

HEARING OFFICER'S REPORT

TO: The Honorable Shawn M. Garvin
Cabinet Secretary, Dept. of Natural Resources and Environmental Control

FROM: Lisa A. Vest
Regulatory Specialist, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: **Perdue Foods, LLC's Application to Renew National Pollutant Discharge Elimination System ("NPDES") Permit No. DE 0000469 (State No. WPCC 301F/74) for its poultry processing plant located at 20621 Savannah Road in Georgetown, Sussex County, Delaware**

DATE: November 30, 2020

I. Background:

This Hearing Officer's Report makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control ("DNREC" or "Department") on the draft National Pollutant Discharge Elimination System ("NPDES") permit for Perdue Foods, LLC ("Perdue" or "Applicant") publicly noticed on August 26, 2018. The Applicant seeks to renew its existing NPDES Permit No. DE 0000469 (State No. WPCC 3011F/74), which authorizes Perdue to discharge treated process wastewater, sanitary wastewater, boiler blowdown water, and process area stormwater from Outfall 002 of its poultry processing plant, located at 20621 Savannah Road in Georgetown, Sussex County, Delaware, to Savannah Ditch, a freshwater, non-tidal stream. The permit also authorizes Perdue to discharge stormwater runoff from a grassy non-process area of the Applicant's property from Outfall 004 to a tributary of Savannah Ditch that also runs through the property.

The discharges from both Outfall 002 and Outfall 004, as referenced above, are subject to certain effluent limitations, along with operational, monitoring, and reporting requirements, as set forth in the permit.

The Department has jurisdiction under its State and delegated federal authority, pursuant to 7 *Del.C.* Chapter 60, and the Department's *Regulations Governing the Control of Water Pollution*, 7 DE Admin. Code 7201 ("NPDES Regulations"), to make a determination regarding the draft NPDES Permit regarding this matter. The Applicant's NPDES permit reissuance is subject to the requirements of the NPDES Regulations, as well as Section 402 of the federal *Clean Water Act* (33 U.S.C. 1251) and 7 *Del.C.* Ch. 60.

Perdue's facility is a poultry processing plant that operates a wastewater treatment system, consisting of screening, anaerobic lagoons, activated sludge, chemical precipitation, clarification, and ultraviolet disinfection. Sanitary wastewater is treated in a batch aerobic treatment system and is then pumped to the ultraviolet disinfection unit. The facility has two outfalls that discharge to Savannah Ditch. The discharge from the treatment plant (Outfall 002) consists of treated process wastewater, sanitary wastewater, boiler blowdown, and treated stormwater. The stormwater from a grassed, non-process area (Outfall 004) does not receive any treatment. Savannah Ditch flows down into Ingram Branch, which in turn flows into Diamond Pond. Diamond Pond flows down into Wagamons Pond, and then to the Broadkill River. The Broadkill River then flows down into the Delaware River.

The Applicant's current NPDES permit had an effective date of August 1, 2006, and an expiration date of July 31, 2011. Perdue's application for the renewal of its NPDES permit ("Application") was received by the Department on January 13, 2011. In accordance with the Department's NPDES Regulations, Perdue's existing NPDES permit is considered administratively extended while its Application for renewal is under review. During this review time, all terms and conditions under the existing NPDES permit are considered to be continued and remain fully in effect and enforceable by the Department.

The Department's Division of Water, Surface Water Discharges Section ("SWDS") reviewed Perdue's Application and prepared a Draft NPDES Permit and Fact Sheet, pursuant to Section 6.0 of the Department's NPDES Regulations referenced above. On August 26, 2018, *The News Journal* and the *Delaware State News* published public notices of the Application, the Draft Permit, and the Fact Sheet, which commenced the 30-day public comment period.

On September 24, 2018, the Department received a request for a public hearing from Mr. Keith Steck. Accordingly, by public notices published in the October 24, 2018 *The News Journal* and the *Delaware State News*, and by posting the same on its website, the Department announced that it would hold a public hearing in this matter beginning at 6:00 p.m. on November 27, 2018, at Georgetown Middle School, 301 West Market Street, Georgetown, Delaware. The publication of these public notices also re-opened the public comment period for written comment, which remained open through the conclusion of the public hearing.

Members of the public attended the aforementioned public hearing held on November 27, 2018, with four people offering comments regarding this pending Application at the hearing. The hearing record formally closed for comment at the conclusion of the public hearing. It should be noted that all noticing requirements concerning this matter were met by the Department. Proper notice of the hearing was provided as required by law.

II. SUMMARY OF THE PUBLIC HEARING RECORD:

The public hearing record ("Record") consists of the following documents:

- (1) a verbatim transcript of the public hearing held on November 27, 2018;
- (2) seven documents introduced by Department staff at the aforementioned public hearing, and marked by this Hearing Officer accordingly as "Department Exhibits 1-7";

(3) written comments (including photographs) submitted by Keith Steck, marked by this Hearing Officer as “Steck Exh. #1”;

(4) Photocopies of maps submitted by Ken Haynes in support of his verbal comments given at the hearing, marked by this Hearing Officer as “Ken Haynes Exh. #1”;

(5) Technical Response Memorandum (“TRM”) dated April 11, 2019, from George Mwangi, Engineer IV, of DNREC’s SWDS, NPDES Permitting Branch;

(6) Email dated January 6, 2020 (with attachments) from Gordon Woodrow, SWDS, NPDES Permitting Branch, Program Manager, confirming the Department’s prior recommendations as set forth in the TRM of April 11, 2019 still stand; and

(7) Supplemental email October 14, 2020, also from Mr. Woodrow, which provided updated documentation concerning this permit renewal request.

The Department’s persons primarily responsible for this pending NPDES permit renewal (initially, George Mwangi, as identified above, and John Rebar, the former Program Manager of the NPDES Permitting Branch, who was superseded by Gordon Woodrow, also identified above) with the Department’s Division of Water as noted above, developed the Record with the relevant documents in the Department’s files.

As stated previously, Department staff, representatives of Perdue, and several members of the public attended the public hearing on November 27, 2018. Written and verbal comments were incorporated into the Record at that time. Following the close of the public comment period as noted above, and at the request of this Hearing Officer, the technical experts in the Department’s Division of Water, SWDS, provided its TRM, dated April 11, 2019, in response to the public concerns received by the Department at the time of the hearing. Additional emails subsequently provided by Mr. Woodrow (see Exhibits #6 and #7 above) confirmed that the prior recommendations of the Department continue to stand at this time.

The Department's TRM provides a summary of the public comments received by the Department in this matter, specifically responds to each concern, and offers conclusions and recommendations with regard to the issuance of Perdue's NPDES permit renewal for the benefit of the Record generated in this matter. It does not, however, address those comments that pertain to matters outside the permitting authority of the SWDS, nor is it responsive to any comments not specifically related to this Application.

I find that the Department's TRM offers a thorough and detailed review of all aspects of the pending Application, addresses those concerns germane to the subject matter of the aforementioned public hearing, and responds to them in a balanced manner, accurately reflecting the information contained in the Record. Thus, the Department's TRM, along with the supplemental email documentation provided by Mr. Woodrow as noted above, are attached hereto as Appendices A-C respectively, and are expressly incorporated herein as such.

III. RECOMMENDED FINDINGS AND CONCLUSIONS:

Currently pending before the Department is the Application submitted by Perdue for renewal of its existing NPDES Permit No. DE 0000469 (State No. WPCC 3011F/74), which authorizes Perdue to (1) discharge treated process wastewater, sanitary wastewater, boiler blowdown water, and process area stormwater from Outfall 002 at its poultry processing plant located at 20621 Savannah Road in Georgetown, Delaware to Savannah Ditch, a freshwater, non-tidal stream; and (2) discharge stormwater runoff from a grassy non-process area at Outfall 004 at the aforementioned property. As stated previously, the discharges referenced above are subject to certain effluent limitations, along with operational, monitoring, and reporting requirements, as set forth in the permit. Furthermore, the NPDES permit itself is governed by both state and federal *Clean Water Act* laws and regulations.

I find that Perdue currently requires a renewal of its existing NPDES permit, as referenced above. I further find that the above-described discharges from both Outfall 002 and Outfall 004 at the Applicant's processing plant in Georgetown, Delaware are subject to various state and federal regulatory requirements, including, but not limited to, Section 6.0 of the *Regulations Governing the Control of Water Pollution*, 7 DE Admin. Code 7201, and as provided for under Delaware law in 7 *Del.C.* Ch. 60.

In its renewal Application, Perdue (1) proposed to work with the Department to develop a reasonable schedule of compliance for total nitrogen and phosphorus limits; and (2) requested the Department to consider elimination of monitoring and limits for aluminum, copper and zinc if the same do not prove to be toxic. In reviewing the applicable statutes and regulations, as well as weighing public benefits against potential detriments, the Department's experts in the SWDS have concluded that Perdue's Application complies with all applicable federal and state laws and regulations. Additionally, the Department's TRM states that no information presented during the November 27, 2018 hearing demonstrated the Application as deficient. Furthermore, the supplemental emails from Mr. Woodrow, as detailed above, confirm for the benefit of the Record that the recommendations as set forth in the Department's TRM still stand.

The Department's SWDS recommends the reissuance of the NPDES Permit No. DE 0000469 (State No. WPCC 3011F/74) to Perdue Foods, Inc., in accordance with its January 13, 2011 NPDES permit application for renewal, with the following changes:

1. Implementation of a 12-month cumulative average annual load limit for Total Nitrogen ("TN"), based on the TMDL for the Broadkill River Watershed.
2. Implementation of a daily average TN load limit during the months of May through September, based on the TMDL for the Broadkill River Watershed.
3. Implementation of a daily average load limit for Biological Oxygen Demand ("BODs"), Total Phosphorus ("TP"), and Ammonia, based on the TMDL for the Broadkill River Watershed.

4. Addition of a “Schedule of Compliance” to Part I, Section C of the Permit, requiring the Permittee to comply with the final effluent limitations and monitoring requirements for TN, TP, and Ammonia, no later than fifty-nine (59) months after the effective date of the Permit.
5. Revision of “Reporting” in Part I, Section D.2 of the Permit, requiring the Permittee to submit results via the Department-approved Electronically Generated Discharge Monitoring Report (“eDMR”).
6. Addition of a standard condition in Part II, Section A.2 of the Permit, “Notifications Specific to Manufacturing, Commercial, Mining, and Silvicultural Dischargers.”
7. Addition of a limit for “Whole Effluent Toxicity” and a thirty-six (36) month compliance schedule for achieving compliance with the new limit.
8. Removal of zinc limits.
9. Addition of new copper limits, based on the new Biotic Ligand Model (“BLM”).
10. Amendment of Special Condition No. 8 regarding the Stormwater Plan, to now include the Broadkill TMDL requirements.
11. Addition of Special Condition No. 11, pursuant to 40 CFR Part 136, to ensure the use of EPA-approved analytical methods capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits.
12. Addition of Special Condition No. 12, which requires monitoring copper BLM parameters and performing a reasonable potential analysis for copper.

In addition to the above permit changes, the Department has revised the Receiving Stream Classification section of the Fact Sheet, now noting that Savannah Ditch discharges to Ingrams Branch, which discharges to Diamond Pond, then into Wagamons Pond, and finally into the Broadkill River, which empties into Zone 6 of the Delaware River. The Department further notes that the designated uses for the Broadkill River Watershed are Industrial Water Supply, Primary Contact Recreation, Secondary Contact Recreation, Maintenance of Fish, Aquatic Life and Wildlife, and Agricultural Water Supply, and that these uses apply to all waterbodies in the watershed, including Ingram Branch, Diamond Pond, Wagamonds Pond, and Broadkill River.

In 7 *Del.C.* §6001(c)(3), the General Assembly’s purpose of providing a program for the protection and conservation of the water resources of the State, for public recreational purposes, and for the conservation of wildlife and aquatic life is stated. In 7 *Del.C.* §6001(a)(2), the General Assembly finds that the development and utilization of water resources must be regulated to ensure that the water resources of the State are employed for beneficial uses and not wasted. Reissuance of Perdue’s NPDES permit will update the permit to reflect existing requirements of state and federal law.

Based on the Record developed, I find and conclude that the Department has provided appropriate reasoning regarding the renewal of Perdue’s NPDES permit, as noted above, and that the Record supports the issuance of the same.

Accordingly, I recommend the Department’s issuance of the renewal of NPDES Permit No. DE 0000469 (State Number WPCC 3011F/74) to Perdue Foods, LLC, in accordance with the Application, as presented by SWDS, in the customary manner provided by law, and with appropriate conditions.

Further, I recommend the Secretary adopt the following findings and conclusions:

1. The Department has the statutory basis and legal authority to act with regard to the renewal of Perdue’s NPDES Permit, under its state and delegated federal authority, and pursuant to 7 *Del.C.* Chapter 60, to make a determination regarding the draft NPDES Permit;

2. The Applicant’s NPDES permit reissuance is subject to the requirements of Delaware’s *Regulations Governing the Control of Water Pollution* (7 DE Admin. Code 7201, Section 6.0), Section 402 of the federal *Clean Water Act* (33 U.S.C. 1251), and 7 *Del.C.* Chapter 60;

3. The Department provided adequate public notice of the Application, and of all proceedings in a manner as required by the law and regulations. The Department also provided the public with an adequate opportunity to offer comment to be submitted into the Record, and considered all public input before making any final decision in this matter;

4. The Department has carefully considered the factors required to be weighed with regard to the renewal of Perdue's NPDES Permit, and finds that the Record supports issuance of the same;

5. The draft NPDES Permit meets the applicable state and federal requirements, and includes reasonable conditions intended to protect Delaware's environment and public health, as referenced above;

6. Further, the Department has an adequate Record for its decision, and no further public hearing is appropriate or necessary; and

7. The Department shall serve and publish its Order on its internet site.

/s/Lisa A. Vest
LISA A. VEST
Public Hearing Officer

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Attachments/Appendix:
Appendix A: SWDS TRM (04/11/2019)
Appendix B: G. Woodrow Email w/attachments (01/06/2020)
Appendix C: G. Woodrow Email w/attachments (10/14/2020)



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MEMORANDUM

TO: Lisa Vest, Hearing Officer, Office of the Secretary

THROUGH: Virgil Holmes, Director, Division of Water (DW) *VH 5/6/19*
Jennifer Roushey, Program Administrator, DW *JR*
Bryan Ashby, Program Manager II, Surface Water Discharge Section (SWDS) *BAA 4/11/19*
John Rebar Jr., Program Manager I, SWDS, NPDES Permitting Branch *JR 4/11/19*

FROM: George Mwangi, Engineer IV, SWDS, NPDES Permitting Branch *GM*

RE: **Technical Response Memorandum Regarding the November 27, 2018 Public Hearing on the National Pollutant Discharge System (NPDES) Permit Reissuance Application for Perdue Foods, LLC**

DATE: April 11, 2019

This Technical Response Memorandum (TRM) was prepared at the request of the presiding hearing officer to assist in the completion of the Hearing Officer's Report to the Secretary of the Department of Natural Resources and Environmental Control (the Department) and the final decision on the reissuance of NPDES Permit No. DE 0000469 (State Number WPCC 3011G/74).

On January 13, 2011, the Department's Division of Water, Surface Water Discharges Section (SWDS), received a NPDES permit application from Perdue Foods, LLC (Perdue) to renew their existing NPDES Permit No. DE 0000469 (State Number WPCC 3011F/74). The permit authorizes Perdue to discharge (from Outfall 002) treated process wastewater, sanitary wastewater, boiler blowdown water, and process area storm water from its poultry processing plant (located at 20621 Savannah Road in Georgetown, Sussex County, Delaware) to Savannah Ditch, a freshwater, non-tidal stream. The permit also authorizes Perdue to discharge (from Outfall 004) storm water runoff from a grassy non-process area of the property. The discharges are subject to certain effluent limitations along with operational, monitoring, and reporting requirements identified in the permit.

On August 26, 2018, the Department placed a legal notice for Perdue's application for reissuance of its NPDES Permit in the News Journal, the Delaware State News, and on the Department's website. The Department on September 24, 2018 received a request for a public hearing from Mr. Keith Steck. The Department did not receive any other request for a hearing or comments.

On October 24, 2018 the Department placed a legal notice for a public hearing for Perdue's application for reissuance of its NPDES Permit in the News Journal, the Delaware State News, and on the Department's website.

On November 27, 2018 a public hearing was held at Georgetown Middle School located at 301 West Market St, Georgetown, DE 19947. Four members of the public, Mr. Keith Steck, Mr. Ken Haynes, Mrs. Joanna Haynes and Ms. Shelly Cohen offered oral comments at the hearing.

On November 28, 2018 Ms. Shelly Cohen provided written comments via email and on November 29, 2018 Mr. Keith Steck submitted an amendment to his original submission of comments via email. This TRM will focus on addressing public comments and questions raised in the public hearing request, during the November 27, 2018 hearing, and written comments submitted following the hearing, which are directly related to this permit renewal application.

- 1. Mr. Steck stated that neither the Fact Sheet nor the draft Permit identified all of the waters affected by the discharge, especially Wagamons Pond in Milton and that there was no mention of Wagamons Pond and how the Ingram Branch connects Diamond Pond to Wagamons Pond. He added that the application only mentioned Savannah Ditch and Broadkill River as the receiving water.**

NPDES Permit Application Forms 2C and 2F require the permittee to provide outfall coordinates as well as the name of the receiving water. Both Outfall 002 and 004 discharge into Savannah Ditch. Item I: "Outfall Location" in Forms 2C and 2F of Perdue's NPDES application include the outfalls coordinates and identify Savannah Ditch as the receiving water.

The cover page for NPDES permits contains a statement authorizing discharge and information on the specific location for which the discharge is authorized. The draft NPDES permit identifies Savannah Ditch as the water body for which Perdue is authorized to discharge. Under the "Receiving Stream Classification" in the draft Fact Sheet, information regarding the classification of Savannah Ditch is provided. Additional information in the draft Fact Sheet identifies Ingram Branch, Diamond Pond, Broadkill River and Delaware River as downstream water bodies. The Fact Sheet has been revised to also identify Wagamons Pond as a downstream water body.

- 2. Mr. Steck stated that the public hearing presentation did not include a discussion about the designated uses of the Ingram Branch, Diamond Pond or Wagamons Pond.**

Section 3.0 of Delaware's Surface Water Quality Standards "Stream Basins & Designated Uses" provides the designated uses applicable to the various stream basins as illustrated in Figure 1 of that section. The designated uses for the Broadkill River Watershed (basin 22 in Figure 1) are applicable to all the waterbodies in the Watershed. The designated uses for the Broadkill River identified in the draft Fact Sheet are therefore also the designated uses for Ingram Branch, Diamond Pond and Wagamons Pond. The designated uses are Industrial Water Supply; Primary Contact Recreation; Secondary Contact Recreation; Maintenance of Fish, Aquatic Life, and Wildlife; and Agricultural Water Supply. Additional information has been included in the Fact Sheet to provide clarity.

- 3. Mr. Steck stated that it was unclear from the draft Fact Sheet and draft Permit what consideration had been given to the species living in Wagamons Pond in setting the discharge nutrient and chemical limits. He stated that there was no real discussion about the impact of water quality on wildlife (bugs, turtles, frogs, birds).**

Permit limits are set such that they ensure that the water quality criteria are met. Water quality criteria which are part of the water quality standards are designed to ensure achievement of the designated uses assigned to a waterbody. The draft fact sheet identifies maintenance of fish, aquatic life and wildlife as one of the designated uses for the waterbodies in the Broadkill River Watershed, which includes Wagamons Pond. The draft fact sheet also provides a summary of the bases for permit limits in Table 1 – Bases for Effluent Limits and Monitoring, which identifies parameters that have limits based on water quality standards. Water quality criteria for pollutants in Delaware waters are based on EPA guidance, meant to protect the most sensitive species in a suite of many species nationwide. Where the sensitive species are not present, the assumption is that those species stand as surrogates for species with similar sensitivity in the local waters. The existing applicable water quality standards were considered in setting the discharge limits in the draft permit.

Additionally, the draft permit includes a limit for Whole Effluent Toxicity (WET), which protects against potential aggregate toxic effect (from all pollutants in the effluent) to aquatic organisms. To determine compliance with the WET limit, Part III A.4 of the draft permit requires Perdue to conduct a toxicity test using EPA methods where test organisms (fish and an invertebrate) are exposed to a sample of the effluent and toxicity evaluated based on the effluent's effect on survival and reproduction of the test organisms.

The Clean Water Act (CWA) requires the water quality standards to undergo a public review every three years, a process referred to as the Triennial Review. The triennial review process can and has led to the promulgation of new standards. The public has an opportunity to suggest more restrictive water quality criteria or designated uses during Triennial Reviews where they can provide evidence that extraordinary species are or should be present and that current criteria are not protective enough for those sensitive species.

- 4. Mr. Steck sought to know what monitoring was currently done or would be done in the future on Ingram Branch, Diamond Pond, and Wagamons Pond.**

The Department monitors water quality in order to determine compliance with the standards. Much of the monitoring is done by the Department, though other partner organizations, including federal agencies, academic institutions, and citizen volunteer monitoring programs, also contribute to these efforts. These partner organizations include the US Geological Survey (USGS), University of Delaware, Nanticoke Watershed Alliance and the Delaware Nature Society. USGS has several monitoring stations within Delaware, while the University of Delaware, Nanticoke Watershed Alliance and the Delaware Nature Society coordinate and/or maintain Monitoring Programs, which allow volunteer engagement in monitoring efforts in some of the watersheds including the Broadkill River, Inland Bays, Nanticoke, Christina River, Appoquinimink River and Mispillion River Watersheds.

The Department's Water Quality Monitoring Network Data Portal allows users to search for monitoring stations throughout the state and access water quality monitoring information. The Department's Water Quality Monitoring Network Data Portal can be accessed through

the link below. There are two monitoring stations between Perdue's discharge location into Savannah Ditch and Wagamons Pond. Station 303011 in Savannah Ditch at Savannah Drive (Rd. 246) and Station 303021 in Ingram Branch at Gravel Hill Rd. (Rd. 248). There is also a monitoring station (Station 303341) in Pemberton Branch (at Gravel Hill Rd. – Rt. 30). Pemberton Branch discharges to Wagamons Pond.

The parameters currently being monitored at these stations include water temperature, pH, salinity, enterococcus, dissolved oxygen, total nitrogen, total phosphorus, chlorophyll A and total suspended solids. If ever there is evidence supporting the need for monitoring additional pollutants, the Department will include them in its monitoring program.

<http://www.dnrec.delaware.gov/swc/wa/Pages/WaterQualityMonitoring.aspx>

5. Mr. Steck stated that there was no discussion of notification and/or warnings to users of the waterways about how discharges would not have to meet permit limits until 59 months after the permit had been issued.

Part I B.2 of the draft permit incorporates more stringent limits for total nitrogen, total phosphorus and ammonia based on the Total Maximum Daily Loads (TMDLs) regulation for the Broadkill River Watershed. In order for Perdue to comply with the new limits, upgrades to their existing wastewater treatment system are necessary. Part I C.2 of the draft permit therefore includes a 59-month compliance schedule for total nitrogen, total phosphorus and ammonia which allows time to secure funding, complete the engineering design, solicit contracts for the work, and perform construction of the necessary upgrades. Part I B.1 of the draft permit however includes interim limits for total nitrogen, total phosphorus and ammonia which Perdue is required to comply with during the period beginning effective date of the permit and lasting to 59 months after the effective date.

The interim limits for total nitrogen, total phosphorus and ammonia are the same as the limits in Part I B.2 of the current permit. Part I B.1 of the draft permit incorporates a new limit for WET testing. Part I C.1 of the draft permit therefore includes a 36-month compliance schedule to allow Perdue to implement a Toxicity Reduction Evaluation (TRE) work plan in order to comply with the new WET limit. The limits for all the other parameters in the draft permit will be effective beginning the effective date of the permit.

In addition to Perdue's discharge, there are other point and nonpoint sources discharges to the waterways. Waterways users can use the Departments Water Quality Monitoring Network Data Portal to access water quality monitoring information. Additionally, water quality assessment information and a list of impaired waterways can be found in the Combined Watershed Assessment Reports (305(b) Reports) and Lists of Impaired Waters (303(d) Lists) which are prepared by the Department and submitted to EPA every two years as required under the CWA. Combined 305(b) reports and 303(d) lists can be accessed through the link below.

<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessment305band303dReports.aspx>

- 6. Mr. Steck stated that there was no discussion about plans for notifying waterway users should violations occur, as happened in 2015. He asked if Perdue had notified the Town of Milton and its residents during the 2015 permit violations so that they were aware of potential contamination of the water.**

Perdue is required to report all instances of noncompliance as described in Part II A.2.b "Notification of Noncompliance" of the current permit. This is a requirement from Section 6.14.8 of Delaware's *Regulations Governing the Control of Water Pollution* (RGCWP). In 2015, Perdue exceeded the limits for ammonia, nitrogen and enterococcus. These incidences were reported to the Department as required. The permit and RGCWP also include a requirement for the permittee to take all reasonable steps to minimize any adverse impacts to State waters resulting from noncompliance such as accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge. In response to the 2015 violations, enhanced stream monitoring was performed and no downstream risk to waterway users was identified. If a risk to downstream users is ever identified during or subsequent to a noncompliance event, the Department would require notification of waterway users.

The public may use EPA's Enforcement and Compliance History Online (ECHO) website to assess permit compliance including violations. ECHO can be accessed through the link below and includes a quick start guide and a short video tutorial for users.

<https://echo.epa.gov/>

- 7. Mr. Steck stated that it was unclear to him what attention had and would be given to the debris and contamination that exist in Savannah Ditch in setting the limits in the draft and future permits. He noted that there was illegal dumping of tires, furniture and other junk in Savannah Ditch and expressed concerns over contamination from deterioration of the dumped material (tires).**

The limits in the draft permit are either based on technology standards (technology-based limits) or water quality standards (water quality-based limits). Where both technology-based and water quality-based standards existed for a specific pollutant, the limit was based upon the standard that resulted in the strictest limit. The limits in the draft permit have therefore been set to meet the existing water quality standards. The water quality criteria found in the water quality standards are designed to ensure the achievement of the designated uses assigned to a water body. When monitoring shows that a water body is impaired (fails to meet the water quality standards), TMDLs are developed for the pollutants causing impairment. The BOD₅, enterococcus, ammonia, total nitrogen, and total phosphorus limits in the draft permit have been developed based on Broadkill River Watershed TMDLs. If water quality criteria and/or TMDLs are established for new pollutants, the permit limit development process will consider such criteria and/or TMDLs.

The Department shares Mr. Steck's concerns regarding illegal dumping. In June 2018, the Department's Drainage Program performed a stream clean-up of Savannah Ditch and the Department maintains a 24-hour toll-free complaint line (1-800-662-8802) to report illegal dumping. However, requiring Perdue to clean-up illegally dumped debris that did not originate from the Perdue facility in Savannah Ditch is beyond the scope of State and Federal regulations governing NPDES permits. The permit does prohibit the discharge of any

unauthorized material from Perdue's outfalls in accordance with Part I B.1-3 of the draft which states "the discharge shall be free from floating solids, sludge deposits, debris, oil, and scum."

8. Mr. Steck asked that the following questions be addressed before permit issuance:

- a. What monitoring and analysis is currently done or will be done to identify contaminants in Savannah Ditch, Ingram Branch, Diamond Pond, and Wagamons Pond? He stated that identifying the contaminants in the waters was critical before setting any discharge limits.**

The monitoring currently done in Savannah Ditch, Ingram Branch and downstream of Wagamons Pond is described in #4 above. The limits in the draft permit have been set ensure that the existing water quality criteria is met. As described above, the water quality criteria are designed to ensure achievement of the designated uses for the Broadkill River Watershed. Additionally, the proposed limits for BOD₅, enterococcus, total nitrogen, total phosphorus and ammonia have been set based on the Broadkill River Watershed TMDLs. The TMDLs were established after water quality monitoring showed that the waters of Broadkill River and several of its tributaries and ponds are impaired by high levels of bacteria and elevated level of nutrients. Information on impairments can found in the Combined Watershed Assessment Reports (305(b) Reports) and Lists of Impaired Waters (303(d) Lists). As described in #7 above if water quality criteria and/or TMDLs are established for new pollutants, the permit limit development process will consider such criteria and/or TMDLs.

