkey Snout Creek	2.62	R	3	X	X	X				X		X		X			*	
OK410210060340_00	Caney Creek	2.63	R	3	X	X				X	X		X						
OK410210060350_00	Cow Creek	11.03	R	5a	F	F	N				X		F		X			*	
OK410210060360_00	Murry Creek	3.85	R	3	X	X				X	X		X						
OK410210060370_00	Little Cow Creek	4.26	R	3	X	X	X				X		X		X			*	
OK410210060380_00	Little River, Mountain Fork	3.89	R	3	X	X	X				X		X		X			*	
OK410210060390_00	Mackey Creek	0.57	R	3	X	X				X	X		X						
OK410210060400_00	Horsepen Creek	3.60	R	3	X	X				X	X		X						
OK410210060410_00	Dark Hollow Creek	2.45	R	3	X	X				X	X		X						
OK410210060420_00	Richmond Creek	1.93	R	3	X	X				X	X		X						
OK410210060430_00	Brushy Creek	1.92	R	3	X	X				X	X		X						
OK410210060440_00	Wilcox Branch	0.87	R	3	X	X	X				X		X		X			*	
OK410210060450_00	Big Eagle Creek, Unnamed Trib of	2.36	R	3	X	X	X				X		X		X			*	
OK410210070010_00	Lufkata Creek	17.80	R	5a	F	F	N				X		N		X		*		
OK410210070020_00	Stephens Branch	4.50	R	3	X	X				X	X		X						
OK410210070030_00	Briar Branch	2.64	R	3	X	X				X	X		X						
OK410210070040_00	Lufkata Creek, West Fork	3.74	R	3	X	X				X	X		X						
OK410210070050_00	Lufkata Creek, East Fork	3.17	R	3	X	X				X	X		X						
OK410210070060_00	Lufkata Creek, Middle Fork	3.13	R	3	X	X				X	X		X						
OK410210080010_00	Glover River	33.95	R	5a	F	F	N				F		F		F		*		
OK410210080020_00	Mitchell Creek	4.04	R	3	X	X				X	X		X						
OK410210080030_00	Harkin Franklin Creek	2.73	R	3	X	X				X	X		X						
OK410210080040_00	Benningfield Creek	4.06	R	3	X	X				X	X		X						
OK410210080050_00	Fifteen Creek	2.57	R	3	X	X				X	X		X						
OK410210080060_00	Gibbs Creek	3.79	R	3	X	X				X	X		X						
OK410210080070_00	Colbert Creek	5.01	R	2	X	X				F	X		X						
OK410210080080_00	Lost Springs Creek	3.82	R	3	X	X				X	X		X						
OK410210080090_00	Tidwell Creek	3.75	R	3	X	X				X	X		X						
OK410210080100_00	Caney Creek	2.18	R	3	X	X				X	X		X						
OK410210080110_00	Lebow Hollow Creek	2.15	R	3	X	X				X	X		X						

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OK410210080120_00	Cedar Creek	11.32	R	2	I	I	F				X		X		X		*		
OK410210080130_00	Cedar Creek, North	3.07	R	3	X	X				X	X		X						
OK410210080140_00	Cedar Creek, South	3.51	R	3	X	X				X	X		X						
OK410210080150_00	Brigham Young Springs Creek	2.02	R	3	X	X				X	X		X						
OK410210080160_00	Shell Rock Creek	4.80	R	3	X	X				X	X		X						
OK410210080170_00	Wolf Hollow Creek	3.01	R	3	X	X				X	X		X						
OK410210080180_00	Whiskey Branch	1.85	R	3	X	X				X	X		X						
OK410210080190_00	Shorty Cox Hollow Creek	1.86	R	3	X	X				X	X		X						
OK410210080200_00	Burks Hollow Creek	2.15	R	3	X	X				X	X		X						
OK410210080210_00	Carter Creek	11.34	R	3	X	X	X				X		X		X		*		
OK410210080220_00	Carter Creek, North	7.88	R	3	X	X				X	X		X						
OK410210080230_00	Carter Creek, Middle	5.97	R	3	X	X				X	X		X						
OK410210080240_00	Mud Creek	1.92	R	3	X	X				X	X		X						
OK410210080250_00	Carter Creek, South	2.08	R	3	X	X				X	X		X						
OK410210080260_00	Beeman Creek	3.83	R	3	X	X				X	X		X						
OK410210080270_00	Pine Creek	5.77	R	3	X	X	X				X		X		X		*		
OK410210080280_00	Canyon Creek	5.86	R	3	X	X				X	X		X						
OK410210080290_00	Little Pine Creek	6.64	R	3	X	X	X				X		X		X		*		
OK410210090010_00	Glover River, East Fork	21.60	R	5a	F	F	N				F		F		F		*		
OK410210090020_00	Willis Creek	6.69	R	3	X	X				X	X		X						
OK410210090030_00	Coon Creek	12.32	R	2	X	X				F	X		X						
OK410210090050_00	Carpenter Branch	4.66	R	3	X	X				X	X		X						
OK410210090070_00	Glover River, West Fork	20.69	R	2	F	F	F				X		X		X		*		
OK410210090080_00	Rocky Creek	6.09	R	3	X	X				X	X		X						
OK410210090090_00	Winship Branch	3.73	R	3	X	X				X	X		X						
OK410210090100_00	Silver Creek	12.04	R	3	I	I				I	X		X						
OK410210090110_00	Little Silver Creek	8.98	R	3	X	X				X	X		X						
OK410210090120_00	Little Silver Creek, West	5.65	R	3	X	X				X	X		X						
OK410210090130_00	Little Silver Creek, East	3.26	R	3	X	X				X	X		X						
OK410210090140_00	Edwards Creek	3.32	R	3	X	X				X	X		X						
OK410210090150_00	Watson Branch	1.54	R	3	X	X				X	X		X						
OK410210090160_00	Bluff Creek	3.69	R	2	I	X	F				X		X		X		*		
OK410210090170_00	Blackwell Branch	2.50	R	3	X	X				X	X		X						
OK410210090180_00	East Creek	7.03	R	3	I	I				I	X		X						
OK410210090190_00	Dog Creek	4.12	R	3	X	X				X	X		X						
OK410300010010_00	Kiamichi River	18.11	R	5a	F	F				N	N		F		N				

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OK410300010020_00	Gates Creek	4.85	R	4a	I	F	N				X		I		X				
OK410300010030_00	Gates Creek	12.83	R	3	X	X	X				X		X		X				
OK410300010040_00	Raymond Gary Lake	263	L	2	F	F				I	I		F						
OK410300010050_00	Cedar Creek	2.60	R	3	X	X				X	X		X						
OK410300010060_00	Negro Creek	2.50	R	3	X	X		X			X			X					
OK410300010070_00	Cold Springs Branch	4.22	R	3	X	X				X	X		X						
OK410300010080_00	Bull Creek	7.46	R	3	X	X				X	X		X						
OK410300010090_00	Tuttle Creek	4.84	R	3	X	X				X	X		X						
OK410300010100_00	Bird Creek	8.05	R	5a	F	F				N	X		F		I				
OK410300010110_00	Sandy Branch	2.77	R	3	X	X				X	X		X						
OK410300010120_00	Rock Creek	4.65	R	3	X	X				X	X		X						
OK410300010130_00	Rock Creek	4.57	R	3	X	X				X	X		X						
OK410300020010_10	Kiamichi River	15.53	R	5c	X	X				N	X		X		X				
OK410300020020_00	Hugo Lake	13250	L	5a	F	F				N	N		F		I				
OK410300020030_00	Cedar Creek	6.87	R	3	X	X				X	X		X						
OK410300020040_00	Salt Creek	0.82	R	3	X	X				X	X		X						
OK410300020050_00	Wire Branch	4.59	R	3	X	X				X	X		X						
OK410300020060_00	Kiamichi River, North Fork	11.00	R	3	I	I				I	X		X		X				
OK410300020070_00	Miller Creek	3.93	R	3	X	X				X	X		X						
OK410300020080_00	Long Creek	5.89	R	3	X	X				X	X		X		X				
OK410300020100_00	Holly Creek, North Fork	3.42	R	3	X	X				X	X		X						
OK410300020110_00	Holly Creek, South Fork	3.39	R	3	X	X				X	X		X						
OK410300020120_00	Schooler Lake	1	L	5c	X	X				X	N		X						
OK410300020130_00	Frazier Creek	15.63	R	3	X	X	X				X		X		X				
OK410300020140_00	Spencer Creek	12.01	R	3	X	X				X	X		X						
OK410300020150_00	Hampton Creek	2.53	R	3	X	X				X	X		X						
OK410300020160_00	Hog Creek	5.67	R	3	X	X				X	X		X						
OK410300020170_00	Crooked Creek	4.74	R	3	X	X				X	X		X						
OK410300020180_00	South Branch	5.42	R	3	X	X				X	X		X						
OK410300020190_00	Rock Creek	13.96	R	5a	I	F	N				X		N						
OK410300020200_00	Possum Creek	6.45	R	3	X	X				X	X		X						
OK410300020210_00	Fish Creek	6.19	R	3	X	X				X	X		X						
OK410300020220_00	Ozzie Cobb Lake	116	L	5a	I	F				N	N		F						
OK410300020230_00	One Creek	10.58	R	3	X	X				X	X		X						
OK410300020240_00	Holly Branch	2.60	R	3	X	X				X	X		X						
OK410300020250_00	Negro Creek	6.27	R	3	X	X				X	X		X						

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OK410300020260_00	Hagerman Creek	3.19	R	3	X	X				X	X		X						
OK410300020270_00	Mill Creek	5.73	R	3	X	X				X	X		X						
OK410300020280_00	Big Waterhole Creek	8.20	R	3	X	X				X	X		X						
OK410300020300_00	Little Waterhole Creek	3.11	R	3	X	X				X	X		X						
OK410300020310_00	Duck Creek	5.67	R	3	X	X				X	X		X						
OK410300030010_00	Kiamichi River	2.97	R	3	X	X				X	X		X		X				
OK410300030010_10	Kiamichi River	10.30	R	5a	F	F				N	N		N		F				
OK410300030010_20	Kiamichi River	11.36	R	3	X	X				X	X		X		X				
OK410300030020_00	Cedar Creek	7.26	R	2	X	X	F				X		X		X		*		
OK410300030020_10	Cedar Creek	23.36	R	5a	F	F	N				X		N		X		*		
OK410300030030_00	Briar Branch	2.32	R	3	X	X				X	X		X						
OK410300030040_00	Bitter Creek	7.43	R	3	X	X				X	X		X						
OK410300030050_00	Chickasaw Creek	6.37	R	3	X	X				X	X		X						
OK410300030060_00	One Creek	17.42	R	5a	I	F				N	X		N						
OK410300030070_00	Medicine Springs Creek	2.63	R	3	X	X				X	X		X						
OK410300030080_00	One Creek, North	8.95	R	3	X	X				X	X		X						
OK410300030090_00	One Creek, Middle	7.88	R	3	X	X				X	X		X						
OK410300030100_00	Dog Creek	4.83	R	3	X	X				X	X		X						
OK410300030110_00	West Fork Creek	11.80	R	3	X	X				X	X		X						
OK410300030120_00	Turkey Creek	4.99	R	3	X	X				X	X		X						
OK410300030130_00	Stovepipe Creek	2.95	R	3	X	X				X	X		X						
OK410300030140_00	Possum Creek	4.98	R	3	X	X				X	X		X						
OK410300030150_00	Snow Creek	3.14	R	3	X	X				X	X		X						
OK410300030160_00	Caney Creek	13.70	R	3	X	X				X	X		X						
OK410300030170_00	Cedar Creek, North	5.39	R	3	X	X				X	X		X						
OK410300030180_00	Little Cedar Creek	7.06	R	3	X	X				X	X		X						
OK410300030190_00	Little Cedar Creek Lake	1	L	3	X	X				X	X		X						
OK410300030200_00	Beaver Creek	12.02	R	2	X	X				F	X		X		X				
OK410300030210_00	Dumpling Creek	13.73	R	5a	F	F				N	X		I						
OK410300030220_00	Charlie Creek	3.93	R	3	X	X				X	X		X						
OK410300030230_00	Coffee Creek	3.73	R	3	X	X				X	X		X						
OK410300030240_00	Judge Cox Branch	3.81	R	3	X	X				X	X		X						
OK410300030250_00	Panther Creek	4.81	R	3	X	X				X	X		X						
OK410300030260_00	Caroline Creek	3.37	R	3	X	X				X	X		X						
OK410300030270_00	Tenmile Creek	35.75	R	5a	I	F				N	X		F		I				
OK410300030280_00	Rock Creek	4.13	R	3	X	X				X	X		X						

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OK410300030290_00	Stink Branch	2.49	R	3	X	X				X	X		X						
OK410300030300_00	Cole Creek	5.57	R	3	X	X				X	X		X						
OK410300030310_00	Hampton Creek	5.60	R	3	X	X				X	X		X						
OK410300030320_00	Davenport Creek	7.84	R	3	X	X				X	X		X						
OK410300030330_00	Little Davenport Creek	4.49	R	3	X	X				X	X		X						
OK410300030340_00	Yerby Branch	2.24	R	3	X	X				X	X		X						
OK410300030350_00	Rough Hollow Creek	2.38	R	3	X	X				X	X		X						
OK410300030360_00	Pine Creek	3.85	R	3	X	X				X	X		X						
OK410300030370_00	Clear Creek	13.04	R	3	X	X				X	X		X						
OK410300030380_00	Little Tenmile Creek	5.78	R	3	X	X				X	X		X						
OK410300030400_00	Cobb Lake	1	L	3	X	X				X	X		X						
OK410300030410_00	Frederick Creek	2.80	R	3	X	X				X	X		X						
OK410300030420_00	Buck Creek	35.60	R	4a	I	F				F	X		N		X				
OK410300030430_00	Whiskey Creek	3.62	R	3	X	X				X	X		X						
OK410300030440_00	Clay Branch	2.21	R	3	X	X				X	X		X						
OK410300030450_00	Wildhorse Creek	6.77	R	3	X	X				X	X		X						
OK410300030460_00	Little Wildhorse Creek	3.14	R	3	X	X				X	X		X						
OK410300030470_00	Kimbrough Creek	5.18	R	3	X	X				X	X		X						
OK410300030480_00	Shorty Creek	6.25	R	3	X	X				X	X		X						
OK410300030490_00	Fobb Creek	11.58	R	3	X	X				X	X		X						
OK410300030500_00	Cole Creek	7.59	R	3	X	X				X	X		X						
OK410300030510_00	Happy Hollow Creek	3.89	R	3	X	X				X	X		X		X				
OK410300030520_00	Grassy Creek	4.19	R	3	X	X				X	X		X		X				
OK410300030530_00	Robinson Creek	4.99	R	3	X	X				X	X		X						
OK410300030540_00	Grassy Creek	3.78	R	3	X	X				X	X		X						
OK410300030550_00	Lily Pond Creek	3.20	R	3	X	X				X	X		X						
OK410300030560_00	Mud Creek	2.66	R	3	X	X				X	X		X						
OK410300030570_00	Kiamichi River	24.39	R	3	X	X				X	X		X		X				
OK410300030570_10	Kiamichi River	1.96	R	3	X	X				X	X		X		X				
OK410300030580_00	Pine Creek	23.49	R	5a	F	F				N	X		I						
OK410300030590_00	Wildcat Creek	8.31	R	3	X	X				X	X		X						
OK410300030600_00	Marble Creek	8.22	R	3	X	X				X	X		X						
OK410300030610_00	Caney Creek	15.66	R	3	X	X				X	X		X						
OK410300030620_00	Spring Branch	1.16	R	3	X	X				X	X		X						
OK410300030630_00	Silver Creek	4.74	R	3	X	X				X	X		X						
OK410300030640_00	John's Creek	2.14	R	3	X	X				X	X		X						

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OK410300030650_00	Fobb Creek	3.11	R	3	X	X				X	X		X						
OK410300030660_00	Peveyhouse Creek	3.11	R	3	X	X				X	X		X						
OK410300030670_00	Bull Creek	5.18	R	3	X	X				X	X		X						
OK410300030680_00	Long Bell Creek	5.28	R	3	X	X				X	X		X						
OK410300030690_00	Hackett Creek	4.96	R	3	X	X				X	X		X						
OK410300030700_00	Beulah Creek	4.24	R	3	X	X				X	X		X						
OK410300030710_00	Crumb Creek	9.60	R	3	X	X				X	X		X						
OK410300030720_00	Stanley Creek, South	1.56	R	3	X	X				X	X		X						
OK410300030730_00	Little Cedar Creek	5.25	R	3	X	X				X	X		X						
OK410300030740_00	Clayton Creek, West	1.12	R	3	X	X				X	X		X						
OK410300030750_00	Peterson Creek	6.27	R	3	X	X				X	X		X						
OK410300030760_00	Peal Creek	7.49	R	3	X	X				X	X		X		X				*
OK410300030770_00	Hurd Creek	7.39	R	3	X	X				X	X		X						
OK410300030780_00	Clayton Lake	95	L	5c	F	I				I	N		I		X				*
OK410310010010_00	Kiamichi River	26.35	R	5a	F	F				N	F		F		F				
OK410310010020_00	Jackfork Creek	2.79	R	2	I	X				I	X		X		F				*
OK410310010030_00	Terryland Creek	2.31	R	3	X	X				X	X		X						
OK410310010040_00	Nanah Waiya Creek	2.03	R	3	I	I				I	I		X		I				
OK410310010050_00	Nanah Waiya Lake	131	L	5c	F	F				F	N		F						
OK410310010060_00	Old Choctaw Creek	1.54	R	3	X	X				X	X		X						
OK410310010070_00	Dry Creek	6.45	R	2	F	I				F	X		I						
OK410310010090_00	Walnut Creek	3.44	R	3	X	X				X	X		X						
OK410310010100_00	Walnut Creek, North Fork	5.82	R	3	X	X				X	X		X						
OK410310010110_00	Walnut Creek, South Fork	3.42	R	3	X	X				X	X		X						
OK410310010140_00	Albion Creek	6.11	R	3	X	X				X	X		X						
OK410310010150_00	Clear Creek	2.56	R	3	X	X				X	X		X						
OK410310010170_00	Rock Creek	8.19	R	3	X	X				X	X		X		X				
OK410310010180_00	Prairie Creek	5.85	R	3	X	X				X	X		X						
OK410310010190_00	Jackson Creek	7.96	R	3	X	X				X	X		X						
OK410310010200_00	Rock Creek, East Fork	7.07	R	3	X	X				X	X		X						
OK410310010210_00	Rock Creek	4.67	R	3	I	I				I	X		X		I				*
OK410310010220_00	Carl Albert Lake	183	L	5a	F	F				N	N		F		I				*
OK410310010230_00	Talihina Lake	25	L	5a	X	I				N	X		X		X				*
OK410310020010_00	Kiamichi River	21.24	R	3	X	X				X	X		X		X				
OK410310020010_10	Kiamichi River	25.18	R	5a	F	F				N	F		F		F				
OK410310020020_00	Tombstone Creek	11.18	R	3	X	X				X	X		X						

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OK410310020030_00	Frazier Creek	11.06	R	3	X	X				X	X		X						
OK410310020040_00	Bohannon Creek	9.39	R	3	X	X				X	X		X						
OK410310020050_00	Woods Creek	6.03	R	3	X	X				I	X		X						
OK410310020060_00	Sycamore Creek	9.12	R	3	X	X				X	X		X						
OK410310020070_00	Billy Creek	8.91	R	5a	I	F				N	X		N						
OK410310020080_00	Billy Creek, East	4.55	R	3	X	X				X	X		X						
OK410310020090_00	Little Cedar Creek	4.15	R	3	X	X				X	X		X						
OK410310020100_00	Big Cedar Creek	5.83	R	5a	F	F				N	X		N						
OK410310020110_00	Pigeon Creek	3.48	R	3	X	X	X				X		X		X				
OK410310030020_00	Sardis Lake	13610	L	5a	F	F				N	N		F		I				*
OK410310030030_00	Buffalo Creek	10.72	R	3	X	X				X	X		X		X				*
OK410310030040_00	Cedar Creek	5.40	R	3	X	X				X	X		X						
OK410310030050_00	Little Buffalo Creek	6.88	R	2	X	X				F	X		X						
OK410310030060_00	Anderson Creek	6.37	R	3	X	X				X	X		X						
OK410310030070_00	Anderson Creek, West Fork	8.90	R	3	X	X				X	X		X						
OK410310030080_00	Jackfork Creek, North Fork	20.99	R	3	X	X				X	X		X						
OK410310030090_00	Bolen Creek	8.54	R	5a	F	N				N	X		I						
OK410310030100_00	Jackfork Creek	12.72	R	3	X	X				X	X		X		X				*
OK410310030110_00	Maxwell Creek	6.67	R	3	X	X				X	X		X						
OK410310030120_00	Clear Creek	11.00	R	3	X	X				X	X		X						
OK410400010010_00	Red River	12.92	R	3	X	X				X	X		X		X				
OK410400010010_10	Red River	12.81	R	3	X	X				X	X		X		X				
OK410400010010_20	Red River	4.86	R	4a	F	F				F	F		N		I				
OK410400010010_30	Red River	8.17	R	3	X	X				X	X		X		X				
OK410400010010_40	Red River	13.62	R	3	X	X				X	X		X		X				
OK410400010010_50	Red River	2.23	R	3	X	X				X	X		X		X				
OK410400010010_60	Red River	6.51	R	3	X	X				X	X		X		X				
OK410400010010_70	Red River	6.63	R	3	X	X				X	X		X		X				
OK410400010020_00	Goodwater Creek	8.04	R	3	X	X				X	X		X						
OK410400010030_00	Carney Creek	10.46	R	3	X	X				X	X		X						
OK410400010040_00	Horse Creek	7.76	R	5a	I	F				F	X		N		X				
OK410400010040_10	Horse Creek	6.90	R	3	X	X				X	X			X					
OK410400010045_00	Horse Creek, Unnamed Tributary of	2.53	R	3	X	X		X			X			X					
OK410400010050_00	Owl Creek	8.50	R	3	X	X				X	X		X						
OK410400010060_00	Roebuck Lake	1	L	5a	I	I				N	I		F						
OK410400010070_00	Muddy Boggy Creek	21.59	R	5a	F	F				N	F		N		I				

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OK410400010080_00	Hanubby Creek	12.33	R	3	X	X				X	X		X						
OK410400010090_00	Red River, Unnamed Tributary of	2.80	R	3	X	X		X			X			X					
OK410400010110_00	Crowder Creek	12.14	R	3	X	X				X	X		X						
OK410400010120_00	Crooked Creek	8.04	R	3	X	X				X	X		X						
OK410400010130_00	Lick Creek	20.19	R	5a	F	F				N	X		N		X				
OK410400010140_00	Rock Creek	7.78	R	3	X	X				X	X		X						
OK410400010150_00	Pointer Creek	6.14	R	3	X	X				X	X		X						
OK410400010160_00	Dry Pointer Creek	2.25	R	3	X	X				X	X		X						
OK410400010170_00	Big Branch	3.89	R	3	I	I				I	X		X						
OK410400010180_00	Beaverdam Creek	11.52	R	3	I	I				I	X		X						
OK410400010190_00	Bee Creek	3.28	R	3	X	X				X	X		X						
OK410400010200_00	Sugar Creek	7.92	R	3	X	X				X	X		X						
OK410400010210_00	Whitegrass Creek	29.71	R	5a	F	F				N	X		N		X				
OK410400010220_00	Dry Creek	3.92	R	3	X	X				X	X		X						
OK410400010230_00	Little Dry Creek	3.54	R	3	X	X				X	X		X						
OK410400010240_00	Carson Branch	4.72	R	3	X	X				X	X		X						
OK410400010250_00	Frazier Creek	4.43	R	3	X	X				X	X		X						
OK410400010260_00	Slash Creek	3.74	R	3	X	X				X	X		X						
OK410400010270_00	Whitesand Creek	5.45	R	3	X	X				X	X		X						
OK410400010280_00	Winters Creek	4.69	R	3	X	X				X	X		X						
OK410400010290_00	Rabbit Creek	2.08	R	3	X	X				X	X		X						
OK410400010300_00	Bokchito Creek	11.88	R	3	X	X				X	X		X						
OK410400010310_00	Crane Lake	1	L	3	X	X				X	X		X						
OK410400020010_00	Clear Boggy Creek	33.42	R	2	I	X				F	X		X		X				
OK410400020010_10	Clear Boggy Creek	8.20	R	3	X	X				X	X		X		X				
OK410400020020_00	Mayhew Creek	9.72	R	3	X	X				X	X		X						
OK410400020025_00	Boswell Creek!	2.96	R	3	X			X			X			X					
OK410400020030_00	Ross Branch	3.81	R	3	X	X				X	X		X						
OK410400020040_00	Newkirk Lake	1	L	3	X	X				X	X		X						
OK410400020050_00	Rocky Branch	3.20	R	3	X	X				X	X		X						
OK410400020060_00	Pecan Branch	4.40	R	3	X	X				X	X		X						
OK410400020070_00	Cold Springs Creek	6.61	R	3	X	X				X	X		X						
OK410400020080_00	Dobbins Lake	1	L	3	X	X				X	X		X						
OK410400020090_00	Sandy Creek	5.70	R	3	X	X				X	X		X						
OK410400020100_00	Shawnee Creek	7.58	R	3	X	X				X	X		X						
OK410400020110_00	Delaware Creek	11.24	R	3	X	X				X	X		X						

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OK410400020120_00	Crooked Creek	2.39	R	3	X	X				X	X		X						
OK410400020130_00	Harrington Creek	3.81	R	3	X	X				X	X		X						
OK410400020140_00	Dancing Rabbit Creek	5.19	R	3	X	X				X	X		X						
OK410400020150_00	Mossy Lake	1	L	3	X	X				X	X		X						
OK410400020160_00	Bois d' Arc Creek	9.99	R	2	X					F	X		X						
OK410400020170_00	Straight Creek	5.55	R	3	X	X				X	X		X						
OK410400020180_00	Attaway Spring Creek	0.80	R	3	X	X				X	X		X						
OK410400020190_00	Odell Spring Creek	0.32	R	3	X	X				X	X		X						
OK410400020200_00	Caney Creek	11.67	R	5a	F	N				N	X		N						
OK410400020210_00	Caney Creek, West Branch	7.51	R	3	X	X				X	X		X						
OK410400020220_00	Caney Creek, East Branch	1.96	R	3	X	X				X	X		X						
OK410400020230_00	Grassy Lake	1	L	3	X	X				X	X		X						
OK410400020240_00	Pine Creek	8.03	R	3	X	X				X	X		X						
OK410400020250_00	Long Branch	7.18	R	3	X	X				X	X		X						
OK410400020260_00	Cowpen Creek	12.55	R	3	X	X				X	X		X						
OK410400020270_00	Little Cowpen Creek	3.80	R	3	X	X				X	X		X						
OK410400020280_00	Twin Lake	1	L	3	X	X				X	X		X						
OK410400020290_00	Sand Creek	9.48	R	3	X	X				X	X		X						
OK410400020300_00	Fronterhouse Creek	8.88	R	3	X	X				X	X		X						
OK410400030010_00	Clear Boggy Creek	22.76	R	5a	F	F				N	F		N		I				
OK410400030020_00	Caney Creek	12.42	R	2	I	F				F	X			F					
OK410400030030_00	Davis Creek	9.68	R	3	X	X				X	X		X						
OK410400030040_00	Caddo Creek	2.22	R	3	X	X				X	X		X						
OK410400030050_00	Cat Creek	3.85	R	3	X	X				X	X		X						
OK410400030060_00	Buffalo Creek	3.25	R	3	X	X				X	X		X						
OK410400030070_00	Big Branch	8.41	R	3	X	X				X	X		X						
OK410400030080_00	Big Slough	3.32	R	3	X	X				X	X		X						
OK410400030090_00	Lain Lake	1	L	3	X	X				X	X		X						
OK410400030100_00	Salt Creek	6.45	R	3	X	X				X	X		X						
OK410400030110_00	Rock Creek	5.75	R	3	X	X				X	X		X						
OK410400030120_00	Rock Creek Lake	248	L	5a	F	F				N	I		F						
OK410400030130_00	Dry Boggy Creek	10.79	R	3	X	X				X	X		X						
OK410400030140_00	Watson Creek	8.26	R	3	X	X				X	X		X						
OK410400030150_00	Sandy Creek	7.87	R	3	X	X				X	X		X						
OK410400030160_00	Sandy Creek	14.01	R	2	I	I				F	X		X						
OK410400030170_00	Ream Lake	1	L	3	X	X				X	X		X						

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OK410400030180_00	Birch Creek	3.55	R	3	X	X				X	X		X						
OK410400030190_00	Rock Creek	4.52	R	3	X	X				X	X		X						
OK410400030200_00	Clear Boggy Creek (old channel)	6.85	R	3	X	X				X	X		X						
OK410400030210_00	Coon Creek	4.67	R	3	X	X				X	X		X						
OK410400030230_00	Clear Boggy Creek	10.74	R	2	X	X				F	X		X		X				
OK410400030230_10	Clear Boggy Creek	16.72	R	3	X	X				X	X		X		X				
OK410400030240_00	Delaware Creek	29.01	R	5a	I	F				F	X		N		X				
OK410400030250_00	Clarita Creek	10.26	R	3	X	X				X	X		X						
OK410400030260_00	Walnut Branch	12.14	R	3	X	X				X	X		X						
OK410400030280_00	Sandy Creek	5.34	R	3	X	X				X	X		X		X				
OK410400030290_00	Wapanucka Creek	1.77	R	3	X	X		X			X			X					
OK410400030300_00	Wapanucka City Lake	1	L	3	I	I				I	I		I						
OK410400030305_00	Wapanucka Creek, West	1.60	R	3	X	X				X	X		X						
OK410400030310_00	Wapanucka Lake	1	L	3	X	X				X	X		X						
OK410400030320_00	Wide Springs Branch	2.95	R	3	X	X				X	X		X		X				
OK410400030330_00	Houghtubby Branch	4.22	R	3	X	X				X	X		X						
OK410400030340_00	Deadman Spring Creek	3.15	R	3	X	X				X	X		X						
OK410400030350_00	Elm Creek	7.81	R	3	X	X				X	X		X						
OK410400030360_00	Little Caney Creek	7.90	R	3	X	X				X	X		X						
OK410400030370_00	Leader Creek	29.58	R	5a	I	F				N	X		N						
OK410400030380_00	Owl Creek	7.86	R	3	X	X				X	X		X						
OK410400030390_00	Peach Creek	6.32	R	3	X	X				X	X		X						
OK410400030400_00	Tupelo Creek	2.05	R	3	X	X				X	X		X						
OK410400030410_00	Turkey Creek	5.37	R	2	X	X				F	X		X						
OK410400030420_00	Coon Creek	4.46	R	3	X	X				X	X		X						
OK410400030430_00	Sandy Creek	5.53	R	5c	X	X				N	X		X						
OK410400030440_00	Lula Creek, East	1.40	R	3	X	X				X	X		X						
OK410400030450_00	Bois d' Arc Creek	3.16	R	3	X	X				X	X		X						
OK410400030460_00	Bully Creek	6.34	R	3	X	X				X	X		X						
OK410400030470_00	Lula Creek	2.12	R	3	X	X				X	X		X						
OK410400030480_00	Leader Creek, West	4.34	R	3	X	X				X	X		X						
OK410400030490_00	Goose Creek	15.09	R	5a	F	F				N	X		N						
OK410400030510_00	Coffee Pot Spring Creek	4.43	R	3	X	X				X	X		X						
OK410400030520_00	Coal Creek	16.29	R	3	X	X				X	X		X						
OK410400030523_00	Diamond Creek	0.64	R	2	I	F				I	X		X		I				
OK410400030530_00	Wildcat Springs Creek	0.37	R	3	X	X				X	X		X						

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OK410400030540_00	Rock Creek	10.60	R	3	X	X				X	X		X						
OK410400030550_00	Coapont Lake	1	L	3	X	X				X	X		X						
OK410400040010_00	Clear Boggy Creek	30.64	R	2	I	I				F	X		X		I				
OK410400040020_00	Buck Creek	13.16	R	3	X	X				X	X		X						
OK410400040030_00	Owl Creek	5.20	R	3	X	X				X	X		X						
OK410400040040_00	Salt Creek	4.53	R	3	X	X				X	X		X						
OK410400040050_00	Buck Creek, East	5.42	R	3	X	X				X	X		X						
OK410400040060_00	Buck Creek, West	6.58	R	3	X	X				X	X		X						
OK410400040070_00	Sheep Creek	9.29	R	3	I	I				I	X		X		I				
OK410400040080_00	Canyon Creek	5.95	R	3	X	X				X	X		X						
OK410400040090_00	Mill Creek	9.59	R	2	I	F				I	X		X		I				
OK410400040100_00	Walnut Creek	5.86	R	3	X	X				X	X		X						
OK410400040110_00	Bois d' Arc Creek	11.27	R	2	X	X				F	X		X						
OK410400040130_00	Jack Creek	1.52	R	3	X	X				X	X		X						
OK410400040140_00	Jack Creek, North	8.04	R	3	X	X				X	X		X						
OK410400040150_00	Jack Creek, South	9.28	R	3	X	X				X	X		X						
OK410400040160_00	Rhoda Creek	6.75	R	3	X	X				X	X		X						
OK410400040170_00	Lake Creek	3.96	R	5b	F	N				F	I		X		F				
OK410400040180_00	Ada Lake	108	L	3	X	X				X	X		X						
OK410400050010_00	Muddy Boggy Creek	3.87	R	3	I	X				I	X		X		X				
OK410400050010_10	Muddy Boggy Creek	29.37	R	3	X	X				X	X		X		X				
OK410400050020_00	Tanyard Creek	9.31	R	3	X	X				X	X		X						
OK410400050040_00	Grassy Lake	1	L	3	X	X				X	X		X						
OK410400050050_00	Salt Lake	1	L	3	X	X				X	X		X						
OK410400050060_00	Louie Lake	1	L	3	X	X				X	X		X						
OK410400050070_00	Boehler Lake Creek	5.13	R	3	X	X				X	X		X						
OK410400050080_00	Clear Lake	1	L	3	X	X				X	X		X						
OK410400050090_00	Boehler Lake	1	L	3	X	X				X	X		X						
OK410400050100_00	Caney Creek	9.15	R	3	X	X				X	X		X						
OK410400050110_00	Lamey Slash	3.31	R	3	X	X				X	X		X						
OK410400050120_00	Boggy Creek Cutoff Oxbow Lake	1	L	3	X	X				X	X		X						
OK410400050130_00	Potubbi Creek	7.27	R	3	X	X				X	X		X						
OK410400050140_00	Allen Lake Creek	1.68	R	3	X	X				X	X		X						
OK410400050150_00	Allen Lake	1	L	3	X	X				X	X		X						
OK410400050160_00	Sand Branch	1.72	R	3	X	X				X	X		X						
OK410400050170_00	Atoka Lake Creek	1.48	R	3	X	X				X	X		X						

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OK410400050180_00	Atoka Lake	1	L	3	X	X				X	X		X						
OK410400050190_00	Sandy Creek	11.82	R	2	X	X				F	X		X						
OK410400050200_00	Rard Branch	2.39	R	3	X	X				X	X		X						
OK410400050210_00	Cold Springs Creek	4.63	R	3	X	X				X	X		X						
OK410400050220_00	Sandy Creek, East	3.06	R	3	X	X				X	X		X						
OK410400050230_00	Dry Lake	1	L	3	X	X				X	X		X						
OK410400050240_00	Crystal Creek	0.39	R	3	X	X				X	X		X						
OK410400050250_00	Crystal Creek, North	3.84	R	3	X	X				X	X		X						
OK410400050260_00	Crystal Creek, South	2.64	R	3	X	X				X	X		X						
OK410400050270_00	Muddy Boggy Creek	24.53	R	3	X	X				X	X		X		X				
OK410400050270_10	Muddy Boggy Creek	22.25	R	5a	F	F				N	N		N		I				
OK410400050290_00	Medicine Branch	3.31	R	3	X	X				X	X		X						
OK410400050300_00	Wilson Creek	4.60	R	3	X	X				X	X		X						
OK410400050310_00	Double Springs Creek	5.97	R	3	X	X				X	X		X						
OK410400050320_00	Double Springs Creek, South Branch	2.61	R	3	X	X				X	X		X						
OK410400050330_00	Double Springs Creek, North Branch	2.31	R	3	X	X				X	X		X						
OK410400050340_00	August Creek	5.88	R	3	X	X				X	X		X						
OK410400050350_00	East Branch	2.79	R	3	X	X				X	X		X						
OK410400050360_00	Cabin Creek	2.70	R	3	X	X				X	X		X						
OK410400050370_00	Rock Creek	5.58	R	3	X	X				X	X		X						
OK410400050380_00	Little Rock Creek	3.33	R	3	X	X				X	X		X						
OK410400050390_00	Campbell Creek	4.24	R	3	X	X				X	X		X						
OK410400050400_00	Prairie Hollow Creek	3.31	R	3	X	X				X	X		X						
OK410400050410_00	Boggy Creek, North	7.25	R	5a	F	N				N	X		N		X				
OK410400050415_00	North Boggy Creek, Unnamed Tributary of	3.31	R	5a	X	N		N			X			I					
OK410400050420_00	Chickasaw Creek	14.03	R	2	X	X				F	X		X						
OK410400050430_00	Little Chickasaw Creek	6.17	R	3	X	X				X	X		X						
OK410400050440_00	Rocky Creek	1.57	R	3	X	X				X	X		X						
OK410400050450_00	Breadtown Creek	8.70	R	3	X	X				X	X		X						
OK410400050460_00	Breadtown Creek, East	4.03	R	3	X	X				X	X		X						
OK410400050470_00	Sand Creek	4.58	R	3	X	X				X	X		X						
OK410400050480_00	Tumbler Creek	3.00	R	3	X	X				X	X		X						
OK410400050490_00	Sandy Creek	4.15	R	3	X	X				X	X		X						
OK410400050495_00	Muddy Boggy Creek, Unnamed Tributary of	4.06	R	3	X	X		X			X			X					

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Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK410400050500_00	Sand Creek	6.04	R	3	X	X				X	X		X						
OK410400050510_00	Atoka Lake	1	L	3	X	X				X	X		X						
OK410400050520_00	Long Creek	5.33	R	3	X	X				X	X		X						
OK410400050530_00	Thompson Creek	7.53	R	3	X	X				X	X		X						
OK410400050540_00	Coal Creek	8.70	R	3	X	X				X	X		X		X				
OK410400050550_00	French Henry Creek	6.92	R	3	X	X				X	X		X						
OK410400050560_00	Dunford Creek	5.54	R	3	X	X				X	X		X						
OK410400050570_00	Sandy Creek	2.80	R	3	X	X				X	X		X						
OK410400050580_00	Brier Creek	8.86	R	2	X	X				F	X		X						
OK410400050585_00	Brier Creek, Unnamed Tributary of	3.01	R	3	X	X		X			X			X					
OK410400050590_00	Sulphur Creek	4.91	R	3	X	X				X	X		X						
OK410400060010_00	Muddy Boggy Creek	15.34	R	3	X	X				X	X		X		X				
OK410400060010_10	Muddy Boggy Creek	13.49	R	3	X	X				X	X		X		X				
OK410400060010_20	Muddy Boggy Creek	15.02	R	3	X	X				X	X		X		X				
OK410400060010_30	Muddy Boggy Creek	20.56	R	5a	I	N				N	X		X		I				
OK410400060020_00	Caney Creek	13.00	R	3	X	X				X	X		X		X				
OK410400060030_00	Coon Creek	7.21	R	3	X	X				X	X		X		X				*
OK410400060040_00	Coalgate Municipal Lake	352	L	5a	F	F				N	N		F		F				*
OK410400060050_00	Coon Creek, North	6.37	R	3	X	X				X	X		X		X				*
OK410400060060_00	Caney Creek Lake	1	L	3	X	X				X	X		X						
OK410400060070_00	Coal Creek	11.44	R	3	X	X				X	X		X						
OK410400060080_00	Phillips Hollow Creek	2.97	R	3	X	X				X	X		X						
OK410400060090_00	Salt Creek	20.06	R	2	X	X				F	X		X						
OK410400060100_00	Keel Creek	10.23	R	3	X	X				X	X		X						
OK410400060110_00	Salt Creek, North	3.49	R	3	X	X				X	X		X						
OK410400060120_00	Caney Boggy Creek	26.49	R	5a	F	F				N	X		N		X				
OK410400060140_00	Ranch Creek	12.63	R	3	X	X				X	X		X						
OK410400060150_00	King Hollow Creek	3.43	R	3	X	X				X	X		X						
OK410400060160_00	Sandy Creek	7.75	R	3	X	X				X	X		X						
OK410400060170_00	Piney Creek	4.71	R	3	X	X				X	X		X						
OK410400060180_00	Rock Creek	8.92	R	3	X	X				X	X		X						
OK410400060190_00	Salt Creek	3.17	R	3	X	X				X	X		X						
OK410400060200_00	Rock Creek	12.87	R	2	X	X				F	X		X						
OK410400060210_00	Black Creek	7.23	R	3	X	X				X	X		X						
OK410400060220_00	Cedar Creek	5.12	R	3	X	X				X	X		X						
OK410400060230_00	Pine Creek	5.04	R	3	X	X				X	X		X						

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OK410400060240_00	Panther Creek	11.25	R	3	X	X				X	X		X						
OK410400060250_00	Gerty Creek	3.46	R	3	X	X				X	X		X						
OK410400060260_00	Big Sandy Creek	13.94	R	3	X	X				X	X		X						
OK410400060270_00	Little Sandy Creek	7.78	R	3	X	X		X			X			X					
OK410400060290_00	Sincere Creek	16.83	R	3	X	X				X	X		X						
OK410400060300_00	Little Sandy Creek	4.66	R	3	X	X				X	X		X						
OK410400060310_00	Town Branch	2.70	R	3	X	X		X						X					
OK410400070010_00	McGee Creek	32.08	R	2	I	F				F	X		F		X				*
OK410400070020_00	McGee Creek Lake	3810	L	5a	F	F				N	N		F		F				*
OK410400070030_00	Crooked Oak Creek	3.91	R	3	X	X				X	X		X						
OK410400070040_00	Potapo Creek	6.01	R	3	X	X				X	X		X						
OK410400070050_00	Panther Creek	1.58	R	3	X	X				X	X		X						
OK410400070060_00	Cat Creek	3.89	R	3	X	X				X	X		X						
OK410400070070_00	Kennedy Hollow Creek	3.61	R	3	X	X				X	X		X						
OK410400070080_00	Peacock Hollow Creek	2.66	R	3	X	X				X	X		X						
OK410400070090_00	Prairie Hollow Creek	0.67	R	3	X	X				X	X		X						
OK410400070100_00	Mill Creek	6.58	R	3	X	X				X	X		X		X				
OK410400070110_00	Blue Creek	2.73	R	3	X	X				X	X		X						
OK410400070140_00	Bugaboo Creek	2.06	R	3	X	X				X	X		X						
OK410400070150_00	Bear Creek	3.48	R	3	X	X				X	X		X						
OK410400070160_00	Little Caney Creek	4.21	R	3	X	X				X	X		X						
OK410400070170_00	Grassy Branch	4.60	R	3	X	X				X	X		X						
OK410400070180_00	Whiskey Hollow Branch	2.44	R	3	X	X				X	X		X						
OK410400070190_00	Ray Hollow Creek	3.62	R	3	X	X				X	X		X						
OK410400070200_00	Ray Creek	4.78	R	3	X	X				X	X		X						
OK410400070230_00	Tommy Bond Branch	5.24	R	3	X	X				X	X		X						
OK410400070250_00	Baker Branch	3.99	R	3	X	X				X	X		X						
OK410400070260_00	Little Caney Creek	3.82	R	3	X	X				X	X		X						
OK410400070270_00	Cedar Creek	2.81	R	3	X	X				X	X		X						
OK410400070280_00	Prairie Creek	6.05	R	3	X	X				X	X		X						
OK410400070290_00	Molletuby Creek	7.16	R	3	X	X				X	X		X						
OK410400070310_00	Ingersoll Creek	4.12	R	3	X	X				X	X		X						
OK410400080010_00	Boggy Creek, North	27.84	R	2	X	X				F	X		X		X				*
OK410400080020_00	Atoka Lake	5700	L	5a	F	F				N	N		F		F				*
OK410400080030_00	Mill Creek	7.39	R	3	X	X				X	X		X						
OK410400080040_00	McEntire Lake	1	L	3	X	X				X	X		X						

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OK410400080050_00	Elm Creek	2.87	R	3	X	X				X	X		X						
OK410400080060_00	Sub-Penitentiary Lake	1	L	3	X	X				X	X		X		X				
OK410400080070_00	Chilly Creek	3.29	R	3	X	X				X	X		X						
OK410400080090_00	Troney Lake	1	L	3	X	X				X	X		X						
OK410400080100_00	Beck Creek	5.06	R	3	X	X				X	X		X						
OK410400080110_00	Buck Creek	14.81	R	3	X	X				X	X		X						
OK410400080120_00	Limestone Creek	5.91	R	3	X	X				X	X		X						
OK410400080140_00	Owl Creek	5.69	R	3	X	X				X	X		X						
OK410400080150_00	Roberts Creek	3.07	R	3	X	X				X	X		X						
OK410400080160_00	Fivemile Creek	9.77	R	3	X	X				X	X		X						
OK410400080170_00	King Creek	6.35	R	3	X	X				X	X		X						
OK410400080180_00	Birch Creek	9.68	R	3	X	X				X	X		X						
OK410400080190_00	Kiowa Lake Creek	4.30	R	3	X	X				X	X		X						
OK410400080200_00	Kiowa Lake	1	L	3	X	X				X	X		X		X				
OK410400080210_00	Sassafras Creek	5.27	R	3	X	X				X	X		X						
OK410600010010_00	Blue River	48.17	R	5a	F	F				F	F		N		F				
OK410600010020_00	Red Branch	5.27	R	3	X	X				X	X		X						
OK410600010030_00	Sulphur Creek	14.61	R	5a	F	F				N	X		N						
OK410600010040_00	Wolf Creek	4.35	R	3	X	X				X	X		X						
OK410600010050_00	McGee Creek	4.69	R	3	X	X				X	X		X						
OK410600010060_00	Sassafras Creek	6.77	R	3	X	X				X	X		X						
OK410600010070_00	Rock Branch	2.85	R	3	X	X				X	X		X						
OK410600010080_00	Cherokee Lake	1	L	3	X	X				X	X		X						
OK410600010090_00	Bokchito Creek	16.78	R	5a	F	F				F	X		N						
OK410600010095_00	Bokchito Creek, Unnamed Tributary of	1.98	R	3	X	X		X			X			X					
OK410600010100_00	Chaney Creek	7.43	R	3	X	X				X	X		X						
OK410600010110_00	Academy Creek	2.19	R	3	X	X				X	X		X						
OK410600010120_00	Banty Spring Creek	3.66	R	3	X	X				X	X		X						
OK410600010130_00	Little Creek	2.34	R	3	X	X				X	X		X						
OK410600010140_00	Caddo Creek	13.96	R	5a	F	F				N	X		N						
OK410600010150_00	Rock Creek	4.47	R	3	X	X				X	X		X						
OK410600010160_00	Mail Rider Creek	5.62	R	3	X	X				X	X		X						
OK410600010170_00	Rocky Branch	3.49	R	3	X	X				X	X		X						
OK410600010180_00	Elm Creek	3.67	R	3	X	X				X	X		X						
OK410600010190_00	Puckett Creek	2.77	R	3	X	X				X	X		X						
OK410600010200_00	J-N Creek	8.04	R	3	X	X				X	X		X						

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OK410600010210_00	North Branch	3.26	R	3	X	X				X	X		X						
OK410600010220_00	Rock Creek	2.43	R	3	X	X				X	X		X						
OK410600010230_00	Cedar Creek	3.59	R	3	X	X				X	X		X						
OK410600010240_00	Dude Creek	4.01	R	3	X	X				X	X		X						
OK410600010250_00	Sandy Creek	3.41	R	3	X	X				X	X		X		X				
OK410600010260_00	Kanola Creek	10.84	R	3	X	X				X	X		X						
OK410600010270_00	Harrington Creek	7.05	R	3	X	X				X	X		X						
OK410600010280_00	Thompson Creek	5.16	R	3	X	X				X	X		X						
OK410600010290_00	Blue River	15.63	R	2	X	X				F	X		X		X				
OK410600010300_00	Mineral Bayou	15.53	R	5a	F	F				N	X		N			F			
OK410600010310_00	Chuckwa Creek	6.03	R	3	X	X				X	X		X						
OK410600010320_00	Johnson Creek	4.89	R	3	X	X				X	X		X						
OK410600010330_00	Simon Creek	6.09	R	3	X	X				X	X		X						
OK410600010340_00	Little Blue River	7.71	R	3	X	X				X	X		X		X				
OK410600010350_00	Bois d' Arc Creek	8.39	R	3	X	X				X	X		X						
OK410600010360_00	McClellan Creek	3.41	R	3	X	X				X	X		X						
OK410600010370_00	Reeder Creek	7.81	R	3	X	X				X	X		X						
OK410600010380_00	Cooper Creek	3.46	R	3	X	X				X	X		X						
OK410600010390_00	Horse Creek	5.40	R	3	X	X				X	X		X						
OK410600010440_00	Durant Lake	287	L	2	F	I				I	I		F						
OK410600020010_00	Blue River	16.75	R	3	X	X				X	X		X		X				
OK410600020010_10	Blue River	12.18	R	3	X	X			X		X		X		X		*		
OK410600020010_20	Blue River	40.10	R	2	X	X	F				X		X		X		*		
OK410600020020_00	Sandy Creek	15.35	R	5a	I	F				N	X		N		X				
OK410600020030_00	Little Sandy Creek	8.24	R	3	X	X				X	X		X						
OK410600020040_00	Brushy Creek	1.77	R	3	X	X				X	X		X						
OK410600020050_00	Peter Sandy Creek	5.14	R	3	I	I				I	X		X						
OK410600020060_00	Pecan Creek	5.21	R	3	X	X				X	X		X						
OK410600020070_00	Diamond Spring Branch	4.76	R	3	X	X				X	X		X						
OK410600020080_00	Little Pecan Creek	3.94	R	3	X	X				X	X		X						
OK410600020090_00	Little Blue Creek	12.09	R	3	X	X				X	X		X						
OK410600020100_00	Little West Blue Creek	19.08	R	5a	F	F				F	X		N						
OK410600020120_00	Limestone Creek	5.44	R	3	X	X				X	X		X						
OK4107000000010_00	Red River	14.79	R	3	X	X				X	X		X		X				
OK4107000000010_10	Red River	22.24	R	3	X	X				X	X		X		X				
OK4107000000010_20	Red River	3.62	R	3	X	X				X	X		X		X				

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OK410700000010_30	Red River	2.18	R	3	X	X				X	X		X		X				
OK410700000010_40	Red River	17.57	R	2	I	F				I	F		I		F				
OK410700000020_00	Rice Creek	6.50	R	3	X	X				X	X		X						
OK410700000030_00	Tuklo Creek	11.02	R	3	X	X				X	X		X						
OK410700000040_00	Island Bayou	41.20	R	2	I	F				F	F			I		F			
OK410700000050_00	Brushy Creek	3.86	R	3	X	X				X	X		X						
OK410700000060_00	Jones Creek	6.26	R	3	X	X				X	X		X						
OK410700000070_00	Wolf Creek	9.45	R	3	X	X				X	X		X						
OK410700000080_00	Long Creek	9.44	R	3	X	X				X	X		X						
OK410700000090_00	Sassafras Creek	12.50	R	3	X	X				X	X		X						
OK410700000100_00	Caney Creek	18.67	R	3	X	X				X	X		X						
OK410700000120_00	Caney Creek	4.47	R	3	X	X				X	X		X						
OK410700000130_00	Moore Creek	6.23	R	3	X	X				X	X		X						
OK410700000140_00	Brown Creek	15.18	R	3	X	X				X	X		X						
OK410700000150_00	Chico Creek	2.96	R	3	X	X				X	X		X						
OK410700000160_00	Muddy Creek	4.43	R	3	X	X				X	X		X						
OK410700000170_00	Pepper Creek	4.23	R	3	X	X				X	X		X						
OK410700000180_00	Sand Creek	8.44	R	3	X	X				X	X		X						
OK410700000190_00	Sandy Creek	5.80	R	3	X	X				X	X		X						
OK410700000200_00	Greenwood Creek	2.67	R	3	X	X				X	X		X						
OK410700000210_00	Webb Creek	7.13	R	3	X	X				X	X		X						
OK410700000220_00	Rock Creek	3.48	R	3	X	X				X	X		X						
OK410700000230_00	Eastman Creek	7.19	R	2	I	F				I	X		I						
OK410700000240_00	Kodac Creek	4.43	R	3	X	X				X	X		X						
OK410700000250_00	Sandy Creek	10.09	R	3	X	X				X	X		X		X				
OK410700000255_00	Sandy Creek, Unnamed Tributary of	1.01	R	3	X	X		X						X					
OK410700000260_00	Sand Creek	12.01	R	5a	F	F				F	X		N						
OK410700000270_00	Little Sand Creek	7.88	R	3	X	X				X	X		X						
OK520500010020_00	Eufaula Lake, N. Canadian River Arm	20680	L	5a	F	F				N	N		I		I				
OK520500010030_00	Carr Creek	6.35	R	3	X	X				X	X		X						
OK520500010040_00	Nellie Creek	3.60	R	3	X	X				X	X		X						
OK520500010050_00	Fivemile Creek	2.31	R	3	X	X				X	X		X						
OK520500010060_00	Possum Creek	2.91	R	3	X	X				X	X		X						
OK520500010070_00	Coon Creek	5.07	R	3	X	X				X	X		X						
OK520500010100_00	Fame Branch	3.37	R	3	X	X				X	X		X						
OK520500010110_10	Canadian River, North	48.39	R	5a	I	F				N	N		N		I				

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OK520500010120_00	Limbo Creek	12.67	R	3	I	I				I	X		X						
OK520500010130_00	Gar Creek	5.34	R	2	I	F				I	X		X		I				
OK520500010140_00	Piney Creek	3.52	R	3	X	X				X	X		X						
OK520500010150_00	Fish Creek	11.00	R	3	X	X				X	X		X						
OK520500010151_00	Dustin Creek	1.44	R	3	X	X				X	X		X						
OK520500010152_00	Dustin Lake	27	L	3	X	X				X	X		X		X				
OK520500010160_00	Parsley Creek	8.04	R	3	X	X				X	X		X						
OK520500010170_00	Bad Creek	19.11	R	5a	F	F				N	X		N		I				
OK520500010180_00	Salt Creek	4.90	R	3	X	X				X	X		X						
OK520500010190_00	Rock Creek	4.71	R	3	X	X				X	X		X						
OK520500010200_00	Alabama Creek	14.20	R	5b	I	N				N	X		N		I				
OK520500010210_00	Weleetka Creek	2.96	R	3	X	X				X	X		X		X				*
OK520500010220_00	Weleetka City Lake	61	L	3	X	X				X	X		X		X				*
OK520500010240_00	Dale Turner Lake!	49	L	3	X	X				X	X		X						
OK520500010242_00	Clearview Creek	2.29	R	5b	I	N				X	X		X						
OK520500010260_00	Salt Creek	3.01	R	3	X	X				X	X		X						
OK520500010270_00	Wetumka City Lake	169	L	5a	F	F				I	N		N		X				
OK520500010280_00	Flat Rock Creek	9.72	R	2	I	I				F	X		X		X				
OK520500010290_00	Battle Creek	4.21	R	2	I	X				I	X		F						
OK520500010300_00	Airport Lake	100	L	3	X	X				X	X		X						
OK520500020010_00	Wewoka Creek	42.99	R	5c	F	F				N	X		N			F			
OK520500020020_00	Greasy Creek	18.51	R	5a	F	F				N	X		I						
OK520500020026_00	Cheyarha Creek	1.76	R	2	I	F				I	X		X		I				
OK520500020027_00	Cheyarha Creek, East	3.01	R	5b	I	N				I	X		X		I				
OK520500020028_00	Cheyarha Creek, West	2.92	R	3	I	I				I	X		X		I				
OK520500020030_00	Fish Creek	8.72	R	2	I	F				I	X		X		I				
OK520500020035_00	Wetumka Creek!	2.39	R	3	X	X		X			X			X					
OK520500020040_00	Brooks Lake	120	L	2	F	I				I	I		F						
OK520500020050_00	Ranche Creek	10.83	R	3	X	X				X	X		X						
OK520500020060_00	Graves Creek	13.50	R	3	I	I				I	X		X		I				
OK520500020070_00	Elm Creek	7.90	R	3	X	X				X	X		X						
OK520500020080_00	Grief Creek	7.10	R	3	X	X				X	X		X						
OK520500020090_00	Little Wewoka Creek	20.44	R	4a	I	F				F	X		N		I				
OK520500020100_00	Stanley Creek	3.65	R	3	X	X				X	X		X						
OK520500020110_00	Stanley Lake	23	L	3	X	X				X	X		X						
OK520500020120_00	Long George Creek	10.88	R	3	X	X				X	X		X						

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OK520500020130_00	Yeager Creek	7.97	R	3	X	X				X	X		X						
OK520500020140_00	Tiger Creek	7.54	R	3	X	X				X	X		X						
OK520500020150_00	Jacobs Creek	9.33	R	3	X	X				X	X		X						
OK520500020160_00	Cooter Creek	9.22	R	3	X	X				X	X		X						
OK520500020170_00	Coon Creek	1.71	R	3	X	X				X	X		X		X				*
OK520500020180_00	Coon Creek	3.90	R	3	I	I				I	I		X		I				*
OK520500020190_00	Wewoka Lake	371	L	5a	F	F				N	N		F		N				*
OK520500020200_00	Tiger Creek	3.07	R	3	X	X				X	X		X						
OK520500020210_00	Tiger Creek	3.77	R	3	I	I				I	X		X		I				
OK520500020220_00	Sportsman Lake	354	L	5a	F	F				N	N		F		F				
OK520500020230_00	Carter Creek	2.70	R	5b	F	N				I	X		X		I				
OK520500020230_10	Carter Creek	4.23	R	2	X	F				I	X		X		I				
OK520500020240_00	Wewoka Creek	5.36	R	5a	F	X		N			I		X			F			
OK520500020240_10	Wewoka Creek	10.27	R	5a	I	N		X			X			X	N				
OK520500020250_00	Magnolia Creek	4.81	R	5b	F	N				I	X		X		I				
OK520500020260_00	Salt Cedar Creek	1.33	R	5b	I	N				I	X		X		I				
OK520500020260_10	Salt Cedar Creek	0.86	R	3	X	X				X	X		X						
OK520500020260_20	Salt Cedar Creek	1.06	R	5b	I	N				I	X		X		I				
OK520500020270_00	Wewoka Creek, Trib A!	5.26	R	5b	I	N				I	X		X		I				
OK520500020280_00	Oakwood Cemetery Creek!	6.69	R	5b	I	N		X			X			X					
OK520500020290_00	Wewoka Creek, Unnamed Tributary of	1.48	R	3	X	X		X						X					
OK520510000010_00	Canadian River, North	36.94	R	5a	I	F				N	F		N		F				
OK520510000010_10	Canadian River, North	35.76	R	3	X	X				X	X		X		X				
OK520510000020_00	Cohee Creek	7.05	R	3	X	X				X	X		X						
OK520510000030_00	Cohee Lake	80	L	3	X	X				X	X		X						
OK520510000040_00	Okemah Creek	12.94	R	3	I	I				I	X		X						
OK520510000050_00	Sand Creek	15.03	R	3	I	I		X			X			X					
OK520510000053_00	Sand Creek, Unnamed Tributary of	4.31	R	3	X	X		X			X			X					
OK520510000055_00	Boley Creek!	5.86	R	3	X	X		X			X			X					
OK520510000060_00	Rock Creek	8.47	R	3	X	X				X	X		X						
OK520510000070_00	Fiftytwo Creek	3.94	R	3	X	X				X	X		X						
OK520510000080_00	Gar Creek	12.60	R	2	X	X				I	X		F						
OK520510000090_00	Snake Creek	7.63	R	3	I	I				I	X		X		I				
OK520510000095_00	Turkey Creek, Trib A!	4.26	R	5b	F	N				F	X		X		F				
OK520510000100_00	Turkey Creek	16.42	R	5a	F	N				N	X		F		F				
OK520510000105_00	Earlsboro Creek	5.13	R	5b	I	N				X	X		X		I				

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OK520510000110_00	Canadian River, North	3.04	R	3	X	X				X	X		X		X				
OK520510000110_05	Canadian River, North	21.91	R	5a	F	N				N	N		I			F			
OK520510000110_10	Canadian River, North	20.31	R	5a	I	N				N	F		N			F			
OK520510000110_20	Canadian River, North	31.54	R	5a	X	X				N	X		N			F			
OK520510000120_00	Shan Creek	7.92	R	3	X	X		X			X			X					
OK520510000130_00	Deer Creek	6.70	R	2	I	I				I	X		X			F			
OK520510000140_00	Painter Creek	5.01	R	3	X	X				X	X		X						
OK520510000150_00	Stamp Dance Creek	2.93	R	3	X	X				X	X		X						
OK520510000160_00	Squaw Creek	2.59	R	3	X	X				X	X		X						
OK520510000170_00	Rock Creek	10.29	R	3	X	X				X	X		X						
OK520510000180_00	Rock Creek	5.80	R	3	X	X				X	X		X						
OK520510000190_00	Squirrel Creek	10.04	R	3	X	X				X	X		X						
OK520510000200_00	Tecumseh Creek	0.93	R	3	X	X				X	X		X		X				*
OK520510000210_00	Tecumseh Creek	1.83	R	3	X	X				X	X		X		X				*
OK520510000220_00	Tecumseh Lake	127	L	5a	F	F				N	I		F		I				*
OK520510000230_00	Lost Creek	5.01	R	3	X	X				X	X		X						
OK520510000240_00	Deer Creek	3.73	R	3	X	X				X	X		X						
OK520510000250_00	Deer Creek, South	7.23	R	3	X	X				X	X		X		X				*
OK520510000255_00	Wes Watkins Reservoir	1132	L	2	F	F				I	F		F		F				
OK520510000280_00	Shawnee Twin Lake #1 (South)	1336	L	5a	F	F				N	F		F		F				*
OK520510000290_00	Deer Creek, South	4.40	R	5a	N	I				N	X		I		N				*
OK520510000300_00	Shawnee Twin Lake #2 (North)	1100	L	5a	F	F				N	I		F		I				*
OK520510000310_00	Deer Creek, North	9.55	R	3	X	X				X	X		X		X				
OK520510000320_00	Canadian River, North, Unnamed Trib	1.77	R	3	X	X		X						X					
OK520510000330_00	Horseshoe Lake	450	L	3	X					X	X		X						
OK520510000340_00	Church Trib!	3.47	R	3	X	X				X	X		X						
OK520510000390_00	Squirrel Creek, Unnamed Tributary of	4.85	R	3	X	X				X	X		X						
OK520520000010_00	Canadian River, North	3.85	R	5a	I	F				N	N		N			F			
OK520520000010_10	Canadian River, North	13.35	R	4a	X	X				I	X		N			F			
OK520520000010_20	Canadian River, North	13.71	R	5a	I	F				I	N		F			F			
OK520520000010_30	Canadian River, North	4.55	R	5a	X	X				N	X		N			F			
OK520520000010_40	Canadian River, North	9.78	R	5a	X	X				N	X		N			F			
OK520520000010_50	Canadian River, North	4.25	R	3	X	X				X	X		X		X				
OK520520000020_00	Harrah Creek	6.37	R	3	X	X				X	X		X						
OK520520000030_00	Choctaw Creek	9.76	R	5a	I	I		N			X			I		F			
OK520520000035_00	Choctaw Creek, Unnamed Tributary of	2.31	R	3	X	X		X					X						

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OK520520000040_00	Jones Creek	4.19	R	3	X	X				X	X		X						
OK520520000050_00	Silver Creek	3.36	R	3	X	X				X	X		X						
OK520520000060_00	Crutch Creek	3.55	R	5a	I	I				N	X		I						
OK520520000070_00	Crutch Creek	3.85	R	5a	I	F				N	X		N						
OK520520000070_10	Crutch Creek	2.42	R	2	I	F		X			X			X					
OK520520000080_00	Soldier Creek	6.76	R	3	X	X				X	X		X						
OK520520000090_00	Crutch Creek	3.14	R	5c	N	X		N			X			X					
OK520520000110_00	Cherry Creek	7.31	R	5a	I	I		N			I			X					
OK520520000140_00	Thompson Lake	100	L	3	X	X				X	X		X						
OK520520000150_00	Crooked Oak Creek	6.98	R	5a	N	N				N	X		N		N				
OK520520000160_00	Lightning Creek	7.50	R	3	I	X				I	X		X						
OK520520000170_00	Brock Creek	5.66	R	3	I	X				I	X		X						
OK520520000190_00	Crutch Creek, Unnamed Tributary of	3.22	R	3	X	X				X	X		X						
OK520520000210_00	Canadian River, North	1.07	R	5a	N	X				N	X		N		X				
OK520520000230_00	Campbell Creek	5.89	R	5a	I	N				N	X		I						
OK520520000240_00	Mustang Creek	9.16	R	5a	I	I				N	X		N						
OK520520000250_00	Canadian River, North	6.52	R	5a	I	F				N	I		N		I				
OK520520000260_00	Overholser Lake	1500	L	5a	I	N				N	F		F		F				
OK520520000270_00	Ramsey Lake	20	L	3	X	X				X	X		X						
OK520520000280_00	Bluff Creek Canal (Hefner L)	2.39	R	3	X	X				X	X		X						
OK520520000290_00	Soldier Creek, Unnamed Trib of	1.20	R	3	X	X				X	X			X					
OK520520000300_00	West Ramp Branch!	0.61	R	3	X	X				X	X		X						
OK520520000310_00	3001 Branch!	1.30	R	3	X	X				X	X		X						
OK520520000320_00	Taxiway Branch!	1.89	R	3	X	X				X	X		X						
OK520520000330_00	Kuhlman Creek	1.95	R	3	X	X				X	X		X						
OK520520000340_00	Albert High School Creek!	2.58	R	3	X	X				X	X		X						
OK520520000350_00	Airport Heights Creek!	4.26	R	5a	I	X				N	X		I						
OK520530000010_00	Canadian River, North	10.24	R	5a	X	F				F	X		N		X				
OK520530000010_10	Canadian River, North	105.34	R	4a	F	F				F	F		N		F				
OK520530000020_00	Wilshire Creek	1.31	R	3	X	X				X	X		X						
OK520530000030_00	Shell Creek	9.48	R	5a	F	F				N	X		N		F				
OK520530000040_00	Purcell Creek	11.75	R	3	I	I				I	X		X		X				
OK520530000050_00	Sixmile Creek	15.96	R	5c	I	X				N	X		X		X				
OK520530000060_00	Fourmile Creek	4.77	R	5c	X	X				N	X		X						
OK520530000070_00	Fourmile Creek	3.04	R	3	X	X				X	X		X						
OK520530000080_00	El Reno Lake	170	L	5a	I	F				N	F		F						

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OK520530000090_00	Target Creek	6.77	R	3	X	X				X	X		X						
OK520530000100_00	Rolla Lake	80	L	2	I	I				I	I		F						
OK520530000110_00	Sixmile Creek	13.62	R	3	I	I				I	X		X						
OK520530000120_00	Laughlin Lake Creek	2.77	R	3	X	X				X	X		X						
OK520530000130_00	Laughlin Lake	45	L	3	X	X				X	X		X						
OK520530000140_00	Horse Creek	7.96	R	3	X	X				X	X		X						
OK520530000150_00	Relay Creek	8.38	R	2	X	X				F	X		X						
OK520530000160_00	Chicken Creek	7.48	R	3	X	X				X	X		X						
OK520530000170_00	Weavers Creek	8.24	R	3	X	X				X	X		X						
OK520530000180_00	Ninemile Creek	7.78	R	3	I	I				I	X		X						
OK520530000190_00	Minnehaha Creek	7.90	R	5c	I	X				N	X			X	X				
OK520530000200_00	Canadian River, North, Unnamed Trib	5.34	R	2	X	X		F						X					
OK520530000270_00	Perimeter Creek!	3.73	R	5c	N	I				N	X		X						
OK520530000280_00	Neighborhood Creek!	2.88	R	3	X	X				X	X		X						
OK520600010010_00	Canadian River	37.50	R	5b	I	N				F	F		N		I				
OK520600010020_00	Arbeca Creek	5.68	R	3	X	X				X	X		X						
OK520600010030_00	Cotton Creek	6.97	R	3	X	X				X	X		X						
OK520600010040_00	Clear Creek	5.96	R	3	I	I				I	X		X		I				
OK520600010050_00	Barret Branch	2.59	R	3	X	X				X	X		X						
OK520600010060_00	Factory Creek	6.32	R	4a	F	F				I	X		N		I				
OK520600010070_00	Rock Creek	3.34	R	3	I	I				I	X		X		I				
OK520600010080_00	Jumper Creek	5.68	R	2	I	I				I	X		X			F			
OK520600010090_00	Jumper Creek	3.11	R	2	I	I				I	X		X			F			
OK520600010100_00	Konawa Lake	1350	L	2	F	F				I	F		F			F			
OK520600010110_00	Negro Creek	5.10	R	3	X	X				X	X		X						
OK520600010120_00	Canadian River, Unnamed Tributary of	3.62	R	3	X	X		X						X					
OK520600020010_00	Canadian River	24.35	R	5a	F	I				N	X		X		I				
OK520600020020_00	Turkey Creek	5.46	R	3	X	X				X	X		X						
OK520600020030_00	Grayson Creek	4.32	R	3	X	X				X	X		X						
OK520600020040_00	Buckhorn Creek	5.30	R	3	I	I				I	X		X		I				
OK520600020050_00	Bebee Creek	3.72	R	2	I	F				I	X		X		I				
OK520600020060_00	Slush Pit Creek	2.68	R	3	X	X				X	X		X						
OK520600020070_00	Maxwell Creek	3.84	R	3	X	X				X	X		X						
OK520600020080_00	Reserve Pit Creek	1.87	R	3	X	X				X	X		X						
OK520600020100_00	Leach Field Creek	1.60	R	3	X	X				X	X		X						
OK520600020110_00	Hutchinson Creek	3.11	R	3	X	X				X	X		X						

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OK520600020120_00	Young Creek	4.02	R	3	X	X				X	X		X						
OK520600020130_00	Preacher Creek	5.32	R	3	X	X				X	X		X						
OK520600020140_00	Big Creek	10.56	R	3	X	X				X	X		X						
OK520600020150_00	Chism Creek	4.86	R	3	X	X				X	X		X						
OK520600020160_00	Cat Creek	4.00	R	2	I	X				F	X		X						
OK520600020165_00	Cat Creek, Unnamed Tributary of	0.96	R	3	X	X		X						X					
OK520600020170_00	Julian Creek	5.19	R	5a	F	N				I	X		N						
OK520600020180_00	Constantine Creek	7.19	R	3	X	X				X	X		X						
OK520600020190_00	Pond Creek	19.58	R	2	I	F				I	X		X		I				
OK520600020200_00	Hog Creek	6.01	R	3	X	X				X	X		X						
OK520600020205_00	Red Springs Creek	1.04	R	5b	F	N				I	X		X		I				
OK520600020210_00	Jumper Creek	2.26	R	3	I	I				I	X		X		I				
OK520600020220_00	Pond Creek, East	4.44	R	3	I	I				I	X		X						
OK520600020230_00	Helsel Creek	2.49	R	3	I	I				I	X		X		I				
OK520600020240_00	Dahlgren Lake	40	L	3	X	X				X	X		X						
OK520600030010_00	Canadian Sandy Creek	37.70	R	5a	I	F				N	X		N		I				
OK520600030020_00	Little Sandy Creek	8.56	R	5c	I	X				N	X		X			F			
OK520600030030_00	Spring Brook	28.44	R	2	I	F				I	X		I		I				
OK520600030040_00	Black Creek	6.17	R	3	X	X				X	X		X						
OK520600030050_00	Rodtky Creek (Bodky)	8.71	R	3	X	X				X	X		X		X				
OK520600030060_00	Days Creek	1.56	R	3	X	X				X	X		X						
OK520600030070_00	Days Creek, East	7.03	R	3	X	X				X	X		X						
OK520600030080_00	Days Creek, West	5.56	R	3	X	X				X	X		X						
OK520600030090_00	Coon Creek	5.60	R	3	X	X				X	X		X						
OK520600030100_00	Burris Creek	6.98	R	3	X	X				X	X		X						
OK520600030110_00	Coon Creek	4.72	R	3	X	X				X	X		X						
OK520600030120_00	Little Canadian Sandy Creek	7.47	R	3	X	X				X	X		X		X				
OK520610010010_00	Canadian River	11.93	R	3	X	X				X	X		X						
OK520610010010_05	Canadian River	32.65	R	4a	I	F				I	F		N						
OK520610010010_10	Canadian River	11.48	R	3	X	X				X	X			X					
OK520610010010_20	Canadian River	6.89	R	3	X	X				X	X			X					
OK520610010020_00	Buckhead Creek	15.44	R	3	X	X				X	X		X		X				
OK520610010030_00	Little Buckhead Creek	4.79	R	3	X	X				X	X		X						
OK520610010060_00	Bell Mere Creek	0.93	R	3	X	X				X	X		X						
OK520610010070_00	Bell Mere Lake	13	L	3	X	X				X	X		X						
OK520610010080_00	Willow Creek	9.06	R	2	F	F				F	X		F						

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OK520610010090_00	Willow Creek, West	6.42	R	3	X	X				X	X		X						
OK520610010100_00	Willow Creek, East	3.33	R	3	X	X				X	X		X						
OK520610010120_00	Chouteau Creek	9.10	R	3	X	X				X	X		X						
OK520610010130_00	Dripping Springs Creek	4.79	R	3	X	X				X	X		X						
OK520610010140_00	Boone Creek	1.20	R	3	X	X				X	X		X						
OK520610010150_00	Boone Creek, East Branch	2.87	R	3	X	X				X	X		X						
OK520610010160_00	Boone Creek, West Branch	3.40	R	3	X	X				X	X		X						
OK520610010180_00	Bishop Creek	7.82	R	5c	I	I				N	X		I						
OK520610010181_00	Bishop Creek, Unnamed Trib of.	2.68	R	3	X	X				X	X		X						
OK520610010190_00	Imhoff Creek	4.08	R	3	X	X				X	X		X						
OK520610010200_00	Merkle Creek	3.16	R	5c	I	F				N	X		X		I				
OK520610010205_00	Brookhaven Creek	4.35	R	3	X	X				I	X		X						
OK520610010210_00	Pond Creek	7.62	R	3	I	I				I	X		X		X				
OK520610010215_00	Tim's Creek	3.12	R	3	X	X		X			X			X					
OK520610010220_00	Lost Creek	2.04	R	3	X	X				X	X		X						
OK520610010230_00	Cow Creek	6.71	R	5a	I	I				N	I		X		I				
OK520610020010_00	Canadian River	19.62	R	3	X	X				X	X			X					
OK520610020020_00	Coal Creek	6.66	R	3	X	X				X	X		X						
OK520610020030_00	Worley Creek	9.10	R	3	X	X				X	X		X						
OK520610020040_00	East Creek	10.93	R	3	X	X				X	X		X						
OK520610020050_00	Bennett Creek	4.03	R	3	X	X				X	X		X		X				
OK520610020060_00	Foreman Creek	4.77	R	5a	I	I				N	X		I						
OK520610020070_00	Dry Creek	8.37	R	5a	N	I				N	X		I		N				
OK520610020080_00	Store Creek	5.63	R	3	X	X				X	X		X		X				
OK520610020090_00	West Creek	5.44	R	3	X	X		X			X			X					
OK520610020100_00	Snake Creek	6.63	R	3	X	X				X	X		X						
OK520610020110_00	Beaver Creek	8.78	R	3	X	X				X	X		X						
OK520610020120_00	Buggy Creek	26.51	R	5a	F	N				N	X		N			F			
OK520610020130_00	Fisher Creek	3.10	R	3	X	X				X	X		X						
OK520610020140_00	Bullet Creek	3.30	R	3	X	X				X	X		X						
OK520610020150_00	Canadian River	2.92	R	3	X	X				X	X			X					
OK520610020150_10	Canadian River	36.25	R	5a	F	F				F	N		N			F			
OK520610020155_00	Canadian River, Unnamed Tributary of	3.46	R	3	X	X		X						X					
OK520610020160_00	Arapaho Creek	8.43	R	3	X	X				X	X		X						
OK520610020165_00	Trib8!	5.97	R	5a	F	I				N	I		X						
OK520610020170_00	Tall Bear Canyon Creek	4.73	R	3	X	X				X	X		X						

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OK520610020180_00	Cedar Lake Creek	2.08	R	3	X	X				X	X		X						
OK520610020190_00	Cedar Lake	62	L	3	X	X				X	X		X						
OK520610020200_00	Powder Face Creek	7.62	R	3	I	I				I	X		X						
OK520610020210_00	Canyon View Creek	7.08	R	5c	X	X				N	X		X						
OK520610020220_00	Fisher Canyon Creek	5.68	R	3	X	X				X	X		X						
OK520610030010_00	Walnut Creek	28.44	R	5a	I	F				F	X		N						
OK520610030040_00	Purcell Lake	150	L	2	F	F				F	I		I						
OK520610030050_00	Red Blanket Creek	5.31	R	3	X	X				X	X		X						
OK520610030060_00	Sandy Creek	6.06	R	3	X	X				X	X		X						
OK520610030070_00	Dibble Creek	9.37	R	3	X	X				X	X		X						
OK520610030080_00	Walnut Creek, North Fork	16.84	R	5a	F	F				N	X		N		I				
OK520610030090_00	Stinson Creek	5.71	R	3	X	X				X	X		X						
OK520610030100_00	Bridge Creek	6.44	R	3	X	X				X	X		X						
OK520610030110_00	Buffalo Creek	5.09	R	2	X	X				F	X		X						
OK520610030115_00	Walnut Creek, Unnamed Trib of	2.98	R	2	X	X				F	X		X						
OK520610030120_00	Blanchard Creek	4.33	R	3	X	X				X	X		X						
OK520610030130_00	Airstrip Branch!	3.44	R	2	I	F				I	X		X						
OK520620010010_00	Canadian River	42.75	R	2	I	I				I	X		I			F			
OK520620010020_00	Lumpmouth Creek	9.50	R	3	I	I				I	X		X						
OK520620010030_00	Bridgeport Creek, East	6.54	R	3	X	X				X	X		X						
OK520620010040_00	Fire Canyon Creek	2.34	R	3	X	X				X	X		X						
OK520620010050_00	Bridgeport Creek, West	6.81	R	3	X	X				X	X		X						
OK520620010060_00	Lariat Creek	10.71	R	3	I	X				I	X		X						
OK520620010070_00	White Canyon Creek	4.72	R	3	X	X				X	X		X						
OK520620010090_00	American Horse Canyon Creek (American Horse)	4.08	R	3	X	X				X	X		X						
OK520620010100_00	American Horse Lake	100	L	2	F	F				I	X		F						
OK520620010110_00	Squaw Creek	8.60	R	3	X	X				X	X		X						
OK520620010120_00	Bear Creek	6.29	R	4a	F	F				I	X		N						
OK520620010130_00	Whirlwind Creek	9.20	R	3	X	X				X	X		X						
OK520620010140_00	Fay Creek, East	5.80	R	3	X	X				X	X		X						
OK520620010150_00	Thomas Creek	5.03	R	3	X	X				X	X		X						
OK520620010160_00	Fay Creek, West	5.43	R	3	X	X		X			X			X					
OK520620010170_00	Canadian River, Unnamed Trib of	4.34	R	3	X	X				X	X		X						
OK520620020010_00	Canadian River	37.78	R	5b	F	N				F	F		F			F			
OK520620020020_00	Rough Creek	12.03	R	3	X	X				X	X		X						

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OK520620020030_00	Big Baby Creek	8.76	R	3	X	X				X	X		X						
OK520620020035_00	Yellow Bull Creek	4.49	R	3	X	X				X	X		X						
OK520620020040_00	One Horse Creek	5.50	R	3	X	X				X	X		X						
OK520620020050_00	Oakwood Creek	6.26	R	3	X	X				X	X		X						
OK520620020060_00	Flanders Creek	4.54	R	5b	I	N				I	X		X		I				
OK520620020070_00	Fiddlers Creek	6.89	R	5b	I	N				I	X		X		I				
OK520620020080_00	Squirrel Creek	9.80	R	5b	I	N				I	X		X		I				
OK520620020090_00	Trail Creek	14.34	R	5b	F	N		F			X		N	X		F			
OK520620020100_00	Little Robe Creek	6.56	R	3	I	I				I	X		X						
OK520620020110_00	Taloga Creek, East	6.72	R	3	X	X				X	X		X						
OK520620020115_00	Aiko Creek	3.18	R	3	X	X				X	X		X						
OK520620020120_00	Taloha Creek, West	7.78	R	3	X	X				X	X		X						
OK520620020130_00	Hog Creek	3.07	R	3	X	X				X	X		X						
OK520620020140_00	Rawhide Creek	12.45	R	2	X	X				F	X		X						
OK520620020150_00	Sand Creek	5.64	R	3	X	X				X	X		X						
OK520620020160_00	Sorter Creek	8.80	R	3	X	X				X	X		X						
OK520620030010_00	Canadian River	38.09	R	5a	F	N				I	X		N			F			
OK520620030020_00	Lone Creek	13.18	R	5b	F	N				F	X		N		I				
OK520620030030_00	Panther Creek	5.30	R	3	X	X				X	X		X						
OK520620030040_00	Burnt Creek	6.89	R	3	X	X				X	X		X						
OK520620030050_00	Red Trail Creek	7.74	R	5b	F	N				I	X		N						
OK520620030060_00	Mouse Hollow Creek	3.30	R	3	X	X				X	X		X						
OK520620030070_00	Bull Creek	6.15	R	3	X	X				X	X		X						
OK520620030080_00	Teepee Creek	5.53	R	3	I	X				I	X		X		I				
OK520620030090_00	Trail Creek	13.95	R	2	X	X				X	X		X			F			
OK520620030100_00	Gyp Creek	7.79	R	3	X	X				X	X		X		X				
OK520620030110_00	Red Creek	11.82	R	5b	I	N				F	X		N		I				
OK520620030120_00	Powwow Creek	14.30	R	3	X	X				X	X		X						
OK520620030130_00	Turkey Creek	15.96	R	2	I	I				F	X		X		X				
OK520620030140_00	Kyser Creek	5.60	R	3	X	X				X	X		X						
OK520620030150_00	Turkey Creek, South	8.19	R	3	X	X				X	X		X		X				
OK520620030160_00	Oats Canyon Creek	2.84	R	3	X	X				X	X		X						
OK520620030170_00	Spring Canyon Creek	2.25	R	3	X	X				X	X		X						
OK520620030180_00	Piles Creek	3.42	R	3	X	X				X	X		X						
OK520620030190_00	Harsha Canyon Creek	1.74	R	3	X	X				X	X		X						
OK520620030200_00	Horse Canyon Creek (House Canyon)	3.44	R	3	X	X				X	X		X						

