

Enclosure: Review of Arkansas' 2004 Section 303(d) List

The statutory and regulatory requirements, and the Environmental Protection Agency's (EPA's) review of Arkansas' compliance with each requirement, are described in detail below.

1. Letter to Jessica Franks, EPA Region 6 from Martin Maner, ADEQ dated July 27, 2006 resolving the remaining 2004 303(d) list issues.
2. Letter to Miguel Flores, EPA Region 6 from Martin Maner, ADEQ dated March 31, 2006 submitting the draft 2006 Integrated Report.
3. Certified letter (dated February 17, 2006) to Miguel Flores, EPA Region 6 from Martin Maner, ADEQ regarding EPA's proposed action agreement for the 2004 303(d) list.
4. Letter (rescinding the July 20, 2005 submittal of the 2004 IR due to significant errors and acknowledgement of the electronic re-submission on October 5th as the final submission) to Miguel Flores, EPA Region 6 from Martin Maner, ADEQ
5. Date of Transmittal letter from State: October 13, 2005; Date of Receipt by EPA: October 27, 2005
6. Attachment (revised integrated report) to letter to Jessica Franks, EPA Region 6 from Martin Maner, ADEQ
7. Date of Transmittal letter from State: October 5, 2005, Date of Receipt by EPA: October 11, 2005
8. Attachment to letter (final list) to Miguel Flores, EPA Region 6 from Martin Maner, ADEQ
9. Date of Transmittal letter from State: July 20, 2005
10. Third draft 2004 303(d) list submitted electronically November 12, 2004
11. Attachment to letter (2nd draft) to Jessica Franks, EPA Region 6 from Martin Maner, ADEQ
12. Date of transmittal letter from State: August 12, 2004; Date of Receipt by EPA: August 17, 2004
13. Date of Receipt by EPA: Draft 2004 303(d) list submitted electronically May 20, 2004

Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and partial disapproval of Arkansas's 2004 Section 303(d) list. The following sections identify those key elements to be included in the list submittal based on the Clean Water Act (CWA) and EPA regulations (see 40 CFR § 130.7). The EPA reviewed the methodology used by the State in developing the 303(d) list and Arkansas' description of the data and information it considered. EPA's review of Arkansas's 303(d) list is based on EPA's analysis of whether the State reasonably considered existing and readily available water quality-related data and information and identified all waters required to be listed.

Statutory and Regulatory Background

Identification of Water Quality Limited Segments (WQLS) for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such

waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

DECISION DOCUMENT FOR ARKANSAS' 2004 303(d) LIST

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. See 40 CFR 130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily available. See Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C ("EPA's 1991 Guidance"). While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring State to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) requires States to include as part of their submission to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by EPA Region 6.

Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require the States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those water quality limited segments (WQLSs) targeted for

TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that States establish priorities. The States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and EPA's 1991.

A Description of the State of Arkansas' Final Submission

EPA Region 6 received the 2004 Arkansas Clean Water Act Section 303(d) List on July 28, 2005. The Arkansas Department of Environmental Quality (ADEQ) submitted the final list along with supporting documentation that included the following:

- Arkansas "Water Quality Limited Waterbodies – 303(d) List – 2004", which includes the methodology used for selecting impaired waterbodies, the assessment criteria, and a listing of impaired rivers/streams and lakes/reservoirs.
- A waterbody specific justification for the non-listing of waters.
- A responsiveness summary to the public comments submitted concerning the impaired waters list.

EPA Region 6 received the revised version of the Arkansas 2004 Integrated Report (electronic format) on October 11, 2005. The 303(d) list portion of the Integrated Report was revised to include all segments listed in category 5 (5a-e), removal of category 4a segments, and updated maps, figures, etc.

EPA Region 6 received a letter on October 27, 2005 officially rescinding the July 20, 2005 submittal of the 2004 Integrated Report. The original document contained significant errors based on software compatibility, staff oversight and other internal problems. The revised 2004 Integrated Report was re-submitted on a CD and mailed October 5, 2005. This letter served as the final submission.

Analysis of the State of Arkansas' Submission

Consideration of Existing and Readily Available Water Quality-Related Data and Information.

EPA has reviewed the State's submission and has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 CFR 130.7. Because the EPA has determined that Arkansas's submission does not include all waters that meet Section 303(d) listing requirements, EPA is partially approving and partially disapproving Arkansas' list submission and proposing to add the additional waters and pollutants that meet the listing requirements to the final 2004 list. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed. Based on EPA's review, five (5) water body pollutant pairs are proposed for addition to the Arkansas 2004 303(d) list.

Additionally, there are a group of eighty-seven (87) water body pollutant pairs, which EPA has contended are impaired. EPA is taking no action on these waters, as mechanisms are in place to resolve this issue (see discussion, *infra*).

As suggested by recent EPA guidance, Arkansas chose to combine the 2004 section 305(b) report and section 303(d) list into a single report following EPA's listing guidance titled "Guidance for the 2002 Integrated Assessment and Reporting on the Quality of States' Waters" ("Integrated Report"). A single assessment methodology for the Integrated Report was used for both the 305(b) reporting and the 303(d) listing activities. The Integrated Report included five categories as established in EPA guidance. Category 5, which is the 2004 section 303(d) list, was also included in the report. Category 5 is the portion of the Integrated Report on which EPA is taking action today.

EPA's review of Arkansas' waters consisted of applying the Arkansas Department of Environmental Quality's (ADEQ) 2004 assessment methodology to data (USGS or Arkansas's ambient monitoring data) for the period of record from October 1, 1998 through September 30, 2003, in addition to reviewing other readily available data. The list was developed based primarily on the data available in the ADEQ ambient monitoring database. ADEQ also posted the draft list on the ADEQ website.

Although EPA reviewed Arkansas' 2004 listing methodology as part of our review of the listing submission, the EPA's partial approval of the State's listing decisions should not be construed as concurrence with or approval of the 2004 listing methodology. EPA is not required to take action on the listing methodology itself under 40 CFR 130.7. EPA's decision to partially approve and partially disapprove Arkansas' listing decisions is based on EPA's review of the data and information submitted concerning individual waters and the State's evaluations of those waters. While EPA considered the State's 2004 listing methodology as part of its review, EPA's evaluation was intended to determine whether the State had identified all waters that meet federal listing requirements specified in Section 303(d) and 40 CFR 130.7. Although EPA has concerns about some aspects of the State's listing methodology, those concerns are not considered in our final listing decision unless application of the methodology resulted in impaired waters not being listed.

The listing methodology employed by Arkansas for 2004 describes a set of decision criteria that were flexibly applied. In general, waters were listed in cases where at least 12 samples were available and more than a certain percentage of samples exceeded the applicable water quality standards during the past five years. The applicable percent exceedances were provided in the ecoregion and stream specific assessment criteria tables of ADEQ's assessment methodology varied according to the parameter (i.e. turbidity, pathogens, etc.). EPA technical staff determined that the percent exceedance used in the assessment methodology is a reasonable approach that is described in the EPA 1997 Guidance document and is consistent with Arkansas's water quality standards.

EPA reviewed ADEQ's description of the data and information it considered and its methodology for identifying waters. For those waters being approved on the 2004 list, EPA concludes that the State properly assembled and evaluated all existing and readily available data

and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5).

