



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

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Matthew J. Strickler
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David K. Paylor
Director

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Regional Director

**STATE WATER CONTROL BOARD
ENFORCEMENT ACTION - ORDER BY CONSENT
ISSUED TO
Tyson Farms, Inc.
FOR
Tyson Farms, Inc. Temperanceville Facility
VPDES Permit No. VA0004049**

SECTION A: Purpose

This is a Consent Order issued under the authority of Va. Code § 62.1-44.15, between the State Water Control Board and Tyson Farms, Inc., regarding the Tyson Farms, Inc. Temperanceville Facility, for the purpose of resolving certain violations of the State Water Control Law and the applicable permit and regulation.

SECTION B: Definitions

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned to them below:

1. "305(b) report" means the report required by Section 305(b) of the Clean Water Act (33 United States Code § 1315(b)), and Va. Code § 62.1-44.19:5 for providing Congress and the public an accurate and comprehensive assessment of the quality of State surface waters.
2. "Board" means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia, as described in Va. Code §§ 10.1-1184 and 62.1-44.7.
3. "CAP" means corrective action plan.
4. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia, as described in Va. Code § 10.1-1183.

5. “Director” means the Director of the Department of Environmental Quality, as described in Va. Code § 10.1-1185.
6. “Discharge” means discharge of a pollutant. 9 VAC 25-31-10
7. “Discharge of a pollutant” when used with reference to the requirements of the VPDES permit program means:
 - (a) Any addition of any pollutant or combination of pollutants to surface waters from any point source; or
 - (b) Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.
8. “DMR” means Discharge Monitoring Report.
9. “Effluent” means wastewater – treated or untreated – that flows out of a treatment plant, sewer, or industrial outfall.
10. “Facility” means the manufacturing operation, consisting of the poultry hatchery and live chicken processing, rendering operation, and wastewater treatment facility located at 11224 Lankford Highway, in Temperanceville, Virginia, which treats and discharges stormwater and wastewater to State waters.
11. “Notice of Violation” or “NOV” means a type of Notice of Alleged Violation under Va. Code § 62.1-44.15.
12. “O&M” means operations and maintenance.
13. “Order” means this document, also known as a “Consent Order” or “Order by Consent,” a type of Special Order under the State Water Control Law.
14. “Permit” means VPDES Permit No. VA0004049, which was issued under the State Water Control Law and the Regulation to Tyson on December 6, 2010, which was reissued on January 1, 2016 and expires on December 31, 2020.
15. “Pollutant” means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC § 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. 9 VAC 25-31-10.

16. "Pollution" means such alteration of the physical, chemical, or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety, or welfare or to the health of animals, fish, or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the Board, are "pollution." Va. Code § 62.1-44.3.
17. "Regulation" means the VPDES Permit Regulation, 9 VAC 25-31-10 *et seq.*
18. "State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands. Va. Code § 62.1-44.3.
19. "State Water Control Law" means Chapter 3.1 (§ 62.1-44.2 *et seq.*) of Title 62.1 of the Va. Code.
20. "TRO" means the DEQ Tidewater Regional Office located in Virginia Beach, Virginia.
21. "Tyson" means Tyson Farms, Inc., a corporation authorized to do business in Virginia and its affiliates, partners, and subsidiaries. Tyson is a "person" within the meaning of Va. Code § 62.1-44.3.
22. "VAC" means the Virginia Administrative Code.
23. "Va. Code" means the Code of Virginia (1950), as amended.
24. "VPA Permit" means the Virginia Pollutant Abatement Permit that DEQ issued to Tyson on April 19, 2011 and expires April 18, 2021 under VPA01035.
25. "VPDES" means Virginia Pollutant Discharge Elimination System.
26. "Warning Letter" or "WL" means a type of Notice of Alleged Violation under Va. Code § 62.1-44.15.

SECTION C: Findings of Fact and Conclusions of Law

1. Tyson owns and operates the Facility. The Facility consists of a poultry hatchery, which supplies chicks to contract growers, the processing of live chickens, and the treating and

discharging of treated wastewater and storm water resulting from manufacturing and processing operations. Poultry processing includes slaughtering, defeathering, eviscerating, chilling, packaging, and shipping of poultry products for human consumption to an offsite destination. Tyson also renders offal and feathers by-products into useable animal feed ingredients.

