



## Arkansas Department of Health

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4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

**Governor Mike Beebe**

**Nathaniel Smith, MD, MPH, Director and State Health Officer**

November 19, 2013

Mr. Doug Szenher  
ADEQ Public Information Officer  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

RE: APC&EC Docket # 13-006-R  
City of Huntsville WWTP Use Attainability Analysis Third Party Rulemaking  
Water Quality Study – Second Amended posted August 1, 2013  
Supplemental Report – Feasibility of Treatment Alternatives posted Oct. 24, 2013

Domestic Water Supply Use Designation  
Town Branch Creek, Holman Creek, War Eagle Creek  
Huntsville, AR

Mr. Szenher:

This office has reviewed the referenced documents submitted under the minute order required by the Commission relating APC&EC Docket # 13-006-R. The following comments are submitted to the Commission concerning this matter.

1. The Arkansas Department of Health (ADH) reiterates its previously submitted comments that the domestic water supply use designation should remain in place for Town Branch Creek, Holman Creek, and War Eagle Creek. It is the ADH's position that it is appropriate for streams within the Beaver Lake watershed to retain domestic water supply use designations considering that Beaver Lake is the source of drinking water for approximately 390,000 Arkansans.

2. Separate correspondence containing comments pertaining to both the second amended Water Quality Study (UAA) and the recent feasibility study is attached to this letter and has been provided to GBM<sup>c</sup>. A primary concern regarding the feasibility report is that full consideration of pretreatment of the waste stream by industry prior to acceptance of the flow by the municipal wastewater system is not explored. Pretreatment is generally accepted to provide greater efficiencies and potential cost savings when compared to combined waste streams for

municipal treatment. Smaller volumes can be treated, and greater flexibility with regards to process modifications and treatment schemes can be achieved.

3. The Water Quality Study posted August 1, 2013 utilizes an assumed background flow of 4 cfs for determination of site specific criteria (sections 7.2.2, 7.2.3, and 7.2.4). ADH disagrees with the assumption that this is representative of stream conditions at the outfall. In reality, Holman Creek and Town Branch Creek are intermittent losing streams and Holman Creek is listed as an impaired stream on the 2008 303(d) list for impairments resulting from the City of Huntsville WWTP discharge of Total Dissolved Solids. Furthermore, assuming 4 cfs of background flow is contrary to the EPA-approved "State of Arkansas Continuing Planning Process" (CPP) dated January 2000. Page IX-7 of the CPP specifically says that 4 cfs "may be calculated ... after mixing." In Sections 7.2.2-4, 4 cfs was assumed upstream. Per the CPP and a Huntsville WWTP flow rate of 3.1 cfs, the maximum dilution available upstream would be 0.9 cfs. Given the losing stream status, 0 cfs would be most appropriate.

Sincerely,



Jeff Stone, P.E.  
Director, Engineering Section

Enclosure

Cc: The Honorable Charles Moulton, APC&EC Administrative Hearing Officer, 101 E. Capitol Ave., Suite 205, Little Rock, AR 72201

Mr. Shon Simpson, Principal/Senior Project Manager, GBMc & Associates, 219 Brown Lane, Suite 215, Bryant, AR 72022

Dr. Joseph Bates, MD, MS, Deputy State Health Officer and Chief Science Officer, 4815 West Markham, Slot 60, Little Rock, AR 72205



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November 19, 2013

Mr. Shon Simpson  
Principal/Senior Project Manager  
GBMc & Associates  
219 Brown Lane, Suite 215  
Bryant, AR 72022

RE: "Feasibility of Treatment Alternatives for TDS and Chloride" Report posted 10/24/2013  
Third Party Rulemaking  
City of Huntsville, AR  
Madison County, AR  
APC&E Docket # 13-006-R      ADH # 86348

Dear Mr. Simpson:

The Supplemental Report for the above-referenced project has been reviewed, and ADH-Engineering staff has the following comments.

