



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**DIVISION OF WATER RESOURCES**

William R. Snodgrass - Tennessee Tower  
312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
Nashville, Tennessee 37243-1102

February 28, 2022

Mr. Nickolas Tafoya  
e-copy: [ntafoya@citgo.com](mailto:ntafoya@citgo.com)  
CITGO Petroleum Corporation  
2409 Knott Road  
Knoxville, TN 37921

Subject: **Draft of NPDES Permit No. TN0022411**  
**CITGO Petroleum Corporation**  
**Knoxville, Knox County, Tennessee**

Dear Mr. Tafoya:

Enclosed please find a draft copy of the NPDES Permit No. TN0022411, 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 draft permit. The issuance of this 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.

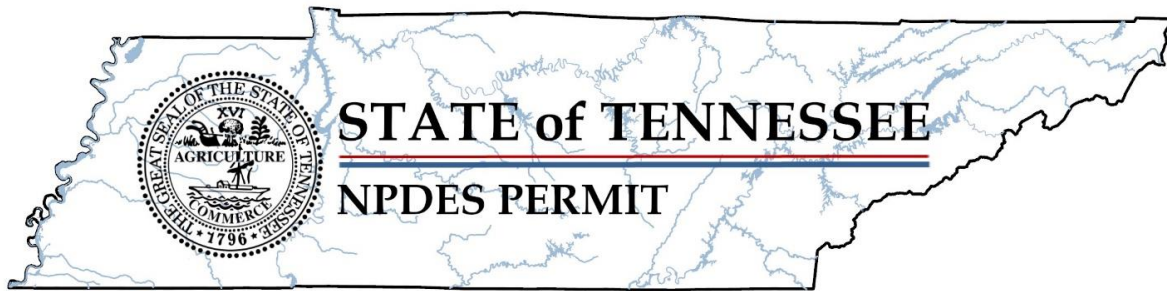
If you have questions, please contact the Knoxville Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Mr. Oscar Montenegro at (615) 532-0623 or by E-mail at [Oscar.Montenegro@tn.gov](mailto:Oscar.Montenegro@tn.gov).

Sincerely,

Vojin Janjić  
Manager, Water-Based Systems

Enclosure

cc: Permit Section File & Knoxville Environmental Field Office



**Authorization to Discharge Under the  
National Pollutant Discharge Elimination System (NPDES)  
Permit Number TN0022411**

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Issued by  
**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: **CITGO Petroleum Corporation  
Knoxville Petroleum Bulk Station and Terminal**

is authorized to discharge: treated and untreated storm water runoff and treated rack wash water through Outfall 001

from a facility located at: 2409 Knott Road, Knoxville, Knox County, Tennessee

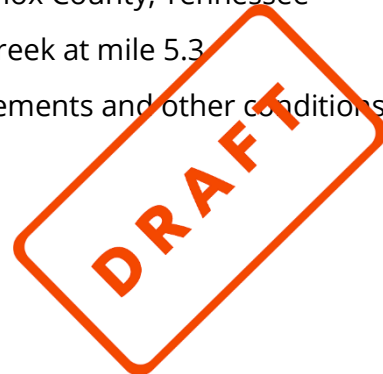
to receiving waters named: unnamed tributary to Third Creek at mile 5.3

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:



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for Jennifer Dodd  
Director

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## PART 1

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### 1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

#### 1.1. NUMERIC AND NARRATIVE EFFLUENT LIMITATIONS

CITGO Petroleum Corporation is authorized to discharge treated and untreated storm water runoff and treated rack wash water through Outfall 001 to unnamed tributary at mile 0.5 to Third Creek at mile 5.3 to Fort Loudoun Reservoir at Tennessee River mile 645.9

##### 1.1.1. Numeric Effluent Limitations

Authorized discharges shall be limited and monitored by the permittee as specified below:

External Outfall 001, All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>=	6.0	SU	Grab	Quarterly	Minimum
00400	pH	<=	9.0	SU	Grab	Quarterly	Maximum
00530	Total Suspended Solids (TSS)	<=	45	mg/L	Grab	Quarterly	Daily Maximum
00545	Settleable Solids	<=	0.5	mL/L	Grab	Quarterly	Daily Maximum
00552	Oil and grease	<=	15	mg/L	Grab	Quarterly	Daily Maximum
34010	Toluene	<=	1.0	mg/L	Grab	Quarterly	Daily Maximum
34030	Benzene	<=	0.07	mg/L	Grab	Quarterly	Daily Maximum
34371	Ethylbenzene	<=	0.2	mg/L	Grab	Quarterly	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	Quarterly	Daily Maximum
81551	Xylene	<=	0.5	mg/L	Grab	Quarterly	Daily Maximum

Notes:

See **Part 1.2.3** for test procedures.

##### 1.1.2. Narrative Conditions

Additional monitoring and reporting requirements and conditions include:

The authorized discharge(s) shall not:

- Result in distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits, or sludge banks of such size or character as may be detrimental to fish and aquatic life.

- Result in total suspended solids, turbidity, or color in such amounts or character that will result in any objectionable appearance to the water, considering the nature and location of the water.
- 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, Tennessee Code Annotated (Tenn. Code Ann.) §68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, Tenn. Code Ann. §68-46-101 et. seq.

## **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 stormwater runoff or the receiving stream. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed and calibrated by a qualified source at least once every 12 months<sup>1</sup>, and maintained to ensure that the accuracy of the measurements is consistent with accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of plus or minus 10% from the true discharge rates throughout the range of expected discharge volumes.

Composite samples must be proportioned by flow at the time of sampling. Aliquots may be collected manually or automatically. The sample aliquots must be maintained at  $\leq 6^{\circ}\text{C}$  during the compositing period, or as otherwise specified in 40 CFR §136 or in the method.

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of

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<sup>1</sup> The Division expects for permittees to meet EPA's guidance on proper operation and maintenance of flow measurement devices, as stated in the [NPDES Compliance Inspection Manual](#).

the monitored discharge. Samples must be representative of the effluent being discharged and collected prior to mixing with any other discharge or the receiving stream. This can be at a different point for different parameters but must be after all treatment for that parameter or all expected changes. Biomonitoring tests, if required, must be conducted on final effluent.

### 1.2.2. Sampling Frequency

The permittee should report "No Discharge" on Discharge Monitoring Reports (DMRs) only if a permitted outfall does not discharge at any time during the monitoring period. If the outfall discharges effluent at any time during the monitoring period, the permittee must provide at least one sampling result from the effluent of that outfall.

If the required monitoring frequency is once per month or 1/month, the monitoring period is one month. If the discharge occurs during only one day in that period, 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 using sufficiently sensitive methods in Title 40 CFR § 136, as amended, and promulgated pursuant to Section 304 (h) of the Act. The chosen methods must be sufficiently sensitive as required in state rule 0400-40-03-.05(8).
- c) If the ML for all methods available in accordance with 40 CFR § 136 are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest ML shall be used.
- d) Where the analytical results are below the method detection limit (MDL), the permittee shall report the actual laboratory MDL and ML values. See **Section 1.3.4.** for instructions regarding reporting less than detection.
- e) When there is no analytical method that has been approved under 40 CFR §136 or required under 40 CFR chapter I, subchapter N or O, and a specific method is not otherwise required by the Director, the permittee may use any suitable method but shall provide a description of the method. When selecting

a suitable method, factors such as a method's precision, accuracy, or resolution must be considered when assessing the performance of the method.

#### **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:

- i. The date, exact place, and time of sampling or measurements;
- ii. The individual(s) who performed the sampling or measurements;
- iii. The date analyses were performed;
- iv. The individual(s) who performed the analyses;
- v. The laboratory where the analyses were performed;
- vi. The analytical techniques or methods used; and
- vii. The results of such analyses.

#### **1.2.5. Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

### **1.3. REPORTING**

#### **1.3.1. Monitoring Results**

Monitoring results shall be recorded monthly and submitted monthly on Discharge Monitoring Reports (DMRs) using EPA's [NetDMR](#) website. The first DMR is due on the 15th of the month following permit effectiveness. Subsequent DMRs shall be submitted through NetDMR no later than 15 days after the completion of the reporting period. In compliance with the Federal NPDES Electronic Reporting Rule, DMRs may not be submitted via email under any circumstances.

Discharge Monitoring Reports and any other information or report must be signed and certified by a responsible corporate officer as defined in Tennessee Rules, Chapter [0400-40-05-.07\(2\)\(i\)](#), a general partner or proprietor, a principal municipal executive officer or ranking elected official, or his or her duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.