Consistent with 130.7(b)(5) Arkansas utilized the 2002 Section 303(d) list in making the 2004 assessment. Based on its review of the 2004 Section 303(d) list in light of the 2004 Section 303(d) list, EPA is disapproving Arkansas' failure to list certain waters. This is discussed in detail under the subtitle "Basis for Decision to Add Waters to Arkansas' 2004 Section 303(d) list".

EPA has determined that Arkansas took reasonable steps to solicit all existing and readily available water quality-related data and information from members of the public and government agencies. Letters were sent to the governmental agencies followed by a minimum of one follow-up letter to any of the governmental agencies that failed to respond to the initial request. Letters were sent to the U. S. Geological Survey, U. S. Army Corps of Engineers, U. S. Forest Service, Arkansas Soil and Water Conservation Commission, and the Arkansas Water Resource Center. No response was received from those letters.

EPA has reviewed Arkansas' description of the data and information it considered, its methodology for identifying waters, and the State's responsiveness summary. EPA concludes that the State properly assembled all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5). EPA concludes that the State's decisions to list the waters identified in its listing submittal are consistent with federal listing requirements. However, EPA concludes that the State's decision not to list several waters and pollutants is inconsistent with federal listing requirements. As discussed in detail below, the available data and information are sufficient to support a conclusion that these waters are water quality limited and need to be listed pursuant to Section 303(d). Therefore, EPA is proposing to add these waters to Arkansas' list, and will be seeking public comment on these proposed additions.

Except as noted below, the State was diligent in compiling data and completed a good synthesis of individual monitoring data for each water body. ADEQ reviewed the data to determine if it met requirements established in the State's statute and rules related to the identification of impaired waters. Arkansas compiled its 2004 Section 303(d) list based almost entirely on evaluation of water chemistry data only. The State did not carefully evaluate other types of monitoring data and information – bioassessments, physical integrity, and fish kills for Section 303(d) listing purposes based on the rationale that its rules precluded their application absent approved water quality standards implementation procedures for narrative standards. As explained below, EPA has determined that these other types of data and information support a conclusion that several waters and pollutants not listed by the State violate State water quality standards and therefore meet federal listing requirements.

1. Waters not assessed by ADEQ for the 2004 303(d) listing cycle.

For the 2004 listing period, ADEQ used the Segment Evaluation program developed by Region 6 to assess its waters. The reports generated by this program indicate which waters are potentially impaired based on the water quality standards in effect in 2004 and the 2004

assessment methodology. ADEQ submitted analyses for 317 stations out of a possible 431 stations.

Resolution: EPA believes there was sufficient data available for the stations below to make an assessment. ADEQ has committed to submit reports for these stations with its 2006 303(d) list submission and to list any impairments that are identified.

StationID	HUC_Code	Reach	P-Seg	Description	# Samples
BEL0001	11140109		1C	Big Bellville Creek	6
BLB0001	11140109		1C	Blue Bayou	7
BRI0001	11140109		1C	Bridge Creek	7
CEG0001	11140109		1C	Cool Creek	7
COS0001	11140109		1C	Cossatot River	6
COS0003	11140109		1C	Cossatot River	7
DIL0001	11140109		1C	Dillard Creek	7
LCO001	11140109	918	1C	Little Cossatot River	6
MES0001	11140109	011	1C	Messers Creek	7
MIN0002	11140109		1C	Mine Creek	7
PLM0001	11140109		1C	Plum Creek	7
RED0033B	11140109		1C	Bear Creek	25
RSS0001	11140109		1C	Sulphur Slough	5
SAL0001	11140109	917	1C	Saline River	7
SAL0003	11140109		1C	Saline River	7
OUA0012	8040205		2B	Chemin-A-Haut Bayou	13
OUA0012A	8040205		2B	Overflow Creek	13
OUA0143	8040205		2B	Bayou Bartholomew	8
OUA0144	8040205		2B	Nevins Creek	12
OUA0145	8040205		2B	Harding Creek	14
OUA0146	8040205		2B	Unmd trib to Bayou Bartholomew	13
OUA0147	8040205		2B	Bayou Imbeau	13
OUA0148	8040205		2B	Melton's Creek	11
OUA0149	8040205		2B	Cousart Bayou	12
OUA0150	8040205		2B	Jack's Bayou	13
OUA0152	8040205		2B	Cross Bayou	8
OUA0153	8040205		2B	Ables Creek sw	7
OUA0155	8040205		2B	Bearhouse Creek	7
OUA0156	8040205		2B	Wolf Creek	13
OUA0157	8040205		2B	Cutoff Creek	13
OUA0158	8040205		2B	Ables Creek	15
OUA0160	8040205		2B	Bayou Bartholomew	8
OUA0006A	8040102	007	2F	Ouachita River	44
OUA0100	8040102		2F	Cove Creek	14
OUA0103	8040102		2F	Cove Creek	13
OUA0104	8040102		2F	Chamberlain Creek	13
OUA0171A	8040102		2F	Chamberlain Creek	12
OUA0171B	8040102		2F	Lucinda Creek	12
OUA0171C	8040102		2F	Cove Creek	13
OUA0171D	8040102		2F	Basin Creek	12
UWTNO01	8040103		2G	Terre Noir Creek	6
ARK0147A	11110207		3C	Fourche Creek	13
ARK0147B	11110207		3C	Fourche Creek	13
ARK0147C	11110207		3C	Fourche Creek	13
ARK0147D	11110207		3C	Fourche Creek	13
ARK0147E	11110207		3C	Fourche Creek	13

ARK0147F	11110207		3C	Fourche Creek	13
ARK0147G	11110207		3C	Fourche Creek	11
ARK0132	11110205		3D	Cypress Creek	6
ARK0133	11110205		3D	Stratton Creek	5
ARK0134	11110205		3D	Brindley Creek	5
WHI0163	11010013		4C	Departee Creek	12
WHI0145	11010004		4F	South Sylamore Creek	11
WHI0145B	11010004		4F	South Sylamore Creek	10
WHI0146	11010004		4F	South Sylamore Creek	9
WHI0147	11010004		4F	South Sylamore Creek	9
WHI0143A	11010012		4G	Strawberry River	16
WHI0143B	11010012		4G	Strawberry River	16
WHI0143E	11010012		4G	Little Strawberry River	16
WHI0143H	11010012		4G	Little Strawberry River	16
WHI0143I	11010012	007	4G	North Big Creek	16
WHI0143J	11010012	013	4G	South Big Creek	16
WHI0143K	11010012	013	4G	South Big Creek	18
WHI0143L	11010012	013	4G	Piney Fork	16
WHI0143M	11010012	013	4G	Piney Fork	16
WHI0143N	11010012		4G	Mill Creek	16
WHI0143P	11010012		4G	Strawberry River	16
WHI0143Q	11010012	015	4G	Caney Creek	16
WHI0143R	11010012	015	4G	Caney Creek	16
WHI0143S	11010012	003	4G	Cooper Creek	16
WHI0172	8020302		4B	Lost Creek	14
BUFET005	11010003		4I	Huzzah Creek	5
BUFET006	11010003	051	4I	Clear Creek	5
BUFET007	11010003	052	4I	Hampton Creek	5
BUFET010	11010003	048	4I	Crooked Creek	5
BUFCS500	11010005		4J	John Eddings Cave Spring	6
BUFCS501	11010005		4J	Elm Spring	6
BUFES001	11010005		4J	Cemetery Spring	5
BUFES002	11010005		4J	West Fork Spring	5
BUFET001	11010003		4J	Hog Creek below Springs	5
BUFET002	11010004		4J	North Sylamore Creek	5
BUFET003	11010001		4J	Hock Creek	5
BUFET004	11010001	012	4J	Kings River	5
BUFR05.9	11010005	006	4J	Buffalo River	21
BUFR06	11010005	026	4J	Buffalo River	18
BUFR06.1	11010005		4J	Buffalo River	21
BUFR100	11010005		4J	Buffalo River	5
BUFS02	11010005	014	4J	Luallen Spring	21
BUFS33	11010005	009	4J	Mitch Hill Spring	22
BUFS41	11010005	004	4J	Gilbert Spring	41
BUFS701	11010005		4J	Yardell Branch Spring	6
BUFS702	11010005		4J	Hurricane Cave Spring	6
BUFS703	11010005		4J	Shaddox Spring Brook Spring	5
BUFT02	11010005	012	4J	Ponca Creek	20
BUFT03	11010005	012	4J	Cecil Creek	20
BUFT04	11010005	012	4J	Mill Creek	21
BUFT11	11010005	005	4J	Mill Creek	20
BUFT12	11010005	004	4J	Bear Creek	20
BUFT1201	11010005		4J	Bear Creek	5
BUFT13	11010005	004	4J	Brush Creek	17
BUFT14	11010005	004	4J	Tomahawk Creek	20
BUFT15	11010005	004	4J	Water Creek	18

BUFT16	11010005	004	4J	Rush Creek	18
BUFT23	11010005	001	4J	Middle Creek	16
BUFT24	11010005	001	4J	Leatherwood Creek	16
BUFT501	11010005		4J	East Fork of the Little Buffalo River	5
BUFT601	11010005		4J	East Fork of Big Creek	5
BUFT602	11010005		4J	West Fork of Big Creek	5
BUFT801	11010005		4J	Cave Creek	5
BUFT901	11010005		4J	Richland Creek	5
BUFT902	11010005		4J	Richland Creek	5
BUFT903	11010005		4J	Falling Water Creek	5
BUFET008	11010001	045	4K	Osage Creek	5
BUFET009	11010001	054	4K	Long Creek	5

2. Waters added by EPA to the State's 2002 303(d) which were not carried forward to the Arkansas 2004 303(d) list

In its 2004 list, the State retained most of the waters added by EPA to the State's 2002 Section 303(d) list. The 8 water body pollutant pairs listed by EPA in 2002 that were not included on the 2004 list are shown in the table below. New data and information for the first 4 water body pollutant pairs showed water quality standards are now attained. New data and information for the last 4 water body pollutant pairs showed water quality standards are not yet attained and therefore, these should remain on the list. EPA is taking action to include the last 4 stream reach combinations on the 2004 303(d) list.

Stream Name	HUC	Reach	P-Seg	Parameter	Status
Curia Creek	11010009	901	4G	pathogens	not impaired
Village Creek	11010013	012	4C	pathogens	not impaired
Cache River	08020302	018	4B	pathogens	not impaired
Cache River	08020302	028	4B	pathogens	not impaired
Illinois River Watershed					
Osage Creek	11110103	030	3J	TP	impaired
Osage Creek	11110103	930	3J	TP	impaired
Spring Creek	11110103	931	3J	TP	impaired
Kings River Watershed					
Osage Creek	11010001	045L	4K	TP	impaired

3. Waters included on the Arkansas 2002 303(d) list but not carried forward to the Arkansas 2004 303(d) list

EPA compared the listings in the 2002 303(d) list with those in the 2004 303(d) list and found that seven (7) waterbody pollutant pairs were on the 2002 303(d) list but not carried forward to the 2004 303(d) list. The State's decision not to include waters listed below as impaired due to pollutants on its 2004 Section 303(d) list is consistent with EPA regulations. See 40 CFR 130.7(b)(1). These waters were identified on the court ordered 1998 Section 303(d) list. 40 CFR 130.7(b)(1) provides that States are not required to list WQLSs still requiring TMDLs where effluent limitations required by the CWA, more stringent effluent limitations required by State or local authority, or other pollution control requirements required by State, local, or federal authority, are stringent enough to implement applicable

water quality standards. The regulation does not specify the time frame in which these various requirements must implement applicable water quality standards to support a State's decision not to list particular waters.

Five (5) of the water body pollutant pairs are now meeting water quality.

Stream Name	HUC	RCHP-Seg	Station	Assess	Parameter	Status
Cache River	8020302	-017	4B	CHR02	M PA	not impaired
Cache River	8020302	-018	4B	CHR02	M PA	not impaired
Cache River	8020302	-028	4B	CHR04	M PA	not impaired
Village Creek	11010013	-012	4C	VGC02	M PA	not impaired
Curia Creek	11010009	-901	4G	CAC01	M PA	not impaired

The State has demonstrated for the remaining 2 water body pollutant pairs (see below) that there are other pollution control mechanisms required by State, local, or federal authority that will result in attainment of water quality standards for the listed pollutants within a reasonable time. Described below are the other control mechanisms being employed for each waterbody identified.

STREAM NAME	HUC	REACH	POLLUTANT	STATUS
Bayou Meto	08020402	007	Priority organics	4b
Lake DuPree	08020402	Lake	Priority organics	4b

Bayou Meto, HUC 8020402, reach 007, 65.7 miles
 Lake Dupree, HUC 8020402, 10 acres, Planning Segment 3b

Site Specific Information: The Vertac, Inc. Superfund site is located in Jacksonville, Pulaski County, AR about 15 miles northeast of Little Rock. Rocky Branch, a tributary of Bayou Meto, flows through western portion of the Vertac site. Lake Dupree is east of Rocky Branch and northeast of the confluence of Bayou Meto and Rocky Branch. Toxic wastes included 28,440 drums of containing herbicide production wastes, contaminated buildings, equipment, soils and sediment. The principal pollutants are 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), 2,4-dichlorophenoxyacetic acid (2,4-D), 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), chlorinated benzenes and chlorinated phenols. Hercules Incorporated, the former site operator, has carried site remediation under Unilateral Orders on Consent and Administrative Orders on Consent. Some aspects of the remedy included the elimination of the drums containing herbicide production waste by on- and off-site incineration, excavation of contaminated Rocky Branch Creek flood plain soils and sediments, and excavation of off-site residential soils. In addition, contaminated portions of the City of Jacksonville's Old Sewage Treatment Plant and West Wastewater Treatment Plant have been demolished and remediated. Consumption of fish from Rocky Branch Creek and Bayou Meto is restricted by a fish consumption advisory issued by the Arkansas Department of Health. Biannual fish monitoring has been conducted since 1994 in Lake Dupree, Rocky Branch Creek and Bayou Meto. Fillets of fish collected downstream of the Vertac site indicate a trend of decreasing tissue levels of 2,3,7,8-TCDD.

Enforceable Agreements: Vertac, Inc., which is located in Pulaski County, was placed on the National Priority List (NPL) on September 8, 1983. EPA to compel remediation of the Vertac

site has used several enforceable agreements. EPA and the State of Arkansas entered into a Consent Decree with Vertac and Hercules for developing a remedial plan for certain on-and off-site area in January, 1982. In 1984, the Court, where the Consent Decree was lodged, ordered the implementation of the Vertac remedy. In 1986, EPA has issued a Unilateral Order on Consent to all Potentially Responsible Parties (PRPs) for the remediation of the Wastewater Treatment Plant. In 1988, EPA signed Administrative Order of Consent with Hercules to excavate off-site residential soils. The 1990 Record of Decision for off-site areas requires monitoring of fish in Rocky Branch Creek and Bayou Meto to assess the levels of 2,3,7,8-TCDD to ensure that levels detected in fish tissue continue to decrease. In 1993, EPA issued a Unilateral Order on Consent to Hercules, Uniroyal, and Vertac for remediation of off-site areas and only Hercules complied with the order. In 1994, EPA issued a Unilateral Order on Consent to Hercules, Uniroyal, and Vertac for remediation of on-site areas.

As part of the Unilateral Order on Consent, Hercules is required to monitor fish in Lake Dupree, Rocky Branch Creek and Bayou Meto, and analyze these fish for tissue levels for 2,3,7,8-TCDD. Fish tissue levels of 2,3,7,8-TCDD will continue to be assessed as part of the ongoing Superfund Five-Year Review process.

Water Quality Standards Support: As a result of the remedial actions described above, the pollutant sources have been identified and eliminated from the area. Without a source of 2,3,7,8-TCDD, the levels of dioxin in the environment should continue to attenuate. The full attenuation of dioxins in the environment will take place over a long period of time, perhaps a decade or more. Observed decreases in edible fish tissue concentration over the past 5 years indicate that the remedy is effective. Because controls stringent enough per CFR 130.7(b)(1) are already in place, standards support (reduction of fish tissue concentrations to safe levels) is expected to take place without any further actions. Since control mechanisms other than a TMDL are in place and are expected to lead to standards attainment, the waters should be placed in category 4b instead of 5.

Basis for Decision to Add Waters to Arkansas' 2004 Section 303(d) List

This section describes the basis for EPA's decisions to (1) disapprove the State's decision to not list several water bodies, and (2) identify these water bodies for inclusion on the final 2004 Section 303(d) list with associated priority rankings.

Assessments Based on Narrative Nutrient Standards

Data are sufficient to support a conclusion that the narrative water quality standard for nutrients is violated.

Arkansas has not completed nor adopted implementation procedures for its narrative water quality standards. Federal regulations at 40 CFR 130.7(b)(3) provide that states must consider potential exceedences for all applicable water quality standards, including designated beneficial uses, numeric and narrative criteria, and antidegradation requirements. Although it is helpful for States to adopt implementation procedures to aid in application of narrative water quality standards, federal regulations do not make their adoption and approval a precondition of

their application in the Section 303(d) list assessment process. EPA concludes that Arkansas did not provide a reasonable rationale for not considering listings due to potential exceedences of narrative standards absent approved implementation procedures. Therefore, EPA carefully reviewed available information in the record provided by the State and also collected by EPA to determine whether any waters violated narrative standards and should be included on the Section 303(d) list. EPA found that several waters do not attain narrative nutrient water quality standards and must be listed.

In EPA's review of the State submittal, several waters were identified for which water quality data were available but which the State did not consider listing because neither numeric water quality standards nor narrative standard implementation procedures were available to guide the assessment. As discussed above, federal regulations require the State to consider all available data and information and to consider possible violations of all applicable water quality standards, including narrative standards.

EPA applied a weight of evidence approach to evaluate available data in these situations to determine whether narrative water quality standards were violated. The weight of evidence approach considers multiple environmental indicators, including biological, physical and chemical measurements and any other water quality related information. For the waters of concern in Arkansas, EPA's evaluations focused upon waters for which nutrient data were available. EPA identified reasonable evaluation guidelines that could be applied to determine whether available data supported findings that specific narrative water quality standards were violated. EPA then compared the available data to these guidelines, considering the number, frequency, and magnitude of sample excursions above these guideline values for each indicator.

Illinois River and Kings River watershed listings for TP

EPA conducted a water quality study in the Illinois River and Kings River basins from August – December 2003. The purpose of the study was to characterize water quality and aquatic biological resources in the Illinois River and Kings River basins to determine the status of aquatic life use. The results combined with other existing water quality data were used to determine whether water bodies in the Illinois River and Kings River basins are impaired and warrant placement on the Arkansas 2004 Clean Water Act Section 303(d) list.

This project utilized sampling and analysis methods and procedures similar to those used in a study conducted by the Arkansas Department of Pollution Control and Ecology Commission initiated in 1995 titled, *Illinois River Water Quality, Macroinvertebrate and Fish Community Survey* (ADEQ 1997). The sampling approach included water quality chemistry analysis and rapid bioassessment protocol. Sampling was conducted at 16 different sites; including three regional "minimally impacted" reference streams for comparison. The basis for making an aquatic life use impairment determination (303(d) listing decision), is ADEQ Regulation 2.509 which states "Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation. As a guideline total phosphorous shall not exceed 100 ug/l in streams or 50 ug/l in lakes and reservoirs except in waters highly laden with natural silts or color which reduce the penetration of sunlight needed for plant photosynthesis, or in other waters where it can be demonstrated that algal production

will not interfere with or adversely affect designated uses an/or fish and wildlife propagation.” The total phosphorus guideline was removed and the narrative expanded to include numerous indicators in the current ADEQ water quality standards approved by EPA in December 2004.

A multiple weight-of-evidence approach was used to evaluate the aquatic life use attainment of waters in the Illinois River and Kings River basins. The approach integrates a suite of indicators including instream concentrations of total phosphorus (TP), daily fluctuations in dissolved oxygen (DO) concentration and DO saturation, elevated pH and total dissolved solids (TDS), habitat characteristics, periphyton presence, filamentous algae presence, benthic community structure, and fish community structure. It is recognized that neither a single indicator nor a single event represents adequate information upon which to base an assessment of aquatic life use status. However, when a suite of indicators suggests aquatic life use impact more than one time, there is reasonable cause to characterize aquatic life at that site as impacted to some degree. The summary report applied a simple algorithm to evaluate each water body based upon the proportion of indicators considered impacted per sample event. While a standard method for applying a weight-of-evidence approach to assess beneficial uses does not exist in Arkansas or EPA Region 6, this method provided a rational mechanism for integrating chemical, physical, and biological data and drawing logical conclusions from the aggregated results. Eleven indicators divided into three categories, water chemistry, habitat, and biological characteristics, were used to develop this weight-of-evidence summary. Each of the eleven indicators was assessed relative to a reference condition, ADEQ Regulation 2 criteria, or USEPA guidance to determine the degree of impact within a reach for each sampling event.

The overall characterization of each site was compiled using the summation of impacted indicators for each site over the three sampling events. EPA’s interpretation of the data is as follows:

<u>Summation of indicators</u>	<u>Interpretation</u>
0 – 4	unimpacted
5 – 8	slightly impacted
9 – 12	impacted
> 13	severely impacted

Based upon this weight of evidence approach, for the Illinois River basin, Osage Creek (reach 930) downstream of Rodgers WWTP was classified as slightly impacted (Score 7), Osage Creek (reach 030) and Muddy Fork (reach 027) downstream of the Prairie Grove WWTP was classified as impacted (both scored 12), and Spring Creek (reach 931) was classified as severely impacted (scored 16). Although Osage Creek (reach 930) was classified as slightly impacted, the decision to add this water to the 2004 303(d) list was heavily weighted on the shift in the biological community towards more nutrient tolerant species such as grazers.

Based upon this weight of evidence approach, for the Kings River basin, Osage Creek (reach 045L) downstream of the Berryville WWTP was classified as severely impacted.

The complete two volume report titled *Water Quality and Biological Assessment of Selected Segments in the Illinois River Basin and Kings River Basin, Arkansas* prepared by Parsons and

the University of Arkansas can be downloaded from the following website:
<http://www.epa.gov/Region6/6wq/ecopro/watershd/monitrng/studies/>.

Additional Support for Osage Creek (reach 930)

Station ARK041 is a long term ambient monitoring station located on Osage Creek near Elm Springs a few miles below its confluence with Spring Creek. A review of the total phosphorus data for Station ARK 041 from 1990 through 2002 indicates total phosphorus is increasing in Osage Creek (Figure 1). The five-year rolling average (1990-1994) has steadily increased from 0.56 mg/l TP to 0.84 mg/l TP for the five-year period 1998-2002 (Figure 2). The national criterion for phosphorus in streams is 0.1 mg/l, well below the concentrations found at this ambient monitoring station.

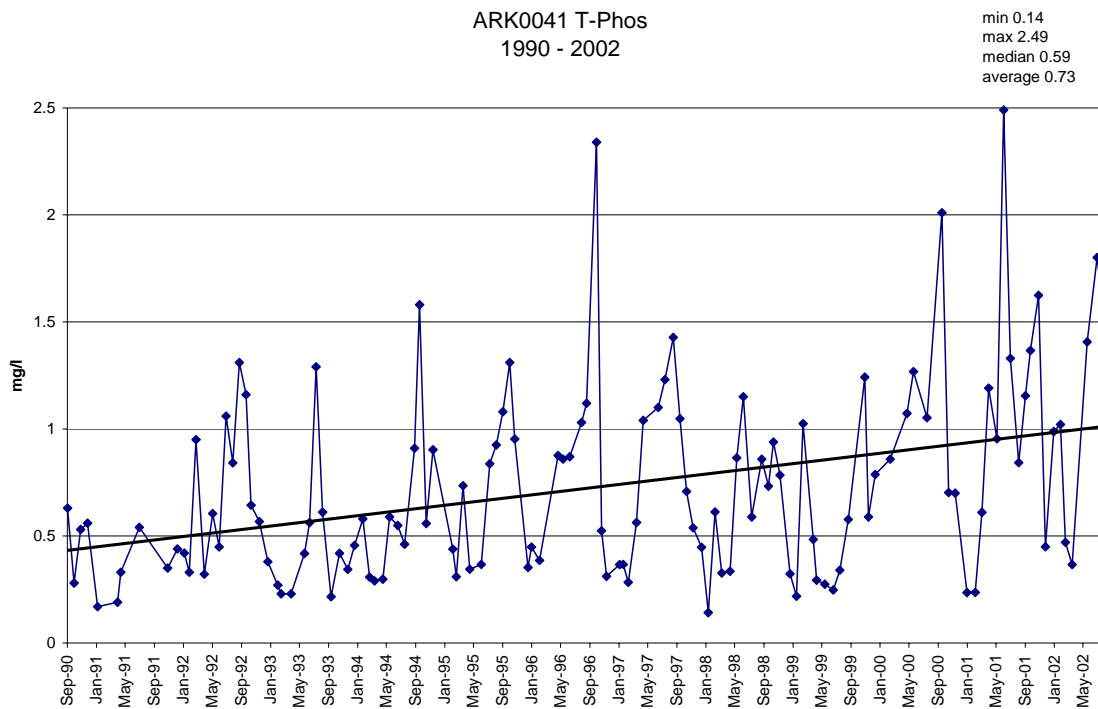


Figure 1. Phosphorus trends in Osage Creek below the Spring Creek Confluence from 1990 through 2002.

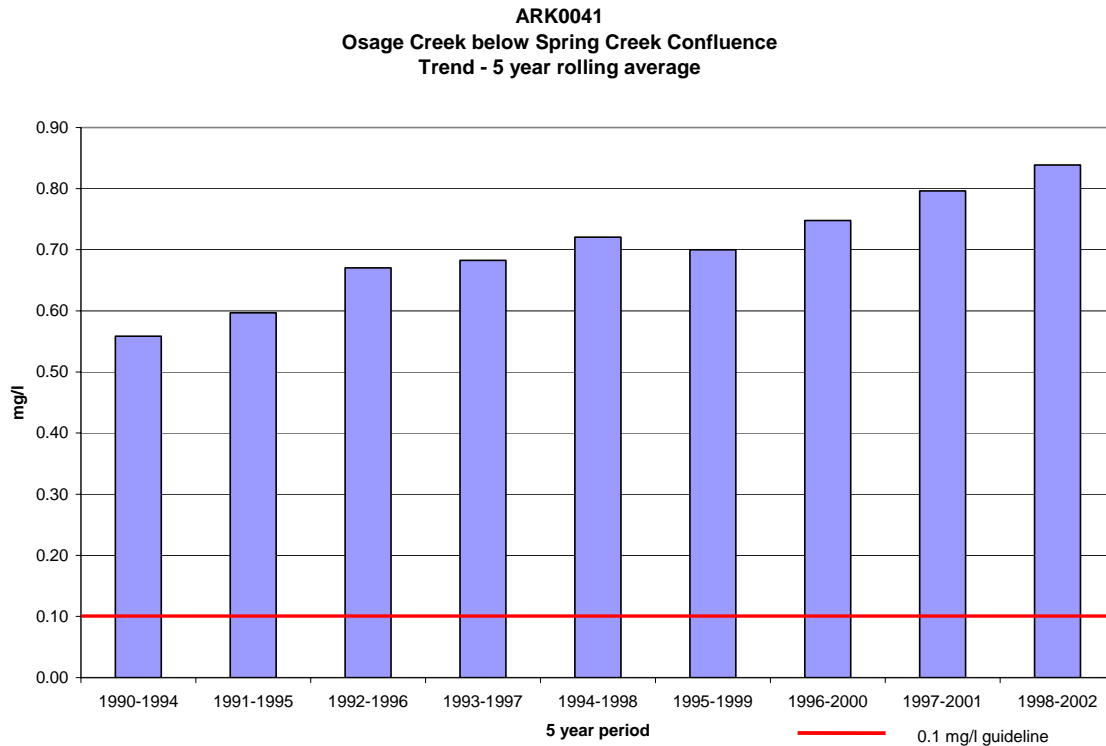


Figure 2. Phosphorus trends (5-year rolling average) in Osage Creek below the Spring Creek Confluence from 1990 through 2002.

The results of this study and additional data support the addition of the following water bodies:

STREAM NAME	HUC	RCH	P-Seg	Parameter
Illinois River Watershed				
Muddy Fork	11110103	027	3J	TP
Osage Creek	11110103	030	3J	TP
Osage Creek	11110103	930	3J	TP
Spring Creek	11110103	931	3J	TP
Kings River Watershed				
Osage Creek	11010001	045L	4K	TP

Assessments Based on Numeric Standards

1. **Metals Assessment:** Metal toxicity is dependent upon the hardness of the water and therefore, a formula is used to calculate water quality standards for each metal. The measured metal concentration is then compared to the water quality metal standard calculated by the formula to determine if a water body is impaired for a given metal.

