

Record of Decision for Review of Arkansas' 2006 §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.

Administrative Records Cited

See Appendix VII for a listing of the documents used in the review of the Arkansas 2006 §303(d) List.

Time Line for the Arkansas 2006 303(d) List

1. Date of transmittal letter and draft 2006 §303(d) List from State: March 31, 2006; Date of Receipt by EPA: April 3, 2006
2. Email dated September 5, 2006 to Martin Maner from EPA transmitting EPA's comments on the draft 2006 §303(d) List.
3. Letter dated October 17, 2006 to Martin Maner from EPA asking Arkansas to place a high priority on finalizing the 2006 §303(d) List.
4. January 25, 2007: EPA met with ADEQ in Little Rock to discuss the 2006 §303(d) List.
5. February 28, 2007: EPA met with ADEQ in Little Rock specifically to address ADEQ's response to EPA's comments on the 2006 §303(d) List. A resolution was reached on all items.
6. May 16, 2007: Letter to Miguel Flores from Martin Maner committing to submit a final Arkansas 2006 §303(d) List by the end of July.
7. August 17, 2007: EPA met with ADEQ in Little Rock to discuss the draft 2006 §303(d) List and when it might be finalized. ADEQ agreed to share a second draft in the interim.
8. September 26, 2007: ADEQ electronically submitted the draft final Arkansas 2006 §303(d) List and supporting documentation.
9. September 27, 2007: EPA advised ADEQ via email that the draft final Arkansas 2006 §303(d) List was no different than the draft received April 3, 2006 and that EPA's comments were not addressed.
10. October 11, 2007: In a telephone conversation, ADEQ stated it was making some revisions to the draft final Arkansas 2006 §303(d) List prior to taking it out to public comment
11. December 6, 2007: EPA met with ADEQ to discuss the remaining unresolved issues on the final draft 2006 §303(d) List.
12. January 11, 2008: ADEQ sent a revised draft final 2006 §303(d) List to EPA. ADEQ took this List out for public comment on January 16th.
13. April 28, 2008: EPA received the final Arkansas 2006 Integrated Report.
14. May 8, 2008: EPA received the Arkansas Responsiveness Summary to Public Comments

Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and partial disapproval of Arkansas's 2006 §303(d) List of water quality limited waters requiring Total Maximum Daily Loads (TMDLs). 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 2006 Assessment Methodology used by the State in developing the 2006 §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 Arkansas 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 the §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 §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 §303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of §303(d).

DECISION DOCUMENT FOR ARKANSAS' 2006 §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 §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 §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 States 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 §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 §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 §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 Guidance.

A Description of the State of Arkansas' Final Submission

EPA Region 6 received the 2006 Arkansas Clean Water Act §303(d) List on April 28, 2008. 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 – 2006", which includes the methodology used for selecting water quality limited segments, assessment criteria, and a listing of water quality limited rivers/streams and lakes/reservoirs.
- A partial water body specific justification for the non-listing of waters that, in some cases, did not provide the information required for EPA to support ADEQ's actions.

A responsiveness summary to the public comments submitted to ADEQ concerning the impaired waters list was submitted on May 8, 2008.

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 §303(d) List in partial compliance with §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 §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 2006 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, seventy-nine (79) water body pollutant pairs are proposed for addition to the Arkansas 2006 §303(d) List. Additionally, EPA is taking action on the group of one hundred and thirty (130) water body pollutant pairs identified in EPA's 2004 record of decision. EPA deferred action on these during the 2004 listing cycle as mechanisms were in place to resolve this issue (see discussion, *infra*).

Arkansas chose to combine the 2006 §305(b) report and §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 the five categories as established in EPA guidance. Category 5, which is the 2006 §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 ADEQ's 2006 Assessment Methodology to data (USGS or Arkansas's ambient monitoring data) for the period of record from October 1, 2000 through September 30, 2005, 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 2006 list on the ADEQ website.

Although EPA reviewed Arkansas' 2006 Assessment Methodology as part of its review of the listing submission, EPA's partial approval of the State's listing decisions should not be construed as concurrence with or approval of the 2006 Assessment Methodology. EPA is not required to take action on the assessment 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 2006 Assessment 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 §303(d) and 40 CFR 130.7.

The Arkansas 2006 Assessment Methodology employed by ADEQ 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, provided in the ecoregion and stream specific assessment criteria tables of the 2006 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 assessment methodology for identifying waters. For those waters being approved on the Arkansas 2006 §303(d) 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 2004 §303(d) List in developing the 2006 assessment. Based on its review of the 2006 Section 303(d) List in light of the 2004 §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' 2006 §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 2006 Assessment Methodology for identifying water quality limited segments, 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 three hundred and twenty one (321) water body pollutant pairs identified in its listing submittal are consistent with federal listing requirements. Furthermore, EPA is taking neither an approval or disapproval action on thirty-six (36) listings for beryllium. However, EPA concludes that the State's decision not to list seventy-nine (79) 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 seventy-nine (79) waters and pollutants must be listed pursuant to §303(d). Therefore, EPA is proposing to add seventy-nine (79) water quality limited segments to Arkansas' list, and will be seeking public comment on these proposed additions.

ADEQ compiled and reviewed the available 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 2006 §303(d) List based almost entirely on evaluation of water chemistry data only. The State did not evaluate other types of monitoring data and information – bioassessments, physical integrity, and fish kills, etc. for §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 a number of waters and pollutants not listed by the State violate State water quality standards and therefore meet federal listing requirements. EPA regulations require consideration of all applicable standards, including numeric and narrative criteria, waterbody uses, and antidegradation requirements (see 40 CFR 130.7(b)(1)(iii) and 40 CFR 130.7(b)(3)).

1. Disposition of Waters for which EPA Took No Action During the 2004 Listing Cycle –

EPA identified one hundred thirty (130) waterbody pollutant pairs listed in the record of decision on the Arkansas 2004 §303(d) List for which EPA took no action thereby deferring its action to the 2006 listing cycle. Data from an additional one hundred (100) stations representing a number of waters were identified where there was sufficient data to make an assessment for the 2004 listing cycle but none was made. The water body pollutant pairs for which EPA took no action in 2004 and the stations and stream names for data that was not assessed were presented in tables in EPA's 2004 record of decision (ROD). To simplify discussion in the 2006 ROD, the information from the various tables has been consolidated into three groups as follows: a) waters with sufficient data that were not assessed during the 2004 listing cycle but ADEQ agreed to assess during the 2006 listing cycle (Appendix I); b) waters for which sufficient data supported a listing, but the listing was omitted by ADEQ (Appendix II), and c) waters which appeared on the 2004 §303(d) List, but there was sufficient data to refute the listing and/or a TMDL was established by EPA prior to the 2006 listing cycle (Appendix III). EPA's action on each of these groups will be discussed separately in the following subheadings. The water body pollutant pairs which EPA is proposing to add to the 2006 §303(d) List will be summarized in a separate table (Appendix V) where EPA will provide a detailed explanation of its decision to include these on the 2006 §303(d) List.

a. Disposition of waters not assessed by ADEQ for the 2004 §303(d) listing cycle.

