

BRITTANY A. BARRIENTOS  
ROBERT J. BRUNDAGE  
EDWARD C. CLAUSEN  
MARK W. COMLEY  
LANETTE R. GOOCH

## NEWMAN, COMLEY & RUTH P.C.

ATTORNEYS AND COUNSELORS AT LAW  
601 MONROE STREET, SUITE 301  
P.O. BOX 537  
JEFFERSON CITY, MISSOURI 65102-0537  
TELEPHONE: (573) 634-2266  
FACSIMILE: (573) 636-3306  
www.ncrpc.com

CATHLEEN A. MARTIN  
STEPHEN G. NEWMAN  
JOHN A. RUTH  
NICOLE L. SUBLETT  
ALICIA EMBLEY TURNER

July 28, 2010

### **HAND-DELIVERED**

Missouri Department of Natural Resources  
Water Protection Program  
Attn: Mr. John Ford  
P.O. Box 176  
Jefferson City, MO 65102

Re: The Doe Run Resources Corporation comments to the 2010 proposed 303(d) list

Dear Mr. Ford:

I am submitting the following comments on behalf of The Doe Run Resources Corporation d/b/a/ The Doe Run Company ("Doe Run"). Doe Run appreciates the opportunity to comment on the 2010 proposed 303(d) list. We appreciate the input the public has been given in vetting the 2010 proposed 303(d) list, and we hope the Department continues to work with stakeholders throughout the 303(d) processes. Doe Run has completed a review of the 2010 proposed 303(d) list, and now offers the following comments.

#### **Comment 1: Attempted Quality Review of draft 2010 303(d) Listing Data**

A request to obtain data and information used to list Doe Run Company water bodies on the proposed 2010 Missouri 303(d) list was made under the Missouri Sunshine Law, Chapter 610, Revised Statutes of Missouri. The purpose of the information request was to allow an independent review of data quality, evaluation of the merits of the water body listings, and to provide comments and feedback to the State regarding the listings.

#### **Data Requested to Validate Samples**

Data used for the 2010 303(d) listings for Doe Run Company water bodies were requested from the Missouri Department of Natural Resources (MoDNR) by Robert Brundage on May 11, 2010. The request specified sample analysis results, quality assurance/quality control (QA/QC) data and data validation information for data that was used by DNR to add newly specified water bodies and/or pollutants to the list. The water bodies and pollutants requested are presented below.

<b>Waterbody Name</b>	<b>WBID</b>	<b>Pollutant</b>	<b>County</b>
Big Creek	2916	Cadmium (S)	Wayne/Iron
Big Creek	2916	Lead (S)	Wayne/Iron
Big Creek	2916	Metals (S)	Wayne/Iron
Crooked Creek	1928U-01	Copper (W)	Iron/Dent
Indian Creek	1946	Zinc (W)	Washington
Strother Creek	2751	Lead (W)	Iron
Strother Creek	2751	Zinc (W)	Iron
West Fork Black River	2755	Cadmium (S)	Reynolds

### **Data Received**

The DNR responded on June 3, 2010 providing five spreadsheets containing sample results information. Laboratory QC data packets (paper copies) were provided to Robert Brundage on June 18, 2010 and field sampling chains-of-custody (COCs) were provided to LimnoTech on July 21, 2009. No data validation reports were provided. An additional request for Quality Assurance Project Plans (QAPPs) for the various studies under which the 303(d) listing data are generated resulted in the receipt of four QAPPs on or about July 14, 2009.

### **Sample Results Data**

The five spreadsheets contain sample analysis results for the requested water bodies, pollutants and environmental media. Analytical results are present for sediment samples (1995-2008), sediment toxicity testing (2004-2008), water samples (2000-2009), water toxicity testing (2002-2004), aquatic invertebrate studies (2000-2005), and crawfish studies (2004, 2005, 2007). There was no identifiable field QA/QC data provided. Field QA/QC data generally would consist of results for field replicates, field blanks (e.g., bottle, equipment rinse, trip) and, possibly, instrument calibration and field notes.

### **Laboratory QC Data and COCs**

Laboratory QC data was provided in 44 data packets. A cover sheet accompanying the QC data packets contained a 140-row list of laboratory sample numbers, metals analyzed and analysis dates. The QC data packets varied in content, which was primarily dependent on the specific method of analysis conducted. In general, laboratory QC data included instrument tuning and calibration data, raw sample analytical results, dilution analysis results, analysis run logs and raw laboratory QC sample results (e.g., method blanks, matrix spike/matrix spike duplicate samples, lab duplicates, lab control samples).

The QC sample identification information (laboratory sample numbers) included in the packets were not present on the sampling results spreadsheets, so therefore it was not possible to link sample results to associated QC results. An additional request to provide this linking information between sample results and QC results was made of MoDNR, and they responded with 32 electronic files containing field sampling COCs that included sample numbers, site descriptions and collection dates. However, the only data field linking QC data to sample results is the site description information, and these descriptions vary between the sample results (Site Name field) and the COCs (Sample Comment field), creating uncertainty in linking sample results with associated QC data.

## **QAPPs**

The four QAPPs received contain quality assurance information and requirements for water chemistry, bioassessment, sediment monitoring and wadeable streams studies. All four QAPPs were written for work being conducted in 2010. The QAPP requirements applicable to time periods of the sample data received (1995-2009) have not been provided.

## **Current Progress**

A quality assurance review of sample results using the laboratory QC data has not been possible because of the lack of information cross-linking individual sample results with associated QC data. The data quality review could be accomplished if DNR provided information that includes the appropriate laboratory sample number found in the QC data with the reported sample results. Given that the Department was unable to provide complete set of information to adequately demonstrate that the data are valid, the newly added waterbodies and pollutants listed above should not be included on the 303(d) list, and we therefore request their removal. We further request that DNR implement procedures that increase transparency of the data review process such that future independent reviews of data quality can be conducted efficiently.

## **Comment 2: Inappropriate Use of Sediment Quality Guidelines to Support Impairment Determinations**

DNR applies Probable Effects Levels (PELs) to make determinations of impairment based on sediment chemistry. The PELs DNR uses are based on Sediment Quality Guidelines (SQGs) from *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*, MacDonald *et al.*, *Environmental Contamination Toxicology*, Volume 39, Pages 20-31, 2000 (MacDonald, 2000). While these PELs can be useful as one tool in assessing sediment chemistry, they should not be used to make impairment determinations for multiple reasons, as follows:

- 1) The SQGs from MacDonald, 2000 were based on sediment samples that were impacted by multiple sources of contamination, including heavy metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and pesticides. MacDonald, 2000 recognizes the limited applicability of the SQGs for this reason: "*These SQGs reflect the toxicity of sediment-associated contaminants when they occur in mixtures with other contamination. Therefore, these consensus-based SQGs are likely to be directly relevant for assessing freshwater sediments that are influenced by multiple sources of contaminants.*" The water bodies listed due to metals downstream of Doe Run facilities have only metals as a source of potential toxicity. Therefore, the MacDonald, 2000 SQGs should not be used to make impairment determinations.
- 2) The SQGs should be used as one tool in combination with others when assessing sediment chemistry and impairment decisions should not be based solely on the SQGs. MacDonald 2000 recognizes the need to use the SQGs in combination with other tools: "*the SQGs can be used to identify hot spots with respect to sediment contamination,*

*determine the potential for and spatial extent of injury to sediment dwelling organisms, evaluate the need for sediment remediation, and support the development of monitoring programs to further assess the extent of contamination and the effects of contaminated sediments on sediment-dwelling organisms. These applications are strengthened when the SQGs are used in combination with other sediment quality assessment tools (i.e. sediment toxicity tests, bioaccumulation assessments, benthic invertebrate community assessments...)" Without other supporting site-specific information on the impairment of the beneficial uses, the MacDonald 2000 SQGs should not be used to make impairment determinations.*

- 3) The threshold at which concentrations of metals, such as cadmium, lead and zinc, cause toxicity is based on a number of site-specific factors. MacDonald 2000 recognizes the need to assess sediment chemistry on a site-specific basis and develop SQGs that account for site-specific factors. One example of this was a study conducted by MacDonald under contract to EPA in the Tri-State Mining District (TSMD) (*Development and Evaluation of Sediment and Pore-Water Toxicity Thresholds to Support Sediment Quality Assessments in the Tri-State Mining District (TRSM), Missouri, Oklahoma, and Kansas, Draft Final Technical Report*, February 2009). Results of this study include toxicity thresholds for cadmium, lead, and zinc that are significantly higher than the MacDonald 2000 SQGs DNR uses in making 303(d) impairment decisions. Thresholds for cadmium were 247% higher in the TSMD study than MacDonald 2000 (17.3 mg/kg versus 4.98 mg/kg), 71% higher for lead (219 mg/kg versus 128 mg/kg), and 542% higher for zinc (2,949 mg/kg versus 459 mg/kg). These results indicate the need to develop SQGs on a site-specific basis. MacDonald 2009 acknowledges this on page 51 of the TSMD report: “[T]he site-specific STTs provide a more accurate basis for classifying sediment samples from the TSMD relative to their potential toxicity to benthic invertebrates.” On page 57, it states “None of the STTs or PWTTs derived in this investigation provide infallible tools for classifying sediment samples from the TSMD relative to the risks that they pose to benthic invertebrates.” And further on page 57, the report notes the site-specific variability even within the TSMD: “Overall, these scatter plots indicate that the relationships between the various sediment chemistry metrics are not consistent throughout the study area. These results suggest that location-specific differences in conditions could be influencing the bioavailability of metals.”

### **Comment 3: Turkey Creek, WBID 3282 (St. Francois County)**

Turkey Creek (WBID 3282), located in St. Francois County, is identified in 10 CSR 20-7.031 Table H of the State of Missouri Water Quality Standards as 2.4 miles in length, and lists use designations for livestock and wildlife watering, aquatic life and whole body contact recreation, Category B. The Turkey Creek classified segment begins where it crosses State Highway 47 near Bonne Terre, Missouri, and ends at its confluence with the Big River (WBID 2080), approximately 2.4 miles downstream. The 2010 draft 303(d) List proposes to add approximately 1.2 miles of Turkey Creek beginning at Highway 47 and extending downstream, for impairment of aquatic life use. The proposed listing identifies “low D.O.” as the pollutant and

“Mill tailings (Aban.)” as the source of the pollutant. The closest mine tailings Doe Run is aware of is the Bonne Terre pile, closed around November 2005. Doe Run is unaware of any data that links low dissolved oxygen levels in Turkey Creek with the closed Bonne Terre pile or any other mill tailings pile.

Discharges to water bodies that affect dissolved oxygen levels are generally associated with organic matter or nutrients, neither of which is known to be associated with the closed Bonne Terre pile. Furthermore, the lowest dissolved oxygen levels recorded in the database used by the Department in making this assessment are identified at Highway 47 (location #3282/2.2), which is upstream of the closed Bonne Terre pile.

Additionally, all of the 13 samples that were identified as below the State of Missouri dissolved oxygen water quality criteria of 5.0 mg/l for Turkey Creek were collected in July and August 2002. The National Weather Service drought information Web page ([http://www.srh.noaa.gov/gis/kml/drought/drought.html#how\\_to](http://www.srh.noaa.gov/gis/kml/drought/drought.html#how_to)) indicates that the geographic area where Turkey Creek is located was identified as abnormally dry (category D0) during August 28 and 29, 2002. In general, dry conditions can lead to higher temperatures and lower base flows in streams. Low base flow often results in low dissolved oxygen concentrations. This is because of a dampened reaeration capability – less water and warmer water have a decreased ability to retain dissolved oxygen, which causes lower dissolved oxygen concentrations in streams.

Doe Run believes that it is more appropriate for the Department to place Turkey Creek in Category 3 for dissolved oxygen until further clarifying data can be collected. However, if the Department elects to retain Turkey Creek in Category 5 for dissolved oxygen, Doe Run requests that the source of the pollutant be modified and the Mill Tailings pile be removed. Doe Run, as stated previously, is unaware of any link between the closed Bonne Terre Mine Tailings pile, and the Department has presented no data or rationale classifying the pile as the source of the low dissolved oxygen for Turkey Creek.

Doe Run also would like to point out that the closure of the Bonne Terre Mine Tailings Pile (portion west of US Highway 67) was completed as part of an EPA Administrative Order on Consent (CERCLA-7-2000-0024) dated March 2001. The Doe Run Company completed the work under the AOC and submitted the Removal Action Report and Post-Removal Site Control Plan in November 2005. Doe Run believes that any potential environmental issues associated with Bonne Terre Mine Tailings Pile have been and continue to be addressed by the remedial actions conducted in compliance with the EPA AOC. As stated previously, Doe Run does not believe that the Department has presented compelling evidence to support the listing of Turkey Creek for dissolved oxygen or to list mill tailings as the source of the pollutant. Therefore, Doe Run requests the 2010 303(d) List be modified accordingly.

**Comment 4: West Fork Black River, WBID 2755 (Reynolds County)**

The West Fork Black River (WBID 2755), located in Reynolds County, is identified in 10 CSR 20-7.031 Table H as a Class P stream from the confluence with the Black River extending upstream 31.7 miles. The West Fork Black River has designated uses of cool water fishery, aquatic life, livestock and wildlife watering and whole body contact recreation – Category A. The proposed 2010 303(d) list identifies a general or narrative criteria aquatic life protection impairment in a segment of the West Fork Black River starting from location 37292400/-91062484 continuing downstream approximately 1.3 miles to location 37294992/-91051392. The list identifies cadmium (sediments), lead (sediments) and nickel (sediments) as the pollutants, and the West Fork Mine as the pollutants source.

