COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of

Electronic Application of Bluegrass Water Utility Operating Company, LLC for Certificates of Convenience and Necessity for Projects at the Delaplain Site	))))	Case No. 2022-00104

Bluegrass Water's Response to Staff's Fourth Request for Information

The Applicant, Bluegrass Water Utility Operating Company, LLC ("Bluegrass") herewith submits its Response to the Commission Staff's Fourth Request for Information. A signed, notarized verification for this Response appears on the following page. The undersigned counsel is responsible for any objection noted for a particular response.

Respectfully submitted,

/s/ Kathryn A. Eckert

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Verification

I, **Aaron Silas**, Director of Regulatory Operations of Central States Water Resources, Inc., the manager of Applicant Bluegrass Operating Company, LLC being duly sworn, state that I prepared or supervised the preparation of the following responses to PSC's Fourth Request for Information, and that the matters and things set forth in the responses are true and correct to the best of my knowledge, information and belief formed after reasonable inquiry.

Aaron Silas

STATE OF MISSOURI)
COUNTY OF St Louis)

Subscribed, sworn to, and acknowledged this 13th day of January, 2023, before me, a Notary Public in and before said County and State.

My Commission expires: 5/4/24

NOTARY PUBLIC

{seal}

DANIEL RYAN JANOWIAK
Notary Public, Notary Seal
State of Missouri
St. Charles County
Commission # 20374795
My Commission Expires 05-04-2024

Request

1. Refer to Application, page 4, paragraph 12, regarding benefits of installing a polymer feed to reduce solids; Application page 5, paragraph 16 stating "Bluegrass anticipates no change to current operating costs due to proposed improvements;" Case No. 2022-00102,[2] Bluegrass Water responses to Commission Staff's First Request for Information, Item 20, indicating that a polymer feed would not address accumulated solids and could worsen the problem; Case No. 2022-00102, Bluegrass Water responses to Commission Staff's Second Request for Information, Item 6d, indicating that a polymer feed requires an increased operations and maintenance (O&M) expense.
    a. Explain why a polymer feed in the project in Case No. 2022-00102 may not have reduced solids and may have increased them, but the proposed polymer feed in Case No. 2022-00104 would.
    b. Explain why a polymer feed in the project in Case No. 2022-00102 would have created additional O&M expense but the proposed polymer feed in Case No. 2022-00104 would not.

Response

a. Please see Bluegrass Water's Response to Staff's Initial Request for Information in Case No. 2022-00102 (Herrington Haven), Response to 1 PSC 20.[1] A polymer feed would have not been the best alternative for Herrington Haven because of the small footprint of that facility and the issues with accumulation of sludge once the polymer feed reduced the suspended solids. The minimal capacity for sludge storage at the Herrington Haven facility would cause this to become problematic quickly by requiring very frequent sludge hauling to maintain adequate treatment capacity, thereby dramatically increasing operational costs. This is not an issue at the Delaplain facility due to the much larger facility capacity which allows for less frequent sludge hauling and therefore more time

[1] See also Case No. 2022-00102 11/07/22 Final Order p. 16 affirming the same issues with size of the plant at the Herrington Haven site.

for sludge to break down, reducing sludge volume and thereby reducing sludge hauling expenses.

There is an important distinction between suspended solids and accumulated solids. A polymer feed will reduce the level of suspended solids in effluent and aid in compliance with TSS limits by causing more of the suspended solids to clump and fall out of solution as an accumulated solid. This means that, on its own, a polymer feed actually increases the amount of solids which drop out of solution and therefore would end up accumulating in the plant. Absent some other method to reduce the amount of accumulated solids, these will need to be hauled away. The aim of the polymer feed, as with the tertiary filtration, is to reduce the amount of suspended solids to allow for compliance with TSS limits.

Any increase in accumulated (that is, settled out of solution and not suspended) solids resulting from the polymer feed will be counteracted with the addition of the IFAS treatment in the Delaplain project. The attached growth treatment will result in more solids being broken down through the increased treatment. The additional breakdown of solids caused by the IFAS treatment will outweigh any increase in accumulated solids settled due to the polymer. The net effect of the polymer feed, used in conjunction with the IFAS treatment, is both a reduction in suspended solids (helping with compliance in TSS limits) and a reduction in accumulated solids, which will drastically reduce sludge hauling costs at the facility. This sort of sludge breakdown is effective way to reduce the operational costs associated with sludge removal, but takes time and treatment volume for the breakdown of retained solids to occur. This sort of savings could not be realized

at the Herrington Haven facility due to the smaller plant size leaving almost no additional space for retained solids to break down.

