Responsiveness Summary to Comments Concerning Arkansas's Draft 2016 303(d) List

The Arkansas Department of Environmental Quality (ADEQ) Office of Water Quality appreciates all of the individuals and entities who submitted comments concerning the draft 2016 Impaired Waters List (303(d) List). ADEQ would like to reiterate this request for public comments was limited to the draft 2016 303(d) List. Several comments were received addressing other ADEQ documents or issues, such as Regulation No. 2, that are not open to public comment at this time. ADEQ encourages these commenters to re-submit those comments when those documents or issues are opened for public review and comment.

General Comments

Comment 1: Several individuals requested an extension of the public comment period stating that they needed more information and more time to review the list of impaired waterbodies.

Response 1: ADEQ granted an extension of the public comment period as requested.

Comment 2: Numerous commenters requested that the frequency and coverage of the monitoring efforts of ADEQ be increased, or that special studies be performed in order to better assess the water quality of the following waterbodies:

Beaver Lake	Hicks Creek	Holman Creek	Chickalah Creek
Big Creek	Bear Creek	Mill Creek	Friley Creek
ELCC Tributary	Flat Creek	Salt Creek	Little Mulberry River

Comment 3: In addition, comments were received requesting ADEQ to:

- Perform special watershed surveys to better identify sources of pollutants in waterbodies used as a drinking water source;
- Develop specific mineral standards and assessment criteria to better assess the Industrial and Agriculture Water Supply designated uses;
- Increase monitoring with the aim of developing water quality standards and better assessment methods for nutrients.

Response 2 & 3: ADEQ acknowledges these comments but has determined they do not relate to the 303(d) List. ADEQ acknowledges the commenter's request regarding additional sampling and criteria development but has determined this is beyond the scope of the draft 303(d) List.

Comment 4: A comment was received related to ADEQ's Data Integrity Review which asked if this indicated there were problems or questions about the data and assessment used by ADEQ. The commenter requested that ADEQ make the results of the Data Integrity Review available to the public and stated that if a revised 303(d) List was developed it should be reissued for public comment. In addition, the commenter wanted the Integrated Water Quality Monitoring and Inventory Report (305(b) Report) issued for public comment. The commenter also requested

that a narrative explanation for listing or delisting stream segments be included with the public notice.

Response 4: ADEQ continuously performs internal reviews of work product. The Data Integrity Review was undertaken in response to comments received during the public comment period. ADEQ is not required to submit a revised 303(d) List for public comment after the initial public comments were received. Additionally, there are no requirements for the 305(b) Report to be public noticed. Both the final 303(d) list and the final 305(b) Report will be made available on the ADEQ website.

Comment 5: A comment was received regarding ADEQ's compilation of the data used to make assessments. The commenter requested that the data and any ADEQ-developed work product be made available to the public at the onset of the public comment period.

Response 5: ADEQ acknowledges this comment and will consider this suggestion for the 2018 listing cycle.

Comments Regarding Beaver Lake

Comment 1: A comment was received concerning why the upper portion of Beaver Lake had been delisted as attaining the water quality standard for turbidity, but went on to state that per phone conversations with ADEQ staff, they understood the upper portion of Beaver Lake will remain listed as impaired. The commenter stated that they are also concerned there is a lack of data from Beaver Lake and has requested that the sampling frequency be increased.

Response 1: ADEQ acknowledges the concerns of the commenter and recognizes that increased monitoring would produce a better database of information which would lead to a more accurate assessment of the water quality of Beaver Lake. Due to a lack of new data, upper portion of Beaver Lake will remain listed as impaired for turbidity.

Comment 2: A comment was received stating that the monitoring station on Holman Creek should probably be WHI0070 instead of WHI0170. It was also noted that Holman Creek reach 059 was on the 303(d) List in Category 5 for TDS while this reach was also on the removed listing table.

Response 2: ADEQ acknowledges the comment and appreciates the commenter identifying this typographical error the 303 (d) List has been revised to reflect WHI0070.

Holman Creek reach 859 is the correct notation for the removed listings table. Holman Creek reach 059 is impaired for TDS and will remain on the 303(d) List in Category 5 for TDS.

Comment 3: A commenter requested an explanation of the reasoning behind delisting the West Fork of the White River for temperature.

Response 3: Based on temperature data collected within the period of record, the West Fork of the White River is currently meeting the water quality standard. There were only two samples within the period of record that exceeded the water quality standard.

Comment 4: The commenter would like to know which "pathogen" was impairing the upper portion of Beaver Lake and other pathogen listings and why the specific pathogen is not listed.

Response 4: The 2006 (carried forward to 2008) Integrated Report Guidance document (EPA 2006) and the Consolidated Assessment and Listing Methodology, Chapter 10, July 2002, clearly indicate that sites that are impaired because of bacteria should be listed for pathogens, not the specific bacteria species. Arkansas' most recently approved 303(d) List is the 2008 version.

Comment 5: The commenter requested that the designated use not supported for Reach -023 of the White River and Reach -059 of Holman Creek be identified. They also pointed out that there are several waterbodies listed on the 2016 303(d) List that do not have a designated use listed as impaired or a source listed.

Response 5: ADEQ must have scientifically defensible data indicating a designated use is impaired. The source of many of the causes of standards non-attainment is difficult to determine and in some instances cannot be definitively determined. Some designated uses, such as contact recreation and domestic water supply, are simply assessed as impaired by chemical water quality parameters alone. The fisheries designated use proves much more difficult in determining impairment status strictly utilizing chemical water quality parameters. In such cases, the stream segment is listed for not attaining water quality standards and not for the impairment of a designated use.

Comment 6: The commenter requested that certain stream reaches listed as impaired within the Beaver Lake watershed be listed as a high priority because the lake is used as a drinking water supply.

Response 6: Neither Town Branch nor Holman Creek were listed as high priority because they are both headwater streams of War Eagle Creek, 25-plus river miles upstream of Beaver Lake. War Eagle Creek at Hwy 45 (WHI0116), just above Beaver Lake, is meeting all standards.

Comments Concerning the Buffalo River Tributaries

More than 150 comments were received requesting three tributaries to the Buffalo River, Mill Creek, Big Creek, and Bear Creek be added to the 2016 list of impaired waterbodies.

The commenters were concerned *Escherichia coli* concentrations in Mill Creek exceeded the state water quality standard. The concern was that Mill Creek would not be safe to swim in nor would the Buffalo River downstream of Mill Creek.

The commenters were also concerned the dissolved oxygen concentrations in Big Creek and Bear Creek are not meeting the state water quality standard. They were concerned that the aquatic life communities in these two streams, and downstream in the Buffalo River may be adversely affected.

ADEQ has assessed the data associated with these three tributaries in accordance with the current Assessment Methodology established for the development of the list of impaired waterbodies for 2016. Most of the data used by the commenters did not meet the requirements as set forth in the methodology as being distributed over at least three seasons and two years. In addition, ADEQ does not currently have an assessment methodology to address continuous recording in situ data.

ADEQ appreciates these comments from individuals who have taken an interest in protecting the waters of the state and hopes that this interest will continue. ADEQ will be investigating methods to assess continuous recorded data to assist in the evaluation of data for future assessments. In addition, ADEQ will stay informed about the water quality in these waterbodies and will continue to monitor the issue.

Comments Concerning the Eleven Point River

Comment 1: Comments were received concerning the delisting of turbidity for the Eleven Point River and the protection of the Ozark Hellbender. It was stated that there is currently a rapidly growing agriculture industry in the watershed and this land use change is going to cause more sediment to enter the river. In particular, they are concerned with the delisting of the Current River and the potential for a loss of CWA Section 319 funding to address sediment loadings to the river. A recommendation was made to develop a TMDL for turbidity and initiate a watershed management plan to improve water quality in the Eleven Point.

Response 1: ADEQ acknowledges these concerns over the protection of the federally endangered Ozark Hellbender. However, current water quality data for turbidity from the Eleven Point River indicate attainment of the water quality standards and assessment criteria assigned to the river. However, the Arkansas Natural Resources Commission, the state agency that administers the CWA 319 program for the state, has provisions in their funding guide to continue work in the Current River watershed. In addition, ADEQ prioritizes TMDL development of impaired waters on Category 5 of the 303(d) list.

