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

February 21, 2017

The Honorable Bennett Armstrong
Mayor-Town of Alexandria
e-copy: cityrecorder@dtccom.net
Town of Alexandria
102 High Street
Alexandria, TN 37243

Subject: **Draft of NPDES Permit No. TN0021539**
Town of Alexandria
Alexandria, DeKalb County, Tennessee

Dear Mayor Armstrong:

Enclosed please find a draft copy of the NPDES Permit No. TN0021539 which the Division of Water Resources proposes to issue. This draft copy is furnished to you solely for your review of its provisions. No wastewater discharges are authorized by this modified permit. The issuance of an official modified permit is contingent upon your meeting all of the requirements of the Tennessee Water Quality Control Act and the Rules and Regulations of the Tennessee Water Quality, Oil and Gas Board.

Also enclosed is a copy of the public notice that announces our intent to issue this permit. The notice affords the public an opportunity to review the draft permit and, if necessary, request a public hearing on this issuance process. If you disagree with the provisions and requirements contained in the draft permit, you have thirty (30) days from the date of this correspondence to notify the division of your objections. If your objections cannot be resolved, you may appeal this permit upon issuance. This appeal should be filed in accordance with Section 69-3-110 of the Tennessee Code Annotated.

If you have questions, please contact the Cookeville Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Ms. Maybelle T. Sparks at (615) 532-0651 or by E-mail at *Maybelle.Sparks@tn.gov*.

Sincerely,

Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Permit Section File
Cookeville Environmental Field Office
Mr. Dale Smith, President, M.S. Environmental Services, Inc., dsmith3858@gmail.com

STATE OF TENNESSEE

NPDES PERMIT

No. TN0021539

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:	**Town of Alexandria**
is authorized to discharge:	**treated municipal wastewater from Outfall 001**
from a facility located:	**in Alexandria, DeKalb County, Tennessee**
to receiving waters named:	**Hickman Creek at mile 13.1**

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

This permit shall become effective on:

This permit shall expire on:

Issuance date:

for Tisha Calabrese Benton
Director

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MTS
TN0021539.DOC

1.0. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. NUMERIC AND NARRATIVE EFFLUENT LIMITATIONS

The Town of Alexandria is authorized to discharge treated municipal wastewater from Outfall 001 to Hickman Creek at mile 13.1. Discharge 001 consists of municipal wastewater from a treatment facility with a design capacity of 0.3 MGD. Discharge 001 shall be limited and monitored by the permittee as specified below:

Code	Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Description : External Outfall, Number : 001, Monitoring : All Weather, Season : All Year							
80998	Bypass of Treatment	Report	-	occur/mo	Occurrences	Continuous	Monthly Total
Description : External Outfall, Number : 001, Monitoring : Dry Weather, Season : All Year							
74062	Overflow use, occurrences	Report	-	occur/mo	Occurrences	Continuous	Monthly Total
Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year							
00300	Oxygen, dissolved (DO)	>=	6.0	mg/L	Grab	Five Per Week	Instantaneous Minimum
00400	pH	>=	6.0	SU	Grab	Five Per Week	Minimum
00400	pH	<=	9.0	SU	Grab	Five 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)	<=	100	lb/d	Composite	Weekly	Weekly Average
00530	Total Suspended Solids (TSS)	<=	40	mg/L	Composite	Weekly	Weekly Average
00530	Total Suspended Solids (TSS)	<=	75	lb/d	Composite	Weekly	Monthly Average
00545	Settleable Solids	<=	1.0	mL/L	Grab	Three Per Week	Daily Maximum
00600	Total Nitrogen (as N)	Report		mg/L	Composite	Weekly	Monthly Average
00600	Total Nitrogen (as N)	Report		mg/L	Compsite	Weekly	Daily Maximum
00630	Nitrite plus Nitrate (as N)	Report	-	mg/L	Composite	Weekly	Daily Maximum
00630	Nitrite plus Nitrate (as N)	Report	-	mg/L	Composite	Weekly	Monthly Average
00630	Nitrite plus Nitrate (as N)	<=	3,935	lb/yr	Calculated	Monthly	Annual Rolling Average
00665	Phosphorus, total (as P)	Report	-	mg/L	Composite	Weekly	Monthly Average
00665	Phosphorus, total (as P)	Report	-	mg/L	Composite	Weekly	Daily Maximum
00665	Phosphorus, total (as P)	<=	894	lb/yr	Calculated	Monthly	Annual Rolling Average
50050	Flow	Report	-	Mgal/d	Continuous	Daily	Monthly Average
50050	Flow	Report	-	Mgal/d	Continuous	Daily	Daily Maximum
51040	E. coli	<=	941	#/100mL	Grab	Three Per	Daily Maximum

