pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0043974**
Facility Type	**Municipal**	APS ID	**999174**
Major / Minor	**Major**	Authorization ID	**1283463**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Valley Forge Sewer Authority**	Facility Name	**Valley Forge Sewer Authority WWTP**
Applicant Address	333 Pawling Road	Facility Address	333 Pawlings Road
	Phoenixville, PA 19460-2656		Phoenixville, PA 19460
Applicant Contact	Martin Goldberg	Facility Contact	Martin Goldberg
Applicant Phone	(610) 935-1553	Facility Phone	(610) 935-1553
Client ID	85898	Site ID	255005
Ch 94 Load Status	Not Overloaded	Municipality	Schuylkill Township
Connection Status	Self Imposed Connection Prohibition	County	Chester
Date Application Received	July 29, 2019	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility, Pretreatment

Purpose of Application: Permit Renewal.

Summary of Review

The applicant requests renewal of an NPDES permit to discharge treated sewage from Valley Forge Sewer Authority WWTP.

The plant consists of two primary clarifiers, two aeration tanks, four final clarifiers, UV disinfection, three gravity thickeners and three centrifuges. Sodium Hypochlorite is used for back up disinfection and for return activated sludge.

The following municipalities are served by this facility: Charlestown Twp, Easttown Twp, East Pikeland Twp, East Whiteland Twp, Malvern Borough, Schuylkill Twp, Tredyffrin Twp, and Willistown Twp.

The facility also accepts hauled in Municipal and Residual wastes.
Biosolids produced at the facility are disposed by land application at various locations.

Facility has an approved pretreatment program and is required to continue implementing the program.
The following are the Significant Industrial Users (SIUs) contributing their wastewater to the VFSA system:

1. Micron Technologies, Inc. (Catalent)
2. Devault Foods
3. Janssen Biotech Inc.
4. Fujirebio Diagnostics (201) Inc.
5. Infiana USA Inc.
6. Paoli Memorial Hospital
7. PECO Energy

Approve	Deny	Signatures	Date
		Sara Reji Abraham, E.I.T. / Project Manager	
		Pravin C. Patel, P.E. / Environmental Engineer Manager	

Summary of Review

According to the permittee, VFSA treatment plant is not currently in or projected to be in a hydraulic or organic overload condition.

Based on the review of the DMRs, the discharge is in compliance with the permit limits most of the time. In 2002 the Department conducted a Schuylkill River Reallocation Study for all the dischargers between Black Run Dam and Norristown Dam. The then permit was prepared with CBOD5, NH3-N and DO limits based on the study. Mass loading limits are still the same. Concentration limits were adjusted during the last permit term when the permitted flow was increased.

A new WQM model run was conducted which also provides the same limits for CBOD5, NH3-N and DO for the new permit.

Influent monitoring for BOD5, CBOD5 and TSS are continued based on Chapter 94 requirement and to check compliance with the 85% removal requirement for secondary treatment.

In April 2007, EPA established the PCB TMDL for Schuylkill River to address the PCB impairment of Schuylkill River. The TMDL was established using a water quality criterion of 0.044 ng/l for PCBs. This facility is included in the TMDL with an assigned WLA of $1.82 * 10^{-3}$ g/day. The review of 2017 and 2018 sampling results show elevated PCB concentration in the discharge. Special condition requiring the implementation of PMP and annual sampling for dry weather and wet weather, is included in Part C of the permit similar to the existing condition.

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.

Act 14 Notifications:

Schuylkill Township - January 25, 2019
Chester County - January 25, 2019

Permit Conditions:

A. No Stormwater
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. No unconventional oil and gas wastewater
E. Chlorine Optimization
F. Operator Notification
G. TMDL/WLA Analysis
H. Fecal Coliform Reporting
I. Hauled-in Waste Condition
J. Operations and Maintenance Plan
K. Pretreatment Program Implementation
L. Solids Management
M. WET Testing Requirements
N. Stormwater Requirements
O. PCB/PMP Requirements

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	11.75
Latitude	40º 7' 5.67"	Longitude	-75º 28' 1.87"
Quad Name	Valley Forge	Quad Code	1842
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	00833
NHD Com ID	26003372	RMI	32.0
Drainage Area	1690 sq. mi.		
Q_{7-10} Flow (cfs)	343	Q_{7-10} Basis	PA Stream Stats
Elevation (ft)	69.4		
Watershed No.	3-F	Chapter 93 Class.	WWF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final, 04/07/2007	Name	Schuylkill River PCB TMDL

Treatment Facility Summary

Treatment Facility Name: Valley Forge Sewer Authority WWTP

WQM Permit No.	Issuance Date
1599422	06/19/2000
1599422 A2	12/28/2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	UV	11.75

