

Application Type Renewal  
Facility Type Non-Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0086428  
APS ID 14076  
Authorization ID 1169912

**Applicant and Facility Information**

Applicant Name	<u>Mazza Vineyards Inc.</u>	Facility Name	<u>Mt Hope Estate &amp; Winery</u>
Applicant Address	<u>2775 Lebanon Road</u> <u>Manheim, PA 17545</u>	Facility Address	<u>2775 Lebanon Road</u> <u>Manheim, PA 17545</u>
Applicant Contact	<u>Scott Bowser</u>	Facility Contact	<u>Scott Bowser</u>
Applicant Phone	<u>(717) 665-7021</u>	Facility Phone	<u>(717) 443-8076</u>
Client ID	<u>73083</u>	Site ID	<u>259653</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Rapho Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Lancaster</u>
	<u>December 13, 2013</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>January 6, 2014</u>	If No, Reason	<u>Chiques Creek Alternate TMDL</u>
Purpose of Application	<u>NPDES Renewal.</u>		

**Summary of Review**

Mazza Vineyards, Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on February 9, 2009 and became effective on March 1, 2009. The permit authorized discharge of treated sewage from the existing Mt. Hope Estate & Winery wastewater treatment plant (WWTP) located in Rapho Township, Lancaster County into Chiques Creek. The existing permit expiration date was February 28, 2014, and the permit has been administratively extended since that time.

In 1996, a 0.025 million gallons per day (mgd) WWTP was built to handle the large tourist visitation that occurs during the summer and fall activities. The total hydraulic capacity is divided into 10,000 gallons per day (gpd) for Mt. Hope Estate & Winery, 10,000 gpd for neighboring development, and 5,000 gpd reserve for Rapho Township. The original facility was permitted for 0.015 mgd because the neighboring land did not have planning. Planning was received on 12/97. Therefore, the facility was re-rated to 0.025 mgd. The WWTP consists of a large equalization tank followed by extended aeration with chlorination and de-chlorination. The facility was hydraulically overloaded and unable to meet permit limits. DEP and Mazza Vineyards entered into a Consent Order and Agreement (COA), signed on August 5, 2013. The COA assessed civil penalties for violations and required a corrective action plan (CAP) to address future violations. Under the terms of the COA, Mazza Vineyards conducted an engineering audit of the WWTP and concluded an expansion and upgrade was needed to address the hydraulic overload and to eliminate effluent violations. Mazza Vineyards submitted and received planning approval for an expanded design flow of 65,000 gpd. It was planned for the expanded treatment plant to serve the existing flow from Mt. Hope Estate & Winery, the neighboring Hampton Inn, and Rapho Township. An amendment to the NPDES permit was received on February 24, 2015 for the new design flow of 65,000 gpd. On November 6, 2017, the Court of Common Pleas of Lancaster County ordered Shree Punit, d/b/a Hampton Inn Cornwall, to cease discharging any sewage into Mazza Vineyards, Inc. within 15 business days of the Court's Order. To date, the Hampton Inn has remained disconnected from Mazza Vineyards WWTP. This has created a significant reduction in the flows experienced at the WWTP. On April 18, 2018, a letter was received from Mazza Vineyards requesting to voluntarily withdraw their WQM Permit Application (3695403 A-1) for the WWTP upgrade to 65,000 gpd. Mazza Vineyards requested the NPDES permit be renewed at the existing design flow of 25,000 gpd. However,

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	March 21, 2023
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	April 4, 2023

### Summary of Review

due to the disconnection of Hampton Inn, the WWTP should only be handling a design flow of 15,000 gpd: 10,000 gpd for Mazza Vineyards and 5,000 gpd for Rapho Township. Therefore, this draft permit will be based on a design flow of 15,000 gpd. Mazza Vineyards discharges to Chiques Creek approximately 300 feet upstream from the Hemlock Acres Court discharge. These two discharges were modeled as one to account for this close proximity. The stream at the point of discharge is about 10 feet wide and 2 to 6 inches deep.

Changes in this renewal: Fecal coliform instantaneous maximum (IMAX) limits were added. Ammonia-nitrogen summertime and wintertime limits were added. A Total Nitrogen monitoring requirement was added. E. Coli monitoring was added.

