March 9, 2016

Dear Director Keogh,

It appears ADEQ has lost sight of its goal to *“Protect, Enhance and Restore* the *Natural Environment for the well being of all Arkansans”.* Over the years ADEQ has seen a departure of conscientious employees qualified to understand the duty the agency has to the citizens of Arkansas. Many people like myself were under the impression ADEQ was watching out for the environmental well being of our state. The nonchalant permitting of a large swine CAFO in the watershed of America’s First National River, an Outstanding National Resource Water has placed tremendous burdens upon our state.

I am hopeful that you, Director Keogh, will be able to pressure and put ADEQ back on course to one of the highest environmental standards in the nation. The agency in which you are director has changed so much that it is unrecognizable as the leader of environmental quality it was known for in the 1970s.

Lets hope you are there to bring ADEQ back into a respected agency providing the people of Arkansas healthier environments.

Today, I write in regard to the waters of this state, the 2016 impaired streams 303 (d) list.

There are 3 streams the National Park Service has asked to be included and I recommend they be included. All three streams are greater than 10 square miles therefore are categorized as primary contact water within the Buffalo River Watershed. These streams are Mill Creek of Newton County, Big Creek of Newton County and Bear Creek of Searcy County. This region is within ADEQ’s Integrated Water Quality Monitoring Assessment Report Section 305 (b) and 303 (d) of the Federal Pollution Control Act submitted biennial.

Page 373 states; In cooperation with the US Parks Service, approximately 60 monitoring stations on the Buffalo River, **its tributaries, and watershed springs** are routinely monitored.
Page 31 states: Extraordinary Resource Waters (ERW) This beneficial use is a combination of the chemical, physical, and biological characteristics of a **waterbody and its watershed** which is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential, and intangible social values.
Unless the watershed is included the Buffalo River cannot maintain Extraordinary Resource Waters (ERW), Ecologically Sensitive Waterbody (ESW) or Natural and Scenic Waterway (NSW) status.

I begin with Big Creek, Newton County due to ADEQ's permitting of an NPDES large swine CAFO on an already at capacity stream without use of documentation or historical stream data information. In other words you did not utilize your own research and data prior to the permitting of a General NPDES Permit. Below Regulation 2.304 states you must provide documentation that there will be **no degradation** to the Extraordinary Resource Water, Ecologically Sensitive Waterbodies or the Natural and Scenic Waterways. The NPS and USGS data report there has been degradation therefore you are in violation of state regulations and you have not provided proof that the permitted facility is not degrading the water of the tributary and the river.

Algae growth in Big Creek has continued to rise over the last few years with the increased application of millions of gallons of untreated waste. This waste is spread thru out the year even when there are no plants to uptake the nutrients. The lower 2 miles of Big Creek are within the boundaries of the National Park. The above photo of the stream choked with algae is 6 miles upstream Big Creek. Big Creek is impaired for dissolved oxygen according to USGS & NPS data, data you have been accepting since the 1970s.

According to Reg 2.30 (below) these streams are full body contact streams and therefore when sampling bacterial data from these streams during May 1-Sep 30 a geometric mean of 126 colonies per 100 ml is the standard.

These streams are within the watershed of the Buffalo National River and must be maintained as Reg 2.01 states to prevent the degradation of the Buffalo River.

Reg. 2.01 states; Existing in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

Reg 2.203 states; Where high quality waters constitute an outstanding state or national resource, such as those waters designated as Extraordinary Resource Waters, Ecologically Sensitive Waterbodies or Natural and Scenic Waterways, those uses and water quality for which the outstanding waterbody was designated shall be protected by (1) water quality controls, (2) maintenance of natural flow regime, (3) protection of in-stream habitat, and (4) encouragement of **land management practices protective** of the **watershed.**

Reg 2.30 (d)states; Primary Contact Recreation - This beneficial use designates waters where full body contact is involved. Any stream with watersheds of greater than 10 mile square are designated for full body contact.

Reg 2.301 states: Substantially all the waters of the State have been designated for specific uses as shown in Appendix A. In those instances where waters are classified for multiple uses

and different criteria are specified for each use, **the criteria to protect the most sensitive use shall be applicable.**

Below is a regulation that states you must provide documentation that there will be no degradation to the ERW, ESW or the NSW.

Reg 2.304 states; Significant physical **alterations** of the habitat within Extraordinary Resource Waters, Ecologically Sensitive Waterbodies or Natural and Scenic Waterways **are not allowed**. **In other waters**, where significant physical alterations of the habitat are proposed, the Department must be assured that **no significant degradation of any existing use or water quality necessary to protect that use will occur**. In order to make such determinations, the Department may require an evaluation of all practicable alternatives to the project including: an environmental assessment of the impacts of each alternative, an engineering and economic analysis, and a socio-economic evaluation of the project in the local area.

