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
Fax: (302) 739-8369

Fact Sheet – February 1, 2016

Allen Harim Foods, LLC
18752 Harbeson Road
Harbeson, Delaware 19951

NPDES Permit No. DE 0000299
State Permit No. WPCC 3131F/76

Allen Harim Foods, LLC, in Harbeson, Delaware applied for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge treated process water, sanitary waste water, and storm water to Beaverdam Creek which discharges to the Broadkill River. Allen Family Foods, Inc. transferred ownership of the site to Allen Harim Foods, LLC, as of September 6, 2011.

Proposed Permit Changes

Allen Harim Foods, LLC, requested in the permit application that daily average flow limit of 1.25 MGD be increased to 2.00 MGD.

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

1. Granted request for flow increase, but implemented the Broadkill TMDL mandated limits for Total Nitrogen (TN), Total Phosphorus (TP), Biological Oxygen Demand (BOD_5), Ammonia and Enterococcus. Corresponding concentration limits have been reduced in proportion to the flow increase for TMDL mandated parameters. Concentration limits for other parameters have been reduced in proportion to flow increase.

2. Implemented 12-month cumulative average annual load limit for Total Nitrogen (TN), based on the TMDL for the Broadkill River Watershed.

3. 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.

4. Implemented daily average load limit for Total Phosphorus (TP), Biological Oxygen Demand (BOD_5), and Ammonia based on the TMDL for the Broadkill River Watershed.

5. Added "Schedule of Compliance" to Part I, C. of the permit requiring the permittee to comply with the final effluent limitations requirements for TN no later than 42 months from issue date of the permit.

6. Established water quality-based limits for aluminum and a 42 month compliance schedule to achieve compliance with these limits.

7. Special Condition about "Storm Water Plan" has been modified to include the Broadkill TMDL requirements.

Facility Location

This facility is located at 18752 Harbeson Road in Harbeson, Sussex County, Delaware.

Activity Description

Allen Harim Foods, LLC is a poultry processing plant which involves: the transportation of live birds from the poultry farms, slaughtering, defeathering, eviscerating, chilling, packing, and the shipping of poultry meat to the distributors. The industrial wastewater and domestic wastewater from the poultry plant flow into their sanitary treatment plant (STP). The STP consists of primary screening, dissolved air flotation, biological nutrient removal (anoxic basins followed by aerobic basins), secondary clarifiers, chlorination, and dechlorination. Process related storm water is collected in sumps with pumping of first flush to the STP. Sludge treatment consists of aerobic digestion, dewatering by filter press and land application.

Description of Discharges

Outfall 001 consists of treated sanitary wastewater, treated process waste water from the poultry processing operation, and treated storm water.

Outfall 002 (West Fence) is storm water runoff from the screening area, trucks parking and cleaning area, loading and unloading area and live holding shed area. Outfall 003 (South Fence) is storm water runoff from the truck parking and live holding shed area. Outfalls 002 and 003 each flow through a separate concrete sump equipped with a pump that pumps first flush water to the influent of the process wastewater treatment system.

Outfall 004 is storm water runoff from access driveway and the employee parking area.

Receiving Stream Classification

The permittee has four outfalls to Beaverdam Creek, which flows into the Broadkill River and finally to the Delaware Bay. The designated uses of the Broadkill River in the area of the discharge are: Industrial Water Supply; Primary Contact Recreation; Secondary Contact Recreation; Protection of Fish, Aquatic Life, and Wildlife; and Agricultural Water Supply.

Statutory and Regulatory Basis

The discharges are subject to certain effluent discharge limitations, monitoring requirements and other terms and conditions identified in the permit. Section 402 of the federal Clean Water Act, as amended and 7 Del. C. Chapter 60 provides the authority for permit issuance. Federal and state regulations promulgated pursuant to these statutes are the regulatory bases for permit issuance.

Proposed Effluent Limitations

The Delaware Department of Natural Resources and Environmental Control (DNREC) has examined the application, discharge monitoring data, and related information. The Department proposes to reissue the facility's NPDES permit to discharge, for a period not to exceed five (5) years. Following is the basis for the proposed limitations.

Basis for Effluent Limitations

The following Table 1 below outlines the bases for the proposed effluent limitations.

