pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088455**
Facility Type	**Industrial**	APS ID	**324060**
Major / Minor	**Minor**	Authorization ID	**1240106**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Rice Fruit Company**	Facility Name	**Rice Fruit Pkg Plant**
Applicant Address	2760 Carlisle Road	Facility Address	2760 Carlisle Road
	Gardners, PA 17324-9684		Gardners, PA 17324-9684
Applicant Contact	Benjamin Rice	Facility Contact	Benjamin Rice
Applicant Phone	(717) 677-8132	Facility Phone	(717) 677-8132
Client ID	141285	Site ID	530266
SIC Code	0723	Municipality	Menallen Township
SIC Description	Agriculture - Crop Preparation Services For Market	County	Adams
Date Application Received	August 1, 2018	EPA Waived?	Yes
Date Application Accepted	November 7, 2019	If No, Reason	

Purpose of Application: This is an application for NPDES renewal.

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	February 18, 2020
X		Daniel W. Martin, P.E. / Environmental Engineer Manager /s/ Maria Bebenek	March 18, 2021
X		Maria Bebenek, P.E. / Environmental Program Manager /s/	March 18, 2021

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Rice Fruit Company, Inc. located at 2760 Carlisle Road, Gardners, PA 17324 in Adams County, municipality of Menallen. The existing permit became effective on October 1, 2013 and expired on September 30, 2018. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on August 1, 2018. Due to changes in the treatment process, the NPDES renewal application was resubmitted on February 3, 2021. The WQM permit application was also received for their proposed upgrade on December 1, 2020. The NPDES and WQM will be issued simultaneously.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility will be a 0.080 MGD (80,000 gpd) treatment facility. The applicant anticipates proposed upgrades to the treatment facility in the next five years. The facility will expand from 0.040 MGD to 0.080 MGD. The upgrades will be covered in the WQM permit. The NPDES application has been processed as an Industrial Waste Treatment Facility due to the type of wastewater and the design flow rate for the facility. Using the information from the WQM submittal which was submitted in December 1, 2020, the applicant disclosed the Act 14 requirement to Adams County Commissioners and Menallen Township Supervisors and the notice was received by the parties on November 5, 2020 and November 16, 2020. Since the facility is an industrial waste facility, a planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 09101 to Opossum Creek. The sequence of receiving streams that the Tributary 09101 to Opossum Creek discharges into are the Opossum Creek, the Conewago Creek, and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for trout stocking fishes (TSF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Tributary 09101 to Opossum Creek is a Category 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an impaired stream for aquatic life due to siltation from agriculture. The receiving stream is also impaired for recreational purposes due to pathogens from an unknown source. The receiving waters may be subject to the Opossum Creek total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed. The Opossum Creek TMDL is in draft status. Once the TMDL is implemented the facility may be subject to the TMDL.

The existing permit and proposed permit differ as follows:

The permit limits shall have (a) Phase 1 limits prior to and during the proposed construction and (b) Phase 2 limits after construction is completed.

- *Add Time Period Phase 1 to Completion of Construction for permits during this time frame*
- *For Time Period Completion of Construction to Expiration, the following changes:*
  The total flow rate shall increase to a hydraulic design capacity of 80,000 gpd.
  TRC shall be replaced with uv disinfection.
  Due to the Chesapeake Bay WIP, monitoring shall be required 2x/yr for nitrogen species and phosphorus

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a

Summary of Review

hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

1.0 Applicant

1.1 General Information

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name:	Rice Fruit Package Plant
NPDES Permit #	PA0088455
Physical Address:	2760 Carlisle Road Gardners, PA 17324-9684
Mailing Address:	2760 Carlisle Road Gardners, PA 17324-9684
Contact:	Benjamin Rice President Ben.rice@ricefruit.com
Consultant:	Fred Heerbrandt, PE (fheerbrandt@wmfhillinc.com) Wm. F. Hill & Associates, Inc. 207 Baltimore Street Gettysburg, PA 17325 717-334-9137

1.2 Permit History

Permit submittal included the following information.

- NPDES/WQM Application
- Flow Diagrams
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 2760 Carlisle Road, Gardners, PA 17324-9684. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

