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Artesian Consulting Engineers

12/09/2021

Artesian Wastewater Management Inc.  
664 Churchman's Road  
Newark, DE 19702

Mr. John Rebar  
89 Kings Highway  
Dover, DE 19901

Dear Mr. Rebar:

Artesian Wastewater Management Inc. (AWMI) is in receipt of the draft Operations Permit for SRRF, State Permit No. 259288-02. The purpose of this letter is to provide comment on several items contained in the draft permit and request that a few changes be made before the final permit is issued.

### **Part I.D.2**

This section of the permit appears to outline a procedure to verify that phosphorus levels do not exceed the permit limit of 31.2 lbs/acre/year. AWMI is currently tracking and reporting this information based on language in State Permit No. 359288-01 that is also reproduced in Part I.D.12, Part II.1.a and Part II.2.a of the draft permit. As this new section is duplicative it should be removed.

### **Part I.E.**

AWMI requests that section Part I.E. Facility Classification on page 14 of the draft Operations Permit for SRRF be revised as follows. In the final sentence the words "and onsite" should be removed so that the sentence reads:

*"A licensed operator, operating under the direction of the licensed operator in Direct Responsible Charge for the facility, shall be available when the spray irrigation system is in operation."*

AWMI understands that the intent of the requirement for an operator to be onsite when the spray irrigation system is in operation is so that they can provide a visual review of the system while in operation to check for ponding, frozen ground, etc. and so that, should something fail, the response time is minimized. The SRRF facility is in a unique situation which is different than most typical spray irrigation facilities in the state. Because of this, the intent behind an operator being present whenever the spray irrigation system is in operation can be met without the need for an operator to

be physically present at the SRRF facility during all spray operations. The reasons for this are as follows.

1. SRRF is an expansive facility with spray operations occurring across hundreds of acres. Visual inspections are conducted daily. However, the operator onsite does not rely solely on these periodic visual inspections but also a series of redundant sensors, SCADA, alarm systems and other controls/safeguards which can all be monitored onsite or remotely. This system of safeguards, which detects, notifies and can discontinue flow, performs the same way whether the operator is onsite or not. AWTMI maintains a one-hour response time to any and all alarms throughout its system. Should an event happen at SRRF, safeguards such as the Reinke Center Pivot controls, remote alarm system and the Artesian SCADA system notify the operator on call immediately. They can then respond in real time using the remote-control capabilities of the system, thus allowing the response time to be immediate without requiring travel time to arrive onsite to take corrective action. Accordingly, the intent of the requirement is being met whether an operator is at the SRRF facility when spray operations are happening or not.
2. SRRF utilizes active farmland for disposal. In accordance with the MOU between DNREC and the Department of Agriculture, AWTMI staff prioritize the needs of the crops over the needs of the wastewater disposal operation. To that end, several irrigation rigs require continued operation for more than 24 hours to complete their cycle and the farmer often asks that spray operations be conducted throughout the night to minimize the amount of evaporation and ensure that the crops are getting the volume of water that they need. An operator is on call throughout the night, but does not need to be onsite while a rig is running during those hours for the system to function.
3. Frozen ground, and other circumstances when spray operations must cease are monitored as part of daily procedures conducted by the operators. The fields are inspected and weather forecasts are reviewed to determine if and where spray operations on a given day should be conducted.

In light of these facts, AWTMI requests that the requirement that an operator be onsite whenever the spray irrigation system is operating be removed from the proposed permit language prior to issuance of the final permit.

### **Part I.I.8. & I.I.9**

These sections provide for an “immediate” disruption of normal operations and diversion back to the combined influent/off-spec lagoon due to test results associated with turbidity and fecal content of the treated effluent. While AWTMI agrees with the intent of these sections, we believe that the procedures written for total nitrogen content of effluent should apply to both the turbidity and fecal content similar to the requirement recently issued in State Permit No. 597261-01 (Allen Harim Operating Permit dated April 27, 2021). Part I Section I.8 and Part I Section I.9 should be replaced in their entirety with an edited version, adjusted to meet AWTMI’s specific process. Reasons for making these changes are as follows.

1. Sensors such as turbidity meters will eventually wear out, or can register false positives due to momentary variances in flows etc. Taking the drastic action of diversion without first determining if a result is a false positive represents a huge potential risk to the system which operates best when steady state conditions are maintained. These conditions will be inevitably disrupted in the event of diversion.

2. Part I Section 10 appropriately requires testing and a contingency plan to stop spray operations and correct fecal presence in the event it is discovered within the 90-million-gallon storage lagoon. However, the draft permit requirements under Part I Section 9 unnecessarily disrupts plant operations by requiring immediate diversion before verifying that an exceedance is not the result of corrupted sampling or incorrect testing procedures. The most recent requirements issued in Allen Harim's Operations Permit (State Permit No. 597261-01) allow for resampling and corroboration of test results before diversion is required. Flow is not immediately sprayed upon exiting the proposed SRRF WWTP. Upon discharge from the plant it will be pumped into the 90-million-gallon effluent storage lagoon where it will mix with the flow from Allen Harim as well as effluent discharged from the plant on previous days. This huge volume of water acts as a buffer, absorbing any short-term overages and diluting them with the compliant water that was already stored in the lagoon. Any short-term issues will be diluted to a level that they are no longer out of compliance.

In light of these factors, AWMi proposes the following language be included in the permit to replace Part I.I.8 and Part I.I.9:

*In the event that analytical results of a treated wastewater effluent sample indicate an exceedance of any of the maximum limitations for fecal coliform bacteria or turbidity set by this Permit, the Permittee shall collect and analyze a second sample within 24-hours after becoming aware of the exceedance. In the event the second sample results indicate that any maximum limitation is continuing to be exceeded, the following corrective actions shall be enacted:*

1. *Notify the Department that corrective actions are being initiated.*
2. *Submit copies of the recent analytical results indicating an exceedance to the Department.*
3. *Immediately increase filtration through the cloth media filters. This shall be accomplished by either bringing online additional filtration capacity or decreasing the loading per square foot of filter media.*
4. *Examine operation and maintenance logs for improper operational procedures.*
5. *Conduct a physical inspection of the treatment system to detect abnormalities. Any abnormalities discovered shall be corrected.*

*Within 24 hours of enacting these corrective actions the Permittee shall collect and analyze a third sample for fecal coliform bacteria and/or turbidity from the treatment plant discharge. If the analytical results from samples of treated wastewater effluent no longer indicate an exceedance of any of the maximum limitations, the Permittee shall notify the Department and may resume normal operations. The Permittee shall collect and analyze a fourth sample for fecal coliform bacteria and/or turbidity. If the analytical results from the fourth sample of treated wastewater effluent remains under all of the maximum limitations normal operations may resume and sampling shall return to its normal schedule.*

*In the event that analytical results of the third sample continue to indicate that an exceedance of any of the maximum limitations for fecal coliform bacteria or turbidity set by this Permit is still occurring the following corrective actions shall be enacted:*

1. *Notify the Department that further corrective actions are being initiated.*
2. *Submit copies of the recent analytical results indicating an exceedance to the Department.*
3. *Effluent from the plant shall be diverted away from the 90-million-gallon storage lagoon back to the influent equalization/diversion lagoon for further treatment.*

*When the analytical results from samples of treated wastewater effluent no longer indicate an exceedance of any of the maximum limitations, the Permittee shall notify the Department and may resume transferring treated wastewater to the 90-million-gallon storage lagoon and resume normal operations. The Permittee shall collect and analyze a fourth sample for fecal coliform bacteria and/or turbidity from the treatment plant discharge. If the analytical results from the sample of treated wastewater effluent remains under any of the maximum limitations normal operations may resume and sampling shall return to its normal schedule.*

Thank you for your consideration of these concerns. If you have any questions or would like to discuss any of these items further please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Konstanski', followed by a horizontal line extending to the right.

Daniel Konstanski, P.E., BCEE  
Manager of Engineering, AWMI