Comments Regarding Norfork River

Comment 1: Comments were received stating the Norfork River below Norfork Dam should remain on the list of impaired waterbodies. Concerns were raised that ADEQ used dissolve oxygen data from one station operated by the USGS to make this determination. It was also

stated that recent data collected in August, September, and October (2015 implied) indicated that dissolved oxygen data were routinely near 4.0 mg/L.

Response 1: ADEQ used data from three sample locations at and below Norfork Dam. The data collected within the period of record (April 1, 2010 to March 31, 2015) indicate that the dissolved oxygen concentrations in Norfork River meet the standards and criteria associated with the River. The data collected after March 31, 2015 will be evaluated during the 2018 assessment. In addition, there is a total maximum daily load (TMDL) in affect for dissolved oxygen in the Norfork River. This TMDL must continue to be implemented if the stream reach is listed as meeting water quality standards (Category 1b) or not meeting the standards (Category 4a).

APC&EC Commissioners

Comment 1: It was noted that the 303(d) website needed revisions to provide the public with a fuller understanding of the 303(d) listing process.

Response 2: The website was updated on March 2, 2016.

Arkansas Department of Health

Comment 1: A comment was received emphasizing that any impaired waterbody that is in the watershed of a drinking water source should be identified as a "high priority" on the list of impaired waterbodies. The commenter requested that these waters receive preferential consideration for increased monitoring, TMDL development, permit compliance, stricter permit requirements, and an increased effort to control nonpoint source pollution.

Response 1: The protection of domestic water supply sources is a priority of ADEQ. It is also one of the determining criteria for prioritizing restoration and protection efforts among numerous state and federal government entities.

Arkansas Environmental Federation

Comment 1: A comment was received that there is a large discrepancy between the number of water bodies listed as impaired between those sorted by planning segment and those sorted by counties. The commenter requested that this listing practice be discontinued to reduce the confusion between the two lists.

Response: The commenter is correct. A planning segment encompasses an entire watershed and therefore a stream segment that is impaired within a planning segment will only appear once. By

contrast, stream segments may pass through several counties and may appear several times; thus producing a higher number of records. ADEQ acknowledges this comment and will consider these suggestions for the 2018 listing cycle.

Comment 2: A comment was received stating that it is inappropriate to use the same criteria to assess both the domestic water supply designated use and the industrial and agriculture water supply designated uses. It was stated that the quality of water necessary to support the domestic water supply use is much greater than the quality of the water needed to support the industrial and agriculture supply designated uses.

Response 2: ADEQ does not have scientifically defensible data to make industrial and agriculture water supply designated determinations using other criteria.

Comment 3: The commenter was concerned that the metrics, scoring criteria, and designated use support decision criteria has changed from being quite similar to the EPA rapid bioassessment criteria to a more stringent assessment method being implemented by the state.

Response 3: ADEQ acknowledges the comment and will take their suggestions about the assessment methodology into consideration for the 2018 listing cycle.

EPA Comments

Comment 1: The State did not provide evidence, rationale, or justification for delisting stream segments and as such does not meet requirements for public participation. EPA cites 40CFR130.7(b) and related guidance document as its reasoning for the above statement.

Response 1: ADEQ public noticed the draft 2016 303(d) List for public comment. This list includes Categories 4 and 5. This draft list and information supporting that listing were provided to the public during the public comment period. In addition to this information, ADEQ provided the public a delisting table for the public's reference. As noted in EPA's comment, federal regulations require submitting "documentation to the Regional Administrator" supporting any delisting. This information has been submitted to the Regional Administrator along with this Response to Comments..

Table 1.

Stream Name	Parameter	Reach	#Exceedances	N	Response
Beech Creek	D.O.	025			Delisted in 2014
Bodcau Creek	pH	006			Delisted in 2014
Kings River	TDS	042	10	57	Does not exceed 25% of samples
Prairie Creek	D.O.	048	8	13	Exceeds and will be listed

Red River	TDS	003	17	57	Included in Category 4a
Red River	TDS	007	23	55	Included in Category 4a
Red River	TDS	011	17	57	Included in Category 4a
Smackover Creek	D.O.	006	11	20	Exceeds and will be listed
Sulphur River	Temperature	006	9	56	Included in Category 4a

Comment 2: ADEQ needs to provide to the public supporting documentation describing how the exceedance rate change (10% to 25%) for site specific minerals criteria is an appropriate and scientifically defensible frequency.

Response 2: This comment addresses the Assessment Methodology, which includes the exceedance rate for listing site specific minerals criteria in developing the 303(d) List. This information was included in the public notice. For water quality limited segments, states are required to submit to the Regional Administrator documentation to support the listing required by 40 CFR 130.7 (b)(1) and (b)(2), including a description of the methodology used to develop the list 40 CFR 130.7(b)(6)(i). EPA may not agree with the methodology employed by ADEQ, but this information was included in the public notice. The change from 10% to 25% exceedance rate was part of a negotiated solution with the regulated community to address issues raised by Act 954 of 2013 (now repealed), the definition of critical flow established for minerals (harmonic mean flow) in the 2014 Triennial Review, and the removal of the default value of 4 cfs used in establishing permit limits for minerals in small streams. The interconnection of these various issues are reflected in the attached Interim Strategy for Mineral Permit Limits, dated January 23, 2014. The site-specific minerals 25% exceedance rate is more consistent with the instream harmonic mean flow and surrounding states. The harmonic mean flow for a stream is generally represented by 30%-50% of overall stream flow. The harmonic mean flow is used in the development of minerals permit limitations per Reg.2.106.

Table 2a. Segments where incorrect standard was applied								
Stream Name	**HUC**	**Reach**	**Parameter**	**Correction**	**EPA**	**#Exc.***	**N**	**Response**
Saline River	08040204	002	Sulfate	40		46		Criteria is 40 mg/L; not listed
Saline River	08040204	002	Sulfate	40				Criteria is 40 mg/L; not listed
Saline River	08040204	002	TDS	120				Criteria is 120 mg/L; not listed
Bayou DeView	08020302	009	Chloride	58				Criteria is 58 mg/L; not listed
Tyronza River	08020203	909	Sulfate	60				Criteria is 60 mg/L; not listed
Saline River	08040204	002	TDS	120				Criteria is 120 mg/L; not listed
Bayou DeView	08020302	004	TDS	411.3		3	12	Criteria is 411.3 mg/L; not listed
Bayou DeView	08020302	004	Chloride	48		3	12	Criteria is 48 mg/L; not listed
North Fork Saline	08040203	011	TDS	120				Criteria is 120 mg/L; not listed
Bayou DeView	08020302	009	TDS	411.3				Criteria is 411.3mg/L; not listed
White River	11010003	902	TDS	180		3	59	Criteria is 160 mg/L; not listed
North Fork Saline	08040203	011	Sulfate	40				Criteria is 40 mg/L; not listed

- Number of exceedances during period of record

Table 2b. Segments with TMDL's Category 4a				
Stream Name	**HUC**	**Reach**	**Parameter**	**Response**
Red River	11140201	007	TDS	Included in Category 4a
Red River	11140201	011	TDS	Included in Category 4a
Red River	11140201	003	TDS	Included in Category 4a
Sulphur River	11140302	006	Sulfate	Included in Category 4a

Table 2c. Segments listed for minerals which should be evaluated using 25% exceedance							
Stream Name	**HUC**	**Reach**	**Parameter**		**#Exc.**	**N**	**Response**
Tyronza River	08020203	909	Sulfate		Only 4	13	Only 4 exceedances, need 5 to list
Cache River	08020302	018	Sulfate		3	14	Need 5 to list
Cache River	08020302	018	TDS		3	14	Need 5 to list
Sulphur River	11140302	006	Sulfate		12	~~57~~ 60	60 samples in dataset, need 16 to list
Mine Creek	11140109	934	Chloride		11	~~58~~ 61	61 samples in dataset, need 16 to list
Mine Creek	11140109	933	Chloride		11	58	Need 16 to list
Red River	11140106	005	Chloride		9	56	Need 16 to list
Red River	11140106	005	Sulfate		8	56	Need 16 to list
Mine Creek	11140109	933	Sulfate		8	58	Need 16 to list

