EXHIBIT R

FAIR MARKET VALUE APPRAISAL SCOTTMADDEN



Smart. Focused. Done Right.®

ScottMadden, Inc. 1900 West Park Drive Suite 250 Westborough, MA 01581 508-202-7918 scottmadden.com

February 20, 2020

Robert Willert Executive Director Delaware County Regional Water Quality Control Authority 3201 West Front Street Chester, PA 19016

Dear Mr. Willert,

ScottMadden, Inc. ("ScottMadden") performed a valuation of the Delaware County Regional Water Quality Control Authority ("DELCORA" or the "Authority") wastewater operations at the request of management for the purposes of establishing a fair value in accordance with Public Utility Code (66 PA.C.S) – Valuation of Acquired Water and Wastewater Systems for ratemaking purposes. The resulting conclusion of value should not be used for any other purpose or by any other party for any other purpose. This valuation was conducted in accordance with the Statement on Standards for Valuation Services ("SSVS") and the Uniform Standards of Professional Appraisal Practice ("USPAP"). The estimates of value that result from a valuation engagement are expressed as conclusions of value.

We were restricted or limited in the scope of our work or data available for analysis as follows:

- Some of the National Association of Regulatory Utility Commissioners' ("NARUC") account numbers used in the Engineering Assessment authored by Pennoni Associates and Weston Solutions, Inc. ("Engineering Assessment") did not match the NARUC account numbers in the Handy Whitman Index. ScottMadden had to make its best guess as to what NARUC account was the most appropriate; and
- Other original cost information was not available. Because of this, we relied upon the Engineering Assessment for their estimation of original cost for these assets.

Based on our analysis, as described in this valuation report, the conclusion of value of DELCORA as of January 31, 2020 is \$308,194,006. This conclusion of value is subject to the Statement of Assumptions and Limiting Conditions found in Appendix A and to the Valuation Analyst's Representation found in Appendix B. We have no obligation to update this report or our conclusion of value for information that comes to our attention after the date of this report.

ScottMadden has no financial interest or contemplated financial interest in the property that is the subject of this report.

Respectfully submitted,

Dylan W. D'Ascendis, CVA, CRRA Director ScottMadden, Inc.

Valuation Report

Delaware County Regional Water Quality Control Authority

As of February 20, 2020

Smart. Focused. Done Right.^a



ı I	Introduc:	tion and Purpose	1			
	Compan	Company Background and Operations				
	Summar	Summary of Valuation Approaches				
	A. D	Cost Approach				
	В.	Market Approach				
	С.	Income Approach				
IV.	Application of the Cost Approach					
	Α.	Description of Facilities				
	i.	Wastewater Treatment Plants	4			
		a. Western Regional Wastewater Treatment Plant	4			
		D. Corinne Village Wastewater Treatment Plant (aka Pocopson Reserve)	5 5			
		d. Springhill Farms Wastewater Treatment Plant	5			
	ii.	Pump Stations	6			
	iii.	Collection System	6			
	iv.	Conveyance System	6			
	V. R	Combined Sewer Outfalls	6 7			
	D. і	Indication of Value Licing the Cost Approach	، ع			
v	Application of the Market Approach					
•••	A	Market-to-Book Multiple Method	8			
	B	Comparable Sales Method	9			
	C.	Indication of Value Using the Market Approach	9			
VI	ο. Applicati	و م				
v I.	A		0			
	A. D	Operating Revenue Assumptions	9 10			
	В.	Operating Expense Assumptions	10			
	C.	Future Capital Requirements Assumptions	10			
	D.					
	E	Indicated Value Using the Income Approach				
VII.	Conclus	ion of Value – Subject Interest	12			
VIII.	Closure		13			
Арр	endix A: S	Statement of Assumptions and Limiting Conditions				
Арр	endix B: \	Valuation Analyst's Representations				
Арр	endix C: I	Resume of Dylan W. D'Ascendis, CVA, CRRA				
Арр	endix D: I	Engineering Assessment of DELCORA Assets by Pennoni Associates and Weston Solution	ons, Inc.			
Арр	endix E: N	Market Transactions				
Арр	endix F: [DELCORA Rate Presentation to Stakeholders				
Арр	endix G: I	DELCORA Capital Plan 2020-2040				
App	endix H: I	Jerivation of the Discount Rate for the Income Approach				

Table of Contents



I. INTRODUCTION AND PURPOSE

Dylan W. D'Ascendis, CVA, CRRA, Director at ScottMadden, Inc. ("ScottMadden") (Full professional qualifications included in Appendix C to this report) has been retained by the Delaware County Regional Water Quality Control Authority ("DELCORA" or the "Client") to value their wastewater operations ("Subject Interest") in accordance with Public Utility Code ("66 PA.C.S.") – Valuation of Acquired Water and Wastewater Systems for Ratemaking Purposes as of February 20, 2020. The conclusion of value derived as a result of this engagement is valid only for the stated purpose as of the date of valuation. The valuation report does not reflect a value of the Subject Interest under any other circumstances other than those described in this report; therefore, no other purpose is intended or should be inferred.

For consideration in this transaction is a 100% interest in DELCORA, which means that the purchaser of the Subject Interest would be able to control the entity's operations going forward. The Subject Interest is not a marketable interest since it is not publicly traded, and it would be difficult to immediately turn the Subject Interest into cash.

ScottMadden has used fair market value as the standard of value for this engagement. The Internal Revenue Service's Revenue Ruling 59-60 recommends the use of fair market value for valuation of corporate stocks on which market quotations are either unavailable or of such scarcity that they do not reflect the fair market value. Fair market value is defined in Section 25.2512-1 of the U.S. Treasury Regulations (Gift Tax Regulations) as:

The price at which property would change hands between a willing buyer and willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts.

The premise of value is an assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation. In lay terms, this explains what is going to happen to the Subject Interest after the transaction. There are any number of variations of premise of value, but two general premises of value are Liquidation (the Subject Interest does not continue operating after the transaction) and Going Concern (the Subject Interest continues operating after the transaction). The premise of value applied in this valuation study is Going Concern as there is no indication that the Subject Interest would cease operations after the transaction.

II. COMPANY BACKGROUND AND OPERATIONS

The Subject Interest is the wastewater operations of DELCORA.

In the late 1960s, Delaware County recognized the need for a regional wastewater treatment plan, with all 49 municipalities designating the Delaware County Planning Commission to develop the plan. The Delaware County Planning Commission's subsequent plan consisted of two phases: the first phase identified problems, future needs, and alternative solutions to the wastewater treatment problem; the second phase developed a regional plan which divided the county into Eastern and Western service areas. Eastern flows would be treated at the Philadelphia Water Department's ("PWD") Southwest Water Pollution Control Plant ("SW WPCP") and Western flows would be treated at a new wastewater treatment plant in Chester, Pennsylvania, which would be known as the Western Regional Wastewater Treatment Plant ("WRWTP"). DELCORA was created to implement the plan. DELCORA is a body, politic and corporate, created October 20, 1971, by a resolution of the Council of the County of Delaware, Pennsylvania, under an Act of General Assembly of the State, approved May 2, 1945, P.L. 382, as amended and supplemented, known as the Municipality Authorities Act of 1945, as amended (the "Act").

The governing body of DELCORA is a Board of Directors consisting of nine members appointed by the Delaware County Council. The Board is authorized to exercise any and all powers conferred by the aforementioned Act necessary for the acquisition, construction, improvement, extension, maintenance, and operation of the system facilities. A Board Member's term is for five years. The terms of the Board Members are staggered.

DELCORA does not have taxing power. Ongoing operations are funded from customer revenues. The acquisition and construction of capital assets are funded by capital borrowing, contributions from developers, Federal and State grants and loans, and customer revenues.

The DELCORA system is divided into two regions: the Eastern Service Area and the Western Service Area. Each is served by a regional wastewater treatment plant. DELCORA is responsible for building and operating interceptors, force mains and pump stations in both regions, building the regional treatment plant in the Western Service Area and acquiring capacity at the SW WPCP for wastewater treatment for the Eastern Service Area. DELCORA currently owns and operates sewer collection systems serving eight municipalities: The City of Chester, parts of the Township of Chester, and the Boroughs of Parkside, Upland, Trainer, Marcus Hook, Rose Valley, and Edgmont.

DELCORA serves a population of approximately 500,000 in the greater Philadelphia area including 42 municipalities in Delaware and Chester Counties. The existing wastewater system consists of the WRWTP, three remote wastewater treatment plants, 24 pump stations, and approximately 160 miles of gravity sewers. Currently,

DELCORA is responsible for the safe collection, transmission, treatment, and discharge of approximately 65 million gallons per day ("MGD") of wastewater generated in southeastern Pennsylvania.

III. SUMMARY OF VALUATION APPROACHES

The valuation of the Subject Interest as a Going Concern considers several methods. Each method, at times, may appear more theoretically justified in its use than others. The soundness of a particular method is based on the specific circumstances of each case. We are responsible for selecting the most appropriate approach/method of valuation for this case. The commonly used methods of valuation can be grouped into one of three general approaches: The Cost Approach, the Market Approach, and the Income Approach.

A. Cost Approach

The Cost Approach is a valuation method that typically values the underlying assets of a company to derive their market value. Because this method only focuses on the company's underlying assets, it fails to reflect the past and projected profitability of the company, as well as the associated risks inherent in the company's operations. Typically, the analyst would start with the current replacement (or reproduction) cost new of the assets being valued and then deduct for the loss in value caused by physical deterioration, functional obsolescence, and economic obsolescence of those assets to arrive at an indicated market value.

B. Market Approach

The Market Approach considers comparable transactions of similar utilities in the same general timeframe and general operational area as the company and other market-based data to establish a fair market value. Usually, finding comparable transactions is difficult, if not impossible, since no two companies are identical, nor are they usually timely. In addition, details surrounding utility transactions, particularly private transactions, are incomplete at best. In spite of these challenges, an analyst may be able to pinpoint a relevant multiple of purchase price or transaction value and then apply that multiple to the Subject Interest to derive a value for that Interest. One can also look to the market data of publicly-traded companies comparable in risk to the Subject Interest for an indication of value.

C. Income Approach

The Income Approach provides an indication of value by discounting the expected or future cash flows of a company to a present value. The projected cash flows must account for additional investment and working capital additions and reflect the specific growth potential of the system being valued. The discount rate used to calculate the present value of the company must be derived from market data of similar risk companies. The discount rate must also take into account how the potential acquirer will finance the transaction (e.g. debt, equity, or a combination of debt and equity).

IV. APPLICATION OF THE COST APPROACH

A. Description of Facilities

The description of DELCORA's assets are described fully in the Engineering Assessment, authored by Pennoni Associates and Weston Solutions, Inc. (attached as Appendix D to this report), and summarized below:

As mentioned above, the DELCORA system is comprised of the WRWTP, three remote wastewater treatment plants, 24 pump stations, and approximately 160 miles of gravity sewer mains.

- i. Wastewater Treatment Plants
 - a. Western Regional Wastewater Treatment Plant

The DELCORA WRWTP accepts wastewater from the DELCORA Western Service Area collection system and surrounding municipal connections. The Western Service Area includes 18 pumping stations which are owned and operated by DELCORA, including Central Delaware Pump Station, which can direct flow to either the WRWTP or the SW WPCP.

In recent years, all of the WRWTP process units and support systems have undergone significant upgrades, improvements, and rehabilitation to improve effluent quality, reduce treatment costs, and extend service life. These upgraded systems include, but are not limited to: modifications to the influent screening, pump stations, aeration basins, secondary clarifiers, solids handling system, incinerator upgrades, and the utility water system.

Permitted hydraulic capacity is currently 44 MGD, and average annual flows are currently approximately 39 MGD. Treatment plant components include:

- Grit System
- Primary Clarifiers
- Aeration System
 - Aeration basins
 - Secondary clarifiers
 - Chlorine contact system
- Solids Handling
 - Sludge hauling tanks
 - Dewatering
 - Incinerator

b. Corinne Village Wastewater Treatment Plant (aka Pocopson Reserve)

The Corinne Village Wastewater Treatment Plant was built in 2010 and has an annual average flow of 0.013 MGD. Treatment plant components include:

- Influent wet well / pump station
- Influent grinder
- Two aerated lagoons
- Two blowers
- Service building
- Emergency generator
- Drip irrigation system
 - c. Sheeder Tract Wastewater Treatment Plant (aka Riverside)

The Sheeder Wastewater Treatment Plant was built in 2007 and has an annual average flow of 0.021 MGD. Treatment plant components include:

- Influent wet well / pump station
- Influent grinder
- Two aerated lagoons
- Three pressurized sand filters
- Two blowers
- Service building
- Emergency generator
- Sodium hypochlorite disinfection system
- Spray irrigation system
 - d. Springhill Farms Wastewater Treatment Plant

The Springhill Farms Wastewater Treatment Plant was built in 1988 and has an annual average flow of 0.042 MGD. Treatment plant components include:

- Influent wet well / pump station
- Bar screen
- Extended aeration treatment system
- Five blowers
- Service building
- Emergency generator
- Chlorination and dechlorination system

According to the Engineering Assessment, the overall condition of the WRWTP and the three remote wastewater treatment plants are good.

ii. Pump Stations

As discussed above, DELCORA owns and operates 24 pump stations, 18 are located in the Western Service Area and six are located in the Eastern Service Area. A summary of the pump stations, including location and condition as determined by the Engineering Assessment is shown on Table 1, below:

Pump Station #	Region	Municipality	Station Name	Condition: Bldg/Pump/Elec	Condition: HVAC	Condition: Wet Well
PS-A	Western	Rose Valley	Brookhaven Rd.	Good	Good	Good
PS-B	Western	Rose Valley	Old Mill	Good/Poor/Good	NA	NA
PS-1	Western	Chester	Chester	Good	Fair	NA
PS-2	Western	Chester	8 th Street	Good	NA	Fair
PS-3	Western	Chester	PS-6 WRWTP	Good	Good	Good
PS-4	Western	Chester	Feltonville	Fair	Fair	Fair
PS-7	Eastern	CDCA	Central Delaware Co.	Good	Good	Good
PS-8	Eastern	MA	Muckinpates	Good	Aging	NA
PS-9	Eastern	DCJA	Darby Creek	Good	Aging	NA
PS-10	Western	Eddystone	Eddystone	Good/Aged/Poor	NA	NA
PS-11	Western	Marcus Hook	Marcus Hook	Good	Good	Good
PS-12	Western	Trainer	Price St.	Good	Good	Good
PS-13	Western	Trainer	Smith St.	Good	Good	Good
PS-16	Western	Chester	Broomall St.	Good / Aged / NA	NA	NA
PS-22	Western	Marcus Hook	Delaware Ave. Ejector Sta,	Poor	Poor	Poor
PS-23	Western	Marcus Hook	Viscose Village	Good	Good	Good
PS-24	Western	Chester	Stadium	Good	Good	Good
PS-26	Western	Rose Valley	Longpoint Ln. Ejector Sta	Good	Good	Good
PS-27	Western	Aston	Chester-Ridley Creek	Good	Good	Good
PS-28	Eastern	Edgmont Twp.	Bridle Way	Good	Good	Good
PS-29	Eastern	Edgmont Twp.	Runnymeade	New	New	New
PS-30	Eastern	Edgmont Twp.	Dream Valley	New	New	New
PS-31	Western	Rose Valley	Rose Valley	Good	Good	Good
PS-33	Western	Chester	Delaware River Interceptor Bypass	Good	Good	Good

Table 1: Location and Conditions of DELCORA Pump Stations

iii. Collection System

As discussed above, DELCORA owns all or part of the collection systems in the following areas: City of Chester, Chester Township, Borough of Marcus Hook, Borough of Rose Valley, Upland Borough, Parkside Borough, Trainer Borough, Edgmont Township, Pocopson Township, and Springhill Farms (Chadds Ford). The collection system consists of gravity piping and laterals within the right-of-way.

iv. Conveyance System

DELCORA serves 49 municipalities in whole or in part as described in Section 4.7 of the Engineering Assessment.

v. Combined Sewer Outfalls

The City of Chester wastewater system is partially a combined sewer system, which means sanitary sewage and stormwater use the same pipes. Due to the negative environmental impact of the combined sewer system, the

Pennsylvania Department of Environmental Protection mandated DELCORA to separate the combined sewer systems. Currently, DELCORA has 25 combined sewer outfalls.

B. Trended Original Cost Study

The first step in arriving at the fair market value of the assets of the Subject Interest using the Cost Approach derives the "reproduction cost new" for the assets that comprise the Authority. In order to arrive at the reproduction cost new for the Authority's assets, ScottMadden began with the original cost of the assets provided by the Engineering Assessment and used the Handy-Whitman Index (the "Index") to determine the current reproduction value. The Index is prepared specifically for electric, gas, and water utilities, and is the only publication of its kind available to the public. The Index has been published continuously since 1924. The Index is comprised of historical index values for various accounts prescribed by the NARUC Uniform System of Accounts, as well as for construction, material, and labor, by geographic region of the United States. For assets not included in the Index (specifically communication equipment, transportation equipment, and computer and software), ScottMadden used the Producer Pricing Index.

The trended original cost method consists of the development of adjustment factors from the time when the asset was put into service to the current date. For example, an average main (NARUC account 331) placed into service in 1985 with an original cost of \$100,000 would be trended forward by the ratio of the index value at the current date divided by the index value at the time of installation. The index value of NARUC account 331 in January 2018 is 790.00, and the index value at 1985 when the assets were installed was 254.00, which means the ratio applied to the original cost of the distribution main would be 3.11.¹ This would translate into a current cost for that main of \$311,024.²

The next step in deriving the fair market value of the Subject Interest using the Cost Approach is to quantify the amount of physical deterioration, functional obsolescence, and economic obsolescence of the assets. Physical deterioration is caused by use, wear and tear, and the aging process. Functional obsolescence is caused by changes in design or construction to create efficiencies not present in the current asset. Economic obsolescence is a loss in value due to external factors not in the control of the Company such as economic conditions. The most common measure of physical deterioration is the reserve held for depreciation, which is based on the asset's remaining life versus its average useful life. Functional obsolescence is measured by comparing the subject asset to a replacement asset with current technology. The Engineering Assessment found no significant functional obsolescence for DELCORA assets. Economic obsolescence is usually measured by market conditions, which have been supportive towards the water and wastewater industries in the recent past, as well as prospectively, so ScottMadden does not believe there is significant economic obsolescence present in DELCORA assets. Since the

¹ 790.00 / 254.00 = 3.11.

² (790.00 / 254.00) x \$100,000 = \$311,023.

only applicable measure of loss of value is physical deterioration, the useful lives for each asset were determined, and reserves for depreciation were calculated for each DELCORA asset if original costs were available.

i. Indication of Value Using the Cost Approach

Using the Handy-Whitman and Producers Pricing Indices to trend the original cost, less depreciation of DELCORA's assets forward, ScottMadden arrived at the reproduction cost new minus depreciation value of \$292,413,993.

As stated above, the value derived from the Cost Approach is based solely on the underlying assets of the Subject Interest, which means it does not take into account the expected cash flows of these assets. Additionally, even though the Handy-Whitman Index takes into account the changes in the cost of various factors over time in different regions throughout the country, it cannot take into account intricacies such as terrain (e.g. mountains in Appalachia versus farmland in Pennsylvania) or changes in development and zoning since original installation. All else remaining equal, different terrains or changes in laws will translate into different timeframes to complete the project, which will directly affect costs.

Also mentioned previously, some of DELCORA's assets were classified under NARUC account numbers that did not coincide with NARUC account numbers in the Handy-Whitman Index, and therefore, ScottMadden had to make its best guess as to what NARUC account was the most appropriate. In addition, some assets did not have original costs assigned, so ScottMadden relied upon the estimation of original cost provided by the Engineering Assessment.

V. APPLICATION OF THE MARKET APPROACH

A. Market-to-Book Multiple Method

The Market Approach is a valuation technique whereby the value of a company is estimated based on pricing relationships associated with market transactions involving similar companies. A common technique to derive a value using market data would be to apply a market-to-book ratio of a comparable risk group to the book value of equity. As shown on page 2 of Schedule 2, market-to-book ratios of the water utility proxy group used to derive the weighted average cost of capital ("WACC") in the Income Approach range from 2.25x to 5.71x book value. Using DELCORA's net position balance from its 2018 audited financial statements of \$180,035,336,³ indicated values range from \$415,589,365 to \$1,055,626,592, with an average of \$695,732,863 as shown on page 3 of Schedule 2.

³

From DELCORA's audited financial statements for the year ended December 31, 2018.

B. Comparable Sales Method

ScottMadden also researched transactions involving companies who acquired 100% of a water or sewer interest since 2015. That research returned 69 results from around the country, 20 of which were acquisitions in Pennsylvania, which are contained on page 4 of Schedule 2.⁴ A common ratio which can be used to determine DELCORA's market value is transaction value per equivalent domestic unit ("EDU"). The purchase price per EDU ratios for the relevant transactions are also shown on page 4 of Schedule 2. As shown on page 4 of Schedule 2, the nationwide average purchase price to EDU is 4.10x, while the Pennsylvania average purchase price to EDU is 6.45x. Given the 197,769 EDUs served by DELCORA, indicated values using this approach range from \$811,451,596 to \$1,276,340,191.

C. Indication of Value Using the Market Approach

Averaging the lowest values of the market-to-book method and the comparable sales method indicates a value of \$613,520,480 for DELCORA as shown on page 1 of Schedule 2.

VI. APPLICATION OF THE INCOME APPROACH

ScottMadden performed an independent study of the value of the income generated from service to its customers. The Income Approach employed by ScottMadden is based on the "highest and best use" assumption that the assets of DELCORA would be "maximally productive" or profitable if owned by similar entities.

We have prepared several financial models to develop the indicated values of the Subject Interest. The underlying data was taken from the Client's financial books and records. Due to the limited purposes of these financial statements, they may be incomplete or contain departures from generally-accepted accounting principles. We have not audited, reviewed, or compiled these statements and express no assurance of them. Following an interview with key staff, we incorporated pro forma changes to the annual operating revenues, operating expenses, and future capital requirements to arrive at a reasonable projection of future cash flows for DELCORA.

A. Operating Revenue Assumptions

The vast majority of DELCORA's revenues are tied to fees for wastewater treatment. Because of this, their revenues are dependent on two factors; population growth and rate increases. Upon review of US census data and interviews with key staff, ScottMadden has concluded that the population served by DELCORA will be flat or slightly increasing going forward. Because of this, ScottMadden did not make any further adjustment to the going forward revenues due to population changes.

⁴

Transaction details are provided in Appendix E.

In regard to rate increases, because of major capital improvements scheduled for the period 2020-2028, ScottMadden assumed 11% rate increases every year from 2020 until 2028, and then a rate increase of 3% every three years thereafter. The assumption of the 11% annual rate increases from 2020 through 2028 are based on DELCORA's presentations to various stakeholders regarding operations if they did not pursue being acquired. An example of one of these presentations to stakeholders is attached as Appendix F. Regarding my assumption of 3% triennial rate increases in the period from 2029 to perpetuity is the result of my discussion with DELCORA management and their strong desire to keep rates as low as possible for their customers. Raising sewer rates slower than the assumed rate of inflation (discussed below) in the period 2029 to perpetuity is an extremely conservative assumption.

B. Operating Expense Assumptions

General operating expenses for DELCORA are comprised of taxes and operation and maintenance expenses. Since the acquiring company will not be tax exempt, we have assumed a composite income tax rate (state and federal) of 28.892%.⁵ The State and Federal income taxes will be reduced by the tax shield created by its depreciation expense. To simplify, we will assume that book depreciation expense is equal to tax depreciation expense⁶ and multiply depreciation expense by the effective tax rate to derive the value of the tax shield.

All operation and maintenance expenses are assumed to increase at the projected level of the Consumer Price Index⁷ ("CPI") with two exceptions. In ScottMadden's assumptions, DELCORA does not renew its contract with PWD, which expires in 2028. Because of this, ScottMadden eliminates the Philadelphia Long-Term Control Plan expense in 2029 and going forward. Similarly, since DELCORA will be treating the flows formerly going to the SW WPCP, they will not be paying the 12% management fee to PWD to treat their wastewater. Because of this, in 2029, ScottMadden reduces the Philadelphia plant treatment costs 12%. ScottMadden also assumes that PWD was charging cost-based rates to DELCORA throughout their contract. Due to this assumption, all operation and maintenance expenses associated with the DELCORA plant expansion would be subsumed in the former Philadelphia treatment plant costs. These are conservative adjustments, as DELCORA management in their interviews expressed that costs would dramatically decrease after the expiration of the PWD contract in excess of ScottMadden's assumed 12% decrease. After 2029, ScottMadden assumes that the former Philadelphia treatment plant costs increase at CPI every year.

C. Future Capital Requirements Assumptions

⁵ Federal income tax of 21% and Pennsylvania corporate income tax of 9.99%. (100%-21%) x 9.99% = 7.892%. 21% + 7.892% = 28.892%

⁶ Book depreciation expense was assumed to be the rate base in that year multiplied by the DELCORA's current depreciation rate of 2.5%.

⁷ ScottMadden employed a CPI projection of 2.1% per year, based on the long-term CPI projection published by *Blue Chip Financial Forecasts*. See, *Blue Chip Financial Forecasts*, Vol. 38, No. 12, December 1, 2019 at 14.

There are several major capital projects that are reflected in the Income Approach, which include improvements to the DELCORA system to allow them to bypass the PWD (~\$450M): the implementation of the long-term control plan for the City of Chester (~\$87M); regulatory required capital projects to expand ammonia and nutrient control (~\$100M); DELCORA's 2019 capital plan (~\$340M), and annual replacements of aged sewer lines (~\$4M / year).

For the expected system improvements for the period used in the Income Approach, ScottMadden relied on DELCORA's internal projected capital expenditures for the period 2020-2040 (provided as Appendix G). For the period from 2041 to perpetuity, ScottMadden assumed regular capital expenditures of \$20M / year increased by CPI.

D. Discount Rate

After calculating the expected cash flows, an appropriate discount rate must be calculated in order to arrive at a value of the Subject Interest based on the Income Approach. The discount rate is the investor-required expected rate of return on the assets. An investor in any company needs to be compensated for the risk of that investment, and a higher level of risk equates to a higher required rate of return. The overall rate of return in this instance is defined by the WACC. ScottMadden has calculated a discount rate which relates to the traditional method of financing for publicly-traded water companies, which uses an equal mix between debt and equity capital.

For the common equity cost rate, ScottMadden applied the Discounted Cash Flow ("DCF"), Risk Premium ("RPM") and Capital Asset Pricing Models ("CAPM") to a proxy group of publicly-traded water companies and a group of non-regulated companies comparable in total risk to the water utility group. Application of these cost of common equity models to these groups results in an indicated cost of common equity of 9.75% which is presented in Appendix H.

The representative capital structure is a hypothetical capital structure based on the range of capital structures for fiscal year 2018 of the publicly-traded proxy group companies used to derive the cost of common equity.⁸ For the debt cost rate used in the WACC calculation, ScottMadden used a projected Moody's A public utility bond rate of 4.11%.⁹ Table 2 below illustrates the assumed WACC of an investor-owned water utility.

⁸ The range of equity ratios of the proxy group companies were from 43.40% to 67.33% at 2018 fiscal year end.

⁹ Appendix H at 13.

Type of Capital	Cost Rate	Ratio	Weighted Cost
Long-Term Debt	4.11%	50.00%	2.06%
Common Equity	9.75%	50.00%	4.88%
Total		100.00%	6.94%

Table 2: Assumed WACC for Water Utility Company

E. Indicated Value Using the Income Approach

Inputting the estimated revenue, expense, and capital expenditure data into the model resulted in an indicated value of \$291,863,370.

VII. CONCLUSION OF VALUE – SUBJECT INTEREST

No method of valuation will produce the exact value of a business. A valuation study cannot incorporate market conditions at the time of sale or predict a potential investor's desire, or lack thereof, to acquire the business. The Client's desire to sell additional assets to the potential acquirer may increase the desire of some investors, and as a result, increase the value of both sets of assets. Our valuation and report cannot incorporate these considerations.

ScottMadden has determined the range of values of the Subject Interest based on the relative weighting of the three valuation methods. The weightings indicate the value placed on each appraisal method from the valuation expert. In ScottMadden's opinion, the Income and Cost Approaches should receive significant weight and the Market Approach should receive minimal weight. The reason for this is that the value derived from the Market Approach is an obvious outlier from the other two approaches, even when using the most conservative assumptions. The range of values and relative weightings of the valuation approaches are set forth in Table 3, below:

Valuation Approach	Indicated Value	Weight	Weighted Value
Cost	\$292,413,993	45%	\$131,586,297
Market	\$613,520,480	5%	\$30,676,024
Income	\$291,863,370	50%	\$145,931,685
Indicated Value		100%	\$308,194,006

Table 3: Conclusion of Value for the Subject Interest

In addition to the purchase price, the parties should consider the value of additional items including, but not limited to, the following; any balance of materials and supplies, prepaid expenses, and outstanding customer accounts receivable at the date of closing.

VIII. CLOSURE

ScottMadden strived to consider all relevant information and data presented by the Client. We appreciate the Client's willingness to provide critical data necessary to complete the engagement. We also appreciate the valuable input from the Client's management team. Again, ScottMadden has no financial interest or contemplated financial interest in the property that is the subject of this report.

Respectfully Submitted,

Dylan W. D'Ascendis, CVA, CRRA Director ScottMadden, Inc.



APPENDIX A: STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS

The conclusion of value arrived at herein is valid only for the stated purpose as of the date of the valuation. All data relied upon by ScottMadden, Inc. was provided before February 20, 2020, the valuation date. All subsequently received data was not considered.

Financial statements and other related information provided by the Client, or its representatives, in the course of the engagement, have been accepted without any verification as fully and correctly reflecting the enterprise's business conditions and operating results for the respective periods. Except as specifically noted herein, ScottMadden, Inc. has not audited, reviewed, or compiled the financial information provided and, accordingly, expresses no audit opinion or any form of assurance on this information.

Public information has been obtained from sources ScottMadden, Inc. believes to be reliable. However, we make no representation as to the accuracy or completeness of such information and have performed no procedures to corroborate the information

ScottMadden, Inc. does not provide assurance on the achievability of the results forecasted by DELCORA because unexpected events and circumstances frequently occur; differences between actual and expected results may be material; and achievement of the forecasted results is dependent on actions, plans, and assumptions of management.

The conclusion of value arrived at herein is based on the assumption that the current level of management expertise and effectiveness would continue to be maintained, and the character and integrity of the enterprise through any sale, reorganization, exchange, or diminution of the owners' participation would not be materially or significantly changed.

This report and the conclusion of value arrived at herein are for the exclusive use of the Client for the sole and specific purposes as noted herein. They may not be used for any other purpose or by any other party for any purpose. Furthermore, the report and conclusion of value are not intended by ScottMadden, Inc. and should not be construed by the reader to be investment advice in any manner whatsoever. The conclusion of value represents the considered opinion of ScottMadden, Inc. based on information furnished to it by the Client and other sources.

Neither all nor any part of the contents of this report (especially the conclusion of value) should be disseminated to the public through advertising media, public relations, news media, sales media, mail, direct transmittal, or any other means of communication without the prior written consent and approval of ScottMadden, Inc.

Future services regarding the subject matter of this report, including, but not limited to testimony or attendance in court, shall not be required of ScottMadden, Inc. unless previous arrangements have been made in writing.

ScottMadden, Inc. is not an environmental consultant or auditor, and it takes no responsibility for any actual or potential environmental liabilities. Any person entitled to rely on this report, wishing to know whether such liabilities exist, or the scope and their effect on the value of the property, is encouraged to obtain a professional environmental assessment. ScottMadden, Inc. does not conduct or provide environmental assessments and has not performed one for the subject property.

No change of any item in this valuation report shall be made by anyone other than ScottMadden, Inc., and it will not have any responsibility for any such unauthorized change.

ScottMadden has conducted interviews with the current management of DELCORA concerning the past, present, and prospective operating results of the Company.

Except as noted, ScottMadden, Inc. has relied on the representations of management and the Engineering Assessment concerning the value and useful condition of all equipment, real estate, and any other assets, except as specifically stated to the contrary in this report.

ScottMadden, Inc. has no financial interest or contemplated financial interest in the Company that is the subject of this report.



APPENDIX B: VALUATION ANALYST'S REPRESENTATIONS

The analyses, opinions, and conclusion of value included in the valuation report are subject to the specified assumptions and limiting conditions (see Appendix A), and they are the personal analyses, opinions, and conclusion of value of the valuation analyst.

The economic and market data included in the valuation report have been obtained from various printed or electronic reference sources that the valuation analyst believes to be reliable. The valuation analyst has not performed any corroborating procedures to substantiate that data.

The valuation engagement was performed in accordance with the American Institute of Certified Public Accountants Statement on Standards for Valuation Services and the Uniform Standards of Professional Appraisal Practice.

The parties for which the information and use of the valuation report is restricted are identified; the valuation report is not intended to be and should not be used by anyone other than such parties.

The analyst's compensation is fee-based and is not contingent upon the development or reporting of a predetermined value or direction of value that favors the cause of the Client, the amount of the estimate of value, or the attainment of a stipulated result.

The valuation analyst relied upon the Engineering Assessment for estimated original costs of certain assets during the valuation engagement.

The valuation analyst has no obligation to update the report or the opinion of value for information that comes to their attention after the date of the report.

Signature of the Analyst:

Dylan W. D'Ascendis Director ScottMadden, Inc.

15



Appendix C **Professional Qualifications of** Dylan W. D'Ascendis, CRRA, CVA

Summary

Dylan is an experienced consultant and a Certified Rate of Return Analyst (CRRA) and Certified Valuation Analyst (CVA). He has served as a consultant for investor-owned and municipal utilities and authorities for 11 years. Dylan has extensive experience in rate of return analyses, class cost of service, rate design, and valuation for regulated public utilities. He has testified as an expert witness in the subjects of rate of return, cost of service, rate design, and valuation before 19 regulatory commissions in the U.S., a Canadian Province, and an American Arbitration Association panel.

He also maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured. He serves on the Rates and Regulatory Committee of the National Association of Water Companies (NAWC).

Areas of Specialization

- Regulation and Rates
- Utilities

- Rate Case Support Financial Modeling
- Mutual Fund Benchmarking
 - Valuation
- Capital Market Risk
- Regulatory Strategy

Recent Expert Testimony Submission/Appearances

Jurisdiction

- Pennsylvania Public Utility Commission
- New Jersey Board of Public Utilities
- Pennsylvania Public Utility Commission
- South Carolina Public Service Commission
- American Arbitration Association

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies
- Maintains the benchmark index against which the Hennessy Gas Utility Mutual Fund performance is measured
- Sponsored valuation testimony for a large municipal water company in front of an American Arbitration Association Board to justify the reasonability of their lease payments to the City
- Co-authored a valuation report on behalf of a large investor-owned utility company in response to a new state regulation which allowed the appraised value of acquired assets into rate base

Recent Publications and Speeches

- Co-Author of: "Decoupling, Risk Impacts and the Cost of Capital", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. The Electricity Journal, March, 2020.
- Co-Author of: "Decoupling Impact and Public Utility Conservation Investment", co-authored with Richard A. Michelfelder, Ph.D., Rutgers University and Pauline M. Ahern. Energy Policy Journal, 130 (2019), 311-319.
- "Establishing Alternative Proxy Groups", before the Society of Utility and Regulatory Financial Analysts: 51st Financial Forum, April 4, 2019, New Orleans, LA.
- "Past is Prologue: Future Test Year", Presentation before the National Association of Water Companies 2017 Southeast Water Infrastructure Summit, May 2, 2017, Savannah, GA.
- Co-author of: "Comparative Evaluation of the Predictive Risk Premium ModelTM, the Discounted Cash Flow Model and the Capital Asset Pricing Model", co-authored with Richard A. Michelfelder. Ph.D., Rutgers University, Pauline M. Ahern, and Frank J. Hanley, The Electricity Journal, May, 2013.
- "Decoupling: Impact on the Risk and Cost of Common Equity of Public Utility Stocks", before the Society of Utility and Regulatory Financial Analysts: 45th Financial Forum, April 17-18, 2013, Indianapolis, IN.

Rate Design

Rate of Return

Cost of Service

Topic

Valuation Cost of Service, Rate Design Return on Common Equity Return on Common Equity Valuation



Appendix C Professional Qualifications of Dylan W. D'Ascendis, CRRA, CVA

Sponsor	DATE	ASSETS VALUED	DESCRIPTION	
Delaware County Regional Water Quality			Authored Valuation Report, which will be a part of an Act 12	
Control Authority	2/20	Wastewater Operations	Filing.	
Washington County Water System, NC	2/20	Water Operations	Authored Valuation Report for internal purposes.	
Egg Harbor City, NJ	2/20	Water Operations	Authored Valuation Report for internal purposes.	
City of Ashtablua, OH	11/19	Wastewater Operations	Authored Valuation Report for internal purposes.	
			Authored Valuation Report, which will be a part of an Act 12	
Steelton Water Authority	6/18	Water Operations	Filing.	
Block Island Power Company	4/18	Electric Operations	Authored Valuation Report for internal purposes.	
Mahoning Township, PA	9/17	Water and Sewer Assets	Authored Valuation Report, which is part of Act 12 Filing.	
Atmos Energy Corporation	9/16	Intrastate Natural Gas Pipeline	Authored Valuation for internal purposes.	
			Co-Authored Valuation Report, which was part of House Bill	
Village of Glenview, IL (North Maine Utilities)	7/14	Water and Sewer Assets	1379 Filing (similar to PA Act 12).	
Springfield Township, PA	8/14	Sewer Assets	Co-Authored Valuation report for internal purposes.	
Erie City Water Authority, Erie, PA	12/13	Water Assets	Sponsored Valuation Testimony in Arbitration Hearing.	
City of Allentown, PA	12/12	Water and Sewer Assets	Assisted in the generation of Valuation Report.	



Pennon

DELCORA

100 E 5th Street

Chester, PA 19013



DELCORA SEWERAGE FACILITIES ENGINEERING ASSESSMENT AND ORIGINAL COST

Various Locations Delaware and Chester Counties, PA

Prepared for:

Submitted By:

Appendix D Page 1 of 598

Pennoni Associates Inc. 1900 Market St, Suite 300 Philadelphia, PA 19103

Bryn Mawr, PA 19010

Technical/Project Manager

Roger W. Lehman, PE Weston Solutions, Inc.



FRANCIS

Frank A. Ciufo, PE Senior Engineer Pennoni Associates Inc.





CONTENTS

1.	EXECUTIVE SUMMARY 1
2.	PURPOSE OF REPORT 2
3.	SYSTEM DESCRIPTION 4
4.	INVENTORY OF ASSETS
	4.1. WESTERN REGIONAL WASTEWATER TREATMENT PLANT5
	4.2. CORINNE VILLAGE WASTEWATER TREATMENT PLANT (aka POCOPSON PRESERVE)
	4.3. SHEEDER TRACT WASTEWATER TREATMENT PLANT (aka RIVERSIDE)23
	4.4. SPRINGHILL FARMS WASTEWATER TREATMENT PLANT
	4.5. PUMP STATIONS
	4.6. COLLECTION SYSTEM
	4.7. CONVEYANCE SYSTEM
	4.8. COMBINED SEWER OUTFALLS (CSOs)
5.	OWNED PROPERTY & EASEMENTS OF VALUE 115
6.	REGULATORY REQUIREMENTS 117
7.	OPERATING EXPENSES 118
8.	LIST OF ASSETS AND COSTS

APPENDICES

APPENDIX A – SYSTEM MAPS

- A1 DELCORA Service Areas
- A2 DELCORA Conveyance System Diagram
- A3 Delaware County Sewage Facilities Served by DELCORA
- A4 DELCORA Pump Stations & WWTP Map (Aerial)
- A5 DELCORA Pump Stations & WWTP Map (TOPO)
- A6 CSO Map

APPENDIX B

- Uniform System of Accounts Section 300
- ACT 12 (HB1326)

APPENDIX C – OWNED PROPERTY & EASEMENTS OF VALUE

- 30 Charter Oak Drive-easement-ROW-DELCORA signed 12-2014
- City of Chester
- Marcus Hook PS Deed

DIGITAL FILES

UNIFORM SYSTEM OF ACCOUNTS

ASSET DOCUMENTS

1. EXECUTIVE SUMMARY

As required by PA Act 12 (HB1326) and following the guidelines of the "Uniform System of Accounts for Class A Wastewater Utilities", an assessment of the tangible assets of facilities and equipment of The Delaware County Regional Water Quality Control Authority (DELCORA) wastewater utility is prepared as part of the asset purchase agreement with Aqua Pennsylvania Wastewater, Inc. (Aqua). Each facility and class of equipment was coded based on Section 300 of the "Wastewater Utility Plant Accounts" of the Guidelines. The Asset Survey included the Western Regional Wastewater Treatment Plant (WRTP), 3 remote Wastewater Treatment Plants (WWTPs), 24 pump stations and associated force mains, and approximately 160 miles of gravity sewers. Asset cost information was derived from various sources. Site visits to each of the facilities were conducted to inventory the equipment and assess conditions.

Site inventories and facility conditions were documented on facility information sheets and summarized in the facility description summaries.

The overall condition of the WRTP and 3 remote WWTPs is good.

Conditions of the Pump Stations varies from poor to very good based on the age and/or completion of recent improvements.

Gravity sewer and force main conditions were not determined. The piping installation period ranges from the early 1900s to 2018.

A complete list of the assets and available original costs is provided in Section 8 of this report.



2. PURPOSE OF REPORT

The purpose of this report is to "conduct an assessment of the tangible assets of the selling utility" per the requirements of PA Act 12 (HB1326).

This engineering assessment will be used by the Utility Value Experts (UVEs) retained by both the seller (DELCORA) and buyer (AQUA). The engineering assessment followed the practices and procedures of the Public Utility Commission (PUC) and National Association of Regulatory Utility Commissioners (NARUC) Systems of Accounts. The engineering assessment report documents the conditions and original costs of DELCORA's assets that will be used as the common list for the UVEs to develop their appraisal of the system.

The report preparation process included meeting with key DELCORA and Aqua representatives to identify and confirm specific information needed to support the assessment and to prepare the report, providing a mutually agreed upon scope of work with DELCORA and Aqua. The inventory is a compilation of data gathered by Pennoni and Weston Solutions, Inc., developed from institutional knowledge, available records, maps, work orders, payment records from construction projects, GIS, site evaluations, and other sources to provide an inventory and listing.

This report contains the following:

- An inventory of the used and useful assets to be transferred, compiled by year and account (codes).
- Identification of facilities being held for future use (if any).
- A list of non-depreciable property such as land and rights-of-way.
- A review of system components, plans, and reports of key facilities. This includes:
 - Permitted discharges, including regulatory requirements
 - Treatment Facilities (4 each)
 - Pumping Stations (24 each), including force mains
 - Gravity collection system
 - Combined sewer system outfalls
- Summary of the operation and maintenance expenses based upon review of DELCORA operating records.
- An assessment of the identified assets.
- Determination and/or establishment of an original cost of construction for each asset.

