CITY OF WATERTOWN

CAPACITY MANAGEMENT OPERATIONS & MAINTENANCE PROGRAM (CMOM PROGRAM)

2021 REPORT UPDATE

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EMPHASIS ON ACTION ITEMS

Throughout this Plan/Report, attention to noted tasks or work items that are recommended for improvement are designated by *italics and color* in the text. These are items that are recommended by EPA's CMOM guidance documents or are critical to the long term functioning of the collection system.

I. EXECUTIVE SUMMARY

A. Introduction

Watertown entered into a Consent Order and Agreement with Tennessee Department of Environment and Conservation in 2016. That Order required that Watertown prepare a Capacity, Management, Operation and Maintenance (CMOM) program report. The report was required to be updated each year and along with that report, there was required to be included an update on progress toward compliance with the Consent Agreement. This is the third CMOM report and the second update report.

The purpose of the CMOM is to improve collection system O&M in order to primarily reduce sanitary sewer overflows (SSO's), but to also improve efficiency, promote safety for employees, reliability of system, and to prioritize and schedule improvements to the system. This CMOM also briefly reviews the treatment plant operations.

B. System Description

The Watertown sewer system was built in 1964. The system is conventional gravity sewer system with approximately 9 miles of sewer main and serves about 1,700 people. The largest interceptor is 12-inch. There are currently 5 pumping stations in the collection system. About 60% of the system is vitrified clay sewer, installed before 1977. The rest of the system is PVC, except one interceptor which was slip-lined with polyethylene pipe.

C. Management Program

Watertown has a small sewer department. The certified operator is a contractor who operates the treatment plant and supervises operation of the collection system. The City has three employees that work on water, sewer, mowing public parks and other park maintenance as well as street repairs.

The City's current Sewer Use Ordinance is included in the Appendix of this Report. This SUO went into effect in 2018, and updated the language of the SUO pertaining to materials used in the construction of the sewers and services. TDEC provided final approval of the SUO on September 1, 2020. One significant change in the SUO defines that the City would not take over and operate a developer installed collection system if it was grinder pump or STEP type system.

The City has one industrial user and maintains an approved Industrial Pretreatment Program. There is no organized grease control program that would track grease interceptor servicing at local restaurants. However, the operator reported minimal problems with grease anywhere in the system.

D. Collection System Operation

The City operates the collection system and treatment plant under the terms of NPDES Permit No. TN 0025488.

The collection system suffers from ongoing wet weather sanitary sewer overflows. Most of those overflows occur at one manhole that is located at the head of the interceptor that runs down Round Lick Creek toward the Main Pumping Station. Overflows are detected by visual inspection and are reported in writing and by contact with the TDEC field office.

Due to the one chronic overflow, the City is required by its NPDES permit to have in place a self-imposed moratorium. This moratorium is currently applied to Basin 1.

The City provided documentation of eleven (11) reported sanitary sewer overflows reported since the last CMOM update. Each of these occurrences are identified as being due to extraneous rain and ground water leaking into the sewer system, causing flow rates that exceed the sewer and pumping station capacity.

The City maintains a Sewer Overflow Response Plan. That plan is utilized to respond to overflows when they occur.

The City owns and maintains a trailer type vactor machine that is used to clean sewer lines when necessary. They also maintain and utilize a CCTV push camera that can go about 200 ft to discover the nature of sewer problems.

The City sewer crews respond to sewer complaints after they receive an alert of the complaints from City Hall. At this time computer records of the complaints and response actions are not maintained. However, the limited size of the sewer department allows for the staff to rapidly respond to the complaints without difficulty.

E. Sewer System Rehabilitation

Watertown is in the process of implementing the recommendations of the Corrective Action Plan – Engineering Report (CAP-ER) as required by the Consent Agreement. A new schedule is outlined in a Gantt Chart that can be reviewed in Table V-2 of this report. The rehabilitation was originally divided into three phases; however the City has decided to complete the rehabilitation of the collection system as a single project. Completion of the collection systems rehabilitation will be followed by a project to upgrade the sewage treatment plant to accommodate the systems flows flowing the reduction of I/I. The CMOM report goes into detail describing the plans for the whole rehabilitation program.

The City of Watertown received permission from TDEC to combine the identified projects within the rehab phases into a single project. Through this approach the

City of Watertown hopes to accelerate compliance by completing the rehabilitation of the collection system in 2021.

Currently the plans and specifications for this project have been submitted to the State Revolving Loan Program (SRF) along with supporting documentation, to obtain a loan for the completion of the identified work. The Mayor is working on obtaining easements for the construction the project, which must be obtained prior to SRF funding approval. It is anticipated that these easements should be in place by November 2021. This will allow for SRF to complete the review and fund the project for construction to start in the spring of 2022.

The project as submitted has evolved from the initial recommendation based on the conditions of sewers within the collection system. Specifically, the submitted project entails the rehabilitation of approximately 17,000 feet of gravity sewer. In addition to this rehab effort, the City is going to replace the existing 12-inch interceptor sewer in order to move the sewer out of Round Lick Creek.

F. Wastewater Treatment Plant

The CMOM focuses mainly on the collection system. However, there is a general description of the wastewater treatment plant. Aerator diffusers caps were installed in 2017, but the plant is still low on oxygen transfer capability. Improvements to the diffusers were discussed but not implemented. The report describes some operational problems that were noted originally in 2016 and recent changes that have occurred to improve operation.

The City of Watertown received a new NPDES discharge permit in 2020 and there were significant changes to effluent limits. TDEC offered to incorporate the compliance period for the permit into the same schedule as the Agreed Order.

The City will need to begin the preliminary design for the wastewater treatment plant in 2022 in order to meet the conditions of the compliance schedule. Preliminary work has begun on this effort and the City is considering moving forward with acquisition of some equipment, such as new blowers, prior to undertaking the capital improvements project at the treatment plant.

II. INTRODUCTION

A. General Information

The City of Watertown was issued a Consent Order and Agreement from the Division of Water Resources, on October 16, 2016. The order noted a number of permit violations at the wastewater treatment plant, as well as a number of sewer overflows from the collection system. The order also served as a means to separate a number of contentious permit issues from the NPDES permit and move them to the Order. One of the requirements of the Consent Order and Agreement was for Watertown to prepare a Capacity, Management, Operations and Maintenance program for the collection system. The initial program was submitted by August 31, 2016. Annual updates are required to be prepared which will also include an annual status update regarding improvements to the sewer system. This report is the fourth annual update and status report. The last report was published in Aug of 2019. This report provides updated CMOM status and an update on the progress on system improvements from January, 2020 through the end of August, 2020.

EPA has initiated a program to assess the status of the management, operation and maintenance of the sewer system for public utilities. This program has been called CMOM (Capacity, Management, Operation and Maintenance) or MOM (Management, Operation and Maintenance) depending upon which EPA region is being involved.

The preparation of the initial CMOM included an audit on the utility, performed by Mr. Bob Slayden, P.E. Mr. Slayden utilized the EPA audit questionnaire covering all facets of the subject matter, and is intended to point out parts of the management, operation and maintenance structure that may have deficiencies, so that improvements can be put in place. The CMOM Program is intended to be updated annually, so that the improvements and remaining deficiencies can be documented each year.

B. Purpose and Goals

The purpose of the CMOM Program is to improve the management, operation and maintenance structures surrounding the sewer collection system. The ultimate goal is to improve the reliability of the collection system in order to:

- Reduce or eliminate wet weather related sewer overflows;
- Improve response time for reported overflows;
- Reduce overflows due to roots, grease or other blockages;
- Increase the level of rehabilitation of sewers so as to reduce “backlog” of deteriorating pipelines and other appurtenances;
- Improve safety in all operational performance;

- Identify and remedy design and operational deficiencies;
- Institute or improve on the maps for the collection system; and,
- Prioritize and schedule improvements and rehabilitation based upon condition and performance of existing systems.

In addition, in the case of Watertown due to the requirements of the Consent Order, this report also provides an update for regulators on the progress of the town toward satisfying the requirements of the Consent Order.

III. SYSTEM DESCRIPTION

Table III-1
Watertown Sewer Collection System

Population of Service Area	1,684
Number of Pumping Stations	5 (4 public, 1 private)
Miles of Sewer	8.9
Largest Interceptor	12-inch (Slip lined to 10-inch)
Treatment Plant Capacity	0.27 MGD
Year System first Built	1964

The Watertown wastewater treatment plant is located just north of town and discharges treated wastewater to Round Lick Creek. The treatment process consists of screening, extended aeration activated sludge, clarification, and ultraviolet disinfection. Sludge is treated by aerobic digestion, dewatered by a static dewatering filter box, with disposal in a sanitary landfill. The plant design flow is 0.27 MGD. The average flow is about 0.30 MGD. Historically, the peak treated flow rate is 0.80 MGD however this peak flow is limited to the maximum flowrate of the Commerce Avenue (Main) Pumping Station. A copy of the current permit is included in the Appendix of this Report.

The oldest portions of the sewer collection system are constructed of vitrified clay pipe (VCP), with the portions constructed in the 1980s and later having use polyvinylchloride pipe (PVC). The full list of sewer materials and lengths are included as **Table III-2**, below.

Table III-2
Line Lengths, Percent by Material

Material	Footage	Percent of total Length
Total PVC	16,882	36%
Total PE slip	1,883	4%
Total VCP	28,018	60%

Map 1, which is included in the **Appendix** of this Report, illustrates the layout of the collection system. The collection system drains to the Commerce Avenue (Main) Pumping Station located on Round Lick Creek. That station pumps approximately 1,500 feet north to the treatment plant. Basin 1 collects sewage from the east side of the creek. Sewers to the west are broken into a number of mini-basins. Basin 3 drains from the higher elevations north of the square and Main Street. Another main runs along Main Street to the west (Basin 2), collecting from residential and commercial along the routes to the west. A newer sewer basin pumps in from the industrial park in the far west end. There is a newer interceptor running south along Round Lick Creek, and then branching off to the west that picks up businesses along Highway 70 (Basin 4). The newest sewers are a small basin that serves the new high school. This basin pumps in to the Round Lick Creek interceptor.

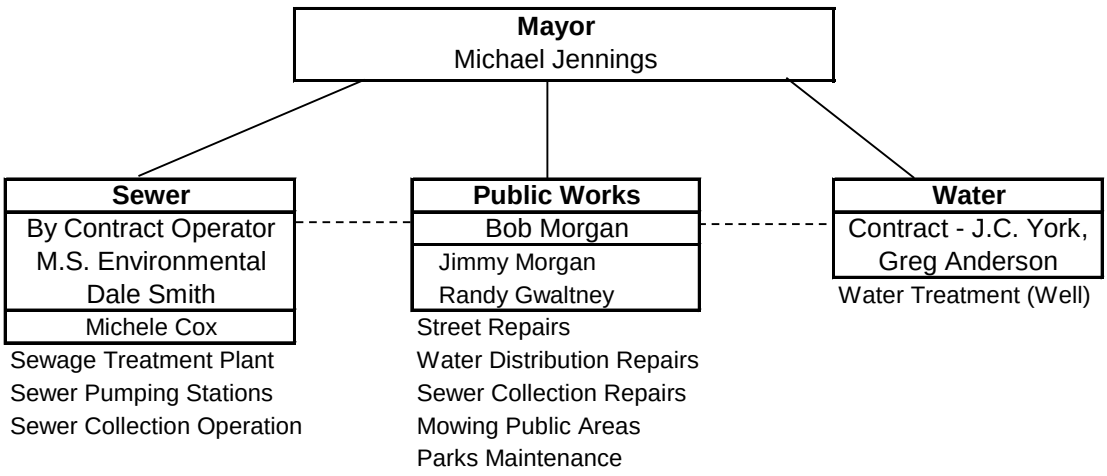
The core of the town's sewer system is vitrified clay pipe, most installed about 1964. After about year 1980, the newer sewers were constructed with PVC pipe. The manholes in the older sewers are pre-cast but appear to lack any gaskets at the pipe connections. The material for the service lines likely match the main materials, but could include some concrete or Orangeburg materials. Clean-outs on the service lines are said to exist in most of the system.

IV. MANAGEMENT PROGRAM

A. Organizational Structure

The Watertown Sewer System organizational structure is shown below. Operation of the treatment plant and the collection system is contracted out to a contract operations firm, M.S. Environmental, Inc.. The operator for both these systems is Dale Smith. Bob Morgan is Public Works director and his duties are shown in the chart below. He and his staff maintain the gravity sewers as well as the water distribution system. His crew is responsible for leak repair and general system improvements.

WATERTOWN
Organizational Chart



B. Certification and Training

Dale Smith, with M.S. Environmental, Inc. holds certification licenses for both sewage treatment and collection. The Public Works Director, Bob Morgan's crew assists with the work under the direction of Mr. Smith, but neither he nor his employees are licensed at this time.

The initial Audit found that at this time the City of Watertown does not have a formal training program for employees, which is not unusual for municipalities of this size. *The Public Works Superintendent has been urged to seek safety training for Confined Space Entry, in particular.*

Mr. Smith has had confined space entry training, and reported that he taught the program in a former job. *However, neither he nor the City has any ventilation or confined space retrieval equipment. Therefore, at this time any work at the treatment plant or within the collection system requiring confined space entry will the use of outside contractors.*

The City does own and uses an air monitor that is used to check the oxygen level in the manholes before entry. These manholes are not classified as confined spaces and the experience of the crew is adequate for this type of work.

C. Communication and Customer Service

1. Internal Communication

The Public Works Superintendent and the Sewer Operator attends monthly Council Meetings. At those meetings, they keep City administrators and elected officials apprised of any new developments in the system. They may receive special instructions from the Mayor and Council at these meetings.

The Mayor meets with the Public Works Superintendent and the Sewer Operator on a regular basis to stay abreast on the needs of the sewer system. These meetings allow for operational issues for the treatment plant and collection system to be presented to the Mayor and to request authorization for changes or repairs as needed.

There is presently not any formalized suggestion system to facilitate movement of comments and ideas from the field crews up through the chain of command. However, with the limited size of the Utility crew, this is not considered to be a problem.

2. External Communication

The Public Works and sewer system staff are present at the monthly council meetings. These meetings are advertised and open to the public. Noteworthy news is published in the local newspaper.

The Watertown Sewer Overflow Response Plan (SORP) calls for notification of the public by the best available means if an overflow is deemed to be a threat to public health or the environment. The plan states that if the overflow can be cleaned up quickly and thoroughly, then no notification will be required. *Under typically circumstances, the most effective way to inform the public of a sanitary sewer overflow is the placement of signage at the manhole.*

3. Customer Service

Sewer complaints now come in to City Hall. The details are relayed to Bob Morgan, the Superintendent of Public Works. He and his crew will normally respond immediately. If the call comes in over the weekend, the only office open is the police department. They have the 24 hour phone number of Dale Smith, the contract operator of the sewage system. Dale will respond and get help as required to solve the issue. Assistance may come from City crews or for outside contractors.

It is appropriate to again make reference to the SORP (On file in Watertown and available on request). Chapter 3 in that document details the procedures for responding to a report of a sanitary sewer overflow (SSO). The same procedures are in place for a customer service request.

D. Management Information Systems

Watertown's sewer operator, Dale Smith keeps all his records on computer spreadsheets. The TDEC required compliance reports are required to be submitted electronically.

The Public Works Superintendent, Bob Morgan does not have any computer based record keeping system. His method is by use of paper notes. Complaints are relayed by phone from the City secretary or City Recorder. Mr. Morgan might make a note of the address, but does not issue a work order. No record is made of the nature of the complaint, the work done, materials used, or final resolution. Watertown is a small town with a limited number of complaints so this system has worked in the past.

However, for the purposes of establishing a record so that predictive maintenance could be planned, it is recommended that some form of record keeping be started on sewer complaint and the work done toward their resolution. Minimum information would be: Nature of the complaint; location; date; investigation results; and action taken. That record should ideally be in some form of computer form or spread sheet format so that a permanent record can be generated but even a paper record is better than nothing.

E. SSO Notification Program

Formal Sanitary Sewer Overflow (SSO) notification procedures were adopted in February, 2016 with the preparation of the Watertown SORP. (On file in Watertown and available on request). The existing overflow report form is included on the next page. The report format appears to be adequate and in compliance with TDEC rules. The contract operator, Dale Smith is responsible for recording overflows on that form.

F. Legal Authority

1. General

The Watertown Sewer Use Ordinance provides the legal authority for all of the actions taken by the City in regards to their sewer system. A copy of the current ordinance, adopted in July 2018, is provided in **Appendix A** of this Report. TDEC provided final approval of the SUO on September 1, 2020.

The changes that were made are in regards to the materials and techniques to be used for building sewers, the clean-out, and the tie-in to the main. Improved and more modern materials and techniques are required in the new revision. Another revision modifies wording related to grinder pumps and STEP systems. This new section removes wording that indicates that the City will take over the system and maintain it. Wording is added to indicate that maintenance of such systems shall be the responsibility of the homeowner. See the document in **Appendix A**.

2. Satellites

There are no satellite utilities or towns discharging into the Watertown Sewer System.

In 2014, Wilson County Schools built a new high school on the southeast side of Watertown. That new school required some new gravity sewer and a new pumping station. That new gravity sewer and pump station were designed and built by the school designers and contractors with funding by Wilson County School system. At the completion of construction, a CCTV inspection by Watertown of that sewer revealed some unacceptable construction issues with the sewer. The school system was notified of the deficiencies but the problems were never resolved. The issues involve deformed PVC sewer pipe with evidence of rock bearing on the sewer from above. The sewer is deep at approximately 20 feet so not easy to replace.

As a result of these construction issues, Watertown has not legally accepted the sewer or pumping station as part of their system. It is assumed that once corrections are made, that these utilities will become part of the Watertown Sewer System.

Wilson County does pay the sewer bills and the electric bills for operating the station. Because the station has not been accepted into the City's sewer system the pump station is classified as a private facility and it is being maintained by the County School System. As such this pumping station is a private facility

This section of sewer has potential for accepting additions other than the high school, so the issue needs to be resolved. It is unclear if Wilson County Schools is prepared to respond if the pumping station were to go down for some reason.

The collection system problems and jurisdiction issue regarding this system and station need to be addressed by the City and County. Failure to complete this action could result in an overflow due to station failure. Also, the sewer leading to the station could collapse or puncture due to the apparent rock pressure on the PVC pipe.

3. Infiltration and Inflow Sources on Private Property

Watertown has authority to control inflow sources located on private property. In the SUO, Section 18-1-506, (2), is particularly pertinent to the subject of non-sewage type connections (roof downspouts, etc.) relating to service lines.

The language in the SUO is shown below:

"(2) Prohibited connections. No person shall make connections of roof downspouts, sump pumps, basement wall seepage or floor seepage, exterior foundation drains, area way drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer. Any such connections which already exist on the effective date of this ordinance shall be completely and permanently disconnected within sixty (60) days of the effective day of this ordinance. The owners of any building sewer having such connections, leaks or defects shall bear all of the costs incidental to removal of such sources. Pipes, sumps and pumps for such sources of ground water shall be separate from the sanitary sewer."

The SUO does not grant the authority to the Department to go onto private property to inspect for such sources. It does, however require disconnection or the repair of defects in sewer service lines should such defects be found. That section is also lacking details in the notification procedure. *The Ordinance does not detail an appeals procedure. There is no provision that would allow the Watertown Sewer Department to repair a faulty service line and then recoup the cost through billing or a lien should the property owner refuse to repair their service line after notification. Future revisions of the SUO should consider the incorporation of additional language to clarify the procedures that would be undertaken.*

This option has been discussed with the City of Watertown personnel. Although lacking in some details, Watertown appears to have the comprehensive legal authority to enforce the infiltration and inflow standards on private services.

The SUO also deals specifically with the service line, its definition, where the clean-out will be located, who is responsible for the cost of construction, and who shall be responsible for maintaining the different parts of the service line.

The Department does not presently have a policy that requires the service lines to be inspected and air tested before a property changes ownership. Such an policy has proven useful in for many cities in the process of renewing old and failing service lines.

4. Standard Specifications for New Construction

Watertown does not maintain a Standard Specification for New Construction. This is not required by TDEC.

5. Pretreatment and Industrial Source Control

The Watertown Sewer Use Ordinance, **Appendix A** contains adequate provisions for control of industrial sources. Section 18-1-509 presents the general regulations with prohibitions of certain substances that might clog, endanger the sewer maintenance personnel, or might harm or cause violations at the treatment plant. That section also contains the Plant Protection Criteria.

Chapter 5A contains the Industrial Pretreatment Wastewater Regulations, with 18-2-501 (4) containing "Table B – Local Limits" for industrial dischargers. The SUO, includes the updated Local (pretreatment) Limits. These have been approved by TDEC. Watertown only has one industry permitted, but this chapter provides the necessary legal authority for their pretreatment program.

6. Grease Control

Under the Watertown Sewer Use Ordinance, 18-1-509, (4), the City requires grease interceptors at restaurants and other sources that would generate grease from cooking. *Presently, there is no formal program to monitor the grease interceptors by the City. It is recommended that a Fats, Oil and Grease (FOG) program be set up. Such a program would routinely check interceptor pump-out compliance and establish a required frequency for individual installations. Records would be kept of the program and be available for reporting on each annual CMOM Report.*

The director of the sewer system reports that grease is not an operational issue in the collection system at this time. A new grease interceptor was installed at the Elementary School that helped quite a bit.

V. COLLECTION SYSTEM OPERATION & MAINTENANCE

A. Budgeting

An adequate budget for operation of the collection system is essential to provide for day to day expenses, long term preventative maintenance, and periodic replacement expenses. Proper record keeping is essential in order to prepare budgets that are adequate to care for the system.

The Manager of Public Works reported that he does not participate in the budget making process. As new tasks are undertaken as a result of improvements in the preventive maintenance of the sewer system, it would be beneficial to have the manager's input in planning for the associated costs.

B. Sewer Rates

Sewer rates in Watertown were adjusted on June 15, 2021. **Table V-1** shows the revised rate schedule that has been adopted. *It is recommended that the City consider making routine rate adjustments upward in order to keep up with and plan for the upcoming costs to rehabilitate the sewer system.*

Table V-1
Watertown Water and Sewer Rate History
Sewer Rate is the same as the Water Rate.

Class	Sep-06	Nov-09	July-21	Comment
Base Rate	$ 13.38	$ 15.39	$ 15.64	minimum bill
First 2,000 gallons	$ 3.58	$ 4.12	$ 4.37	per thousand gallons
Next 8,000 gallons	$ 4.90	$ 5.64	$ 5.89	per thousand gallons
Over 10,000 gallons	$ 5.71	$ 6.57	$ 6.82	per thousand gallons

C. Compliance

The Watertown Sewer System operates under the terms of NPDES Permit No. TN0025488. That permit regulates the quality of the water discharged from the wastewater treatment plant (WWTP). That permit also regulates the operation of the collection system. Parts of the permit require the City to operate the collection system so as to contain all flows and not allow sanitary sewer overflows (SSO) from the system. Any SSO is a violation of the Permit, and is reportable as such.

The City of Watertown was issued a Consent Order and Agreement from the Division of Water Resources, on October 16, 2016. The Order noted a number of permit violations at the wastewater treatment plant, as well as a number of sewer overflows from the collection system. The Order cited 47 overflows (SSO's) between March, 2013 and February, 2015.

The Order also cited 15 ammonia nitrogen violations, 14 incidents of failure to report flow rate, 2 biomonitoring violations, 2 violations of TSS, 2 incidents of bypass of treatment, 2 cyanide reporting violations, 2 E. coli reporting violations, 2 violations of TSS percent removal, 1 total phosphorus reporting violation, 1 total mercury reporting violation, and 1 biochemical oxygen demand violation.

The Order required preparation and submittal of a Corrective Action Plan – Engineering Report (CAP-ER), a CMOM (submitted August, 2016), and a Sewer Overflow Response Plan (SORP). The CAP-ER, which was submitted in May, 2016, sets out a plan and schedule to eliminate all SSO's and return to compliance. The SORP has also been prepared and submitted for review. The Order also requires annual CMOM updates and a report on sewer system improvements and plans. This report is to satisfy that last requirement.

The treatment plant continues to have occasional permit violations. There was some unexplained violations of the ammonia nitrogen limits in April of 2016. The operator replaced the plant's aeration diffusers. Although it is not certain that the diffusers were the cause, since then, there have been no violations.

Watertown's primary compliance problem stems from the aging collection system, badly in need of sewer rehabilitation. Because of the limited size and orientation of the system, almost every overflow has occurred at one low manhole, located beside Round Lick Creek on East Main Street. After a heavy rain, and once the main pumping station has reached its maximum flow rate, sewer surcharges quickly back up in the Round Lick Creek Interceptor. At the head of that interceptor the low manhole then overflows. The overflow results from a contribution of high I/I flows from the whole town, but exit a low manhole just off the main in Basin 1. There were fifteen (15) overflow events from January, 2019 through September 30, 2019. All of these overflows are due to rainfall-induced infiltration and inflow and a system that cannot handle the resultant flows. All of these events were in the vicinity of the point where Basin 1 connects to the Round Lick Creek Interceptor.

D. Collection System Monitoring

Watertown has an approved Industrial Pretreatment Program as required by its NPDES Permit. Monitoring is performed on the one permitted industrial user on a semi-annual basis. This involves using a composite sampler and maintaining chain-of-custody. The sampling and preservation procedures are reviewed by the State of Tennessee during their annual audit of the system.

No other laboratory monitoring is performed on the collection system at this time.

The collection system is routinely monitored for overflows and records are made of any discharges through unpermitted discharge points. The operator knows to check the main overflow point for overflows should there be a high amount of rainfall, increasing the likelihood of a sanitary sewer overflow. This overflow

monitoring is by a daily visual check. The flow chart at the WWTP can also be used to determine the approximate time when the overflow started and ceased.

E. Hydrogen Sulfide Monitoring and Control

Hydrogen Sulfide or sewer odors have not been a problem in Watertown.

F. Safety

The field crews minimize entry into confined spaces. *The crews do not have confined space entry equipment, nor have they had training in confined space entry. The contract operator has had training, and in fact has taught this subject in other employment, but does not own or use confined space equipment.*

Most of the pumping stations maintained by the collection system staff are submersible, so do not require confined space entry. There is one wet well/dry well type station which is the main pumping station. This station is constructed of reinforced concrete. The station has the pump motors and controls up on the operating floor. The motors drive the pumps via long drive shafts running in the (dry) pump pit below. The pumps are accessed by means of a hatch with a ladder leading down to a landing, then a second ladder to a subterranean pump chamber. This chamber is definitely a confined space. The area is equipped with a functioning ventilation fan. Staff that operate this station are cognizant of the need to utilize this ventilation. Staff also have an air monitor to check conditions before entering.

There is currently no safety coordinator for the City. There are also no routine safety training or review practices that have been established. Based on these facts the City will need to rely on contractors to perform any activities that confined space entry.

G. Emergency Preparedness and Response

Guidance documents for this CMOM program recommend that the utility maintain a written Emergency Preparedness and Response Plan. The plan would include procedures for dealing with natural and man-made disasters and emergencies. Watertown has no such written plan at this time.

In 2016, Watertown completed their Sewer Overflow Response Plan (SORP) (On file in Watertown and available on request). This document provides written policy and guidance to field personnel in how to respond to a sewer overflow. The document contains guidance in estimating the quantity of flow, assessing the severity of the overflow, how to and when to post warning signs, clean-up procedures and notification procedures.

The Watertown Sewer Department has some unwritten emergency procedures for operation of the collection system. The State design criteria requires, and Watertown has provided and maintains redundant pumps in each pumping

station. No pumping stations have backup generators that could be used in case of a power outage.

On occasion, collection system operators have employed the services of a septic tank pumper service to keep a (small) pumping station pumped out while they repaired a pump outage.

No special training is provided to deal with emergency preparedness. No record-keeping procedure is in place to record the nature of emergencies and method used to deal with them. This is a smaller size utility, and the key individuals and their responsibilities are well known to all the staff.

Vulnerability analysis (to terrorist or disasters) has not been formally accomplished. Routine security measures (fencing and locked gate) have been employed at the wastewater treatment plant.

The City should consider the installation of emergency bypass connections at the pump stations. This would allow the use of diesel bypass pumps if a station is out of service for repairs or power loss. This would provide another method to supplement pumping and hauling of the sewage.

H. Computer Modeling

Hydraulic computer modeling of the collection system is desirable for all systems. This model can provide a better understanding of the hydraulic limitations of the system. In some systems, it can help in explaining the reason for witnessed surcharges and overflows. It can also be used to test the theoretical capacity of the system before new additions are connected on to the system.

In Watertown, hydraulic computer modeling has not been done. During the preparation of the CAP-ER, calculations were made of the maximum carrying capacity of the main interceptor. That interceptor's existing capacity without surcharging is about 0.7 MGD. The 8-inch tributary basin sewer mains are not at capacity even during peak infiltration and inflow conditions.

TDEC requires all new construction design to be hydraulically modeled to assure adequate downstream sewer carrying capacity. It is assumed that new sewer extensions will include these calculations. Of course, it is to be expected that under peak flow rainfall conditions that overflows will continue to occur until adequate rehabilitation is accomplished and/or interceptors are replaced and upsized.

The City has the capability to preform hydraulic modeling of the collection system through their engineering consultant.

I. Engineering

Oral Smith and Associates has developed a sewer system map, last published in about 2014. The map has updated and refined by Water Management Services, LLC. during the preparation of the CAP-ER (2016) and as part of the design process for the sewer rehabilitation project. Approximately 60 percent of the manholes have been located by survey and the invert elevations have been determined.

A GIS (Geographic Information System) system is not in place at this time. At the present time, the sewer system map is maintained in AutoCAD and the information is either from the survey or record drawings. A copy of the latest system map is included in a **Pocket** at the end of this Report.

The existing map includes all of the sewer system with most of the system attributes included. Information on the map includes line size and best information about material; but no slope, manhole invert elevation or top of casting elevations are included. The original plans for the sewer system are on record, so design manhole locations, elevations, location of original services is available from those plans.

Watertown does not have any in-house engineering staff. The City receives consulting services regarding construction of new sections of sewers, pumping stations and force mains. Engineering services are provided regarding rehabilitation planning and design, flow monitoring and other aspects of SSO reduction by consulting firms.

J. Pumping Stations

Watertown has 5 sewer pumping stations. Four are operated by the City of Watertown. The fifth station is operated by Wilson County School System. The treatment plant operator is responsible for inspecting and maintaining the pumping stations. That individual can be assisted by other workers from the City if the need arises. The three small stations (not including the High School) are checked 2-3 times per week. The main pump station is checked 7-days per week. None of the stations have remote telemetry for monitoring. **Table V-2** provides a summary of the pump station information.

Table V-2
Watertown Sewer Pumping Stations

Name	Number Pumps	Brand	Model	Type	HP	Flow GPM	Year
Commerce Ave	3	Yeomans	4310 SC.1C	Dry Pit, Vert. Non-Clog	(2) 5 hp, (1) 7.5 hp	175 210	2003
Industrial Park	2	Hydromatic	SPGH-500	Sub. Grinder	5	100	1992
Edna Grooms	2	Myers	3VX	Sub. Non-clog	3	100	2010
Cornwell	2	Hydromatic	HPGX 200 CD	Sub. Grinder	2	46	2005
High School	2	Myers	3VX	Sub. Non-clog	3	___	2013

All stations are routinely operated with one pump on standby. Operators will typically check the run time, main overload breaker, vibration, wet well water level, and float operation. On all stations, run times are recorded manually daily (or whenever station is checked) for each pump. There is a check list maintained for each station. *Manufacturer's literature is available for each station and the major equipment for each. However, this material does not appear to be readily available in a file should quick action be needed. It is recommended that all pump name, model number, serial number, impeller trim and vendor all be assembled in a quick reference file for use in an emergency situation.* Four of the smaller stations are submersible type, with the main pumping station being wet well/dry well type.

There is no written emergency procedures pertaining to the pumping stations. The pumping station operator does not attempt repairs except for float operation and other fairly simple repairs. If the station will not run, the operator normally contacts a mechanical repair contractor for repairs.

K. Force Mains

The Department does not routinely inspect the route of the force mains for the system. There is no routine program to regularly assess the condition of the force mains. It is assumed that force main breaks would be apparent in loss of flow at the plant, or in sewage flowing on top of the ground along the force main route. *Inspection of the route, especially the long force mains from the main pumping station should be at least an annual undertaking.*

L. New Sewer Service Line Inspection and Connection

The Watertown Sewer Use Ordinance includes rules requiring inspection of new sewer service lines. Any new service line must be installed by and paid for by the property owner. Before covering, the line is to be inspected by the City. The actual connection to the City's main is to be by City crews. The Sewer Use Ordinance is included as **Appendix A**.

M. Collection System Maintenance

1. Routine Maintenance and Inspections

The collection system is not routinely inspected but the City crews have completed a CCTV inspection of Basin 1. There is no routine preventive maintenance program. In late 2016, the sewer crew purchased a 200 ft "push camera" CCTV unit. This camera has been used in 2017 to inspect all of Basin 1 and one other location in town. As a result of this inspection, the sewer crew made point repairs to numerous locations. These were reported and included with the 2017 CMOM Report and Update published in March, 2018.

The collection system crew also might jet out a slow moving section of line or sluggish backed-up section of line. However, this is usually done as a response to a complaint from a customer.

2. Unplanned Maintenance

Response to unplanned maintenance of the pumping stations has been discussed in previous sections. The City has a crew that works both water and sewer complaints. They typically would respond to back-up complaints by jetting out a blocked main line, or if the main line is flowing free, would inform the customer that the problem was not caused by the public sewer system.

N. Complaints and Response

Complaints come in to the City Clerk, who relays the complaint to the appropriate field crew. Sewer line back-ups would be handled by the City workers. Pump station problems would be handled by the contract collection system and treatment plant operator. The field crew ordinarily responds immediately. There is no after-hours complaint line, but individuals occasionally might contact the Watertown Police Department. The field crew might relay information regarding the correction of the situation if the problem affects more than one customer. *As was mentioned in a previous section, it is recommended that records of complaints and the response be maintained in some form.*

O. Sewer Maintenance Equipment

Watertown owns a trailer mounted sewer jetter machine that is used for cleaning grease and sediment out of sewer lines. If this machine is not able to clear the line or a vactor truck is needed, the City has requested and on occasion has employed the larger and heavier duty equipment that is owned and operated by the City of Lebanon.

The City also owns and operates a back hoe and dump truck. Other hand tools are available as well.

The City owns and operates smoke generating equipment that is used in smoke testing surveys. This equipment was used to smoke all of Basin 1 starting in October 2016. The results and records of that smoke testing were included in the 2017 CMOM Report and Update (published March 2018).

Watertown does own and operate a CCTV "push" camera that was purchased in late 2016. The sewer crew has been using this equipment to do pre-rehabilitation inspection of Basin 1. This camera has limitation in that it can only travel a maximum of 200 feet and the camera head does not have pan or tilt capability. They have also used this equipment on a few other blockages and complaints.

P. Maintenance and Repair Parts

The sewer department keeps on hand a small stock of pipe, repair clamps, stone, and other fittings as might be required to make most repairs.

Q. New and Potential Future Sewer Connections

The operator and the Sewer System Director reported that there is considerable pressure to connect some new homes on the east end of town. This is the area that is under the self-imposed sewer moratorium due to the chronic overflows at the low point on Basin 1.

Another future issue is a developer's plans to develop 2000 acres to the southeast of Watertown. These new homes would connect to either Basin 1, or possibly to the sewers that serve the High School. The developer has talked of building a STEP (Septic Tank Effluent Pumping) type sewer. However, Watertown has told the developer that they will not accept a STEP system and the long term maintenance of the pumps and solids removal from the tanks. Watertown has adopted new wording in their SUO requiring that any STEP (or grinder type) systems must be maintained by the homeowner.

Watertown does not have any sewer connection restrictions on the rest of the town's sewers at this time.

VI. SEWER SYSTEM REHABILITATION

A. Existing Sanitary Sewer Overflows

Watertown presently has one chronic sewer overflow point. This overflow is from manhole 4/65 near the head of the Round Lick Creek Interceptor. This manhole can be noted on the Watertown Sewer System Map (**Pocket at end of Appendix**) located just east of Round Lick Creek at Main Street. Overflow records are maintained on the forms that are filed monthly with TDEC in any month that an overflow exists. Copies of those overflow records for the previous year is included in **Appendix C.**

A review of the reports indicates that a sewer system overflows occurred eleven (11) times during this period and that during some events there was more than one overflow location. These overflows occurred from manhole 4/65 at the junction of drainage Basin 1 and the Round Lick Creek Interceptor and at manhole 1/67B, manhole 3/41, and manhole 3/43.

The cause of these overflows is infiltration and inflow following significant rainfall events. The Round Lick Creek Interceptor has a non-surcharged capacity of about 0.7 MGD. Therefore, when flows exceed this level the pipeline friction loss begins to surcharge in the vicinity of the overflow manhole. To compound this limited pipeline capacity, the pumping station can only pump about 0.8 MGD.

Further limiting this situation is the capacity of the treatment plant. The average design flow is 0.27 MGD. The operator reports that the plant can maintain compliance up to about the capacity of the Main Pumping Station, but the clarifiers appear to be at their limit at that flow. Therefore, simply adding higher capacity pumps to the station might stop the overflow, but would almost certainly overwhelm the hydraulic capacity of the treatment plant.

As was described in an earlier section, there was a catastrophic failure of the Main Pumping Station in July, 2018. This caused a fish kill in Round Lick Creek. Improvements to the controls should reduce the likelihood of another incident with this cause. *If the station is equipped with a 24 hour monitoring system, then response times would be minimized for any failure in the future. These upgrades are planned for as part of a future project.*

B. Corrective Action Plan – Engineering Report

In May, 2016, as required by the 2015 TDEC Consent Order, Watertown submitted a Corrective Action Plan – Engineering Report (CAP-ER). The CAP-ER examined all aspects of the sewage collection and treatment system. This was required because of the ongoing sanitary sewer overflows (SSO's) and the impending new nutrient (nitrogen and phosphorus) permit limits at the treatment plant. Simply expanding the hydraulic capacity of the existing plant to accommodate more flow was not a feasible option.

As part of the research leading to the CAP-ER report, engineers did field inspections of sewer flows just following a 1" rainfall event. Manhole 4/65 was surcharged but not quite overflowing when the inspection began. The flow from contributing tributary basins were estimated based upon approximate velocity and depth of flow. Based upon this work, recommendations were made to concentrate initial rehabilitation efforts on Basin 1 (located to the east of Round Lick Creek) and on Basin 2 (runs from the west along Main Street).

The Round Lick Creek Interceptor is located right in the middle of Round Lick Creek, and was recommended for rehabilitation or replacement by the report. Round Lick Creek has a very low flow in the summer, with sections of exposed dry creek bed. But in the wetter winter and spring can be running a foot or more deep for the full width covering the interceptor. This interceptor was slip-lined with PE pipe in the mid-1980's. There are a dozen or so service lines that were never rehabilitated or replaced which run under the creek bed and are likely infiltration contributors. Where this slip-lined interceptor intersects manholes is also a very suspect leakage area.

The CAP-ER proposed a phased approach to the rehabilitation due to the expected expense. The three rehabilitation phases along with expansion of the main pumping station are estimated to cost in the range of $2.5 million.

The report recommended flow monitoring, CCTV inspection, cured-in-place pipe for the rehab method. Service laterals would be renewed to the clean-out. Due to financial considerations, only the worst leaking areas are proposed in the plan. All of the older vitrified clay sewers are planned to be inspected and smoke tested with point repairs on structurally critical sections.

The collection system rehabilitation plan is combined with a plan to increase the capacity and level of treatment at the sewage treatment plant. The report examined three treatment alternatives; oxidation ditch, sequencing batch reactor, and integrated fixed film activated sludge (IFAS). Based upon preliminary estimates, the IFAS was the lowest cost alternative and was recommended by the report. The estimated cost of the treatment plant upgrade was found to be in the range of $2.4 million.

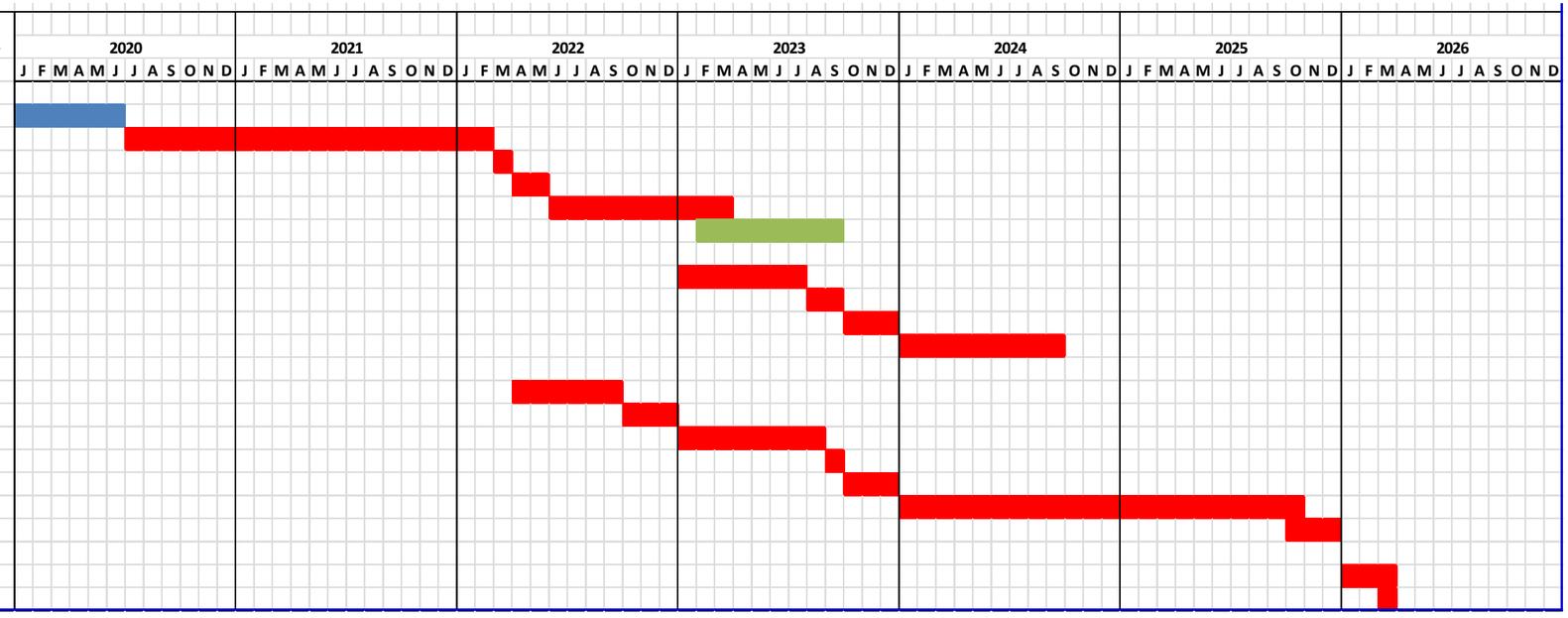
The original schedule for this work, which was prepared in keeping with the requirements of the Consent Order, is presented in **Table VI-1**. The schedule was revised to reflect changes in the scope of the initial rehabilitation project and was approved on June 12, 2019 by the Division of Water Resources. The new schedule allows the City of Watertown to utilize SRF funding to complete all phases of the sewer system rehabilitation in a single project.