Red River	11140106	005	TDS		12	59	Need 16 to list
Mine Creek	11140109	934	Sulfate		8	58	Need 16 to list
Kings River	11010001	042	TDS		~~10~~ 15	~~57~~ 88	Need 23 to list
White River	11010001	023	Chloride		7	58	Need 16 to list
St. Francis River	08020203	014	Chlorides		2	13	Need 3 to list
L'Anguille River	08020205	001	Sulfate		10	61	Need 16 to list

Table 2d. Segments with no new data; previous assessment carries forward

Stream Name	**HUC**	**Reach**	**Parameter**		**#Exc.**	**N**	**Response**
Cache River	08020302	020	Sulfate		4	12	No New Data
Cache River	08020302	028	Sulfate		3	11	No New Data

Comment 3: Five waterbodies in Table 3 (Gilham Lake, Lake DeQueen, Lake Austelle, Dierks Lake, and Whig Creek) need to be included in the 303(d) list as impaired for ammonia.

Response 3: Regulation 2.512 requires temperature or pH to determine whether ammonia criteria are being exceeded. For Lakes Gilham, DeQueen and Dierks, there was no corresponding temperature or pH data for the ammonia data. No data existed during the period of record for Lake Austelle. Whig Creek will be listed for ammonia.

Comment 4: Osage Creek and Spring Creek should be listed on the 303(d) list as impaired for Total Phosphorus (TP) and not attaining the designated use of aquatic life/fisheries.

Response 4: ADEQ continues to disagree with a narrow rationale of impairment utilizing the response of one biological assemblage to instream conditions. A weight of evidence approach incorporating all recorded variables from the 2009 study must be utilized to make an appropriate determination.

Comment 5: The Ouachita River from OUA0008B station to the Louisiana state line needs to be listed on the 303(d) list as impaired due to toxics based on data from a 2007 study.

Response 5: The laboratory documentation was not included in the 2007 report. ADEQ requests control survival results for all toxicity tests.

Comment 6: Lake Ouachita needs to be added to the 303(d) list due to fish consumption advisory banning fish consumption for high risk groups and limiting consumption to no more than 2 meals per month for certain sized fish for the general public.

Response 6: ADEQ acknowledges that fish consumption advisories may reflect impacts on the fishery, but Regulation 2 does not specifically identify "fish consumption" as a designated use.

Colonel (Ret) Darryl G. Treat

Comment 1: The commenter stated that they are against the listing of Bear Creek as being impaired. The commenter also stated the majority of the land in the Bear Creek watershed is in private holdings and that the listing of Bear Creek would result in restrictions on land uses in the watershed.

Response 1: ADEQ must assess the Waters of the State in accordance with state water quality standards and the current assessment criteria. In making these decisions, ADEQ relies solely on scientifically defensible data.

Daniel DeVun

Comment 1: The commenter noted that the HUC for the South Fork of the Caddo River was incorrect.

Response 1: ADEQ agrees with the comment and has made the correction.

El Dorado Chemical Company

Comment 1: A comment was received concerning the ELCC tributary and the monitoring station OUA0137E, listed in the draft 2016 303(d) List. The commenter was concerned that the data used was not within the period of record and that the data from the listed station did not support the listings. The commenter was also concerned that designated use impairments are listed without a corresponding water quality constituent identified.

The commenter requested an explanation of the use of old monitoring data to assess a waterbody on the draft 303(d) List.

Response 1: ADEQ re-examined the information for the ELCC tributary listing and determined a typographical error had occurred. The monitoring station used to make the assessment was OUA0137A, not OUA0137E.

Designated use impairments may be associated with one water quality constituent (i.e. Primary Contact Recreation/pathogens) or a combination of several constituents (i.e. Fisheries/toxics, dissolved oxygen, pH). In this specific situation, all three constituents are contributing to the fisheries designated use impairment.

Data were assessed according to the 2016 Assessment Methodology part 3.1.1.

FTN

Comment 1: A comment was received regarding the appropriateness of assessing dissolved oxygen data collected from just below the inflow of shallow groundwater. It was suggested that this input would depress the oxygen concentrations simply because ground water typically has very low dissolved oxygen concentrations.