For the 2004 listing period, ADEQ used the Segment Evaluation (SegEval) program developed by Region 6 to assess its waters. The reports generated by this program indicate which waters are impaired based on the water quality standards in effect for the 2004 listing cycle and the 2004 ADEQ Assessment Methodology. In 2004, ADEQ failed to assess data for one-hundred (100) stations representing numerous waters. As part of its 2006 List submission, ADEQ submitted analyses (SegEval Reports) representing these one-hundred (100) stations for which the data was not assessed during the 2004 listing cycle (Appendix 1). Water bodies with water quality limited segments are included on the 2006 §303(d) List either by ADEQ or EPA. The bolded pollutants represent those omitted by ADEQ but proposed for addition by EPA because sufficient data was available to support a listing. See Appendix V for a detailed explanation of EPA's decision to include these water quality limited segments on the 2006 §303(d) List.

b. Waters for which sufficient data supported a listing in 2004, but the listing was omitted by ADEQ.

During its review of the 2004 §303(d) List, EPA determined that the eighty-four (84) water body pollutant pairs listed in Appendix II were omitted from the 2004 §303(d) List even though data was available to support such a listing. ADEQ re-evaluated these waters for the 2006 listing cycle. Of the eighty-four (84) water body pollutant pairs, ADEQ determined that fifty-seven (57) are impaired (identified with a "Y" under the column heading "Status L06") for the pollutant shown in Appendix II. EPA is approving the listing of these water body pollutant pairs.

Twenty-three (23) were not included on the 2006 §303(d) List because they are 'not impaired' for the pollutant shown based on new data and information, the original

analysis was based on incorrect criteria for the assessment, there was a change in the assessment methodology, or ADEQ provided an acceptable justification for not listing. Therefore, today, EPA is taking neither an approval nor disapproval action on those water body pollutant pairs identified as “not impaired” under the column heading “Status L06”.

EPA has determined that ADEQ omitted four (4) water body pollutant pairs for which there is sufficient data to support a listing. These are identified in Appendix II with a “YE” under the column heading “Status L06” and are proposed for addition to the 2006 §303(d) List by EPA. See Appendix V for a detailed explanation of EPA’s decision to include these on the 2006 §303(d) List.

- c. Waters included by ADEQ on the 2004 §303(d) List, but there was sufficient data to refute the listing.

During its review of the 2004 §303(d) List, EPA determined that the forty-six (46) water body pollutant pairs listed in Appendix III were listed on the 2004 §303(d) List even though the available data did not support such a listing. ADEQ re-assessed the data for these forty six (46) waterbody pollutant pairs and listed these as appropriate on the 2006 §303(d) List. Of the forty-six (46) water body pollutant pairs, twenty-four (24) are not impaired and meeting the water quality standards for the parameter indicated. Total Maximum Daily Loads (TMDLs) were established by EPA prior to the 2006 listing cycle (April 1, 2006) for fifteen (15) of the water body pollutant pairs and therefore, these should have been shown in category 4a for the 2006 listing cycle. EPA is taking neither an approval nor disapproval action on those identified in Appendix III as “not impaired” or a “TMDL” has been completed.

ADEQ determined, based on new data that three (3) reaches of Village Creek are impaired for dissolved oxygen and included them on the 2006 303(d) List. EPA is approving the Village Creek listings.

EPA has determined that ADEQ omitted four (4) water body pollutant pairs for which there is sufficient data to support a listing. They include Flat Creek (HUC 8040201, reach 706) for copper and zinc; Salt Creek (HUC 8040201, reach 806) for copper and Bayou Meto (HUC 8020402 reach 907) for lead. See Appendix V for a detailed explanation of EPA’s decision to include these on the 2006 303(d) List.

2. Waters added by EPA to the State’s 2004 §303(d) which were not carried forward to the Arkansas 2006 303(d) List

In its 2006 list, the State did not retain any of the Illinois River watershed water quality limited segments added by EPA to the State’s 2004 §303(d) List. The four (4) water body pollutant pairs listed by EPA in 2004 that were not included on the 2006 list are shown in the table below. These water body pollutant pairs should remain on the list until new data and information are available to show they are no longer impaired. See EPA’s 2004 Record of Decision (ROD) (pages 11-14) for a discussion of the rationale for these listings.

Stream Name	HUC	Reach	P-Seg	Pollutant	Status
Illinois River Watershed					
Osage Creek	11110103	030	3J	TP	impaired
Osage Creek	11110103	930	3J	TP	impaired
Spring Creek	11110103	931	3J	TP	impaired
Muddy Fork	11110103	027	3J	TP	impaired

3. Waters ADEQ included on the Arkansas 2004 303(d) List that were delisted on the Arkansas 2006 §303(d) List

EPA compared the listings in the 2004 §303(d) List with those in the 2006 §303(d) List and found that sixty-three (63) water body pollutant pairs that were on the 2004 §303(d) List were delisted during the 2006 listing cycle. Of the sixty-three (63) water body pollutant pairs, forty-three (43) were moved to Category 4a because a TMDL had been established by EPA. The remaining twenty (20) water body pollutant pairs were delisted for several reasons: 1) new data indicates the water body is meeting criteria for the pollutant listed, 2) the drinking water use was removed, or 3) the water body was assessed against the wrong criteria for the pollutant listed during the 2004 listing cycle. EPA concurs with these delistings. See Appendix VI for an itemized listing with specific justifications for delisting.

4. Waters included by ADEQ on the Arkansas 2004 §303(d) List in Category 4b but not addressed adequately on the Arkansas 2006 §303(d) List

Bayou Meto was included in Category 4b for the 2006 cycle as impaired for priority organics (PO), but ADEQ failed to provide an adequate justification. Lake DuPree was omitted from the 2006 list cycle; however, EPA accepted its listing in Category 4b on the 2004 §303(d) List. No justification was provided by ADEQ to show water quality standards are now being met.

The State demonstrated for the two (2) water body pollutant pairs (see table below) in the 2004 listing cycle that there are other pollution control mechanisms required by State, local, or federal authority that will result in attainment of water quality standards within a reasonable time. EPA believes the omission of Lake DuPree from Category 4b on the 2006 §303(d) List is in error. Due to the nature of the pollutant, it is reasonable to believe that the mechanisms described on pages 9 and 10 of EPA's 2004 ROD are still being employed. Therefore, as a result of the remedial actions described on pages 9 and 10 of EPA's 2004 ROD, 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.

STREAM NAME	HUC	REACH	POLLUTANT	STATUS
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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

5. Waters listed as impaired for Beryllium

There are twenty-seven (27) streams and nine (9) lakes listed for beryllium on the final 2006 §303(d) List (Appendix IV). ADEQ identifies the beryllium source as resource extraction (mining) or unknown. The current beryllium standard (0.076 ug/l) in Regulation No. 2 was established based on criteria developed in the 1970s or 1980s. The detection limit reported by the laboratory for the analysis of beryllium is 0.110 ug/l, which is 1.45 times above the Regulation No. 2 criterion for beryllium. Therefore, any reported value equal to or above the detection limit (0.11 ug/l) would result in an exceedance in the criterion. The lab does not have the capability to analyze for beryllium at or below the criterion of 0.076 ug/l. As a result, the analytical data reported by the laboratory is not sufficient to determine if a true impairment exists using the 0.076 ug/l criterion given the 0.110 ug/l detection limit.

EPA extracted all the beryllium data for the 5-year period of record (Oct 1, 2002 through Sept. 30, 2004). Any value reported as “below detection limit” (BDL) was replaced with one-half the detection limit or 0.055 ug/l. There were 5,867 data points which ranged from BDL to 9.25 ug/l. Four-hundred and fifty (450) of the data points were equal to or greater than the detection limit (0.110 ug/l). EPA assessed the data against the newly adopted national drinking water criterion of 4 ug/l maximum contaminant level (MCL). Only two monitoring stations had data that exceeded this concentration, both of which are located on Chamberlin Creek (HUC 8040102, reach 971).

