

Missouri
Department of
Natural Resources

DRAFT CAVE SPRINGS BRANCH TMDL
PUBLIC COMMENTS

Public Notice
July 30 – Sept. 13, 2010

**Cave Springs Branch
WBID # 3245U-01**

McDonald County, Mo.

Missouri Department of Natural Resources
Water Protection Program
PO Box 176
Jefferson City, MO 65102-0176
800-361-4827 / 573-751-1300

August 13, 2010



Mr. John Hoke, TMDL Unit Chief
Missouri Department of Natural Resources
Water Protection Program
Water Quality Monitoring and Assessment Section
P.O. Box 176
Jefferson City, MO. 65102-0176

P.O. BOX 430
SILOAM SPRINGS, ARKANSAS 72761
TELEPHONE: 479/524-8151
FAX: 479/215-2772

RE: CAVE SPRINGS BRANCH TMDL

Dear Mr. Hoke:

As of August 4, 2010 we are in receipt of the proposed TMDL for Cave Springs Branch in Southwest Missouri. As you are aware, this 0.2 mile (1056 feet) tributary, via an unnamed branch in Missouri is the receiving water for the discharge of treated process water from the Simmons Foods facility located just north of Southwest City, Missouri off highway 43.

We do want to say that we were totally "blindsided" with the issuance of this TMDL and were not at all expecting this to be issued. We have in the last 10 years been an exemplary facility for your agency and I do believe if you discuss this with your SW Regional office they will totally agree. When the last permit was issued in 2006, we were told that this was the most stringent permit that had ever been issued by the State of Missouri. We, Simmons Foods have spent millions of dollars to meet this permit and have consistently been below the limits imposed. The enhanced treatment process and improvements that we have made over the last 10 years have been phenomenal. We also purchased approximately 250 acres of land adjoining the West portion of our property for further control of the riparian areas and subsequently removed all the cattle, which resulted in much lower fecal numbers at the State Line (OF006) and therefore documenting the effects of removing the cattle as per the attached graph (see attachment).

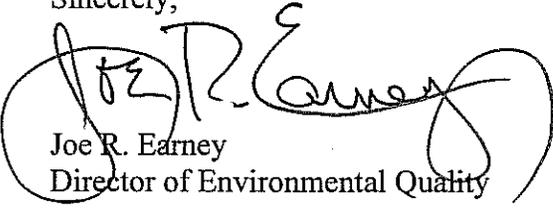
We believe the data that you have included and reference in this TMDL to be outdated and that additional chemical and physical studies need to be conducted to truly evaluate the current stream conditions and should warrant an additional assessment in the spring and fall of the benthic invertebrate populations or as per the Missouri protocol. Thru this study we fully believe that this stream will be found in a much improved condition and truly eligible for removal from the 303-d listing as an impaired stream as recommended by your staff in a previous year.

With the issuance of this TMDL and the now proposed limits from our outfall being 0.289 mg/l for Total Nitrogen and 0.007 mg/l for Phosphorus, we believe as do any and all others we have discussed this with that these numbers are unattainable by any technology that is currently available.



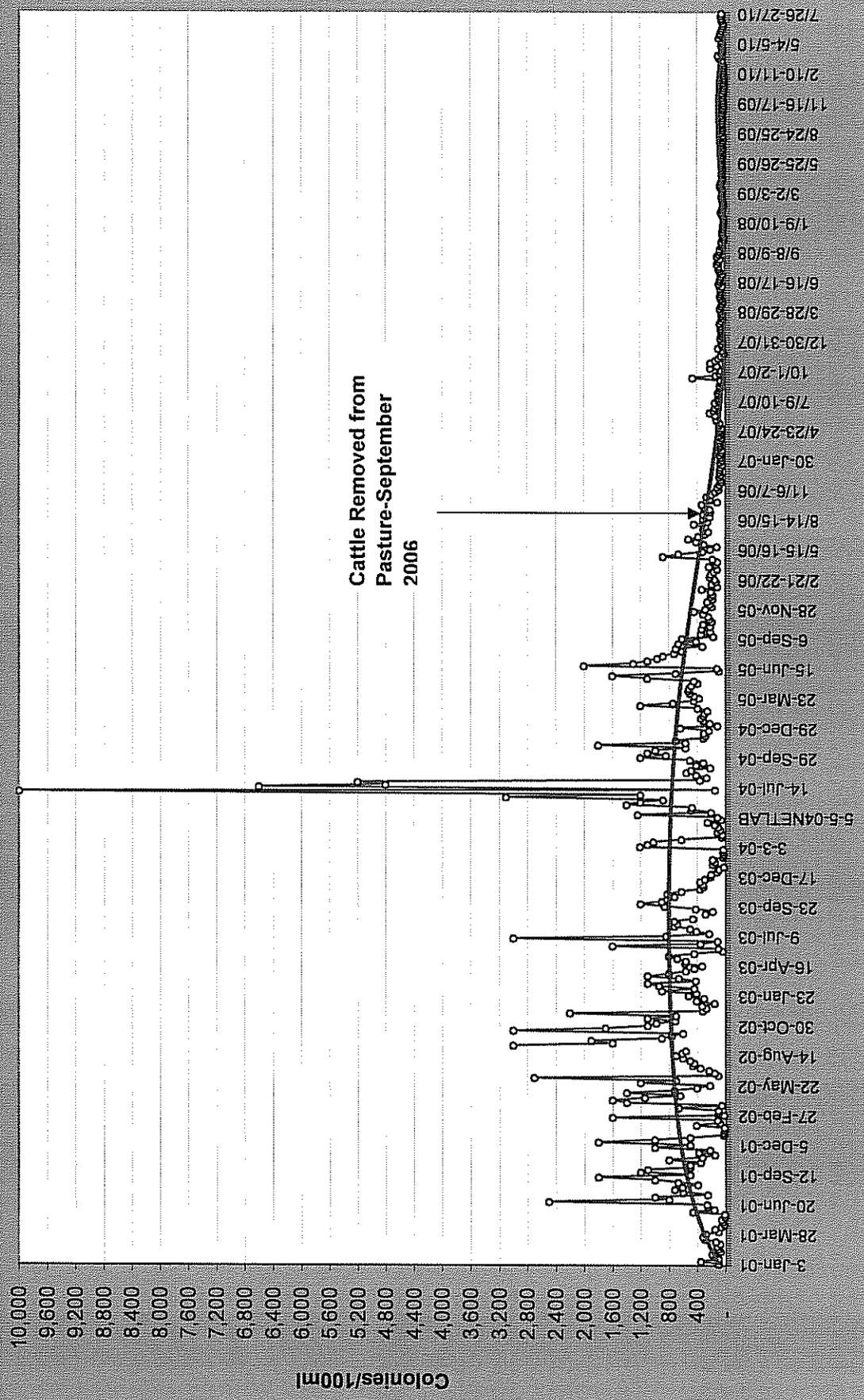
Therefore to allow us some additional time to further evaluate these options and hopefully to sit down with you and discuss your rationale for issuance of these proposed limits, **we sincerely request an extension of the comment period for an additional six months.**

Sincerely,



Joe R. Earney
Director of Environmental Quality

Simmons SWC - Missouri-Oklahoma State Line (OF006)



Hoke, John

From: Hoke, John
Sent: Tuesday, August 24, 2010 4:09 PM
To: jearney@simfoods.com
Subject: RE: Simmons Foods, Southwest City Request for Extension on the proposed TMDL comment period.

Mr. Earney,

Thank you for your August 13, 2010 e-mail and letter regarding the Public Notice/Comment Period Extension for the draft Cave Springs Branch Total Maximum Daily Load (TMDL) in McDonald County, Mo. The Department appreciates the interest and involvement of Simmons Foods, Inc. and welcomes any comments your company can provide.

The majority of TMDL development activities to date have been directed toward assisting the U.S. Environmental Protection Agency (EPA) in fulfillment of the requirements relating to the TMDL Consent Decree [1] and toward fulfilling the Memorandum of Understanding [2] (MOU) between EPA and the Department. Cave Springs Branch is a water body segment that is listed on the TMDL Consent Decree and must have a TMDL established by December 31, 2010. Should the Department not fulfill its obligations under the Consent Decree and MOU, EPA will proceed with establishing and approving this TMDL without the Department's input or assistance.

The Department believes a 45-day public notice period is sufficient time to review and provide informed comments on a draft TMDL. However, extensions may be granted provided the Department can accommodate the extension and still meet its obligations under the Consent Decree. Unfortunately, the Department can not accommodate the six month extension to the public comment period requested by Simmons Foods, Inc. in its August 13, 2010 letter. EPA has indicated that should the Department fail to meet its obligations to submit this TMDL by the end of September 2010, EPA would take over responsibility for the TMDL and its contents.