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OK520620030210_00	Cinnamon Canyon Creek	2.53	R	3	X	X				X	X		X						
OK520620040010_00	Canadian River	18.13	R	2	X	X				X	X		X			F			
OK520620040020_00	Flying V Creek	11.74	R	3	I	I				I	X		X						
OK520620040030_00	Devil's Creek	4.02	R	3	X	X				X	X		X						
OK520620040040_00	Mott Creek	6.42	R	3	X	X				X	X		X						
OK520620040050_00	Hackberry Creek	14.33	R	5b	I	N				F	X		N		I				
OK520620040060_00	Sand Creek	6.99	R	3	X	X				X	X		X						
OK520620040070_00	Richards Creek	3.11	R	3	X	X				X	X		X						
OK520620040080_00	Hackberry Creek, West	2.05	R	3	X	X				X	X		X						
OK520620040090_00	Black Bull Creek	3.08	R	3	X	X				X	X		X						
OK520620040100_00	Coon Creek	3.75	R	3	X	X				X	X		X						
OK520620040110_00	Spotted Deer Creek	2.54	R	3	X	X				X	X		X						
OK520620040120_00	Sourdough Creek	5.59	R	3	X	X				X	X		X						
OK520620040130_00	Boggy Creek	3.43	R	3	X	X				X	X		X						
OK520620040140_00	Trail Branch	4.26	R	3	X	X				X	X		X						
OK520620040150_00	S. A. Creek	5.03	R	3	X	X				X	X		X						
OK520620040160_00	Bois d' Arc Creek	3.38	R	3	X	X				X	X		X						
OK520620050010_00	Canadian River	33.95	R	2	I	I				I	X		X			F			
OK520620050020_00	Wagon Creek	6.24	R	3	X	X				X	X		X						
OK520620050030_00	West Creek	3.70	R	3	X	X				X	X		X						
OK520620050040_00	Packsaddle Creek	1.79	R	3	X	X				X	X		X						
OK520620050050_00	Packsaddle Lake	50	L	3	X	X				X	X		X						
OK520620050060_00	Cornell Creek	5.46	R	3	X	X				X	X		X						
OK520620050070_00	Bull Creek	5.62	R	3	X	X				X	X		X						
OK520620050080_00	Dugout Creek	6.80	R	3	X	X				X	X		X						
OK520620050090_00	Cottonwood Creek	5.91	R	3	X	X				X	X		X						
OK520620050100_00	Little Turkey Creek	3.79	R	3	X	X				X	X		X						
OK520620050110_00	Mosquito Creek	4.63	R	3	X	X				X	X		X		X				
OK520620050120_00	Mosquito Creek	6.56	R	2	X	X		X			X			X		F			
OK520620050130_00	Arnett Creek	8.70	R	3	X	X				X	X		X		X				
OK520620050140_00	Red Bluff Creek	12.30	R	3	X	X				X	X		X		X				
OK520620050150_00	Red Bluff Creek, West	10.13	R	3	X	X				X	X		X						
OK520620050160_00	Commission Creek	12.13	R	4a	I	F				F	X		N		I				
OK520620050170_00	Coon Creek	0.62	R	3	X	X				X	X		X						
OK520620050180_00	Hog Creek	7.56	R	3	X	X				X	X		X						
OK520620050190_00	Coon Creek	7.36	R	3	X	X				X	X		X						

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OK520620050200_00	Lloyd Vincent Lake	160	L	2	F	F				F	I		F						
OK520620050210_00	Hog Creek, West	3.76	R	3	X	X				X	X		X						
OK520620050220_00	Little Robe Creek	10.71	R	3	I	I				I	X		X						
OK520620060010_00	Deer Creek	55.58	R	4a	I	F				I	X		N		F				
OK520620060020_00	Dead Woman Creek	5.95	R	3	X	X				X	X		X						
OK520620060030_00	Cedar Canyon Creek	5.83	R	3	X	X				X	X		X						
OK520620060040_00	Little Deep Creek	12.76	R	3	I	I		I			X		I						
OK520620060050_00	Sportsman Creek	0.42	R	3	X	X				X	X		X						
OK520620060060_00	Sportsman Lake	100	L	3	X	X				X	X		X						
OK520620060070_00	Little Deer Creek	14.83	R	3	I	I				I	X		X		I				
OK520620060080_00	Horse Creek	17.64	R	3	I	I				I	X		X		I				
OK520620060090_00	Putnam Creek	9.04	R	3	X	X				X	X		X						
OK520700010020_00	Eufaula Lake, Canadian River Deep Fork	16453	L	5a	F	F				N	N		I		I				
OK520700010040_00	Onapa Lake (Checotah Municipal)	70	L	3	X	X				X	X		X						
OK520700010080_00	Gentry Creek	9.64	R	5a	F	F				N	X		N						
OK520700010090_00	Snake Creek	2.94	R	3	X	X				X	X		X						
OK520700010110_00	Grave Creek	13.94	R	5b	F	N				F	X		X		I				
OK520700010120_00	Canadian River, Deep Fork	33.41	R	5c	I	X				N	X		X		X				
OK520700010130_00	Wolf Creek	2.91	R	3	X	X				X	X		X						
OK520700010140_00	Coal Creek	21.72	R	5c	I	X				N	X			F		F			
OK520700010150_00	Nichols Creek	2.69	R	3	X	X				X	X		X						
OK520700010160_00	Nichols Lake	25	L	3	X	X				X	X		X						
OK520700010170_00	Wolf Creek	5.70	R	5c	I	X				N	X		X		X				*
OK520700010170_10	Wolf Creek	7.00	R	3	X	X				X	X		X		X				*
OK520700010180_00	Henryetta Lake	450	L	5a	F	F				N	I		F		I				*
OK520700010190_00	Moore Creek	9.91	R	3	X	X				X	X		X						
OK520700010200_00	Flag Creek	1.59	R	3	X	X				X	X		X						
OK520700010210_00	Flag Lake	100	L	3	X	X				X	X		X						
OK520700010220_00	Montezuma Creek	22.39	R	5c	I	X				N	X		F						
OK520700010230_00	Burgess Creek	7.23	R	2	X	X				X	X		X			F			
OK520700010240_00	Fourmile Creek	8.44	R	3	X	X				X	X		X						
OK520700010250_00	Cosseetta Creek (Cussetah)	13.28	R	3	X	X				X	X		X						
OK520700010260_00	Long Branch	9.06	R	3	X	X				X	X		X						
OK520700010270_00	Morris Creek	1.88	R	3	X	X				X	X		X						
OK520700010280_00	Morris Lake	38	L	3	X	X				X	X		X						

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OK520700010290_00	Okmulgee Creek	14.69	R	2	I	F				I	X		X		I				
OK520700010300_00	Honey Creek	7.02	R	3	X	X				X	X		X						
OK520700010310_00	Cussetah Creek, Unnamed Trib of	3.36	R	3	X	X		X						X					
OK520700020010_00	Canadian River, Deep Fork	4.26	R	3	X	X				X	X		X		X				
OK520700020010_10	Canadian River, Deep Fork	39.26	R	5a	I	F				N	F		N		I				
OK520700020020_00	Salt Creek	4.98	R	3	X	X				X	X		X		X				
OK520700020040_00	Okmulgee Lake	668	L	5a	F	F				N	F		F		F				*
OK520700020050_00	Salt Creek	8.76	R	3	X	X				X	X		X		X				*
OK520700020060_00	Dripping Springs Lake (Salt Creek Structure 1)	1150	L	5a	F	F				N	N		F		F				*
OK520700020070_00	Negro Creek	2.62	R	3	X	X				X	X		X						
OK520700020080_00	Adams Creek	13.33	R	5a	I	I				N	X		X		X				
OK520700020090_00	Flat Rock Creek	3.48	R	3	X	X				X	X		X		X				
OK520700020100_00	Beggs Creek, West	4.13	R	2	X	X				X	X		X			F			
OK520700020110_00	Beggs Lake	80	L	3	X	X				X	X		X						
OK520700020120_00	Beggs Creek, East	3.23	R	3	X	X				X	X		X						
OK520700020130_00	New Beggs Lake	56	L	3	X	X				X	X		X		X				
OK520700020140_00	Little Nuyaka Creek	9.02	R	3	X	X				X	X		X						
OK520700020150_00	Salt Creek	12.59	R	5a	I	N				N	X		X						
OK520700020155_00	Begger Creek!	3.61	R	5b	F	N				I	X		X		I				
OK520700020160_00	Tiger Creek	7.09	R	3	X	X				X	X		X						
OK520700020170_00	Checkerboard Creek	7.88	R	3	X	X				X	X		X						
OK520700020180_00	Park Wheeler Creek	5.42	R	3	X	X				X	X		X						
OK520700020200_00	Nuyaka Creek	21.72	R	5a	I	F				N	X		N		X				
OK520700020210_00	Brier Creek	5.75	R	3	X	X				X	X		X						
OK520700020220_00	Little Brier Creek	2.93	R	3	X	X				X	X		X						
OK520700020230_00	Sixshooter Creek	7.37	R	3	X	X				X	X		X						
OK520700020240_00	Cow Creek	6.62	R	3	X	X				X	X		X						
OK520700020250_00	Philadelphia Creek	5.55	R	3	X	X				X	X		X						
OK520700020260_00	Hopper Creek	6.74	R	3	X	X				X	X		X						
OK520700020270_00	Buckeye Creek	2.22	R	3	X	X				X	X		X		X				
OK520700020280_00	Buckeye Creek	12.93	R	3	X	X				X	X		X		X				*
OK520700020290_00	Okemah Lake	761	L	2	F	F				I	F		F		F				*
OK520700020300_00	Yhola Creek	2.74	R	3	X	X				X	X		X		X				*
OK520700020310_00	Klutts Lake	40	L	3	X	X				X	X		X						
OK520700030010_00	Canadian River, Deep Fork	46.83	R	2	I	F				I	X		X		I				

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Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK520700030020_00	Walnut Creek	14.71	R	5a	I	F				N	X		X						
OK520700030030_00	Little Walnut Creek	7.32	R	3	X	X				X	X		X						
OK520700030040_00	Sandy Creek	5.21	R	5c	I	I				N	X		X						
OK520700030050_00	Sandy Creek, East Fork	5.48	R	3	X	X				X	X		X						
OK520700030060_00	Sandy Creek, West Fork	7.87	R	3	X	X				X	X		X						
OK520700030070_00	Wolfe Creek	5.71	R	3	X	X				X	X		X						
OK520700030080_00	Welty Creek	3.16	R	3	X	X				X	X		X						
OK520700030090_00	Clifty Creek	2.62	R	3	X	X				X	X		X						
OK520700030100_00	Salt Creek	22.35	R	5a	F	N				N	X		N		I				
OK520700030110_00	Bachelor Creek	4.90	R	3	X	X				X	X		X						
OK520700030120_00	Gypsy Creek	7.20	R	3	X	X				X	X		X						
OK520700030130_00	Junction Creek	5.66	R	3	X	X				X	X		X						
OK520700030140_00	Little Creek	2.45	R	3	X	X				X	X		X						
OK520700030150_00	Pickle Creek	4.13	R	3	X	X				X	X		X						
OK520700030160_00	Big Pond Creek	2.92	R	3	X	X				X	X		X						
OK520700030170_00	Ritts Junction Creek	5.52	R	3	X	X				X	X		X						
OK520700030180_00	Hickory Creek	1.53	R	3	X	X				X	X		X						
OK520700030190_00	Sunny Slope Creek, North	4.29	R	3	X	X				X	X		X						
OK520700030200_00	Sunny Slope Creek, South	1.59	R	3	X	X				X	X		X						
OK520700030210_00	Milfay Creek	3.59	R	3	X	X				X	X		X						
OK520700030220_00	Camp Creek	5.14	R	5c	I	F				N	X		N		I				
OK520700030230_00	Camp Creek	5.86	R	3	X	X				X	X		X		X				*
OK520700030240_00	Stroud Lake	600	L	5c	F	F				I	N		F		F				*
OK520700030250_00	Lilly Creek	4.43	R	3	X	X				X	X		X						
OK520700030260_00	Spring Creek	6.85	R	3	X	X				X	X		X						
OK520700030270_00	Hilliby Creek	13.39	R	5c	I	I				N	X		X						
OK520700030280_00	Harrican Creek	4.17	R	3	X	X				X	X		X						
OK520700030290_00	Little Hilliby Creek	4.28	R	3	X	X				X	X		X						
OK520700030300_00	Pettiquah Creek	11.11	R	3	X	X				X	X		X						
OK520700030310_00	Uchee Creek	5.92	R	3	X	X				X	X		X						
OK520700030320_00	Todd Creek	1.21	R	3	X	X				X	X		X						
OK520700030330_00	Barby Creek	4.74	R	3	X	X				X	X		X						
OK520700030340_00	Todd Lake	1	L	3	X	X				X	X		X						
OK520700040010_00	Canadian River, Deep Fork	18.10	R	4a	I	F				F	F		N		I				
OK520700040020_00	Dry Creek	28.27	R	4a	I	F				N	X		N		I				
OK520700040030_00	Gray Horse Creek	4.46	R	3	X	X		X			X			X					

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OK520700040040_00	Wild Horse Creek	5.35	R	3	X	X				X	X		X						
OK520700040050_00	Dosie Creek	8.72	R	3	X	X				X	X		X						
OK520700040060_00	Chuckaho Creek	10.03	R	3	X	X				X	X		X		X				
OK520700040070_00	Davenport Creek	1.38	R	3	X	X				X	X		X						
OK520700040080_00	Davenport Lake	7	L	3	X	X				X	X		X						
OK520700040090_00	Possum Trot Creek	3.48	R	3	X	X				X	X		X						
OK520700040100_00	Ranch Creek	12.40	R	3	X	X				X	X		X						
OK520700040110_00	Fourmile Creek	7.56	R	3	X	X				X	X		X						
OK520700040120_00	Ranch Creek, North Branch	3.77	R	3	X	X				X	X		X						
OK520700040130_00	Spring Creek	1.83	R	3	X	X				X	X		X						
OK520700040140_00	Turkey Creek	1.43	R	3	X	X				X	X		X						
OK520700040150_00	Beaver Creek	0.82	R	3	X	X				X	X		X						
OK520700040160_00	Beaver Creek, East	7.00	R	3	X	X				X	X		X						
OK520700040170_00	Beaver Creek, West	7.91	R	3	X	X				X	X			X					
OK520700040180_00	Deer Creek	16.30	R	5c	I	X				N	X		X		X				
OK520700040190_00	Robinson Creek	19.62	R	3	X	X				X	X		X		X				
OK520700040200_00	Warsham Creek	4.52	R	3	X	X				X	X		X						
OK520700040210_00	Sand Creek	3.63	R	3	X	X				X	X		X						
OK520700040220_00	Prague Lake	225	L	5c	F	F				F	N		F						
OK520700040230_00	Clark Creek	1.90	R	3	X	X				X	X		X						
OK520700040240_00	Clark Lake	269	L	3	X	X				X	X		X						
OK520700040250_00	Browns Lake	34	L	3	X	X				X	X		X						
OK520700040260_00	Quapaw Creek	26.81	R	5a	F	F				N	X		N		I				
OK520700040270_00	Sparks Creek	0.92	R	3	X	X				X	X		X						
OK520700040280_00	Sparks Lake	1	L	3	X	X				X	X		X		X				
OK520700040290_00	Hogshooter Creek	3.27	R	3	X	X				X	X		X						
OK520700040300_00	Breakfast Creek	4.66	R	3	X	X				X	X		X						
OK520700040310_00	Spring Creek	4.27	R	3	X	X				X	X		X						
OK520700040320_00	Little Sand Creek	7.24	R	3	X	X				X	X		X						
OK520700040330_00	Clear Creek	2.40	R	3	X	X				X	X		X						
OK520700040340_00	Sand Creek	5.40	R	3	X	X				X	X		X						
OK520700040350_00	Quapaw Creek, South	3.76	R	2	X	X				F	X		X		X				*
OK520700040360_00	Quapaw Creek, South	5.31	R	3	X	X				X	X		X		X				*
OK520700040370_00	Meeker Lake	250	L	5a	F	F				N	N		F		F				*
OK520700040380_00	Coon Creek	3.71	R	3	X	X				X	X		X						
OK520700040390_00	Wildhorse Creek	5.68	R	3	X	X				X	X		X						

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OK520700040400_00	Brush Creek	7.41	R	3	X	X				X	X		X						
OK520700040410_00	Robinson Creek, Unnamed Trib of	3.09	R	3	X	X				X	X		X						
OK520700050010_00	Canadian River, Deep Fork	25.60	R	5c	F	F				N	X		X		I				
OK520700050020_00	Bellcow Creek	5.75	R	4a	I	X				I	X		N		X				
OK520700050025_00	Bellcow Lake	1153	L	5a	F	F				N	F		F		F				
OK520700050030_00	Bellcow Creek	8.49	R	3	X	X				X	X		X		X				
OK520700050040_00	Bellcalf Creek	1.14	R	3	X	X				X	X		X						
OK520700050050_10	Bellcalf Creek	1.94	R	3	X	X				X	X		X		X				*
OK520700050060_00	Chandler Lake	129	L	5a	F	F				N	F		F		N				*
OK520700050070_00	Otoe Creek	2.79	R	3	X	X				X	X		X						
OK520700050080_00	Bellcow Creek, North	4.56	R	5c	N	X				N	X		X						
OK520700050090_00	Kickapoo Creek	6.36	R	3	X	X				X	X		X		X				
OK520700050100_00	Rat Creek	5.09	R	3	X	X				X	X		X						
OK520700050110_00	Pecan Creek	7.11	R	3	X	X				X	X		X						
OK520700050120_00	Spring Creek	8.16	R	3	X	X				X	X		X						
OK520700050130_00	Eagle Creek	7.70	R	3	X	X				X	X		X						
OK520700050140_00	Captain Creek	4.40	R	2	F	F				I	X		F		F				
OK520700050150_00	Captain Creek, East	7.69	R	3	X	X				X	X		X		X				
OK520700050160_00	Captain Creek, West	8.74	R	3	X	X				X	X		X						
OK520700050170_00	Bear Creek	26.06	R	5a	X	F				N	X		F		X				
OK520700050180_00	Grant Creek	3.29	R	3	X	X				X	X		X						
OK520700050190_00	Blue Creek	3.33	R	3	X	X				X	X		X						
OK520700050200_00	Opossum Creek	7.37	R	4a	F	F				N	X		I						
OK520700050210_00	Fall Creek	7.08	R	3	X	X				X	X		X						
OK520700050220_00	Wildhorse Creek	9.79	R	3	X	X				X	X		X						
OK520700050230_00	Wildhorse Creek, East Fork	2.38	R	3	X	X				X	X		X						
OK520700050240_00	Wildhorse Creek, West Fork	3.58	R	3	X	X				X	X		X						
OK520700050250_00	Chandler Lake, NW Trib!	2.36	R	5c	N	X				N	X		X		N				*
OK520700050260_00	Bellcow Creek, Unnamed Tributary of	1.51	R	3	X	X		X						X					
OK520700050270_00	West Captain Creek, Unnamed Trib of	6.26	R	5c	I	X				N	X		X						
OK520700060010_00	Little Deep Fork Creek	20.30	R	5c	I	F				N	I		I						
OK520700060020_00	Comelys Branch	3.74	R	3	X	X				X	X		X						
OK520700060030_00	Frank Henry Creek	4.68	R	3	X	X				X	X		X						
OK520700060040_00	McKennon Creek	2.50	R	3	X	X				X	X		X						
OK520700060050_00	Browns Creek	13.93	R	5a	I	I				N	X		X		X				
OK520700060060_00	Turkey Creek	10.72	R	2	I	I				F	X		X						

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OK520700060070_00	Chicken Creek	8.07	R	3	X	X				X	X		X						
OK520700060080_00	Skull Creek	7.41	R	3	I	I				I	X		X						
OK520700060090_00	Morgan Creek	3.00	R	3	X	X				X	X		X						
OK520700060100_00	Little Deep Fork Creek	1.82	R	3	X	X				X	X		X						
OK520700060110_00	Sand Creek	8.90	R	3	I	I				I	X		X						
OK520700060120_00	Rock Creek	8.15	R	2	I	F				I	X		X						
OK520700060130_00	Little Deep Fork Creek	4.56	R	2	X	X		F			X			X	X				
OK520700060130_05	Little Deep Fork Creek	0.31	R	3	X	X				X	X		X		X				
OK520700060130_10	Little Deep Fork Creek	24.39	R	5a	F	F				N	X		N		I				
OK520700060140_00	Catfish Creek	9.94	R	5b	I	N				N	X		X		X				
OK520700060150_00	Massena Creek	0.51	R	3	X	X				X	X		X						
OK520700060160_00	Massena Lake	90	L	3	X	X				X	X		X						
OK520700060170_00	Little Catfish Creek	6.51	R	3	X	X				X	X		X						
OK520700060180_00	Swan Creek	2.94	R	3	X	X				X	X		X						
OK520700060190_00	Spring Creek	2.23	R	3	I	I				I	X		X						
OK520700060200_00	Spring Creek, East	8.73	R	3	I	I				I	X		X						
OK520700060210_00	Spring Creek, West	7.28	R	5b	I	N				I	X		X		I				
OK520700060220_00	Little Deep Fork Creek, Unnamed Tributary of	2.08	R	3	X	X		X						X					
OK520710010010_00	Canadian River, Deep Fork	7.70	R	5a	I	F				N	X		N		I				
OK520710010020_00	Smith Creek	6.37	R	3	X	X		X			X		X		X				
OK520710010030_00	Coon Creek	12.47	R	3	I	I				I	X		I						
OK520710010040_00	Hiwassee Creek	2.98	R	3	X	X				X	X		X						
OK520710010050_00	Hiwassee Lake	132	L	3	X	X				X	X		X						
OK520710010060_00	Soldier Creek	4.82	R	3	X	X				I	X		X						
OK520710010070_00	Opossum Creek	3.49	R	3	X	X				X	X		X						
OK520710010080_00	Canadian River, Deep Fork	0.91	R	3	X	X				X	X		X		X				
OK520710010090_00	Coffee Creek	4.17	R	2	I	F		I			X		X		I				
OK520710010090_10	Coffee Creek	1.28	R	3	X	X				X	X		X		X				
OK520710010100_00	Coffee Creek	4.87	R	3	I	I				I	X		X		X				
OK520710010110_00	Cowbell Creek	4.57	R	3	X	X				X	X		X						
OK520710010120_00	Peavine Creek	4.55	R	3	X	X				X	X		X						
OK520710020010_00	Canadian River, Deep Fork	4.14	R	3	X	X				X	X		X		X				*
OK520710020020_00	Arcadia Lake	1820	L	5a	F	F				N	F		F		N				*
OK520710020030_00	Spring Creek	5.27	R	5a	I	I				N	X		N		I				*
OK520710020040_00	Tinker Creek	1.92	R	3	X	X				X	X		X		X				*

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OK520710020050_00	Wynn Creek	5.59	R	3	X	X				X	X		X		X				*
OK520710020060_00	Canadian River, Deep Fork	10.07	R	2	F	F				I	X		I		I				*
OK520710020070_00	Britton Creek	4.72	R	3	X	X				X	X		X		X				*
OK520710020075_00	Deep Fork, Unnamed Tributary of	3.32	R	3	X	X				X	X		X		X				*
OK520710020080_00	Aluma Creek	1.33	R	3	X	X				X	X		X		X				*
OK520710020090_00	Aluma Lake	13	L	3	X	X				X	X		X		X				*
OK520710020100_00	Forest Park Creek	2.69	R	3	X	X				X	X		X		X				*
OK520710020110_00	Northeast Creek	2.46	R	3	X	X				X	X		X		X				*
OK520710020120_00	Northeast Lake (Zoo)	29	L	3	X	X				X	X		X		X				*
OK520710020130_00	Springlake Creek	2.07	R	3	X	X				X	X		X		X				*
OK520710020140_00	Guy James Creek	1.97	R	5c	X	X				N	X		X		X				*
OK520710020150_00	Nichols Creek	0.97	R	3	X	X				X	X		X		X				*
OK520710020160_00	Belle Isle Creek	2.23	R	3	X	X				X	X		X		X				*
OK520710020170_00	Canadian River, Deep Fork, Unnamed Tributary of.	1.96	R	3	X	X				X	X		X						
OK520800010010_00	Little River	24.80	R	5a	F	F				N	F		N		I				
OK520800010030_00	Bemore Creek	1.92	R	3	X	X				X	X		X		X				*
OK520800010040_00	Holdenville Lake	550	L	5a	F	F				N	F		F		N				*
OK520800010050_00	Bird Creek	13.81	R	5a	I	N		N			X			F					
OK520800010055_00	Kight Creek	4.55	R	5b	F	N				I	X		X		I				
OK520800010060_00	Cudjo Creek	5.88	R	5a	F	N				N	X		X		I				
OK520800010062_00	Bear Cub Creek	1.05	R	5a	I	F				N	X		X						
OK520800010070_00	Sand Creek	5.93	R	3	X	X				X	X		X						
OK520800010080_00	Rock Creek	4.75	R	3	X	X				X	X		X						
OK520800010090_00	Little River	28.45	R	5b	I	N				F	X		X		I				
OK520800010110_00	Tate Mountain Creek	3.57	R	3	X	X				X	X		X						
OK520800010120_00	Trib 9!	7.11	R	3	X	X				X	X		X						
OK520800010130_00	Little River	17.11	R	5b	I	N				F	X		X		I				
OK520800010140_00	Mini Creek	2.96	R	3	X	X				X	X		X						
OK520800010150_00	Bird Creek, Unnamed Tributary of	5.15	R	5c	X	X				N	X			X					
OK520800010160_00	Rogers Creek	2.41	R	3	X	X				X	X		X						
OK520800010170_00	Brier Creek	6.36	R	3	X	X				X	X		X						
OK520800010180_00	Tyner Creek	3.38	R	3	X	X				X	X		X						
OK520800010190_00	Tecumseh Creek, South	5.48	R	3	X	X				X	X		X						
OK520800010200_00	Little River, Unnamed Tributary of	1.95	R	3	X	X		X						X					
OK520800020010_00	Little River	20.98	R	3	X	X				X	X		X		X				

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OK520800020020_00	Dance Creek	9.92	R	3	X	X				X	X		X						
OK520800020030_00	Morvin Creek	3.66	R	3	X	X				X	X		X						
OK520800020040_00	Sand Creek	3.34	R	3	X	X				X	X		X						
OK520800020050_00	Coon Creek	5.14	R	3	X	X				X	X		X						
OK520800020060_00	Council Creek	7.26	R	3	X	X				X	X		X						
OK520800020070_00	Jim Creek	7.73	R	3	X	X				X	X		X						
OK520800020080_00	Pecan Creek	10.80	R	2	F	F				I	X		F						
OK520800020090_00	Bullfrog Creek	5.05	R	3	X	X				X	X		X						
OK520800020100_00	Spring Creek	8.33	R	3	X	X				X	X		X						
OK520800020110_00	Bourbonais Creek	4.49	R	3	X	X				X	X		X						
OK520800020120_00	Roulette Creek	5.34	R	3	X	X				X	X		X						
OK520800020130_00	Prairie Creek	7.92	R	3	X	X				X	X		X						
OK520800030010_00	Salt Creek	39.02	R	5a	I	N				N	X		N		I				
OK520800030020_00	Sandy Creek	6.03	R	2	I	F				I	X		X		I				
OK520800030030_00	Mud Creek	8.72	R	3	X	X				X	X		X						
OK520800030040_00	Maud Creek	4.49	R	3	X	X				X	X		X						
OK520800030060_00	Katy Lake	11	L	3	X	X				X	X		X						
OK520800030070_00	Bruno Creek	10.32	R	5b	I	N				I	X		X		I				
OK520800030080_00	Popshego Creek	4.38	R	5b	F	N				I	X		X		N				
OK520800030090_00	Marcum Creek	5.57	R	3	X	X				X	X		X						
OK520800030100_00	Sand Creek	4.47	R	3	X	X				X	X		X						
OK520800030110_00	Box Creek	2.66	R	3	X	X				X	X		X						
OK520800030120_00	Blacksmith Creek	5.99	R	5b	I	N				I	X		X		I				
OK520800030130_00	Opossum Creek	4.48	R	3	X	X				X	X		X						
OK520800030140_00	Delaware Creek	2.12	R	3	X	X				X	X		X						
OK520800030150_00	Cottonwood Creek	5.58	R	3	X	X				X	X		X						
OK520800030160_00	Wolf Creek	2.29	R	3	X	X				X	X		X						
OK520800030170_00	Bruno Creek, Unnamed Trib of	3.12	R	3	X	X				X	X		X						
OK520810000010_00	Little River	1.27	R	3	X	X				X	X		X		X				*
OK520810000020_00	Thunderbird Lake	6070	L	4a	I	F				N	F		F		N				*
OK520810000030_00	Hog Creek	11.89	R	5a	I	F				I	X		N		X				*
OK520810000040_00	Hog Creek, West Branch	3.69	R	5a	I	I				N	X		I		X				*
OK520810000050_00	Clear Creek	3.70	R	3	X	X				X	X		X		X				*
OK520810000060_00	Dave Blue Creek	7.16	R	3	X	X				X	X		X		X				*
OK520810000070_00	Jim Blue Creek	4.40	R	3	X	X				X	X		X		X				*
OK520810000080_00	Little River	18.64	R	5a	X	N				N	X		N		X				*

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OK520810000090_00	Rock Creek	5.99	R	5a	X	F				I	X		N		X				*
OK520810000100_00	Elm Creek	1.44	R	5a	F	N				N	X		N		F				*
OK520810000110_00	Elm Creek, East	2.40	R	5a	I	I				N	X		I		X				*
OK520810000130_00	Stanley Draper Lake	2900	L	5a	F	F				N	N		F		F				
OK520810000140_00	Elm Creek, West	8.00	R	5a	X	F				F	X		N		X				*
OK520810000150_00	Kitchen Creek	5.41	R	3	X	X				X	X		X		X				*
OK520810000160_00	Kitchen Lake	25	L	3	X	X				X	X		X						
OK520810000170_00	Little River, North Fork	8.94	R	2	I	F				I	X		X		X				*
OK520810000175_00	Moore Creek	4.02	R	5b	F	N				I	X		X		F				*
OK520810000180_00	Mussel Shoals Lake Creek	0.63	R	3	X	X				X	X		X		X				*
OK620900010020_00	Keystone Lake, Cimarron River Arm, Lower	4673	L	5a	F	F				N	I		I		I				
OK620900010030_00	Salt Creek	3.51	R	3	X	X				X	X		X						
OK620900010040_00	Little Salt Creek	4.37	R	3	X	X				X	X		X						
OK620900010050_00	Mannford Reservoir	268	L	2	F	I				I	I		I						
OK620900010060_00	Mannford Creek	2.32	R	3	X	X				X	X		X						
OK620900010070_00	Fish Creek	2.61	R	3	X	X				X	X		X						
OK620900010090_00	Keystone Lake, Cimarron River Arm, Upper	5550	L	5a	I	F				N	I		I		I				
OK620900010100_00	House Creek	9.10	R	3	X	X				X	X		X						
OK620900010110_00	Terlton Creek	4.63	R	3	X	X				X	X		X						
OK620900010120_00	Hallett Creek	5.50	R	3	X	X				X	X		X						
OK620900010130_00	Jennings Creek	1.73	R	3	X	X				X	X		X						
OK620900010140_00	Cottonwood Creek	5.83	R	3	I	I				I	X		X		I				
OK620900010150_00	Rocky Canyon Creek	4.11	R	3	X	X				X	X		X						
OK620900010160_00	Sand Creek	5.95	R	3	X	X				X	X		X						
OK620900010170_00	Cimarron River	1.54	R	2	I	F				I	X		X			F			
OK620900010170_10	Cimarron River	26.58	R	5a	I	F				N	N		N			F			
OK620900010180_00	Lagoon Creek	18.55	R	4a	F	F				I	X		N						
OK620900010190_00	Kenny Creek	6.04	R	3	X	X				X	X		X						
OK620900010200_00	Crystal Creek	4.78	R	3	X	X				X	X		X						
OK620900010210_00	Maramel Creek, South	5.07	R	3	X	X				X	X		X						
OK620900010220_00	Buckeye Creek	11.42	R	2	I	F				I	X		I						
OK620900010230_00	Dry Creek	9.52	R	2	I	F				I	X		X						
OK620900010240_00	Deer Creek	6.98	R	3	X	X				X	X		X						
OK620900010250_00	Tiger Creek	9.68	R	2	F	F				F	X		X						

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OK620900010260_00	Little Tiger Creek	4.50	R	3	X	X				X	X		X						
OK620900010280_00	Tydol Lake (Tidal)	5	L	3	X	X				X	X		X						
OK620900010290_00	Euchee Creek	9.56	R	4a	I	F				I	X		N			F			
OK620900010290_10	Euchee Creek	12.40	R	2	X	X				X	X			X		F			
OK620900010300_00	Sand Creek	8.39	R	3	I	I				I	X		X		I				
OK620900010310_00	Cottonwood Creek	6.26	R	5a	I	X				N	X		N			F			
OK620900010320_00	Wildhorse Creek	8.09	R	2	I	I				F	X		X		I	F			
OK620900010330_00	Turkey Creek	5.95	R	3	X	X				X	X		X						
OK620900010340_00	Rattlesnake Creek	4.21	R	3	X	X				X	X		X						
OK620900010350_00	Turkey Creek	3.88	R	3	X	X				X	X		X						
OK620900010360_00	Skull Creek	8.69	R	5a	I	I				N	N		X			F			
OK620900010370_00	Cross Bones Creek	2.30	R	3	X	X				X	X		X						
OK620900010380_00	Mud Creek	6.49	R	3	X	X				X	X		X						
OK620900010390_00	Yale Creek	3.23	R	3	X	X				X	X		X						
OK620900020010_00	Cimarron River	20.70	R	2	I	F				I	X		X			F			
OK620900020020_00	Salt Creek	14.71	R	5a	F	F				N	X		N		I				
OK620900020030_00	Eagle Creek	7.46	R	3	X	X				X	X		X						
OK620900020040_00	Short Creek	3.64	R	3	X	X				X	X		X						
OK620900020050_00	Council Creek	21.94	R	5a	F	F				N	X		N		I				
OK620900020060_00	Feather Creek	6.01	R	5c	X	X				N	X		X						
OK620900020070_00	Hog Hollow Creek	2.61	R	3	X	X				X	X		X						
OK620900020080_00	Long Branch	5.51	R	3	X	X				X	X		X						
OK620900020090_00	Cabin Creek	3.64	R	3	X	X				X	X		X						
OK620900020100_00	Big Creek	2.17	R	3	X	X				X	X		X		X				
OK620900020110_00	Big Creek	7.99	R	3	X	X				X	X		X		X				*
OK620900020120_00	Cushing Lake	591	L	5a	I	F				N	N		F		F				*
OK620900020130_00	Elm Creek	5.56	R	3	X	X				X	X		X		X				*
OK620900020140_00	Ghost Hollow Creek	2.23	R	3	X	X				X	X		X						
OK620900030010_00	Cimarron River	42.09	R	5a	I	F				F	N		N			F			
OK620900030030_00	Brush Creek	6.55	R	3	X	X				X	X		X						
OK620900030040_00	Sand Creek	8.24	R	3	X	X		X			X			X					
OK620900030050_00	Sand Creek, East Fork	4.01	R	3	X	X				X	X		X						
OK620900030060_00	Headquarters Creek	16.42	R	3	X	X				X	X		X						
OK620900030070_00	Tryon Creek	3.19	R	3	X	X				X	X		X						
OK620900030080_00	Dugout Creek	13.58	R	4a	F	F				F	X		N		I				
OK620900030090_00	Lost Creek	11.56	R	2	X	X				F	X		X						

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OK620900030100_00	Perkins Creek	2.14	R	3	X	X				X	X		X						
OK620900030110_00	Corduroy Creek	8.75	R	3	X	X				X	X		X						
OK620900030120_00	Wild Horse Creek	15.88	R	3	I	I				I	X		X						
OK620900030130_00	Walnut Creek	8.75	R	3	X	X				X	X		X						
OK620900030150_00	Fitzgerald Creek	17.09	R	3	X	X				X	X		X		X				
OK620900030160_00	Soldier Creek	6.39	R	3	X	X				X	X		X						
OK620900030170_00	Langston Creek	2.61	R	3	X	X				X	X		X		X				*
OK620900030180_00	Langston Lake	304	L	2	F	F				F	I		F		I				*
OK620900030190_00	Indian Meridian Creek	8.23	R	3	I	I				I	X		X		I				
OK620900030200_00	Pleasant Valley Creek	2.31	R	3	X	X				X	X		X						
OK620900030210_00	Clear Creek	10.04	R	3	I	I				I	X		X		I				
OK620900030220_00	Antelope Creek	8.49	R	3	X	X				X	X		X						
OK620900030230_00	Beaver Creek	12.65	R	5a	I	N				N	X		N		I				
OK620900030240_00	Mulhall Creek	7.75	R	3	I	I				I	X		X		I				
OK620900030250_00	Beaver Creek, East	12.55	R	2	I	F				I	X		X		I				
OK620900030260_00	Beaver Creek, West	13.21	R	5a	I	F				N	X		N		I				
OK620900030270_00	Beaver Creek, Middle	10.04	R	3	I	I				I	X		X		I				
OK620900040010_00	Stillwater Creek	1.58	R	3	I	X				I	X		X		X				
OK620900040020_00	Spring Creek	4.61	R	3	X	X				X	X		X						
OK620900040030_00	Deer Creek	3.83	R	3	X	X				X	X		X						
OK620900040040_00	Stillwater Creek	3.53	R	4a	F	F				N	X		N		I				
OK620900040050_00	Little Stillwater Creek	13.91	R	5a	I	I				F	X		X		N				
OK620900040060_00	Mehan Creek	1.23	R	3	X	X				X	X		X						
OK620900040070_00	Stillwater Creek	5.85	R	2	X	X		F			X		X		X	F			
OK620900040070_10	Stillwater Creek	16.43	R	5a	F	F		N			X			F	I	F			
OK620900040080_00	Fairgrounds Creek	3.96	R	3	X	X				X	X		X						
OK620900040090_00	Brush Creek	1.92	R	3	X	X		X			X			X					
OK620900040100_00	Brush Creek, East	9.65	R	3	X	X				X	X		X						
OK620900040110_00	Yost Lake Creek	1.52	R	3	X	X				X	X		X						
OK620900040120_00	Yost Lake	26	L	3	X	X				X	X		X						
OK620900040130_00	Brush Creek, West	9.82	R	3	X	X				X	X		X						
OK620900040140_00	Boomer Creek	2.28	R	5c	X	X				N	X		X		X				
OK620900040150_00	Sanborn-Hazen Lake Creek	3.59	R	5c	X	X				N	X		X						
OK620900040160_00	Hazen Lake	1	L	3	X	X				X	X		X						
OK620900040170_00	Sanborn Lake	1	L	3	X	X				X	X		X						
OK620900040180_00	Boomer Creek	6.49	R	5c	X	X				N	X		X		X				*

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OK620900040190_00	Boomer Lake	260	L	5a	F	F				N	N		F		N				*
OK620900040195_00	Duck Creek	3.06	R	3	X	X				X	X		X						
OK620900040200_00	Cow Creek	8.26	R	2	X	X				F	X		X						
OK620900040210_00	Dry Creek	7.41	R	3	X	X				X	X		X						
OK620900040220_00	Stillwater Creek, North	3.76	R	3	X	X				X	X		X		X				*
OK620900040230_00	Stillwater Creek, North	6.80	R	3	X	X				X	X		X		X				*
OK620900040240_00	McMurtry Lake	1155	L	5a	F	F				N	F		F		F				*
OK620900040250_00	Harrington Creek	4.41	R	3	X	X				X	X		X						
OK620900040260_00	Harrington Creek Lake (Stillwater Creek site 46)	1	L	3	X	X				X	X		X						
OK620900040270_00	Stillwater Creek	2.15	R	2	X	X		X			X			X	X	F			
OK620900040270_10	Stillwater Creek	6.42	R	5a	F	F				N	X		N		X				*
OK620900040280_00	Carl Blackwell Lake	3370	L	5a	F	F				N	N		F		N				*
OK620900040290_00	Hunt Creek	3.16	R	3	X	X				X	X		X		X				*
OK620900040300_00	Little Stillwater Creek	4.67	R	3	X	X				X	X		X		X				*
OK620910010010_00	Cimarron River	8.33	R	5a	I	F				N	F		N			F			
OK620910010010_10	Cimarron River	28.89	R	2	X	X				X	X		X			F			
OK620910010030_00	Lawrie Creek	2.75	R	3	X	X				X	X		X						
OK620910010040_00	Pin Creek	8.26	R	3	I	I				I	X		X						
OK620910010060_00	Gar Creek	7.58	R	3	I	I				I	X		X						
OK620910010070_00	Pawnee Creek	9.29	R	3	X	X				X	X		X						
OK620910010080_00	Cox Creek	5.54	R	3	X	X				X	X		X						
OK620910010090_00	Boggy Creek	4.86	R	3	X	X				X	X		X						
OK620910010100_00	Crescent Creek	3.88	R	3	X	X				X	X		X						
OK620910010110_00	Cedar Cove Lake	2	L	3	X	X				X	X		X						
OK620910010120_00	Lattawanna Lake	16	L	3	X	X				X	X		X						
OK620910010130_00	Campbell Creek	13.63	R	3	I	I				I	X		X						
OK620910010140_00	Walnut Creek	12.66	R	3	X	X				X	X		X						
OK620910010150_00	Sooner Trend Creek	8.03	R	3	I	I				I	X		X						
OK620910010160_00	Bird Creek	6.94	R	3	I	I				I	X		X						
OK620910020010_00	Cimarron River	17.84	R	5a	F	F				N	F		N			F			
OK620910020010_10	Cimarron River	41.63	R	5a	F	N				N	F		N			F			
OK620910020040_00	Cooper Creek	40.27	R	5a	F	N				N	X		N		I				
OK620910020050_00	Oneida Creek	7.07	R	3	X	X				X	X		X						
OK620910020060_00	Felter Branch	2.50	R	3	X	X				X	X		X						
OK620910020070_00	Willow Creek	7.08	R	3	X	X				X	X		X						

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OK620910020080_00	Preacher Creek	8.30	R	3	I	I				I	X		X						
OK620910020090_00	Pepper Creek	5.99	R	3	X	X				X	X		X						
OK620910020092_00	Sweet Alley	5.98	R	3	X	X				X	X		X						
OK620910020100_00	Salt Creek	4.43	R	5a	I	N				N	F			F		F			
OK620910020100_10	Salt Creek	24.53	R	2	I	I		I			I			I		F			
OK620910020110_00	Spring Creek	22.89	R	3	X	X				X	X		X		X				
OK620910020115_00	Spring Creek, Unnamed Trib of	4.68	R	3	X	X		X						X					
OK620910020120_00	Hitchcock Creek	12.36	R	3	X	X		X						X					
OK620910020140_00	Hitchcock Creek, West	2.68	R	3	X	X				X	X		X						
OK620910020150_00	Bitter Creek	5.53	R	3	X	X				X	X		X						
OK620910020160_00	Cat Canyon Creek	3.44	R	3	X	X				X	X		X						
OK620910020170_00	Bitter Creek	4.22	R	3	X	X				X	X		X						
OK620910020180_00	Watonga Lake	55	L	3	X	X				X	X		X						
OK620910020190_00	Boecher Lake	12	L	3	X	X				X	X		X						
OK620910020200_00	Ruby Mill Canyon Creek	4.31	R	3	X	X				X	X		X						
OK620910020210_00	Hoyle Creek	25.12	R	3	I	I				I	X		X		X				
OK620910020230_00	Crystal Lake	1	L	3	X	X				X	X		X						
OK620910020240_00	Silver Lake	1	L	3	X	X				X	X		X						
OK620910020250_00	Deep Creek	25.42	R	5a	I	N				N	X		N		I				
OK620910020260_00	Isabella Creek	4.49	R	3	X	X				X	X		X						
OK620910020270_00	Elm Creek	14.15	R	5b	F	N				N	X		N		I				
OK620910020280_00	Darrow Creek	8.00	R	3	X	X				X	X		X						
OK620910020290_00	Homestead Creek	6.61	R	3	X	X				X	X		X						
OK620910020300_00	Sand Creek	12.86	R	3	X	X				X	X		X						
OK620910020310_00	Indian Creek	16.71	R	4a	F	F				F	X		N		I				
OK620910020320_00	Ringwood Creek	5.70	R	3	X	X				X	X		X						
OK620910020330_00	Carwile Creek	7.60	R	3	X	X				X	X		X		X				
OK620910020370_00	Bitter Creek, Unnamed Trib of	1.30	R	3	X	X				X	X		X						
OK620910030010_00	Skeleton Creek	32.84	R	5a	I	F				N	F		N		I				
OK620910030020_00	Wolf Creek	8.65	R	3	X	X				X	X		X		X				
OK620910030030_00	Bridge Creek	10.27	R	3	I	I				I	X		X		I				
OK620910030040_00	Otter Creek	30.15	R	4a	F	F				I	X		N		I				
OK620910030050_00	Elkhorn Creek	5.36	R	3	I	I				I	X		X		I				
OK620910030060_00	Crows Nest Creek	14.43	R	3	X	X				X	X		X						
OK620910030070_00	4-D Creek	8.83	R	3	X	X				X	X		X						
OK620910030080_00	Shawnee Creek	9.64	R	3	X	X				X	X		X						

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OK620910030090_00	Rock Creek	5.76	R	3	X	X				X	X		X						
OK620910030100_00	Spring Creek	5.10	R	3	X	X				X	X		X						
OK620910030110_00	Horse Creek	12.69	R	3	X	X				X	X		X		X				
OK620910030120_00	Cottonwood Creek	10.21	R	3	X	X				X	X		X						
OK620910030130_00	Spring Creek	13.66	R	3	X	X				X	X		X						
OK620910030140_00	Lyon Creek	22.32	R	3	I	I				I	X		X						
OK620910030150_00	Camp Creek	8.90	R	3	X	X				X	X		X						
OK620910030160_00	Crooked Creek	7.31	R	3	X	X				X	X		X						
OK620910030170_00	Skeleton Creek	6.00	R	3	X	X				X	X		X		X				
OK620910030170_10	Skeleton Creek	22.44	R	2	I	F		I			I			I		F			
OK620910030180_00	Bitter Creek	20.28	R	3	X	X				X	X		X		X				
OK620910030190_00	Wolf Creek	7.14	R	3	X	X				X	X		X						
OK620910030200_00	Rock Creek	10.20	R	3	I	I				I	X		X						
OK620910030210_00	Dry Creek	6.81	R	3	X	X				X	X		X						
OK620910030220_00	Hackberry Creek	17.40	R	2	X	X				X	X			X		F			
OK620910030230_00	Fairmont Creek	10.31	R	3	X	X		X			X			X					
OK620910030240_00	Skeleton Creek	11.45	R	3	X	X				X	X		X		X				
OK620910030250_00	Boggy Creek	15.63	R	3	X	X				X	X		X						
OK620910030260_00	Meadowlake Park Lake	10	L	3	X	X				X	X		X						
OK620910030270_00	Vance Creek	2.78	R	3	X	X				X	X		X						
OK620910030290_00	Covington Creek!	6.73	R	3	X	X				X	X		X						
OK620910040010_00	Cottonwood Creek	22.01	R	5a	F	F				F	X		N		I				
OK620910040010_10	Cottonwood Creek	2.88	R	3	X	X				X	X		X		X				
OK620910040010_20	Cottonwood Creek	24.39	R	4a	I	F				N	X		N		X				
OK620910040020_00	Bird Creek	4.28	R	3	X	X				X	X		X						
OK620910040030_00	Country Club Lake (Santa Fe)	97	L	3	X	X				X	X		X						
OK620910040040_00	Snake Creek	2.95	R	3	X	X				X	X		X						
OK620910040050_00	Guthrie Creek	5.77	R	3	X	X				X	X		X		X				*
OK620910040060_00	Guthrie Lake	274	L	5a	F	F				N	F		N		N				*
OK620910040070_00	Liberty Lake Creek	5.56	R	3	X	X				X	X		X		X				*
OK620910040080_00	Liberty Lake	167	L	5a	F	F				N	F		N		N				*
OK620910040090_00	Spring Creek	6.67	R	3	X	X				X	X		X						
OK620910040100_00	Chisholm Creek	21.15	R	5a	I	F				N	I		I		N				
OK620910040110_00	Edmond Creek	3.90	R	3	X	X				X	X		X						
OK620910040120_00	Deer Creek	12.67	R	4a	F	F				N	I		N		F				
OK620910040120_10	Deer Creek	18.51	R	3	X	X				I	X		X		X				

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OK620910040130_00	Bloody Rush Creek	6.50	R	3	X	X				X	X		X						
OK620910040140_00	Bluff Creek	9.32	R	5a	I	X				I	X		N		I				
OK620910040150_00	Dry Creek	6.65	R	2	X	X				F	X		X						
OK620910040170_00	Spring Creek	3.77	R	3	X	X				X	X		X						
OK620910040175_00	Hefner Canal	2.58	R	3	X	X				X	X		X						
OK620910040180_00	Ski Island Lake	45	L	3	X	X				X	X		X						
OK620910040190_00	Silver Lake	5	L	3	X	X				X	X		X						
OK620910040200_00	Hefner Lake	2500	L	2	F	F				I	F		F		F				
OK620910040210_00	Walnut Creek	9.43	R	3	X	X				X	X		X						
OK620910040220_00	Soldier Creek	8.17	R	3	X	X				X	X		X						
OK620910040230_00	Chapel Hill Creek	6.07	R	3	X	X				X	X		X						
OK620910040240_00	Piedmont Creek	4.33	R	3	X	X				X	X		X						
OK620910040250_00	Spring Creek	4.67	R	3	X	X				X	X		X						
OK620910040260_00	Northwood Lake	190	L	3	I	X				I	X		X						
OK620910040270_00	Cow Creek	4.85	R	3	X	X				X	X		X						
OK620910040280_00	Wolf Creek	6.97	R	3	X	X				X	X		X						
OK620910050010_00	Kingfisher Creek	47.37	R	5a	F	F				N	X		N						
OK620910050020_00	Trail Creek	14.87	R	5a	I	I				N	X		N						
OK620910050030_00	Uncle Johns Creek	27.49	R	4a	F	F				F	X		N						
OK620910050040_00	Clear Creek	9.90	R	3	X	X				X	X		X						
OK620910050050_00	Concho Creek	11.56	R	3	X	X				X	X		X						
OK620910050060_00	Elmer Lake Creek	5.49	R	3	X	X				X	X		X						
OK620910050070_00	Elmer Lake	60	L	3	X	X				X	X		X						
OK620910050080_00	Winter Camp Creek	24.23	R	5a	F	F				N	X		N		I				
OK620910050085_00	Winter Camp Creek, Unnamed Tributary of	5.25	R	2	X	X		X						X		F			
OK620910050090_00	Okarche Creek	21.87	R	3	I	I				I	X		X						
OK620910050100_00	Altona Creek	6.42	R	3	X	X				X	X		X						
OK620910050110_00	Cheyenne Creek	15.77	R	3	X	X				X	X		X						
OK620910050120_00	Porcupine Creek	14.86	R	3	X	X				X	X		X						
OK620910050130_00	Otter Creek	23.15	R	3	X	X				X	X		X		X				
OK620910050140_00	Cedar Creek	9.43	R	3	X	X				X	X		X						
OK620910050150_00	Winter Camp Creek!	7.73	R	5b	I	N				I	X		X						
OK620910060010_00	Turkey Creek	82.59	R	5a	I	F				I	X		N		I				
OK620910060020_00	Little Turkey Creek	11.37	R	4a	F	F				F	X		N						
OK620910060025_00	Narragansett Creek	2.47	R	3	X	X		X						X					

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OK620910060030_00	Buffalo Creek	13.99	R	5a	I	I				N	X		I						
OK620910060040_00	Bison Creek	6.04	R	3	X	X				X	X		X						
OK620910060050_00	Hell and Gone Creek	7.26	R	3	X	X				X	X		X						
OK620910060060_00	Barr Creek	5.72	R	3	X	X				X	X		X						
OK620910060070_00	Dry Creek	7.52	R	3	X	X				X	X		X						
OK620910060080_00	Flowing Creek	5.01	R	3	X	X				X	X		X						
OK620910060090_00	Sand Creek	4.02	R	3	X	X				X	X		X						
OK620910060100_00	Spring Creek	6.81	R	3	I	I				I	X		X						
OK620910060110_00	Clear Creek	5.18	R	5a	I	I				N	X		I						
OK620910060120_00	Sand Creek	10.16	R	3	X	X				X	X		X						
OK620910060130_00	Carrier Creek	12.66	R	3	X	X				X	X		X						
OK620910060140_00	Dry Salt Creek	6.69	R	3	X	X		X			X			X					
OK620910060145_00	Dry Salt Creek, Unnamed Trib of	0.18	R	3	X	X		X						X					
OK620910060150_00	Elm Creek	8.98	R	3	X	X				X	X		X						
OK620920010010_00	Cimarron River	43.01	R	4a	I	F				N	I		N			F			
OK620920010020_00	Sand Creek	14.40	R	3	I	I				I	X		X		X				
OK620920010030_00	Gypsum Creek	16.16	R	3	X	X				X	X		X		X				
OK620920010040_00	Fairview Creek, West	8.11	R	3	X	X				X	X		X						
OK620920010050_00	Fairview Creek, East	9.01	R	3	X	X				X	X		X						
OK620920010060_00	Elm Creek	10.61	R	3	X	X				X	X		X						
OK620920010080_00	Cottonwood Creek	21.88	R	5b	F	N				N	X		I		I				
OK620920010090_00	Skunk Creek	12.06	R	3	X	X				X	X		X						
OK620920010100_00	Cheyenne Creek	18.53	R	3	X	X				X	X		X		X				
OK620920010110_00	Barney Creek	21.49	R	3	X	X				X	X		X		X				
OK620920010120_00	Barney Creek, West Branch	6.06	R	3	X	X				X	X		X						
OK620920010130_00	Griever Creek	20.28	R	5a	I	N				N	X		N		I				
OK620920010140_00	Griever Creek, East	13.36	R	5a	F	N				I	X		N		I				
OK620920010150_00	Griever Creek, Middle	6.33	R	3	X	X				X	X		X						
OK620920010160_00	Walnut Grove Creek	8.88	R	3	X	X				X	X		X						
OK620920010170_00	Wildcat Creek	6.58	R	3	X	X				X	X		X						
OK620920010180_00	Main Creek	19.10	R	5b	I	N				F	X		N		I				
OK620920010190_00	Ewers Creek	12.83	R	2	X	X				F	X		X		X				
OK620920010200_00	Gyp Creek	5.09	R	3	X	X				X	X		X						
OK620920010210_00	West Creek	19.62	R	3	X	X				X	X		X						
OK620920010220_00	Cuddy Creek	12.91	R	3	X	X				X	X		X						
OK620920020010_00	Cimarron River	32.63	R	5a	F	N				N	N		N			F			

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OK620920020020_00	Dog Creek	8.56	R	2	X	X				X	X		X			F			
OK620920020030_00	Sand Creek	16.85	R	3	X	X				X	X		X		X				
OK620920020040_00	Chimney Creek	16.90	R	3	X	X				X	X		X		X				
OK620920020050_00	Whitehorse Creek	21.66	R	3	I	I				I	X		X		X				
OK620920020060_00	Doe Creek	17.50	R	5c	I	I				N	X		X		X				
OK620920020070_00	Wildcat Creek	9.65	R	3	X	X				X	X		X						
OK620920020080_00	Long Creek	17.76	R	5a	F	N				N	X		N		I				
OK620920020090_00	Alabaster Creek	6.07	R	3	X	X				X	X		X						
OK620920020100_00	Slicker Creek	10.70	R	3	X	X				X	X		X						
OK620920020110_00	Red Horse Creek	15.76	R	3	X	X				X	X		X		X				
OK620920020120_00	Anderson Creek	20.19	R	3	X	X				X	X		X		X				
OK620920020130_00	Bull Creek	5.72	R	3	X	X				X	X		X						
OK620920020140_00	Freedom Creek	8.00	R	3	X	X				X	X		X						
OK620920020150_00	Girl Creek	9.96	R	3	X	X				X	X		X						
OK620920020160_00	Houston Creek	11.89	R	3	X	X				X	X		X						
OK620920020170_00	Traders Creek	22.09	R	5a	F	N				I	X		N		F				
OK620920020180_00	Moccasin Creek	16.85	R	3	X	X				X	X		X		X				
OK620920020190_00	Moccasin Creek, West	9.21	R	3	X	X				X	X		X						
OK620920020200_00	Sand Creek	17.03	R	3	I	I				I	X		X		X				
OK620920030010_00	Cimarron River	24.35	R	5a	F	N				N	F		N			F			
OK620920030030_00	Day Creek	11.76	R	3	X	X				X	X		X		X				
OK620920030040_00	Keno Creek	14.30	R	3	X	X				X	X		X		X				
OK620920030050_00	Anderson Creek	9.09	R	3	X	X				X	X		X						
OK620920030060_00	Lodge Pole Creek	12.55	R	3	X	X				X	X		X						
OK620920040010_00	Eagle Chief Creek	73.43	R	4a	F	F				I	X		N		I				
OK620920040030_00	Big Timber Lake Creek	4.37	R	3	X	X		X			X			X					
OK620920040040_00	Big Timber Lake	15	L	3	X	X				X	X		X						
OK620920040050_00	Spring Creek	2.82	R	3	I	I				I	X		X						
OK620920040060_00	Carmen Creek	3.73	R	3	X	X				X	X		X						
OK620920040070_00	Carmen Creek, East	4.45	R	3	X	X				X	X		X						
OK620920040080_00	Carmen Creek, West	4.07	R	3	X	X				X	X		X						
OK620920040090_00	Sand Creek	17.78	R	3	I	I				I	X		X						
OK620920040100_00	Lake Creek	15.59	R	3	I	I				I	X		X						
OK620920040110_00	Little Eagle Chief Creek	24.99	R	5b	I	N				I	X		X						
OK620920040120_00	Noel Creek	6.73	R	3	X	X				X	X		X						
OK620920040140_00	Avard Lake	1	L	3	X	X				X	X		X						

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OK620920040160_00	McGill Lake	24	L	3	X	X				X	X		X						
OK620920040170_00	Lojo creek	7.53	R	2	F	I				I	X		X						
OK620920050010_00	Buffalo Creek	49.75	R	5b	I	N				F	X		N		I				
OK620920050020_00	Elm Creek	11.50	R	3	I	I				I	X		X						
OK620920050030_00	Sleeping Bear Creek	16.60	R	3	I	I				I	X		X		I				
OK620920050040_00	Gilbert Creek	6.07	R	3	I	I				I	X		X						
OK620920050050_00	Sand Creek	26.02	R	5a	I	N				N	X		N		I				
OK620920050060_00	Selman Creek	10.80	R	3	I	I				I	X		I						
OK620920050070_00	Little Buffalo Creek	3.72	R	3	I	I				I	X		X						
OK620920050080_00	Buffalo Aqueduct	6.59	R	3	X	X				X	X		X						
OK620920050090_00	Doby Springs Park Branch!	1.01	R	3	I	I				I	X		X						
OK620920050100_00	Doby Springs Creek!	8.40	R	3	X	X				X	X		X						
OK620930000010_00	Cimarron River	37.66	R	5a	F	F				N	F		N		I				
OK620930000020_00	Snake Creek	15.71	R	3	X	X				X	X		X		X				
OK620930000030_00	Redoubt Creek	19.41	R	3	I	I				I	X		X		X				
OK620930000040_00	Old Settlers Irrigation Ditch	15.12	R	3	X	I				X	X		X						
OK620930000050_00	Stink Creek	7.63	R	3	X	X				X	X		X						
OK620930000060_00	Horse Creek	12.79	R	2	X	X				X	X			X		F			
OK620930000070_00	Horse Creek, West Fork	8.35	R	3	X	X				X	X		X						
OK620930000090_00	Gate Lake	1	L	3	X	X				X	X		X						
OK620930000100_00	Crooked Creek	6.38	R	5b	F	N				I	X		N		I				
OK620930000110_00	Cottonwood Creek	7.40	R	3	X	X				X	X		X		X				
OK620930000120_00	Taintor Creek	7.30	R	2	X	F				I	X		I						
OK620930000130_00	Forgan Creek, West	7.90	R	3	X	X				X	X		X						
OK621000010010_00	Arkansas River, Salt Fork	10.72	R	3	X	X				X	X		X		X				
OK621000010010_10	Arkansas River, Salt Fork	8.21	R	3	X	X				X	X		X		X				
OK621000010010_20	Arkansas River, Salt Fork	5.41	R	3	X	X				X	X		X		X				
OK621000010010_30	Arkansas River, Salt Fork	34.45	R	4a	I	F				N	F		N		F				
OK621000010020_00	Deadman Creek	3.24	R	3	I	I				I	X		X						
OK621000010030_00	Conoco Creek	4.69	R	3	X	X				X	X		X						
OK621000010050_00	Cowskin Creek	11.71	R	3	I	I				I	X		X		I				
OK621000010060_00	Bird's Nest Creek	22.54	R	3	I	I				I	X		X		I				
OK621000010070_00	Horseshoe Lake Creek	3.52	R	3	I	I				I	X		X		I				
OK621000010080_00	Horseshoe Lake	1	L	3	X	X				X	X		X						
OK621000010090_00	Tonkawa Creek	3.38	R	3	X	X				X	X		X						
OK621000010100_00	Unnamed Tributary (Deer)	0.42	R	3	X	X				X	X		X		X				

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OK621000010110_00	Eddy Creek	6.64	R	3	I	I				I	X		X		I				
OK621000010120_00	Boggy Creek	8.72	R	3	X	X				X	X		X						
OK621000010130_00	Red Bird's Nest Creek	3.40	R	3	I	I				I	X		X						
OK621000010140_00	Tonkawa Creek	2.56	R	3	I	I				I	X		X						
OK621000020010_00	Arkansas River, Salt Fork	33.55	R	2	I	F				I	X		X		I				
OK621000020010_10	Arkansas River, Salt Fork	8.22	R	2	X	X				F	X		X						
OK621000020030_00	Negro Creek	5.42	R	3	X	X				X	X		X						
OK621000020040_00	Wild Horse Creek	24.66	R	5a	F	F				N	X		N						
OK621000020050_00	Sand Creek	16.15	R	3	X	X				X	X		X						
OK621000020060_00	Kremlin Creek	9.88	R	3	X	X				X	X		X						
OK621000020080_00	Hellums Lake	6	L	3	X	X				X	X		X						
OK621000020090_00	Four Corners Creek	5.55	R	3	X	X				X	X		X						
OK621000020100_00	Ninemile Creek	11.27	R	3	I	I				I	X		X						
OK621000020110_00	Ninemile Canyon Creek	1.36	R	3	X	X				X	X		X						
OK621000020120_00	Little Pond Creek	5.90	R	3	X	X				X	X		X						
OK621000020130_00	Spring Creek	6.14	R	5a	F	F				F	X		N						
OK621000020140_00	Three Lakes Creek	1.30	R	3	X	X				X	X		X						
OK621000020150_00	Three Lake	1	L	3	X	X				X	X		X						
OK621000020160_00	Coldwater Creek	25.80	R	3	I	I				I	X		X						
OK621000020170_00	Sand Creek	18.77	R	3	I	X				I	X		X						
OK621000020180_00	Little Nash Creek	3.14	R	3	X	X				X	X		X						
OK621000020190_00	Nash Creek	12.38	R	2	X	X				F	X		X						
OK621000020200_00	Wagon Creek	24.12	R	3	I	X				I	X		X		X				
OK621000020210_00	Wagon Creek, Unnamed Trib of	5.15	R	3	X	X		X						X					
OK621000030010_00	Bois d' Arc Creek	36.88	R	5a	F	F				N	X		N		I				
OK621000030020_00	Santa Fe Creek	3.86	R	3	X	X				X	X		X						
OK621000030040_00	Cattle Creek, East	10.28	R	2	F	F				I	X		X		I				
OK621000030050_00	Cattle Creek, West	8.56	R	5b	I	N				I	X		X		I				
OK621000030060_00	Kildare Creek	5.90	R	3	X	X				X	X		X						
OK621000030070_00	Spring Creek	2.13	R	2	X	X				F	X		X			F			
OK621000030080_00	Kildare Creek, North	4.95	R	3	I	I				I	X		X		I				
OK621000030090_00	Spring Creek	3.40	R	5c	I	I				N	X		X			F			
OK621000030100_00	Newkirk Creek	4.49	R	3	X	X				X	X		X						
OK621000030110_00	Spring Creek	2.52	R	2	X	X		X			X			X		F			
OK621000030110_10	Spring Creek	3.54	R	2	X	X				X	X		X			F			
OK621000040010_00	Deer Creek	40.81	R	4a	I	F				F	X		N		I				

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OK621000040020_00	Thompson Creek	14.17	R	3	X	X				X	X		X						
OK621000040030_00	Peters Creek	9.44	R	3	X	X				X	X		X						
OK621000040040_00	Nardin Creek	8.74	R	3	X	X				X	X		X						
OK621000040050_00	Big Antelope Creek	13.42	R	3	X	X				X	X		X						
OK621000040060_00	Little Antelope Creek	10.63	R	3	X	X				X	X		X						
OK621000040070_00	Dry Creek	9.57	R	2	I	F				I	X		X		I				
OK621000050010_00	Pond Creek	60.22	R	4a	I	F				I	X		N		I				
OK621000050020_00	Spring Creek	8.14	R	3	X	X				X	X		X						
OK621000050030_00	Polecat Creek	29.10	R	3	X	X				X	X		X		X				
OK621000050040_00	Deadman Creek	8.22	R	3	X	X				X	X		X						
OK621000050050_00	Cottonwood Creek	14.27	R	3	X	X				X	X		X						
OK621000050060_00	Elm Creek	9.82	R	3	X	X				X	X		X						
OK621000050070_00	Renfrow Creek	5.83	R	3	X	X				X	X		X						
OK621000050080_00	Bullwacker Creek	20.23	R	2	X	X		X			X			X		F			
OK621000050090_00	Medford Creek	8.49	R	3	X	X				X	X		X						
OK621000050100_00	Osage Creek	33.69	R	3	X	X				X	X		X		X				
OK621000050110_00	Wakita Creek	7.57	R	3	X	X				X	X		X						
OK621000050120_00	Deadman Creek, Unnamed Trib of	2.74	R	3	X	X				X	X		X						
OK621000060010_00	Crooked Creek	32.88	R	4a	F	F				I	X		N		I				
OK621000060020_00	Gilbert Creek	3.70	R	3	X	X				X	X		X						
OK621000060030_00	Sand Creek	25.80	R	2	X	I				F	X		X		X				
OK621000060040_00	Cooper Creek	9.26	R	3	X	X				X	X		X						
OK621000060050_00	Lynch Creek	8.36	R	3	X	X				X	X		X						
OK621000060060_00	Duel Creek	10.35	R	5b	I	N				I	X		X						
OK621000060070_00	Gibbon Creek, North	11.13	R	3	X	X				X	X		X						
OK621000060080_00	Manchester Creek	11.33	R	3	X	X				X	X		X						
OK621000060090_00	Gibbon Creek, East	11.25	R	3	X	X				X	X		X						
OK621010010010_00	Arkansas River, Salt Fork	17.34	R	4a	I	F				N	X		F		I				
OK621010010020_00	Great Salt Plains Lake	8690	L	5a	I					N	F		N						
OK621010010050_00	Powell Creek	7.70	R	3	I	I				I	X		X						
OK621010010060_00	Spring Creek	10.10	R	3	X	X				X	X		X						
OK621010010070_00	Twin Creek	10.49	R	3	X	X				X	X		X		X				
OK621010010080_00	Jet Creek	3.73	R	3	X	X				X	X		X		X				
OK621010010090_00	Clay Creek	4.05	R	2	X	X				X	X		X			F			
OK621010010100_00	Cottonwood Creek	21.81	R	3	I	I				I	X		X						
OK621010010110_00	Clay Creek, East	15.17	R	3	X	X				X	X		X		X				

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OK621010010110_10	Clay Creek, East	6.91	R	3	X	X				X	X		X		X				
OK621010010120_00	Helena Creek	6.26	R	3	X	X				X	X		X		X				
OK621010010130_00	Clay Creek, West	22.92	R	5a	F	N				I	X		N		X				
OK621010010140_00	Lambert Creek	9.09	R	3	X	X				X	X		X		X				
OK621010010160_00	Arkansas River, Salt Fork	14.96	R	4a	F	F				N	F		N		F				
OK621010010180_00	Ingersoll Creek	10.61	R	3	X	X				X	X		X		X				
OK621010010190_00	Ashley Creek, East	8.70	R	3	X	X				X	X		X		X				
OK621010010200_00	Ashley Creek, West	4.34	R	3	X	X				X	X		X		X				
OK621010010210_00	Capron Creek, South	11.41	R	3	X	X				X	X		X		X				
OK621010010220_00	Arkansas River, Salt Fork	36.63	R	2	I	F				I	X		X		I				
OK621010010230_00	Turkey Creek	20.80	R	5b	F	N				F	X		N		I				
OK621010010240_00	Boggy Creek	16.43	R	5b	I	N				I	X		X		I				
OK621010010250_00	Greenleaf Creek	19.53	R	3	I	I				I	X		X		X				
OK621010010260_00	Hackberry Creek	1.96	R	3	X	X				X	X		X		X				
OK621010010270_00	Yellowstone Creek	21.82	R	5b	I	N				I	X		N		I				
OK621010020010_00	Sandy Creek	17.81	R	4a	I	F				F	X		N		I				
OK621010020020_00	Little Church Creek	4.28	R	3	X	X				X	X		X		X				
OK621010020030_00	Little Sandy Creek	9.82	R	3	X	X				X	X		X		X				
OK621010020040_00	Salty Creek	4.47	R	3	I	I				I	X		X		X				
OK621010020050_00	Rush Creek	3.59	R	3	X	X				X	X		X		X				
OK621010030010_00	Medicine Lodge River	13.47	R	4a	I	F				F	X		N		I				
OK621010030020_00	Byron Creek	6.11	R	3	X	X				X	X		X		X				
OK621010030030_00	Driftwood Creek	38.79	R	4a	F	F				N	X		N		I				
OK621010030040_00	Dry Creek	10.30	R	3	X	X				X	X		X		X				
OK621010030050_00	Little Driftwood Creek	9.75	R	3	I	I				I	X		X		X				
OK621010030060_00	Loder Creek	4.35	R	3	X	X				X	X		X		X				
OK621010030070_00	Little Mule Creek	6.36	R	3	X	X				X	X		X		X				
OK621010030080_00	Capron Creek, North	8.09	R	5b	I	N				I	X		X		I				
OK621010030090_00	Spring Creek	10.54	R	3	X	X				I	X		X		X				
OK621010030100_00	Stink Creek	19.18	R	3	X	X				I	X		X		X				
OK621100000010_00	Chikaskia River	5.39	R	4a	I	F				N	F		N		I				
OK621100000010_10	Chikaskia River	23.11	R	4a	F	F				N	F		N		I				
OK621100000010_20	Chikaskia River	12.81	R	5a	I	F				F	X		N		F				
OK621100000020_00	Antwine Lake	20	L	3	X	X				X	X		X						
OK621100000030_00	Duck Creek	25.78	R	5a	F	I				I	X		N		F				
OK621100000033_00	Duckling Creek	4.85	R	3	I	I				I	X		X		I				

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OK621100000040_00	Peckham Creek	9.29	R	5b	I	N				I	X		X		I				
OK621100000050_00	Stink Creek	15.93	R	3	I	I				I	X		X		I				
OK621100000060_00	Lost Creek	15.40	R	3	I	I				I	X		X						
OK621100000070_00	Grainville Creek	6.32	R	5b	I	N				I	X		X						
OK621100000080_00	Wentz Lake Creek	1.45	R	3	X	X				X	X		X						
OK621100000090_00	Wentz Lake	17	L	3	X	X				X	X		X						
OK621100000100_00	Bitter Creek	23.33	R	5a	I	N				N	X		N		I				
OK621100000110_00	Dry Creek	20.58	R	3	X	X				X	X		X						
OK621100000120_00	Braman Creek	10.52	R	3	X	X				X	X		X						
OK621100000130_00	Scatter Creek	7.58	R	5b	I	N				I	X		X		I				
OK621100000140_00	Sumpter Creek	6.90	R	3	X	X				X	X		X						
OK621100000150_00	Bitter Creek, East	4.14	R	3	X	X				X	X		X						
OK621100000160_00	Spring Creek	8.79	R	3	X	X				X	X		X						
OK621100000180_00	Shoo Fly Creek	7.75	R	3	X	X				X	X		X						
OK621100000190_00	Chikaskia River	7.89	R	3	X	X				X	X		X		X				
OK621100000200_00	Blackwell Lake	53	L	3	X	X				X	X		X						
OK621100000210_00	Blackwell Creek	5.02	R	3	X	X				X	X		X						
OK621100000220_00	Sand Creek	5.88	R	3	X	X				X	X		X						
OK621100000230_00	Bluff Creek	11.66	R	3	X	X				X	X		X		X				
OK621100000240_00	Spring Creek	5.09	R	3	X	X				X	X		X						
OK621100000250_00	Sullivan Branch	6.12	R	3	X	X				X	X		X						
OK621200010020_00	Keystone Lake	3980	L	5a	F	F				N	I		I		I				
OK621200010025_00	Keywest Creek	1.86	R	2	I	F				I	X		X		I				
OK621200010030_00	Bogy Creek	2.34	R	3	X	X				X	X		X						
OK621200010040_00	Arkansas River	1.59	R	3	X	X				I	X		X		X				
OK621200010050_00	Keystone Lake, Arkansas River Arm	9491	L	5a	I	F				N	I		I		I				
OK621200010060_00	Mud Creek	4.53	R	3	X	X				X	X		X						
OK621200010070_00	Rock Creek	2.59	R	3	X	X				X	X		X						
OK621200010080_00	Walnut Creek	2.90	R	3	X	X				X	X		X						
OK621200010090_00	Waresha Creek	2.63	R	3	X	X				X	X		X						
OK621200010100_00	Little Waresha Creek	2.31	R	3	X	X				X	X		X						
OK621200010110_00	Cowskin Creek	5.36	R	3	X	X				X	X		X						
OK621200010120_00	Bear Creek	5.40	R	3	X	X				X	X		X						
OK621200010130_00	Mill Creek	2.86	R	3	X	X				X	X		X						
OK621200010140_00	Vandruuff Creek	4.01	R	3	X	X				X	X		X						
OK621200010150_00	Mechetsemoi Creek	4.22	R	3	X	X				X	X		X						

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OK621200010160_00	Osage Creek	4.44	R	3	X	X				X	X		X						
OK621200010170_00	Cedar Creek	7.02	R	3	X	X				X	X		X						
OK621200010180_00	Scanlon Creek	3.48	R	3	X	X				X	X		X						
OK621200010190_00	Black Dog Creek	4.69	R	3	X	X				X	X		X						
OK621200010200_00	Arkansas River	37.49	R	4a	I	F				I	F		N		I				
OK621200010210_00	Sand Creek	3.08	R	3	X	X				X	X		X						
OK621200010220_00	Ghost Hollow Creek	2.85	R	3	X	X				X	X		X						
OK621200010230_00	Ranch Creek	2.31	R	3	X	X				X	X		X						
OK621200010240_00	Turkey Creek	2.29	R	3	X	X				X	X		X						
OK621200010250_00	Carpenter Creek	4.60	R	3	X	X				X	X		X						
OK621200010260_00	Ranch Creek	6.99	R	3	X	X				X	X		X		X				
OK621200010270_00	Cleveland Lake	159	L	5a	F	F				N	F		F		F				
OK621200010280_00	Ranch Creek, West Branch	7.00	R	3	X	X				X	X		X						
OK621200010300_00	Maramec Lake	28	L	3	X	X				X	X		X						
OK621200010310_00	Hellroaring Creek	9.95	R	3	X	X				X	X		X						
OK621200010320_00	Bug Creek	11.54	R	2	X	X				F	X		X		X				
OK621200010330_00	Harper Creek	4.77	R	3	X	X				X	X		X						
OK621200010350_00	Sycamore Creek	11.54	R	3	X	X				X	X		X						
OK621200010360_00	Dry Creek	5.06	R	3	X	X				X	X		X						
OK621200010370_00	Spring Creek	3.90	R	3	X	X				X	X		X						
OK621200010380_00	Coal Creek	11.79	R	3	X	X				X	X		X						
OK621200010390_00	Coon Creek	5.40	R	3	X	X				X	X		X						
OK621200010400_00	Gray Horse Creek	15.94	R	4a	F	F				F	X		N						
OK621200010410_00	Lucy Creek	9.00	R	3	X	X				X	X		X						
OK621200010420_00	Eagle Creek	5.56	R	3	X	X				X	X		X						
OK621200020010_00	Arkansas River	4.92	R	3	X	X				X	X		X		X				
OK621200020010_10	Arkansas River	14.80	R	3	X	X				X	X		X		X				
OK621200020010_20	Arkansas River	0.86	R	3	X	X				X	X		X		X				
OK621200020010_30	Arkansas River	24.60	R	3	X	X				X	X		X		X				
OK621200020010_40	Arkansas River	6.73	R	3	X	X				X	X		X		X				
OK621200020010_50	Arkansas River	10.33	R	3	X	I				I	I		X		I				
OK621200020020_00	Doga Creek	9.85	R	5a	F	F				N	X		N		I				
OK621200020030_00	Clear Creek	7.41	R	3	X	X				X	X		X						
OK621200020040_00	Doga Creek, East Fork	4.97	R	3	X	X				X	X		X		X				
OK621200020050_00	Doga Creek, West Fork	2.70	R	3	X	X				X	X		X		X				
OK621200020060_00	Doga Creek, Middle Fork	4.80	R	3	X	X				X	X		X		X				

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OK621200020070_00	Bedford Creek	3.67	R	3	X	X				X	X		X						
OK621200020080_00	Mud Creek	5.76	R	3	X	X				X	X		X						
OK621200020090_00	Brush Creek	4.52	R	3	X	X				X	X		X						
OK621200020100_00	Rock Creek	9.39	R	3	X	X				X	X		X						
OK621200020110_00	Greasy Creek	4.14	R	3	X	X				X	X		X						
OK621200020120_00	Watchorn Creek	5.86	R	3	X	X				X	X		X						
OK621200020130_00	Sooner Lake	5400	L	2	F	F				I	F		F						
OK621200020150_00	Big Drum Creek	7.43	R	3	X	X				X	X		X						
OK621200020160_00	Little Drum Creek	7.57	R	3	X	X				X	X		X						
OK621200020170_00	Prettyhair Creek	5.59	R	3	X	X				X	X		X						
OK621200020180_00	Simpkins Creek	5.16	R	3	X	X				X	X		X						
OK621200020190_00	Turkey Creek	2.65	R	3	X	X				X	X		X		X				*
OK621200020200_00	Turkey Creek, West Ponca Lake Branch	6.67	R	3	X	X				X	X		X		X				*
OK621200020210_00	Lake Ponca	403	L	5a	F	F				I	I		F		N				*
OK621200020220_00	Turkey Creek, East Ponca Lake Branch	3.34	R	3	X	X				X	X		X		X				*
OK621200020250_00	Indian Hills Lake	1	L	3	X	X				X	X		X						
OK621200020260_00	Coon Creek (Dry)	6.16	R	3	X	X				X	X		X						
OK621200020270_00	Charley Creek	9.53	R	3	X	X				X	X		X						
OK621200030010_00	Black Bear Creek	68.02	R	4a	F	F				N	F		N		I				
OK621200030020_00	Little Crystal Creek	2.46	R	3	X	X				X	X		X						
OK621200030030_00	Crystal Creek	8.04	R	3	X	X				X	X		X						
OK621200030040_00	Camp Creek	23.09	R	2	F	F				F	X		I		I				
OK621200030060_00	Lone Chimney Lake	550	L	2	F	F				I	I		F		F				
OK621200030070_00	Pawnee Creek	4.77	R	3	X	X				X	X		X						
OK621200030080_00	Skedee Creek	2.00	R	3	X	X				X	X		X		X				*
OK621200030090_00	Skedee Creek	5.31	R	3	X	X				X	X		X		X				*
OK621200030100_00	Pawnee Lake	257	L	5a	F	F				N	F		F		N				*
OK621200030110_00	Little Skedee Creek	3.24	R	3	X	X				X	X		X		X				*
OK621200030120_00	Feaster Lake Creek	2.24	R	3	X	X				X	X		X		X				*
OK621200030130_00	Feaster Lake	7	L	3	X	X				X	X		X						
OK621200030140_00	Pepper Creek	6.76	R	3	X	X				X	X		X						
OK621200030150_00	Peters Creek	4.47	R	3	X	X				X	X		X						
OK621200030160_00	Turkey Creek	6.60	R	2	X	X				F	X		X						
OK621200030170_00	Panther Creek	6.73	R	3	X	X				X	X		X						
OK621200030180_00	Lion Creek	5.30	R	3	X	X				X	X		X						
OK621200030190_00	Oak Creek	9.88	R	3	X	X				X	X		X		X				

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OK621200030195_00	Oak Creek, Unnamed Trib of	4.56	R	3	X	X				X	X		X						
OK621200030200_00	Long Branch	20.66	R	3	X	X				X	X		X						
OK621200030208_00	Upper Black Bear Creek Site 5 Reservoir	12	L	3	X	X				X	X		X						
OK621200030210_00	Otoe Creek	5.76	R	3	X	X				X	X		X						
OK621200030220_00	Spring Creek	6.43	R	3	X	X				X	X		X						
OK621200030230_00	Mule Creek	8.63	R	3	X	X				X	X		X		X				
OK621200030240_00	Willow Creek	7.50	R	3	X	X				X	X		X						
OK621200030250_00	Elm Creek	8.28	R	3	X	X				X	X		X						
OK621200030260_00	Black Bear Creek	17.16	R	5b	I	N				N	X		F		I				
OK621200030260_10	Black Bear Creek	11.65	R	5b	I	N				I	X		X						
OK621200030260_20	Black Bear Creek	18.22	R	2	I	F				I	X		X						
OK621200030270_00	Cow Creek	12.97	R	5a	I	X				I	X		N		I				
OK621200030290_00	Wills Lake	5	L	3	X	X				X	X		X						
OK621200030300_00	Perry Lake Park Creek	1.97	R	3	X	X				X	X		X						
OK621200030310_00	Perry Lake Park Lake	6	L	3	X	X				X	X		X						
OK621200030320_00	Calf Creek	4.01	R	3	X	X				X	X		X						
OK621200030330_00	Little Cow Creek	2.91	R	3	X	X				X	X		X						
OK621200030340_00	Cow Creek	7.48	R	3	I	X				I	X		X		I				*
OK621200030350_00	Perry Lake	614	L	5a	F	F				N	F		F		F				*
OK621200030360_00	Gansel Creek	7.36	R	3	I	I				I	X		X						
OK621200030370_00	Warren Creek	8.16	R	3	X	X				X	X		X						
OK621200030380_00	Warren Creek, East	5.13	R	3	X	X				X	X		X						
OK621200030390_00	Warren Creek, West	4.99	R	2	I	F				F	X		X		X				
OK621200030396_00	Lucien Creek	3.62	R	5b	F	N				F	X		X		X				
OK621200030400_00	Turkey Creek	3.60	R	3	X	X				X	X		X						
OK621200030410_00	Panther Creek	11.80	R	3	X	X				X	X		X						
OK621200030420_00	Garber Creek	5.62	R	5b	I	N				I	X		X						
OK621200030430_00	Crow Creek	5.09	R	3	I	I				I	X		X						
OK621200030440_00	Olive E!	2.42	R	3	I	I				I	X		X						
OK621200030450_00	Olive W!	3.02	R	3	I	I				I	X		X						
OK621200030460_00	Olive	2.05	R	3	I	I				I	X		X						
OK621200030470_00	Yogi	1.89	R	3	I	I				I	X		X						
OK621200030480_00	Garber Trib A!	1.86	R	3	I	I				I	X		X						
OK621200030490_00	Garber Field!	3.42	R	5b	I	N				I	X		X						
OK621200030500_00	St. John!	2.58	R	5b	I	N				I	X		X						

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OK621200030510_00	Shale!	2.54	R	5b	I	N				I	X		X						
OK621200030520_00	Lincoln!	5.38	R	3	I	I				I	X		X						
OK621200030530_00	Lutheran E!	0.89	R	3	I	I				I	X		X						
OK621200030540_00	Lutheran mid. Branch	1.87	R	3	I	I				I	X		X						
OK621200030550_00	Lutheran W!	2.27	R	3	I	I				I	X		X						
OK621200030560_00	Lutheran!	2.76	R	5b	I	N				I	X		X						
OK621200030570_00	Fozzie!	1.99	R	3	I	I				I	X		X						
OK621200040010_00	Salt Creek	17.29	R	4a	I	F				I	X		N		I				
OK621200040010_10	Salt Creek	43.97	R	4a	I	F				F	X		N		I				
OK621200040020_00	Threemile Canyon Creek	3.81	R	3	X	X				X	X		X						
OK621200040030_00	Wild Creek	5.74	R	3	X	X				X	X		X		X				*
OK621200040040_00	Fairfax Lake	111	L	5a	F	F				I	F		F		N				*
OK621200040050_00	Tate Creek	4.09	R	3	X	X				X	X		X						
OK621200040060_00	Solomon Creek	5.98	R	3	X	X				X	X		X						
OK621200040070_00	Little Chief Creek	13.18	R	2	F	F				F	X		I		I				
OK621200040080_00	Lost Man Creek	6.72	R	3	X	X				X	X		X						
OK621200040090_00	Wild Horse Creek	3.43	R	3	X	X				X	X		X						
OK621200040100_00	Jim Creek	8.81	R	3	X	X				X	X		X						
OK621200040110_00	Stewart Creek	4.40	R	3	X	X				X	X		X						
OK621200040120_00	Mud Creek	5.72	R	3	X	X				X	X		X						
OK621200040130_00	Hay Creek	7.08	R	3	X	X				X	X		X						
OK621200040140_00	Webb City Creek	2.62	R	3	X	X				X	X		X						
OK621200040150_00	Shidler Creek	3.06	R	3	X	X				X	X		X						
OK621200040160_00	Rock Creek	0.30	R	3	X	X				X	X		X						
OK621200040170_00	Rock Creek	5.54	R	3	X	X				X	X		X		X				*
OK621200040180_00	Phillips Lake (Shidler)	1	L	3	X	X				X	X		X		X				*
OK621200040190_00	Potato Creek	6.46	R	3	X	X				X	X		X						
OK621200040200_00	Wamsley Creek	5.77	R	3	X	X				X	X		X						
OK621200040210_00	Elm Creek	12.08	R	3	X	X				X	X		X		X				
OK621200040220_00	Dugout Creek	9.12	R	3	X	X				X	X		X						
OK621200040230_00	Antelope Creek	7.35	R	3	X	X				X	X		X						
OK621200040240_00	Adams Lake Creek	1.33	R	3	X	X				X	X		X						
OK621200040250_00	Adams Lake	63	L	3	X	X				X	X		X						
OK621200040260_00	Grainola Creek	2.89	R	3	X	X				X	X		X						
OK621200040270_00	Salt Creek, Unnamed Trib of	3.00	R	3	X	X		X						X					
OK621200050010_00	Red Rock Creek	36.92	R	5a	I	F				N	X		N						

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OK621200050010_10	Red Rock Creek	46.89	R	4a	F	F				N	X		N						
OK621200050020_00	Cat Creek	2.50	R	3	X	X				X	X		X						
OK621200050030_00	Houston Creek	4.20	R	3	X	X				X	X		X						
OK621200050040_00	Coon Creek	5.29	R	3	X	X				X	X		X						
OK621200050050_00	Long Creek	10.44	R	3	X	X				X	X		X						
OK621200050060_00	Bird Creek	7.05	R	3	X	X				X	X		X						
OK621200050070_00	Marland Creek	7.07	R	3	X	X		X						X					
OK621200050080_00	Squaw Creek	8.01	R	3	X	X				X	X		X						
OK621200050090_00	Skinny Creek	13.02	R	3	I	I				I	X		X						
OK621200050100_00	Cottonwood Creek	7.35	R	3	X	X				X	X		X						
OK621200050110_00	Perry Air Creek	9.34	R	3	X	X				X	X		X						
OK621200050120_00	Ceres Creek	4.69	R	3	X	X				X	X		X						
OK621200050130_00	Little Hackberry Creek	9.69	R	3	X	X				X	X		X						
OK621200050140_00	Hackberry Creek	13.28	R	3	X	X				X	X		X						
OK621200050150_00	Dean Creek	8.47	R	3	X	X				X	X		X						
OK621200050160_00	Grassy Creek	11.30	R	5a	X	F				N	X		F						
OK621200050170_00	Doe Creek	6.66	R	5c	X	X				N	X		X						
OK621200050180_00	Bunch Creek	12.43	R	3	X	X				X	X		X						
OK621200050190_00	Billings Creek	4.70	R	3	X	X				X	X		X						
OK621200050200_00	Monkey Creek	8.91	R	3	I	I				I	X		X						
OK621200050210_00	Elkhorn Creek	10.91	R	2	I	F				I	X		X						
OK621200050220_00	Ranch Creek	4.04	R	3	X	X				X	X		X						
OK621200050230_00	Hereford Creek	10.46	R	3	X	X				X	X		X						
OK621200050240_00	Wolf Creek	4.74	R	3	X	X				X	X		X						
OK621200050250_00	Thompson Lake Creek	7.97	R	3	X	X				X	X		X						
OK621200050260_00	Thompson Lake	1	L	3	X	X				X	X		X						
OK621210000020_00	Kaw Lake, Lower	7208	L	5a	F	F				N	N		I		I				
OK621210000030_10	Arkansas River	14.44	R	5b	I	N				N	I		N		I				
OK621210000040_00	Kaw Lake, Upper	9009	L	5a	F	F				N	N		I		I				
OK621210000050_10	Beaver Creek	21.58	R	5a	F	F				N	X		N		I				
OK621210000070_00	Aleck Creek	3.39	R	3	X	X				X	X		X						
OK621210000080_00	Little Beaver Creek	13.04	R	3	X	X				X	X		X						
OK621210000090_00	Canadian Creek	4.79	R	3	X	X				X	X		X						
OK621210000100_00	Mud Creek	5.42	R	3	X	X				X	X		X						
OK621210000110_00	Myers Creek	4.55	R	3	X	X				X	X		X						
OK621210000120_00	Rabbit Creek	6.03	R	3	X	X				X	X		X						

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OK621210000130_00	Cooper Creek	1.83	R	3	X	X				X	X		X						
OK621210000140_00	Haines Creek	4.31	R	3	X	X				X	X		X						
OK621210000150_00	Bayliss Creek	3.46	R	3	X	X				X	X		X						
OK621210000160_00	Otter Creek	6.00	R	3	X	X				X	X		X						
OK621210000170_00	Lone Tree Creek	1.34	R	3	X	X				X	X		X						
OK621210000180_00	Spring Creek	2.41	R	3	X	X				X	X		X						
OK621210000190_00	Coon Creek	5.82	R	3	X	X				X	X		X						
OK621210000200_00	Bear Creek	5.41	R	3	X	X				X	X		X						
OK621210000210_00	Sweetwater Creek	7.01	R	3	X	X				X	X		X						
OK621210000220_00	Wolf Creek	7.60	R	3	X	X				X	X		X						
OK621210000230_00	Newkirk Country Club Lake	41	L	3	X	X				X	X		X						
OK621210000240_00	Deer Creek	8.70	R	3	X	X				X	X		X						
OK621210000260_00	Newkirk Lake	21	L	3	X	X				X	X		X						
OK621210000270_00	Chilocco Creek	16.31	R	4a	F	F				N	X		N						
OK621210000275_00	Rockford Creek	4.56	R	3	X	X				X	X		X						
OK621210000280_00	Osage Creek	5.49	R	3	X	X				X	X		X						
OK621210000290_00	Little Osage Creek	4.45	R	3	X	X				X	X		X						
OK720500010010_00	Canadian River, North	37.36	R	5a	F	F				N	F		N		F				
OK720500010020_00	Canton Lake	7910	L	5a	F	F				N	N		F		F				
OK720500010030_00	Red Bluff Cut Off Lake	1	L	3	X	X				X	X		X						
OK720500010040_00	Cheyenne Creek	5.75	R	3	X	X				X	X		X		X				
OK720500010050_00	Seiling Creek	7.13	R	3	I	I				I	X		X						
OK720500010060_00	Deep Creek	12.11	R	3	I	I				I	X		X		X				
OK720500010070_00	Bent Creek	18.13	R	4a	F	N				I	X		N		I				
OK720500010080_00	Camp Creek	8.53	R	2	I	I				F	X		X		X				
OK720500010090_00	Kizer Creek	15.94	R	3	X	X				X	X		X		X				
OK720500010100_00	Kizer Creek, North	9.63	R	3	X	X				X	X		X						
OK720500010110_00	Cottonwood Creek	10.18	R	3	X	X				X	X		X		X				
OK720500010120_00	Cottonwood Creek, North	6.29	R	3	X	X				X	X		X						
OK720500010130_00	Mutual Creek	7.02	R	3	X	X				X	X		X						
OK720500010140_00	Canadian River, North	18.55	R	3	X	X				X	X		X		X				
OK720500010140_10	Beaver River (North Canadian)	11.50	R	4a	F	F				I	F		N						
OK720500010140_20	Canadian River, North	22.64	R	2	I	F				I	X		X						
OK720500010150_00	Persimmon Creek	13.45	R	4a	I	F				F	X		N		I				
OK720500010160_00	Hackberry Creek	10.01	R	3	X	X				X	X		X						
OK720500010170_00	Persimmon Creek, North	20.42	R	3	X	X				X	X		X		X				

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OK720500010180_00	Persimmon Creek, South	10.39	R	3	X	X				X	X		X		X				
OK720500010190_00	Sand Creek	9.78	R	3	X	X				X	X		X						
OK720500010200_00	Indian Creek	17.03	R	4a	I	F				F	X		N		I				
OK720500010210_00	Mooreland Creek	2.32	R	3	X	X				X	X		X						
OK720500010220_00	Bull Creek	5.23	R	3	X	X				X	X		X						
OK720500010230_00	Boggy Creek	4.64	R	3	X	X				X	X		X						
OK720500010240_00	Boiling Springs Creek	1.66	R	3	X	X				X	X		X						
OK720500010250_00	Woodward Creek	5.46	R	3	X	X				X	X		X						
OK720500010260_00	Crystal Beach Lake	10	L	3	I	X				X	X		X						
OK720500010270_00	Spring Creek	6.42	R	3	X	X				I	X		X						
OK720500010280_00	Field Station Lake	10	L	3	I	X				X	X		X						
OK720500010290_00	Sand Creek	7.38	R	3	I	I				I	X		I						
OK720500010300_00	Roundup Creek	2.31	R	3	X	X				X	X		X						
OK720500020010_00	Beaver River (North Canadian)	40.07	R	5a	F	F				N	N		N						
OK720500020030_00	Wolf Creek	5.57	R	4a	I	F				N	X		N		X				*
OK720500020040_00	Sand Creek	11.50	R	3	X	X				X	X		X						
OK720500020050_00	Otter Creek	13.55	R	4a	I	F				F	X		N		I				
OK720500020060_00	Otter Creek, East	9.65	R	3	X	X				X	X		X						
OK720500020070_00	Clear Creek	29.74	R	4a	F	F				F	I		N		I				
OK720500020080_00	Dry Prong Creek	9.37	R	3	X	X				X	X		X						
OK720500020100_00	Spring Creek	6.67	R	5a	F	F				N	X		N						
OK720500020110_00	Spring Creek, North Fork	6.15	R	3	X	X				X	X		X						
OK720500020120_00	Spring Creek, South Fork	8.90	R	3	X	X				X	X		X						
OK720500020130_00	Kiowa Creek	34.54	R	5a	F	F				N	I		N		I				
OK720500020140_00	Beaver River (North Canadian)	38.96	R	5a	I	N				N	N		N						
OK720500020150_00	Camp Creek	18.91	R	3	X	X				X	X		X		X				
OK720500020160_00	Sand Creek	19.45	R	3	X	X				X	X		X		X				
OK720500020170_00	Indian Creek	11.92	R	3	X	X				X	X		X						
OK720500020180_00	Don Jose Creek	9.12	R	3	X	X				X	X		X						
OK720500020190_00	Coon Creek	18.37	R	3	X	X				X	X		X		X				
OK720500020200_00	Kiowa Creek, North Fork	14.72	R	3	X	X				X	X		X						
OK720500020210_00	Mexico Creek	9.42	R	3	X	X				X	X		X		X				
OK720500020220_00	Evans Chambers Lake	80	L	3	X	X				I	X		X						
OK720500020230_00	Kidds Creek	8.29	R	3	X	X				X	X		X						
OK720500020240_00	Knowles Creek	7.21	R	3	X	X				X	X		X						
OK720500020250_00	Duck Pond Creek	40.62	R	4a	F	F				I	X		N		I				

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OK720500020260_00	Camp Creek	13.29	R	3	X	X				X	X		X		X				
OK720500020270_00	Spring Creek	7.19	R	3	X	X				X	X		X						
OK720500020280_00	Timber Creek	8.02	R	3	X	X				X	X		X						
OK720500020290_00	Beaver River (North Canadian)	31.37	R	5a	F	N				N	F		N						
OK720500020300_00	Clear Creek	23.48	R	5a	F	F				N	X		I		F				
OK720500020310_00	Cottonwood Creek	11.82	R	3	X	X				X	X		X		X				
OK720500020330_00	Clear Creek, South Fork	19.37	R	3	X	X				X	X		X		X				
OK720500020340_00	Clear Creek, North Fork	25.35	R	3	X	X				X	X		X		X				
OK720500020350_00	Spring Creek	11.22	R	3	X	X				X	X		X						
OK720500020370_00	Beaver Pioneer Creek	7.25	R	3	X	X				X	X		X						
OK720500020380_00	Home Creek	11.49	R	3	X	X				X	X		X		X				
OK720500020390_00	Sixmile Creek	23.85	R	3	X	X				X	X		X		X				
OK720500020400_00	Dugout Creek	15.72	R	3	X	X				X	X		X						
OK720500020410_00	Elm Creek	14.86	R	3	X	X				X	X		X						
OK720500020420_00	Willow Creek	14.47	R	3	X	X				X	X		X		X				
OK720500020430_00	Sharp Creek	11.57	R	3	X	X				I	X		X		X				
OK720500020440_00	Short Creek	6.91	R	3	X	X				X	X		X						
OK720500020450_00	Beaver River (North Canadian)	28.20	R	5a	I	N				N	F		N						
OK720500020450_10	Beaver River (North Canadian)	2.59	R	3	X	X				I	X		X						
OK720500020460_00	Jackson Creek	22.24	R	3	X	X				X	X		X		X				
OK720500020470_00	Jackson Creek, East Fork	11.62	R	3	X	X				X	X		X						
OK720500020480_00	Bull Creek	17.48	R	3	X	X				X	X		X		X				
OK720500020490_00	Red Horse Creek	9.42	R	3	X	X				X	X		X						
OK720500020500_00	Palo Duro Creek	15.84	R	5a	I	N				N	I		N		I				
OK720500020500_10	Palo Duro Creek	4.40	R	4a	F	F				F	X		N		I				
OK720500020510_00	Fulton Creek	17.51	R	3	X	X				X	X		X		X				
OK720500020520_00	Sand Creek	8.60	R	3	X	X				X	X		X		X				
OK720500020530_00	Chiquita Creek	15.03	R	3	X	X				X	X		X		X				
OK720500020540_00	Webb Lake	1	L	3	X	X				X	X		X						
OK720500020550_00	Cottonwood Creek	7.63	R	3	X	X				X	X		X						
OK720500020560_00	Hachberry Creek	18.99	R	3	X	X				X	X		X		X				
OK720500020570_00	Peacher Creek	4.61	R	3	X	X				X	X		X						
OK720500020580_00	Sand Draw	5.62	R	3	X	X				X	X		X						
OK720500020590_00	Dry Creek	18.14	R	3	X	X				X	X		X						
OK720500030010_00	Wolf Creek	43.05	R	4a	F	F				F	F		N		I				*
OK720500030020_00	Fort Supply Lake	1880	L	5a	I	F				N	N		F		N				*

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OK720500030030_00	Eightmile Creek	11.39	R	3	X	X				X	X		X						
OK720500030040_00	Turkey Creek	12.64	R	2	X	X				F	X		X						
OK720500030050_00	Sixteenmile Creek	16.61	R	3	X	X				X	X		X		X				*
OK720500030060_00	Boggy Creek	18.50	R	3	X	X				X	X		X						
OK720500030070_00	Little Wolf Creek	14.78	R	3	X	X				X	X		X		X				*
OK720500030080_00	Buzzard Creek	10.10	R	2	F	F				I	X		I		I				*
OK720500030090_00	Twentyfivemile Creek	20.19	R	3	I	I				I	X		X		X				*
OK720500030100_00	Willow Creek	12.04	R	3	X	X				X	X		X		X				*
OK720500030110_00	Rock Creek	14.92	R	3	X	X				X	X		X		X				*
OK720500030130_00	Six Pony Creek	10.82	R	3	X	X				X	X		X						
OK720500030140_00	Ivanhoe Creek	13.85	R	3	X	X				X	X		X						
OK720500030150_00	Long Creek	11.75	R	3	X	X				X	X		X						
OK720510000020_00	Beaver River (North Canadian)	4.60	R	3	X	X				X	X		X		X				
OK720510000030_00	Optima Lake	5340	L	3	X	X				X	X		X						
OK720510000035_00	Ann Ruth's Stream	1.86	R	3	X	X				X	X		X						
OK720510000040_00	Coldwater Creek	18.73	R	3	X	X				X	X		X		X				
OK720510000050_00	Frisco Creek	18.38	R	3	X	X				X	X		X						
OK720510000060_00	Frisco Creek, North Fork	18.47	R	3	X	X				X	X		X						
OK720510000080_00	Aqua Fria Creek	21.11	R	3	X	X				X	X		X						
OK720510000090_00	Pony Creek	33.57	R	3	X	X				X	X		X		X				
OK720510000100_00	Beaver River (North Canadian)	16.00	R	3	X	X				X	X		X		X				
OK720510000110_00	Goff Creek	57.44	R	3	X	X				X	X		X		X				
OK720510000115_00	Leftover creek	4.27	R	3	X	X				X	X		X						
OK720510000120_00	Cow Creek	21.50	R	3	X	X				X	X		X						
OK720510000140_00	Little Goff Creek	19.02	R	3	X	X				X	X		X						
OK720510000150_00	Dry Sand Draw	14.12	R	3	X	X				X	X		X						
OK720510000160_00	Sunset Lake	10	L	3	X	X				X	X		X						
OK720510000190_00	Beaver River (North Canadian)	42.54	R	4a	F	F				I	F		N		I				
OK720510000190_10	Beaver River (North Canadian)	55.81	R	3	X	X				X	X		X		X		*		
OK720510000200_00	Tepee Creek	32.17	R	3	X	X				X	X		X		X				
OK720510000210_00	Spring Aroa Creek	9.75	R	3	X	X				X	X		X						
OK720510000220_00	Sand Creek	40.78	R	3	X	X				X	X		X		X				
OK720510000230_00	Sand Creek, North	13.38	R	3	X	X				X	X		X						
OK720510000240_00	Cieneguilla Creek	7.55	R	3	X	X				X	X		X		X				
OK720510000275_00	Corrupa Creek	12.94	R	5a	F	I				N	X		I		X		*		
OK720900000010_00	Cimarron River	46.82	R	5a	F	I				I	X		N		F		*		

F = Fully Supporting I = Insufficient Information X = Not Assessed N = Not Supporting

Waterbody ID	Waterbody Name	Size (Lake Acres or Stream Miles)	Type	Category	Aesthetic	Agriculture	Cool Water Aquatic Comm	Habitat Limited Aquatic Comm	Trout Fishery	Warm Water Aquatic Comm	Fish Consumption	Navigation	Primary Body Contact Rec	Secondary Body Contact Rec	Public and Private Water Supply	Emergency Water Supply	High Quality Water	Outstanding Resource Water	Sensitive Water Supply
OK720900000020_00	Burrows Draw	4.90	R	3	X	X				X	X		X						
OK720900000030_00	Nevitt Draw	5.84	R	3	X	X				X	X		X						
OK720900000040_00	King Draw	3.69	R	3	X	X				X	X		X						
OK720900000050_00	Picket House Draw, South	8.94	R	3	X	X				X	X		X		X				
OK720900000060_00	Picket House Draw, North	7.30	R	3	X	X				X	X		X						
OK720900000070_00	Flagg Springs Creek	8.89	R	3	X	X				X	X		X						
OK720900000080_00	Ute Canyon Creek	6.39	R	3	X	X				X	X		X						
OK720900000100_00	Cold Springs Creek	29.19	R	5a	F	I				N	X		I		I				
OK720900000110_00	Canyon Creek, North	6.36	R	3	X	X				X	X		X						
OK720900000120_00	Red Canyon Creek	3.38	R	3	X	X				X	X		X						
OK720900000130_00	Gallinas Canyon Creek	5.43	R	3	X	X				X	X		X		X				
OK720900000140_00	Bingaman Canyon Creek	3.53	R	3	X	X				X	X		X						
OK720900000150_00	Lane Canyon Creek	4.77	R	3	X	X				X	X		X						
OK720900000160_00	Sand Canyon Creek	1.04	R	3	X	X				X	X		X						
OK720900000170_00	Pat Canyon Creek	2.63	R	3	X	X				X	X		X						
OK720900000180_00	Cimarron River	19.24	R	5a	I	N				N	X		N		I		*		
OK720900000190_00	Water Canyon Creek	8.22	R	3	X	X				X	X		X		X				
OK720900000200_00	Carrizo Creek, South	19.55	R	5a	I	I				N	X		I		I				
OK720900000210_00	Cottonwood Canyon Creek	8.28	R	3	X	X				X	X		X		X				
OK720900000220_00	Willow Creek	8.81	R	3	X	X				X	X		X						
OK720900000230_00	Swede Creek	7.23	R	3	X	X				X	X		X						
OK720900000240_00	Carl Etling Lake	159	L	5a	I	N				N	F		F		X				
OK720900000250_00	Easley Canyon Creek	4.49	R	3	X	X				X	X		X						
OK720900000260_00	Tesesquite Creek	11.10	R	3	X	X				X	X		X		X				
OK720900000270_00	Burrows Canyon Creek	2.07	R	3	X	X				X	X		X						
OK720900000280_00	Carrizo Creek, North	7.15	R	3	I	I				I	X		I		I				
OK720900000290_00	Road Canyon Creek	4.63	R	3	X	X				X	X		X						
OK720900000300_00	Coopers Arroyo Creek	3.69	R	3	X	X				X	X		X						
OK720900000310_00	Blacksmith Canyon Creek	3.14	R	3	X	X				X	X		X						
OK720900000320_00	Carrizozo Creek	1.03	R	3	X	X				X	X		X		X				

Appendix C - 2016 Oklahoma 303(d) List of Impaired Waters

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK120400010070_00	Webbers Falls Lake		ACRES	11600	5a	5a	WWAC	Turbidity		4	140	
OK120400010130_00	Greenleaf Lake		ACRES	920	5a	5a	PPWS	Chlorophyll-a		3	140	
						5a	WWAC	Turbidity		3	140	
OK120400010280_00	Bayou Manard	X	MILES	14.02	5c	5c	WWAC	Macroinvertebrate Bio	X	2	39, 40	
OK120400010400_00	Coody Creek		MILES	16.16	4a	4a	PBCR	Enterococcus			42532	46, 59, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			42532	46, 69, 85, 92, 108, 111, 133, 136, 140
OK120400020010_00	Dirty Creek		MILES	44.18	5a	4a	PBCR	Enterococcus			42533	46, 69, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK120400020030_00	Dirty Creek, South Fork		MILES	15.55	5a	5c	WWAC	Macroinvertebrate Bio	X	4		39, 46, 85, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			42535	4, 46, 59, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		39, 46, 85, 87, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 62, 140
OK120400020110_00	Dirty Creek, Georges Fork		MILES	10.05	5a	5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 133, 136, 140
						5a	WWAC	pH	X	4		46, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			42536	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		39, 46, 87, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK120400020160_00	Butler Creek		MILES	10.34	5a	4a	PBCR	Enterococcus			42538	46, 59, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			42538	46, 59, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK120400020190_00	Elk Creek		MILES	13.96	5a	5a	WWAC	Oxygen, Dissolved		4		46, 62, 85, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	pH	X	4		46, 62, 85, 87, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 87, 140
OK120400020240_00	Shady Grove Creek		MILES	10.80	5a	5b	AG	Total Dissolved Solids		4		49, 140
						5b	AG	Sulfates		4		49, 140
						5a	WWAC	pH		4		8, 102, 140
						4a	PBCR	Enterococcus			42539	46, 85, 92, 108, 111, 128, 133, 136, 140
OK120410010030_00	Pecan Creek	X	MILES	17.01	5a	5c	WWAC	Macroinvertebrate Bio	X	4		39, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 140
OK120410010080_00	Arkansas River		MILES	41.89	4a	4a	PBCR	Enterococcus			35681	46, 59, 85, 92, 111, 133, 136, 140
OK120410010100_00	Cloud Creek		MILES	4.77	4a	4a	PBCR	Enterococcus			42540	46, 59, 85, 92, 108, 111, 133, 136, 140
OK120410010110_00	Ash Creek	X	MILES	17.71	5a	5a	PBCR	Escherichia coli	X	3		46, 49, 59, 86, 92, 108, 111, 133, 138
OK120410010210_00	Haikey Creek		MILES	10.90	5a	4a	PBCR	Escherichia coli			35680	46, 84, 92, 108, 111, 128, 133, 136, 140
						5a	WWAC	Diazinon		3		140
						5a	WWAC	Oxygen, Dissolved	X	3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments	X	3		140
OK120410010220_00	Snake Creek		MILES	31.43	4a	4a	PBCR	Enterococcus			42541	46, 59, 92, 108, 111, 133, 136, 140
OK120420010010_00	Arkansas River		MILES	16.74	5a	4a	PBCR	Enterococcus			35669	46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Turbidity		2		46, 85, 108, 140
OK120420010010_10	Arkansas River		MILES	7.32	5a	5a	WWAC	Cadmium		2		140
OK120420010025_00	Twin Hills Creek, Unnamed Trib of	X	MILES	1.30	5c	5c	WWAC	Fishes Bioassessments	X	2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010050_00	Joe Creek	X	MILES	8.38	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010060_00	Fred Creek		MILES	2.87	5a	5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010070_00	Mooser Creek		MILES	3.79	5a	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio	X	2		39, 46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010090_00	Crow Creek		MILES	2.99	5a	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		39, 46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		84, 140
						5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK120420010130_00	Arkansas River		MILES	12.65	5a	5a	WWAC	Turbidity		2		46, 85, 108, 140
OK120420010140_00	Bigheart Creek		MILES	4.48	5a	5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010170_00	Harlow Creek		MILES	5.69	5a	5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420010250_00	Shell Lake	X	ACRES	573	5a	5a	PPWS	Chlorophyll-a	X	2		140
OK120420010340_00	Little Joe Creek, Unnamed Trib of		MILES	2.19	5c	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK120420020040_00	Nickel Creek		MILES	12.29	5a	5c	WWAC	Macroinvertebrate Bio	X	2		39, 46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 128, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	2		140
OK120420020050_00	Polecat Creek		MILES	7.68	5c	4a	PBCR	Enterococcus			42568	46, 85, 92, 108, 111, 128, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		39, 46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
OK120420020060_00	Rock Creek		MILES	4.05	5c	5c	WWAC	Macroinvertebrate Bio		2		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
OK120420020130_00	Sahoma Lake		ACRES	312	5a	5a	WWAC	Turbidity		2		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK120420020160_00	Childres Creek		MILES	7.18	5b	5b	AG	Chloride		2	102	
OK120420020300_00	Heyburn Lake		ACRES	880	5a	5a	WWAC	Oxygen, Dissolved		2	140	
						5a	WWAC	Turbidity		2	140	
						5c	FC	Mercury		2	140	
OK121300010010_00	Bird Creek		MILES	23.81	4a	4a	PBCR	Enterococcus			40585	46, 59, 85, 92, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			40585	46, 59, 85, 92, 111, 133, 136, 140
OK121300010050_00	Mill Creek		MILES	3.68	5c	5c	WWAC	Macroinvertebrate Bio		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Total Dissolved Solids	X	1	140	
OK121300010060_00	Ranch Creek		MILES	6.94	4a	4a	PBCR	Escherichia coli			40972	46, 92, 108, 111, 133, 136, 140
OK121300010090_00	Coal Creek		MILES	6.71	5c	4a	PBCR	Escherichia coli			40582	46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK121300010120_00	Flat Rock Creek	X	MILES	9.91	5c	5c	WWAC	Macroinvertebrate Bio	X	1	39, 140	
OK121300010140_00	Dirty Butter Creek	X	MILES	4.21	5c	5c	HLAC	Macroinvertebrate Bio	X	1	140	
OK121300010150_00	Delaware Creek		MILES	26.26	5a	5a	PBCR	Enterococcus		1		46, 59, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK121300020010_10	Bird Creek		MILES	35.63	4a	4a	PBCR	Enterococcus			39211	46, 85, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121300030040_00	Birch Lake		ACRES	1137	5a	5a	WWAC	Oxygen, Dissolved		3	140	
						5a	WWAC	Turbidity		3	140	
OK121300030300_00	Bluestem Lake		ACRES	762	5a	5a	WWAC	Turbidity		3	140	
OK121300040010_00	Hominy Creek		MILES	12.75	5a	4a	PBCR	Enterococcus			39215	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 133, 136, 140
OK121300040080_00	Skiatook Lake	X	ACRES	10190	5c	5c	FC	Mercury	X	2	140	
OK121300040280_00	Hominy Creek		MILES	33.89	5b	4a	PBCR	Enterococcus			39160	46, 85, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		2		49, 97, 102, 140
						5b	AG	Total Dissolved Solids		2		49, 97, 102, 140
OK121400010010_10	Caney River		MILES	46.50	5a	5a	FC	Lead		2		49, 85, 140
						4a	PBCR	Enterococcus			39216	46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Lead		2		49, 85, 140
OK121400010270_00	Curl Creek		MILES	17.27	5a	5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			39217	46, 92, 108, 111, 133, 136, 140
OK121400010300_00	Hogshooter Creek		MILES	20.02	5a	4a	PBCR	Enterococcus			39219	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			39219	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 111, 133, 136, 140
OK121400020010_10	Caney River		MILES	25.54	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121400020140_00	Little Caney River (Caney Creek)		MILES	6.85	4a	4a	PBCR	Enterococcus			39218	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			39218	46, 49, 87, 108, 140
OK121400020190_00	Mission Creek		MILES	18.22	4a	4a	PBCR	Enterococcus			39220	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			39220	46, 59, 92, 108, 111, 133, 136, 140
OK121400030020_00	Hulah Lake		ACRES	3570	5a	5a	WWAC	Turbidity		3		140
OK121400030170_00	Buck Creek		MILES	22.22	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK121400040010_00	Sand Creek		MILES	59.85	5a	4a	PBCR	Enterococcus			37064	46, 69, 92, 108, 111, 133, 136, 140
						5a	WWAC	Turbidity		4		46, 49, 87, 102, 108, 140
OK121400050020_00	Copan Lake		ACRES	4850	5a	4a	PPWS	Chlorophyll-a			60880	140
						5a	WWAC	Turbidity		4		140
OK121500010200_00	Verdigris River		MILES	6.11	4a	4a	PBCR	Enterococcus			42569	46, 59, 85, 92, 111, 133, 136, 140
						4a	WWAC	Turbidity			42569	38, 140
OK121500020090_00	Bull Creek		MILES	17.55	5a	4a	PBCR	Enterococcus			42574	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 100, 108, 133, 136, 140
OK121500020100_00	Pea Creek		MILES	10.23	4a	4a	PBCR	Escherichia coli			42579	85, 140
						4a	PBCR	Enterococcus			42579	85, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121500020150_00	Adams Creek		MILES	18.02	5a	5c	WWAC	Macroinvertebrate Bio	X	3		39, 46, 84, 92, 108, 133, 136, 140
						5a	PBCR	Escherichia coli		3		46, 84, 92, 108, 111, 133, 136, 140, 156
OK121500020260_00	Verdigris River		MILES	18.71	4a	4a	PBCR	Enterococcus			42571	46, 59, 85, 92, 111, 133, 136, 140
						4a	WWAC	Turbidity			42571	38, 140
OK121500020360_00	Dog Creek		MILES	10.08	5c	4a	PBCR	Enterococcus			42580	46, 85, 92, 108, 111, 128, 133, 136, 140
						4a	PBCR	Escherichia coli			42580	46, 85, 92, 108, 111, 128, 133, 136, 140
						4a	WWAC	Oxygen, Dissolved			31658	46, 85, 87, 92, 108, 111, 128, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK121500020390_00	Cat Creek		MILES	7.04	5a	5b	AG	Sulfates		2		140
						5c	WWAC	Fishes Bioassessments		2		140
						5a	PBCR	Escherichia coli		2		84, 85, 140
						5a	PBCR	Enterococcus		2		84, 85, 140
						4a	WWAC	Oxygen, Dissolved			31657	84, 85, 140
OK121500020480_00	Spunky Creek	X	MILES	11.93	5b	5b	AG	Total Dissolved Solids	X	4		140
OK121500030010_00	Verdigris River		MILES	10.43	4a	4a	PBCR	Enterococcus			42572	46, 59, 85, 92, 111, 133, 136, 140
OK121500040010_00	Dog Creek		MILES	16.87	5a	5a	WWAC	Oxygen, Dissolved		2		84, 92, 140, 156
						5a	WWAC	pH		2		2, 92, 102, 140
						5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121500040020_00	Claremore Lake		ACRES	470	4a	4a	PPWS	Chlorophyll-a			60900	140
OK121510010020_00	Oologah Lake		ACRES	29460	5a	5a	WWAC	Oxygen, Dissolved		1		140
						5a	WWAC	Turbidity		1		140
OK121510010040_00	Spencer Creek		MILES	4.31	5b	5b	AG	Sulfates		1		140
						5b	AG	Total Dissolved Solids		1		140
OK121510010110_00	Campbell Creek		MILES	3.79	5b	5b	AG	Sulfates		1		56
						5b	AG	Total Dissolved Solids		1		56
OK121510010120_00	Plumb Creek		MILES	5.52	5b	5b	AG	Chloride		1		140
						5b	AG	Sulfates		1		140
						5b	AG	Total Dissolved Solids		1		140
OK121510010130_00	Lightning Creek		MILES	14.40	5b	5b	AG	Sulfates		1		82, 127, 140
						5b	AG	Total Dissolved Solids		1		82, 127
OK121510010140_00	Panther Creek		MILES	6.97	5b	5b	AG	Sulfates		1		82, 140
						5b	AG	Total Dissolved Solids		1		82, 140
OK121510020010_00	Verdigris River		MILES	37.43	5a	4a	PBCR	Enterococcus			50980	46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Lead		1		49, 85, 140
						5a	FC	Lead		1		49, 85, 140
OK121510020050_00	California Creek		MILES	25.39	5a	4a	PBCR	Enterococcus			50980	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 87, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121510030010_00	Big Creek		MILES	34.74	4a	4a	PBCR	Enterococcus			50814	46, 92, 108, 111, 133, 136, 140
OK121600010010_00	Neosho River		MILES	1.00	4a	4a	PBCR	Enterococcus			42581	46, 92, 108, 133, 136, 140
OK121600010050_00	Fort Gibson Lake		ACRES	12464	5a	5a	WWAC	Oxygen, Dissolved		1		46, 108, 133, 136, 140
OK121600010060_00	Ranger Creek		MILES	7.94	4a	4a	PBCR	Enterococcus			34847	4, 46, 59, 92, 108, 111, 128, 133, 136, 140
OK121600010100_00	Fourteenmile Creek		MILES	25.45	4a	4a	PBCR	Enterococcus			34848	46, 92, 108, 111, 133, 136, 140
OK121600010200_00	Fort Gibson Lake, Upper		ACRES	4814	5a	5a	WWAC	Oxygen, Dissolved		1		140
OK121600010280_00	Neosho River		MILES	14.26	5a	5a	WWAC	Oxygen, Dissolved		2		46, 62, 85, 92, 108, 133, 136, 140
OK121600010430_00	Chouteau Creek		MILES	22.25	5a	4a	PBCR	Enterococcus			42582	46, 62, 85, 92, 108, 133, 136, 140, 156
						5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 136, 140
OK121600010440_00	Crutchfield Branch		MILES	5.07	4a	4a	PBCR	Escherichia coli			34849	46, 85, 92, 108, 133, 136, 140
						4a	PBCR	Enterococcus			34849	46, 85, 92, 108, 133, 136, 140
OK121600020020_00	Hudson Lake, Lower	X	ACRES	5802	5a	5a	WWAC	Oxygen, Dissolved	X	1		140
OK121600020030_10	Saline Creek		MILES	28.12	4a	4a	PBCR	Enterococcus			58701	4, 46, 92, 100, 108, 111, 128, 133, 136, 140
OK121600020070_00	Little Saline Creek		MILES	10.50	4a	4a	PBCR	Enterococcus			58702	4, 46, 59, 92, 108, 136, 140
OK121600020170_00	Neosho River		MILES	10.89	5a	5a	FC	Lead	X	3		56, 82, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 62, 85, 108, 133, 136, 140
OK121600030020_00	Grand Lake O' the Cherokees, Lower		ACRES	10051	5a	5a	FC	Lead		1		82, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Oxygen, Dissolved		1	140	
OK121600030030_00	Grand Lake O' the Cherokees, Middle		ACRES	19584	5a	5a	FC	Lead		1	82, 140	
OK121600030040_00	Grand Lake O' The Cherokees, Upper		ACRES	8670	5a	5a	FC	Lead		1	82, 140	
						5a	WWAC	Turbidity		3	140	
OK121600030090_00	Drowning Creek		MILES	8.66	4a	4a	PBCR	Escherichia coli			34851	4, 46, 59, 92, 108, 133, 136, 140
						4a	PBCR	Enterococcus			34851	4, 46, 59, 92, 108, 133, 136, 140
OK121600030160_00	Horse Creek		MILES	10.06	5a	5b	AG	Chloride		1	140	
						5a	WWAC	pH		1	140	
						5a	WWAC	Oxygen, Dissolved		1	85, 92, 140, 156	
						4a	PBCR	Escherichia coli			34852	46, 85, 92, 108, 133, 136, 140, 156
						5a	WWAC	Ammonia (Un-ionized)		1	85, 92, 140	
OK121600030190_00	Little Horse Creek		MILES	6.46	5a	4a	PBCR	Enterococcus			34854	4, 46, 59, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			34854	46, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2	46, 87, 92, 108, 111, 133, 136, 140	
						5c	WWAC	Macroinvertebrate Bio		2	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
OK121600030340_00	Cave Springs Branch		MILES	4.48	5b	4a	PBCR	Escherichia coli			34855	4, 46, 59, 92, 100, 108, 133, 136, 140, 146
						5b	AG	Total Dissolved Solids		3	49, 102, 140	
OK121600030445_00	Honey Creek		MILES	4.85	4a	4a	PBCR	Escherichia coli			34857	46, 59, 62, 85, 92, 100, 108, 136, 140
						4a	PBCR	Enterococcus			34857	4, 46, 59, 92, 108, 133, 136, 140, 146

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121600030445_10	Honey Creek		MILES	4.64	4a	4a	PBCR	Enterococcus			58704	46, 92, 108, 111, 133, 136, 140
OK121600030510_00	Sycamore Creek		MILES	7.36	4a	4a	PBCR	Enterococcus			34858	46, 92, 108, 136, 140, 146
OK121600040010_00	Neosho River		MILES	16.57	5a	5a	WWAC	Lead		4		49, 85, 140
OK121600040040_00	Hudson Creek		MILES	8.28	5a	4a	WWAC	Turbidity			50814	4, 46, 59, 92, 108, 133, 136, 140, 156
						5a	WWAC	Oxygen, Dissolved		4		4, 46, 59, 92, 108, 133, 136, 140, 156
OK121600040060_00	Tar Creek		MILES	11.67	5a	5a	HLAC	Lead		4		16, 140
						5c	HLAC	Macroinvertebrate Bio	X	4		39, 140
OK121600040062_00	Blue Goose Mill Pond		ACRES	5	5a	5a	FC	Lead		4		82
OK121600040063_00	Northwest Western Chat Pile Pond		ACRES	1	5a	5a	FC	Lead		4		82
OK121600040064_00	Western Chat Pile Mill Pond		ACRES	1	5a	5a	FC	Lead		4		82
OK121600040105_00	Atlas Chat Pile Pond		ACRES	10	5a	5a	FC	Lead		4		82
OK121600040130_00	Cow Creek		MILES	12.42	5a	4a	WWAC	Turbidity			50814	46, 108, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 92, 108, 133, 136, 140
OK121600040170_00	Fourmile Creek		MILES	7.10	5a	5a	WWAC	Oxygen, Dissolved		4		46, 92, 133, 136, 140, 146
OK121600040200_00	Russell Creek		MILES	11.48	5a	5a	WWAC	Oxygen, Dissolved		4		46, 92, 108, 133, 136, 140
						5b	AG	Sulfates		4		140
OK121600040220_00	Neosho River		MILES	13.97	5a	4a	PBCR	Enterococcus			50814	46, 59, 85, 92, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	WWAC	Turbidity			50814	46, 108, 140
						5a	WWAC	Lead		2		49, 85, 140
						5a	WWAC	Sedimentation/Siltation		2		49, 85, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 87, 92, 102, 108, 111, 136, 140
OK121600050020_00	Spavinaw Lake		ACRES	1584	5a	5a	WWAC	Oxygen, Dissolved		1		4, 46, 92, 108, 133, 136, 140
						4a	AES	Phosphorus (Total)			38670	4, 59, 140, 146
						5a	PPWS	Chlorophyll-a		1		4, 59, 140, 146
OK121600050070_00	Eucha Lake (Upper Spavinaw)		ACRES	2860	5a	5a	WWAC	Oxygen, Dissolved		1		4, 46, 59, 92, 108, 133, 136, 140, 146
						5a	PPWS	Chlorophyll-a		1		4, 59, 140, 146
						4a	AES	Phosphorus (Total)			38667	4, 59, 140, 146
OK121600050160_00	Beaty Creek		MILES	12.44	4a	4a	PBCR	Enterococcus			58707	4, 46, 59, 92, 108, 133, 136, 140
OK121600050180_00	Cloud Creek		MILES	12.93	4a	4a	PBCR	Enterococcus			58708	46, 92, 108, 111, 133, 136, 140
OK121600060060_10	Big Cabin Creek		MILES	4.16	5b	5b	AG	Sulfates		3		49, 140
OK121600060080_00	Little Cabin Creek		MILES	32.31	5a	4a	PBCR	Enterococcus			50980	46, 85, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 85, 87, 92, 108, 111, 133, 136, 140
OK121600060200_00	Bull Creek		MILES	10.83	5a	5b	AG	Total Dissolved Solids		4		140
						5a	WWAC	Oxygen, Dissolved		4		4, 59, 62, 68, 84, 85, 92, 140
						5b	AG	Chloride		4		140
						5b	AG	Sulfates		4		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121600060220_00	Big Cabin Creek		MILES	11.58	5b	5b	AG	Sulfates		4		49, 97, 140
OK121600060240_00	Pawpaw Creek		MILES	18.40	5a	5b	AG	Sulfates		4		140
						5b	AG	Total Dissolved Solids		4		140
						5a	WWAC	Oxygen, Dissolved		4		46, 92, 108, 133, 136, 140, 156
OK121600070010_00	Spring River		MILES	22.11	5a	5a	FC	Lead		3		49, 85
						5a	CWAC	Turbidity		3		46, 108, 140
OK121600070110_00	Fivemile Creek		MILES	5.81	4a	4a	PBCR	Enterococcus			50814	46, 85, 92, 108, 111, 133, 136, 140
OK121610000050_10	Pryor Creek		MILES	4.97	5a	4a	PBCR	Enterococcus			58709	46, 68, 85, 92, 108, 111, 128, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 85, 87, 92, 108, 111, 128, 133, 136, 140
						5a	WWAC	pH		3		8, 92, 102, 140
OK121610000090_00	Pryor Creek		MILES	2.35	5a	5a	WWAC	Oxygen, Dissolved		3		84, 85, 92, 140, 156
						4a	WWAC	Turbidity			58709	140, 156
OK121610000090_10	Pryor Creek		MILES	12.12	5a	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 59, 87, 92, 108, 111, 136, 140
OK121700010010_00	Illinois River		MILES	9.47	5a	5a	Trout	Oxygen, Dissolved		3		140
OK121700010020_00	Deep Branch	X	MILES	8.71	5a	5a	WWAC	Oxygen, Dissolved	X	3		39, 140
						5a	WWAC	pH	X	3		140
OK121700020020_00	Tenkiller Ferry Lake		ACRES	8442	5a	5a	WWAC	Oxygen, Dissolved		1		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	AES	Phosphorus (Total)		1		140
OK121700020110_00	Chicken Creek		MILES	3.54	5c	5c	WWAC	Fishes Bioassessments		1		46, 59, 87, 92, 108, 111, 133, 136, 140
OK121700020220_00	Tenkiller Ferry Lake, Illinois River Arm		ACRES	5032	5a	5a	PPWS	Chlorophyll-a		1		4, 59, 108, 136, 140, 146
						5a	AES	Phosphorus (Total)		1		4, 59, 108, 136, 140, 146
OK121700020270_00	Park Hill Branch		MILES	6.86	5c	5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK121700030010_00	Illinois River		MILES	7.68	5a	5a	PBCR	Enterococcus		1		4, 46, 59, 92, 100, 108, 133, 136, 140, 146
						5a	AES	Phosphorus (Total)		1		4, 46, 59, 85, 92, 100, 108, 140, 146
OK121700030040_00	Tahlequah Creek (Town Branch)		MILES	6.21	5a	5a	PBCR	Escherichia coli		1		46, 92, 108, 133, 136, 140
OK121700030080_00	Illinois River		MILES	31.68	5a	5a	AES	Phosphorus (Total)		1		4, 46, 59, 108, 133, 136, 140, 146
						5a	PBCR	Enterococcus	X	1		59, 85, 92, 46, 100, 108, 136, 140
OK121700030110_00	Cedar Hollow Creek	X	MILES	3.60	5c	5c	WWAC	Macroinvertebrate Bio	X	1		39, 140
OK121700030280_00	Illinois River		MILES	15.65	5a	5a	PBCR	Enterococcus		1		46, 59, 85, 92, 100, 108, 136, 140
						5a	AES	Phosphorus (Total)		1		4, 46, 59, 92, 108, 133, 136, 140, 146
						5a	CWAC	Turbidity		1		46, 59, 85, 108, 140
OK121700030290_00	Flint Creek		MILES	1.60	5a	5a	CWAC	Oxygen, Dissolved		1		4, 46, 59, 92, 108, 133, 136, 140, 146
						5a	AES	Phosphorus (Total)		1		4, 46, 59, 92, 108, 133, 136, 140, 146
OK121700030350_00	Illinois River		MILES	5.18	5a	5a	AES	Phosphorus (Total)		2		4, 34, 46, 59, 92, 100, 133, 136, 140, 146

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK121700030370_00	Ballard Creek		MILES	12.60	5a	5a	CWAC	Oxygen, Dissolved	X	2	140	
						5c	CWAC	Macroinvertebrate Bio	X	2		4, 39, 46, 59, 92, 108, 133, 136, 140
						5a	PBCR	Enterococcus		2		4, 46, 59, 92, 108, 111, 133, 136, 140
OK121700040010_00	Caney Creek		MILES	20.92	5a	5a	PBCR	Enterococcus		3		46, 59, 92, 100, 108, 140
						5a	PBCR	Escherichia coli		3		46, 59, 85, 92, 100, 108, 136, 140
						5c	CWAC	Macroinvertebrate Bio	X	3		140
OK121700050010_00	Illinois River, Baron Fork		MILES	25.15	5a	5a	AES	Phosphorus (Total)		2		4, 46, 59, 92, 108, 133, 136, 140, 146
OK121700050090_00	Tyner Creek		MILES	15.92	5a	5a	PBCR	Enterococcus		2		4, 46, 59, 92, 108, 136, 140
OK121700050120_00	Peachewater Creek		MILES	10.95	5a	5a	PBCR	Enterococcus		2		4, 46, 59, 92, 100, 108, 128, 136, 140
OK121700050170_10	Illinois River, Baron Fork		MILES	7.78	5a	5a	PBCR	Enterococcus		2		46, 59, 92, 108, 136, 140
OK121700060010_00	Flint Creek		MILES	7.75	5a	5a	PBCR	Enterococcus		1		4, 46, 59, 92, 100, 108, 111, 133, 136, 140, 146
						5a	AES	Phosphorus (Total)		1		4, 46, 59, 85, 92, 100, 108, 140, 146
OK121700060040_00	Battle Creek (Battle Branch)		MILES	5.43	5a	5a	PBCR	Enterococcus		1		4, 46, 59, 92, 108, 111, 133, 136, 140
OK121700060080_00	Sager Creek		MILES	4.15	5a	5a	PBCR	Enterococcus		1		4, 46, 59, 85, 92, 108, 133, 136, 140, 146
						5a	CWAC	Sedimentation/Siltation		1		140
						5c	CWAC	Macroinvertebrate Bio		1		140
OK220100010010_00	Poteau River		MILES	23.89	5a	4a	WWAC	Turbidity			58800	46, 85, 108, 140
						5a	PBCR	Enterococcus	X	2		46, 59, 85, 92, 100, 108, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Lead		2		49, 85, 140
						5a	FC	Lead		2		49, 85, 140
OK220100010010_10	Poteau River	X	MILES	1.55	5a	5a	PBCR	Enterococcus	X	4		46, 59, 85, 92, 100, 108, 136, 140
OK220100010010_40	Poteau River		MILES	21.35	5a	5a	WWAC	Silver	X	2		140
						4a	WWAC	Turbidity			58820	140
						5a	WWAC	Cadmium	X	2		140
						5a	WWAC	Copper		2		140
						5a	WWAC	Selenium	X	2		140
						5a	WWAC	Lead		2		140
						5a	FC	Lead		2		140
OK220100010050_00	New Spiro Lake		ACRES	254	5a	5a	WWAC	pH	X	1		140
						5a	WWAC	Oxygen, Dissolved		1		46, 92, 108, 133, 136, 140
						5a	PPWS	Chlorophyll-a		1		140
OK220100010160_00	Sugarloaf Creek	X	MILES	15.00	5a	5a	WWAC	Oxygen, Dissolved	X	4		39, 140
						5a	WWAC	pH	X	4		140
OK220100010180_00	Caston Creek		MILES	14.43	5b	5b	AG	Sulfates	X	3		46, 49, 59, 87, 92, 102, 108, 111, 136
						5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK220100010265_00	Rock Creek Tributary!		MILES	2.01	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK220100020010_10	Poteau River		MILES	27.04	5a	5a	PBCR	Enterococcus		1		46, 59, 85, 92, 100, 108, 136, 140
						5a	PBCR	Escherichia coli	X	1		46, 59, 85, 92, 100, 108, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK220100020020_00	Wister Lake		ACRES	7333	5a	5c	FC	Mercury		1	140	
						5a	PPWS	Chlorophyll-a		1	140	
						5a	WWAC	pH		1	140	
						5a	AES	Phosphorus (Total)		1	140	
						5a	WWAC	Turbidity		1	140	
OK220100020040_00	Poteau River, Black Fork		MILES	28.60	5a	5a	WWAC	pH		2	140	
OK220100020060_00	Cedar Lake		ACRES	78	5a	5a	WWAC	pH		2	140	
						5c	FC	Mercury	X	2	140	
						5a	WWAC	Oxygen, Dissolved		2	46, 92, 108, 133, 136, 140	
OK220100020080_00	Big Creek	X	MILES	12.57	5a	5a	CWAC	pH	X	2	46, 62, 69, 85, 87, 92, 108, 111, 133, 136, 140	
						5c	CWAC	Macroinvertebrate Bio	X	2	39, 46, 62, 69, 85, 87, 92, 108, 111, 133, 136, 140	
OK220100030010_00	Brazil Creek		MILES	17.83	4a	4a	PBCR	Enterococcus			58760	4, 46, 59, 92, 108, 136, 140
OK220100040020_00	Fourche Maline Creek		MILES	36.94	5a	4a	PBCR	Enterococcus			35634	46, 59, 62, 69, 85, 92, 100, 108, 111, 133, 136, 140
						5a	WWAC	Lead		2	49, 85, 140	
						5a	WWAC	Oxygen, Dissolved		2	46, 62, 69, 85, 87, 92, 108, 111, 133, 136, 140	
OK220100040050_00	Red Oak Creek		MILES	10.95	5a	5a	WWAC	pH		2	140	
						5a	WWAC	Oxygen, Dissolved		2	46, 85, 92, 108, 133, 136, 140	
OK220100040080_00	Bandy Creek		MILES	12.44	5c	5c	WWAC	Fishes Bioassessments		2	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK220100040100_00	Lloyd Church Lake (Wilburton City)		ACRES	160	5a	5a	WWAC	pH		2	140	
						5a	WWAC	Turbidity		2	140	
						5c	FC	Mercury	X	2	140	
OK220100040140_00	Carlton Lake	X	ACRES	52	5c	5c	FC	Mercury	X	2	140	
OK220100040150_00	Wayne Wallace Lake		ACRES	94	5a	5a	WWAC	Oxygen, Dissolved		2	46, 92, 108, 133, 136, 140	
						5a	WWAC	pH		2	140	
						5c	FC	Mercury	X	2	140	
OK220200010030_10	Big Skin Bayou	X	MILES	18.51	5a	5a	WWAC	pH	X	4	39	
OK220200020020_00	Robert S. Kerr Lake		ACRES	43380	5a	5a	WWAC	Turbidity		2	140	
OK220200020130_10	Vian Creek	X	MILES	21.42	5a	5a	CWAC	pH	X	4	140	
						5a	CWAC	Oxygen, Dissolved	X	4	39, 140	
OK220200030010_10	Sallisaw Creek		MILES	9.00	5a	5a	PBCR	Enterococcus		2	140	
						5a	CWAC	Oxygen, Dissolved	X	2	39, 140	
OK220200030010_20	Sallisaw Creek		MILES	13.30	4a	4a	PBCR	Enterococcus		58780	4, 46, 59, 92, 108, 111, 128, 133, 136, 140	
OK220200030040_00	Brushy Creek Lake		ACRES	358	5a	5a	PPWS	Chlorophyll-a		2	140	
						5a	WWAC	pH		2	140	
						5a	WWAC	Turbidity	X	2	140	
OK220200030120_00	Stilwell City Lake		ACRES	188	5a	5a	WWAC	Oxygen, Dissolved		2	46, 108, 133, 136, 140	
						5a	WWAC	Turbidity		2	140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK220200040010_10	Sans Bois Creek		MILES	10.76	5b	4a	PBCR	Enterococcus			58782	4, 46, 59, 85, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		140
OK220200040010_40	Sans Bois Creek		MILES	27.80	5a	4a	PBCR	Escherichia coli			35635	4, 46, 59, 85, 92, 108, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		4, 46, 59, 85, 92, 108, 133, 136, 140
						4a	PBCR	Enterococcus			35635	4, 46, 59, 85, 92, 108, 133, 136, 140
OK220200040050_00	Sans Bois Creek, Mountain Fork		MILES	13.63	4a	4a	PBCR	Escherichia coli			35626	46, 92, 108, 133, 136, 140, 156
OK220200050010_00	Lee Creek		MILES	1.87	5a	5a	PBCR	Enterococcus		3		46, 92, 108, 133, 136, 140, 146
						5a	CWAC	Lead		3		49, 140, 146
OK220300000040_00	Emachaya Creek	X	MILES	16.27	5a	5a	WWAC	Oxygen, Dissolved	X	3		39, 140
OK220600010020_00	Eufaula Lake	X	ACRES	14689	5a	5a	WWAC	Turbidity	X	2		140
						5c	FC	Mercury	X	2		140
OK220600010050_00	Eufaula Lake, Canadian River Arm		ACRES	19040	5a	5a	WWAC	Turbidity		2		140
						5c	FC	Mercury	X	2		140
OK220600010060_00	Eufaula Lake, Longtown Creek Arm		ACRES	3857	5a	5a	WWAC	Turbidity		2		140
						5c	FC	Mercury	X	2		140
OK220600010070_10	Longtown Creek		MILES	12.14	5a	4a	PBCR	Enterococcus			35627	92, 140, 156
						5a	WWAC	Oxygen, Dissolved		2		39, 92, 140, 156
OK220600010100_20	Mill Creek		MILES	24.16	4a	5a	WWAC	Oxygen, Dissolved	X	2		39, 46, 87, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	pH	X	2		46, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			35628	46, 92, 108, 111, 133, 136, 140
OK220600010119_10	Canadian River		MILES	39.08	5a	4a	PBCR	Enterococcus			58783	46, 59, 85, 92, 111, 133, 136, 140
						4a	WWAC	Turbidity			58783	46, 85, 87, 108, 140
						5a	FC	Lead		2		49, 85, 140
						5a	WWAC	Sedimentation/Siltation		2		46, 85, 87, 108, 140
						5c	WWAC	Fishes Bioassessments		2		49, 85, 140
OK220600010130_00	Hay Creek		MILES	4.70	5c	5c	AES	Oil and Grease		4		140
						5c	WWAC	Oil and Grease		4		140
OK220600010160_00	Gobbler Creek		MILES	7.80	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK220600010190_00	Middle Creek	X	MILES	11.64	5c	5c	WWAC	Macroinvertebrate Bio	X	3		39, 140
OK220600020010_10	Coal Creek	X	MILES	9.77	5a	5a	WWAC	Oxygen, Dissolved	X	1		39, 140
						5c	WWAC	Macroinvertebrate Bio	X	1		39, 140
OK220600020030_00	McAlester Lake		ACRES	1521	5a	5a	WWAC	Turbidity		1		140
						5c	FC	Mercury		1		140
OK220600020050_00	Talawanda 2 Lake		ACRES	195	5a	5a	WWAC	pH		1		140
						5c	FC	Mercury	X	1		140
OK220600020060_00	Talawanda 1 Lake		ACRES	91	5a	5a	WWAC	pH		1		140
OK220600030010_00	Brushy Creek		MILES	2.96	5a	5c	AES	Oil and Grease		2		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	WWAC	Oil and Grease		2		49, 102, 140
						5a	WWAC	Turbidity		2		46, 108, 140
						5a	FC	Lead		2		49, 85, 140
						4a	PBCR	Enterococcus			35630	46, 59, 85, 92, 111, 133, 136, 140
						5c	PPWS	Oil and Grease		2		49, 102, 140
OK220600030010_10	Brushy Creek		MILES	25.03	5a	4a	PBCR	Enterococcus			35631	140
						5a	WWAC	Oxygen, Dissolved	X	2		39, 46, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	pH	X	2		46, 108, 140
OK220600030010_20	Brushy Creek		MILES	11.30	5a	5a	WWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 133, 136, 140
OK220600030020_00	Blue Creek		MILES	10.68	4a	4a	PBCR	Enterococcus			35636	85, 140
						4a	PBCR	Escherichia coli			35636	85, 140
OK220600030050_00	Peaceable Creek		MILES	17.14	5a	4a	PBCR	Enterococcus			35632	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 85, 87, 92, 108, 111, 133, 136, 140
OK220600030080_00	Bull Creek		MILES	3.29	5a	5a	WWAC	Zinc		2		62
						5a	WWAC	Lead		2		62
						5a	WWAC	Copper		2		62
OK220600030090_00	Brown Lake		ACRES	139	5a	5a	WWAC	Lead		2		140
OK220600040010_00	Gaines Creek		MILES	38.22	5a	5a	WWAC	Oxygen, Dissolved		1		39, 46, 59, 87, 92, 108, 111, 133, 136, 140, 156
						5a	WWAC	pH		1		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK220600040030_00	Beaver Creek		MILES	9.11	5a	4a	PBCR	Escherichia coli			35633	92, 140, 156
						5a	WWAC	Oxygen, Dissolved		1		92, 140, 156
						5a	WWAC	pH		1		140
						5a	WWAC	Turbidity		1		140, 156
						5c	AES	Oil and Grease		1		97, 140
						5c	WWAC	Oil and Grease		1		97, 140
OK220600040040_00	Pit Creek		MILES	7.65	5a	5a	WWAC	pH		1		140
						5b	AG	Sulfates		1		2, 140
						5a	WWAC	Oxygen, Dissolved		1		140, 156
						5b	AG	Total Dissolved Solids		1		140
OK220600050010_00	Eufaula Lake, Gaines Creek Arm		ACRES	24990	5a	5a	WWAC	Turbidity		1		140
						5c	FC	Mercury	X	1		140
OK220600050060_00	Mud Creek		MILES	6.85	4a	4a	WWAC	Oxygen, Dissolved			831	140
OK310800010011_00	Texoma Lake, Washita River Arm, Lower		ACRES	19214	5a	5a	WWAC	Oxygen, Dissolved		2		140
						5b	AG	Chloride		2		140
OK310800010051_00	Old Channel (of Washita)		MILES	4.62	5b	5b	AG	Chloride		2		102
OK310800010090_00	Big Sandy Creek		MILES	13.57	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 92, 108, 111, 133, 136, 140
OK310800010190_00	Mill Creek		MILES	37.86	5a	5a	PBCR	Enterococcus		3		4, 46, 85, 92, 100, 108, 111, 128, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310800010240_00	Oil Creek		MILES	19.47	5a	5a	WWAC	Oxygen, Dissolved	X	3		39, 46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Enterococcus		3		46, 92, 108, 111, 133, 136, 140
OK310800020010_00	Washita River		MILES	31.58	5a	4a	PBCR	Enterococcus			33274	46, 59, 85, 92, 111, 133, 136, 140
						5a	FC	Lead		2		49, 85, 140
OK310800020040_00	Sand Branch		MILES	6.24	4a	4a	WWAC	Turbidity			39165	140, 156
OK310800020100_00	Arbuckle Lake (Lake of the Arbuckles)		ACRES	2350	5a	5a	WWAC	Oxygen, Dissolved		2		140
						5c	FC	Mercury	X	2		140
OK310800020122_00	Rock Creek	X	MILES	12.50	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 140
OK310800020190_00	Chigley Sandy Creek		MILES	14.31	5a	4a	PBCR	Enterococcus			33276	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 140
						5c	WWAC	Fishes Bioassessments	X	4		140
OK310800030010_00	Caddo Creek		MILES	44.08	4a	4a	PBCR	Enterococcus			42415	140
						4a	PBCR	Escherichia coli			42415	46, 92, 108, 111, 133, 136, 140
OK310800030010_06	Caddo Creek		MILES	16.82	5b	5b	AG	Total Dissolved Solids		3		102
						5b	AG	Chloride		3		102
OK310800030260_00	Russell Pretty Branch		MILES	5.17	5b	5b	AG	Chloride		3		102
OK310800030265_00	Briar Branch		MILES	3.88	5b	5b	AG	Chloride		3		102
OK310800030280_00	Pruitt Branch		MILES	4.97	5b	5b	AG	Chloride		3		102

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310800030285_00	Pruitt West Creek!		MILES	3.94	5b	5b	AG	Chloride		3	102	
OK310800030290_00	Russell Pretty Branch, Trib A!		MILES	1.00	5b	5b	AG	Chloride		3	102	
						5b	AG	Total Dissolved Solids		3	102	
OK310800030330_00	Caddo Creek, Clemscott Branch!		MILES	3.04	5b	5b	AG	Chloride		3	102	
OK310800030340_00	Briar Branch Trib.B!		MILES	1.16	5b	5b	AG	Sulfates		3	102	
OK310800030350_00	Briar Branch Trib.A!		MILES	1.42	5b	5b	AG	Chloride		3	102	
OK310800030360_00	Caddo Creek, Fox Branch!		MILES	3.11	5b	5b	AG	Chloride		3	102	
OK310800030370_00	Caddo Creek Trib.!		MILES	3.34	5b	5b	AG	Chloride		3	102	
OK310800030380_00	Caddo Creek, North Branch		MILES	3.80	5b	5b	AG	Chloride		3	102	
OK310800030390_00	Caddo Creek North Branch Trib!		MILES	1.46	5b	5b	AG	Chloride		3	102	
OK310800030410_00	Caddo Creek North Fork Trib!		MILES	1.08	5b	5b	AG	Chloride		3	102	
OK310810010010_10	Washita River		MILES	32.87	4a	4a	PBCR	Enterococcus			33277	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			39166	46, 85, 87, 108, 140
OK310810010020_00	Wildhorse Creek		MILES	8.97	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli	X	4		46, 92, 108, 111, 133, 136, 140
OK310810010050_00	Kickapoo Sandy Creek		MILES	10.19	4a	4a	PBCR	Enterococcus			39167	140
						4a	PBCR	Escherichia coli			39167	140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310810010090_10	Rush Creek		MILES	10.30	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		4		46, 92, 108, 111, 133, 136, 140
						4a	AG	Chloride	X		53311	46, 92, 108, 111, 133, 136, 140
OK310810010180_00	Pauls Valley Lake		ACRES	750	5a	5a	WWAC	Turbidity		4		140
OK310810010186_00	RC Longmire Lake	X	ACRES	918	5a	5a	WWAC	Turbidity	X	4		140
OK310810010190_00	Washington Creek		MILES	6.49	5a	4a	WWAC	Turbidity			39170	46, 49, 87, 108, 140
						5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		4		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK310810010220_00	Maysville Lake (Wiley Post)		ACRES	302	5a	5a	PBCR	Enterococcus	X	4		140
						5a	WWAC	Turbidity		4		140
OK310810010270_00	Rush Creek, Trib G!		MILES	4.03	4a	4a	AG	Chloride			53310	140
OK310810010280_00	Washita River Trib 14-1N-1E!		MILES	1.71	5b	5b	AG	Chloride		4		97
OK310810020010_00	Washita River		MILES	63.16	5a	5a	FC	Lead		4		49, 85, 140
						4a	PBCR	Enterococcus			39171	46, 59, 85, 92, 108, 133, 136, 140
						4a	WWAC	Turbidity			39171	46, 85, 87, 108, 140
OK310810020020_00	Finn Creek		MILES	14.15	4a	4a	PBCR	Enterococcus			42423	140
OK310810020170_00	Roaring Creek		MILES	18.27	5a	4a	PBCR	Enterococcus			33279	140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	PBCR	Escherichia coli			33279	140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 140
OK310810020200_00	Laflin Creek		MILES	12.60	5c	4a	PBCR	Enterococcus			33280	92, 140, 156
						4a	PBCR	Escherichia coli			33280	92, 140, 156
						5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK310810020220_00	Winter Creek		MILES	12.44	5c	5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK310810020260_00	Stealy Creek!		MILES	5.15	5b	5b	AG	Chloride		4		70
OK310810030010_00	Wildhorse Creek		MILES	22.30	5a	5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
						4a	PBCR	Enterococcus			42425	140
						5b	AG	Chloride		4		49, 102, 140
OK310810030080_00	Salt Creek		MILES	19.05	5a	4a	PBCR	Enterococcus			42424	46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		4		46, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		4		46, 102, 140
						5c	WWAC	Macroinvertebrate Bio		4		140
OK310810030130_00	Countyline Creek		MILES	4.44	5b	5b	AG	Chloride		4		102
OK310810030140_00	N. Pernell Creek, North		MILES	3.34	5b	5b	AG	Chloride		4		102
OK310810030145_00	Pernell Creek!		MILES	2.96	5b	5b	AG	Chloride		4		102
OK310810030160_00	Pernell Creek, Trib.B!		MILES	0.77	5b	5b	AG	Chloride		4		102

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310810030180_00	Sandy Bear Creek, West Fork!		MILES	5.46	5b	5b	AG	Chloride		4	140	
OK310810030200_00	South Tatums!		MILES	1.57	5b	5b	AG	Chloride		4	140	
OK310810030210_00	Ratliff East Creek!		MILES	4.42	5b	5b	AG	Chloride		4	140	
OK310810030240_00	Ratliff West Creek! Trib.!		MILES	0.98	5b	5b	AG	Chloride		4	140	
OK310810030250_00	Countyline Creek Trib.3!		MILES	1.15	5b	5b	AG	Chloride		4	140	
OK310810030260_00	Wildhorse Creek Trib.B!		MILES	3.30	5b	5b	AG	Chloride		4	140	
OK310810030270_00	Wildhorse Creek Trib. A!		MILES	2.09	5b	5b	AG	Chloride		4	140	
OK310810040015_00	West County Line Creek		MILES	3.28	5b	5b	AG	Chloride		4	102	
OK310810040020_00	Panther Creek		MILES	5.36	5b	5b	AG	Chloride		4	140	
OK310810040050_00	Fuqua Lake		ACRES	1500	5a	5a	WWAC	Turbidity		2	140	
OK310810040080_00	Duncan Lake	X	ACRES	500	5a	5a	PPWS	Chlorophyll-a	X	2	140	
OK310810040120_00	Clear Creek Lake (Chisholm)		ACRES	722	5a	5b	AG	Sulfates		2	140	
						5a	PPWS	Chlorophyll-a		2	140	
OK310810040140_00	Wildhorse Creek		MILES	11.13	5c	5c	WWAC	Macroinvertebrate Bio		2	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
						4a	PBCR	Enterococcus		39172	140	
						4a	PBCR	Escherichia coli		39172	140	
OK310810040150_00	Humphreys Lake		ACRES	882	4a	4a	PPWS	Chlorophyll-a		66037	140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310810040170_00	Owens Creek		MILES	5.23	5c	5c	WWAC	Macroinvertebrate Bio		2	140	
OK310810040180_00	West County Line Creek Trib.!		MILES	2.53	5b	5b	AG	Chloride		4	140	
OK310810040200_00	Black Bear Trib 10!		MILES	2.65	5b	5b	AG	Chloride		2	102	
OK310810040230_00	Northwest Alma Creek		MILES	1.87	5b	5b	AG	Chloride		2	102	
OK310810040240_00	Velma East Creek!		MILES	3.96	5b	5b	AG	Chloride		2	102	
OK310810040250_00	Velma Creek!		MILES	2.42	5b	5b	AG	Chloride		2	102	
OK310810040260_00	Velma Creek West Branch!		MILES	1.25	5b	5b	AG	Sulfates		2	140	
						5b	AG	Chloride		2	102	
OK310810040280_00	Passmore Cemetery Creek Trib B!		MILES	2.03	5b	5b	AG	Chloride		2	102, 140	
OK310810040290_00	Wildhorse Creek Trib 10-1S-5W!		MILES	4.15	5b	5b	AG	Chloride		2	140	
OK310810050010_00	Rush Creek		MILES	58.40	5c	5c	WWAC	Fishes Bioassessments		4	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
OK310810050060_00	Taylor Lake (Marlow City)		ACRES	227	5a	5a	WWAC	Turbidity		4	140	
OK310810050120_00	Rush Creek, Trib E!		MILES	3.40	4a	4a	AG	Chloride			53309	102
OK310810050130_00	Cox City!		MILES	3.21	4a	4a	AG	Chloride			53307	102
OK310810050140_00	West Cox City!		MILES	1.50	4a	4a	AG	Chloride			53308	102
OK310820010030_00	Bitter Creek		MILES	6.02	4a	4a	PBCR	Enterococcus			33281	140
						4a	PBCR	Escherichia coli			33281	140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310820010160_00	Ionine Creek		MILES	6.45	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
OK310820010170_00	Jack Hollow Creek		MILES	4.87	5b	5b	AG	Sulfates		4		140
OK310820020010_00	Little Washita River		MILES	36.98	5a	4a	PBCR	Enterococcus			42414	92, 140, 156
						5a	WWAC	Oxygen, Dissolved	X	4		39, 140
						5b	AG	Sulfates	X	4		140
OK310820020080_00	Bills Creek, West		MILES	6.54	5b	5b	AG	Sulfates		4		140
OK310820020110_00	McCarty Creek		MILES	8.49	5b	5b	AG	Chloride		4		102
						5b	AG	Sulfates		4		102
						5b	AG	Total Dissolved Solids		4		102
OK310820020140_00	Allen's Lake		ACRES	10	5b	5b	AG	Chloride		4		102
OK310830010010_00	Washita River		MILES	20.68	5a	4a	PBCR	Enterococcus			33282	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Sedimentation/Siltation		3		46, 85, 87, 108, 140
						5c	WWAC	Fishes Bioassessments		3		46, 85, 87, 108, 140
OK310830010030_00	Delaware Creek		MILES	11.68	5a	5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Chloride		3		49, 102, 140
OK310830020010_00	Washita River		MILES	29.70	5c	5c	WWAC	Fishes Bioassessments		4		46, 85, 87, 108, 140
						5a	WWAC	Sedimentation/Siltation		4		46, 87, 108, 140
OK310830020020_00	Stinking Creek		MILES	18.36	5b	4a	PBCR	Enterococcus			39174	140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Chloride		4		49, 97, 102, 140
OK310830020060_10	Rainy Mountain Creek		MILES	32.33	5b	5b	AG	Chloride		4		49, 97, 102, 140
						5c	WWAC	Macroinvertebrate Bio	X	4		39, 49, 102, 140
OK310830030010_00	Washita River		MILES	49.32	5b	4a	PBCR	Enterococcus			33283	46, 59, 85, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride	X	4		140
						5b	AG	Sulfates	X	4		140
						5b	AG	Total Dissolved Solids	X	4		140
						5c	WWAC	Fishes Bioassessments	X	4		140
OK310830030070_00	Cavalry Creek		MILES	20.30	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
OK310830030100_00	Boggy Creek		MILES	24.89	4a	4a	PBCR	Enterococcus			42417	140
OK310830030190_00	Beaver Creek		MILES	22.54	5a	5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
OK310830030200_00	Barnitz Creek		MILES	8.87	5a	5a	PBCR	Enterococcus		3		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		3		46, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		3		140
						5b	AG	Total Dissolved Solids		3		140
						5c	WWAC	Fishes Bioassessments		3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK310830030210_00	Barnitz Creek, East		MILES	26.48	5b	4a	PBCR	Enterococcus			42416	46, 92, 108, 111, 133, 136, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
						5b	AG	Sulfates		4		49, 102, 140
OK310830030230_00	Barnitz Creek, West		MILES	38.35	5a	4a	PBCR	Enterococcus			42418	140
						5a	PBCR	Escherichia coli	X	3		140
						5b	AG	Sulfates		3		49, 102, 140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
						5c	WWAC	Fishes Bioassessments		3		140
OK310830030280_00	Clinton Lake		ACRES	335	5a	5a	PPWS	Chlorophyll-a		2		140
						5a	WWAC	Turbidity		2		140
OK310830040010_00	Spring Creek		MILES	16.76	5a	5b	AG	Sulfates		4		49, 140
						5c	WWAC	Macroinvertebrate Bio		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						4a	PBCR	Escherichia coli			42422	140
						4a	PBCR	Enterococcus			42422	140
						5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK310830040030_00	Stinking Creek		MILES	11.33	5a	5a	PBCR	Enterococcus		4		140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
OK310830050010_00	Sugar Creek		MILES	32.40	5a	5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	WWAC	Macroinvertebrate Bio		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK310830060020_00	Fort Cobb Lake		ACRES	4100	5a	4a	PPWS	Chlorophyll-a			23066	140
						5a	WWAC	Turbidity	X	4		140
OK310830060030_00	Willow Creek		MILES	9.24	4a	4a	PBCR	Enterococcus			33285	92, 140, 156
						4a	PBCR	Escherichia coli			33285	92, 140, 156
OK310830060050_00	Cobb Creek		MILES	17.34	4a	4a	PBCR	Enterococcus			42419	140
						4a	PBCR	Escherichia coli			42419	140
OK310830060080_00	Fivemile Creek		MILES	12.22	4a	4a	PBCR	Enterococcus			42420	140
						4a	PBCR	Escherichia coli			42420	140
OK310830060130_00	Crowder Lake		ACRES	158	5a	5a	PPWS	Chlorophyll-a		2		140
						5a	WWAC	Turbidity		2		140
OK310840010010_00	Washita River		MILES	18.62	5a	4a	PBCR	Enterococcus			33286	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			33286	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	FC	Lead		2		49, 85, 140
						5a	WWAC	Oxygen, Dissolved	X	2		140
						5a	WWAC	Sedimentation/Siltation		2		46, 85, 87, 108, 140
						5c	WWAC	Fishes Bioassessments		2		46, 85, 87, 108, 140
OK310840010020_00	Foss Lake		ACRES	8800	5a	5a	WWAC	Turbidity		2		140
OK310840010060_00	Quartermaster Creek		MILES	32.98	5a	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Total Dissolved Solids		3		49, 140
						5b	AG	Sulfates		3		49, 140
						4a	PBCR	Enterococcus			33278	140
						4a	PBCR	Escherichia coli			33278	140
OK310840020010_00	Washita River		MILES	61.94	4a	4a	WWAC	Turbidity			39178	140, 156
OK310840020020_00	Sandstone Creek		MILES	14.59	5b	4a	PBCR	Enterococcus			39180	140
						5b	AG	Sulfates		3		49, 102, 140
						5b	AG	Total Dissolved Solids	X	3		49, 102, 140
OK310840020210_00	Rush Creek	X	MILES	16.33	5a	5a	WWAC	Oxygen, Dissolved	X	4		39, 140
OK310840020240_00	Spring Creek		MILES	5.90	5a	5a	PBCR	Enterococcus		4		140
						5c	WWAC	Fishes Bioassessments		4		140
OK311100010080_00	Texoma Lake, Red River Arm, Upper		ACRES	11466	5a	5a	WWAC	Turbidity		3		140
OK311100010190_00	Red River		MILES	47.84	5a	5a	WWAC	Lead	X	2		49, 85, 140
OK311100010190_20	Red River		MILES	46.43	5a	4a	PBCR	Enterococcus			42448	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			42448	46, 87, 108, 140
						5a	FC	Lead		2		49, 85, 140
						5a	WWAC	Selenium		2		46, 87, 108, 140
OK311100010230_00	Bills Creek		MILES	8.43	5a	5a	PBCR	Enterococcus		4		85, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311100010250_00	Walnut Bayou		MILES	10.82	5a	5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 92, 108, 136, 140
						5a	PBCR	Enterococcus		4		46, 92, 108, 136, 140
OK311100010290_00	Red Creek		MILES	17.42	5a	5c	WWAC	Fishes Bioassessments	X	2		46, 59, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			39183	46, 49, 87, 102, 140
						4a	PBCR	Enterococcus			39183	140
						4a	PBCR	Escherichia coli			39183	140
OK311100010300_00	Fleetwood Creek		MILES	10.91	5a	5a	PBCR	Enterococcus		3		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		3		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 111, 133, 136, 140
OK311100020010_10	Hickory Creek		MILES	37.28	5a	5a	PBCR	Enterococcus		2		140
OK311100020090_00	Lake Murray		ACRES	5458	5a	5a	WWAC	Oxygen, Dissolved		2		140
OK311100030130_00	Healdton Municipal Lake		ACRES	370	5a	5a	WWAC	Turbidity		4		140
OK311100040010_00	Mud Creek		MILES	49.53	5a	5a	WWAC	Oxygen, Dissolved		2		46, 87, 108, 140
						5a	FC	Lead	X	2		46, 85, 87, 108, 140
						4a	PBCR	Enterococcus			33287	46, 108, 136, 140
						5a	WWAC	Lead		2		46, 85, 87, 108, 140
						4a	WWAC	Turbidity			39186	46, 87, 108, 140
OK311100040045_00	Oak Creek!		MILES	3.04	5b	5b	AG	Total Dissolved Solids		4		97