In the event that electronic reporting is unavailable, the permittee shall comply with reporting conditions provided in **Section 1.7**.

### **1.3.2. Additional Monitoring by Permittee**

If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR § 136, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or other reporting form specified by the Commissioner. Such increased frequency shall also be indicated.

### **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 § 69-3-115 of the Tennessee Water Quality Control Act.

### **1.3.4. Reporting Less Than Detection; Reporting Significant Figures**

For the purpose of evaluating compliance with the permit limits established herein, where certain limits are below the minimum level (ML) of 40 CFR § 136 approved analytical methods, compliance will be demonstrated when a non-detect result is obtained using the most sensitive method available. The results of non-detect analyses, in this case, shall be reported as Below Detection Limit (BDL) or "NODI = B" in NetDMR. Reporting examples are provided below.

*Reporting Example 1:* If the permit limit is 0.02 mg/L with a method detection limit (MDL) of 0.05 mg/L and no detection is shown, the permittee must report "BDL" or "NODI = B" on DMRs in NetDMR. Whenever "BDL" or "NODI = B" is reported, the actual MDL must be reported in the DMR comments or in an attachment submitted in NetDMR.

*Reporting Example 2:* If the permit limit is 0.02 mg/L with an MDL of 0.05 mg/L and detection is shown, the actual detected value must be reported.

*Reporting Example 3:* If the permit limit is 0.02 mg/L with an MDL of 0.01 mg/L and no detection is shown, the permittee must report less than MDL (<0.01 mg/L in this case).

For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, the numeric value of the MDL may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report "less than {numeric value of the MDL}" and if the average

value is less than the ML, the permittee must report "less than {numeric value of the ML}." If a value is equal to or greater than the ML, the permittee must report and use the actual value. The resulting average value must be compared to the compliance level, the ML, in assessing compliance.

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.

### **1.3.5. Outlier Data**

Outlier data include analytical results that are probably false. The validity of results is based on operational knowledge and a properly implemented quality assurance program. False results may include laboratory artifacts, potential sample tampering, broken or suspect sample containers, sample contamination or similar demonstrated quality control flaw.

Outlier data are identified through a properly implemented quality assurance program, and according to ASTM standards (e.g. Grubbs Test, 'h' and 'k' statistics). Furthermore, outliers should be verified, corrected, or removed based on further inquiries into the matter. If an outlier was verified (through repeated testing and/or analysis), it should remain in the preliminary data set. If an outlier resulted from a transcription or similar clerical error, it should be corrected and subsequently reported.

Therefore, only if an outlier was associated with problems in the collection or analysis of the samples and as such does not conform with the Guidelines Establishing Test Procedures for the Analysis of Pollutants (40 CFR §136), can it be removed from the data set and not reported on DMRs. Otherwise, all results (including monitoring of pollutants more frequently than required at the location(s) designated, using approved analytical methods as specified in the permit) should be included in the calculation and reporting of the values required in the DMR form. The permittee should use the "comment" section in NetDMR to explain any potential outliers or dubious results.

## **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 304(b)(2) of the Clean Water Act, as amended, if the effluent standard or limitation 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.

### **1.7. ELECTRONIC REPORTING**

This permit requires the submission of forms developed by the Director in order for a person to comply with certain requirements, including, but not limited to, making reports, submitting monitoring results, and applying for permits. The Director may make these forms available electronically and, if submitted electronically, then that electronic submission shall comply with the requirements of Chapter [0400-01-40](#).

In the event of large-scale emergencies and/or prolonged electronic reporting system outages, an episodic electronic reporting waiver may be granted by the Commissioner in accordance with 40 CFR § 127.15. A request for a deadline extension or episodic electronic reporting waiver should be submitted to [DWRWater.Compliance@tn.gov](mailto:DWRWater.Compliance@tn.gov), in compliance with the Federal NPDES Electronic Reporting Rule.

If an episodic electronic reporting waiver is granted, reports with wet-ink original signatures shall be mailed to the following address:

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

For purposes of determining compliance with this permit, data provided to the Division electronically is legally equivalent to data submitted on signed and certified forms. A copy must be retained for the permittee's files.

## PART 2

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### **2. GENERAL PERMIT REQUIREMENTS**

#### **2.1. GENERAL PROVISIONS**

##### **2.1.1. Duty to Comply**

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

##### **2.1.2. Duty to Reapply**

The 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 Division Director no later than 180 days prior to the expiration date. Such forms shall be properly signed and certified.

##### **2.1.3. 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, or other technology based effluent limitations such as those established in Tennessee Rule [0400-40-05-.09](#).

##### **2.1.4. Duty to Provide Information**

The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

#### **2.1.5. 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, to:

- a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records shall be kept under the conditions of this permit;
- b) Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this permit;
- c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d) Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the Director.

#### **2.1.6. 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 Division's offices or via the Department's [dataviewer webpage](#). As required by the Federal Act, effluent data shall not be considered confidential.

#### **2.1.7. 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.

#### **2.1.8. 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.

### **2.1.9. 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.

### **2.1.10. 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 as defined in Rule [0400-40-05-.02](#);
- 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); or
- c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices.

### **2.2.2. Permit Modification, Revocation, or Termination**

- a) This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR § 122.62 and § 122.64, Federal Register, Volume 49, No. 188 (Wednesday, September 26, 1984), as amended. Causes for such permit action include but are not limited to the following:
  - i. Violation of any terms or conditions of the permit;
  - ii. Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; and
  - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

- 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.
- 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 for 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**

Except as provided in Tennessee Rule Chapter [0400-40-05-.06\(5\)](#)(a) or (b), 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 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 permittee shall provide the following information to the Director in their formal notice of intent to transfer ownership:
  - i. The permit number of the subject permit;
  - ii. The effective date of the proposed transfer;
  - iii. The name, address, and contact information of the transferor;
  - iv. The name, address, and contact information of the transferee;



- v. The names of the responsible parties for both the transferor and transferee;
- vi. A statement that the transferee assumes responsibility for the subject permit;
- vii. A statement that the transferor relinquishes responsibility for the subject permit;
- viii. The signatures of the responsible parties for both the transferor and transferee pursuant to the signatory requirements of subparagraph (i) of Rule [0400-40-05-.07\(2\)](#); and
- ix. 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. 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 EFO within 24 hours from the time the permittee becomes aware of the circumstances. The EFO should be contacted for names and phone numbers of the environmental response team.

A written submission must be provided via [MyTDEC Forms](#) within five days of the time the permittee becomes aware of the circumstances unless the Director on a case-by-case basis waives this requirement. The permittee shall provide the Director with the following information:

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

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

b) Scheduled Reporting:

For instances of noncompliance which do not cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the permittee shall report the noncompliance on the DMR. 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.

**2.3.2. Overflows and Releases**

- a) Sanitary sewer overflows, including dry-weather overflows, are prohibited.
- b) The permittee shall operate the collection, transmission, and treatment system so as to avoid sanitary sewer overflows and releases due to improper operation or maintenance. A “release” may be due to improper operation or maintenance of the collection system or may be due to other cause(s). Releases caused by improper operation or maintenance of the permittee’s collection, transmission, and treatment system are prohibited.
- c) The permittee shall take all reasonable steps to minimize any adverse impact associated with overflows and releases.
- d) No new or additional flows shall be added upstream of any point in the collection, transmission, or treatment system that experiences greater than 5 sanitary sewer overflows and/or releases per year<sup>2</sup> or would otherwise overload any portion of the system. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after:
  - 1) An authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem;
  - 2) The correction work is underway; and
  - 3) The cumulative, peak-design flows potentially added from new connections and line extensions upstream of any chronic overflow or

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<sup>2</sup> This includes dry weather overflows, wet weather overflows, dry weather releases and wet weather releases.

release point are less than or proportional to the amount of inflow and infiltration removal documented upstream from 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 the permittee's DMR and uploaded to NetDMR. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

- e) In the event that chronic sanitary sewer overflows or releases have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium of the actions identified in this paragraph, the permittee may request a meeting with Division EFO staff to petition for a waiver based on mitigating evidence.
- f) Unpermitted discharges from the collection or treatment system of industrial facilities are prohibited.

### **2.3.3. Upset**

- a) "*Upset*" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations due to 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".

#### **2.3.4. 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.

#### **2.3.5. Bypass**

- a) "*Bypass*" means 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 the following 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 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; and
  - iii. For anticipated bypass, the permittee submits prior notice, if possible at least ten days before the date of the bypass, or for unanticipated bypass, the permittee submits notice of an unanticipated bypass within 24 hours from the time that the permittee becomes aware of the bypass.
- c) Bypasses that do not cause effluent limitations to be exceeded may be allowed only if the bypass is necessary for essential maintenance to assure efficient

operation and are not subject to the reporting requirements of part b)iii. above.