						Week	
51040	E. coli	<=	126	#/100mL	Grab	Three Per Week	Monthly Geometric Mean
Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Summer							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Frequency**	**Statistical Base**
00610	Nitrogen, Ammonia total (as N)	<=	4.2	lb/d	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.8	lb/d	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.2	mg/L	Composite	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	1.7	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	1.1	mg/L	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	37.5	lb/d	Composite	Weekly	Weekly Average
80082	CBOD, 5-day, 20 C	<=	10	mg/L	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	<=	25	lb/d	Composite	Weekly	Monthly Average
Description : External Outfall, Number : 001, Monitoring : Effluent Gross, Season : Winter							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Frequency**	**Statistical Base**
00610	Nitrogen, Ammonia total (as N)	<=	8	lb/d	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	4.2	mg/L	Composite	Weekly	Daily Maximum
00610	Nitrogen, Ammonia total (as N)	<=	5.3	lb/d	Composite	Weekly	Monthly Average
00610	Nitrogen, Ammonia total (as N)	<=	3.2	mg/L	Composite	Weekly	Weekly Average
00610	Nitrogen, Ammonia total (as N)	<=	2.1	mg/L	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	20	mg/L	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	50	lb/d	Composite	Weekly	Monthly Average
80082	CBOD, 5-day, 20 C	<=	25	mg/L	Composite	Weekly	Weekly Average
80082	CBOD, 5-day, 20 C	<=	30	mg/L	Composite	Weekly	Daily Maximum
80082	CBOD, 5-day, 20 C	<=	62.6	lb/d	Composite	Weekly	Weekly Average
Description : External Outfall, Number : 001, Monitoring : Percent Removal, Season : All Year							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**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	Average (Minimum)
81011	TSS, % removal	>=	40	%	Composite	Weekly	Daily Minimum
81011	TSS, % removal	>=	85	%	Composite	Weekly	Average (Minimum)

Description : External Outfall, Number : 001, Monitoring : Raw Sewage Influent, Season : All Year							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Frequency**	**Statistical Base**
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Composite	Weekly	Daily Maximum
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Composite	Weekly	Monthly Average
50050	Flow	Report	-	Mgal/d	Continuous	Daily	Daily Maximum
50050	Flow	Report	-	Mgal/d	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
Description : External Outfall, Number : 001, Monitoring : Wet Weather, Season : All Year							
Code	**Parameter**	**Qualifier**	**Value**	**Unit**	**Sample Type**	**Frequency**	**Statistical Base**
74062	Overflow use, occurrences	Report	-	occur/mo	Occurrences	Continuous	Monthly Total

Notes: The permittee shall achieve 85% removal of $CBOD_5$ and TSS on a monthly average basis. The permittee shall report all instances of overflow 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 next page for percent removal calculations.

Phosphorus, total (as P) & Nitrite-Nitrate (as N) Note: Monitoring shall be conducted weekly and reported monthly, as described in the "External Outfall, Number : 001, Monitoring : Effluent Gross, Season : All Year" chart above.

***Annual rolling average Note**: Beginning the 12th month following permit effective date, the rolling average limit applies. The rolling average is the average of the 12 most recent months of data. On each appropriate reporting period DMR, the data shall figure monthly averages using the sample values and the average effluent flow rates on the dates of the sampled. Then each monthly average will be averaged with the monthly average values from the 11 previous months; and that average will be reported as the annual rolling average for that reporting period DMR.

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 floating scum, oil or other matter contained in the wastewater discharge. The wastewater discharge must not cause an objectionable color contrast in the receiving stream.

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 insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure 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).

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;

b. The exact person(s) collecting samples;

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 Cookeville Environmental Field Office (EFO) at the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Cookeville Environmental Field Office
1221 South Willow Avenue
Cookeville, Tennessee 38506

A copy should be retained for the permittee's files. 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.

The electronic submission of DMR data will be accepted only if formally approved beforehand by the division. For purposes of determining compliance with this permit, data approved by the division to be submitted 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 specifically limited by this permit 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 and Overflow Reporting

1.3.5.1. Report Requirements

A summary report of known or suspected instances of overflows in the collection system or bypass of wastewater treatment facilities shall accompany the Discharge Monitoring Report. The report must contain the date and duration of the instances of overflow and/or bypassing and the estimated quantity of wastewater released and/or bypassed.

The report must also detail activities undertaken during the reporting period to (1) determine if overflow is occurring in the collection system, (2) correct those known or suspected overflow points and (3) prevent future or possible overflows and any resulting bypassing at the treatment facility.

On the DMR, the permittee must report the number of sanitary sewer overflows, dry-weather overflows and in-plant bypasses separately. Three lines must be used on the DMR form, one for sanitary sewer overflows, one for dry-weather overflows and one for in-plant bypasses.

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.

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

1.6. SCHEDULE OF COMPLIANCE

Full compliance and operational levels shall be attained from the effective date of this permit.

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. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and

c. To sample at reasonable times any discharge of pollutants.

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 State of 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).

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

All discharges shall be consistent with the terms and 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 are not reported under subparagraph 2.3.2.a above, 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. Overflow

a. "**Overflow**" means any release of sewage from any portion of the collection, transmission, or treatment system other than through permitted outfalls.

b. Overflows are prohibited.

c. The permittee shall operate the collection system so as to avoid overflows.

d. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic overflows (greater than 5 events per year) 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 point are less than or proportional to the amount 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 more than 5 overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion 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 shall submit the results of an Industrial Waste Survey (IWS) in accordance with 40 CFR 403.8(f)(2)(i), including any industrial users (IU) covered under Section 301(i)(2) of the Act. As much information as possible must be obtained relative to the character and volume of pollutants contributed to the POTW by the IUs. This information will be submitted to the Division of Water Resources, Pretreatment Section within one hundred twenty (120) days of the effective date of this permit, unless such a survey has been submitted within 3 years of the effective date. Development of a pretreatment program may be required after completion of the industrial user review. All requirements and conditions of the pretreatment program are enforceable through the NPDES permit.