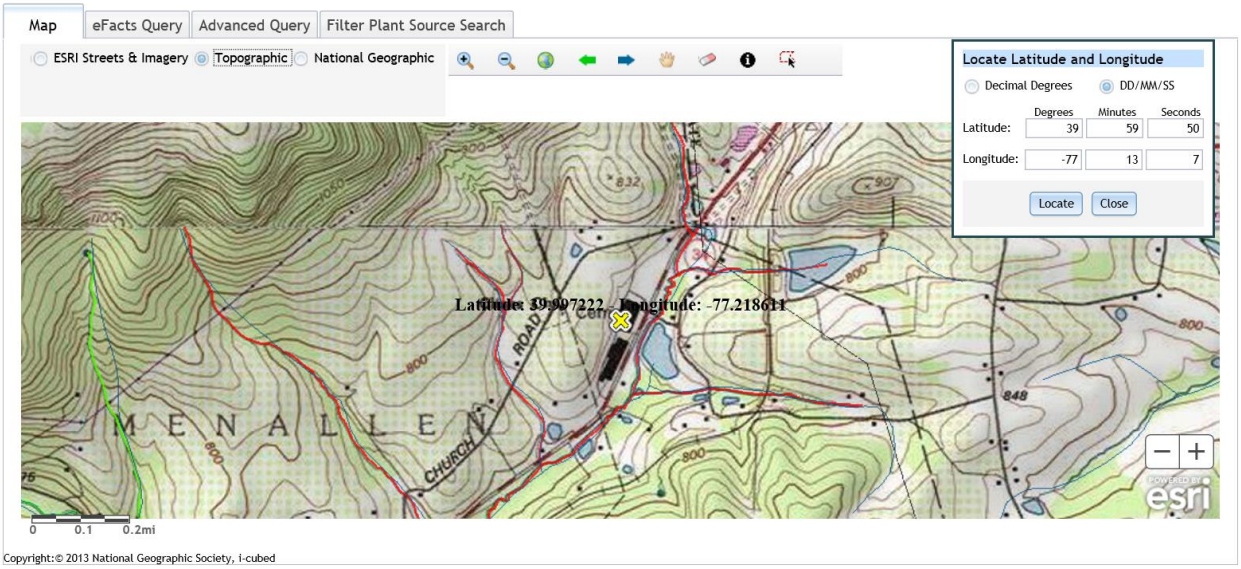
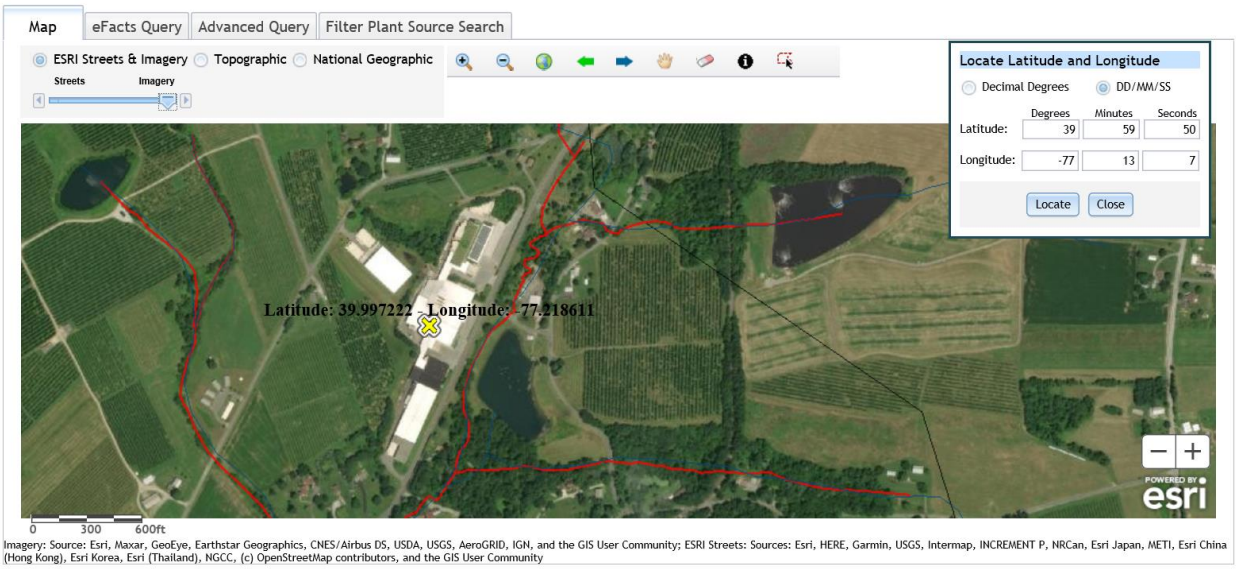


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

Outfall 001 receives effluent from the subject facility's wastewater treatment facility, noncontact cooling water used in refrigeration, and stormwater runoff.

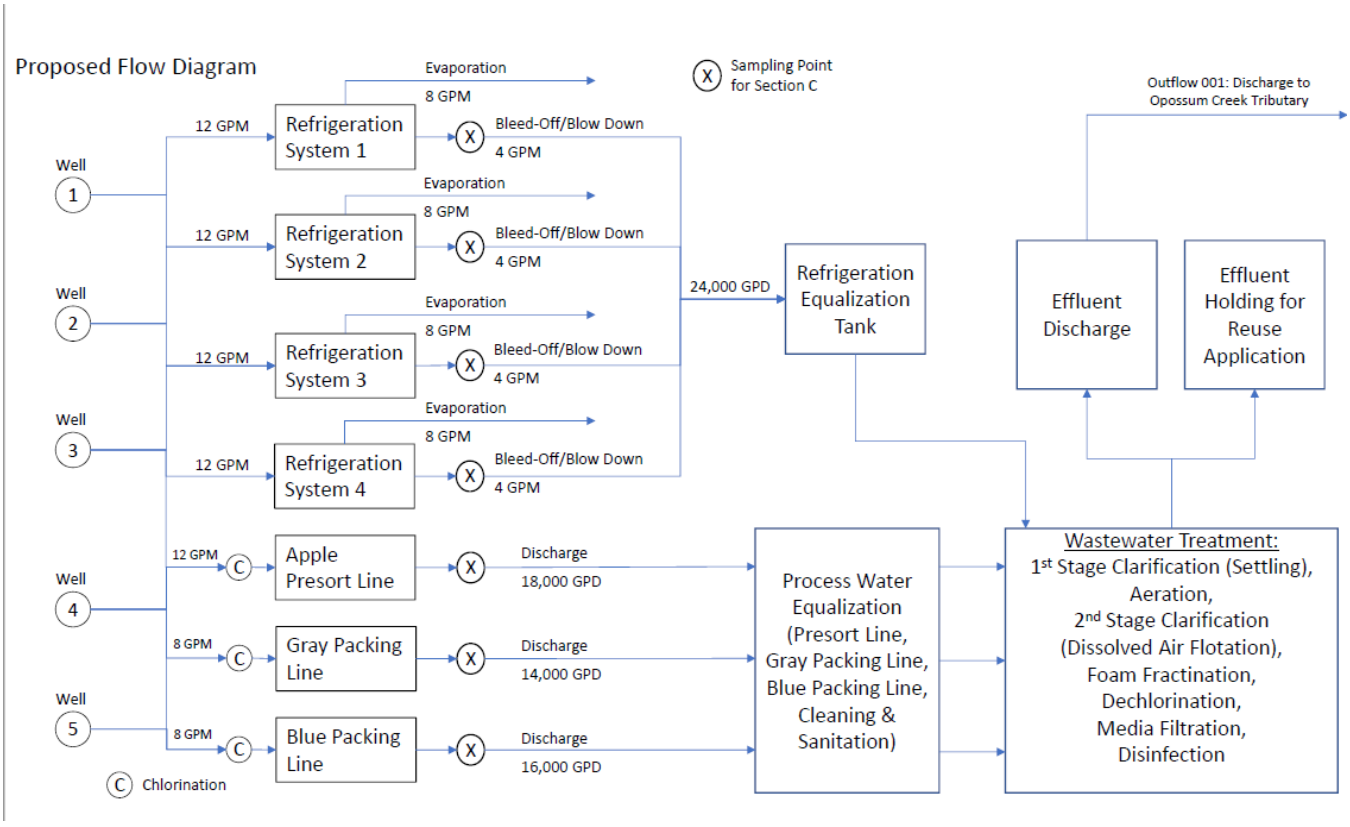
2.2 Description of Wastewater Treatment Process

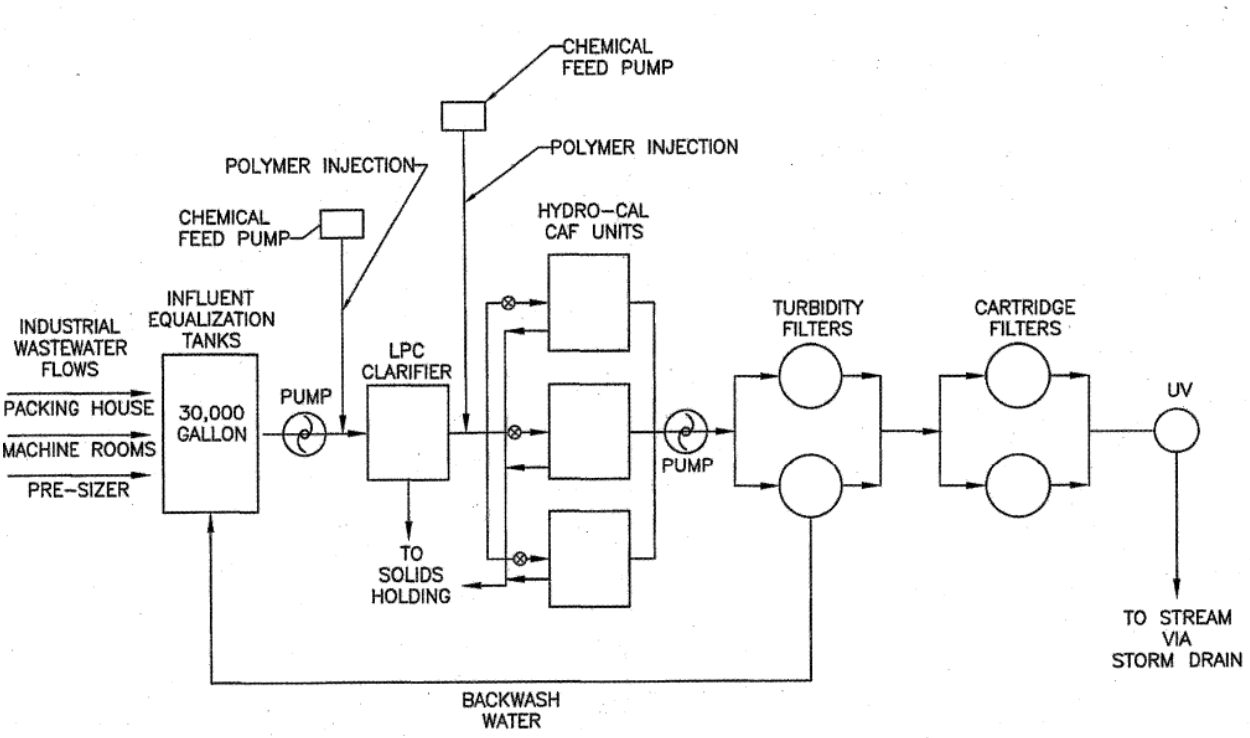
The facility generates approximately 0.024 MGD of non-contact cooling water that is piped into the wastewater treatment plant. The remaining 0.048 MGD is generated from the process line which sorts and packages the fruits. The flow diagram depicts flow contributions totaling 0.072 MGD. The subject facility will have a hydraulic design of 0.08 MGD (80,000 gpd) design flow.