For Station OUA104 on Chamberlin Creek above the confluence with Cove Creek five (5) data points out of a total of seventeen (17) exceeded the 4 ug/l. The seventeen (17) reported values for these data points ranged from 0.41 ug/l to 5.1 ug/l; all above 0.11 ug/l detection limit.

For Station OUA171A on Chamberlain Creek at Baroid Road near Magnet Cove, AR eight (8) data points out of a total of fifteen (15) exceeded the 4 ug/l. The fifteen (15) reported values for these data points ranged from 0.25 ug/l to 9.25 ug/l; all above the 0.11 ug/l detection limit.

On September 28, 2007, the Arkansas Pollution Control and Ecology Commission (APC&EC) adopted EPA’s recommended beryllium criterion of 4 ug/l MCL which was effective under Arkansas Sate Law on October 10, 2007. EPA approved the revision of the beryllium criterion on January 24, 2008.

Therefore, based on the newly adopted 4 ug/l MCL criterion, only one (1) water body, Chamberlin Creek, is impaired for beryllium and should be included on the 2006 §303(d) List in Category 5a. The remaining water bodies are meeting the new criterion and are not impaired.

EPA is taking neither an approval or disapproval action on all the water bodies and lakes listed for beryllium except for Chamberlin Creek (HUC 8040102, reach 971).

Basis for Decision to Add Waters to Arkansas' 2006 Section 303(d) List

This section describes the basis for EPA's decisions to (1) disapprove the State's decision to not list seventy-nine (79) water bodies, and (2) to identify these water bodies for inclusion on the final 2006 §303(d) List with associated priority rankings.

6. List of water body pollutant pairs which ADEQ omitted from the 2006 §303(d) List and EPA's rationale for adding these to the list.

The water body pollutant pairs listed in Appendix V include those water body pollutant pairs identified earlier in the record of decision (those on which EPA deferred action until the 2006 §303(d) List) plus a number of other water body pollutant pairs omitted from the 2006 §303(d) List. The purpose of this section is to provide a detailed rationale for EPA's decision to add these waters to the Arkansas 2006 §303(d) List. The streams listed in Appendix V appear to be in violation of the numeric criteria for listed parameters when assessed in accordance with the 2006 Assessment Methodology. The exception is the total phosphorus listings in the Illinois River watershed. These listings were based on a weight of evidence approach as described in EPA's 2004 Record of Decision.

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 thirty-eight (38) targeted waters and associated pollutants (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 under 40 CFR § 130.7 and the requirements under the consent decree in Sierra Club V. Whitman, case No. LR-C-99-114 (E.D. Ark) which requires twenty TMDLs.

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 §303(d), associated federal regulations, and EPA guidance concerning preparation of §303(d) Lists, and this decision letter and supporting report. EPA determined that the materials provided by the State with its submittal and additional materials and information requested by EPA 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. The State may have compiled and considered additional materials as part of its list development process that were not included in the materials submitted to EPA. EPA did not consider 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.

Appendix I. – Listing of the one-hundred (100) stations and the associated water body identified in EPA’s record of decision (ROD) for the 2004 listing cycle that were not assessed by ADEQ during the 2004 listing cycle. The non-bolded pollutants represent those included on the 2006 §303(d) List by ADEQ. The bolded pollutants represent those that ADEQ omitted from the 2006 §303(d) List; however, there is sufficient data to support the listing of these water body pollutant pairs. See Appendix V for a detailed explanation of EPA’s decision to include these on the 2006 §303(d) List. Blanks indicate that the assessment report showed no impairment.

Description	HUC	RCH	P-Seg	Station ID	Pollutants
Big Bellville Creek	11140109		1C	BEL0001	
Blue Bayou	11140109	009	1C	BLB0001	FC
Bridge Creek	11140109		1C	BRI0001	
Cool Creek	11140109		1C	CEG0001	
Cossatot River	11140109		1C	COS0001	
Cossatot River	11140109		1C	COS0003	
Dillard Creek	11140109		1C	DIL0001	
Little Cossatot River	11140109	918	1C	LCO001	TDS
Messers Creek	11140109	011	1C	MES0001	
Mine Creek	11140109		1C	MIN0002	
Plum Creek	11140109		1C	PLM0001	
Bear Creek	11140109	025	1C	RED0033B	NO3
Sulphur Slough	11140109		1C	RSS0001	
Saline River	11140109	917	1C	SAL0001	
Saline River	11140109		1C	SAL0003	
Chemin-A-Haut Bayou	8040205	907	2B	OUA0012	FC, DO
Overflow Creek	8040205	908	2B	OUA0012A	CL, SI
Bayou Bartholomew	8040205	006	2B	OUA0143	DO
Nevins Creek	8040205		2B	OUA0144	
Harding Creek	8040205	902	2B	OUA0145	FC, Cu, Pb, Zn
Unnamed trib to Bayou Bartholomew	8040205	909	2B	OUA0146	CU, Pb, DO
Bayou Imbeau	8040205	910	2B	OUA0147	DO, Pb
Melton’s Creek	8040205	903	2B	OUA0148	FC, DO, SI
Cousart Bayou	8040205		2B	OUA0149	
Jack’s Bayou	8040205	904	2B	OUA0150	DO, FC
Cross Bayou	8040205	905	2B	OUA0152	FC
Ables Creek sw	8040205		2B	OUA0153	
Bearhouse Creek	8040205	901	2B	OUA0155	DO, Pb, FC, Cu
Wolf Creek	8040205	701	2B	OUA0156	DO
Cutoff Creek	8040205	007	2B	OUA0157	DO
Ables Creek	8040205	911	2B	OUA0158	SI
Bayou Bartholomew (Melton’s Ck)	8040205	006	2B	OUA0160	DO
Cove Creek	8040102		2F	OUA0100 & 103	pH, SO4, Cl, TDS
Chamberlain Creek	8040102	971	2F	OUA0104 & 171A	Cd, Cu, Zn, pH, SO4, Cl, TDS
Lucinda Creek	8040102	975	2F	OUA0171B	pH, SO4, Zn
Cove Creek	8040102		2F	OUA0171C	
Basin Creek	8040102		2F	OUA0171D	
Terre Noir Creek	8040103		2G	UWTNO01	