Please know that while this TMDL must be submitted to EPA in September 2010, the Department is committed to working with Simmons Foods, Inc. toward implementing the Cave Springs Branch TMDL once it is approved by EPA. To this end, we are looking forward to meeting with you and your staff on August 25, 2010 at the Department's South West Regional Office in Springfield, Mo. to discuss the draft TMDL and the requirements contained within the document for the Simmons Foods, Inc. facility in Southwest City, Mo.

Thank you again for your interest and involvement in the TMDL process. If you should have questions or need additional information, please let me know.

1 - Consent Decree refers to the 2001 Consent Decree entered in the case of American Canoe Association, et al. v. Carol M. Browner, et al., No. 98-1195-CV-W in consolidation with No. 98-4282-CV-W, February 27, 2001. 2 - Memorandum of Understanding (MOU) refers to the August 2000 MOU between EPA and the department to "memorialize all commitments relative to the determination of impaired waters and the development of total maximum daily loads."

John Hoke
Env. Specialist IV, TMDL Unit Chief
Water Quality Monitoring & Assessment
Missouri Department of Natural Resources
Phone: (573) 526-1446 Fax: (573) 522-9920
From: jearney@simfoods.com [jearney@simfoods.com]
Sent: Tuesday, August 17, 2010 1:53 PM
To: Hoke, John
Subject: Simmons Foods, Southwest City Request for Extension on the proposed TMDL comment period.

John....please note the attached scan of the Request for extension and comments of

support. As discussed, I am by next day Fex Ex delivery sending a hard copy to your attention in Jefferson City.

* Please do advise your receipt of this Request?

Thanks....and we do look forward to meeting with you and allowing you to further enlighten us on this TMDL issuance.

Joe Earney, Director of Environmental Quality Simmons Food's, Inc.

P.O. 430

601 North Hico

Siloam Springs, Arkansas 72761

phone - 479-215-2415

Fax - 479-549-1356

email - jearney@simfoods.com

----- Forwarded by Joe Earney/Simmons on 08/17/2010 01:42 PM ----- scan@simfoods.com

08/17/2010 01:35 PM

To

jearney@simfoods.com

cc

Subject

Scan from HR Kyocera

* Please see attachment

KM-4050

[00:c0:ee:1e:e2:95]

Recd 9-13-10

September 10, 2010



P.O. BOX 430
SILOAM SPRINGS, ARKANSAS 72761
TELEPHONE: 479/524-8151
FAX: 479/215-2772

Mr. John Hoke, TMDL Unit Chief
Missouri Department of Natural Resources
Water Protection Program
Water Quality Monitoring and Assessment Section
1101 Riverside Drive
Jefferson City, MO. 65101

RECEIVED

SEP 13 2010

WATER PROTECTION PROGRAM

Re: Comments regarding the Draft Cave Springs Branch TMDL

Dear Mr. Hoke:

Thank you for the opportunity to provide comments on the Draft TMDL Report ("Report") prepared for Cave Springs Branch in McDonald County. Simmons Foods, Inc. (Simmons) operates a poultry processing complex in Southwest City (inclusive of a Processing Plant, a regional Protein Recovery Plant, and a ProCal Plant – employing some 1,400 people) that discharges highly treated wastewater to of Cave Springs Branch pursuant to Missouri State Operating Permit (MSOP) MO-0036773.

As far as we have been able to ascertain in reviewing the public records available to us on the MDNR website, and discussion with MDNR Permit Engineers, our current 0.5 mg/L limit for total phosphorus is among if not the most stringent in Missouri. Since 1996, Simmons has invested an additional \$14 million dollars in treatment technology to meet reduced ammonia, nitrate, and phosphorus limits. This investment has resulted in a state of the art, award winning, two stage biological/chemical treatment plant.

Simmons employ 7 Class "A" Certified/Licensed Wastewater Operators, with a minimum of one of these "A" operators on duty at all times, 24-hours per day, 7-days per week, 365-days per year to ensure efficient and consistent high quality operation of the Southwest City wastewater treatment plant. The Simmons Southwest City facility has not received an N.O.V. (Notice of Violation) in over 10 years. In addition to effluent quality efforts, Simmons has also invested in intense water conservation measures at the Southwest City facility. Typical poultry processing facilities require 6.5 – 7.0 gallons of water to process a single bird, whereas Simmons has reduced water usage to 4.0 gallons per bird.

The wasteload allocation applicable to the Simmons wastewater discharge to Cave Springs Branch (0.007 mg/L - total phosphorus, 0.289 mg/L - total nitrogen, which is ammonia + nitrate + nitrite + organic nitrogen) recommended in the draft TMDL would be impossible to meet. Treatment technology to reduce nitrogen, and phosphorus to the levels recommended in the TMDL does not exist at any cost. The phosphorus level recommended in the TMDL is an order of magnitude lower than detection levels specified in EPA approved analytical methods.

We have reviewed the draft TMDL and offer the following specific comments:



1. Simmons strongly disagrees with the TMDL premise that Cave Springs Branch is impaired. In the 2002 Oklahoma Water Quality Assessment Integrated Report, Cave Springs Branch was specifically recommended for delisting (and approved for delisting) for a number of causes including ammonia, **nutrients**, organic enrichment, suspended solids, and noxious aquatic plants. [emphasis added] As cited in the draft TMDL Report, Cave Springs Branch is not listed on Oklahoma's 2008 303(d) list for nutrients, and not recommended for listing for nutrients on the Oklahoma 2010 list.

During 2004 MDNR completed a visual and benthic survey of Cave Springs Branch for the first 4 miles downstream from the Simmons facility with the vast majority of this stream study being conducted in Oklahoma. The findings from the study were that "the aquatic invertebrate community and levels of algae in the stream appeared to be similar to other streams viewed in this area on the same date." The concluding statement in the report was that "there is currently no evidence of exceedance of narrative water quality standards." A review of the total phosphorus, ammonia nitrogen and nitrate nitrogen data collected by Simmons Foods at the Oklahoma and Missouri state line as a condition of MO-0036773 indicates that concentrations of the three constituents have remained consistent from the summer of 2004 (when the MDNR survey was completed) through present. This data is shown in Figures 1, 2 and 3.

Figure 1. Cave Springs Branch NO₃-N mg/L at the State Line (June 2004 - June 2010)

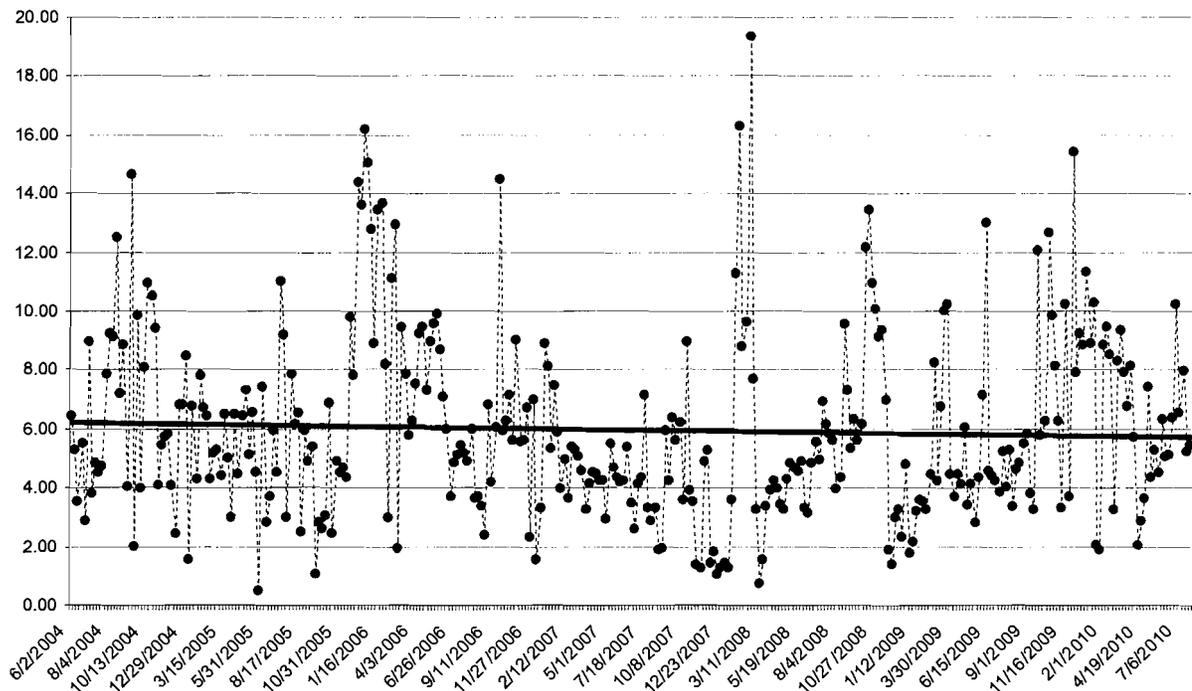


Figure 2. Cave Springs Branch NH₃-N at the State Line (June 2004 - June 2010)