2. The Permit allows Tyson to discharge treated stormwater and wastewater resulting from poultry processing and rendering operations to an unnamed tributary, in strict compliance with the terms and conditions of the Permit.
3. The Permit requires Tyson to monitor and report compliance with effluent limits for ammonia, Total Suspended Solids (TSS), *E. coli*, fecal coliform, and Biological Oxygen Demand (BOD5).
4. The unnamed tributary, which flows to the Sandy Bottom Branch and then to the Pocomoke Sound, is located in the Chesapeake Bay, Atlantic Ocean, and Small Coastal Basin watersheds. The unnamed tributary is listed in DEQ's 305(b) report as impaired for fecal coliform. Tyson's Permit No. VA0004049 is listed in the fecal coliform TMDL as having a waste load allocation for *E. coli* based on the permit limit of 126 x 1.007 MGO. EPA approved the Total Maximum Daily Load (TMDL) on November 7, 2005 and the Board on April 28, 2009.
5. In submitting its DMRs, as required by the Permit, Tyson has listed that it exceeded discharge limits contained in Part I.A.1 of the Permit for ammonia for the March 2015, August 2015, and August 2016 reporting periods, TSS, *E. coli*, and fecal coliform for the March 2015 reporting period, and BOD5 for the September 2015 reporting period. Tyson also failed to provide a letter of explanation for non-compliance with its permit limits for the August, September, and March 2015 reporting periods in violation of Part II.I.3 of the Permit.
6. TRO issued a Warning Letter and Notice of Violation for the Permit limit exceedances and for failure to provide a letter of explanation for non-compliance described in C(5) as follows: WL No. W2015-05-T-1003, issued May 14, 2015; and NOV No. W2015-09-T-0003, issued October 27, 2015. The March 2015 TSS and ammonia effluent limit violations and the failure to provide a letter of explanation for non-compliance with its permit limits for the March 2015 reporting period were cited in WL No. W2015-05-T-1003.
7. Va. Code § 62.1-44.5 states that: "[E]xcept in compliance with a certificate issued by the Board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances."
8. The Regulation, at 9 VAC 25-31-50, also states that except in compliance with a VPDES permit, or another permit issued by the Board, it is unlawful to discharge into state waters sewage, industrial wastes or other wastes.

9. Va. Code § 62.1-44.15(5a) states that a VPDES permit is a “certificate” under the statute.
10. The Department has not issued any permits or certificates to Tyson, regarding the discharge of the pollutants described above, other than VPDES Permit No. VA0004049.
11. The unnamed tributary is a surface water located wholly within the Commonwealth and is a “state water” under State Water Control Law.
12. Based on the results of DMRs and accompanying documentation submitted by Tyson to DEQ for the months of March through September 2015, the Board concludes that Tyson has violated its Permit, Va. Code § 62.1-44.5, and 9 VAC 25-31-50, by discharging treated stormwater and wastewater from the Facility while concurrently failing to comply with the conditions of the Permit, as described in paragraph C(5) above.
13. Tyson submitted a “CAP” on December 16, 2016 to address the violations described in paragraph C(5) above. The CAP was revised on March 8, 2017, which was approved by DEQ on May 12, 2017.
14. On October 12, 2017, Tyson submitted a revised CAP proposing additional actions that further clarify their return to compliance. The October 2017 CAP is incorporated as Appendix A of this Order. In the October 2017 CAP, Tyson proposed to dewater and land apply solids from the solids lagoons, refurbish an old lagoon that has been out of service (i.e. remove vegetation, rebuild embankments, install liner and associated piping), reduce water consumption, and conduct a third-party evaluation of its wastewater treatment operations.
15. Tyson is in compliance with the October 2017 CAP as follows:
 - a. Tyson began dewatering and land-applying solids in April 2018 in accordance with the October 2017 CAP compliance schedule. During April 2018, Tyson removed and land-applied 3,000,000 gallons of liquid sludge from the waste activated sludge lagoon. Tyson also removed and land-applied 2,250,000 gallons of sludge from the anaerobic solids lagoon. Land application of solids is performed in accordance with the VPA Permit.
 - b. Tyson has performed an engineering design study for lagoon refurbishment. The design completion date in the October 2017 CAP compliance schedule (on or before January 12, 2018) was extended until the fall of 2018. The design study was completed in August 2018.
 - c. The Tyson water conservation initiative is in progress. According to Tyson, this Facility has recognized a 15.29% reduction in groundwater use and an 18.03% reduction in wastewater discharges in gallons in the first five months of 2018 compared to 2017. This year over year reduction helps to demonstrate this Tyson