### **2.3.6. 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 decreases due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to inflow and infiltration.
- b) A washout is prohibited. If a washout occurs the permittee must report the incident to the Division in the appropriate EFO within 24 hours by telephone. A written submission must be provided within five days. The washout must be noted on that month's DMR. 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 "*Bypass*" (**Section 2.3.5**), "*Overflows and Releases*" (**Section 2.3.2**), and "*Upset*" (**Section 2.3.3**), 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.

## PART 3

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### 3. PERMIT SPECIFIC REQUIREMENTS

#### 3.1. TOXIC POLLUTANTS

The permittee shall notify the Division as soon as it knows or has reason to believe that:

- a) Any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic substance(s) not limited in the permit (listed in 40 CFR 122, Appendix D, Table II and III), if that discharge will exceed the highest of the following "notification levels":
  - i. One hundred micrograms per liter (100 µg/L);
  - ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - iii. Five times the maximum concentration value reported for that pollutant(s) in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - iv. The level established by the Director in accordance with 40 CFR 122.44(f).
  
- b) Any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
  - i. Five hundred micrograms per liter (500 µg/L);
  - ii. One milligram per liter (1 mg/L) for antimony;
  - iii. Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - iv. The level established by the Director in accordance with 40 CFR 122.44(f).

#### 3.2. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign at each outfall or the nearest publicly accessible location. 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 are given as examples of the minimal amount of information that must be included on the signs:

**TREATED INDUSTRIAL WASTEWATER**  
**CITGO Petroleum Corporation**  
**Knoxville Petroleum Bulk Station and Terminal**  
**(865) 588-3555**  
**NPDES Permit No. TN0022411**  
**TENNESSEE DIVISION OF WATER RESOURCES**  
**1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Knoxville**

**INDUSTRIAL STORMWATER RUNOFF**  
**CITGO Petroleum Corporation**  
**Knoxville Petroleum Bulk Station and Terminal**  
**(865) 588-3555**  
**NPDES Permit No. TN0022411**  
**TENNESSEE DIVISION OF WATER RESOURCES**  
**1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Knoxville**

## PART 4

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### 4. DEFINITIONS AND ACRONYMS

#### 4.1. DEFINITIONS

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.

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 maximum concentration is the concentration of that 24-hour composite; when other sampling means are used, the daily maximum concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

**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** is 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 Outstanding National Resource Waters (ONRWs) the mitigation must occur within the ONRW.

**Discharge** or **discharge of a pollutant** refers to the addition of pollutants to waters from a source.

A **grab sample** is a single influent or effluent sample collected at a particular time.

The **instantaneous maximum concentration** is a limitation on the maximum concentration, in units of mass per volume (e.g. 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 units of mass per volume (e.g. 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.

**Pollutant** means sewage, industrial wastes, or other wastes.

A **qualifying storm event** is a storm event in which greater than 0.1 inches of rainfall occurs after a period of at least 72 hours following any previous storm event with rainfall of 0.1 inches or greater.

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.



**Severe property damage**, when used to consider the allowance of a bypass, 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. Severe property damage does not mean economic loss caused by delays in production.

**Unpermitted discharge** refers to the discharge of pollutants to waters not authorized by this permit.

**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 domestic wastewater 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.

**Wet weather flow** shall be construed to represent stormwater runoff which, in combination with all process and/or non-process wastewater discharges, as applicable, is discharged during a qualifying storm event.



#### **4.2. ACRONYMS AND ABBREVIATIONS**

1Q10	–	1-day minimum, 10-year recurrence interval
30Q5	–	30-day minimum, 5-year recurrence interval
7Q10	–	7-day minimum, 10-year recurrence interval
BAT	–	best available technology economically achievable
BCT	–	best conventional pollutant control technology
BDL	–	below detection limit
BOD <sub>5</sub>	–	five-day biochemical oxygen demand
BPT	–	best practicable control technology currently available
CBOD <sub>5</sub>	–	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
<i>E. coli</i>	–	<i>Escherichia coli</i>
EPA	–	Environmental Protection Agency
EFO	–	environmental field office
GPM	–	gallons per minute
IC <sub>25</sub>	–	inhibition concentration causing 25% reduction in survival, reproduction, and growth of the test organisms
IU	–	industrial user
IWS	–	industrial waste survey
LB (lb)	–	pound
LC <sub>50</sub>	–	acute test causing 50% lethality
MDL	–	method detection limit
MGD	–	million gallons per day
mg/L	–	milligrams per liter
ML	–	minimum level of quantification
mL	–	milliliter
MLSS	–	mixed liquor suspended solids
MOR	–	monthly operating report
NODI	–	no discharge code in NetDMR
NPDES	–	national pollutant discharge elimination system
PL	–	permit limit
POTW	–	publicly owned treatment works
SAR	–	semi-annual report [pretreatment program]

SIU – significant industrial user  
SSO – sanitary sewer overflow  
STP – sewage treatment plant  
TBEL – technology-based effluent limit  
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



#### **4.3. RESOURCES, HYPERLINKS, AND WEB PAGES**

Clean Water Act NPDES Electronic Reporting (eReporting) Information

<https://www.epa.gov/compliance/npdes-ereporting>

Clean Water Act Section 316(b) Cooling Water Intake Existing Facility Final Rule

<https://www.federalregister.gov/documents/2014/08/15/2014-12164/national-pollutant-discharge-elimination-system-final-regulations-to-establish-requirements-for>

Electronic Code of Federal Regulations (eCFR), Title 40 (40 CFR § 1 through § 1099)

[https://www.ecfr.gov/cgi-bin/text-idx?SID=75202eb5d09974cab585afeea981220b&mc=true&tpl=/ecfrbrowse/Title40/40chapt\\_erl.tpl](https://www.ecfr.gov/cgi-bin/text-idx?SID=75202eb5d09974cab585afeea981220b&mc=true&tpl=/ecfrbrowse/Title40/40chapt_erl.tpl)

Electronic Reporting (NetDMR) Waiver Request

[https://www.tn.gov/content/dam/tn/environment/water/documents/wr\\_ereporting\\_waiver.pdf](https://www.tn.gov/content/dam/tn/environment/water/documents/wr_ereporting_waiver.pdf)

Low Flow Statistics Tools: A How-To Handbook for NPDES Permit Writers (EPA)

[https://www.epa.gov/sites/production/files/2018-11/documents/low\\_flow\\_stats\\_tools\\_handbook.pdf](https://www.epa.gov/sites/production/files/2018-11/documents/low_flow_stats_tools_handbook.pdf)

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA)

[https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual\\_2002.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/acute-freshwater-and-marine-wet-manual_2002.pdf)

NetDMR Login

<https://cdxnodengn.epa.gov/net-netdmr/>

NetDMR, MyTDEC Forms, & Electronic Reporting Information

<https://www.tn.gov/environment/program-areas/wr-water-resources/netdmr-and-electronic-reporting.html>

NPDES Compliance Inspection Manual (EPA)

<https://www.epa.gov/sites/production/files/2017-01/documents/npdesinspect.pdf>

NPDES Electronic Reporting Rule

<https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-mpdes-electronic-reporting-rule>

Quality System Standard Operating Procedure for Macroinvertebrate Stream Surveys (QSSOP)

[https://www.tn.gov/content/dam/tn/environment/water/documents/DWR-PAS-P-01-Quality\\_System\\_SOP\\_for\\_Macroinvertebrate\\_Stream\\_Surveys-081117.pdf](https://www.tn.gov/content/dam/tn/environment/water/documents/DWR-PAS-P-01-Quality_System_SOP_for_Macroinvertebrate_Stream_Surveys-081117.pdf)



Rules of the TN Department of Environment and Conservation, Chapter 0400-40  
<https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm>

Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA)  
[https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual\\_2002.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/short-term-chronic-freshwater-wet-manual_2002.pdf)

TDEC Water Quality Rules, Reports, and Publications  
<https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html>

Technical Support Document for Water Quality-based Toxics Control (EPA)  
<https://www3.epa.gov/npdes/pubs/owm0264.pdf>

Tennessee Nutrient Reduction Framework  
[https://www.tn.gov/content/dam/tn/environment/water/tmdl-program/wr-ws\\_tennessee-draft-nutrient-reduction-framework\\_030315.pdf](https://www.tn.gov/content/dam/tn/environment/water/tmdl-program/wr-ws_tennessee-draft-nutrient-reduction-framework_030315.pdf)

