

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

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0050423  
APS ID 1019922  
Authorization ID 1320632

**Applicant and Facility Information**

Applicant Name	<u>Sisters Servants of the Immaculate Heart of Mary</u>	Facility Name	<u>Villa Maria STP</u>
Applicant Address	<u>1140 King Road Immaculata, PA 19345-0200</u>	Facility Address	<u>1140 King Road Immaculata, PA 19345</u>
Applicant Contact	<u>David McDonnell</u>	Facility Contact	<u>David McDonnell</u>
Applicant Phone	<u>(610) 647-2160</u>	Facility Phone	<u>(610) 647-2160</u>
Client ID	<u>62911</u>	Site ID	<u>458570</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>East Whiteland Township</u>
Connection Status	<u></u>	County	<u>Chester</u>
Date Application Received	<u>July 2, 2020</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u></u>	If No, Reason	<u></u>
Purpose of Application	<u>Permit Renewal.</u>		

**Summary of Review**

The applicant requests approval for the renewal of an NPDES permit to discharge treated sewage from Villa Maria STP.

Influent is fed to the treatment plant via a gravity collection system. A manual bar screen is utilized to remove large debris prior to the treatment process. The flows are then split to two aeration basins for biological treatment. The aeration is derived from centrifugal blowers. Aluminum Sulfate is added at the end of both aeration basins for phosphorus reduction. Two clarifiers with air lift sludge return pumps follow the aeration tanks. Wasting is achieved by manually opening independent gate valves at the clarifiers which discharges to the sludge holding tank. The flow leaves the clarifiers through a V notch weir for flow measurement to two sand filtration beds that are used in alternation. Forward flow goes to a chlorine injection point at the chlorine detention tank and is then dechlorinated before being discharged to the outfall. Sodium hypochlorite is used for disinfection.

Sludge is hauled away to other WWTP.

Based on the DMR review, the discharge has been in compliance with the permit limits. According to the operations section, the facility is operating well.

There are no changes in the flow, influent characteristics, treatment units, stream designation etc.

The existing limits are recommended to carry over to the new permit.

Approve	Deny	Signatures	Date
X		<i>Sara Abraham</i> Sara Reji Abraham, E.I.T. / Project Manager	August 17, 2020
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	08/18/2020

**Summary of Review**

Act 14 Notifications:

East Whiteland Township	-	March 31, 2020
Chester County	-	March 31, 2020

Permit Conditions:

- A. No stormwater
- B. Acquire Necessary Property Rights
- C. Proper Sludge Disposal
- D. Abandon STP When Municipal Sewers Available
- E. Chlorine Optimization
- F. Operator Notification
- G. Fecal Coliform Requirement
- H. Solids Management

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.	<u>001</u>	Design Flow (MGD)	<u>.04</u>
Latitude	<u>40° 1' 19.48"</u>	Longitude	<u>-75° 34' 0.56"</u>
Quad Name	<u>Malvern</u>	Quad Code	<u>1841</u>
Wastewater Description: <u>Treated Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary of Ridley Creek (HQ-TSF)</u>	Stream Code	<u>00686</u>
NHD Com ID	<u>25625972</u>	RMI	<u>0.3</u>
Drainage Area	<u>0.26 mi<sup>2</sup></u>		
Q7-10 Flow (cfs)	<u>0.0338</u>	Q7-10 Basis	<u>usgs streamstats*</u>
Watershed No.	<u>3-G</u>	Chapter 93 Class.	<u>HQ-TSF</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>cause unknown, flow regime modification, siltation</u>		
Source(s) of Impairment	<u>urban runoff/storm sewers</u>		
TMDL Status	<u>None</u>		

\*see attached below:



low flow statistics

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Villa Maria STP				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration with Solids Removal	Hypochlorite	0.04
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.04		Not Overloaded		Other WWTP

Compliance History

DMR Data for Outfall 001 (from July 1, 2019 to June 30, 2020)