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.

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. If land application activities are suspended permanently and sludge disposal moves to a municipal solid waste landfill, the permittee shall contact the local Division of Solid Waste Management office address for other permitting and approvals (see table below):

Division of Solid Waste Management			
Office	**Location**	**Zip Code**	**Phone No.**
Chattanooga	1301 Riverfront Parkway, Suite 206	37402	(423) 634-5745
Jackson	1625 Hollywood Drive	38305	(731) 512-1300
Cookeville	1221 South Willow Avenue	38506	(931) 432-4015
Columbia	2484 Park Plus Drive	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	37243	(615) 687-7000

3.4. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign(s) at each outfall and any bypass/overflow point in the collection system. For the purposes of this requirement, any bypass/overflow point that has discharged five (5) or more times in the last year must be so posted. 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 bypass/overflow point:

UNTREATED WASTEWATER DISCHARGE POINT
Town of Alexandria

(615) 529-2171
NPDES Permit NO. TN0021539
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Cookeville

NPDES Permitted Municipal/Sanitary Outfall:

TREATED MUNICIPAL/SANITARY WASTEWATER
Town of Alexandria

(615) 529-2171
NPDES Permit NO. TN0021539
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Cookeville

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.

3.5. 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.

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.

"***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 nth 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***", shall be determined by the summation of all the measured daily discharges by weight divided by the number of days 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 **"*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

30Q20 – 30-day minimum, 20-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

RATIONALE

Town of Alexandria
NPDES Permit No. TN0021539
Date: 2/15/17
Permit Writer: Maybelle T. Sparks

1. FACILITY INFORMATION

Town of Alexandria
Honorable Bennett Armstrong - Mayor-Town of Alexandria
Alexandria, DeKalb County, Tennessee
(615) 529-2171
Treatment Plant Average Design Flow: 0.3 MGD
Percentage Industrial Flow: 0%
Treatment Description: Sequencing batch reactor (SBR) with post equalization and UV disinfection. Sludge is aerobically digested and dewatered for landfill
Certified Operator Grades: STP: 3; CS: 1; Date Rated: 05/23/00

2. RECEIVING STREAM INFORMATION

Hickman Creek at mile 13.1
Watershed Group: Caney Fork
Hydrocode: 05130108
Low Flow: 7Q10 = 0 MGD (0 CFS)
Low Flow Reference:
USGS Water-Resource Investigation Report 95-4293
Station #03424790
Water Quality Designation: Unavailable conditions waters

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 designated uses due to alteration in stream-side or littoral vegetative covers, nitrite/nitrate as n, low dissolved oxygen, total phosphorus and *E. coli* from grazing in riparian or shoreline zones and municipal point source discharges

3. CURRENT PERMIT STATUS

Permit Type:	**Municipal**
Classification:	**Minor**
Issuance Date:	**01-JUL-12**
Expiration Date:	**30-JUN-17**
Effective Date:	**01-AUG-12**

4. NEW PERMIT LIMITATIONS AND COMPLIANCE SCHEDULE SUMMARY

a. This proposed draft permit proposes effluent nutrient limits for nitrogen and phosphorus. Section 6.4 of this fact sheet provides more detail.

b. 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

c. 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 August 2012- January 2017 reveals that the Town of Alexandria has exceeded permit limits for TSS (monthly avg, daily max and percent removal) and ammonia (September 2016).

A complete discharge monitoring report summary is located in Appendix 2.

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	25	15	37.5	20	40	D.O. protection, Refer to 6.1 below
$CBOD_5$ (Nov. 1- April 30)	20	50	25	62.6	30	40	D.O. protection, Refer to 6.1 below
NH_3-N (May 1- Oct. 31)	1.1	2.8	1.7	4.2	2.2	—	Ammonia Toxicity, Refer to 6.2 below
NH_3-N (Nov. 1- April 30)	2.1	5.3	3.2	8	4.2	—	Ammonia Toxicity, Refer to 6.2 below
Total Suspended Solids	30	75	40	100	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 as N	Report	—	—	—	Report	—	Refer to 6.4 below
NO_3-NO_2 as N	Report	3935 lb/yr	—	—	Report	—	Refer to 6.4 below
Total Phosphorus	Report	894 lb/yr	—	—	Report	—	Refer to 6.4 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
Flow (MGD):							
Influent	Report	—	—	—	Report	—	Used to quantify pollutant load
Effluent	Report	—	—	—	Report	—	Used to quantify pollutant load
Sanitary Sewer Overflows, Total Occurrences			Report				Refer to 6.6 below
Dry Weather Overflows, Total Occurrences			Report				Refer to 6.6 below
Bypass of Treatment, Total Occurrences			Report				Refer to 6.6 below

Note: Weekly limitations on $CBOD_5$ 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 $CBOD_5$ 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 $CBOD_5$ 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, 20 mg/l-winter), NH_3-N (1.1 mg/l-summer, 2.1 mg/l-winter), and D.O. (6 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 access toxicity impacts, the state utilizes the EPA document, 1999 Update to Ambient Water Quality Criteria for Ammonia, pursuant to 0400-40-03-.0-3(3)(j), and assumed stream temperatures of 27°C and 17°C and pH of 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:

CCC values based on temperature and pH, in mg/L:

Temperature (°C)	7.5 pH	8.0 pH
25	2.22	1.24
27	1.94	1.09
30	1.61	0.90

Temperature (°C)	7.5 pH	8.0 pH
15	4.22	2.36
17	3.72	2.07
20	3.06	1.71

The mass balance equation is as follows:

$$CCC = \frac{Q_S C_S + Q_{STP} C_{STP}}{Q_S + Q_{STP}} \qquad \text{or,} \qquad C_{STP=} \frac{CCC(Q_S + Q_{STP}) - (Q_S C_S)}{Q_{STP}}$$

where:

CCC = Criteria continuous concentration (mg/l)
Q_S = 7Q10 flow of receiving stream (MGD)
Q_{STP} = Design flow of STP (MGD)
C_S = Assumed/Measured instream NH_3 (mg/l)
C_{STP} = Allowable STP discharge of NH_3 (mg/l)

$$C_{STP} = \frac{\text{CCC (0 MGD+ 0.3 MGD)} - \text{(0 MGD x 0.1mg/l)}}{\text{0.3 MGD}} = 1.1 \text{ mg/l (summer)}$$

$$C_{STP} = \frac{\text{CCC (0 MGD+ 0.3 MGD)} - \text{(0 MGD x 0.1mg/l)}}{\text{0.3 MGD}} = 2.1 \text{ mg/l (winter)}$$

In this case, limiting ammonia to prevent toxicity is necessary at ambient conditions per the above calculations. Summer and winter ammonia limits of 1.1 mg/l and 2.1 mg/l are required to protect instream dissolved oxygen and prevent toxicity.

6.3. CHLORINATION

An effluent limitation for residual chlorine is not necessary since chlorine will not be utilized for disinfection.

6.4. TOTAL NITROGEN AND TOTAL PHOSPHORUS MONITORING/REPORTING

This permit proposes limits on nitrate plus nitrate as nitrogen and total phosphorus and monitoring and reporting for total nitrogen in support of the anti-degradation provision of state water quality standard. The division is not proposing optimization for nutrient removal for several reasons related to current problems presenting in this sewerage system. These reasons follow below after background on why limiting nutrients is important.

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. We are seeing local impacts in our assessment data collected in Hickman Creek.

Below is a summary of the chemical data that we collected up and down stream of the Alexandria outfall location in 2012 and 2013. For assessment purposes, we compare these values to the 90th concentration values seen in reference streams of an eco-region in Tennessee comparable to Hickman Creek.

Date	TP		Inorganic N (nitrate and nitrite)	
	Mile 13.0 (d/s)	Mile 13.7 (u/s)	Mile 13.0 (d/s)	Mile 13.7 (u/s)
6/4/2013	0.29	0.18	0.53	0.056
5/13/2013	0.19	0.22	0.35	0.29
4/2/2013	0.16	0.16	0.34	0.28
3/13/2013	0.17	0.16	0.49	0.44
2/8/2013	0.18	0.28	0.66	0.55
1/8/2013	0.21	0.19	0.89	0.71
12/13/2012	0.19	0.19	1.1	1
11/6/2012	0.32	0.18	1.3	0.043
10/16/2012	0.26	0.23	0.72	0.52
9/11/2012	0.51	0.21	1.3	0.34
8/14/2012	0.46	0.19	1.4	0.4
7/31/2012	0.6	0.47	3.9	3.6
	TP Downstream	TP Upstream	Nitrates Downstream	Nitrates Upstream
Average	0.30	0.22	1.08	0.69
As compared to Eco-Region 71h 90th percentile values:				
	TP		Nitrate and nitrite	
	0.18		0.92	

This data shows that both nitrates and phosphorus are elevated at the sampling location located a tenth of a mile from the outfall. This is not unexpected in an effluent dominated (zero low flow) stream. More importantly, the data reflects that the average phosphorus at 0.22 mg/l is above the reference stream value of 0.18 mg/L even upstream of the outfall. Additionally, while average nitrates of 0.69 mg/L are below the reference stream value of 0.92 mg/L upstream of the outfall, the average concentration downstream of 1.08 mg/L is only 0.16 mg/L above the reference value for the comparable eco-region. Additionally, many of the individual nitrate and nitrite samples are below the reference stream value downstream of the outfall. We interpret this data to mean then that the stream is impacted by several causes which we identify in our assessment as grazing in the riparian zones and municipal point source discharges.