Tennessee Plant Optimization Program (TNPOP)  
<https://www.tn.gov/environment/program-areas/wr-water-resources/tn-plant-optimization-programs/tnpop.html>

Tennessee Water Resources Data and Map Viewers  
<https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-resources-data-map-viewers.html>

USGS StreamStats  
[https://www.usgs.gov/mission-areas/water-resources/science/streamstats-streamflow-statistics-and-spatial-analysis-tools?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/mission-areas/water-resources/science/streamstats-streamflow-statistics-and-spatial-analysis-tools?qt-science_center_objects=0#qt-science_center_objects)

USGS SWToolbox  
<https://www.usgs.gov/software/swtoolbox-software-information>

## PART 5

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### 5. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

The discharger will develop, document, and maintain a stormwater pollution prevention plan (SWPPP) pursuant to the requirements set forth in EPA guidance manuals titled [\*Stormwater Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices\*](#) (EPA 832-R-92-006) and the document's [\*Summary Guidance\*](#) (EPA 833-R-92-002). The plan shall be signed by either a principal executive officer of a corporation, the owner or proprietor of a sole proprietorship, or a partner or general partner of a partnership. The SWPPP developed and implemented shall be site specific to the permitted facility with regard to the general terms and conditions outlined in the guidance manuals cited herein, and, at a minimum, shall contain the following items:

#### 5.1. POLLUTANT SOURCES AND PATHWAYS

- a) A site map outlining the individual stormwater drainage areas, existing structural control measures, surface waterbodies, and sinkholes.
- b) A narrative description of significant materials (40 CFR § 122.26) that are currently being, or in the past have been, treated, stored, or disposed outside; materials management practices; existing structural and non-structural control measures to reduce pollutants; and a description of any stormwater treatment.
- c) A list of significant spills and leaks of toxic or hazardous pollutants at the facility that have taken place after the effective date of the permit.
- d) A prediction of direction of flow and the possible pollutants associated with each area of the plant that generates stormwater.
- e) A record of available sampling data describing pollutants in stormwater discharges.

#### 5.2. STORMWATER MANAGEMENT CONTROLS

The permittee shall:

- a) Formulate a pollution prevention team with named individuals who will develop the stormwater pollution prevention plan and assist the plant manager in its implementation.

- b) Inventory types of materials handled and associated potential of release to storm water. Evaluate the following for potential pollutant contribution: loading and unloading operations, outdoor storage and manufacturing activities, dust or particulate generating processes, and on-site waste disposal practices. Consider toxicity of chemicals, quantity of chemicals, and history of leaks or spills of toxic or hazardous pollutants.
- c) Design a preventative maintenance program including inspection and maintenance of stormwater management devices and testing plant equipment and systems to uncover conditions, which could cause failures.
- d) Maintain a clean, orderly facility.
- e) Establish prevention and response procedures. Identify potential spill areas and drainage points. Specify material handling procedures and storage requirements. Identify spill cleanup procedures and provide to responsible personnel. Make available to responsible personnel the necessary equipment to implement cleanup at all times when the facility is in operation.
- f) Include in the plan a narrative of traditional stormwater management practices, i.e., other than those that control the source of pollutants.
- g) Identify areas of potentially high soil erosion and measures to limit erosion.
- h) Train employees at all levels of responsibility in the components of the stormwater pollution prevention plan.
- i) Identify qualified personnel to inspect equipment, plant areas, and material handling areas. Develop a tracking system to ensure corrective action and maintain records of inspections.
- j) Designate a person in the plan who will keep records of spills or other discharges, inspections and maintenance activities, and information describing the quality and quantity of stormwater discharges.
- k) Identify any non-stormwater discharges associated with the stormwater outfalls and their source(s). In the event non-stormwater discharges are discovered in combination with the stormwater discharges, the permittee must submit the appropriate EPA form(s) for the characterization of these non-stormwater discharges as warranted.



**5.3. FACILITY INSPECTION**

Responsible person(s) named in the plan will inspect the facility at least semi-annually for the accuracy of the plan and maps, adequate measures to reduce pollutants in stormwater runoff, and the need for additional controls. Records of these inspections will be maintained for a period of three years.

**5.4. SPILL PREVENTION CONTROL AND COUNTERMEASURES**

Stormwater management programs may reflect requirements for spill prevention control and countermeasures (SPCC) plans under Section 311 of the Clean Water Act.

**5.5. PLAN REVIEW AND UPDATE**

The plan will be reviewed and updated, if necessary, by the facility at least annually. The plan and all records will be retained for at least three years after expiration of this permit.

**5.6. PLAN IMPLEMENTATION**

The plan should be developed and available for review within 30 days after permit coverage. Facilities should implement the management practices as soon as possible, but not later than one year after permit coverage. Where new construction is necessary to implement the management plan, a construction schedule should be included. Construction should be completed as soon as possible.

**5.7. PLAN AVAILABILITY**

The plan will be maintained by the discharger on the site or at a nearby office. Copies of the plan will be submitted to the Division within ten business days of any request.

**5.8. PLAN MODIFICATION**

The plan will be modified as required by the Division Director.

**5.9. MONITORING PLAN**

The stormwater discharges will be monitored as required in **Part 1.1.** of the permit, as applicable to stormwater outfalls. For each outfall monitored, the surface area and type of cover (e.g. roof, pavement, grassy areas, gravel) will be identified.

**5.10. SARA TITLE III, SECTION 313 PRIORITY CHEMICALS**

The SWPPP shall include the following for those facilities subject to reporting requirements under SARA Title III, Section 313 for chemicals that are classified as Section 313 water priority chemicals:

- a) In areas where Section 313 priority chemicals are stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures will be provided. At a minimum, one of the following preventive systems or its equivalent will be used:
  - i. Curbing, culverting, gutters, sewers, or other forms of drainage control, or
  - ii. Roofs, covers, or other forms of protection to prevent storage piles from exposure to stormwater and wind.
  
- b) The plan will include a discussion of measures taken to conform with the following applicable guidelines:
  - i. In liquid storage areas where stormwater comes into contact with any equipment, tank container, or other vessel used for Section 313 water priority chemicals:
    - 1) The tank or container must be compatible with the Section 313 water priority chemical which it stores, and
    - 2) The liquid storage areas shall be operated to minimize discharge of Section 313 chemicals.
  - ii. Material storage areas for Section 313 water priority chemicals, other than liquids, will incorporate features that will minimize the discharge of Section 313 chemicals by reducing stormwater contact.
  - iii. Truck and rail car loading and unloading areas for Section 313 liquid chemicals will be operated to minimize discharges of chemicals. Appropriate measures may include placement and maintenance of drip pans for use when making and breaking hose connections, a spill contingency plan, and/or other equivalent measures.
  - iv. In plant areas where Section 313 chemicals are transferred, processed, or handled, piping, processing equipment, and materials handling equipment will be operated so as to minimize discharges of chemicals. Piping and equipment must be compatible with chemicals handled. Additional protection, including covers and guards to prevent exposure to wind, pressure relief vents, and overhangs or door skirts to enclose trailer ends at truck loading docks, will be implemented. Visual

inspections or leak tests will be conducted on overhead piping that conveys Section 313 chemicals.

- v. For discharges from areas covered by parts i – iv of this section:
  - 1) The drainage should be restrained by manually operated valves or other positive means to prevent the discharge of a spill or excessive leakage.
  - 2) A flapper-type drain valve cannot be used for drainage of containment units.
  - 3) The final discharge of in-facility storm sewers should be equipped with a diversion system that could, in the event of an uncontrolled spill of a Section 313 chemical, return the spilled material to the facility.
  - 4) The records of the frequency and estimated volume (in gallons) of discharges from containment areas will be maintained.
- vi. Facility site runoff other than from areas covered by parts i – iv of this section from which runoff could contain Section 313 chemicals will incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and to ensure the reduction of pollutants in runoff or leachate.
- vii. All areas of the facility will be inspected at specific intervals for leaks or conditions that could lead to discharges of Section 313 water priority chemicals or direct contact of stormwater with raw materials, intermediate materials, waste materials, or products. Inspection intervals shall be specified in the plan and shall be based on design and operations experience. Corrective action will be taken promptly when a leak or condition, which could cause significant releases of a chemical is discovered. If corrective action can't be taken immediately, the unit or process will be shut down until the situation is corrected. When a leak or spill has occurred, the contaminated material(s) must be promptly removed and disposed in accordance with Federal, State, and local requirements and as described in the plan.
- viii. Facilities will have the necessary security systems to prevent accidental or intentional entry, which could cause a discharge.
- ix. Facility employees and contract personnel that work in areas where SARA title III, Section 313 water priority chemicals are used or stored will be trained in and informed of preventive measures at the facility. Employee training shall be conducted at least once per year in the pollution control laws and regulations and in the SWPPP. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements.

