

City of Morganton's Wastewater System Performance Report for 2022



EPA's Clean Water Act of 1999 requires the publishing of this report.

The purpose of this report is to present the performance of the wastewater system for the past year:

January 1st – December 31st, 2022

Catawba River Pollution Control Facility

**1000 Vine Arden Rd
Morganton NC 28655**

NPDES Permit: NC0026573
Design Capacity: 10.5 MGD

Operator in Responsible Charge: Eli Self
Receiving Stream: Catawba River

The facility is an activated sludge plant using a fine bubbler diffused aeration system powered by turbo blowers. It's treatment units consist of bar screens to remove trash and debris, flow monitoring, cyclone degritting for grit removal, primary clarification, aeration for microbiology to grow and remove wastewater BOD (biochemical oxygen demand), secondary clarification, disinfection and dechlorination before being discharged into the Catawba River. Sludge is removed with dewatering centrifuges and processed on site at the compost facility. Plant is staffed 24-7 with operators of state certified grade 1 or higher. Facility reports many parameters each month to North Carolina's Department of Environmental Quality (NCDEQ). Total flow in million gallons a day (MGD), biochemical oxygen demand (BOD) which is the amount of oxygen consumed by microorganisms to break down organic matter, total suspended solids (TSS), ammonia nitrogen (NH₃-N), fecal coliform, pH, dissolved oxygen (DO), total chlorine residual from disinfection/dechlorination and toxicity. Facility renewed it's discharge permit this year and will be valid through 2027.

Wastewater Treatment Plant System Report

| 2022 | | | | 2021 | | |
|------------------------|---|----------------------------------|-------------------|------------------------|---------------|---------------|
| Wastewater Treated | | 1.95 Billion Gallons | | 1.835 Billion Gallons | | |
| Average Daily Flow | | 5.35 Million Gallons a Day (MGD) | | 5.03 MGD | | |
| Monthly Flow | | Total Gallons | Daily Average MGD | | Total Gallons | Daily Average |
| Jan | | 158,492,000 | 5.11 | | 184,451,000 | 5.95 |
| Feb | | 156,393,000 | 5.59 | | 175,344,000 | 6.26 |
| Mar | | 167,125,000 | 5.39 | * | 194,453,000 | 6.27 |
| Apr | | 150,755,000 | 5.03 | | 150,872,000 | 5.03 |
| May | | 150,161,000 | 4.84 | * | 142,349,000 | 4.59 |
| June | | 140,010,000 | 4.67 | | 133,128,000 | 4.44 |
| July | | 155,649,000 | 5.02 | | 138,075,000 | 4.45 |
| Aug | | 164,452,000 | 5.30 | | 151,760,000 | 4.90 |
| Sep | * | 169,914,000 | 5.66 | | 132,480,000 | 4.42 |
| Oct | | 159,989,000 | 5.16 | * | 160,671,000 | 5.18 |
| Nov | | 187,794,000 | 6.26 | | 135,031,000 | 4.50 |
| Dec | * | 190,958,000 | 6.16 | | 136,384,000 | 4.40 |
| * Non-Compliant Months | | | | * Non-Compliant Months | | |

| Permit Parameters | Effluent Limits | | | Monthly Averages 2022 | | | | | | | | | | | |
|-------------------|------------------------|-----------|-----------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| | Monthly | Weekly | Daily | Jan | Feb | Mar | Apr | May | June | July | Aug | Sep | Oct | Nov | Dec |
| Flow MGD | 8.0 MGD | | | 5.1 | 5.6 | 5.4 | 5.0 | 4.8 | 4.7 | 5.0 | 5.3 | 5.7 | 5.2 | 6.3 | 6.2 |
| BOD | 30 mg/l | 45 mg/l | | 17.2 | 21.0 | 11.8 | 12.0 | 6.7 | 4.3 | 3.7 | 5.2 | 16.7 | 6.8 | 15.4 | 40.8 |
| TSS | 30 mg/l | 45 mg/l | | 16.4 | 20.4 | 11.9 | 15.4 | 7.4 | 5.0 | 4.9 | 8.7 | 28.4 | 8.8 | 16.3 | 41.5 |
| Ammonia (NH3-n) | 8.4 mg/l | 25.3 mg/l | | 0.7 | <0.5 | <0.5 | <0.5 | 0.52 | 0.65 | <0.5 | 0.52 | 1.1 | 0.84 | 1.2 | 1.3 |
| Fecal Coliform | 200/100ml | 400/100ml | | 7 | 4 | 3 | 10 | 8 | 5 | 14 | 8 | 11 | 3 | 2 | 7 |
| pH | | | 6 - 9 | 6.6 | 6.8 | 6.8 | 6.8 | 6.9 | 7.0 | 6.8 | 6.9 | 6.9 | 6.8 | 6.7 | 6.6 |
| DO | | | >5.0 mg/l | 8.8 | 9.0 | 8.7 | 8.5 | 8.3 | 7.9 | 7.7 | 7.5 | 7.7 | 8.1 | 8.3 | 8.7 |
| Total Chlorine | | | 28 ug/l | 16 | 15 | 14 | 14 | 17 | 12 | 17 | 17 | 17 | 14 | 16 | 18 |
| Toxicity | Pass or Fail Quarterly | | | Pass | | | Pass | | | Pass | | | Pass | | |

