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REVISED CORRECTIVE ACTION PLAN

AFIN: 40-00016 NPDES Permit No. AR0040827

ADC Cummins and Varner Units WWTP

Gould, Lincoln County

November 13, 2024

Background

From May to September 2024, McClelland Consulting Engineers, Inc. (MCE) completed a Preliminary Engineering Report (PER) to evaluate an alternative approach to the solutions presented in the September 2021 Corrective Action Plan (CAP) for the Arkansas Department Correction (ADC) Cummins-Varner Unit Wastewater Treatment Plant (WWTP).

The initial actions in the September 2021 CAP proposed constructing a new 3.25 MGD design flow WWTP with a larger treatment capacity to handle increasing influent flows. However, by recommendation of the Arkansas Health Department, MCE explored a new discharge location and receiving body that would potentially allow for less restrictive NPDES permit parameter limits. MCE requested from the Division of Environmental Quality (DEQ) a preliminary limit for a discharge to the Arkansas River, to confirm the discharge location would be a viable option. The completed PER analysis demonstrated that the alternative discharge to the Arkansas River not only offers a more reliable permit compliance solution, but is also significantly more cost-effective.

Methods of Treatment

As part of the PER, MCE also evaluated the current conditions of the existing WWTP. It was determined that a few treatment components have reached the end of their technological usefulness and will require upgrades and new additions to enhance the plant to optimal compliant performance levels for a proposed design flow increase from 0.8 MGD to 2.0 MGD.

Among the proposed repairs and additions to the WWTP are as follows:

- In both oxidation ditches the aerators will need to be replaced. Upgrading to a more reliable aeration technology within an oxidation ditch enhances oxygen transfer efficiency, ensuring more consistent oxygenation and improved treatment performance for wastewater
- To manage Biochemical Oxygen Demand (BOD), converting both Oxidation Ditches from extended aeration to complete mix aeration mode will reduce detention time allowing for higher flow rates, and an increased hydraulic loading of 2.13 MGD to handle greater volumes of wastewater.

- To enhance the management of the suspended solids; a rotating disk filtration unit will be installed between the clarifiers and the UV disinfections units.
- To enhance disinfection, the ultraviolet disinfection system will be expanded. Expanding UV disinfection helps meet fecal coliform reduction targets within NPDES parameter limits.
- New Discharge Lift station and force main for the new outfall to the Arkansas River
- New Automatic Screens at each Cummins & Varner unit Lift Station. Installing an automatic bar screen can protect existing equipment by filtering out debris and large particles, preventing clogs, wear, and potential damage to downstream machinery. Additionally reducing wastewater treatment maintenance costs, extending equipment lifespan, and improving preliminary waste water treatment.

Phase I Milestones ARE ALL COMPLETED.

ADC has completed all Phase I Milestone tasks laid out in the previous 2021 CAP as shown below:

Phase I- Temporary Solution	
Milestones from Previous Corrective Action Plan	**Status**
1. Introduction of organic/ inorganic polymer into SSTs • **In the 3rd quarter of 2023, this action was completed**	Complete
2. Replacement of the bar screens a. Varner Screen b. Cummins Screen • **On 12-22-22, Jack Tyler Engineering installed motor and bracket, along with wiring motor, heat trace and solenoid. Jack Tyler Engineering stated "both stations are operational"**	Complete
3. Replacement of the aeration rotor in the Cummins OD • **In 2nd quarter of 2022 restoration of aerators was complete**	Complete

4. Removal of oil, grease and scum in the equalization basin • **In the 2nd quarter of 2022 equalization basin repairs were complete**	Complete
5. Replacement of mixer in the equalization basin • **In the 2nd quarter of 2022 equalization basin repairs were complete**	Complete
6. Repair of return activated sludge (RAS) pump • **In the 3rd quarter of 2022 RAS station was rebuilt along with new controls. In the 4th quarter of 2022, a Mag meter was installed**	Complete

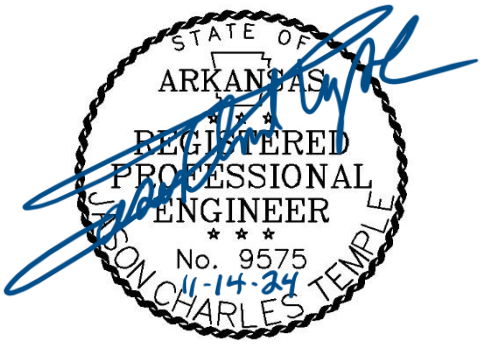
Revised Phase II Milestones

The proposed Phase II revised CAP and the permanent solutions of the revised corrective action plan, will now focus on building additions and improvements to the existing wastewater treatment plant. The plan will now include establishing a new discharge location to the Arkansas River and implementing the facility improvements and additions previously discussed in the "Methods of Treatment" section of this CAP that will increase the wastewater treatment plant capacity from 0.8 MGD to 2.0 MGD design flow. The Phase II Schedule below outlines the revised milestones

Revised Milestone Schedule for 2.0 MGD Design Flow **Phase II – Permanent Solutions**	
Activity	**Milestone Date**
Topographical & Legal Surveys	February 29, 2025
Design Phase 2.0 MGD WWTP Additions and Improvements	May 31, 2025
ADH Engineering Review	December 31, 2025
DEQ New NPDES Permit	December 31, 2025
Corps of Engineer Permit and Approval	December 31, 2025
Watershed District Approvals	December 31, 2025
DEQ NPDES Construction Permit	April 30, 2026

Funding Secured	May 31, 2026
Bid Phase	July 31 2026
Notice of Award	August 31, 2026
Notice to Proceed	October 31, 2026
Construction Phase	October 31, 2027
Final Compliance	April 30, 2028

Quarterly reports will be provided upon approval of the CAP by DEQ



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