REPORT OF THE PRETREATMENT COMPLIANCE INSPECTION

AT
City of Columbia
4900 W. Gillespie Bridge Road
P.O. Box 6015
Columbia, Missouri 65205

NPDES Permit No.: **MO0097837**

BY
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 7
ENFORCEMENT AND COMPLIANCE ASSURANCE DIVISION (ECAD)
WATER BRANCH/DRINKING WATER & INSPECTIONS SECTION (WB/DWIS)

ON
April 1-3, 2024

At the request of the Water Branch (WB), Enforcement and Compliance Assurance Division (ECAD), a Pretreatment Compliance Inspection of the Columbia Approved Industrial Pretreatment Program (IPP) was conducted on April 1, 2, and 3, 2024. To direct the inspection, a checklist was used that evaluates all important elements of the Pretreatment Program. A copy of the checklist is attached to this report (Attachment 1). The inspection consisted of a discussion with the IPP personnel and file review of the IPP's program records, and visits to two of the regulated industries: Watlow and Good Day Farm. In addition, I conducted brief file review of the city's Biosolids Management Program (Sludge). This narrative report presents the findings of the inspection.

Participants

City of Columbia

- Tami Hansen, Laboratory Supervisor and IPP Coordinator — Tami.Hansen@CoMo.gov
- Erin Keys, Utilities Assistant Director — Erin.Keys@CoMo.gov
- Ben Riles WWTP Superintendent — Ben.Riles@CoMO.gov
- Tim Fahrenbrink WWTP Operations Supervisor (503)
- Greg Mabrey Sewer Supervisor

Good Day Farms

- Guillermo Guitron - Regional Director of Operations
- Colton Tosh - IPM Manager
- David Turk - Lab Supervisor
- Roman Ketcherside - Regional EHS Coordinator

Watlow-Columbia
- Rebecca Brewer - HS&E Manager
- Steven Burns - Senior Process Engineer
- Don Tennyson - Facilities Manager

Missouri Department of Natural Resources
- Brad Allen, Pretreatment Coordinator Brad.Allen@dnr.mo.gov
- John Heisterberg, Chemical Engineer, Northeast RO john.Heisterberg@dnr.mo.gov

U.S. Environmental Protection Agency (EPA), Region 7
- Naji J. Ahmad, Environmental Engineer, ECAD/WB/DWIS ahmad.naji@epa.gov
- Justin Kensinger, Pretreatment Coordinator, WD/PWD Kensinger.Justin.R@epa.gov

Facility Description and Program Overview

The city of Columbia approved pretreatment program was originally approved on June 6, 1984. The city's most recent local limits evaluation was submitted to the Missouri Department of Natural Resources (MDNR) on July 14, 2022, pursuant to the requirement of Special Condition #17 of National Pollutant Discharge Elimination System (NPDES) Permit Number MO-0097837. Mr. Brad Allen with the MDNR formally approved the local limits evaluation in a letter dated January 19, 2023.

Additionally, the MDNR formally approved the city's November 17, 2022, modification to the city's sewer use ordinance and enforcement response plan (ERP) on February 8, 2023. The city's authority to enforce its current IPP is listed under Chapter 22, Article VI, Division 5, Sections 22-210 to 22-224 of the Columbia code of ordinances.

Local limits were calculated as concentration (mg/l). The evaluation for BOD, TSS, and ammonia indicated that the WWTP is not loaded at or above 80% of plant capacity so numerical local limits for these pollutants are not needed.

Table 1, Columbia's Local Limits

Pollutant	Daily Max	Pollutant	Daily Max	Pollutant	Daily Max
ARSENIC	**0.210**	LEAD	**0.396**	MOLYBDMUM	**0.162**
CADMIUM	**0.74**	MERCURY	**0.042**	SELENIUM	**0.097**
CHROMIUM	**5.875**	NICKEL	**1.187**	CYANIDE	**0.244**
COPPER	**3.003**	SILVER	**0.867**	ZINC	**10.623**

The SUO also includes a numerical value for Oil and Grease of 200 mg/l. Upper and lower limits for pH are set at 5.5 s.u. and 9.5 s.u.

According to the NPDES permit that will expire on June 30, 2025, the Columbia Regional Wastewater Treatment Plant (WWTP) has a design flow of 25.2 million gallons per day (mgd),

an actual flow of 14.2 mgd, and an annual design sludge production of 3,948 dry tons. According to the IPP personnel, the WWTP has a design peak flow of approximately 60.6 mgd and the average actual daily flow in 2023 was 14.471 mgd. This WWTP is located at 4900 West Gillespie Bridge Road in Columbia. Treated effluent discharges through outfall 001 into a tributary to Old Missouri River Slough (Eagle Bluffs Conservation Area wetland) and a tributary to Perche Creek.