Fourche Creek	11110207	024	3C	ARK0147D	DO
Fourche Creek	11110207	022	3C	ARK0147E-G	DO, SI, Pb, Zn
Cypress Creek	11110205	917	3D	ARK0132	Cu, Zn
Stratton Creek	11110205		3D	ARK0133	
Brindley Creek	11110205		3D	ARK0134	
Departee Creek	11010013	020	4C	WHI0163	Zn
South Sylamore Creek	11010004		4F	WHI0145	
South Sylamore Creek	11010004		4F	WHI0145B	
South Sylamore Creek	11010004		4F	WHI0146	
South Sylamore Creek	11010004		4F	WHI0147	
Strawberry River	11010012	011	4G	WHI0143A	SI, FC
Strawberry River	11010012	009	4G	WHI0143B	SI, FC
Little Strawberry River	11010012	010	4G	WHI0143E & H	SI, FC
North Big Creek	11010012	007	4G	WHI0143I	
South Big Creek	11010012	013	4G	WHI0143J, K, L, M	FC
Mill Creek	11010012	016	4G	WHI0143N & P	FC
Caney Creek	11010012	015	4G	WHI0143Q & R	FC
Cooper Creek	11010012	003	4G	WHI0143S	FC
Lost Creek	8020302	909	4B	WHI0172	Cu, Pb, Zn
Huzzah Creek	11010003		4I	BUFET005	
Clear Creek	11010003	051	4I	BUFET006	
Hampton Creek	11010003	052	4I	BUFET007	
Crooked Creek	11010003	048	4I	BUFET010	
John Eddings Cave Spring	11010005		4J	BUFCS500	
Elm Spring	11010005		4J	BUFCS501	
Cemetery Spring	11010005		4J	BUFES001	
West Fork Spring	11010005		4J	BUFES002	
Hog Creek below Springs	11010003		4J	BUFET001	
North Sylamore Creek	11010004		4J	BUFET002	
Hock Creek	11010001		4J	BUFET003	
Kings River	11010001	012	4J	BUFET004	
Buffalo River	11010005	006	4J	BUFR05.9	
Buffalo River	11010005	026	4J	BUFR06	
Buffalo River	11010005		4J	BUFR06.1	
Buffalo River	11010005		4J	BUFR100	
Luallen Spring	11010005	014	4J	BUFS02	
Mitch Hill Spring	11010005	009	4J	BUFS33	
Gilbert Spring	11010005	004	4J	BUFS41	
Yardell Branch Spring	11010005		4J	BUFS701	
Hurricane Cave Spring	11010005		4J	BUFS702	
Shaddox Spring Brook Spring	11010005		4J	BUFS703	
Ponca Creek	11010005	012	4J	BUFT02	
Cecil Creek	11010005	012	4J	BUFT03	
Mill Creek	11010005	012	4J	BUFT04	
Mill Creek	11010005	005	4J	BUFT11	
Bear Creek	11010005	004	4J	BUFT12	
Bear Creek	11010005		4J	BUFT1201	
Brush Creek	11010005	004	4J	BUFT13	
Tomahawk Creek	11010005	004	4J	BUFT14	

Water Creek	11010005	004	4J	BUFT15	
Rush Creek	11010005	004	4J	BUFT16	
Middle Creek	11010005	001	4J	BUFT23	
Leatherwood Creek	11010005	001	4J	BUFT24	
East Fork of the Little Buffalo R.	11010005		4J	BUFT501	
East Fork of Big Creek	11010005		4J	BUFT601	
West Fork of Big Creek	11010005		4J	BUFT602	
Cave Creek	11010005		4J	BUFT801	
Richland Creek	11010005		4J	BUFT901	
Richland Creek	11010005		4J	BUFT902	
Falling Water Creek	11010005		4J	BUFT903	
Osage Creek	11010001	045	4K	BUFET008	
Long Creek	11010001	054	4K	BUFET009	

Appendix II – Listing of the eighty-four (84) water body pollutant pairs identified in EPA’s record of decision (ROD) for the 2004 listing cycle for which there was sufficient data to support a listing in 2004, but ADEQ omitted from the list. EPA deferred action on these to the 2006 §303(d) List. ADEQ re-assessed these in 2006. A “Y” indicates that ADEQ included the water body pollutant pair on the 2006 §303(d) List. A “YE” indicates those that ADEQ omitted from the 2006 list; however, there is sufficient data to support the listing of these water body pollutant pairs. See Appendix V for a detailed explanation of EPA’s decision to include these on the 2006 §303(d) List.

Stream Name	HUC	RCH	P-Seg	Station ID	Assess	Pollutant	Status L06
Bodcau Creek	11140205	002	1A		E	Pb	Y
Bodcau Creek	11140205	006	1A	RED0027	M	Pb	Y
Dorcheat Bayou	11140203	022	1A	RED0015A	M	Pb	Y
Big Creek	11140203	923	1A	BIG01	M	Pb	Y
Days Creek	11140302	003	1B	RED0004A	M	Pb	Y
Saline River	11140109	014	1C	RED0032	M	Zn	Not Impaired
Big Bellville Creek	11140109	?	1C	BEL001	M	TDS	Not Impaired
Bridge Creek	11140109	?	1C	BRI001	M	TDS	Not Impaired
Little Cossatot R.	11140109	?	1C	LCO01	M	TDS	YE
Bayou Bartholomew	8040205	006	2B	OUA0033	M	Pb	Y
Bayou Bartholomew	8040205	006	2B	OUA0160	M	DO	Y
Cutoff Creek	8040205	007	2B	OUA0157	M	DO	Y
Wolf Creek	8040205	701	2B	OUA0156	M	DO	Y
Bearhouse Creek	8040205	901	2B	OUA0155	M	Pb	Y
Bearhouse Creek	8040205	901	2B	OUA0155	M	DO	Y
Harding Creek	8040205	902	2B	OUA0145	M	Cu	Y
Harding Creek	8040205	902	2B	OUA0145	M	Pb	Y
Harding Creek	8040205	902	2B	OUA0145	M	Zn	Y
Cross Bayou	8040205	905	2B	OUA0152	M	TDS	Not Impaired
Cheminahaut Ck.	8040205	907	2B	OUA0012	M	DO	Y
Bayou Bartholomew	8040205	006	2B	OUA0143	M	Pb	Y
Bayou Bartholomew	8040205	006	2B	OUA0143	M	DO	Y
Main Street Ditch	8040205	909	2B	OUA0146	M	Cu	Y
Main Street Ditch	8040205	909	2B	OUA0146	M	Pb	Y
Main Street Ditch	8040205	909	2B	OUA0146	M	DO	Y
Bayou Imbeau	8040205	910	2B	OUA0147	M	DO	Y
Bayou Imbeau	8040205	910	2B	OUA0147	M	Pb	Y
Ables Creek	8040205	911	2B	OUA0158	M	DO	Not Impaired
Cousart Bayou	8040205	?	2B	OUA0149	M	SI	Not Impaired
Cousart Bayou	8040205	?	2B	OUA0149	M	TDS	Not Impaired
Cousart Bayou	8040205	?	2B	OUA0149	M	Cl	Not Impaired
Cousart Bayou	8040205	?	2B	OUA0149	M	SO4	Not Impaired
Saline River	8040204	002	2C	OUA0010A	M	Zn	Y