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
11.75	26,700	Not Overloaded	Centrifugation	Land Application

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	8.039	8.33	8.818	7.793	9.812	8.71	9.51	9.09	9.64	7.75	9.24	8.09
Flow (MGD) Daily Maximum	10.96	15.24	11.319	8.64	14.93	10.44	13.37	14.54	14.34	10.13	13.96	12.49
pH (S.U.) Instantaneous Minimum	6.8	7.1	7.1	7.0	7.0	7.0	7.0	6.9	7.0	7.1	7.0	7.0
pH (S.U.) Instantaneous Maximum	7.3	7.5	7.5	7.3	7.3	7.2	7.4	7.6	7.8	7.8	7.5	7.6
DO (mg/L) Instantaneous Minimum	7.5	7.8	8.1	8.6	8.4	8.9	8.6	8.5	8.2	8.2	7.8	7.6
DO (mg/L) Average Monthly	8.1	8.2	8.9	9.2	9.5	9.6	9.3	9.3	8.9	8.5	8.3	8.1
TRC (mg/L) Average Monthly	0.04	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	0.06	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	< 297	382	< 299	242	< 353	< 355	< 377	293	< 345	< 243	< 303	< 285
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	9865	8288	8098	9070	9592	9696	11167	8814	8968	9439	9562	7895
CBOD5 (lbs/day) Weekly Average	435	444	406	273	409	404	551	373	582	< 282	409	< 426
CBOD5 (mg/L) Average Monthly	< 4	5	< 4	4	< 4	< 5	< 5	4	< 4	< 4	< 4	< 4
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	154	124	120	142	119	132	148	115	112	146	119	120
CBOD5 (mg/L) Weekly Average	7	6	5	4	5	5	6	5	6	4	5	< 5

BOD5 (lbs/day) Raw Sewage Influent Average Monthly	11050	9190	8347	10171	11264	11553	13063	9896	9685	10269	9778	8037
BOD5 (mg/L) Raw Sewage Influent Average Monthly	172	138	123	158	141	156	166	130	120	159	131	122
TSS (lbs/day) Average Monthly	354	551	382	< 232	481	495	563	456	579	325	493	389
TSS (lbs/day) Raw Sewage Influent Average Monthly	13002	12461	9246	13809	14225	12717	15221	11259	14336	14846	14214	11628
TSS (lbs/day) Weekly Average	511	710	531	264	560	590	775	637	1079	404	715	502
TSS (mg/L) Average Monthly	5	8	5	< 4	6	7	7	6	7	5	6	6
TSS (mg/L) Raw Sewage Influent Average Monthly	202	183	136	215	178	173	194	148	180	232	188	177
TSS (mg/L) Weekly Average	7	9	6	4	7	9	10	8	11	5	8	7
Total Dissolved Solids (mg/L) Average Monthly	532	495	547	553	674	729	612	628	454	464	507	439
Total Dissolved Solids (mg/L) Daily Maximum	574	542	651	583	821	1050	707	757	520	499	546	487
Fecal Coliform (No./100 ml) Geometric Mean	< 14	9	< 2	< 5	9	< 4	9	< 5	< 4	< 3	< 4	< 6
Fecal Coliform (No./100 ml) Instantaneous Maximum	462	300	1987	388	72	48	58	609	30	116	1987	200
UV Transmittance (%) Minimum	49.3	50.3	51.7	53.0	54.9	57.6	64.4	43.5	43.5	50	64.0	46.9
Total Nitrogen (mg/L) Average Monthly	18.4	15.3	15.4	17.0	16.3	19.3	16.9	16	13.3	< 19.3	14.6	17.8
Ammonia (lbs/day) Average Monthly	< 43	< 75	< 60	< 55	< 164	< 76	< 104	< 77	< 65	< 33	< 85	< 63

Ammonia (mg/L) Average Monthly	< 0.5	< 0.9	< 0.8	< 0.8	< 1.9	< 1.0	< 1.3	< 0.9	< 0.8	< 0.5	< 1.1	< 0.9
Total Phosphorus (mg/L) Average Monthly	5.5	4.5	5.2	5.3	3.8	4.1	4	3.9	3.6	4.9	3.0	4.6
Total Copper (lbs/day) Average Monthly	0.30	0.50	0.40	0.80	0.70	0.90	0.50	1.27	0.40	0.40	0.40	0.30
Total Copper (lbs/day) Daily Maximum	0.30	0.50	0.40	1.21	0.70	0.90	0.50	1.27	0.40	0.40	0.40	0.30
Total Copper (mg/L) Average Monthly	0.0048	0.0083	0.0054	0.012	0.0081	0.011	0.0071	0.017	0.0071	0.0047	0.0073	0.0059
Total Copper (mg/L) Daily Maximum	0.0048	0.0083	0.0054	0.019	0.0081	0.011	0.0071	0.017	0.0071	0.0047	0.0073	0.0059
PCBs (Dry Weather) (pg/L) Daily Maximum								670.9				
PCBs (Wet Weather) (pg/L) Daily Maximum								876.9				
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum								100				
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum								100				
Chronic WET - Pimephales Survival (TUc) Daily Maximum								100				
Chronic WET - Pimephales Growth (TUc) Daily Maximum								100				