TABLE VI-1
Watertown Consent Order Summary - Final 10/16/2015

Description	Period or Date	Due Date
Collection System Rehabilitation Program - Initiate	initiate within 1 year	10/16/2016
a. Entire system to be rehabilitated on a 10-year basis		
b. 40% complete by 12/31/2019.		12/31/2019
70% complete by 12/31/2022		12/31/2022
100% complete by 12/31/2025		12/31/2025
c. Annual reports with CMOM Reports each year		w/ the CMOM
Complete all requirements of the Consent Order & achieve compliance with the Permit	Dec. 31, 2025	12/31/2025
a. Submit final summary report	Mar. 31, 2026	3/31/2026

The revised CAP-ER's Proposed Progress Schedule is presented in **Table VI-2**, on the next page.

Work Item	Preliminary Start Date	Preliminary Completion Date
Proposed Sewer Rehabilitation		
Development of Design Plans & Specifications	7/1/2019	6/30/2020
Submittal for SRF Funding Review & Approval	7/1/2020	8/30/2020
Advertisements for Bid	9/1/2020	10/1/2020
SRF ATA Packet review & Award of Bid	10/1/2020	11/30/2020
Construction of - Phase 1,2, & 3 Rehab Project	12/1/2020	9/27/2021
Post Flow Mointering & Flow Reduction Verification	8/1/2021	3/29/2022
Proposed Pumping Station Improvements		
Development of Design Plans and Specifications	1/1/2023	7/30/2023
TDEC Review & Approval	8/1/2023	9/30/2023
Advertisement for Bids & Award	10/1/2023	12/31/2023
Construction (Concurrent with WWTP)	1/1/2024	9/30/2024
Wastewater Treatment Plant Improvements		
Preperation of the Preliminary Engineering Report	4/1/2022	9/30/2022
TDEC Review & Approval of the PER	10/1/2022	12/31/2022
Development of Design Plans & Specifications	1/1/2023	8/29/2023
TDEC Review & Approval	8/30/2023	9/30/2023
Advertisement for Bids & Award	10/1/2023	12/31/2023
Construction	1/1/2024	10/31/2025
Start-up & Testing	10/31/2025	12/31/2025
Final Summary Report		
Preperation of Final Engineering Report	1/1/2026	3/15/2026
TDEC Report Submittal		3/31/2026



C. Smoke Testing

City crews have previously performed smoke testing in Basin 1. This was done in keeping with the requirements of the CAP-ER. The work was done with a push camera. That equipment is fairly limited, as it will not make it from one manhole to another so has to be pushed upstream and then downstream. The camera does not have pan and tilt, so no close inspection of the services is possible.

City crews have continued to work on fixing problems that are on the property line or on the public ROW. Where smoke was seen on private property, the sewer director spoke with the owner and told them the problem needed to be fixed. However, no follow-up letter or other records of the contact have been made.

It is recommended that the City continue to perform and document the smoke locations that need attention by the homeowner and generate a letter notification and follow-up plan to insure that the work takes place. It is also recommended that a plan and schedule be developed to enable smoke testing of the portions of the collection system that are not included in the rehab project.

D. Video Inspection

In 2004, Basin 1 was inspected with CCTV by a contractor. A few line segments were done along Main Street in Basin 2. The Round Lick Creek Interceptor was inspected with CCTV as well. This inspection work generated some point repair points that were taken care of by a contract project at that time.

In late 2016, the sewer crew purchased a 200 ft “push camera” CCTV unit. This camera has been used in 2017 to inspect all of Basin 1 and one other location in town. As a result of this inspection, the sewer crew made point repairs to numerous locations since that time. The results of this work has assisted in the preliminary development and design of the rehabilitation project for these sewers. Video records were made of the inspections and are preserved in digital files at Watertown.

E. Rehabilitation

1. Past Projects

Attempts have been made over the years at correcting the infiltration and inflow of the collection system.

In the 1980’s, the first efforts to address the infiltration and inflow problem was accomplished with the installation of the 10-inch polyethylene slip-line inside the 12-inch interceptor sewer that runs

down Round Lick Creek. Slip-lining was once thought to be an effective rehabilitation technique. Now, it is known that this method has serious drawbacks. The PE slip-liner has a high coefficient of expansion and contraction. It also stretches quite a lot during installation. The installing contractor must wait for a sufficient time before re-connecting services. There is no glue that will stick to the PE pipe. So if the sewer moves in relation to the new connections to the services, then the service tees can become displaced leaving a hole for extraneous water. Another drawback is the slip-line in this case is 10-inches inside diameter, and the original pipe was 12-inch inside diameter.

The most problematic issue, even if the service taps were made correctly, is the seals between the original pipe and the new polyethylene inner pipe cannot be made permanent. Various methods for seal construction have been tried over the years. Current practice is for this space to packed with jute that has been soaked in expanding plastic grout. Two layers of this packed grout are typically installed. Since the pipe moves with temperature changes, and the grout will not stick to the PE pipe, experience has shown that the seal will eventually fail allowing large amounts of ground water to enter the PE pipe. This is called “interstitial seal failure”. *The condition of the interstitial seals in this pipe segment has not been inspected. To inspect the seals, the watertight manhole covers will need to be removed. Since most of the openings are flush with the stream bottom, this has not been possible. This line is scheduled for replacement as part of the rehabilitation project.*

A recent (2016) review of the 2004 CCTV inspection work revealed that some of the service line connections are faulty. There was one place where the HDPE slip-liner had a defect where two sections of pipe were fused, and there was a fold and open space that might be causing leaks. The defect was not leaking at the time of the inspection, but the CCTV work was done during a low stream flow season. The video also showed that there was one service connection that had a 1.5” or 2” PVC water pipe sticking out of a service line and going straight across the width of the 10-inch pipe.

The 10-inch slip-line reduced the 12-inch interceptor’s capaCity. The capaCity of the original 12-inch sewer was originally about 1.1 MGD flowing full pipe. Once the slip-line was installed, the 10-inch inside diameter PE line at 0.3% slope is estimated to carry about 0.7 MGD with no surcharging. If surcharging about 6-inches at the upper end, the line will theoretically carry about 0.9 MGD. Surcharging a sewer is never recommended as part of a new design.

An effort to improve the collection system was undertaken in about year 2003. This work included about 45 dig-down point repairs, Most of the work was in the eastern part of the City, in drainage Basin 1. Some other dig-down point repairs were done along Statesville Ave. Nearly all of Basin 1 was video inspected, cleaned, tested, and sealed with grout. The slip-lined interceptor's PE pipe interstitial space was re-sealed at each manhole as well in 2003. In that same project, a second 6-inch force main was added to increase the Main Pumping Station's flow rate.

In 2005, another rehabilitation project was performed by a contractor utilizing a grout packer machine that would inject an expanding grout into the cracks and defective sewer pipe joints. About 14,500 feet of sewer was inspected, tested and sealed using this method. Some dig-down point repairs were done at that time as well. Some manholes were raised to prevent surface water intrusion. Others were sealed where street drainage was entering. In addition, 10 manholes were sealed.

During the March, 2016 sewer inspection, a random sampling of the manholes that were built in the old (1963) portions of the sewer system were inspected. Sewers of this age were frequently built with all brick manhole construction. It was a great relief to find that the inspection revealed that all of these manholes are of concrete construction, and appear to be factory made precast manhole rings and cone sections stacked during construction. This work was done before general use of precast manhole grade rings, and therefore these manholes have brick chimneys from the cone section up to the manhole (cast iron) casting and cover. These original manholes do not utilize a rubber gasket at the pipe junction. Generally, the manholes are in great shape for their age. Very few leaks were found in the body of the manhole or at the pipe junction.

The main defect of these manholes is from thin metal pavement adjustment risers that were inserted into the original cast iron frames and then tightened into place with a jack screw. These were added when the streets were paved to adjust the manhole covers up to the new pavement level. All of these risers can allow street drainage to enter around the area of the jack screw. *A review of each manhole needs to be done during rainy conditions to determine how well the street drains rainwater away from the manhole cover. If water is draining to the cover area, then the manhole casting needs to be properly raised and rebuilt. The brick grade adjustment section would be replaced at that time with concrete or composite grade rings and properly sealed.*

2. Ongoing Rehabilitation Projects

The Consent Agreement schedule called for Watertown to begin some form of sewer rehabilitation by October 16, 2016. The CAP-ER proposed that this work begin with smoke testing to start by August 15, 2016. Also, pre-rehab flow monitoring was to be accomplished toward the end of 2016.

In October, 2016, the Watertown sewer crew did smoke inspection of all of Basin 1. The results of that inspection are included in the Appendix. The sewer crew repaired faults that were found to be on the ROW side of the property line. Smoke faults in the private service line were called attention to the owner verbally immediately while the work was being done.

The Watertown's sewer crew did inspect most of Basin 1 sewers utilizing a CCTV push camera. This work was started in January, 2017 and ended by the end of March, 2017. Although not the perfect tool for the job, the crew has been able to inspect most of the lines in Basin 1 by pushing the camera downstream from the upstream end and then pushing upstream from the downstream manhole. The reach of this device is 200 feet. The camera does not have the capability to rotate and examine a defect or look up into a service line, so details will not be discovered by this method. The intent of the use of this camera was to provide designers with more information during design of the rehabilitation for Basin 1.

This CCTV work did discover a significant amount of defects in vitrified clay sewers (installed 1964). Some lines that were thought to be potential problems proved to the relatively problem free. This information proved very valuable to design engineers in deciding how to rehab the collection system.

3. 2020-2021 Rehabilitation Project

Ideally, all of the vitrified clay pipe in the Watertown sewer system would be rehabilitated using either CIPP, pipe bursting, or dig-and-replace. These old sewers are more than 50 years old, and eventually will fail if not renewed at some point. To be most effective, this work should include renewing the service lines up to the property line.

For the CAP-ER, two main factors were considered: the relative elevation of the existing sewers and the results of the field flow chasing after rainfall events. These findings are still the basis for the full-scale rehabilitation project, which has been consolidated into a single project.

Most of the rehabilitation construction work would be confined to portions of the sewer system that were witnessed to have shown the

worst leakages during the March 2, 2016 flow chasing field inspections. See **Figures V-1, V-2, and V-3** for the lines recommended to be included. These lines also have pipe flow line invert elevations that are at or below elevation 659.

This project involves cured-in-place (CIP) rehabilitation lining of approximately 17,000 linear feet of the existing sewer lines and associated repairs. These existing sewer lines are to be rehabilitated by the cured-in-place resin impregnated lining method along with replacement of existing sewer customer services, and the coating of the existing manholes. In cases where lining is not feasible the pipe will be removed and a new sewer pipe installed.

In addition to the rehabilitation, the project also includes the installation of approximately, 3,065 linear feet of new gravity sewer to replace the existing interceptor located in the bottom of Round Lick Creek. The installation of these sewerage facilities will help to drastically reduce the amount of infiltration and inflow entering the City's sewer system, and eliminate ongoing environmental impacts related to having a sewer main located within a creek bed.

The design of the project has been completed and submitted to SRF to obtain funding. The City of Watertown intends to advertise and bid the project as soon as SRF approval can be obtained.

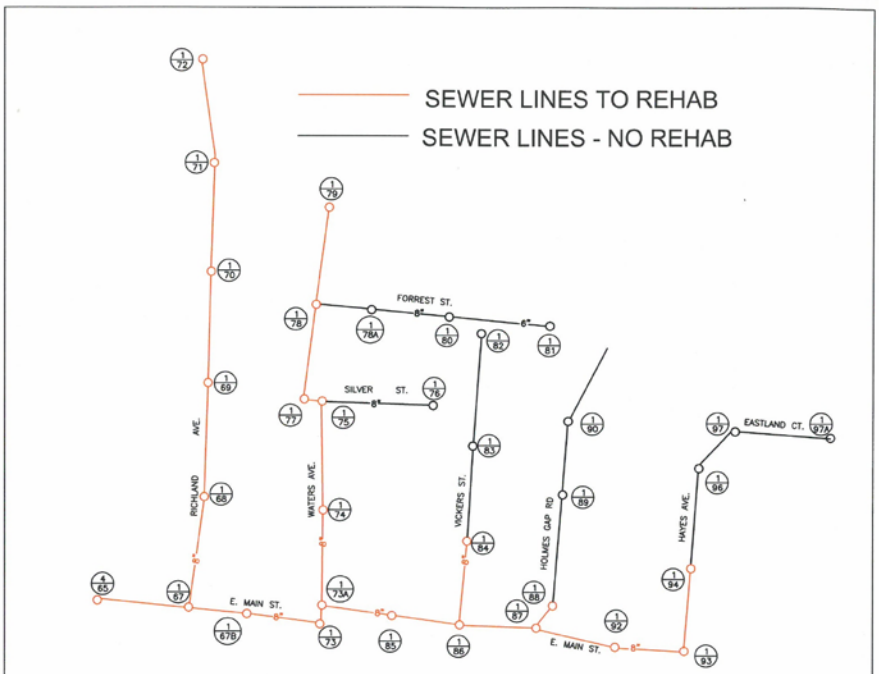


FIGURE V-1
WATERTOWN SEWER SYSTEM
BASIN 1
PHASE 1 SEWER REHABILITATION

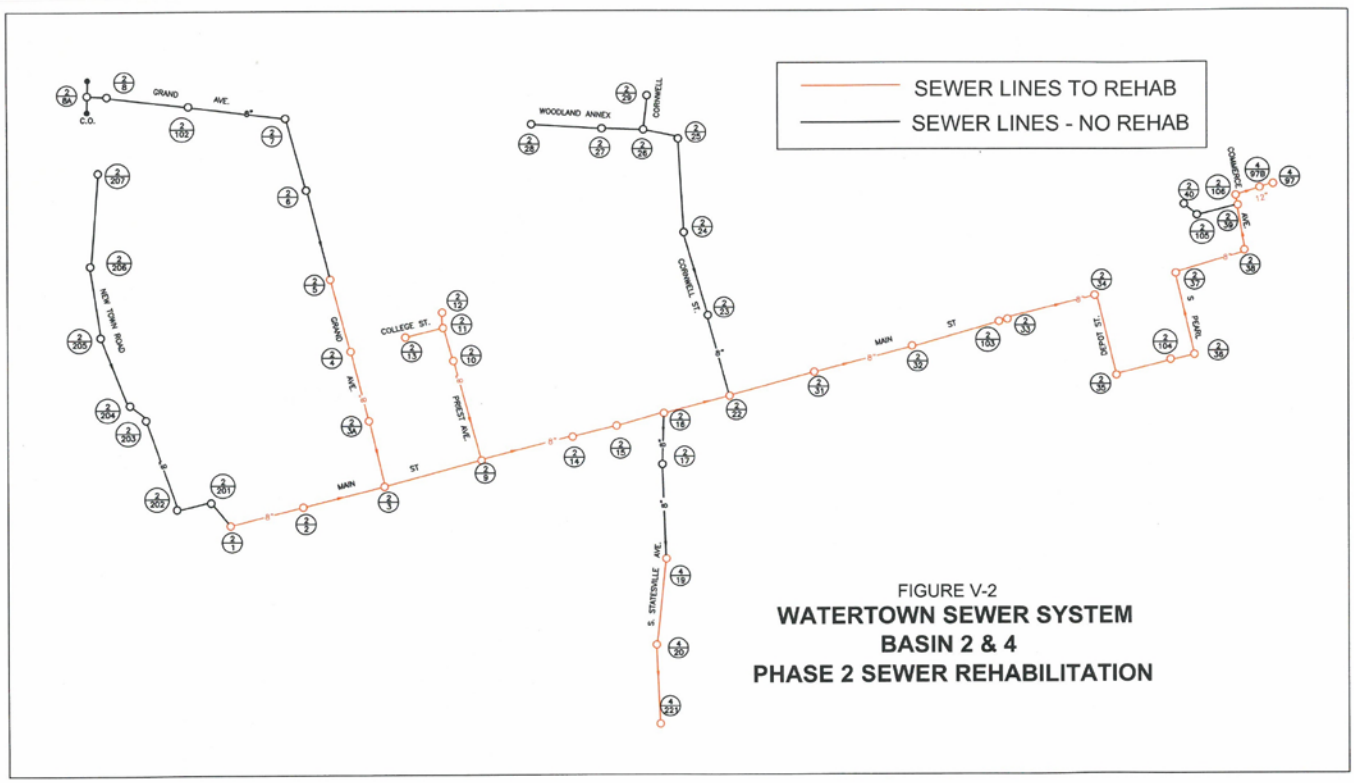


FIGURE V-2
WATERTOWN SEWER SYSTEM
BASIN 2 & 4
PHASE 2 SEWER REHABILITATION

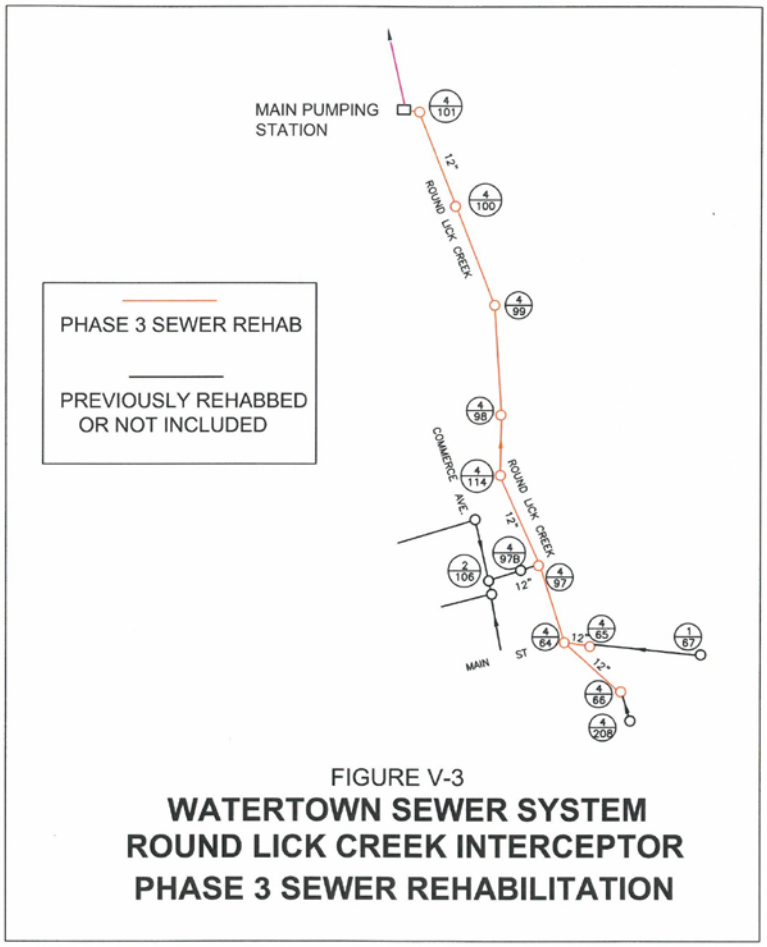


FIGURE V-3

WATERTOWN SEWER SYSTEM
ROUND LICK CREEK INTERCEPTOR
PHASE 3 SEWER REHABILITATION

Table VI-3

ITEM	QTY.	UNIT	UNIT PRICE	TOTAL
8" CIPP GRAVITY SEWER	17347	LF	$ 50.00	$ 867,350.00
REMOVE PIPE OBSTRUCTIONS	12	EA	$ 300.00	$ 3,600.00
RECONNECT EXISTING 4"/6" SERVICES TO CIPP PIPE	302	EA	$ 3,000.00	$ 906,000.00
6" PVC CLEANOUT AT ROW	140	EA	$ 1,000.00	$ 140,000.00
6" PVC SDR 21 SERVICE PIPE (5FT EACH CO)	700	LF	$ 60.00	$ 42,000.00
POINT REPAIR OF EXISTING 8" SEWER (12FT)	8	EA	$ 4,000.00	$ 32,000.00
ADDITIONAL FOOTAGE OF POINT REPAIR	50	LF	$ 100.00	$ 5,000.00
VACUUM TESTING EXISTING MANHOLE	63	EA	$ 500.00	$ 31,500.00
REHAB EXIST 4-FT MH (VAROUS DEPTHS)	31	EA	$ 1,200.00	$ 37,200.00
RESET/RESEAL EXISTING FRAME & COVER	31.5	EA	$ 250.00	$ 7,875.00
PAVEMENT REPLACEMENT "TYPE A"	260	LF	$ 150.00	$ 39,000.00
SEED & STRAW- TOPSOIL	1860	SQ	$ 5.00	$ 9,300.00
CONC (SIDEWALK) REPLACEMENT	12	CY	$ 50.00	$ 600.00
GRAVEL DRIVEWAY	600	LF	$ 40.00	$ 24,000.00
15" SDR 26 PVC GRAVITY SEWER OUTSIDE/RDWY	1697	LF	$ 225.00	$ 381,825.00
15" SDR 26 PVC GRAVITY SEWER UNDER/RDWY	80	LF	$ 285.00	$ 22,800.00
15" SDR 26 PVC GRAVITY SEWER CREEK CROSSING	180	LF	$ 500.00	$ 90,000.00
12" SDR 26 PVC GRAVITY SEWER OUTSIDE/RDWY	30	LF	$ 185.00	$ 5,550.00
12" SDR 26 PVC GRAVITY SEWER CREEK CROSSING	110	LF	$ 500.00	$ 55,000.00
8" SDR 26 PVC GRAVITY SEWER UNDER/RDWY	955	LF	$ 150.00	$ 143,250.00
REPLACE EXISTING 4-FT MH	3	EA	$ 8,000.00	$ 24,000.00
STANDARD 4-FT MANHOLE (0-6FT)	16	EA	$ 8,000.00	$ 128,000.00
EXTRA MH BARREL DEPTH (6+ FT)	81	VF	$ 300.00	$ 24,300.00
MH VENT PIPE ASSEMBLIES	2	EA	$ 3,000.00	$ 6,000.00
WATER TIGHT MH FRAME & COVERS	8	EA	$ 1,000.00	$ 8,000.00
MH FRAME AND COVERS	6	EA	$ 500.00	$ 3,000.00
SEED & STRAW, TOPSOIL	1740	LF	$ 3.00	$ 5,220.00
TYPE "A" ASPHALT OVERALL FULL WIDTH	15360	SF	$ 15.00	$ 230,400.00
GRAVEL DRIVEWAY	20	LF	$ 40.00	$ 800.00
CONC SIDEWALK/DRIVEWAY	1	CY	$ 50.00	$ 50.00
15" PVC KOR-N-SEAL CONNECTION	1	EA	$ 3,500.00	$ 3,500.00
BULKHEAD EXISTING SEWERS	4	EA	$ 250.00	$ 1,000.00
6" SDR 26 PVC SEWER SERVICE RECONNECTION	27	LF	$ 500.00	$ 13,500.00
6" PVC CLEANOUT AT ROW	27	EA	$ 1,500.00	$ 40,500.00
6" PVC SDR 21 PVC SEWER SERVICE PIPE	130	LF	$ 60.00	$ 7,800.00
EARTHEN CHECK DAMS	2	EA	$ 500.00	$ 1,000.00
CONCRETE CHECK DAMS	6	EA	$ 750.00	$ 4,500.00
BULKHEAD EXISTNG INLET IN P.S.	1	EA	$ 5,000.00	$ 5,000.00
REDIRECT 6" SERVICES ON COMMERCE AVE	1500	LF	$ 35.00	$ 52,500.00
			Estimate of Probable Construction Cost	$ 3,402,920.00

4. Post Rehabilitation Flow Monitoring

Once rehabilitation project is complete, flow monitoring should be conducted to allow for a determination if problems have been rectified and whether any additional work is should be undertaken in that portion of the system.

It is believed that the replacement of the existing Round Lick Creek interceptor sewer will greatly reduce the amount of I/I entering the sewer system. The ultimate impact of the rehabilitation efforts will not be known until the post rehab flow monitoring has been completed.

The post rehabilitation monitoring is also required to evaluate the capacity of the main pumping station. If adequate amounts of I/I are removed from the collection system then the current capacity of the station may be adequate. In such a case improvements at the station will focus on reliability and redundancy.

The main sewer pumping station needs to be upgraded and may require an increase in capacity and to be equipped with more efficient pumps. While the total extent of the upgrades will remain unknown until after the flow monitoring has been completed.

VII WASTEWATER TREATMENT PLANT

A. Description

The existing treatment plant was built in 1963. It is an activated sludge design utilizing dual train aeration basins. Originally it had one rectangular clarifier. That has been abandoned and replaced with two circular clarifiers. The original chlorine contact disinfection has been replaced with ultraviolet disinfection. Headworks originally consisted of manually raked bar screen and channel type grit chamber. The screen has been upgraded to a centenary type fine screen. The system no longer has a grit chamber prior to treatment. Aeration is by coarse bubble diffusers fed by positive displacement blowers. The aeration pattern is old style “roll type” with diffusers placed along one side of the aeration basin to promote mixing.

Sludge is wasted to sludge holding tanks. It is then treated with polymer and sent to a filter type dewatering box. Final disposal is to a sanitary landfill.

The existing plant is rated for 0.27 MGD. Flows peak at 0.8 MGD during rain events. This flow rate is limited by the main pumping station.

B. Operational Issues and Violations

The plant is operating generally within the design limitations for the treatment technology. Low dissolved oxygen levels during the warmer periods of 2016 led the operator to investigate the diffusers at the treatment plant. The aeration diffusers are the old rubber “snap cap” type coarse bubble diffusers. They were in very bad condition and were all replaced at that time.

This work helped a little bit, but the dissolved oxygen in the basin during the warmest months continues to be quite low in the range of 0.2 mg/l. When this occurs, the plant has some violations of ammonia nitrogen.

In 2020 the operators increased the amount of DO in the basin by utilizing a second blower. This has resulted in an increase in the DO within the basin and allowed the operators to increase the mixed liquor concentrations. The results of these changes have been that the effluent ammonia numbers have decreased.

In 2021 the DMR data shows that effluent ammonia numbers have improved during summer months. However, the data also demonstrates the effects of colder temperatures on the treatment plant. In February the treatment plant was out of compliance for each sampling period. This period of noncompliance occurred during extremely cold temperatures combine with higher flows to push water through the treatment plant at a rate that does not allow for adequate removal of ammonia.

C. Improvements Needed – Short Range

In the interest of economy, it would be prudent to minimize any costly improvements to the plant for the short range. This is due to the fact that the plant will be undergoing a major renovation starting in 2024 to be completed in 2025. As was previously noted, the dissolved oxygen in the basin is too low during warmer weather.

Investigations have been initiated in regards to adding equipment necessary to increase the dissolved oxygen. The treatment plant has currently increased the amount of blowers in operation and has seen an increase in DO levels and a decrease in effluent ammonia. The City is considering the purchase and installation of a new high efficiency blower with a VFD. This would improve operational control for the existing plant and if properly sized can be reused in the future plant expansion project.

Furthermore, the completion of the I/I project will assist by lowering the influent flows to the treatment plant. This will increase the amount of time that the microorganisms have to breakdown the ammonia.

D. Planned Improvements – Long Range

The TDEC Consent Agreement required planning to provide treatment improvements necessary to comply with future nitrogen and phosphorus limits. The existing plant does not have this treatment capability. The CAP-ER (May, 2016) examined three possible alternatives to provide this treatment. Each of the three was feasible and all three are within the same range in cost. The recommended alternative was to modify the plant with Integrated Fixed Film Activated Sludge (IFAS) technology. The other two alternatives, sequencing batch reactor and oxidation ditch were both close in budget cost and should stay in consideration as future possibilities during the more detailed engineering report (approx. 2022).

The IFAS process would utilize the same aeration tanks but would add partitions and all new aeration systems. A new clarifier would be added. Chemical addition would be required and tertiary filtration would be added in order to insure compliance with the phosphorus limits. A new grit chamber would be installed prior to the treatment plant. Sludge treatment capability would be expanded, but would largely remain the same process. The budget cost for this project is estimated at $3.5 to $4.0 million based on current construction cost.

The plant and pumping station work will best be combined into one project with a single contractor. This part of the work must start with a detailed engineering report starting in the spring of 2022. Plans preparation would follow in 2023. Construction would begin early in 2024 and be complete by the third quarter of 2025. The completion of this work would occur in advance of the final compliance deadline of Dec. 31, 2025.

APPENDIX

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APPENDIX A

SEWER USE ORDINANCE

City of Watertown

Sewer Use Ordinance

&

Enforcement Response Guide

ORDINANCE NO. 2015-_____

AN ORDINANCE TO REPEAL THE EXISTING SEWER USE ORDINANCE AND ADOPT WASTEWATER REGULATIONS

BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF WATERTOWN, TENNESSEE, THAT:

Section 1. Ordinance Chapters 5 and 7 are hereby replaced by the following Wastewater Regulations.

CHAPTER 5

GENERAL WASTEWATER REGULATIONS

SECTION

18-1-501. Purpose and policy. This chapter sets forth uniform requirements for users of the City of Watertown, Tennessee, wastewater treatment system and enables the city to comply with the Federal Clean Water Act and the state Water Quality Control Act and rules adopted pursuant to these acts. The objectives of this chapter are:

(1) To protect public health,

(2) To prevent the introduction of pollutants into the municipal wastewater treatment facility, which will interfere with the system operation;

(3) To prevent the introduction of pollutants into the wastewater treatment facility that will pass through the facility, inadequately treated, into the receiving waters, or otherwise be incompatible with the treatment facility;

(4) To protect facility personnel who may be affected by wastewater and sludge in the course of their employment and the general public;

(5) To promote reuse and recycling of industrial wastewater and sludge from the facility;

(6) To provide for fees for the equitable distribution of the cost of operation, maintenance, and improvement of the facility; and

(7) To enable the city to comply with its National Pollution Discharge Elimination System (NPDES) Permit conditions, sludge and bio-solid use and disposal requirement, and any other Federal or State industrial pretreatment rules to which the facility is subject.

In meeting these objectives, this chapter provides that all persons in the service area of the City of Watertown must have adequate wastewater treatment either in the form of a connection to the municipal wastewater treatment system or, where the system is not available, an appropriate private disposal system.

This chapter shall apply to all users inside or outside the city who are, by implied contract or written agreement with the City, dischargers of applicable wastewater to the wastewater treatment facility. Chapter 2 provides for the issuance of permits to system users, for monitoring, compliance, and enforcement activities; establishes administrative review procedures for industrial users or other users whose discharge can interfere with or cause violations to occur at the wastewater treatment facility. Chapter 2 details permitting requirements including the setting of fees for the full and equitable distribution of costs resulting from the operation, maintenance, and capital recovery of the wastewater treatment system and from other activities required by the enforcement and administrative program established herein.

18-1-502. Administrative. Except as otherwise provided herein, the Local Administrative Officer of the City shall administer, implement, and enforce the provisions of this chapter.

18-1-503. Definitions. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this chapter, shall have the meanings hereinafter designated:

(1) "Administrator": The Administrator or the United States Environmental Protection Agency.

(2) "Act or the Act": The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended and found in 33 U.S.C. § 1251, *et seq.*

(3) "Approval authority": The Tennessee Department of Environment and Conservation, Division of Water Resources.

(4) "Authorized or Duly Authorized Representative of Industrial User":

(a) If the user is a corporation:

(i) The President, Secretary, Treasurer, or Vice-President of the corporation in charge of a principal business function, or any person who performs similar policy or decision-making functions for the corporation; or

(ii) The Manager of one or more manufacturing, production, or operating facilities, provided the Manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can insure that the necessary systems are established or actions taken to gather complete and accurate information for individual wastewater discharge permit requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(b) If the user is a partnership or sole proprietorship: a general partner or proprietor, respectively.

(c) If the user is a Federal, State, or Local Governmental Agency: a Director or highest official appointed or designated to oversee the operation and performance of the activities of the governmental facility, or their designee.

(d) The individual described in paragraphs (a)-(c), above, may designate a duly authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the City.

(5) "Best Management Practice" or "BMPs" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Section 109 of this chapter. BMPs also include treatment requirement, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

(6) "Biochemical Oxygen Demand (BOD)." The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five days at 20 centigrade expressed in terms of weight and concentration (milligrams per liter (mg/l)).

(7) "Building sewer": A sewer conveying wastewater from the premises of a user to the publicly owned sewer collection system.

(8) "Categorical standards": The National Categorical Pretreatment Standards or Pretreatment Standard as found in 40 CFR Chapter I, Subchapter N, Parts 405-471.

(9) "Categorical Pretreatment Standards" are pollution control regulations for specific industries. The standards regulate the level of pollutants in the wastes discharged into the sewage system from an industrial process. Each categorical standard covers one industry category and assigns specific end-of-process limits for the process waste streams covered by that specific category.

(10) "City": The Board of Mayor and Aldermen of the City of Watertown, Tennessee.

(11) "Commissioner": The Commissioner of Environment and Conservation or the Commissioner's duly authorized representative and, in the event of the Commissioner's absence or a vacancy in the office of Commissioner, the Deputy Commissioner.

(12) "Compatible pollutant": Shall mean BOD, suspended solids, pH, fecal coliform bacteria, and such additional pollutants as are now or may in the future be specified and controlled in the city's NPDES permit for its wastewater treatment works where sewer works have been designed and used to reduce or remove such pollutants.

(13) "Composite sample": A sample composed of two or more discrete samples. The aggregate sample will reflect the average water quality covering the compositing or sample period.

(14) "Control authority": The term "control authority" shall refer to the "approval authority," defined herein above; or the local hearing authority if the city has an approved Pretreatment Program under the provisions of 40 CFR 403.11.

(15) "Cooling water": The water discharge from any use such as air conditioning, cooling, or refrigeration, or to which the only pollutant added is heat.

(16) "Customer": Any individual, partnership, corporation, association, or group who receives sewer service from the city under either an express or implied contract requiring payment to the city for such service.

(17) "Daily Maximum": The arithmetic average of all effluent samples for a pollutant (except pH) collected during a calendar day. The daily maximum for pH is the highest value tested during a 24 hour calendar day.

(18) "Daily Maximum Limit": The maximum allowable discharge limit of a pollutant during a calendar day. Where the limit is expressed in units of mass, the limit is the

maximum amount of total mass of the pollutant that can be discharged during the calendar day. Where the limit is expressed in concentration, it is the arithmetic average of all concentration measurements taken during the calendar day.

(19) "Direct discharge": The discharge of treated or untreated wastewater directly to the waters of the State of Tennessee.

(20) "Domestic wastewater": Wastewater that is generated by a single family, apartment or other dwelling unit or dwelling unit equivalent or commercial establishment containing sanitary facilities for the disposal of wastewater and used for residential or commercial purposes only.

(21) "Environmental Protection Agency (EPA)": The U. S. Environmental Protection Agency, or where appropriate, the term may also be used as a designation for the administrator or other duly authorized official of the said agency.

(22) "Garbage": Solid wastes generated from any domestic, commercial or industrial source.

(23) "Grab sample": A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and is collected over a period of time not to exceed fifteen (15) minutes. Grab sampling procedure: Where composite sampling is not an appropriate sampling technique, a grab sample(s) shall be taken to obtain influent and effluent operational data. Collection of influent grab samples should precede collection of effluent samples by approximately one detention period. The detention period is to be based on a 24-hour average daily flow value. The average daily flow used will be based upon the average of the daily flows during the same month of the previous year. Grab samples will be required, for example, where the parameters being evaluated are those, such as cyanide and phenol, which may not be held for any extended period because of biological, chemical or physical interactions which take place after sample collection and affect the results.

(24) "Grease interceptor": An interceptor whose rated flow is 50 g.p.m. (gallons per minute) or less and is generally located inside the building.

(25) "Grease trap": An interceptor whose rated flow is 50 g.p.m. or more and is located outside the building.

(26) "Holding tank waste": Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.

(27) "Incompatible pollutant": Any pollutant which is not a "compatible pollutant" as defined in this section.

(28) "Indirect discharge": The introduction of pollutants into the WWF from any non-domestic source.

(29) "Industrial user": A source of indirect discharge which does not constitute a "discharge of pollutants" under regulations issued pursuant to Section 402, of the Act (33 U.S.C. §1342).

(30) "Industrial wastes": Any liquid, solid, or gaseous substance, or combination thereof, or form of energy including heat, resulting from any process of industry, manufacture, trade, food processing or preparation, or business or from the development of any natural resource.

(31) "Instantaneous limit": The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composited sample collected, independent of the industrial flow rate and the duration of the sampling event.

(32) "Interceptor": A device designed and installed to separate and retain for removal, by automatic or manual means, deleterious, hazardous or undesirable matter from normal wastes, while permitting normal sewage or waste to discharge into the drainage system by gravity.

(33) "Interference": A discharge that, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the WWF, its treatment processes or operations, or its sludge processes, use or disposal, or exceeds the design capacity of the treatment works or collection system.

(34) "Local administrative officer": The Chief Administrative Officer of the local hearing authority.

(35) "Local hearing authority": The Board of Mayor and Aldermen or such person or persons appointed by the Board to administer and enforce the provisions of this chapter and conduct hearings pursuant to Section 205.

(36) "National Categorical Pretreatment Standard or Pretreatment Standard": Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C.§ 1347) which applies to a specific category of industrial users.

(37) "North American Industrial Classification System (NAICS)": A system of industrial classification jointly agreed upon by Canada, Mexico and the United States. It replaces the Standard Industrial Classification (SIC) System.

(38) "New source":

(a) Any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the

publication of proposed Pretreatment Standards under section 307(c) of the Clean Water Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that:

(i) The building structure, facility or installation is constructed at a site at which no other source is located; or

(ii) The building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

(iii) The production or wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered.

(b) Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation meeting the criteria of parts (a)(ii) or (a)(iii) of this definition but otherwise alters, replaces, or adds to existing process or production equipment.

(c) Construction of a new source as defined under this paragraph has commenced if the owner or operator has:

(i) Begun, or caused to begin as part of a continuous onsite construction program:

(A) Any placement, assembly, or installation of facilities or equipment; or

(B) Significant site preparation work including cleaning, excavation or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

(ii) Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph

(39) "National Pollution Discharge Elimination System (NPDES)": The program for issuing, conditioning, and denying permits for the discharge of pollutants from point sources into navigable waters, the contiguous zone, and the oceans pursuant to Section 402 of the Clean Water Act as amended.

(40) "Pass-through": A discharge which exits the Wastewater Facility (WWF) into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of

the WWF's NPDES permit including an increase in the magnitude or duration of a violation.

(41) "Person": Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents, or assigns. The masculine gender shall include the feminine and the singular shall include the plural where indicated by the context.

(42) "pH": The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.

(43) "Pollution": The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(44) "Pollutant": Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical waste, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste and certain characteristics of wastewater (e.g., pH, temperature, turbidity, color, BOD, COD, toxicity, or odor discharge into water).

(45) "Pretreatment or treatment": The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical, biological processes, or process changes or other means, except through dilution as prohibited by 40 CFR Section 403.6(d).

(46) "Pretreatment coordinator": The person designated by the Local Administrative Officer or his authorized representative to supervise the operation of the pretreatment program.

(47) "Pretreatment requirements": Any substantive or procedural requirement related to pretreatment other than a national pretreatment standard imposed on an industrial user.

(48) "Pretreatment standards or standards": A prohibited discharge standard, categorical pretreatment standard and local limit.

(49) "Publicly Owned Treatment Works (POTW)": A treatment works as defined by Section 212 of the Act, (33 U.S.C.§ 1292) which is owned in this instance by the municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage

or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. See WWF, Wastewater Facility, found in definition number 63, below.

(50) "Shall" is mandatory; "May" is permissive.

(51) "Significant industrial user": The term significant industrial user means:
(a) All industrial users subject to categorical pretreatment standards under 40 CFR 403.6 and 40 CFR chapter I, subchapter N; and

(b) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the WWF (excluding sanitary, non-contact cooling and boiler blow down wastewater); contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the control authority as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the WWF's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

(52) "Significant noncompliance": Per 0400-40-14.
(a) Chronic violations of wastewater discharge limits, defined here as those in which Sixty-Six Percent (66%) or more of all of the measurements taken for each parameter taken during a six-month period exceed (by any magnitude) a numeric pretreatment standard or requirement, including instantaneous limit.

