STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

May 29, 2024

Mr. Michael Barry
Plant Manager
e-copy: mbarry@cardinalcorp.com
600 Cardinal Way Road
Church Hill, TN 37642

Subject: **Draft of NPDES Permit No. TN0002631**
Cardinal FG Company
Church Hill, Hawkins County, Tennessee

Dear Mr. Barry:

Enclosed please find a draft copy of the NPDES Permit No. TN0002631, 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 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 Johnson City EFO at 1-888-891-TDEC; or, at this office, please contact Mr. Timothy Hunziker at (615) 981-7879 or by E-mail at *Timothy.Hunziker@tn.gov*.

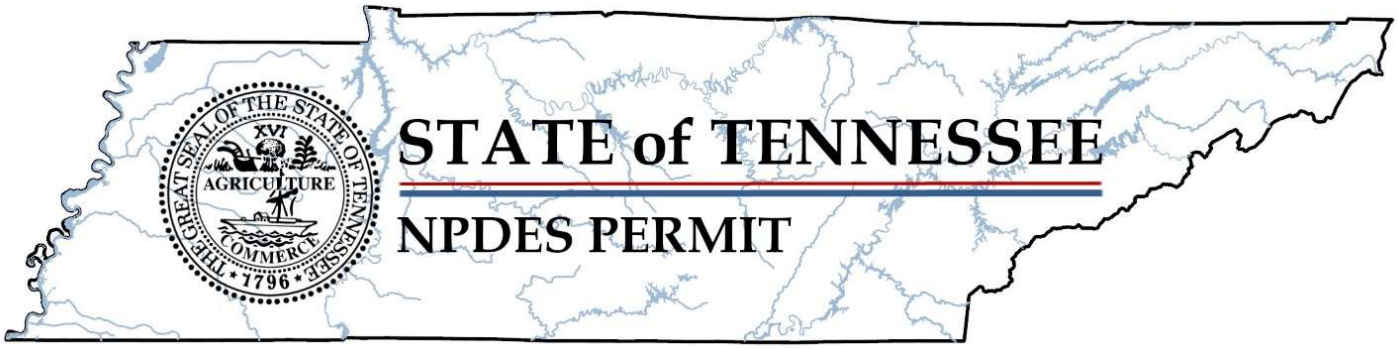
Sincerely,

Wade O Murphy /for

Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Permit File
Johnson City Environmental Field Office (EFO)
NPDES Permit Section, EPA Region IV, r4npdespermits@epa.gov
Mr. James Hatcher, Environmental Health and Safety Manager, Jhatcher@cardinalcorp.com
Mr. Lucas Hughes, Environmental Engineer, lhughes@cardinalcorp.com



Authorization to Discharge Under the National Pollutant Discharge Elimination System (NPDES) Permit Number TN0002631

Issued by

Department of Environment and Conservation
Division of Water Resources
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

Under the 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.)

Permittee:	**Cardinal FG Company** **Greenland Plant**
is authorized to discharge:	contact process wastewater (tempering washer), treated domestic wastewater, non-contact cooling water and stormwater runoff through Outfall 004; Cooling water sourced from the Holston River mile 128.2 and backup intake location in Bradley Creek;
from a facility located at:	600 Cardinal Way, Church Hill, Hawkins County, Tennessee
to receiving waters named:	unnamed tributary at mile 0.6 to Holston River at mile 126.5

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:

DRAFT

for April Grippo, Interim Director

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PART 1

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. NUMERIC AND NARRATIVE EFFLUENT LIMITATIONS

Cardinal FG Company is authorized to discharge contact process wastewater (tempering washer), treated domestic wastewater, non-contact cooling water, and stormwater runoff through Outfall 004 to an unnamed tributary at mile 0.6 to Holston River at mile 126.5. Internal outfalls 002 & 01A and internal monitoring point 005 are also permitted.

1.1.1. Numeric Effluent Limitations

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

External Outfall, Number: 004 - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00010	Temperature, water deg. C	Report	-	deg C	Grab	2 / Month	Daily Maximum
00400	pH	>= <=	6.0 9.0	SU SU	Grab	5 / Week	Daily Minimum Maximum
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Grab	2 / Month	Daily Maximum
00545	Settleable Solids	<=	0.5	ml/L	Grab	Weekly	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum Monthly Average
50060	Chlorine, total residual (TRC)	<= <=	0.019 0.011	mg/L mg/L	Grab	Weekly	Daily Maximum Monthly Average
84066	Oil and grease visual	Report	-	Y=1;N=0	Visual	2 / Month	Value
T7P3B	IC25 Sub-Lethal Static Renewal 7 Day Chronic Ceriodaphnia Dubia	>=	100	%	Composite	Once Per Permit Term	Minimum
T7P6C	IC25 Sub-Lethal Static Renewal 7 Day Chronic Pimephales Promelas	>=	100	%	Composite	Once Per Permit Term	Minimum

Internal Monitoring Point, Number: 01A - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>= <=	6.0 9.0	SU SU	Grab	2 / Month	Daily Minimum Maximum
00530	Total Suspended Solids (TSS)	<= <=	50.45 33.48	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
00665	Phosphorus, total (as P)	<= <=	0.13 0.13	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
03582	Oil and grease	<= <=	18.35 18.35	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum Monthly Average

Internal Monitoring Point, Number: 002, Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00300	Oxygen, dissolved (DO)	>=	2.0	mg/L	Grab	5 / Week	Minimum
00310	BOD, 5-day, 20 C	<= <=	45 30	mg/L mg/L	Grab	2 / Month	Daily Maximum Monthly Average
00400	pH	>= <=	6.0 9.0	SU SU	Grab	Weekly	Daily Minimum Maximum
00530	Total Suspended Solids (TSS)	<= <=	45 30	mg/L mg/L	Grab	2 / Month	Daily Maximum Monthly Average
00545	Settleable Solids	<=	0.5	ml/L	Grab	2 / Month	Daily Maximum
50050	Flow	Report	- -	MGD	Instantaneous	Weekly	Daily Maximum Monthly Average
50060	Chlorine, total residual (TRC)	<=	0.5	mg/L	Grab	2 / Month	Daily Maximum
51040	E. coli	<= <=	410 126	#/100mL #/100mL	Grab	2 / Month	Daily Maximum Monthly Average

Internal Monitoring Point, Number: 005 - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>= <=	6.0 9.0	SU SU	Grab	2 / Month	Minimum Maximum
00530	Total Suspended Solids (TSS)	<= <=	9.7 9.7	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
03582	Oil and grease	<= <=	19.4 19.4	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum Monthly Average

Notes:

See **Part 1.2.3** for test procedures.

See **Part 3.3** for biomonitoring test and reporting requirements.

The permittee may collect more samples than specified as the monitoring frequency in the permit. Samples may not be collected at intervals of less than 12 hours. For determining the geometric mean, individual samples having an *E. coli* group concentration of less than 1 per 100 mL shall be considered as having a concentration of 1 per 100 mL. In addition, the concentration of the *E. coli* group in any individual sample shall not exceed a specified maximum amount.

A monthly average limit for TRC has been added to the renewed permit. The criterion continuous concentration (chronic exposure) of 0.011 mg/L is for protection of fish and aquatic life designated use of the receiving stream. Considering the reported Total Residual Chlorine (TRC) will be that of the effluent, exceedance above the monthly average value of 0.011 mg/L will be considered a violation. See 1.3.4 for reporting requirements and guidance.

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 follow 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.

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

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[1], 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 ≤ 6°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 the monitored discharge. Samples must be representative of the effluent being discharged and collected prior to mixing with any other discharge or the receiving

[1] 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.

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, 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:

DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT UNIT
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

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

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, or any release (whether or not caused by improper operation and maintenance), which could cause a threat to human health or the environment, the permittee shall:

i. Report the noncompliance or release to the Commissioner within 24 hours from the time the permittee becomes aware of the circumstances. Such noncompliance or release includes, but is not limited to, any unanticipated bypass exceeding any effluent limitation, any upset exceeding any effluent limitation, and violations of any maximum daily effluent limitation identified in the permit as requiring 24-hour reporting. (The EFO should be contacted for names and phone numbers of the environmental response team.)

ii. Submit a written report within five days of the time the permittee becomes aware of the noncompliance. The permittee shall provide the following information:

1. A description of and the cause of the noncompliance or release;

2. The period of noncompliance or release, including start and end dates and times i.e. duration or, if not corrected, the anticipated time the noncompliance or release is expected to continue;

3. The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance or release; and

4. For POTWs or domestic wastewater treatment plants, reporting any dry weather overflow, wet weather overflow, dry weather release, wet weather release, combined sewer overflow, or bypass, this written report must also include the following:

   I. Type of event;
   II. Type of sewer overflow, release, or bypass structure (e.g., manhole, combined sewer overflow outfall);
   III. Estimated volume (gallons);
   IV. Types of human health and environmental impacts;
   V. Location (latitude and longitude);
   VI. Estimated duration (hours);
   VII. The next downstream pump station (for overflows and releases only); and
   VIII. The name of receiving water (if applicable).

iii. Industrial dischargers that do not treat domestic waste shall comply with subpart a) ii. 4. of this subparagraph with respect to bypasses only.

iv. For overflows, releases, bypasses, upsets and washouts, the report required by a) ii. Shall be submitted electronically via MyTDEC Forms.

b) Other Noncompliance.

i. All permittees shall report each instance of noncompliance or any release (whether or not caused by improper operation and maintenance), not reported under sub-part a) at the time of submitting the next routine monitoring report, including all information required by sub-parts a) ii. 1-3.

ii. In addition to the information required by part i of this sub-part, POTWs and domestic wastewater treatment plants shall submit a written report containing the information required by sub-part a) i. 4. If these events are

caused by an extreme weather event, the Commissioner may provide a written waiver of some or all of these reporting requirements.

iii. In addition to the information required by sub-part i, industrial dischargers shall submit a written report of bypasses containing the information required by sub-part a) i. 4. This part does not relieve industrial dischargers from any applicable reporting requirements of 40 C.F.R. Part 117 (2021) and 40 C.F.R. Part 302 (2021).

2.3.2. Overflows and Releases

a) For publicly owned treatment works (POTW) or domestic wastewater treatment plants, sanitary sewer overflows, including dry-weather overflows and wet weather overflows, are prohibited.

b) Releases caused by improper operation and maintenance, which is to be determined by the Commissioner based on the totality of the circumstances, are prohibited.

c) 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).

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

e) 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[2] 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

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

3) The cumulative, peak-design flows potentially added from new connections and line extensions upstream of any chronic overflow or release point are less than or proportional to the amount 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.

f) 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.

g) For industrial dischargers, the discharge of pollutants from any location other than a permitted outfall is prohibited.

2.3.3. Upset

a) An upset shall constitute an affirmative defense to an action brought for noncompliance with 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".

b) In any enforcement proceeding, the permittee seeking to establish the affirmative defense of an upset has the burden of proof.

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) Bypasses (see subpart 4.1) 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
      a. For anticipated bypass, the permittee submits prior notice, if possible at least ten days before the date of the bypass, or
      b. 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.

b) 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. The permittee must sample and report the discharge during each bypass to demonstrate that the bypass does not cause effluent limitations to be exceeded.

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

3. PERMIT SPECIFIC REQUIREMENTS

3.1. CERTIFIED OPERATOR

The waste treatment facilities shall be operated under the supervision of a certified wastewater treatment operator in accordance with the Water Environmental Health Act of 1984.

3.2. 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).

3.3. BIOMONITORING REQUIREMENTS, CHRONIC

The permittee shall conduct a 3-Brood *Ceriodaphnia dubia* Survival and Reproduction Test and a 7-Day Fathead Minnow *(Pimephales promelas)* Larval Survival and Growth Test on samples of final effluent from Outfall 004.

The measured endpoint for toxicity will be the inhibition concentration causing 25% reduction in survival, reproduction and growth (IC_{25}) of the test organisms. The IC_{25} shall be determined based on a 25% reduction as compared to the controls, and as derived from linear interpolation. The average reproduction and growth responses will be determined based on the number of *Ceriodaphnia dubia* or *Pimephales promelas* larvae used to initiate the test.

Tests shall be conducted and results reported based on appropriate replicates of a total of five serial dilutions and a control, using the percent effluent dilutions as presented in the following table:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
Permit Limit (PL)	**0.50 X PL**	**0.25 X PL**	**0.125 X PL**	**0.0625 X PL**	**Control**
% effluent					
100	**50**	**25**	**12.5**	**6.25**	**0**

The dilution/control water used will be moderately hard water as described in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms*, EPA-821-R-02-013 (or the most current edition). A chronic standard reference toxicant quality assurance test shall be conducted with each species used in the toxicity tests and the results submitted with the discharge monitoring report. Additionally, the analysis of this multi-concentration test shall include review of the concentration-response relationship to ensure that calculated test results are interpreted appropriately.

Toxicity will be demonstrated if the IC_{25} is less than or equal to the permit limit indicated for each outfall in the above table(s).

All tests will be conducted using a minimum of three 24-hour, flow-proportionate composite samples of final effluent (*e.g.*, collected on days 1, 3, and 5). If, in any control more than 20% of the test organisms die in 7 days, the test (control and

effluent) is considered invalid and the test shall be repeated within two (2) weeks. Furthermore, if the results do not meet the acceptability criteria in the above-referenced *Short-term Methods* document, or if the required concentration-response review fails to yield a valid relationship per guidance contained in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing*, EPA-821-B-00-004 (or the most current edition), that test shall be repeated. Any test initiated but terminated before completion must also be reported along with a complete explanation for the termination.

