ORDINANCE NO. 15, 2023

AN ORDINANCE OF THE CITY OF CATLETTSBURG, KENTUCKY, ADOPTING, AUTHORIZING AND DIRECTING FAITH DAY, MAYOR, TO EXECUTE THE REVISED CORRECTIVE ACTION PLAN/AGREED ORDER REGARDING THE ALLEGED VIOLATIONS AT THE CITY WASTEWATER TREATMENT PLANT BETWEEN THE CITY AND THE COMMONWEALTH OF KENTUCKY, ENERGY AND ENVIRONMENATAL CABINET, AND DECLARING AN EMERGENCY TO EXIST TO ALLOW FOR TWO READINGS OF THE ORDINANCE ON THE SAME DAY.

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BE IT ORDAINED BY THE CITY OF CATLETTSBURG, KENTUCKY:

SECTION 1. The City Council of Catlettsburg hereby adopts and authorizes and directs Mayor Faith Day to execute the attached Revised Corrective Action Plan/ Agreed Order dated December 15, 2023 for submission to the Kentucky Energy and Environmental Cabinet ("Cabinet") addressing alleged violations at the City's Wastewater Treatment Plant ("WWTP"). The document was received from the City's consulting engineer, HDR on December 15, 2023.

SECTION 2. The executed Revised Corrective Action Plan/Agreed Order must be submitted to the Cabinet by December 22, 2023.

SECTION 3. Pursuant to the provisions of KRS 83A.060(7) the City Council is not scheduled to meet again until January 16, 2024, therefore, the Council declares an emergency to exist and suspends the rule to allow for two readings of this Ordinance on the same day in order that the Revised Corrective Action Plan/Agreed Order relating to the City's WWTP can be timely submitted to the Cabinet.

SECTION 4. All ordinances of the City and parts of ordinances in conflict herewith, to the extent of such conflict only, are hereby repealed.

SECTION 5. This ordinance shall be in full force and effect from and after its adoption, readoption and publication, as required by law.

SECTION 6. It is hereby authorized that publication of this ordinance be in summary form.

Faith R. Day
MAYOR

ATTEST:
Mary Cole
CITY CLERK

ADOPTED BY THE CITY COUNCIL: 12-19-23
READOPTED BY THE CITY COUNCIL: 12-19-23
PUBLISHED: _____

CERTIFICATION

This is to certify that the heading of this Ordinance is in compliance with KRS 83A.060(9) and is an accurate summary of the full Ordinance It was prepared by the City Attorney who is licensed to practice law within the Commonwealth of Kentucky.

_____
Richard W. Martin

COMMONWEALTH OF KENTUCKY
COUNTY OF BOYD

Subscribed and sworn to before me this ___ day of December, 2023.

My commission expires: _____.
ID No. _____.

_____
Notary Public, State-at-Large, Kentucky

CORRECTIVE ACTION PLAN
Revised 12/15/2023
CATLETTSBURG WASTEWATER TREATMENT PLANT (WWTP)
CATLETTSBURG, KY
AGREED ORDER CASE NO. DOW-20-3-0285

A. PURPOSE AND BACKGROUND

This Corrective Action Plan (CAP) has been developed as required by the Agreed Order between the Kentucky Energy and Environment Cabinet (EEC) and the City of Catlettsburg (City), to address violations at the City's Wastewater Treatment Plant (WWTP). The violations are with terms, conditions, or provisions of the City's Kentucky Pollutant Discharge Elimination Systems (KPDES) Permit No. KY0035467.

The City was issued Notices of Violation (NOVs) on the following dates: 10/21/19, 4/3/20, 7/9/20, 9/21/20, 11/24/20, 5/28/21, and 12/14/21. The CAP includes an explanation of why the cited violations occurred, a report of completed corrective actions, a list of proposed corrective actions to avoid future non-compliance, an implementation schedule, and a final compliance date for each proposed corrective action.

B. EXPLANATION OF VIOLATIONS

The specific violations for which the City has been cited are listed in Table 1.

The City and its WWTP operators have investigated the cause of the violations listed. The primary cause of violations at the WWTP is hydraulic overloading of the treatment process. The WWTP is permitted for an average daily flow of 0.65 million gallons per day (MGD). Problems begin to occur at daily flows exceeding 2.0 MGD and become more pronounced when daily flows exceed 2.2 MGD. High influent flows to the WWTP are attributable to high levels of infiltration and inflow (I/I) in the wastewater collection system. High flows can cause overflows and other issues within the treatment process. Problems with high influent flows are exacerbated by hydraulic issues within the WWTP. High flow rates can cause "washouts", or loss of activated sludge from treatment units. These events compromise the effectiveness of treatment and the WWTP's ability to meet permit limits. Other problems include unequal flow distribution, leading to inconsistent results from the three treatment units.