(b) Technical Review Criteria (TRC) violations, defined here as those in which Thirty-Three Percent (33%) or more of all of the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the numeric pretreatment standard or requirement, including instantaneous limits multiplied by the applicable TRC (TRC=1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH). TRC calculations for pH are not required.

(c) Any other violation of a pretreatment standard or requirement (daily maximum or longer-term average, instantaneous limit, or narrative standard) that the WWF determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of WWF personnel or the general public).

(d) Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the WWF's exercise of its emergency authority under Section 205(1)(b)(i)(D), Emergency Order, to halt or prevent such a discharge.

(e) Failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance.

(f) Failure to provide, within 30 days after their due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules.

(g) Failure to accurately report noncompliance.

(h) Any other violation or group of violations, which may include a violation of Best Management Practices, which the WWF determines will adversely affect the operation or implementation of the local pretreatment program.

(i) Continuously monitored pH violations that exceed limits for a time period greater than Fifty (50) minutes or exceed limits by more than 0.5 s.u. more than eight (8) times in four (4) hours.

(53) "Slug": Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge, which has a reasonable potential to cause interference or pass-through, or in any other way violate the WWF's regulations, local limits, or permit conditions.

(54) "Standard Industrial Classification (SIC)": A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.

(55) "State": The State of Tennessee.

(56) "Storm sewer or storm drain": A pipe or conduit which carries storm and surface waters and drainage, but excludes sewage and industrial wastes. It may, however, carry cooling waters and unpolluted waters, upon approval of the Superintendent.

(57) "Storm water": Any flow occurring during or following any form of natural precipitation and resulting therefrom.

(58) "Superintendent": The Local Administrative Officer or person designated by him to supervise the operation of the publicly owned treatment works and who is charged with certain duties and responsibilities by this chapter, or his duly authorized representative.

(59) "Suspended solids": The total suspended matter that floats on the surface of, or is suspended in, water, wastewater, or other liquids and that is removable by laboratory filtering.

(60) "Toxic pollutant": Any pollutant or combination of pollutants listed as toxic in regulations published by the Administrator of the Environmental Protection Agency under

the provision of CWA 307(a) or other Acts.

(61) "Twenty-four (24) our flow proportional composite sample": A sample consisting of several sample portions collected during a 24-hour period in which the portions of a sample are proportioned to the flow and combined to form a representative sample.

(62) "User": The owner, tenant or occupant of any lot or parcel of land connected to a sanitary sewer, or for which a sanitary sewer line is available if a municipality levies a sewer charge on the basis of such availability, Tennessee Code Annotated, § 68-221-201.

(63) "Wastewater": The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, whether treated or untreated, which is contributed into or permitted to enter the WWF.

(64) "Wastewater Facility": Any or all of the following: the collection/transmission system, treatment plant, and the reuse or disposal system, which is owned by any person. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial waste of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a WWF treatment plant. The term also means the municipality as defined in section 502(4) of the Federal Clean Water Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. WWF was formally known as a POTW, or Publicly Owned Treatment Works.

(65) "Waters of the State": All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and other bodies of accumulation of water, surface or underground, natural or artificial, public or private, that are contained within, flow through, or border upon the state or any portion thereof.

(66) "0400-40-14": Chapter 0400-40-14 of the Rules and Regulations of the State of Tennessee, Pretreatment Requirements.

18-1-504. Proper waste disposal required.

(1) It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the service area of the city, any human or animal excrement, garbage, or other objectionable waste.

(2) It shall be unlawful to discharge to any waters of the state within the service area of the city any sewage or other polluted waters, except where suitable treatment has been provided in accordance with provisions of this ordinance or city or state regulations.

(3) Except as herein provided, it shall be unlawful to construct or maintain any privy, privy vault, cesspool, or other facility intended or used for the disposal of sewage.

(4) Except as provided in (6) below, the owner of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes situated within the service area in which there is now located or may in the future be located a public sanitary sewer, is hereby required at his expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper private or public sewer in accordance with the provisions of this chapter. Where public sewer is available property owners shall within sixty (60) days after date of official notice to do so, connect to the public sewer. Service is considered "available" when a public sewer main is located in an easement, right-of-way, road or public access way which abuts the property.

(5) Where a public sanitary sewer is not available under the provisions of (4) above, the building sewer shall be connected to a private sewage disposal system complying with the provisions of Section 105 of this Ordinance.

(6) The owner of a manufacturing facility may discharge wastewater to the waters of the State provided that he obtains an NPDES permit and meets all requirements of the Federal Clean Water Act, the NPDES permit, and any other applicable local, state, or federal statutes and regulations.

18-1-505. Private domestic wastewater disposal.

(1) Availability.

(a) Where a public sanitary sewer is not available under the provisions of Section 104(4), the building sewer shall be connected, until the public sewer is available, to a private wastewater disposal system complying with the provisions of the applicable local and state regulations.

(b) The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times, at no expense to the city. When it becomes necessary to clean septic tanks, the sludge may be disposed of only according to applicable federal and state regulations.

(c) Where a public sewer becomes available, the building sewer shall be connected to said sewer within sixty (60) days after date of official notice from the city to do so.

(2) Requirements.

(a) The type, capacity, location and layout of a private sewerage disposal system shall comply with all local or state regulations. Before commencement of construction of a private sewerage disposal system, the owner shall first obtain a written approval from the County Health Department. The application for such approval shall be made on a form furnished by the County Health Department which the applicant shall supplement with any plans or specifications that the Department has

requested.

(b) Approval for a private sewerage disposal system shall not become effective until the installation is completed to the satisfaction of the local and state authorities, who shall be allowed to inspect the work at any stage of construction.

(c) The type, capacity, location, and layout of a private sewage disposal system shall comply with all recommendations of the Tennessee Department of Environment and Conservation, and the County Health Department. No septic tank or cesspool shall be permitted to discharge to waters of Tennessee.

(d) No statement contained in this chapter shall be construed to interfere with any additional or future requirements that may be imposed by the city and the county health department.

18-1-506. Connection to public sewers.

(1) Application for Service.

(a) There shall be two (2) classifications of service: (1) residential and (2) service to commercial, industrial and other nonresidential establishments. In either case, the owner or his agent shall make application for connection on a special form furnished by the City. Applicants for service to commercial and industrial establishments shall be required to furnish information about all waste producing activities, wastewater characteristics and constituents. The application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the superintendent. Details regarding commercial and industrial permits include but are not limited to those required by this ordinance. Service Connection Fees for establishing new sewer service are paid to the city. Industrial User Discharge Permit Fees may also apply. The receipt by the city of a prospective customer's application for connection shall not obligate the city to render the connection. If the service applied for cannot be supplied in accordance with this chapter and the city's rules and regulations and general practice, or state and federal requirement, the connection charge will be refunded in full, and there shall be no liability of the city to the applicant for such service.

(b) Users shall notify the city of any proposed new introduction of wastewater constituents or any proposed change in the volume or character of the wastewater being discharged to the system a minimum of sixty (60) days prior to the change. The City may deny or limit this new introduction or change based upon the information submitted in the notification.

(2) Prohibited connections. No person shall make connections of roof downspouts, sump pumps, basement wall seepage or floor seepage, exterior foundation

drains, area way drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer. Any such connections which already exist on the effective date of this ordinance shall be completely and permanently disconnected within sixty (60) days of the effective day of this ordinance. The owners of any building sewer having such connections, leaks or defects shall bear all of the costs incidental to removal of such sources. Pipes, sumps and pumps for such sources of ground water shall be separate from the sanitary sewer.

(3) Physical connection to public sewer.

(a) No person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof. The city shall make all connections to the public sewer upon the property owner first submitting a connection application to the City.

The connection application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the superintendent. A service connection fee shall be paid to the city at the time the application is filed.

The applicant is responsible for excavation and installation of the building sewer which is located on private property. The city will inspect the installation prior to backfilling and make the connection to the public sewer.

(b) All costs and expenses incident to the installation, connection, and inspection of the building sewer shall be borne by the owner including all service and connection fees. The owner shall indemnify the city from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

(c) A separate and independent building sewer shall be provided for every building; except where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, courtyard, or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer. Where property is subdivided and buildings use a common building sewer are now located on separate properties, the building sewers must be separated within 60 days.

(d) Old building sewers may be used in connection with new buildings only when they are found, on examination and tested by the superintendent to meet all requirements of this chapter. All others may be sealed to the specifications of the Superintendent.

(e) Building sewers shall conform to the following requirements:

(i) The minimum size of a building sewer shall be as follows: Conventional sewer system - Four inches (4").

(ii) The minimum depth of a building sewer shall be eighteen

inches (18").

(iii) Building sewers shall be laid on the following grades: Four inch (4") sewers - 1/8 inch per foot.
Larger building sewers shall be laid on a grade that will produce a velocity when flowing full of at least 2.0 feet per second.

(iv) Building sewers shall be installed in uniform alignment at uniform slopes.

(v) Building sewers shall be constructed only of ductile iron pipe class 50 or above or polyvinyl chloride pipe SDR-35 for gravity sewers and SDR-21 for pressure sewers. Joints shall be rubber or neoprene "o" ring compression joints. No other joints shall be acceptable.

(vi) Cleanouts shall be provided to allow cleaning in the direction of flow. A cleanout shall be located five (5) feet outside of the building, as it crosses the property line and one at each change of direction of the building sewer which is greater than 45 degrees. Additional cleanouts shall be placed not more than seventy-five (75) feet apart in horizontal building sewers of six (6) inch nominal diameter and not more than one hundred (100) feet apart for larger pipes. Typical sewer cleanouts (6-inch or 4-inch) shall consist of a cleanout wye (no tees) along with a 45° bend. The 6-inch or 4-inch plug or cap shall be contained in a cleanout box. The box shall be a minimum of 16" x 10" x 12" and 6" extensions made of injection molded plastic meeting ASTM D-2853-70, Class 1212 or approved equal. The cover shall be green with "SEWER" imprinted on the top. The box and lid shall have UV stabilizer additive to assure resistance to material degradation from ultraviolet light. A 2.5" diameter, 16-gauge steel reflector with dichromate coating shall be applied to the underside of the plastic cover for electromagnetic detection. If the box must be located in a roadway or roadway shoulder subject to traffic, then the box shall be constructed of cast iron. Cleanouts shall not be smaller than four (4) inches. Blockages on the property owner's side of the property line cleanout are the responsibility of the property owner.

(vii) Connections of building sewers to the public sewer system shall be made only by the city and shall be made at the appropriate existing wyes or tee branch using heavy reinforced rubber coupling with stainless steel clamps as manufactured by Tex-Vit or approved equal. Where existing wye or tee branches are not available, connections of building services shall be made by either removing a length of pipe and replacing it with a wye or tee fitting. Approved type commercial couplings shall be used in making transition from

one type material to another. Couplings for transitions shall be a heavy reinforced rubber coupling with stainless steel clamps as manufactured by Tex-Vit or approved equal. Bedding must support pipe to prevent damage or sagging. All such connections shall be made gastight and watertight.

(viii) In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved pump system according to Section 107 and discharged to the building sewer at the expense of the owner.

(ix) The methods to be used in excavating, placing of pipe, jointing, testing, backfilling the trench, or other activities in the construction of a building sewer which have not been described above shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the city or to the procedures set forth in appropriate specifications by the ASTM. Any deviation from the prescribed procedures and materials must be approved by the superintendent before installation.

(x) An installed building sewer shall be gastight and watertight.

(f) All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City.

(g) No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, basement drains, sump pumps, or other sources of surface runoff or groundwater to a building directly or indirectly to a public sanitary sewer.

(h) Inspection of connections:

(i) The sewer connection and all building sewers from the building to the public sewer main line shall be inspected before the underground portion is covered, by the superintendent or his authorized representative.

(ii) The applicant for discharge shall notify the Superintendent when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the Superintendent or his representative.

(4) Maintenance of building sewers. Each individual property owner shall be entirely responsible for the construction, maintenance, repair or replacement of the building sewer as

deemed necessary by the superintendent to meet specifications of the city. Owners failing to maintain or repair building sewers or who allow storm water or ground water to enter the sanitary sewer may face enforcement action by the superintendent up to and including discontinuation of water and sewer service.

(5) Sewer extensions. All expansion or extension of the public sewer constructed by property owners or developers must follow policies and procedures developed by the city. In the absence of policies and procedures the expansion or extension of the public sewer must be approved in writing by the superintendent or manager of the wastewater collection system. All plans and construction must follow the latest edition of Tennessee Design Criteria for Sewerage Works, located at http://www.tennessee.gov/environment/article/wr-wq-water-quality-reports-publications. Contractors must provide the Superintendent or Manager with as-built drawing and documentation that all mandrel, pressure and vacuum tests as specified in design criteria were acceptable prior to use of the lines. Contractor's one year warranty period begins with occupancy or first permanent use of the lines. Contractors are responsible for all maintenance and repairs during the warranty period and final inspections as specified by the superintendent or manager. The superintendent or manager must give written approval to the contractor to acknowledge transfer of ownership to the city. Failure to construct or repair lines to acceptable standards could result in denial or discontinuation of sewer service.

18-1-507. Septic tank effluent pump or grinder pump wastewater systems. When connection of building sewers to the public sewer by gravity flow lines is impossible due to elevation differences or other encumbrances, Septic Tank Effluent Pump (STEP) or Grinder Pump (GP) systems may be installed subject to the regulations of the City.

(1) Equipment requirements.

(a) Septic tanks shall be of water tight construction and must be approved by the City.

(b) Pumps must be approved by the city and shall be maintained by the home or business owner.

(2) Installation requirements. Location of tanks, pumps, and effluent lines shall be subject to the approval of the city. Installation shall follow design criteria for STEP and GP systems as provided by the Superintendent.

(3) Costs. STEP and GP equipment for new construction shall be purchased and installed at the developer's, homeowner's, or business owner's expense according to the specification of the City and connection will be made to the city sewer only after inspection and approval of the City.

(4) Use of STEP and GP systems.

(a) Home or business owners shall follow the STEP and GP users' guide provided by the Superintendent.

(b) Home or business owners shall provide an electrical connection that

meets specifications and shall provide electrical power.

(c) Home or business owners shall be responsible for maintenance of drain lines from the building to the STEP and GP tank, STEP and GP equipment.

(d) Prohibited uses of the STEP and GP system:
- (i) Connection of roof guttering, sump pumps or surface drains.
- (ii) Disposal of toxic household substances.
- (iii) Use of garbage grinders or disposers.
- (iv) Discharge of pet hair, lint, or home vacuum water.
- (v) Discharge of fats, grease, and oil.

(5) Tank cleaning. Solids removal from the septic tank shall be the responsibility of the home or business owner.

18-1-508. Regulation of holding tank waste disposal or trucked in waste.

(1) No person, firm, association or corporation shall haul in or truck in to the WWF any type of domestic, commercial or industrial waste unless such person, firm, association, or corporation obtains a written approval from the city to perform such acts or services.

Any person, firm, association, or corporation desiring a permit to perform such services shall file an application on the prescribed form. Upon any such application, said permit shall be issued by the superintendent when the conditions of this chapter have been met and providing the superintendent is satisfied the applicant has adequate and proper equipment to perform the services contemplated in a safe and competent manner.

(2) Fees. For each permit issued under the provisions of this chapter the applicant shall agree in writing by the provisions of this section and pay an annual service charge to the city to be set as specified in Section 207 of this ordinance. Any such permit granted shall be for a specified period of time, and shall continue in full force and effect from the time issued until the expiration date, unless sooner revoked, and shall be nontransferable. The number of the permit granted hereunder shall be plainly painted in 3-inch permanent letters on each side of each motor vehicle used in the conduct of the business permitted hereunder.

(3) Designated disposal locations. The superintendent shall designate approved locations for the emptying and cleansing of all equipment used in the performance of the services rendered under the permit herein provided for, and it shall be a violation hereof for any person, firm, association or corporation to empty or clean such equipment at any place other than a place so designated. The superintendent may refuse to accept any truckload of waste at his discretion where it appears that the waste could interfere with the operation of the WWF.

(4) Revocation of permit. Failure to comply with all the provisions of the permit or this chapter shall be sufficient cause for the revocation of such permit by the superintendent. The

possession within the service area by any person of any motor vehicle equipped with a body type and accessories of a nature and design capable of serving a septic tank of wastewater or excreta disposal system cleaning unit shall be prima facie evidence that such person is engaged in the business of cleaning, draining, or flushing septic tanks or other wastewater or excreta disposal systems within the service area of the City of Watertown.

(5) Trucked in waste. This part includes waste from trucks, railcars, barges, etc., or temporally pumped waste, all of which are prohibited without a permit issued by the superintendent. This approval may require testing, flow monitoring and record keeping.

18-1-509. Discharge regulations.

(1) General discharge prohibitions. No user shall contribute or cause to be contributed, directly or indirectly anything which will pass through or interfere with the operation and performance of the WWF. These general prohibitions apply to all such users of a WWF whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements. Violations of these general and specific prohibitions or the provisions of this section may result in the issuance of an industrial pretreatment permit, surcharges, discontinuance of water and/or sewer service and other fines and provisions of Section 110 or 205. A user may not contribute the following substances to any WWF:

(a) Any liquids, solids, or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the WWF or to the operation of the WWF. Prohibited flammable materials including, but not limited to, waste streams with a closed cup flash point of less than 140^0 F or 60^0 C using the test methods specified in 40 CFR 261.21. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromate, carbides, hydrides and sulfides and any other substances which the city, the state or EPA has notified the user is a fire hazard or a hazard to the system.

(b) Any wastewater having a pH less than 5.5 or higher than 9.5 or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, and/or personnel of the WWF.

(c) Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities including, but not limited to: grease, garbage with particles greater than one-half inch (1/2") in any dimension, waste from animal slaughter, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, mud, or glass grinding or polishing wastes.

(d) Any pollutants, including oxygen demanding pollutants (BOD, etc.) released at a flow rate and/or pollutant concentration which will cause interference to the WWF.

(e) Any wastewater having a temperature which will inhibit biological activity in the WWF treatment plant resulting in interference, but in no case wastewater with a temperature at the introduction into the WWF which exceeds 40°C (104° F) unless approved by the State of Tennessee.

(f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through.

(g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the WWF in a quantity that may cause acute worker health and safety problems.

(h) Any wastewater containing any toxic pollutants, chemical elements, or compounds in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans, including wastewater plant and collection system operators, or animals, create a toxic effect in the receiving waters of the WWF, or to exceed the limitation set forth in a categorical pretreatment standard. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to Section 307(a) of the Act.

(i) Any trucked or hauled pollutants except at discharge points designated by the WWF.

(j) Any substance which may cause the WWF's effluent or any other product of the WWF such as residues, sludge, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the WWF cause the WWF to be in non-compliance with sludge use or disposal criteria, 40 CFR 503, guidelines, or regulations developed under Section 405 of the Act; any criteria, guidelines, or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or state criteria applicable to the sludge management method being used.

(k) Any substances which will cause the WWF to violate its NPDES Permit or the receiving water quality standards.

(l) Any wastewater causing discoloration of the wastewater treatment plant effluent to the extent that the receiving stream water quality requirements would be violated, such as, but not limited to, dye wastes and vegetable tanning solutions.

(m) Any waters or wastes causing an unusual volume of flow or concentration of waste constituting "slug" as defined herein.

(n) Any waters containing any radioactive wastes or isotopes of such half-life

or concentration as may exceed limits established by the Superintendent in compliance with applicable State or Federal regulations.

(o) Any wastewater which causes a hazard to human life or creates a public nuisance.

(p) Any waters or wastes containing animal or vegetable fats, wax, grease, or oil, whether emulsified or not, which cause accumulations of solidified fat in pipes, lift stations and pumping equipment, or interfere at the treatment plant.

(q) Detergents, surfactants, surface-acting agents or other substances which may cause excessive foaming at the WWF or pass through of foam.

(r) Wastewater causing, alone or in conjunction with other sources, the WWF to fail toxicity tests.

(s) Any stormwater, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer. Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the superintendent and the Tennessee Department of Environment and Conservation. Industrial cooling water or unpolluted process waters may be discharged on approval of the superintendent and the Tennessee Department of Environment and Conservation, to a storm sewer or natural outlet.

(2) Local Limits. In addition to the general and specific prohibitions listed in this section, users permitted according to Chapter 2 may be subject to numeric and best management practices as additional restrictions to their wastewater discharge in order to protect the WWF from interference or protect the receiving waters from pass through contamination.

(3) Restrictions on wastewater strength. No person or user shall discharge wastewater which exceeds the set of standards provided in "Table A - Plant Protection Criteria", unless specifically allowed by their discharge permit according to Chapter 2 of this ordinance. Dilution of any wastewater discharge for the purpose of satisfying these requirements shall be considered in violation of this chapter.

"Table A-Plant Protection Criteria"

Parameter	Maximum Concentration (ug/l)
Arsenic	
Benzene	13.04
Cadmium	11.73
Carbon Tetrachloride	1500
Chloroform	223.68
Chromium III	
Chromium VI	68.75

Copper	258.41
Cyanide	13.68
Ethybenzene	40
Lead	100
Mercury	0.21
Methylene chloride	96.15
Molybdenum	
Naphthalene	12.5
Nickel	250
Phenol	454.55
Selenium	
Silver	29.41
Tetrachloroethylene	138.89
Toluene	214.29
Total Phthalate	169.74
Trichlorethlene	100
1,1,1-Trichloroethane	250
1,2 Transdichloroethylene	7.5
Zinc	290

(4) Fats, oils and grease traps and interceptors.

(a) Fat, Oil, and Grease (FOG), waste food, and sand interceptors. FOG, waste food and sand interceptors shall be installed when, in the opinion of the superintendent, they are necessary for the proper handling of liquid wastes containing fats, oils, and grease, any flammable wastes, ground food waste, sand, soil, and solids, or other harmful ingredients in excessive amount which impact the wastewater collection system. Such interceptors shall not be required for single family residences, but may be required on multiple family residences. All interceptors shall be of a type and capacity approved by the superintendent, and shall be located as to be readily and easily accessible for cleaning and inspection.

(b) Fat, oil, grease, and food waste.

(i) New construction and renovation. Upon construction or renovation, all restaurants, cafeterias, hotels, motels, hospitals, nursing homes, schools, grocery stores, prisons, jails, churches, camps, caterers, manufacturing plants and any other sewer users who discharge applicable waste shall submit a FOG and food waste control plan that will effectively control the discharge of FOG and food waste.

(ii) Existing structures. All existing restaurants, cafeterias, hotels, motels, hospitals, nursing homes, schools, grocery stores,

prisons, jails, churches, camps, caterers, manufacturing plants and any other sewer users who discharge applicable waste shall be required to submit a plan for control of FOG and food waste, if and when the superintendent determines that FOG and food waste are causing excessive loading, plugging, damage or potential problems to structures or equipment in the public sewer system.

(iii) Implementation of plan. After approval of the FOG plan by the Superintendent the sewer user must:

(A) Implement the plan within a reasonable amount of time;

(B) Service and maintain the equipment in order to prevent impact upon the sewer collection system and treatment facility. If in the opinion of the superintendent the user continues to impact the collection system and treatment plan, additional pretreatment may be required, including a requirement to meet numeric limits and have surcharges applied.

(c) Sand, soil, and oil interceptors. All car washes, truck washes, garages, service stations and other sources of sand, soil, and oil shall install effective sand, soil, and oil interceptors. These interceptors shall be sized to effectively remove sand, soil, and oil at the expected flow rates. The interceptors shall be cleaned on a regular basis to prevent impact upon the wastewater collection and treatment system. Owners whose interceptors are deemed to be ineffective by the superintendent may be asked to change the cleaning frequency or to increase the size of the interceptors. Owners or operators of washing facilities will prevent the inflow of rainwater into the sanitary sewers.

(d) Laundries. Commercial laundries shall be equipped with an interceptor with a wire basket or similar device, removable for cleaning, that prevents passage into the sewer system of solids 1/2 inch or larger in size such as strings, rags, buttons, or other solids detrimental to the system.

(e) Control equipment. The equipment of facilities installed to control FOG, food waste, sand and soil, must be designed in accordance with the Tennessee Department of Environment and Conservation engineering standards or applicable city guidelines. Underground equipment shall be tightly sealed to prevent inflow of rainwater and easily accessible to allow regular maintenance. Control equipment shall be maintained by the owner or operator of the facility so as to prevent a stoppage of the public sewer, and the accumulation of FOG in the lines, pump stations and treatment plant. If the city is required to clean out the public sewer lines as a result of a stoppage resulting from poorly maintained control equipment, the property owner shall be required to refund the labor, equipment, materials and overhead costs to the city. Nothing in this subsection shall be construed to prohibit

or restrict any other remedy the City has under this chapter, or State or Federal law. The City retains the right to inspect and approve installation of control equipment.

(f). Solvents Prohibited. The use of degreasing or line cleaning products containing petroleum based solvents is prohibited. The use of other products for the purpose of keeping FOG dissolved or suspended until it has traveled into the collection system of the city is prohibited.

(g) The Superintendent may use industrial wastewater discharge permits under 202 to regulate the discharge of fat, oil and grease.

18-1-510. Enforcement and abatement. Violators of these Wastewater Regulations may be cited to city court, general sessions court, chancery court, or other court of competent jurisdiction face fines, have sewer service terminated or the city may seek further remedies as needed to protect the collection system, treatment plant, receiving stream and public health including the issuance of discharge permits according to Chapter 2. Repeated or continuous violation of this ordinance is declared to be a public nuisance and may result in legal action against the property owner and/or occupant and the service line disconnected from sewer main. Upon notice by the superintendent that a violation has or is occurring, the user shall immediately take steps to stop or correct the violation. The city may take any or all the following remedies:

(1) Cite the user to City or General Sessions Court, where each day of violation shall constitute a separate offense.

(2) In an emergency situation where the Superintendent has determined that immediate action is needed to protect the public health, safety or welfare, a public water supply or the facilities of the sewerage system, the superintendent may discontinue water service or disconnect sewer service.

(3) File a lawsuit in Chancery Court or any other Court of competent jurisdiction seeking damages against the user, and further seeking an injunction prohibiting further violations by user.

(4) Seek further remedies as needed to protect the public health, safety or welfare, the public water supply or the facilities of the sewerage system.

CHAPTER 5A

INDUSTRIAL/COMMERCIAL WASTEWATER REGULATIONS

SECTION

18-2-508. Validity.

18-2-501. Industrial pretreatment. In order to comply with Federal Industrial Pretreatment Rules 40 CFR 403 and Tennessee Pretreatment Rules 0400-40-14 and to fulfill the Purpose and Policy of this ordinance the following regulations are adopted.

(1) User discharge restrictions. All system users must follow the General and Specific discharge regulations specified in Section 509 of this ordinance.

(2) Users wishing to discharge pollutants at higher concentrations than Table A Plant Protection Criteria of Section 509, or those dischargers who are classified as Significant Industrial Users will be required to meet the requirements of this Chapter. Users who discharge waste which falls under the criteria specified in this Chapter and who fail to or refuse to follow the provisions shall face termination of service and/or enforcement action specified in Section 205.

(3) Discharge regulation. Discharges to the sewer system shall be regulated through use of a permitting system. The permitting system may include any or all of the following activities: completion of survey/application forms, issuance of permits, oversight of users monitoring and permit compliance, use of compliance schedules, inspections of industrial processes, wastewater processing, and chemical storage, public notice of permit system changes and public notice of users found in significant noncompliance.

(4) Discharge Permits shall limit concentrations of discharge pollutants to those levels that are established as "Table B-Local Limits" or other applicable State and Federal pretreatment rules which may take effect after the passage of this ordinance.

"Table B – Local Limits"

Pollutant	Monthly Average* Maximum Concentration (mg/l)	Daily Maximum Concentration (mg/l)
Arsenic		
Benzene	0.137	0.274
Cadmium	0.1225	0.2451
Carbon Tetrachloride	16.303	32.606
Chloroform	2.407	4.814
Chromium III	108.670	217.340

Chromium VI	0.648	1.295
Copper	2.267	4.534
Cyanide	0.1238	0.2476
Ethybenzene	0.430	0.860
Lead	1.0630	2.1261
Mercury	0.0023	0.0046
Methylene chloride	1.020	2.041
Molybdenum		
Napthalene	0.111	0.222
Nickel	2.689	5.378
Phenol	3.805	7.610
Selenium		
Silver	0.315	0.629
Tetrachloroethylene	1.505	3.010
Toluene	2.3048	4.6097
Total Phthalate	1.4984	2.9968
Trichlorethlene	1.082	2.164
1,1,1-Trichoroethane	02.713	5.426
1,2 Transdichloroethylene	0.0765	0.1531
Zinc	2.006	4.012

*Based on 24-hour flow proportional composite samples unless specified otherwise.

Surcharge limits and maximum concentrations. Dischargers of high strength waste may be subject to surcharges based on the following surcharge limits. Maximum concentrations may also be established for some users.

(This section reserved for future use.)

"Table C-Surcharge and Maximum Limits"

Parameter	Surcharge Limit	Maximum Concentration
Total Kjeldahl Nitrogen (TKN)		
Oil & Grease		
MBAS		
BOD		
COD		
Suspended Solids		

(6) Protection of treatment plant influent. The pretreatment coordinator shall monitor

the treatment works influent for each parameter in Table A - Plant Protection Criteria. Industrial users shall be subject to reporting and monitoring requirements regarding these parameters as set forth in this chapter. In the event that the influent at the WWF reaches or exceeds the levels established by Table A or subsequent criteria calculated as a result of changes in pass through limits issued by the Tennessee Department of Environment and Conservation, the pretreatment coordinator shall initiate technical studies to determine the cause of the influent violation and shall recommend to the city the necessary remedial measures, including, but not limited to, recommending the establishment of new or revised local limits, best management practices, or other criteria used to protect the WWF. The pretreatment coordinator shall also recommend changes to any of these criteria in the event that: the WWF effluent standards are changed, there are changes in any applicable law or regulation affecting same, or changes are needed for more effective operation of the WWF.

(7) User inventory. The Superintendent will maintain an up-to-date inventory of users whose waste does or may fall into the requirements of this Chapter, and will notify the users of their status.

(8) Right to establish more restrictive criteria. No statement in this chapter is intended or may be construed to prohibit the pretreatment coordinator from establishing specific wastewater discharge criteria which are more restrictive when wastes are determined to be harmful or destructive to the facilities of the WWF or to create a public nuisance, or to cause the discharge of the WWF to violate effluent or stream quality standards, or to interfere with the use or handling of sludge, or to pass through the WWF resulting in a violation of the NPDES permit, or to exceed industrial pretreatment standards for discharge to municipal wastewater treatment systems as imposed or as may be imposed by the Tennessee Department of Environment and Conservation and/or the United States Environmental Protection Agency.

18-2-502. Discharge permits.

(1) Application for discharge of commercial or industrial wastewater. All users or prospective users which generate commercial or industrial wastewater shall make application to the superintendent for connection to the municipal wastewater treatment system. It may be determined through the application that a user needs a discharge permit according to the provisions of federal and state laws and regulations. Applications shall be required from all new dischargers as well as for any existing discharger desiring additional service or where there is a planned change in the industrial or wastewater treatment process. Connection to the city sewer or changes in the industrial process or wastewater treatment process shall not be made until the application is received and approved by the superintendent, the building sewer is installed in accordance with section 106 of this ordinance and an inspection has been performed by the superintendent or his representative.

The receipt by the City of a prospective customer's application for connection shall not obligate the city to render the connection. If the service applied for cannot be supplied in accordance with this chapter and the city's rules and regulations and general practice, the connection charge will be refunded in full, and there shall be no liability of the city to the applicant for such service.

(2) Industrial wastewater discharge permits.

(a) General requirements. All industrial users proposing to connect to or to contribute to the WWF shall apply for service and apply for a discharge permit before connecting to or contributing to the WWF. All existing industrial users connected to or contributing to the WWF may be required to apply for a permit within 180 days after the effective date of this chapter.

(b) Applications. Applications for wastewater discharge permits shall be required as follows:

(i) Users required by the superintendent to obtain a wastewater discharge permit shall complete and file with the pretreatment coordinator, an application on a prescribed form accompanied by the appropriate fee.

(ii) The application shall be in the prescribed form of the city and shall include, but not be limited to the following information: name, address, and SIC/NAICS number of applicant; wastewater volume; wastewater constituents and characteristic, including but not limited to those mentioned in Section 109 and 201 discharge variations -- daily, monthly, seasonal and 30 minute peaks; a description of all chemicals handled on the premises, each product produced by type, amount, process or processes and rate of production, type and amount of raw materials, number and type of employees, hours of operation, site plans, floor plans, mechanical and plumbing plans and details showing all sewers and appurtenances by size, location and elevation; a description of existing and proposed pretreatment and/or equalization facilities and any other information deemed necessary by the pretreatment coordinator.

(iii) Any user who elects or is required to construct new or additional facilities for pretreatment shall as part of the application for wastewater discharge permit submit plans, specifications and other pertinent information relative to the proposed construction to the pretreatment coordinator for approval. A wastewater discharge permit shall not be issued until such plans and specifications are approved. Approval of such plans and specifications shall in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the city under the provisions of this chapter.

(iv) If additional pretreatment and/or operations and maintenance will be required to meet the pretreatment standards, the

application shall include the shortest schedule by which the user will provide such additional pretreatment. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. For the purpose of this paragraph, "pretreatment standard," shall include either a national pretreatment standard or a pretreatment standard imposed by this chapter.

(v) The city will evaluate the data furnished by the user and may require additional information. After evaluation and acceptance of the data furnished, the city may issue a wastewater discharge permit subject to terms and conditions provided herein.

(vi) The receipt by the city of a prospective customer's application for wastewater discharge permit shall not obligate the city to render the wastewater collection and treatment service. If the service applied for cannot be supplied in accordance with this chapter or the city's rules and regulations and general practice, the application shall be rejected and there shall be no liability of the city to the applicant of such service.

(vii) The pretreatment coordinator will act only on applications containing all the information required in this section. Persons who have filed incomplete applications will be notified by the pretreatment coordinator that the application is deficient and the nature of such deficiency and will be given thirty (30) days to correct the deficiency. If the deficiency is not corrected within thirty (30) days or within such extended period as allowed by the local administrative officer, the local administrative officer shall deny the application and notify the applicant in writing of such action.

(viii) Applications shall be signed by the duly authorized representative.

(c) Permit conditions. Wastewater discharge permits shall be expressly subject to all provisions of this chapter and all other applicable regulations, user charges and fees established by the City.

(i) Permits shall contain the following:

(A) Statement of duration;

(B) Provisions of transfer;

(C) Effluent limits, including best management practices, based on applicable pretreatment standards in this Chapter, State Rules, categorical pretreatment standards, local, State, and Federal laws.

(D) Self-monitoring, sampling, reporting, notification, and record-keeping requirements. These requirements shall include an identification of pollutants (or best management practice) to be monitored, sampling location, sampling frequency, and sample type based on Federal, State, and local law;

(E) Statement of applicable civil and criminal penalties for violations of pretreatment standards and the requirements of any applicable compliance schedule. Such schedules shall not extend the compliance date beyond the applicable federal deadlines;

(F) Requirements to control slug discharges, if determined by the WWF to be necessary;

(G) Requirement to notify the WWF immediately if changes in the users processes affect the potential for a slug discharge.

(ii) Additionally, permits may contain the following:

(A) The unit charge or schedule of user charges and fees for the wastewater to be discharged to a community sewer;

(B) Requirements for installation and maintenance of inspection and sampling facilities;

(C) Compliance schedules;

(D) Requirements for submission of technical reports or discharge reports;

(E) Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the City, and affording city access thereto;

(F) Requirements for notification of the city sixty (60) days prior to implementing any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system, and of any changes in industrial processes that would affect wastewater quality or quantity;

(G) Prohibition of bypassing pretreatment or pretreatment equipment;

(H) Effluent mass loading restrictions;

(I) Other conditions as deemed appropriate by the city to ensure compliance with this chapter.

(d) Permit modification. The terms and conditions of the permit may be subject to modification by the pretreatment coordinator during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 60 days prior to the effective date of change. Except in the case where federal deadlines are shorter, in which case the federal rule must be followed. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

(e) Permit duration. Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The user shall apply for permit renewal a minimum of 180 days prior to the expiration of the user's existing permit.

(f) Permit transfer. Wastewater discharge permits are issued to a specific user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new owner, new user, different premises, or a new or changed operation without the written approval of the city. Any succeeding owner or user shall also comply with the terms and conditions of the existing permit. The permit holder must provide the new owner with a copy of the current permit.

(g) Revocation of permit. Any permit issued under the provisions of this chapter is subject to be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

(i) Violation of any terms or conditions of the wastewater discharge permit or other applicable federal, state, or local law or regulation.

(ii) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts.

(iii) A change in:

(A) Any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

(B) Strength, volume, or timing of discharges;

(C) Addition or change in process lines generating wastewater.

(iv) Intentional failure of a user to accurately report the discharge constituents and characteristics or to report significant changes in

plant operations or wastewater characteristics.

(3) Confidential information. All information and data on a user obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inspection shall be available to the public or any governmental agency without restriction unless the user specifically requests and is able to demonstrate to the satisfaction of the pretreatment coordinator that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets of the users.

When requested by the person furnishing the report, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available to governmental agencies for use; related to this chapter or the city's or user's NPDES permit. Provided, however, that such portions of a report shall be available for use by the state or any state agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information. However, when any request conflicts with the Tennessee Open Records provision, then the Open Records provision shall prevail.

Information accepted by the pretreatment coordinator as confidential shall not be transmitted to any governmental agency or to the general public by the pretreatment coordinator until and unless prior and adequate notification is given to the user.

18-2-503. Industrial user additional requirements.

(1) Monitoring facilities. The installation of a monitoring facility shall be required for all industrial users. A monitoring facility shall be a manhole or other suitable facility approved by the Pretreatment Coordinator.

When in the judgment of the Pretreatment Coordinator, there is a significant difference in wastewater constituents and characteristics produced by different operations of a single user, the Pretreatment Coordinator may require that separate monitoring facilities be installed for each separate source of discharge.

Monitoring facilities that are required to be installed shall be constructed and maintained at the user's expense. The purpose of the facility is to enable inspection, sampling and flow measurement of wastewater produced by a user. If sampling or metering equipment is also required by the pretreatment coordinator, it shall be provided and installed at the user's expense.

The monitoring facility will normally be required to be located on the user's premises outside of the building. The Pretreatment Coordinator may, however, when such a location would be impractical or cause undue hardship on the user, allow the facility to be constructed in the public street right-of-way with the approval of the public agency having jurisdiction of that right-of-way and located so that it will not be obstructed by landscaping or parked vehicles.

There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expenses of the user.

(2) Sample methods. All samples collected and analyzed pursuant to this regulation

shall be conducted using protocols (including appropriate preservation) specified in the current edition of 40 CFR 136 and appropriate EPA guidance. Multiple grab samples collected during a 24 hour period may be composited prior to the analysis as follows: For cyanide, total phenol, and sulfide the samples may be composited in the laboratory or in the field; for volatile organics and oil & grease the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the control authority, as appropriate.

(3) Representative sampling and housekeeping. All wastewater samples must be representative of the User's discharge. Wastewater monitoring and flow measuring facilities shall be properly operated, kept clean, and in good working order at all times. The failure of the User to keep its monitoring facilities in good working order shall not be grounds for the User to claim that sample results are unrepresentative of its discharge.

(4) Proper operation and maintenance. The user shall at all times properly operate and maintain the equipment and facilities associated with spill control, wastewater collection, treatment, sampling and discharge. Proper operation and maintenance includes adequate process control as well as adequate testing and monitoring quality assurance.

(5) Inspection and sampling. The city may inspect the facilities of any user to ascertain whether the purpose of this chapter is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the city or its representative ready access at all reasonable times to all parts of the premises for the purpose of inspection, sampling, records examination and copying or in the performance of any of its duties. The city, approval authority and EPA shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. The city will utilize qualified city personnel or a private laboratory to conduct compliance monitoring. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from the city, approval authority and EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibility.

(6) Safety. While performing the necessary work on private properties, the pretreatment coordinator or duly authorized employees of the city shall observe all safety rules applicable to the premises established by the company and the company shall be held harmless for injury or death to the city employees and the city shall indemnify the company against loss or damage to its property by city employees and against liability claims and demands for personal injury or property damage asserted against the company and growing out of the monitoring and sampling operation, except as such may be caused by negligence or failure of the company to maintain safe conditions.

(7) New sources. New sources of discharges to the WWF shall have in full operation all pollution control equipment at start-up of the industrial process and be in full compliance of effluent standards within 90 days of start-up of the industrial process.

(8) Slug discharge evaluations. Evaluations will be conducted of each significant industrial user according to the state and federal regulations. Where it is determined that a slug

discharge control plan is needed, the user shall prepare that plan according to the appropriate regulatory guidance

(9) Accidental discharges or slug discharges.

(a) Protection from accidental or slug discharge. All industrial users shall provide such facilities and institute such procedures as are reasonably necessary to prevent or minimize the potential for accidental or slug discharge into the WWF of waste regulated by this chapter from liquid or raw material storage areas, from truck and rail car loading and unloading areas, from in-plant transfer or processing and materials handling areas, and from diked areas or holding ponds of any waste regulated by this chapter. Detailed plans showing the facilities and operating procedures shall be submitted to the pretreatment coordinator before the facility is constructed.

The review and approval of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility to provide the protection necessary to meet the requirements of this chapter.

(b) Notification of accidental discharge or slug discharge. Any person causing or suffering from any accidental discharge or slug discharge shall immediately notify the pretreatment coordinator in person, or by the telephone to enable countermeasures to be taken by the pretreatment coordinator to minimize damage to the WWF, the health and welfare of the public, and the environment.