ADEQ is empowered to enforce and administer all laws and regulations relating to pollution of the waters of the state and the Commission is authorized to promulgate rules and regulations relating to pollution of waters of the state. Ark. Code Ann. § 8-4-201. Because "waters of the state" include "...all bodies or accumulations of water, surface and underground...," the Commission is authorized under state law to develop standards for the protection of groundwater.

Please add Mill Creek, Bear Creek and Big Creek to the 303 (d) impaired waters list. It is visibly and data apparent these tributaries are impaired due to some type of pollution within the watershed. The source of the impaired criteria does not come from the Buffalo River itself but from the tributaries that are the sources of the waters of the river.

7/29/2015 I will not list the whole ADEQ complaint form. I have selected portions that will give you an idea that ADEQ had awareness of the water quality in Mill Creek for the last 2 years. This complaint was made by me after a previous complaint.

From online ADEQ complaint form:
"This is my 3rd complaint in 1 1/2 years about the visual water quality below the Dogpatch spring. I know you are aware of it as I have, including this made another complaint. The lake below the spring is completely covered in algae. I have been driving this highway for over 20 years and this is the worst I've ever seen. The e coli counts where Mill Creek runs into the Buffalo River are at or above safe contact levels. See the NPS reports (you also get these so no need to look on the NPS sites). I made a report 2 weeks ago and I have received no response. It would be better to find the source of pollution and stop it if that is all the time ADEQ has than replying to me, but it is time for ADEQ to act."

PREVIOUS COMPLAINTS: **Yes** DATE(S): **7/20/2015, 7/29/2015**

PHOTOS TAKEN: **Yes**

NAME OF WATERBODY: **Mill Creek Tributary to Buffalo River**

INVESTIGATION & ACTION TAKEN

The site was visited on 7/31/2015. The Mill Creek watershed is located within the Boston Mountain Ecoregion. The area is characterized by karst topography with a complex geologic structure. The Mill Creek surface watershed at Dogpatch is only approximately 4.5 square miles in size. Field observations of the upper Mill Creek and Crooked Creek drainage basins indicate that much of the flow in Mill Creek is derived from the Crooked Creek watershed through a subsurface drainage network. This inter-basin groundwater flow was confirmed by a series of dye traces in which dye was injected into sink holes in the upper Crooked Creek surface watershed and detected in Dogpatch Springs (Photo 1 and 2) in the Mill Creek surface watershed. As much as 10.2 square miles of the Crooked Creek surface watershed drains through the subsurface to Dogpatch Springs (Mott, Hudson and Aley 2000).

Manor and Mott (1991) found that most of the nitrate and phosphorous load to Mill Creek and the Buffalo River originates from Upper and Lower Dogpatch Springs. The shallow impoundments on Mill Creek receive flow from the nearby high volume springs containing elevated nutrient concentrations. The combination of clear water with good light penetration of the entire water column and high nutrient concentrations stimulate algae production (see Photos 4, 5, and 6).

Based upon anecdotal observations, the upper Mill Creek and lower Crooked Creek watersheds are experiencing considerable growth in human and livestock populations. There is little doubt that virtually all of the nutrient load to the springs is derived from numerous, unknown non-point sources. This is a particularly difficult water quality problem to address in a rapidly urbanizing area .

Lower Dogpatch Spring emanating from cave. **Dogpatch Spring outflow at confluence with Mill Creek.**

Photographer:Tony Morris

7/31/2015 Looking upstream from impoundment dam at algae and duck weed covered water.

Mill Creek at Dogpatch Theme Park, Newton County

Photographer:

Tony Morris

7/31/2015

It is very important when visiting an ERW with your children or immune compromised individual that people are aware when the water quality has degraded and harmful bacteria can enter the body causing kidney failure in young children or bacterial infections on the skin. Children love to splash and play in the water and they should not have to worry about raw sewage. They deserve the protection, the enhancement and the restoration of their environment.

I look forward to watching Arkansas become a leader in Environmental Quality. Not just a rubber stamped leader, but a real quality leader.

Sincerely,

Carol Bitting

CC

Jim Wise
impairedwaterbodies_comments@adeq.state.ar.us

davidbranscum@hotmail.com

kaspar.paul@epa.gov

hunt.laura@epa.gov

matt.mcnair@arkansas.gov

Dr. Joseph Bates
edu.ehs@arkansas.gov

From:	Carol Bitting
To:	ImpairedWaterbodies_Comments
Subject:	Additional comments
Date:	Tuesday, March 15, 2016 11:09:50 PM
Attachments:	CH_All Data Compiled.xlsx

303(d)listing_Carol_2 3/15/16, 10:51 PM

I'd like to add more comments to the 303 (d) impaired stream list due.

In 2012 C&C Farms was producing approximately 550,000 gallons of swine waste a year. It was permitted as 312 sow & pig farm. During the years of 2012 and 2013 C&C modified their permit and began spreading waste on fields aligning Big Creek. C&C is now known as EC Farms and public comment period for further modifications is in Jasper April 11. (see EC Farms permit # 3540-WR-7).