Stream habitat and macroinvertebrate assessments we conducted in June 2013 also indicate that stream impairment results from several sources. The habitat score of 107 rates in the impaired category as compared to a passing score of $\geq$127 for comparable reference streams. Additionally, the total assessment score of 24, which is significantly lower than the target score of 32, resulted from points being deducted in all metric categories that are compiled into a total score. The quantity of nutrient tolerant organisms is only 1 of 7 metrics included in the total score. Other metrics are indicators of water quality pollution and habitat. The discharge monitoring report (DMR) summary for the publicly-owned treatment works indicates that the facility consistently meets its water quality based treatment limits, Again, we conclude then that while nutrients are a concern for Alexandria's treatment and discharge of municipal wastewater, we need to consider that need in relation to other factors that present. Significant factors we see in reviewing file data are the influent BOD_5 and TSS at this facility and problems we note in our inspection reports.

Per the discharge monitoring report in Appendix 2 the influent is very often full-strength to strong. Influent BOD_5 and TSS averaged 245 mg/L and 301 mg/L respectively for the period from April 2012 to January 2017. In addition to these being representative of full-strength waste water, the report reflects that influent values are significantly higher at times. For the same reporting period, the monthly average influent BOD_5 and TSS values were as high as 632 mg/L and 962 mg/L respectively. De-nitrification is directly impacted by the influent organic loading, so identifying the sources and the reasons for their variability in influent loading is necessary. It may be that pretreatment of industrial waste water will be necessary to prevent upset and pass-through at the treatment facility. There are a couple of industries in town. An updated industrial user survey is required in Part III of this permit to re-evaluate the discharges of these and other sources.

The division's inspection of this facility in September 2016 noted both that this collection system is subject to rain-induced inflow and infiltration (I/I). It also noted that the influent flow measurement device is located in a confined space and is flooded during peak flow events so as to not read accurately. While I/I may be evident in the DMR summary as monthly average BOD_5 and TSS values of 51 mg/L and 9 mg/L respectively, SBRs are amenable to treatment of variable flow rates as the overall DMR summary shows. Still, accurate flow measurement is necessary when doing collection system work in order to provide feedback on which scopes of sewer rehabilitation have been effective. Additionally, operability and maintainability of equipment located in a confined space is a safety issue for an employee.

Therefore, this permit proposes load limits derived from effluent characterization in order to prevent worsening of the existing stream conditions and allows Alexandria to focus its resources on its inflow and infiltration, flow measurement and regulation of industrial sources. The limits support the anti-degradation provision of the state water quality standard. They also equate to treatment levels being considered in the state's draft nutrient reduction framework.

The document referred to as the Tennessee Nutrient Reduction Framework (NRF), contains proposed rationale and the methodology for implementing the framework 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 framework intends to make use of modeling which is not yet developed completely for the Cumberland River Basin.

This framework approach sets realistic numeric percent reduction goals that result in the best possible conditions given available BMPs and other pollutant controls. Besides capping existing loads at their existing levels, the draft framework categorizes 3 levels of reduction. They are loads based on treatment levels of 8.0 mg/L total nitrogen and 1.0 mg/L total phosphorus, treatment levels of 5 mg/L total nitrogen and 0.3 mg/L total phosphorus, and reductions based on a stream specific total maximum daily load (TMDL). Capping this facility at its existing loads appears to be already equivalent to the 8.0 TN and 1.0 TP treatment level.

We communicated the need to consider nutrient limits in this permit with the operator during preparation of this draft permit. The operator supplied monthly sampling data for total phosphorus and nitrate and nitrite and the associated flows on the dates of the samples for the monitoring period from January 2014 to November 2016. Since this gives us 150 daily effluent load values for each parameter, we are using the average of these daily loads, inclusive of the statistical outliers, to represent the actual operation of the facility in light of the loading variability and inflow and infiltration. Those loads are then multiplied by 365 into annual loads. When back calculated to the design flow rate of 0.3 MGD, these load values represent treatment levels equivalent to discharges of 4.3 mg/L nitrate plus nitrite and 1.0 m/l total phosphorus. The application for renewal indicates, based on 3 samples, that total nitrogen from this facility is about 2 times the nitrate and nitrate value. The total kjeldahl nitrogen (sum of ammonia and organic) was 9.5 mg/l compared to the nitrate and nitrite value of 11.2 mg/l. So, since ammonia is below detection, organic nitrogen is 85% of the nitrate and nitrite value. At this ratio, the 4.3 mg/l nitrate plus nitrite would be expected to represent a total nitrogen effluent value of 8.0 mg/L with the organic nitrogen added. In order to verify this presumption, this permit proposes monitoring and reporting of total nitrogen in addition to nitrate and nitrite which is limited.

Therefore this permit imposes limits based on actual concentrations to cap the loadings at their present levels from the previous permit. This loading is imposed as annual rolling average. Load limits, versus concentration limits, give credit for any waste water diverted from the outfall for reuse and thereby encourages reuse alternatives. Since biological removals of nutrients are functions of other variables (e.g. detention time, inflow/infiltration), annual rolling average loads allow operational flexibility in achieving the load limits.

Beginning the 12th month following permit effective date (reported by the 15th day of the 13th month), the permittee shall meet annual rolling average load limit that is capped at their present level:

10.78 lb/day NO_3-NO_2 as N x 365 days/yr = 3935 lb/yr, as an annual rolling average

2.45 lb/day TP x 365 days/yr = 894 lb/yr, as an annual rolling average

Monitoring shall be conducted weekly and reported monthly as an annual rolling average load.