Two methods were used by ADEQ to assess metal toxicity. The first method uses a mean ecoregion hardness value, designed to characterize stream hardness for a larger area over time.

The second method uses the actual in stream hardness concentration and therefore, the standard fluctuates with the measured ambient hardness concentration. The Segment Evaluation Program automatically calculates the applicable metals standard based on in stream hardness, compares that criterion to the measured metal concentration to make an assessment. The advantage to using this method is that the metals assessment is made from concomitant metals and hardness measurements.

Resolution: The State listed toxic pollutants in cases where more than 1 sample exceeded the applicable acute numeric standard in any three-year period and/or where more than 10% of the samples exceeded the applicable chronic standard. This approach is consistent with EPA's 1997 and 2003 assessment guidance documents and State water quality standards. Different outcomes are possible depending upon which methodology (ambient hardness vs mean ecoregion hardness) is used to determine impairment. EPA concludes that some of the State's toxic pollutants listing decisions are consistent with federal listing requirements. However, for the water bodies listed in the table below, available data supports the conclusion that acute and/or chronic water quality standards based on the use of both ambient hardness and mean ecoregion hardness for the listed metals are violated and these waters should be listed. ADEQ is in agreement with the use of in stream ambient hardness for making metals toxicity impairment decisions and will re-evaluate these waters for inclusion in the 2006 303(d) list. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. Review of Arkansas' draft 2006 303(d) indicates the State re-evaluated these waters and included such on the 2006 303(d) draft list. EPA is taking neither an approval nor disapproval action on these seventeen (17) water body pollutant pairs waters until the State formally submits its 2006 section 303(d) list.

STREAM NAME	HUC	RCH	P-Seg	Station	Assess	Metal	Added 2006 List
Bodcau Creek	11140205	006	1A	RED27	M	Pb	Y
Bodcau Creek	11140205	002	1A		E	Pb	Y
Days Creek	11140302	003	1B	RED04A	M	Pb	Y
B. Bartholomew, untrib	8040205		2B	OUA146	M	Cu	Y
B. Bartholomew, untrib	8040205		2B	OUA146	M	Pb	Y
Bayou Imbeau	8040205		2B	OUA147	M	Pb	Y
Harding Creek	8040205	902	2B	OUA145	M	Pb	Y
Harding Creek	8040205	902	2B	OUA145	M	Zn	Y
Saline River	8040204	002	2C	OUA0010A	M	Cu	Y
Saline River	8040204	002	2C	OUA0010A, 117	M	Zn	Y
Moro Creek	8040201	001U	2D	OUA28	M	Zn	Y
Moro Creek	8040201	001U	2D	OUA28	M	Pb	Y
Little Missouri R.	8040103	008	2G	OUA35	M	Cu	Y
Fouche Creek	11110207		3C	ARK147A	M	Pb	Y
Fouche Creek	11110207		3C	ARK147A	M	Zn	Y
Cache River	8020302	018	4B	CHR02	M	Pb	Y
L' Anguille River	8020205	005	5B	LGR02	M	Pb	Y

For the water bodies listed in the table below, available data supports the conclusion that acute and/or chronic water quality standards based on the use of ambient hardness for the listed metals are violated. ADEQ is in agreement with the use of in stream ambient hardness for making metals toxicity impairment decisions and will re-evaluate these waters for inclusion in the 2006 303(d) list. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. Review of Arkansas' draft 2006 303(d) indicates the State re-evaluated these waters and included such on the 2006 303(d) draft list. The Saline River was not included on the draft 2006 303(d) list because new data shows it is now meeting water quality standards. EPA is taking neither an approval nor disapproval action on these twenty one (21) water body pollutant pairs waters until the State formally submits its 2006 section 303(d) list.

STREAM NAME	HUC	RCH	P-Seg	Station	ASSESS	Metal	Added 2006 List
Big Creek	11140203	023	1A	BIG01	M	Pb	Y
Dorcheat Bayou	11140203	024	1A		E	Pb	Y
Dorcheat Bayou	11140203	022	1A	RED15A	M	Pb	Y
Saline River	11140109	014	1C	RED032	M	Zn	N
B. Bartholomew	8040205	006	2B	OUA33	M	Pb	Y
Harding Creek	8040205	902	2B	OUA145	M	Cu	Y
B. Bartholomew	8040205	006	2B	OUA143	M	Pb	Y
Bearhouse Creek	8040205	901	2B	OUA155	M	Pb	Y
Smackover Creek	8040201	006	2D	OUA27	M	Pb	Y
Smackover Creek	8040201	007	2D		E	Pb	Y
Prairie Cypress	8020304	014	4A	WHI73	M	Pb	Y
Bayou DeView	8020302	004	4B	BDV02	M	Pb	Y
Cache River	8020302	016	4B	WHI32	M	Pb	Y
Departee Creek	11010013	020	4C	DTC01	M	Zn	Y
Glaise Creek	1101001	021	4C	GSC01	M	Zn	Y
Bayou Des Arc	8020301	007	4D	BDA01	M	Zn	Y
Bayou Des Arc	8020301	006	4D	WHI056	M	Zn	Y
Bull Creek	8020301	009	4D	BLB01	M	Zn	Y
Cypress Bayou	8020301	010	4D	CPB01	M	Pb	Y
Overflow Creek	11010014	006	4E	OFC01	M	Zn	Y
L' Anguille River	8020205	004	5B	LGR01	M	Pb	Y

2. **Pathogens, Temperature, pH, Dissolved Oxygen and Turbidity:** The streams below appear to be in violation of the numeric criteria for the listed parameter when assessed in accordance with the assessment methodology.

Resolution: EPA will take no action on these twenty-nine (29) water body pollutant pairs until additional data and information is provided. ADEQ is committed to re-evaluating these and listing as appropriate in the 2006 303(d) list cycle. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. Review of Arkansas' draft 2006 303(d) indicates the State re-evaluated these waters and included such on the 2006 303(d) draft list. New data indicate the waters that were not included on the draft 2006 303(d) list are now meeting water quality standards.

EPA is taking neither an approval nor disapproval action on these twenty nine (29) water body pollutant pairs waters until the State formally submits its 2006 section 303(d) list. The only available data for Station ARK107 (Wilson Creek) is from 1997 and 1998 which is outside the period of record. ADEQ states the site was established to monitor runoff from an adjacent pasture and any overflows from the pond used in a swine operation facility. New data will be collected for assessment purposes for the 2008 listing cycle.