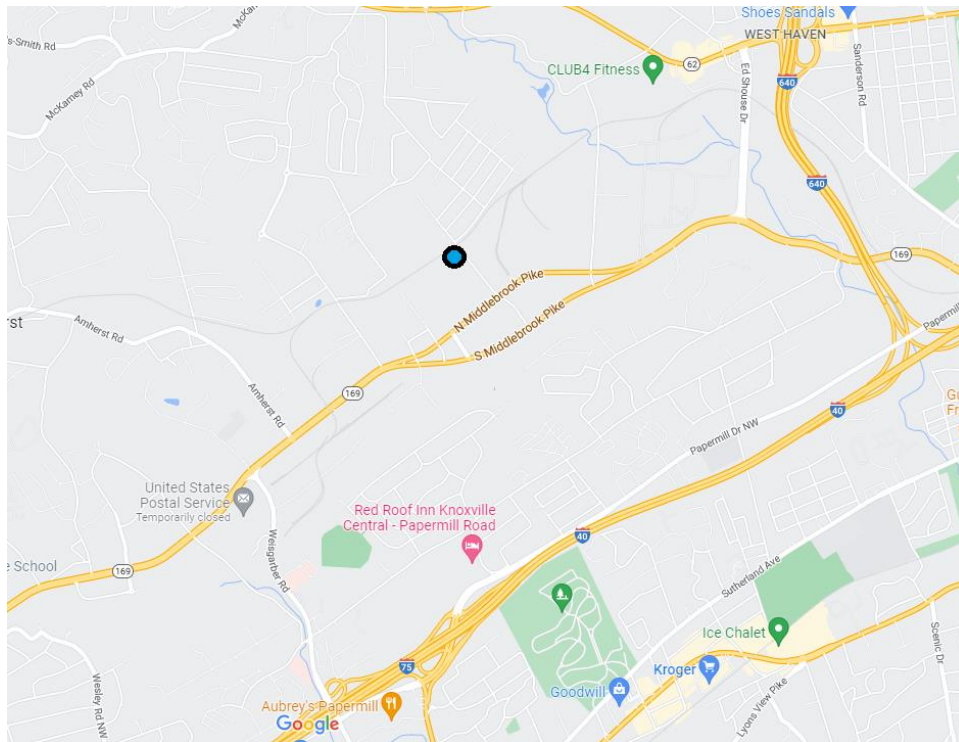
- x. The SWPPP for a facility subject to SARA Title III, Section 313 requirements will be reviewed and certified by a responsible corporate officer in accordance to Part I.D.1 (Monitoring Results) of this permit. The corporate officer will certify the plan every three years thereafter, or as soon as practical, after significant modifications are made to the facility. Certification will in no way relieve the owner or operator of a facility covered by the plan of their duty to prepare and fully implement such plan.
  
- c) *Section 313 water priority chemicals* means the following chemicals or chemical categories:
  - i. Listed at 40 CFR § 372.65 pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, also titled the Emergency Planning and Community Right-to-Know Act of 1986;
  - ii. Present at or above threshold levels at a facility subject to SARA Title III, Section 313 reporting requirements; and
  - iii. Meeting at least one of the following criteria:
    - 1) Listed in Appendix D of 40 CFR § 122 in either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
    - 2) Listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the Clean Water Act at 40 CFR § 116.4; or
    - 3) Designated as pollutants for which EPA has published acute or chronic toxicity criteria.

# RATIONALE

**CITGO Petroleum Corporation**  
**Knoxville Petroleum Bulk Station and Terminal**  
**NPDES Permit Number TN0022411**  
**Date: 2/28/2022**  
**Permit Writer: Oscar Montenegro**

## 1. FACILITY INFORMATION

<b>Permittee Name:</b>	<b>CITGO Petroleum Corporation</b>
<b>Project Name:</b>	<b>Knoxville Petroleum Bulk Station and Terminal</b>
<b>Location:</b>	2409 Knott Road, Knoxville, Knox County, Tennessee
<b>Contact:</b>	Mr. Nickolas Tafoya (865) 588-3555 ntafoya@citgo.com
<b>Design Flow Rate:</b>	0.042 MGD
<b>Nature of Business:</b>	Bulk petroleum storage marketing terminal.
<b>SIC Code(s):</b>	5171
<b>Industrial Classification:</b>	Secondary Industry without ELGs
<b>Discharger Rating:</b>	Minor



## 1. FACILITY DISCHARGES AND RECEIVING STREAM INFORMATION

<b>Receiving Waterbody:</b>	<b>unnamed tributary at mile 0.5 to Third Creek at mile 5.3 to Fort Loudoun Reservoir at Tennessee River mile 645.9</b>			
<b>Watershed Group:</b>	Ft. Loudoun/Little River			
<b>Hydrocode:</b>	6010201			
<b>Primary Outfall Latitude:</b>	35.961808			
<b>Primary Outfall Longitude:</b>	-84.002645			
<b>Low Flow:</b>	7Q10 = 0.92 MGD (1.43 CFS)			
<b>Low Flow Reference:</b>	USGS StreamStats			
<b>Stream Designated Uses:</b>	<i>Domestic Water Supply</i>	<i>Industrial</i>	<i>Fish &amp; Aquatic Life</i>	<i>Recreation</i>
		<b>X</b>	<b>X</b>	<b>X</b>
	<i>Livestock &amp; Wildlife</i>	<i>Irrigation</i>	<i>Navigation</i>	<i>Trout</i>
	<b>X</b>	<b>X</b>		

CITGO Petroleum Corporation discharges treated and untreated storm water runoff and treated rack wash water through Outfall 001 to unnamed tributary at mile 0.5 to Third Creek at mile 5.3 from Outfall 001

Low flows on unregulated streams are estimated using guidance from the EPA document [Low Flow Statistics Tools: A How-To Handbook for NPDES Permit Writers](#). In this permit, no sufficient gage data is available to characterize the receiving stream. Thus, USGS Streamstats was used to delineate the critical low flow at the point of discharge. [Appendix 4](#) shows the Streamstats output used for this estimation.

## 2. CURRENT PERMIT STATUS

<b>Issuance Date:</b>	April 18, 2018
<b>Expiration Date:</b>	April 30, 2022
<b>Effective Date:</b>	May 1, 2018

## 3. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

There are no EPA effluent guidelines for the discharges from this facility. Standards of performance are therefore established in accordance with existing state regulations using available treatability information.

#### 4. PREVIOUS PERMIT TERM REVIEW

A review of the permittee's Discharge Monitoring Reports (DMRs) from June 2018 through 2021 revealed that the permittee reported no violations of permit limits and generally discharged below the detection limit for relevant petrochemicals. A summary of data reported on DMRs during the previous permit term is located in [Appendix 2](#).

During the previous permit term, Division personnel from the Knoxville Environmental Field Office performed a Compliance Evaluation Inspection (CEI) of the permittee's facility. The CEI was performed by Mr. Steven Brooks on June 25<sup>th</sup> 2020, and the permittee was found to be in compliance. The inspection report described properly run maintenance and operations.

#### 5. NEW PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

The proposed new permit limits have been selected by determining a technology-based limit and evaluating if that limit protects the water quality of the receiving stream. If the technology-based limit would cause violations of water quality, the water quality-based limit is chosen. The technology-based limit is determined from EPA effluent limitations guidelines if applicable (see Part 4 above) or from State of Tennessee maximum effluent limits for effluent limited segments per [Rule 0400-40-05-.08](#). Note that in general, the term "anti-backsliding" refers to a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluents limits, permit conditions, or standards that are less stringent than those established in the previous permit.

- a) Language throughout the permit has been updated to reflect the eReporting Phase 2 requirements in 40 CFR § 127.
- b) For comparison, this rationale contains the previous permit limits and effluent monitoring requirements in [Appendix 1](#).

##### 5.1. FLOW

Monitoring of flow quantifies the load of pollutants to the stream. Flow shall be reported in million gallons per day (MGD) and monitored at the time of sample collection.



## **5.2. METALS AND TOXICS**

Effluent permit limits for metals and toxics were calculated as shown in [Appendix 3](#).