Parameter	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19
Flow (MGD) Average Monthly	0.00788 1	0.00921 1	0.00697 9	0.00636 7	0.01185 4	0.00869 5	0.00744 4	0.01294 2	0.01038 4	0.00843 9	0.01326 7	0.01067 5
Flow (MGD) Daily Maximum	0.02391 8	0.02328	0.02136 8	0.01604 6	0.06939	0.02072 7	0.01360 8	0.06125	0.02786 3	0.01960 8	0.06542 8	0.02436 4
pH (S.U.) Instantaneous Minimum	6.57	6.66	6.87	6.8	6.58	6.72	6.67	6.51	6.81	6.78	6.41	6.52
pH (S.U.) Instantaneous Maximum	8.08	7.88	8.37	8.51	8.43	8.40	8.89	8.77	8.12	7.71	8.17	7.27
DO (mg/L) Instantaneous Minimum	6.90	8.03	9.18	9.71	9.65	9.79	9.82	8.97	7.67	6.28	6.23	6.02
TRC (mg/L) Average Monthly	0.02	0.02	0.01	0.01	< 0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.02
TRC (mg/L) Instantaneous Maximum	0.06	0.07	0.03	0.04	0.06	0.04	0.03	0.04	0.04	0.03	0.04	0.04
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
TSS (mg/L) Average Monthly	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Dissolved Solids (mg/L) Daily Maximum	542			503.33			654			597		
Fecal Coliform (CFU/100 ml) Geometric Mean	17	< 2	< 2	< 2	6	< 3	< 2	< 2	8	< 2	< 2	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	28	< 2	< 2	< 2	8	5	< 2	< 2	13	< 2	< 2	< 2
Total Nitrogen (mg/L) Average Monthly	< 30.06	< 26.31	< 27.56	< 32.41	< 30.09	< 31.24	< 27.12	< 30.6	< 29	< 25.3	< 25.94	< 25.04
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

**NPDES Permit Fact Sheet  
Villa Maria STP**

**NPDES Permit No. PA0050423**

Total Phosphorus (mg/L) Average Monthly	0.46	0.28	0.25	0.28	0.35	0.23	0.23	0.32	0.42	0.58	0.51	0.51
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**Development of Effluent Limitations**

Outfall No. 001 Design Flow (MGD) .04  
 Latitude 40° 1' 19.24" Longitude -75° 34' 0.84"  
 Wastewater Description: 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**

Parameter	Limit (mg/l)	SBC	Basis
CBOD <sub>5</sub> (05-1 to 10-31)	20	Average Monthly	Existing
CBOD <sub>5</sub> (11-1 to 4-30)	25	Average Monthly	Existing
TSS	30	Average Monthly	DRBC
Fecal Coliform	200/1000	Ave. Month. /Inst.Max	Chapt. 93 & DRBC
Ammonia-N (05-1 to 10-31)	2.0	Average Monthly	Existing
Ammonia-N (11-1 to 04-30)	6.0	Average Monthly	Existing
Total Residual Chlorine	0.14/0.32	Ave.Month./Inst.Max	Existing
Dissolved Oxygen	6.0	Inst. Min.	Existing
pH	6.0 to 9.0 at all times		Chapt. 93
Total Phosphorus	2.0	Average Monthly	Existing/BPJ
Total Nitrogen	Report	Average Monthly	Existing/Data Collection
Total Dissolved Solids	Report	Daily Max.	Existing/ Data Collection
Copper, Total	Report	Daily Max.	Data Collection*

\*Discharge concentration of Copper, Total is reported as 27 ug/l in the application which is much higher than the most stringent criterion, 9 ug/l. Therefore, quarterly monitoring for Copper, Total is included in the permit for data collection. This is the only new parameter in the permit.

Anti-Backsliding

N/A

**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	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	See Permit	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	See Permit	Grab
TRC	XXX	XXX	XXX	0.14	XXX	0.32	See Permit	Grab
CBOD5 Nov 1 - Apr 30	8.3	XXX	XXX	25	XXX	50	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	6.7	XXX	XXX	20	XXX	40	2/month	24-Hr Composite
TSS	10.0	XXX	XXX	30	XXX	60	2/month	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	2.0	XXX	XXX	6.0	XXX	12	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.7	XXX	XXX	2.0	XXX	4	2/month	24-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	0.7	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite
Total Copper	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite