

***CORRECTIVE ACTION PLAN
TRI-CITY UTILITIES, INC.
WASTEWATER TREATMENT PLANT***

Town of O’Kean, Arkansas
July 2015

CIVIL ENGINEERING ASSOCIATES

2114 East Matthews Ave.
JONESBORO, ARKANSAS 72401
870-972-5316
FAX 870-932-0432

1. DESCRIPTION OF EXISTING WASTEWATER FACILITIES

Tri-City Utilities, Inc. currently owns and operates a wastewater treatment facility that is located in O’Kean, Arkansas. The original treatment facility was constructed in 1989. The facility treats all of the wastewater generated in the Town of O’Kean, the Town of Delaplaine, and the City of Peach Orchard. Each of the towns are responsible for their own collection system. The facility was effectively rebuilt in 2009, but the basic treatment process remained the same. The only change in the process was from a UV disinfection unit to a chlorinator and chlorine contact chamber. The treatment facility was designed for a flow rate of 0.048 MGD.

2. DESCRIPTION OF EXISTING PROBLEMS

This “Corrective Action Plan” was prepared to address the violations submitted via letter from Arkansas Department of Environmental Quality (ADEQ) dated June 5, 2015. Enclosed in the letter was a list of the violations that occurred from May 31, 2012, through February 28, 2015. The list identified forty-six (46) effluent violations of Part 1 Section A of their NPDES permit. The following table shows the breakdown of the violations.

Table 1. Violations Breakdown

Effluent Limit Characteristic Violations	Number of Violations
Nitrogen, ammonia total (as N) (MO AVG, lb/d)	10
Nitrogen, ammonia total (as N) (MO AVG, mg/l)	13
Nitrogen, ammonia total (as N) (7 DA AVG, mg/l)	11
Oxygen, dissolved (DO) (INST Min., mg/l)	1
BOD, carbonaceous, 5-day (MO AVG, mg/l)	2
BOD, carbonaceous, 5-day (MO AVG, lb/d)	5
Solids, total suspended (MO AVG, mg/l)	1
Solids, total suspended (MO AVG, lb/d)	3

From Table 1, it appears that the major area of concern is the NH₃-N. Civil Engineering Associates (CEA) conducted several site visits to try to ensure the plant is being properly operated and maintained. CEA’s inspection of the facility revealed that the facility is currently being well maintained and operated. However, this was not the case during the time that most of the listed violations occurred. The present operator, ClearWater Utility Management Services, LLC, was contracted to operate the facility in July 2014. In reviewing the list of violations, only eight (8) of the violations occurred after ClearWater assumed role as operator. Of those, five (5) occurred within the first two (2) months of their tenure, while they were working to get the facility back into operational shape.

3. RECOMMENDED IMPROVEMENTS

Based on our review of the information associated with this facility and discussions with Board Members, it is fairly apparent that the cause of the majority of the effluent violations was improper operation and maintenance of the treatment facility. An inspection of the facility was performed with Mr. Heath Vaughn, owner of ClearWater Utility Management Services, when his company was first contracted to operate the treatment facility. During this inspection, it was noted that weeds were

approximately waist deep in the sand filter beds, there was a thick scum of algae on the water surface in the chlorine contact chamber, and the automated valves on the influent side of the sand filters were not functioning properly. Since that time, a considerable amount of work has been done to “clean-up” the facility and make repairs. That is reflected in the decreased number of violations since ClearWater assumed operation of the facility. As previously mentioned, the number of effluent violations that have occurred since ClearWater took over as operator and had a chance to clean things up a little have decreased dramatically.

It is well known by Tri-City Utilities, Inc. and its Board of Directors, and by ClearWater Utility Management Services, that there is a tremendous amount of Inflow/Infiltration (I/I) into the collection system. However, since Tri-City Utilities does not own and operate the collection systems, it is difficult for them to mandate that improvements to the collection systems be performed. Each of the collection systems is owned and operated by the individual community. Members of the Board of Directors have been asked to community with their respective community to importance of the community having their individual collection system smoke tested to determine the severity of I/I and possibly make repairs to reduce it.

It is also a well-known fact by those involved that several of the lift stations through the three (3) collection systems are not functioning properly. In fact, there are a few of them that do not operate at all and are being bypassed with portable gasoline driven pumps. Each of the three (3) communities are working on their respective lift stations in an attempt to get them all back up and functioning properly. The fact that they are not operating correctly allows the wastewater to become even more septic than it would be otherwise, which makes it more difficult to treat with the type of treatment process being utilized by Tri-City Utilities. Again, however, there is not much that Tri-City Utilities can do about the operation and maintenance of the individual collection systems since it does not have any control over them.

All this being said, and assuming that each of the communities will take care of the issues associated with its individual collection system, the number of effluent violations associated with the Tri-City Utilities, Inc. wastewater treatment facility should be minimal. ClearWater Utility Management Services will continue to maintain and operate the facility as effectively and efficiently as possible. Should the effluent violations continue to occur, influent samples should be taken to determine the ammonia levels. If it is determined that the influent ammonia levels are too high, Tri-City Utilities will have to take the appropriate steps to make the necessary process changes to treat the ammonia.

4. MILESTONE SCHEDULE FOR COMPLETION AND IMPLEMENTATION

A milestone schedule showing the estimated time for compliance and monitoring is included in Exhibit A, Milestone Schedule.

EXHIBIT A

**Tri-City Utilities, Inc.
Compliance Timeline**

- August – December 2015
 - Continue monitoring effluent for permit compliance.
 - Work with O’Kean, Delaplaine, & Peach Orchard on I/I reduction in collection systems.
 - Work with O’Kean, Delaplaine, & Peach Orchard on other collection system needs.

- January 2016 (IF EFFLUENT FROM PREVIOUS FIVE MONTHS IS NON-COMPLIANT)
 - Take influent samples, two samples during the month, for analysis.
 - Plan process improvements based on results from influent sample analysis.

- March 2016 (IF PROCESS IMPROVEMENTS ARE NEEDED)
 - Take steps to prepare and submit funding application for needed improvements.

- May 2016 (ASSUMING FUNDING HAD BEEN OBTAINED)
 - Prepare detailed construction drawings and specifications for needed improvements.

- July 2016
 - Submit plans and specifications to funding agency, ADEQ, and ADH for review and approval.

- September 2016
 - Advertise proposed improvements for bids.

- October 2016
 - Award construction contracts and begin construction.

- February 2017
 - Obtain compliance with permitted effluent parameters.