The heaviest production is between August to November. The production is dramatically reduced during the summer months.

At the wastewater treatment plant, the subject facility treats wastewater using an influent equalization tank(s), a low profile clarifier, a Hydro-Cal cavitation air flotation filter(s), a turbidity filter(s), a cartridge filter(s), and a UV disinfection prior to discharge through the outfall.

A schematic of the proposed treatment process is shown. The 1st figure shows the overall process flow diagram for wastewater. The 2nd figure shows the treatment units utilized in the wastewater treatment plant.





INDUSTRIAL WASTEWATER TREATMENT SYSTEM SCHEMATIC
SCALE: N.T.S.

The facility is currently being evaluated for flow, pH, dissolved oxygen, TRC, CBOD5, TSS, and ammonia-nitrogen. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary

Treatment Facility Name: Rice Fruit Company

WQM Permit No.	Issuance Date
0116201	09/13/2016
0116201 A1	TBD

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Chemical (Industrial Waste)	Coagulation	Ultraviolet	0.08

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.08				Combination of methods

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.08
Latitude	39º 59' 45.96"	**Longitude**	-77º 13' 6.08"

Wastewater Description: IW Process Effluent without ELG

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. The downstream outfall is the Pitzer garage (PA0083615) which is about 0.93 miles from the subject facility. The facility is inactive.

2.3.1 Operational Considerations- Chemical Additives

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Brennfloc CP-2606 for polymer mix formulation. This consists of a coagulant and a flocculant.
- Sodium bisulfite 38-40% for chlorine neutralizer.
- Citric acid for pH buffer in fruit dump tank
- Hydrogen peroxide for biocide in cooling towers
- CT-S1 for scale inhibitor in cooling towers

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 39° 59' 50" , **Longitude** 77° 13' 07" , **River Mile Index** 1.48 , **Stream Code** 09101

Receiving Waters: Unnamed Tributary to Opossum Creek

Type of Effluent: Effluent from fruit sorting and packing lines and non-contact cooling water

1. The permittee is authorized to discharge during the period from October 1, 2013 through September 30, 2018.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.20	XXX	0.67	1/day	Grab
CBOD5	XXX	XXX	XXX	25	50	62	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	3.0	3.7	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	9.0	11.2	2/month	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

05/08/2014:

- The outfall area and channel leading to the main receiving stream had a whitish, slimy growth covering the channel substrate. This growth appeared to be a bacterial growth known as Sphaerotilus. The presence of Sphaerotilus in a receiving stream is indicative of high strength organic loading to the stream. At the point where the channel met the main stream, a large amount of white sudsy foam collected on the surface of the water. The facility was advised that this condition at the outfall and receiving water is a violation of the NPDES permit Part A under Additional Requirements. There should be no floating solids, scum, sheen, foam, or other substances that result in observed deposits in the receiving water. The facility reported that composite sample results were usually well below permit limits. The facility was not certain why the growth was occurring at the outfall. It was reported that composite samples are collected 2x/month during the day shift but most of the clean-up happened on the night shift when a greater load of wastewater was sent to the wastewater plant. The facility was advised to collect some composite samples at night during clean-up to gain a more representative sample of wastewater.
- The DMRs reported that 23 out of 26 days in April 2014 the flow was well above the 0.04 MGD permitted limit.

- The DAF and holding tanks had a large amount of the same white sudsy foam found in the receiving stream.
- The facility was advised that should they use a de-foaming agent they will need to obtain DEP approval.
- Based upon the Sphaerotilus growth and foam in the receiving stream it did not seem the current treatment process was adequate to meet the plant's treatment needs. The facility was advised to further investigate the current issues that led to the cited violations.

08/19/2015:

- The outfall area appeared to be mostly clear of any filamentous growth that was present at the outfall during the last inspection on 05/08/2014.
- The facility was advised to calibrate the pH meter on a daily basis.
- The facility was advised to check the TRC meter against chlorine color standards.
- The facility stated that they are in the process of building a larger DAF unit with hopes to improve their overall treatment.

03/16/2016:

- The inspection was completed in response to a message from the facility reporting that the influent tank was structurally deficient and needed to be taken offline and replaced as soon as possible due to safety concerns. The facility proposes to replace the failing 20,000 gallon influent tank with the current 20,000 gallon effluent tank and add a new 5,000 gallon tank as an effluent tank.
- During the inspection, the influent tank was actively leaking from the bottom right-side. The leaking wastewater was at a rate of about 1 gal/min which was flowing to a sump pit and being pumped back into the influent tank with a small sump pump. The facility was advised that a WQM permit would be needed before adding the new 5,000 gallon tank. As a follow-up inspection on 3/21/2016, this requirement was relaxed by DEP due to the urgent nature of the tank replacement. The facility was required to submit the necessary paperwork within 15 days after the tank was installed.
- The presence of a whitish-grey bacterial growth (Sphaerotilus bacterial) was observed in the entire length of the outfall channel leading to the UNT of Opossum Creek. The facility was informed of this find in a phone message on 3/17/2016. The facility was cited for a violation for the same issue on 5/8/2014. The presence of Sphaerotilus bacterial at a discharge point is usually an indication of a significant organic or nutrient load in the treated effluent. The facility's monthly discharge monitoring reports did not indicate based on their CBOD results a high organic loading. However, it was noted that based upon the chemical additives usage report significant quantities of phosphoric acid were added which could be the source of a nutrient load allowing for the excessive Sphaerotilus growth.
- Past sampling of the facility's effluent by DEP revealed Total Phosphorus concentrations as high as 16 mg/l which is contrary to the facility's reported concentrations of <1 mg/l for phosphoric acid. The facility was not required to test for Total Phosphorus which is the only mechanism to verify concentrations in the effluent. The facility will be required to test for Total Phosphorus along with other permitted parameters while phosphoric acid was being used.
- DEP investigated considering all the chemicals additives used by the facility. It was determined that many of the listed chemical additives were not on the DEP Approved Chemical Additives list. This was a violation of the NPDES permit on chemical additives.
- On a follow-up inspection on 3/21/2016, it was confirmed that the influent tank was taken offline and no longer leaking.
- The facility suggested that the substance at the outfall may be residual polymer and not Sphaerotilus or some other bacterial growth. Polymer is added to the wastewater at the treatment plant to capture solids. The facility stated that when the influent tank was being taken offline wastewater polymer was inadvertently sent to the influent tank and leaked out. The facility suggested that the substance in the leak stream from the influent tank may have contained polymer resembling the substance at the outfall. DEP proposed to collect samples from the leak stream.

05/19/2016:

- This inspection was in response to a complaint regarding possible raw sewage being discharged to the stream in the vicinity of the subject facility. The complaint reported that strong odors and toilet paper were coming from a discharge pipe that led to the UNT of Opossum Creek. In investigating the complaint, it turned out that the discharge pipe in question was the Rice Fruit IWTP outfall and the toilet paper was actually Sphaerotilus bacterial growth which at first glance was mistaken as toilet paper. Sphaerotilus bacterial growth was positively identified by the DEP Bureau of Labs in March 2016 from a sample collected from the outfall channel. The presence of Sphaerotilus in the outfall channel has been an ongoing issue that Rice Fruit and the Department have been working to resolve. Currently, the thought was that the amount of phosphoric acid being used to neutralize the dump water is contributing to the growth as a source of phosphorus nutrient. The facility plans to discontinue using phosphoric acid. Rice Fruit will be submitting chemical additive paperwork for an alternative neutralizing agent. The facility remains in violation as long as the presence of Sphaerotilus persist at the outfall channel.

07/19/2016:

- During the inspection the outfall channel was checked and appeared to free of Sphaerotilus growth. However, the channel had significant vegetation growth along its banks which made it difficult to see. The facility was advised to clear/cut back vegetation growth along the outfall channel to provide a better view for inspection.
- The facility reported that wastewater flows were currently lower due to a seasonal decrease in fruit packaging. The lower flow is a concern since possible lower flows may be contributing to the reduction of Sphaerotilus growth at the outfall channel. DEP will be re-evaluate the Sphaerotilus issue when production ramps back up increasing wastewater flows. The current violation will remain open until that time.
- The facility reported phosphoric acid was discontinued and citric acid use was used as its replacement. DEP permitted the facility to stop sampling for total phosphorus with monthly sampling.

12/19/2017:

- The polyblend system was not in service and as a result no polymer was being added to the CAF influent. The polyblender was removed from the IWTP to the apple processing plant where it was disassembled. The facility stated that the mixing chamber had become obstructed. The mixing chamber was soaking in a container of bleach.
- The media in the filtration units were changed on 02/17/2017.
- A break was observed in the IWTP effluent line behind the apple processing facility. Effluent was observed discharging from the break in the line into the adjacent ground. The facility was advised that the discharge of IWTP effluent at locations other than the permitted outfall (001) was not permitted and was considered a violation of the facility's NPDES permit.
- A white slimy coating was noted on the stream substrate in the UNT Opossum Creek at and below outfall 001 and also in Opossum Creek immediately downstream of the confluence with the UNT Opossum Creek. Based on visual observation and documentation in previous DEP inspection report, Sphaerotilus was suspected. A sample was collected and submitted to DEP laboratories.

01/24/2018:

- Difference in quantitative results were observed for several parameters. cBOD was 38.9 mg/l at the IWTO discharge and 0.90 mg/l at the Outfall 001. The facility was advised to televise the line.
- A ladder was used to observed the refrigeration equalization tank/effluent holding tank. The tank contents were slightly cloudy. A white-grey growth was noted on the walls of the tank. The growth had a similar appearance to the material noted growing on the stream substrate and the channel below Outfall 001. A grab sample was collected from the tap on the discharge line. A sample of the growth on the walls of the refrigeration equalization tank/effluent holding tank was collected and submitted to DEP Labs for identification. Cleaning of the tank was recommended.

- At the Outfall 001 channel, a white-grey growth was again noted in the channel substrate. The growth was less pronounced than observed in 12/19/2017. Increased flow associated with a recent large precipitation event may have removed some of the growth via scouring action. Continuing monitoring of the receiving stream was recommended.
- Dampness was noted on the pavement along the eastern wall of the building housing the CAF and sand filters and extending approximately south along the influent holding tanks. The source of the dampness appeared to be a wooden apple crate. The facility stated they deposit sludge removed from CAF unit into the apple crate. The CAF sludge is combined with wastes from the processing facility (primarily leaves screened from the wash tank) and land applied to an apple orchard.
- The facility was advised that discharge of drippings from the CAF sludge onto the ground is an unpermitted discharge of industrial wastewater. Sludges must be stored in accordance with the Solid Waste Management Act. Land application of food processing residuals must be done in accordance with the FPR manual.