TABLE 1 – Bases for Effluent Limits and Monitoring
(Notes are at the end of this table)

Outfall	Parameter	Lim/Mon.	Water Quality-Based[1]	Technology-based			
				DRBC[2]	Effluent Limitation Guidelines[3]	Performance-Based[4]	RGCWP[5]
001	Flow	Limit				✓	
	BOD5	Limit	✓				
	Total Suspended Solids	Limit			✓	✓	
	Oil & Grease	Limit			✓	✓	
	Total Phosphorus (as P)	Limit	✓				
	Ammonia (as N)	Limit	✓				
	Total Nitrogen	Limit	✓				
	Aluminum	Limit	✓				
	Enterococcus	Limit	✓				
	Total Residual Chlorine	Limit	✓				
	Biomonitoring	Monitoring	✓				
	pH	Limit					✓
	"Free From ... "	Limit	✓				
002 & 003	BOD5	Limit			✓		
	Total Suspended Solids	Limit			✓		
	Oil & Grease	Limit			✓		
	Total Phosphorus (as P)	Monitoring					
	Ammonia (as N)	Limit			✓		
	Total Nitrogen	Limit			✓		
	Enterococcus	Limit	✓				
	"Free From ... "	Limit	✓				
004	"Free From ... "	Limit	✓				

1. State of Delaware Surface Water Quality Standards (**SWQS**), as amended June 1, 2011, http://regulations.delaware.gov/AdminCode/title7/7000/7400/7401.shtml.
2. Delaware River Basin Commission.
3. 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.
4. Performance-based limits are based on the provisions of 40 CFR 122.45(b)(2)(I).
5. §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 September 1, 2012, http://regulations.delaware.gov/AdminCode/title7/7000/7200/7201.pdf.

TABLE 2
Comparison of Effluent Guideline Derived Limits with Current Permit Limits.

Parameter	Daily Average		Daily Maximum	
	Concentration Limit (mg/L)		Concentration Limit (mg/L)	
	Current Permit	40 CFR 432 Subpart K	Current Permit	40 CFR 432 Subpart K
BOD_5	16	16	23	26
TSS	20	20	23	30
O&G	8.0	8.0	14	14
NH_3 – N	4.0	4.0	8.0	8.0
Total Nitrogen	103	103	147	147

BOD5

Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 104.3 lb/day is proposed for BOD5. Proposed daily average and maximum load limits are more stringent than the 40 CFR Part 432, Subpart K limits.

Oil and Grease Limits

For O&G, the daily average and daily maximum concentration limits in the current permit are the same as the 40 CFR Part 432, Subpart K concentration limits. The current load limits are based on the concentration limits and the flow limit of 1.25 MGD. The standard practice is to maintain current load limits and reduce the concentration limits in proportion to the flow increase. However, doing so would reduce the average concentration limit to 4 mg/L which is below the method detection limit (MDL). Demonstrating compliance with such a standard would not be practicable. As a result, the proposed daily average effluent limit has been set at the MDL of 5 mg/L. The daily maximum concentration limit is proposed to be 7.5 mg/L and the load limits are based on the concentration limits and the design flow of 2.0 MGD.

TSS Limits

The daily average and daily maximum concentration limits in the current permit are the same as 40 CFR Part 432, Subpart K concentration limits. The current TSS load limits are proposed to be maintained and the concentration limits have been reduced in proportion to the flow increase.

Ammonia Limits

Based on the TMDL for the Broadkill River Watershed allocation for this facility, a daily average load limit of 10.4 lb/day is proposed for Ammonia. Proposed daily average and maximum load limits are more restrictive than the 40 CFR Part 432, Subpart K mass limits.

Total Nitrogen (TN) Limits

The TMDL for the Broadkill River Watershed specifies a WLA of 73.0 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 26,645 pounds. Additionally, a daily average load limit of 73.0 lb/day for May 1 through September 30 is proposed based on the TMDL. The effluent limitations for TN are proposed to become effective 42 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.

Total Phosphorus (TP) Limits

Based on the TMDL for the Broadkill River Watershed allocation, a daily average load limit of 5.21 lb/day is proposed for TP.

Enterococcus Limits

As the Broadkill TMDL Enterococcus load limits have been imposed for this permittee, it supersedes the limits in the current permit. Further these limits have been reduced in proportion to flow increase. The proposed limits are 113 col/100 mL for daily maximum and 63 col/100 mL for daily average.

Biomonitoring

The current permit requires chronic biomonitoring on 100% effluent, based on the low dilution available in the receiving waters. The facility passed biomonitoring tests, as per results submitted with the permit application and therefore, as in the current permit, one time chronic biomonitoring test is due prior to permit expiration date.