The WWTP treats municipal and industrial wastewater from within the city, and domestic wastewater from one contributing jurisdiction, which is the Boone County Regional Sewer District (BCRSD).

The WWTP consists of influent pump station, 2 peak flow clarifiers, 2 peak flow storage basins, dual mechanical bar screens, dual vortex grit system, 4 primary clarifiers, 4 activated sludge basins, 4 final clarifiers, sodium hypochlorite tank, ferric chloride treatment, 4 multi-cell treatment wetlands, effluent pump station, 3 primary anaerobic digesters, 1 secondary anaerobic digester, biosolids cake storage pad, 2 sludge gravity thickeners, 2 sludge thickening centrifuges with polymer system, and a sludge holding tank. Produced biosolids are either land applied, landfilled, or hauled to a permitted sludge/biosolids disposal facility.

The Columbia IPP's regulated industrial community consists of twelve significant industrial users (SIUs) all of which are permitted.

The WWTP had a total suspended solids (TSS) violation in May of 2023 due to dying vegetation in the inlet and outlet ditch and spawning fish in the constructed wetlands.

Industrial Waste Survey and Significant Industrial Users

The Columbia IPP is currently working on conducting an industrial waste survey which they started in 2023. Records indicated that the last formal IWS was completed in 2019.

Currently there are twelve regulated industries by the Columbia IPP all of which are located within the city of Columbia city limits. Seven of the regulated SIUs are classified as categorical industrial users (CIU). Gates Corporation does not discharge process wastewater to the city.

The CIUs are: 3M Company and Watlow-Columbia are subject to the Metal Finishing Standard 40 CFR, Part 433, City of Columbia Sanitary Landfill, subject to the Landfills Standard 40 CFR, Part 445, Aurora Organic Dairy, subject to the Dairy Products Processing Standard 40 CFR, Part 405, Gates Corporation, subject to the Rubber Manufacturing Standard 40 CFR, Part 428, Quaker Oats, subject to the Grain Mills Standard 40 CFR, Part 406, and Columbia Municipal Power Plant, subject to the Steam Electric Power Generation Standard 40 CFR, Part 423.16.

The other 5 regulated SIUs are: Kraft-Heinz, Inc., Beyond Meat on Maguire Boulevard and Beyond Meat on Lemone Industrial Boulevard, Good Day Farm, and Swift Prepared Foods.

The Columbia IPP has identified approximately 96 dental offices under the Amalgam rule 40 CFR Part 441. The IPP reports the list of regulated dental offices annually to the MDNR.

Waste Haulers

Hauled waste is accepted by the city from septic tanks, grease traps, portable or chemical toilets, and from the BCRSD at the WWTP. The city requires contractors/haulers to test hauled waste for pH and complete manifests and complete a Liquid Wastehauler Load tickets. The city issues a business license to waste haulers and only waste haulers with permits are allowed to discharge at a manhole within the WWTP during business hours. Records indicated that in 2023, the city accepted 620 loads of waste totaling 1,346,635 gallons. Of which, 22 loads (96,250 gallons) received from the BCRSD.

Permits

All industries have current permits, and the IPP continues to issue permits with a three-year duration. Overall, permits appeared to contain the necessary elements that should be included in an enforceable permit. Records indicate that most industries submitted complete and adequate permit renewal applications. However, during my review of some of the permits, I noticed the following:

- Permits did not include permit renewal application date. Permit renewal application is required by Section 22.216.3.(5) of the city ordinance. "*The permittee must submit an application for a new permit at least ninety (90) days before the expiration date of the permit if the permittee wishes to continue an activity regulated by the permit after the expiration date of the permit.*"
- Some of the industries failed to submit permit renewal application on time as required.
- Permits were missing outfall(s) description.

Inspections, Compliance Monitoring, Self-Monitoring, and Reporting

The IPP Coordinator (PC) conducted inspections of all regulated industries in the past 12 months. Inspection reports appeared adequate and comprehensive. The PC evaluated the need for industries to develop slug control plans during the inspection and included the determination in the inspection report.

Sampling and self-monitoring reporting is described in detail in the industrial permits. The city performs compliance monitoring of its industries twice per year usually May and November. My review of industrial files indicted that monitoring reports were reviewed by the PC to determine compliance.

Industries are required to submit monthly self-monitoring reports to the city no later than the 28th day of the following month. Reports include monitoring for pH, flow, and other pollutants of concern data.

The general pretreatment regulations state that facilities subject the electroplating, metal finishing, and electrical and electronic components categories may choose to submit total toxic organics (TTO) certification that they are implementing a solvent management plan (SMP) in lieu of TTO monitoring. Records indicated that the two industries subject to such categorical standards chose to develop and implement a SMP and submit the TTO certification statements. Records indicated that the SMP submitted are adequate.

Determining the need for a slug control plan (SCP), is done by the PC during the inspection. During my review of industrial files, I pointed out to Ms. Hansen that industries are submitting a spill prevention and countermeasures control (SPCC) plan as their SCP. I also pointed out to Ms. Hansen that although some elements of the SPCC cover what's required in the SCP, the SPCC is a federal requirement under 40 CFR Part 112, §112.3 for those industries that has at least 1,320 U.S. gallons of petroleum products (diesel fuel, gasoline, hydraulic fluid, oil, and used oil) stored onsite in various containers such as double-wall tanks, totes, and 55-gallon drums. I added, the SCP should meet the requirement of 403.8(f)(2)(vi)(A) to (D).

Enforcement

As mentioned above the new ERP was approved by the MDNR on February 8, 2023. Ms. Tami Hansen has a good understanding of the ERP and is taking adequate enforcement in a timely manner.

Records also indicate that, in 2022 Quaker Oats was under a compliance schedule, and the IPP issued verbal Notices of Violation to Kraft-Heinz, Beyond Meat Maguire, Quaker Oats, Good Day Farm, Columbia Power Plant, and Swift Prepared Foods.

In 2023, no industries were under compliance schedule. But verbal Notices of Violation were issued to Kraft-Heinz, Beyond Meat Lemone, Quaker Oats, Columbia Power Plant, and Swift Prepared Foods.

Kraft-Heinz, Quaker Oats, Beyond Meat Lemone, Beyond Meat Maguire, and Swift Prepared Foods were in significant noncompliance in 2022.

Beyond Meat Lemone, Beyond Meat Maguire, Columbia Power Plant, Good Day Farm, Quaker Oats, Kraft-Heinz, Swift Prepared Foods, and Watlow-Columbia were in significant noncompliance in 2023.

All industries in significant noncompliance in 2022 and 2023, were published in the newspaper as required.

Dunring my records review I noticed and pointed out to the IPP personal the following:

- The city did not take enforcement to those industries that did not submit or submitted late permit renewal application.
- Some enforcement decumulation were missing the enforcement initiation date.
- The city does not collect penalties which is permitted by Section 16-255.2. of the ordinance.

Upon my return to the office, I noticed that in Chapter 16-Articl II-Section 16-255.2 of the city ordinance it is stated that "any person found guilty of violating the provisions of this division shall be punished by a fine, which does not exceed the following: (a) Infraction, Type I, two hundred fifty dollars ($250.00), (b) Infraction, Type II, one hundred dollars ($100.00), and (c) Misdemeanor, one thousand dollars ($1,000.00)" This Section does not meet the requirement of 40 CFR 403.8(f)(1)(vi)(A) which requires at least the amount of $1,000 a day for each violation by industrial users of Pretreatment Standards and Requirements.

Data Management

Overall, industrial files have all the necessary documentation as recommended by the Agency checklist. Each file consisted of permit and permit renewal applications, inspection reports, monitoring reports, and correspondence between the IPP Coordinator and the industry. Records are well kept by Ms. Hansen office at the WWTP and maintained at her office for more than three years and are available for public review. Records are also kept electronically.

Site visit to Watlow-Columbia

I traveled to Watlow-Columbia located at 2101 Pennsylvania Drive in Columbia, to observe the city conduct an inspection and to investigate if any of the 40 processes under §433.10 are used on site. Watlow-Columbia is a categorical industrial user, subject to the Metal Finishing Standard 40 CFR, Part 433, that manufactures silicon rubber and flexible heaters, printed circuit and wire wound, and Lazer cutting. Printed circuit heaters are manufactured by chemical itching process. Wash waters from the photo developing / photoengraving process (Ferric chloride ($FeCl_3$) etching), and stripper process are treated before discharged to city sewer. Treatment is semi continuous. The itching rinse waters are collected into a 1,000-gallon equalization tank. The material is treated with additional FeCl3 and caustic soda to bring the pH and flocculate in a 500-gallon continuous flow tank which then pumped into a 1,000-gallon tank. the material is vacuumed through a diatomaceous earth filter. Finally, the water is combined with other rinse waters, and pH is adjusted to the permitted levels (5.5-9.0). Treated wastestream is then discharged via Outfall 001 to the city's sanitary sewer.

We toured the production areas, chemical storage, and the pretreatment system. The facility has a spill prevention plan and solvent management plan in lieu of sampling total toxic organics. The overall average daily water usage is approximately 1,800 gallons from etching process and 7,800 from other processes. All the process ares floor drains lead to the pretreatment system.

The facility has two $FeCl_3$ etching process lines (new & old). During the inspection, facility personal indicated that they are planning on discontinuing the old in mid-2024.

During the inspection I pointed out the flowing:

- At the laboratory, the lab technicians were using hot water baths (~1-gallon containers) to test the quality of the products. This water should be treated because it is regulated under one of the 40 subprocesses (Testing).
- At the main (new) $FeCl_3$ etching line, I noticed a sink used to clean parts, rinse, and for handwashing. The sink drains directly to the sanitary sewer bypassing the treatment system. This water should be treated because it is regulated under one of the 40 subprocesses (cleaning).

Therefore, waters from those processes should be going through the treatment process before discharging to the city.

Site Visit to Good Day Farms

I also traveled to Good Day Farms (GDF) facility located at 5301 Paris Road in Columbia, to observe the city conduct an inspection and observe the process. GDF is a non-categorical industry that cultivates cannabis. The process at the facility includes replicating the sun light and

maintaining controlled environment for temperature and humidity that allows year-round growth of cannabis. The whole growing process is approximately 14 weeks. After curing, the flower is either jarred or packaged for retail or sent for extraction. Extracted oil from the CO2 extraction process, is used to produce gummies, cartridges, and edibles. The facility is monitored monthly for oil and grease. Average daily flow is approximately 2,500 gallons. No issues were noted during the visit

Sludge Quality

One function of the IPP is to protect the city's sludge from metals contamination. As part of this inspection, the 2022 and 2023 annual biosolids reports were reviewed to determine the IPP's effectiveness.

In 2023, the city produced 1,714.6 dry metric tons (dmt). The city land applied 1,400.6 dmt as class B sludge and sent 413 dmt to the landfill. In 2022, the city produced 1,796 dmt. The city land applied 1,535.8 dmt as class B sludge and sent 260.2 dmt to the landfill.

Below are the 2022 and 2023 tables that compares the city's peak observed metals level against the statutory ceiling and the city's average level against the exceptional quality (EQ) sludge level specified by the 40 C.F.R. Part 503 Sludge regulations. Because the city sampled its sludge once a month, the monthly average is the maximum value observed.

Table 2, 2023 Sludge Metal Concentration Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic, As	75	41	5	5	6.67%	12.20%
Chromium	3000	1200	24.7	24.7	0.82%	2.06%
Cadmium, Cd	85	39	1.16	1.16	1.36%	2.97%
Copper, Cu	4300	1500	656	656	15.26%	43.73%
Lead, Pb	840	300	18.88	18.88	2.25%	6.29%
Mercury, Hg	57	17	2.16	2.16	3.79%	12.71%
Molybdenum , Mo	75	----	21.56	21.56	28.75%	
Nickel, Ni	420	420	17.6	17.6	4.19%	4.19%
Selenium, Se	100	36	6.45	6.45	6.45%	17.92%
Zinc, Zn	7500	2800	1170	1170	15.60%	41.79%

Table 3, 2022 Sludge Metal Concentration Quality (mg/kg)

Pollutant	503 Ceiling	503 EQ	Max	Mo. Avg.	Max/Ceiling	Avg./EQ
Arsenic, As	75	41	28.3	28.3	37.73%	69.02%
Chromium	3000	1200	30.9	30.9	1.03%	2.58%
Cadmium, Cd	85	39	1.64	1.64	1.93%	4.21%
Copper, Cu	4300	1500	518	518	12.05%	34.53%
Lead, Pb	840	300	22.9	22.9	2.73%	7.63%
Mercury, Hg	57	17	1.02	1.02	1.79%	6.00%
Molybdenum , Mo	75	----	14.51	14.51	19.35%	
Nickel, Ni	420	420	28.9	28.9	6.88%	6.88%
Selenium, Se	100	36	6.45	6.45	6.45%	17.92%
Zinc, Zn	7500	2800	1107	1107	14.76%	39.54%

Conclusion & Recommendations

Overall, Ms. Hansen is responsible for the implementation of the city's IPP. Ms. Hansen appeared to have an adequate knowledge and the necessary skills implement the program. Ms. Hanses is familiar with EPA's Significant Noncompliance definition and appeared to be making adequate compliance determination.

Permits should include permit renewal requirement and full description of all outfalls.

The city should initiate enforcement as necessary when a regulated industry fails to submit permit renewal application at least ninety (90) days before the expiration date of the permit as required by Section 22.216.3.(5) of the city ordinance

The city should ensure that the civil penalties amount, listed under Chapter 16-Articl II-Section 16-255.2 of the city ordinance, meets the requirement of 40 CFR 403.8(f)(1)(vi)(A) which requires that civil penalties should be at least the amount of $1,000 a day for each violation by industrial users of Pretreatment Standards and Requirements.

Industries that are required to submit a Slug Control Plan, must submit the plan in accordance with the requirement of 403.8(f)(2)(vi)(A) to (D).

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Naji J. Ahmad
Environmental Engineer, WB/DWIS

NICOLE MORAN Digitally signed by NICOLE MORAN Date: 2024.06.20 11:23:20 -05'00'

Nicole Moran
Section Supervisor, WB/DWIS

Attachments

1. PCI Checklist