Saline River	8040204	002	2C	OUA0010A	M	Cu	Y
Hurricane Creek	8040203	004	2C	OUA0116	M	DO	Not Impaired
Moro Creek	8040201	001	2D	OUA0028	E	Zn	Y
Smackover Creek	8040201	006	2D	OUA0027	M	Pb	Y
Smackover Creek	8040201	007	2D		E	Pb	Y
Salt Creek	8040201	806	2D	OUA137D	M	pH	YE
Moro Creek	8040201	901	2D		M	Pb	Y
Moro Creek	8040201	901	2D		M	Zn	Y
Jug Creek	8040201	910	2D	OUA0047	M	DO	Not Impaired
Little Missouri R.	8040103	008	2G	OUA0035	M	Cu	Y
Fourche Creek	11110207	022	3C	ARK0131+	M	SI	Y
Fourche Creek	11110207	022	3C	ARK0131+	M	Pb	YE
Fourche Creek	11110207	022	3C	ARK0131+	M	Zn	YE
Cadron Creek	11110205	012	3D		E	DO	Not Impaired
Fourche La Fave R.	11110206	007	3E	ARK0037	M	SI	Y
Levi Creek	11110202		3H	ARK0112	M	FC	Not Impaired
Wilson Creek	11110202		3H	ARK0107	M	FC	Not Impaired
Prairie Cypress	8020304	014	4A	WHI0073	M	Pb	Y
Bayou DeView	8020302	004	4B	BDV02	M	Pb	Y
Bayou DeView	8020302	005	4B		E	Pb	Y
Bayou DeView	8020302	006	4B		E	Pb	Y
Bayou DeView	8020302	007	4B		E	Pb	Y
Cache River	8020302	016	4B	WH00132	M	Pb	Y
Cache River	8020302	017	4B		E	Pb	Y
Cache River	8020302	018	4B	CHR02	M	Pb	Y
Cache River	8020302	019	4B		E	Pb	Y
Cache River	8020302	028	4B	CHR04	M	TDS	Y
Departee Creek	11010013	020	4C	WHI0163	M	DO	Not Impaired
Departee Creek	11010013	020	4C	DTC01	M	Zn	Y
Glaise Creek	1101001	021	4C	GSC01	M	Zn	Y
Bayou Des Arc	8020301	006	4D	WHI0056	M	Zn	Y
Bayou Des Arc	8020301	007	4D	BDA01	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
Little Red River	11010014	007	4E	WHI0059	M	Temp	Not Impaired
Salado Creek	11010004	012	4F	WHI0166	M	DO	Not Impaired
White River	11010004	014	4F	WHI0046	M	Temp	Y
Greenbrier Creek	11010014	017	4F	WHI0167	M	DO	Y
Current River	1101008	001	4G	WHI0004	M	DO	Y
Fourche Creek	1101009	008	4G	WHI0170	M	SI	Y
Caney Creek	11010012	015	4G	WHI143Q&R	M	SI	Not Impaired
Myatt Creek	11010010	010	4H	WHI0171	M	TDS	Not Impaired
Crooked Creek	11010003	049	4I	WHI66, 67	M	Cl	Y
Gilbert Spring	11010005	007	4J	BUFS41	M	TDS	Not Impaired
Luallen Spring	11010005	014	4J	BUFS02	M	SO4	Not Impaired
Kings River	11010001	042	4K	WHI123	M	TDS	Y

Osage Creek	11010001	45	4K	WHI069	N	DO	Not Impaired
L' Anguille River	8020205	004	5B	LGR01	M	Pb	Y
L' Anguille River	8020205	005	5B	LGR02	M	Pb	Y
First Creek	8020205	007	5B	FRA0030	M	TDS	Not Impaired

Appendix III - Listing of forty-six (46) water body pollutant pairs identified in EPA's 2004 Record of Decision (ROD) for which the data did not support a listing in 2004. EPA deferred action until the 2006 listing cycle. ADEQ re-assessed these in 2006. A "Y" indicates that ADEQ included the water body pollutant pair on the 2006 §303(d) List. A "TMDL" indicates those for which EPA established a Total Maximum Daily Load. A "YE" indicates those that ADEQ omitted from the 2006 list; however, there is sufficient data to support the listing of these water body pollutant pairs. See Appendix V for a detailed explanation of EPA's decision to include these on the 2006 §303(d) List.

Stream Name	HUC	RCH	P-Seg	Station ID	Assess	Pollutant	Status L06
Lake June	11140203	Lake	1A			Cl	not impaired
Macon Bayou	8050002	003	2A	BYM02	M	SI	TMDL
Macon Bayou	8050002	006	2A	BYM01	M	SI	TMDL
Beouf River	8050001	019	2A	BFR01	M	SO4	not impaired
Beouf River	8050001	019	2A	BFR01	M	TDS	not impaired
Boeuf River	8050001	019	2A	BFR01	M	Cl	TMDL
Boeuf River	8050001	019	2A	BFR01	M	SI	TMDL
Big Bayou	8050001	022	2A	BGB01,+	M	Cl	TMDL
Big Bayou	8050001	022	2A	BGB01,+	M	SI	TMDL
Big Bayou	8050001	022	2A	BGB01+	M	SO4	not impaired
Big Bayou	8050001	022	2A	BGB01+	M	TDS	not impaired
Oak Bayou	8050002	910	2A	OUA0179	M	SI	TMDL
Oak Bayou	8050002	910	2A	OUA0179	M	Cl	TMDL
Oak Bayou	8050002	910	2A	OUA0179	M	TDS	TMDL
Elcc Trib.	8040201	606	2D	OUA137A&B	M	Zn	not impaired
Flat Cr.	8040201	706	2D	OUA0137C	M	Cu	YE
Flat Cr.	8040201	706	2D	OUA0137C	M	Zn	YE
Salt Creek	8040201	806	2D	OUA0137D	M	Cu	YE
Lake Calion	8040201	Lake	2D			Cl	not impaired
Caddo River	8040102	016	2F	OUA0023	M	Cu	not impaired
Caddo River	8040102	018	2F		E	Cu	not impaired
Caddo River	8040102	019	2F		E	Cu	not impaired
Wabbaseka Bayou	8020401	003	3A	WSB01	M	SI	TMDL
Bayou Meto	8020402	907	3B	ARK0060	M	Pb	YE
Poteau River	11110105	031	3I	ARK0055	M	Zn	TMDL
Poteau River	11110105	031	3I	ARK0055	M	SI	not impaired
Bayou DeView	8020302	002	4B	WHI0033	M	FC	not impaired
Bayou DeView	8020302	003	4B		E	FC	not impaired
Cache River	8020302	017	4B		E	FC	not impaired
Village Creek	11010013	006	4C	VGC01&03	M	DO	Y
Village Creek	11010013	007	4C		E	DO	Y
Village Creek	11010013	008	4C		E	DO	Y
Overflow Creek	11010014	004	4E		E	SI	not impaired
Overflow Creek	11010014	006	4E	OFC01	M	SI	not impaired
Ten Mile Creek	11010014	009	4E	TMC01	M	SI	TMDL
Salado Creek	11010004	012	4F	WHI0166	M	FC	not impaired
Strawberry R.	11010012	004	4G		E	SI	TMDL

Strawberry R.	11010012	005	4G		E	SI	TMDL
Strawberry R.	11010012	006	4G	WHI0024	M	SI	TMDL
Holman Creek	11010001	059	4K	WHI0070	M	Cl	not impaired
Holman Creek	11010001	059	4K	WHI0070	M	SO4	not impaired
War Eagle Creek	11010001	060	4K		E	Cl	not impaired
War Eagle Creek	11010001	060	4K		E	SO4	not impaired
Fifteen Mile Bayou	8020203	006	5A	FRA0028	M	SI	not impaired
Tyronza River	8020203	012	5A	FRA0033	M	SI	TMDL
L' Anguille River	8020205	004	5B	LGR01	M	SO4	not impaired

Appendix IV – Listing of thirty-six (36) water bodies shown as impaired for Beryllium on the 2006 §303(d) List.

