

***CORRECTIVE ACTION PLAN
CITY OF FLIPPIN
WASTEWATER TREATMENT FACILITY***

Flippin, Arkansas
May 2021



2114 East Matthews Avenue, Ste. B
Jonesboro, Arkansas 72401
870-972-5316
FAX: 870-932-0432

1. DESCRIPTION OF EXISTING WASTEWATER FACILITIES

The City of Flippin’s (City) existing wastewater treatment facility was constructed around 1986. At that time, the City switched from a lagoon facility to an activated sludge process. The activated sludge process selected for treatment included a screening headworks system, an oxidation ditch, two (2) clarifiers that are operated in series, a dosing tank, intermittent sand filters, and chlorine disinfection. Since that time, additional sludge handling facilities have been added to the facility, and the chlorine disinfection was replaced with a UV disinfection unit.

The plant was designed for a hydraulic loading of 0.175 MGD. The facility was designed for typical normal strength wastewater loadings.

2. DESCRIPTION OF EXISTING PROBLEMS

This “Corrective Action Plan” (CAP) was prepared as a precursor to the issuance of a Consent Administrative Order (CAO) by the Arkansas Energy & Environment Department of Environmental Quality (DEQ). During the time period covered from January 2018 through March 2021, the wastewater treatment facility had a total of 107 effluent violations. A breakdown of these violations is listed in the following table:

Effluent Parameter	Number of Violations
Total Suspended Solids	2
Nitrogen Ammonia	76
Fecal Coliform	1
Carbonaceous BOD	28

The City of Flippin has been working towards wastewater system improvements since early 2017. The City contracted with the Arkansas Rural Water Association to clean and televise the entire collection system in 2018. In addition, the City contracted with Civil Engineering Associates, LLC (CEA) to design collection system and treatment facility improvements to bring the City back into compliance with its NPDES discharge permit.

The existing treatment facility consists of an influent lift station, a screening unit, an oxidation ditch, two (2) clarifiers operating in series, a dosing tank, intermittent sand filters, UV disinfection, and post aeration. The facility also has an equalization basin that can be used when it is not full. The primary issue associated with the treatment facility is that it is hydraulically overloaded. In addition, the equipment in the facility is old, and difficult to maintain. The fact that the facility is hydraulically overloaded is exacerbated by the fact that the wastewater collection system is riddled with I/I problems.

Because the facility is hydraulically overloaded, it is difficult to maintain all of the facility’s processes without causing major issues with the effluent, especially during wet-weather events. When the flows are higher than the facility can handle, the aerators in the oxidation ditch have to be shut down in order to keep from pushing sludge out of the ditch and into the other processes of the facility. In fact, if the

aerators are not shut down, sludge will be pushed all the way through the remainder of the treatment process and into the receiving stream. In addition, the intermittent sand filters have to be by-passed because the water will not drain through them fast enough to be able to continually use them. Therefore, when the aerators are shut down, the ammonia levels in the effluent rise above the effluent limit. In addition to the high ammonia levels, the BOD levels in the effluent can remain elevated since the wastewater is not able to undergo the complete treatment process.

Operating personnel at the facility have decided that it is better to violate its NPDES discharge permit by being out on ammonia and BOD rather than allow sludge to be released from the facility into the receiving stream. They are simply trying to do the best that they can with what they have to work with.

3. RECOMMENDED IMPROVEMENTS

Based on the above-referenced problems, the City of Flippin has been working towards a complete wastewater treatment facility rehabilitation project. The proposed project will increase the treatment facility's capacity from 0.175-MGD to 0.35-MGD. The WWTF improvements project is being funded with SRF money from ANRC. The plans and specifications for the improvements have been reviewed and approved by the ADH and ANRC. This same information has been submitted to ADEQ for a construction/modification permit, but the City is still awaiting approval.

The proposed WWTF improvements project will include the following:

- a. Replacement of the existing influent lift station.
- b. Replacement of the existing screening headworks unit with a new screening and grit removal headworks unit.
- c. Construction of an additional oxidation ditch and the replacement of the aerators in the existing oxidation ditch with new aerators.
- d. Replacement of the existing clarifiers with two (2) new 28-ft. diameter clarifiers that can be operated in parallel.
- e. Removal of the existing intermittent sand filters and the construction of a new sludge holding pond.
- f. Improvements to the existing equalization basin to increase its overall capacity.

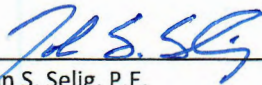
In addition to the proposed WWTF improvements, the City has received funding from AEDC, through its CDBG Program, and USDA-Rural Development for the complete rehabilitation of the wastewater collection system. The collection system rehabilitation is currently in the design phase. The proposed improvements will include some dig and replacement, some pipe bursting, and some point repairs. In addition, work will be performed on the existing manholes.

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.

5. PREPARER

This Corrective Action Plan (CAP) has been prepared by John S. Selig, P.E., of Civil Engineering Associates, LLC, and approved by the City of Flippin.



John S. Selig, P.E.
Member/Principal



Sandy Balogh
Acting Mayor

EXHIBIT A

MILESTONE SCHEDULE

PROPOSED MILESTONE SCHEDULE

City of Flippin Wastewater System Improvements

May 2021

Submission of CAP to ADEQ for Review	May 21, 2021
Submission of Plans & Specification for Wastewater Collection System Rehabilitation	June 2021
Issuance of Construction/Modification Permit by ADEQ	July 2021
Approval of Plans & Specifications for Wastewater Collection System Rehabilitation	August 2021
Advertisement for Bids for WWTF Improvements	August 2021
Advertisement for Bids for Wastewater Collection System Rehabilitation	September 2021
Initiation of Construction for WWTF Improvements	September 2021
Submission of 1 st Quarterly Report	September 2021
Initiation of Construction for Wastewater Collection System Rehabilitation	October 2021
Submission of 2 nd Quarterly Report	December 2021
Submission of 3 rd Quarterly Report	March 2022
Submission of 4 th Quarterly Report	June 2022
End of Construction for WWTF Improvements	June 2022
End of Construction for Wastewater Collection	August 2022
Submission of 5 th Quarterly Report	September 2022
Obtain Compliance with NPDES Permit	November 30, 2022