In 2013 Faron Usery, NPS sent information to ADEQ requesting help determining what was impairing the Dissolved Oxygen on Big Creek. Below is a that information and ADEQ's awareness a pollution of this stream existed.

Below is a copy of an email sent from the NPS to ADEQ bringing awareness to Big Creek impairment in Aug of 2013. (This email thread is in ADEQ's archive) Those ADEQ employees that received this information were Sarah Clem, Bruce Kirkpatrick, Tony Morris, Jason Bolengaugh, Uveda Craig, Jeff Ruehr,

Date: Tue, 6 Aug 2013 16:19:06 -0500
Subject: Dissolved Oxygen in Big Creek, Newton County Sarah,

Dissolved oxygen in Big Creek continues to be low despite the rain and cooler temperatures. Last weeks water quality sampling in several of our tributaries found that Big Creek was among the lowest, and todays sampling found that it was 5.8 mg/L at 0940. We are concerned that due to the continuous low dissolved oxygen that there may be a biological impairment in Big Creek. And, dissolved oxygen is being driven down to critical levels in the Buffalo River below the confluence, a reach containing potential T&E species of native mussels. Several weeks ago I requested ADEQ's assistance to determine the source of the dissolved oxygen depletion, has there been any headway in that request? I have no authority to proceed on to lands outside the park, but ADEQ has that investigative authority. In the weeks to come, we will continue to monitor dissolved oxygen in our water quality tributaries and in Big Creek (T06). I look forward to hearing from ADEQ in this issue and will assist you in any capacity that I can. Thank you.

Faron Usrey

Aquatic Ecologist

Buffalo National River

Below is data arrived from BCRET's data showing Big Creek was impaired for e-coli. This data is also in ADEQ's archive, but I will include it as I received it as a spread sheet.

Subject: Big Creek, Newton County, Impairment for *Escherichia coli* based on data collected by Big Creek Research and Extension Team

After a rather exhaustive analysis of Big Creek Research and Extension Team (BCRET) water quality data for two stations on the main stem of Big Creek, Newton County, above its confluence with the Left Fork of Big Creek, it is determined that this reach of the creek, Headwaters Big Creek, 12 digit Hydrologic Unit Code (HUC12) 110100050302 was impaired for *Escherichia coli* (*E. coli*) bacteria based upon Regulation 2.507 during the primary contact period of May 1 to September 30, 2014. According to the Arkansas Water Information System, this HUC12 has an area of approximately 45 square miles, making it Big Creek a Primary Contact Stream.

BCRET site BC 6 is a station on the main stem of Big Creek upstream of the C&H Hog Farm, Inc. facility and manure spreading fields.

If we assume that Big Creek is not part of an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway (ERW, ESW, or NSW) the upper *E. coli* limit is 410 colonies per 100 ml (410 col/100ml). During the primary contact period in 2014, the E. coli exceeded 410 col/100ml in 6 of 22 samples for a 27% exceedance. According to Regulation 2.507, for assessment of ambient waters as impaired by bacteria, the *E. coli* standard shall not be exceeded in more than 25% of samples in no less than 8 samples taken during the primary contact season.

The regulations enacting the Federal Clean Water Act appear to take a more conservative approach to Outstanding National Resource Waters (ONRW) [40 CFR§131.12(a)(3)] which streams are analogous to ERW, WSW, and NSW streams. 40 CFR indicates that the watershed of ONRWs is part and parcel with the ONRW itself, and watershed protection leads to maintenance and protection of the ONRW. Taking this more conservative approach, the E. coli standard for Big Creek should be 298 col/100ml for an individual sample and 126 col/100ml for a geometric mean of at least five samples over a 30 day period. During the primary contact period of 2014, Station BC 6 exceeded 298 col/100ml in 8 of 22 samples for a 36% exceedance. Also, during the primary contact period there were three periods when the geometric mean was exceeded. These were: May 13 through June 9, 2014 when the geometric mean was 339 col/100ml, June 19 through July 15, 2014 when the geometric mean was 783 col/100ml, and August 20 through September 18, 2014 when the geometric mean was 146 col/100ml.

BCRET BC 7 is a station on the main stem of Big Creek downstream of the C&H Hog Farm, Inc. facility and manure spreading fields. During the primary contact period in 2014, the stream exceeded 410 col/100ml in 7 out of 22 samples for a 32% exceedance of the standard. The stream exceeded 298 col/100 ml in 7 out of 22 samples for a 32% exceedance of the ERW standard. The stream had two periods where the ERW geometric mean was exceeded. These were: May 13 to June 9, 2014 with a geometric mean of 283 col/100ml and June 24 to July 23, 2014 with a geometric mean of 697 col/100ml.

These data indicate that Big Creek is indeed impaired for *E. coli* upstream of the Left Fork.

Sincerely,

Carol Bitting, HC 73 Box 182 A, Marble Falls, Ar 72648

“Wilderness is not a luxury but a necessity of the human spirit, and as vital to our lives as water and good bread.”

Edward Abby