1. The national secondary MCLs for TDS, chlorides, and sulfates in drinking water are 500, 250, and 250 mg/l, respectively. The effluent discharge from the Huntsville Waste Water Treatment Plant (WWTP) flows into Beaver Lake which is a drinking water source for much of northwest Arkansas. Any effluent from the Huntsville WWTP should include concentration limits on TDS, chlorides, and sulfates that meet these MCLs in the effluent.
2. The report did not address the feasibility and cost of any modification of the manufacturing processes used in the Butterball facility in order to reduce the level of contaminants in the wastewater effluent. Please discuss these potential changes beyond what was mentioned in Section 8.4 of the site-specific water quality study (dated March 2013 as revised on July 26, 2013).
3. The report did not address the feasibility and cost of any modification to the pretreatment processes of the wastewater flow from the Butterball facility so that the concentration of these contaminants can be reduced prior to entering the Huntsville WWTP. Please describe the current pretreatment process at the Butterball facility, including the specific function of each lagoon, and please detail the proposed pretreatment process changes (and costs) that could be made specifically at the Butterball facility to reduce the levels of these contaminants.



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4. There does not appear to be any active coagulation/flocculation/filtering of the wastewater in the pretreatment or treatment process. Was adding coagulation/flocculation/filtration considered at either the Butterball facility and/or Huntsville WWTP?
5. Please discuss the potential costs/benefits of flow equalization and stormwater management at the Butterball facility and/or Huntsville WWTP.
6. Please discuss the potential costs/benefits of land application of wastewater from the Butterball facility and/or Huntsville's WWTP effluent.
7. Please clarify the design basis being used for Reverse Osmosis (RO). The report appears to be using a flow rate of 1.25 MGD and reduction of 3.4 g/l by 95% which would be approximately 170 PPM TDS. What is the discharge target for TDS post RO?
8. As a historical reference, please provide a copy of the \$10 – 15 million RO cost estimate report prepared by McGoodwin, Williams & Yates cited in pages 3 and 9 of the Fact Sheet for Huntsville WWTP's NPDES Permit No. AR0022004.
9. The RO cost estimate appears to be inflated from 1996 twice. Also, it is not clear whether the ultrafiltration + carbon filter was meant to be included in the 2012Q4 values. Were more current cost data not available? This office obtained an ultrafiltration + RO vendor cost estimate of \$3.5 - 5.0/gallon/day (for 1.25 MGD with 1,300 mg/L TDS) including equipment and installation (not including a building or other infrastructure costs).
10. Please provide more itemization detail on the purpose of the proposed \$158,470 in annual labor costs for the proposed RO system (by itself)?
11. Please clarify the design basis being used for Electrodialysis (ED). The report appears to be using a flow rate of 1.0 MGD and does not indicate the expected TDS reduction. What is the discharge target for TDS post ED?
12. The cost estimate for ED appears to be inflated from 1993. Were more current cost data not available?
13. Please clarify the design basis being used for Capacitive Deionization Technology (CDT) cost (e.g., modules initially needed, expected module replacement frequency, etc.). The report appears to be using a flow rate of 1.0 MGD and does not indicate the expected TDS reduction.
14. The cost estimate for CDT appears to be inflated from 2005. Were more current cost data not available?

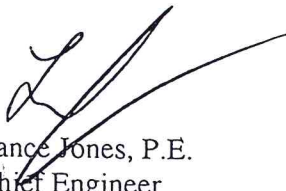
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15. Please provide more itemization detail for the projected annual operating costs for filtration, crystallization, and equipment replacement.
16. Please include the costs to transport and land apply the reject water at a permitted site and/or dispose of the reject water in a permitted disposal well as an alternative to crystallization.

Review of this project will continue upon your response to the above comments. When submitting correspondence pertaining to this project, please include our reference number ADH # 86348.

We would like to meet with you to discuss these issues as soon as possible since the comment period is winding down. Please contact this office at (501) 661-2623 at your earliest convenience.

Sincerely,



Lance Jones, P.E.  
Chief Engineer  
ADH Engineering Section

LJ:LG:CC:CH:DR:KB:cwr

cc: Hon. Charles Moulton, APC&EC Administrative Hearing Officer, APC&EC Docket #13-006-R  
Doug Szenher, ADEQ Public Information Officer, APC&EC Docket #13-006-R  
City of Huntsville Wastewater