Doe Run has examined the assessment and data presented by the Department in support of the listing and believes that the Department has inappropriately applied chronic toxicity criteria to the mixing zone and incorrectly considered sediment sampling data at locations within the mixing zone for the West Fork Black River.

The “Methodology for the Development of the 2010 Section 303(d) List in Missouri” document does not specifically address the requirements of the regulations in terms of assessing waters in mixing zones and zones of initial dilution. Missouri regulation 10 CSR 20-7.031(I) prescribes the general and numeric criteria applicable for the protection of waters in mixing zones. Waters in mixing zones are specifically granted an exemption to the chronic criteria numeric values of 10 CSR 20-7.031 Tables A and B in 10 CSR 20-7.031(4)(A). Missouri regulation 10 CSR 20-7.031(4)(A)4.A. and B. describes the eligibility of pollutants, applicability of acute numeric criteria, and the size of the mixing zone for a water body. These regulations specifically allow a mixing zone for pollutants that are rendered nontoxic by dilution, dissipation or rapid chemical transformation. Further, for streams with a 7Q10 of 0.1 to 20 cubic feet per second, these regulations indicate that the maximum size of the mixing zone shall be ¼ of the stream width, cross-sectional area or volume of flow; length of ¼ mile.

Missouri regulation 10 CSR 20-7.031(3)(I) indicates that waters in mixing zones and unclassified waters that support aquatic life on an intermittent basis shall be subject to 3 requirements:

- Acute toxicity criteria of 7.031 Tables A and B.
- Toxicity requirements of 7.031(4)(B)
- Whole effluent toxicity conditions [7.031(3)(I)2.]
  - Single Dilution Method
  - Multiple Dilution Method

The West Fork Black River has an identified 7Q10 flow value of 15 cubic feet per second<sup>1</sup> and is eligible for a mixing zone and zone of initial dilution in accordance with 10 CSR 20-7.031(4)(A)4. This is supported by the Department's usage of a mixing zone and zone of initial dilution for Outfall 001 in the State Operating Permit for the Doe Run West Fork Mine. Doe Run believes that the appropriate method to assess use attainment in waters in a mixing zone is an evaluation of the three elements contained in 10 CSR 20-7.031(3)(I).

a. Acute Toxicity Criteria of 10 CSR 20-7.031 Tables A and B

In the assessment and usage of the sediment chemistry data presented for the West Fork Black River, the Department compared the average sediment values for the segment in question to the sediment pollutant levels established in the 2000 MacDonald paper regarding Probable Effects Concentrations<sup>2</sup> (PECs). This paper utilizes the values derived in a number of other research papers to establish pollutant concentration values for sediments where effects on aquatic communities are likely to be observed. Several, if not all, of these papers utilize chronic toxicity test duration and end points to establish the toxicity values used by MacDonald in the 2000 paper.

In follow-up research, MacDonald Environmental Services conducted additional work on sediment and pore-water toxicity in the Tri-State Mining District of Missouri, Kansas and Oklahoma. A draft final technical report was published and submitted to the U.S. EPA and the U.S. Fish and Wildlife Service in February 2009. It is titled, "Development and Evaluation of Sediment and Port-Water Toxicity Thresholds to Support Sediment Quality Assessments in the Tri-State Mining District (TSMD), Missouri, Oklahoma, and Kansas." This report indicates that research exposure testing with 10- and 28-day endpoint durations were conducted on three benthic invertebrate species (amphipod - *Hyalella azteca*, midge - *Chironomus dilutus*, and fat-mucket mussel - *Lampsilis siliquoidea*) from the study area. Further, this report also indicates on Page 45, section 4.5 - Development of Preliminary Toxicity Thresholds for Sediment and Pore Water, that those toxicity concentrations derived from the testing were calculated based upon response rates that represented a 10% and a 20% reduction in the survival or biomass of the toxicity test organisms (i.e. TC<sub>10</sub> and TC<sub>20</sub>). Both the 2000 MacDonald report and the draft final 2009 MacDonald Tri-State report publish sediment toxicity values that are derived based upon procedures that mimic chronic toxicity testing endpoints, in terms of test duration and toxicity value endpoints.

The 1994 USEPA Water Quality Standards Handbook, Appendix H – Derivation of the 1985 Aquatic Life Criteria, Section IV, indicates that acute toxicity criteria values for aquatic life should be developed based upon test durations that are shorter term (e.g. 48- to 96-hour tests) based upon the specific test organism in question and based upon toxicity concentration endpoints where 50% of the test population suffers an adverse affect or mortality (e.g. effective

---

<sup>1</sup> Missouri Department of Natural Resources NPDES permit MO-0100218 and fact sheet dated March 12, 2010.

<sup>2</sup> "Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems" by MacDonald, D.D. et al. Arch. Environ. 39, 20-31 (2000).

concentration – EC<sub>50</sub>, lethal concentration – LC<sub>50</sub>). The data represented by the MacDonald reports appears to be aimed at establishing chronic toxicity of pollutants in sediments and not acute toxicity affects.

Doe Run believes that according to Missouri's Water Quality Standards, only the acutely toxic effects of pollutants described in 7.031 Tables A and B can be considered in the mixing zone downstream of Outfall 001 with regard to assessing compliance of the water body with the Missouri's water quality criteria. Specifically related to West Fork Black River, the data presented by the Department regarding sediment chemistry contains sampling results from two locations within the mixing zone of Outfall 001 of the West Fork Mine. West Fork Black River sampling locations 2755/22.7 and 2755/22.8 are located within the mixing zone of Outfall 001 and therefore, are subject to and must be in compliance with 10 CSR 20-7.031(3)(I).

Therefore, the sediment chemistry data at these locations should not be compared to the PECs since they appear to be chronic-based or non-acute-based criteria and are not appropriate for inclusion in the mixing zone in the vicinity of the West Fork Mine. Doe Run requests that the Department amend the assessment and remove the sediment chemistry data from these two locations in the calculation and comparison to the PECs values of the LMD.

b. Assessment of entire segment

Furthermore, should the Department use the remainder of the sediment chemistry data outside the mixing zone, identified previously, to make an assessment of the aquatic life use for West Fork Black River, Doe Run believes that all the sediment chemistry data available for the entire 31.7-mile portion of the West Fork Black River (including data above the West Fork Mine) should be used. In the recent past, when only smaller sub-segments of water bodies have been identified as impaired by a particular pollutant, the US Environmental Protection Agency has required and has listed the entire segment in question on Missouri's 303(d) list regardless of whether data existed to confirm or rebut the impairment for the entire segment. In this case, sediment chemistry data exists at locations above and below the discharge of the West Fork Mine and Doe Run believes it prudent to consider all the data for the segment, since it is available, and not just a portion for a small sub-segment particularly given that the US EPA would likely list the entire 31.7 miles even if only a smaller sub-segment exceeds the PECs for any or each of the pollutants in question.

**Comment 5: Big Creek, (WBID 2916), Courtois Creek (WBID 1943), Meramec River (WBID 2183 & 2185), Strother Creek (WBID 2751 & 2751U-01), and West Fork Black River (WBID 2755)**

Sediment chemistry does not support an impairment determination based on comparison to MacDonald 2000 SQGs. See comment 4 above.

Mr. John Ford  
July 28, 2010  
The Doe Run Company  
Comments to 2010 Draft 303(d) List  
Page 9

**Comment 6: West Fork Black River (WBID 2755) Toxicity Tests**

One *Ceriodaphnia dubia* toxicity test in 2002 in the West Fork Black River is not sufficient to demonstrate impairment, particularly given the fact that the toxicity test for the reference site (West Fork Black River near Greeley) indicated only 20% survival for *C. dubia*. If the Department's own reference site suggests toxicity, toxicity testing should not be used to make an impairment determination. Additional monitoring is needed as well as consideration of the ability of *Ceriodaphnia dubia* to survive in reference streams.

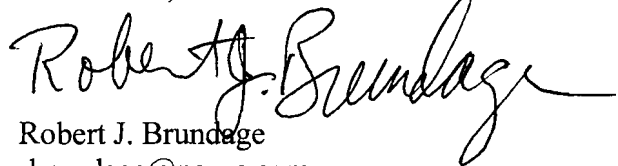
**Comment 7: West Fork Black River (WBID 2755) Invertebrate Data**

The use of invertebrate metrics in making impairment decisions is questionable. Based on the department's methodology, there is very little difference between a "passing" score of 16 and an "impaired" score of 14. There are four parts to the invertebrate score, each of which is scored as 1, 3, or 5, yielding a score that could range from 4 to 20. The difference between "impaired" and not impaired can be only a slight difference in one of the four components. The invertebrate score for West Fork Black River at river mile (RM) 22.3 in 2003 was 12. In 2004 it was 14. Further downstream at RM 16 a score of 18 was reported in 2004 and at RM 12.2 a score of 12 in 2003 and 18 in 2004. These data highlight the variability in the scores, and the often small differences between impaired and non-impaired determinations. These data further suggest an improving trend in the scores between 2003 and 2004. An impairment determination based on this data should not be made; rather, additional monitoring should be conducted to determine if there has been additional improvement since the 2004 sampling event.

This concludes Doe Run's comments. Thank you again for the opportunity to offer these comments.


Sincerely,

NEWMAN, COMLEY & RUTH P.C.



Robert J. Brundage  
[rbrundage@ncrpc.com](mailto:rbrundage@ncrpc.com)

c: The Doe Run Company



STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

[www.dnr.mo.gov](http://www.dnr.mo.gov)

August 3, 2010

Mr. Robert Brundage  
Newman, Comley and Ruth, P.C.  
P.O. Box 537  
Jefferson City, MO 65102-0537

Dear Mr. Brundage:

Thank you for your letter received by the Department of Natural Resources on July 28, 2010 taking the time to comment on our proposed 2010 Section 303(d) List. Your letter contains several comments and I will attempt to answer them as fully as possible.

Comment One (1) is a description of your attempts to acquire and interpret a large amount of quality assurance information from the Department. You note that you had requested Quality Assurance Project Plans (QAPPs) for about the last fifteen years and had only received the most recent annual QAPP documents. This was an oversight; however, the portion of the document that discusses quality assurance rarely changes from year to year. These annual QAPP documents typically vary only in the number of samples, analytes and sample locations. If you would like all of the QAPP documents in your initial request, please let me know and they will be provided.

While the QAPP documents should be readily understandable, it may be frustrating trying to understand the quality assurance data packages provided by the lab. Generally, few people other than analytical chemists whose work directly involves documentation of lab quality assurance can readily understand and properly interpret this type of data. However, if I am interpreting your comment correctly, you are not suggesting that the data quality was questionable, only that you may not have received everything you requested and had difficulty interpreting what you did receive. This is not sufficient justification to remove several waters from the list which the state believes are impaired by the Doe Run Corporation.

Comment Two (2) discusses three points relating to the fallibility of the sediment quality guidelines (SQGs) currently used in the Listing Methodology Document (LMD). The Department has previously acknowledged that these guidelines are not perfect but contends they still represent the best broad-based analysis of sediment toxicity available. In a state where heavy metal mining has been conclusively documented to impair surface waters, ground waters and has shown toxicity to aquatic life, it seems advisable to also investigate sediments as an environmental sink for heavy metals and assess sediments as a agent of toxicity. EPA's guidance to use all readily available and scientifically defensible data to develop the state 303(d) list supports our use of SQGs. With regard to the third discussion point under this comment, I have reviewed much of the data in this report but have not yet read the text of the report. I would suggest that during the next public participation period for the LMD the findings of the Tri-State report should be reviewed to see if revision of the currently used SQGs is warranted.

Mr. Robert Brundage  
Page Two

Comment Three (3) requests the Department remove low dissolved oxygen (DO) as a pollutant, and the Bonne Terre chat pile as the source for Turkey Creek, WBID 3282. I have reviewed the DO data and it indicates that per the LMD, DO should be listed; however, we did err in listing the chat pile as the source. The list will be amended to indicate the source as “multiple point and nonpoint sources”.

Comment Four A (4a) was an excellently reasoned and referenced reminder that chronic criteria, including SQGs which are largely based on chronic toxicity endpoints, should not be used in mixing zones. This is a valid comment and since some of the sediment data used to assess the West Fork Black River was collected approximately 0.2 miles downstream from the West Fork Mine outfall, this data will be used only if we know it was collected outside of the mixing zone. In this case, the mixing zone is defined as the 25th percent of the stream width nearest the right descending bank for the first 440 yards downstream of the outfall. Staff that collected these samples will be contacted to confirm exact sampling locations.

Comment Four B (4b) requests that the entire 31.7 mile segment of West Fork be assessed as a single water body. The Department over the years has frequently made separate assessments for different portions of the same water body where there was data to support such a separation. The purposes of these separate assessments are two-fold. One, we try to make the most accurate assessment possible in terms of the spatial extent of the problem, and two, lumping data from a smaller impaired section with data from a larger unimpaired section would often result in listing the entire waterbody as unimpaired. This runs counter to the intent of Section 303(d) of the Clean Water Act which is to indentify impaired waters. In the case of the West Fork Black River, sediment and toxicity test data suggest the section of this stream immediately downstream of the outfall is more affected than portions several miles removed. Thus, our decision to make separate assessments of this water body is justified.