The toxicity tests specified herein shall be conducted once per permit cycle (five years) for Outfall 004 and begin no later than 90 days from the effective date of this permit.

In the event of a test failure, the permittee must start a follow-up test within 2 weeks and submit results from a follow-up test within 30 days from obtaining initial WET testing results. The follow-up test must be conducted using the same serial dilutions as presented in the corresponding table(s) above. The follow-up test will not negate an initial failed test. In addition, the failure of a follow-up test will constitute a separate permit violation.

In the event of 2 consecutive test failures or 3 test failures within a 12-month period for the same outfall, the permittee must initiate a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) study within 30 days and so notify the Division by letter. This notification shall include a schedule of activities for the initial investigation of that outfall. During the term of the TIE/TRE study, the frequency of biomonitoring shall be once every three months. Additionally, the permittee shall submit progress reports once every three months throughout the term of the TIE/TRE study. The toxicity must be reduced to allowable limits for that outfall within 2 years of initiation of the TIE/TRE study. Subsequent to the results obtained from the TIE/TRE studies, the permittee may request an extension of the TIE/TRE study period, if necessary, to conduct further analyses. The final determination of any extension period will be made at the discretion of the Division.

The TIE/TRE study may be terminated at any time upon the completion and submission of 2 consecutive tests (for the same outfall) demonstrating compliance. Following the completion of TIE/TRE study, the frequency of monitoring will return to a regular schedule, as defined previously in this section as well in Part I of the permit. During the TIE/TRE study, the permittee will continue to conduct toxicity testing of the outfall being investigated at the frequency of once every three months but will not be required to perform follow-up tests for that outfall during the period of TIE/TRE study.

Test procedures, quality assurance practices, determinations of effluent survival/reproduction and survival/growth values, and report formats will be made in accordance with *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms*, EPA-821-R-02-013, or the most current edition. Results of tests, reference toxicant information, copies of raw data sheets, statistical analysis, and chemical analyses shall be compiled in a report also written in accordance with the *Short-term Methods* document above.

A copy of the biomonitoring report (including any follow-up reports) shall be submitted to the Division as an attachment to the monthly DMR in NetDMR.

3.4. 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:

TREATED INDUSTRIAL WASTEWATER
Cardinal FG Company
Greenland Plant
(423) 357-2412
NPDES Permit No. TN0002631
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Johnson City

Industrial Stormwater Runoff:

INDUSTRIAL STORMWATER RUNOFF
Cardinal FG Company
Greenland Plant
(423) 357-2412
NPDES Permit No. TN0002631
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Johnson City

PART 4

4. DEFINITIONS AND ACRONYMS

4.1. DEFINITIONS

Actual intake flow (AIF) means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years.

For the purposes of this permit, ***annually*** is defined as a monitoring frequency of once every 12 months beginning with the effective date of this permit, so long as the following set of measurements for a given 12 month period are made approximately 12 months subsequent to that time.

An ***Alert Value*** is a benchmark concentration that indicates presence of pollutants in concentrations that shall require a review of BMPs used in a corresponding drainage area. An alert value differs from an enforceable numerical limit in that an exceedance of the alert value is not a permit violation. However, the failure to report a sampled concentration with an alert value is a permit violation.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

A ***calendar day*** means the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight to midnight time period.

A ***composite sample*** means a combination of not less than eight influent or effluent portions (aliquots), collected over a 24-hour period. Under certain circumstances a lesser time period may be allowed, but in no case less than eight hours. A sufficient volume of sample to perform all required analyses plus any additional amount for quality control must be obtained. For automatic samplers that use a peristaltic pump, a minimum 100 ml aliquot must be obtained.

Continuous monitoring, for the purposes of this permit, means the measurement of temperature or pH at a frequency that will accurately characterize the nature of discharges from the site and water in the receiving stream. Samples collected continuously shall be at a frequency of not less than once every 15 minutes for temperature.

Cooling water means water used for contact or non-contact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations at the facility's premises.

Cooling water intake structure means the total physical structure and any associated constructed waterways used to withdraw cooling water form waters of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to, and including, the intake pumps.

The ***daily maximum amount*** means the total amount of any pollutant in the discharge by weight during any calendar day.

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.

Design intake flow (DIF) means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody.

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.

   (Note: Consistent with T.C.A. § 69-3-108, special consideration will be given to bioaccumulative substances to confirm the effect is de minimis,

even if they are less than five percent of the available assimilative capacity.)

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.

An ***ecoregion*** is a relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

Entrainment means the incorporation of all life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure and into a cooling water system.

The ***geometric mean*** of any set of values means the n^{th} root of the product of the individual values where n is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For the purposes of calculating the geometric mean, values of zero shall be considered to be one.

A ***grab sample*** means a single sample collected at a particular time.

IC_{25} means the inhibition concentration in which at least a 25% reduction in reproduction and/or growth in test organisms occurs.

Industrial discharger means those industries identified in the standard industrial classification manual, Bureau of the Budget, 1987, as amended and supplemented, under the category "Division D - Manufacturing" and such other classes of significant waste producers as the Board or Commissioner deems appropriate.

Industrial wastes means any liquid, solid, or gaseous substance, or combination thereof, or form of energy including heat, resulting from any process of industry, manufacture, trade, or business or from the development of any natural resource.

The ***instantaneous maximum concentration*** means the concentration, in units of mass per volume, of any pollutant parameter in a grab sample taken at any point in time.

The ***instantaneous minimum concentration*** means the minimum concentration, in units of mass per volume, of a pollutant parameter in a grab sample taken at any point in time.

LC_{50} means the concentration that causes at least 50% lethality of the test organisms.

Major facility means a municipal or domestic wastewater treatment plant with a design capacity of one million gallons per day or greater; or any other facility or activity classified as such by the Commissioner.

Minor facility means any facility that is not a major facility.

The ***monthly average amount*** means the arithmetic mean of all the measured daily discharges by weight during the calendar month when the measurements were made.

The ***monthly average concentration***, means the arithmetic mean of all samples collected in a one calendar-month period, expressed in units of mass per volume of any pollutant other than bacteria.

National Pollutant Discharge Elimination System or ***NPDES*** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the federal CWA. The term includes an "approved program."

New or increased discharge is a new discharge of pollutants to waters of the state or an increase in the authorized loading of a pollutant above either (1) numeric effluent limitations established in a National Pollutant Discharge Elimination System permit for that discharge, or (2) if no such limitations exist, the actual discharges of that pollutant.

New source means any building, structure, facility, area, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced after the publication of state or federal regulations prescribing a standard of performance.

Nitrate (as N) means nitrate reported as nitrogen.

A ***one-week period*** (or ***calendar-week***) means the period from Sunday through Saturday. For weekly average reporting purposes, a calendar week that contains a change of month shall be considered part of the latter month.

Owner or ***operator*** means any person who owns, leases, operates, controls, or supervises a source.

Person means an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof.

Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant means sewage, industrial wastes, or other wastes.

Pollution means such alteration of the physical, chemical, biological, bacteriological, or radiological properties of the waters of this state including, but not limited to, changes in temperature, taste, color, turbidity, or odor of the waters that will:

(a) Result or will likely result in harm, potential harm, or detriment to the public health, safety, or welfare;

(b) Result or will likely result in harm, potential harm, or detriment to the health of animals, birds, fish, or aquatic life;

(c) Render or will likely render the waters substantially less useful for domestic, municipal, industrial, agricultural, recreational, or other reasonable uses; or

(d) Leave or likely leave the waters in such condition as to violate any standards of water quality established by the Board.

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.

Quarter means 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.

Rainfall event means 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.

Rationale or ***fact sheet*** means a document that is prepared when drafting an NPDES permit or permit action. It provides the technical, regulatory and administrative basis for an agency's permit decision.

A ***reference site*** means the least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

A ***reference condition*** is a parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

Release means the flow of sewage from any portion of the collection or transmission system owned or operated by a publicly owned treatment works (POTW) or a domestic wastewater treatment plant, other than through permitted outfalls, that does not reach waters. In addition, a "release" includes a backup into a building or private property that is caused by blockages, flow conditions, or other malfunctions originating in the collection or transmission system owned or operated by the permittee. A "release" does not include:

(a) Backups into a building or private property caused by blockages or other malfunctions originating in a private lateral;

(b) Events caused by vandalism;

(c) Events caused by lightning strike;

(d) Events caused by damage due to third parties working on other utilities in the right of way, e.g., cross bore from telecommunications line; or

(e) Events that are directly incidental to planned, preventative, or predictive maintenance provided the site is under the direct control of a certified operator or contractor, public access is restricted, and the site is disinfected.

Sanitary sewer overflow or ***Overflow or SSO*** means an unpermitted discharge of wastewater from the collection or treatment system of a publicly owned treatment works (POTW) or a domestic wastewater treatment plant other than through a permitted outfall.

Schedule of compliance means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, condition of a permit, other limitation, prohibition, standard, or regulation. This term includes, but is not limited to, schedules authorized by national effluent limitations guidelines or by Tennessee's water quality standards.

The term ***semi-annually***, for the purposes of this permit, means the same as once every 6 months. Measurements of the limited effluent parameters may be made any time during a 6 month period beginning from the effective date of this permit, so long as the second set of measurements for a given 12 month period are made approximately 6 months subsequent to that time, if feasible.

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.

Sewage means water-carried waste or discharges from human beings or animals, from residences, public or private buildings, or industrial establishments, or boats, together with such other wastes and ground, surface, storm, or other water as may be present.

Sewerage system means the conduits, sewers, and all devices and appurtenances by means of which sewage and other waste is collected, pumped, treated, or disposed.

Source means any activity, operation, construction, building, structure, facility, or installation from which there is or may be the discharge of pollutants.

Standard of performance means a standard for the control of the discharge of pollutants that reflects the greatest degree of effluent reduction that the Commissioner determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

Stream means a surface water that is not a wet weather conveyance.

Subecoregion is a smaller, more homogenous area that has been delineated within an ecoregion.

Total dissolved solids or ***TDS*** means nonfilterable residue.

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.

Watercourse means a man-made or natural hydrologic feature with a defined linear channel that discretely conveys flowing water, as opposed to sheet-flow.

Weekly average amount means the arithmetic mean of all the measured daily discharges by weight during the calendar week when the measurements were made.

Weekly average concentration means the arithmetic mean of all the concentrations expressed in units of mass per volume of any pollutant measured in a calendar week.

Wet weather conveyance means, notwithstanding any other law or rule to the contrary, man-made or natural watercourses, including natural watercourses that have been modified by channelization:

(a) That flow only in direct response to precipitation runoff in their immediate locality;

(b) Whose channels are at all times above the groundwater table;

(c) That are not suitable for drinking water supplies; and

(d) In which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

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_5 – five-day biochemical oxygen demand
BPT – best practicable control technology currently available
$CBOD_5$ – five-day carbonaceous biochemical oxygen demand
CEI – compliance evaluation inspection
CFR – code of federal regulations
CFS – cubic feet per second
CFU – colony forming units
CIU – categorical industrial user
CSO – combined sewer overflow
DMR – discharge monitoring report
D.O. – dissolved oxygen
E. coli – *Escherichia coli*
EPA – Environmental Protection Agency
EFO – environmental field office
GPM – gallons per minute
IC_{25} – 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_{50} – 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/Title40/40chaptERl.tpl

Electronic Reporting (NetDMR) Waiver Request
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

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

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-npdes-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

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

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

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

USGS Hydrologic Toolbox
https://pubs.usgs.gov/publication/tm4D3

RATIONALE

Cardinal FG Company
Greenland Plant
NPDES Permit No. TN0002631
Permit Writer: Timothy Hunziker

1. PERMIT STATUS & PUBLIC PARTICIPATION

Permit Type:	Industrial
Previous Issuance Date:	September 9, 2019
Previous Expiration Date:	September 30, 2024
Previous Effective Date:	October 1, 2019

As provided under Rule 0400-40-05-.06, this permit allows 30 days for public comment on the proposed permit. The 30-day public comment period begins the date this permit is placed on public notice. The public notice document for this permit can be found at the Division's Water Notices and Hearings website under "Permit Public Notices".