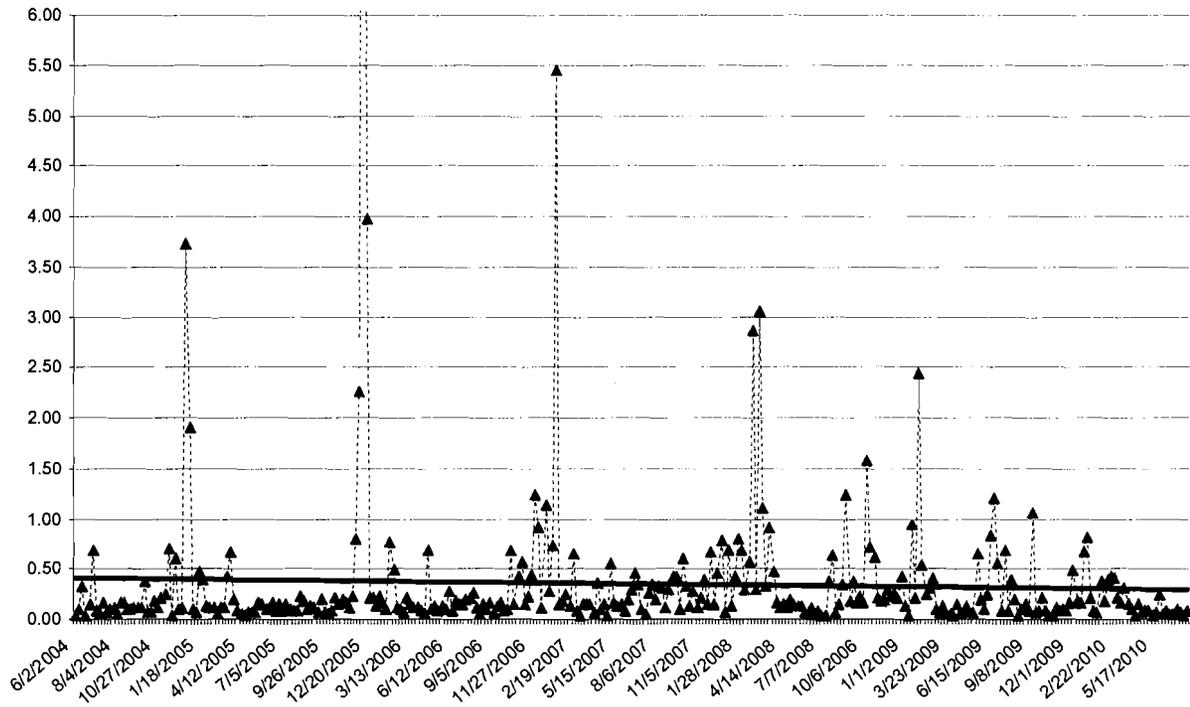
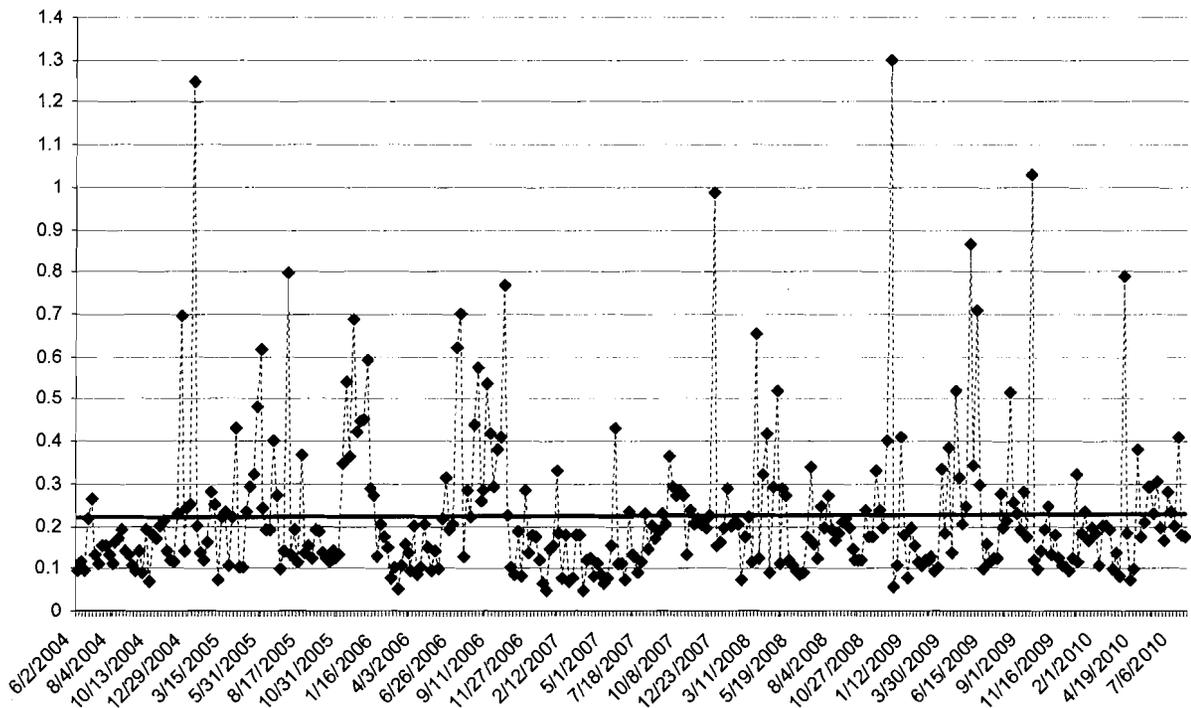


Figure 3. Cave Springs Branch Total-P mg/L at the State Line (June 2004 - June 2010)



This data suggests that the nutrients that were in Cave Springs Branch preceding and during the 2004 visual and benthic survey conducted by MDNR have remained the same since that time. This data indicates that there would be no exceedance of the narrative water quality standards in 2010. Therefore, the data confirms that Cave Springs Branch is not impaired. **Simmons requests a statement that Cave Springs Branch is not impaired be added to the TMDL.**

2. The numerical targets specifically used to develop the TMDL for total phosphorus and total nitrogen have not been adopted as water quality standards for Missouri, and the Missouri Water Quality Standards do not contain a narrative nutrient criteria or procedure for translation of general narrative criteria to specific numerical values. The water quality targets used in the TMDL Report cannot legitimately be based on the EPA ecoregion criteria until Missouri first adopts the criteria as Water Quality Standards through Missouri's Administrative Rulemaking Process, or through the same process a specific mechanism for translation of the Missouri general narrative criteria into specific numerical nutrient criteria is adopted.

Use of EPA ecoregion criteria as TMDL targets is not consistent with Missouri's own Nutrient Criteria Plan (MDNR, 2005), which was approved by EPA in 2005 and says that MDNR will base nutrient criteria on data from their own reference streams on an Ecological Drainage Unit (EDU) basis. The EPA ecoregion criteria should not be used as TMDL targets in Missouri.

The use of EPA ecoregion criteria is not explained or justified in the draft Report. It does not appear that EPA is recommending that their criteria be used in the manner in which MDNR has used them in the draft TMDL. The EPA Ambient Water Quality Recommendations document (EPA 822-B-00-020) when describing the purpose of the nutrient criteria, states "Ambient water quality criteria associated with specific waterbody uses **when adopted as State or Tribal water quality standards under Section 303** define the level of a pollutant (or, in the case of nutrients, a condition) necessary to protect **designated uses** in ambient waters." [emphasis added]. In this situation MDNR has not adopted the criteria pursuant to Section 303 nor are the criteria needed to protect any designated uses since Cave Springs Branch does not have designated uses. Use of the EPA ecoregion criteria are not proper because they were not intended to be used in the circumstances of this unclassified stream.