> **Annual rolling average Note**: The rolling average is the average of the 12 most recent months of data. On each appropriate reporting period DMR, the average of all data taken during that month will be that month's average value. The data shall figure monthly averages using the sample values and the average effluent flow rates on the dates the samples. Then each monthly average will be averaged with the monthly average values from the 11 previous months; and that average will be reported as the annual rolling average for that reporting period DMR.

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.

because the design capacity of the facility does not exceed 1.0 MGD and a pretreatment program is not required, the facility is considered not to have the reasonable potential to violate the narrative water quality criterion, "no toxics in toxic amounts". Therefore, toxicity testing is not required.

6.7. OVERFLOW AND BYPASS REPORTING

For the purposes of demonstrating proper operation of the collection, transmission, and treatment system, the permit defines overflow as any release of sewage other than through permitted outfalls. This definition includes, but is not necessarily limited to, sanitary sewer overflows and dry weather overflows as defined. For example, a collection system blockage or hydraulic overload that causes backup and release of sewage into a building during a wet weather event may not clearly fit either the definition of a sanitary sewer overflow or a dry weather overflow. Still, any unpermitted release potentially warrants permittee mitigation of human health and/or water quality impacts 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.

However, for the more typical, unpermitted, releases into the environment, this permit intends interchangeable use of the terms, “overflow” and “sanitary sewer overflow” for compliance reporting purposes.

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 3 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.

7.2. COLLECTION SYSTEM CERTIFIED OPERATOR

The collection system shall be operated under the supervision of a Grade 1 certified collection system operator in accordance with the Water Environmental Health Act of 1984.

7.3. PRETREATMENT PROGRAM

The Town of Alexandria has received an exemption from development of a pretreatment program due to the lack of any significant industrial users. To keep the exemption, the Town of Alexandria must complete an updated Industrial Waste Survey within 120 days of the effective date of the permit, unless such a survey has been submitted within 3 years of the effective date. The Town of Alexandria must notify the division immediately of its intent to connect a significant industrial user to the sewage system.

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 have 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

This permit is being reissued for 5 years in order to coordinate its reissuance with other permits located within the Caney Fork Watershed.

7.6. ELECTRONIC REPORTING

Starting on December 21, 2016, all Individual NPDES Permit holders will be required to submit Discharge Monitoring Reports (DMRs) electronically through NetDMR. Prior to 21 December 2016, the permittee may elect to electronically submit DMRs instead of mailing paper DMRs.

EPA published the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which will modernize Clean Water Act reporting for municipalities, industries and other facilities. The rule was published in the Federal Register on October 22, 2015 and became effective on December 22, 2015. The rule replaces most paper-based NPDES reporting requirements with electronic reporting.

More information is available at: http://www.tn.gov/environment/article/wr-netdmr-electronic-reporting:

- Getting Started on NetDMR,
- Electronic reporting schedule,
- Training Opportunities,
- NetDMR User Guide and other supporting information.

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# TN05130108002_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. This permit does not authorize alteration in stream side or littoral vegetative covers. The effluent limits are protective of instream dissolved oxygen. STPs are sources of pathogens, but must meet water quality standards at the end of the discharge pipe by disinfecting the effluent.

The division's assessments of the receiving stream reflect elevated phosphorus and Nitrite-Nitrate as N (NO_3-NO_2 as N) from grazing in riparian or shoreline zones and municipal point source discharges. The NO_3-NO_2 compound is the nitrogen parameter used by the division to assess whether a stream complies with the narrative nutrient standard for fish and aquatic life. In situations where the macro-invertebrate community fails to achieve eco-regional goals and where the ambient levels of nutrients are above the 90th percentile value for eco-region reference streams, the stream is assessed as "impaired" or in need of additional controls on phosphorus and nitrogen. Municipal facilities discharge nutrients, so additional controls on nitrogen and phosphorus are proposed in this permit consistent with a permit strategy developed consistent with a state-wide nutrient reduction framework being developed by the division. See Section 6.4 of permit rationale.

TMDLs have been developed and approved for this waterbody segment on the following parameters and dates:

Parameter	TMDL Approval Date
Pathogens	September 19, 2005

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	25	15	37.5	20	40	1/week
$CBOD_5$ (Nov. 1- April 30)	20	50	25	62.6	30	40	1/week
NH_3-N (May 1- Oct. 31)	1.1	2.8	1.7	4.2	2.2	—	1/week
NH_3-N (Nov. 1- April 30)	2.1	5.3	3.2	8	4.2	—	1/week
Total Suspended Solids	30	75	40	100	45	40	1/week
Dissolved Oxygen (mg/l)	6.0 (daily minimum) instantaneous	—	—	—	—	—	5/week
NO_3-NO_2 as N	Report	—	—	—	Report	—	1/week
Total Phosphorus	Report	—	—	—	Report	—	1/week
E. coli (colonies/100ml)	126/100 ml	—	—	—	487/100 or 941/100 ml	—	3/week
Settleable Solids (ml/l)		—	—	—	1.0 (daily maximum)	—	3/week
pH (standard units)	6.0-9.0	—	—	—	—	—	5/week
Flow (MGD):							
Influent	Report	—	—	—	Report	—	7/week
Effluent	Report	—	—	—	Report	—	7/week
Sanitary Sewer Overflows, Total Occurrences			Report				continuous
Dry Weather Overflows, Total Occurrences			Report				continuous
Bypass of Treatment, Total Occurrences			Report				continuous

APPENDIX 2
Discharge Monitoring Report Summary

	Flow (MGD)		Biochemical Oxygen Demand				Suspended Solids				Effluent (mg/l)									By-passing
			Influent	Effluent (mg/l)		%	Influent	Effluent (mg/l)		%	Settleable	pH		Cl_2	Ammonia		D.O.	E. coli		
	Monthly Average	Daily Max	(mg/l)	Monthly Average	Daily Max	Removal	(mg/l)	Monthly Average	Daily Max	Removal	Solids (ml/l)	(std. units) Min	Max	Daily Max	Monthly Average	Daily Max	Daily Min	Monthly Average	Daily Max	
Limits	Report	Report	Report			85	Report			85	1.0	6.0	9.0				6.0	126	941	
Summer				10	20			30	45						1.1	2.2				
Winter				20	30			30	45						2.1	4.2				
Average	0.154	0.347	245	4	5	98	301.3	15	22	92	0.5	7.3	8.0		0.2	0.4	8.1	5	56	
Maximum	0.990	0.704	632.1	9	12	100	962.0	34	53	98	0.5	7.8	8.8		0.9	4.7	9.9	34	770	
Minimum	0.055	0.074	51.3	1	2	93	9.0	3	5	72	0.1	6.8	7.1		0.1	0.1	6.6	0	1	
+ = Exceedence								1	2	5						1				
Date																				
Aug/12	0.069	0.137	172.1	4	5	97.5	233	22	27	88.7	0.5	7.8	8.7		0.15	0.17	8.4	6.209	65.7	
Sep/12	0.087	0.389	189.1	4	7	95.5	324	20	32	84.2 +	0.5	7.4	8.5		0.17	0.22	7.2	7.476	770	
Oct/12	0.990	0.290	145.1	4	5	97.3	236	18	25	92.2	0.5	7.6	8.5		0.11	0.12	7.8	7.834	162	
Nov/12	0.077	0.184	195.7	3	6	98.4	234	14	22	94	0.5	7.3	8.3		0.12	0.16	9.0	1.644	8.4	
Dec/12	0.146	0.366	115.5	2	3	97.9	142	9	12	93.2	0.5	7.3	7.8		0.16	0.17	8.6	10.32	45	
Jan/13	0.208	0.460	129.1	2	3	97.5	178	11	14	90.3	0.5	7.4	7.9		0.11	0.14	9.1	7.132	93.4	
Feb/13	0.145	0.208	126.8	2	3	98.4	137	11	12	89.5	0.5	7.5	7.8		0.12	0.15	8.8	1.503	5.1	
Mar/13	0.161	0.293	77.4	2	2	96.8	91	9	11	92.5	0.5	7.3	7.8		0.10	0.10	8.5	2.198	9.6	
Apr/13	0.167	0.579	129	3	5	97.8	144	11	16	92.3	0.5	7.2	7.6		0.11	0.13	7.8	0.119	5.2	
May/13	0.158	0.615	138.1	2	7	98	147	12	20	91.6	0.5	7.3	8.3		0.17	0.24	7.5	1.349	4.1	
Jun/13	0.055	0.081	557.1	6	6	98.9	863	19	23	97.5	0.5	7.5	8.2		0.13	0.16	7.9	5.823	51.2	
Jul/13	0.130	0.545	326.7	4	5	98.2	459	13	23	96.2		7.5	8.5		0.13	0.14	7.7	1.548	9.6	
Aug/13	0.077	0.140	448.5	4	5	98.9	703	12	19	97.5		7.2	8.5		0.10	0.11	7.9	1.979	21.4	
Sep/13	0.064	0.108	430.9	4	6	99.2	741	19	24	97.1		7.2	8.1		0.11	0.13	8.8	1.779	4.2	
Oct/13	0.068	0.155	632.1	3	4	99.6	962	14	23	95	0.1	7.0	8.0		0.14	0.22	8.3	1.799	13.2	
Nov/13																				
Dec/13	0.182	0.693	157.5	2	2	98.7	224	9	12	89.6	0.5	6.8	7.3		0.11	0.14	8.8	2.474	194	
Jan/14	0.134	0.377	131.9	2	3	98.5	117	13	25	87.9	0.5	6.8	7.2		0.29	1.00	9.9	2.086	23.1	
Feb/14	0.168	0.483	151.4	2	2	96.6	75	6	12	91.5		7.3	7.9				9.1	1.963	4.1	
Mar/14	0.132	0.625	143.4	2	2	98.6	130	15	17	84.2 +		7.1	7.4				7.9	8.294	26.5	
Apr/14	0.139	0.405		2	4		148	18	30			7.1	7.1				7.7	4.222	125	
May/14	0.670	0.115	240.5	6	7	97.2	224	19	30	84 +		7.2	8.0				7.8	1.755	13.2	
Jun/14	0.067	0.126	244.5	4	7	98.1	281	17	22	90.2	0.5	7.1	8.2		0.25	0.25	7.9	2.05	14.3	
Jul/14	0.059	0.222	247.9	6	6	98	373	26	32	92.5	0.5	7.4	8.4		0.25	0.25	7.6	2.597	5.2	
Aug/14	0.062	0.124	196	4	5	97.9	340	13	21	95	0.5	7.2	8.3		0.44	1.00	8.2	1.625	8.2	
Sep/14	0.072	0.373	242	5	10	97.7	352	30	53 +	91.1	0.5	7.4	8.4		0.25	0.25	7.4	1.469	3.1	
Oct/14	0.183	0.704	77.8	2	4	96.7	73	13	20	79.4 +	0.5	7.1	8.3		0.25	0.25	7.1	2.039	10.7	
Nov/14	0.163	0.438	51.3	2	2	95.6	68	10	15	85.6	0.5	7.2	7.6		0.25	0.25	8.4	1.91	15.6	
Dec/14	0.183	0.471	198.6	2	3	92.7	381	10	11	91.3	0.5	6.9	7.1		0.25	0.25	8.8	2.09	39.9	
Jan/15	0.152	0.374	225.7	2	2	99	9	9	16	95.6	0.5	7.0	7.7		0.25	0.25	7.5	2.062	19.9	
Feb/15	0.167	0.546	145.4	3	3	97.8	97	19	37	72.2 +	0.5	7.3	7.6		0.25	0.25	8.9	2.512	1.33	
Mar/15																				
Apr/15	0.164	0.436	152.3	3	3	97.4	132	9	14	92.1	0.5	7.2	7.5		0.25	0.25	7.7	1.877	12.2	
May/15	0.064	0.084	299.1	9	12	97.1	317	23	38	91.8	0.5	7.2	8.6		0.25	0.25	8.4	3.332	42.8	
Jun/15	0.073	0.127	231.8	8	10	96.6	256	23	30	90.7	0.5	7.2	8.5		0.25	0.25	8.2	1.794	11.6	
Jul/15	0.133	0.409	431	6	7	98	729	26	38	94	0.5	7.2	8.4		0.36	0.79	7.5	2.745	40.2	
Aug/15	0.125	0.240	297	5	6	98.2	623	27	38	95.5	0.5	7.3	8.6		0.25	0.25	7.4	1.839	21.1	
Sep/15	0.069	0.096	325.5	8	11	97.6	361	34 +	48 +	89.9		7.2	8.2				8.7	1.714	7.4	
Oct/15	0.109	0.351	238.6	3	4	98.8	228	14	32	93.4	0.5	7.1	8.0		0.25	0.25	7.8	6.5	76.7	
Nov/15	0.171	0.624	227.6	2	2	99.3	275	10	13	95.8	0.5	7.2	7.5		0.25	0.25	7.9	1.37	8.5	
Dec/15	0.219	0.632	169.2	2	2	99	111	7	12	91.1	0.5	7.1	7.5		0.25	0.25	7.8	3	75.9	
Jan/16	0.161	0.433	244	2	2	99.1	146	9	16	93.5	0.5	7.2	7.6		0.25	0.25	8.6	1.7	17.3	
Feb/16	0.220	0.614	161.6	1	2	99	147	5	8	89	0.5	7.4	7.7				8.8	2.2	95.9	
Mar/16	0.155	0.275	255.1	2	2	99	140	3	7	97	0.5	7.4	7.7				8.3	1.1	2	
Apr/16	0.103	0.237	430.8	4	8	99	418	11	21	96.1	0.5	7.5	8.7				8.5	1	3	
May/16	0.080	0.095	417.5	6	10	98	442	26	34	93	0.5	7.6	8.6				8.4	2.9	12.1	
Jun/16	0.112	0.400		5	7	98	304	11	19	96	0.5	7.4	8.7				6.6	12.1	308	
Jul/16	0.167	0.493	199.6	7	10	95	246	14	21	89	0.5	7.4	8.6				6.6	22.5	98.7	
Aug/16	0.088	0.145	251.6	7	8	97	294	13	20	93	0.5	7.4	8.3		0.25	0.25	6.9	9.47	36.8	
Sep/16	0.080	0.253	475	7	10	98	734.4	11	17	97	0.5	7.5	8.8		0.95	4.74 +	7.6	30	85.4	
Oct/16	0.068	0.074	314.7	3	4	99	280	12	14	95.8	0.5	7.5	8.6				7.8	34.2	93.4	
Nov/16	0.075	0.211	404.5	5	6	99	446	11	14	98	0.5	7.3	8.2				8.2	27.9	63.8	
Dec/16	0.215	0.567	265.4	5	6	98	333.6	14	20	96	0.5	7.3	7.6				7.2	3.2	16	
Jan/17	0.211	0.625	213.5	1	2	99	219	4	5	98	0.5	7.4	7.6				7.8	2.5	13.5	