This notification shall be followed, within five (5) days of the date of occurrence, by a detailed written statement describing the cause of the accidental discharge and the measures being taken to prevent future occurrence.

Such notification shall not relieve the user of liability for any expense, loss, or damage to the WWF, fish kills, or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed by this chapter or state or federal law.

(c) Notice to employees. A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall ensure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

18-2-504. Reporting requirements. Users, whether permitted or non-permitted may be required to submit reports detailing the nature and characteristics of their discharges according to the following subsections. Failure to make a requested report in the specified time is a violation subject to enforcement actions under Section 205.

(1) Baseline monitoring report.

(a) Within either one hundred eighty (180) days after the effective date of a categorical pretreatment standard, or the final administrative decision on a category

determination under Tennessee Rule 0400-40-14, whichever is later, existing categorical industrial users currently discharging to or scheduled to discharge to the WWF shall submit to the superintendent a report which contains the information listed in paragraph B, below. At least ninety (90) days prior to commencement of their discharge, New Sources, and sources that become categorical industrial users subsequent to the promulgation of an applicable categorical Standard, shall submit to the superintendent a report which contains the information listed in paragraph (b), below. A new source shall report the method of pretreatment it intends to use to meet applicable categorical standards. A new source also shall give estimates of its anticipated flow and quantity of pollutants to be discharged.

(b) Users described above shall submit the information set forth below.

(i) Identifying Information. The user name, address of the facility including the name of operators and owners.

(ii) Permit Information. A listing of any environmental control permits held by or for the facility.

(iii) Description of operations. A brief description of the nature, average rate of production (including each product produced by type, amount, processes, and rate of production), and standard industrial classifications of the operation(s) carried out by such User. This description should include a schematic process diagram, which indicates points of discharge to the WWF from the regulated processes.

(iv) Flow measurement. Information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from regulated process streams and other streams, as necessary, to allow use of the combined waste stream formula.

(v) Measurement of pollutants.

(A) The categorical pretreatment standards applicable to each regulated process and any new categorically regulated processes for existing sources.

(B) The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by the standard or by the superintendent, of regulated pollutants in the

discharge from each regulated process.

(C) Instantaneous, daily maximum, and long-term average concentrations, or mass, where required, shall be reported.

(D) The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in 40 CFR 136 and amendments, unless otherwise specified in an applicable categorical standard. Where the standard requires compliance with a BMP or pollution prevention alternative, the user shall submit documentation as required by the superintendent or the applicable standards to determine compliance with the standard.

(E) The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this paragraph.

(F) Samples should be taken immediately downstream from pretreatment facilities if such exist or immediately downstream from the regulated process if no pretreatment exists. If other wastewaters are mixed with the regulated wastewater prior to pretreatment the User should measure the flows and concentrations necessary to allow use of the combined waste stream formula to evaluate compliance with the pretreatment standards

(G) Sampling and analysis shall be performed in accordance with 40 CFR 136 or other approved methods;

(H) The Superintendent may allow the submission of a baseline report which utilizes only historical data so long as the data provides information sufficient to determine the need for industrial pretreatment measures;

(I) The baseline report shall indicate the time, date and place of sampling and methods of analysis, and shall certify that such sampling and analysis is representative of normal work cycles and expected pollutant discharges to the WWF.

(c) Compliance certification. A statement, reviewed by the user's duly authorized representative and certified by a qualified professional, indicating whether

pretreatment standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O&M) and/or additional pretreatment is required to meet the Pretreatment Standards and Requirements.

(d) Compliance schedule. If additional pretreatment and/or O&M will be required to meet the Pretreatment Standards, the shortest schedule by which the user will provide such additional pretreatment and/or O&M must be provided. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. A compliance schedule pursuant to this Section must meet the requirements set out in Section 204(2) of this ordinance.

(e) Signature and report certification. All baseline monitoring reports must be certified in accordance with section 204(14) of this ordinance and signed by the duly authorized representative.

(2) Compliance schedule progress reports. The following conditions shall apply to the compliance schedule required by section 204(1)(d) of this Ordinance:

(a) The schedule shall contain progress increments in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the User to meet the applicable pretreatment standards (such events include, but are not limited to, hiring an engineer, completing preliminary and final plans, executing contracts for major components, commencing and completing construction, and beginning and conducting routine operation)

(b) No increment referred to above shall exceed nine (9) months,

(c) The user shall submit a progress report to the superintendent no later than fourteen (14) days following each date in the schedule and the final date of compliance including, at a minimum, whether or not it complied with the increment of progress, the reason for any delay, and, if appropriate, the steps being taken by the user to return to the established schedule,

(d) In no event shall more than nine (9) months elapse between such progress reports to the Superintendent.

(3) Reports on compliance with categorical pretreatment standard deadline. Within ninety (90) days following the date for final compliance with applicable categorical pretreatment standards, or in the case of a new source following commencement of the introduction of wastewater into the WWF, any user subject to such pretreatment standards and requirements shall submit to the superintendent a report containing the information described in section 204(1)(b)(iv) and (v) of this ordinance. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period. All compliance reports must be signed and certified in accordance with subsection 14 of

this section. All sampling will be done in conformance with subsection 11.

(4) Periodic compliance reports.

(a) All significant industrial users must, at a frequency determined by the Superintendent submit no less than twice per year (April 10 and October 10) reports indicating the nature, concentration of pollutants in the discharge which are limited by pretreatment standards and the measured or estimated average and maximum daily flows for the reporting period. In cases where the pretreatment standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the user must submit documentation required by the superintendent or the pretreatment standard necessary to determine the compliance status of the user.

(b) All periodic compliance reports must be signed and certified in accordance with this ordinance.

(c) All wastewater samples must be representative of the User's discharge. Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a User to keep its monitoring facility in good working order shall not be grounds for the User to claim that sample results are unrepresentative of its discharge.

(d) If a User subject to the reporting requirement in this section monitors any regulated pollutant at the appropriate sampling location more frequently than required by the superintendent, using the procedures prescribed in subsection 11 of this section, the results of this monitoring shall be included in the report

(5) Reports of changed conditions. Each user must notify the superintendent of any significant changes to the user's operations or system which might alter the nature, quality, or volume of its wastewater at least 60 days before the change potential for a slug discharge.

(a) The superintendent may require the user to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application under section 201 of this chapter.

(b) The superintendent may issue an individual wastewater discharge permit under section 202 of this chapter or modify an existing wastewater discharge permit under section 202 of this chapter in response to changed conditions or anticipated changed conditions.

(6) Report of potential problems.

(a) In the case of any discharge, including, but not limited to, accidental discharges, discharges of a non-routine, episodic nature, a non-customary batch discharge, a slug discharge or slug load, that might cause potential problems for the POTW, the User shall immediately telephone and notify the superintendent of the

incident. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and corrective actions taken by the user.

(b) Within five (5) days following such discharge, the user shall, unless waived by the superintendent, submit a detailed written report describing the cause(s) of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liability which might be incurred as a result of damage to the WWF, natural resources, or any other damage to person or property; nor shall such notification relieve the user of any fines, penalties, or other liability which may be imposed pursuant to this ordinance.

(c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees who to call in the event of a discharge described in paragraph (a), above. Employers shall ensure that all employees, who could cause such a discharge to occur, are advised of the emergency notification procedure.

(d) Significant industrial users are required to notify the Superintendent immediately of any changes at its facility affecting the potential for a slug discharge.

(7) Reports from unpermitted users. All Users not required to obtain an individual wastewater discharge permit shall provide appropriate reports to the Superintendent as the Superintendent may require to determine if users status as non-permitted.

(8) Notice of violations/repeat sampling and reporting. Where a violation has occurred, another sample shall be conducted within 30 days of becoming aware of the violation, either a repeat sample or a regularly scheduled sample that falls within the required time frame. If sampling performed by a user indicates a violation, the user must notify the superintendent within twenty-four (24) hours of becoming aware of the violation. The user shall also repeat the sampling and analysis and submit the results of the repeat analysis to the superintendent within thirty (30) days after becoming aware of the violation. Resampling by the industrial user is not required if the city performs sampling at the user's facility at least once a month, or if the city performs sampling at the user's facility between the time when the initial sampling was conducted and the time when the user or the city receives the results of this sampling, or if the City has performed the sampling and analysis in lieu of the industrial user.

(9) Notification of the discharge of hazardous waste.

(a) Any user who commences the discharge of hazardous waste shall notify the POTW, the EPA Regional Waste Management Division Director, and state hazardous waste authorities, in writing, of any discharge into the POTW of a substance which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge (continuous, batch, or other). If the user discharges more than one hundred (100) kilograms of such waste per calendar month to

the POTW, the notification also shall contain the following information to the extent such information is known and readily available to the user: an identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the waste stream discharged during that calendar month, and an estimation of the mass of constituents in the waste stream expected to be discharged during the following twelve (12) months. All notifications must take place no later than one hundred and eighty (180) days after the discharge commences. Any notification under this paragraph need be submitted only once for each hazardous waste discharged. However, notifications of changed conditions must be submitted under section 204(5) of this ordinance. The notification requirement in this Section does not apply to pollutants already reported by users subject to categorical pretreatment standards under the self-monitoring requirements of Sections 204(1), 204(3), and 204(4) of this chapter.

(b) Dischargers are exempt from the requirements of paragraph (a), above, during a calendar month in which they discharge no more than fifteen (15) kilograms of hazardous wastes, unless the wastes are acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e). Discharge of more than fifteen (15) kilograms of non-acute hazardous wastes in a calendar month, or of any quantity of acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e), requires a one-time notification. Subsequent months during which the user discharges more than such quantities of any hazardous waste do not require additional notification.

(c) In the case of any new regulations under Section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the user must notify the Superintendent, the EPA Regional Waste Management Waste Division Director, and state hazardous waste authorities of the discharge of such substance within ninety (90) days of the effective date of such regulations.

(d) In the case of any notification made under this section, the user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

(e) This provision does not create a right to discharge any substance not otherwise permitted to be discharged by this ordinance, a permit issued there under, or any applicable federal or state law.

(10) Analytical requirements. All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, unless otherwise specified in an applicable categorical Pretreatment Standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the EPA determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed by using validated analytical methods or any other applicable sampling and analytical procedures, including procedures suggested by the Superintendent or other parties approved by EPA.

(11) Sample collection. Samples collected to satisfy reporting requirements must be based on data obtained through appropriate sampling and analysis performed during the period covered by the report, based on data that is representative of conditions occurring during the reporting period.

(a) Except as indicated in sections (b) and (c) below, the user must collect wastewater samples using 24-hour flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Superintendent. Where time-proportional composite sampling or grab sampling is authorized by the city, the samples must be representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the city, as appropriate. In addition, grab samples may be required to show compliance with instantaneous limits.

(b) Samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides, and volatile organic compounds must be obtained using grab collection techniques.

(c) For sampling required in support of baseline monitoring and 90-day compliance reports required in Subsections (1) and (3) of this section, a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist; for facilities for which historical sampling data are available, the superintendent may authorize a lower minimum. For the reports required by subsection (4) of this section, the industrial user is required to collect the number of grab samples necessary to assess and assure compliance with applicable pretreatment standards and requirements.

(12) Date of receipt of reports. Written reports will be deemed to have been submitted on the date postmarked. For reports, which are not mailed, the date of receipt of the report shall govern.

(13) Recordkeeping. Users subject to the reporting requirements of this ordinance shall retain, and make available for inspection and copying, all records of information obtained pursuant to any monitoring activities required by this ordinance, any additional records of information obtained pursuant to monitoring activities undertaken by the user independent of such requirements, and documentation associated with best management practices established under section 208. Records shall include the date, exact place, method, and time of sampling, and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used; and the results of such analyses. These records shall remain available for a period of at least three (3) years. This period shall be automatically extended for the duration of any litigation concerning the user or the city, or where the user has been specifically notified of a longer retention period by the superintendent.

(14) Certification statements. Signature and certification: All reports associated with

compliance with the pretreatment program shall be signed by the duly authorized representative and shall have the following certification statement attached:

> **I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.**

Reports required to have signatures and certification statement include, permit applications, periodic reports, compliance schedules, baseline monitoring, reports of accidental or slug discharges, and any other written report that may be used to determine water quality and compliance with local, state, and federal requirements.

18-2-505. **Enforcement response plan**. Under the authority of Tennessee Code Annotated, § 69-3-123 *et seq*:

(1) Complaints; notification of violation; orders.

(a) (i) Whenever the local administrative officer has reason to a violation of any provision of the Watertown Wastewater Regulations, pretreatment program, or of orders of the local hearing authority issued under it has occurred, is occurring, or is about to occur, the local administrative officer may cause a written complaint to be served upon the alleged violator or violators.

(ii) The complaint shall specify the provision or provisions of the pretreatment program or order alleged to be violated or about to be violated and the facts alleged to constitute a violation, may order that necessary corrective action be taken within a reasonable time to be prescribed in the order, and shall inform the violators of the opportunity for a hearing before the local hearing authority.

(iii) Any such order shall become final and not subject to review unless the alleged violators request by written petition a hearing before the local hearing authority as provided in section 205(2), no later than thirty (30) days after the date the order is served; provided,

that the local hearing authority may review the final order as provided in Tennessee Code Annotated, 69-3-123(a)(3).

(iv) Notification of violation. Notwithstanding the provisions of subsections (i) through (iii), whenever the pretreatment coordinator finds that any user has violated or is violating this chapter, a wastewater discharge permit or order issued hereunder, or any other pretreatment requirements, the city or its agent may serve upon the user a written notice of violation. Within fifteen (15) days of the receipt of this notice, the user shall submit to the pretreatment coordinator an explanation of the violation and a plan for its satisfactory correction and prevention including specific actions. Submission of this plan in no way relieves the user of liability for any violations occurring before or after receipt of the notice of violation. Nothing in this section limits the authority of the city to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation.

(b) (i) When the Local Administrative Officer finds that a user has violated or continues to violate this chapter, wastewater discharge permits, any order issued hereunder, or any other pretreatment standard or requirement, he may issue one of the following orders. These orders are not prerequisite to taking any other action against the user.

(A) Compliance order. An order to the user responsible for the discharge directing that the user come into compliance within a specified time. If the user does not come into compliance within the specified time, sewer service shall be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders may also contain other requirements to address the noncompliance, including additional self-monitoring, and management practices designed to minimize the amount of pollutants discharged to the sewer. A compliance order may not extend the deadline for compliance established for a federal pretreatment standard or requirement, nor does a compliance order release the user of liability for any violation, including any continuing violation.

(B) Cease and desist order. An order to the user directing it to cease all such violations and directing it to immediately comply with all requirements and take needed remedial or preventive action to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.

(C) Consent order. Assurances of voluntary compliance, or other documents establishing an agreement with the user responsible for noncompliance, including specific action to be taken by the user to correct the noncompliance within a time period specified in the order.

(D) Emergency order. (1) Whenever the Local Administrative Officer finds that an emergency exists imperatively requiring immediate action to protect the public health, safety, or welfare, the health of animals, fish or aquatic life, a public water supply, or the facilities of the WWF, the local administrative officer may, without prior notice, issue an order reciting the existence of such an emergency and requiring that any action be taken as the local administrative officer deems necessary to meet the emergency.

(c) If the violator fails to respond or is unable to respond to the order, the local administrative officer may take any emergency action as the local administrative officer deems necessary, or contract with a qualified person or persons to carry out the emergency measures. The local administrative officer may assess the person or persons responsible for the emergency condition for actual costs incurred by the city in meeting the emergency.

(i) Appeals from orders of the local administrative officer.

(A) Any user affected by any order of the local administrative officer in interpreting or implementing the provisions of this chapter may file with the local administrative officer a written request for reconsideration within thirty (30) days of the order, setting forth in detail the facts supporting the user's request for reconsideration.

(B) If the ruling made by the local administrative officer is unsatisfactory to the person requesting reconsideration, he may, within thirty (30) days, file a written petition with the local hearing authority as provided in subsection (2). The local administrative officer's order shall remain in effect during the period of reconsideration.

(d) Except as otherwise expressly provided, any notice, complaint, order, or other instrument issued by or under authority of this section may be served on any named person personally, by the local administrative officer or any person designated by the local administrative officer, or service may be made in accordance with Tennessee statutes authorizing service of process in civil action. Proof of service shall be filed in the office of the local administrative officer.

(2) Hearings.

(a) Any hearing or rehearing brought before the local hearing authority shall be conducted in accordance with the following:

(i) Upon receipt of a written petition from the alleged violator pursuant to this subsection, the local administrative officer shall give the petitioner thirty (30) days' written notice of the time and place of the hearing, but in no case shall the hearing be held more than sixty (60) days from the receipt of the written petition, unless the local administrative officer and the petitioner agree to a postponement;

(ii) The hearing may be conducted by the local hearing authority at a regular or special meeting. A quorum of the local hearing authority must be present at the regular or special meeting to conduct the hearing;

(iii) A verbatim record of the proceedings of the hearings shall be taken and filed with the local hearing authority, together with the findings of fact and conclusions of law made under subdivision (a)(vi). The recorded transcript shall be made available to the petitioner or any party to a hearing upon payment of a charge set by the local administrative officer to cover the costs of preparation;

(iv) In connection with the hearing, the chair shall issue subpoenas in response to any reasonable request by any party to the

hearing requiring the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in the hearing. In case of contumacy or refusal to obey a notice of hearing or subpoena issued under this section, the chancery court of Wilson County has jurisdiction upon the application of the local hearing authority or the local administrative officer to issue an order requiring the person to appear and testify or produce evidence as the case may require, and any failure to obey an order of the court may be punished by such court as contempt;

(v) Any member of the local hearing authority may administer oaths and examine witnesses;

(vi) On the basis of the evidence produced at the hearing, the local hearing authority shall make findings of fact and conclusions of law and enter decisions and orders that, in its opinion, will best further the purposes of the pretreatment program. It shall provide written notice of its decisions and orders to the alleged violator. The order issued under this subsection shall be issued by the person or persons designated by the chair no later than thirty (30) days following the close of the hearing;

(vii) The decision of the local hearing authority becomes final and binding on all parties unless appealed to the courts as provided in subsection (b).

(viii) Any person to whom an emergency order is directed under 205(1)(b)(i)(D) shall comply immediately, but on petition to the local hearing authority will be afforded a hearing as soon as possible. In no case will the hearing be held later than three (3) days from the receipt of the petition by the local hearing authority.

(b) An appeal may be taken from any final order or other final determination of the local hearing authority by any party who is or may be adversely affected, including the pretreatment agency. Appeal must be made to the chancery court under the common law writ of certiorari set out in Tennessee Code Annotated, § 27-8-101, et seq. within sixty (60) days from the date the order or determination is made.

(c) Show cause hearing. Notwithstanding the provisions of subsections (a) or (b), the pretreatment coordinator may order any user that causes or contributes to violation(s) of this chapter, wastewater discharge permits, or orders issued hereunder, or any other pretreatment standard or requirements, to appear before the local administrative officer and show cause why a proposed enforcement action should not be taken. Notice shall be served on the user specifying the time and place for the meeting, the proposed enforcement action, the reasons for the action, and a request that the user show cause why the proposed enforcement action should be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days

prior to the hearing. The notice may be served on any authorized representative of the user. Whether or not the user appears as ordered, immediate enforcement action may be pursued following the hearing date. A show cause hearing shall not be prerequisite for taking any other action against the user. A show cause hearing may be requested by the discharger prior to revocation of a discharge permit or termination of service.

(3) Violations, Administrative civil penalty. (Under the authority of Tennessee Code Annotated, § 69-3-125):

(a) (i) Any person including, but not limited to, industrial users, who does any of the following acts or omissions is subject to a civil penalty of up to ten thousand dollars ($10,000.00) per day for each day during which the act or omission continues or occurs:

(A) Unauthorized discharge, discharging without a permit;

(B) Violates an effluent standard or limitation;

(C) Violates the terms or conditions of a permit;

(D) Fails to complete a filing requirement;

(E) Fails to allow or perform an entry, inspection, monitoring or reporting requirement;

(F) Fails to pay user or cost recovery charges; or

(G) Violates a final determination or order of the local hearing authority or the local administrative officer.

(ii) Any administrative civil penalty must be assessed in the following manner:

(A) The Local Administrative Officer may issue an assessment against any person or industrial user responsible for the violation;

(B) Any person or industrial user against whom an assessment has been issued may secure a review of the assessment by filing with the local administrative officer a written petition setting forth the grounds and reasons for the violator's objections and asking for a hearing in the matter involved before the local hearing authority and, if a petition for review of the assessment is not filed within thirty

(30) days after the date the assessment is served, the violator is deemed to have consented to the assessment and it becomes final;

(C) Whenever any assessment has become final because of a person's failure to appeal the assessment, the local administrative officer may apply to the appropriate court for a judgment and seek execution of the judgment, and the court, in such proceedings, shall treat a failure to appeal the assessment as a confession of judgment in the amount of the assessment;

(D) In assessing the civil penalty the Local Administrative Officer may consider the following factors:

(1) Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;

(2) Damages to the pretreatment agency, including compensation for the damage or destruction of the facilities of the publicly owned treatment works, and also including any penalties, costs and attorneys' fees incurred by the pretreatment agency as the result of the illegal activity, as well as the expenses involved in enforcing this section and the costs involved in rectifying any damages;

(3) Cause of the discharge or violation;

(4) The severity of the discharge and its effect upon the facilities of the publicly owned treatment works and upon the quality and quantity of the receiving waters;

(5) Effectiveness of action taken by the violator to cease the violation;

(6) The technical and economic reasonableness of reducing or eliminating the discharge; and

(7) The economic benefit gained by the violator.

(E) The local administrative officer may institute proceedings for assessment in the chancery court of the county in which all or part of the pollution or violation occurred, in the name of the pretreatment agency.

(1) The local hearing authority may establish by regulation a schedule of the amount of civil penalty which can be assessed by the local administrative officer for certain specific violations or categories of violations.

(2) Assessments may be added to the user's next scheduled sewer service charge and the local administrative officer shall have such other collection remedies as may be available for other service charges and fees.

(b) Any civil penalty assessed to a violator pursuant to this section may be in addition to any civil penalty assessed by the commissioner for violations of Tennessee Code Annotated, § 69-3-115(a)(1)(F). However, the sum of penalties imposed by this section and by Tennessee Code Annotated, § 69-3-115(a) shall not exceed ten thousand dollars ($10,000) per day for each day during which the act or omission continues or occurs.

(4) Assessment for noncompliance with program permits or orders.

(a) The local administrative officer may assess the liability of any polluter or violator for damages to the city resulting from any person's or industrial user's pollution or violation, failure, or neglect in complying with any permits or orders issued pursuant to the provisions of the pretreatment program or this section.

(b) If an appeal from such assessment is not made to the local hearing authority by the polluter or violator within thirty (30) days of notification of such assessment, the polluter or violator shall be deemed to have consented to the assessment, and it shall become final.

(c) Damages may include any expenses incurred in investigating and enforcing the pretreatment program of this section, in removing, correcting, and terminating any pollution, and also compensation for any actual damages caused by the pollution or violation.

(d) Whenever any assessment has become final because of a person's failure to appeal within the time provided, the local administrative officer may apply to the appropriate court for a judgment, and seek execution on the judgment. The court, in its proceedings, shall treat the failure to appeal the assessment as a confession of judgment in the amount of the assessment.

(5) Judicial proceedings and relief. The Local Administrative Officer may initiate proceedings in the chancery court of the county in which the activities occurred against any person or industrial user who is alleged to have violated or is about to violate the pretreatment program, this section, or orders of the local hearing authority or local administrative officer. In the action, the local administrative officer may seek, and the court may grant, injunctive relief and any other relief available in law or equity.

(6) Termination of discharge. In addition to the revocation of permit provisions in 202(2)(g) of this chapter, users are subject to termination of their wastewater discharge for violations or a wastewater discharge permits, or orders issued hereunder, or for any of the following conditions:

(a) Violation of wastewater discharge permit conditions.

(b) Failure to accurately report the wastewater constituents and characteristics of its discharge.

(c) Failure to report significant changes in operations or wastewater volume, constituents and characteristics prior to discharge.

(d) Refusal of reasonable access to the user's premises for the purpose of inspection, monitoring or sampling.

(e) Violation of the pretreatment standards in the general discharge prohibitions in Section 109 of chapter 1.

(f) Failure to properly submit an industrial waste survey when requested by the pretreatment coordination superintendent.

The user will be notified of the proposed termination of its discharge and be offered an opportunity to show cause, as provided in subsection (2)(c) above, why the proposed action should not be taken.

(7) Disposition of damage payments and penalties--special fund. All damages and/or penalties assessed and collected under the provisions of this section shall be placed in a special fund by the pretreatment agency and allocated and appropriated for the administration of its wastewater fund or combined water and wastewater fund.

Levels of non-compliance

(a) Insignificant non-compliance: For the purpose of this guide, insignificant non-compliance is considered a relatively minor infrequent violation of pretreatment standards or requirements. These will usually be responded to informally with a phone call or site visit but may include a Notice of Violation (NOV).

(b) "Significant noncompliance." Per 0400-40-14.

(i) Chronic violations of wastewater discharge limits, defined here as those in which sixty-six percent or more of all of the measurements taken for each parameter taken during a six-month period exceed (by any magnitude) a numeric pretreatment standard or requirement, including instantaneous limit.

(ii) Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent or more of all of the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the numeric pretreatment standard or requirement, including instantaneous limits multiplied by the applicable TRC (TRC=1.4 for BOD, TSS fats, oils and grease, and 1.2 for all other pollutants except pH). TRC calculations for pH are not required.

(iii) Any other violation of a pretreatment standard or requirement (daily maximum of longer-term average, instantaneous limit, or narrative standard) that the WWF determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).

(iv) Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the WWF's exercise of its emergency authority under 205(1)(b)(i)(D), Emergency Order, to halt or prevent such a discharge.

(v) Failure to meet, within ninety (90) days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance.

(vi) Failure to provide, within 30 days after their due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic

self-monitoring reports, and reports on compliance with compliance schedules.

(vii) Failure to accurately report noncompliance.

(viii) Any other violation or group of violations, which may include a violation of Best Management Practices, which the WWF determines will adversely affect the operation of implementation of the local pretreatment program.

(ix) Continuously monitored pH violations that exceed limits for a time period greater than 50 minutes or exceed limits by more than 0.5 s.u. more than eight times in four hours.

Any significant non-compliance violations will be responded to according to the Enforcement Response Plan Guide Table (Appendix A).

(9.) Public Notice of the significant violations. The Superintendent shall publish annually, in a newspaper of general circulation that provides meaningful public notice within the jurisdictions served by the WWF, a list of the users which, at any time during the previous twelve (12) months, were in significant noncompliance with applicable pretreatment standards and requirements. The term significant noncompliance shall be applicable to all significant industrial users (or any other industrial user that violates paragraphs (C), (D) or (H) of this section) and shall mean:

(a) Chronic violations of wastewater discharge limits, defined here as those in which sixty-six percent (66%) or more of all the measurements taken for the same pollutant parameter taken during a six (6) month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including Instantaneous Limits;

(b) Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent (33%) or more of wastewater measurements taken for each pollutant parameter during a six (6) month period equals or exceeds the product of the numeric Pretreatment Standard or Requirement including Instantaneous Limits, multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH), TRC calculations for pH are not required;

(c) Any other violation of a pretreatment standard or requirement as defined by section 207 (daily maximum, long-term average, instantaneous limit, or narrative standard) that the superintendent determines has caused, alone or in combination with other discharges, interference or pass through, including endangering the health of WWF personnel or the general public;

(d) Any discharge of a pollutant that has caused imminent endangerment to the public or to the environment, or has resulted in the superintendent's exercise of its emergency authority to halt or prevent such a discharge;

(e) Failure to meet, within ninety (90) days of the scheduled date, a compliance schedule milestone contained in an individual wastewater discharge permit or enforcement

order for starting construction, completing construction, or attaining final compliance;

(f) Failure to accurately report noncompliance; or

(g) Any other violation(s), which may include a violation of best management practices, which the Superintendent determines will adversely affect the operation or implementation of the local pretreatment program.

(h) Continuously monitored pH violations that exceed limits for a time period greater than 50 minutes or exceed limits by more than 0.5 s.u. more than eight times in four hours.

(10) Criminal Penalties. In addition to civil penalties imposed by the local administrative officer and the State of Tennessee, any person who willfully and negligently violates permit conditions is subject to criminal penalties imposed by the State of Tennessee and the United States.

18-2-506. Enforcement response guide table.

(1) Purpose. The purpose of this chapter is to provide for the consistent and equitable enforcement of the provisions of this ordinance.

(2) Enforcement Response Guide Table. The applicable officer shall use the schedule found in Appendix A to impose sanctions or penalties for the violation of this ordinance.

18-2-507. Fees and billing.

(1) Purpose. It is the purpose of this chapter to provide for the equitable recovery of costs from users of the city's wastewater treatment system including costs of operation, maintenance, administration, bond service costs, capital improvements, depreciation, and equitable cost recovery of EPA administered federal wastewater grants.

(2) Types of charges and fees. The charges and fees as established in the city's schedule of charges and fees may include but are not limited to:

(a) Inspection fee and tapping fee;
(b) Fees for applications for discharge;
(c) Sewer use charges;
(d) Surcharge fees (see Table C);
(e) Waste Hauler Permit;
(f) Industrial wastewater discharge permit fees;
(g) Fees for industrial discharge monitoring; and
(h) Other fees as the city may deem necessary.

(3) Fees for application for discharge. A fee may be charged when a user or prospective user makes application for discharge as required by §202 of this chapter.

(4) Inspection fee and tapping fee. An inspection fee and tapping fee for a building sewer installation shall be paid to the city's sewer department at the time the application is filed.

(5) Sewer user charges. The board of mayor and aldermen shall establish monthly rates and charges for the use of the wastewater system and for the services supplied by the wastewater system.

(6) Industrial wastewater discharge permit fees. A fee may be charged for the issuance of an industrial wastewater discharge fee in accordance with § 207 of this chapter.

(7) Fees for industrial discharge monitoring. Fees may be collected from industrial users having pretreatment or other discharge requirements to compensate the city for the necessary compliance monitoring and other administrative duties of the pretreatment program.

(8) Administrative civil penalties. Administrative civil penalties shall be issued according to the following schedule. Violation are categorized in the Enforcement Response Guide Table (Appendix A). The local administrative officer may access a penalty within the appropriate range. Penalty assessments are to be assessed per violation per day unless otherwise noted.

Category 1	No penalty
Category 2	$50.00-$500.00
Category 3	$500.00-$1,000.00
Category 4	$1,000.00-$5,000.00
Category 5	$5,000.00-$10,000.00

18-2-508. Validity. This chapter and its provisions shall be valid for all service areas, regions, and sewage works under the jurisdiction of the city.

Section 2. Date of effect. This ordinance shall take effect from and after its final passage, the public welfare requiring it.

Passed 1st reading, 6-19, 2018

Passed 2nd reading, 7-17, 2018

Mayor, City of Watertown

Recorder, City of Watertown

APPENDIX A

Enforcement Response Guide Table

Unauthorized Discharge (no permit)				
Noncompliance	Nature of Violation	Category	Enforcement Response	Personnel
Failure to Return Industrial user Survey	Initial, requirements not understood	1	Phone call or visit to explain and/or assist	PC
	Persistent after assistance	4	AO and/or penalty and/or termination of service	PC, LAO
Unpermitted discharge	IU unaware of requirements; no harm to POTW or environment	1	Phone Call and /or NOV, may need permit application	PC
	IU unaware of requirement; harm to POTW or environment	4	AO and/or penalty or Termination of service	LAO
	Aware of requirement but have repeated discharges such as spills or accidents. Incident #1 through #4	1st , 1 2nd , 2 3rd, 3 4th, 4	Phone Call and/or NOV NOV and/or Order Show Cause Hearing and/or Order Order	PC PC, LAO PC, LAO LAO
	Discharge continues after previous steps	5	Civil Action in Chancery Court and/ or Criminal investigation and/ or Termination	LAO
Failure to renew permit	IU has not submitted application within 10 days of due date	1	Phone call and/or NOV	PC
Discharge Permit Violations				
Exceeding of local, state, or federal standards	Isolated, <or= 1/ month (no harm)	1	Phone call and/ or NOV	PC
	Isolated, > 1/month (no harm)	2	NOV and/or AO	PC, LAO
	Isolated, harmful to POTW or environment	3	Show Cause Hearing and/ or AO and penalty, and/or legal action	PC LAO
	Chronic or TRC, no harm	1	NOV and Public Notice	PC
	Chronic or TRC, no harm	2,2nd 3,3rd 4,4th	Public Notice, with/without AO & penalty	PC, LAO

	Chronic or TRC, harm to POTW or environment	4	AO and penalty, and/or legal action, and/or Termination of service	LAO
	Persistent violations, causing harm to the POTW or the appearance of intent, or disregard of permit requirements and enforcement actions	5	Administrative Order and/or criminal investigation, and/or termination of service	LAO

Monitoring and Reporting Violations				
Noncompliance	Nature of Violation	Category	Enforcement Response	Personnel
Reporting violation	Report improperly signed or certified	1	Phone call and/ or NOV	PC
	Report improperly signed or certified after prior notice	2	Show Cause Hearing and/ or AO	PC LAO
	Isolated, (<20% / 6mo. >5 days late)	1	Phone call and/ or NOV	PC
	Significant, (>20% / 6mo.>5 days late)	2	AO to submit and penalty for each additional day late	LAO
	Reports always late: failure to submit (>75% of reports > 5 days late) within 12 month reporting period	5	AO and penalty and/ or Civil action or Chancery Court or Termination of service	LAO
	Failure to report spill or discharge change, no harm	1	NOV	PC
	Failure to report spill or discharge change with harm	3	AO and penalty and/ or Civil action	LAO
	Repeated failure to report spills >2 failures / 12 mo. Reporting periods	5	AO and penalty and/ or civil action or termination	LAO
	Falsification of records	5	Criminal Investigation and/or termination	LAO
	Failure to report change in industrial process	1st , 1 Additional step / event	1st, NOV, Repeated AO and/or penalty	PC, LAO

Failure to monitor correctly	Failure to monitor all permit required pollutants	1 2	NOV 1st / 12mo. reporting period AO 2nd / 12mo. Reporting period	PC LAO
	Recurring failure to monitor > 4 failures/ 24 month reporting period	3	AO and penalty and/ or Civil action	LAO
Improper sampling	No evidence of intent	1	NOV	PC
	Evidence of intent, tampering with sampler	3, 1st 5, Repeated	1st, NOV - AO, Criminal investigation and/or termination	PC, LAO

Enforcement Response Guide Table

Monitoring and Reporting Violations (cont.)				
Noncompliance	Nature of Violation	Category	Enforcement Response	Personnel
Failure to install monitoring equipment	Delay of less than 30 days	1	NOV	PC
	Delay of more than 30 days	2	AO to install with penalty for each additional day	LAO
	Recurring, violation of AO	5	Civil Action or Criminal Investigation or termination of service	LAO
Compliance schedule	Missed milestone, less than 30 days, will not affect final schedule	1	NOV	PC
	Missed milestone more than 30 days, will affect final schedule (good cause)	2	AO	LAO
	Missed milestone, more than 30 days, will affect final schedule (no good cause)	4	AO and penalty Civil action or termination	LAO
	Recurring violations or violations of AO	5	Civil Action and/or Criminal Investigation and/ or Termination of service	LAO

Enforcement Response Guide Table

Other Permit Violations				
Non-compliance	Nature of Violation	Category	Enforcement Response	Personnel
Waste Stream Dilution in lieu of pretreatment	Initial violation	2	AO and/or penalty	LAO
	Recurring	3	Show Cause Hearing possible Termination	LAO
Failure to mitigate chronic noncompliance or halt production	Does not cause harm	1	NOV	PC
	Does cause harm	2,2nd 3,3rd 4,4th 5,5th	AO and/or penalty or Civil action	LAO
Discharging following a terminated permit due to enforcement action that terminated service	Initial violation	5	Maximum penalties	LAO
Failure to resample following violation	Initial violation	1	Phone call or visit	PC
	Repeated failure after notice by PC	2nd #1,3rd#2, 4th#3	2nd NOV, 3rd AO and penalty 4th AO and penalty and/or termination of service	PC , LAO
Failure to properly operate and maintain facility	Does not cause harm	1	NOV	PC
	Does cause harm, or reoccurring	4	AO and penalty or, Civil Action	LAO
Violations Detected During Site Visit				
Entry Denial	Entry denied or consent withdrawn: copies of records denied	2	Obtain warrant and return to IU	PC
Illegal Discharge, violation of general discharge prohibitions	No harm to POTW or environment	2	AO and penalty	LAO
	Caused harm or evidence of intent or negligence	4	AO and penalty and/ or Civil action and or criminal investigation	LAO

	Recurring, violation of AO	5	Terminate Service	LAO

Enforcement Response Guide Table

Violations During Site Visits (cont.)				
Non-compliance	Nature of violation	Category	Enforcement Response	Personnel
Improper sampling	Unintentional sampling at incorrect location	1	NOV	PC
	Unintentional using incorrect sample type	1	NOV	PC
	Unintentional using incorrect techniques	1	NOV	PC
Inadequate record keeping	Files incomplete or missing (no evidence of intent)	1	NOV	PC
	Recurring	3	AO and penalty	LAO
Failure to report additional monitoring	Inspection finds additional files (unintentional)	2	NOV	LAO
	Recurring (considered falsification)	4	AO with penalty, and/or criminal prosecution	LAO

AO- Administrative Order
IU- Industrial User
LAO- Local Administrative Officer
NOV- Notice of Violation
PC- Pretreatment Coordinator
TRC- Technical Review Criteria

APPENDIX B

SANITARY SEWER

OVERFLOW REPORTS

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	5/04/2021 18:00
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	5/04/2021 8:00 am
Date & Time Overflow / Bypass Ended:	has not ended at time of reporting as it is still raining
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Consecutive heavy rainstorms
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 5/04/2021

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	12/04/2020 23:30
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	12/04/2020 9:00
Date & Time Overflow / Bypass Ended:	12/04/2020 20:00
Estimated Volume:	33,000
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy Rains, Pumps Can Not Keep Up With Inflow And Infiltration
Corrective Action or Repairs:	City Is Working On A Collection System Rehab Project
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**Yes**
Name of Stream:	Round Lick
Stream Conditions Observed:	High Flow From Heavy Rain Event
Fish or Aquatic Life Killed:	No
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	Yes
Stream Sampling Conducted:	No
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 12/*04/2020

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	9/13/2020 21:15
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	9/13/2020 9:00
Date & Time Overflow / Bypass Ended:	Has not ended at time of report
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 9/13/2020

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	2/28/2021 18:45
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	2/27/2021 20:00
Date & Time Overflow / Bypass Ended:	Has not ended at time of report
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains several days in a row
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 12/28/2020

Tennessee Division of Water Resources
Wastewater Collection System Overflow
Treatment Unit Bypass
Report Form

System Name & Permit Number:	City of Watertown TN0025488
County:	Wilson
Date & Time Reported To DWR:	8/1/2020 11:45
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	7/31/2020 14:00
Date & Time Overflow/Bypass Ended:	Has no as of report
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains pump station can not keep up with the flow
Corrective Action or Repairs:	Rehab project is in being worked on
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Potential Impact	
Did wastewater enter a residence or other structure	no
Wastewater Entered Stream:	yes
Name of Stream:	Round Lick
Stream Conditions Observed:	Out of banks
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Cleanup, Disinfection of Area:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	
Comments:	
Information Received By:	

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	3/29/2021 14:15
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65, 1/67B, 3/41
Date & Time Overflow or Bypass of Treatment Units Began:	3/28/2021 8:00 am
Date & Time Overflow / Bypass Ended:	1/67B and 3/41B end 5:00pm 4/65 has not ended at time of reporting
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Consecutive heavy rainstorms
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 3/29/2020

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	3/31/2021 11:15
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	3/31/2021 8:00 am
Date & Time Overflow / Bypass Ended:	has not ended at time of reporting
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Consecutive heavy rainstorms
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 3/31/2020

Tennessee Division of Water Resources
Wastewater Collection System Overflow
Treatment Unit Bypass
Report Form

System Name & Permit Number:	City of Watertown TN0025488
County:	Wilson
Date & Time Reported To DWR:	8/1/2020 11:45
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326

Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH 3/43
Date & Time Overflow or Bypass of Treatment Units Began:	7/31/2020 14:00
Date & Time Overflow/Bypass Ended:	7/31/20 15:15
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains combined with partial blockage
Corrective Action or Repairs:	Lines were jetted rehab project is being worked on
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	

Potential Impact	
Did wastewater enter a residence or other structure	no
Wastewater Entered Stream:	yes
Name of Stream:	Round Lick
Stream Conditions Observed:	Out of banks
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	Any solids in the area were picked up area was washed down ditches in the area were under high flows
Cleanup, Disinfection of Area:	yes
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	

Comments:	
Information Received By:	

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	2/28/2021 18:45
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	3/18/2021 01:00
Date & Time Overflow / Bypass Ended:	Has not ended at time of report as it is raining currently
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 3/19/2020

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	12/24/2020 14:00
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	12/24/2020 5:00
Date & Time Overflow / Bypass Ended:	Has not ended at time of report
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 12/24/2020

Wastewater Collection System Overflow
Or Treatment Unit Bypass
Report Form

System Name, Permit No.:	TN0025488
County:	Wilson
Date & Time Reported To DWR:	12/24/2020 14:00
System Contact:	Dale Smith
Title:	Operator
Phone Number(s):	615-237-3326
Location --- Cause --- Corrective Action	
Location of Pump Station, Manhole, Other:	MH # 4/65
Date & Time Overflow or Bypass of Treatment Units Began:	12/24/2020 5:00
Date & Time Overflow / Bypass Ended:	Has not ended at time of report
Estimated Volume:	
Treatment Unit(s) Bypassed:	
Cause of Overflow or Bypass:	Heavy rains
Corrective Action or Repairs:	Rehab project is in process
Time & Date Completed, or Estimated:	
Volume Contained or Recovered:	
Cleanup, Disinfection of Area:	
Potential Impact	
Wastewater Entered Stream:	**yes**
Name of Stream:	Round lick
Stream Conditions Observed:	Out of banks from storm rains
Fish or Aquatic Life Killed:	no
Distance of Impact:	
Actions Taken to Minimize Health Hazards or Impact to Water Quality:	
Public Notified, Signs Posted, or Access Restricted:	yes
Stream Sampling Conducted:	no
Comments:	
Person Preparing Report & Date Prepared:	Dale Smith 12/24/2020

APPENDIX C

NPDES PERMIT

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

November 2, 2020

Honorable Michael R. Jennings
Mayor
e-copy: mjenningslaw@aol.com
Town of Watertown
8630 Sparta Pike
Watertown, TN 37184

Subject: **NPDES Permit No. TN0025488**
Town of Watertown
Watertown, Wilson County, Tennessee

Dear Mayor Jennings:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.), Sections 69-3-101 through 69-3-120, the Division of Water Resources hereby issues the enclosed NPDES Permit. The continuance and/or reissuance of this NPDES Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that a petition for permit appeal may be filed, pursuant to T.C.A. Section 69-3-105, subsection (i), by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application.