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311100040080_00	Mud Creek, Lower West		MILES	27.81	5a	4a	PBCR	Enterococcus			33288	92, 140, 156
						4a	PBCR	Escherichia coli			33288	92, 140, 156
						4a	WWAC	Turbidity			39187	140, 156
						5a	WWAC	Oxygen, Dissolved		2		92, 140, 156
OK311100040090_00	Post Oak Creek		MILES	7.53	5b	5b	AG	Chloride		2		140
OK311200000010_00	Red River		MILES	30.02	5a	5a	WWAC	Selenium		3		140
						5b	AG	Total Dissolved Solids		3		49, 140
						5b	AG	Sulfates		3		49, 140
						5a	PPWS	Selenium		3		140
						4a	WWAC	Turbidity			42449	46, 87, 108, 140
						4a	PBCR	Enterococcus			42449	46, 59, 85, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		3		49, 140
OK311200000030_00	Beaver Creek		MILES	30.69	5a	4a	PBCR	Enterococcus			39188	140
						4a	WWAC	Turbidity	X		39188	140
						5a	WWAC	Oxygen, Dissolved		1		140
						5b	AG	Total Dissolved Solids	X	1		140
OK311200000060_00	Cow Creek		MILES	25.73	5a	5a	PBCR	Escherichia coli		2		140
						4a	PBCR	Enterococcus			33289	140
						4a	WWAC	Turbidity	X		39189	46, 87, 108, 140
OK311200000080_00	Dry Creek		MILES	20.96	5a	5a	WWAC	Oxygen, Dissolved		2		92, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	PBCR	Escherichia coli		2		92, 140
						4a	WWAC	Turbidity			39190	140
						5a	PBCR	Enterococcus		2		92, 140
OK311200000110_00	Claridy Creek		MILES	8.43	5a	5a	FC	Lead	X	2		140
						5c	AES	Oil and Grease		2		70
						5c	WWAC	Oil and Grease		2		70
OK311200000120_00	Willow Creek		MILES	7.32	5a	5c	AES	Oil and Grease		2		70
						5c	WWAC	Oil and Grease		2		70
OK311210000020_00	Waurika Lake		ACRES	10100	5a	4a	PPWS	Chlorophyll-a			53302	140
						5a	WWAC	Turbidity		1		140
OK311210000030_00	Walker Creek		MILES	10.02	5b	5b	AG	Chloride		1		102
OK311210000050_00	Little Beaver Creek		MILES	39.49	5b	5b	AG	Total Dissolved Solids	X	3		46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			42444	140
						4a	PBCR	Escherichia coli			42444	46, 92, 108, 111, 133, 136, 140
OK311210000060_00	Stage Stand Creek		MILES	12.94	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK311210000140_00	Whisky Creek		MILES	10.28	4a	4a	PBCR	Enterococcus			33290	140
						4a	PBCR	Escherichia coli			33290	140
OK311210000150_00	Cottonwood Creek		MILES	7.21	5b	4a	PBCR	Enterococcus			33291	140
						4a	PBCR	Escherichia coli			33291	140
						5b	AG	Sulfates		4		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311300010020_00	Cache Creek, East		MILES	9.05	5a	4a	WWAC	Turbidity			39191	21, 46, 49, 87, 108, 140
						5a	WWAC	Selenium	X	2	140	
						4a	PBCR	Enterococcus			33292	46, 92, 108, 133, 136, 140
						4a	PBCR	Escherichia coli			33292	46, 92, 108, 133, 136, 140
OK311300010020_10	Cache Creek, East		MILES	17.11	5a	4a	PBCR	Enterococcus			33292	140
						4a	WWAC	Turbidity			39192	140
						5a	FC	Lead		2	140	
OK311300010080_00	Walters Lake (Boyer)		ACRES	148	5a	5a	PPWS	Chlorophyll-a		2	140	
						5a	WWAC	Turbidity		2	140	
OK311300010100_00	Cache Creek, Unnamed Trib of East		MILES	8.57	5b	5b	AG	Chloride		2	102	
						5b	AG	Total Dissolved Solids		2	102	
OK311300020010_10	Cache Creek, East		MILES	17.08	5a	5b	AG	Sulfates		1	49, 97, 140	
						5a	PBCR	Enterococcus		1	140	
						5a	WWAC	Oxygen, Dissolved		1	46, 62, 87, 92, 108, 111, 128, 133, 136, 140	
OK311300020040_00	Wolf Creek	X	MILES	10.20	5c	5c	WWAC	Fishes Bioassessments	X	4	140	
OK311300030010_10	Cache Creek, East	X	MILES	28.40	5a	5a	WWAC	Oxygen, Dissolved	X	3	39, 140	
OK311300030020_00	Ellsworth Lake		ACRES	5600	5a	4a	PPWS	Chlorophyll-a			53306	140
						5a	WWAC	Turbidity		1	140	
OK311300030070_00	Tahoe Creek		MILES	16.79	5a	4a	PBCR	Escherichia coli			33293	92, 140, 156

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Sulfates		3	140	
						5c	AES	Oil and Grease		3	140	
						5c	WWAC	Oil and Grease		3	140	
						5c	PPWS	Oil and Grease		3	140	
OK311300040050_00	Elmer Thomas Lake		ACRES	334	5a	5a	WWAC	Oxygen, Dissolved		1	140	
						5c	FC	Mercury		1	140	
OK311300040060_00	Medicine Creek		MILES	17.71	5a	5a	PBCR	Enterococcus		1	140	
OK311300040070_00	Lawtonka Lake		ACRES	2398	4a	4a	PPWS	Chlorophyll-a			53301	140
OK311310010010_00	Red River		MILES	88.02	5a	4a	PBCR	Enterococcus			33294	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Chromium (total)	X	3	140	
						5a	WWAC	Sedimentation/Siltation		3		46, 87, 108, 140
						5a	WWAC	Selenium		3	140	
						5a	WWAC	Turbidity		3		46, 87, 108, 140
						5b	AG	Chloride		3		49, 140
						5b	AG	Sulfates		3		49, 140
						5b	AG	Total Dissolved Solids		3		49, 140
						5c	WWAC	Mercury	X	3	140	
OK311310010025_00	Hound Creek		MILES	7.56	5b	5b	AG	Chloride		3	102	
						5b	AG	Sulfates		3	102	
OK311310010070_00	Suttle Creek		MILES	19.41	5b	5b	AG	Chloride		4		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
						4a	WWAC	Turbidity			39193	21, 46, 49, 87, 108, 140
OK311310020010_00	Cache Creek, West		MILES	9.10	5b	4a	PBCR	Enterococcus			33295	46, 108, 136, 140
						4a	PBCR	Escherichia coli			33295	46, 108, 136, 140
						4a	WWAC	Turbidity			39194	46, 87, 108, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
OK311310020010_10	Cache Creek, West		MILES	19.17	5a	5a	PBCR	Enterococcus		4		140
OK311310020060_00	Blue Beaver Creek		MILES	18.33	5a	5a	PBCR	Enterococcus		2		92, 140, 156
OK311310020068_00	Rush Lake		ACRES	53	5c	5c	FC	Mercury		2		140
OK311310020130_00	Quanah Parker Lake		ACRES	89	5c	5c	FC	Mercury		2		140
OK311310020150_00	Panther Creek		MILES	7.48	5c	5c	WWAC	Fishes Bioassessments		2		140
OK311310030010_00	Deep Red Creek		MILES	57.29	5b	4a	PBCR	Enterococcus			39195	140
						4a	PBCR	Escherichia coli			39195	140
						4a	WWAC	Turbidity			39195	46, 87, 108, 140
						5a	WWAC	Oxygen, Dissolved	X	3		39, 46, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		3		49, 102, 140
						5b	AG	Sulfates		3		49, 102, 140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
OK311310030030_00	Jack Creek	X	MILES	23.87	5a	5c	WWAC	Fishes Bioassessments	X	3		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311310030040_00	Little Deep Red Creek		MILES	33.57	5a	5a	WWAC	Oxygen, Dissolved	X	3		39, 49, 102, 140
						5c	WWAC	Fishes Bioassessments		1		140
						5c	WWAC	Macroinvertebrate Bio		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Total Dissolved Solids		1		46, 102, 140
						5b	AG	Sulfates		1		46, 102, 140
OK311310030050_00	Brush Creek		MILES	11.64	5a	5b	AG	Chloride		3		140
						5c	AES	Oil and Grease		3		140
						5b	AG	Total Dissolved Solids		3		140
						5b	AG	Sulfates		3		140
						4a	WWAC	Turbidity			39198	140
						4a	PBCR	Escherichia coli			33296	84, 92, 140
						4a	PBCR	Enterococcus			33296	84, 92, 140
						5c	WWAC	Oil and Grease		3		140
						5a	WWAC	Oxygen, Dissolved		3		84, 92, 140
						5a	WWAC	Turbidity		3		140
OK311500010020_00	Red River, North Fork	X	MILES	22.72	5a	5a	WWAC	Turbidity	X	3		140
						5b	AG	Chloride	X	3		58, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311500010020_10	Red River, North Fork		MILES	61.70	5a	5b	AG	Total Dissolved Solids	X	3		58, 140
						5b	AG	Total Dissolved Solids		2		58, 140
						5c	WWAC	Macroinvertebrate Bio	X	2		140
						5b	AG	Chloride		2		58, 140
						5a	PBCR	Escherichia coli		2		46, 85, 108, 136, 140
						4a	PBCR	Enterococcus			34831	46, 85, 108, 136, 140
						5a	WWAC	Selenium		2		140
						5b	AG	Chloride		3		140
						4a	PBCR	Enterococcus			34850	84, 92, 100, 140, 156
						5b	AG	Sulfates		3		140
						5a	PPWS	Nitrates		3		84, 92, 100, 140
						4a	WWAC	Turbidity			39200	140, 156
						4a	PBCR	Escherichia coli			34850	84, 92, 100, 140, 156
						5a	WWAC	Oxygen, Dissolved	X	2		39, 49, 102, 140
						5b	AG	Chloride		2		49, 102, 140
						5b	AG	Total Dissolved Solids	X	4		49, 102, 140
						4a	PBCR	Enterococcus			39201	140
OK311500010110_00	Tepee Creek		MILES	19.44	5b	5b	AG	Sulfates		2		49, 102, 140
						4a	PBCR	Enterococcus			34832	140
						5b	AG	Chloride		2		49, 102, 140
						5b	AG	Total Dissolved Solids		2		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	PBCR	Escherichia coli			34832	140
OK311500020040_00	Otter Creek, West		MILES	6.77	4a	4a	PBCR	Enterococcus			34833	85, 92, 140, 156
						4a	PBCR	Escherichia coli			34833	85, 92, 140, 156
OK311500020060_00	Tom Steed Lake (Mountain Park)		ACRES	6400	5a	4a	PPWS	Chlorophyll-a			41064	140
						5a	WWAC	Turbidity		2		140
OK311500030010_00	Elk Creek		MILES	15.70	5a	4a	PBCR	Enterococcus			34834	46, 85, 108, 136, 140
						4a	WWAC	Turbidity			39202	46, 85, 87, 108, 140
						5a	WWAC	Selenium		4		140
						5c	WWAC	Macroinvertebrate Bio		4		140
OK311500030040_00	Little Elk Creek		MILES	15.40	5a	5a	PBCR	Escherichia coli	X	3		49, 140
						5c	WWAC	Macroinvertebrate Bio	X	3		39, 49, 102, 140
						5a	PBCR	Enterococcus		3		140
OK311500030060_00	Rocky (Hobart) Lake		ACRES	347	5a	5a	WWAC	Turbidity		3		140
						4a	PPWS	Chlorophyll-a			41063	140
OK311500030070_00	Trail Creek		MILES	19.15	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids	X	4		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio	X	4		39, 49, 102, 140
OK311510010020_00	Altus Lake (Altus-Lugert)		ACRES	6260	5a	5a	WWAC	Turbidity		4		140
OK311510010040_00	Lake Creek		MILES	13.33	4a	4a	PBCR	Enterococcus			42451	46, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311510010090_00	Timber Creek		MILES	12.01	5a	5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						4a	PBCR	Enterococcus			42447	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			42447	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	3		39, 49, 102, 140
OK311510020010_00	Red River, North Fork		MILES	37.86	5c	5c	WWAC	Fishes Bioassessments		3		140
OK311510020040_00	Sand Creek		MILES	13.05	5c	5c	WWAC	Fishes Bioassessments		3		140
OK311510020060_00	Turkey Creek		MILES	19.42	4a	4a	PBCR	Enterococcus			34837	92, 140, 156
OK311510020090_00	Buffalo Creek		MILES	20.32	5b	4a	PBCR	Enterococcus			42428	46, 92, 108, 133, 136, 140
						4a	PBCR	Escherichia coli			42428	46, 92, 108, 133, 136, 140
						5b	AG	Total Dissolved Solids	X	3		49, 102, 140
						5c	WWAC	Fishes Bioassessments	X	3		46, 92, 108, 111, 133, 136, 140
OK311510020120_00	Sweetwater Creek		MILES	16.43	4a	4a	PBCR	Enterococcus			39204	46, 92, 108, 133, 136, 140
						4a	PBCR	Escherichia coli			39204	46, 92, 108, 133, 136, 140
OK311600010020_00	Gypsum Creek		MILES	28.10	5a	5b	AG	Total Dissolved Solids		3		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Sulfates		3		49, 102, 140
						5b	AG	Chloride		3		49, 102, 140
						4a	PBCR	Enterococcus			39205	46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311600010040_00	Sandy Creek (Lebos)		MILES	39.65	5a	4a	SBCR	Enterococcus	X		34838	46, 85, 108, 136, 140
						4a	HLAC	Turbidity			39206	46, 87, 108, 140
						5a	HLAC	Selenium		2		140
						5b	AG	Chloride		2		49, 102, 140
						5b	AG	Sulfates		2		49, 102, 140
						5b	AG	Total Dissolved Solids		2		49, 102, 140
						5c	HLAC	Fishes Bioassessments		2		140
OK311600020010_00	Red River, Salt Fork		MILES	13.67	5a	5b	AG	Chloride		3		58, 140
						5b	AG	Total Dissolved Solids	X	3		140
						5b	AG	Sulfates		3		140
						4a	PBCR	Enterococcus			34839	46, 85, 92, 108, 136, 140, 156
						5a	PPWS	Selenium		3		140
						5a	FC	Lead		3		46, 85, 87, 108, 140
						5a	WWAC	Selenium		3		140
						5a	WWAC	Turbidity		3		49, 87, 108, 140
OK311600020010_10	Red River, Salt Fork		MILES	69.63	5c	4a	PBCR	Enterococcus			34840	46, 85, 108, 136, 140
						5c	WWAC	Fishes Bioassessments	X	4		140
OK311600020060_00	Turkey Creek		MILES	51.64	5a	5b	AG	Chloride		3		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio		3		39, 46, 59, 72, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Sulfates		3		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Oxygen, Dissolved		3		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity	X		42446	46, 59, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			42446	46, 92, 108, 111, 133, 136, 140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
OK311600020110_00	Bitter Creek		MILES	3.60	5a	5a	FC	DDT		3		140
						5a	FC	Toxaphene		3		140
OK311600020110_05	Bitter Creek		MILES	7.80	5a	4a	SBCR	Enterococcus			34841	68, 85, 92, 140, 156
						5a	FC	DDT		3		140
						5a	FC	Toxaphene		3		140
						5b	AG	Chloride		3		49, 97, 140
						5c	HLAC	Fishes Bioassessments		3		140
OK311600020110_10	Bitter Creek		MILES	18.57	5a	5a	FC	DDT		3		140
						5a	FC	Toxaphene		3		140
OK311600020140_00	Cave Creek		MILES	13.69	5b	4a	PBCR	Enterococcus			34842	92, 140, 156
						4a	PBCR	Escherichia coli			34842	92, 140, 156
						5b	AG	Sulfates		4		49, 102, 140
OK311800000010_00	Red River, Elm Fork		MILES	36.63	5a	5c	WWAC	Macroinvertebrate Bio		3		140
						5c	WWAC	Fishes Bioassessments		3		140
						5b	AG	Chloride	X	3		58, 140
						5a	PPWS	Selenium		3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Selenium		3	140	
						5a	FC	Lead		3	49, 56, 85, 140	
						4a	PBCR	Escherichia coli			34843	46, 85, 108, 136, 140
						4a	PBCR	Enterococcus			34843	46, 85, 108, 136, 140
OK311800000010_10	Red River, Elm Fork		MILES	25.69	5a	5a	WWAC	Selenium		3	140	
						5a	PPWS	Selenium		3	140	
						5b	AG	Chloride		3	58, 140	
						5b	AG	Sulfates		3	58, 140	
						5b	AG	Total Dissolved Solids		3	58, 140	
						5c	WWAC	Fishes Bioassessments		3	140	
						5a	WWAC	Oxygen, Dissolved	X	3	85, 92, 108, 140	
						5c	WWAC	Macroinvertebrate Bio	X	3	140	
OK311800000040_00	Haystack Creek		MILES	43.06	5b	5c	WWAC	Fishes Bioassessments	X	3	21, 39, 49, 87, 92, 108, 111, 133, 136, 140	
						4a	PBCR	Enterococcus			39207	46, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			39207	21, 46, 49, 87, 108, 140
						5b	AG	Sulfates		3	21, 46, 49, 87, 92, 108, 111, 133, 136, 140	
OK311800000060_00	Station Creek		MILES	10.58	5b	5b	AG	Sulfates		3	49, 102, 140	
						4a	PBCR	Enterococcus			42450	46, 92, 108, 111, 133, 136, 140
OK311800000070_00	Deer Creek		MILES	22.59	5b	4a	PBCR	Enterococcus			34844	92, 140, 156
						4a	PBCR	Escherichia coli			34844	92, 140, 156
						4a	WWAC	Turbidity			39208	140, 156

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK311800000130_00	Fish Creek		MILES	16.84	5a	5b	AG	Sulfates		3	140	
						4a	PBCR	Enterococcus		34845	46, 108, 136, 140	
						5b	AG	Chloride	X	3	49, 102, 140	
						5b	AG	Sulfates		3	49, 102, 140	
						5b	AG	Total Dissolved Solids	X	3	49, 102, 140	
OK311800000170_00	Elm Creek, West		MILES	12.77	5a	5c	WWAC	Fishes Bioassessments		3	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
						5a	PBCR	Enterococcus		4	46, 92, 108, 111, 133, 136, 140	
						5c	WWAC	Fishes Bioassessments		4	46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140	
						5b	AG	Sulfates		4	49, 102, 140	
						5a	WWAC	pH	X	4	46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140	
OK410100010010_10	Red River		MILES	22.99	5a	5b	AG	Chloride	X	4	49, 102, 140	
						5a	PBCR	Enterococcus	X	3	46, 85, 108, 136	
						5a	FC	Lead		3	140	
OK410100010050_00	Norwood Creek		MILES	20.15	5a	5a	PBCR	Enterococcus		3	46, 92, 108, 111, 133, 136, 140	
						5a	PBCR	Escherichia coli		3	46, 92, 108, 111, 133, 136, 140	
						5a	WWAC	Oxygen, Dissolved		3	4, 46, 59, 87, 92, 108, 111, 133, 136, 140	
OK410100010340_00	Waterhole Creek		MILES	16.61	5a	5a	PBCR	Enterococcus		4	46, 92, 108, 111, 133, 136, 140	
						5a	WWAC	Oxygen, Dissolved		4	4, 46, 59, 87, 92, 100, 108, 111, 133, 136, 140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK410100010480_00	Clear Creek	X	MILES	2.51	5c	5c	WWAC	Macroinvertebrate Bio	X	4		39, 140
OK410200010200_00	Little River		MILES	8.20	5a	5a	CWAC	Oxygen, Dissolved		1		46, 82, 87, 92, 108, 140
OK410200010200_10	Little River		MILES	24.14	5a	5a	CWAC	Lead		1		49, 140
						5a	CWAC	Silver		1		49, 56, 140
						4a	CWAC	Turbidity			59165	46, 56, 87, 92, 108, 120, 140
OK410200010210_00	Mud Creek		MILES	17.66	5a	5a	WWAC	Lead		1		140
						5c	WWAC	Macroinvertebrate Bio		1		140
						5b	WWAC	Zinc		1		140
						5a	FC	Lead		1		140
OK410200010230_00	Yashoo Creek	X	MILES	19.80	5c	5c	CWAC	Macroinvertebrate Bio	X	1		39, 140
OK410200030010_00	Rock Creek		MILES	12.35	5a	5a	PBCR	Enterococcus		4		46, 87, 108, 111, 133, 136, 140
						5a	CWAC	Oxygen, Dissolved		4		46, 87, 92, 100, 108, 111, 133, 136, 140
						5a	CWAC	pH		4		155
OK410210010070_00	Cypress Creek		MILES	20.73	5a	5a	CWAC	pH		2		155
						5a	CWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
OK410210020020_00	Pine Creek Lake		ACRES	3750	5a	5c	FC	Mercury		2		140
						5a	WWAC	pH		2		155
						5a	WWAC	Lead		2		140
						5a	WWAC	Oxygen, Dissolved		2		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK410210020140_00	Little River		MILES	27.25	5a	4a	CWAC	Turbidity			59168	108, 119, 140
						5a	CWAC	Copper		2		49, 56, 85, 140
						5a	CWAC	Lead		2		49, 82, 85, 140
						5a	CWAC	pH	X	2		140
						5a	CWAC	Silver		2		49, 56, 85, 140
						5a	CWAC	Zinc		2		140
						5a	FC	Lead		2		49, 56, 85, 140
OK410210020300_00	Cloudy Creek		MILES	25.63	5a	5a	CWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		2		140
						4a	CWAC	Turbidity			59169	46, 49, 87, 102, 108, 140
OK410210030020_00	Little River, Black Fork		MILES	31.00	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140
						5a	CWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		2		155
OK410210040010_10	Little River, Mountain Fork		MILES	1.14	5a	5a	Trout	Lead		2		49, 82, 140
						5a	Trout	Silver		2		49, 56, 140
OK410210050020_00	Broken Bow Lake		ACRES	14200	5a	5a	WWAC	Cadmium	X	1		140
						5a	WWAC	Oxygen, Dissolved		1		140
						5a	WWAC	pH		1		155
						5c	FC	Mercury		1		140
OK410210060010_10	Little River, Mountain Fork		MILES	28.08	5a	5a	CWAC	Silver		1		49, 56, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	CWAC	Turbidity	X	1		108, 120
						5a	CWAC	Lead		1		49, 82, 140, 146
						5a	CWAC	Zinc		1		49, 56, 140
OK410210060020_00	Buffalo Creek		MILES	23.38	5a	4a	CWAC	Turbidity			59170	46, 49, 87, 102, 108, 140
						5a	CWAC	pH		1		155
OK410210060160_00	Big Eagle Creek		MILES	20.50	5a	5a	CWAC	Oxygen, Dissolved		2		4, 46, 59, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		2		155
OK410210060320_00	Beech Creek		MILES	12.71	5a	4a	CWAC	Turbidity			59171	46, 49, 87, 102, 108, 140
						5a	CWAC	pH		1		155
OK410210060350_00	Cow Creek		MILES	11.03	5a	4a	CWAC	Turbidity			59172	46, 49, 87, 102, 108, 140
						5a	CWAC	Oxygen, Dissolved		1		46, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		1		155
OK410210070010_00	Lukfata Creek		MILES	17.80	5a	5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
						5a	CWAC	Oxygen, Dissolved		1		4, 46, 87, 92, 100, 108, 111, 133, 136, 140
						5a	CWAC	Turbidity		1		46, 49, 87, 102, 108, 140
OK410210080010_00	Glover River		MILES	33.95	5a	5a	CWAC	Lead		1		49, 56, 140
						5a	CWAC	Silver	X	1		49, 56, 140
OK410210090010_00	Glover River, East Fork		MILES	21.60	5a	5a	CWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		2		8, 59, 92, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK410300010010_00	Kiamichi River		MILES	18.11	5a	5a	WWAC	Lead		1		49, 56, 82, 140
						5a	FC	Lead		1		49, 56, 82, 140
						5a	PPWS	Lead		1		49, 56, 82, 140
OK410300010020_00	Gates Creek		MILES	4.85	4a	4a	CWAC	Turbidity			59174	46, 87, 102, 108, 140, 157
OK410300010100_00	Bird Creek		MILES	8.05	5a	5a	WWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 133, 136, 140
OK410300020010_10	Kiamichi River		MILES	15.53	5c	5c	WWAC	Fishes Bioassessments		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK410300020020_00	Hugo Lake		ACRES	13250	5a	5c	FC	Mercury		1		140
						5a	WWAC	pH		1		140
						5a	WWAC	Turbidity		1		140
OK410300020120_00	Schooler Lake	X	ACRES	1	5c	5c	FC	Mercury	X	1		140
OK410300020190_00	Rock Creek		MILES	13.96	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						4a	CWAC	Turbidity			66323	46, 49, 87, 102, 108, 140
						5a	CWAC	Oxygen, Dissolved		1		33, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		1		8, 92, 102, 140
OK410300020220_00	Ozzie Cobb Lake		ACRES	116	5a	5a	WWAC	pH		1		155
						5c	FC	Mercury	X	1		140
OK410300030010_10	Kiamichi River		MILES	10.30	5a	5a	WWAC	Silver	X	1		49, 56, 140
						5a	FC	Lead		1		49, 56, 82, 140
						5a	WWAC	Lead		1		49, 56, 82, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	PBCR	Enterococcus	X		33307	46, 85, 108, 136, 140
OK410300030020_10	Cedar Creek		MILES	23.36	5a	4a	CWAC	Turbidity			66323	46, 49, 87, 102, 108, 140
						5a	CWAC	Oxygen, Dissolved		1		46, 87, 92, 108, 111, 133, 136, 140
						5a	CWAC	pH		1		8, 92, 102, 140
						4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
OK410300030060_00	One Creek		MILES	17.42	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		1		46, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	pH		1		2, 92, 102, 140
OK410300030210_00	Dumpling Creek		MILES	13.73	5a	5a	WWAC	pH		2		155
OK410300030270_00	Tenmile Creek		MILES	35.75	5a	5a	WWAC	pH		2		155
						5c	WWAC	Macroinvertebrate Bio	X	2		39, 140
						5a	WWAC	Oxygen, Dissolved		2		92, 140, 156
OK410300030420_00	Buck Creek		MILES	35.60	4a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
OK410300030580_00	Pine Creek		MILES	23.49	5a	5a	WWAC	pH		2		155
OK410300030780_00	Clayton Lake	X	ACRES	95	5c	5c	FC	Mercury	X	2		140
OK410310010010_00	Kiamichi River		MILES	26.35	5a	5a	WWAC	Lead		1		49, 82, 140
						5a	WWAC	Silver		1		49, 56, 140
OK410310010050_00	Nanhi Waiya Lake	X	ACRES	131	5c	5c	FC	Mercury	X	2		140
OK410310010220_00	Carl Albert Lake		ACRES	183	5a	5a	WWAC	pH		2		155

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	FC	Mercury	X	2	140	
OK410310010230_00	Talihina Lake		ACRES	25	5a	5a	WWAC	Turbidity		2		102, 119
OK410310020010_10	Kiamichi River		MILES	25.18	5a	5a	WWAC	pH		1		155
						5a	WWAC	Silver		1		49, 56, 140
						5a	WWAC	Lead		1		49, 82, 140
						5a	WWAC	Zinc		1		10, 140
OK410310020070_00	Billy Creek		MILES	8.91	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	pH		2		155
OK410310020100_00	Big Cedar Creek		MILES	5.83	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	pH		2		155
OK410310030020_00	Sardis Lake		ACRES	13610	5a	5a	WWAC	pH		1		140
						5a	WWAC	Turbidity		1		140
						5c	FC	Mercury		1		140
OK410310030090_00	Bolen Creek		MILES	8.54	5a	5b	AG	Sulfates		1		140
						5b	AG	Total Dissolved Solids		1		140
						5a	WWAC	pH		1		155
OK410400010010_20	Red River	X	MILES	4.86	4a	4a	PBCR	Enterococcus	X		33297	46, 85, 108, 111, 136, 140
OK410400010040_00	Horse Creek		MILES	7.76	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK410400010060_00	Roebuck Lake		ACRES	1	5a	5a	WWAC	Turbidity		4	140	
OK410400010070_00	Muddy Boggy Creek		MILES	21.59	5a	4a	PBCR	Enterococcus			33298	46, 85, 108, 111, 136, 140
						4a	WWAC	Turbidity			42476	46, 87, 108, 140
						5a	PBCR	Escherichia coli	X	2		46, 85, 108, 111, 136, 140
OK410400010130_00	Lick Creek		MILES	20.19	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 133, 136, 140
						5a	WWAC	pH		2		8, 92, 102, 140
OK410400010210_00	Whitegrass Creek		MILES	29.71	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 111, 133, 136, 140
OK410400020200_00	Caney Creek		MILES	11.67	5a	4a	PBCR	Enterococcus			66323	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			66323	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 133, 136, 140
						5a	WWAC	pH		3		8, 92, 140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
OK410400030010_00	Clear Boggy Creek		MILES	22.76	5a	4a	PBCR	Enterococcus	X		33299	46, 85, 108, 111, 136, 140
						5a	WWAC	Lead		2		49, 85, 140
						5a	WWAC	Sedimentation/Siltation		2		46, 87, 108, 140
OK410400030120_00	Rock Creek Lake		ACRES	248	5a	5a	WWAC	Turbidity		3	140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK410400030240_00	Delaware Creek		MILES	29.01	5a	5a	PBCR	Enterococcus		4	140	
OK410400030370_00	Leader Creek		MILES	29.58	5a	5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			42474	46, 49, 87, 102, 108, 140
						5a	PBCR	Enterococcus		3		46, 92, 108, 111, 133, 136, 140
OK410400030430_00	Sandy Creek		MILES	5.53	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK410400030490_00	Goose Creek		MILES	15.09	5a	5a	PBCR	Enterococcus		3		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 108, 111, 133, 136, 140
OK410400040170_00	Lake Creek		MILES	3.96	5b	5b	AG	Chloride		3		140
OK410400050270_10	Muddy Boggy Creek		MILES	22.25	5a	4a	PBCR	Enterococcus			42455	46, 85, 108, 111, 136, 140
						4a	WWAC	Turbidity			42455	46, 87, 108, 140
						5a	PBCR	Escherichia coli	X	2		46, 85, 108, 111, 136, 140
						5a	FC	Lead		2		49, 85, 140
OK410400050410_00	Boggy Creek, North		MILES	7.25	5a	5a	PBCR	Enterococcus		1		46, 92, 108, 133, 136, 140
						5b	AG	Total Dissolved Solids		1		140
						5b	AG	Sulfates		1		140
						5a	WWAC	Oxygen, Dissolved		1		46, 92, 108, 136, 140
OK410400050415_00	North Boggy Creek, Unnamed Tributary of		MILES	3.31	5a	5a	HLAC	Oxygen, Dissolved		1		46, 59, 87, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		1		49, 102, 140
						5b	AG	Total Dissolved Solids		1		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	HLAC	Macroinvertebrate Bio		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK410400060010_30	Muddy Boggy Creek		MILES	20.56	5a	5a	WWAC	pH		3		102
						5b	AG	Chloride		3		140
OK410400060040_00	Coalgate Municipal Lake		ACRES	352	5a	5c	FC	Mercury		2		140
						5a	WWAC	Copper		2		140
						5a	WWAC	Oxygen, Dissolved		2		140
						5a	WWAC	Turbidity		2		140
OK410400060120_00	Caney Boggy Creek		MILES	26.49	5a	5a	PBCR	Enterococcus		3		46, 92, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 87, 92, 100, 108, 111, 133, 136, 140
OK410400070020_00	McGee Creek Lake		ACRES	3810	5a	5a	WWAC	Oxygen, Dissolved		1		140
						5a	WWAC	pH		1		140
						5c	FC	Mercury		1		140
OK410400080020_00	Atoka Lake		ACRES	5700	5a	5a	WWAC	Lead	X	1		140
						5a	WWAC	pH	X	1		140
						5a	WWAC	Turbidity		1		140
						5c	FC	Mercury		1		140
OK410600010010_00	Blue River	X	MILES	48.17	5a	4a	PBCR	Enterococcus	X		33301	46, 59, 85, 92, 111, 133, 136, 140
						5a	PBCR	Escherichia coli	X	3		46, 59, 85, 92, 111, 133, 136, 140
OK410600010030_00	Sulphur Creek		MILES	14.61	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		2		46, 92, 108, 111, 133, 136, 140
OK410600010090_00	Bokchito Creek		MILES	16.78	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140
OK410600010140_00	Caddo Creek		MILES	13.96	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 85, 87, 92, 108, 111, 133, 136, 140
OK410600010300_00	Mineral Bayou		MILES	15.53	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK410600020020_00	Sandy Creek		MILES	15.35	5a	5a	PBCR	Enterococcus		3		140
						5a	WWAC	Oxygen, Dissolved		3		46, 59, 87, 92, 108, 111, 133, 136, 140
OK410600020100_00	Little West Blue Creek		MILES	19.08	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
OK410700000260_00	Sand Creek		MILES	12.01	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 111, 133, 136, 140
OK520500010020_00	Eufaula Lake, N. Canadian River Arm		ACRES	20680	5a	5a	WWAC	Turbidity		2		140
						5c	FC	Mercury	X	2		140
OK520500010110_10	Canadian River, North		MILES	48.39	5a	4a	WWAC	Turbidity			40589	46, 85, 87, 108, 140
						5a	FC	Lead		2		49, 85, 140
						4a	PBCR	Enterococcus			40589	46, 59, 85, 92, 111, 133, 136, 140
OK520500010170_00	Bad Creek		MILES	19.11	5a	4a	PBCR	Enterococcus			40591	46, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Oxygen, Dissolved	X	2		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio	X	2		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
OK520500010200_00	Alabama Creek		MILES	14.20	5b	4a	PBCR	Enterococcus			60840	46, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	2		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		2		49, 102, 140
OK520500010242_00	Clearview Creek		MILES	2.29	5b	5b	AG	Total Dissolved Solids		2		140
						5b	AG	Chloride		2		140
OK520500010270_00	Wetumka City Lake		ACRES	169	5a	5c	FC	Mercury	X	2		140
						5a	PBCR	Enterococcus		2		140
OK520500020010_00	Wewoka Creek		MILES	42.99	5c	4a	PBCR	Enterococcus			40592	4, 46, 59, 69, 85, 92, 100, 108, 111, 128, 133, 136, 140
						4a	WWAC	Turbidity	X		40592	4, 46, 49, 59, 69, 85, 92, 100, 102, 108, 111, 128, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio	X	2		4, 39, 46, 49, 59, 69, 85, 92, 100, 102, 108, 111, 128, 133, 136, 140
OK520500020020_00	Greasy Creek		MILES	18.51	5a	5a	WWAC	Oxygen, Dissolved		4		140
						5a	WWAC	pH		4		140
OK520500020027_00	Cheyarha Creek, East		MILES	3.01	5b	5b	AG	Chloride		2		102
OK520500020090_00	Little Wewoka Creek		MILES	20.44	4a	4a	PBCR	Enterococcus			60861	4, 46, 92, 100, 108, 111, 133, 136, 140
OK520500020190_00	Wewoka Lake		ACRES	371	5a	5c	FC	Mercury	X	2		140
						5a	PPWS	Chlorophyll-a		2		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Turbidity		2	140	
OK520500020220_00	Sportsman Lake		ACRES	354	5a	5a	WWAC	Turbidity		2	140	
						5c	FC	Mercury	X	2	140	
OK520500020230_00	Carter Creek		MILES	2.70	5b	5b	AG	Chloride		2	102, 140	
						5b	AG	Total Dissolved Solids		2	102, 140	
OK520500020240_00	Wewoka Creek		MILES	5.36	5a	5a	HLAC	Cadmium		2	140	
OK520500020240_10	Wewoka Creek		MILES	10.27	5a	5a	PPWS	Nitrates		2	85, 92	
						5b	AG	Chloride		2	102, 124, 140	
						5b	AG	Total Dissolved Solids		2	102, 124, 140	
OK520500020250_00	Magnolia Creek		MILES	4.81	5b	5b	AG	Chloride		2	102	
OK520500020260_00	Salt Cedar Creek		MILES	1.33	5b	5b	AG	Chloride		2	102	
						5b	AG	Total Dissolved Solids		2	102	
OK520500020260_20	Salt Cedar Creek		MILES	1.06	5b	5b	AG	Chloride		2	102	
						5b	AG	Total Dissolved Solids		2	102	
OK520500020270_00	Wewoka Creek, Trib A!		MILES	5.26	5b	5b	AG	Total Dissolved Solids		2	102	
OK520500020280_00	Oakwood Cemetery Creek!		MILES	6.69	5b	5b	AG	Chloride		2	102	
OK520510000010_00	Canadian River, North		MILES	36.94	5a	4a	PBCR	Enterococcus		40595	46, 59, 85, 92, 111, 133, 136, 140	
						4a	WWAC	Turbidity		40595	46, 85, 87, 108, 140	
						5a	WWAC	pH		2	140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	WWAC	Fishes Bioassessments		2		46, 85, 87, 108, 140
OK520510000095_00	Turkey Creek, Trib A!		MILES	4.26	5b	5b	AG	Chloride		1		102
OK520510000100_00	Turkey Creek		MILES	16.42	5a	5a	WWAC	Oxygen, Dissolved	X	1		39, 49, 102, 140
						5b	AG	Chloride		1		49, 102, 140
						5b	AG	Total Dissolved Solids	X	1		49, 102, 140
OK520510000105_00	Earlsboro Creek		MILES	5.13	5b	5b	AG	Chloride		1		102
OK520510000110_05	Canadian River, North		MILES	21.91	5a	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Total Dissolved Solids		2		140
						5a	FC	Lead		2		140
						5a	WWAC	Lead		2		140
						5a	WWAC	Cadmium		2		140
						5a	WWAC	Chromium (total)	X	2		140
						5a	WWAC	Copper	X	2		140
OK520510000110_10	Canadian River, North		MILES	20.31	5a	5a	PBCR	Enterococcus		1		46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Turbidity		1		46, 85, 87, 108, 140
						5b	AG	Total Dissolved Solids		1		140
OK520510000110_20	Canadian River, North		MILES	31.54	5a	5a	WWAC	Oxygen, Dissolved		1		140
						4a	PBCR	Enterococcus			38886	34, 92, 108, 111, 133, 136, 140
OK520510000220_00	Tecumseh Lake		ACRES	127	5a	5a	WWAC	Turbidity		1		140
OK520510000280_00	Shawnee Twin Lake #1 (South)		ACRES	1336	5a	5a	WWAC	Turbidity		1		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520510000290_00	Deer Creek, South		MILES	4.40	5a	5a	WWAC	Oxygen, Dissolved		1		34, 46, 92, 111, 133, 136, 140
						5c	AES	Oil and Grease		1		34, 49, 97, 111, 140
						5c	WWAC	Oil and Grease		1		34, 49, 97, 111, 140
						5c	PPWS	Oil and Grease		1		34, 49, 97, 111, 140
OK520510000300_00	Shawnee Twin Lake #2 (North)		ACRES	1100	5a	5a	WWAC	Turbidity		1		140
OK520520000010_00	Canadian River, North		MILES	3.85	5a	5a	WWAC	Turbidity		1		46, 85, 87, 108, 140
						4a	PBCR	Enterococcus			38869	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	FC	Dieldrin	X	1		140
						5a	PBCR	Escherichia coli		1		46, 59, 85, 92, 111, 133, 136, 140
OK520520000010_10	Canadian River, North		MILES	13.35	4a	4a	PBCR	Enterococcus			38885	34, 92, 111, 133, 136, 140
OK520520000010_20	Canadian River, North		MILES	13.71	5a	5a	FC	Dieldrin		1		66, 140
OK520520000010_30	Canadian River, North		MILES	4.55	5a	4a	PBCR	Enterococcus			38883	34, 92, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			38883	34, 92, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		1		140
OK520520000010_40	Canadian River, North		MILES	9.78	5a	4a	PBCR	Enterococcus			38882	34, 92, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		1		140
OK520520000030_00	Choctaw Creek		MILES	9.76	5a	5a	HLAC	Oxygen, Dissolved		1		140
OK520520000060_00	Crutcho Creek		MILES	3.55	5a	5a	WWAC	Oxygen, Dissolved		1		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520520000070_00	Crutcho Creek		MILES	3.85	5a	5a	PBCR	Enterococcus		1		68, 84, 85, 140
						5a	WWAC	Oxygen, Dissolved		1		68, 84, 85, 140
						5a	PBCR	Escherichia coli		1		68, 84, 85, 140
OK520520000090_00	Crutcho Creek		MILES	3.14	5c	5c	AES	Oil and Grease		1		33, 140
						5c	HLAC	Oil and Grease		1		33, 140
OK520520000110_00	Cherry Creek		MILES	7.31	5a	5a	HLAC	Cadmium		2		140
						5a	HLAC	Oxygen, Dissolved		2		140
						5a	HLAC	Selenium		2		140
OK520520000150_00	Crooked Oak Creek		MILES	6.98	5a	5c	AES	Oil and Grease		1		84, 140
						5c	WWAC	Oil and Grease		1		84, 140
						5b	AG	Chloride		1		140
						5a	WWAC	Oxygen, Dissolved		1		84, 85, 140
						5a	PBCR	Enterococcus		1		84, 85, 140
						4a	PBCR	Escherichia coli			38875	84, 85, 140
						5c	PPWS	Oil and Grease		1		84, 140
OK520520000210_00	Canadian River, North		MILES	1.07	5a	4a	PBCR	Enterococcus			38881	92, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		140
						5c	AES	Oil and Grease		3		70
						5c	WWAC	Oil and Grease		3		70
OK520520000230_00	Campbell Creek		MILES	5.89	5a	5a	WWAC	Oxygen, Dissolved		3		46, 108, 136, 140, 156

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Sulfates		3	140	
OK520520000240_00	Mustang Creek		MILES	9.16	5a	4a	PBCR	Escherichia coli			38874	84, 140, 156
						5a	WWAC	Oxygen, Dissolved		3		46, 111, 133, 136, 140, 156
OK520520000250_00	Canadian River, North		MILES	6.52	5a	5a	PBCR	Escherichia coli	X	3		46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Turbidity		3		46, 85, 87, 108, 140
OK520520000260_00	Overholser Lake		ACRES	1500	5a	5a	WWAC	Turbidity		3		140
						5b	AG	Sulfates		3		140
OK520520000350_00	Airport Heights Creek!		MILES	4.26	5a	5a	WWAC	Oxygen, Dissolved		1		34, 84, 111, 133, 140
						5a	WWAC	Turbidity		1		140
OK520530000010_00	Canadian River, North		MILES	10.24	5a	5a	PBCR	Enterococcus		3		4, 46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		3		4, 46, 92, 108, 111, 133, 136, 140
OK520530000010_10	Canadian River, North		MILES	105.34	4a	4a	PBCR	Enterococcus			33888	46, 59, 85, 92, 111, 133, 136, 140
OK520530000030_00	Shell Creek		MILES	9.48	5a	4a	PBCR	Enterococcus			33889	92, 140, 156
						4a	PBCR	Escherichia coli			33889	92, 140, 156
						5a	WWAC	Oxygen, Dissolved		3		92, 140, 156
OK520530000050_00	Sixmile Creek	X	MILES	15.96	5c	5c	WWAC	Macroinvertebrate Bio	X	3		39, 92, 140, 156
OK520530000060_00	Fourmile Creek	X	MILES	4.77	5c	5c	WWAC	Fishes Bioassessments	X	3		92, 140, 156
OK520530000080_00	El Reno Lake		ACRES	170	5a	5a	WWAC	Turbidity		3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520530000190_00	Minnehaha Creek		MILES	7.90	5c	5c	WWAC	Fishes Bioassessments		4	140	
OK520530000270_00	Perimeter Creek!		MILES	3.73	5c	5c	AES	Oil and Grease		3		34, 49, 111, 140
						5c	WWAC	Oil and Grease		3		34, 49, 111, 140
OK520600010010_00	Canadian River		MILES	37.50	5b	4a	PBCR	Enterococcus			35619	46, 59, 85, 92, 108, 111, 133, 136, 140
						5b	AG	Total Dissolved Solids		4		58, 140
OK520600010060_00	Factory Creek		MILES	6.32	4a	4a	PBCR	Escherichia coli			35615	85, 92, 140, 156
OK520600020010_00	Canadian River		MILES	24.35	5a	5a	WWAC	pH		4		140
OK520600020170_00	Julian Creek		MILES	5.19	5a	5a	PBCR	Escherichia coli		4		92, 140, 156
						5b	AG	Chloride		4		49, 102, 140
OK520600020205_00	Red Springs Creek		MILES	1.04	5b	5b	AG	Total Dissolved Solids		4		140
OK520600030010_00	Canadian Sandy Creek		MILES	37.70	5a	5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 59, 92, 108, 111, 133, 136, 140
						5a	PBCR	Enterococcus		4		46, 59, 92, 108, 111, 133, 136, 140
OK520600030020_00	Little Sandy Creek		MILES	8.56	5c	5c	WWAC	Macroinvertebrate Bio		4		140
OK520610010010_05	Canadian River		MILES	32.65	4a	4a	PBCR	Enterococcus			35621	46, 59, 85, 92, 111, 133, 136, 140
OK520610010180_00	Bishop Creek		MILES	7.82	5c	5c	WWAC	Macroinvertebrate Bio	X	3		39, 46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
OK520610010200_00	Merkle Creek		MILES	3.16	5c	5c	WWAC	Macroinvertebrate Bio		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520610010230_00	Cow Creek		MILES	6.71	5a	5a	WWAC	Oxygen, Dissolved		3	140	
						5a	WWAC	Selenium		3	140	
OK520610020060_00	Foreman Creek		MILES	4.77	5a	5a	WWAC	Oxygen, Dissolved		3	46, 92, 108, 133, 136, 140	
OK520610020070_00	Dry Creek		MILES	8.37	5a	5c	PPWS	Oil and Grease		3	34, 49, 97, 111, 140	
						5c	WWAC	Oil and Grease		3	34, 49, 97, 111, 140	
						5a	WWAC	Oxygen, Dissolved		3	34, 92, 133, 136, 140	
						5c	AES	Oil and Grease		3	34, 49, 97, 111, 140	
OK520610020120_00	Buggy Creek		MILES	26.51	5a	4a	PBCR	Enterococcus			35618	4, 46, 85, 92, 100, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			35618	46, 85, 92, 100, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4	49, 102, 140	
						5b	AG	Total Dissolved Solids		4	49, 102, 140	
						5c	WWAC	Macroinvertebrate Bio		4	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
OK520610020150_10	Canadian River		MILES	36.25	5a	4a	PBCR	Enterococcus			35623	46, 59, 85, 92, 111, 133, 136, 140
						5a	FC	Lead		2	49, 85, 140	
OK520610020165_00	Trib8!		MILES	5.97	5a	5a	WWAC	Arsenic		3	70	
						5a	WWAC	Chromium (total)		3	70	
OK520610020210_00	Canyon View Creek		MILES	7.08	5c	5c	WWAC	Fishes Bioassessments		3	46, 49, 59, 87, 92, 102, 108, 111, 136, 140	
OK520610030010_00	Walnut Creek		MILES	28.44	5a	5a	PBCR	Enterococcus		4	46, 85, 92, 100, 108, 111, 128, 133, 136, 140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520610030080_00	Walnut Creek, North Fork		MILES	16.84	5a	4a	PBCR	Enterococcus			35624	92, 140, 156
						4a	PBCR	Escherichia coli			35624	92, 140, 156
						5a	WWAC	Turbidity		4		140, 156
OK520620010120_00	Bear Creek		MILES	6.29	4a	4a	PBCR	Enterococcus			30710	92, 140, 156
						4a	PBCR	Escherichia coli			30710	92, 140, 156
OK520620020010_00	Canadian River		MILES	37.78	5b	5b	AG	Chloride		4		49, 102, 140
OK520620020060_00	Flanders Creek		MILES	4.54	5b	5b	AG	Sulfates		4		155
OK520620020070_00	Fiddlers Creek		MILES	6.89	5b	5b	AG	Sulfates		4		102
OK520620020080_00	Squirrel Creek		MILES	9.80	5b	5b	AG	Sulfates		4		102
OK520620020090_00	Trail Creek		MILES	14.34	5b	5b	AG	Total Dissolved Solids		4		49, 140
						4a	PBCR	Enterococcus			30717	46, 92, 108, 136, 140
						5b	AG	Sulfates		4		49, 140
OK520620030010_00	Canadian River		MILES	38.09	5a	5a	PBCR	Enterococcus		4		140, 156
						5b	AG	Chloride		4		140
						5b	AG	Sulfates		4		140
OK520620030020_00	Lone Creek		MILES	13.18	5b	4a	PBCR	Enterococcus			30718	46, 92, 108, 136, 140
						4a	PBCR	Escherichia coli			30718	46, 92, 108, 136, 140
						5b	AG	Sulfates		4		49, 140
						5b	AG	Total Dissolved Solids		4		49, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520620030050_00	Red Trail Creek		MILES	7.74	5b	5b	AG	Sulfates		4	140	
						4a	PBCR	Escherichia coli			30747	140
						4a	PBCR	Enterococcus			30747	140
OK520620030110_00	Red Creek		MILES	11.82	5b	4a	PBCR	Escherichia coli			30757	140, 156
						5b	AG	Sulfates		4		49, 140
						4a	PBCR	Enterococcus			30757	140, 156
OK520620040050_00	Hackberry Creek		MILES	14.33	5b	4a	PBCR	Enterococcus			30759	46, 92, 108, 136, 140
						4a	PBCR	Escherichia coli			30759	46, 92, 108, 136, 140
						5b	AG	Sulfates		4		49, 140
						5b	AG	Total Dissolved Solids		4		49, 140
OK520620050160_00	Commission Creek		MILES	12.13	4a	4a	PBCR	Enterococcus			30730	46, 92, 108, 136, 140
OK520620060010_00	Deer Creek		MILES	55.58	4a	4a	PBCR	Enterococcus			30723	46, 59, 85, 92, 108, 111, 128, 133, 136, 140
						4a	PBCR	Escherichia coli			30723	140
OK520700010020_00	Eufaula Lake, Canadian River Deep Fork		ACRES	16453	5a	5a	WWAC	Turbidity		1		140
						5c	FC	Mercury	X	1		140
OK520700010080_00	Gentry Creek		MILES	9.64	5a	5a	PBCR	Escherichia coli		1		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		1		46, 87, 92, 108, 136, 140
						5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
OK520700010110_00	Grave Creek		MILES	13.94	5b	5b	AG	Chloride		1		102

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520700010120_00	Canadian River, Deep Fork		MILES	33.41	5c	5c	WWAC	Fishes Bioassessments		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520700010140_00	Coal Creek		MILES	21.72	5c	5c	WWAC	Fishes Bioassessments		1		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520700010170_00	Wolf Creek		MILES	5.70	5c	5c	WWAC	Fishes Bioassessments		1		140
OK520700010180_00	Henryetta Lake		ACRES	450	5a	5a	WWAC	Turbidity		1		140
						5a	WWAC	Lead		1		140
OK520700010220_00	Montezuma Creek		MILES	22.39	5c	5c	WWAC	Fishes Bioassessments		3		140
						5a	WWAC	Oxygen, Dissolved	X	3		39, 140
OK520700020010_10	Canadian River, Deep Fork		MILES	39.26	5a	4a	PBCR	Enterococcus			41134	46, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			41134	46, 85, 87, 111, 140
						5a	WWAC	Sedimentation/Siltation		2		46, 87, 108, 140
						5c	WWAC	Fishes Bioassessments		2		46, 85, 87, 108, 140
OK520700020040_00	Okmulgee Lake		ACRES	668	5a	5a	WWAC	Oxygen, Dissolved		3		140
OK520700020060_00	Dripping Springs Lake (Salt Creek Structure 1)		ACRES	1150	5a	5a	WWAC	Lead	X	3		140
						5a	WWAC	Turbidity		3		140
						5c	FC	Mercury	X	3		140
OK520700020080_00	Adams Creek		MILES	13.33	5a	5a	WWAC	Oxygen, Dissolved		3		140
OK520700020150_00	Salt Creek		MILES	12.59	5a	5b	AG	Chloride		3		140
						5a	WWAC	Oxygen, Dissolved		3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520700020155_00	Begger Creek!		MILES	3.61	5b	5b	AG	Chloride		3	102	
						5b	AG	Total Dissolved Solids		3	102	
OK520700020200_00	Nuyaka Creek		MILES	21.72	5a	5a	PBCR	Escherichia coli	X	3	140	
						5a	WWAC	Oxygen, Dissolved		3	39, 140	
						5a	WWAC	Turbidity		3	140	
						5c	WWAC	Macroinvertebrate Bio	X	3	39, 140	
OK520700030020_00	Walnut Creek		MILES	14.71	5a	5a	WWAC	Turbidity		3	140	
OK520700030040_00	Sandy Creek	X	MILES	5.21	5c	5c	WWAC	Fishes Bioassessments	X	3	140	
OK520700030100_00	Salt Creek		MILES	22.35	5a	4a	PBCR	Enterococcus			41065	46, 59, 85, 92, 108, 111, 128, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	4	39, 140	
						5b	AG	Chloride	X	4	140	
OK520700030220_00	Camp Creek		MILES	5.14	5c	4a	PBCR	Enterococcus			41066	46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520700030240_00	Stroud Lake	X	ACRES	600	5c	5c	FC	Mercury	X	4	140	
OK520700030270_00	Hilliby Creek		MILES	13.39	5c	5c	WWAC	Fishes Bioassessments		4	140	
OK520700040010_00	Canadian River, Deep Fork		MILES	18.10	4a	4a	PBCR	Enterococcus			41069	46, 85, 92, 108, 111, 133, 136, 140
OK520700040020_00	Dry Creek		MILES	28.27	4a	4a	PBCR	Enterococcus			41070	46, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			41070	46, 49, 85, 87, 102, 108, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520700040180_00	Deer Creek		MILES	16.30	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520700040220_00	Prague Lake	X	ACRES	225	5c	5c	FC	Mercury	X	3		140
OK520700040260_00	Quapaw Creek		MILES	26.81	5a	4a	PBCR	Enterococcus			41072	46, 92, 108, 111, 128, 133, 136, 140
						5c	WWAC	Macroinvertebrate Bio	X	3		39, 46, 92, 111, 133, 136, 140
						5c	WWAC	Fishes Bioassessments	X	3		46, 92, 111, 133, 136, 140
OK520700040370_00	Meeker Lake		ACRES	250	5a	5a	WWAC	Turbidity		3		140
						5c	FC	Mercury	X	3		140
OK520700050010_00	Canadian River, Deep Fork		MILES	25.60	5c	5c	WWAC	Fishes Bioassessments		2		140
OK520700050020_00	Bellcow Creek		MILES	5.75	4a	4a	PBCR	Enterococcus			41078	85, 140
OK520700050025_00	Bellcow Lake		ACRES	1153	5a	5a	WWAC	Turbidity		2		140
OK520700050060_00	Chandler Lake		ACRES	129	5a	5a	PPWS	Chlorophyll-a		1		140
						5a	WWAC	Turbidity		1		140
OK520700050080_00	Bellcow Creek, North		MILES	4.56	5c	5c	AES	Oil and Grease		2		124
						5c	WWAC	Oil and Grease		2		124
OK520700050170_00	Bear Creek	X	MILES	26.06	5a	5a	WWAC	Oxygen, Dissolved	X	2		39, 140
OK520700050200_00	Opossum Creek		MILES	7.37	4a	4a	WWAC	Turbidity			41077	140, 156
OK520700050250_00	Chandler Lake, NW Trib!		MILES	2.36	5c	5c	WWAC	Oil and Grease		2		124
						5c	PPWS	Oil and Grease		2		124

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5c	AES	Oil and Grease		2	124	
OK520700050270_00	West Captain Creek, Unnamed Trib of		MILES	6.26	5c	5c	WWAC	Fishes Bioassessments		4	140	
OK520700060010_00	Little Deep Fork Creek	X	MILES	20.30	5c	5c	WWAC	Fishes Bioassessments	X	3	140	
OK520700060050_00	Browns Creek		MILES	13.93	5a	5a	WWAC	Oxygen, Dissolved		3	140	
OK520700060130_10	Little Deep Fork Creek		MILES	24.39	5a	4a	WWAC	Turbidity			41133	140
						5a	PBCR	Enterococcus		3	140	
						5a	PBCR	Escherichia coli		3	140	
OK520700060140_00	Catfish Creek		MILES	9.94	5b	4a	WWAC	Turbidity			41132	140
						5b	AG	Chloride		3	140	
						5b	AG	Total Dissolved Solids		3	140	
OK520700060210_00	Spring Creek, West		MILES	7.28	5b	5b	AG	Total Dissolved Solids		3	102	
						5b	AG	Chloride		3	102	
OK520710010010_00	Canadian River, Deep Fork		MILES	7.70	5a	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Macroinvertebrate Bio		2	140	
						5a	PBCR	Enterococcus		2		46, 59, 85, 92, 108, 111, 128, 133, 136, 140
						5a	PBCR	Escherichia coli		2		46, 59, 85, 92, 108, 111, 128, 133, 136, 140
OK520710020020_00	Arcadia Lake		ACRES	1820	5a	5a	PPWS	Chlorophyll-a		2	140	
						5a	WWAC	Turbidity		2	140	

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK520710020030_00	Spring Creek		MILES	5.27	5a	5a	PBCR	Escherichia coli		2		84, 140
						5c	WWAC	Macroinvertebrate Bio		2		39, 46, 49, 59, 72, 87, 92, 102, 108, 111, 136, 140
OK520710020140_00	Guy James Creek	X	MILES	1.97	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 140
OK520800010010_00	Little River		MILES	24.80	5a	4a	PBCR	Enterococcus			35625	46, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Turbidity		2		46, 87, 108, 140
OK520800010040_00	Holdenville Lake		ACRES	550	5a	5a	WWAC	Oxygen, Dissolved		1		140
						5a	WWAC	Turbidity		1		140
						5a	PPWS	Chlorophyll-a		1		140
OK520800010050_00	Bird Creek		MILES	13.81	5a	5b	AG	Chloride		2		49, 102, 140
						5c	HLAC	Macroinvertebrate Bio		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520800010055_00	Kight Creek		MILES	4.55	5b	5b	AG	Chloride		2		102
						5b	AG	Total Dissolved Solids		2		102
OK520800010060_00	Cudjo Creek		MILES	5.88	5a	5a	WWAC	pH		2		140
						5b	AG	Chloride		2		102
						5b	AG	Total Dissolved Solids		2		102
OK520800010062_00	Bear Cub Creek		MILES	1.05	5a	5a	WWAC	pH		2		102
OK520800010090_00	Little River		MILES	28.45	5b	5b	AG	Chloride		2		102
OK520800010130_00	Little River		MILES	17.11	5b	5b	AG	Total Dissolved Solids		4		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Chloride		4		49, 102, 140
OK520800010150_00	Bird Creek, Unnamed Tributary of		MILES	5.15	5c	5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK520800030010_00	Salt Creek		MILES	39.02	5a	5a	PBCR	Enterococcus		4		4, 46, 85, 87, 100, 108, 111, 133, 136, 140
						5b	AG	Chloride		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio	X	4		39, 49, 102, 140
OK520800030070_00	Bruno Creek		MILES	10.32	5b	5b	AG	Chloride		4		102
						5b	AG	Total Dissolved Solids		4		102
OK520800030080_00	Popshego Creek		MILES	4.38	5b	5b	AG	Total Dissolved Solids		4		102
						5b	AG	Chloride		4		102
						5b	PPWS	Barium		4		102
OK520800030120_00	Blacksmith Creek		MILES	5.99	5b	5b	AG	Total Dissolved Solids		4		102
						5b	AG	Chloride		4		102
OK520810000020_00	Thunderbird Lake		ACRES	6070	4a	4a	PPWS	Chlorophyll-a			55040	140
						4a	WWAC	Oxygen, Dissolved			55040	140
						4a	WWAC	Turbidity	X		55040	140
OK520810000030_00	Hog Creek		MILES	11.89	5a	5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
OK520810000040_00	Hog Creek, West Branch		MILES	3.69	5a	5a	WWAC	Oxygen, Dissolved		1		34, 111, 133, 136, 140
OK520810000080_00	Little River		MILES	18.64	5a	5b	AG	Total Dissolved Solids		1		49, 102, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		1		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		1		46, 59, 87, 92, 108, 111, 133, 136, 140
OK520810000090_00	Rock Creek		MILES	5.99	5a	5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		1		46, 92, 108, 111, 133, 136, 140
OK520810000100_00	Elm Creek		MILES	1.44	5a	5a	PBCR	Escherichia coli		1		140
						5a	WWAC	Turbidity		1		140
						5b	AG	Total Dissolved Solids		1		140
OK520810000110_00	Elm Creek, East		MILES	2.40	5a	5a	WWAC	Oxygen, Dissolved		1		34, 108, 111, 133, 136, 140
OK520810000130_00	Stanley Draper Lake		ACRES	2900	5a	5a	WWAC	Turbidity		1		140
						5c	FC	Mercury		1		140
OK520810000140_00	Elm Creek, West		MILES	8.00	5a	5a	PBCR	Enterococcus		1		46, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		1		46, 92, 108, 111, 133, 136, 140
OK520810000175_00	Moore Creek		MILES	4.02	5b	5b	AG	Total Dissolved Solids		1		102
OK620900010020_00	Keystone Lake, Cimarron River Arm, Lower		ACRES	4673	5a	5a	WWAC	Turbidity		2		140
OK620900010090_00	Keystone Lake, Cimarron River Arm, Upper		ACRES	5550	5a	5a	WWAC	Turbidity		2		140
OK620900010170_10	Cimarron River		MILES	26.58	5a	4a	PBCR	Enterococcus			42499	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			42499	46, 85, 87, 108, 140
						5a	FC	Lead		2		49, 85, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	pH		2	140	
						5c	WWAC	Fishes Bioassessments		2		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK620900010180_00	Lagoon Creek		MILES	18.55	4a	4a	PBCR	Enterococcus			42501	46, 92, 108, 136, 140
OK620900010290_00	Euchee Creek		MILES	9.56	4a	4a	PBCR	Enterococcus			42509	46, 59, 85, 92, 108, 111, 133, 136, 140
OK620900010310_00	Cottonwood Creek		MILES	6.26	5a	4a	PBCR	Enterococcus			42504	85, 140
						4a	PBCR	Escherichia coli			42504	85, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 85, 87, 108, 140
OK620900010360_00	Skull Creek	X	MILES	8.69	5a	5a	WWAC	Lead	X	2		140
						5a	FC	Lead	X	2		140
OK620900020020_00	Salt Creek		MILES	14.71	5a	4a	PBCR	Escherichia coli			42512	46, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	2		39, 46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			42512	46, 92, 108, 136, 140
OK620900020050_00	Council Creek		MILES	21.94	5a	4a	PBCR	Enterococcus			42511	46, 92, 108, 136, 140
						4a	WWAC	Turbidity			42511	46, 49, 87, 102, 108, 140
						5a	WWAC	Oxygen, Dissolved		2		46, 59, 87, 92, 108, 111, 136, 140
OK620900020060_00	Feather Creek	X	MILES	6.01	5c	5c	WWAC	Fishes Bioassessments	X	2		140
OK620900020120_00	Cushing Lake		ACRES	591	5a	5a	WWAC	Turbidity		2		140
						5c	FC	Mercury	X	2		140
OK620900030010_00	Cimarron River		MILES	42.09	5a	4a	PBCR	Enterococcus			42492	46, 59, 85, 92, 108, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	FC	Lead		2		49, 85, 140
OK620900030080_00	Dugout Creek		MILES	13.58	4a	4a	PBCR	Enterococcus			42513	46, 92, 100, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			42513	46, 92, 100, 108, 111, 133, 136, 140
OK620900030230_00	Beaver Creek		MILES	12.65	5a	4a	PBCR	Enterococcus			42502	46, 92, 108, 111, 128, 133, 136, 140
						4a	WWAC	Turbidity			42502	21, 46, 49, 87, 102, 108, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 49, 87, 102, 108, 140
						5b	AG	Chloride	X	4		46, 49, 87, 102, 108, 140
OK620900030260_00	Beaver Creek, West		MILES	13.21	5a	4a	WWAC	Turbidity			42505	140, 156
						5a	PBCR	Enterococcus		4		92, 140, 156
						5a	PBCR	Escherichia coli		4		92, 140, 156
OK620900040040_00	Stillwater Creek		MILES	3.53	4a	4a	PBCR	Enterococcus			42510	46, 69, 85, 92, 100, 108, 111, 128, 133, 136, 140
						4a	PBCR	Escherichia coli			42510	46, 69, 85, 92, 100, 108, 111, 128, 133, 136, 140
						4a	WWAC	Turbidity			42510	46, 49, 87, 102, 108, 140
OK620900040050_00	Little Stillwater Creek		MILES	13.91	5a	5a	PPWS	Nitrates		2		85, 92
OK620900040070_10	Stillwater Creek		MILES	16.43	5a	5a	HLAC	Oxygen, Dissolved		2		46, 87, 92, 100, 108, 111, 133, 136, 140
OK620900040140_00	Boomer Creek	X	MILES	2.28	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 140
OK620900040150_00	Sanborn-Hazen Lake Creek	X	MILES	3.59	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 140
OK620900040180_00	Boomer Creek	X	MILES	6.49	5c	5c	WWAC	Macroinvertebrate Bio	X	2		39, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK620900040190_00	Boomer Lake		ACRES	260	5a	5a	PPWS	Chlorophyll-a		2	140	
						5a	WWAC	Oxygen, Dissolved		2	140	
						5a	WWAC	Turbidity		2	140	
						5c	FC	Mercury		2	140	
OK620900040240_00	McMurtry Lake		ACRES	1155	5a	5a	WWAC	Turbidity		2	140	
OK620900040270_10	Stillwater Creek		MILES	6.42	5a	5a	WWAC	Turbidity		2	140	
						5a	PBCR	Escherichia coli		2	46, 92, 108, 111, 133, 136, 140	
						5a	WWAC	Oxygen, Dissolved		2	140	
OK620900040280_00	Carl Blackwell Lake		ACRES	3370	5a	5c	FC	Mercury	X	2	140	
						5a	WWAC	Turbidity		2	140	
						4a	PPWS	Chlorophyll-a			66037	140
OK620910010010_00	Cimarron River		MILES	8.33	5a	4a	PBCR	Enterococcus			37386	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	PBCR	Escherichia coli		4		46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Turbidity		4		46, 85, 87, 108, 140
OK620910020010_00	Cimarron River		MILES	17.84	5a	4a	PBCR	Enterococcus			40623	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			40623	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Selenium		4		140
OK620910020010_10	Cimarron River		MILES	41.63	5a	5b	AG	Chloride		3		49, 140
						5c	WWAC	Fishes Bioassessments	X	3		140
						5b	AG	Sulfates		3		49, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Selenium		3	140	
						4a	PBCR	Escherichia coli			40622	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus	X		40622	46, 59, 85, 92, 111, 133, 136, 140
						5b	AG	Total Dissolved Solids		3		49, 140
OK620910020040_00	Cooper Creek		MILES	40.27	5a	4a	PBCR	Enterococcus			37387	46, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
OK620910020100_00	Salt Creek		MILES	4.43	5a	5b	AG	Chloride	X	4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Sulfates	X	4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio	X	4		39, 46, 49, 59, 87, 92, 102, 108, 111, 136, 140
						5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK620910020250_00	Deep Creek		MILES	25.42	5a	4a	PBCR	Enterococcus			37396	46, 92, 108, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5a	WWAC	Turbidity		4		46, 49, 87, 102, 108, 140
OK620910020270_00	Elm Creek		MILES	14.15	5b	4a	PBCR	Enterococcus			37398	92, 140, 156
						4a	PBCR	Escherichia coli			37398	92, 140, 156
						4a	WWAC	Turbidity			38651	140, 156
						5b	AG	Sulfates		4		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK620910020310_00	Indian Creek		MILES	16.71	4a	4a	PBCR	Enterococcus			37399	46, 69, 85, 92, 108, 111, 133, 136, 140
OK620910030010_00	Skeleton Creek		MILES	32.84	5a	4a	PBCR	Enterococcus			37402	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			38652	21, 46, 49, 87, 97, 108, 140
						5a	WWAC	Selenium		4		140
						5c	WWAC	Oil and Grease	X	4		46, 49, 87, 102, 108, 140
OK620910030040_00	Otter Creek		MILES	30.15	4a	4a	PBCR	Enterococcus			42583	46, 59, 92, 108, 111, 128, 133, 136, 140
OK620910040010_00	Cottonwood Creek		MILES	22.01	5a	5a	PBCR	Enterococcus		2		4, 46, 92, 100, 108, 111, 128, 133, 136, 140
						5a	PBCR	Escherichia coli		2		4, 46, 92, 100, 108, 111, 128, 133, 136, 140
OK620910040010_20	Cottonwood Creek		MILES	24.39	4a	4a	PBCR	Enterococcus			37407	140
						4a	PBCR	Escherichia coli			37407	140
						4a	WWAC	Turbidity			38653	140
OK620910040060_00	Guthrie Lake		ACRES	274	5a	4a	PPWS	Chlorophyll-a			41750	140
						5a	PBCR	Enterococcus		2		140
						5a	WWAC	Turbidity		2		140
OK620910040080_00	Liberty Lake		ACRES	167	5a	4a	PPWS	Chlorophyll-a			41751	140
						5a	PBCR	Enterococcus		2		140
						5a	WWAC	Turbidity	X	2		140
OK620910040100_00	Chisholm Creek		MILES	21.15	5a	5a	PPWS	Nitrates		2		140
						5c	WWAC	Macroinvertebrate Bio	X	2		39, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK620910040120_00	Deer Creek		MILES	12.67	4a	4a	PBCR	Enterococcus			37408	68, 84, 85, 140, 156
						4a	PBCR	Escherichia coli			37408	68, 84, 85, 140, 156
						4a	WWAC	Turbidity			38654	140, 156
OK620910040140_00	Bluff Creek		MILES	9.32	5a	4a	PBCR	Enterococcus			42517	85, 140
						5a	PBCR	Escherichia coli		2		84, 85, 140
OK620910050010_00	Kingfisher Creek		MILES	47.37	5a	4a	PBCR	Enterococcus			37410	46, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			37410	46, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 92, 108, 111, 133, 136, 140
OK620910050020_00	Trail Creek		MILES	14.87	5a	5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
						4a	PBCR	Enterococcus			37412	140
						4a	PBCR	Escherichia coli			37412	140
OK620910050030_00	Uncle Johns Creek		MILES	27.49	4a	4a	PBCR	Enterococcus			37413	46, 92, 108, 111, 128, 133, 136, 140
						4a	PBCR	Escherichia coli			37413	46, 92, 108, 111, 128, 133, 136, 140
OK620910050080_00	Winter Camp Creek		MILES	24.23	5a	4a	PBCR	Enterococcus			37414	46, 85, 92, 100, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK620910050150_00	Winter Camp Creek!		MILES	7.73	5b	5b	AG	Sulfates		4		140
OK620910060010_00	Turkey Creek		MILES	82.59	5a	4a	PBCR	Enterococcus			30704	46, 85, 92, 108, 111, 128, 133, 136, 140
						5a	PBCR	Escherichia coli		4		46, 85, 92, 108, 111, 128, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK620910060020_00	Little Turkey Creek		MILES	11.37	4a	4a	PBCR	Enterococcus			30706	46, 92, 108, 111, 133, 136, 140
OK620910060030_00	Buffalo Creek		MILES	13.99	5a	4a	WWAC	Turbidity			30707	140
						5a	WWAC	Oxygen, Dissolved		4		140
OK620910060110_00	Clear Creek		MILES	5.18	5a	5a	WWAC	Turbidity		4		140
OK620920010010_00	Cimarron River		MILES	43.01	4a	4a	PBCR	Enterococcus			40624	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			40624	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			40624	46, 85, 87, 108, 140
OK620920010080_00	Cottonwood Creek		MILES	21.88	5b	4a	WWAC	Turbidity			40618	140, 156
						5b	AG	Sulfates		4		49, 102, 140
OK620920010130_00	Griever Creek		MILES	20.28	5a	4a	PBCR	Enterococcus			40621	92, 140, 156
						5a	PBCR	Escherichia coli		3		92, 140, 156
						5b	AG	Sulfates		3		46, 102, 140
						5c	WWAC	Macroinvertebrate Bio		3		140
OK620920010140_00	Griever Creek, East		MILES	13.36	5a	5a	PBCR	Enterococcus		3		46, 92, 108, 136, 140
						5b	AG	Sulfates		3		49, 102, 140
OK620920010180_00	Main Creek		MILES	19.10	5b	5b	AG	Sulfates		3		49, 140
						4a	PBCR	Enterococcus			40617	46, 92, 108, 136, 140
OK620920020010_00	Cimarron River		MILES	32.63	5a	5c	FC	Mercury		3		140
						5c	WWAC	Fishes Bioassessments		3		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Total Dissolved Solids		3		49, 140
						5b	AG	Chloride		3		49, 140
						5a	WWAC	Selenium		3		140
						4a	PBCR	Escherichia coli			40615	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	PBCR	Enterococcus	X	3		46, 59, 85, 92, 111, 133, 136, 140
OK620920020060_00	Doe Creek		MILES	17.50	5c	5c	WWAC	Fishes Bioassessments		3		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK620920020080_00	Long Creek		MILES	17.76	5a	4a	PBCR	Enterococcus			40616	46, 92, 108, 133, 136, 140
						5a	WWAC	Ammonia (Un-ionized)	X	3		140
						5b	AG	Sulfates	X	3		140
OK620920020170_00	Traders Creek		MILES	22.09	5a	5a	PBCR	Enterococcus		3		140, 156
						5b	AG	Sulfates		3		49, 102, 140
OK620920030010_00	Cimarron River		MILES	24.35	5a	4a	PBCR	Enterococcus			40609	46, 59, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			40609	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Sedimentation/Siltation		3		46, 87, 108, 140
						5b	AG	Chloride		3		49, 140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
						5c	WWAC	Macroinvertebrate Bio		3		46, 87, 108, 140
						5c	WWAC	Fishes Bioassessments		3		46, 87, 108, 140
OK620920040010_00	Eagle Chief Creek		MILES	73.43	4a	4a	PBCR	Enterococcus			40625	46, 92, 108, 111, 128, 133, 136, 140
OK620920040110_00	Little Eagle Chief Creek		MILES	24.99	5b	5b	AG	Chloride		4		102

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK620920050010_00	Buffalo Creek		MILES	49.75	5b	4a	PBCR	Enterococcus			40612	46, 92, 108, 136, 140
						5b	AG	Sulfates		3		49, 102, 140
OK620920050050_00	Sand Creek		MILES	26.02	5a	4a	PBCR	Enterococcus			40614	46, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		3		49, 102, 140
						4a	PBCR	Escherichia coli			40614	46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		3		46, 59, 87, 92, 108, 111, 133, 136, 140
OK620930000010_00	Cimarron River		MILES	37.66	5a	4a	PBCR	Enterococcus			40587	46, 59, 85, 92, 108, 111, 133, 136, 140
						5a	WWAC	Selenium		4		140
						5c	WWAC	Macroinvertebrate Bio	X	4		140
OK620930000100_00	Crooked Creek		MILES	6.38	5b	4a	PBCR	Enterococcus			40588	4, 46, 92, 100, 108, 111, 133, 136, 140
						5b	AG	Chloride	X	4		140
						5b	AG	Sulfates	X	4		140
						5b	AG	Total Dissolved Solids	X	4		140
OK621000010010_30	Arkansas River, Salt Fork		MILES	34.45	4a	4a	PBCR	Enterococcus			41080	46, 108, 136, 140
						4a	WWAC	Turbidity			41080	46, 85, 87, 108, 140
OK621000020040_00	Wild Horse Creek		MILES	24.66	5a	5a	PBCR	Escherichia coli		4		46, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 136, 140
OK621000020130_00	Spring Creek		MILES	6.14	5a	5a	PBCR	Enterococcus		4		140
						5a	PBCR	Escherichia coli		4		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK621000030010_00	Bois d' Arc Creek		MILES	36.88	5a	4a	PBCR	Enterococcus			41129	46, 59, 92, 108, 111, 133, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 92, 97, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity	X		41129	46, 49, 87, 108, 140
						5c	WWAC	Macroinvertebrate Bio		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK621000030050_00	Cattle Creek, West		MILES	8.56	5b	5b	AG	Sulfates		4		140
OK621000030090_00	Spring Creek		MILES	3.40	5c	5c	WWAC	Macroinvertebrate Bio		4		46, 49, 59, 92, 97, 102, 108, 111, 136, 140
OK621000040010_00	Deer Creek		MILES	40.81	4a	4a	PBCR	Enterococcus			41084	46, 92, 108, 136, 140
OK621000050010_00	Pond Creek		MILES	60.22	4a	4a	PBCR	Enterococcus			41115	46, 59, 92, 108, 136, 140
OK621000060010_00	Crooked Creek		MILES	32.88	4a	4a	PBCR	Enterococcus			41116	46, 92, 108, 136, 140
OK621000060060_00	Duel Creek		MILES	10.35	5b	5b	AG	Sulfates		4		140
OK621010010010_00	Arkansas River, Salt Fork		MILES	17.34	4a	4a	WWAC	Turbidity			41121	21, 46, 49, 87, 108, 140
OK621010010020_00	Great Salt Plains Lake		ACRES	8690	5a	5a	WWAC	Turbidity		2		140
						5a	PBCR	Enterococcus		2		140
OK621010010130_00	Clay Creek, West		MILES	22.92	5a	5a	PBCR	Enterococcus		2		46, 92, 108, 111, 133, 136, 140
						5b	AG	Chloride		2		49, 102, 140
						5b	AG	Total Dissolved Solids		2		49, 102, 140
						5b	AG	Sulfates		2		49, 102, 140
OK621010010160_00	Arkansas River, Salt Fork		MILES	14.96	4a	4a	PBCR	Enterococcus			41122	46, 100, 108, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	PBCR	Escherichia coli			41122	46, 100, 108, 136, 140
						4a	WWAC	Turbidity			41122	46, 85, 87, 108, 140
OK621010010230_00	Turkey Creek		MILES	20.80	5b	5b	AG	Total Dissolved Solids		4		49, 102, 140
						4a	PBCR	Enterococcus			41098	46, 92, 100, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			41098	46, 92, 100, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
OK621010010240_00	Boggy Creek		MILES	16.43	5b	5b	AG	Sulfates		4		140
OK621010010270_00	Yellowstone Creek		MILES	21.82	5b	4a	PBCR	Enterococcus			41123	46, 92, 108, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 97, 140
OK621010020010_00	Sandy Creek		MILES	17.81	4a	4a	PBCR	Enterococcus			41124	46, 92, 108, 136, 140
OK621010030010_00	Medicine Lodge River		MILES	13.47	4a	4a	PBCR	Enterococcus			41119	46, 92, 108, 136, 140
OK621010030030_00	Driftwood Creek		MILES	38.79	4a	4a	PBCR	Enterococcus			41117	46, 92, 108, 136, 140
						4a	WWAC	Turbidity			41117	21, 46, 49, 87, 102, 108, 140
OK621010030080_00	Capron Creek, North		MILES	8.09	5b	5b	AG	Sulfates		4		140
OK621100000010_00	Chikaskia River		MILES	5.39	4a	4a	PBCR	Enterococcus			41088	46, 92, 108, 128, 136, 140
						4a	WWAC	Turbidity	X		41088	140
OK621100000010_10	Chikaskia River		MILES	23.11	4a	4a	PBCR	Enterococcus			41128	46, 85, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	WWAC	Turbidity			41128	46, 85, 87, 108, 140
OK621100000010_20	Chikaskia River		MILES	12.81	5a	5a	PBCR	Enterococcus		4		46, 92, 108, 128, 136, 140
OK621100000030_00	Duck Creek		MILES	25.78	5a	5a	PBCR	Enterococcus		3		140
						5a	PBCR	Escherichia coli		3		140
OK621100000040_00	Peckham Creek		MILES	9.29	5b	5b	AG	Sulfates		3		102
OK621100000070_00	Grainville Creek		MILES	6.32	5b	5b	AG	Sulfates		3		102
OK621100000100_00	Bitter Creek		MILES	23.33	5a	4a	PBCR	Enterococcus			41086	46, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
						5b	AG	Sulfates		4		49, 102, 140
						5b	AG	Total Dissolved Solids		4		49, 102, 140
						5b	AG	Chloride		4		49, 102, 140
OK621100000130_00	Scatter Creek		MILES	7.58	5b	5b	AG	Chloride		4		102
						5b	AG	Sulfates		4		102
OK621200010020_00	Keystone Lake		ACRES	3980	5a	5a	WWAC	Turbidity		2		140
OK621200010050_00	Keystone Lake, Arkansas River Arm		ACRES	9491	5a	5a	WWAC	Turbidity		2		140
OK621200010200_00	Arkansas River		MILES	37.49	4a	4a	PBCR	Enterococcus			41096	46, 85, 108, 111, 136, 140
OK621200010270_00	Cleveland Lake		ACRES	159	5a	5a	WWAC	Turbidity		2		140
OK621200010400_00	Gray Horse Creek		MILES	15.94	4a	4a	PBCR	Enterococcus			37062	46, 92, 108, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						4a	PBCR	Escherichia coli			37062	46, 92, 108, 133, 140
OK621200020020_00	Doga Creek		MILES	9.85	5a	4a	PBCR	Enterococcus			37063	46, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		39, 46, 59, 87, 92, 108, 111, 133, 136, 140
OK621200020210_00	Lake Ponca		ACRES	403	5a	5a	PPWS	Chlorophyll-a		1		140
OK621200030010_00	Black Bear Creek		MILES	68.02	4a	4a	PBCR	Enterococcus			41131	46, 85, 92, 108, 111, 128, 133, 136, 140
						4a	WWAC	Turbidity			39182	21, 46, 49, 87, 102, 108, 140
OK621200030100_00	Pawnee Lake		ACRES	257	5a	5a	PPWS	Chlorophyll-a		1		140
						5a	WWAC	Turbidity		1		140
OK621200030260_00	Black Bear Creek		MILES	17.16	5b	5a	WWAC	Turbidity	X	3		49, 102, 140
						5b	AG	Chloride		3		140
						5b	AG	Total Dissolved Solids		3		49, 102, 140
OK621200030260_10	Black Bear Creek		MILES	11.65	5b	5b	AG	Chloride		3		140
OK621200030270_00	Cow Creek		MILES	12.97	5a	5a	PBCR	Enterococcus		3		85, 140
						5a	PBCR	Escherichia coli		3		85, 140
OK621200030350_00	Perry Lake		ACRES	614	5a	5a	WWAC	Turbidity		3		140
OK621200030396_00	Lucien Creek		MILES	3.62	5b	5b	AG	Chloride		3		102
OK621200030420_00	Garber Creek		MILES	5.62	5b	5b	AG	Chloride		3		102
OK621200030490_00	Garber Field!		MILES	3.42	5b	5b	AG	Chloride		3		102