facility is currently on track to meet its portion of the overall 12% water reduction goal for Tyson Foods, Inc. by 2020. The reduction in groundwater use does not imply, determine, or entitle Tyson to a specific limit or approval of a specific groundwater withdrawal amount in any Virginia Groundwater Withdrawal Permit.

- d. Tyson has completed its third-party evaluation of its wastewater treatment operations on December 18, 2017. The audit was evaluated against Tyson's corporate wastewater standards, as well as state and federal regulatory requirements. The audit concluded that there were no issues with Tyson's compliance with state and federal requirements but made four recommendations with respect to compliance with Tyson's corporate wastewater standards. Tyson has addressed the four recommendations identified in this report.
16. In addition to CAP requirements, Tyson has submitted an updated Solids Disposal Plan, O&M Manual, a wastewater process control document, and an updated wastewater flow diagram. Tyson completed its aboveground storage tank certifications, including pipe testing, removal of underground piping, and renewed its risk management program. Tyson also completed its stormwater drain and ditch cleanout and submitted a synthetic minor air permit application on November 30, 2017, which DEQ issued to Tyson on June 26, 2018. Tyson continues to operate under a Title V air permit as well.
 17. In order for Tyson to return to compliance, DEQ staff and representatives of Tyson have agreed to the October 2017 CAP and the Schedule of Compliance, which is incorporated as Appendices A and B of this Order.

SECTION D: Agreement and Order

Accordingly, by virtue of the authority granted it in Va. Code §§ 62.1-44.15, the Board orders Tyson, and Tyson agrees to pay a civil charge totaling \$30,160.00. Tyson has previously paid \$26,160 of the civil charge by making payments to DEQ on December 21, 2016 and May 25, 2017, in the amounts of \$16,150 and \$10,010, respectively. Tyson paid the remaining \$4,000 to DEQ on May 29, 2018.

Accordingly, by virtue of the authority granted it in Va. Code §§ 62.1-44.15, the Board orders Tyson and Tyson agrees to perform the actions described in Appendices A and B of this Order.

Payments shall be made to DEQ within 30 days of the effective date of the Order in settlement of the violations cited in this Order. Payment shall be made by check, certified check, money order or cashier's check payable to the "Treasurer of Virginia," and delivered to:

Receipts Control
Department of Environmental Quality
Post Office Box 1104

Richmond, Virginia 23218

Tyson shall include its Federal Employer Identification Number (FEIN) 56-0754148 with the civil charge payment and shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Environmental Emergency Response Fund (VEERF). If the Department has to refer collection of moneys due under this Order to the Department of Law, Tyson shall be liable for attorneys' fees of 30% of the amount outstanding.

SECTION E: Administrative Provisions

1. The Board may modify, rewrite, or amend this Order with the consent of Tyson for good cause shown by Tyson, or on its own motion pursuant to the Administrative Process Act, Va. Code § 2.2-4000 *et seq.*, after notice and opportunity to be heard.
2. This Order addresses and resolves only those violations specifically identified in Section C of this Order, in NOV No. W2015-09-T-0003 dated October 27, 2015, and Warning Letter No. W2015-05-T-1003 dated May 14, 2015. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the facility; or (3) taking subsequent action to enforce the Order.
3. For purposes of this Order and subsequent actions with respect to this Order only, Tyson admits the jurisdictional allegations, findings of fact, and conclusions of law contained herein.
4. Tyson consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. Tyson declares it has received fair and due process under the Administrative Process Act and the State Water Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to modify, rewrite, amend, or enforce this Order.
6. Failure by Tyson to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.