Additionally, for those permits for which the department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment.

Any petition for permit appeal under this subsection (i) shall be filed with the Technical Secretary of the Water Quality, Oil and Gas Board within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel.

TDEC has activated a new email address to accept appeals electronically. If you wish to file an appeal, you may do so by emailing the appeal and any attachments to TDEC.Appeals@tn.gov. If you

file an appeal electronically, you do not have to send a paper copy. If you have questions about your electronic filing, you can call (615) 532-0131. Electronic filing is encouraged, but not required.

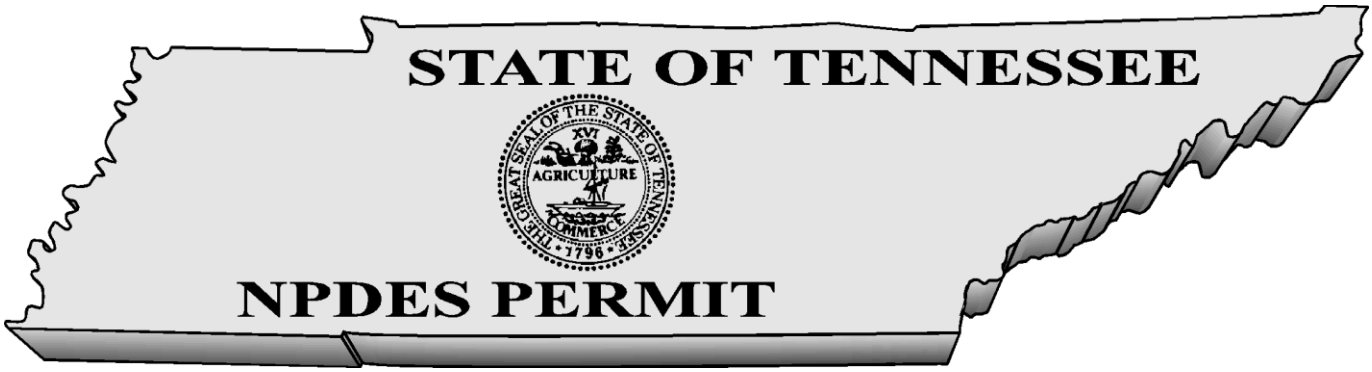
If you have questions, please contact the Nashville Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Ms. Ariel Wessel-Fuss at (615) 532-0642 or by E-mail at *Ariel.Wessel-Fuss@tn.gov*.

Sincerely,

Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Permit File
Nashville Environmental Field Office
Mr. Dale Smith, President, M.S. Environmental Services, Inc., dsmith3858@gmail.com
Ms. Claudia Bonnyman, , claudia.bonnyman@comcast.net
Mrs. Christina Norris, , cnorris24@comcast.net
Mr. Howard Roberts, Town Commissioner, 135 Vickers Ave, Watertown, TN 37184
Mr. Jim Redwine, Harpeth Conservancy, jimredwine@harpethconservancy.org
Mr. Tony Lea, Watertown Town Counsel, wtlea55@gmail.com
Mr. Chris Corley, TN Sierra Club, drcriscorley@gmail.com
Mr. Paul Estill Davis, P.E., pedh2o@gmail.com
Mr. John Norris, Norris & Norris PLC, john@norrislaw.net
Ms. Katie Smith, Watertown Town Counsel, catherinesmithphd@gmail.com



No. TN0025488

Authorization to discharge under the
National Pollutant Discharge Elimination System (NPDES)

Issued By

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.)

Discharger:	**Watertown STP**
is authorized to discharge:	**treated domestic wastewater from Outfall 001**
from a facility located:	**in Watertown, Wilson County, Tennessee**
to receiving waters named:	**Round Lick at mile 20.0**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on:	**December 1, 2020**
This permit shall expire on:	**July 31, 2024**
Issuance date:	**October 30, 2020**

for Jennifer Dodd
Director

CN-0759 RDA 2366

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1.0. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. NUMERIC AND NARRATIVE EFFLUENT LIMITATIONS

The Town of Watertown is authorized to discharge treated domestic wastewater from Outfall 001 to the Round Lick at mile 20.0. Discharge 001 consists of municipal wastewater from a treatment facility with a design capacity of 0.27 MGD. Discharge 001 shall be limited and monitored by the permittee as specified below:

Monitoring : All Weather							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Monitoring Frequency**	**Statistical Base**
51929	Bypass of Treatment Facility	Report	-	occur/mo	Occurrences	Continuous	Monthly Total
51929	Bypass of Treatment Facility	Report	-	gal/mo	Estimate	Continuous	Monthly Total
Monitoring : Dry Weather							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Monitoring Frequency**	**Statistical Base**
51925	SSO, Dry Weather	Report	-	gal/mo	Estimate	Continuous	Monthly Total
51925	SSO, Dry Weather	<=	0	occur/mo	Occurrences	Continuous	Monthly Total
51927	Release [Sewer], Dry Weather	Report	-	occur/mo	Occurrences	Continuous	Monthly Total
51927	Release [Sewer], Dry Weather	Report	-	gal/mo	Estimate	Continuous	Monthly Total
Monitoring : Wet Weather							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Monitoring Frequency**	**Statistical Base**
51926	SSO, Wet Weather	Report	-	gal/mo	Estimate	Continuous	Monthly Total
51926	SSO, Wet Weather	<=	0	occur/mo	Occurrences	Continuous	Monthly Total
51928	Release [Sewer], Wet Weather	Report	-	occur/mo	Occurrences	Continuous	Monthly Total
51928	Release [Sewer], Wet Weather	Report	-	gal/mo	Estimate	Continuous	Monthly Total

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00300	Oxygen, dissolved (DO)	>=	6.0	mg/L	Grab	Five Per Week	Daily Minimum
00400	pH	>=	6.0	SU	Grab	Three Per Week	Minimum
00400	pH	<=	9.0	SU	Grab	Three Per Week	Maximum
00530	Total Suspended Solids (TSS)	<=	45	mg/L	Composite	Weekly	Daily Maximum
00530	Total Suspended Solids (TSS)	<=	30	mg/L	Composite	Weekly	Monthly Average
00530	Total Suspended Solids (TSS)	<=	40	mg/L	Composite	Weekly	Weekly Average
00530	Total Suspended Solids (TSS)	<=	68	lb/d	Composite	Weekly	Monthly Average
00530	Total Suspended Solids (TSS)	<=	90	lb/d	Composite	Weekly	Weekly Average
00545	Settleable Solids	<=	1.0	mL/L	Grab	Weekly	Daily Maximum
00600	Nitrogen, total (as N)	Report	-	mg/L	Composite	Weekly	Daily Maximum
00600	Nitrogen, total (as N)	Report	-	mg/L	Composite	Weekly	Monthly Average
00600	Nitrogen, total (as N)	Report	-	lb/d	Composite	Weekly	Monthly Average
00600	Nitrogen, total (as N)	<=	22,134	lb/yr	Calculated	Monthly	Rolling Average
00665	Phosphorus, total (as P)	Report	-	lb/d	Composite	Weekly	Monthly Average
00665	Phosphorus, total (as P)	Report	-	lb/d	Composite	Weekly	Daily Maximum
00665	Phosphorus, total (as P)	Report	-	mg/L	Composite	Weekly	Monthly Average
00665	Phosphorus, total (as P)	<=	2,865	lb/yr	Calculated	Monthly	Rolling Average
01027	Cadmium, total (as Cd)	<=	0.0017	mg/L	Grab	Semiannual	Monthly Average
50050	Flow	Report	-	MGD	Continuous	Daily	Daily Maximum
50050	Flow	Report	-	MGD	Continuous	Daily	Monthly Average
51040	E. coli	<=	941	MPN/100mL	Grab	Weekly	Daily Maximum

51040	E. coli	<=	126	MPN/100mL	Grab	Weekly	Monthly Geometric Mean
71900	Mercury, total (as Hg)	Report	-	ng/L	Composite	Quarterly	Average
TRP3B	IC25 Static Renewal 7 Day Chronic Ceriodaphnia	>	100	%	Composite	Quarterly	Minimum
TRP6C	IC25 Static Renewal 7 Day Chronic Pimephales promelas	>	100	%	Composite	Quarterly	Minimum

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Summer

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00610	Nitrogen, Ammonia total (as N)*	<=	2.5	mg/L	Composite	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)*	<=	1.1	mg/L	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)*	<=	2	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)*	<=	4.5	lb/d	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)*	<=	2.5	lb/d	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	20	mg/L	Composite	Weekly	Daily Maximum
80082	CBOD, 5-day, 20 C	<=	15	mg/L	Composite	Weekly	Weekly Average
80082	CBOD, 5-day, 20 C	<=	23	lb/d	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	10	mg/L	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	34	lb/d	Composite	Weekly	Weekly Average

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Winter,

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00610	Nitrogen, Ammonia total (as N)*	<=	9	lb/d	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)*	<=	7.4	lb/d	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)*	<=	4	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)*	<=	4.5	mg/L	Composite	Weekly	Daily Maximum

00610	Nitrogen, Ammonia total (as N)*	<=	3.3	mg/L	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	56	lb/d	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	68	lb/d	Composite	Weekly	Weekly Average
80082	CBOD, 5-day, 20 C	<=	35	mg/L	Composite	Weekly	Daily Maximum
80082	CBOD, 5-day, 20 C	<=	30	mg/L	Composite	Weekly	Weekly Average
80082	CBOD, 5-day, 20 C	<=	25	mg/L	Composite	Weekly	Monthly Average

Description : External Outfall, Number : 001, Monitoring : Percent Removal, Season : All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
80358	CBOD, 5-day, 20 C, % removal	>	40	%	Composite	Weekly	Daily Minimum
80358	CBOD, 5-day, 20 C, % removal	>	85	%	Composite	Weekly	Monthly Average Minimum
81011	TSS, % removal	>	85	%	Composite	Weekly	Monthly Average Minimum
81011	TSS, % removal	>	40	%	Composite	Weekly	Daily Minimum

Description : External Outfall, Number : 001, Monitoring : Raw Sewage Influent, Season : All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Composite	Weekly	Monthly Average
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Composite	Weekly	Daily Maximum
50050	Flow	Report	-	MGD	Continuous	Daily	Daily Maximum
50050	Flow	Report	-	MGD	Continuous	Daily	Monthly Average
80082	CBOD, 5-day, 20 C	Report	-	mg/L	Composite	Weekly	Daily Maximum
80082	CBOD, 5-day, 20 C	Report	-	mg/L	Composite	Weekly	Monthly Average

Ammonia limits effective **January 1, 2026**

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Summer, Limit Set Status : Compliance Schedule							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Monitoring Frequency**	**Statistical Base**
00610	Nitrogen, Ammonia total (as N)	<=	1.0	mg/L	Composite	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	0.5	mg/L	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	0.7	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	1.2	lb/d	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	1.7	lb/d	Composite	Weekly	Weekly Average
Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Winter, Limit Set Status : Compliance Schedule							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Monitoring Frequency**	**Statistical Base**
00610	Nitrogen, Ammonia total (as N)	<=	1.9	mg/L	Composite	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	0.9	mg/L	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	1.4	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.1	lb/d	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	3.2	lb/d	Composite	Weekly	Weekly Average

Narrative Conditions

Due Date	Event Description	Comments
01-DEC-21	Status/ Progress Report	Milestone 1 - First year report in accordance with Part 1.6 of the permit
15-DEC-21	Monitoring Report	Submit all instream lab reports for the three monitoring locations (upstream of the outfall, near outfall and downstream of the outfall). Reports should be uploaded to NetDMR in the November report no later than December 15th. Additional details are in section 3.7 of the permit.
01-DEC-22	Status/ Progress Report	Milestone 2 - Second year report in accordance with Part 1.6 of the permit
15-DEC-22	Monitoring Report	Submit all instream lab reports for the three monitoring locations (upstream of the outfall, near outfall and downstream of the outfall). Reports should be uploaded to NetDMR in the November report no later than December 15th. Additional details are in section 3.7 of the permit.
01-DEC-23	Status/ Progress Report	Milestone 3 - Third report in accordance with Part 1.6 of the permit
15-DEC-23	Monitoring Report	Submit all instream lab reports for the three monitoring locations (upstream of the outfall, near outfall and downstream of the outfall). Reports should be uploaded to NetDMR in the November report no later than December 15th. Additional details are in section 3.7 of the permit.

Notes: The permittee shall achieve 85% removal of $CBOD_5$ and TSS on a monthly average basis. The permittee shall report all instances of releases, overflows and/or bypasses. See Part 2.3.3.a for the definition of overflow and Part 1.3.5.1 for reporting requirements.

Unless elsewhere specified, summer months are May through October; winter months are November through April.

See Part 1.2.3 for test procedures.

See Part 3.4 for biomonitoring test and reporting requirements. See next page for percent removal calculations.

Total residual chlorine (TRC) monitoring shall be applicable when chlorine, bromine, or any other oxidants are added. The acceptable methods for analysis of TRC are any methods specified in Title 40 CFR, Part 136 as amended. The method detection level (MDL) for TRC shall not exceed 0.05 mg/l unless the permittee demonstrates that its MDL is higher. The permittee shall retain the documentation that justifies the higher MDL and have it available for review upon request. In cases where the permit limit is less that the MDL, the reporting of TRC at less than the MDL shall be interpreted to constitute compliance with the permit.

Monitoring and reporting requirements for both total nitrogen (TN) and total phosphorus (TP) begin the effective date of the permit. The annual rolling load (lb/year) is calculated and reported monthly using the data from the current month and previous 11 months. Each annual load is the grand total of the average pounds per day for 12 months multiplied by 365 days.

Each daily load is calculated by multiplying the day's sample concentration (mg/l) by the effluent flow rate (MGD) for the day of the sample was collected by 8.34.

$$Load = \begin{pmatrix} Effluent \\ Concentration \end{pmatrix} x \begin{pmatrix} Effluent\ flow\ for\ the\ day\ the \\ day\ the\ sample\ was\ collected \end{pmatrix} x\ (8.34)$$

The average pound per day is the mathematical average where the sum of all the calculated loads during the current month and previous 11 months is divided by the number of calculated loads. Each load is calculated using the day's sample concentration (mg/l) and the effluent flow rate for the day the sample was collected.

$$Average\ Pounds\ per\ Day = \begin{pmatrix} Sum\ of\ All\ Loads\ in\ \frac{lbs}{day}\ During\ the \\ \underline{Current\ Month\ and\ the\ Previous\ 11\ Months} \\ Total\ Number\ of\ Loads\ \ Calculated\ During \\ the\ Current\ Month\ and\ Previous\ 11\ Months \end{pmatrix}$$

The annual rolling load for the current month is calculated by multiplying the average of all sample loads for the current month and the previous 11 months by 365.

$$Annual\ Rolling\ Load = \left(\frac{Sum\ of\ All\ Loads\ in\ \frac{lbs}{day}\ During\ the\ Current\ Month\ and\ Previous\ 11\ Months}{Total\ Number\ of\ Loads\ \ Calculated\ During\ the\ Current\ Month\ and\ Previous\ 11\ Months} \right) x\ (365)$$

The wastewater discharge must be disinfected to the extent that viable coliform organisms are effectively eliminated. The concentration of the *E. coli* group after disinfection shall not exceed 126 cfu per 100 ml as the geometric mean calculated on the actual number of samples collected and tested for *E. coli* within the required reporting period. The permittee may collect more samples than specified as the monitoring frequency. Samples may not be collected at intervals of less than 12 hours. For the purpose of determining the geometric mean, individual samples having an *E. coli* group concentration of less than one (1) per 100 ml shall be considered as having a concentration of one (1) per 100 ml. In addition, the concentration of the *E. coli* group in any individual sample shall not exceed a specified maximum amount. A maximum daily limit of 487 colonies per 100 ml applies to lakes and exceptional Tennessee waters. A maximum daily limit of 941 colonies per 100 ml applies to all other recreational waters.

There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character as may be detrimental to fish and aquatic life.

There shall be no total suspended solids, turbidity or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.

The wastewater discharge shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

Sludge or any other material removed by any treatment works must be disposed of in a manner that prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act. (40 C.F.R. 125.98(b)(1)).

For the purpose of evaluating compliance with the permit limits established herein, where certain limits are below the State of Tennessee published required detection levels (RDLs) for any given effluent characteristics, the results of analyses below the RDL shall be reported as Below Detection Level (BDL), unless in specific cases other detection limits are demonstrated to be the best achievable because of the particular nature of the wastewater being analyzed.

For $CBOD_5$ and TSS, the treatment facility shall demonstrate a minimum of 85% removal efficiency on a monthly average basis. This is calculated by determining an average of all daily influent concentrations and comparing this to an average of all daily effluent concentrations. The formula for this calculation is as follows:

$$\left[1 - \frac{\text{average of daily effluent concentration}}{\text{average of daily influent concentration}}\right] \times 100\% = \%\ \text{removal}$$

The treatment facility will also demonstrate 40% minimum removal of the $CBOD_5$ and TSS based upon each daily composite sample. The formula for this calculation is as follows:

$$\left[1 - \frac{\text{daily effluent concentration}}{\text{daily influent concentration}}\right] \times 100\% = \% \text{ removal}$$

1.2. MONITORING PROCEDURES

1.2.1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified herein shall be representative of the volume and nature of the monitored discharge, and shall be taken after treatment and prior to mixing with uncontaminated storm water runoff or the receiving stream. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than plus or minus 10% from the true discharge rates throughout the range of expected discharge volumes.

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge, and shall be taken at the following location(s):

Influent samples must be collected prior to mixing with any other wastewater being returned to the head of the plant, such as sludge return. Those systems with more than one influent line must collect samples from each and proportion the results by the flow from each line.

Effluent samples must be representative of the wastewater being discharged and collected prior to mixing with any other discharge or the receiving stream. This can be a different point for different parameters, but must be after all treatment for that parameter or all expected change:

a. The chlorine residual must be measured after the chlorine contact chamber and any dechlorination. It may be to the advantage of the permittee to measure at the end of any long outfall lines.

b. Samples for *E. coli* can be collected at any point between disinfection and the actual discharge.

c. The dissolved oxygen can drop in the outfall line; therefore, D.O. measurements are required at the discharge end of outfall lines greater than one mile long. Systems with outfall lines less than one mile may measure dissolved oxygen as the wastewater leaves the treatment facility. For systems with dechlorination,

dissolved oxygen must be measured after this step and as close to the end of the outfall line as possible.

d. Total suspended solids and settleable solids can be collected at any point after the final clarifier.

e. Biomonitoring tests (if required) shall be conducted on final effluent.

1.2.2. Sampling Frequency

Where the permit requires sampling and monitoring of a particular effluent characteristic(s) at a frequency of less than once per day or daily, the permittee is precluded from marking the “No Discharge” block on the Discharge Monitoring Report if there has been any discharge from that particular outfall during the period which coincides with the required monitoring frequency; i.e. if the required monitoring frequency is once per month or 1/month, the monitoring period is one month, and if the discharge occurs during only one day in that period then the permittee must sample on that day and report the results of analyses accordingly.

1.2.3. Test Procedures

a. Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (h) of the Clean Water Act (the "Act"), as amended, under which such procedures may be required.

b. Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR, Part 136, as amended, promulgated pursuant to Section 304 (h) of the Act.

c. Composite samples must be proportioned by flow at time of sampling. Aliquots may be collected manually or automatically. The sample aliquots must be maintained at ≤ 6 degrees Celsius during the compositing period.

d. In instances where permit limits established through implementation of applicable water criteria are below analytical capabilities, compliance with those limits will be determined using the detection limits described in the TN Rules, Chapter 0400-40-03-.05(8).

e. All sampling for total mercury at the municipal wastewater plant (application, pretreatment, etc.) shall use Methods 1631, 245.7 or any additional method in 40 CFR 136 with a maximum detection limit of 5 ng/L.

1.2.4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date and time of sampling or measurements;

b. The exact person(s) collecting samples or measurements;

c. The dates and times the analyses were performed;

d. The person(s) or laboratory who performed the analyses;

e. The analytical techniques or methods used, and;

f. The results of all required analyses.

1.2.5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of three (3) years, or longer, if requested by the Division of Water Resources.

1.3. REPORTING

1.3.1. Monitoring Results

Monitoring results shall be recorded monthly and submitted monthly using NetDMR. Submittals shall be no later than 15 days after the completion of the reporting period. If NetDMR is not functioning, a completed DMR with an original signature shall be submitted to the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT SECTION
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

If NetDMR is not functioning, a copy of the completed and signed DMR shall be mailed to the Nashville Environmental Field Office (EFO) at the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Nashville Environmental Field Office
711 R.S. Gass Boulevard
Nashville, Tennessee 37216

In addition, any communication regarding compliance with the conditions of this permit must be sent to the two offices listed above.

The first DMR is due on the 15th of the month following permit effectiveness.

DMRs and any other information or report must be signed and certified by a responsible corporate officer as defined in 40 CFR 122.22, a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or his duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

For purposes of determining compliance with this permit, data provided to the division electronically is legally equivalent to data submitted on signed and certified DMR forms.

1.3.2. Additional Monitoring by Permittee

If the permittee monitors any pollutant more frequently than required at the location(s) designated, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form. Such increased frequency shall also be indicated on the form.

1.3.3. Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

1.3.4. Monthly Report of Operation

Monthly operational reports shall be submitted on standard forms to the appropriate Division of Water Resources Environmental Field Office in Jackson, Nashville, Chattanooga, Columbia, Cookeville, Memphis, Johnson City, or Knoxville. Reports shall be submitted by the 15th day of the month following data collection.

1.3.5. Bypass, Release and Overflow Reporting

1.3.5.1. Report Requirements

A summary report of known instances of sanitary sewer overflows, releases, and bypasses shall accompany the Discharge Monitoring Report (DMR). The report must contain the date(s), estimated duration in hours, estimated quantity of wastewater in gallons, and if applicable, the receiving stream for each instance of sanitary sewer overflow, release, or bypass. For each sanitary sewer overflow and release, the report shall identify (using the permittee’s naming conventions) the next downstream pump station. For each sanitary sewer overflow, the report shall also identify whether it was a dry weather overflow.

The report must also detail activities undertaken during the reporting period to correct the reported sanitary sewer overflows and releases.

On the DMR, the permittee must separately report: the total number of sanitary sewer overflows for the reporting month and the cumulative total for the previous 12 months; the total number of dry-weather overflows for the reporting month and the cumulative total for the previous 12 months; the total number of releases for the reporting month; and the total number of bypasses for the reporting month. On the DMR, sanitary sewer overflows are coded "SSO, Dry Weather and SSO, Wet Weather" and releases are coded "Release [Sewer], Dry Weather and Release [Sewer], Wet Weather." Estimated total monthly volume for each type of event will be reported as gallons per month. Each release due to improper operation or maintenance shall be reported as such. Each discrete location of a sanitary sewer overflow or a release shall be reported as a separate value.

1.3.5.2. Anticipated Bypass Notification

If, because of unavoidable maintenance or construction, the permittee has need to create an in-plant bypass which would cause an effluent violation, the permittee must notify the division as soon as possible, but in any case, no later than 10 days prior to the date of the bypass.

1.3.6. Reporting Less Than Detection; Reporting Significant Figures

A permit limit may be less than the accepted detection level. If the samples are below the detection level, then report "BDL" or "NODI =B" on the DMRs. The permittee must use the correct detection levels in all analytical testing required in the permit. The required detection levels are listed in the Rules of the Department of Environment and Conservation, Division of Water Resources, Chapter 0400-40-03-.05(8).

For example, if the limit is 0.02 mg/l with a detection level of 0.05 mg/l and detection is shown; 0.05 mg/l must be reported. In contrast, if nothing is detected reporting "BDL" or "NODI =B" is acceptable.

Reported results are to correspond to the number of significant figures (decimal places) set forth in the permit conditions. The permittee shall round values, if allowed by the method of sample analysis, using a uniform rounding convention adopted by the permittee.

1.4. COMPLIANCE WITH SECTION 208

The limits and conditions in this permit shall require compliance with an area-wide waste treatment plan (208 Water Quality Management Plan) where such approved plan is applicable.

1.5. REOPENER CLAUSE

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections

301(b)(2)(C) and (D), 307(a)(2) and 405(d)(2)(D) of the Clean Water Act, as amended, if the effluent standard, limitation or sludge disposal requirement so issued or approved:

a. Contains different conditions or is otherwise more stringent than any condition in the permit; or

b. Controls any pollutant or disposal method not addressed in the permit.

c. The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

d. This permit may be reopened and modified, subject to permittee comment and appeal and applicable public notice procedures, to incorporate changes necessary to accommodate watershed planning requirements associated with total maximum daily load (TMDL) development or other pollutant reduction strategy for nutrients by either the permittee or the State of Tennessee.

1.6. SCHEDULE OF COMPLIANCE

The permittee shall meet the following compliance schedule for Nitrogen, Ammonia total (as N) (ammonia)

Milestone 1 – First year report

Report shall be submitted to Water.Permits@tn.gov and DWR.NEFO@tn.gov in accordance with the narrative condition of Part 1 of the permit, which details the following:

- A comparison of Influent characterization prior to the sewer rehabilitation project to its current state
- A brief narrative description of the impact the sewer rehabilitation project has had on the operation of the wastewater plant with regards to ammonia.

Milestone 2 – Second year report

Report shall be submitted to Water.Permits@tn.gov and DWR.NEFO@tn.gov in accordance with the narrative condition of Part 1 of the permit, which details the following:

- A comparison of Influent characterization prior to the sewer rehabilitation project to its current state
- A brief narrative description of the impact the sewer rehabilitation project has had on the operation of the wastewater plant with regards to ammonia
- A brief narrative description of the project plan for the treatment of ammonia to the post compliance schedule limits

Milestone 3 – Third year report

Report shall be submitted to Water.Permits@tn.gov and DWR.NEFO@tn.gov in accordance with the narrative condition of Part 1 of the permit, which details the following:

- A brief narrative description of the project plan for the pumping station improvements.
- A brief narrative description of the project plan for the wastewater plant improvements specifically addressing how the improvements will allow the facility to meet the post compliance schedule ammonia limits

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2.0. GENERAL PERMIT REQUIREMENTS

2.1. GENERAL PROVISIONS

2.1.1. Duty to Reapply

Permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of the Division of Water Resources (the "director") no later than 180 days prior to the expiration date. Such forms shall be properly signed and certified.

2.1.2. Right of Entry

The permittee shall allow the director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;

b. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

c. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Director.

2.1.3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Water Pollution Control Act, as amended, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Resources. As required by the Federal Act, effluent data shall not be considered confidential.

2.1.4. Proper Operation and Maintenance

a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is

necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.

b. Dilution water shall not be added to comply with effluent requirements to achieve BCT, BPT, BAT and or other technology based effluent limitations such as those in Tennessee Rule 0400-40-05-.09.

2.1.5. Treatment Facility Failure (Industrial Sources)

The permittee, in order to maintain compliance with this permit, shall control production, all discharges, or both, upon reduction, loss, or failure of the treatment facility, until the facility is restored or an alternative method of treatment is provided. This requirement applies in such situations as the reduction, loss, or failure of the primary source of power.

2.1.6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

2.1.7. Severability

The provisions of this permit are severable. If any provision of this permit due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this permit shall not be affected thereby.

2.1.8. Other Information

If the permittee becomes aware of failure to submit any relevant facts in a permit application, or of submission of incorrect information in a permit application or in any report to the director, then the permittee shall promptly submit such facts or information.

2.2. CHANGES AFFECTING THE PERMIT

2.2.1. Planned Changes

The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants, which are

subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices.

2.2.2. Permit Modification, Revocation, or Termination

a. This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR 122.62 and 122.64, Federal Register, Volume 49, No. 188 (Wednesday, September 26, 1984), as amended.

b. The permittee shall furnish to the director, within a reasonable time, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the director, upon request, copies of records required to be kept by this permit.

c. If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for any toxic pollutant under Section 307(a) of the Federal Water Pollution Control Act, as amended, the director shall modify or revoke and reissue the permit to conform to the prohibition or to the effluent standard, providing that the effluent standard is more stringent than the limitation in the permit on the toxic pollutant. The permittee shall comply with these effluent standards or prohibitions within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified or revoked and reissued to incorporate the requirement.

d. The filing of a request by the permittee for a modification, revocation, reissuance, termination, or notification of planned changes or anticipated noncompliance does not halt any permit condition.

2.2.3. Change of Ownership

This permit may be transferred to another party (provided there are neither modifications to the facility or its operations, nor any other changes which might affect the permit limits and conditions contained in the permit) by the permittee if:

a. The permittee notifies the director of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and

c. The director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

Pursuant to the requirements of 40 CFR 122.61, concerning transfer of ownership, the permittee must provide the following information to the division in their formal notice of intent to transfer ownership: 1) the NPDES permit number of the subject permit; 2) the effective date of the proposed transfer; 3) the name and address of the transferor; 4) the name and address of the transferee; 5) the names of the responsible parties for both the transferor and transferee; 6) a statement that the transferee assumes responsibility for the subject NPDES permit; 7) a statement that the transferor relinquishes responsibility for the subject NPDES permit; 8) the signatures of the responsible parties for both the transferor and transferee pursuant to the requirements of 40 CFR 122.22(a), “Signatories to permit applications”; and, 9) a statement regarding any proposed modifications to the facility, its operations, or any other changes which might affect the permit limits and conditions contained in the permit.

2.2.4. Change of Mailing Address

The permittee shall promptly provide to the director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

2.3. NONCOMPLIANCE

2.3.1. Effect of Noncompliance

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of applicable state and federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2.3.2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Field Office should be contacted for names and phone numbers of environmental response team).

A written submission must be provided within five days of the time the permittee becomes aware of the circumstances unless the director on a case-by-case

basis waives this requirement. The permittee shall provide the director with the following information:

i. A description of the discharge and cause of noncompliance;

ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and

iii. The steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. Scheduled Reporting

For instances of noncompliance which do not cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the permittee shall report the noncompliance on the Discharge Monitoring Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

2.3.3. Overflows and Releases

a. Sanitary sewer overflows, including dry-weather overflows, are prohibited.

b. The permittee shall operate the collection system so as to avoid sanitary sewer overflows and releases due to improper operation or maintenance. A “release” may be due to improper operation or maintenance of the collection system or may be due to other cause(s). Releases caused by improper operation or maintenance of the permittee’s collection and transmission system are prohibited.

c. The permittee shall take all reasonable steps to minimize any adverse impact associated with overflows and releases.

d. No new or additional flows shall be added upstream of any point in the collection or transmission system that experiences greater than 5 sanitary sewer overflows and/or releases per year[1] or would otherwise overload any portion of the system. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic overflow or release point are less than or proportional to the amount

[1] This includes dry weather overflows, wet weather overflows, dry weather releases and wet weather releases.

of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to a Monthly Operating Report submitted to the local TDEC Environmental Field Office. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

e. In the event that chronic sanitary sewer overflows or releases have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium of the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Resources EFO staff to petition for a waiver based on mitigating evidence.

2.3.4. Upset

a. "***Upset***" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   i. An upset occurred, and that the permittee can identify the cause(s) of the upset;

   ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;

   iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and

   iv. The permittee complied with any remedial measures required under "Adverse Impact."

2.3.5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in

an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2.3.6. Bypass

a. "***Bypass***" is the intentional diversion of waste streams from any portion of a treatment facility. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypasses are prohibited unless all of the following 3 conditions are met:

   i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

   ii. There are no feasible alternatives to bypass, such as the construction and use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, which occurred during normal periods of equipment downtime or preventative maintenance;

   iii. The permittee submits notice of an unanticipated bypass to the Division of Water Resources in the appropriate Environmental Field Office within 24 hours of becoming aware of the bypass (if this information is provided orally, a written submission must be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted to the director, if possible, at least 10 days before the date of the bypass.

c. Bypasses not exceeding permit limitations are allowed **only** if the bypass is necessary for essential maintenance to assure efficient operation. All other bypasses are prohibited. Allowable bypasses not exceeding limitations are not subject to the reporting requirements of 2.3.6.b.iii, above.

2.3.7. Washout

a. For domestic wastewater plants only, a "washout" shall be defined as loss of Mixed Liquor Suspended Solids (MLSS) of 30.00% or more. This refers to the MLSS in the aeration basin(s) only. This does not include MLSS decrease due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to infiltration and inflow.

b. A washout is prohibited. If a washout occurs the permittee must report the incident to the Division of Water Resources in the appropriate Environmental Field Office within 24 hours by telephone. A written submission must be provided within five days. The washout must be noted on the discharge monitoring report. Each day of a washout is a separate violation.

2.4. LIABILITIES

2.4.1. Civil and Criminal Liability

Except as provided in permit conditions for "***Bypassing*****,**" "***Overflow,"*** and "***Upset*****,**" nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2.4.2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or the Federal Water Pollution Control Act, as amended.

3.0. PERMIT SPECIFIC REQUIREMENTS

3.1. CERTIFIED OPERATOR

The waste treatment facilities shall be operated under the supervision of a certified wastewater treatment operator and the collection system shall be operated under the supervision of a certified collection system operator in accordance with the Water Environmental Health Act of 1984.

3.2. POTW PRETREATMENT PROGRAM GENERAL PROVISIONS

As an update of information previously submitted to the division, the permittee will undertake the following activity.

a. The permittee has been delegated the primary responsibility and therefore becomes the "control authority" for enforcing the 40 CFR 403 General Pretreatment Regulations. Where multiple plants are concerned the permittee is responsible for the Pretreatment Program for all plants within its jurisdiction. The permittee shall implement and enforce the Industrial Pretreatment Program in accordance with Section 403(b)(8) of the Clean Water Act, the Federal Pretreatment Regulations 40 CFR 403, Tennessee Water Quality Control Act Part 69-3-123 through 69-3-128, and the legal authorities, policies, procedures, and financial provisions contained in its approved Pretreatment Program, except to the extent this permit imposed stricter requirements. Such implementation shall require but not limit the permittee to do the following:

   i. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user (IU), whether the IU is in compliance with the pretreatment standards;

   ii. Require development, as necessary, of compliance schedules for each IU for the installation of control technologies to meet applicable pretreatment standards;

   iii. Require all industrial users to comply with all applicable monitoring and reporting requirements outlined in the approved pretreatment program and IU permit;

   iv. Maintain and update, as necessary, records identifying the nature and character of industrial user discharges, and retain such records for a minimum of three (3) years;

   v. Obtain appropriate remedies for noncompliance by an IU with any pretreatment standard and/or requirement;

vi. Publish annually, pursuant to 40 CFR 403.8 (f)(2)(viii), a list of industrial users that have significantly violated pretreatment requirements and standards during the previous twelve-month period.

vii. Maintain an adequate revenue structure for continued operation of the pretreatment program.

viii. Update its Industrial Waste Survey at least once every five years. Results of this update shall be submitted to the Division of Water Resources, Pretreatment Section within 120 days of the effective date of this permit, unless such a survey has been submitted within 3 years of the effective date.

ix. Submit a written technical evaluation of the need to revise local limits within 120 days of the effective date of this permit to the state pretreatment program coordinator. The evaluation shall include the most recent pass-through limits proposed by the division. The technical evaluation shall be based on practical and specialized knowledge of the local program and not be limited by a specified written format.

b. The permittee shall enforce 40 CFR 403.5, "prohibited discharges". Pollutants introduced into the POTW by a non-domestic source shall not cause pass through or interference as defined in 40 CFR Part 403.3. These general prohibitions and the specific prohibitions in this section apply to all non-domestic sources introducing pollutants into the POTW whether the source is subject to other National Pretreatment Standards or any state or local pretreatment requirements.

Specific prohibitions. Under no circumstances shall the permittee allow introduction of the following wastes in the waste treatment system:

i. Pollutants which create a fire or explosion hazard in the POTW;

ii. Pollutants which will cause corrosive structural damage to the treatment works, but in no case discharges with pH less than 5.0 unless the system is specifically designed to accept such discharges.

iii. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the treatment system resulting in interference.

iv. Any pollutant, including oxygen-demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment works.

v. Heat in amounts which will inhibit biological activity in the treatment works resulting in interference, but in no case heat in such quantities that the temperature at the treatment works exceeds 40°C (104°F) unless the works are designed to accommodate such heat.

vi. Any priority pollutant in amounts that will contaminate the treatment works sludge.

vii. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

viii. Pollutants which result in the presence of toxic gases, vapors or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

ix. Any trucked or hauled pollutants except at discharge points designated by the POTW.

c. The permittee shall notify the Tennessee Division of Water Resources of any of the following changes in user discharge to the system no later than 30 days prior to change of discharge:

i. New introductions into such works of pollutants from any source which would be a new source as defined in Section 306 of the Act if such source were discharging pollutants.

ii. New introductions of pollutants into such works from a source which would be subject to Section 301 of the "Federal Water Quality Act as Amended" if it were discharging such pollutants.

iii. A substantial change in volume or character of pollutants being introduced into such works by a source already discharging pollutants into such works at the time the permit is issued.

This notice will include information on the quantity and quality of the wastewater introduced by the new source into the publicly owned treatment works, and on any anticipated impact on the effluent discharged from such works. If this discharge necessitates a revision of the current NPDES permit or pass-through guidelines, discharge by this source is prohibited until the Tennessee Division of Water Resources gives final authorization.

d. Reporting Requirements

As of December 21, 2020, all semi-annual must be submitted electronically. Prior to December 21, 2020, reports may be submitted electronically when electronic reporting is available. The electronic submission of a pretreatment report will be accepted only if formally approved beforehand by the division. Prior to electronic reporting approval, the report shall be submitted to the Division of Water Resources, Central Office and a copy to the appropriate Environmental Field Office no later than the 28th day of the month following each reporting period. Large programs with more than 20 SIUs will be granted an additional 15 days for report submittal.

The permittee shall provide a semiannual report briefly describing the permittee's pretreatment program activities over the previous six-month period. Reporting periods shall end on the last day of the months of March and September. For control authorities with multiple STPs, one report should be submitted with a separate Form 1 for each STP. Prior to approval of electronic reporting, each report shall conform to the format set forth in the State POTW Pretreatment Semiannual Report Package which contains information regarding:

i. An updated listing of the permittee's industrial users.

ii. Results of sampling of the influent and effluent of the wastewater treatment plant. At least once each reporting period, the permittee shall analyze the wastewater treatment plant influent and effluent for the following pollutants, using the prescribed sampling procedures:

Pollutant	**Sample Type**
chromium, trivalent	24-hour composite
chromium, hexavalent	Per method requirements [2]
copper	24-hour composite
lead	24-hour composite
nickel	24-hour composite
zinc	24-hour composite
cadmium	24-hour composite
mercury	Per method requirements[2]
silver	24-hour composite
total phenols	grab
cyanide	grab

If any particular pollutant is analyzed more frequently than is required, the permittee shall report the maximum and average values on the semiannual report. All upsets, interferences, and pass-through violations must also be reported on the semiannual report, the actions that were taken to determine the causes of the incidents and the steps that have been taken to prevent the incidents from recurring.

At least once during the term of this permit, the permittee shall analyze the effluent from the STP (and report the results in the next regularly scheduled report) for the following pollutants:

[2] When a composite sample would compromise sample integrity refer to 40 CFR Part 136.3 Table II including footnotes.

chromium III	cyanide	phthalates, sum of the following:
chromium VI	silver	bis (2-ethylhexyl) phthalate
copper	benzene	butyl benzylphthalate
lead	carbon tetrachloride	di-n-butylphthalate
nickel	chloroform	diethyl phthalate
zinc	ethylbenzene	1,2 trans-dichloroethylene
cadmium	methylene chloride	tetrachloroethylene
mercury	naphthalene	toluene
phenols, total	1,1,1 trichloroethane	trichloroethylene

iii. Compliance with categorical and local standards, and review of industrial compliance, which includes a summary of the compliance status for all permitted industries. Also included is information on the number and type of major violations of pretreatment regulations, and the actions taken by the POTW to obtain compliance. The effluent from all significant industrial users must be analyzed for the appropriate pollutants at least once every 12 months.

iv. A list of industries in significant non-compliance as published in local newspapers in accordance with the requirements set forth in 40 CFR 403.8(f)(2)(viii).

v. A description of all substantive changes made to the permittee's pretreatment program. Any such changes shall receive prior approval. Substantive changes include, but are not limited to, any change in any ordinance, major modification in the program's administrative structure, local limits, or a change in the method of funding the program.

vi. Summary of permittee's industrial user inspections, which includes information on the number and type of industry inspected. All significant industrial users must be inspected at least once per year.