Sludge use and disposal description and location(s): Sludge holding tank with offsite disposal.

Supplemental information for this renewal is provided at the end of this fact sheet.

### Public Participation

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 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.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.015
Latitude	40° 13' 16.5"	Longitude	76° 26' 2.7"
Quad Name		Quad Code	
Wastewater Description: Sewage Effluent			
Receiving Waters	Chiques Creek (WWF, MF)	Stream Code	7919
NHD Com ID	57461967	RMI	27.8
Drainage Area	2.19 mi <sup>2</sup>	Yield (cfs/mi <sup>2</sup> )	0.12
Q <sub>7-10</sub> Flow (cfs)	0.26	Q <sub>7-10</sub> Basis	USGS Gage #01576500
Elevation (ft)	79	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients, Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Borough Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	30

Changes Since Last Permit Issuance: A drainage area of 2.19 mi<sup>2</sup> and a Q<sub>7-10</sub> flow of 0.26 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576500 on the Conestoga River. The Q<sub>7-10</sub> and drainage area at the gage are 38.6 cfs and 324 mi<sup>2</sup>, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q<sub>7-10</sub> runoff rate at the gage station was calculated as follows:

$$\text{Yield} = (38.6 \text{ cfs}) / 324 \text{ mi}^2 = 0.12 \text{ cfs/mi}^2$$

The drainage area at the discharge point, taken from USGS PA StreamStats = 2.19 mi<sup>2</sup>

The Q<sub>7-10</sub> at the discharge point = 2.19 mi<sup>2</sup> x 0.12 cfs/mi<sup>2</sup> = 0.26 cfs

Other Comments: None

Treatment Facility Summary				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Sodium Hypochlorite	0.015
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.015		Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: As discussed in the Summary of Review, the renewal will be based on a design flow of 0.015 mgd.

Other Comments: The treatment process consists of: Aerated Flow Equalization – 2 Aeration Tanks with Aluminum Sulfate Addition – Clarifier – Aerated Sludge Holding Tank – Chlorination/Dechlorination – Outfall 001 to UNT to Little Cocalico Creek

Compliance History	
<b>Summary of DMRs:</b>	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
<b>Summary of Inspections:</b>	<p>10/20/2014: A routine inspection was conducted. Dusting of solids/sediment was observed in the receiving stream. The effluent was cloudy. Field test results were within permitted range. The EQ tank had about 5 feet of freeboard. The aeration tank appeared well aerated and mixed liquor was a medium brown with minor foam. The clarifier surface was 90% covered with grease balls and sludge. The supernatant appeared cloudy, and solids were at the weir channel and at the clarifier weir. The effluent in the pump station appeared very cloudy. Scott Bowser, the facility manager, was informed of DEP's concerns and volunteered to shut down the plant to avoid the effluent from being pumped to the receiving stream. It was recommended to make the necessary changes to the treatment process to improve effluent quality and contact DEP when the facility begins to discharge again. The effluent sample taken revealed an exceedance of the instantaneous maximum (IMAX) limit for Total Phosphorus of 4 mg/l. The sample result was 8.2 mg/l.</p> <p>12/3/2014: A follow up inspection was conducted in response to the previous Total Phosphorus violation. A grab sample was taken from the effluent, and results for pH, D.O., and TRC were within the permitted range. Sample results revealed an exceedance for the permitted TSS IMAX limit of 60 mg/l, with a result of 94 mg/l. The effluent was cloudy.</p> <p>1/27/2015: A follow up inspection was conducted in response to the TSS violation. A grab sample was taken from the effluent, and results for pH, D.O., and TRC were within the permitted range. Sample results were within the permitted range. The fecal coliform result was 13,000/100 mL – this was not a valid result due to exceeding the holding time, but it does indicate the effluent was not being adequately disinfected. During the inspection it was noted that there were no chlorine tablets in the clarifier channel. The operator Barry Bracken was made aware. The effluent from the clarifier was clear, but the effluent at the outfall was cloudy. It was recommended to have the effluent lift station cleaned out.</p> <p>3/3/2016: A routine inspection was conducted. All treatment units were online. The stream outfall was not inspected. No issues were noted.</p> <p>11/8/2017: A routine inspection was conducted. The main distribution panel had been replaced after catching fire. The plant lost aeration, flow meter, pump station pump operation. The issue occurred on 10/29/17 – no overflow occurred. The facility is measuring flow by bucket and stopwatch method. A sanitary sewer overflow (SSO) occurred 6/24/2017 at the pump station due to rags and hydraulic overload. The estimated volume was 5,000 gallons. The outfall was observed, and no apparent issues were noted. On 12/15/17, the inspector contacted Michael Keffer. Michael noted that the comminutor for the influent pump station was on order, and the flow meter was scheduled to be replaced at the end of December. The composite sample was to be connected the next day.</p> <p>9/18/2018: A routine inspection was conducted. The EQ tank was aerated and had approximately 6 feet of freeboard. The aeration tanks had a medium/dark brown mixed liquor, and tanks were being aerated. The light and heavy return lines were both functional. The clarifiers had some floating scum. An EcoMat Rotating Belt Filter Press is used to remove solids and debris. The filtrate is returned to EQ tank. Wasting is controlled through pumping, and approximately 900 gallons are wasted per day. The frac tank has been removed. An inspection of the receiving stream revealed no concerns.</p> <p>5/13/2019: A routine inspection was conducted. A very small amount of rags was present in the basket bar screen. The EQ tank had approximately 2.5 feet of freeboard. Increased</p>