04/25/2018:

- Chlorine dioxide was being added to the filter influent on a trial basis. The chlorine dioxide was being supplied as a two part system which is mixed on-site and fed via metering pump to the filter influent line. The chemistry was manufactured by Applied Oxidation. The active ingredients were sodium chlorite in one part and sodium bisulfite in the second part. Instructions for mixing were posted near the metering pump.
- The facility was adding polymer to the polymer feed system during the inspection.
- A plastic apple crate with a water-tight bottom was being used to store sludge removed from the flotation unit. No runoff from the sludge storage crate was noted. However, standing was noted in the crate. The facility was advised to cover the crate or store it under cover.
- The contents of the post equalization tank had a clear-to slightly greyish appearance. No growth on the walls of the steel tank was noted.
- Sphaerotilus growth was noted in the effluent channel although the extent of the growth appeared to be less than previously observed. The facility has not televised the effluent line.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.37 MGD. DEP believes that there may have been data entry errors for the elevated flow rate. Other flow rates hover around 0.04 MGD. The original design capacity of the treatment system is 0.040 MGD. Since the proposed design capacity shall be 0.080 MGD, the exceedances in flow rates above 0.04 MGD will not be an issue.

The off-site laboratory used for the analysis of the parameters was Laboratory, Analytical, and Biological Services, Inc located at 409 North Avenue, East Berlin, PA 17316.

MR Data for Outfall 001 (from December 1, 2019 to November 30, 2020)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19
Flow (MGD) Average Monthly	0.041	0.0441	0.047	0.0339	0.0345	0.37	0.0369	0.035	0.043	0.042	0.038	0.047
Flow (MGD) Daily Maximum	0.067	0.67	0.060	0.047	0.046	0.062	0.068	0.058	0.061	0.065	0.072	0.074
pH (S.U.) Minimum	7.1	6.9	7.0	7.1	7.0	7.2	7.1	7.1	7.2	7.1	7.3	7.4
pH (S.U.) Maximum	8.1	8.0	8.0	7.9	7.8	7.9	8.1	7.9	8.1	8.0	8.1	7.9
DO (mg/L) Minimum	7.3	8.0	7.5	8.0	8.3	8.3	8.1	8.3	8.2	8.4	8.0	8.3
TRC (mg/L) Average Monthly	0.013	0.014	0.011	0.015	0.01	0.019	0.018	0.017	0.016	0.002	0.014	0.015
TRC (mg/L) Instantaneous Maximum	0.06	0.06	0.08	0.10	0.06	0.08	0.10	0.08	0.06	0.06	0.06	0.08
CBOD5 (mg/L) Average Monthly	4.5	9.5	3	3	3	5.5	11	3	< 3	4	7	6.5
CBOD5 (mg/L) Daily Maximum	5	10.0	3	3	3	8.0	19	3	< 3	5	11	10
TSS (mg/L) Average Monthly	16.5	7.0	14.0	13.5	10.5	13.5	10.5	6	8	8.5	12	9.5
TSS (mg/L) Daily Maximum	20	10.0	18.0	20	18	18	15	8	12	15	20	15
Ammonia (mg/L) Average Monthly	< 0.10	2.93	0.225	0.49	0.605	0.24	0.325	0.25	0.51	0.135	0.29	0.22
Ammonia (mg/L) Daily Maximum	< 0.010	5.5	0.23	0.51	0.72	0.38	0.55	0.35	0.53	0.17	0.48	0.28

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning in October 1, 2013 and ending on January 21, 2021, the following were observed effluent non-compliances.

Summary of Effluent Non-Compliance
Beginning October 1, 2013 and Ending Jnuary 21, 2021

NON COMPLIANCE DATE	NON COMPLIANCE TYPE	PARAMETER	SAMPLE VALUE	VIOLATION CONDITION	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
11/09/2020	Violation of permit condition	Ammonia-Nitrogen	2.93	>	1.5	mg/L	Average Monthly
11/09/2020	Violation of permit condition	Ammonia-Nitrogen	5.5	>	3.0	mg/L	Daily Maximum

An accumulation of a gray material identified as Sphaerotilus growth was found to be accumulating in the receiving stream near Outfall 001. The facility has been working with DEP on a cause and solution.

3.3.2 Non-Compliance- Enforcement Actions

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning in October 1, 2013 and ending January 21, 2021, the following were observed enforcement actions.

Summary of Enforcement Actions
Beginning October 1, 2013 and ending January 21, 2021

DATE	VIOLATIONS	# OF VIOLATIONS	ENF FINALSTATUS	DATE
06/12/2014	92A.41(C)	1	Comply/Closed	06/06/2014
02/14/2018	92A.41(C); CSL301	2	Comply/Closed	03/12/2019
03/13/2018	92A.41(A)5; 92A.41(C); CSL301	3	Comply/Closed	03/12/2019
04/15/2016	92A.24(A); 92A.41(A)5;	4	Comply/Closed	03/12/2019

3.4 Summary of Biosolids Disposal

A summary of the biosolids disposed of from the facility is as follows.