At high flow rates, effective disinfection has been an issue (hence the E. Coli violations). The chlorine contact time for treatment (Davco) Unit #3 has been found to be inadequate. This will be corrected by adding a chlorine injection point within Unit #3.

C. COMPLETED CORRECTIVE ACTIONS

The WWTP operators closely monitor the plant during high flow periods and adjust stop plates in the influent splitter box, to control the flow to the three treatment units. A stop plate is also used in the influent grit chamber to control flow between the main channel and bypass channel. The use of stop plates has allowed the operators to maximize flow through the WWTP without creating a hydraulic overload or upsetting the treatment process.

Table 1: Summary of Violations

Date Observed	Description/Parameter	Permitted Value	Reported Value	Comments
9/27/19	E. Coli	≤ 240 MPN/100 mL (7-day)	2420 MPN/100 mL	February 2019
			866 MPN/100 mL	May 2019
			2420 MPN/100 mL	January 2019
			361 MPN/100 mL	July 2019
			2420 MPN/100 mL	December 2018
	Suspended Solids	85% Removal	54 % Removal	December 2018
	Monitoring/Reporting	N/A	N/A	No. 001-1, April 2019
2/28/20	E. Coli	≤ 240 MPN/100 mL (7-day)	1733 MPN/100 mL	December 2019
	Suspended Solids	85% Removal	72% Removal	
5/14/20	E. Coli	≤ 240 MPN/100 mL (7-day)	770 MPN/100 mL	February 2020
			2420 MPN/100 mL	March 2020
	Suspended Solids	85% Removal	71% Removal	
	Monitoring/Reporting	N/A	N/A	CSO 008-C, Feb. 2020
9/4/20	E. Coli	≤ 240 MPN/100 mL (7-day)	387 MPN/100 mL	May 2020
		≤ 130 MPN/100 mL (30-day)	497 MPN/100 mL	April 2020
		≤ 240 MPN/100 mL (7-day)	2420 MPN/100 mL	
	Suspended Solids	85% Removal	80% Removal	May 2020
			77% Removal	June 2020
	E. Coli	≤ 240 MPN/100 mL (7-day)	2420 MPN/100 mL	
	Suspended Solids	85% Removal	73% Removal	April 2020
	Monitoring/Reporting	N/A	N/A	No. 001-1, May 2020
11/10/20	E. Coli	≤ 240 MPN/100 mL (7-day)	2420 MPN/100 mL	September 2020
5/10/21	BOD	85% Removal	80% Removal	February 2021
			78% Removal	January 2021
12/2/21	Suspended Solids	85% Removal	77% Removal	July 2021
	Total Residual Chlorine	0.019 mg/L	0.03 mg/L	October 2021
	pH	≥ 6 S.U.	4 S.U.	

The City is actively working to convert the WWTP to sodium hypochlorite disinfection (from gaseous chlorine). The disinfection system modifications will improve safety, lower the risk of chlorine exposure to staff and the public, and result in a more reliable disinfection process to meet permit limits. As stated, an additional injection point for sodium hypochlorite will be added to treatment Unit #3 to increase the disinfectant contact time.

In 2020, the City enlisted the help of Kentucky Rural Water Association to complete partial smoke testing of the wastewater collection system. Results were summarized in a 137-page report. The City has begun repairing defects identified by the smoke testing study, including the removal of storm drain connections. Specific actions taken include the following:

1. Built permanent access road for sewer main line between Barbeque Road and Ky Hwy 168.

2. Replaced broken main sewer line between manholes #1 and #2 on Barbeque Road and plumbed for new sewer taps.
3. Completed Barbeque Road Phase 2 sewer between manholes #2 and #3.
4. Repaired broken Barbeque Road Phase 3 sewer, repaired to end of main.
5. Replaced defective manhole on Horse Branch Road and replaced lateral line.
6. In Grandview Manor area, separated a 15-inch and 24-inch sewer line and cleaned out obstructions. Fixed installed cleanouts and bad connections.
7. Vacuum pumped out and repaired 10th Street pump station, to prevent discharge into Big Sandy River.
8. At 34th Street pump station, removed surface water at sinkholes, patched holes, and ordered catch basin. Replaced sewer lateral from sidewalk to City tap in street.

In June 2021, the City contracted with HDR Engineering, Inc. to conduct a hydraulic review of the WWTP. HDR's recommendations regarding hydraulic improvements at the WWTP have been incorporated into the CAP.

D. PROPOSED CORRECTIVE ACTIONS

The City has developed the following list of proposed corrective actions to avoid future non-compliance.