During low flow conditions Cave Springs Branch at the state line is primarily treated effluent from the Simmons facility. Because of this, and the manner in which the EPA ecoregion criteria were used to develop the TMDL wasteload allocation the Simmons Southwest City facility will be required to produce an effluent equal to or better in quality for phosphorus and nitrogen than many of the very best pristine streams of the Ozark Highlands Ecoregion. It should be noted that the highest quality Ozark Highlands streams would not consistently meet the EPA ecoregion nutrient criteria levels used in the draft TMDL. It is unreasonable to require an effluent to exceed the quality of the majority of pristine reference streams in a particular ecoregion.

3. The relationship between the impairment and the pollutant(s) causing the impairment are not established in the Report. It does not appear that the TMDL specifies which of

three listed general narrative criteria have been "exceeded" in Cave Springs Branch, but on page 8 Section 2.3 a statement regarding "unsightly or harmful bottom deposits" suggests that the general water criterion at 10CSR 20-7032(3)(A) "Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly, or harmful bottom deposits or prevent full maintenance of beneficial uses" is not being maintained in the last 0.2 miles of Cave Springs Branch within Missouri.

Section 2.3 of the Report states that "The numeric target should apply to the pollutant of concern and if reductions are achieved, **will have a direct impact on remediation of the impairment.**" [emphasis added] As used in the context of impairment assessment, the Methodology for the Development of the 2008 Section 303(d) List in Missouri (MDNR 2008) was reviewed. According to the Methodology Document at Table 1.2, (which contains the Methods for Assessing Compliance with WQS used for 303(d) Listing Purposes: Narrative Criteria Based on Numeric Thresholds not Contained in State Water Quality Standards) objectionable bottom deposits are associated with a stream bottom "covered by sewage sludge, trash or other materials reaching the water due to anthropogenic sources."

There is no relationship between "objectionable bottom deposits" and the application of the extraordinarily low wasteload allocations for total nitrogen and total phosphorus recommended in the Report. The TMDL must be re-examined and the water quality target strategy re-developed, based on existing MDNR methodology to address objectionable bottom deposits.

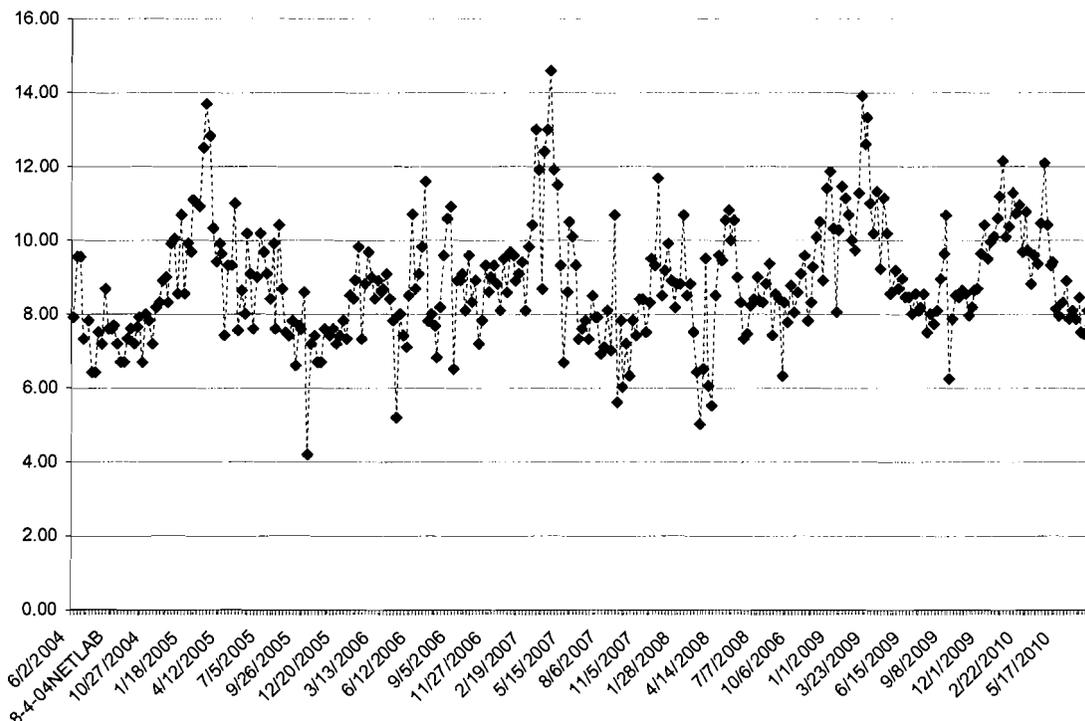
4. The draft TMDL Report at Section 2.4 stresses downstream water concerns as a rationale for use of the EPA ecoregion criteria based on erroneous assumptions about the Oklahoma Water Quality Standards. Section 2.4 of the Report states that use of the "EPA nutrient ecoregion reference targets, when applied to Cave Springs Branch, should be sufficient to protect downstream and interstate water quality standards across the Missouri-Oklahoma state line." In fact, the EPA ecoregion reference targets are wholly unnecessary for maintenance of Oklahoma's Water Quality Standards as evidenced by Cave Springs Branch's appearance and removal from Oklahoma's 303(d) lists. In the 2002 Oklahoma Water Quality Assessment Integrated Report, Cave Springs Branch was specifically recommended for delisting (and approved for delisting) for a number of causes including ammonia, **nutrients**, organic enrichment, suspended solids, and noxious aquatic plants. [emphasis added] As cited in the TMDL Report, Cave Springs Branch is not listed on Oklahoma's 2008 303(d) list for nutrients, and not recommended for listing for nutrients on the Oklahoma 2010 list. Therefore, the Oklahoma Water Quality Standards cannot be used as a rationale for the use of EPA ecoregion reference criteria in TMDL development, and those criteria should not be the targets used in the draft TMDL Report.
5. The presence of the Ozark Cavefish is noted in the Report and although no direct correlation is made between the Ozark Cavefish and the need for use of the EPA ecoregion reference criteria, we wish to note that according to communication with the U.S. Fish & Wildlife Service in Tulsa, there are no known populations of Ozark Cave fish in either the Cave Springs Branch or larger Honey Creek watersheds. Further, based on a brief review of the literature it appears that nutrient reduction could be adverse for the

Cavefish, which typically depend on leaf litter, woody debris, and bat guano for their major sources of food and nutrients.

- The Report also does not make a correlation between algal growth and nutrient levels in Cave Springs Branch, although in Section 1.0, page 4 it is stated that "Elevated levels of nutrients can stimulate excess production of benthic (bottom growing) algae, which in turn can adversely affect fish and other aquatic life in the stream by reducing available habitat and causing low levels of dissolved oxygen. Therefore, elevated levels of nutrients in Cave Springs Branch must be reduced in order to resolve the impairment and bring the waterbody back into compliance with the Missouri and Oklahoma water quality standards."

In response to this statement, it should be noted that no data are provided in the Report that suggest that there is an existing problem with dissolved oxygen or benthic algae in the stream. Dissolved oxygen data collected as required by MO-0036773, shown in Figure 4, suggest that DO levels are more than adequate for fish and aquatic life, further suggesting that excess production of benthic algae is not occurring, and elevated levels of nutrients are not resulting in any impairment of Cave Springs Branch.

Figure 4. Cave Springs Branch DO mg/L at Stateline.



Moreover, there is an abundance of recent literature that indicates that physical habitat may play as large a role in periphyton biomass as nutrient levels. Specifically shading/light, substrate and flow appear to be significant variables in agricultural

streams. The USGS has several studies from 2009-2010 containing supporting statements such as:

- a. "...low level nutrient enrichment may influence biota less than other water quality and habitat variables." (Justis, et.al., 2009) Data from this study was collected in the Ozark Highlands Ecoregion.
- b. "...nutrient concentrations alone provide a poor explanation of aquatic plant growth responses in these streams." (Maret, et.al., 2010) Data collected from three ecoregions including the Ozark Highlands.
- c. Another study completed by the USGS in several US ecoregions concludes that relationships between nutrient levels and periphyton biomass (Chl-a) are usually low because of "...overriding influence of stream habitat."

Again, there is no evident relationship between the extraordinarily low wasteload allocation of total nitrogen and total phosphorus and any impairment in Cave Springs Branch; therefore the TMDL should be re-evaluated in light of any documented impairment and those pollutants linked to the impairment where reductions would directly address and resolve the documented impairment. For example, if habitat quality is an actual cause of "problems" in Cave Springs Branch as noted in Section 3.2.4 of the Report, a TMDL designed to enhance riparian characteristics and instream habitat features would be targeted at an actual issue in the creek, would be something actually achievable, and could result in measurable instream improvements of the system.