Given the overall reduction in sludge accumulated with all the proposed improvements, the projected annual O&M cost is shown to be reduced by approximately 18%, as was detailed in the attachment in the Response to 1 PSC19 previously submitted. The goal of the polymer feed system is to reduce suspended solids by causing these to accumulate, which is necessary for compliance with TSS effluent limits. On its own, absent the increased treatment resulting from the IFAS treatment, the polymer feed would not reduce solids accumulation and would lead to additional sludge hauling costs, but still result in improved ability to meet suspended solids limits.

b. Please see Bluegrass Water's response to 1 PSC 19 and subpart (a) above. In the Delaplain project there are two components at work - the polymer feed and the IFAS treatment. There is a chemical cost associated with the polymer feed system. Therefore, considered in a vacuum, there is a higher O&M cost associated with operating a polymer feed. As explained in subpart (a) above, Bluegrass intends to also install an IFAS treatment at Delaplain. The IFAS treatment has the effect of increasing the aerobic treatment which will reduce BOD and Ammonia and ultimately also reduce accumulated solids. As a result of the reduction of accumulated solids, there is a reduced need for sludge hauling. Therefore, there is a reduction in O&M costs. The net impact of both these proposed improvements is a reduction of anticipated operating cost by approximately 18%. As shown in the attachment for the response to 1 PSC 19, the net effect is an annual reduction in operating costs of approximately $52,000 annually.

Request

2. Refer to Corrective Action Plan, response to Commission Staff's First Request for Information (Response to Staff's First Request), Item 24, KY2022- 00104_BW_419, referring to a "second phase of improvements." Provide estimated construction costs of these improvements and annual O&M expenses.

Response

Bluegrass Water does not have any estimated costs for additional improvements and annual O&M expenses for a "second phase of improvements" because no second phase of improvements has been planned at this time. The second phase of improvements was built into the corrective action plan in the event that the proposed improvements identified in the CPCN do not result in compliance with permitted limits. At this time, there is no reason to anticipate that a second phase will be required.

Request

3. Refer to Enforcement and Compliance History Online (ECHO) exceedance report, Response to Staff's First Request, Item 4, KY2022-00104_BW_375.
    a. Identify any planned, unplanned, or completed projects or actions necessary to prevent *E.coli* or chlorine exceedances noted in the ECHO report.
    b. Provide estimated construction costs of these projects and annual O&M expenses.
    c. If insufficient actions have been undertaken to correct these exceedances, explain why.

Response

a. No planned, unplanned or completed projects or actions are necessary beyond the projects identified in the current CPCN application. Two major factors seem to have contributed to the history of E.coli and TRC violations at this facility. First, under previous ownership it appears that chlorine dosing was not being handled precisely, which led to some of the historic violations. Second, since taking over the facility Bluegrass has found that most of the issues with E.coli and TRC are the result of the poor solids handling at the facility. Higher than normal levels of suspended solids can reduce the effectiveness of disinfection by physically shielding pockets of bacteria from the disinfection process. Operators sometimes increase the chlorine dosing to try to account for this until the planned solids handling improvements can be implemented, which can cause exceedances of TRC limits as a result. The proposed solids handling improvements will essentially eliminate solids from the effluent, eliminating the issues with ineffective disinfection, allowing for more stable dosing of chlorine, and thereby preventing further TRC limits exceedances. As a result, Bluegrass Water currently anticipates that no additional project beyond what has already been proposed in this

CPCN application is required to resolve these violations and that the stabilized operation of the facility following the proposed projects will eliminate these violations.

b. As described above in subpart (a) and the response to 4 PSC 02 no additional projects are anticipated to resolve the exceedances. As such, there are no project costs or projected changes in O&M expenses related to E.coli or TRC limit exceedances, other than those identified in the pending Delaplain CPCN application.

c. Please see Bluegrass Water's response to 4 PSC 3a.