## **5.3. OIL AND GREASE**

The Division has determined that an oil and grease limitation is needed for this facility because of the potential of contamination from spills, leaks, and other industrial activities present at the site. The technology-based limit for oil and grease is 15 mg/L as a daily maximum concentration. This level can be accomplished where oil/water separators are maintained, kept clean and are not overloaded. There should be less reliance upon the oil/water separator as a solution and a greater reliance upon good management, operation, and housekeeping practices to restrict pollution.

According to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter [0400-40-03-.03\(3\)\(c\)](#)], there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream.

## **5.4. TOTAL SUSPENDED SOLIDS (TSS)**

Total Suspended Solids is a general indicator of the quality of a wastewater and will be limited in this permit. The permit writer's technology-based limit for TSS of 40 mg/L, taken from Tennessee Rule [0400-40-05-.09\(1\)\(a\)1.](#), "Conventional Secondary Treatment Plants."

The State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [[Chapter 0400-40-03-.03\(3\)\(c\)](#)] state there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream.

The permit writer believes the limit of 45 mg/L daily maximum concentration will provide protection of water quality in the receiving stream which provides dilution even at low flow conditions. Considering the nature of wastewater collection and discharge system, the sample type will be grab.

## **5.5. PH**

According to the State of Tennessee Water Quality Standards [Chapter [0400-40-03-.03\(3\)\(b\)](#)], the pH for the protection of Fish and Aquatic Life shall not fluctuate





more than 1.0 unit over a period of 24 hours and shall not be outside the following ranges: 6.0 – 9.0 standard units (SU) in wadeable streams and 6.5 – 9.0 SU in larger rivers, lakes, reservoirs, and wetlands. Considering that the receiving stream will provide some buffering capacity, effluent limitation for pH will be retained in a range 6.0 to 9.0. The sample type will be grab.

## **5.6. BENZENE, ETHYLBENZENE, XYLENES, AND TOLUENE**

The daily maximum concentrations for benzene, ethylbenzene, xylenes, and toluene were based upon odor threshold values. These odor threshold values were taken from *handbook of Environmental Data on Organic Chemicals*, Second Edition, by Karel Vershueren (Van Nostrand Reinhold Company, New York, 1982).

The previous permit limits were the most restrictive for each effluent characteristic when compared with the Water Quality criteria values. Benzene and other aromatic compound limits were recalculated in this reissuance, but the previous limits are more protective of water quality and are all maintained from the previous permit (refer to highlighted limits in Appendix 3). Monitoring frequencies from the previous permit are also retained in this new permit.

## **6. OTHER PERMIT REQUIREMENTS AND CONDITIONS**

### **6.1. PERMIT TERM**

In order to meet the target reissuance date for the Ft. Loudoun/Little River watershed and following the directives for the Watershed Management Program initiated in January 1996, the permit will be issued to expire in 2027.

### **6.2. ELECTRONIC REPORTING**

The [NPDES Electronic Reporting Rule \(eRule\)](#), which became effective on December 21, 2016, replaces most paper-based reporting requirements with electronic reporting requirements. NetDMR allows NPDES permittees to submit DMRs electronically to EPA through a secure internet application and has been approved by Tennessee as the official electronic reporting tool for DMRs. The permittee has been reporting electronically via NetDMR since April 2016.

Monitoring results shall be recorded monthly and submitted monthly using Discharge Monitoring Reports (DMRs) based on the effluent limits in **section 1.1** of the permit. DMRs and DMR attachments, including laboratory data and overflow reports, shall be submitted electronically in [NetDMR](#) or other electronic reporting tool approved by the State, no later than the 15th of the month following

the end of the monitoring period. All NPDES program reports must be signed and certified by a responsible official or a duly authorized representative, as defined in 40 CFR § 122.22.

According to 40 CFR § 127.15, states have the flexibility to grant temporary or episodic waivers from electronic reporting to NPDES permittees who are unable to meet the electronic reporting requirements. To obtain an electronic reporting waiver, an [electronic reporting waiver request](#) must be submitted by email to [DWRwater.compliance@tn.gov](mailto:DWRwater.compliance@tn.gov) or by mail to the following address:

*Division of Water Resources  
Compliance and Enforcement Unit – NetDMR Waivers  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 11th Floor  
Nashville, TN 37243-1102*

For contact and training information about NetDMR electronic reporting, visit the Division's website [here](#).

The permit language has been modified to accommodate the implementation of the MyTDEC Forms electronic reporting tool. For more information, visit EPA's website on [eReporting requirements](#).

### **6.3. 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# TN06010201067\_1000.

The Division has made a water quality assessment of the receiving waters and has found the receiving stream to be neither an exceptional nor outstanding national resource water. Additionally, this water partially supports designated uses due to sedimentation and nitrates levels due to land development and a high urban population.

Total Maximum Daily Loads (TMDLs) have been developed and approved for this waterbody segment on the following parameters and dates:



Parameter:

E.coli  
Siltation

TMDL Approval Date:

2017  
2006

The proposed terms and conditions of this permit comply with the wasteload allocations of these TMDLs. As an industrial facility discharging relatively small volumes of stormwater and washwater, the permittee is not expected to contribute to further impairment.

## APPENDIX 1 – PREVIOUS PERMIT LIMITS

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External Outfall 001, All Year

Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>=	6.0	SU	Grab	Quarterly	Minimum
00400	pH	<=	9.0	SU	Grab	Quarterly	Maximum
00530	Total Suspended Solids (TSS)	<=	45	mg/L	Grab	Quarterly	Daily Maximum
00545	Settleable Solids	<=	0.5	mL/L	Grab	Quarterly	Daily Maximum
00552	Oil and grease	<=	15	mg/L	Grab	Quarterly	Daily Maximum
34010	Toluene	<=	1.0	mg/L	Grab	Quarterly	Daily Maximum
34030	Benzene	<=	0.07	mg/L	Grab	Quarterly	Daily Maximum
34371	Ethylbenzene	<=	0.2	mg/L	Grab	Quarterly	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	Quarterly	Daily Maximum
81551	Xylene	<=	0.5	mg/L	Grab	Quarterly	Daily Maximum

## APPENDIX 2 – DMR SUMMARY

Date	pH		TSS	Solids, settleable	Oil & Grease	Toluene	Benzene	Ethylbenzene	Xylene	Flow
	MIN (SU)	MAX (SU)	DAILY MX (mg/L)	DAILY MX (mL/L)	DAILY MX (mg/L)	DAILY MX (mg/L)	DAILY MX (mg/L)	DAILY MX (mg/L)	DAILY MX (mg/L)	DAILY MX (MGD)
06/30/2018	7.7	7.7	6.29	< .1	< 5.21	< .001	< .001	< .001	< .005	0.018
09/30/2018	8	8	< 2.5	< .1	< 5	< .001	< .001	< .001	< .005	0.018
12/31/2018	7.8	7.8	< 3.13	< .1	< 5	0.002	< .001	< .001	< .005	0.018
03/31/2019	7.5	7.5	< 2.5	< .1	< 5	< .001	< .001	< .001	< .005	0.018
06/30/2019	7.9	7.9	< 2.5	< .1	< 5.05	< .001	< .001	< .001	< .005	0.018
09/30/2019	8	8	3.9	< .1	< 7.14	< .001	< .001	< .001	< .005	0.018
12/31/2019	7.8	7.8	< 2.5	< .1	< 5	< .001	< .001	< .001	< .005	0.018
03/31/2020	7.6	7.6	5.2	< .1	< 5	< .001	< .001	< .001	< .005	0.018
06/30/2020	7.6	7.6	19	< .1	< 5	< .001	< .001	< .001	< .003	0.018
09/30/2020	7.9	7.9	38.7	< .1	< 5	0.0019	< .001	< .001	< .003	0.018
12/31/2020	7.8	7.8	3.9	< .1	< 5	0.00107	< .001	< .001	< .003	0.018
03/31/2021	7.9	7.9	< 9.63	< .1	< 5.26	< .001	< .001	< .001	< .003	0.018
06/30/2021	8.1	8.1	6.25	< .1	< 5	< .001	< .001	< .001	< .003	0.018
09/30/2021	8.1	8.1	< .1	< .1	< .1	< .001	< .001	< .001	< .003	0.018
12/31/2021	8.2	8.2	3.6	0.1	< .1	< .001	< .001	< .001	< .001	0.018

## **APPENDIX 3 – METALS & TOXICS CALCULATIONS**

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The following procedure is used to calculate the allowable instream concentrations for pass-through guidelines and permit limitations:

- a) The most recent background conditions of the receiving stream segment are compiled. This information includes:
  - 7Q10 of receiving stream (0.92 MGD, USGS)
  - Calcium hardness (25 mg/L, default)
  - Total suspended solids (10 mg/L, default)
  - Background metals concentrations (½ water quality criteria)
  - Other dischargers impacting this segment (none)
  - Downstream water supplies, if applicable
  
- b) The chronic water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel, and zinc. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions.
  