3.3. BIOSOLIDS MANAGEMENT PRACTICES

All sludge and/or biosolids use or disposal must comply with 40 CFR 503 et seq. Biosolids shall be sampled and analyzed at a frequency dependent on the amount used annually.

Any facility that land applies non-exceptional quality biosolids must obtain an appropriate permit from the division in accordance with Chapter 0400-40-15.

a. Reopener: If an applicable "acceptable management practice" or numerical limitation for pollutants in sewage sludge promulgated under Section 405(d)(2) of the Clean Water Act, as amended by the Water Quality Act of 1987, is more stringent than the sludge pollutant limit or acceptable management practice in this permit, or controls a pollutant not limited in this permit, this permit shall be promptly modified or revoked and reissued to conform to the requirements

promulgated under Section 405(d)(2). The permittee shall comply with the limitations by no later than the compliance deadline specified in the applicable regulations as required by Section 405(d)(2) of the Clean Water Act.

b. Notice of change in sludge disposal practice: The permittee shall give prior notice to the director of any change planned in the permittee's sludge disposal practice.

The current method of sludge disposal is to a municipal solid waste landfill (or co - composting facility). This method of disposal is controlled by the rules of the Tennessee Division of Solid Waste Management (DSWM) and Federal Regulations at 40 CFR 258. If the permittee anticipates changing its disposal practices to either land application or surface disposal, the Division of Water Resources shall be notified prior to the change. A copy of the results of pollutant analyses required by the Tennessee Division of Solid Waste Management (DSWM) and / or 40 CFR 258 shall be submitted to the Division of Water Resources.

3.4. BIOMONITORING REQUIREMENTS, CHRONIC

The permittee shall conduct a 3-Brood *Ceriodaphnia dubia* Survival and Reproduction Test and a 7-Day Fathead Minnow *(Pimephales promelas)* Larval Survival and Growth Test on samples of final effluent from Outfall 001.

The measured endpoint for toxicity will be the inhibition concentration causing 25% reduction in survival, reproduction and growth (IC_{25}) of the test organisms. The IC_{25} shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of *Ceriodaphnia dubia* or *Pimephales promelas* larvae used to initiate the test.

Test shall be conducted and its results reported based on appropriate replicates of a total of five serial dilutions and a control, using the percent effluent dilutions as presented in the following table:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
Permit Limit (PL)	**0.50 X PL**	**0.25 X PL**	**0.125 X PL**	**0.0625 X PL**	**Control**
% effluent					
100	**50**	**25**	**12.5**	**6.25**	**0**

The dilution/control water used will be moderately hard water as described in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013 (or the most current edition). A chronic standard reference toxicant quality assurance test shall be conducted with each species used in the toxicity tests and the results submitted with the discharge monitoring report. Additionally, the analysis of this multi-concentration test shall include review of the concentration-response relationship to ensure that calculated test results are interpreted appropriately.

Toxicity will be demonstrated if the IC_{25} is less than or equal to the permit limit indicated for each outfall in the above table(s).

All tests will be conducted using a minimum of three 24-hour flow-proportionate composite samples of final effluent collected on days 1, 3 and 5. If, in any control more than 20% of the test organisms die in 7 days, the test (control and effluent) is considered invalid and the test shall be repeated within two (2) weeks. Furthermore, if the results do not meet the acceptability criteria in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013 (or the most current edition), or if the required concentration-response review fails to yield a valid relationship per guidance contained in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing, EPA-821-B-00-004 (or the most current edition), that test shall be repeated. Any test initiated but terminated before completion must also be reported along with a complete explanation for the termination.

The toxicity tests specified herein shall be conducted quarterly (1/Quarter) for Outfall 001 and begin no later than 90 days from the effective date of this permit.

In the event of a test failure, the permittee must start a follow-up test within 2 weeks and submit results from a follow-up test within 30 days from obtaining initial WET testing results. The follow-up test must be conducted using the same serial dilutions as presented in the corresponding table(s) above. **The follow-up test will not negate an initial failed test. In addition, the failure of a follow-up test will constitute a separate permit violation.**

In the event of 2 consecutive test failures or 3 test failures within a 12-month period for the same outfall, the permittee must initiate a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) study within 30 days and so notify the division by letter. This notification shall include a schedule of activities for the initial investigation of that outfall. **During the term of the TIE/TRE study, the frequency of biomonitoring shall be once every three months.** Additionally, the permittee shall submit progress reports once every three months throughout the term of the TIE/TRE study. The toxicity must be reduced to allowable limits for that outfall within 2 years of initiation of the TIE/TRE study. Subsequent to the results obtained from the TIE/TRE studies, the permittee may request an extension of the TIE/TRE study period if necessary to conduct further analyses. The final determination of any extension period will be made at the discretion of the division.

The TIE/TRE study may be terminated at any time upon the completion and submission of 2 consecutive tests (for the same outfall) demonstrating compliance. Following the completion of TIE/TRE study, the frequency of monitoring will return to a regular schedule, as defined previously in this section as well in Part I of the permit. **During the course of the TIE/TRE study, the permittee will continue to conduct toxicity testing of the outfall being investigated at the frequency of once every three months but will not be required to perform follow-up tests for that outfall during the period of TIE/TRE study.**

Test procedures, quality assurance practices, determinations of effluent survival/reproduction and survival/growth values, and report formats will be made in accordance with Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013, or the most current edition.

Results of all tests, reference toxicant information, copies of raw data sheets, statistical analysis and chemical analyses shall be compiled in a report. The report will be written in accordance with Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, EPA-821-R-02-013, or the most current edition.

Two copies of biomonitoring reports (including follow-up reports) shall be submitted to the division. One copy of the report shall be submitted along with the discharge monitoring report (DMR). The second copy shall be submitted to the local Division of Water Resources office address (see table below):

Division of Water Resources			
Office	**Location**	**Zip Code**	**Phone No.**
Chattanooga	1301 Riverfront Pkwy., Suite 206	37402	(423) 634-5745
Jackson	1625 Hollywood Drive	38305	(731) 512-1300
Cookeville	1221 South Willow Avenue	38506	(931) 520-6688
Columbia	1421 Hampshire Pike	38401	(931) 380-3371
Johnson City	2305 Silverdale Road	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive, Bartlett	38133	(901) 371-3000
Nashville	711 R.S. Gass Boulevard	37216	(615) 687-7000

3.5. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign at each overflow/release point in the collection system. For the purposes of this requirement, any point that has had a total of five (5) or more overflows plus releases in the last year must be so posted. The permittee shall place and maintain a sign at each outfall. The sign(s) should be clearly visible to the public from the bank and the receiving stream. The minimum sign size should be two feet by two feet (2' x 2') with one-inch (1") letters. The sign should be made of durable material and have a white background with black letters.

The sign(s) are to provide notice to the public as to the nature of the discharge and, in the case of the permitted outfalls, that the discharge is regulated by the Tennessee Department of Environment and Conservation, Division of Water Resources. The following is given as an example of the minimal amount of information that must be included on the sign:

Permitted CSO or unpermitted release/overflow point:

UNTREATED WASTEWATER DISCHARGE POINT
Watertown STP
(615) 237-3326
NPDES Permit NO. TN0025488
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Nashville

NPDES Permitted Municipal/Sanitary Outfall:

TREATED MUNICIPAL/SANITARY WASTEWATER
Watertown STP
(615) 237-3326
NPDES Permit NO. TN0025488
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Nashville

No later than sixty (60) days from the effective date of this permit, the permittee shall have the above sign(s) on display in the location specified.

3.6. ANTIDEGRADATION

Pursuant to the Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06, titled “Tennessee Antidegradation Statement,” which prohibits the degradation of exceptional Tennessee waters and the increased discharges of substances that cause or contribute to impairment, the permittee shall further be required, pursuant to the terms and conditions of this permit, to comply with the effluent limitations and schedules of compliance required to implement applicable water quality standards, to comply with a State Water Quality Plan or other state or federal laws or regulations, or where practicable, to comply with a standard permitting no discharge of pollutants.

3.7. INSTREAM MONITORING

Beginning the effective date of the permit, during summer when stream flow conditions are low, the facility shall conduct annually a water quality sampling event that reflects the discharges from the facility and its impact on the stream. The facility shall sample for the parameters in the following table. All values shall be reported in the **November discharge monitoring report, no later than December 15th**. The first report will be due December 15, 2020. The instream sampling locations shall be approved by the local environmental field office. The instream sampling results will be analyzed to evaluate the I/I rehab impact on the improvement of the stream and provide data to the division for watershed modeling.

At STP Discharge	Upstream Sample	Downstream Sample
Ammonia	Ammonia	Ammonia
DO	DO	DO
E. coli	E. coli	E. coli
Nitrite-Nitrate	Nitrite-Nitrate	Nitrite-Nitrate
TKN	TKN	TKN
Orthophosphate	Orthophosphate	Orthophosphate
Total Phosphorous	Total Phosphorous	Total Phosphorous
Temperature	Temperature	Temperature
Conductivity	Conductivity	Conductivity
pH	pH	pH

4.0. DEFINITIONS AND ACRONYMS

4.1. DEFINITIONS

"***Biosolids***" are treated sewage sludge that have contaminant concentrations less than or equal to the contaminant concentrations listed in Table 1 of subparagraph (3)(b) of Rule 0400-40-15-.02, meet any one of the ten vector attraction reduction options listed in part (4)(b)1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 of Rule 0400-40-15-.04, and meet either one of the six pathogen reduction alternatives for Class A listed in part (3)(a)3, 4, 5, 6, 7, or 8, or one of the three pathogen reduction alternatives for Class B listed in part (3)(b)2, 3, or 4 of Rule 0400- 40-15-.04.

A "***bypass***" is defined as the intentional diversion of waste streams from any portion of a treatment facility.

A "***calendar day***" is defined as the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight to midnight time period.

A "***composite sample***" is a combination of not less than 8 influent or effluent portions, of at least 100 ml, collected over a 24-hour period. Under certain circumstances a lesser time period may be allowed, but in no case, less than 8 hours.

The "***daily maximum concentration***" is a limitation on the average concentration in units of mass per volume (e.g. milligrams per liter), of the discharge during any calendar day. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24-hour composite; when other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

"***Discharge***" or "discharge of a pollutant" refers to the addition of pollutants to waters from a source.

A "***dry weather overflow***" is a type of sanitary sewer overflow and is defined as one day or any portion of a day in which unpermitted discharge of wastewater from the collection or treatment system other than through the permitted outfall occurs and is not directly related to a rainfall event. Discharges from more than one point within a 24-hour period shall be counted as separate overflows.

"Degradation" means the alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration, withdrawal of water, or removal of habitat, except those alterations of a short duration.

“***De Minimis***” - Degradation of a small magnitude, as provided in this paragraph.

(a) Discharges and withdrawals

1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged.
2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the stream.
3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses 10% of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the Division finds on a scientific basis that the additional degradation has an insignificant effect on the resource.

(b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the Division finds that the impacts, individually and cumulatively are offset by impact minimization and/or in-system mitigation, provided however, in ONRWs the mitigation must occur within the ONRW.

An “***ecoregion***” is a relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

The "***geometric mean***" of any set of values is the n^{th} root of the product of the individual values where “n” is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For the purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

A "***grab sample***" is a single influent or effluent sample collected at a particular time.

The "***instantaneous maximum concentration***" is a limitation on the concentration, in milligrams per liter, of any pollutant contained in the wastewater discharge determined from a grab sample taken from the discharge at any point in time.

The "***instantaneous minimum concentration***" is the minimum allowable concentration, in milligrams per liter, of a pollutant parameter contained in the wastewater discharge determined from a grab sample taken from the discharge at any point in time.

The "***monthly average amount***", is the arithmetic mean of all the measured daily discharges by weight during the calendar month when the measurements were made.

The "***monthly average concentration***", other than for *E. coli* bacteria, is the arithmetic mean of all the composite or grab samples collected in a one-calendar month period.

A "***one week period***" (or "***calendar-week***") is defined as the period from Sunday through Saturday. For reporting purposes, a calendar week that contains a change of month shall be considered part of the latter month.

"***Pollutant***" means sewage, industrial wastes, or other wastes.

A "***quarter***" is defined as any one of the following three-month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, and/or October 1 through December 31.

A "***rainfall event***" is defined as any occurrence of rain, preceded by 10 hours without precipitation that results in an accumulation of 0.01 inches or more. Instances of rainfall occurring within 10 hours of each other will be considered a single rainfall event.

A "***rationale***" (or "fact sheet") is a document that is prepared when drafting an NPDES permit or permit action. It provides the technical, regulatory and administrative basis for an agency's permit decision.

A "***reference site***" means least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

A "***reference condition***" is a parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

A "***release***" is the flow of sewage from any portion of the collection or transmission system owned or operated by the permittee other than through permitted outfalls that does not add pollutants to waters. In addition, a "release" includes a backup into a building or private property that is caused by blockages, flow conditions, or other malfunctions originating in the collection and transmission system owned or operated by the permittee. A "release" does not include backups into a building or private property caused by blockages or other malfunctions originating in a private lateral.

A ***"sanitary sewer overflow (SSO)"*** is defined as an unpermitted discharge of wastewater from the collection or treatment system other than through the permitted outfall.

"***Sewage***" means water-carried waste or discharges from human beings or animals, from residences, public or private buildings, or industrial establishments, or boats,

together with such other wastes and ground, surface, storm, or other water as may be present.

"***Severe property damage***" when used to consider the allowance of a bypass or SSO means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass or SSO. Severe property damage does not mean economic loss caused by delays in production.

"***Sewerage system***" means the conduits, sewers, and all devices and appurtenances by means of which sewage and other waste is collected, pumped, treated, or disposed.

"***Sludge***" or "***sewage sludge***" is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

A "***subecoregion***" is a smaller, more homogenous area that has been delineated within an ecoregion.

"***Upset***" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

The term, "***washout***" is applicable to activated sludge plants and is defined as loss of mixed liquor suspended solids (MLSS) of 30.00% or more from the aeration basin(s).

"***Waters***" means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

The "***weekly average amount***", shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar week when the measurements were made.

The "***weekly average concentration***", is the arithmetic mean of all the composite samples collected in a one-week period. The permittee must report the highest weekly average in the one-month period.

4.2. ACRONYMNS AND ABBREVIATIONS

1Q10 – 1-day minimum, 10-year recurrence interval

30Q5 – 30-day minimum, 5-year recurrence interval

7Q10 – 7-day minimum, 10-year recurrence interval

BAT – best available technology economically achievable

BCT – best conventional pollutant control technology

BDL – below detection level

BOD_5 – five day biochemical oxygen demand

BPT – best practicable control technology currently available

$CBOD_5$ – five day carbonaceous biochemical oxygen demand

CEI – compliance evaluation inspection

CFR – code of federal regulations

CFS – cubic feet per second

CFU – colony forming units

CIU – categorical industrial user

CSO – combined sewer overflow

DMR – discharge monitoring report

D.O. – dissolved oxygen

E. coli – Escherichia coli

EFO – environmental field office

LB(lb) - pound

IC_{25} – inhibition concentration causing 25% reduction in survival, reproduction and growth of the test organisms

IU – industrial user

IWS – industrial waste survey

LC_{50} – acute test causing 50% lethality

MDL – method detection level

MGD – million gallons per day

MG/L(mg/l) – milligrams per liter

ML – minimum level of quantification

ml – milliliter

MLSS – mixed liquor suspended solids

MOR – monthly operating report

NODI – no discharge

NPDES – national pollutant discharge elimination system

PL – permit limit

POTW – publicly owned treatment works

RDL – required detection limit

SAR – semi-annual [pretreatment program] report

SIU – significant industrial user

SSO – sanitary sewer overflow

STP – sewage treatment plant

TCA – Tennessee code annotated

TDEC – Tennessee Department of Environment and Conservation

TIE/TRE – toxicity identification evaluation/toxicity reduction evaluation

TMDL – total maximum daily load

TRC – total residual chlorine

TSS – total suspended solids

WQBEL – water quality based effluent limit

ADDENDUM TO RATIONALE

October 29, 2020
Ariel Wessel-Fuss

The draft NPDES permit for the Town of Watertown's wastewater treatment plant originally went on public notice on June 18, 2019. During the public notice period, a public hearing was requested. The public hearing was originally scheduled to be held on September 9, 2019 but was rescheduled to ensure that the Mayor of Watertown would be able to attend. The public hearing was placed on a 30 day public notice and held in Watertown on September 19, 2019.

The update to the water quality criterion for ammonia was promulgated in Tennessee Rules, Chapter 0400-40-03-.03-3(3)(j), on September 11, 2019. Although drafted prior to this date, the permit had not been issued, and therefore, had to incorporate the new water quality criterion. The implementation of the new criterion posed a fairly significant decrease in ammonia values and the revised draft permit was placed on public notice on December 3, 2019.

The Town provided comments on the revised draft in a letter dated December 30, 2019.

Ammonia Comment

> The Town was issued a Draft Permit dated June 18, 2019. In that draft, limits for code 00610 Ammonia Nitrogen had become more stringent and the Town asked for more lenient limits. Instead, the new issuance of the Draft Permit proposes even more stringent ammonia limits, reducing the current limit by more than 250%. With the Town not having the ability to meet its current limits it appears both unreasonable and improbable to expect the Town to achieve a 250% reduction.

Tennessee Rule 0400-40-05-.08(1)(j) requires that "When a permit is renewed or reissued, effluent limitations, standards or conditions shall be at least as stringent as the effluent limitations, standards, or conditions in the previous permit… (3) In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard." Therefore, the Division is unable to make the ammonia limits less stringent than the permit effective January 1, 2016, simply because the Town is having difficulty meeting those limits.

However, it is not uncommon for the permit to include a schedule of compliance for a limit decrease due to a revision in the water quality criteria. On May 18, 2020, the Division held a compliance review meeting with representatives from the Town. In this meeting, the option of a compliance schedule was discussed. Enforcement order WPC15-0030 (order) requires that the permittee achieve compliance with the permit no later than December 31, 2025. Therefore, a compliance schedule for ammonia has been included in this final permit. The ammonia limits based on the revised water quality criteria will become effective January 1, 2026. Although, the permit term will expire prior to this date, the compliance schedule will be structured with this end date.

August 25, 2020, the Division received a CMOM annual report as required by enforcement order WPC15-0030. A compliance schedule was included to meet the requirements of the enforcement order. Therefore, the compliance schedule based upon the documentation submitted by the Town will be included in the narrative conditions of Part 1 of the permit as well as the detailed reporting requirements of Part 1.6 of the permit.

It is anticipated that the subsequent permit will have compliance milestones similar to the following:

Milestone 4 – Fourth year report

Report shall be submitted to Water.Permits@tn.gov and DWR.NEFO@tn.gov in accordance with the narrative condition of Part 1 of the permit, which details the following:

- A brief narrative description of the completed pumping station project and the any impacts to ammonia treatment at the wastewater treatment plant.
- A brief narrative update of the construction progress on the wastewater treatment plant improvements

Milestone 5 – Final report

Report shall be submitted to Water.Permits@tn.gov and DWR.NEFO@tn.gov in accordance with the narrative condition of Part 1 of the permit, which details the following:

- Completion status confirmation of the wastewater treatment plant improvements
- Brief narrative description of the ability of the wastewater plant to treat ammonia to the post compliance schedule limits

Additionally, due to the delay of issuance of the final permit, the narrative condition due on December 15, 2020, for the submittal of instream sampling outlined in section 3.7 of the permit has been removed.

The permittee requested the removal of settable solids.

Settleable solids is required by Tennessee Rule 0400-40-05-.09(1)(a)1. and cannot be removed from the permit. Settleable solids test is largely a measure of primary treatment (i.e. settling), and therefore may seem unnecessary. However, failure of the settable solids test can indicate issues with inflow and infiltration hydraulics, biological process upset by influent pollutants, operating at loadings in excess of treatment plant design. The collection system is undergoing a significant rehabilitation in the near future which will be followed by plant upgrades. Therefore the settable solids test would provide valuable information during this time. If after the wastewater treatment facility work has been completed, the permittee may request a reduction in settable solids frequency at permit reissuance. However, at this time, the frequency will remain the same as a means to continue to verify plant performance.

The permittee also requested the removal of cadmium sampling since “Cadmium was removed from the facilities industrial user around 25 years ago. The Town has not current source of cadmium.”

Effluent data does indicate that cadmium is typically below detection level. However, in 2012, the Town reported a discharge of 0.0032 mg/l of cadmium which shows the reasonable potential to violate water quality. Additionally, regardless of the limit itself, the permittee is still required to sample for cadmium as shown in section 3.2 of the permit.

The Town also reiterated its position that releases (events which do not reach waters) is only occasionally an event due to improper operation and maintenance.

The determination of "improper operation and maintenance" is dependent on site specific and event specific conditions. The permittee may present the conditions that it believes indicates that a specific event was not due to improper operation and maintenance for evaluation by division staff for a final determination. It should be noted that the division is in the process of launching its MyTDEC forms online reporting platform. In the near future, municipalities will receive a letter indicating when they will be required to begin reporting all overflows, releases and bypasses through the online system as required by phase 2 of the eReporting rule. At this time reporting requirements for these events will shift from paper and NetDMR submittals to the MyTDEC forms platform.

The Town stated that it was unfair to have a 30 day timeframe to respond to comments which coincides with the holidays.

The permittee may request an additional time in which to draft and submit comments. That request should be submitted prior to the end of the published public notice comment period.

Additionally, on December 30, 2019, the division received a letter from John Norris stating that he along with Claudia Bonnyman, Christina Norris objected to the permit and requested that the previously submitted comments, exhibits, documents and other materials be included in the record. Additionally, this submittal requested

- a Town wide moratorium on both water and sewer taps
- the requirement to place signs at every discharge location of raw sewage into Round Lick Creek
- noted the concern of contamination of their drinking well water

The previously submitted comments were addressed in the original rational. The conditions for implementing a moratorium is included in this permit. The Town is under a partial moratorium and is currently working under an enforcement order to rectify issues within the collection and treatment system. If other parts of the Town's system trigger the moratorium requirement in section 2.3.3 of the permit, then the Town is obligated to place that section of the collection system under a sewer moratorium. A moratorium on the drinking water taps is outside the authority of the NPDES permit.

Section 3.5 of the permit outlines the requirements for the posting of signs. This requirement is intended to notify the public of a chronic overflow point and be viewable from the users in the stream. These signs must be durable. Many cities order these signs from 3rd party vendors which take time to be manufactured and received. By the time the sign is received and installed, the risk posed of a one-off event has likely passed. While the proposed solution would not likely result in timely notification, the commenter has brought forth a valid concern. As a requirement of the order, the Town is required to initiate a sewer overflow response plan (SORP). This document details how the Town will communicate events to the public. These types of plans are intended to be "living documents." The Town is encouraged to review and update. These updates to the documentation should be submitted to the Division for review. It important to note that at the time this order was agreed upon, the term overflow encompassed both what we call an overflow and a release in this permit. The Division encourages the commenter to request an up-to-date copy of the SORP from the Town.

If you have concerns about your well water and would like total coliform sampling, please reach out to your local health department or complete the TDEC Service Request Application (https://tdec.tn.gov/septic-service-request/) to have your water tested. Under service requested, you may choose 'Water Sample-Fecal Coliform'. If you have questions about Fecal Coliform sampling and analysis, please contact Brad Harris (Brad.Harris@TN.gov) or John Newberry (John.Newberry@TN.gov) with the Division of Water Resources.

If you would like a more robust suite of sampling parameters, you will need to reach out to a private laboratory or consulting service to have the sampling and analysis performed. A list of laboratories certified for drinking water analysis can be found by visiting the Laboratory Certification Program's website at (https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/drinking-water-redirect/lab-certification-program.html). There are two buttons at the bottom of the page that will allow you to access the lists.

RATIONALE

Watertown STP
NPDES Permit No. TN0025488
Date: 6/3/19 Revised 11/5/19
Permit Writer: Ariel Wessel-Fuss

1. FACILITY INFORMATION

Watertown STP
Honorable Michael Jennings - Mayor
Watertown, Wilson County, Tennessee
(615) 237-3326
Treatment Plant Average Design Flow: 0.27 MGD
Percentage Industrial Flow: 1%
Treatment Description: Activated sludge plant with UV Disinfection
Certified Operator Grades: STP: III; CS: I; Date Rated: 04/01/99

2. RECEIVING STREAM INFORMATION

Round Lick at mile 20.0
Watershed Group: Cumberland-Old Hickory Lake
Hydrocode: 5130201
Low Flow: 7Q10 = 0 MGD (0 CFS)

Low Flow Reference: USGS Water-Resource Investigation Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl.

Water Quality Designation: Not evaluated at this time.

Stream Classification Categories:

Domestic Wtr Supply	Industrial	Fish & Aquatic	Recreation
		X	X
Livestock Wtr & Wlife	**Irrigation**	**Navigation**	
X	X		

Water Quality Assessment: Not supporting of fish and aquatic life and recreation, due to sedimentation/siltation, Nitrite + Nitrate as N, Dissolved Oxygen, alteration in stream-side or littoral vegetative covers, and E. coli and Not supporting of Recreation due to E. Coli

3. CURRENT PERMIT STATUS

Permit Type:	**Municipal**
Classification:	**Minor**
Issuance Date:	**1-Dec-15**
Expiration Date:	**31-Jul-19**
Effective Date:	**1-Jan-16**

4. NEW PERMIT LIMITATIONS AND COMPLIANCE SCHEDULE SUMMARY

a. Public Hearing and Previous Draft

The proposed permit was originally placed on public notice on June 18, 2019. During the public notice comment period a public hearing was requested. The public hearing was held at the Watertown Community Center on September 19, 2019, and approximately 20 people were in attendance. Comments and an audio recording of the public hearing can be found on the division's website at http://tdec.tn.gov:8080/pls/enf_reports/f?p=9034:34051:::NO:34051:P34051_PERMIT_NUMBER:TN0025488

Comments that were received can be divided into three groups.

General Public

Comments during the public hearing expressed a desire by (mostly nearby land owners) to fully utilize Round Lick Creek for its designated uses. Comments received by this group focused on the impact of continued chronic compliance issues of the permittee. Mr. John Norris' comments "…we want the ongoing pollution and degradation of Round Lick Creek caused by Watertown's inadequately treated wastewater to end. We also want an end to raw sewage spills from the city's sewage system into the creek." Mr. Norris also provided additional documentation as to the condition of Round Lick Creek such as photos and information from the July 2018 fish kill. Multiple individuals requested that the permit not be issued.

It is important to understand that the City of Watertown is operating under the current permit issued in 2015. Based on the comments received, it is our understanding that the commenters believed that if the division did not issue a permit, the discharge would cease. This is not the case. The current permit is considered administratively continued until a new permit is issued. This means the city would continue to discharge under the current permit. Not issuing a permit would not benefit water quality.

It was also requested that Watertown be placed under a moratorium. It is our understanding that Watertown is under a partial moratorium for the oldest portion of the collections system. The proposed permit includes the same requirements for self-imposed moratoriums above chronic overflow locations. Since the city is currently under an order, it would be best to address a system wide moratorium through the enforcement process.

The commenters also expressed concerned with the enforcement of the current permit as well as the timely implementation of the current compliance schedule outlined in the order. The division shares the concerns regarding the continued compliance issues with the facility. However, the permit is not an appropriate mechanism for enforcement.

Environmental Interests

The first of the environmental interest groups encouraged the use of biological nutrient removal (BNR). The division strongly supports the use of BNR where it is

feasible. The 2015 permit originally had a requirement to investigate the use of BNR. In order for BNR to be successful, the system must have a sufficient supply of carbon in the influent. Due to the significant Inflow and Infiltration (I/I) of the Watertown system, it was determined that it was infeasible to begin the process of BNR without first addressing the I/I issue. As such the division and the city entered into a consent order as a result of the permit appeal of this issue. That consent order addresses nutrients and provided the city the time to correct the I/I issue and bring the facility into compliance with the permit by December 31, 2025.

Additionally, the environmental interest groups requested that the permit include a water quality based effluent limit. The proposed permit is in accordance with the current narrative water quality criteria for nutrients. There is currently a cross functional nutrient work group evaluating the division's nutrient reduction approach.

There was also a request for online access to DMR effluent data. Most DMR data can be access through EPA's Enforcement and Compliance Online (ECHO) portal located at https://echo.epa.gov/.

City of Watertown

The city provided detailed and specific comments in a letter dated July 18, 2019, which will be address individually.

In the introduction, the letter states,

"The pass-through limits for copper and lead have become more stringent. The previous permit had changes and limits as well. The city recalculated its Plant Protection Criteria and local limits at that time. It was not until March 29, 2018 that the state approved the calculations and changes to the city's Sewer Use Ordnance. After that it takes two readings before these can be implemented. It appears it takes an entire permit cycle for the process of data collection, calculating limits, amending ordinances and getting State approval before the city has the ability to implement any changes necessary to meet more stringent limits."

In our experience, it does not take most cities an entire permit cycle to implement new pass-through limits. According to our records, Watertown received a notice of violation on May 9, 2016, for failure to submit a technical evaluation of the need to recalculate local limits within 120 days of the effective date of the permit. The technical evaluation was due December 30, 2014.

Watertown first submitted local limits calculations on August 1, 2016. This submittal resulted in numerous discussions and resubmittals between division and city personnel. It was not until November 9, 2017, that the division received a submittal that was able to be approved. The limits were given preliminary approval in a letter dated November 16, 2017.

The preliminary approval letter outlined the public notice requirements that must be met before final approval can be given by the Division. Although public noticed on May 24, 2018, the public notice period did not last the required 30 day period and

had to be placed on public notice again. The required public notice documents have not been received by the Division as of November 5, 2019.

Comment 1
On page 1, numbers 51925, 51926 and 51927:
Releases are added to the permit along with 12 month cumulative totals. At page 12, 1.3.5.1 gives the process for calculating 12 month totals. Keeping up with 12 month totals is a waste of resources that could better be spent elsewhere. Monthly totals are already submitted on the DMR along with summary of the events. Releases are added to the permit. Although these are not violations, you are now considering them as part of the 5 per year event requirements for self-imposed moratorium outlined on page 19 2.3.3.

Comment 7
Page 12,1.3.5 and 1.3.5.1:
Adds reporting requirements for releases. Permit states "releases due to improper operation or maintenance shall be reported as such" releases are described as flow of sewage from the collection system that do not add pollutants to waters and are not violations. The State is trying to make them violations by considering them improper operation or maintenance. I think this wording need to be removed or at best have a better description of who is to determine improper operation or maintenance and methods used to determine improper operation or maintenance.

Page 12-13
Regarding overflows and releases to our knowledge regulations are for the release of sewage in a waterway or water body. We advise requesting that the define releases and questioning legal authority regarding the addition of this language into the permit.

Response to Comments 1& 7
The division acknowledges that reporting and distinguishing between overflows and releases have previously been a point of confusion for some permittees. The permittee is correct that collection system failures are reporting monthly on the DMR collectively as overflows. Due to limited options in the EPA database at the time, all sewage released from the collection system regardless of if it reached waters of the state were reported as overflows. Previously, the division made this reporting element "report only" because there was no way to know by the information provided in the DMR if pollutants reached waters of the state or was the result of improper operation and maintenance. The department's Office of General Council worked with the permitting staff to develop the language in the proposed permit in order to better align the permit language with the state and federal rules. The language was designed to clarify some of the common points of confusion.

The draft permit requires that the total number previously reported be broken down depending on if the sewage reaches waters of the state and if it is a wet or dry weather occurrence. This was made possible when the EPA database system was updated to include separate parameter codes for overflow and what is called a release. The volume of the overflows and releases will be reported on the DMR as report only. This allows division personnel to better understand the magnitude of the

issues much more quickly and efficiently than sifting through letters and potentially minimizes number of violations reported to the federal database.

In the proposed permit, an overflow is where pollutants reach waters of the state. All overflows are violations regardless of the cause. It has long been in the division's rules that permittees properly operate and maintain their collection systems so that all wastewater is conveyed to the treatment plant. The new permit allows the permittee to report separately from overflows collection system failures not reaching waters as releases. The permittee is incorrect in asserting that all releases are not violations. All releases that are due by improper operation and maintenance are a violation. However, there is occasionally an event that is not due to improper operation and maintenance. The permittee may include relevant details that they believe would indicate that a particular release event is not due to improper operation and maintenance. However, it is the division's responsibility to make that determination. In July of 2019, the division conducted a public hearing on changes to rule chapter 0400-40-05 and rule chapter 0400-40-06 which clarifies overflows and the new term releases among other changes. This proposed permit is written in a manner consistent with the current rules. In consultation with the compliance and enforcement unit, the division will remove the 12 month cumulative totals from SSO, Dry Weather and SSO, Wet Weather.

Comment 2. Page 2,1.1
Would like to ask that code 00545 settleable Solids be removed from the permit. This test is a waste of time and does not provide any usable data.

Code 0060 and 0065:
Total Nitrogen and Total Phosphorus rolling averages are calculated using a different Method. Total Nitrogen limits do not match the limit in the previous permit. (Previous limit 60.64 lb/day or calculate to year average 60.64x365=22133.6 lb/year, new limit 22608 lb/year) why was a new method used for these limits?

Response to Comment 2
Tennessee Rule 0400-40-05.09(1)(a)1 requires that "the concentration of settleable solids shall not exceed 1.0 ml/l as measured by the standard one-hour Imhoff cone test." The permittee may request a reduction in frequency at the next permit renewal. The division will consider the request based on EPA guidance. This includes the facility's operational and compliance status at that time.

The Total Nitrogen limit in the previous permit was updated as a result of a correction to DMR data. The recalculation was separate and the calculations from the initial draft were used. Section 6.4 of the rationale and the permit limits has been with the correct value.

Comment 3. Page 3, 1.1:
Code 00610 Ammonia Nitrogen limits have become more stringent. Rational page R-4 6.2 gives the reason for the recalculation. The plant has an extensive history of violating its current ammonia limits. The state should wait until the end of the rehab projects to recalculate the ammonia limits as we do not have the ability to meet the limits that currently are in place.

Response to Comment 3
To assess toxicity impacts, the state utilizes the EPA Ambient Water Quality Criteria for Ammonia (https://www.epa.gov/wqc/aquatic-life-criteria-ammonia), which is promulgated in Tennessee Rules, Chapter 0400-40-03-.03-3(3)(j). Just before the public hearing on September 11, 2019, a revision to this rule was promulgated. Section 6.2 has been updated with the calculations based on the revised water quality criteria. The permittee may request compliance schedule for implementation of ammonia.

Comment 4, Page 3:
The Nitrogen limit is miscalculated and should be 7.2 mg/L. The rational for this Calculation is contained on page R-8. The issue here is the data used is from 2010-2013 and the new values for total nitrogen appear very low for a number of samples. This results in low total nitrogen load which results in low lbs. for discharge. We believe this needs to be recalculated.

We also think that it is reasonable to ask for the monitoring of cadmium to be removed as there are no sample results listed on page R-30 that exceed the proposed protection criteria during the previous permit cycle. It is burdensome of the state to require monitoring.

Comment 12. Page 26 3.2 d ii:
Ask that cadmium be removed from reporting requirements. Cadmium was removed from Technical Plating around 25 years ago. The city has no current source of cadmium. Previous detectable amounts of cadmium were due to residue cadmium in the collection system and have only ever been in minute amounts when detectable. Testing for cadmium is a waste of resources. Rational page R-6 6.3 states ,,total cadmium retained limit is from the previous permit due to the anti-backsliding provision of 40 CFR 122.449(l)."

Response to Comments 4 & 12
The total nitrogen calculation was incorrectly copied from the original rationale of the 2015 permit. During the public notice and appeals process for that permit, that value was recalculated due to inaccurate data on the DMR. The corrected calculation that was issued in 2015 has been included in this proposed permit and the values (See section 6.4). It is preferred to have at least 10 values for the purposes of calculating limits based on the 95th percentile. The data that was available when the limit was calculated included 12 values for the total nitrogen calculation and 11 for the total phosphorus calculation. Once the limit has been establish, antidegradation only provides a few avenues for relaxing the limit. Converting the limit from a rolling average in lb/d to a rolling average in lb/year is not a relaxing of the previously established limit, only expressing the limit in different units. As for the statement that the nitrogen limit should be 7.2 mg/l, it is unclear what the commenter is referring to since no other information was provided.

The effluent limit for cadmium was previously established due to issues caused by an industrial user. Part 3.2.d.ii details the reporting requirements for the city's pretreatment program. This fundamental requirement of all cities with pretreatment

programs requires that the influent and effluent to be sampled for a various pollutants (including Cadmium) semi-annually. The sampling frequency of Part 1 of the permit is established to match the frequency of sampling required by Part 3.2.d.ii. Tennessee Rule 0400-40-14-.08(6)(c) states "the WWF shall have sufficient resources and qualified personnel to carry out the authorities and procedures described in subparagraphs (a) and (b) of this paragraph." This includes the ability to identify the character and volume of pollutants contributed to the WWF (Tennessee Rule 0400-40-14-.08(6)(b)2). If the city is having difficultly funding implementation of the pretreatment program, the city's sources of funding should be revaluated.

Comment 5. Page 5, 1.1:
Codes 0010 Temperature, 0094 Conductivity, 00400 pH are added to the annual in-stream monitoring. Temperature and PH are not difficult to add to the testing. However, the city does not own any equipment to do conductivity testing. Equipment will need to be purchased for this testing or be outsourced. What is the necessity behind the additional testing?

Response to Comment 5
Conductivity was added to bring the permit language in line with the requirements of the I.I. 1.a of the Division of Water Resources QSSOP for Chemical & Bacteriological Sampling of Surface Water (DWR-WQP-P-01-QSSOP-Chem-Bact-082918).
https://www.tn.gov/content/dam/tn/environment/water/policy-and-guidance/DWR-WQP-P-01-QSSOP-Chem-Bact-082918.pdf

Because of the public hearing and additional public comment period, the requirement for the instream sampling that was due to be submitted by December 15, 2019, has been removed. The instream sampling requirements due in 2020 and beyond will not be affected. Additionally a table of narrative conditions has been added to Part 1 clarifying the due dates for each report referenced in Part 3.7.

Comment 6. Page 7:
See notations regarding use of the annual average pounds.

Response to Comment 6
This comment is the only comment with that term. It is unclear what is intended.

Comment 8. Page 13,1.5:
Reopener clauses C & D available in the precious permit have been removed.

Response to Comment 8
Item C was included in the draft, but it is now explicitly called out with a "C". Comment D from the 2015 permit has been added to section 1.5 of the propose permit.

Comment 9. Page 14,1.6:
Full compliance clause added. The city is operating under an order and cannot be expected to be in full compliance until the completion of that order.

Page 14:
If limits are reduced we advise requesting that compliance be added to existing Agreed order as the reduction of flows will be essential to being able to comply.

Response to Comment 9
Section 1.6 of the permit has been modified to specifically refer to the enforcement order. The division is willing to work with the permittee to open the enforcement order to better accommodate the changes needed to comply with the promulgated water quality criteria for ammonia.

Comment 10. Page 18, 2.3.1:
The first sentence has been changed for the purpose of issuing violations associated with releases- Previous permit stated "All discharges shall be consistent with the terms and conditions of this permit."

Response to Comment 10
This section has been changed to better align with the verbiage found in Tennessee Rule 0400-40-05-.07.

Comment 11. Page 19 2.3.3:
Note part A, releases are not prohibited nor are they violations. Part D, releases are added to the events per year calculations. Part C, releases are added. page 20 2.3.5 adverse Impact, states the permittee shall take all reasonable steps to minimize any adverse impact to waters of Tennessee. 2.3.3 Part c, releases should be removed as they are defined as not entering waters, therefore cannot have an adverse impact. Should they have an adverse impact, they are then considered overflows.

Response to Comment 11
Part A states "Sanitary sewer overflows, including dry-weather overflows, are prohibited". This is consistent with Tennessee Rule 0400-40-05-.07. Part A is applicable to overflows that reach waters regardless of cause. Part A does not address events that do not reach waters nor should it be construed to mean that releases are not violations.

Part D does clarify that what are called releases in the permit should be included in the count for determining a self-imposed moratorium. These events should have always been included in the count for self-imposed moratoriums. Due to the introduction of a separate term to distinguish if the event reached waters or not, the permit language had to be clarified to ensure that the proposed permit was not less stringent than the previous.

The section title has been modified to more clearly state that it is applicable to both overflows and release. Part C discussing adverse impact is applicable to both overflows and releases. In some cases, taking reasonable steps to minimize any adverse impact to the waters of Tennessee could be what prevents a release from becoming an overflow.

Comment 13. Page 293.4:

Watertown has a history of failing biomonitoring. These failures can be directly linked to high levels of ammonia nitrogen. ln the event Watertown has 2 consecutive test failures or three test failures within a l2-month period requiring TIE/TRE study, ask this study be waived if the failures can be directly linked to ammonia nitrogen levels. These studies are extensive and quite expensive. A study should not be necessary should the source of the failure already be known.

Response to Comment 13
Although the ammonia levels may likely be the cause of the failures that does not mean it is the only cause of a failure or that it will always be the cause of a failure. The assumption that all WET testing failures are cause by the ammonia levels excludes the industrial user (or another unknown source) as causing or contributing to the failures. Section 3.4 requires that the city notify the division by letter of a TIE/TRE. This notification shall include a schedule of activities for the initial investigation of that outfall. If the city had high ammonia values at the same time as a WET test failure, the city could indicate that ammonia is a known issue in this letter. Additionally, the letter should detail how they plan to identity if it is the only cause or if there are secondary causes through the schedule of activities. There is flexibility in the process. Each TIE/TRE will be different and should be designed to the site specific conditions.