- b. Because the discharge into the Ditch will likely carry chemicals and compounds downstream, to what extent have the draft and future permits taken into account or will take into account the existing and future contaminants in the other waterways that have leached from tires and other things in Savannah Ditch?**

As described above, the limits in the draft permit have been set to ensure the existing water quality criteria are met. The water quality criteria are designed to ensure achievement of the designated uses for the Broadkill River Watershed. When new water quality criteria are adopted, the limits are revised based on the new criteria.

- c. Given that the Ditch is likely to continue to be a dumpsite, to what extent has the draft permit been adjusted to factor in contaminants leaching from debris into the Ditch, Ingram Branch, and Diamond and Wagamons Pond?**

As described above, the limits in the draft permit have been set to ensure the existing water quality criteria for various contaminants are met. The water quality criteria are designed to ensure achievement of the designated uses for the Broadkill River Watershed. When new water quality criteria are adopted, the limits are revised in order to meet the new criteria. The draft permit includes revised BOD₅, total nitrogen, total phosphorus and ammonia limits. The BOD₅, total nitrogen, and total phosphorus limits are based on the TMDLs regulation for the Broadkill River Watershed.

Ammonia limits are based on both the TMDLs regulation for the Broadkill River Watershed and water quality criteria for protection of aquatic life. These limits are more stringent than the limits in the current permit.

d. Until the dumping in Savannah Ditch is cleaned up, what kind of monitoring and analysis of the ditch will be done to ensure the health and safety of wildlife of the downstream waterways and the users?

As described above, water quality criteria are designed to ensure achievement of the designated uses assigned to a waterbody. Maintenance of fish, aquatic life and wildlife is one of the designated uses for the waterbodies in the Broadkill River Watershed which includes Ingram Branch, Diamond Pond, Wagamons Pond, and Broadkill River. As described in #3 above, water quality criteria for pollutants in Delaware waters are based on EPA guidance, meant to protect the most sensitive species in a suite of many species nationwide. The Department monitors water quality in order to determine compliance with the standards and when a waterbody fails to meet the standards, TMDLs are developed. TMDLs have been developed for the Broadkill River Watershed for pollutants causing impairment. Currently, monitoring is done for the following parameters which include pollutant that have been identified to cause impairment in the waterbodies in the Broadkill River Watershed: water temperature, pH, salinity, enterococcus, dissolved oxygen, total nitrogen, total phosphorus, chlorophyll A and total suspended solids at Station 303011 in Savannah Ditch at Savannah Drive (Rd. 246). When there is evidence supporting the need for monitoring additional pollutants, the Department will include them in its monitoring program.

e. What steps is Perdue and/or the Department currently taking to remove tires, etc. from Savannah Ditch and what steps will they take in the future to prevent dumping and contamination?

The NPDES permit regulates what Perdue can discharge into Savannah Ditch. As discussed above, there is no regulatory requirement for Perdue to remove debris from Savannah Ditch that is not discharged from Perdue's business operations. The removal of tires and other illegally dumped materials from Savannah Ditch is outside the scope of this NPDES permit. The public may report illegal dumping by calling 1-800-662-8802. In addition, the "Adopt a Stream" program by The Delaware Nature Society (see link below) offers an opportunity for businesses and other interested parties to volunteer as a stream adopter. The Department encourages Perdue and local residents to consider the opportunities that might be available to improve Savannah Ditch through such a program.

<https://www.delawarenaturesociety.org/what-we-do/clean-water/stream-watch/>

f. Mr. Steck urges Perdue to adapt and cleanup the ditch or otherwise wants the Department to require it be done as a permit condition.

The Department does not have any regulatory authority to require Perdue to clean-up the dumping in Savannah Ditch under the NPDES permit. See above.

- 9. According to Mr. Steck, none of the dozens of Milton town residents and people who live by Diamond and Wagamons Ponds that he has spoken to, are aware that Perdue Georgetown plant discharges into waters feeding into the ponds. According to him, the residents are especially concerned about sanitary wastewater going into the ponds. He added that the residents are especially concerned that the current treatment processes at Perdue do not fully remove bacteria, pathogens, medications, illegal drugs, cleaning fluids, heavy metals and other potentially dangerous contaminants. Mr. Steck expressed his concern over accumulation of these contaminants in the receiving waterways given the proposed permit will not have to meet standards and limits for up to 59 months after the permit has been issued.**

As described in the draft Fact Sheet, Perdue operates a wastewater treatment facility which consists of screening, anaerobic lagoons, activated sludge (2-cell parallel aerobic/anoxic system), chemical precipitation using alum for phosphorus removal, clarification, and ultraviolet (UV) disinfection. Sand filtration prior to the UV disinfection is not used because the plant meets the TSS permit limits. Sanitary wastewater is treated in a batch aerobic treatment system (sequence batch reactor – SBR) and is then pumped to the ultraviolet disinfection unit. Waste activated sludge from the treatment facility is aerobically digested, gravity thickened, dewatered by belt filter press, and then hauled by a contractor for ultimate disposal by land application. Based on the discharge monitoring data over the past 5 years, Perdue has had 100% compliance with Flow, pH, BOD₅, Oil and Grease, Total Phosphorus, Aluminum, Copper, and Zinc limits in the current permit. There were limit exceedances for ammonia and total nitrogen in June 2015, enterococcus in May 2015 and total suspended solids in January 2016. Following the exceedances, Perdue addressed the problems and they have not recurred.

As discussed in #5 above, the draft permit proposes more stringent total nitrogen, total phosphorus and ammonia limits in accordance with the TMDLs for the Broadkill River Watershed and includes a 59-month compliance schedule (Part I C.2) to allow time for completion of wastewater treatment system upgrades necessary to come into compliance with the new limits. The 59-month compliance schedule is only for compliance with the new total nitrogen, total phosphorus and ammonia limits. Interim limits are included in Part I B.1 of the draft permit.

- 10. Mr. Steck sought to know what the Department was going to do about determining TMDLs and permit limits of the Perdue permit given that according to him, there is a serious concern about existing contaminants in Savannah Ditch. He also sought to know how the Department will factor additional load sources into the Broadkill as they come online, in the permit limits, as well as how TMDLs are allocated in a watershed.**

As required by the CWA, TMDLs are developed for waterways that do not meet State water quality standards. The Department monitors water quality in order to determine compliance with the Delaware Water Quality Standards. Monitoring performed by the Department showed that the waters of Broadkill River and several of its tributaries and ponds were impaired by high levels of bacteria and elevated levels of nutrients (nitrogen and phosphorus) leading to the development of TMDLs for the Broadkill River Watershed.

The TMDLs include wasteload allocations for Perdue, which form the bases for BOD₅, enterococcus, total nitrogen, total phosphorus and ammonia limits in the draft permit. The Broadkill River Watershed TMDLs include wasteload allocations (WLAs) for the four existing point sources (Perdue, SAW, Town of Milton and Allen Harim) and load allocation for non-point sources. TMDLs Regulation for Broadkill River and the technical support document can be accessed through the links below. Table 4 on page 6-2 of the technical support document provides a summary of the WLAs for the four point sources. Table 5 of the same page provides a summary of the total WLAs for the Broadkill River Watershed. The combined WLAs for the four point sources make up the total WLAs for the Broadkill River Watershed. The TMDLs cap the loads for point sources (WLA) and provide watershed-wide percent reduction goals for non-point source loads (LA). If a new point source comes online in the future, it would have to offset its entire load through programs such as trading and credit purchase. Also, if any of the existing point sources increase their discharge flow/capacity, they would have to treat their discharge to a higher standard to meet the capped WLA. More detailed information on the TMDL development for the Broadkill River Watershed can be found in the technical support document (see link below).

If monitoring determines other pollutants are causing impairments in the waterbodies within the Broadkill River Watershed, the Department will be required to develop TMDLs for those pollutants and set WLAs and LAs for the point and nonpoint sources respectively. New permit limits will be developed based on WLAs for the new pollutants as with the current WLAs for Perdue. Currently, monitoring in the Broadkill River Watershed including Savannah Ditch is done for water temperature, pH, salinity, enterococcus, dissolved oxygen, total nitrogen, total phosphorus, chlorophyll A and total suspended solids. When there is evidence supporting the need for monitoring additional pollutants, the Department will include them in its monitoring program. The public has an opportunity to be engaged in the monitoring efforts through the monitoring programs highlighted in #4 above.

In addition to determining compliance with the water quality standards, the monitoring data is used to prepare the Combined Watershed Assessment Report (305(b) Report) and List of Impaired Waters (303(d) List) every even-numbered year. This is in fulfillment of the reporting requirements set forth under Sections 305(b) and 303(d) of the Federal CWA. The process for preparing a Combined Watershed Assessment Report (305(b) Report) and List of Impaired Waters (303(d) List) allows public participation. As mentioned in #3 above, the CWA requires the water quality standards to undergo a public review every three years. The triennial review process can and has led to the promulgation of new standards.

<http://regulations.delaware.gov/AdminCode/title7/7000/7400/7418.pdf>

http://www.dnrec.delaware.gov/swc/wa/Documents/TMDL_TechnicalAnalysisDocuments/13_BroadkillTMDLAnalysis.pdf

11. According to Mr. Steck, many people were completely unaware of the hearing taking place in Georgetown and he requested that the Department conducts a Milton town meeting in Milton to explain how some of the issues raised will be addressed.

The public notice of the draft permit and fact sheet was published in the News Journal and the Delaware State News which offer state-wide and Georgetown coverage, respectively. The notice was posted on the Department's website on August 26, 2018. A 30-day period (ending

September 25, 2018) was allowed to afford interested persons an opportunity to provide comments or request for a public hearing. On September 24, 2018 the Department received a public hearing request from Mr. Steck. No other comments or request for a hearing were received. On October 24, 2018 the Department published the public notice for a public hearing in the News Journal and the Delaware State News. The notice was also posted on the Department's website. Additionally, the notice was sent to Mr. Steck via email. The public hearing was held on November 27 at Georgetown Middle School in Georgetown where Mr. Steck and three other members of the public provided oral comments. The public notices of the draft permit and fact sheet, and the public hearing were in accordance with the requirements in the RGCWP. In her opening remarks during the public hearing, the Hearing Officer, Lisa Vest explained that the Department's Secretary will review the entire record of the hearing including comments and responses and make a determination on the permit reissuance. If a permit is issued, the public has an opportunity to appeal the Secretary's decision to issue the permit to the Environmental Appeals Board in accordance with Section 6.36.2 of the RGCWP.

12. Mr. Steck stated that it was not clear to him whether the bases for the water quality-based permit limits included water quality of just Savannah Ditch or water quality of Ingram Branch, Diamond Pond, and Wagamons Pond as well.

Water quality based limits are set to meet water quality criteria. As discussed above, the water quality criteria are designed to ensure the achievement of the designated uses assigned to each water body or segment and TMDLs are developed when monitoring shows failure to meet the water quality criteria. The TMDL based limits (BOD₅, total nitrogen, total phosphorus, ammonia-daily average and enterococcus) in the draft permit are set to address water quality issues in the Broadkill River Watershed which includes waterbodies downstream of Savannah Ditch: Ingram Branch (including Diamond Pond), Wagamons Pond and Broadkill River. Copper and aluminum limits, and the daily maximum limit for ammonia, are based on water quality criteria for protection of aquatic life (found in the SWQS). Ammonia and copper water quality criteria are dependent on specific water chemistry and characteristics of the receiving water body. As discussed in the draft fact sheet, copper criteria was determined based on the water chemistry in Savannah Ditch and ammonia criteria based on pH and temperature in Savannah Ditch. The WET limit is based on EPA recommended criteria for protection against acute and chronic effects.

13. Mr. Haynes sought to know the origin of the water from the drainage area for Outfall 004. He also expressed concern stating that if there was no monitoring at this outfall, monitoring downstream was a little too late. He questioned where the water from the parking lot and loading dock area drain into. He presented Google and US Fish & Wildlife Service Wetland maps, which were entered as exhibits and stated that the maps indicated that the parking lot had hardly been dry in the last 12 years. He sought to know if the water was going directly into the creek.

As described in the draft fact sheet, Outfall 004 consists of stormwater from a grassed non-process area located next to the vehicle refueling area. The area is a grass field just to the west of the live haul office where no industrial activity occurs. The water that flows from this grassy field is rainwater and therefore no monitoring is required. Form 2F of the permit application includes a site drainage map showing stormwater drainage areas.

As described in the draft fact sheet, the stormwater runoff from the process area is collected in a stormwater basin (shown in Part I A.2 of the draft permit) and pumped to the treatment system before discharge via Outfall 002 which is monitored. Part I A.1 of the draft permit clearly lists the areas whose stormwater runoff is captured in the stormwater basin. The areas include: processing building roofs, live receiving area, offal area, yard wash down, refrigerated box trailer parking pads, truck wash, trailer drippings, driveways, live haul scale, vehicle refueling area, and raw waste lift station. Perdue maintains a storm water plan (SWP) as required in Part III A.8 of the current permit to minimize discharge of contaminated storm water. The draft permit as well requires Perdue to continue to implement and maintain the SWP. The SWP shall be implemented and maintained in accordance with the requirements of Section 9.1.5 of the Department's *Regulations Governing the Control of Water Pollution*, 9 DE Reg. 1250 (2/1/06).

Based on the maps submitted by Mr. Haynes and google map research, it is unclear which area Mr. Haynes was referring to. It appears that the area he was referring to is the stormwater basin and not a parking lot. As discussed under the "site description" section included in the permit application, stormwater from the process area of the plant is collected into the basin, which is controlled to feed the stormwater into the wastewater treatment facility at an acceptable rate for treatment. There is also an emergency pond west of Savannah Road which acts as a diversion pond that returns water to the treatment system.

- 14. Mrs. Haynes stated that the hearing presentation failed to show permit limit values. She inquired about how long it would take the draft permit to fix the problem. She inquired about the amount of penalty for the 2015 violations and questioned whether Perdue had paid, stating that facilities were known not to pay fines/penalties. She expressed concerns with the water stating that the nitrates were a big thing.**

The public hearing presentation included the bases for the proposed permit limits. Part I B of the draft permit includes the proposed limits. During the public notice period of the public hearing, the draft permit, fact sheet and application were available for inspection on the Department's website or by contacting the Surface Water Discharges Sections.

As explained during the public hearing presentation, the permit proposes more stringent total nitrogen, total phosphorus and ammonia limits in accordance with the TMDLs for the Broadkill River Watershed. The draft permit includes a 59-month compliance schedule (Part I C.2) to allow time to secure funding, complete the engineering design, solicit contracts for the work, and perform construction of the necessary wastewater treatment plant upgrades to come into compliance with the new limits. The 59-month compliance schedule is only for compliance with the new total nitrogen, total phosphorus and ammonia limits. Interim limits are included in Part I B.1 of the draft permit.

Following the non-compliance incidences in 2015, the Department issued a Notice of Violation (NOV) and Secretary's Order No. 2018-W-0015 with an administrative penalty of \$77,300. The Order also included a \$7,601 reimbursement to the Department for its abatement expenses. A copy of the Order is available to the public and can be accessed on the Department's website through the link provided below. To offset a portion of the penalty, Perdue chose to perform an Environmental Improvement Project in conjunction with The Nature Conservancy, for which the company would convert about 39 acres of farmland into forest with the goal of reducing the loads of nitrogen and phosphorus pollutants going into

the Broadkill River from the property to be converted. Perdue has paid the penalty from the 2015 administrative order and the Environmental Improvement Project is in progress.

http://www.dnrec.delaware.gov/Info/Pages/SecOrders_Enforcement.aspx

Perdue is not required to monitor for nitrates. The current and draft permits have limits for total nitrogen, with the draft permit proposing more stringent limits in accordance with the TMDLs regulation for the Broadkill River watershed. Monitoring for total nitrogen is required on a weekly basis. The wastewater treatment system is designed for nutrient removal with the proposed upgrades expected to achieve higher nutrient removal. Nitrate levels are generally more of a concern in drinking water sources. The effluent from Perdue is discharged into Savannah Ditch and neither the Ditch nor the downstream waters are a source of drinking water.

- 15. Ms. Cohen expressed concerns over Perdue's failure to comply with permit conditions. She stated that she read that Perdue had been out of compliance with their permit for a very long time and that there was a low expectation that they would ever be in compliance. She added that the wastewater treatment description in the PowerPoint presentation was flawed and that Perdue has been exceeding the levels of contaminants they discharge to Savannah Ditch for years ignoring the minimal standards in the NPDES permit. She indicated that that Perdue should install better equipment now rather than 5 years in the future. She stated that Perdue had more violations than what was presented at the hearing and submitted excerpt from 2017 EPA violation notice for Perdue.**

As presented during the public hearing, based on a compliance history over the last 5 years, Perdue has had 100% compliance with flow, pH, BOD₅, oil & grease, total phosphorus, aluminum, copper, and zinc limits in the current permit. Limits for ammonia and total nitrogen were exceeded in June 2015, enterococcus exceeded in May 2015 and total suspended solids exceeded in January 2016. The non-compliance incidences were reported to the Department as required and Perdue took the necessary action to address the problems. Perdue has not had a reoccurrence of limits exceedances and continues to comply with the limits in the current permit.

As discussed above, the draft permit proposes more stringent total nitrogen, total phosphorus and ammonia limits. Upgrades to their existing wastewater treatment facility are necessary in order to comply with the more stringent limits. To allow for the process of securing funds, and completion of design and construction of the necessary upgrades, the draft permit includes a 59-month compliance schedule for total nitrogen, total phosphorus and ammonia new limits.

The excerpt from 2017 EPA violation notice provided by Ms. Cohen is not for this facility's NPDES permit. The violation is for a CAFO Permit for Perdue's facility located at 255 Rehoboth Boulevard, Milford, DE 19963.

- 16. Ms. Cohen requested the Department to provide numbers including monitoring lab reports showing the levels of contaminants to interpret the impact to the environment and water sources. She expressed concerns indicating that pollutants spread through**

water bodies and seep into aquifers which are a source of drinking water. She also added that the water bodies are recreational, supporting swimming, kayaking and fishing activities. Expressed concerns that the government endorses the continual custom of treating natural waterways as open sewers and that protection of waterways and environment should have been mandatory years ago. She expressed concerns over nitrates affecting her.

In accordance with NPDES permit requirements, Perdue submits its discharge monitoring data to the Department via Electronic Discharge Monitoring Report (eDMR) on a monthly basis. The data undergoes quality assurance checks by the Department before being electronically uploaded to EPA's Integrated Computerized Information System (ICIS). As stated in #6 above, the public may use EPA's ECHO website to access permit compliance information including monthly monitoring results.

As mentioned in above, the designated uses for the waters in the Broadkill River Watershed are Industrial Water Supply; Primary Contact Recreation; Secondary Contact Recreation; Maintenance of Fish, Aquatic Life, and Wildlife; and Agricultural Water Supply. Primary contact recreation includes activities with a high probability for total body immersion or ingestion of water such as swimming and water skiing. Secondary contact recreation includes activities with a low probability for total body immersion or ingestion of water such as wading, boating and fishing. Water quality criteria are designed to ensure achievement of the designated uses assigned to a waterbody and the permit limits are set so that the existing applicable water quality criteria are met. With regard to nitrates see #14 above.

- 17. Ms. Cohen expressed concerns over expired permits indicating that it had become standard operating procedure to operate under expired permits. She stated that the expectation was for continued noncompliance with NPDES instead of insistence by the Department of a complete new application, inspection and review before issuing a new NPDES permit to current legal standards. She indicated that Perdue is not making the correct financial commitment to install proper waste and wastewater equipment to bring their contaminant impact down to zero and states that the Department needs to enforce its power to make Perdue comply with NPDES standards.**

Under Section 6.14.3.2 of the RGCWP, permittees are required to submit a permit renewal application at least 180 days before the expiration date of the existing permit. This requirement is included in Part II B. 8 "Reapplication for a Permit" of the current permit and proposed permits. Perdue submitted a permit renewal application, which was reviewed by the Department and deemed complete. As required, the existing permit was administratively extended until a new permit is issued. As per Section 6.14.3.3 of the RGCWP, the terms and conditions of the existing permit are continued and remain fully effective and enforceable. The draft permit incorporates the requirements for NPDES permits found in the RGCWP and considers all the applicable standards (including new standards) found in the SWQS. The Department continues to work to reduce its NPDES permit backlog.

As discussed above, Perdue has undertaken measures to address noncompliance issues and continue to remain in compliance with the limits in the current permit. Perdue will be upgrading its wastewater treatment facility to ensure compliance with proposed new limits for total nitrogen, total phosphorus and ammonia.

Surface Water Discharges Section Recommendation

The application received from Perdue Foods, LLC (Perdue) is to renew their existing NPDES Permit No. DE 0000469 (State Number WPCC 3011F/74). The submitted application satisfies all State and Federal regulatory requirements and no information was presented during the public hearing demonstrating the application as deficient. As such, the Surface Water Discharges Section recommends the issuance of the NPDES Permit No. DE 0000469 (State Number WPCC 3011F/74) to Perdue Foods, LLC in accordance with the January 13, 2011 application.



20621 Savannah Road
Georgetown, DE 19947
Ph: 302-855-5681 Fax: 302-855-5682
Email: parker.burdell@perdue.com

November 5, 2019

Nicole Smith, DNREC
Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901



RE: Perdue Georgetown Total Nitrogen Levels, DE0000469

Dear Ms. Smith,

On October 25, 2019, Perdue Georgetown Processing Plant (Perdue) performed a total nitrogen analysis on the 002-composite sample. The results from the composite sample dated October 25 to 26, 2019, and received by Perdue on November 5, 2019, revealed an exceedance of the total nitrogen limit of 94.1 mg/L. The result was a total nitrogen result of 94.3 mg/L. A phone call notifying Nicole Smith, of the Delaware Department of Natural Resources and Environmental Control, was made on November 5, 2019, notifying the State of the violation. A copy of the November 5, 2019 lab report is enclosed with this letter.

There was a higher level than normal of incoming nitrogen from the anaerobic lagoon during weeks prior to the Outfall 002 nitrogen violation. Starting in late September 2019 we noticed a change in the appearance of the anaerobic lagoon cap. The cap was covered by sludge layer, that eventually covered approximately 80% of the lagoon, it appears the anaerobic lagoon turned over. Starting the week of September 30, 2019, the wastewater plant started experiencing increased solids and nitrogen loadings, from the anaerobic lagoon. The wastewater staff began managing the increases by improving DAF removal efficiency to handle the solids, and balancing the ammonia to nitrate levels, in our Biolac system. Starting on the week of October 20, 2019 the nitrogen level increased to a point above daily maximum levels. The higher nitrogen levels, from the anaerobic lagoon, put the carbon to nitrogen levels out of balance. To improve this balance and help remove the excess nitrogen loadings, Perdue began feeding glycerin as an alternative Carbon source on October 23, 2019. Perdue is also replacing the diffusers, in the Biolac. The diffuser replacement will improve ammonia removal efficiency, allowing the anoxic zone to increase denitrification.

Additional Perdue wastewater and engineering associates have been in Georgetown for support with measuring, monitoring and investigation of activities and data. Three outside consulting firms have been employed to aid in our management of the system as we return it to compliance. The supplemental carbon source glycerin will be added until the system returns to a normal operating state, or an alternative carbon source is identified.

If you require any more information or have any questions please feel free to contact me at (302) 855-5681

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Burdell', with a stylized flourish at the end.

Parker A Burdell
Environmental Manager

Enclosure


ENVIROCORP LABORATORIES INC.

51 CLARK STREET, HARRINGTON, DE 19952
302-398-4313
www.envirocorplabs.com


ANALYTICAL SERVICES: NPDES, RCRA, GROUND WATER

Perdue-Georgetown

Project: 002 Weekly

200 Savannah Road

Project Number:

Georgetown, DE 19947

Reported: 11/05/2019 10:33

Analytical Results

Sample ID:	002	Sample Start:	10/25/19 08:30
Lab ID:	1905074-01	Sample End:	10/26/19 08:30
Matrix:	Waste Water	Received:	10/26/19 09:28
Sample Type:	Composite		

Analyte	Result	Units	Reporting Limit	Qualifier	Method	Date Prepared	Date Analyzed	Analyst
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Inorganic

Alkalinity as CaCO ₃	142	mg/L	2.00		SM2320-B	10/29/19 10:29	10/29/19 10:29	JB
Biochemical Oxygen Demand 5	ND	mg/L	3.0		SM5210-B	10/26/19 11:47	10/31/19 11:56	JB
Hardness, Total by Titration	530	mg/L	2.0		SM2340-C	11/1/19 14:34	11/1/19 14:34	ML
Ammonia as N	2.32	mg/L	0.050		SM4500-NH3-G	10/28/19 9:48	10/28/19 10:52	CK
Nitrite as N	0.158	mg/L	0.0500		SM4500-NO2-B	10/29/19 12:10	10/29/19 15:17	CK
Nitrate as N	90.8	mg/L	0.0500		[CALC]	10/29/19 12:10	10/29/19 15:17	CK
Nitrate+Nitrite as N	91.0	mg/L	2.00		SM4500-NO3-H	10/28/19 9:59	10/28/19 11:25	CK
Total Kjeldahl Nitrogen	3.29	mg/L	0.100		SM4500-Norg-C	10/28/19 13:45	10/28/19 14:33	CK
Total Nitrogen as N	94.3	mg/L	0.100		[CALC]	10/28/19 13:45	10/28/19 14:33	CK
Total Phosphorus as P	0.168	mg/L	0.100		SM4500-P-F	10/28/19 13:49	10/28/19 14:25	CK
Total Suspended Solids @103-105 C	4.8	mg/L	2.0		SM2540-D	10/30/19 13:57	10/31/19 13:12	HM



20621 Savannah Road
Georgetown, DE 19947
Ph: 302-855-5681 Fax: 302-855-5682
Email: parker.burdell@perdue.com

November 21, 2019

Nicole Smith, DNREC
Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901



RE: Perdue Georgetown Total Nitrogen Levels, DE0000469

Dear Ms. Smith,

Perdue Georgetown exceeded the monthly average concentration levels for total nitrogen during the month of October 2019. The system experienced higher than normal nitrogen loadings from the anaerobic lagoon. Starting on the sample collected October 8, 2019 we saw an increase in effluent nitrogen to 61.8 mg/L, the sample collected October 15 2019 was 71.7 mg/L, the sample collected October 25, 2019 was 94.3 mg/L, the sample collected October 27, 2019 was 86.2, the sample collected October 29, 2019 was 66.6, and the sample collected October 31, 2019 was 69.2.

There was a higher level than normal of incoming nitrogen from the anaerobic lagoon during weeks prior to the Outfall 002 nitrogen violation. Starting in late September 2019 we noticed a change in the appearance of the anaerobic lagoon cap. The cap was covered by sludge layer, that eventually covered approximately 80% of the lagoon, it appears the anaerobic lagoon turned over. Starting the week of September 30, 2019, the wastewater plant started experiencing increased solids and nitrogen loadings, from the anaerobic lagoon. The wastewater staff began managing the increases by improving DAF removal efficiency to handle the solids, and balancing the ammonia to nitrate levels, in our Biolac system. Starting on the week of October 20, 2019 the nitrogen level increased to a point above daily maximum levels. The higher nitrogen levels, from the anaerobic lagoon, put the carbon to nitrogen levels out of balance. To improve this balance and help remove the excess nitrogen loadings, Perdue began feeding glycerin as an alternative Carbon source on October 23, 2019. Perdue is also replacing the diffusers, in the Biolac. The diffuser replacement will improve ammonia removal efficiency, allowing the anoxic zone to increase denitrification.

Additional Perdue wastewater and engineering associates have been in Georgetown for support with measuring, monitoring and investigation of activities and data. Three outside consulting firms have been employed to aid in our management of the system as we return it to compliance. The supplemental carbon source glycerin will be added until the system returns to a normal operating state, or an alternative carbon source is identified.

If you require any more information or have any questions please feel free to contact me at (302) 855-5681

Sincerely,

A handwritten signature in blue ink, appearing to read 'Parker A. Burdell', with a stylized, cursive script.

Parker A Burdell
Environmental Manager

Enclosure



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Surface Water Discharges Section

Telephone: (302) 739-9946
Facsimile: (302) 739-8369

Public Notice Fact Sheet
Permit Effective Date –

Perdue Foods, LLC
20621 Savannah Road
Georgetown, Delaware 19947

NPDES No. DE 0000469
State Permit No. WPCC 3235G/74

Permit Renewal Application

Perdue Foods, LLC has requested reissuance of its National Pollutant Discharge Elimination System (NPDES) Permit No. DE 0000469 to discharge treated process wastewaters and treated process area storm water from a wastewater treatment system and storm water run-off (from grassed area) from the property located on Savannah Road in Georgetown, Delaware to Savannah Ditch.

Summary of Requested and Proposed Permit Changes

Perdue requested in the permit application:

- To provide reasonable schedule of compliance for total nitrogen and phosphorus limits.
- To eliminate monitoring and limits for aluminum, copper, and zinc if they do not prove to be toxic.

The Delaware Department of Natural Resources and Environmental Control (DNREC) proposes to reissue the permit with following changes:

1. Implemented 12-month cumulative average annual load limit for Total Nitrogen (TN), based on the TMDL for the Broadkill River Watershed.
2. Implemented daily average load limit for Total Nitrogen (TN) during the months of May through September based on the TMDL for the Broadkill River Watershed.
3. Implemented daily average load limit for Biological Oxygen Demand (BOD₅), Total Phosphorus (TP), and Ammonia based on the TMDL for the Broadkill River Watershed.
4. Added "Schedule of Compliance" to Part I, C. of the permit requiring the permittee to comply with the final effluent limitations and monitoring requirements for Total Nitrogen (TN), Total Phosphorus (TP), and Ammonia no later than fifty-nine (59) months after the effective date of the permit.
5. Revised "Reporting" in Part I.D.2. which requires the permittee to submit results via the Department approved Electronically Generated Discharge Monitoring Report (eDMR).
6. Added a standard condition in Part II.A.2 "Notifications Specific to Manufacturing, Commercial, Mining, and Silvicultural Dischargers".

7. Add a limit for “Whole Effluent Toxicity” and a thirty-six (36) month compliance schedule for achieving compliance with the new limit.
8. Removed limits for copper and zinc.
9. Special Condition No. 8 about Storm water Plan has been amended to include the Broadkill TMDL requirements.
10. Added new special condition No. 11 pursuant to 40 CFR part 136 to ensure the use of EPA-approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits.
11. Added Special Condition No. 12 which requires monitoring copper BLM parameters and performing a reasonable potential analysis for copper.

Facility Location

This facility is located at 20621 Savannah Road in Georgetown, Sussex County, Delaware.



Activity Description

This facility is a poultry processing plant. Operations include receiving of live poultry and the slaughter, eviscerating, chilling, and packaging of fresh poultry followed by shipment to northeast markets. The facility is designated a **major** facility as rated using the “NPDES Permit Rating Work Sheet.”

Statutory and Regulatory Basis

The Delaware Department of Natural Resources and Environmental Control (DNREC) proposes to reissue Perdue Foods, LLC a NPDES permit to discharge wastewater subject to certain effluent limitations identified in the permit. Section 402 of the Federal Clean Water Act of 1977, as amended and 7 Del. C., Chapter 60 provides the authority for NPDES permit issuance. Regulations promulgated pursuant to these statutes are the regulatory basis for permit issuance.

Receiving Stream Classification

The applicant has two outfalls to Savannah Ditch, a freshwater, non-tidal stream. Savannah Ditch discharges to Ingrams Branch which discharges to Diamond Pond, then into the Broadkill River which empties into Zone 6 of the Delaware River. The designated uses are Industrial Water Supply; Primary Contact Recreation; Secondary Contact Recreation; Maintenance of Fish, Aquatic Life, and Wildlife; and Agricultural Water Supply.

Low Flow Waters

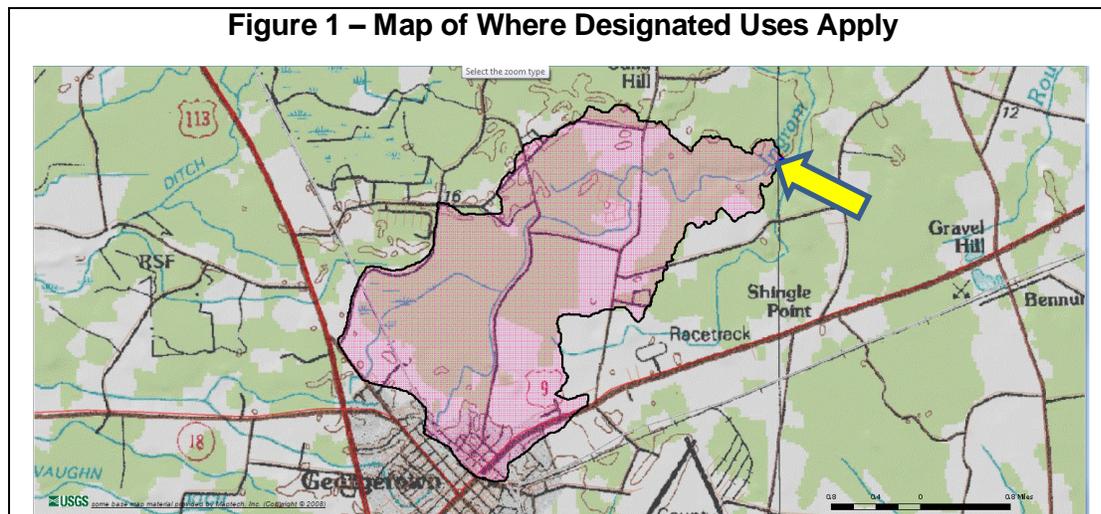
The DeSWQS provide that “designated uses” apply “at the closest downstream point where uses could reasonably be expected to occur”:

8.0 Criteria for Low Flow Waters

8.1 A low flow water is one in which the 7Q10 freshwater inflow is less than 0.1 cfs. The following criteria shall apply to discharges into low flow waters:

8.1.1 Where information is available for the receiving water which indicates that, because of low flow, it would not support designated uses, then numeric criteria shall not apply. The numeric criteria shall then apply at the closest downstream point where uses could reasonably be expected to occur.

From the USGS watershed mapping tool,¹ the following figure shows where 7Q10 flows are greater than or equal to (\geq) 0.1 cfs.



¹ <https://streamstats.usgs.gov/ss/>

From the same USGS tool, the following table shows basin characteristics before and at where designated uses apply.

Table 1 – Basin Characteristics Report		
Location	Before & at stream junction where 7Q10 stream flow is ≥ 0.1 cfs	
NAD27 Latitude	38.7235	38.7236
NAD27 Longitude	-75.3444	-75.3442
NAD83 Latitude	38.7236	38.7237
NAD83 Longitude	-75.3440	-75.3438
Parameter	Value	Value
Area in square miles	3.65	5.66
Average basin slope, in percent	0.47	0.5
Percent Of area covered by forest	17.5564	24.856
Impervious area, in percent, NLCD 2001	4.1531	3.6507
Hydrologic soil type A, in percent	14.0421	14.7736
Wetlands and Waterbody storage, in percent	1.8651	1.3118
7Q10, from USGS regression equation	0.036	0.131

The equation below was used to calculate 7Q10 flows in the last line of the table above.

<p>Equation 1 – USGS Regression Equation for Calculating 7Q10 Flows²</p> $7Q_{10} + 0.2 = 0.269A^{0.887} (F + 10)^{-0.375} (S_a + 10)^{0.522} (S_d + 10)^{-0.640}$ <p>A = Drainage area, in square miles, F = Forest cover (F) area, as percent of the total drainage area Sa = Type A soils area, as percent of the total drainage area Sd = Type D soils, as percent of the total drainage area</p>
--

Description of Discharge

The site has two discharges, Outfalls 002 and 004, to Savannah Ditch. Outfall 002 consists of discharge from the process wastewater treatment system.

Process waste streams include process wastewaters from first processing operations (receiving, killing, scalding, picking), second processing operations (evisceration, chilling), and further processing operations (cutup, boneless, thin slice); plant sanitation wastewater; sanitary wastewater, boiler blowdown (0.035 mgd); process area storm water; and feed mill boiler blowdown (0.003 mgd) from the Perdue Feed Mill in Bridgeville.

Storm water from the process area is collected in a stormwater pond (7 MG capacity) and then pumped to anaerobic lagoons. This stormwater runoff is from the following areas: processing building roofs, live hold area, offal area, yard wash down, refrigerated box trailer parking pads, truck wash, trailer drippings,

² Page 9, Equation (2) 9 under “Eastern Shore Region”, “Low-Flow Characteristics of Streams in Maryland and Delaware”, By David H. Carpenter and Donald C. Hayes, U.S. Geological Survey, Water-Resources Investigations Report 94-4020, <http://pubs.er.usgs.gov/publication/wri944020>

and driveways.

Storm water from the live haul scale, vehicle refueling area, and raw waste lift station is collected in a smaller stormwater pond (0.136 MG capacity), then pumped to the WWTP, and then discharged through Outfall 002.

The wastewater treatment system consists of: screening, anaerobic lagoons, activated sludge (2-cell parallel aerobic/anoxic system), chemical precipitation using alum for phosphorus removal, clarification, and ultraviolet (UV) disinfection. Sand filtration prior to the UV disinfection is not used because the plant meets the TSS permit limits. Sanitary wastewater is treated in a batch aerobic treatment system (sequence batch reactor – SBR) and is then pumped to the ultraviolet disinfection unit.

Waste activated sludge from the treatment facility is aerobically digested, gravity thickened, dewatered by belt filter press, and then hauled by a contractor for ultimate disposal by land application.

Outfall 004 consists of stormwater from a grassed non-process area located next to the vehicle refueling area. This stormwater is discharged without treatment.

Proposed Effluent Limitations

DNREC has examined the application and proposes to reissue the applicant's permit for a period of five years, subject to the effluent limitations and monitoring requirements on the attached copy of the draft permit. Following are the bases for the proposed limitations.

Bases for Effluent Limitations for Outfall 002

The following table outlines the bases for the proposed effluent limitations for Outfall 002.

Table 2 – Bases for Effluent Limits and Monitoring							
Outfall	Parameter	Lim/Mon.	Water Quality-Based ¹	Technology-based			
				DRBC ²	Effluent Limitation Guidelines ⁵	Performance-Based ³	RGCWP ⁴
002	Flow	Limit				✓	
	pH	Limit					✓
	BOD ₅	Limit	✓				
	Total Suspended Solids	Limit			✓	✓	
	Oil & Grease	Limit				✓	
	Total Nitrogen	Limit	✓				
	Ammonia (as N)	Limit	✓		✓		
	Total Phosphorus (as P)	Limit	✓				
	Aluminum	Limit	✓				
	Hardness	Monitoring	✓				
	Enterococcus	Limit	✓				
	Biomonitoring	Limit	✓				✓
	"Free From ..."	Limit	✓				

Basis for Effluent Limits and Monitoring Table Notes:

1. State of Delaware Surface Water Quality Standards (**SWQS**), as amended July 11, 2004.
2. Delaware River Basin Commission – March 2005 Water Code
3. Performance-based limits are based on the provisions of 40 CFR 122.45(b)(2)(l).
4. §8.03(b), "Effluent Limitations Based on a Practicable Level of Pollutant Removal Technology", of the State of Delaware Regulations Governing the Control of Water Pollution (**RGCWP**), as

amended May 14, 2003.

5. Final Effluent Limitations Guidelines and New Source Performance Standards for the Meat and Poultry Products (MPP) Point Source Category were published in the Federal Register on September 8, 2004 and promulgated in the Code of Federal Regulations at 40 CFR Part 432. Subpart K - Poultry First Processors applies to the discharges from this facility.

Table 2 below provides a comparison of the current Outfall 002 limits with the 40 CFR Part 432, Subpart K - Poultry First Processors concentration limits and mass limits derived using the long term average (LTA) flow of 2.00 mgd reported in the permit application. Selected limits for the proposed permit are highlighted in bold type.

Table 3 – Comparison of Effluent Guideline Derived Limits with Current Permit Limits.

Parameter	Daily Average				Daily Maximum			
	Concentration Limit (mg/L)		Mass Limit (lbs/day)		Concentration Limit (mg/L)		Mass Limit (lbs/day)	
	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K
BOD ₅	11.3	16	188.0	266.9 ¹	22.5	26	375	433.7 ¹
TSS	20	20	333.6	333.6¹	30	30	500	500.4¹
O&G	7.5	8.0	125.0	133.4 ¹	11.3	14	188	233.5 ¹
NH ₃ – N	4.0	4.0	66.7	66.7 ¹	8.0	8.0	133.4	133.4 ¹

¹ Based on 40 CFR Part 432, Subpart K concentration limit and LTA flow of 2.00 mgd reported in Permit Application.

Oil and Grease Limits

For O&G, the daily average and daily maximum concentration limits in the current permit are lower than the 40 CFR Part 432, Subpart K concentration and mass limits and therefore will be retained. Considering the very low variability in the monitoring results, the permit reduces monitoring frequency to “one grab sample taken per sampling day”.

TSS Limits

The 40 CFR Part 432, Subpart K daily average concentration and mass limits and daily maximum concentration and mass limits are same as current permit. Therefore, the current permit’s concentration and mass limits for TSS are retained.

Broadkill River TMDL-based Limits

The Broadkill River TMDL Regulation and TMDL Analysis Document (Tables 3 & 4 on pgs. 6-1 & 6-2) establish daily Waste Load Allocations (WLAs) for 5-day Biological Oxygen Demand (BOD₅), Ammonia (NH₃), Total Nitrogen (TN), Total Phosphorus (TP), and Enterococcus. The following Table summarizes WLAs for Perdue in the watershed.

Parameter	Concentrations	Loads
BOD ₅ (mg/L)	10 (mg/L)	166.8 (lbs/day)
NH ₃ (mg/L)	1 (mg/L)	16.7 (lbs/day)
TN (mg/L)	7 (mg/L)	116.8 (lbs/day)
TP (mg/L)	0.5 (mg/L)	8.34 (lbs/day)
Enterococcus	100 (#/100mL)	7,570,000,000 (#/day)

Daily maximum values can be higher or lower, as long as the Long Term Average (LTA) complies with the Broadkill WLAs.

The EPA's "Technical Support Document for Water Quality-based Toxics Control"³ provides a procedure to calculate limits that account for daily variability and still meet the LTA requirements of the TMDL. Applied to BOD₅, TN, and TP limits here, that procedure is

1. Determine whether the data can be described by a normal or log-normal distribution.
2. Calculate a Coefficient of Variation (CV) for the data.
3. Use the Broadkill WLA as the "Average Monthly Limit" (AML) and as the LTA of the data distribution.
4. Calculate the "Maximum Daily Limit" (MDL) as the 99th percentile of that distribution, CV, and LTA.
5. Used the load MDLs to calculate the maximum daily concentration limits, using
(Load in lbs/day) = (Flow in mgd) x (Conc. in mg/L) x (8.34 lbs/gal. water density)

Exceptions are that the enterococcus MDL is based on the WQS and NH₃ MDL is based on worst-case acute criterion (See additional discussion below).

Under the headings below for BOD₅, TN, and TP,

- The first Figure shows how well normal and lognormal distributions (shown as cumulative frequencies) fit Perdue's data, from 1 day (24 hour) composite samples taken weekly. In those Figures, "MLOC" is the monitoring location; "MLOC = 1" means "gross effluent value at the discharge".
- The second Figure shows the load MDLs, for both normal and lognormal distributions, for the Broadkill WLAs.

For all three parameters,

- The log-normal distribution describes Perdue's data better than the normal distribution, and
- Load MDLs in the proposed permit are based on log-normal distributions of the data.

BOD₅

Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 166.8 lbs/day is proposed for BOD₅. Proposed daily average and maximum load limits are more stringent than the 40 CFR Part 432, Subpart K mass limits. The daily load is used to calculate the limits concentrations based on 2.0MGD design flow capacity as follows:

Concentration, mg/l = (load, lbs/d)/(design flow, mgd * 8.34)

³ http://water.epa.gov/scitech/swguidance/standards/handbook/upload/2002_10_25_npdes_pubs_owm0264.pdf, Appendix E.

Figure 2 – Describing Perdue’s 001 BOD5 Data with Normal and Log-normal Distributions

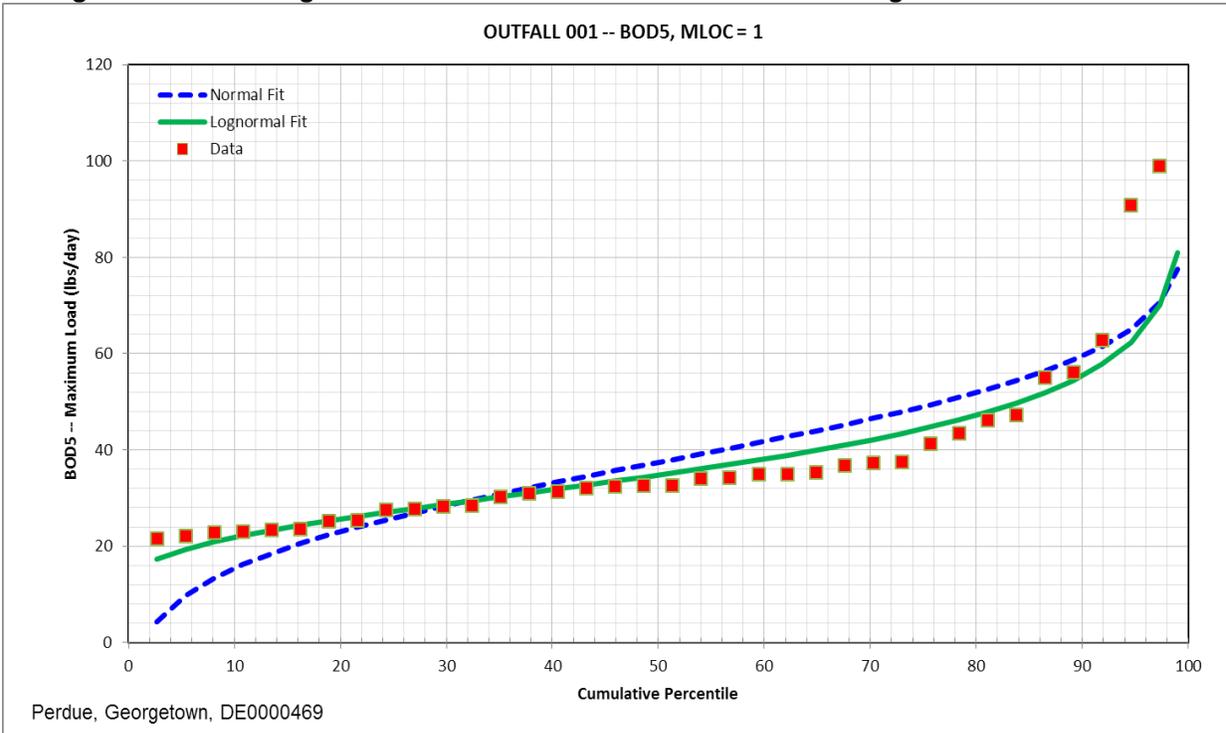
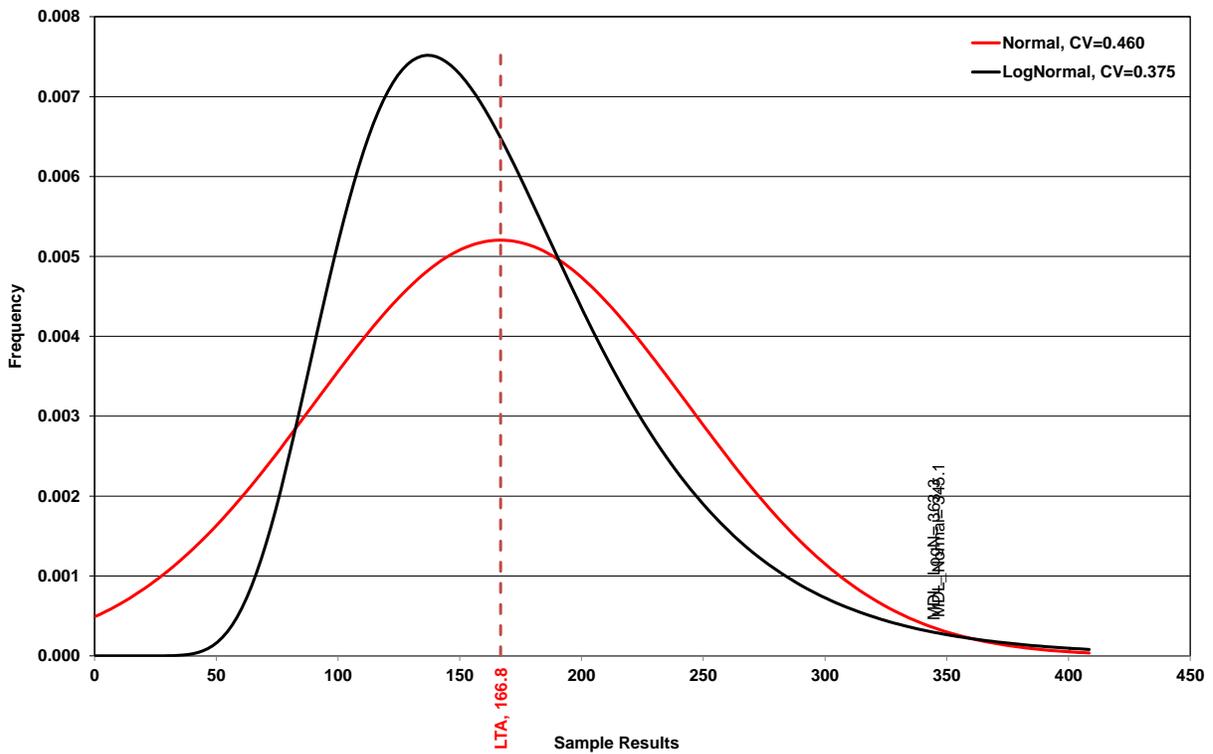


Figure 3 – BOD5, Maximum Daily Load (MDL) Limits



Total Nitrogen (TN) Limits

The TMDL for the Broadkill River Watershed specifies a WLA of 116.8 lb/day for TN for this facility. This WLA has been implemented in the permit as a moving 12-month cumulative average load limit of 42,632 pounds. Additionally, a daily average load limit of 116.8 lb/day for May 1 through September 30 is proposed based on the TMDL; the MDL is 361.3 lbs/day. The effluent limitations for TN, along with TP and Ammonia, are proposed to become effective 59 months after the permit effective date. The proposed permit includes a schedule of compliance for meeting the final effluent limitations, and requires the permittee to submit a report on an annual basis outlining progress made towards compliance with the final effluent limitations and the interim milestones included in the compliance schedule.

Figure 4 – Describing Perdue’s 001 TN Data with Normal and Log-normal Distributions

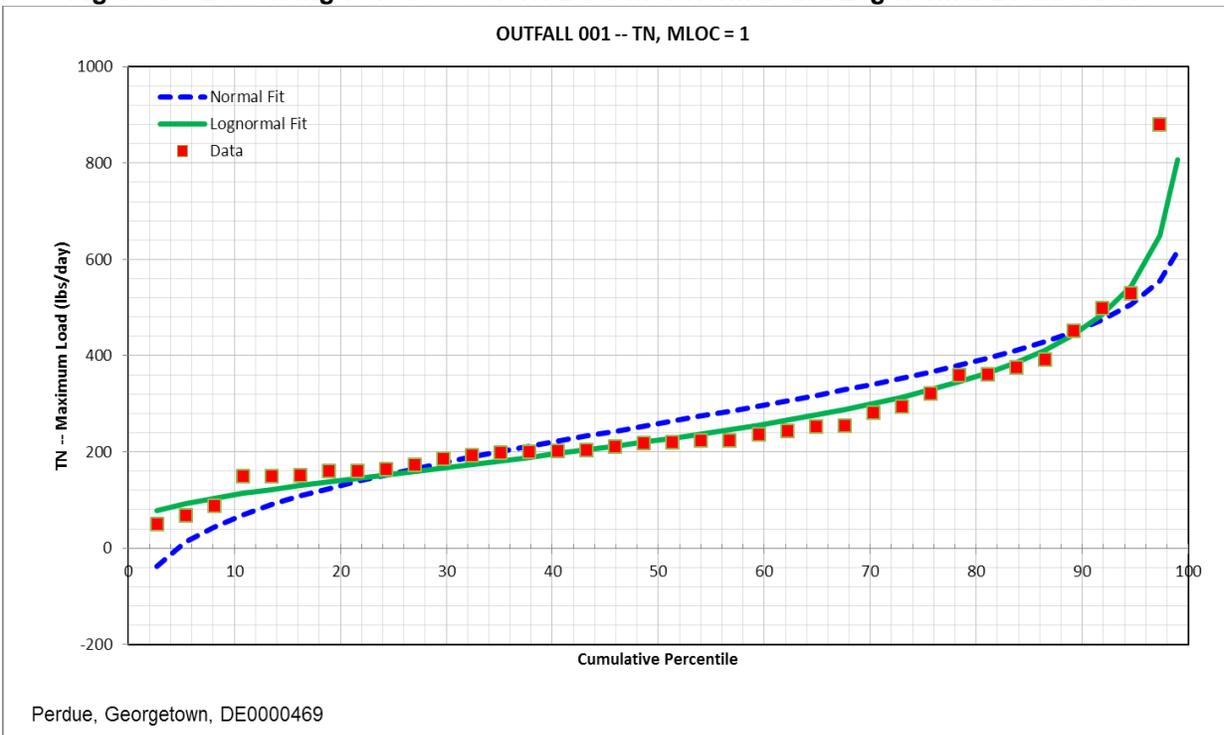
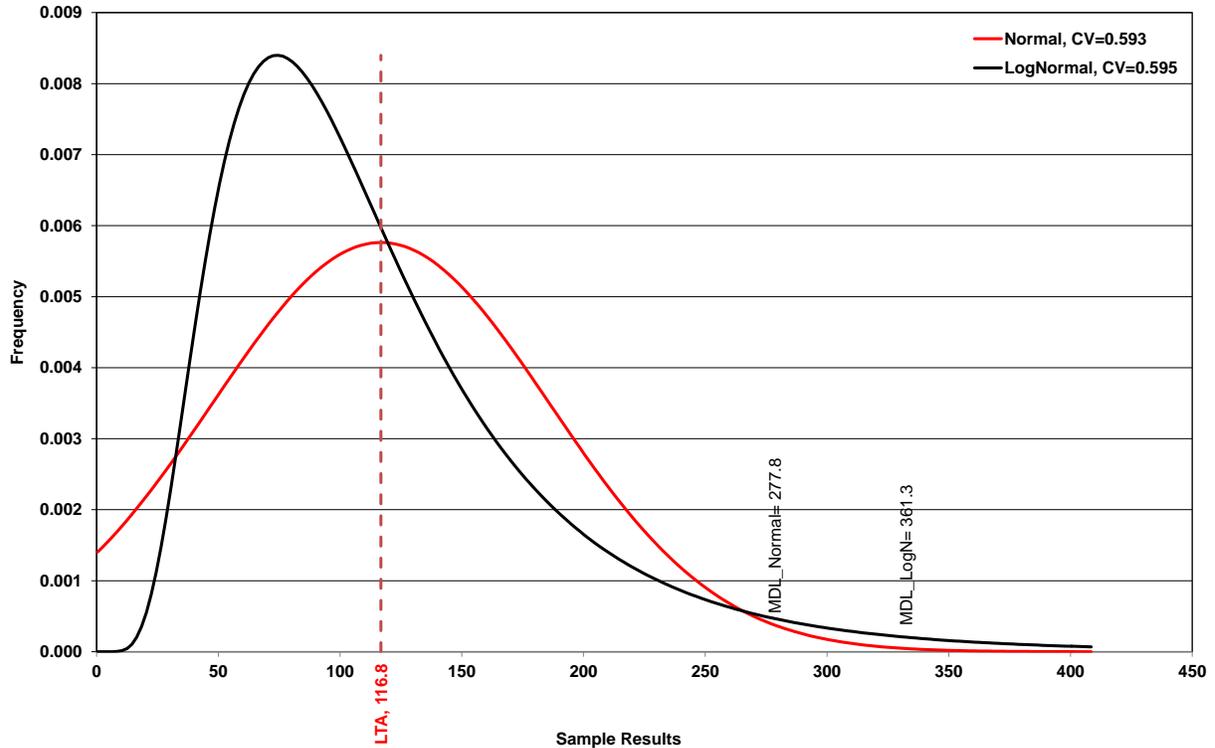


Figure 5 – Total Nitrogen, Maximum Daily Load (MDL) Limits



Total Phosphorus (TP) Limits

Based on the TMDL for the Broadkill River Watershed allocation, a daily average load limit of 8.34 lb/day is proposed for fifth year of the permit. The MDL is 19.4 lbs/day.

The permit does not include daily TP concentration limits. The disincentive for TP concentration limits is that aluminum compounds are often used to precipitate TP, with more and more aluminum needed per TP removed, to achieve very low TP concentrations. In other words, TP concentration limits could contribute to an aluminum (not a TMDL parameter, but limited in the permit) problem if the site has to over treat to achieve TP concentrations.

Figure 6 – Describing Perdue’s 001 TP Data with Normal and Log-normal Distributions

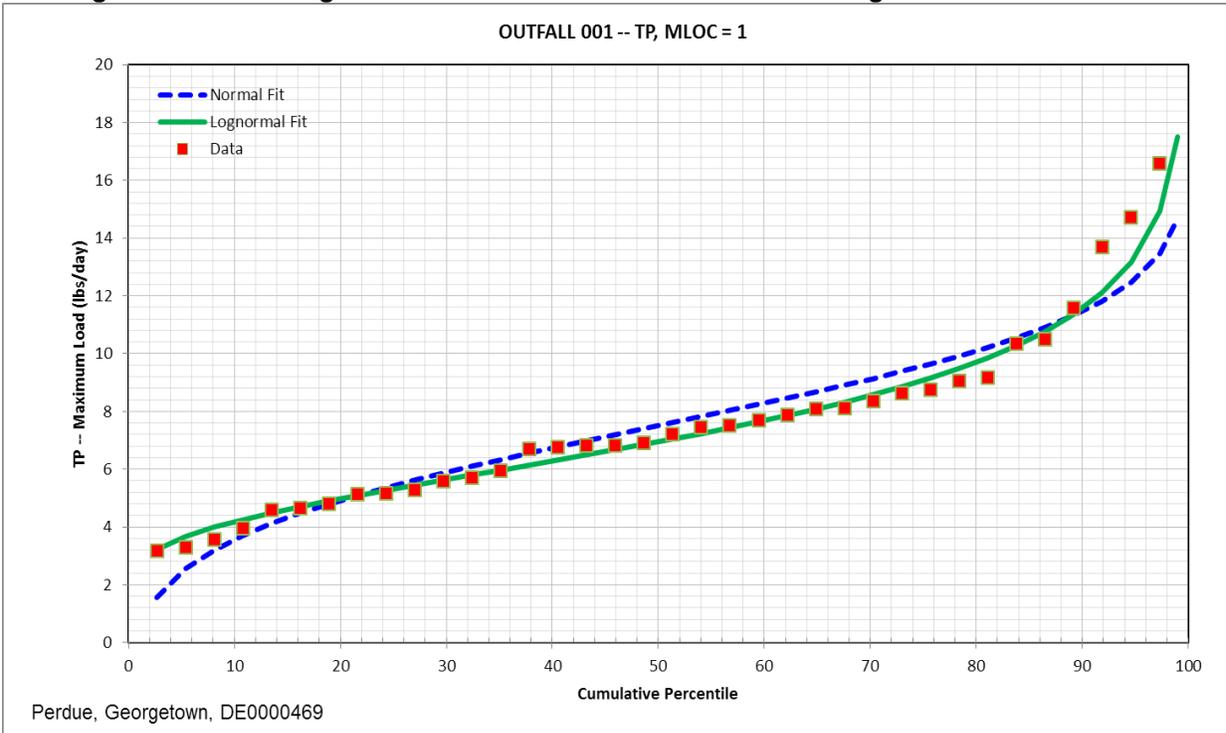
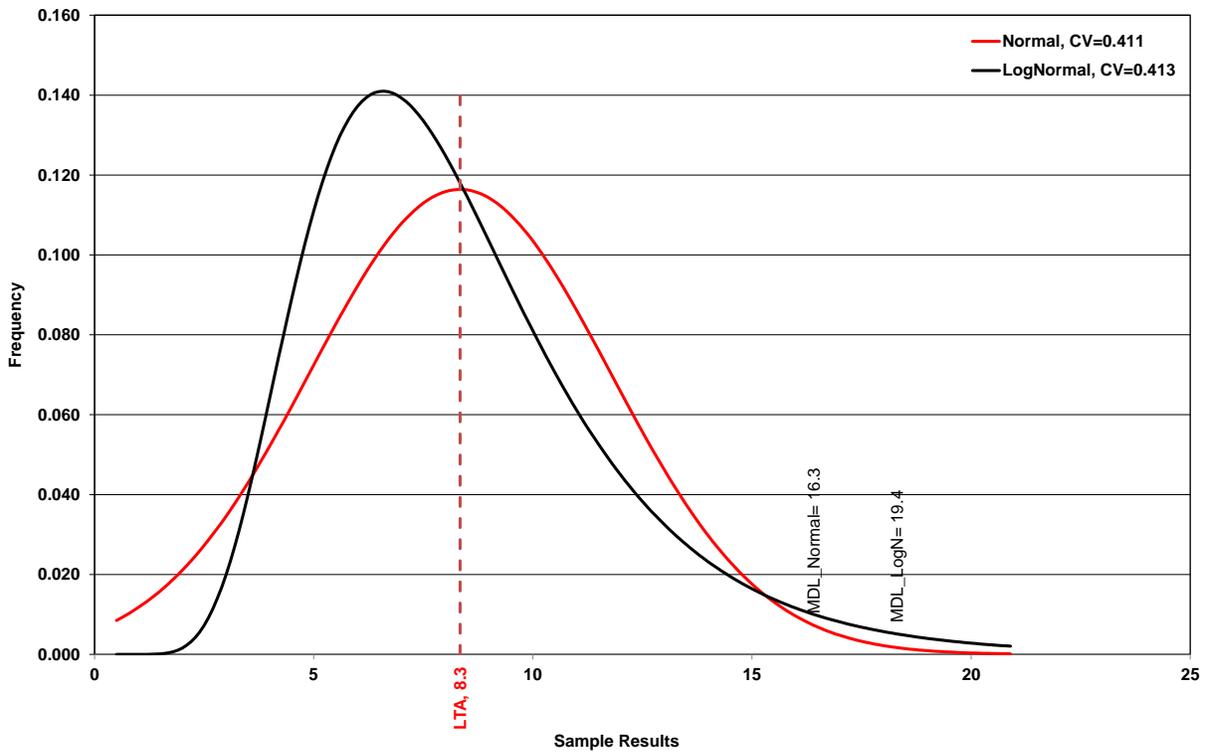


Figure 7 – Total Phosphorus, Maximum Daily Load (MDL) Limits

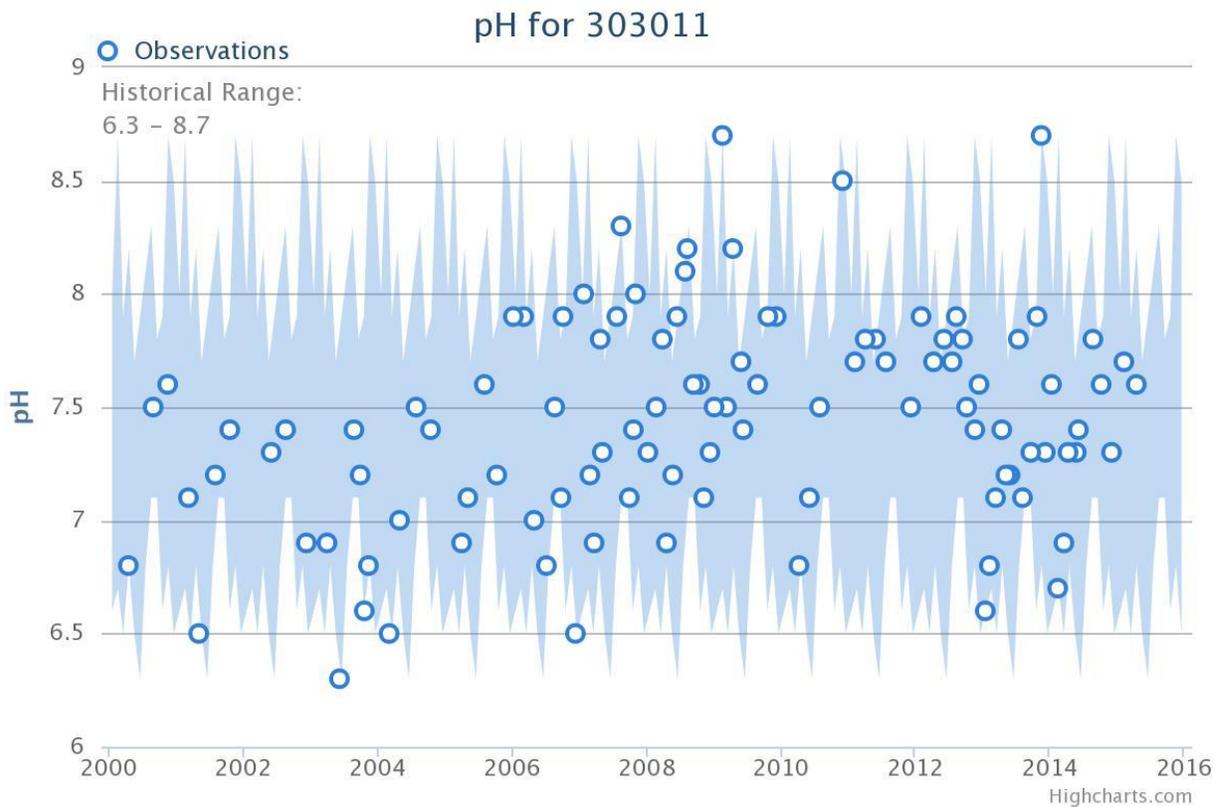


Ammonia Limits

Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 16.7 lb/day is proposed, effective at the beginning of the fifth year of the permit. Proposed daily average and maximum load limits are more restrictive than the 40 CFR Part 432, Subpart K mass limits.

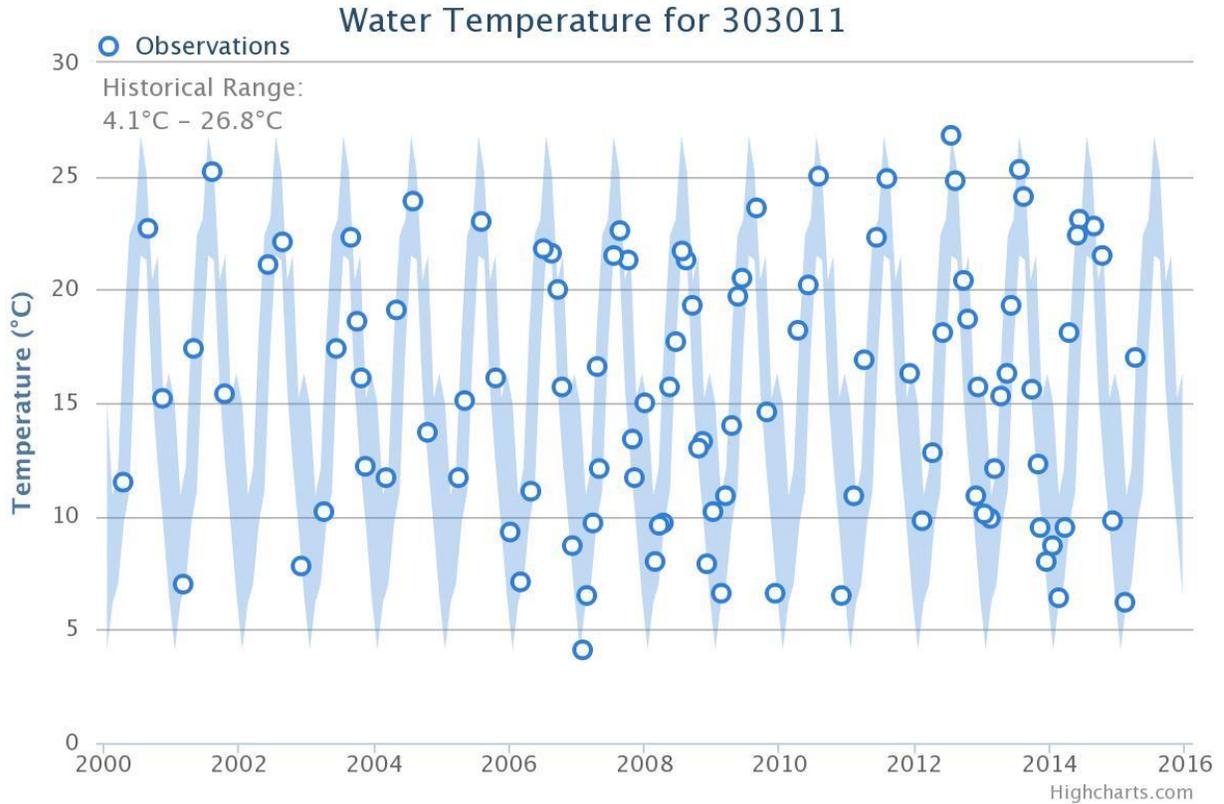
Using the same calculations as for BOD5, TN, and TP, a 99th percentile-based MDL for NH3 would be 5.6 mg/L. However, NH3 can have short term toxicity. The State of Delaware Surface Water Quality Standards⁴ (SWQS) have criteria for NH3 for acute (i.e., 1 hour exposure) and chronic (4-day exposure) toxicity. The acute NH3 criterion (aka the “criteria maximum concentration or “CMC”) is calculated based on pH. The chronic NH3 criterion (aka the “criteria chronic concentration or “CCC”) is calculated based on both pH and temperature.

To determine reasonable pH and temperature ranges to evaluate the potential for NH3 toxicity, the following Figures show historical ranges for instream pH & temperature at STORET Station. 303011 in Ingrams Branch.⁵ At least in Perdue’s case, that is closer to conditions where designated uses will apply, as discussed under **Low Flow Waters**” above.

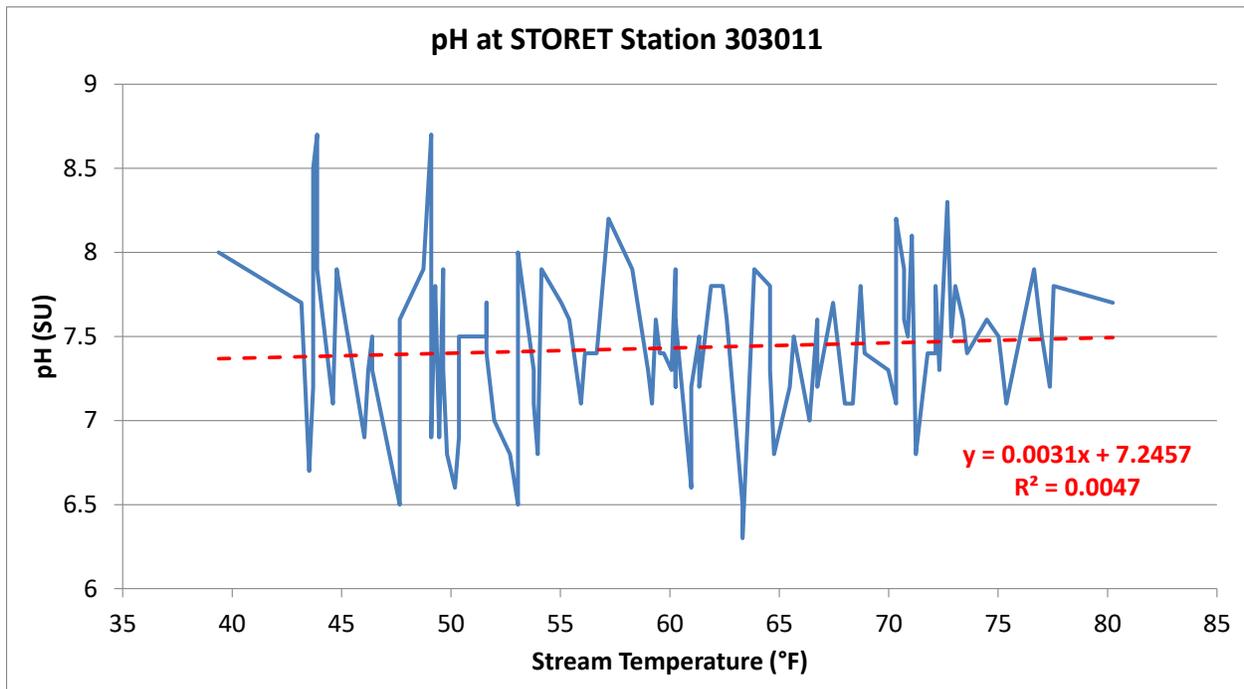


⁴ <http://www.dnrec.delaware.gov/swc/wa/Pages/Watershed%20Assessment%20Surface%20Water%20Quality%20Management.aspx>

⁵ <http://demac.udel.edu/waterquality/>



4.1 – 26.8°C is 39.4 – 80.2°F. The Figure below shows instream pH vs. temperature. R^2 in the Figure below is a measure of the correlation of pH with temperature. $R^2 = 1.0$ would be perfectly correlated; $R^2 = 0.0$ means “no correlation at all”, i.e., pH and temperature are completely independent of each other.



The NH3 CMC becomes stricter as pH increases. The NH3 CCC becomes stricter as both pH and temperature increase. As a worst case scenario, the historical stream maximum pH = 8.7 SU was used to calculate the NH3 CMC of 2.2 mg/L, which is included in the permit as the maximum daily NH3 limit. Considering the Figure above, temperature & pH conditions will not coincide long enough (4 days) or often enough (more than once per three years) to get a CCC that is stricter than the CMC.

Enterococcus Limits

The limits in the current permit, 185 col/100 mL for daily maximum and 100 col/100 mL for daily average have been retained as they are consistent with the requirements of Broadkill TMDL. The TMDL requirement for enterococcus is stated as a load. The permit will continue to require concentration limits only, since the enterococcus load TMDL requirement is just calculated as

$$\text{Load} = (\text{Enterococcus WQS concentration}) \times (\text{Discharge Flow Limit}) \times (\text{Units Conversion Factors})$$

The same equation, with values and units, is shown below.

Description	Load	Enterococcus WQS Concentration	Units Conversion Factor	Flow Limit	Units Conversion Factor	Units Conversion Factor
Equation and Values	7,570,000,000	= <u>100</u>	x 10	x <u>2</u>	x 3.785	x 1,000,000
Units	CFU/Day	CFU/mL	(100s of mLs)/Liter	mgd	liters/gallon	gpd/mgd

For permit compliance reporting, the double-underlined values above would be replaced with actual monitoring results.

Reasonable Potential Analysis and Water Quality-based Limits for Aluminum, Copper, and Zinc

Review of data (last 5 years) indicates the effluent data for aluminum has frequently been above the calculated water quality-based limits until August, 2017. Since Savannah Ditch is an effluent-dominated stream, there is reasonable potential for the Outfall 002 discharge to cause exceedances of De. SWQS for aluminum.

The “reasonable potential analysis” (RP) checks if pollutant concentrations may cause or contribute to exceedances of water quality requirements, and calculates potential limits, based on the procedures recommended in the “Technical Support Document for Water Quality-based Toxics Control”, U.S.E.P.A., Office of Water (EN-336), EPA/505/2-90-001, PB91-127415, March, 1991.

Note that the permit effective on August 1, 2006 includes final limits for aluminum, copper and zinc on page 6, shown in the Table below.

Parameter	Average Limit (ppm)	Maximum Limit (ppm)
Aluminum	0.07	0.14
Copper	0.0026	0.0051
Zinc	0.025	0.049

Those limits are based on the information in the rightmost column in the table below.

Table 6 – Values Used for Reasonable Potential Analysis		
Parameter	Updated Values	August 1, 2006 Values
Effluent water hardness	329 ppm as CaCO ₃	36 ppm as CaCO ₃
Ambient water hardness	33 ppm as CaCO ₃	60 ppm as CaCO ₃
Upstream 1Q10 river flow at 002	0.0 cfs	0.007 cfs
Upstream 7Q10 river flow at 002	0.0 cfs	0.011 cfs
Upstream 1Q10 river flow where “designated uses” apply	0.089	N/A
Upstream 7Q10 river flow at 002 where “designated uses” apply	0.131	N/A
Effluent flow	3.09 cfs (=2.0 mgd)	3.09 cfs (=2.0 mgd)

The Reasonable Potential analysis below is based on the updated values in the table above. In short, improved access to data and analysis tools, as discussed below, make the updated values much more reliable than the August 1, 2006 values.

For example, instream water hardness for EPA and USGS ambient monitoring is accessible via <http://waterqualitydata.us/portal/>. The following table summarizes the average instream water hardness⁶ for surface water monitoring stations within 20 miles of the Outfall 002 location (latitude = 38.702172 and longitude = -75.382675, in decimal degrees)

Table 7 – Average Surface Water Hardness at Monitoring Stations	
Stream	44.6
BRIDGEVILLE BRANCH AT BRIDGEVILLE, DE	53.2
BUCKS BRANCH AT BUCKS BRANCH ROAD NEAR ATLANTA, DE	41.6
BUCKS BRANCH AT CONRAIL RD AT CANNON, DE	57.8
BUCKS BRANCH NEAR ATLANTA, DE	42.2
BUCKS BRANCH NEAR WESLEY CHURCH, DE	39.8
FREIDEL PRONG AT BAKER ROAD NEAR ATLANTA, DE	51.5
FREIDEL PRONG AT WESLEY CHURCH RD NEAR CANNON, DE	66.9
GUM BRANCH NEAR OAKLEY, DE	16.7
NANTICOKE RIVER AT GREENWOOD, DE	28.7
NANTICOKE RIVER NEAR BRIDGEVILLE, DE	33.1
TOMS DAM BRANCH NEAR BRIDGEVILLE, DE	28.2
WEST BRANCH NEAR GULLY CAMP, DE	20.4
Stream: Ditch	47.4
FIELD DITCH OUTLET AT WESLEY CHURCH, DE	51.9
GILBERT TRIVITTS DITCH AT CANNON, DE	42.8
“Stream” and “Stream: Ditch”	44.8

The limiting water quality criteria are the freshwater chronic criterion for aluminum, and the freshwater acute criteria for copper and zinc. The zinc criteria is hardness dependent, so effluent and ambient water hardness were considered in calculating limits. In May 2017 the State adopted a new freshwater criteria for copper, the Biotic Ligand Model (BLM). The BLM requires at least 12 months monitoring of 10 parameters to determine the criteria. There is a STORET station (Station 303011) in Savannah Ditch downstream of Outfall 002 at Road 246. Monitoring data for 5 of the 10 BLM parameters was available for

6. STORET parameter code 00900, for Total Hardness as CaCO₃.

this station. The values for the 5 missing parameters were estimated using EPA guidance⁷ for estimating missing BLM parameters. Estimation is based upon both ecoregion and stream order. The portion of Savannah Ditch where Outfall 002 discharges is in ecoregion 63 and since it does not have tributaries, it is categorized under stream order 1-3. The BLM-based criteria was used in the reasonable potential analysis and development of copper limits.

The Table below summarizes the results of the Reasonable Potential Analysis, using the “Updated Values” referenced in Table 6 above.

Table 8 – Reasonable Potential (RP) Analysis											
Pollutant	Highest Values	Month	Max. Effluent Conc. (ppm)	Coeff. of Variation*	Water Quality Std. (ppm)		WLA (ppm)	Ce as % of WLA	Limit or Monitoring Needed?	Avg. Limit (ppm)	Max. Limit (ppm)
					Fresh Acute	Fresh Chronic					
Aluminum, Total	Highest	Jan-16	2.08	0.6	0.75	0.087	0.091	2293%	Limits	0.07	0.15
	2nd Highest	Mar-14	1.6					1764%	Limits		
	3rd Highest	Oct-15	0.76					838%	Limits		
Copper, Total Dissolved	Highest	Mar-18	0.011	0.9	0.01227	0.00762	0.0079	133%	Limits	0.0052	0.0126
	2nd Highest	July-15	0.0082					99%	Monitoring		
	3rd Highest	Jun-14	0.008					97%	Monitoring		
Zinc, Total Dissolved	Highest	Jun-14	0.072	0.8	0.31	0.31	0.32	22%	Neither	0.14	0.324
	2nd Highest	Oct-13	0.067					18%	Neither		
	3rd Highest	Sep-13	0.057					17%	Neither		

*Calculated from 3 years of monthly Discharge Monitoring Reports (i.e., 36 values), ending Mar, 2018 for copper and zinc and July, 2017 for aluminum.
 **The water quality standards shown are as they apply in stream, without dilution.
 ***The Waste Load Allocation includes in stream dilution affects, and is based on the strictest water quality standard.

Note that the zinc water quality criteria is for dissolved zinc. RP calculations use effluent monitoring results for total zinc, but conservatively assume that it is 100% dissolved. Even at that, the RP analysis indicates that limits are not warranted for zinc.⁸ RP analysis indicates limits are needed for Aluminum. According to the permittee, recent process changes have been implemented at the facility in order to meet aluminum limits. RP analysis for aluminum therefore did not include the most recent discharge data (Aug 2017-Mar 2018) as it would not result in a good representation of the average discharge data variation (coefficient of variation).

Zinc

The results of the reasonable potential analysis does not indicate the need to monitor zinc; still, the permit requires continued quarterly monitoring for zinc and hardness, considering remaining issues with Whole Effluent Toxicity. The proposed permit deletes the zinc limits, based on the discussion above. Federal⁹ and State¹⁰ regulations have anti-backsliding requirements, but the proposed permit changes do qualify under the exceptions allowed in those regulations.

Copper

Copper toxicity can be highly variable and dependent on ambient water chemistry. The BLM was developed as a tool to account for variations in metal toxicity using local water chemistry. The BLM for

⁷ Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Application in EPA’s Biotic Ligand Model. <https://www.epa.gov/wq/draft-technical-support-document-recommended-estimates-missing-water-quality-parameters-biotic>.

⁸ Moreover, taking an extra conservative approach of applying “uses” (see discussion above) at the Outfall 002 location, limits are not warranted for copper or zinc.

⁹ 40 CFR 122.44(l), http://www.ecfr.gov/cgi-bin/text-idx?SID=5920e435a64ba708ab8f144209f2458b&mc=true&node=se40.22.122_144&rgn=div8

¹⁰ Delaware RGCWP, <http://regulations.delaware.gov/AdminCode/title7/7000/7200/7201.pdf>

copper requires the following input parameters (in dissolved form) which influence the bioavailability and toxicity of copper to aquatic life; temperature, pH, dissolved organic carbon (DOC), calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), sulfate (SO₄), chloride (Cl), alkalinity and sulfide.

As explained above, the STORET station downstream of Outfall 002 (station 303011) only monitors 5 of the BLM parameters (temperature, pH, DOC, total chloride and total alkalinity) and the remaining 5 were estimated using EPA guidance document. Since the criteria is based on estimates for 5 of the BLM parameters, a special condition has been added in the permit which requires the Permittee to monitor the required BLM parameters for a period of 24 months. The results will be used to develop a criteria which will be used in performing reasonable potential analysis to determine if there is a reasonable potential of the discharge to cause an exceedance of the BLM-based copper criteria. If reasonable potential is found, limits will be determined and the permit shall be reopened to include the new limits. If no reasonable potential is found, the permit shall be reopened to remove the existing limits and only monitoring will be required.

Aluminum

Aluminum sulfate is added in the wastewater treatment process for the removal of phosphorus. The results of the reasonable potential analysis indicate limits are needed for aluminum. The current permit includes aluminum limits.

The August 1, 2006 permit included a compliance schedule for meeting aluminum limits and the permittee had requested an extension to the compliance date. The Department had agreed to issue an extension but since it would not be executed in the August 1, 2006 permit, the Department proposed to issue a “Notice of Conciliation and Secretary’s Order”, as companion to this permit, which would provide a schedule for the permittee to achieve compliance with the aluminum limits. In a letter date November 16, 2017 the permittee stated that it considered such an Order unnecessary as it was meeting the limits as a result of then recent process changes. The Aluminum limits therefore become effective on the effective day of this permit. The Reasonable Potential Analysis, updated during the permit re-issuance process, still reflects the final aluminum limits as stated in the August 1, 2006 permit are still appropriate (except that the max. limit has been increased slightly, from 0.14 mg/L to 0.15 mg/L).

Whole Effluent Toxicity

The current permit requires chronic biomonitoring but no limit for “Whole Effluent Toxicity” (WET) on 100% effluent, based on the low dilution available in the receiving waters. Perdue’s effluent has exhibited recurring intermittent toxicity. The permittee implemented Toxicity Reduction Evaluation (TRE) plan, in June 2017 however did not get beyond Phase 1 of the Toxicity Identification Evaluation (TIE).

Consultation with EPA indicates that Outfall 002 has had recurring intermittent toxicity at least since 1992, but the permittee has never gotten beyond Phase 1 of the 3 phase TIE procedure. The permit includes a new Whole Effluent Toxicity limit of 1.0 TU daily average. The permit can and does provide a schedule of compliance to meet that limit and is consistent with anti-backsliding requirements, because a limit is stricter than just the biomonitoring requirement.

Monitoring Frequency

Except for copper and zinc, all monitoring frequencies have been retained from the current permit.

Table 9 – Proposed Monitoring Frequencies for Outfall 002 Parameters			
Effluent Parameter	Monitoring Requirement		
	Proposed Measurement Frequency	Current Measurement Frequency	Sample Type
Flow	Continuous	Continuous	Recording/Totalizing
BOD ₅	Once per week	Once per week	Composite
Total Suspended Solids	Once per week	Once per week	Composite
Oil and Grease	Once per month	Once per month	Grab/shift
Phosphorus, Total (as P)	Once per week	Once per week	Composite
Ammonia (as N)	Once per week	Once per week	Composite
Nitrogen, Total	Once per week	Once per week	Composite
Aluminum	Once per month	Once per month	Composite
Copper	Once per quarter	Once per month	Composite
Zinc	Once per quarter	Once per month	Composite
Hardness	Once per quarter	Once per month	Composite
Enterococcus	Once per week	Once per week	Grab
pH	Once per day	Once per day	Grab
Biomonitoring	Once per quarter	Once per quarter	Composite

Bases for Effluent Limitations for Outfall 004

The current permit's requirement that the discharge be free from floating solids, sludge deposits, debris, oil, and scum are retained. The permit requires the facility to implement a SWP. The only storm water is sheet runoff from a grassed area. Monitoring requirements are established via the Storm water Plan.

Special Conditions

Special Condition No. 1 indicates this permit supersedes the State Permit WPC 3235F/74 and NPDES Permit DE 0000469 issued on August 1, 2006.

Special Condition No. 2 is a standard permit reopener clause. This Special Condition allows the Department to reopen and modify the permit if the discharge is causing water quality problems.

Special Condition No. 3 defines sampling requirements for oil & grease for Outfall 002.

Special Condition No. 4 requires quarterly chronic biomonitoring of Outfall 002 at 100% effluent

Special Conditions Nos. 5, 6, and 7 require proper disposal of sludge, in accordance with state and federal regulations under 40 CFR 125.3.

Special Condition No. 8 requires implementation and maintenance of a storm water plan (SWP).

Special Condition No. 9 requires the operator of the wastewater treatment facility to be a certified operator holding a Class IV license.

Special Condition No. 10 outlines the requirements to meet the moving 12-month cumulative load effluent limits for Total N.

Special Condition No. 11 requires the permittee to use EPA-approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits pursuant to 40 CFR Part 136.

Special Condition No. 12 requires monitoring of copper BLM parameters and performing reasonable potential analysis for copper.

Antidegradation Statement

Except where otherwise noted herein, the proposed effluent limitations included in this NPDES permit comply with the applicable portions of the State of Delaware Surface Water Quality Standards, Section 5 Antidegradation and ERES Waters Policies.

Public Notice and Process for Reaching a Final Decision

The public notice of the Department's receipt of the application and of reaching the tentative determinations outlined herein will be published in the Wilmington News Journal and the Delaware State News on XXXX XX, XXXX. Interested persons are invited to submit their written views on the draft permit and the tentative determinations made with respect to this NPDES permit application. The Department will not hold a public hearing on this application unless the Department receives a meritorious request to do so or unless the notice of this proposal generates substantial public interest. A public hearing request shall be deemed meritorious if it exhibits a familiarity with the application and a reasoned statement of the permit's probable impact. The request for a public hearing shall be in writing and shall state the nature of the issues to be raised at the hearing. All comments received by 4:30 p.m. on XXXX XX, XXXX will be considered by the Department in preparing the final permit.

Department Contact for Additional Information

Name: George Mwangi, P.E., Engineer IV
Address: Surface Water Discharges Section, Division of Water
Department of Natural Resources and Environmental Control
89 Kings Highway, Dover, DE 19901
Telephone: (302) 739-9946
Facsimile: (302) 739-8369
Email: George.Mwangi@state.de.us

State Permit Number WPCC 3235G/74
NPDES Permit Number DE 0000469
Effective Date:
Expiration Date:

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
AND THE LAWS OF THE
STATE OF DELAWARE

In compliance with the provisions of the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251 et seq.) (herein after referred to as "the Act"), and pursuant to the provisions of 7 Del. C., 6003

Perdue Foods, LLC
20621 Savannah Road
Georgetown, Delaware 19947

is authorized to discharge from the facility (Point Sources 002 and 004) located at

20621 Savannah Road
Georgetown, Delaware

to receiving waters named

Savannah Ditch

The effluent limitations, monitoring requirements and other permit conditions are set forth in Part I, II and III hereof.

Bryan A. Ashby, Manager
Surface Water Discharges Section
Division of Water
Department of Natural Resources and Environmental Control

Date Signed

Effective Date:
Expiration Date:

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Part I

A. General Description of Discharges and Facilities

1. Discharge Descriptions and Site Location Map

Outfall 002 - Effluent from the wastewater treatment system. Waste streams include:

- process wastewaters from first processing operations (receiving, killing, scalding, picking), second processing operations (evisceration, chilling), and further processing operations (cutup, boneless, thinslice);
- plant sanitation wastewater;
- sanitary wastewater;
- boiler blowdown (0.035 mgd);
- process area storm water (includes storm water runoff from the following areas: processing building roofs, live receiving area, offal area, yard wash down, refrigerated box trailer parking pads, truck wash, trailer drippings, driveways, live haul scale, vehicle refueling area, and raw waste lift station); and,
- feed mill boiler blowdown (0.003 mgd) from the Perdue Feed Mill, in Bridgeville.

Outfall 004 - Storm Water discharge from a grassed area.

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A. General Description of Discharges and Facilities (continued)

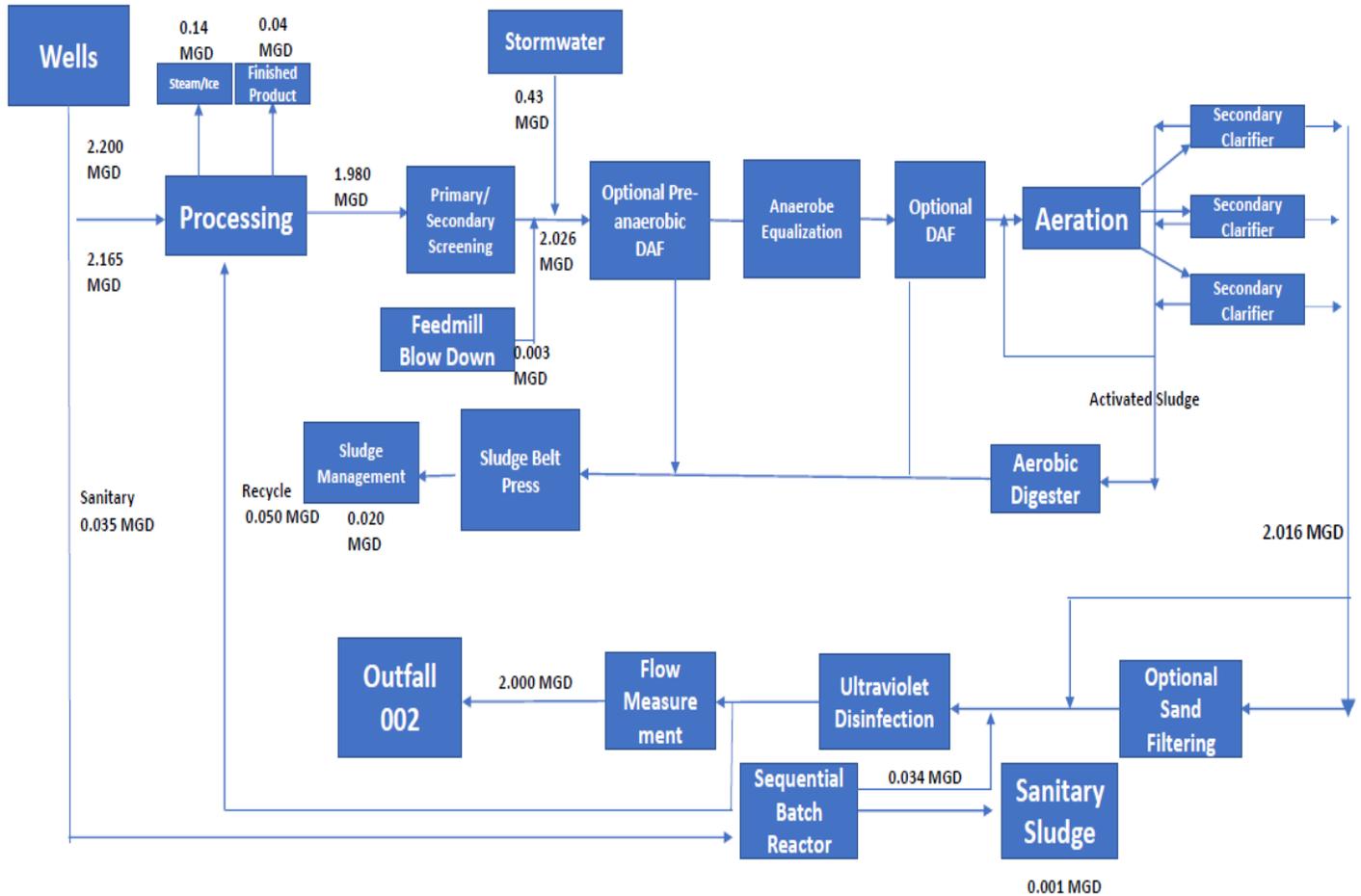
2. Site Location Map



A. General Description of Discharges and Facilities (continued)

3. Process Diagram

Perdue Farms Georgetown NPDES Permit # DE0000469 Flow Diagram



B. Effluent Limitations and Monitoring Requirements

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR Outfall 002

During the period beginning **effective date and lasting to fifty-nine (59) months** after the effective date, the permittee is authorized to discharge from point source 002¹ the quantity and quality of effluent specified below:

Parameter	Effluent Limitations						Monitoring Requirements ²	
	Load			Concentration			Measurement Frequency	Sample Type
	Daily Average	Daily Maximum	Units	Daily Average	Daily Maximum	Units		
Flow ³	2.0		MGD	--	--	--	Continuous	Record/Totalize
pH	The pH shall be between 6.0 S.U. and 9.0 S.U. at all times.					S.U.	Once per day	Grab
BOD ₅	166.8	363.3	lbs/day	10.0	21.8	mg/L	Once per week	Composite
Total Suspended Solids (TSS)	333.6	500	lbs/day	20.0	30.0	mg/L	Once per week	Composite
Enterococcus	--	--	--	100 ⁴	185	Col/100 mL	Once per week	Grab
Nitrogen, Total (as N) ⁵	906	1568	lbs/day	54.4	94.1	mg/L	Once per week	Composite
Ammonia (as N) ⁵	66.7	133.4	lbs/day	4.0	8.0	mg/L	Once per week	Composite
Phosphorus, Total (as P) ⁵	25	38	lbs/day	1.5	2.3	mg/L	Once per week	Composite
Oil and Grease	125	188	lbs/day	7.5	11.3	mg/L	Once per month	3 Grabs ⁶
Aluminum, Total	1.19	2.39	lbs/day	0.07	0.15	mg/L	Once per month	Composite
Copper, Dissolved ⁷	0.0868	0.2103	lbs/day	0.0052	0.0126	mg/L	Once per quarter	Composite
Zinc, Dissolved			lbs/day			mg/L	Once per quarter	Composite
Hardness (as CaCO ₃)			lbs/day			mg/L	Once per quarter	Composite
Whole Effluent Toxicity ⁸	--	--	--	1.0		Chronic Toxicity Units	Once per quarter	Composite
The discharge shall be free from floating solids, sludge deposits, debris, oil and scum.								

Note: In the table above, a blank box indicates that a value must be reported, but there is no effluent limitation.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the effluent from the UV disinfection system.

1. Outfall 002 consists of effluent from the process wastewater treatment system.
2. Report "non-detect" testing results on the discharge monitoring report (DMR) as "<" and the applicable test MDL. For example, if BOD₅ is "non-detect" using a test method with an MDL of 2.4 mg/L, report "< 2.4 mg/L" on the DMR.
3. Report both average daily and maximum daily flows on the discharge monitoring report (DMR).
4. The average enterococcus limit is based on a geometric mean.
5. See Part I.C.2 of this permit.
6. See Part III.A., Special Condition No. 3, "Compliance with Oil and Grease Limits", of this permit.
7. See Special Condition 12 of this permit.
8. **WET limit becomes effective three years after the permit effective date.** See Part I.C.1 and Special Condition No. 4 of this permit.

B. Effluent Limitations and Monitoring Requirements

2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS for Outfall 002

During the period beginning the **fifty-ninth (59) month after the effective date and lasting through expiration date**, the permittee is authorized to discharge from point source 002¹ the quantity and quality of effluent specified below:

Parameter	Effluent Limitations						Monitoring Requirements ²	
	Load			Concentration			Measurement Frequency	Sample Type
	Daily Average	Daily Maximum	Units	Daily Average	Daily Maximum	Units		
Flow ³	2.0	---	MGD	---	---	---	Continuous	Record/Totalize
pH	The pH shall be between 6.0 S.U. and 9.0 S. U. at all times.					S.U.	Once per day	Grab
BOD ₅	166.8	363.3	lbs/day	10.0	21.8	mg/L	Once per week	Composite
Total Suspended Solids (TSS)	333.6	500.0	lbs/day	20.0	30.0	mg/L	Once per week	Composite
Enterococcus	---	---	CFU/day	100 ⁴	185	Col/100 mL	Once per week	Grab
Nitrogen, Total (as N) (Oct. 1 – Apr. 30)			lbs/day			mg/L	Once per week	Composite
Nitrogen, Total (as N) (May 1 – Sep. 30)	116.8	361.3	lbs/day			mg/L	Once per week	Composite
Nitrogen, Total (as N)	Moving 12-Month Cumulative Load of 42,632 pounds ⁵							
Ammonia (as N)	16.7	36.7	lbs/day	1.0	2.2	mg/L	Once per week	Composite
Phosphorus, Total (as P)	8.34	19.4	lbs/day			mg/L	Once per week	Composite
Oil and Grease	125.0	188.0	lbs/day	7.5	11.3	mg/L	Once per month	3 Grabs ⁶
Aluminum, Total	1.19	2.39	lbs/day	0.07	0.15	mg/L	Once per month	Composite
Copper, Dissolved	0.0868	0.2103	lbs/day	0.0052	0.0126	mg/L	Once per quarter	Composite
Zinc, Dissolved			lbs/day			mg/L	Once per quarter	Composite
Hardness (as CaCO ₃)			lbs/day			mg/L	Once per quarter	Composite
Whole Effluent Toxicity ⁷	--	--	--	1.0		Chronic Toxicity Units	Once per quarter	Composite
The discharge shall be free from floating solids, sludge deposits, debris, oil and scum.								

Note: In the table above, a blank box indicates that a value must be reported, but there is no effluent limitation.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the effluent from the UV disinfection system.

1. Outfall 002 consists of effluent from the process wastewater treatment system.
2. Report “non-detect” testing results on the discharge monitoring report (DMR) as “<” and the applicable test MDL. For example, if BOD₅ is “non-detect” using a test method with an MDL of 2.4 mg/L, report “< 2.4 mg/L” on the DMR.
3. Report both average daily and maximum daily flows on the DMR.
4. The average enterococcus limit is based on a geometric mean.
5. See Part III, A, Special Condition No. 10.
6. See Part III.A., Special Condition No. 3, “Compliance with Oil and Grease Limits”, of this permit.
7. See Special Condition No. 4 of this permit.

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B. Effluent Limitations and Monitoring Requirements

3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS for Outfall 004

During the period beginning effective date and lasting through expiration date, the permittee is authorized to discharge from point source 004¹ the quantity and quality of effluent specified below:

Parameter	Effluent Limitations							Monitoring Requirements ²	
	Load			Concentration				Measurement Frequency	Sample Type
	Daily Average	Daily Maximum	Units	Daily Average	Daily Maximum	Maximum Instantaneous	Units		
No monitoring requirements are placed on this discharge ² .									
Only storm water may be discharged from this outfall.									
The discharge shall be free from floating solids, sludge deposits, debris, oil and scum.									

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the stormwater ditch near the property line.

1 Outfall 004 consists of storm water discharge from grassed non-process areas.

2. See Special Condition No. 8 on Page 24 of this permit.

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Expiration Date:

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C. Schedule of Compliance

The Permittee shall comply with the requirements herein as soon as possible, but in no event later than the dates set forth in the following schedules.

All submittals required below shall be subject to the written approval of the Department.

1. Compliance with the chronic whole effluent toxicity (WET) limit

- a. No later than 90 days after the effective date of this permit, the permittee shall submit a detailed Toxicity Reduction Evaluation (TRE) Work Plan which shall include actions the permittee will take to investigate, identify, and correct the causes of toxicity in order to achieve compliance with the WET limit specified in Part I.B. 1.
- b. No later than six (6) months after the effective date of this permit, the permittee shall begin implementation of the work plan.
- c. No later than twelve (12) months after the effective date of this permit, the permittee shall complete the source investigation and have identified the source of toxicity.
- d. No later than twenty-four (24) months after the effective date of this permit, the permittee shall have confirmed the source of toxicity, submit the results to the Department and begin taking the necessary actions to eliminate the source of toxicity.
- e. As soon as possible but no later than thirty-six (36) months after the effective date of this permit, the permittee shall achieve compliance with the WET limits in Part I.B. 1.

The permittee may submit a written proposal to the Department requesting extension of the compliance schedule in Part I.C1.e. above if it is determined that capital improvements are necessary to achieve compliance. Such a request must be received by the Department no later than 24 months after the effective date of this permit. Any deadline extension shall not go beyond 59 months after the effective date of this permit.

2. Compliance with Final Total Nitrogen (TN), Total Phosphorus (TP) and Ammonia limits in Part I.B.2 of this permit.

- a. No later than twelve (12) months after the effective date of this permit, the permittee shall provide a
 - 1) Schedule of specific actions to acquire funding and initiate design and construction of improvements needed to achieve compliance with TN, TP and ammonia limits, and
 - 2) Proposed alternatives and plans to achieve compliance with final TN, TP and ammonia limits at Outfall 002,
- b. No later than twenty four (24) months after the effective date of this permit, the permittee shall initiate design and construction of proposed plant upgrades necessary for compliance with the final effluent limitations.
- c. No later than thirty-six (36) months after the permit effective date, the permittee shall submit a progress report of the upgrades.
- d. No later than forty-eight (48) months after the effective date of this permit, the permittee shall complete construction.
- e. No later than fifty-nine (59) months after the effective date of this permit the permittee must achieve compliance with the final effluent limitations and monitoring requirements for TN, TP and Ammonia at Outfall 002, as specified in Part I, B. 2. of this permit.

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No later than fourteen (14) calendar days following a date identified in the above schedule of compliance, the Permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

D. Monitoring and Reporting

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Reporting

Monitoring results obtained during the previous one (1) month shall be summarized for each month and reported via the Department approved Electronically Generated Discharge Monitoring Report (eDMR).

- a. The permittee shall submit results via the eDMR. The eDMR must be electronically signed and submitted no later than the 28th day of the month following the completed reporting period. All other reports required herein, shall be submitted to the Department via email or by regular mail. The Department mailing address is:

State of Delaware – DNREC
Division of Water – Surface Water Discharges Section
R & R Building
89 King Highway
Dover, DE 19901
Telephone: (302) 739-9946

- b. In the event of a catastrophic “electronic system failure”, the permittee may submit/may be required to submit, results on a signed hard copy DMR (EPA Form No. 3320-1 or approved equivalent). This hard copy DMR must be postmarked no later than the 28th day of the month following the completed reporting period. SPECIAL NOTE: Departmental approval must be obtained prior to sending in any hard copy DMR, as the eDMR process is the only reporting method meeting the eReporting Federal reporting requirements.

3. Definitions

- a. “Average daily loading” means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.
- b. “Average monthly discharge” or “daily average discharge” is the arithmetic mean of all daily discharges during a calendar month, calculated as the sum of all daily discharges sampled and/or measured during the month divided by the number of daily discharges sampled or measured during such month.
- c. “Average monthly effluent limitation” or “daily average effluent limitation” means the highest allowable average of daily discharges over a calendar month.

- d. "Best management practices" or "BMP's" means schedules of activities, prohibitions of practices, maintenance procedures and other management practices or measures to prevent or reduce the discharge of pollutants. BMP's include but are not limited to: structural and nonstructural controls; treatment requirements; operating procedures and practices to control spills or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs can be applied before, during and after pollution generating activities to reduce or eliminate the introduction of pollutants into receiving waters.
- e. "Biosolids" refers to the biomass or biological sludge generated or produced by biological wastewater treatment processes.
- f. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.
- g. "Composite sample" means a combination of individual samples obtained at specified intervals over a given time period, generally 24 hours.

In collecting a composite sample of a discharge other than a discharge of storm water or storm runoff (a non-storm water discharge), either: a) the volume of each individual sample is proportional to the discharge flow rate or b) the sampling interval is proportional to the discharge flow rate and the volume of each individual sample is constant. For a continuous non-storm water discharge, a minimum of 24 individual grab samples shall be collected and combined to constitute a 24 hour composite sample. For intermittent non-storm water discharges 4 hours or more in duration, the number of individual grab samples collected and combined to constitute a composite sample shall at a minimum be equal to the duration of the discharge in hours but not less than 12. For intermittent non-storm water discharges of less than 4 hours, the minimum number of individual grab samples collected and combined to constitute a composite sample shall be equal to the duration of the discharge in hours times 3 but not less than 3 samples.

- h. "Daily discharge" means the total discharge measured during a calendar day or any 24-hour period that reasonably represents the calendar day for sampling purposes. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of a pollutant discharged over a calendar day or the equivalent 24-hour period. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over a calendar day or the equivalent 24-hour period.
- i. "Daily maximum effluent limitation" is the highest total mass of a pollutant allowed to be discharged during a calendar day or, in the case of a pollutant limited in terms other than mass, the highest average concentration or other measurement of the pollutant specified during the calendar day, or any 24-hour period that reasonably represents the calendar day for sampling purposes.
- j. "Daily maximum temperature" is the highest arithmetic mean of the temperature observed for any two (2) consecutive hours during a 24-hour day, or during the operating day if flows are of shorter duration.
- k. "Direct Responsible Charge" or "DRC" means on-location accountability for, and on-location performance of, active daily operation (including Technical Supervision, Administrative Supervision, or Maintenance Supervision) for a Wastewater Facility, an operating shift of a system or a facility, or a major segment of a system or facility.
- l. "Estimate" is that based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

- m. "Grab sample" is an individual sample collected in less than 15 minutes.
- n. "I/S" (immersion stabilization) means the immersion of a calibrated device in the effluent stream until the reading is stabilized.
- o. "Maximum instantaneous concentration" or "MIC" is the highest allowable measured concentration of a pollutant, obtained by analyzing a grab sample of the discharge.
- p. "Measured flow" is any method of liquid volume measurement the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.
- q. "Method Detection Limit" or "MDL" means the lowest concentration of a substance which can be measured with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.
- r. "Minimum analytical level" or "MAL" means the lowest concentration of a substance that can be quantified within specified limits of interlaboratory precision and accuracy under routine laboratory operating conditions in the matrix of concern. When there is insufficient interlaboratory study data, the "MAL" may be determined through the use of a multiplier of 5 to 10 times the method detection level or "MDL".
- s. "Monthly average temperature" is the arithmetic mean of temperature measurements made on an hourly basis, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar month, or during the operating month if flows are of shorter duration.
- t. "Non-contact cooling water" is that which is contained within a leak-free system, i.e. has no contact with any gas, liquid or solid other than the container used for transport.
- u. "Nuisance condition" is any condition that, as a result of pollutant addition to a surface water, causes unreasonable interference with the designated uses of the waters or the uses of the adjoining land areas.
- v. "Operator" means any person employed or appointed by any owner, and who is designated by such owner to be the person controlling the operations of the treatment works, including direct actions, decisions or evaluations which affect the quality of the discharge, and whose duties include testing or evaluation to control treatment works operations.
- w. "Pollution prevention" means any practice which results in a lesser quantity of emissions released or discharged prior to out-of-process recycling, treatment or control, as measured on a per-unit-of-production basis.
- x. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- y. "Sewage" means the water carried human or animal wastes from septic tanks, water closets, residences, buildings, industrial establishments or other places together with such groundwater infiltration, subsurface water, storm inflow, admixture of industrial wastes, or other wastes as may be present.
- z. "Sewage sludge" means any solid, semi-solid or liquid residue removed during the treatment

of municipal wastewater or domestic sewage, including but not limited to, solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings and sewage sludge products.

- aa. "Sludge" means the accumulated semi-liquid suspension, settled solids, or dried residue of these solids removed by any surface water or groundwater treatment facility or any liquid waste treatment facility or works, whether or not such solids have undergone treatment.
- bb. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. The basis for specific effluent limitations can be found in this permit's fact sheet. 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.
- cc. "Whole effluent toxicity" means the aggregate toxic effect of an effluent or discharge measured directly by a toxicity test.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 C.F.R., Part 136, unless otherwise specified in this permit.

5. Quality Assurance Practices

The permittee is required to show the validity of all data by requiring its laboratory to adhere to the following minimum quality assurance practices:

- a. Duplicate¹ and spiked² samples must be run for each constituent in the permit on 5% of the samples, or at least on one sample per month, whichever is greater. If the analysis frequency is less than one sample per month, duplicate and/or spiked samples must be run for each analysis.
- b. For spiked samples, a known amount of each constituent is to be added to the discharge sample. The amount of constituent added should be approximately the same amount present in the unspiked sample, or must be approximately that stated as maximum or average in the discharge permit.
- c. The data obtained in a and b shall be summarized in an annual report in terms of precision, percent recovery, and the number of duplicate and spiked samples run, date and laboratory log number of samples run, and name of analyst. The report shall cover the calendar year, January 1 through December 31, and shall be submitted to the Department, postmarked no later than the February 15 following the fourth quarter of reporting.
- d. Precision shall be calculated by the formula, standard deviation $s = (\sum d^2/k)^{1/2}$, where d is the difference between duplicate results, and k is the number of duplicate pairs used in the calculations.
- e. Percent recovery shall be reported on the basis of the formula $R = 100 (F-I)/A$, where F is the analytical result of the spiked sample, I is the result before spiking of the sample, and A is the amount of constituent added to the sample.

1 Duplicatesamples are not required for the following parameters: color, temperature, and turbidity.

2 Spiked samples are not required for the following parameters: acidity, alkalinity, bacteriological, benzidine, chlorine, color, dissolved oxygen, hardness, pH, oil & grease, radiological, residues, temperature, turbidity, BOD 5, and total suspended solids. Procedures for spiking samples are available through the Regional Quality Assurance Coordinator.

- f. The percent recovery, R, in e above shall be summarized yearly in terms of mean recovery and standard deviation from the mean. The formula, $s = (\sum(x-\bar{x})^2/(n-1))^{1/2}$, where s is the standard deviation around the mean \bar{x} , x is an individual recovery value, and n is the number of data points, shall be applied.
- g. The permittee or its contract laboratory is required to annually analyze an external quality control reference sample for each pollutant. These are available through the EPA regional quality assurance coordinator, or other EPA-approved supplier. Results shall be included in the Annual Report, required in paragraph c above.
- h. The permittee and/or its contract laboratory is required to maintain an up-to-date and continuous record of the method used, of any deviations from the method or options employed in the reference method, of reagent standardization, of equipment calibration and of the data obtained in a, b and f above.
- i. If a contract laboratory is utilized, the permittee shall report the name and address of the laboratory and the parameters analyzed together with the monitoring data required.

6. Records

- a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
 - 1) The date, exact place and time of sampling or measurements;
 - 2) The person(s) who performed the sampling or measurements;
 - 3) The date(s) and time(s) analyses were performed;
 - 4) The individual(s) who performed each analysis;
 - 5) The analytical techniques or methods used;
 - 6) The results of each analysis; and
 - 7) The quality assurance information as stated above.
- b. An operator log must be kept on site at all times. This log should include time spent at the treatment facility on any date, and the nature of operation and maintenance performed.

7. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA No. 3320-1). Such increased frequency shall also be indicated.

8. Records Retention

All records and information resulting from the monitoring activities required by this permit including hard copies of any electronically generated Discharge Monitoring Reports, all records of analyses performed, records of calibration and maintenance of instrumentation, and recording

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from continuous monitoring instrumentation shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

Part II

A. Management Requirements

1. Duty to Comply

- a. The permittee must comply with all the conditions of this permit. All discharges authorized herein shall be consistent with the terms and conditions of this permit.
- b. The discharge of any pollutant more frequently than, or at a level in excess of that identified and authorized herein shall constitute a violation of the terms and conditions of this permit. The violation of any effluent limitation or of any other condition specified in this permit is a violation of 7 Del. C., Chapter 60, and the Act and is grounds for enforcement as provided in 7 Del. C. §§6005, 6013, and 6018, for permit termination or loss of authorization to discharge pursuant to this permit, for permit revocation and reissuance, or permit modification, or denial of a permit renewal application. The Department may seek voluntary compliance by way of warning, notice or other educational means, pursuant to 7 Del. C. §6019, or any other means authorized by law. However, the Law does not require that such voluntary means be used before proceeding by way of compulsory enforcement.
- c. Any person violating Sections 301, 302, 306, 307, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative, and/or criminal penalties as set forth in 40 CFR 122.41(a)(2), 122.41(a)(3), and 122.41(j)(5).

2. Notification

a. Notification of Planned Changes

The permittee shall notify the Department in writing of any anticipated expansion or alteration of this permitted facility, any production increases, process modifications, or other changes which could result in new, different or increased discharges of pollutants. Notice is required only when such alteration, addition or change:

- (1) may justify the application of permit conditions that are different from those specified in this permit, or
- (2) may justify the application of permit conditions that are absent from this permit, or
- (3) meets any one of the following criteria:
 - (a) The alteration or addition to this permitted facility may meet one of the criteria for determining whether a facility is a new source, as defined in Section 2 of the Department's Regulations Governing the Control of Water Pollution, as amended May 14, 2003; or
 - (b) As a result of the alteration or addition, the nature of the discharge is or could be substantially different from that represented in the application originally submitted for the discharge(s) authorized herein, upon which this permit is based; or
 - (c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, including any uses or disposal sites not identified in the application for this permit or during this permit's issuance process; or

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- (d) The planned change in permitted facility or activity may result in noncompliance with the requirements of this permit.

Upon notification of a planned change, the Department may require the submission of a new application. The permittee is encouraged to notify the Department and submit any application well in advance of the scheduled date for the anticipated alteration or addition to allow sufficient time to process any modifications of this permit necessitated by the change and to avoid any resultant project delays.

b. Notification of Noncompliance

The permittee shall report all instances of noncompliance with this permit to the Department as outlined herein:

- 1) If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation or maximum instantaneous concentration specified in this permit, the permittee shall report such incident within 24 hours and provide the Department with the following information, in writing, within five (5) days of becoming aware of such conditions:
 - a) A description of the discharge and cause of noncompliance;
 - b) The period of noncompliance, including exact dates and times and if the noncompliance has not been corrected, the anticipated time when the discharge will return to compliance; and
 - c) Actions taken or to be taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.
- 2) If, for any reason, the permittee does not comply with any daily average or average monthly effluent limitation or standard specified in this permit, the permittee shall provide the information outlined above in paragraph b.1) with the discharge monitoring report (DMR) submitted in accordance with Part I.D.2. of this permit.
- 3) In the case of any upset or unanticipated bypass that exceeds any permitted effluent or discharge limitation, the permittee shall notify the Department within 24 hours. If this notification is provided orally, a written report shall be submitted within 5 days.
- 4) In the case of any discharge subject to any toxic pollutant effluent standard under Section 307(a) of the Act, the permittee shall notify the Department within 24 hours from the time the permittee becomes aware of a noncomplying discharge. Notification shall include the information outlined above in paragraph b.1). If this information is provided orally, a written submission covering these points shall be provided within five days of the time the permittee becomes aware of the circumstances covered by this paragraph.
- 5) In the case of any other discharges which could constitute a threat to human health, welfare, or the environment, the information required above in paragraph b.1) shall be provided as quickly as possible upon discovery and after activating the appropriate emergency site plan, unless circumstances exist which make such a notification impossible. A delay in notification shall not be considered a violation of this permit when the act of reporting may delay the mitigation of the discharge and/or the protection of public health and the environment. A written submission covering these points must be provided within five days of the time the permittee becomes aware of the circumstances covered by this paragraph.

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- 6) The permittee shall report all instances of noncompliance not otherwise reported under the preceding paragraphs at the time the discharge monitoring report (DMR) is submitted. The report shall contain the information outlined above in paragraph b.1).
 - 7) The Department may waive the written report as required herein on a case-by-case basis, if an oral report was provided within 24 hours.
- c. Notifications Specific to Manufacturing, Commercial, Mining, and Silvicultural Dischargers

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

- 1) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - a) One hundred micrograms per liter (100 µg/l);
 - b) 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;
 - c) Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - d) The level established by this Permit.
 - 2) That 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":
 - a) Five hundred micrograms per liter (500 µg/l);
 - b) One milligram per liter (1 mg/l) for antimony;
 - c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - d) The level established by this Permit.
- d. Reporting Discharge(s) of Pollutants Pursuant to 7 Del. C. §6028

Any person who causes or contributes to the discharge of a pollutant into waters of the State or the United States either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department as required under 7 Del. C. §6028.

3. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as

possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes but is not limited to, effective performance (based upon the facilities' design), adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, when necessary, to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to State waters resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Failure

The permittee, in order to maintain compliance with this permit, shall control production and all discharges as necessary upon reduction, loss, or failure of the treatment facility until the treatment facility is restored or an alternative method of treatment is provided. The need to halt or reduce the permitted activity in order to maintain compliance with this permit shall not be a defense for a permittee in any enforcement action.

6. Alternative Power Source

In order to ensure compliance with the terms and conditions of this permit, the Department may require that the permittee provide an alternative power supply which is sufficient to operate the permittee's wastewater collection, conveyance and treatment facilities.

7. Removed Substances

Any solids, sludges, filter backwash, or other pollutants removed in the collection, conveyance or treatment of wastewater shall be disposed of in such manner as to prevent any pollutant from such materials from entering surface waters or groundwaters.

8. Bypass

- a. The Secretary may prohibit the intentional diversion or bypass of waste streams from any portion of the facility regulated herein in consideration of the adverse effect of the proposed bypass or where the proposed bypass does not meet the conditions set forth below in Part II.A.8.b.
- b. The intentional diversion or bypass of waste streams from any portion of the facility regulated herein is prohibited unless:
 - 1) The bypass is necessary to perform essential maintenance and auxiliary equipment, a redundant or back-up system or an alternate mode of operation is utilized to maintain treatment performance; or
 - 2) The following four conditions are met:
 - a) Bypass is unavoidable to prevent loss of human life, personal injury or severe property damage;

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- b) There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, plant shutdown or maintenance during normal periods of equipment down-time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent the bypass;
 - c) The permittee notifies the Department of the bypass or of the need to bypass as outlined below in paragraph 8.c below; and
 - d) The permittee is utilizing or will utilize all available alternative operating procedures or interim control measures to reduce the impact of the bypass on State waters.
- c. Notice
- 1) If the permittee knows in advance of the need for a bypass, the permittee shall notify the Secretary, in writing, at least ten days before the date of the bypass, if possible.
 - 2) In the event of an unanticipated or unintentional bypass, the permittee shall notify the Department within twenty-four hours of discovery. Notice may be provided orally, but shall be followed up with submission of a written report that provides the information outlined in Part II.A.2.b.1 within five (5) days.
 - 3) The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible.

9. Upset

- a. An upset shall constitute an affirmative defense to an action brought for noncompliance with any technology based permit effluent limitations established herein, if the requirements of Part II.A.9.b below are met.
- b. To establish an affirmative defense for an upset, the permittee shall demonstrate, through properly signed and authenticated, contemporaneous operating logs, or by other relevant evidence that:
 - 1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
 - 2) 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;
 - 3) The permittee submitted notice of the upset as required in Part II.A.2.b.3) (i.e., within 24 hours of becoming aware of the upset); and
 - 4) The permittee took all reasonable measures necessary to minimize any adverse impact to State waters.
- c. Burden of proof. The permittee shall have the burden of proving an upset in any case where an upset is claimed as a defense.

B. RESPONSIBILITY

1. Right of Entry

The permittee shall allow the Secretary of the Department, the EPA Regional Administrator, or

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their authorized representatives, jointly and severally, upon the presentation of his or her credentials:

- a. To enter upon the permittee's premises where the regulated facility, treatment works, or discharge(s) is located or the regulated activity is conducted or where any records required to be kept under the terms and conditions of this permit are located;
- b. To have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;
- c. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit;
- d. To inspect at reasonable times any facilities, equipment, management or control practices, or operations regulated or required under this permit; and
- e. To sample at reasonable times any discharge or substance at any location for the purpose of assuring compliance with this permit or otherwise determine whether a violation of the Law or these regulations exists, as provided in 7 Del. C. §6024;

2. Duty to Provide Information Requested by the Department

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

3. Duty to Provide Information Found to be Missing or Inaccurate

When the permittee discovers that it failed to submit any relevant facts in a permit application or that it submitted any incorrect information in any permit application or in any report to the Department, it shall promptly submit such facts or information.

4. Availability of Reports

Except for any data and information that is deemed to be confidential and claimed as such when submitted, and that is entitled to protection as trade secrets under State law, all reports prepared in accordance with the terms and conditions of this permit shall be available for public inspection at the Department's offices. This permit, the permit application and any information submitted to support the application (other than information entitled to protection as trade secrets pursuant to State law) and any effluent or discharge monitoring data shall not be deemed confidential and any claims of confidentiality will be denied. Knowingly making any false statement in any such report may result in the imposition of criminal penalties as provided under 7 Del. C., §6013.

5. Signatory Requirements

All applications, reports, or information submitted to the Department shall be signed and certified as outlined in Section 6.11 of the Department's Regulations Governing the Control of Water Pollution, as amended May 14, 2003.

6. Permit Transfer

- a. This permit is not transferable to any person, except after notice to and with the concurrence of the Secretary.

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- b. In the event of a change in ownership or control of the facilities from which the authorized discharge(s) emanate(s), this permit may be transferred if the permittee:
 - 1) Notifies the Department, in writing, of the proposed transfer, in advance; and
 - 2) Submits to the Department a written agreement signed by all parties to the transfer, containing a specific date for transfer of permit responsibility, coverage and liability to the new permittee. The written agreement shall expressly acknowledge the current permittee is responsible and liable for compliance with the terms and conditions of this permit up to the date of transfer and the new permittee is responsible and liable for compliance from that date on; and
 - 3) The Department within thirty (30) days of receipt of the notification of the proposed transfer does not notify the current permittee and the new permittee of its intent to modify, to revoke and reissue or to terminate this permit and require that a new application be submitted.
- c. The permittee is encouraged to provide as much advance notice as possible of any proposed transfer, to allow sufficient time for the Department to modify this permit to identify the new permittee and to incorporate such other requirements as may be necessary under the Law or the Act.

7. Modification, Termination, or Revocation and Reissuance

This permit may be modified, terminated or revoked and reissued in whole or in part, during its term, for cause as provided in Section 6, Part V of the Department's Regulations Governing the Control of Water Pollution, as amended May 14, 2003. The filing of a request for permit modification, or revocation and reissuance, or termination, or a notification of any planned changes or anticipated noncompliance does not stay any permit condition.

8. Reapplication for a Permit

- a. The permittee must apply for and obtain a new permit if the permittee wishes to continue the activity regulated by this permit beyond its expiration date;
- b. At least 180 days before the expiration date of this permit, the permittee shall submit a new application or notify the Department of the permittee's intent to cease discharging by the expiration date;
- c. In the event that a timely and sufficient reapplication has been submitted and the Department is unable, through no fault of the permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are continued and remain fully effective and enforceable;

9. Compliance with Effluent Standards for Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Act for toxic pollutants within the time provided in the regulations that establish such standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

10. Construction Authorization

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This permit does not approve or authorize the construction, installation or modification of any wastewater/liquid waste collection, transmission or treatment facilities, system, or any other pollution control equipment or device necessary to achieve or to maintain compliance with the terms and conditions of this permit. Separate authorization for the construction, installation or modification of such pollution control facilities must be obtained from the Secretary.

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in navigable waters.

11. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

12. State Laws

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 to which the permittee is or may be subject under 7 Del. C., Chapter 60, or any other State law or regulation.

13. Severability

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

Part III

A. Special Conditions

1. Supersedes previous permit

This permit supersedes NPDES Permit DE 0000469, and State Permit WPCC 3235F/74, issued on August 1, 2006, as amended.

2. Permit Reopener Clause

The Department or agencies under its supervision may perform or direct the performance of analyses or biosurveys on the receiving waters in the immediate vicinity of the permittee's discharge or further downstream, after the issuance of this permit. Such analyses or biosurveys may include evaluating impingement, entrainment, and thermal impacts the permittee's facility poses on its intake and receiving waters. If the results of these analyses or biosurveys suggest that the permittee's discharge is causing, or has the potential to cause, diminished attainment of designated protected uses (as defined by the State of Delaware's "Water Quality Standards for Streams") then this permit may be reopened and modified after notice and opportunity for a public hearing. At that time, additional effluent limitations, monitoring requirements and/or special conditions may be included in the permit. If it is determined that additional equipment is needed to meet the revised permit conditions, the permittee shall install the necessary equipment.

3. Compliance with Oil & Grease Limits

The Permittee shall demonstrate compliance with the Oil and Grease limits using the 40 C.F.R. Part 136 approved test procedure, EPA Method No. 1664A. The Department may approve use of an alternative test method in writing, if that alternative method is approved under 40 C.F.R. Part 136.

- a. On the sampling day, at least 1 grab samples shall be taken. If more grab samples are taken the same day, they shall be at evenly spaced time intervals, with at least a four (4) hour time interval between each sample. Each grab sample shall be analyzed separately; for each sampling day,
 - 1) "daily concentration" = arithmetic mean of the grab samples taken that day.
 - 2) "daily load" (lbs/day) = "daily concentration" (mg/L) x flow on sampling day (MGD) x 8.34 (lbs/gal)
- b. For compliance purposes, results reported in the Discharge Monitoring Reports (DMR) for each reporting period shall be calculated as follows:
 - 1) "Average Concentration" = the arithmetic mean of all the "daily concentration" values,
 - 2) "Maximum Concentration" = the highest "daily concentration" value,
 - 3) "Average Load" = the arithmetic mean of all the "daily load" values, and
 - 4) "Maximum Load" = the highest "daily load" value.

4. Whole Effluent Toxicity (WET) Limit Requirements

Part I.B.2 of this permit requires chronic whole effluent toxicity limits of 1.0 TUc (IC25) monthly average during the quarterly reporting period at outfall 002.

- a. The permittee shall simultaneously perform quarterly EPA chronic test methods 1000.0

Pimephales promelas Larval Survival and Growth Test, and 1002.0 Ceriodaphnia Survival and Reproduction Test according to 40 CFR 136. Alternative EPA test method approved species may be used, if approved by the Department in writing. Each test shall be initiated no later than 36 hours after the collection of the representative composite effluent sample.

Results shall be reported in chronic toxicity units (TUc) for both TUc (NOEC) = 100/NOEC and TUc (IC25) =100/IC25.

- 1) The No Observed Effect Concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a short-term chronic test that causes no observable adverse effects on the test organisms (e.g., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).
 - 2) The Inhibition Concentration (IC) is the toxicant concentration that would cause a given percent reduction (i.e., 25%) in a non-quantal biological measurement for the test population.
- b. For a purpose of these tests, a representative composite sample is a 24-hour composite sample as defined in Part I.D.3.g. If the instantaneous flow rate does not vary by more than +/- 15 percent of the average flow rate, a time-interval composite will be an acceptable representative sample. Otherwise, a flow-weighted composite sample must be used. All composite samples shall be representative of 24 hours of typical operations.
 - c. The Department shall be notified in writing at least thirty (30) days in advance of the day when a bioassay test is planned to commence. The permittee shall split the composite samples used to perform a bioassay test with the Department upon request. All documentation pertaining to these tests shall be maintained at the facility as required in Part I.D., "Monitoring and Reporting", of this permit and shall be made available for inspection, upon request.
 - d. Within 30 days of the completion of tests required above, the results shall be reported to the Department. This report shall follow the general format and include the information listed in Section 10, pages 47-49, of EPA-821-R-02-013 (Fresh Chronic).

5. Sludge Disposal – Requirements

The permittee shall comply with all existing Federal and State laws and regulations that apply to its sludge use or disposal practice(s) including, but not limited to, Federal Regulations 40 CFR Part 258, Section 28 "Liquids Restrictions"; 40 CFR Part 503, "Standards for the Use and Disposal of Sludge, February, 1993"; and the Department's "Guidance and Regulations Governing the Land Treatment of Wastes", including "Part III.B, The Regulations Governing the Use and Disposal of Wastewater Sludge", October, 1999. If the Department determines that additional requirements or permit conditions are needed to insure compliance with the referenced regulations, or if the Federal Government promulgates new regulations under Section 405(d) of the Act governing, (a) the treatment or disposal of sewage sludge, (b) sewage sludge management practices, or (c) concentrations of pollutants in sewage sludge, this permit may be reopened, and after notice and opportunity for public hearing, modified accordingly during its term.

6. Sludge Disposal - Planned Changes

Prior to any planned change in the permittee's sludge use or disposal practice(s), the permittee shall notify the Department in accordance with the requirements of Part II.A.2.a, "Management Requirements, Notification, Notification of Planned Changes" of this permit. A change in the permittee's sludge use or disposal practice(s) shall be considered cause for this permit to be

modified, or revoked and reissued, under Part II.B.7, "Modification, Termination, or Revocation and Reissuance", of this permit.

7. Sludge Disposal – Record Keeping

The permittee shall maintain monthly sludge inventory data. This data shall include at a minimum (a) quantity of sludge generated, (b) quantity of sludge stored on site, and (c) quantity of sludge transported off site. Transportation records shall include the date, quantity, carrier used, and the final destination for each shipment. The inventory data shall be maintained at the facility and be made available to the Department in accordance with Part I, Section 8 (Records Retention) of this permit, excepting that records shall be retained for five (5) years.

8. Storm Water Plan

The permittee shall continue to implement and maintain a Storm Water Plan (SWP) that is designed to limit the exposure of industrial materials and activities to precipitation and to minimize the discharge of contaminated storm water from the permittee's facility. The SWP shall be implemented and maintained in accordance with the requirements of Section 9.1.5 of the Department's *Regulations Governing the Control of Water Pollution*, 9 DE Reg. 1250 (2/1/06).

In addition, the SWP shall specifically address the management practices needed to prevent or minimize the discharge of nutrients (nitrogen and phosphorus) and enterococci associated with the runoff from the site. The permittee shall update and adjust those management practices as necessary to ensure their performance is adequate to satisfy the requirements of the "Total Maximum Daily Loads (TMDLs) Regulation for the Broadkill River Watershed, Delaware", dated December 1, 2006. Practices that maintain long term average concentrations of total nitrogen (as N) in the storm water runoff¹ of 3.0 mg/L or less, and long term average concentrations of total phosphorus (as P) in the storm water runoff of 0.2 mg/L or less, shall be considered satisfactory to meet the TMDLs regulation.

9. Wastewater Treatment Plant Operator Licensing

The wastewater treatment facility described in Part I.A. of this permit is a "Class IV" facility. The permittee shall retain the services of a Delaware certified wastewater treatment plant operator for the operation and maintenance of the facility. The operator shall, at a minimum, be licensed at the level necessary to comply with the "State of Delaware Regulations for Licensing Operators of Wastewater Facilities, as revised."

10. Moving 12-Month Cumulative Load Limit for Total Nitrogen

The moving twelve (12) month cumulative loads shall be calculated by adding the individual monthly discharge loads for the most current twelve (12) months of operation. Individual monthly loads shall be calculated by using the following formula:

$$\text{average monthly concentration (mg/L)} \times \text{total monthly flow (MG)} \times 8.34 \text{ (lb/gal)} = \text{monthly total discharge load (pounds/month)}$$

This load for the month will be added to the calculated loads for the previous eleven (11) months and reported on the DMR as the moving twelve (12) month cumulative load.

1 That is, storm water discharges from the site other than those treated and discharged via Outfall 002.

11. Sufficiently Sensitive Test Methods

- a. For compliance monitoring and eDMR reporting:
 - 1) The permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O.
 - 2) An EPA-approved test method is “sufficiently sensitive” for compliance monitoring and eDMR reporting when:
 - a) The method minimum level (ML) of quantification is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or
 - b) The method has the lowest published ML (i.e., is the most sensitive) of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.
 - 3) In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameter.
- b. For completing NPDES permit applications:
 - 1) Except as specified in 40 CFR 122.21(e)(3)(ii), a NPDES permit application shall not be considered complete unless all required quantitative data are collected in accordance with sufficiently sensitive analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter I, subchapter N or O.
 - 2) An EPA-approved test method is “sufficiently sensitive” for completing NPDES permit applications when:
 - a) The method minimum level (ML) is at or below the level of the applicable water quality criterion, as calculated at the monitoring location considering regulatory mixing zone effects, for the measured pollutant or pollutant parameter; or
 - b) The method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility’s discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
 - c) The method has the lowest ML (i.e., is the most sensitive) of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.
 - 3) When there is no analytical method that has been approved under 40 CFR part 136, required under 40 CFR chapter I, subchapter N or O, and is not otherwise required by the Department, the applicant may use any suitable method, but shall provide a description of the method. When selecting a suitable method, other factors such as a method’s precision, accuracy, or resolution, may be considered when assessing the performance of the method. Use of the selected method is subject to the written approval of the Department.

- c. Consistent with 40 CFR part 136, the permittee or applicant has the option of providing matrix or sample specific minimum levels rather than the published levels. Further, where a permittee or applicant can demonstrate that, despite a good faith effort to use a method that would otherwise meet the definition of “sufficiently sensitive”, the analytical results are not consistent with the QA/QC specifications for that method, then the Department may determine that the method is not performing adequately and the permittee or applicant shall select a different sufficiently sensitive method from the remaining EPA-approved methods.

12. Copper Reasonable Potential Analysis

The permittee shall monitor the following BLM parameters (in dissolved form): temperature, pH, dissolved organic carbon (DOC), calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), sulfate (SO₄), chloride (Cl) and, alkalinity in Savannah Ditch at a location outside the chronic mixing zone representative of ambient water conditions reflecting complete mixing.

Monitoring shall be conducted once per month for a period of twenty-four (24) months

- a. No later than 30 days after the effective date of this permit, the permittee shall identify and notify the Department of a sampling location in Savannah Ditch.
- b. No later than 60 days after the effective date of this permit, the permittee shall begin monitoring of the BLM parameters.
- c. No later than fourteen (14) months after the effective date of this permit, the permittee shall complete the first twelve (12) months of monitoring.
- d. No later than fifteen (15) months after the effective date of this permit, the permittee shall submit a report to the Department, to include results of the first 12 months of monitoring and the associated lab reports. The monitoring results shall be in the format below.

Sample Location	Sample Date	Temp, °C	pH, SU	DOC, mg/L	Ca, mg/L	Mg, mg/L	Na, mg/L	K, mg/L	SO ₄ , mg/L	Cl, mg/L	Alkalinity, mg/L
Savannah Ditch											

- e. No later than twenty-six (26) months after the effective date of this permit, the permittee shall complete twenty-four (24) months of monitoring.
- f. No later than twenty-seven (27) months after the effective date of this permit, the permittee shall submit a final report to the Department, to include results of the 24 months of monitoring and the associated lab reports. The monitoring results shall be in the format specified in Special Condition 12.d. above.

Monitoring results will be used to determine the site-specific copper criteria. The site-specific criteria will be used to perform the reasonable potential analysis for copper to determine if there is a reasonable potential for Outfall 002 discharge to cause an exceedance of the criteria. If reasonable potential is determined, copper limits shall be established and the permit reopened to replace the existing limits with the new limits. If no reasonable potential is determined, the permittee shall be reopened to remove the existing limits and only monitoring will be required.



STATE OF DELAWARE
**DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL**

DIVISION OF WATER
RICHARDSON & ROBBINS BUILDING
89 KINGS HIGHWAY
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**SURFACE WATER
DISCHARGES**

Fact Sheet

Permit Effective Date –

Perdue Foods, LLC
20621 Savannah Road
Georgetown, Delaware 19947

NPDES No. DE 0000469
State Permit No. WPCC 3235G/74

Permit Renewal Application

Perdue Foods, LLC has requested reissuance of its National Pollutant Discharge Elimination System (NPDES) Permit No. DE 0000469 to discharge treated process wastewaters and treated process area storm water from a wastewater treatment system and storm water run-off (from grassed area) from the property located on Savannah Road in Georgetown, Delaware to Savannah Ditch.

Summary of Requested and Proposed Permit Changes

Perdue requested in the permit application:

- To provide reasonable schedule of compliance for total nitrogen and phosphorus limits.
- To eliminate monitoring and limits for aluminum, copper, and zinc if they do not prove to be toxic.

The Delaware Department of Natural Resources and Environmental Control (DNREC) proposes to reissue the permit with following changes:

1. Implemented 12-month cumulative average annual load limit for Total Nitrogen (TN), based on the TMDL for the Broadkill River Watershed.
2. Implemented daily average load limit for Total Nitrogen (TN) during the months of May through September based on the TMDL for the Broadkill River Watershed.
3. Implemented daily average load limit for Biological Oxygen Demand (BOD₅), Total Phosphorus (TP), and Ammonia based on the TMDL for the Broadkill River Watershed.
4. Added "Schedule of Compliance" to Part I, C. of the permit requiring the permittee to comply with the final effluent limitations and monitoring requirements for Total Nitrogen (TN), Total Phosphorus (TP), and Ammonia no later than fifty-nine (59) months after the effective date of the permit.
5. Revised "Reporting" in Part I.D.2. which requires the permittee to submit results via the Department approved Electronically Generated Discharge Monitoring Report (eDMR).
6. Added a standard condition in Part II.A.2 "Notifications Specific to Manufacturing, Commercial, Mining, and Silvicultural Dischargers".

7. Add a limit for “Whole Effluent Toxicity” and a thirty-six (36) month compliance schedule for achieving compliance with the new limit.
8. Removed limits for zinc.
9. **New copper limits based on new standard (Biotic Ligand Model-BLM)**
10. Special Condition No. 8 about Storm water Plan has been amended to include the Broadkill TMDL requirements.
11. Added new special condition No. 11 pursuant to 40 CFR part 136 to ensure the use of EPA-approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits.
12. Added Special Condition No. 12 which requires monitoring copper BLM parameters and performing a reasonable potential analysis for copper.

Facility Location

This facility is located at 20621 Savannah Road in Georgetown, Sussex County, Delaware.



Activity Description

This facility is a poultry processing plant. Operations include receiving of live poultry and the slaughter, eviscerating, chilling, and packaging of fresh poultry followed by shipment to northeast markets. The facility is designated a **major** facility as rated using the “NPDES Permit Rating Work Sheet.”

Statutory and Regulatory Basis

The Delaware Department of Natural Resources and Environmental Control (DNREC) proposes to reissue Perdue Foods, LLC a NPDES permit to discharge wastewater subject to certain effluent limitations identified in the permit. Section 402 of the Federal Clean Water Act of 1977, as amended and 7 Del. C., Chapter 60 provides the authority for NPDES permit issuance. Regulations promulgated pursuant to these statutes are the regulatory basis for permit issuance.

Receiving Stream Classification

The applicant has two outfalls to Savannah Ditch, a freshwater, non-tidal stream. Savannah Ditch discharges to Ingrams Branch which discharges to Diamond Pond, then into Wagamons Pond, and finally into the Broadkill River which empties into Zone 6 of the Delaware River. The designated uses for the Broadkill River Watershed are Industrial Water Supply; Primary Contact Recreation; Secondary Contact Recreation; Maintenance of Fish, Aquatic Life, and Wildlife; and Agricultural Water Supply. These uses apply to all waterbodies in the watershed including Ingram Branch, Diamond Pond, Wagamons Pond and Broadkill River.

Low Flow Waters

The DeSWQS provide that “designated uses” apply “at the closest downstream point where uses could reasonably be expected to occur”:

8.0 Criteria for Low Flow Waters

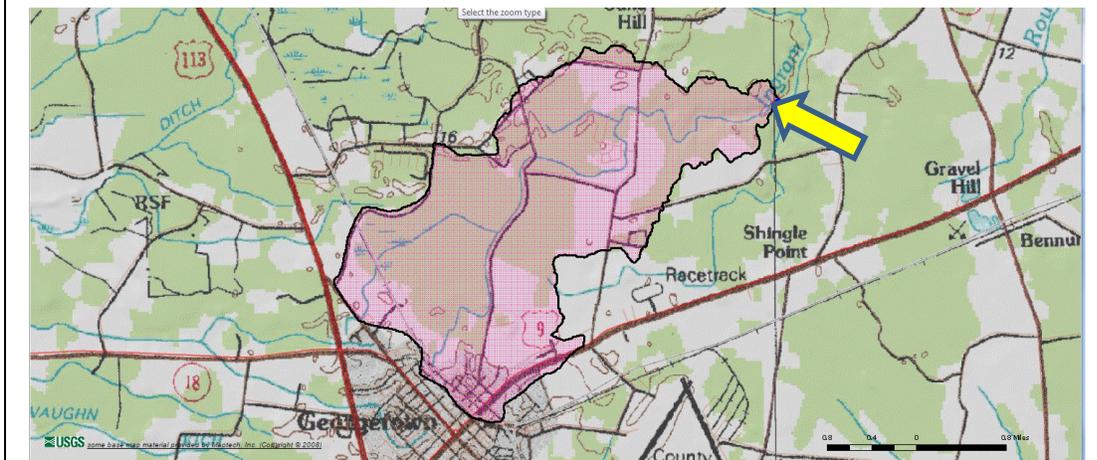
8.1 A low flow water is one in which the 7Q10 freshwater inflow is less than 0.1 cfs. The following criteria shall apply to discharges into low flow waters:

8.1.1 Where information is available for the receiving water which indicates that, because of low flow, it would not support designated uses, then numeric criteria shall not apply. The numeric criteria shall then apply at the closest downstream point where uses could reasonably be expected to occur.

From the USGS watershed mapping tool,¹ the following figure shows where 7Q10 flows are greater than or equal to (\geq) 0.1 cfs.

¹ <https://streamstats.usgs.gov/ss/>

Figure 1 – Map of Where Designated Uses Apply



From the same USGS tool, the following table shows basin characteristics before and at where designated uses apply.

Table 1 – Basin Characteristics Report		
Location	Before & at stream junction where 7Q10 stream flow is ≥ 0.1 cfs	
NAD27 Latitude	38.7235	38.7236
NAD27 Longitude	-75.3444	-75.3442
NAD83 Latitude	38.7236	38.7237
NAD83 Longitude	-75.3440	-75.3438
Parameter	Value	Value
Area in square miles	3.65	5.66
Average basin slope, in percent	0.47	0.5
Percent Of area covered by forest	17.5564	24.856
Impervious area, in percent, NLCD 2001	4.1531	3.6507
Hydrologic soil type A, in percent	14.0421	14.7736
Wetlands and Waterbody storage, in percent	1.8651	1.3118
7Q10, from USGS regression equation	0.036	0.131

The equation below was used to calculate 7Q10 flows in the last line of the table above.

Equation 1 – USGS Regression Equation for Calculating 7Q10 Flows²

$$7Q_{10} + 0.2 = 0.269A^{0.887} (F + 10)^{-0.375} (S_a + 10)^{0.522} (S_d + 10)^{-0.640}$$

A = Drainage area, in square miles,

F = Forest cover (F) area, as percent of the total drainage area

S_a = Type A soils area, as percent of the total drainage area

S_d = Type D soils, as percent of the total drainage area

Description of Discharge

The site has two discharges, Outfalls 002 and 004, to Savannah Ditch. Outfall 002 consists of discharge from the process wastewater treatment system.

Process waste streams include process wastewaters from first processing operations (receiving, killing, scalding, picking), second processing operations (evisceration, chilling), and further processing operations (cutup, boneless, thin slice); plant sanitation wastewater; sanitary wastewater, boiler blowdown (0.035 mgd); process area storm water; and feed mill boiler blowdown (0.003 mgd) from the Perdue Feed Mill in Bridgeville.

Storm water from the process area is collected in a stormwater pond (7 MG capacity) and then pumped to anaerobic lagoons. This stormwater runoff is from the following areas: processing building roofs, live hold area, offal area, yard wash down, refrigerated box trailer parking pads, truck wash, trailer drippings, and driveways.

Storm water from the live haul scale, vehicle refueling area, and raw waste lift station is collected in a smaller stormwater pond (0.136 MG capacity), then pumped to the WWTP, and then discharged through Outfall 002.

The wastewater treatment system consists of: screening, anaerobic lagoons, activated sludge (2-cell parallel aerobic/anoxic system), chemical precipitation using alum for phosphorus removal, clarification, and ultraviolet (UV) disinfection. Sand filtration prior to the UV disinfection is not used because the plant meets the TSS permit limits. Sanitary wastewater is treated in a batch aerobic treatment system (sequence batch reactor – SBR) and is then pumped to the ultraviolet disinfection unit. Waste activated sludge from the treatment facility is aerobically digested, gravity thickened, dewatered by belt filter press, and then hauled by a contractor for ultimate disposal by land application.

Outfall 004 consists of stormwater from a grassed non-process area located next to the vehicle refueling area. This stormwater is discharged without treatment.

Proposed Effluent Limitations

DNREC has examined the application and proposes to reissue the applicant's permit for a period of five years, subject to the effluent limitations and monitoring requirements on the attached copy of the draft permit. Following are the bases for the proposed limitations.

Bases for Effluent Limitations for Outfall 002

The following table outlines the bases for the proposed effluent limitations for Outfall 002.

² Page 9, Equation (2) 9 under “Eastern Shore Region”, “Low-Flow Characteristics of Streams in Maryland and Delaware”, By David H. Carpenter and Donald C. Hayes, U.S. Geological Survey, Water-Resources Investigations Report 94-4020, <http://pubs.er.usgs.gov/publication/wri944020>

Table 2 – Bases for Effluent Limits and Monitoring							
Outfall	Parameter	Lim/Mon.	Water Quality-Based ¹	Technology-based			
				DRBC ²	Effluent Limitation Guidelines ⁵	Performance-Based ³	RGCWP ⁴
002	Flow	Limit				✓	
	pH	Limit					✓
	BOD ₅	Limit	✓				
	Total Suspended Solids	Limit			✓	✓	
	Oil & Grease	Limit				✓	
	Total Nitrogen	Limit	✓				
	Ammonia (as N)	Limit	✓		✓		
	Total Phosphorus (as P)	Limit	✓				
	Aluminum	Limit	✓				
	Hardness	Monitoring	✓				
	Enterococcus	Limit	✓				
	Biomonitoring	Limit	✓				✓
	"Free From ..."	Limit	✓				

Basis for Effluent Limits and Monitoring Table Notes:

1. State of Delaware Surface Water Quality Standards (**SWQS**), as amended July 11, 2004.
2. Delaware River Basin Commission – March 2005 Water Code
3. Performance-based limits are based on the provisions of 40 CFR 122.45(b)(2)(I).
4. §8.03(b), "Effluent Limitations Based on a Practicable Level of Pollutant Removal Technology", of the State of Delaware Regulations Governing the Control of Water Pollution (**RGCWP**), as amended May 14, 2003.
5. Final Effluent Limitations Guidelines and New Source Performance Standards for the Meat and Poultry Products (MPP) Point Source Category were published in the Federal Register on September 8, 2004 and promulgated in the Code of Federal Regulations at 40 CFR Part 432. Subpart K - Poultry First Processors applies to the discharges from this facility.

Table 2 below provides a comparison of the current Outfall 002 limits with the 40 CFR Part 432, Subpart K - Poultry First Processors concentration limits and mass limits derived using the long term average (LTA) flow of 2.00 mgd reported in the permit application. Selected limits for the proposed permit are highlighted in bold type.

Table 3 – Comparison of Effluent Guideline Derived Limits with Current Permit Limits.

Parameter	Daily Average				Daily Maximum			
	Concentration Limit (mg/L)		Mass Limit (lbs/day)		Concentration Limit (mg/L)		Mass Limit (lbs/day)	
	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K
BOD ₅	11.3	16	188.0	266.9 ¹	22.5	26	375	433.7 ¹
TSS	20	20	333.6	333.6¹	30	30	500	500.4 ¹
O&G	7.5	8.0	125.0	133.4 ¹	11.3	14	188	233.5 ¹
NH ₃ – N	4.0	4.0	66.7	66.7 ¹	8.0	8.0	133.4	133.4 ¹

¹ Based on 40 CFR Part 432, Subpart K concentration limit and LTA flow of 2.00 mgd reported in Permit Application.

Oil and Grease Limits

For O&G, the daily average and daily maximum concentration limits in the current permit are lower than the 40 CFR Part 432, Subpart K concentration and mass limits and therefore will be retained. Considering the very low variability in the monitoring results, the permit reduces monitoring frequency to “one grab sample taken per sampling day”.

TSS Limits

The 40 CFR Part 432, Subpart K daily average concentration and mass limits and daily maximum concentration and mass limits are same as current permit. Therefore, the current permit’s concentration and mass limits for TSS are retained.

Broadkill River TMDL-based Limits

The Broadkill River TMDL Regulation and TMDL Analysis Document (Tables 3 & 4 on pgs. 6-1 & 6-2) establish daily Waste Load Allocations (WLAs) for 5-day Biological Oxygen Demand (BOD5), Ammonia (NH3), Total Nitrogen (TN), Total Phosphorus (TP), and Enterococcus. The following Table summarizes WLAs for Perdue in the watershed.

Table 4 – Broadkill River NPDES Daily WLAs		
Parameter	Concentrations	Loads
BOD5 (mg/L)	10 (mg/L)	166.8 (lbs/day)
NH3 (mg/L)	1 (mg/L)	16.7 (lbs/day)
TN (mg/L)	7 (mg/L)	116.8 (lbs/day)
TP (mg/L)	0.5 (mg/L)	8.34 (lbs/day)
Enterococcus	100 (#/100mL)	7,570,000,000 (#/day)

Daily maximum values can be higher or lower, as long as the Long Term Average (LTA) complies with the Broadkill WLAs.

The EPA’s “Technical Support Document for Water Quality-based Toxics Control”³ provides a procedure to calculate limits that account for daily variability and still meet the LTA requirements of the TMDL. Applied to BOD5, TN, and TP limits here, that procedure is

1. Determine whether the data can be described by a normal or log-normal distribution.
2. Calculate a Coefficient of Variation (CV) for the data.
3. Use the Broadkill WLA as the “Average Monthly Limit” (AML) and as the LTA of the data distribution.
4. Calculate the “Maximum Daily Limit” (MDL) as the 99th percentile of that distribution, CV, and LTA.
5. Used the load MDLs to calculate the maximum daily concentration limits, using
 $(\text{Load in lbs/day}) = (\text{Flow in mgd}) \times (\text{Conc. in mg/L}) \times (8.34 \text{ lbs/gal. water density})$

Exceptions are that the enterococcus MDL is based on the WQS and NH3 MDL is based on worst-case acute criterion (See additional discussion below).

Under the headings below for BOD5, TN, and TP,

- The first Figure shows how well normal and lognormal distributions (shown as cumulative frequencies) fit Perdue’s data, from 1 day (24 hour) composite samples taken weekly. In those Figures, “MLOC” is the monitoring location; “MLOC = 1” means “gross effluent value at the discharge”.

³ http://water.epa.gov/scitech/swguidance/standards/handbook/upload/2002_10_25_npdes_pubs_owm0264.pdf, Appendix E.

- The second Figure shows the load MDLs, for both normal and lognormal distributions, for the Broadkill WLAs.

For all three parameters,

- The log-normal distribution describes Perdue’s data better than the normal distribution, and
- Load MDLs in the proposed permit are based on log-normal distributions of the data.

BOD₅

Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 166.8 lbs/day is proposed for BOD₅. Proposed daily average and maximum load limits are more stringent than the 40 CFR Part 432, Subpart K mass limits. The daily load is used to calculate the limits concentrations based on 2.0MGD design flow capacity as follows:

$$\text{Concentration, mg/l} = (\text{load, lbs/d}) / (\text{design flow, mgd} * 8.34)$$

Figure 2 – Describing Perdue’s 001 BOD₅ Data with Normal and Log-normal Distributions

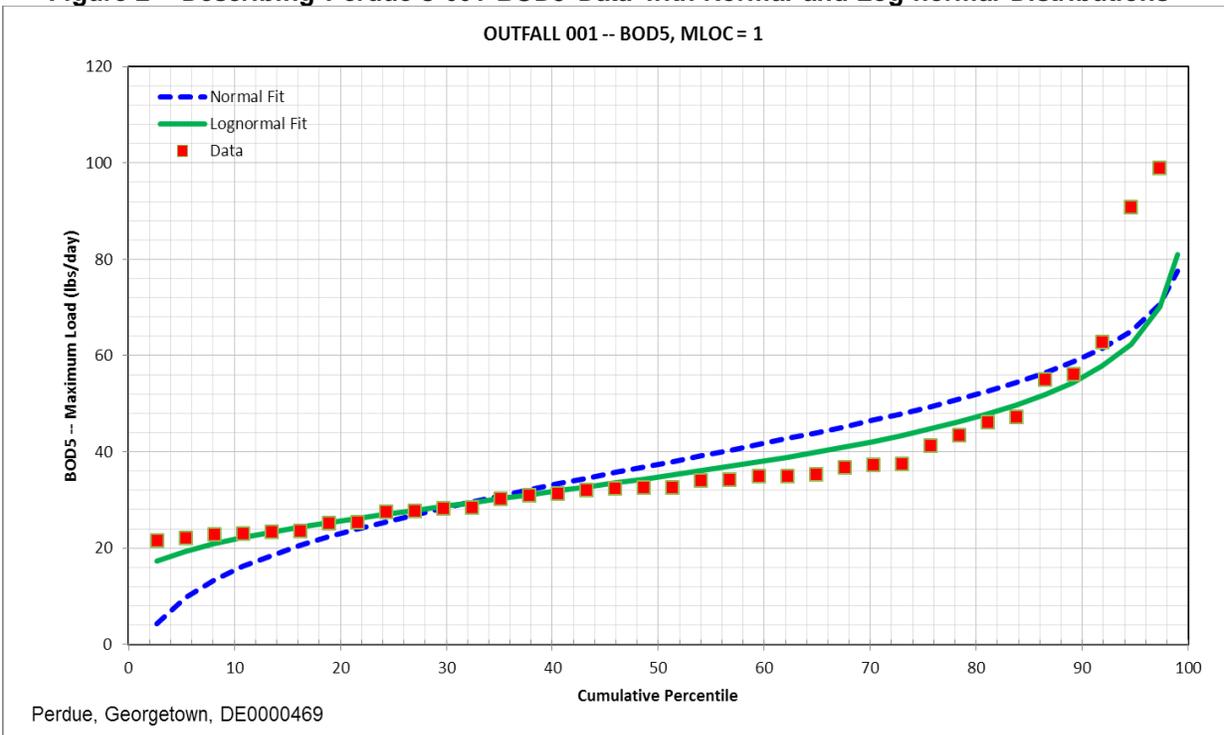
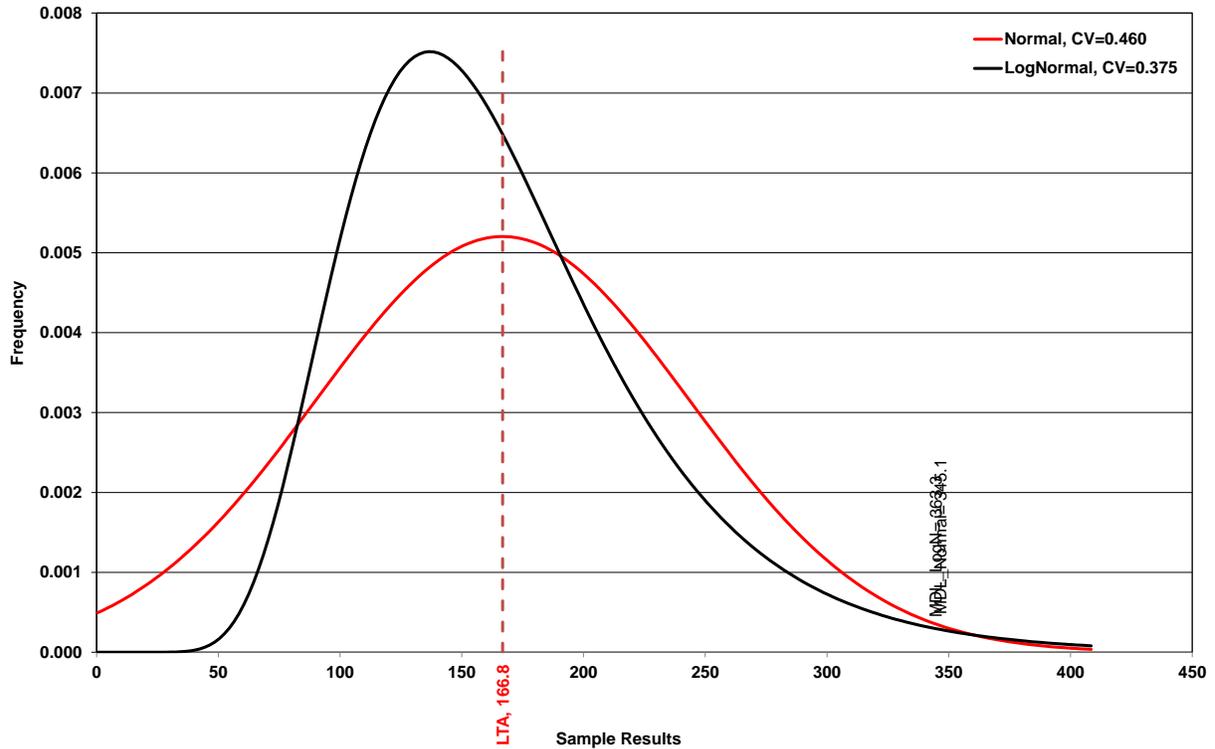


Figure 3 – BOD5, Maximum Daily Load (MDL) Limits



Total Nitrogen (TN) Limits

The TMDL for the Broadkill River Watershed specifies a WLA of 116.8 lb/day for TN for this facility. This WLA has been implemented in the permit as a moving 12-month cumulative average load limit of 42,632 pounds. Additionally, a daily average load limit of 116.8 lb/day for May 1 through September 30 is proposed based on the TMDL; the MDL is 361.3 lbs/day. The effluent limitations for TN, along with TP and Ammonia, are proposed to become effective 59 months after the permit effective date. The proposed permit includes a schedule of compliance for meeting the final effluent limitations, and requires the permittee to submit a report on an annual basis outlining progress made towards compliance with the final effluent limitations and the interim milestones included in the compliance schedule.

Figure 4 – Describing Perdue’s 001 TN Data with Normal and Log-normal Distributions

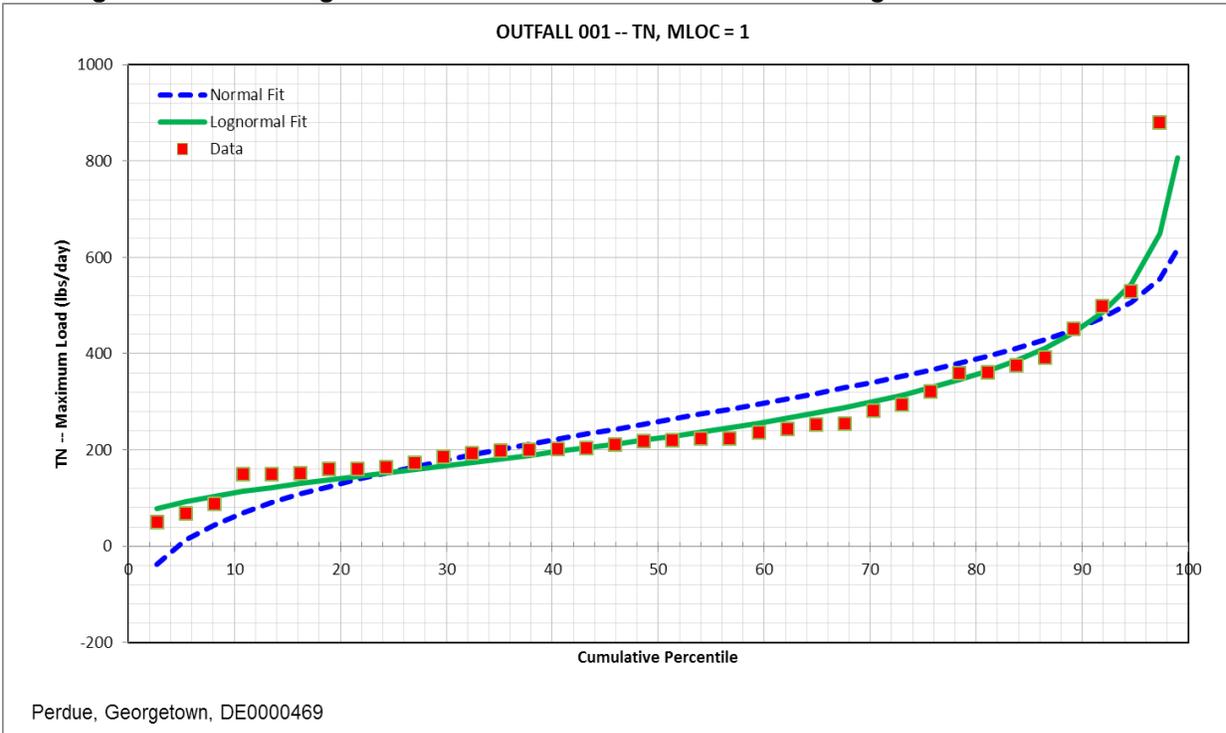
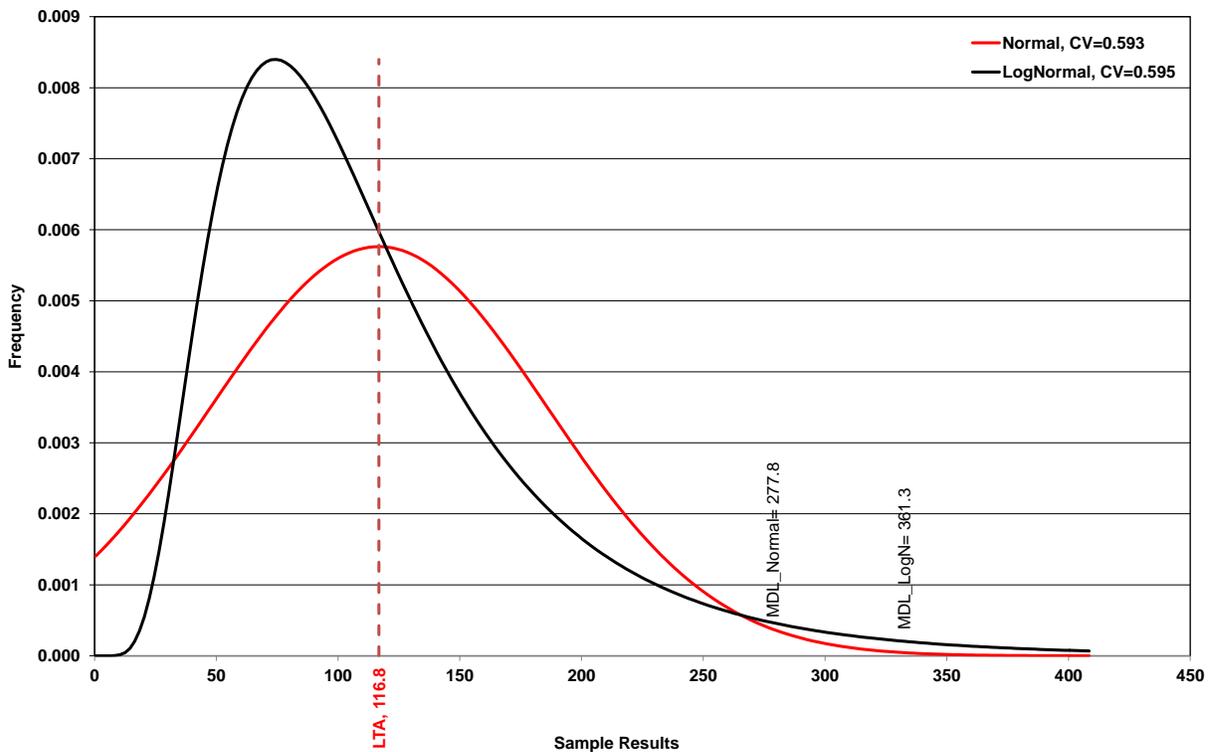


Figure 5 – Total Nitrogen, Maximum Daily Load (MDL) Limits



Total Phosphorus (TP) Limits

Based on the TMDL for the Broadkill River Watershed allocation, a daily average load limit of 8.34 lb/day is proposed for fifth year of the permit. The MDL is 19.4 lbs/day.

The permit does not include daily TP concentration limits. The disincentive for TP concentration limits is that aluminum compounds are often used to precipitate TP, with more and more aluminum needed per TP removed, to achieve very low TP concentrations. In other words, TP concentration limits could contribute to an aluminum (not a TMDL parameter, but limited in the permit) problem if the site has to over treat to achieve TP concentrations.