Non-Compliance Violations 2022

| Month | Violation | Cause |
|-----------|--|---|
| September | Week #2 TSS & BOD | Hydraulic overloading from 3.5" rain event with TSS & BOD industry violations occurring |
| December | Week #3 TSS & BOD Monthly TSS & BOD | Hydraulic overloading from back to back 1.5" rain events and industrial users' issues also causing increased TSS & BOD results. |
| | | |

Wastewater Treatment Plant Compost Residuals

1000 Vine Arden Rd
Morganton NC 28655

Permit Number: WQ0002127

Operator in Responsible Charge: Eli Self

Permit Type: Class A Biosolids

Located at the wastewater treatment plant, residual solids are removed from the wastewater stream and processed onsite. Operation consists mixing dewatered sludge with woodchips and stacked into beds that is fed air into pile with blowers. This process generates heat which kills harmful bacteria and further dries the material. After heating stage of several weeks, material is screened with a trommel screen to produce a finished material for distribution. Finish material is sampled every three months for various metals, fecal coliform, pH, phosphorus and other parameters to meet permit requirements. Product then can be distributed to general public as a Class A Biosolids.

| Compost Residuals | 2022 | 2021 |
|-----------------------|----------|----------|
| | Dry Tons | Dry Tons |
| Residuals generated | 1603 | 1705 |
| Residuals screened | 966 | 771 |
| Residuals distributed | 876 | 717 |

Non-Compliance Violations 2021

| Month | Violation | Cause |
|-------|-----------|-------|
| None | | |

Wastewater Collection System

305 E. Union St. Suite A100 Permit Number: WQCS00028

Operator in Responsible Charge: Ronnie Suttles

Morganton NC 28655

The wastewater collection system consists of over 200 miles of piping and maintains 16 lift stations. The collection system serves most of central Burke County including the shores of Lake James, Glenn Alpine, Salem, Drexel and most of the city limits. Piping materials consists of vitrified clay, plastic, ductile iron and cement. Piping ranges from 3 inches to 54 inches in diameter.

| Collection System Report | | |
|---------------------------|------------------------|------------------------|
| | 2022 | 2021 |
| New Sewer Taps | 47 | 34 |
| Repairs | 36 | 33 |
| Stoppages | 97 | 55 |
| Man Hole Maint. | 569 | 488 |
| Sewer Line Flushed | 93,048 ft (17.6 Miles) | 109,361 ft (20 Miles) |
| Camera Inspected | 7,633 ft (1.45 Miles) | 9,288 ft (1.75 Miles) |
| Right of Way Cleaning | 39,800 ft (7.53 Miles) | 78,380 ft (14.8 Miles) |
| Service Calls | 174 | 177 |
| Investigations/Complaints | 70 | 54 |

| Collection System Sewer Overflows 2022 | | | |
|--|----------------------|---------|--------------------------------------|
| Date | Location | Gallons | Cause |
| 3/10/2022 | 104 East Union Drive | 200 | Old pipe failed from manhole |
| 3/28/2022 | 201-299 Morehead St. | 1500 | Tree fall broke aerial crossing pipe |
| 11/1/2022 | 521 Ervin Rd. | 675 | Grease & roots clog |
| 12/13/2022 | 622 2nd St. | 500 | Grease clog |
| | | | |

Fats, Oils and Grease Program

PO Box 3448

Operator: Tim Arney

Morganton NC 28680

The Fats, Oils and Grease program consists of inspecting each food establishment for proper grease disposal before discharging into the collection system. Each food establishment is required to complete a survey of their operation. Any inspections that fail to meet the FOG requirements are issued a citation.

| Fats, Oils and Grease Program (FOG) | | |
|-------------------------------------|------|------|
| | 2022 | 2021 |
| Food Establishments Inspected | 129 | 123 |
| Citations Issued | 22 | 4 |
| Establishment Surveys | 7 | 5 |

Often our customers are the first to find issues.

Please call Water Resources' 24-hour number at 828-438-5276 to report any issues.