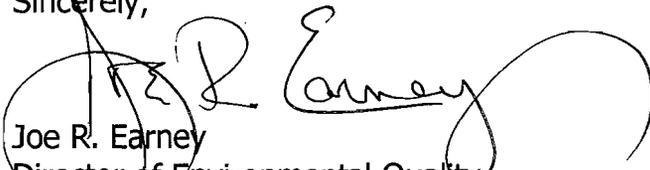
7. The load duration curve method of assigning a load allocation is flawed in that it assumes that nutrient target concentrations can be maintained throughout all flow regimes, including storm flows. The literature on nutrient loads and concentrations during storm event flows demonstrates that this assumption is not valid. As we understand the method, a regression analysis is completed on stream flow and nutrient concentration in order to predict loads from flows. Where the stream has no flow data, a nearby gauged stream is used to estimate flow per square mile in the stream in question. For Cave Springs Branch both flow and nutrient concentration data are available. The curve is set so that the median concentration/load from the data is adjusted down to match the target from the TMDL (*i.e.*, the new median of the data from the curve becomes the TMDL target). Then a frequency analysis is completed on the flow data to determine what percent of the time the flow is above the point source design flow and the flow volume (*i.e.*, 50% flow exceedance, 60% flow exceedance, etc.). Each flow exceedance level is then assigned the nutrient TMDL target value (*i.e.*, 0.007 mg/L for TP) to determine load at that flow level, and all flows in excess of the point source flow (3.1 cfs for Simmons) are considered NPS related loading. This method of load allocation assignment is flawed because it is not possible that the load allocations will maintain the nutrient target throughout the entire flow regime because concentrations do not remain consistent throughout the entire flow regime.
8. The EPA Ecoregion nutrient criteria targets and the resulting wasteload allocations are far too stringent to be applied to Cave Springs Branch in Missouri. Cave Springs Branch, as noted throughout the TMDL Report, is an unclassified waterbody in Missouri. No beneficial uses apply to the stream. In the hierarchy of water quality standards protection assignment, Cave Springs Branch is at the lowest end, with only vaguely described general narrative criteria applicable to the stream. The TMDL recommends a

wasteload allocation for Simmons Food that, to the extent that we have been able to find, would result in effluent limits for total nitrogen and total phosphorus that would be the most stringent ever applied to a point source discharge in the United States. The extraordinarily stringent wasteload allocations for total nitrogen and phosphorus contained in the TMDL are not necessary for protection of the general narrative criteria applicable to Cave Springs Branch and the TMDL should not be finalized with those recommended wasteload allocations.

9. In the event that the comments presented in this letter do not result in a significant amendment of the phosphorus and nitrogen wasteload allocation recommended to apply to Simmons Foods Southwest City facility, we request that the implementation process that will be used to translate the wasteload allocation into effluent limitations in MO-0036773 be included in the TMDL Report. Furthermore, we request that a clause be added to the Report that allows the TMDL to be amended in the event that additional data warrants or should Cave Springs Branch be determined to not be impaired by nutrients and be removed from the 303(d) list of impaired waters.

Thank you again for the opportunity to provide these comments. Simmons would be pleased to answer any questions or address any items of discussion raised by the above comments and requests. Should you have additional questions, please contact me at 479-215-2415, or by email at jeaney@simfoods.com.

Sincerely,



Joe R. Earney
Director of Environmental Quality
Simmons Foods, Inc.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Kip A. Stetzler, Acting Director

www.dnr.mo.gov

October 21, 2010

Mr. Joe R. Earney
Simmons Foods, Inc.
P.O. Box 430
Siloam Springs, Arkansas 72761

RE: Response to Comments on the Draft Cave Springs Branch Total Maximum Daily Load

Dear Mr. Earney:

The Missouri Department of Natural Resources (Department) appreciates the comments provided by Simmons Foods, Inc. (Simmons) on the draft Cave Springs Branch Total Maximum Daily Load (TMDL). This letter responds to comments received during the public notice period for this TMDL. Please find herein the Department's response to each comment and the location of the revision (if applicable) within the final document as it will be submitted to the U.S. Environmental Protection Agency (EPA).

The Department acknowledges and appreciates the treatment technology and operational improvements made at the Simmons Southwest City facility (MO-0036773). Reductions in ammonia, nitrate, and phosphorous have had a positive effect on effluent quality and reduced its impact on Cave Springs Branch. However, due to its placement on the Missouri 303(d) List of impaired waters and inclusion in the TMDL Consent Decree¹, the Department or EPA must establish a TMDL for this water body by December 31, 2010. Implementation of the approved TMDL need not begin immediately. Rather, the Department and Simmons can work toward an adaptive management approach for the facility that should address most of the concerns found in the comments submitted.

***Comment #1:** Simmons strongly disagrees with the TMDL premise that Cave Springs Branch is impaired. In the 2002 Oklahoma Water Quality Assessment Integrated Report, Cave Springs Branch was specifically recommended for delisting (and approved for delisting) for a number of causes including ammonia, **nutrients**, organic enrichment, suspended solids, and noxious aquatic plants. [emphasis added] As cited in the draft TMDL Report, Cave Springs Branch is not listed on Oklahoma's 2008 303(d) list for nutrients, and not recommended for listing for nutrients on the Oklahoma 2010 list.*

As referenced in the comment, the Department notes in the draft TMDL that Cave Springs Branch is no longer listed as impaired in Oklahoma for nutrients. However, the water body continues to be listed on Missouri's 303(d) List of impaired waters for nutrients and a TMDL must be developed for these pollutants pursuant to the Clean Water Act and subsequent Consent Decree.

¹ Consent Decree refers to the 2001 Consent Decree entered in the case of American Canoe Association, et al. v. Carol M. Browner, et al., No. 98-1195-CV-W in consolidation with No. 98-4282-CV-W, February 27, 2001.

Mr. Joe R. Earney
Page Two

*During 2004 MDNR completed a visual and benthic survey of Cave Springs Branch for the first 4 miles downstream from the Simmons facility with the vast majority of this stream study being conducted in Oklahoma. The findings from the study were that "the aquatic invertebrate community and levels of algae in the stream appeared to be similar to other streams viewed in this area on the same date." The concluding statement in the report was that "there is currently no evidence of exceedence of narrative water quality standards." A review of the total phosphorus, ammonia nitrogen and nitrate nitrogen data collected by Simmons Foods at the Oklahoma and Missouri state line as a condition of MO-0036773 indicates that concentrations of the three constituents have remained consistent from the summer of 2004 (when the MDNR survey was completed) through present. This data is shown in Figures 1, 2 and 3 [not included in this response]. This data suggests that the nutrients that were in Cave Springs Branch preceding and during the 2004 visual and benthic survey conducted by MDNR have remained the same since that time. This data indicates that there would be no exceedence of the narrative water quality standards in 2010. Therefore, the data confirms that Cave Springs Branch is not impaired. **Simmons requests a statement that Cave Springs Branch is not impaired be added to the TMDL.***

The Department acknowledges stream assessment worksheets developed for Cave Springs Branch as part of the 303(d) assessment process note the improvements in water quality referenced in the comment above. However, no new physical, chemical or biological data has been collected to assess the impairment status of Cave Springs Branch relative to Missouri's original 303(d) listing of the water body. Because Cave Springs Branch remains on the Missouri 303(d) List as impaired, and is required to have a TMDL established by consent decree, the draft Cave Springs Branch TMDL has been developed. To help clarify the current water quality status of the listed segment, additional reference has been added to Section 1 of the TMDL. This new language indicates that although listed as impaired, water quality conditions have improved in Cave Springs Branch as documented in Department assessment worksheets.

As a result of comments received during the September 8, 2010 meeting of the Missouri Clean Water Commission, portions of the draft Missouri 2010 303(d) List have been placed on public notice for additional comment. Cave Springs Branch is one of the water body segments on which the Commission and Department have requested additional comments. The Department highly recommends that Simmons provide comments during this second public notice and include any data or information believed pertinent to the water quality status of Cave Springs Branch. The second public notice period began September 29, 2010 and ends October 28, 2010.

***Comment #2:** The numerical targets specifically used to develop the TMDL for total phosphorus and total nitrogen have not been adopted as water quality standards for Missouri, and the Missouri Water Quality Standards do not contain a narrative nutrient criteria or procedure for translation of general narrative criteria to specific numerical values. The water quality targets used in the TMDL Report cannot legitimately be based on the EPA ecoregion criteria until Missouri first adopts the criteria as Water Quality Standards through Missouri's Administrative Rulemaking Process, or through the same process a specific mechanism for translation of the Missouri general narrative criteria into specific numerical nutrient criteria is adopted.*

Federal regulation at 40 CFR 130.7(c)(1) states in part that "TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical WQS". In the case of Cave Springs Branch, the applicable water quality standards are Missouri's General Criteria found in state rule at 10 CSR 20-7.031(3). A reduction in total nitrogen (TN) and total phosphorous (TP) are needed as these pollutants are impairing the General Criteria pertaining to aesthetics and the protection of aquatic life. The Department acknowledges that numeric nutrient criteria are currently not available in state rule from which to set TMDL targets. However, federal regulation indicates that endpoints for narrative criteria can be developed if ambient numeric criteria are not available

Mr. Joe R. Earney
Page Three

[See, e.g., 40 CFR 122.44(d)(1)(vi)]. EPA ecoregion criteria have been chosen as the quantifiable endpoint to measure whether or not applicable water quality standards (i.e., general criteria) are attained. These values are appropriate and have been demonstrated to not result in impairment of beneficial uses in the ecoregion. State and federal rules and guidance provide the flexibility to use this approach without the need to promulgate individual criteria or translations in rule.

Use of EPA ecoregion criteria as TMDL targets is not consistent with Missouri's own Nutrient Criteria Plan (MDNR, 2005), which was approved by EPA in 2005 and says that MDNR will base nutrient criteria on data from their own reference streams on an Ecological Drainage Unit (EDU) basis. The EPA ecoregion criteria should not be used as TMDL targets in Missouri.

The Department acknowledges the Missouri Nutrient Criteria Plan indicates that numeric nutrient criteria for flowing waters (i.e., rivers and streams) will be developed on an Ecological Drainage Unit (EDU) basis. The Department is currently working with stakeholders to develop nutrient criteria by EDU as part of the 2012 Missouri Water Quality Standards triennial review. It is anticipated numeric nutrient criteria for flowing waters will become effective in state rule December 2012. EPA ecoregion nutrient criteria have been developed using the best available information and data and are appropriate targets for TMDL development during the interim. Use of EPA ecoregion nutrient criteria at this time does not preclude the Department from developing TMDLs using Missouri's numeric nutrient criteria when they become available. To this end, language has been added to the TMDL (Section 2.3) to clarify that other criteria (targets) may be used in future TMDL development when such criteria are approved for use.

*The use of EPA ecoregion criteria is not explained or justified in the draft Report. It does not appear that EPA is recommending that their criteria be used in the manner in which DNR has used them in the draft TMDL. The EPA Ambient Water Quality Recommendations document (EPA 822-B-00-020) when describing the purpose of the nutrient criteria, states "Ambient water quality criteria associated with specific waterbody uses **when adopted as State or Tribal water quality standards under Section 303** define the level of a pollutant (or, in the case of nutrients, a condition) necessary to protect **designated uses** in ambient waters." [emphasis added]. In this situation MDNR has not adopted the criteria pursuant to Section 303 nor are the criteria needed to protect any designated uses since Cave Springs Branch does not have designated uses. Use of the EPA ecoregion criteria are not proper because they were not intended to be used in the circumstances of this unclassified stream.*

In the absence of promulgated numeric nutrient criteria, the Department and EPA have chosen ecoregion nutrient criteria to develop TMDLs and wasteload allocations for streams with nutrient related impairments. The EPA ecoregion nutrient criteria offer a valid approach for protecting state waters from nutrient enrichment and ensure attainment and compliance with applicable water quality standards, including general criteria. The Department believes the application of EPA ecoregion nutrient criteria for the draft Cave Springs Branch TMDL is consistent with the intent of the recommendations found in EPA 822-B-00-020.

During low flow conditions Cave Springs Branch at the state line is primarily treated effluent from the Simmons facility. Because of this, and the manner in which the EPA ecoregion criteria were used to develop the TMDL wasteload allocation the Simmons Southwest City facility will be required to produce an effluent equal to or better in quality for phosphorus and nitrogen than many of the very best pristine streams of the Ozark Highlands Ecoregion. It should be noted that the highest quality Ozark Highlands streams would not consistently meet the EPA ecoregion nutrient criteria levels used in the draft TMDL. It is unreasonable to require an effluent to exceed the quality of the majority of pristine reference streams in a particular ecoregion.

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Development of the EPA ecoregion nutrient criteria considered data and information from pristine and minimally impacted streams within the Ozark Highlands ecoregion. These streams are likely similar to (or include) the streams alluded to in the comment above and represent attainable water quality conditions. Effluent limitations are required under state and federal regulation for facilities that may cause or contribute to exceedences of applicable water quality standards. These effluent limitations must be set at levels that ensure water quality is protected. However, the Department recognizes that other nutrient criteria (targets) may be developed in the future that can be applied to Cave Springs Branch. Text has therefore been added to Section 2.3 of the TMDL to clarify that other nutrient criteria (targets) will be used to revise the Cave Springs Branch TMDL in the future as these criteria or targets are developed and approved by EPA.

Please note that the conversion of wasteload allocations to permit limits is the purview of the Permits and Engineering Section of the Water Pollution Control Branch. Should you have questions regarding the determination of permit effluent limits for the Simmons facility, please contact the Permits and Engineering section chief, Refaat Mefrakis at (573) 526-2928 or by email at refaat.mefrakis@dnr.mo.gov.

Comment #3: The relationship between the impairment and the pollutant(s) causing the impairment are not established in the Report. It does not appear that the TMDL specifies which of three listed general narrative criteria have been 'exceeded' in Cave Springs Branch, but on page 8 Section 2.3 a statement regarding "unsightly or harmful bottom deposits" suggests that the general water criterion at 10CSR 20-7032(3)(A) "Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly, or harmful bottom deposits or prevent full maintenance of beneficial uses" is not being maintained in the last 0.2 miles of Cave Springs Branch within Missouri.

Section 2.1 of the TMDL has been revised to clarify the general criteria applicable to the Cave Springs Branch impairment include 10 CSR 20-7.031(3)(A), (C) and (G). All three of these narrative criteria were exceeded during and following the impairment listing for the water body. The Department notes, however, that conditions in Cave Springs Branch have improved considerably since that time.

*Section 2.3 of the Report states that "The numeric target should apply to the pollutant of concern and if reductions are achieved, **will have a direct impact on remediation of the impairment.**" [emphasis added] As used in the context of impairment assessment, the Methodology for the development of the 2008 Section 303(d) List in Missouri (MDNR 2008) was reviewed. According to the Methodology Document at Table 1.2, (which contains the Methods for Assessing Compliance with WQS used for 303(d) Listing Purposes: Narrative Criteria Based on Numeric Thresholds not Contained in State Water Quality Standards) objectionable bottom deposits are associated with a stream bottom "covered by sewage sludge, trash or other materials reaching the water due to anthropogenic sources."*

There is no relationship between 'objectionable bottom deposits' and the application of the extraordinarily low wasteload allocations for total nitrogen and total phosphorus recommended in the Report. The TMDL must be re-examined and the water quality target strategy re-developed, based on existing MDNR methodology to address objectionable bottom deposits.

It is recognized by EPA in their National Nutrient Strategy², and widely understood in general, that excessive nutrients in a water body can lead to potentially harmful algal blooms. Poultry processing facility effluent contains nutrient concentrations at levels that can cause or contribute to algal growth (and subsequent decomposition) in the receiving stream. These conditions in turn can cause or

² National Strategy for the Development of Regional Nutrient Criteria (June 1998). EPA 822-R-98-002

contribute to violations of the state narrative water quality criteria. This creates the linkage between an anthropogenic source of pollutants (a facility that discharges nutrients) and the water quality impairment (objectionable bottom deposits; e.g. algae). Reductions in nutrient concentrations are therefore necessary to achieve applicable water quality standards.

In 1992, a stream survey noted heavy filamentous algae growth, or “objectionable bottom deposits”, in Cave Springs Branch a short distance downstream of the Simmons Southwest City facility. As a result of this and other surveys, Cave Springs Branch was listed as impaired by the states of Missouri and Oklahoma in the late 1990s. These impairment listings reflect the fact that elevated levels of nutrients can stimulate excess production of benthic (bottom growing) algae to levels that lead to impairment of the water body. Since that time, reductions in nutrient effluent concentrations from the Simmons facility have resulted in increased water quality in Cave Springs Branch. Water quality has improved such that algae production in the stream has been reduced and objectionable bottom deposits have also been reduced or eliminated. These improved conditions corroborate that decreased nutrient concentrations will have an impact on remediation of the impairment. For this reason, the approach taken in the Cave Springs Branch TMDL is appropriate and will result in conditions supportive of applicable water quality standards.