Assets were identified through various sources. The WWTP assets were field inventoried and evaluated; and, supplemented with information obtained from drawings, where available. Force main sizes and quantities were taken from GIS and project drawings. Pump Stations were field inventoried



and evaluated; and, supplemented with information obtained from drawings, where available. Gravity piping costs are based on current cost of replacement and back calculated to the year of installation using the ENR Construction Cost Index.

A coding system as described in Section 300 of the Uniform System of Accounts for Class A Wastewater Utilities was used for classifying various assets. Section 300 as well as the listing of codes can be found in Appendix B. The entire Uniform System of Accounts can be found in the Digital Files.



3. SYSTEM DESCRIPTION

System Summary

DELCORA is responsible for the safe collection, transmission, treatment, and discharge of approximately 65 million gallons per day (MGD) of wastewater generated in southeastern Pennsylvania (A map of the service areas is located in Appendix A, Figure A1). DELCORA's facilities serve residential, commercial, institutional, and industrial customers in Delaware and Chester Counties. DELCORA owns and operates a system consisting of 24 pump stations and associated force mains, and 160 miles of gravity collection system mains and interceptor sewers for the conveyance of wastewater to DELCORA's Western Regional Treatment Plant (WRTP) located in Delaware County and to the Philadelphia Water Department's Southwest Water Pollution Control Plant.

Historically, DELCORA has characterized its service areas as "Eastern" and "Western". The Western Service Area includes eighteen (18) pumping stations which are owned and operated by DELCORA including Central Delaware Pump Station which can direct flow to either the WRTP, a permitted 44 MGD activated sludge wastewater treatment plant, or the City of Philadelphia's Southwest Water Pollution Treatment Plant. The Eastern Service Area include (6) six pumping stations which are owned and operated by DELCORA. The Eastern Service Area discharges to the Philadelphia Southwest Water Pollution Control Plant (SWWPCP) and the WRTP. A schematic of DELCORA's conveyance system and the connection to the treatment facilities can be found in Appendix A, Figure A2. The average annual flow in 2018 for the WRTP was 39.18 MGD and 25.76 MGD for the Eastern Service Area.

In addition to the WRTP, DELCORA owns and operates three (3) remote Treatment Plants. Corinne Village (Pocopson Preserve) located in Pocopson Township; Sheeder Tract (Riverside) located in Pocopson Township; and Springhill Farms located in Chadds Ford Township. The average annual flow for Corinne Village is 0.013 MGD; for Sheeder Tract is 0.021 MGD and for Springhill Farms is 0.042 MGD.

An aerial map of the DELCORA system showing the location of the Pump Stations and Treatment Plants is located in Appendix A, Figure A4.



4. INVENTORY OF ASSETS

4.1. WESTERN REGIONAL WASTEWATER TREATMENT PLANT

Facility Description

The DELCORA Western Regional Treatment Plant (WRTP) accepts wastewater from the DELCORA Western Service Area collection system and surrounding municipal connections as shown on the DELCORA Conveyance Plan in Section 4.7. Please note that not all pump stations in the system are owned by DELCORA. The Western Service Area includes eighteen (18) pumping stations which are owned and operated by DELCORA including Central Delaware Pump Station which can direct flow to either the WRTP or the City of Philadelphia's Southwest Water Pollution Treatment Plant. Figure A3 in Appendix A provides the location of all pump stations, including those only contract operated by DELCORA.

In recent years all of the WRTP process units and support systems have undergone significant upgrades, improvements, and rehabilitation to improve effluent quality, reduce treatment costs, and extend the service life. These upgraded systems include, but not limited to modifications to the influent screening, pump stations, aeration basins, secondary clarifiers, solids handling system, incinerator upgrades, and the utility water system. The costs of these projects are included in Section 8 of this report.

Permitted hydraulic capacity is currently 44 MGD and permitted organic discharge limit is 7,000 pounds per day of BOD5 per the NPDES permit. The design organic loading for the aeration system is 108,000 pounds BOD5 per day. (This represents the loading from the primary effluent, not WRTP influent). The influent design organic loading for the plant is 161,000 pounds BOD5 per day, based on 33% removal through the primary system. Figure 2 is a layout plan of the Treatment Plant, not all pump stations in the system are owned by DELCORA.

Treatment Plant components include:

- Grit System
- Primary Clarification
- Aeration System
 - Aeration Basins
 - Secondary Clarifiers
 - Chlorine Contact System
- Solids Handling
 - Sludge Holding Tanks
 - Dewatering
 - Incinerator

PENNONI Consulting Engineers



Treatment Plant Units

Grit System

The WRTP has two aerated grit and pre-aeration tanks at the WRTP. These tanks are divided into a grit chamber (approximately one third of each tank) and a pre-aeration chamber (approximately two thirds of each tank). The grit chamber tanks are each 31.6 feet long and 30 feet wide with a side water depth of 15.75 feet. Each tank also includes a fine screen, washing compactor and a horizontal screw conveyor to remove solids and debris from the influent.

Primary Clarification

There are eight primary clarifiers at the WRTP. Each primary clarifier tank is rectangular concrete units, with chain and scraper mechanisms. The units have a length of 155.5 feet, a width of 41.5 feet, and a side water depth averaging 9.50 feet. Each settling tank has a total weir length of 350 feet.

AERATION SYSTEM

The system consists of submerged aeration diffusers and piping grid, centrifugal blowers, dissolved oxygen (DO) control system, interconnection ductwork, electrical controls and blower building. The submerged diffusers (700 total) are high efficiency flat panel membrane diffusers manufactured by OVIVO Inc.

Aeration Basins

There are four aeration tanks at the WRTP. The tanks are constructed of concrete and are square in shape, with a length of 136 feet, a width of 136 feet, and a side water depth of 18.1 feet. Typical operation uses two trains of two tanks each, providing essentially a complete mix activated sludge (CMAS) configuration.

Secondary Clarifiers

There are five secondary clarifiers at the WRTP. Four clarifiers (Tanks T-15, T-16, T-17, and T-18) have a 130-foot diameter and one clarifier (Tank T-27) has a diameter of 175-feet. The four smaller clarifiers were included in the original design of the plant while the fifth larger clarifier was added in 1994. Return sludge from the bottom well of each clarifier utilize a suction pipe withdrawal mechanism.

Post Aeration Tanks

There are two (2) 48.5-ft by 48.5-ft square post-aeration tanks at the WRTP with aside water depth of 11.5 feet. The tanks are currently being used to provide additional chlorine contact time.



Chlorine Contact System

There are two (2) chlorine contact tanks at the WRTP. The tanks are rectangular with a length of 116 feet, width of 36 feet, and side water depth of 12.5 feet. The tanks are baffled to provide a long flow path and prevent short circuiting, to help in providing adequate contact time.

SOLIDS HANDLING

The WRTP uses gravity belt thickeners (GBT) for thickening the waste activated sludge (WAS) prior to dewatering and thickening. The system includes two (2) GBTs located in Building B-4.

Sludge Holding Tanks

The WRTP has four (4) tanks (ET-1, ET-2, ET-3, and ET-4) currently used for sludge holding (note these tanks were originally designed as digesters prior to construction of the incinerator. Based upon the design drawings (Catania Engineering Associates, Dwg. 80700-101) each tank is 52-ft in diameter with a 18.5-ft wall height and 16-ft SWD and a 6-ft cone bottom. The liquid volume for each tank is approximately 250,000 gallons resulting in a combined liquid capacity of approximately 1,000,000 gallons.

Dewatering

The WRTP uses belt filter presses (BFPs) for dewatering primary, secondary and trucked-in sludge. There are four (4) Ashbrook-Simon-Hartley Klampress Type 85, Size 3, 2.0-meter BFPs installed in building B-3.

Incinerator

Sludge is processed by a Nichols Herreshoff Sludge Incinerator or to a container. There are two (2) incinerators with each being 22.25-foot outside diameter with 8 hearths. The units were retrofitted for the use of natural gas in February 27, 2012 for Incinerator #1 and June 1, 2012 for Incinerator #2. The incinerator emission control system was upgraded for both incinerators in 2016. The project involved the installation of a new wet scrubber, wet electrostatic precipitator, and regenerative thermal oxidizer for each incinerator.





Figures 2.ppt





PENNONI Consulting Engineers





Figure 1 – Aeration Tank

Figure 2 – Grit Building



Figure 3 – Control Building

Figure 4 – B-3 Belt Filter Press

PENNONI Consulting Engineers





Figure 5 – B-4 Sludge Thickening Building

Figure 6 – B-5 Maintenance Building



Figure 7 – B-6 Blower Building

Figure 8 – Blowers B-6





Figure 9 – Clarifier

Figure 10 – Floatation Unit B-4



Figure 11 – PS-1 Building

Figure 12 – PS-1 Interior


Appendix D Page 16 of 598 Engineering Assessment December 2019



Figure 13 – PS-2 Building



Figure 14 – PS-2 Pumps



Figure 15 – PS-3 Building

Figure 16 – PS-3 Pumps





Figure 17 – PS-4 Electrical Room

Figure 18 – PS-4 Pumps



Figure 19 – PS-5 Building

Figure 20 – PS-5 Pumps





Figure 21 – Substation 1

Figure 22 – Substation 2 Exterior



Figure 23 – Substation 2 Interior

Figure 24 – Substation 3 Exterior



Appendix D Page 19 of 598 Engineering Assessment December 2019



Figure 25 – Substation 3 Interior



Figure 26 – T-1



Figure 27 – T-3 to T-10



Figure 28 – T-20





Figure 29 – T-21 & T-22

Figure 30 – Waste Unloading Facility



4.2. CORINNE VILLAGE WASTEWATER TREATMENT PLANT (aka POCOPSON PRESERVE)

Facility Description (see attached Information Sheet)

The Corinne Village Wastewater Treatment Plant was built in 2010. The system consists of the following components:

- Influent Wet well/ Pump Station
- Influent Grinder
- Two aerated lagoons
- 2 Blowers
- Service Building
- Emergency Generator
- Drip irrigation System

Influent Wet well/Pump Station

The Influent wet well is an 6-ft diameter precast concrete structure with two Hydromatic 3 HP, 3 PH, 230 V, 84 GPM @ 23.5-ft TDH pumps. A Muffin Monster 5 HP grinder is mounted on the influent line. The pumps are control by a Hydromatic Control Panel located in the Service Building.

Service Building

The Service Building (36-ft x 24-ft) is constructed of concrete blocks with a stucco finish, the roof is constructed of asphalt shingles. The interior consists of florescent lighting, exhaust fans, electric unit heaters and a bathroom with a toilet and sink. A laboratory table with a pH meter and other standard laboratory equipment is located along one wall.

The building equipment is powered by a 250A Square D service panel. Two 50KVA transformers are located outside the building.

Aerated Lagoon System

The Aerated Lagoon system is an Environetics two lagoon system rated for 20,212 Gallons Per Day (.020 MGD). The system consists of a primary aeration lagoon (0.28 Acres) with floating tube diffusers and baffles and a secondary lagoon (0.18 acres) with two 15 HP floating mechanical aerators. The floating tube diffusers air is supplied by two 7.5 HP Gardner Denver rotary lobe blowers located in the service building



<u>Generator</u>

The generator is a Cummins 132 KW /98 KVA unit located on the west side of service building. An integral 145 gallon diesel fuel tank is located below the generator. A Cummins Power Automatic Transfer Switch (ATS) is located in the service building.

Drip Irrigation System

The drip irrigation system consists of a 9.5-acre field located to the northeast of the treatment facility. The field has a wetted area of 3.765 acres with 64,800 feet of tubing in 12 zones.

The effluent from the secondary lagoon is treated by an Amiad cartridge filter. Two 7.5 HP Fairbanks Morse Vertical Turbine Pumps, 60 GPM @ 188 TDH supply the water to the drip irrigation system.





Figure 1 – Influent Pump Station

Figure 2 – Influent Pump Station



Figure 3 – Drip Irrigation Pumps

Figure 4 – Secondary Lagoon





Figure 5 - Drip Irrigation Field

Figure 6 - Drip Irrigation Field



Figure 7 - Generator



Figure 8 - Drip Irrigation Control Panel





Figure 9 - Blowers

Figure 10 - Drip Irrigation Filters



Figure 11 – Flow Meter Readout & Chart Recorder

Figure 12 – Service Building



	Corinne Village WWTP aka Pocopson Preserve							
CODE		UNIT	DESCRIPTION	YEAR INSTALLED	COMMENTS			
	Treatment	t processes	1					
		Headworks						
		facility description	Environetics two lagoon aeration system, American "Perc-Rite" Drip Despersal System located on a drip field. Design - 20,212 GPD. Facility constructed 2010.					
		Grinder unit	Muffin Monster located in wet well.					
		Pump Station	6' dia. Wetwell, precast concrete					
		Pumps	Hydromatic S4NVX300EC, 3 HP, 3 ph, 230V, 84 GPM@23.5' TDH,					
		controls Control Donal	Floats					
		valve nit	6' x 10' precast concrete with 5' x 4' aluminu hatch: 2 gate and 2 check values					
		raire pr						
		Treatment Units						
		Structure	Primary (12,000 SF, 0.28 acres) and Secondary (8,000 SF, 0.18 acres) Aeration Jagoons					
		Manufacturer	Environetics floating baffle System					
		Description	two lagoon system with primary treatment with floating tubular aeration diffusers, secondary lagoon with					
		e compron	floating mechancal aerators					
		Drin Irrigotion autors	"Bass Bits"					
		size	3 765 wetted acres 64 800 feet of tubing in 12 zones (total field size = 9.5 acres)					
		Controls	Wall mounted control panel with interactive LCD screen					
		Pumps (2)	Fairbanks Morse 7100UW vertical turbine, 60 GPM @188' TDH, 7.5 HP, 3 ph, 230-460V					
		Wetwell	8' x 8' precast concrete					
		valve pit	6' x 6' precast concrete					
		tilter	Amiad cartridge filter					
		Blowers						
		Description	two - Gardner Denver Sutorbilt Model GABHOSA, 7.5 HP					
		Treatment Plant Service building						
		Dimensions	36' x 24'					
		Main Structure Material	Concrete Block with stucco exterior					
		Roof type	asphalt shingle					
		Doors	steel					
		lighting	florescent					
		HVAL Bathroom	exhaust fans with electric unit neaters					
		Bathoon						
		Laboratory/Office	integral to building, wih pH meter and basic laboratory equipment					
			eyewash					
		Electric						
		ransformer	exterior - two 50 KVA					
		Main Disconnect	Distribution Panel 250 AMP					
		Panel LP	100 AMP					
		TVSS	Square D Surgelogic					
		a 1						
		Alarm	OmniSite Cellular monitor					
		Disinfection System						
		Chiorination system	N/A					
		electrical/controls						
		Dechlorination chem						
		Dosing Pump						
		Generator						
		Manufacturer	Cummins					
		size	132 HP, 98 KW					
		ruei fuel tank size	ulesei 145 gallons					
		ATS	Cummins Power Command					
		Flow meter	Honeywell Chart Recorder					

4.3. SHEEDER TRACT WASTEWATER TREATMENT PLANT (aka RIVERSIDE)

Facility Description (see attached Information Sheet)

The Sheeder Tract Wastewater Treatment Plant was built in 2007. The system consists of the following components:

- Influent Wet well/ Pump Station
- Influent Grinder
- Two aerated lagoons
- Three pressurized Sand Filters
- 2 Blowers
- Service Building
- Emergency Generator
- Sodium hypochlorite disinfection system
- Spray irrigation System

Influent Wet well/Pump Station

The Influent wet well is an 8-ft diameter x 18-ft deep precast concrete structure with two Fairbanks Morse 5 HP, 3 PH, 460 V, 125 GPM @ 44-ft TDH pumps. A Franklin Miller TM8508 3 HP grinder is mounted on the influent line. The pumps are controlled by a Healy Ruff Control Panel located in the Service Building.

Service Building

The Service Building (30-ft x 50-ft) is constructed of finished concrete blocks (30-ft x 50-ft) with asphalt shingles. The interior consists of fluorescent lighting, exhaust fans, GE 12,000 BTU/hour heat pump unit and a bathroom with a toilet and sink. A laboratory table with a pH meter and other standard laboratory equipment is located along one wall.

The building equipment is powered by a 400A Square D service panel and a 50KVA transformer located east of the building.

Aerated Lagoon System

The Aerated Lagoon system is an Aqua Aerobics two lagoon system rated for 45,000 Gallons Per Day (0.045 MGD). The system consists of a primary aeration lagoon (0.28 Acres) with floating tube diffusers and a secondary lagoon (1.75 acres) with two 15 HP floating mechanical aerators. The floating tube diffusers are supplied by two 5 HP Gardner Denver rotary lobe blowers located in the service building.



Service Building

The Service Building is a 24-ft x 118-ft prefabricated steel building on a concrete block foundation. The building is divided into the office laboratory; the generator/ maintenance / Electrical room; the compressor room; and a UV disinfection area on the lower level.

The building has (4) 3-ft x 7-ft steel man doors; (1) 6-ft x 7-ft steel double door; (1) electric operated overhead steel roll up door (10-ft x 10-ft).

The office is combined with the lab area. A men's shower/bathroom is adjacent to the office.

The laboratory is equipped with lab tables with sinks; refrigerator; various lab glassware, testing equipment, scales, oven, reagents and microscopes.

Disinfection System

A sodium hypochlorite chlorination system is located in the Service Building. It consists of a 100 gallon Polypropylene storage tank and a LMI 1.3 GPH dosing pump.

Generator

The generator is a Cummins 175 KW /218 KVA unit located in the service building. An integral 300 gallon diesel fuel is located below the generator. A Cummins Power Automatic Transfer Switch (ATS) is located in the service building.

Spray Irrigation System

The spray irrigation system consists of two grass spray fields, a spray field in a wooded area, two turbine pumps and a booster pump.

The grass spray fields are located adjacent to the treatment facilities. The fields are approximately 3 Acres and 2.5 Acres. A third Spray field is located approximately 2000 feet away on the north side of the development in a wooded area. The effluent from the secondary lagoon is treated by (3) Yardney 300 gallon pressurized sand filters. (2) 50 HP Fairbanks Morse Vertical Turbine Pumps and a 7.5 Grundfos booster pump supply the water to the spray field nozzles.

A Climatronics weather system is utilized to control spray cycles.





Figure 1 – System Monitor / Control Panel



Figure 2 – Pump Control Panel



Figure 3 – VFDs



Figure 4 – Generator





Figure 5 -Sand Filters

Figure 6 - Blowers



Figure 7 – Service Building

Figure 8 – Spray Field Pumps





Figure 9 – Secondary Lagoon

Figure 10 - Primary Lagoon



Figure 11 – Spray Field (adjacent to Treatment Plant)

Figure 12 – Spray Field in Woods



CODE		UNIT	DESCRIPTION	YEAR INSTALLED	COMMENTS
	Treatment	t processes			
		Headworks			
		facility description	Aqua Aerobics two lagoon aeration system, spray irrigation onto 3 separate sprayfield. 0.045 GPD. Put in service July, 2007		
		Headworks			
		Wetwell	8' diameter x 18' deep precast concrete		
		Influent Pumps	Fairbanks Morse 5 HP, 3 PH, 460 V, 125 GPM @ 44' TDH		
		Grinder Controls	Franklin Miller TM8508 3 HP Healy Buff Coastral Boast		
		controis			
		Treatment Units			
		Structure Manufacturer	Lagoons Agua Aerobics		
		Description	two aerated lagoons, primary (12.000 SF, 0.28 acres), secondary lagoon (76.000 SF, 1.75 acres)		
		Sand filters	Three - Yardney pressurized 42 CF (300 gallon) Sand Filters		
		Blowers			
		Description	Gardner Denver GAFHDPA, 5 HP, total 2		
		Treatment Plant Service building			
		Dimensions	30' x 50'		
		Main Structure Material	concrete block		
		Roof type	asphalt shingle		
		Doors	steel		
		HVAC	exhaust fans. GE Heat Pump wall unit 12.000 BTU/Hr		
		Laboratory/Office	interior room with ph meter and basic laboratory equipment		
		Bathroom	toilet, sink, 12 gal electric hot water heater		
		Electric			
		MCC	Square D		
		Main Disconnect	400 AMP		
		Transformer	EGS Hevi-Duty 50 KVA		
		Alarm	Verbatim		
		Disinfection System			
		Chlorination system	sodium Hypochlorite		
		electrical/controls	Paul CTOT		
		Dechlorination chem			
		Dosing Pump			
		Consultan			
		Generator	Cumming		
		size	175 KW/218 KVA		
		fuel	Diesel		
		fuel tank size	300 gallons		
		ATS	Cummins Power Command		
		SDRAV IRRIGATION SVETENA			
			Two Fairbanks Morse Verticle Turbine Pumos Model 7100-50 HP 1200 RPM 3 ph 460 V		
			One - Grundfos 7.5 HP Booster Pump		
		Pump Controls	Two - Saftronics VFD control panels		
		Aerators	Two - 15 HP floating (Secondary lagoon), underwater floating tube diffusers (Aqua Aerobic)		
		Weather system	Climatronics		
		•	1		

4.4. SPRINGHILL FARMS WASTEWATER TREATMENT PLANT

Facility Description (see attached Information Sheet)

The Springhill Farms Wastewater Treatment Plant was constructed in 1988. The system consists of the following components:

- Influent wet well/ Pump Station
- Bar Screen
- Extended Aeration Treatment System
- 5 Blowers
- Service Building
- Emergency Generator
- Chlorination and Dechlorination system

Influent Wet well/Pump Station

The Influent wet well is a 7-ft x 7-ft precast concrete structure with two (2) Hydromatic model S4 3 HP, 3 PH, 230 V grinder pumps. A bar screen is located at the head of the treatment tanks. The pumps are control by a Usemco, Inc. Control Panel located in the Service Building.

Service Building

The Service Building (32-ft x 20-ft) is constructed of concrete block with a stucco finish, the roof is constructed of asphalt shingles. The interior consists of a blower room which also houses the pump control panels and equipment storage, fluorescent lighting, exhaust fans, electric unit heaters, 10-gallon hot water heater, chlorination storage and dosing pump, de-chlorination storage and dosing pump and instrumentation.

The building and equipment are powered by a 300A Square D service panel.

A prefabricate wooded shed is located between the two process trains containing the liquid aluminum sulfate tank (325 gallons), dosing pump and bags of sodium bicarbonate.

Extended Aeration System

The treatment system is a Dutchland Extended Aeration Process rated for 100,000 GPD (0.10 MGD). The process consists of a bar screen, splitter box, equalization tanks, aeration, settling, return activated sludge (RAS) pumps and sludge storage. There are two trains in parallel, each train is constructed of precast concrete and are approximately 85-ft long x 16-ft wide. Process controls include a GLI model turbidity meter, Aluminum Sulfate addition and Sodium Bicarbonate addition.



<u>Blowers</u>

There are 5 total blowers that feed air to the treatment process. (3) 10 HP Roots Model 45 U-RAI supply air to the aeration tanks, (2) 5 HP blowers supply air to the Equalization Tank and the Sludge Holding Tank.

<u>Generator</u>

The generator is a Cummins 100 KW, 125 KVA, 200 HP unit located outside on the south side of service building. An integral 308-gallon diesel fuel tank is located below the generator. A Cummins Power Automatic Transfer Switch (ATS) is located outside on the south wall of the service building.

Chlorination System

A precast concrete chlorine contact tank is located west of the service building. The tank is segmented for chlorine contact, de-chlorination contact and a wet well for the discharge pumps. A V-Notch weir is located in one of the chambers for flow measurement. A Badger Ultrasonic sensor is mounted in the top slab of the tank. The flow meter read out and totalizer are mounted in the service building. Chlorine dosage is controlled by a HACH CL17 chlorine analyzer.

The effluent pumps are (2) Hydromatic 1 HP pumps discharging into a 4-inch forcemain.





Figure 1 – Influent Pump Station

Figure 2 – Bar Screen



Figure 3 – Treatment Chambers (South Train)

Figure 4 – Treatment Facility





Figure 5 -Liquid Alum Tank

Figure 6 - Storage Shed



Figure 7 – Service Building

Figure 8 – Chlorine Contact / Discharge Chamber





Figure 9 - Generator



Figure 10 - ATS



Figure 11 – Electrical Main Panel



Figure 12 – Instrumentation and Controls





Figure 13 – Sodium Hypochlorite Storage Tank

Figure 14 - Sodium Thiochlorite Storage Tank



Figure 15 – Influent Pump Control Panel



CODE		UNIT	DESCRIPTION	YEAR INSTALLED	COMMENTS
	Treatment	processes			
		facility description	Dutchland extended aeration system consisting of a influent pump station with grinder pumps, spitter box, 2 system trains with flow equalization, aeration, sludge storage, RAS pumps, chlorination and dechlorination. Installed in 1988. The plant is permited for 100,000 GPD.	1988	
		Headworks			
		Wetwell	7' x 7' x 15' (est) deen Met Mell		
		Influent Pumps	3 HP, 230 V, 3ph. Hydromatic Model S4		
		screen unit	Bar Screen		
		Other	Davit Crane		
		Treatment Unite			
		Structure	Presast Constate two (approx 85' v 16')		
		Manufacturer	Dutchland		
		Description	Equalization, Aeration, Clarification, Chlorination, Dechlorination		
		RAS Controls	air lift pumps		
		Blowers			
		Description	Roots Model 45 U-RAI, Three 10 HP and t 5 HP		
		Treatment Plant			
		Service building			
		Dimensions	32' × 20'		
		Main Structure Material	concrete block with stucco exterior		
		Roof type	asphalt shingle		
		Doors	isteel interior motal balido and florocropt outorior, wall packs		
		HVAC	exhaust fan		
		Laboratory/Οπιζε	interior space with how meter chart, how oisplay unit, turoidry monitor, sooium nybochionte noiding tank, Sodium Thiosulfate decholination holding tank, chlorine analyzer, LMI dosing pumps		
		Electric			
		MCC	N/A		
		wain Disconnect	suu amp main - square D		
		Alarm	Verbatim Series VSS		
		Disinfection Sustan			
		Chloringtion system	líquíd Sodium Bunochlarita		
		Dosing Pump	Inquia sociam hypochiome		
		electrical/controls	Hach CL17		
		Dechlorination chem	Sodium thiosulfate		
		Dosing Pump			
		Generator			
		Manufacturer	Cummins		
		size	100 KW, 125 KVA, 200 HP		
		fuel	Diesel		
		fuel tank size	308 gallons		
		AIS	Lummins Power Command		
		Flow meter	Badger Ultrasonic		
		turbidity meter	GLI Model 53		

MASTER	PUMP	STATION	LIST
--------	------	----------------	------

Pump Station # (Facility ID)	Geographic Area	Municipality	Station Name
PS-A	Western	Rose Valley	Brookhaven Road
PS-B	Western	Rose Valley	Old Mill
PS-1	Western	Chester	Chester
PS-2	Western	Chester	8th Street
PS-3	Western	Chester	PS-6 WRTP
PS-4	Western	Chester	Feltonville
PS-7	Eastern	CDCA	Central Delaware County
PS-8	Eastern	МА	Muckinipates
PS-9	Eastern	ACJA	Darby Creek
PS-10	Western	Eddystone	Eddystone
PS-11	Western	Marcus Hook	Marcus Hook
PS-12	Western	Trainer	Price Street
PS-13	Western	Trainer	Smith Street
PS-16	Western	Chester	Broomall Street
PS-22	Western	Marcus Hook	Delaware Avenue Ejector Sta.
PS-23	Western	Marcus Hook	Viscose Village
PS-24	Western	Chester	Stadium (aka Riverfront)
PS-26	Western	Rose Valley	Longpoint Lane Ejector Sta.
PS-27	Western	Aston	Chester-Ridley Creek
PS-28	Eastern	Edgmont Twp	Bridle Way (EPS-1)
PS-29	Eastern	Edgmont Twp	Runnymeade (EPS-2)
PS-30	Eastern	Edgmont Twp	Dream Valley (EPS-3)
PS-31	Western	Rose Valley	Rose Valley
PS-33	Western	Chester	Delaware River Interceptor Bypass

4.5. PUMP STATIONS

PS-1 - Chester PS

Facility Description (see attached Information Sheet)

PS-1 is wet well / dry well station located at 113 W. 2nd St, Chester, PA originally installed in 1976. The pump station has three (3) 14,000-GPM Allis-Chambers Horizontal Non-Clog Centrifugal pumps installed in 2004. There are two vertical sewage pumps which at one time pumped directly to the Delaware River, but are now decommissioned.

The station has dual gravity grit collection channels and two (2) influent Duperon screens, which were replaced in 2017. The grit collection equipment is carbon steel construction in poor condition. The grit collection bucket chains were recently replaced. The grit buckets and housings are in very poor condition. The grit conveyor was recently updated. The pump station wet well is unlined concrete (1,394 Sq. Ft.) and is covered with FRP grating in serviceable condition.

The three Horizontal Non-Clog Centrifugal pumps take suction from the wet well. Each pump has an 18-inch Pratt cone valves, a 24-inch motorized knife gate suction valves, and a 24-inch motorized Dezurik plug discharge valves. The pumps have 400 HP, 460Vmotors, which are VFD controlled.

The PLC based control panel was manufactured by General Electric. The station has a new magnetic flow meter. SCADA communications are by directional radio and fiber optics.

The pump system has a separate Grit/Screen Building (1,936 Sq. Ft.) The Building (4,226 Sq. Ft.) is constructed of Pre-Cast Panels in good condition. Membrane roof was recently replaced. The buildings have fluorescent lighting and painted carbon steel doors. There are two overhead cranes to service the screen area and the pump room. The dry well is multi-level and extends below grade.

The pump station has dual utility feeds and the Automatic Transfer Switch (ATS) switches between the two. The pump VFDs have been installed in the near past. The bulk of the station's MCC is original and in need of replacement.

The entire property is surrounded by 522 LF of galvanized steel chain link fence.

Property Condition

A majority of the equipment has been upgraded in the 2000's. The building, pumps and electrical systems are in good condition; the HVAC systems are in fair condition.





Figure 1 – Bar Screen Discharge



Figure 2 – Bar Screens



Figure 3 – Pump Assembly



Figure 4 – Building Boilers





Figure 5 – System Display Monitor



Figure 7 – MCC



Figure 6 – Pump Control Panel



Figure 8 – Bar Screen Control Panel





Figure 9 – Knife Gate Valve

Figure 10 – Screening Building



Figure 11 – Primary Settling Tanks



Figure 12 – Overhead Crane





PUMP STATION #		PS-1		Scheduled Visit Date:	10/25/2019	FRI
Station Name	e	Chester	Phone #			
Location		113 W. 2nd St, Chester, PA		1		
Start Up Date	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Orginal			
		No. of Pumps	3			
			Horizontal Non-Clog			
		Type	Centrifugal			
		Pump Manufacturer	Allis-Chalmers			
		Pump Model Number	SSEH			
		Year Installed	2004			
		Pump GPM	14000 GPM			
		Pump TDH Ft.	87'			
		Outlet Size	18"			
		Motor HP				
		Motor Voltage	460 V			
371.3		Pump Control (VFD?)	VFD			
370.3		WETWELL				
		Condition	Good			
		Size	1,394 Sq. Ft.			
		Material	Concrete			
		Lined	N/A			
		Hatch	N/A			
		Vent	N/A			
		Rails	N/A			
		Cable	N/A			
		Piping	Steel			
371.3		CONTROL PANEL				
		Manufacturer	General Electric			
		Year Installed	2009			
		Model	Fanuc			
361		INFLUENT PIPING (IF KNOWN)			
		Material				
		Diameter				
371		SCREEN				
		Manufacturer	(2) Duperon screens			2 Screens
		Model				
		HP				
		Year Installed	2017			
371		CRANE/HOIST				
		Manufacturer	Clevland Tramrail			
		Model	2 Ton Crane			
		Year Installed	1976			
360		VALVES (DISCHARGE)				
		Туре	Cone	Knife Gate	Plug	
		Manufacturer	Pratt		Dezurik	
		Size	18''	24''	24"	
		# 	3	January 3, 1900	January 3, 1900	
		Year Installed	2008	May 29, 1905	May 29, 1905	
355		GENERATOR	N1/A			
		Manufacturer	N/A			
		Generator KW	N/A			
		Generator KVA	N/A			
		Fuer Tank (Gais)	N/A			
355		AIS (mant/model #)	N/A			
			N/A			
360		FORCE MAIN	40"	E 411		
		Force Main Size	48	54"		
		Force Main Mat.	500	12.020		
		Vear Installed	2000	12,030		
		Discharge Point	2009	2009		
		Discharge Point Location				
1	1	pischarge i Unit LotatiUn		1		1

CODE	SUBCODE	PUMP STATION				COMMENTS	
354.2		BUILDING	Pump Building				
		Condition	Good				
		Size	4,226 Sq. Ft.				
		Main Structure Material	Pre-Cast Panels				
		Roof Type	Membrane				
		Roof Condition	Good				
		Doors (number /material)	6/ Steel				
		Lighting (Type)	Flourescent				
		Year Installed	1976				
		ELECTRICAL					
371.3		мсс	Westinghouse 1800 A Switchboard & Westinghouse MCC				
396		Alarm System (manf/ model)	APC SCADA Based				
		Year Installed					
354.3		HVAC	Electrical Room				
		Condition	Aging				
		Туре	Mechanical Cooling				
		Manufacturer					
		Year Installed	1976				
364		Flow Meter	Krohne Mag Meter				
364		Chart Recorder	SCADA				
354.3		Hydrants	N/A				
		GROUNDS					
354.3		Fence Length	522'				
		Fence T ype	Galvanized Steel Chain Link				
		Year Installed	1976				
354.3		Paving and Walkways	Asphalt				
371.3		ODOR CONTROL					
		Manufacturer	N/A				
		Туре	N/A				
		MISCELLANEOUS		DESCR	RIPTION OF FACILITY		
		Other Buildings	Grit/ Screen Building (1,	,936 Sq. Ft.) in Good co	ndition		
		Spare Parts					
		Vac Truck Suitable					
		Does the PS have a Sanitary O	verflow? Size and Mater	ial?			
OVERALL BU	ILDING AND	FACILITY ASSESSMENT					
2002 - Install	Bar Screen						
2004 - PS Upgrade							
2004 - PS Conveyor Installation							
2009 - Force	main Replace	ement					
2009 - PS & \	/alve Replace	ement					
2009 - Bulkh	ead Replacen	nent					

Overall condition of the two building and equipment is good. Improvements have been made several time since the original construction. Some sections of concrete is showing minor deterioration, oiginal grit chamber has significant metal deterioration.

PS-2 - 8th Street PS

Facility Description (see attached Information Sheet)

PS-2 is located at 99 W. 8th St. Chester, PA and is equipped with two (2) 330-GPM Submersible pumps. Wastewater is discharged through a 4-inch force main. The original pump station was installed in 1996. The pump station controls were upgraded in 2003.

The pump wet well is Poured Concrete (8-ft x 8-ft x 15 ft D (est.)) with 2 hatchways. The control panel is manufactured by Flygt. The pump system has a separate Valve Pit with a 5-ft x 4-ft Aluminum Hatch with (2) 4-inch gate valves.

There is no building at this facility.

There is no generator or Automatic Transfer Switch (ATS) at this facility.

The entire property is surrounded by a 24-foot x 24-foot x 8-foot high cyclone fence.

Property Condition

Electronics and pumps were upgraded in 2003 and 1996 respectively and are in good condition. Wet well concrete and hatch are in fair condition.





Figure 1 – Facility Site



Figure 2 – Pump Control Panel



Figure 3 – Pump Control Panel



Figure 4 – Gate Valves & By-Pass Connection



PUMP STATION #		PS-2		Scheduled Visit Date:	10/23/2019	WED
Station Name	e	8th Street	Phone #			
Location		99 W. 8th St. Chester, PA				
Start Up Date	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition				
		No. of Pumps	2			
		Туре	Submersible			
371.3		Pump Manufacturer	Flygt			
		Pump Model Number				
		Year Installed	1996			
		Pump GPM	330			
		Pump TDH Ft.	22			
		Outlet Size				
		Motor HP	3 HP			
		Motor Voltage	240V (3) Ph			
371.3		Pump Control (VFD?)	Floats			
370.3		WET WELL				
		Condition				
		Size	8' x 8' x 15' D			5' x 4' Alum Hatch, estimated depth
		Material	Poured Concrete			· · · ·
		Lined				
		Hatch				
		Vent				
		Rails				
		Cable				
		Piping				
371.3		CONTROL PANEL				
		Manufacturer	Flygt			
		Year Installed	1996			RTU Unit and other electronics upgraded in 2003
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN	N/A			
		Material				
		Diameter				
371		GRINDER	N/A			
		Manufacturer				
		Model/Serial number				
		НР				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)		Valve Pit		
		Туре	Gate			
		Manufacturer				
		Size	4			
		# 	2			
255		Year Installed	1996			
355		GENERATOR	N/A			
		Generator KVA				
		Fuer Lank (Gais)				
355		AIS (mant/model #)				
200		rear installed				
360		FUKLE IVIAIN	01			
		Force Main Size	8 [°]			
		Force Main Mat.				
		Voor Installed	1051			
		Discharge Point	1321			
		Discharge Point Lesstion				
1		piscial ge POINT LOCATION	1	1		

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	Breaker Panel			
396		Alarm System (manf/ model)	Verbatim			
		Year Installed	1996			
354.3		HVAC_	N/A			
		Condition				
		Туре				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	24' x 24' x 8' H			
		Fence Type	Cyclone			
		Year Installed				
354.3		Paving and Walkways				
371.3		ODOR CONTROL	N/A			
		Manufacturer				
		Туре				
		MISCELLANEOUS		DESC	RIPTION OF FACIL	ITY
		Other Buildings	Valve Pit w/ 5' x 4' A	lum Hatch		
		Spare Parts	No			
		Vac Truck Suitable	Yes			
		Does the PS have a Sanitary O	verflow? Size and Ma	aterial?		
OVERALL BU	ILDING AND	FACILITY ASSESSMENT				
Electronics an condition.	nd pumps ha	ave been upgraded in 2003 and	1996 respectively.	Wet well concrete and I	natch in fair	

<u> PS-3 – WWTP PS-6</u>

Facility Description (see attached Information Sheet)

PS-3 is submersible pump station located at the Western Regional Treatment plant and was installed in 2017. The station is in like new condition. The station has (4) 5,200GPM, 250 HP submersible pumps. The station accepts septage and other hauled wastes and has a separate pump station to hand this waste. The treatment plant's incoming main and incoming power switchgear is located on the second floor of the pump station building.

The influent is screened by (2) Duperon upright bar screens. The septage is pumped into a channel with (1) Duperon Flex Rake Screen. The two flows are combined and flow into the lined concrete wet well.

Pumps are 460 volts and controlled by Yaskawa VFDs. The system is monitored and controlled by a PLC base control system with SCADA communication. The treatment plant has a dual feed electrical service.

The Building is constructed of CMU with and EPIS stucco finish. The Membrane roof in new condition. The building has well separated screening, pump station electrical controls, and plant substation electrical switch gear areas. Each area has its own forced air ventilation system. The electrical rooms have mechanical cooling. The building contains LED lighting.

The station has a Strobic Air Tri-Stack high volume air/ exhaust dilution system to collect and disperse odors.

The facility sits within the property boundary of the WRTP.

Property Condition

The building and all mechanical and electrical equipment are in good condition.




Figure 1 – Electric Room



Figure 3 – Odor Control Fans



Figure 2 – Pump Control Room



Figure 4 – Bar Screens





Figure 5 – Screenings Disposal



Figure 6 – Pump Station Wet Well



Figure 7 – Wet Well



Figure 8 – System Monitor





Figure 9 – Cooling Units

Figure 10 – Plant's Main Incoming Power Switchgear



Figure 11 – H2S Removal System

Figure 12 – Building



			1			
		P5-5		Scheduled Visit Date:	10/25/2019	FRI
Station Nam	ie	PS-6	Phone #			
Location		WWTP				
Start Up Dat	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	New			
		No. of Pumps	1			
		Ture	4 Culture and bla			
274.2		Type	Submersible			
371.3		Pump Manufacturer	Fiygt			
		Pump Model Number				
		Year Installed	2017			
		Pump GPM	5,200			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	250 HP			
		Motor Voltage	460 V			
371 3		Pump Control	VED			
370.3			110			
570.5		Condition	Neur			
		condition	New			
L		Size				
		Material	Concrete			
		Lined	Ероху			
		Hatch	Aluminum			
		Vent	N/A			
		Rails	Stainless Steel			
		Cable	Stainless Steel			
		Piping	Ductile Iron			
371 3						
571.5		Manufacturor	Conoral Electric			
		Manufacturer Vess Installed				
		rear installed	2017			
		Model	Not Accessible; Presume GE 90-70			
361		INFLUENT PIPING				
		Material	Ductile Iron			
		Diameter				
371		SCREEN				
		Manufacturer	(2) Duperon screens, (1) Duperon Flex Rake Screen (Sludge)			
		Model				
		НР				
		Vear Installed	2017			
271			2017			
5/1						
		Model				
		Year Installed				
360	1	VALVES (DISCHARGE)				
		Туре	Plug			
		Manufacturer				
		Size				
		#				
		Year Installed				
355		GENERATOR				
		Manufacturer	Ν/Δ			
		Generator KW	N/A			
			N/A			
			N/A			
		Fuel Tank (Gals)	N/A			
355		ATS (manf/model #)	N/A			
		Year Installed	N/A			
360		FORCE MAIN	N/A			
		Force Main Size				
		Force Main Mat.				
		Length in Feet				
—		Year Installed				
		Discharge Point				
<u> </u>						
1	1	Discharge Point Location		1	1	

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	Good			
		Size				
		Main Structure Material	CMU			
		Roof Type	Membrane			
		Roof Condition	New			
		Doors (number /material)	5/ Steel			
		Lighting (Type)	LED			
		Year Installed	2017			
		ELECTRICAL				
371.3		мсс	Eaton 13.2 KV Switchgear & Eaton 3000 A Distrubution Switchboard			
396		Alarm System (manf/ model)	APC SCADA Based & Edwards Fire/ Security Panel			
		Year Installed	2017			
354.3		<u>H∀AC</u>				
		Condition	Good			
			Centrifugal Fan/			
		Туре	Air Duct			
		Manufacturer				
		Year Installed	2017			
364		Flow Meter	(2) KROHNE Mag Meters			
364		Chart Recorder	SCADA			
354.3		Hydrants	N/A			
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	Asphault			
371.3		ODOR CONTROL				
		Manufacturer	Strobic Air			
		Туре	Dilution			
		MISCELLANEOUS		DESCRIPTIO	N OF FACILITY	
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary O	verflow? Size and Material?		No	

Appendix D Page 56 of 598

<u> PS-4 - Feltonville PS</u>

Facility Description (see attached Information Sheet)

PS-4 is located at 2432 Concord Rd. Chester, PA and is equipped with two (2) 200 GPM 10 HP Vaughan Chopper pumps. The pump station was installed in 1970.