The consultant projects that there is a small amount of solids recovered in the CAF and Plate Settler units. This sludge is collected and dried for application on the orchard ground around the sorting facility.

3.5 Open Violations

No open violations existed as of February 2021.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 09101 to Opossum Creek. The sequence of receiving streams that the Tributary 09101 to Opossum Creek discharges into are the Opossum Creek, the Conewago Creek, and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is the PPL Brunner Island (PWS ID #7670802) located approximately 69 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

4.4 2020 Integrated List of All Waters (303d Listed Streams):

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 5 waterbody. The surface waters is an impaired stream for aquatic life due to siltation from agriculture. The receiving waters is also impaired for recreational purposes due to pathogens from an unknown source. The designated use has been classified as protected waters for trout stocking fishes (TSF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

An extensive study was completed in the July 1, 2013 Fact Sheet evaluating the appropriate low flow stream estimation.

The closest gage station with low flow data is Gage 01574000 in Manchester, PA. However, this gauge is over 60 miles downstream and its period of record ends in 1995 and is no longer satisfactorily recent. In addition, the calculated Q710 low flow yield from the gauge data is 0.021 ft^3/mi^2 (derived from 10.8 ft^3/s / 510 mi^2) which appears to be erroneously low considering the watershed characteristics and the low flow data from other area gages (Fact Sheet July 1, 2013).

StreamStats was utilized to estimate the low flow yield (LFY) and Q710. The low flow yield was averaged between the two modeling points. The modeling points utilized for LFY estimation were points just downstream of the subject facility. This was done consistent with the strategy done in the July 1, 2013 Fact Sheet. The low flow yield was 0.19 $ft^3/s/mi^2$ and the Q710 is 0.243 ft^3/s.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	Average((0.215 ft^3/sec / 1.28 mi^2) ,(0.477 ft3/sec / 2.25 mi2))		
LFY =	0.1900	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		1.28	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1900 $ft^3/sec/mi^2$)(1.28 mi^2)			
Q710 =	0.243	ft^3/sec	

For WQM modeling, default values for pH and stream water temperature were used. pH utilized 7.00 and the stream water temperature utilized was 20 C.

The hardness of the stream was estimated to be 100 mg/l $CaCO_3$ (Default).

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.04
Latitude	39Âº 59' 45.88"	Longitude	-77Âº 13' 4.63"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		

Receiving Waters	Unnamed Tributary to Opossum Creek (TSF)	Stream Code	9101
NHD Com ID	57469537	RMI	1.34
Drainage Area	1.28	Yield (cfs/mi^2)	0.19
Q_{7-10} Flow (cfs)	0.243	Q_{7-10} Basis	StreamStats
Elevation (ft)	703	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	TSF, MF
Existing Use	Same as Chapter 93 class	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired for aquatic life		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status	Tentative	Name	Opossum Creek

Background/Ambient Data		Data Source
pH (SU)	7.00	Default
Temperature (°C)	20	Default
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		PPL Brunner Island	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	54	Distance from Outfall (mi)	69

5.0: Overview of Presiding Water Quality Standards

5.1 General

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

5.2.1 Technology-Based Limitations

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

5.3 Water Quality-Based Limitations

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.0 (WQM Model) and (3) PENTOXSD using DEP Toxics Management Spreadsheet for Toxics pollutants.

5.3.1 Water Quality Modeling 7.0

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH3-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-N in the discharge*.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.

5.3.2 Toxics Modeling

The facility can be considered a Fruits and Vegetables Processing facility. The facility will be subject to sampling the parameters in Pollutant Group 1 for the NPDES renewal application.

The subject facility is not subject to toxics modeling.

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

5.4 Total Maximum Daily Loading (TMDL)

5.4.1 TMDL

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

5.4.1.1 Local TMDL

The subject facility discharges into a local TMDL. The Opossum Creek TMDL is in draft status. The impaired stream segments for this TMDL are located in Menallen, Cooke, Dickinson, Tyrone, and Butler Townships. The 303(d) list identified 35 miles within the Opossum Watershed as impaired by sediment from agricultural land use practices.

The receiving waters may be subject to the Opossum Creek total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed. The draft TMDL would require a waste load allocation limit of 10.0140 lbs/day or 3,655.11 lbs/yr of sediment (Table 6 of the Opossum Creek Watershed TMDL). This was based upon a flow rate of 0.04 MGD and a TSS of 30.0 mg/l.

The increase in flow rate from 0.04 MGD to 0.08 MGD shall be communicated to the DEP Central Office TMDL team for consideration in the final TMDL.

Preliminary discussions with Bill Brown of DEP Central Office on March 18, 2021 suggest that they will consider increasing the load for the TMDL based upon the increasing flow rate. This would occur once the TMDL is finalized.

Once the TMDL is implemented the facility may be subject to the TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was December 17, 2019.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector C discharger. The supplement defines Sector C as a non-significant discharger that includes sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing.

Non-significant IW facilities that propose expansion or production increases and as a result will discharge at least 75 lbs/day TN or 25 lbs/day TP (on an annual average basis), will be classified as Significant IW dischargers and receive Cap Loads in their permits based on existing performance (existing TN/TP concentrations at current average annual flow).