***Comment #4:** The draft TMDL Report at Section 2.4 stresses downstream water concerns as a rationale for use of the EPA ecoregion criteria based on erroneous assumptions about the Oklahoma Water Quality Standards. Section 2.4 of the Report states that use of the 'EPA nutrient ecoregion reference targets, when applied to Cave Springs Branch, should be sufficient to protect downstream and interstate water quality standards across the Missouri-Oklahoma state line.' In fact, the EPA ecoregion reference targets are wholly unnecessary for maintenance of Oklahoma's Water Quality Standards as evidenced by Cave Springs Branch's appearance and removal from Oklahoma's 303(d) lists. In the 2002 Oklahoma Water Quality Assessment Integrated Report, Cave Springs Branch was specifically recommended for delisting (and approved for delisting) for a number of causes including ammonia, **nutrients**, organic enrichment, suspended solids, and noxious aquatic plants. [emphasis added] As cited in the TMDL Report, Cave Springs Branch is not listed on Oklahoma's 2008 303(d) list for nutrients, and not recommended for listing for nutrients on the Oklahoma 2010 list. Therefore, the Oklahoma Water Quality Standards cannot be used as a rationale for the use of EPA ecoregion reference criteria in TMDL development, and those criteria should not be the targets used in the draft TMDL Report.*

Federal regulation at 40 CFR 131.10(b) requires that a State take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters. Although there is currently a difference in use designation for Cave Spring Branch in Missouri and Oklahoma, Oklahoma's designation of Cave Springs Branch as a “High Quality Water” must be recognized and protected when setting criteria for Cave Springs Branch in Missouri. To this end, the use of EPA ecoregion nutrient criteria is appropriate and the best available target for TMDL development.

Development of the EPA ecoregion nutrient criteria considered data and information on pristine and minimally impacted streams within the Ozark Highlands ecoregion. These criteria should be protective of Cave Springs Branch and ensure Oklahoma's water quality requirements are met for this water body. Please reference the enclosed September 13, 2010 letter from the Oklahoma Department of Environmental Quality supportive of the Cave Springs Branch TMDL endpoints and allocations.

***Comment #5:** The presence of the Ozark Cavefish is noted in the Report and although no direct correlation is made between the Ozark Cavefish and the need for use of the EPA ecoregion reference criteria, we wish to note that according to communication with the U.S. Fish & Wildlife Service in*

Tulsa, there are no known populations of Ozark Cave fish in either the Cave Springs Branch or larger Honey Creek watersheds. Further, based on a brief review of the literature it appears that nutrient reduction could be adverse for the Cavefish, which typically depend on leaf litter, woody debris, and bat guano for their major sources of food and nutrients.

As referenced in the comment, no attempt was made in the TMDL to correlate the presence of the Ozark Cavefish, in either the Cave Springs Branch or Honey Creek watersheds, with the use of EPA ecoregion nutrient criteria as TMDL targets. The only reference in the TMDL to the Ozark Cavefish is on Page 2, where the document discusses Oklahoma's water quality standards listing for Cave Springs Branch. The Department appreciates the additional information provided by Simmons Foods on this federally-listed threatened species. Should it be determined the Ozark Cavefish is found in the Cave Springs Branch or Honey Creek watersheds, targets and conditions found in the TMDL will be re-evaluated in light of the finding.

Comment #6: *The Report also does not make a correlation between algal growth and nutrient levels in Cave Springs Branch, although in Section 1.0, page 4 it is stated that "Elevated levels of nutrients can stimulate excess production of benthic (bottom growing) algae, which in turn can adversely affect fish and other aquatic life in the stream by reducing available habitat and causing low levels of dissolved oxygen. Therefore, elevated levels of nutrients in Cave Springs Branch must be reduced in order to resolve the impairment and bring the waterbody back into compliance with the Missouri and Oklahoma water quality standards."*

In response to this statement, it should be noted that no data are provided in the Report that suggest that there is an existing problem with dissolved oxygen or benthic algae in the stream. Dissolved oxygen data collected as required by MO-0036773, shown in Figure 4 [not included in this response letter], suggest that DO levels are more than adequate for fish and aquatic life, further suggesting that excess production of benthic algae is not occurring, and elevated levels of nutrients are not resulting in any impairment of Cave Springs Branch.

Moreover, there is an abundance of recent literature that indicates that physical habitat may play as large a role in periphyton biomass as nutrient levels. Specifically shading/light, substrate and flow appear to be significant variables in agricultural streams. The USGS has several studies from 2009-2010 containing supporting statements such as:

- a. "...low level nutrient enrichment may influence biota less than other water quality and habitat variables." (Justis, et.al., 2009) Data from this study was collected in the Ozark Highlands Ecoregion.*
- b. "...nutrient concentrations alone provide a poor explanation of aquatic plant growth responses in these streams." (Maret, et.al., 2010) Data collected from three ecoregions including the Ozark Highlands.*
- c. Another study completed by the USGS in several US ecoregions concludes that relationships between nutrient levels and periphyton biomass (Chl-a) are usually low because of "...overriding influence of stream habitat."*

Again, there is no evident relationship between the extraordinarily low wasteload allocation of total nitrogen and total phosphorus and any impairment in Cave Springs Branch; therefore the TMDL should be re-evaluated in light of any documented impairment and those pollutants linked to the impairment where reductions would directly address and resolve the documented impairment. For example, if habitat quality is an actual cause of "problems" in Cave Springs Branch as noted in Section 3.2.4 of the Report, a TMDL designed to enhance riparian characteristics and instream habitat features would be targeted at an actual issue in the creek, would be something actually achievable, and could result in measurable instream improvements of the system.

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As detailed in the TMDL (page 2, last paragraph), “high concentrations of nitrogen and phosphorus stimulated excessive algae growth in the water body” and were a chronic concern throughout much of the 1990s. It is acknowledged, however, that improvements and upgrades at the Simmons Southwest City facility have resulted in increased effluent quality and resulting water quality improvements in Cave Springs Branch. These improvements can be seen in the water quality data presented by Simmons with this comment. Even so, as stated previously in response to Comment #3, it is recognized by EPA in their National Nutrient Strategy, and widely understood in general, that excessive nutrients in a water body can lead to potentially harmful algal blooms and these conditions can cause or contribute to violations of narrative (general) water quality criteria. Because violations of Missouri’s General Criteria were the cause of the original listing of Cave Springs Branch as impaired, the pollutants responsible for these conditions (i.e., nutrients) must be targeted by the TMDL. Additionally, because Cave Springs Branch is part of the TMDL Consent Decree, a TMDL must be established for this water body by EPA or the Department by December 31, 2010.

The Department appreciates the USGS literature references provided in the comment and acknowledges additional conditions or factors can influence the production of algae in stream environments. However, many of these factors (e.g., habitat) are not quantifiable pollutants and are therefore not appropriate targets for TMDL development.

Comment #7. The load duration curve method of assigning a load allocation is flawed in that it assumes that nutrient target concentrations can be maintained throughout all flow regimes, including storm flows. The literature on nutrient loads and concentrations during storm event flows demonstrates that this assumption is not valid. As we understand the method, a regression analysis is completed on stream flow and nutrient concentration in order to predict loads from flows. Where the stream has no flow data, a nearby gauged stream is used to estimate flow per square mile in the stream in question. For Cave Springs Branch both flow and nutrient concentration data are available. The curve is set so that the median concentration/load from the data is adjusted down to match the target from the TMDL (i.e., the new median of the data from the curve becomes the TMDL target). Then a frequency analysis is completed on the flow data to determine what percent of the time the flow is above the point source design flow and the flow volume (i.e., 50% flow exceedence, 60% flow exceedence, etc.). Each flow exceedence level is then assigned the nutrient TMDL target value (i.e., 0.007 mg/L for TP) to determine load at that flow level, and all flows in excess of the point source flow (3.1 cfs for Simmons) are considered NPS related loading. This method of load allocation assignment is flawed because it is not possible that the load allocations will maintain the nutrient target throughout the entire flow regime because concentrations do not remain consistent throughout the entire flow regime.

The load duration curve methodology is most appropriate where flow is the primary driver in pollutant delivery mechanisms. At lower flow conditions, the pollutant loads are primarily driven by point sources (e.g., Simmons Foods) and reduction of pollutant loading from facilities should allow attainment of applicable water quality standards. At higher flow conditions, pollutant loads are increasingly contributed by nonpoint sources (e.g., storm water runoff) rather than point sources. Setting appropriate wasteload allocations for point sources, and allocating the remaining load capacity to nonpoint sources as load allocations, should ensure attainment of applicable water quality standards at all flow conditions.