The pump wet well is poured concrete (5-foot x 10-foot x 17.5-foot deep) with 3-foot x 4.5-foot aluminum hatchway. The control panel was a generic manufacturer. There are (2) 4-inch iron check valves, (2) 4-inch PVC call valves, installed in 1970.

There is no building at this facility. There is no generator or Automatic Transfer Switch (ATS) at this facility.

The entire property is surrounded by a 31-foot x 18-foot x 6-foot high cyclone fence.

Property Condition

The facility is in fair condition.





Figure 1 – Pump Station Site



Figure 3 – RTU Panel



Figure 2 – Dry Pit from Top Entrance



Figure 4 – Pump and Motor in Dry Pit





Figure 5 –View Up from Dry Pit



Figure 6 – Pump Control Panel



PUMP STATION #		PS-4		Scheduled Visit Date:	10/22/2019	TUE
Station Nam	e	Feltonville	Phone #			
Location		2432 Concord Rd. Chester, PA	l l			
Start Up Dat	е	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Good			
		No. of Pumps	2			
		Туре	Chopper			
		Pump Manufacturer	Vaughan			
		Pump Model Number	WKO			
		Year Installed	1970			
		Pump GPM	200			
		Pump TDH Ft.	411			
		Outlet Size	4"			
		Motor HP	10 HP			
271.2		Notor Voltage	240V			
371.3		Pump Control (VFD?)	FIGALS			
570.5		Condition				
		Size	5' v 10' v 17 5' D			Dry Well 7' x 8' x 17 5' D Poured Concre
		Material	Poured Concrete			
		lined	r burea concrete			
		Hatch	3' x 4.5' Alum			
		Vent	3 - 4" steel			
		Rails				
		Cable				
		Piping				
371.3		CONTROL PANEL				VFD1-2
		Manufacturer	Unknown			RTU Unit
		Year Installed				
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN	1			
		Material				
		Diameter				
371		GRINDER	N/A			
		Manufacturer				
		Model/Serial number				
		HP Veer Installed				
271			N/A			
571		Manufacturer	NA			
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	IRON Check	PVC Ball		
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		GENERATOR	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
255		Fuel Tank (Gals)				
355		AIS (mant/model #)				
200						
300		FORCE IVIAIIN	8"			
		Force Main Mat				
		length in Feet	925			
		Year Installed	1970			
		Discharge Point	10,0			
		Discharge Point Location				
		. –			1	

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		мсс	Breaker Panel			
396		Alarm System (manf/ model)	RTU Unit			
		Year Installed				
354.3		HVAC				
		Condition				
		Туре				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	31' x 18' x 6' H			
		Fence Type	Cyclone			
		Year Installed				
354.3		Paving and Walkways				
371.3		ODOR CONTROL	N/A			
		Manufacturer				
		Туре				
		MISCELLANEOUS		DESCI	RIPTION OF FACILIT	Y
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary O	verflow? Size and N	1aterial?		
OVERALL BU	JILDING AND	FACILITY ASSESSMENT				
Pump statio	n. wet well. r	pump controls, electrical and H	VAC are all in fair co	ondition.		

PS-7 - Central Delaware County PS

Facility Description (see attached Information Sheet)

PS-7 is wet well / dry well located at 563 W. Sellers Ave, Ridley Park, PA and is equipped with four (4) 9,266-GPM vertically shafted non-clog sewage pumps manufactured by Allis-Chambers. The original pump station was installed in 1980 and was upgraded in 2001. Wastewater is discharged through a 36 -inch DIP force main. The discharge flow can be directed to either the Western Regional Treatment Plant or the City of Philadelphia for treatment. During high flow periods, motorized plug valves automatically divert the flow to Philadelphia. The motorized plug valves and flow meters are located in underground concrete vaults.

The pump wet well is un-lined concrete (600 Sq. Ft.). The station influent is screened with two Duperon Upright Screen units. The screens and screenings conveyors were place in 2017.

The four vertical Non-Clog Centrifugal pumps take suction from the wet well. Each pump has a 14inch Pratt cone valves, 24-inch motorized knife gate suction valves, and a 24-inch motorized Dezurik plug discharge valves.

The pumps have 450 HP 460V motors, which are VFD controlled. The PLC based control panel was manufactured by General Electric. The station has a magnetic flow meter. SCADA communications are redundant with directional radio and fiber optics.

The pump station has dual utility feeds and the Automatic Transfer Switch (ATS) switches between the two. The pump VFD's and the station's MCC are General Electric and were replaced with the 2006 upgrade.

The Building (2,400 Sq. Ft.) is constructed of Brick/ CMU in good condition. The membrane roof was recently replaced. The screen area/ wet well and pump room are well separated. A new electrical room was added in 2001. The building contains fluorescent lighting. The doors are painted carbon steel. . The ventilation systems are a ducted forced air system is in fair condition. The pump room has an overhead gantry crane. The dry well is multi-level and extends below grade.

The entire property is surrounded by 800 LF of galvanized steel chain link fence.

Property Condition

There have been significant upgrades made to the pump station over the last 10 years. The facility is in good condition.





Figure 1 – Building Front



Figure 3 – Screen Units

Figure 2 – Building Rear



Figure 4 – MCC (In Background)







Figure 5 – Harmonic Filter

Figure 6 – Pump & Discharge Piping



Figure 7 – Pump

Figure 8 – Electric Room





Figure 9 – Pump Control Panel



Figure 10 – Transformers



Figure 11 –Pump Room

Figure 12 – Discharge Manifold

PENNONI **Consulting Engineers**

Pennon

PUMP STATION #		PS-7		Scheduled Visit Date:	10/25/2019	FRI
Station Name	9	Central Delaware County	Phone #			
Location		563 W. Sellers Ave, Ridley Park	, РА			
Start Up Date	9	1980				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Good			
		No. of Pumps	4			
			Vertically Shafted			
			Non-Clog Sewage			
		Туре	Pump			
371.3		Pump Manufacturer	Allis-Chalmers			
		Pump Model Number	NSWV 16x14			
		Year Installed	2001			
		Pump GPM	9266			
		Pump T DH Ft.	150'			
		Outlet Size	14''			
		Motor HP	450 HP			
		Motor Voltage	460 V			
371.3		Pump Control (VFD?)	VFD			
370.3		WET WELL				
		Condition	Good			
		Size	600 Sq. Ft.			
		Material	Concrete			
		Lined	No			
		Hatch	Yes			
		Vent	N/A			
		Rails	N/A			
		Cable	N/A			
		Piping	Ductile Iron			
3/1.3						
		Manufacturer	General Electric			
		Year Installed	June 23, 1905			
261		INIGAEI	Funac			
301		Matarial	DCD			
		Diameter	RCP 49''			
371		SCREEN	40			
5/1		Manufacturer	Duperon			2 Screens
		Model	Buperon			
		HP				
		Year Installed	2017			
371		CRAIN/HOIST				
		Manufacturer	American			
			Overhead Gantry			
		Model	4 T on			
		Year Installed	1980			
360		VALVES (DISCHARGE)				
		Type	(Suction) Knife Gate	(Pump Control) Cone	(Discharge) Plug	
		Manufacturer		Pratt	Dezurik	
		Size	24''	14''	24''	
		#	4	4	4	
		Year Installed	1980	2001	1980	
355		GENERATOR				
		Manufacturer	N/A			
		Generator KW	N/A			
		Generator KVA	N/A			
		Fuel Tank (Gals)	N/A			
355		ATS (mant/model #)	N/A			
		Year Installed	N/A			
360			0.011			
		Force Main Size	36"			
		Force Main Mat.	PCCP			
		Length in Feet	9,820			
		Discharge Point	1311			
		Discharge Point Location				
1		piscinal ge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS	
354.2		BUILDING					
		Condition	Good				
		Size	2,400 Sq. Ft.				
		Main Structure Material	Brick/ CMU				
		Roof T ype	Membrane				
		Roof Condition	Good				
		Doors (number /material)	7/ Steel				
		Lighting (T ype)	Flourescent				
		Year Installed	1980				
		ELECTRICAL					
			Square-D/ Penn Panel				
			Unit				
			Substation & GE 7700				
371.3		мсс	MCC				
			APC SCADA Based &				
			Gamewell/				
			Zans Fire/ Security				
396		Alarm System (manf/ model)	Panel				
		Year Installed					
354.3		HVAC	Electrical Room				
		Condition	Aging				
			Centrifugal Fan				
		Туре	Air Ducts				
		Manufacturer					
		Year Installed	1980				
364		Flow Meter	Mag Meter				
364		Chart Recorder	SCADA				
354.3		Hydrants	N/A				
		GROUNDS					
354.3		Fence Length	813'				
			Galvanized Steel				
		Fence T ype	Chain Link				
		Year Installed	1980				
354.3		Paving and Walkways	Asphalt				
371.3		ODOR CONTROL					
		Manufacturer	N/A				
		Туре	N/A				
		MISCELLANEOUS		DESCRIP	TION OF FACILITY		
		Other Buildings					
		Spare Parts					
		Vac Truck Suitable					
		Does the PS have a Sanitary Ov	verflow? Size and Materia	al?			
2006 - Switchgear Modification							
2006 - PS Upgrades							
2009 - Harmonic Filter Installation							
2012 - Controls System Upgrades							
OVERALL BU	LDING AND	FACILITY ASSESSMENT					
There have b	een significai	nt upgrade made to the pump	station over the last $10 verthe vertices$	ears. The facility is in good	condition.		

PS-8 - Muckinipates PS

Facility Description (see attached Information Sheet)

PS-8 is wet well / dry well station located at 100 Amosland Rd. Norwood, PA and has three (3) 4,200 GPM vertically shafted non-clog sewage pumps manufactured by Flght-Xylem. The pump station was installed in 1980 and pumps replaced in 2012. Wastewater is discharged through 30-inch DIP force main and is directed to the City of Philadelphia for treatment.

The pump wet well is un-lined concrete (600 square-feet). The station influent is screened with two (2) Duperon Upright Screen units. The screens and screenings conveyors were replaced in 2017.

The four vertical Non-Clog Centrifugal pumps take suction from the wet well. Each pump has a 12inch Pratt cone valve, 24-inch motorized knife gate suction valves, and an 18-inch motorized Dezurik plug discharge valves

The pumps have 100 HP 460V motors, which are VFD controlled. The PLC based control panel was manufactured by General Electric. The station has a magnetic flow meter. SCADA communications are redundant with directional radio and internet cable. The flow meter is located in a separate concrete vault.

The pump station has dual utility feeds and the Automatic Transfer Switch (ATS) switches between the two. The pump VFDs are as manufactured by Siemens. The station's MCC are General Electric and are original to the station

The building (1,944 square-feet) is constructed of Brick/CMU and membrane roof in good condition. The screen area/wet well and pump room are well separated. The building contains fluorescent lighting. The doors are painted carbon steel. The ventilation systems are a ducted forced air system is in fair condition. The pump room has an overhead gantry crane. The dry well is multi-level and extends below grade.

The entire property is surrounded by 750 feet of galvanized steel chain link fence. The access drive is in poor condition. The paved area around the station is in fair condition.

Property Condition

The building, pump equipment and electrical components are in good condition. The HVAC systems are aging.





Figure 1 – Pump Building



Figure 2 – Wet Well



Figure 3 – Transformers



Figure 4 – Bar Screens





Figure 5 – Building Interior / Overhead Crane



Figure 7 – Pump Motor / MCC



Figure 6 - Building Interior / MCC



Figure 8 - VFD







Figure 11 – Dry Pit from Top



Figure 10 - MCC



Figure 12 – Pump Room





Figure 13 – Pump



Figure 14 - Pump



PUMP STATION #		PS-8		Scheduled Visit Date:	10/25/2019	FRI
Station Name	e	Muckinipates	Phone #			
Location		100 Amosland Rd. Norwood, F	PA			
Start Up Date	9	1980		1		
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Good			
		No. of Pumps	3			
		Туре	NSWV			
371.3		Pump Manufacturer	Xylem-Flygt			
		Pump Model Number	200			
		Year Installed	2012			
		Pump GPM	4200 GPM			
		Pump TDH Ft.	51'			
		Outlet Size	12"			
		Motor HP	100 HP			
271.2		Motor Voltage	460 V			
3/1.3		Pump Control (VFD?)	VED			
370.3			Card			
			G000			
		Matarial	Concrete			
		lined	No			
		Hatch	Yes			
		Vent	N/A			
		Rails	N/A			
		Cable	N/A			
		Piping	Ductile Iron			
371.3		CONTROL PANEL				
		Manufacturer	General Electric			
		Year Installed	2012			
		Model	Fanuc			
361		INFLUENT PIPING (IF KNOWN	<u>u</u>			
		Material	RCP			
		Diameter	36"			
371		SCREEN	-			
		Manufacturer	Duperon			2 Screens
		Model				
		HP Veet Installed	2017			
271			2017			
5/1		Manufacturer	American			2 Contrios
		Manufacturer	Overhead Gantry			
		Model	2 Ton			
		Year Installed	1980			
360		VALVES (DISCHARGE)				
			(Suction) Knife			
		Туре	Gate	(Pump Control) Cone	(Discharge) Plug	
		Manufacturer		Pratt	Dezurik	
		Size	24''	12"	18''	
		#	3	3	3	
		Year Installed	1980	2012	1980	
355		GENERATOR				
		Manufacturer	N/A			
		Generator KW	N/A			
		Generator KVA	N/A			
		Fuel Tank (Gals)	N/A			
355		ATS (mant/model #)	N/A			
200			N/A			
360		FORCE MAIN	10"			
		Force Main Mat				
		length in Feet	8 800			
		Year Installed	1977			
		Discharge Point				
		Discharge Point Location				

354.2 BULDING Good Image: State in the	CODE	SUBCODE	PUMP STATION				COMMENTS	
Condition Good Size 1.944 Sq. FL Roof Type Membrane Roof Candition Good Doors (number/material) 7/ Steel Doors (number/material) 7/ Steel Uptiting (Type) Hembrane Uptiting (Type) Roor Economic Bit (Type) Roor Economic Uptiting (Type) Roor Economic 371.3 MCC 8 GE 7700 MCC 364 Alarm System (mant/ model) APC SCADA Based Vari Installed ISBA Stata MAC Electrical Room Electrical Room Type Alar Bystee Vari Installed ISBA Uptiting (Transite) ISBA Stata Hydronis N/A Electrical Room Stata Hydronis N/A Electrical Room Stata Hydronis N/A Electrical Room Stata Hydronis N/A Electrical Room <td< td=""><td>354.2</td><td></td><td>BUILDING</td><td></td><td></td><td></td><td></td></td<>	354.2		BUILDING					
Size 1.944 Sq. FL Image: Structure Material Brdc/C CMU Roof Type Membrane Good Roof Candition Good Good Doors (number/material) 7/ Steel Image: Steel Upting Type) Flourescent Image: Steel Verain Tistalled 1930 Image: Steel 371.3 MCC & GE 13.2 KV Unit Substation Substation Image: Steel 396 Alarn System (manf/ model) APC SCADA Based Year Installed Image: Steel Image: Steel Substation Image: Steel Image: Steel Yaer Installed Image: Steel Image: Steel Type Alarn System (manf/ model) APC SCADA Based Manufacturer Image: Steel Image: Steel Vaer Installed 1980 Image: Steel Steal Flow Meter Stabanition Steal Flow Meter Stabanition Steal Flow Meter Stabanition Steal Flow Meter Stabanition Steal Flow Meter Image:			Condition	Good				
Main Structure Material Brick/ CMU Brick/ CMU Boof Condition Good Doors (number /material) 7/ Steel Upting (Type) Flourescent Upting (Type) Statistion 371.3 MCC & 65 720 MCC 396 Alarm System (mant/ mode) Vear installed Electrical Boom Vear installed Issatian Statistion Aging 354.3 HVAC How Keter Centrifuga Fan Manufacturer Manufacturer Vear Installed Issa Statistion N/A Statistion SCADA Statistion SCADA Statistion N/A Genotifuga Fan Issa Type Alar Ducts Manufacturer Issa Vear Installed Issa Fence Length 758' Galvanized Steel Issa Fence Length Galvanized Steel Fence Length Sisa Manufacturer N/A Manufacturer N			Size	1,944 Sq. Ft.				
Roof Type Membrane Roof Condition Good Doors (number / material) 7/ Steel Ughting (Type) Flourescent Ughting (Type) Flourescent Waar Installed 1980 ELECTRICAL 6E 13.2 KV Unit Substation 371.3 MCC 8 GE 7200 MCC 396 Alarm System (manf/ model) Year Installed User Installed Year Installed Condition Aging Condition Aging Condition Aging Year Installed 1980 Warufacturer Interview (Centrifugal Fan Year Installed 1980 364 Flow Meter Krohne Mag Meter Interview (Centrifugal Fan GROUNDS Interview (Centrifugal Fan Galvanized Steel Interview (Centrifugal Fan Growing (Centrifugal Fan Interview (Centrifugal Fan Stai S Fan (Centrifugal Fan Interview (Centrifugal Fan Galvanized Steel Interview (Centrifugal Fan Year In			Main Structure Material	Brick/ CMU				
Roof Condition Good Doors (number / material) 77 Stel Ughting (Type) Flourescent Vear installed 1980 ELECTRCAL 6E 13.2 KV Unit Substation 371.3 MCC & GE 7200 MCC 396 Alarm System (manf/ model) 34.3 HVAC Condition Aging Condition Aging Condition Aging Manufacturer Interview Year installed 1980 GROUNDS Interview GROUNDS Interview GROUNDS Interview Year installed 1980 Sta.3 Fence Type Chait Marker Interview Manufacturer N/A Year installed 1980 Sta.3 Paving and Walkways Aphalt Interview Year installed 1980 Year installed 1980 Warufacturer N/A			Roof Type	Membrane				
Doors (number (material) 7/ Steel Lighting (Type) Flourescent Year installed 1980 371.3 MCC 8 GE 7200 MCC 396 Alarm System (manf/ model) APC Electrical Room 341.3 HVAC Condition Aging Condition Aging Marufacturer Air Ducts Manufacturer Air Ducts 354.3 HVAC Kear Installed 1980 Stata Gentrifugal Fan Marufacturer Air Ducts Wear Installed 1980 364 Chart Recorder Stata Hydrants N/A Stata Galvanized Steel Galvanized Steel Fence Type Chail Link Vear Installed 1980 354.3 Paving and Walkways Asphalt Stata Marufacturer N/A Vear Installed 1980 Stata Paving and Walkways Asphalt Stata ODOR CONTROL Stata Vear Installed 1980 Stata Paving and Walkways Asphalt Stata Other Buildings St			Roof Condition	Good				
Idpiting (Type) Flourescent Year Installed 1980 371.3 MCC 36 Alarm System (marf/model) Alarm System (marf/model) APC SCADA Based 354.3 HVAC Electrical Room Electrical Room 354.3 HVAC Condition Aging Condition Aging Year Installed Image: Condition Year Installed Image: Condition Year Installed Image: Condition Year Installed 1980 Year Installed 1980 Gottame Image: Condition Year Installed 1980 Year Installed 1980 Gatamized Steel Image: Condition Year Installed 1980 Gatamized Steel Image: Condition Year Installed 1980			Doors (number /material)	7/ Steel				
Year installed 1980 ELECTRICAL GE 13.2 KV Unit Substation 371.3 MCC 396 Alarm System (mant/ model) 397 APC SCADA Based 398 Year installed 394 Year installed 354.3 HVAC Condition Aging Condition Aging Vear installed Installed Vear installed 1980 364 Flow Meter Vear installed 1980 364 Chart Recorder S6A3 Fence Length 354.3 Fence Length GROUNDS Galvanized Steel Galvanized Steel Galvanized Steel Fence Type Chart Initk Vear installed 1980 354.3 Fence Length 758' Galvanized Steel Galvanized Steel Galvanized Steel Manufacturer N/A Manufacturer N/A Manufacturer N/A S43.3 Paving and Walkways Asphalt Does Control Manufacturer N/A Manufacturer N/A Vac Truck Suitable Does the PS have a Sanitary Overflow? Size and Material?			Lighting (Type)	Flourescent				
ELECTRICAL GE 13.2 KV Unit Substation 371.3 MCC 8 GE 7700 MCC 396 Alarm System (manf/ model) APC SCADA Based 354.3 HVAC Electrical Room 354.3 HVAC Electrical Room Manufacturer Air Ducts Manufacturer Air Ducts Manufacturer Manufacturer Gentrifugal Fan Stata 354.3 HVAC Year installed 1980 364 Flow Meter Krohne Mag Meter Stata 354.3 Hydrants N/A GROUNDS Galvanized Steel Gravinized Steel Steel Fence Type Chain lunk Year installed 1980 354.3 Fence Carght 758' GROUNDS Galvanized Steel Steel Fence Type Chain lunk Steel Manufacturer N/A Year installed 1980 354.3 Paving and Walkways Asplat Steel Manufacturer N/A Manufacturer N/A Manufacturer N/A Manufacturer N/A ODOR CONTROL Does the PS have a Sanitary Overflow? Si			Year Installed	1980				
GE 13.2 KV Unit Substation GE 7700 MCC 396 Alarm System (manf/ model) APC SCADA Based 396 Alarm System (manf/ model) APC SCADA Based 396 Condition Aging 354.3 HVAC Electrical Room Condition Aging Image: Condition Year installed Image: Condition Aging Wanufacturer Air Ducts Image: Condition War installed 1980 Image: Condition War finatalled 1980 Image: Condition 364 Flow Meter Krohne Mag Meter Image: Condition 364 Flow Meter SCADA Image: Condition 354.3 Hydrants N/A Image: Condition 354.3 Fence Length 758' Image: Condition 371.3 ODC RONTROL Image: Condition Image: Condition 371.3 ODC RONTROL Image: Condition Image: Condition Manufacturer N/A Image			ELECTRICAL					
371.3 MCC & GE 7700 MCC 336 Alarm System (manf/ model) APC SCADA Based 354.3 HVAC Electrical Room 354.3 HVAC Electrical Room Condition Aging Condition Aging Condition Aging Manufacturer Condition Year installed 1980 Year installed 1980 364 Chart Recorder SCADA Image: SCADA 364 Chart Recorder 354.3 Hydrants Mydrants N/A GROUNDS Image: SCADA S44.3 Fence Length 758' Image: SCADA S43.3 Fence Length 758' Image: SCADA S43.4 Paving and Walkways Asphalt Image: SCADA S43.4 Paving and Walkways Asphalt Image: SCADA Manufacturer N/A Manufacturer				GE 13.2 KV Unit				
371.3 MCC & GE 7700 MCC Image: State of the state of				Substation				
396 Alarm System (manf/ model) APC SCADA Based 334.3 HVAC Electrical Room 354.3 HVAC Electrical Room Condition Aging	371.3		мсс	& GE 7700 MCC				
396 Alarm System (manf/ model) Arc SLAA Based 1 Year installed Image: State (manf/ model) 354.3 HVAC Electrical Room 2 Condition Aging 354.3 HVAC Electrical Room 1 Condition Aging 2 Condition Aging 364 Type Air Ducts 364 Flow Meter Krohne Mag Meter 364 Chart Recorder SCADA 364 Chart Recorder SCADA 364 Chart Recorder SCADA 354.3 Hydrants N/A 354.3 Fence Langth 78' 354.3 Fence Langth 78' 4 Galvanized Steel Electrical Room 5 Fence Type Chain Link 5 Fence Type N/A 354.3 Paving and Walkways Asphalt 371.3 ODOR CONTROL 4 Type 4 Type 5 Spare Parts 5 Spare Parts 5 Spare Parts 7 Spare Parts 7001 - Findergelizement 2002 - PS Conveyor 2003 - PS How a Sanitary Over								
Year Installed Electrical Room Image: Condition Aging Image: Condition Condition Aging Image: Condition Aging Image: Condition Type Air Ducts Image: Condition Aging Image: Condition Type Air Ducts Image: Condition Aging Image: Condition Wanufacturer Image: Condition ScADA Image: Condition Wear Installed 1980 Image: Condition Image: Condition 364 Chart Recorder SCADA Image: Condition 354.3 Hydrants N/A Image: Condition 354.3 Fence Length 758' Image: Condition 354.3 Fence Ength 758' Image: Condition 354.3 Paving and Walkways Asphalt Image: Condition 371.3 ODOR CONTROL Image: Condition Image: Condition Image: Condition Subject Image: Condition Image: Condition Image: Condition Image: Condition Subject Image: Condition Image: Condition Image: Condition 354.3 Paving and Walkways Asphalt Image: Condition Image: Condition 371.3 ODOR CONTROL Image: Condition Image: Condition Image: Condition </td <td>396</td> <td></td> <td>Alarm System (manf/ model)</td> <td>APC SCADA Based</td> <td></td> <td></td> <td></td>	396		Alarm System (manf/ model)	APC SCADA Based				
354.3 HVAC Electrical Room Condition Aging Centrifugal Fan Centrifugal Fan Type Air Ducts Manufacturer Search Year Installed 1980 364 Flow Meter Krohne Mag Meter Search 364 Chart Recorder ScADA Search 364 Chart Recorder ScADA Search GROUNDS Search Galvanized Steel Search Fence Ength 758' StA.3 Paving and Walkways Asphalt Search Year Installed 1980 354.3 Paving and Walkways Asphalt Search Year Installed 1980 371.3 ODOR CONTROL Manufacturer N/A Manufacturer N/A MisCELLANEOUS DESCRIPTION OF FACILITY Other Buildings Spare Parts Spare Parts Spare Parts Outer Stable Spare National Does the PS have a Sanitary Overflow? Size and Material? Spare Stable 2001 - Emergency Repairs Spare Stable 2002 - PS Conveyor Spare Parts 2003 - Sp S Conveyor <td></td> <td></td> <td>Year Installed</td> <td></td> <td></td> <td></td> <td></td>			Year Installed					
Condition Aging Centrifugal Fan Type Air Ducts Manufacturer Air Ducts War Installed 1980 364 Flow Meter Kow Meter Krohne Mag Meter 364 Chart Recorder 364 Chart Recorder 364 Chart Recorder 364 ScADA 364 Chart Recorder 364 ScADA 364 ScADA 364 ScADA 364 Chart Recorder 364 ScADA 364 ScADA 364 ScADA 364 Chart Recorder 364 ScADA 364 ScADA 364 ScADA 364 ScADA 364 ScADA 371.3 ODCR CONTROL Manufacturer N/A Spare Parts Spare Parts 2001 - Emergency Repairs 2002 - PS	354.3		HVAC	Electrical Room				
Type Centrifugal Fan Air Ducts Manufacturer Air Ducts Year Installed 1980 364 Flow Meter 364 Flow Meter 364 Chart Recorder SCADA SCADA 354.3 Hydrants Mytants N/A GROUNDS Scana 354.3 Fence Length 758' Scana Stata Fence Length 758' Scana Stata Fence Type Chain Link Scana Year Installed 1980 Year Installed 1980 Year Installed 1980 Year Installed 1980 Manufacturer N/A Manufacturer N/A Manufacturer N/A Manufacturer N/A Manufacturer N/A Other Buildings Description OF FACILITY Quart Tuck Suitable Spare Parts Uart Tuck Suitable Spare Parts 2001 - Emergency Repairs Spare Parts 2002 - PS Conveyor Spare Parts 2003 - PS Conveyor Spare Parts 2004 - ScortorI System Uggrades Spare Stevee Stevee Stevee Stevee Stevee Stevee Stevee Stevee Stevee Steve S			Condition	Aging				
Image: Arr Ducts Arr Ducts Manufacturer Manufacturer Year installed 1980 364 Flow Meter Krohne Mag Meter 364 Chart Recorder SCADA 364 Chart Recorder SCADA 354.3 Hydrants N/A 354.3 Fence Length 758' 354.3 Fence Length 758' Status Fence Type Chain Link Fence Type Chain Link Vear Installed 1980 354.3 Paving and Walkways Asphalt 354.3 Paving and Walkways Asphalt 371.3 ODO CONTROL Image: Control System Upgrades Manufacturer N/A Image: Control System Upgrades MisceLaneOus Deschiption OF FACILITY Other Buildings Image: Control System Upgrades 2001 - Emergency Repairs Image: Control System Upgrades 2003 - PS Flowmeter Replacement Image: Control System Upgrades 2004 - Sp Control System Upgrades Image: Control System Upgrades				Centrifugal Fan				
Manufacturer 1980 364 Flow Meter Krohne Mag Meter 364 Chart Recorder SCADA 354.3 Hydrants N/A 354.3 Hydrants N/A 354.3 Fence Length 758' 354.3 Fence Length 758' 354.3 Fence Length 758' 354.3 Paving and Walkways Asphalt 4 Year Installed 1980 354.3 Paving and Walkways Asphalt 354.3 Paving and Walkways Asphalt 354.3 Paving and Walkways Asphalt 371.3 ODOR CONTROL Image: Control C			Туре	Air Ducts				
Year Installed 1980 364 Flow Meter 364 Chart Recorder 364 Chart Recorder 364 Chart Recorder 354.3 Hydrants N/A Image: Second			Manufacturer					
364 Flow Meter Krohne Mag Meter 364 Chart Recorder SCADA 354.3 Hydrants N/A GROUNDS			Year Installed	1980				
364 Chart Recorder SCADA 354.3 Hydrants N/A GROUNDS Image: Scalar S	364		Flow Meter	Krohne Mag Meter				
354.3 Hydrants N/A GROUNDS	364		Chart Recorder	SCADA				
GROUNDS Force Length 758' 354.3 Fence Length 758' Fence Type Galvanized Steel Chain Link Chain Link Year Installed 1980 354.3 Paving and Walkways Asphalt Manufacturer N/A Manufacturer N/A Manufacturer N/A MiSCELLANEOUS DESCRIPTION OF FACILITY Other Buildings	354.3		Hydrants	N/A				
354.3 Fence Length 758' Galvanized Steel Galvanized Steel Year Installed 1980 354.3 Paving and Walkways Asphalt Image: Constraint of the strength of the streng			GROUNDS	,				
Galvanized Steel Galvanized Steel Fence Type Chain Link Year Installed 1980 354.3 Paving and Walkways Asphalt 371.3 ODOR CONTROL Image: Control State Steel Manufacturer N/A Image: Control State Steel MisceLLANEOUS DESCRIPTION OF FACILITY Other Buildings Image: Control State Steel Vac Truck Suitable Image: Control State Steel Uases the PS have a Sanitary Overflow? Size and Material? Image: Control State Steel 2001 - Emergency Repairs Image: Control State Steel 2002 - PS Conveyor Image: Control State Steel 2003 - PS Flowmeter Replacement Image: Control State Steel 2009 - PS Control System Upgrades Image: Control State Steel	354.3		Fence Length	758'				
Image: Prece Type Chain Link Image: Prece Type Chain Link Year Installed 1980 Image: Prece Type Imag				Galvanized Steel				
Year Installed 1980 354.3 Paving and Walkways Asphalt 371.3 ODOR CONTROL Image: Control Cont			Fence Type	Chain Link				
354.3 Paving and Walkways Asphalt Image: constraint of the second			Year Installed	1980				
371.3 ODOR CONTROL Image: Control of the second se	354.3		Paving and Walkways	Asphalt				
Image: Second	371.3		ODOR CONTROL	, apriore				
Type N/A MISCELLANEOUS DESCRIPTION OF FACILITY Other Buildings Spare Parts Spare Parts Vac Truck Suitable Uses the PS have a Sanitary Overflow? Size and Material? Image: Spare Parts 2001 - Emergency Repairs Image: Spare Parts 2002 - PS Conveyor Image: Spare Parts 2003 - PS Flowmeter Replacement Image: Spare Parts 2009 - PS Control System Upgrades Image: Spare Parts Image: Spare Part Suppredict Spare Part Parts Image: Spare Parts 2009 - PS Control System Upgrades Image: Spare Part Parts Image: Spare Part Part Part Part Part Part Part Part			Manufacturer	N/A				
MISCELLANEOUS DESCRIPTION OF FACILITY Other Buildings			Type	N/A				
Image: Control of the Buildings Other Buildings Spare Parts Vac Truck Suitable Does the PS have a Sanitary Overflow? Size and Material? Does the PS have a Sanitary Overflow? Size and Material? 2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			MISCELLANEOUS		DESC	RIPTION OF FACILITY	/	
Solve Parts Spare Parts Vac Truck Suitable Does the PS have a Sanitary Overflow? Size and Material? 2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			Other Buildings		2200			
Vac Truck Suitable Does the PS have a Sanitary Overflow? Size and Material? 2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			Spare Parts					
Does the PS have a Sanitary Overflow? Size and Material? 2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			Vac Truck Suitable					
2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			Does the PS have a Sanitary O	verflow? Size and Ma	aterial?			
2001 - Emergency Repairs 2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades COVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging			boes the ronate a sumary s					
2002 - PS Conveyor 2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging	2001 - Emera	zency Repair	5	1			1	
2003 - PS Flowmeter Replacement 2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging	2001 - Energency Repairs 2002 - PS Conveyor							
2009 - PS Control System Upgrades OVERALL BUILDING AND FACILITY ASSESSMENT Image: Control System is aging	2003 - PS Flowmeter Replacement							
OVERALL BUILDING AND FACILITY ASSESSMENT Image: Constraint of the second seco	2009 - PS Control System Upgrades							
OVERALL BUILDING AND FACILITY ASSESSMENT Equipment was updated in 2012 and is in good condition, HVAC system is aging		,						
Equipment was updated in 2012 and is in good condition, HVAC system is aging	OVERALL BU	ILDING AND	FACILITY ASSESSMENT					
	Equipment w	/as updated i	n 2012 and is in good conditio	n, HVAC system is agi	ing	1		

<u> PS-9 - Darby Creek PS</u>

Facility Description (see attached Information Sheet)

PS-9 is wet well / dry well located at Calcon-Hook Road. and Tribbett Avenue, Sharon Hill, PA and has three (3) 25,000 GPM vertically shafted non-clog sewage pumps manufactured by Allis Chambers. The pump station was installed in 1980 and pumps replaced in 2006. Wastewater is discharged through 66-inch PCCP force main and is directed to the City of Philadelphia for treatment.

The pump wet well is unlined concrete (600 square-feet). The station influent is screened with two (2) Duperon Upright Screen units. The screens and screenings conveyors were place in 2017.

The three vertical Non-Clog Centrifugal pumps take suction from the wet well. Each pump has a 24inch Pratt cone valves, 36-inch motorized non-rising stem gate suction valves, and a 30-inch motorized Dezurik plug discharge valves

The pumps have 700 HP 460V motors, which are VFD controlled. The PLC based control panel was manufactured by General Electric. The station has a magnetic flow meter. SCADA communications are redundant with directional radio and internet cable. The flow meter is in a separate concrete vault.

The generator is an MTU-Onsite Energy 1000 KW unit with a 3,400-gallon tank. The Automatic Transfer Switch (ATS) is part of the switchgear. The pump VFDs are as manufactured by Siemens. The station's MCC are General Electric and are original to the station

The building (5,600 square-feet) is constructed of Brick/CMU and membrane roof in good condition. The screen area/wet well and pump room are well separated. The building contains fluorescent lighting. The doors are painted carbon steel. The ventilation systems are a ducted forced air system is in fair condition. The pump room has an overhead gantry crane.

The entire property is surrounded by 876 feet of galvanized steel chain link fence. The access drive is in poor condition. The paved area around the station is in fair condition.

Property Condition

The building, pumps and electrical equipment are in good condition. The HVAC systems are aging.





Figure 1 – Pump Building Front



Figure 3 – Pum**p** Room

Figure 2 – Screenings Collection



Figure 4 – Control / Electric Room





Figure 5 – System Monitor



Figure 6 - VFD



Figure 7 - MCC



Figure 8 – Pump Motor







Figure 9 – Pump Volute

Figure 10 – Pump Volute



Figure 11 - Transformers

Figure 12 - Generator





Figure 13 – Influent Chamber



Figure 14 - Pump Room / Overhead Crane



PUMP STATION #		PS-9		Scheduled Visit Date:	10/25/2019	FRI
Station Name	5	Darby Creek	Phone #			
Location		Calcon-Hook Rd. and Tribbett	Ave. Sharon Hill, PA			
Start Up Date	9	1975				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Good			
		No. of Pumps	3			
		Туре	SSE-V			
			Flygt			
371.3		Pump Manufacturer				
		Pump Model Number	08-112-312-580			
		Year Installed	2019			
		Pump GPM	25000 GPM			
		Pump IDH Ft.	70°			
		Outlet Size	24			
		Motor HP	700 HP			
271.2			400 V			
370.3			VID			
570.5		Condition	Good			
		Size	600 Sa. Ft.			
		Material	Concrete			
		Lined	No			
		Hatch	Yes			
		Vent	N/A			
		Rails	N/A			
		Cable	N/A			
		Piping	Ductile Iron			
371.3		CONTROL PANEL				
		Manufacturer	General Electric			
		Year Installed	2009			
		Model	Funac			
361		INFLUENT PIPING (IF KNOWN	2			
		Material	RCP			
271		Diameter	60			
3/1		<u>SCREEN</u>	Duporop			2 Seroons
		Model	Duperon			
		НР				
		Year Installed	2017			
371		CRANE/HOIST				
		Manufacturer	Cleveland Tramrail			
		Model				
		Year Installed	1975			
360		VALVES (DISCHARGE)				
		Туре	(Suction) Gate	(Pump Control) Cone	(Discharge) Plug	
		Manufacturer		Rodney Hunt		
		Size	36"	24"	30''	
ļļ		#	3	3	3	
		Year Installed	1975	2009	1975	
355		GENERATOR	MTH Oracle 5			
			IVITU-Unsite Energy			
		Generator KW	1000 KW			
		Fuel Tank (Gale)	3 400 Gol			
255		ATS (manf/model #)	Part of Switchgear			
		Year Installed	2014			
360		FORCE MAIN	2014			
550		Force Main Size	66"	66"		
		Force Main Mat.	PCCP	PCCP		
		Length in Feet	10,040	2,985		
		Year Installed	1972	1974		
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	Good			
		Size	5,616 Sq. Ft.			
		Main Structure Material	Brick/ CMU			
		Roof T ype	Membrane			
		Roof Condition	Good			
		Doors (number /material)	9/ Steel			
		Lighting (T ype)	Flourescent			
		Year Installed	1975			
		ELECTRICAL				
			GE 13.2 KV Switch Gear			
			& 2000 A			
			GE Switchboard;			
			GE 7700 MCC & Eaton/			
			Cutler-Hammer 2100			
371.3		мсс	MCC			
396		Alarm System (manf/ model)	APC SCADA Based			
		Year Installed	2007			
354.3		HVAC	Electrical Room			
		Condition	Aging			
			Centrifugal Fan			
		Туре	Air Ducts			
		Manufacturer				
		Year Installed	1975			
		Flow Meter	Mag Meter			
364		Chart Recorder	SCADA			
364		Hydrants	N/A			
354.3		GROUNDS				
354.3		Fence Length	876'			
			Galvanized Steel			
		Fence T ype	Chain Link			
		Year Installed	1975			
354.3		Paving and Walkways	Asphalt			
371.3		ODOR CONTROL				
		Manufacturer	N/A			
		Туре	N/A			
		MISCELLANEOUS		DES	CRIPTION OF FACILITY	
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary O	verflow? Size and Materia	?		
2002 - PS Scr	ew Conveyor		· · · · · · · · · · · · · · · · · · ·			
OVERALL BU	ILDING AND	FACILITY ASSESSMENT				
A majority of	of the pump	station was upgraded in 2006,	, the bar screen in 2017 ar	nd is in good condition	n.	

PS-10 - Eddystone PS

Facility Description (see attached Information Sheet)

PS-10 is located at 738 Eddystone Avenue, Eddystone, PA and is equipped with three (3) approximately 700 GPM, 25 HP Fairbanks Morse vertical shaft centrifugal pumps located in a dry pit. Wastewater is discharged through an 8-inch DIP. The original pump station was installed in 1931. Pump controls, discharge piping and other building components were upgraded recently.

The pump wet well is poured concrete in the lower level of the station. A mechanical Bar Screen (nonoperational) is located in the wetwell. The control panel is manufactured by QuickPanel. There are 6-inch check valves on the discharge. The influent line to the wet well contains a Franklin-Miller grinder which operated via a 2 HP hydraulic unit.

The pumps are controlled by a Total Control Quick Panel, pump flows are controlled by TLC VFDs. Discharge flow is monitored by a Krohne magmeter.

The building (30-ft x 30-ft) is constructed of exterior brick, interior concrete and a flat roof in unknown condition. The building contains LED lighting.

The Generator is a Kohler 125 KW unit with an integral 250-gallon diesel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO.

The entire property is surrounded by a 300 ft. cyclone fence.

Property Condition

The building was in good condition. The pumps and motors are aged, but run quietly. Pump electronics and valves were replaced recently and are in good condition. The generator is in in poor condition.



Appendix D Page 83 of 598 Engineering Assessment December 2019





Figure 1 – Building

Figure 2 – (Upper Floor) Pump Motos



Figure 3 – System Monitor

Figure 4 – System Control Panel





Figure 5 -VFD Controllers

Figure 6 – (Lower Floor) Pump Room



Figure 7 – Generator



Figure 8 – Influent Chamber, Bar Screen





PUMP STATION #		PS-10		Scheduled Visit Date:	11/6/2019	WED
Station Nam	e	Eddystone	Phone #			
Location		736 Eddystone Ave., Eddystor	ne, PA			
Start Up Dat	e					-
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	aged			
		No. of Pumps	3			
		Туре	vertical shaft centrifugal			
371.3		Pump Manufacturer	Fairbanks Morse			
		Pump Model Number	K3X1-071717-0			
		Year Installed	2007			
		Pump GPM	700	estimated		
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	25			
271.2		Motor Voltage	230/460			
3/1.3		Pump Control (VFD?)	Transducer			
370.3		WET WELL				automated bar screen not operable.
		Condition				
		Size				
		Material	poured concrete			
		Lined				
		Hatch				
		Vent				
		Pining				
371 3		CONTROL PANEL				
571.5		Manufacturer	OuickPanel			
		Year Installed	Quicki difei			
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN	l)			
		Material				
		Diameter				
371		GRINDER				
		Manufacturer	Franklin-Miller			
		Model/Serial number	Hydraulic			
		НР	2			
		Year Installed				
371		CRAIN/HOIST				
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)				
		Type Mapufacturor				
		Size				
		#				
		Year Installed				
355		GENERATOR				
		Manufacturer	Kohler			
		Generator KW	125			
		Generator KVA	156			
		Fuel Tank (Gals)	250			
355		ATS (manf/model #)	ASCO			
		Year Installed				
360		FORCE MAIN				
		Force Main Size	8"			
		Force Main Mat.	CIP			
		Length in Feet	1921			
		Year Installed	1931			
		Discharge Point				
		Discharge Point Location				

354.2	BUILDING				
	Condition	good			
	Size	30' x 30'			
	Main Structure Material	Brick			
	Roof Type	flat			
	Roof Condition				
	Doors (number /material)				
	Lighting	LED			
	Year Installed	1931			
	ELECTRICAL				
371.3	MCC	400 Amp			
396	Alarm System (manf/ model)	OmniSite			
	Year Installed				
354.3	HVAC				
	Condition				
	Туре	roof top exhaust			
	Manufacturer	·			
	Year Installed				
364	Flow Meter				
364	Chart Recorder				
354.3	Hydrants				
	GROUNDS				
354.3	Fence Length				
	Fence Type	Cyclone			
	Year Installed	· · · · · · · · · · · · · · · · · · ·			
354.3	Paving and Walkways				
371.3	ODOR CONTROL				
	Manufacturer				
	Туре				
	MISCELLANEOUS		DESCRIP	TION OF FACILITY	
	Other Buildings				
	Spare Parts				
	Vac Truck Suitable				
	Does the PS have a Sanitary O				
OVERALL BL	JILDING AND FACILITY ASSESSMENT				
Building was	s in good condition. Pumps were aged, but r	an quiet. Motors were a	Iso aged, but quiet. Pum	p valves and electro	nics were replaced in 2007.
Generator ir	n poor condition				·

PS-11 - AKA Marcus Hook PS

Facility Description (see attached Information Sheet)

PS-11 is located at 401 Penn Ave. Marcus Hook, PA and is equipped with (2) 3,300 GPM, 60 HP Vaughan centrifugal pumps. Wastewater is discharged through an 8" DIP force main. The original pump station was installed in 1955. The pumps, electrical controls and other pump station components were upgraded in 2016.

The pump wet well is cast in place concrete (26-ft x 16-ft x 28-ft deep with 6-ft high fence with no hatchway. The control panel is a GE Quickpanel, pump flow is regulated by Digital Operator VFDs. The system is monitored via a SCADA system. There are (2) check valves, (2) discharge valves, (1) Influent gate valve, (2) (Suction) valves, installed in 2016. The influent line to the wet well contains a Muffin Monster Hydraulic grinder which operated via a 5 HP hydraulic unit.

The Building (original 29.5ft x 17.6-ft, addition 16-ft x 17.6-ft) is constructed of yellow brick masonry exterior with concrete foundation, porcelain brick interior in older section and green porcelain tile interior in newer section, concrete dry pit lower level and flat roof in unseen condition. The building contains four (4) LED, original; four (4) fluorescent, new lighting and one (1) double door; one (1) man door, original; (1) new double door, aluminum door. A two (2)-ton Yale overhead crane is located in the building.

The Generator is an MTU On-site 150 KW unit with 400-gallon diesel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO, J03ATSA30400FGOC. the Generator was installed in 2016.

The entire property is surrounded by approximately a 96-foot x 146-foot, 8-foot high steel chain link fence with 3 strands of barbed wire in poor condition.

Property Condition

The building, pumps and electrical controls were upgraded in 2016 and are in good condition.




Figure 1 – Building Front



Figure 3 – Influent Chamber



Figure 2 – Building & Generator



Figure 4 – Building Rear





Figure 5 -MCC



Figure 6 - Building Interior



Figure 7 – Electrical Panels



Figure 8 – Pump Control Panel





Figure 9 – Pump Gate Valves



Figure 11 – Discharge Pump



Figure 10 - Dry Pit Pump



Figure 12 – Discharge Piping



PUMP STATION #		PS-11		Scheduled Visit Date:	10/22/2019	TUE
Station Name	e	Marcus Hook	Phone #			
Location		401 Penn Ave. Marcus Hook, P	PA			
Start Up Date	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	good			
		No. of Pumps	2			
		Type	Centrifugal			
371.3		Pump Manufacturer	Vaughan			
		Pump Model Number	PE8K10CS			
		Year Installed	10/2016			
		Pump GPM	3300			
		Pump TDH Ft.	56			
		Outlet Size	8"			updated
		Motor HP	60			•
		Motor Voltage	240V (3) Ph			
			Elow Matcher VED 1&2 Digital			
371 3		Pump Control (VED?)	Operator IVOP-180 ALM			transducer
371.3		WFT WFII				
570.5		Condition	good			
		Sizo	16'W x 26'L x 28'D with 6' high force			
		Material	cast in place concrete			
		Lipod				
		Lineu	unimea			
		Hatch	Ro			
		vent	no			
		Rails	no			
		Cable	no			
		Piping	16" steel welded, 16" DIP			
371.3		CONTROL PANEL				VFD 1-2
		Manufacturer	Quickpanel			
		Year Installed	2016			
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN)				
		Material				
		Diameter				
371		GRINDER				
		Manufacturer	Muffin Monster Hydraulic			
		Model/Serial number				
		НР	5			
		Year Installed				
371		CRAIN/HOIST				
		Manufacturer	Yale 2-ton			
		Model/Serial number	1C2F34L20			
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	Check	Discharge	Influ. Gate	Suction
		Manufacturer				
		Size				
		#	2	2	1	2
		Year Installed				
355		GENERATOR	YES			
		Manufacturer	MTU On-site			
		Generator KW	150			
		Generator KVA	187.5			
		Fuel Tank (Gals)	400 gal diesel			
355		ATS (manf/model #)	ASCO J03ATSA30400FG0C			
		Year Installed	~2017			
360		FORCE MAIN	2017			
500		Force Main Size	30"	36"	36"	16"
		Force Main Mat	РССР	РССР	ט. וח	CID
		Length in Feet	2 250	5 605	17 602	Q/
		Vear Installed	2,230	1077	2000	
		Discharge Point	13//	1977	2000	13//
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	good			
		Size	original 29'-6" x 17'-8", addition 16' x 1	L7'-8"		
			yellow brick masonry exterior with			
			concrete foundation, porcelain brick			
			interior in older section and green			
			porcelain tile interior in newer			
		Main Structure Material	section, concrete dry pit lower level			
		Roof Type	flat			
		Roof Condition	unseen			
		Doors (number /material)	(1) double door; (1) man door, origina	l; (1) new double door, alu	ıminum	
		Lighting (Type)	(4) LED, original; (4) fluorescent, new			
		Year Installed				
		ELECTRICAL				
			Eaton Pow-r-Line, PRL-C, 240/120V,			
371.3		мсс	600A			
396		Alarm System (manf/ model)	Scada/RTU			
		Year Installed	2016			
354.3		HVAC				
		Condition	good			
		_	roof top power ventilation, eletric			
		Type	unit heaters			
		Manufacturer				
264		Year Installed				
364		Flow Meter	Kronne IFC magmeter			
364		Chart Recorder				
354.3						
254.2		GROUNDS	annravimataly 06 x 146			
554.5			approximately 96 x 146	arkad wira, naar canditia		
		Vear Installed	8 H Steel chain link with 5 strands of b	arbed wire, poor condition	1	
254.2		Paving and Walkways	rood			
271.2			good N/A			
571.5		Manufacturer	N/A			
		Type				
		MISCELLANEOUS				L
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary				
		Overflow? Size and Material?				
OVERALL BU	ILDING AND	FACILITY ASSESSMENT				
2013 - PS Un	grades		1			·
	J					
Overal buildi	ng is in good	condition, interior has been im	proved as part of the 2016 equipment	upgrades.		
Exterior asph	alt has mode	erate cracking, original fencing	has some rust.			
F**		2. 0				

PS-12 - Price Street PS

Facility Description (see attached Information Sheet)

PS-12 is located at 3639 Post Road Trainer, PA and is equipped with (3) 320-GPM, 7.5 HP Flygt pumps. Wastewater is discharged through a 8" force main. The pump station was installed in 2009.

The pump wet well is pre-cast concrete (1,500 gal) with safety grate and an 8-foot x 4.5-foot hatchway. The pump control panel is manufactured by Flygt, pump flow is controlled Siemens VFDs. System controls are monitored by a GE Quickpanel display.

There is no building at this facility, but an (8-foot x 8-foot) enclosure constructed of fiberglass with a fiberglass roof in good condition. The enclosure contains 1 Fiberglass door.

The Generator is a Cummins 98 KW, 132 HP unit with a 235-gallon integral diesel tank. The Automatic Transfer Switch (ATS) is a Cummins Power Command.

The entire property is surrounded by a 70-foot x 42-foot, 6-foot high cyclone fence.

Property Condition

The building, pumps and controls are less than ten years old and are in good condition.





Figure 1 – Pump Station & Wet Well

Figure 2 – Bar Screen



Figure 3 – Generator

Figure 4 – Flow Meter





Figure 5 – Control Panel Building



Figure 6 – Pump Control Panel



Figure 7 – Pump VFD's



Figure 8 – Electrical Main & Panels





PUMP STAT	ION #	PS-12		Scheduled Visit Date:	10/22/2019	TUE
Station Nam	e	Price Street	Phone #			1
Location		3639 Post Rd. Trainer, PA				
Start Up Dat	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Good			
		No. of Pumps	3			
371.3		Pump Manufacturer	Flygt			
		Pump Model Number				
		Туре	Submersible			
		Year Installed	2009			
		Pump GPM	320			
		Pump IDH Ft.	39 ft			
		Outlet Size	3 X 4"			
			7.5			
271.2		Rump Control (VED2)				
371.3						
370.3		Condition				
		Size	1 500 gal			10' 8" x 8'-8" x annrox 18' Deen
		Material	Pre-cast			
		Lined	No			
		Hatch	Safety Grate - 8' x 4.5'			
		Vent	DIP			
		Rails	SS			
		Cable				
		Piping				
371.3		CONTROL PANEL				
		Manufacturer	Siemans			
		Year Installed	2009			
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN	<u>n</u>			
		Material	PVC			
		Diameter	8"			
3/1		GRINDER_	Bar Screen			Pre-cast Concrete - 6' Ø x 12.8' Deep
		Madul/Sorial number				
		Vear Installed				
371		CRAIN/HOIST				
5,1		Manufacturer	2 - Thern Davit Crane			Galv. Stl.
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)	N/A			
		Туре				
		Manufacturer				
		Size				
		#				
		Year Installed				
355		GENERATOR	YES			
		Manufacturer	Cummins			
		Generator KW	98			
		Generator HP	132			201 x 71 x 101
		ruer rank (Gals)	235 Diesel - Cummins			
255		ATS (manf/model #)	Power Command			
333		Year Installed	2009			
360		FORCE MAIN	2005			
- 350		Force Main Size	10"			
		Force Main Mat.	DI			
		Length in Feet	1,345			
		Year Installed	2007			
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS	
354.2		BUILDING					
		Condition	good				
		Size	8' x 8'				
		Main Structure Material	Fiberglass				
		Roof Type	Fiberglass				
		Roof Condition	good				
		Doors (number /material)	1 - Fiberglass				
		Lighting (Type)					
		Year Installed	2009				
		ELECTRICAL					
371.3		MCC					
396		Alarm System (manf/ model)	Crystal Ball				
		Year Installed					
354.3		<u>HVAC</u>					
		Condition					
		Туре	exhaust fan				
		Manufacturer					
		Year Installed					
364		Flow Meter					
364		Chart Recorder					
354.3		Hydrants					
		GROUNDS					
354.3		Fence Length	70' x 24' x 70' x 42'				
		Fence Type	Cyclone - 6' H				
		Year Installed	2009				
354.3		Paving and Walkways					
371.3		ODOR CONTROL					
		Manufacturer	N/A				
		Туре					
		MISCELLANEOUS		DESCR	RIPTION OF FACILITY		
		Other Buildings					
		Spare Parts					
		Vac Truck Suitable					
		Does the PS have a Sanitary O	nitary Overflow? Size and Material? NO				
OVERALL BU	ILDING AND	FACILITY ASSESSMENT					
BUILDING AN	ID ALL OTHE	R FOUIPMENT IS LESS THAN 10	YEARS OLD AND IN GOO	OD CONDITION.			

PS-13 - Smith Street PS

Facility Description (see attached Information Sheet)

PS-13 is located at 498 Smith Street, Trainer, PA. The station is a steel prepacked unit and is equipped with (2) 700-GPM, 25 HP Fairbanks Morse centrifugal pumps. Wastewater is discharged through an 8" force main. The pump station was installed in 1997.

The pump wet well is coated steel (750 gal) with 3-foot circular hatchway. The control panel is custom built. The pump system is monitored by an OmniSite Crystal Ball alarm system.

There is no building at this facility.

There is no generator or Automatic Transfer Switch (ATS) at this facility.

The entire property is surrounded by a 30-foot x 33-foot, 8-foot high chain link fence.

Property Condition

Most of the facility is original and in poor condition.





Figure 1 – Pump Site

Figure 2 – Pump Station Entrance



Figure 3 – Pump Station Entrance & Electrical Boxes

Figure 4 – Pump Controls





Figure 5 – Interior of Dry Pit



Figure 6 - Electric Main



Figure 7 – Electrical Panels

Figure 8 – Omni Site Pump Monitor



PUMP STATION #		PS-13		Scheduled Visit Date:	10/22/2019	TUE
Station Name	e	Smith Street	Phone #			
Location		498 Smith St. Trainer, PA				
Start Up Date	e	1997				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition				
		No. of Pumps	2			
		Туре	Centrifugal			
371.3		Pump Manufacturer	Fairbanks Morse			
		Pump Model/Serial Number	T 4D30S			
		Year Installed	1997			
		Pump GPM	700			
		Pump TDH Ft.	73 ft			
		Outlet Size	8"			8" By-Pass Hook-up
		Motor HP	25			Marathon 7VJ324TTDR8390ANL
271.2		Motor Voltage	230/460			
3/1.3		Pump Control (VFD?)	Floats			
370.3		Condition	Poor			
		Size	750 mail			
		Material	costed steel			
		lined				
		Hatch	3' circular			
		Vent	b chi cului			
		Rails				
		Cable				
		Piping				
371.3		CONTROL PANEL				
		Manufacturer	Custom Built			
		Year Installed				
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN)				
		Material				
		Diameter				
371		GRINDER	N/A			
		Manufacturer				
		Model/Serial number				
		HP Veer lostelled				
371			N/A			
571		Manufacturer	17/2			
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	Gate			
		Manufacturer				
		Size	8"			
		#	2			
		Year Installed	1997			
355		GENERATOR	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
200						
360			0"			
		Force Main Size				
		length in Feet	3 230			
		Year Installed	2007			
		Discharge Point	2007			
		Discharge Point Location				
	1	I	1			1

CODE	SUBCODE	PUMP STATION				COMMENTS	
354.2		BUILDING	N/A				
		Condition					
		Size					
		Main Structure Material					
		Roof Type					
		Roof Condition					
		Doors (number /material)					
		Lighting (T ype)					
		Year Installed					
		ELECTRICAL					
371.3		МСС					
			Omni Site Crystal				
396		Alarm System (manf/ model)	Ball				
		Year Installed					
354.3		HVAC	N/A				
		Condition					
		Туре					
		Manufacturer					
		Year Installed					
364		Flow Meter					
364		Chart Recorder					
354.3		Hydrants					
		GROUNDS					
354.3		Fence Length	30' x 33' x 8' H				
		Fence T ype					
		Year Installed					
354.3		Paving and Walkways					
371.3		ODOR CONTROL	N/A				
		Manufacturer					
		Туре					
		MISCELLANEOUS			DESCRIPTION OF FACILITY	í l	
		Other Buildings					
		Spare Parts					
		Vac Truck Suitable					
		Does the PS have a Sanitary Overf	low? Size and Materi	ial?			
2007 - Tr aine	er FM						
OVERALL BU	ILDING AND	FACILITY ASSESSMENT					

Most of the pump station components and electronics are original and in poor condition. Pumps were replaced recently.

PS-16 - Broomall Street PS

Facility Description (see attached Information Sheet)

PS-16 is located at 1 Broomall Street, Chester, PA and is equipped with (3) 700-GPM, 20 HP Longo centrifugal dry pit pumps. Wastewater is discharged through an 8-inch DIP force main. The original pump station was installed in 1964.

The pump wet well is poured concrete. The control panel is manufactured by Eurotherm and Chessell, the pumps are controlled by two Yaskawa P1000 VFDs. The system is monitored by a GE Quickpanel. There are three (3) 6-inch (suction) pinch valves, three (3) 6-inch Kennedy vertical swing check valves, (1) knife gate valves, three (3) 6-inch and one (1) 8-inch CLOW gate valves, installed in 1964. Flow is monitored by Krohne magmeter.

The building (24 feet x24 feet) is constructed of brick masonry with some minor issues above door to wet well and flat roof. The building contains in-ceiling fluorescent lighting that looks newer than original lighting, one (1) double door and (1) single door (both steel) into building and control room door.

The entire property is surrounded by a 50' x 50' cyclone fence.

Property Condition

The exterior of the building is in good condition, upper floor is in good condition, lower level steel and pump show considerable deterioration.





Figure 1 – Pump Station Building Front



Figure 3 – Crack in Wall



Figure 2 – Pump Station Building Rear



Figure 4 – Building Interior





Figure 5 – Pump Controls & Electrical Panel



Figure 7 – Pumps in Dry Pit



Figure 6 – Flow Meter



Figure 8 – Pumps & Pipe Manifold







Figure 9 – Pump Gate Valves



Figure 11 – Corroded Pump Housing



Figure 10 – Corroded Pipe Supports



Figure 12 – Corroded Stairs



PUMP STATI	ON #	PS-16		Scheduled Visit Date:	10/22/2019	TUE
Station Name	e	Broomall Street	Phone #			
Location		1 Broomall St. Chester, PA				
Start Up Date	e	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
274.2						
3/1.3		PUMP(S)				
			(2) not original, (1)			
			new (fair cond.)			
		No. of Pumps	3			
274.2		Type	centrifugal dry pit			
3/1.3		Pump Manufacturer	LONGO			
		Pump Model Number	1064 1075 2017			
		Year Installed	1964, 1975, 2017			
			700			
		Pump IDH Ft.	62			
			4			
			20			
		wotor voltage	460			continuous loval consor activated
271 2		Rump Control (VED3)	(2) Vachaura D1000			continuous reversensor activated,
3/1.3			(2) Taskawa P1000			րսութ։ on vrus
370.3		Condition	acad			
		Sizo	8000			
		Material	noured concrete			
		lined	poureu concrete			
		Hatch				
		Vent				
		Bails				
		Cable				
		Piping	ductile iron			
371.3		CONTROL PANEL				
				1		older pumps on Eurotherm, new
		Manufacturer	Eurotherm, Chessell			pump on Chessell
		Year Installed				
		Model				
361		INFLUENT PIPING (IF KNOWN	<u>4)</u>			
		Material				
		Diameter				
371		COMMINUTOR	N/A			
		Manufacturer				
		Model				
		HP				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		IVIODEI				
360						
500		Type	ninch	vortical swing chock	gato	knifo gato
		Manufacturer	pinen	Kennedy		Kinie gate
		Size	6" suction	6"	6" 8"	
		#	3	lanuary 3, 1900	(3) 6" (1) 8"	1
		 Year Installed		5411441 9 0, 1500	(0)0)(1)0	-
355		GENERATOR	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		FORCE MAIN				
		Force Main Size	8"			
		Force Main Mat.	CIP			
		Length in Feet	760			
		Year Installed	1964			
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	good			
		Size	24'x24'			
		Main Structure Material	brick masonry with	some minor issus abov	e door to wet well	
		Roof Type	flat			
		Roof Condition				
		Doors (number /material)	(1) double door and	(1) single door, both s	teel, into building ar	nd control room
		Lighting (Type)	Fluorescent lighting	; in ceiling, looks newer	than origianl	
		Year Installed				
		ELECTRICAL				
371.3		МСС	GE			
396		Alarm System (manf/ model)	SCADA based			
254.2						
354.3		<u>HVAC</u>				
		Ture				
		Type				
		Manufacturer				
254		rear installed	14 1 14			
364		Flow Meter	Krohne Magmeter			
364		Chart Recorder	scada			
354.3		Hydrants				
254.2		GROUNDS				
354.3						
		Fence Type				
254.2		Year Installed				
354.3		Paving and walkways				
371.3		ODOR CONTROL				
		Manufacturer				
		Туре				
		MISCELLANEOUS		DESC	RIPTION OF FACILI	ΙΥ
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary				
		Overflow? Size and				
		Material?				
			 	this provide the second		al (an an also decourd) and out y
		EVONIK Industries dischar	ges neavy flow into	this PS which is severel	y deteriorating ever	ytning on the dry well and wet well.
OVER ALL ST						
		PRULINY ASSESSIVIENI			 	
installed in 2	uliding is in § .017.	good condition, upper floor is i	η gooa conaitión, lo	wer level steel and pun	np show considerab	e deteroration. New discharge piping

PS-22 - Delaware Avenue Ejector. PS

Facility Description (see attached Information Sheet)

PS-22 is located at Market Street and Delaware Avenue, Marcus Hook, PA and is equipped with (2) air ejector pumps, flow rate is undetermined. Wastewater is discharged through 4-inch force main. The pump station was installed in 1979. The air ejectors are powered by two 2 HP Gast Compressors.

The pump wet well is concrete (8-foot diameter). The control panel is manufactured by Flo-A-Matic. There are one (1) 4-inch Milliken plug valve and one (1) 4-inch check valve, installed in 1979.

There is no building at this facility.

There is no generator or Automatic Transfer Switch (ATS) at this facility.

The entire property is surrounded by a 12.5-foot x 12.5-foot, 8-foot high fiberglass enclosure fence.

Property Condition

The facility is in poor condition.





Figure 1 – Pump Station Entrance

Figure 2 – Omni Site Pump Monitor



Figure 3 – Compressor Controls



Figure 4 – Compressors



Appendix D Page 111 of 598 Engineering Assessment December 2019





Figure 6 - Air Tank



PUMP STATION #		PS-22		Scheduled Visit Date:	10/23/2019	WED
Station Name	e	Delaware Avenue Ejector Sta.	Phone #			
Location		Market Street and Delaware	Avenue, Marcus Hook, P.	A		
Start Up Date	2	1965				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	Poor			
		No. of Pumps	2			
		Туре	Air Ejector			
371.3		Pump Manufacturer	Flo-A-Matic			
		Pump Model Number				
		Year Installed	1979			
		Pump GPM				
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	2 HP			Gast Compressors (2)
		Motor Voltage				
371.3		Pump Control (VFD?)	Floats			
370.3		WET WELL				
		Condition	poor			
		Size	8' Dia.			Drywell 8' Dia. x 8' High
		Material	concrete			
		Lined				
		Hatch				
		Vent				
		Rails				
		Cable				
		Piping				
3/1.3			51 A A A 1			
		Manufacturer	FIO-A-Matic			
		Year Installed	1979			
261			ELD-103-78			
501		Matorial	N/A			
		Diamotor				
371		GRINDER	Ν/Δ			
5/1		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	Plug	check		
		Manufacturer	Milliken			
		Size	4"	4"		
		#	1	1		
		Year Installed				
355		GENERATOR	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		FORCE MAIN	. *			
		Force Main Size	4"			
		Force Main Mat.	CIP			
		Length in Feet	345			
		rear installed	1970			
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		МСС	Breaker Panel			
396		Alarm System (manf/ model)	Omni Site Crystal Ball			
		Year Installed				
354.3		HVAC				
		Condition				
		Туре	Exhaust fan			
		Manufacturer				
		Year Installed				
364		Flow Meter	N/A			
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	12.5' x 12.5' x 8' H			
		Fence Type	Fiberglass Enclosure			
		Year Installed				
354.3		Paving and Walkways				
371.3		ODOR CONTROL	N/A			
		Manufacturer				
		Туре				
		MISCELLANEOUS		DESCRI	PTION OF FACILITY	
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary C	verflow? Size and Mater	rial? NO		
OVERALL BU	ILDING AND	FACILITY ASSESSMENT				
Most of the	equipment is	s original to the facility and in p	oor condition. Enclosur	e was recently installed a	nd is in good	

PS-23 - Viscose Village PS

Facility Description (see attached Information Sheet)

PS-23 is located at 6 Walnut Street, Marcus Hook, PA and is equipped with two (2) 320-GPM, one (1) 280-GPM, 15 HP Vaughan centrifugal vertical shaft, dry pit pumps. Wastewater is discharged through a 12-inch force main. The pump station was originally constructed in 1966. The 2 of Vaughan pumps were replaced in 2008 and 2010. The pumps are controlled GE PLC interactive control screen and Yaskawa P7 VFDs. The pump station controls, piping and other electronics were upgraded in 2013.

The pump wet well is poured concrete (17-foot x 8 inches) with an aluminum hatchway. The control panel is manufactured by TLC Controls. The influent line to the wet well contains a Muffin Monster grinder which operates via a 5 HP unit.

The building (20-foot x 20-foot) is constructed of brick with poured concrete dry pit and flat roof in unknown condition. The building contains fluorescent lighting.

The generator is a Cummins Power 80 KW unit with 235-gallon tank. The Automatic Transfer Switch (ATS) is manufactured by Cummins, Power Command.

The entire property is surrounded by an approximately 70' x 100' x 6' high cyclone fence.

Property Condition

Building exterior is in good condition. Building interior and equipment were upgraded in 2013 and are in good condition.





Figure 1 – Site Entrance



Figure 3 – Electric AC Main, ATS & Grinder Hydraulic Unit



Figure 2 – Building Front



Figure 4 – Pump Motor and Various Electric Panels

82





Figure 5 – Influent Wet Well



Figure 7 – Pump & gate Valve



Figure 6 – Dry Pit Dumps



Figure 8 – Pump & Gate Valve



PUMP STATION #		PS-23		Scheduled Visit Date:	10/22/2019	TUE				
Station Nam	e	Viscose Village	Phone #							
Location		6 Walnut St. Marcus Hook, PA	ن Walnut St. Marcus Hook, PA							
Start Up Dat	e	1965								
CODE	SUBCODE	PUMP STATION				COMMENTS				
371.3		PUMP(S)								
		Condition								
		No. of Pumps	3							
			centrifugal vert.							
		Туре	shaft, dry pit							
371.3		Pump Manufacturer	(2) Vaughen, (1) Chicago							
		Pump Model Number								
		Year Installed	2010, 2008, 1966							
		Pump GPM	(2) 320, (1) 280							
		Pump TDH Ft.								
		Outlet Size	8"							
		Motor HP	15			Oringinal 1965, rebuilt 2005, two Baldor & one TECO				
		Motor Voltage	3 phase 240v							
371.3		Pump Control (VFD?)	Yaskawa, P7BBA042	2 & P7BBA043		2010, float backup				
370.3		WET WELL								
		Condition	good							
		Size	17' x 8'							
		Material	Poured Concrete							
		Lined								
		Hatch								
		Vent	2-12" exhaust fans							
271.2										
571.5		Manufacturer	TLC Controls							
		Year Installed	2010							
		Model/Serial number	VST2							
361		INFLUENT PIPING (IF KNOWN	l)							
		Material								
		Diameter								
371		COMMINUTOR								
		Manufacturer	Muffin Monster							
		Model/Serial number	Hydraulic							
		НР	5							
		Year Installed								
371										
		Manufacturer								
		Voar Installed								
360		VALVES								
		Type								
		Manufacturer								
		Size								
		#								
		Year Installed								
355		GENERATOR								
		Manufacturer	Cummins Power							
L		Generator KW	80							
		Generator KVA	100							
		Fuel Tank (Gals)	235 Cummins							
355		ATS (manf/model #)	PowerCommand							
		Year Installed	July 2, 1905							
360		FORCE MAIN								
		Force Main Size	12"							
L		Force Main Mat.	CIP							
		Length in Feet	855							
		Year Installed	1965							
		Discharge Point								
1	1	piscialize Point Location	1		1					

CODE	SUBCODE	PUMP STATION				COMMENTS	
354.2		BUILDING					
		Condition	good				
		Size	20' x 20'				
		Main Structure Material	Brick w/ poured cor	crete dry pit			
		Roof T ype	flat				
		Roof Condition	unknown				
		Doors (number /material)					
		Lighting (Type)	flourecent				
		Year Installed	1965				
		ELECTRICAL					
371.3		MCC	Square D - 225 AMP				
396		Alarm System (manf/ model)	Omni Crystal Ball				
		Year Installed					
354.3		HVAC					
		Туре	exhaust fans				
		Manufacturer					
		Model					
		Year Installed					
364		Flow Meter	Krohne Magmeter				
364		Chart Recorder					
354.3		Hydrants					
		GROUNDS					
354.3		Fence Length					
		Fence Type					
		Year Installed					
354.3		Paving and Walkways					
371.3		ODOR CONTROL					
		Manufacturer					
		Туре					
		MISCELLANEOUS		DE	SCRIPTION OF	FACILITY	
		Other Buildings					
		Spare Parts					
		Vac Truck Suitable					
		Does the PS have a Sanitary O	verflow? Size and M	aterial?			
OVERALL BU	ILDING AND	FACILITY ASSESSMENT					
2013 - PS Up	grades						
Buliding exterior is in good condition, interior and equipment were all approx. 6 years old and are all in good condition							

PS-24 - Stadium (aka Riverfront) PS

Facility Description (see attached Information Sheet)

PS-24 is located at 2501 Seaport Drive, Chester, PA and is equipped with (3) 610-GPM, 10 HP Flygt Submersible pumps. Wastewater is discharged through a 10-inch force main. The pump station was installed in 2010.

The pump wet well is (12-foot x 22-foot). The control panel is a GE Quick Panel, the pumps are controlled by Seimens VFDs. There are three (3) 10-inch swing check valves, three (3) 10-inch gate valves, and one (1) 8-inch surge valves, installed in 2010. The influent line to the wet well contains a Huber Rotomat screen unit. The system has a carbon filter odor control unit. The facility vacuums air out of the wet well and pumps through carbon filter.

The building (12-foot x 15-foot) is constructed of precast concrete exterior formed to look like brick. Precast concrete walls, concrete slab. and hip roof, standing seam-metal roof in good condition. The building contains two (2) 4-foot fluorescent on ceiling lighting and one (1) metal double door.

The Generator is a Cummings 80 KW unit with a 200-gallon diesel tank. The Automatic Transfer Switch (ATS) is manufactured by Entelli-switch 250.

The entire property is surrounded by a 200-foot, 7-foot high vinyl coated chain link fence with barbed wire.

Property Condition

The building, pumps and controls are all in good condition.





Figure 1 – Site Entrance



Figure 3 – MCC



Figure 2 – Odor Controls



Figure 4 – Pump Controls





Figure 5 - Generator



Figure 7 – Pump Wet Well



Figure 6 - Pump Wet Well & Valve Pit



Figure 8 – Check & Gate Valves



PUMP STATION #		PS-24		Scheduled Visit Date: 10/22/2019 TUE		TUE	
Station Name		Stadium (aka Riverfront)	Phone #			•	
Location		2501 Seaport Dr. Chester, PA	·				
Start Up Date	e						
CODE	CURCORE					COMMENTS	
CODE	SUBCODE	PUMP STATION				COMMENTS	
371.3		PUMP(S)					
		Condition					
		No. of Pumps	3				
		Туре	Submersible				
371.3		Pump Manufacturer	Flygt				
		Pump Model Number	3127				
		Year Installed	2010				
		Pump GPM	610			Pumps 2 & 3 together 1050gpm	
		Pump TDH Ft.	21				
		Outlet Size	10"				
		Motor HP	10				
		Motor Voltage	480				
371.3		Pump Control (VFD?)	Siemens touchscreen			discrete level controls with VFDs	
370.3		WET WELL					
		Condition					
		Size	12' x 22' out to out				
		Material					
		Lined					
		Hatch					
		Vent	SS				
		Rails					
		Cable					
		Piping					
371.3		CONTROL PANEL				VFD 1-3	
		Manufacturer	GE				
		Year Installed					
		Model	Quick Panel				
361		INFLUENT PIPING (IF KNOWN	<u>)</u>				
		Material					
		Diameter					
371		VERTICAL FINE SCREEN				Influent Screen	
		Manufacturer	Huber				
		Model	Rotamat				
		НР					
		Year Installed					
371		CRAIN/HOIST	N/A				
		Manufacturer					
		Model					
		Year Installed					
360		VALVES (DISCHARGE)		C +			
		Type	Swing Check	Gate	Surge		
			10	101	0"		
		Size	10	10	8		
		# Veen installed	3	3	1		
255							
300		Manufacturer	Cummings				
			cummings				
		Generator KVA	100				
			200gal diasal				
255		ATS (manf/modal #)	Entelli-switch 250				
305		Kis (mani/model#)	looks now				
200			looks new				
300		FORCE IVIAIIN	10"				
		Force Main Size					
		Longth in Foot					
		Vear Installed	4,000				
		Discharge Point	2010				
		Discharge Point Location					
1	1	piscial ge i onit Location	1	1	1	1	

CODE	SUBCODE	PUMP STATION				COMMENTS			
354.2		BUILDING							
		Condition	good						
		Size	12' x 15'						
		Main Structure Material	precast concrete build	ing exterior formed to loo	ks like brick. Precast	concrete walls, concrete slab.			
		Roof Type	hip roof, standing seam-metal						
		Roof Condition	good						
		Doors (number /material)	(1) metal double door						
		Lighting (Type)	(2) 4' Fluorescent on ce	eiling					
		Year Installed	new						
		ELECTRICAL							
371.3		мсс	GE Evolution Series E9	000, 480V					
396		Alarm System (manf/ model)	OmniSite Crystal Ball						
		Year Installed							
354.3		HVAC							
		Condition							
		Туре	Electric Heater						
		Manufacturer	Qmark						
		Year Installed	White-Rodgers						
364		Flow Meter	KROHNE			located inside 6' x 6" valve vault			
364		Chart Recorder	N/A						
354.3		Hydrants	N/A						
		GROUNDS							
354.3		Fence Length	200LF, 7'H with 1' barb	ed wire					
		Fence Type	chain link fence winyl c	oated					
		Year Installed	new						
354.3		Paving and Walkways	good						
371.3		ODOR CONTROL	Yes						
		Manufacturer							
		Туре	vacuums air out of wet well and pumps through carbon filter						
		MISCELLANEOUS	DESCRIPTION OF FACILITY						
		Other Buildings							
		Spare Parts							
		Vac Truck Suitable							
		Does the PS have a Sanitary O	verflow? Size and Mate	erial?					
	Lar								
OVERALL BUILDING AND FACILITY ASSESSMENT									
Building, pumps, electrical controls and all other components are in good condition.									
PS-26 - Longpoint Lane Ejector Sta. PS

Facility Description (see attached Information Sheet)

PS-26 is located at 8 N. Longpoint Ln, Rose Valley, PA and is equipped with air ejector pumps. Flow rate is undetermined. Wastewater is discharged through a 6-in PVC force main. The pump station was installed in approx. 1970. An Ingersol Rand compressor powers the air ejector system.

The pump wet well is below the floor, two (2) steel (approximately 3 feet in diameter and 3 feet deep) pressurized tanks are located in the dry pit. The control panel is custom made. There are two (2) 3-inch gate valves.

The building (10-foot x 15-foot) is constructed of red brick masonry exterior, unfinished exposed studs, rafters, and masonry interior and an asphalt shingle roof in newer condition. The building contains overhead fluorescent lighting and 1 wood double door.

The is no generator or Automatic Transfer Switch (ATS).

The property is not fenced and the facility does not utilize an odor control system.

Property Condition

The building is in good condition, the roof is in newer condition. Pumps and other controls are in good condition.



Appendix D Page 125 of 598 Engineering Assessment December 2019



Figure 1 – Small Structure to House Ejector Station (Below)



Figure 3 – Compressor Ejector



Figure 2 – Interior of Small Structure



Figure 4 – Ejector Piping and Tanks





PUMP STATI	ON #	PS-26		Scheduled Visit Date:	10/17/2019	THUR
Station Name	e	Longpoint Lane Ejector Sta.	Phone #			
Location		8 N. Longpoint Ln, Rose Valley	, ΡΑ			
Start Up Date	e	approx. 1970				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	good			
		No. of Pumps				
		Туре	air ejector			
371.3		Pump Manufacturer	Ingersoll-Rand			
		Pump Model Number				
		Year Installed	1970			
		Pump GPM				
		Pump TDH Ft.				
		Outlet Size				
		Motor HP				compressor
		Motor Voltage				
371.3		Pump Control (VFD?)	floats			
370.3		WET WELL				
		Condition	(2) steel pressurized	d tanks in dry well		
		Size	appoximately 3' dia	m and 3'H below grade		
						condition of steel appears to be
		Material	Steel			adequate
		Lined	no			
		Hatch	no			
		Vent	no			
		Rails	no			
		Cable	no			
		Piping				
3/1.3						
		Manufacturer	custom			
		Year Installed	1970			
261		INIGHER PROVINC (IF KNOWN				
301		INFLOENT PIPING (IF KNOWN	<u>u</u>			
						Influent and offluent pipes are DVC_All
		Material	PVC			other nining is Ductile Iron or Cast Iron
		Diameter	6"			other piping is Ductile non of cast non
371		GRINDER	Ν/Δ			
571		Manufacturer	14/7			
		Model				
		НР				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model				
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	gate	swing check		
		Manufacturer				
		Size				
		#				
		Year Installed	approx. 1970	approx. 1970		
355		<u>GENERATOR</u>	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)	N/A			
		Year Installed				
360		FORCE MAIN				
		Force Main Size	6"			
		Force Main Mat.				
		Length in Feet	848			
		Discharge Deint	1920			
		Discharge Point				
		Discharge Point Location				

354.2	BUILDING				
00.02	Condition	good			
	Size	10'x15'			
	Main Structure Material	red brick masonry e	sterior unfinished expo	 osed studs_rafters_anc	masonry interior
	Boof Type	ridge arch Shingles	Alerior, annisilea expe		
	Boof Condition	newer			not full height
	Doors (number /material)	1 wood double door	1 wood double door		
	Lighting (Type)	overhead fluorescer	nt lights	-	
	Year Installed	approx, 1970		-	
	ELECTRICAL				
371.3	MCC	Westinghouse		-	underground service, 240V
		<u> </u>			
396	Alarm System (manf/ model)	Omni Crystal Ball			
	Year Installed	· · · · · · · · · · · · · · · · · · ·			
354.3	HVAC	N/A			
	Condition				
	Туре				
	Manufacturer				
	Year Installed				
364	Flow Meter				Effluent
364	Chart Recorder				
354.3	Hydrants				
	GROUNDS	N/A			
354.3	Fence Length				
	Fence Type				
	Year Installed				
354.3	Paving and Walkways	good condition			
371.3	ODOR CONTROL				
	Manufacturer				
	Туре				
	MISCELLANEOUS		DES	CRIPTION OF FACILITY	1
	Other Buildings				
	Spare Parts				
	Vac Truck Suitable				
	Does the PS have a Sanitary C	verflow? Size and Ma	aterial?		
OVERALL BUIL	DING AND FACILITY ASSESSMENT				
2017 - Rose Va	alley PS & FM				

PS-27 - AKA Chester-Ridley Creek PS

Facility Description (see attached Information Sheet)

PS-27 is submersible pump station located at 1 Gamble Lane, Aston, PA and was installed in 2014. The station has four (4) 3,850-GPM submersible pumps. The pump station is in good condition.

The influent is screened with two Huber upright bar screens. The station has a gravity grit pit. Two self-priming pumps pump the grit to a grit classifier. The grit chamber overflows directly into the wet well. The pump wet well is unlined concrete.

The pumps have 250 HP 460-volt motors, which are VFD controlled. The PLC based control panel was manufactured by Trijay. The station has a magnetic flow meter. SCADA communications are redundant with directional radio and internet cable. The flow meter is in a separate concrete vault.

The Generator is an MTU - Onsite Energy 600 KW KW unit with a 3000-gallon tank. The Automatic Transfer Switch (ATS) is a 1600A ASCO/ G03AUSA31600NGXM. The pump VFD's are as manufactured by DRV. The station's MCC was manufactured by General Electric \

The building (2,500 Sq. Ft.) is constructed of Brick/ CMU with EPIS stucco. The membrane roof is in good condition. The wet well, screens, and grit classifier are located within the same building space. This building space has explosion proof electrical construction. There is a separate electrical room. The screen area/ wet well / pump room and the electrical room are well separated. The building contains LED lighting. The doors are painted carbon steel. The ventilation systems are a ducted forced air system is in good condition. The pump room has an overhead trolley hoist.

The pump station sits within a larger property, which is surrounded by a 3,100-foot galvanized steel chain link fence. The access drive is in good condition. The paved area around the station is in fair condition.

Property Condition

Due to the age of the facility, the building, equipment and electronics are in good condition.





Figure 1 – Bar Screen Discharge



Figure 3 – MCC

Figure 2 – Electrical Panels



Figure 4 – Gas Detector Panel







Figure 7 – SCADA / Pump Monitor Display



Figure 6 - VFD / Pump Control



Figure 8 – Pump Controls





Figure 9 – Ultrasonic Flowmeter



Figure 10 - Pump Station Building



Figure 11 – Control Room

Figure 12 – Bar Screens





Figure 13 - Grit Classifier

Figure 14 – Grit Pumps



		DC 37	1	C-h-d-l-d-M-th D-h-	10/25/2010		
PUMP STAT	ION #	PS-27		Scheduled Visit Date:	10/25/2019	FRI	
Station Nam	ne	Chester-Ridley Creek	Phone #				
Location		1 Gamble Ln. Aston, PA					
Start Up Dat	e	2014					
CODE	SURCODE	DUMP STATION				COMMENTS	
CODE	JUBCODE	FOMF STATION				COMMENTS	
371.3		PUMP(S)					
		Condition	New				
		No. of Pumps	4				
		Type	Submersible				
371 3		Pump Manufacturer	Flygt				
572.5		Pump Model Number	2227/746-5001				
		Veer Installed	3237/740-5001				
		rear installed	2014				
			3850				
		Pump TDH Ft.	149				
		Outlet Size	222				
		Motor HP	250 HP				
		Motor Voltage	460 V				
371.3		Pump Control (VFD?)	VFD				
370.3		WET WELL					
		Condition	Good				
		Size					
		Material	Concrete				
		lined	No				
		Hatch	N/A				
		Vont	N/A				
		Paile	Staiplass Staal				
		Calila	Stamless steel				
		Cable	Yes				
		Piping	Ductile Iron				
371.3		CONTROL PANEL					
		Manufacturer	Trijay/ General Electric				
		Year Installed	2014				
		Model	Presume GE 90-70				
361		INFLUENT PIPING (IF KNOW)	N}				
		Material					
		Diameter					
371		SCREEN					
		Manufacturer	Huber			2 Screens	
		Model	BOTAMAT				
		НР					
		Vear Installed	2014				
371			2014				
3/1	-		MBL				
		Manufacturer	NicDai				
		Model	3 Ton				
		Year Installed	2014				
360		VALVES (DISCHARGE)					
		Туре	Plug				
		Manufacturer					
		Size					
		#	4				
		Year Installed	2014				
355		GENERATOR					
		Manufacturer	MTU - Onsite Energy				
		Generator KW	600 KW				
		Generator KVA	750 KVA				
	-	Fuel Tank (Gals)	3000 Gal				
255	-	ATS (manf/model #)		1			
	-	Vear Installed	2014				
200	-		2014				
360	l		201	2011			
		Force Main Size	30"	30"			
	-	Force Main Mat.	DI	HDPE			
		Length in Feet	10,410	4,770			
		Year Installed	2013	2013			
		Discharge Point					
		Discharge Point Location					

CODE	SUBCODE	PUMP STATION				COMMENTS		
354.2		BUILDING						
		Condition	Good					
		Size	2,508 Sq. Ft.					
		Main Structure Material	CMU					
		Roof Type	Membrane					
		Roof Condition	New					
		Doors (number /material)	5/ Steel					
		Lighting (Type)	LED					
		Year Installed	2014					
		ELECTRICAL						
371.3		мсс	GE 1600A Distribution Switchboard					
396		Alarm System (manf/ model)	APC SCADA Based & Edwards Fire / Security Panel					
		Year Installed						
354.3		HVAC						
		Condition	Good					
		Туре	Mechanical Cooling - Centrifugal Fan/ Air Duct					
		Manufacturer						
		Year Installed	2014					
364		Flow Meter	Endress Hauser Mag Meter					
364		Chart Recorder	SCADA					
354.3		Hydrants	N/A					
		GROUNDS						
354.3		Fence Length	3076'					
		Fence Type	Galvanized Steel Chain Link					
		Year Installed	2014					
354.3		Paving and Walkways	Asphalt					
371.3		ODOR CONTROL						
		Manufacturer	N/A					
		Type	N/A					
		MISCELLANEOUS		DES	CRIPTION OF FACILI	тү	l .	
		Other Buildings						
		Spare Parts						
		Vac Truck Suitable						
		Does the PS have a Sanitary C	overflow? Size and Material?					
2002 - Forcemain Construction Chester Creek Crossing								
2013 - CRC FM								
2013 - CRC PS								
2018 - Electrical Systems Upgrades								
		0	VERALL BUILDING AND FACILITY ASS	SESSMENT				
		Eacility was cons	tructed in 2014 All facility compone	ents are in good conditio	n			

<u> PS-28 - Bridle Way (EPS-1) PS</u>

Facility Description (see attached Information Sheet)

PS-28 is located at 20 Bridle Way, Newtown Square, PA and is equipped with two (2) duty pt. 562-GPM, 60 HP Flygt submersible pumps. Wastewater is discharged through a 6-inch DIP force main. The pump station was installed in 2016.

The pump wet well is precast concrete with no coating (10-foot diameter) with three (3) new aluminum hatches. The pump control panel is a GE PLC touch screen, pumps are controlled by Yaskawa P1000 VFDs. The pump system has a separate 4-foot Bar Screen. There are one (1) 4-inch gate valves, three (3) 6-inch Milliken plug valves, one (1) 4-inch check valve, two (2) 6-inch GA Industries air cushioned swing check valves, one (1) 4-inch GA Industries surge valves, installed in 2016. The influent line to the wet well contains a 5 HP electric operated muffin monster grinder.

The building (22-foot x 22-foot) is constructed of stone masonry veneer exterior with 12-inch thick CMU interior and asphalt shingle roof in new condition. The building contains fluorescent lighting in ceiling and a double, insulated metal door and frame door.

The facility is powered by 200 amp service panel. The Generator is a KOHLER 100 KW unit with diesel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO 200A, Service Entrance Transfer Switch, Emerson. A 150 KVA transformer is located on the side of the building.

The entire property is surrounded by a 200-foot long, 6-foot high ornamental aluminum fence, with vehicle and main gates.

Property Condition

The building, pumps and electrical controls were all installed in 2016 and are in good condition.



Appendix D Page 136 of 598 Engineering Assessment December 2019



Figure 1 – Pump Station Building



Figure 3 – Top Slab of Wet Well



Figure 2 – Generator



Figure 4 – Interior of Building (Elect. & Control Area)





Figure 5 – – Interior of Building (Elect. & Control Area)



Figure 7 – Discharge Pipe Layout



Figure 6 – Discharge Pipe Layout



Figure 8 – Wet Well



		laa aa	1				
PUMP STAT	<u>ION #</u>	PS-28		Scheduled Visit Date:	10/17/20	19 THUR	
Station Nam	ıe	Bridle Way (EPS-1)	Phone #				
Location		20 Bridle Way, Newtown Squ	are, PA				
Start Up Dat	te	2016	Γ	1			
CODE	SUBCODE	PUMP STATION				COMMENTS	
371.3	3	PUMP(S)					
		Condition	new				
		No. of Pumps	2				
		Type	Submersible				
371.3	1	Pump Manufacturer	Elvgt (Xylem)			S/N 1510016/1510017	
		Pump Model Number	NP3202.095-5105			Impeller: NP467_4"	
		Year Installed	2016			impenet: in 407, 4	
		Pump GPM	duty nt 562 gnm			reading during site visit 650gnm	
		Pump TDH Ft	166				
		Outlet Size	100				
		Motor HR	4				
			60				
271.2		Notor Voltage	400V				
371.3	5	Pump Control (VFD?)	(2) Yaskawa P1000 VFDs			VFD controls with float activated swite	:n
370.3	5	WEIWELL			-		
		Condition	new				
		Size	10' diameter				
		Concrete	precast concrete with no	coating			
		Lined	unlined				
		Hatch	(3) new aluminum hatche	s			
		Vent	4" DIP (passive)				
		Rails	2" diameter SS 304				
		Cable	SS				
		Piping	DIP				
371.3	8	CONTROL PANEL					
		Manufacturer	GE				
		Year Installed	2016				
		Model	PLC touch screen				
361		INFLUENT PIPING (IF KNOW)	v)				
		Material	Ī				
		Diameter					
371		GRINDER					
	-	Manufacturer	muffin monster				
		Model	30005-24				
		HP	5 HP Fler			motor on top of grinder	
		Vear Installed	2016			motor on top of grinder	
371			2010 N/A				
- 3/1	-	Mapufacturor	N/A				
		Manufacturer					
		Model					
		Year Installed					
360	,	VALVES (DISCHARGE)	<u> </u>	2			
		lype	Gate	Plug	Check	Air Cushioned Swing Check	Surge
		Manufacturer		Milliken		GA Industries	GA Industries
		Size	4"	6"	4"	6"	4"
		#	1	3	1	2	1
		Year Installed	2016	2016	2016	2016	2016
355	5	GENERATOR					
		Manufacturer	KOHLER				
		Generator KW	100				
		Generator KVA	125				
		Fuel Tank (Gals)	diesel				
355	5	ATS (manf/model #)	ASCO 200A, Service Entra	nce Transfer Switch, Eme	erson		
		Year Installed	2016				
360		FORCE MAIN		1			
	1	Force Main Size	8"	1			
	1	Force Main Mat	FPVC	1			1
	1	Length in Feet	2,022	1			1
		Year Installed	2,022	1			-
	+	Discharge Point	2014	1			1
		Discharge Point Location			-		+
1	1	poscharge Fourt Location	1	1	1		1

Appendix D Page 139 of 598

CODE	SUBCODE	PUMP STATION				COMMENTS		
354.2		BUILDING						
		Condition	new					
		Size	22'x22'			out to out		
		Main Structure Material	Stone masonry veneer ext	erior with 12" THK CMU i	nterior			
		Roof Type	sloped rood ridge line con	loped rood ridge line constructed with 2" x with Arch, asphalt shingles				
		Roof Condition	new					
		Doors (number /material)	1 double, insulated metal	door and frame				
		Lighting (Type)	fluorescent lights in ceiling					
		Year Installed	2016					
		ELECTRICAL						
371.3		мсс	200 AMP service panel			transformer		
396		Alarm System (manf/ model)	hard wire fire alarm (Hone	ywell)				
		Year Installed	2016					
354.3		HVAC						
		Condition	NEW			in building only		
		Туре	unit heaters/exhaust fans					
		Manufacturer						
		Year Installed						
364		Flow Meter	6" KROHNE					
364		Chart Recorder	N/A					
354.3		Hydrants	N/A					
		GROUNDS						
354.3		Fence Length	200LF, 50'x40' with vehicle	and main gates				
		Fence Type	6'H ornamental aluminum					
		Year Installed	2016					
354.3		Paving and Walkways	well maintained					
371.3		ODOR CONTROL	N/A					
		Manufacturer						
		Туре						
		MISCELLANEOUS		DESCRIP	FION OF FACILITY			
		Other Buildings	4' Bar Screen					
		Spare Parts	VFDs					
		Vac Truck Suitable						
		Does the PS have a Sanitary C	Verflow? Size and Material	?				
OVERALL BL	JILDING AND	FACILITY ASSESSMENT						
2009 - Pump	o Upgrade							
2010 - Rag C	Conveyor Syst	em						
(2) insulated	l flood vent n	nodel 1540-520 vy smart vent,	at 8" above grade					
"OMNI SITE"	' not activate	d						
This facilitty	is new, clear	n, and very well maintained						
1) Bridle Way (EPS-1) and Dream Valley (EPS-3) will forward all communicational data to Runnymeade (EPS-2). Fiber optic cables will be used to transmit this data.								
2) Runnyme	2) Runnymeade (EPS-2) will send all system data to the WRTP via radio communications.							

PS-29 - Runnymeade (EPS-2) PS

Facility Description (see attached Information Sheet)

PS-29 is located at 3547 Runnymeade Dr. Newtown Square, PA and is equipped with two (2) 856-GPM, 105 HP Flygt submersible pumps. Wastewater is discharged through a 6-inch DIP force main. The pump station was installed in 2016.

The pump wet well is concrete, coated (approx. 10-foot x 15-foot x 18-foot deep) with three (3) aluminum hatchways, two (2) 5-foot x 3-foot and one (1) 2-foot x 2-foot. The pump control panel is manufactured by GE. Pumps are operated with 2 Yaskawa P1000 VFDs. There is one (1) 4-inch gate valve, two (2) 8-inch Milliken plug valves, one (1) 8-inch GA Industries surge valve, two (2) 8-inch and one (1) 4-inch GA Industries air cushion check valves, installed in 2016. The influent line to the wet well contains a muffin monster grinder which operated via a 5 HP electric unit. Flow is monitored by a Krohne magmeter.

The building (22-foot x 22-foot) is constructed of stone masonry veneer exterior with 12-inch CMU interior and sloped roof ridge line constructed with an asphalt shingle roof in new condition. The building contains fluorescent lighting and a double, insulated metal door and frame door and a bathroom, sink, and toilet.

System power is supplied by a 400 amp service panel. The Generator is a KOHLER 250 KW unit with diesel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO 400A Emerson.

The entire property is surrounded by a 170-linear-foot, 6-foot high ornamental aluminum fence with vehicle and main gates.

Property Condition

The pumps, equipment, and building are all in new condition



Appendix D Page 141 of 598 Engineering Assessment December 2019



Figure 1 – Pump Station Building



Figure 3 – Generator



Figure 2 – Top Slab of Wet Well



Figure 4 – Interior of Building (Elect. & Control Area)





Figure 5 – Interior of Building (Elect. & Control Area)



Figure 7 – Discharge Pipe Layout



Figure 6 – Discharge Pipe Layout



Figure 8 – Grinder in Wet Well



PUMP STATI	ION #	PS-29		Scheduled Visit Date:	10/17/2019	THUR
Station Nam	e	Runnymeade (EPS-2)	Phone #		·	
Location		3547 Runnymeade Dr. Newto	wn Square, PA			
Start Up Dat	e	2016				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	new			
		No. of Pumps	2			
		Туре	Submersible			
371.3		Pump Manufacturer	Flygt (Xylem)			S/N 1510007/1510008
		Pump Model Number	NP-3301.090-5236			Impeller NP460 6"
		Year Installed	2016			
		Pump GPM	856			
		Pump TDH Ft.	244			
		Outlet Size	6"			
		Motor HP	105			
		Motor Voltage	460			
371.3		Pump Control (VFD?)	(2) Yaskawa P1000 Y	VFDs		VFD controls with float activated switch
370.3		WET WELL				
		Condition	new			
		Size	approx. 10'x15'x18'	D		
		Concrete	concrete, coated			
		Lined	unlined			
		Hatch	(3) aluminum, (2) 5'	x 3' and (1) 2' x 2'		
		Vent	8" DIP (passive)			
		Rails	2" diameter SS 304			
		Cable	SS			
		Piping	DIP			
371.3		CONTROL PANEL				
571.5		Manufacturer	GF			
		Year Installed	2016			
		Model	PLC touch screen			
361		INFLUENT PIPING (IF KNOWN)			
		Material				
		Diameter				
371		GRINDER				
		Manufacturer	muffin monster			
		Model	30005-24			
		НР	5 HP Elec.			motor on top of grinder in wet well
		Year Installed	2016			
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model				
		Year Installed				
360		VALVES (DISCHARGE)				
		Туре	Gate	Plug	Surge	Air Cushion Check
		Manufacturer		Milliken	GA Industries	GA Industries
		Size	4"	8"	8"	4", 8"
		#	1	2	1	(2) 8", (1) 4"
		Year Installed	2016	2016	2016	2016
355		GENERATOR				
		Manufacturer	KOHLER			Model 250RE0ZJE
		Generator KW	250			
		Generator KVA	312.5			
		Fuel Tank (Gals)	diesel			
355		ATS (manf/model #)	ASCO 400A Emerso	n		
		Year Installed	2016			
360		FORCE MAIN				
		Force Main Size	10"			
		Force Main Mat.	FPVC			
		Length in Feet	1,860			
		Year Installed	2014			
		Discharge Point				
		Discharge Point Location				

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	new			
		Size	22'x22'			out to out
		Main Structure Material	Stone masonry vene	eer exterior with 12" THK	CMU interior	
		Roof Type	sloped roof ridge lin	e constructed with 2" x w	ith Arch, asphalt shi	ngles
		Roof Condition	new			
		Doors (number /material)	1 double, insulated	metal door and frame		
		Lighting (Type)	fluorescent lights in	ceiling		
		Year Installed	2016			
		ELECTRICAL				
371.3		MCC	Service Panel			
396		Alarm System (manf/ model)	hard wire fire alarm	(Honeywell)		
		Year Installed	2016			
354.3		HVAC				
		Туре				
		Manufacturer				
		Model				
		Year Installed				
364		Flow Meter	8" KROHNE			
364		Chart Recorder	N/A			
354.3		Hydrants	N/A			
		GROUNDS				
354.3		Fence Length	170LF, 60'x25' with	vehicle and main gates		
		Fence Type	6'H ornamental alur	minum		
		Year Installed	2016			
354.3		Paving and Walkways	well maintained			
371.3		ODOR CONTROL	N/A			
		Manufacturer				
		Туре				
		MISCELLANEOUS		DESCI	RIPTION OF FACILITY	(
		Building	building has bathroo	om with sink and toilet		
		Spare Parts	N/A			
		Vac Truck Suitable	N/A		1	
		Does the PS have a Sanitary C	verflow? Size and M	aterial?		
	(2) insulated flood vent model	1540-520 vy smart ve	ent, at 8" above grade		
		"OMNIS	SITE" not activated			
		This facilitty is new, o	clean, and very well r	maintained		
1) Duidle 18/	·/EDC 1) and			anal data ta Dunnum!-		
cables will be	e used to trai	nsmit this data.	vard all communicati	onal data to Runnymeade	: (EPS-2). Fiber optic	
	2) Runny	meade (EPS-2) will send all sys	stem data to the WR	TP via radio communicatio	ons.	

<u> PS-30 - Dream Valley (EPS-3) PS</u>

Facility Description (see attached Information Sheet)

PS-30 is located at 45 Dream Valley Drive, Newtown Square, PA and is equipped with two (2) 121-GPM, 4 HP Flygt submersible pumps. Wastewater is discharged through a 3-inch DIP force main. The pump station was installed in 2016.

The pump wet well is precast concrete (6-foot diameter) with 4-foot x 3-foot-6-inch aluminum (300 psf) hatchway. There are two (2) 4-inch GA Industries air cushioned swing check valves, three (3) 4-inch Milliken plug valves, installed in 2016. The influent line to the wet well contains a Muffin Monster grinder which operated via a 5 HP electric unit. Flow is monitored by a Krohne magmeter. Pumps are controlled by a GE interactive control screen, VFDs with a SCADA interface.

There is no building at this facility. All equipment is housed in weatherproof enclosers.

The Generator is a Generac 20 KW unit operated with natural gas. The Automatic Transfer Switch (ATS) is manufactured by Generac.

The entire property is surrounded by an 8-foot x 11-foot, 6-foot high ornamental aluminum fence.

Property Condition

The facility is new and in good condition.



Appendix D Page 146 of 598 Engineering Assessment December 2019



Figure 1 – Pump Station Yard



Figure 3 – Valve Vault



Figure 2 – Generator



Figure 4 – Grinder in Wet Well



PUMP STAT	ION #	PS-30		Scheduled Visit Date:	10/17/2019	THUR
Station Nam	e	Dream Valley (EPS-3)	Phone #		, ,	I
Location		45 Dream Valley Drive, Newto	own Square, PA			
Start Up Dat	e	2016				
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	new			
		No. of Pumps	2			
		Type	submersible			
371.3		Pump Manufacturer	Flygt (Xylem)			S/N 1510024/1510025
		Pump Model Number	NP-3085.190-0146			Impeller: NP255 3"
		Year Installed	2016			
		Pump GPM	121			
		Pump TDH Ft.	63			
		Outlet Size	3"			
		Motor HP	4			
		Motor Voltage	460			
371 3		Pump Control (VED?)	VED controls with float activa	uted switch		
370.3		WET WELL				
570.5		Condition	DeW/			
		Size	6' diameter			
		Concrete	precast concrete			
		Lined	linod			
		Hatch	4' x 3'-6" aluminum (200 pcf)			
		Vont				
		Pails	2" diamotor \$\$ 304			
		Cablo				
		Diping	33			
271.2			DIF			
5/1.5		Manufasturar	Elvet (Xylom)			
		Vear Installed	Flygt (Ayleitt)			
		Model				
261		INELLENT BIDING (IE KNOWN	1			
501		Material				
		Diamotor	0"			
271			8			
5/1		Manufacturer	Muffin Monster			
		Madal	20005 9			
		нр	5 HP Elec			motor on top of grinder in wet well
		Voar Installed	2016			motor on top of grinder in wet wei
371			2010 N/A			
5/1		Manufacturor	17.6			
		Model				
		Year Installed				
360		VALVES (DISCHARGE)		I	1	1
		Type	Air Cushioned Swing Check	Pluø		
		Manufacturer	GA Industries	Milliken		
		Size	4"	4"		
		#	2	3		
		Year Installed	2016	2016		
355		GENERATOR				
		Manufacturer	Generac			
		Generator KW	20			
		Generator KVA	25			
		Fuel Tank (Gals)	natural gas			
255		ATS (manf/model #)	Generac			
		Year Installed	2016			
360		FORCE MAIN	2010			
500		Force Main Size	2"			
		Force Main Mat	fpvc			
		Length in Feet	698			
		Year Installed	2014			
		Discharge Point	2017			
		Discharge Point Location				
1	1	a second be a bint condition	1	1	1	1

CODE	SUBCODE	PUMP STATION				COMMENTS		
354.2		BUILDING	N/A					
		Condition						
		Size						
		Main Structure Material						
		Roof Type						
		Roof Condition						
		Doors (number /material)						
		Lighting (Type)						
		Year Installed						
		ELECTRICAL						
371.3		MCC	Service Panel					
396		Alarm System (manf/ model)						
		Year Installed						
354.3		HVAC	N/A					
		Туре						
		Manufacturer						
		Model						
		Year Installed						
364		Flow Meter	approx. 8" Krohne					
364		Chart Recorder						
354.3		Hydrants						
		GROUNDS						
354.3		Fence Length	8'x11'x6'H					
		Fence Type	ornamental aluminum					
		Year Installed	2016					
354.3		Paving and Walkways						
371.3		ODOR CONTROL	N/A					
		Manufacturer						
		Туре						
		MISCELLANEOUS		DESCRIPT	ON OF FACILITY	•		
		Other Buildings						
		Spare Parts						
		Vac Truck Suitable						
		Does the PS have a Sanitary O	verflow? Size and Material?					
Bridle Way	(EPS-1) and	Dream Valley (EPS-3) will forw	vard all communicational data	a to Runnymeade (EPS-2)	. Fiber optic cables v	vill be used to transmit this data.		
) Runnymea	de (EPS-2) v	vill send all system data to the	WRTP via radio communicatio	ons.				

PS-31 - Rose Valley PS

Facility Description (see attached Information Sheet)

PS-31 is located at 18 S. Longpoint Ln. Rose Valley, PA and is equipped with two (2) 275-GPM, 35 HP Flygt submersible pumps. Wastewater is discharged through a 6-inch force main. The original pump station building was installed in 1937. The pumps and controls were update in 2017.

The pump wet well is precast coated concrete, (7-foot-4 inches x 11-foot-4 inches) with two (2) aluminum, 3-foot x 3-foot and 3-foot x 5-foot hatchways and davit crane. The control panel is manufactured by GE. The pumps are controlled by Yaskawa Z1000 VFDs. There are five (5) plug valves, installed in 2017. The influent line to the wet well contains a Muffin Monster grinder. A Krohne Magmeter measures discharge flow.

The building (approx. 14-foot x 14-foot) is constructed of stone masonry exterior with newly rehabbed sheetrock interior and slate, hip roof in new condition. The building contains fluorescent lighting in the ceiling lighting and one (1) door.

The Generator is a Generac 175 KW unit with 693-gallon diesel tank. The Automatic Transfer Switch (ATS) is manufactured by Generac GTS-Series. There is a150 KVA transformer located adjacent to the pump station

The entire property is surrounded by a 6-foot high chain link fence.

Property Condition

The building exterior and interior are in good condition, the roof is in new condition. Since the station was upgraded in 2017, all equipment is in good condition.





Figure 1 – Front Door Elevation of Control Building



Figure 3 – Interior of Control Building



Figure 2 – Back Corner Elevation of Control Building



Figure 4 – Interior of Control Building





Figure 5 – Top Slab of Wet Well



Figure 6 – Grinder in Wet Well



Figure 7 –Valve Vault



Figure 8 – Elect. Panels with Roof Structure



	ON #	DC 21		Caluad Mate Dates	10/17/2010	7000
PUMPSIAII		P3-31		scheduled visit Date:	10/17/2019	THUR
Station Name	3	Rose Valley	Phone #			
Location		18 S. Longpoint Ln. Rose Valle	y, PA			
Start Up Date	2	original building 1937, update	ed in 2017			
CODE	CURCORE					CONNENTS
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	new			
		No. of Pumps	7			
		Tuno	zubrarsibla			
- 174		Type During Manual anti-	subfilersible			
3/1.3		Pump Manufacturer	Flygt			
		Pump Model Number	3171.095-5169			
		Year Installed	2017			
		Pump GPM	275			
		Pump TDH Ft.	224			
		Outlet Size	6"			
		Motor HP	35			
		Motor Voltage	460			
371 3		Bump Costrol ()(ED3)	(3) Vaskawa 71000			discrete lovel centrals with VEDs
371.3		Pump control (VPD?)	(2) Taskawa 21000			discrete level controls with VFDs
370.3		WEIWELL				
		Condition	new			
		Size	7'-4" x 11'-4"			
		Concrete	precast concrete, coated			
		Lined	unlined			
		Hatch	(2) aluminum, 3' x 3' and 3' x 5'			
						Active vent in valve vault and just passive vent with one
		Vent	passive SS			vent on wet well
		Rails	ss			
		Cable	33 shain fan lifting numps			douit mone - bet disped only
		Cable	chain for inting pumps			davit crafie - flot dipped galv.
		Piping	4" DIP			
371.3		CONTROL PANEL				
		Manufacturer	GE			
		Year Installed	2017			
		Model/Serial number				
361		INFLUENT PIPING (IF KNOWN	i)			
		Material				
		in accinat				annears to have a surge maybe from another PS that
		Diamotor	17"			flows over the grinder
271			12			nows over the grinder
5/1			1. <i>T</i>			
		Manufacturer	Muffin Monster			
		Model/Serial number				
		HP				
		Year Installed	2017			
371		CRAIN/HOIST				
		Manufacturer	davit crane - hot dipped			
		Model/Serial number	· · ·			
		Year Installed	2017			
360		VALVES (DISCHARGE)				
500		Type	nlua			
		Manufacturer	piug			
		rianuracturer				
		Size	-			
		#	5			
		Year Installed	2017			
355		GENERATOR				
		Manufacturer	Generac			
		Generator KW	175			
		Generator KVA	219			
		Fuel Tank (Gals)	693gal diesel			
344		ATS (manf/model #)	Generac GTS-Series			
		Vear Installed	2017			
300			2017			
360						
		Force Main Size	6"			
		Force Main Mat.	HDPE			
		Length in Feet	2,950			
		Year Installed	2017			
		Discharge Point				
		Discharge Point Location				

354.2	BUILDING				
	Condition	good original exterior, new interior			
	Size	approx. 14' x 14'			
	Main Structure Material	stone masonry exterior with newly rehabbed shee	trock interior		
	Roof Type	slate, hip roof			
	Roof Condition	new			
	Doors (number /material)	1			
	Lighting (Type)	fluorescent lights in ceiling			
	Year Installed	original building from 1937			
	ELECTRICAL				
371.3	MCC	480V			below grade into vault below transformer, 4kV-150
205	Name Castern (mark) and N	Lie was well B. Charles and			
396	Alarm System (mant/ model)	Honeywell Winitrend			
254.2	Year Installed	2017			
354.3	HVAC	N/A			
	Condition	good			
	Type				
	Van Installed				
264	Fear Installed	KROUNE			
264	Chart Recorder	KROHNE			
25/2	Hudrante				
334.5	GROUNDS				
354 3	Eepce Length				
554.5	Fence Type	6'H chain link			
	Vear Installed	Dew .			
354 3	Paving and Walkways	new			
371 3		N/A			
5/1.5	Manufacturer	170			
	Type				
	MISCELLANEOUS		DESCRIPTIC	N OF FACILITY	
	Other Buildings				
	Spare Parts				
	Vac Truck Suitable				
	Does the PS have a Sanitary C	verflow? Size and Material?			
	,				
	I	Debris found on the highes	t point in the wet well	1	
		Does this station	overflow?		
		Original building was part of the original wast	ewater treatment plant;	it is dated 1937.	
	li	has been rehabilitated with new slte roof and new	sheetrock interior Now	used as a contol r	oom.

PS-33 - Delaware River Interceptor Bypass PS

Facility Description (see attached Information Sheet)

PS-33 is located at 2501 Seaport Dr. and Townsend St., Chester, PA and is equipped with one (1) 1500 GPM (estimated) trash pump. Wastewater is discharged through a 6-inch force main that ties into the existing sewage collection system at adjacent interceptor. The pump station was installed in approximately 2014.

The pump wet well is an existing brick MH (4-foot diameter) with no hatchway. The control panel is custom.

The Building (10-foot-6 inches x 14 feet x 10 feet high) is a wood stud shed and arch shingles roof in good condition. The building contains one (1) 4-foot LED lighting and an overhead 7-foot x 8-foot-6-inch door. The building has an electric unit heater and is vented.

There is no generator or Automatic Transfer Switch (ATS) at this facility.

There is no fencing at this property.

Property Condition

The building and all equipment is in good condition.



Appendix D Page 155 of 598 Engineering Assessment December 2019



Figure 1 – Pump Building



Figure 2 – Pump & Motor



Figure 3 – Building Interior



Figure 4 – Manhole & Pump Suction



PUMP STATION #		PS-33		Scheduled Visit Date:	10/22/2019	TUE		
Station Name		Delaware River Interceptor Bypass	Phone #					
Location		Seaport Dr. and Townsend Ave.		•				
Start Up Date		1965						
CODE	SUBCODE	PUMP STATION				COMMENTS		
371.3		PUMP(S)						
		Condition	good					
		No. of Pumps	1					
		Type	trash pump					
		Pump Manufacturer	Godwin					
		Pump Model Number	CD150M Dri-Prime					
		Year Installed	approx. 2014					
		Pump GPM	1500 (est)					
		Pump TDH Ft.						
		Outlet Size	6"					
		Motor HP	50					
		Motor Voltage	230/460					
			Schneider Altivar					
371.3		Pump Control (VFD?)	212 VFD					
370.3		WET WELL						
		Condition	poor					
		Size	4' dia.					
		Material	existing brick MH					
		Lined	unlined					
		Hatch	no hatch					
		Vent	no vent					
		Rails	no rails					
		Cable	no cable					
		Piping	6" suction hose. 6"	discharge hose				
371.3		CONTROL PANEL	,-					
		Manufacturer	custom					
		Year Installed						
		Model						
361		INFLUENT PIPING (IF KNOWN)						
		Material						
		Diameter						
371		GRINDER	N/A					
		Manufacturer						
		Model/Serial number						
		HP						
		Year Installed						
371		CRAIN/HOIST	N/A					
		Manufacturer						
		Model						
		Year Installed						
360		VALVES (DISCHARGE)	N/A					
		Туре						
		Manufacturer						
		Size						
		#						
		Year Installed						
355		GENERATOR	N/A					
		Manufacturer						
		Generator KW						
		Generator KVA						
		Fuel Tank (Gals)						
355		ATS (manf/model #)						
		Year Installed						
360		FORCE MAIN						
		Force Main Size	8"					
		Force Main Mat.	HDPE					
		Length in Feet	685					
		Year Installed	2016					
		Discharge Point						
		Discharge Point Location						

CODE	SUBCODE	PUMP STATION			COMMENTS			
354.2		BUILDING						
		Condition	good					
		Size	10'-6"x14'x10'H					
		Main Structure Material	wood stud shed					
		Roof T ype	arch shingles					
		Roof Condition	good					
		Doors (number /material)	(1) overhead 7'x8'-6	n				
		Lighting (T ype)	(1) 4' LED					
		Year Installed	2014					
		ELECTRICAL						
371.3		мсс	Acme Electric KVA transformer; service panel					
396		Alarm System (manf/ model)						
		Year Installed						
354.3		HVAC						
		Condition	good					
		lype	Elec. unit heater					
		Manufacturer						
		Year Installed						
364		Flow Meter	no flow meter					
364		Chart Recorder						
354.3		Hydrants						
		GROUNDS						
354.3		Fence Length	N/A					
		Fence Type	N/A					
		Year Installed						
354.3		Paving and Walkways	N/A					
371.3		ODOR CONTROL	N/A					
		Manufacturer						
		Туре						
				DESCRIPTION OF FACILI	ТҮ			
		Other Buildings						
		Spare Parts						
		Vac Truck Suitable						
		Does the PS have a Sanitary Overflow? S	ze and Material?					
OVERALL BUILDING AND FACILITY ASSESSMENT								
Building and Pump set up is temporary. Wood shed and pump are approximately 5 years old and in good condition.								

L

PS-A - Brookhaven Road PS

Facility Description (see attached Information Sheet)

PS-A is located at 607 Brookhaven Rd, Rose Valley, PA and is a packaged pump station equipped with two (2) 150-GPM, 7.5HP, centrifugal Smith & Loveless pumps. Wastewater is discharged through a 4-inch DIP force main. The pump station was installed in 1997.

The pump wet well is precast concrete (approximately 5 feet in diameter) that sits below the pump assembly. The control panel is manufactured by Smith & Loveless. There are plug valves and swing check valves, installed in 1996. The influent line to the wet well does not contain a grinder.

There is no building, but an approximately 4-foot x 6-foot x 4-foot high fiberglass enclosure.

There is no generator or Automatic Transfer Switch (ATS).

The pump station is shielded on two sides by a 6-foot high solid vinyl fence.

Property Condition

The pumps and enclosure are in good condition.





Figure 1 – Pump Station Located Behind 6'-0" High Vinyl Fence



Figure 3 – Elect. Controls and Pumps



Figure 2 – Housed Pump Station



Figure 4 – Wet Well

108


PUMP STATION #		PS-A		Scheduled Visit Date:	10/17/2019	THUR
Station Name	2	Brookhaven Road	Phone #			
Location		607 Brookhaven Rd, Rose Vall	ey, PA	•		
Start Up Date	3	1997				
CODE SUBCODE		PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	good			
		No. of Pumps	2			
		Туре	centrifugal			
371.3		Pump Manufacturer	Smith & Loveless			
		Pump Model Number	13695-xx2978			
		Year Installed	1997			from Hydro-Numatic Sale email
		Pump GPM	150			
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	7.5			
		Motor Voltage	230/460			
			part of package system of smith			
371.3		Pump Control (VFD?)	loveless			
370.3		WEI WELL				
		Condition	good			
		Size	approximately 5'			
		Material	precast concrete			
		Lined	uniinea			
		Hatch	no			
		Vent	no			
		Ralls	no			
		Cable Division	no (2) Cll susting gives	uith (1) Clindianh anns minn	-	
271.2			(2) 6" suction pipes	With (1) 6" discharge pipe	2	
3/1.3			Emith & Lovalace			
		Vear Installed	1007			
		Model/Serial number	165095			
261			100000			
301		Material				
		Diameter	FVC			
371		GRINDER	N/A			
571		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		VALVES (DISCHARGE)		•		
		Туре	Plug	swing check		All part of Smith & Loveless package
		Manufacturer				
		Size				
		#				
		Year Installed	1997	1997		
355		GENERATOR	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)	N/A			
		Year Installed				
360		FORCE MAIN				
		Force Main Size	8"			
		Force Main Mat.	Steel			
		Length in Feet	1,050			
		Year Installed	1966			
⊢		Discharge Point				
		Discharge Point Location		1		

CODE	SUBCODE	PUMP STATION				COMMENTS
354.2		BUILDING				
		Condition	Good			No building, but small fiberglass enclosu
		Size	approximately 4'x6'x4'H			
		Main Structure Material	fiberglass enclosure			
		Roof Type	N/A			
		Roof Condition	N/A			
		Doors (number /material)	N/A			
		Lighting (Type)	N/A			
		Year Installed	1996			guessing from tag on fiberglass housing
		ELECTRICAL				
371.3		мсс	N/A			All part of Smith & Loveless package
396		Alarm System (manf/ model)	N/A			All part of Smith & Loveless package
		Year Installed				
354.3		HVAC				
		Condition	good			
		Туре	small fan & louver			
		Manufacturer				
		Year Installed	1997			
364		Flow Meter	N/A			
364		Chart Recorder	N/A			
354.3		Hydrants	N/A			
		GROUNDS				
354.3		Fence Length	6'H			3 sides only
		Fence T ype	solid vinyl partial en	closure, poor condition		
		Year Installed				
354.3		Paving and Walkways	poor			
371.3		ODOR CONTROL				
		Manufacturer	N/A			
		Туре				
		MISCELLANEOUS		DESC	RIPTION OF FACILITY	
		Other Buildings				
		Spare Parts				
		Vac Truck Suitable				
		Does the PS have a Sanitary O	verflow? Size and Ma	aterial?		
OVERALL BU	ILDING AND	FACILITY ASSESSMENT				
		very small pump station, t	aking flow from a ha	indful of houses		
		Old, abando	ned "can" station sit	e		
		(2) pumps sitting	on top of precast w	et well		

PS-B - Old Mill PS

Facility Description (see attached Information Sheet)

PS-B is located at 10 Old Mill Ln. Rose Valley, PA and is equipped with two (2) 250-GPM, 10 HP Smith & Loveless centrifugal pumps. Wastewater is discharged through a 6-inch force main. The original pump station was installed in 1935.

The pump wet well is concrete, assumed original (under part of building) with no hatchway. The control panel is locally fabricated. There is one (1) 4-inch Smith & Loveless Plug valve and one (1) 4-inch Smith & Loveless swing check valve. The system is monitored by a SCADA system.

The building (12-foot x 12-foot) is constructed of stone masonry exterior with lath & plaster interior walls and ceiling. The building has a hip roof with asphalt shingles roof in good condition. The building contains florescent lighting and a single wood door.

The Generator is an ONAN Cummings 35 KW/ 43.8 KVA unit with an integral diesel fuel tank.

There is no fence surrounding the facility.

Property Condition

The building is in original condition, the roof is in good condition. This pump station condition is poor to fair and needs upgrades. A Godwin CD-103 silenced Dri-prime pump is utilized for wet weather flow. The generator is in good condition. The Authority is planning to replace the pump station, since the small building dates back to 1935.





Figure 1 – Pump Station Building W. Generator to the Left



Figure 3 – Interior of Building



Figure 2 – Pumps with Elect. Controls



Figure 4 – Godwin Pump for Wet Weather Flows

PENNONI Consulting Engineers





PUMP STATION #		PS-B		Scheduled Visit Date:	10/17/2019	THUR
Station Name	e	Old Mill	Phone #			
Location		10 Old Mill Ln. Rose Valley, PA	4			
Start Up Date	e	1935				-
CODE	SUBCODE	PUMP STATION				COMMENTS
371.3		PUMP(S)				
		Condition	updated, not new			
		No. of Pumps	2			
		Туре	centrifugal pumps			
371.3		Pump Manufacturer	Smith & Loveless			
		Pump Model Number				
		Year Installed	1935			
		Pump GPM	250			
		Pump T DH Ft.				
		Outlet Size	4"			
		Motor HP	10			
		Motor Voltage	6			
3/1.3		Pump Control (VFD?)	float activated			
370.3		WET WELL				
		Condition				
		Size	under part of build	ng		
		Lined	concrete, assumed	onginai		
		Lined	20			
		Vent	no			
		Rails	no			
		Cable	no			
		Piping	4" DIP at pumps tra	nsitions to PVC to exit bu	ilding	
371.3		CONTROL PANEL				
		Manufacturer				
		Year Installed				
		Model				
361		INFLUENT PIPING (IF KNOWN	1			
		Material				
		Diameter				
371		GRINDER	N/A			
		Manufacturer				
		Model				
		НР				
		Year Installed				
371		CRAIN/HOIST	N/A			
		Manufacturer				
		Model				
200						
360			Plug	Swing Chock	1	
		Manufacturer	Smith & Loveless	Smith & Loveless		
		Size	4"	4"		
		#	1	1		
		Year Installed	-	-		
355		GENERATOR				
		Manufacturer	ONAN Cummings			
		Generator KW	35			
		Generator KVA	43.8			
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		FORCE MAIN				
		Force Main Size	6"			
		Force Main Mat.	CIP			
		Length in Feet	2,550			
		Year Installed	1937			
		Discharge Point				
		Discharge Point Location				

354.2	BUILDING				
	Condition	85-yr old building			
	Size	12'x12'			
	Main Structure Material	stone masonry exte	rior with lath & plaster in	terior walls and ceilin	ng
	Roof Type	Hip roof with asphal	t shingles		
	Roof Condition	good	· · · ·		
	Doors (number /material)	1 man door, wood			
	Lighting (Type)	Fluorescent			
	Year Installed				
	ELECTRICAL				
371.3	MCC	Service Panel			
		OmniSite Crystal			
396	Alarm System (manf/ model)	Ball			
	Year Installed				
354.3	HVAC_	N/A			
	Туре				
	Manufacturer				
	Model				
	Year Installed				
364	Flow Meter	MJK MagFlux-1			
364	Chart Recorder	N/A			
354.3	Hydrants	N/A			
	GROUNDS				
354.3	Fence Length	N/A			
	Fence Type	N/A			
	Year Installed				
354.3	Paving and Walkways	N/A			
371.3	ODOR CONTROL	N/A			
	Manufacturer				
	Туре				
	MISCELLANEOUS		DESC	RIPTION OF FACILITY	i
	Other Buildings				
	Spare Parts				
	Vac Truck Suitable				
	Does the PS have a Sanitary O	verflow? Size and Ma	aterial?		
Omni onsite	but not operating				
Planning to r	eplace soon since the small building dates l	back to 1935. This PS	condition is poor to fair	and needs upgrades.	
A Godwin CD	0-103 silenced Dri-prime pump is utilized fo	r wet weather flow.			

4.6. COLLECTION SYSTEM

DELCORA owns all or part of the collection systems in the following service areas: City of Chester, Chester Township, Borough of Marcus Hook, Borough of Rose Valley, Upland Borough, Parkside Borough, Trainer Borough, Edgmont Township, Pocopson Township, and Springhill Farms (Chadds Ford Township). The collection system consists of gravity piping and laterals within the right of way. A map of the collection system can be found in Appendix A, Figure A1. Collection system related cost data can be found in Section 8 for the gravity mains, manholes and force mains under account codes 361.21, 361.23, and 360.21 respectively.



4.7. CONVEYANCE SYSTEM

The following municipalities are served in whole or in part by a DELCORA owned facility:

Aldan Borough Aston Township **Bethel Township Brookhaven Borough Chester Heights Borough** Darby Borough Darby Township Easttown Township (Chester County) Eddystone Borough **Edgmont Township** Folcroft Borough **Glenolden Borough** Haverford Township Lansdowne Borough Lower Chichester Township Marcus Hook Borough Marple Township Middletown Township Morton Borough Nether Providence Township Newtown Township Norwood Borough Parkside Borough Upper Chichester Township Upper Darby Township

Chester Township City of Chester **Clifton Heights Borough Collingdale Borough** Colwyn Borough Pocopson Township (Chester County) **Prospect Park Borough** Radnor Township **Ridley Park Borough Ridley Township Rose Valley Borough Rutledge Borough** Sharon Hill Borough Springfield Township Swarthmore Borough **Trainer Borough** Tredyffrin Township (Chester County) Upland Borough **Upper Providence Township** Pocopson Township (Chester County) **Prospect Park Borough Radnor Township Ridley Park Borough Ridley Township** Yeadon Borough



4.8. COMBINED SEWER OUTFALLS (CSOs)

The City of Chester wastewater system is partially a combined sewer system. DELCORA is under mandate from the Pennsylvania Department of Environmental Protection (DEP) to separate the sanitary sewage and storm water and eliminate the combined sewer system. The combined sewer system consists of 25 CSOs. A location map for the CSOs is provided in Appendix A, Figure A6. DELCORA has successfully eliminated 2 CSOs. The CSOs include tide gates and screening devices. CSO related cost data can be found in Section 8 under account code 362.2.



Figure 1 – 7th & Penn 1



Figure 2 – 7th & Penn 2

PENNONI Consulting Engineers





Figure 3 – Parker St. 1



Figure 4 – Parker St. 2



Figure 5 – 6th St.



5. OWNED PROPERTY & EASEMENTS OF VALUE

Property that was directly purchased by the Authority and easements acquired with a significant purchase price are listed in the following chart. A majority of the properties owned by the Authority were transferred as part of the purchase of the facility and cannot be isolated as a separate value. The value of said properties is listed with a purchase price of zero and included in the original purchase price of the facilities listed in Section 8 – "List of Assets and Costs". A majority of the easements were purchased for one dollar and are not listed.



6. REGULATORY REQUIREMENTS



Appendix D Page 172 of 598



April 20, 2015

CERTIFIED MAIL NO. 7013 2250 0000 7504 1694

Robert J. Willert Executive Director DELCORA PO Box 999 Chester, PA 19016

Re: WQM Permit - Sewage Sheeder Tract Subdivision Permit No. 1505419 Authorization ID No. 1050423 Pocopson Township, Chester County

Dear Mr. Willert:

Your Water Quality Management (WQM) permit is enclosed. You must comply with all Standard and Special Conditions attached to this Permit. Please review the permit conditions and the supporting documentation.

Note: Please pay special attention to significant changes to the irrigation conditions that are outlined in the special conditions of the permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER,

Scanned

Joe Simatheo

Mr. Robert J. Willert

- 2 -

YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Karen McDaniel at 484.250.5126 or kmcdaniel@pa.gov.

Sincerely,

Jenifer L. Fields, P.E.

Jenifer L. Fields, P.E. Environmental Program Manager Clean Water Program

Enclosures

cc: Pocopson Township Chester County Health Department Chester County Board of Commissioners Ms. Hessler, Castle Valley Consultants Operations-SERO Ms. Sansoni- SERO Ms. Lashley- SERO Re 3800-PM-WSFR0015 1/2011 Permit



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

WATER QUALITY MANAGEMENT PERMIT PERMIT NO. <u>1505419</u>

AMENDMENT NO. Renewal

APS ID. <u>857488</u>

AUTH. ID. <u>1050423</u>____

А.	PERMITTEE (Name and Address):	CLIENT ID#: 110302	¦В.	PROJECT/FACILITY (Name)): Treatman	t Plant
	DELCORA			Sneeder Fract wastewater	rreaumen	l Fiant
	PO Box 999					
	Chester, PA 19016			TE ID#: 656747		
C.	LOCATION (Municipality, County):		31	IE 10#. 050747		
	Pocopson Township, Chester County		_			
D.	This permit approves the renewal of sewage lagoon, a storage lagoon, chlorination, and a	facilities consisting of: the exis spray irrigation system dischar	sting : An ging effl	i influent pump station with a gri uent to 3- zones on 9.02 acres.	nder, an ae	erated treatment
. Pur	no Stations: Influent , Spray Irrigation	Lagoon Storage:	S	ewage Treatment Facility:		
	ign Canacity: 125 GPM 516 GPM	Volume: 6.4 MG	A	nnual Average Flow:	<u>.045150</u>	MGD
Des	Ign Capacity. <u>125</u> Cr W., <u>515</u> Cr W	Freeboard: 24 inches	D	esion Hydraulic Capacity:	,125	MGD
				esign Organic Canacity:	96	lb/dav
			<u> </u>			
E.	APPROVAL GRANTED BY THIS PERMIT	S SUBJECT TO THE FOLLOW	/ING: cordanc	e with the Water Quality Mana	nement Pe	rmit application dated
1.	, its supporting documentation and ad	dendums dated, which a	are hereb	by made a part of this permit.	gomont i o	
	Renewal : All construction, operations and dated <u>11/10/2014</u> and its supporting document	procedures shall be in accorda entation and addendums dated	ance with) the Water Quality Managemer which are hereby made a part o	it Permit Ai f this amen	mendment application dment.
	Except for any herein approved modification Management Permit No dated	ons, all terms, conditions, sup _ shall remain in effect.	porting (documentation and addendums	approved	under Water Quality
	Transfers: Water Quality Management Pe part of this transfer.	rmit No dated ar	nd condi	tions, supporting documentatior	and adde	ndums are also made
2.	Permit Conditions Relating to Sewerage are	attached and made part of this	s permit.			
З.	Special Conditions I - XVI are attached and	made part of this permit.				
F.	THE AUTHORITY GRANTED BY THIS PER	RMIT IS SUBJECT TO THE FO	LLOWIN	IG FURTHER QUALIFICATION	S:	-1
1.	If there is a conflict between the application shall apply.	or its supporting documents an	id ameno	Iments and the attached condition	ons, the att	ached conditions
2.	Failure to comply with the rules and regulati by the issuance of this permit.	ons of DEP or with the terms or	r conditio	ons of this permit shall void the a	authority gr	ven to the permittee
3.	This permit is issued pursuant to the Clear permit shall not relieve the permittee of any	Streams Law Act of June 22, responsibility under any other I	, 1937, F aw.	P.L. 1987, as amended 35 P.S.	§691.1 et	seq. Issuance of this
4.	This permit shall expire on The permit shall expire on	permittee shall submit an appl	ication t	o renew the permit no later th	an 180 da	ys prior to the permit
	PERMIT ISSUED:	В	Y:	Jet. F.	uld	
-	April 20, 2015	T	ITLE:	Jenifer L: Fields, P.E. Clean Water Program Mana Southeast Regional Office	ager	



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS Water Quality Management Permit No. 1505419

Pocopson Township, Chester County

This permit is subject to the following Special Condition(s):

- I. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration not greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value not greater than 1,000/100 ml of these organisms in more than 10 percent of the samples tested.
- **II.** Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection Southeast Regional Office Water Management 2 East Main Street Norristown, PA 19401

III. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled from a designated sampling point and shall be limited at all times as follows:

	Discha	Discharge Limitations (mg/l)			equirements
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow (mgd)	.045150	J		Continuous	Recorded
CBOD ₅	25		50	1/Month	8 Hour Composite
Total Nitrogen*	Monitor/ Report		Monitor/ Report	1/Month	8 Hour Composite
Suspended Solids	30		60	· 1/Month	8 Hour Composite
Fecal Coliform	200/100	ml as geome	tric average	1/Month	Grab
рН	Within limits	s of 6.0 to 9.0 all times	standard units at	1/Month	Grab

* Total Nitrogen = Total Kjeldahl Nitrogen + Nitrite (NO₂) + Nitrate (NO₃)

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters

IV. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

- Quarterly analysis of groundwater sampled at groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5R, MW-6, and MW-7 shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.
- Annual analysis of groundwater sampled at all groundwater monitoring wells shall consist of: total solids, settleable solids, total iron, total manganese, sulfate, and sodium.
- Groundwater elevations must be measured prior to purging the groundwater monitoring well.
- Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.
- All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

V. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP **annually** and be in **report form**. The report shall be due to DEP within 28 days of the end of your annual permit cycle. For example, if your permit was issued on March 4, 2008, then your annual report is due by April 28, 2009. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection Southeast Regional Office Clean Water Program 2 East Main Street Norristown, PA 19401

Attention: Hydrogeologist Planning Section The annual groundwater monitoring report shall include the following information:

- 1. General Information
 - A. Facility name
 - B. Facility permit number
 - C. Facility location (including municipality and county)
 - D. Facility contact information:
 - permittee name, address, and telephone number
 - contact name and title
 - facility operator name, address, and telephone number
 - facility consultant name, address, and telephone number
- 2. Site Information
 - A. Brief narrative, including site limitations.
 - B. Soil type and bedrock lithology beneath the absorption areas.
 - C. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.
- 3. Construction details of each groundwater monitoring well shall include:
 - A. Well depth.
 - B. Casing depth.
 - C. Static water levels.
 - D. Surface elevation.
 - E. Well log.
 - F. Water bearing zones.
 - G. Top of casing elevation.
 - H. Ground surface elevation.
- 4. Site History
 - A. Date site 537 approval issued.
 - B. Date site permit issued.
 - C. Date groundwater monitoring began.
 - D. Date treatment plant started operation.
 - E. Date land application of treated wastewater started.

- F. Date of any additional permit actions and description of actions (e.g., waiver of special conditions or anything else which may impact the groundwater monitoring program contained within this permit). Include copy of any correspondence in correspondence section.
- G. Date and description of any enforcement action.
- H. Date and description of any facility event which impacted any part of the groundwater monitoring program whether or not it resulted in an enforcement action (e.g., collapse of groundwater monitoring well, etc.).
- 5. Site Data
 - A. Average effluent flow for the year covered by the report.
 - B. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:
 - i. Date of sampling.
 - ii. Groundwater elevation.
 - iii. Sampling depth.
 - iv. Identification of upgradient and downgradient wells.
 - v. The results of the analysis of the samples.
 - C. Background groundwater data generated prior to system start-up.
- 6. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

VI. Sprayfield Weekly Maximum Hydraulic Loadings

- A. Effluent flows to each sprayfield must be consistent with the maximum hydraulic loading requirements of the following table, which provides the weekly maximum irrigation gallons for each zone.
- B. The permittee shall include with the monthly Discharge Monitoring Report a Supplemental Land Application System Form 3800-FM-BPNPSM0449 that indicates the gallons per day discharged to each of the zones.
- C. At no time shall the application rate exceed 0.25 inch per hour.

Month	Zone 1	Zone 2 3 29 ac	Zone 3
WIGHT	Grass Field	Wooded	Grass Field
	(gal/wk)	(gal/wk)	(gal/wk)
Jan	51,318	44,666	26,881
Feb	51,318	44,666	26,881
Mar	153,954	133,997	80,643
Apr	153,954	133,997	80,643
_May	205,272	178,663	107,524
Jun	256,590	223,328	134,404
Jul	256,590	223,328	134,404
Aug	256,590	133,997	134,404
Sep	256,590	111,664	134,404
Oct	112,900	98,265	59,138
Nov	102,636	58,065	53,762
Dec	51,318	44,666	26,881

MAXIMUM WEEKLY HYDRAULIC LOADINGS IN GALLONS PER ZONE

VII. <u>Sprayfield Operation</u>

ł

- A. Application of the effluent shall be managed to prevent runoff from the permitted spray fields and ponding of effluent.
- B. No irrigation is to occur on frozen soils.
- C. No irrigation is to occur if more than 0.5 inches of rainfall has fallen during the previous 24 hours.
- D. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.
- E. The spray fields shall be maintained to ensure that vegetation does not interfere with or impair proper operation of the spray heads.
- F. All spray fields must be managed to maintain a perennial grass or forested cover. Several times each growing season, grass fields must be harvested by cutting, with clippings removed off the spray fields. Forested fields should be maintained to remove dead and fallen wood during periods that would minimize soil compaction by equipment.
- G. Sprayfield vegetation and soils must be managed in accordance with an approved annual Crop Management Plan (CMP). Upon notification by the Department, the permittee shall prepare and submit an updated CMP for review and approval.

à

XIII. Storage Lagoon Management

At all times, the wastewater levels in the lagoon shall be managed within the low and high water level parameters as designed. The water level shall be controlled so that a freeboard of at least 24 inches is maintained at all times. The Department must be notified if the water level is anticipated to enter freeboard.

- **IX.** If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.
- X. The authorization to discharge contained in this permit shall expire in five years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.
- XI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.
- XII. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

XIII. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- 1. The exact place, date, and time of sampling or measurement.
- 2. The person(s) who performed the sampling or measurement.
- 3. The dates the analyses were performed.
- 4. The person(s) who performed the analyses.
- 5. The analytical techniques or methods used.
- 6. The results of such analyses.

XIV. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XV. Laboratory Certification

The Environmental Laboratory Accreditation Act of 2002 requires that all environmental laboratories register with the Department of Environmental Protection. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

<u>VXI.</u> The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

.

PRIMARY FACILITY NAME/ADDRESS

Pocopson Township Chester County Sheeder Tract Subdivision STP Pocopson Township Chester, PA 19016 Chester County PO Box 999 ЧЧ WATERSHED LOCATION ADDRESS CLIENT NAME

COMMUNIVEAL IT OF FEININS TLYANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

Sprayfield Zon and 3	OUTFALL NUI	
1505419	PERMIT NUMBER	

Sprayfield Zones 1,2 and 3 OUTFALL NUMBER

April 30 2020 Permit Application Due: Reporting Frequency: DMR Effective From: DMR Effective To: Permit Expires:

November 1, 2019

DAY

QM

YEAR

DAY

OM

YEAR

2

MONITORING PERIOD

NOTE: Read Instructions before completing this form Check Here if No Discharge

L L	۱ _ш		Ж		SITE	_	SITE		R Site		Ð		ß	l		DAY
SAMP	TΥΡ		METE		COMPO		8HF COMPC		8HI Compo		GRA		GR∕	DATE		OW
	ALYSIS		SUONS		NTH		DNTH		HINO		HTH		DNTH			YEAR
	OF AN		CONT		1/MC	_	1/MC		1/MC		1/MC		1/MG	Щ		1BER
	żХ.											ľ		EPHON		NUN -
	UNITS		XXXX		MG/L	I	MG/L		MG/L		#/100ml		SU	TEL		AREA CODE
CENTRATION	Inst. Maximum	XXXX	XXXX		50		60		MONITOR/ REPORT	XXXX	XXXX					EXECUTIVE D AGENT
ALITY OR CON	Average _ Weekly	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			OF PRINCIPAL OR AUTHORIZE
no	Average Monthly	XXX	XXXX		25		30		MONITOR/ REPORT	I	200/100ML GEOMETRIC MEAN		6.0 MINIMUM		r J	OFFICER
	UNITS		MGD		xxxx		XXXX		XXXX		XXXX		XXXX	epared under my	index sources in the system in the second product of the second product of the second product in the second pr	hilby of fire and \$5 4904 (retaing
TTY OR LOADING	Maximum		MONITOR/ REPORT	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	aw that this document was pr accordance with a system of	construction or persons who miles in the magnetical for gathours the the base of miles for gathours the the base of miles for the theory of the theory of miles for the theory of miles for the theory of the the theory of the the theory of the the theory of the the theory of the theory of the theory of the theory of the the the theory of the theory of the theory of the theory of the	an avere first there are so mation, including the possi violationa. See 18 Pa. C.S.
DUAN	Average		045150	ХХХХ	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	I certify under perafty of I direction or supervision in	Research on my inquiry of the control on the contro	recorrate and completes and completes of a submitting faile traction implementation for knowing to unswern failingtiontion).
	1	SAMPLE MFASTIREMFNT	PERMIT .	SAMPLE	PERMIT REQUIREMENT	SAMPLE MEASUREMENT	PERMIT REQUIREMENT	SAMPLE MEASUREMENT	PERMIT REQUIREMENT	SAMPLE MEASLIREMENT	PERMIT	SAMPLE	PERMIT	CUTIVE OFFICER		NTED
	PARAMETER	ľ	, EI OW		CROD5		SST		TOTAL NITROGEN		FECAL COLIFORM		H	NAME/TITI E DRINCIPAL EXF		TYPED OR PRI

COMMENTS (Report all violations on the "Non-Compliance Reporting Form")



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

INSTRUCTIONS FOR COMPLETING DISCHARGE MONITORING REPORTS (DMRs)

<u>General</u>

One or more Discharge Monitoring Reports (DMRs) are attached to your permit for reporting the results of selfmonitoring activities as required by your permit. You should make copies of the DMRs for your ongoing use, unless you elect to participate in the Department of Environmental Protection's (DEP's) electronic DMR (eDMR) program (see www.dep.state.pa.us/edmr).

- Reporting frequencies will vary depending on the monitoring frequencies listed in your permit, and are generally monthly, quarterly semi-annually and annually.
- Your reports must be <u>received</u> by DEP on the 28th day of the month following the end of the reporting period, unless otherwise specified in Part C of your permit.
- Your permit may require submission of DMRs to other agencies, including the U.S. Environmental Protection Agency (EPA).
- If you receive DMRs in the mail from EPA, please discontinue use of DMR Form No. 3800-FM-BPNPSM0462 and begin using EPA's DMRs.
- DMRs will generally include pre-populated information for permittee name and address, facility location, permit number, outfall number, permit expiration date, parameter names, and permit requirements. If you identify any errors on a DMR issued by DEP, please contact the DEP regional office that issued your permit. If you identify any errors on a DMR issued by EPA, please contact DEP's Central Office at 717-787-6744.
 DO NOT make changes to DMRs issued to you.
- You may use computer-generated replicas of Form No. 3800-FM-BPNPSM0462 or of EPA's DMR if you receive prior approval from DEP and EPA. **DEP reserves the right to instruct you to discontinue the submission of computer-generated DMRs if the permit requirements you entered on the form are inaccurate.**

Instructions

- 1. Enter statistical results into each blank field below the "VALUE" column headers. Results must be reported in the same units shown on the DMR.
- Sum the total number of excursions or exceedances of permit limits across the row for each parameter and enter the value into the "NO. EX" field. For example, if the permit contains limits of 6.0 S.U. (Minimum) and 9.0 S.U. (Maximum) for pH, and the Minimum and Maximum results are 5.9 S.U. and 9.1 S.U., respectively, enter "2" into the "NO. EX" field.
- 3. Report the actual sampling frequency and sample type utilized during the reporting period in the fields corresponding to "Frequency of Analysis" and "Sample Type", respectively.
- 4. Type the name of the principal executive officer (or an authorized agent designated by a principal executive officer) who is taking responsibility for the report, sign the report (should be in ink), enter the telephone number of the responsible individual, and record the date that the report was signed. Mail only original, signed copies of DMRs.
- 5. In the Comments section at the bottom of the DMR, you may write a brief summary of violations in this section; however, DEP requests that <u>all</u> violations during the monitoring period be reported in more detail on DEP's **Non-Compliance Reporting Form** (3800-FM-BPNPSM0440) and be submitted as an attachment to the DMR. Other uses of the Comments Section include explanations of attachments to the DMR, explanations for the unavailability of data, and brief summaries of issues that have affected operations or effluent quality during the monitoring period. Always consider attaching a letter or separate document to explain your situation in more detail.

3800-FM-BPNPSM0463 Rev. 2/2014

No Discharge or No Data Available

If there was <u>no discharge at all from an outfall</u> during the monitoring period, check the "No Discharge" box on the top of the DMR. Complete the information above and below the table and mail the DMR to the appropriate agencies. Be sure to sign and date the DMR.

If there was no discharge of a specific parameter (e.g., if a chlorine limit is in the permit but chlorine was not used for disinfection during the entire reporting period), or if data are not available for a specific parameter for the entire reporting period, <u>do not</u> leave the DMR blank. Instead, report one of the following No Data Indicator (NODI) codes that apply to your situation in the appropriate value field, and **provide an explanation as an attachment to the DMR**:

- A Use if you are exempted from monitoring the parameter because of a General Permit condition.
- E Use if <u>all samples or results</u> are not available for the reporting period due to equipment failure or because sample collection was overlooked or samples could not be collected for the parameter.
- **GG** Use if your permit requires sample collection and analysis only under certain conditions and those conditions were not met during the reporting period (e.g., report chlorine results only when chlorination system is used).
- FF Other: use if there is any reason for the absence of data that is not covered by those above.

If you have at least one result for a parameter, the value should be reported and not a NODI code.

Calculations

The following explains how to calculate statistical values that are commonly required by permits:

Monthly Average – For Loading (lbs/day), sum the total of daily loadings and divide by the number of samples during the month. To calculate the daily loading, multiply the daily concentration (mg/l) by the flow (MGD) on the date of sampling and a conversion factor of 8.34. For Concentration, sum the total of daily concentrations and divide by the number of samples.

Weekly Average – For Loading (Ibs/day), sum the total of average daily loadings during each week of the reporting period (beginning on a Sunday and ending on a Saturday) and divide by the number of samples during the week. For Concentration, sum the total of daily concentrations each week and divide by the number of samples. Report the <u>maximum</u> weekly average on the DMR.

Maximum Daily ("Daily Max") – Report the maximum concentration or load measured during a 24-hour period during the reporting period; if multiple measurements are taken daily, include all data in the analysis.

Instantaneous Maximum ("IMAX") – Report the maximum result obtained by a grab sample for a specific pollutant over the entire reporting period covered by a DMR.

Instantaneous Minimum ("Minimum") – Report the minimum result obtained by a grab sample for a specific pollutant over the entire reporting period covered by a DMR.

Total Monthly Load (Ibs) – Sum the total of average daily loadings, divide by the number of samples during the month, and multiply by the number of days in the month.

Geometric Mean – Report the average of a set of *n* sample results given by the *n*th root of their product. If any result is zero (0), substitute 1 for the calculation. For example, five samples were analyzed with the following results: 20, 300, 400, 500, and 0. The calculation of geometric mean is as follows (note that you will need to use the power function on a calculator):

 $\sqrt[5]{20 \cdot 300 \cdot 400 \cdot 500 \cdot 1} = \sqrt[5]{1,200,000,000} = (1,200,000,000)^{1/5} = 65$

3800-FM-BPNPSM0463 Rev. 2/2014

Non-Detect Data

Conventional and Toxic Parameters

For calculating average values of data sets in which there are some "detections" (results at or above the laboratory reporting limit) and some "non-detect" data (results reported below the laboratory reporting limit), use the reporting limit for non-detect data. In other words, ignore the less than (<) symbol for statistical calculations and include the < symbol with the statistical result if there is at least one non-detect result in the data set. For example, four samples were analyzed with the following results: < 1.0, 2.0, < 1.0, and 1.0. The average statistical result is < 1.3.

Where the permit includes an effluent limitation for a parameter that is less than the most sensitive detection limit available, and the laboratory reports a value at or below the lowest level specified by the permit, you may use zero (0) in the calculation in lieu of the reporting limit, if the parameter is identified in 25 Pa. Code Chapter 16, Appendix A, Tables 2A and 2B. In general, parameters with limitations that are less than the most sensitive detection limit will be identified in Part C of the permit, if applicable.

Bacteria Parameters

Report all "non-detect" (e.g., < 2) and "too numerous to count" (TNTC) (e.g., > 2,000) results on DMR supplemental forms as reported by the laboratory. Do not report "TNTC" on supplemental forms, but instead report a value qualified with the">" symbol. Where a data set includes one or more "non-detect" and/or TNTC results, calculate the geometric mean by ignoring qualifying symbols, but report the value with the symbol. If a data set includes both ">" and "<" qualifiers, the ">" qualifier takes precedence for reporting. For all "non-detect" values, specify in the Comments section of the DMR the maximum volume filtered at the laboratory.

Example 1 – For results are determined, < 2, 10, 20, and 30. The geometric mean should be reported as < $(2 \cdot 10 \cdot 20 \cdot 30)^{0.25} = < 10$. Specify the maximum volume filtered for the < 2 result in the DMR Comments.

Example 2 – Three results are determined, < 2, 1,000, and > 2,000. The geometric mean should be reported as > (2 \cdot 1,000 \cdot 2,000^{0.333} = > 158.

Rounding and Precision

Statistical values reported on the DMR should be rounded to the same number of decimal places as the limit for the parameter as set forth in the permit. If the permit does not contain a limit but requests monitoring only, statistical values for concentration results should be rounded to the maximum number of decimal places in the data set as reported by the laboratory or the instrument used for analysis. If mass loads must be reported and there is no limit, round statistical values to the nearest whole number, unless the calculated number is less than one, in which case the value should be rounded to one significant figure (e.g., 0.1, 0.05, etc.). If the number you are rounding is followed by 5, 6, 7, 8, or 9, round the number up, otherwise round down.

The documents "Discharge Monitoring Reports Overview and Summary" (3800-BK-DEP3047) and "Management of Non-Detect Results for Discharge Monitoring Reports" (3800-FS-DEP4262) contain more information and are incorporated by reference. These documents are available on DEP's website.

Permit No. 1505419

3800-PM-BPNPSM0015a 5/2013 Conditions Sewerage

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

PERMIT CONDITIONS RELATING TO SEWERAGE

For use in Water Quality Management Permits

(Check boxes that apply)

-

l	Gen	ieral	
		1.	The Department of Environmental Protection (DEP) considers the licensed Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.
		2.	The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.
		3.	The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.
		4.	The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.
		5.	When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.
		6.	The approval of the plans, and the authority granted in this permit, if not specifically extended, shall cease and be null and void 2 years from the issuance date of this permit unless construction or modification of the facilities covered by this permit has begun on or before the second anniversary of the permit date.
	\boxtimes	7.	If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.
		8.	If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
	\boxtimes	9.	This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.
	\boxtimes	10.	This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.
		11.	The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No. and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.
	Co	ństru	ction
		12.	This permit is issued under the authorization of The Clean Streams Law and 25 Pa. Code Chapter 91. The

12. This permit is issued under the authorization of The Clean Streams Law and 25 Pa. Code Chapter 91. The permittee shall obtain all necessary permits, approvals and/or registrations under 25 Pa. Code Chapters 102, 105 and 106 prior to commencing construction of the facilities authorized by this permit, as applicable. The permittee should contact the DEP office that issued this permit if there are any questions concerning the applicability of additional permits.

3800-PM-BPNPSM0015a 5/2013 Conditions Sewerage Permit No. 1505419

- 13. The facilities shall be constructed under the supervision of a Pennsylvania licensed Professional Engineer in accordance with the approved reports, plans and specifications.
- 14. A Pennsylvania licensed Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" form (3800-PM-WSFR0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. As-built drawings, photographs (if available) and a description of all deviations from the application and design plans must be submitted to DEP within 30 days of certification.
- 15. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.
- 16. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

Operation and Maintenance

- 17. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.
- 18. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.
- 19. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.
- 20. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.
- 21. The sewerage facilities shall be properly operated and maintained to perform as designed.
- 22. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.
- 23. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, et seq. shall operate the sewage treatment plant.
- 24. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.
- 25. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.
- 26. All connections to the approved sanitary sewers must be in accordance with the official Act 537 Plan and, if applicable, a corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.
- 27. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.



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

SUPPLEMENTAL LABORATORY ACCREDITATION FORM¹

Permittee Nam	ne: DELCORA			
ddress:	<u>PO Box 999</u>	9		
	Chester, PA	19016		
	PERMIT	NUMBER	MONI Ye	TORING PERIOD ear/Month/Day
	150	5419		то
PARA	METER	ANALYSIS METHOD	LAB NAME	LAB ID NUMBER ²
	-			

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 possibly of fine and imprisonment for knowing violations.

Name/Title Principal Executive Officer	Phone:	Signature of Principal Executive Officer or Authorized Agent
	Date:	
¹ Submit this form with the first Discharge Monitoring	Report (DMR) or Annual Report, whe	are sample results are submitted to the Department for compliance

' Submit this form with the first Discharge Monitoring Report (DMR) or Annual Report, where sample results are submitted to the Department for compliance purposes. You do not need to send this form to the Department again UNLESS there has been a change to the lab(s), parameter(s) or method(s) of analysis.

² For parameter(s) covered under accreditation-by-rule, submit the lab's registration number in lieu of an accreditation number.

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

> **DENDSYLVANIA** DEPARTMENT OF ENVIRONMENTAL PROTECTION

38<u>00-F</u>M-BPNPSM0449 3/2012

SUPPLEMENTAL REPORT LAND APPLICATION SYSTEMS

Facility Name: <u>Sheeder Tract Subdivision</u> Municipality: <u>Pocopson Township</u> Watershed: <u>3-H</u>

Month: Year: Year: Year: Duffail No.: <u>1505419</u> Outfail No.: This permit will expire on

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 qualified 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, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Signature: Date:

Prepared By:	Title:

3800-FM-BPNPSM0449 3/2012 Instructions



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

INSTRUCTIONS FOR COMPLETING LAND APPLICATION SYSTEMS SUPPLEMENTAL REPORT

Use this form to document wastewater management activities for facilities with land application programs (e.g., surface or subsurface irrigation, drip irrigation, etc.) approved under a Water Quality Management (WQM) permit.

- 1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, Permit No., Outfall No. (if applicable) and Permit Expiration Date (if applicable).
- 2. Next to each "Zone" heading (this may also be considered "land application site"), enter a unique identifier. For example, "1," "2," etc. or "Site 1," Site 2," etc. If the name of the zone or site is too long for the space provided, please use an abbreviation. Up to five zones can be accommodated on one report. If you have more than five zones, please use more sheets. Next to each "Acres" heading, enter the number of acres that receive effluent (e.g., "wettable acres").
- 3. Enter the daily volume (gallons) applied onto each zone.
- 4. Enter the average daily temperature at the land application site. An on-site temperature monitoring system is recommended, but other approaches may be acceptable, such as use of local airport data.
- 5. Enter the daily ground surface conditions (site-wide). Recommended entries include "dry," "wet," and "frozen," but others may be used.
- 6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

DEPARTMENT OF ENVIRONMENTAL PROTECTION 3800-FM-BPNPSM0439 Rev. 3/2014 pennsylvania N

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

SUPPLEMENTAL REPORT – CHEMICAL ADDITIVES USAGE

Month:

Facility Name:	Sheeder Tract Subdivision	
Municipality:	Pocopson Township	County: Chester
Watershed:	3-H	

Year: Outfall No.: ____ Renewal application due 180 days prior to expiration This permit will expire on NPDES Permit No.: 1505419

							ð	iemical Nami	ų							ſ
ie C			_						3	Γ					ļ	
Udy	gallons	lbs	gallons	lbs	gallons	sql	gallons	sdl	gallons	sql	gallons	sql	gallons	lbs	gallons	sql
1					_											
2												-				
ო																
4												_				
5																
9										ſ						
7							_					_	1			
∞								-		T						
6							l			Ī						
10						-				T						
11							-									
12															-	
13										T						
14																
15																
16												-				
17			1			-				T	-					
18					•						I					
¥ 19				ſ						Γ						T
20										T						
21										-		.1				
22										T						
23							t,			T						
24																
25		-			1	1										T
26							_									
27											 				1	
28																T
29														1		Γ
30																T
31	,		ļ					1		1						
Average										ľ						I
Maximum																
Certify und	er nenaltv o	f law that	this docum	nent wae nr	aparad made	or sove directi			Hint of a large large]		
information c	uhmittad D	trend on a	ania aocan	f the near pr			oli ol supel			la system	designed to	o assure ma	at qualified p	ersonnel g	ather and e	valuate the
			ny mquny c	I II IE person	I DI persons	Who manage	e the system	or those pers	sons airectiy	responsibl	e for gatheri	ng the infor	nation, the Ir	iformation (submitted is.	to the best

ULUE 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).

Signature:	Date:
S	Δ

3800-FM-BPNPSM0439 Rev. 3/2014 Instructions Dennsylvania

EPARTMENT OF ENVIRONMENTAL PROTECTION

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

INSTRUCTIONS FOR COMPLETING CHEMICAL ADDITIVES USAGE SUPPLEMENTAL REPORT

- 1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., Outfall No. and Permit Expiration Date. A separate sheet is required for each outfall that receives chemical additives.
- 2. In the spaces below the Chemical Names header in the table, enter the chemical additives used at the facility. If more than eight additives are used per Outfall, add more sheets.
- 3. Enter the daily usage rates for each chemical. Enter additives introduced in liquid form in the "gallons" column and additives in solid form (or if you have calculated the mass equivalent of liquid additives) under the "lbs" column.
- 4. Calculate and report the average and maximum usage rates for each chemical at the bottom of the table.
- 5. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0440 3/2012

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

NON-COMPLIANCE REPORTING FORM

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 and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an 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 additional report on the incident or plan of pollution prevention measures. If you are reporting other non-compliance events, and the 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. See instructions for more information.

Facility I	Name:	Sheeder Tract Subdivision			Month:	Year	
Municip	ality:	Pocopson Township	County:	Chester	Permit No.:	1505419	
	Violation	<pre>s of Permit Effluent Limitations*</pre>					

	Statistical
	Permit
Ι	
	_

	_	
Corrective Action Taken		
Cause of Violation		
Units		
Result		
Code		
Units		
Limit		
Parameter		
Date		,

Sanitary Sewer Overflows and Other Unauthorized Discharges*

tte DEP otified		
Je Da		
Cause of Dischar		
Impact on Waters		
Receiving Waters		
Duration (hrs)		
Volume (gals)		
Location		
Substance Discharged		
Event Date		

Other Permit Violations*

Explain Explain Explain Explain	Explain
Sample collection less frequent than required Sample type not in compliance with permit Violation of permit schedule Other	Other

.

* 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 qualified 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).

3800-FM-BPNPSM0440 3/2012 Instructions



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

INSTRUCTIONS FOR COMPLETING NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report <u>all</u> 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). If you are reporting other non-compliance events, and the deadline for a written report (e.g., 5 days) does not coincide with your submission of the DMR, this form should be submitted separately to the Department by the reporting deadline set forth in the permit.

If you are unsure of whether an incident constitutes non-compliance that may endanger health or the environment, it is recommended that you notify the Department verbally as soon as possible after you become aware of the incident. Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.

Instructions:

- 1. Enter the name of the facility, the municipality and county where it is located, the month and year when violations occurred, and the NPDES or WQM permit number for the facility.
- 2. If there were violations of permit effluent limitations during the month, check the box next to "Violations of Permit Effluent Limitations." (Note if using the electronic version of this form, check the boxes first, and then select Tools Unprotect Document to enter additional information). Enter the date of the violation (if a violation of a minimum or maximum limit, the date of sample collection, or if a violation of an average limit, the end of the monitoring period), the parameter name, the permit limit and units, the statistical code (e.g., "MIN", "MAX", "MO AVG", etc.), the measured result and units, the cause of the violation and the corrective action taken. If there are more than two violations during the monitoring period and/or if the space provided is insufficient to explain the cause or corrective action, please attach additional pages.
- 3. If there are Sanitary Sewer Overflow (SSO) discharges or other unauthorized discharges from the facility (e.g., spills, leaks, etc.) that enter or have the potential to enter waters of the Commonwealth, including groundwater, notify DEP by phone as soon as possible, and document the discharge on this form by checking the box next to "Sanitary Sewer Overflows and Other Unauthorized Discharges." Record the event (discharge) date, the substance discharged (e.g., sewage, on-site chemicals, etc.), the location where the discharge occurred (e.g., manhole number, pump station name, equipment description, etc.), the volume discharged (gallons), the approximate duration of the discharge (hours), the receiving waters (name of stream or groundwater), the impact on the receiving waters, if observed (e.g., solids deposition, foam, fish kill, etc.), the cause of the discharge, and the date on which the Department was verbally notified. If there are more than two discharge, please attach additional pages.
- 4. If there are other violations of the permit, check the box next to "Other Permit Violations," and check the appropriate box that describes the violation type. If not identified on the form, check the box next to "Other" and provide a written explanation. If the space provided is insufficient to explain the violation, please attach additional pages.
- 5. Type your name and title and sign and date the form after reading the certification statement.

If you have questions about completing this form, contact the Clean Water Program Operations Section of the Department in your region:

Southeast Region – (484) 250-5970 Northeast Region – (570) 826-2553 Southcentral Region – (717) 705-4707 Northcentral Region – (570) 327-0532 Southwest Region – (412) 442-4060 Northwest Region – (814) 332-6942



April 11, 2018

CERTIFIED MAIL NO. 7015 3010 0001 5161 8870

Mr. Robert Willert DELCORA 100 East 5th Street Chester, PA 19013

cc: RJW, MJD, Gober, Piro, M. Kawamoto-Castle Valley, File

Re: WQM Permit - Sewage Corinne Village Subdivision Permit No. 1507415 Authorization ID No. 1213843 Pocopson Township Chester County

Dear Mr. Willert:

Your Water Quality Management (WQM) permit is enclosed. You must comply with all Standard and Special Conditions attached to this Permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.
Mr. Robert Willert

- 2 -

If you have any questions, please contact Mr. James Roth at 484.250.5169.

Sincerely,

Shanhar ____

Environmental Program Manager Clean Water Program

Enclosures

 cc: Chester County Health Department Ms. Hessler, P.E. – Castle Valley Consultants, Inc. Ms. Sansoni (scanned copy) Mr. Evans (scanned copy) Operations Re 30 (GJE18CLW)101-7

Appendix D Page 197 of 598

3800-PM-WSFR0015 1/2011 Permit



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

PERMIT NO. 1507415

AMENDMENT NO.

WATER QUALITY MANAGEMENT PERMIT

APS ID. <u>959227</u>

A.	PERMITTEE (Name and Address): DELCORA 100 East 5 th Street Chester, PA 19013	CLIENT ID#: 42332	B. PROJECT/FACILITY (Name): Corinne Village WWTF
C.	LOCATION (Municipality, County): Pocopson Township, Chester Cou	nty	SITE ID#: 661927
D.	THIS PERMIT APPROVES THE OP treatment lagoon, a storage lagoon	ERATION OF WASTEWATER TREAT n, a process control building, multi-	MENT FACILITIES CONSISTING OF: an influent pump station, a media filters, and six drip disposal fields divided into 12 zones.
Pun	np Stations:	Manure Storage:	Sewage Treatment Facility:
Des	ign Capacity: GPM	Volume: MG	Annual Average Flow: 0.02 MGD
		Freeboard: inches	Design Hydraulic Capacity: 0.02 MGD
			Design Organic Capacity: <u>50.5</u> lb/day
ε.	APPROVAL GRANTED BY THIS PE	ERMIT IS SUBJECT TO THE FOLLOW	VING:
1.	New Permits: All construction, ope <u>1/12/2018</u> , its supporting documenta	erations and procedures shall be in ac tion and addendums dated, whi	ccordance with the Water Quality Management Permit application dated ich are hereby made a part of this permit.
	Amendments: All construction, o application dated and its supp	perations and procedures shall be in porting documentation and addendums	a accordance with the Water Quality Management Permit Amendment a dated, which are hereby made a part of this amendment.
	Except for any herein approved me Management Permit No date	odifications, all terms, conditions, sup ed shall remain in effect.	pporting documentation and addendums approved under Water Quality
	Transfers: Water Quality Managen permit transfer.	nent Permit No dated	and permit renewal issued have been superseded by this
2.	Permit Conditions Relating to Sewer	rage are attached and made part of this	s permit.
3.	Special Conditions I-XVI are attache	d and made part of this permit.	
F.	THE AUTHORITY GRANTED BY TH	HIS PERMIT IS SUBJECT TO THE FO	DLLOWING FURTHER QUALIFICATIONS:
1.	If there is a conflict between the app shall apply.	lication or its supporting documents ar	nd amendments and the attached conditions, the attached conditions
2.	Failure to comply with the rules and by the issuance of this permit.	regulations of DEP or with the terms o	or conditions of this permit shall void the authority given to the permittee
3.	This permit is issued pursuant to th permit shall not relieve the permittee	e Clean Streams Law Act of June 22 of any responsibility under any other	, 1937, P.L. 1987, as amended 35 P.S. §691.1 <i>et seq.</i> Issuance of this law.
4.	This permit shall expire on <u>April 30.</u> expiration date.	<u>, 2023</u> . The permittee shall submit an	application to renew the permit no later than 180 days prior to the permit
	PERMIT ISSUED DATE:	4/11/8	14: SQchin Shankan
		flay 1, 2018 T	ITLE: Clean Water Program Manager Southeast Regional Office



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS Water Quality Management Permit No. 1507415

> DELCORA Corinne Village WWTP

I. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled from the sample tap on the sand filter discharge pipe and shall be limited at all times as follows:

	Discha	arge Limitatio	ons (mg/l)	Monitoring Rec	juirements
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent					
Flow (mgd)	0.020			Continuous	Recorded
CBOD ₅	25		50	2/Month	Grab
Suspended					
Solids	30		60	2/Month	Grab
	Within limits	of 6.0 to 9.0 s	standard units at		
pH		all times		Daily	Grab

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters.

Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "composite" sample means a combination of individual samples collected at regular intervals over a time period. The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

II. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection Southeast Regional Office Water Management 2 East Main Street Norristown, PA 19401

III. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

- A. Quarterly analysis of groundwater sampled at groundwater monitoring wells MW-2, MW-5, and MW-7 shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.
- B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.
- C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.
- D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

IV. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP <u>annually</u> and be in <u>report form</u>. The report shall be due to DEP within 28 days of the end of your annual permit cycle. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection Southeast Regional Office Clean Water Program 2 East Main Street Norristown, PA 19401

Attention: Hydrogeologist Planning Section

- V. The annual groundwater monitoring report shall include the following information:
 - A. General Information
 - 1. Facility name
 - 2. Facility permit number
 - 3. Facility location (including municipality and county)
 - 4. Facility contact information:
 - a. permittee name, address, and telephone number
 - b. contact name and title
 - c. facility operator name, address, and telephone number
 - d. facility consultant name, address, and telephone number
 - B. Site Data
 - 1. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

- 2. Average effluent flow for the year covered by the report.
- 3. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:
 - a. Date of sampling.
 - b. Groundwater elevation.
 - c. Sampling depth.
 - d. Identification of upgradient and downgradient wells.
 - e. The results of the analysis of the samples.
- 4. Background groundwater data generated prior to system start-up. This information is absolutely needed and needs to be included in the data tabulation.
- C. Comprehensive Groundwater Evaluation (CGE)
 - As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.
- D. Groundwater Background Report

Within 60 days of system start up, or upon issuance of permit renewal a Groundwater Background Report shall be submitted to DEP. The report shall include the follow information:

- 1. Site Information
 - a. Brief narrative, including site limitations.
 - b. Soil type and bedrock lithology beneath the absorption areas.
 - c. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.
- 2. Construction details of each groundwater monitoring well shall include:
 - a. Well depth.
 - b. Casing depth.
 - c. Static water levels.
 - d. Surface elevation.
 - e. Well log.
 - f. Water bearing zones.
 - g. Top of casing elevation.
 - h. Ground surface elevation.

VI. Drip Dispersal Field Operation

- A. Application of the effluent to drip dispersal fields shall be managed to prevent ponding, freezing, breakout, and run off. At no time may effluent be discharged to the ground surface.
- B. The drip dispersal system area shall be inspected on a routine basis. System components including valves and piping shall be repaired/replaced immediately if any damage occurs.

- C. The drip field vegetation shall consist of predominantly grass-like species to be mowed and maintained as needed to facilitate frequent inspection of the drip field components. At a minimum, mowing shall occur twice per year.
- D. At no time shall any debris be stockpiled on the drip area.
- E. The permittee shall maintain a daily log of total gallons discharged to each drip irrigation zone.

VII. Hydraulic Loading Requirements

ł

The Hydraulic Loading Rate shall be limited at all times to 20,224 gpd on the 3.765 acres of disposal area. The hydraulic loadings for the drip zones are as follows:

Zone	Maximum Cycle Dose per Zone (Gallons)	Maximum Daily Dose per Zone (Gallons)
1	423	1,692
2	423	1,692
3	416	1,664
4	423	1,692
5	423	1,692
6	423	1,692
7	423	1,692
8	412	1,648
9	423	1,692
10	423	1,692
11	423	1,692
12	423	1,692

- VIII. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.
- IX. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.
- X. The water level, within the impoundments, shall be controlled so that a freeboard of at least 24 inches is maintained at all times.
- XI. The authorization to discharge contained in Section D of this permit shall expire in 5 years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date). In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous 5 years, including a discussion of groundwater quality trends resulting from this discharge.

XII. Laboratory Certification

Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of act 90 of 2002 (27 Pa. Code C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XIII. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XIV. The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

XV. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Stream Law, the permittee shall allow authorized representatives of Department of Environmental Protection upon the presentation of credentials and other documents as may be required by law:

- A. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
- B. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
- C. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
- D. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or The Clean Streams Law, any substances or parameters at any location.
- XVI. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to DEP.

3800-FM-BCW0462 12/2016

PRIMARY FAC	ylvania of eweronmental ILITY NAME/ADDRESS	DEPAR NATIONAL PO DIS	TMENT BUF LLUTAN CHAR	OF ENVIRG REAU OF C T DISCHARG GE MONIT	N H W H
NAME	Corrine Village WWTF				
CLIENT	DELCORA		507415	5	
ADDRESS	100 East 5 th Street	PERV		ABER	
	Chester, PA 19013				
LOCATION	Pocopson Township			MONITO	₩.
	Chester County	YEAR	MO	DAY	
WATERSHED	ΗC				-

1507415	OUTFALL NUMBER	
1		

		_	
	DAY		
	ΜO		
ERIOD	YEAR		
RING P		ð	
MONITOF	DAY		
	МО		
	YEAR		

DMR Effective From:	Permit Effective Date
DMR Effective To:	Permit Expiration Date
Permit Expires:	
Dormit Application Due:	

Monthly

Reporting Frequency:

ł

Check Here if No Discharge
NOTE: Read Instructions before completing this form Permit Application Due:

		QUANT	FITY OR LOADIN	U	gu	ALITY OR CON	CENTRATION		o' Z	FREQUENCY	SAMPLE
PARAMETER		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS	Ж	OF ANALYSIS	ТҮРЕ
	SAMPLE MEASUREMENT								_		
Flow	PERMIT	Report		-	2007	200	~~~	>>		Continuoue	Docordod
Raw Sewage Influent	REQUIREMENT	Avg Mo	XX	MGD	X	XX	¥	ŧ	Ì		ואמרתותמת
	SAMPLE		L								
	MEASUREMENT								t		
	PERMIT				0.0		9.0				
Hd	REQUIREMENT	XXX	XXX	XXX	Inst Min	×	IMAX	S.U.		1/day	Grab
-	SAMPLE										
Carbonaceous	MEASUREMENT										
Biochemical Oxygen	PERMIT				25.0			;	1	:	
Demand (CBOD5)	REQUIREMENT	XXX	XXX	XXX	Avg Mo	×	×	mg/L		2/month	Grab
	SAMPLE										
	MEASUREMENT										
	PERMIT)		30.0			;		:	
Total Suspended Solids	REQUIREMENT	XX	ğ	×,	Avg Mo	XX	×	mg/L		2/month	Grab
ו חופו מתצחבו וחבה המוחה		~~~~	552		1				1		

				ŀ			
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I cartify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure		TELE	PHONE		DATE	
	 that qualified personnel gather ans 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,						
TYPED OR PRINTED	to contrain a contraint of the set of the se	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY
COMMENTS (Report all violations on the "Non-Co.	ompliance Reporting Form")						



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

SUPPLEMENTAL LABORATORY ACCREDITATION FORM¹

100 Address: Che	East 5 th Street ster, PA 19013		
PERM		MONI Ye	TORING PERIOD ear/Month/Day
1	507415		то
PARAMETER	ANALYSIS METHOD	LAB NAME	LAB ID NUMBER ²
	·		
HI			

Name/Title Principal Executive Officer

Signature of Principal Executive Officer or **Authorized Agent**

Date:

Phone:

¹ Submit this form with the first Discharge Monitoring Report (DMR) or Annual Report, where sample results are submitted to the Department for compliance purposes. You do not need to send this form to the Department again UNLESS there has been a change to the lab(s), parameter(s) or method(s) of analysis.

² For parameter(s) covered under accreditation-by-rule, submit the lab's registration number in lieu of an accreditation number.

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

> pennsylvania остания по семиноминала

38<u>00-F</u>M-BPNPSM0449 3/2012

SUPPLEMENTAL REPORT LAND APPLICATION SYSTEMS

	County: Chester	
Corinne Village Subdivision	Pocopson Township	3-H
Facility Name:	Municipality:	Watershed:

Month: Permit No.: <u>1507415</u> This permit will expire on

	No.:
ar.	ltfall
¥	õ

one: cres:		Zone: Acres:	∠one: Acres:	Zone: Acres:	zune. Acres:	Preci	ipitation	Average Temp	Ground Conditions
Gallons	-	Gallons	Gallons	Gallons	Gallons	Inches	Type	٩	(Wet, Dry, Frozen)
	₽								
	+								
	_								
	_								
	-								
	_								
	_								
	_								
	-								
						1			
	_								
								-	
								1	
	_								
	_								
							_		

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 qualified personnel gather and evaluate the information submitted. Based on my inquity 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 penalities for submitting false information, including the possibility of fine and imprisonment for knowling violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Signature:	Date:
Prepared By:	Title:

3800-FM-BPNPSM0449 3/2012 Instructions

THENT OF ENVIRONMENTAL PROTECTION



INSTRUCTIONS FOR COMPLETING LAND APPLICATION SYSTEMS SUPPLEMENTAL REPORT

Use this form to document wastewater management activities for facilities with land application programs (e.g., surface or subsurface irrigation, drip irrigation, etc.) approved under a Water Quality Management (WQM) permit.

- 1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, Permit No., Outfall No. (if applicable) and Permit Expiration Date (if applicable).
- 2. Next to each "Zone" heading (this may also be considered "fand application site"), enter a unique identifier. For example, "1," "2," etc. or "Site 1," Site 2," etc. If the name of the zone or site is too long for the space provided, please use an abbreviation. Up to five zones can be accommodated on one report. If you have more than five zones, please use more sheets. Next to each "Acres" heading, enter the number of acres that receive effluent (e.g., "wettable acres").
- 3. Enter the daily volume (gallons) applied onto each zone.
- 4. Enter the average daily temperature at the land application site. An on-site temperature monitoring system is recommended, but other approaches may be acceptable, such as use of local airport data.
- 5. Enter the daily ground surface conditions (site-wide). Recommended entries include "dry," "wet," and "frozen," but others may be used.
- 6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

Permit No. <u>1507415</u>

3800-PM-BPNPSM0015a 5/2013 Conditions Sewerage

Pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

PERMIT CONDITIONS RELATING TO SEWERAGE

For use in Water Quality Management Permits

(Check boxes that apply)

Ger	eral	
	1.	The Department of Environmental Protection (DEP) considers the licensed Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.
	2.	The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.
	3.	The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.
	4.	The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.
	5.	When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.
	6.	The approval of the plans, and the authority granted in this permit, if not specifically extended, shall cease and be null and void 2 years from the issuance date of this permit unless construction or modification of the facilities covered by this permit has begun on or before the second anniversary of the permit date.
\boxtimes	7.	If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.
	8.	If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
\boxtimes	9.	This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.
	10.	This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.
	11.	The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.
Co	nstru	ction
	12.	This permit is issued under the authorization of The Clean Streams Law and 25 Pa. Code Chapter 91. The permittee shall obtain all necessary permits, approvals and/or registrations under 25 Pa. Code Chapters 102, 105 and 106 prior to commencing construction of the facilities authorized by this permit, as applicable. The permittee should contact the DEP office that issued this permit if there are any questions concerning the applicability of additional permits.

3800-PM-BPNPSM0015a 5/2013 Conditions Sewerage

Permit No. 1507415

- 13. The facilities shall be constructed under the supervision of a Pennsylvania licensed Professional Engineer in accordance with the approved reports, plans and specifications.
- 14. A Pennsylvania licensed Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" form (3800-PM-WSFR0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. As-built drawings, photographs (if available) and a description of all deviations from the application and design plans must be submitted to DEP within 30 days of certification.
- 15. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.
- 16. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

Operation and Maintenance

- 17. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.
- 18. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.
- 19. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.
- 20. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.
- 21. The sewerage facilities shall be properly operated and maintained to perform as designed.
- 22. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.
- 23. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, et seq. shall operate the sewage treatment plant.
- 24. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.
- 25. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.
- 26. All connections to the approved sanitary sewers must be in accordance with the official Act 537 Plan and, if applicable, a corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.
- 27. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.



November 20, 2015

CERTIFIED MAIL NO. 7001 2510 0006 1770 0397

Mr. Donald Franceschini Manager Spring Hill Farm WWTF Association P.O. Box 756 Chadds Ford, PA 19317

Re: Final NPDES Permit - Sewage Spring Hill Farm STP NPDES Permit No. PA0052230 Authorization ID No. 1067798 Chadds Ford Township, Delaware County

Dear Mr. Franceschini:

Your NPDES permit is enclosed. Please read the permit carefully. The permit expires on the date identified on page 1 of the permit. A renewal application must be submitted to this office 180 days prior to the permit expiration date, if a discharge is expected to continue past the expiration date of the permit.

Enclosed are Discharge Monitoring Report (DMR) templates and DMR instructions. It is recommended that you retain the DMR templates in the event you are unable to submit DMRs electronically through DEP's eDMR system. Routine use of the eDMR system is a requirement of the permit unless the conditions in Part A III.B of the permit are met to withdraw' from the eDMR system.

Also enclosed is a Supplemental Form Inventory, which identifies the forms that are attached to the permit and must be submitted as attachments to eDMR reports, as applicable (see individual form instructions). The submission of other supplemental forms may be required in accordance with the permit. We encourage you to use the spreadsheet versions of supplemental forms that contain appropriate validation and DEP-approved calculations.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on

Mr. Donald Franceschini

- 2 -

audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Sara Abraham at 484.250.5195.

Sincerely.

Jenifer L. Fields, P.E. Environmental Program Manager Clean Water Program

Enclosures

cc:

Chadds Ford Township (w/o enclosure)
Concord Township (w/o enclosure)
Operations Section
Mr. Linahan-David V Linahan PE LLC
Mr. Kovach-DRBC
Ms. Lashley (w/o enclosure)
Central Office, Division of Operations, Monitoring and Data Systems Re

DEPARTMENT OF ENVIRONMENTAL PROTECTION



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

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR NON-MUNICIPAL SEWAGE TREATMENT WORKS

NPDES PERMIT NO: PA0052230

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

> Spring Hill Farm WWTF Association PO Box 756 Chadds Ford, PA 19317

is authorized to discharge from a facility known as Spring Hill Farm STP, located at 90 Springhill Drive, Chadds Ford Township, Delaware County, to Unnamed Tributary to Webb Creek in Watershed(s) 3-G in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A. B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON	JANUARY 1, 2016

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON DECEMBER 31, 2020

The authority granted by this permit is subject to the following further qualifications:

- 1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.
- 2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action: for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))
- 3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d)(2))

In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code §§ 92a.7(b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED

November 20, 2015

ISSUED BY

Jenifer L. Fields, P.E. Clean Water Program Manager Southeast Regional Office

3800-PM-BPNPSM0013	
Rev.	
10/2014	

Permi	Ē						Permu	10, FAUU02230	ч
PAR	TA-EFFLUEN		ATIONS, MONITORING, RECOR	DKEEPING AND	REPORTING REQ	UIREMENTS			
I. A.	For Outfall	001	, Latitude <u>39° 51' 56.00"</u>	_, Longitude	75° 32' 21.00"	, River Mile Index	0.42	_, Stream Code	00568
	Receiving Wa	iters:	Unnamed Tributary to Webb Cre	eek					
	Type of Efflue	ent:	Treated Sewage						

<u>-</u> The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.

Ņ Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

			Effluent L	imitations			Monitoring Rec	quirements
3	Mass Units	(lbs/day) ⁽¹⁾		Concentrati	ons (mg/L)		Minimum ⁽²⁾	Required
Parameter	Average	Daily	Instant.	Average		Instant.	Measurement	Sample
	Monthly	Maximum	Minimum	Monthly		Maximum	Frequency	Туре
Flow (MGD)	Report	Report	ХХХ	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	ХХХ	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.06	ХХХ	0.14	1/day	Grab
						-		24-Hr
CBOD5	21	XXX	XXX	25	XXX	50	1/week	Composite
	р П	~~~	~~~	0 0	~~~	2	1/2004	24-Hr
				Report				24-Hr
Total Dissolved Solids	XXX	XXX	XXX	Daily Max	XXX	XXX	1/quarter	Composite
Fecal Coliform (CFU/100 ml)						1		-
May 1 - Sep 30	XXX	XXX	ХХХ	200	XXX	1,000	1/week	Grab
Fecal Coliform (CFU/100 ml)								
Oct 1 - Apr 30	XXX	XXX	XXX	200	XXX	1,000*	1/week	Grab

Appendix D Page 212 of 598

3800-PM-BPNPSM0013 Rev. 10/2014 Permit

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

			Effluent L	.imitations			Monitoring Rec	quirements
I	Mass Units	(Ibs/day) ⁽¹⁾		Concentrati	ons (mg/L)		Minimum ⁽²⁾	Required
Parameter	Averace	Daily	Instant.	Average		Instant.	Measurement	Sample
	Monthly	Maximum	Minimum	Monthly		Maximum	Frequency	Туре
								24-Hr
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	Composite
Ammonia-Nitrogen								24-Hr
May 1 - Oct 31	1.7	ХХХ	XXX	2.0	XXX	4.0	1/week	Composite
Ammonia-Nitrogen								24-Hr
Nov 1 - Apr 30	5.0	XXX	XXX	6.0	XXX	12.0	1/week	Composite
Total Phosphorus								24-Hr
May 1 - Oct 31	0.8	XXX	XXX	1.0	XXX	2.0	1/week	Composite
Total Phosphorus								24-Hr
Nov 1 - Apr 30	1.7	XXX	XXX	2.0	XXX	4.0	1/week	Composite
				Report				24-Hr
Total Copper	XXX	ХХХ	XXX	Daily Max	XXX	XXX	1/quarter	Composite

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

*Shall not exceed in more than 10% of samples. See Part C.I. Other Requirement No. H.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS (Continued)

Additional Requirements

- 1. The permittee may not discharge:
 - a. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code § 92a.41(c))
 - b. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (<u>25 Pa. Code § 92a.47(a)(7), § 95.2(2)</u>)
 - c. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code § 93.6(a))
 - Foam or substances that produce an observed change in the color, taste, odor or turbidity of the receiving water, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. (25 Pa Code § 92a.41(c))
- 2. If the permit requires the reporting of average weekly statistical results, the maximum weekly average concentration and maximum weekly average mass loading shall be reported, regardless of whether the results are obtained for the same or different weeks.
- 3. The permittee shall monitor the sewage effluent discharge(s) for the effluent parameters identified in the Part A limitations table(s) during all bypass events at the facility, using the sample types that are specified in the limitations table(s). Where the required sample type is "composite", the permittee must commence sample collection within one hour of the start of the bypass, wherever possible. The results shall be reported on the Daily Effluent Monitoring supplemental form (3800-FM-BPNPSM0435) and be incorporated into the calculations used to report self-monitoring data on Discharge Monitoring Reports (DMRs).

Footnotes

- (1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.
- (2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

Supplemental Information

- (1) The effluent limitations for Outfall 001 were determined using an effluent discharge rate of 0.1 MGD.
- (2) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO₂+NO₃-N), where TKN and NO₂+NO₃-N are measured in the same sample.

II. DEFINITIONS

At Outfall (XXX) means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line (XXX), or where otherwise specified.

Average refers to the use of an arithmetic mean, unless otherwise specified in this permit. (40 CFR 122.41(I)(4)(iii))

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollutant loading to surface waters of the Commonwealth. The term also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term includes activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. (25 Pa. Code § 92a.2)

Bypass means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i))

Calendar Week is defined as the seven consecutive days from Sunday through Saturday, unless the permittee has been given permission by DEP to provide weekly data as Monday through Friday based on showing excellent performance of the facility and a history of compliance. In cases when the week falls in two separate months, the month with the most days in that week shall be the month for reporting.

Clean Water Act means the Federal Water Pollution Control Act, as amended. (33 U.S.C.A. §§ 1251 to 1387).

Composite Sample (for all except GC/MS volatile organic analysis) means a combination of individual samples (at least eight for a 24-hour period or four for an 8-hour period) of at least 100 milliliters (mL) each obtained at spaced time intervals during the compositing period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval is proportional to the flow rates over the time period used to produce the composite. (EPA Form 2C)

Composite Sample (for GC/MS volatile organic analysis) consists of at least four aliquots or grab samples collected during the sampling event (not necessarily flow proportioned). The samples must be combined in the laboratory immediately before analysis and then one analysis is performed. (<u>EPA Form 2C</u>)

Daily Average Temperature means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day. (<u>25 Pa. Code § 92a.2</u>, 40 CFR 122.2)

Daily Maximum Discharge Limitation means the highest allowable "daily discharge."

Discharge Monitoring Report (DMR) means the DEP or EPA supplied form(s) for the reporting of selfmonitoring results by the permittee. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Estimated Flow means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

Geometric Mean means the average of a set of n sample results given by the nth root of their product.

Permit No. PA0052230

Grab Sample means an individual sample of at least 100 mL collected at a randomly selected time over a period not to exceed 15 minutes. (EPA Form 2C)

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act. (40 CFR 122.2)

Hauled-In Wastes means any waste that is introduced into a treatment facility through any method other than a direct connection to the sewage collection system. The term includes wastes transported to and disposed of within the treatment facility or other entry points within the collection system.

Immersion Stabilization (i-s) means a calibrated device is immersed in the wastewater until the reading is stabilized.

Instantaneous Maximum Effluent Limitation means the highest allowable discharge of a concentration or mass of a substance at any one time as measured by a grab sample. (25 Pa. Code § 92a.2)

Measured Flow means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

Monthly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. (25 Pa. Code § 92a.2)

Municipal Waste means garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility. (<u>25 Pa. Code § 271.1</u>)

Residual Waste means garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law. (25 Pa Code § 287.1)

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (<u>40 CFR 122.41(m)(1)(ii)</u>)

Stormwater means the runoff from precipitation, snow melt runoff, and surface runoff and drainage. (25 Pa. Code § 92a.2)

Stormwater Associated With Industrial Activity means the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant, and as defined at 40 CFR §122.26(b)(14)(i) - (ix) and (xi) and 25 Pa. Code § 92a.2.

Total Dissolved Solids means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR Part 136.

Toxic Pollutant means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions,

Permit No. PA0052230

including malfunctions in reproduction, or physical deformations in these organisms or their offspring. (25 Pa. Code § 92a.2)

Permit No. PA0052230

III. SELF-MONITORING, REPORTING AND RECORDKEEPING

- A. Representative Sampling
 - Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (<u>40 CFR 122.41(i)(1)</u>). Representative sampling includes the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance and changes in treatment plant loading. If possible, effluent samples must be collected where the effluent is well mixed near the center of the discharge conveyance and at the approximate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized. (<u>40 CFR 122.48, 25</u> <u>Pa. Code § 92a.61</u>)
 - 2. Records Retention (40 CFR 122.41(i)(2))

Except for records of monitoring information required by this permit related to the permittee's sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for 3 years from the date of the sample measurement, report or application. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

3. Recording of Results (40 CFR 122.41(i)(3))

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date and time of sampling or measurements.
- b. The person(s) who performed the sampling or measurements.
- c. The date(s) the analyses were performed.
- d. The person(s) who performed the analyses.
- e. The analytical techniques or methods used; and the associated detection level.
- f. The results of such analyses.
- 4. Test Procedures
 - a. Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of Act 90 of 2002 (27 Pa. C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation.
 - b. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be those approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, unless the method is specified in this permit or has been otherwise approved in writing by DEP. (40 CFR 122.41(j)(4)), 122.44(i)(1)(iv))
 - c. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be sufficiently sensitive. A method is sufficiently sensitive when 1) the method minimum level is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or 3) the method is specified in this permit or has been otherwise approved in writing by DEP for the measured pollutant or pollutant parameter. Permittees have the option of providing matrix or sample-specific minimum levels rather than the published levels. (40 CFR 122.44(i)(1)(iv))
- 5. Quality/Assurance/Control

Permit No. PA0052230

In an effort to assure accurate self-monitoring analyses results:

- a. The permittee, or its designated laboratory, shall participate in the periodic scheduled quality assurance inspections conducted by DEP and EPA. (40 CFR 122.41(e), 122.41(i)(3))
- b. The permittee, or its designated laboratory, shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit, in accordance with 40 CFR Part 136. (<u>40 CFR 122.41(j)(4)</u>)
- B. Reporting of Monitoring Results
 - 1. The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit. (40 CFR 122.41(e), 122.44(i)(1))
 - Discharge Monitoring Reports (DMRs) must be completed in accordance with DEP's published DMR Instructions (3800-FM-BPNPSM0463). DMRs are based on calendar reporting periods unless Part C of this permit requires otherwise. DMR(s) must be received by the agency(ies) specified in paragraph 3 below in accordance with the following schedule:
 - Monthly DMRs must be received within 28 days following the end of each calendar month.
 - Quarterly DMRs must be received within 28 days following the end of each calendar quarter, i.e., January 28, April 28, July 28, and October 28.
 - Semiannual DMRs must be received within 28 days following the end of each calendar semiannual period, i.e., January 28 and July 28.
 - Annual DMRs must be received by January 28, unless Part C of this permit requires otherwise.
 - 3. The permittee shall complete all Supplemental Reporting forms (Supplemental DMRs) provided by DEP in this permit (or an approved equivalent), and submit the signed, completed forms as an attachment to the DMR(s). If the permittee elects to use DEP's electronic DMR (eDMR) system, one electronic submission may be made for DMRs and Supplemental DMRs. If paper forms are used, the completed forms shall be mailed to:

Department of Environmental Protection Clean Water Program 2 East Main Street Norristown, PA 19401

- 4. If the permittee elects to begin using DEP's eDMR system to submit DMRs required by the permit, the permittee shall, to assure continuity of business operations, continue using the eDMR system to submit all DMRs and Supplemental Reports required by the permit, unless the following steps are completed to discontinue use of eDMR:
 - a. The permittee shall submit written notification to the regional office that issued the permit that it intends to discontinue use of eDMR. The notification shall be signed by a principal executive officer or authorized agent of the permittee.
 - b. The permittee shall continue using eDMR until the permittee receives written notification from DEP's Central Office that the facility has been removed from the eDMR system, and electronic report submissions are no longer expected.
- 5. The completed DMR Form shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

Permit No. PA0052230

- For a corporation by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency by a principal executive officer or ranking elected official.

If signed by a person other than the above, written notification of delegation of DMR signatory authority must be submitted to DEP in advance of or along with the relevant DMR form. (40 CFR 122.22(b))

6. If the permittee monitors any pollutant at monitoring points as designated by this permit, using analytical methods described in Part A III.A.4. herein, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR. (40 CFR 122.41(I)(4)(ii))

C. Reporting Requirements

 Planned Changes to Physical Facilities – The permittee shall give notice to DEP as soon as possible but no later than 30 days prior to planned physical alterations or additions to the permitted facility. A permit under 25 Pa. Code Chapter 91 may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to DEP, can be used to satisfy the notification requirements of this section.

Notice is required when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b). (40 CFR 122.41(I)(1)(i))
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this permit. (40 CFR 122.41(l)(1)(ii))
- c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii))
- d. The planned change may result in noncompliance with permit requirements. (40 CFR 122.41(I)(2))
- 2. Planned Changes to Waste Stream Under the authority of 25 Pa. Code § 92a.24(a), the permittee shall provide notice to DEP as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream as a result of indirect discharges or hauled-in wastes, as specified in paragraphs 2.a. and 2.b., below. Notice shall be provided on the "Planned Changes to Waste Stream" Supplemental Report (3800-FM-BPNPSM0482), available on DEP's website. The permittee shall provide information on the quality and quantity of waste introduced into the facility, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility. The Report shall be sent via Certified Mail or other means to confirm DEP's receipt of the notification. DEP will determine if the submission of a new application and receipt of a new or amended permit is required.
 - a. Introduction of New Pollutants (25 Pa. Code § 92a.24(a))

New pollutants are defined as parameters that meet all of the following criteria:

(i) Were not detected in the facilities' influent waste stream as reported in the permit application; and

Permit No. PA0052230

(ii) Have not been approved to be included in the permittee's influent waste stream by DEP in writing.

The permittee shall provide notification of the introduction of new pollutants in accordance with paragraph 2 above. The permittee may not authorize the introduction of new pollutants until the permittee receives DEP's written approval.

b. Increased Loading of Approved Pollutants (25 Pa. Code § 92a.24(a))

Approved pollutants are defined as parameters that meet one or more of the following criteria:

- Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or
- Have been approved to be included in the permittee's influent waste stream by DEP in writing; or
- (iii) Have an effluent limitation or monitoring requirement in this permit.

The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the facility, or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading of approved pollutants may not result in an exceedance of ELGs or effluent limitations and may not cause exceedances of the applicable water quality standards in the receiving stream.

- 3. Reporting Requirements for Hauled-In Wastes
 - a. Receipt of Residual Waste
 - (i) The permittee shall document the receipt of all hauled-in residual wastes (including but not limited to wastewater from oil and gas wells, food processing waste, and landfill leachate), as defined at 25 Pa. Code § 287.1, that are received for processing at the treatment facility. The permittee shall report hauled-in residual wastes on a monthly basis to DEP on the "Hauled In Residual Wastes" Supplemental Report (3800-FM-BPNPSM0450) as an attachment to the DMR. If no residual wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report. The information used to develop the Report shall be retained by the permittee for five years from the date of receipt and must be made available to DEP or EPA upon request.

- (1) The dates that residual wastes were received.
- (2) The volume (gallons) of wastes received.
- (3) The license plate number of the vehicle transporting the waste to the treatment facility.
- (4) The permit number(s) of the well(s) where residual wastes were generated, if applicable.
- (5) The name and address of the generator of the residual wastes.
- (6) The type of wastewater.

The transporter of residual waste must maintain these and other records as part of the daily operational record (25 Pa. Code § 299.219). If the transporter is unable to provide this information or the permittee has not otherwise received the information from the generator, the residual wastes shall not be accepted by the permittee until such time as the permittee receives such information from the transporter or generator.

- (ii) The following conditions apply to the characterization of residual wastes received by the permittee:
 - (1) If the generator is required to complete a chemical analysis of residual wastes in accordance with 25 Pa. Code § 287.51, the permittee must receive and maintain on file a chemical analysis of the residual wastes it receives. The chemical analysis must conform to the Bureau of Waste Management's Form 26R except as noted in paragraph (2), below. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it.
 - (2) For wastewater generated from hydraulic fracturing operations ("frac wastewater") within the first 30 production days of a well site, the chemical analysis may be a general frac wastewater characterization approved by DEP. Thereafter, the chemical analysis must be waste-specific and be reported on the Form 26R.
- b. Receipt of Municipal Waste
 - (i) The permittee shall document the receipt of all hauled-in municipal wastes (including but not limited to septage and liquid sewage sludge), as defined at 25 Pa. Code § 271.1, that are received for processing at the treatment facility. The permittee shall report hauled-in municipal wastes on a monthly basis to DEP on the "Hauled In Municipal Wastes" Supplemental Report (3800-FM-BPNPSM0437) as an attachment to the DMR. If no municipal wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report:

- (1) The dates that municipal wastes were received.
- (2) The volume (gallons) of wastes received.
- (3) The BOD₅ concentration (mg/l) and load (lbs) for the wastes received.
- (4) The location(s) where wastes were disposed of within the treatment facility.
- (ii) Sampling and analysis of hauled-in municipal wastes must be completed to characterize the organic strength of the wastes, unless composite sampling of influent wastewater is performed at a location downstream of the point of entry for the wastes.
- 4. Unanticipated Noncompliance or Potential Pollution Reporting
 - a. Immediate Reporting The permittee shall immediately report any incident causing or threatening pollution in accordance with the requirements of 25 Pa. Code §§ 91.33 and 92a.41(b).
 - (i) If, because of an accident, other activity or incident a toxic substance or another substance which would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, the permittee shall immediately notify DEP by telephone of the location and nature of the danger. Oral notification to the Department is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution.

- (ii) If reasonably possible to do so, the permittee shall immediately notify downstream users of the waters of the Commonwealth to which the substance was discharged. Such notice shall include the location and nature of the danger.
- (iii) The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove the residual substances contained thereon or therein from the ground and from the affected waters of this Commonwealth to the extent required by applicable law.
- b. The permittee shall report any noncompliance which may endanger health or the environment in accordance with the requirements of 40 CFR 122.41(I)(6). These requirements include the following obligations:
 - (i) 24 Hour Reporting The permittee shall orally report any noncompliance with this permit which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported within 24 hours under this paragraph:
 - (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
 - (2) Any upset which exceeds any effluent limitation in the permit; and
 - (3) Violation of the maximum daily discharge limitation for any of the pollutants listed in the permit as being subject to the 24-hour reporting requirement. (40 CFR 122.44(g))
 - (ii) Written Report A written submission shall also be provided within 5 days of the time the permittee becomes aware of any noncompliance which may endanger health or the environment. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
 - (iii) Waiver of Written Report DEP may waive the written report on a case-by-case basis if the associated oral report has been received within 24 hours from the time the permittee becomes aware of the circumstances which may endanger health or the environment. Unless such a waiver is expressly granted by DEP, the permittee shall submit a written report in accordance with this paragraph. (40 CFR 122.41(I)(6)(iii))
- 5. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraph C.4 of this section or specific requirements of compliance schedules, at the time DMRs are submitted, on the Non-Compliance Reporting Form (3800-FM-BPNPSM0440). The reports shall contain the information listed in paragraph C.4.b.(ii) of this section. (40 CFR 122.41(l)(7))

Permit No. PA0052230

PART B

I. MANAGEMENT REQUIREMENTS

- A. Compliance
 - 1. The permittee shall comply with all conditions of this permit. If a compliance schedule has been established in this permit, the permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit. (40 CFR 122.41(a)(1))
 - The permittee shall submit reports of compliance or noncompliance, or progress reports as applicable, for any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline. (25 Pa. Code § 92a.51(c), 40 CFR 122.47(a)(4))
- B. Permit Modification, Termination, or Revocation and Reissuance
 - 1. This permit may be modified, terminated, or revoked and reissued during its term in accordance with Title 25 Pa. Code § 92a.72 and 40 CFR 122.41(f).
 - 2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. (40 CFR 122.41(f))
 - In the absence of DEP action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions. (40 CFR 122.41(a)(1))
- C. Duty to Provide Information
 - 1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. (40 CFR 122.41(h))
 - 2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this permit. (40 CFR 122.41(h))
 - 3. Other Information Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to DEP, it shall promptly submit the correct and complete facts or information. (<u>40 CFR 122.41(I)(8)</u>)
 - 4. If the sewage treatment facility provides service in part or whole to a municipality, through a contract or agreement between the operator and municipality, an annual report shall be submitted to DEP by March 31 containing the following information, at a minimum:
 - a. The information identified in 25 Pa. Code § 94.12.
 - b. A "Solids Management Inventory" if specified in Part C of this permit.
 - c. The total volume of hauled-in residual and municipal wastes received during the year, by source.
- D. General Pretreatment Requirements

Where pollutants contributed by indirect dischargers result in interference or pass through, and a violation is likely to recur, the permittee shall develop and enforce specific limits for indirect dischargers and other users, as appropriate, that together with appropriate facility or operational changes, are necessary to

ensure renewed or continued compliance with this permit or sludge use or disposal practices. The permittee shall submit a copy of such limits to DEP when developed. (<u>25 Pa. Code § 92a.47(d)</u>)

- E. Proper Operation and Maintenance
 - 1. The permittee shall employ operators certified in compliance with the Water and Wastewater Systems Operators Certification Act (63 P.S. §§ 1001-1015.1).
 - 2. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit. (40 CFR 122.41(e))
- F. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d))

- G. Bypassing
 - Bypassing Not Exceeding Permit Limitations The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions in paragraphs two, three and four of this section. (40 CFR 122.41(m)(2))
 - 2. Other Bypassing In all other situations, bypassing is prohibited and DEP may take enforcement action against the permittee for bypass unless:
 - a. A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage." (40 <u>CFR 122.41(m)(4)(i)(A)</u>)
 - b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance. (40 CFR 122.41(m)(4)(i)(B))
 - c. The permittee submitted the necessary notice required in G.4.a. and b. below. (<u>40 CFR 122.41(m)</u> (<u>4)(i)(C)</u>)
 - 3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in G.2. above. (<u>40 CFR 122.41(m)(4)(ii)</u>)
 - 4. Notice
 - a. Anticipated Bypass If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the bypass. (<u>40 CFR 122.41(m)(3)(i)</u>)
 - b. Unanticipated Bypass The permittee shall submit oral notice of any other unanticipated bypass within 24 hours, regardless of whether the bypass may endanger health or the environment or whether the bypass exceeds effluent limitations. The notice shall be in accordance with Part A III.C.4.b.
- H. Sanitary Sewer Overflows (SSOs)

An SSO is an overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility. SSOs are not authorized under this permit. The permittee shall immediately report any SSO to DEP in accordance with Part A III.C.4 of this permit.

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative and/or criminal penalties as set forth in 40 CFR §122.41(a)(2).

Any person or municipality, who violates any provision of this permit; any rule, regulation or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

B. Falsifying Information

Any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or
- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or noncompliance)

Shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 Pa.C.S.A § 4904 and 40 CFR 122.41(j)(5) and (k)(2).

C. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (40 <u>CFR 122.41(c)</u>)

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law, and Title 25 Pa. Code Chapter 92a and 40 CFR 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law:

Permit No. PA0052230

- 1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit; (40 CFR 122.41(i)(1))
- 2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit; (<u>40 CFR 122.41(i)(2)</u>)
- 3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and (40 CFR 122.41(i)(3))
- 4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location. (<u>40 CFR 122.41(i)(4)</u>)
- B. Transfer of Permits
 - Transfers by modification. Except as provided in paragraph 2 of this section, a permit may be transferred by the permittee to a new owner or operator only if this permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (40 CFR 122.61(a))
 - 2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:
 - a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b. of this section; (40 CFR 122.61(b)(1))
 - b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; and (<u>40 CFR 122.61(b)(2)</u>)
 - c. DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue this permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b. of this section. (40 CFR 122.61(b)(3))
 - d. The new permittee is in compliance with existing DEP issued permits, regulations, orders and schedules of compliance, or has demonstrated that any noncompliance with the existing permits has been resolved by an appropriate compliance action or by the terms and conditions of the permit (including compliance schedules set forth in the permit), consistent with 25 Pa. Code § 92a.51 (relating to schedules of compliance) and other appropriate DEP regulations. (25 Pa. Code § 92a.71)
 - 3. In the event DEP does not approve transfer of this permit, the new owner or operator must submit a new permit application.
- C. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege. (<u>40</u> <u>CFR 122.41(g)</u>)

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit. (<u>40 CFR 122.41(b)</u>)

E. Other Laws

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

Permit No. PA0052230

IV. ANNUAL FEE

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. Annual fee amounts are specified in the following schedule and are due on each anniversary of the effective date of the most recent new or reissued permit. All flows identified in the schedule are annual average design flows. (25 Pa. Code § 92a.62)

Small Flow Treatment Facility (SRSTP or SFTF)	\$0
Minor Sewage Facility < 0.05 MGD (million gallons per day)	\$250
Minor Sewage Facility ≥ 0.05 and < 1 MGD	\$500
Minor Sewage Facility with CSO (Combined Sewer Overflow)	\$750
Major Sewage Facility ≥ 1 and < 5 MGD	\$1,250
Major Sewage Facility ≥ 5 MGD	\$2,500
Major Sewage Facility with CSO	\$5,000

As of the effective date of this permit, the facility covered by the permit is classified in the following fee category: **Minor Sewage Facility >=0.05 and <1 MGD**.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Throughout a five year permit term, permittees will pay four annual fees followed by a permit renewal application fee in the last year of permit coverage. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees. The fees identified above are subject to change in accordance with 25 Pa. Code § 92a.62(e).

Payment for annual fees shall be remitted to DEP at the address below by the anniversary date. Checks should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection Bureau of Point and Non-Point Source Management Re: Chapter 92a Annual Fee P.O. Box 8466 Harrisburg, PA 17105-8466

PART C

I. OTHER REQUIREMENTS

- A. No storm water from pavements, area ways, roofs, foundation drains or other sources shall be directly admitted to the sanitary sewers associated with the herein approved discharge.
- B. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance or replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.
- C. Collected screenings, slurries, sludges, and other solids shall be handled and disposed of in compliance with 25 Pa. Code, Chapters 75, and in a manner equivalent to the requirements indicated in Chapters 271, 273, 275, 283, and 285 (related to permits and requirements for landfilling, land application, incineration, and storage of sewage sludge), Federal Regulation 40 CFR 257, Pennsylvania Clean Streams Law, Pennsylvania Solid Waste Management Act of 1980, and the Federal Clean Water Act and its amendments. The permittee is responsible to obtain or assure that contracted agents have all necessary permits and approvals for the handling, storage, transport, and disposal of solid waste materials generated as a result of wastewater treatment.
- D. If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
- E. The permittee shall optimize chlorine dosages used for disinfection or other purposes to minimize the concentration of Total Residual Chlorine (TRC) in the effluent, meet applicable effluent limitations, and reduce the possibility of adversely affecting the receiving waters. Optimization efforts may include an evaluation of wastewater characteristics, mixing characteristics, and contact times, adjustments to process controls, and maintenance of the disinfection facilities. If DEP determines that effluent TRC is causing adverse water quality impacts, DEP may reopen this permit to apply new or more stringent effluent limitations and/or require implementation of control measures or operational practices to eliminate such impacts.

Where the permittee does not use chlorine for primary or backup disinfection, but proposes the use of chlorine for cleaning or other purposes, the permittee shall notify DEP prior to initiating use of chlorine and monitor TRC concentrations in the effluent on each day in which chlorine is used. The results shall be submitted as an attachment to the DMR.

- F. The attention of the permittee is directed to the fact that effluent is discharged to a location with little or no assimilative capacity or dilution during critical periods. If the effluent creates a health hazard or nuisance, the permittee shall, upon notice from DEP, provide such additional treatment as may be required by DEP.
- G. Notification of the designation of the responsible operator must be submitted to the permitting agency by the permittee within 60 days after the effective date of the permit and from time to time thereafter as the operator is replaced.
- H. The seasonal effluent limitations for fecal coliform are based on Chapter 92a (§ 92a.47(4) & (5)) of DEP's regulations and Delaware River Basin Commission's (DRBC's) Water Quality Regulations at § 4.30.4.A. DEP's regulations govern the summer limits for fecal coliform while the winter limits are based on DRBC's regulations. The DRBC regulations state that during winter season from October through April, the instantaneous maximum concentration of fecal coliform organisms shall not be greater than 1,000 per 100

Permit No. PA0052230

milliliters in more than 10 percent of the samples tested. For reporting purposes, a copy of the guidelines on the 10 percent rule is enclosed with the permit.

I. The DEP may identify and require certain discharge specific data to be submitted before the expiration date of this permit. Upon notification by the DEP, the permittee will have 12 months from the date of the notice to provide the required data. These data, along with any other data available to the DEP, will be used in completing the Watershed TMDL/WLA Analysis and in establishing discharge effluent limits. In the event that DEP requires the submission of data pursuant to this condition, the permittee shall have the right to appeal or otherwise contest the requirement.