Stream Name	HUC	RCH	P-Seg	Station ID	Pollutant
Columbia Lake	11140203	Lake	1A		Be
Earling	11140205	Lake	1A		Be
DeQueen	1114109	Lake	1C		Be
Millwood	11140109	Lake	1C		Be
Able's Creek	8040205	911	2B	OUA0158	Be
Big Creek	8040204	005	2C	OUA0043	Be
Big Creek	8040203	904	2C	OUA0018	Be
Saline River	8040204	001	2C	OUA0010A	Be
Saline River	8040204	002	2C	OUA0010A+	Be
Saline River	8040204	004	2C		Be
Saline River	8040204	006	2C	OUA0118	Be
Saline River	8040203	007	2C	OUA0042	Be
Big Cornie Creek	8040206	015	2E	OUA0002	Be
Caddo River	8040102	016	2F	OUA0023	Be
Cove Creek	8040102	970	2F	OUA0159	Be
Chamberlain Creek	8040102	971	2F	OUA0100	Be
D.C. Creek	8040102	923	2F	OUA0044T	Be
DeGray Lake	8040102	Lake	2F		Be
Lucinda Creek	8040102	975	2F	OUA0171B	Be
Ouachita Lake	8040101	Lake	2F		Be
Ouachita River	8040102	007	2F	OUA0006	Be
Arkansas River	11110207	01	3C	ARK0048	Be
Fourche Creek	11110207	024	3C	ARK0147C	Be
Beaverfork Lake	11110205	Lake	3D		Be
Atkins Lake	11110203	Lake	3F		Be
Overcup Lake	11110203	Lake	3F		Be
Petit Jean River	11110204	011	3G	ARK0034	Be
Lost Creek Ditch	8020302	909	4B	WHI0172	Be
Bear Creek	11010003	045	4I	WHI0174	Be
Crooked Creek	11010003	049	4I	WHI0067	Be
Dry Fork Creek	11010001	043	4K	WHI0127	Be
Kings River	11010001	042	4K	WHI0123	Be
Osage Creek	11010001	047	4K	WHI0130	Be
War Eagle Creek	11010001	034	4K	WHI0116	Be
White River	11010001	027	4K	WHI0106	Be
Yocum Creek	11010001	052	4K	WHI0137	Be
St. Francis River	8020203	014	5A	FRA0008	Be

Appendix V – List of seventy-nine (79) water body pollutant pairs EPA is proposing to add to the 2006 §303(d) List. In the table below, the proposed additions are grouped into six categories with a general justification for the particular group (bolded text). The shaded rows below each group contain the stream name, HUC, reach, planning segment, Station ID, whether the assessment was based on monitoring data or evaluated based on upstream/downstream data, and pollutant. The non-shaded rows contain EPA’s detailed justification for including on the list.

Stream Name	HUC	RCH	P-Seg	Station ID	Assess	Pollutant
EPA Justification: The group of impaired waters (27) listed below were on the 2004 §303(d) List and omitted from the 2006 §303(d) List. These should be included on the 2006 §303(d) List and can be placed in Category 4a for the 2008 List because TMDLs were completed in 2007. Priority Ranking: High.						
Lake Frierson	8030202	Lake	4B		M	SI
Bear Creek Lake	8020205	Lake	5A		M	NU
Horseshoe Lake	8020203	Lake	5A		M	NU
Old Town Lake	8020303	Lake	5A		M	NU
Mallard Lake	8020204	Lake	5C		M	NU
Grand Lake	8050002	Lake	2A		M	NU
First Old River	11140106	Lake	1B		M	NU
Jack's Bayou	8040205	904	2B	OUA0150	M	FC
Little Red River	11010014	007	4E	WHI0059	M	FC
Little Red River	11010014	008	4E		E	FC
Little Red River	11010014	010	4E		E	FC
Little Red River	11010014	012	4E		E	FC
Overflow Creek	11010014	004	4E		E	FC
Overflow Creek	11010014	006	4E	OFC01	M	FC
S. F. Little Red River	11010014	038	4E	SRR01&02	M	FC
Ten Mile Creek	11010014	009	4E	TMC01	M	FC
Caney Creek	11010012	015	4G	WHI0143Q&R	M	FC
Cooper Creek	11010012	003	4G	WHI0143S	M	FC
Data Creek	11010009	902	4G	WHI065	M	FC
L. Strawberry River	11010012	010	4G	WHI0143H+	M	FC
L. Strawberry River	11010012	010	4G	WHI0143H+	M	EC
Mill Creek	11010012	015	4G	WHI0143N	M	FC
Mill Creek	11010012	015	4G	WHI0143N	M	EC
Reed's Creek	11010012	014	4G	RDC01	M	FC
Strawberry R.	11010012	008	4G		E	FC
Strawberry R.	11010012	011	4G	SBR01	M	FC
Strawberry River	11010012	011	4G	WHI0143A		FC
The group of 15 impaired waters listed below were placed into Category 4b without the proper justification. These waters are still impaired and should be in Category 5. Priority Ranking: High						
Bear Creek	11140109	025	1C	RED0033	M	NO3
EPA Justification: 16/56 samples (>10%) exceed the nitrate criterion of 10 mg/l. ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Holly Creek	11140109	013	1C	RED0034B	M	Zn

EPA Justification: 3/20 samples exceed the acute criterion for Zn; 4/20 samples (>10%) exceed the chronic criterion for Zn; ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Mine Creek	11140109	933	1C	RED0048B	M	DO
EPA Justification: 7/44 samples (>10%) exceed the primary season DO criterion of 5mg. IADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Mine Creek	11140109	933	1C	RED0048B	M	CU
EPA Justification: 4/30 samples exceed the acute criterion for Cu; 8/30 samples (>10%) exceed the chronic criterion for Cu; ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Mine Creek	11140109	933	1C	RED0048B	M	Zn
EPA Justification: 3/30 samples exceed the acute criterion for Zn; 6/30 samples (>10%) exceed the chronic criterion for Zn; ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Rolling Fork	11140109	919	1C	RED0058	M	Cu
EPA Justification: 3/26 samples exceed the acute criterion for Cu; 7/26 samples (>10%) exceed the chronic criterion for Cu; ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Flat Cr.	8040201	706	2D	OUA0137C	M	Cu
EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Salt Creek	8040201	806	2D	OUA0137D	M	Cu
EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Sager Creek	11110103	932	3J	ARK0005	M	NO3
EPA Justification: 12/57 samples (>10%) exceed the nitrate criterion of 10 mg/l. ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Town Branch	11110103	901	3J	ARK0056	M	TP
EPA Justification: ADEQ delisted to Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Flat Cr.	8040201	706	2D	OUA0137C	M	Zn
EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Short Mountain Cr	11110202	043	3H	ARK11B	M	Cu
EPA Justification: 4/19 samples (>10%) exceed the chronic criterion for Cu; ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Hicks Creek	11010004	015	4F	WHI0065	M	FC
EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Bayou Meto	8020402	007	3B	ARK0050	M	Zn
EPA Justification: 3/24 samples exceed acute criterion for zinc; only 1 exceedance in 3 years is acceptable. ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance.						
Big Creek	8040203	904	2C	OUA0018	M	OE
EPA Justification: Originally listed for organic enrichment (OE) on 2004 list. ADEQ replaced OE listing with DO and listed in Category 4b for TP and NO3 because of a miscommunication. At						

the time, a 3rd party TMDL to address the OE listing was underway. Because EPA did not approve the TMDL until January 16, 2007, the OE listing should remain. EPA is taking no action on the TP and NO3 listing in Category 4b because the data do not support such a listing.