8. Tyson shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other unforeseeable circumstances beyond its control and not due to a lack of good faith or diligence on its part. Tyson shall demonstrate that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. Tyson shall notify the DEQ Regional Director verbally within 24 hours and in writing within three business days when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of the Order. Such notice shall set forth:
 - a. the reasons for the delay or noncompliance;
 - b. the projected duration of any such delay or noncompliance;
 - c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
 - d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

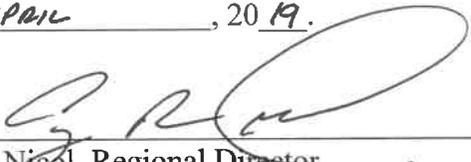
Failure to so notify the Regional Director verbally within 24 hours and in writing within three business days, of learning of any condition above, which the parties intend to assert will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto and any successors in interest, designees and assigns, jointly and severally.
10. This Order shall become effective upon execution by both the Director or his designee and Tyson. Nevertheless, Tyson agrees to be bound by any compliance date which precedes the effective date of this Order.
11. This Order shall continue in effect until:
 - a. The Director or his designee terminates the Order after Tyson has completed all of the requirements of the Order;
 - b. Tyson petitions the Director or his designee to terminate the Order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order; or
 - c. the Director or Board terminates the Order in his or its sole discretion upon 30 days' written notice to Tyson.

Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve Tyson from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

12. Any plans, reports, schedules or specifications attached hereto or submitted by Tyson and approved by the Department pursuant to this Order are incorporated into this Order. Any non-compliance with such approved documents shall be considered a violation of this Order.
13. The undersigned representative of Tyson certifies that he or she is a responsible official authorized to enter into the terms and conditions of this Order and to execute and legally bind Tyson to this document. Any documents to be submitted pursuant to this Order shall also be submitted by a responsible official of Tyson.
14. This Order constitutes the entire agreement and understanding of the parties concerning settlement of the violations identified in Section C of this Order, and there are no representations, warranties, covenants, terms or conditions agreed upon between the parties other than those expressed in this Order.
15. By its signature below, Tyson voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 15TH day of April, 2019.



Craig Nicol, Regional Director
Department of Environmental Quality

Tyson Farms, Inc. voluntarily agrees to the issuance of this Order.

Date: 1/16/2019 By: Kevin J. Igli, SVP Chief Environmental Officer
(Person) (Title)
Kevin J. Igli Tyson Farms, Inc.

Commonwealth of ~~Virginia~~ Arkansas SJH
City/County of Washington

The foregoing document was signed and acknowledged before me this 16th day of
January, 2019, by Kevin J. Igli who is
SVP Chief Environmental Officer of Tyson Farms, Inc., on behalf of the corporation.

Stephanie Jean Hendricks
Notary Public

12705958

Registration No.

My commission expires: 4/4/2028

Notary seal:



APPENDIX A
October 12, 2017 CAP

(Attached following page 13 of this Consent Order)

APPENDIX B SCHEDULE OF COMPLIANCE

1. Land-Apply Solids from Solids Lagoons

- a. Tyson shall continue to remove and land-apply solids from the anaerobic and waste activated sludge holding lagoons as needed to ensure compliance in accordance with its O&M Manual and Permit requirements.
- b. If at any time during refurbishment of lagoons under B.2, solids exceed the design capacity of the wastewater treatment system (i.e. the treatment lagoons and wastewater treatment plant), Tyson shall operate a portable belt press to remove solids and land-apply in accordance with the VPA Permit.

2. Refurbish Inactive Lagoons Nos. 2 and 3

- a. Tyson shall complete construction of lagoon refurbishment as expeditiously as possible but in no event later than January 1, 2020.
- b. Tyson shall submit quarterly progress reports to DEQ by the 10th day of the month following the preceding quarter (e.g. January-March, due April 10th).
- c. Refurbishment shall include the removal of vegetation and biosolids, rebuilding of embankments, and installation of liner and associated piping.