Public Notice Date:	5/28/2024
Comment Period Ends:	6/27/2024

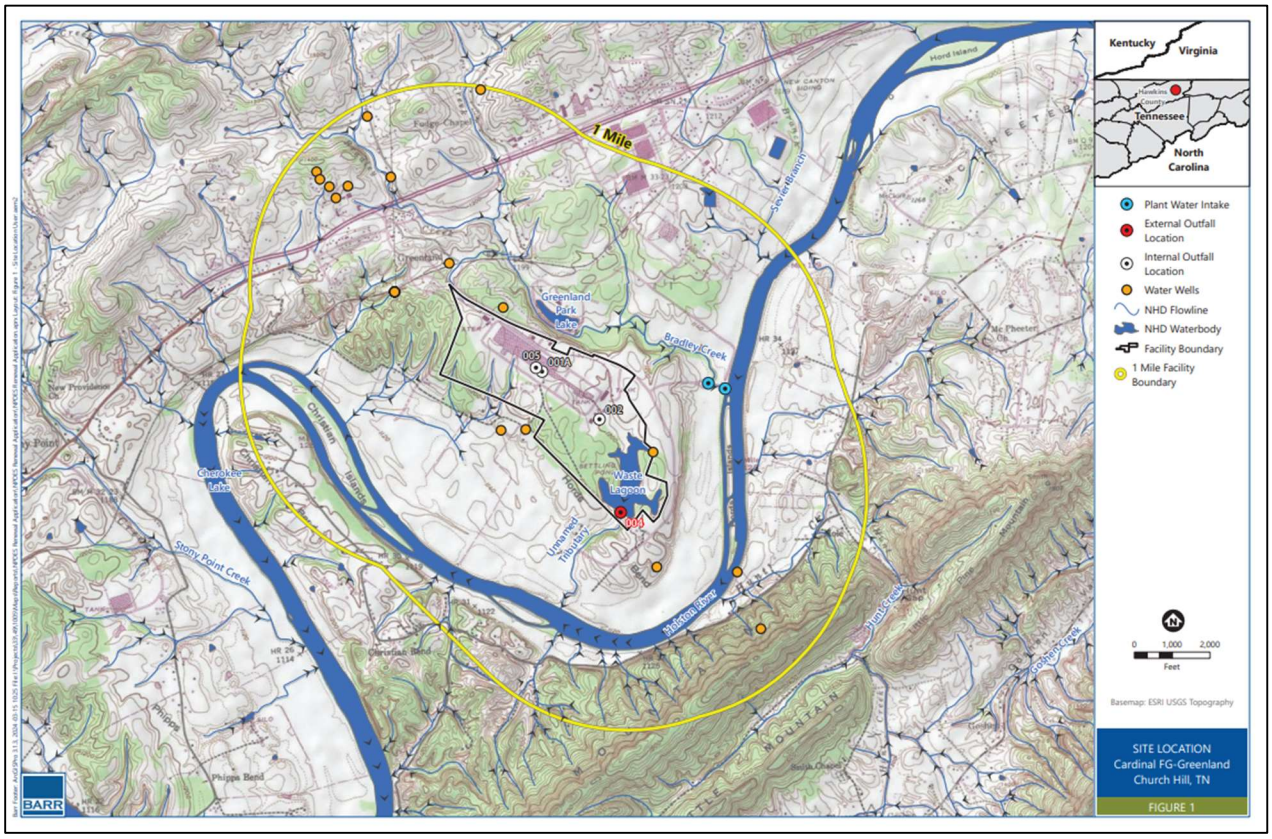
Those wishing to make a formal comment on the proposed permit may submit comments electronically to Water.Permits@tn.gov, or by mail to:

Division of Water Resources - Water Based Systems Unit
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, TN 37243

The public may also request a public hearing on a proposed permit by submitting such a request in writing during the public comment period specified above. The request should indicate the interest of the party filing it and the reasons why a hearing is warranted. A request for public hearing should be submitted as soon as practicable to the addresses provided above. Questions regarding the draft permit may be directed to 1-888-891-TDEC.

2. FACILITY INFORMATION

Permittee Name:	**Cardinal FG Company**
Project Name:	**Greenland Plant**
Location:	600 Cardinal Way, Church Hill, Hawkins County, Tennessee
Contact:	Mr. Michael Barry - Plant Manager (423) 357-2412 mbarry@cardinalcorp.com
Average Flow Rate:	1.1 MGD
Nature of Business:	Production of flat glass from float glass, tempering, finish, and sputter coating processes
SIC Code(s):	3211
Industrial Classification:	Secondary Industry with ELGs
Discharger Rating:	Minor



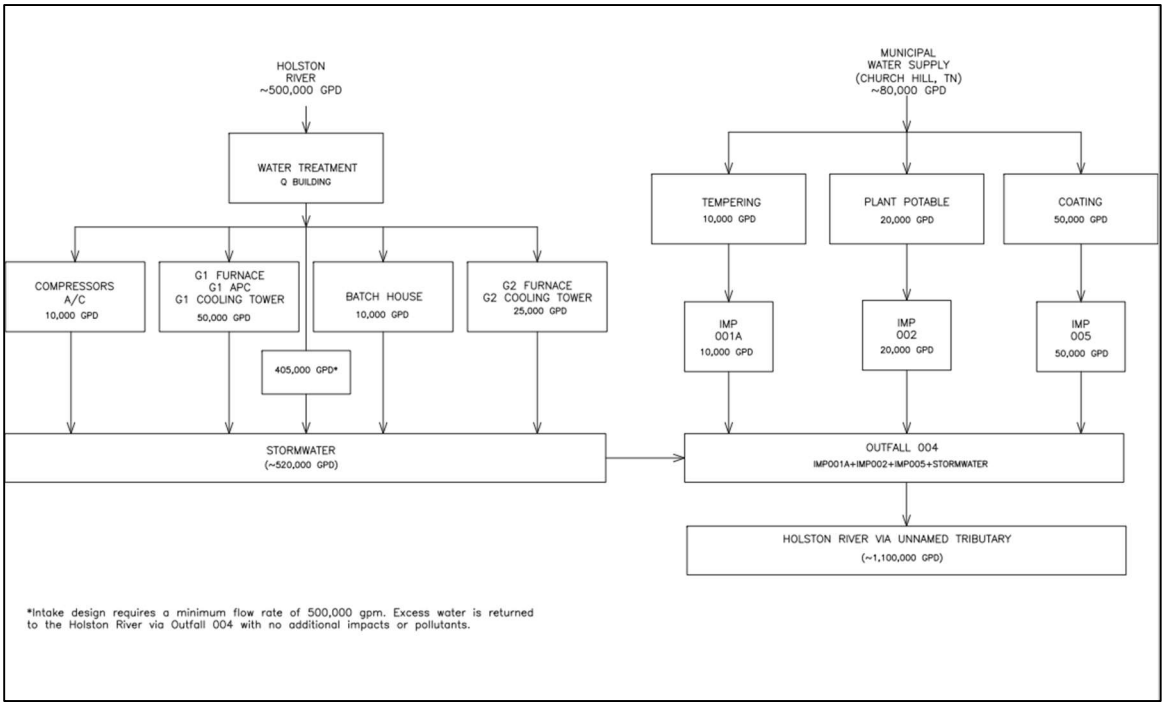
3. FACILITY DISCHARGES AND RECEIVING STREAM INFORMATION

3.1. DISCHARGES

Cardinal FG Company discharges contact process wastewater, treated domestic wastewater, non-contact cooling water, and stormwater runoff through Outfall 004 to an unnamed tributary (mile 0.6) to the Holston River (mile 126.5). Discharges are detailed below and come from the permittee's application.

Stormwater discharges associated with the industrial activity of this facility are covered by the Tennessee Multi-Sector General Storm Water Permit TNR051221. Stormwater concerns associated with this facility are covered in the general permit and will therefore not be addressed in detail in this permit.

Outfall	Discharge	Flow (MGD)
01A	Industrial wastewater from tempering washing / float glass process	0.010
002	Sanitary wastewater from package plant (activated sludge & chlorine disinfection)	0.020
005	Industrial wastewater from coating process	0.050
004	Non-contact cooling water, cooling tower blowdown (pH adjustment for neutralization)	0.075
004	Excess / unused intake water	0.405
Lagoon	Stormwater (approx. / varies)	0.520
004	**TOTAL**	**1.08**



3.2. RECEIVING STREAM

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. Streamstats estimates flow conditions based on geological survey data and the size of the drainage area above the point of discharge. When the drainage area to the receiving stream is outside the accepted drainage area range for Streamstats to run the model, a zero critical low flow (7Q10 = 0 MGD) is assumed based on the permit writer's Best Professional Judgment (BPJ). Appendix 5 shows the Streamstats output used for this estimation and the receiving stream information is detailed below.

Receiving Waterbody:	**unnamed tributary at mile 0.6 to Holston River at mile 126.5**
Watershed Group:	Holston
Hydrocode:	06010104
Primary Outfall Latitude:	36.483482°
Primary Outfall Longitude:	-82.771980°
Low Flow:	7Q10 = 0 MGD (0 CFS)
Low Flow Reference:	USGS StreamStats (Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Sreamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009-5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159))

Stream Designated Uses:

Domestic Water Supply	*Industrial*	*Fish & Aquatic Life*	*Recreation*
		X	**X**
Livestock & Wildlife	*Irrigation*	*Navigation*	*Trout*
X	**X**		

4. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

The Standard Industrial Classification (SIC) code for Cardinal FG Company is 3211 (Float Glass). Process wastewater discharged through IMP 01A is regulated by 40 CFR § 426 – Glass Manufacturing Point Source Category. Appendix 3 lists the applicable effluent limitations guidelines for Subpart E – Float Glass Manufacturing Subcategory and Subpart F – Automotive Glass Tempering Subcategory.

5. PERMIT HISTORY

5.1. PREVIOUS PERMIT TERM REVIEW

A review of the permittee's Discharge Monitoring Reports (DMRs) from 10/31/2024 to 3/31/2024 revealed that the permittee reported violations of permit limits as shown below. A summary of data reported on DMRs during the previous permit term is in Appendix 2.

Violations		
Parameter	**Quantity**	**Outfall / IMP**
pH	2	004
TSS	1	004
BOD_5	1	002
E .coli	2	002
TSS	2	002
pH	2	005

During the previous permit term, Division personnel from the Johnson City Environmental Field Office performed a Compliance Evaluation Inspection (CEI) of the permittee's facility. The CEI was performed by Brianna Begley on 1/24/2024, and the permittee was found to be in compliance. The inspection report described the facility as generally well maintained with a deficiency noted regarding proper operation and maintenance surrounding sweeping a fine layer of sand and crushed glass that was present near floor drains that contribute to the high head drain. This observation was noted in a Notice of Violation (NOV) dated 12/13/2021 and within the subsequent CEI. The report also notes dissolved oxygen (DO) monitoring equipment not calibrated against standard reference tables. Total Residual Chlorine (TRC) method detection limit (MDL) procedure requirements stipulate Revision 2 (dated 2016) need to be implemented as Revision 1 procedures were observed on site. Septage haulers for sludge disposal (named 1. Dons and Davis Sanitation and 2. A&B Kerns Septic Services) did not list the final disposal location on their invoices.

5.2. PERMIT TIMELINE

Date	Permit Activity
2011-2016	5 NOVs; all resolved
4/30/2014	2014 permit issued
9/9/2019	2019 permit issued
7/30/2021	Change of ownership
8/2/2021	Complaint UD 114396 concerning Pollution/Spills/Illicit discharge of sulfuric acid leaking from an outfall pipe due to a fallen tree
12/13/2021	NOV concerning effluent excursions and previously noted deficiencies not yet remedied
2024	2024 permit issued

Note: Due to the Department's retention procedures outlined in the Tennessee Department of State Records Disposition Authorization, the history outlined above may not represent a complete and comprehensive summary, but instead reflects the best information available at this time.

6. 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.
c) Reduce WET testing to once per permit cycle.
d) IMP 001A is updated to IMP 01A
e) Outfall 004:
    a. TSS monitoring requirements changed to report only
    b. Oil and grease changed to a visual check and report only

6.1. ALL OUTFALLS

6.1.1. 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.

6.1.2. 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 and performance frequency varies for each internal monitoring point and outfall.

6.2. OUTFALL 004

Outfall 004 consists of non-contact cooling, cooling tower blowdown, storm water runoff, process wastewater (through IMP 01A and IMP 005) and treated domestic wastewater (through IMP 002).

6.2.1. Chlorination

The total residual chlorine (TRC) limit is derived using the mass balance formula and the EPA acute instream protection value of 0.019 mg/L for fish and aquatic life. Applying this formula yields the following calculation for the TRC daily maximum limit:

$$\frac{0.019\ (Qd + Qs)}{Qd} = Limit\ (mg/L) = \frac{0.019(1.1 + 0)}{1.1} = 0.019\,mg/L \approx 0.02\,mg/L$$

where:

0.019	=	acute instream protection value (mg/L)
0	=	Qs – 7Q10 flow of receiving stream (MGD)
1.1	=	Qd – average flow of facility (MGD)

Similarly, the chronic instream protection value of 0.011 mg/L for fish and aquatic life is applied to the mass balance formula to determine the monthly average limit for TRC. Previous permits do not contain rationale for omitting this limit and may have utilized the belief that chlorine's reactivity with other compounds will ensure it does not remain in solution long enough to result in chronic exposure to fish

and aquatic life. The best way to reflect that chronic exposure to harmful levels of chlorine is not occurring is reporting successful operation of the de-chlorination technology in compliance with the monthly average limit. This added limit does not entail additional sampling but rather calculation of a monthly average value based on the sampling results in consideration of the method detection level of the test method.

$$\frac{0.011\ (Qd + Qs)}{Qd} = Limit\ (mg/L) = \frac{0.011(1.1 + 0)}{1.1} = 0.011\,mg/L \approx 0.01\,mg/L$$

Considering the reported TRC will be that of the effluent, an exceedance of the above-mentioned monthly average of 0.011 mg/L water quality criteria is not necessarily a permit violation. The 0.011 mg/L value applies to the receiving stream, not the effluent. Therefore, if the TRC monthly average of the effluent exceeds 0.011 mg/L, the permittee should note in the comments section of NetDMR that this is the TRC of the effluent and not of the receiving stream. A TRC check in the receiving stream below the discharge point may be performed in order to prove a facility's compliance with the Tennessee Water Quality Standards and should also be noted in the comments section of NetDMR.

6.2.2. Oil and Grease

The Division has determined that an oil and grease limitation is needed for this facility because of the potential for contamination from spills, leaks, and other industrial activities present at the site. 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.

This permit removes numeric effluent limitations for oil and grease at Outfall 004 and moves to a report-only basis. Limits at 004 are redundant since this parameter is limited at the internal monitoring points. This monitoring requirement will be accomplished through a visual inspection twice per month and the value reported to be "1" if Yes or "0" if No for the presence of oil or grease.

6.2.3. Total Suspended Solids (TSS)

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.

TSS is a reasonable indicator of stormwater quality since many stormwater pollutants are themselves suspended solids or entering receiving waters attached to solids. Industrial discharges associated with non-contact cooling water and cooling tower blowdown are potential sources of TSS especially when combined with stormwater. This facility is one which has stormwater runoff associated with industrial activity, as defined in 40 CFR 122.26 (b)(14). For stormwater discharges, a benchmark value of 200 mg/L was designed as a cut-off concentration to guide the design of stormwater pollution prevention plans (SWPPPs). Using best professional judgement (BPJ) and in consideration that TSS continues to be limited at internal monitoring points, this permit cycle moves TSS monitoring at Outfall 004 to a report only basis. Considering the nature of wastewater collection and discharge system, the sample type will be grab and the daily maximum reported twice per month.

6.2.4. Effluent Temperature

Temperature will be monitored according to the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 0400-40-03-.03(3)(e)]. It is recognized that the temperature of the cooling water discharge will be greater than the temperature of the water prior to its use for cooling or other purposes. This discharge must not cause the temperature change in receiving stream to exceed 3°C relative to an upstream control point. Also, this discharge must not cause the temperature of receiving stream to exceed 30.5°C (except as a result of natural causes), and this discharge must not cause the maximum rate of temperature change in the receiving stream to exceed 2°C per hour (except as a result of natural causes).

6.2.5. Settleable Solids

The limits for Settleable Solids of 0.5 ml/L daily maximum concentration will be retained from the previous permit. The sample type will be grab on a weekly frequency. Historically, this limit has been established, and recent DMR data demonstrates that compliance is achievable.

6.2.6. Biomonitoring

The discharge of industrial wastewater from Outfall 004 may contain several different pollutants, the combined effect of which has a reasonable potential to be detrimental to fish and aquatic life. The Tennessee Water Quality Standards criteria stipulate that “The waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions….” Based on a history of passing test results, this permit reduces WET

testing from an annual basis to once per permit cycle and must be completed within 90 days of the permit effective date.

Since the permittee discharges to a stream with low critical flow conditions, there is a concern for toxicity effects of the discharge on the receiving stream, which is relatively unknown. Biomonitoring will provide information relative to the toxicity of the discharge.

$$Dilution\ Factor = \frac{Stream\ Low\ Flow + Waste\ Flow}{Waste\ Flow} = \frac{0 + 1.1}{1.1} = 1$$

$$IC_{25}\ \% > \frac{100\%}{Dilution\ Factor} > \frac{100\%}{1} > 100\%$$

Where:

0	= 7Q10 Low Flow (MGD)
1.1	= Waste Flow (MGD)
IC_{25}	= Concentration causing 25% reduction in survival, growth, and reproduction of test organisms

6.3. INTERNAL MONITORING POINT 01A

Internal Monitoring Point (IMP) 01A is used to monitor wastewater from the tempering washer and flat glass production. The processes involved are subject to ELGs listed in 40 CFR 426 (See Appendix 3). Limits were set for discharge that occurs from IMP 01A, through Outfall 004, and into the receiving. If no discharge occurs the permittee shall mark the “No Discharge” box on the DMRs.

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.

6.3.1. Phosphorus

Phosphorus is a component of federal effluent limitation guidelines (ELGs) for 40 CFR § 426 subpart E. The mass loading limit for phosphorus (total as P) is calculated as 0.13 lb/d for both the daily maximum and monthly average, as shown in Appendix 3. Monitoring frequency will be twice per month and the sample type will be grab.

6.3.2. Oil and Grease

IMP 01A is subject to ELGs for flat glass manufacturing and tempering and since there are two processes contributing effluent to IMP 01A, the limit is the sum of the allowable limits. 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 derived is 18.35 lb/d for both the daily maximum and monthly average mass loading (calculations shown in Appendix 3). Sample type will be grab and taken twice per month.

This level can be accomplished where treatment units are maintained, kept clean and are not overloaded and best management practices are used. There should be less reliance upon the treatment as a solution and a greater reliance upon good management, operation, and housekeeping practices to restrict pollution. In addition, the permit contains language prohibiting visible floating scum, oil, or other matter in the wastewater discharge.

6.3.3. Total Suspended Solids (TSS)

Since there are two processes contributing effluent to IMP 01A, the limit is the sum of the allowable limits. Mass limits of 50.45 lb/d for daily maximum and 33.48 lb/d for monthly average were derived from ELG calculations based on production values (shown in Appendix 3). These limits will provide protection of water quality in the receiving stream. Considering the nature of wastewater collection and discharge system, the sample type will be grab and performed twice per month.

6.4. INTERNAL MONITORING POINT 002

Domestic wastewater is treated in an activated sludge package plant before it is discharged through Outfall 004. IMP 002 is used for monitoring of package plant treatment performance, prior to mixing of treated domestic wastewater with wastewater being eventually discharged from Outfall 004.

6.4.1. Biological Oxygen Demand (BOD_5)

Biochemical oxygen demand, or BOD, is a measure of the oxygen used when biological processes break down organic pollutants in wastewater. The amount of oxygen used is more specifically referred to as the five-day biochemical oxygen demand, or BOD_5. This parameter is used in the wastewater industry to measure both the strength of wastewater and the performance of wastewater treatment processes.

Limits on the oxygen demand remaining in the treated wastewater is often necessary to prevent pollutants in the wastewater from driving oxygen in the receiving stream down below the levels necessary to support fish and aquatic life. Additionally, the breakdown of ammonia into other forms of nitrogen also requires oxygen and therefore exerts an oxygen demand on receiving wastewaters.

The limits for BOD5 are in consistent with the State of Tennessee maximum limits per Rule 0400-40-05-.09(1)(a), technology-based effluent limitations for conventional secondary wastewater treatment plants. The limits will be 30 mg/L monthly average concentration and 45 mg/L daily maximum concentration. The sample type will be a grab and performed twice per month.

6.4.2. Dissolved Oxygen (DO)

The Dissolved Oxygen (DO) limit of 2.0 mg/L will be retained from the previous permit as a minimum to protect water quality. The sample type will be grab and performed five times per week. The DO effluent limitation of 2.0 mg/L is a practical limit achievable by the facility rather than a water-quality based limit necessary to protect fish and aquatic life. A minimum level of 2.0 mg/L is necessary in a treatment system to prevent nuisance conditions associated with anaerobic environments.

6.4.3. Chlorination

This permit continues to apply the previously established 0.5 mg/L limit on total residual chlorine at the internal monitoring point for the domestic wastewater treatment plant per the anti-backsliding provision of permit regulation. Good chlorine disinfecting processes can achieve this value after the chlorine contact time necessary to accomplish pathogen kill. This permit applies a water-quality based limit on total residual chlorine at Outfall 004.

6.4.4. Settleable Solids

The limits for Settleable Solids of 0.5 ml/L daily maximum concentration will be retained from the previous permit. The sample type will be grab and a frequency of a twice per month. This limit has been established historically and recent DMR data demonstrates that compliance is achievable.

6.4.5. Total Suspended Solids (TSS)

Total Suspended Solids is a general indicator of the quality of a wastewater and previous limits will be retained. The 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 concentration limits of 40 mg/L for daily maximum and 30 mg/L for monthly average will provide protection of water quality in the receiving stream. Considering the nature of wastewater collection and discharge system, the sample type will be grab and performed twice per month.

6.4.6. E. coli

Disinfection of wastewater is required to protect the receiving stream from pathogenic microorganisms. *E. coli* is used as an indicator organism as a measure of the bacteriological health of a receiving stream and the effectiveness of disinfection. Both the geometric mean and daily maximum are limited for *E. coli* in accordance with Rule 0400-40-03-.03. While the Rule retains the geometric mean for *E. coli* of 126 cfu/100 mL, the maximum has been changed. Formerly, the *E. coli* daily maximum limit of 487 colony forming units (cfu) per 100 mL applied to lakes and exceptional Tennessee waters, while a daily maximum limit of 941 cfu/100 mL applied to all other recreational waters.

In November 2022, the Tennessee Board of Water Quality, Oil, and Gas adopted a new maximum criterion to align with U.S. Environmental Protection Agency national recommended criteria. That criterion will apply to Tennessee waters to protect the recreation use designation effective March 17, 2024. EPA established a statistical relationship between number of colony forming units and percent of time when such numbers were observed in any 30-day period. The new criterion of 410 cfu/100 mL corresponds to no exceedances in more than 10% of samples during any 30-day interval for all receiving waters.

Tennessee has historically applied water quality standards for pathogens at the outfall of POTWs so that a discharger can demonstrate that it is not contributing to any violation of the criterion in the receiving waterbody. The Division therefore proposes to apply the new criterion as a daily maximum of 410 cfu/100 mL in accordance with EPA guidance and retains the monthly geometric mean for E. coli of 126 cfu/100 mL.

The units for *E. coli* have been standardized to #/100 mL, which is functionally equivalent to colony forming units.

6.5. INTERNAL MONITORING POINT 005

IMP 005 is used for monitoring of wastewater from the coating washer, reverse osmosis, and condensate blowdown. Limits were set for discharge that occurs from IMP 005, through Outfall 004 and into the receiving stream. If no discharge occurs the permittee shall mark the "No Discharge" box on the DMRs. Outfall 005 was recently added to this permit using the Best Practical Technology (BPT) available limits for new sources, those limits will carry over to this permit.

6.5.1. 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. 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.

The technology-based limit derived for oil and grease is 19.4 lb/d for both a daily maximum and monthly average mass loading. ELG calculations are provide in Appendix 3. This level can be accomplished where treatment units are maintained, kept clean and are not overloaded and best management practices are used. There should be less reliance upon the treatment units as a solution and a greater reliance upon good management, operation, and housekeeping practices to restrict pollution. Sample type will be grab and performed twice per month.

6.5.2. Total Suspended Solids (TSS)

Limits were derived from ELG calculations based on production values (shown in Appendix 3). Both the mass loading limits of 9.7 lb/d for the daily maximum and monthly average will provide protection of water quality in the receiving stream. Considering the nature of wastewater collection and discharge system, the sample type will be grab and performed twice per month.

7. OTHER PERMIT REQUIREMENTS AND CONDITIONS

7.1. PERMIT TERM

In order to meet the target reissuance date for the Holston watershed and following the directives for the Watershed Management Program initiated in January 1996, the permit will be issued to expire in 2029.

7.2. 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 11/30/2015.

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 or by mail to the following address:

Division of Water Resources
Compliance and Enforcement Unit – NetDMR Waivers
Davy Crockett Tower, 9th Floor
500 James Robertson Parkway
Nashville, TN 37243

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.

7.3. 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# TN06010104011_0999.

The Division has made a determination of the receiving waters associated with the subject discharge(s) and has found the receiving stream to be an available conditions water. Additionally, this water is fully supporting of its designated uses. The Division has maintained, and shall continue to assess, the water quality of the stream to assure that the water quality is adequate to protect the existing uses of the stream fully, and to assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

APPENDIX 1 – PREVIOUS PERMIT LIMITS

For **Internal Monitoring Point 001A**, this is used for monitoring of process wastewater. Limits were set for discharge from IMP 001A, through Outfall 004 and into the receiving stream:

Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Monthly Average
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Daily Maximum
Phosphorus, total (as P)	<=	0.12	lb/d	Grab	Twice Per Month	Monthly Average
Phosphorus, total (as P)	<=	0.12	lb/d	Grab	Twice Per Month	Daily Maximum
Oil & Grease	<=	18.35	lb/d	Grab	Twice Per Month	Monthly Average
Oil & Grease	<=	18.35	lb/d	Grab	Twice Per Month	Daily Maximum
Total Suspended Solids (TSS)	<=	33.48	lb/d	Grab	Twice Per Month	Monthly Average
Total Suspended Solids (TSS)	<=	50.45	lb/d	Grab	Twice Per Month	Daily Maximum
pH	>=	6.0	SU	Grab	Twice Per Month	Minimum
pH	<=	9.0	SU	Grab	Twice Per Month	Maximum

For **Internal Monitoring Point 002**, this is used for monitoring of package plant treatment performance, prior to mixing with wastewater and eventually discharged from Outfall 004:

Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
E. coli	<=	126	MPN/100mL	Grab	Twice Per Month	Monthly Average
E. coli	<=	941	MPN/100mL	Grab	Twice Per Month	Daily Maximum
Chlorine, total residual (TRC)	<=	0.5	mg/L	Grab	Twice Per Month	Daily Maximum
Flow	Report	-	Mgal/d	Instantaneous	Weekly	Monthly Average
Flow	Report	-	Mgal/d	Instantaneous	Weekly	Daily Maximum
Settleable Solids	<=	0.5	mL/L	Grab	Twice Per Month	Daily Maximum
Total Suspended Solids (TSS)	<=	45	mg/L	Grab	Twice Per Month	Daily Maximum
Total Suspended Solids (TSS)	<=	30	mg/L	Grab	Twice Per Month	Monthly Average
pH	>=	6.0	SU	Grab	Weekly	Minimum
pH	<=	9.0	SU	Grab	Weekly	Maximum
BOD, 5-day, 20 C	<=	30	mg/L	Grab	Twice Per Month	Monthly Average
BOD, 5-day, 20 C	<=	45	mg/L	Grab	Twice Per Month	Daily Maximum
Oxygen, dissolved (DO)	>=	2.0	mg/L	Grab	Five Per Week	Minimum

For **Outfall 004**, this consists of non-contact cooling, stormwater runoff, process wastewater (through IMP 001A and IMP 005), and treated domestic wastewater (through IMP 002):

Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
Chlorine, total residual (TRC)	<=	0.011	mg/L	Grab	Weekly	Monthly Average
Chlorine, total residual (TRC)	<=	0.019	mg/L	Grab	Weekly	Daily Maximum
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Monthly Average
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Daily Maximum
Oil & Grease	<=	15	mg/L	Grab	Twice Per Month	Monthly Average
Oil & Grease	<=	10	mg/L	Grab	Twice Per Month	Daily Maximum
Settleable Solids	<=	0.5	mL/L	Grab	Weekly	Daily Maximum
Total Suspended Solids (TSS)	<=	30	mg/L	Grab	Twice Per Month	Monthly Average
Total Suspended Solids (TSS)	<=	40	mg/L	Grab	Twice Per Month	Daily Maximum
pH	>=	6.0	SU	Grab	Five Per Week	Minimum
pH	<=	9.0	SU	Grab	Five Per Week	Maximum
Temperature, water deg. C	Report	-	°C	Grab	Twice Per Month	Daily Maximum

Parameter	Qualifier	Value	Sample Type	Monitoring Frequency	Statistical Base
IC25 Static Renewal 7 Day Chronic Ceriodaphnia	>=	100%	Composite	Annual	Minimum
IC25 Static Renewal 7 Day Chronic Pimephales promelas	>=	100%	Composite	Annual	Minimum

For **Internal Monitoring Point 005,** this is used for monitoring of wastewater. Limits were set for discharge from IMP 005, through Outfall 004 and into the receiving stream:

Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Monthly Average
Flow	Report	-	Mgal/d	Instantaneous	Five Per Week	Daily Maximum
Oil & Grease	<=	19.4	lb/d	Grab	Twice Per Month	Monthly Average
Oil & Grease	<=	19.4	lb/d	Grab	Twice Per Month	Daily Maximum
Total Suspended Solids (TSS)	<=	9.7	lb/d	Grab	Twice Per Month	Monthly Average
Total Suspended Solids (TSS)	<=	9.7	lb/d	Grab	Twice Per Month	Daily Maximum
pH	>=	6.0	SU	Grab	Twice Per Month	Minimum
pH	<=	9.0	SU	Grab	Twice Per Month	Maximum

APPENDIX 2 – DMR SUMMARY

TN0002631 AGC Flat Glass North America, Inc.	Chlorine, total residual - Effluent (All Year)		Flow, in conduit or thru treatment plant, Effluent - (All Year)		IC25 Static Renewal 7 Day Chronic Ceriodaphnia dubia, Effluent - (All Year)	IC25 Static Renewal 7 Day Chronic Chrpimephales, Effluent - (All Year)	Oil & Grease, Effluent - (All Year)		pH, Effluent - (All Year)		Solids, settleable, Effluent - (All Year)	Solids, total suspended, Effluent - (All Year)			Temperature, water deg. centigrade, Effluent - (All Year)
Outfall 004	Weekly average or geo. mean (mg/L)	Daily max. (mg/L)	Monthly or total (MGD)	Weekly or daily (MGD)	Monthly average or min. (%)	Monthly average or min. (%)	Weekly average or geo. mean (mg/L)	Daily max. (mg/L)	Monthly average or min. (SU)	Daily max. (SU)	Daily max. (mL/L)	Weekly average or geo. mean (mg/L)	Daily max. (mg/L)	Percent exceedance	Daily max. (deg C)
03/31/2024	NODI B	NODI B	1.127	3.334	NODI 9	NODI 9	6	6	8.5	8.7	0.1	9	10		16.6
02/29/2024	NODI B	NODI B	1.286	4.942	NODI 9	NODI 9	6	6	8	8.9	0.1	8	10		17.1
01/31/2024	NODI B	NODI B	1.343	8.791	NODI 9	NODI 9	6	6	7.5	8.7	0.1	5	6		13.8
12/31/2023	NODI B	NODI B	0.696	0.884	NODI 9	NODI 9	6	6	7.3	9	0.1	8	10		16.3
11/30/2023	NODI B	NODI B	0.733	1.388	NODI 9	NODI 9	6	6	7.3	8.2	0.1	4	5		18.5
10/31/2023	NODI B	NODI B	0.865	2.619	NODI 9	NODI 9	6	6	7.5	8	0.1	3	3		21.8
09/30/2023	NODI B	NODI B	0.941	4.11	NODI 9	NODI 9	6	6	7.4	8.2	0.1	2	2		24.2
08/31/2023	NODI A	NODI A	1.74	13.382	NODI 9	NODI 9	6	6	7.5	8.8	0.1	3	3		24.7
07/31/2023	NODI B	NODI B	0.642	1.388	100	100	7	8	7.3	8.7	0.1	2	3		25
06/30/2023	NODI B	NODI B	0.734	1.388	NODI 9	NODI 9	6	6	7.4	8.6	0.1	3	3		22.6
05/31/2023	NODI B	NODI B	0.934	4.11	NODI 9	NODI 9	6	6	7.6	8.9	0.1	2	2		22
04/30/2023	NODI B	NODI B	0.901	1.388	NODI 9	NODI 9	6	6	7.8	8.7	0.1	3	3		19.8
03/31/2023	NODI B	NODI B	1.702	12.17	NODI 9	NODI 9	6	6	7.6	8.9	0.1	3	3		17
02/28/2023	NODI B	NODI B	1.86	14.635	NODI 9	NODI 9	6	6	7	8.9	0.1	2	2		18.8
01/31/2023	NODI B	NODI B	1.443	5.829	NODI 9	NODI 9	6	6	7.8	8.7	0.1	3	4		13.7
12/31/2022	NODI B	NODI B	0.92	4.11	NODI 9	NODI 9	6	7	7.5	8.9	0.1	5	7		16
11/30/2022	NODI B	NODI B	0.83	4.11	NODI 9	NODI 9	6	6	6.7	8.4	0.1	3	3		20.3
10/31/2022	NODI B	NODI B	0.757	1.388	NODI 9	NODI 9	6	6	7.6	8.4	0.1	2	2		20.4
09/30/2022	NODI B	NODI B	0.836	2.619	NODI 9	NODI 9	6	6	7.6	8.5	0.1	3	3		24.1
08/31/2022	NODI B	NODI B	0.799	1.968	100	100	6	6	8.1	8.9	0.1	3	3		25.6
07/31/2022	NODI B	NODI B	1.025	4.942	NODI 9	NODI 9	6	6	8	8.9	0.1	3	4		25.9
06/30/2022	NODI B	NODI B	0.654	0.884	NODI 9	NODI 9	6	6	8.2	8.8	0.1	4	5		27
05/31/2022	NODI B	NODI B	0.909	2.61	NODI 9	NODI 9	6	7	7.8	8.8	0.1	2	2		25.1
04/30/2022	NODI B	NODI B	1.325	5.829	NODI 9	NODI 9	6	6	7	9.3	0.1	2	2		20.8
03/31/2022	NODI B	NODI B	1.294	4.942	NODI 9	NODI 9	6	6	8.2	8.9	0.1	3	3		19.9
02/28/2022	NODI B	NODI B	2.132	8.791	NODI 9	NODI 9	6	6	8	8.9	0.1	2	2		17.5
01/31/2022	NODI B	NODI B	0.957	2.619	NODI 9	NODI 9	5	6	7.8	8.9	0.1	4	5		12.4
12/31/2021	NODI B	NODI B	0.632	1.388	NODI 9	NODI 9	6	6	7.1	8.5	0.1	3	3		19.6
11/30/2021	NODI B	NODI B	0.531	0.884	NODI 9	NODI 9	6	6	7.3	8.3	0.1	2	3		19.6
10/31/2021	NODI B	NODI B	0.848	1.968	NODI 9	NODI 9	6	6	7.5	8.6	0.1	50	98	145	22
09/30/2021	NODI B	NODI B	0.78	1.388	NODI 9	NODI 9	6	6	7.9	8.5	0.1	2	2		24
08/31/2021	NODI B	NODI B	0.801	1.968	100	100	6	6	1.2	8.5	0.1	2	2		24.8
07/31/2021	NODI B	NODI B	0.897	3.334	NODI 9	NODI 9	6	6	7.7	8.8	0.1	2	2		25.6
06/30/2021	NODI B	NODI B	0.788	1.388	NODI 9	NODI 9	6	6	7.8	8.3	0.1	2	2		24.9
05/31/2021	NODI B	NODI B	0.717	1.388	NODI 9	NODI 9	6	6	8.1	8.7	0.1	2	2		23.5
04/30/2021	NODI B	NODI B	0.828	1.968	NODI 9	NODI 9	6	6	8.4	8.8	0.1	3	4		20.4
03/31/2021	NODI B	NODI B	2.123	13.382	NODI 9	NODI 9	6	6	8.3	8.9	0.1	2	2		18.3
02/28/2021	NODI B	NODI B	1.902	12.17	NODI 9	NODI 9	6	6	8.4	9	0.1	3	3		14.7
01/31/2021	NODI B	NODI B	1.193	3.334	NODI 9	NODI 9	6	6	8.4	8.9	0.1	3	4		15.1
12/31/2020	NODI B	NODI B	1.021	3.33	NODI 9	NODI 9	6	6	8.3	9	0.1	4	5		16.1
11/30/2020	NODI B	NODI B	0.606	1.969	NODI 9	NODI 9	6	6	8.3	8.9	0.1	4	5		19.3
10/31/2020	NODI B	NODI B	1.358	17.26	NODI 9	NODI 9	6	6	7.3	8.7	0.1	2	2		20.5
09/30/2020	NODI B	NODI B	0.808	2.619	NODI 9	NODI 9	6	6	8	8.8	0.1	2	2		25.1
08/31/2020	NODI B	NODI B	0.567	0.884	100	100	6	6	8	8.5	0.1	2	2		25.3
07/31/2020	NODI B	NODI B	0.719	1.968	NODI 9	NODI 9	6	6	7.9	8.7	0.1	2	2		25.7
06/30/2020	NODI B	NODI B	0.581	0.664	NODI 9	NODI 9	6	6	8.2	8.7	0.1	2	2		23.5
05/31/2020	NODI B	NODI B	0.79	1.968	NODI 9	NODI 9	6	7	8.1	8.7	0.1	3	4		22.7
04/30/2020	NODI B	NODI B	1.342	5.829	NODI 9	NODI 9	6	7	8.2	9	0.1	2	2		19.1
03/31/2020	NODI B	NODI B	1.952	9.873	NODI 9	NODI 9	6	6	8.3	9	0.1	2	2		20.3
02/29/2020	NODI B	NODI B	3.34	22.965	NODI 9	NODI 9	6	6	8.2	8.8	0.1	12	22		16.1
01/31/2020	NODI B	NODI B	1.404	7.755	NODI 9	NODI 9	6	6	8.3	9	0.1	16	29		17
12/31/2019	NODI B	NODI B	0.86	1.968	NODI 9	NODI 9	6	6	8.2	8.7	0.1	3	3		16.5
11/30/2019	NODI B	NODI B	0.72	2.619	NODI 9	NODI 9	7	7	7.9	8.4	0.1	3	3		15.7
10/31/2019	NODI B	NODI B	0.596	1.388	NODI 9	NODI 9	6	7	7.9	8.3	0.1	2	2		24
Std. dev.	#DIV/0!	#DIV/0!	0.52342	4.76780	0	0	0.23718	0.40782	0.99388	0.25480	0	6.85104	13.59384	-	3.85932
Min:	0	0	0.53	0.66	100	100	5.0	6.0	1.20	8.00	0.10	2.0	2.0	-	12.4
Max:	0	0	3.34	22.97	100	100	7.0	8.0	8.50	9.30	0.10	50.0	98.0	-	27.0
Count:	0	0	54	54	4	4	54	54	54	54	54	54	54	-	54
Average:	#DIV/0!	#DIV/0!	1.0757	4.6813	100	100	6.0185	6.1481	7.6889	8.7130	0.1000	4.315	6.000	-	20.4870
Permit Limit:	0.011	0.019	REPORT	REPORT	100	100	15	10	6.0	9.0	0.5	30	40	-	REPORT
Ratio of long term average to limit	N/A	N/A	-	-	100.0%	100.0%	40.1%	61.5%	78.0%	96.8%	20.0%	14.4%	15.0%	-	-

*reported as LESS than the value listed (< X)
*reported as GREATER than the value listed (> X)

TN0002631 AGC Flat Glass North America, Inc.	Flow, in conduit or thru treatment plant, Effluent Gross Monitoring Location 1, Season ID 0		Oil & Grease, Effluent Gross Monitoring Location 1, Season ID 0		pH, Effluent Gross Monitoring Location 1, Season ID 0		Phosphorus, total [as P], Effluent Gross Monitoring Location 1, Season ID 0		Solids, total suspended, Effluent Gross Monitoring Location 1, Season ID 0	
IMP 01A	Monthly or total (MGD)	Weekly or daily (MGD)	Monthly or total (lb/d)	Weekly or daily (lb/d)	Monthly average or min. (SU)	Daily max. (SU)	Monthly or total (lb/d)	Weekly or daily (lb/d)	Monthly or total (lb/d)	Weekly or daily (lb/d)
03/31/2024	0.0122	0.0201	0.49	0.49	7.6	7.8	0	0	0.21	0.22
02/29/2024	0.01	0.01	0.48	0.51	7.4	8	0	0	0.57	0.65
01/31/2024	0.01	0.01	0.5	0.51	7.5	8.6	0	0	0.37	0.53
12/31/2023	0.01	0.01	0.5	0.51	7.5	7.7	0	0	0.31	0.42
11/30/2023	0.0095	0.01	0.48	0.49	7.8	8.4	0	0	0.21	0.21
10/31/2023	0.01	0.01	0.5	0.52	7.4	8.3	0	0	0.21	0.21
09/30/2023	0.0095	0.01	0.56	0.64	7.2	7.9	0	0	0.22	0.23
08/31/2023	0.0096	0.01	0.49	0.5	7.8	7.9	0	0	0.24	0.28
07/31/2023	0.0095	0.01	0.52	0.52	7.7	8	0	0	0.21	0.22
06/30/2023	0.0095	0.01	0.61	0.7	8	8.5	0	0	0.31	0.42
05/31/2023	0.0083	0.01	0.47	0.47	7.4	8.2	0	0	0.52	0.83
04/30/2023	0.008	0.01	0.5	0.52	8.2	8.4	0	0	0.21	0.21
03/31/2023	0.0091	0.01	0.49	0.52	8	8.5	0	0	0.21	0.22
02/28/2023	0.0095	0.01	0.51	0.55	7.9	8.1	0	0	0.22	0.23
01/31/2023	0.0086	0.01	0.52	0.52	7.6	8.2	0	0	0.21	0.21
12/31/2022	0.01	0.01	0.51	0.52	7.1	8	0	0	0.22	0.23
11/30/2022	0.01	0.01	0.49	0.52	7.7	8.3	0	0	0.45	0.7
10/31/2022	0.01	0.01	0.54	0.55	7.6	8.3	0	0	0.25	0.28
09/30/2022	0.0082	0.01	0.57	0.61	7.9	8.2	0	0	0.21	0.21
08/31/2022	0.01	0.01	0.54	0.56	8.4	8.4	0	0	0.21	0.22
07/31/2022	0.009	0.01	0.52	0.6	7.6	8.6	0	0	0.21	0.21
06/30/2022	0.0089	0.01	0.51	0.52	8	8.4	0	0	0.21	0.21
05/31/2022	0.01	0.01	0.52	0.56	7.9	8.6	0	0	0.21	0.21
04/30/2022	0.0089	0.01	0.51	0.52	7.9	8.5	0	0	0.21	0.21
03/31/2022	0.0096	0.01	0.46	0.49	7.3	8.3	0	0	0.29	0.37
02/28/2022	0.008	0.01	0.48	0.49	7.9	8.4	0	0	0.21	0.21
01/31/2022	0.0095	0.01	0.48	0.49	7.5	8.7	0	0	0.27	0.27
12/31/2021	0.0096	0.01	0.46	0.46	6.7	7.7	0	0	0.34	0.47
11/30/2021	0.0086	0.01	0.46	0.46	6.7	8.8	0	0	5.4	10.59
10/31/2021	0.0095	0.01	0.46	0.46	6.9	8.2	0	0	0.21	0.21
09/30/2021	0.0096	0.01	0.46	0.46	6	8.3	0	0	0.21	0.21
08/31/2021	0.0095	0.01	0.48	0.49	7.2	8.4	0	0	0.21	0.21
07/31/2021	0.01	0.01	0.51	0.52	7.8	8.5	0	0	0.21	0.21
06/30/2021	0.01	0.01	0.48	0.49	7.8	8.3	0	0	0.21	0.21
05/31/2021	0.0086	0.01	0.45	0.46	8.2	8.3	0	0	1.26	2.32
04/30/2021	0.01	0.01	0.47	0.47	7.8	8.2	0	0	0.29	0.32
03/31/2021	0.01	0.01	0.46	0.46	7.5	8.3	0	0	0.46	0.58
02/28/2021	0.0096	0.021	0.47	0.49	7.9	8.3	0	0	0.84	0.96
01/31/2021	0.009	0.01	0.46	0.46	8	8.3	0	0	0.26	0.32
12/31/2020	0.0096	0.01	0.46	0.47	8	8.6	0	0	0.42	0.47
11/30/2020	0.0095	0.01	0.48	0.52	7.8	8.3	0	0	0.25	0.3
10/31/2020	0.01	0.01	0.47	0.47	8.2	8.4	0	0	0.21	0.21
09/30/2020	0.01	0.01	0.46	0.46	7.8	8.4	0	0	0.21	0.21
08/31/2020	0.01	0.01	0.5	0.51	8.1	8.3	0	0	0.21	0.21
07/31/2020	0.01	0.01	0.5	0.52	7.9	8.2	0	0	0.21	0.21
06/30/2020	0.0091	0.01	0.49	0.51	8.2	8.4	0	0	0.21	0.21
05/31/2020	0.0086	0.01	0.48	0.49	8	8.2	0	0	0.21	0.21
04/30/2020	0.0077	0.01	0.49	0.49	7.8	8.2	0	0	0.21	0.21
03/31/2020	0.01	0.01	0.49	0.52	7.9	8.2	0	0	0.21	0.21
02/29/2020	0.01	0.01	0.47	0.47	7.9	8.2	0	0	0.22	0.22
01/31/2020	0.0096	0.01	0.46	0.46	7.9	8.2	0	0	0.21	0.21
12/31/2019	0.01	0.01	0.49	0.55	8	8.1	0	0	0.22	0.22
11/30/2019	0.01	0.01	0.5	0.54	7.9	8.1	0	0	0.22	0.23
10/31/2019	0.0096	0.01	0.47	0.47	8	8.2	0	0	0.21	0.21
Std. dev.	**0.00073**	**0.00201**	**0.03088**	**0.04744**	**0.43241**	**0.22918**	**0**	**0**	**0.71841**	**1.43156**
Min:	**0.0077**	**0.010**	**0.450**	**0.46**	**6.00**	**7.70**	**0**	**0**	**0.21**	**0.21**
Max:	**0.0122**	**0.021**	**0.610**	**0.70**	**8.40**	**8.80**	**0**	**0**	**5.40**	**10.59**
Count:	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**
Average:	**0.0095**	**0.0104**	**0.4922**	**0.5098**	**7.6981**	**8.2741**	**0**	**0**	**0.3798**	**0.5291**
Permit Limit:	**REPORT**	**REPORT**	**18.35**	**18.35**	**6**	**9**	**0.12**	**0.12**	**33.48**	**50.45**
Ratio of long term average to limit	-	-	**2.7%**	**2.8%**	**77.9%**	**91.9%**	**0.0%**	**0.0%**	**1.1%**	**1.0%**

*reported as less than the value listed (< x)

TN0002631 AGC Flat Glass North America, Inc.	BOD, 5-day, 20 deg. C, Effluent - (All Year)			Chlorine, total residual, Effluent - (All Year)	E. coli, Effluent - (All Year)			Flow, in conduit or thru treatment plant, Effluent - (All Year)		Oxygen, dissolved [DO], Effluent - (All Year)	pH, Effluent - (All Year)		Solids, settleable, Effluent - (All Year)	Solids, total suspended, Effluent - (All Year)		
IMP 002	Weekly average or geo. mean (mg/L)	Daily max. (mg/L)	Percent exceedance	Daily max. (mg/L)	Weekly average or geo. mean (MPN/100mL)	Daily max. (MPN/100mL)	Percent exceedance	Monthly or total (MGD)	Weekly or daily (MGD)	Monthly average or min. (mg/L)	Monthly average or min. (SU)	Daily max. (SU)	Daily max. (mL/L)	Weekly average or geo. mean (mg/L)	Daily max. (mg/L)	Percent exceedance
03/31/2024	4	5		0.46	91	1733	84	0.016	0.034	6.6	6.6	7.1	0.1	16	17	
02/29/2024	5	5		0.41	NODI B	NODI B		0.017	0.039	6.1	6.3	7	0.1	15	15	
01/31/2024	18	33		0.48	4	18		0.013	0.038	6.3	6.3	8	0.1	27	39	
12/31/2023	4	4		0.49	4	5		0.014	0.031	6.1	6	7.2	0.1	25	39	
11/30/2023	7	10		0.3	19	123		0.015	0.023	6	6.3	6.8	0.1	35	36	17
10/31/2023	4	4		0.33	33	56		0.016	0.02	5.3	6.3	7	0.1	7	11	
09/30/2023	4	4		0.27	30	33		0.014	0.021	5.9	6.3	7	0.1	9	13	
08/31/2023	3	3		0.24	18	22		0.021	0.059	4.8	6.4	7.3	0.1	7	9	
07/31/2023	3	3		0.4	94	140		0.015	0.032	5.5	6.1	7.2	0.1	7	9	
06/30/2023	4	5		0.45	37	70		0.013	0.03	5.2	6.6	7.1	0.1	10	11	
05/31/2023	4	4		0.31	6	12		0.015	0.022	6.4	6.5	7.2	0.1	5	8	
04/30/2023	3	3		0.29	52	109		0.017	0.031	7.3	7	7.6	0.1	4	4	
03/31/2023	6	7		0.45	10	15		0.018	0.051	7.5	6.7	7.3	0.1	3	3	
02/28/2023	3	3		0.26	1	1		0.02	0.046	7.6	6.7	7.3	0.1	3	3	
01/31/2023	5	6		0.47	8	12		0.025	0.037	7.2	6.6	8.7	0.1	10	10	
12/31/2022	3	3		0.38	4	12		0.024	0.054	8.2	6.5	7.2	0.1	6	6	
11/30/2022	8	12		0.41	7	8		0.022	0.035	8.3	6.6	7.1	0.1	5	6	
10/31/2022	3	3		0.41	21	33		0.02	0.025	5.6	6.6	8.2	0.1	4	5	
09/30/2022	4	4		0.42	3	5		0.024	0.037	6.1	7	7.6	0.1	6	7	
08/31/2022	4	5		0.3	30	57		0.027	0.039	6.8	7	7.9	0.1	16	23	
07/31/2022	3	3		0.42	4	8		0.024	0.037	6.5	6.9	7.5	0.1	3	4	
06/30/2022	4	4		0.42	2	4		0.022	0.026	6.4	7	7.6	0.1	3	3	
05/31/2022	18	49	9	0.48	108	> 2419	99999	0.022	0.043	5	7	7.7	0.1	25	79	76
04/30/2022	24	24		0.45	8	9		0.011	0.015	6.5	6.8	7.4	0.1	17	18	
03/31/2022	4	5		0.47	1	1		0.009	0.018	6.6	6.6	7.6	0.1	9	10	
02/28/2022	3	3		0.42	4	15		0.012	0.03	6.9	6.6	7.9	0.1	25	47	4
01/31/2022	3	3		0.47	1	1		0.007	0.018	7.1	7.1	7.7	0.1	9	11	
12/31/2021	3	3		0.43	1	1		0.004	0.006	8.8	6.8	7.7	0.1	2	2	
11/30/2021	3	3		0.43	9	91		0.009	0.018	7.4	6.3	7.1	0.1	14	20	
10/31/2021	3	3		0.45	50	313		0.01	0.014	5.9	6.6	7.6	0.1	9	10	
09/30/2021	3	3		0.4	18	28		0.01	0.028	5.3	6.9	7.9	0.1	6	8	
08/31/2021	3	3		0.43	117	125		0.014	0.036	5.2	6.7	7.7	0.1	20	22	
07/31/2021	3	3		0.46	47	199		0.012	0.018	5.1	6.3	7.8	0.1	11	14	
06/30/2021	3	3		0.42	12	72		0.013	0.019	5.8	6.9	7.5	0.1	23	31	
05/31/2021	3	3		0.45	67	70		0.008	0.015	7.1	6.8	7.4	0.1	3	4	
04/30/2021	3	3		0.47	3	10		0.01	0.022	7	6.9	7.4	0.1	4	5	
03/31/2021	3	3		0.4	8	57		0.014	0.031	5.6	6.5	7.4	0.1	6	8	
02/28/2021	3	3		0.42	2	4		0.011	0.021	6.3	6.5	7.4	0.1	15	16	
01/31/2021	3	3		0.45	2	3		0.008	0.027	6.1	6.6	7.6	0.1	6	7	
12/31/2020	3	3		0.43	69	101		0.009	0.012	4.9	7	7.6	0.1	7	8	
11/30/2020	3	3		0.43	80	161		0.009	0.02	5.8	7	7.6	0.1	10	10	
10/31/2020	4	4		0.47	15	236		0.012	0.033	5.7	7	7.6	0.1	11	14	
09/30/2020	3	3		0.42	12	77		0.013	0.024	5.9	7	7.5	0.1	10	16	
08/31/2020	3	3		0.41	68	140		0.012	0.016	6.3	7	7.5	0.1	5	7	
07/31/2020	3	3		0.42	1	1		0.01	0.019	5.1	7	7.4	0.1	4	6	
06/30/2020	3	4		0.43	5	29		0.011	0.016	6.6	6.8	7.4	0.1	6	6	
05/31/2020	3	3		0.4	66	104		0.01	0.017	6	6.8	7.6	0.1	7	8	
04/30/2020	3	3		0.4	29	74		0.013	0.024	6.5	7.2	7.5	0.1	4	5	
03/31/2020	3	3		0.5	2	5		0.021	0.038	6.1	6.9	7.5	0.1	3	4	
02/29/2020	3	3		0.4	1	2		0.027	0.08	5.6	7	7.4	0.1	2	2	
01/31/2020	4	5		0.4	6	33		0.018	0.034	5.9	7.1	7.5	0.1	3	3	
12/31/2019	4	5		0.4	1	1		0.011	0.021	6.5	7	7.5	0.1	3	3	
11/30/2019	4	4		0.4	1	1		0.012	0.023	5.9	6.9	7.6	0.1	3	3	
10/31/2019	3	4		0.5	55	88		0.012	0.021	5	7.2	7.6	0.1	4	6	
Std. dev.	**3.9846**	**7.850**	**-**	**0.0608**	**31.3193**	**242.1355**	**-**	**0.0055**	**0.0131**	**0.8872**	**0.2933**	**0.3211**	**0**	**7.5704**	**13.6857**	**-**
Min:	**3.0**	**3.0**	**-**	**0.24**	**1.0**	**1.0**	**-**	**0**	**0.01**	**4.80**	**6.00**	**6.80**	**0.10**	**2.0**	**2.0**	**-**
Max:	**24.0**	**49.0**	**-**	**0.50**	**117.0**	**1733.0**	**-**	**0.03**	**0.08**	**8.80**	**7.20**	**8.70**	**0.10**	**35.0**	**79.0**	**-**
Count:	**54**	**54**	**-**	**54**	**53**	**52**	**-**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**-**
Average:	**4.50**	**5.67**	**-**	**0.41**	**25.42**	**87.08**	**-**	**0.01**	**0.03**	**6.24**	**6.72**	**7.49**	**0.10**	**9.48**	**12.85**	**-**
Permit Limit:	**30**	**45**	**-**	**0.5**	**126**	**941**	**-**	**REPORT**	**REPORT**	**2**	**6**	**9**	**0.5**	**30**	**45**	**-**
Ratio of long term average to limit	**15.0%**	**12.6%**	**-**	**82.5%**	**20.2%**	**9.3%**	**-**	**-**	**-**	**312.2%**	**89.2%**	**83.2%**	**20.0%**	**31.6%**	**28.6%**	**-**

*reported as less than the value listed (< x)

TN0002631 AGC Flat Glass North America, Inc.	Flow, in conduit or thru treatment plant, Effluent - (All Year)		Oil & Grease, Effluent - (All Year)		pH, Effluent - (All Year)		Solids, total suspended, Effluent - (All Year)	
IMP 005	Monthly or total (MGD)	Weekly or daily (MGD)	Monthly or total (lb/d)	Weekly or daily (lb/d)	Monthly average or min. (SU)	Daily max. (SU)	Monthly or total (lb/d)	Weekly or daily (lb/d)
03/31/2024	0.046	0.0568	1.6	2.3	7.5	7.8	0.7	1
02/29/2024	0.0332	0.0568	1	1	7.1	7.6	0.4	0.4
01/31/2024	0.0294	0.0568	1.1	1.8	6.9	7.8	0.5	0.8
12/31/2023	0.0347	0.0568	2.8	3	6.8	7.7	1.7	2.2
11/30/2023	0.044	0.0823	0.8	1	7.5	7.9	0.3	0.4
10/31/2023	0.0387	0.0823	2.9	3	7.5	7.9	1.3	1.4
09/30/2023	0.0441	0.0721	1	1.1	6.9	7.6	0.4	0.4
08/31/2023	0.0369	0.0823	1.9	2.8	7.7	9	0.8	1.2
07/31/2023	0.0369	0.0823	0.7	1	7.7	9	0.3	0.4
06/30/2023	0.0379	0.0568	2.2	2.8	7.8	7.8	1	1.2
05/31/2023	0.037	0.0568	2.8	2.9	7.8	8.4	1.2	1.2
04/30/2023	0.0332	0.0568	1.4	1.8	7.5	7.9	0.6	0.8
03/31/2023	0.0328	0.0568	1.7	2.5	7.9	8.5	2.3	4.1
02/28/2023	0.0367	0.0721	1.5	2.7	7.8	8.5	0.7	1.2
01/31/2023	0.0427	0.0823	2	3	7.5	8	0.8	1.2
12/31/2022	0.0527	0.1137	3.3	4.1	7.8	8.6	1.6	2.1
11/30/2022	0.0634	0.1137	2.4	3.8	7.7	8	1.1	1.7
10/31/2022	0.0748	0.1137	3.5	= 4.3	7.8	8.3	1.5	1.7
09/30/2022	0.0557	0.0823	3.9	4	7.8	8.6	1.7	1.7
08/31/2022	0.0361	0.0823	2.3	3	8.3	8.8	4.3	7.3
07/31/2022	0.0416	0.1137	1.9	2.8	7.5	8.2	0.8	1.2
06/30/2022	0.0255	0.0568	0.9	1	6.9	8.3	0.8	1.2
05/31/2022	0.0326	0.0568	2.4	2.5	7.9	8.4	1	1
04/30/2022	0.041	0.0823	1.9	2.7	8	8.5	0.8	1.2
03/31/2022	0.029	0.0568	0.7	1	7.7	8.4	0.3	0.4
02/28/2022	0.033	0.0823	0.7	1	8.2	8.6	0.3	0.4
01/31/2022	0.053	0.1137	5.7	6.3	7.7	8.4	2.4	2.4
12/31/2021	0.1137	0.1137	6.1	6.3	7.6	8.5	2.4	2.4
11/30/2021	0.1137	0.1137	5.3	5.3	7.2	8.1	2.4	2.4
10/31/2021	0.1137	0.1137	5.8	5.9	7.4	7.8	3.6	4.7
09/30/2021	0.1132	0.1137	5.3	5.3	7.5	8.1	2.4	2.4
08/31/2021	0.1122	0.1137	5.1	5.3	7.7	8.6	2.4	2.4
07/31/2021	0.1137	0.1137	5.4	5.6	6.5	8.3	2.4	2.4
06/30/2021	0.1137	0.1137	5.3	5.3	7.6	8.2	2.4	2.4
05/31/2021	0.1137	0.1137	5.4	5.6	8.2	8.5	2.4	2.4
04/30/2021	0.1092	0.1137	5.4	5.6	7.9	8.2	2.3	2.4
03/31/2021	0.0864	0.1012	3.2	5	7.4	8.6	1.4	2.1
02/28/2021	0.0648	0.1012	5.1	5.3	7.1	8.5	2.9	3.2
01/31/2021	0.1018	0.1137	4.7	4.7	8.1	8.5	2.2	2.3
12/31/2020	0.087	0.1137	4.6	4.7	7.7	8.8	2.2	2.4
11/30/2020	0.062	0.1012	2.5	3.3	7.8	8.5	1.9	3
10/31/2020	0.0275	0.0568	2.3	2.9	7.2	8.5	1	1.3
09/30/2020	0.0419	0.0568	2	3	7.7	8	1	2
08/31/2020	0.0279	0.0568	1.4	1.7	6.8	8.3	1.7	3
07/31/2020	0.014	0.0201	0.5	0.6	7.4	9	0.2	0.2
06/30/2020	0.0141	0.0367	0.4	0.5	6	8	0.6	1.1
05/31/2020	0.019	0.0568	1.3	1.6	7.6	8.4	1.8	2.9
04/30/2020	0.0133	0.0568	0.4	0.4	5.9	8.3	0.2	0.2
03/31/2020	0.0079	0.0367	0.3	0.3	7.3	8.3	0.2	0.2
02/29/2020	0.0088	0.0201	0.6	0.9	4.9	8.4	0.3	0.4
01/31/2020	0.0127	0.0568	1.8	3.3	6	7.9	2.5	4.9
12/31/2019	0.0428	0.0823	3.8	3.9	6.8	8.8	1.8	1.9
11/30/2019	0.0569	0.0823	2.4	3	7.4	8.1	1	1.2
10/31/2019	0.0376	0.0568	1.73	1.76	7.1	8	0.76	0.76
Std. dev.	**0.03296**	**0.02758**	**1.75144**	**1.74219**	**0.63146**	**0.35463**	**0.94257**	**1.33021**
Min:	**0.01**	**0.02**	**0.3**	**0.3**	**4.9**	**7.6**	**0.2**	**0.2**
Max:	**0.11**	**0.11**	**6.1**	**6.3**	**8.3**	**9.0**	**4.3**	**7.3**
Count:	**54**	**54**	**54**	**53**	**54**	**54**	**54**	**54**
Average:	**0.0527**	**0.0798**	**2.6506**	**3.0558**	**7.3889**	**8.2907**	**1.4067**	**1.7993**
Permit Limit:	**REPORT**	**REPORT**	**19.4**	**19.4**	**6**	**9**	**9.7**	**9.7**
Ratio of long term average to limit	-	-	**13.7%**	**15.8%**	**81.2%**	**92.1%**	**14.5%**	**18.5%**

*reported as less than the value listed (< x)

Violations Report Summary

NPDES ID(s): 0002631;TN0002631
State: TN
Major/Minor Indicator:
Violation Date: 10/01/2019 - 04/18/2024
Violation Type(s):

Environmental Protection Agency
Integrated Compliance Information System
Violations Report

Created Date: 09/15/2010
Refresh Date: 04/18/2024
Report Version 1.5, Modified: 1/4/2017

TN0002631

Permittee Name: AGC Flat Glass North America, Inc.
Permittee Address: 600 AFG Road, Church Hill, TN 37642
Major/Minor Indicator: Minor
Compliance Track. Status: On
DMR Non Receipt Flag: On
RNC Tracking Flag: On

Primary SIC Code: 3211
Primary SIC Desc: Flat Glass
Primary NAICS Code:
Primary NAICS Desc:
Cognizant Official:
Cognizant Offcl. Ph.:
Receiving Body: Holston

Permit Issued: 09/09/2019
Permit Effective: 10/01/2019
Permit Expired: 09/30/2024
Permit Status: Effective

Facility Information

Facility Name: AGC FLAT GLASS NORTH AMERICA, INC. - GREENLAND PLANT
Facility Location: 600 AFG ROAD, CHURCH HILL, TN 37642

County: Hawkins
Region: 04
State-Region:

FRS ID: 110000546080
Federal Facility Ownership: N
Type of Ownership: Privately Owned Facility

DMR Non-Receipt Violations

Violation Code	Monitoring Period End Date	DMR Due Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	DMR Value	NODI Code	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date	DMR Val. Rec Date
D90	12/31/2021	01/15/2022	004-G	00400 - pH	1	0	C1				03/18/2022
D90	12/31/2021	01/15/2022	004-G	00400 - pH	1	0	C3		K 02/15/2022	2 03/18/2022	03/18/2022
D90	12/31/2021	01/15/2022	004-G	00530 - Solids, total suspended	1	0	C2		N 02/15/2022	2 03/18/2022	03/18/2022
D80	12/31/2021	01/15/2022	004-G	50050 - Flow, in conduit or thru treatment plant	1	0	Q1		N 02/15/2022	2 03/18/2022	03/18/2022
D80	12/31/2021	01/15/2022	004-G	50050 - Flow, in conduit or thru treatment plant	1	0	Q2		K 02/15/2022	2 03/18/2022	03/18/2022
D90	08/31/2021	09/15/2021	004-G	00400 - pH	1	0	C1				10/27/2021

Effluent Violations

Violation Code	Monitoring Period End Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	SNC Group	EA Identifier	Value Type/ Stat. Base	Reported Value/Units	% Exceed.	Limit Value/ Units	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
E90	03/31/2024	002-G	51040 - E. coli	1	0			C3	1,733	84%	<=941		
E90	11/30/2023	002-G	00530 - Solids, total suspended	1	0	1		C2 MO AVG	35 mg/l	17%	<=30 mg/l		
E90	05/31/2022	002-G	00310 - BOD, 5-day, 20 deg. C	1	0	1		C3 DAILY MX	49 mg/l	9%	<=45 mg/l		

DMR Non-Receipt Violations: Asterisks around a NODI Code (e.g. **X**) indicate the NODI code will not automatically resolve RNC.
Schedule Violations: Schedule Type P - Permit, A - Administrative, J - Judicial

NPDES ID(s): 0002631;TN0002631
State: TN
Major/Minor Indicator:
Violation Date: 10/01/2019 - 04/18/2024
Violation Type(s):

Environmental Protection Agency
Integrated Compliance Information System
Violations Report

Created Date: 09/15/2010
Refresh Date: 04/18/2024
Report Version 1.5, Modified: 1/4/2017

TN0002631

Effluent Violations

Violation Code	Monitoring Period End Date	Limit Set	Parameter	Mon. Loc.	Seas. ID	SNC Group	EA Identifier	Value Type/ Stat. Base	Reported Value/Units	% Exceed.	Limit Value/ Units	RNC Det. Code/ RNC Det. Date	RNC Res. Code/ RNC Res. Date
E90	05/31/2022	002-G	00530 - Solids, total suspended	1	0	1		C3 DAILY MX	79 mg/l	76%	<=45 mg/l		
E90	05/31/2022	002-G	51040 - E. coli	1	0			C3	>2,419	99,999%	<=941		
E90	04/30/2022	004-G	00400 - pH	1	0			C3	9.3		<=9		
E90	02/28/2022	002-G	00530 - Solids, total suspended	1	0	1		C3 DAILY MX	47 mg/l	4%	<=45 mg/l		
E90	10/31/2021	004-G	00530 - Solids, total suspended	1	0	1		C2 MO AVG	50 mg/l	67%	<=30 mg/l		
E90	10/31/2021	004-G	00530 - Solids, total suspended	1	0	1		C3 DAILY MX	98 mg/l	145%	<=40 mg/l		
E90	08/31/2021	004-G	00400 - pH	1	0			C1	1.2		>=6		
E90	04/30/2020	005-G	00400 - pH	1	0			C1	5.9		>=6		
E90	02/29/2020	005-G	00400 - pH	1	0			C1	4.9		>=6		

DMR Non-Receipt Violations: Asterisks around a NODI Code (e.g. **X**) indicate the NODI code will not automatically resolve RNC.
Schedule Violations: Schedule Type P - Permit, A - Administrative, J - Judicial

APPENDIX 3 – APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

40 CFR PART 426

SUBPART E - FLOAT GLASS MAUFACTURING SUBCATEGORY

	BPT		BAT	
	PART 426.52		PART 426.53	
	MO. AVG.	DAILY MAX.	MO. AVG.	DAILY MAX.
EFFLUENT CHARACTERISTIC	lb/ton product	lb/ton product	lb/ton product	lb/ton product
TSS	0.004	0.004	NA	NA
Oil	0.0028	0.0028	NA	NA
Phosphorus	0.0001	0.0001	0.0001	0.0001
pH	6.0 - 9.0		NA	

40 CFR PART 426

SUBPART F - AUTOMOTIVE GLASS TEMPERING SUBCATEGORY

	BPT		BAT	
	PART 426.62		PART 426.63*	
	MO. AVG.	DAILY MAX.	MO. AVG.	DAILY MAX.
EFFLUENT CHARACTERISTIC	lb/1000 sq ft product	lb/1000 sq ft product	lb/1000 sq ft product	lb/1000 sq ft product
TSS	0.25	0.4	NA	NA
Oil	0.13	0.13	NA	NA
pH	6.0 - 9.0		NA	

* Part 426.63 is reserved

EFFLUENT LIMIT CALCULATIONS

For limits set on a mass basis:

$$\dot{M} \times lim_{BPT} = \dot{m}_{max}$$

Where:

$\dot{M}$ = Daily rate of production [tons/day]
lim_{BPT} = Best Practicable Control Technology limit [lb/ton]
$\dot{m}_{max}$ = Maximum allowable daily load [lb/day]

$$\frac{\dot{m}_{max}}{\dot{Q}} \times 0.12 = cc_{max}$$

Where:

$\dot{Q}$ = Daily flow [MGD]
cc_{max} = Maximum allowable effluent concentration [mg/L]

For limits set on an area basis:

$$\dot{A} \times lim_{BPT} = \dot{m}_{max}$$

Where:

$\dot{A}$ = Daily rate of production [ft^2/day]
lim_{BPT} = Best Practicable Control Technology limit [lb/1060 ft^2]
$\dot{m}_{max}$ = Maximum allowable daily load [lb/day]

Calculation of Effluent Limited Guidelines
IMP 01A, IMP 005, Outfall 004
Cardinal FG Company - Greenland Plant

		Historical Production	Effluent Limitation			
			Monthly Average		Daily Maximum	
		[tons/day]	[lb/ton]	[lb/day]	[lb/1000 lb]	[lb/day]
SUBPART E - FLOAT GLASS MANUFACTURING	TSS	1,300	0.0040	5.2	0.0040	5.2
	Oil	1,300	0.0028	3.64	0.0028	3.6
	Phosphorus	1,300	0.0001	0.13	0.0001	0.13
SUBPART F - AUTOMOTIVE GLASS TEMPERING		(ft^2/day)	[lb/1000ft^2]	[lb/day]	[lb/1000 lb]	[lb/day]
	TSS	113,134	0.25	28.3	0.40	45.3
	Oil	113,134	0.13	14.71	0.13	14.7
SUBPART F - BPJ FOR COATED GLASS MANUFACTURING		(ft^2/day)	[lb/1000ft^2]	[lb/day]	[lb/1000 lb]	[lb/day]
	TSS	193,548	0.05	9.7	0.05	9.7
	Oil	193,548	0.10	19.4	0.10	19.4
	Phosphorus	193,548	0.00	0.0	0.00	0.0
Total Mass	**TSS**			**43.2**		**60.1**
	Oil			**37.7**		**37.7**
	Phosphorus			**0.1**		**0.1**

APPENDIX 4 – FACILITY PRODUCTION, DISCHARGES, AND LOW FLOW DETERMINATION

PRODUCTION		
I.M.P.	**Operation/Product/Material**	**Quantity**
01A	Manufacturing of flat glass using float process	1,300 tons/d
01A	Average total of tempered glass	113,134.32 ft^2/d
005	Average total of coated glass	193,548.39 ft^2/d

SOURCE: NPDES APPLICATION FORM 2C

FACILITY DISCHARGES AND RECEIVING WATERS

OUTFALL 004	
LATITUDE	**LONGITUDE**
36° 29' 00.5345" N	82° 46' 19.1270" W

RECEIVING STREAM DISCHARGE ROUTE
Mile 0.6 of unnamed tributary to mile 126.5 of Holston River

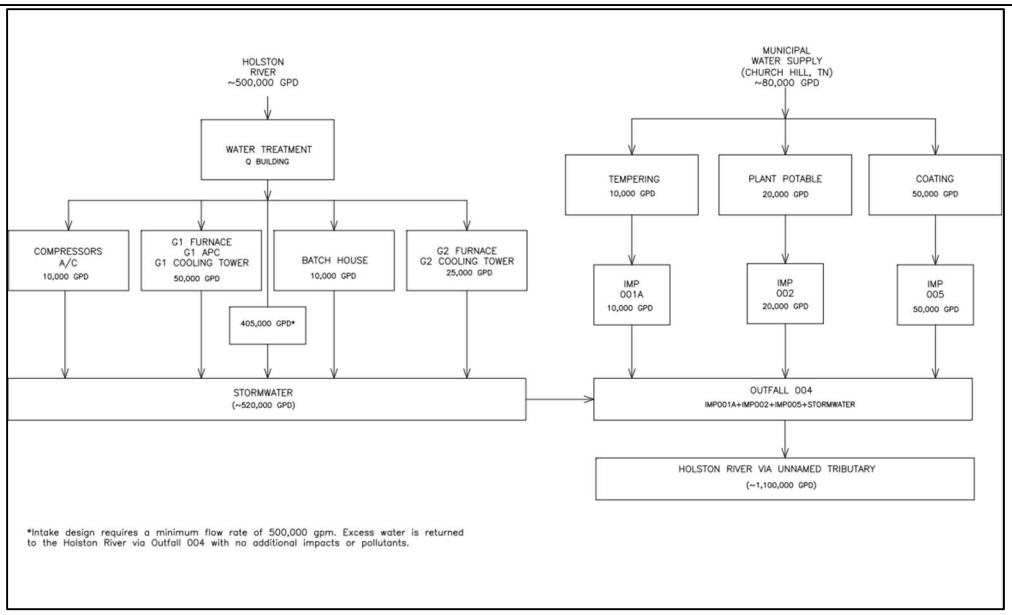
FLOW (MGD)	**DISCHARGE SOURCE**
0.010	01A - Industrial wastewater from tempering washing / float glass process
0.020	002 - Sanitary wastewater from package plant
0.050	005 - Industrial wastewater from coating process
0.075	004 - Non-contact cooling water, cooling tower blowdown
0.405	004 - Excess / unused intake water
0.520	Stormwater (approx. / varies)
1.08	**TOTAL DISCHARGE (OUTFALL 004)**

STREAM LOW FLOW	**7Q10**	**1Q10**	**30Q5**
(CFS)*	0.00	0.00	0.00
(MGD)	0.00	0.00	0.00

STREAM USE CLASSIFICATIONS (WATER QUALITY)				
FISH & AQUATIC LIFE	**RECREATION**	**IRRIGATION**	**LIVESTOCK & WILDLIFE**	**DOMESTIC WATER**
X	X	X	X	
INDUSTRIAL	**NAVIGATION**			

Treatment:
- Domestic Wastewater - Package Plant (activated sludge & chlorine disinfection)
- Non-contact cooling water/cooling tower blowdown - pH adjustment (neutralization)

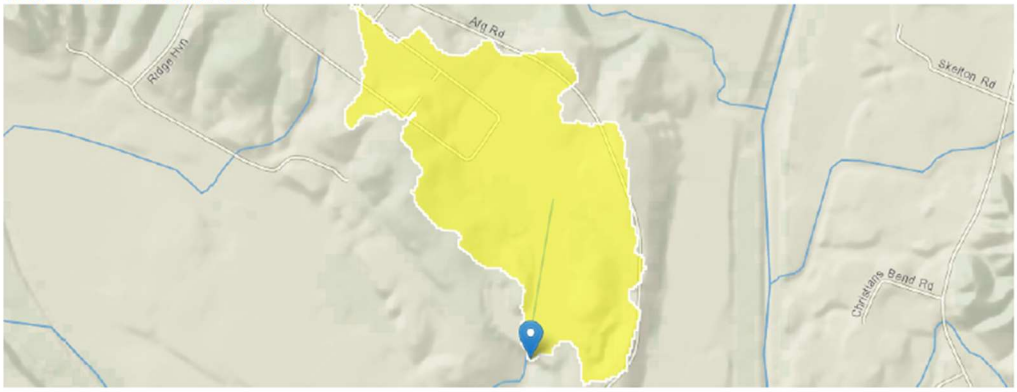
*Reference: Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Sreamflow-chacateristic esimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009-5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159/)



APPENDIX 5 – LOW FLOW DETERMINATION

StreamStats Report

Region ID: TN
Workspace ID: TN20240424200129267000
Clicked Point (Latitude, Longitude): 36.48335, -82.77198
Time: 2024-04-24 15:01:51 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.141	dimensionless
DRNAREA	Area that drains to a point on a stream	0.35	square miles
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	69.004	percent
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	65	days per log cycle
SOILPERM	Average Soil Permeability	1.19	inches per hour

Low-Flow Statistics

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	0.35	square miles	1.3	14441
RECESS	Recession Index	65	days per log cycle	32	175
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.141	dimensionless	2.056	2.46
SOILPERM	Average Soil Permeability	1.19	inches per hour	0.45	9.72
PERMGTE2IN	Percent permeability gte 2 in per hr	69.004	percent	2	100

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

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.0208	ft^3/s
30 Day 5 Year Low Flow	0.0325	ft^3/s

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. (http://pubs.usgs.gov/sir/2009/5159/)

APPENDIX 6 – NEW PERMIT LIMITS

External Outfall, Number: 004 - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00010	Temperature, water deg. C	Report	-	deg C	Grab	2 / Month	Daily Maximum
00400	pH	>= <=	6.0 9.0	SU SU	Grab	5 / Week	Daily Minimum Maximum
00530	Total Suspended Solids (TSS)	Report	-	mg/L	Grab	2 / Month	Daily Maximum
00545	Settleable Solids	<=	0.5	ml/L	Grab	Weekly	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum Monthly Average
50060	Chlorine, total residual (TRC)	<= <=	0.019 0.011	mg/L mg/L	Grab		Daily Maximum Monthly Average
84066	Oil and grease visual	Report	-	Y=1; N=0	Visual	2 / Month	Value
T7P3B	IC25 Sub-Lethal Static Renewal 7 Day Chronic Ceriodaphnia Dubia	>=	100	%	Composite	Annual	Minimum
T7P6C	IC25 Sub-Lethal Static Renewal 7 Day Chronic Pimephales Promelas	>=	100	%	Composite	Annual	Minimum

Internal Monitoring Point, Number: 01A - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>= <=	6.0 9.0	SU SU	Grab	2 / Month	Daily Minimum Maximum
00530	Total Suspended Solids (TSS)	<= <=	50.45 33.48	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
00665	Phosphorus, total (as P)	<= <=	0.13 0.13	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
03582	Oil and grease	<= <=	18.35 18.35	lb/d lb/d	Grab	2 / Month	Daily Maximum Monthly Average
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum Monthly Average

Internal Monitoring Point, Number: 002, Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00300	Oxygen, dissolved (DO)	>=	2.0	mg/L	Grab	5 / Week	Minimum
00310	BOD, 5-day, 20 C	<=	45	mg/L	Grab	2 / Month	Daily Maximum
		<=	30	mg/L			Monthly Average
00400	pH	>=	6.0	SU	Grab	Weekly	Daily Minimum
		<=	9.0	SU			Maximum
00530	Total Suspended Solids (TSS)	<=	45	mg/L	Grab	2 / Month	Daily Maximum
		<=	30	mg/L			Monthly Average
00545	Settleable Solids	<=	0.5	mL/L	Grab	2 / Month	Daily Maximum
50050	Flow	Report	-	MGD	Instantaneous	Weekly	Daily Maximum
			-				Monthly Average
50060	Chlorine, total residual (TRC)	<=	0.5	mg/L	Grab	2 / Month	Daily Maximum
51040	E. coli	<=	410	#/100mL	Grab	2 / Month	Daily Maximum
		<=	126	#/100mL			Monthly Average

Internal Monitoring Point, Number: 005 - Effluent (All Year)							
Code	Parameter	Qualifier	Value	Unit	Sample Type	Monitoring Frequency	Statistical Base
00400	pH	>=	6.0	SU	Grab	2 / Month	Minimum
		<=	9.0	SU			Maximum
00530	Total Suspended Solids (TSS)	<=	9.7	lb/d	Grab	2 / Month	Daily Maximum
		<=	9.7	lb/d			Monthly Average
03582	Oil and grease	<=	19.4	lb/d	Grab	2 / Month	Daily Maximum
		<=	19.4	lb/d			Monthly Average
50050	Flow	Report	-	MGD	Instantaneous	5 / Week	Daily Maximum
							Monthly Average