EPA Justification: These 4 waters listed below were not carried forward to the 2006 list. See EPA's 2004 Record of Decision (ROD) (pages 11-14) for a discussion of the rationale for these listings. Priority Ranking: High

Muddy Fork	11110103	027	3J		M	TP
Osage Creek	11110103	030	3J	ARK0041	M	TP
Osage Creek	11110103	930	3J	ARK041 (eval)	M	TP
Spring Creek	11110103	931	3J	SPG03+	M	TP

TMDLs are currently under review for the 10 waters listed below. These waters are still impaired as shown by the individual justifications. Priority Ranking: High

Elcc Trib.	8040201	606	2D	OUA137A&B	M	Cu
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EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance. A TMDL for Cu is currently under EPA review.

Elcc Trib.	8040201	606	2D	OUA137A&B	M	NO3
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EPA Justification: ADEQ listed in Category 4b in 2006, but the justification provided did not meet the requirements set out in the 2006 IR Guidance. A TMDL for NO3 is currently under EPA review.

Holly Creek	11140109	013	1C		M	FC
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EPA Justification: Originally listed in 2002. No new data to support delisting.

Mine Creek	11140109	033	1C	RED0048B+	M	FC
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EPA Justification: Originally listed in 2002. No new data to support delisting.

Mine Creek	11140109	033	1C	RED0048A & 18B	M	EC
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EPA Justification: Geometric mean of 10 primary contact season E. coli samples for station RED048A is 202.93. Geometric mean of 8 primary contact season E. coli samples for station RED018B is 127.85. This exceeds the fecal coliform geometric mean criterion of 126.

Bayou Bartholomew	8040205	001	2B	OUA13 & OUA12A	M	Cl
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EPA Justification: 4/13 samples (>10%) exceed the site specific criterion of 30 mg/l Cl.

Cypress Bayou	8020301	010	4D	CPB01	M	FC
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Cypress Bayou	8020301	011	4D		E	FC
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Cypress Bayou	8020301	012	4D		E	FC
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EPA Justification: Geometric mean of 9 primary contact season fecal coliform samples is 230.43. This exceeds the fecal coliform geometric mean criterion of 200. Reaches 11 and 12 are evaluated on station CPB01.

Saline River	8040204	006	2C	OUA0118	M	SO4
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EPA Justification: 8/59 samples (>10%) exceed the site specific criterion of 120 mg/l.

The 14 waters listed below were on the 2004 §303(d) List; however, they were not carried forward to the 2006 §303(d) List. In some cases there was no new data available to take a delisting action. In other cases new data supported the continued listing on the 2006 §303(d) list. Priority Ranking: Medium

Salt Creek	8040201	806	2D	OUA137D	M	pH
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EPA Justification: 5/5 (100%) samples (100%) are below a pH of 6.

Little Cossatot R.	11140109	?	1C	LCO01	M	TDS
EPA Justification: 3/6 samples exceed the site specific criterion of 70 mg/l. Based on a sample size of 12 and a 10% exceedance rate, 2 exceedances are acceptable; however, there are 3 exceedances.						
Glaise Creek	11010013	021	4C	GSC01	M	FC
EPA Justification: New data; 3/8 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; in addition the geometric mean of 8 primary contact season fecal coliform samples is 299.33. This exceeds the fecal coliform geometric mean criterion of 200.						
Big Creek	11010014	018	4F	WHI0164	M	FC
EPA Justification: New data; Geometric mean of 10 primary contact season fecal coliform samples is 521.72. This exceeds the fecal coliform geometric mean criterion of 200.						
Greenbrier Creek	11010014	017	4F	WHI0167	M	FC
EPA Justification: New data; Geometric mean of 10 primary contact season fecal coliform samples is 236.01. This exceeds the fecal coliform geometric mean criterion of 200.						
Village Creek	11010013	012	4C	VGC02	M	FC
EPA Justification: New data; Geometric mean of 10 primary contact season fecal coliform samples is 238.33. This exceeds the fecal coliform geometric mean criterion of 200.						
Cache River	8020302	028	4B	CHR04	M	FC
EPA Justification: New data; Geometric mean of 10 primary contact season fecal coliform samples is 214.65. This exceeds the fecal coliform geometric mean criterion of 200.						
Walnut Creek	11110202	902	3H	ARK125	M	FC
EPA Justification: Listed in 2004; 2/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Big Piney Creek	11110202	018	3H	ARK105	M	FC
EPA Justification: Listed in 2004; 3/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Hurricane Creek	11110202	022	3H	ARK119	M	FC
EPA Justification: Listed in 2004; 2/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Little Piney Creek	11110202	024	3H	ARK104	M	FC
EPA Justification: Listed in 2004; 3/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Little Piney Creek	11110202	025	3H	ARK126	M	FC
EPA Justification: Listed in 2004; 2/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Mill Creek	11110202	901	3H	ARK110	M	FC
EPA Justification: Listed in 2004; 2/4 samples (>25%) exceeded the fecal coliform criterion of 400 col/ml; no new data has been collected to justify a delisting.						
Strawberry R.	11010012	009	4G	SBR02	M	FC
EPA Justification: No new fecal coliform data has been collected since initial listing in 2004 by ADEQ.						
EPA determined that the above 9 waters are impaired but were omitted from the 2006§303(d) List. Individual justifications are provided. Priority Ranking: Low						
St. Francis River	8020203	008	5A	FRA0013	M	SI

St. Francis River	8020203	009	5A		E	SI
EPA Justification: 9/35 samples (> 20%) exceed the all flows turbidity criterion of 100 NTU. Reach 009 is evaluated (E) based on station FRA0013.						
Melton's Creek	8040205	903	2B	OUA0148	M	SI
EPA Justification: 4/10 samples (> 20%) exceed the all flows turbidity criterion of 32 NTU. Based on a samples size of 12; need 3 exceedances to list.						
Dorcheat Bayou	11140203	024	1A		E	Pb
EPA Justification: 5/24 samples (>10%) exceed the criterion for Pb.						
Blue Bayou	8020301	009	1C	BLB0001	M	FC
EPA Justification: Geometric mean of 11 fecal coliform data points for the primary contact season is 288.70. This exceeds the geometric mean criterion of 200.						
Bull Creek	8020301		4D	UWBLB01	M	FC
EPA Justification: New data; Geometric mean of 9 primary contact season fecal coliform samples is 260.71. This exceeds the fecal coliform geometric mean criterion of 200.						
Bearhouse Creek	8040205	901	2B	OUA0155	M	Cu
EPA Justification: 2/7 samples exceed acute criterion for copper; only 1 exceedance in 3 years is acceptable.						
M. Fk. Little Red	11010014	030	4E	UWMFK01	M	SI
EPA Justification: 4/14 samples (> 20%) exceed the all flows turbidity criterion of 19 NTU.						
South Big Creek	11010012	013	4G	WHI0143J	M	FC
EPA Justification: Geometric mean of 15 primary contact season fecal coliform samples is 244.13. This exceeds the fecal coliform geometric mean criterion of 200.						

Appendix VI - List of sixty-three (63) water body pollutant pairs ADEQ delisted during the 2006 §303(d) List cycle. In the table below, the shaded rows contain the stream name, HUC, reach, planning segment, Station ID, whether the assessment was based on monitoring data or evaluated based on upstream/downstream data, and pollutant. The non-shaded rows contain a detailed justification for each delisting or group of delistings.