Comment Five (5) lists six other waters you believe should be removed from the list and reference your comment number four. If you are referring to your comment 4b, the response would be the same as for the West Fork Black River. If you are referencing your comment 4a concerns about mixing zones, mixing zones do not apply to any of these waters.

Comment Six (6) expresses concern over the display in our worksheets of toxicity test results for *Ceriodaphnia dubia* on the West Fork Black River which shows only slightly greater toxicity just below the West Fork Mine than at an upstream control site. This data was included not as ‘stand alone’ conclusive evidence of toxicity due to the Doe Run mine discharge, but as part of a ‘weight of evidence’ procedure requested by the Clean Water Commission and many stakeholders whereby the Department would display data of all types relevant to an assessment of a narrative criterion.

Comment Seven (7) notes that the aquatic invertebrate sampling protocol used by DNR and others can result in variable scores over time and therefore may not be a reliable indicator of water quality. The protocol is in the LMD because the Department believes this is a sound protocol that gives good information on water quality. The invertebrate data are supported by other information indicating impairment of the West Fork below the Doe Run Mine such as elevated levels of heavy metals in sediment pore waters and the virtual elimination of the crayfish community for at least 1.5 miles below the mine outfall. The display of invertebrate scores is a necessary part of our “‘weight of evidence” approach to assessing narrative criteria

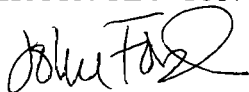
Mr. Robert Brundage  
Page Three

issues and when considered with other kinds of data we present in our assessment, documents water quality impairments to the West Fork Black River.

If you have any other comments, or wish to clarify any of your comments, please do not contact me at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, (573) 751-7024 or email me at [john.ford@dnr.mo.gov](mailto:john.ford@dnr.mo.gov).

Sincerely,

WATER PROTECTION PROGRAM

A handwritten signature in black ink, appearing to read "John Ford". The signature is written in a cursive, somewhat stylized font.

John Ford, Unit Chief  
Water Quality Assessment Unit

JF/lsm





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7  
901 NORTH 5TH STREET  
KANSAS CITY, KANSAS 66101

FEB 23 2010

Mr. Robert Brundage  
Newman, Comley & Ruth P.C.  
601 Monroe Street, Suite 301  
P.O. Box 537  
Jefferson City, Missouri 65102

Dear Mr. Brundage:

Thank you for your letter regarding the Clean Water Act section 303(d) listing status of Willow Branch (WBID 0654U). The Environmental Protection Agency (EPA or the Agency) appreciates your interest and input in Missouri's listing process. As your letter noted, on December 16, 2009, EPA decided to retain Willow Branch on Missouri's 2008 section 303(d) List as impaired by unknown pollutants. At this time, the Agency is not considering revisions to that decision. The Missouri Department of Natural Resources (MDNR) will soon be initiating the stakeholder process on the development of the 2010 303(d) List. Missouri will be considering all readily available water quality-related information as it completes its assessment of the state's waters. In its oversight capacity, EPA will be reviewing the available data and information Missouri uses to support its listing decisions. I have forwarded your letter to the assessment team at MDNR, and would encourage you to participate, as you have in the past, in the upcoming public discussion on Missouri's 2010 303(d) List.

Thank you for your interest in Missouri's water quality. If you have any additional questions, you may contact me at (913) 551-7861, or [Landewe.Rebecca@epa.gov](mailto:Landewe.Rebecca@epa.gov).

Sincerely,

A handwritten signature in cursive script that reads "Rebecca Landewe".

Rebecca Landewe  
Missouri Water Quality Standards Coordinator

cc: Mr. John Ford, MDNR  
Mr. John Hoke, MDNR

John,

I wrote this text back in late March/early April, 2010. I slightly modified it today. To some extent, your latest draft LM discussed and the last CWC meeting addresses some of the points raised below. I appreciate your review of those issues. As you know, I still have concerns about chronic toxicity methods and the macroinvertebrate standards as they relate to small streams and habitat impairment. I regret I have not yet had time to draft language you requested of me at the last CWC meeting regarding four samples over four consecutive days.

Robert

Mr. John Ford  
Missouri Department of Natural Resources  
Water Pollution Control Branch  
P.O. Box 176  
Jefferson City, MO 65102-0176

Re: **Draft Listing Methodology for the 2012 303(d) List**

Dear John:

I am in receipt of the draft *Proposed Methodology for the Development of the 2012 Section 303(d) List in Missouri* submitted to stakeholders via email on March 2, 2010. Thank you for the opportunity to meet with you and other stakeholders during your public availability meeting on March 25, 2010. The purpose of this letter is to review the issues which I discussed with you on March 25, 2010.

Under Table 1.2 on page 20, under Protection of Aquatic Life – Biological, there is a description of full attainment and non-attainment for macroinvertebrate sampling. It states that the “stream condition index scores” are compared to “regional reference streams.” I suggested the listing methodology be revised to explain that macroinvertebrate index scores should only be compared to regional reference streams of a similar size with similar habitat. I know of at least one instance where EPA compared a small, unclassified stream to much larger reference streams that were larger by an order of magnitude. The listing methodology should be revised to specifically prohibit this type of comparison.

After the meeting, you emailed to me a description of when the MDNR would compare macroinvertebrate index scores to reference streams when the habitat was considered similar. You explained that MDNR would compare reference streams if the habitat is at least 75% as good as the reference stream. You said that based upon the MDNR’s *Stream Habitat Assessment Project Procedure*, it appeared that Randy Sarver based the MDNR’s protocols on those used in the *Rapid Bioassessment Protocols (Barbour et al. 1999)*. According Figure 1 of the Project Procedure, a 75% habitat similarity should support a biological condition in the supporting category. I have not studies these documents but I have serious concerns about comparing a stream which has only 75% similar habitat to that of a reference stream. A potential alternative might be proportionally reducing the stream condition index score by the percentage reduction in the stream habitat indices.

During our meeting, you said that MDNR is beginning to look at appropriate macroinvertebrate index scores for smaller, intermittent streams. Until such time as this research is completed and appropriate index scores are developed together with appropriate reference streams of much smaller size, I recommend the listing methodology specifically prohibit listing of streams unless it could be compared to a reference stream of similar size.

Another comment I had during the meeting was regarding Table 1.2, Protection of Aquatic Life – Toxic Chemicals. It states that under full attainment, “no more than one exceedance of acute or chronic criteria in three years for all toxics.” A footnote to this sentence states that “the test result must be representative of water quality for the entire time for which the acute or chronic criteria apply.” I have a great deal of concern that only two grab samples collected over three years could be used to make an impairment decision for a chronic criteria which are supposed to be samples representative of a 96 hour period. Even when stream conditions appear relatively stable, a grab sample is statistically not similar or representative of stream conditions over 96 hours. Either the number of samples should be greatly increased or there should be a requirement that more than a single grab sample be collected over 96 hours. In addition, if four daily samples are collected over 96 hours, all four must be above the water quality standard. Presently, if fewer than four samples exceed the standard, the stream will be listed as impaired when it did not violate the chronic four-day average. This should be corrected.

I had another comment concerning the nutrient criteria. At the meeting, you had a handout of a handwritten chart showing the total phosphorous and nitrogen criterion depicted in a graph format. I complimented you on the chart and urged you to publish this type of graphical depiction of the water quality standard on MDNR’s website. I believe you made note of the correction you will make to the incorrect reference to the “RV” which should have been “PV” in the upper right hand quadrant of the total phosphorous criterion graph.

I truly appreciate all of the hard work that you have put in on the 303(d) List and listing methodology. You are always available to answer questions and explain the Department’s decisions and listing methodology issues.

Sincerely,

NEWMAN, COMLEY & RUTH, P.C.

By: /s/ Robert J. Brundage

Robert J. Brundage

---

Robert J. Brundage  
Newman, Comley & Ruth, P.C.  
601 Monroe St., Suite 301  
P.O. Box 537  
Jefferson City, MO 65102-0537  
(573) 634-2266 Office | (573) 636-3306 Fax



# TABLE ROCK LAKE WATER QUALITY, INC.

P.O. Box 606  
Kimberling City, MO 65686  
Email: trlwq@lvbw.net  
Phone 417-739-4100  
Fax 417-739-9889

July 7, 2010

Mr. John Ford  
Water Protection Program  
Department of Natural Resources

Re: Written comments on the Proposed 2010 303(d) List

Dear Mr. Ford,

I appreciate this opportunity to comment on the Proposed 2010 303(d) List. My comments are directed at Table Rock Lake, but I think they may also apply to Lake of the Ozarks. I was an active stakeholder in the process to develop the Nutrient Criteria for Missouri Lakes. As the process was coming to a close, I was very insistent that the larger lakes such as Table Rock should be segmented, that we should look at the arms of the lake separately from the main body of the lake. I give as an example the large algae bloom on the upper James River Arm of Table Rock Lake in 1999. The test data at the dam would not show impairment, but the algae bloom was so large it, in part, led to the listing of Table Rock Lake on the 2002 303(d) list for nutrients and led the Clean Water Commission to establish phosphorous limits on wastewater treatment plant discharges.

The Proposed 2010 303(d) list has only the main body of Table Rock Lake (White River Arm) listed for Nitrogen and for Chlorophyll and not one of the arms are listed. It is my understanding the location decided on for the arms in the Nutrient Criteria for Lakes does not have test data at that specific site. There is data at many other sites in the arms but that data is not being considered in the Proposed 2010 303(d) list.

I have attached the Lakes of Missouri Volunteer Program test data for 2009, 2008, 2007 and 2006. I have also included a map showing the location of the testing sites. It is easy to see that levels of Phosphorous, Nitrogen and Chlorophyll are almost always higher in the arms of Table Rock Lake than in the main body of the lake (White River Arm).

Based on this information, I request that all the arms of Table Rock Lake be considered for listing on the Proposed 2010 303(d) list for Nitrogen, Chlorophyll and Phosphorous based on the extensive test data we have available even if that data is not located at the specific site listed in the Nutrient Criteria for Lakes. To leave the arms off the 2010 303(d) list due to a technicality would not be in the best interests or intent of the Clean Water Act.

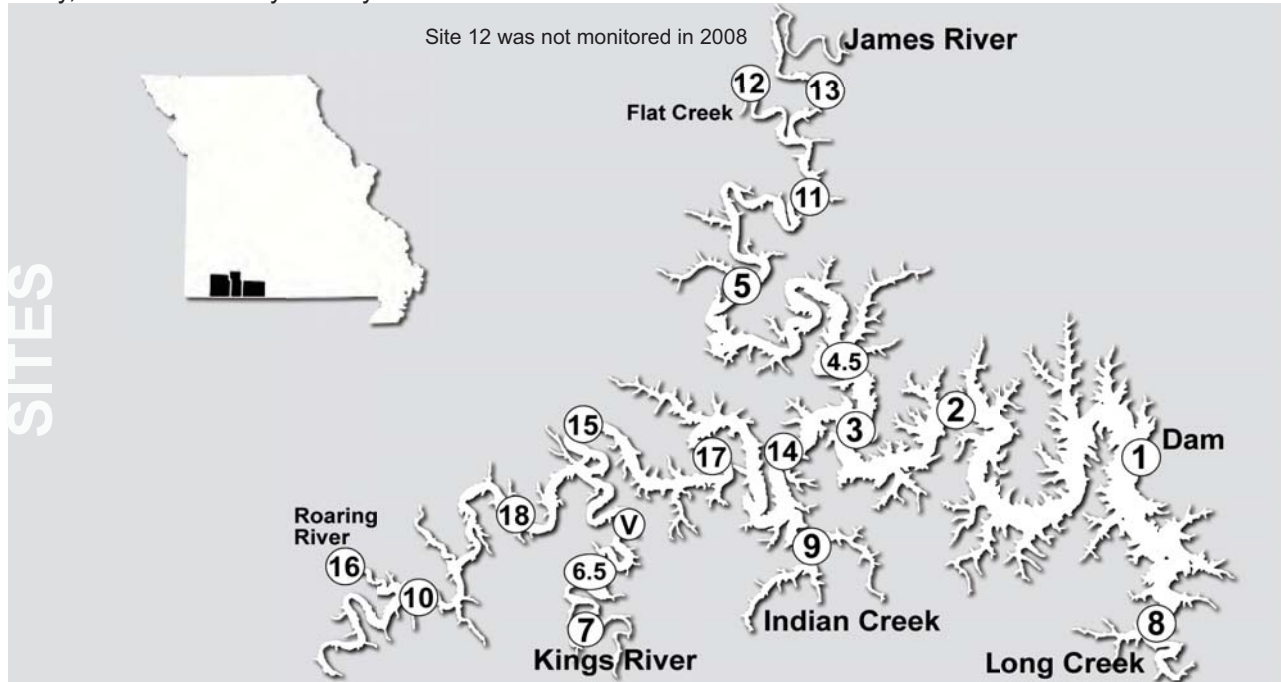
Sincerely,



David Casaletto  
Executive Director

# Table Rock Lake

Barry, Stone and Taney County



The extremely high water levels in Table Rock Lake during the 2008 sample season made for interesting data. Care should be taken when comparing among sites as not everyone was able to monitor during the exact same period. Sample collections started on April 7 at one site, while another site was not sampled until mid-July. Also, the number of samples collected varied enough to influence comparisons, with minimum and maximum number of samples ranging from four to nine.