The Department acknowledges that higher flows may contribute higher concentrations of pollutants to the water body. The extent to which this will occur depends on the pollutant, the pollutant transport mechanism, and any management practices (or lack thereof) within the watershed. Even so, load duration curves present a reasonable, straightforward means of defining total maximum daily loads for a watershed. The approach also allows watershed stewards the opportunity to identify and target those flow regimes that are most in need of pollutant reductions.

Comment #8. The EPA Ecoregion nutrient criteria targets and the resulting wasteload allocations are far too stringent to be applied to Cave Springs Branch in Missouri. Cave Springs Branch, as noted throughout the TMDL Report, is an unclassified waterbody in Missouri. No beneficial uses apply to the stream. In the hierarchy of water quality standards protection assignment, Cave Springs Branch is at the lowest end, with only vaguely described general narrative criteria applicable to the stream. The TMDL recommends a wasteload allocation for Simmons Food that, to the extent that we have been able to find, would result in effluent limits for total nitrogen and total phosphorus that would be the most stringent ever applied to a point source discharge in the United States. The extraordinarily stringent wasteload allocations for total nitrogen and phosphorus contained in the TMDL are not necessary for protection of the general narrative criteria applicable to Cave Springs Branch and the TMDL should not be finalized with those recommended wasteload allocations.

As noted in the response to Comment #4, federal regulation at 40 CFR 131.10(b) requires that a State take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters. Although only narrative (general) criteria apply to Cave Springs Branch in Missouri, the Department believes the TMDL and its allocations will be protective of water quality conditions in both Missouri and Oklahoma, where Cave Springs Branch is designated as a "High Quality Water".

Development of TMDL wasteload allocations must ensure attainment and compliance with applicable water quality standards per 40 CFR 130.7(c). As a result, TMDL wasteload allocation development is conducted without consideration of wastewater treatment technology or cost. The Department recognizes that upgrades and operational improvements at the Simmons Southwest City facility have resulted in water quality improvements in Cave Springs Branch. However, the amount of improvement in Cave Springs Branch has not been quantitatively assessed against the earlier impairment listing for the water body. The Department is therefore recommending a phased implementation approach to the Cave Springs Branch TMDL. Section 10.1 of the document has been revised to include the requirement that a study be conducted by either the Department or Simmons Foods, Inc. to determine the status of water quality in Cave Springs Branch. Should the water quality assessment determine that all applicable Missouri and Oklahoma water quality standards are met, no further reductions in nutrients from the facility would be required at this time. However, if it is determined that water quality has not improved and the water body is still impaired, the nutrient wasteload allocations found in the Cave Springs Branch TMDL may be implemented in the Simmons Southwest City facility operating permit.

The Department recognizes that alternate nutrient criteria may be more appropriate for the Cave Springs Branch and Honey Creek watersheds. As referenced previously, the Department is currently developing Ecological Drainage Unit (EDU) nutrient criteria for Missouri streams as part of the 2012 Missouri Water Quality Standards triennial review. These nutrient criteria may be less stringent than the nutrient target values for the Ozark Highlands ecoregion used in this TMDL. Should new nutrient criteria be promulgated in Missouri's water quality standards, the Cave Springs Branch TMDL will be reviewed and revised, as appropriate, to incorporate any new criteria that may be available.

Additionally, any nutrient criteria or TMDLs established for downstream waters (e.g., Grand Lake O' the Cherokees) will be reviewed and the Cave Springs Branch TMDL revised, as appropriate, to incorporate any new criteria or requirements for downstream waters. Any revised TMDL will be established according to federal regulation at 40 CFR 130.7(c) and any new pollutant loads will supersede those found in this version of the Cave Springs Branch TMDL. The implementation section of the Cave Springs Branch TMDL has been updated to include additional language regarding future revisions of the TMDL.

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Comment #9. *In the event that the comments presented in this letter do not result in a significant amendment of the phosphorus and nitrogen wasteload allocation recommended to apply to Simmons Foods Southwest City facility, we request that the implementation process that will be used to translate the wasteload allocation into effluent limitations in MO-0036773 be included in the TMDL Report. Furthermore, we request that a clause be added to the Report that allows the TMDL to be amended in the event that additional data warrants or should Cave Springs Branch be determined to not be impaired by nutrients and be removed from the 303(d) list of impaired waters.*

Language has been added to Section 10.1 of the Cave Springs Branch TMDL that outlines a phased approach to nutrient reductions at the Simmons Southwest City facility. In addition, a section has been added to the document that indicates the TMDL may be revised in the future should new data or information become available. Should the Department submit, and EPA approve, a delisting request that demonstrates Cave Springs Branch is attaining applicable water quality standards, no further nutrient reductions would be required at the facility until such time Missouri promulgates nutrient criteria into the water quality standards or downstream waters require such reductions.

Methods for converting wasteload allocations to permit effluent limitations are not the purview of the TMDL process. As noted previously in the response to Comment #2, the conversion of wasteload allocations to permit limits is the purview of the Permits and Engineering Section of the Water Pollution Control Branch. Should you have questions regarding the determination of permit effluent limits for the Simmons facility, please contact the Permits and Engineering section at the contact information given in the response.

Thank you again for your comments and support of the TMDL process. If you should have questions or would like to discuss this TMDL further, please contact me at (573) 526-1446, john.hoke@dnr.mo.gov, or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM



John Hoke, Chief
TMDL Unit

JH:apl

Enclosure



STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

September 13, 2010

Mr. John Hoke
Missouri Department of Natural Resources
Water Quality Monitoring and Assessment Section
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176

RE: TMDL for Cave Springs Branch, McDonald County, Missouri

Dear Mr. Hoke:

Thank you for the opportunity to review the above referenced Total Maximum Daily Load (TMDL) report. As the report correctly notes, Cave Springs Branch in Oklahoma is impaired for chlorides, sulfates, TDS and bacteria. While the TMDL is not likely to affect those impairments, implementation should result in generally improved water quality downstream in Oklahoma. As in Missouri, Oklahoma does not currently have numeric criteria for nutrients that would apply to Cave Springs Branch. We believe the endpoints for nitrogen and phosphorus selected for this TMDL would be sufficient to comply with Oklahoma's narrative water quality criteria. The Oklahoma Department of Environmental Quality agrees with the calculated TMDLs, wasteload allocations and load allocations as set forth in the report for total nitrogen and total phosphorus. Implementation of the TMDL, particularly as it relates to the Simmons Foods facility, should result in noticeable improvement in water quality in Oklahoma and Missouri.

Please keep us informed as the TMDL is finalized and implementation moves forward.

Cordially,

A handwritten signature in blue ink, appearing to read 'Mark Derichsweiler', is written over a light blue horizontal line.

Mark Derichsweiler, P.E.
Engineering Manager
Watershed Protection & Stormwater Permitting Section
Water Quality Division



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Kip A. Stetzler, Acting Director

www.dnr.mo.gov

October 21, 2010

Mr. Mark Derichsweiler, P.E.
Oklahoma Department of Environmental Quality
Water Quality Division, Watershed Protection & Stormwater Permitting Section
707 North Robinson
P.O. Box 1677
Oklahoma City, OK 73101-1677

RE: Response to Comments on the Draft Cave Springs Branch Total Maximum Daily Load

Dear Mr. Derichsweiler:

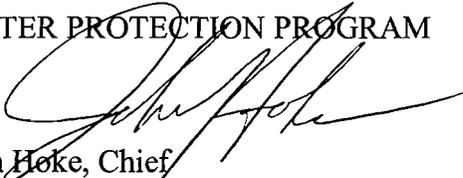
The Missouri Department of Natural Resources (Department) appreciates the support provided by the Oklahoma Division of Environmental Quality (ODEQ) on the draft Cave Springs Branch Total Maximum Daily Load (TMDL). As requested, the Department will keep ODEQ informed as the TMDL is finalized and implementation moves forward.

In addition to the comment letter submitted by ODEQ, the Department received one other comment letter on the draft Cave Springs Branch TMDL from Simmons Foods, Inc. The Department has responded to all TMDL comment letters received and anticipates submitting the final TMDL to the U.S. Environmental Protection Agency for approval by October 31, 2010.

Thank you again for your comments and support of the TMDL process. If you should have questions or would like to discuss this TMDL further, please contact me at (573) 526-1446, john.hoke@dnr.mo.gov, or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM


John Hoke, Chief
TMDL Unit

JH:apl