Stream Name	HUC	RCH	P-Seg	Station ID	Assess	Pollutant
Boeuf River	8050001	018	2A	OUA015A	M	SO4
Boeuf River	8050001	018	2A	OUA015A	M	TDS
Boeuf River	8050001	018	2A	OUA015A	M	SI
Boeuf River	8050001	018	2A	OUA015A	M	Cl
Poteau River	11110105	001	3I	ARK0014	M	SI
Poteau River	11110105	031	3I	ARK0055	M	Cu
Poteau River	11110105	031	3I	ARK0055	M	TP
Bayou DeView	8020302	004	4B	BDV02	M	SI
Bayou DeView	8020302	005	4B		E	SI
Bayou DeView	8020302	006	4B		E	SI
Bayou DeView	8020302	007	4B		E	SI
Bayou DeView	8020302	009	4B	WHI0026	M	SI
Cache River	8020302	016	4B	WHI0032	M	SI
Cache River	8020302	017	4B		E	SI
Cache River	8020302	018	4B	CHR02	M	SI
Cache River	8020302	019	4B		E	SI
Cache River	8020302	020	4B	CHR03	M	SI
Cache River	8020302	021	4B		E	SI
Cache River	8020302	027	4B		E	SI
Cache River	8020302	028	4B	CHR04	M	SI
Cache River	8020302	029	4B		E	SI
Cache River	8020302	031	4B		E	SI
Cache River	8020302	032	4B		E	SI
White River	11010001	023	4K	WHI0052	M	SI
West Fork	11010001	024	4K	WHI0051	M	SI
Osage Creek	11010001	045	4K	WHI069	M	TP
Strawberry River	11010012	008	4G		E	SI
Strawberry River	11010012	009	4G	SBR02	M	SI
L. Strawberry River	11010012	010	4G	WHI0143H+	M	SI
Strawberry River	11010012	011	4G	SBR01	M	SI
Village Creek	11010013	006	4C	VGC01&03	M	SI
Village Creek	11010013	007	4C		E	SI
Village Creek	11010013	008	4C		E	SI
Village Creek	11010013	012	4C	VGC02	M	SI
Village Creek	11010013	014	4C		E	SI
White Oak Creek	11110203	927	3F	ARK0053	M	SI
Cadron Creek	11110205	011	3D	CCR01	M	SI
Cadron Creek	11110205	012	3D		E	SI
Rolling Fork	11140109	919	1C	RED0030&58	M	NO3
Rolling Fork	11140109	919	1C	RED0030&58	M	TP
Days Creek	11140302	003	1B	RED0004A	M	NO3
Grand Lake	8050002	Lake	2A			NU

First Old River	11140106	Lake	1B		M	NU
Delisting Justification: Delisted to Category 4a because a TMDL has been established by EPA.						
Big Creek	11140203	023	1A	BIG01	M	Cl
Big Creek	11140203	023	1A	BIG01	M	SO4
Big Creek	11140203	023	1A	BIG01	M	TDS
Delisting Justification: Listed in error in 2004; assessed against wrong criteria in 2004. This station is upstream of Dismukes Bayou. The correct CL/SO4/TDS standards are 250/250/500 mg/L.						
Mine Creek	11140109	033	1C	RED0048B+	M	SO4
Delisting Justification: New data indicates the site specific sulfate criterion is being met.						
Hurricane Creek	8040203	006	2C	OUA0031	M	DO
Delisting Justification: New data indicates the DO criteria are being met. Listed as reach 004 in 2004, but the correct reach is 006.						
Fourche La Fave R.	11110206	007	3E	ARK0037	M	Temp
Delisting Justification: Temperature criterion is being met.						
Poteau River	11110105	031	3I	ARK0055	M	NO3
Drinking water use removed from segment; NO3 criteria do not apply.						
Cache River	8020302	016	4B	WHI0032	M	FC
Delisting Justification: New data indicates the fecal coliform criterion is being met.						
Hicks Creek	11010004	015	4F	WHI0065	M	TP
Hicks Creek	11010004	015	4F	WHI0065	M	Cu
Delisting Justification: Recent data indicates the copper criterion is being met. The TP listing for 2004 was in error, meeting nutrient narrative criteria.						
War Eagle Creek	11010001	060	4K	WHI0113 & 114	E	TDS
Delisting Justification: TDS criterion is being met based on data for Stations WHI0113 and WHI0114.						
Saline River	8040203	007	2C	OUA0042	M	TDS
Lost Creek	8040203	008	2C		E	TDS
Saline River	8040203	009	2C		E	TDS
Delisting Justification: New data indicates the TDS criterion is being met.						
Bayou De L'outré	8040202	006	2D	OUA0005	M	Cu
Bayou De L'outré	8040202	007	2D	OUA0005	E	Cu
Bayou De L'outré	8040202	008	2D	OUA0005	E	Cu
Delisting Justification: New data indicates the copper criterion is being met.						
Blackfish Bayou	8020203	003	5A		E	SI
Blackfish Bayou	8020203	005	5A		E	SI
Blackfish Bayou	8020203	007	5A	FRA0027	M	SI
Delisting Justification: Listed in error; assessed against wrong criteria for the 2004 listing cycle. The correct turbidity standards are 250 NTU for all flows and 75 NTU for base flow.						

Appendix VII – Listing of administrative records used in the review of the Arkansas 2006 §303(d) List.

1. Arkansas Water Quality Standards, Arkansas Pollution Control and Ecology Commission, Regulation 2, April 2004.
2. EPA, 2007, EPA Record of Decision on the 2004 §303(d) List.
http://www.epa.gov/region06/6wq/npdes/tmdl/303d/ar/2004-list-rod_final.pdf
3. EPA, 2005, *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, EPA Office of Water, July 29, 2005.
<http://www.epa.gov/owow/tmdl/2006IRG/>
4. 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.
<http://www.epa.gov/owow/tmdl/tmdl0103/index.html>
5. EPA 2002, *Consolidated Assessment and Listing Methodology*, EPA Office of Water, July 2002. <http://www.epa.gov/owow/monitoring/calm.html>
6. 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 2000 Section 303(d) Lists*. <http://www.epa.gov/owow/tmdl/2000fact.html>
7. EPA 2001b, November 19, 2001 memorandum from Robert H. Wayland, III, Director, Office of Wetlands, Oceans, and Watersheds, Office of Water, EPA Headquarters regarding *2002 Integrated Water Quality monitoring and Assessment Report Guidance*.
<http://www.epa.gov/owow/tmdl/2002wqma.html>
8. 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.
9. 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.” <http://www.epa.gov/OWOW/tmdl/lisgid.html>
10. 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.
<http://www.epa.gov/owow/monitoring/305bguide/v1ch6.pdf>

- 11.** 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.”
- 12.** 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.” <http://www.epa.gov/owow/tmdl/1994guid.html>
- 13.** EPA 1992a, July 24, 1992 Federal Register Notice, *40 CFR Parts 122, 123, 130*, revision of regulation, 57 Fed. Reg. 33040.
- 14.** 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.”
- 15.** EPA 1992c, October 30, 1992 memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA Headquarters, to Water Quality Branch Chiefs, Regions I-X, regarding “Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation.”
- 16.** EPA 1991, April 1991. *Guidance for Water Quality Based Decisions: The TMDL Process*, App. C. EPA 440/4-91-001 U.S. Environmental protection Agency, Office of Water, Washington, DC. <http://www.epa.gov/owow/tmdl/decisions/>
- 17.** 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
- 18.** 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.