In general, for new non-significant IW discharges (including existing facilities discharging without a permit), DEP will issue permits containing Cap Loads of "0" and these facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is subject to Sector C monitoring requirements. Due to the Chesapeake Bay WIP, monitoring for nitrogen and phosphorus shall be 2x/yr. Monitoring for ammonia nitrogen may be more frequent for water quality purposes.

5.5 Anti-Degradation Requirement

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection and (b) Nitrogen Species and Phosphorus.

The NPDES effluent limits presented in the tables are those that apply from the time period of Completion of Construction to Expiration of the NPDES permit.

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Rice Fruit Company; PA0088455; Limits from Completion of Construction to Expiration of Permit			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-4).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 2x/month as an 8-hr composite sample (Table 6-4).
		Effluent Limit:	Effluent limits shall not exceed 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD. Since the TBEL is more stringent than TBEL, TBEL will apply.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1x/day. The facility will be required to record the UV intensity.
		Effluent Limit:	The UV intensity shall be recorded in mJ/cm^2.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.08 MGD.			
3 Table 6-4 (Self Monitoring Requirements for Industrial Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus

Rice Fruit Company; PA0088455; Limits from Completion of Construction to Expiration of Permit

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	Anti-backsliding	Monitoring:	The monitoring frequency shall be 2x/mo as an 8-hr composite sample
		Effluent Limit:	During the months of May 1 to October 31, the average monthly shall not exceed 1.5 mg/l. During the months of November 1 to April 30, the average monthly shall not exceed 4.5 mg/l.
		Rationale:	Due to anti-backsliding regulations, the current limit for ammonia-nitrogen shall continue to the proposed permit.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/yr as an 8-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Notes:			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.08 MGD.

3 Table 6-4 (Self Monitoring Requirements for Industrial Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

6.2 Summary of Changes From Existing Permit to Proposed Permit

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

The permit limits shall have (a) Phase 1 limits prior to and during the proposed construction and (b) Phase 2 limits after construction is completed.

Establishment of Time Period for Phase 1 to Completion of Construction effluent limits

Time Period Completion of Construction to Expiration
The total flow rate shall increase to a hydraulic design capacity of 80,000 gpd.
TRC shall be replaced with uv disinfection.
Due to the Chesapeake Bay WIP, monitoring shall be required 2x/yr for nitrogen species and phosphorus

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

The proposed NPDES effluent limitations are summarized in the table below.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 39º 59' 45.96" , **Longitude** 77º 13' 6.08" , **River Mile Index** 1.53 , **Stream Code** 65026

Receiving Waters: Unnamed Tributary to Opossum Creek (TSF)

Type of Effluent: IW Process Effluent without ELG

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Completion of Construction**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.20	XXX	0.67	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	50	62	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	9.0	11.2	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	3.0	3.7	2/month	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 001 , **Latitude** 39º 59' 45.96" , **Longitude** 77º 13' 6.08" , **River Mile Index** 1.53 , **Stream Code** 65026

Receiving Waters: Unnamed Tributary to Opossum Creek (TSF)

Type of Effluent: IW Process Effluent without ELG

1. The permittee is authorized to discharge during the period from **Completion of Construction** through **Permit Expiration Date**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	50	62	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	8-Hr Composite
Ultraviolet light intensity (mW/cm²)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/day	Recorded
Nitrate-Nitrite as N	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	9.0	11.2	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	3.0	3.7	2/month	8-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Chesapeake Bay Nutrient Definitions

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: *New and Reissuance Industrial Waste and Industrial Stormwater, rev October 11, 2013.*
☐	Other:

Rice Fruit Company February 2021
PA0088455

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	0.243	**= Q stream (cfs)**		**0.5**	**= CV Daily**	
5	0.04	**= Q discharge (MGD)**		**0.5**	**= CV Hourly**	
6	30	**= no. samples**		**1**	**= AFC_Partial Mix Factor**	
7	0.3	**= Chlorine Demand of Stream**		**1**	**= CFC_Partial Mix Factor**	
8	0	**= Chlorine Demand of Discharge**		**15**	**= AFC_Criteria Compliance Time (min)**	
9	**0.5**	**= BAT/BPJ Value**		**720**	**= CFC_Criteria Compliance Time (min)**	
	0	**= % Factor of Safety (FOS)**		**0**	**=Decay Coefficient (K)**	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	**1.3.2.iii**	WLA afc = 1.272		**1.3.2.iii**	WLA cfc = 1.232
12	PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373		**5.1c**	LTAMULT cfc = 0.581
13	PENTOXSD TRG	**5.1b**	LTA_afc= 0.474		**5.1d**	LTA_cfc = 0.716
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Correspondences

Hong, Nicholas

Subject: FW: Rice Fruit TMDL on Opossum Creek

From: Brown, Will <willbrown@pa.gov>
Sent: Thursday, March 18, 2021 11:25 AM
To: Hong, Nicholas <nhong@pa.gov>
Cc: Bebenek, Maria <mbebenek@pa.gov>; Martin, Daniel <danielmarti@pa.gov>; Morris, Michael <michamorri@pa.gov>
Subject: RE: Rice Fruit TMDL on Opossum Creek

Nick,

I think you can just go ahead and double the load. Like you said, it's still only going to be 7,300 lbs/year in a watershed where the allowable load is over 8.3 million lbs/year. They are a very small contributor in the watershed and aren't causing the impairment. We'll figure out a way to adjust the TMDL when necessary.