	<p>flow had been noted over the weekend. The clarifier had approximately 15% coverage of surface scum and the contents appeared clear. The clarifier trough was free of solids. The chlorine contact tank appeared clear. Field results collected were within permit limits. It was noted that written bench sheets have been changed on DMR submissions. Mr. Bowser stated that the inconsistencies were the result of human error in transferring values from meters to bench sheets.</p> <p>5/23/2019: A Notice of Violation (NOV) was issued due to failure to properly document monitoring activities and results. It was requested that an investigation be conducted and the permittee submit a report to DEP.</p> <p>2/24/2020: A routine inspection was conducted. No issues were noted.</p> <p>6/23/2020: An administrative inspection was conducted. All treatment units were online, and there were no outstanding issues noted.</p> <p>12/10/2020: An administrative inspection was conducted. No issues were noted.</p> <p>10/4/2021: A routine inspection was conducted. A sanitary sewer overflow had occurred at the influent pump station. It was believed to have occurred due to grease accumulation within the wet well. Solids were visible on the ground surface surrounding the pump station. The outfall was observed, and no evidence of solids or accumulations was visible. The effluent appeared clear. The WWTP units continued to show signs of aging. A follow up inspection was conducted on 10/7/21. Lime had been applied to the ground, and new floats had been ordered for the pump station.</p>
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Other Comments: There are 2 open violations from 10/4/21 due to unpermitted discharges of sewage to waters of the Commonwealth, and failure to properly operate and maintain all facilities.

Compliance History

DMR Data for Outfall 001 (from February 1, 2022 to January 31, 2023)

Parameter	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22
Flow (MGD) Average Monthly	0.00291	0.00515	0.00509 5	0.01157 5	0.00954 6	0.00443	0.00275	0.0035	0.00347	0.00424	0.00402	0.00389
Flow (MGD) Daily Maximum	0.0087	0.01969	0.00979 5	0.01996	0.01282 7	0.00939	0.00651	0.0081	0.01532	0.01615	0.00682	0.01149
pH (S.U.) Minimum	7.41	7.04	6.4	6.03	6.05	6.26	7.25	6.72	7.02	6.92	7.05	7.27
pH (S.U.) Maximum	8.07	8.12	8.04	7.8	7.82	8.06	8.07	7.85	8.11	8.08	7.89	7.94
DO (mg/L) Minimum	6.94	6.71	5.04	5.25	5.2	5.3	5.75	5.96	6.12	7.41	7.05	10.45
TRC (mg/L) Average Monthly	0.11	0.19	0.17	0.25	0.12	0.11	0.08	0.08	0.19	0.19	0.11	0.1
TRC (mg/L) Instantaneous Maximum	0.48	0.73	0.8	1.06	0.41	0.39	0.7	0.8	0.3	0.32	0.25	0.7
CBOD5 (mg/L) Average Monthly	4.2	< 8.6	7.4	< 6.1	< 2.1	2.5	8.2	< 2.6	< 2.7	4.1	< 2.0	< 2
TSS (mg/L) Average Monthly	< 5.2	< 14	10.2	< 7	< 5.3	5.5	8.6	< 4.8	< 4.6	8.4	< 4.0	< 4
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 45	< 1	50	< 89	< 3	< 7	< 1	< 1	< 1	< 1.0	< 1
Total Phosphorus (mg/L) Average Monthly	< 0.11	< 0.34	0.32	0.37	< 0.16	0.16	0.26	0.15	0.13	< 0.13	< 0.12	< 0.15

**Existing Effluent Limits and Monitoring Requirements**

The table below summarizes the effluent limits and monitoring requirements implemented in the existing NPDES permit.

**Outfall 001**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	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 (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000	XXX	XXX	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	XXX	2/month	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 001



**Development of Effluent Limitations**

<b>Outfall No.</b>	001	<b>Design Flow (MGD)</b>	.015
<b>Latitude</b>	40° 13' 16.5"	<b>Longitude</b>	76° 26' 2.7"
<b>Wastewater Description:</b>	Sewage Effluent		

**Technology-Based Limitations**

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD <sub>5</sub>	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)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

**Water Quality-Based Limitations**

**CBOD<sub>5</sub>, NH<sub>3</sub>-N**

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), ammonia (NH<sub>3</sub>-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a CBOD<sub>5</sub> average monthly limit of 25 mg/l, an NH<sub>3</sub>-N average monthly limit of 8.4 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats and USGS Gage # 01576500 on the Conestoga River, and is included as an attachment. Stream pH and temperature inputs for this model run were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 206 on Chiques Creek from October 1998 to March 2019 for pH, and from October 1998 to October 2017 for temperature. DEP's Standard Operating Procedure (SOP) No. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends using the 90<sup>th</sup> percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90<sup>th</sup> percentile analysis was performed on the data and resulted in a Stream pH of 8.3 and a Stream Temperature of 21°C. As mentioned in the Summary of Review, the Mazza Vineyards WWTP discharge was modelled with the Hemlock Acres MHP as one discharge to determine limitations due to their close proximity to each other. The CBOD<sub>5</sub> limit is the same as the limit in the existing permit, which will remain. There is no ammonia limit in the existing permit. Therefore, an ammonia limit of 8.0 mg/l, rounded in accordance with DEP's Technical Guidance No 362-0400-001, will be included in the renewal permit as a summertime average monthly limit. A multiplier of 3 will be used to develop the ammonia limit for the winter period. Monitoring requirements of 2/month using an 8-hr composite sample will be applied to be consistent with the existing permit limits.

There are no industrial users contributing industrial wastewater to the system and Mazza Vineyards does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

**Best Professional Judgement (BPJ) Limitations**

**Dissolved Oxygen (D.O.)**

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit. This limit will continue to be included in the permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

**Total Residual Chlorine**

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.5 mg/l monthly average and 1.6 mg/l instantaneous maximum be applied this permit cycle, the same as the existing limit.

**Additional Considerations**

**Chesapeake Bay Total Maximum Daily Load (TMDL)**

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

This facility is considered a Phase 5 non-significant facility with a design flow less than 0.2 MGD but greater than 0.002 MGD. According to the Phase 3 WIP, TN and TP monitoring is recommended for this facility. Therefore, TN and TP monitoring will be included in the renewed permit. Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001) recommends a measurement frequency of 2/month for NH<sub>3</sub>-N and phosphorus. This is consistent with existing permit monitoring requirements and will be used for these parameters.

**Chiques Creek Alternate Restoration Plan**

This facility discharges to Chiques Creek. Chiques Creek was included on Pennsylvania's 1996 303(d) List of Impaired Waters due to nutrient impairments. A Total Maximum Daily Load (TMDL) for the Chiques Creek Watershed was approved by the United States Environmental Protection Agency (EPA) on April 9, 2001. Due to several deficiencies within the TMDL, it was withdrawn with approval from EPA on October 28, 2015. DEP, Susquehanna River Basin Commission (SRBC) and watershed stakeholders have been in the process of developing a large scale monitoring and restoration plan. The goal of this Alternate Restoration Plan (ARP) is to address impacts to the Chiques Creek Watershed due to suspended solids/siltation and nutrient pollution. During the ongoing ARP development, this discharge permit will be renewed to conform with existing guidance. This permit will include a Total Phosphorus (TP) limit of 2.0 mg/l. The TP limit of 2.0 mg/l is derived from 25 Pa. Code § 96.5(c). This section states that "when it is determined that the discharge of phosphorus, alone or in combination with the discharge of other pollutants, contributes or threatens to impair existing or designated uses in a free flowing surface water, phosphorus discharges from point source discharges shall be limited to an average monthly concentration of 2 mg/l." This is consistent with existing limits for other dischargers to the Chiques Creek Watershed. This

limit is included in the existing permit, and will remain in the renewal. A continued evaluation of dischargers to Chiques Creek will be performed as described in the NPDES Part C Conditions.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. The instantaneous maximum fecal coliform limits have been included in the renewal permit.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of 0.002 – 0.05 mgd will include E. Coli monitoring with a frequency of 1/year. This parameter has been added to the renewal permit.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an aquatic life impairment for agriculture due to siltation and nutrients.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions addressed by DEP in this fact sheet.

**Proposed Effluent Limitations and Monitoring Requirements**

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.

**Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	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
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	24	XXX	48	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	8.0	XXX	16	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

**Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date )**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

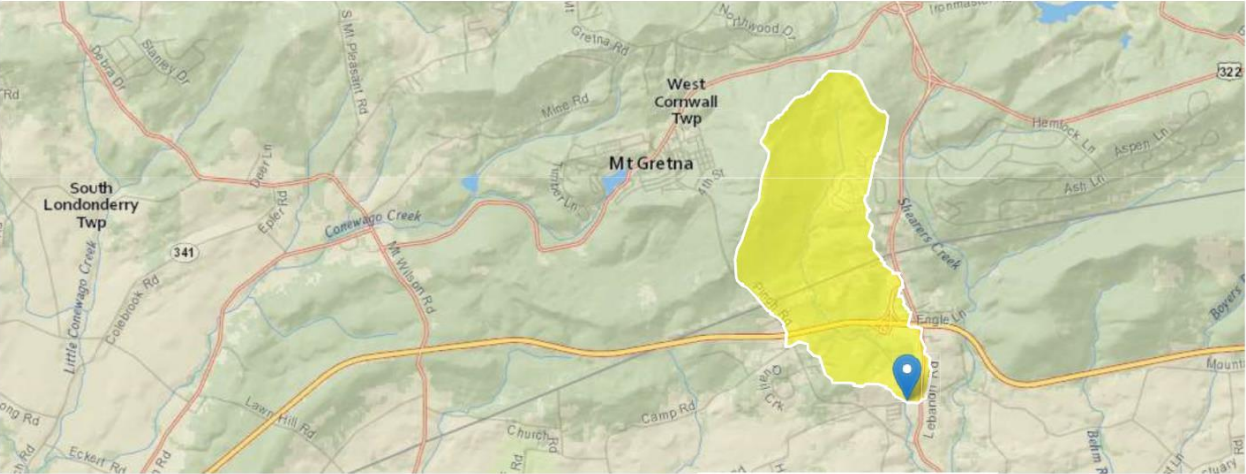
Other Comments: None

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment <span style="background-color: yellow;">      </span> )
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment <span style="background-color: yellow;">      </span> )
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment <span style="background-color: yellow;">      </span> )
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment <span style="background-color: yellow;">      </span> )
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: BCW-PMT-033
<input type="checkbox"/>	Other: <span style="background-color: yellow;">      </span>

Permit No. PA0086428

Mazza Vineyards Inc. PA0086428 Outfall 001

Region ID: PA  
Workspace ID: PA20230314171851966000  
Clicked Point (Latitude, Longitude): 40.22112, -76.43429  
Time: 2023-03-14 13:19:12 -0400



+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.2396	degrees
DRNAREA	Area that drains to a point on a stream	2.19	square miles
ROCKDEP	Depth to rock	4	feet
URBAN	Percentage of basin with urban development	3.001	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (2.18 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.19	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	6.2396	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	3.001	percent	0	89

Low-Flow Statistics Disclaimers [99.9 Percent (2.18 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [99.9 Percent (2.18 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.317	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.43	ft <sup>3</sup> /s

Permit No. PA0086428

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.131	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.189	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.294	ft <sup>3</sup> /s
<i>Low-Flow Statistics Citations</i>		
<b>Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<a href="http://pubs.usgs.gov/sir/2006/5130/">http://pubs.usgs.gov/sir/2006/5130/</a>)</b>		

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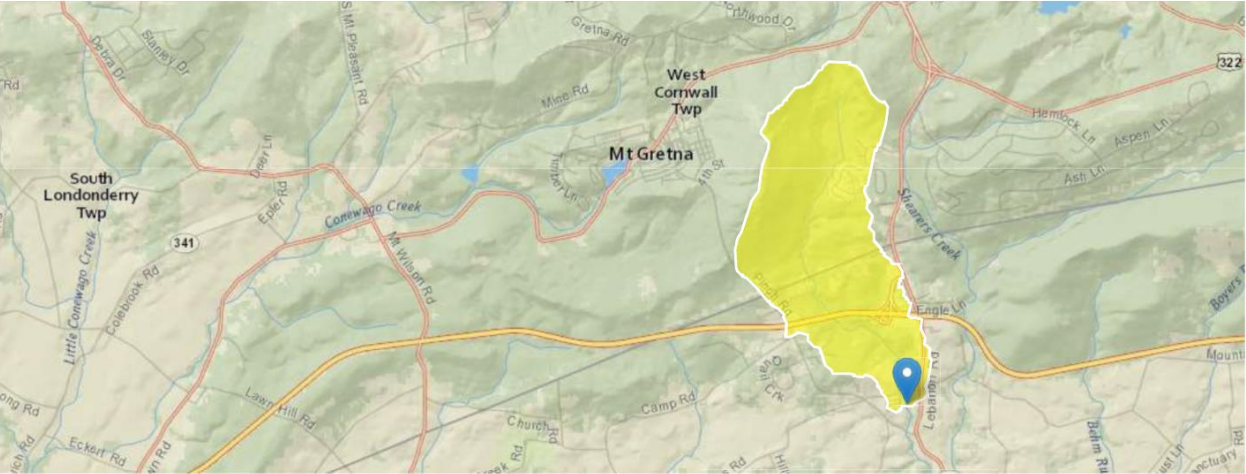
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.13.0  
StreamStats Services Version: 1.2.22  
NSS Services Version: 2.2.1



Hemlock Acres Court MHP Outfall 001

Region ID: PA  
Workspace ID: PA20230314172500238000  
Clicked Point (Latitude, Longitude): 40.21965, -76.43422  
Time: 2023-03-14 13:25:20 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.1873	degrees
DRNAREA	Area that drains to a point on a stream	2.24	square miles
ROCKDEP	Depth to rock	4	feet
URBAN	Percentage of basin with urban development	3.4958	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (2.23 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.24	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	6.1873	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	3.4958	percent	0	89

Low-Flow Statistics Disclaimers [99.9 Percent (2.23 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [99.9 Percent (2.23 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.324	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.44	ft <sup>3</sup> /s

Permit No. PA0086428

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.134	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.194	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.302	ft <sup>3</sup> /s
<i>Low-Flow Statistics Citations</i>		
<b>Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<a href="http://pubs.usgs.gov/sir/2006/5130/">http://pubs.usgs.gov/sir/2006/5130/</a>)</b>		