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

The reasonable potential analysis and calculations of potential metals limits are 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. The following analysis is based upon two (2) 24 hr. composite samples taken during November, 2014.

TABLE 3
Reasonable Potential Analysis

Limits at flow = 2.0 mgd						
Parameter	Outfall 001 Values Used (ppm)	Effluent as % of WLA	WLA (ppm)	Limit or Monitoring Needed?	Avg. Limit	Max. Limit
Aluminum, Total	0.193	139%	0.139	Limits	0.114	0.228
	0.0873	63%		Monit.		
Copper, Total Dis.	0.004	12%	0.033	No	0.028	0.053
	<0.0026	8%		No		
Zinc, Total Dis.	0.0663	16%	0.420	No	0.265	0.420
	0.0514	12%		No		

The limiting water quality criteria are the freshwater chronic criterion for aluminum, and the freshwater acute criteria for copper and zinc. These copper and zinc criteria are hardness dependent, so effluent and ambient water hardness were considered in calculating limits. Reasonable potential analysis is based on the following:

TABLE 4
Receiving Water Characteristics

Parameter	Value Used
Effluent water hardness	411.5 ppm as CaCO3
Ambient water hardness	32 ppm as CaCO3
Upstream 1Q10 river flow	1.25 cfs
Upstream 7Q10 river flow	1.84 cfs
Effluent flow	3.09 cfs (=2.0 mgd)

Aluminum

Aluminum chloride 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. A compliance schedule, to attain proposed permit limits, has been added to proposed permit.

Copper and Zinc

The results of the reasonable potential analysis indicate neither copper nor zinc needs to be monitored.

Monitoring Frequency

All monitoring frequencies have been retained from the current permit.

TABLE 5
Proposed Monitoring Frequencies for Outfall 001 Parameters

Effluent Parameter	Monitoring Requirement		
	Proposed Measurement Frequency	Current Measurement Frequency	Sample Type
Flow	Continuous	Continuous	Recording/Totalizing
Total Residual Chlorine	Once per day	Once per day	Grab
pH	Once per day	Once per day	Grab
BOD_5	Once per week	Once per week	Composite
Total Suspended Solids	Once per week	Once per week	Composite
Oil & Grease	Once per week	Once per week	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 (as N)	Once per week	Once per week	Composite
Aluminum	Once per week	-------	Composite
Enterococcus	Once per week	Once per week	Grab
Biomonitoring	Once per permit cycle	Once per permit cycle	Composite

TABLE 6
Proposed Monitoring Frequencies for Outfalls 002 and 003 Parameters

Effluent Parameter	Monitoring Requirement		
	Proposed Measurement Frequency	Current Measurement Frequency	Sample Type
Flow	Proposed monitoring frequency of once per month, is same as current permit.		Estimate
BOD_5			Grab
Total Suspended Solids			Grab
Oil and Grease			Grab
Phosphorus, Total (as P)			Grab
Ammonia (as N)			Grab
Nitrogen, Total			Grab
pH			Grab
Enterococcus			Grab

Special Conditions

Special Condition No. 1 states that this permit supersedes NPDES Permit DE0000299 and the State Permit WPCC 3131E/76, which became effective on May 1, 2006.

Special Condition No. 2 is a standard permit reopener clause.

Special Condition No. 3 specifies screening chronic biomonitoring on 100% effluent.

Special Condition No. 4 specifies the methodology of oil & grease analysis.

Special Conditions No. 5 requires continued implementation and maintenance of a Storm Water Plan (SWP) to reduce pollution in storm water run-off.

Special Condition No. 6 outlines the requirements to meet the moving 12-month cumulative average load effluent limitation for TN.

Special Condition Nos. 7, 8, and 9 require proper disposal of sludge in accordance with state and federal requirements.

Special Condition No. 10 specifies requirements for a licensed treatment plant operator.

Special Condition No. 11 specifies the total residual chlorine (TRC) test procedures.

Antidegradation Statement

The proposed effluent limitations in the NPDES permit comply with the applicable portions of Delaware's *Surface Water Quality Standards*, Section 5.0, "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, 2015. 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 received a request for a public hearing on September 25, 2015. A public hearing was held on November 18, 2015, to receive comments on the proposed NPDES Permit. A Technical Response Memorandum was written addressing the comments received. Based upon the public hearing record and subsequent Hearing Officer's Report, this permit was issued pursuant to Secretary's Order No. 2015-W-0046.

Department Contact for Additional Information

Anthony E. Hummel, P.E., Environmental Engineer
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: Anthony.Hummel@state.de.us