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2018 To: July 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	09/30/18	IMAX	1987	No./100 ml	1000	No./100 ml
Fecal Coliform	05/31/19	IMAX	1987	No./100 ml	1000	No./100 ml

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 11.75
Latitude 40º 7' 6.55" **Longitude** -75º 28' 2.12"
Wastewater Description: Treated 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
$CBOD_5$	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)
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	Model
CBOD5	16	Average Monthly	WQM 7.0
Total Suspended Solids	30	Average Monthly	DRBC
Total Dissolved Solids	1000	Average Monthly	DRBC
NH3-N	6.3	Average Monthly	WQM 7.0
DO	5.0	Inst.Min.	WQM 7.0
pH	Within 6.0 to 9.0 Std. all time		Ch. 93
Fecal Coliform	200/1000	Geo.mean/Imax	Ch.93 and DRBC
TRC*	0.42	Average Monthly	Spreadsheet
UV Transmittance	Report	Min.	Data Collection/SOP
Total Phosphorus	Report	Average Monthly	Data Collection/SOP
Total Nitrogen	Report	Average Monthly	Data Collection/SOP

* monitoring needed only during the use of chlorine.
** All these limits are similar to the existing limits except TRC limit.

Anti-Backsliding

N/A

"Reasonable Potential Analysis" determined that the following are parameters of concern:

Effluent Parameter Name	Reported on Application Max.	Most Stringent Criterion (ug/l)	Further Interest	WQBEL	Comments
Total Dissolved Solids*	1050000	500000	Yes		Limit/existing
Total Cadmium	0.5	0.271	Yes	2.875	No monitoring
Copper, Total	17	9.3	Yes	27.447	Existing limit/changed
Selenium, Total	8	5	Yes	40.711	No monitoring
Hexachlorobutadiene	<0.51	0.44	Yes	13.033	No monitoring

* Since TDS concentration is elevated, the major constituents of TDS; Chloride, Bromide, Sulfate are required to be monitored in the permit.

See attached PENTOXSD, WQM 7.0 and TRC reports:

pentoxsd wqm 7.0 trc

A tributary hardness of 139 mg/l (from application) and a discharge hardness of 170 mg/l (from application) are used for the PENTOXSD run. Effluent limit for Copper is changed from the previous permit due to the change in Stream Hardness. DMR review shows the facility is able to meet the new Copper limits.

Outfall No. 002 **Design Flow (MGD)** 0
Latitude 40º 17' 0.00" **Longitude** -75º 27' 50.00"
Wastewater Description: Stormwater

According to the permittee there is no discharge from Outfall 002.
Stormwater monitoring is only needed upon request similar to the existing permit.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **annually**

The dilution series used for the tests was: 100%, 60%, 30%, 10%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 10%

Please see the attached Wet Summary and Evaluation:

Wet Summary and evaluation

Based on the review of the submitted WET reports, no permit limit is required.
Annual monitoring for Chronic WET is required, and the WET condition is included in Part C of the permit.

Proposed Effluent Limitations and Monitoring Requirements

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	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	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	Report	XXX	XXX	1/day	Grab
TRC*	XXX	XXX	XXX	0.42	XXX	0.52	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
CBOD5 Nov 1 - Apr 30	1918	3069	XXX	20	30	40	1/day	24-Hr Composite
CBOD5 May 1 - Oct 31	1535	2302	XXX	16	24	32	1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
TSS	2939	4410	XXX	30	45	60	1/day	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000	2000 Daily Max	2500	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia Nov 1 - Apr 30	1228	XXX	XXX	12.5	XXX	25	1/day	24-Hr Composite
Ammonia May 1 - Oct 31	614	XXX	XXX	6.3	XXX	12.5	1/day	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Copper	2.65	4.21 Daily Max	XXX	0.027	0.043 Daily Max	0.068	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Bromide	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Sulfate, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
PCBs (Dry Weather) (pg/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite
PCBs (Wet Weather) (pg/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite

Other Comments: *monitor only during the use of chlorine.

Proposed Effluent Limitations and Monitoring Requirements

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

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		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
CBOD5	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
TKN	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab