CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2022 VALLEY FORGE SEWER AUTHORITY CHESTER COUNTY, PENNSYLVANIA

SECTION 1

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2022

	wner and/or operator of a POTW or other wner and/or operator of a collection syster	•	owned/operated by permittee		
	GENERAL IN	FORMATION			
Permittee Name:	VALLEY FORGE SEWER AUTHORITY REGIONAL TREATMENT PLANT REPORT	Permit No.:	PA0043974		
Mailing Address:	333 PAWLING ROAD	Effective Date:	1/1/20		
City, State, Zip:	PHOENIXVILLE, PA 19460	Expiration Date:	12/31/24		
Contact Person:	Mr. Leonard J. Pinchok, Sr.	Renewal Due Date:	7/4/24		
Title:	General Manager	Municipality:	Schuylkill Township		
Phone:	610-935-1553	County:	Chester		
Email:	lpinchok@vfsa.com	Consultant Name:			
	CHAPTER 94 REPO	ORT COMPONENTS			
 Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1)) Check the appropriate boxes: Line graph for flows attached (Attachment 1) DEP Chapter 94 Spreadsheet used (Attachment 1) Section 1 is not applicable (report is for a collection system). 					
each month for line depicting the Check the apple Line graph to DEP Chapte	to this report a line graph depicting the me the past 5 years and projecting the organic e organic design capacity of the treatment ropriate boxes: for organic loads attached (Attachment 1 er 94 Spreadsheet used (Attachment 1) not applicable (report is for a collection symmetry)	ic loads for the next 5 year t plant per the WQM permi)	rs. The graph must also include a		

3.	If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3)) Not applicable
4.	Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4)) Check the appropriate boxes: Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (Attachment) List summarizing each extension or project attached (Attachment) Schedules describing how each project will be completed over time and effects attached (Attachment)
	Schedules describing now each project will be completed over time and effects attached (Attachment
	Comments:
	Please see individual partner reports included as Section 3 of the 2022 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.
5.	Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))
	Please see individual partner reports included as Section 3 of the 2022 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

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6.	Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))
	Check the appropriate boxes:
	 System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event. System did not experience capacity-related bypassing, SSOs or surcharging during the report year.
	Comments:
	Please see individual partner reports included as Section 3 of the 2022 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.
7.	Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))
	Check the appropriate boxes:
	The collection system does not contain pump stations
	The collection system does contain pump stations (Number –)
	Discussion of condition of each pump station attached (Attachment)
8.	If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))
	a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
	b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
	c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.
	Check the appropriate boxes:
	Industrial waste report as described in 8 a., b. and c. attached (Attachment)
	☑ Industrial pretreatment report as required in an NPDES permit attached (Attachment)

Existing or Projected Overload.	ļ
Check the appropriate boxes: ☐ This report demonstrates an existing hydraulic overload ☐ This report demonstrates a projected hydraulic overload ☐ This report demonstrates an existing organic overload ☐ This report demonstrates a projected organic overload	d condition. condition. condition.
If one or more boxes above have been checked, attach a Corprojected overloaded conditions under §§ 94.21 an overload). (25 Pa. Code § 94.12(a)(9))	Corrective Action Plan (CAP) to reduce or eliminate present d/or 94.22 (relating to existing overload and projected
Corrective Action Plan attached (Attachment)	
10. Where required by the NPDES permit, attach a Se mass balance of solids coming in and leaving the facility or	ewage Sludge Management inventory that demonstrates a ver the previous calendar year.
Sewage Sludge Management Inventory attached (Atta	chment)
 11. For facilities with CSOs and where required by th satellite combined sewer systems). Annual CSO Report attached (Attachment) 	e NPDES permit, attach an Annual CSO Report (including
	ng that flow measuring, indicating and recording equipment
RESPONSIBLE OFFIC	IAL CERTIFICATION
I certify under penalty of law that this document and all attack accordance with a system designed to assure that qualified submitted. Based on my inquiry of the person or persons where for gathering the information, the information submitted is, to complete. I am aware that there are significant penalties for and imprisonment for knowledge of violations. See 18 Pa. C.S.	o manage the system or those persons directly responsible the best of my knowledge and belief, true, accurate, and submitting false information, including the possibility of fine
Leonard J. Pinchok, Sr.	Remard & fromt S.
Name of Responsible Official	Signature 3/28/23
610-935-1553	3/28/23 Date
Telephone No.	

PREPARER CE	RTIFICATION
I certify under penalty of law that this document and all attach or supervision in accordance with a system designed to assu the information submitted. The information submitted is, to complete. I am aware that there are significant penalties for and imprisonment for knowledge of violations. See 18 Pa. C.S.	re that qualified personnel properly gathered and evaluated the best of my knowledge and belief, true, accurate, and submitting false information, including the possibility of fine
Richard D. Taylor	Willia ONW
Name of Preparer	Signature
610-935-1553	3-28-23
Telephone No.	Date

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1-9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) - 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT (In PADEP Format)

CALENDAR YEAR 2022

For: THE VALLEY FORGE SEWER AUTHORITY
WASTEWATER TREATMENT PLANT
CHESTER COUNTY, PENNSYLVANIA
333 PAWLING ROAD
PHOENIXVILLE, PA 19460

INTRODUCTION

The Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Schuylkill, East Pikeland, and Charlestown Townships. Additionally, wastewater treatment (not conveyance) is provided to the Partner Municipalities which include Easttown, East Whiteland, Tredyffrin and Willistown Townships and Malvern Borough. Beginning with the 2019 VFSA Regional Chapter 94 Report an additional collection system Chapter 94 report submitted by Aqua Resources for the Valley Creek Trunk Sewer (VCTS) system is included.

The VFSA treatment plant began treatment of wastewater during or about January 1978. The plant receives flow from the municipalities listed above from two force mains. There is one thirty inch diameter force main from the Partner Municipalities, containing wastewater flow from the Wilson Road and Valley Creek pump stations. There is also a twenty inch diameter force main from the Member Municipalities containing wastewater flow from the Pickering and Perkiomen pump stations. Flow from the two force mains combines immediately prior to the raw influent structure. The raw influent structure meters and diverts the flow into one of two primary clarifiers (operated in parallel) for gravity settling to remove heavy inorganic and organic solids, also reducing Biochemical Oxygen Demand (BOD₅). Following the primary clarifiers, further reduction of BOD5, sufficient to also allow Nitrification, occurs biologically in the two activated sludge aeration tanks. Final settling is achieved following the aeration tanks in four final clarifiers also operated in parallel. The final treatment step prior to discharge to the Schuylkill River is ultraviolet light (UV) disinfection. Wastewater solids produced during primary clarification are pumped through cyclone degritters where grit is removed from the wastewater, sent to one of three treatment plant gravity thickeners where it is combined with other plant solids (scum, trucked wastewater and waste activated sludge).

In addition to its connected customers, VFSA also receives regulated and non-regulated (residential) trucked waste at a designated receiving station for preliminary treatment and equalization prior to combination with other plant solids in gravity thickeners. The gravity thickened solids produced in the sludge thickeners are pumped to centrifuges for dewatering. The resulting cake solids produced by the centrifuge dewatering process are alkaline stabilized by mixing dewatered sludge solids with hydrated lime, resulting in a biosolids product registered with the Pennsylvania Department of Agriculture as a fertilizer product. For more than ten years all of the VFSA biosolids have been land applied for beneficial agricultural reuse.

Act 537 Sewage Facility Planning

The long-term wastewater treatment needs for the areas served by the Valley Forge Sewer Authority (VFSA) were described in the Act 537 Plan, which was approved by the PADEP on March 10th of 2009. The basis for the 2009-approved Plan included the expansion of the VFSA treatment plant including the addition of a third aeration tank and a fourth final clarifier, additional solids handling capacity, and new UV disinfection. UV disinfection was added in the

summer of 2011 on an expedited basis in order to provide the required capacity for future disinfection as well as eliminate the risks inherent by the use of liquid chlorine.

In the winter of 2012 after discussions with its partners and the PADEP, VFSA conducted testing which successfully documented the treatment plant's capability to adequately treat wastewater for BOD5 and ammonia removal without the addition of a third aeration tank. With PADEP's concurrence the third aeration tank remains a part of the Act 537 plan, but construction has been deferred to a later date when this capacity may be required. Other items added consist of a third gravity thickener and a new third centrifuge. Final design – consisting of contracts for general construction, mechanical and electrical components - were completed in late 2012 with public bids occurring in January 2013. The three contracts were awarded and construction began in 2013 with substantial completion of the project achieved by October 20, 2016.

Construction of the VFSA influent chamber fine screen for rag and debris removal was substantially completed and placed in operation January 2020. Although this doesn't relate directly to capacity, it improves process stability, reduces O & M costs and results in a higher quality biosolids product.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion
Annual Average Capacity	11.75 mgd
Hydraulic Design Capacity	11.75 mgd
Organic Design Capacity	26,700 lbs/day

The 2022 VFSA Annual Chapter 94 spreadsheet attached as Attachment A of Section 1 contains the summary of VFSA's treatment plant flows for the years 2017 through 2021. The Annual Average (AA) flow for 2022 was 6.266 MGD, which is fifty-three percent of the post-expansion permitted AA capacity of 11.75 MGD.

The 2022 VFSA wastewater treatment plant flow was generated by an average of 30,968 EDUs. The year end baseline EDUs used in the projected flow calculations is 31,009.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any 3 consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2022.

The VFSA treatment plant is not currently in a hydraulic overload condition therefore a Corrective Action Plan (CAP) or Connection Management Plan (CMP) are not applicable.

During 2022 there were eight days on which there were precipitation totals of one inch or greater. There were <u>no</u> exceedances of the NPDES permit due to High Flow Conditions during 2022.

The annual hydraulic loading from trucked wastes is approximately one percent of the total annual plant's influent, is not considered significant in regards to overall plant flow and is not included in the hydraulic projections in the VFSA DEP Chapter 94 spreadsheet.

2. ORGANIC LOADING

VFSA's Annual Average (AA) organic loading for 2022, including trucked in waste loading, was **8,234** LB/day BOD₅, which is thirty-one percent of the post-expansion permitted AA capacity of **26,700** LB/day BOD₅.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2022.

Treatment plant influent CBOD₅ and BOD₅ samples are twenty-four hour flow proportioned composite samples collected, preserved and analyzed in accordance with

the Title 40 of the Code of Federal Regulations, Part 136. These CBOD₅ and BOD₅ samples are collected for analysis from the plant's raw influent structure, after initial mixing of the two force mains tributary to the treatment plant and treatment by the influent fine screen, but prior to any treatment units and recycle/return flows from the treatment plant.

VFSA calculates influent organic loadings for each day on which samples are collected for both influent CBOD₅ and BOD₅ utilizing PADEP's recommended method. The results are summarized in the VFSA DEP Chapter 94 spreadsheet.

Trucked waste contributes a BOD₅ load on the plant which should be accounted for and included in the Chapter 94 organic projections. This report maintains that assumption and is confirmed in the 5 year look back table below:

VALLEY FORGE SEWER AUTHORITY Chapter 94 Historic Organic Loading Monthly Organic Loading (ppd) Trucked Wastewater Five Year MONTH 2021 2022 Avg BOD5 2018 2019 2020 492 509 804 **JANUARY** 707 1,541 773 515 **FEBRUARY** 343 1,393 699 463 683 1,899 796 661 639 926 MARCH 635 1,326 716 824 825 671 **APRIL** 586 1,110 557 872 738 MAY 623 531 796 1.002 JUNE 978 625 666 708 1,418 916 **JULY** 982 1.030 527 620 **AUGUST** 710 425 1,255 736 641 646 **SEPTEMBER** 594 661 512 549 1,287 721 1,593 939 **OCTOBER** 534 1,141 743 681 989 763 576 1,512 946 **NOVEMBER** 890 983 1,155 451 1,067 1,704 538 DECEMBER 834 746 1,161 636 588 1,041 **AVERAGE** 1,704 1.899 796 716 1.593 1,899 **MAX MONTH**

All values are in Lbs/Day BOD₅

The 2022 monthly average organic loading was calculated by adding the estimated organic loading from trucked in waste to the influent loading and is included in the DEP Chapter 94 spreadsheet monthly organic BOD₅ loads.

All contributing Partners of the regional treatment plant responded to the request for data necessary to compile this report. VFSA compiles the Partner's responses within this submittal. The hydraulic and organic loading projections to establish treatment plant

of the 2022 VFSA Chapter 94 Municipal Wasteload Management Annual Report for copies of the VFSA Member Municipalities and individual Partner Municipality reports.

- 3. NOT APPLICABLE
- 4. SEWER EXTENSIONS
- 5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION
- 6. CONDITION OF THE SEWER SYSTEM
- 7. SEWAGE PUMPING STATIONS

Information For Components 4 Through 7, Including The Requested Maps, Data And Supporting Information For Those Components, Can Be Found In The Valley Forge Sewer Authority and Partner Municipality Portions Of Section 3 Of The 2021 VFSA Chapter 94 Municipal Wasteload Management Annual Report. These submittals are prepared and submitted to VFSA by its Partners and accordingly, the Partners are responsible for the content of their respective submittals.

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the 2022 VFSA Chapter 94 Municipal Wasteload Management Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the individual member reports attached the following member municipalities currently either have CAP/CMP plans submitted or approved by PADEP, while Malvern Borough, Tredyffrin Township, Valley Forge Sewer Authority and Willistown are currently not considered to be in overload conditions and do not require a CAP/CMP plan:

- 1) Easttown Twp CAP/CMP for the Berwyn Pumping Station drainage and subdrainage areas.
- 2) East Whiteland Twp CAP/CMP in effect for the Lee Boulevard Pump Station.

(See the individual partner municipality Chapter 94 Municipal Chapter 94 Wasteload Management Annual Reports in Section 3 for more details.)

10. SEWAGE SLUDGE MANAGEMENT INVENTORY – NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, most meters are calibrated on a quarterly basis). Please see Attachment No. 2 of Section 1 of the 2022 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2022 calibration reports. Meter calibration reports for the whole year are available for review at the VFSA administration building.

2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 1

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

SPREADSHEET AND GRAPHS



PADEP Chapter 94 Spreadsheet Sewage Treatment Plants

Reporting Year: 2022

Facility Name:

VALLEY FORGE SEWER AUTHORITY

Permit No.:

Month

January

February

March

April

Mav

June

July

August

September

October

November

December

Annual Avg

Max Mo Avg

Max : Avg Ratio

Existing EDUs

Load/EDU

Load/Capita

Exist. Overload?

PA0043974

2018

12,512

12,395

10,437

12,160

9,850

10,413

10,817

8,678

10,371

10,734

10,575

11,600

10,879

12,512

1.15

28,941

0.376

0.107

NO

Persons/EDU:

ibs BOD5/day

2021

8,730

9,417

10,197

9,882

10,154

10,733

8,546

7,874

8,066

9,837

11,035

9,504

11,035

1.16

30,946

0.307

0.088

NO

3.5

2022

8,921

8,046

9,179

6,039

7,995

7,910

7,923

7,637

8,743

8,026

9,095

9,297

8,234

9,297

1.13

31,009

0.266

0.076

NO

Existing Hydraulic Design Capacity: Upgrade Planned in Next 5 Years? Future Hydraulic Design Capacity:

11.75 NO

MGD Year:

MGD

Existing Organic Design Capacity: Upgrade Planned In Next 5 Years? Future Organic Design Capacity:

26,700 NO

2019

14,779

11,060

11,647

10,374

9,307

9,167

12,094

8,933

9,685

12,109

11,696

13,362

11,184

14,779

1,32

29,570

0.378

0.108

NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

2020

12,830

11,832

10,851

11,052

9,656

8,714

9,812

8,170

8,783

8,371

9,103

10,752

9,994

12,830

1.28

30,518

0.327

0.094

NO

lbs BOD5/day Year:

Monthly Average Flows for Past Five	Years	(MGD)
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	11011010110	TOT LIAG LESUR (MICD)		
	2019	2020	2021	2022
5.37262	9.79772	6.60554	7.53677	5.93040
7.41131	8.91632	7.10116		6.02140
8.07139	9.78963		†	
7.30078	7.66522	 	 	6.06857
7.60256	8.25896			8.62903
8.04313				7.59703
				6.22953
				5.50492
		6.85695	5.67764	5.20640
		5.66047	7.12382	5.42485
	5.61106	5.68845	5.73051	6,17092
<u> </u>	5.80538	6.44449	5.76575	5.64851
9.31282	6.70695	8.46566	5.34291	6.76954
	8.07139 7.30078 7.60256 8.04313 7.02130 8.11466 9.28798 7.87423 9.77282	2018 2019 5.37262 9.79772 7.41131 8.91632 8.07139 9.78963 7.30078 7.66522 7.60256 8.25896 8.04313 8.02592 7.02130 7.69159 8.11466 6.21275 9.28798 5.70357 7.87423 5.61106 9.77282 5.80538	2018 2019 2020 5.37262 9.79772 6.60554 7.41131 8.91632 7.10116 8.07139 9.78963 6.94752 7.30078 7.66522 8.08821 7.60256 8.25896 7.23763 8.04313 8.02592 6.28828 7.02130 7.69159 6.22494 8.11466 6.21275 6.85695 9.26798 5.70357 5.66047 7.87423 5.61106 5.68845 9.77282 5.80538 6.44449	5.37262 9.79772 6.60554 7.53677 7.41131 8.91632 7.10116 7.30873 8.07139 9.78963 6.94752 8.61681 7.30078 7.66522 8.08821 7.17745 7.60256 8.25896 7.23763 6.36140 8.04313 8.02592 6.28828 6.42324 7.02130 7.69159 6.22494 5.69481 8.11466 6.21275 6.85695 5.67764 9.28798 5.70357 5.66047 7.12382 7.87423 5.61106 5.68845 5.73051 9.77282 5.80538 6.44449 5.76575

Annual Avg Max 3-Mo Avg Max : Avg Ratio	7.93213 8.98662 1.13	7.51542 9.62779 1.28	6.80078 7.42445 1.09	6.56332 7.82077 1.19	6.26659 7.4852 1.19
Existing EDUs	28,941.0	29,569.9	30,517.9	30,946.2	31,009,2
Flow/EDU (GPD)	274.1	254.2	222.8	212.1	202.1
Flow/Capita (GPD)	78.3	72.6	63.7	60.6	57.7
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

2023	2024			
	4424	2025	2026	2027
587.1	286.4	245.8	279.8	219.8
0.1368	0.0667	0.0573		
7.15245	7.21915			0.0512
8.42811	8.50671		*****	7.39285
NO	NO	NO	8.65106 NO	8.71139 NO
	0.1368 7.15245 8.42811	0.1368 0.0667 7.15245 7.21915 8.42811 8.50671	0.1368 0.0667 0.0573 7.15245 7.21915 7.27645 8.42811 8.50671 8.57423	587.1 286.4 245.8 279.8 0.1368 0.0667 0.0573 0.0652 7.15245 7.21915 7.27645 7.34165 8.42811 8.50671 8.57423 8.65106

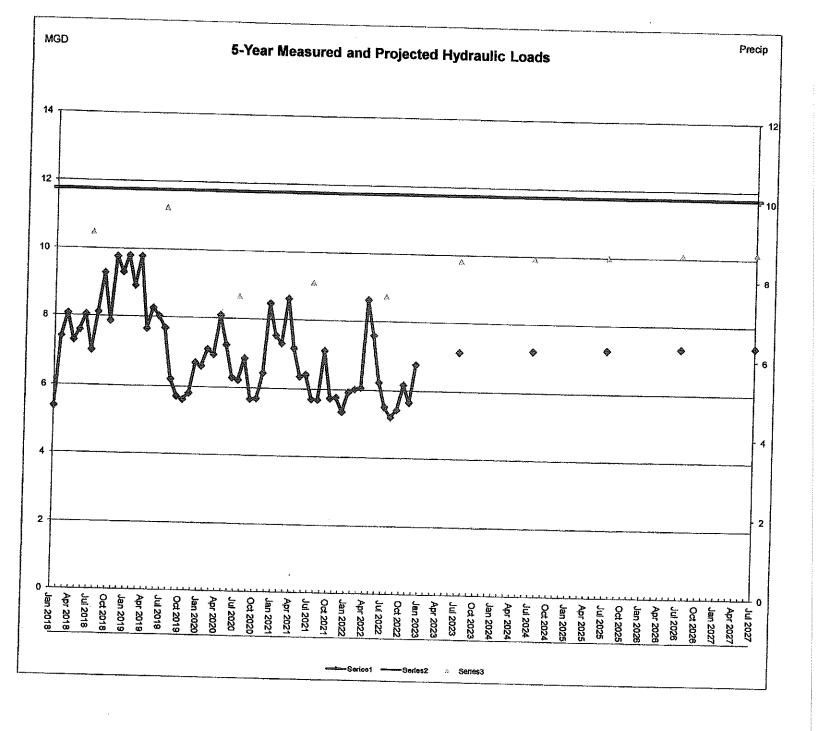
Projected BOD5 Loads for Next Five Years (lbs/day)

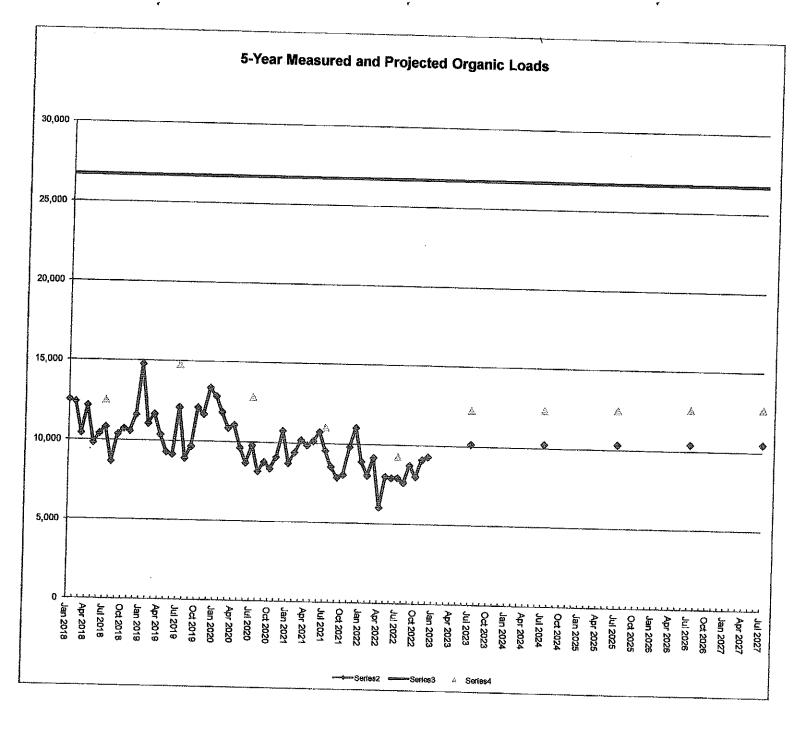
			AND TO HEXL	rive rears (it	is/day)
**	2023	2024	2025	2026	2027
New EDUs	587.1	286,4	245.8	279.8	219.8
New EDU Load	194.241	94.755	81.323	92.571	72,721
Proj. Annual Avg	10,153	10,248	10,329	10,422	
Proj. Max Avg	12,276	12,391	12,489	12,601	10,495
Proj. Overload?	NO	NO	NO	NO.	12,689 NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

rotal Monthly Precipitation for Past Five Years (Inches)						
Month	2018	2019	2020	2021	2022	
January	2.80000	4.48000	3.39000	2.11000	3.69000	
February	7.30000	3.23000	2.65000	6.25000	2.71000	
March	3.90000	5.22000	4.45000	3.75000	3.31000	
April	3.53000	3.09000	5.92000	1.70000	6.20000	
May	8.11000	6.21000	2,84000	4.10000		
June	7.02000	8,29000	2.84000	3.32000	4.93000	
July	6.75000	5.66000	8.61000	<u> </u>	3.06000	
August	9.00000	1.95000	9.38000	3.67000	2.79000	
September	7.65000	2.25000		7.36000	1.76000	
October	2.25000		2.47000	9.51000	5.38000	
November		6.05000	4.19000	4.78000	2.62000	
December	11.03000	1.72000	5.95000	1.06000	2.78000	
Decelimel.	6.10000	4.81000	6,50000	1.76000	5.15000	





2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 2

METER CALIBRATION DOCUMENTATION

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section A: Equipment calibrated quarterly (VFSA Pump Stations)

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Section C: Equipment calibrated quarterly (EAST WHITELAND Township)

Section D: Equipment calibrated quarterly (MALVERN Borough)
Section E: Equipment calibrated quarterly (TREDYFFRIN Township)
Section F: Equipment calibrated quarterly (WILLISTOWN Township)

Date: Third Quarterly 2022 Calibration Data

"Section A"

Valley Forge Sewer Authority Pickering Creek Pump Station Phone # 610-993-9475 Magnetic Flow meters #1 Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Serial #: 0264549

Cal: 1002005509795005 Max Flow: 5000 GPM

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Pickering Creek Pump Station Magnetic Flow meter #3 Instrument Data:

Manufacturer: Sparling Model #: FM656 Serial #: M156262611 Max Flow: 5000 GPM

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Pickering Creek Pump Station Magnetic Flow meter #2 Instrument Data:

Manufacture: Sparling

Model #: FM655-085-110-0 Serial #: H40050191 Max Flow: 5000 GPM

Sign: Minus Coil Freq 4

K factor 31.42 PPG

Offset 1.06

D: 7.7500000K Factor:

Date of Calibration:

11-01-22 Less than .2%

% of Error: Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Pickering Pump Station

OIT

Instrument Data:

Manufacturer: Allen Bradley Model #: Panelveiw Plus 1000 Serial #: (21)AWOGN5VL

Counter: NONE Range: 0-5000GPM

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Pickering Pump Station Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

7/18/22 Ma. = 1/5,001/10,002 GPM

Corrective Action:

none

Valley Forge Sewer Authority Perkiomen Pump Station {935-2150} Magnetic Flow Instrument Data:

Manufacturer: Rosemount

Model #: 8712C

Serial #: 086013121311-01-22 Counter: Electronic Totalize X 1 Cal: #0929605509081011 Max Flow: 1500 GPM

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Perkiomen Pump Station Mission Control

Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

9-8-22

% of Error:

Approx. avg. Low .30%

Comments:

4/12/20 Ma. = -1 / 749 /1497 GPM

Corrective Action:

none

Valley Forge Sewer Authority

Valley Creek Pump Station (phone:#610-291-0587)

Magnetic Flow meter Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Serial #: 0860250715 Cal#: 115560491152011 Max Flow: 300 GPM

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Valley Creek Pump Station

Recorder Instrument Data:

Manufacture: Chessel

Model #: 392

Serial #D8950-001-03-03

Counter: Electronic Totalize X 10

Chart: 0-300

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Valley Creek Pump Station

Totalize

Instrument Data:

Manufacturer: AGM Model #: 4011-10 Serial #: 314-553A Multiplier X 10

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Corrective Action:

none

Comments:

none

Valley Forge Sewer Authority Valley Creek Pump Station

Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

11-01-22

% of Error:

Approx. avg. Low .26%

Comments:

11-01-22 4/20 Ma. = -.2 / 149.7 / 299.7 GPM

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Meadows Station

Magnetic Flow meters Instrument Data: Manufacturer: Sparling CODE 1563

Model #: FM656 Serial #: M078233104 Max Flow: 500 GPM

4 inches

K Factor: 256.01 PPG

Offset: 2.37

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Meadows Station Totalizer transmitter (Thru SCADA) Instrument Data: Manufacturer: Sparling

CODE 1563

Model #: FM656 Serial #: M078233104 Max Flow: 500 GPM

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Meadows Station

Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

11-01-22

% of Error:

Less than .2%

Comments:

2/01/22 Ma. = -.1 / 249.1 / 499.8 GPM

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: Hydro-Ranger Serial #:021805130VU

Primary Device: 6" Palmer Bowlus Flume

Max Flow: 130 GPM Totalize Multiplier: X 10

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Miltronics Model #: Hydro-Ranger Serial #:021805130VU

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station

Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

% of Error: Comments:

Not in Operation

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Oaks Station Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 1007

Primary Device: 6" Palmer Bowlus Flume

Max Flow: 100 GPM Totalize Multiplier: X 10

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Oaks Station Mission Control

Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

% of Error: Comments:

. Not in Operation

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Oaks Station Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 1007 Relay output x 100

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534

Daylesford Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: L406F616000

Cal: 1.0969-9

Max Flow: 1200GPM

Date of Calibration:

1-13-23

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Daylesford Pump Station Recorder Instrument Data:

Manufacture: Endress Hauser

Model #: RSG40 Serial #: L503EB04267 Chart: 0-1200GPM

Tot x 1

Date of Calibration:

1-13-23

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Berwyn Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50

Serial #: HC045B16000 Cal: 2.627 9+205-26-19 Max Flow: 2500GPM

Tot x 1

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Berwyn Pump Station

Recorder
Instrument Data:

Manufacture: Endress Hauser

Model #: 6400 Serial #: 76B4109J4 Chart: 0-2500GPM

Date of Calibration:

1-13-23

Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township

Saybrook Road Pump Station

Magnetic Flow meter Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Max Flow: 1000 GPM Serial #0860156434 Output: 4-20 MADC

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Saybrook Road Pump Station Recorder / Totalizer Instrument Data:

Manufacturer: Honeywell Model #: DR 4300

Serial #: 0336Y360322600001

Counter: Electronic Totalize X 100

Chart: 0-100

Max Flow: 0-1000 GPM

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action

none

"Section C"

East Whiteland Township
Lee Boulevard Pump Station
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Warren Avenue Meter Pit

Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair Less than .2%

% of Error: Comments:

none

Corrective Action:

none

East Whiteland Township

Minor Hill

Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Matthews Road Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Max Flow: 10.0 MGD

Primary: 36" Leopold Lagco Flume Output: 4-20 MADC (tot x 1000)

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township
Matthews Road Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 1eeeerr00

Date of Calibration:

Under repair Less than .2%

% of Error:

none

Comments:

Corrective Action:

none

East Whiteland Township

Woodveiw Apts Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 2534

Max Flow: 50 G.P.M.

Primary:

Output: 4-20 MADC (tot x 100)

Date of Calibration:

6-3-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Woodveiw Apts

Totalizer transmitter (Thru SCADA)

Instrument Data: 9-26-22

Manufacturer: Badger

Model #: 2100 Serial #: 2534 Relay output x 100

Date of Calibration:

6-3-22

% of Error:

none

Comments:

none

Corrective Action:

none

East Whiteland Township Woodveiw Apts Totalize / Display SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

Under repair Less than .2%

% of Error: Comments:

none

Corrective Action:

none

East Whiteland Township

Erin Glen

Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger Model #: 2100

Model #: 2100 Serial #: 4391

Max Flow: 590.0 G.P.M.

Primary:

Output: 4-20 MADC (tot x 100)

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Erin Glen

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 4391

Relay output x 100

Date of Calibration:

1-10-23

% of Error:

none

Comments:

none

Corrective Action:

none

East Whiteland Township

Erin Glen

Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

Under repair Less than .2%

% of Error: Comments:

none

Corrective Action:

none

East Whiteland Township Charlestown Oaks Meter Pit Totalize / Display SCADA (LOCATED AT MILL LANE)

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Instrument Data:

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Charlestown Meadows Station Totalize / Display SCADA (LOCATED AT MILL LANE) Instrument Data:

Manufacture: Maple System Model #: HM15070

Serial #120609618 Multiplier X 10

Under repair

Date of Calibration: % of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section D"

Malvern Borough (644-1819) Tide Water Meter Pit Ultrasonic Flow meter Instrument Data: Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair Less than .2%

% of Error: Comments:

none

Corrective Action:

none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Receiver Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Minor Hill Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Erin Glen

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10 Date of Calibration:

Under repair Less than .2%

% of Error: Comments:

none

Corrective Action:

none

"Section E"

Tredyffrin Township Wilson Rd. Pump Station Magnetic Flow meter/ Totalizer Instrument Data:

Manufacturer: Siemens Model #: 5100W

Serial #: 7ME6910-1AA10-1AA0

Max Flow: 1000 GPM

Date of Calibration:

10-06-22

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Tredyffrin Township Wilson Rd. Pump Station SCADA: Display

Manufacturer: Allen Bradley

Model #: 1771 P7

Date of Calibration:

10-06-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section F"

Willistown Township (610-647-5300 Ext.245) Jim cell (610-656-2074) Cedar Hollow Road Meter Pit

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Mobrey Model #: MCU 900 Serial #: 1780418 Max Flow: 3.000 MGD

Primary: 18" Open Flow Nozzle

Multiplier: X 1000

Date of Calibration:

12-30-22

% of Error:

Less than .5%

Comments:

none

Corrective Action:

none

Willistown Township (610-647-5300) Cedar Hollow Road Meter Pit Recorder

Instrument Data:

Manufacturer: Future Design Controls

Model #: 5000

Serial: #: 11-02710FD Max Flow: 3.00 MGD

Chart: 0-100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT ANNUAL PRETREATMENT REPORT

CALENDAR YEAR 2022 VALLEY FORGE SEWER AUTHORITY CHESTER COUNTY, PENNSYLVANIA

SECTION 2



Valley Forge Sewer Authority

333 Pawling Road Phoenixville, Pennsylvania 19460 610-935-1553 Phone 610-983-9684 Fax



March 22, 2023

CERTIFIED MAIL RETURN RECEIPT REQUESTED Parcel Number 7019 0160 0000 2632 8971

U.S. EPA Region 3 Pretreatment (3WD41) Four Penn Center 1600 John F Kennedy Center Philadelphia, PA, 19103-2852

RE: Annual Pretreatment Report for Calendar Year 2022

Attention:

Enclosed please find one (1) copy of the required signatory page and analytical data for Valley Forge Sewer Authority's 2022 Annual Pretreatment Report. The report in electronic format has been already sent along with the analytical data summary.

If you have any further questions please contact me at the number listed above.

Very truly yours,

Richard D. Taylor Laboratory Supervisor

ENCLOSURES

Facility Na VALLEY FORGE SEWER AUTHORITY

Location: INFLUENT Continue Continue		-		10000			A CANADA CONTRACTOR								
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Facility Na VALLEY FORGE SEWER AUTHORITY Facility ID: PAP04397 UNITS: MG/KG

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Email File to EPA Region 3

The signature certification page must be printed, signed, and sent in hard copy to US EPA Region 3 at the address below. The QR code must be visible.

Attn: U.S. EPA Region 3 Pretreatment [3WD41]
Four Penn Center
1600 John F Kennedy Blvd
Philadelphia, PA 19103-2852

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Xeman J man 5
Authorized Signatory Official

03/14/2023

Date

Forand T. Hachek Se /Gen

Print or type name and title

Note: The Signatory Official is the person authorized by the POTW to sign the Annual Report (see 40 CFR Section 403.12(m)).

The following documents may be attached to the email or hard copies can be mailed to US EPA Region 3

- 1. A copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.
- 2. The results of all influent monitoring results that were performed as required in the Pretreatment section of your state issued NPDES permit. The results must include the name of the pollutant, measured concentration, analytical method used, detection
- 3. The results of all effluent monitoring results from the monitoring required by the Pretreatment section of your state issued NPDES permit. Provide monitoring results for those pollutants that were reported above the detection limit. The results must include the
- 4. The results of all monitoring results for biosolids (sludge) monitoring for any pollutants listed in 40 CFR Part 122, Appendix D, Table II, III, and V. This is for final sludge to disposal only. This monitoring may have been required by your state issued NPDES permit, or

Time Stamp: User Stamp:

Annual Report of POTW Implementation

Last Updated: 11-18-2022

Disclaimer

This model is intended to be used as a tool to submit the Pretreatment Annual Report of the EPA Region 3 Industrial Pretreatment Program. All other uses are strictly prohibited. Unless specified otherwise, enter data for the reporting year.

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Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

Facility Na VALLEY FORGE SEWER AUTHORITY

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Facility No. VALLEY FORGE SEWER AUTHORIT

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Facility Na VALLEY FORGE SEWER ALITHORITY

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974

Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Reporting I	Period
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January 1 to December 31 of year 2022

POTW Contacts

Control Authority Name	VALLEY FORGE SEWER AUTHORITY
NPDES Permit No	PA0043974
Permit Issuance Date	12/11/2019
Permit Expiration Date	12/31/2024
Facility Name	VALLEY FORGE SEWER AUTHORITY
Facility Address1	333 Pawling Road
Facility Address2	
Facility City	PhoenixvIlle
Facility County	Chester
Facility State	Pennsylvania
Facility Zip	19460-2656

Pretreatment Contact(s) - List all Pretreatment Personnel

	Name	Title	Email
1	Richard D. Taylor	Laboratory Supervisor	rtaylor@vfsa.com
2	Robin D. Heffner	Compliance Specialist	pretreat@vfsa.com
3	Dennis F. Campanella	Compliance Specialist	pretreat@vfsa.com
4			
5			
6			

Permit Signatory	Leonard J. Pinchok Sr.
Permit Signatory Title	General Manager
Contact Phone	610-935-1553
Contact Email	lpinchok@vfsa.com
POTW Site Address	333 Pawling Road, Phoenixville, PA: 19460- 2656:

Additional Information

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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POTW Information

NPDES Effluent Violations?	-NA	Parameter(s)	
Date of Violations	FNA-	a translation of the second se	The standard by the standard of the standard o
Cause of NPDES permit violations?			
Sludge Disposal Method 1	Land Application, Class A		
Sludge Disposal Method 2	Land Application, Class B		
Sludge Disposal Method 3	Landfill (only If necessary)		
Highest Treatment Level	Advanced Secondary		
Treatment Types			
Primary Clarification?	YES	Lagoon?	EVER SERVICE SERVICE SUIT
Secondary Clarification?	YES	Anaerobic Digestion?	
Activated Sludge?	YES	Aerobic Digestion?	V80400000000000000000000000000000000000
Trickling Filter?		Chlorination?	
Oxidation Ditch?		Dechlorination?	
Biotowers?		UV Disinfection?	YES
Rotating Biological Contacts?		BNR?	MENON MARKANAN
Other?		The second second	
POTW Design Flow (mgd)	11.75		
POTW Actual Flow (mgd)	5,688		
Total SIU Flow (mgd)	0.293		
% Industrial Flow	5 %		
POTW Organic (BOD) Design Capacity (lbs/day)	26700		
POTW TSS Design Capacity (lbs/day)	19599		
POTW Ammonia (NH3) Design Capacity (lbs/day)			
Actual or Estimated total Flow for			
Commercial (Non-SIU) Dischargers (mgd)			

Additional Information

Facility Name: #N/A
Parmit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Program Implementation

lumber of Permitted Industrial Users as of December 31 IUs	4		
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ukai 5103 hther Permitted iUs	0	1	
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ion-Significant ClUs			
The state of the s	-570	-	
IUs with No/Expired Permit as of December 31			
IUs with Administratively Extended Permits > 180 Days			
Number of SIUs with current control mechanisms			
Number of NSCIUs that have violated any pretreatment standard			
والمنطقة المناوية والمناوية والمنطق المنطقة والمنطقة والم	7/-3		
Number of SIUs in significant non-compliance (SNC) as of December 31			
Addition of all and the all an	CIUs	Non Categorical SIUs	Total SIUs
NC Self-monitoring		0	
NC Reporting		0	
NC PT Standards		0	
NC Prohibitions			
NC Compliance Schedule		0	
NC Pass Through/Interference		0	
SNC Other SNC Violations		0	
		•q	
Number of SIUs in significant non-compliance (SNC) at any time		2]	
Number of non-SIUs in significant non-compliance (SNC) at any time		<u> </u>	
Number of SIUs in SNC during the previous calendar year		0	
SNC during the July to December period		9	
CONTRACTOR OF THE STATE OF THE		neg .	
Permitted Non-SIUs With Unknown Compliance Status		<u>0</u>	
SIUs With Unknown Compliance Status		<u>의</u>	
Does the ERP include escalating enforcement actions for SNC	YES	3	
and of the second of the secon			
•	CIUs	Non Categorical SIUs	Total SIUs
Number of SIUs with compliance schedule as of December 31		0	
HARMAN ALEMA WAN SAMBANIA			

Facility Name: #N/A Permit Number: PA0043974 Reporting Period: 2022

POTW Name: VALLEY FORGE SEWER AUTHORITY

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Enforcement Actions

	Non-SIUs	SIUs	ClUs
Number of NOVs	0	5	2
Number of Formal Enforcement Actions	Ö	O	0
Number of different IUs with Formal Enforcement Actions	Ō	0	0
Number of SIUs on formal compliance schedule	Ö	0	n
Formal actions at any time during the reporting year including Advan			

Formal actions at any time during the reporting year including Administrative Orders, show cause hearings, out-of-court settlements that are formal settlements, termination of service, formal compliance schedules, penalty actions EXCEPT civil or criminal suits.

	Civil	Criminal	Total
Number of suits filed against SIUs	0	0	0
	·		
	Non-SIUs	SIUs	
Number of Different IUs From Whom Penalties Were Collected	0	0	
Total Penalties Collected	\$-	Ś	
The second section of the sect			
Number of IUs Published As Being In SNC	0		
A service of the serv			
Additional Information			
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Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Compliance Monitoring	Non-SIU	siu
Number of individual permits issued	0	0
Number of general permits issued	0 4444 4444 4444	Company of the Compan
Number of inspections in the reporting year	Managara 0	territorio (O)
Overview description of Non-SIU inspections	Not applicable	
Number of SIUs not inspected during the reporting year	0	
Number of SIUs that submitted required Self-Monitoring Reports	Ō	
Number of SIUs not sampled during the reporting year	0	
Number of SIUs in SNC With Self-Monitoring Requirements That Were Not Inspected or Sampled	0	
Additional Information		

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUT

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Program Implementation - Resources

Number of Pretreatment FTEs	1
Significant Changes (+/- 20%) to The POTW's Pretreatment Program Budget or Staffing?	-NA-
Source of Budget	Initial, Annual and Re-p
Total Pretreatment Program Budget	-NA-
Number of Jurisdictions Covered By Pretreatment Program	R
Adequate delegation in each jurisdiction?	YES
Miscellaneous Developments and Special Initiatives?	-NA-
One VFSA laboratory employee position is designated as full time for industrial	
pretreatment, although industrial pretreatment program implementation and	
enforcement is accomplished through the collaborative efforts of the laboratory staff. As	
equired, other VFSA laboratory and administrative employees are also available to	
ensure implementation.	
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Additional Information	

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Program Implementation - Hauled Waste

Does the POTW receive any discharges of	frie construction
Receive Groundwater From Hydrocarbon Cleanup Site?	NO
Receive Haided Septage (Domestic Only)?	YES THE PROPERTY OF
Receive Hauled Waste From Industrial Sources?	YES
Receive Hauled Waste From Commercial Sources?	YES
Receive Hauled Categorical Waste?	YES
Receive Hauled Grease Interceptor/Trap Waste?	NO CONTRACTOR
Receive Landfill Leachate?	NO
Receive CERCLA Cleanup Wastes?	NO.
Receive Hazardous (RCRA) Waste?	NO.
RV Dump Stations in Service Area?	NO CONTROL OF
Receive Other Unique Waste?	NO
Receive Oil & Gas Waste from Stripper wells?	NO WESTERN

As defined at 40 CFR Part 261 and delivered by truck, rail or dedicated pipeline

If you accept any trucked or hauled waste, indicate all of the following that apply to you	POTW
If you accept any trucker of thanks it bets?	YES
Legal Authority To Control Hauled Waste?	VES
POTW issues Permits For Hauled Wastes?	VEC STATESTICS
POTW Has A Designated Disposal Site For Hauled Wastes?	ure distribution
POTW Controls Access At The Designated Disposal Station?	1153
POTW Uses A Manifest System To Track/Control Haufed Wastes?	YES
POTW Believes That Illegal Dumping May Be Occurring In Its Jurisdiction?	NO PROPERTY.
POTM Believes That megal pumping may	,

What parameter if any do you surcharge	vec detactions
Surcharge for BOD?	Ves
Surcharge for TSS?	NO.
Surcharge for Oil and Grease?	NO
Surcharge for Flow?	NO
Surcharge for Ammonia?	NO
Surcharge for COD?	NO
Surcharge for TKN?	NO
Surcharge for Other Parameters?	~

Additional Information	
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Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022

POTW Name: VALLEY FORGE SEWER AUT

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Program Implementation - Pass/INTF

Instances Of Interference At The POTW?	NO
Instances Of Pass Through At The POTW?	NO
Receive Notification Of The Discharge Of Any Hazardous Waste?	NO
If so, names of IUs	
	Instances Of Miterierence At The POTW? Receive Notification Of The Discharge Of Any Hazardous Waste? If so, names of IUs

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Attachment A: List of CIUs/SIUs

			CORPORACE	T INIT					SIL	SIU INFO
			PERIMIT INFO	INC						
					Permit					
SIU		Issued	Effective	Expires	Type	Address	County	Sampled	Inspected	MRS
1 Beyond Meat 10/28/2021 10/28/2024 6/30/24	T. Contraction of the Contractio	10/28/2021	10/28/202	1 6/30/202		Devault Lane, Devault, PA 19432	CHESTER		1	
2 Fuirebio Diagnostics 8/25/2021 8/25/2021 6/30/2024	gnostics	8/25/2021	8/25/202	1 6/30/202	24 lP	201 Great Valley Parkway, Malvern, PA 193 CHESTER	PA 193 CHESTER		_	
3 LOPAREX		8/25/2021 8/25/2021 6/30/2024	8/25/202	1 6/30/202	24 IP	2400 Continental Blvd, Malvern, PA 19355 CHESTER	19355 CHESTER		T	
4 Janssen Biotech Inc. 8/25/2021 8/25/2021 6/30/2024	ech Inc.	8/25/2021	8/25/202	1 6/30/20	24 IP	90 Great Valley Parkway, Malvern, PA 1934 CHESTER	A 1934CHESTER			
5 Catalent		10/28/2021	10/28/202	10/28/2021 10/28/2021 6/30/2024	24 IP	333 Phoenixville Pike, Malvern PA 19355 CHESTER	9355 CHESTER		1	-
6 Paoli Memorial Hospi 8/25/2021 8/25/2021 6/30/2024	ial Hospi	8/25/2021	8/25/202	1 6/30/20,	24 IP	255 W Lancaster Avenue, Paoli, PA 19301 CHESTER	19301 CHESTER			-
7 Accupac, Inc.		2/18/2021	2/1/202	2/18/2021 2/1/2021 1/31/2024	24 IP	1501 Industrial Bivd, Mainland, PA 19451 MONTGOMERY	19451 MONTGOME	RY	2	1
8 Colorcon		2/18/2021	2/1/202	2/18/2021 2/1/2021 1/31/2024	24 IIP	415 Moyer Blvd, West Point, PA 19486	486 MONTGOMERY	RY	2	1
0										
10 Brenntag Northeast Inc	rtheast.	22				81 W. Huller In, Reading, PA 19605-9278	9278 BERKS			
11 Colorcon Harleysville	rlevsville					275 Ruth Rd, Harleysville, PA 19438	MONTGOMERY	.RY		
12 Covne Chemical	ical					3015 State Rd, Croydon, PA 19021	BUCKS			
11 CHARACTER 1	は公理が									
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tion	Charlestown Twp	Tradyffrin Twn	East Whiteland Twp	East Whiteland Twp	wn Twp	Lower Salford Twp	Upper Gwynedd Twp	inee Twp	ila I wp	СM	
Jurisdiction	Charles	Tradyf	East W	East W	Willistown Twp	Lower S	Opper	Ontelaunee Twp	Franconia Iwp	Bristol Twp	
G. S. A. C.											
WWG	-based	-based	-based	-paseq	-based	-pased	-pased				
Limits Type MWG	Concentration-based	Concentration-based	entration	entration	Concentration-based	entration	entration				
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# of self- monitorings conducted/ required	24/4	4/4	14/17	4/4	2/2	0/0	3				100000000000000000000000000000000000000

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Facility Name: #N/A
Permit Number: PA0043974 .
Reporting Period: 2022

POTW Name: VALLEY FORGE SEWER AUTHORIT

Return to Home

Attachment B: Copy of Newspaper Notice of SNC

Provide a copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.

Copy of Newspaper Notice of SNC submitted?	-NA-

Additional Information

Facility Name: #N/A Permit Number: PA0043974 Reporting Period: 2022

POTW Name: VALLEY FORGE SEWER AUT

Return to Home

Attachment C: Description of Each Incidence of Pass Through or Interference
Provide a description of each incidence of Pass Through or Interference at the wastewater treatment plant or
collection system during the year, the cause if determined, and any actions taken by the POTW in response
to the Pass Through or Interference.

	Description of Pass Through/Interference
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Additional Information	

Facility Name: #N/A Permit Number: PA0043974 Reporting Period: 2022 POTW Name: VALLEY FORGE SI

Return to Home

Attachment D: Description of Significant Change in Program Funding/Staffing An explanation of any significant decrease (20% or greater) in pretreatment funding or staffing of the POTW's Pretreatment Program.