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK621200030500_00	St. John!		MILES	2.58	5b	5b	AG	Chloride		3	140	
OK621200030510_00	Shale!		MILES	2.54	5b	5b	AG	Chloride		3	102	
OK621200030560_00	Lutheran!		MILES	2.76	5b	5b	AG	Chloride		3	140	
OK621200040010_00	Salt Creek		MILES	17.29	4a	4a	PBCR	Enterococcus			37061	46, 85, 92, 108, 111, 133, 136, 140
OK621200040010_10	Salt Creek		MILES	43.97	4a	4a	PBCR	Enterococcus			37059	46, 92, 108, 136, 140
OK621200040040_00	Fairfax Lake		ACRES	111	5a	5a	PPWS	Chlorophyll-a		1	140	
OK621200050010_00	Red Rock Creek		MILES	36.92	5a	4a	PBCR	Enterococcus			41108	46, 59, 85, 92, 108, 111, 128, 133, 136, 140
						4a	WWAC	Turbidity			41108	21, 46, 49, 87, 108, 140
						5a	WWAC	Oxygen, Dissolved	X	4		39, 46, 49, 87, 102, 108, 140
OK621200050010_10	Red Rock Creek		MILES	46.89	4a	4a	PBCR	Enterococcus			59184	46, 85, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			41113	46, 92, 108, 128, 136, 140
						4a	WWAC	Turbidity			41113	21, 46, 49, 87, 108, 140
OK621200050160_00	Grassy Creek		MILES	11.30	5a	5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
						5a	WWAC	Turbidity		4		46, 49, 87, 102, 108, 140
OK621200050170_00	Doe Creek		MILES	6.66	5c	5c	WWAC	Macroinvertebrate Bio		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140
OK621210000020_00	Kaw Lake, Lower		ACRES	7208	5a	5c	FC	Mercury		1	140	
						5a	WWAC	Turbidity		1	140	
OK621210000030_10	Arkansas River		MILES	14.44	5b	5b	AG	Total Dissolved Solids		4		49, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5b	AG	Sulfates		4		49, 140
						4a	PBCR	Enterococcus			59185	46, 85, 108, 111, 136, 140
						4a	WWAC	Turbidity			59185	46, 85, 87, 108, 140
OK621210000040_00	Kaw Lake, Upper		ACRES	9009	5a	5a	WWAC	Turbidity		4		140
						5c	FC	Mercury		4		140
OK621210000050_10	Beaver Creek		MILES	21.58	5a	4a	PBCR	Enterococcus			41090	46, 92, 108, 136, 140
						5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK621210000270_00	Chilocco Creek		MILES	16.31	4a	4a	PBCR	Enterococcus			41089	85, 92, 140, 156
						4a	PBCR	Escherichia coli			41089	85, 92, 140, 156
						4a	WWAC	Turbidity			41089	46, 49, 87, 102, 108, 140
OK720500010010_00	Canadian River, North		MILES	37.36	5a	5c	WWAC	Fishes Bioassessments		3		140
						4a	PBCR	Enterococcus			59186	46, 59, 85, 92, 111, 133, 136, 140
						5a	WWAC	Sedimentation/Siltation		3		46, 87, 108, 140
OK720500010020_00	Canton Lake		ACRES	7910	5a	5c	FC	Mercury	X	3		140
						5a	WWAC	Turbidity		3		140
OK720500010070_00	Bent Creek		MILES	18.13	4a	4a	PBCR	Enterococcus			59187	46, 92, 108, 136, 140
						4a	PBCR	Escherichia coli			59187	46, 92, 108, 136, 140
						4a	AG	Sulfates			60920	49, 102, 140
OK720500010140_10	Beaver River (North Canadian)		MILES	11.50	4a	4a	PBCR	Enterococcus			59200	46, 59, 85, 92, 111, 133, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK720500010150_00	Persimmon Creek		MILES	13.45	4a	4a	PBCR	Enterococcus			59202	46, 108, 128, 136, 140
OK720500010200_00	Indian Creek		MILES	17.03	4a	4a	PBCR	Enterococcus			59203	46, 59, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			59203	46, 59, 92, 108, 111, 133, 136, 140
OK720500020010_00	Beaver River (North Canadian)		MILES	40.07	5a	5a	WWAC	Oxygen, Dissolved	X	4	140	
						4a	PBCR	Enterococcus			39225	46, 59, 108, 128, 136, 140
						5a	PBCR	Escherichia coli		4		46, 59, 108, 128, 136, 140
						5a	FC	Lead		4	140	
OK720500020030_00	Wolf Creek		MILES	5.57	4a	4a	PBCR	Enterococcus			39240	46, 92, 108, 111, 133, 136, 140
						4a	WWAC	Turbidity			39240	21, 46, 49, 87, 108, 140
OK720500020050_00	Otter Creek		MILES	13.55	4a	4a	PBCR	Enterococcus			39234	92, 140, 156
						4a	PBCR	Escherichia coli			39234	92, 140, 156
OK720500020070_00	Clear Creek		MILES	29.74	4a	4a	PBCR	Enterococcus			39227	46, 59, 92, 100, 108, 128, 136, 140
OK720500020100_00	Spring Creek		MILES	6.67	5a	4a	PBCR	Enterococcus			39237	46, 92, 100, 108, 111, 128, 133, 136, 140
						4a	PBCR	Escherichia coli			39237	46, 92, 100, 108, 111, 128, 133, 136, 140
						5c	WWAC	Fishes Bioassessments		4	140	
OK720500020130_00	Kiowa Creek		MILES	34.54	5a	4a	PBCR	Enterococcus			39233	46, 92, 108, 136, 140
						4a	PBCR	Escherichia coli			39233	4, 46, 92, 108, 111, 133, 136, 140
						5c	WWAC	Fishes Bioassessments		4		46, 49, 59, 87, 92, 102, 108, 111, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK720500020140_00	Beaver River (North Canadian)		MILES	38.96	5a	5a	WWAC	Sedimentation/Siltation		4	140	
						5c	WWAC	Fishes Bioassessments		4	140	
						5c	WWAC	Macroinvertebrate Bio		4	140	
						4a	AG	Chloride			60940	58, 140
						4a	PBCR	Enterococcus			39224	46, 59, 108, 128, 136, 140
						5a	FC	Lead		4		49, 140
OK720500020250_00	Duck Pond Creek		MILES	40.62	4a	4a	PBCR	Enterococcus			39229	46, 92, 108, 136, 140
						4a	PBCR	Escherichia coli	X		39229	46, 92, 111, 133, 136, 140
OK720500020290_00	Beaver River (North Canadian)		MILES	31.37	5a	5a	WWAC	Selenium		4		49, 140
						5c	WWAC	Macroinvertebrate Bio		4		140
						5a	WWAC	Sedimentation/Siltation		4		140
						5a	WWAC	Oxygen, Dissolved	X	4		140
						4a	AG	Sulfates			60941	58, 140
						4a	PBCR	Escherichia coli			39223	46, 59, 108, 128, 136, 140
						4a	AG	Chloride			60941	58, 140
						4a	PBCR	Enterococcus			39223	46, 59, 108, 128, 136, 140
						4a	AG	Total Dissolved Solids			60941	58, 140
						5c	WWAC	Fishes Bioassessments	X	4		140
OK720500020300_00	Clear Creek		MILES	23.48	5a	5a	WWAC	Oxygen, Dissolved		4		46, 59, 87, 92, 108, 111, 133, 136, 140
OK720500020450_00	Beaver River (North Canadian)		MILES	28.20	5a	4a	PBCR	Enterococcus			39222	46, 59, 108, 128, 136, 140
						5c	WWAC	Fishes Bioassessments		4		140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
						5a	WWAC	Sedimentation/Siltation		4	140	
						4a	AG	Total Dissolved Solids			60960	58, 140
						4a	PBCR	Escherichia coli			39222	46, 59, 108, 128, 136, 140
						4a	AG	Chloride			60960	58, 140
						4a	AG	Sulfates			60960	58, 140
OK720500020500_00	Palo Duro Creek		MILES	15.84	5a	5a	PBCR	Escherichia coli		4	140	
						4a	AG	Sulfates			60980	140
						5a	WWAC	Oxygen, Dissolved		4		92, 100, 140, 156
						5a	WWAC	Selenium		4		140
						4a	AG	Total Dissolved Solids			60980	140
						4a	WWAC	Turbidity			39236	140
						5a	PBCR	Enterococcus		4		140
OK720500020500_10	Palo Duro Creek		MILES	4.40	4a	4a	PBCR	Enterococcus			39235	46, 92, 108, 111, 133, 136, 140
						4a	PBCR	Escherichia coli			39235	46, 92, 108, 111, 133, 136, 140
OK720500030010_00	Wolf Creek		MILES	43.05	4a	4a	PBCR	Enterococcus			39238	46, 92, 108, 111, 133, 136, 140
OK720500030020_00	Fort Supply Lake		ACRES	1880	5a	5a	PPWS	Chlorophyll-a		1		140
						5a	WWAC	Turbidity		1		140
						5c	FC	Mercury	X	1		140
OK720510000190_00	Beaver River (North Canadian)		MILES	42.54	4a	4a	PBCR	Escherichia coli			39221	46, 108, 136, 140
						4a	PBCR	Enterococcus			39221	46, 108, 136, 140

Waterbody ID	Waterbody Name	New WB	Units	Waterbody Size	WB Category	Cause Category	Impaired Use	Cause of Impairment	New Cause	TMDL Priority	TMDL ID	Unconfirmed Potential Sources
OK720510000275_00	Corrumpa Creek		MILES	12.94	5a	5a	WWAC	Ammonia (Un-ionized)		3		140, 156
						5a	WWAC	Oxygen, Dissolved		3		140, 156
OK720900000010_00	Cimarron River		MILES	46.82	5a	5a	PBCR	Escherichia coli		2		140, 156
OK720900000100_00	Cold Springs Creek		MILES	29.19	5a	5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 136, 140
OK720900000180_00	Cimarron River		MILES	19.24	5a	4a	PBCR	Enterococcus			40586	140, 156
						5a	WWAC	Oxygen, Dissolved		2		46, 87, 92, 108, 136, 140
						5b	AG	Sulfates		2		49, 102, 140
OK720900000200_00	Carrizo Creek, South		MILES	19.55	5a	5a	WWAC	Oxygen, Dissolved		2		140
OK720900000240_00	Carl Etling Lake		ACRES	159	5a	5b	AG	Sulfates		2		140
						5a	WWAC	pH		2		140
						5a	WWAC	Turbidity		2		140

TMDL Development Priority Schedule

TMDL Priority	Proposed Initiation of TMDL Development*
1	2018
2	2019-2021
3	2022-2024
4	2025-2027

*Dates are only estimates and subject to change

Appendix D - 2016 Oklahoma 303(d) Delisting Justifications

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK120400010070_00	Webbers Falls Lake	Enterococcus	WQS attained; Enterococcus geometric mean of 20.84 cfu/mL is below criterion	
OK120410010100_00	Cloud Creek	Sulfates	None of 20 samples exceeds 250 mg/L criteria for sulfates	
OK120420020130_00	Sahoma Lake	Oxygen, Dissolved	DO assessment is undetermined; between 55-69% of water column has DO less than 2 mg/L	
OK121300030230_00	Pawhuska Lake	Sulfates	WQS attained; no sulfate sample exceeds 250 mg/L	
OK121300040350_00	Hominy Lake	Oxygen, Dissolved	DO assessment is undetermined; 50-62% of water column is below 2 mg/L	
OK121400010010_10	Caney River	Turbidity	WQS attained. Only 2 of 22 (9.1%) exceeded criterion.	
OK121500030010_00	Verdigris River	Turbidity	IR 2016: out of 13 samples 0 exceed for turbidity	
OK121510020010_00	Verdigris River	Turbidity	WQS attained. 0 of 13 samples exceeded criterion.	
OK121600010280_00	Neosho River	Lead	WQS attained, 0 of 14 samples exceed criteria for lead	
OK121600010290_00	Spring Creek	Enterococcus	WQS attained; geometric mean of 22 (11 samples) is below criterion for Enterococcus	
OK121600020050_00	WR Holway Reservoir (Chimney Rock Lake)	Oxygen, Dissolved	WQS attained. No instances of greater than 50% of the volume of the lake were below 2 mg/L using Quarterly sampling and real-time monitoring platform data.	
OK121700030080_00	Illinois River	Lead	WQS attained; 0 of 7 samples exceed	
OK121700030080_00	Illinois River	Escherichia coli	WQS attained, geometric mean of 91.2 is below criterion	
OK121700030280_00	Illinois River	Escherichia coli	WQS attained, geometric mean of 52.3 is below criterion	
OK121700030350_00	Illinois River	Enterococcus	WQS attained, geometric mean of 16.6 is below criterion	
OK121700030350_00	Illinois River	Escherichia coli	WQS attained, geometric mean of 12.8 is below criterion	
OK121700050010_00	Illinois River, Baron Fork	Enterococcus	WQS attained; geometric mean of 30.8 is below criterion for Enterococcus	
OK121700050010_00	Illinois River, Baron Fork	Escherichia coli	WQS attained; geometric mean of 32.1 is below criterion for E. coli	
OK121700060010_00	Flint Creek	Escherichia coli	WQS attaining; geometric mean of 101.5 is below the E. coli criterion	
OK121700060080_00	Sager Creek	Oxygen, Dissolved	WQS attained; 4 of 41 (9.8%) samples exceed criteria for DO	
OK220100010010_30	Poteau River	Cadmium	Error in the input of data due to wrong interpretation of sampling station location. Data belongs in another segment (OK220100010010_40).	
OK220100010010_30	Poteau River	Copper	Error in the input of data due to wrong interpretation of sampling station location. Data belongs in another segment (OK220100010010_40).	
OK220100010010_30	Poteau River	Silver	Error in the input of data due to wrong interpretation of sampling station location. Data belongs in another segment (OK220100010010_40).	

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK220100010010_30	Poteau River	Lead	Error in the input of data due to wrong interpretation of sampling station location. Data belongs in another segment (OK220100010010_40).	
OK220100010010_30	Poteau River	Selenium	Error in the input of data due to wrong interpretation of sampling station location. Data belongs in another segment (OK220100010010_40).	
OK220100010180_00	Caston Creek	Fishes Bioassessments	WQS attained for fish; USAP score of 39.	
OK220200010010_00	Arkansas River	Total Dissolved Solids	0 of 15 samples exceed criterion	
OK220200010010_00	Arkansas River	Enterococcus	16 samples with a geometric mean of 26.7	
OK220200020040_00	Little Sallisaw Creek	Copper	2007-2008 hardness was in incorrect units (micrograms vs milligrams)	
OK220200050010_10	Lee Creek	Lead	0 of 31 samples exceed criteria	
OK220600010070_10	Longtown Creek	Escherichia coli	WQS attained; geometric mean of 54.03 is below criterion for E. coli	
OK220600030010_10	Brushy Creek	Escherichia coli	WQS attained; geometric mean of 40.36 is below criterion for E. coli	
OK220600030050_00	Peaceable Creek	Sulfates	Sulfates were monitored 20 times and no sulfate value exceeded 250	
OK220600030050_00	Peaceable Creek	Escherichia coli	WQS attained; geometric mean of 52.77 is below criterion for E. coli	
OK220600040010_00	Gaines Creek	Oil and Grease	No oil and grease found; two different locations in this segment were monitored with a total of 27 samples	
OK220600050010_00	Eufaula Lake, Gaines Creek Arm	Oxygen, Dissolved	Change in WQS; DO range of 50-55% below 2 mg/L is considered "undetermined"	
OK310800020010_00	Washita River	Turbidity	WQS attained. Only 1 of 13 (7.7%) samples exceeded criteria	
OK310800020190_00	Chigley Sandy Creek	Escherichia coli	WQS attained; geometric mean of 98.11 is below criterion for E. coli	
OK310810010090_10	Rush Creek	Turbidity	10 samples, none exceed. highest value = 48.3	
OK310810040150_00	Humphreys Lake	Chlorophyll-a	TMDL approved (EPA TMDL No. 66037) 7/22/2016	66037
OK310830010010_00	Washita River	Turbidity	Only 2 of 28 (7.1%) samples exceed criteria	
OK310830010030_00	Delaware Creek	Fishes Bioassessments	Fish collection (8/4/2014) - attaining USAP	
OK310830020020_00	Stinking Creek	Escherichia coli	WQS attained; geometric mean of 70.75 is below criterion for E. coli	
OK310830030010_00	Washita River	Turbidity	WQS attained; only 3 of 32 samples exceed criterion (9.4%)	
OK310830030070_00	Cavalry Creek	Escherichia coli	WQS attained; geometric mean of 89.39 is below criterion for E. coli	
OK310830030100_00	Boggy Creek	Fishes Bioassessments	WQS attained; fish bioassessment indicates attainment	
OK310830030100_00	Boggy Creek	Escherichia coli	WQS attained; geometric mean of 84.70 is below criterion for E. coli	
OK310830030190_00	Beaver Creek	Fishes Bioassessments	Fish collection (5/13/2014) - attaining USAP	
OK310830030210_00	Barnitz Creek, East	Escherichia coli	WQS attained, E. coli geometric mean is 108.42	

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK310830030210_00	Barnitz Creek, East	Fishes Bioassessments	WQS attained; Fish bioassessment is now supporting.	
OK310830040030_00	Stinking Creek	Fishes Bioassessments	WQS attained; Fish bioassessment is now supporting	
OK310830050010_00	Sugar Creek	Fishes Bioassessments	Fish collection (6/30/2014) - attaining USAP	
OK310840010010_00	Washita River	Turbidity	0 of 20 samples exceeded criteria	
OK311100010190_00	Red River	Sulfates	Error in original listing; data is for a different segment	
OK311100010190_00	Red River	Turbidity	Error in original listing; data was for a different segment	
OK311100010190_00	Red River	Enterococcus	Error in original listing; data was for a different segment	
OK3111310010010_00	Red River	Fishes Bioassessments	OKRM-1010 & OKRM-1026 from 2014	
OK3111310020010_00	Cache Creek, West	Chloride	WQS attained; mean of 173.4 mg/L is below YMS of 187 mg/L, and 2 of 20 chloride samples exceeded the segment SS of 285 mg/L (10%)	
OK3111310030040_00	Little Deep Red Creek	Escherichia coli	Sampled in 2010 and 2014; Geometric mean = 77.08	
OK311500010020_10	Red River, North Fork	Sulfates	WQS attained; only 1 of 30 samples exceed (3.3 %) the SS of 1040 mg/L and mean of 722.4 mg/L does not exceed YMS of 781 mg/L	
OK311500010080_00	Otter Creek	Escherichia coli	WQS attained; geometric mean of 47.21 is below E. coli criterion	
OK311500030010_00	Elk Creek	Escherichia coli	WQS attained; geometric mean of 32.1 is below criterion for E. coli	
OK311500030010_00	Elk Creek	Chloride	0 of 30 samples exceed criterion	
OK311500030120_00	Elk City Lake	Turbidity	WQS attained, only 4% of turbidity values exceed criterion	
OK311510010040_00	Lake Creek	Escherichia coli	WQS attained, geometric mean of 47.42 is below E. coli criterion	
OK311600020060_00	Turkey Creek	Escherichia coli	WQS attained. E. coli geometric mean is 55.06.	
OK311600020060_00	Turkey Creek	Fishes Bioassessments	WQS attained; Latest fish bioassessment does not indicate impairment.	
OK410100010010_10	Red River	Turbidity	WQS attained. Only 2 of 24 (8.3%) samples exceeded criteria	
OK410210060010_10	Little River, Mountain Fork	Copper	WQS attained; 0 of 31 copper samples exceed criterion of 2.649 ug/L	
OK410210080010_00	Glover River	Enterococcus	WQS attained. 11 samples with a GM of 26.00	
OK410300020190_00	Rock Creek	Turbidity	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410300020190_00	Rock Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410300030020_10	Cedar Creek	Turbidity	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410300030020_10	Cedar Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410300030060_00	One Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK410300030420_00	Buck Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410310020010_10	Kiamichi River	Copper	WQS attained, 0 of 16 copper samples exceed the criterion of 2.071 ug/L	
OK410310020070_00	Billy Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410310020100_00	Big Cedar Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400010070_00	Muddy Boggy Creek	Lead	WQS attained, long-term arithmetic mean of 1.8 ug/L is below criterion	
OK410400010130_00	Lick Creek	Escherichia coli	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400010130_00	Lick Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400010210_00	Whitegrass Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400010210_00	Whitegrass Creek	Escherichia coli	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400020200_00	Caney Creek	Enterococcus	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400020200_00	Caney Creek	Escherichia coli	TMDL approved (EPA TMDL No. 66323) 9/1/16	66323
OK410400030010_00	Clear Boggy Creek	Benthic-Macroinvertebrate Bioassessments	WQS attained, recent macroinvertebrates bioassessments indicate attainment	
OK410400030010_00	Clear Boggy Creek	Turbidity	Only 1 of 28 (3.6%) sample exceeded criteria	
OK520500020010_00	Wewoka Creek	Escherichia coli	12 samples in 2013-2014 with a GM of 33.69	
OK520500020010_00	Wewoka Creek	Chloride	Chloride mean of 206 mg/L is below the segment YMS of 334 mg/L, and no samples exceed the SS of 430 mg/L	
OK520500020090_00	Little Wewoka Creek	Escherichia coli	WQS attained; geometric mean of 55.28 is below criterion	
OK520510000010_00	Canadian River, North	Lead	17 samples attain	
OK520510000100_00	Turkey Creek	pH	pH was attaining with 20 samples	
OK520510000110_00	Canadian River, North	Lead	Error in original listing; data was for another stream segment.	
OK520510000110_00	Canadian River, North	Turbidity	Error in original listing; data was for another stream segment.	
OK520510000110_00	Canadian River, North	pH	Error in original listing; data was for another stream segment.	
OK520510000110_00	Canadian River, North	Enterococcus	Error in original listing; data was for another stream segment.	
OK520510000110_20	Canadian River, North	Escherichia coli	WQS attained; geometric mean of 38 is below criterion for E. coli	
OK520520000010_10	Canadian River, North	Escherichia coli	WQS attained; geometric mean of 69 is below criterion for E. coli	
OK520520000010_20	Canadian River, North	Escherichia coli	WQS attained; geometric mean of 44 is below criterion for E. coli	
OK520520000010_40	Canadian River, North	Escherichia coli	WQS attained; geometric mean of 79 is below criterion for E. coli	

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK520520000210_00	Canadian River, North	Escherichia coli	WQS attained; geometric mean of 72 is below criterion for E. coli	
OK520530000010_10	Canadian River, North	Escherichia coli	11 samples with a GM of 42.7	
OK520600030010_00	Canadian Sandy Creek	Escherichia coli	WQS attained; geometric mean of 30.73 is below criterion	
OK520610010080_00	Willow Creek	Chlorpyrifos	WQS attained; 0 samples exceed acute and chronic criterion for Fish & Wildlife Propagation	
OK520610010180_00	Bishop Creek	Fishes Bioassessments	WQS attained for Fish Bioassessment; latest fish bioassessment does not indicate impairment	
OK520610010180_00	Bishop Creek	Chlorpyrifos	WQS attained; 0 samples exceed acute and chronic criterion for Fish & Wildlife Propagation	
OK520610020150_10	Canadian River	Turbidity	WQS attained; only 1 of 25 samples exceed criterion (4%)	
OK520700020010_10	Canadian River, Deep Fork	Lead	WQS attained; mean of lead samples is 3.64	
OK520700040020_00	Dry Creek	Escherichia coli	WQS attained; geometric mean of 125.09 is below criterion	
OK520700040260_00	Quapaw Creek	Escherichia coli	10 samples in 2013 and 2014. Geometric mean = 26.46	
OK520700050140_00	Captain Creek	Escherichia coli	11 samples in 2013-14; Geometric mean = 72.96	
OK520710010030_00	Coon Creek	Chlorpyrifos	WQS attained; 0 samples exceed acute and chronic criterion for Fish & Wildlife Propagation	
OK520710020030_00	Spring Creek	Fishes Bioassessments	WQS attained; fishes bioassessment indicates attainment	
OK520710020060_00	Canadian River, Deep Fork	Enterococcus	WQS attained, listed in error, only 2 samples collected within a recreation period	
OK520710020060_00	Canadian River, Deep Fork	Escherichia coli	WQS attained, listed in error, only 2 samples collected within a recreation period	
OK520800010050_00	Bird Creek	Total Dissolved Solids	WQS attained; none of 12 samples with mean 633.3 exceeds SS of 1576, mean of 633.3 is below YMS of 1192	
OK520800010050_00	Bird Creek	Ammonia (Un-ionized)	Out of 11 samples not one exceeded ammonia for temperature and pH	
OK520800020080_00	Pecan Creek	Oil and Grease	27 samples in 2013-2015 with no observations of oil and grease	
OK520800030010_00	Salt Creek	Escherichia coli	10 samples in 2013-2014; Geometric mean = 53.28	
OK520800030010_00	Salt Creek	Fishes Bioassessments	Not impaired; recent fish assessment does not indicate impairment	
OK520810000030_00	Hog Creek	Escherichia coli	10 samples in 2013-2014; Geometric mean = 74.79	
OK520810000030_00	Hog Creek	Oxygen, Dissolved	WQS attained; Only 1 of 21 samples (5%) did not meet the criteria to be considered attained	
OK520810000030_00	Hog Creek	Turbidity	WQS attained. Only 1 of 20 samples exceeded criterion.	
OK620900010290_00	Euchee Creek	Ammonia (Un-ionized)	WQS attained. 7 of 7 samples do not exceed criterion.	

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK620900020050_00	Council Creek	Escherichia coli	WQS attained. Geometric mean of 105.11 is below the E. coli criterion.	
OK620900030010_00	Cimarron River	Turbidity	0 of 33 samples exceeded criteria	
OK620900030230_00	Beaver Creek	Escherichia coli	WQS attained; geometric mean of 20.02 is below the E. coli criterion	
OK620900040280_00	Carl Blackwell Lake	Chlorophyll-a	TMDL completed (EPA TMDL ID No. 66037) 7/22/16	66037
OK620910020010_10	Cimarron River	Enterococcus	TMDL approved (EPA TMDL No. 40622) 8/26/2011	40622
OK620910020040_00	Cooper Creek	Escherichia coli	WQS attained; geometric mean of 49.62 is below the E. coli criterion	
OK620910020250_00	Deep Creek	Escherichia coli	10 samples in 2013 with a GM of 113.55	
OK620910020310_00	Indian Creek	Escherichia coli	10 samples in 2013 with GM of 53.65	
OK620910030010_00	Skeleton Creek	Escherichia coli	15 samples collected with a GM of 123.9	
OK620910030040_00	Otter Creek	Escherichia coli	WQS attained; geometric mean of 52.71 is below the E. coli criterion	
OK620910040120_00	Deer Creek	Chlorpyrifos	WQS attained; 0 samples exceed acute and chronic criterion for Fish & Wildlife Propagation	
OK620910050010_00	Kingfisher Creek	Sulfates	WQS attained; only 2 of 20 samples exceeded SS and mean of 612.6 mg/L does not exceed YMS of 680 mg/L	
OK620910050010_00	Kingfisher Creek	Turbidity	WQS attained; only 1 of 15 (6.6%) samples exceeded criteria in 2012-2014	
OK620910050080_00	Winter Camp Creek	Sulfates	WQS attained; Sulfates - 599.19 (YMS 680, SS 873)	
OK620910050080_00	Winter Camp Creek	Escherichia coli	WQS attained; geometric mean of 97.0 is below criterion for E. coli	
OK620920010180_00	Main Creek	Escherichia coli	WQS attained; geometric mean of 77.66 is below the E. coli criterion.	
OK620920020080_00	Long Creek	Escherichia coli	WQS attained; geometric mean of 94.51 is below the E. coli criterion	
OK620920040010_00	Eagle Chief Creek	Escherichia coli	WQS attained; geometric mean of 43 is below the E. coli criterion	
OK620920050010_00	Buffalo Creek	Escherichia coli	WQS attained. 11 samples in 2012-2014 with a GM of 16.77	
OK620930000010_00	Cimarron River	Escherichia coli	14 samples collected with a GM of 116.8	
OK621000010010_30	Arkansas River, Salt Fork	Lead	IR2016: 16 samples attain with a mean of 2.58	
OK621000050010_00	Pond Creek	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 52.62	
OK621010010130_00	Clay Creek, West	Oxygen, Dissolved	DO assessment is undetermined; 2 of 18 (11%) below support criteria and 1 of 18 (5.5%) below non-support criteria.	
OK621010020010_00	Sandy Creek	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 16.08	
OK621010030010_00	Medicine Lodge River	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 30.71	

Waterbody ID	Waterbody Name	Listing Cause	Delisting Justification	TMDL ID (if completed)
OK621010030030_00	Driftwood Creek	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 102.83	
OK621100000010_00	Chikaskia River	Turbidity	TMDL approved (EPA TMDL No. 41088) 9/30/2011	41088
OK621100000010_10	Chikaskia River	Lead	WQS attained. The mean is 2.38 ug/L (17 samples).	
OK621200010200_00	Arkansas River	Turbidity	Only 2 of 27 (7.4%) samples exceeded criteria	
OK621200020210_00	Lake Ponca	Oxygen, Dissolved	DO assessment is undetermined; between 55-65% of water column has DO less than 2 mg/L	
OK621200030010_00	Black Bear Creek	Escherichia coli	13 samples collected with a GM of 88.2	
OK621200030010_00	Black Bear Creek	Lead	IR2016: 15 samples with a mean of 4.53	
OK621200030060_00	Lone Chimney Lake	Turbidity	WQS attained; only 4% of values exceed 25 NTU.	
OK621200040010_10	Salt Creek	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 16.62.	
OK621200050010_00	Red Rock Creek	Escherichia coli	WQS attained. 10 samples in 2013 with a GM of 86.50.	
OK621210000050_10	Beaver Creek	Escherichia coli	10 samples in 2013 with a GM of 56.33	
OK720500010150_00	Persimmon Creek	Escherichia coli	11 samples with a GM of 69.46	
OK720500020250_00	Duck Pond Creek	Escherichia coli	TMDL approved (EPA TMDL No. 39229) 9/28/2010	39229

Appendix E - Completed TMDLs

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK120400010260_00	Arkansas River	Enterococcus	42530	9/27/2012
OK120400010400_00	Coody Creek	Enterococcus	42532	9/27/2012
OK120400010400_00	Coody Creek	Escherichia coli	42532	9/27/2012
OK120400020010_00	Dirty Creek	Enterococcus	42533	9/27/2012
OK120400020010_00	Dirty Creek	Turbidity	42533	9/27/2012
OK120400020030_00	Dirty Creek, South Fork	Enterococcus	42535	9/27/2012
OK120400020110_00	Dirty Creek, Georges Fork	Enterococcus	42536	9/27/2012
OK120400020160_00	Butler Creek	Enterococcus	42538	9/27/2012
OK120400020160_00	Butler Creek	Turbidity	42538	9/27/2012
OK120400020160_00	Butler Creek	Escherichia coli	42538	9/27/2012
OK120400020190_00	Elk Creek	Enterococcus	42537	9/27/2012
OK120400020240_00	Shady Grove Creek	Enterococcus	42539	9/27/2012
OK120410010080_00	Arkansas River	Enterococcus	35681	11/18/2008
OK120410010100_00	Cloud Creek	Enterococcus	42540	9/27/2012
OK120410010100_00	Cloud Creek	Turbidity	42540	9/27/2012
OK120410010210_00	Haikey Creek	Escherichia coli	35680	11/18/2008
OK120410010220_00	Snake Creek	Enterococcus	42541	9/27/2012
OK120410010220_00	Snake Creek	Turbidity	42541	9/27/2012
OK120420010010_00	Arkansas River	Enterococcus	35669	11/18/2008
OK120420010130_00	Arkansas River	Enterococcus	42564	9/27/2012
OK120420020010_00	Polecat Creek	Escherichia coli	42566	9/27/2012
OK120420020050_00	Polecat Creek	Enterococcus	42568	9/27/2012
OK121300010010_00	Bird Creek	Enterococcus	40585	8/16/2011
OK121300010010_00	Bird Creek	Escherichia coli	40585	8/16/2011
OK121300010060_00	Ranch Creek	Escherichia coli	40972	8/16/2011
OK121300010090_00	Coal Creek	Escherichia coli	40582	8/16/2011
OK121300020010_10	Bird Creek	Enterococcus	39211	9/29/2010
OK121300040010_00	Hominy Creek	Enterococcus	39215	9/29/2010

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK121300040280_00	Hominy Creek	Enterococcus	39160	9/22/2010
OK121400010010_10	Caney River	Enterococcus	39216	9/28/2010
OK121400010010_10	Caney River	Turbidity	39216	9/28/2010
OK121400010270_00	Curl Creek	Enterococcus	39217	9/28/2010
OK121400010270_00	Curl Creek	Turbidity	39217	9/28/2010
OK121400010300_00	Hogshooter Creek	Escherichia coli	39219	9/28/2010
OK121400010300_00	Hogshooter Creek	Enterococcus	39219	9/28/2010
OK121400020140_00	Little Caney River	Enterococcus	39218	9/28/2010
OK121400020140_00	Little Caney River	Turbidity	39218	9/28/2010
OK121400020190_00	Mission Creek	Escherichia coli	39220	9/28/2010
OK121400020190_00	Mission Creek	Enterococcus	39220	9/28/2010
OK121400040010_00	Sand Creek	Enterococcus	37064	9/15/2009
OK121400040010_00	Sand Creek	Escherichia coli	37064	9/15/2009
OK121400050020_00	Copan Lake	Chlorophyll-a	60880	9/24/2014
OK121500010200_00	Verdigris River	Turbidity	42569	9/27/2012
OK121500010200_00	Verdigris River	Enterococcus	42569	9/27/2012
OK121500020090_00	Bull Creek	Escherichia coli	42574	9/27/2012
OK121500020090_00	Bull Creek	Enterococcus	42574	9/27/2012
OK121500020090_00	Bull Creek	Turbidity	42574	9/27/2012
OK121500020100_00	Pea Creek	Escherichia coli	42579	9/27/2012
OK121500020100_00	Pea Creek	Enterococcus	42579	9/27/2012
OK121500020260_00	Verdigris River	Enterococcus	42571	9/27/2012
OK121500020260_00	Verdigris River	Turbidity	42571	9/27/2012
OK121500020360_00	Dog Creek	Escherichia coli	42580	9/27/2012
OK121500020360_00	Dog Creek	Enterococcus	42580	9/27/2012
OK121500020360_00	Dog Creek	DO	31658	11/3/2006
OK121500020390_00	Cat Creek	DO	31657	11/3/2006
OK121500030010_00	Verdigris River	Enterococcus	42572	9/27/2012
OK121500040020_00	Claremore Lake	Chlorophyll-a	60900	9/24/2014
OK121510020010_00	Verdigris River	Turbidity	50814	10/1/2012

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK121510020010_00	Verdigris River	Enterococcus	50980	9/30/2012
OK121510020050_00	California Creek	Enterococcus	50980	10/1/2012
OK121510030010_00	Big Creek	Escherichia coli	50814	10/1/2012
OK121510030010_00	Big Creek	Enterococcus	50814	9/30/2012
OK121600010010_00	Neosho River	Enterococcus	42581	9/27/2012
OK121600010060_00	Ranger Creek	Enterococcus	34847	7/28/2008
OK121600010100_00	Fourteenmile Creek	Enterococcus	34848	7/28/2008
OK121600010430_00	Chouteau Creek	Enterococcus	42582	9/27/2012
OK121600010430_00	Chouteau Creek	Escherichia coli	42582	9/27/2012
OK121600010440_00	Crutchfield Branch	Enterococcus	34849	7/28/2008
OK121600010440_00	Crutchfield Branch	Escherichia coli	34849	7/28/2008
OK121600020030_10	Saline Creek	Enterococcus	58701	5/13/2014
OK121600020070_00	Little Saline Creek	Enterococcus	58702	5/13/2014
OK121600030090_00	Drowning Creek	Enterococcus	34851	7/28/2008
OK121600030090_00	Drowning Creek	Escherichia coli	34851	7/28/2008
OK121600030160_00	Horse Creek	Escherichia coli	34852	7/28/2008
OK121600030190_00	Little Horse Creek	Escherichia coli	34854	7/28/2008
OK121600030190_00	Little Horse Creek	Enterococcus	34854	7/28/2008
OK121600030340_00	Cave Springs Branch	Escherichia coli	34855	7/28/2008
OK121600030340_00	Cave Springs Branch	Enterococcus	34855	7/28/2008
OK121600030440_00	Elk River	Enterococcus	34856	7/28/2008
OK121600030445_00	Honey Creek	Enterococcus	34857	7/28/2008
OK121600030445_00	Honey Creek	Escherichia coli	34857	7/28/2008
OK121600030445_10	Honey Creek	Enterococcus	58704	5/13/2014
OK121600030510_00	Sycamore Creek	Enterococcus	34858	7/28/2008
OK121600040010_00	Neosho River	Turbidity	50980	10/1/2012
OK121600040040_00	Hudson Creek	Turbidity	50814	10/1/2012
OK121600040060_00	Tar Creek	Enterococcus	34919	7/28/2008
OK121600040130_00	Cow Creek	Turbidity	50814	10/1/2012
OK121600040220_00	Neosho River	Enterococcus	50814	10/1/2012

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK121600040220_00	Neosho River	Turbidity	50814	10/1/2012
OK121600050020_00	Spavinaw Lake	Phosphorus	38670	6/9/2010
OK121600050070_00	Eucha Lake	Phosphorus	38667	6/9/2010
OK121600050150_00	Spavinaw Creek	Enterococcus	58705	5/13/2014
OK121600050160_00	Beaty Creek	Enterococcus	58707	5/13/2014
OK121600050180_00	Cloud Creek	Enterococcus	58708	5/13/2014
OK121600060080_00	Little Cabin Creek	Escherichia coli	50980	10/1/2012
OK121600060080_00	Little Cabin Creek	Enterococcus	50980	10/1/2012
OK121600070010_00	Spring River	Enterococcus	50980	10/1/2012
OK121600070110_00	Fivemile Creek	Enterococcus	50814	10/1/2012
OK121610000050_10	Pryor Creek	Enterococcus	58709	5/13/2014
OK121610000050_10	Pryor Creek	Escherichia coli	58709	5/13/2014
OK121610000090_00	Pryor Creek	Turbidity	58709	5/13/2014
OK220100010010_00	Poteau River	Turbidity	58800	5/13/2014
OK220100010010_40	Poteau River	Turbidity	58820	5/13/2014
OK220100030010_00	Brazil Creek	Enterococcus	58760	5/13/2014
OK220100040020_00	Fourche Maline Creek	Enterococcus	35634	10/28/2008
OK220200030010_20	Sallisaw Creek	Enterococcus	58780	5/13/2014
OK220200040010_10	Sans Bois Creek	Enterococcus	58782	5/13/2014
OK220200040010_40	Sans Bois Creek	Enterococcus	35635	10/20/2008
OK220200040010_40	Sans Bois Creek	Escherichia coli	35635	10/20/2008
OK220200040050_00	Sans Bois Creek, Mountain Fork	Escherichia coli	35626	10/20/2008
OK220600010070_10	Longtown Creek	Escherichia coli	35627	10/20/2008
OK220600010070_10	Longtown Creek	Enterococcus	35627	10/20/2008
OK220600010100_20	Mill Creek	Enterococcus	35628	10/20/2008
OK220600010119_10	Canadian River	Enterococcus	58783	5/13/2014
OK220600010119_10	Canadian River	Turbidity	58783	5/13/2014
OK220600030010_00	Brushy Creek	Enterococcus	35630	10/20/2008
OK220600030010_10	Brushy Creek	Enterococcus	35631	10/20/2008
OK220600030010_10	Brushy Creek	Escherichia coli	35631	10/20/2008

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK220600030020_00	Blue Creek	Enterococcus	35636	10/20/2008
OK220600030020_00	Blue Creek	Escherichia coli	35636	10/20/2008
OK220600030050_00	Peaceable Creek	Escherichia coli	35632	10/20/2008
OK220600030050_00	Peaceable Creek	Enterococcus	35632	10/20/2008
OK220600040030_00	Beaver Creek	Escherichia coli	35633	10/20/2008
OK220600050060_00	Mud Creek	DO	831	11/30/1999
OK310800020010_00	Washita River	Turbidity	39164	9/22/2010
OK310800020010_00	Washita River	Enterococcus	33274	9/21/2007
OK310800020040_00	Sand Branch	Turbidity	39165	9/22/2010
OK310800020190_00	Chigley Sandy Creek	Escherichia coli	33276	9/21/2007
OK310800020190_00	Chigley Sandy Creek	Enterococcus	33276	9/21/2007
OK310800030010_00	Caddo Creek	Escherichia coli	42415	9/20/2012
OK310800030010_00	Caddo Creek	Enterococcus	42415	9/20/2012
OK310800030020_00	Sand Creek	Ammonia	10625	1/30/2004
OK310800030020_00	Sand Creek	DO	10625	1/30/2004
OK310810010010_10	Washita River	Turbidity	39166	9/22/2010
OK310810010010_10	Washita River	Enterococcus	33277	9/21/2007
OK310810010050_00	Kickapoo Sandy Creek	Enterococcus	39167	9/22/2010
OK310810010050_00	Kickapoo Sandy Creek	Turbidity	39167	9/22/2010
OK310810010050_00	Kickapoo Sandy Creek	Escherichia coli	39167	9/22/2010
OK310810010090_10	Rush Creek	Chloride	53311	9/19/2013
OK310810010190_00	Washington Creek	Turbidity	39170	9/22/2010
OK310810010270_00	Rush Creek, Trib G!	Chloride	53310	9/19/2013
OK310810020010_00	Washita River	Enterococcus	39171	9/22/2010
OK310810020010_00	Washita River	Turbidity	39171	9/22/2010
OK310810020020_00	Finn Creek	Enterococcus	42423	9/20/2012
OK310810020170_00	Roaring Creek	Enterococcus	33279	9/21/2007
OK310810020170_00	Roaring Creek	Escherichia coli	33279	9/21/2007
OK310810020200_00	Laflin Creek	Enterococcus	33280	9/21/2007
OK310810020200_00	Laflin Creek	Escherichia coli	33280	9/21/2007

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK310810030010_00	Wildhorse Creek	Enterococcus	42425	9/20/2012
OK310810030080_00	Salt Creek	Enterococcus	42424	9/20/2012
OK310810040140_00	Wildhorse Creek	Enterococcus	39172	9/22/2010
OK310810040140_00	Wildhorse Creek	Escherichia coli	39172	9/22/2010
OK310810040140_00	Wildhorse Creek	Turbidity	39172	9/22/2010
OK310810040150_00	Humphreys Lake	Chlorophyll-a	66037	7/22/2016
OK310810050120_00	Rush Creek, Trib E!	Chloride	53309	9/19/2013
OK310810050130_00	Cox City!	Chloride	53307	9/19/2013
OK310810050140_00	West Cox City!	Chloride	53308	9/19/2013
OK310820010030_00	Bitter Creek	Enterococcus	33281	9/21/2007
OK310820010030_00	Bitter Creek	Escherichia coli	33281	9/21/2007
OK310820020010_00	Little Washita River	Enterococcus	42414	9/20/2012
OK310830010010_00	Washita River	Turbidity	39173	9/22/2010
OK310830010010_00	Washita River	Enterococcus	33282	9/21/2007
OK310830020020_00	Stinking Creek	Turbidity	39174	9/22/2010
OK310830020020_00	Stinking Creek	Enterococcus	39174	9/22/2010
OK310830020020_00	Stinking Creek	Escherichia coli	39174	9/22/2010
OK310830020060_10	Rainy Mountain Creek	Turbidity	39175	9/22/2010
OK310830030010_00	Washita River	Turbidity	39176	9/22/2010
OK310830030010_00	Washita River	Enterococcus	33283	9/21/2007
OK310830030010_00	Washita River	Escherichia coli	33283	9/21/2007
OK310830030010_10	Washita River	Enterococcus	33284	9/21/2007
OK310830030100_00	Boggy Creek	Escherichia coli	42417	9/20/2012
OK310830030100_00	Boggy Creek	Enterococcus	42417	9/20/2012
OK310830030210_00	Barnitz Creek, East	Enterococcus	42416	9/20/2012
OK310830030230_00	Barnitz Creek, West	Enterococcus	42418	9/20/2012
OK310830040010_00	Spring Creek	Enterococcus	42422	9/20/2012
OK310830040010_00	Spring Creek	Escherichia coli	42422	9/20/2012
OK310830060020_00	Fort Cobb Lake	Chlorophyll-a	23066	7/26/2006
OK310830060020_00	Fort Cobb Lake	Phosphorus	23066	7/26/2006

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK310830060030_00	Willow Creek	Escherichia coli	33285	9/21/2007
OK310830060030_00	Willow Creek	Enterococcus	33285	9/21/2007
OK310830060050_00	Cobb Creek	Enterococcus	42419	9/20/2012
OK310830060050_00	Cobb Creek	Escherichia coli	42419	9/20/2012
OK310830060080_00	Fivemile Creek	Escherichia coli	42420	9/20/2012
OK310830060080_00	Fivemile Creek	Enterococcus	42420	9/20/2012
OK310840010010_00	Washita River	Turbidity	39177	9/22/2010
OK310840010010_00	Washita River	Enterococcus	33286	9/21/2007
OK310840010010_00	Washita River	Escherichia coli	33286	9/21/2007
OK310840010060_00	Quartermaster Creek	Escherichia coli	33278	9/21/2007
OK310840010060_00	Quartermaster Creek	Enterococcus	33278	9/21/2007
OK310840020010_00	Washita River	Turbidity	39178	9/22/2010
OK310840020020_00	Sandstone Creek	Enterococcus	39180	9/22/2010
OK310840020020_00	Sandstone Creek	Escherichia coli	39180	9/22/2010
OK310840020020_00	Sandstone Creek	Turbidity	39180	9/22/2010
OK311100010190_00	Red River	Turbidity	42452	9/20/2012
OK311100010190_20	Red River	Enterococcus	42448	9/20/2012
OK311100010190_20	Red River	Turbidity	42448	9/20/2012
OK311100010290_00	Red Creek	Turbidity	39183	9/22/2010
OK311100010290_00	Red Creek	Escherichia coli	39183	9/22/2010
OK311100010290_00	Red Creek	Enterococcus	39183	9/22/2010
OK311100010300_00	Fleetwood Creek	Turbidity	39184	9/22/2010
OK311100040010_00	Mud Creek	Turbidity	39186	9/22/2010
OK311100040010_00	Mud Creek	Enterococcus	33287	9/21/2007
OK311100040080_00	Mud Creek, Lower West	Turbidity	39187	9/22/2010
OK311100040080_00	Mud Creek, Lower West	Enterococcus	33288	9/21/2007
OK311100040080_00	Mud Creek, Lower West	Escherichia coli	33288	9/21/2007
OK311200000010_00	Red River	Enterococcus	42449	9/20/2012
OK311200000010_00	Red River	Turbidity	42449	9/20/2012
OK311200000030_00	Beaver Creek	Turbidity	39188	9/22/2010

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK311200000030_00	Beaver Creek	Enterococcus	39188	9/22/2010
OK311200000060_00	Cow Creek	Turbidity	39189	9/22/2010
OK311200000060_00	Cow Creek	Enterococcus	33289	9/21/2007
OK311200000060_00	Cow Creek	Escherichia coli	33289	9/21/2007
OK311200000080_00	Dry Creek	Turbidity	39190	9/22/2010
OK311210000020_00	Waurika Lake	Chlorophyll-a	53302	9/16/2013
OK311210000050_00	Little Beaver Creek	Enterococcus	42444	9/20/2012
OK311210000050_00	Little Beaver Creek	Escherichia coli	42444	9/20/2012
OK311210000050_00	Little Beaver Creek	Turbidity	42444	9/20/2012
OK311210000140_00	Whisky Creek	Enterococcus	33290	9/21/2007
OK311210000140_00	Whisky Creek	Escherichia coli	33290	9/21/2007
OK311210000150_00	Cottonwood Creek	Escherichia coli	33291	9/21/2007
OK311210000150_00	Cottonwood Creek	Enterococcus	33291	9/21/2007
OK311300010020_00	Cache Creek, East	Turbidity	39191	9/22/2010
OK311300010020_00	Cache Creek, East	Enterococcus	33292	9/21/2007
OK311300010020_00	Cache Creek, East	Escherichia coli	33292	9/21/2007
OK311300010020_10	Cache Creek, East	Turbidity	39192	9/22/2010
OK311300010020_10	Cache Creek, East	Enterococcus	33292	9/21/2007
OK311300030020_00	Ellsworth Lake	Chlorophyll-a	53306	9/16/2013
OK311300030070_00	Tahoe Creek	Escherichia coli	33293	9/21/2007
OK311300040070_00	Lawtonka Lake	Chlorophyll-a	53301	9/16/2013
OK311310010010_00	Red River	Enterococcus	33294	9/21/2007
OK311310010070_00	Suttle Creek	Turbidity	39193	9/22/2010
OK311310020010_00	Cache Creek, West	Turbidity	39194	9/22/2010
OK311310020010_00	Cache Creek, West	Enterococcus	33295	9/21/2007
OK311310020010_00	Cache Creek, West	Escherichia coli	33295	9/21/2007
OK311310030010_00	Deep Red Creek	Escherichia coli	39195	9/22/2010
OK311310030010_00	Deep Red Creek	Enterococcus	39195	9/22/2010
OK311310030010_00	Deep Red Creek	Turbidity	39195	9/22/2010
OK311310030040_00	Little Deep Red Creek	Turbidity	39196	9/22/2010

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK311310030050_00	Brush Creek	Turbidity	39198	7/28/2008
OK311310030050_00	Brush Creek	Escherichia coli	33296	9/21/2007
OK311310030050_00	Brush Creek	Enterococcus	33296	9/21/2007
OK311500010020_10	Red River, North Fork	Turbidity	39199	9/22/2010
OK311500010020_10	Red River, North Fork	Enterococcus	34831	7/28/2008
OK311500010050_00	Stinking Creek	Turbidity	39200	9/22/2010
OK311500010050_00	Stinking Creek	Enterococcus	34850	7/28/2008
OK311500010050_00	Stinking Creek	Escherichia coli	34850	7/28/2008
OK311500010080_00	Otter Creek	Turbidity	39201	9/22/2010
OK311500010080_00	Otter Creek	Escherichia coli	39201	9/22/2010
OK311500010080_00	Otter Creek	Enterococcus	39201	9/22/2010
OK311500010110_00	Tepee Creek	Enterococcus	34832	7/28/2008
OK311500010110_00	Tepee Creek	Escherichia coli	34832	7/28/2008
OK311500020040_00	Otter Creek, West	Enterococcus	34833	7/28/2008
OK311500020040_00	Otter Creek, West	Escherichia coli	34833	7/28/2008
OK311500020060_00	Tom Steed Lake	Chlorophyll-a	41064	9/30/2011
OK311500030010_00	Elk Creek	Turbidity	39202	9/22/2010
OK311500030010_00	Elk Creek	Escherichia coli	34834	7/28/2008
OK311500030010_00	Elk Creek	Enterococcus	34834	7/28/2008
OK311500030060_00	Rocky Lake	Chlorophyll-a	41063	9/30/2011
OK311510010010_10	Red River, North Fork	Turbidity	39203	9/22/2010
OK311510010010_10	Red River, North Fork	Enterococcus	39203	7/28/2008
OK311510010040_00	Lake Creek	Escherichia coli	42451	9/20/2012
OK311510010040_00	Lake Creek	Enterococcus	42451	9/20/2012
OK311510010090_00	Timber Creek	Enterococcus	42447	9/20/2012
OK311510010090_00	Timber Creek	Turbidity	42447	9/20/2012
OK311510010090_00	Timber Creek	Escherichia coli	42447	9/20/2012
OK311510020060_00	Turkey Creek	Enterococcus	34837	7/28/2008
OK311510020090_00	Buffalo Creek	Escherichia coli	42428	9/20/2012
OK311510020090_00	Buffalo Creek	Enterococcus	42428	9/20/2012

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK311510020120_00	Sweetwater Creek	Escherichia coli	39204	9/22/2010
OK311510020120_00	Sweetwater Creek	Enterococcus	39204	9/22/2010
OK311510020120_00	Sweetwater Creek	Turbidity	39204	9/22/2010
OK311600010020_00	Gypsum Creek	Turbidity	39205	9/22/2010
OK311600010020_00	Gypsum Creek	Enterococcus	39205	9/22/2010
OK311600010040_00	Sandy Creek (Lebos)	Turbidity	39206	9/22/2010
OK311600010040_00	Sandy Creek (Lebos)	Enterococcus	34838	7/28/2008
OK311600020010_00	Red River, Salt Fork	Enterococcus	34839	7/28/2008
OK311600020010_00	Red River, Salt Fork	Escherichia coli	34839	7/28/2008
OK311600020010_10	Red River, Salt Fork	Enterococcus	34840	7/28/2008
OK311600020060_00	Turkey Creek	Escherichia coli	42446	9/20/2012
OK311600020060_00	Turkey Creek	Enterococcus	42446	9/20/2012
OK311600020060_00	Turkey Creek	Turbidity	42446	9/20/2012
OK311600020110_05	Bitter Creek	Turbidity	42445	9/20/2012
OK311600020110_05	Bitter Creek	Enterococcus	34841	7/28/2008
OK311600020140_00	Cave Creek	Enterococcus	34842	7/28/2008
OK311600020140_00	Cave Creek	Escherichia coli	34842	7/28/2008
OK311800000010_00	Red River, Elm Fork	Enterococcus	34843	7/28/2008
OK311800000010_00	Red River, Elm Fork	Escherichia coli	34843	7/28/2008
OK311800000040_00	Haystack Creek	Turbidity	39207	9/22/2010
OK311800000040_00	Haystack Creek	Enterococcus	39207	9/22/2010
OK311800000040_00	Haystack Creek	Escherichia coli	39207	9/22/2010
OK311800000060_00	Station Creek	Enterococcus	42450	9/20/2012
OK311800000070_00	Deer Creek	Turbidity	39208	9/22/2010
OK311800000070_00	Deer Creek	Enterococcus	34844	7/28/2008
OK311800000070_00	Deer Creek	Escherichia coli	34844	7/28/2008
OK311800000130_00	Fish Creek	Enterococcus	34845	7/28/2008
OK410100010010_10	Red River	Turbidity	59164	9/8/2014
OK410200010200_10	Little River	Turbidity	59165	9/8/2014
OK410200030010_00	Rock Creek	Turbidity	59167	9/8/2014

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK410210020140_00	Little River	Turbidity	59168	9/8/2014
OK410210020140_00	Little River	Enterococcus	33303	9/21/2007
OK410210020300_00	Cloudy Creek	Turbidity	59169	9/8/2014
OK410210040010_00	Little River, Mountain Fork	Enterococcus	33304	9/21/2007
OK410210040010_10	Little River, Mountain Fork	Enterococcus	33305	9/21/2007
OK410210060020_00	Buffalo Creek	Turbidity	59170	9/8/2014
OK410210060320_00	Beech Creek	Turbidity	59171	9/8/2014
OK410210060350_00	Cow Creek	Turbidity	59172	9/8/2014
OK410210080010_00	Glover River	Turbidity	59173	9/8/2014
OK410210080010_00	Glover River	Enterococcus	33306	9/21/2007
OK410300010010_00	Kiamichi River	Enterococcus	59163	9/8/2014
OK410300010020_00	Gates Creek	Turbidity	59174	9/8/2014
OK410300010100_00	Bird Creek	Turbidity	59175	9/8/2014
OK410300020190_00	Rock Creek	Enterococcus	66323	9/1/2016
OK410300020190_00	Rock Creek	Turbidity	66323	9/1/2016
OK410300030010_10	Kiamichi River	Enterococcus	33307	9/21/2007
OK410300030020_10	Cedar Creek	Turbidity	66323	9/1/2016
OK410300030020_10	Cedar Creek	Enterococcus	66323	9/1/2016
OK410300030060_00	One Creek	Enterococcus	66323	9/1/2016
OK410300030270_00	Tenmile Creek	Enterococcus	33309	9/21/2007
OK410300030420_00	Buck Creek	Enterococcus	66323	9/1/2016
OK410310010010_00	Kiamichi River	Enterococcus	59162	9/8/2014
OK410310020010_10	Kiamichi River	Enterococcus	59160	9/8/2014
OK410310020070_00	Billy Creek	Enterococcus	66323	9/1/2016
OK410310020100_00	Big Cedar Creek	Enterococcus	66323	9/1/2016
OK410400010010_20	Red River	Enterococcus	33297	9/21/2007
OK410400010070_00	Muddy Boggy Creek	Turbidity	42476	9/20/2012
OK410400010070_00	Muddy Boggy Creek	Enterococcus	33298	9/21/2007
OK410400010130_00	Lick Creek	Escherichia coli	66323	9/1/2016
OK410400010130_00	Lick Creek	Enterococcus	66323	9/1/2016

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK410400010130_00	Lick Creek	Turbidity	42479	9/20/2012
OK410400010210_00	Whitegrass Creek	Escherichia coli	66323	9/1/2016
OK410400010210_00	Whitegrass Creek	Enterococcus	66323	9/1/2016
OK410400010210_00	Whitegrass Creek	Turbidity	42481	9/20/2012
OK410400020200_00	Caney Creek	Enterococcus	66323	9/1/2016
OK410400020200_00	Caney Creek	Escherichia coli	66323	9/1/2016
OK410400030010_00	Clear Boggy Creek	Turbidity	42468	9/20/2012
OK410400030010_00	Clear Boggy Creek	Enterococcus	33299	9/21/2007
OK410400030370_00	Leader Creek	Turbidity	42474	9/20/2012
OK410400030490_00	Goose Creek	Turbidity	42470	9/20/2012
OK410400050270_10	Muddy Boggy Creek	Enterococcus	42455	9/20/2012
OK410400050270_10	Muddy Boggy Creek	Turbidity	42455	9/20/2012
OK410400050270_10	Muddy Boggy Creek	Enterococcus	33300	9/21/2007
OK410400060120_00	Caney Boggy Creek	Turbidity	42458	9/20/2012
OK410600010010_00	Blue River	Enterococcus	33301	9/21/2007
OK410600010030_00	Sulphur Creek	Turbidity	39181	9/22/2010
OK520500010110_10	Canadian River, North	Turbidity	40589	8/16/2011
OK520500010110_10	Canadian River, North	Enterococcus	40589	8/16/2011
OK520500010170_00	Bad Creek	Escherichia coli	60820	9/25/2014
OK520500010170_00	Bad Creek	Enterococcus	40591	8/16/2011
OK520500010200_00	Alabama Creek	Enterococcus	60840	9/25/2014
OK520500010200_00	Alabama Creek	Escherichia coli	60840	9/25/2014
OK520500020010_00	Wewoka Creek	Escherichia coli	60860	9/25/2014
OK520500020010_00	Wewoka Creek	Enterococcus	40592	8/16/2011
OK520500020010_00	Wewoka Creek	Turbidity	40592	8/16/2011
OK520500020090_00	Little Wewoka Creek	Enterococcus	60861	9/25/2014
OK520500020090_00	Little Wewoka Creek	Escherichia coli	60861	9/25/2014
OK520510000010_00	Canadian River, North	Enterococcus	40595	8/16/2011
OK520510000010_00	Canadian River, North	Turbidity	40595	8/16/2011
OK520510000110_00	Canadian River, North	Enterococcus	40590	8/16/2011

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK520510000110_00	Canadian River, North	Turbidity	40590	8/16/2011
OK520510000110_20	Canadian River, North	Enterococcus	38886	6/29/2010
OK520520000010_00	Canadian River, North	Enterococcus	38869	6/29/2010
OK520520000010_10	Canadian River, North	Enterococcus	38885	6/29/2010
OK520520000010_20	Canadian River, North	Enterococcus	38884	6/29/2010
OK520520000010_30	Canadian River, North	Escherichia coli	38883	6/29/2010
OK520520000010_30	Canadian River, North	Enterococcus	38883	6/29/2010
OK520520000010_40	Canadian River, North	Enterococcus	38882	6/29/2010
OK520520000150_00	Crooked Oak Creek	Escherichia coli	38875	6/29/2010
OK520520000210_00	Canadian River, North	Enterococcus	38881	6/29/2010
OK520520000240_00	Mustang Creek	Escherichia coli	38874	6/29/2010
OK520530000010_10	Canadian River, North	Escherichia coli	33888	11/6/2007
OK520530000010_10	Canadian River, North	Enterococcus	33888	11/6/2007
OK520530000030_00	Shell Creek	Enterococcus	33889	11/6/2007
OK520530000030_00	Shell Creek	Escherichia coli	33889	11/6/2007
OK520600010010_00	Canadian River	Enterococcus	35619	10/20/2008
OK520600010060_00	Factory Creek	Escherichia coli	35615	10/28/2008
OK520610010010_05	Canadian River	Enterococcus	35621	10/20/2008
OK520610010080_00	Willow Creek	Escherichia coli	35617	10/20/2008
OK520610020120_00	Buggy Creek	Enterococcus	35618	10/20/2008
OK520610020120_00	Buggy Creek	Escherichia coli	35618	10/20/2008
OK520610020150_10	Canadian River	Enterococcus	35623	10/20/2008
OK520610030080_00	Walnut Creek, North Fork	Enterococcus	35624	9/29/2009
OK520610030080_00	Walnut Creek, North Fork	Escherichia coli	35624	9/29/2009
OK520620010120_00	Bear Creek	Escherichia coli	30710	9/29/2006
OK520620010120_00	Bear Creek	Enterococcus	30710	9/29/2006
OK520620020010_00	Canadian River	Enterococcus	30714	9/29/2006
OK520620020090_00	Trail Creek	Escherichia coli	30717	9/29/2006
OK520620020090_00	Trail Creek	Enterococcus	30717	9/29/2006
OK520620030020_00	Lone Creek	Escherichia coli	30718	9/29/2006

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK520620030020_00	Lone Creek	Enterococcus	30718	9/29/2006
OK520620030050_00	Red Trail Creek	Enterococcus	30747	9/29/2006
OK520620030050_00	Red Trail Creek	Escherichia coli	30747	9/29/2006
OK520620030110_00	Red Creek	Escherichia coli	30757	9/29/2006
OK520620030110_00	Red Creek	Enterococcus	30757	9/29/2006
OK520620040050_00	Hackberry Creek	Escherichia coli	30759	9/29/2006
OK520620040050_00	Hackberry Creek	Enterococcus	30759	9/29/2006
OK520620050160_00	Commission Creek	Enterococcus	30730	9/29/2006
OK520620050160_00	Commission Creek	Escherichia coli	30730	9/29/2006
OK520620060010_00	Deer Creek	Enterococcus	30723	9/29/2006
OK520620060010_00	Deer Creek	Escherichia coli	30723	9/29/2006
OK520700020010_10	Canadian River, Deep Fork	Turbidity	41134	9/30/2011
OK520700020010_10	Canadian River, Deep Fork	Enterococcus	41134	9/30/2011
OK520700030100_00	Salt Creek	Enterococcus	41065	9/30/2011
OK520700030220_00	Camp Creek	Enterococcus	41066	9/30/2011
OK520700040010_00	Canadian River, Deep Fork	Turbidity	41069	9/30/2011
OK520700040010_00	Canadian River, Deep Fork	Enterococcus	41069	9/30/2011
OK520700040020_00	Dry Creek	Turbidity	41070	9/30/2011
OK520700040020_00	Dry Creek	Enterococcus	41070	9/30/2011
OK520700040020_00	Dry Creek	Escherichia coli	41070	9/30/2011
OK520700040260_00	Quapaw Creek	Turbidity	41072	9/30/2011
OK520700040260_00	Quapaw Creek	Enterococcus	41072	9/30/2011
OK520700050020_00	Bellcow Creek	Enterococcus	41078	9/30/2011
OK520700050200_00	Opossum Creek	Turbidity	41077	9/30/2011
OK520700060130_10	Little Deep Fork Creek	Turbidity	41133	9/30/2011
OK520700060140_00	Catfish Creek	Turbidity	41132	9/30/2011
OK520800010010_00	Little River	Enterococcus	35625	10/20/2008
OK520810000020_00	Thunderbird Lake	Chlorophyll-a	55040	11/13/2013
OK520810000020_00	Thunderbird Lake	DO	55040	11/13/2013
OK520810000020_00	Thunderbird Lake	Turbidity	55040	11/13/2013

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK620900010170_10	Cimarron River	Enterococcus	42499	9/20/2012
OK620900010170_10	Cimarron River	Turbidity	42499	9/20/2012
OK620900010180_00	Lagoon Creek	Escherichia coli	42501	9/20/2012
OK620900010180_00	Lagoon Creek	Enterococcus	42501	9/20/2012
OK620900010290_00	Euchee Creek	Escherichia coli	42509	9/20/2012
OK620900010290_00	Euchee Creek	Enterococcus	42509	9/20/2012
OK620900010290_00	Euchee Creek	Turbidity	42509	9/20/2012
OK620900010310_00	Cottonwood Creek	Enterococcus	42504	9/20/2012
OK620900010310_00	Cottonwood Creek	Escherichia coli	42504	9/20/2012
OK620900020020_00	Salt Creek	Enterococcus	42512	9/20/2012
OK620900020020_00	Salt Creek	Escherichia coli	42512	9/20/2012
OK620900020050_00	Council Creek	Turbidity	42511	9/20/2012
OK620900020050_00	Council Creek	Enterococcus	42511	9/20/2012
OK620900020050_00	Council Creek	Escherichia coli	42511	9/20/2012
OK620900030010_00	Cimarron River	Enterococcus	42492	9/20/2012
OK620900030010_00	Cimarron River	Turbidity	42492	9/20/2012
OK620900030080_00	Dugout Creek	Enterococcus	42513	9/20/2012
OK620900030080_00	Dugout Creek	Escherichia coli	42513	9/20/2012
OK620900030230_00	Beaver Creek	Turbidity	42502	9/20/2012
OK620900030230_00	Beaver Creek	Escherichia coli	42502	9/20/2012
OK620900030230_00	Beaver Creek	Enterococcus	42502	9/20/2012
OK620900030260_00	Beaver Creek, West	Turbidity	42505	9/20/2012
OK620900040040_00	Stillwater Creek	Turbidity	42510	9/20/2012
OK620900040040_00	Stillwater Creek	Escherichia coli	42510	9/20/2012
OK620900040040_00	Stillwater Creek	Enterococcus	42510	9/20/2012
OK620900040280_00	Carl Blackwell Lake	Chlorophyll-a	66037	7/22/2016
OK620910010010_00	Cimarron River	Enterococcus	37386	9/29/2009
OK620910020010_00	Cimarron River	Turbidity	40623	8/26/2011
OK620910020010_00	Cimarron River	Escherichia coli	40623	8/26/2011
OK620910020010_00	Cimarron River	Enterococcus	40623	8/26/2011

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK620910020010_10	Cimarron River	Escherichia coli	40622	8/26/2011
OK620910020010_10	Cimarron River	Enterococcus	40622	8/26/2011
OK620910020040_00	Cooper Creek	Turbidity	38650	5/28/2010
OK620910020040_00	Cooper Creek	Escherichia coli	37387	9/29/2009
OK620910020040_00	Cooper Creek	Enterococcus	37387	9/29/2009
OK620910020250_00	Deep Creek	Escherichia coli	37396	9/29/2009
OK620910020250_00	Deep Creek	Enterococcus	37396	9/29/2009
OK620910020270_00	Elm Creek	Turbidity	38651	5/28/2010
OK620910020270_00	Elm Creek	Enterococcus	37398	9/29/2009
OK620910020270_00	Elm Creek	Escherichia coli	37398	9/29/2009
OK620910020310_00	Indian Creek	Enterococcus	37399	9/29/2009
OK620910020310_00	Indian Creek	Escherichia coli	37399	9/29/2009
OK620910030010_00	Skeleton Creek	Turbidity	38652	5/28/2010
OK620910030010_00	Skeleton Creek	Enterococcus	37402	9/29/2009
OK620910030010_00	Skeleton Creek	Escherichia coli	37402	9/29/2009
OK620910030040_00	Otter Creek	Escherichia coli	42583	9/20/2012
OK620910030040_00	Otter Creek	Enterococcus	42583	9/20/2012
OK620910040010_20	Cottonwood Creek	Turbidity	38653	5/28/2010
OK620910040010_20	Cottonwood Creek	Escherichia coli	37407	9/29/2009
OK620910040010_20	Cottonwood Creek	Enterococcus	37407	9/29/2009
OK620910040060_00	Guthrie Lake	Chlorophyll-a	41750	5/18/2012
OK620910040080_00	Liberty Lake	Chlorophyll-a	41751	5/18/2012
OK620910040120_00	Deer Creek	Turbidity	38654	5/28/2010
OK620910040120_00	Deer Creek	Enterococcus	37408	9/29/2009
OK620910040120_00	Deer Creek	Escherichia coli	37408	9/29/2009
OK620910040140_00	Bluff Creek	Enterococcus	42517	9/20/2012
OK620910050010_00	Kingfisher Creek	Turbidity	38655	5/28/2010
OK620910050010_00	Kingfisher Creek	Escherichia coli	37410	9/29/2009
OK620910050010_00	Kingfisher Creek	Enterococcus	37410	9/29/2009
OK620910050020_00	Trail Creek	Escherichia coli	37412	9/29/2009

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK620910050020_00	Trail Creek	Enterococcus	37412	9/29/2009
OK620910050030_00	Uncle Johns Creek	Enterococcus	37413	9/29/2009
OK620910050030_00	Uncle Johns Creek	Escherichia coli	37413	9/29/2009
OK620910050080_00	Winter Camp Creek	Turbidity	38656	5/28/2010
OK620910050080_00	Winter Camp Creek	Escherichia coli	37414	9/29/2009
OK620910050080_00	Winter Camp Creek	Enterococcus	37414	9/29/2009
OK620910060010_00	Turkey Creek	Turbidity	30704	9/29/2006
OK620910060010_00	Turkey Creek	Enterococcus	30704	9/29/2006
OK620910060020_00	Little Turkey Creek	Turbidity	30706	9/29/2006
OK620910060020_00	Little Turkey Creek	Enterococcus	30706	9/29/2006
OK620910060030_00	Buffalo Creek	Turbidity	30707	9/29/2006
OK620920010010_00	Cimarron River	Turbidity	40624	8/26/2011
OK620920010010_00	Cimarron River	Escherichia coli	40624	8/26/2011
OK620920010010_00	Cimarron River	Enterococcus	40624	8/26/2011
OK620920010080_00	Cottonwood Creek	Turbidity	40618	8/26/2011
OK620920010130_00	Griever Creek	Enterococcus	40621	8/26/2011
OK620920010180_00	Main Creek	Escherichia coli	40617	8/26/2011
OK620920010180_00	Main Creek	Enterococcus	40617	8/26/2011
OK620920010180_00	Main Creek	Turbidity	40617	8/26/2011
OK620920020010_00	Cimarron River	Escherichia coli	40615	8/26/2011
OK620920020080_00	Long Creek	Escherichia coli	40616	8/26/2011
OK620920020080_00	Long Creek	Enterococcus	40616	8/26/2011
OK620920030010_00	Cimarron River	Enterococcus	40609	8/26/2011
OK620920030010_00	Cimarron River	Escherichia coli	40609	8/26/2011
OK620920040010_00	Eagle Chief Creek	Turbidity	40625	8/26/2011
OK620920040010_00	Eagle Chief Creek	Enterococcus	40625	8/26/2011
OK620920040010_00	Eagle Chief Creek	Escherichia coli	40625	8/26/2011
OK620920050010_00	Buffalo Creek	Enterococcus	40612	8/26/2011
OK620920050010_00	Buffalo Creek	Escherichia coli	40612	8/26/2011
OK620920050050_00	Sand Creek	Enterococcus	40614	8/26/2011

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK620920050050_00	Sand Creek	Escherichia coli	40614	8/26/2011
OK620930000010_00	Cimarron River	Enterococcus	40587	8/16/2011
OK620930000100_00	Crooked Creek	Enterococcus	40588	8/16/2011
OK621000010010_30	Arkansas River, Salt Fork	Enterococcus	41080	9/30/2011
OK621000010010_30	Arkansas River, Salt Fork	Turbidity	41080	9/30/2011
OK621000030010_00	Bois D' Arc Creek	Turbidity	41129	9/30/2011
OK621000030010_00	Bois D' Arc Creek	Escherichia coli	41129	9/30/2011
OK621000030010_00	Bois D' Arc Creek	Enterococcus	41129	9/30/2011
OK621000040010_00	Deer Creek	Enterococcus	41084	9/30/2011
OK621000040010_00	Deer Creek	Turbidity	41084	9/30/2011
OK621000040010_00	Deer Creek	Escherichia coli	41084	9/30/2011
OK621000050010_00	Pond Creek	Escherichia coli	41115	9/30/2011
OK621000050010_00	Pond Creek	Enterococcus	41115	9/30/2011
OK621000050010_00	Pond Creek	Turbidity	41115	9/30/2011
OK621000060010_00	Crooked Creek	Enterococcus	41116	9/30/2011
OK621000060010_00	Crooked Creek	Turbidity	41116	9/30/2011
OK621010010010_00	Arkansas River, Salt Fork	Enterococcus	41121	9/30/2011
OK621010010010_00	Arkansas River, Salt Fork	Turbidity	41121	9/30/2011
OK621010010090_00	Clay Creek	Enterococcus	41125	9/30/2011
OK621010010160_00	Arkansas River, Salt Fork	Escherichia coli	41122	9/30/2011
OK621010010160_00	Arkansas River, Salt Fork	Enterococcus	41122	9/30/2011
OK621010010160_00	Arkansas River, Salt Fork	Turbidity	41122	9/30/2011
OK621010010230_00	Turkey Creek	Turbidity	41098	9/30/2011
OK621010010230_00	Turkey Creek	Escherichia coli	41098	9/30/2011
OK621010010230_00	Turkey Creek	Enterococcus	41098	9/30/2011
OK621010010270_00	Yellowstone Creek	Enterococcus	41123	9/30/2011
OK621010020010_00	Sandy Creek	Enterococcus	41124	9/30/2011
OK621010020010_00	Sandy Creek	Escherichia coli	41124	9/30/2011
OK621010030010_00	Medicine Lodge River	Turbidity	41119	9/30/2011
OK621010030010_00	Medicine Lodge River	Escherichia coli	41119	9/30/2011

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK621010030010_00	Medicine Lodge River	Enterococcus	41119	9/30/2011
OK621010030030_00	Driftwood Creek	Turbidity	41117	9/30/2011
OK621010030030_00	Driftwood Creek	Escherichia coli	41117	9/30/2011
OK621010030030_00	Driftwood Creek	Enterococcus	41117	9/30/2011
OK621100000010_00	Chikaskia River	Escherichia coli	41088	9/30/2011
OK621100000010_00	Chikaskia River	Enterococcus	41088	9/30/2011
OK621100000010_00	Chikaskia River	Turbidity	41088	9/30/2011
OK621100000010_10	Chikaskia River	Enterococcus	41128	9/30/2011
OK621100000010_10	Chikaskia River	Turbidity	41128	9/30/2011
OK621100000100_00	Bitter Creek	Escherichia coli	41086	9/30/2011
OK621100000100_00	Bitter Creek	Turbidity	41086	9/30/2011
OK621100000100_00	Bitter Creek	Enterococcus	41086	9/30/2011
OK621200010200_00	Arkansas River	Enterococcus	41096	9/30/2011
OK621200010200_00	Arkansas River	Turbidity	41096	9/30/2011
OK621200010400_00	Gray Horse Creek	Turbidity	38646	5/10/2010
OK621200010400_00	Gray Horse Creek	Escherichia coli	37062	9/15/2009
OK621200010400_00	Gray Horse Creek	Enterococcus	37062	9/15/2009
OK621200020020_00	Doga Creek	Turbidity	38647	5/10/2010
OK621200020020_00	Doga Creek	Escherichia coli	37063	9/15/2009
OK621200020020_00	Doga Creek	Enterococcus	37063	9/15/2009
OK621200030010_00	Black Bear Creek	Escherichia coli	41131	9/30/2011
OK621200030010_00	Black Bear Creek	Enterococcus	41131	9/30/2011
OK621200030010_00	Black Bear Creek	Turbidity	39182	9/22/2010
OK621200040010_00	Salt Creek	Turbidity	38645	5/10/2010
OK621200040010_00	Salt Creek	Enterococcus	37061	9/15/2009
OK621200040010_10	Salt Creek	Escherichia coli	37059	9/15/2009
OK621200040010_10	Salt Creek	Enterococcus	37059	9/15/2009
OK621200050010_00	Red Rock Creek	Escherichia coli	41108	9/30/2011
OK621200050010_00	Red Rock Creek	Enterococcus	41108	9/30/2011
OK621200050010_00	Red Rock Creek	Turbidity	41108	9/30/2011

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK621200050010_10	Red Rock Creek	Enterococcus	59184	9/11/2014
OK621200050010_10	Red Rock Creek	Escherichia coli	41113	9/30/2011
OK621200050010_10	Red Rock Creek	Turbidity	41113	9/30/2011
OK621210000030_10	Arkansas River	Enterococcus	59185	9/11/2014
OK621210000030_10	Arkansas River	Turbidity	59185	9/11/2014
OK621210000050_10	Beaver Creek	Enterococcus	41090	9/30/2011
OK621210000050_10	Beaver Creek	Escherichia coli	41090	9/30/2011
OK621210000270_00	Chilocco Creek	Enterococcus	41089	9/30/2011
OK621210000270_00	Chilocco Creek	Turbidity	41089	9/30/2011
OK621210000270_00	Chilocco Creek	Escherichia coli	41089	9/30/2011
OK720500010010_00	Canadian River, North	Enterococcus	59186	9/11/2014
OK720500010070_00	Bent Creek	Sulfates	60920	9/23/2014
OK720500010070_00	Bent Creek	Escherichia coli	59187	9/11/2014
OK720500010070_00	Bent Creek	Enterococcus	59187	9/11/2014
OK720500010140_10	Beaver River (North Canadian)	Enterococcus	59200	9/11/2014
OK720500010150_00	Persimmon Creek	Escherichia coli	59202	9/11/2014
OK720500010150_00	Persimmon Creek	Enterococcus	59202	9/11/2014
OK720500010150_00	Persimmon Creek	Turbidity	59202	9/11/2014
OK720500010200_00	Indian Creek	Escherichia coli	59203	9/11/2014
OK720500010200_00	Indian Creek	Enterococcus	59203	9/11/2014
OK720500020010_00	Beaver River	Enterococcus	39225	9/28/2010
OK720500020030_00	Wolf Creek	Enterococcus	39240	9/28/2010
OK720500020030_00	Wolf Creek	Turbidity	39240	9/23/2010
OK720500020050_00	Otter Creek	Escherichia coli	39234	9/28/2010
OK720500020050_00	Otter Creek	Enterococcus	39234	9/28/2010
OK720500020070_00	Clear Creek	Escherichia coli	39227	9/28/2010
OK720500020070_00	Clear Creek	Enterococcus	39227	9/28/2010
OK720500020100_00	Spring Creek	Escherichia coli	39237	9/28/2010
OK720500020100_00	Spring Creek	Enterococcus	39237	9/28/2010
OK720500020130_00	Kiowa Creek	Escherichia coli	39233	9/28/2010

Waterbody ID	Waterbody Name	Cause	TMDL ID	TMDL Completion Date
OK720500020130_00	Kiowa Creek	Enterococcus	39233	9/28/2010
OK720500020140_00	Beaver River (North Canadian)	Chloride	60940	9/23/2014
OK720500020140_00	Beaver River	Enterococcus	39224	9/28/2010
OK720500020250_00	Duck Pond Creek	Enterococcus	39229	9/28/2010
OK720500020250_00	Duck Pond Creek	Escherichia coli	39229	9/28/2010
OK720500020290_00	Beaver River (North Canadian)	Chloride	60941	9/23/2014
OK720500020290_00	Beaver River (North Canadian)	Sulfates	60941	9/23/2014
OK720500020290_00	Beaver River (North Canadian)	TDS	60941	9/23/2014
OK720500020290_00	Beaver River	Enterococcus	39223	9/28/2010
OK720500020290_00	Beaver River	Escherichia coli	39223	9/28/2010
OK720500020300_00	Clear Creek	Enterococcus	39226	9/28/2010
OK720500020450_00	Beaver River (North Canadian)	TDS	60960	9/23/2014
OK720500020450_00	Beaver River (North Canadian)	Sulfates	60960	9/23/2014
OK720500020450_00	Beaver River (North Canadian)	Chloride	60960	9/23/2014
OK720500020450_00	Beaver River	Enterococcus	39222	9/28/2010
OK720500020450_00	Beaver River	Escherichia coli	39222	9/28/2010
OK720500020500_00	Palo Duro Creek	Sulfates	60980	9/23/2014
OK720500020500_00	Palo Duro Creek	TDS	60980	9/23/2014
OK720500020500_00	Palo Duro Creek	Chloride	60980	9/23/2014
OK720500020500_00	Palo Duro Creek	Turbidity	39236	9/28/2010
OK720500020500_10	Palo Duro Creek	Enterococcus	39235	9/28/2010
OK720500020500_10	Palo Duro Creek	Escherichia coli	39235	9/28/2010
OK720500030010_00	Wolf Creek	Enterococcus	39238	9/28/2010
OK720510000190_00	Beaver River	Escherichia coli	39221	9/28/2010
OK720510000190_00	Beaver River	Enterococcus	39221	9/28/2010
OK720900000180_00	Cimarron River	Enterococcus	40586	8/16/2011

***Statewide Stream/River Probabilistic Monitoring Network for
the State of Oklahoma from 2008-2011***



Final Report
September 3, 2013

FY-2011 WPCP-Monitoring Section 106 Supplemental, Project 2 (CA# I-00F432-01) –“The Statewide Stream/River Probabilistic Monitoring Network—Final Report”

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Full Report available at, including appendices, available at:

http://www.owrb.ok.gov/studies/reports/reports_pdf/StatewideStreamProbMonitoringNetwork2008-2011.pdf

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EXECUTIVE SUMMARY

Several agencies conduct water quality monitoring in the State of Oklahoma. These agencies meet complementary monitoring objectives that support the management of Oklahoma's surface waters. The two primary components of the statewide monitoring program include (a) the Beneficial Use Monitoring Program, a long-term, fixed-station water quality monitoring network of the Oklahoma Water Resources Board (OWRB), and (b) Oklahoma Conservation Commission's (OCC) Small-Watershed Rotating Basin Monitoring Program, targeting water quality and ecological conditions in waters flowing from 11-digit hydrologic units. The state recently completed a water quality monitoring strategy that describes their existing programs in detail and the monitoring objectives that cannot be met with existing resources (OWRB, 2012d). These objectives include the ability to make statistically valid inferences about environmental conditions throughout the state, based on a probabilistic selection of sites. Meeting this objective will improve the ability to make condition estimates required in section 305(b) of the Clean Water Act. This requirement includes a description of the quality of all lotic waters, and the extent that all waters provide for the protection and propagation of aquatic life. The Environmental Protection Agency (EPA) recently released guidance establishing the "10 Required Elements of a State Water Monitoring and Assessment Program" (USEPA, 2005). Among other things, the document states, "a State monitoring program will likely integrate several monitoring designs (e.g., fixed station, intensive and screening-level monitoring, rotating basin, judgmental and probability design) to meet the full range of decision needs. The State monitoring design should include probability-based networks (at the watershed or state-level) that support statistically valid inferences about the condition of all State water types, over time. EPA expects the State to use the most efficient combination of monitoring designs to meet its objectives."

From 2008-2011, Oklahoma completed its 2nd and 3rd statewide surveys of lotic waters. In SY 2008-2009, Oklahoma participated in the National Rivers and Streams Assessment (NRSA) and sampled fifty-two (52) stations equally proportioned across orders 1-4 and 5+, completing its second comprehensive survey. In SY 2010-2011, Oklahoma completed its third statewide probabilistic study with a sample size of 48 perennial streams and rivers. The new study population included perennial streams and rivers throughout Oklahoma, and continued through the NRSA draw into the remaining oversample sites. By combining the two studies, Oklahoma can report on several temporal scales, and on two (2) size classes—smaller and larger waterbodies. Temporal scales include:

- 52 sites in the 2008-2009 sampling period (NRSA study)
- 48 sites in the 2010-2011 sampling period (OWRB study)
- 100 sites over the 2008-2011 sampling period (combined study).

The probability-based survey was designed to assist Oklahoma's water quality managers in several ways. Furthermore, in keeping with the environmental goals of the state as outlined in the comprehensive water plan, an effective long-term management strategy based on sound science and defensible data can be developed using this data. The four over-arching goals were:

1. Estimate the condition of multi-assemblage biological indicators for Oklahoma's waters through a statistically-valid approach.
2. Estimate the extent of stressors that may be associated with biological condition.
3. Evaluate the relationship between stressors and condition for use in various long and short term environmental management strategies.
4. Assess waters for inclusion in Oklahoma's Integrated Water Quality Report.

To assess ecological and human health, one-time collections were made for a variety of biological, chemical, and physical parameters (Table 1). When sites were verified as target, a sampling schedule was implemented. All target sites were visited once (in rare instances twice) during a late spring to late summer index period (June 1 – August 30), under base flow conditions. The studies measured the condition of three biotic assemblages—fish, macroinvertebrates, and sestonic and benthic algae—and a variety of stressors, including nutrients, conductivity, turbidity, habitat and sedimentation, and toxics. Fish data were analyzed using two indices of biological integrity (IBI) commonly used in Oklahoma bioassessment studies, as well as the IBI developed by the NRSA. Macroinvertebrate data were analyzed using a Benthic-IBI (B-IBI) developed for Oklahoma benthic communities (OCC, 2005a) and commonly used by the OCC and OWRB Water Quality Divisions (OCC, 2008; OWRB, 2009 and 2010a; ODEQ, 2012), as well as the IBI developed by the NRSA. To estimate condition of algal biomass, chlorophyll-a concentrations were compared to several screening levels.

Data outputs include: 1) relative extent of indicator and stressor condition, 2) relative risk of stressors to indicators, and 3) attributable risk of stressors to indicator extent. Data will also combined with other sources and included in the 2014 303(d) assessment of the Oklahoma Integrated Water Quality Report.

Highlights of the relative extent include:

- For both fish and macroinvertebrates, nearly 35% of stream miles were classified in poor condition over the 4-year study period, and the poor category increased to greater than 40% from 2008-2009 and decreased to less than 25% from 2010-2011.
- When considering stream size, a greater percentage of large river stream miles are in poor condition than small streams.
- A relative small percentage of miles (10%) are classified in poor condition for benthic algae. a greater percentage of large rivers (22%) than small streams (6%) are in poor condition.
- For sestonic algae, the percentage of streams in poor condition across study years varies from nearly 20% (2008-2009) to nearly 30% from 2010-2011, while the percent in good condition is approximately 55% for all study periods, and approximately 60% of large river miles are in poor condition as compared less than 10% of small river miles.
- Phosphorus extent in poor condition is generally 30-40%, regardless of study period or source of screening limit, while the percent of total miles in good condition ranges from 40-50%.
- Total nitrogen poor condition is from 25-40%.
- For conductivity, poor condition ranges from 10-22%, and is 40-55% in larger rivers, as opposed to 5% in small streams.
- For turbidity, poor condition is nearly 25%, and is 37% in larger rivers as opposed to 9% in smaller streams.
- Excess sedimentation from greater than 25% in streams to 35% in rivers, with poor condition ranging from 15% in 2008-2009 to greater than 50% from 2010-2011.

The current study allows for unique analysis between both study periods and waterbody size.

- For indicators, both fish and macroinvertebrates demonstrate a downward trend in poor condition between study periods, with only the fish having a significant downward trend.
- Conversely, both algal indicators show an upward trend, with only the benthic algae trend having significance.
- All but one of the total phosphorus stressors shows an upward trend between the two study periods, with only turbidity and sediment having a significant trend.

Attributable risk analyses provided the following results:

- Notably, for fish, elimination of sediment in large rivers could create a significant reduction of poor condition in fish as could reduction in conductivity.
- For macroinvertebrates, elimination of both total phosphorus and total nitrogen could have a significant effect on poor condition
- The elimination of phosphorus in small streams results in a nearly 14% lowering of the percent of miles in poor condition.
- As with fish, the elimination of conductivity is significant in some scenarios.
- Sestonic algal condition shows significant reduction in poor condition when turbidity, conductivity, and nutrients are eliminated.

Future study plans include the 2013-2014 National Rivers and Streams Assessment and a subsequent two-year statewide study beginning in 2015 (OWRB, 2013b). Substantive changes to the program will include

- Use of the NRSA protocols for large Wadeable and non-wadeable waterbodies.
- Use of NRSA habitat protocols for wadeable streams in concert with the current RBP habitat protocol.
- Inclusion of a second winter macroinvertebrate index period.
- Development of a periphyton taxonomic assemblage.
- Assessments at aggregated ecoregion scales used in the 2005-2007 assessment (OWRB, 2009)
- Change/trend analyses through the use of revisit sites.

INTRODUCTION

Several agencies conduct water quality monitoring in the State of Oklahoma. These agencies meet complementary monitoring objectives that support the management of Oklahoma's surface waters. The two primary components of the statewide monitoring program include (a) the Beneficial Use Monitoring Program, a long-term, fixed-station water quality monitoring network of the Oklahoma Water Resources Board (OWRB), and (b) Oklahoma Conservation Commission's (OCC) Small-Watershed Rotating Basin Monitoring Program, targeting water quality and ecological conditions in waters flowing from 11-digit hydrologic units. The state recently completed a water quality monitoring strategy that describes their existing programs in detail and the monitoring objectives that cannot be met with existing resources (OWRB, 2012d). These objectives include the ability to make statistically valid inferences about environmental conditions throughout the state, based on a probabilistic selection of sites. Meeting this objective will improve the ability to make condition estimates required in section 305(b) of the Clean Water Act. This requirement includes a description of the quality of all lotic waters, and the extent that all waters provide for the protection and propagation of aquatic life.

The Environmental Protection Agency (EPA) recently released guidance establishing the "10 Required Elements of a State Water Monitoring and Assessment Program" (USEPA, 2005). Among other things, the document states, "a State monitoring program will likely integrate several monitoring designs (e.g., fixed station, intensive and screening-level monitoring, rotating basin, judgmental and probability design) to meet the full range of decision needs. The State monitoring design should include probability-based networks (at the watershed or state-level) that support statistically valid inferences about the condition of all State water types, over time. EPA expects the State to use the most efficient combination of monitoring designs to meet its objectives." Until 2005, Oklahoma had several monitoring programs that met these requirements including the Beneficial Use Monitoring Program (BUMP) and the Rotating Basin Monitoring Program (RBMP) (OWRB, 20012d). Furthermore, the state has developed several programs to intensively monitor areas that have been listed on Oklahoma's 303(d) list of impaired waters (ODEQ, 2010).

In 2001, the state requested assistance with the design of a probabilistic approach to stream and river site selection from the U.S. Environmental Protection Agency, Office of Research and Development (ORD), Western Ecology Division (OWRB, 2006a). The study design was completed, but Oklahoma agencies remained unable to initiate further planning and implementation because of a lack of resources and commitment. In 2004, the OWRB and OCC took part in the National Wadeable Streams Assessment (WSA) (USEPA, 2006), which was fortuitous to future planning efforts for several reasons. First, the timing of the study coincided with discussions in the state about implementing a probabilistic design. Although money was a question, staff and management were worried staff time could not be spent performing all of the necessary reconnaissance work or sampling that is required in a random based monitoring program. Participating in the WSA instilled confidence that this type of monitoring could be accomplished without impeding the success of other programs. In fact, this facet of Oklahoma's monitoring program has only enhanced other programs. Second, because the state showed interest in implementing a random design, USEPA Region 6 began working with staff to find appropriate funding. The initial funding came through a Clean Water Act (CWA) Section 104(b)(3) grant. This money funded not only the initial year of study (2005), but an outcome was to investigate the feasibility of full implementation (OWRB, 2006a). The study investigated feasibility on two fronts—logistic and funding—finding that the logistic portion could be overcome through proper planning and coordination of staff. The funding, however, was not easily dealt with because of program priorities. In 2005, another funding opportunity came open when the USEPA announced further funding of the Regional Environmental Monitoring and Assessment Program (REMAP) (OWRB, 2009). Funding from the REMAP grant allowed the state to continue implementation of probabilistic monitoring for an additional two years through 2007. In

that study, the OWRB completed a large-scale statewide assessment of perennial rivers and streams, as well as assessments for three large ecoregion groupings including the Western and High Plains, the Forested Plains and Flint Hills, and the Eastern Highlands. A significant limitation during that study was the inability to determine biological condition in large rivers.

In SY 2008-2009, Oklahoma participated in the National Rivers and Streams Assessment (NRSA) and sampled fifty-two (52) stations equally proportioned across orders 1-4 and 5+, completing its second comprehensive survey. In SY 2010-2011, Oklahoma completed its third statewide probabilistic study with a sample size of 48 perennial streams and rivers. The new study population included perennial streams and rivers throughout Oklahoma, and continued through the NRSA draw into the remaining oversample sites. By combining the two studies, Oklahoma can report on several temporal scales, and on two (2) size classes—smaller and larger waterbodies. Temporal scales include:

- 52 sites in the 2008-2009 sampling period (NRSA study)
- 48 sites in the 2010-2011 sampling period (OWRB study)
- 100 sites over the 2008-2011 sampling period (combined study)

The probability-based survey was designed to assist Oklahoma's water quality managers in several ways. Furthermore, in keeping with the environmental goals of the state as outlined in the Oklahoma Comprehensive Water Plan, an effective long-term management strategy based on sound science and defensible data can be developed using this data. The four over-arching goals were:

5. Estimate the condition of multi-assemblage biological indicators for Oklahoma's waters through a statistically-valid approach.
6. Estimate the extent of stressors that may be associated with biological condition.
7. Evaluate the relationship between stressors and condition for use in various long and short term environmental management strategies.
8. Assess waters for inclusion in Oklahoma's Integrated Water Quality Report.

The current assessment allows the state to make a statistically valid assessment of the condition of all of Oklahoma's streams/rivers, as required under Section 305(b) of the Clean Water Act (CWA) (ODEQ, 2012). The sample size allows for a statewide estimate of fish, macroinvertebrate, and algal condition on 3 temporal scales, as well as two size classes. Additionally, stressor extent is evaluated for a number of potential environmental stressors. Under the guidelines of the Integrated Listing Methodology (ODEQ, 2012), data allow for the assessment of the Fish & Wildlife Propagation beneficial use on more waters of the state. Although currently limited to certain beneficial uses and associated criteria, the support status of more waters can be determined. Future work may allow for more comprehensive 303(d) assessments so that the support status of probabilistic sites may be fully vetted. Finally, the survey provides information that will allow for better long- and short-range planning and resource allocation. A benefit of probabilistic design is that data results can be applied in a much broader context. For example, the relationship of condition can be associated with stressor extent through methodologies like relative risk analysis. The current study yields a wealth of biological, chemical, and physical data across a broad gradient of environmental conditions, supporting evaluation of these indicator relationships. Data can be used to calibrate existing biocriteria ranges, establish reference condition, and assist in nutrient criteria development. When integrated with fixed-station networks, it can assist in identifying local areas of concern. Also, although not accomplished by this report, landscape metrics can be associated with stressors and condition to develop predictive models. Probabilistic data can assist

in efforts to regionalize environmental concerns. A bottom up approach to management identifies not only statewide issues but allows managers to identify local and regional concerns first, which often lead to issues farther down the watershed, and put resources where they are needed. The probabilistic methodology adds a valuable layer to that management approach.

METHODS

Study Design

An unequal probability random tessellation stratified (RTS) survey design (Stevens 1997, Stevens and Olsen 2004) was used to select stream sample sites across the state (USEPA, 2012 and Appendix D-1). The original design for the 4-year study emanated from Oklahoma's site file for the 2008-2009 NRSA. Unequal probability categories were defined separately for Wadeable streams (1st to 4th order) and non-Wadeable rivers (5th to 10th order). The terms Wadeable and non-Wadeable were used to designate Strahler order classes and did not imply that the streams were actually Wadeable or non-Wadeable, as defined by protocol. For the Wadeable stream category, unequal selection probabilities were defined for 1st, 2nd, 3rd, and 4th order streams so that an equal number of sites would occur for each order. Then these unequal selection probabilities were adjusted by the Wadeable Streams Assessment (WSA) nine aggregated ecoregion categories so that an equal number of sites would occur in each WSA nine aggregated ecoregion category. For the non-Wadeable river category, unequal selection probabilities were defined for 5th, 6th, 7th, and 8th + Strahler order Rivers so that the expected number of sites nationally would be 350, 275, 175, and 100 sites, respectively. Then these unequal selection probabilities were adjusted by WSA nine aggregated ecoregion categories so that an equal number of sites would occur in each WSA nine aggregated ecoregion category. Additionally, certain sites were selected as revisit sites from the 2004 Wadeable Streams, and included in the initial study design, weighted equally across the Strahler order categories mentioned above. In Oklahoma for the 4-year study period, the expected sample size was 51 for both Wadeable streams and non-Wadeable rivers. Oversample sites were provided for each Strahler order grouping. Site replacement was done within the two major Strahler order categories, 1st-4th and 5th+

The study was spatially, temporally and hydrologically limited. Spatially, the study was limited to only streams defined as perennial in flow and excluded all sites within a reservoir flood pool. Temporal limitations were defined by biological index periods. The index period for the fish assemblage in Oklahoma was May 15th through September 15th with an optional extension to October 1st if the stream had not risen above summer seasonal base flow (OWRB, 2010b). The index habitat period for the macroinvertebrate assemblage in Oklahoma was June 1st through August 30th with collections completed in as short a time period as possible (OWRB, 2010c). Hydrologically, the study was limited by both an extended drought in SY-2011 as well as excessive rains and flooding in SY-2008. This impeded study progress in several ways. Sites originally verified as target sites were removed and an oversample site visited because of site changes between the period of reconnaissance and sampling. Additionally, several sites had partial collections because conditions changed between the period of macroinvertebrate/water sampling and fish sampling, or vice-versa. Furthermore, all of the smaller Strahler order category sites were ultimately evaluated. Because of accessibility issues related to drought in SY-11, only 48 sites were available for inclusion in the 2010-2011 study.

The study and subsequent site selection were designed to allow for three reporting periods and sub-categorization of "small" and "large" sites. The reporting periods include 2008-2011 (n = 100), 2008-2009 (n = 52), and 2010-2011 (n = 48). The 2008-2011 was sub-categorized to evaluate small (1st-4th Strahler Order) and large (5th+ Strahler Order) waterbodies. For each subcategory, an "n" of 50

was achieved. The oversample sites from the original NRSA sample design were used to provide sites for the 2010-2011 study.

Site Reconnaissance

Limited accessibility is the most serious problem with any probabilistic study. Unlike a fixed station design, study sites are typically not accessible by public roads and may only be accessed by foot. Compounding the problem is private ownership of land and the need to respect a landowner's choice of who may or may not access the property. Finally, probabilistic sites are selected from data frames that are not 100% accurate and may include non-candidate sites. Fortunately, proper planning and having an excess of available oversample sites can alleviate these issues. During the EPA's Wadeable Streams Assessment (USEPA, 2006) and Oklahoma's 1st Statewide Probabilistic Study (REMAP) (OWRB, 2009), the OWRB developed (with assistance from EPA documentation) and implemented a three-stage reconnaissance plan.

The first stage of planning was a "desk top" reconnaissance to determine if the proposed site was a candidate site. Candidate sites must meet certain criteria, including: 1) perennial flow, 2) not within normal pool elevation of a lake (oxbows or reservoirs), 3) not a wetland/swamp dominated river, 4) accessible by foot, and 5) landowner permission granted. Initially, each site was located using a variety of resources including topographic maps (OWRB, 2011), and other GIS mapping tools (NACEC, 1997). For each site, a site reconnaissance and tracking form (Figure 3) was created with the ultimate determination made to "accept" or "reject". At the outset, required hydrological characteristics were verified, and if not met, the site was rejected without further consideration. Then, a series of site maps containing at least two geographic scales were included with the site tracking form, and the necessary information to determine landowner was collected, including legal description of site and county. County assessor offices were the main source of landowner information. However, for some problem sites, staff used a variety of other resources including development of relationships with local realtors/developers or personal visits to nearby residences. Finally, a landowner permission packet was sent to each landowner, including a standardized permission letter (Figure 4), maps, a study brochure, and self addressed/stamped envelope for them to review and mail back to the OWRB either approving or disallowing access to their property. Based on landowner response, the site was accepted, accepted with restrictions/further instructions, or rejected. However, even when good landowner information was available, response to permission requests was occasionally slow for a variety of reasons, and therefore, a two stage process was developed to deal with slow responses. After two to three weeks, staff attempted contact by phone, and if unsuccessful, would send a reminder postcard. If still unsuccessful, in-person contact was attempted. If each of these attempts failed, the site was rejected.

Once site accessibility was verified (i.e., accepted) and a site was labeled as a study target site, a second planning stage was initiated. The planning objective was simply to collect thorough, well-documented information to assist field crews in locating and accessing the sampling reach. Because of color aerial satellite imagery, much of this information was gathered from the desktop. Notes were made and included in the tracking form of special considerations including hazards, best route of entry, time of travel, etc. Unfortunately, some sites required an on-site initial visit to complete the planning phase. Concerns did arise about the cost versus benefit of an extra site visit. However, over the course of three years, crews discovered that much of the information collected during the initial on-site planning visit was of great benefit on the actual day of sampling. Furthermore, because sites could be visited in batches and only one staff member was required, little expense was incurred.

The final planning stage involved all activities up to the first sampling visit, and involved compiling a complete site packet. The packet incorporated all information gathered in stages one and two,

including a completed tracking form, landowner permission letter, and pertinent pictures and maps. In addition, all necessary field forms and labels were compiled and a checklist of equipment needed was completed.

Probabilistic Monitoring – Site Reconnaissance & Tracking Form

Stream Name: **Little Creek**

Site ID: **OKPB01-027**

Lat/Long: **34° 46' 50.8" / 99° 23' 33.5"**

Site Type: **target** or oversample

Sample Status: **Accepted** or Rejected

If rejected, what is the reason:

- ☐ Landowner Denied Permission
- ☐ Site is Dry
- ☐ Site is Impounded (part of a lake)
- ☐ Site is Not Riverine Habitat (i.e., wetland, swamp, etc.)
- ☐ Site is Not Physically Accessible
- ☐ Other, Please Explain:

If rejected, what site replaces this one?:

Landowner Contact Information:

**John Doe (Doe Land & Cattle Co.)
P.O. Box A
Your Town, OK 11111
(580)555-2222**

Landowner Requests:

None. You can drive down to the site if you need to. (see attached permission letter)

Directions/Access to Site:

From Your Town, go west on SH 1 for 3.25 miles. The property is South of this point. Walk or drive across pasture to get to the X-site. (see attached maps)

Figure 1. Template site reconnaissance and tracking form used during study.

Date

John Doe Trust
C/O Jane Doe
Rt. 1 Box 1
Anywhere, OK 74534

Dear Sir/Madam:

The Oklahoma Water Resources Board (OWRB) is conducting a five-year project to perform environmental assessments on 210 to 220 randomly selected streams across Oklahoma. This effort involves on-site visits by OWRB personnel to a stream adjacent to your property to take samples of the water, fish and other aquatic life, and to gather other information concerning stream habitat such as measurements of stream width and depth and observations of stream bed and vegetation characteristics. The findings of the study are not intended for enforcement or regulatory purposes.

One of the sites that we would like to assess is a point on Your Creek located on your property in Section 1, Township 1 N, Range 1 E, in Your County, Oklahoma. We have enclosed a copy of a topographic map with the site identified by an "X" at the specific point on the stream to be sampled.

We are writing to ask for your permission to come onto your property to visit the site and conduct sampling activities. We realize that working on your property is a privilege and we will respect your landowner rights at all times. If you grant us permission, we will make no more than three visits to your land. The first visit will be for site reconnaissance and will occur sometime between March and April of 2006. A crew of one to two people will use your land to access the site and only gather information about site accessibility. In addition, one or two more visits will be made between May and October of 2006 for sampling and collection. We expect to have a crew of no more than four OWRB employees or its contractors coming on site during the sample collection visits. Fish will only be collected during one of these visits.

Once a sampling date is set, OWRB employees will contact you, either by telephone or in person, before entering onto your land. After OWRB staff contact you, they will access the site either on foot or by vehicle and collect the necessary samples and data. Other than driving or walking across your land and walking in and around the stream site, we expect that staff will not leave any trace of their activity. Staff will honor any special instructions you have, such as accessing land only by foot, driving on pasture roads only, and opening and closing gates responsibly.

If you are agreeable to the activities described above, please complete and sign one copy of the "Landowner Permission" page and mail it back to us in the enclosed, stamped return envelope by Date. We have enclosed a duplicate of this page, which you may keep for your records. Please include contact information so that we may contact you by phone. Thank you for your consideration. If you have any questions about this request, please contact Jason Childress (Project Coordinator) or myself at 405-530-8800.

Sincerely,

Monty Porter
Water Quality Programs Streams/Rivers Monitoring Coordinator

Enclosures: Topo map
 Duplicate original of letter
 Return envelope

LANDOWNER PERMISSION

I grant permission to the employees of the Oklahoma Water Resources Board to come onto my property and conduct stream sampling activities as described in this letter.

_____ Permission granted
_____ Permission granted, subject to the following restrictions or instructions:

_____ Permission not granted

Landowner's Name (please print): _____

Landowner's Signature: _____

Landowner's Daytime Phone No. _____

Figure 2. Template landowner permission letter used during study.

Data Collection

To assess ecological and human health, one-time collections were made for a variety of biological, chemical, and physical parameters (Table 1). When sites were verified as target, a sampling schedule was implemented. All target sites were visited once (in rare instances twice) during a late spring to late summer index period (June 1 – August 30), under base flow conditions. Collections included a comprehensive water chemistry sample and measurement of *in situ* water quality parameters, including water temperature, dissolved oxygen, pH, specific conductance, and turbidity. Additionally, biological assemblages were collected, including fish, macroinvertebrates, phytoplankton, and benthic periphyton. A comprehensive suite of physical habitat, riparian and human health influence measurements were made, as well as a variety of site observational information. In the event that a full collection could not be completed during the index period, an additional collection may have occurred for fish after May 10 or before October 15. Depending on circumstances, information was collected during the same site visit. Additionally, a winter index period was added for macroinvertebrates and water chemistry during the 2010 and 2011 sample years.

Table 1. Water quality variables included in study.

SAMPLE VARIABLES		
<i>In situ</i> Variables		
Dissolved Oxygen (D. O.)	% D. O. Saturation	pH
Water Temperature	Specific Conductance	
Field Variables		
Nephelometric Turbidity	Total Alkalinity	Total Hardness
Instantaneous Flow	Stage	
Laboratory Variables--General Chemistry		
Total Kjeldahl Nitrogen	Ortho-Phosphorus	Total Phosphorus
*Nitrate Nitrogen	*Nitrite Nitrogen	Ammonia Nitrogen
Total Dissolved Solids—gravimetric	Chlorides	Sulfates
Total Settleable Solids	Total Suspended Solids	
Laboratory Variables—Metals		
Arsenic	Cadmium	Chromium
Copper	Lead	Mercury
Nickel	Selenium	Silver
Zinc	Thallium	Calcium
Barium	Iron	Magnesium
Potassium	Sodium	
Biological Variables		
Fish	Macroinvertebrates	Sestonic Chlorophyll-a
Habitat--Long Form	Habitat--Short Form	Benthic Chlorophyll-a

From 2008-2009, all collections strictly followed the NRSA field operations manual (USEPA, 2009a) and Quality Assurance Project Plan (USEPA, 2009b). Sample analyses for these years were provided by the NRSA contract laboratories and data/assessments for all samples and assemblages were provided by the USEPA through either their National Aquatic Resource Survey (NARS) sharefile portal (<https://nars.sharefile.com/>) (USEPA, 2012) or personal communication from EPA staff (Mitchell, 2013).

For study years 2010-2011, data for water quality variables was collected in one of two ways (OWRB, 2010e). Several variables (pH, dissolved oxygen, water temperature, and specific

conductance) were monitored *in-situ* utilizing a Hydrolab® Minisonde or YSI® multi-probe instrument or with single parameter probes. Regardless of instrumentation and in accordance with manufacturer's specifications and/or published SOP's, all instruments (except water temperature) were calibrated at least weekly and verified daily with appropriate standards. The measurement was taken at the deepest point of the channel at a depth of at least 0.1 meters and no greater than one-half of the total depth. The data were uploaded from the instrument and saved to a data recorder, transferred manually to a field log sheet, and manually entered into the OWRB Water Quality database. Data for all other variables were amassed from water quality samples collected at the station. Grab samples were collected by one of two methods—a grab or a composite grab. The most common method employed was a grab sample, which was used in streams with a single, well-mixed channel. The sample was collected at the deepest, fastest flowing portion of the horizontal transect by completely submerging the bottle, allowing it to fill to the top, and capping the bottle underwater. Composite grabs were collected in rivers with multiple channels and were aliquotted into sample bottles using a clean splitter-churn. Each sample included three bottles for general chemistry analyses (two ice preserved and one sulfuric acid preserved), one bottle for metals analysis (nitric acid preserved), and one bottle each for field chemistry analysis and sestonic chlorophyll-a (ice preserved and kept dark). For benthic chlorophyll-a, a sample was composited, placed on ice to be preserved, and kept dark. The Oklahoma Department of Environmental Quality-State Environmental Laboratory (ODEQ-SEL) in accordance with the ODEQ's Quality Management Plan (QTRACK No. 00-182) (ODEQ, 2007) analyzed samples for most parameters listed in Table 4. OWRB personnel measured nitrogen and ortho-phosphorus using Hach® colorimeter protocols, hardness and alkalinity using Hach® titration protocols, and nephelometric turbidity using a Hach® Portable turbidometer.

Samples for algal biomass were collected in both the sestonic and benthic zones of each waterbody and processed in accordance with standard procedures outlined (OWRB, 2006b). Sestonic, or water column, samples were processed from water collected during the general water quality collection. A benthic sample was processed from a reach-wide composite. Benthic filters were extracted using an alternate method, whereby filters are placed in a standard aliquot of ethanol (25 mL) and extracted at room temperature for at least 72 hours. All chlorophyll-a samples were analyzed by the ODEQ-SEL under the previously mentioned QMP (ODEQ, 2007). Additionally, a 50-mL sample was collected from both the water column and the benthic composites for subsequent sestonic and benthic algal ID analysis. Samples were preserved with 10% formalin, wrapped with foil, and placed at 4°C.

Biological assemblages included aquatic macroinvertebrates and fish that were collected in accordance with Oklahoma's Rapid Bioassessment Protocols (RBP) (OWRB, 1999) and the OWRB's biological collection protocols (OWRB, 2010b and 2010d). Collections were completed over a 150-4000 meter reach depending on wetted width. Fish were collected during the summer index period using a pram or boat electrofishing unit depending on wadeability. The pram unit consisted of a Smith-Root 2.5 generator powered pulsator (GPP) attached to a 3000W Honda generator, and were operated with AC output current at 2-6 amps. The boat was equipped with a 9.0 GPP powered by a 9,000 Kohler generator, and operated at an AC output range of 7-20 amps. A battery powered Smith-Root backpack generator was used on rare occasions in sites with less than 1-meter average wetted width. Using two netters with ¼ inch mesh dipnets, collections were made in an upstream direction with target effort depending on reach length, site conditions, and protocol. When existing habitats existed could not be effectively electrofished, supplemental or stand-alone collections were made using 6' X 10-20' seines of ¼ inch mesh equipped with 8' brailles. Fish were processed at several intervals during each collection. The majority of fish were processed in the field, including enumeration and identification to species. Representative site voucher collections were made with a combination of appropriate photodocumentation and

representative species vouchers. Fish that were not readily identifiable were fixed in 10% formalin and returned to the OWRB laboratory for identification and enumeration. Additionally, all representative voucher fish were fixed in a 10% formalin solution, subsequently preserved in 80% ethanol, and, along with photodocumentation, permanently housed in the OWRB fish collection library.

Aquatic macroinvertebrate collections were made during the summer and winter index period of each study year (OWRB, 2010d). Each sampling event included a variety of samples as defined in the OWRB's macroinvertebrate collection protocols. At wadeable sites, staff collected samples from available targeted habitats, including streamside vegetation, woody debris, and rocky riffles. The streamside vegetation and woody debris collections were semi-qualitative samples collected over flowing portions of the reach for total collection times of three and five minutes, respectively. The streamside sample was collected using a 500-micron D-frame net to agitate various types of fine structure sample including fine roots, algae, and emergent and overhanging vegetation. Likewise, the wood sample was collected using a 500-micron D-frame net to agitate, scrape, and brush wood of any size in various states of decay. Additionally, wood that could be removed from the stream was scanned for additional organisms outside the 5-minute sampling time. The riffle collection was a quantitative sample compositing three kicks representing slow, medium and fast velocity rocky riffles within the reach. Each sub-sample was collected by fully kicking one square meter into a 500-micron Zo seine. At non-wadeable sites, a large river collection protocol was used, with the sub-protocol determined by the dominant reach substrate, either fine or coarse substrate. In each protocol, the dominant substrate is sampled at each transect, and within each sub-reach, the dominant targeted habitat is sampled. The primary difference between the sub-protocols was the treatment of samples. The coarse protocol requires that all samples are processed and composited in a final collection type called large coarse-composite (LRC-Comp). While at the large river fine (LRF) sites, collections were kept separate and processed as LRF-THab (targeted habitat) and LRF-Sub (substrate) samples. At all LR sites, a riffle composite is collected, if available. All samples were field post-processed in a 500-micron sieve bucket to remove large material and silt in an effort to reduce sample size to fill no more than $\frac{3}{4}$ of a quart sample jar. Additionally, all nets and buckets were thoroughly scanned to ensure that no organisms were lost. After processing, each sample type was preserved independently in quart wide mouth polypropylene jars with ethanol and interior and exterior labels were added. Prior to taxonomic analysis, all samples were laboratory processed by study personnel to obtain a representative 100 and 300-count subsample, with a large/rare scan (OWRB, 2010d). After sorting, the subsamples were sent to the contract laboratory of record for identification and enumeration. Taxonomic data for each sample were grouped and metrics calculated by the contract laboratory. In general, most organisms were identified to genera with midges identified to tribe. The two contract laboratories used in the study were Environmental Services and Consulting (Lynchburg, VA) and Rhithron Associates (Missoula, MT).

Additionally, a detailed habitat assessment was made targeting in-stream substrate, habitat, width and depth, bank and riparian measurements, and human disturbance characteristics. The collections included both Oklahoma's semi-qualitative RBP habitat protocols (OWRB, 2010c), and the NRSA semi-quantitative habitat protocols (USEPA, 2009a). To date, the USEPA assessments have not been processed.

Discharge and/or stage data were also collected at each station (OWRB, 2005). Flow was determined through several methods including direct measurement of instantaneous discharge using a flow meter, interpolation of flow from a stage/discharge rating curve developed by the United States Geological Survey (USGS) or the OWRB, or through estimation of discharge using a float test (OWRB, 2004).

For a more detailed discussion of sampling procedures, please contact the OWRB/Water Quality Programs Division at (405) 530-8800 for copy of the BUMP Standard Operating Procedures (SOP) or visit the OWRB website at <http://www.owrb.state.ok.us/quality/monitoring/monitoring.php#SOPs>.

Analytical Methods

Condition classes for biotic assemblages and stressors were assigned by either the USEPA or OWRB, depending on study year. All data collected from 2008-2009 were processed and assessed by USEPA staff, excluding wadeable fish and chlorophyll-a data. All data collected from 2010-2011, as well as chlorophyll-a data from 2008-2009, were processed and assessed by OWRB staff.

Analysis of Fish Biological Condition.

Fish data were analyzed using two indices of biological integrity (IBI) commonly used in Oklahoma bioassessment studies, as well as the IBI developed by the NRSA. State biocriteria methods are outlined in Oklahoma's Use Support Assessment Protocols (OWRB, 20012b). In addition, an IBI commonly used by the OCC's Water Quality Division was used to provide an alternative bioassessment (OCC, 2005a and 2008; ODEQ, 2012). All metrics and IBI calculations were made using the OWRB's "Fish Assessment Workbook", an automated calculator OWRB staff built in Microsoft Excel (OWRB, 2012a). The NRSA condition assessments were taken from the tabular fish condition file on the USEPA's NARS sharefile site (USEPA, 2012). The multi-metric index (MMI) developed by the NRSA is described in Appendix D-3.

Oklahoma's biocriteria methodology (OKFIBI) uses a common set of metrics throughout the state (Table 2). Each metric is scored a 5, 3, or 1 depending on the calculated value, and scores are summed to reach two subcategory totals for sample composition and fish condition (OWRB, 2012b). The two subcategories are then summed for a final IBI score. The score is compared to ecoregion biocriteria to determine support status. For example, if the final IBI score is between 25-34, the status for sites in the Ouachita Mountain Ecoregion is deemed undetermined. Likewise, for scores greater than 34 and less than 25, the status is supported or not supported, respectively.

The OCCFIBI uses "a modified version of Karr's Index of Biotic Integrity (IBI) as adapted from Plafkin et al., 1989" (OCC, 2008; ODEQ, 2012). The metrics as well as the scoring system are in Table 3. Metric scores are calculated in two ways for both the test site and composite reference metric values of high-quality streams in the ecoregion (OCC 2005). Species richness values (total, sensitive benthic, sunfish, and intolerant) are compared to composite reference value to obtain a "percent of reference". A score of 5, 3, or 1 is then given the site depending on the percentages outlined in Table 6, while the reference composite is given a default score of 5. Proportional metrics (% individuals as tolerant, insectivorous cyprinids, and lithophilic spawners) are scored by comparing the base metric score for both the test site and the reference composite to the percentile ranges given in Table 3. After all metrics are scored, total scores are calculated for the test and composite reference sites. Finally, the site final score is compared to the composite reference final score and a percent of reference is obtained. The percent of reference is compared to the percentages in Table 4 and an integrity classification is assigned with scores falling between assessment ranges classified in the closest scoring group.

Fish taxonomic results for each site were analyzed to produce a raw score for the OKFIBI and a percent of reference score for the OCCFIBI. Additionally, when available, the condition class determined from the NRSA analysis was included in the evaluation. A preponderance of these assessments were used to then assign a final condition class of good, fair, and poor for each of the 3 study periods, as well as large and small streams.

Table 2. Index of biological integrity used to calculate scores for Oklahoma's biocriteria. Referenced figures may be found in OAC 785:15: Appendix C (OWRB, 2012b).

Metric	Value	Scoring			Score
		5	3	1	
Total # of species		fig 1	fig 1	fig 1	
Shannon's Diversity based upon numbers		>2.50	2.49-1.50	<1.50	
# of sunfish species		>3	2 to 3	<2	
# of species comprising 75% of sample		>5	3 to 4	<3	
Number of intolerant species		fig 2	fig 2	fig 2	
Percentage of tolerant species		fig 3	fig 3	fig 3	
TOTAL SCORE FOR SAMPLE COMPOSITION					0
Percentage of lithophils		>36	18 to 36	<18	
Percentage of DELT anomalies		<0.1	0.1-1.3	>1.3	
Total individuals		>200	75 to 200	<75	
TOTAL SCORE FOR FISH CONDITION					0
TOTAL SCORE					0

Table 3. Metrics and scoring criteria used in the calculation of OCC's index of biological integrity (OCC, 2008; ODEQ, 2012).

Metrics	5	3	1
Number of species	>67%	33-67%	<33%
Number of sensitive benthic species	>67%	33-67%	<33%
Number of sunfish species	>67%	33-67%	<33%
Number of intolerant species	>67%	33-67%	<33%
Proportion tolerant individuals	<10%	10-25%	>25%
Proportion insectivorous cyprinid individuals	>45%	20-45%	<20%
Proportion individuals as lithophilic spawners	>36%	18-36%	<18%

Table 4. Integrity classification scores and descriptions used with OCC's index of biological integrity (OCC, 2008; ODEQ, 2012).

% Comparison to the Reference Score	Integrity Class	Characteristics
>97%	Excellent	Comparable to pristine conditions, exceptional species assemblage
80 - 87%	Good	Decreased species richness, especially intolerant species
67 - 73%	Fair	Intolerant and sensitive species rare or absent
47 - 57%	Poor	Top carnivores and many expected species absent or rare; omnivores and tolerant species dominant
26 - 37%	Very Poor	Few species and individuals present; tolerant species dominant; diseased fish frequent

Analysis of Macroinvertebrate Biological Condition

Macroinvertebrate data were analyzed using a Benthic-IBI (B-IBI) developed for Oklahoma benthic communities (OCC, 2005a) and commonly used by the OCC and OWRB Water Quality Division (OCC, 2008; OWRB, 2009 and 2010a; ODEQ, 2012), as well as the IBI developed by the NRSA. The metrics and scoring criteria (Table 5) are taken from the original “Rapid Bioassessment Protocols for Use in Streams and Rivers” (Plafkin et al., 1989) with slight modifications to the EPT/Total and Shannon-Weaver tolerance metrics (OCC, 2008). Metrics were calculated by OWRB contractors and IBI calculations were made using the OWRB’s “B-IBI Assessment Workbook v. 3.0”, an automated calculator built by OWRB Staff in Microsoft Excel (OWRB, 2012a). The NRSA condition assessments were taken from the tabular macroinvertebrate condition file on the USEPA’s NARS sharefile site (USEPA, 2012). The IBI developed by the NRSA is described in Appendix D-4.

Calculation of the B-IBI is similar to the fish OCC-IBI discussed previously. Metric scores are calculated in two ways for both the test site and the composite reference metric values of high-quality streams in each ecoregion (OCC, 2008). Species richness (total and EPT) and modified HBI values are compared to the composite reference value to obtain a “percent of reference”. A score of 6, 4, 2 or 0 is then given the site depending on the percentages outlined in Table 5, while the reference composite is given a default score of 6. Proportional metrics (% dominant 2 taxa and %EPT of total) as well as the Shannon-Weaver Diversity Index are scored by comparing the base metric score for both the test site and the reference composite to the percentile ranges given in Table 5. After all metrics are scored, total scores are calculated for the test and composite reference sites. The site final score is then compared to the composite reference final score and a percent of reference is obtained. The percent of reference is compared to the percentages in Table 6 and an integrity classification is assigned with scores falling between assessment ranges classified in the closest scoring group.

Macroinvertebrate taxonomic results for each site were analyzed to produce a percent of reference score for the OKBIBI. From these scores, biological integrity classifications were assigned. For NRSA sites, the condition classification assigned by the NRSA was used because the samples were processed as 500 individual sub-samples. Instead of rarifying samples to a 100 individual sub-sample to allow use in Oklahoma’s B-IBI, it was decided that using NRSA condition assignments was more defensible and efficacious for final data analyses. Furthermore, the NRSA IBI was used to assign condition classes for large rivers that were too large to be processed through Oklahoma B-IBI. These samples were compared to national reference metrics and screening limits developed for the NRSA.

Table 5. Metrics and scoring criteria used in the calculation of the B-IBI (OCC, 2008; ODEQ, 2012).

B-IBI Metrics	6	4	2	0
Taxa Richness	>80%	60-80%	40-60%	<40%
Modified HBI	>85%	70-85%	50-70%	<50%
EPT/Total	>30%	20-30%	10-20%	<10%
EPT Taxa	>90%	80-90%	70-80%	<70%
% Dominant 2 Taxa	<20%	20-30%	30-40%	>40%
Shannon-Weaver Diversity Index	>3.5	2.5-3.5	1.5-2.5	<1.5

Table 6. Integrity classification scores and descriptions used with the B-IBI (OCC, 2008; ODEQ 2012).

% Comparison to the Reference Score	Biological Condition	Characteristics
>83%	Non-impaired	Comparable to the best situation expected in that ecoregion; balanced trophic and community structure for stream size
54 - 79%	Slightly Impaired	Community structure and species richness less than expected; percent contribution of tolerant forms increased and loss of some intolerant species
21 - 50%	Moderately Impaired	Fewer species due to loss of most intolerant forms; reduction in EPT index
<17%	Severely Impaired	Few species present; may have high densities of 1 or 2 taxa

Analysis of Algal Biomass

Algae are important in aquatic ecology acting as an important primary producer in aquatic food webs providing a food source for a wide variety of fish and macroinvertebrates. Furthermore, algae are indispensable producers of oxygen for aquatic organisms. However, algal blooms are also an important indicator of water quality perturbation and nutrient productivity. Introduction of nutrients to waterbodies occurs through a number of sources including runoff from urban and agricultural areas, wastewater treatment discharges, and a variety of other sources. As nutrient concentrations increase, uptake by primary producers increases and leads to algal blooms, as well as an increased standing crop. As eutrophication happens, aquatic life and human health beneficial uses can become impaired, as well as the aesthetic and recreational appeal of waterbodies being drastically reduced.

In order to quantify eutrophication, algal biomass was measured in both the benthic (i.e., periphyton) and water column (i.e., sestonic) areas of all study streams. Various measures exist to determine algal biomass including chlorophyll-a and ash free dry mass. For this study, chlorophyll-a concentrations were calculated because the Oklahoma Water Quality Standards (OWQS) (OWRB, 2012c) provides screening levels for both periphyton and sestonic chlorophyll-a.

To estimate condition of algal biomass, chlorophyll-a concentrations were compared to several screening levels. For benthic chlorophyll-a, several screening levels were used. First, Oklahoma's Use Support Assessment Protocol (USAP) (OWRB, 2012b) provides a screening level for periphyton chlorophyll-a in the aesthetic beneficial use. A value of 100 mg/m² represents a nuisance level for periphyton algae, and was used as the cut-point for poor-fair condition. Second, the OWRB has collected periphyton chlorophyll-a across the state for several programs throughout the years. To provide an alternate screening level, the 25th percentile of all OWRB benthic data were calculated at 45.7 mg/m², which was used as the cut-point for fair-good condition. Similarly, several screening levels were established for sestonic chlorophyll-a. The OWQS- includes a standard for sensitive water supplies of 10 mg/m³ (SesChl10) of chlorophyll-a (OWRB, 2012c), which was set as the fair-good cut-point for condition assessment. Additionally, to establish the cut-point for the poor-fair condition, the distribution of all OWRB sestonic chlorophyll-a data were considered as a screening level (OWRB, 2009). The mean of all concentrations calculates at 19 mg/m³ and was set as the poor-fair cut-point for sestonic chlorophyll-a analyses.

Stressor Methodology

During each visit a number of physical and water quality parameters were collected. These included nutrients, *in situ* measurements, metals, and salinity. Each of these may have some effect on the conditions analyzed in the previous results section. This effect can lead to decreased biological integrity (e.g., the effect of nutrients on fish condition) or may be responsible for the increase in a negative condition (e.g., the effect of total phosphorus on algal biomass concentration). Quantifying stressor extent is important for a variety of reasons including development and refinement of water quality screening levels and criteria, location of hotspots, and understanding the cause and effect relationship between stressors and indicators of biological integrity and human health concerns. Stressor descriptions are given in Table 7. The final stressor methodology for chemistry is detailed in Appendix D-5.

Table 7. Descriptions of stressors affecting biological condition.

Stressor Description	Stressor (code)	Source
Total nitrogen SL from the National Rivers and Streams Assessment (NRSA)	TN_NRSA	USEPA
Total nitrogen SL from USEPA's regional nutrient criteria development	TN_ECO	USEPA
Total phosphorus SL from the NRSA	TP_NRSA	USEPA
Total phosphorus SL from USEPA's regional nutrient criteria development	TP_ECO	USEPA
Conductivity SL from the NRSA	Cond_NRSA	USEPA
Conductivity SL based on regional OWRB historical data	Cond_ECO	USEPA
Turbidity SL from USEPA's regional nutrient criteria development	Turb_ECO	USEPA
Sediment based on sediment metric from NRSA and combination of %loose bed material, % embeddedness, and % deep pools from Oklahoma's Rapid Bioassessment	Excess Sed	USEPA/ OWRB
Instream cover assessment from the NRSA	InstCov	USEPA
Riparian vegetation cover from the NRSA	RipVegCov	USEPA
Metals chronic criteria for fish/wildlife propagation beneficial use housed in App. G, Table 2 of OWQS	XxChronic	OWRB

Nutrient stressors include measures of total phosphorus and total nitrogen (nitrate + nitrite + total Kjeldahl nitrogen). For comparison, two sources were used to determine screening levels for each parameter giving a variety of nutrient levels based upon stream characteristics and/or regional variation (Table 7). First, regional nutrient criteria were developed based on Omernik Level III ecoregions. The lower end thresholds represent the 25th percentile of data from a variety of sources (USEPA, 2000a, 2000b, 2001a, 2001b; OWRB, 2009), while the upper end thresholds were developed from OCC regional monitoring data (OCC, 2005b, 2006a, 2006b, 2007, 2008). Second, the NRSA developed nutrient thresholds at a Level II ecoregion scale as described in Appendix D-5. The nutrient cut-point thresholds are in Table 8.

Additionally, both salinity and turbidity were evaluated as water quality stressors and are described in Table 7. Conductivity was used as a surrogate for salinity and several sources including both the USEPA regional criteria development (USEPA, 2000a, 2000b, 2001a, 2001b) and regional screening limits developed for Oklahoma's original statewide assessment (OWRB, 2009). Turbidity screening levels were only based on the USEPA regional criteria development reports. The cut-points for conductivity and turbidity are provided in Table 9.

Numerical criteria for metals are housed in Appendix G, Table 2 of the OWQS (OWRB, 2012c). The OWQS provides criteria for a number of metals but only cadmium, copper, lead, selenium, and zinc are considered in this study. These analytes have both ecological and human health significance and appear more regularly in Oklahoma's Integrated Report as causes of impairment (ODEQ, 2012c). No other metals showed any level of potential impairment in the study. To facilitate analysis, dissolved metals concentrations were compared to dissolved chronic criterion.

Sedimentation was analyzed as a potential stressor to biological condition by using a combination of the state rule and NRSA condition assessments. For sites monitored as part of the NRSA, the sedimentation assessments were taken from the tabular habitat condition file on the USEPA's NARS sharefile site (USEPA, 2012), and the NARS methodology is described in Appendix D-2. For sites monitored in 2010-2011, metrics were calculated based on results from Oklahoma's Rapid Bioassessment Protocol (OWRB, 1999, 2010c, 2012b). The assessment consists of a variety of measures including flow, stream width and depth, substrates, embeddedness, habitat classification (i.e., pool, run, and riffle), fish cover, presence of point bars, erosion, and riparian structure. Metrics are scored based on predetermined ranges and a total score is obtained. Oklahoma's USAP (OWRB, 2012b) contains a protocol for determining sedimentation based upon loose bottom substrates (%LBS), embeddedness (%Emb), and presence of deep pools (%DP). Screening levels for sedimentation metrics are determined by comparing final site scores to a percent of reference condition. The reference condition is derived from the habitat scores for ecoregion based high quality sites developed by the OCC (2005a). For the most part, all high quality sites in an Omernik Level III ecoregion were used to develop reference condition. However, in certain ecoregions, some Omernik Level IV ecoregions were broken out from the whole. Omernik Level IV ecoregions used are the Broken Red Plains and Cross Timbers Transition of the Central Great Plains and the Arbuckle Uplift of the Cross Timbers. Additionally, the reference condition used is separated by aquatic life tier, and sites used to determine reference condition are required to be within 2 Strahler orders of the test stream. Finally, the cut-points for poor-fair-good are based on pre-determined percent of reference for each metric, with 2 or 3 metrics deemed to be fair or poor, respectively. Additionally, both instream cover and riparian vegetative cover were also evaluated as part of the NRSA. These stressors are included in the analysis of NRSA sites.

Statistical Methods

The processing of data for relative extent, relative risk, and attributable risk values were accomplished with R-statistical Software (R Foundation, 2013) using R-scripts developed for the NARS program (Van Sickle, 2012). Adjusted site weights were calculated and provided by the USEPA (Kincaid, 2013). Other analyses were performed using Minitab statistical software (Minitab, 2013). References to ecoregions throughout this document refer to those published by USEPA (Omernik, 1987; Woods et al., 2005).

Table 8. Ecoregion screening levels used as good/fair/poor cut-points for nutrient stressor analyses (Appendix D-5) (OWRB, 2009).

Ecoregion	TN_NRSA Poor_Fair (mg/L)	TN_NRSA Fair_Good (mg/L)	TN_ECO Poor_Fair (mg/L)	TN_ECO Fair_Good (mg/L)	TP_NRSA Poor_Fair (mg/L)	TP_NRSA Fair_Good (mg/L)	TP_ECO Poor_Fair (mg/L)	TP_ECO Fair_Good (mg/L)
Southwest Tablelands	1.570	0.698	1.050	0.450	0.095	0.052	0.055	0.025
Central Great Plains	1.570	0.698	1.600	0.840	0.095	0.052	0.130	0.090
Cross Timbers	1.570	0.698	0.900	0.680	0.095	0.052	0.110	0.038
Arbuckle Uplift	1.570	0.698	1.500	0.680	0.095	0.052	0.050	0.038
South Central Plains	2.078	1.092	0.750	0.385	0.108	0.056	0.070	0.050
Ouachita Mountains	0.535	0.296	0.450	0.300	0.024	0.018	0.025	0.010
Arkansas Valley	0.535	0.296	0.683	0.270	0.024	0.018	0.060	0.043
Ozark Highlands	0.535	0.296	1.500	0.379	0.024	0.018	0.070	0.007
Central Irregular Plains	3.210	1.750	1.150	0.712	0.338	0.165	0.160	0.093

Table 9. Ecoregion screening levels used as good/fair/poor cut-points for conductivity and turbidity stressor analyses. (Appendix D-5) (OWRB, 2009)

Ecoregion	Cond_NRSA Poor_Fair (uS/cm2)	Cond_NRSA Fair_Good (uS/cm2)	Cond_ECO Poor_Fair (uS/cm2)	Cond_ECO Fair_Good (uS/cm2)	Turb_ECO Poor_Fair (NTU)	Turb_ECO Fair_Good (NTU)
Southwest Tablelands	2000	1000	2300	1000	20	12
Central Great Plains	2000	1000	2925	1000	45	22
Cross Timbers	2000	1000	1000	550	40	4
Arbuckle Uplift	2000	1000	1000	500	7	4
South Central Plains	1000	500	500	180	20	10
Ouachita Mountains	1000	500	500	65	10	5
Arkansas Valley	1000	500	500	160	20	7
Ozark Highlands	1000	500	500	285	5	2
Central Irregular Plains	2000	1000	1000	450	40	16

RESULTS—EXTENT AND CONDITION ESTIMATES

Site Evaluation

For the study, a total of 177 randomly chosen sites were evaluated as candidate target sites, representing a total of 36,003 stream miles. Stream miles determined to be target, or sampleable, varied per study period (Figures 3-5). The total sampleable stream miles assessed per study period breaks down as follows:

- 21,019 miles for study period 2008-2011
- 25,466 miles for study period 2008-2009
- 15,572 miles for study period 2010-2011

The dramatic variation between the initial and subsequent 2-year study periods is obviously the number of rejected sites during the evaluation process. Although access denials increased between the study periods, the percentage of dry stream miles evaluated increased by over 300% from 3,094 to 10,605 evaluated miles, accounting for the dramatic decrease in assessed stream miles from reporting period to reporting period. Inaccessible and impounded miles were nearly equivalent across study periods. Furthermore, Figures 6 and 7 show a breakdown between large and small streams. Notably, small stream miles outnumbered large stream miles nearly 3.5:1, the majority of accessibility issues occurred in small streams.

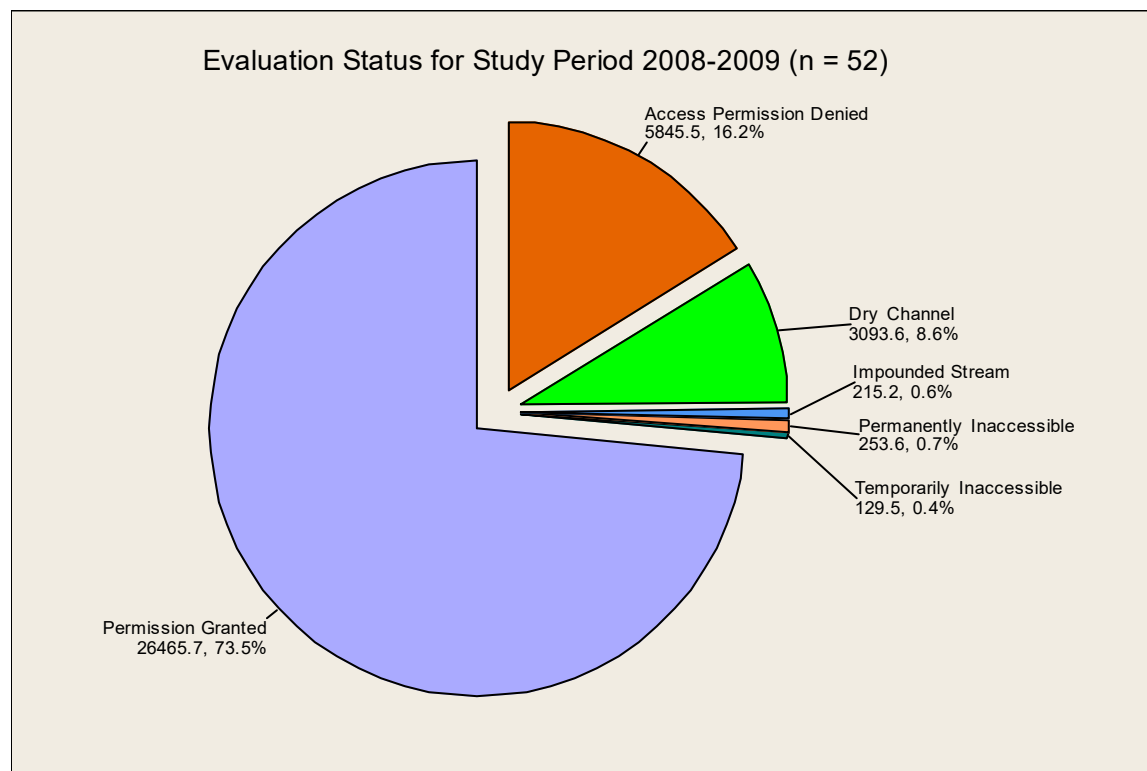


Figure 3. Site evaluation status for study period 2008-2009 (total miles = 36,003).

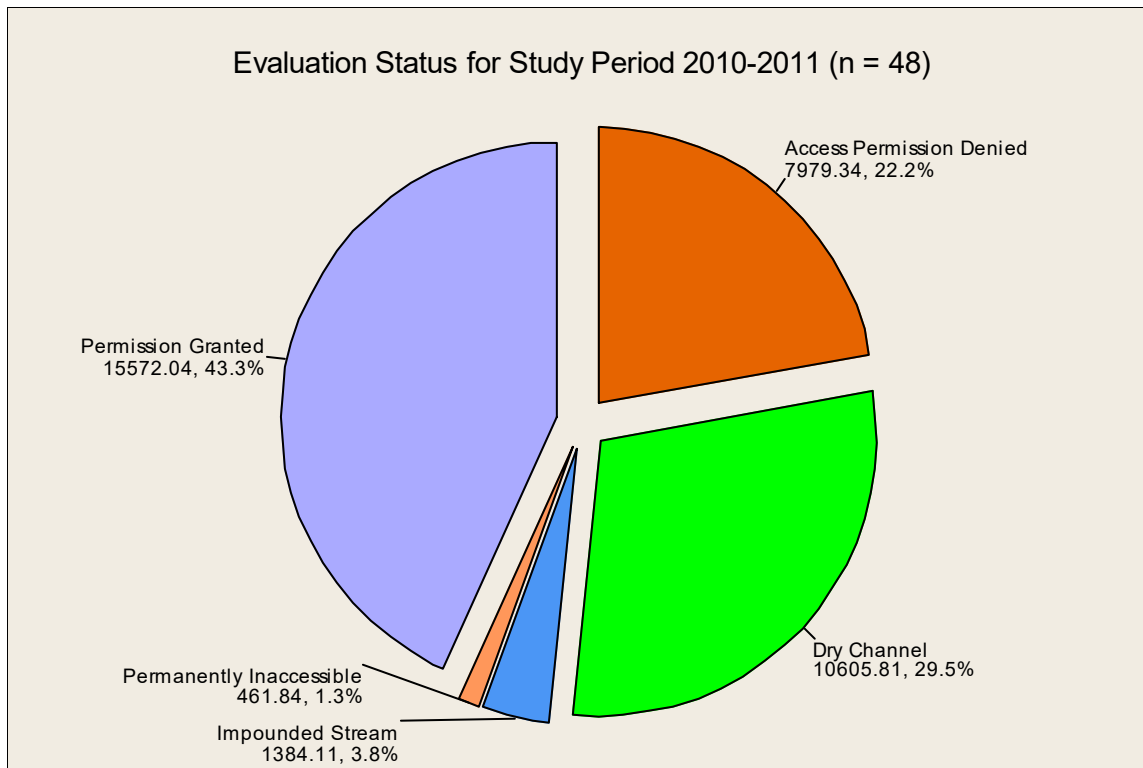


Figure 4. Site evaluation status for study period 2010-2011 (total miles = 36,003).

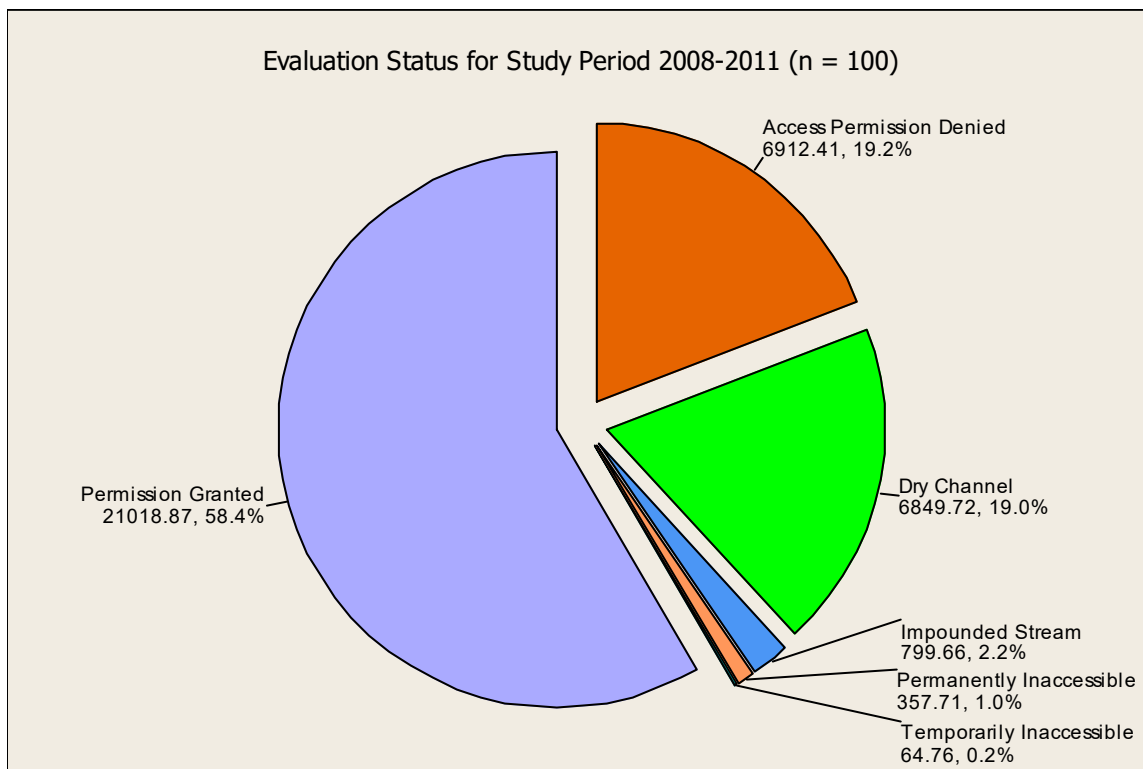


Figure 5. Site evaluation status for study period 2008-2011 (total miles = 36,003).

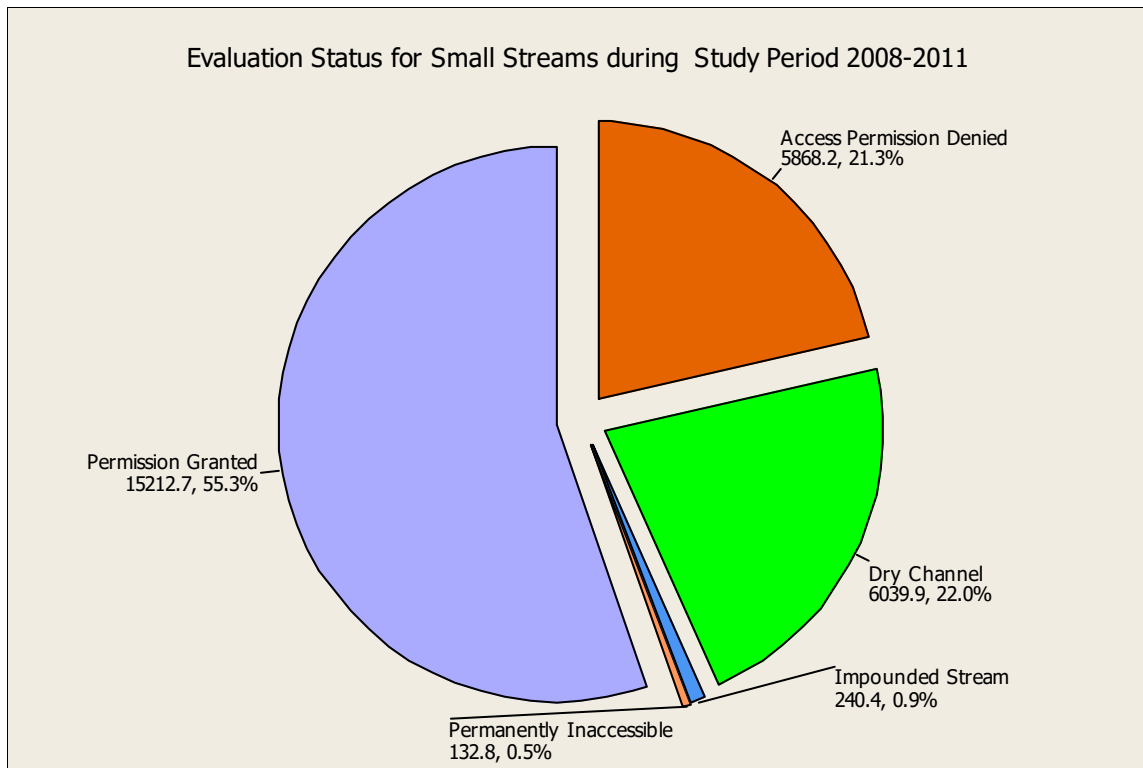


Figure 6. Site evaluation status for small streams from 2008-2011 (total miles = 27,494).

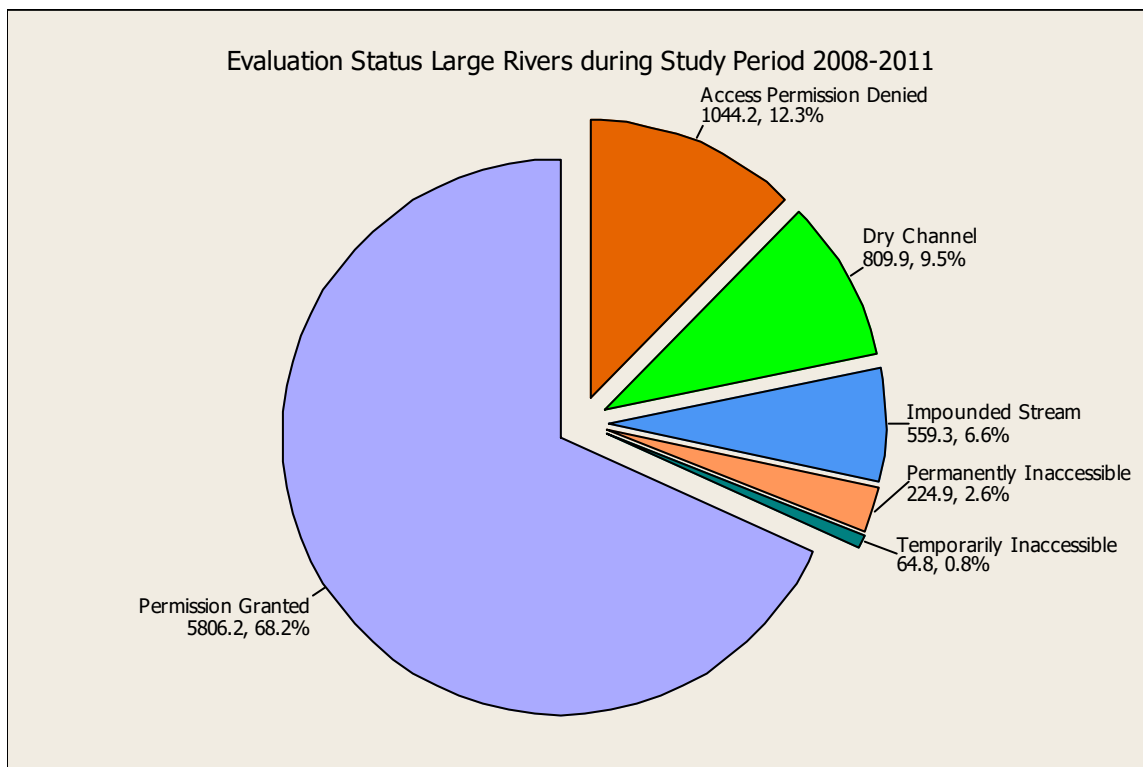


Figure 7. Site evaluation status for large streams from 2008-2011 (total miles = 8,509).

Biological Indicator Condition Extent

Statewide condition extent estimates were made for benthic macroinvertebrates, fish, phytoplankton (sestonic algae) at two levels, and periphyton. For each biotic assemblage, the indicator condition was categorized as good, fair, or poor based on methodology described in the “Methods” section, and percentages for each condition category are based on “percent of total miles”. In Figures 8-9, good/fair/poor estimates are grouped for each indicator by both study periods and size. In Figures 10-14, study periods and size classifications for each indicator are also depicted ungrouped with standard error for each classification.

For both fish and macroinvertebrates, nearly 35% of stream miles were classified in poor condition over the 4-year study period. Also, for both indicators, the poor category increased to greater than 40% from 2008-2009 and decreased to less than 25% from 2010-2011. A notable difference between the indicators is the higher percentage of stream miles in fair condition as opposed to good condition. For all study periods, the percentages of stream miles in fair condition are greater than 40% for macroinvertebrates and less than 10% for fish. When considering stream size, a greater percentage of large river stream miles are in poor condition than small streams. For benthic macroinvertebrates, nearly 65% of large river miles are in poor condition, with approximately 20% in fair or good condition. Conversely, in small streams, approximately 25% of stream miles are poor or good condition, while nearly 50% are in fair condition. Likewise, for fish, nearly 50% of large river miles are in poor condition and nearly 35% in good condition. In small streams, greater than 75% of miles are in good condition, while approximately 30% are in poor condition.

A relative small percentage of miles are classified in poor condition for benthic algae. For the 4-year study period, approximately 10% of miles are in poor condition, with greater than 75% of miles in good condition. In 2008-2009, the percentage in poor condition decreases to less than 5%, while the percentage in good condition increases to nearly 85%. However, in 2010-2011, the percentage in poor condition nearly doubles to greater than 20%, with greater than 65% in good condition. As with fish and macroinvertebrates, a greater percentage of large rivers (22%) than small streams (6%) are in poor condition.

For phytoplankton, or sestonic algae, the percentage of streams in poor condition across study years varies from nearly 20% (2008-2009) to nearly 30% from 2010-2011. The percent in good condition is approximately 55% for all study periods. Conversely, stream size varies significantly for poor and good condition. Approximately 60% of large river miles are in poor condition as compared less than 10% of small river miles. Conversely, less than 20% of large river miles are in good condition for sestonic algae, while nearly 70% of small river miles are considered in good condition.

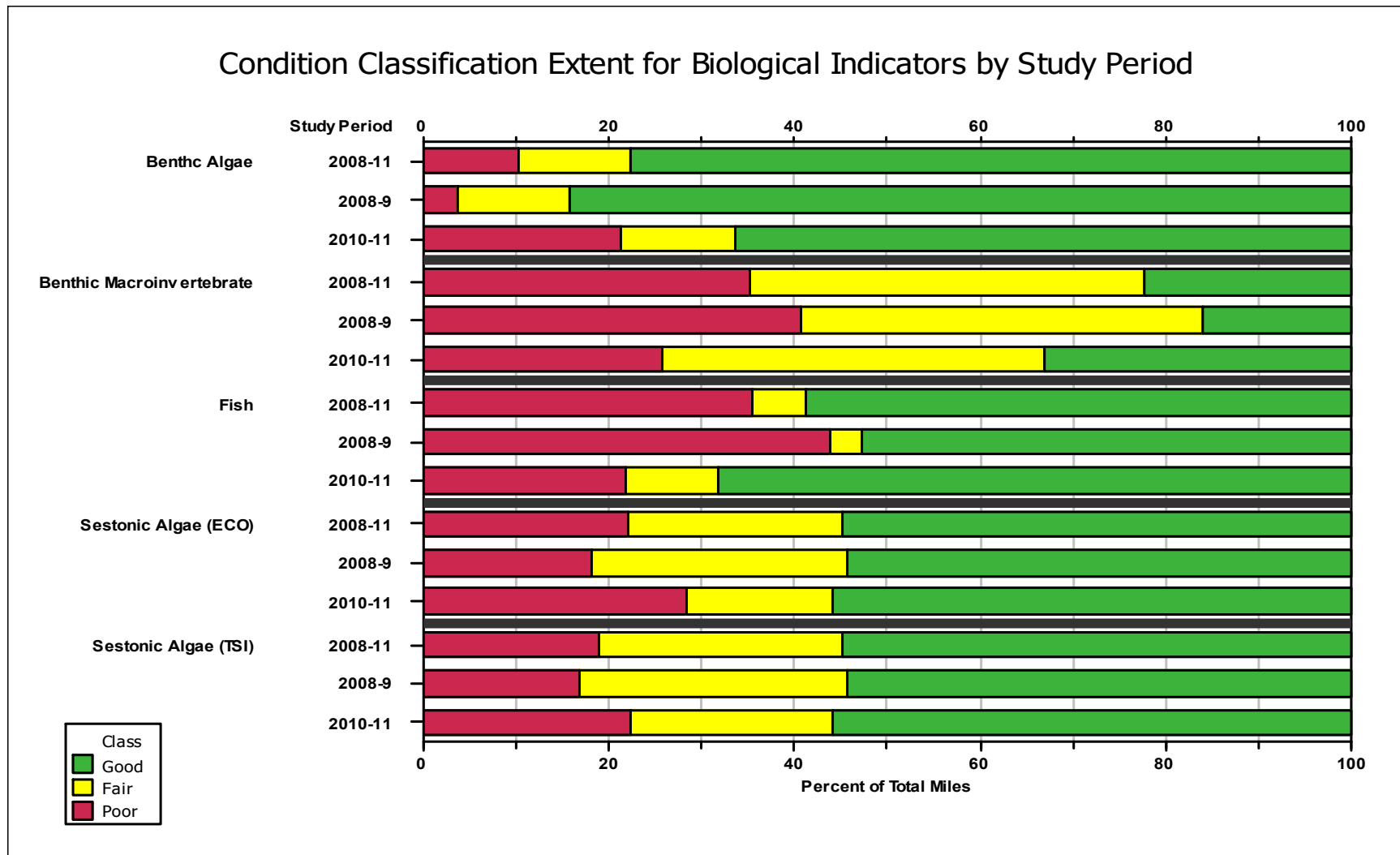


Figure 8. Stacked percentages of condition class estimates for study periods grouped by biological indicators.

Condition Classification Extent for Biological Indicators by Stream Size

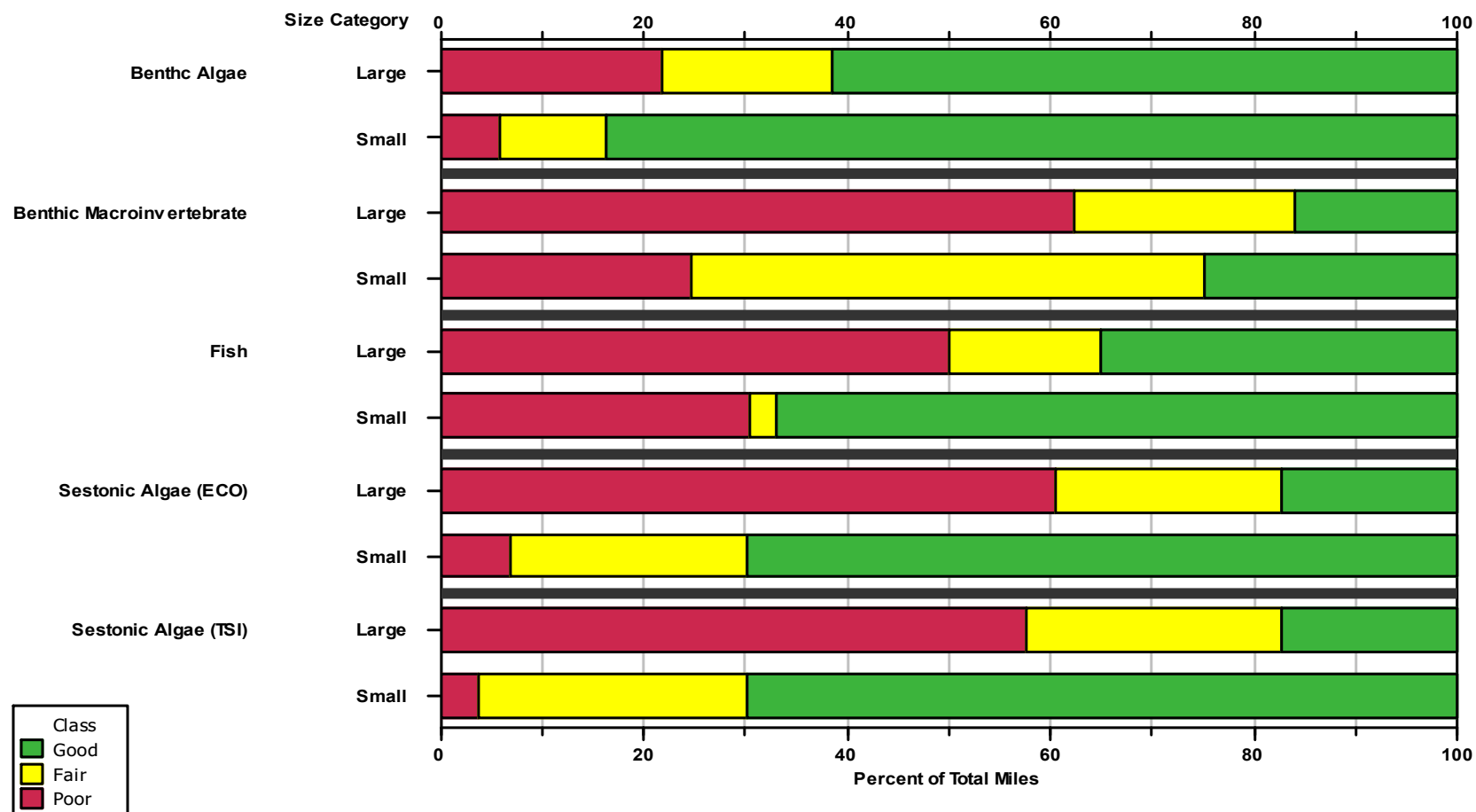


Figure 9. Stacked percentages of condition class estimates for stream size grouped by biological indicators.

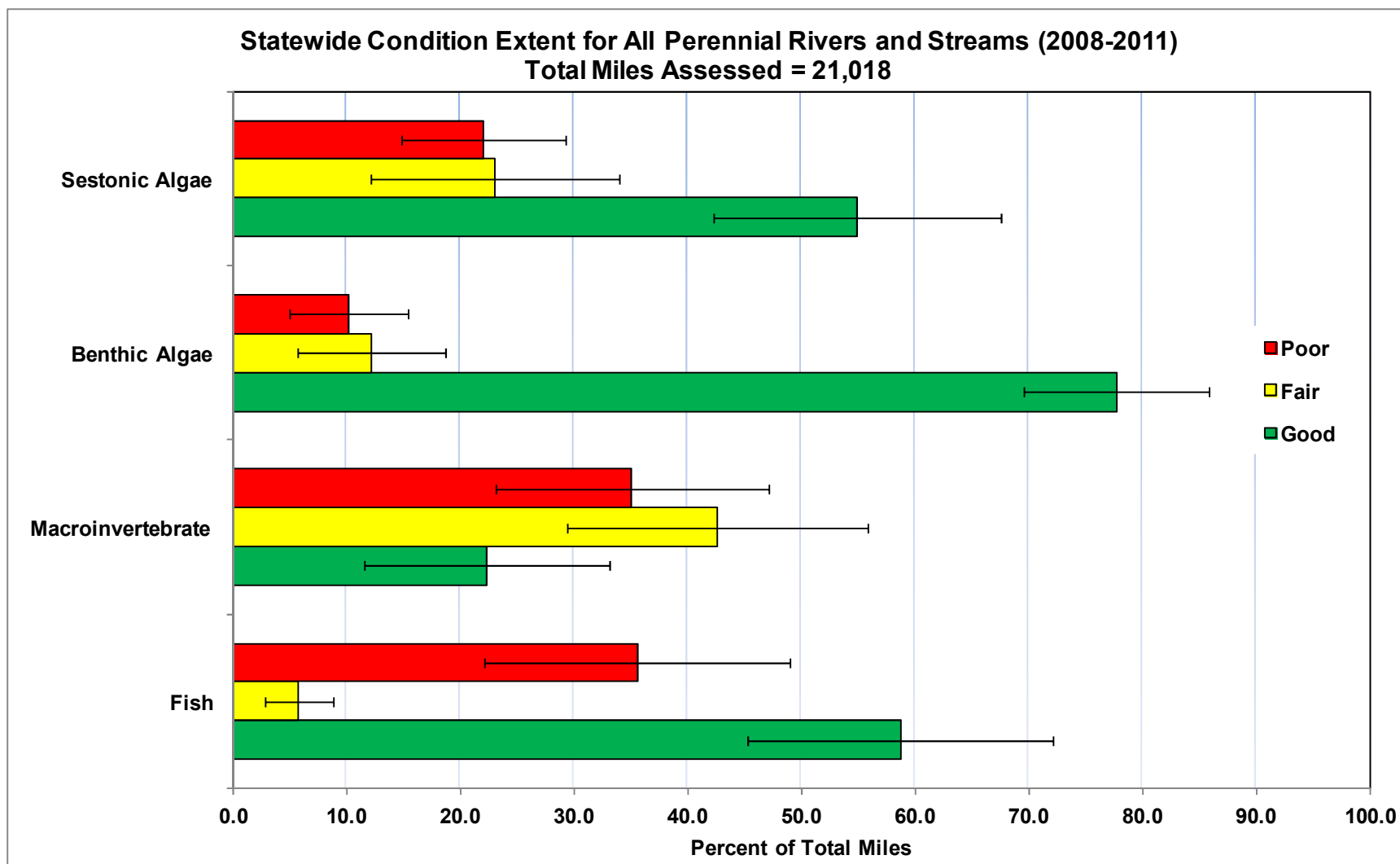


Figure 10. Biological indicator condition extent estimated statewide from 2008-2011. Upper and lower bounds represent a 95% confidence interval.