- c) The acute water quality criteria are converted from total recoverable metal at lab conditions to dissolved lab conditions for the following metals: cadmium, copper, trivalent chromium, lead, nickel, zinc, and silver. Then translators are used to convert the dissolved lab conditions to total recoverable metal at ambient conditions for the following metals: cadmium, copper, lead, nickel, and silver.
  
- d) The resulting allowable trivalent and hexavalent chromium concentrations are compared with the effluent values characterized as total chromium on permit applications. If reported total chromium exceeds an allowable trivalent or hexavalent chromium value, then the calculated value will be applied in the permit for that form of chromium unless additional effluent characterization is received to demonstrate reasonable potential does not exist to violate the applicable state water quality criteria for chromium.
  
- e) A standard mass balance equation determines the total allowable concentration (permit limit) for each pollutant. This equation also includes a percent stream allocation of no more than 90%.

The following formulas are used to evaluate water quality protection:

$$C_m = \frac{Q_s C_s + Q_w C_w}{Q_s + Q_w}$$

Where:

- C<sub>m</sub> = resulting instream concentration after mixing
- C<sub>w</sub> = concentration of pollutant in wastewater
- C<sub>s</sub> = stream background concentration
- Q<sub>w</sub> = wastewater flow (STP Design flow)
- Q<sub>s</sub> = stream low flow

***To protect water quality:***

$$C_w \leq \frac{(S_A)[C_m(Q_s + Q_w) - Q_s C_s]}{Q_w}$$

Where: S<sub>A</sub> = the percent "Stream Allocation"

Calculations for this permit have been done using a standardized spreadsheet, titled "Water Quality Based Effluent Calculations". Division policy dictates the following procedures in establishing these permit limits:

- 1) The critical low flow values are determined using USGS data:

*Fish and Aquatic Life protection:*

- 7Q10 – Low flow under natural conditions
- 1Q10 – Regulated low flow conditions

*Other than Fish and Aquatic Life protection:*

- 30Q5 – Low flow under natural conditions

- 2) Fish and Aquatic Life water quality criteria for certain metals are developed through application of hardness dependent equations. These criteria are combined with dissolved fraction methodologies in order to formulate the final effluent concentrations.
- 3) For criteria that are hardness dependent, chronic and acute concentrations are based on a hardness of 25 mg/L and Total Suspended Solids (TSS) of 10 mg/L unless available ambient monitoring information substantiates a different value. Minimum and maximum limits on the hardness value used for water quality calculations are 25

mg/L and 400 mg/L respectively. The minimum limit on the TSS value used for water quality calculations is 10 mg/L.

- 4) Background concentrations are determined from the Division database, results of sampling obtained from the permittee, and/or obtained from nearby stream sampling data. If this background data is not sufficient, one-half of the chronic “In-stream Allowable” water quality criteria for fish and aquatic life is used. If the measured background concentration is greater than the chronic “In-stream Allowable” water quality criteria, then the measured background concentration is used in lieu of the chronic “In-stream Allowable” water quality criteria for the purpose of calculating the appropriate effluent limitation (C<sub>w</sub>). Under these circumstances, and in the event the “stream allocation” is less than 100%, the calculated chronic effluent limitation for fish and aquatic life should be equal to the chronic “In-stream Allowable” water quality criteria. These guidelines should be strictly followed where the industrial source water is not the receiving stream. Where the industrial source water is the receiving stream, and the measured background concentration is greater than the chronic “In-stream Allowable” water quality criteria, consideration may be given as to the degree to which the permittee should be required to meet the requirements of the water quality criteria in view of the nature and characteristics of the receiving stream.

The spreadsheet has 15 data columns, all of which may not be applicable to any particular characteristic constituent of the discharge. A description of each column is as follows:

**Column 1:** The “stream background” concentrations of the effluent characteristics.

**Column 2:** The “chronic” Fish and Aquatic Life water quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, and zinc, this value represents the criteria for the dissolved form at laboratory conditions. The Criteria Continuous Concentration (CCC) is calculated using the equation:

$$CCC = (\exp\{m_c[\ln(\text{stream hardness})] + b_c\}) * (CCF)$$

CCF = Chronic Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule [0400-40-03-.03](#) and the EPA guidance contained in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent; no chronic criterion exists for silver. Published criteria are used for non-metal parameters.



**Column 3:** The "Acute" Fish and Aquatic Life water quality criteria. For cadmium, copper, trivalent chromium, lead, nickel, silver, and zinc, this value represents the criteria for the dissolved form at laboratory conditions. The Criteria Maximum Concentration (CMC) is calculated using the equation:

$$CMC = (\exp\{m_A[\ln(\text{stream hardness})] + b_A\}) * (ACF)$$

ACF = Acute Conversion Factor

This equation and the appropriate coefficients for each metal are from Tennessee Rule 0400-40-03-.03 and the EPA guidance contained in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996). Values for other metals are in the total form and are not hardness dependent. Published criteria are used for non-metal parameters.

**Column 4:** The "Fraction Dissolved" converts the value for dissolved metal at laboratory conditions (columns 2 & 3) to total recoverable metal at in-stream ambient conditions (columns 5 & 6). This factor is calculated using the linear partition coefficients found in *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007, June 1996) and the equation:

$$\frac{C_{\text{diss}}}{C_{\text{total}}} = \frac{1}{1 + \{[K_{\text{po}}][SS^{(1+a)}][10^{-6}]\}}$$

ss = in-stream suspended solids concentration (mg/L)

Linear partition coefficients for streams are used for unregulated (7Q10) receiving waters, and linear partition coefficients for lakes are used for regulated (1Q10) receiving waters. For those parameters not in the dissolved form in columns 2 & 3 (and all non-metal parameters), a Translator of 1 is used.

**Column 5:** The "Chronic" Fish and Aquatic Life water quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 2 by the value in column 4.

**Column 6:** The "Acute" Fish and Aquatic Life water quality criteria at in-stream ambient conditions. This criteria is calculated by dividing the value in column 3 by the value in column 4.

- Column 7:** The "Chronic" Calculated Effluent Concentration for the protection of fish and aquatic life. *This is the chronic limit.*
- Column 8:** The "Acute" Calculated Effluent Concentration for the protection of fish and aquatic life. *This is the acute limit.*
- Column 9:** The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Organism Consumption (Recreation).
- Column 10:** The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Water and Organism Consumption. These criteria are only to be applied when the stream use classification for the receiving stream includes both "Recreation" and "Domestic Water Supply".
- Column 11:** The In-Stream Water Quality criteria for the protection of Human Health associated with the stream use classification of Domestic Water Supply.
- Column 12:** The Calculated Effluent Concentration associated with Organism Consumption.
- Column 13:** The Calculated Effluent Concentration associated with Water and Organism Consumption.
- Column 14:** The Calculated Effluent Concentration associated with Domestic Water Supply.
- Column 15:** The Effluent Limited criteria. This upper level of allowable pollutant loading is established if (a) the calculated water quality value is greater than accepted removal efficiency values, (b) the treatment facility is properly operated, *and* (c) full compliance with the pretreatment program is demonstrated. This upper level limit is based upon EPA's 40 POTW Survey on levels of metals that should be discharged from a POTW with a properly enforced pretreatment program and considering normal coincidental removals.

The most stringent water quality effluent concentration from Columns 7, 8, 12, 13, 14, and 15 is applied if the receiving stream is designated for domestic water supply. Otherwise, the most stringent effluent concentration is chosen from columns 7, 8, 12, and 15 only.

## Water Quality Based Effluent Calculations:

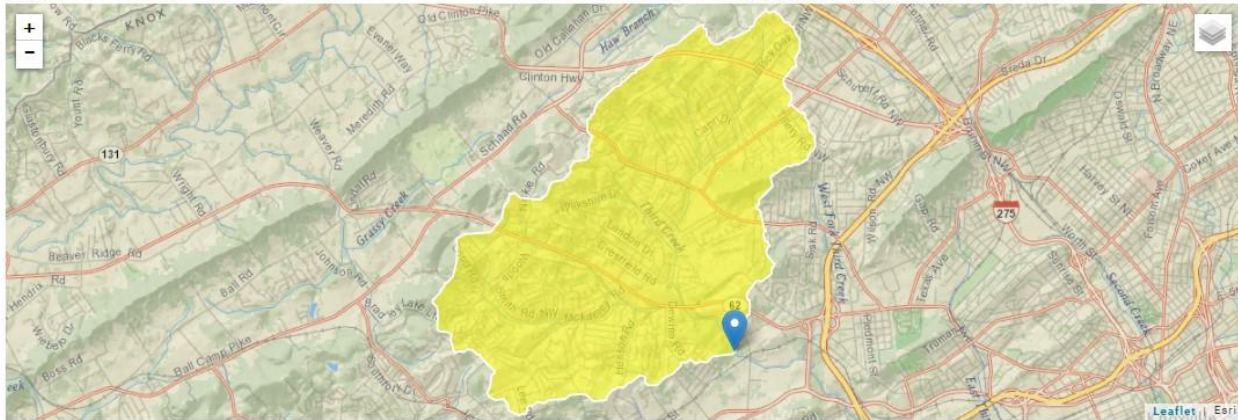
Stream (7Q10)	Stream (30Q5)	Waste Flow	Ttl. Susp. Solids	Hardness (as CaCO3)	Margin of Safety
[MGD]	[MGD]	[MGD]	[mg/l]	[mg/l]	[%]
<b>0.92</b>	<b>1.18</b>	<b>0.04</b>	<b>10</b>	<b>25</b>	<b>90</b>

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Stream	Fish/Aqua. Life (F & AL) WQC		F & AL- instream allowable	F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent limited case
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			
PARAMETER	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	ug/l
	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]
<b>Copper (a,b)</b>	3.940	2.739	3.640	0.348	7.881	10.472	<b>84.77</b>	<b>138.19</b>	N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	<b>80.0</b>
<b>Chromium III</b>	58.866	23.813	183.066	0.202	117.733	905.082	<b>1266.47</b>	<b>17497.11</b>	N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	
<b>Chromium VI</b>	5.500	11.000	16.000	1.000	11.000	16.000	<b>118.33</b>	<b>221.40</b>	N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	
<b>Chromium, Total</b>		N/A	N/A	N/A	N/A	N/A	<b>N/A</b>	<b>N/A</b>	N/A	N/A	100.0	<b>N/A</b>	N/A	2618.57	<b>60.0</b>
<b>Nickel (a,b)</b>	18.616	16.096	144.918	0.432	37.231	335.209	<b>400.50</b>	<b>6543.09</b>	4600.0	610.0	100.0	<b>119983.58</b>	15502.58	2147.86	<b>180.0</b>
<b>Cadmium (a,b)</b>	0.501	0.253	0.492	0.252	1.002	1.947	<b>10.77</b>	<b>30.26</b>	N/A	N/A	5.0	<b>N/A</b>	N/A	118.27	<b>5.0</b>
<b>Lead (a,b)</b>	1.471	0.541	13.882	0.184	2.942	75.487	<b>31.64</b>	<b>1527.12</b>	N/A	N/A	5.0	<b>N/A</b>	N/A	93.74	<b>45.0</b>
<b>Mercury (T) (c)</b>	0.385	0.770	1.400	1.000	0.770	1.400	<b>8.28</b>	<b>21.27</b>	0.051	0.05	2.0	<b>-8.40</b>	-8.43	42.64	<b>0.4</b>
<b>Silver (a,b,e)</b>	0.296	N/A	0.296	1.000	N/A	0.296	<b>N/A</b>	<b>0.27</b>	N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	<b>5.0</b>
<b>Zinc (a,b)</b>	63.367	36.498	36.202	0.288	126.733	125.705	<b>1363.29</b>	<b>1342.09</b>	26000.0	7400.0	N/A	<b>679226.30</b>	192172.01	N/A	<b>200.0</b>
<b>Cyanide (d)</b>	2.600	5.200	22.000	1.000	5.200	22.000	<b>55.94</b>	<b>402.26</b>	140.0	140.0	200.0	<b>3600.26</b>	3600.26	5171.40	<b>230.0</b>
<b>Toluene</b>	0.000								15000.0	1300.0	1000.0	<b>392785.71</b>	34041.43	<b>26185.71</b>	<b>15.0</b>
<b>Benzene</b>	0.000								510.0	22.0	5.0	<b>13354.71</b>	576.09	<b>130.93</b>	<b>3.0</b>
<b>1,1,1 Trichloroethane</b>	0.000								N/A	N/A	200.0	<b>N/A</b>	N/A	5237.14	<b>30.0</b>
<b>Ethylbenzene</b>	0.000								2100.0	530.0	700.0	<b>54990.00</b>	<b>13878.43</b>	18330.00	<b>4.0</b>
<b>Carbon Tetrachloride</b>	0.000								16.0	2.3	5.0	<b>418.97</b>	60.23	130.93	<b>15.0</b>
<b>Chloroform</b>	0.000								4700.0	57.0	N/A	<b>123072.86</b>	1492.59	N/A	<b>85.0</b>
<b>Tetrachloroethylene</b>	0.000								33.0	6.9	5.0	<b>864.13</b>	180.68	130.93	<b>25.0</b>
<b>Trichloroethylene</b>	0.000								300.0	25.0	5.0	<b>7855.71</b>	654.64	130.93	<b>10.0</b>
<b>1,2 trans Dichloroethylene</b>	0.000								10000.0	140.0	100.0	<b>N/A</b>	3666.00	2618.57	<b>1.5</b>
<b>Methylene Chloride</b>	0.000								5900.0	46.0	5.0	<b>154495.71</b>	1204.54	N/A	<b>50.0</b>
<b>Total Phenols</b>	0.000								860000.0	10000.0	N/A	<b>22519714.29</b>	261857.14	N/A	<b>50.0</b>
<b>Naphthalene</b>	0.000								N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	<b>1.0</b>
<b>Total Phthalates</b>	0.000								N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	<b>64.5</b>
<b>Chlorine (T. Res.)</b>	0.000	11.000	19.000	1.000	11.000	19.000	<b>251.95</b>	<b>435.19</b>	N/A	N/A	N/A	<b>N/A</b>	N/A	N/A	<b>N/A</b>

## APPENDIX 4 – LOW FLOW DETERMINATION

### StreamStats Report

Region ID: TN  
 Workspace ID: TN20220223201430941000  
 Clicked Point (Latitude, Longitude): 35.96922, -83.99460  
 Time: 2022-02-23 14:14:50 -0600



#### Low-Flow Statistics Parameters [Low Flow Central and East Regions 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.27	square miles	1.3	14441
RECESS	Recession Index	120	days per log cycle	32	175
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.241	dimensionless	2.056	2.46
SOILPERM	Average Soil Permeability	1.767	inches per hour	0.45	9.72
PERMGTE2IN	Percent permeability gte 2 in per hr	97.404	percent	2	100

#### Low-Flow Statistics Flow Report [Low Flow Central and East Regions 2009 5159]

Pll: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
7 Day 10 Year Low Flow	1.43	ft <sup>3</sup> /s	89
30 Day 5 Year Low Flow	1.83	ft <sup>3</sup> /s	70.2

#### Low-Flow Statistics Citations

Law, G.S., Tasker, G.D., and Ladd, D.E., 2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009-5159, 212 p., 1 pl.

## APPENDIX 5 - NEW PERMIT LIMITS

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External Outfall 001, All Year

<b>Code</b>	<b>Parameter</b>	<b>Qualifier</b>	<b>Value</b>	<b>Unit</b>	<b>Sample Type</b>	<b>Monitoring Frequency</b>	<b>Statistical Base</b>
00400	pH	>=	6.0	SU	Grab	Quarterly	Minimum
00400	pH	<=	9.0	SU	Grab	Quarterly	Maximum
00530	Total Suspended Solids (TSS)	<=	45	mg/L	Grab	Quarterly	Daily Maximum
00545	Settleable Solids	<=	0.5	mL/L	Grab	Quarterly	Daily Maximum
00552	Oil and grease	<=	15	mg/L	Grab	Quarterly	Daily Maximum
34010	Toluene	<=	1.0	mg/L	Grab	Quarterly	Daily Maximum
34030	Benzene	<=	0.07	mg/L	Grab	Quarterly	Daily Maximum
34371	Ethylbenzene	<=	0.2	mg/L	Grab	Quarterly	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	Quarterly	Daily Maximum
81551	Xylene	<=	0.5	mg/L	Grab	Quarterly	Daily Maximum