During normal years, water quality in the main lake displays low variability, with only minimal differences among sites. This was not the case in 2008. Phosphorus and chlorophyll displayed the most site-to-site variability; with average phosphorus values ranging from  $5\mu\text{g/L}$  (Site 1) to  $21\mu\text{g/L}$  (Site 14). Chlorophyll also varied among sites by a factor of four, with average values ranging from  $2.9\mu\text{g/L}$  (Site 18) to  $11.5\mu\text{g/L}$  (Site 1). There was also more variability than normal at some sites during the course of the sample season. Site 3, which was sampled on nine occasions between April 7 and September 16 was the most variable of main lake sites (most likely because it was sampled over a longer period of time in 2008 than any other main lake site). At this site individual phosphorus measurements ranged by a factor of 9 ( $9 - 82\mu\text{g/L}$ ) and the chlorophyll maximum was >11 times the minimum ( $2.9 - 33.4\mu\text{g/L}$ ).

**Table Rock Lake with all 10 flood gates open**

April 10, 2008 photo courtesy of paddlingcenter.com



2008 SUMMARY

# Table Rock Lake

Barry, Stone and Taney County

## 2009 Table Rock Lake Summary Data

TP = Total Phosphorus  
 TN = Total Nitrogen  
 CHL = Chlorophyll

### Main Lake Sites

	SITE #	10	18	15	17	14	3	2	1
	# of Samples	8	5	7	8	8	8	5	6
SECCHI (inches)	Mean	70	59	75	74	97	106	81	67
	Minimum	56	50	64	54	66	79	76	54
	Maximum	82	89	94	103	190	172	86	86
TP (µg/L)	Mean	12	13	14	11	10	10	9	4
	Minimum	8	9	11	8	8	8	8	2
	Maximum	16	21	20	18	12	14	10	19
TN (µg/L)	Mean	399	376	421	380	461	535	386	326
	Minimum	310	290	280	280	320	350	280	220
	Maximum	650	470	660	630	850	870	760	930
CHL (µg/L)	Mean	7.6	10.4	9.3	7.9	7.4	7.6	8.2	8.2
	Minimum	4.1	8.1	7.0	2.7	3.3	3.4	4.0	5.5
	Maximum	15.5	15.9	15.7	13.9	12.3	18.0	12.7	12.9

### Tributary Sites

		James River Arm				Kings River Arm		Indian Creek	Roaring River	Long Creek
	SITE #	13	11	5	4.5	7	6.5	9	16	8
	# of Samples	8	8	8	9	8	8	8	6	8
SECCHI (inches)	Mean	29	38	58	76	31	45	91	45	64
	Minimum	24	25	50	62	26	27	69	40	50
	Maximum	38	56	70	87	42	58	144	52	78
TP (µg/L)	Mean	67	46	25	13	45	32	12	30	16
	Minimum	42	37	16	9	30	23	11	24	11
	Maximum	88	73	77	17	65	76	14	42	24
TN (µg/L)	Mean	1039	809	833	579	650	495	349	883	621
	Minimum	700	520	460	330	400	320	170	480	370
	Maximum	1860	1540	1600	1470	2050	1090	550	2470	1120
CHL (µg/L)	Mean	28.8	29.6	19.7	9.5	13.3	15.8	7.4	8.0	14.3
	Minimum	3.4	8.0	10.4	5.9	0.8	5.9	3.9	1.0	10.6
	Maximum	88.6	52.6	48.4	14.2	49.2	26.9	11.6	19.2	26.6

Summary Data Table

Table Rock Lake 2008

2008 Table Rock Summary Data

TP = Total Phosphorus;  
 TN = Total Nitrogen;  
 CHL = Chlorophyll

Main Lake Sites	10		18		15		17		14		3		2		1	
	# of samples	7	6	4	4	7	7	9	5	5	5					
Secchi (inches)	Mean	92	114	86	78	88	85	73	58							
	Min	50	86	68	62	42	29	63	39							
	Max	116	190	111	104	120	138	84	76							
TP (µg/L)	Mean	13	10	16	15	21	19	11	5							
	Min	10	5	9	10	11	9	9	3							
	Max	23	14	20	24	39	82	14	9							
TN (µg/L)	Mean	390	335	488	466	573	648	483	358							
	Min	280	220	350	320	350	380	350	210							
	Max	670	540	690	730	1060	1250	730	680							
CHL (µg/L)	Mean	6.8	2.9	7.6	10.1	9.5	10.6	11.4	11.5							
	Min	2.4	0.1	5.7	6.1	1.7	2.9	7.6	6.1							
	Max	13.6	7.6	9.8	15.0	19.8	33.4	17.1	18.4							

Tributary Sites	James River Arm		Kings River Arm		Indian Creek		Roaring River		Long Creek	
	# of samples	13	11	5	4.5	7	6.5	9	16	8
Secchi	Mean	36	41	66	67	29	47	78	42	57
	Min	23	32	49	48	4	13	33	30	23
	Max	53	66	88	88	63	70	116	54	99
TP (µg/L)	Mean	64	51	25	22	35	28	21	24	29
	Min	36	33	18	13	8	14	13	19	17
	Max	130	142	35	79	195	154	63	36	136
TN (µg/L)	Mean	1028	849	571	759	608	563	589	626	856
	Min	540	410	390	370	430	350	320	380	560
	Max	1730	1740	990	1750	1110	980	910	2240	1810
CHL (µg/L)	Mean	33.6	30.8	15.7	10.5	13.7	14.2	8.5	7.0	12.6
	Min	18.6	12.3	7.4	3.4	4.0	6.5	2.6	0.5	4.3
	Max	48.6	77.8	24.1	22.6	32.2	29.4	32.1	17.2	23.7

Summary Data Table

2007 Table Rock Summary Data

TP = Total Phosphorus;  
TN = Total Nitrogen;  
CHL = Chlorophyll

Main Lake Sites		10	18	15	17	14	3	2	1
	# of samples	6	2	8	8	7	5	8	8
Secchi (inches)	Mean	123	126	148	152	122	138	116	149
	Min	87	93	99	89	86	120	91	123
	Max	192	172	227	232	174	174	182	185
TP (µg/L)	Mean	7	8	7	7	7	5	7	4
	Min	5	7	6	6	4	4	5	3
	Max	8	10	10	8	11	6	9	7
TN (µg/L)	Mean	270	350	320	380	420	400	480	390
	Min	220	260	240	270	280	340	380	200
	Max	340	460	580	640	660	620	650	1210
CHL (µg/L)	Mean	4.4	2.4	4.6	4.6	4.7	5.8	5.3	3.3
	Min	2.1	2.3	2.0	1.5	2.0	2.5	3.8	1.7
	Max	8.4	2.5	8.7	11.9	9.0	11.4	9.0	7.5

Tributary Sites		James River Arm				Kings River Arm			Indian Creek	Flat Creek	Roaring River	Long Creek
		13	11	5	4.5	7	6.5	Viola	9	12	16	8
	# of samples	8	7	8	8	8	8	7	7	8	8	6
Secchi	Mean	43	40	58	90	41	74	95	111	48	47	123
	Min	34	34	44	74	34	63	60	66	31	63	108
	Max	57	50	93	107	53	97	138	162	92	39	135
TP (µg/L)	Mean	64	46	26	11	28	17		8	47	33	8
	Min	52	27	18	8	20	14		6	13	21	7
	Max	112	70	39	17	37	30		11	158	149	9
TN (µg/L)	Mean	1020	630	880	560	380	340		420	1310	640	340
	Min	640	420	470	410	320	260		280	780	350	270
	Max	1870	1500	1750	830	560	510		570	2230	1700	500
CHL (µg/L)	Mean	40.5	39.3	22.5	9.5	15.8	11.2		4.8	15.3	11.0	6.3
	Min	27.1	23.1	10.4	5.4	7.0	7.1		1.8	0.7	2.3	4.4
	Max	78.9	71.3	53.4	20.4	31.4	21.1		10.5	157.1	25.1	10.8

Table Rock Lake 2007

Summary Data Table

Table Rock Lake 2006

2006 Table Rock Summary Data

TP = Total Phosphorus;  
 TN = Total Nitrogen;  
 CHL = Chlorophyll

<b>Main Lake Sites</b>		<b>10</b>	<b>18</b>	<b>15</b>	<b>17</b>	<b>14</b>	<b>3</b>	<b>2</b>	<b>1</b>
	# of samples	7	5	8	8	7	7	7	8
Secchi (inches)	Mean	112	121	115	121	127	126	131	140
	Min	89	92	59	69	104	89	89	87
	Max	134	157	197	165	161	158	187	195
TP (µg/L)	Mean	9	9	8	9	7	6	5	4
	Min	6	6	5	4	4	4	4	2
	Max	18	12	18	19	13	15	9	10
TN (µg/L)	Mean	337	305	264	259	332	408	275	372
	Min	240	230	170	180	260	310	190	300
	Max	740	410	360	300	440	560	410	500
CHL (µg/L)	Mean	4.4	4.8	5.5	4.2	4.0	4.5	2.5	2.8
	Min	2.5	3.5	2.4	1.8	2.9	2.2	0.2	1.4
	Max	8.3	8.4	15.0	8.3	5.7	13.4	5.4	7.3

<b>Tributary Sites</b>		James River Arm				Kings River Arm			Indian Creek	Flat Creek	Roaring River
		<b>13</b>	<b>11</b>	<b>5</b>	<b>4.5</b>	<b>7</b>	<b>6.5</b>	<b>Viola</b>	<b>9</b>	<b>12</b>	<b>16</b>
	# of samples	8	8	8	8	8	8	5	7	8	8
Secchi (inches)	Mean	42	41	59	77	43	63	87	112	42	46
	Min	35	34	42	59	30	54	50	84	32	34
	Max	54	53	103	109	62	81	113	142	80	60
TP (µg/L)	Mean	58	35	19	8	37	19		12	40	31
	Min	40	22	11	4	21	10		8	18	15
	Max	96	68	34	14	63	33		27	72	60
TN (µg/L)	Mean	1069	691	623	371	436	390		332	450	711
	Min	590	420	420	230	300	250		240	320	390
	Max	1840	1250	1230	560	670	860		470	1620	950
CHL (µg/L)	Mean	32.9	31.4	14.1	5.8	14.9	14.0		4.2	13.8	10.7
	Min	3.0	16.8	6.4	3.4	2.5	6.9		2.9	0.4	0.5
	Max	93.6	81.1	22.6	12.1	43.9	31.0		6.0	48.9	47.8

Mr. David Casaletto, Executive Director  
Table Rock Lake Water Quality Inc.  
PO Box 606  
Kimberling City, Mo. 65686

Dear Mr. Casaletto:

Thank you for taking the time to comment on the 2010 proposed 303(d) list. I understand your concern that the proposed list includes the lower portion of Table Rock Lake which has the lowest levels of nutrients but neither the James nor Kings river arms which have higher levels of nutrients.

The current nutrient criteria for Table Rock lake sets stricter standards for the lower main lake to insure that historic high water quality in that portion of the lake is maintained. Less stringent standards (currently only nitrogen standards) were set for the other arms of the lake. Our proposed 2010 303(d) listing of Table Rock Lake must be based on compliance with our current standards, and I believe the list is justified based upon the data we have and the standards we must use.

I would encourage you to voice your concerns about the current manner in which the Table Rock Lake nutrient criteria are written to John Hoke, Chief of the TMDL and Standards Unit. I would expect that future revisions of the standards will include some changes to the lake nutrient criteria, so it is important that you have a voice in any such revisions.

SY jcF  
Cc: John Hoke



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7  
901 NORTH 5TH STREET  
KANSAS CITY, KANSAS 66101

JUL 21 2010

Mr. John Ford  
Water Protection Program  
Water Protection and Soil Conservation Division  
Missouri Department of Natural Resources  
P. O. Box 176  
Jefferson City, Missouri 65102

Re: Missouri Public Notice of Impaired Waters List

Dear Mr. Ford:

The United States Environmental Protection Agency (EPA) has reviewed the Missouri Department of Natural Resources (MDNR) draft 2010 Clean Water Act (CWA) Section 303(d) list public noticed by MDNR on February 28, 2010. MDNR stated in the public notice that all comments received on or before the close of business July 28, 2010, will be considered and the proposed list possibly revised. The following are EPA's comments on Missouri's draft 2010 list.

In order to facilitate a thorough review and EPA action on the 2010 Missouri CWA Section 303(d) list, we encourage MDNR to submit a complete submission package that contains:

- the 2010 MO listing methodology,
- priorities and schedules for Total Maximum Daily Load (TMDL) development,
- any and all data to support good cause for Category 2 delistings,
- any and all information to support Category 4a waters because of approved TMDLs,
- any and all information to support Category 4b waters because of a permit in lieu of or a watershed plan,
- any and all information to support Category 4c waters,
- any and all information to support the Assessment Database, and
- copies of any and all public comments and responses.

We look forward to working with you on the 2010 Missouri CWA Section 303(d) list. If you have questions, please contact me at (913) 551-7821 or by e mail at [delashmit.john@epa.gov](mailto:delashmit.john@epa.gov) or Bruce Perkins of my staff at (913) 551-7067.

Sincerely,

John DeLashmit  
Chief  
Water Quality Management Branch

2010 JUL 23 PM 12:37  
WATER PROTECTION PROGRAM

Lorin, i have recieved and reviewed your powerpoint presentation on Kiefer Creek. It is very well done and might form the core of a nonpoint source watershed grant proposal. While some of these grant monies are tied to current or former 303d listed waters, non 303d waters are still eligible. Given the presence of the state park and a potentially large number of people that do or would like to use the stream for swimming, I think a project to identify and treat bacterial sources in the Kiefer Creek watershed would be an excellent nonpoint source project. I have placed a copy of your presentation in the administrative record for the 2010 303(d) list.

---

**From:** Lorin Crandall [mailto:lorincrandall@yahoo.com]

**Sent:** Wednesday, July 28, 2010 4:57 PM

**To:** Ford, John

**Subject:** 2010 303d List Comment on Kiefer Creek

Hello John,

I have attached a pdf containing my comment regarding 303d status for Kiefer Creek in 2010. Please review and let me know if you have any questions, I look forward to your response.

Sincerely,

Lorin Richard Crandall  
*Clean Water Coordinator*  
Missouri Coalition for the Environment  
(314) 680-2575

# MISSOURI COALITION FOR THE ENVIRONMENT

6267 Delmar Blvd. 2-E • St. Louis MO 63130 • 314-727-0600 Fax: 314-727-1665 • moenviron@moenviron.org • www.moenviron.org



July 28, 2010

Missouri Department of Natural Resources  
Attn: John Ford  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102

Re: Proposed 2010 303(d) Impaired Waters List

I submit these comments regarding the draft 2010 303(d) list on behalf of Missouri Coalition for the Environment (MCE). Over the past several years, MCE has consistently filed comments regarding the Missouri 303(d) list and the methodology used to derive the list.

MCE's past comments have pointed out serious inadequacies in the 303(d) listing methodology which inappropriately leaves large swaths of Missouri's streams off the list. MCE's comment letters on the 2004/2006 and 2008 impaired waters lists point out that while MDNR recognizes the serious environmental and human health risks of mercury contamination in Missouri's waters within official documents, streams are de-listed for mercury issues. Atmospheric deposition of mercury is an ongoing issue, and yet the Mississippi River (WBID 3152) in Mississippi/Pemiscot County is proposed for de-listing. MCE reiterates its prior comments that because of the ongoing causes of mercury in the atmosphere and the resulting ongoing deposition, the Mississippi River (WBID 3152) still is impaired for mercury and should not be delisted.

Additionally, on numerous previous occasions MCE has also pointed out that Missouri fails to include many of the state's currently unclassified waters on the 303(d) list because these waters are not assigned numeric criteria due to their "unclassified" status. The current 303(d) methodology is not designed to consider narrative criteria, which are the only criteria that are in place to protect the majority of streams in Missouri. By DNR's numbers there are at least 80,000 miles of unclassified waters in the state, and the number is likely closer to 160,000 miles. As previously stated in our 2008 303(d) comment letter (dated April 10, 2009), "Federal regulations do not authorize States to decline to apply narrative standards in the 303(d) process until narrative standards implementation procedures have been implemented."<sup>1</sup> The result of this failure to include narrative criteria in the 2010 303(d) listing methodology is that the majority of Missouri's unclassified streams are not included on the list and therefore will not receive a TMDL, not because they do not suffer from impairment, but because the methodology is flawed.

In addition to these ongoing overarching concerns with the 303(d) list methodology mentioned above, we have problems with several of the specific waters proposed for de-listing in 2010 and

---

<sup>1</sup> *Responsiveness Summary EPA Decision Concerning Arizona's 2004 CWA Section 303(d) List*, p. 2 (U.S. EPA Region IX Mar. 17, 2005). Available at: [http://www.epa.gov/region09/water/tmdl/303d-2002pdfs/az2004\\_response-summary\\_final.pdf](http://www.epa.gov/region09/water/tmdl/303d-2002pdfs/az2004_response-summary_final.pdf).

believe that the information MDNR currently has does not support de-listing. They are detailed as follows:

- **WBID 1709 Maline Creek:** According to the water quality information sheet Maline Creek is proposed for de-listing as impaired for chlorides. The data sheet states that a water body should be considered impaired for chlorides if “chronic or acute numeric criteria are exceeded on more than one occasion during the last 3 years for which data is available”. The last time data samples were taken for chlorides on Maline Creek was September 2007. There is no data available after that, presumably because samples were not taken. MCE does not believe that MDNR has taken samples recently enough to justify the de-listing of Maline Creek, since the data samples it used that showed chloride levels above the chronic water quality standard for protection of aquatic life from February 2004, January 2005, and February 2007. Since the data stops after September 2007, it is entirely possible that chronic or acute numeric criteria could have been exceeded in late 2007, in 2008, or in 2009 but no samples were gathered.

Additionally, the water quality data sheet states that 2 of the chloride exceedances of the 3 occasions cited occurred during non-stable flow conditions that were not considered to be representative of the 96 hour period around the date of sample collection. There is no data for the 96 hours period around the date of sample collection for February 2004, January 2005, or February 2007 so MCE is unclear how MDNR was able to reach the conclusion that the conditions were not representative. Without more recent and consistent data, it is impossible for MDNR to have drawn the conclusions it cites for de-listing of this portion of Maline Creek.

- Water quality data sheets are missing for the following waters proposed for de-listing, and thus it is impossible for anyone reviewing the data to understand how MDNR determined that these waters should be removed from the list. The water quality data sheets should be made publicly available for comment before the list is finalized.
  - WBID 0212 Indian Camp Creek, WBID 3374 Jordan Creek, WBID 3152, 1706 Mississippi River, 0654U Willow Br.
- **WBID 221 & 222 Dardenne Creek:** The water quality data sheet for this section of Dardenne Creek states “Based on the rules in the Listing Methodology document, the 2002 data shows impairment while the 2008 data just falls into the unimpaired category. These results are judged to be inconclusive, but do suggest that Dardenne Creek has elevated levels of fine sediment.” MCE does not see how the results are inconclusive if both the 2002 and the 2008 results indicate impairment and Dardenne Creek should not be de-listed for Inorganic Sediment in the 2010 303(d) list.
- **WBID 7020 Lewistown Lake/Reservoir:** There is no data for this reservoir after 2002. While the water quality data sheet indicates that the lake was not used for drinking water after 2002, it is classified “L1” which means it is a “Lake[] or Reservoir[] used primarily for public drinking water supply.” 20- CSR 10-7.031. If the lake is still classified for WBC-A, then elevated levels of atrazine from crop production would still render the water body impaired but without any data to show whether levels have been elevated in the past 8 years, it is impossible to determine whether the lake should be de-listed. As such, since MDNR does not

have data to support de-listing, the lake should remain on the impaired waters list and MDNR should resume testing for atrazine going forward and establish a TMDL, as necessary.

- WBID 217 & 218 Peruque Creek: In the water quality data sheet for Peruque Creek, all data used in MDNR's analysis to determine that "Data shows WQ Standard now met" is from 2002. There is no data on Inorganic Sediment more current than that available, therefore MCE does not believe MDNR has enough information to justify de-listing of Peruque Creek especially because it was listed on the 2004/2006 and 2008 303(d) lists, at a time when the 2002 data was presumably available.
- WBID 2375 Wilson's Creek: DNR states that there are no exceedances of the geometric mean for E coli for the last 4 years of data that exist for Wilsons Creek, and therefore the stream is unimpaired and should be de-listed. The last data sample taken on Wilson Creek was in September 2007 by the Christian County Health Department. This data is almost 3 years old and is not representative of current stream conditions at Wilsons Creek. The information MDNR currently has is insufficient to justify de-listing and therefore Wilsons Creek should remain on the 2010 303(d) list.

Additionally, MCE believes that MDNR's analysis of the e coli standard that applies to Wilson's Creek in the water quality data sheet is incorrect. In Missouri state regulations, "The *E. coli* count shall not exceed one hundred twenty six (126) per one hundred milliliters (100 mL) at any time in losing streams". 10 CSR 20-7.031(4)(C). Wilson's Creek is a losing stream, as denoted in Table J, 10 CSR 20-7.031, and the losing stream segment is a part of the segment currently on the 2008 303(d) list. If the e coli levels in the losing stream segment of Wilson's Creek can never exceed 126 cfu/100 mL, then there have been exceedances of the geometric mean in the last 4 years of data.

These inconsistencies indicate that Wilson's Creek must remain on the 303(d) list, and also indicate that it is possible that other losing streams in Missouri are being held to a less stringent e coli standard than is required by 10 CSR 20-7.031(4)(C).

- WBID 3589 Wolf Creek, Trib.: This section of Wolf Creek and tributaries is being de-listed, according to the water quality info sheet, because DNR has only taken 3 DO measurements in the last 25 years, but Wolf Creek (WBID 3589) is listed as impaired on the proposed 2010 303(d) list for D.O. MCE is confused about whether Wolf Creek is proposed for de-listing or not. If it is an error that it appears on the 2010 303(d) list, MCE would say that if DNR has only taken 3 D.O. samples in the past 25 years, that it does not have enough data to justify de-listing of Wolf Creek and tributaries.

Thank you for this opportunity to comment on Missouri's 2010 303(d) list. Please let me know if you have any comments or questions.

Sincerely  
/s/ Caroline Ishida

Caroline Ishida  
Staff Attorney  
Missouri Coalition for the Environment





Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

## DEPARTMENT OF NATURAL RESOURCES

[www.dnr.mo.gov](http://www.dnr.mo.gov)

July 30, 2010

Ms. Caroline Ishida  
Staff Attorney  
Missouri Coalition for the Environment  
6267 Delmar 2E  
St. Louis, MO 63130

Dear Ms. Ishida:

Thank you for taking the time to review and comment on the proposed 2010 Section 303(d) List. Your letter received by the Department of Natural Resources on July 28, 2010 notes that the Missouri Coalition for the Environment (MCE) has made comments in the past about inadequacies in the state's Listing Methodology Document (LMD) and expresses concern particularly about de-listing certain waters for mercury. Our current assessment method for assessing mercury in fish tissue is to compare mean levels of mercury in higher trophic level fish to the proposed national tissue guideline proposed by the U.S. Environmental Protection Agency (EPA). It seems to be a straightforward and rational method that closely follows national guidelines for assessing mercury risk, but we always solicit comments during the public participation process for the revision of the LMD. During this period, which has just ended for the 2012 LMD, MCE did not attend any of the three public meetings, nor did they submit comments as to how this assessment method might be improved. Based on our current assessment method, the Mississippi River is not impaired by mercury.

I do understand and agree with your concern that unclassified waters are underrepresented on the proposed 2010 303(d) List. There are two major reasons for this under representation. The first is that the assessment process is by nature a quantitative one and currently we have established numeric translators for only some of our narrative water quality criteria. Contrary to the statement in your letter that "the current 303(d) methodology is not designed to consider narrative criteria", our current LMD includes numeric translators for fine sediment deposition, color, levels of selected metals in sediments, levels of selected metals and pesticides in fish tissue and the use of Missouri Stream Condition Index (MSCI) scores for aquatic invertebrate communities. Our proposed 303(d) listing of 388 waterbody/pollutant pairs includes 92 listings (24%) based on failure to meet narrative criteria. We also consider other types of biological data and toxicity testing. For the 2014 303(d) List, we anticipate we will be assessing a large volume of fish community data supplied by the Missouri Department of Conservation's Resource Assessment Monitoring (RAM) program. Thus, while not fully addressing narrative criteria, I believe the LMD is effective in identifying many narrative criteria problems and we will continue to work to improve this portion of the LMD.

The second and more important of the reasons for the underrepresentation of unclassified waters is that current monitoring programs are limited and focused primarily on classified waters. Given that our current monitoring resources do not allow adequate monitoring of classified

Ms. Caroline Ishida  
Page Two

waters, it would seem unwise to shift a significant portion of this current program to unclassified waters at the expense of these larger streams that serve as drinking water supplies and receive much more recreational use.

I note that in your letter there is an objection to the de-listing of certain waters only because of the absence of data for the past two or three years. When we construct a 303(d) list we use the most recent data available to us at that time. The LMD does make provision for disqualifying the use of some older data if it is no longer considered representative of current conditions due to some known change that could significantly affect water quality. If you have evidence of changes in these watersheds that has made the data we used unrepresentative of current conditions, please do not hesitate to share that with us.

I should point out that MCE has recently argued for the use of ten year old data in the assessment of Kiefer Creek, which is inconsistent with your argument against our use of three to five year old data.

With regard to your comments on Maline Creek, I have reviewed the data and our assessment of it and believe that we did follow the LMD rules for assessing this stream. The chronic chloride standard that was developed by EPA and adopted into Missouri's water quality standards is based on the assumption that the criterion value was exceeded continuously for 96 hours. We know from review of data from Maline Creek and other urban waters that chloride levels are greatly influenced by changes in flow. Two of the three chloride criterion exceedences in Maline Creek in the last three years for which data is available (2004, 2005 and 2007) were taken during a hydrographic peak event. On small streams such as Maline Creek, these events typically result in very large changes in flow within a 24-hour period and thus we cannot assume that the chloride value taken during this event is representative of a 96-hour period bracketing the time of sample collection, because there would be large changes in flow during that 96 hour period.

Thanks for noting that we had failed to post the Indian Camp Creek (sediment), Jordan Creek (DO), Mississippi River (Hg) and Willow Branch (unknown) worksheets on our web site. I will get those posted as soon as possible. The worksheet related to the proposed delisting of the 'Mississippi River WB 1707 for lead and zinc is on the web site. The file name is "10 Mississippi R".

With regard to your comments on the proposed de-listing of Dardenne Creek, I think if you re-read this paragraph in your letter you will find that your statement in the first part of the paragraph that the 2008 data just falls into the unimpaired category contradicts your conclusion in the latter part that both the 2002 and the 2008 results indicate impairment.

With regard to Lewistown Lake, our proposal to delist was based upon finished drinking water data taken from the mid 1990s indicating compliance with the atrazine standard, combined with fall 2009 communications from Mr. Everett Baker, the Department's Drinking Water Specialist for the area, who noted that the Lewistown drinking water treatment plant rarely used activated charcoal (which removes atrazine from the raw water source). Thus, we felt this was good evidence that raw water atrazine levels in the mid 1990s were basically the same as finished water levels and indicated the lake should be delisted. We have attempted to resume atrazine monitoring in Lewistown Lake but it has been sold and is now owned by an individual who has refused us access to the lake.

Ms. Caroline Ishida  
Page Three

I reviewed the 2002 fine sediment deposition (FSD) data for Peruque Creek and it clearly indicates there is no basis for listing. There was a mean FSD of 33.2% in Peruque Creek and 32% in the control stream sites. Since the current LMD requires the mean FSD to be 20% more than in control sites, Peruque Creek clearly should not be listed for FSD. Additionally, there is aquatic invertebrate data for this stream that is judged to show an unimpaired invertebrate community. I have no explanation for our failure to propose this stream for de-listing for FSD on earlier 303(d) lists other than it was an oversight.

With regard to Wilson Creek, I appreciate your careful review and your observation that a portion of this stream is classified as a losing stream in our standards and thus has a different bacteria standard. Our assessment was based on data from two sites and used the Whole Body Contact Recreation "Class B criterion of 206/100 ml". Since one of these two sites was within the losing portion of Wilson Creek, I pulled all the data for that site and re-assessed. The results indicated that the annual geometric mean E. coli value has been less than the 126/100 ml criterion for each of the last five years, and thus our assessment remains unchanged.

You are also correct that we have erroneously placed Tributary to Wolf Creek, WBID 3589 in both the proposed 2010 303(d) List and in the proposed list of waters to be removed from the 303(d) List. We are proposing de-listing because we believe the original listing was made in error due to an inadequate amount of data, three samples. Along with our proposed de-listing, we are recommending additional monitoring on this stream to confirm its proper 303(d) status. Based on your comment we will remove this stream from the proposed 2010 303(d) List and retain it on the list of waters proposed for de-listing.

MCE has obviously spent a lot of time reviewing the proposed 303(d) list. I would encourage you to also invest some time early in the public participation process, particularly for the revision of the LMD, so that your suggestions can be communicated to all our stakeholders and we can have productive discussions about how to improve this document.

Thank you again for taking the time to review and comment. If you need additional information, please contact me at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102, (573) 751-7024 or via email at [john.ford@dnr.mo.gov](mailto:john.ford@dnr.mo.gov).

Sincerely,

WATER PROTECTION PROGRAM



John Ford, Unit Chief  
Water Quality Assessment Unit

JF/lsm

**From:** Mike McKee, Missouri Department of Conservation (MDC)

**To:** John Ford, Missouri Department of Natural Resources

**Data:** July 28, 2010

**Subj:** Comments on draft 2010 303(d) impaired waters list

In the draft 2010 303(d) impaired waters list, three lakes are proposed for listing in northeastern Missouri for recent exceedance of site-specific nutrient criteria. The three lakes are Fox Valley Lake, Hazel Creek Lake and Forest Lake. These lakes are among the highest quality fishing lakes in the region, so a closer examination of the listing process by MDC was undertaken.


These three lakes were assigned site-specific nutrient criteria because they were of higher quality than some other lakes in the region as specified in the Nutrient Criteria Development Document (draft April 2007). Assigning site-specific criteria that is very close to historic levels will help prevent future degradation. MDC supports this approach, but believes that the comparison of site-specific criteria to the data used in the 303(d) assessment should account for year-to-year variation in the historic data. If this variation is ignored, nutrient criteria could be exceeded due to natural variation.

We also examined rainfall near Fox Valley Lake (Novelty Weather Station <http://agebb.missouri.edu/weather/realtime/novelty.asp>) and found that annual rainfall was 55.8 inches in 2008 compared to 29.1 to 40.3 inches in the previous 7 years. Total phosphorus in Fox Valley Lake was greater in 2008 than in any of the previous 7 years, which may be due to the increased rainfall and not other source issues. We did not have time to investigate the other lakes mentioned above, but 2008 was generally a very wet year throughout the northeast region of Missouri.

**MDC Recommendation:** MDC suggests delaying the listing of Fox Valley Lake, Hazel Creek Lake and Forest Lake in the 2010 303(d) list of impaired waters until some of the outstanding issues are resolved. Specifically, we recommend that the assessment of these lakes consider the following:

1. Exclude data used to set site-specific nutrient criteria from the 303(d) assessment. For Fox Valley Lake, as an example, years 2003 and 2004 would be excluded from the 303(d) assessment since they were included in setting site-specific nutrient criteria.
2. Require a minimum of three years of data be available beyond the historic data to conduct a 303(d) assessment for lakes with site-specific nutrient criteria.
3. Use a t-test comparison of 303(d) assessment data to the site-specific nutrient criteria data. An example of how to use the t-test for these types of comparisons is described in Appendix B of the draft 2012 Listing Methodology Document (narrative criteria example). If there is wide variation in the number of samples collected each year then a weighted analysis may be required.
4. Evaluate whether rainfall should be considered in the assessment of nutrient impairment in lakes with site-specific data.

The MDC staff familiar with these three lakes do not anticipate that delaying the assessment until the next cycle will create vulnerability to aquatic life. However, delaying the process can help ensure that we do not inadvertently list a water that may not be impaired.



STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

[www.dnr.mo.gov](http://www.dnr.mo.gov)

July 30, 2010

Mr. Mike McKee  
Resource Scientist  
Missouri Department of Conservation  
1110 South College Avenue  
Columbia, MO 65201

Dear Mr. McKee:

Thank you for your email on July 28, 2010 responding to our request for comments on the draft 2010 303(d) List. While I share your concerns about site specific lake nutrient criteria being set so close to ambient conditions that one or two wet years may cause the lakes to be listed, lake standards and the current listing methodology constrain us from complying with all your requests.

Your first request was that we exclude the data used to develop the criteria from our 303(d) assessment. For some lakes with site specific criteria such as the Lake of the Ozarks or Table Rock Lake, this would be a very large data set excluded from 303(d) consideration. Federal guidelines for the development of the list, and the Department of Natural Resources' position as well, are to use all readily available and scientifically defensible data. Additionally, including all the data used to determine the criteria when we make an assessment would reduce the impact of any subsequent year's data. This method tends to keep the mean values of nitrogen, phosphorus and chlorophyll nearer to the values used to set the criteria, thus actually reducing the chance of placing these lakes on the 303(d) list.

Your second request was to use a minimum of three years of data collected after criteria were set. I think our present method of assessment noted in the previous paragraph will provide more protection against an assessment being overly influenced by one atypical year.

Your third request was that we use a "t" test to evaluate the data. The current listing methodology requires comparison of the nutrient criterion value to the sixty percent lower confidence limit, and we have no flexibility on this issue. However, the calculation of the sixty percent lower confidence limit actually uses the "t" statistic equation, it just re-writes the equation to solve for amount of difference from the mean rather than solving for the "t" statistic.

Mr. Mike McKee  
Page Two

You also note that should some years have substantially more data than others, that the data should be weighted so that no single year's data has more weight than other years. The Department agrees. We have had some negative feedback from EPA and others on past lists when we weighed data, but the overall issue is how representative the data is of real world conditions. We will continue to weigh data whenever we feel it is necessary to make the dataset representative of true conditions.

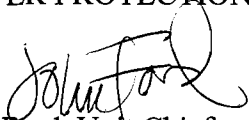
Your fourth request was that we give additional consideration to how we use data from atypical (extremely wet or dry) years. We do this to some extent now in our assessment of biological data. This issue is generally less important for water chemistry where we typically have several years of data and less chance for that kind of bias. With only a few years of data, it does become a more important issue, and although we are still constrained by the need to use all data, we may have some room for interpretation where an assessment seems unduly influenced by an atypical year.

One possible way of resolving some of your concern would be to increase the burden of proof in the statistical test used to assess lakes with site specific criteria. Unfortunately the five month public notice period just ended and we intend to ask for approval of the 2012 Listing Methodology at the September 8<sup>th</sup> Clean Water Commission meeting. If I felt there would be no stakeholder opposition to making a change in the statistical methods for the 2012 Listing Methodology Document (LMD), I would propose it even at this late date. However, we have stakeholders on Table Rock Lake and the Lake of the Ozarks that are very sensitive to the issue of relaxing our rules for assessing lake nutrient criteria. In fairness to them, I believe any discussion of statistical procedures for assessing site specific nutrient criteria needs to be postponed until development of the 2014 LMD so that there is adequate time and opportunity for all stakeholders to participate.

If you need additional information, please contact me at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102, (573) 751-7024 or via email at [john.ford@dnr.mo.gov](mailto:john.ford@dnr.mo.gov).

Sincerely,

WATER PROTECTION PROGRAM



John Ford, Unit Chief  
Water Quality Assessment Unit

JF/lsm



# MPUA

## Missouri Public Utility Alliance

RECEIVED  
2010 JUL 19 PM 3:13  
WATER PROTECTION PROGRAM

July 15, 2010

● Mr. John Ford  
Missouri Department of Natural Resources  
Water Protection Program  
Watershed Protection Section  
P.O. Box 176  
Jefferson City, MO 65102

RE: Comments on Missouri's Proposed 2010 303(d) List

Dear Mr. Ford:

The Missouri Public Utility Alliance (MPUA) is pleased to offer comments on the proposed 2010 303(d) List. We would also like to thank the Missouri Department of Natural Resources (Department) and Clean Water Commission (Commission) for conducting what we believe to be a fair and transparent process in assembling a list of water bodies still requiring a Total Maximum Daily Load (TMDL). MPUA recognizes that challenges still exist in terms of data quality and quantity. We want to encourage the Department and Commission to continue to work with stakeholders to obtain and use the best data possible when making decisions on Missouri's water bodies; developing suitable and equitable funding sources for monitoring; and assessing Missouri's waters and make all the data used (including QA/QC documentation) in the assessment and listing process available to the public at no cost.

MPUA has completed a review of the proposed list and is concerned about the identification of low dissolved oxygen as a pollutant when no apparent pollutant or source of pollutants can be identified or when the water body appears to have naturally-occurring dissolved oxygen levels that do not conform to the State's dissolved oxygen criteria which is taken from a Federal standard. This standard does not recognize the unique biologic, hydrologic, limnologic, and geologic conditions found in Missouri's rivers and streams. MPUA recognizes and recalls that the Department switched to the current format of listing low dissolved oxygen as a pollutant on the 2004/2006 303(d) List in an effort to, presumably, provide transparency to the public as to the condition of the water body that is causing the impairment. MPUA, however, is growing ever more concerned with the concept of listing low dissolved oxygen as the pollutant as this may be having the effect of masking the identification of other sources of the cause of the impairment. Unless the Department revises the dissolved oxygen criteria to be more reflective of

1808 I-70 Dr. SW  
Columbia, MO 65203  
Phone: 573-445-3279  
Fax: 573-445-0680  
www.mpua.org

### Serving Municipal Utilities

Missouri Association of Municipal Utilities  
Missouri Joint Municipal Electric Utility Commission  
Municipal Gas Commission of Missouri

the actual conditions that exist in the water bodies, decides to move or to list waters in Category 4C due to the impairment being attributed to pollution instead of a pollutant; or begins to demonstrate attainment with the water quality criteria, the Department will be required by the United States Environmental Protection Agency (USEPA) to produce a TMDL for these waters.

The Department now has low dissolved oxygen identified as a pollutant for approximately 80 water body/pollutant pairs in Category 5. MPUA is concerned that the Department will be forced into a position of producing TMDLs simply for the sake of complying with the procedural requirements of Federal law and regulations. In these cases, it is conceivable that well-run wastewater treatment facilities that produce a high quality effluent will be identified through the TMDL process as sources of the impairment simply by virtue of their existence in the watershed of the water body. In most cases, waste load allocations will be assigned to the wastewater treatment plant regardless of the performance, effluent quality produced, or upstream condition of the water body.

Recently, the MPUA was involved in an impaired water body/TMDL situation very similar to the one described above. Mound Branch (WBID #1300) is a Class C stream located in Bates County near Butler, Missouri. This stream was first listed on the 1998 303(d) List with BOD and ammonia identified as the pollutants. The Butler Wastewater Treatment Facility (WWTF) was identified as the source. Subsequent to the listing, the City of Butler completed a major upgrade to the wastewater treatment facility in 2003. Since that time, monitoring of Mound Branch has continued to occur, and the Department elected to include this water body again on the 2008 303(d) List and identified low dissolved oxygen as the pollutant with the source of the pollutants listed as unknown. The data utilized to make the 2008 assessment indicates the dissolved oxygen content of Mound Branch upstream of the Butler WWTF is lower than downstream locations and the upstream segment also has a higher CBOD concentration than downstream locations. Further, the average total nitrogen and total phosphorous concentrations upstream of the WWTF were lower than downstream locations. At the time, this data did not lead the agencies to point to a clear pollutant, cause, or source of the low dissolved oxygen for Mound Branch. Therefore, neither specific pollutant(s) nor sources were able to be identified by either the Department or the USEPA in their review and approval of the 2008 list.

In early 2010, the Department with the assistance of the USEPA published a draft TMDL for Mound Branch. The agencies, based upon the same data that was used for the assessment in the preparation of the 2008 303(d) List only a few months earlier, now identified the City of Butler's newly upgraded WWTF as one of the probable sources of the low dissolved oxygen impairment. The TMDL identified four possible causes of the low dissolved oxygen: excessive loads of decaying matter, as measured by CBOD; too much algae in the receiving stream as a result of excessive phosphorous or nitrogen loading; high consumption of oxygen from decaying matter on the streambed; and physical factors such as naturally low flows due to a lack of groundwater inputs or a lack of riffles, which help to increase dissolved oxygen through aeration. MPUA,

along with the City of Butler, objected to the TMDL offering detailed comments to refute much of which was being concluded and prescribed by the TMDL. It is interesting to reflect now, some months after the TMDL was finalized, that the Department and the USEPA gave so little attention and credence to what may be the actual causes of the low dissolved oxygen impairment, namely, naturally occurring conditions and/or pollution from sources that the WWTF will have little to no effect upon. It should be noted that the CBOD waste load allocation prescribed by the TMDL for the City of Butler's wastewater treatment plant is 1.5 mg/l. Interestingly, the TMDL reports that the average CBOD discharge from the City of Butler's upgraded wastewater treatment plant is 2.445 mg/l. MPUA believes that the citizens of Butler have better uses for their taxpayer dollars than to now be forced to plan over the next 5 years how to fund another round of upgrades to the treatment plant to reduce the CBOD of the discharge from 2.445 mg/l to 1.5 mg/l, which in all likelihood will only produce a very marginal benefit, if any, to the dissolved oxygen in Mound Branch downstream of the discharge. Most certainly, these upgrades will do nothing for the dissolved oxygen content of Mound Branch upstream of the WWTF. MPUA believes that this may be a case where greater use of Category 4C of the Integrated Report may have been appropriate and wants to encourage the Department and the USEPA to increase their efforts to identify the pollutants causing the impairments and make greater use of Category 4C of the Integrated Report where the situations are appropriate rather than rushing to load the 303(d) List with water bodies that have low dissolved oxygen with no apparent pollutants or sources of pollutants.

MPUA offers the following additional general and specific comments on the proposed 2010 303(d) List.

#### General Comment

The Department in response to Federal law and regulations, including 40 CFR 130.7(b)(1)&(2), has prepared a list of water-quality-limited segments still requiring TMDLs, commonly known as the 303(d) List. Historically, the Department has been required by the USEPA to list streams with low dissolved oxygen that do not attain the State's dissolved water quality criteria on the 303(d) List. The MPUA has historically objected to the addition of those water bodies, many of which we believe are naturally occurring, to the 303(d) List principally because the 303(d) List should be a meaningful tool to identify and prioritize water bodies that are in need of restoration due to impairments caused by certain sources of pollutants. Housing water bodies on the 303(d)

List for the purposes of maintaining a log or to "keep track" of those water bodies is not appropriate and does not meet the intent of the Federal Clean Water Act, regulations and guidance. The Department has chosen to list "low dissolved oxygen" as the pollutant for water

bodies that are not attaining the State's dissolved water quality criteria instead of the actual pollutant that has caused or suspected to have caused the low dissolved oxygen condition of the water body.

40 CFR 130.7(b)(4) requires that states "shall identify the pollutants causing or expected to cause violations of the applicable water quality standards." Furthermore, Section V.H.9 of the EPA publication, "Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act" (2006 EPA IR Guidance), dated July 29, 2005, specifically indicates that states "must identify all pollutants that are known to be causing the impairment of a segment." This guidance in Section V.G.3 also indicates that states are not required to complete a TMDL for water bodies that are impaired by pollution and not a specific pollutant.

Pollutant is defined in 40 CFR 122.2 as dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. This definition under State regulation 10 CSR 20-2.010(55) is essentially identical with the exception of changes pertaining to the Atomic Energy Act language of the federal regulations. By definition, low dissolved oxygen is not a pollutant but a condition of a water body. It is brought about by various factors, one of which may be the discharge of pollutants to or pollution of the water body that results in the lowering of the dissolved oxygen. The Department has identified low dissolved oxygen as the pollutant for approximately 80 water body/pollutant pairs on the proposed 2010 303(d) List. Failure to list the actual pollutant causing or suspected to be causing the impairment may be resulting in the Department inappropriately requiring TMDLs for water bodies that are not attaining the dissolved oxygen water quality criteria due to naturally occurring conditions or other forms of pollution and not a specific pollutant. Section 502(19) of the Federal Clean Water Act defines pollution as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." Examples of pollution from the 2006 EPA IR Guidance include segments impaired due to a lack of flow or stream channelization. Therefore, in instances where the pollution causing impairment is not related to a specific pollutant, Section V.G.3 of the 2006 EPA IR Guidance indicates that a TMDL is not required and that the water body should be included in Category 4C of the state's Integrated Report.

MPUA is concerned that the USEPA in their rush to group all the low dissolved oxygen water bodies in Missouri into Category 5 of the state's Integrated Report will result in water bodies being unnecessarily and inappropriately added to the 303(d) List. This may result in the needless preparation of TMDLs for water bodies that have low dissolved oxygen levels either due to natural conditions or due to pollution from anthropogenic sources not related to a specific pollutant. Preparing TMDLs is expensive and resource intensive. While the USEPA has

participated in TMDL preparation and provided resources in the past, resources and priorities have a way of shifting. This may leave Missourians “holding-the-bag” for the cost of TMDL preparation and implementation of the associated waste load allocations in the future. In today’s climate of stretched fiscal resources, it is critical that the Department and USEPA correctly identify whether they believe that a water body is impaired due to the discharge of a pollutant, which requires a TMDL, or whether the impairment is resulting from pollution, not requiring a TMDL. In either case, the identification of low dissolved oxygen as the pollutant causing the impairment is not in compliance with Federal law, regulations and guidance and must be corrected prior to submission to the USEPA for approval.

MPUA is aware that several States do not identify low dissolved oxygen as a pollutant. Some States have adjusted the language of the list to reflect the cause of the impairment rather than list low dissolved oxygen as a pollutant, while others have made greater efforts to identify the actual pollutant causing or suspected to be causing the impairment. MPUA strongly encourages the Department to make every effort to revert back to the pollutant-listing procedure used in the 2002 303(d) List and identify the pollutant causing the impairment rather than listing low dissolved oxygen as the pollutant. We recognize that in some cases where the Department suspects that a pollutant is causing the impairment but cannot identify the specific pollutant it is appropriate for the Department to list the pollutant as unknown while continuing to work on identification of the pollutant(s) causing the impairment.

MPUA stands ready to work with the Department to prepare an Integrated Report to the USEPA that is an accurate categorization of Missouri’s waters. To reiterate, MPUA believes that the usage of low dissolved oxygen as a pollutant on the 303(d) List does not comply with federal regulations and guidance, and can lead to premature listing decisions that force agencies to expend resources on water bodies where the impairment may not be driven by a pollutant. MPUA advocates for a change in this procedure.

#### Comments on Specific Water Bodies

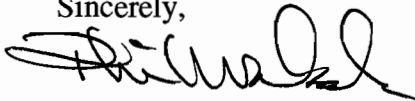
Middle Fork Salt River, WBID 0121, Macon and Monroe Counties – The Middle Fork Salt River is identified by 10 CSR 20-7.031 Table H as a Class P stream extending 49 miles from a downstream lat/long location of 39285962/-91552841 to an upstream lat/long location of 39393292/-92220108. Table H also identifies a Class C portion of the Middle Fork Salt River extending 22 miles from a downstream lat/long location 39393292/-92220108 to an upstream lat/long location of 39535493/-92261621. The Class P portion of Middle Fork Salt River has designated uses of irrigation, livestock and wildlife watering, aquatic life protection, whole body contact recreation–B, secondary contact recreation, and industrial. The Class C portion has designated uses of livestock and wildlife watering, aquatic life protection, and whole body contact recreation–B.

As an administrative matter, the proposed 2010 303(d) List identifies the impairment length as 24.8 miles. However, the GPS location data that the Department presented in Table 1 identifies the impaired segment, as approximately 58.1 miles. MPUA believes that the downstream lat/long location data is likely not properly located and should be adjusted.

In addition to the GPS location data issue, the listing identifies low dissolved oxygen as the pollutant for the water body and the source as unknown. MPUA, as stated previously, does not believe it is appropriate to identify low dissolved oxygen as a pollutant causing the impairment. Perhaps more important to this particular water body listing is the data used in the assessment of the water body attainment of the water quality criteria. There are four dissolved oxygen data sampling results with dissolved oxygen data that is below the state water quality criteria of 5.0 mg/l. Sampling locations 121/33.5, 121/38.3, 121/46.0 and 121/55.2 each contain only one dissolved oxygen data point. These data points range from 3.8 mg/l to 4.1 mg/l. MPUA believes that it is worthy to note that each of these sampling locations do not appear to be routinely sampled and that all the samples collected from these locations occurred during September 26 and 27, 2007. Further, MPUA would like to point out that most if not all of the Middle Fork River and the accompanying watershed were within a geographic area experiencing a Category D1 drought as identified by the National Oceanographic and Atmospheric Administration (NOAA) during the dates when the samples were collected. MPUA is aware that the USEPA does not allow the usage of stream data collected during drought conditions in the conductance of aquatic life or recreational use attainability analyses. We believe that given the affect that temperature and flow can have on dissolved oxygen levels of water bodies it is inappropriate to list the Middle Fork Salt River as impaired for low dissolved oxygen based upon data collected during drought conditions. MPUA believes that, at a minimum, the Middle Fork Salt River should be moved to Category 3 of Missouri's Integrated Report.

MPUA appreciates the opportunity to provide comments on the proposed 2010 303(d) List. If you have any questions, please do not hesitate to contact me at (573) 445-3279.

Sincerely,



Philip K. Walsack  
Manager of Environmental Services  
Missouri Public Utility Alliance

cc: Ron Hardecke, Chair, Missouri Clean Water Commission  
Scott Totten, Acting Director, WPP  
John Delashmit, P.E., USEPA Region VII

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

[www.dnr.mo.gov](http://www.dnr.mo.gov)

July 20, 2010

Mr. Phil Walsack  
Manager of Environmental Services  
Missouri Public Utility Alliance  
1808 I-70 Drive SW  
Columbia, MO 65203

Dear Mr. Walsack:

Thank you for your thoughtful and well reasoned letter received in our office July 15, 2010 regarding our proposed 2010 303(d) List. You make a strong case for one side of the dissolved oxygen listing issue, the strongest single point being that dissolved oxygen (DO) is an inherent condition of the water rather than some substance added to the water, and could reasonably be put in category 4C [impaired but not requiring a Total Maximum Daily Load (TMDL)]. On the other side of the argument is the fact that the U.S. Environmental Protection Agency (EPA), Region 7 expects state lists to include DO. EPA will add low DO waters to the state list if they fail to do so. There also is a problem with substituting specific potential causes of low DO such as nutrients, biological oxygen demand (BOD), sediment oxygen demand, temperature, and physical or hydrologic conditions. In many cases, we do not know which of these are contributory and the 303(d) List seems a poor place for speculation.

Had your comments been made earlier in the public participation process we might have vetted your idea to other stakeholders and EPA. However, I think it is late in the process to be discussing this issue for the 2012 Listing Methodology Document (LMD). I personally believe that your suggestion has merit, and would suggest that between now and the next LMD revision we discuss this issue with EPA and interested stakeholders. Movement of waters with low DO levels from the 303(d) List to category 4C would, as you note, have considerable benefit to the Department of Natural Resources in the form of reduced workload for TMDL writers while still retaining these waters on our list of impaired waters.

I reviewed our locational data for Middle Fork Salt River and agree that the downstream end of the segment, as shown on the proposed 303(d) List is in error and we will correct that location so that the segment indicated is 24.8 miles in length. Regarding your comments on the representativeness of the DO data for Middle Fork Salt, I note that the low DO values were taken during September when water temperatures were lower than in summer. Also the sampling locations had from one to three cubic feet per second (cfs) of flow. Under these conditions even prairie streams should be able to maintain 5 milligrams per liter (mg/L) of DO, so I do not believe the low DO at this time was due strictly to physical or hydrologic conditions.

Mr. Phil Walsack  
Page 2

If you have any questions, please contact me at (573) 751-7024 or by mail at Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102. Thank you again for taking the time to comment on our proposed list.

Sincerely,

WATER PROTECTION PROGRAM

A handwritten signature in black ink, appearing to read "John Ford". The signature is stylized with a large, looped initial "J" and a cursive "Ford".

John Ford, Chief  
Water Quality Monitoring Unit

JF:djs

Comments submitted to the Missouri Department of Natural Resources concerning the proposed 2010 303(d) list.

Some general comments concerning five lakes on the proposed list:

Lake of the Ozarks and Table Rock Lake are both listed for exceeding TN criterion at their dam sites (Table Rock is also listed for CHL at this site). The 303(d) list identifies these sites by referencing the main lake channels (Osage and White arms). There is confusion if the use of the main lake channel name is strictly for site identification or if this means only these main lake channels will be focused on for TN reduction. It is my hope that it is the former and not the latter, as TN concentrations at the dam site of a lake are a function of all inputs into the lake.

Lake Springfield is listed for TP, TN and CHL. This water body is unique in that it has a power plant located near the dam that has great influence on water quality. Data suggest the warm water releases from the power plant may keep this lake from stratifying during the summer, eliminating the loss of nutrients to sedimentation. The constant mixing of water at the dam may be reason to exempt this lake from the adopted nutrient criteria approach. If current criteria are used for Lake Springfield, it should be noted that internal loading may be extreme enough to limit improvements associated with any watershed management activities.

Lake Taneycomo is listed for TN. This water body is a lake in name, but functionally is much more similar to a river. During times of high flow, the residence time in Lake Taneycomo can be as short as one day. The extreme nature of this water body's hydrology may mean the current method for criteria calculation is inappropriate. Research has indicated that algal production in this lake is generally not a function of nutrient levels, but controlled by hydrology. Another factor that makes this lake different from most is the vast majority of flow through the lake comes from deep water draws from an up-stream reservoir (Table Rock). Nitrogen abatement efforts that take place down-stream of Table Rock Dam may not result in measurable reductions due to the overwhelming influence of discharge from Table Rock Lake.

Lake Wappapello is listed for TP, TN and CHL. Water depth in Lake Wappapello is generally quite shallow (mean depth at conservation pool is around 7.5 feet). Historically the highest nutrient concentrations measured in Lake Wappapello have come during the second half of the summer season and not during the early summer as observed in most Missouri reservoirs. Nutrient and water column temperature/dissolved oxygen profiles indicate this lake may be polymictic, mixing multiple times during the year at irregular frequencies. This means the high nutrients measured during mid to late summer may be a product of internal loading and not watershed inputs. Internal loading may limit the potential for nutrient abatement efforts in the watershed to reduce in-lake nutrient concentrations.

Comments concerning specific criteria values for lakes on the 303(d) list:

Butler Lake is listed for TP and CHL

Butler Lake has a predicted TP value of .089mg/L and a geometric mean of .068mg/L. According to section N-3-A-III of the rule, the TP criterion for this lake should be set at the predicted TP value of .089mg/L. The corresponding CHL criterion would be .0392mg/L. This lake meets both TP and CHL criteria and should be removed from the list.

Hazel Creek Lake is listed for CHL

While Hazel Creek is listed as having site specific criteria in Table M of the rule, the lake did not meet the standards for being on the list (neither the mean nor the predicted TP value was less than .020mg/L). Hazel Creek Lake has a long-term geometric mean of .022mg/L for TP, which equals the lake's predicted TP value. The lake should have a TP criterion that is set at .022 and not .027mg/L. Corresponding TN and CHL criteria would be .440 and .0097mg/L. Hazel Creek Lake's long-term mean TN and CHL are .510 and .0074mg/L, respectively. The lake currently meets TP and CHL criteria, but exceeds TN criterion. (I realize this may all be moot given that lake was inadvertently included in Table M.)

Kraut Run/Busch #33 is listed for TP, TN and CHL

Kraut Run has a long-term geometric mean TP value of .102mg/L and a predicted TP value of .085mg/L. Because both the mean and predicted TP values are higher than the regional reference value of .058mg/L, the TP criterion for this lake should be the predicted value of .085mg/L (section N-3-A-III). The corresponding TN and CHL criteria should be 1.700mg/L and .0374mg/L, respectively. This lake exceeds TP and CHL criteria, but meets TN criterion.

Lake St. Louis is listed for TP, TN and CHL

Lake St. Louis is located in the Mississippi River Hills Subsection (TP8) and according to the rule (section N-1-B-I) is part of the greater Plains Region. The lake has long-term geometric mean and predicted TP values that exceed the Plains Regional reference value of .058mg/L. According to section N-3-A-III of the rule, the TP criterion should be set at the predicted value of .096mg/L. The corresponding TN and CHL criteria are 1.920 and .0422mg/L, respectively. Long-term geometric mean values for all three parameters fall below their respective criteria. This lake should be removed from the 303d list.

Lamar City Lake is listed for TP and CHL

The long-term geometric mean and predicted TP for Lamar City Lake are both higher than the regional reference value of .058mg/L. According to section N-3-A-III of the rule, the TP criterion should be set at the predicted value of .083mg/L. The corresponding CHL criterion is .0365mg/L. This lake meets TP criterion and should be removed from the list for TP; CHL still exceeds criterion.

Little Dixie Lake is listed for TP, TN and CHL

Little Dixie Lake is located in the Claypan Till Plains Subsection (TP6), which is listed as being part of the Plains Region (section N-1-B-I). The long-term geometric mean of .055mg/L is higher than the predicted TP value, but lower than the regional reference value, meaning the TP criterion should be listed as the regional reference value of .058mg/L (section N-3-A-I). The corresponding TN and CHL values are 1.160 and .0255mg/L. TP and TN both meet criteria and the lake should be taken off of the list for both nutrients. The long-term geometric mean CHL value for this lake is .02557mg/L, compared to the CHL criterion of .0255mg/L.

Manito Lake is listed for TP

Manito Lake is located in the Prairie Ozark Border Subsection (OZ11) and according to section N-1-B-II of the rule is part of the Ozark Border Region. The TP criterion should be the regional reference value of .041mg/L and not .058mg/L (which is the reference value for Plains Region). Corresponding TN and CHL criteria are .820 and .0144mg/L, respectively. Based on these values, Manito Lake exceeds both TP and TN criteria.

Unionville Lake (new) is listed for TP and CHL

The long-term geometric mean TP value (.089mg/L) for Unionville Lake is higher than both the predicted value (.070mg/L) and the regional reference value (.058mg/L). Because the predicted value is also higher than the regional reference value, it should be the lake's TP criterion (section N-3-A-III). Corresponding TN and CHL criteria are 1.400 and .0308mg/L, respectively. Unionville Lake exceeds its TP criterion, but meets both the TN and CHL criteria.

Sincerely,

Dan Obrecht  
Senior Research Associate  
Department of Fisheries and Wildlife Sciences  
University of Missouri

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

www.dnr.mo.gov

July 29, 2010

Mr. Daniel Obrecht  
University of Missouri, Columbia  
School of Fisheries and Wildlife Sciences  
302 AB Natural Resources Building  
Columbia, MO 65211

Dear Mr. Obrecht:

Dan, your careful review of the proposed 2010 303(d) list and comment letter received via email July 27, 2010 is greatly appreciated. With regard to your initial question on the scope of Total Maximum Daily Loads (TMDLs) for the Lake of the Ozarks and Table Rock Lake, even though only the lower portion of the lake or the main channel may be listed, the TMDL must and will, include consideration of point and nonpoint sources from the entire lake watershed.

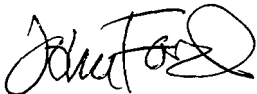
As you note in your letter, your comments which involve the appropriateness of the current lake criteria as they pertain to Lake Springfield, Lake Taneycomo, Lake Wappapello and Hazel Creek Lake are not 303(d) listing issues since our listings must be made based on the current criteria. These are issues that the Department needs to be aware of and address either through revision of the lake nutrient criteria or within the TMDL documents for these waters. I will forward a copy of your letter to John Hoke for his consideration as to how your comments may best be addressed.

Regarding your more specific comments, during a public meeting we were informed of the errors in calculation of criteria for Butler and Lamar Lakes and those have been corrected. Thank you for catching the criteria calculation errors on Kraut Run, Lake St. Louis, Little Dixie, Manito and Unionville Lakes. I double checked and agree with all the calculated values in your letter and I have edited my spreadsheet that calculated and contains the lake criteria accordingly. I will also get revised worksheets for these lakes up on our 303(d) web site.

Hope you are having a good summer. If you have any further questions, please do not hesitate to call me at (573) 751-7024 or email me at [john.ford@dnr.mo.gov](mailto:john.ford@dnr.mo.gov).

Sincerely,

WATER PROTECTION PROGRAM



John Ford, Unit Chief  
Water Quality Assessment Unit

JF/lsm

c: John Hoke

# NEWMAN, COMLEY & RUTH P.C.

BRITTANY A. BARRIENTOS  
ROBERT J. BRUNDAGE  
EDWARD C. CLAUSEN  
MARK W. COMLEY  
LANETTE R. GOOCH

ATTORNEYS AND COUNSELORS AT LAW  
601 MONROE STREET, SUITE 301  
P.O. BOX 537  
JEFFERSON CITY, MISSOURI 65102-0537  
TELEPHONE: (573) 634-2266  
FACSIMILE: (573) 636-3306  
www.ncrpc.com

CATHLEEN A. MARTIN  
STEPHEN G. NEWMAN  
JOHN A. RUTH  
NICOLE L. SUBLETT  
ALICIA EMBLEY TURNER

February 4, 2010

Ms. Rebecca Landewe  
Water, Wetlands, and Pesticides Division  
US EPA Region 7  
901 North Fifth Street  
Kansas City, KS 66101

RE: Willow Branch (WBID 0654U)

Dear Rebecca:

I read with interest EPA's final decision on Missouri's 2008 303(d) list. In the *Decision Document* attached to EPA's December 16, 2009, letter to Leanne Tippet Mosby, there is a discussion regarding Willow Branch on pages 19 and 20. Despite the Missouri Department of Natural Resources' repeated attempts to encourage EPA to remove Willow Branch from the 303(d) list, EPA once again made no revision to the 303(d) list thus retaining the waterbody in Category 5.

In the *Decision Document*, EPA said that it decided to retain the listing because "EPA considered the original reason for listing the stream as impaired, the data used to support the original listing, new data and/or information about the biological condition, water chemistry data, the appropriateness of the reference streams, and other observations taken in the field." EPA offered no analysis of these factors but for one observation regarding pollutant tolerant species. EPA stated that it "observed that the percentage of pollution tolerant species found in Willow Branch was marketedly different than those found in the reference streams." EPA cited a study conducted in May 2008 under EPA's direction titled *Stressor Identification for Willow Branch, Putnam County, Missouri*. You were kind enough to forward to me a copy of this report.

The May 2008 *Stressor Identification* study noted that the "2006-2007 benthic macroinvertebrate data for Willow Branch indicate that the stream is fully supporting its aquatic life use." (Emphasis added.) The report also stated that "Willow Branch is influenced by habitat degradation resulting from poorly forested riparian buffers, silt deposition, sedimentation, and bank erosion."

On January 16, 2009, you authored a memorandum analyzing whether Willow Branch should be retained on the 303(d) list. You reported that "MDNR calculated that the MSCI scores were 16, 18, and 16 for the fall 2006, spring 2007 and fall 2007 sampling events, respectively." These scores, according to MDNR and their *Biological Criteria* document, "indicate the stream

Ms. Rebecca Landewe  
February 4, 2010  
Page 2

is similar to reference conditions and fully support(ing) the aquatic life use.” Willow Branch is fully supporting its aquatic uses despite the fact that Willow Branch is a small, unclassified stream that is being compared to macroinvertebrate data and indices from reference streams which are Class P streams.

According to your January 2009 memorandum, “the discharge of these two reference streams and Willow Branch have more than a magnitude in difference.” You noted that Missouri’s Water Quality Standards state that reference streams should be similar with watershed areas and discharges within an order of magnitude. (Emphasis added.) Therefore, EPA should not be comparing Willow Branch to much larger reference streams. Nonetheless, the macroinvertebrate data show that Willow Branch is fully supporting aquatic uses and therefore is compliant with the Missouri Water Quality Standards.

After reviewing all this information, you concluded that Willow Branch should be retained on the 303(d) list because it had approximately twice as many pollution tolerant species than the two reference streams which were larger by more than a magnitude in difference. If Willow Branch contains more pollution tolerant species, it is likely a result of habitat impairment as discussed in the May 2008 *Stressor Identification* study.

In conclusion, the weight of evidence indicates that Willow Branch is fully supporting aquatic life and is therefore in compliance with the Missouri Water Quality Standards. To the extent there may be any differences in the aquatic community from a similarly sized reference stream, any so-called impairment is caused by habitat impairment as concluded by the *Stressor Identification* study. As you are aware, habitat impairment is not a “pollutant” and may not serve as a basis for a 303(d) listing.

In conclusion, I respectfully request the EPA to reconsider its decision to retain this waterbody on the 303(d) list in light of the overwhelming “weight of the evidence” that indicates this waterbody is not a candidate for the Missouri’s 303(d) list.

Sincerely,

NEWMAN, COMLEY & RUTH, P.C.



Robert J. Brundage  
[rbrundage@ncrpc.com](mailto:rbrundage@ncrpc.com)

RJB:ccl

cc: Leanne Tippett Mosby  
Scott Totten  
John Hoke  
Missouri Clean Water Commission