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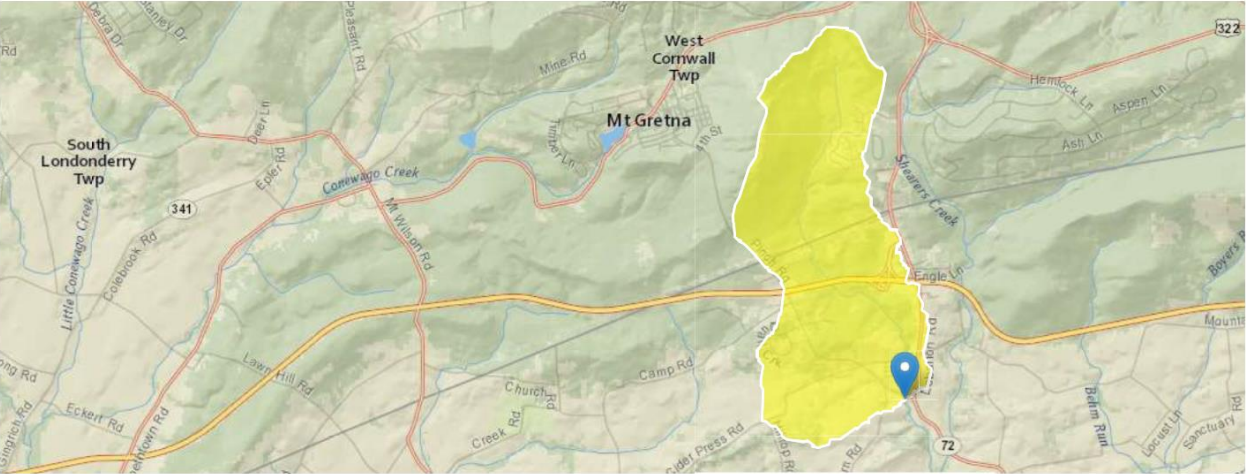
Application Version: 4.13.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Mazza Vineyards Inc. Downstream Point

Region ID: PA  
Workspace ID: PA20230314172849403000  
Clicked Point (Latitude, Longitude): 40.21659, -76.43437  
Time: 2023-03-14 13:29:16 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	5.4864	degrees
DRNAREA	Area that drains to a point on a stream	3.07	square miles
ROCKDEP	Depth to rock	4.2	feet
URBAN	Percentage of basin with urban development	2.72	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (3.07 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.07	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.4864	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.2	feet	4.13	5.21
URBAN	Percent Urban	2.72	percent	0	89

Low-Flow Statistics Disclaimers [99.9 Percent (3.07 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [99.9 Percent (3.07 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.464	ft <sup>3</sup> /s
30 Day 2 Year Low Flow	0.627	ft <sup>3</sup> /s

Permit No. PA0086428

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.195	ft <sup>3</sup> /s
30 Day 10 Year Low Flow	0.278	ft <sup>3</sup> /s
90 Day 10 Year Low Flow	0.441	ft <sup>3</sup> /s
<i>Low-Flow Statistics Citations</i>		
<b>Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<a href="http://pubs.usgs.gov/sir/2006/5130/">http://pubs.usgs.gov/sir/2006/5130/</a>)</b>		

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Application Version: 4.13.0  
StreamStats Services Version: 1.2.22  
NSS Services Version: 2.2.1

Permit No. PA0086428

TRC\_CALC

1A	B	C	D	E	F	G
2	TRC EVALUATION					
3	Input appropriate values in B4:B8 and E4:E7					
4	0.26	= Q stream (cfs)		0.5	= CV Daily	
5	0.015	= 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)			=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 3.593		1.3.2.iii	WLA cfc = 3.496
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 1.339		5.1d	LTA_cfc = 2.032
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*Xd/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*Xd/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)				

Permit No. PA0086428

### Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07G	7919	CHICKIES CREEK	27.800	479.00	2.19	0.00000	0.00	<input checked="" type="checkbox"/>

#### Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	pH	Stream Temp (°C)	pH
	(cfsm)	(cfs)	(cfs)									
Q7-10	0.100	0.00	0.26	0.000	0.000	0.0	0.00	0.00	20.00	7.00	21.00	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

#### Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Mazza Vineyards	PA0086428	0.0150	0.0150	0.0150	0.000	25.00	7.00

#### Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0086428

### Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07G	7919	CHICKIES CREEK	27.700	469.00	2.24	0.00000	0.00	<input checked="" type="checkbox"/>

#### Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	pH	Stream Temp (°C)	pH
	(cfsm)	(cfs)	(cfs)									
Q7-10	0.100	0.00	0.27	0.000	0.000	0.0	0.00	0.00	20.00	7.00	21.00	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

#### Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hemlock Acres	PA0043028	0.0052	0.0052	0.0052	0.000	25.00	7.00

#### Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0086428

### Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07G	7919	CHICKIES CREEK	27.400	462.00	3.07	0.00000	0.00	<input checked="" type="checkbox"/>

#### Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	<u>Tributary</u> Temp (°C)	<u>Stream</u> pH	<u>Stream</u> Temp (°C)	<u>Stream</u> pH
	(cfsm)	(cfs)	(cfs)									
Q7-10	0.100	0.00	0.37	0.000	0.000	0.0	0.00	0.00	20.00	7.00	21.00	8.30
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

#### Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

#### Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70



Permit No. PA0086428

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
07G		7919				CHICKIES CREEK						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
<b>Q7-10 Flow</b>												
27.800	0.26	0.00	0.26	.0232	0.01894	.416	6.99	16.8	0.10	0.063	21.33	7.89
27.700	0.27	0.00	0.27	.0312	0.00442	.42	8.06	19.19	0.09	0.206	21.41	7.83
<b>Q1-10 Flow</b>												
27.800	0.17	0.00	0.17	.0232	0.01894	NA	NA	NA	0.08	0.079	21.49	7.78
27.700	0.17	0.00	0.17	.0312	0.00442	NA	NA	NA	0.07	0.256	21.61	7.71
<b>Q30-10 Flow</b>												
27.800	0.35	0.00	0.35	.0232	0.01894	NA	NA	NA	0.11	0.053	21.25	7.96
27.700	0.37	0.00	0.37	.0312	0.00442	NA	NA	NA	0.10	0.176	21.31	7.90

Permit No. PA0086428

### **WQM 7.0 Modeling Specifications**

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

Permit No. PA0086428

## WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>	
07G		7919		CHICKIES CREEK	

NH3-N Acute Allocations							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
27.800	Mazza Vineyards	5.17	42.25	5.17	37.64	2	11
27.700	Hemlock Acres	3.32	50	5.78	44.55	2	11

NH3-N Chronic Allocations							
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
27.800	Mazza Vineyards	.75	12.26	.75	8.4	2	31
27.700	Hemlock Acres	.58	25	.82	17.15	2	31

Dissolved Oxygen Allocations									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
27.80	Mazza Vineyards	25	25	8.4	8.4	5	5	0	0
27.70	Hemlock Acres	25	25	17.15	17.15	5	5	0	0

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### WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name	
07G	7919	CHICKIES CREEK	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
27.800	0.015	21.328	7.893
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
6.988	0.416	16.801	0.097
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>
3.88	0.772	0.69	0.775
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
7.977	23.843	Owens	5
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>		
0.063	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)
			D.O. (mg/L)
	0.006	3.86	0.69
	0.013	3.84	0.68
	0.019	3.83	0.68
	0.025	3.81	0.68
	0.031	3.79	0.67
	0.038	3.77	0.67
	0.044	3.75	0.67
	0.050	3.73	0.66
	0.056	3.71	0.66
	0.063	3.69	0.66

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<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
27.700	0.020	21.415	7.828
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
8.062	0.420	19.190	0.089
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>
4.20	0.799	1.07	0.781
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
7.969	22.064	Owens	5
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>		
0.206	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)
			D.O. (mg/L)
	0.021	4.13	1.06
	0.041	4.06	1.04
	0.062	3.99	1.02
	0.082	3.92	1.01
	0.103	3.85	0.99
	0.124	3.78	0.98
	0.144	3.72	0.96
	0.165	3.65	0.94
	0.186	3.59	0.93
	0.206	3.53	0.91

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WQM 7.0 Effluent Limits

SWP Basin		Stream Code		Stream Name			
07G		7919		CHICKIES CREEK			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
27.800	Mazza Vineyards	PA0086428	0.015	CBOD5	25		
				NH3-N	8.4	16.8	
				Dissolved Oxygen			5
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
27.700	Hemlock Acres	PA0043028	0.005	CBOD5	25		
				NH3-N	17.15	34.3	
				Dissolved Oxygen			5