Description of Significant Change in Program Funding/Staffing

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Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Attachment E1: Permitted Industrial Users (part 1 of 2)	Provide a printout or listing of all permitted non-SiUs

1-\text{-\text{ductional information}}	ď	Permitted Non-SIUs		Address	County	Jurisdiction	SIC Code	SIC Code NAICS Code	Rationale for permitting these non-SiUs	ing these non-SiUs	1
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Facility Name: VALLEY FORGE SEWER AUTHORITY

Permit Number: PA0043974

Reporting Period: 2022

POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Attachment E2: Permitted Industrial Users (part 2 of 2)
Provide a printout or listing of all SIUs covered by a General Permit

	SIUs covered by a General Permit	Justification Criteria
1	-NA-	
2		
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	Addinoneriows:	
	Additional Information	
	-NA-	

POTW Name: VALLEY FORGE SEWER AUTHORITY Facility Name: #N/A Permit Number: PA0043974 Reporting Period: 2022

Return to Home

Attachment F: IUs in SNC During the Reporting Period For those IUs in SNC during the Reporting Period

1 - NA- 2 - NA- 3 4 4 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Enforcement Action	Action	Parameter(s) Violated	Date in Compliance	Penalties Assessed	Penalties Penalties Quarters during Assessed Collected in SNC PRP?	Quarters of In SNC	during PRP?
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orting Period: 2022 POTW Name: VALLEY FORGE SEWER AUTHORITY

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Attachment G: Modification History

	Type of Modification	Description of Modification	Date of PN	Approval
1	LOCAL LIMITS	LOCAL LIMITS UPDATE (NON-S	-NA-	6/15/2022
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Expected Modifications	
-NA-	

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2022
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Attachment H: Influent/Effluent and Biosolids Monitoring

	YES Includes priority pollutant scan where applicable
Decelle Culmitted or Ottorhod?	
Biosolids Monitoring Results Submitted or Attached	1113 management and the second

Additional Information

Please specify the email addresses of up to five individuals who should each receive a courtesy copy of this Annual Report

Here is an example:

	smith	•	john	@	modernlabs		org	smith.john@modernlabs.org
1	SHUART		RYAN	@	EPA		GOV	SHUART, RYAN@EPA. GOV
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CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2022 VALLEY FORGE SEWER AUTHORITY CHESTER COUNTY, PENNSYLVANIA

SECTION 3

SECTION 3

PARNTER MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORTS

EASTTOWN TOWNSHIP

EAST WHITELAND TOWNSHIP

MALVERN BOROUGH

TREDYFFRIN TOWNSHIP

VALLEY FORGE SEWER AUTHORITY

WILLISTOWN TOWNSHIP

AQUA RESOURCES – VALLEY CREEK TRUNK SEWER

MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

EASTTOWN TOWNSHIP CHESTER COUNTY, PA



Birdsboro Office 321 North Furnace Street, Ste. 200 Birdsboro, PA 19508 T 610.374.5285

March 13, 2023

Richard Taylor, Laboratory Manager Valley Forge Sewer Authority 333 Pawling Road Phoenixville, PA 19460

RE:

Easttown Township 2022 Chapter 94 Report ARRO # 50800.11

Dear Mr. Taylor:

On behalf of our client, Easttown Municipal Authority, please find enclosed the Authority's 2022 Annual Report for inclusion within the 2022 VFSA Chapter 94 Report. We trust that you will find the enclosed information satisfactory.

As always, if you have any questions or require any additional information, please feel free to contact me via email at <u>bill.bohner@arroconsulting.com</u> or telephone at 610.495.2102.

Sincerely,

William L. Bohner, Jr., P.E.

Vellain a. Ro

ARRO Consulting, Inc., Easttown Municipal Authority Engineer

WLB:

Enclosure

c: Donald C. Curley, Administrator – Easttown Municipal Authority (w/ encl.)

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CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

2022 EASTTOWN MUNICIPAL AUTHORITY CHESTER COUNTY, PENNSYLVANIA

Prepared by:

ARRO CONSULTING, INC. 321 North Furnace Street, Suite 200 Birdsboro, Pennsylvania 19508 (610) 374-5285

Prepared for:

EASTTOWN MUNCIPAL AUTHORITY
566 Beaumont Road
Devon, Pennsylvania 19333
(610) 687-3000

Preparer

Signature

William L. Bohner, Jr., P.E. ARRO Consulting, Inc.

Authority Engineer

EASTTOWN MUNICIPAL AUTHORITY CHESTER COUNTY, PENNSYLVANIA

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT OPERATING YEAR 2022

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1. INTRODUCTION

This Municipal Wasteload Management Annual Report is prepared in accordance with the Pennsylvania Department of Environmental Protection (Department) Chapter 94 for the Easttown Municipal Authority sewerage collection and conveyance system tributary to the Valley Forge Sewer Authority Wastewater Treatment Plant.

Easttown Municipal Authority (Authority) owns the sanitary sewer collection and conveyance systems within Easttown Township under Water Quality Management Permit No. 1503401. Easttown Township operates and maintains the facilities.

The Authority sanitary sewer collection system provides for collection of domestic sewage from Easttown Township, a suburban residential area encompassing several watersheds. Wastewater from each of these watersheds flows by gravity to one of twelve pumping stations, which ultimately convey the wastewater to a wastewater treatment plant operated by the Valley Forge Sewer Authority via the Aqua Resources, Inc.'s Valley Creek Trunk Sewer (VCTS) collection system. A small portion of the system, consisting of approximately 80 EDUs in the Valley Forge Road area, drains through both the Tredyffrin Township and Radnor Township collection systems into the Radnor-Haverford-Marple Authority system. There is also a small portion of the system, comprised of approximately 176.4 EDUs, that drains through Tredyffrin Township to Upper Merion Township's Trout Run Water Pollution Control Center.

The sanitary sewer collection system is comprised of roughly 319,415 lineal feet of Authority gravity sewer and 15,980 lineal feet of private gravity sewer, with approximately 1,743 manholes, and 8,011 lineal feet of low pressure force main. There are approximately 2,945 residential homes and 317 small businesses connected to the collection system. The conveyance systems are comprised of twelve (12) sewage pump stations with approximately 41,344 lineal feet of force main.

2. HYDRAULIC LOADINGS

Sewage flow from the Authority system is measured at three pumping stations, Berwyn, Daylesford and Saybrook, which each convey wastewater directly into the Tredyffrin Township collection system.

Exhibit 'A' contains a summary of Easttown total monthly flow to VFSA for 2022 and the previous 4 years, along with the 2022 monthly rainfalls. The 2022 monthly flows and rainfalls are charted in Exhibit 'E'.

During 2022 the measured sewage flow from the Authority sewer system averaged 1,153,670 gallons-per-day (1.154 MGD). This represents a decrease of approximately 113,592 gallons-per-day versus 2021 flows.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The total number of EDUs connected at the end of 2022 was 3815.7, which produced an average annual flow of 1.154 MGD and 302.3 gpd/EDU.

The number of EDUs and total average daily flow over the next five (5) years are both projected to increase as follows:

		Additional # of EDUs	<u>Total # of EDUs</u>	Total Flow (MGD)*
Actual	2022	4.0	3,815.7	1.154
Projected	2023	97.8	3,913.5	1.183
Projected	2024	97.8	4,011.3	1.213
Projected	2025	97.8	4,109.1	1.242
Projected	2026	97.8	4,207.0	1.272
Projected	2027	97.8	4,304.8	1302

^{*} Projected flows are based on 2022 average gpd/EDU.

The yearly Additional # of EDUs was derived by interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the *Act 537 Supplement for Wilson Road Force Main*, Table 3-3, Average Daily Wastewater Flow Projections.

A summary of the EDUs, flows and organic loadings over the last five years and those projected for the next five years, along with graphs depicting the past and projected flows and loadings, are included in Exhibit 'B'. The 2022 average annual loading was

estimated to be 2,165 lbs./day based on an assumed BOD5 concentration of 225 mg/l. The maximum 1-month loading was estimated to be 3,160 lbs./day. The average 5-year ratio organic peaking factor is 1.41.

4. <u>SEWER EXTENSIONS</u>

Exhibit 'C' contains an updated Easttown Township Approved and Projected EDU map and an accompanying tracking list for the sanitary sewer system. EDUs are tracked by both Authority pump station drainage area and unmetered drainage area to the Valley Forge Sewer Authority wastewater treatment plant, by unmetered drainage area to the Radnor-Haverford-Marple Sewer Authority wastewater treatment plant and by unmetered drainage area to the Upper Merion Township Trout Run water pollution control plant. There are currently 3,815.7 EDUs connected to the Easttown Township sanitary sewer system with an estimated 4,688.4 EDUs projected to be connected by 2040. The tracking list and map is updated periodically as requests for connections are made and the Department approves EDUs.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

The sewer system is maintained by the Township Sewer Crew. The basic operation force consists of one (1) Crew Chief, and three (3) Pump Station Operators. This group is responsible for routine sewer and pump station maintenance and repairs. The Sewer Crew personnel on a daily basis check all pump stations with various readings and notations made for each station as well as conditions and status of major operational components. Each pump station is equipped with various alarms and an automatic dialer to notify Sewer Crew personnel in the event of an equipment malfunction or an unusual system condition. The Sewer Crew also has computer software installed at the Municipal Garage and at the Crew Chief's home that allow real-time monitoring of each pump station. Additionally, a weekly "on-call" rotation is in place whereby two of the fourman crew is available at any given time to handle emergency situations.

The Township contracts with Municipal Maintenance Company (MMC) to provide quarterly detailed inspections of each station within the system. MMC generates a report

detailing specific conditions and suggested corrective measures. Township personnel formulate a plan to perform the necessary maintenance and repair, either in-house or contracted services. All necessary repairs are made in a timely manner.

6. CONDITION OF THE SEWER SYSTEM

During 2022, three (3) sanitary sewer overflow events were reported within the Authority's collection system.

- Three (3) overflow events occurred within the Berwyn Pump Station drainage area. The existing WQM permit issued by PADEP prevents the Township from setting the pump variable frequency drives to ultimate station capacity. PADEP directed the Township to submit an Act 537 Special Study, which was submitted and approved in 2020. The resetting of the VFDs to ultimate capacity would likely mitigate the likelihood of future wet weather events. The ACP portions of the Berwyn force main will also be replaced in 2023.
 - February 23, 2022: Sewage was found leaking from a hole in the Berwyn Pump Station force main near Tredyffrin Township's Lancaster Avenue Pump Station. The flow was stopped by bypass pumping and the leaking pipe section was replaced.
 - April 6, 2022: Sewage was found leaking from a break in the Berwyn Pump Station force main within the easement near Lindsey Avenue. The flow was stopped by bypass pumping and the leaking pipe section was replaced.
 - October 16, 2022: A minimal amount of sewage was found flowing out of a
 Berkley Road sanitary manhole. A blockage in the 8" sewer main caused the
 overflow. The sewer was jetted to clear the blockage.

The Authority has televised certain portions of the sanitary sewer system in the Berwyn, Daylesford, Devon Hunt, Exeter, Millbrook, Newtown, Pinecroft, Saybrook and Spring Knoll Pump Station drainage areas. From 2012 through 2017 approximately 79,369 ft. of sanitary sewer has been televised. The televising found 80 pipe segment defects, 72 lateral defects and 23 manhole defects that were allowing or had potential to allow infiltration into the sanitary sewer system.

In 2022, the Authority completed an Inflow and Infiltration (I/I) intervention and evaluation report. The report recommended that the following drainage areas should receive further attention:

- 1. Berwyn Drainage Area
- 2. Daylesford Drainage Area
- 3. Newtown Drainage Area
- 4. Devon Hunt Drainage Area

Recommended actions for these areas included:

- Televising of the sanitary sewers.
- Making internal pipe repairs during the televising process.
- Air testing the sanitary sewer segments upon completion of televising and completion of repairs.

The Authority initiated the implementation of the recommended courses of action in the Berwyn and Daylesford drainage areas and the Authority contracted with Standard Pipe Services for this work. To date, Standard Pipe Services has televised nearly 9,700 LF of sewer main, air tested nearly 800 pipe joints and grouted nearly 750 joints and cracks.

This work will remain in progress in an effort to continue to reduce I/I in the Authority's collection system.

7. <u>SEWAGE PUMPING STATIONS</u>

The Township operates twelve (12) pumping stations owned by the Municipal Authority. All pumping stations are equipped with magnetic flow meters that measure the flows. Exhibit 'D' contains the 2022 flow information for each pump station.

During 2022 no overflow event was reported at any of the Authority pumping stations.

As a result of completed and planned I/I reduction work it is anticipated that there will be no need to upgrade or expand the Saybrook Pump Station.

8. PUMPING STATION FLOW DURING MAJOR STORM EVENTS

The Department requires Chapter 94 reports to include a discussion of metered flow data for the collection and conveyance systems, specifically during major storm events (greater than 1.0 inch of rain).

Exhibit 'F' contains a summary of Easttown total monthly flow versus rainfall to VFSA from its three major pump stations – Berwyn, Daylesford and Saybrook – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'G' contains a summary of monthly flow versus rainfall at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'H' contains a summary of the rainfall and the metered flows at all twelve (12) of the Authority's pump stations for the eight (8) days in 2022 where rain fell more than 1-inch plus in a 24-hour period. The charts in Exhibits 'I' and 'J' were developed from this data.

Exhibit 'I' contains a chart for the Berwyn, Daylesford, and Saybrook Pump Stations during the eight (8) rain events. As related to yearly average flow, the peaking factors for the three pump station meters during the rain events are as follows:

Pump Station	Yearly Avg. Flow	Rain Events	Peaking Factor
1	(MGD)	<u>High</u>	<u>Average</u>
Berywn	0.711	2.38	1.49
Daylesford	0.259	1.80	1.34
Saybrook	0.107	1.46	1.12

In conclusion, the peaking factors for Berwyn, Daylesford and Saybrook Pump Stations during the high rain event are within the Department's current peaking factor guidelines. However, as part of its CMP program, the Authority will continue to actively pursue I/I in the drainage areas of contributing upstream pump stations to Berwyn Pump Station, especially Devon Hunt and Exeter.

Exhibit 'J' contains the charts of peak rain event flows at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens. As related to yearly average flow, the peaking factors for the nine (9) pump stations during the rain events are as follows:

Pump Station	Yearly Avg. Flow	Rain Events	Peaking Factor
	(MGD)	<u>High</u>	Average
Berwyn Estates	0.006	1.28	1.13
Devon Hunt	0.066	2.31	1.48
Exeter	0.008	3.67	1.79
Fox Creek	0.014	2.42	1.60
Millbrook	0.005	1.90	1.24
Newtown	0.143	3.07	1.75
Pinecroft	0.003	2.41	1.42
Spring Knoll	0.042	2.49	1.48
The Greens	0.019	1.50	1.29

9. <u>INDUSTRIAL WASTES</u>

There are no known industrial waste dischargers within Easttown Township.

10. CORRECTIVE ACTION PLAN

The Department mandated the Authority to develop a CMP/CAP in December 2010. ARRO Consulting, Inc. prepared a Capacity Management Plan (CMP) and an associated Strategic I/I Reduction Plan, which collectively makes up the Corrective Action Plan (CAP) that sets forth the actions the Authority would take to reduce overloads and provide additional capacity in its sanitary sewer system. The CAP/CMP that was submitted to PADEP by transmittal letter dated February 10, 2011 and, after minor revisions, was approved by PADEP by letter, dated October 25, 2011.

PADEP issued a June 2, 2021 letter to Easttown releasing from the CAP/CMP requirements the Daylesford Pumping Station, Saybrook Pumping Station and VFSA Unmetered drainage areas, while maintaining the CAP/CMP in the Berwyn Pumping Station drainage area and its subdrainage areas.

11. <u>CALIBRATION REPORTS</u>

The flow meters at Berwyn, Daylesford and Saybrook Pump Stations were calibrated during 2022. Copies of the calibration reports are included in Exhibit 'K'.

EXHIBITS

Exhibit A

Easttown Municipal Authority

Past & Present Hydraulic Loading Data

Table 1

TABLE 1

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT HYDRAULIC LOADING DATA (MGD) 2018 - 2022

Rainfall (in.) 45.29 3.31 6.20 4.93 3.17 2.63 1.92 5.38 3.42 3.69 2.78 2.71 Total = 1.43535 1.16782 1,45441 0.92014 0.83422 1.01276 1.21369 1.68381 0.88092 1.16623 1.09090 1.31392 1.10523 1.15367 1.90216 1.64141 1.46320 1.01606 0.97765 1.26726 1.19776 1.21584 1.21338 1.06938 1.55888 1.49227 0.99526 1.10531 2021 1.28420 1.50799 1.27130 1.08014 1.37650 1.20403 1.04589 1.28341 1.21179 .29868 1.33731 1.14210 1.28183 1.73565 2020 1.68756 1.43215 1.80822 1.87585 1.40490 1.10147 0.98859 1.86127 1.43598 1.37107 0.92726 0.90901 1.34999 1.20480 2019 1.44028 1.30148 1.29249 1.21999 1.31642 1.06600 1.30994 1.76115 1.34060 1.61629 0.86945 1.19748 1.53474 97777. Max. 3 Month Ave. Flow (MGD) Average Annual Flow (MGD) PEAKING FACTOR September November December February January October August Month March April June May July

	1.232
Flow Peaking Factor:	Average 5 Year Ratio

1.240

1.300

1.070

1.340

1.210

Max. 3 Month Ave. Flow/

Ave. Annual Flow

Jan - Dec 2022: Rain Data from USGS Site 01473169 Valley Creek near Valley Forge.

Exhibit B

Easttown Municipal Authority

Past, Present & Projected EDUs, Flows and Organic Loadings

Table 2 & Table 3 and Graph 1 & Graph 2

TABLE 2

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT ORGANIC LOADING DATA (Ibs/Day) 2018 - 2022

Month	2018	2019	2020	2021	2022
January	1 632	3 520	NFC C	3000	7100
	1,00	370,0	t/7,7	2,323	2,0/4
February	2,289	3,167	2,437	2,746	2,277
March	2,703	3,493	2,410	3,569	2,191
April	2,442	2,636	2,830	2,800	3,160
May	2,425	2,695	2,509	2,248	2,729
June	2,470	2,687	2,259	2,282	2,188
July	2,000	2,573	2,143	1,907	1,727
August	2,247	2,067	2,386	1,835	1,565
September	2,880	1,740	1,963	2,277	1,653
October	2,458	1,706	2,027	2,007	2,047
November	3,305	1,855	2,405	2,074	1,900
December	3,336	2,261	3,257	1,868	2,466
Average Annual BOD (lbs/Day)	2,516	2,533	2,408	2,378	2.165
Max. 1 Month BOD5 Loading (lbs/Day)	3,336	3,520	3,257	3,569	3,160
RATIO: Max. 1 Month BOD5 / Ave. Annual BOD5	1.33	1.39	1.35	1.50	1.46
Organic Peaking Factor:					

Average 5 Year Ratio

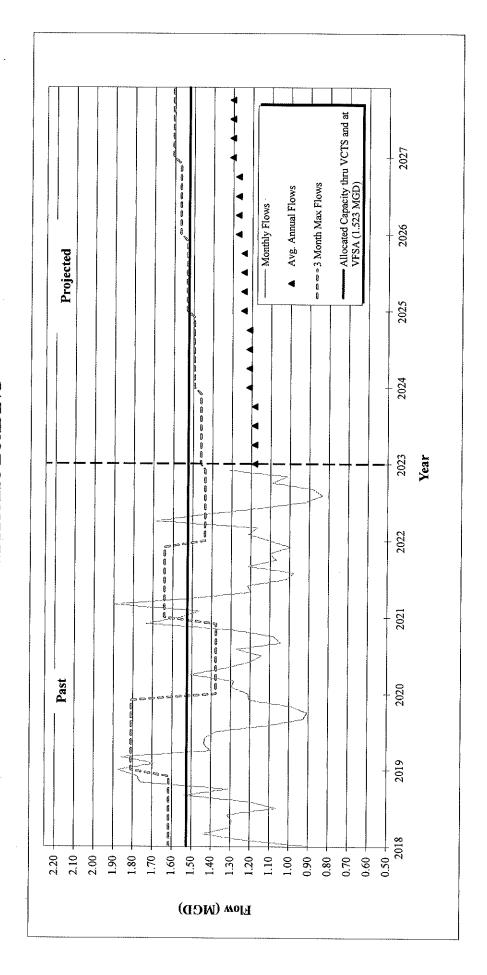
TABLE 3

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT PAST AND PROJECTED LOADINGS

Per Capita BOD5 (lbs/day)	0.230	0.231	0.219	0.219	0.199	0.220		0.220	0.220	0.220	0.220	0.220
Average Total BOD5 (lbs/day)	2,516	2,533	2,408	2,378	2,165	2,400		2,448	2,506	2,564	2,622	2,681
Per Capita Flow (gpcd)	123	123	117	117	106	117		106	106	106	107	107
Max. 3 Month Ave. Flow (mgd)	1.62	1.81	1.38	1.64	1.44			1.46	1.49	1.53	1.57	1.60
Average Total Flow (mgd)	1.341	1.350	1.283	1.267	1.154	1.279		1.183	1.213	1.242	1.272	1.302
Connected Population	10,922	10,953	10,984	10,860	10,871	10,918		11,136	11,401	11,666	11,931	12,196
EDUs	3,841.7	3,850.7	3,857.4	3,811.7	3,815.7		oadings	3,913.5	4,011.3	4,109.1	4,207.0	4,304.8
Year	2018	2019	2020	2021	2022	Average	Projected Loadings	2023	2024	2025	2026	2027

GRAPH - #1

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT HYDRAULIC LOADING



GRAPH - #2

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT ORGANIC LOADING

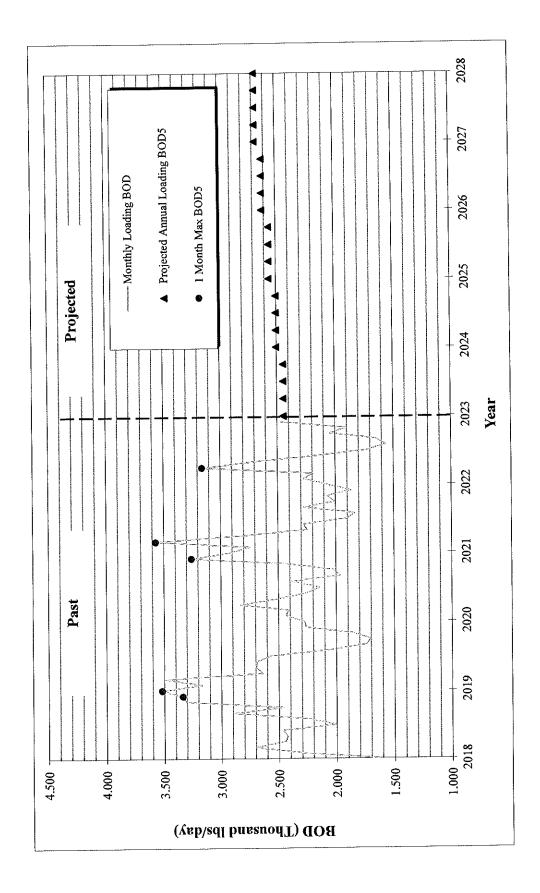


Exhibit C

Easttown Township

Approved and Projected Connections

EASTTOWN TOWNSHIP APPROVED and PROJECTED EDU TRACKING LIST

Мар	Development		Development	Total EDUs	Total EDUs Connected	Approved EDUs Already Connected	Potential EDUs Connected	Potential EDUs Connected	Total Potential	Total EDUs
£D.	Name	Address	Tax Parcel #	Approved	Thru 2022	Thru 2022	2023 - 2024 0,00	2025 - 2040 11.00	2023 - 2040 11.00	2040 51,00
Вегмул Е	states Pump Station Drainage Area Projected/Potential Connections				40.00	0.00	0.00	11.00	11.00	01,40
									AVA 05	1,758,45
Barwyn P	ump Station Drainage Area				1,503.20	B,00	17.00	238.25	263,25	1,780,40
w	Berwyn Owner, LLC	4 Midland Ave.	55-2G-43	16.00		0.00 0.00	1.00	16.00		
•	Ted Babbiy Stonehaven Homes (Mack Oll)	28 S. Fairfied Road Branch Avenue	55-3J-23 55-2G-10	1.00 12.00		8.00	4.00			
-	Daggett Property	500 S. Waterloo Road	55-3-54	3.00		0.00 0,00	3,00 1,00			
	Ted Babbly Thompson	422 S, Waterloo Road 1145 S, Leopard Road	55-3-53.1 55-4-115,2	1.00 1.00		0.00	1,00			
-	DP Fritztown Center, LLC	631 Lancaster Avenue 166 S. Devon Road	55-2G-5 55-3P-42	62.00 1.00		0,00 0.00	1,00	62.00		
-	Houlman, PE Houlman, PE	156 S. Devon Rd	55-3-58	1.00		0.00	1.00			
-	Michael Young	72 Centrel Ave 62 Central Ave	55-2L-50 55-2L-49	1.00 1.00		0.00 0.00	1.00 1,00			
-	Michael Young Berwyn Owner, LLC (Berwyn Square)	584 Lancaster Ave.	55-2G-42,43,46	106,00		0.00 0.00	3,00	106,00		
-	119 Lancaster Partners, LP	119 Lancaster Avenue	55-3E-90	3.00		0.00	5,00	52.25		
-	Projected/Potential: Other Connections									
Darby Pu	mp Station Drainage Area				135,50	0,00 0.00	4.00 4.00	17.00 17.00	21,00	158.50
•	Projected/Potential Connections									
	of Day - Station Bustoness Assa				657.40	0.00	4.00	32.48	38.48	693.68
Daylesto	d Pump Station Drainage Area Kelly Group Builders, Inc.	2291 S. Valley Road	54-04-0008	4,00		0.00	4.00			
-	Projected/Potential Connections							32,48		
					174.10	0.00	3.00	116,00	119.00	293.10
Devon Hi B	int Pump Station Drainage Area Lewis Subdivision	120 South Devon Avenue	55-3-63.1	3,00	1,4210	0.00	3,00			
-	Projected/Potential Connections							116,00		
					32.20	0.00	1.00	9.00	10.00	42.20
Exetor Po	imp Statton Drainage Area Keyes	393 Church Road	55-5-6	1,00	52.20	0,00	1.00			
	Projected/Potential Connections							9.00		
					44.60	0.00	9,00	1.00	1.00	45,60
Fox Cree	k Pump Station Drainage Area Projected/Potential Connections				44.00		0.00	1.00		
hairt	Pining Parking Darkania Assa				38,00	0,00	0.00	0.00	0.00	38.00
Milibroo	Pump Station Drainage Area Projected/Potential Connections					0.00	0.00	0.00		
Newtown	Pump Station Drainage Area				394,60	5.00	4.00	68.00	62.00	456,60
A	South Leopard Road Associates***			9.00		5.00	4.00			
-	Projected/Potential Connections							58,00		
					16,00	0.00	0.00	0,60	0,00	16.00
Pissorof	t Pump Station Drainage Area Projected/Potential Connections				10,00			0.00		
Saybroo	k Pump Station Drainage Area				322.10	0.00	2.00	41.45 25.00	43,45	385.85
-	Projected/Potential: Benson Homes & Development Peter Hutchinson	15 Leopard Road 820 Potter Road	55-2L-11 55-2L-189	2.00		0.00	2.00	20.00		
-								16.45		
-	Projected/Potential Connections									
Sorina k	noil Pump Station Drainage Area				224.00	3.00	9,00	18.00	27.00	251,00
apieny r	Tartan Investment Partners, LP (Imbesi)	900 - 921 Prescott Road	55-5-30.1 to	12,00		3,00	9.00			
			55-5-30.12					18.00		
-	Projected/Potential Connections									
The Gre	ens Pump Station Drainage Area				118.00	0.00	0,00 0.00	9.00 9.00	9.00	125,00
•	Projected/Potential Connections						0.00	0.00		
					400.00	0,00	0,00	18.00	18,00	138,00
VFSA U	metered Drainage Area Projected/Potential Connections				120,00	0,00	0,00	18,00	19144	
	ŕ								611.18	4,426.88
			SA Total EDUs = Metered EDUs =	240.00	3,815.70 3,560.20	16.00 16.00	44,00 40,00	567.18 532.18	572.18	4,420.00
			metered EDUs =		255.50	0,00	4.00	35,00	39,00	
					80.10		0.00	3.00	3.00	83.10
RHM Un	metered Drainage Area Projected/Potential Connections				VVIIV		0.00	3.00		
								* **	0.00	178.40
Trout R	in Unmetered Drainage Area Projected/Potential Connections				176,40		0.00 0.00	2.00 2.00	2,00	17 G.9V
-	i injestem eternisi vointentiona									
		Grand	Total EDUs =	240.00	4,072.20	i	44.00	572.18	616,18	4,688.38

EASTTOWN TOWNSHIP APPROVED AND PROJECTED

CONNECTIONS



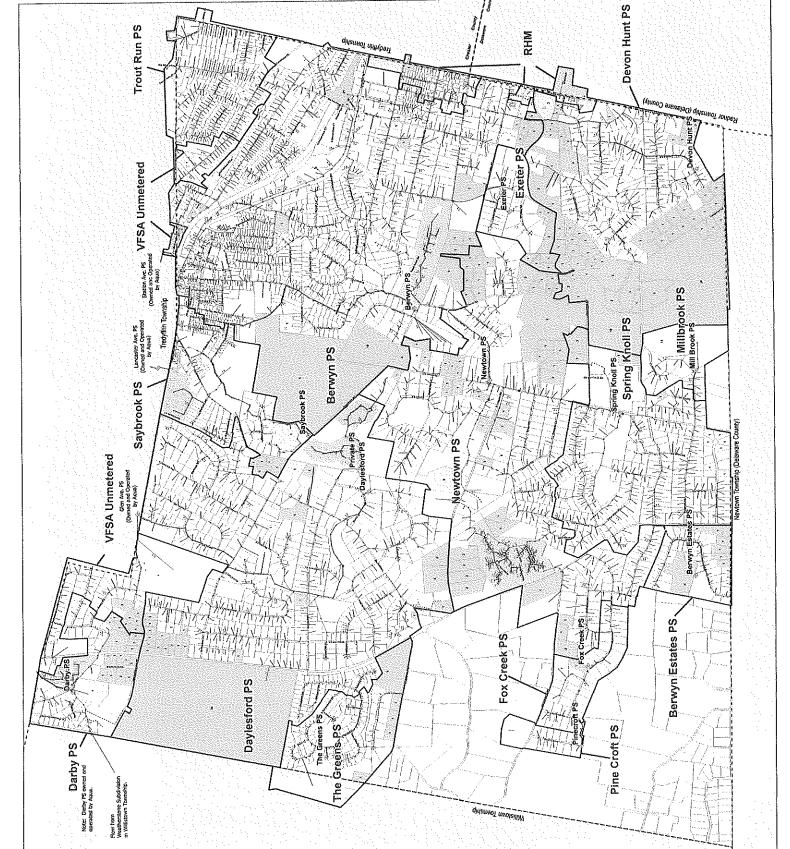




Exhibit D

Easttown Municipal Authority

Flow Information for Each Pump Station

EXHIBIT - D

FLOW INFORMATION FOR EACH PUMPING STATION EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT

				Pump Station Ca	on Capacities			Present Flows	2-Year Projected Ann. Avg. Daily Flow	ed Ann. Avg	. Daily Flow	Future Projec	Future Projected Ann. Avg. Daily Flow	Daily Flow
,		Permit Design	Uftimate Design	#	Ultimate Permit Peak	PADEP	Current Permit Annual Average	Actual Annual	Projected Annual	PADEP	Projected	Projected Annual	PADEP	Projected
Fumping Station Name ^(t)	No. of Pumps	Capacity (gpm)	Capacity (gpm)	Peak Flow Capacity ⁽²⁾	Flow Capacity ⁽²⁾	Peaking Factor ⁽⁵⁾	Daily Flow Capacity	Average Daily Flow - 2022 ⁽³⁾	Average Daily Flow - 2024 ⁽⁴⁾	Peaking Factor ⁽⁵⁾	Peak Flow - 2024	Average Daily Flow - 2040 ⁽⁴⁾	Peaking Factor ⁽⁵⁾	Peak Flow -
Berwyn	8	920	1019	2,649,600	2,936,000	2.50	1,059,840	710,700	726,183	3.00	2,178,549	850,046	3.00	2,550,138
Berwyn Estates	2	73	73	105,120	105,120	2.50	42,048	6,425	6,621	4.20	27,810	8,192	4.20	34,406
Devon Hunt	2	250	252	360,000	362,880	2,50	144,000	65,830	70,830	3.75	265,327	110,826	3.75	415,153
Exeter	2	5	100	144,000	144,000	2.50	57,600	7,674	7,939	4.18	33,200	10,057	4.18	42,059
Fox Creek	2	20	20	72,000	72,000	2.50	28,800	13,596	13,621	4.15	56,554	13,820	4.15	57,382
Millbrook	2	8	40	57,600	57,600	2.50	23,040	4,672	4,672	4.20	19,622	4,672	4.20	19,622
Newtown	2	069	690	994,003	994,000	2,50	397,601	142,545	144,663	3.67	530,769	161,609	3.67	592,943
Pinecroft	2	32	32	46,080	46,080	2,50	18,432	2,836	2,836	4.20	11,911	2,836	4.20	11,911
Spring Knoll	2	270	270	388,800	388.800	2.50	155,520	41,812	42,294	3.93	166,175	46,154	3.93	181,339
Daylesford	2	718	718	1,033,618	1,033,620	2.50	413,447	258,901	260,593	3.49	908,687	274,126	3.49	955,876
The Greens	7	200	200	288,000	288,000	2.50	115,200	18,523	18,683	4.09	76,393	19,960	4.09	81,617
Saybrook	2	275	275	396,000	396,000	2.50	158,400	106,788	108,389	3.77	408,625	121,193	3.77	456,899

(2) Current and Ultimate Permit Peak Flow Capacity based on one pump always on stand-by.
 (3) Actual Annual Average Daily Flows are as per flow meter readings for all pumping stations.

Projected Annual Average Daily flow in 2023 and at buildout (2040) is based on an interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the Act 537 Supplement for Wilson And Rosa Force Main, Table 3-3, Average D

(5) PADEP Peaking Factor is interpolated from PADEP Southeast Regional Office's "Sewage Pumping Station Guidance (Rev. 3/24/99)".

(6) All flow rates above are in gallons per day (gpd).

Exhibit E

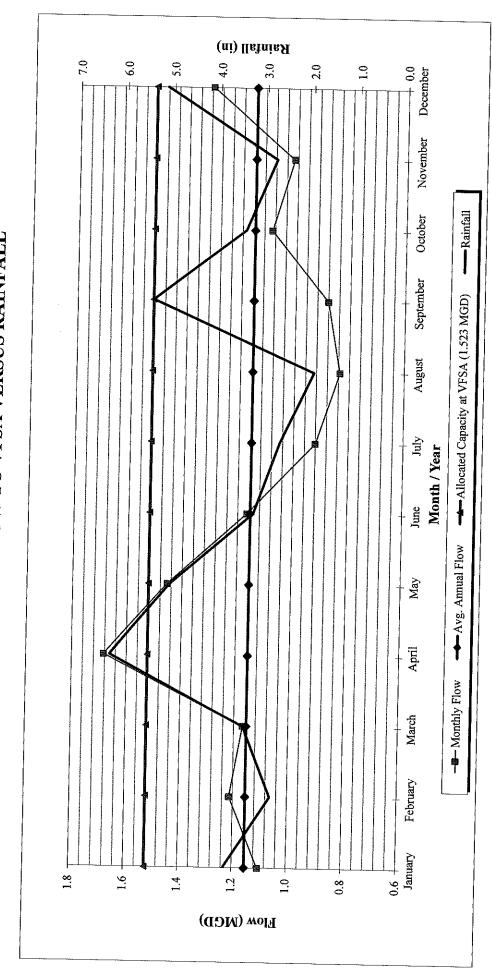
Easttown Municipal Authority

Monthly Flow Total to VFSA Versus Rainfall - Graph

Graph 3

GRAPH - #3

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY TOTAL FLOW TO VFSA VERSUS RAINFALL



<u>Exhibit F</u>

Easttown Municipal Authority

<u>Pump Stations Flow to VFSA</u> <u>Versus Rainfall - Summary and Graphs</u>

Berwyn Pump Station
Daylesford Pump Station
Saybrook Pump Station

Table 4A, Graphs 4A, 4B and 4C

Table 4A

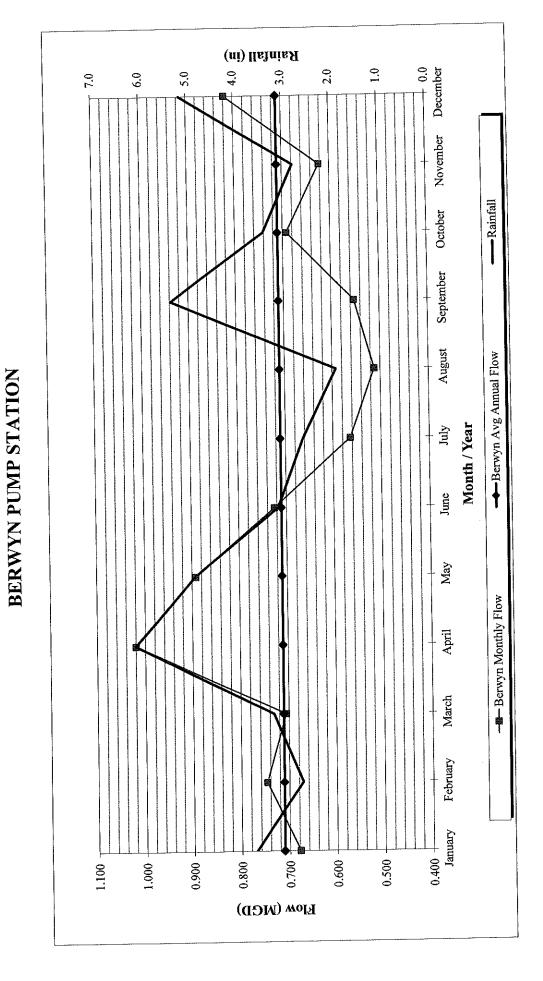
EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY PUMP STATION FLOW TO VFSA

BERWYN, DAYLESFORD and SAYBROOK PUMP STATIONS

			Monthly Flow, MGD		
Year	Month	Berwyn	Daylocford	ı	
CCUC			Biologica	Saybrook	Raintall
7707	January	0.6777	0.2431	0.1103	3 69
	February	0.7465	0.2712	0.1146	2.23
	March	0.7056	0.2746	0 1094	- 7.5
	April	1.0196	0.3978	0.1536	5.0
	Mav	0.8912	0.3466	0.77	0.20
		2 000	0.3466	0.1191	4.93
	anne	0.7250	0.2622	0.1009	3.17
	July	0.5640	0.2023	0.0923	2 63
	August	0.5123	0 1774	0.0010	20.7
	Conformber		t	0.0007	1.92
	September	0.5529	0.1810	0.0880	5.38
	October	0.6920	0.2252	0.1006	3.42
	November	0.6222	0.2298	0.0929	2 78
	December	0.8194	0.2956	0 1109	. r . r
Avg Annual	ial Flow (MGD) =	0.7107	0.2589	0.1068	2

GRAPH - #4A

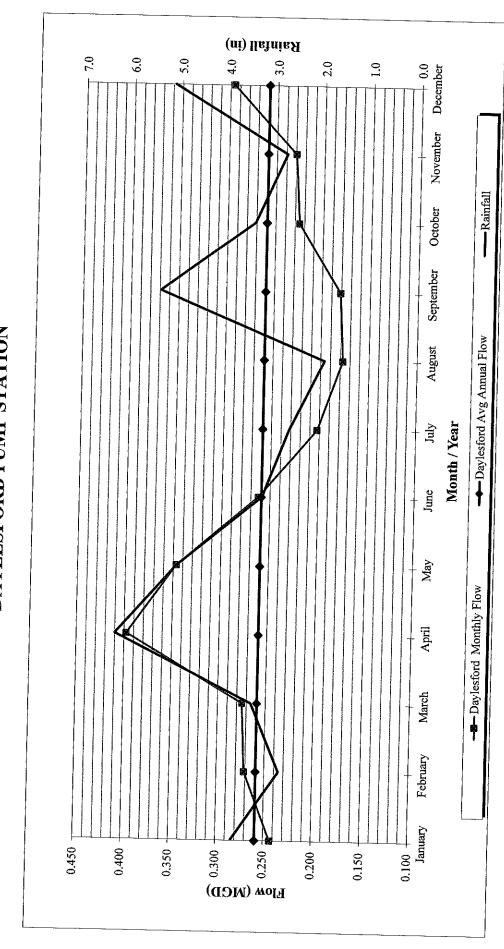
MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT



GRAPH - #4B

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT

DAYLESFORD PUMP STATION



GRAPH - #4C

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT



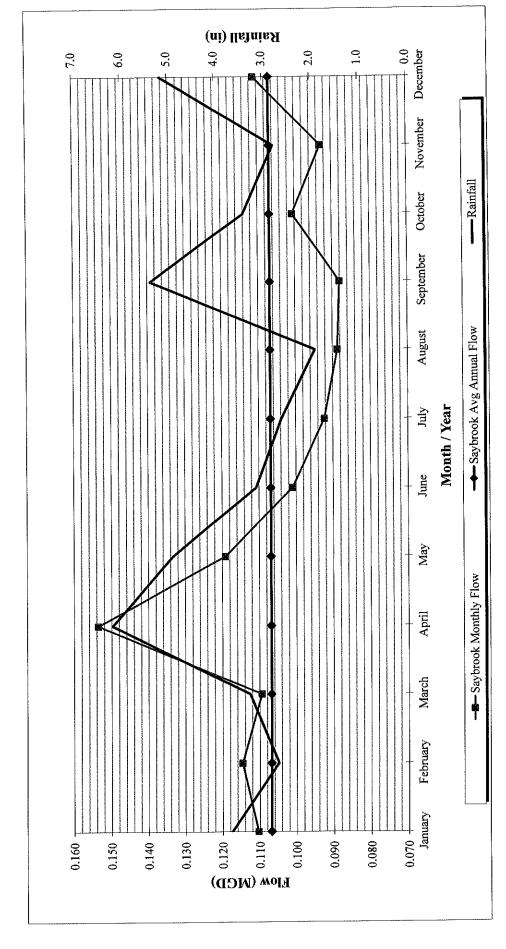


Exhibit G

Easttown Municipal Authority

Small Metered Pump Stations Flow Versus Rainfall - Summary and Graphs

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

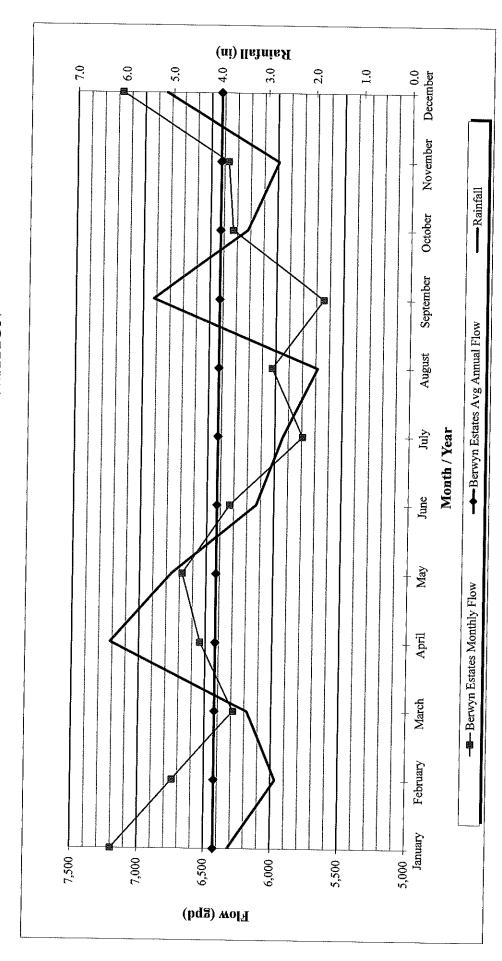
Table 4B, Graphs 4D to 4L

Table 4B

	Wasseston .				Mon	Monthly Flow, GPD	The state of the s				
Year	Month	Renwyn Estates	Devon Hunt	Exeter	Fox Creek	Millbrook	Newtown	Pinecroft	Spring Knoll	The Greens	Rainfall
2000	,001.00	7 106	66.254	6 231	14 609	3 769	142.250	2.941	41,393	18,437	3.69
7707	Jaliualy	00-1	101.00	2 .	1,00	0.00	004.04	2.088	40.813	17.250	2.71
	February	6,741	90/169	484,	14,5/6	5,040	43,100	20,5	0,0	000	i
	March	6 285	66.770	8.686	13,552	4,054	137,488	3,017	38,797	17,689	15.5
		6 530	88.053	15 146	17 773	4.500	197.819	3,055	52,691	19,139	6.20
		200,0	04,450	12 023	15 385	4 527	172 995	2.959	47.081	19,625	4.93
	way -	000,0	60 447	7.70	12,723	4 264	142 458	2 740	42.542	20,090	3.17
	nne	055,0	00,447	0711	16,17,5	107.	2001		10101	17 975	263
	\[\frac{1}{2}\]	5.793	55,035	5,203	10,942	4,665	115,508	7,491	40,13	20,5	3
	August	R.025	49 207	4 101	10.735	4.839	107,110	2,746	35,119	20,564	1.92
	Contombor	5,625	53.163	4 746	11 831	4 796	113,284	2.761	36,016	18,596	5.38
	September	2 60	22,122	7 7 0	12,13	5 157	134 800	2.815	39.793	16,508	3.42
	CCIODE	0000	00,100	5 1	7,00		079 007	2 577	40,626	17.763	2.78
	November	6,369	58,840	5,458	12,970	106.0	120,040	2,0	20,5		
	December	7.167	72.599	8,168	14,887	5,744	168,066	2,863	46,739	18,743	5.13
Ave Annii	Ava Applial Flow (GPD) =		65.830	7.674	13.596	4,672	142,545	2,836	41,812	18,523	
anne Bac	(2:2)				The second secon						

