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EXHIBIT E2

CHAPTER 94 REPORT FOR 2020  
MUNICIPAL AUTHORITY OF THE BOROUGH OF MORRISVILLE

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March 31, 2021

MORA 0024

David Burke, Watershed Manager  
Southeast Regional Office  
2 East Main Street  
Norristown, PA 19401

**RE: The Municipal Authority of the Borough of Morrisville  
2020 Municipal Wasteload Management Annual Report  
NPDES Permit No. PA 0026701**

Dear Mr. Burke:

On behalf of The Municipal Authority of the Borough of Morrisville, we are hereby submitting a copy of the 2020 Municipal Wasteload Management Annual Report for the Morrisville Wastewater Treatment Plant (WWTP). The report is submitted in compliance with the latest PaDEP regulations set forth in Title 25, Chapter 94 - Municipal Wasteload Management.

Should you have any questions or comments, please do not hesitate to contact the undersigned.

Sincerely,



Robert M. Campbell, PE  
Senior Engineer  
**PENNONI ASSOCIATES INC.**  
Authority Engineer

RMC/adg

Enclosures

cc: John J. Warena, Jr., Executive Director, Morrisville Municipal Authority (via email w/ encl.)  
Scott Haws, Morrisville Municipal Authority, (via email w/ encl.)



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

**For Calendar Year: 2020**

- Permittee is owner and/or operator of a POTW or other sewage treatment facility  
 Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	<b>Municipal Authority of the Borough of Morrisville</b>	Permit No.:	<b>PA0026701</b>
Mailing Address:	<b>35 Union Street</b>	Effective Date:	<b>October 1, 2020</b>
City, State, Zip:	<b>Morrisville, PA, 19067</b>	Expiration Date:	<b>September 30, 2025</b>
Contact Person:	<b>Scott Haws</b>	Renewal Due Date:	<b>April 3, 2025</b>
Title:	<b>Plant Superintendent</b>	Municipality:	<b>Boroughs of Morrisville and Yardley, and portions of Lower Makefield and Falls Townships</b>
Phone:	<b>(215) 736-0018</b>	County:	<b>Bucks County</b>
Email:	<b>mmawwtp@verizon.net</b>	Consultant Name:	<b>Pennoni Associates</b>
CHAPTER 94 REPORT COMPONENTS			
<p>1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. <u>(25 Pa. Code § 94.12(a)(1))</u></p> <p><b>Check the appropriate boxes:</b></p> <p><input checked="" type="checkbox"/> Line graph for flows attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>			
<p>2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. <u>(25 Pa. Code § 94.12(a)(2))</u></p> <p><b>Check the appropriate boxes:</b></p> <p><input checked="" type="checkbox"/> Line graph for organic loads attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>			

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

**Projections of annual average and maximum 3-month average flows to the WWTP are based upon the estimated Morrisville and Falls annual average contribution calculated in this Report below and flow data projection supplied in the Lower Makefield and Yardley Chapter 94 reports in Appendix B and C**

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

**Check the appropriate boxes:**

- Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment** )
- List summarizing each extension or project attached (**Attachment** )
- Schedules describing how each project will be completed over time and effects attached (**Attachment** )

**Comments:**

**A Sewerage Facilities Map in Appendix A of the Report. No new sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects in 2020.**

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

**See Section V. of the Report**

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

**Check the appropriate boxes:**

- System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

**Comments:**

**See Section VI. of the Report**

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

**Check the appropriate boxes:**

- The collection system does not contain pump stations
- The collection system does contain pump stations (Number – 2)
- Discussion of condition of each pump station attached (**Attachment** )

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

**Check the appropriate boxes:**

- Industrial waste report as described in 8 a., b. and c. attached (**Attachment** )
- Industrial pretreatment report as required in an NPDES permit attached (**Attachment** )

9. Existing or Projected Overload.

**Check the appropriate boxes:**

- This report demonstrates an existing hydraulic overload condition.
- This report demonstrates a projected hydraulic overload condition.
- This report demonstrates an existing organic overload condition.
- This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload).  
(25 Pa. Code § 94.12(a)(9))

- Corrective Action Plan attached (**Attachment** )

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- Sewage Sludge Management Inventory attached (**Attachment** )

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

- Annual CSO Report attached (**Attachment** )

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

- Flow calibration report attached (**Attachment** )

**RESPONSIBLE OFFICIAL CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Scott Haws**

Name of Responsible Official

**215-736-0018**

Telephone No.

Signature

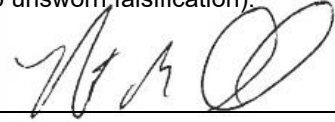
3/31/21

Date

### PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Robert M. Campbell, PE**



Name of Preparer

Signature

**215-222-3000**

**3/29/2021**

Telephone No.

Date



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

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

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

### General Information

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

### Chapter 94 Report Components

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

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

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

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

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

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

### Certification

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

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


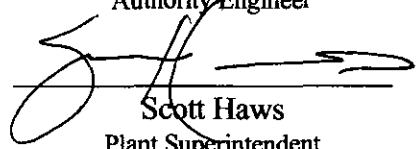


**THE MUNICIPAL AUTHORITY  
OF THE BOROUGH OF MORRISVILLE  
BUCKS COUNTY, PENNSYLVANIA**

**2020 MUNICIPAL WASTELOAD MANAGEMENT REPORT**

**Prepared by:**

**PENNONI ASSOCIATES INC.  
1900 Market Street  
Suite 300  
Philadelphia, PA 19103**

Preparer:	 _____ Robert M. Campbell, PE Authority Engineer	<u>3/31/2021</u> Date
Permittee:	 _____ Scott Haws Plant Superintendent	<u>3/30/2021</u> Date

**THE MUNICIPAL AUTHORITY  
OF THE BOROUGH OF MORRISVILLE  
BUCKS COUNTY, PENNSYLVANIA**

**2020 MUNICIPAL WASTELOAD MANAGEMENT REPORT**

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## APPENDICES

### **A - MORRISVILLE CHAPTER 94 SUPPORTING DOCUMENTS**

1. Morrisville's Wastewater Treatment Plant Projected Hydraulic and Organic Loadings
2. List of Non-significant users
3. Summary of Morrisville Sewer Connections
4. Copy of the Morrisville Pretreatment Ordinance
5. Warner Industrial Park Pump Stations – Development of Present and Projected Wastewater Flow to Pump Station.
6. Warner Industrial Park Pumping Stations – Summary of Pump Station's Hydraulic Loadings.
7. Morrisville Wastewater Treatment Plant Calibration Meter Certificates.
8. Pump Station Pump Manufacturer Curve
9. Scheduled or Completed Maintenance Work at the Plant & Pump Station
10. Copies of Morrisville Wastewater Treatment Plant's National Pollutant Discharge Elimination Permits (NPDES)
11. Copy of Water Quality (Part II) Permit for K-Mart and Philadelphia Avenue Pumping Stations
12. Copy of Morrisville Wastewater Treatment Plant's Amended Water Quality (Part II) Permit
13. 2019 Wet Weather Pump Station Records
14. Authority Response to Notice of Violation
15. Sanitary Sewer Overflow Report
16. Morrisville Municipal Authority Sewerage Facilities Maps

### **B - COPY OF LOWER MAKEFIELD TOWNSHIP, "MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT, CALENDAR YEAR 2020"**

### **C - COPY OF BOROUGH OF YARDLEY, "MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT, CALENDAR YEAR 2020"**

### **D - COPY OF THE TOWNSHIP OF FALLS, "MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT, CALENDAR YEAR 2020"**

**THE MUNICIPAL AUTHORITY  
OF THE BOROUGH OF MORRISVILLE**

**2020 MUNICIPAL WASTELOAD MANAGEMENT REPORT**

**TREATMENT PLANT:** Morrisville Wastewater Treatment Plant

**LOCATION OF PLANT:** 95 Riverview Avenue  
Morrisville, Bucks County, Pennsylvania

**OWNER/PERMITTEE:** The Municipal Authority of the Borough of Morrisville

**ADDRESS:** 35 Union Street, Morrisville, PA 19067

**INTRODUCTION**

The following report is submitted in compliance with the latest regulations set forth under Title 25, Part I, Subpart C, Article II, Chapter 94 - Municipal Wasteload Management Regulations of the Pennsylvania Department of Environmental Protection (PaDEP) concerning sewerage facilities.

Copies of the Wasteload Management Reports for Lower Makefield Township, Yardley Borough, and the Township of Falls which have a portion of their wastewater flows treated at the Morrisville Wastewater Treatment Plant (WWTP) are included in Appendix B, C, and D respectively of this report.

**BACKGROUND**

The WWTP is permitted to discharge an annual average flow of 7.1 million gallons per day (MGD) following the upgrade and expansion of the plant in 1989. Per the existing NPDES Permit, the plant has a permitted hydraulic capacity of 8.7 MGD based on the hydraulic design capacity of the plant. The plant currently serves the Boroughs of Morrisville and Yardley, and portions of Lower Makefield and Falls Townships. The majority of the flow is domestic strength wastewater; however, there are two (2) significant and three (3) non-significant industrial dischargers.

The Authority has two (2) pump stations, Kmart Pump Station and Philadelphia Avenue Pump Station. Kmart receives flow from Warner Industrial Park and Pennwood Crossing, a privately-owned collection system.

After receiving PaDEP approval in 1991 for a Revision to the Authority’s Act 537 Plan, the Borough of Morrisville, Lower Makefield Township, and Yardley Borough each agreed to a flow re-allocation of the plant capacity. Table 1 shows: (1) the original capacity held by each municipality in the plant prior to 1988; (2) the 1988 PaDEP Consent Order approved a 1.5 MGD plant expansion; and (3) the 1991 flow re-allocations per the Lower Makefield and Morrisville 1991 Act 537 Plan Revisions.

**TABLE 1**

**1991 CAPACITY ALLOCATIONS IN THE MORRISVILLE WASTEWATER TREATMENT PLANT**

<b>MUNICIPALITY</b>	<b>(1) PRECONSTRUCTION ALLOCATION (MGD)</b>	<b>(2) DER 1988 CONSENT ORDER (MGD)</b>	<b>(3) PER CURRENT 1991 AGREEMENT (MGD)*</b>
Morrisville	3.473	4.1115	3.103
Lower Makefield	1.697	2.0885	3.097
Yardley	0.430	0.900	0.900
<b>TOTAL CAPACITY</b>	<b>5.600</b>	<b>7.100</b>	<b>7.100</b>

*\* Per Amendment to 1977 Treatment Agreement dated October 8, 1991.*

The plant previously received a NPDES Permit Renewal on December 1, 2014. The permit expired at midnight on November 30, 2019 and a renewal application was submitted. A NPDES Permit Renewal went into effect on October 1, 2020 and the permit will expire on September 30, 2025. The plant permitted influent capacity loadings and NPDES average monthly effluent limitations presented in Table 2 are for the NPDES permit that expired in 2019 and was administratively extended through September 30, 2020. Refer to Appendix A for copies of both permits.

**TABLE 2**

**PERMITTED PARAMETERS FOR THE MORRISVILLE  
WASTEWATER TREATMENT PLANT**

<b>Influent</b>	<b>PERMITTED CAPACITIES</b>	
	<b>Concentration</b>	<b>Loading</b>
Annual Average		7.1 MGD
Maximum Month		8.7 MGD
Organic Loading BOD <sub>5</sub>		18,140 #/day

<b>Effluent (Average Monthly)</b>	<b>CURRENT NPDES PERMIT LIMITS</b>	
	<b>Concentration</b>	<b>Loading</b>
Total Residual Chlorine	0.5 mg/l	-
CBOD <sub>5</sub>	22 mg/l	1,302 #/day
CBOD <sub>20</sub>	-	1,916 #/day
Suspended Solids	30 mg/l	1,775 #/day
Fecal Coliform	200 geo.mean	-
Ammonia Nitrogen Total	35 mg/l	2,070 #/day
Total Copper	0.067 mg/l	4 #/day
Total Zinc	0.594 mg/l	35 #/day

## I. CONDITION OF WWTP

Operation and maintenance of the wastewater treatment plant is carried out by the superintendent and plant personnel. The superintendent is responsible for routine monitoring and maintenance of the plant, while specialized maintenance at the wastewater treatment plant is handled by independent contractors hired by the Authority on an "as needed" basis.

The monitoring program at the plant consists of routine monitoring of influent entering the plant, condition and performance of process treatment controls and equipment, and the regulatory monitoring requirements of the existing NPDES permit. Plant personnel monitor flows at the plant, sludge production, review industrial waste reports, and collect and analyze influent and effluent wastewater samples. The monitoring values are written and documented daily and reported via monthly summary reports.

The current influent sampling protocol for total suspended solids and organic load measurements (5-day carbonaceous biochemical oxygen demand or "CBOD<sub>5</sub>") includes a 24-hour composite sample of the treatment plant influent; collected at the headwork chamber, inside the Aerated Grit Chamber. Samples are collected and analyzed daily at the treatment plant laboratory. The sample collection is flow proportioned.

Flow is continuously recorded and analyzed for unusual occurrences. An effluent flow meter located after the chlorine contact tank monitors the treated effluent before discharging to the Delaware River. Flow measurements are taken where the plant effluent flows out of the final chlorine contact tank through a Parshall flume. The depth of the water through the flume is measured with an ultrasonic transmitter which is used to calculate the discharge flow rate. The flow measurement device is calibrated annually. A copy of the 2020 calibration report is in Appendix A.

The frequency of sampling and analysis of the final effluent at the WWTP is shown in Table 3 below. A copy of the NPDES permit is included in Appendix A of the Report. An outdoor, automatic sampler continuously takes samples of the final effluent after the final chlorine contact tank, inside a flume before discharging to the Delaware River. All effluent sampling is collected by the Authority and analyzed at the treatment plant DEP accredited laboratory or shipped to a PaDEP certified laboratory for analysis as required under the current NPDES permit.

<b>TABLE 3 FINAL EFFLUENT SAMPLING</b>		
TEST PARAMETER	FREQUENCY	TYPE
Flow	Continuous	Recorded (Meter)
pH Effluent	Daily	Grab
Dissolved Oxygen	Daily	Grab
Chlorine Residual	Daily	Grab
Color (Pt-Co Units)	Weekly	Grab
5 Day Carbonaceous (INFLUENT)	Daily	24-hour Comp
5 Day Carbonaceous BOD	Daily	24-hour Comp
BOD (INFLUENT)	Weekly	24-hour Comp
20 Day Carbonaceous BOD	Weekly	24-hour Comp.
20-Day CBOD % Removal	Weekly	24-hour Comp
Total Suspended Solids	Daily	24-hour Comp
Total Dissolved Solids	Monthly	24-hour Comp
Fecal Coliform	Daily	Grab
Nitrate-Nitrite as N	Weekly	24-hour Comp



<b>TABLE 3 FINAL EFFLUENT SAMPLING</b>		
TEST PARAMETER	FREQUENCY	TYPE
Ammonia Nitrogen	Daily	24-hour Comp
Total Kjeldahl Nitrogen	Weekly	24-hour Comp
Total Phosphorus	Weekly	24-hour Comp
Total Copper	Monthly	24-hour Comp
Total Zinc	Monthly	24-hour Comp.
1,4 Dioxane	Monthly	24-hour Comp
Total Phenolics	Weekly	24-hour Comp
Polychlorinated Biphenyls, Total (2-wet weather/ 2-dry weather)	4/Year	24-hour Comp
Chronic Toxicity (4 tests)	Quarterly	24-hour Comp

The Authority installed tertiary cloth filters to replace the existing sand filters to address TSS concerns. The first of three (3) filters was placed into service in October 2016 with the remaining two (2) filters installed in March 2017. The Authority also improved chlorine dispersion as part of the filter upgrade project to improve the treatment for fecal coliform and to assist in the maintenance of the cloth filters.