The commenter also expressed the concern that Indian Springs Creek was listed using the wrong assessment method. It was stated that the assessment criteria of a 10% exceedance rate for domestic water supply criteria was utilized instead of the 25% exceedance rate for site specific sulfate criteria. The statement was made that the 25% exceedance rate for site specific criteria should be used since the waterbody is not being used as a water supply due to intermittent flows.

Response 1: ADEQ must assess waterbodies strictly by standards set forth in Regulation No. 2.

Since Indian Springs Creek has both site specific minerals criteria and a domestic water supply designated use; ADEQ assessed the data against both the 25% exceedance rate for site specific minerals criteria and the 10% exceedance rate for domestic water supply designated use.

Comment 2: A comment was received objecting to the listing of Wilson Creek as impaired for sulfates. The commenter suggested that because Wilson Creek has a site specific sulfate standard in place, then the assessment criteria of 25% should be applied (Section 6.10, 2016 Assessment Methodology). The commenter also stated that ADEQ was in error in assessing the stream against the more stringent domestic water supply assessment of a 10% exceedance rate because the stream has never been used as a drinking water source and therefore the domestic water designated use does not apply.

Response 2: Wilson Creek has both site specific minerals criteria and a domestic water supply designated use. ADEQ assessed the data against both the 25% exceedance rate for site specific minerals criteria and the 10% exceedance rate for domestic water supply designated use.

JoAnn Burkholder

NOTE: Most of the comments are in regards to Reg. 2, the Assessment Methodology, and sampling protocols rather than the draft 2016 303(d) List.

Comment 1: The commenter was concerned about the five category classification system and the priority ranking given to waterbodies in Category 5.

ADEQ Response1: The guidance document for the preparation of 303(d) List and the 305 (b) Report, EPA Memorandum, July 29, 2005, includes instructions for states to categorize waters into five classification, including Category 4b and 5. It further instructs states to prioritize the waters in Category 5 for implementation of restoration activities or TMDL development. ADEQ has followed these suggestions in the preparation of the 2016 303(d) List.

National Park Service – Main Stem Buffalo River

Comment 1: The commenter is concerned that the lower 11.3 miles of the Buffalo River, stream segment 001, was removed from the list of impaired water bodies but did not show up on the removed list spreadsheet. In addition, segment 005 of the Buffalo was not on the impaired list and was also not on the removed spreadsheet.

Response 1: ADEQ removed each of these stream segments from the 303(d) List because each are currently meeting water quality standards. The removed stream spreadsheet is simply a reference spreadsheet and is not part of the list of impaired waterbodies. ADEQ acknowledges

the comment and appreciates the commenter identifying this typographical error. The removed listing spreadsheet has been revised to the removal of Buffalo River reach 001.

USDA Forest Service

Comment 1: A comment was received concerning Chickalah Creek being listed for low dissolved oxygen. The commenter was concerned because most of the watershed lies within the Ozark-St. Frances National Forest it may appear that the Forest Service is affecting the dissolved oxygen levels. They question the appropriateness of the standard and requested that a sampling station upstream near the forest boundary be established to better characterize the water quality of the stream.

Response 1: ADEQ does not have definitive data regarding the potential for the National Forest Service to be a contributor to the low dissolved oxygen concentrations in the creek. ADEQ acknowledges the commenter's request regarding a sampling station but has determined this is beyond the scope of the draft 303(d) List.

Comment 2: Friley Creek and the Little Mulberry River are now listed because of low pH values, as is the Mulberry River. The commenter requested ADEQ conduct a study to determine if the pH is naturally lower so that the standard can be updated and these streams to be removed from the list.

Response 2: ADEQ has reviewed this issue in the Mulberry River and its tributaries and agrees that pH values lower than the water quality standards are likely naturally occurring. ADEQ acknowledges this comment and the request for further study but has determined this request is beyond the scope of the draft 303(d) List.

Comment 3: It was noted that the county was incorrect for Cove Creek Lake on the Category 4a table, it should be Perry County.

Response 3: ADEQ agrees with the comment and has made the correction.