1. DISINFECTION SYSTEM IMPROVEMENTS

The disinfection system at the WWTP will be modified to utilize liquid Sodium Hypochlorite instead of gaseous Chlorine for disinfection, and Sodium Thiosulfate for dechlorination. New tanks, piping, valves, and related equipment will be installed at the WWTP.

2. WWTP HYDRAULIC IMPROVEMENTS

The following improvements are proposed at the WWTP to improve flow measurement and hydraulic performance.

a. Influent Modifications

1) Replace influent Parshall flume with new flow meter

The influent Parshall flume does not accurately measure flow through the WWTP, due to influent flow backing up into the flume. It will be replaced with a new open channel, Doppler radar-type flow monitoring system. New 16-inch influent sewer piping will be installed upstream and downstream of the flow meter.

2) Modify influent splitter box

Existing orifices downstream of the influent splitter box gates will be removed and replaced with a single square opening at the bottom of each channel. The existing slide gates will be removed and replaced. These improvements will allow for better flow isolation/control between the three treatment (Davco) units.

b. Treatment (Davco) Unit Modifications

To eliminate hydraulic limitations within the existing treatment (Davco) units, the transfer pipes (8-inch or 12-inch) will be replaced with new 16-inch pipes. These modifications will increase operational flexibility and improve hydraulics within the units during peak wet weather events.

c. Grit Chamber Modifications

The existing proportional weir on the downstream side of the grit chamber creates a bottleneck at peak wet weather conditions. A new 1.5-foot-high weir will be installed in the grit chamber bypass channel to reduce/eliminate overflows in the unit.

3. SEWER SYSTEM EVALUATION SURVEY

The City will complete a Sewer System Evaluation Survey (SSES) to better identify, map and correct problem areas in the collection system that generate excessive I/I to the WWTP.

a. Flow Monitoring

The City installed six (6) temporary flow meters in the collection system, for a flow monitoring study. The study duration was 44 days, beginning in December 2022 and ending in January 2023. The meters were installed at key locations in the collection system, to determine and identify areas of the system with the highest flow rates and highest degree of I/I.

b. Smoke Testing/Mapping

The City completed a supplemental smoke testing study combined with updating collection system mapping, to identify specific defects, cross connections, and other sources of I/I. The smoke testing study was completed during a dry weather period in July and August 2023. Global positioning (GPS) location of manholes was used to improve the City's base mapping of the sewer system. The initial smoke testing study was for approximately one third of the collection system, where experience and flow monitoring indicated the most likely areas with defects.

c. CCTV and Manhole Inspections

As a follow-up to the flow monitoring and smoke testing studies, closed-circuit television (CCTV) inspection of gravity sewer lines will be performed to identify specific pipe defects. Manholes will be inspected to identify specific manhole defects. CCTV and manhole inspection will only be completed in areas of the system exhibiting high flows, and/or a high level of defects from smoke testing. **The initial CCTV inspection effort will include 19 days of field work at an estimated production rate of 1,000 LF/day.**

d. Collection System Improvements/Rehabilitation

Based on the results of the flow monitoring, smoke testing, CCTV and manhole studies, specific defects in the collection system will be identified, prioritized, and repaired. Prioritization will be based on the severity of the defects and the overall beneficial impact of the repair and/or rehabilitation.

E. IMPLEMENTATION SCHEDULE AND COMPLIANCE DATES

The City proposes the following implementation schedule for the corrective actions. Note: All dates represent completion dates for that phase of the project.

1. DISINFECTION SYSTEM IMPROVEMENTS

a.	Design/Permitting	**Completed**
b.	Construction	**February 29, 2024**
c.	Final Compliance Date	**March 31, 2024**

2. WWTP HYDRAULIC IMPROVEMENTS

a.	Design/Permitting	**August 31, 2024**
b.	Bidding	**November 30, 2024**
c.	Construction	**July 31, 2025**
d.	Final Compliance Date	**August 31, 2025**

3. SEWER SYSTEM EVALUATION SURVEY

a.	Flow Monitoring	**Completed**
b.	Smoke Testing (Field Work)	**Completed**
c.	Smoke Testing (Report)	**Completed**
d.	CCTV and Manhole Inspections (Field Work)	**April 30, 2024**
e.	CCTV and Manhole Inspections (Report)	**June 30, 2024**
f.	Collection System Rehabilitation/Repairs (Priority 1)	**December 31, 2025**
g.	Collection System Rehabilitation/Repairs (Priority 2)	**December 31, 2026**
h.	Final Compliance Date	**December 31, 2026**

The City of Catlettsburg will assess and monitor the results of each task associated with the CAP, with the overall goal of full and continued compliance with its KPDES permit and obligations under the Agreed Order.

This CAP has been approved for submittal by the Mayor and City Council.

Faith R. Day

Faith Day, Mayor
City of Catlettsburg
December 19, 2023