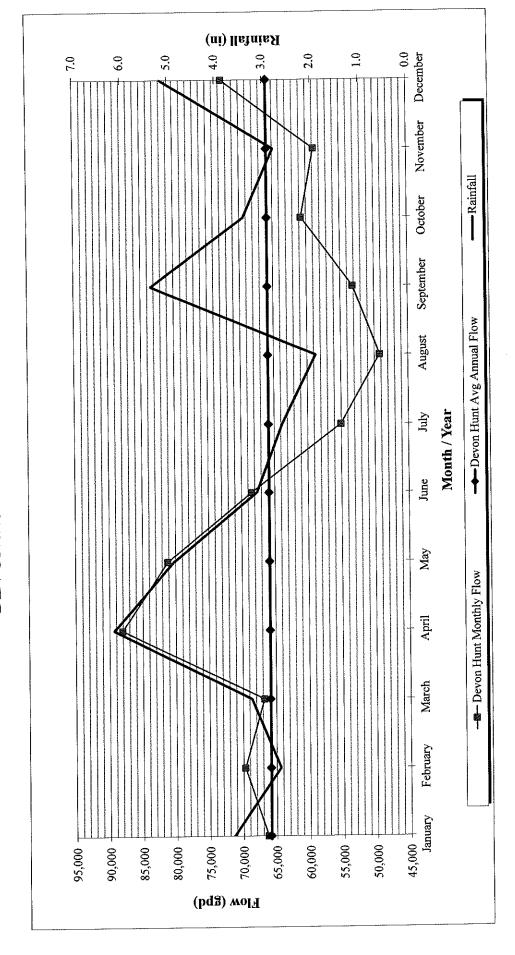
GRAPH - #4D

BERWYN ESTATES PUMP STATION



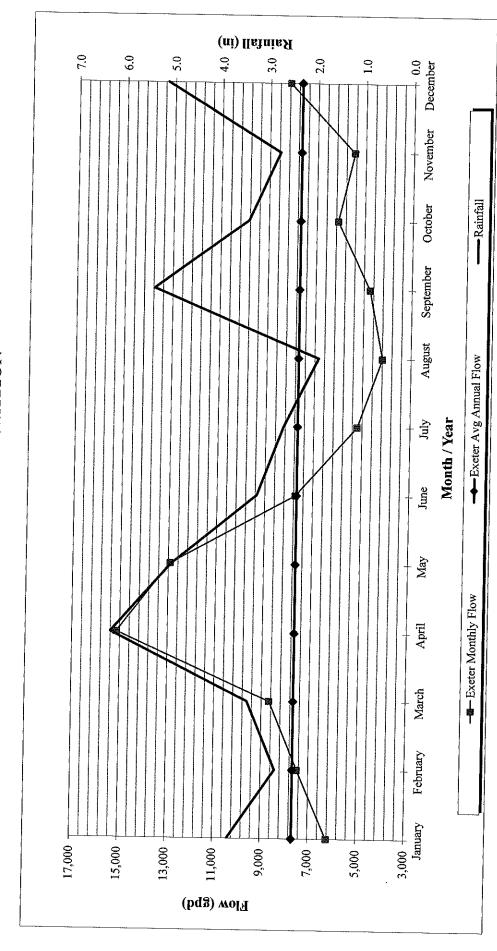
GRAPH - #4E

DEVON HUNT PUMP STATION



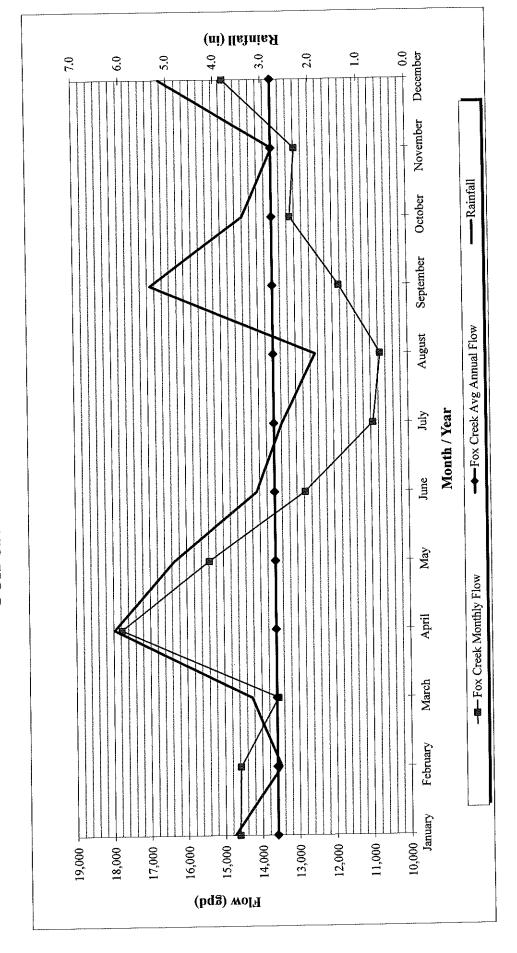
GRAPH - #4F

EXETER PUMP STATION



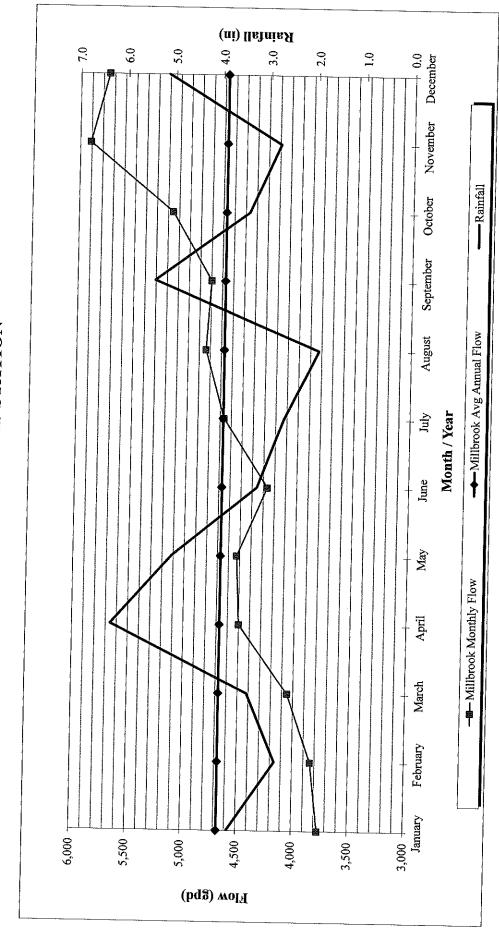
GRAPH - #4G

FOX CREEK PUMP STATION



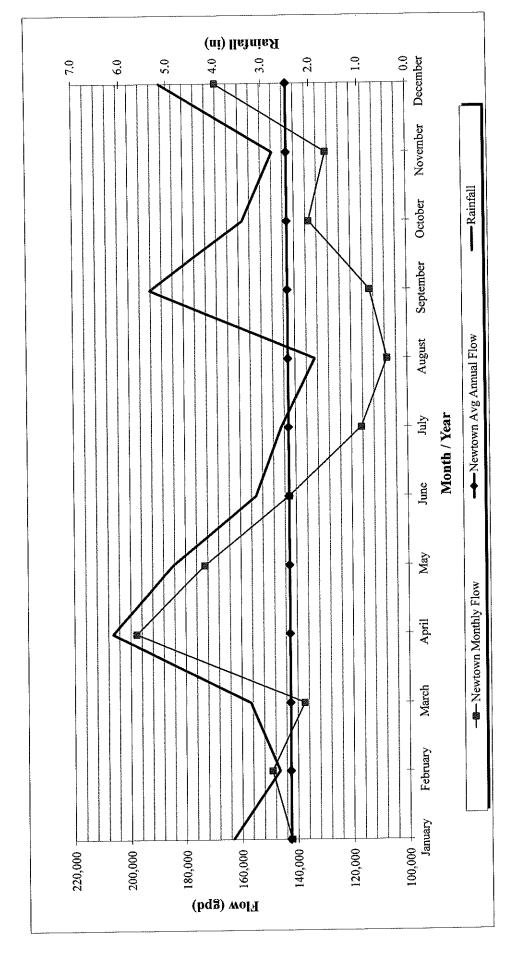
GRAPH - #4H

MILLBROOK PUMP STATION



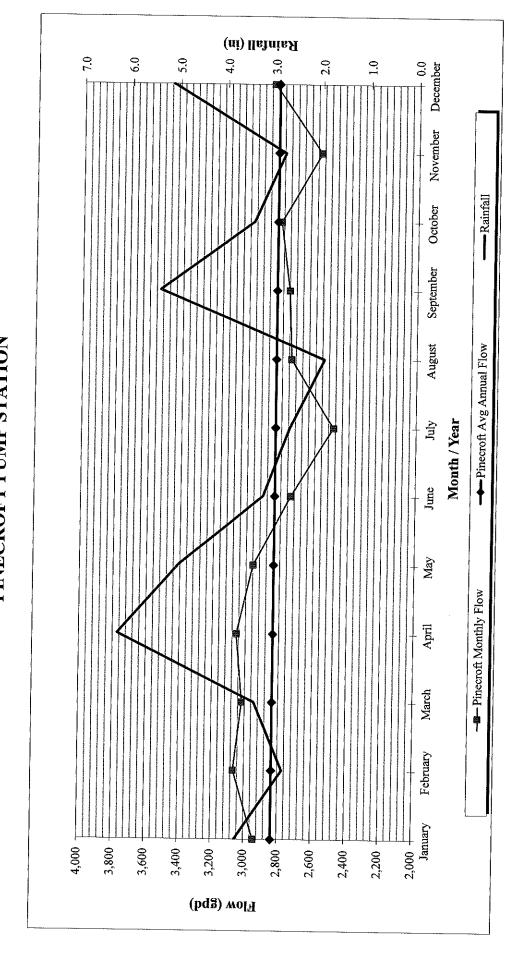
GRAPH - #4I

NEWTOWN PUMP STATION



GRAPH - #4J

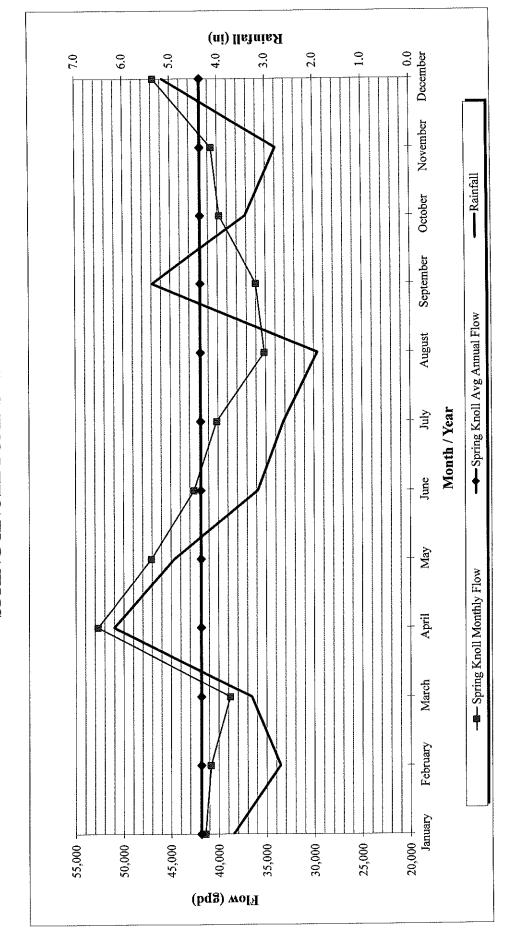
EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY SATELLITE PUMP STATION FLOWS PINECROFT PUMP STATION



GRAPH - #4K

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY SATELLITE PUMP STATION FLOWS

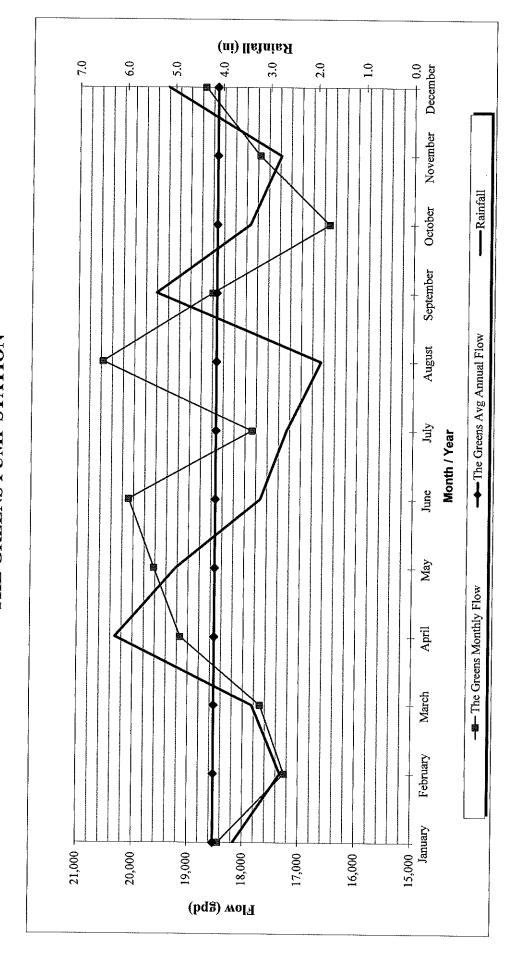
SPRING KNOLL PUMP STATION



GRAPH - #4L

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY SATELLITE PUMP STATION FLOWS

THE GREENS PUMP STATION



<u>Exhibit H</u>

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow At Metered Pump Stations – Summary

Berwyn Pump Station
Berwyn Estates Pump Station
Daylesford Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Saybrook Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Table 5

Table 5

EASTTOWN MUNICIPAL AUTHORITY
2022 ANNUAL CHAPTER 94 REPORT
SUMMARY OF MAXIMUM DAILY FLOW (MGD) AT METERED PUMP STATIONS DURING DAYS WHEN RAINFALL > 1.0 INCH PER DAY

Devon Hunt PS Fxeter PS Exy Crost De	reek PS	Peaking	ractor	1.95	2.42	1.44	224	200	70.07	1.44	1.03		!	2.42	1.60		The Greens PS	Peaking	Factor	1.25	1.43	1.50	1.38	0.99	1.49	107	1.19			1.50	
	Fox C	Peak	(MGD)	0.026	0.033	0.020	0.030	0.011	- 60.0	0.020	0.014	0.014	0.140				The Gre	Peak	(MGD)	0.023	0.027	0.028	0.026	0.018	0.028	0.020	0.022	0.019	0.560		
	Xetel Xetel	Peaking	racioi	2.11	3.67	2.20	2.40	0.63	7	21.1	0.87		,	5.67	1.79	Of a	noll PS	Peaking	Factor	1.63	2.49	1.29	1.86	0.89	1.20	1.07	1.39		,	2.49 1.48	
		Teak	(1000)	0.076	0.028	0.017	0.018	0.005	000	0.003	0.007	0.008	0.280				Spring Knoll PS	Peak	(MGD)	0.068	0.104	0.054	0.078	0.037	0.050	0.045	0.058	0.042	0.490		
		Factor	1000	0.70	2.57	1.50	2.07	0.75	17	- 0	5. 5. 5. 6.		2 24	7.3 7.40	×4.) DC	OK PS	Peaking	Factor	0.98	44.	1.46	7.33	0.82	1.00	0.92	1.04		,	1,46	
Devon	1000	MGD)	0440	7 6	0.132	0.099	0.136	0.050	0.077	0.00	0.089	0.066	096.0			Od yourdney	Saybio	Teak	(MGD)	0.105	0.154	0.156	0.142	0.087	0.106	0.098	0.111	0.107	1.400		
ord PS	Dooking	Factor	177		5 5	SC.	1.79	0.75	0.94	88	1.22		1.80	25	<u> </u>	# bc	200	reaking.	ractor	 S	2.41	5. to	20.0	0.91	<u>.</u>	. 13	1.22		77.7	1.42	
Daylesford PS	Peak	(MGD)	0.459	0.766	2 5 5	14.0	0.464	0.193	0.243	0.228	0.317	0.259	201			Pinacroff PS	700	א מקר בינו	(MGD)	9.004	0.00	0.004	000	0.003	0.003	0.003	0.003	0.003	<u>}</u>		
tates PS	Peaking	Factor	1.12	ας.	5 5	5.6	97	0.95	1.10	66 0	1.27		1.28	1.13	<u>:</u>	m PS	Dogking	- canily	202	2.0	2.07	55. C	3 6	0.00	5 6	7.02	1.75		3.07	1.75	
Berwyn Estates PS	Peak	(MGD)	0.007	0.008	0.007	- 000	0.000	0.006	0.007	0.006	0.008	0.006	2			Newfown PS	Deak	(2)	0.205	0.438	0.430	0.335	7 (1 00 0	2,70	0.140	0.25.0	0.143	•		
n PS	Peaking	Factor	1.47	2.38	1 49	90.0	100	9 :	1.36	0.96	1.45		2.38	1.49		Millbrook PS	Peaking	Factor	1 19	٠ ١		06.0	000	1.45	9	 D : 0	1.20		1.90	1.24	
Berwyn PS	Peak	(MGD)	1.042	1.689	1.056	1481	- C	0.042	0.964	0.684	1.028	5.000	g Factor ≖	g Factor ==	g Factor =		Peak	(MGD)	0.006	0 007	0.004	0.004	0.004	0.007	000	9000	0.00	0.005	Factor =	Factor =	
		Rain (in.)	1.35	1.71	1.61	1.58	5 6	57.	3.75	1.07	1.46	Yearly Avg Flow (MGD) = Meter Max (MGD) =	High Peaking Factor ≖	Average Peaking Factor ==		10000		Rain (in.)	1.35	1.71	1,61	1.58	1.29	3.75	107		Pr.	/ Avg Flow (MGD) = Meter Max (MGD) =	High Peaking Factor =	Average Peaking Factor =	20000
		Rain Date	04/06/22	04/07/22	04/18/22	05/07/22	07/08/00	00/06/20	77/00/60	11/15/22	12/15/22	Yearly Avg F		7				Rain Date	04/06/22	04/07/22	04/18/22	05/07/22	07/28/22	09/06/22	11/15/22	12/15/22	77.5.	Yearly Avg Flow (MGD) = Meter Max (MGD) =		¥	

Exhibit I

Easttown Municipal Authority

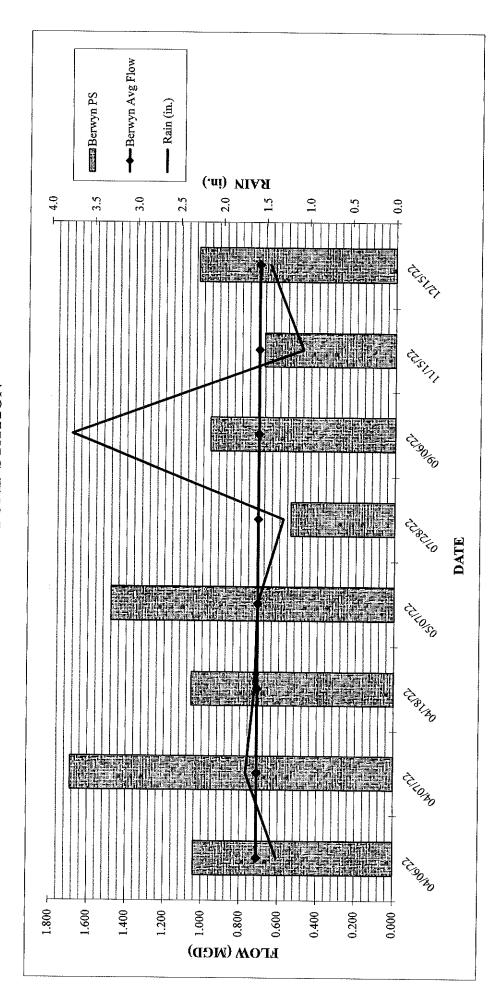
1-Inch Plus Rainfall Versus Flow At Large Metered Pump Stations - Graphs

Berwyn Pump Station Daylesford Pump Station Saybrook Pump Station

Graphs 5A, 5B and 5C

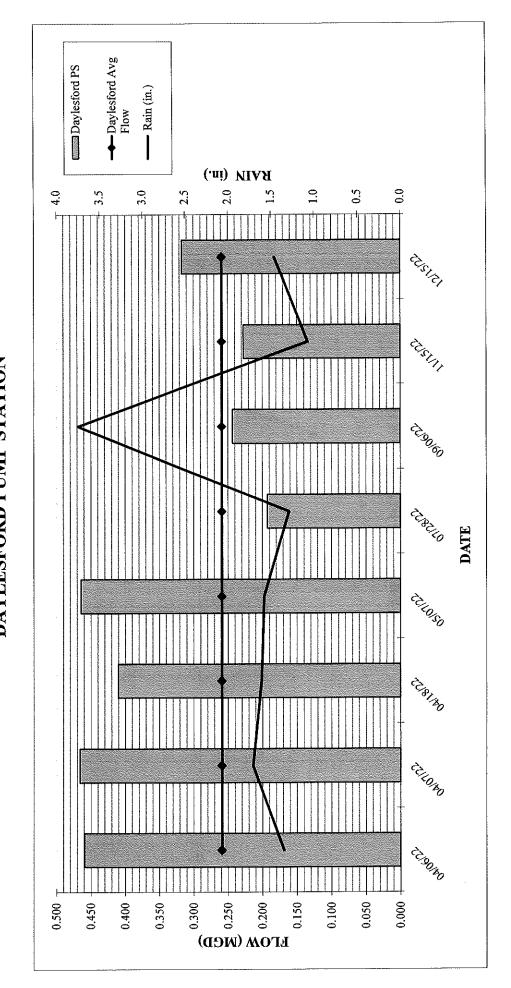
GRAPH - #5A

BERWYN PUMP STATION



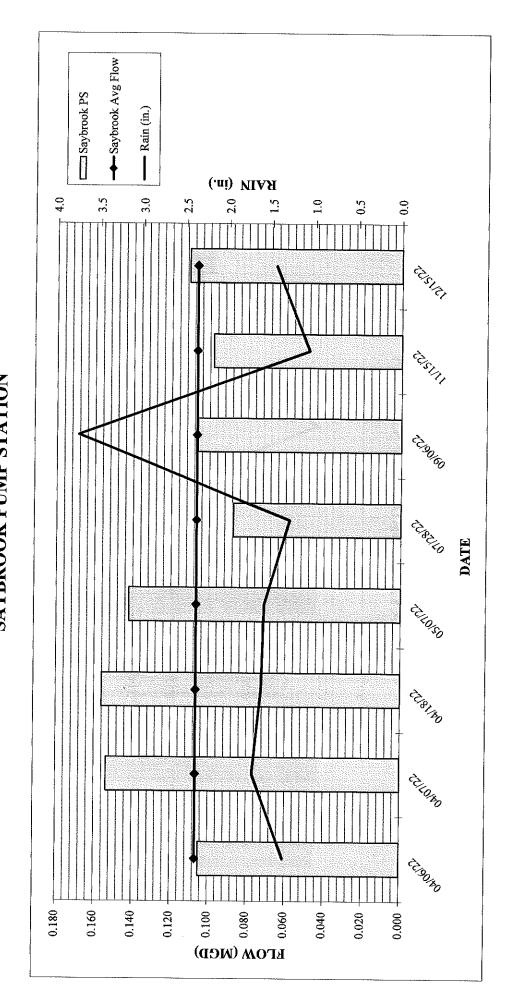
GRAPH - #5B

EASTTOWN MUNICIPAL AUTHORITY
2022 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW
DAYLESFORD PUMP STATION



GRAPH - #5C

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT 1 INCH PLUS RAINFALL VERSUS FLOW SAYBROOK PUMP STATION



<u>Exhibit J</u>

Easttown Municipal Authority

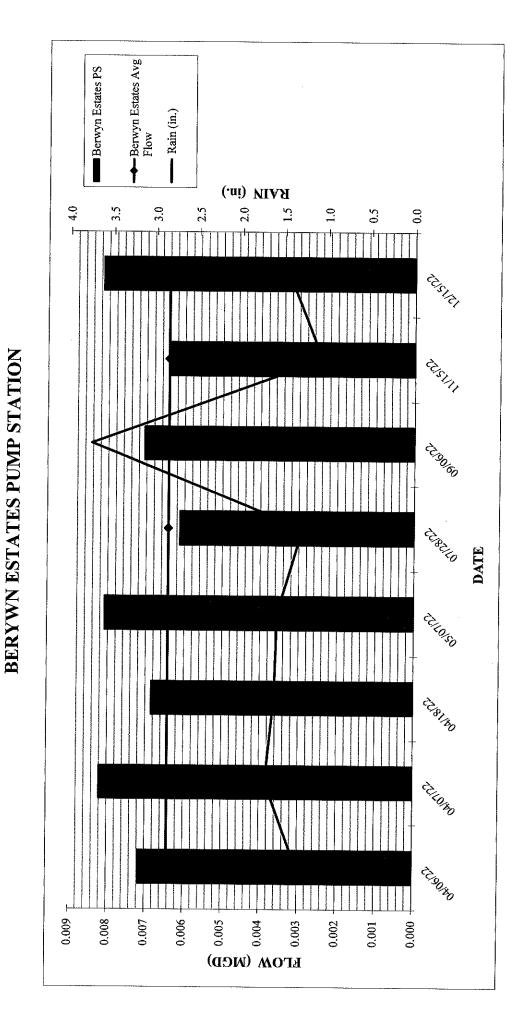
<u> 1-Inch Plus Rainfall Versus Flow</u> <u>At Small Metered Pump Stations - Graphs</u>

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Graphs 6A to 6I

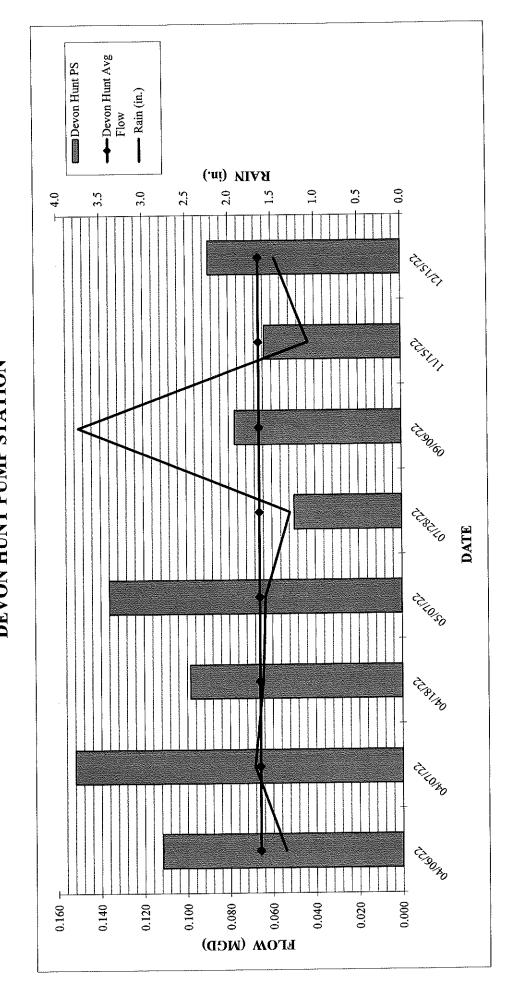
GRAPH - #6A

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT 1 INCH PLUS RAINFALL VERSUS FLOW



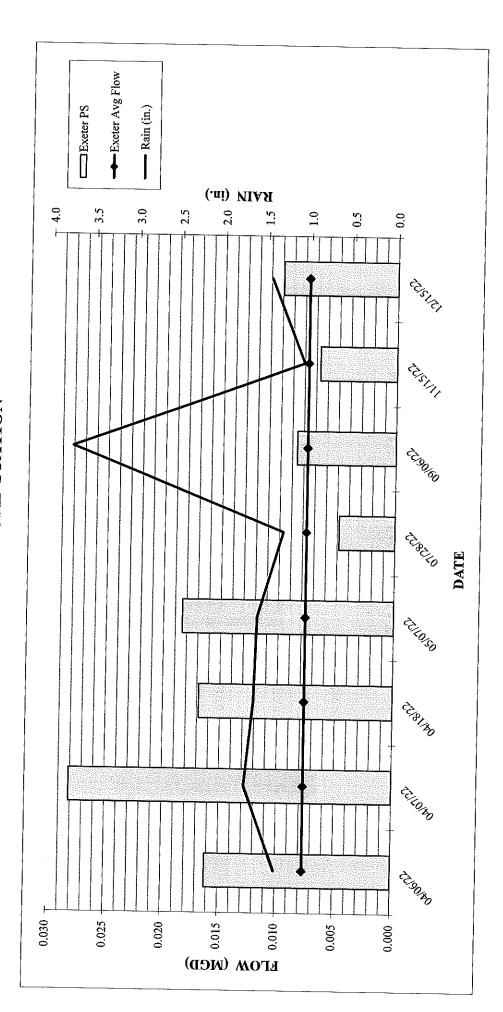
GRAPH - #6B

EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT 1 INCH PLUS RAINFALL VERSUS FLOW DEVON HUNT PUMP STATION



GRAPH - #6C

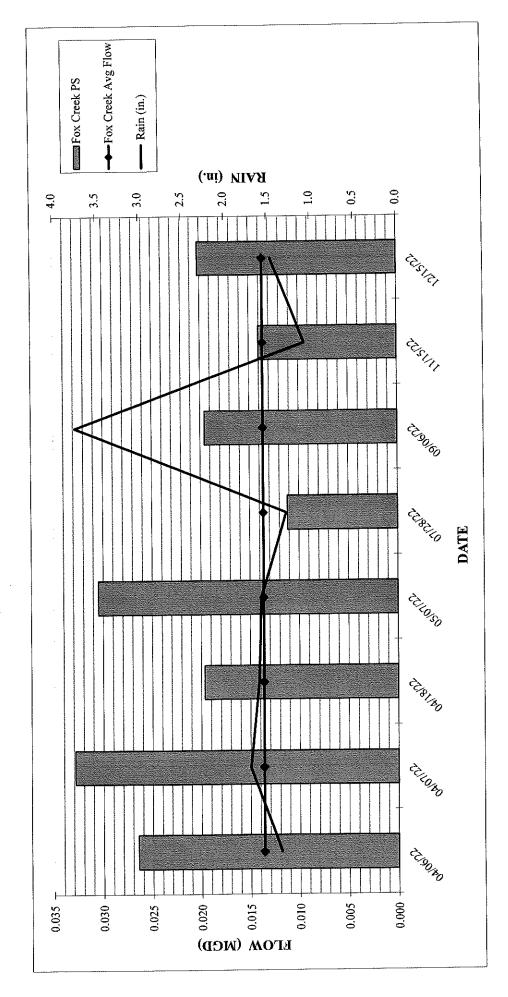
EXETER PUMP STATION



GRAPH - #6D

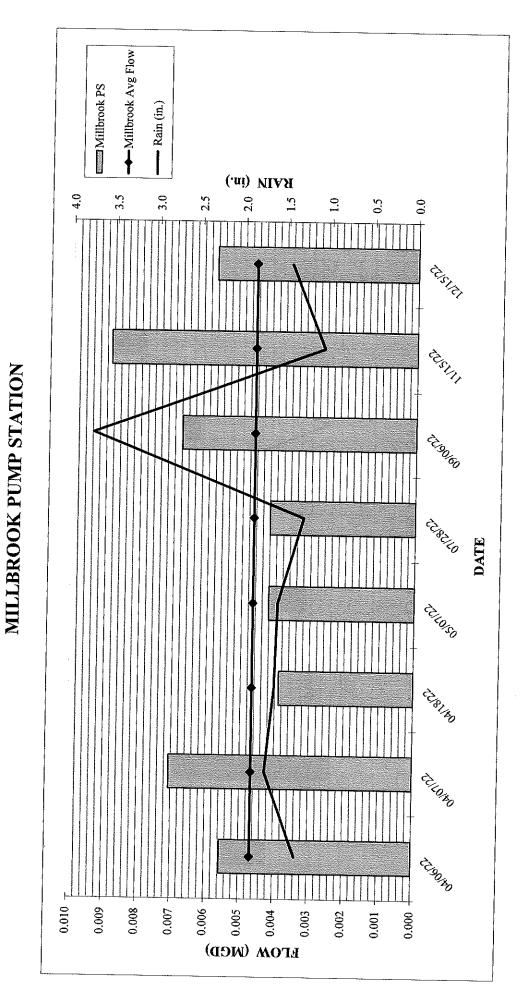
EASTTOWN MUNICIPAL AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT 1 INCH PLUS RAINFALL VERSUS FLOW

FOX CREEK PUMP STATION

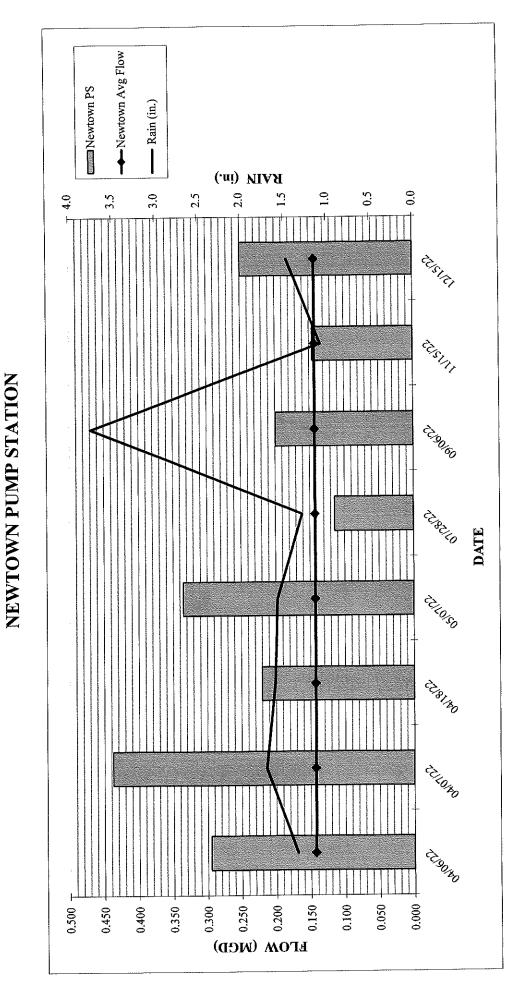


GRAPH - #6E

EASTTOWN MUNICIPAL AUTHORITY
2022 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW

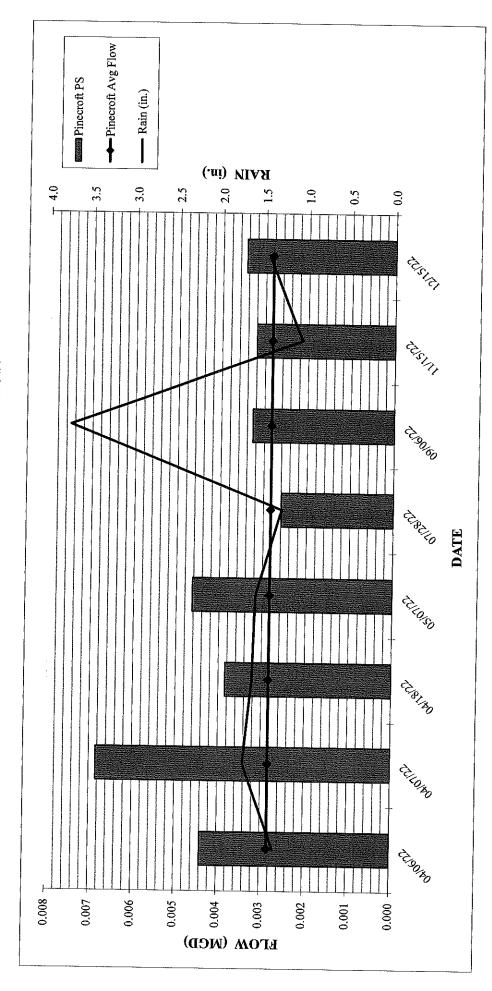


GRAPH - #6F



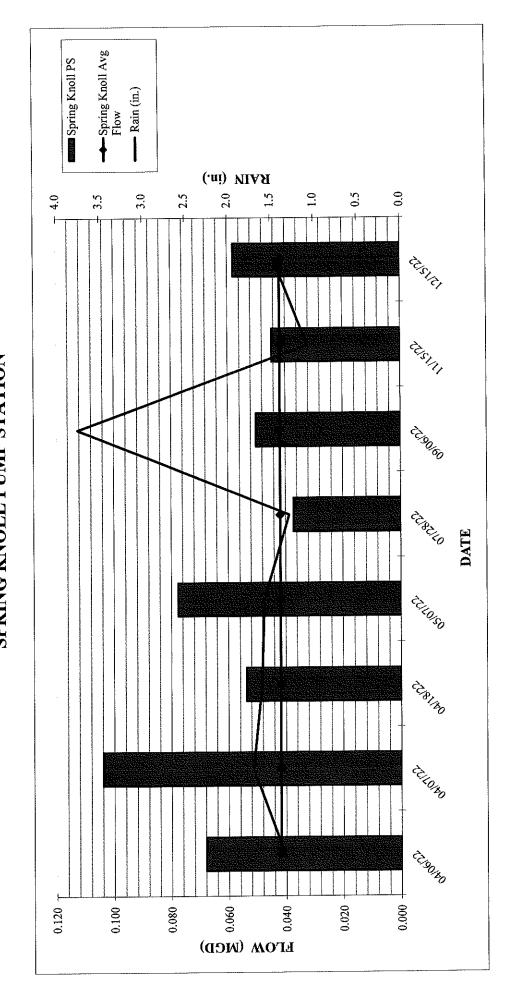
GRAPH - #6G

PINECROFT PUMP STATION



GRAPH - #6H

EASTTOWN MUNICIPAL AUTHORITY
2022 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW
SPRING KNOLL PUMP STATION



GRAPH - #6I



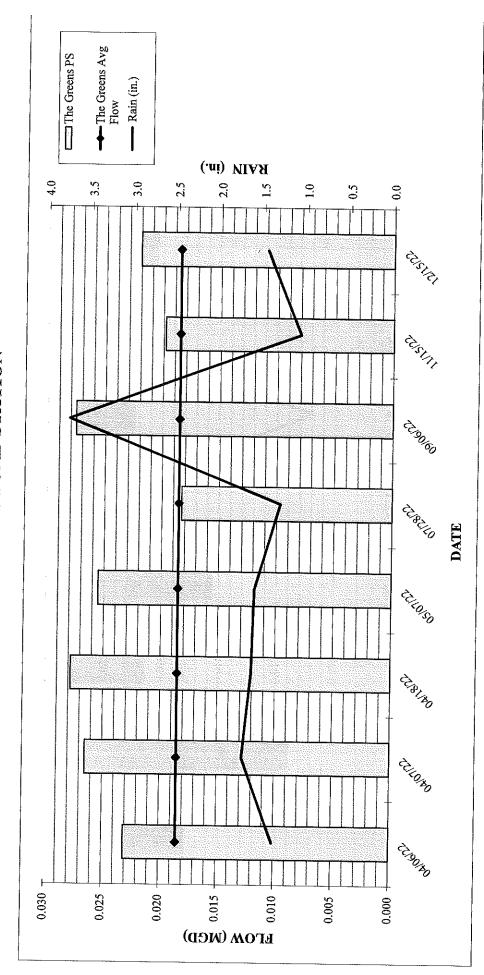


Exhibit K

Easttown Municipal Authority

Pump Station Flow Meter

Calibration Reports

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: First Quarter 2022 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534

Daylesford Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: L406F616000

Cal: 1.0969-9

Max Flow: 1200GPM

Date of Calibration:

04-01-22 less than .2%

% of Error: Comments:

none

Corrective Action:

none

Easttown Township Daylesford Pump Station Recorder

Instrument Data:

Manufacture: Endress Hauser

Model #: RSG40 Serial #: L503EB04267 Chart: 0-1200GPM

Tot x 1

Date of Calibration:

04-01-22

% of Error:

less than .2%

Comments:

none

Corrective Action:

Easttown Township Berwyn Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: HC045B16000

Cal: 2.627 9+2 Max Flow: 2500GPM

Tot x 1

Date of Calibration:

04-01-22

% of Error: Comments:

Less than .2%

none

Corrective Action:

none

Easttown Township Berwyn Pump Station

Recorder
Instrument Data:

Manufacture: Endress Hauser

Model #: 6400 Serial #: 76B4109J4 Chart: 0-2500GPM

Date of Calibration:

04-01-22

Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Saybrook Road Pump Station Magnetic Flow meter

Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Max Flow: 1000 GPM Serial #0860156434 Output: 4-20 MADC

Date of Calibration:

04-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

Easttown Township Saybrook Road Pump Station Recorder / Totalizer

Instrument Data:

Manufacturer: Honeywell Model #: DR 4300

Serial #: 0336Y360322600001 Counter: Electronic Totalize X 100

Chart: 0-100

Max Flow: 0-1000 GPM

Date of Calibration:

04-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Second Quarter 2022 Calibration Data

"Section B"

Easttown didn't receive a Second Quarter 2022 Calibration Data report from ACS as ACS had a malfunction with their calibration equipment.

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Third Quarter 2022 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534

Daylesford Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: L406F616000

Cal: 1.0969-9

Max Flow: 1200GPM

Date of Calibration:

9-15-22

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser

Model #: RSG40 Serial #: L503EB04267 Chart: 0-1200GPM

Tot x 1

Date of Calibration:

9-15-22

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Easttown Township

Berwyn Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: HC045B16000 Cal: 2.627 9+205-26-19 Max Flow: 2500GPM

Tot x 1

Date of Calibration:

9-15-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Berwyn Pump Station Recorder

Instrument Data:

Manufacture: Endress Hauser

Model #: 6400 Serial #: 76B4109J4 Chart: 0-2500GPM

Date of Calibration:

9-15-22

Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Saybrook Road Pump Station

Magnetic Flow meter Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Max Flow: 1000 GPM Serial #0860156434 Output: 4-20 MADC

Date of Calibration:

9-15-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

Easttown Township Saybrook Road Pump Station Recorder / Totalizer Instrument Data:

Manufacturer: Honeywell Model #: DR 4300

Serial #: 0336Y360322600001 Counter: Electronic Totalize X 100

Chart: 0-100

Max Flow: 0-1000 GPM

Date of Calibration:

9-15-22

% of Error:

Less than .2%

Comments:

none

Corrective Action

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Fourth Quarter 2022 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534

Daylesford Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: L406F616000

Cal: 1.0969-9

Max Flow: 1200GPM

Date of Calibration:

1-13-23

% of Error:

less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Daylesford Pump Station Recorder

Instrument Data:

Manufacture: Endress Hauser

Model #: RSG40 Serial #: L503EB04267 Chart: 0-1200GPM

Tot x 1

Date of Calibration:

1-13-23

% of Error:

less than .2%

Comments:

none

Corrective Action:

Berwyn Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: HC045B16000 Cal: 2.627 9+205-26-19 Max Flow: 2500GPM

Tot x 1

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Berwyn Pump Station

Recorder
Instrument Data:

Manufacture: Endress Hauser

Model #: 6400 Serial #: 76B4109J4 Chart: 0-2500GPM

Date of Calibration:

1-13-23

Error:

Less than .2%

Comments:

none

Corrective Action:

none

Easttown Township Saybrook Road Pump Station Magnetic Flow meter Instrument Data:

Manufacturer: Rosemount

Model #: 8712C Max Flow: 1000 GPM Serial #0860156434 Output: 4-20 MADC

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

Easttown Township Saybrook Road Pump Station Recorder / Totalizer Instrument Data:

Manufacturer: Honeywell

Model #: DR 4300

Serial #: 0336Y360322600001 Counter: Electronic Totalize X 100

Chart: 0-100

Max Flow: 0-1000 GPM

Date of Calibration:

1-13-23

% of Error:

Less than .2%

Comments:

none

Corrective Action

MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

EAST WHITELAND TOWNSHIP CHESTER COUNTY, PA



AQUA PENNSYLVANIA WASTEWATER, INC. EAST WHITELAND TOWNSHIP SANITARY SEWER COLLECTION SYSTEM CHESTER COUNTY

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT FOR CALENDAR YEAR 2022

Prepared By:

Aqua Pennsylvania Wastewater, Inc. 762 West Lancaster Avenue Bryn Mawr, PA 19010

Aqua Pennsylvania Wastewater, Inc. 762 West Lancaster Avenue Bryn Mawr, PA 19010

East Whiteland Sanitary Sewer Collection System Chester County

This Chapter 94 Report for calendar year 2022 has been prepared Aqua Pennsylvania Wastewater, Inc. for the East Whiteland Sanitary Sewer Collection System in Chester County.

Respectfully Submitted,

Sean Carney, EIT

Project Engineer - Wastewater

Aqua Pennsylvania Wastewater, Inc.

Kyle Roberts

Area Manager II, Wastewater Operations Aqua Pennsylvania Wastewater, Inc.

Aqua Pennsylvania Wastewater, Inc. East Whiteland Township Sanitary Sewer Collection System Chester County

Chapter 94 Municipal Wasteload Management Annual Report 2022

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1. INTRODUCTION

This Municipal Wasteload Management Report was prepared in accordance with the PA Title 25 Rules and Regulations, Part I, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article II, Water Resources, Chapter 94 Code §94.12. This report summarizes the results of the annual review of the capacity and condition of the East Whiteland Township Sanitary Sewer Collection System located in East Whiteland Township, Chester County.

The East Whiteland Township Sanitary Sewer Collection System is owned and operated Aqua Pennsylvania Wastewater, Inc. (Aqua). Aqua acquired the system in August 2022. The system includes twelve (12) pump stations.

2. SEWER EXTENSIONS

Historic and projected hydraulic loading from the East Whiteland service area is included in **Appendix A**. The hydraulic projections were calculated based on the average flow from the past five (5) year and the proposed connections for the next five years.

Projected future connections and sewer extensions are listed in **Appendix B**. This list contains all development/extensions which were constructed in 2022, under construction currently, or are anticipated to be constructed. The anticipated number of EDU's that will connect to the system for each of the developments/extensions within the next five years is also provided in **Appendix B**. A map showing the location of these projected connection is included in **Appendix C**.

3. SEWER SYSTEM MONITORING, MAINTENANCE, AND REPAIR

Aqua monitors sewer flows leaving and entering the collection system via flow meters daily and compiles the data in monthly flow reports. Irregular flow patterns are investigated, and the sources of those flow irregularities are corrected as soon as possible. Meter pits are checked on a routine basis to determine if the meters are functioning properly and that there is no debris accumulating within the flumes. Ongoing visual inspections of the system have indicated that the sewer is generally in good condition.

Closed-circuit television (CCTV) equipment is used to inspect sewer mains for infiltration, roots and grease and locate areas of Inflow and Infiltration (I/I). Prior to televising lines, the lines are cleaned, the information collected during the inspections are used to determine areas of concern, and areas that require repairs. As an on-going practice, the sanitary sewer lines flushed periodically throughout the system.

Manhole covers are adjusted and/or replaced with new watertight gaskets in low-lying areas. Manhole covers and frames are replaced as required and are adjusted to the new pavement grades to help eliminate inflow. Manhole inserts have been added in areas that were experiencing inflow through manhole covers.

4. CONDITION OF THE SEWER

The Mill Lane Sewer Main Replacement Phase 1 construction project was operational as of November 2013, and the Sidley Road Sewer Main Replacement Phase 2 construction project was operational as of March 2014. The completion of these projects eliminated the hydraulic restriction in the East Whiteland Township sewer mains in the Mill Lane and Sidley Road areas. Consequently, the corrective action plan has been terminated for the Mill Lane and Sidley Road areas.

The improvements to the Mill Lane and Sidley Road sewer system also completed Phase 1 and 2 aspects of the Corrective Action Plan (CAP) currently on file with PADEP. Phase 3 of the CAP related to improvements to the Lee Boulevard Pump Station are still to be implemented.

In 2016, approximately 3,780 linear feet (LF) of new 18-inch, 20-inch and 24-inch sanitary sewer pipe were installed in Conestoga Road to replace existing deteriorating sewer.

During 2017, the following sanitary sewer system work was done:

- Wilburdale Pump Station and Force main improvements
- Planebrook Pump Station force main improvements were completed.
- Deer Run Pump Station emergency generator replacement was started and were completed in 2018

During 2018, the following sanitary sewer system work was done:

- On August 23, 2018, a portion of a 10-inch sewer main collapsed on Warren Avenue. The repair consisted of replacing approximately 100 LF. of the deteriorated main.
- Construction of Planebrook Pump Station was complete.
- On November 30, 2018, Frame Ave Pump Station was decommissioned, and flow was diverted to the Planebrook Pump Station.

During 2019, the following sanitary sewer system work was done:

- Flat Road Pump Station was shut down on January 24, 2019, due to a sinkhole which
 developed at the station and jeopardized the integrity of the station. A new pump
 station was built and put into service in October of 2019.
- Construction of the Chester Valley Golf Course Sewer Extension began in December of 2019.

During 2020, the following sanitary sewer system work was done:

- Pump #1 at Westgate Pump Station was replaced on April 14, 2020, with a new pump.
- Church Road Pump Station was turned off on March 14, 2020, and flow was diverted through the new gravity sewer installed line through Chester Valley Golf Course.

During 2021, the following sanitary sewer system work was done:

- Lateral extensions were installed to 21 existing properties along Conestoga Road.
- Diverted flows from Malvern Hunt WWTP to West Whiteland Village sewer via installation of approximately 350-feet of force main.
- A section of pipe on Warren Ave was repaired after a partial pipe collapse (10').
- An obstructed pipe was repaired, and the area stabilized behind 273 Phoenixville Pike.

During 2022, the following sanitary sewer system work was done:

- A CCTV and manhole inspection project began which includes around 70,000 ft of sewer main and 360 manholes. This project is expected to be completed in the first quarter of 2023.
- There was a main break on the Hillbrook FM on October 11, 2022 which was subsequently repaired.

There were no Sanitary Sewer Overflows (SSOs) in 2022.

5. <u>SEWAGE PUMPING STATIONS</u>

There are currently twelve (12) pumping stations in operation that convey sanitary sewage flow within the collection system. Pump station reports, which include the permitted capacity, monthly flows, and the 2-Year projected flows, for all 12 pump stations are included in **Appendix D**. In 2018 Frame Ave Pump Station was abandoned/demolished and all flow was diverted to the newly constructed Planebrook Pump Station. All pump stations, except Mill Lane, have two pumps that alternate lead-lag. The Mill Lane Pump Station has three variable speed pumps. Two pumps operate and one pump is standby. Only the Mill Lane, Wilburdale

and newly constructed Planebrook Pump Station are equipped with a magnetic flow meter to measure the pump station flows. Flow at the other eight (8) pump stations are calculated based on the monthly pump run-time data multiplied by the pump design capacity. All pump stations are visited on a regular basis to determine the condition and document the flow. If a discrepancy is noted during these visits, the cause is investigated, and the appropriate action is taken. Heavy maintenance and repairs are completed by contractors. The emergency generators are checked for readiness by exercising the units once a week. All pump stations are equipped with emergency alarms. In the event of an alarm, an automatic dialer contacts the operators to alert them of the condition.

6. INDUSTRIAL WASTES

Industrial wastes are managed by the Valley Forge Sewer Authority (VFSA) as part of their Industrial Pretreatment Program. Aqua does not sample or test the discharge from the industrial customers or the sewage leaving the sewer system. Industrial customers monitor their own systems and send quarterly records to the VFSA to verify compliance with the Authority's effluent guidelines.

7. CORRECTIVE ACTION PLAN

No Corrective Action Plan is warranted for the collection system and pump stations.

8. METER CALIBRATION REPORTS

Flow meters are that regularly calibrated, and **Appendix E** contains the meter calibration reports for 2022.

Appendix A: Flow Data

		Histor	ical Hyc	Iraulic Loa	ading				
ล Pennsylvan	nia Waste	water, Inc	East Whi	teland Town	ship Sani	tary Sewer Co	llection .	System	
2018		2019		2020		2021		2022	
Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)
1.521	3.25	2.179	2.43	1.477	4.48	1.352	2.11	1.658	3.69
1.833	1.57	2.111	6.18	1.511	3.23	1.381	6.25	1.681	2.71
1.992	5.22	2.256	4.09	1.437	5.22	1.638	3.75	1,666	3.31
1.782	2.78	1.654	3.76	1.508	3.09	1.433	1.70	1.992	6.20
1.926	5.30	1.823	6.36	1.265	6.21	1.078	4.10	1.893	4.93
1.979	4.81	1.834	6.04	1.121	8.29	1.111	3.32	1.616	3.17
1.852	5.46	1.788	6.13	1.110	5.66	1.258	3.67	1.541	2.63
2.043	4.79	1.493	9.82	1.446	1.95	1.371	7.36	1.479	1.92
2.417	1.84	1.391	9.53	1.168	2.25	1.776	9.51	1.522	5.38
2.041	4.54	1.428	2.48	1.173	6.05	1.467	4.77	1.658	3.42
2.205	1.83	1.360	8.32	1.272	1.72	1.470	1.06	1.413	2.78
2.291	1.96	1.448	5.99	1.480	4.81	1.431	1.76	1.657	5.15
1.990	43.35	1.730	71.13	1.331	52.96	1.397	49.36	1.648	45.29
2.417		2.256		1.511		1.776		1.992	
1.936		1.603		2.221		1.485		1.850	
0.973		0.926		1.669	•	1.063		1.123	
					5 - ye	ar Average Hydru	salic Ratio	1.151	1
			:	5 - year H	lydraulic An	ınual Average An	nual Flow	1.619	6
	Average Monthly Flow (MGD) 1.521 1.833 1.992 1.782 1.926 1.979 1.852 2.043 2.041 2.041 2.041 2.041 1.990 2.205 2.201 1.936 0.973	Average Rainfall (in) (in) (in) (in) (in) (in) (in) (in)	Average Average Average Average Rainfall Monthly Flow (in) (MGD) 1.521 3.25 2.179 1.833 1.57 2.111 1.992 5.22 2.256 1.926 5.30 1.834 1.979 4.81 1.834 1.979 4.81 1.834 1.979 4.81 1.836 2.041 4.54 1.428 2.205 1.83 1.360 2.291 1.96 1.448 1.990 43.35 1.603 2.417 2.256 1.936 4.35 1.603 1.936 1.936 1.603 0.973 0.926	Average	Monthly Flow (in) Mont	Average Rainfall Average Rainfall Monthly Flow (MGD) 1.521 2.179 2.43 1.477 4.48 1.922 5.22 2.256 4.09 1.437 5.22 1.929 2.417 1.84 1.391 2.48 1.173 6.05 2.205 1.83 1.360 1.480 1.73 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.83 1.360 1.480 1.31 2.205 1.480 1.605 1.31 2.205 1.305	Average Aver	Monthly Flow (in) Mont	Maria Mastewater, Inc. East Whiteland Township Sanitary Sewer Collection System Average Rainfall Monthly Flow (in) (MGD) (MGD)

Monthly Rainfall data from recordings taken from USGS 01473169 Valley Creek water information collection station.

	Proje	cted Hyo	Projected Hydraulic Loading			
Transfer Miller					•	Projected
	Previous Year's Annual	Projected		Projected Annual Average	Hydraulic	XaX Max
Year	Average Flow	EDU's	Increased Flow (MGD)	Flow (MGD)	Ratio	Month
2023	1.619	145.3	0.040	1.659	1.151	1.910
2024	1.659	57	0.016	1.675	1.151	1.928
2025	1.675	85	0.023	1.698	1.151	1.954
2026	1.698	95	0.026	1.724	1.151	1.985
2027	1.724	105	0.029	1.753	1.151	2.018

(1) Calculated Flow Rate Per EDU 275 (gal/EDU) (2) Calculated 5-year Hydrualic Ratio 1.151

Appendix B: Projected Connections

Table 2: East Whiteland	Township	Projected	Connections
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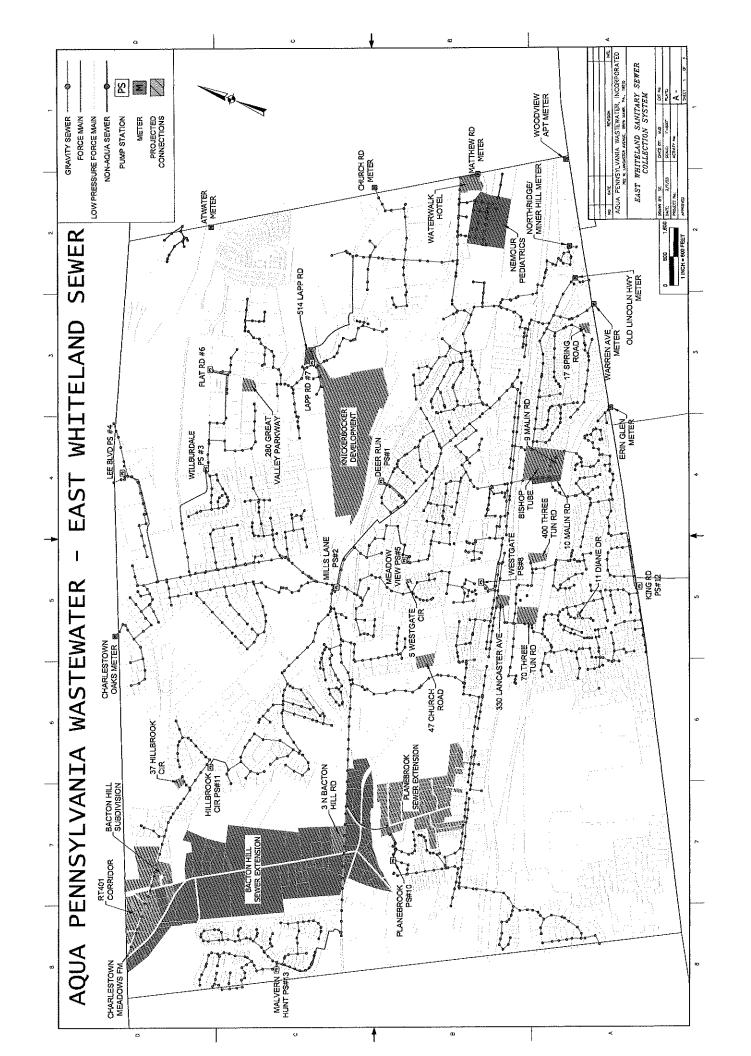
Table 2: East Whiteland Tov		PFIU	,		CONTRACTOR AND		
Drainage Basin	Actual			Action of the Company	Connect	SENSO CONTRACTOR MUSIC PROPERTY NAMED IN NO.	
	2022	2023	2024	2025	2026	2027	Total
Gravity Drainage Basin ¹							
Grove Shopping Center Redevelopment	26	-	-	-	-	-	_
Nemours Pediatrics (Uptown Worthington)	-	19	-	-	-	-	19
17 Spring Road	-	1	-	-	-	-	1
16 Spring Road	1	-	-	-	-	-	-
9 Malin Road	-	2	-	-	-	-	2
10 Malin Road	-	2	-	-	-	-	2
Bishop Tube	-	-	-	5	15	15	35
Waterwalk Hotel		<u>-</u>	_	_	_	30	30
Gravity Drainage Basin Subtotal	1	24		5	15	45	89
Deer Run Pump Station 1							
No Projected Connections	-		-		-	-	_
Deer Run Pump Station 1 Subtotal				•			
Mill Lane Pump Station 2							
Malvern Crossing	3		egistang banasasan me	gaja sara teru termi	************************	- The second	
3 North Bacton Hill	J	1	_	_	-	_	1 1
Bacton Hill/Swedesford Road Sewer Extension	_	10	10	15	15	10	60
47 Church Road-GVSD 5/6 Center	_	75			_	-	75
5 Westgate	_	1	_	_	-	_	1
_	7	_	_	_	_	_	
554, 556558, 560 Lancaster Ave. (Frazer Lanes)	3	<u> </u>	_	_	_	_	_
105 Church Street (Malvern Ducklings)		15	17	15	<u> </u>	10	72
Flow From PS 3,4,5,11,13, and 14	7.8 21	102	27	30	30	20	209
Mill Lane Pump Station 2 Subtotal	21	102	۷,	JU	JU		200
Wilburdale Pump Station 3							
No Projected Connections	-	-	-	-	-	-	_
Flow from Flat Road PS		-	- 		- 155461 (2014)	-	-
Wilburdale Pump Station 3 Subtotal	•	-	-	-	-	-	-
Lee Boulevard Pump Station 4							
PA Turnpike - Devault Maintenance Facility	3.8	_	.	-	<u>.</u>	-	
Lee Boulevard Pump Station 4 Subtotal	3.8						
Meadowview Pump Station 5							
No Projected Connections	-	_	_	-	-	-	_
Meadowview Pump Station 5 Subtotal							
Flat Road Pump Station 6							
No Projected Connections	<u>-</u>] -	-	_		-	- 1
Flat Road Pump Station 6 Subtotal							-
Lapp Road Pump Station 7		estitud.	30		erre esemble	and consider	170
Knickerbocker	_	-	30	50	50	40	170
514 Lapp Road	_	2	-	-	-	-	2
280 Great Valley Parkway-Johnson and Johnson	- 1 + 2 + 4 + 5 * 5 *	2	-	-	- 1	- 40	2
Lapp Road Pump Station 7 Subtotal		4	30	50	50	40	174

Table 2: East Whiteland Townshi	o Proj	ected	Conn	ectior	ıs (Co	ntinue	ed)
Drainage Basin	Actual		Pr	ojected	Connec	tions	
	2022	2023	2024	2025	2026	2027	Total
Westgate Pump Station 8							
11 Diane Drive (King/Carol/Summit Extension)	2	1	-	-	-	-	1
Redgo Development Lot 2 (60 Three Tun Road)	.4	-	-	-	-	-	-
Redgo Development Lot 3 (70 Three Tun Road)	-	5.3	-	-	-	-	5.3
400 Three Tun Road	-	2	_	-	-	-	2
330 Lancaster Ave - Shouldice Hernia	-	7	-	-	-	_	7
Westgate Pump Station 8 Subtotal	6	15.3					15.3
Hillbrook Circle Pump Station 11							
37 Hillbrook (part of Hillbrook Circle)	-	1	*** *** **** **** *** *** *** *** **	- 11:0 Levino 14:10.	=	releanistrase. •	1
Bacton Hill Subdivision	-	2	3	1	_	_	6
401 Corridor Extension	4	4	4	4	5		17
Hillbrook Circle Pump Station 11 Subtotal	4	7	7	5	5		24
King Road Pump Station 12							
No Projected Connections	-		erik (12. wer 9 5,5) : =	Tektralie dater	Barren Geregeler -		
King Road Pump Station 12 Subtotal		2545 <u>2</u> 1545.					
Malvern Hunt Pump Station 13							
No Projected Connections		1986.31 (893.44) -	. Circle of Education (1853 BA 46 (1894)9 -	Al-Katadi Jan -		
Malvern Hunt Pump Station 13 Subtotal						1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1	
Planebrook Road Pump Station 14							
Planebrook Road Sewer Extension		8	10	10	10	10	48
Planebrook Road Pump Station 14 Subtotal		8	10	10	10	10	46 48
Total Connections	53.8	145,3	57/.(0)	- (35,0)	95.0	105.0	40 487,3
Projected Flow (GPD) ²			15,675				THE TOP A SHILL DOWN

Notes:

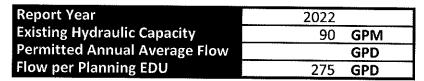
- 1. All projected flow in this table flows through the gravity drainage basin and the Matthews Rd Meter
- 2. Projected Flows are calculated using 275 GPD/EDU

Appendix C: Sewer System Map



Appendix D: Pump Station Reports

Pump Station Name Deer Run P.S. 1
WQM Permit No. 1571413





Flow Units GPD

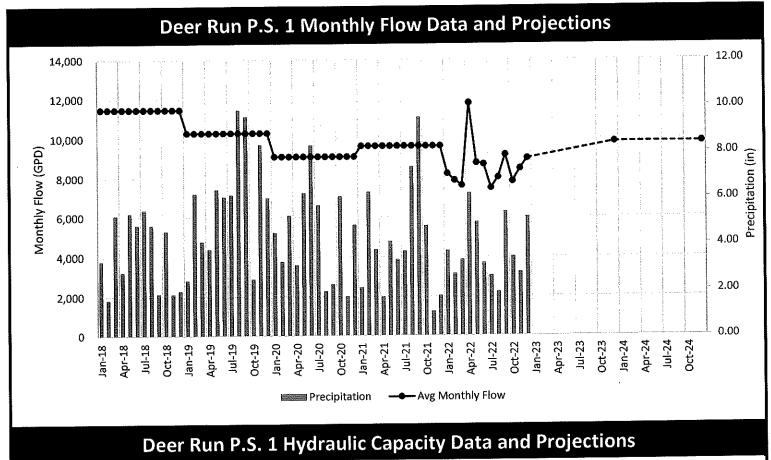
		Averag	ge Daily Flow	, GPD		Г	Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					8,228	Г		
February					7,878	1	Project	ed EDUs
March					7,618	1	0	0
April					11,799	1		
May					8,774	1	Project	ed Flow
June					8,700		0	0
July					7,487			
August					8,032			
September					9,185			
October					7,823			
November					8,473			
December					8,995			
Annual Avg	11,475	10,298	9,099	9,634	8,583	Н	9,818	9,818
Max Month					11,799		13,497	13,497
Max : Avg Ratio					1.37		1.37	1.37
Peak Factor	4.25	4.25	4.25	4.25	4.25		4.25	4.25
Peak Flow (GPM)	34	30	27	28	25		29	29
Overload?	No	No	No	No	No		No	No

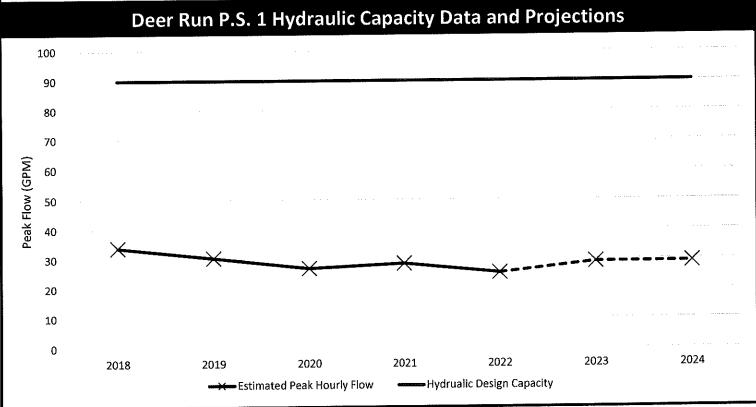
		Pr	ecipitation,	ln	
Month	2018	2019	2020	2021	2022
January	3.25	2.43	4.48	2.11	3.69
February	1.57	6.18	3.23	6.25	2.71
March	5.22	4.09	5.22	3.75	3.31
April	2.78	3.76	3.09	1.70	6.20
May	5.30	6.36	6.21	4.10	4.93
June	4.81	6.04	8.29	3.32	3.17
July	5.46	6.13	5.66	3.67	2.63
August	4.79	9.82	1.95	7.36	1.92
September	1.84	9.53	2.25	9.51	5.38
October	4.54	2.48	6.05	4.77	3.42
November	1.83	8.32	1.72	1.06	2.78
December	1.96	5.99	4.81	1.76	5.15
Total	43.35	71.13	52.96	49.36	45.29

Weather Station	
Valley Creek	
USGS 01473169	

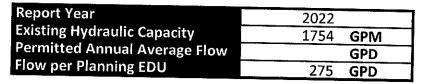
-		







Pump Station Name Mill Lane P.S. 2
WQM Permit No. 1575412





Flow Units GPD

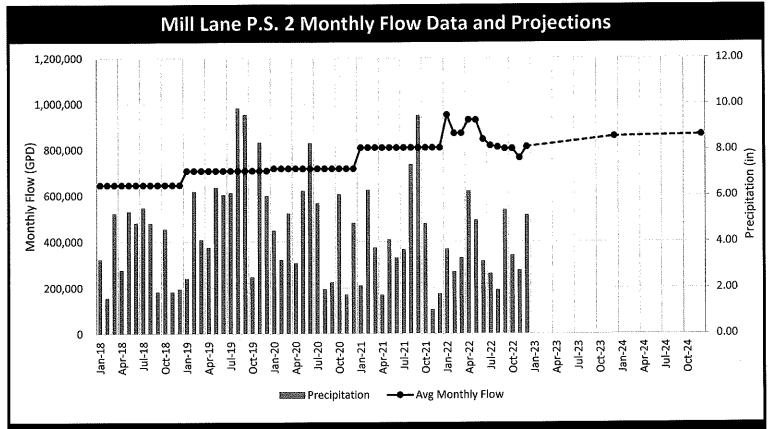
Month			ge Daily Flov	v, GPD		Г	Project	ted Flow
	2018	2019	2020	2021	2022		2023	2024
January					952,403	Т		
February					872,069	1	Project	ed EDUs
March					872,330	1	102	27
April					930,900	Ì		
May					930,084	1	Project	ed Flow
June					846,162		28,050	7,425
July					818,470			
August					812,206			
September October					804,887			
November		· · · · · · · · · · · · · · · · · · ·			804,981		!	
December					764,370			
December					812,834			
Annual Avg	646,520	708,029	718,197	808,912	851,808		858,410	865,835
Max Month					952,403		959,785	968,086
Max : Avg Ratio					1.12		1.12	1.12
Peak Factor	2.50	2,50	3.50	2 5 6				
Peak Flow (GPIM)	1122	1229	2.50	2.50	2.50		2.50	2.50
Overload?	No	No	1247	1404	1479	_ļ	1490	1503
	140	NU	No	No i	No		No	No

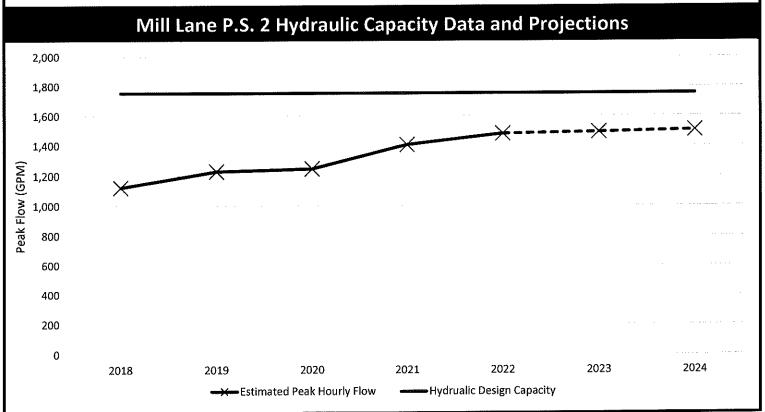
n a		Pr	ecipitation,	In	
Month	2018	2019	2020	2021	2022
January	3.25	2.43	4.48	2.11	3.69
February	1.57	6.18	3.23	6.25	2.71
March	5.22	4.09	5.22	3.75	3.31
April	2.78	3.76	3.09	1.70	6.20
May	5.30	6.36	6.21	4.10	4.93
June	4.81	6.04	8.29	3.32	3.17
July	5.46	6.13	5.66	3.67	2.63
August	4.79	9.82	1.95	7.36	1.92
September	1.84	9.53	2.25	9.51	5.38
October	4.54	2.48	6.05	4.77	3.42
November	1.83	8.32	1.72	1.06	2.78
December	1.96	5.99	4.81	1.76	5.15
Total	43.35	71.13	52.96	49.36	45.29

Weather Station
Valley Creek
USGS 01473169

N	σi	es
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Pump Station Name	Wilburdale P.S. 3
WQM Permit No.	1507413

Report Year	2022	
Existing Hydraulic Capacity	930	GPM
Permitted Annual Average Flow	300,000	GPD
Flow per Planning EDU	275	GPD

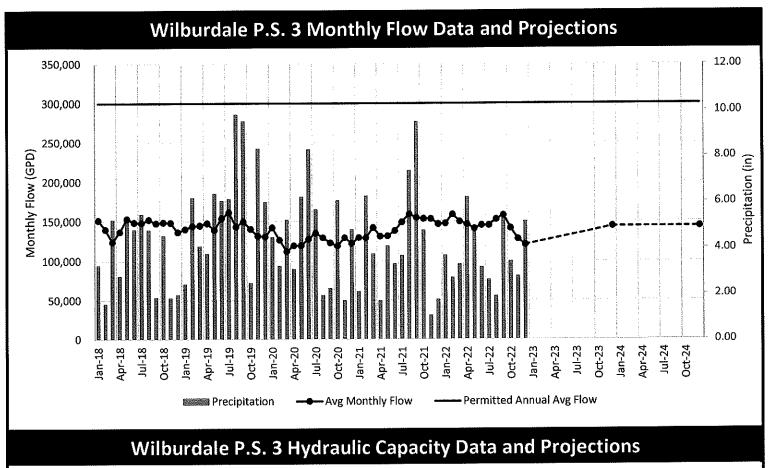


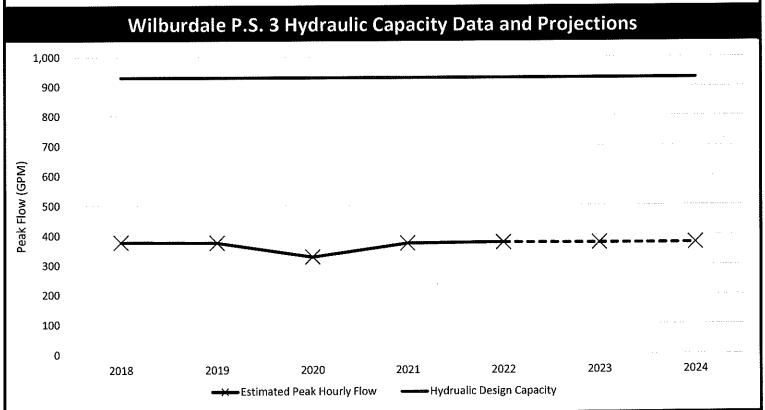
	Average Daily Flow, GPD						Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January	151,320	140,390	142,430	129,770	147,440			
February	140,190	144,140	126,790	129,500	158,670		Projecto	ed EDUs
March	124,430	144,960	112,420	142,340	149,680		0	0
April	137,100	147,780	119,760	131,520	146,260	İ		·
May	153,210	139,620	119,790	131,930	141,290		Project	ed Flow
June	148,820	153,740	127,950	138,300	145,200		0	0
July	148,210	161,360	135,570	149,200	145,200			
August	152,130	143,680	129,610	158,950	152,496			
September	147,810	149,830	123,240	154,640	157,691			
October	148,820	140,640	119,380	153,460	141,763			
November	148,230	131,850	129,670	153,180	128,223			
December	136,770	131,110	122,610	146,800	120,927			
Annual Avg	144,753	144,092	125,768	143,299	144,570	H	143,935	143,935
Max Month	153,210	161,360	142,430	158,950	158,670		158,814	158,814
Max : Avg Ratio	1.06	1.12	1.13	1,11	1.10		1.10	1.10
						_		
Peak Factor	3.75	3.75	3.75	3.75	3.75		3.75	3.75
Peak Flow (GPM)	377	375	328	373	376	L	375	375
Overload?	No	No	No No	No	No	Ц	No	No

	Precipitation, In						
Month	2018	2019	2020	2021	2022		
January	3.25	2.43	4.48	2.11	3.69		
February	1.57	6.18	3.23	6.25	2.71		
March	5.22	4.09	5.22	3.75	3.31		
April	2.78	3.76	3.09	1.70	6.20		
May	5.30	6.36	6.21	4.10	4.93		
June	4.81	6.04	8.29	3.32	3.17		
July	5.46	6.13	5.66	3.67	2.63		
August	4.79	9.82	1.95	7.36	1.92		
September	1.84	9.53	2.25	9.51	5.38		
October	4.54	2.48	6.05	4.77	3.42		
November	1.83	8.32	1.72	1.06	2.78		
December	1.96	5.99	4.81	1.76	5.15		
Total	43.35	71.13	52.96	49.36	45.29		

Ν	ot	es







Pump Station Name	Lee Boulevard P.S. 4
WQM Permit No.	1587430

Report Year	2022	
Existing Hydraulic Capacity	470	GPM
Permitted Annual Average Flow		GPD
Flow per Planning EDU	275	GPD



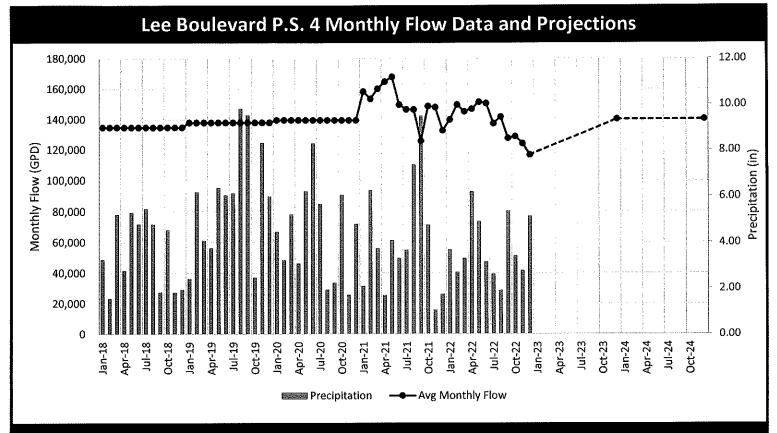
An Essential Utilities Company

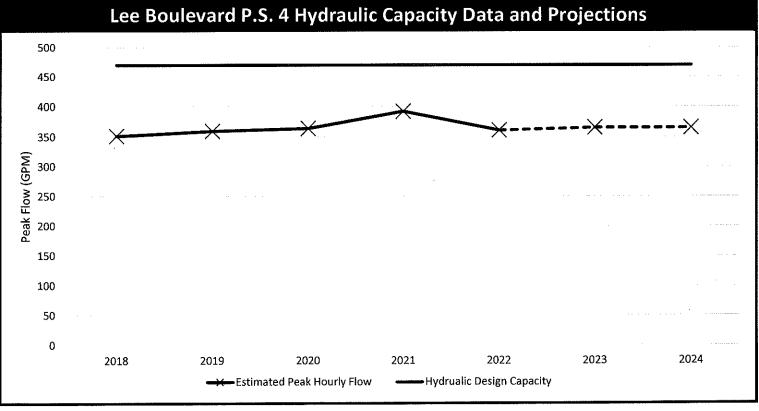
Flow	Units	GPD

	Average Daily Flow, GPD						Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January				158,471	140,017			
February				153,650	149,839		Project	ed EDUs
March				160,181	145,426	1	0	0
April				164,875	147,113			
May				168,059	151,563		Project	ed Flow
June				149,930	150,687		0	0
July				146,734	137,468			
August				146,730	141,892			
September				126,030	127,740			
October				148,965	128,948			
November				148,240	124,204			
December				132,973	116,828			
Annual Avg	134,837	138,000	139,683	150,403	138,477		140,280	140,280
Max Month	· · · · · · · · · · · · · · · · · · ·			168,059	151,563		155,142	155,142
Max : Avg Ratio				1.12	1.09		1.11	1.11
Peak Factor	3.75	3.75	3.75	3.75	3.75		3.75	3.75
Peak Flow (GPM)	351	359	364	392	361		365	365
Overload?	No	No	No	No	No		No	No

	Precipitation, In					
Month	2018	2019	2020	2021	2022	
January	3.25	2.43	4.48	2.11	3.69	
February	1.57	6.18	3.23	6.25	2.71	
March	5.22	4.09	5.22	3.75	3.31	
April	2.78	3.76	3.09	1.70	6.20	
May	5.30	6.36	6.21	4.10	4.93	
June	4.81	6.04	8.29	3.32	3.17	
July	5.46	6.13	5.66	3.67	2.63	
August	4.79	9.82	1.95	7.36	1.92	
September	1.84	9.53	2.25	9.51	5.38	
October	4.54	2.48	6.05	4.77	3.42	
November	1.83	8.32	1.72	1.06	2.78	
December	1.96	5.99	4.81	1.76	5.15	
Total	43.35	71.13	52.96	49.36	45.29	







Pump Station Name	Meadowview P.S. 5
WQM Permit No.	1580410

Report Year	2022
Existing Hydraulic Capacity	80 GPM
Permitted Annual Average Flow	GPD
Flow per Planning EDU	275 GPD

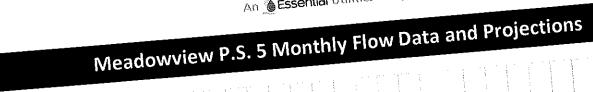


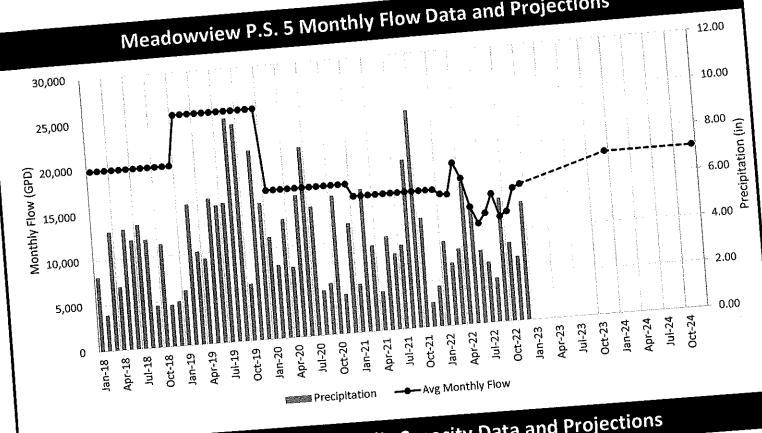
		Averag	e Daily Flow	, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					14,387			
February					14,297		Project	ed EDUs
March					17,621		0	0
April					15,909			
May					12,735		Project	ed Flow
June					10,893		0	0
July					11,941			
August					13,981			
September					11,474	Ì		
October					11,961			
November					14,453			
December					14,808			<u> </u>
Annual Avg	19,791	25,368	16,306	14,902	13,705		17,570	17,570
Max Month					17,621		22,590	22,590
Max : Avg Ratio					1.29		1.29	1.29
Peak Factor	4.25	4.25	4.25	4.25	4.25		4.25	4.25
Peak Flow (GPM)	58	75	48	44	40		52	52
Overload?	No	No	No	No	No		No	No

	Precipitation, In						
Month	2018	2019	2020	2021	2022		
January	3.25	2.43	4.48	2.11	3.69		
February	1.57	6.18	3.23	6.25	2.71		
March	5.22	4.09	5.22	3.75	3.31		
April	2.78	3.76	3.09	1.70	6.20		
May	5.30	6.36	6.21	4.10	4.93		
June	4.81	6.04	8.29	3.32	3.17		
July	5.46	6.13	5.66	3.67	2.63		
August	4.79	9.82	1.95	7.36	1.92		
September	1.84	9.53	2.25	9.51	5.38		
October	4.54	2.48	6.05	4.77	3.42		
November	1.83	8.32	1.72	1.06	2.78		
December	1.96	5.99	4.81	1.76	5.15		
Total	43.35	71.13	52.96	49.36	45.29		

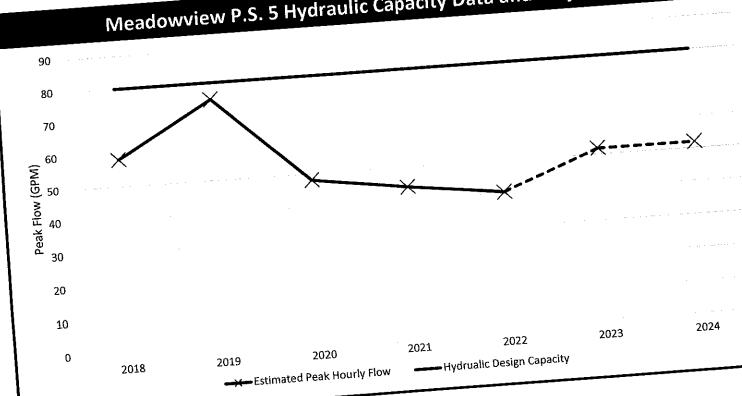
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Meadowview P.S. 5 Hydraulic Capacity Data and Projections



Pump Station Name	Flat Road P.S. 6
WQM Permit No.	1521407

Report Year	2022
Existing Hydraulic Capacity	275 GPM
Permitted Annual Average Flow	GPD
Flow per Planning EDU	275 GPD

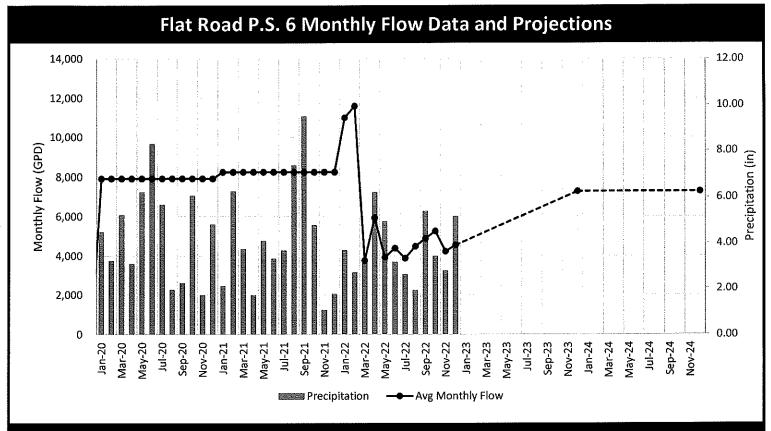


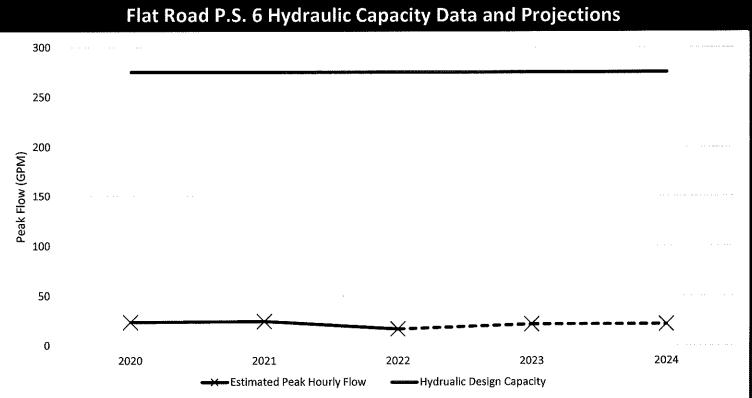
		Averag	ge Daily Flow	, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					11,018			
February					11,609		Project	ed EDUs
March					3,779	1	0	0
April					5,940			
May					3,939	1	Project	ed Flow
June					4,400	1	0	0
July					3,885			<u>'</u>
August					4,500			
September					4,895			
October					5,269			
November					4,235			
December					4,565			
Annual Avg			7,925	8,245	5,670	H	7,280	7,280
Max Month				,	11,609		14,907	14,90
Max : Avg Ratio					2.05		2.05	2.05
Peak Factor			4.25	4.25	4.25		4.25	4.25
Peak Flow (GPM)			23	24	17		21	21
Overload?			No	No	No		No	No

		Pr	ecipitation,	ln	
Month	2018	2019	2020	2021	2022
January	3.25	2.43	4.48	2.11	3.69
February	1.57	6.18	3.23	6.25	2.71
March	5.22	4.09	5.22	3.75	3.31
April	2.78	3.76	3.09	1.70	6.20
May	5.30	6.36	6.21	4.10	4.93
June	4.81	6.04	8.29	3.32	3.17
July	5.46	6.13	5.66	3.67	2.63
August	4.79	9.82	1.95	7.36	1.92
September	1.84	9.53	2.25	9.51	5.38
October	4.54	2.48	6.05	4.77	3.42
November	1.83	8.32	1.72	1.06	2.78
December	1.96	5.99	4.81	1.76	5.15
Total	43.35	71.13	52.96	49.36	45.29

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Pump Station Name	Lapp Road P.S. 7
WQM Permit No.	1583405



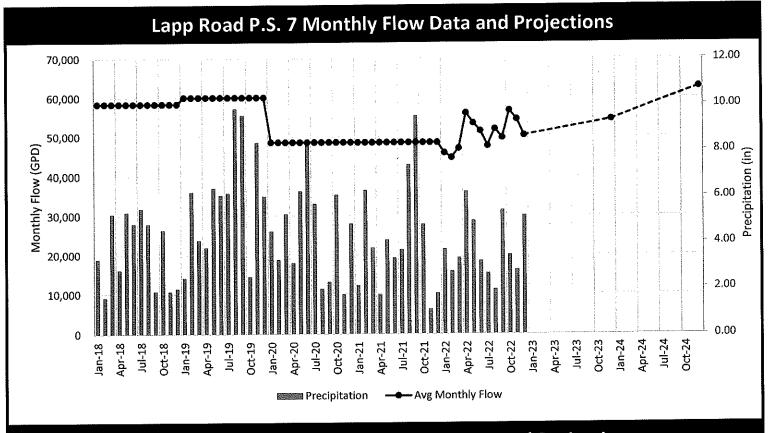


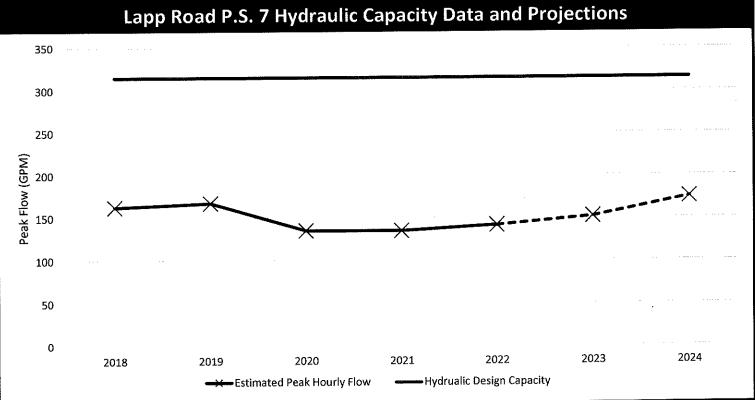
		Averag	e Daily Flow	, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					45,960			
February					44,708		Projecto	ed EDUs
March					47,026		4	30
April					56,091			
May					53,509		Project	ed Flow
June					51,471		1,100	8,250
July					47,687	1		
August					51,946			
September					49,716			
October					56,761			
November					54,495			
December					50,337			
Annual Avg	58,439	60,109	48,565	48,527	50,809		54,390	62,640
	36,439	00,109	40,303	40,327		l		
Max Month					56,761		60,761	69,978
Max : Avg Ratio			<u>L.</u>		1.12	Ц	1.12	1.12
Peak Factor	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Peak Flow (GPM)	162	167	135	135	141	1	151	174
Overload?	No	No	No	No	No		No	No

	Precipitation, In							
Month	2018	2019	2020	2021	2022			
January	3.25	2.43	4.48	2.11	3.69			
February	1.57	6.18	3.23	6.25	2.71			
March	5.22	4.09	5.22	3.75	3.31			
April	2.78	3.76	3.09	1.70	6.20			
May	5.30	6.36	6.21	4.10	4.93			
June	4.81	6.04	8.29	3.32	3.17			
July	5.46	6.13	5.66	3.67	2.63			
August	4.79	9.82	1.95	7.36	1.92			
September	1.84	9.53	2.25	9.51	5.38			
October	4.54	2.48	6.05	4.77	3.42			
November	1.83	8.32	1.72	1.06	2.78			
December	1.96	5.99	4.81	1.76	5.15			
Total	43.35	71.13	52.96	49.36	45.29			

NULE:	Ν	O	ìt	e:
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Pump Station Name Westgate P.S. 8
WQM Permit No. 1587436

Report Year 2022

Existing Hydraulic Capacity 700 GPM

Permitted Annual Average Flow GPD

Flow per Planning EDU 275 GPD



Flow Units GPD

		Averag	e Daily Flov	v, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					52,906	Г		
February					64,700	ĺ	Project	ed EDUs
March					54,735	1	15.3	0
April					63,793	1		
May					59,568		Project	ed Flow
June					59,920	1	4,208	0
July					62,390	ĺ		
August					57,527	1		
September					56,980			
October					58,800			
November					54,460			
December					56,420			
Annual Avg				51,907	58,517	П	62,724	62,724
Max Month					64,700		69,352	69,352
Max : Avg Ratio					1.11		1.11	1.11
Peak Factor				4.00	4.00		4.00	4.00
Peak Flow (GPM)				144	163		174	174
Overload?				No	No	П	No	No

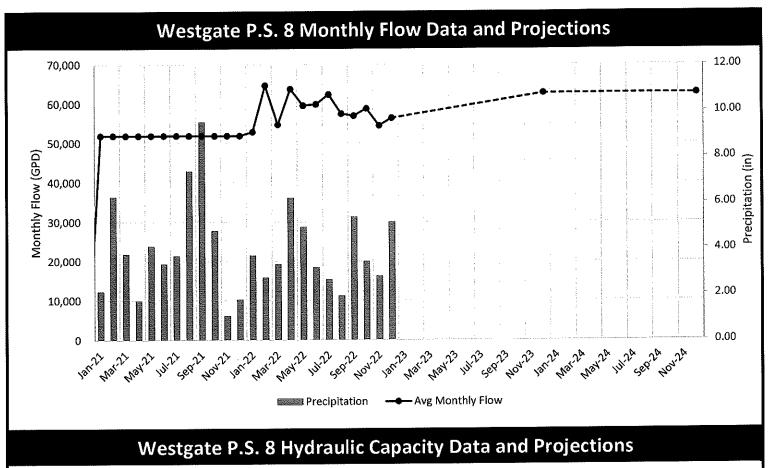
	Precipitation, In						
Month	2018	2019	2020	2021	2022		
January	3.25	2.43	4.48	2.11	3.69		
February	1.57	6.18	3.23	6.25	2.71		
March	5.22	4.09	5.22	3.75	3.31		
April	2.78	3.76	3.09	1.70	6.20		
May	5.30	6.36	6.21	4.10	4.93		
June	4.81	6.04	8.29	3.32	3.17		
July	5.46	6.13	5.66	3.67	2.63		
August	4.79	9.82	1.95	7.36	1.92		
September	1.84	9.53	2.25	9.51	5.38		
October	4.54	2.48	6.05	4.77	3.42		
November	1.83	8.32	1.72	1.06	2.78		
December	1.96	5.99	4.81	1.76	5.15		
Total	43.35	71.13	52.96	49.36	45.29		

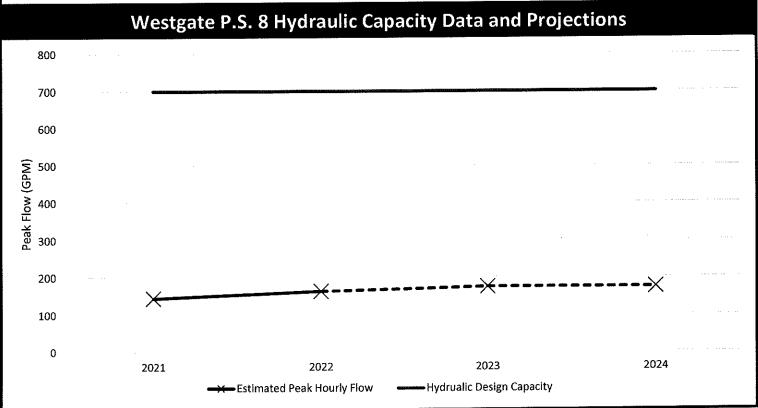
Weather Station
Valley Creek
USGS 01473169

1. In 2020 the Church Rd PS was decomissioned which reduceds flows to the Westgate PS so only 2021 and 2022 is being shown.

Notes







Pump Station Name Hillbrook Circle P.S. 11
WQM Permit No. 1500428-A1

Report Year	2022	
Existing Hydraulic Capacity	295	GPM
Permitted Annual Average Flow		GPD
Flow per Planning EDU	275	GPD



Flow Units GPD

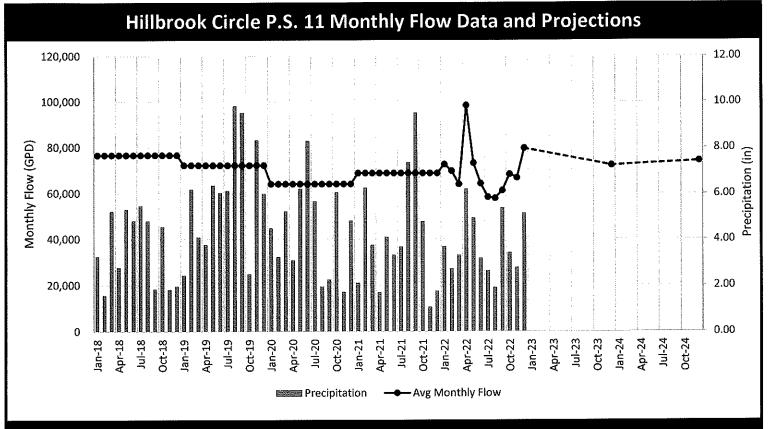
		Averag	ge Daily Flow	, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					72,684			
February					69,852	1	Project	ed EDUs
March					64,101	1	7	7
April					98,392			
Мау					73,255		Project	ed Flow
June					64,399	1	1,925	1,925
July					58,458			
August					57,927			
September					61,360			
October		*****	*******		68,459			
November					66,965			
December					79,709	Ш		
Annual Avg	76,702	72,308	64,118	68,850	69,630		72,247	74,172
Max Month		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	98,392		102,090	104,810
Max : Avg Ratio					1.41		1.41	1.41
Peak Factor	3.90	3.90	3.90	3.90	3.90		3.90	3.90
Peak Flow (GPM)	208	196	174	186	189		196	201
Overload?	No	No	No	No	No		No	No

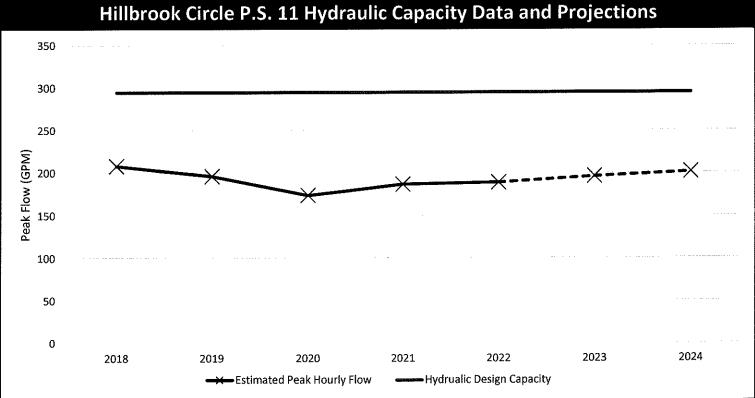
	Precipitation, In						
Month	2018	2019	2020	2021	2022		
January	3.25	2.43	4.48	2.11	3.69		
February	1.57	6.18	3.23	6.25	2.71		
March	5.22	4.09	5.22	3.75	3.31		
April	2.78	3.76	3.09	1.70	6.20		
May	5.30	6.36	6.21	4.10	4.93		
June	4.81	6.04	8.29	3.32	3.17		
July	5.46	6.13	5.66	3.67	2.63		
August	4.79	9.82	1.95	7.36	1.92		
September	1.84	9.53	2.25	9.51	5.38		
October	4.54	2.48	6.05	4.77	3.42		
November	1.83	8.32	1.72	1.06	2.78		
December	1.96	5.99	4.81	1.76	5.15		
Total	43.35	71.13	52.96	49.36	45.29		

Weather Station
Valley Creek
USGS 01473169

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м.			-







Pump Station Name	King Road P.S. 12
WQM Permit No.	1502418

Report Year	2022	
Existing Hydraulic Capacity	258	GPM
Permitted Annual Average Flow		GPD
Flow per Planning EDU	275	GPD

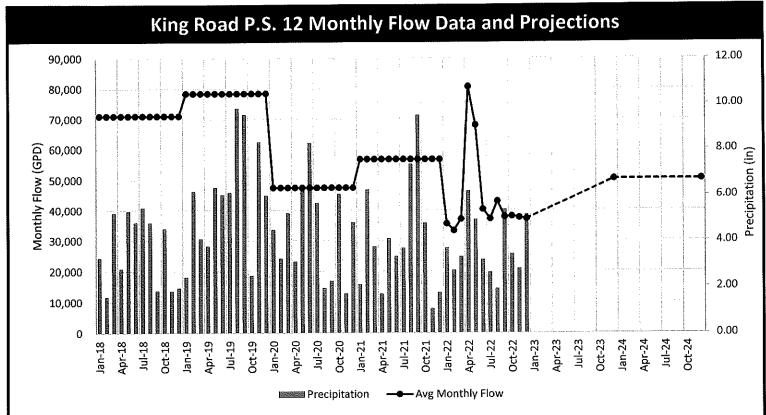


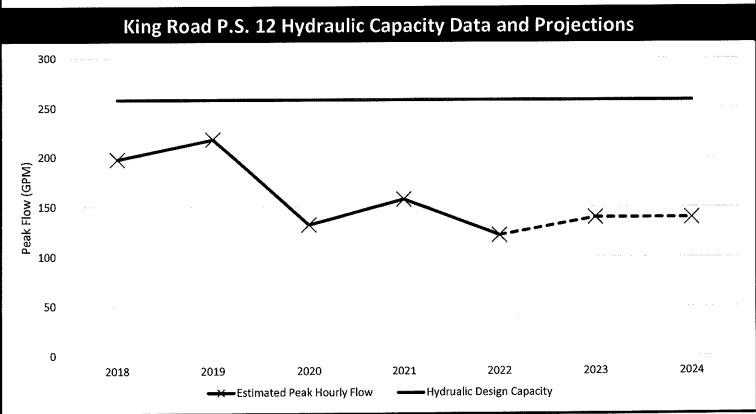
		Averag	ge Daily Flow	, GPD			Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January					35,587			
February					33,347		Project	ed EDUs
March					37,102		0	0
April					80,728			
May					68,004		Project	ed Flow
June					40,360		0	0
July					37,202			
August					43,063			
September					37,874			
October					38,101			
November					37,616			\
December					37,204			
Annual Avg	71,065	78,460	47,545	56,741	43,849	Н	50,295	50,295
Max Month					80,728		92,596	92,596
Max : Avg Ratio					1.84		1.84	1.84
Peak Factor	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Peak Flow (GPM)	197	218	132	158	122		140	140
Overload?	No	No	No	No	No		No	No

	Precipitation, In					
Month	2018	2019	2020	2021	2022	
January	3.25	2.43	4.48	2.11	3.69	
February	1.57	6.18	3.23	6.25	2.71	
March	5.22	4.09	5.22	3.75	3.31	
April	2.78	3.76	3.09	1.70	6.20	
May	5.30	6.36	6.21	4.10	4.93	
June	4.81	6.04	8.29	3.32	3.17	
July	5.46	6.13	5.66	3.67	2.63	
August	4.79	9.82	1.95	7.36	1.92	
September	1.84	9.53	2.25	9.51	5.38	
October	4.54	2.48	6.05	4.77	3.42	
November	1.83	8.32	1.72	1.06	2.78	
December	1.96	5.99	4.81	1.76	5.15	
Total	43.35	71.13	52.96	49.36	45.29	

IN.	TA)	4-1







Pump Station Name Malvern Hunt P.S. 13
WQM Permit No. WQG02152118





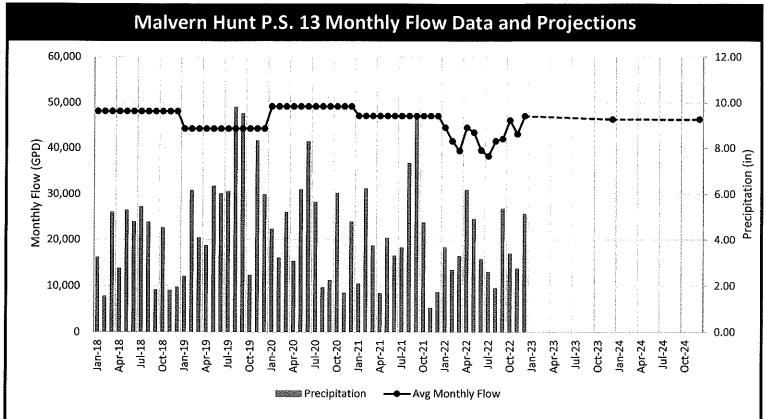
Flow Units GPD

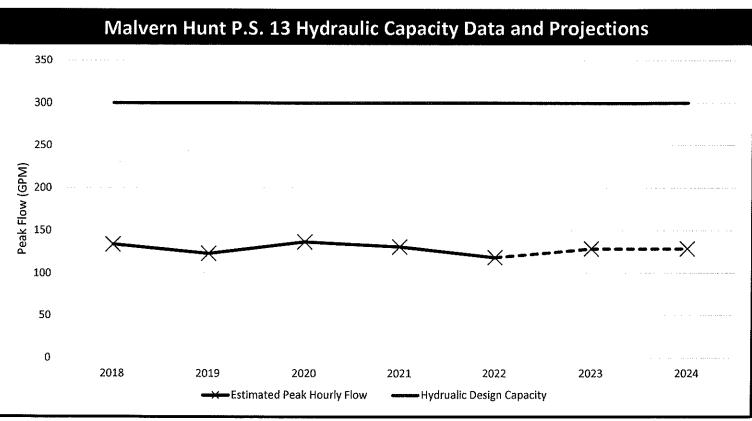
	Average Daily Flow, GPD					Project	ed Flow	
Month	2018	2019	2020	2021	2022		2023	2024
January					44,555			
February					41,571		Projecto	ed EDUs
March					39,503		0	0
April					44,560			
May					43,471		Project	ed Flow
June					39,550		0	0
July					38,294			
August				-	41,564			
September					42,060			
October					46,161			
November					43,140			
December					47,100			
Annual Avg	48,158	44,292	49,203	47,100	42,627	Н	46,310	46,310
Max Month					47,100		51,169	51,169
Max : Avg Ratio					1.10		1.10	1.10
Peak Factor	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Peak Flow (GPM)	134	123	137	131	118		129	129
Overload?	No	No	No	No	No		No	No

	Precipitation, In					
Month	2018	2019	2020	2021	2022	
January	3.25	2.43	4.48	2.11	3.69	
February	1.57	6.18	3.23	6.25	2.71	
March	5.22	4.09	5.22	3.75	3.31	
April	2.78	3.76	3.09	1.70	6.20	
May	5.30	6.36	6.21	4.10	4.93	
June	4.81	6.04	8.29	3.32	3.17	
July	5.46	6.13	5.66	3.67	2.63	
August	4.79	9.82	1.95	7.36	1.92	
September	1.84	9.53	2.25	9.51	5.38	
October	4.54	2.48	6.05	4.77	3.42	
November	1.83	8.32	1.72	1.06	2.78	
December	1.96	5.99	4.81	1.76	5.15	
Total	43.35	71.13	52.96	49.36	45.29	

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Pump Station Name	Planebrook Road P.S. 14
WQM Permit No.	1517401

Report Year	2022	
Existing Hydraulic Capacity	394	GPM
Permitted Annual Average Flow	151,325	GPD
Flow per Planning EDU	275	GPD

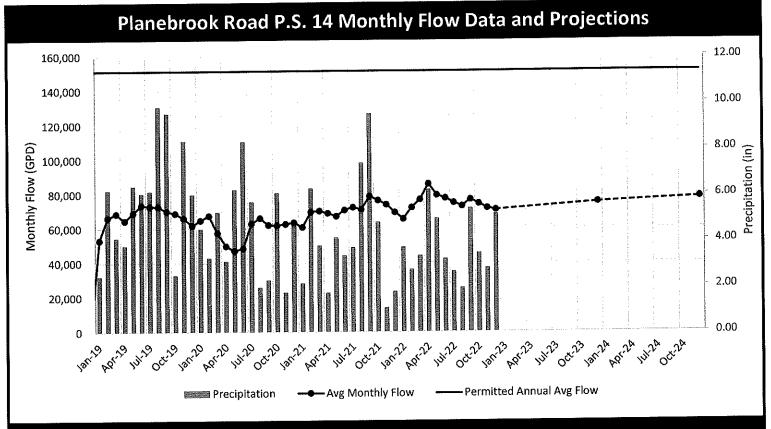


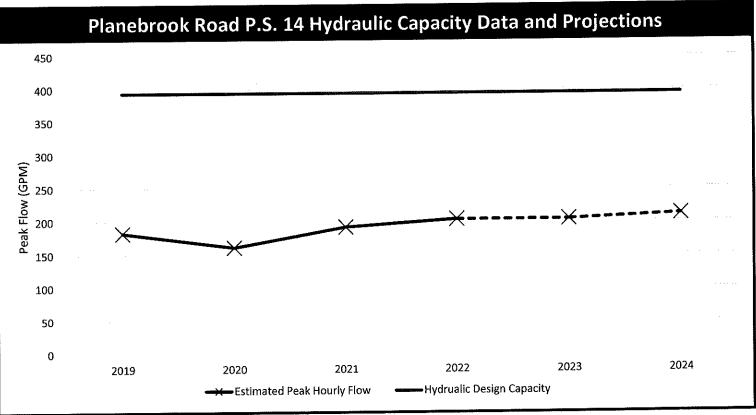
	Average Daily Flow, GPD						Projecte	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January		53,284	64,856	60,715	65,446			
February		66,372	67,571	69,565	72,087		Projecte	ed EDUs
March		68,692	57,514	70,121	76,789		8	10
April		64,636	49,885	68,809	85,901			
May		69,066	47,123	67,035	79,389		Projecte	ed Flow
June		73,738	48,609	70,662	77,566		2,200	2,750
July		72,962	62,903	72,244	74,933			
August		72,953	66,067	70,994	72,870			
September		70,110	62,066	78,657	76,830			
October		68,967	61,906	76,310	74,408			
November		66,179	62,569	73,865	71,800			:
December		61,907	63,442	69,278	70,771			
Annual Avg		67,406	59,543	70,688	74,899		74,993	77,743
Max Month					85,901		86,009	89,163
Max : Avg Ratio					1.15		1.15	1.15
		2.00	2.00	2.00	3.90		3.90	3.90
Peak Factor		3.90	3.90	3.90			203	211
Peak Flow (GPM)		183	161	191	203	_		
Overload?		No	No No	No	No		No	No

	Precipitation, In					
Month	2018	2019	2020	2021	2022	
January	3.25	2.43	4.48	2.11	3.69	
February	1.57	6.18	3.23	6.25	2.71	
March	5.22	4.09	5.22	3.75	3.31	
April	2.78	3.76	3.09	1.70	6.20	
May	5.30	6.36	6.21	4.10	4.93	
June	4.81	6.04	8.29	3.32	3.17	
July	5.46	6.13	5.66	3.67	2.63	
August	4.79	9.82	1.95	7.36	1.92	
September	1.84	9.53	2.25	9.51	5.38	
October	4.54	2.48	6.05	4.77	3.42	
November	1.83	8.32	1.72	1.06	2.78	
December	1.96	5.99	4.81	1.76	5.15	
Total	43.35	71.13	52.96	49.36	45.29	

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Appendix E: Flow Meter Calibration Reports

East Whiteland

CALIBRATION SCHEDULE:

Section A: Equipment calibrated quarterly (VFSA Pump Stations)

Section C: Equipment calibrated quarterly (EAST WHITELAND Township)

Section D: Equipment calibrated quarterly (MALVERN Borough)

Date: 3 rd. 2022 Calibration Data

"Section A"

Valley Forge Sewer Authority Charlestown Meadows Station

Magnetic Flow meters Instrument Data: Manufacturer: Sparling CODE 1563

Model #: FM656 Serial #: M078233104 Max Flow: 500 GPM

4 inches

K Factor: 256.01 PPG

Offset: 2.37

Date of Calibration:

7-26-22 Less than .2%

% of Error: Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Meadows Station Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Sparling

CODE 1563

Model #: FM656 Serial #: M078233104 Max Flow: 500 GPM

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Meadows Station Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

2/01/22 Ma. = -.1 / 249.1 / 499.8 GPM

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: Hydro-Ranger Serial #:021805130VU

Primary Device: 6" Palmer Bowlus Flume

Max Flow: 130 GPM Totalize Multiplier: X 10

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Miltronics Model #: Hydro-Ranger Serial #:021805130VU

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Lee Boulevard Pump Station

Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

% of Error: Comments:

Not in Operation

Corrective Action:

none

Charlestown Oaks Station Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 1007

Primary Device: 6" Palmer Bowlus Flume

Max Flow: 100 GPM Totalize Multiplier: X 10

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Oaks Station

Mission Control Instrument Data:

Manufacturer: Mission Control

Model #: M110/800

Date of Calibration:

% of Error: Comments:

Not in Operation

Corrective Action:

none

Valley Forge Sewer Authority Charlestown Oaks Station Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 1007 Relay output x 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section C"

East Whiteland Township
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Warren Avenue Meter Pit Totalize / Display SCADA (LOCATED AT MILL LANE) Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Minor Hill

Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Matthews Road Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens

Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Max Flow: 10.0 MGD

Primary: 36" Leopold Lagco Flume Output: 4-20 MADC (tot x 1000)

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Matthews Road Meter Pit Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 1eeeerr00

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Woodveiw Apts

Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 2534

Max Flow: 50 G.P.M.

Primary:

Output: 4-20 MADC (tot x 100)

Date of Calibration:

6-3-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Woodveiw Apts

Totalizer transmitter (Thru SCADA)

Instrument Data: 9-26-22

Manufacturer: Badger

Model #: 2100

Serial #: 2534 Relay output x 100

Date of Calibration:

6-3-22

% of Error:

none

Comments:

none

Corrective Action:

none

East Whiteland Township
Woodveiw Apts
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Erin Glen

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Badger Model #: 2100 Serial #: 4391

Max Flow: 590.0 G.P.M.

Primary:

Output: 4-20 MADC (tot x 100)

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township

Erin Glen

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger Model #: 2100

6

Serial #: 4391 Relay output x 100

Date of Calibration:

Corrective Action:

7-26-22

% of Error:

none none

Comments:

none

East Whiteland Township

Erin Glen

Totalize / Display

SCADA (LOCATED AT MILL LANE)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Charlestown Oaks Meter Pit Totalize / Display SCADA (LOCATED AT MILL LANE) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

East Whiteland Township Charlestown Meadows Station Totalize / Display SCADA (LOCATED AT MILL LANE) Instrument Data:

Manufacture: Maple System

Model #: HM15070

Serial #120609618 Multiplier X 10

Date of Calibration:

9-8-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section D"

Malvern Borough (644-1819)

Tide Water Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Tide Water Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Meter Pit Ultrasonic Flow meter

Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Meter Pit Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 100 Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 100 Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Erin Glen Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

MALVERN BOROUGH CHESTER COUNTY, PA

Chapter 94 Municipal Wasteload Management Annual Report

2022 Chapter 94 Annual Report Borough of Malvern Valley Forge Sewer Authority Chester County

Prepared by:
Edward B. Walsh and Associates, Inc.
Whiteland Business Park
855 Springdale Drive, Suite 202
Exton, PA 19341

Prepared for:
Valley Forge Sewer Authority
Valley Forge Wastewater Treatment Plant
333 Pawling Road
Phoenixville, PA 19464

Preparer

Signature

Name: Daniel H. Daley, P.E.

Company: E. B. Walsh & Associates, Inc.

Permittee

Signature

Name: Tiffany Loomis

Permittee: Malvern Borough

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1. INTRODUCTION

Malvern Borough currently has an allocation of 543,650 GPD at the Valley Forge Sewer Authority Regional Treatment Plant. All of Malvern Borough is designated as being within the Public Sewer Service Area. Malvern Borough is the Owner and Operator of the Collection and Conveyance Systems within the Borough.

2. HYDRAULIC AND ORGANIC LOADINGS

Valley Forge Sewer Authority conducts influent sampling for BOD5 and hydraulic loadings at the wastewater treatment plant.

Malvern Borough's average sewage flow for 2022 was 304,269 GPD, as per Valley Forge Sewage Treatment Flow Report for 2022 (supplied to the Borough on February 9, 2023).

Malvern Borough estimates their BOD5 as follows:

The total number of pounds of BOD₅ collected each day is estimated to be 1,114.4 pounds per day, which was calculated by using a factor of 0.17 pounds per day per capita X (times) the estimated number of persons.

1,871 EDU's x 3.5 Persons = 6,556 Persons

 $6,556 \times 0.17 = 1,114.4$ Pounds

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The 2022 Average Sewage flow of 304,269 GPD excludes:

- 2 EDU's from East Whiteland Township which flow to the Old Lincoln Highway sewage meter.
- EDU's from East Whiteland Township's portion of Erin Glen Subdivision which flows to the Warren Avenue sewage meter.

The 2022 Average Sewer flow of 304,269 GPD includes:

 Unmetered flow from Malvern Prep (15 EDUs) and Village of Pennwyck – Vintage Subdivision (12 EDUs) to Willistown Township. A summary of the total number of EDU's is as follows:

	EQUIVALENT DW	ELLING UNIT (EDU) SU	JMMARY
	METERED	UNMETERED	TOTAL
	EDU'S	EDU'S+	EDU'S
2018	1805	27	1832
2019	1828	27	1855
2020	1837	27	1864
2021	1844	27	1871
2022	1846	27	1873
Ma Vil	ered EDU's - Discharge int Ivern Prep lage of Pennwyck - Vintag	-	15 EDUs 12 EDUs 27 EDUs
ADDIT	IONAL EDU'S		
2018	Sheet (323 Old Lincoln 1	HwyHopkins (2-4-38)	2
	Lagrie - Building Permit	s (2-4-34 - Lot 1)	1
400 E. King Street - Brick and Brew 8			
		203 Management LLC 156 W. King Street	
2019	Wolfe - 151 Channing A	Wolfe - 151 Channing Avenue	
	Gables - 217 S. Warren A	Gables - 217 S. Warren Ave.	
	Chambers - 346 E. King Street		2

During the next five (5) years, the number of EDU's is projected to increase as follows:

Year	Projected Number of EDU's to be Added in			Accumulative Total of the Number of EDU's	Accumulative Total of Sewage Flow
<u> </u>	Cal	endar Yea	ır		MGD
2022				1873	0.304
2023	7	1925	GPD	1880	0.306
2024	7	1925	GPD	1887	0.308
2025	7	1925	GPD	1894	0.310
2026	30	8250	GPD	1924	0.318
2027	15	4125	GPD	1939	0.322
Total:	66	18150	GPD		

^{*}Includes unmetered flow to Willistown.

The increase in the number of equivalent dwelling units and associated sewage flow was derived in the following manner:

- 1. All residential, commercial, and industrial facilities that are presently connected to the sewer system are included in the 2022 metered flow. Uncompleted developments and subdivisions and proposed developments and subdivisions under consideration have their associated sewage flow projected into each of the above referenced calendar years.
- 2. For each additional EDU, a sewage flow of 275 gallons per day (GPD) was used for planning purposes.

For the period of 2023 to 2027, the additional sewage flow was based upon the development of proposed and subdivisions and developments along with unanticipated projects in the manner indicated on the attached Table 1.0 entitled "Malvern Borough 2022 Growth Projection Table December 31, 2022." The location of each of the various subdivisions and developments is shown on the attached "Location Map" for Malvern Borough's 2022 Chapter 94 Report.

4. SEWER EXTENSIONS

- a. No sewer main extensions were completed in 2022.
- b. A map showing sewer extensions approved or exempted in the past year in accordance with the PA Sewage Facilities Act (35 P.S. §§ 750.1—750.20)

and Chapter 71 (relating to administration of the sewage facilities program), but not yet constructed.

See Attached Map

c. A map showing all known proposed projects which require public sewers but are in the preliminary planning stages.

See Attached Map

- d. A list summarizing each extension or project.

 See Table 1.0
- e. If a sewer extension approval or proposed project includes schedules for completing the project over time, the list should describe the projects projected build-out over time.

See Table 1.0

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

Discussion of I & I Problems

Malvern Borough monitors the flow rates in their sewer system in order to detect sources of infiltration, and when sources of infiltration are detected, Malvern Borough takes the necessary measures to remove the cause and source of the infiltration. The balance of Malvern Borough's sanitary sewer system is in good condition. The amount of infiltration flowing into the sanitary sewer system was estimated to be at the rate of fifty (50) gallons per inch of diameter of pipe per 24 hours. Using the above described infiltration rate, the total estimated amount of infiltration into the sanitary sewer system was calculated to be as indicated below:

8" sanitary sewer 33,219 L.F. = 6.29 miles X 400 = 2,516 gallons 10" sanitary sewer 4,327 L.F. = 0.82 miles X 500 = 410 gallons 2,926 gal/day

Measures Taken to Alleviate Infiltration Problems

The sewage flows listed in Item 1 above, Hydraulic and Organic Loading Contribution do not exceed Malvern Borough's allocated sewage flow capacity which is 0.544 MGD.

Malvern Borough will continue to take the necessary measures to eliminate infiltration problems.

Monitoring, Maintenance and Inspection of System

Twice a year a manhole inspection is performed. Once every two years or when necessary; selective video inspections of sections of the sanitary sewer system are made where infiltration problems are suspected. Low-lying manholes are checked periodically for surface water infiltration. There are four (4) employees available for maintenance.

The Borough flow meters (installed in early 2015) were maintained / calibrated quarterly.

In 2019, the Borough replaced 2,400 linear feet of 4" forcemain from the Ruthland Avenue Pump Station to the gravity sanitary sewer manhole on Channing Avenue. The cost of this project was approximately \$288,000. Also, a flow meter was installed on the Ruthland Avenue Pump Station.

Pump Station Maintenance

Stations are checked twice a day. Every week air tanks are drained in stations. Every six months pumps and motors are lubricated. There are four (4) people available for maintenance on the sanitary sewer system. In case of emergency, there is always one (1) person available on stand-by duty.

Overall Condition of Malvern Borough's Sanitary Sewer System

Malvern Borough continues to monitor and maintain their sanitary system and the overall condition of the system is good.

6. CONDITION OF THE SEWER SYSTEM

This section requires a discussion of the condition of the sewer system, including portions where conveyance capacity is exceeded or will be exceeded in the next 5 years. It should include a discussion of those portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate:

a.	Bypassing;	None Known
b.	Combined sewer overflows;	None Known
c.	Sanitary sewer overflows;	None Known
	Excessive infiltration;	None Known
	Other system problems.	None Known

Discussion of available existing and future capacity.

f. The age of the sewer system.

The majority of the sanitary sewer system was installed in 1975-1976.

g. The type of material of which the system is made (i.e., brick, vitrified clay, PVC, Orangeburg, etc.).

The existing sanitary sewer system consists of terracotta pipe. Any recent extensions or repairs to the system were made with PVC pipe.

h. An analysis that determines whether the existing sewer lines are sized properly for the connected population.

Based on existing flow data for the Borough as compared to the projected flow, no known capacity issues are anticipated. As redevelopment or new development is proposed, the capacity of the system is analyzed to ensure capacity.

i. A discussion of any portions of the system that should be repaired, replaced or rehabilitated, including a timeframe by which any proposed actions are expected to be completed.

At this time there are no portions of the system that are known to be in need of repair or replacement.

Discussion regarding any portions of the sewer system in which surcharging occurs:

- j. How often does the system surcharge in each location?

 There are no known areas of the system that have surcharged.
- k. What size storm events create surcharging sewer lines?
 Not Applicable
- l. What is the cause of the surcharging? Not Applicable
- m. <u>Sewer systems that surcharge during wet weather indicate a lack of hydraulic capacity and are considered to be in a projected hydraulic overload. For such conditions, permittees should submit a CAP and CMP with the annual report, as required by 25 Pa Code § 94.22.

 Not Applicable</u>

Provide a list of all SSOs that occurred during the calendar year, including their cause and location (a copy of the Southeast Regional Office's SSO Report Form submitted by the permittee is acceptable). SSOs related to wet weather should be discussed:

n. Explain if there is a history of SSOs at each reported location. If a trend of SSOs at specific locations during rain events is documented, this

indicates a lack of hydraulic capacity and is considered a hydraulic overload condition.

There are no known areas of the system that have had an overflow.

o. Why are SSOs occurring at each location? Has a hydraulic analysis been conducted, and if so, what were the results and recommendations for corrective action?

Not Applicable

- p. Provide an analysis of flow metering that has been conducted. **Not Applicable**
- q. <u>Sewer systems that experience SSOs are considered to be in an existing hydraulic overload. A CAP and CMP should be submitted with the annual report, as required by 25 Pa Code § 94.21.</u>

Not Applicable

The Department strongly recommends that existing capacity be documented with flow meter data. Whether flow meters are in place, or are proposed to be used throughout the system to gather data on a sub-basin approach-existing capacity should be documented with data that describes actual flow conditions during dryweather and wet-weather conditions:

r. <u>Dry weather flows should be monitored to document baseline flows and for comparison purposed, to determine the extent of I/I within the collection system.</u>

The Borough had the five gravity flow metering stations within the Borough replaced. The meters were brought online February 21, 2015 and fully functional by the end of the First Quarter 2015.

In addition, a new meter was installed in the fall / winter of 2019 at the Ruthland Avenue Pump Station to further evaluate the Borough flows.

s. Wet weather capacity should be determined by documenting the peak instantaneous (or peak hourly) flow rates as compared to the hydraulic carrying capacity of the sanitary sewer (i.e., Manning's equation).

The Borough has plans to further evaluate peak flows during wet weather conditions and complete analysis related to I/I.

The Borough Engineer has begun assembling the data for the hydraulic carrying capacity of the existing sewer.

7. SEWAGE PUMPING STATIONS

Pumping Stations

There are two pump stations and two ejector stations located within Malvern Borough's sanitary sewer system.

	T****				
	PUMPING	PUMPING	EJECTOR	EJECTOR	
	STATION 1	STATION 2	STATION 1	STATION 2	
Rated Max.	500 GPM @	200 GPM @	50 GPM @	100 GPM @	
capacity:	120' TDH	135' TDH	35' TDH	56' TDH	
Current Ave.	101.4 GPM	43.2 GPM		8 GPM	
daily flow	(1)	(1)	(2)	(3)	
Current peak	253.6 GPM	108.1 GPM		32 GPM	
flow	(4)	(4)	(2)	(3)	
				· · · · · · · · · · · · · · · · · · ·	
Peak			****		
instantaneous	(2)	(2)	(2)	(2)	
flow during wet			` ´		
weather:					
Footnotes:					
(1)	Not metered flow	. Calculated on E	EDU basis. 781 E	DU's at Station	
	No. 1 and 333 EI	DU's at Station No	o. 2 (187 GPD _{AVG}	per EDU based	
	on Warren Aver	ue metered flow	after deduction	for Erin Glen	
	metered flow).				
(2)	The Borough is currently working on providing information regarding				
Was - VIV.	these Items.				
(3)	The numbers for	r this Ejector Sta	ation are based	on the Design	
	Calculations				
(4)	Calculated average	e daily flow multir	olied by a peak fac	ctor of 2.5	

8. INDUSTRIAL WASTES

If applicable, the report on industrial wastes (IW) should include:

a. A copy of an ordinance or regulation governing IW.

Industrial Wastes are ultimately governed by the Rules and Regulations of the Valley Forge Sewer Authority. The Rules and Regulations of Valley Forge have been adopted by Adopted by Malvern Borough via Ordinance No. 2002-2 and 2009-2, see attached.

b. A discussion of the permittee's program for surveillance and monitoring of IW discharges to the sewer system during the past year.
 No specific program for surveillance / monitoring exists. The Borough's

Public Works Department monitors the sewer system on a regular basis and if issues are observed, they are reported to the Public Works Director and the issue is investigated.

c. A discussion of specific problems in the sewer system or at the WWTF, known or suspected to be caused by IW discharges and a summary of steps being taken to alleviate or eliminate the problems.

No known issues within Malvern Borough's sewer system.

d. A list of any such industries known to be discharging wastes that create a problem and actions taken to prevent potential or recurring problems caused by the IW dischargers.

Not Applicable

e. Provide documentation regarding any actions taken against IW dischargers. **Not Applicable**

9. CORRECTIVE ACTION PLAN

Malvern Borough does not have an existing or projected overload condition within their collection and or conveyance system; therefore a CAP or CMP Plan is not required.

10. CALIBRATION REPORTS

Allied Controls conducts quarterly calibrations for the flow meters within Malvern Borough. The Calibrations are done via a contract through Valley Forge Sewer Authority. The calibration reports are attached to this Chapter 94 Report.

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A summary of the total number of EDU's is as follows:

EQUIVALENT	DWELLING UNIT	(EDU) SUMMARY

	METERED	UNMETERED	TOTAL
	EDU'S	EDU'S+	EDU'S
2018	1805	27	1832
2019	1828	27	1855
2020	1837	27	1864
2021	1844	27	1871
2022	1846	27	1873

+Unmetered EDU's - Discharge into Willistown Township

Malvern Prep		15 EDUs
Village of Pennwyck - Vintage Subo	division	12 EDUs
	Total	27 EDUs

ADDITIONAL EDU'S

2018	Sheet (323 Old Lincoln HwyHopkins (2-4-38)	2.
2016	Lagrie - Building Permits (2-4-34 - Lot 1)	1
	400 E. King Street - Brick and Brew	8
	203 Management LLC 156 W. King Street	5
2019	Wolfe - 151 Channing Avenue	1
	Gables - 217 S. Warren Ave.	2
	Chambers - 346 E. King Street	7
	o diving the local september 2.2 is the first the september of the section of the	
	11 Griffith Ave Subdivision (17 Griffith Ave)	1
	Rubino (13 Lovers Ln Sub) (15 & 17)	2
2020	Lagrie - Building Permits (353 Old Lincoln Hwy.)	1
	51 Ruthland Ave. Subdivision (53, 55, 57 & 59)	4
	Renehan - 320 W. First Ave Permit Plan	1
	631 Monument Avenue (convert from cess pool)	1
2021	Traynor Capital Management (418 E. King St.)	5
	523 Monument Avenue - Coughlin	1
2022	Cifa Subdivision - 215 E. Broad Street	1
2022	8 Sugartown Road (convert from on-lot)	1

During the next five (5) years, the number of EDU's is projected to increase as follows:

Year	Projected Number of EDU's to be Added in Calendar Year		ed in	Accumulative Total of the Number of EDU's *	Accumulative Total of Sewage Flow MGD
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	Combined sewer overflows;	None Known
c.	Sanitary sewer overflows;	None Known
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f. The age of the sewer system.

The majority of the sanitary sewer system was installed in 1975-1976.

g. The type of material of which the system is made (i.e., brick, vitrified clay, PVC, Orangeburg, etc.).

The existing sanitary sewer system consists of terracotta pipe. Any recent extensions or repairs to the system were made with PVC pipe.

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Pumping Stations

There are two pump stations and two ejector stations located within Malvern Borough's sanitary sewer system.

	DIN CODIC	r			
	PUMPING	PUMPING	EJECTOR	EJECTOR	
	STATION 1	STATION 2	STATION 1	STATION 2	
Rated Max.	500 GPM @	200 GPM @	50 GPM @	100 GPM @	
capacity:	120' TDH	135' TDH	35' TDH	56' TDH	

Current Ave.	101.4 GPM	43.2 GPM		8 GPM	
daily flow	(1)	(1)	(2)	(3)	
			\\.		
Current peak	253.6 GPM	108.1 GPM		32 GPM	
flow	(4)	(4)	(2)	(3)	

Peak		****			
instantaneous	(2)	(2)	(2)	(2)	
flow during wet		` /	1-/	(2)	
weather:					
Footnotes:					
(1)	Not metered flow	. Calculated on E	EDU basis 781 F	DU's at Station	
, ,	No. 1 and 333 EI	DU's at Station No	$0.2 (187 \text{ GPD}_{AVG})$	ner FDII based	
	on Warren Aver	ue metered flow	after deduction	for Erin Glan	
·	on Warren Avenue metered flow after deduction for Erin Glen metered flow).				
(2)	The Borough is currently working on providing information regarding				
	these Items.	,	F 0 , 10111	introll rogarding	
(3)	The numbers for	this Ejector St	ation are based	on the Design	
	The numbers for this Ejector Station are based on the Design Calculations				
(4)		e daily flow multir	olied by a neak fac	etor of 2.5	
(4) Calculated average daily flow multiplied by a peak factor of 2.5					

8. INDUSTRIAL WASTES

If applicable, the report on industrial wastes (IW) should include:

a. A copy of an ordinance or regulation governing IW.

Industrial Wastes are ultimately governed by the Rules and Regulations of the Valley Forge Sewer Authority. The Rules and Regulations of Valley Forge have been adopted by Adopted by Malvern Borough via Ordinance No. 2002-2 and 2009-2, see attached.

b. A discussion of the permittee's program for surveillance and monitoring of IW discharges to the sewer system during the past year.
 No specific program for surveillance / monitoring exists. The Borough's Public Works Department monitors the sewer system on a regular basis and

Public Works Department monitors the sewer system on a regular basis and if issues are observed, they are reported to the Public Works Director and the issue is investigated.

c. A discussion of specific problems in the sewer system or at the WWTF, known or suspected to be caused by IW discharges and a summary of steps being taken to alleviate or eliminate the problems.

No known issues within Malvern Borough's sewer system.

d. A list of any such industries known to be discharging wastes that create a problem and actions taken to prevent potential or recurring problems caused by the IW dischargers.

Not Applicable

e. Provide documentation regarding any actions taken against IW dischargers. **Not Applicable**

9. CORRECTIVE ACTION PLAN

Malvern Borough does not have an existing or projected overload condition within their collection and or conveyance system; therefore a CAP or CMP Plan is not required.

10. CALIBRATION REPORTS

Allied Controls conducts quarterly calibrations for the flow meters within Malvern Borough. The Calibrations are done via a contract through Valley Forge Sewer Authority. The calibration reports are attached to this Chapter 94 Report.

ARTICLE III

Industrial Waste, Holding Tank Waste and Septage [Adopted 9-20-1994 by Ord. No. 94-4 (Part 11, Ch. 2, Art. B, of the 1975 Code of Ordinances)]

§ 168-11. Purpose; policy.

- A. This article requires all users and use of the Borough's sewer facilities to comply with the regulations (collectively "applicable regulations" or any one individually "applicable regulation") promulgated by the Valley Forge Sewer Authority (VFSA), the United States Environmental Protection Agency (USEPA), which include, without limitation, the pretreatment standards promulgated by the USEPA as set forth in 40 Code of Federal Regulations (CFR) 403 et seq. and the Pennsylvania Department of Environmental Resources (PADER); and
- B. This article establishes the means of enforcing those regulations.

\S 168-12. Amended VFSA regulations adopted. [Amended 6-18-2002 by Ord. No. 2002-2¹; 2-17-2009 by Ord. No. 2009-2; 12-21-2010 by Ord. No. 2010-5]

The standards established by the Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage, dated May 31, 2002, and amended by Resolution No. 2 of 2008 of the Board of Directors of the Valley Forge Sewer Authority (VFSA) and further amended by Resolution No. 1 of 2010, are hereby adopted as the minimal standards of the Borough, applicable to all users and use of the Borough's sewer facilities, and any user or use of the Borough facilities must comply with all of the VFSA's requirements with respect to these amended regulations, as well as all other applicable regulations.

§ 168-13. Violations.

Without limiting any other section hereof, a person (as defined by the VFSA regulations) violates this article:

A. By discharging sewage or waste into the Borough's sewage facilities when such discharge is not in compliance with this

Editor's Note: Section 2 of this ordinance provided for the deletion of existing Appendix XXII of the 1975 Code of Ordinances and replacement with a copy of the "Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage dated May 31, 2002." Said document has not been codified; it is on file in the office of the Borough Secretary.

§ 168-13

article, any applicable industrial permit requirements or National Categorical Pretreatment Standards, any applicable regulation or any Borough order; or

B. By otherwise failing or refusing to comply in any way with the VFSA regulations, including but not limited to achieving all permits, licenses and approvals and filing all reports, when and as required.

§ 168-14. Solicitor authorized to commence action; cost of action.

The Borough Solicitor is authorized to commence actions against any violator of this article for appropriate legal and/or equitable relief from the violation. If the Borough is granted any relief in any such action, the violator shall, in addition to any fine or penalty, pay all the Borough's costs thereof, including but not limited to attorney fees.

§ 168-15. Penalties.

- A. Any person (as defined by VFSA regulations) who violates any provision of this article shall, upon conviction thereof, be sentenced to pay a fine of not more than \$1,000 and/or to imprisonment for a term not to exceed 90 days. Every day that any violation of this article continues shall constitute a separate offense.
- B. Any person (as defined by VFSA regulations) who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this article or any industrial waste permit or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required under this article shall be in violation of this article and may be prosecuted in accordance with the provisions of the Pennsylvania Crimes and Offenses Code, 18 Pa.C.S.A. § 4901 et seq. pertaining to perjury and falsification in official matters.

§ 168-16. Severability.

If any provision, paragraph, word or section of this article is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words and sections of this article shall not be affected and shall continue in full force and effect.

§ 168-17

§ 168-17. Repealer.

All other ordinances or parts of other ordinances and provisions of this Code inconsistent or conflicting in any part with this article are hereby repealed to the extent of such inconsistency or conflict.

§ 168-18. Adoption of future amendments of VFSA regulations. [Added 6-18-2002 by Ord. No. 2002-2]

In the event that the Valley Forge Sewer Authority further amends its rules and regulations, or otherwise undertakes regulatory action governing wastewater treatment within the Borough of Malvern, said proposed regulations must be forwarded to and adopted by Borough Council prior to becoming effective.

	TABLE 1 O ROB	O BOROLIGH OF MAIVERN 2022 GROWTH PRO JECTION TABLE	TWO GROWI	OITOSI ON H.	LIABLE					
		December 31, 2022	131, 2022			•				
							EDU's RE	EDU'S REMAINING TO BE CONNECTED	TO BE CO	NNECTED
ō	Property Owner / Project	Tax Parcel	Tot. Est. EDU's	EDU's Previously Connected	EDU's Connected in 2022	EDU's to be Connected	2023	2024 20	2025 2026	6 2027
	Completed Projects									
-	Santoleri	2-4-262.1			0	0				
2	Hibernia Homes (Formerly Yasgur-Levis)	2-4-71	,	l	0	0				
က	Hibernia Homes (Formerly Yasgur-Levis)	2-4-67	2	2	0	0				
4	Greenstone (Formerly TAG)	2-6-102,101,91.1	5	5	0	0				
5	Hibernia Homes (Formerly Building Block)	2-4-69	_	l	0	0				
9	Rittenhouse	2-4-337.2	1	1	0	0				
6	Buerkel (1 Previously Approved & 2 New EDU's)	2-3-3.1E	3	င	0	0				
		2-4-148	128	128	0	0				
22		2-3-24	ı		0	0				
25	Greenstone (Formerly Deflavis)	7-6-91	ļ	1	0	0				
27	Hughes 326 Old Lincoln Hwy.	2-4-91.1	1	,	0	0				
29		2-3-22		Ţ	0	0				
32		2-3-84 E		l	0	0				
33	101 Church Street (Andrews Management)	2-4-287	ဗ	3	0	0				
88		2-4-41	2	2	0	0				
39		2-2-27	4	4	0	0				
40	F Joseph Rubino (361 OLH)	2-4-43	2	2	0	0				
13		2-4-38	2	2	0	0			1	
45	400 E. King Street - Brick and Brew	2-4-355	10	10	0	0				
43		2-3-29, 29.1	5	5	0	0				
50		2-4-235.1			0	0				
44		2-4-360.1	4	4	0	0				
46		2-3-25	_	_	0	0				
47	Renehan - 320 W. First Avenue Permit Plan	2-6-96.1	_	-	0	0				
42		2-4-297	7	7	0	0				
24	Rubino (Hopkins - 13 Lovers Lane Subdivision)	2-4-43.1	2	2	0	0				
51	631 Monument Avenue (convert from cess pool)	2-6-31	_	_	0	0				
49		2-4-356	5	5	0	0			_	
48	523 Monument Ave. Subdivision - Coughlin	2-6-37		_	0	0				
7	Cifa	2-4-84	_	0	1	0				
53	i 8 Sugartown Road (convert from on-lot)	2-2-2	-	0		0		-		
	Projects Approved but Not Complete									
	ı	2-3-3	_	0	0					_
은		2-4-34, 36, 2-1-35	က	2	0	-				
34		2-7-34 E	posta.	0	0			-	-	
	l						İ			

							EDU's R	EMAINE	VG TO B	EDU'S REMAINING TO BE CONNECTED	ECTED
				EDU's	EDU's						
₽	Property Owner / Project	Tax Parcel	Tof. Est. EDU's	Previously Connected	Connected in 2022	EDU's to be	2023	2024	2002	2024	2027
35	[2-4-105	_	0	0	-					77
37	- 1	2-7-36	5	4	0				-		-
54	t Celli - 626 Highland Avenue	2-6-26		0	0	١		-			
	Projects being Reviewed										
52	2 551 Sugartown Road Subdivision	2-6-30		0	0	p	_				
	Anticipated Projects		,								
14	Remed	2-9-1	7	0	0	7					7
36	s Gugliemi (connect existing garage)	2-4-36	1	0	0	_			<u> </u>		
4		2-4-204,205,206	25	0	0	25				25	
55	CVLL - Paoli Memorial Grounds (Ballpark restroom)	2-6-81		0	0	_		-		3	
	Vacant Parcel Analysis*										
15	i Francis (Formerly Longford/Old Lincoln)	2-4-68	9	0	0	9					
17	, Atwin	2-3-1.1	9	0	0	9					
82	8 Birchell	2-3-7	2	0	0	0					
19		2-3-29.1		0	0						
8		2-4-276	2	0	0	2					
23	- 1	2-4-266.1	_	0	0						
26	Priddy	2-7-8	1	0	0	-					
38	Gugliemi (redevelopment)	2-4-36	2	0	0	2					
	Miscellaneous										
8	- 1		150	0	0	150	5	5	5	5	52
က	Potential Redevelopments**		420	0	0	420					
	TOTAL EDU's		838	204	2	632	7	1	7	တ္တ	15
,											

Sewage flows for the Vacant Parcels were determined by the Maximum allowable density based on current zoning.

Potential Developments include Malvern Prep site (97 acres) and the Malvern Retreat site (106 acres). Based upon current zoning regulations, a permitted use on both parcels is a refirement community with 8 du/acre. Malvern Prep permitted density based upon zoning exceeds 440 dwelling units. Malvern Retreat permitted density based upon zoning also exceeds 440 dwelling units.

BOROUGH OF MALVERN 30-YEAR FLOW PROJECTIONS VALLEY FORGE SEWER AUTHORITY 2022 CHAPTER 94 REPORT

December 2022

WASTEWATER FLOW PROJECTIONS

	PRESENT 2022	5-YEAR 2027	10-YEAR 2032	20-YEAR 2042	ULTIMATE 30-YEAR 2052
GPD	304,269	322,419	363,669	411,794	437,919
EDUs	1873	1939	2089	2264	2359
New EDUs		66	150	175	95

NOTES:

 Includes unmetered flow into Willistown Township and excludes 2 EDU's from East Whiteland Twp and Erin Glen Flow from East Whiteland Twp. Malvern Borough has 27 EDUs that flow unmetered into Willistown Twp.

15 EDUs - Malvern Prep= 4,125 gpd 12 EDUs - Vintage Development = 3,300 gpd Total = 7,425 gpd

2. Projected flows based upon a flow of 275 gallons per day (gpd) per equivalent dwelling unit (EDU).

Tributary Municipality – Malvern Borough Chapter 94 Report Checklist

YES	NO	NA	Annual Report Requirements	Comments
			94.12 Annual Report	
			Section (a)(1)	
			A line graph depicting monthly average flows	
			(expressed in millions of gallons per day (MGD)) for	
		X	each month for the past 5 years.	
			The graph should include projected flows for the next	
		X	5 years.	
			The graph shall include a line depicting the hydraulic	
		X	design flow in MGD.	
			Section (a)(2)	
			A line graph depicting monthly average organic	
		**	loading (expressed in pounds per day of BOD5) for	
~		X	each month for the past 5 years.	
		wr	The graph shall include projected loadings for the next	
		X	5 years.	
		3 7	The graph shall include a line depicting the organic	
	_	X	loading design of the plant in lbs/day BOD5.	
			Section (a)(3)	
			A discussion of the basis for the flow and organic	
		X	loading projections to the plant as referred to in	
		Λ	Sections a(1) and a(2).	
İ		X	A description of the time needed to expand the plant to	
		<u> </u>	meet the load projections, if applicable.	
ĺ		X	Data used to support the projections are included in an	
		A	appendix to the report.	
			Section (a)(4)	
		X	A map showing all sewer extensions constructed in the	
		Δ.	past calendar year.	
			The map should show sewer extensions approved or	
		\mathbf{x}	exempted in the past year in accordance with 537 but	
		A	not yet constructed. The man should show all known proposed and in the	See attached map
-			The map should show all known proposed projects that require public sewers but that are in the	
\mathbf{x}			preliminary planning stages.	See attached map in
41		. [A list accompanying the map summarizing each	report and Table 1.0
X		i	extension or project and the population to be served.	C. 70 11 4 6
41		1	extension of project and the population to be served.	See Table 1.0

Tributary Municipality – Malvern Borough Chapter 94 Report Checklist

YES	NO	NA	Annual Report Requirements	Comments
			The list should include any schedules describing how	
			the project will be completed over time, and the effect	
			that this built-out-rate will have on the populations	
\mathbf{X}			served.	See Table 1.0
			Section (a)(5)	
			A discussion of the permittee's program for sewer	
			system monitoring, maintenance, repair and	
			rehabilitation, including routine and special activities,	
			personnel and equipment used, sampling frequency,	
			quality assurance, data analyses, and	See Item 5 of the
X			infiltration/inflow monitoring.	report
			A calibration report shall be included for all flow	
			measuring, indicating and recording equipment within	
			the collection and conveyance system. Calibrations	See Item 10 of the
····	X		should occur annually.	report
			A discussion of the maintenance and control of	See Item 5 of the
X			combined sewer regulators during the past year.	report
			Section (a)(6)	
			A discussion of the condition of the sewer system,	
			including portions of the sewer system where	
			conveyance capacity is being exceeded or is projected	See Item 6 of the
X			to be exceeded in the next 5 years.	report
			Existing capacity should be documented with actual	
			metering of present maximum flows. If not already	
			existing, the permittee should consider the best	
			placement of flow meters to document the capacity of	
		,	major interceptors (greater than 10 inches in diameter)	
			and/or where lines cross municipal borders. A	
			discussion of present maximum flows should be	
			documented with hourly or instantaneous peak	
			readings taken during major storm events (greater than	
			1.0 inch of rain). Auto dialers may be installed to	
			alert of high flow conditions. The Chapter 94 Report	
			should compare the peak instantaneous flow for each	
			major storm event to the design hydraulic conveyance	
			capacity of the sewer in order to determine whether	
			sufficient capacity is available. The ratio of peak	
			(hourly or instantaneous) to annual average flows	
			should be determined to assess the actual peaking	See Item 6 of the
	X		factor for the system.	report

Tributary Municipality – Malvern Borough Chapter 94 Report Checklist

YES	NO	NA	Annual Report Requirements	Comments
			A discussion of portions of the system where	
			rehabilitation or cleaning is needed or underway to	See Items 5 and 6 of
			maintain the integrity of the system and prevent or	the report – There
			eliminate bypassing, combined sewer overflow,	are no known
			sanitary sewer overflow, excessive infiltration, and	problems within the
\mathbf{x}			other system problems.	Borough's system
			Section (a)(7)	3
			A discussion of the condition of sewage pumping	
			Stations, including:	
			A comparison of the maximum pumping rate with	See Item 7 of the
\mathbf{x}			present maximum flows.	report
	•		Present maximum flows should be documented with	
			the peak hourly or instantaneous readings taken	The Borough is
			during major storm events (greater than 1.0 inch of	currently working on
			rain). Auto dialers may be installed to alert of high	providing this
	X		flow conditions.	information
			A discussion of metered flow data obtained during	
	٠		the report's calendar year to illustrate the ratio of	The Borough is
1			peak flow to annual average flow. The permittee	currently working on
F			should use these figures to determine the actual	providing this
	X		peaking factor for the pumping station.	information
				The Borough is
			Provide documentation that the pump station can	currently working on
			convey maximum flows with any one pump out of	providing this
	X		service.	information
				The Borough is
				currently working on
			The projected two-year maximum flows for each	providing this
	\mathbf{x}		station.	information
			The two-year projection should use the estimated	The Borough is
			new flows to the system (annual average flows),	currently working on
			multiplied by the peaking factor derived from	providing this
	X		metered flow data.	information
	· · · · · · · · · · · · · · · · · · ·		Section (a)(8)	
	į		A report of industrial wastes discharged into the sewer	
		X	system.	Completed by VFSA
			The report shall include:	Completed by VISIA
ŀ			(i) A copy of any ordinance or regulation governing	
			industrial waste discharges into the sewer system,	
\mathbf{x}			including a copy of any amendments adopted.	Included in report
			(ii) A discussion of the permittee's or municipality's	
			, berminer of minimum partition	İ
			program for surveillance and monitoring of industrial	
			program for surveillance and monitoring of industrial waste discharges into the sewer system during the past	

Tributary Municipality Chapter 94 Report Checklist

YES	NO	NA	Annual Report Requirements	Comments
1170	110	1111	(iii) A discussion of specific problems in the sewer	
			system or at the plant, known or suspected to	
			be caused by industrial waste discharges,	
			including a summary of the steps being taken	
		1	to alleviate or eliminate the problems, as well	
		X	as pollution prevention techniques.	Completed by VFSA
			The discussion shall include a list of industries	
			known to be discharging wastes which create	
			problems in the plant or in the sewer system	
			and actions taken to eliminate the problem or	
		X	prevent its recurrence.	Completed by VFSA
			Section (a)(9)	
			A proposed plan to reduce or eliminate present or	The Borough is not
			projected overloaded conditions under Chapters 94.21	projecting any
		X	and 94.22.	overloads
	Section (b)			
			Permittees of sewer systems which contribute sewage	
]	flows to the plant shall submit information to the			
			permittee of the plant as required to facilitate	
X		ļ	preparation of the annual report.	
			94.13 Measuring, indicating and recording devices.	
			Section (a)	
			A plant which receives or will receive in the next five	
			years, monthly average flows exceeding	
			100,000 gallons per day (gpd) shall be equipped to	
		X	continuously measure, indicate and record the flow.	
	The permittee shall install the necessary equipment for			
			those measurements within 6 months after the date	
		X	when such a flow becomes evident.	
			Section (b)	
			A calibration report shall be included in the annual	
			report for flow measuring, indicating and recording	
		X	equipment. Calibrations should occur annually.	

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 1 rst. Quarter 2022 Calibration Data

"Section D"

Malvern Borough (644-1819) Tide Water Meter Pit

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

3-10-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

3-10-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalize / Display SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

2-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

3-9-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

3-9-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Receiver Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

2-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

3-9-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Relay output x 100

Date of Calibration:

3-9-22

% of Error:

Less than 2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Meter Pit Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070

Serial #120609618 Multiplier X 100

Date of Calibration:

2-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

3-9-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

3-9-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Minor Hill Totalize / Display SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618

Multiplier X 100

Date of Calibration:

2-01-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section A1"

Malvern Borough Injector Station No. 2 Magnetic Flow meter/totalizer

Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: 7B04A416000 Cal: 104515010000000 Max Flow: 150 GPM

Date of Calibration:

3-10-22

% Of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Injector Station No. 2 Circular Chart Recorder Instrument Data:

Manufacture: Fisher + Porter

Model #: 392

Serial #: D17787-001-01-01-4500-F5 Counter: Electronic Totalizer x 10

Range: 0-150 GPM

Date of Calibration:

3-10-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 2 nd. Quarter 2022 Calibration Data

"Section D"

Malvern Borough (644-1819) Tide Water Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Tide Water Meter Pit Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume

Output: 4-20 MADC same

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013

Relay output x 100

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618

Multiplier X 100

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Erin Glen

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

4-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section A1"

Malvern Borough Injector Station No. 2

Magnetic Flow meter/totalizer

Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: 7B04A416000 Cal: 104515010000000 Max Flow: 150 GPM

Date of Calibration:

6-23-22

% Of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Injector Station No. 2 Circular Chart Recorder Instrument Data:

Manufacture: Fisher + Porter

Model #: 392

Serial #: D17787-001-01-01-4500-F5 Counter: Electronic Totalizer x 10 Range: 0-150 GPM

Date of Calibration:

6-23-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 3 rd. Quarter 2022 Calibration Data

"Section D"

Malvern Borough (644-1819) Tide Water Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Meter Pit

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Receiver Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data: Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Meter Pit Totalize / Display SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Minor Hill

Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger Model #: 2100

Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

9-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100 Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Erin Glen Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

7-26-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section A1"

Malvern Borough Injector Station No. 2 Magnetic Flow meter/totalizer Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: 7B04A416000 Cal: 104515010000000 Max Flow: 150 GPM

Date of Calibration:

9-26-22

% Of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Injector Station No. 2 Circular Chart Recorder Instrument Data:

Manufacture: Fisher + Porter

Model #: 392

Serial #: D17787-001-01-01-4500-F5 Counter: Electronic Totalizer x 10 Range: 0-150 GPM

Date of Calibration: % of Error:

9-26-22

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 4 rth. Quarter 2022 Calibration Data

"Section D"

Malvern Borough (644-1819) Tide Water Meter Pit Ultrasonic Flow meter Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: PBD/X7070003 Max Flow: 50 GPM

Counter: Electronic Totalize X 10 Primary: 4" Palmer Bowlus Flume

Output: 4-20 MADC

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalizer transmitter (Thru SCADA) Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X7070003 Relay output x 100

Date of Calibration:

1-10-23

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Tide Water Meter Pit Totalize / Display

SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Ultrasonic Flow meter

Instrument Data:

Manufacturer: Miltronics Model #: HydroRanger 200 Serial #: 110904179VU

Max Flow: 750 GPM

Primary: 21" Leopold Lagco Flume

Output: 4-20 MADC

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Warren Avenue Meter Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: 110904179VU Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Warren Avenue Receiver Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data: Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Ultrasonic Flow meter

Ultrasonic Flow meter Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Max Flow: 0-200 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Old Lincoln Pit

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Seimens Model #: Hydro Ranger 200 Serial #: PBD/X65982013 Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

monument Data.