3800-FM-BPNPSM0462	3/2012 3 EETEON		DEPAN DEPAN BUREAU OF		NWEALTH T OF ENVIF AND NON- NT DISCHAR	OF PENNS CONMENTAL POINT SOL	YLVANIA - PROTECI IRCE MAN	TION AGEMEN ⁻ M (NPDES)	L					
PERMITTEE NAME/ADD	RESS		DISC	HARG	E MONITO	RING REF	ORT (DM	R)						
NAME Springh	ill Farm STP								Г					
CLIENT Spring I	Hill Farm WWTF Associ	ation	PAG	052230			001		Repo	rting Frequ	ency:	Monthly		
ADDRESS PO Box	756		PERMI	T NUM	3ER	ō	JTFALL NU	JMBER	DMR	Effective F	:mo	January 1, 2	016	[
Chadds	Ford, PA 19317								DMR	Effective To	ä	December 3	1, 2020	
LOCATION Chadds	Ford Township				MONITORI	NG PERIO	0		Perm	it Expires:		December 3	1, 2020	[
Delawa	re County		YEAR	MO	ДАΥ	YE/	R MO	ДΑΥ	Perm	it Applicatio	n Due:	July 4, 2020		ſ
WATERSHED 3-G									 	Check Here	if No Di	scharge		
										:: Kead Inst	ructions	petore completin	g this form	Γ
PARAMETER				ADING	UNITS	VALLE			VALUE	UNITS	ĞЩ	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
	SAMPLE MEASUREMENT					****	****		****					
Flow	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Ma	×	MGD					****		Continuous	Recorded	
	SAMPLE MEASUREMENT	****	****				****							
На	PERMIT				***	6.0 Inst Min	***		9.0 IMAX	S.U.		1/day	Grab	
	SAMPLE MEASUREMENT	****	****				****		****					
Dissolved Oxygen	REQUIREMENT	***			****	5.0 Inst Min			*****	mg/L		1/day	Grab	
	SAMPLE MEASUREMENT	****	****			* 7 2 * *								
Total Residual Chlorine	PERMIT REQUIREMENT				****		0.06 Avg N) 10	0.14 IMAX	mg/L		1/day	Grab	
	SAMPLE MEASUREMENT		****			****			****					
CBOD5	PERMIT REQUIREMENT	Z1 Avg Mo	****		lbs/day	****	Avg A	lo l	****	mg/L		1/week	24-Hr Composite	n nda 11 Nije da
	SAMPLE MEASUREMENT		****			*****			*****					
Total Suspended Solids	PERMIT REQUIREMENT	25 Avg Mo	****		lbs/day		30 Avg N	10	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	mg/L		1/week	24-Hr Composite	
	SAMPLE MEASUREMENT	****	***			****								
Fecal Coliform May 1 - Sep 30	PERMIT REQUIREMENT				****		200 Avg N	10	1,000 IMAX	CFU/ 100 ml		1/week	Grab	
NAME/TITLE PRINCIPAL E	XECUTIVE OFFICER	I certify under penalty of direction or supervision in that qualified personnel g	law that this docume a accordance with a s gather and evaluate t	nt was prepa ystem design the information	red under my red to assure on submitted.					TELE	PHONE		DATE	Т
		Based on my inquiry of the or those persons directly information submitted is.	he person or persons responsible for gath to the best of my kr	s who manag lering the inf towiedge an	le the system ormation, the d belief, true,									ĺ
TYPED OR P	RINTED	accurate and complete. for submitting false info imprisonment for knowin, to unsworn falsification).	rain aware matumer mation, including th g violations. See 18	e are signing 1e possibility Pa. C.S. § 4	ant penantes of fine and 1904 (relating	SIGNATUR	E UF PRINC R OR AUTHO	JIPAL EXE ORIZED A(GULIVE	AREA CODE	NUMBI	ER YEAR	MO DAY	
														-

PAGE 1 OF 2

COMMENTS (Report all violations on the "Non-Compliance Reporting Form")
3800-FM-BPNPSM0462	3/201'2 I RESS		DEPAI DEPAI BUREAU OI NATIONAL P DISC	COMMC RTMEN POINT OLLUTA	NWEALTH F OF ENVIR AND NON-I NT DISCHAR	OF PENNSYI ONMENTAL POINT SOUF GE ELIMINATH RING REPO	-VANIA PROTECTION (CE MANAGEN ON SYSTEM (NPI ORT (DMR)	IENT DES)					
NAME Springhi	II Farm STP		PAC	052230			001		ottina Eroauo		Mathow		
CLIENI <u>Spring F</u> ADDRESS PO Box	111 Farm WW IF Associ 756	ation	PERMI	T NUME	BER	OO		R DMF	titling rieque R Effective Fr	. mo	January 1,	016	[]
Chadds	Ford, PA 19317							DMR	Effective To		December (1, 2020	[
LOCATION Chadds	Ford Township				MONITORIN	NG PERIOD		Pern	nit Expires:		December (1, 2020	[[
Delawan	e County		YEAR	Q	DAY	YEAF	MO D	AY Perm	nit Application	Due:	July 4, 2020		[
WATERSHED 3-G						10			Check Here	if No Disc	charge		
								NOT	E: Read Insti	uctions b	efore completir	g this form	r
PARAMETER		QUAN	ITITY OR LO	ADING	UNITS		ALITY OR CON VALUE	ICENTRATION	UNITS	<u>о</u> й	FREQUENCY	SAMPLE TYPE	
	SAMPLE MEASUREMENT	****	****			*****	-						1
Fecal Coliform Oct 1 - Apr 30	PERMIT				****		200 Avg Mo	1,000* IMAX	CFU/ 100 ml		1/week	Grab	i an an
	SAMPLE MEASUREMENT	****	****			*****		*****					
Total Nitrogen	PERMIT				****	***	Report Avg Mo		mg/L		1/week	24-Hr Composite	lag ng d
	SAMPLE MEASUREMENT		****		2	*****		****					
Ammonia-Nitrogen May 1 - Oct 31	PERMIT REQUIREMENT	1.7 Avg Mo	****		lbs/day		2.0 Avg Mo		mg/L		1/week	24-Hr Composite	1.126.1
	SAMPLE MEASUREMENT		****			*****		*****					1
Ammonia-Nitrogen Nov 1 - Apr 30	PERMIT REQUIREMENT	5.0 Avg Mo	*****		lbs/day		6.0 Avg Mo		mg/L		1/week	24-Hr Composite	1
	SAMPLE MEASUREMENT	4	****			****		****					1
Total Phosphorus May 1 - Oct 31	PERMIT REQUIREMENT	0.8 Avg Mo			lbs/day		1.0 Avg Mo		mg/L		1/week	24-Hr Composite	10.1
	SAMPLE MEASUREMENT		****			*****	-	*****					
Total Phosphorus Nov 1 - Apr 30	PERMIT REQUIREMENT	1.7 Avg Mo	****		lbs/day	*****	2.0 Avg Mo	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	mg/L		1/week	24-Hr Composite	1
	SAMPLE MEASUREMENT												T
	REQUIREMENT			a tana A tana									
NAME/TITLE PRINCIPAL E)	XECUTIVE OFFICER	I certify under penalty of I direction or supervision in thet cualified perconnel of	aw that this docume accordance with a s	nt was prepa system design the information	red under my ted to assure on submitted				TELEF	HONE		DATE	1
		Based on my inquiry of the Dr those persons directly information submitted is, accurate and complete.	responsible for gatt to the best of my ki	s who manag tering the init nowledge and e are signific	e the system ormation, the d belief, true, ant penalities								
TYPED OR PF	RINTED	imprisonment for knowing to unsworn falsification).	y violations. See 18	Pa. C.S. § 4	904 (relating	SIGNATURE OFFICER	OF PRINCIPAL OR AUTHORIZE	EXECUTIVE D AGENT	AREA CODE	NUMBEF	R YEAR	MO DAY	1 1
COMMENTS (Report all vio *Shall not exceed in more	lations on the "Non-Cor e than 10% of sampl	mpliance Reportin es.	ıg Form")			· .						PAGE 2 OF 2	۲

Appendix D Page 232 of 598

3800-FM-BPNPSM0462 3/2012 pennsylvania PRIMARY FACILITY NAME/ADDRESS

NAME	Springhill Farm STP
CLIENT	Spring Hill Farm WWTF Association
ADDRESS	PO Box 756
	Chadds Ford, PA 19317
LOCATION	Chadds Ford Township
	Delaware County

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

001	OUTFALL NUMBE	
		1

PERMIT NUMBER PA0052230

			-
OUTF	ALL NU	MBER	
			ō
 ERIOD			ď
YEAR	MO	DAY	ď

MONITORING

DAΥ

ОМ

YEAR

Э-С

WATERSHED

01

Reporting Frequency:	Quarterly
DMR Effective From:	January 1, 2016
DMR Effective To:	December 31, 2020
Permit Expires:	December 31, 2020
Permit Application Due:	July 4, 2020
Check Here if No Disc	harge
NOTE: Read Instructions be	ofore completing this form

QUANTITY OR LOADING QUALITY OR CONCENTRATION NO. FREQUENCY VALUE VALUE VALUE VALUE VALUE VALUE VALUE OF ANALYSIS
TITY OR LOADING QUALITY OR CONCENTRATION NO. FREQUENCY VALUE 1 UNITS VALUE 1 VALUE 1 VALUE 1 UNITS EX OF ANALYSIS
CONCENTRATION ALUE VALUE VALUE VALUE VALUE VALUE VALUE VALUE VALUE UNITS EX OF ANALYSIS
ALUE VALUE VALUE VALUE OVICE VALUE OVICY
ALITY OR CONCENTRATION NO. FREQUENCY VALUE VALUE VALUE ONITS EX OF ANALYSIS
CENTRATION NO. FREQUENCY
UNITS EX OF ANALYSIS
NO. FREQUENCY EX OF ANALYSIS
EQUENCY ANALYSIS
SAMPLE TYPE

PAGE 1 OF 1

3800-FM-BPNPSM0463 Rev. 2/2014

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

INSTRUCTIONS FOR COMPLETING DISCHARGE MONITORING REPORTS (DMRs)

<u>General</u>

One or more Discharge Monitoring Reports (DMRs) are attached to your permit for reporting the results of selfmonitoring activities as required by your permit. You should make copies of the DMRs for your ongoing use, unless you elect to participate in the Department of Environmental Protection's (DEP's) electronic DMR (eDMR) program (see <u>www.dep.state.pa.us/edmr</u>).

- Reporting frequencies will vary depending on the monitoring frequencies listed in your permit, and are generally monthly, quarterly semi-annually and annually.
- Your reports must be <u>received</u> by DEP on the 28th day of the month following the end of the reporting period, unless otherwise specified in Part C of your permit.
- Your permit may require submission of DMRs to other agencies, including the U.S. Environmental Protection Agency (EPA).
- If you receive DMRs in the mail from EPA, please discontinue use of DMR Form No. 3800-FM-BPNPSM0462 and begin using EPA's DMRs.
- DMRs will generally include pre-populated information for permittee name and address, facility location, permit number, outfall number, permit expiration date, parameter names, and permit requirements. If you identify any errors on a DMR issued by DEP, please contact the DEP regional office that issued your permit. If you identify any errors on a DMR issued by EPA, please contact DEP's Central Office at 717-787-6744.
 DO NOT make changes to DMRs issued to you.
- You may use computer-generated replicas of Form No. 3800-FM-BPNPSM0462 or of EPA's DMR if you receive prior approval from DEP and EPA. **DEP reserves the right to instruct you to discontinue the submission of computer-generated DMRs if the permit requirements you entered on the form are inaccurate.**

Instructions

- 1. Enter statistical results into each blank field below the "VALUE" column headers. Results must be reported in the same units shown on the DMR.
- Sum the total number of excursions or exceedances of permit limits across the row for each parameter and enter the value into the "NO. EX" field. For example, if the permit contains limits of 6.0 S.U. (Minimum) and 9.0 S.U. (Maximum) for pH, and the Minimum and Maximum results are 5.9 S.U. and 9.1 S.U., respectively, enter "2" into the "NO. EX" field.
- 3. Report the actual sampling frequency and sample type utilized during the reporting period in the fields corresponding to "Frequency of Analysis" and "Sample Type", respectively.
- 4. Type the name of the principal executive officer (or an authorized agent designated by a principal executive officer) who is taking responsibility for the report, sign the report (should be in ink), enter the telephone number of the responsible individual, and record the date that the report was signed. Mail only original, signed copies of DMRs.
- 5. In the Comments section at the bottom of the DMR, you may write a brief summary of violations in this section; however, DEP requests that <u>all</u> violations during the monitoring period be reported in more detail on DEP's Non-Compliance Reporting Form (3800-FM-BPNPSM0440) and be submitted as an attachment to the DMR. Other uses of the Comments Section include explanations of attachments to the DMR, explanations for the unavailability of data, and brief summaries of issues that have affected operations or effluent quality during the monitoring period. Always consider attaching a letter or separate document to explain your situation in more detail.

3800-FM-BPNPSM0463 Rev. 2/2014

No Discharge or No Data Available

If there was <u>no discharge at all from an outfall</u> during the monitoring period, check the "No Discharge" box on the top of the DMR. Complete the information above and below the table and mail the DMR to the appropriate agencies. Be sure to sign and date the DMR.

If there was no discharge of a specific parameter (e.g., if a chlorine limit is in the permit but chlorine was not used for disinfection during the entire reporting period), or if data are not available for a specific parameter for the entire reporting period, <u>do not</u> leave the DMR blank. Instead, report one of the following No Data Indicator (NODI) codes that apply to your situation in the appropriate value field, and **provide an explanation as an attachment to the DMR**:

- A Use if you are exempted from monitoring the parameter because of a General Permit condition.
- E Use if <u>all samples or results</u> are not available for the reporting period due to equipment failure or because sample collection was overlooked or samples could not be collected for the parameter.
- **GG** Use if your permit requires sample collection and analysis only under certain conditions and those conditions were not met during the reporting period (e.g., report chlorine results only when chlorination system is used).
- FF Other: use if there is any reason for the absence of data that is not covered by those above.

If you have at least one result for a parameter, the value should be reported and not a NODI code.

Calculations

The following explains how to calculate statistical values that are commonly required by permits:

Monthly Average – For Loading (lbs/day), sum the total of daily loadings and divide by the number of samples during the month. To calculate the daily loading, multiply the daily concentration (mg/l) by the flow (MGD) on the date of sampling and a conversion factor of 8.34. For Concentration, sum the total of daily concentrations and divide by the number of samples.

Weekly Average – For Loading (lbs/day), sum the total of average daily loadings during each week of the reporting period (beginning on a Sunday and ending on a Saturday) and divide by the number of samples during the week. For Concentration, sum the total of daily concentrations each week and divide by the number of samples. Report the <u>maximum</u> weekly average on the DMR.

Maximum Daily ("Daily Max") – Report the maximum concentration or load measured during a 24-hour period during the reporting period; if multiple measurements are taken daily, include all data in the analysis.

Instantaneous Maximum ("IMAX") – Report the maximum result obtained by a grab sample for a specific pollutant over the entire reporting period covered by a DMR.

Instantaneous Minimum ("Minimum") – Report the minimum result obtained by a grab sample for a specific pollutant over the entire reporting period covered by a DMR.

Total Monthly Load (lbs) – Sum the total of average daily loadings, divide by the number of samples during the month, and multiply by the number of days in the month.

Geometric Mean – Report the average of a set of *n* sample results given by the *n*th root of their product. If any result is zero (0), substitute 1 for the calculation. For example, five samples were analyzed with the following results: 20, 300, 400, 500, and 0. The calculation of geometric mean is as follows (note that you will need to use the power function on a calculator):

 $\sqrt[5]{20 \cdot 300 \cdot 400 \cdot 500 \cdot 1} = \sqrt[5]{1,200,000,000} = (1,200,000,000)^{1/5} = 65$

3800-FM-BPNPSM0463 Rev. 2/2014

Non-Detect Data

Conventional and Toxic Parameters

For calculating average values of data sets in which there are some "detections" (results at or above the laboratory reporting limit) and some "non-detect" data (results reported below the laboratory reporting limit), use the reporting limit for non-detect data. In other words, ignore the less than (<) symbol for statistical calculations and include the < symbol with the statistical result if there is at least one non-detect result in the data set. For example, four samples were analyzed with the following results: < 1.0, 2.0, < 1.0, and 1.0. The average statistical result is < 1.3.

Where the permit includes an effluent limitation for a parameter that is less than the most sensitive detection limit available, and the laboratory reports a value at or below the lowest level specified by the permit, you may use zero (0) in the calculation in lieu of the reporting limit, if the parameter is identified in 25 Pa. Code Chapter 16, Appendix A, Tables 2A and 2B. In general, parameters with limitations that are less than the most sensitive detection limit will be identified in Part C of the permit, if applicable.

Bacteria Parameters

Report all "non-detect" (e.g., < 2) and "too numerous to count" (TNTC) (e.g., > 2,000) results on DMR supplemental forms as reported by the laboratory. Do not report "TNTC" on supplemental forms, but instead report a value qualified with the">" symbol. Where a data set includes one or more "non-detect" and/or TNTC results, calculate the geometric mean by ignoring qualifying symbols, but report the value with the symbol. If a data set includes both ">" and "<" qualifiers, the ">" qualifier takes precedence for reporting. For all "non-detect" values, specify in the Comments section of the DMR the maximum volume filtered at the laboratory.

Example 1 – For results are determined, < 2, 10, 20, and 30. The geometric mean should be reported as < $(2 \cdot 10 \cdot 20 \cdot 30)^{0.25} = < 10$. Specify the maximum volume filtered for the < 2 result in the DMR Comments.

Example 2 – Three results are determined, < 2, 1,000, and > 2,000. The geometric mean should be reported as > (2 \cdot 1,000 \cdot 2,000^{0.333} = > 158.

Rounding and Precision

Statistical values reported on the DMR should be rounded to the same number of decimal places as the limit for the parameter as set forth in the permit. If the permit does not contain a limit but requests monitoring only, statistical values for concentration results should be rounded to the maximum number of decimal places in the data set as reported by the laboratory or the instrument used for analysis. If mass loads must be reported and there is no limit, round statistical values to the nearest whole number, unless the calculated number is less than one, in which case the value should be rounded to one significant figure (e.g., 0.1, 0.05, etc.). If the number you are rounding is followed by 5, 6, 7, 8, or 9, round the number up, otherwise round down.

The documents "Discharge Monitoring Reports Overview and Summary" (3800-BK-DEP3047) and "Management of Non-Detect Results for Discharge Monitoring Reports" (3800-FS-DEP4262) contain more information and are incorporated by reference. These documents are available on DEP's website.

Supplemental Form Inventory

The following supplemental forms (indicated in the check box column) are attached to this permit and must be completed and submitted to DEP in accordance with the permit and the supplemental form instructions. If the eDMR system is used to submit DMR reports, the spreadsheet versions of these supplemental forms, where applicable, should be used and attached to the eDMR submissions. A link to DEP's supplemental form website is available when logging into the eDMR system.

Check Box	Supplemental Form Name and No.
\boxtimes	Daily Effluent Monitoring (3800-FM-BPNPSM0435)
\square	Influent & Process Control (3800-FM-BPNPSM0436)
	Hauled in Municipal Wastes (3800-FM-BPNPSM0437)
\boxtimes	Sewage Sludge/Biosolids Production and Disposal (3800-FM-BPNPSM0438)
	Chemical Additives Usage (3800-FM-BPNPSM0439)
\square	Non-Compliance Reporting Form (3800-FM-BPNPSM0440)
	CSO Monthly Summary Report (3800-FM-BPNPSM0441)
	CSO Detailed Report (3800-FM-BPNPSM0442)
	Groundwater Monitoring Data Report (3800-FM-BPNPSM0443)
	Nutrient Monitoring (3800-FM-BPNPSM0444)
	Nitrogen Budget (3800-FM-BPNPSM0445)
	Phosphorus Budget (3800-FM-BPNPSM0446)
	Annual Nutrient Summary (3800-FM-BPNPSM0447)
	TMDL Annual Load Summary (3800-FM-BPNPSM0448)
	Land Application Systems (3800-FM-BPNPSM0449)
	Hauled in Residual Wastes (3800-FM-BPNPSM0450)
	Surface Water Monitoring Data Report (3800-FM-BPNPSM0461)
\square	Lab Accreditation Form (3800-FM-BPNPSM0189)
	Whole Effluent Toxicity Test Summary Report (3800-FM-BPNPSM0485)
	Storm Water Annual Inspection Form (3800-PM-WSFR0083v)
	Storm Water Additional Information (3800-PM-WSFR0083t)
	Other:

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

SUPPLEMENTAL REPORT DAILY EFFLUENT MONITORING

Facility Name:	Spring Hill Farm STP	
Municipality:	Chadds Ford Township	County: Uelaware
Watershed:	3-G	

DEPARTMENT OF ENVIRONMENTAL PROTECTION

pennsylvania

3800-FM-BPNPSM0435 3/2012

DES Permit No.: <u>PA005230</u> ewal amilication due 180 davs prior to expiration
ermit will expire on

Year: _

$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2130 8 10 10 10 0 1 0 0 1 10 0 10 10 10 10 10	AGD AGD	σ	На														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Day 1-1008 100 100 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	1GD	σ		-	DO		TRC		CBOD5		TSS	Tot	tal Dissolved Solids	Ъē	cal Coliform	Ļ	ital Nitrogen
Image: displaying control Image: displaying contendisplayeracontendisplayerace Image: displaying	α	460	3		0	-	(4	11200	c	l)om	c	CELI/100 ml	c	mail
1 1	- 0 0 7 0 0 7 7 7 0 0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			s.u.	٥	mg/L	σ	mg/L	J	mg/L	3	mg/L	2	mg/L	7		<u>"</u>	IIIG/L
2 1	; 0 0 م م 0 1 4 0 2		-												_			
3 1	w 4 ω ω ν ω ω 7 τ;														_			
4 1	; 0 0 م م م م								_									
5 1	2 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			_	2100-				-								_	
6 1	, <u>−</u> − 0 ∞ − 1 0																	
7 1	,																	-
8 1	, 11 0 0 8																	
9 1 9 1	11 0 0														_		_	
10 10 <td< td=""><td>, 11 11</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	, 11 11			1					_									
11 11 <td< td=""><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	11																	
12 12 14 <th14< th=""> 14 14 <th1< td=""><td>¢,</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th1<></th14<>	¢,																	
13 13 14 <td< td=""><td></td><td></td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				4														
14 14 <th14< th=""> 14 14 <th1< td=""><td>13</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th1<></th14<>	13																	
16 1	14			4														
16 16 16 17 17 18 17 18 17 18 17 18 <th< td=""><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	15								_									
17 17 17 17 17 17 18 19 10 <th10< th=""> 10 10 <th1< td=""><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th1<></th10<>	16																	
18 18 19 10 <th10< th=""> 10 10 <th1< td=""><td>17</td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>51125</td><td></td></th1<></th10<>	17			1													511 2 5	
19 19 19 19 19 10 <th< td=""><td>18</td><td></td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	18			4														
20 20 20 21 20 21 21 21 21 22 22 23 24 24 24 24 24 24 24 26 26 26 26 26 27 26 26 27 26 27 26 26 26 27 27 28 23 26 26 26 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 <th< td=""><td>19</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	19								_									
21 1	20			1														
22 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 24 26 24 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 27 26 26 27 26 27 26 27 26 27 26 27 26 26 27 26 27 26 27 26 27 27 28 27 28 27 27 27 27 27 27 27 27 27 27 27 27 27 28 27 <th< td=""><td>21</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	21																	
23 1	22	NCULU		ł														
24 1	23																	
25 26 26 26 26 26 27 27 27 27 27 27 27 27 28 27 28 27 28 27 28 26 26 27 29 27 29 27 29 29 29 29 29 29 29 29 29 29 20 <td< td=""><td>24</td><td>01972</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	24	01972																
26 27 26 1	25																	
27 27 27 28 28 29 29 29 29 29 29 20 <td< td=""><td>26</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td></td<>	26								-								_	
28 28 28 29 29 29 29 29 20 20 21 20 21 20 21 20 21 <th< td=""><td>27</td><td></td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	27			4														
29 29 29 29 29 20 <th< td=""><td>28</td><td></td><td></td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	28			4														
30 31 Avg 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 qualified personnel gather and evaluate th 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, i 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	29				Ī													
31 Avg Avg 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 qualified personnel gather and evaluate th 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, information submitted is accurate and complete. I am aware that there are significant penaltities for submitting false information, including the possibility of fine and imprisonment	30																	
Avg 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 qualified personnel gather and evaluate th 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, i 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	31 31		_															
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 qualified personnel gather and evaluate th 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, 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	Avg			-											_			
I certify under penalty of law that this document was prepared under my direction or supervision in accordance when a system designed to assume that we among parties and system of the information submitted is, i information submitted is any knowledge and belief, true, accurate and complete. I am aware that there are significant penaltities for submitting false information, including the possibility of fine and imprisonment best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penaltities for submitting false information, including the possibility of fine and imprisonment best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penaltities for submitting false information, including the possibility of fine and imprisonment											- 11	antono docion	4 00	accure that allo	ulfiod r	adteo lannad	ar and	evratuate the
information submitted. Based on my inquiry of the person of persons who manage the system of those persons directly responsible to garening the possibility of fine and imprisonment.	l certify under p	enalty of la	aw that	this docume	Tt was	prepared unde	r my di	rection or sup	Dervisio	on in accordance	with a	system design +hr recoonsible	eu IV for ge	assure urat que atharing tha info	anneu F	personnergame		bmitted is to
best of my knowledge and belief, true, accurate and complete. Tain aware that uncle are significant periaties for submitting raise information, instituting the perioding we provide the area instrumented and belief.	information sub	mitted. Ba	ised of	n my inquiry c	t the p	person or persor		manage the	syster signi	n or those person History por alties f	or subr	cuy responsible mitting false inf	ormafi	autering ure mic ion including th	אוזשווות	sihility of fine ar	ne i i oi. nmi pu	urisonment fo
	best of my knov	vledge and	l belief,	, true, accura.	e ano	complete. I an	1 awart	e that there a	re sign.	incant penalites t	ions io	ווווווווות ומואכ וווו	UIIIa	ani, inciuuily a		יפוטווור) טו וווכ מו		

Page 1 of 2

Signature:

Prepared By:

Title:

Date:

3800-FM-BPNPS/M0435 3/2012

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

SUPPLEMENTAL REPORT DAILY EFFLUENT MONITORING

	County: Delaware	
Spring Hill Farm STP	Chadds Ford Township	3-G
Facility Name:	Municipality:	Watershed:

Year:	Outfall No.: 001	xpiration	
Month:	NPDES Permit No.: PA0052230	Renewal application due 180 days prior to e	This permit will expire on

Laborar	ones:										מ הכווו								E.
								_	Effluer	ht Paramete	S								
		mmonia	i	Total		Fotal Copper							-		Kon inisilian				RANK SWEEKER
Day			È	losphorus															анонари
	σ	mg/L	σ	mg/L	Ø	mg/L	ø		σ		σ		σ		ø		σ	ta yana aya minin da da ka	
1																			
2																			maqu
ъ			6090				-						1116						n norma
4					-														unqa
5																			ende
9																			eentra
2																			unanini i
ജ																			-anjo
ი					-				_		_				_				and the second
10					10.00							5190/00 TV							-
11																			-
12					94.5B		-												may
13	-				-								_						
14																			
15					manta		-												
16													_			4			-
17			10000								_					and the second			may
18																			-
19													-						manda
20			201200		-											Anna da dabitati (PPP) - PP			erene ja
21					_		•												made
22													_						
23																			T
24	-				1973210														
25	11001012				ano,000						_								
26	-		-		-														
27									5042205										
28																			u na pa
29	8.001002								1				-						anaspa
30													-						وفعرو
31																			
Avg							wees								_				
- - -	ertify un	der penalty of	law the	at this docum€	snt wa	s prepared und	er my d	irection or sup-	ervision	in accordance	e with a	system design	ned to a	issure that qua	alified p	ersonnel gathe	r and e	waluate the	a

Signature: Date:

Щ.	
Prepared	Title:

Page 2 of 2

3800-FM-BPNPSM0435 3/2012 Instructions pennsylvania DEPARTMENT OF ENGRONMENTAL PROTECTION

INSTRUCTIONS FOR COMPLETING DAILY EFFLUENT MONITORING SUPPLEMENTAL REPORT

Use this form to report daily monitoring results for the parameters that must be monitored in effluent for compliance with the permit. Results for influent parameters are normally reported on Form 3800-FM-BPNPSM0436.

- 1. Enter Facility Name, Municipality, County, Watershed No., Laboratories, Month, Year, NPDES Permit No., Outfall No., and Permit Expiration Date (it is noted that this information may be pre-populated if you have received this form with your permit). For Laboratories, list the names of all laboratories where samples were analyzed during the month, including on-site analysis.
- 2. In the column headers, below "Effluent Parameters," enter the names of parameters in the permit. Since limited space is provided, abbreviation may be necessary. If there are more parameters for an outfall than columns provided on the form, attach an additional sheet.
- 3. Below parameter names, and to the right of "Q" (Qualifier) column headers, enter the units associated each parameter (it is noted that this information may be pre-populated if you have received this form with your permit).
- 4. Enter monitoring results for parameters in the rows corresponding to the day of the month in which samples were collected. Enter results exactly as reported by the laboratory, or if measured with on-site equipment, to the level of precision recommended by the equipment manufacturer. Enter data qualifiers such as "<," ">," "J," and others in the "Q" column.
- 5. Calculate and report average values at the bottom of the table in accordance with the DMR Instructions (3800-FM-BPNPSM0463) and DEP guidance (3800-BK-DEP3047). Note for bacteria, calculate and report the geometric mean value.
- 6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

DEPARTMENT OF ENVIRONMENTAL PROTECTION pennsylvania 3800-FM-BPNPSM0436 3/2012 M.

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

SUPPLEMENTAL REPORT – INFLUENT & PROCESS CONTROL

County: Delaware Chadds Ford Township 3-G Spring Hill Farm STP Facility Name: Municipality: Watershed:

Year: NPDES Permit No.: <u>PA0052230</u> Renewal application due <u>180 days</u> prior to expiration This permit will expire on Month:

							onordentite in Andrew (
Process Control	Sludge Wasted (gallons)																																	
	Aeration DO (mg/l)																																	
	Aeration MLSS (mg/l)																																	
	TSS (lbs)																																	
	TSS (mg/l)																																	
Influent	BOD5 (Ibs)																																	
	BOD5 (mg/l)																																	
	Flow (MGD)																																	
	Day	1	2	Э	4	5	9	7	8	о	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg	Мах

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 qualified 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, 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 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).

iy:	
Prepared E	Title:

Signature:

3800-FM-BPNPSM0436 3/2012 Instructions



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

INSTRUCTIONS FOR COMPLETING INFLUENT & PROCESS CONTROL SUPPLEMENTAL REPORT

- 1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., and Permit Expiration Date.
- For Influent, enter daily average <u>Influent</u> Flow (MGD) (if an influent flow meter is in use), daily influent BOD₅ or BOD₅ concentrations (mg/l) and loads (lbs), and daily influent TSS concentrations (mg/l) and loads (lbs). Calculate loads by multiplying daily average flow (MGD) by daily average concentration (mg/l) and a conversion factor of 8.34. If an influent flow meter is not in use, you may use results from an effluent flow meter.
- 3. For Process Control, enter daily average Mixed Liquor Suspended Solids (MLSS) (mg/l) and daily average Aeration Dissolved Oxygen (DO) for aerobic biological treatment systems, and total daily Sludge Wasted (removed from biological treatment), in gallons, for all treatment system types. If a parameter does not apply to your facility, leave the column blank. Information for other parameters such as Return Activated Sludge (RAS) Rate, Recirculation Rate (for fixed media treatment systems), Sludge Blanket Thickness, Sludge Volume Index, and others may be requested by the DEP office that issued the permit.
- 4. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0438 3/2012 Pennsylvania Deferment of Environmental Protection

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

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name:	Spring Hill Farm STP
Municipality:	Chadds Ford Township County: Delaware
Watershed	

Month: Year: Year: NPDES Permit No.: PA0052330 Renewal application due <u>180 days</u> prior to expiration This permit will expire on

SEWAGE SLUDGE/BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

Check here if there were no off-site removal events during the month

	Sewage Sludge/Biosolids Dewatered and Incinerated On-site	Tons Dewatered % Solids Dry Tons						TOTAL:
	Dewatered Sewage Sludge/Biosolids Hauled Off-site	Tons Dewatered % Solids Dry Tons						TOTAL:
	Liquid Sewage Sludge/Biosolids Hauled Off-site	Gallons % Solids Dry Tons						TOTAL:
]	Date							

SEWAGE SLUDGE/BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION (Identify all sites where sewage sludge/biosolids or ash were disposed or land applied)

				*C - 1 L
Tuesdouter	random and the state of t			Hauler Name
				Type of Disposal/Use*
				Dry Tons Applied/Disposed
				Type of Material*
				DEP Permit No.
				County
		a de la compansión de la c		Municipality
- coed				Site Name

*See Instructions for explanation

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 qualified 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, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine and imprisonment for knowledge violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Signature:

Date:

Prepared By:	Title:

3800-FM-BPNPSM0438 3/2012 Instructions

> pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

INSTRUCTIONS FOR COMPLETING SEWAGE SLUDGE / BIOSOLIDS SUPPLEMENTAL REPORT

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., and Permit Expiration Date.

Biosolids Production Information

- 2. For each off-site removal event for liquid sewage sludge or biosolids and for dewatered sewage sludge or biosolids, and for each event where dewatered sewage sludge or biosolids are incinerated on-site, list the date of the event, identify the gallons (liquid) or tons (dewatered) removed or incinerated and the percent solids (e.g., 10%, 20%, etc.) Report only sewage sludge or biosolids that have been removed from the plant digesters and other solids which have been **permanently** removed from the treatment process. Do **not** include sewage sludge or biosolids from other facilities that are processed at your facility. (If there were no off-site removal events during the month, check the box above the table).
 - Calculate dry tons for liquid sewage sludge or biosolids by multiplying the volume (gallons) by the percent solids and by a conversion factor of 0.0000417. For example, if 2,500 gallons of liquid biosolids is removed, and the percent solids is 3.0%, dry tons is calculated as:

2,500 gallons x 3.0% x 0.0000417 = 0.31 dry tons

Calculate dry tons for dewatered sewage sludge or biosolids by multiplying the tons dewatered by the percent solids and by a conversion factor of 0.01. For example, if 5 tons of dewatered biosolids is removed, and the percent solids is 50%, dry tons is calculated as:

The **%** Solids of liquid or dewatered sewage sludge or biosolids must be determined periodically through laboratory testing. Do not estimate or guess this value. An acceptable test method is method 2540B in *Standard Methods for the Examination of Water and Wastewater*, 18th edition, where samples are dried at 103-105°C. Other references such as ASTM may have equivalent tests which are also acceptable.

Biosolids and Incinerator Ash Disposal and Beneficial Use Information

- 3. Report sewage sludge, biosolids, and ash disposal and beneficial use information by disposal/application site. There are columns for four possible sites per month - if more sites are needed, attach additional pages. For each Site Name, listed at the top of the column, enter the Municipality and County of the site, the DEP Permit No. (i.e., Biosolids permit number for land application, landfill waste management permit number, etc.), Type of Material (sewage sludge, biosolids, or incinerator ash), Dry Tons Applied/Disposed at the site for the month, Type of Disposal/Use (e.g., reed beds, agricultural utilization, composting, landfill, other treatment plant, etc.) and the name of the hauler (company or individual name).
- 4. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

pennsylvania 3800-FM-BPNPSM0440 3/2012 AVA.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

NON-COMPLIANCE REPORTING FORM

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 and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plant of pollution incidents and the reportion deadline does not coincide with 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

your submission	n of the DN	AR, it should be sub	mitted separ	rately to 1	the Departmen	t by the reporting	deadline :	set forth in the permit. See instructions for	r more information.
Facility Name:	Spring	Hill Farm STP					Mont	th: Yea	
Municipality:	Chadd	ls Ford Township		County:	Delaware		Pern	nit No.: PA0052230	
□ Violati	ons of Pe	ermit Effluent Limi	tations*						
			Permit		Statistical				
Dat	te	Parameter	Limit	Units	Code	Result	Units	Cause of Violation	Corrective Action Taken

Sanitary Sewer Overflows and Other Unauthorized Discharges*

ause of Discharge Notified	
Impact on Waters C	
Receiving Waters	
Duration (hrs)	
Volume (gals)	
Location	
Substance Discharged	
Event Date	

Other Permit Violations*

* If the space provided is not sufficient to record all information, please attach additional sheets.

1 certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified 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, 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).

Signature:	Date:
Prepared By:	Title:

3800-FM-BPNPSM0440 3/2012 Instructions



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

INSTRUCTIONS FOR COMPLETING NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report <u>all</u> 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). If you are reporting other non-compliance events, and the deadline for a written report (e.g., 5 days) does not coincide with your submission of the DMR, this form should be submitted separately to the Department by the reporting deadline set forth in the permit.

If you are unsure of whether an incident constitutes non-compliance that may endanger health or the environment, it is recommended that you notify the Department verbally as soon as possible after you become aware of the incident. Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.

Instructions:

- 1. Enter the name of the facility, the municipality and county where it is located, the month and year when violations occurred, and the NPDES or WQM permit number for the facility.
- 2. If there were violations of permit effluent limitations during the month, check the box next to "Violations of Permit Effluent Limitations." (Note if using the electronic version of this form, check the boxes first, and then select Tools Unprotect Document to enter additional information). Enter the date of the violation (if a violation of a minimum or maximum limit, the date of sample collection, or if a violation of an average limit, the end of the monitoring period), the parameter name, the permit limit and units, the statistical code (e.g., "MIN", "MAX", "MO AVG", etc.), the measured result and units, the cause of the violation and the corrective action taken. If there are more than two violations during the monitoring period and/or if the space provided is insufficient to explain the cause or corrective action, please attach additional pages.
- 3. If there are Sanitary Sewer Overflow (SSO) discharges or other unauthorized discharges from the facility (e.g., spills, leaks, etc.) that enter or have the potential to enter waters of the Commonwealth, including groundwater, notify DEP by phone as soon as possible, and document the discharge on this form by checking the box next to "Sanitary Sewer Overflows and Other Unauthorized Discharges." Record the event (discharge) date, the substance discharged (e.g., sewage, on-site chemicals, etc.), the location where the discharge occurred (e.g., manhole number, pump station name, equipment description, etc.), the volume discharged (gallons), the approximate duration of the discharge (hours), the receiving waters (name of stream or groundwater), the impact on the receiving waters, if observed (e.g., solids deposition, foam, fish kill, etc.), the cause of the discharge, and the date on which the Department was verbally notified. If there are more than two discharge, please attach additional pages.
- 4. If there are other violations of the permit, check the box next to "Other Permit Violations," and check the appropriate box that describes the violation type. If not identified on the form, check the box next to "Other" and provide a written explanation. If the space provided is insufficient to explain the violation, please attach additional pages.
- 5. Type your name and title and sign and date the form after reading the certification statement.

If you have questions about completing this form, contact the Clean Water Program Operations Section of the Department in your region:

Southeast Region – (484) 250-5970 Northeast Region – (570) 826-2553 Southcentral Region – (717) 705-4707 Northcentral Region – (570) 327-0532 Southwest Region – (412) 442-4060 Northwest Region – (814) 332-6942



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

SUPPLEMENTAL LABORATORY ACCREDITATION FORM¹

Permittee Name:	Spring Hill F	arm WWTF Associat	ion	 					
Address:	<u>P.O. Box 75</u>	6		 					
	Chadds For	d, PA 19317	10 Martin						
	PERMIT	NUMBER			MONITC Year	RING PE	RIOD ay		
	PA005	52230				то			
PARAME	TER	ANALYSIS ME	THOD	LAB NA	ME	and a second		UMBER ²	

								1979 - 1970 -	

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 possibly of fine and imprisonment for knowing violations.

Name/Title Principal Executive Officer

Signature of Principal Executive Officer or Authorized Agent

Date:

Phone: _____

¹ Submit this form with the first Discharge Monitoring Report (DMR) or Annual Report, where sample results are submitted to the Department for compliance purposes. You do not need to send this form to the Department again UNLESS there has been a change to the lab(s), parameter(s) or method(s) of analysis.

² For parameter(s) covered under accreditation-by-rule, submit the lab's registration number in lieu of an accreditation number.



Southeast Regional Office

April 2, 2013

CERTIFIED MAIL NO. 7007 3020 0002 8265 2147

Mr. Joseph L. Salvucci Executive Director DELCORA 100 East Fifth Street, P. O. Box 999 Chester, PA 19016-0999

Re: Final NPDES Permit - Sewage DELCORA STP NPDES Permit No. PA0027103 Authorization ID No. 896205 City of Chester, Delaware Coun

Dear Mr. Salvucci:

Your NPDES permit is enclosed. Please read the permit carefully. The permit expires on the date identified on page 1 of the permit. A renewal application must be submitted to this office 180 days prior to the permit expiration date, if a discharge is expected to continue past the expiration date of the permit.

We have reviewed the draft comment letter dated February 26, 2013 submitted by Christine Volkay-Hilditch, and the following are our responses:

- (i) We acknowledge your concern regarding the eDMR coding.
- (ii) On page 29, Other Requirement O is revised to eliminate the reference of the outfall extension.
- (iii) Page 18 and 19, Section C.2, Planned Changes to Waste Stream of the permit is a statewide standard requirement and it remains unchanged.
- (iv) On page 33, Section III. POTW Pretreatment Program Implementation, item E is revised to include the reference of EPA approval.

Enclosed are Discharge Monitoring Report (DMR) templates and DMR instructions. It is recommended that you retain the DMR templates in the event you are unable to submit DMRs electronically through DEP's eDMR system. Routine use of the eDMR system is a requirement of the permit unless the conditions in Part A III.B of the permit are met to withdraw from the eDMR system.



Mr. Joseph L. Salvucci - 2 -

Also enclosed is a Supplemental Form Inventory, which identifies the forms that are attached to the permit and must be submitted as attachments to eDMR reports, as applicable (see individual form instructions). The submission of other supplemental forms may be required in accordance with the permit. We encourage you to use the spreadsheet versions of supplemental forms that contain appropriate validation and DEP-approved calculations.

We would like to bring to your attention to the enclosed information about the Early Warning System (EWS). The EWS may be useful to initiate an alert by reporting an event to downstream water suppliers and industries. We encourage you to use this notification procedure when needed.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Sara Abraham at 484.250.5195.

Sincerely,

Jenifer L. Fields, P.E. Environmental Program Manager Clean Water Program

Enclosures

Mr. Joseph L. Salvucci - 3 -

•

cc: City of Chester (w/o enclosure) Chester Environmental Partnership (w/o enclosure) U. S. Environmental Protection Agency Mr. Stoller-DRBC Operations Section Mr. O'Neil-Majors File Ms. Lashley (w/o enclosure) Central Office, Division of Operations, Monitoring and Data Systems Re

.

3800-PM-WSFR0012 Rev. 5/2012 Permit

PARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WATER STANDARDS AND FACILITY REGULATION

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR PUBLICLY OWNED TREATMENT WORKS (POTWs)

NPDES PERMIT NO: PA0027103

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

Delaware County Regional Water Quality Control Authority (DELCORA) 100 East Fifth Street, P O Box 999 Chester, PA 19016-0999

is authorized to discharge from a facility known as **DELCORA STP**, located at **3201 West Front Street**, **City of Chester**, **Delaware County**, to the **Delaware River Estuary Zone 4** in Watershed(s) **3-G** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON May 1. 2013

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON _____April 30, 2018

The authority granted by this permit is subject to the following further qualifications:

- 1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.
- Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))
- A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (<u>40 CFR</u> <u>122.41(b)</u>, <u>122.21(d)</u>)

In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (<u>25 Pa. Code 92a.7(b), (c)</u>)

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED ______ 2013

ISSUED BY

Jenifer L. Pfelds, P.E. Clean Water Program Manager Southeast Regional Office

3800-PM-WSFR0012 Rev. 5/2012 Permit						Permit 1	Vo. PA0027103	
PARTS - GARVENT LINEAU	DNS HOMLY	OUNE, RECORD		HE RUNCE	Sargel/Jec [1] a			
I. A. For Outfall 001	Latitude 3	9° 49' 25.00" ,	Longitude	75° 23' 22.00"	_, River Mile I	ndex 80.71	, Stream Code	0002
Discharging to <u>Delaware I</u>	River Estuary	Zone 4						
which receives wastewater	from DELCO	RA STP				,		
1. The permittee is authori	ized to discha	rge during the peri	od from Permit E	<u>Effective Date</u> through the three t	ough <u>Completion</u>	<u>of plant expansions</u>	ion.	
 Based on the anticipate following effluent limitation 	ed wastewater tions and moni	characteristics and toring requirement	d flows describe ts apply (see als	d in the permit ap o Additional Requ	plication and its uirements, Footn	supporting docul otes and Supple	ments and/or ame mental Informatior	ndments, the).
			Effluent l	imitations			Monitoring Rec	quirements
Darameter	Mass Uni	its (Ibs/day) ^(ī)	, , ,	Concentrat	ions (mg/L)		Minimum ⁽²⁾	Required
	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement	Sample Type
Flow (MGD)	Report	Report Daily Max					Continuous	Metered
рН (S.U.)			6.0			9.0	1/day	Grab
Total Residual Chlorine				0.5		1.0	1/day	Grab
CBOD5	2,000	10,500		0 0	29 Wkly Avg	38	1/dav	24-Hr Composite
CBOD5 Raw Sewage Influent	Report			Report			1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report			Report			1/week	24-Hr Composite
CBOD20	10,500						1/week	24-Hr Composite
CBOD20 (%) Percent Removal			B9.25 Min % Min % Removal		4		1/week	24-Hr Composite
Total Suspended Solids	11,000	16,500		30	45 Wkly Avg	60	1/day	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report			Report			1/day	24-Hr Composite
Total Dissolved Solids	_			Report	Report	Report	2/month	24-Hr Composite
Oil and Grease	5,500			15		30	1/day	Grab

N

3800-PM-WSFR0012 Rev. 5/2012 Permit

Permit No. PA0027103

Outfall 001, Continued (from Permit Effective Date through Completion of plant expansion)

		I.	Effluent L	imitations			Monitoring Rec	uirements
Deremeter	Mass Units	(Ibs/day) ⁽¹⁾		Concentrat	ions (mg/L)		Minimum ⁽²⁾	Required
	Average Monthlv	Weekly Average	Instant. Minimum	Average Monthly	Daily Maximum	İnstant. Maximum	Measurement Frequency	Sample Tvpe
Fecal Coliform (CFU/100 ml)				200				
May 1 - Sep 30	_			Geo Mean		1,000	1/day	Grab
Fecal Coliform (CFU/100 ml)				200				
Oct 1 - Apr 30				Geo Mean		1,000*	1/day	Grab
								24-Hr
Ammonia-Nitrogen				Report			2/month	Composite
								24-Hr
Nitrate as N				Report	Report		2/month	Composite
								24-Hr
Nitrite as N	_			Report	Report		2/month	Composite
	_							24-Hr
Total Kjeldahl Nitrogen				Report			2/month	Composite
								24-Hr
Total Cadmium				Report			1/month	Composite
								24-Hr
Total Copper	_			Report			1/month	Composite
								24-Hr
Total Cyanide				Report			1/month	Composite
				14				24-Hr
Total Lead				Report			1/month	Composite
								24-Hr
Total Zinc				Report			1/month	Composite