Comment 14. Page 35:
Release is added to definitions.

Rational

Response to Comment 14
It is unclear what is intended by this comment.

Comment 15. Page R-1, 1*:*
Plant does not use chlorination or dechlorination.

Response to Comment 15
This has been corrected.

16. Page R-12 6.9:
There is a lot of misleading and vague wording in this section, including the statement "any release potentially warrants permittee mitigation of human health risks via direct or indirect contact and demonstrates a hydraulic problem in the system that warrants permittee consideration of proper operation and maintenance of the system." This statement is very misleading particularly the use of saying "any release."

Response to Comment 15
Collection systems are supposed to transport waste to the wastewater treatment plant for treatment. Any time waste leaves the collection system there is a potential risk to human health and the environment. This section of the rationale reiterating that the permit requires the permittee to report and respond to releases just as they

would for overflows. The response by the permittee includes mitigating the risks for human health.

b. The draft permit proposes to continue to require a more sensitive test method than used in the past for mercury for treated effluent analyses conducted for pretreatment program reporting and NPDES application renewal. In recent years, approved test methods in 40 CFR Part 136 have been revised to include methods for testing mercury that have detection limits lower than the minimum required detection level specified in the state water quality standards. However, the water quality standards allow for use of other detection limits on a case by case basis. Test results reported as less than the promulgated minimum detection level of 0.2 mg/L are not sensitive enough to demonstrate that effluent mercury is not contributing to, or does not have reasonable potential to contribute to, excursion of the water quality standard. Accordingly, Section 1.2.3 has been revised to read, "All sampling for total mercury (application, pretreatment, etc.) shall use Methods 1631, 245.7 or any additional method in 40 CFR 136 with a maximum detection limit of 5 ng/L."

c. Limits for Cadmium will be continued in the proposed permit as well as reporting for mercury. Section 6.2, Appendix 3 and Appendix 4 updated for the September 11, 2019, Water Quality Criteria changes.

d. Total nitrogen and total phosphorus terms and conditions are modified for annual rolling average (See section 6.4).

e. Compliance Schedule Summary

Description of Report to be Submitted	Reference Section in Permit
Monthly Discharge Monitoring Reports	1.3.1
Monthly Operational Reports	1.3.4
Monthly Bypass and Overflow Summary Report	1.3.5.1
Industrial Waste Survey Report within 120 days of the effective permit date	3.2.a
Technical review of the need to recalculate local limits within 120 days of the permit effective date	3.2.a
Biomonitoring Report beginning within 90 days of the effective permit date	3.4

For comparison, this rationale contains a table depicting the previous permit limits and effluent monitoring requirements in Appendix 1.

5. PREVIOUS PERMIT DISCHARGE MONITORING REPORT REVIEW

A review of the DMR summary from January 2016 to May 2019 reveals that the City of Watertown has had numerous exceedances of permit limits including: Nitrogen Ammonia, e. coli, total nitrogen, and IC25. Additionally, Watertown has 4 parameters in non-receipt as well as four single event pretreatment violations. A violations report

summary is located in Appendix 2a and A discharge monitoring report summary is located in Appendix 2b.

6. PROPOSED EFFLUENT LIMITS AND RATIONALE

PARAMETERS	MONTHLY AVERAGE CONCENTRATION (MG/L)	MONTHLY AVERAGE AMOUNT (LB/DAY)	WEEKLY AVERAGE CONCENTRATION (MG/L)	WEEKLY AVERAGE AMOUNT (LB/DAY)	DAILY MAXIMUM CONCENTRATION (MG/L)	DAILY MINIMUM PERCENT REMOVAL	RATIONALE
$CBOD_5$ (May 1- Oct. 31)	10	23	15	34	20	40%	D.O. protection, Refer to 6.1 below (or) T.C.A. 0400-40-05-.09 (for BOD_5)
$CBOD_5$ (Nov. 1- April 30)	25	56	30	68	35	40%	D.O. protection, Refer to 6.1 below (or) T.C.A. 0400-40-05-.09 (for BOD_5)
NH_3-N (May 1- Oct. 31)	0.5	1.2	0.7	1.7	1.0	—	Ammonia Toxicity, Refer to 6.2 below
NH_3-N (Nov. 1- April 30)	0.9	2.1	1.4	3.2	1.9	—	Ammonia Toxicity, Refer to 6.2 below
Total Suspended Solids	30	68	40	90	45	40	T.C.A. 0400-40-05-.09
Dissolved Oxygen (mg/l)	6.0 (daily minimum) instantaneous	—	—	—	—	—	D.O. protection, Refer to 6.1 below
Total Nitrogen	Report	Report	—	22134 lbs/year Rolling load	Report		Refer to 6.3 below
Total Phosphorus	Report	Report	—	2865 lbs/year Rolling load	Report		Refer to 6.3 below
E. coli (colonies/100ml)	126/100 ml	—	—	—	941/100 ml	—	T.C.A. 0400-40-03-.03, Refer to 6.5 below
Settleable Solids (ml/l)		—	—	—	1.0 (daily maximum)	—	T.C.A. 0400-40-05-.09
pH (standard units)	6.0-9.0	—	—	—	—	—	T.C.A. 0400-40-03-.03
Cadmium, total (as Cd)	—	—	—	—	0.0017	—	Refer to 6.3 below
Mercury, total (as Hg)	—	—	—	—	Report	—	Refer to 6.3 below
Flow (MGD):							
Influent	Report	—	—	—	Report	—	Used to quantify pollutant load
Effluent	Report	—	—	—	Report	—	Used to quantify pollutant load
Whole Effluent Toxicity:							
IC_{25}	100% per sample	—	—	—	—	—	Refer to 6.6 below
Metals & Toxics:							Refer to 6.7 below

	Monthly Total		Volume (gal/mo)	12 Month Cumulative Total	
Dry Weather	Overflows	0	Report	Report	Refer to 6.9 below
	Releases	Report	Report		Refer to 6.9 below
Wet Weather	Overflows	0	Report	Report	Refer to 6.9 below
	Releases	Report	Report		Refer to 6.9 below
All Weather	Bypass of Treatment	Report	Report		Refer to 6.9 below

Note: Weekly limitations on BOD_5/$CBOD_5$ and TSS concentrations are given as required per 40 CFR 133.102(a)(2) or 133.102(a)(4)(2) & 133.102 (b)(2) respectively; daily BOD_5/$CBOD_5$ and TSS limitations are authorized by T.C.A. 0400-40-05-.09; monthly and weekly mass loads are limited per 40 CFR 122.45(f) and based on the design flow as per 40 CFR 122.45(b); monthly average percent removal rates for BOD_5/$CBOD_5$ and TSS are required per 40 CFR 133.102(a)(3) or 133.102(a)(4)(iii) and 133.102 (b)(3) respectively. A minimum 40% daily removal rate is required as equivalent to a daily mass load limitation.

6.1. $CBOD_5$, DISSOLVED OXYGEN, AND PERCENT REMOVALS REQUIREMENTS

a. Streeter-Phelps modeling was performed during a previous issuance of this permit at various conditions to determine allowable organic loadings. The monthly average limits for $CBOD_5$ (10 mg/l-summer, 25 mg/l-winter), NH_3-N (1.1 mg/l-summer, 3.3 mg/l-winter), and D.O. (6.0 mg/l) still apply and are considered sufficient to result in an instream dissolved oxygen concentration that remains above the required minimum of 5.0 mg/l. Modeling results are located in the permit file administrative record.

In addition to $CBOD_5$, NH_3-N undergoes biological oxidation in a receiving stream thereby utilizing in stream oxygen and potentially reducing oxygen levels below water quality standards. Ammonia as N is also a pollutant that exhibits toxicity to fish and other aquatic life. The two affects are analyzed separately and the division imposes the most stringent limit in the permit.

b. The treatment facility is required to remove 85% of the $CBOD_5$ and TSS that enter the facility on a monthly basis. This is part of the minimum requirement for all municipal treatment facilities contained in Code of Federal Regulations 40 Part 133.102. The reasons stated by the U.S.E.P.A. for these requirements are to achieve these two basic objectives:

(1) To encourage municipalities to correct excessive inflow and infiltration (I/I) problems in their sanitary sewer systems, and
(2) To help prevent intentional dilution of the influent wastewater as a means of meeting permit limits.

The treatment facility is required to remove 40% of the $CBOD_5$ and TSS that enter the facility on a daily basis. This percent removal will be calculated three times per week and recorded on the Monthly Operation Report. The number of excursions (days when $CBOD_5$ and/or TSS removal is less than 40%) will be reported on the Discharge Monitoring Report.

6.2. NH_3-N TOXICITY

To assess toxicity impacts, the state utilizes the EPA Ambient Water Quality Criteria for Ammonia (https://www.epa.gov/wqc/aquatic-life-criteria-ammonia), which is promulgated in Tennessee Rules, Chapter 0400-40-03-.03-3(3)(j), dated *September 11, 2019*, and assumed stream temperatures of 25°C and 15°C and pH of 7.5 or 8.0 to derive an allowable instream protection value protective of chronic exposure to a continuous discharge. A mass balance equation with sewage treatment facility and stream flows and this allowable value determines the monthly average permit limit. The criteria document states that a 30Q5 flow value is protective in deriving allowable values. Where the division has 30Q5 flow values, the division may use them. Otherwise, the division utilizes the available 7Q10 or 1Q10 values that are generally more conservative. The criteria continuous concentrations (CCC) derived from assumed temperature and pH values are as follows:

Ammonia as Nitrogen Calculations

The State utilizes the Water Quality Criteria and the EPA document, EPA Ambient Water Quality Criteria for Ammonia (https://www.epa.gov/wqc/aquatic-life-criteria-ammonia). A mass balance with plant and stream flows and this allowable value determines the monthly average permit limit. Seasonal limits may also be allowed due to ambient temperature variations between the summer and winter seasons.

East TN- 25°C, 15°C
Middle TN- 27°C, 17°C
West TN- 30°C, 20°C

	Winter		**Summer**
Temp (°C)=	17	Temp (°C)=	27
pH=	8	pH=	8
MAX Expression	17.0000	MAX Expression	27.0000

$$CCC = 0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) x\left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$

Winter CCC=	**0.94**	Summer CCC=	**0.49**

CCC - Continuous Chronic Criterion Allowable instream NH3 concentration [mg/l]

$$CCC = \frac{\text{(Critical Low Flow [MGD] * Background Ammonia [mg/L]) + (Design Flow [MGD] * } \mathbf{\text{Effluent Concentration}} \text{ [mg/L])}}{\text{(Critical Low Flow [MGD] + (Design Flow [MGD])}}$$

where:	0	Critical Low Flow [MGD] (7Q10 value)
	0.1	Background Ammonia Concentration [mg/L]
	0.27	WWTP Design Flow or long-term average flow [MGD]

Therefore, the Allowable **Effluent Concentrations** and corresponding **Amounts** in winter and summer are:

Winter		**Summer**	
0.94	Concentration [mg/L]	**0.495**	Concentration [mg/L]
2.1	Amount [lb/day]	**1.1**	Amount [lb/day]

The previous permit erroneously used the CCC values based on an instream pH of 7.5. Standard procedures require using the instream pH of 8.0 for middle Tennessee. Additionally, a review of instream sampling of Round Lick Creek indicate that the vast majority of samples are above a pH of 7.5 further substantiating the use to a pH of 8.0 to determine the CCC value.

DWR Station ID	Date	Time	Characteristic	Value
RLICK019.4WS	6/9/2015	1000	pH	8.28
RLICK019.4WS	5/6/2015	945	pH	8.09
RLICK019.4WS	4/28/2015	1140	pH	8.66
RLICK019.4WS	3/17/2015	1030	pH	8.12
RLICK019.4WS	2/3/2015	1015	pH	8.18
RLICK019.4WS	1/21/2015	1100	pH	8.19
RLICK019.4WS	12/9/2014	1015	pH	7.02
RLICK019.4WS	11/6/2014	1005	pH	7.94
RLICK019.4WS	10/22/2014	1040	pH	8.06
RLICK019.4WS	9/23/2014	1040	pH	7.99
RLICK019.4WS	8/5/2014	905	pH	8.09
RLICK019.4WS	7/15/2014	835	pH	7.86
RLICK020.1WS	7/1/2010	930	pH	7.82
RLICK019.4WS	7/1/2010	950	pH	7.99
RLICK019.4WS	6/29/2010	1125	pH	8.22
RLICK020.1WS	6/29/2010	1105	pH	7.91
RLICK020.1WS	6/22/2010	905	pH	7.67
RLICK019.4WS	6/22/2010	920	pH	7.84
RLICK020.1WS	6/16/2010	950	pH	7.98
RLICK019.4WS	6/16/2010	925	pH	8.03
RLICK020.1WS	6/14/2010	945	pH	7.84
RLICK019.4WS	6/14/2010	1010	pH	8.11

DWR Station ID	Date	Time	Characteristic	Value
RLICK019.4WS	6/8/2010	845	pH	7.98
RLICK019.4WS	6/1/2010	1310	pH	8.43
RLICK019.4WS	5/27/2010	915	pH	7.96
RLICK019.4WS	5/24/2010	1040	pH	8.08
RLICK019.4WS	5/19/2010	940	pH	7.9
RLICK019.4WS	5/13/2010	945	pH	8.08
RLICK019.4WS	5/11/2010	1000	pH	8.24
RLICK019.4WS	4/13/2010	1010	pH	8.17
RLICK019.4WS	3/2/2010	930	pH	7.88
RLICK019.4WS	1/26/2010	932	pH	7.49
RLICK019.4WS	12/10/2009	1040	pH	7.74
RLICK019.4WS	11/24/2009	925	pH	7.76
RLICK019.4WS	10/28/2009	940	pH	7.72
RLICK019.4WS	9/30/2009	1015	pH	7.82
RLICK019.4WS	9/2/2009	935	pH	7.41
RLICK019.4WS	8/25/2009	850	pH	7.47
RLICK019.4WS	8/19/2009	900	pH	7.57
RLICK019.4WS	8/17/2009	1000	pH	7.86
RLICK019.4WS	8/13/2009	955	pH	7.89
RLICK019.4WS	8/11/2009	915	pH	7.67
RLICK019.4WS	7/16/2009	955	pH	8.01

Table of instream pH values for Round Lick Creek pH values below 7.5 are highlighted.

Because the Winter NH_3-N concentration limits calculated to protect dissolved oxygen are less restrictive to the toxicity limits calculated above, following table shows the current and proposed summer and winter ammonia limits.

Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Summer							
Code	**Parameter**	**Statistical Base**	**Qualifier**	**Value (2015 permit)**	**Unit**	**Proposed Value**	**Unit**
610	Nitrogen, Ammonia total (as N)	Daily Maximum	<=	2.5	mg/L	1.0	mg/L
610	Nitrogen, Ammonia total (as N)	Monthly Average	<=	1.1	mg/L	0.5	mg/L
610	Nitrogen, Ammonia total (as N)	Weekly Average	<=	2	mg/L	0.7	mg/L
610	Nitrogen, Ammonia total (as N)	Weekly Average	<=	4.5	lb/d	1.7	lb/d
610	Nitrogen, Ammonia total (as N)	Monthly Average	<=	2.5	lb/d	1.2	lb/d
Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Winter							
Code	**Parameter**	**Statistical Base**	**Qualifier**	**Value (2015 permit)**	**Unit**	**Proposed Value**	**Unit**
610	Nitrogen, Ammonia total (as N)	Weekly Average	<=	9	lb/d	3.2	lb/d
610	Nitrogen, Ammonia total (as N)	Daily Maximum	<=	4.5	mg/L	1.9	mg/L
610	Nitrogen, Ammonia total (as N)	Weekly Average	<=	4	mg/L	1.4	mg/L
610	Nitrogen, Ammonia total (as N)	Monthly Average	<=	7.4	lb/d	2.1	lb/d
610	Nitrogen, Ammonia total (as N)	Monthly Average	<=	3.3	mg/L	0.9	mg/L

6.3. CADMIUM AND MERCURY

Appendix 3 shows the reasonable potential procedures and pretreatment semi-annual monitoring. The total cadmium limit is retained from the previous permit due to the anti-backsliding provision of 40 CFR 122.44(I) that requires a reissued permit to be as stringent as the previous permit.

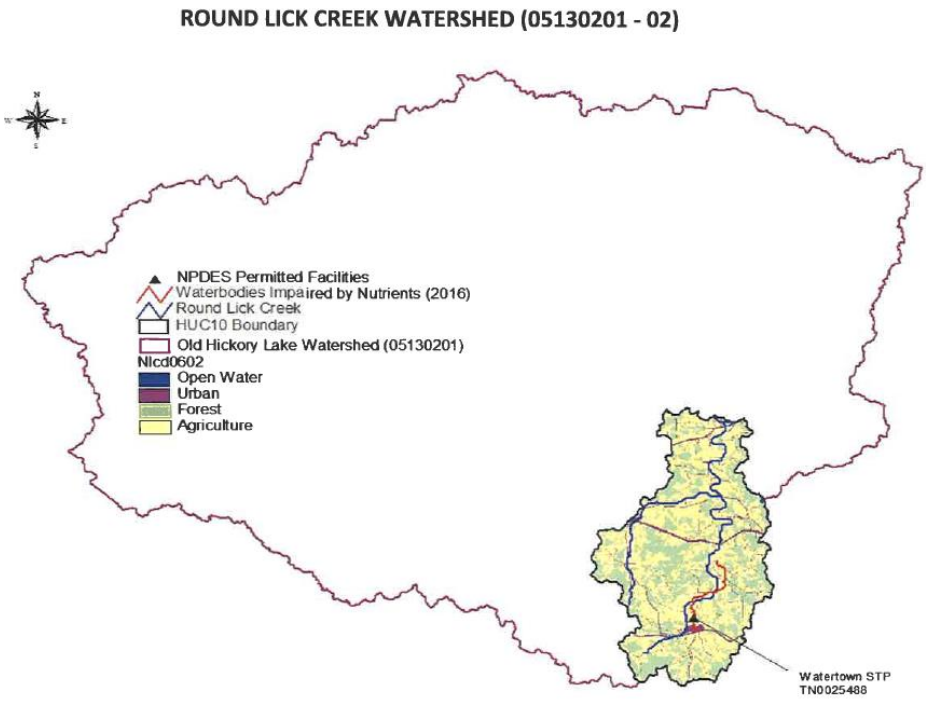
Additionally, the DMR data indicated a maximum mercury value of 16ng/l. Although not high enough to require a limit be established, it is prudent to continue monitoring and reporting.

6.4. TOTAL NITROGEN AND TOTAL PHOSPHORUS MONITORING/REPORTING

Nutrients are naturally occurring and essential components of healthy aquatic systems. Excessive amounts of nutrients, however, can impact water quality. The enrichment of a waterbody with nutrients, called eutrophication, can result in dense, rapidly multiplying growths, or blooms, of algal species and other nuisance aquatic plants. These have potential for negatively impacting the habitat for fish and aquatic

life and degrading the water quality for drinking water supply and recreation uses. These impacts can present both locally from an individual activity and much further downstream from the cumulative impact of multiple activities. The division has therefore developed and begun to implement a strategy to accomplish long-term nutrient reduction in Tennessee waters. The document referred to as the Tennessee Nutrient Reduction Framework (NRF), contains proposed rationale and the methodology for implementing the strategy within a watershed area. Consequently, the framework considers impacts from both point and non-point sources of nutrients and potentially recommends reduction goals for both point and non-point sources. The NRF approach to nutrient reduction is intended to utilize an adaptive management approach in consideration of the facts presenting within a watershed and reevaluation of the effectiveness of progress being made. Regular reassessments of goals and action plans will be conducted by reviewing monitoring data, modeling results and other measures of success. As additional data becomes available (such as WWTP effluent characterization and instream water quality data), model results can be re-evaluated. The framework may be reviewed on the division's webpage at
http://www.tn.gov/environment/article/wr-ws-tennessee-nutrient-reduction-framework.

The statewide framework is an adaptive management approach. This is an iterative approach whereby the most practical treatment methods are prescribed for the symptoms and facts presenting followed by assessment of results and application of more stringent controls in subsequent control mechanisms. In 2018 the SPARROW model was run for the Round Lick Creek Watershed



This model indicated that the limit that was implemented in the previous permit to "cap" the amount of TN and TP is still protective of the receiving waters.

Calculation of Total Nitrogen (TN) and Total Phosphorus (TP) limits from permit effective on January 1, 2016.

	TN	Flow	TN Load
Units	mg/l	MGD	lb/day
Date			
3/4/2010	16	0.344	45.90
6/22/2010	11.8	0.173	17.03
9/22/2010	16	0.176	23.49
11/30/2010	8.2	0.223	15.25
3/17/2011	8.2	0.407	27.83
4/28/2011	5.5	0.442	20.27
9/22/2011	6.6	0.318	17.50
11/10/2011	24	0.393	78.66
2/9/2012	17	0.336	47.64
4/19/2012	15	0.193	24.14
11/15/2012	12	0.230	23.02
1/17/2013	6.3	0.403	21.17
Total	12.00	12.00	12.00
Average	12.22	0.30	30.16
Std dev	5.58	0.10	18.53
95th percentile	20.15		61.60

from pgs E-5 & E-6 in the TSD:

$x_p = \mu + z_p\sigma$

where:

μ = mean of monthly averages

σ = standard deviation of monthly averages

z_p = pth percentage point for std normal dist

x_{95} = 95th %ile n-day monthly average limit

$= \mu + 1.645\sigma$

Note: $z_p = 1.645$

x95 (mg/l)= 21.39

x95 (lb/day)= 60.64

	TP	Flow	TP Load
Units	mg/l	MGD	lb/day
Date			
03/31/2010	2.20	0.34	6.31
04/30/2010	2.20	0.25	4.55
11/30/2010	1.90	0.22	3.53
12/31/2010	1.90	0.31	4.96
03/31/2011	1.10	0.41	3.73
04/30/2011	1.20	0.44	4.42
11/30/2011	2.60	0.39	8.52
02/29/2012	1.60	0.34	4.48
04/30/2012	4.20	0.19	6.76
11/30/2012	0.99	0.23	1.90
01/31/2013	0.74	0.40	2.49
Total	11.00	11.00	11.00
Average	1.88	0.32	4.70
Std dev	0.97	0.09	1.92
95th percentile	3.40		7.64

from pgs E-5 & E-6 in the TSD:

$x_p = \mu + z_p\sigma$

where:

μ = mean of monthly averages

σ = standard deviation of monthly averages

z_p = pth percentage point for std normal dist

x_{95} = 95th %ile n-day monthly average limit

$= \mu + 1.645\sigma$

Note: $z_p = 1.645$

x95 (mg/l)= 3.47

x95 (lb/day)= 7.85

Since the issuance of the previous permit the division has begun to implement the nutrient limits as annual rolling load limits in lb/yr where feasible. Annual load limits, versus concentration or daily load limits, give credit for any waste water diverted from the outfall for reuse and thereby encourages reuse alternatives. Annual rolling average load limits allow operational flexibility in achieving limit while still be protective of water quality due to the nature of nutrients.

The data used in the calculation of the “cap” limits include 11 data points for each parameter and are a good representation of the different seasons. The “cap” limits shown above will be converted to an annual loading in lb/year

TN

$$60.64\ \frac{lbs}{day} \times 365\ \frac{lbs}{day} = 22{,}134\ \frac{lbs}{year}$$

TP

$$7.85\ \frac{lbs}{day} \times 365\ \frac{lbs}{day} = 2865\ \frac{lbs}{year}$$

Typically, the division requires the permittee to investigate and optimize the wastewater treatment plant for biological nutrient removal. However, biological nutrient removal is extremely difficult when the wastewater influent is heavily influence by I/I. In 2015, Watertown entered into a consent order (WPC15-0030) with the division to rehabilitate the collection system to resolve the I/I issue. As such, the requirement to optimize will be not be include in the proposed permit.

The annual instream sampling requirement will continue. However, field parameters have been added to each location. Reporting of the value for each parameter will be on the DMR. Additionally, a set narrative conditions have been added to require the lab reports to be submitted.

6.5. *E. COLI* REQUIREMENTS

Disinfection of wastewater is required to protect the receiving stream from pathogenic microorganisms. Fecal coliform and *E. coli* are indicator organisms used as a measure of bacteriological health of a receiving stream and the effectiveness of disinfection.

As of September 30, 2004, the criterion for fecal coliform has been removed from the State's Water Quality Standards. Thus, the division imposes an *E. coli* limit on discharges of treated sewage for the protection of recreational use of the stream in lieu of the fecal coliform limit. The *E. coli* daily maximum limit of 487 colonies per 100 ml applies to lakes and exceptional Tennessee waters. A maximum daily limit of 941 colonies per 100 ml applies to all other recreational waters.

6.6. BIOMONITORING

The division evaluates all dischargers for reasonable potential to exceed the narrative water quality criterion, "no toxics in toxic amounts". The division has determined that for municipal facilities with stream dilutions of less than 500 to 1, any of the following conditions may demonstrate reasonable potential to exceed this criterion.

a. Toxicity is suspected or demonstrated.
b. A pretreatment program is required.
c. The design capacity of the facility is greater than 1.0 MGD.

Watertown is required to operate a pretreatment program

Even though the potential instream toxicity after mixing, expressed as TUa exceeds the CMC, acute whole effluent toxicity testing is waived and replaced by a chronic test that is more stringent than the LC_{50} acute test.

The following calculation is the required dilution at which chronic toxicity testing must meet permit requirements.

$$IC_{25}\ \% = \frac{\text{Design Flow}}{\text{Low Flow+ Design Flow}} * 100 \geq \frac{0.27}{0+0.27} * 100 > 100\%$$

where:

0 = Low Flow - 7Q10 (MGD)
0.27 = Design Flow Capacity (MGD)
IC_{25} = Concentration causing 25% reduction in survival, reproduction and growth of test organisms

6.7. METALS AND TOXICS

Pass-through limitations for heavy metals and other toxic substances have been recalculated as part of the permit issuance process and/or due to changes in industrial waste contribution to the POTW. This POTW is required to implement/maintain a pretreatment program. More frequent monitoring will be required **in the permit** if (a) the reported concentrations approach or exceed calculated allowable values, (b) significant amounts of particular pollutants are present which may impact the treatment process sludge character or the receiving stream, or (c) minimum information is lacking to accurately calculate water quality protection values, in which case additional stream monitoring may also be required.

A summary of the semi-annual report data indicates that the potential exists for the water quality criteria for cadmium parameter to be exceeded as discussed in 6.3 above. Additionally, mercury will continue to be monitored. Appendix 3 lists the metal and toxic parameters calculations and the procedure used to derive the results.

6.8. VOLATILE ORGANIC, ACID-EXTRACTABLE, AND BASE-NEUTRAL COMPOUNDS

The division evaluated effluent concentrations of volatile organic, acid-extractable, and base-neutral compounds and antimony, arsenic, beryllium, selenium and thallium for potential to violate water quality criteria using the following mass balance equation:

$$Cm = \frac{QsCs + QwCw}{Qs + Qw}$$

where:

Cm = resulting in-stream concentration after mixing
Cw = concentration of pollutant in wastewater
Cs = stream background concentration
Qw = wastewater flow, (STP design flow)
Qs = stream low flow

to protect water quality:

$$Cw \leq Ca$$

where:

Ca = STP effluent concentration allowable

$$= \frac{(S_A)\,[Cm\,(Qs + Qw) - QsCs]}{Qw}$$

and (S_A) = the percent “Stream Allocation”.

The reasonable potential evaluation uses the following assumptions and procedures:

a. Stream background concentrations, Cs, for all volatile organic, acid-extractable, and base-neutral compounds equal zero unless actual stream data exists to show otherwise. Use of the effluent concentrations of such pollutants contributed by upstream dischargers as background is not justifiable due to the volatility and reactivity of these pollutants.

b. The stream allocation, S_A , is 90% and is used as a factor of safety.

c. A mass balance uses the STP design flow, the receiving stream critical low flow (7Q10 or 1Q10), the state water quality numeric criteria, and the stream allocation safety factor to derive the allowable effluent concentrations.

d. When pollutants have potential to violate standards because the concentrations are below the scan detection levels but could be above the allowable water quality based effluent concentrations, the pollutants are handled one of three (3) ways:

    i. Additional testing of detected and non-detected pollutants is required if contributing industrial processes are likely to contain them and the effluent scans have not met the minimum required detection levels (RDL) in the state water quality standards or approximated the method detection limits (MDL) of the approved test methods for the pollutants in 40 CFR Part 136.
    ii. If the required RDL has been used and resulted in non-detection, or if an MDL has been used with non-detection and the contributing industrial processes do not reasonably contain that pollutant, the division drops the pollutant from further consideration.
    iii. Pollutants detected at levels high enough to violate standards are limited in the permit to the allowable concentration, Cw, based on STP design flow.

Calculations for this permit have been done using a standardized spreadsheet, titled "WQ Based Effluent Calculations- Other Compounds", and are located in Appendix 4. All metals other than antimony, arsenic, beryllium, selenium, and thallium have been evaluated using procedures described in the rationale, or fact sheet, section headed, “METALS & TOXICS”.

The evaluation indicates that volatile organic, acid extractable, and base neutral compounds and antimony, arsenic, beryllium, selenium, and thallium do not exhibit

the potential to violate water quality criteria and thus will not be given effluent limitations and monitoring requirements in the permit.

6.9. OVERFLOW (SANITARY SEWER AND DRY-WEATHER), RELEASE AND BYPASS REPORTING

For the purposes of demonstrating proper operation of the collection, transmission and treatment system, the permit treats releases separately from overflows and bypass. State regulations at 0400-40-05-.07(2) establish “standard conditions.” These standard conditions include 0400-40-05-.07(2)(n) that sets forth specific language prohibiting sanitary sewer overflows (defined in the regulations as a “discharge”) and standard conditions in 0400-40-05-.07(2)(l) and (m) pertaining to bypass. While the regulations prohibit sanitary sewer overflow (i.e., discharges that reach receiving waters) it does not prohibit “releases” that do not reach receiving waters. However, releases that do not reach receiving waters may be indicative of other problems, such as improper operation and maintenance of the sewer system. Whether another violation occurs or whether, for example, there is an unavoidable accident (see, e.g., § 69-3-114(a)), will involve case-specific evaluations. Regardless, the permit assures, without waiving rights to pursue other violations associated with a release, as applicable, that the permittee would, at a minimum be reporting and responding to releases. Any release potentially warrants permittee mitigation of human health risks via direct or indirect contact and demonstrates a hydraulic problem in the system that warrants permittee consideration as part of proper operation and maintenance of the system.

When determining if a location experiences chronic sanitary sewer overflows or releases the term “event(s)” includes dry weather overflows, wet weather overflows, dry weather releases and wet weather releases.

7. OTHER PERMIT REQUIREMENTS AND CONDITIONS

7.1. CERTIFIED WASTEWATER TREATMENT OPERATOR

The waste treatment facilities shall be operated under the supervision of a Grade III certified wastewater treatment operator in accordance with the Water Environmental Health Act of 1984. Operator grades are under jurisdiction of the Water and Wastewater Operators Certification Board. This NPDES permit is under jurisdiction of the Tennessee Board of Water Quality, Oil and Gas. Operator grades are rated and recommended by the Division of Water Resources pursuant to Rule 0400-49-01 (formerly 1200-05-03) and are included in this fact sheet for reference. The grades are intentionally not specified in the permit so that the operation certification board can authorize changes in grade without conflicting with this permit.

7.2. COLLECTION SYSTEM CERTIFIED OPERATOR

The collection system shall be operated under the supervision of a Grade I certified collection system operator in accordance with the Water Environmental Health Act of 1984.

7.3. PRETREATMENT PROGRAM

The Watertown STP has an approved pretreatment program. An updated Industrial Waste Survey must be completed within 120 days of the effective date of the permit, unless such a survey has been submitted within 3 years of the effective date.

At least once each reporting period, all permittees with approved pretreatment programs are required to analyze the STP influent and effluent for the following pollutant parameters: chromium (trivalent and hexavalent and total if drinking water use applies), copper, lead, nickel, zinc, silver, cadmium, mercury, total phenols, and cyanide. These pollutants were selected because, historically, they are the ones that tend to be predominant in industrial wastewaters. Other pollutants may be added to the list, as required.

During preparation of this permit, data from ten previous semiannual reports were analyzed. If any particular value of a pollutant equals or exceeds 85% of the pass-through limit, the pollutant was added to the list of those that are required to be sampled. Based on our review of the semiannual reports and other documents, sampling for additional pollutants is not required at this time.

7.4. BIOSOLIDS MANAGEMENT PRACTICES

The Clean Water Act (CWA) requires that any NPDES permit issued to a publicly owned treatment works or any other treatment works treating domestic sewage shall comply with 40 CFR Part 503, the federal regulation governing the use and disposal of sewage sludge. It is important to note that “biosolids” are sewage sludge that has been treated to a level so that they can be land applied.

The language in subpart 3.3 of the permit, relative to biosolids management, a CWA requirement, allows the “permitting authority” under 40 CFR Part 503.9(p) to be able to enforce the provisions of Part 503. The “permitting authority” relative to Part 503 is either a state that has been delegated biosolids management authority or the applicable EPA Region; in the case of Tennessee it is EPA-Region 4.

Tennessee regulates the land application of non-exceptional quality biosolids under state rules, Chapter 0400-40-15. The state rules became effective on June 30, 2013. Under these state rules, all facilities that land apply non-exceptional quality biosolids must obtain a biosolids permit from the division. The land application of non-exceptional quality biosolids under state rules is regulated through either a general permit or by an individual permit. Questions about the division’s biosolids regulations and permitting program should be directed to the State Biosolids Coordinator at:

State of Tennessee
Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass - Tennessee Tower

312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102
(615) 532-0625

7.5. PERMIT TERM

In order to meet the target reissuance date for the Cumberland-Old Hickory Lake watershed and following the directives for the Watershed Management Program initiated in January, 1996, the permit will be issued to expire in 2024.

7.6. ELECTRONIC REPORTING

Monitoring results shall be recorded monthly and submitted monthly using Discharge Monitoring Reports (DMRs) based on the effluent limits in Section 1.1 of the permit. DMRs and DMR attachments, including laboratory data and overflow reports, shall be submitted electronically in NetDMR, or other electronic reporting tool approved by the State, no later than the 15th of the month following the end of the monitoring period. All NPDES program reports must be signed and certified by a responsible official or a duly authorized representative, as defined in 40 CFR 122.22.

The NPDES Electronic Reporting Rule, which became effective on December 21, 2016, replaces most paper-based reporting requirements with electronic reporting requirements. NetDMR allows NPDES permittees to submit DMRs electronically to EPA through a secure internet application and has been approved by Tennessee as the official electronic reporting tool for DMRs.

According to 40 CFR 127.15, states have the flexibility to grant temporary or episodic waivers from electronic reporting to NPDES permittees who are unable to meet the electronic reporting requirements. To obtain an electronic reporting waiver, an electronic reporting waiver request must be submitted by email to DWRwater.compliance@tn.gov or by mail to the following address:

Division of Water Resources
Compliance and Enforcement Unit
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243

For contact and training information about NetDMR electronic reporting, visit TDEC's website at http://tn.gov/environment/topic/wr-netdmr-and-electronic-reporting.

8. ANTIDEGRADATION STATEMENT/WATER QUALITY STATUS

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06. It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act.

Stream determinations for this permit action are associated with the waterbody segment identified by the division as segment ID# TN05130201021_2000.

The division has made a water quality assessment of the receiving waters associated with the subject discharge(s) and has found the receiving stream to be neither an exceptional nor outstanding national resource water. Additionally, this water partially/does not support(s) designated uses due to sedimentation/siltation, dissolved oxygen, Escherichia coli, Nitrate/Nitrite, alteration in stream-side or littoral vegetative.

The division proposes permit terms and conditions to comply with the state regulations. In summary, the permit imposes limits that will prevent the POTW effluent from contributing additional nutrient loading, and stream monitoring and reporting.

TMDLs have been developed and approved for this waterbody segment on the following parameters and dates:

Parameter	TMDL Approval Date
E. Coli	3/28/08

The proposed terms and conditions of this permit comply with the wasteload allocations of these TMDLs.