3. Water Conservation

- a. Tyson shall maintain at a minimum the current Facility water consumption reduction per pound of product (compared to a 2015 baseline) of 12% through 2020.
- b. By January 1, 2019, Tyson shall update the existing groundwater Water Conservation and Management Plan ("Plan"), which was last revised on October 16, 2008, to ensure compliance with 9VAC25-610-100.B.2. At a minimum, the Plan shall include:
 1. Requirements for the use of water saving equipment and processes to ensure the most efficient use of groundwater and reductions in water demand where practicable;
 2. A water loss reduction program including a leak detection and repair program;
 3. A water use education program which contains requirements for the education of water users and training of employees controlling water consuming processes. The program will include a schedule for information distribution and the type of materials used;
 4. An evaluation of potential water reuse options and assurances that water will be reused in all instances where reuse is practicable and not prohibited by other

- regulatory programs; and
5. Requirements for mandatory water use reductions and compliance with restrictions during water shortage emergencies declared by the local governing body or water authority consistent with §§ 15.2-923 and 15.2-924 of the Code of Virginia. This should include requirements providing for mandatory water use restrictions in accordance with drought response and contingency ordinances implemented to comply with 9VAC25-780-120 during water shortage emergencies.

4. Submittals

- a. Unless otherwise specified, Tyson shall submit all requirements of Appendices A and B of this Order to:

Regional Director
VA DEQ – Tidewater Regional Office
5636 Southern Boulevard
Virginia Beach, VA 23462

APPENDIX A
October 12, 2017 CAP

Corrective Action Plan



Order by Consent
VPDES Permit No. VA0004049
Tyson Farms, Inc.
Temperanceville, VA

October 12, 2017

Wastewater Treatment Introduction

Tyson-Temperanceville operates a Four Stage Biological Nutrient Removal (BNR) activated sludge system followed by tertiary filtration and ultraviolet disinfection.

Wastewater solids reduction and byproduct recovery are accomplished in the offal room where chicken viscera are removed using rotary screens. These materials are transferred to trucks for rendering. After screening, the wastewater is pumped to collection pit #1. From that pit, the wastewater is pumped to the 250,000-gallon equalization (EQ) tank. The wastewater is pumped from the EQ tank to the dissolved air flotation (DAF) unit.

For management of total suspended solids (TSS) in the DAF, a system has been installed to maintain a specific level of TSS leaving the DAF. The system doses chemicals to ensure that the level of TSS required is maintained. A three-chemical system is currently in use to produce a thicker sludge and high biological oxygen demand (BOD), low TSS effluent.

Water from sanitary processes at the plant are pumped into the sanitary tank located on the south side of the treatment building, bypassing the pretreatment systems.

The sludge skimmed from the surface of the DAF unit is collected in a gravity thickening tank. Clear liquids are decanted from the solids after separation. The clear water is then drained from the tank back to the plant site drain, and is then pumped back to the head of the 12 MG anaerobic lagoon or to the sanitary tank which is pumped to the Anoxic basin. The sludge is then taken off-site for land application.

The anaerobic lagoon currently is not used for wastewater flows except during DAF downtime or during periods of low flow (weekends). The plant site drain which collects DAF sand drain and auger drain effluent, clarifier scum trough effluent, sand filter backwash and office restroom and floor drains, is pumped directly to the anaerobic. Anaerobic flow is removed by a single T6 pump that is manually operated as needed. This flow is directed to the anoxic basin and continues in the wastewater process.

The DAF effluent flows into the sanitary tank. The combined water is then pumped to the 4.5 MG anoxic basin (Reactor #1) along with the nitrate return from the complete mix activated sludge (CMAS) basin. In this basin nitrate is converted to nitrogen gas and oxygen. This process is called denitrification. There are two 75 horsepower tornado mixers to provide mixing capabilities. This flow is directed to the anoxic basin and continues in the wastewater process.

The water is then gravity flowed into the CMAS basin which is a 4.5 MG aerobic basin (Reactor #2) where ammonia is converted to nitrate and BOD is reduced. This basin requires a minimum of 0.5 dissolved oxygen (DO) level. Normal DO levels are 1.0-2.0 mg/l. Diffused air is introduced into the basin by pumps powered by 4 blowers. LM50 is used for pH control, and normal pH is 6.5-7.0. Organic matter present in this basin. Influent is consumed by aerobic and facultative (heterotrophic) bacteria for energy and the production of new cells. Influent nitrogen in the form of ammonia is converted to nitrites and then nitrates in the CMAS basin by the nitrifying autotrophic bacteria (nitrosomas and nitrobacter). These microorganisms, when properly controlled, form a biological floc, which subsequently settle in the final clarifier basin. The

majority of this settled (activated) sludge is returned to Reactor #1 for continued organic and inorganic pollutant removal. Excess waste activated sludge (WAS) goes to the WAS lagoon, and it is later land applied during the spring.

The wastewater then flows to Reactors #3 and #4. These serve as processes to further remove organic matter. Reactor #3 has an anoxic environment and Reactor #4 provides another aerobic environment. Anoxic Reactor #3 is designed to provide final nitrate nitrogen removal by biological denitrification using supplemental carbon source dosage as needed. Reactor #4 is for re-aeration and polishing of the carbonaceous BOD. After Reactors #3 & #4 wastewater flows by gravity to the final clarifier. Prior to the clarifier, aluminum sulfate is added to the influent for the coagulation and flocculation of phosphorus and remaining solids for removal by settling in the clarifier. Polymer is also added to aid in sludge settling.

Water from Reactor #4 enters the clarifier by gravity through the center stilling well where the velocity is reduced to allow the sludge to settle. The heavier sludge is then removed from the bottom by the use of a header which is connected to the return sludge pump suction piping. This header is kept in motion by the associated motor/gearbox drive located on the clarifier bridge. This circular motion allows the sludge to be removed from the tank bottom. The upper scum removal system is integrated with the header system to allow the floating solids to be removed to the scum troughs.

From the clarifier, the water flows to two sand filters located in the filter building. This tertiary filtration system removes any remaining solids.

Once through the tertiary filters the effluent enters a collection well which raises the elevation of the flow to allow for gravity flow through the ultraviolet (UV) disinfection. After UV disinfection, the effluent passes through a contact chamber and down steps to add DO back into the water. The final effluent is then discharged into a ditch at the north end of the property. The effluent ultimately discharges into the Chesapeake Bay watershed.

Exceedances

Discharge Monitoring Reports (DMRs) submitted to VDEQ, as required by the VPDES Permit, indicated exceedances for ammonia for the March 2015, August 2015, and August 2016 reporting periods, TSS, E. coli, and fecal coliform for the March 2015 reporting period, and BOD5 for the September 2015 reporting period. Copies of DMRs (Individual VPDES Permit) for calendar years 2015, 2016 and 2017 as well as copies of DMRs (General VPDES Nutrient Trading) for calendar years 2013-2016 are attached.

Immediate consultation with Reid Engineering Company, our wastewater design engineer, Tyson corporate wastewater specialists, and various other wastewater field experts, determined that the March 2015 and August 2015 ammonia exceedance events were caused by an excess of solids in the wastewater system. The wastewater system uses bacteria to break down nutrients through a series of biological processes. These processes create additional bacterial which are eventually turned into solids. To maintain balance, some of the solids must be wasted out of the process. Solids had not been removed from the anaerobic lagoon since its installation in 1989. Due to limited space in the WAS pond and a full anaerobic lagoon, the entire wastewater system became saturated with solids. Excess solids create operation issues due to increased air consumption by the bacteria. This inhibits existing bacteria from completing the nitrogen cycle and removing ammonia from the water. Prior to the upset in 2015, operational data of the anaerobic lagoon did not indicate that excessive solids were present. It was determined that solids were required to be removed from the anaerobic lagoon.

After consultation with VDEQ, Tyson began the process of removing solids from the anaerobic lagoon in January 2016. Four million gallons of anaerobic liquid was pumped, solids pressed and land applied under VPA permit VPA01035. The project also included removal of three million gallons of WAS sludge. A total of 390 wet tons of solids were removed from the anaerobic lagoon while 250 wet tons of solids were removed from the waste activated sludge lagoon. Tyson underwent a similar project beginning in 2017, but on a larger scale. In January and February of 2017, a third-party vendor began the second stage of solids removal from the anaerobic lagoon. A total of 11.6MG was pumped and pressed from the anaerobic and WAS lagoons, resulting in 987.51 dry tons of solids being removed from the wastewater system and being land applied.