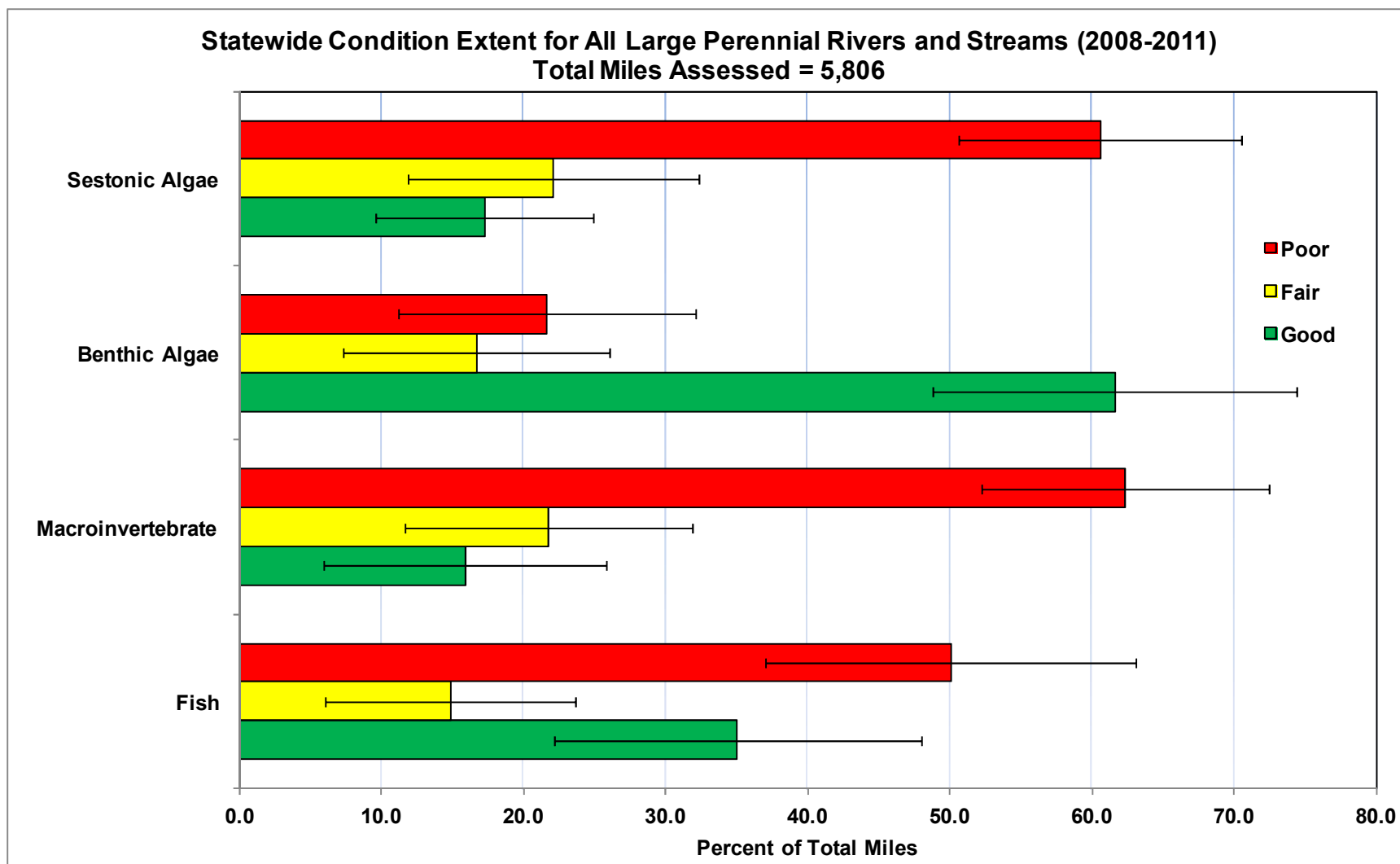


Figure 11. Biological indicator condition extent estimated statewide for larger streams and rivers (Strahler Order > 4) from 2008-2011. Upper and lower bounds represent a 95% confidence interval.

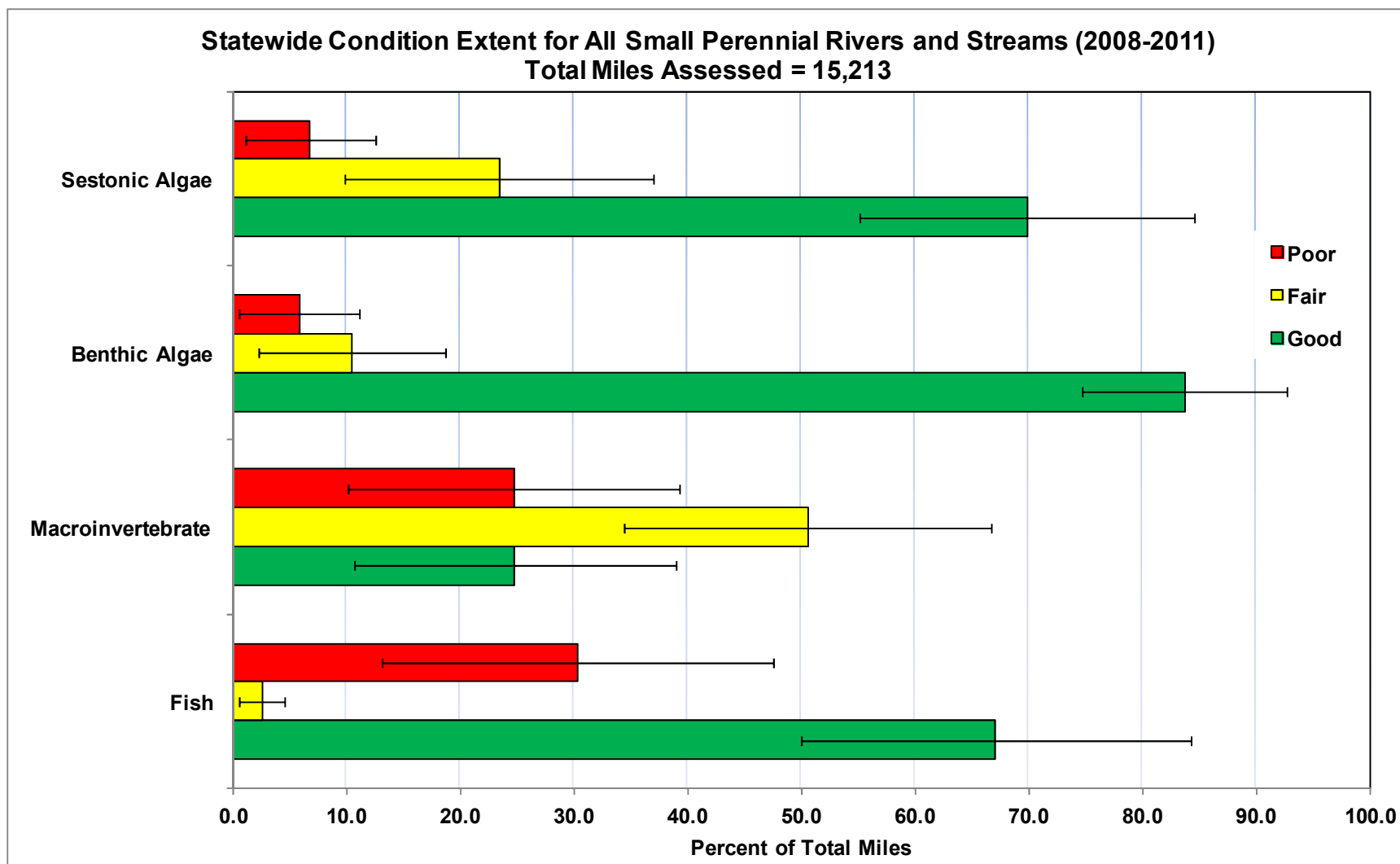


Figure 12. Biological indicator condition extent estimated statewide for smaller streams and rivers (Strahler Order < 5) from 2008-2011. Upper and lower bounds represent a 95% confidence interval.

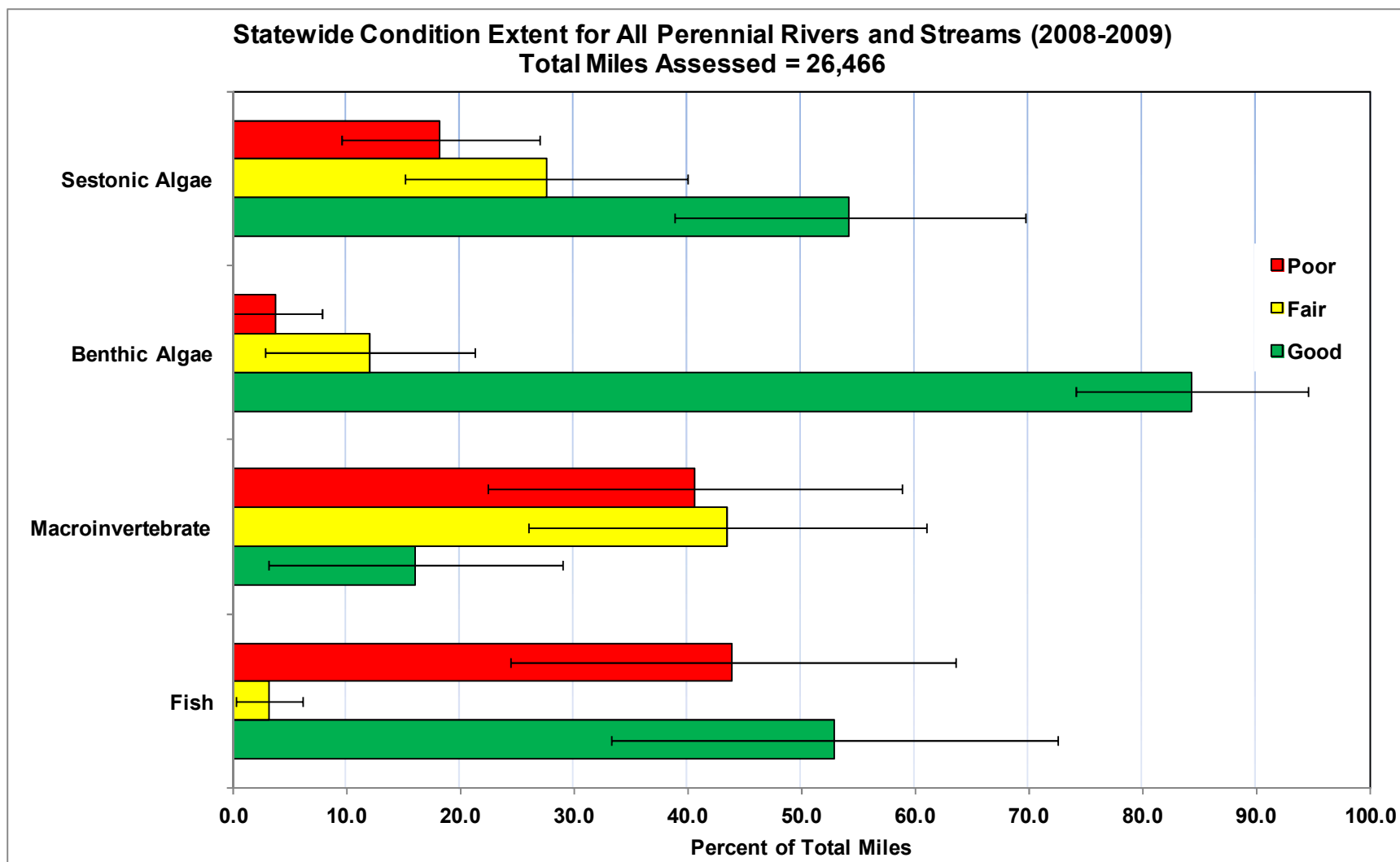


Figure 13. Biological indicator condition extent estimated statewide from 2008-2009. Upper and lower bounds represent a 95% confidence interval.

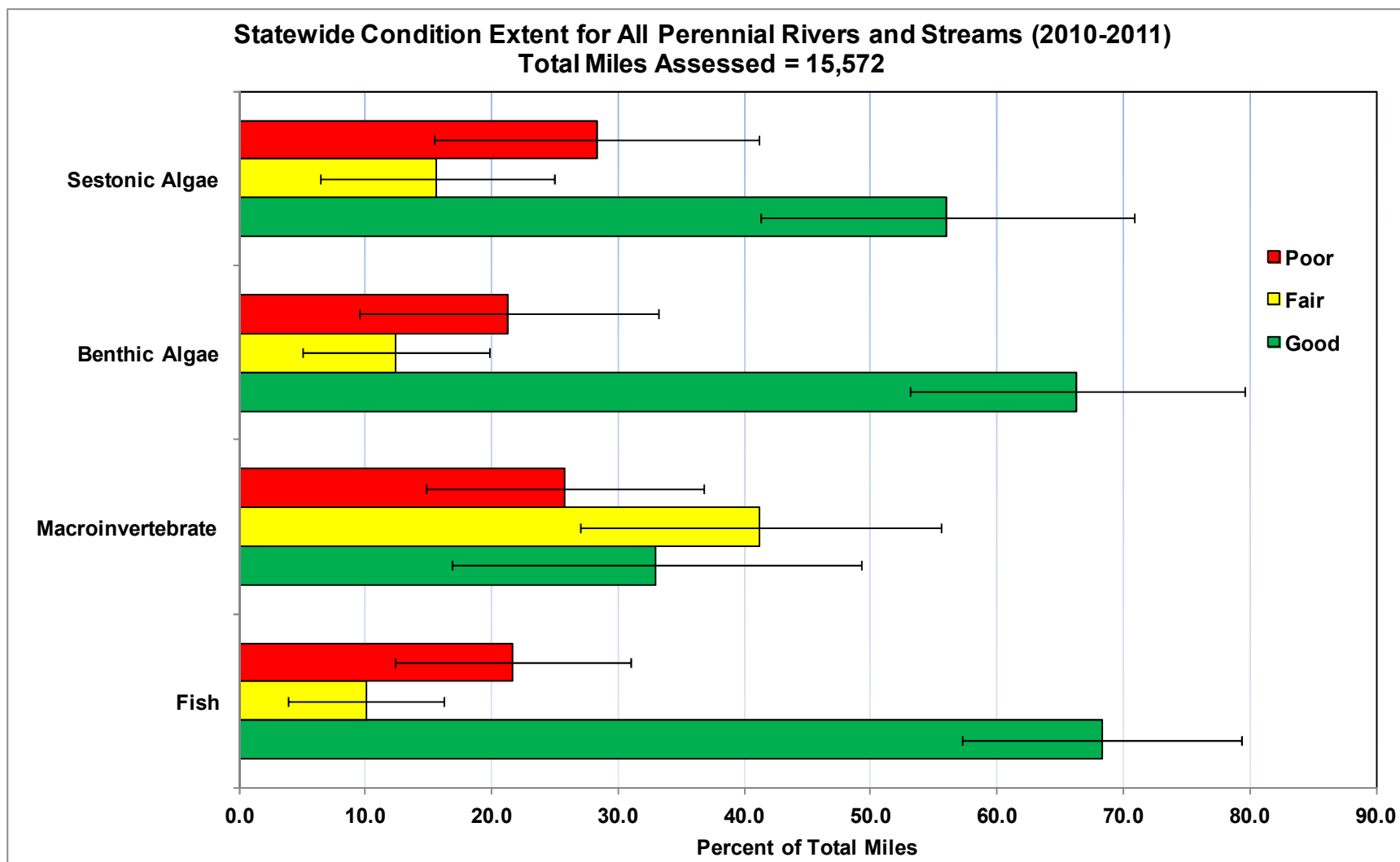


Figure 14. Biological indicator condition extent estimated statewide from 2010-2011. Upper and lower bounds represent a 95% confidence interval.

Stressor Extent

Statewide condition extent estimates were made for total nitrogen, conductivity, turbidity, metal toxicity, sedimentation, and instream and vegetative cover. Estimates employed a variety of NRSA and Omernick level III ecoregion screening levels. For each stressor except metals toxicity, the condition was categorized as good, fair, or poor based on methodology described in the “Methods” section, and percentages for each condition category are based on “percent of total miles”.

In Figures 15-16, good/fair/poor estimates for nutrients, conductivity and turbidity are grouped for each stressor by both study periods and size. In Figures 17-21, study periods and size classifications for each indicator are also depicted ungrouped with standard error for each classification. Phosphorus extent in poor condition is generally 30-40%, regardless of study period or source of screening limit, while the percent of total miles in good condition ranges from 40-50%. Generally, poor condition is lower for the NRSA screening limits, but is not significantly different. When considering stream size, large streams (approximately 75%) have a significantly higher percentage of miles in poor condition than small streams (10-25%). For total nitrogen, the difference between the sources of screening limits and study periods are more dramatic, but still not significantly different. For the NRSA screening limit, the percent of miles in poor condition ranges from less than 15% from 2008-2009, as opposed to nearly 25% from 2010-2011. For all study periods, good condition is greater than 50%. A similar pattern is evident with the ecoregion screening limit, with poor condition ranging from 25% (2008-2009) to nearly 40% from 2010-2011, and good condition ranging from nearly 50% to as low as approximately 25% during the same periods. Unlike total phosphorus, stream size is not significant when considering percent of miles in poor condition, with large ranging from 30-40% and small from 10-25%. However, the percent in good condition is significantly different with size. Large rivers range from 15-25%, with small streams ranging from 55-65% in good condition. Conductivity is generally not significantly different between study periods or sources of screening limits. Poor condition ranges from 10-20% from 2008-2009, and increases approximately 22% in the 2010-2011 study period. For the NRSA values, good condition is ranges from 60-65%, regardless of period. However, when using ecoregion screening limits, good condition during the 2010-2011 period shows a significant decrease to approximately 25%, while the 2008-2009 period is approximately 55%. As with nutrients, condition is significantly different when comparing streams to rivers. The percent of river miles in poor condition ranges from 40-55%, while streams are approximately 5% for both screening limits. Conversely, the percent of stream miles in good condition ranges from 55% to 80%, as opposed to 15-30% in large rivers. For turbidity, period is not significant, with poor condition ranging from 10-30%, and good at 30-35% for both periods. However, the percent of river miles (37%) in poor condition is significantly different from small streams (9%). The percentage in good condition is much closer with nearly 30% in large rivers and 35% in small streams.

The extent of various habitat stressors is depicted in Figure 22. Instream and riparian vegetative cover are considered for only the 2008-2009 period, with no delineation between waterbody sizes. Poor condition ranges from 5% for riparian to 15% for instream cover. Good condition is 65-70% for both. Excess sedimentation is not significantly different when considering waterbody size. Poor condition ranges from greater than 25% in streams to 35% in rivers, with the percent in good condition at nearly 35% in both. Study period is significantly different, with poor condition ranging from 15% (2008-2009) to greater than 50% from 2010-2011. Good condition is not significantly different, but does range from less than 20% (2010-2011) to greater than 50% in 2008-2009 study period. The percent of miles in fair condition is ranges from 30-40%, regardless of study period.

Finally, the extent of metals toxicity is represented in Figure 23. Miles in poor condition generally ranges from 10-15%. While no stressors are significantly different, more miles appear to be affected by selenium than any other metal.

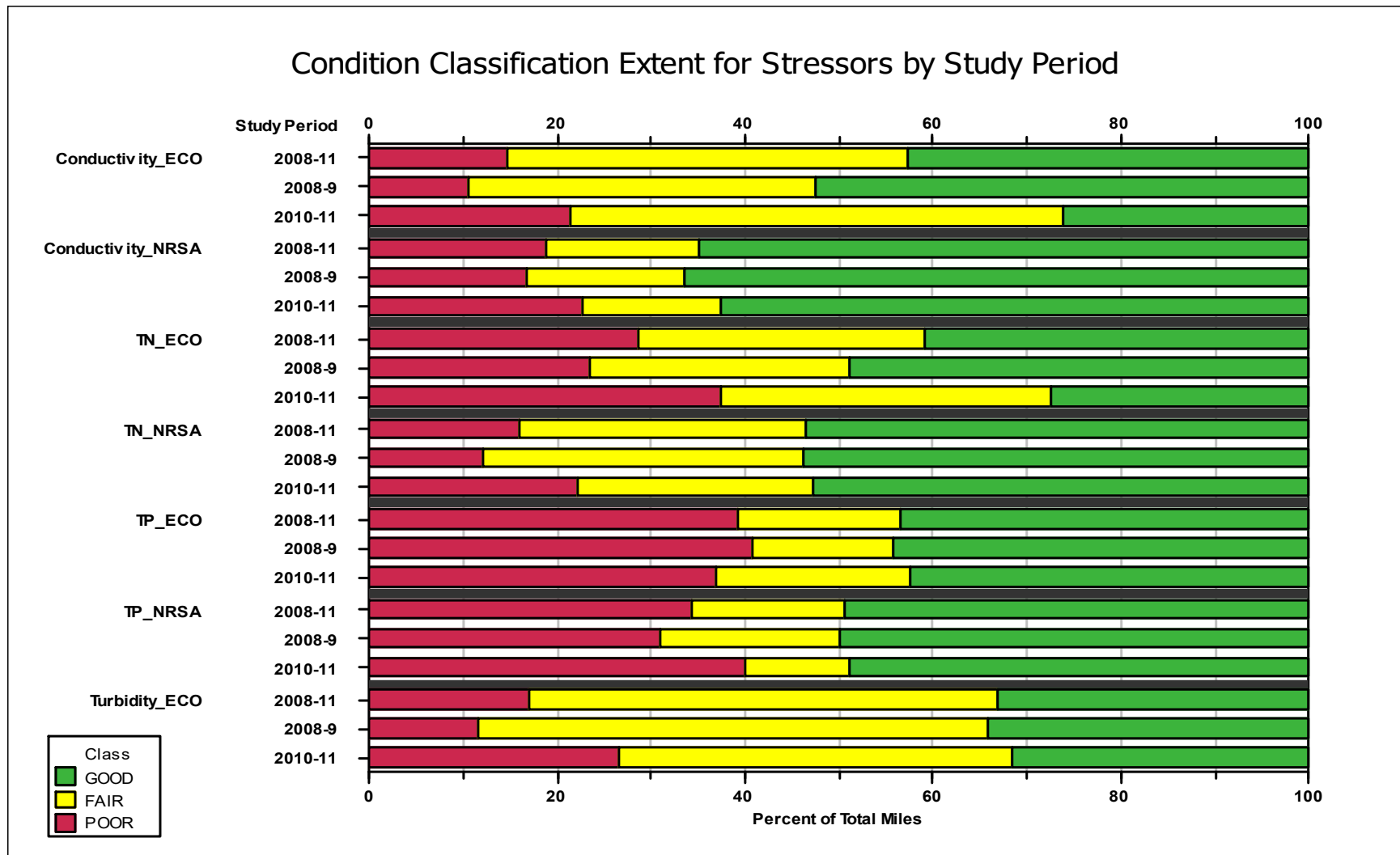


Figure 15. Stacked percentages of condition class estimates for study periods grouped by stressors. (Refer to Table 7 for stressor descriptions.)

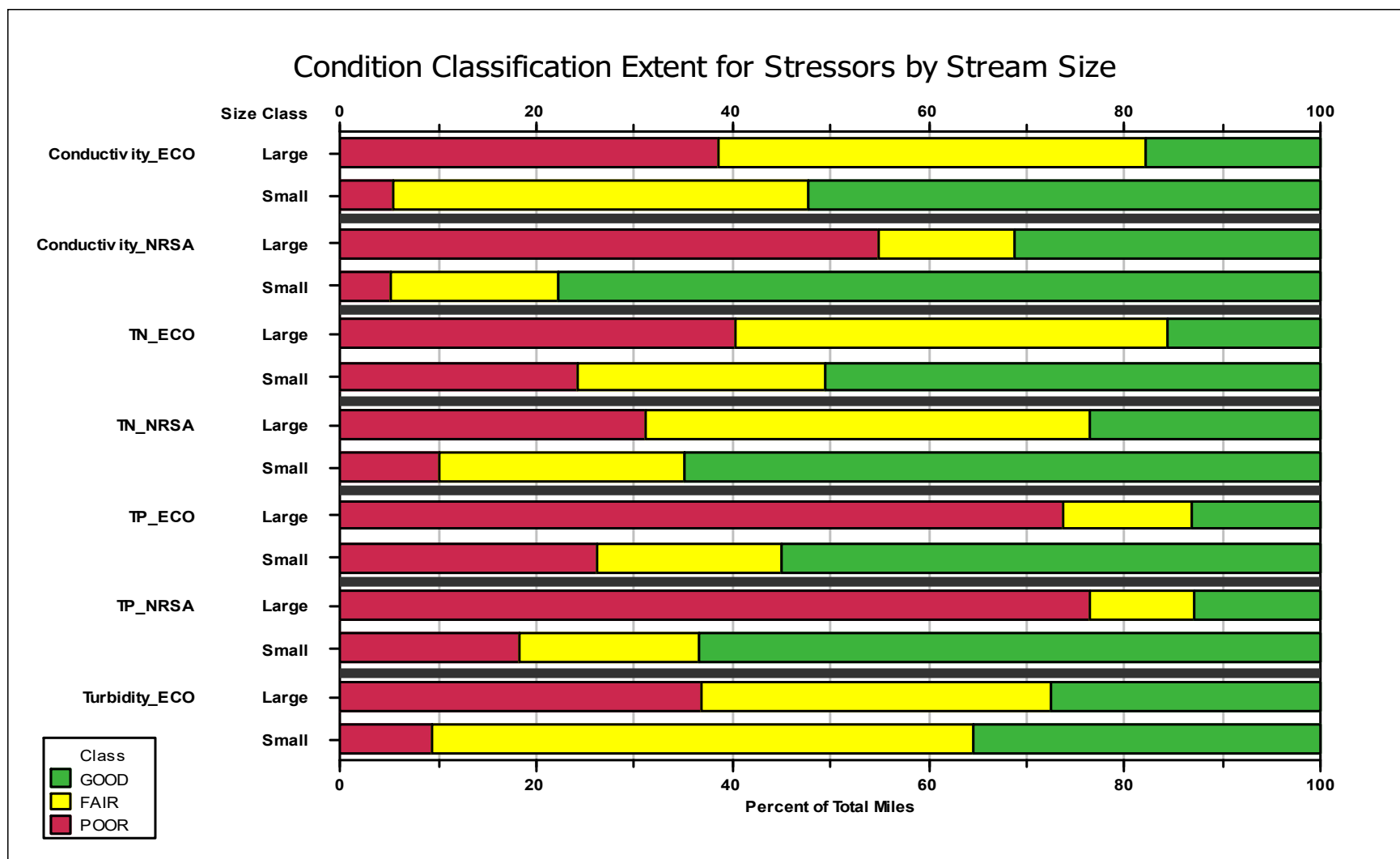


Figure 16. Stacked percentages of condition class estimates for stream size grouped by stressors. (Refer to Table 7 for stressor descriptions.)

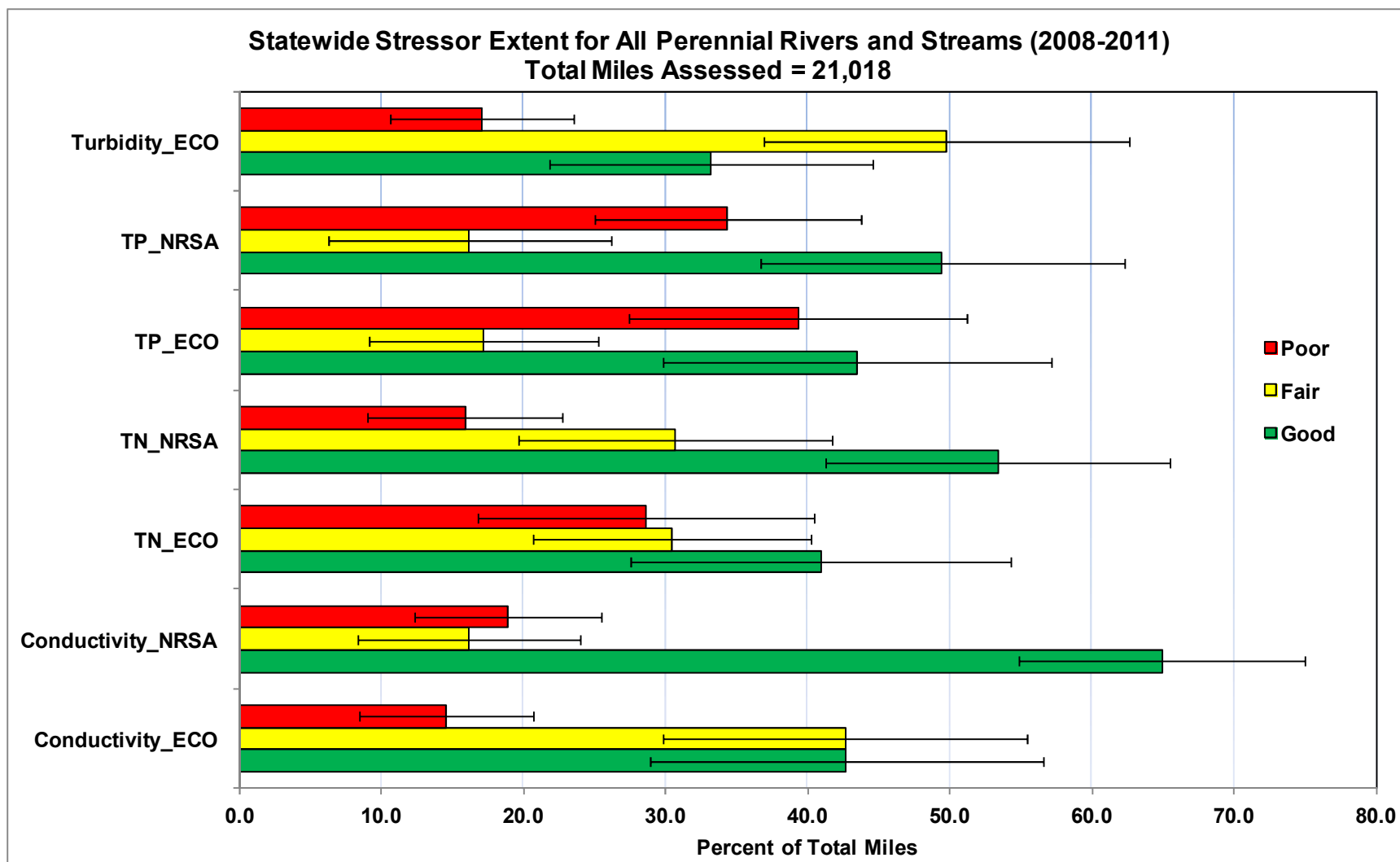


Figure 17. Stressor extent estimated statewide from 2008-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

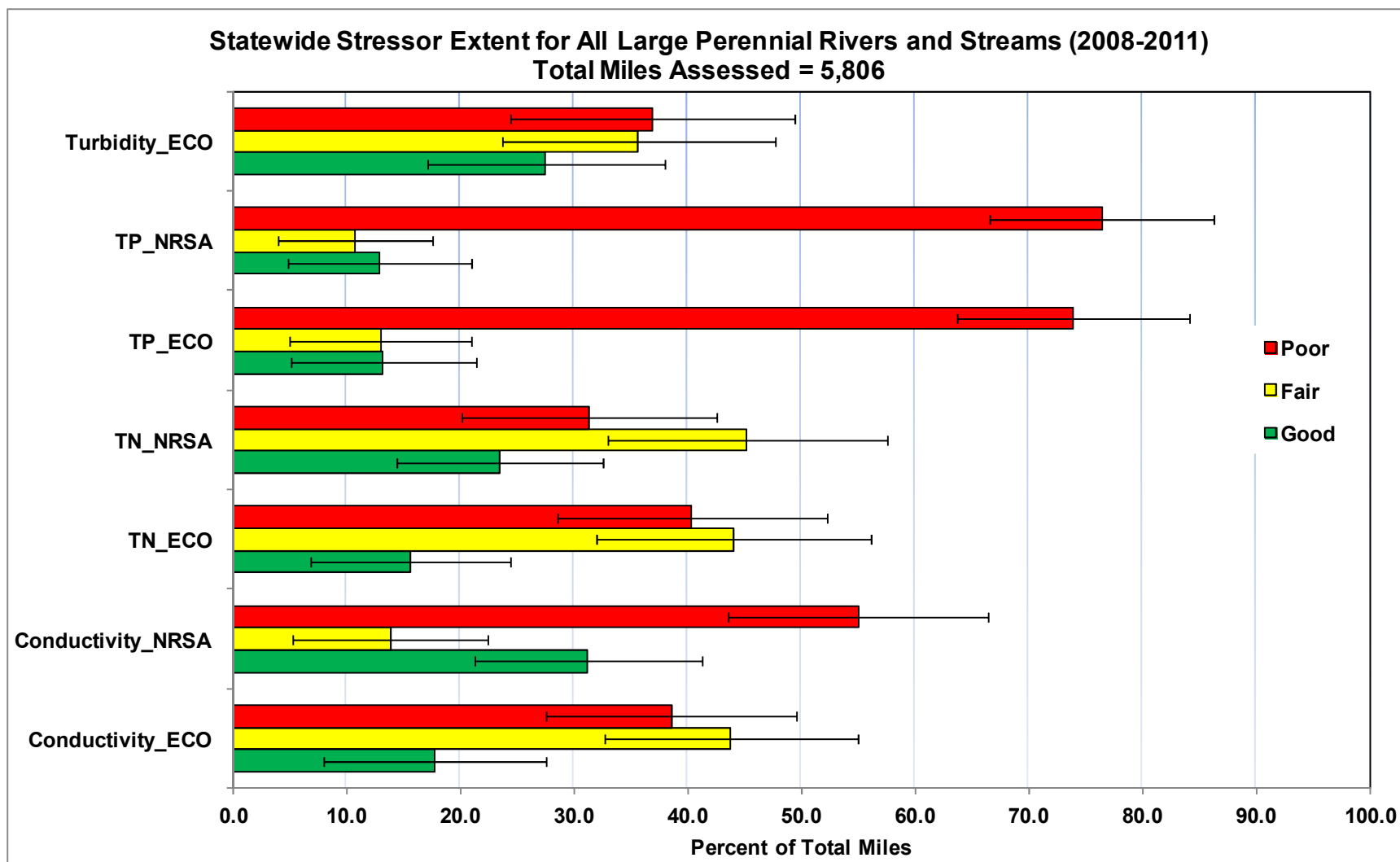


Figure 18. Stressor extent estimated statewide for larger streams and rivers (Strahler Order > 4) from 2008-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

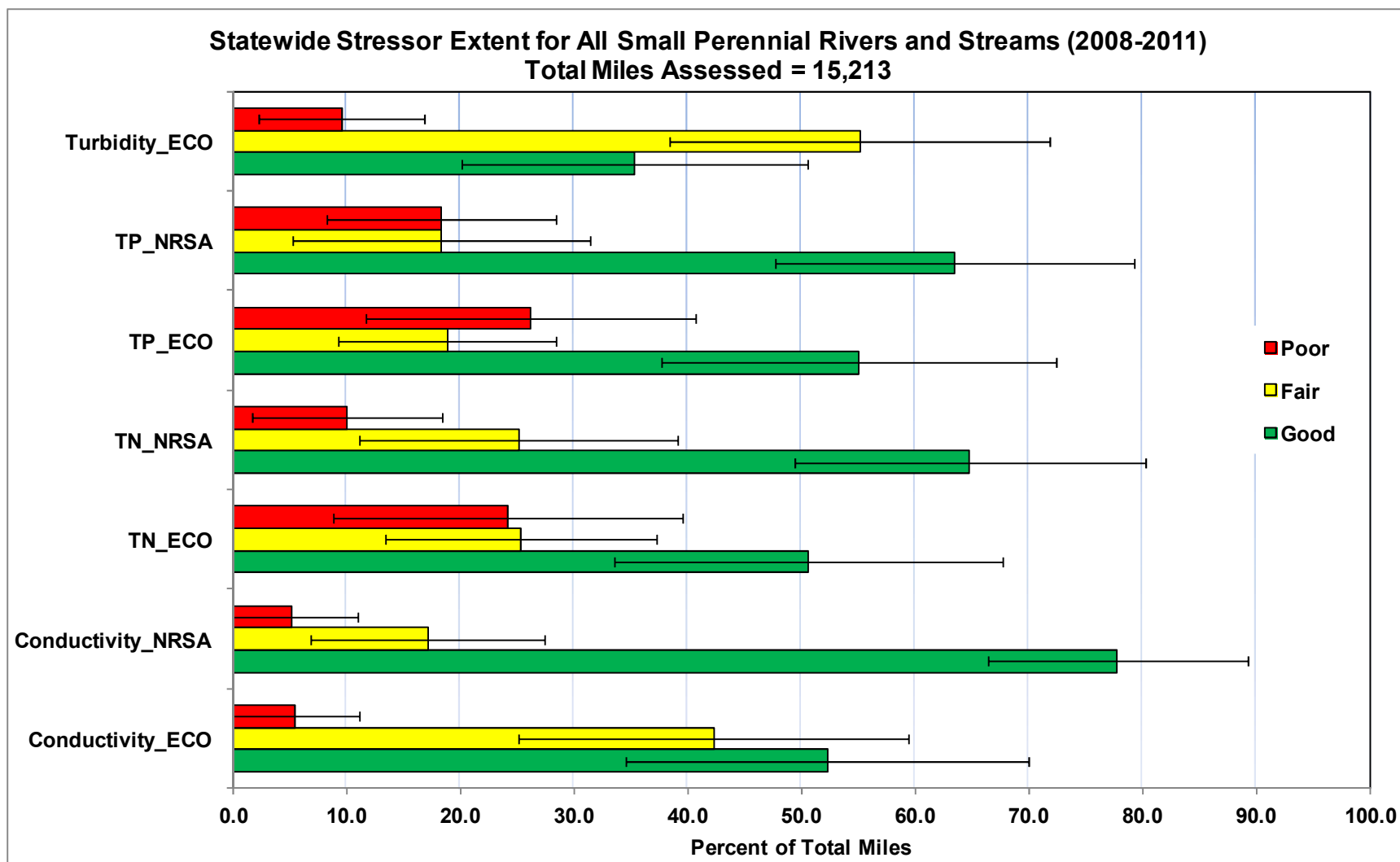


Figure 19. Stressor extent estimated statewide for smaller streams and rivers (Strahler Order < 5) from 2008-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

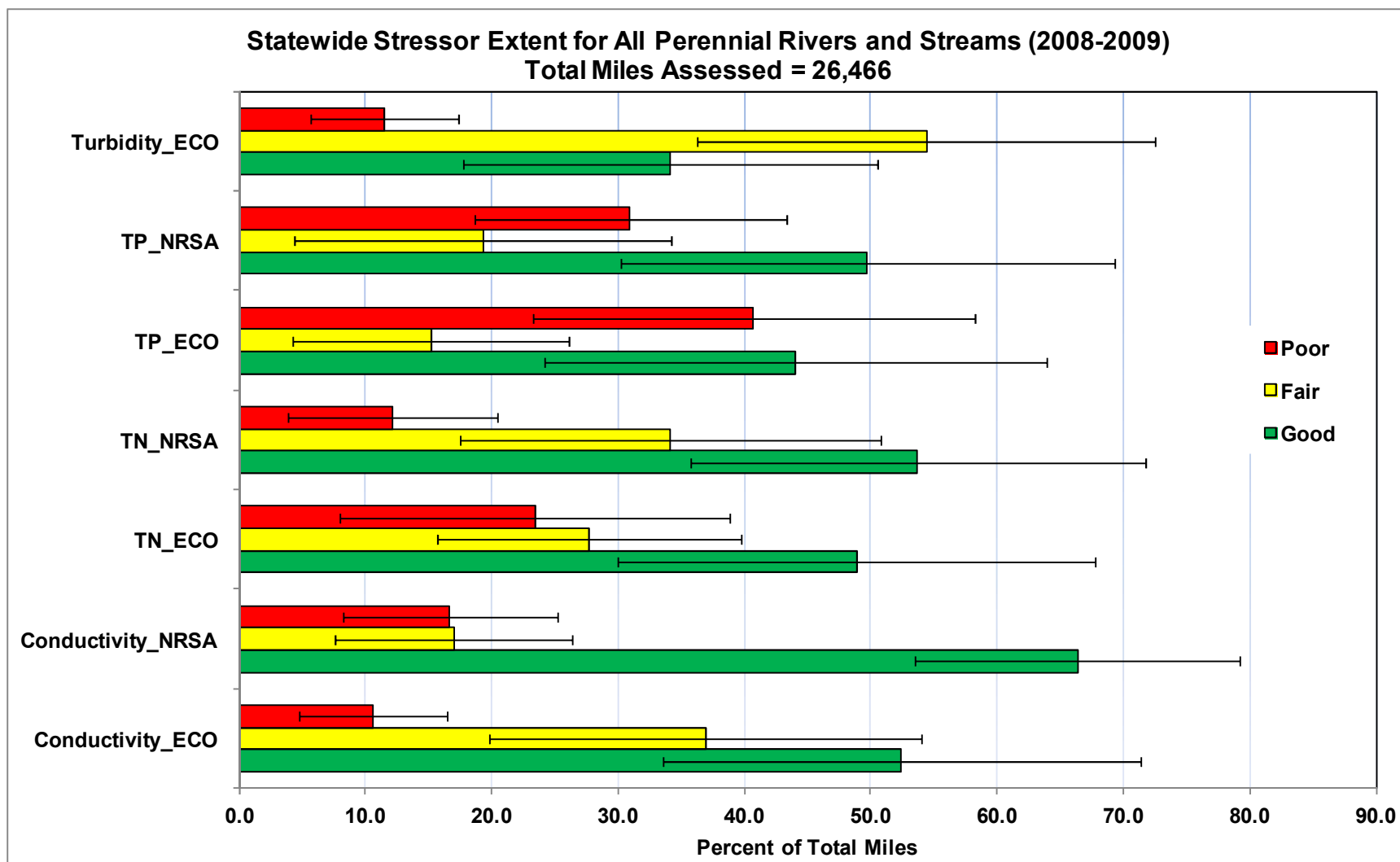


Figure 20. Stressor extent estimated statewide from 2008-2009. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

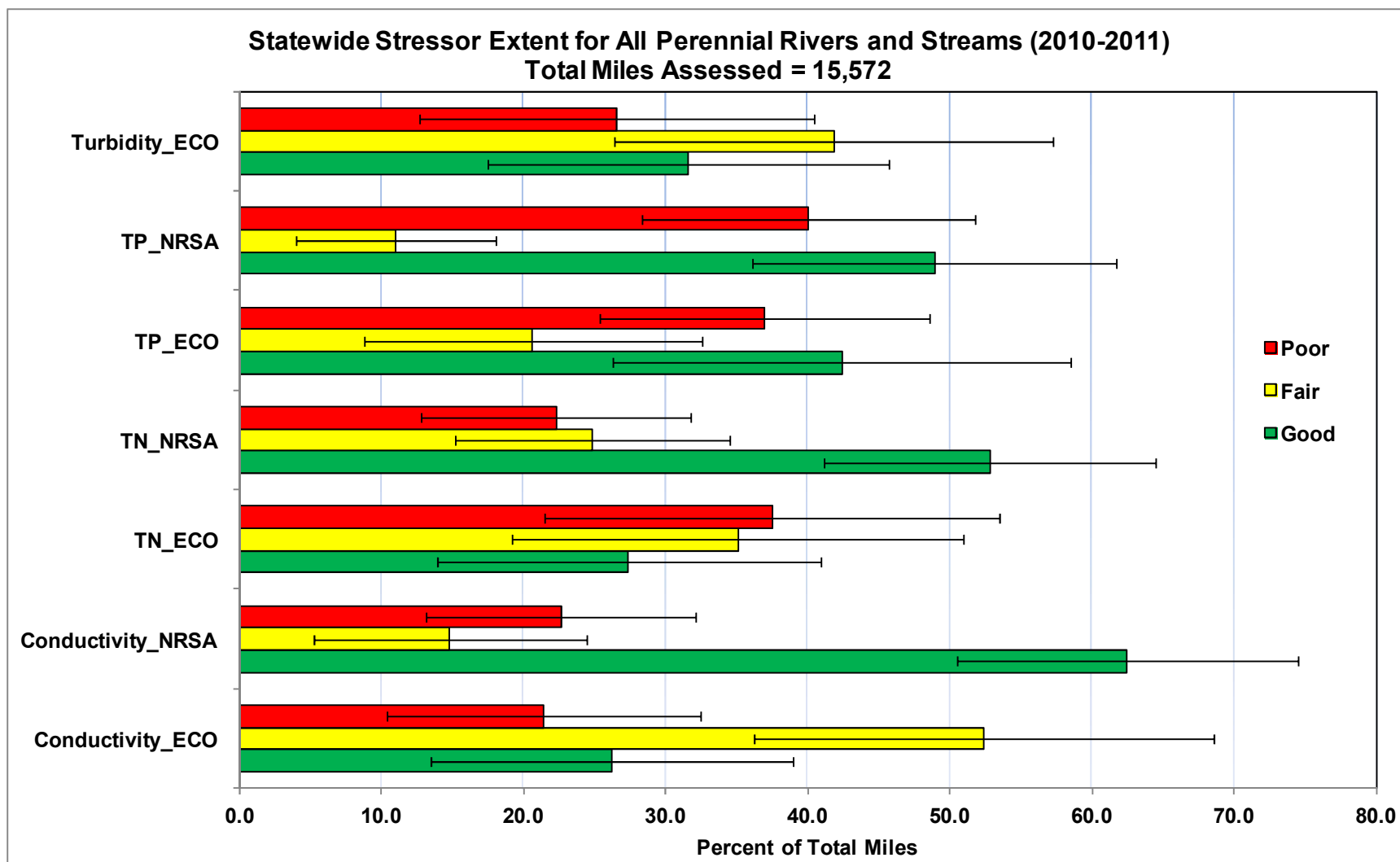


Figure 21. Stressor extent estimated statewide from 2010-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

Statewide Habitat Stressor Extent for All Perennial Rivers and Streams

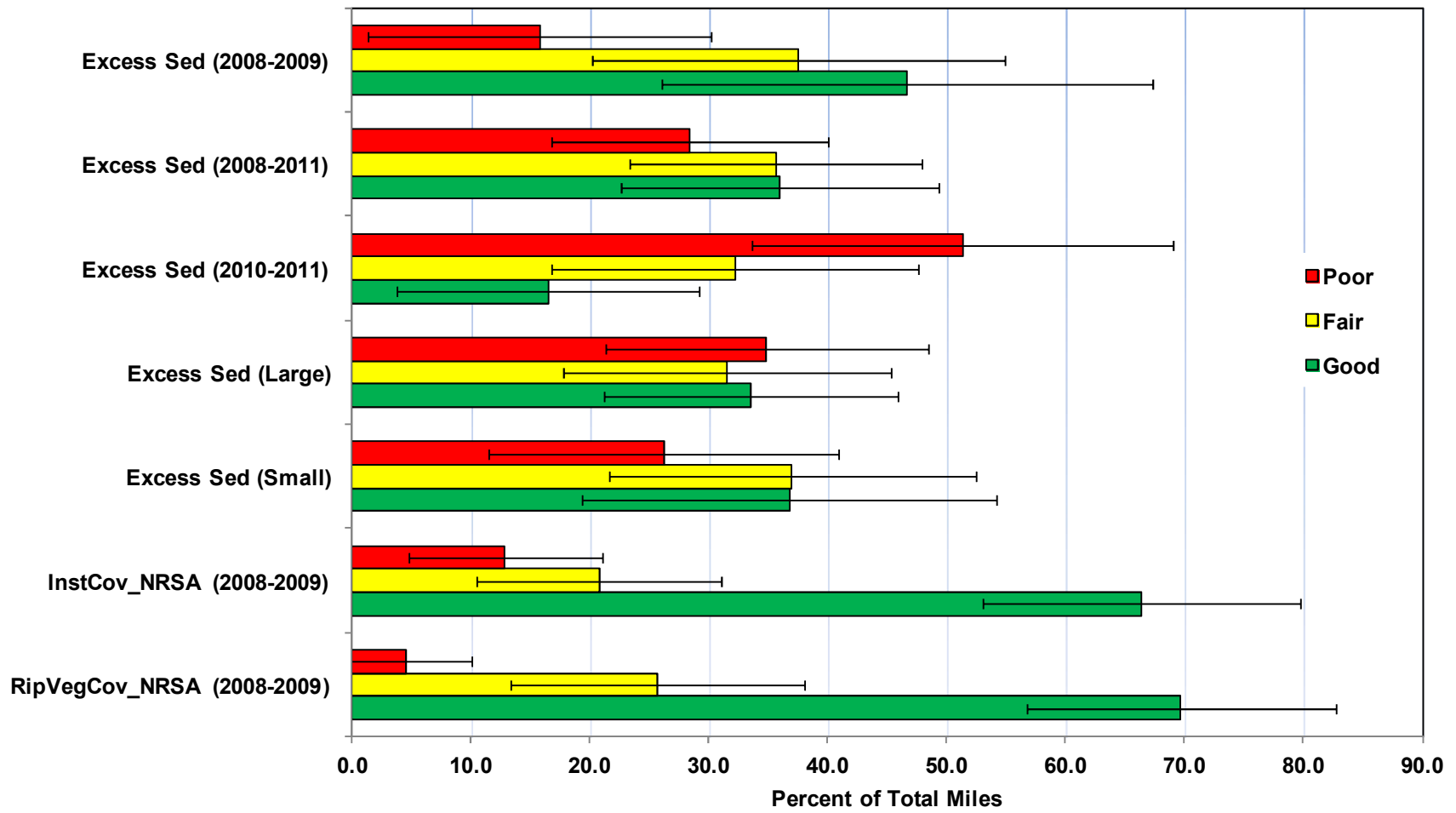


Figure 22. Sedimentation and other habitat stressors estimated statewide from 2008-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

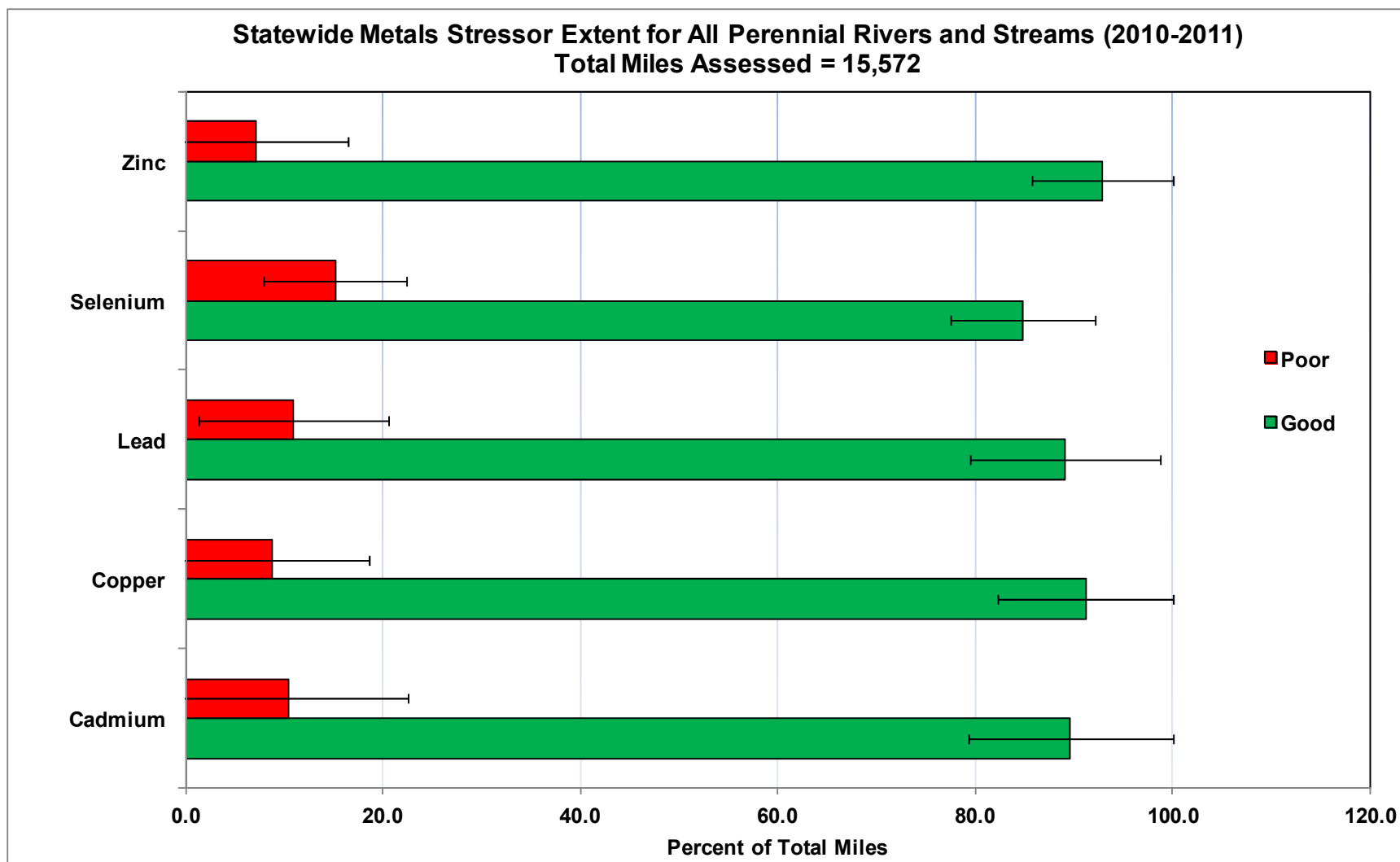


Figure 23. Metal toxicity extent estimated statewide from 2010-2011. Upper and lower bounds represent a 95% confidence interval. (Refer to Table 7 for stressor descriptions.)

RESULTS—RELATIVE RISK

Relative Risk Methodology

The concept of using relative risk to develop a relationship between biological condition and stressor extent was developed initially for the USEPA's National Wadeable Streams Assessment (USEPA, 2006). Van Sickle et al. (2006) drew upon a practice commonly used in medical sciences to determine the relationship of a stressor (e.g., high cholesterol) to a medical condition (e.g., heart disease). The method calculates a ratio between the number of streams with poor biological condition/high stressor concentration and those with poor biological condition/low stressor concentration. If the ratio is above 1, it indicates that biological condition is likely affected by high stressor concentrations (i.e., concentrations above a preset level). As the ratio increases beyond 1, the relative risk of the stressor increases (Van Sickle, 2004).

The following analyses include a comparison of a variety of stressors to biological conditions for fish, macroinvertebrates, and algal biomass. For each stressor, relative risk is determined for study period and/or waterbody size. The analysis uses a binomial designation of good/poor for condition and high/low for stressor concentration. These binomial designations are then placed in a two-way contingency table to determine relative risk. Two initial ratios are determined. The ratio for poor condition given high stressor concentration is compared to the total number of sites having high stressor concentration, regardless of condition. Likewise, the ratio for poor condition given low stressor concentration is compared to the total number of sites having low stressor concentrations, regardless of condition. These two ratios are then used to calculate relative risk. For each indicator and stressor, the good and fair conditions were collapsed into a good condition for purposes of calculating relative risk. Significant relative risk will be determined by applying a 95% confidence, which must remain above 1.0 for risk to be considered significant.

Relative Risk to Fish Condition

The relative risks of various stressors to fish condition are represented in Figures 24-29. The relative risk of poor fish condition is generally greater than 1 when most stressors are in poor condition. However, few are not significant, regardless of study period or size. For the 2008-2009 study period, the ecoregion total nitrogen screening limit shows a significant relative risk of nearly 2.5 to fish condition (Figure 24). Likewise, if the NRSA conductivity is in poor condition, the risk of poor fish condition is 4.7 times greater during 2010-2011 period (Figure 26) and 2.9 times greater in small streams (Figure 27). Additionally, the risk for poor fish condition is 1.7 times greater in large rivers when turbidity is in poor condition (Figure 27). When excess sediment leads to poor condition, poor fish condition is 2.1 times more likely in large rivers and 2.3 times during the 2008-2009 study period (Figure 28). Metals toxicity demonstrates no significant relative risk to fish condition (Figure 29).

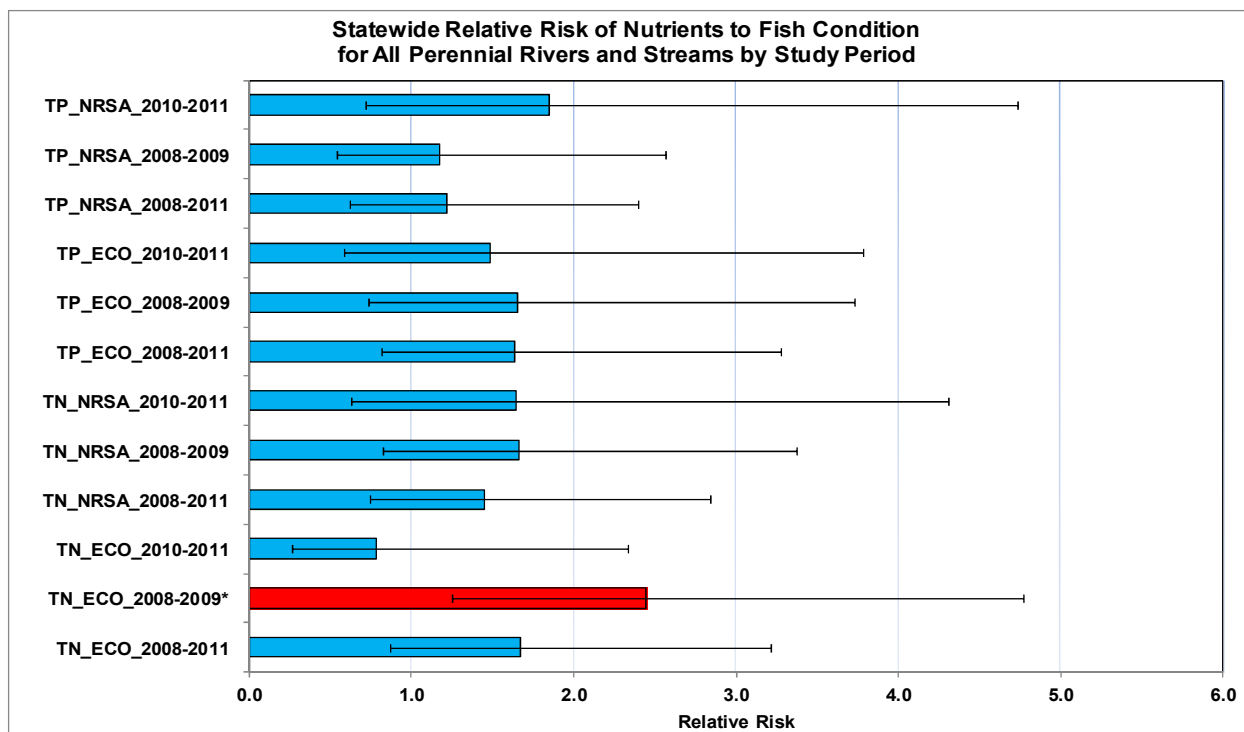


Figure 24. Relative risk of nutrient stressors affecting poor fish condition by study period. (upper/lower bounds represent a 95% confidence interval-CI) (* = significant relative risk-RR)

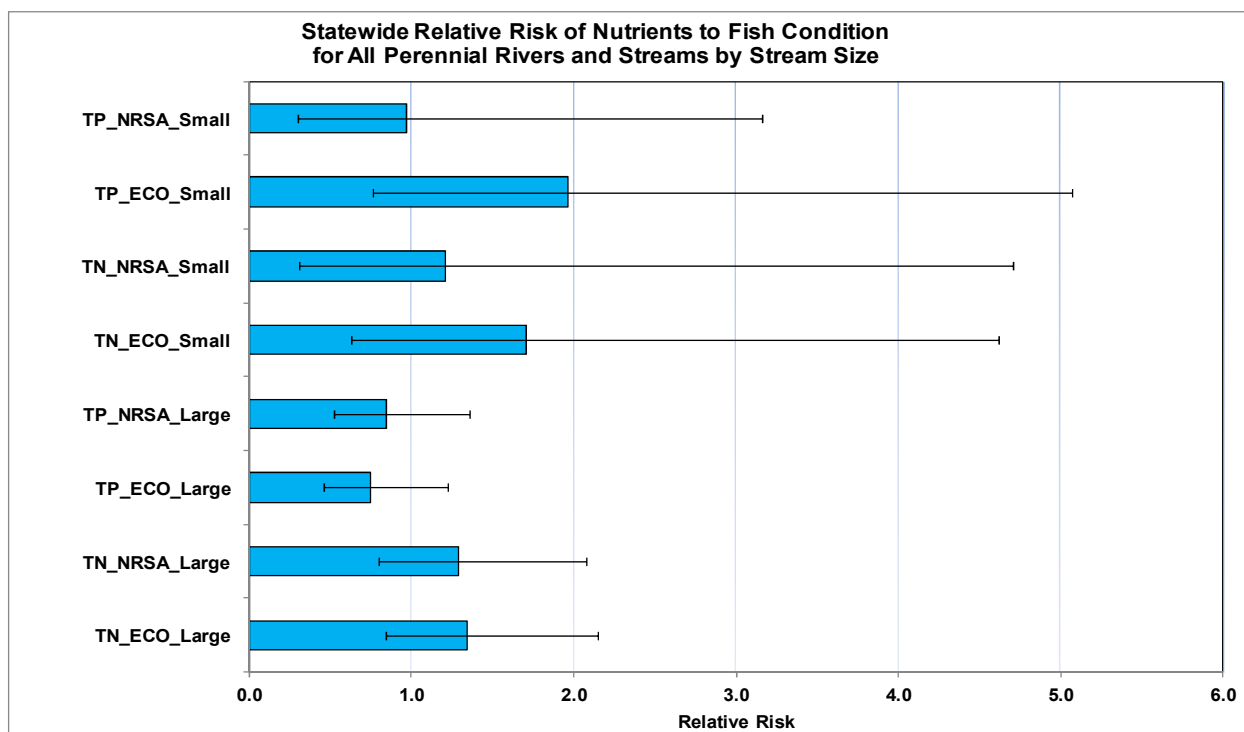


Figure 25. Relative risk of nutrient stressors affecting poor fish condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

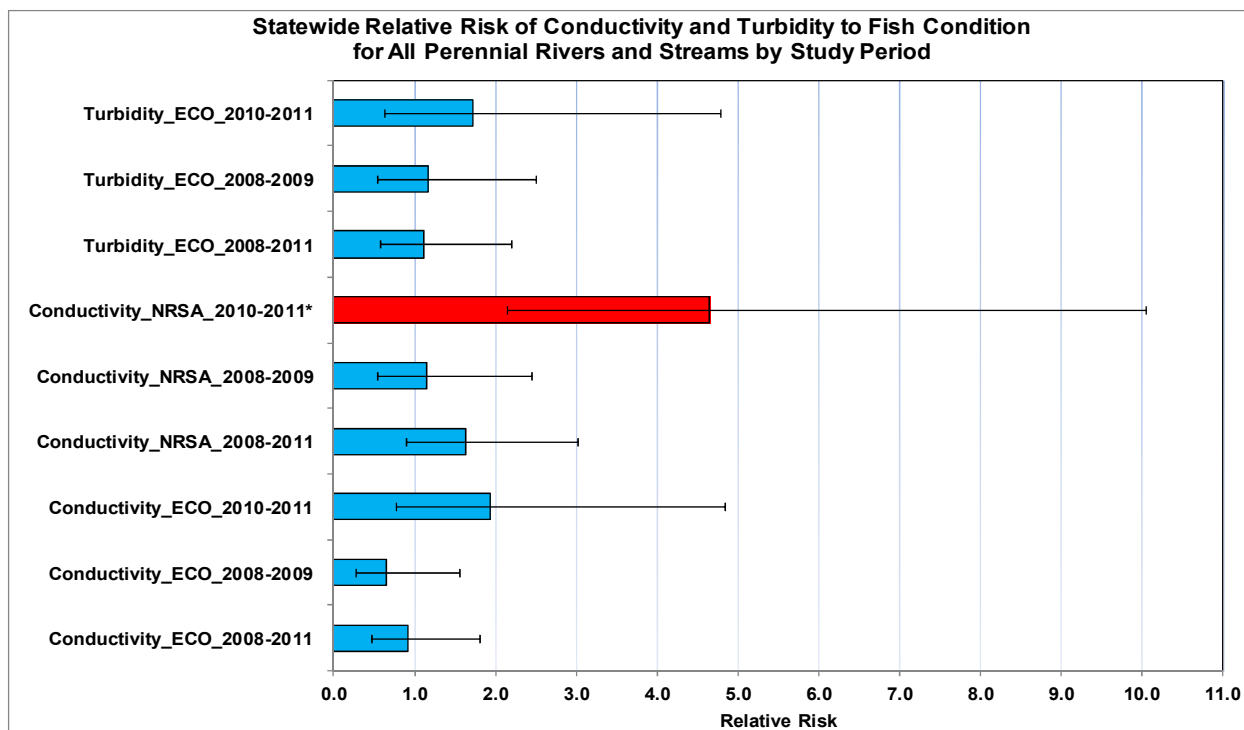


Figure 26. Relative risk of conductivity and turbidity stressors affecting poor fish condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

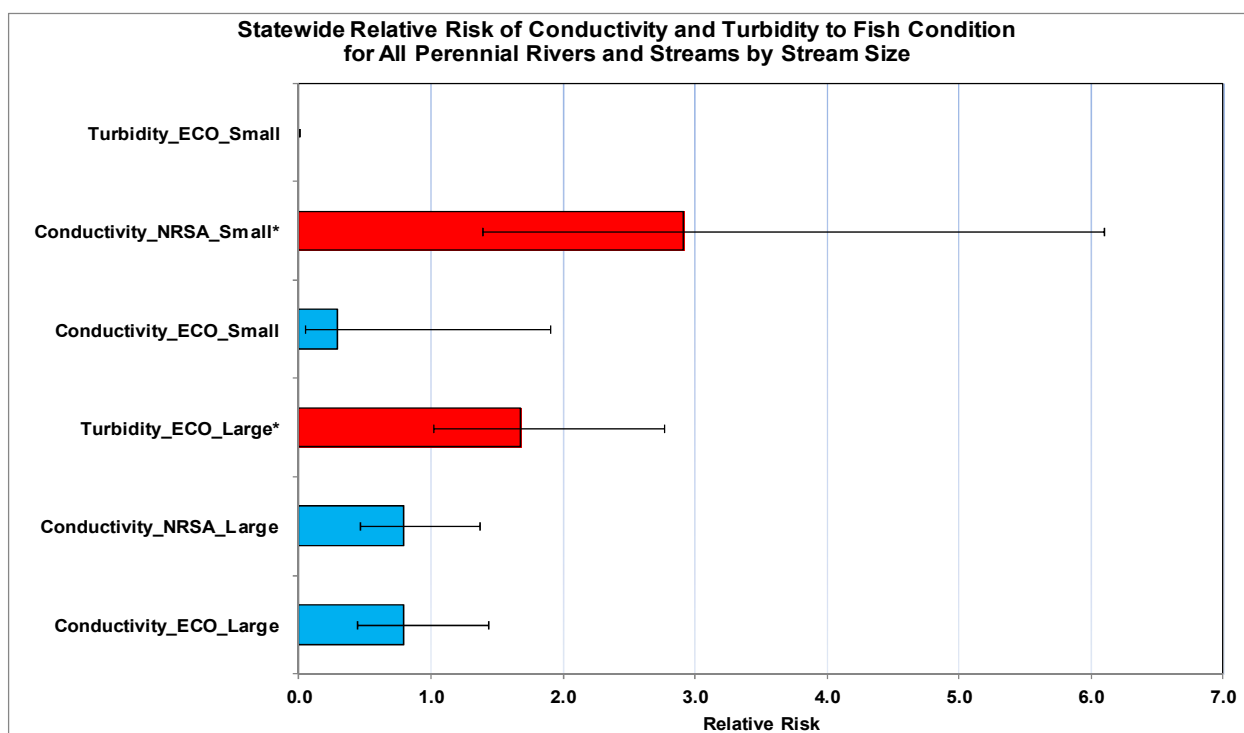


Figure 27. Relative risk of conductivity and turbidity stressors affecting poor fish condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

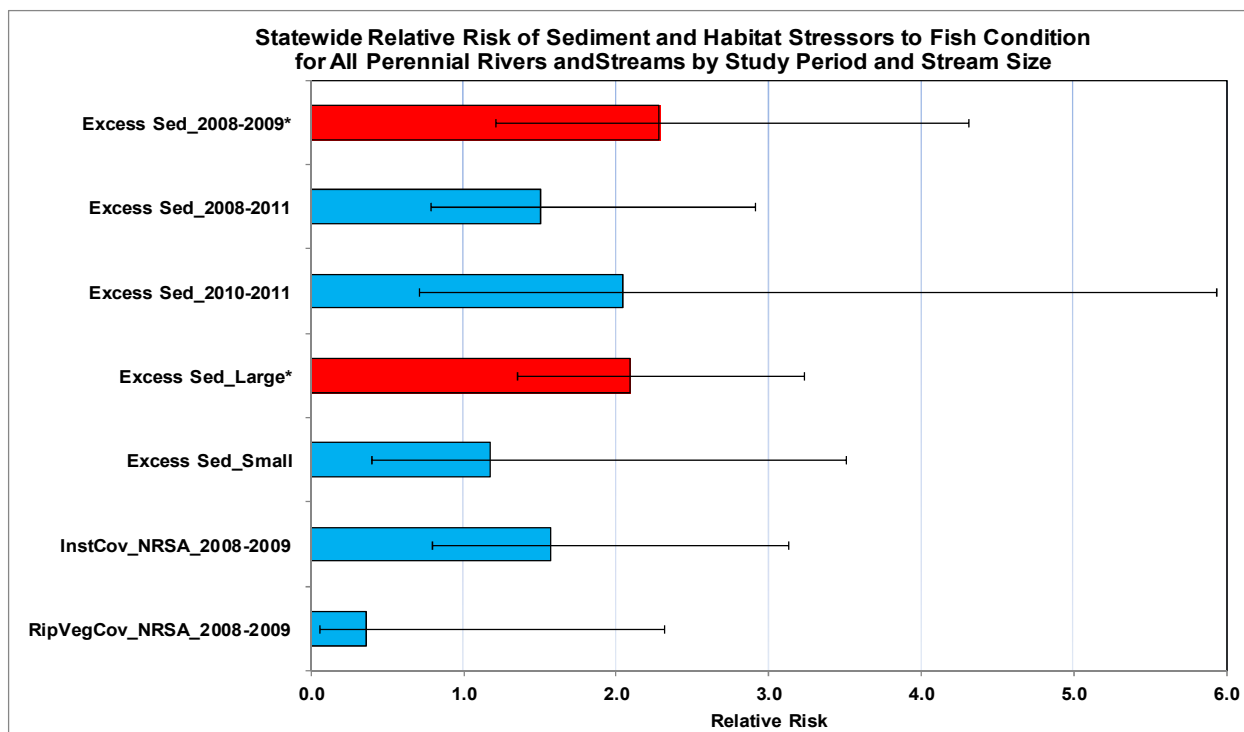


Figure 28. Relative risk of sediment and habitat stressors affecting poor fish condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

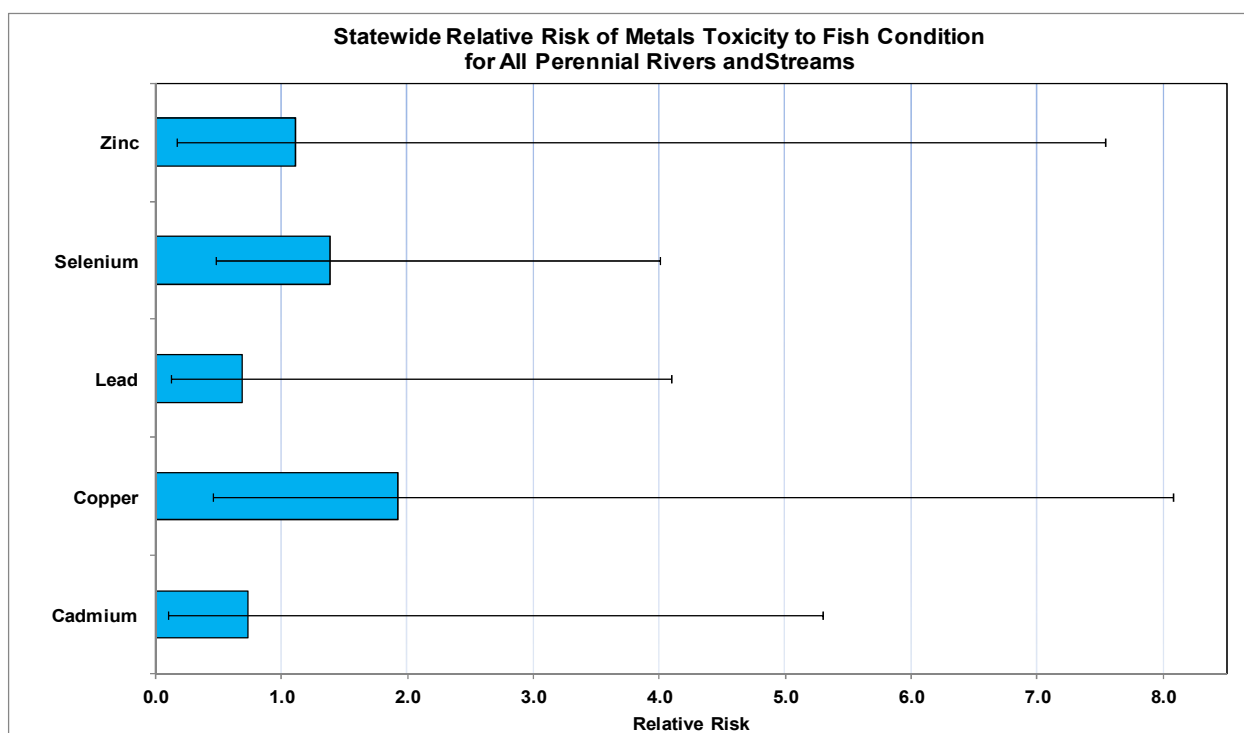


Figure 29. Relative risk of metal toxicity stressors affecting poor fish condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

Relative Risk to Macroinvertebrate Condition

The relative risks of various stressors to macroinvertebrate condition are shown in Figures 30-35. As with fish, the relative risk of poor macroinvertebrate condition is generally greater than 1 when most stressors are in poor condition, but unlike fish, many demonstrate significant risk. With the exception of the NRSA screening limit during study certain periods, the risk of poor macroinvertebrate condition is 2.3 to 3.5 times greater with poor total phosphorus condition and 1.9 to 4.3 times greater with poor total nitrogen condition (Figure 30). For stream size, small streams with poor total phosphorus condition are 3.4 to 5.8 times more likely to have poor macroinvertebrate condition (Figure 31). Poor total nitrogen condition, regardless of size, and total phosphorus in large rivers do not pose a significant relative risk to macroinvertebrate condition. When conductivity is in poor condition, all waterbodies are 2.4 to 3.2 times more likely to have poor macroinvertebrate condition, and from 2010-2011, poor condition was 2.9 times more likely when turbidity was in poor condition (Figure 32). Depending on the screening limit, risk of poor macroinvertebrate condition is 3.7 times greater in small streams and 1.7 times greater in large rivers when conductivity condition is poor (Figure 33). Turbidity demonstrates no significant relative risk to macroinvertebrate condition when considering waterbody size. The risk of poor macroinvertebrate condition is 2.3 times more likely when riparian vegetative cover is poor, and from 2008-2009, was 2.6 greater with excess sedimentation (Figure 34). Large rivers are also 1.5 times more likely to show poor condition with excess sedimentation. Finally, as with fish, metals toxicity demonstrates no significant relative risk to macroinvertebrate condition (Figure 29).