STREAM NAME	HUC	RCH	P-Seg	Station	Assess	Pollutant	Added 2006 List
Ables Creek	8040205		2B	OUA158	M	DO	N
B. Bartholomew	8040205	006	2B	OUA143	M	DO	N
B. Bartholomew untrb	8040205		2B	OUA146	M	DO	N
Bayou Imbeau	8040205		2B	OUA147	M	DO	N
Bearhouse Creek	8040205	901	2B	OUA155	M	DO	N
Cheminahaut Ck.	8040205	907	2B	OUA12	M	DO	N
Cutoff Creek	8040205	007	2B	OUA157	M	DO	N
Wolf Creek	8040205		2B	OUA156	M	DO	N
B. Bartholomew	8040205		2B	OUA160	M	DO	N
Hurricane Creek	8040203	004	2C	OUA116	M	DO	Y
Jug Creek	8040201	901	2D	OUA47	M	DO	Y
Cadron Creek	11110205	012	3D		E	DO	Y
Departee Creek	11010013	020	4C	WHI163	M	DO	Y
Greenbrier Creek	11010014	017	4F	WHI167	M	DO	Y
Salado Creek	11010004	012	4F	WHI166	M	DO	Y
Current River	1101008	002	4G	WHI04	M	DO	Y
Osage Creek	11010001	045L	4K	WHI69	N	DO	Y
Levi Creek	11110202		3H	ARK112	M	PA	N
Wilson Creek	11110202		3H	ARK107	M	PA	N
Cross Bayou	8040205	905	2B	OUA152	M	PA	Y
Harding Creek	8040205	902	2B	OuA145	M	PA	Y
Cousart Bayou	8040205		2B	OUA149	M	SI	Y
Fouche Creek	11110207		3C	ARK147A	M	SI	Y
Fourche LaFave R.	11110206	007	3E	ARK37	M	SI	N
Caney Creek	11010012	016	4G	WHI143Q&R	M	SI	N
Fourche Creek	1101009	008	4G	WHI160	M	SI	Y
Little Red River	11010014	007	4E	WHI59	M	Temp	N
White River	11010004	014	4F	WHI46	M	Temp	Y
Salt Creek	8040201	806	2D	OUA137D	M	pH	Y

3. **Site Specific Minerals:** The assessment methodology describes a process if greater than ten percent of the samples exceed a site specific minerals standard, then the water will be included on the 303(d) list as being impaired for that mineral.

Resolution: The streams below appear to be in violation of the site specific minerals criteria. ADEQ has agreed to re-evaluate these fourteen (14) water body pollutant pairs for inclusion in the 2006 303(d) list. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. Review of Arkansas' draft 2006 303(d) indicates the State re-evaluated these waters and included

such on the 2006 303(d) draft list. New data indicate the waters that were not included on the draft 2006 303(d) list are now meeting water quality standards. EPA is taking neither an approval nor disapproval action on these fourteen (14) water body pollutant pairs waters until the State formally submits its 2006 section 303(d) list.

STREAM NAME	HUC	RCH	P-Seg	Station	Assess	Parameter	Added 2006 List
Big Bellville Creek	11140109		1C	BEL001	M	TDS	N
Bridge Creek	11140109		1C	BRI001	M	TDS	N
Little Cossatot R.	11140109		1C	LCO01	M	TDS	N
Cousart Bayou	8040205		2B	OUA149	M	CI	Y
Cousart Bayou	8040205		2B	OUA149	M	SO4	N
Cousart Bayou	8040205		2B	OUA149	M	TDS	Y
Cross Bayou	8040205	905	2B	OUA152	M	TDS	Y
Cache River	8020302	028	4B	CHR04	M	TDS	Y
Myatt Creek	11010010	010	4H	WHI171	M	TDS	N
Crooked Creek	11010003	049	4I	WHI66, 67	M	CI	Y
Gilbert Spring	11010005		4J	BUFS41	M	TDS	N
Luallen Spring	11010005		4J	BUFS02	M	SO4	N
Kings River	11010001	042	4K	WHI123	M	TDS	N
First Creek	8020205	007	5B	FRA30	M	TDS	N

4. **Water body Pollutant Pairs for which the data do not support a listing:** There are listings for various parameters for which the data does not support the listing. It may be that ADEQ has additional data and information to support these listings.

Resolution: EPA will take no action on these forty six (46) water body pollutant pairs to keep them out of NTTs and from having to spend money on writing TMDLs until additional data and information is provided. ADEQ is committed to re-evaluating these and listing as appropriate in the 2006 303(d) list cycle. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. New data indicate the waters that were not included on the draft 2006 303(d) list are still meeting water quality standards for the parameter indicated. EPA is taking neither an approval nor disapproval action on these fourteen (14) water body pollutant pairs waters until the State formally submits its 2006 section 303(d) list.

STREAM NAME	HUC	RCH	P-Seg	Station	ASSESS	Parameter	Added 2006 List
Lake June	11140203		1A		M	CI	N
Beouf River	8050001	-019	2A	BFR01	M	SO4	N
Beouf River	8050001	-019	2A	BFR01	M	TDS	N
Big Bayou	8050001	-022	2A	BGB01,+	M	SI	N
Big Bayou	8050001	-022	2A	BGB01+	M	TDS	N
Big Bayou	8050001	-022	2A	BGB01,+	M	CI	N
Big Bayou	8050001	-022	2A	BGB01+	M	SO4	N
Boeuf River	8050001	-019	2A	BFR01	M	SI	N

Boeuf River	8050001	-019	2A	BFR01	M	Cl	N
Macon Bayou	8050002	-003	2A	BYM02	M	SI	N
Macon Bayou	8050002	-006	2A	BYM01	M	SI	N
Oak Bayou	8050002	-010	2A	OUA179	M	Cl	N
Oak Bayou	8050002	-010	2A	OUA179	M	SI	N
Oak Bayou	8050002	-010	2A	OUA179	M	TDS	N
Elcc Trib.	8040201	-606	2D	OUA137A&B	M	Zn	N
Flat Cr.	8040201	-706	2D	OUA137C	M	Cu	N
Flat Cr.	8040201	-706	2D	OUA137C	M	Zn	N
Lake Calion	8040201		2D		M	Cl	N
Salt Creek	8040201	-806	2D	OUA137D	M	Cu	N
Caddo River	8040102	-016	2F	OUA23	M	Cu	N
Caddo River	8040102	-018	2F		E	Cu	N
Caddo River	8040102	-019	2F		E	Cu	N
Wabbaseka B.	8020401	-003	3A	WSB01	M	SI	N
Bayou Meto	8020402	-007	3B	ARK60,50	M	Pb	N
Poteau River	11110105	031L	3I	ARK55	M	SI	N
Poteau River	11110105	-031	3I	ARK55	M	Zn	N
Bayou DeView	8020302	-003	4B		E	PA	N
Bayou DeView	8020302	-002	4B	WHI033	M	PA	N
Cache River	8020302	-017	4B		E	PA	N
Village Creek	11010013	-008	4C		E	DO	N
Village Creek	11010013	-007	4C		E	DO	N
Village Creek	11010013	-006	4C	VGC01&03	M	DO	N
Overflow Creek	11010014	-006	4E	OFC01	M	SI	N
Overflow Creek	11010014	-004	4E		E	SI	N
Ten Mile Creek	11010014	-009	4E	TMC01	M	SI	N
Salado Creek	11010004	-012	4F	WHI166	M	PA	N
Strawberry R.	11010012	-004	4G		E	SI	N
Strawberry R.	11010012	-005	4G		E	SI	N
Strawberry R.	11010012	-006	4G	WHI24	M	SI	N
Holman Creek	11010001	-059	4K	WHI070	M	Cl	N
Holman Creek	11010001	-059	4K	WHI070	M	SO4	N
War Eagle Creek	11010001	-060	4K		E	Cl	N
War Eagle Creek	11010001	-060	4K		E	SO4	N
Fifteen Mile B.	8020203	-006	5A	FRA28	M	SI	N
Tyronza River	8020203	-012	5A	FRA33	M	SI	N
L' Anguille River	8020205	-004	5B	LGR01	M	SO4	N

5. **Water body Pollutant Pairs for which new data do not support a listing:** EPA added several lake listings to the 2002 303(d) list for nutrients, chloride, turbidity and pathogens. A special one-year study (June 2004 – July 2005) was conducted to collect additional data to re-evaluate EPA’s 2002 listing decisions. Review of the new data shows that several of the lakes are now meeting their designated uses and water quality criteria. EPA is taking neither an approval nor disapproval action on those lakes with a status of “not impaired” in the table below based on the new data. EPA is approving the continued listing of those lakes in the table below with a status of “impaired”.

LAKE NAME	HUC	P-SEG	SIZE (acres)	PARAMETER	STATUS
Grand Lake	08050002	2A	1400	Nutrients	impaired
Horseshoe Lake	08020203	4A	1200	Nutrients	impaired
Old Town Lake	08020303	5A	900	Nutrients	impaired
Mallard Lake	08020204	5C	300	Nutrients	impaired
First Old River	11140106	1B	200	Nutrients	impaired
Bear Creek Lake	08020205	2B	625	Nutrients	impaired
Lake Calion	08040201	2D	510	Chloride	not impaired
Lake June	11140203	1A	60	Chloride	not impaired
Lake Frierson	08030202	4B	335	Turbidity	impaired

6. Review of the draft 2006 303(d) list submitted by ADEQ on April 3, 2006:

After review of the Arkansas 2004 303(d) list, EPA identified eighty three (83) water body pollutant pairs which it considered impaired based on the data for the period of record (October 1, 1998 through September 30, 2003), the 2004 assessment methodology, and the water quality standards applicable to the 2004 listing cycle. Also identified were forty six (46) water body pollutant pairs that were included on the 2004 303(d) list but the data did not support the listing. There was another one hundred fourteen (114) stations for which the data was not assessed for the 2004 listing cycle. EPA agreed to take no action on these if ADEQ would re-evaluate them and include them on the 2006 303(d) list as appropriate. ADEQ submitted a draft 2006 303(d) list on April 3, 2006. EPA reviewed the draft 2006 303(d) list with regard to the above concerns and posted in each table above whether or not the water body pollutant pair was included on the 2006 list. EPA is taking neither an approval nor disapproval action on these water body pollutant pairs until the State formally submits its 2006 section 303(d) list.

Priority Ranking and Targeting

EPA also reviewed the State's priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters. The State's priority ranking falls into three categories. Those waters with the highest risk of affecting public health or welfare, substantial impact on aquatic life uses, and existing data available for TMDL are given a high priority rank (H). A medium priority rank (M) is assigned to waters with a moderate risk to public health or welfare or to aquatic life uses. A low priority rank (L) is assigned to those waters with the lowest risk to public health or welfare and secondary impact on aquatic life uses.

In addition, EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters (high priority) are appropriate for TMDL development in this time frame. EPA concludes, based on these considerations, that the State's priority ranking and targeting commitments are consistent with federal requirements.

Administrative Record Supporting This Action

In support of this decision to approve Arkansas' listing decisions, EPA carefully reviewed the materials submitted by Arkansas with its 303(d) listing decision. The administrative record supporting EPA's decision is comprised of the materials submitted by the State, copies of Section 303(d), associated federal regulations, and EPA guidance concerning preparation of Section 303(d) lists, and this decision letter and supporting report. EPA determined that the materials provided by the State with its submittal provided sufficient documentation to support our analysis and findings that the State listing decisions meet the requirements of the Clean Water Act and associated federal regulations. We are aware that the State compiled and considered additional materials (e.g. raw data and water quality analysis reports) as part of its list development process that were not included in the materials submitted to EPA. EPA did not consider all these additional materials as part of its review of the listing submission. It was unnecessary for EPA to consider all of the materials considered by the State in order to determine that, based on the materials submitted to EPA by the State, the State complied with the applicable federal listing requirements. Moreover, federal regulations do not require the State to submit all data and information considered as part of the listing submission.

References

- Arkansas Water Quality Standards, Arkansas Pollution Control and Ecology Commission, Regulation 2, April 1998.
- ADEQ Water Division, 1997. Illinois River Water Quality, Macroinvertebrate and Fish Community Survey, Benton and Washington Counties, Arkansas. ADEQ Report WQ97-03-1, 90p.
- EPA, 2003, *Guidance for 2004 Assessment, listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act* EPA: TMDL-01-03 U.S. Environmental Protection Agency, Office of Water, Washington, DC.
- EPA 2002, *Consolidated Assessment and Listing Methodology*, EPA office of Water, July 2002.
- EPA 2000, April 28, 2000 memorandum from Robert H. Wayland, III, Director, Office of Wetlands, Oceans, and Watershed, office of Water, EPA Headquarters regarding "EPA Review of 200 Section 303(d) Lists."
- EPA 2001b, November 19, 2001 memorandum from EPA Office of Water regarding *2002 Integrated Water Quality monitoring and Assessment Report Guidance*.
- EPA 1997a, May 23, 1997 memorandum from Geoffrey H. Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA headquarters to FACA Workgroup Section 303(d) Listing Criteria re: Nonpoint Sources and Section 303(d) Listing Requirements.
- EPA 1997a, August 27, 1997 memorandum from Robert H. Wayland III, Director, Office Wetlands, oceans, and Watershed, Office of Water, EPA Headquarters, to Water Division Directors, Regions I-X, and Directors, Great Water Body program, and Water Quality

Branch chiefs, Regions I-X, regarding “National Clarifying Guidance for 1998 State and Territory Section 303(d) Listing Decisions.”

EPA 1997b, September, 1997 Guidance from Office of Water, Headquarters, UA EPA regarding *Guidelines for preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement*, EPA-841-B-97-002B.

EPA 1996, August 9, 1996 memorandum from Robert Perciasepe, Assistant Administrator regarding EPA Action on 1996 lists, “Priority Rankings and TMDL Targeting Plans Submitted by States Under Section 303(d) of the CWA.”

EPA 1993, November 26, 1993 memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA headquarters, to Water Quality Branch Chiefs, Regions I-X, and TMDL coordinators, Regions I-X, regarding “Guidance for 1994 Section 303(d) Lists.”

EPA 1992a, July 24, 1992 Federal Register Notice, *40 CFR Parts 122, 123, 130*, revision of regulation, 57 Fed. Reg. 33040.

EPA 1992b, August 13, 1992 memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, office of Water, EPA Headquarters, to EPA Water Quality Branch Chief’s, Regions I-X and TMDL Coordinators, Regions I-X, regarding “Supplemental Guidance on Section 303(d) Implementation.”

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EPA 1985, January 11, 1985 Federal Register Notice, *40 CFR Parts 35 and 130*, Water Quality Planning and Management: Final Rule, 50 Fed. Reg. 1774

EPA 1978, December 28, 1978 Federal Register Notice, Total Maximum Daily Loads Under Clean Water Act, finalizing EPA's identification of pollutants suitable for TMDL calculations, 43 Fed. Reg. 60662.