The September 2015 BOD exceedance was directly related to sodium bisulfite interference during breakpoint chlorination. Breakpoint chlorination (chemical oxidation) was required to address the ammonia inhibition described previously. BOD is a 24-hr composite sample.

The root cause of the March 2015 E. coli and fecal coliform was undetermined as the facility had not previously had an E. coli and/or fecal coliform exceedance and have not had an issue since the one sampling event. E. coli and fecal coliform are a once/week grab sample.

The root cause of the August 2016 ammonia exceedance was undetermined as process control samples indicated the wastewater treatment plant was operating properly. Ammonia is a 24-hr composite sample.

No wastewater exceedances have occurred since August 2016.

Proposed Corrective Action Plan

Tyson has contracted with Denali Water Solutions (Denali) to dewater and land apply biosolids from the anaerobic lagoon and waste activated sludge (WAS) storage lagoon the past two years with continued improvement to wastewater operations being realized each successive year. This process has been very successful and Tyson will continue this practice commencing again in the fall of 2017. The project scheduled for the fall of 2017 is estimated to process 10MG through a belt filter press (BFP) resulting in approximately 950 dry tons of biosolids being removed from the wastewater system. The biosolids will be land applied in the months of March – June of 2018 under VPA permit VPA01035. The project will coincide with the removal and land application of approximately an additional 3MG of WAS from the WAS storage lagoon. This process will continue on an annual basis for the WAS lagoon and as needed, but no less than once every 5 years, for the anaerobic lagoon.

Our wastewater design engineer, Reid Engineering, recommended that Tyson refurbish lagoons previously associated with the Temperanceville wastewater treatment system and taken out of service in approximately 1990. Activities associated with the lagoon refurbishment include removing of vegetation, removing residual biosolids, rebuilding embankments and installing a liner and associated piping. The lagoons will be reviewed to determine whether they should be combined into one larger lagoon or refurbished individually. The lagoon(s) will be used for additional storage of WAS and/or for providing additional wastewater treatment options. Design of the lagoon refurbishment will begin in August 2017 with design completion on or before January 12, 2018. Tyson will submit the designs for lagoon refurbishment to VDEQ for permit approval and develop a schedule for construction.

Water conservation activities will continue at the facility and are designed to further reduce loading to the wastewater treatment system and receiving stream. Tyson-Temperanceville obtained a 10% decrease in gallons of water used per pound of finished product in 2016 and has established a goal to further reduce water consumption by approximately 12% by 2020 as compared to the baseline year of 2015. To achieve this goal, Tyson will be installing additional meters to assess water usage throughout the plant. Prime Equipment Group conducted an engineering assessment of water usage areas within the Temperanceville facility in July 2017. The assessment revealed that significant water reductions would not be achieved (<40 gal/min) through the installation of water re-use equipment. A current assessment evaluating re-use options for wastewater effluent is in progress.

Tyson will retain Endeavour EHS to conduct a third-party evaluation of Temperanceville wastewater treatment plant operations. Specifically, the evaluation will review the facility's wastewater treatment plant operations compared to requirements within Tyson's "Wastewater Discharge Standard", effective May 20, 2007 and revised June 27, 2017. The Standard specifies certain activities including: operation & maintenance; process control monitoring; sample collection, preservation and shipping procedures; sample analysis procedures as well as training. The third-party evaluation will be completed prior to December 31, 2017. Results of the evaluation will be shared with DEQ, with a plan to address corrective actions, if any deficiencies are identified, developed by February 28, 2018.

Discharge Monitoring Report History (Calendar years 2013-2017)

Copies of DMRs (Individual VPDES Permit) for calendar years 2015, 2016 and 2017 as well as copies of DMRs (General VPDES Nutrient Trading) for calendar years 2013-2016 are attached.