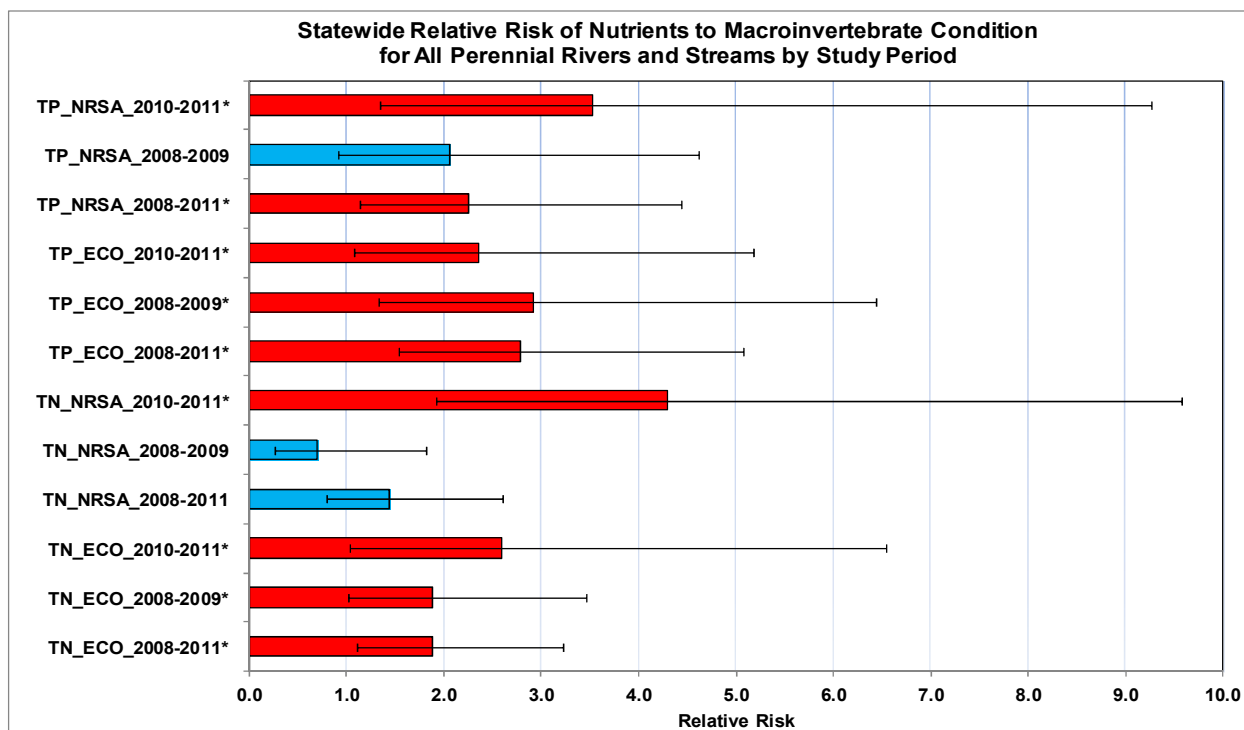


Figure 30. Relative risk of nutrient stressors affecting poor macroinvertebrate condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

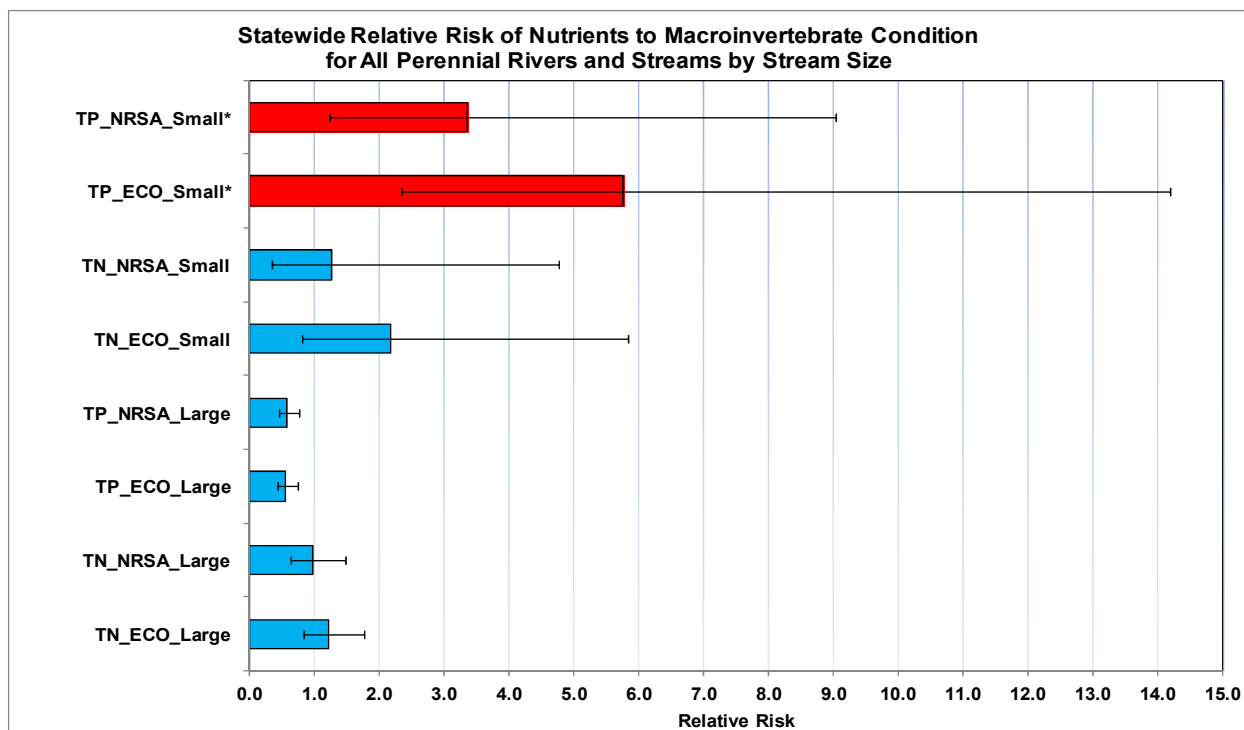


Figure 31. Relative risk of nutrient stressors affecting poor macroinvertebrate condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

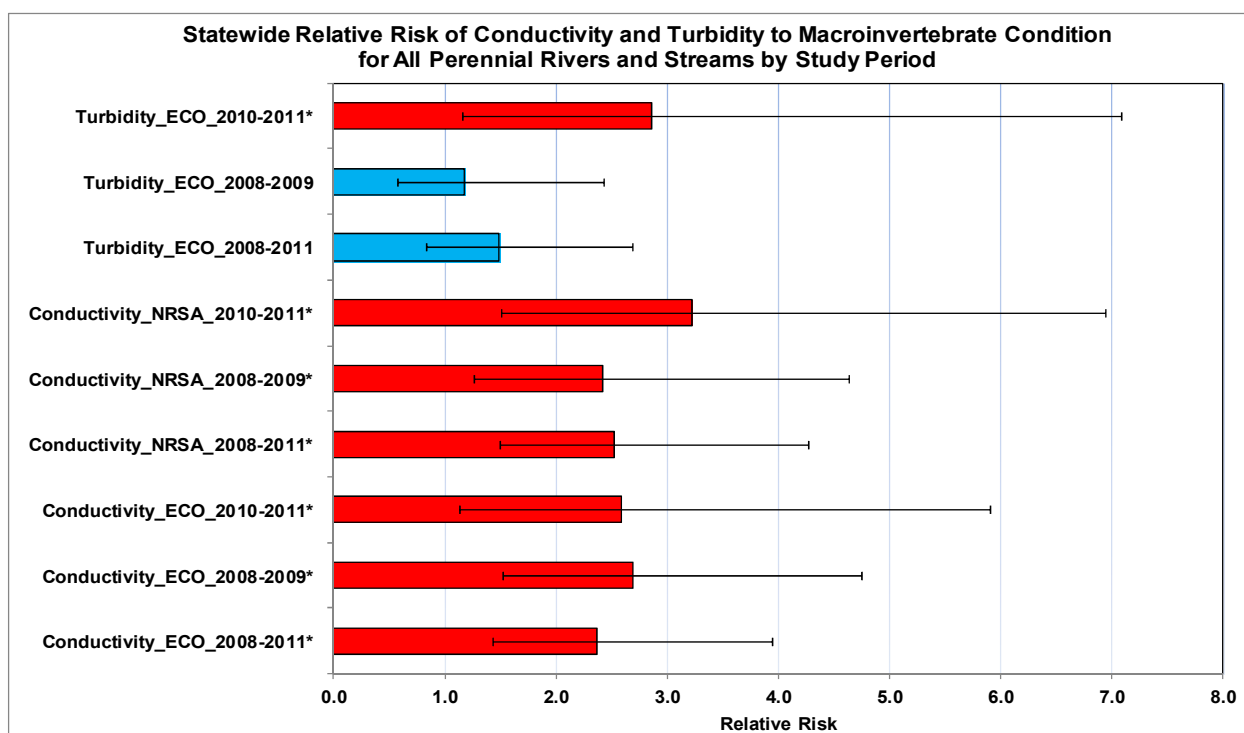


Figure 32. Relative risk of conductivity and turbidity stressors affecting poor macroinvertebrate condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

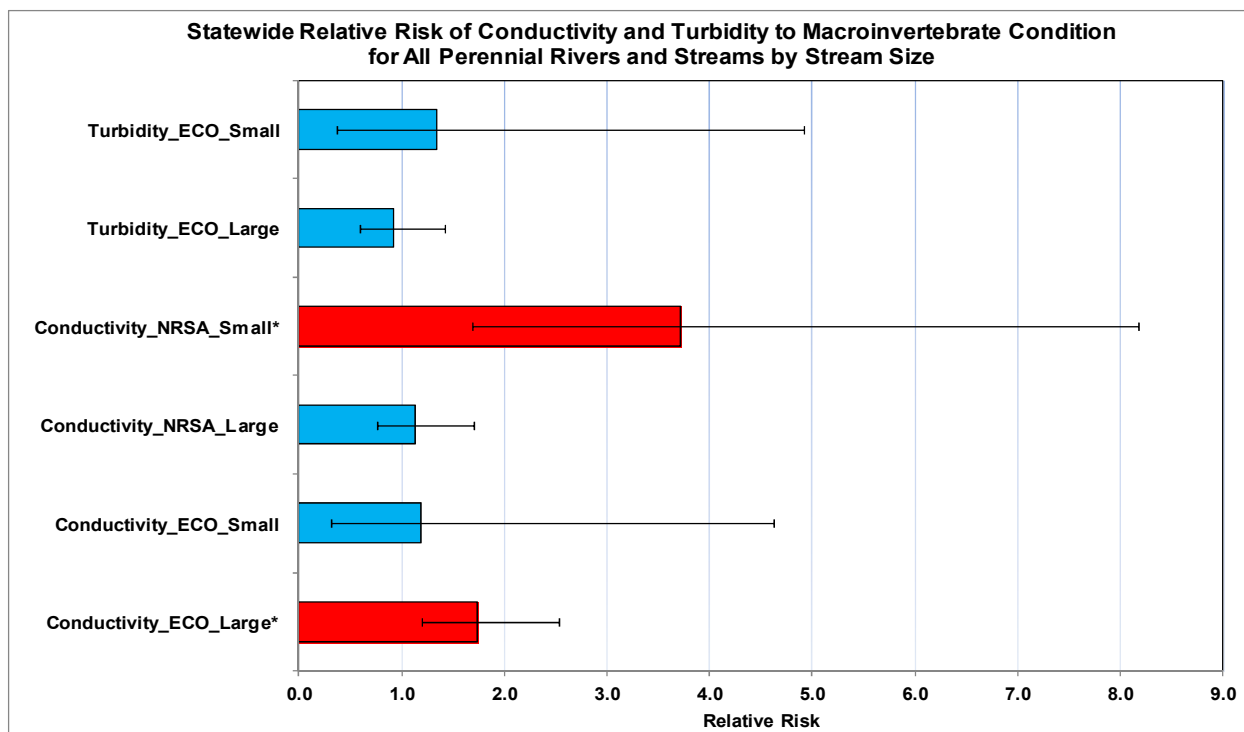


Figure 33. Relative risk of conductivity and turbidity stressors affecting poor macroinvertebrate condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

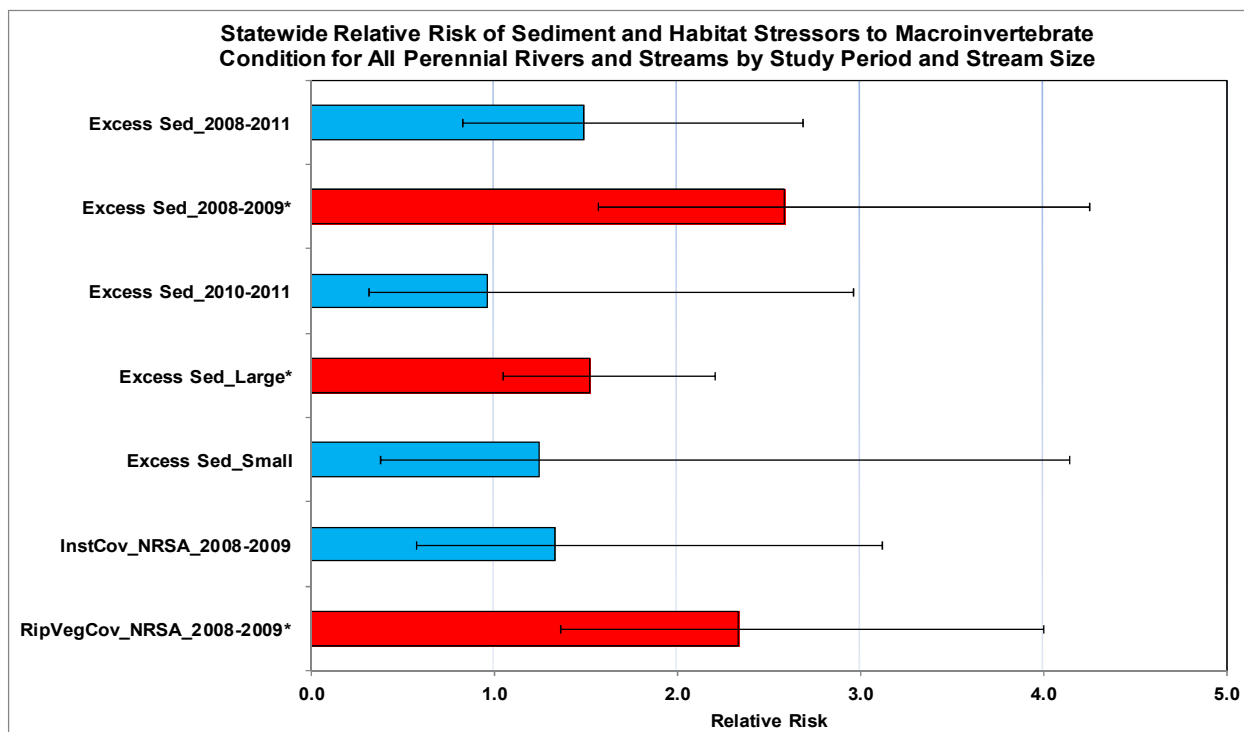


Figure 34. Relative risk of sediment and habitat stressors affecting poor macroinvertebrate condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

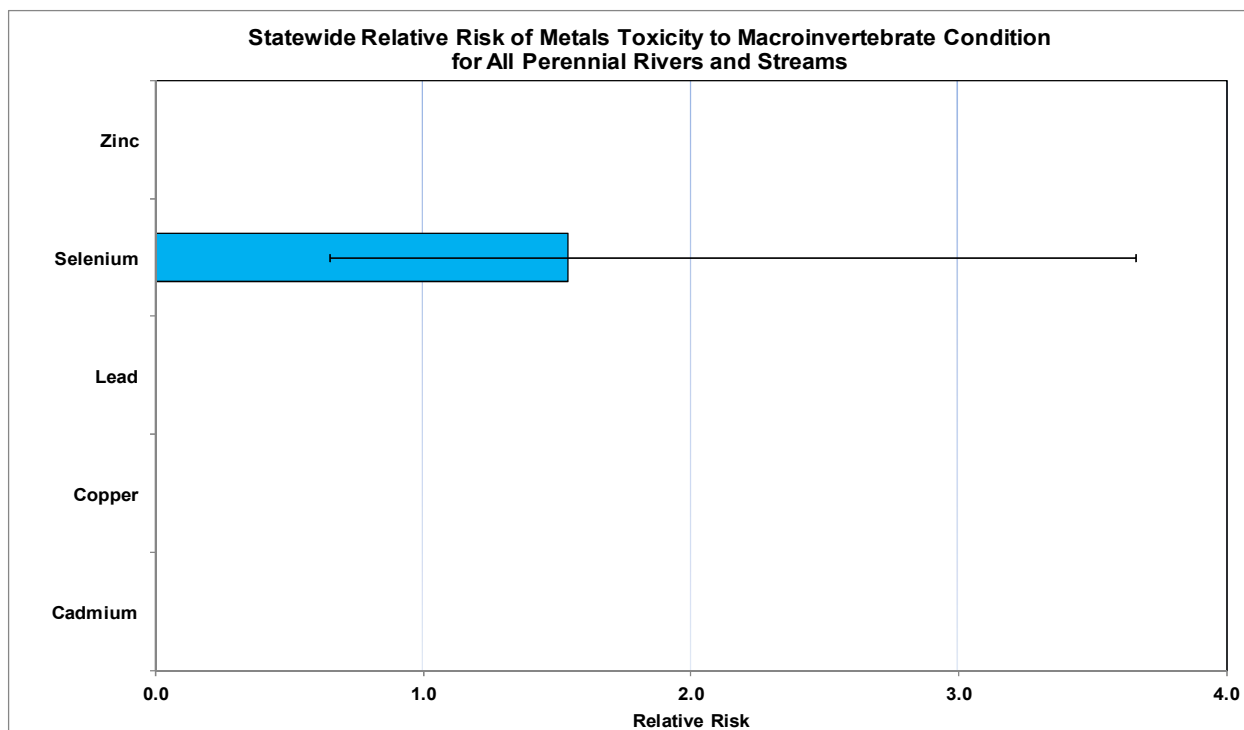


Figure 35. Relative risk of metal toxicity stressors affecting poor macroinvertebrate condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

Relative Risk to Benthic Algae Condition

The relative risks of various stressors to benthic algae condition are represented in Figures 36-41. Nutrients show very little significant relative risk, regardless of study period or waterbody size (Figures 36 and 37). For the 4-year study period, benthic algae condition was 3.3 times more likely to be poor when NRSA total nitrogen was in poor condition (Figure 36). Likewise, over the entire study period, poor conductivity condition was 3.0 to 4.5 times more likely to lead to excessive benthic algal growth (Figure 38). When the ecoregion conductivity was high, the likelihood of poor condition in the population increased by 10.2 times from 2008-2009 (Figure 38) and 9.6 times in small streams (Figure 39). Poor turbidity and habitat condition, as well as excess sedimentation, pose no significant relative risk to benthic algae condition (Figures 38-40). Interestingly, excess benthic algal growth is more likely when lead (3.9) and selenium (2.9) are above the applicable chronic toxicity criteria (Figure 41).

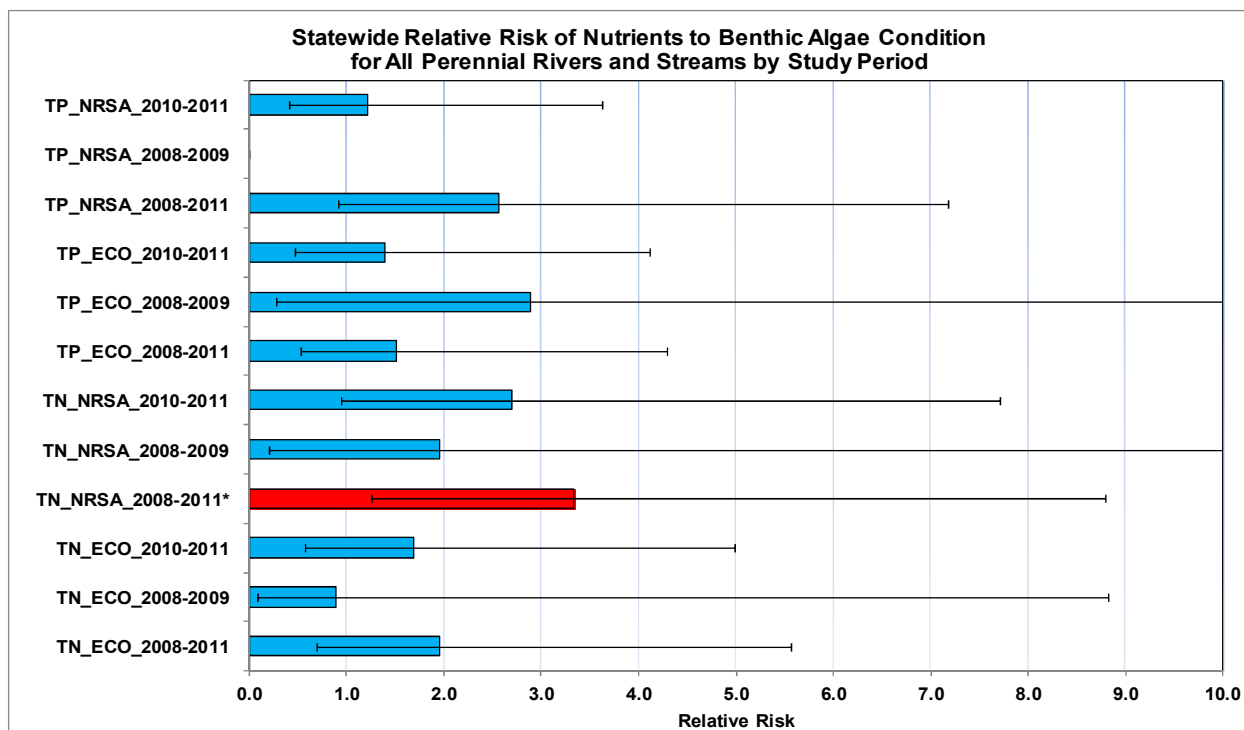


Figure 36. Relative risk of nutrient stressors affecting poor benthic algae condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

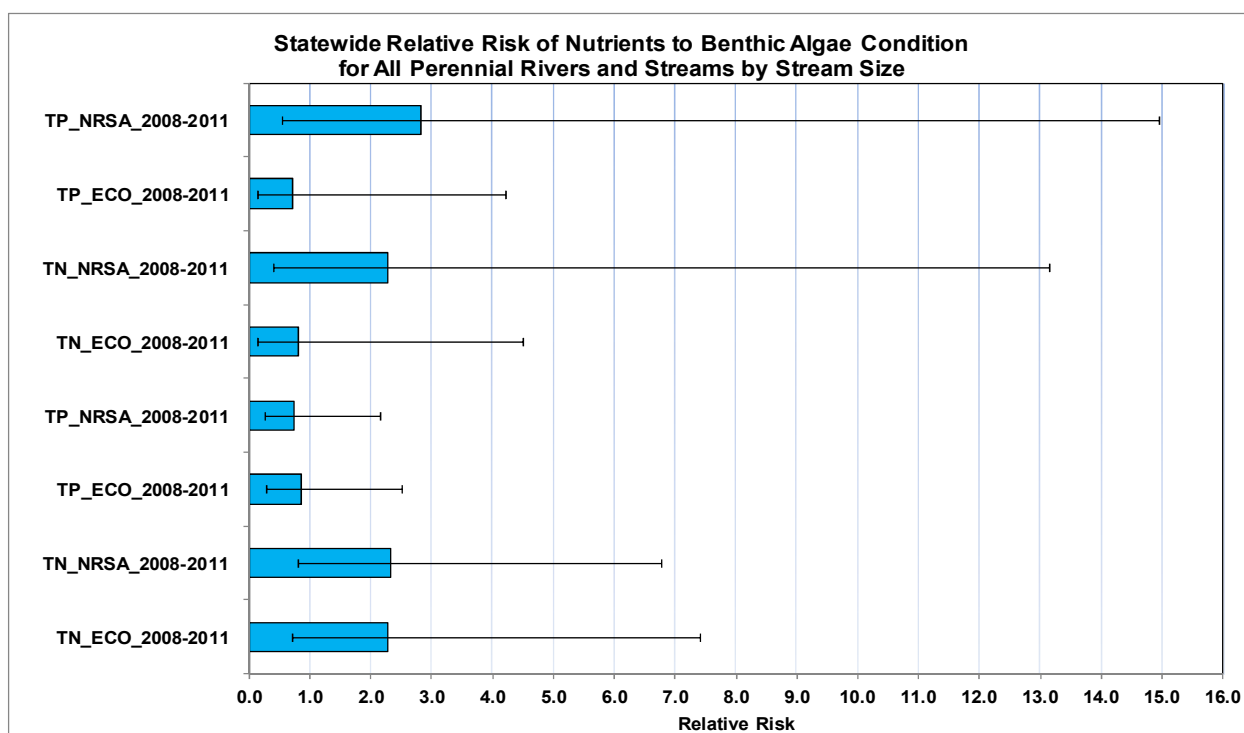


Figure 37. Relative risk of nutrient stressors affecting poor benthic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

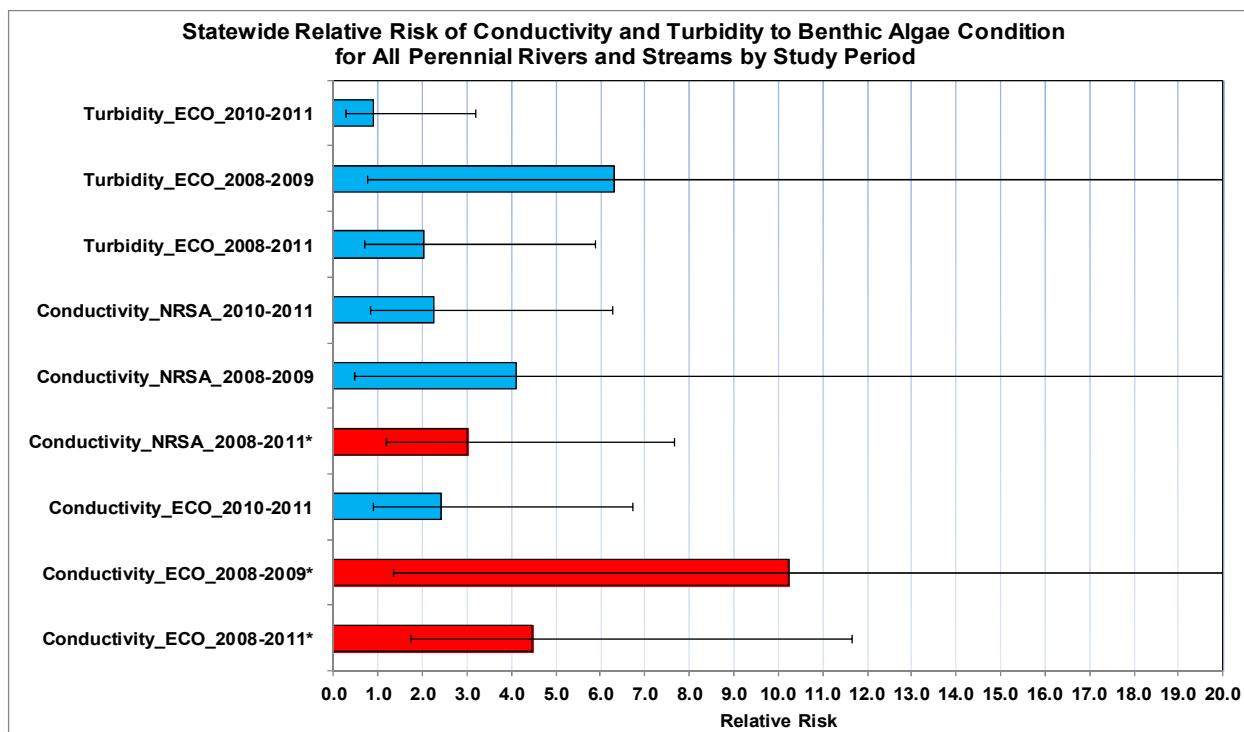


Figure 38. Relative risk of conductivity and turbidity stressors affecting poor benthic algae condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

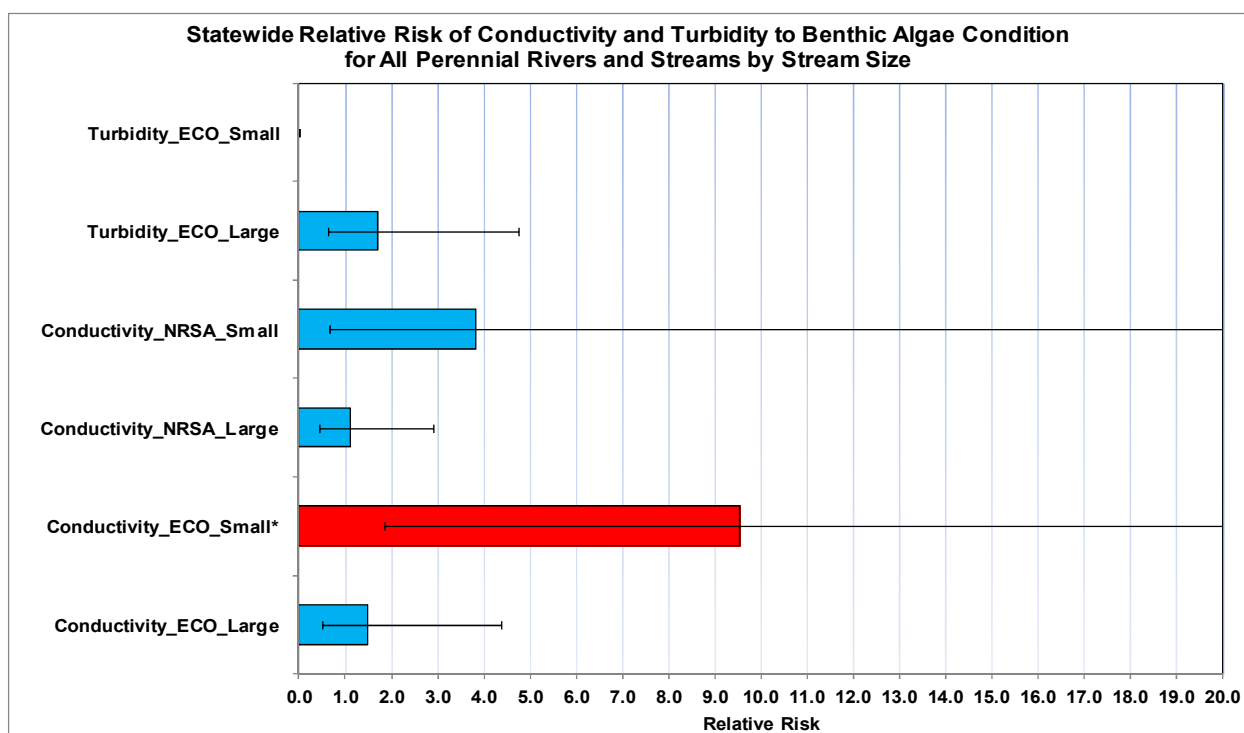


Figure 39. Relative risk of conductivity and turbidity stressors affecting poor benthic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

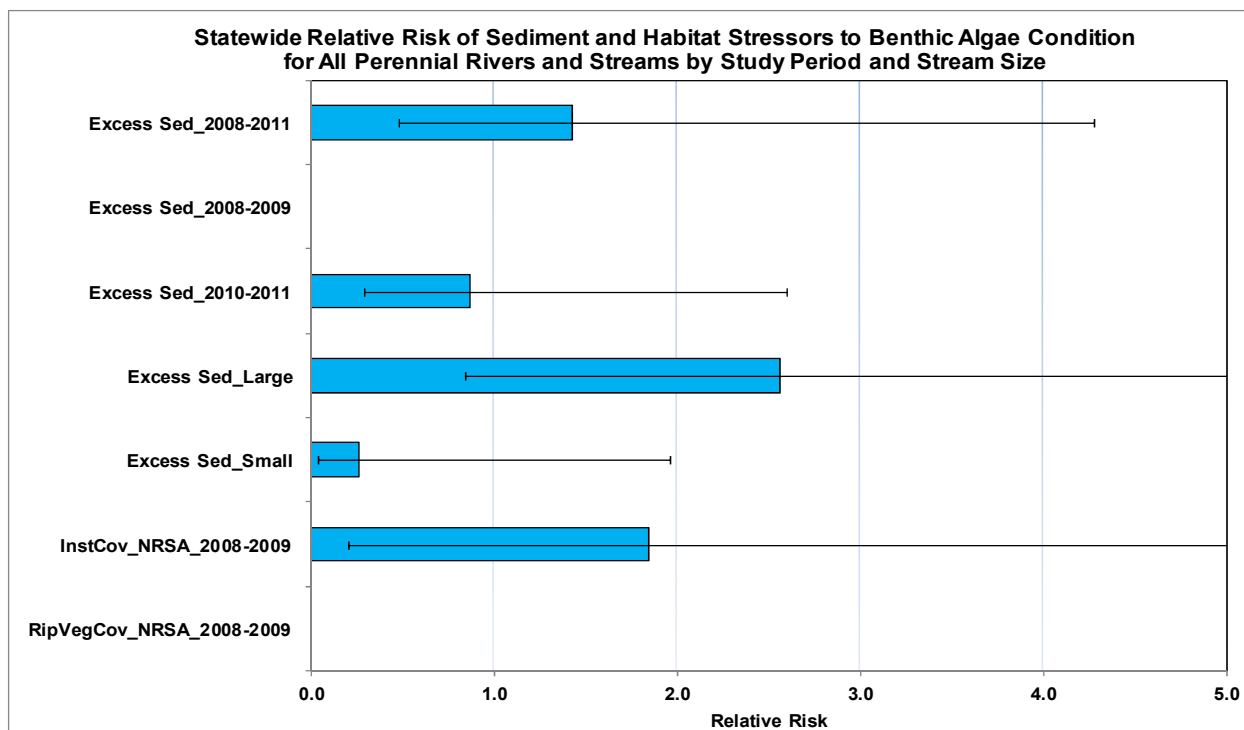


Figure 40. Relative risk of sediment and habitat stressors affecting poor benthic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

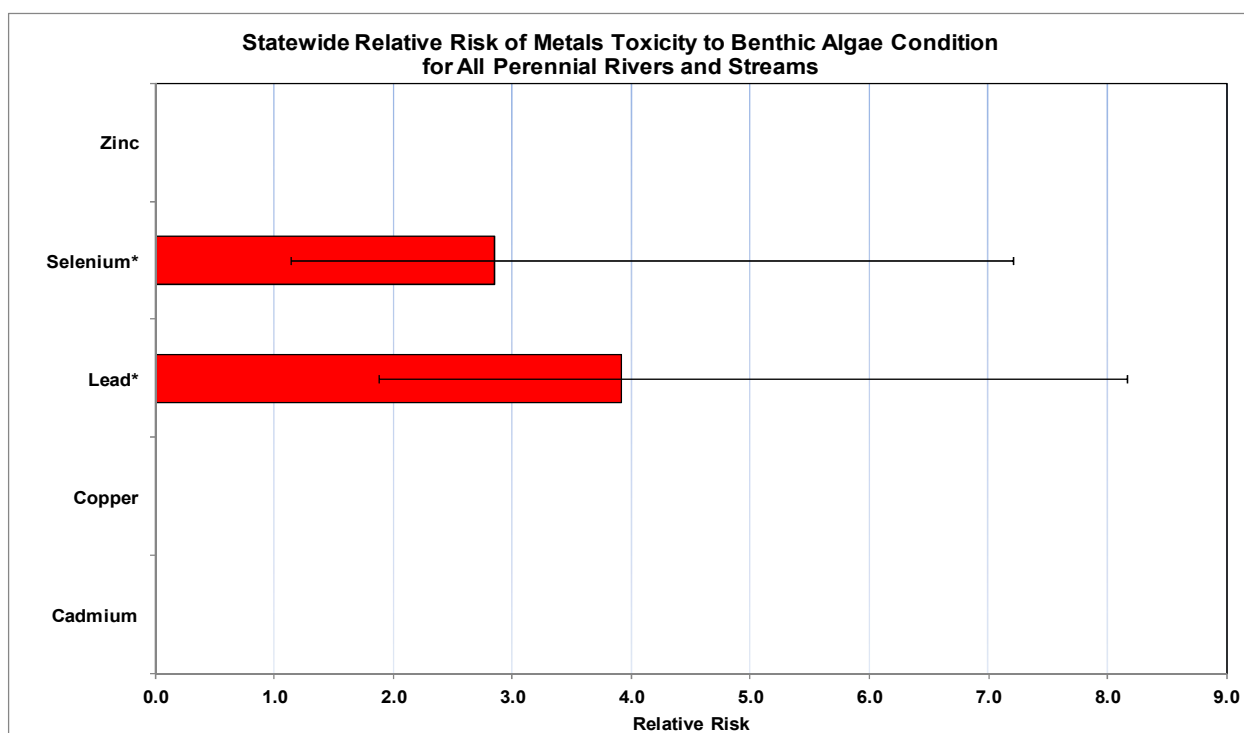


Figure 41. Relative risk of metal toxicity stressors affecting poor benthic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

Relative Risk to Sestonic Algal Condition

The relative risks of various stressors to sestonic algae condition are represented in Figures 42-47. Regardless of study period, poor total phosphorus condition increases by 4.7-15.6 times the risk of poor sestonic algae condition (Figure 42). When the NRSA total nitrogen screening limit is in poor condition, the risk of poor condition increases by 2.8-3.4 times during the 4-year study period as well as the 2010-2011 period. In large rivers, the risk of poor sestonic algae condition increases by 2 to 3.7 times when total phosphorus is in poor condition and 1.4 times when total nitrogen is poor (Figure 43). Conversely, in small rivers, significant risk is confined to NRSA total phosphorus, with the risk of excess sestonic algal growth increased by 6.6 times. With poor conductivity condition, the risk of increased algal growth increased by 3 to 6.6 times, and poor turbidity condition increased risk by 2.7 to 4.5 times, during the 4-year and the 2008-2009 study periods (Figure 44). In small streams, high conductivity increased by 5.3 times the risk for excess sestonic algal growth (Figure 45), while large rivers showed no significant relative risk related to conductivity. There was not significant relative risk to poor turbidity condition in large or small waterbodies. Excess sediment and poor riparian vegetative cover did not significantly increase relative risk (Figure 46). However, poor instream cover increased the likelihood of excessive sestonic algal growth by 2.9 times. Finally, lead concentrations above the chronic criterion increased the likelihood of excessive algal growth by 3.2 times (Figure 47).

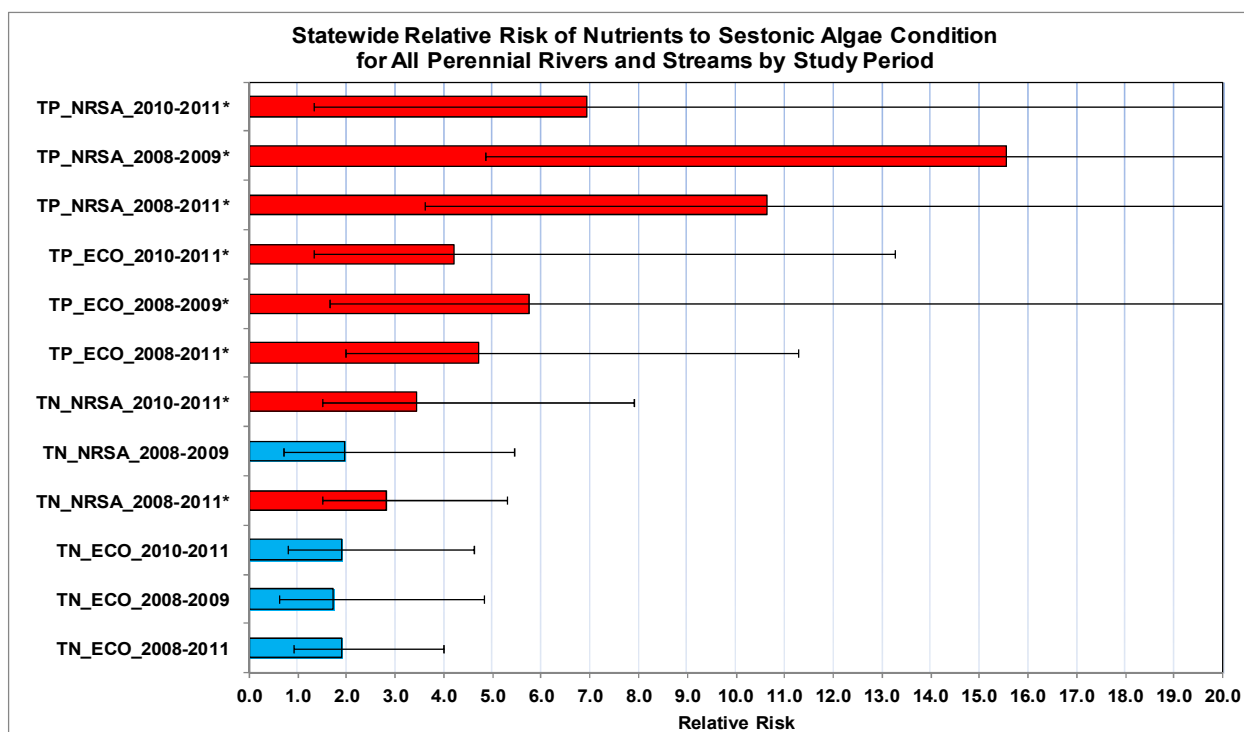


Figure 42. Relative risk of nutrient stressors affecting poor sestonic algae condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

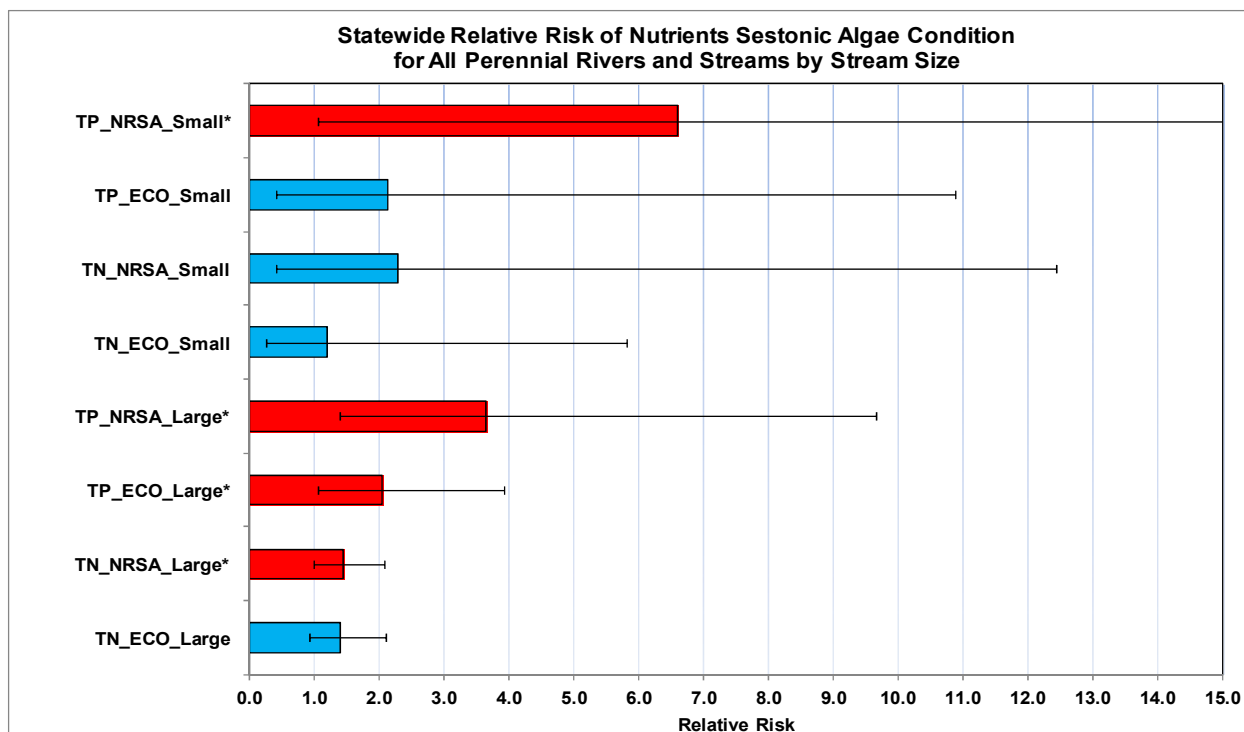


Figure 43. Relative risk of nutrient stressors affecting poor sestonic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

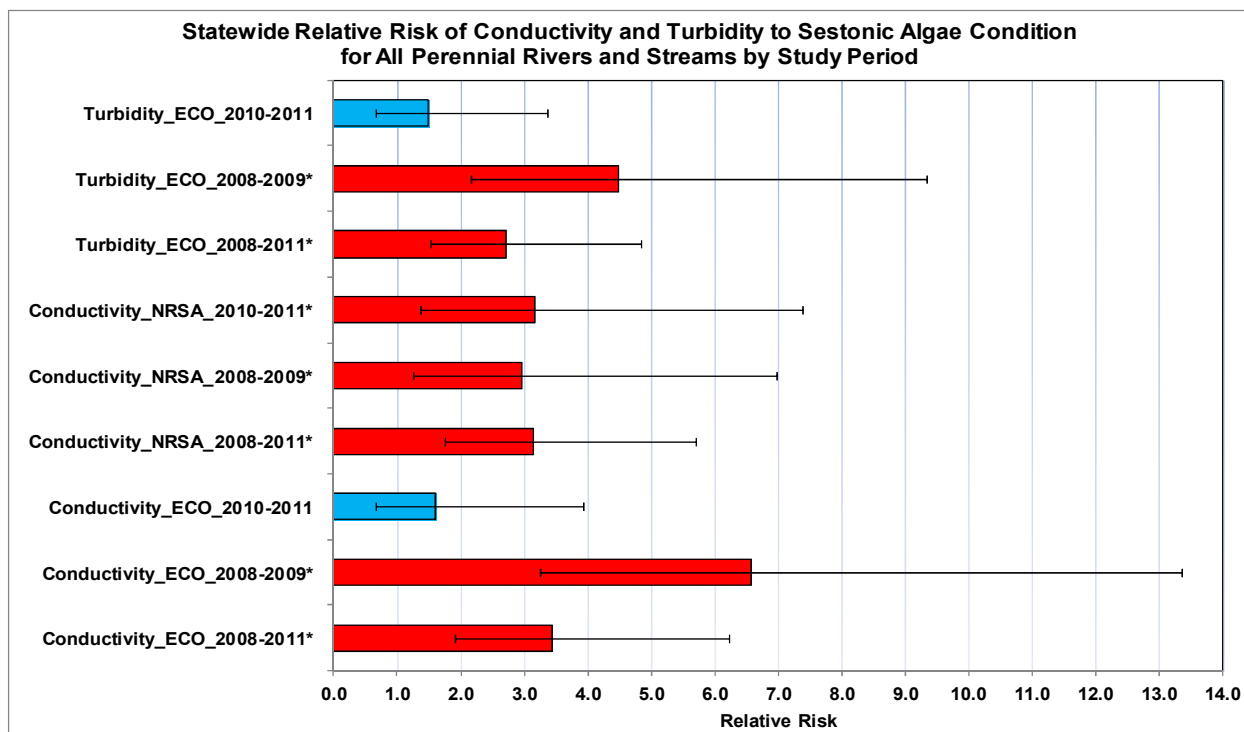


Figure 44. Relative risk of conductivity and turbidity stressors affecting poor sestonic algae condition by study period. (upper/lower bounds represent a 95% CI) (* = significant RR)

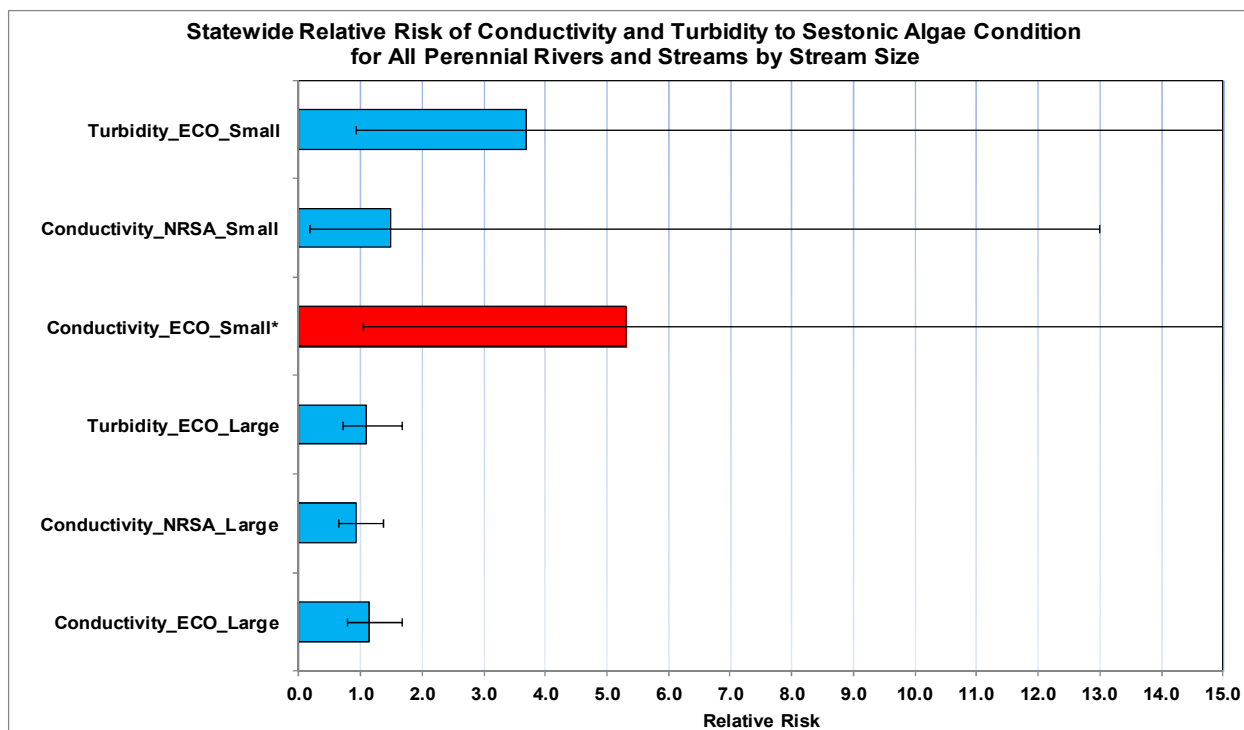


Figure 45. Relative risk of conductivity and turbidity stressors affecting poor sestonic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

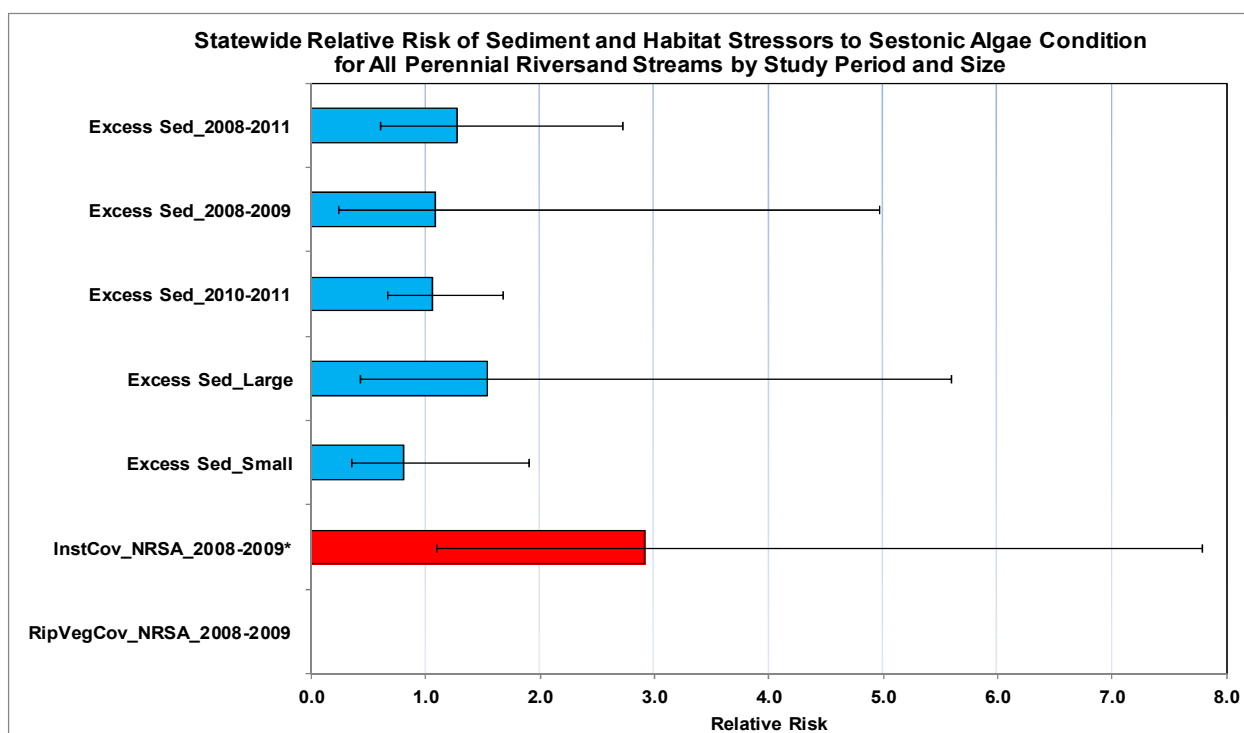


Figure 46. Relative risk of sediment and habitat stressors affecting poor sestonic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

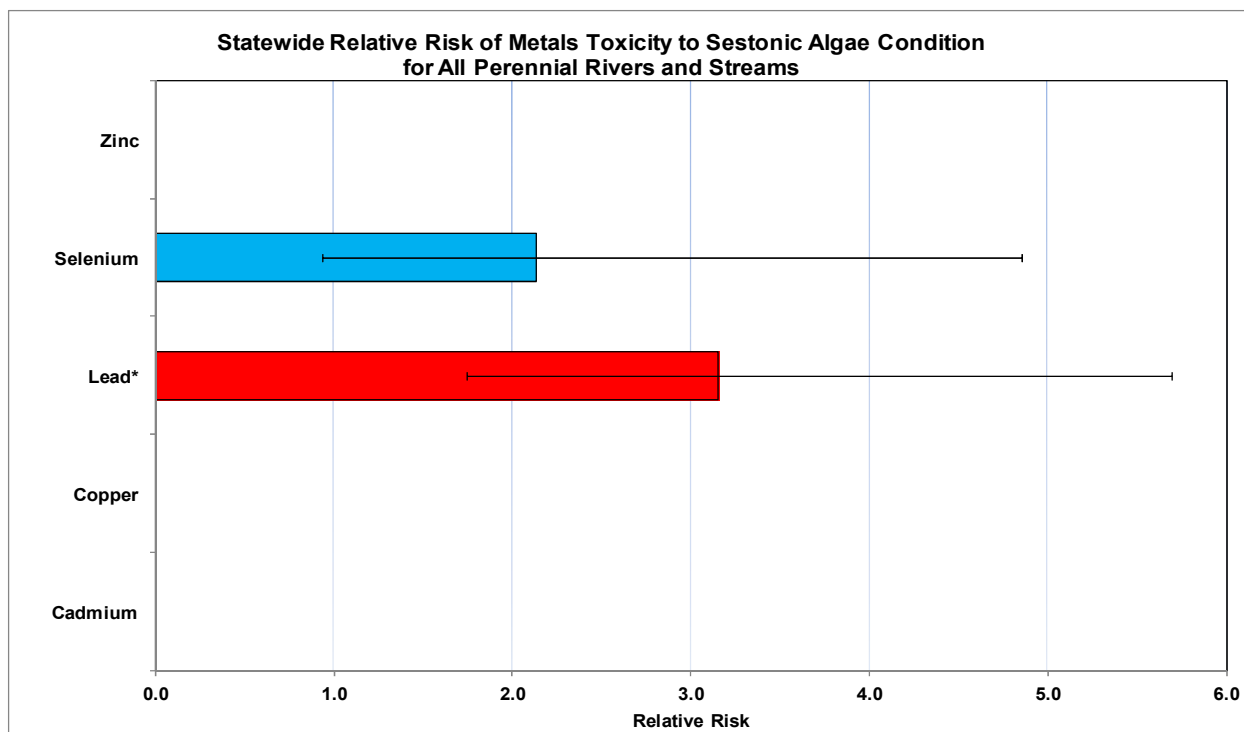


Figure 47. Relative risk of metal toxicity stressors affecting poor sestonic algae condition by waterbody size. (upper/lower bounds represent a 95% CI) (* = significant RR)

DISCUSSION AND RECOMMENDATIONS

Oklahoma's Integrated Water Quality Report

Oklahoma's environmental agencies gather and assess data across the state for a wide variety of biological, chemical, and physical water quality indicators. One purpose of these data collections is to meet federal Clean Water Act requirements to compile a list of impaired waterbodies and determine the condition of all of these waters. These reports are compiled to the biannual Oklahoma Water Quality Assessment Integrated Report (ODEQ, 2010).

The current study benefits this report in several ways. First, this report marks Oklahoma's second and third statistically based assessments of the condition of Oklahoma's lotic waters. The OWRB recommends that this report be adopted into the 305(b) section of the 2012 or 2014 integrated report. Included graphics can be used to show overall statewide and regional condition. Second, individual lotic waterbodies not yet included in Oklahoma's Integrated Report (ODEQ, 2010) now have some level of assessment. The OWRB regularly submits waters for inclusion on Oklahoma's 303(d) list, and will do so again in October 2013. As a part of OWRB's submission, waterbodies assessed as part of this study will be included for consideration as not only category 5 (impaired), but as category 3 (not impaired for some uses). Because of assessment rules housed in Oklahoma's Continuing Planning Process (CPP) (ODEQ, 2012) and USAP (OWRB, 2012b), certain water quality parameters will not be included as part of the assessment. Most of Oklahoma's assessment protocols require that certain data requirements be met including the number of samples required to make an assessment determination. Protocols were developed to either assess short-term or long-term exposure. Short-term exposure protocols are written as percent exceedances, with typically a minimum of ten samples required. Long-term exposure protocols are based upon some measure of central tendency, but typically require a minimum number of samples to calculate the applicable descriptive statistic. Some exceptions to these rules include biological assessments, application of the sediment criteria, and a single sample maximum of 200 mg/m³ for benthic chlorophyll-a. All other parameters included in this study will not be included in assessments for the impaired waters list but will be made publicly available in the event that another entity can include the data in their assessment. To ensure inclusion of relevant data, stations will be placed in the most current version of the OWRB Assessment Workbook (OWRB 2013c), which is not only used to assess waters for the Oklahoma Integrated Report but for the OWRB's Beneficial Use Monitoring Program (OWRB, 2013a)

Differences in Indicator/Stressor Levels

The current study allows for unique analysis between both study periods and waterbody size. Differences in poor condition of both indicators and stressors are presented in Table 10. The analysis simply compares the differences in percent of total miles in poor condition, and establishes significant difference between periods or size if the 95% confidence interval does not overlap the calculated percentage of the other subcategory. For example, for fish, the confidence intervals of period percentages overlap but do not overlap the calculated percentage. Additionally, the arrows in the trend column merely indicate the direction of a potential trend.

For indicators, both fish and macroinvertebrates demonstrate a downward trend in poor condition between study periods, with only the fish having a significant downward trend. Conversely, both algal indicators show an upward trend, with only the benthic algae trend having significance. Likewise, all but one of the total phosphorus stressors shows an upward trend between the two study periods, with only turbidity and sediment having a significant trend. Notably, environmental conditions, particularly drought, became more acute in 2010-2011, and high water was an issue

during a portion of the 2009 index period. Otherwise, no other notable differences exist between the two periods, except the MMI used to analyze the macroinvertebrates, which could account for the difference in poor condition between the two periods. Lastly, when comparing large to small waterbodies, all indicators and stressors have a larger percentage of large river miles in poor condition than small river miles. And, with the exception of sediment, all differences are significant. Likely, this exists for several reasons. First, larger rivers and streams carry much heavier pollutant loads because they have a much larger area of input. Second, the development and refinement of reference condition, metrics, and stressor criteria/screening limits need continued development at both ecoregion and size scales. Data exists to perform these tasks and would eliminate much of the potential noise that is present in current assessments.

Table 10. The percentage of indicators and stressors in poor condition compared between study periods, as well as large and small waterbodies. Arrows show direction of potential trend (** = significant at alpha of 0.05)

Indicator/Stressor	2008-09 %Poor	2010-11 %Poor	Trend	Large %Poor	Small %Poor	Change
Fish	43.9%	21.7%	↓**	50.1%	30.4%	**
Macroinvertebrate	40.6%	25.7%	↓	62.3%	24.7%	**
Benthic Algae	3.7%	21.3%	↑**	21.7%	5.9%	**
Sestonic Algae	18.2%	28.3%	↑	60.6%	6.8%	**
Conductivity_ECO	10.6%	21.4%	↑	38.5%	5.5%	**
Conductivity_NRSA	16.7%	22.7%	↑	55.0%	5.1%	**
TN_ECO	23.4%	37.5%	↑	40.3%	24.1%	**
TN_NRSA	12.2%	22.3%	↑	31.3%	10.1%	**
TP_ECO	40.7%	36.9%	↓	73.8%	26.2%	**
TP_NRSA	31.0%	40.1%	↑	76.4%	18.3%	**
Turbidity_ECO	11.5%	26.6%	↑**	36.9%	9.5%	**
Sediment	15.8%	51.3%	↑**	34.9%	26.2%	NS

Attributable Risk

To determine the actual effect a stressor has on a particular biological indicator, relative risk analyses were made for each stressor-indicator pair and presented in the results section of this report. However, is there a way to determine how much effect a proportional reduction in a stressor would have on the incidence of poor condition in an indicator? Attributable risk provides an elimination scenario to investigate this relationship and potential beneficial outcomes of reduction (Sickle and Paulsen, 2008). Although assumable assumptions are made about causality and the analysis requires elimination of the stressor, it is still a useful extension of the stressor extent and risk models already used in probability assessments. As reported in the draft NRSA report:

“Attributable risk represents the magnitude or importance of a potential stressor and can be used to help rank and set priorities for policymakers and managers. Attributable risk is derived by combining relative extent and relative risk into a single number for purposes of ranking. Conceptually, attributable risk provides an estimate of the proportion of poor biological conditions that could be reduced if high levels of a particular stressor were eliminated. This risk number is presented in terms of the percent of length that could be improved” (USEPA, 2013).

The results of attributable risk for the current Oklahoma studies are provided in Figures 49-52. In order to provide a meaningful analysis, an assumption was made that if relative risk was not significant, then calculating of an elimination scenario was not meaningful. Therefore, pollutant elimination analyses were only performed where stressor/indicator relative risk was significant. Confidence intervals were also calculated for each risk analysis, and significant potential reduction only exists where the upper confidence bound does not equal the original percent in poor condition. For example, in Figure 49, an elimination of turbidity could reduce poor condition for fish in large rivers by approximately 10%. However, upper confidence bound is not lower than the original percentage in poor condition, so the potential reduction is effectively not different from “0”.

Notably, for fish, elimination of sediment in large rivers could create a significant reduction of poor condition in fish as could reduction in conductivity (Figure 49). For macroinvertebrates, elimination of both total phosphorus and total nitrogen could have a significant effect on poor condition (Figure 50). The elimination of phosphorus in small streams results in a nearly 14% lowering of the percent of miles in poor condition. As with fish, the elimination of conductivity is significant in some scenarios. Sestonic algal condition shows potential promise with a variety of pollutant elimination scenarios (Figure 52). Turbidity, conductivity, and nutrients all show some significant results. Of particular interest, many of the total phosphorus measures show significant potential reduction in sestonic algal growth. For example, in large rivers, the elimination of phosphorus would reduce the percent of river miles in poor condition by greater than 25 to 40%. There is no significant pollutant elimination scenarios related to benthic algae condition (Figure 51).

Interestingly, the elimination of conductivity is consistently significant in reducing the prevalence of poor indicator condition. Because of Oklahoma’s significant conductivity gradient, this is to be expected. However, it is yet another indication of the need for refinement and further regionalization of reference condition and biological criteria, as well as the potential effect of dewatering and drought in alluvial systems. Likewise, the potential that the elimination of phosphorus would have on biological condition is prevalent throughout the analysis, regardless of study period, waterbody size, or screening limit source.

Future Plans

In terms of monitoring, probabilistic design has been completely integrated into both the OWRB and OCC monitoring programs (OWRB, 2012d). The OWRB is currently participating in the 2013-2014 National Rivers and Streams Assessment (NRSA) and will use data from it to provide an update to the current report. Also, the fourth two-year statewide study will begin in 2015 (OWRB, 2013b). Substantive changes to the program will include: 1) use of the NRSA protocols for large Wadeable and non-wadeable waterbodies, 2) use of NRSA habitat protocols for wadeable streams in concert with the current RBP habitat protocol, 3) inclusion of a second winter macroinvertebrate index period, 4) development of a periphyton taxonomic assemblage, 5) assessments at aggregated ecoregion scales used in the 2005-2007 assessment (OWRB, 2009), and 6) change/trend analyses through the use of revisit sites. Dependent upon future funding, additional plans are also in the works for future regionally based studies, similar to the Illinois River Basin Project (OWRB, 2010a).

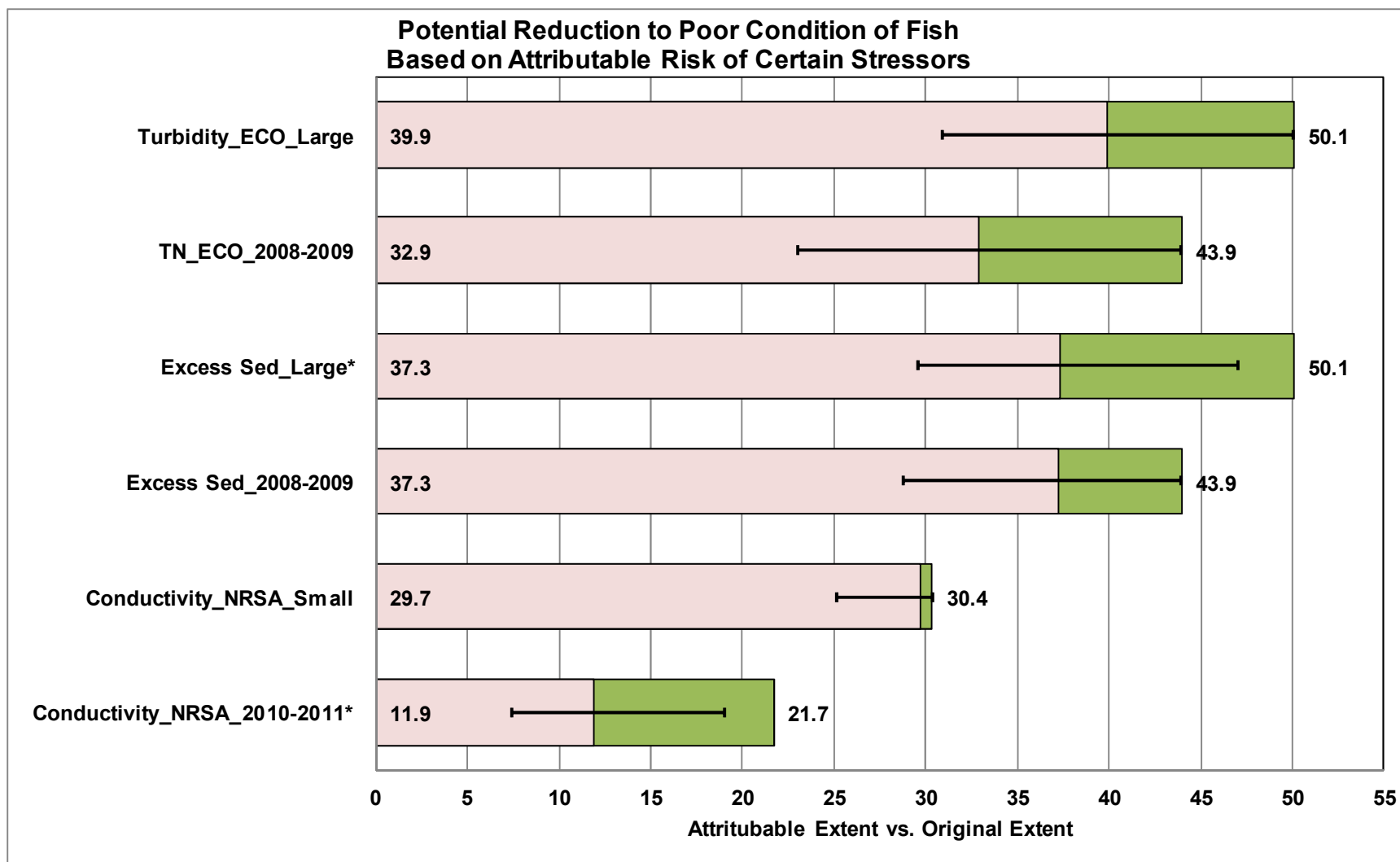


Figure 48. Potential reduction to poor condition of fish based on the attributable risk of stressors having significant relative risk. (upper/lower bounds represent a 95% confidence interval-CI)

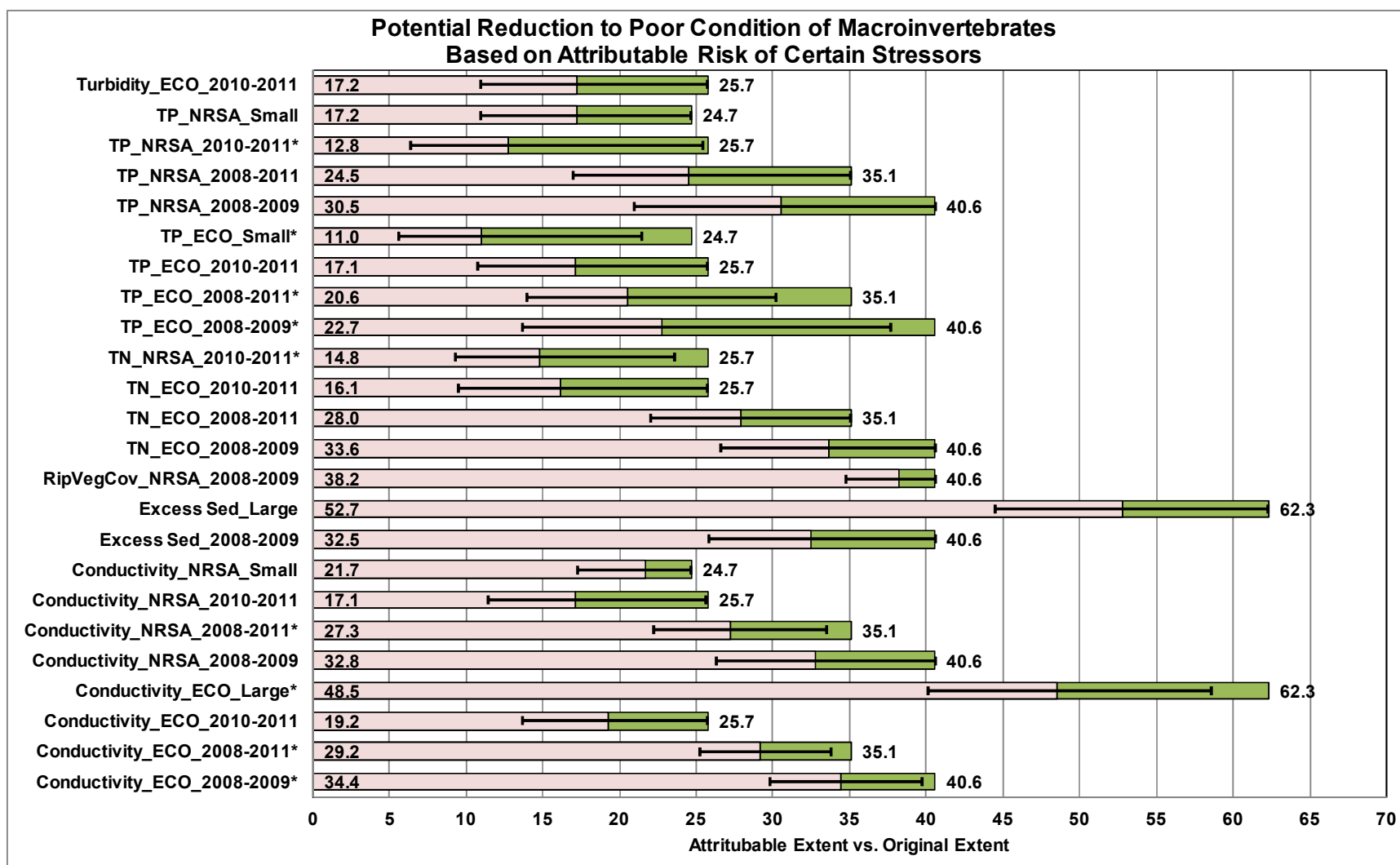


Figure 49. Potential reduction to poor condition of macroinvertebrates based on the attributable risk of stressors having significant relative risk. (upper/lower bounds represent a 95% confidence interval-CI)

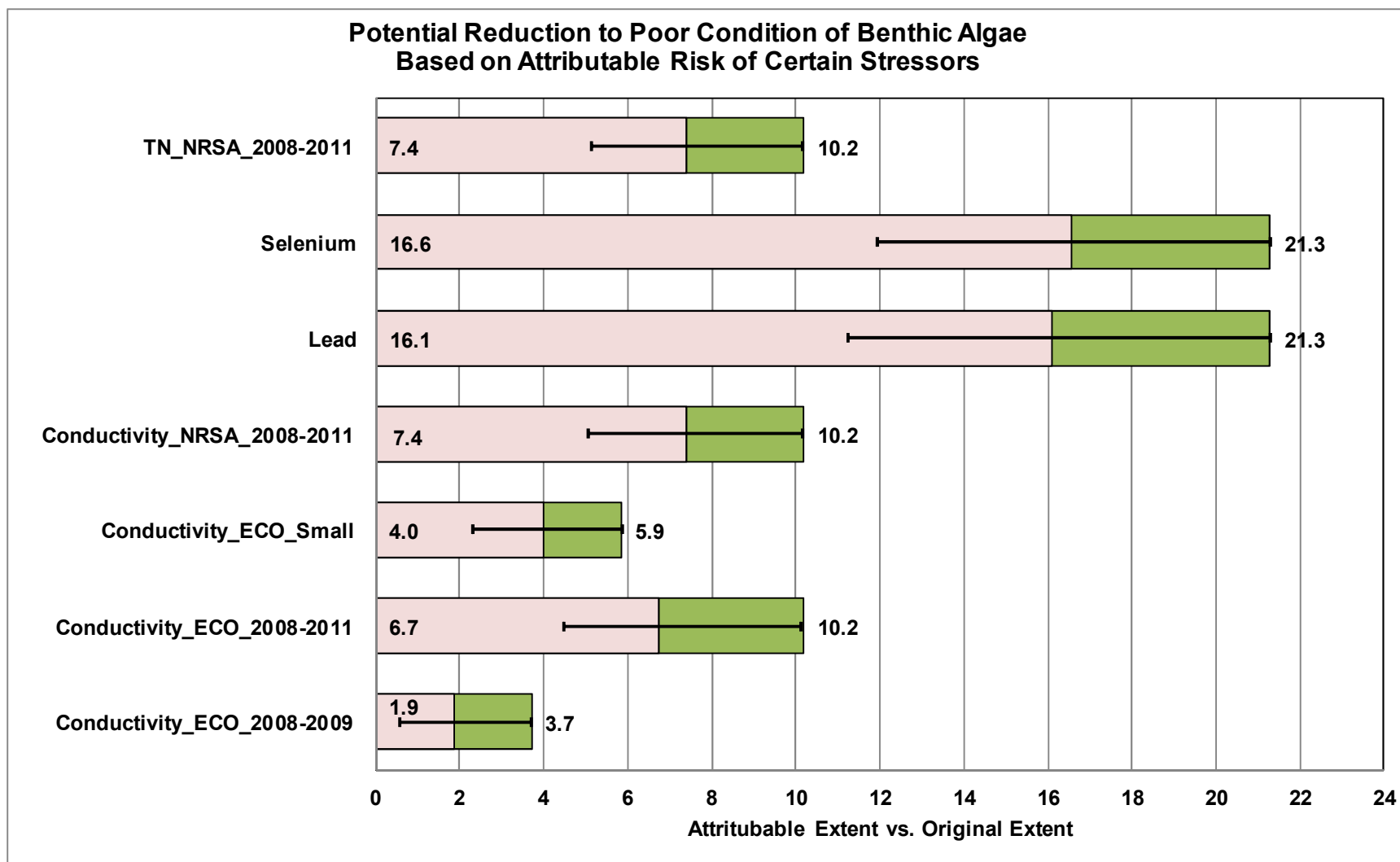


Figure 50. Potential reduction to poor condition of benthic algae based on the attributable risk of stressors having significant relative risk. (upper/lower bounds represent a 95% confidence interval-CI)

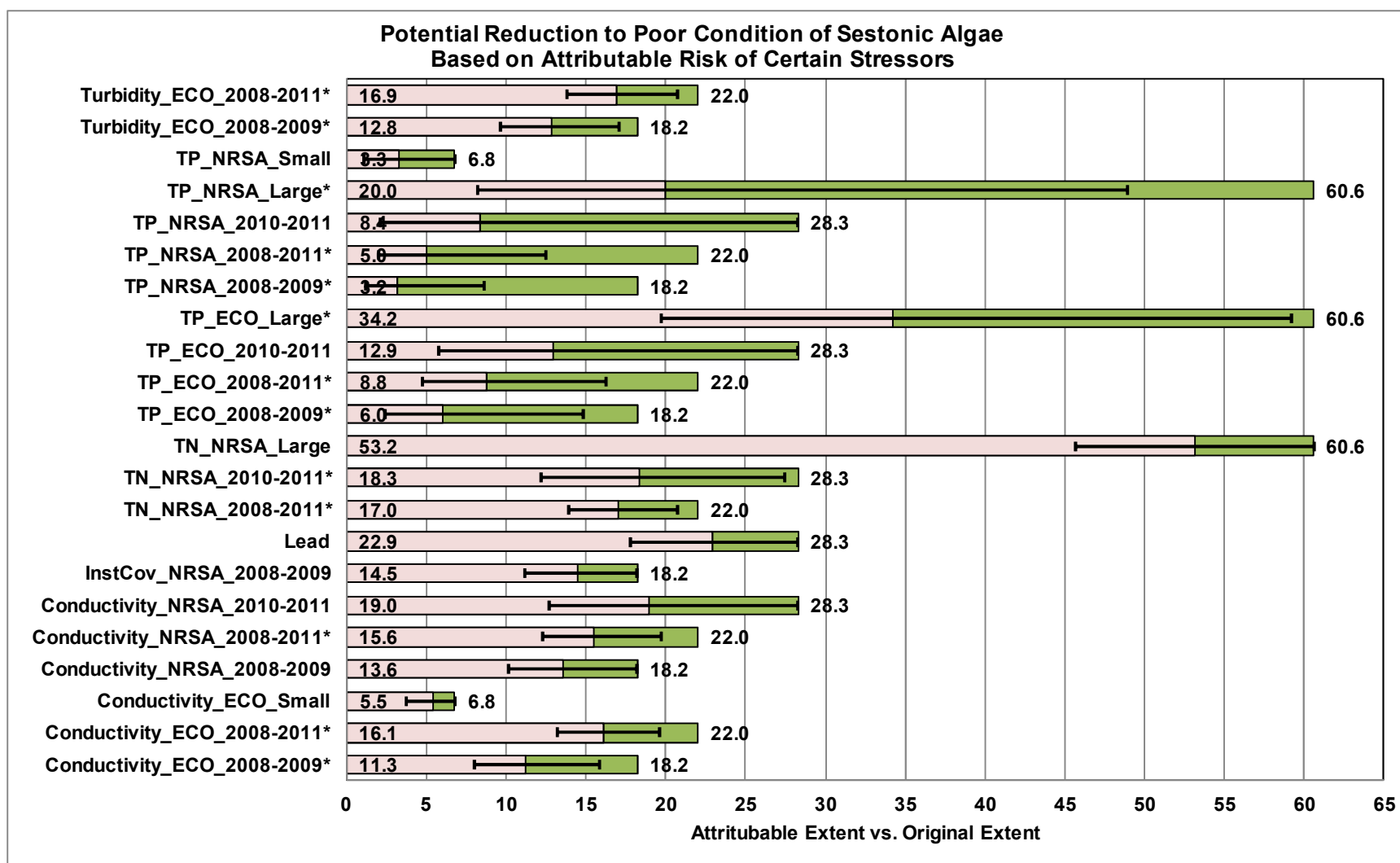


Figure 51. Potential reduction to poor condition of sestonic algae based on the attributable risk of stressors having significant relative risk. (upper/lower bounds represent a 95% confidence interval-CI)

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Appendix G – Response to Public Comments

Comments were received from:

- (a) Oklahoma DEQ Staff (DEQ)
- (b) Jeff Everett, OGE Energy Corp. (OGE)
- (c) Derek Johnson, City of Oklahoma City (OKC)
- (d) Brian Lewis, City of Tulsa (COT)

This key is used in the summary of comments below to identify the commenter. DEQ responses to comments are indicated in *italics*.

1. (DEQ) During review of data for TMDL development and transition to EPA's ATTAINS database, DEQ staff noticed the following waterbody assessments needing corrections:

- a) OK410210020140_00: Fish Consumption was "Not Supporting" with no cause of impairment listed. Lead should be added to causes.
OK121300010050_00: Agriculture was "Not Supporting" with no cause of impairment listed. TDS should be to causes.
OK520500010020_00: Fish Consumption was "Not Supporting" with no cause of impairment listed. Mercury should be added to causes.
OK621100000010_00: Fish Consumption was "Not Supporting" with no cause of impairment listed. Assessment from OWRB shows "Fully Supporting" (4/1/2015). Should be changed to "Fully Supporting" and the delisting for lead should be removed. (There was no listing for lead in 2014. Lead delisting is for OK621100000010_10.)
OK520700020060_00: Fish Consumption was "Not Supporting" with no cause of impairment listed. Mercury should be added to causes.
OK520500020010_00: Agriculture was "Not Supporting" with no cause of impairment listed. Assessment from OCC shows "Fully Supporting" (4/14/2015). Agriculture should be changed to "Fully Supporting".
OK310800020010_00: Fish and Wildlife Propagation (FWP) was "Not Supporting" with no cause of impairment listed. Assessment from OWRB shows Insufficient Information (4/1/2015). FWP should be changed to Insufficient Information.
OK720500030020_00: Fish Consumption was "Not Supporting" with no cause of impairment listed. Mercury should be added to causes.
- b) TMDLs exist for the following 303(d) list waterbodies but were removed from the Assessment Database (ADB) during prior delistings:
 - OK310810010090_10: Change chloride to 4a and add TMDL ID
 - OK410300030010_10: Change Enterococcus to 4a and add TMDL ID
 - OK410400030010_00: Change Enterococcus to 4a and add TMDL ID
 - OK621000030010_00: Change turbidity to 4a and add TMDL ID
- c) There was an error in the *E. coli* geometric mean calculation for OK311310010010_00. The correct geometric mean is 106.8 cfu/100 ml. The listing for *E. coli* for this waterbody should be removed. (It was not listed in 2014; therefore, a delisting is not necessary.)

DEQ Response: *These changes have been made to the final version of the 2016 Integrated Report.*

2. (OGE) On the interactive map, Deep Fork River segment OK520710020060_00 was highlighted as impaired. However, it is not listed as impaired in Appendix C and can be found in Appendix D for delisting.

DEQ Response: *OK520710020060_00 has been removed from the 303(d) GIS layer.*

3. (OKC) Data and assessments were sent to DEQ for the following waterbodies:
 - a) Dry Creek (OK520610020070_00) should be delisted for oil and grease.
 - b) Chisolm Creek (OK620910040100_00) should be split based on nitrate results from above the wastewater treatment facility.
 - c) Perimeter Creek (OK520530000270_00) should be listed for dissolved oxygen and delisted for oil and grease.
 - d) Elm Creek (OK520810000100_00) should be delisted for turbidity.

DEQ Response: *We will take these assessments and associated data into consideration and assess the aforementioned waterbodies using all data for the 2018 cycle.*

4. (COT) What are the sample requirements to remove streams from the 303d list?
 - a) Flat Rock Creek was 303d listed for benthics in 2012, removed in 2014, and re-listed in 2016. Are parts of the same data used in both the 2014 and 2016 reports?

DEQ Response: Yes.

- b) If no data is collected in the meantime does the impairment simply remain on the list?

DEQ Response: *Yes. Impairments cannot be removed from a waterbody due to a lack of new data. Impairments must remain until data is collected indicating that the waterbody is no longer impaired.*

- c) For example, if data was collected in the year 2000 and an impairment listed, but no data collected again until 2010, would the data from the year 2000 be included in the analysis to determine use support in 2010?

DEQ Response: *Data used is collected in the five year period covered by the IR. For example, for the 2016 report, data collected from 4/1/2010 – 4/30/2015 was used. This means that some of the data will be used for more than one report, but not all. Macroinvertebrate data requires that a minimum of four samples is collected over two years. If data was collected in 2000 and not collected again until 2010, some*

data from older collections could be included to get four, but most likely, the agency that sampled would wait until the 2014 IR (4/1/2008-4/30-2013) to reevaluate the stream for benthics.

5. (COT) What determines the issuance of a unique stream segment ID and name? Twin Hills Creek (aka Fry Ditch Creek) has an unnamed tributary that is 1.3 miles long. However, Brookhollow Creek is roughly 4 miles long, has roadside creek name signage, and does not have a stream segment ID. In the same vein, some WBID segments are dozens of miles long while other watersheds are much smaller, and have multiple WBID's.

DEQ Response: WBIDs are assigned at the request of another agency or another section of ODEQ. Some waterbody segments may be divided further if there is a discharger or a significant difference of stream characteristics. For more information about WBID assignment, see Appendix A of the Integrated Report and Appendix A of Chapter 45
<http://www.owrb.ok.gov/rules/pdf/current/Ch45.pdf>.

6. (COT) Who checks that data collected is valid? An unnamed tributary of Twin Hills Creek OK120420010025_00 and an Unnamed trib of Little Joe Creek OK120420010340_00 are 303d listed for fish and/or benthics. The Twin Hills tributary has a watershed of 0.3 mi. sq. and Little Joe Creek's watershed is 0.5 sq. mi. and neither in our opinion contain enough flow to ever attain the beneficial use for biological criteria.

DEQ Response: OK120420010340_00 was sampled for fish and benthic macroinvertebrates by the Oklahoma Conservation Commission (OCC) in 2007. We cannot delist until we receive new data. OCC sampled for fish bioassessment on OK120420010025_00 in 2013 and found it to be impaired. There were a total of 329 fish collected.

Sampling depends on whether or not those watersheds are perennial during normal seasons. OCC would not sample a recently dry stream for benthic macroinvertebrates – or if they did, they would flag that sample as possibly unrepresentative. If the streams usually have water, they should also have benthic macroinvertebrates. They may or may not have fish, but if there is water, there will usually be fish.

7. (COT) Where is the exact Ecoregion boundary?

DEQ Response: The Cross Timbers/Central Irregular Plains boundary lies basically along the N/S portion of the Arkansas River in Tulsa. Sites to the East are CIP; sites to the West are CT. OCC looks at the site location and the drainage of the watershed to come up with an ecoregion for the site location and an ecoregion for the water being evaluated. A map of ecoregions is available in the CPP http://www.deq.state.ok.us/wqdnew/305b_303d/Final%20CPP.pdf. (Cross Timbers is the same as COTP.)

8. (COT) If ecoregions determine stream segment ID, where is the boundary? Most streams in the City of Tulsa have similar TDS readings, but because of the segment ID some are impaired while the others are well within limits.

DEQ Response: Standards for TDS are located in Appendix F of Chapter 45. The values presented are specific to the 6-digit waterbody segment. The 6-digit segment IDs correlate to the first six digits of the WBID.

9. (COT) What is the average of all samples Cross Timbers vs Central Irregular Plains and what is the seasonal variation lumped by Summer (April – Sept) vs Winter (Oct – March) by ecoregion?

DEQ Response: High quality streams have been identified over the years across each ecoregion. Their results are averaged to come up with the reference conditions. OCC is still using data from the original analysis, but are in the process of looking at updating that information. In general, the agricultural beneficial use is attained with respect to TDS if no sample is greater than 700 mg/L. OCC's most recent work using data from the entire year indicates the following:

CT ecoregion:

<u>TotDisSolids (mg/L)</u>	
Mean	197.481
Standard Error	7.353
Median	195.000
Mode	126.000
Standard Deviation	61.518
Sample Variance	3784.411
Kurtosis	-0.331
Skewness	0.296
Range	285.000
Minimum	71.000
Maximum	356.000
Sum	13823.700
Count	70.000
Mean + 2*StdDev	320.517
Mean + StdDev	258.999
StdDev * 2	123.035
Mean - StdDev	135.964
Mean - 2*StdDev	74.446

CIP ecoregion:

<u>TotDisSolids (mg/L)</u>	
Mean	288.364
Standard Error	20.331
Median	224.000
Mode	209.000
Standard Deviation	182.976

Sample Variance	33480.291
Kurtosis	5.542
Skewness	2.191
Range	1053.000
Minimum	10.000
Maximum	1063.000
Sum	23357.500
Count	81.000
<hr/>	
Mean Plus 2	654.317
Mean Plus 1	471.340
Std Dev *2	365.952
Mean Minus 1	105.388
Mean Minus 2	-77.588