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100

Date of Calibration:

Under repair Less than ,2%

% of Error: Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Ultrasonic Flow meter Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002

Max Flow: 0-90.0 GPM

Primary: 8" Palmer Bowlus Flume Output: 4-20 MADC same

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough

Minor Hill

Totalizer transmitter (Thru SCADA)

Instrument Data:

Manufacturer: Badger

Model #: 2100 Serial #: 4002 Relay output x 100

Date of Calibration:

12-30-22

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Minor Hill Totalize / Display SCADA (LOCATED AT MALVERN) Instrument Data:

Manufacture: Maple System

Model #: HM15070 Serial #120609618 Multiplier X 100 Date of Calibration:

% of Error:

Under repair Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Erin Glen Totalize / Display SCADA (LOCATED AT MALVERN)

Instrument Data:

Manufacture: Maple System Model #: HM15070 Serial #120609618 Multiplier X 10

Date of Calibration:

Under repair

% of Error:

Less than .2%

Comments:

none

Corrective Action:

none

"Section A1"

Malvern Borough Injector Station No. 2 Magnetic Flow meter/totalizer Instrument Data:

Manufacturer: Endress Hauser

Model #: Pro Mag 50 Serial #: 7B04A416000 Cal: 104515010000000 Max Flow: 150 GPM

Date of Calibration:

1-10-23

% Of Error:

Less than .2%

Comments:

none

Corrective Action:

none

Malvern Borough Injector Station No. 2 Circular Chart Recorder Instrument Data:

Manufacture: Fisher + Porter

Model #: 392

Serial #: D17787-001-01-01-4500-F5 Counter: Electronic Totalizer x 10

Range: 0-150 GPM

Date of Calibration:

1-10-23

% of Error:

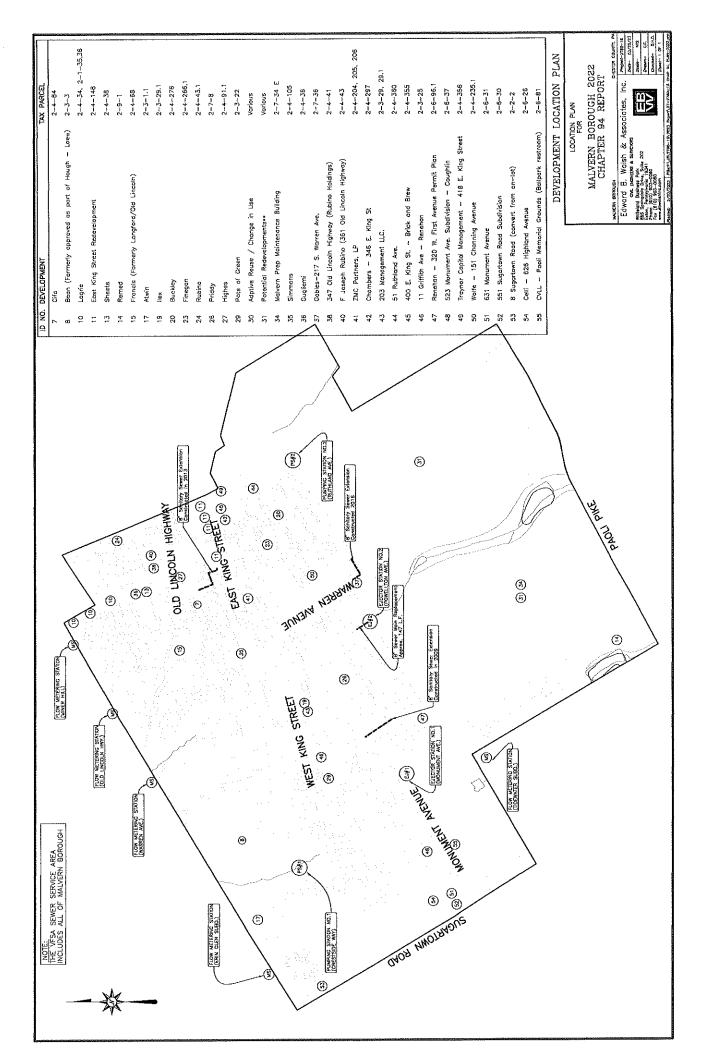
Less than .2%

Comments:

none

Corrective Action:

none



MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

TREDYFFRIN TOWNSHIP CHESTER COUNTY, PA

Two Radnor Corporate Center 100 Matsonford Road, Ste 250 Radnor, PA 19087

T: 484.253.4700



March 8, 2023

Mr. Richard Taylor, Laboratory Manager Valley Forge Sewer Authority 333 Pawling Road Phoenixville, PA 19460

[153258]

Subject: Tredyffrin Township, Paoli Drainage Basin, 2022 Municipal Wasteload

Management Annual Report

Dear Mr. Taylor:

Enclosed please find the electronic copy of the above-referenced report for the calendar year 2022. This information is submitted on behalf of Tredyffrin Township for the Valley Forge Sewer Authority's (VFSA) information and use.

Please send a copy of the VFSA Chapter 94 report to Tredyffrin Township once completed.

If you have any questions, please do not hesitate to contact me either via phone at 443.223.7308 or email: <u>Slockhart@brwncald.com</u>. Thank you!

Very truly yours,

Brown and Caldwell

Susanne Lockhart, P.E.

Sharre Fockskart

Project Manager

cc: Darin Fitzgerald, Tredyffrin Township

3800-FM-BPNPSM0507 4/2014
Chapter 94 Report

Pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT



For Calendar Year: 2022

	GENERAL I	NFORMATION			
Permittee Name:	Tredyffrin Township	Permit No.:	PA		
Mailing Address:	1100 Duportail Road	Effective Date:	•		
City, State, Zip:	Berwyn, PA 19312	Expiration Date:			
Contact Person:	Darin Fitzgerald	Renewal Due Date:			
Title:	Director of Public Works	Municipality:	Tredyffrin		
Phone:	610-408-3620	County:	Chester		
Email:	Dfitzgerald@tredyffrin.org	Consultant Name:	Brown and Caldwell		
erren er en en en en en en en en en en en en en	CHAPTER 94 REP	ORT COMPONENTS			
2. Attach to this repo	not applicable (report is for a collection ort a line graph depicting the monthly st 5 years and projecting the organic l	average organic loads (ex			
	anic design capacity of the treatment p				
Check the appro	-				
_ •	r organic loads attached (Attachment 94 Spreadsheet used (Attachment)			
Section 2 is not applicable (report is for a collection system).					
2 If the DED Chapte	er 94 Spreadsheet was not used to d	atarmina projections, discu	use the basis for the hydraulic one		
		n of the time needed to e	xpand the plant to meet the load		
organic projectio	cessary, and data used to support the p	rojections should be include	ed in an appendix to this report. (<u>25</u>		

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))
Check the appropriate boxes:
 Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (Attachment)
 ✓ List summarizing each extension or project attached (Attachment) ✓ Schedules describing how each project will be completed over time and effects attached (Attachment)
Comments:
See Exhibit 2 Sewer Extensions
5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))
See Exhibit 3 Program for Sewer System Monitoring, Maintenance and Repair
, , , , , , , , , , , , , , , , , , ,
6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))
Check the appropriate boxes:
 System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event. System did not experience capacity-related bypassing, SSOs or surcharging during the report year.
Comments: See Exhibit 4 - Condition of the Sewer System

7.	pur 94. Che □	ch a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum nping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 12(a)(7)) eck the appropriate boxes: The collection system does not contain pump stations The collection system does contain pump stations (Number – 5) Discussion of condition of each pump station attached (Exhibit 5)
	,	
8.		ne sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the ormation listed below. (25 Pa. Code § 94.12(a)(8))
	a.	A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
	b.	A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
	c.	A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.
	Ch	eck the appropriate boxes:
		Industrial waste report as described in 8 a., b. and c. attached (Attachment) Industrial pretreatment report as required in an NPDES permit attached (Attachment)
9.	Exist	ing or Projected Overload.
	Ch	eck the appropriate boxes:
		This report demonstrates an existing hydraulic overload condition.
		This report demonstrates a projected hydraulic overload condition.
		This report demonstrates an existing organic overload condition.
		This report demonstrates a projected organic overload condition.
	or p	ne or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). Pa. Code § 94.12(a)(9))
		Corrective Action Plan attached (Attachment)
10		ere required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass ance of solids coming in and leaving the facility over the previous calendar year.
	bal	ance of solids confiling in and leaving the facility over the previous calendar year.

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).				
Annual CSO Report attached (Attachment)				
12. For POTWs, attach a calibration report documenting that fle calibrated annually. (25 Pa. Code § 94.13(b))	ow measuring, indicating and recording equipment has been			
▼ Flow calibration report attached (Attachment – See E)	Exhibit 6)			
RESPONSIBLE OFFIC	IAL CERTIFICATION			
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).				
Darin Fitzgerald	Dain Up.			
Name of Responsible Official	Signature			
610-408-3620	03/08/23			
Telephone No.	Date			
PREPARER CERTIFICATION				
I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).				
Susanne Lockhart, PE	Surre Fockkart			
Name of Preparer	Signature			
443-223-7308	03/08/23			
Telephone No.	Date			

3800-FM-BPNPSM0507 4/2014 Chapter 94 Report Instructions



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

Valley Forge Sewer Authority 2022 Municipal Wasteload Management Annual Report

Prepared for Tredyffrin Township Chester County, Pennsylvania March 8, 2023

Valley Forge Sewer Authority 2022 Municipal Wasteload Management Annual Report

Prepared for Tredyffrin Township Chester County, Pennsylvania March 8, 2023



Two Radnor Corporate Center 100 Matsonford Road, Ste 250 Radnor, PA 19087

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Attachment A Exhibit 6: Flow Meter Calibration Documentation



Exhibit 1. Hydraulic and Organic Loading

The total number of equivalent dwelling units (EDUs) connected to the Paoli sanitary sewer basin in 2022 was 7,818.6. These connected EDU's contributed 0.505 million gallons per day (MGD). The projected flows are found in Table 1-1.

Tab	Table 1-1. Valley Creek Trunk Sewer - Paoli Basin EDU Projections						
Year	Additional Number of EDUs	Total Number of EDUs	Total MGD				
Actual 2022 ¹	132	7818.6	0.505				
Projected 2023 ²	251	8069.6	0.574				
Projected 2024 ²	41	8110.6	0.586				
Projected 2025 ²	0	8110.6	0.586				
Projected 2026 ²	38	8148.6	0.596				
Projected 2027 ²	0	8148.6	0.596				

^{1.} Source is 2022 4th Quarter Flow Report from VFSA on February 9, 2023 (average flow) and meeting with Erin McPherson on February 22, 2023.

The increase in number of connections was based on Tredyffrin Township records of proposed developments.

The organic load projections are based on a 5-day biochemical oxygen demand (BOD₅) of 200 milligrams per liter (mg/L), which is used in the loading calculation of:

Total MGD per year x 200 mg/L BOD₅ x 8.34 pounds per gallon (lb/gallon) = X lbs/day

ÆAR	Projected Flow (MGD)	BOD ₅ (mg/L)	BOD₅ (lbs/day)
2022	0.505	200	843
2023	0.574	200	958
2024	0.586	200	977
2025	0.586	200	977
2026	0.596	200	994
2027	0.596	200	994

Brown AND Caldwell

^{2.} Estimated additional flows are based on EDUs of 275 gallons per day per EDU.

Exhibit 2. Sanitary Sewer Extensions

Table 2-1 lists the 5-year projections for sewer connections/extensions within the Paoli drainage basin.

Table 2-1. Valley Creek Trunk Sewer - Paoli Basin Sewer Extensions							
Development/Extensions	TOTAL EDUs 2023 - 2027	2022	2023	2024	2025	2026	2027
Highgrove	3	1	1	1			
Howellville Road	24					24	
Sage Atwater	108	108					
Lancaster Chestnut Assoc.	17	17					
1237 Lancaster Ave	5	5					
Wawa	6					6	
10 Wilson Ave	4					4	
585 Berkshire	1	1					
Picket Place	4					4	
Swedesford Plaza (ECHO Realty)	250		250				
1690 Russell Road Assisted Living	40			40			
TOTAL	462	132	251	41	0	38	0

Exhibit 3. Sewer System Monitoring and Maintenance

In 2022, Tredyffrin Township Department of Public Works had five full time staff including the Public Works Director who are dedicated to the operation and maintenance of the sanitary sewer collection system. Other departments within Tredyffrin Township may assist as needed. Tredyffrin Township subcontracts with Municipal Maintenance to perform the non-routine maintenance on the sewer pumping stations. Tredyffrin Township has performed extensive closed-circuit television (CCTV) inspection of the Township's sewer piping, hundreds of manhole inspections and has a flusher truck for removing blockages and other debris.

Exhibit 4. Condition of the Sewer System

The rehabilitation of the Wilson Road Force Main was completed in December 2016. In general, the system is in good condition with consistent maintenance activities being performed.

In December 2018, the Valley Creek Trunk Sewer System was sold to Aqua Resources, Inc. The assets included in the sale were: Valley Creek Trunk Sewer, Wilson Road Force Main and Wilson Road Pumping Station, Darby Road Pumping Station and Force Main, the Glenn Avenue Force Main and the Lancaster Avenue Force Main. Glenn Avenue Pumping Station and Lancaster Avenue Pumping Station were not included in the sale.



Exhibit 5. Wastewater Pumping Stations

Within the Township's Sewer Collection System, there are five pumping stations that contribute flow to the Valley Forge Sewer Authority Pawling Road Wastewater Treatment Plant. Darby Road and Wilson Road Pumping Stations were included in the VCTS sale.

	Table 5-1. Valley Creek Trunk Sewer - Paoli Basin Pumping Stations					
Pumping Station	Capacity (MGD)	2022 Average Flow (MGD)	2022 Peak Flow ¹ (MGD)	Projected 2024 Average Flow ² (MGD)	Projected 2024 Peak Flow ¹ (MGD)	
Lancaster Avenue	0.300	0.008	0.020	0.044	0.111	
Glenn Avenue	0.313	0.022	0.056	0.059	0.146	
Chesterbrook	0.909	0.084	0.209	0.120	0.300	
Summerhill	0.144	0.006	0.014	0.042	0.105	
Atwater/Church Road	0,274	0.029	0.072	0.065	0.163	

^{1.} Peak flow = 2.5x average daily flow.

Exhibit 6. Flow Meter Calibration Documentation

The Township maintains multiple flow meters within their system. Attached is the documentation that regular calibration of these meters occurs as part of ongoing maintenance of the system.

^{2.} Projected flow based on Table 1A 5 Year Flow Projections incorporating planned development.

^{3.} Flow calculations are based on pump run time.



Attachment A:

Exhibit 6: Flow Meter Calibration Documentation





611 GARFIELD AVE. · P.O. BOX 234 · WEST POINT, PA 19486

INVOICE

Invoice Number:

316116

Invoice Date:

10/26/2021

Page:

Sold To:

Phone: 215-699-2855

Fax: 215-699-9030

Township of Tredyffrin 1100 Duportall Road Berwyn, PA 19312

Ship To:

DEM-00-1027

Richards Rd, Summerhill, Pine Hill,

Glen Ave, Boxhill

Customer ID	Customer PO	Payment Terms		
TRED01	D Fitzgerald	Net 30 Days		
Sales Rep ID	Shipping Method	Ship Date	Due Date	
GBUCHSER	Field Service	10/26/202	11/25/2021	

Qty	P/N	Description	Unit Price	Extension
2,50	DEMAND ITM	Richards Rd on site semi annual calibration services as provided by G. Buchser on 10/26/21. Please refer to CSR #54070 for more details.	128.00	320.00
1.00	DEMAND ITM	Summerhill on-site semi annual calibration services as provided by G. Buchser on 10/26/21. Please refer to CSR #54070 for more details.	128.00	128.00
1.00	DEMAND ITM	Pine Hill on-site semi annual calibration services as provided by G. Buchser on 10/26/21. Please refer to CSR #54070 for more details.	128.00	128.00
1.00	DEMAND ITM	Glen Ave on-site semi annual calibration services as provided by G. buchser on 10/26/21. Please refer to CSR #54070 for more details.	128.00	128.00
2.50	DEMAND ITM	Box Hill on-site semi annual calibration services as provided by G. Buchser on 10/26/21. Please refer to CSR #54070 for more details.	128.00	320.00
30.00	MILEAGE	Total Mileage Charge	0.90	27.00

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Subtotal Sales Tax

\$1,051.00

0.00

Total Invoice Amount Payment/Credit Applied 1,051.00 0.00

Check/Credit Memo No.

TOTAL

\$1,051.00



CUSTOMER SERVICE REPORT

@10114070

ALLIED CONTROL SERVICES, INC.

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486 24 Hour Emergency Service 800-441-4844

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	316116
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MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

VALLEY FORGE SEWER AUTHORITY CHESTER COUNTY, PA

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT



CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2022

	er and/or operator of a POTVV or other sew er and/or operator of a collection system tri	•	owned/operated by permittee					
	GENERAL INFO	RMATION						
Permittee Name:	VALLEY FORGE SEWER AUTHORITY INCORPORATING MEMBER MUNICIPALITIES REPORT	Permit No.:	PA0043974					
Mailing Address:	333 PAWLING ROAD	Effective Date:	1/1/20					
City, State, Zip:	PHOENIXVILLE, PA 19460	Expiration Date:	12/31/24					
Contact Person:	Mr. Leonard F. Pinchok, Sr.	Renewal Due Date:	7/4/24					
Title:	General Manager	Municipality:	Schuylkill Township					
Phone:	610-935-1553	County:	Chester					
Email:	lpinchok@vfsa.com	Consultant Name:						
	CHAPTER 94 REPORT	COMPONENTS						
the past 5 years a	his report a line graph depicting the month and projecting the flows for the next 5 years apacity per the WQM permit. (25 Pa. Code	ears. The graph must						
☐ Line graph for ☐ DEP Chapter 9	— • • • • • • • • • • • • • • • • • • •							
each month for the line depicting the o Check the approp Line graph for DEP Chapter 9	his report a line graph depicting the month past 5 years and projecting the organic lorganic design capacity of the treatment plantiate boxes: organic loads attached (Attachment 1) 4 Spreadsheet used (Attachment 1) t applicable (report is for a collection syste	pads for the next 5 year ant per the WQM permit	s. The graph must also include a					

3.	If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))
	Not applicable
4.	Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))
	Check the appropriate boxes:
	Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (Attachment)
	 ∠ List summarizing each extension or project attached (Attachment) ∠ Schedules describing how each project will be completed over time and effects attached (Attachment)
	Comments:
	Please see report following.
5.	Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))
	Please see report following.

6.	Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6)) Check the appropriate boxes:
	 System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event. System did not experience capacity-related bypassing, SSOs or surcharging during the report year.
	Comments:
7.	Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))
	Check the appropriate boxes: ☐ The collection system does not contain pump stations ☐ The collection system does contain pump stations (Number –) ☐ Discussion of condition of each pump station attached (Attachment)
8.	If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))
	a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
	b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
	c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.
	Check the appropriate boxes: ☐ Industrial waste report as described in 8 a., b. and c. attached (Attachment) ☐ Industrial pretreatment report as required in an NPDES permit attached (Attachment)

9.	Existing or Projected Overload.				
	Check the appropriate boxes: ☐ This report demonstrates an existing hydraulic overlo ☐ This report demonstrates a projected hydraulic overlo ☐ This report demonstrates an existing organic overload ☐ This report demonstrates a projected organic overload	ad condition. d condition.			
		Corrective Action Plan (CAP) to reduce or eliminate present nd/or 94.22 (relating to existing overload and projected			
	Corrective Action Plan attached (Attachment)				
10.	Where required by the NPDES permit, attach a smass balance of solids coming in and leaving the facility of	Sewage Sludge Management inventory that demonstrates a over the previous calendar year.			
	Sewage Sludge Management Inventory attached (Att	achment)			
11.	For facilities with CSOs and where required by the satellite combined sewer systems).	ne NPDES permit, attach an Annual CSO Report (including			
	Annual CSO Report attached (Attachment)				
12.	For POTWs, attach a calibration report document has been calibrated annually. (25 Pa. Code § 94.13(b))	ing that flow measuring, indicating and recording equipment			
	☐ Flow calibration report attached (Attachment 2)				
	RESPONSIBLE OFFICIAL CERTIFICATION				
sub for con	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).				
Lec	onard J. Pinchok, Sr.	Kumin I freket. S.			
Nar	me of Responsible Official	Signature			
610	9-935-1553	3/28/23			
Tel	ephone No.	Date			

PREPARER CE	RTIFICATION
I certify under penalty of law that this document and all attachmor supervision in accordance with a system designed to assure the information submitted. The information submitted is, to complete. I am aware that there are significant penalties for and imprisonment for knowledge of violations. See 18 Pa. C.S.	re that qualified personnel properly gathered and evaluated the best of my knowledge and belief, true, accurate, and submitting false information, including the possibility of fine
Richard D. Taylor	Milio 2067
Name of Preparer	Signature
610-935-1553	3-28-23
Telephone No.	Date

3800-FM-BPNPSM0507 4/2014 Chapter 94 Report Instructions



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

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For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

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Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT MEMBER MUNICIPALITIES ANNUAL REPORT (In PADEP Format)

CALENDAR YEAR 2022 VALLEY FORGE SEWER AUTHORITY CHESTER COUNTY, PENNSYLVANIA

VFSA MEMBER MUNICIPALITIES:

CHARLESTOWN TOWNSHIP EAST PIKELAND TOWNSHIP SCHUYLKILL TOWNSHIP

INTRODUCTION

Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Charlestown, East Pikeland and Schuylkill Townships. The Member Municipalities allocation of the total treatment plant hydraulic and organic loading is 18.1 percent.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion	Member Municipalities Allocation
Annual Average Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Hydraulic Design Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Organic Design Capacity	26,700 lbs/day	4,833 lbs/day (18.1% of total)

The Annual Average (AA) flow for 2022 for the VFSA Member Municipalities was **1.520** MGD, which is seventy-one percent of the post-expansion AA capacity of **2.128** MGD.

The 2022 VFSA Member Municipalities wastewater treatment plant flow was generated by an average of 7,650 EDUs. The number of baseline EDUs used in the projected flow calculations is 7,640 corresponding to the 2022 end-of-year EDU count.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any three consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2022.

2. ORGANIC LOADING

The Annual Average (AA) organic loading for 2022 for the VFSA Member Municipalities was **2,535** LB/day BOD₅, which is fifty-two percent of the post-expansion permitted AA capacity of **4,833** LB/day BOD₅. Organic loading was estimated utilizing an average value of 200 mg/L BOD₅.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2022.

3. NOT APPLICABLE

4. SEWER EXTENSIONS

The total number of EDUs connected at the end of 2022 was 7694. The total number of additional EDUs at the end of the report year versus the previous year's total was 65 EDUs.

During the next five years, the number of EDUs is projected to increase as follows:

2023	68.0
2024	69.6
2025	56.0
2026	19.0
2027	2.0

Please see the spreadsheet and graphs included in Appendix A at the end of this section.

Information and updates on the progress of the sewer extensions is presented in Table 1, below:

VFSA Member Municipalities Chapter 94 Report 2022

Pickering Crossing	Southdown Homes	Charlestown Township	0	1250	Dedication of the sanitary to the Valley Forge Sewer Authority occurred September 2022.	1 lot for 2 EDU's still remain to be connected. Billed for reserved Capacity
Spring Oak	JP Orleans	Charlestown Township	1	2850	Dedication of this development projected is to be completed in 2023 with the recordation of ROW Agreement,	Last remaining new home was connected to public sewer in 2022.
Devault Village at Spring Oak	JP Orleans	Charlestown Township	11	0	Construction Agreements are recorded and inplace. Sanitary construction activities began in the fall of 2021. New home construction and sanitary tie-ins are currently taking place the first of which in January 2023	Received PADEP planning approval in December 2018 for 15,950 gpd. 78 residential units.
Kimberton Glen	Toll Brothers	East Pikeland Township	56	3100	Phase 1 dedication to the Authority will be completed upon successful fulfillment of the 18-month Maintenance Warranty completed in 2022.	8 lots remain to be connected in 2022 and beyond. Phases 2 & 3 are currently under construction.
Valley Forge Greene	Pulte	Schuylkill Township	0	625	Agreements are in place and sanitary sewer dedication activities are in progress.	Received PADEP planning approval in February 2020 for 32 - unit townhomes totalling 8,800 gpd. To date, all units are connected and sold. Dedication to take place in 2023.

5. SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

Infiltration and Inflow (I&I) Analysis and Repair

In addition to the normal O&M work in the collector system and pumping stations, in 2022 the Authority continued a project focused on identifying sources and repairing I&I in the French Creek drainage basin and in the Pickering Creek drainage basin. These project activities have included:

Clearing all right-of-ways of overgrown vegetation. (To date approximately 19 miles of VFSA has been cleared and maintained).

Utilizing a Global Positioning System (GPS) to locate manholes and marking all manhole locations within the study area. (In 2022 5 new areas were satellite marked and will be incorporated into a VFSA sewer map book).

- Installing portable flow meters in strategic areas to evaluate inflow and infiltration (I&I) quantities at these locations during storm events.
- Utilizing the Authority's Engineer of Record, Buchart Horn Inc., to provide manhole condition assessments according to industry-accepted methodologies.
- Utilizing a contractor to clean and televise sanitary sewers in the targeted drainage areas and to perform spot repairs.
- Installing new water proof manhole frames and covers.
- Utilizing the SmartCover flow monitoring system with real-time masurements and alert features and notifications.
- Utilizing the Mission Control systems for monitoring and alerts on the key aspects of the these pumping stations.

Since 2018, approximately 90% of the entire French Creek Pump Station sanitary sewer drainage basin including 22 miles of pipe and 385 manholes have been cleaned, televised and inspected. This work also included performing an additional 25 spot repairs to gravity sewer pipes and manholes and installing 50 new manhole frame and covers in flood prone areas in 2022.

Some preliminary conclusions of this work thus far:

 The gravity sewers and manholes appear to be in generally good condition, and while some manhole and pipe defects were found and repaired, they were generally minor.

- A sustainable maintenance program which includes identification of system defects and repair of is beneficial.
- In addition to I&I related to precipitation events, there is also a relationship between groundwater level and wastewater flow.
- Significant work is still needed to identify and repair I&I problems throughout the
 entire VFSA sanitary sewer system. However unlikely gaining significant
 capacity through I&I reduction may be, overall maintenance shows progress
 towards reducing excess flows to the treatment plant. More important it is the
 overall maintenance of system condition in order to avoid and prevent
 degradation which could result in reduced capacity and an increased risk of
 sanitary sewer overflows.
- We are also working with local plumbers to have defective customer lateral service lines replaced to improve the overall collection system and reduce I&I..

In addition to continuing with the I&I activities that are described above, additional work anticipated in the future includes the following:

- Establish and implement appropriate activities to evaluate and address potential
 sources of I&I from private sewer lateral connections and potentially illegal
 connections to the sanitary sewer system from private households. The Authority
 is also evaluating developing ordinances which would require, as part of the real
 estate transaction process, inspections of internal plumbing in customer homes to
 assure no illegal connections.
- Install a cure in place pipe lining on the gravity end of the French Creek Pump Station force main prior to these wastes being received at the Pothouse Road Pumping Station. (This work was completed in February 2023 by Insituform)

In 2023 and beyond the Authority intends to continue its work in the French Creek basin, as well as initiating and completing preventative maintenance and emergency repair work in other parts of the sanitary sewer system in both Schuylkill and Charlestown Townships.

Right-of Ways

The Authority has contracted with a professional landscaping service (Coventry Property Services) through PA COSTARS which is supporting the Authority in maintaining its nearly 26 miles of sewer right-of-ways. In 2022 the Authority was actively clearing, marking and inspecting its manholes and sewer mains within these right-of-ways. VFSA staff has added more than 35 new reflective tape marking posts which were installed to provide easy location and identification of manhole structures in the field. In 2022, the Authority has identified and marked all of its manholes and sewer lines in the French Creek drainage basin and Pickering Creek basin. These locations/structures were added to the Authority's (Geographic Information System Mapping (GIS) mapping program for easy reference for future identification.

Electrical Service Upgrades at the VFSA Major Pump Stations

The Authority's electrical contractor Garden Spot Electric and the Authority's electrical design Engineer (Burns Engineeering) have reviewed, installed, inspected and issued the substantial completion of all electrical service upgrades to three of the Authority's largest pump stations for this project. These pump stations are: French Creek Pump Station, Pothouse Road Pump Station and Whitehorse Road Pump Station. These electrical upgrades include: removal of forty-year-old transformers (one per station) and the installation of new pad mounted transformers with associated medium voltage 35kV switchgear, main distribution panels, circuit breakers, power block enclosures, automatic transfer switches and power distribution enclosures. Surge protection equipment has also been installed to existing variable frequency drives of the pumping station. Additional site improvements were made to the following at these locations: lighting panels, junction boxes, light fixtures, receptacles, light switches, heaters, and ventilation units. New utility poles were also installed with their associated guy wires, cable terminators, surge arrestors, racks cable guards for the aerial 35kV cables from existing PECO pole locations.

New emergency service generators were installed at all four major pump stations, French Creek Pump Station, Pothouse Road Pump Station, Whitehorse Road Pump Station and Pickering Pump Station. These units have been installed in the event of service power disruption and or other electrical failures due to storms.

6. CONDITION OF THE SEWER SYSTEM

As indicated in Section 5 above, a conclusion of the French Creek Evaluation was that the gravity sewers and manholes in the French Creek drainage basin appear to be in generally good condition. It is the Authority's opinion that its entire system is also in a generally good state of repair, and further detailed study will occur in subsequent years.

During 2022, no bypassing occurred in the Member Municipalities sanitary sewer system. VFSA has a sanitary sewer system only, not a combined system, so no CSOs occurred. During 2022, there were four Sanitary Sewer Overflow (SSOs) which were promptly reported to PADEP. These occurred on the following dates: August 22, October 3, October 7 and October 18. All four SSOs occurred at the Main Scum Pit at the VFSA Treatment Plant and were attributed to pump blockages, faulty control equipment and/or maintenance activities. None of the SSOs were observed to leave the VFSA treatment plant site and did not impact Commonwealth waters. Copies of the submitted reports are in Appendix B. An upgraded Main Scum Pit is currently in design by the Authority's consulting engineer.

7. SEWAGE PUMPING STATIONS

Please see the table (attached) regarding VFSA member municipality pump stations. Additional flows are based on an average EDU rate of 275 gpd/EDU. Maximum Day Flow data for clanedar year 2022 has been obtained from the cloud based real time monitoring system for each pump station.

Overall 2022 was a slightly below average year for precipitation with annual rainfall totals in excess of 44 inches versus average rainfall amounts of approximately 48 inches. This resulted in some high maximum day flows at the pumping stations, but still below their hydraulic design capacities. All four of the large pump stations in VFSA's system contain three (3) pumps which enables two (2) pumps to operate simultaneously if required.

Please see the tables and graphs included as Appendices C and D which include monthly flows at the 4 major pump stations and flows at all of the Authority's pump stations in regards to rainfall events of one inch or more during 2022.

VFSA Member Municipalities Chapter 94 Report 2022

			VALLE	Y FORGE SEV	VALLEY FORGE SEWER AUTHORITY	<u>L</u>				
			2022 ANNUAI BASED ON I	L CHAPTER 94 HYDRAU MISSION COMMUNICA PUMP STATION DATA	322 ANNUAL CHAPTER 94 HYDRAULIC LOADING BASED ON MISSION COMMUNICATION DATA PUMP STATION DATA	LOADING IN DATA				
		PERMI	PERMITTED CAPACITIES	TIES	PRES	PRESENT FLOWS 2021	021	PR	PROJECTED FLOWS	WS
		Annual			2022					
		Average	Hydraulic Capacity	pacity	Annual	2022	2022	Contributin	2 year	2 Year
PUMP		Permitted	(excluding capacity of	pacity of	Average	Мах. Day	Max. Day	Max. Day New EDUs	Annual	Max. Daily
STATION	No. of	Capacity	backup pump), (gpm)	o), (gpm)	Flow	Flow	to Avg. Dayhext 2 year	next 2 year	Avg Flow	Flow
NAME	Pumps	(pdg)	(pdg)		(gbd)	(pdB)	Ratio		(pdg)	(gpd)
Pickering Creek	ď	2 686 560	5 597	8 059 680	1 223 003	4 752 000	2 80	ጸዓ	1 240 878	4 821 454
VA/bito Closes	, (טטט טור ר		7,050,240	220/221/2	2 474 250	0 0) (010,010	0 1 20 1 20
Wille Horse	'n	7,350,080	4,896	/,050,240	896,356	3,4/1,358	3.8/	64	913,956	3,539,518
Pot House	m	2,040,000	4,250	6,120,000	783,891	2,589,700	3.30	64	801,491	2,647,844
French Creek	m	1,570,994	3,382	4,870,080	670,546	2,345,600	3.50	64	688,146	2,407,166
Perkinmen	,	217 920	507	850 680	75 110	269 600	2 50	L	76 515	27/1533
Valley Creek	2	67,680	188	270,720	19,206	112,700	5.87	0	19,206	112,700
Kimbel Drive	2	37,440	104	149,760	14,515	46,823	3.23	0	14,515	46,823
Charlestown Rd	2	92,520	257	370,080	30,137	262,408	8.71	0	30,137	262,408
VF Woods	2	112,680	313	450,720	56,331	78,307	1.39	0	56,331	78,307
Charlestown Meadows	2	97,200	270	388,800	25,223	31,670	1.26	0	25,223	31,670
Charlestown Oaks	0	METER STATION OI	N ONLY		METER ONL	METER ONL METER ONLY	ΔN	0		
Kimberton Meadows	2	18,000	20	72,000	17,612	40,475	2.30	0	17,612	40,475

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the VFSA Member Municipalities PADEP Chapter 94 Spreadsheet hydraulic and organic historical data and projections, the VFSA member municipalities are projected to slightly exceed their hydraulic capacity allocation for 2023 through 2027. This is primarily a result of wet weather conditions and the build out of VFSA's member municipalities. The VFSA is in the process of providing additional allocated capacity – either from purchase, rental or construction of additional capacity at it's treatment plant. The Authority anticipates a definitive direction will be established in 2023.

However, a hydraulic overload of the wastewater treatment plant is not projected for these years since the plant is only currently at 53% of its capacity and the other partner municipalities are well below their projected hydraulic capacity allocations. This situation is allowed under the Wastewater Treatment Plant Rental Pool Agreement where unused allocated capacity is rented to the municipalities in need. There are no projected organic overload conditions through 2027.

There are no projected hydraulic overloads at the Pump Stations or the Wastewater Treatment Plant for the next 2 years.

10. SEWAGE SLUDGE MANAGEMENT INVENTORY - NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, most meters are calibrated on a quarterly basis). Please see Attachment No. 2

of Section 1 of the 2022 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2022 calibration reports. Meter calibration reports are available upon request.

2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT MEMBER MUNICIPALITIES REPORT

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

APPENDIX A



PADEP Chapter 94 Spreadsheet Sewage Treatment Plants

Reporting Year:

2022

Facility Name:

Existing EDUs

Flow/EDU (GPD)

Flow/Capita (GPD)

Exist. Overload?

VALLEY FORGE SEWER AUTHORITY - INCORPORATING MUNICIPAL

Permit No.:

Exist, Overload?

NO

PA0043974

Persons/EDU:

lbs BOD5/day

3.5

Existing Hydraulic Design Capacity: Upgrade Planned in Next 5 Years? Future Hydraulic Design Capacity:

Г	2,128	•
	NO	
г		

MGD

MGD

Year:

Existing Organic Design Capacity: Upgrade Planned in Next 5 Years? Future Organic Design Capacity: 4,833 NO lbs BOD5/day Year:

Monthly	Average	Flows	for	Pact	Flva	Vegre	(MGD)

MOII	HILL VIACIONS	10113 101 1 40	ci iic icais (i	الحرب!
2018	2019	2020	2021	2022
1.24980	2.45700	1.63800	1.84900	1.48800
2.22552	2.24200	1.86000	1.98200	1.58800
2.36334	2.64900	1.85400	2.52900	1.53700
1.72942	1.75700	2.15000	1.73600	2,45400
2.11740	1,95900	1,80200	1.46000	1.85700
2.27612	1,69600	1.38700	1.37800	1.37900
1.90489	1.52600	1.44600	1.21700	1.17000
2.26242	1.26500	1.64100	1.21500	1.12800
2.51413	1.17500	1.23500	1.62900	1.17300
1.76121	1.24500	1.28500	1.30300	1,42600
2.70618	1.36300	1.52800	1.33400	1.25200
2.39324	1.74000	2.22500	1.20300	1.78600
2.12531	1.756	1.671	1.57	1.52
2.32717	2,519	1,955	2.12	1.949
1.09	1.43	1.17	1.35	1.28
	2018 1.24980 2.22552 2.36334 1.72942 2.11740 2.27612 1.90489 2.26242 2.51413 1.76121 2.70618 2.39324 2.12531 2.32717	2018 2019 1,24980 2,45700 2,22552 2,24200 2,36334 2,64900 1,72942 1,75700 2,11740 1,95900 2,27612 1,69800 1,90489 1,52600 2,26242 1,26500 2,51413 1,17500 1,76121 1,24500 2,39324 1,74000 2,12531 1,756 2,32717 2,519	2018 2019 2020 1.24980 2.45700 1.63800 2.22552 2.24200 1.86000 2.36334 2.64900 1.85400 1.72942 1.75700 2.15000 2.11740 1.95900 1.80200 2.27612 1.69800 1.38700 1.90489 1.52600 1.44600 2.56242 1.26500 1.64100 2.51413 1.17500 1.23500 1.76121 1.24500 1.28500 2.70618 1.36300 1.52800 2.39324 1.74000 2.22500 2.12531 1.756 1.671 2.32717 2.519 1.955	1.24980 2.45700 1.63800 1.84900 2.22552 2.24200 1.86000 1.98200 2.36334 2.64900 1.85400 2.52900 1.72942 1.75700 2.15000 1.73600 2.11740 1.95900 1.80200 1.46000 2.27612 1.69800 1.38700 1.37800 1.90489 1.52600 1.44600 1.21700 2.26242 1.26500 1.64100 1.21500 2.51413 1.17500 1.23500 1.62900 1.76121 1.24500 1.28500 1.30300 2.70618 1.36300 1.52800 1.33400 2.39324 1.74000 2.22500 1.20300 2.12531 1.756 1.671 1.57 2.32717 2.519 1.955 2.12

	Monthly A	verage BOD	Loads for Pa	st Five Years	(lbs/day)
Month	2018	2019	2020	2021	2022
January	2,085	4,098	2,732	3,084	2,483
February	3,712	3,740	3,102	3,307	2,649

March	3,942	4,418	3,092	4,219	2,563
April	2,885	2,930	3,586	2,895	4,094
May .	3,532	3,267	3,006	2,435	3,097
June	3,797	2,828	2,313	2,299	2,301
July	3,177	2,545	2,413	2,029	1,952
August	3,774	2,111	2,737	2,026	1,881
September	4,194	1,959	2,060	2,701	1,956
October	2,938	2,076	2,143	2,173	2,379
November	4,514	2,274	2,549	2,224	2,088
December	3,992	2,902	3,712	2,006	2,978
Annual Avg	3,545	2,929	2,787	2,617	2,535
Max Mo Avg	4,514	4,418	3,712	4,219	4,094
Max : Avg Ratio	1.27	1.51	1.33	1.61	1.61
Existing EDUs	6,997	7,306	7,521	7,529	7,694
Load/EDU	0.507	0.401	0.371	0.348	0.330
Load/Capita	0.145	0.115	0.106	0.099	0.094

Projected Flows for Next Five Years (MGD)

7,521.0

222.2

63,5

NO

7,529.0

208.5

59.6

NO

7,693.5

197.6

56.4

NO

_	2023	2024	2025	2026	2027	
New EDUs	68.0	69.6	56.0	19.0	2.0	
New EDU Flow	0.0159	0.0163	0.0131	0.0045	0.0005	
Proj. Annual Avg	1.74436	1,76066	1.77376	1.77826	1.77876	
Proj. Max 3-Mo Avg	2.20906	2.22970	2.24629	2.25199	2.25262	
Proj. Overload?	YES	YES	YES	YES	YES	

7,306.0

240.4

68.7

YES

	Projec	tea ROD2 Fo	ada tot wext i	ive rears (in	s/uay)
	2023	2024	2025	2026	2027
New FDI Is	68	69.6	56	19	2

NO

NO

NO

NO

New EDUs	68	69.6	56	19	2	
New EDU Load	26.590	27.216	21.898	7.430	0.782	
Proj. Annual Avg	2,909	2,936	2,958	2,966	2,966	
Proj. Max Avg	4,271	4,311	4,343	4,354	4,355	
Proj. Overload?	NO	NO	NO	NO	NO	

Show Precipitation Data on Hydraulic Graph?

6,997.0

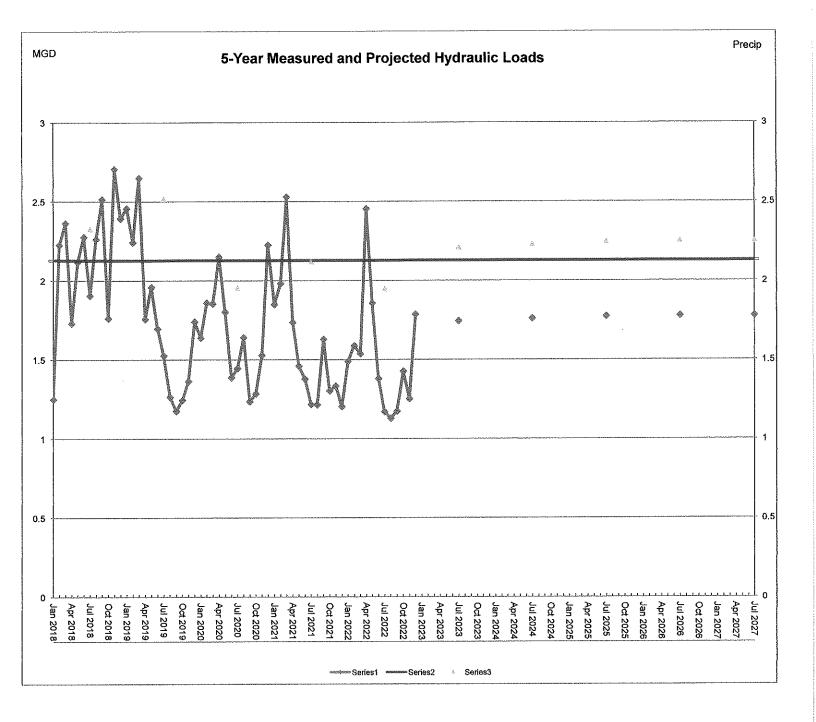
303.7

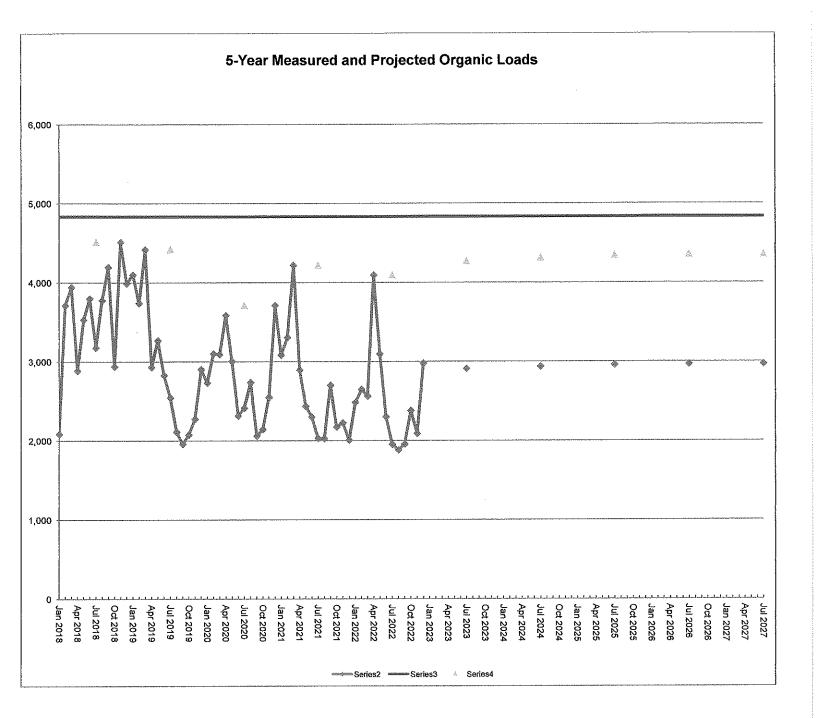
86.8

NO

Total Monthly Precipitation for Past Five Years (Inches)

Month	2018	2019	2020	2021	2022
January	2.80000	4.48000	3,39000	2.11000	3.69000
February	7.30000	3.23000	2.65000	6.25000	2.71000
March	3,90000	5.22000	4.45000	3,75000	3.31000
April	3,53000	3.09000	5.92000	1.70000	6.20000
May	8,11000	6.21000	2.84000	4.10000	4.93000
June	7.02000	8.29000	2.84000	3,32000	3.06000
July	6.75000	5.66000	8.61000	3,67000	2.79000
August	9.00000	1,95000	9.38000	7.36000	1.76000
September	7.65000	2.25000	2.47000	9.51000	5.38000
October	2.25000	6.05000	4.19000	4.78000	2.62000
November	11.03000	1.72000	5.95000	1.06000	2.78000
December	6.10000	4.81000	6.50000	1.76000	5,15000





Updated: 3/6/2023

885.4

2.0

TABLE 1 PROJECTED EDU GROWTH WITHIN THE MEMBER MUNICIPALITIES

The estimated EDUs for the years 2023 through 2027 and beyond are as follows:

Development	Status	Twp.	Approved EDUs Total	Remaining EDUs - Total	2023	2024	2025	2026	2027	Beyond	Type of Ext.	Drainage Basin
Altair (26-2-170) former Ashley Sq	Р	EP	15	15	0	0	0	15	0	0	R	FC-2009
Campbell (26-2-169)	P	EP	15	15	0	0	2	15	. 0	0	R	FC-2009
Celluci	Р	СН	16	16	0	0	0	0	0	16	R	LT-3010
19 Oakwood Lane (27-7-10,13A)	A	s	1	1	1	0	0	0	0	0	R	VC
Connell Property (26-2-160,161)	Р	ĒΡ	2	2	0	0	0	2	0	0	R	FC-2009
Commons at Great Valley	E	СН	73	10	5	5	0	0	0	0	С	LT-3010
Croft @ Rt 113 & 7 Stars	N	EP	2	2	0	2	0	0	0	0	R	FC-2009
Cutler (Kimberton Glen)	A	EP	332	8	8	0	0	0	0	0	R	FC-2009
Deer Run Lane	E	EP	9	3	0	0	0	0	0	3	R	FC-2009
Devault Meats	E	СН	134	134	0	0	0	0	0	134	1	LT-3010
Emmanuel/Dodie	N	EP	13	13	0	0	0	0	0	13	R	FC-2009
Ferry Lane (Masters)	P	s	4	4	2	2	0	0	0	0	R	PER-1009
Filipo Tract (Devault Village @ Spring Oak)	A	СH	78	70	20	25	25	0	0	0	R	LT-3010
French Creek Business Park	E	s	25	1	1	0	0	0	0	0	С	FC-2009
Gappa @ Rapps Dam Rd (26-3-106)	Р	EP	2	2	0	0	2	0	0	0	R	FC-2009
GPT Properties (566 & 574 Schuylkill Ro	N	EP	3	3	3	0	0	0	0	0	R	FC-2009
Heritage Brightside Estate (Coccia)	P	EP	22	22	0	0	0	0	0	22	R	FC-2009
Holy Ascension Church	P	СН	6.6	6.6	0	6.6	0	0	0	0	R/C	LT-3010
Jugan Property (26-2-170.2,170.3.170.4	Р	TEP	17	17	0	0	0	0	0	17	R	FC-2009
Kaiserman/Condign	N	EP	15	15	0	10	5	0	0	0	R	FC-2009
Kimberton Square	Ē	EP	10	10	0	0	0	0	0	10	R	FC-2009
Late Spring Development	E	СН	10	8	0	0	0	0	0	8	R	LT-3010
Laurabrooke	P	СН	20	20	0	0	0	0	0	20	R	LT-3010
Lee/Brook/Pheasant Run	N	EР	52	52	0	0	0	0	0	52	R	FC-2009
505 Pawlings Road	A	s	1	1	0	1	0	0	0	0	R	PER-1009
Meadow Lane	N	EP	12	10	0	0	10	0	0	0	R	FC-2009
Meadowbrook Farm (PASD)	Р	s	3	3	0	0	0	0	0	3	R/C	WH-1004
Mill Lane	P	s	3	2	1	0	0	0	0	1	R	WH-1004
Miller Pond Subdivision	A	EP	2	0	0	0	0	0	0	0	R	FC-2009
Miscellaneous**			60	40	2	2	2	2	2	30	R/C	
Morehall @ VF	E	s	148	1	1	0	0	0	0	0	R	PK-1003
Phoenixville Area School District	P	EP	20	20	19	0	0	0	0	1	R/C	FC-2009
Piazza 26-2-194.3,194.4	Р	EP	15	15	5	10	0	0	0	0	1	FC-2009
Pickering Crossing	Р	СН	78	2	0	0	0	0	0	2	R	LT-3010
Pleasant Valley Acres	N	EP	27	27	0	0	0	0	0	27	R	FC-2009
Pothouse Road (26-3-147)	Р	EP	10	10	0	0	10	0	0	0	R	FC-2009
Reeves Property	Р	S	93	93	0	0	0	0	0	93	R	PK-1003
Route 23 Commercial	Ë	S	6	2	0	0	0	0	0	2	C	PK-1003
Shick (26-2-96)	Р	EP	3	1	0	1	0	0	0	0	R	FC-2009
Snyder Avenue	N	EP	10	10	0	0	0	0	0	10	R	FC-2009
Spring Oak	Р	СН	184	0	0	0	0	0	0	0	R	LT-3010
Thoroughbred Drive	Р	EP	4	4	0	3	0	0	0	1	R	FC-2009
Walsh/Western Road	Р	EP	2	2	0	2	0	0	0	0	R	FC-2009
Warner Lane	Р	СН	16.9	16.9	0	0	0	0	0	16.9	R/C	LT-3010
Zone Dist I/O	Р	СН	175	175	0	0	0	0	0	175	R/C	LT-3010
Zone Dist B-1, FR, LI/B, RC	Р	СН	228.5	228.5	0	0	0	0	0	228.5	R/C	LT-3010

TYPE	MUNICIPALITIES	DRAINAGE BASIN	5 YEAR PRO	JECTION
C- COMMERCIAL	EP - EAST PIKELAND TOWNS	H CC - COUNTRY CLUB	2023	68,0
I - INDUSTRIAL	CH - CHARLESTOWN TOWNS	SH FC -FRENCH CREEK	2024	69.6
R - RESIDENTIAL	S - SCHUYLKILL TOWNSHIP	KD - KIMBLE DRIVE	2025	56.0
R/C - RESIDENTIAL/COMMERCIAL	WV - WEST VINCENT	LT - LEE TIRE BLVD.	2026	34.0
	EP&WV - EAST PIKELAND & V	VI PER - PERKIOMEN	2027	2.0
STATUS		PH - POT HOUSE	Beyond	885.4
		PK - PICKERING	Total	1,115
E = EXISTING (INCLUDED ON COMP MAP)		RT-401 = ROUTE 401		
A = APPROVED BY VFSA (ON COMP MAP)		SYDLEY RD - TO E. WHITELAND		

Totals:

1,113.0 68.0 69.6 56.0 34.0

VC - VALLEY CREEK

WH - WHITEHORSE

A = APPROVED BY VFSA (ON COMP MAP)

P = IN NEEDS ANALYSIS - NO FORMAL APPLICATION TO VFSA -

REQUIRES PUBLIC SEWER BUT ARE IN PRELIMINARY PLANNING STAGE)

SHOWN WITH BUBBLE ON COMPREHENSIVE MAP

N = NEW, NAMED BY TOWNSHIP

2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT MEMBER MUNICIPALITIES REPORT

SANITARY SEWER OVERFLOWS (SSOs)

APPENDIX B

Rick Taylor

From:

Rick Taylor

Sent:

Tuesday, August 23, 2022 11:14 AM

To:

'Wolfinger, David'

Cc:

Len Pinchok; Martin Goldberg; Lloyd Knauer

Subject: Attachments: VFSA Main scum pit overflow August 22, 2022 PADEP Non-Compliance Reporting Form VFSA Main Scum Pit SSO August 22 2022.pdf

Tracking:

ADEL Holl Compliance Reporting Form VI or

'Wolfinger, David'

Recipient

Len Pinchok Martin Goldberg

Lloyd Knauer

Delivery

Delivered: 8/23/2022 11:14 AM Delivered: 8/23/2022 11:14 AM Delivered: 8/23/2022 11:14 AM

Mr. David Wolfinger, PADEP

RE:

VFSA Main scum pit overflow August 22, 2022

Dear Dave,

On Monday, August 22, 2022, there was an overflow of the main scum pit at the VFSA treatment plant while the plant was staffed. The main scum pit high level alarm tripped at 1218 and the overflow was estimated to have lasted about five minutes, possibly discharging two hundred gallons to the ground, none of which was discharged to waters of the Commonwealth.

I have attached the non-compliance report to this email.

If you have any questions or need a more formal report please let me know.

Sincerely,

Richard D. Taylor Laboratory Supervisor



CUMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIR ENTAL PROTECTION BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening notlinion and activities utilizing politically in part requires incidents. Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. reme report See ir

remer reporti See in	llation, ai ng deadli structions	remediation, and may require an a reporting deadline does not coincide See instructions for more information.	fuire an additional report on the incide to coincide with your submission of the Diformation.	tional rep	ort on the	ely), in pa le incident o of the DMR	in requires or plan of po , it should be	Immedia	ite notifi revention d separat	cation by telephores. If your ely to the Department.	one to the Del are reporting oft ent by the report	remediation, and may require an additional report on the incident or plant requires immediate notification by telephone to the Department of pollution incidents, respectively, in part reporting the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the See instructions for more information.	rtion incidents, sevents, and the rth in the permit.
Facility	Facility Name:	Valley Forge Sewer Authority	ge Sewer,	Authority						Month: August		Year	2022
MULIC	Municipality:	Schuylkill Township	Township			ŏ	County: Che	Chester		Ĭ.	o.: PA 0043974		
ĭĭ l □	lations o	☐ Violations of Permit Effluent Limitations*	ent Limita	tlons*									
	Date	Parameter		Permit Limit	Unite	Statistical	\$ History	-	Luife	No control	1061		100
			 		2	3	neav		3	Cause of Violation	Janon	Corrective Action Laken	CLIOII I AKER
Sa	ıltary Sev	Sanitary Sewer Overflows and Other Unauthorized Discharge	and Othe	er Unauth	orized D	ischarges*							
	Event Date	Substance Discharged		Location		Volume (gals)	Duration	Receiving	gui	Impact on			Date DEP
						Gura	6	Hate	,	Maters	Cause	Discillatye	naliton
જે	8/22/22	Sanitary Sewage	Main VFSA T	Main Scum Pit at VFSA Treatment Plant	at Plant	<200 (est)	<5 min (est)	-NA-		-NA-	Pump	Pump blockage	8/23/22
₩ 	ıer Permi	Other Permit Violations*		,									
] Sampl	Sample collection less frequent than required	is frequent	t than requ	uired		Explain .					,	
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[Other						Explain						
*If the	Space	provided is	not enffi	iciont to	Pa 0 0 0 2	oll inform	Explain		3500				
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		Prepared By:		Martin Goldberg	erg				୍ ର୍ଚ୍ଚ	Signature:	The Co	J. Lin	\
		Title:	ď	Operations Manager	lanager				ä I	P	8-23-22	A	
									1				



FILE COPY

From:

Rick Taylor

Sent:

Tuesday, October 04, 2022 11:44 AM

To:

'Wolfinger, David'

Cc:

Len Pinchok; Martin Goldberg; Lloyd Knauer Main Scum Pit Overflow October 3 2022

Subject: Attachments:

PADEP Non-Compliance Reporting Form VFSA Main Scum Pit SSO October 3 2022.pdf

Tracking:

Recipient

Delivery

'Wolfinger, David'

Len Pinchok

Delivered: 10/4/2022 11:43 AM Delivered: 10/4/2022 11:43 AM

Martin Goldberg Lloyd Knauer

Delivered: 10/4/2022 11:43 AM

Mr. David Wolfinger, PADEP

RE:

VFSA Main scum pit overflow October 3, 2022

Dear Dave,

On Monday, October 3, 2022, there was an overflow of the main scum pit at the VFSA treatment plant while the plant was staffed. The main scum pit high level alarm tripped at 1328 and the overflow was estimated to have lasted less than five minutes, possibly discharging up to two hundred gallons to the ground, none of which was discharged to waters of the Commonwealth.

I have attached the non-compliance report to this email.

If you have any questions or need a more formal report please let me know.

Sincerely,

Richard D. Taylor Laboratory Supervisor



CUMMUNWEALTH OF PENNSYLVANIA DEPARTMENT OF ENY WENTAL PROTECTION BUREAU OF LEAN WATER

NON-COMPLIANCE REPORTING FORM

Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollutions, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. See

See Ins	deadlin structions	le does not co	o all additional I bincide with your mation.	eport on submissio	the incident n of the DM	t or plan of R, it should	pollution prev be submitted a	reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit	u are reporting off nent by the report	her non-compliand ing deadline set f	e events, and the
Facility Nam Municipality:	Facility Name: Municípality:	Valley Forge Sewer Schuylkill Township	Valley Forge Sewer Authority Schuylkill Township	ty		County:	Chester	Month: October		Year:	2022
□ Viol	ations of	Permit Efflue	Uiolations of Permit Effluent Limitations*			•		remit No.:	VO.: PA 0043974	74	
	340				Statistical	al					
	Cale	Parameter	eter Limit	Units	Code	Result	ult Units	Cause of Violation	iolation	Corrective A	Corrective Action Taken
Sani	fary Sew	er Overflows	Sanitary Sewer Overflows and Other Unauthorized Discharges⁴	rthorized	Discharges	- - -					
<u> </u>	Event S	Substance			Volume	Duration					
	Date	Discharged	Location		(gals)	(hrs)	Waters	Impact on Waters	Cause of	Cause of Discharge	Date DEP Notified
10/	10/3/22	Sanitary Sewage	Main Scum Pit at VFSA Treatment Plant	oit at nt Plant	<200 (est)	<5 min (est)	-NA-	-NA-	Pump t	Pump blockage	10/4/22
□ Othe	r Permit	Other Permit Violations*			·						
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		Prepared By:	By: Martin Goldberg	berg				Signature:	# 7 (J.M.	Mary	
		Title:	Operations Manager	Manager				Date:	1/40, HO		

Rick Taylor

FILE COPY

From:

Rick Taylor

Sent:

Tuesday, October 11, 2022 2:01 PM

To:

'Wolfinger, David'

Cc: Subject: Len Pinchok; Martin Goldberg; Lloyd Knauer VFSA Main Scum Pit Overflow October 7 2022

Attachments:

VFSA Main Scum Pit Overflow October 7 2022
VFSA Main Scum Pit Overflow October 7 2022 Form and Attachment.pdf

Tracking:

Recipient

'Wolfinger, David'

Len Pinchok Martin Goldberg Lloyd Knauer Delivery

Delivered: 10/11/2022 2:00 PM Delivered: 10/11/2022 2:00 PM Delivered: 10/11/2022 2:00 PM

Mr. David Wolfinger, PADEP

RE:

VFSA Main scum pit overflow October 7, 2022

Dear Dave,

On Friday, October 7, 2022, there was an overflow of the main scum pit at the VFSA treatment plant while the plant was staffed. The main scum pit high level alarm tripped at 1223 and the overflow was estimated to have lasted less than five minutes, possibly discharging ten gallons to the ground, none of which was discharged to waters of the Commonwealth.

I have attached the non-compliance report, a brief explanation of the events and some possible immediate and proposed solutions to mitigate further occurrences to this email.

If you have any questions or need more information please let me know.

Sincerely,

Richard D. Taylor Laboratory Supervisor



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIR BUREAU OF CLLAN WATER

NON-COMPLIANCE REPORTING FORM

Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollutions, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, respectively, in part requires immediate notion incidents, and the remediation, and may require an additional report on the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the reporting deadline set forth in the permit. See instructions for more information. Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit.

rem repo See	ediation, a	remediation, and may require an acreporting deadline does not coincide See instructions for more information.	an additional re ncide with your s	port on t	he incident of the DMR	or plan of po	llution prevention submitted separation	remediation, and may require an additional report on the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the reporting deadline set forth in the permit. See instructions for more information.	are reporting other n nt by the reporting o	ion-compliance e deadline set forth	vents, and the in the permit.
Faci	Facility Name:	Valley Forg	Valley Forge Sewer Authority	>				Month: October	i	Year:	2022
Mun	Municipality:	Schuylkill Township	ownship		O	County: Chester	ster	Permit No.:	DA 0043974		
	/iolations	☐ Violations of Permit Effluent Limitations*	nt Limitations*								
<u> </u>	Date	Parameter	Permit ter Limit	Units	Statistica Code	al Result	t Units	Cause of Violation	lation	Corrective Action Taken	ion Taken
🗵	Sanitary Se	wer Overflows	Sanitary Sewer Overflows and Other Unauthorized Discharges*	thorized	Discharges						
	Event	Substance	r Ciberro	2	Volume (gale)	Duration (hrs)	Receiving	Impact on Waters	Cause of Discharge	scharge	Date DEP Notified
	Date	Discriarged	Locallo		(gais)						
	10/7/22	Sanitary Sewage	Main Scum Pit at VFSA Treatment Plant	Pit at int Plant	<10 (est)	<5 min (est)	-NA-	-NA-	Please see attached	attached	10/7/22
□ ** Constant of the state of	Other Permi Other Pampl Sampl Sampl Violati Other Other certify under certify under personnel gath for gathering the for gathering the for gathering the for gathering the for gathering the for gathering the for gathering the for gathering the falsification).	Other Permit Violations* Other Pample collection less freque sample type not in complianted by the Sample type not in complianted by the Sample type not in complianted by the Sample type not in complianted by the Sample type not in the Space provided is not subject to gathering the information, the informalties for submitting false information). Prepared By:	Other Permit Violations* Other Permit Violations* Sample collection less frequent than required Sample type not in compliance with permit Violation of permit schedule Violation of permit schedule Other Other Certify under penalty of law that this document was prepared personnel gather and evaluate the information submitted. Based for gathering the information, the information submitted is, to the penalties for submitting false information, including the possibil falsification). Prepared By: Martin Goldberg Title: Operations Manager	ent than required ce with permit formation submitted ormation, including the Martin Goldberg	rd all infor s prepared ed. Based o ed is, to the bhe possibilit	Explain Explain Explain Explain Explain Explain Explain nation, ple under my din n my inquiry sest of my kr	tase attach ad ection or super of the person or towledge and be imprisonment	Sawage VrSA Ireatment Plant Casy Cas	with a system design the system or those and complete. I am aving some 18 Pa. C.S.	signed to assurate that there is \$ 4904 (related).	ned to assure that qualified persons directly responsible vare that there are significant \$ 4904 (relating to unsworn

The possible reasons and solutions for the recent treatment plant main scum pit overflows consist of the following:

- 1. Reason The upstream DAT Tank is currently being bypassed for maintenance, thereby making the potential for two pump simultaneous operation from the trucked waste (septic dump) wet well directly to the gravity thickeners possible (rather than to the DAT tank for equalization). Simultaneous flow from two septic dump pumps may have been sufficient to raise the thickener liquid levels and overflow the thickener scum collection boxes directly to the main scum pit. Solution The Authority has reduced the amount of trucked waste routed to the septic dump wet well to 1 truck at a time, thereby reducing or eliminating 2 pump simultaneous pumping.
- 2. <u>Reason</u> A faulty controller, designed to activate the submersible scum pit pump at High level and alarm at High-High level, was failing on an intermittent basis. <u>Solution</u> A shelf spare controller was installed until the replacement controller, ordered with overnight shipping, is received and placed in service.

The Authority is working with an engineering consultant to identify improvements to the main scum pit to improve its operation and mitigate the potential for overflows. These include, but may not be limited to:

- Installation of an on line spare (backup) pump.
- Building up the pit walls to allow for containment of larger amounts of contents within the pit.
- Adding interlocks to automatically discontinue upstream scum sources when the pit reaches a
 high level, until the cause(s) of the high level may be found and corrected.

Rick Taylor

From:

Rick Taylor

Sent:

Thursday, October 20, 2022 4:49 PM

To:

'Wolfinger, David'

Cc: Subject: Len Pinchok; Martin Goldberg; Lloyd Knauer VFSA Main scum pit overflow October 18 2022

Attachments:

PADEP Non-Compliance Reporting Form VFSA Main Scum Pit SSO October 18 2022 and

Attachment.pdf

Tracking:

Recipient

Delivery

'Wolfinger, David'

Len Pinchok Martin Goldberg Delivered: 10/20/2022 4:48 PM Delivered: 10/20/2022 4:48 PM

Delivered: 10/20/2022 4:48 PM

Lloyd Knauer

Mr. David Wolfinger, PADEP

RE:

VFSA Main Scum Pit Overflow October 18, 2022

Dear Dave,

On Tuesday, October 18, 2022, there was an overflow of the main scum pit at the VFSA treatment plant while the plant was staffed. This overflow was estimated to have lasted less than fifteen minutes, possibly discharging up to two hundred fifty gallons to the ground, none of which was discharged to waters of the Commonwealth.

I have attached the non-compliance report and additional information to this email.

If you have any questions or need a more formal report please let me know.

Sincerely,

Richard D. Taylor Laboratory Supervisor



COMMONWEALTH C" PENNSYLVANIA DEPARTMENT OF ENVIRG INTAL PROTECTION BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening polluti remed See ir

poll rem	ution and ution and ediation, a	environment, you may attach this form to the Discharge Monitoring Report (DMR). pollution and activities utilizing pollutants, respectively), in part requires remediation, and may require an additional report on the incident or plan of poreporting deadline does not coincide with your submission of the DMR, it should be	this form izing post an additional incide will	to the Dis Ilutants, Itional rep th your su	scharge N respectivort on the control on the contro	fonitoring Revely), in pase incident of the DMR,	port (DMR). rt requires r plan of po it should be	Title 25, Pa immediate Ilution preve submitted se	environment, you may attach this form to the Discharge Monitoring Report (DMR). Title 25, Pa. Code §§ 91.35 and 91.34 (regarding inclusing or mission incidents, pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, and the remediation, and may require an additional report on the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the reporting deadline set forth in the permit reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the DMR.	I.34 (regarding in the took the Dep are reporting other the reporting of the reporting	partment of pollurier non-compliance ing deadline set for	tion incidents, events, and the thin the permit.
Fac	Facility Name:	Facility Name: Valley Forge Sewer Authority	ge Sewer	Authority					Month: October		Year.	2022
M	Municipality:	Schuylkill Township	Township			ၓ 	County: Chester	ster	Permit No.:	lo.: PA 0043974	74	
	Violations	Violations of Permit Effluent Limitations*	ant Limit	ations*								
	Date	Parameter	eter	Permit Limit	Units	Statistical Code	Result	t Units	Cause of Violation	olation	Corrective Action Taken	ction Taken
-												
\boxtimes	Sanitary S	Sanitary Sewer Overflows and Other Unauthorized Discharges*	s and Oti	ner Unaut	thorized I	Jischarges*						
	Event	Substance		l ocation		Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause o	Cause of Discharge	Date DEP Notified
	Dag	Discussion										
	10/18/2	Sanitary Sewage	Ma VFSA	Main Scum Pit at VFSA Treatment Plant	it at nt Plant	<250 (est)	<15 min (est)	-NA-	-NA-	Please s	Please see attached	10/18/22
	Other Per	Other Permit Violations*							-			
	Sa⊓	Sample collection less frequent than required	ss freque	ant than re	aquired		Explain Explain					
		Violation of permit schedule	chedule))			Explain		t distribution of the state of			
		ier er					Explain					
# _ 9 5 8 g	'If the space certify under certify under certify under certify under certify under certification certification).	*If the space provided is not sufficient to record all info I certify under penalty of law that this document was prepared personnel gather and evaluate the information submitted. Based for gathering the information, the information submitted is, to the penalties for submitting false information, including the possibilifalsification).	s not sum that the state the interpretation of the state the interpretation of the state of the	ifficient his docur iformatior ormation ration, inc	to recornent was a submitter submitter submitter submitter cluding the	d all inforts prepared used. Based or dis, to the buse or the buse or dis, to the buse or the buse or the buse or the buse or the buse of	nation, ple Inder my dii I my inquiry est of my kr of fine and	ease attach ection or su of the perso lowledge and imprisonma	*If the space provided is not sufficient to record all information, please attach additional sheets. I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that persons directly responsible personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	e with a system or and complete. I and complete. I ans. See 18 Pa.	or those persons directly responsible I am aware that there are significant a. C.S. § 4904 (relating to unsworn	gned to assure that qualified spersons directly responsible vare that there are significant § 4904 (relating to unsworn
		Prepar Title:	Prepared By:	Martin Goldberg Operations Manager	ldberg s Manager				Signature: ///// Date:	2/20/22	10	
										,		

The main scum pit overflow which occurred Tuesday, October 18, 2022, was due mainly to a transducer in the trucked waste wet well incorrectly reading the wet well level as low. Due to the in correct low reading by the transducer, the trucked waste wet well pumps were not initiated to pump. After the VFSA maintenance department identified and resolved this issue, the transducer began reading the trucked waste wet well level correctly (as a high level) and initiated both wet well pumps to operate. This flow, directly to the sludge thickeners, was apparently enough to raise the thickener levels quickly enough to overflow the thickener scum collection boxes, resulting in an overflow of the main scum pit pump. This overflow, estimated to have a duration of no more than fifteen minutes and a volume of less than 250 gallons, remained on VFSA property and did not flow to waters of the Commonwealth.

Note, trucked waste is normally pumped from the trucked waste wet well to the Decant Aeration Tank (DAT) for blending and equalization. This interim blending and equalization step helps to control the volume of waste being pumped to the sludge thickeners. The DAT tank is currently out of service for required maintenance cleaning in preparation for sand blasting and coating of the DAT tank metal infrastructure.

The Authority is already working with an engineering consultant to identify improvements to the main scum pit to improve its operation and mitigate the potential for overflows. These include, but may not be limited to:

- Installation of an on line spare (backup) pump.
- Building up the pit walls to allow for containment of larger amounts of contents within the pit.
- Adding interlocks to automatically discontinue upstream scum sources when the pit reaches a
 high level, until the cause(s) of the high level may be found and corrected.

In the interim, the Authority is investigating and trying additional methods to control the volume of waste pumped to the main scum pit such as:

- Adjusting the plant clarifier(s) scum pit pumps in order to reduce the chance of multiple scum pits pumping waste concurrently to the main scum pit.
- Locking out one of the main scum pit pumps so that only one will operate at a time.

2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT MEMBER MUNICIPALITIES REPORT

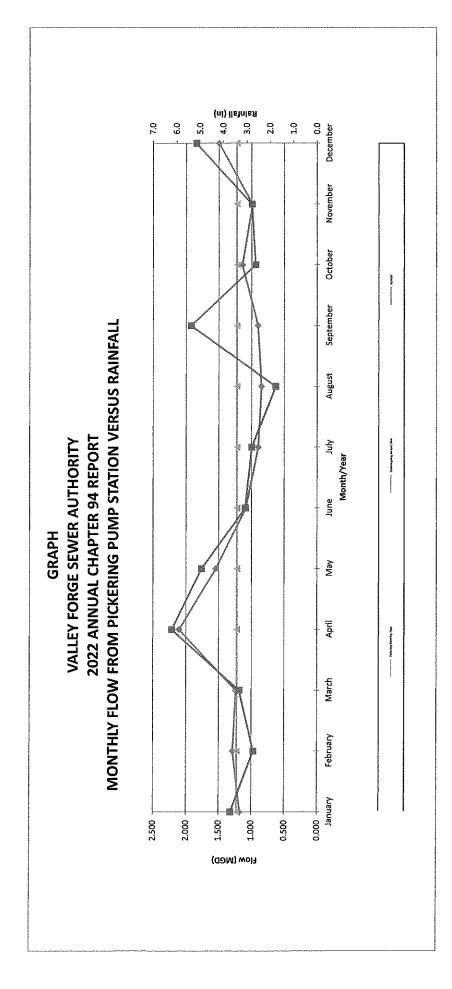
VFSA MAJOR PUMP STATION FLOWS VERSUS RAINFALL – SUMMARY AND GRAPHS

APPENDIX C

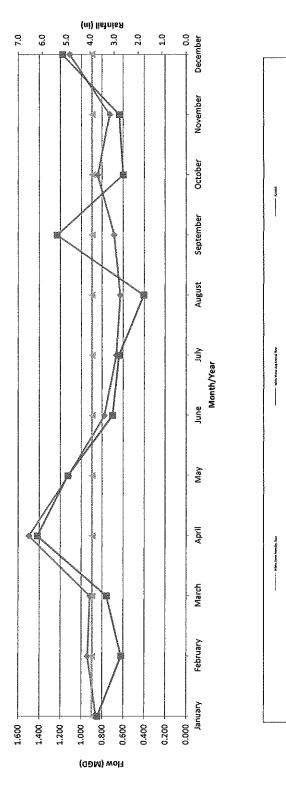
Pickering Pump Station White Horse Pump Station Pot House Pump Station French Creek Pump Station

VALLEY FORGE SEWER AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT MONTHLY PUMP STATION FLOW

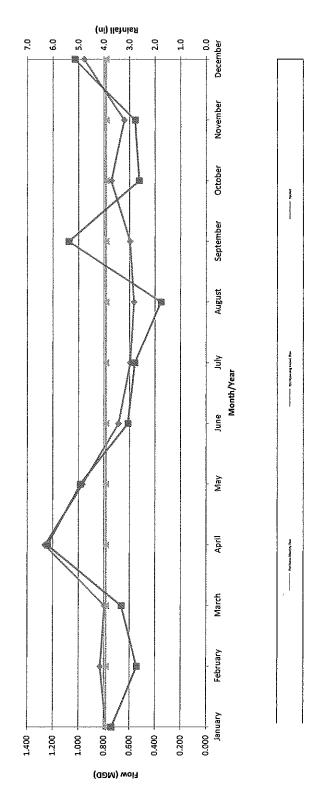
		Month	ly Flow at Majoi	r Pump Station	s, MGD	
Year	Month	Pickering	White Horse	Pot House	French Ck	Rainfall
2022	January	1.174	0.857	0.782	0.666	3.69
	February	1.282	0.940	0.828	0.704	2.71
]	March	1.238	0.916	0.794	0.674	3.31
	April	2.103	1.498	1.261	1.074	6.20
	May	1.543	1.122	0.968	0.811	4.93
	June	1.084	0.777	0.685	0.575	3.06
	July	0.894	0.663	0.594	0.502	2.79
	August	0.845	0.625	0.565	0.487	1.76
	September	0.899	0.684	0.595	0.522	5.38
	October	1.140	0.840	0.741	0.645	2.62
	November	0.983	0.727	0.641	0.564	2.78
	December	1.492	1.108	0.954	0.821	5.15
Avg Annual Fl	ow (MGD) =	1.223	0.896	0.784	0.671	_

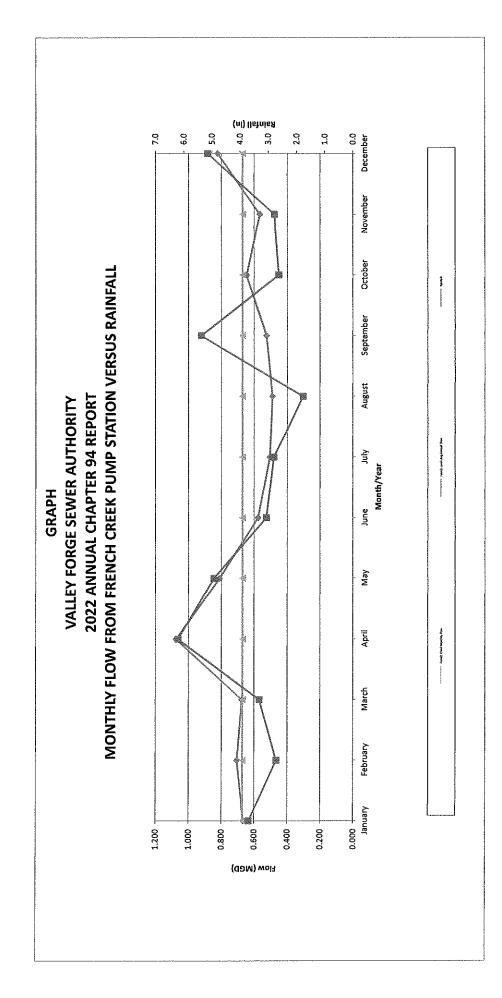






GRAPH
VALLEY FORGE SEWER AUTHORITY
2022 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM POT HOUSE PUMP STATION VERSUS RAINFALL





2022 VFSA CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT MEMBER MUNICIPALITIES REPORT

1 INCH PLUS RAINFALL VERSUS FLOW AT METERED PUMP STATIONS – SUMMARY AND GRAPHS

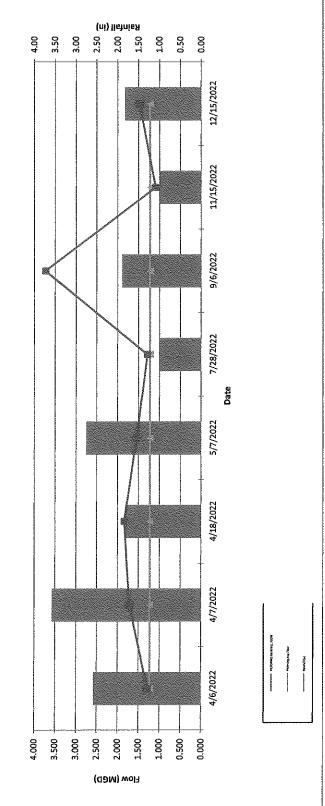
APPENDIX D

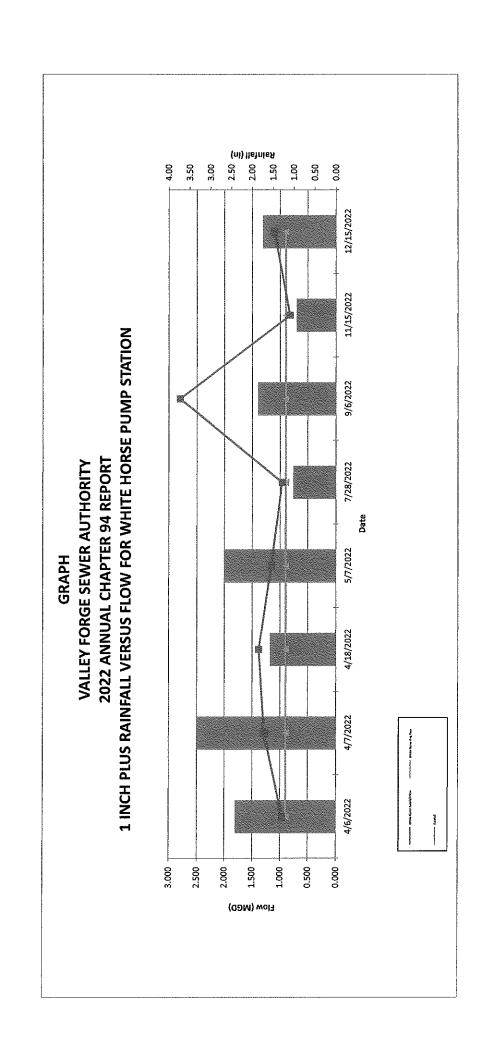
Pickering Pump Station
White Horse Pump Station
Pot House Pump Station
French Creek Pump Station
Charlestown Meadows Pump Station
Charlestown Pump Station
Kimberton Meadows Pump Station
Kimbel Drive Pump Station
Perkiomen Pump Station
Valley Creek Pump Station
Valley Forge Woods Pump Station

VALLEY FORGE SEWER AUTHORITY 2022 ANNUAL CHAPTER 94 REPORT 1 INCH PLUS RAINFALL VERSUS FLOW SUMMARY AT PUMP STATIONS

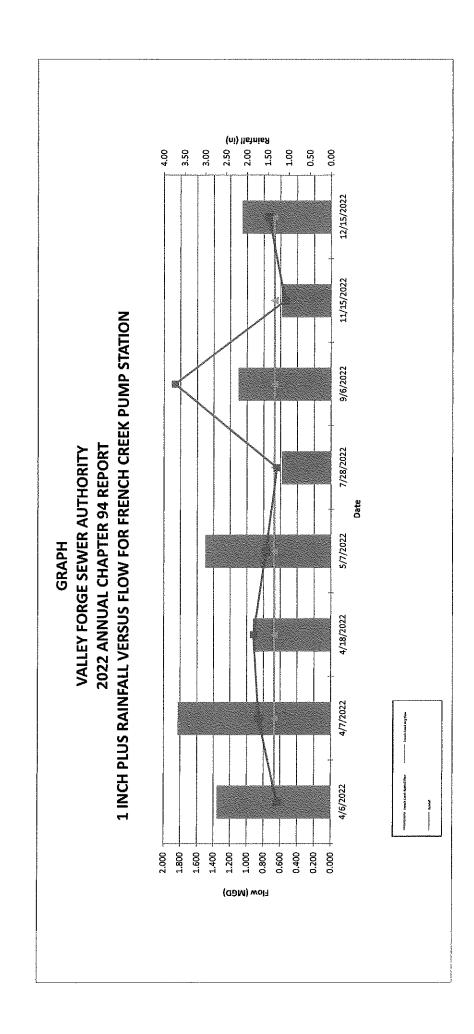
		Pickering PS		White Horse PS	Г	Pot House PS		French Creek PS		Charlestown Meadows		Charlestown PS	n PS	Kimberton Meadows PS		Kimbel Drive PS	e PS	Perkiomen PS	PS	Valley Creek PS	ŕ	Valley Forge Woods PS	/oods PS
		Rainfall Flow		Rainfall Flow		Rainfall Flow		Rainfall Flow		Rainfall Flow		Rainfall Flow	×	Rainfall Flow		Rainfail Flow	*	Rainfall Flow	*	Rainfail Flow		Rainfall Flow	
		Peak	Peaking	Peak	Peaking Peak		Peaking	Peak P	Peaking P	Peak	Peaking	Peak	Peaking	Peak	Peaking	Peak	Peaking	Peak	Peaking	Peak	Peaking	Peak	Peaking
Rain Date	Rainfall	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor ((MGD) F	Factor ()	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor	(MGD)	Factor
4/6/2022	1.28	2.578	2.11	1,804	2,01	1,616	2.06	1.357	2,02	0.026	1.04	0,087	2,89	0.019	1,06	0.033	2.27	0.139	1.84	0.039	2.05	0.070	1,25
4/7/2022	1.71	3.571	2.92	2.498	2.79	1,598	2.04	1.828	2.73	0.026	1.04	0,164	97'5	0.026	1,48	0.047	3.23	0,218	2.90	0,053	2.78	0.078	1.38
4/18/2022	2	1,801	1,47	1.177	1.31	1.107	1,41	0.924	1.38	0.026	1.04	0.048	1,60	0.017	66'0	0.018	127	0.095	1.26	0.024	1.24	0.069	1.22
5/7/2022	1,54	2.749	2.25	2.010	2.24	1.768	225	1,501	2.24	0.026	1.04	0.092	30.6	0.023	1.32	0.039	2.71	0.132	1.75	0.035	1,84	0.078	1.39
7/28/2022	1.28	0,998	0,82	0.759	0.85	0.674	98'0	0.582	78.0	0,023	0.92	0.025	0.82	0.018	1.04	0,015	1.01	690'0	0,92	0.017	0.89	0.054	96'0
9/6/2022	3.73	1.889	1.54	1,399	1,56	1.247	1.59	1.103	1.65	0.027	1.06	0.041	1,36	0.022	1.27	0.025	1,74	0.129	1.71	0,037	1.95	0.077	1.37
11/15/2022	1.09	0.992	0.81	0.703	0.78	0.662	0,84	0.585	0.87	0.024	96'0	0.017	95.0	0.017	96'0	0,016	1.13	0.065	0.86	0.018	0.95	0.051	06'0
12/15/2022	1.47	1.825	1.49	1.311	1.46	1.226	1.56	1.057	1.58	0.028	1.09	0.044	1.44	0.024	1.36	0.028	1.96	0,111	1,48	0.033	1.73	0.068	1.21
Yearly Avg Flow (MGD) =	· (MGD) =	1.223		968'0		0.784		0.671		0.025		0.030		0.018		0.015		0,075		0.019		0.056	
High Peaking Factor =	Factor=		2.92		2.73		2.25		2.73		1.09		3.46		1.48		3.23		2,90		2.78		1,39
Average Peaking Factor =	y Factor =		1.68		1,63		1.58		1.67		1.02		2.15		1.18		1.92		1.59		1.68		1.21

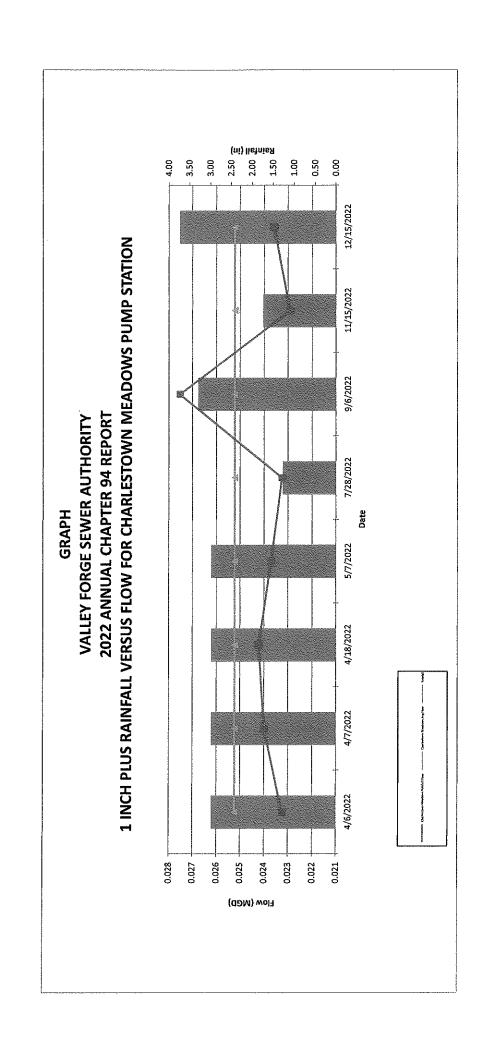
1 INCH PLUS RAINFALL VERSUS FLOW FOR PICKERING PUMP STATION 2022 ANNUAL CHAPTER 94 REPORT GRAPH
VALLEY FORGE SEWER AUTHORITY

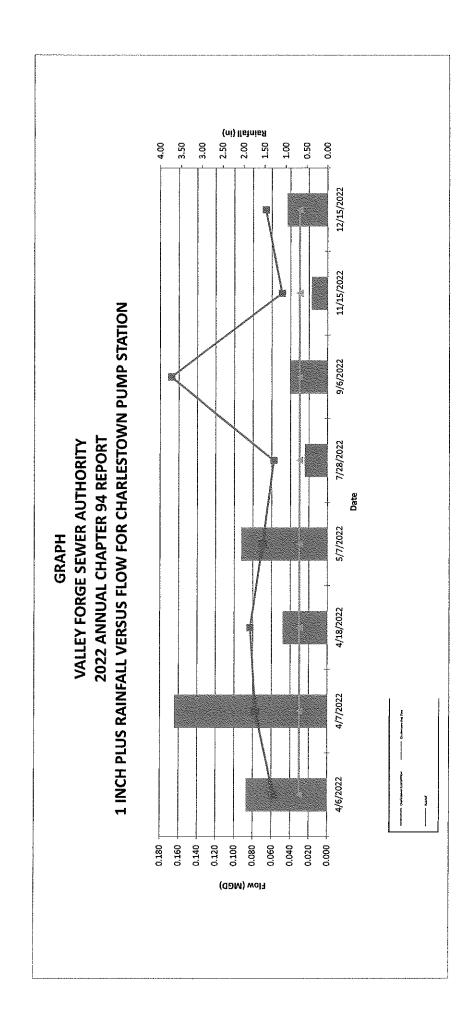


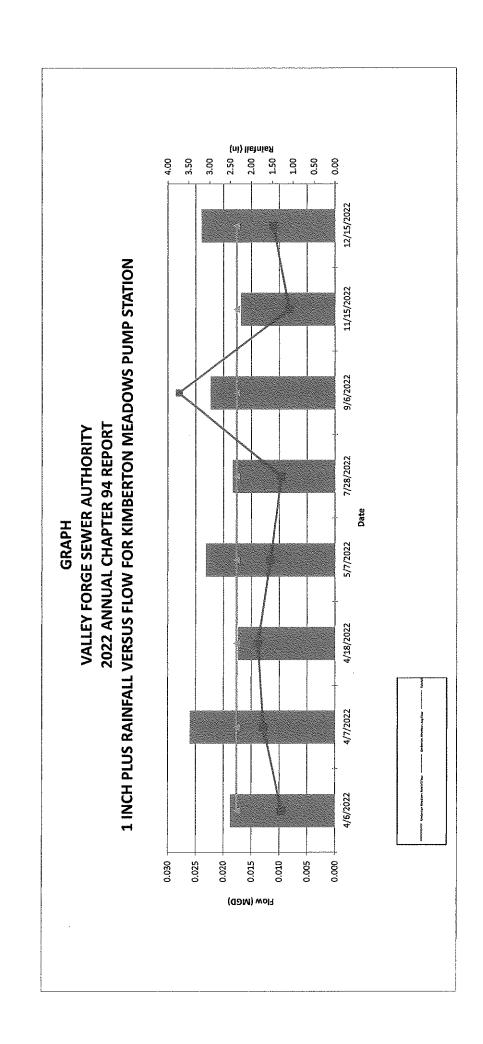


2.50 2.00 (in) Rainfall (in) 4.00 3.50 3.00 0.00 1.00 0.50 12/15/2022 11/15/2022 1 INCH PLUS RAINFALL VERSUS FLOW FOR POT HOUSE PUMP STATION 9/6/2022 7/28/2022 2022 ANNUAL CHAPTER 94 REPORT GRAPH
VALLEY FORGE SEWER AUTHORITY Date 5/7/2022 4/18/2022 4/7/2022 4/6/2022 Park | 0.400 2.000 1.800 1.600 1.400 1.200 1,000 0.800 0.600 0.200 How (MGD)









1 INCH PLUS RAINFALL VERSUS FLOW FOR KIMBEL DRIVE PUMP STATION 2022 ANNUAL CHAPTER 94 REPORT GRAPH
VALLEY FORGE SEWER AUTHORITY 0.045 0.015 0.050 0.040 0.020 0.035 0.030 0.025

2.50 2.00 (in) Rainfall (in)

1.00

12/15/2022

11/15/2022

9/6/2022

7/28/2022

5/7/2022

4/18/2022

4/7/2022

4/6/2022

0.010

Flow (MGD)

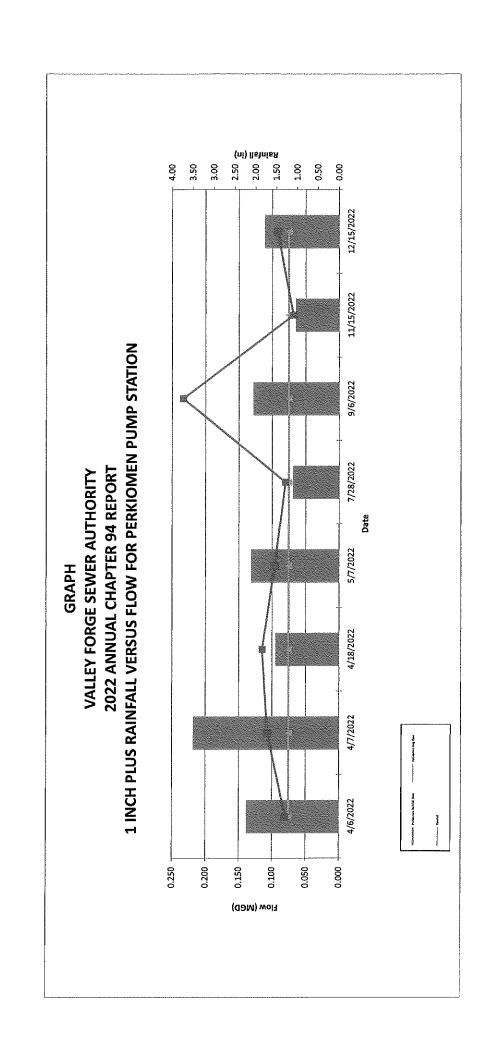
0.005

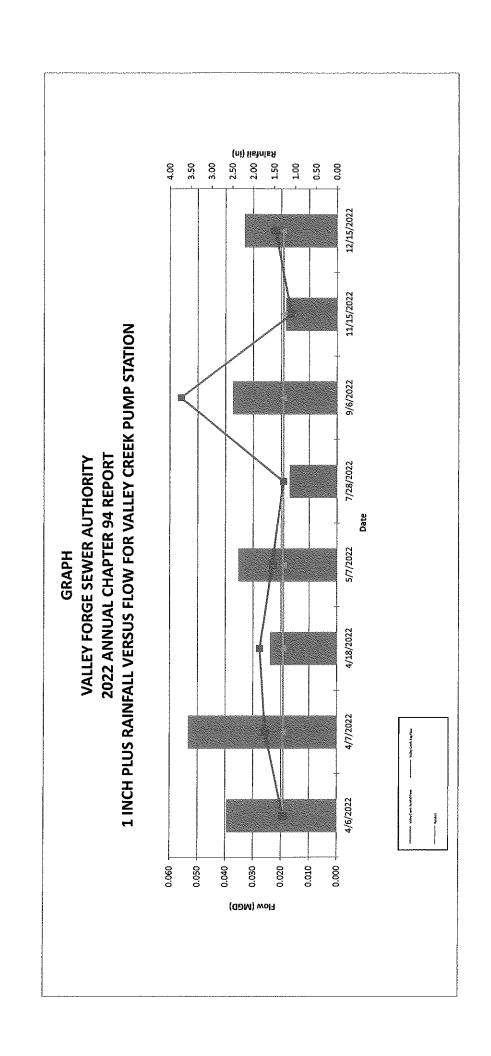
Date

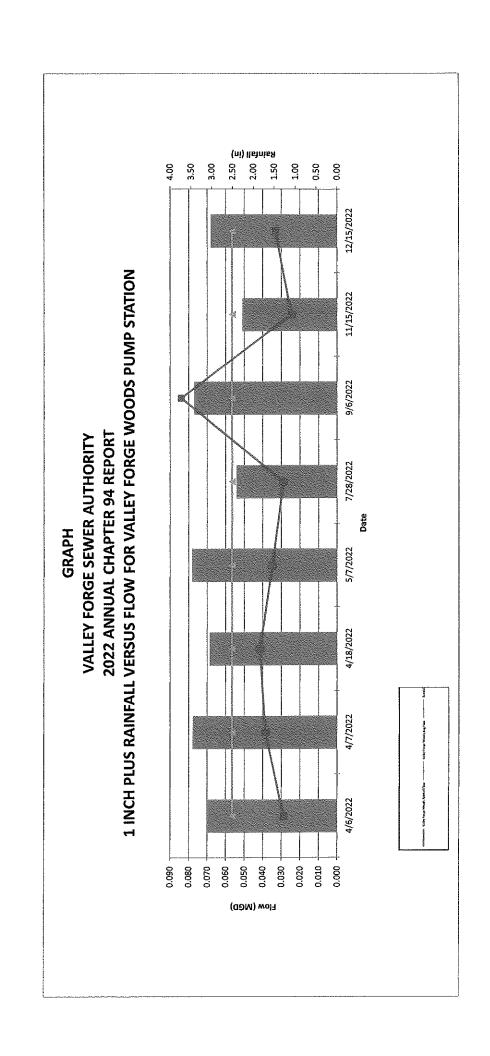
3.50

4.00









MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

WILLISTOWN TOWNSHIP CHESTER COUNTY, PA

WILLISTOWN TOWNSHIP MUNICIPAL WASTELOAD MANAGEMENT REPORT

VALLEY FORGE SEWER AUTHORITY DRAINAGE AREA

CALENDAR YEAR 2022

MARCH 2023

PREPARED FOR:

WILLISTOWN TOWNSHIP 688 SUGARTOWN ROAD MALVERN, PA 19355

SHANNA LODGE, TOWNSHIP MANAGER

anna Lodgo

PREPARED BY:

CARROLL ENGINEERING CORPORATION 949 EASTON ROAD WARRINGTON, PA 18976

WILLIAM N. MALIN, P.D., VICE PRESIDENT

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WASTEWATER FACILITIES PLAN

SECTION 1 INTRODUCTION

Pursuant to Pennsylvania Chapter 94 Municipal Wasteload Management regulations and requirements, Willistown Township has prepared this 2022 Municipal Wasteload Management Annual Report for the Valley Forge Sewer Authority (VFSA) service area.

The Valley Forge Sewer Authority service area covers the northern one-third of the Township adjacent to Tredyffrin Township and Malvern Borough and generally east of Sugartown Road to the Easttown Township border. In addition, there is a small portion along the East Goshen Township Boundary that straddles Paoli Pike. Wastewater in the VFSA service area is conveyed via the Valley Creek Trunk Sewer (VCTS) to VFSA for treatment. In addition to collecting and conveying wastewater in Willistown Township, flows from East Whiteland and Malvern Borough are conveyed (wheeled flow) through Willistown to the VCTS and VFSA. The Valley Forge Sewer Authority service area is shown on the Wastewater Facilities Plan.

The Valley Forge Sewer Authority service area includes approximately 20 miles of 8" through 18" gravity sewers and 9 miles of pressure sewers. There are five municipal-owned pump stations in the VFSA service area.

Wastewater from the VFSA service area enters Tredyffrin and Easttown Townships at five locations identified on the Wastewater Facilities Plan:

- ➤ Flow from Tredyffrin Township Drainage Area 1 is metered at the Cedar Hollow flow meter located on Cedar Hollow Road just north of Jacqueline Drive. Approximately 97% of all Willistown Township flow to VFSA flows through the Cedar Hollow meter.
- > Seven un-metered EDUs on Central Avenue in Tredyffrin Township Drainage Area 2 connect to Tredyffrin Township's sewer system.
- Fifty-six unmetered EDUs on Plank Avenue, Paoli Pike, Richmond Drive, Wistar Road and Cobblestone Drive in Tredyffrin Township Drainage Area 3 connect directly to Tredyffrin Township's sewer system.
- ➤ Flow from Easttown Township Drainage Area 1 is metered at the Pheasant Run flow meter located in Pheasant Run Drive. This meter has been out of commission since it was stolen in 2020. It is in the process of being replaced.
- Four unmetered EDUs on Whitegate Lane in Easttown Township Drainage Area 2 connect directly to Easttown Township's sewer system. One additional EDU will connect to this system.

SECTION 2 HYDRAULIC LOADING

Willistown Township is allocated 1,438,000 gallons per day (GPD) of capacity in VFSA's treatment plant. In 2022, Willistown conveyed a monthly average daily flow of 1,134,957 GPD to VFSA. Currently, Willistown is using 78.9% of their allocated capacity. Flows conveyed to VSFA is summarized in Table No. 1.

The monthly average daily flow in 2022 decreased by approximately 13% (147,333 GPD). Variations in annual monthly average daily flow are attributable to variations in annual precipitation. Willistown's long term (January 2017 through December 2022) monthly average daily flow is 1,316,630 GPD.

In 2022, ten (10) new EDU's connected in the VFSA service area. Projected flows for the new connections for the period 2023 through 2027 are shown in Table No. 2. Flows are projected to increase by 8,800 GPD in the next 5-years.

SECTION 3 CONDITION OF THE SEWER SYSTEM

Willistown's sewer system dates to the 1970's. Older portions of the system primarily consist of vitrified clay or asbestos cement pipe (VCP & ACP). New portions are PVC pipe. In 2014, the gravity sewer system was televised by a third-party contractor. In 2015 sewer defects and needed repairs were catalogued. In 2022, 1,033 feet of sewer and three manholes were replaced. The Township continues to monitor the condition of the sewer system and addresses critical areas on an as needed basis.

SECTION 4 SEWAGE PUMPING STATIONS

There are five municipal-owned pump stations in the VFSA service area. Pump Stations Nos. 1, 2, 4, and the Dovecote Pump Station pump flow to Pump Station No. 3. Pump Station No. 3 pumps flow to the gravity sewer system tributary to the Cedar Hollow flow meter. The pump stations are shown on the Wastewater Facilities Plan.

Pump station flows are summarized as follows:

1. PUMP STATION No. 1:

Design Capacity:

288,000 GPD

Current 5-year Maximum Flow:

98,294 GPD

Projected 2-year Maximum Flow:

98,294 GPD

2. PUMP STATION No. 2:

Design Capacity:

720,000 GPD

Current 5-year Maximum Flow:

446,209 GPD

Projected 2-year Maximum Flow:

446,209 GPD

3. PUMP STATION No. 3:

Design Capacity:

2,880,000 GPD

Current 5-year Maximum Flow:

910,313 GPD

Projected 2-year Maximum Flow:

910,313 GPD

Current and projected pump station flows include flow from Pump Station Nos. 1, 2, 4 & Dovecote.

4. PUMP STATION No. 4:

Design Capacity:

288,000 GPD

Current 5-year Maximum Flow:

65,828 GPD

Projected 2-year Maximum Flow:

65,828 GPD

5. DOVECOTE PUMP STATION:

Pump station capacity and flow data is not currently available. There will be no additional flow in the next 2-years.

SECTION 5 INDUSTRIAL WASTES

Currently, there are no industrial users in the VFSA service area, nor are any planned in the future.

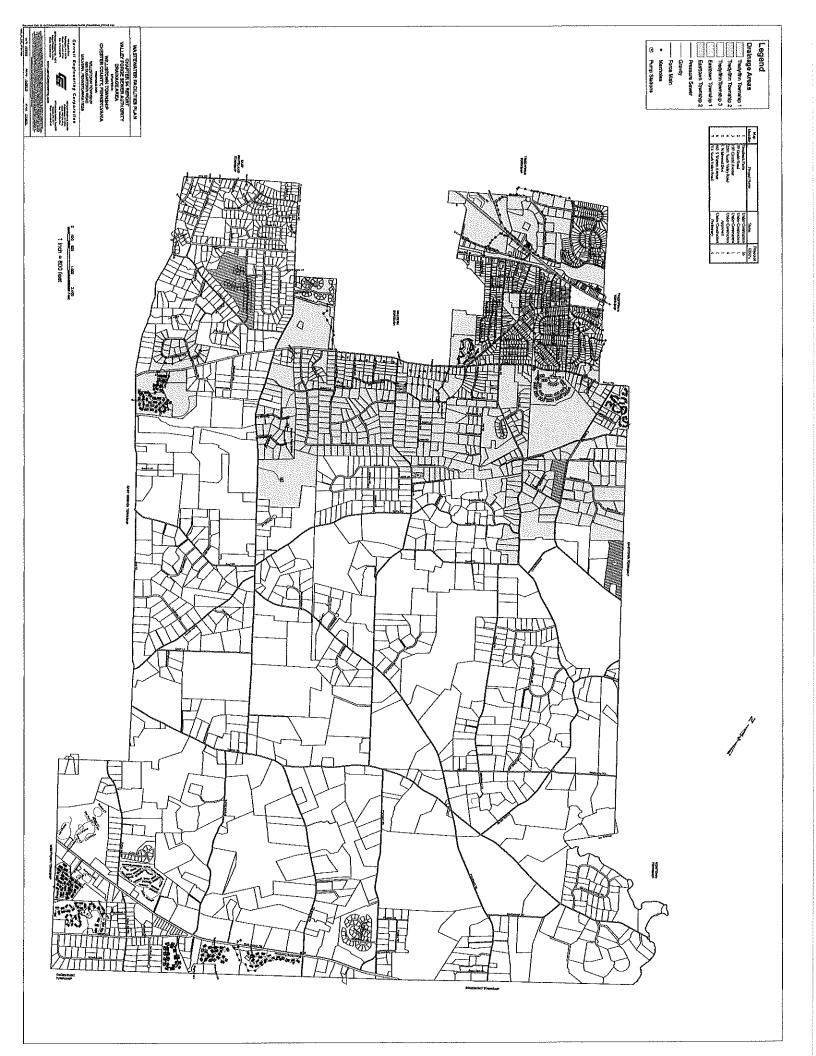
Table No. 1 Willistown Township Valley Forge Sewer Authority Service Area 2022 Monthly Flow Summary

				Metered Flow	d Flow						Ď	Jn-Metered Flow	w			
		Metered Flows			Wheelex	Wheeled Flows								Base EDU		
	Cedar	Pheasant				Malvem		Net	Cedar		Flow	Peaking		Flow	Corrected	Total
	Hollow	Run	Total	Woodview	Tidewater	Prep	Total	Metered	Hollow	Flow	Analysis	Factor	Total	275	Un-metered	Willistown
	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Analysis	Corres.	ADF=	Un-metered	Gal/EDU	Flow	Flow
Month	(GPD)	(GPD)	(GPD)	(GPD)	(GPD)	(GPD)	GPD	(GPD)	(MGD)	z-scale	Flow	1.087	EDU's	(GPD)	(GPD)	(GPD)
January	982,472	186,381	1,068,853	9,552	12,058	20,715	42,325	1,026,528	0.982	-0.428	0.974	968.0	73	20,075		1,044,510
February	1,069,972	86,381	1,156,353	7,171			37,767	1,118,585	1.070	-0.067	1.047	0.963	73	20,075	19,330	1,137,916
March	1,074,114	86,381	1,160,495				39,012	1,121,483	1.074	-0.051	1.049	0.965	73	20,075		1,140,847
April	_	86,381	1,573,149	615'6	15,618		36,357	1,536,792	1.487	1.322	1.530	1.408	73	20,075		1,565,051
May	1,355,237	86,381	1,441,618				29,740	1,411,878	1.355	0.931	1.358	1.249	73	20,075		1,436,948
June	1,103,669	86,381	1,190,050	10,300	8,803	11,220	30,323	1,159,728	1.104	0.063	1.074	0.988	73	20,075		1,179,559
July	908,428	86,381	994,809		8,410	12,710	30,484	964,325	0.908	-0.759	0.909	0.836	73	20,075		981,115
August	861,498	86,381	947,879	9,364	12,139		34,213	913,666	0.861	-0.983	0.876	0.806	73	20,075		929,847
September	882,783	86,381	969,164	9,364		12,710	30,474	938,691	0.883	-0.880	0.890	0.818	73	20,075		955,122
October	1,027,848	86,381	1,114,229	9,364	8,930	9,713	28,007	1,086,222	1.028	-0.237	1.011	0.930	73	20,076		1,104,895
November	915,479	86,381	1,001,860	9,364	10,251	9,713	29,329	972,531	0.915	-0.726	0.915	0.841	73	20,077		989,420
December	1,079,031	86,381	1,165,412		11,561	9,713	30,638	1.134,774	1.079	-0.032	1.055	0.971	73	20,078		1,154,257
Average																1,134,957

Table No. 2 Willistown Township 5-year Flow Projections

		Total Project Connected	Connected		Proje	Projected Connections	ions	
Project Name	Status	EDU's	To Date	2023	2024	2025	2026	2027
Troutbeck Farm	Under Construction	36	7	15	14			
59 Grubb Road	Under Construction	₩.	_		•	101		
107 Central Avenue	Under Construction	H	—					
White Gate (2291 South Valley Road)	Under Construction	4	3	—				
1 Wildwood Dive	Approved	*******						
643 S Warren Avenue	Under Construction	П		*				
314 South Valley Road	Preliminary	4		1				
Projected Annual EDU's				18	14	0	0	0
Projected Annual Flow @275 gallons per EDU (GPD)	EDU (GPD)			4,950	3,850	0	0	0
Projected Cumulative EDU's		WARRING WARRIN		18	32	32	32	32
Projected Cumulative flow @275 gallons per EDU (GPD)	per EDU (GPD)			4,950	8,800	8,800	8,800	8,800
Existing Average Daily Flow January 2018 - December 2022 (GPD)	18 - December 2022 (GPD)		1,316,630	1,316,630	1,316,630	1,316,630	1,316,630
Projected Average Daily Flow (GPD)	Minte			1,321,580	1,325,430	1,325,430	1,325,430	1,325,430

WASTEWATER FACILITIES PLAN



MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

AQUA RESOURCES – VALLEY CREEK TRUNK SEWER CHESTER COUNTY, PA



AQUA RESOURCES, INC. VALLEY CREEK TRUNK SEWER SANITARY SEWER COLLECTION SYSTEM CHESTER COUNTY

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT FOR CALENDAR YEAR 2022

Prepared By:Aqua Resources, Inc.
762 West Lancaster Avenue
Bryn Mawr, PA 19010

Aqua Resources, Inc. 762 West Lancaster Avenue Bryn Mawr, PA 19010

Valley Creek Trunk Sewer Sanitary Sewer Collection System Chester County

This Chapter 94 Report for calendar year 2022 has been prepared by Aqua Resources, Inc. for the Valley Creek Trunk Sewer Sanitary Sewer Collection System in Chester County.

Respectfully Submitted,

Sean Carney, EIT

Project Engineer - Wastewater

Aqua Resources, Inc.

Kyle Roberts

Area Manager II, Wastewater Operations

Aqua Resources, Inc.

Aqua Resources, Inc. Valley Creek Trunk Sewer Sanitary Sewer Collection System Chester County

Chapter 94 Municipal Wasteload Management Annual Report 2022

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	Introduction

1. INTRODUCTION

This Municipal Wasteload Management Report was prepared in accordance with the PA Title 25 Rules and Regulations, Part I, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article II, Water Resources, Chapter 94 Code §94.12. This report summarizes the results of the annual review of the capacity and condition of the Valley Creek Trunk Sewer (VCTS) Sanitary Sewer Collection System located in Tredyffrin Township, Chester County.

The VCTS system is owned and operated by Aqua Resources, Inc. (Aqua). Aqua acquired the VCTS in December 2018. The system includes the Valley Creek Trunk Line, the Wilson Road Pump Station (WRPS) and force main (WRFM) and the Darby Road Pump Station (DRPS) and force main.

2. SEWER EXTENSIONS

There were no sewer extensions of the VCTS in 2022 and there are no proposed sewer extensions within the next five years. Partner municipalities will be submitting their Chapter 94 reports to Valley Forge Sewer Authority (VFSA) with detailed information on their proposed sewer connections/extensions. Aqua will be requesting a copy of these Chapter 94 reports to monitor flow and connections into the VCTS. Projected flows within the VCTS are based on the 2017 Act 537 Supplement for the Wilson Road Force Main as shown in **Table 1**.

3. SEWER SYSTEM MONITORING, MAINTENANCE, AND REPAIR

Routine maintenance and monitoring of the sewer system were conducted in 2022. There were no major repairs required during the 2022 operating year. There are two flow meters that are utilized for flow monitoring. One meter is located at the DRPS and the other is located at the WRPS. The WRPS is critical because that is the final flow monitoring location within the VCTS sewershed prior to entering the WRFM and finally the Valley Forge Sewer Authority (VFSA) Pawling Road Plant for treatment.

In 2020, Aqua began working with Brown and Caldwell to develop a hydraulic model of the VCTS system to make more informed capacity evaluations. This model is currently being used for capacity evaluations for Act 537 Sewage Facility Planning Modules.

4. CONDITION OF THE SEWER

The rehabilitation of the WRFM was completed in December 2016. In general, the system is in good condition with consistent maintenance activities being performed.

Page 1

5. SEWAGE PUMPING STATIONS

There are two pump stations, Darby Road and Wilson Road pump Stations, within the VCTS collection system. The permitted capacity, monthly flows, and the 2-Year projected flows for the WRPS and the DRPS are presented in tabular and graphical form in **Appendix A**. The flow projections for each pump station for the next five years are provided in **Table 1**.

Wilson Road Pump Station

The Wilson Road Pump Station has three (3) pumps and a design capacity of 14,000 gallons per minute (GPM). Pump station influent is divided between two channels, each housing a high-flow sewage grinder. This pump station coveys all flow from the VCTS to the VFSA WWTP. Based on the historical and projected flow data, the pump station is not hydraulically overloaded, and it is not projected to be overloaded within the next 2 years.

In 2020, one of the grinder pumps failed and was subsequently replaced. During grinder down time, influent channels were isolated, and flow was sent through a single channel. A temporary secondary backup generator and an accompanying temporary switchgear were also installed in 2020 which allowed for the upgrade of the existing backup generator. A generator control panel was also installed, allowing operations staff to toggle between generators and utility power.

The work on upgrading the pump station electrical components continued in 2021. The primary generator cooling system was upgraded to improve generator reliability, and a design for the upgrade to the paralleling switchgear and a design and bidding for a backup generator were completed. The switch gear upgrade and the installation of the generator occurred in 2022.

Cleaning and maintenance of the WRPS wet well was also conducted in 2021 and 2022. Wet well bowl cleaning, quarterly force main air release valve cleaning and maintenance, and regular pump station maintenance were also conducted in 2022.

Darby Road Pump Station

The Darby Road Pump Station has two (2) pumps and a design capacity of 700 GPM. Based on historical and projected flows, the pump station is not hydraulically overloaded, and it is not projected to be overloaded within the next 2 years. Quarterly force main air release valve cleaning and regular pump station maintenance were conducted in 2022.

6. <u>INDUSTRIAL WASTES</u>

Industrial wastes are managed by the VFSA as part of their Industrial Pretreatment Program.

7. CORRECTIVE ACTION PLAN

No Corrective Action Plan is warranted for the collection system and pump stations.

8. METER CALIBRATION REPORTS

Aqua maintains meters at the Darby Road Pump Station and Wilson Road Pump Station. These flow meters are regularly calibrated, and **Appendix B** contains the meter calibration reports for 2022.

		Table 1: Flow Proj	ections	
	Wilson Road	l Pump Station	Darby Road	Pump Station ¹
	Actual Flow (GPD)	Annual Increase in Flow (GPD)	Actual Flow (GPD)	Annual Increase in Flow (GPD)
2019	5,956,831		316,784	
2020	5,337,447	-619,384	307,376	-9,408
2021	5,181,753	-155,694	299,280	-8,096
2022	4,949,206	-232,547	281,630	-17,650
AVG	5,356,309	-335,875	301,268	-11,718
	Projected Flow (GPD)	Annual Increase in Flow (GPD)	Projected Flow (GPD)	Annual Increase in Flow (GPD)
2023	5,530,509	174,200	301,268	0
2024	5,704,709	174,200	301,268	0
2025	5,878,909	174,200	301,268	0
2026	6,053,109	174,200	301,268	0
2027	6,227,309	174,200	301,268	0

Notes:

1. No projected increase in flow to the Darby Rd Pump Station

Appendix A: Pump Station Reports

Pump Station Name	Wilson Road Pump Station
WQM Permit No.	1571407 T-1

Report Year 2022

Existing Hydraulic Capacity 14,000 GPM

Permitted Annual Average Flow 20,160,000 GPD

Flow per Planning EDU¹ GPD



Flow Units GPD

		Avera	ge Daily Flow	, GPD		Projecto	ed Flow
Month	2018	2019	2020	2021	2022	2023	2024
January		7,538,146	5,175,664	5,909,718	4,664,588		
February		6,868,244	5,441,979	5,549,870	4,645,080	Projecte	d EDUs ¹
March		7,336,703	5,300,408	6,007,032	4,741,950		
April		6,104,184	6,147,236	5,671,871	6,384,839		
May		6,496,086	5,643,927	5,135,348	5,953,606	Project	ed Flow
June		6,527,558	5,104,476	5,258,612	5,061,046	174,200	174,200
July		6,357,218	4,986,043	4,688,444	4,533,498		
August		5,147,039	5,425,162	4,676,959	4,282,294		
September		4,727,014	4,632,663	5,694,658	4,442,019		
October		4,562,321	4,608,627	4,638,894	4,935,358		
November		4,639,715	5,125,251	4,645,015	4,582,260		
December		5,177,742	6,457,927	4,304,620	5,163,935		
Annual Avg		5,956,831	5,337,447	5,181,753	4,949,206	5,530,509	5,704,709
Max Month		7,538,146	6,457,927	6,007,032	6,384,839	6,809,067	7,023,539
		1.27	1.21	1.16	1.29	1.23	1.23
Max : Avg Ratio	-	1.2/	1.21	1.10	1,27	1.20	1.20
Peak Factor		2.30	2.30	2.30	2.30	2.30	2.30
Peak Flow (GPM)		9514	8525	8276	7 9 05	8833	9112
Overload?	No	No	No	No	No	No	No

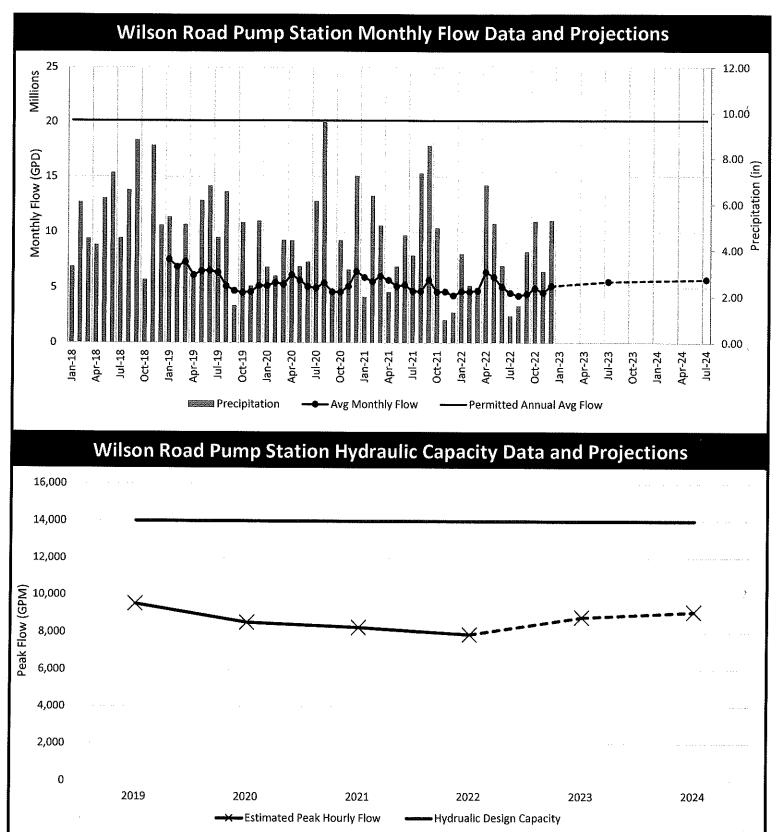
		Р	recipitation,	ln	
Month	2018	2019	2020	2021	2022
January	3.31	5.47	3.29	2.01	3.85
February	6.12	3.40	2.90	6.39	2.49
March	4.52	5.14	4.45	5.09	2.23
April	4.24	3.09	4,44	2.21	6.85
May	6.29	6.19	3.31	3.31	5.18
June	7.39	6.82	3.51	4.67	3.35
July	4.55	4.57	6.16	3.80	1.18
August	6.64	6.56	9.59	7.36	1.62
September	8.83	1.63	2.23	8.57	3.95
October	2.75	5.23	4.45	4.99	5.28
November	8.58	2.47	3.17	1.01	3.10
December	5.11	5.28	7.25	1.34	5.31
Total	68.33	55.85	54.75	50.75	44.39

Weather Station
CONSHOHOCKEN
GHCND:USC00361737

1. Future flows are not projected on an EDU basis. See Table 1 for more information on flow projections.

Notes





Pump Station Name Darby Road Pump Station
WQM Permit No. 1571407 T-1





Flow Units GPD

		Avera	ge Daily Flow	ı, GPD		Projecto	ed Flow
Month	2018	2019	2020	2021	2022	2023	2024
January		408,958	276,552	346,987	269,713		
February		327,043	303,039	313,786	279,654	Projecte	d EDUs ¹
March		364,532	312,694	429,497	271,710		
April		356,717	335,622	361,587	354,831		
May		330,483	311,481	269,387	338,838	Project	ed Flow
June		291,010	319,267	276,310	293,260	0	0
July		407,281	288,523	249,790	250,255		
August		285,055	320,132	264,368	240,082		
September		277,897	277,897	308,903	261,147		
October		233,268	258,235	251,981	272,924		
November		241,267	303,520	288,187	252,057		
December		277,897	381,552	230,581	295,087		
Annual Avg		316,784	307,376	299,280	281,630	301,268	301,268
Max Month		408,958	381,552	429,497	354,831	393,704	393,704
Max : Avg Ratio		1.29	1.24	1.44	1.26	1.31	1.31
Peak Factor		2.50	2.50	2.50	2.50	2.50	2.50
Peak Flow (GPM)		550	534	520	489	523	523
Overload?	No	No	No	No	No	No	No

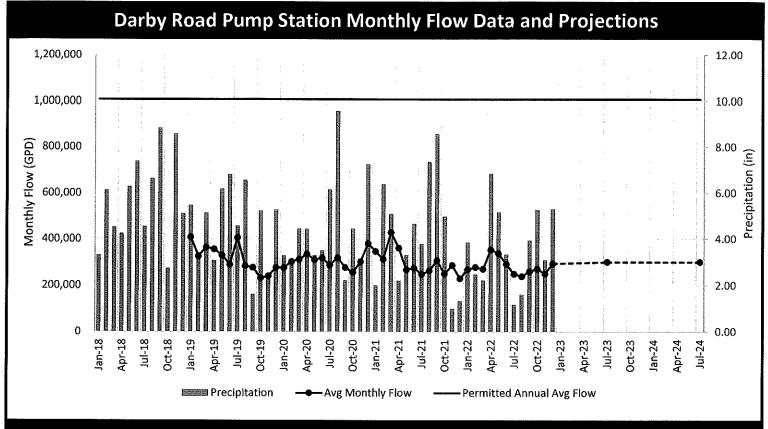
		P	recipitation,	ln	
Month	2018	2019	2020	2021	2022
January	3.31	5.47	3.29	2.01	3.85
February	6.12	3.40	2.90	6.39	2.49
March	4.52	5.14	4.45	5.09	2.23
April	4.24	3.09	4.44	2.21	6.85
May	6.29	6.19	3.31	3.31	5.18
June	7.39	6.82	3.51	4.67	3.35
July	4.55	4.57	6.16	3.80	1.18
August	6.64	6.56	9.59	7.36	1.62
September	8.83	1.63	2.23	8.57	3.95
October	2.75	5.23	4.45	4.99	5.28
November	8.58	2.47	3.17	1.01	3.10
December	5.11	5.28	7.25	1.34	5.31
Total	68.33	55.85	54.75	50.75	44.39

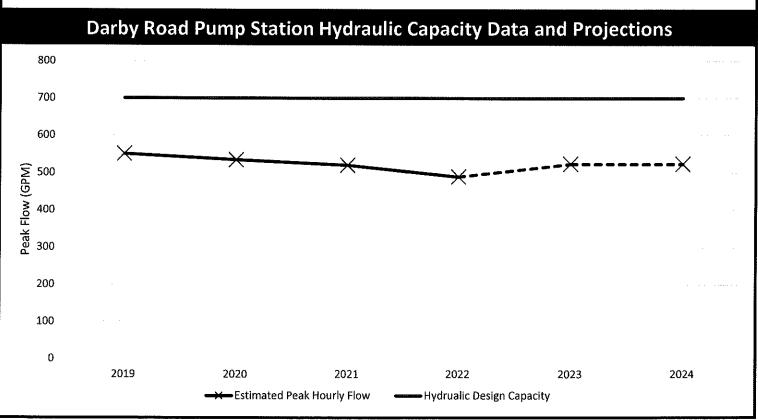
Weather Station
CONSHOHOCKEN
GHCND:USC00361737

1. Future flows are not projected on an EDU basis. See Table 1 for more information on flow projections.

Notes







Appendix B: Flow Meter Calibration Reports

SIEMENS MAGFLO® Verification Certificate

Custome	<u>":</u>	MAGFLO® Identifi	<u>cation:</u>
Name	kbr golden	TAG No./Name	0
Address		Sensor Code No.	7ME658
		Sensor Serial No.	046401U400
	mike	Transmitter Code No.	7ME691
Phone	484 431 4616	Transmitter Serial No.	091030U400
Email		Location	WILSON RD

Results:		- Inocial		Pa	BX AQUA WILS assed assed assed	SON	
Velocity		Current Outp	out			Frequency	Output
Theoretical	Theoretical	Actual	Deviation		Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.10%		0.500kHz	0.499kHz	-0.22%
1.0m/s	5.600mA	5.598mA	-0.14%		1.000kHz	0.999kHz	-0.14%
3.0m/s	8.800mA	8.799mA	-0.03%		3.000kHz	3.001kHz	0.03%
	Current Outpu	t 4-20mA			Frequency Ou	tput 0-10kHz	·

<u>Transmi</u>	tter Settings:	
Basic	Qmax. Flow Direction	20000.0 US G /min
		Negative
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer	1 value before test	21559.61589692 US MG
Totalizer	1 value after test	21559.61589692 US MG
Totalizer	2 value before test	19957.39126414 US MG
Totalizer	2 value after test	19957.39126414 US MG
Operating	g time in days	4073

Sensor Details:	
Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)					
N1J6120001					
170020					
1.40					
5.01					
2022.04.20					
2023.04.20					

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Customer: MAGFLO® Identification: TAG No./Name Name kbx golden Sensor Code No. Address 7ME658 Sensor Serial No. 046401U400 Transmitter Code No. 7ME691 joey Transmitter Serial No. 091030U400 Phone 610 226 5017 Email Location wilson rd

Verification file name or No.

Transmitter

Sensor Insulation Magnetic Circuit		Passed Passed				
Velocity	Current Outp	out		Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.07%	0.500kHz	0.500kHz	-0.04%
1.0m/s	5.600mA	5.597mA	-0.17%	1.000kHz	0.999kHz	-0.11%
3.0m/s	8.800mA	8.798mA	-0.04%	3.000kHz	3.002kHz	0.05%
Jennium	Current Outpu	t 4-20mA		Frequency Ou	tput 0-10kHz	

KBX AQUA WILSON

Passed

<u>Transmit</u>	ter Settings:	
Basic	Qmax. Flow Direction Low flow Cut-off Empty Pipe	20000.0 US G /min Negative 1.50% OFF
Output Current Output Time Constant Relay Output		ON (4-20mA) 10.0 Sec. Error Level
	Digital Output Frequency Range Time Constant Volume/pulse Pulse width Pulse polarity	OFF N/A N/A 0.0 m³/p 0.066 sec. Positiv
Totalizer: Totalizer: Totalizer:	1 value before test 1 value after test 2 value before test 2 value after test 1 time in days	22051.98188193 US MG 22051.98188193 US MG 20449.75724915 US MG 20449.75724915 US MG 4179

Sensor Details:	
Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)						
Serial No.	N1J6120001					
Device No.	170020					
Software Version	1.40					
PC-Software Version	5.01					
Cal. date	2022.04.20					
ReCal. date	2023.04.20					

Comments

Results:

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters. Verification is traceable to National and International Standards.

Date and signature

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486 24 Hour Emergency Service 800-441-4844 Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTOMER: KBX Golden	ی.			ana.	
LOCATION: DARRY RAL, W	00 Dulew PS				
LOOP OR SYSTEM ID: <u> </u>			· · · ·	_	
CALIBRATED RANGE: O-1400 O-	-3mgb	TOTALIZER MULTIPL	IER X100		
The following equipment has been accuing accordance with the manufacturers of	urately calibrated un	der ambient conditio	ns at an ambient	temperature of	<u>75</u> deg. F,
ITEM MANUFACTURER M	10DEL#	SERIAL #	DESCRIPTION		
1 Blooks	3577	2-27-285-1	MAgwe	(EL	
2 Brooks	1 10/10		MAGME	ēc	
3 ROSEMOUNT		arman was a sure of the sure o	mayme	TER	
4 AGM		With a little Company and the second	Linteger	مح	
			•		meaning to the second s
	· · · · · · · · · · · · · · · · · · ·				
REMARKS:					
CALIBRATION DATE: <u> </u>	3033 . тео	CHNICIAN:	ege Be	ich	
TEST EQUIPMENT USED:					
MANUFACTURER	DESCRIPTION	NC	MC	DEL	SERIAL #
Fluke	DUV	Λ		787	790/025
Emersou	Simo	MATOC			



611 Garfield Avenue • P.O. Box 234, West Point, PA 19486 24 Hour Emergency Service 800-441-4844 Fax 215-699-9030

CERTIFICATE OF CALIBRATION

customer: <u>KBK</u>	AQUA	Andrew Grand Andrews		
LOCATION: DARRY	RD PS			
LOOP OR SYSTEM ID: FFE				
CALIBRATED RANGE:				
The following equipment has bee in accordance with the manufactu	n accurately calibrated	under ambient cond	litions at an ambient temperatu	re of <u>6</u> 8 deg. F,
ITEM MANUFACTURER	MODEL #	SERIAL#	DESCRIPTION	
1 Brooks	3580	LÍM	MAGMETEC	
2 Precision		125-6000	DIGITAL DISPLA	M TOTALIZEE
		- Land Market Ma		and the same of th
Walter and the second of the s			CAST CONTRAC	
Additional Control of the Control of				
	and the second s	A A A A A A A A A A A A A A A A A A A		
REMARKS:	A SAME HAR PROPERTY TO THE SAME PARTY TO THE SAM		AND THE RESIDENCE OF THE PARTY	
			1 2 1	Washington and the second
CALIBRATION DATE: 10 6	12012	TECHNICIAN:	lug Bucher	
TEST EQUIPMENT USED:				
MANUFACTURER	DESCRI	PTION	MODEL	SERIAL#
Fluke	<u>Du</u>	m	787	
Brucks	Cali	histor		<i>NA</i>

MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

AQUA RESOURCES – VALLEY CREEK TRUNK SEWER CHESTER COUNTY, PA



AQUA RESOURCES, INC. VALLEY CREEK TRUNK SEWER SANITARY SEWER COLLECTION SYSTEM CHESTER COUNTY

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT FOR CALENDAR YEAR 2022

Prepared By: Aqua Resources, Inc. 762 West Lancaster Avenue Bryn Mawr, PA 19010

Aqua Resources, Inc. 762 West Lancaster Avenue Bryn Mawr, PA 19010

Valley Creek Trunk Sewer Sanitary Sewer Collection System Chester County

This Chapter 94 Report for calendar year 2022 has been prepared by Aqua Resources, Inc. for the Valley Creek Trunk Sewer Sanitary Sewer Collection System in Chester County.

Respectfully Submitted,

Sean Carney, EIT

Project Engineer - Wastewater

Aqua Resources, Inc.

Kyle Roberts

Area Manager II, Wastewater Operations

Aqua Resources, Inc.

Aqua Resources, Inc. Valley Creek Trunk Sewer Sanitary Sewer Collection System Chester County

Chapter 94 Municipal Wasteload Management Annual Report 2022

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1. INTRODUCTION

This Municipal Wasteload Management Report was prepared in accordance with the PA Title 25 Rules and Regulations, Part I, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article II, Water Resources, Chapter 94 Code §94.12. This report summarizes the results of the annual review of the capacity and condition of the Valley Creek Trunk Sewer (VCTS) Sanitary Sewer Collection System located in Tredyffrin Township, Chester County.

The VCTS system is owned and operated by Aqua Resources, Inc. (Aqua). Aqua acquired the VCTS in December 2018. The system includes the Valley Creek Trunk Line, the Wilson Road Pump Station (WRPS) and force main (WRFM) and the Darby Road Pump Station (DRPS) and force main.

2. SEWER EXTENSIONS

There were no sewer extensions of the VCTS in 2022 and there are no proposed sewer extensions within the next five years. Partner municipalities will be submitting their Chapter 94 reports to Valley Forge Sewer Authority (VFSA) with detailed information on their proposed sewer connections/extensions. Aqua will be requesting a copy of these Chapter 94 reports to monitor flow and connections into the VCTS. Projected flows within the VCTS are based on the 2017 Act 537 Supplement for the Wilson Road Force Main as shown in **Table 1**.

3. SEWER SYSTEM MONITORING, MAINTENANCE, AND REPAIR

Routine maintenance and monitoring of the sewer system were conducted in 2022. There were no major repairs required during the 2022 operating year. There are two flow meters that are utilized for flow monitoring. One meter is located at the DRPS and the other is located at the WRPS. The WRPS is critical because that is the final flow monitoring location within the VCTS sewershed prior to entering the WRFM and finally the Valley Forge Sewer Authority (VFSA) Pawling Road Plant for treatment.

In 2020, Aqua began working with Brown and Caldwell to develop a hydraulic model of the VCTS system to make more informed capacity evaluations. This model is currently being used for capacity evaluations for Act 537 Sewage Facility Planning Modules.

4. CONDITION OF THE SEWER

The rehabilitation of the WRFM was completed in December 2016. In general, the system is in good condition with consistent maintenance activities being performed.

Page 1

5. **SEWAGE PUMPING STATIONS**

There are two pump stations, Darby Road and Wilson Road pump Stations, within the VCTS collection system. The permitted capacity, monthly flows, and the 2-Year projected flows for the WRPS and the DRPS are presented in tabular and graphical form in **Appendix A**. The flow projections for each pump station for the next five years are provided in **Table 1**.

Wilson Road Pump Station

The Wilson Road Pump Station has three (3) pumps and a design capacity of 14,000 gallons per minute (GPM). Pump station influent is divided between two channels, each housing a high-flow sewage grinder. This pump station coveys all flow from the VCTS to the VFSA WWTP. Based on the historical and projected flow data, the pump station is not hydraulically overloaded, and it is not projected to be overloaded within the next 2 years.

In 2020, one of the grinder pumps failed and was subsequently replaced. During grinder down time, influent channels were isolated, and flow was sent through a single channel. A temporary secondary backup generator and an accompanying temporary switchgear were also installed in 2020 which allowed for the upgrade of the existing backup generator. A generator control panel was also installed, allowing operations staff to toggle between generators and utility power.

The work on upgrading the pump station electrical components continued in 2021. The primary generator cooling system was upgraded to improve generator reliability, and a design for the upgrade to the paralleling switchgear and a design and bidding for a backup generator were completed. The switch gear upgrade and the installation of the generator occurred in 2022.

Cleaning and maintenance of the WRPS wet well was also conducted in 2021 and 2022. Wet well bowl cleaning, quarterly force main air release valve cleaning and maintenance, and regular pump station maintenance were also conducted in 2022.

Darby Road Pump Station

The Darby Road Pump Station has two (2) pumps and a design capacity of 700 GPM. Based on historical and projected flows, the pump station is not hydraulically overloaded, and it is not projected to be overloaded within the next 2 years. Quarterly force main air release valve cleaning and regular pump station maintenance were conducted in 2022.

6. INDUSTRIAL WASTES

Industrial wastes are managed by the VFSA as part of their Industrial Pretreatment Program.

7. CORRECTIVE ACTION PLAN

No Corrective Action Plan is warranted for the collection system and pump stations.

8. METER CALIBRATION REPORTS

Aqua maintains meters at the Darby Road Pump Station and Wilson Road Pump Station. These flow meters are regularly calibrated, and **Appendix B** contains the meter calibration reports for 2022.

Table 1: Flow Projections								
	Wilson Road	Pump Station	Darby Road	Pump Station ¹				
	Actual Flow (GPD)	Annual Increase in Flow (GPD)	Actual Flow (GPD)	Annual Increase in Flow (GPD)				
2019	5,956,831		316,784					
2020	5,337,447	-619,384	307,376	-9,408				
2021	5,181,753	-155,694	299,280	-8,096				
2022	4,949,206	-232,547	281,630	-17,650				
AVG	5,356,309	-335,875	301,268	-11,718				
Tally Tally	Projected Flow (GPD)	Annual Increase in Flow (GPD)	Projected Flow (GPD)	Annual Increase in Flow (GPD)				
2023	5,530,509	174,200	301,268	0				
2024	5,704,709	174,200	301,268	0				
2025	5,878,909	174,200	301,268	0				
2026	6,053,109	174,200	301,268	0				
2027		174,200	301,268	0				

Notes:

1. No projected increase in flow to the Darby Rd Pump Station

Appendix A: Pump Station Reports

Pump Station Name Wilson Road Pump Station
WQM Permit No. 1571407 T-1





Flow Units GPD

Average Daily Flow, GPD							Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January		7,538,146	5,175,664	5,909,718	4,664,588			
February		6,868,244	5,441,979	5,549,870	4,645,080		Projecte	ed EDUs ¹
March		7,336,703	5,300,408	6,007,032	4,741,950			
April		6,104,184	6,147,236	5,671,871	6,384,839			
May		6,496,086	5,643,927	5,135,348	5,953,606		Project	ed Flow
June		6,527,558	5,104,476	5,258,612	5,061,046		174,200	174,200
July		6,357,218	4,986,043	4,688,444	4,533,498			
August		5,147,039	5,425,162	4,676,959	4,282,294			
September		4,727,014	4,632,663	5,694,658	4,442,019			
October		4,562,321	4,608,627	4,638,894	4,935,358			
November		4,639,715	5,125,251	4,645,015	4,582,260			
December		5,177,742	6,457,927	4,304,620	5,163,935			
Annual Avg		5,956,831	5,337,447	5,181,753	4,949,206	-	5,530,509	5,704,709
Max Month		7,538,146	6,457,927	6,007,032	6,384,839		6,809,067	7,023,539
Max : Avg Ratio		1.27	1.21	1.16	1.29		1.23	1.23
Peak Factor		2.30	2.30	2.30	2.30		2.30	2.30
Peak Flow (GPM)		9514	8525	8276	7905		8833	9112
Overload?	No	No	No	No	No		No	No

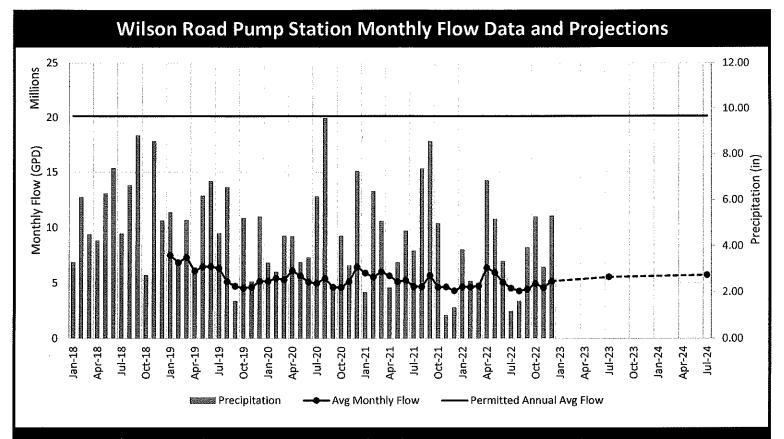
	Precipitation, In					
Month	2018	2019	2020	2021	2022	
January	3.31	5.47	3.29	2.01	3.85	
February	6.12	3.40	2.90	6.39	2.49	
March	4.52	5.14	4.45	5.09	2.23	
April	4.24	3.09	4.44	2.21	6.85	
May	6.29	6.19	3.31	3.31	5.18	
June	7.39	6.82	3.51	4.67	3.35	
July	4.55	4.57	6.16	3.80	1.18	
August	6.64	6.56	9.59	7.36	1.62	
September	8.83	1.63	2.23	8.57	3.95	
October	2.75	5.23	4.45	4.99	5.28	
November	8.58	2.47	3.17	1.01	3.10	
December	5.11	5.28	7.25	1.34	5.31	
Total	68.33	55.85	54.75	50.75	44.39	

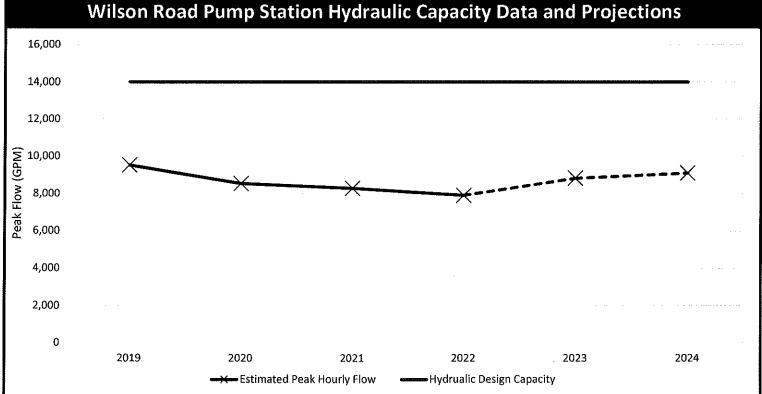
Weather Station
CONSHOHOCKEN
GHCND:USC00361737

1. Future flows are not projected on an EDU basis. See Table 1 for more information on flow projections.

Notes







Pump Station Name Darby Road Pump Station
WQM Permit No. 1571407 T-1





Flow Units GPD

		Average Daily Flow, GPD					Project	ed Flow
Month	2018	2019	2020	2021	2022		2023	2024
January		408,958	276,552	346,987	269,713			
February		327,043	303,039	313,786	279,654		Projecte	ed EDUs ¹
March		364,532	312,694	429,497	271,710			
April		356,717	335,622	361,587	354,831			
May		330,483	311,481	269,387	338,838		Project	ed Flow
June		291,010	319,267	276,310	293,260		0	0
July		407,281	288,523	249,790	250,255			
August		285,055	320,132	264,368	240,082			
September		277,897	277,897	308,903	261,147			
October		233,268	258,235	251,981	272,924			
November		241,267	303,520	288,187	252,057			
December		277,897	381,552	230,581	295,087	L		
Annual Avg		316,784	307,376	299,280	281,630	 	301,268	301,268
Max Month		408,958	381,552	429,497	354,831		393,704	393,704
Max : Avg Ratio		1.29	1.24	1.44	1.26	L	1.31	1.31
Peak Factor		2.50	2.50	2.50	2.50		2.50	2.50
Peak Flow (GPM)		550	534	520	489		523	523
Overload?	No	No	No	No	No		No	No

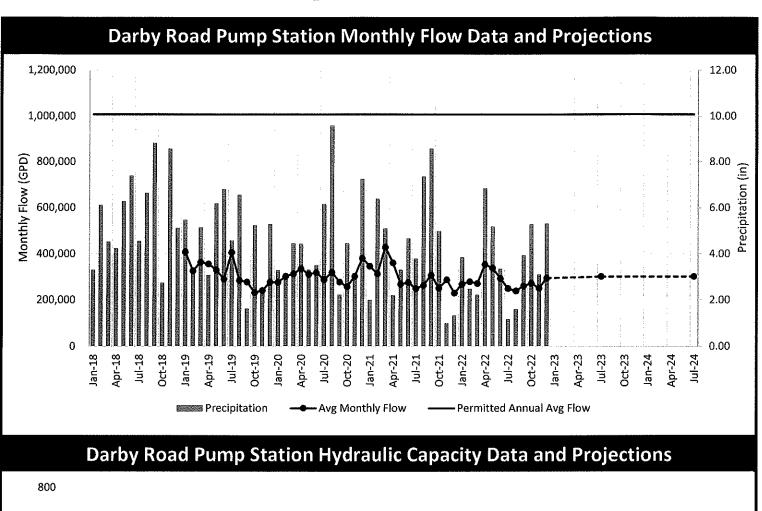
		Pi	recipitation,	ln	
Month	2018	2019	2020	2021	2022
January	3.31	5.47	3.29	2.01	3.85
February	6.12	3.40	2.90	6.39	2.49
March	4.52	5.14	4.45	5.09	2.23
April	4.24	3.09	4.44	2.21	6.85
May	6.29	6.19	3.31	3.31	5.18
June	7.39	6.82	3.51	4.67	3.35
July	4.55	4.57	6.16	3.80	1.18
August	6.64	6.56	9.59	7.36	1.62
September	8.83	1.63	2.23	8.57	3.95
October	2.75	5.23	4.45	4.99	5.28
November	8.58	2.47	3.17	1.01	3.10
December	5.11	5.28	7.25	1.34	5.31
Total	68.33	55.85	54.75	50.75	44.39

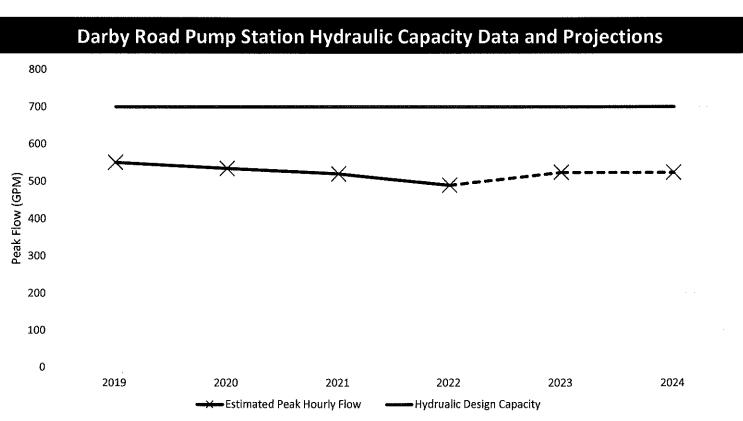
Weather Station
CONSHOHOCKEN
GHCND:USC00361737

1. Future flows are not projected on an EDU basis. See Table 1 for more information on flow projections.

Notes







Appendix B: Flow Meter Calibration Reports

SIEMENS MAGFLO® Verification Certificate

Custome	<u>r:</u>		MAGFLO® Identifi	cation:
Name	kbr golden		TAG No./Name	0
Address			Sensor Code No.	7ME658
			Sensor Serial No.	046401U400
	mike		Transmitter Code No.	7ME691
Phone	484 431 4616		Transmitter Serial No.	091030U400
Email			Location	WILSON RD

<u>Results:</u>		11100101		KBX AQUA WILSON Passed Passed Passed		
Velocity		Current Output			Frequency	Output
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.10%	0.500kHz	0.499kHz	-0.22%
1.0m/s	5.600mA	5.598mA	-0.14%	1.000kHz	0.999kHz	-0.14%
3.0m/s	8.800mA	8.799mA	-0.03%	3.000kHz	3.001kHz	0.03%
	Current Outpu	t 4-20mA		Frequency Ou	tput 0-10kHz	

<u>Transmi</u>	tter Settings:	
Basic	Qmax. Flow Direction Low flow Cut-off Empty Pipe	20000.0 US G /min Negative 1.50% OFF
Output	Current Output Time Constant Relay Output	ON (4-20mA) 10.0 Sec. Error Level
	Digital Output Frequency Range Time Constant Volume/pulse Pulse width Pulse polarity	OFF N/A N/A 0.0 m³/p 0.066 sec. Positiv
Totalizer Totalizer Totalizer	1 value before test 1 value after test 2 value before test 2 value after test g time in days	21559.61589692 US MG 21559.61589692 US MG 19957.39126414 US MG 19957.39126414 US MG 4073

Sensor Details:	
Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)				
Serial No.	N1J6120001			
Device No.	170020			
Software Version	1.40			
PC-Software Version	5.01			
Cal. date	2022.04.20			
ReCal. date	2023.04.20			

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Customer: MAGFLO® Identification: 0 TAG No./Name Name kbx golden Sensor Code No. Address 7ME658 Sensor Serial No. 046401U400 Transmitter Code No. 7ME691 joey Transmitter Serial No. 091030U400 Phone 610 226 5017 Location wilson rd Email

Verification file name or No.

Transmitter

	Senso			Passed		
Velocity	1	iviagnet Current Outp	ic Circuit out	Passed	Frequency	Output
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.07%	0.500kHz	0.500kHz	-0.04%
1.0m/s	5.600mA	5.597mA	-0.17%	1.000kHz	0.999kHz	-0.11%
3.0m/s	8.800mA	8.798mA	-0.04%	3.000kHz	3.002kHz	0.05%
	Current Output	4-20mA	1	Frequency Ou	tput 0-10kHz	

KBX AQUA WILSON

Passed

<u>Transmit</u>	ter Settings:	
Basic	Qmax. Flow Direction Low flow Cut-off Empty Pipe	20000.0 US G /min Negative 1.50% OFF
Output	Current Output Time Constant Relay Output Digital Output	ON (4-20mA) 10.0 Sec. Error Level OFF
	Frequency Range Time Constant Volume/pulse Pulse width Pulse polarity	N/A N/A 0.0 m³/p 0.066 sec. Positiv
Totalizer Totalizer Totalizer	1 value before test 1 value after test 2 value before test 2 value after test g time in days	22051.98188193 US MG 22051.98188193 US MG 20449.75724915 US MG 20449.75724915 US MG 4179

Sensor Details:	
Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)				
Serial No.	N1J6120001			
Device No.	170020			
Software Version	1.40			
PC-Software Version	5.01			
Cal. date	2022.04.20			
ReCal. date	2023.04.20			

Comments

Results:

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters. Verification is traceable to National and International Standards.

Date and signature



611 Garfield Avenue • P.O. Box 234, West Point, PA 19486 24 Hour Emergency Service 800-441-4844 Fax 215-699-9030

CERTIFICATE OF CALIBRATION

CUSTO	MER: KBX Gold	ల ు.			
LOCATI	ON: DARBY RAL,	wooblew F	52	4494	
	DR SYSTEM ID: Sew				
CALIBR	IATED RANGE: ()-1400	0-3mgb	TOTALIZER MULTIPI	IER X100	
The foll	owing equipment has been a rdance with the manufacture	accurately calibrated	under ambient condition	ons at an amblent temperatur	re of <u>75</u> deg. F,
ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION	
	Blooks	3577	2-27-285-1	MAGNETER	
2	Brooks			magneter	
3_				maymeter	
4.	AGM			Integrator	, and the same and
			Marie Marie		
					A STATE OF THE STA
REMAR	RKS:				
CALIBE	RATION DATE: _C/_QC	>1 <u>2098</u>	TECHNICIAN:	ege Buller	
TEST E	QUIPMENT USED:				
MANUFACTURER DESCRIP		PTION	MODEL	SERIAL#	
E	loke		oM	<u> 787</u>	350/075
	mersou		nulatoc		

5	3	7	5
•	J	•	J

Се	rtif	ica	te	#
ノロ	ııı	ıva	LLC.	**



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CERTIFICATE OF CALIBRATION

CUSTO	MER: \\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	AQUA			
	ION: DARRY I	20 P.S.			
	OR SYSTEM ID: FFF				
CALIBE	RATED RANGE:	o GPM	TOTALIZER MULTII	PLIER XIOO	·······
The fol		accurately calibrated t	under ambient condi	tions at an ambient temperatu	re of <u>6ठ</u> deg. F,
ITEM	MANUFACTURER	MODEL #	SERIAL#	DESCRIPTION	
	Brooks	3580	_UA	MAGMETEL	
2	^	DIGITAL	1756000	DIGITAL DEPLA	M TOTALIZER
					Water and the state of the stat
3)443				ASSESSMENT AND STATE OF THE STA	
		1. As a Codification of the Codification of th		-	
REMAR	RKS:				
, (L) (0					
CALIBE	RATION DATE: 1016		ECHNICIAN:	ey Bucher	And Andrews
TEST E	EQUIPMENT USED:			·	
MANUF	FACTURER	DESCRIP	TION	MODEL	SERIAL#
_F	Tuke			787	
_ <i>]</i>	uoks	CAIL	Mie	<u> </u>	