Figure 6 – Describing Perdue’s 001 TP Data with Normal and Log-normal Distributions

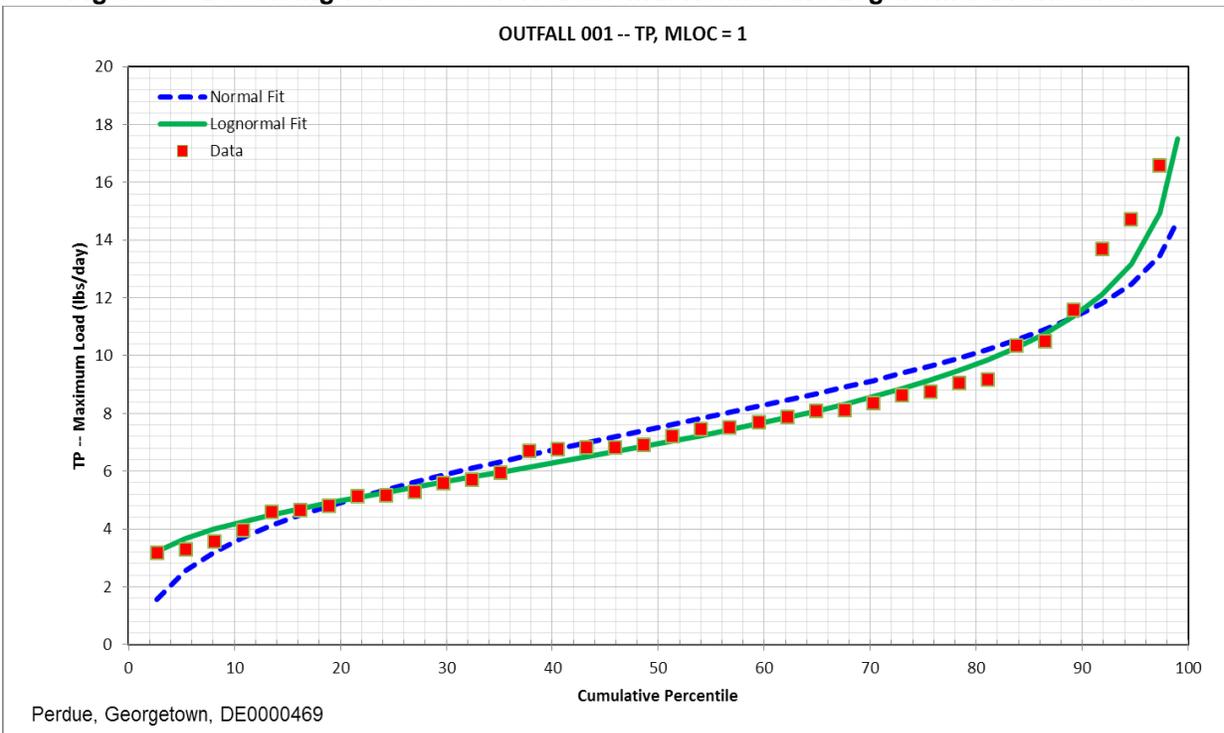
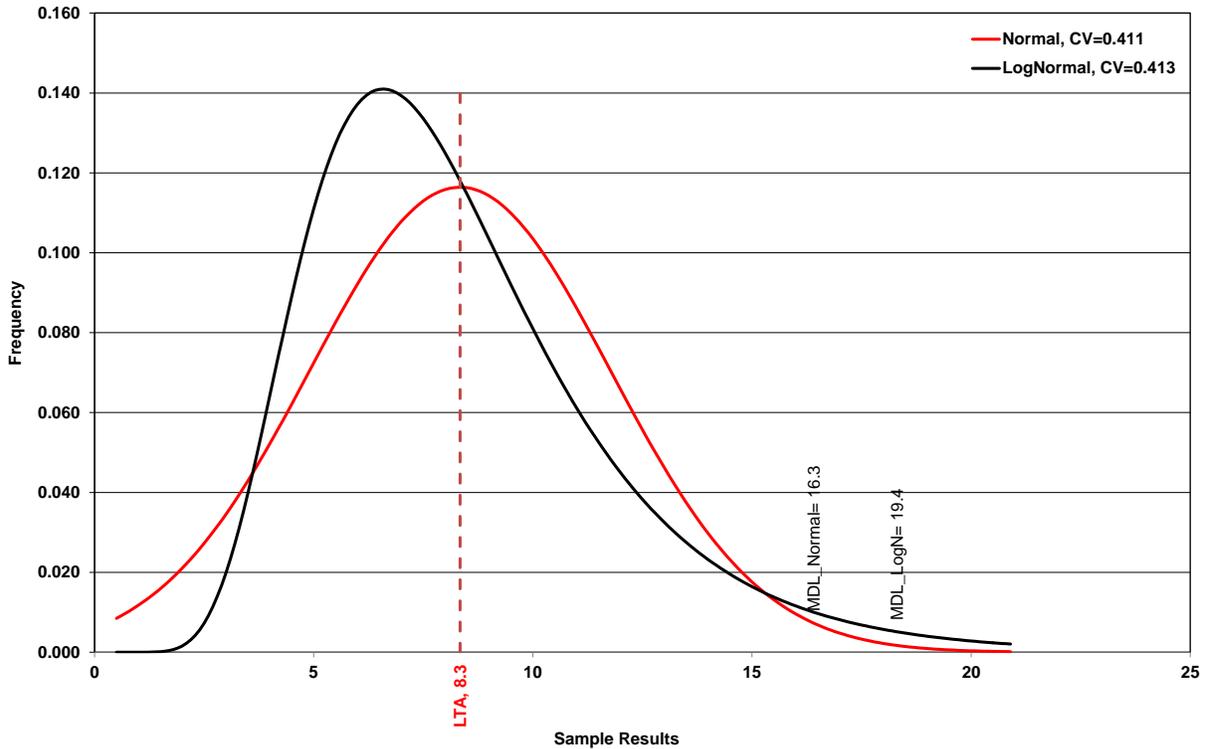


Figure 7 – Total Phosphorus, Maximum Daily Load (MDL) Limits



Ammonia Limits

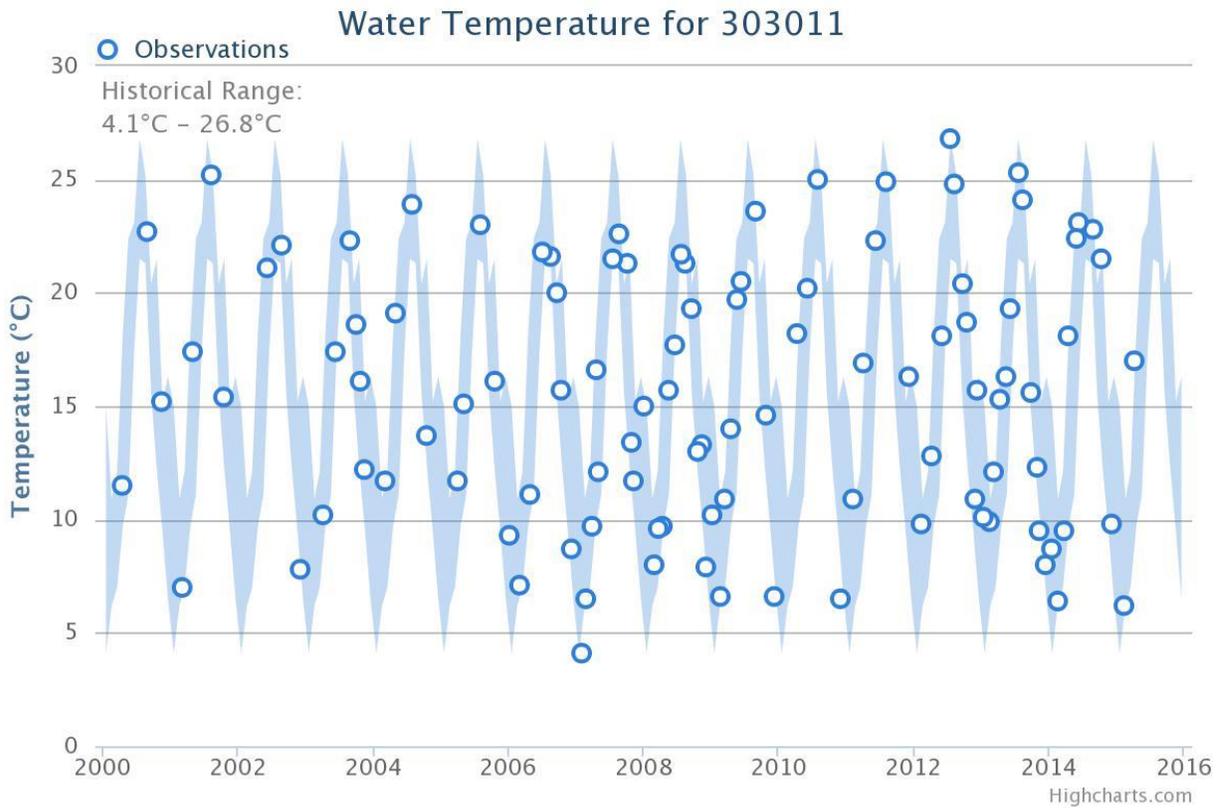
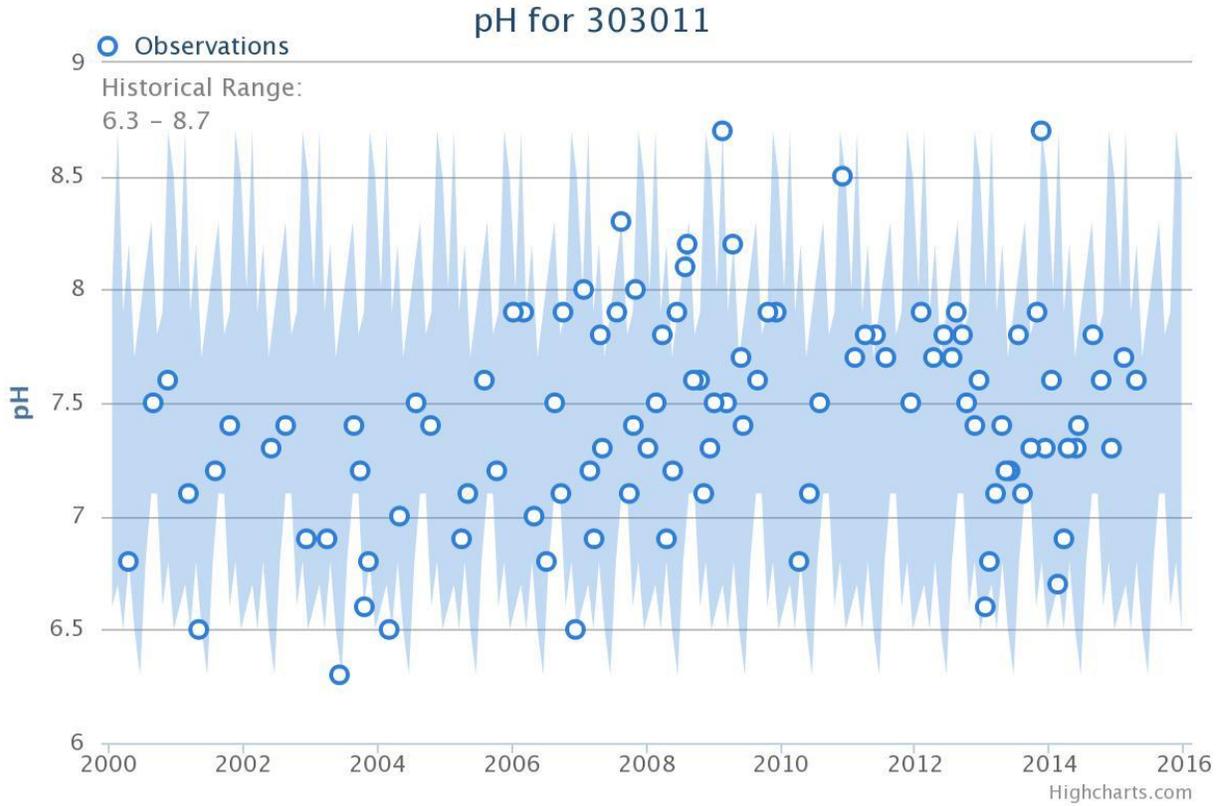
Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 16.7 lb/day is proposed, effective at the beginning of the fifth year of the permit. Proposed daily average and maximum load limits are more restrictive than the 40 CFR Part 432, Subpart K mass limits.

Using the same calculations as for BOD5, TN, and TP, a 99th percentile-based MDL for NH3 would be 5.6 mg/L. However, NH3 can have short term toxicity. The State of Delaware Surface Water Quality Standards⁴ (SWQS) have criteria for NH3 for acute (i.e., 1 hour exposure) and chronic (4-day exposure) toxicity. The acute NH3 criterion (aka the “criteria maximum concentration or “CMC”) is calculated based on pH. The chronic NH3 criterion (aka the “criteria chronic concentration or “CCC”) is calculated based on both pH and temperature.

To determine reasonable pH and temperature ranges to evaluate the potential for NH3 toxicity, the following Figures show historical ranges for instream pH & temperature at STORET Station. 303011 in Ingrams Branch.⁵ At least in Perdue’s case, that is closer to conditions where designated uses will apply, as discussed under **Low Flow Waters**” above.

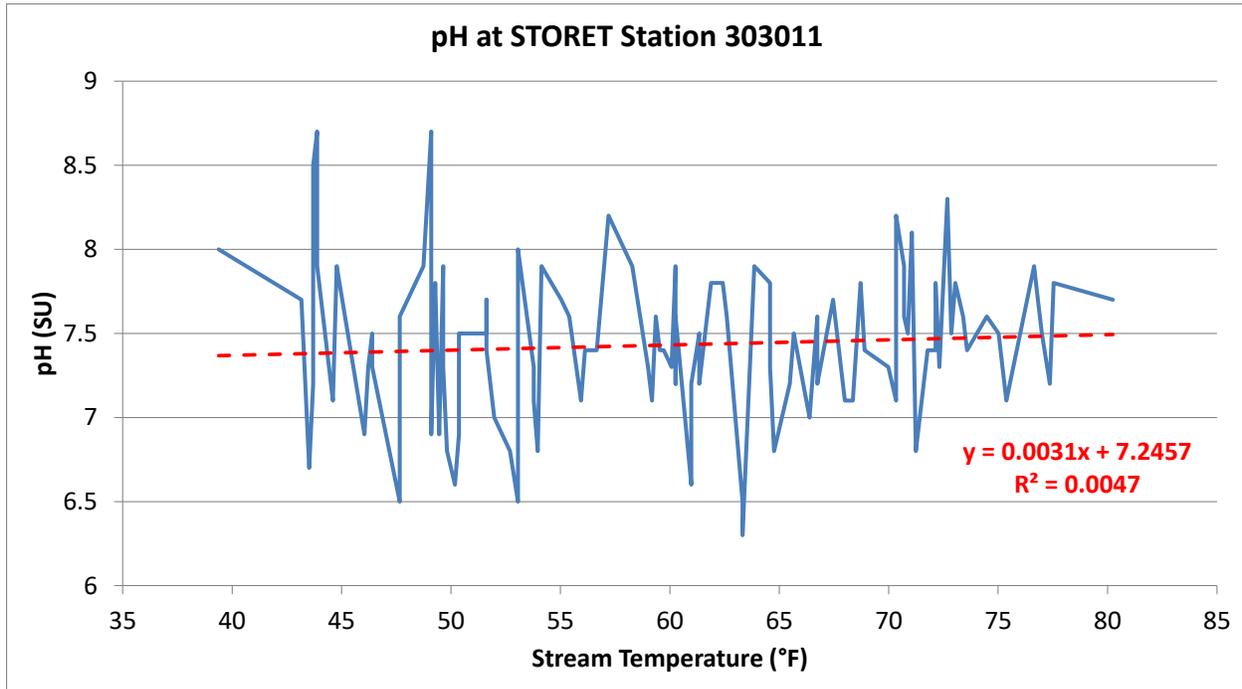
⁴ <http://www.dnrec.delaware.gov/swc/wa/Pages/Watershed%20Assessment%20Surface%20Water%20Quality%20Management.aspx>

⁵ <http://demac.udel.edu/waterquality/>



4.1 – 26.8°C is 39.4 – 80.2°F. The Figure below shows instream pH vs. temperature. R² in the Figure

below is a measure of the correlation of pH with temperature. $R^2 = 1.0$ would be perfectly correlated; $R^2 = 0.0$ means “no correlation at all”, i.e., pH and temperature are completely independent of each other.



The NH3 CMC becomes stricter as pH increases. The NH3 CCC becomes stricter as both pH and temperature increase. As a worst case scenario, the historical stream maximum pH = 8.7 SU was used to calculate the NH3 CMC of 2.2 mg/L, which is included in the permit as the maximum daily NH3 limit. Considering the Figure above, temperature & pH conditions will not coincide long enough (4 days) or often enough (more than once per three years) to get a CCC that is stricter than the CMC.

Enterococcus Limits

The limits in the current permit, 185 col/100 mL for daily maximum and 100 col/100 mL for daily average have been retained as they are consistent with the requirements of Broadkill TMDL. The TMDL requirement for enterococcus is stated as a load. The permit will continue to require concentration limits only, since the enterococcus load TMDL requirement is just calculated as

$$\text{Load} = (\text{Enterococcus WQS concentration}) \times (\text{Discharge Flow Limit}) \times (\text{Units Conversion Factors})$$

The same equation, with values and units, is shown below.

Description	Load	Enterococcus WQS Concentration	Units Conversion Factor	Flow Limit	Units Conversion Factor	Units Conversion Factor
Equation and Values	7,570,000,000	= <u>100</u>	x 10	x <u>2</u>	x 3.785	x 1,000,000
Units	CFU/Day	CFU/mL	(100s of mLs)/Liter	mgd	liters/gallon	gpd/mgd

For permit compliance reporting, the double-underlined values above would be replaced with actual monitoring results.

Reasonable Potential Analysis and Water Quality-based Limits for Aluminum, Copper, and Zinc

Review of data (last 5 years) indicates the effluent data for aluminum has frequently been above the calculated water quality-based limits until August, 2017. Since Savannah Ditch is an effluent-dominated stream, there is reasonable potential for the Outfall 002 discharge to cause exceedances of De. SWQS for aluminum.

The “reasonable potential analysis” (RP) checks if pollutant concentrations may cause or contribute to exceedances of water quality requirements, and calculates potential limits, based on the procedures recommended in the “Technical Support Document for Water Quality-based Toxics Control”, U.S.E.P.A., Office of Water (EN-336), EPA/505/2-90-001, PB91-127415, March, 1991.

Note that the permit effective on August 1, 2006 includes final limits for aluminum, copper and zinc on page 6, shown in the Table below.

Parameter	Average Limit (ppm)	Maximum Limit (ppm)
Aluminum	0.07	0.14
Copper	0.0026	0.0051
Zinc	0.025	0.049

Those limits are based on the information in the rightmost column in the table below.

Parameter	Updated Values	August 1, 2006 Values
Effluent water hardness	329 ppm as CaCO ₃	36 ppm as CaCO ₃
Ambient water hardness	33 ppm as CaCO ₃	60 ppm as CaCO ₃
Upstream 1Q10 river flow at 002	0.0 cfs	0.007 cfs
Upstream 7Q10 river flow at 002	0.0 cfs	0.011 cfs
Upstream 1Q10 river flow where “designated uses” apply	0.089	N/A
Upstream 7Q10 river flow at 002 where “designated uses” apply	0.131	N/A
Effluent flow	3.09 cfs (=2.0 mgd)	3.09 cfs (=2.0 mgd)

The Reasonable Potential analysis below is based on the updated values in the table above. In short, improved access to data and analysis tools, as discussed below, make the updated values much more reliable than the August 1, 2006 values.

For example, instream water hardness for EPA and USGS ambient monitoring is accessible via <http://waterqualitydata.us/portal/>. The following table summarizes the average instream water hardness⁶ for surface water monitoring stations within 20 miles of the Outfall 002 location (latitude = 38.702172 and longitude = -75.382675, in decimal degrees)

6. STORET parameter code 00900, for Total Hardness as CaCO₃.

Table 7 – Average Surface Water Hardness at Monitoring Stations	
Stream	44.6
BRIDGEVILLE BRANCH AT BRIDGEVILLE, DE	53.2
BUCKS BRANCH AT BUCKS BRANCH ROAD NEAR ATLANTA, DE	41.6
BUCKS BRANCH AT CONRAIL RD AT CANNON, DE	57.8
BUCKS BRANCH NEAR ATLANTA, DE	42.2
BUCKS BRANCH NEAR WESLEY CHURCH, DE	39.8
FREIDEL PRONG AT BAKER ROAD NEAR ATLANTA, DE	51.5
FREIDEL PRONG AT WESLEY CHURCH RD NEAR CANNON, DE	66.9
GUM BRANCH NEAR OAKLEY, DE	16.7
NANTICOKE RIVER AT GREENWOOD, DE	28.7
NANTICOKE RIVER NEAR BRIDGEVILLE, DE	33.1
TOMS DAM BRANCH NEAR BRIDGEVILLE, DE	28.2
WEST BRANCH NEAR GULLY CAMP, DE	20.4
Stream: Ditch	47.4
FIELD DITCH OUTLET AT WESLEY CHURCH, DE	51.9
GILBERT TRIVITTS DITCH AT CANNON, DE	42.8
“Stream” and “Stream: Ditch”	44.8

The limiting water quality criteria are the freshwater chronic criterion for aluminum, and the freshwater acute criteria for copper and zinc. The zinc criteria is hardness dependent, so effluent and ambient water hardness were considered in calculating limits. In May 2017 the State adopted a new freshwater criteria for copper, the Biotic Ligand Model (BLM). The BLM requires at least 12 months monitoring of 10 parameters to determine the criteria. There is a STORET station (Station 303011) in Savannah Ditch downstream of Outfall 002 at Road 246. Monitoring data for 5 of the 10 BLM parameters was available for this station. The values for the 5 missing parameters were estimated using EPA guidance⁷ for estimating missing BLM parameters. Estimation is based upon both ecoregion and stream order. The portion of Savannah Ditch where Outfall 002 discharges is in ecoregion 63 and since it does not have tributaries, it is categorized under stream order 1-3. The BLM-based criteria was used in the reasonable potential analysis and development of copper limits.

The Table below summarizes the results of the Reasonable Potential Analysis, using the “Updated Values” referenced in Table 6 above.

Table 8 – Reasonable Potential (RP) Analysis											
Pollutant	Highest Values	Month	Max. Effluent Conc. (ppm)	Coeff. of Variation*	Water Quality Std.* (ppm)		WLA (ppm)	Ce as % of WLA	Limit or Monitoring Needed?	Avg. Limit (ppm)	Max. Limit (ppm)
					Fresh Acute	Fresh Chronic					
Aluminum, Total	Highest	Jan-16	2.08	0.6	0.75	0.087	0.091	2293%	Limits	0.07	0.15
	2nd Highest	Mar-14	1.6					1764%	Limits		
	3rd Highest	Oct-15	0.76					838%	Limits		
Copper, Total Dissolved	Highest	Mar-18	0.011	0.9	0.01227	0.00762	0.0079	133%	Limits	0.0052	0.0126
	2nd Highest	July-15	0.0082					99%	Monitoring		
	3rd Highest	Jun-14	0.008					97%	Monitoring		
Zinc, Total Dissolved	Highest	Jun-14	0.072	0.8	0.31	0.31	0.32	22%	Neither	0.14	0.324
	2nd Highest	Oct-13	0.067					18%	Neither		

⁷ Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Application in EPA’s Biotic Ligand Model. <https://www.epa.gov/wqc/draft-technical-support-document-recommended-estimates-missing-water-quality-parameters-biotic>.

	3rd Highest	Sep-13	0.057					17%	Neither	
*Calculated from 3 years of monthly Discharge Monitoring Reports (i.e., 36 values), ending Mar, 2018 for copper and zinc and July, 2017 for aluminum. **The water quality standards shown are as they apply in stream, without dilution. ***The Waste Load Allocation includes instream dilution affects, and is based on the strictest water quality standard.										

Note that the zinc water quality criteria is for dissolved zinc. RP calculations use effluent monitoring results for total zinc, but conservatively assume that it is 100% dissolved. Even at that, the RP analysis indicates that limits are not warranted for zinc.⁸ RP analysis indicates limits are needed for Aluminum. According to the permittee, recent process changes have been implemented at the facility in order to meet aluminum limits. RP analysis for aluminum therefore did not include the most recent discharge data (Aug 2017-Mar 2018) as it would not result in a good representation of the average discharge data variation (coefficient of variation).

Zinc

The results of the reasonable potential analysis does not indicate the need to monitor zinc; still, the permit requires continued quarterly monitoring for zinc and hardness, considering remaining issues with Whole Effluent Toxicity. The proposed permit deletes the zinc limits, based on the discussion above. Federal⁹ and State¹⁰ regulations have anti-backsliding requirements, but the proposed permit changes do qualify under the exceptions allowed in those regulations.

Copper

Copper toxicity can be highly variable and dependent on ambient water chemistry. The BLM was developed as a tool to account for variations in metal toxicity using local water chemistry. The BLM for copper requires the following input parameters (in dissolved form) which influence the bioavailability and toxicity of copper to aquatic life; temperature, pH, dissolved organic carbon (DOC), calcium (Ca), magnesium (Mg), sodium (Na), potassium (K), sulfate (SO4), chloride (Cl), alkalinity and sulfide.

As explained above, the STORET station downstream of Outfall 002 (station 303011) only monitors 5 of the BLM parameters (temperature, pH, DOC, total chloride and total alkalinity) and the remaining 5 were estimated using EPA guidance document. Since the criteria is based on estimates for 5 of the BLM parameters, a special condition has been added in the permit which requires the Permittee to monitor the required BLM parameters for a period of 24 months. The results will be used to develop a criteria which will be used in performing reasonable potential analysis to determine if there is a reasonable potential of the discharge to cause an exceedance of the BLM-based copper criteria. If reasonable potential is found, limits will be determined and the permit shall be reopened to include the new limits. If no reasonable potential is found, the permit shall be reopened to remove the existing limits and only monitoring will be required.

Aluminum

Aluminum sulfate is added in the wastewater treatment process for the removal of phosphorus. The results of the reasonable potential analysis indicate limits are needed for aluminum. The current permit includes aluminum limits.

The August 1, 2006 permit included a compliance schedule for meeting aluminum limits and the permittee had requested an extension to the compliance date. The Department had agreed to issue an extension but since it would not be executed in the August 1, 2006 permit, the Department proposed to issue a

⁸ Moreover, taking an extra conservative approach of applying “uses” (see discussion above) at the Outfall 002 location, limits are not warranted for copper or zinc.

⁹ 40 CFR 122.44(l), http://www.ecfr.gov/cgi-bin/text-idx?SID=5920e435a64ba708ab8f144209f2458b&mc=true&node=se40.22.122_144&rgn=div8

¹⁰ Delaware RGCWP, <http://regulations.delaware.gov/AdminCode/title7/7000/7200/7201.pdf>

“Notice of Conciliation and Secretary’s Order”, as companion to this permit, which would provide a schedule for the permittee to achieve compliance with the aluminum limits. In a letter date November 16, 2017 the permittee stated that it considered such an Order unnecessary as it was meeting the limits as a result of then recent process changes. The Aluminum limits therefore become effective on the effective day of this permit. The Reasonable Potential Analysis, updated during the permit re-issuance process, still reflects the final aluminum limits as stated in the August 1, 2006 permit are still appropriate (except that the max. limit has been increased slightly, from 0.14 mg/L to 0.15 mg/L).

Whole Effluent Toxicity

The current permit requires chronic biomonitoring but no limit for “Whole Effluent Toxicity” (WET) on 100% effluent, based on the low dilution available in the receiving waters. Perdue’s effluent has exhibited recurring intermittent toxicity. The permittee implemented Toxicity Reduction Evaluation (TRE) plan, in June 2017 however did not get beyond Phase 1 of the Toxicity Identification Evaluation (TIE).

Consultation with EPA indicates that Outfall 002 has had recurring intermittent toxicity at least since 1992, but the permittee has never gotten beyond Phase 1 of the 3 phase TIE procedure. The permit includes a new Whole Effluent Toxicity limit of 1.0 TU daily average. The permit can and does provide a schedule of compliance to meet that limit and is consistent with anti-backsliding requirements, because a limit is stricter than just the biomonitoring requirement.

Monitoring Frequency

Except for copper and zinc, all monitoring frequencies have been retained from the current permit.

Table 9 – Proposed Monitoring Frequencies for Outfall 002 Parameters			
Effluent Parameter	Monitoring Requirement		
	Proposed Measurement Frequency	Current Measurement Frequency	Sample Type
Flow	Continuous	Continuous	Recording/Totalizing
BOD ₅	Once per week	Once per week	Composite
Total Suspended Solids	Once per week	Once per week	Composite
Oil and Grease	Once per month	Once per month	Grab/shift
Phosphorus, Total (as P)	Once per week	Once per week	Composite
Ammonia (as N)	Once per week	Once per week	Composite
Nitrogen, Total	Once per week	Once per week	Composite
Aluminum	Once per month	Once per month	Composite
Copper	Once per quarter	Once per month	Composite
Zinc	Once per quarter	Once per month	Composite
Hardness	Once per quarter	Once per month	Composite
Enterococcus	Once per week	Once per week	Grab
pH	Once per day	Once per day	Grab
Biomonitoring	Once per quarter	Once per quarter	Composite

Bases for Effluent Limitations for Outfall 004

The current permit’s requirement that the discharge be free from floating solids, sludge deposits, debris, oil, and scum are retained. The permit requires the facility to implement a SWP. The only storm water is sheet runoff from a grassed area. Monitoring requirements are established via the Storm water Plan.

Special Conditions

Special Condition No. 1 indicates this permit supersedes the State Permit WPCC 3235F/74 and NPDES Permit DE 0000469 issued on August 1, 2006.

Special Condition No. 2 is a standard permit reopener clause. This Special Condition allows the Department to reopen and modify the permit if the discharge is causing water quality problems.

Special Condition No. 3 defines sampling requirements for oil & grease for Outfall 002.

Special Condition No. 4 requires quarterly chronic biomonitoring of Outfall 002 at 100% effluent

Special Conditions Nos. 5, 6, and 7 require proper disposal of sludge, in accordance with state and federal regulations under 40 CFR 125.3.

Special Condition No. 8 requires implementation and maintenance of a storm water plan (SWP).

Special Condition No. 9 requires the operator of the wastewater treatment facility to be a certified operator holding a Class IV license.

Special Condition No. 10 outlines the requirements to meet the moving 12-month cumulative load effluent limits for Total N.

Special Condition No. 11 requires the permittee to use EPA-approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits pursuant to 40 CFR Part 136.

Special Condition No. 12 requires monitoring of copper BLM parameters and performing reasonable potential analysis for copper.

Antidegradation Statement

Except where otherwise noted herein, the proposed effluent limitations included in this NPDES permit comply with the applicable portions of the State of Delaware Surface Water Quality Standards, Section 5 Antidegradation and ERES Waters Policies.

Public Notice and Process for Reaching a Final Decision

The public notice of the Department's receipt of the application and of reaching the tentative determinations outlined herein was published in the Wilmington News Journal and the Delaware State News on **August 26, 2018**. Interested persons were invited to submit their written views on the draft permit and the tentative determinations made with respect to this NPDES permit application. The Department held a public hearing on this application on **November 27, 2018** after receiving a request to do so. Written comments received by **4:30 p.m. on September 25, 2018**, oral and written comments during the public hearing, and written comments following the public hearing were considered by the Department in preparing the final permit.

Revisions Based on Comments Received

Based on the comments received during the public hearing and the public notice period, a Technical Response Memo (TRM) was written and minor revisions to the Fact Sheet recommended. The revisions to the Fact Sheet based on the TRM recommendations are summarized below:

- Additional information has been added under the "Receiving Stream Classification" section of this Fact Sheet to include Wagamons Pond as a downstream waterbody to Savannah Ditch.
- Additional information has been added under the "Receiving Stream Classification" section of this Fact Sheet to provide clarity regarding the designated uses for Ingram Branch, Diamond Pond and Wagamons Pond.

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