APPENDIX 1
PREVIOUS PERMIT LIMITS

PARAMETERS	MONTHLY AVERAGE CONCENTRATION (MG/L)	MONTHLY AVERAGE AMOUNT (LB/DAY)	WEEKLY AVERAGE CONCENTRATION (MG/L)	WEEKLY AVERAGE AMOUNT (LB/DAY)	DAILY MAXIMUM CONCENTRATION (MG/L)	DAILY MINIMUM PERCENT REMOVAL	MEASUREMENT FREQUENCY
$CBOD_5$ (May 1- Oct. 31)	10	23	15	34	20	40%	3/week
$CBOD_5$ (Nov. 1- April 30)	25	56	30	68	35	40%	3/week
NH_3-N (May 1- Oct. 31)	1.1	2.5	2.0	4.5	2.5	—	3/week
NH_3-N (Nov. 1- April 30)	3.3	7.4	4.0	9.0	4.5	—	3/week
Total Suspended Solids	30	68	40	90	45	40%	3/week
Dissolved Oxygen (mg/l)	6.0 (daily minimum) instantaneous	—	—	—	—	—	5/week
Total Nitrogen	—	—	—	—	60.64 lb/d	—	1/month
Total Phosphorus)	—	—	—	—	7.85 lb/d	—	1/month
E. coli (colonies/100ml)	126/100 ml	—	—	—	941/100 ml	—	3/week
Settleable Solids (ml/l)		—	—	—	1.0 (daily maximum)	—	5/week
pH (standard units)	6.0-9.0	—	—	—	—	—	5/week
Cadmium, Total					0.0017		
Mercury, Total					Report		
Flow (MGD):							
Influent	Report	—	—	—	Report	—	7/week
Effluent	Report	—	—	—	Report	—	7/week
Whole Effluent Toxicity:							
IC_{25}	100% per sample	—	—	—	—	—	1/quarter
Metals & Toxics:							
Sanitary Sewer Overflows, Total Occurrences			Report				continuous
Dry Weather Overflows, Total Occurrences			Report				continuous
Bypass of Treatment, Total Occurrences			Report				continuous

APPENDIX 2A
Violations Report

NPDES ID(s): TN0025488
State: TN
Major/Minor Indicator:
Violation Date: 03/01/2014 - 03/01/2019
Violation Type(s):

Environmental Protection Agency
Integrated Compliance Information System
Violations Report

Created Date: 09/15/2010
Refresh Date: 03/01/2019
Version 1.5, Modified: 1/4/2017

TN0025488

Permittee Name:	CITY OF WATERTOWN	**Primary SIC Code:**	4952	**Permit Issued:**	12/01/2015
Permittee Address:	8630 SPARTA PIKE WATERTOWN, TN 37184	**Primary SIC Desc:**	Sewerage Systems	**Permit Effective:**	01/01/2016
		Primary NAICS		**Permit Expired:**	07/31/2019
Major/Minor Indicator:	Minor	**Primary NAICS Desc:**		**Permit Status:**	Effective
Compliance Track. Status	On	**Cognizant Official:**	MAYOR MICHAEL R. JENNINGS		
DMR Non Receipt Flag:	On	**Cognizant Offcl. Ph.:**	615-237-3326		
RNC Tracking Flag:	On	**Receiving Body:**	ROUND LICK CR @mi 19.2		

Facility Information

Facility Name:	WATERTOWN STP	**County:**	Wilson	**FRS ID:**	110009788630
Facility Location:	COMMERCE ROAD WATERTOWN, TN 37184	**Region:**	04	**Federal Facility**	N
		State-Region:	04	**Type of Ownership:**	Municipal or Water District

DMR Non-Receipt Violations

Violation Code	Monitoring Period End	DMR Due Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	DMR Value	NODI Code	RNC Det. Code/	RNC Res. Code/	DMR Val. Rec Date
D80	07/31/2017	08/15/2017	001-G	50050 - Flow, in conduit or thru treatment plant	1	0	Q1	**G**	N 09/15/2017	**1** **09/15/2017**	08/15/2017
D80	07/31/2017	08/15/2017	001-G	50050 - Flow, in conduit or thru treatment plant	1	0	Q2	**G**	K 09/15/2017	**1** **09/15/2017**	08/15/2017

Effluent Violations

Violation Code	Monitoring Period End Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	SNC Group	EA Identifier	Value Type/ Stat. Base	Reported Value/Units	% Exceed.	Limit Value/Units	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
E90	12/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		Q2 WKLY AVG	15.8 lb/d	76%	<=9 lb/d		
E90	12/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C2 WKLY AVG	5.8 mg/l	45%	<=4 mg/l		
E90	12/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C3 DAILY MX	5.8 mg/l	29%	<=4.5 mg/l		
E90	10/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	2.16 mg/l	8%	<=2 mg/l		
E90	09/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q1 MO AVG	3.6 lb/d	44%	<=2.5 lb/d	T 09/30/2018	2 12/31/2018
E90	09/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	13 lb/d	189%	<=4.5 lb/d		
E90	09/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	2.4 mg/l	118%	<=1.1 mg/l	T 09/30/2018	2 12/31/2018
E90	09/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	8.54 mg/l	327%	<=2 mg/l		
E90	09/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	8.54 mg/l	242%	<=2.5 mg/l		
E90	08/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	5.6 lb/d	24%	<=4.5 lb/d		
E90	08/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	3.45 mg/l	73%	<=2 mg/l		
E90	08/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	3.45 mg/l	38%	<=2.5 mg/l		
E90	07/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	5.7 lb/d	27%	<=4.5 lb/d		
E90	07/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	2.2 mg/l	100%	<=1.1 mg/l	T 09/30/2018	2 12/31/2018

Effluent Violations

Violation Code	Monitoring Period End Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	SNC Group	EA Identifier	Value Type/ Stat. Base	Reported Value/Units	% Exceed.	Limit Value/Units	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
E90	07/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	7.2 mg/l	260%	<=2 mg/l		
E90	07/31/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	7.2 mg/l	188%	<=2.5 mg/l		
E90	06/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	6.3 lb/d	40%	<=4.5 lb/d		
E90	06/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	1.262 mg/l	15%	<=1.1 mg/l	V 09/30/2018	2 12/31/2018
E90	06/30/2018	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	2.5 mg/l	25%	<=2 mg/l		
E90	04/30/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		Q2 WKLY AVG	12 lb/d	33%	<=9 lb/d		
E90	04/30/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C2 WKLY AVG	7.01 mg/l	75%	<=4 mg/l		
E90	04/30/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C3 DAILY MX	7.01 mg/l	56%	<=4.5 mg/l		
E90	03/31/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		Q2 WKLY AVG	13.8 lb/d	53%	<=9 lb/d		
E90	03/31/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C2 WKLY AVG	5.09 mg/l	27%	<=4 mg/l		
E90	03/31/2017	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C3 DAILY MX	5.09 mg/l	13%	<=4.5 mg/l		
E90	03/31/2017	001-G	TRP6C - IC25 Static Renew al 7 Day Chronic Chroimephales	1	0			C3 MINIMUM	20 %	80%	>100 %		
E90	10/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	7.6 lb/d	69%	<=4.5 lb/d		
E90	10/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	2.1 mg/l	91%	<=1.1 mg/l		
E90	10/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	7.1 mg/l	255%	<=2 mg/l		
E90	10/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	7.1 mg/l	184%	<=2.5 mg/l		
E90	09/30/2016	001-G	TRP3B - IC25 Static Renew al 7 Day Chronic Chrceriodaphnia	1	0			C3 MINIMUM	4.55 %	95%	>100 %		
E90	09/30/2016	001-G	TRP6C - IC25 Static Renew al 7 Day Chronic Chroimephales	1	0			C3 MINIMUM	6.25 %	94%	>100 %		
E90	07/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	4.8 lb/d	7%	<=4.5 lb/d		
E90	05/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q1 MO AVG	13.2 lb/d	428%	<=2.5 lb/d		
E90	05/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	25.7 lb/d	471%	<=4.5 lb/d		
E90	05/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	9.49 mg/l	763%	<=1.1 mg/l		
E90	05/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	17.7 mg/l	785%	<=2 mg/l		
E90	05/31/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	17.7 mg/l	608%	<=2.5 mg/l		
E90	04/30/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		Q2 WKLY AVG	10 lb/d	11%	<=9 lb/d		

Effluent Violations

Violation Code	Monitoring Period End Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	SNC Group	EA Identifier	Value Type/ Stat. Base	Reported Value/Units	% Exceed.	Limit Value/Units	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
E90	04/30/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C2 WKLY AVG	7.32 mg/l	83%	<=4 mg/l		
E90	04/30/2016	001-G	00610 - Nitrogen, ammonia total [as N]	1	1	1		C3 DAILY MX	7.32 mg/l	63%	<=4.5 mg/l		
E90	03/31/2016	001-G	00600 - Nitrogen, total [as N]	1	0	1		Q2 ROLL AVG	265 lb/d	337%	<=60.64 lb/d		
E90	12/31/2015	001-G	TRP3B - IC25 Static Renew al 7 Day Chronic Chrceriodaphnia	K	0			C1 MINIMUM	85.3 %	15%	>=100 %		
E90	10/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q1 MO AVG	2.8 lb/d	12%	<=2.5 lb/d		
E90	10/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	5.7 lb/d	27%	<=4.5 lb/d		
E90	10/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	1.58 mg/l	44%	<=1.1 mg/l		
E90	10/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	4.4 mg/l	120%	<=2 mg/l		
E90	10/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	4.4 mg/l	76%	<=2.5 mg/l		
E90	09/30/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	1.2 mg/l	9%	<=1.1 mg/l		
E90	09/30/2015	001-G	80082 - BOD, carbonaceous [5 day, 20 C]	1	0	1		Q1 MO AVG	98.7 lb/d	329%	<=23 lb/d		
E90	09/30/2015	001-G	80082 - BOD, carbonaceous [5 day, 20 C]	1	0	1		Q2 WKLY AVG	99.2 lb/d	192%	<=34 lb/d		
E90	05/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q1 MO AVG	16.5 lb/d	560%	<=2.5 lb/d		
E90	05/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	24.7 lb/d	449%	<=4.5 lb/d		
E90	05/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	9.4 mg/l	755%	<=1.1 mg/l		
E90	05/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	16 mg/l	700%	<=2 mg/l		
E90	05/31/2015	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	16 mg/l	540%	<=2.5 mg/l		
E90	08/31/2014	001-G	00530 - Solids, total suspended	1	0	1		Q2 WKLY AVG	148.5 lb/d	65%	<=90 lb/d		
E90	08/31/2014	001-G	00530 - Solids, total suspended	1	0	1		C2 WKLY AVG	43 mg/l	8%	<=40 mg/l		
E90	08/31/2014	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q1 MO AVG	7.1 lb/d	184%	<=2.5 lb/d		
E90	08/31/2014	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		Q2 WKLY AVG	25.6 lb/d	469%	<=4.5 lb/d		
E90	08/31/2014	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C1 MO AVG	2.3 mg/l	109%	<=1.1 mg/l		
E90	08/31/2014	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C2 WKLY AVG	7.4 mg/l	270%	<=2 mg/l		
E90	08/31/2014	001-G	00610 - Nitrogen, ammonia total [as N]	1	0	1		C3 DAILY MX	7.4 mg/l	196%	<=2.5 mg/l		
E90	08/31/2014	001-G	80082 - BOD, carbonaceous [5 day, 20 C]	1	0	1		Q2 WKLY AVG	41.4 lb/d	22%	<=34 lb/d		
E90	08/31/2014	001-G	81011 - Solids, suspended percent removal	K	0	1		C1 DAILY MN	32.8 %	12%	>=40 %		
E90	08/31/2014	001-G	81011 - Solids, suspended percent removal	K	0	1		C2 MO AV MN	75.9 %	61%	>=85 %		

Single Event Violations

Violation Code	Single Event Start Date	Single Event End Date	Agency type	Violation Description/ Comments	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
B0016	11/16/2016	12/22/2016	State	Pretreatment - Failure to Meet Inspection and Sampling Plan for SIUs Comment: Failure to perform the required compliance monitoring activities; Notice of Violation issued on December 22, 2016; considered resolved	Q 11/16/2016	9 12/22/2016
B0013	02/24/2016	02/24/2016	State	Pretreatment - Failure to Enforce Against I/U Comment: Failure to publish in the newspaper SIU in SNC	Q 05/09/2016	**A** **05/09/2016**
C0013	02/24/2016	02/24/2016	State	Pretreatment - Failure to Establish Self-Monitoring Requirements Comment: Failure to require industry to conduct self-monitoring as required in the approved program; control authority is currently conducting all monitoring in lieu of requiring the industry to perform self-monitoring	Q 05/09/2016	**A** **05/09/2016**
E0015	02/24/2016	02/24/2016	State	Pretreatment - Failure to submit required report (non-DMR) Comment: Failure to submit Industrial Waste Survey and technical evaluation of local limits within 30 days of the due date; Notice of Violation issued on May 9, 2016; Industrial Waste Survey results submitted on April 15, 2016; Local Limits Evaluation submitted on April 11, 2016	Q 02/24/2016	9 05/09/2016

APPENDIX 2B
Discharge Monitoring Report Summary

Monitoring Location	Effluent Outfall

Row Labels	Average of DMR Value	Max of DMR Value	Min of DMR Value
BOD, carbonaceous [5 day, 20 C]			
lb/d			
MO AVG	8.953	98.700	2.500
WKLY AVG	13.217	99.200	3.600
mg/L			
DAILY MX	4.640	15.000	2.000
MO AVG	3.303	10.000	1.500
WKLY AVG	4.640	15.000	2.000
Bypass valve			
occur/mo			
MO TOTAL	0.000	0.000	0.000
Cadmium, total [as Cd]			
mg/L			
MO AVG	0.000	0.000	0.000
Carbonaceous oxygen demand, % removal			
%			
DAILY MN	95.790	99.000	80.000
MO AV MN	97.610	99.000	94.000
E. coli			
#/100mL			
DAILY MX	129.048	816.400	2.000
MO GEOMN	8.620	42.000	1.100
E. coli, MTEC-MF			
#/100mL			
DAILY MX	37.279	172.200	1.000
MO GEOMN	6.073	17.179	1.000
Flow, in conduit or thru treatment plant			
MGD			
DAILY MX	0.563	0.817	0.156
MO AVG	0.283	0.433	0.136
IC25 Static Renewal 7 Day Chronic Chrceriodaphnia			
%			
MINIMUM	93.881	100.000	4.550
MO AV MN	100.000	100.000	100.000
IC25 Static Renewal 7 Day Chronic Chrpimephales			
%			
MINIMUM	89.779	100.000	6.250

MO AV MN	100.000	100.000	100.000
Mercury, total [as Hg]			
ng/L			
AVERAGE	3.205	16.000	0.500
Nitrogen, ammonia total [as N]			
lb/d			
MO AVG	2.150	16.500	0.000
WKLY AVG	4.789	25.700	0.100
mg/L			
DAILY MX	2.564	17.700	0.102
MO AVG	1.101	9.490	0.026
WKLY AVG	2.564	17.700	0.102
Nitrogen, total [as N]			
lb/d			
DAILY MX	36.241	75.630	15.010
MO AVG	25.442	51.710	12.230
ROLL AVG	30.458	265.000	1.100
mg/L			
DAILY MX	17.295	26.000	0.350
MO AVG	13.443	26.000	0.350
QRTR AVG			
Overflows			
occur/mo			
MO TOTAL	0.758	9.000	0.000
Oxygen, dissolved [DO]			
mg/L			
DAILY MN	7.068	8.400	6.000
pH			
SU			
MAXIMUM		8.000	7.300
MINIMUM		7.500	6.500
Phosphorus, total [as P]			
lb/d			
DAILY MX	7.109	23.690	2.340
MO AVG	4.685	8.870	1.520
ROLL AVG	3.979	5.400	1.200
mg/L			
DAILY MX	3.218	6.350	1.850
MO AVG	2.250	3.600	1.050
QRTR AVG	2.000	2.000	2.000
Solids, settleable			
mL/L			
DAILY MX	0.504	0.700	0.500
Solids, suspended percent removal			
%			
DAILY MN	89.865	98.100	32.800
MO AV MN	94.713	98.500	75.900
Solids, total suspended			

lb/d			
MO AVG	13.363	49.500	2.900
WKLY AVG	24.433	148.500	4.900
mg/L			
DAILY MX	9.918	43.000	2.000
MO AVG	6.073	19.000	1.000
WKLY AVG	9.918	43.000	2.000

Monitoring Location Code	Influent

Row Labels	Average of DMR Value	Max of DMR Value	Min of DMR Value
BOD, carbonaceous [5 day, 20 C]			
mg/L			
DAILY MX	219.888	415.000	103.700
MO AVG	163.936	293.000	71.800
Flow, in conduit or thru treatment plant			
MGD			
DAILY MX	0.545	0.760	0.070
MO AVG	0.255	0.408	0.025
Solids, total suspended			
mg/L			
DAILY MX	221.278	972.000	100.000
MO AVG	150.680	424.000	40.000

APPENDIX 3
Metal and Toxic Parameter Calculations

The following procedure is used to calculate the allowable instream concentrations for pass-through guidelines and permit limitations.

a. The most recent background conditions of the receiving stream segment are compiled. This information includes:

   * 7Q10 of receiving stream (0 MGD, USGS)
   * Calcium hardness (242 mg/l, effluent on application)
   * Total suspended solids (10 mg/l, default)
   * Background metals concentrations (½ water quality criteria)
   * Other dischargers impacting this segment (none)
   * Downstream water supplies, if applicable

b. The chronic water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel and zinc. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions.

c. The acute water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel, zinc and silver. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions for the following metals: cadmium, copper, lead, nickel and silver.

d. The resulting allowable trivalent and hexavalent chromium concentrations are compared with the effluent values characterized as total chromium on permit applications. If reported total chromium exceeds an allowable trivalent or hexavalent chromium value, then the calculated value will be applied in the permit for that form of chromium unless additional effluent characterization is received to demonstrate reasonable potential does not exist to violate the applicable state water quality criteria for chromium.

e. A standard mass balance equation determines the total allowable concentration (permit limit) for each pollutant. This equation also includes a percent stream allocation of no more than 90%.

The following formulas are used to evaluate water quality protection:

$$Cm = \frac{QsCs + QwCw}{Qs + Qw}$$

where:

Cm = resulting in-stream concentration after mixing
Cw = concentration of pollutant in wastewater
Cs = stream background concentration
Qw = wastewater flow
Qs = stream low flow

to protect water quality:

$$Cw \leq \frac{(S_A)\,[Cm\,(Qs + Qw) - QsCs]}{Qw}$$

where (S_A) is the percent “Stream Allocation”.

Calculations for this permit have been done using a standardized spreadsheet, titled "Water Quality Based Effluent Calculations." Division policy dictates the following procedures in establishing these permit limits:

1. The critical low flow values are determined using USGS data:

   Fish and Aquatic Life Protection
   7Q10 - Low flow under natural conditions
   1Q10 - Regulated low flow conditions

   Other than Fish and Aquatic Life Protection
   30Q5 - Low flow under natural conditions

2. Fish & Aquatic Life water quality criteria for certain Metals are developed through application of hardness dependent equations. These criteria are combined with dissolved fraction methodologies in order to formulate the final effluent concentrations.

3. For criteria that are hardness dependent, chronic and acute concentrations are based on a Hardness of 25 mg/L and Total Suspended Solids (TSS) of 10 mg/L unless STORET or Water Supply intake data substantiate a different value. Minimum and maximum limits on the hardness value used for water quality calculations are 25 mg/L and 400 mg/L respectively. The minimum limit on the TSS value used for water quality calculations is 10 mg/L.

4. Background concentrations are determined from the division database, results of sampling obtained from the permittee, and/or obtained from nearby stream sampling data. If this background data is not sufficient, one-half of the chronic “In-stream Allowable” water quality criteria for fish and aquatic life is used. If the measured background concentration is greater than the chronic “In-stream Allowable” water quality criteria, then the measured background concentration is used in lieu of the chronic “In-stream Allowable” water quality criteria for the purpose of calculating the appropriate effluent limitation (Cw). Under these circumstances, and in the event the “stream allocation” is less than 100%, the calculated chronic effluent limitation for fish and aquatic life should be equal to the chronic “In-stream Allowable” water quality criteria. These guidelines should be strictly followed where the industrial source water is not the receiving stream.

Where the industrial source water is the receiving stream, and the measured background concentration is greater than the chronic “In-stream Allowable” water quality criteria, consideration may be given as to the degree to which the permittee should be required to meet the requirements of the water quality criteria in view of the nature and characteristics of the receiving stream.

The spreadsheet has fifteen (15) data columns, all of which may not be applicable to any particular characteristic constituent of the discharge. A description of each column is as follows:

Column 1: The "Stream Background" concentrations of the effluent characteristics.

Column 2: The "Chronic" Fish and Aquatic Life Water Quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, and zinc, this value represents the criteria for the dissolved form at laboratory conditions. The Criteria Continuous Concentration (CCC) is calculated using the equation:

$$CCC = (\exp \{ m_C [\ln (\text{stream hardness})] + b_C \}) (CCF)$$

CCF = Chronic Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule 0400-40-03-.03 and the EPA guidance contained *in The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent; no chronic criterion exists for silver. Published criteria are used for non-metal parameters.

Column 3: The "Acute" Fish and Aquatic Life Water Quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, silver, and zinc, this value represents the criteria for the dissolved form at laboratory conditions. The Criteria Maximum Concentration (CMC) is calculated using the equation:

$$CMC = (\exp \{ m_A [\ln (\text{stream hardness})] + b_A \}) (ACF)$$

ACF = Acute Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule 0400-40-03-.03 and the EPA guidance contained in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent. Published criteria are used for non-metal parameters.

Column 4: The “Fraction Dissolved” converts the value for dissolved metal at laboratory conditions (columns 2 & 3) to total recoverable metal at in-stream ambient conditions (columns 5 & 6). This factor is calculated

using the linear partition coefficients found in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996) and the equation:

$$\frac{C_{diss}}{C_{total}} = \frac{1}{1 + \{ [K_{po}] [ss^{(1+a)}] [10^{-6}] \}}$$

ss = in-stream suspended solids concentration [mg/l]

Linear partition coefficients for streams are used for unregulated (7Q10) receiving waters, and linear partition coefficients for lakes are used for regulated (1Q10) receiving waters. For those parameters not in the dissolved form in columns 2 & 3 (and all non-metal parameters), a Translator of 1 is used.

Column 5: The "Chronic" Fish and Aquatic Life Water Quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 2 by the value in column 4.

Column 6: The "Acute" Fish and Aquatic Life Water Quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 3 by the value in column 4.

Column 7: The "Chronic" Calculated Effluent Concentration for the protection of fish and aquatic life. This is the chronic limit.

Column 8: The "Acute" Calculated Effluent Concentration for the protection of fish and aquatic life. This is the acute limit.

Column 9: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Organism Consumption (Recreation).

Column 10: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Water and Organism Consumption. These criteria are only to be applied when the stream use classification for the receiving stream includes both “Recreation” and “Domestic Water Supply.”

Column 11: The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Domestic Water Supply.

Column 12: The Calculated Effluent Concentration associated with Organism Consumption.

Column 13: The Calculated Effluent Concentration associated with Water and Organism Consumption.

Column 14: The Calculated Effluent Concentration associated with Domestic Water Supply.

Column 15: The Effluent Limited criteria. This upper level of allowable pollutant loading is established if (a) the calculated water quality value is greater than accepted removal efficiency values, (b) the treatment facility is properly operated, and (c) full compliance with the pretreatment program is demonstrated. This upper level limit is based upon EPA's 40 POTW Survey on levels of metals that should be discharged from a POTW with a properly enforced pretreatment program and considering normal coincidental removals.

The most stringent water quality effluent concentration from Columns 7, 8, 12, 13, 14, and 15 is applied if the receiving stream is designated for domestic water supply. Otherwise, the most stringent effluent concentration is chosen from columns 7, 8, 12, and 15 only.

WQ Based Effluent Calculations

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL 001

FACILITY:	PERMIT #:	DATE:	CALC BY:
Watertown STP	TN0025488	11/15/2019	AEWF

non-regulated stream worksheet (7Q10)

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	0.00	0.27	10	242	100

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream Bckgrnd. Conc.	Fish/Aqua. Life (F & AL) WQC lab conditions		Fraction	F & AL- instream allowable ambient conditions (Tot)		Calc. Effluent Concentration based on F & AL		Human Health Water Quality Criteria *						effluent limited case	
									In-Stream Criteria			Calc. Effluent Concentration **				
PARAMETER	[ug/l]	Chronic [ug/l]	Acute [ug/l]	Dissolved [Fraction]	Chronic [ug/l]	Acute [ug/l]	Chronic [ug/l]	Acute [ug/l]	Organisms [ug/l]	Water/Organisms [ug/l]	DWS [ug/l]	Organisms [ug/l]	Water/Organisms [ug/l]	DWS [ug/l]	ug/l	**PARAMETER**
Copper (a,b)	27.413	19.058	30.903	0.348	54.827	88.904	**54.83**	**88.90**	N/A	N/A	N/A	**N/A**	N/A	N/A	**80.0**	**Copper (a,b)**
Chromium III	377.832	152.844	1175.004	0.202	755.664	5809.246	**755.66**	**5809.25**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium III**
Chromium VI	5.500	11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium VI**
Chromium, Total		N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	**60.0**	**Chromium, Total**
Nickel (a,b)	127.037	109.841	988.946	0.432	254.073	2287.525	**254.07**	**2287.52**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	2.762	1.395	4.114	0.252	5.523	16.295	**5.52**	**16.29**	N/A	N/A	5.0	**N/A**	N/A	5.00	**5.0**	**Cadmium (a,b)**
Lead (a,b)	17.645	6.490	166.546	0.184	35.291	905.625	**35.29**	**905.63**	N/A	N/A	5.0	**N/A**	N/A	5.00	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.385	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	7.354	N/A	14.709	1.000	N/A	14.709	**N/A**	**14.71**	N/A	N/A	N/A	**N/A**	N/A	N/A	**5.0**	**Silver (a,b,e)**
Zinc (a,b)	433.704	249.804	247.778	0.288	867.408	860.370	**867.41**	**860.37**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**200.0**	**Zinc (a,b)**
Cyanide (d)	2.600	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	**230.0**	**Cyanide (d)**
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	**15.0**	**Toluene**
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	**3.0**	**Benzene**
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	**4.0**	**Ethylbenzene**
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	**15.0**	**Carbon Tetrachloride**
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	**85.0**	**Chloroform**
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	**25.0**	**Tetrachloroethylene**
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	**50.0**	**Methylene Chloride**
Total Phenols	0.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	**50.0**	**Total Phenols**
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**1.0**	**Naphthalene**
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	5.500	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	**N/A**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

SAR Summary

TN 0025488	4/17/2014	85% PTLs	Proposed 6/3/2019	Apr-19	Oct-18	Apr-18	Oct-17	Apr-17	Oct-16	Apr-16	Oct-15	Apr-15
COPPER	0.05685	0.04661	0.05483	0.00443	0.01240	0.00629	0.00803	0.00364	0.01230	0.02000	0.00855	0.02000
CHROMIUM III	Report	N/A	Report	0.00100	0.00143	0.00100	0.00100	0.01000	0.01000	0.01000	0.01000	0.01000
CHROMIUM VI	0.01100	0.00935	0.01100	**0.01000**	**0.01000**	**0.01000**	**0.01000**	**0.01000**	**0.01000**	**0.01000**	0.01000	0.01000
NICKEL	0.18000	0.15300	0.18000	0.00100	0.00100	0.00100	0.00157	0.00100	0.01570	0.02000	0.00137	0.02000
CADMIUM	0.00176	0.00150	0.00176	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.01000
LEAD	0.03656	0.03108	0.03656	0.00187	0.00100	0.00100	0.00100	0.00100	0.00500	0.00500	0.00100	0.00500
MERCURY	0.00005	0.00004	0.00005	0.00000	0.00001	0.00000	0.00000	0.00001	0.000005	**0.00005**	**0.00020**	0.00020
SILVER	0.00500	0.00425	0.00500	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100	0.00100
ZINC	0.20000	0.17000	0.20000	0.04290	0.06080	0.01340	0.03550	0.02820	0.08690	0.05000	0.05680	0.05500
CYANIDE	0.00520	0.00442	0.00520	**0.00500**	**0.00500**	**0.00500**	**0.00500**	**0.00500**	**0.00500**	**0.00500**	**0.00500**	0.00500
TOLUENE	0.01500	0.01275	0.01500									
BENZENE	0.00300	0.00255	0.00300									
1,1,1 TRICHLOROETHANE	0.03000	0.02550	0.03000									
ETHYLBENZENE	0.00400	0.00340	0.00400									
CARBON TETRACHLORIDE	0.01500	0.01275	0.01500									
CHLOROFORM	0.08500	0.07225	0.08500									
TETRACHLOROETHYLENE	0.02500	0.02125	0.02500									
TRICHLOROETHYLENE	0.01000	0.00850	0.01000									
1,2 TRANSDICHLOROETHYL	0.00150	0.00128	0.00150									
METHYLENE CHLORIDE	0.05000	0.04250	0.05000									
TOTAL PHENOLS	0.05000	0.04250	0.05000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000
NAPHTHALENE	0.00100	0.00085	0.00100									
TOTAL PHTHALATES	0.06540	0.05559	0.06540									

Bolded in effluent data exceeds 85% of proposed PTLs

Shaded means detection level

TN 0025488	4/17/2014	85% PTLs	Proposed 6/3/2019	Oct-14	Apr-14	Apr-13	Oct-12	Apr-12	Oct-11	Apr-11	Oct-10	Apr-10
COPPER	0.05685	0.04661	0.05483	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000
CHROMIUM III	Report	N/A	Report	0.01000	0.01000	0.01150	0.01000	0.01000	0.01000			
CHROMIUM VI	0.01100	0.00935	0.01100	0.01000	0.01000	0.01000	0.01000	0.01000	0.01000	0.01000	0.01000	0.01000
NICKEL	0.18000	0.15300	0.18000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000	0.02000
CADMIUM	0.00176	0.00150	0.00176	0.00050	0.00050	0.00050	0.00050	**0.00320**	0.00050	0.00050	0.00050	0.00500
LEAD	0.03656	0.03108	0.03656	0.05000	0.00500	0.00500	0.00500	0.00500	0.01800	0.00500	0.00500	0.00500
MERCURY	0.00005	0.00004	0.00005	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	**0.00120**	0.00020	0.00020
SILVER	0.00500	0.00425	0.00500	0.00050	0.00050	0.00073	0.00050	**0.01400**	0.00050	0.00050	0.00050	0.00050
ZINC	0.20000	0.17000	0.20000	0.09400	0.06000	0.05500	0.11000	0.05600	0.03200	0.03000	0.06200	0.03000
CYANIDE	0.00520	0.00442	0.00520	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500
TOLUENE	0.01500	0.01275	0.01500									
BENZENE	0.00300	0.00255	0.00300									
1,1,1 TRICHLOROETHANE	0.03000	0.02550	0.03000									
ETHYLBENZENE	0.00400	0.00340	0.00400									
CARBON TETRACHLORIDE	0.01500	0.01275	0.01500									
CHLOROFORM	0.08500	0.07225	0.08500									
TETRACHLOROETHYLENE	0.02500	0.02125	0.02500									
TRICHLOROETHYLENE	0.01000	0.00850	0.01000									
1,2 TRANSDICHLOROETHYL	0.00150	0.00128	0.00150									
METHYLENE CHLORIDE	0.05000	0.04250	0.05000									
TOTAL PHENOLS	0.05000	0.04250	0.05000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000	0.04000
NAPHTHALENE	0.00100	0.00085	0.00100									
TOTAL PHTHALATES	0.06540	0.05559	0.06540									

APPENDIX 4
WQ Based Effluent Calculations- Other Compounds

2019 WQC

WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL 001

FACILITY: Watertown
PERMIT: TN0025488
DATE: 6/5/19

Stream (1Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Tll. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0	0	0.3	10	242	100

	1	2	3	5		6	7		8	9	10	11	12	13	14	15	
	Stream Bckgrnd.	Dectection Levels		Fish/Aqua. Life Water Quality Criteria			Calculated Effluent Concentration			Human Health Water Quality Criteria (30Q5) In-Stream Criteria			Calculated Effluent Concentration			Avg. daily effluent	
	Conc.	Scan MDL	WQC RDL *EPA MDL	Chronic		Acute	Chronic		Acute	Organisms	Water/Org	DWS	Organisms	Water/Org	DWS		
PARAMETER	[µg/l]	[µg/l]	[µg/l]	[µg/l]		[µg/l]	[µg/l]		[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	ug/l	**PARAMETER**
ANTIMONY		3.8	3.0							640.0	5.6	6.0	640.0	5.6	6.0	3.0	ANTIMONY
ARSENIC		1.0	1.0	150.0		340.0	150.0		340.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	ARSENIC
BERYLLIUM		2.0	1.0									4.0			4.0	1.0	BERYLLIUM
SELENIUM (f)		5.0	2.0	1.5	3.1	20.0	1.5	3.1	20.0	4200.0	170.0	50.0	4200.0	170.0	50.0	5.0	SELENIUM
THALLIUM		5.0	*							0.47	0.24	2.0	0.5	0.2	2.0	5.0	THALLIUM
ACROLEIN	0.0	50.0	1.0	3.000		3.000	3.0		3.0	9.0	6.0		9.0	6.0		50.0	ACROLEIN
ACRYLONITRILE	0.0	50.0	1.0							2.5	0.51		2.5	0.5		50.0	ACRYLONITRILE
BENZENE	0.0	1.0	1.0							510.0	22.0	5.0	510.0	22.0	5.0	1.0	BENZENE
BROMOFORM	0.0	1.0	1.0							1400.0	43.0		1400.0	43.0		1.0	BROMOFORM
CARBON TETRACHLORIDE	0.0	1.0	1.0							16.0	2.3	5.0	16.0	2.3	5.0	1.0	CARBON TETRACHLORIDE
CHLOROBENZENE	0.0	1.0	*							1600.0	130.0	100.0	1600.0	130.0	100.0	1.0	CLOROBENZENE
CHLORODIBROMO-METHANE	0.0	1.0	*							130.0	4.0		130.0	4.0		1.0	CHLORODIBROMO-METHANE
CHLOROETHANE	0.0	1.0	*													1.0	CHLOROETHANE
2-CHLORO-ETHYLVINYL ETHER	0.0	1.0	*													1.0	2-CHLORO-ETHYLVINYL ETHER
CHLOROFORM	0.0	5.0	0.5							4700.0	57.0		4700.0	57.0		5.0	CHLOROFORM
DICHLOROBROMO-METHANE	0.0	1.0	1.0							170.0	5.5		170.0	5.5		1.0	DICHLOROBROMO-METHANE
1,1-DICHLOROETHANE	0.0	1.0	1.0							NA	NA	NA	NA	NA	NA	1.0	1,1-DICHLOROETHANE
1,2-DICHLOROETHANE	0.0	1.0	1.0							370.0	3.8	5.0	370.0	3.8	5.0	1.0	1,2-DICHLOROETHANE
TRANS 1,2-DICHLORO-ETHYLENE	0.0	1.0	*							10000	140.0	100.0	10000.0	140.0	100.0	1.0	TRANS 1,2-DICHLORO-ETHYLENE
1,1-DICHLOROETHYLENE	0.0	1.0	1.0							7100.0	300.0	7.0	7100.0	300.0	7.0	1.0	1,1-DICHLOROETHYLENE
1,2-DICHLOROPROPANE	0.0	1.0	*							150.0	5.0	5.0	150.0	5.0	5.0	1.0	1,2-DICHLOROPROPANE
1,3-DICHLORO-PROPYLENE	0.0	1.0	1.0							210.0	3.4		210.0	3.4		1.0	1,3-DICHLORO-PROPYLENE
ETHYLBENZENE	0.0	1.0	1.0							2100	530.0	700.0	2100.0	530.0	700.0	1.0	ETHYLBENZENE
METHYL BROMIDE	0.0	1.0	*							1500.0	47.0		1500.0	47.0		1.0	METHYL BROMIDE
METHYL CHLORIDE	0.0	1.0	1.0													1.0	METHYL CHLORIDE
METHYLENE CHLORIDE	0.0	5.0	1.0							5900.0	46.0	5.0	5900.0	46.0	5.0	5.0	METHYLENE CHLORIDE
1,1,2,2-TETRACHLORO-ETHANE	0.0	1.0	0.5							40.0	1.7		40.0	1.7		1.0	1,1,2,2-TETRACHLORO-ETHANE
TETRACHLORO-ETHYLENE	0.0	1.0	0.5							33.0	6.9	5.0	33.0	6.9	5.0	1.0	TETRACHLORO-ETHYLENE
TOLUENE	0.0	1.0	1.0							15000	1300.0	1000.0	15000.0	1300.0	1000.0	1.0	TOLUENE
1,1,1-TRICHLOROETHANE	0.0	1.0	1.0									200.0			200.0	1.0	1,1,1-TRICHLOROETHANE
1,1,2-TRICHLOROETHANE	0.0	1.0	0.2							160.0	5.9	5.0	160.0	5.9	5.0	1.0	1,1,2-TRICHLOROETHANE
TRICHLORETHYLENE	0.0	1.0	1.0							300.0	25.0	5.0	300.0	25.0	5.0	1.0	TRICHLORETHYLENE
VINYL CHLORIDE	0.0	1.0	2.0							24.0	0.25	2.0	24.0	0.3	2.0	1.0	VINYL CHLORIDE
P-CHLORO-M-CRESOL	0.0	10.0	*													10.0	P-CHLORO-M-CRESOL
2-CHLOROPHENOL	0.0	10.0	*							150.0	81.0		150.0	81.0		10.0	2-CHLOROPHENOL
2,4-DICHLOROPHENOL	0.0	10.0	*							290.0	77.0		290.0	77.0		10.0	2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL	0.0	10.0	*							850.0	380.0		850.0	380.0		10.0	2,4-DIMETHYLPHENOL
4,6-DINITRO-O-CRESOL	0.0	10.0	24.0							280.0	13.0		280.0	13.0		10.0	4,6-DINITRO-O-CRESOL
2,4-DINITROPHENOL	0.0	10.0	42.0							5300.0	69.0		5300.0	69.0		10.0	2,4-DINITROPHENOL
2-NITROPHENOL	0.0	10.0	*													10.0	2-NITROPHENOL
4-NITROPHENOL	0.0	10.0	*													10.0	4-NITROPHENOL
PENTACHLOROPHENOL	0.0	10.0	5.0	15		19	15.0		19.0	30.0	2.7	1.0	30.0	2.7	1.0	10.0	PENTACHLOROPHENOL
PHENOL	0.0	10.0	*							860000	10000.0		860000.0	10000.0		10.0	PHENOL

	1	2	3	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Dectection Levels		Fish/Aqua. Life		Calculated Effluent Concentration		Human Health Water Quality Criteria (30Q5)						Avg. daily	
	Bckgrnd.	Scan	WQC RDL	Water Quality Criteria				In-Stream Criteria			Calculated Effluent Concentration			effluent	
	Conc.	MDL	*EPA MDL	Chronic	Acute	Chronic	Acute	Organisms	Water/Org	DWS	Organisms	Water/Org	DWS		
PARAMETER	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	ug/l	**PARAMETER**
2,4,6-TRICHLOROPHENOL	0.0	10.0	2.7					24.0	14.0		24.0	14.0		10.0	2,4,6-TRICHLOROPHENOL
ACENAPHTHENE	0.0	10.0	*					990.0	670.0		990.0	670.0		10.0	ACENAPHTHENE
ACENAPHTHYLENE	0.0	10.0	2.3											10.0	ACENAPHTHYLENE
ANTHRACENE	0.0	10.0	0.7					40000	8300.0		40000.0	8300.0		10.0	ANTHRACENE
BENZIDINE	0.0	50.0	*					0.0020	0.0009		0.002	0.0		50.0	BENZIDINE
BENZO(A)ANTHRACENE	0.0	10.0	0.3					0.18	0.038		0.2	0.0		10.0	BENZO(A)ANTHRACENE
BENZO(A)PYRENE	0.0	10.0	0.3					0.18	0.038	0.2	0.2	0.0	0.2	10.0	BENZO(A)PYRENE
3,4 BENZO-FLUORANTHENE	0.0	10.0	0.3					0.18	0.038		0.2	0.0		10.0	3,4 BENZO-FLUORANTHENE
BENZO(GHI)PERYLENE	0.0	10.0	*											10.0	BENZO(GHI)PERYLENE
BENZO(K)FLUORANTHENE	0.0	10.0	0.3					0.18	0.038		0.2	0.0		10.0	BENZO(K)FLUORANTHENE
BIS (2-CHLOROETHOXY) METHANE	0.0	10.0	*											10.0	BIS (2-CHLOROETHOXY) METHANE
BIS (2-CHLOROETHYL)-ETHER	0.0	10.0	1.0					5.3	0.30		5.3	0.3		10.0	BIS (2-CHLOROETHYL)-ETHER
BIS (2-CHLOROISO-PROPYL) ETHER	0.0	10.0	*					65000	1400.0		65000.0	1400.0		10.0	BIS (2-CHLOROISO-PROPYL) ETHER
BIS (2-ETHYLHEXYL) PHTHALATE	0.0	10.0	2.5					22.0	12.0	6.0	22.0	12.0	6.0	1.9	BIS (2-ETHYLHEXYL) PHTHALATE
4-BROMOPHENYL PHENYL ETHER	0.0	10.0	*											10.0	4-BROMOPHENYL PHENYL ETHER
BUTYL BENZYL PHTHALATE	0.0	10.0	*					1900.0	1500.0		1900.0	1500.0		10.0	BUTYL BENZYL PHTHALATE
2-CHLORONAPHTHALENE	0.0	10.0	*					1600.0	1000.0		1600.0	1000.0		10.0	2-CHLORONAPHTHALENE
4-CHLORPHENYL PHENYL ETHER	0.0	10.0	*											10.0	4-CHLORPHENYL PHENYL ETHER
CHRYSENE	0.0	10.0	2.5					0.18	0.038		0.2	0.0		10.0	CHRYSENE
DI-N-BUTYL PHTHALATE	0.0	10.0	2.5					4500.0	2000.0		4500.0	2000.0		10.0	DI-N-BUTYL PHTHALATE
DI-N-OCTYL PHTHALATE	0.0	10.0	*											10.0	DI-N-OCTYL PHTHALATE
DIBENZO(A,H) ANTHRACENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	DIBENZO(A,H) ANTHRACENE
1,2-DICHLOROBENZENE	0.0	1.0	2.0					1300.0	420.0		1300.0	420.0		1.0	1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE	0.0	5.0	2.0					960.0	320.0		960.0	320.0		5.0	1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE	0.0	5.0	2.0					190.0	63.0		190.0	63.0		5.0	1,4-DICHLOROBENZENE
3,3-DICHLOROBENZIDINE	0.0	10.0	*					0.28	0.2		0.3	0.2		10.0	3,3-DICHLOROBENZIDINE
DIETHYL PHTHALATE	0.0	10.0	1.9					44000	17000.0		44000.0	17000.0		10.0	DIETHYL PHTHALATE
DIMETHYL PHTHALATE	0.0	10.0	1.6					1100000	270000.0		1100000.0	270000.0		10.0	DIMETHYL PHTHALATE
Di-n-butyl phthalate (84-74-2) (g)	0.0	10.0						4500	2000.0		4500.0	2000.0		10.0	Di-n-butyl phthalate (84-74-2)
2,4-DINITROTOLUENE	0.0	10.0	1.0					34.0	1.1		34.0	1.1		10.0	2,4-DINITROTOLUENE
2,6-DINITROTOLUENE	0.0	10.0	*											10.0	2,6-DINITROTOLUENE
Di-n-octyl phthalate (117-84-0) (g)	0.0	10.0												10.0	Di-n-octyl phthalate (117-84-0)
1,2 DIPHENYLHYDRAZINE	0.0	10.0	*					2.0	0.4		2.0	0.4		10.0	1,2 DIPHENYLHYDRAZINE
FLUORANTHENE	0.0	10.0	2.2					140.0	130.0		140.0	130.0		10.0	FLUORANTHENE
FLUORENE	0.0	10.0	0.3					5300.0	1100.0		5300.0	1100.0		10.0	FLUORENE
HEXACHLOROBENZENE	0.0	10.0	1.9					0.0029	0.0028	1.0	0.003	0.0	1.0	10.0	HEXACHLOROBENZENE
HEXACHLOROBUTADIENE	0.0	10.0	5.0					180.0	4.4		180.0	4.4		10.0	HEXACHLOROBUTADIENE
HEXACHLOROCYCLO-PENTADIENE	0.0	10.0	*					1100.0	40.0	50.0	1100.0	40.0	50.0	10.0	HEXACHLOROCYCLO-PENTADIENE
HEXACHLOROETHANE	0.0	10.0	0.5					33.0	14.0		33.0	14.0		10.0	HEXACHLOROETHANE
INDENO(1,2,3-CD)PYRENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	INDENO(1,2,3-CD)PYRENE
ISOPHORONE	0.0	10.0	*					9600	350.0		9600.0	350.0		10.0	ISOPHORONE
NAPHTHALENE	0.0	10.0	*											10.0	NAPHTHALENE
NITROBENZENE	0.0	10.0	10.0					690.0	17.0		690.0	17.0		10.0	NITROBENZENE
N-NITROSODI-N-PROPYLAMINE	0.0	10.0	*					5.1	0.050		5.1	0.1		10.0	N-NITROSODI-N-PROPYLAMINE
N-NITROSODI- METHYLAMINE	0.0	10.0	*					30.0	0.0069		30.0	0.0		10.0	N-NITROSODI- METHYLAMINE
N-NITROSODI-PHENYLAMINE	0.0	10.0	*					60.0	33.0		60.0	33.0		10.0	N-NITROSODI-PHENYLAMINE
PHENANTHRENE	0.0	10.0	0.7												PHENANTHRENE
PYRENE	0.0	10.0	0.3					4000.0	830.0		4000.0	830.0		10.0	PYRENE
1,2,4-TRICHLOROBENZENE	0.0		*					70.0	35.0	70.0	70.0	35.0	70.0		1,2,4-TRICHLOROBENZENE

a. Columns 7-8, and 12-14 are the effluent concentrations allowable to prevent exceedence of water quality criteria.
b. Potential to exceed criteria exists if the measured quantity in column 15 exceeds, or could exceed, the calculated allowable concentrations in columns 7-8, and 12-14.
c. Additional testing is required if the detection level used in the scan is higher than the state RDL and/or the MDL of the approved EPA scan method and industry is known to have that pollutant.
d. All background concentrations for these volatile organic, acid-extractable, and base-neutral compounds are assumed zero in the absence of supporting monitoring data.
e. Other metals for which data were provided on the application are evaluated on the Metals & Toxics spreadsheet.
f. The Water Quality Criteria CCC Value for Selenium is 1.5 µg/l (lentic - Still water aquatic ecosystems such as ponds, lakes, or reservoirs **) and 3.1 µg/l (lotic -** Flowing water aquatic ecosystems such as streams and rivers **).**
g. Form 2C only