The treatment plant operated in good condition and in accordance with its latest NPDES discharge permit except for the following exceedances:

**1. *Carbonaceous Biochemical Oxygen Demand (CBOD5):***

A slug load from an Industrial User caused pass a through violation. (Reported value: 38, Weekly Average Limit: 33)

2. ***Fecal Coliform:***

Instantaneous maximum effluent concentration exceedances in Fecal Coliform were reported as follows:

- April (Maximum Reported: 1986 CFU/100 ml, Limit: 1000 CFU/100 ml)
- June (Maximum Reported: 2419.6 CFU/100 ml, Limit: 1000 CFU/100 ml)
- November (Maximum Reported: 2419.6 CFU/100 ml, Limit: 1000 CFU/100 ml).

3. ***Color (Pt-Co Units)***

Instantaneous maximum effluent concentration exceedances in color was reported in July due to interference from an industrial user. (Maximum Reported: 120 Pt-Co Units, Limit: 100 Pt-Co Units)

4. ***Total Dissolved Solids***

Daily maximum effluent concentration exceedance in for Total Dissolved Solids was reported in August, the cause is unknown. (Maximum Reported: 1040 mg/L, Limit: 1000 mg/L)

II. HYDRAULIC & ORGANIC PLANT LOADINGS [§ 94.12.Sec. (a) (1), (2)]

A. Historical and Present Hydraulic Loading

The permitted maximum month hydraulic capacity of the WWTP in 2020 is 8.7 MGD. Table 4 shows monthly average wastewater flows expressed in million gallons per day (MGD) for the Morrisville WWTP during 2020.

The monthly average flows ranged from 3.450 MGD to 5.710 MGD in 2020.

It should be noted that the maximum monthly average flow of 5.710 MGD did not exceed the plant's permitted hydraulic capacity of 8.7 MGD. ***Therefore, the treatment plant was not hydraulically overloaded in 2020.***

Also, Table 4 shows historical (past 5 years) hydraulic flows at the Morrisville Wastewater Treatment Plant, including monthly total rainfall data. Based on these historical flows, a hydraulic ratio (peaking factor) of the maximum 3-month flow divided by the annual average flow was calculated in each year. A 5-Year Average Hydraulic Ratio of 1.20 has been calculated and is used later in the report for development of the projected plant hydraulic loadings.

A hydraulic loading graph incorporating the historical monthly average and annual average flows to WWTP is included in Appendix A.

B. Historical & Present Organic Loading

An application to amend the plant's Water Quality (Part II) Permit for an increase in organic capacity was approved by the PaDEP with an effective date of July 2, 2010. A copy of the Permit is included in Appendix A of the Report. Table 5 shows the calculated average daily influent organic loading, expressed in thousand pounds per day (1000#/day), and the calculated daily influent organic concentration, expressed in milligrams per liter (mg/) for the Morrisville WWTP during 2020.

The monthly average daily organic load ranged from 5,586 #/day to 9,656 #/day for the WWTP during 2020.

It should be noted that the maximum average daily organic loading of 9,656 #/day of BOD<sub>5</sub> for the month of January did not exceeded the plant's permitted organic design capacity of 18,140 #/day. ***Therefore, the treatment plant was not organically overloaded in 2020.***

Also, Table 5 shows historical (past 5 years) annual average daily organic loadings and concentrations at the WWTP. Based on the historical organic loadings, an organic ratio (peaking factor) of the maximum average daily organic divided by the annual average daily organic loading was calculated in each of the past five years. A 5-Year Average Influent Organic Strength of 189 mg/l and a 5-Year Average Organic Ratio of 1.43 has been calculated and is used later in the report for development of the projected organic

loadings. Please note the following items regarding the Historical & Present Organic Loading to the plant in Table 5:

- The average daily organic load is calculated by multiplying the daily influent BOD<sub>5</sub> concentration by the recorded flow on the day the influent BOD<sub>5</sub> concentration was sampled and the unit conversion factor 8.34. The calculated average daily organic load for the month is the average of all the sampling events in that month.
- The average influent organic strength is a flow-based calculation of the sum of the past 5 years average daily organic loadings divided by the total monthly flow. See notes in Table 5.

An organic loading graph incorporating the historical annual average and maximum average daily organic loadings to WWTP is located in Appendix A.

**TABLE 4**  
**WWTP FLOWS OVER PAST FIVE YEARS (MGD)**

	<u>2016</u>		<u>2017</u>		<u>2018</u>		<u>2019</u>		<u>2020</u>	
	Flow (MGD)	**Rainfall - Tot. (in.)	Flow (MGD)	**Rainfall - Tot. (in.)	Flow (MGD)	**Rainfall - Tot. (in.)	Flow (MGD)	**Rainfall - Tot. (in.)	Flow (MGD)	**Rainfall - Tot. (in.)
January	<b>5.068</b>	3.29	4.270	3.11	4.649	2.80	<b>7.041</b>	3.61	5.235	3.61
February	<b>5.990</b>	3.91	4.288	1.37	6.492	5.75	<b>6.028</b>	2.37	<b>5.285</b>	2.37
March	<b>5.210</b>	1.62	4.333	4.51	<b>7.768</b>	4.77	<b>5.943</b>	3.26	<b>5.161</b>	3.26
April	4.476	1.67	<b>6.431</b>	3.16	<b>6.338</b>	3.57	5.171	4.05	<b>5.710</b>	4.05
May	4.764	3.55	<b>5.723</b>	5.25	<b>6.710</b>	7.22	5.963	7.57	5.272	7.57
June	4.295	2.11	<b>5.099</b>	4.69	6.289	5.21	6.356	6.03	4.396	6.03
July	3.969	7.36	4.993	3.96	5.177	5.65	5.311	7.06	4.120	7.06
August	3.766	1.19	4.893	2.86	4.891	3.66	4.746	2.54	3.776	2.54
September	3.487	2.38	4.129	1.86	4.613	6.93	3.981	2.17	3.450	2.17
October	3.320	2.09	3.963	5.22	5.066	3.27	3.922	5.24	3.824	5.24
November	3.403	2.90	4.145	1.54	6.726	8.24	4.013	1.41	4.530	1.41
December	3.919	2.65	4.355	1.59	7.050	5.28	5.184	5.08	5.694	5.08
<b>Annual Average:</b>	4.306	34.72	4.719	39.12	5.981	62.35	5.305	50.39	4.705	50.39
<b>Max. 3 Months Average:</b>	5.423	-	5.751	-	6.939	-	6.337	-	5.385	-
<b>Peak Factor:</b> (Max. 3 Months Avg./Annual Avg.)	1.26	-	1.22	-	1.16	-	1.19	-	1.14	-
<b>5 -Year Average Hydraulic Ratio (3-Month Max/ Annual Average):</b>									<b>1.20</b>	

Notes:  
**Peak Consecutive Three-Months in Bold**  
**\*\* Data from Trenton, New Jersey Airport (KTTN)**

**TABLE 5**  
**ORGANIC LOADING OVER PAST FIVE YEARS (1000 #/day)**

<b>Month</b>	<b>2016</b>		<b>2017</b>		<b>2018</b>		<b>2019</b>		<b>2020</b>	
	Load (1000#/day)	Concentration (mg/l)	Load (1000#/day)	Concentration (mg/l)	Load (1000#/day)	Concentration (mg/l)	Load (1000#/day)	Concentration (mg/l)	Load (1000#/day)	Concentration (mg/l)
January	<b>12.922</b>	306	8.776	246	9.532	246	7.018	120	<b>9.656</b>	221
February	12.271	246	7.520	210	<b>10.355</b>	191	6.243	124	7.206	163
March	7.029	162	<b>9.869</b>	273	9.671	149	5.467	110	6.780	158
April	8.868	238	8.335	155	8.176	155	6.401	148	7.993	168
May	9.116	229	7.528	158	8.594	154	7.542	152	7.409	169
June	6.733	188	7.810	184	9.080	173	8.665	163	8.393	229
July	6.175	187	6.119	147	7.321	170	8.213	185	6.684	195
August	6.323	201	8.657	212	7.151	175	6.384	161	5.586	177
September	5.875	202	8.724	253	8.461	220	6.735	203	6.300	219
October	6.962	251	7.880	238	6.706	159	6.632	203	6.197	194
November	8.160	288	7.025	203	7.178	128	8.113	242	6.315	167
December	9.627	295	8.729	240	7.720	131	<b>13.628</b>	315	7.574	159
<b>Annual Average Daily</b>	<b>8.338</b>	<b>233</b>	<b>8.081</b>	<b>210</b>	<b>8.329</b>	<b>171</b>	<b>7.587</b>	<b>177</b>	<b>7.174</b>	<b>185</b>
<b>Max. Average Daily</b>	<b>12.922</b>		<b>9.869</b>		<b>10.355</b>		<b>13.628</b>		<b>9.656</b>	
<b>Max/Ave Ratio</b>	1.55		1.22		1.24		1.80		1.35	

**5-Year Average Organic Strength (mg/l): 189**

**5 -Year Average Organic Ratio (Max. Average Daily / Annual Average Daily): 1.43**

C. Projected Loading

Table 6 shows historical flows (2016-2020) for each municipality. Flows from each municipality which are treated at the Morrisville plant are conveyed as follows:

- i. Lower Makefield Twp. and Yardley Borough: Flows are conveyed through Lower Makefield's Delmorr Interceptor. (Metering Station located just outside the WWTP fence line)
- ii. Township of Falls: Flows conveyed through gravity sewers and the Warner Industrial Park's Philadelphia Avenue Pump Station. (All Unmetered)

Data compiled over the past year indicates annual average flows from Lower Makefield Township of 2.740 MGD; Yardley Borough of 0.129 MGD; and Morrisville, including Falls Township, of 1.84 MGD. These flows are subject to an annual audit.

Table 6 also shows projected flows (2021-2025) for each municipality. The projected flows are based upon the Lower Makefield Township, Yardley Borough, and the Morrisville and Falls anticipated flow projections in the next 5 years.

Accordingly, based upon the anticipated flow projections from each of the above municipality, the WWTP projected loadings for the next five years are computed in Table 6. The annual average and maximum 3-month average flows are listed. Likewise, the annual average and maximum average daily loadings are listed. Graphs incorporating historical and projected loadings to the WWTP are in Appendix A for hydraulic and organic loads.

**TABLE 6  
HISTORICAL & PROJECTED FLOWS AND ORGANIC LOADINGS TO THE MORRISVILLE WWTP**

YEAR	(1)	(2)	(1) + (2) = (3)	(4)
	AVERAGE L. MAKEFIELD FLOW (gpd)	AVERAGE YARDLEY FLOW (gpd)	AVERAGE FERRY ROAD FLOW (gpd)	AVERAGE MORRISVILLE FLOW * (gpd)
<b>ACTUAL:</b>				
2016 <sup>(a)</sup>	1,999,000	230,000	2,229,000	2,076,687
2017 <sup>(a)</sup>	2,158,000	247,000	2,405,000	2,313,509
2018 <sup>(a)</sup>	3,487,000	22,000	3,509,000	2,471,726
2019 <sup>(a)</sup>	4,133,000	266,000	4,399,000	905,971
2020 <sup>(a)</sup>	2,740,000	129,000	2,869,000	1,835,541
<b>PROJECTED:</b>				
2021	2,743,000	130,000	2,873,000	1,970,000
2022	2,759,000	131,000	2,890,000	1,974,000
2023	2,777,000	132,000	2,909,000	1,974,000
2024	2,788,000	133,000	2,921,000	1,974,000
2025	2,796,000	134,000	2,930,000	1,974,000

WWTP HYDRAULIC LOADING		WWTP ORGANIC LOADING	
(3)+(4) = (5) ANNUAL AVERAGE WWTP FLOW (gpd)	MAX. 3-MONTH AVERAGE WWTP FLOW (gpd)	ANNUAL AVERAGE DAILY ORGANIC WWTP LOAD (lbs/day)	MAXIMUM AVERAGE DAILY ORGANIC WWTP LOAD (lbs/day)
4,305,687	5,422,870	8,338	12,922
4,718,509	5,751,264	8,081	9,869
5,980,726	6,938,713	8,329	10,355
5,304,971	6,337,334	7,587	13,628
4,704,541	5,385,295	7,174	9,656
4,843,000	5,790,000	7,600 **	10,878 **
4,864,000	5,815,000	7,700 **	11,021 **
4,883,000	5,838,000	7,700 **	11,021 **
4,895,000	5,852,000	7,700 **	11,021 **
4,904,000	5,863,000	7,700 **	11,021 **

**WWTP PERMITTED ANNUAL AVERAGE FLOW: 8.7 MGD**

**18,140 #/DAY**

**Notes:**

(a) Audited Flows. Please note for the 2018 Lower Makefield and Yardley Flow, the meter at Yardley Pump Station was down and there are 5 months of estimated flow.

Projected data in Column 1 from Lower Makefield Chapter 94 Report.

Projected data in Column 2 from Yardley Chapter 94 Report. Future flows were projected by combining the number of anticipated connections using 242 GPD/EDU.

(\*) Includes Falls Township flow

(\*\*) Projected organic loadings based on an average influent organic concentration of 189 mg/L and the 5-Year Average Organic Ratio of 1.43; See Table 5



III. BASIS OF HYDRAULIC & ORGANIC PROJECTIONS [§ 94.12.Sec. (a) (3)]

A. Basis for Projected Hydraulic Loading

Projections of annual average and maximum 3-month average flows to the WWTP are based upon the estimated Morrisville and Falls annual average contribution calculated in this Report below and flow data projection supplied in the Lower Makefield and Yardley Chapter 94 reports in Appendix B and C.

The projected hydraulic loadings for Morrisville and Falls annual average wastewater contribution were developed as follow:

1. In Table 7 below, new flows were calculated for Morrisville and Falls in each of the previous calendar years. New flows are based on the number of new EDUs that are projected for each year multiplied by the calculated unit flow in the calendar year. As shown in the Appendix A, Summary of Morrisville Sewer Connections, the calculated unit flow of 127 gallons per EDU is based on the total potable water consumption in gallons divided by the total number of residential customers connected to the plant in 2020. The following new flows were calculated for 2016 thru 2020 year.

<b>Table 7</b>			
<b>Morrisville - Previous 5-Years New EDUs Connection</b>			
<b>Year</b>	<b># of New EDUs connected in the year (EDUs)</b>	<b>Calculated Unit Flow (GPD/EDU)</b>	<b>New Flow (MGD)</b>
2016	0	168	0.00000
2017	0	172	0.00000
2018	0	175	0.00000
2019	0	117	0.00000
2020	0	127	0.00000

2. In Table 8 below, a 5-Year Adjusted Annual Average flow is derived by adding new flows in each calendar year to the previous calendar years' annual average flow (2016 thru 2020). Then, the Average of the Adjusted Annual Average flows becomes the 5-Year Adjusted Annual Average flow.

<b>Table 8</b>							
<b>Morrisville - 5-Year Adjusted Annual Average Flow</b>							
Year	Annual Average (MGD)	New Flow					Adjusted Annual Average Flow (MGD)
		2016	2017	2018	2019	2020	
2016	2.08	0	0	0	0	0	2.08
2017	2.31		0	0	0	0	2.31
2018	2.47			0	0	0	2.47
2019	0.91				0	0	0.91
2020	1.84					0	1.84
<b>Total:</b>	<b>9.60</b>	<b>Total:</b>					<b>9.60</b>
<b>5-Year Annual Average:</b>	<b>1.92</b>	<b>5-Year Adjusted Annual Average:</b>					<b>1.92</b>

3. As can be seen in the above Table 8, the annual average and the adjusted annual average 5-Year flow is 1.92 MGD since no new connections in Morrisville and none in Falls were made for the past 5-Years. Hence, the adjusted annual average of 1.92 MGD is used as the previous year's annual average flow to begin hydraulic projections in 2021 in Table 9 below.

**TABLE 9**

<b>MORRISVILLE - ADJUSTED PROJECTIONS</b>				
<b>YEAR</b>	<b>Previous Year's Annual Average Flow</b>	<b>New EDUs</b>	<b>* Increased Flow (MGD)</b>	<b>Projected Annual Average Flow (MGD)</b>
<b>2020</b>	<b>1.92</b>	<b>&lt;&lt;&lt;&lt;5-Year Adjusted Annual Average</b>		
2021	1.95	182	0.02	1.97
2022	1.97	27	0.003	1.97
2023	1.97	0	0.00	1.97
2024	1.97	0	0.00	1.97
2025	1.97	0	0.00	1.97

**NOTE: (\*) On January 20, 2017 an additional flow, up to 200,000 gpd, was permitted from Waste Management for the treatment of storm water.**

4. The projected annual average flows (2021 thru 2025) for Morrisville and Falls in Table 9 are based on 209 new projected connections in the next 5 years. New or pending EDU connections that have been given planning approval are added to the previous year's annual average flow for the next 5 years. New or pending EDU connections are be multiplied by Year 2020's unit flow of 127 gallons per day per EDU. As indicated in the 2015 Report, Waste Management did increase their discharge of pretreated leachate from 60,000 GPD to 120,000 GPD in 2016 under a pilot program. Under an extension of the pilot program, the pretreated leachate flow rate was adjusted based on the daily average WWTP flow rate between 60,000 and 120,000 gpd through 2017. This operational procedure went into effect on April 3, 2017. Additionally, an average of up to 200,000 gpd of additional flow from Waste Management was accepted for treatment of stormwater starting in January 2017. Thus, the projected annual average flow for Morrisville and Falls service area at the end of the next five-year period is estimated to be 1.97 MGD.

**TABLE 10**

<b>ADJUSTED PROJECTIONS - MORRISVILLE WWTP</b>						
	(1)	(2)	(3)	(1) + (2) + (3) = (4)		
YEAR	<i>Morrisville</i> Projected Annual Avg. (MGD)	<i>Lower Makefield</i> Projected Annual Avg. (MGD)	<i>Yardley</i> Projected Annual Avg. (MGD)	<i>Morrisville WWTP</i> Projected Annual Average Flow (MGD)	5 Year Average Hydraulic Ratio	<i>Morrisville WWTP</i> Projected Max 3-Month Average Flow (MGD)
2021	1.970	2.743	0.130	4.843	1.20	5.790
2022	1.974	2.759	0.131	4.864	1.20	5.815
2023	1.974	2.777	0.132	4.883	1.20	5.838
2024	1.974	2.788	0.133	4.895	1.20	5.852
2025	1.974	2.796	0.134	4.904	1.20	5.863

The maximum 3-month average flow projections (2021 to 2025) for the Morrisville WWTP is based on the total projected annual average flow from Morrisville and Falls, Lower Makefield, and Yardley to the plant, in Table 10 above, multiplied by the Previous 5-Year Average Maximum 3 Months (Average Hydraulic Ratio) of 1.20. The projected maximum 3-month average daily flow at the end of the next five-year period is estimated to be 5.863 MGD.

As evident in Table 10 and the hydraulic loading graph, projections for the maximum 3-month average flow to the WWTP will not exceed the permitted hydraulic capacity of 8.7 MGD for the next five years. ***Therefore, the WWTP is not projected to be hydraulically overloaded within the next five years.***

**B. Basis for Projected Organic Loading**

Projections of annual average daily organic loadings (2021 to 2025) in Table 6 were calculated by multiplying the Average Influent Organic Strength of 189 mg/l of BOD<sub>5</sub>, as shown in Table 5, times the projected annual average flow to the WWTP and the unit conversion factor of 8.34. The projected annual average daily organic loading at the end of the next five-year period is estimated to be 7,700 #/day.

Also, the maximum average daily organic loading projections (2021 to 2025) on Table 6 were calculated by multiplying the 5-Year Average Daily Organic Ratio of 1.43, shown in Table 5, times the projected annual average daily organic load. The projected maximum average daily organic loading at the end of the next five years' period is estimated to be 11,021 #/day.

As evident in Table 6 and the organic loading graph, projections for maximum month daily organic loading to the WWTP will not exceed the permitted organic design capacity of 18,140 #/day BOD<sub>5</sub> in the next five years. ***Therefore, the WWTP is not projected to be organically overloaded within the next five years.***

IV. SEWER EXTENSIONS [§ 94.12.Sec. (a) (4)]

The following is a summary of projects requiring connection to public sewers for the Borough of Morrisville.

- There were no sewer extensions constructed in 2020.
- There were no exempted sewer extensions in 2020.
- There were no pending sewer extensions with planning approval in 2020.
- There were no pending sewer extensions without planning approval in 2020.
- There are no projects requiring or exempted to public sewers prior to 2020.

The maps of the Morrisville sewage facilities have been included in Appendix A. Any sewer extensions within Lower Makefield Township and the Borough of Yardley are addressed in their respective reports included in the Appendix B and C.

The Municipal Authority of the Borough of Morrisville did accept dedication of the existing sewers in the Warner Industrial Park in the Township of Falls in 2003. Sewage facilities planning approval was granted by the PaDEP on December 22, 2005, and re-issued February 16, 2006.

The Authority has signed an agreement to purchase the wastewater facilities at the former US Steel Fairless Hills Facility, now known as the Keystone Trade Center (KTC) and intends to complete the process of transferring permits in 2021.

V. SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION [§ 94.12.Sec. (a) (5)]

There are no residential grinder pumps or private sewers located in the Morrisville sewer system. Routine maintenance was the only other work performed in 2020. Sewer jetting was performed by Authority personnel using the Authority's jet truck on an as-needed basis when blockages were identified or cleaning was necessary. The Plaza Boulevard sewers are in constant need of sewer cleaning due to the number of apartment buildings connected, grease, and various inappropriate materials discharged into the sewers.

Maintenance and repairs to the sewer system that can not be performed by the Authority personnel is carried out by independent contractors hired on an "as needed" basis and under the supervision of the Executive Director. There were a few lines that required televising in the Borough in which an independent contractor was hired. See Appendix A for list of 2020 Scheduled or Completed Maintenance Work for the sewer lines.

The Authority implements a maintenance program based on a preventive maintenance concept. This concept involves work relative to the cleaning of the sewer system and clearing stoppages as performed by plant personnel, and a 24-hour emergency number is provided. Complaints are investigated to ascertain responsibility and acted upon accordingly.

VI. CONDITION OF SEWER SYSTEM [§ 94.12.Sec. (a) (6)]

The overall condition of the sewer system is generally good. Naturally, the normal maintenance problems such as roots and grease have been encountered. The normal stoppages that do occur are cleared by an Authority owned hydraulic high-pressure jet cleaning truck. Chemical treatment or mechanical cutters are used to alleviate root problems. Problem sewer sections are repaired if necessary.

Currently, there are no problematic sewer areas where conveyance capacity is being or will be exceeded in the next five years since the municipality is built-out. There are no known, reported, or suspected areas of sewer surcharging within the Borough during dry or wet weather flow events. There are portions of the sewer system that have been identified as requiring rehabilitation. In the 2010 Report, asbestos cement sewers located the Warner Industrial Park were identified as in need of rehabilitation. The sewers were initially identified in the latest 537 Update Plan as being attacked by hydrogen sulfide. The Authority lined 3,923 feet of sanitary sewer and replaced 1,558 feet of sanitary sewer in the Industrial Park in 2011.

There are no combined sewers in the Authority collection system; hence, there are no possibilities for any combined sewer overflows (CSO).

There was one sanitary sewer overflow (SSO) in 2020. See attached inspection report in Appendix A.

VII. CONDITION OF PUMPING STATIONS [§ 94.12.Sec. (a) (7)]

There are no pumping stations within the Borough of Morrisville. All sewerage service within the Borough is by a gravity collection system. Pumping stations within Lower Makefield Township and the Borough of Yardley are addressed in their respective reports included in the Appendix B and C.

However, the Municipal Authority of the Borough of Morrisville did accept dedication of two (2) pump stations located in the Warner Industrial Park in the Township of Falls in 2003 which discharge to the Borough of Morrisville for treatment at the Morrisville Wastewater Treatment Plant. These are the K-Mart and Philadelphia Avenue Pumping Stations.

In accordance with the Authority's most recent Act 537 Revision Plan and per the agreement between The Municipal Authority of the Borough of Morrisville and Warner Company, the Authority has assumed ownership and responsibility for the operation and maintenance of these sewage facilities in the Warner Industrial Park including the two (2) pump stations. Upgrades to the K-Mart and the Philadelphia Avenue Pumping Stations were completed in 2005 and 2008, respectively. The projects included, but not be limited to, replacing two (2) existing pumping units at each station with new pumps, variable frequency drives, and the addition of emergency generators. A copy of the Water Quality (Part II) Permit #0906402, issued by the PaDEP on June 27, 2006 for both pump stations, is included in Appendix A of the Report.

Both pump stations are similar in construction, consisting of two (2) explosion-proof, submersible pumps, below-grade wetwell/drywell cast-in-place concrete structures, and an at-grade level masonry control building. Currently, there is no flow measuring device installed at each of the pump stations.



Each pumping stations is periodically inspected on each shift with an inspection checklist completed by the Authority. Also, each pump station is continuously monitored 24 hours a day via alarm system/autodialer which contacts the plant operator of the Morrisville Wastewater Treatment Plant for the following conditions:

- Wetwell high and low water levels
- Pump motor failure
- Loss of electrical service
- Emergency generator shut down and low fuel alarm.

In general, the pump stations are running without any problems and are in good condition. There were no overloads at the stations in 2020. Each pump station had one (1) pump removed, rebuilt and reinstalled. A list of maintenance work performed/completed at the pump stations in 2020 is shown in Appendix A.

Typically, the Authority monitored the hour meters at the pump stations for 4 to 6 weeks during the typical wet season (February – March) to capture heavy rainfall events greater than one inch of rain over the four to six-week period. Pump station monitoring performed in 2019 can be found in Appendix A, please note that records were not taken in 2020.

A. Hydraulic Load Projections to the Pump Station

In accordance with the Township’s latest 537 Plan Update, the upgrade to each pump station included the design capacity to handle an average daily design flow for the present and projected wastewater flow for the Warner Industrial Park. The projected wastewater flow is considered close to built-out for the area. A table listing the “Development of Present and Projected Wastewater Flow” to the K-Mart and Philadelphia Avenue Pump Station has been included in Appendix A.

Projected average daily flows for the years 2021 through 2025 are based on the projected build-out of approved and/or pending subdivision and commercial entities as shown in a table listing the “Development of Present and Projected Wastewater Flow” to the K-Mart and Philadelphia Avenue Pump Station in Appendix A.

The projected average daily flow for each area is based on several units already connected and an estimated number of units projected to be completed each year. By applying a unit flow rate to the existing and estimated projections to connect, an appropriate average daily flow is calculated. The unit flow rate applied is listed in the notes of the “Development Present and Projected Wastewater Flow” to the K-Mart and Philadelphia Avenue Pump Station table.

There are no flow metering devices installed on the collection and conveyance system in 2019 for recording flows necessary to derive a peaking factor at the pump station; therefore, engineering practice suggest using a peaking factor, per the PaDEP’s Pump Station Guidance, multiplied by the projected average daily flow to the pump stations to ascertain projected maximum hourly peak flow to the station. Accordingly, as shown in the table “Summary of Pump Station’s Hydraulic Loading” in Appendix A, the projected five-year maximum hourly peak flow to each pump station is listed and is also compared to the available maximum pumping capacity of the station.

***There is no projected hydraulic overload in the next five years at the pump stations.***

## VIII. INDUSTRIAL PRETREATMENT PROGRAM REPORT [§ 94.12.Sec. (a) (8)]

In 2005, the Morrisville Authority entered into an agreement with Waste Management to accept up to 25,000 gallons per day of leachate from the G.R.O.W.S., G.R.O.W.S. North, and the Tullytown Landfill on a pilot basis. In 2008, the PaDEP approved increasing the flows up to 70,000 gallons per day of pretreated leachate into the Morrisville plant on a pilot basis. In accordance with the DRBC Docket No. D-1987-008CP-2 dated July 13, 2011, Waste Management was required to reduce their flows to a maximum of 60,000 gpd. In July 2015, the PADEP approved a Phase IV Pilot Program to increase the flow of pretreated leachate from 60,000 GPD to 120,000 GPD to evaluate the performance of the plant at higher leachate flow conditions. Under an extension of the Phase IV pilot program, the pretreated leachate flow rate varied through 2017 between 60,000 and 120,000 gpd according to the PADEP approved sliding scale program, which is based on the daily average WWTP flow rate. This operational procedure went into effect on April 3, 2017. The pilot program formally ended in March 2018 and continued until December following DRBC docket renewal approval, formally adopting the sliding scale.

Due to an increase in leachate flows above 25,000 gallons per day, Morrisville updated and reactivated their Industrial Pretreatment Program in October 2009. Accordingly, Waste Management status changed from a non-significant to a significant industrial user. As of 2020, the only two significant industrial dischargers were Waste Management and CSC Sugar. Morrisville accepts flow from three (3) non-significant industrial users shown in Appendix A. The Borough of Yardley, Lower Makefield Township, and the Township of Falls have stated in their respective Chapter 94 Reports that they have no Significant Industrial Users (SIU'S) connected to their collection systems tributary to the Authority's sewer system.

A. Control Mechanism Issuance

In 2020, no new discharge permits were issued for SIU'S in Morrisville, Yardley, or Lower Makefield. However, in 2015 the significant industrial user CSC Sugar, LLC was issued a permit and went from a non-significant industrial user to a significant industrial user. Also, in 2015 the non-significant industrial user A.E. Staley had discontinued business, ceasing to discharge into the sewer system. The Authority issued a non-Significant Industrial Pretreatment Permit to Bright Farms in May 2017 to discharge up to 10,000 gal/day. In January 2017 the Authority also issued a non-Significant Industrial Pretreatment Permit to accept up to 200,000 gpd from Waste management for the treatment of stormwater.

B. Sampling and Inspection

Industrial wastewater discharge permits are issued per the Borough's Pretreatment Ordinance. Sampling and inspection requirements are as follows:

1. Sampling requirements included grab or composite sampling prior to discharge into the Morrisville Sewer System.
2. Heavy metals testing is performed monthly.

C. Industrial User Compliance and POTW Enforcement

Compliance and enforcement of pretreatment regulations is controlled through the monitoring of the individual industrial users and the Rules and Regulations of the Authority and the Borough's Pretreatment Ordinance.

Additional pretreatment inspections were conducted in 2020 to verify that there were no new industrial discharges other than what has been reported in Appendix A.

D. Industrial Listing

1. Significant users – Waste Management and CSC Sugar
2. A list of non-significant users is included in Appendix A

E. Pretreatment Program Changes

Due to the introduction of leachate from Waste Management's GROWS and Tullytown Landfills, the Authority updated and re-activated its Pretreatment Program, with some modification to the rules and regulations. Morrisville submitted an updated program that includes the new EPA requirements to EPA for their review on September 14, 2007 and January 29, 2009. A copy of the updated Morrisville Pretreatment Ordinance, adopted by the Authority in October 2009, is included in Appendix A.

In February 2017, the Authority modified their surcharges for excess levels of CBOD<sub>5</sub>; Total Suspended Solids; Ammonia and color in wastewater discharges. The surcharge for Total Sulfide was removed in 2017 and is being further evaluated.

In 2018, CSC Sugar was in Significant Non-Compliance for the 2<sup>nd</sup> and 3<sup>rd</sup> Quarters and the 3<sup>rd</sup> and 4<sup>th</sup> Quarters. The Authority issue an Administrative Compliance Order and imposed a civil penalty against CSC Sugar. On February 26, 2019, CSC was issued a cease and desist order effectively preventing them from sending process until further notice. After demonstrating an improved understanding of the issues causing the previous exceedances and guarantees of future compliance, service was eventually restored on May 29th.

IX. PREVENTION OF OVERLOAD CONDITIONS [§ 94.12.Sec. (a) (9)]

The Authority continues to maintain the sanitary sewer system including identification and removal of illegal connections. The Authority does not anticipate any overloads in the basin.

X. MISCELLANEOUS

1. **Summary of Hauled Wastes Accepted:**

The table below is a summary of monthly septage hauled to the wastewater treatment plant. Sources bring domestic septage to the plant for treatment and are added to the North Influent line just before the Influent wetwell.

**Hauled Waste 2020**

<b>NAME OF HAULED WASTE:</b>	<b>Lewis Weiser</b>	<b>George Allen</b>	<b>Franc Environmental</b>	<b>Waste Management</b>	<b>Copperhead Waste</b>	<b>Liberty Waste</b>	<b>Total (gal.)</b>
<b><u>Date</u></b>							
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
October	0	4,000	0	0	0	0	4,000
November	0	13,000	0	0	0	0	13,000
December	0	0	0	0	0	0	0
<b>Total (gal.):</b>	0	0	0	0	0	0	17,000

2. We have investigated the feasibility of installing an influent flow meter as requested in the PaDEP’s preliminary review letter for the 2007 Chapter 94 Report dated February 18, 2009. We believe it would almost be impossible to install an influent flow meter in the influent line to continuously measure, indicate, and record the incoming flow to the treatment plant. The 48-inch influent line is approximately twenty (20) feet deep; makes a sharp 90-degree bend as it enters the influent grit chamber; and is partially surcharged during periods of the day. When the plant was constructed, the invert of the influent pipe was constructed approximately 6-inches lower than the water level of the influent grit chamber. This condition results in a slight surcharge in the influent sewer which would make flow measurements unreliable. Also, the water level in the grit

chamber cannot be lowered. Immediately downstream of the influent grit chamber, the plant's recycle lines discharge into the aerated grit chamber effluent channel, therefore, the flows cannot be accurately measured downstream of the grit chamber.

On September 16, 2010 and January 5, 2012, the Authority requested PaDEP approval to utilize the plant's existing effluent meter to measure and record the plant flows in-lieu-of installing a new influent meter because: (1) the influent cannot be measured accurately due to the physical construction of the headworks; (2) there are no equalization facilities at the plant that would store flow; and (3) the existing effluent meter is a properly designed Parshall Flume with proper free fall discharge and a recording ultrasonic flow meter. The PaDEP has acknowledged the above space constraint and recommended that the Authority consider installing an influent flow meter during any future plant expansion or headworks modification project per their 2011 Chapter 94 review correspondence dated December 17, 2012.

3. The Authority now uses the definition of flow/EDU as found in the Act 57 of 2003 legislation as 90 gallons/day/person. The Authority serves two Townships and one Borough outside of the Morrisville Borough's municipal boundary. Therefore, the person/household used in the calculation is the Bucks County figure of 2.61 capita per house per the 2000 U.S. Census for Owner-occupied units. The calculation results in 234.9 GPD/EDU which will be used by the Authority until a new census is taken.
4. The Authority completed contracts to re-line or replace approximately 5,481 feet of the deteriorated lines in the Warner Industrial Park in 2011.
5. The 2020 calibration certificates for the meter at the treatment plant are included in this submission within Appendix A.

\*\*\*END\*\*\*

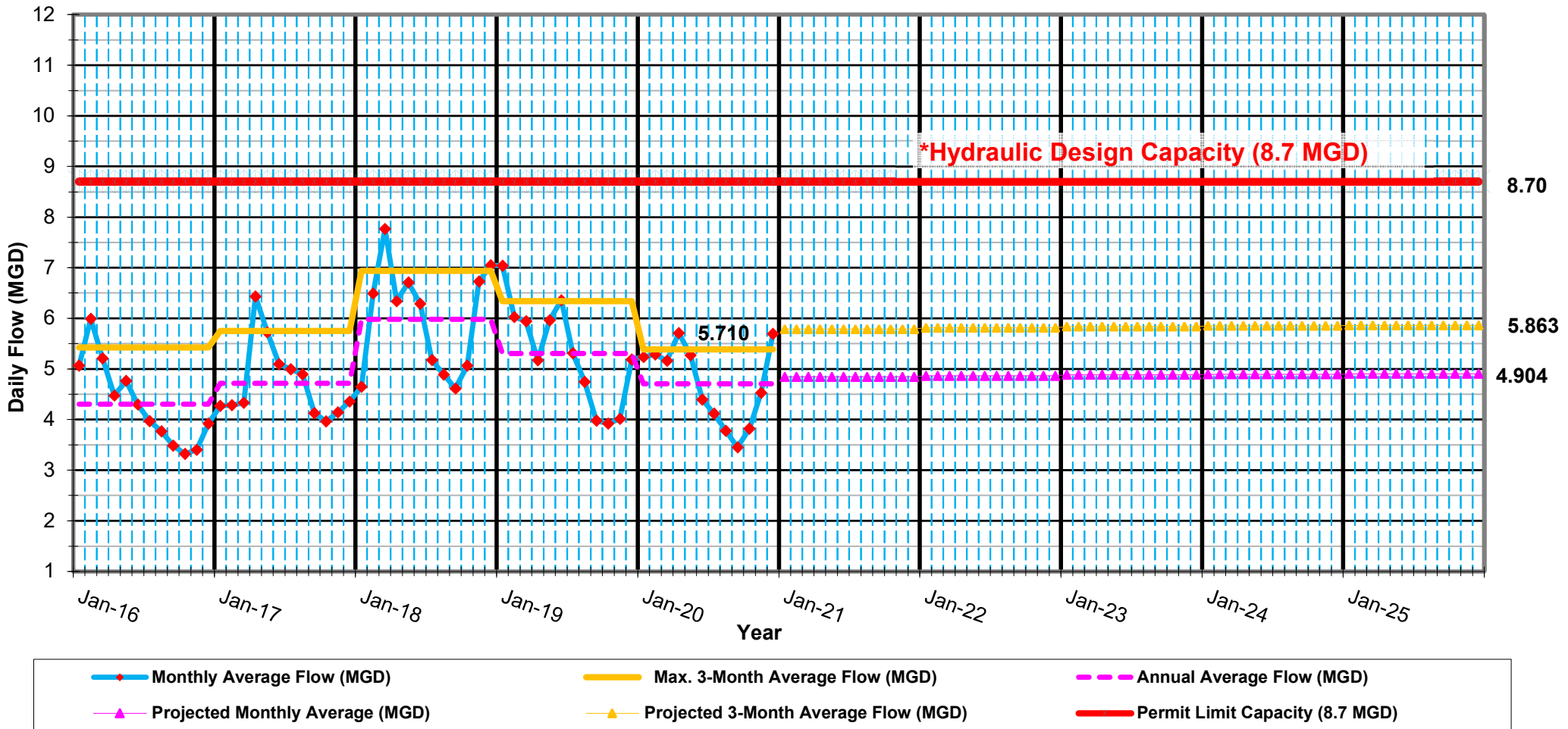
**APPENDIX A**

**MORRISVILLE CHAPTER 94 SUPPORTING  
DOCUMENTS**



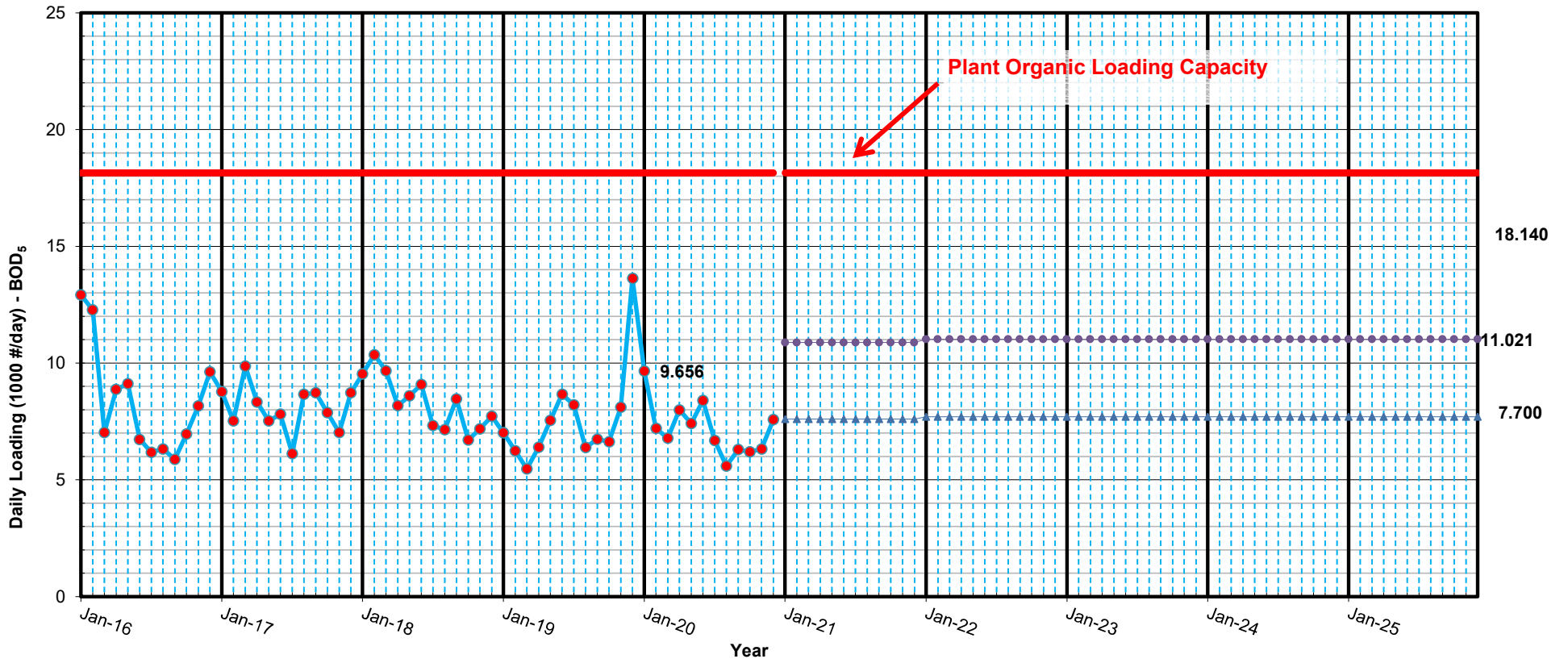
# **1. Projected Hydraulic & Organic Loading**

## THE MUNICIPAL AUTHORITY OF THE BOROUGH OF MORRISVILLE WWTP Hydraulic Loading



NOTE: (\*) Per Part A of the plant's existing NPDES Permit #PA0026701

**THE MUNICIPAL AUTHORITY OF THE BOROUGH OF MORRISVILLE  
WWTP Organic Loading - Influent BOD<sub>5</sub>**



## **2. List of Non-Significant Users**

## **LIST OF NON-SIGNIFICANT INDUSTRIAL USERS**

1. Heucotech Limited  
99 Newbold Road  
Fairless Hills, PA 19030
2. Bright Farms LLC/LMT  
754 Stony Hill Road  
Yardley, PA 19067
3. Waste Management of Pennsylvania, Inc.  
1000 New Ford Mall Road  
Morrisville, PA 19067  
(STORMWATER)

### **3. Summary of Morrisville Sewer Connections**

## Summary of Sewer Connections

### Actual Metered Flow

	YEAR 2016				YEAR 2017				YEAR 2018				YEAR 2019				YEAR 2020			
	Number of Units	Gallons Used (gpy)	Unit Flow (gal/EDU)	% of Flow	Number of Units	Gallons Used (gpy)	Unit Flow (gal/EDU)	% of Flow	Number of Units	Gallons Used (gpy)	Unit Flow (gal/EDU)	% of Flow	Number of Units	Gallons Used (gpy)	Unit Flow (gal/EDU)	% of Flow	Number of Units	Gallons Used (gpy)	Unit Flow (gal/EDU)	% of Flow
<b>I. Morrisville Borough Potable Water Consumption <sup>(1)</sup></b>																				
a. Residential connections	2,919	179,876,261	168		2,919	183,871,407	172		2,939	187,286,749	175		2,888	123,234,499	117		2,828	131,831,923	127	
b. Commercial + Warner Industrial Park	154	13,711,840			154	14,144,958				13,720,214				103,520,476				100,636,426		
c. Industrial + Warner Industrial Park + Morrisville WWTP	45	11,945,975			45	11,302,714				11,551,131				10,861,261				9,600,902		
d. Public	21	38,067,870			21	39,571,500				30,623,907				2,436,273				1,536,090		
<b>Subtotal:</b>	<b>3,139</b>	<b>243,601,946</b>			<b>3,139</b>	<b>248,890,579</b>			<b>2,939</b>	<b>243,182,001</b>			<b>2,888</b>	<b>240,052,509</b>			<b>2,828</b>	<b>243,605,341</b>		
<b>II. Significant Industrial User Sewer Metering</b>																				
a. A.E. Staley <sup>(2)</sup>	0	0			0	0			0	0			0	0			0	0		
b. Waste Management Leachate	1	29,425,272			1	28,890,106			1	37,247,588			1	35,065,756			1	31,904,357		
c. CSC Sugar									1	10,622,000			1	5,454,000			1	1,876,000		
<b>Subtotal:</b>		<b>29,425,272</b>				<b>28,890,106</b>				<b>47,869,588</b>				<b>40,519,756</b>				<b>33,780,357</b>		
<b>III. Fall Township Service Area Potable Water Consumption</b>																				
a. Pennwood Crossing <sup>(3)</sup>		38,448,000				29,173,000				30,197,000				28,385,000				28,426,000		
b. Pennwynn <sup>(3)</sup>		10,523,000				6,414,000				6,044,000				5,531,000				5,561,000		
<b>Subtotal:</b>		<b>48,971,000</b>				<b>35,587,000</b>				<b>36,241,000</b>				<b>33,916,000</b>				<b>33,987,000</b>		
<b>Total Water Consumption (Morrisville &amp; Falls Township Flow):</b>		<b>321,998,218</b>				<b>313,367,685</b>				<b>327,292,589</b>				<b>314,488,265</b>				<b>311,372,698</b>		
<b>V. Lower Makefield Township Sewer Flow</b>		731,576,686		46%		787,545,034		46%		1,272,616,872		64%		1,508,431,964		78%		1,002,981,749		58%
<b>VI. Yardley Borough Sewer Flow</b>		84,170,059		5%		90,047,322		5%		8,059,437		0%		97,141,724		5%		47,039,744		3%
<b>Subtotal:</b>		<b>815,746,745</b>				<b>877,592,356</b>				<b>1,280,676,309</b>				<b>1,605,573,688</b>				<b>1,050,021,493</b>		
<b>Total Potable Water Consumption + LM Twp. &amp; Yardley Borough Sewers:</b>		1,137,744,963				1,190,960,041				1,607,968,898				1,920,061,953				1,361,394,191		
Morrisville WWTP Flow:		1,573,340,000		100%		1,723,390,000		100%		1,973,150,000		100%		1,935,842,000		100%		1,717,657,000		100%
<b>Estimated Morrisville Excess Flow</b>		<b>435,595,037</b>				<b>532,429,959</b>				<b>365,181,102</b>				<b>15,780,047</b>				<b>356,262,809</b>		
(As a Percentage of Morrisville Total Flow):		57%				63%				53%				5%				53%		
Total Annual Raifall (inches):		62.35				50.39				50.39				0				0		
<b>Morrisville &amp; Falls Township Sewer Flow including excess flow (GPY):</b>		<b>757,593,255</b>		48%		<b>845,797,644</b>		49%		<b>692,473,691</b>		35%		<b>330,268,312</b>		17%		<b>667,635,507</b>		39%
<b>(MGD):</b>		<b>2.07</b>				<b>2.31</b>				<b>1.89</b>				<b>0.90</b>				<b>1.82</b>		

**Notes**  
 LM Twp.: Lower Makefield Township  
 (1) Data furnished by MMA Authority Water Billing Report  
 (2) A.E. Staley's sewer flow manually billed by MMA  
 (3) Served by Falls Township Water

**4. Copy of The Morrisville Pretreatment Ordinance  
and Annual Report 2020**



**Code  
of the  
Borough of  
Morrisville**

COUNTY OF BUCKS

COMMONWEALTH OF PENNSYLVANIA

SERIAL NO. 4 .....

GENERAL CODE PUBLISHERS CORP.  
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2007

Done 7/2/08  
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**GENERAL CODE**

**INSTRUCTIONS**

**Borough of Morrisville Code Supplement No. 2**

The enclosed new and/or replacement pages should be placed in your Code volume immediately! The dateline, on the bottom of the page, does not indicate the adoption date of the Code changes, but rather identifies the pages printed with this supplement. This instruction page should be placed in the front of your Code volume.

**REMOVE**

Officials Page, 2007  
Table of Contents,  
vii - x  
—  
345:1 - 345:23  
360:17 - 360:18  
405:1 - 405:2  
405:11 - 405:14  
DL:7 - DL:8  
Index Pages 1 - 37

**INSERT**

Officials Page, 2008  
Table of Contents,  
vii - x  
302:1 - 302:4  
345:1 - 345:51  
360:17 - 360:18  
405:1 - 405:2  
405:11 - 405:14  
DL:7 - DL:8  
Index Pages 1 - 37

Legislation, by number or date of adoption, included in this supplement: Ord. Nos. 964; 966; 967; 970.

## Chapter 345

### SEWERS

#### Part 1 Sewage Disposal

##### ARTICLE I Disposal

- § 345-1. Definitions.
- § 345-2. Occupied buildings to be connected to accessible sewer.
- § 345-3. Unlawful means of disposal of sewage from premises accessible to sewer.
- § 345-4. Certain substances not to be discharged into sanitary sewers.
- § 345-5. Certain industrial waste not to be discharged into sanitary sewers.
- § 345-6. Manner of making connections to sewers.
- § 345-7. Application to make connection; fee.
- § 345-8. Independent connections to sewer system; exception.
- § 345-9. Certain receptacles constitute nuisances.
- § 345-10. Violations and penalties.
- § 345-11. Prosecution of violators; disposition of fines and penalties.

#### Part 2 Sewage Pretreatment

##### ARTICLE II General Provisions

- § 345-12. Purpose and policy.
- § 345-13. Administration.

§ 345-14. Abbreviations.

§ 345-15. Definitions.

##### ARTICLE III General Sewer Use Requirements

- § 345-16. Prohibited discharge standards.
- § 345-17. National categorical pretreatment standards.
- § 345-18. State pretreatment standards.
- § 345-19. Local limits.
- § 345-20. Borough's right of revision.
- § 345-21. Dilution.

##### ARTICLE IV Pretreatment of Wastewater

- § 345-22. Pretreatment facilities.
- § 345-23. Additional pretreatment measures.
- § 345-24. Accidental discharge/slug discharge control plans.
- § 345-25. Hauled wastewater.

##### ARTICLE V Individual Wastewater Discharge Permits and General Permits

- § 345-26. Wastewater analysis.
- § 345-27. Permit required.
- § 345-28. Existing connections.
- § 345-29. New connections.
- § 345-30. Permit application contents.
- § 345-31. General permits.

MORRISVILLE CODE

§ 345-32. Application signatories and certifications.

§ 345-33. Permit decisions.

§ 345-34. Permit duration.

§ 345-35. Permit contents.

§ 345-36. Permit issuance process.

§ 345-37. Permit modification.

§ 345-38. Permit transfer.

§ 345-39. Permit revocation.

§ 345-40. Permit reissuance.

§ 345-41. Regulation of waste received from other jurisdictions.

ARTICLE VI  
Reporting Requirements

§ 345-42. Baseline monitoring reports.

§ 345-43. Compliance schedule progress reports.

§ 345-44. Reports on compliance with categorical pretreatment standard deadline.

§ 345-45. Periodic compliance reports.

§ 345-46. Reports of changed conditions.

§ 345-47. Reports of potential problems.

§ 345-48. Reports from unpermitted users.

§ 345-49. Notice of violation; repeat sampling and reporting.

§ 345-50. Notification of discharge of hazardous waste.

§ 345-51. Analytical requirements.

§ 345-52. Sample collection.

§ 345-53. Date reports received.

§ 345-54. Recordkeeping.

§ 345-55. Certification statements.

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Compliance Monitoring

§ 345-56. Right of entry; inspection and sampling.

§ 345-57. Search warrants.

ARTICLE VIII  
Confidential Information

§ 345-57.1. Availability and protection of information.

ARTICLE IX  
Publication of users in Significant Noncompliance

§ 345-57.2. List published; meaning.

ARTICLE X  
Administrative Enforcement Remedies

§ 345-58. Notification of violation.

§ 345-59. Consent orders.

§ 345-60. Show-cause hearing.

§ 345-61. Compliance orders.

§ 345-62. Cease-and-desist orders.

§ 345-63. Administrative fines.

§ 345-64. Emergency suspensions.

§ 345-65. Termination of discharge.

ARTICLE XI  
Judicial Enforcement Remedies

§ 345-66. Injunctive relief.

§ 345-67. Civil penalties.

§ 345-68. Criminal prosecution.

§ 345-69. Remedies nonexclusive.

**ARTICLE XII  
Supplemental Enforcement Action**

- § 345-70. Penalties for late reports.
- § 345-71. Performance bonds.
- § 345-72. Liability insurance.
- § 345-73. Payment of outstanding fees and penalties.
- § 345-74. Water supply severance.
- § 345-75. Public nuisances.

**ARTICLE XIII  
Affirmative Defenses to Discharge  
Violations**

- § 345-75.1. State laws to govern.
- § 345-76. Upset.
- § 345-77. General prohibitions defense.

§ 345-78. Bypass.

**ARTICLE XIV  
Wastewater Treatment Rates and Fees**

- § 345-79. Rates and fees adopted by Municipal Authority.

**ARTICLE XV  
Miscellaneous Provisions**

- § 345-80. Pretreatment charges and Fees.
- § 345-81. Severability.

**[HISTORY: Adopted by the Borough Council of the Borough of Morrisville as indicated in part histories. Amendments noted where applicable.]**

**GENERAL REFERENCES**

Building and construction codes — See Ch. 129.  
 Floodplain management — See Ch. 195.  
 Solid waste — See Ch. 360.  
 Stormwater management — See Ch. 370.  
 Streets and sidewalks — See Ch. 376.

Subdivision and land development — See Ch. 390.  
 Swimming pools — See Ch. 398.  
 Water — See Ch. 445.  
 Zoning — See Ch. 465.

**Part 1  
Sewage Disposal  
[Adopted 7-12-1951]**

**ARTICLE I  
Disposal**

§ 345-1. Definitions. [Amended 5-14-1985 by Ord. No. 800]

The following words and terms, as used in this Part 1, shall be construed or defined as follows, unless the context clearly indicates otherwise:

**AUTHORITY** — And refers to the Municipal Authority of the Borough of Morrisville, as presently or hereafter constituted, to which has been referred, by said Borough, the specific project of sewers.

**BOROUGH** — The Mayor and Borough Council of the Borough of Morrisville, Bucks County, Pennsylvania.

**CONNECTION** — And refers to the pipe line or pipe lines from the curb of any public highway, street, lane or alley or the collecting sewer pipe (where such line is closer to an occupied building than the curb line) and the exterior wall of any occupied building.

**INDUSTRIAL WASTE** — And refers to any liquid, gaseous or solid substance resulting from any manufacture or industrial processes.

**OCCUPIED BUILDING** — And refers to any structure erected and intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sewage is or may be discharged.

**PERSON** — Includes natural person, partnerships, organizations and corporations.

**PREMISES ACCESSIBLE TO THE SEWER SYSTEM** — And refers to real estate which adjoins, abuts on or is adjacent to the sewer system.

**SEWERAGE** — And refers to household waste, liquids, human or animal excretion, and all substances commonly known as sewage, but shall not include roof or surface waters, exhaust steam, oils, tar, grease, gasoline, benzine or other combustible gases and liquids and offal, or insoluble solids, industrial waste or substances which would impair, impede, affect, interfere with or endanger the sewer system or any part thereof in any manner whatsoever, or the functioning of the process of sewage treatment.

**SEWER MANAGER** — And refers to any person who may, from time to time, be placed in general charge of the sewer system by the Authority.

**SEWER SYSTEM** — And refers to the sewerage collection system and sewage treatment plant as constructed and operated by the said Authority, and all additions, extensions and improvements thereto.

**§ 345-2. Occupied buildings to be connected to accessible sewer.**

All persons owning any occupied building on premises accessible to the sewer system shall, at their own expense, connect with the sewer system within 90 days after public or written notice to do so.

**§ 345-3. Unlawful means of disposal of sewage from premises accessible to sewer.**

After the expiration of the period specified in § 345-2, it shall be unlawful for any person owning any occupied buildings on premises accessible to the sewer system to erect, construct, use or maintain or cause to be erected, constructed, used or maintained any privy, cesspool, sinkhole, septic tank or other receptacle on such premises for receiving sewage or to maintain any connection, pipe or conduit to public or private drains for the discharge of sewage except into the sewer system.

**§ 345-19. Local limits.**

- A. The Director is authorized to establish local limits pursuant to 40 CFR 403.5(c).
- B. The pollutant limits are established by the EPA to protect against pass-through and interference. In its industrial discharge program, the Authority will establish limits at least as stringent as those established by the EPA, as well as establish local limits for various pollutants not currently regulated by the EPA. These limits will be modified, from time to time, as new EPA limits are set or local conditions warrant. No person shall discharge wastewater containing in excess of those limits established in the Municipal Authority of the Borough of Morrisville's industrial pretreatment program.
- C. The limits apply at the point where the wastewater is discharged to the POTW. Concentrations for metallic substances are for total metal, unless indicated otherwise. The Director may impose mass limitations in addition to the concentration-based limitations.
- D. If authorized under state law, the Director may develop best management practices (BMPs), by ordinance or in individual wastewater discharge permits or general permits, to implement local limits and the requirements of § 345-16.

**§ 345-20. Borough's right of revision.**

The Borough reserves the right to establish, by ordinance or in individual wastewater discharge permits or in general permits, more stringent standards or requirements on discharges to the POTW consistent with the purpose of this Part 2.

**§ 345-21. Dilution.**

No user shall ever increase the use of process water, or in any way attempt to dilute a discharge, as a partial or complete substitute for adequate treatment to achieve compliance with a discharge limitation unless expressly authorized by an applicable pretreatment standard or requirement. The Director may impose mass limitations on users who are using dilution to meet applicable pretreatment standards or requirements, or in other cases when the imposition of mass limitations is appropriate.

**ARTICLE IV  
Pretreatment of Wastewater**

**§ 345-22. Pretreatment facilities.**

Users shall provide wastewater treatment as necessary to comply with this Part 2 and shall achieve compliance with all categorical pretreatment standards, local limits and the prohibitions set out in § 345-16 of this Part 2 within the time limitations specified by EPA, the state or the Director, whichever is more stringent. Any facilities necessary for compliance shall be provided, operated and maintained at the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the Director for review and shall be acceptable to the Director before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying

such facilities as necessary to produce a discharge acceptable to the Director under the provisions of this Part 2.

**§ 345-23. Additional pretreatment measures.**

- A. Whenever deemed necessary, the Director may require users to restrict their discharge during peak flow periods, designate that certain wastewater be discharged only into specific sewers, relocate and/or consolidate points of discharge, separate sewage waste streams from industrial waste streams and such other conditions as may be necessary to protect the POTW and determine the user's compliance with the requirements of this Part 2.
- B. The Director may require any persons discharging into the POTW to install and maintain, on their property and at their expense, a suitable storage and flow-control facility to ensure equalization of flow. An individual wastewater discharge permit or a general permit may be issued solely for flow equalization.
- C. Grease, oil and sand interceptors shall be provided when, in the opinion of the Director, they are necessary for the proper handling of wastewater containing excessive amounts of grease and oil or sand, except that such interceptors shall not be required for residential users. All interception units shall be of a type and capacity approved by the Director, shall comply with any Borough oil and grease management ordinance (if applicable) and shall be so located to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned and repaired in accordance with applicable Borough oil and grease management ordinances by the user at said user's expense.
- D. Users with the potential to discharge flammable substances may be required to install and maintain an approved combustible gas detection meter.

**§ 345-24. Accidental discharge/slug discharge control plans.**

The Director shall evaluate whether each SIU needs an accidental discharge/slug discharge control plan or other action to control slug discharges. The Director may require any user to develop, submit for approval and implement such a plan or take such other action that may be necessary to control slug discharges. Alternatively, the Director may develop such a plan for any user. An accidental discharge/slug discharge control plan shall address, at a minimum, the following:

- A. Description of discharge practices, including nonroutine batch discharges;
- B. Description of stored chemicals;
- C. Procedures for immediately notifying the Director of any accidental or slug discharge, as required by § 345-47 of this Part 2; and
- D. Procedures to prevent adverse impact from any accidental or slug discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for



containing toxic organic pollutants, including solvents, and/or measures and equipment for emergency response.

**§ 345-25. Hauled wastewater.**

- A. Septic tank waste may be introduced into the POTW only at locations designated by the Director and at such times as are established by the Director. Such waste shall not violate Article III of this Part 2 or any other requirements established by the Borough. The Director may require septic tank waste haulers to obtain individual wastewater discharge permits or general permits.
- B. The Director may require haulers of industrial waste to obtain individual wastewater discharge permits or general permits. The Director may require generators of hauled industrial waste to obtain individual wastewater discharge permits or general permits. The Director may also prohibit the disposal of hauled industrial waste. The discharge of hauled industrial waste is subject to all other requirements of this Part 2.
- C. Industrial waste haulers may discharge loads only at locations designated by the Director. No load may be discharged without prior consent of the Director. The Director may collect samples of each hauled load to ensure compliance with applicable standards. The Director may require the industrial waste hauler to provide a waste analysis of any load prior to discharge.
- D. Industrial waste haulers must provide a waste-tracking form for every load. This form shall include, at a minimum, the name and address of the industrial waste hauler, permit number, truck identification, names and addresses of sources of waste and volume and characteristics of waste. The form shall identify the type of industry, known or suspected waste constituents and whether any wastes are RCRA hazardous wastes.

**ARTICLE V**

**Individual Wastewater Discharge Permits and General Permits**

**§ 345-26. Wastewater analysis.**

When requested by the Director, a user must submit information on the nature and characteristics of its wastewater within 10 days of the request. The Director is authorized to prepare a form for this purpose and may periodically require users to update this information.

**§ 345-27. Permit required.**

- A. No significant industrial user shall discharge wastewater into the POTW without first obtaining an individual wastewater discharge permit or a general permit from the Director, except that a significant industrial user that has filed a timely application pursuant to § 345-28 of this Part 2 may continue to discharge for the time period specified therein.
- B. The Director may require other users to obtain individual wastewater discharge permits or general permits as necessary to carry out the purposes of this Part 2.

Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the Borough of Morrisville

Press Ctrl-h to return to this sheet from any other sheet

<b>POTW</b>	<b>Program Information</b>	<b>Attachments</b>			
<b>POTW Contacts</b>	<b>Implementation</b>	<b>Resources</b>	A	E	
<b>POTW Information</b>	<b>Enforcement</b>	<b>Hauled Waste</b>	B	F	
	<b>Compliance</b>	<b>Pass/INTF</b>	C	G	
			D	H	
<b>Send Copies To</b>		<b>Submittal and Certification</b>			

Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the Borough of Morrisville

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### Reporting Period

January 1 to December 31 of year	2020
----------------------------------	------

### POTW Contacts

Control Authority Name	Municipal Authority of the Borough of Morrisville
NPDES Permit No	PA0026701
Permit Issuance Date	09/10/20
Permit Expiration Date	09/30/25
Facility Name	Morrisville Borough STP
Facility Address1	35 Union Street
Facility Address2	
Facility City	Morrisville
Facility State	PA
Facility Zip	19067

### Pretreatment Contact(s) - List all Pretreatment Personnel

	Name	Title	Email
01	Rich Dulay	Superintendent (Former)	mmawwtp@verizon.net
02	Scott Haws	Superintendent (Current)	scottwwtp@gmail.com
03	Rory Sullivan	Laboratory Director	rcsullivan.mma@gmail.com
04			
05			
06			

Permit Signatory	John J. Warena Jr.
Permit Signatory Title	Executive Director
Contact Phone	215-295-8181
Contact Email	warendaesq@gmail.com
POTW Site Address	95 Riverview Avenue Morrisville, PA 19067

### Additional Information

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Facility Name: Morrisville Borough STP  
 Permit Number: PA0026701  
 Reporting Period: 2020  
 POTW Name: Municipal Authority of the Borough of Morrisville

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### POTW Information

NPDES Effluent Violations?	Yes	Parameter(s)	CBOD5; Fecal; Fecal; Color; F
Date of Violations	February; April; June; July; November		
Cause of NPDES permit violations?			
Sludge Disposal Method 1	LANDFILL		
Sludge Disposal Method 2			
Sludge Disposal Method 3			
Highest Treatment Level	Advanced		

### Treatment Types

Primary Clarification?	Yes	Lagoon?	No
Secondary Clarification?	Yes	Anaerobic Digestion?	No
Activated Sludge?	Yes	Aerobic Digestion?	No
Trickling Filter?	No	Chlorination?	Yes
Oxidation Ditch?	No	Dechlorination?	Yes
Biotowers?	No	UV Disinfection?	No
Rotating Biological Contacts?	No		
Other?	Pure Oxygen Activated Sludge (UNOX)		

POTW Design Flow (mgd)	7.1
POTW Actual Flow (mgd)	4.706
Total SIU Flow (mgd)	0.17
% Industrial Flow	4 %
POTW Organic (BOD) Design Capacity (lbs/day)	18140
POTW TSS Design Capacity (lbs/day)	2665
POTW Ammonia (NH3) Design Capacity (lbs/day)	1184
Actual or Estimated total Flow for Commercial (Non-SIU) Dischargers	1 MGD

### Additional Information

NPDES violations occurred in February and July due to IU pass-through, for the parameters CBOD5 and Color, respectively. Instantaneous

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## Program Implementation

### Number of Permitted Industrial Users as of December 31

CIUs	0	
Total SIUs	2	<i>includes CIUs + SIUs</i>
Other Permitted IUs	0	
Zero-Discharge CIUs	0	
Permitted Zero-Discharge CIUs	0	
Middle-Tier CIUs	0	
Non-Significant CIUs	0	

SIUs with No/Expired Permit as of December 31	0
SIUs with Administratively Extended Permits >180 Days	0
Number of SIUs with current control mechanisms	2
Number of NSCIUs that have violated any pretreatment standard	0

### Number of SIUs in significant non-compliance (SNC) as of December 31

	CIUs	Non Categorical SIUs	Total SIUs
SNC Self-monitoring	0	0	0
SNC Reporting	0	0	0
SNC PT Standards	0	0	0
SNC Prohibitions	0	1	1
SNC Compliance Schedule	0	1	1
SNC Pass Through/Interference	0	2	2
SNC Other SNC Violations	0	0	0

Number of SIUs in significant non-compliance (SNC) at any time	1
Number of non-SIUs in significant non-compliance (SNC) at any time	0
Number of SIUs in SNC during the previous calendar year	1
SNC during the July to December period	1

# Permitted Non-SIUs With Unknown Compliance Status	0
# SIUs With Unknown Compliance Status	0
Does the ERP include escalating enforcement actions for SNC	Yes

	CIUs	Non Categorical SIUs	Total SIUs
Number of SIUs with compliance schedule as of December 31	0	1	1

### Additional Information

CSC Sugar was in SNC last reporting year and under a compliance schedule. IU was under a reduced-flow pilot program to demonstrate compliance

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## Enforcement Actions

	Non-SIUs	SIUs	CIUs
<b>Number of NOVs</b>	0	0	0
<b>Number of Formal Enforcement Actions</b>	0	1	0
<b>Number of different IUs with Formal Enforcement Actions</b>	0	1	0
<b>Number of SIUs on formal compliance schedule</b>	0	1	0

*Formal actions include Administrative Orders, show cause hearings, out-of-court settlements that are formal settlements, termination of service, formal compliance schedules, penalty actions EXCEPT civil or criminal suits.*

	Civil	Criminal	Total
<b>Number of suits filed against SIUs</b>	0	0	0

	Non-SIUs	SIUs
<b>Number of Different IUs From Whom Penalties Were Collected</b>	0	0
<b>Total Penalties Collected</b>	\$ -	\$ -

<b>Number of IUs Published As Being In SNC</b>	0
--	---

### Additional Information

Over the past two years, three Administrative Compliance Orders and associated civil penalties have been iss

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### Compliance Monitoring

	Non-SIU	SIU
Number of individual permits issued	1	3
Number of general permits issued	0	0
Number of inspections in the reporting year	0	3

Overview description of Non-SIU inspections

Number of SIUs not inspected during the reporting year

0

Number of SIUs that submitted required Self-Monitoring Reports

0

Number of SIUs not sampled during the reporting year

0

Number of SIUs in SNC With Self-Monitoring Requirements That Were Not Inspected or Sampled

0

#### Additional Information

Non-SIU (Bright Farms) facility shutdown before annual inspection.

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## Program Implementation - Resources

Number of Pretreatment FTEs	1
Significant Changes (+/- 20%) to The POTW's Pretreatment Program Budget or Staffing?	Yes
Source of Budget	Surcharges
Total Pretreatment Program Budget	\$ 30,000

Number of Jurisdictions Covered By Pretreatment Program	4
Adequate delegation in each jurisdiction?	Yes
Miscellaneous Developments and Special Initiatives?	No

### Additional Information

The Authority conducts extensive sampling to monitor the industrial users discharging to the system. For IU th



[Return to Home](#)

## Program Implementation - Hauled Waste

### Does the POTW receive any discharges of

Receive Groundwater From Hydrocarbon Cleanup Site?	No
Receive Hauled Septage (Domestic Only)?	Yes
Receive Hauled Waste From Industrial Sources?	No
Receive Hauled Waste From Commercial Sources?	No
Receive Hauled Categorical Waste?	No
Receive Hauled Grease Interceptor/Trap Waste?	No
Receive Landfill Leachate?	Yes
Receive CERCLA Cleanup Wastes?	No
Receive Hazardous (RCRA) Waste?	No
RV Dump Stations in Service Area?	No
Receive Other Unique Waste?	No
Receive Oil & Gas Waste from Stripper wells?	No

*As defined at 40 CFR Part 261 ar*

### If you accept any trucked or hauled waste, indicate all of the following that apply to your POTW

Legal Authority To Control Hauled Waste?	Yes
POTW Issues Permits For Hauled Wastes?	No
POTW Has A Designated Disposal Site For Hauled Wastes?	Yes
POTW Controls Access At The Designated Disposal Station?	Yes
POTW Uses A Manifest System To Track/Control Hauled Wastes?	Yes
POTW Believes That Illegal Dumping May Be Occurring In Its Jurisdiction?	No

### What parameter if any do you surcharge

Surcharge for BOD?	Yes
Surcharge for TSS?	Yes
Surcharge for Oil and Grease?	No
Surcharge for Flow?	No
Surcharge for Ammonia?	Yes
Surcharge for COD?	No
Surcharge for TKN?	No
Surcharge for Other Parameters?	Color

### Additional Information

Hauled waste is sampled for compliance and haulers will be turned away if needed.

Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the

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### Program Implementation - Pass/INTF

Instances Of Interference At The POTW?	No
Instances Of Pass Through At The POTW?	Yes

Receive Notification Of The Discharge Of Any Hazardous Waste?	No
---	----

If so, names of IUs

01	CSC Sugar
02	
03	
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### Additional Information

NPDES violations occurred in February and July due to IU pass-through, for the param

**Facility Name:**  
**Permit Number:**  
**Reporting Period:**  
**POTW Name:**

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**Attachment A: List of CIUs/SIUs**

SIU	PERMIT INFO					SIU Info					
	Issued	Effective	Expires	Permit Type	Address	Sampled	Inspected	MRS	# of self-monitorings conducted/required		
01	CSC Sugar, LLC	01/26/15	01/25/15	01/25/20	IP	200 Rock Run	Yes	Yes		0	0
02	Waste Management (	10/09/17	10/01/17	10/01/22	IP	1121 Bordent	Yes	Yes		1	0
03	Waste Management (	03/30/18	01/20/17	01/20/22	IP	1000 New For	Yes	Yes		1	0
04											
05											
110											


Add more rows

**Additional Information**


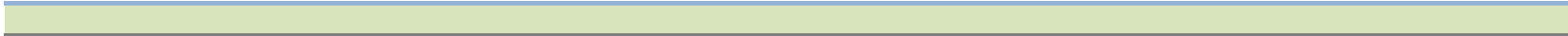
Morrisville Borough STP  
PA0026701  
2020  
Municipal Authority of the Borough of Morrisville

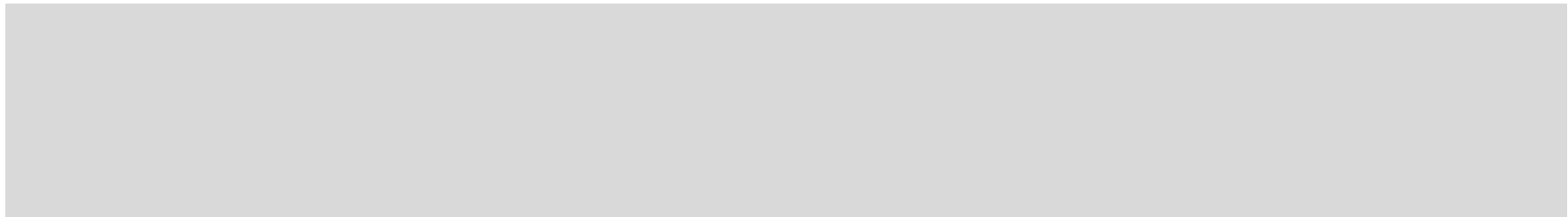
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Limits Type	MWG	Jurisdiction	SIC Code1	SIC Code2	Categorical Standard	Total Average Process Flow (gpd)
	No		5149		No	15976
Concentration	No		4212		No	87170
Concentration	No		4212		No	0

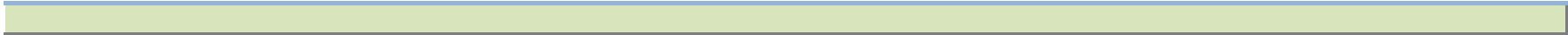


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Total Average Facility Flow (gpd)	MTCIU or NSCIU?	Justification	Discharge Status	Description	SNC?
			Indefinite suspension	IU was on a compliance schedule	Yes
87170			Current		No
0			Current (As Needed)		No



Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the Borou

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## **Attachment B: Copy of Newspaper Notice of SNC**

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

**Copy of Newspaper Notice of SNC submitted?**

No

### **Additional Information**

A copy of the required SNC Notice will be submitted in 2021.

/ End of Sheet

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### **Attachment C: Description of Each Incidence of Pass Through or Interference**

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

#### **Description of Pass Through/Interference**

01	February - Slug load from Industrial user (CSC Sugar) on 2/21 and 2/22 caused pass through violation of CBOD5. User discharged 8,929 and :
02	July - A Pass through Violation from a pretreatment Industry (CSC Sugar) resulted in a 120 PtCo color Violation. IU discharged 4200 PtCo of c
03	
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#### **Additional Information**

NPDES violations occurred in February and July due to IU pass-through, for the parameters CBOD5 and Color, respectively. Instantaneous IV

Facility Name: Morrisville Boro  
Permit Number: PA0026701  
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POTW Name: Municipal Autho

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### **Attachment D: Description of Significant Change in Program Funding/Staffing**

*An explanation of any significant decrease (20% or greater) in pretreatment funding or staffing of the POTW's Pretreatment Program.*

#### **Description of Significant Change in Program Funding/Staffing**

Due to CSC Sugar being indefinitely suspended, the surcharges associated with their discharge are no longer funding the pretre



Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
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POTW Name: Municipal Authority of the Borough of Morrisville

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### Attachment E1: Permitted Industrial Users (part 1 of 2)

*Provide a printout or listing of all permitted non-SIUs*

	Permitted Non-SIUs	Rationale for permitting these non-SIUs
01	Bright Farms	Potential for elevated organic and ammonia loading.
02		
03		
04		
05		
06		
07		
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Add more rows

#### Additional Information

The Authority has notified, or delegated contributory users to notify all dental offices within their serv

Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the Borough of Morrisville

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## Attachment E2: Permitted Industrial Users (part 2 of 2)

*Provide a printout or listing of all SIUs covered by a General Permit*

	SIUs covered by a General Permit	Justification Criteria
01		
02		
03		
04		
05		
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12		
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20		

Add more rows

Additional Information

/ End of Sheet

Facility Name:  
 Permit Number:  
 Reporting Period:  
 POTW Name:

Morrisville Borough STP  
 PA0026701  
 2020  
 Municipal Authority of the Borough of Morrisville

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### Attachment F: IUs in SNC During the Reporting Period

*For those IUs in SNC during the Reporting Period*

	IU Name	Reason for SNC	Date of Enforcement Action	Type of Enforcement Action	Parameter(s) Violated	Date in Compliance	Penalties Assessed	Penalties Collected	Quarters In SNC	In SNC during PRP?
01	CSC Sugar	Pass Through	10/23/20	Administrative	BOD Concentration, Service indefin		Yes	No	Q1, Q3	Yes
02										
03										
04										
05										
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Add more rows

Additional Information

Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
Reporting Period: 2020  
POTW Name: Municipal Authority of the Borough of Morrisville

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### Attachment G: Modification History

	Type of Modification	Description of Modification	Date of PN	Approval
01				
02				
03				
04				
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#### Additional Information

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Facility Name: Morrisville Borough STP  
Permit Number: PA0026701  
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POTW Name: Municipal Authority of the Borough of Morrisville

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### Attachment H: Influent/Effluent and Biosolids Monitoring

Influent Monitoring Results Submitted or Attached?	Yes
Effluent Monitoring Results Submitted or Attached?	Yes
Biosolids Monitoring Results Submitted or Attached?	Yes

#### Additional Information

--

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

Here is an example:

smith . john @ modernlabs . org smith.john@modernlabs.org

1	rcampbell	.		@	Pennoni	.	com		
2	bpferdehirt	.		@	Pennoni	.	com		
3	agoldberg	.		@	Pennoni	.	com		
4		.		@		.			
5		.		@		.			

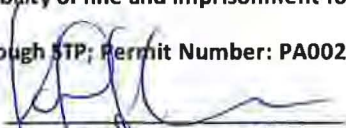
Email File to EPA Region 3

The signature certification page **must** be printed, signed, and sent in hard copy to US EPA Region 3 at the following address:

Pretreatment Coordinator  
US EPA Region 3  
Mail Code 3WD41  
1650 Arch Street  
Philadelphia, PA 19103-2029

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

Facility Name: Morrisville Borough STP; Permit Number: PA0026701 ;Reporting Period: 2020

  
Authorized Signatory Official  
JOHN J. WARENDT  
EXECUTIVE DIRECTOR  
Print or type name and title

03/29/2021

Date

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

The following documents may be attached to the email or hard copies can be mailed to US EPA Region 8

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

Time Stamp: 03/29/2021 8:48:50 AM

User Stamp: 19-9046VTH

Facility Name:	MORRISVILLE BORO MUN AUTHORITY															
Facility ID:	PAP026701	<b>UNITS: MG/L</b>														
Location:	<b>INFLUENT</b>															
	Pollutant	Goals	Frequency	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
				1/2/2020	1/7/2020	1/14/2020	1/21/2020	1/28/2020	2/4/2020	2/11/2020	2/18/2020	2/25/2020	3/3/2020	3/10/2020	3/17/2020	
01002	ARSENIC- TOTAL	0.0192	4		0.0034				0.0034				0.0052			
01027	CADMIUM- TOTAL	0.0123	4		< 0.002				< 0.002				< 0.002			
01034	CHROMIUM- TOTAL	0.0959	4		< 0.01				< 0.01				< 0.01			
01042	COPPER- TOTAL	0.4152	4	0.17	0.16	0.07	0.09	0.09	0.04	0.05	0.08	0.06	0.05	0.04	0.06	
00720	CYANIDE- TOTAL	0.137	4		< 0.020				< 0.020				< 0.020			
01051	LEAD- TOTAL	0.0957	4		0.004				0.0042				0.0014			
71900	MERCURY- TOTAL	0.0096	4		< 0.00020				< 0.00020				< 0.00020			
01062	MOLYBDENUM- TOTAL	0.0317	4		< 0.02				< 0.02				< 0.02			
01067	NICKEL- TOTAL	0.2907	4		< 0.01				< 0.01				< 0.01			
00610	NITROGEN- AMMONIA	53.4752	4		17.68				18.475				19.12			
01147	SELENIUM- TOTAL	0.0422	4		<0.0010				<0.0010				<0.0010			
01077	SILVER- TOTAL	0.1149	4		< 0.0002				< 0.0002				< 0.0002			
01092	ZINC- TOTAL	0.881	4	0.46	0.53	0.46	0.41	0.31	0.17	0.19	0.34	0.25	0.19	0.19	0.2	



Facility Name:	MORRISVILLE BORO MUN AUTHORITY														
Facility ID:	PAP026701														
Location:	<b>INFLUENT</b>														
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		3/17/2020	3/31/2020	4/7/2020	4/14/2020	4/21/2020	4/28/2020	5/5/2020	5/12/2020	5/19/2020	5/26/2020	6/2/2020	6/9/2020	6/16/2020	6/23/2020
01002	ARSENIC- TOTAL			0.0034				0.0019				0.0037			
01027	CADMIUM- TOTAL			< 0.002				< 0.002				< 0.002			
01034	CHROMIUM- TOTAL			< 0.01				< 0.01				< 0.01			
01042	COPPER- TOTAL	0.06	0.05	0.11	0.04	0.07	0.05	0.05	0.08	0.05	0.05	0.06	0.09	0.08	0.15
00720	CYANIDE- TOTAL			< 0.020				< 0.020				< 0.020			
01051	LEAD- TOTAL			0.0024				0.0021				0.0013			
71900	MERCURY- TOTAL			< 0.00020				< 0.00020				< 0.00020			
01062	MOLYBDENUM- TOTAL			< 0.02				< 0.02				< 0.02			
01067	NICKEL- TOTAL			< 0.01				< 0.01				< 0.01			
00610	NITROGEN- AMMONIA			17.025				19.575				23.32			
01147	SELENIUM- TOTAL			<0.0010				0.0013				<0.0010			
01077	SILVER- TOTAL			< 0.0002				< 0.0002				< 0.0002			
01092	ZINC- TOTAL	0.2	0.19	0.2	0.15	0.19	0.17	0.21	0.22	0.16	0.19	0.19	0.31	0.29	0.44

Facility Name:	MORRISVILLE BORO MUN AUTHORITY														
Facility ID:	PAP026701														
Location:	<b>INFLUENT</b>														
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		6/30/2020	7/7/2020	7/14/2020	7/21/2020	7/28/2020	8/4/2020	8/11/2020	8/18/2020	8/25/2020	8/26/2020	9/8/2020	9/15/2020	9/22/2020	9/29/2020
01002	ARSENIC- TOTAL		0.003				0.0024				0.003	0.0032			
01027	CADMIUM- TOTAL		< 0.002				< 0.002				<0.0010	< 0.002			
01034	CHROMIUM- TOTAL		< 0.01				< 0.01				0.0052	< 0.01			
01042	COPPER- TOTAL	0.12	0.07	0.07	0.1	0.08	0.15	0.17	0.08	0.1	0.09	0.11	0.13	0.13	0.08
00720	CYANIDE- TOTAL		< 0.020				< 0.020					< 0.020			
01051	LEAD- TOTAL		0.0014				0.007				0.003	0.0026			
71900	MERCURY- TOTAL		< 0.00020				< 0.00020				<0.0002	< 0.00020			
01062	MOLYBDENUM- TOTAL		< 0.02				< 0.02					< 0.02			
01067	NICKEL- TOTAL		< 0.01				< 0.01				0.0062	< 0.01			
00610	NITROGEN- AMMONIA		24.7				22.825					25.425			
01147	SELENIUM- TOTAL		<0.0010				<0.0010				0.003	<0.0010			
01077	SILVER- TOTAL		< 0.0002				0.0003				<0.0010	0.0002			
01092	ZINC- TOTAL	0.35	0.22	0.35	0.36	0.25	0.5	0.42	0.36	0.37	0.348	0.43	0.56	0.44	0.37

Facility Name:	MORRISVILLE BORO MUN AUTHORITY													
Facility ID:	PAP026701													
Location:	INFLUENT													
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Entry Count
		10/6/2020	10/13/2020	10/20/2020	10/27/2020	11/3/2020	11/10/2020	11/17/2020	11/24/2020	12/2/2020	12/8/2020	12/15/2020	12/22/2020	244
01002	ARSENIC- TOTAL	0.0045				0.0018				0.0025				13
01027	CADMIUM- TOTAL	< 0.002				< 0.002				< 0.002				13
01034	CHROMIUM- TOTAL	< 0.01				< 0.01				< 0.01				13
01042	COPPER- TOTAL	0.11	0.03	0.07	0.07	0.05	0.06	0.06	0.05	0.06	0.04	0.1	0.05	52
00720	CYANIDE- TOTAL	< 0.020				< 0.020				0.023				12
01051	LEAD- TOTAL	0.0032				< 0.0010				0.0016				13
71900	MERCURY- TOTAL	< 0.00020				< 0.00020				< 0.00020				13
01062	MOLYBDENUM- TOTAL	< 0.02				< 0.02				< 0.02				12
01067	NICKEL- TOTAL	< 0.01				< 0.01				< 0.01				13
00610	NITROGEN- AMMONIA	24.025				21.2				17.4				12
01147	SELENIUM- TOTAL	0.0011				<0.0010				<0.0010				13
01077	SILVER- TOTAL	0.0002				< 0.0002				< 0.0002				13
01092	ZINC- TOTAL	0.41	0.27	0.26	0.31	0.24	0.27	0.26	0.22	0.26	0.21	0.41	0.21	52

Facility Name:	MORRISVILLE BORO MUN AUTHORITY																
Facility ID:	PAP026701	UNITS: MG/L															
Location:	EFFLUENT			Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
	Pollutant	Goals	Frequency	01/02/20	01/07/20	01/14/20	01/21/20	01/28/20	02/04/20	02/11/20	02/18/20	02/25/20	03/03/20	03/10/20	03/17/20	03/24/20	
01002	ARSENIC- TOTAL	1.6775	4		0.0024				0.0032				0.0044				
01027	CADMIUM- TOTAL	0.0363	4		< 0.002				< 0.002				< 0.002				
01034	CHROMIUM- TOTAL	0.4011	4		< 0.01				< 0.01				< 0.01				
01042	COPPER- TOTAL	0.2643	4	< 0.010	< 0.010	< 0.010	0.01	0.011	0.012	< 0.010	0.018	0.011	0.015	0.012	0.012	0.016	
00720	CYANIDE- TOTAL	0.5515	4		< 0.020				< 0.020				< 0.020				
01051	LEAD- TOTAL	0.3638	4		< 0.001				< 0.001				< 0.001				
71900	MERCURY- TOTAL	0.0084	4		< 0.00020				< 0.00020				< 0.00020				
01062	MOLYBDENUM- TOTAL	Monitor	4		< 0.02				< 0.02				< 0.02				
01067	NICKEL- TOTAL	6.7825	4		< 0.01				< 0.01				< 0.01				
00610	NITROGEN- AMMONIA	34.9995	0		14.16				15.3				18.74				
01147	SELENIUM- TOTAL	0.8388	4		< 0.0010				< 0.0010				< 0.0010				
01077	SILVER- TOTAL	0.0606	4		0.0003				< 0.0002				< 0.0002				
01092	ZINC- TOTAL	2.3273	4	0.072	0.066	0.126	0.102	0.093	0.088	0.081	0.116	0.093	0.109	0.101	0.098	0.095	

Facility Name:	MORRISVILLE BORO MUN AUTHORITY															
Facility ID:	PAP026701															
Location:	EFFLUENT															
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
		03/31/20	04/07/20	04/14/20	04/21/20	04/28/20	05/05/20	05/12/20	05/19/20	05/26/20	06/02/20	06/09/20	06/16/20	06/23/20	06/30/20	07/07/20
01002	ARSENIC- TOTAL		0.0022				0.0026				0.0026					0.0025
01027	CADMIUM- TOTAL		< 0.002				< 0.002				< 0.002					< 0.002
01034	CHROMIUM- TOTAL		< 0.01				< 0.01				0.01					< 0.01
01042	COPPER- TOTAL	0.01	0.014	< 0.010	< 0.010	0.01	< 0.010	0.015	0.013	0.013	0.011	< 0.010	< 0.010	0.012	0.014	0.017
00720	CYANIDE- TOTAL		< 0.020				< 0.020				< 0.020					< 0.020
01051	LEAD- TOTAL		< 0.001				< 0.001				< 0.001					< 0.001
71900	MERCURY- TOTAL		< 0.00020				< 0.00020				< 0.00020					< 0.00020
01062	MOLYBDENUM- TOTAL		< 0.02				< 0.02				< 0.02					< 0.02
01067	NICKEL- TOTAL		< 0.01				< 0.01				< 0.01					< 0.01
00610	NITROGEN- AMMONIA		15.675				16.775				18.5					18.85
01147	SELENIUM- TOTAL		< 0.0010				< 0.0010				< 0.0010					< 0.0010
01077	SILVER- TOTAL		< 0.0002				< 0.0002				< 0.0002					< 0.0002
01092	ZINC- TOTAL	0.079	0.084	0.072	0.076	0.076	0.079	0.09	0.091	0.082	0.071	0.07	0.07	0.082	0.074	0.069

Facility Name:	MORRISVILLE BORO MUN AUTHORITY															
Facility ID:	PAP026701															
Location:	EFFLUENT															
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	
		07/14/20	07/21/20	07/28/20	08/04/20	08/11/20	08/18/20	08/25/20	09/08/20	09/15/20	09/22/20	09/29/20	10/06/20	10/13/20	10/20/20	10/27/20
01002	ARSENIC- TOTAL				0.0017				0.003				0.0023			
01027	CADMIUM- TOTAL				< 0.002				< 0.002				< 0.002			
01034	CHROMIUM- TOTAL				< 0.01				< 0.01				< 0.01			
01042	COPPER- TOTAL	< 0.010	0.011	0.012	0.014	< 0.010	< 0.010	0.011	0.011	< 0.010	0.019	0.016	0.015	0.015	0.012	0.01
00720	CYANIDE- TOTAL				< 0.020				< 0.020				< 0.020			
01051	LEAD- TOTAL				< 0.001				< 0.001				< 0.001			
71900	MERCURY- TOTAL				< 0.00020				< 0.00020				< 0.00020			
01062	MOLYBDENUM- TOTAL				< 0.02				< 0.02				< 0.02			
01067	NICKEL- TOTAL				< 0.01				< 0.01				< 0.01			
00610	NITROGEN- AMMONIA				14.415				14.925				18.4			
01147	SELENIUM- TOTAL				< 0.0010				< 0.0010				< 0.0010			
01077	SILVER- TOTAL				< 0.0002				< 0.0002				< 0.0002			
01092	ZINC- TOTAL	0.079	0.056	0.06	0.068	0.065	0.069	0.082	0.068	0.11	0.135	0.177	0.162	0.082	0.087	0.083

Facility Name:	MORRISVILLE BORO MUN AUTHORITY										
Facility ID:	PAP026701										
Location:	EFFLUENT										
	Pollutant	Date	Date	Date	Date	Date	Date	Date	Date	Date	Entry Count
		11/03/20	11/10/20	11/17/20	11/24/20	12/02/20	12/08/20	12/15/20	12/22/20	12/29/20	236 Total
01002	ARSENIC- TOTAL	0.0017				0.0021					12
01027	CADMIUM- TOTAL	< 0.002				< 0.002					12
01034	CHROMIUM- TOTAL	< 0.01				< 0.01					12
01042	COPPER- TOTAL	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	< 0.010	< 0.010	52
00720	CYANIDE- TOTAL	< 0.020				< 0.020					12
01051	LEAD- TOTAL	< 0.001				< 0.001					12
71900	MERCURY- TOTAL	< 0.00020				< 0.00020					12
01062	MOLYBDENUM- TOTAL	< 0.02				< 0.02					12
01067	NICKEL- TOTAL	< 0.01				< 0.01					12
00610	NITROGEN- AMMONIA	18.725				15.46					12
01147	SELENIUM- TOTAL	< 0.0010				< 0.0010					12
01077	SILVER- TOTAL	< 0.0002				< 0.0002					12
01092	ZINC- TOTAL	0.085	0.047	0.051	0.049	0.07	0.07	0.062	0.049	0.053	52

Facility Name:	MORRISVILLE BORO MUN AUTHORITY										
Facility ID:	PAP026701		<b>UNITS: MG/KG</b>								
Location:	<b>SLUDGE</b>		<b>DRY WT</b>		Date	Date	Date	Date	Date	Date	Entry Count
	Pollutant	Goals	Frequency	01/17/20	06/24/20	09/03/20	09/04/20	10/06/20	12/12/20	75 Total	
01002	ARSENIC- TOTAL	41	4	4.1	6.2	<5.1	4.2	4.8	4	6	
01027	CADMIUM- TOTAL	39	4	< 5.0	< 5.0	<2.26	< 5.0	< 5.0	< 5.0	6	
01034	CHROMIUM- TOTAL	Monitor	4	21.6	18.9	19.8	19.8	21.6	20.2	6	
01042	COPPER- TOTAL	1500	4	530	511	673	563	654	619	6	
00720	CYANIDE- TOTAL	Monitor	4	< 12	< 10		< 10	< 8.9	< 12	5	
01051	LEAD- TOTAL	300	4	18.6	22.2	20.5	25.7	26.1	18.1	6	
71900	MERCURY- TOTAL	17	4	0.45	0.4	0.604	0.67	0.8	0.83	6	
01062	MOLYBDENUM- TOTAL	75	4	5.4	8.4		6.5	7.3	5.7	5	
01067	NICKEL- TOTAL	420	4	8.7	7.7	9.8	9.5	9.8	8.7	6	
00610	NITROGEN- AMMONIA	No Goal	0	2920	11700		10800	< 1720	5250	5	
01147	SELENIUM- TOTAL	100	4	5.9	5.1	9	4.1	4.3	5.3	6	
01077	SILVER- TOTAL	Monitor	4	1.7	1.4	<2.26	1.6	2.1	1.8	6	
01092	ZINC- TOTAL	2800	4	1710	1470	2500	1830	2310	1740	6	





**M.J. Reider Associates, Inc.**

ENVIRONMENTAL TESTING LABORATORY  
U.S. EPA/PA DEP #06-00003

# Certificate of Analysis

**Laboratory No.:** 2028223

**Report:** 09/15/20

**Lab Contact:** Bradley T Griffiths

**Attention:** Rich Dulay

**Reported To:** Morrisville Municipal Authority

35 Union Street

Morrisville, PA 19067

**Project Info:** Priority Pollutants

**Lab ID:** 2028223-01      **Collected By:** Client

**Sampled:** 08/26/20 07:02

**Received:** 08/26/20 14:10

**Sample Desc:** Morrisville Influent (24Hr Composite)

**Sample Type:** Composite

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Organics							
4,4'-DDD	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
4,4'-DDE	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
4,4'-DDT	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Aldrin	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Alpha-BHC	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Alpha-Chlordane	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Beta-BHC	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Chlordane (technical)	<5.00	ug/l	5.00	EPA 608	09/03/20		TWH
Delta-BHC	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Dieldrin	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Endosulfan I	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Endosulfan II	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Endosulfan Sulfate	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Endrin	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Endrin Aldehyde	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Gamma-Chlordane	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Heptachlor	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Heptachlor Epoxide	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
Lindane	<0.50	ug/l	0.50	EPA 608	09/03/20		TWH
PCB-1016	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1221	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1232	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1242	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1248	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1254	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
PCB-1260	<2.00	ug/l	2.00	EPA 608	09/03/20		TWH
Toxaphene	<5.00	ug/l	5.00	EPA 608	09/03/20		TWH



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**M.J. Reider Associates, Inc.**

Lab ID: 2028223-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Organics</b>							
<b>Surrogates</b>							
2,4,5,6-Tetrachloro-m-xylene	63.0%		4-119	EPA 608	09/03/20		TWH
Decachlorobiphenyl	30.0%		1-111	EPA 608	09/03/20		TWH
<b>Semivolatiles</b>							
1,2,4-Trichlorobenzene	<100	ug/l	100	EPA 625	09/04/20	Q-09a	MEB
1,2-Dichlorobenzene	<100	ug/l	100	EPA 625	09/04/20		MEB
1,2-Diphenylhydrazine (as Azobenzene)	<100	ug/l	100	EPA 625	09/04/20		MEB
1,3-Dichlorobenzene	<100	ug/l	100	EPA 625	09/04/20		MEB
1,4-Dichlorobenzene	<100	ug/l	100	EPA 625	09/04/20		MEB
1,4-Dioxane	<100	ug/l	100	EPA 625	09/04/20		MEB
2,2'-Oxybis(1-Chloropropane)	<100	ug/l	100	EPA 625	09/04/20		MEB
2,4,6-Trichlorophenol	<100	ug/l	100	EPA 625	09/04/20		MEB
2,4-Dichlorophenol	<100	ug/l	100	EPA 625	09/04/20		MEB
2,4-Dimethylphenol	<100	ug/l	100	EPA 625	09/04/20		MEB
2,4-Dinitrophenol	<500	ug/l	500	EPA 625	09/04/20		MEB
2,4-Dinitrotoluene	<100	ug/l	100	EPA 625	09/04/20		MEB
2,6-Dinitrotoluene	<100	ug/l	100	EPA 625	09/04/20		MEB
2-Chloronaphthalene	<100	ug/l	100	EPA 625	09/04/20	Q-09c	MEB
2-Chlorophenol	<100	ug/l	100	EPA 625	09/04/20		MEB
2-Nitrophenol	<100	ug/l	100	EPA 625	09/04/20		MEB
3,3'-Dichlorobenzidine	<200	ug/l	200	EPA 625	09/04/20		MEB
4,6-Dinitro-o-cresol	<500	ug/l	500	EPA 625	09/04/20		MEB
4-Bromophenyl Phenyl Ether	<100	ug/l	100	EPA 625	09/04/20		MEB
4-Chloro-3-Methylphenol	<200	ug/l	200	EPA 625	09/04/20		MEB
4-Chlorophenyl phenyl ether	<100	ug/l	100	EPA 625	09/04/20		MEB
4-Nitrophenol	<500	ug/l	500	EPA 625	09/04/20		MEB
7,12-Dimethylbenz(a)anthracene	<100	ug/l	100	EPA 625	09/04/20		MEB
Acenaphthene	<100	ug/l	100	EPA 625	09/04/20		MEB
Acenaphthylene	<100	ug/l	100	EPA 625	09/04/20		MEB
Anthracene	<100	ug/l	100	EPA 625	09/04/20		MEB
Benzidine	<200	ug/l	200	EPA 625	09/04/20		MEB
Benzo(a)anthracene	<100	ug/l	100	EPA 625	09/04/20		MEB
Benzo(a)pyrene	<100	ug/l	100	EPA 625	09/04/20		MEB
Benzo(b)fluoranthene	<100	ug/l	100	EPA 625	09/04/20		MEB
Benzo(ghi)perylene	<100	ug/l	100	EPA 625	09/04/20		MEB
Benzo(k)fluoranthene	<100	ug/l	100	EPA 625	09/04/20		MEB



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**M.J. Reider Associates, Inc.**

Lab ID: 2028223-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Semivolatiles</b>							
Bis(2-chloroethoxy)methane	<100	ug/l	100	EPA 625	09/04/20		MEB
Bis(2-Chloroethyl)ether	<100	ug/l	100	EPA 625	09/04/20		MEB
Bis(2-Ethylhexyl)phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Butyl Benzyl Phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Chrysene	<100	ug/l	100	EPA 625	09/04/20		MEB
Dibenzo(a,h)anthracene	<100	ug/l	100	EPA 625	09/04/20		MEB
Diethyl Phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Dimethyl Phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Di-n-butyl Phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Di-n-octyl Phthalate	<100	ug/l	100	EPA 625	09/04/20		MEB
Fluoranthene	<100	ug/l	100	EPA 625	09/04/20		MEB
Fluorene	<100	ug/l	100	EPA 625	09/04/20	Q-09b	MEB
Hexachlorobenzene	<100	ug/l	100	EPA 625	09/04/20		MEB
Hexachlorobutadiene	<100	ug/l	100	EPA 625	09/04/20		MEB
Hexachlorocyclopentadiene	<100	ug/l	100	EPA 625	09/04/20		MEB
Hexachloroethane	<100	ug/l	100	EPA 625	09/04/20	Q-09	MEB
Indeno(1,2,3-cd)pyrene	<100	ug/l	100	EPA 625	09/04/20		MEB
Isophorone	<100	ug/l	100	EPA 625	09/04/20		MEB
Naphthalene	<100	ug/l	100	EPA 625	09/04/20		MEB
Nitrobenzene	<100	ug/l	100	EPA 625	09/04/20		MEB
N-Nitrosodimethylamine	<100	ug/l	100	EPA 625	09/04/20		MEB
N-Nitrosodi-n-propylamine	<100	ug/l	100	EPA 625	09/04/20		MEB
N-Nitrosodiphenylamine	<100	ug/l	100	EPA 625	09/04/20		MEB
Pentachlorophenol	<200	ug/l	200	EPA 625	09/04/20		MEB
Phenanthrene	<100	ug/l	100	EPA 625	09/04/20		MEB
Phenol	<100	ug/l	100	EPA 625	09/04/20		MEB
Pyrene	<100	ug/l	100	EPA 625	09/04/20		MEB
<b>Surrogates</b>							
2,4,6-Tribromophenol	55.1%		14-131	EPA 625	09/04/20		MEB
2-Fluorobiphenyl	51.4%		27-96	EPA 625	09/04/20		MEB
2-Fluorophenol	23.5%		1-66	EPA 625	09/04/20		MEB
Nitrobenzene-d5	43.8%		1-153	EPA 625	09/04/20		MEB
Phenol-d5	19.3%		6-42	EPA 625	09/04/20		MEB
Terphenyl-d14	55.0%		1-138	EPA 625	09/04/20		MEB
<b>Semivolatiles</b>							
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ND-02			EPA 625 SIM	09/05/20		MEB

**Total Metals**



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Lab ID: 2028223-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Total Metals							
Antimony	<0.003	mg/l	0.003	EPA 200.8 Rev 5.4	08/27/20		MPB
Arsenic	0.003	mg/l	0.001	EPA 200.8 Rev 5.4	08/27/20		MPB
Beryllium	<0.0010	mg/l	0.0010	EPA 200.8 Rev 5.4	08/27/20		MPB
Cadmium	<0.0010	mg/l	0.0010	EPA 200.8 Rev 5.4	08/27/20		MPB
Chromium	0.0052	mg/l	0.0010	EPA 200.8 Rev 5.4	08/27/20		MPB
Copper	0.090	mg/l	0.001	EPA 200.8 Rev 5.4	08/27/20		MPB
Lead	0.003	mg/l	0.001	EPA 200.8 Rev 5.4	08/27/20		MPB
Mercury	<0.0002	mg/l	0.0002	EPA 245.1 Rev 3.0	08/28/20		JAF
Nickel	0.0062	mg/l	0.0010	EPA 200.8 Rev 5.4	08/27/20		MPB
Selenium	0.003	mg/l	0.001	EPA 200.8 Rev 5.4	08/27/20		MPB
Silver	<0.0010	mg/l	0.0010	EPA 200.8 Rev 5.4	08/27/20		MPB
Thallium	<0.001	mg/l	0.001	EPA 200.8 Rev 5.4	08/27/20		MPB
Zinc	0.348	mg/l	0.005	EPA 200.8 Rev 5.4	08/27/20		MPB



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**M.J. Reider Associates, Inc.**

**Lab ID:** 2028223-02      **Collected By:** Client      **Sampled:** 08/26/20 07:27      **Received:** 08/26/20 14:10  
**Sample Desc:** Morrisville Influent (Grab)      **Sample Type:** Composite

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>General Chemistry</b>							
Cyanide	<0.004	mg/l	0.004	Lachat 10-204-00-1X	08/27/20		SNF
Total Phenolics	0.020	mg/l	0.010	EPA 420.4	08/28/20		SNF
<b>Volatiles</b>							
1,1,1-Trichloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,1,2,2-Tetrachloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,1,2-Trichloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,1-Dichloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,1-Dichloroethene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,2-Dichlorobenzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,2-Dichloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,2-Dichloropropane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,3-Dichlorobenzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
1,4-Dichlorobenzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
2-Chloroethyl Vinyl Ether	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Acrolein	<50.0	ug/l	50.0	EPA 624	08/26/20	Q-07, Q-28	GXF
Acrylonitrile	<50.0	ug/l	50.0	EPA 624	08/26/20		GXF
Benzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Bromodichloromethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Bromoform	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Bromomethane (Methyl Bromide)	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Carbon Tetrachloride	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Chlorobenzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Chloroethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Chloroform	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Chloromethane (Methyl Chloride)	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Cis-1,2-Dichloroethene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Cis-1,3-Dichloropropene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Dibromochloromethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Ethylbenzene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Methylene Chloride (Dichloromethane)	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Tetrachloroethene (PCE)	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Toluene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Trans-1,2-Dichloroethene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Trans-1,3-Dichloropropene	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Trichloroethene (TCE)	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF



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**M.J. Reider Associates, Inc.**

**Lab ID:** 2028223-02 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Volatiles</b>							
Trichlorofluoromethane	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Vinyl Chloride	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
Xylenes, Total	<5.0	ug/l	5.0	EPA 624	08/26/20		GXF
<b>Surrogates</b>							
4-Bromofluorobenzene	93.7%		60.1-130	EPA 624	08/26/20		GXF
Dibromofluoromethane	111%		70-153.2	EPA 624	08/26/20		GXF
Toluene-d8	110%		70-130	EPA 624	08/26/20		GXF

**Preparation Methods**

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
<b>2028223-01</b>				
<b>Organics</b>				
EPA 608	EPA 3510 C	B0H1783	08/31/2020	RJD
<b>Semivolatiles</b>				
EPA 625	EPA 3510 C	B0I0021	09/02/2020	RJD
EPA 625 SIM	EPA 3510 C	B0I0021	09/02/2020	RJD
<b>Total Metals</b>				
EPA 200.8 Rev 5.4	EPA 200.2	B0H1615	08/27/2020	HRG
EPA 245.1 Rev 3.0	EPA 245.1 Rev 3.0	B0H1697	08/28/2020	JAF
<b>2028223-02</b>				
<b>General Chemistry</b>				
Lachat 10-204-00-1X	EPA 9010 C	B0H1639	08/27/2020	RCE
<b>Volatiles</b>				
EPA 624	EPA 5030 B	B0H1559	08/26/2020	GXF

**Notes and Definitions**

- ND-02 The semi-volatile extract was analyzed for 2,3,7,8-Tetrachlorodibenzo-p-dioxin. There was no indication of the characteristic ion in the extract.
- Q-07 The blank spike was outside acceptable limits of 70-130% recovery at 139%.
- Q-09 The blank spike was outside acceptable limits of 40-113% at 36.25%.
- Q-09a The blank spike was outside acceptable limits of 44-142% at 37.94%.
- Q-09b The blank spike was outside acceptable limits of 59-121% at 55.12%.
- Q-09c The blank spike was outside acceptable limits of 60-118% at 47.96%.
- Q-28 The calibration verification was outside acceptable limits of 70-130% recovery at 131.



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**WORK ORDER  
Chain of Custody**

2028223



Client Code: 3021

Client: Morrsville Municipal Authority

Project Manager: Bradley T Griffiths

Project: Priority Pollutants

Report To: Morrsville Municipal Authority - Rich Dulay - 35 Union Street, Morrsville, PA 19067

Invoice To: Morrsville Municipal Authority - Rich Dulay - 35 Union Street, Morrsville, PA 19067

Collected By :  
(Full Name)

*Byron Robinson*

Comments: \_\_\_\_\_

**2028223-01 Morrisville Influent (24Hr Composite)**

Ag EPA 200.8, As EPA 200.8, Be EPA 200.8, Cd EPA 200.8, Cr EPA 200.8, Cu EPA 200.8, Hg EPA 245.1, Ni EPA 200.8, Pb EPA 200.8, Pesticides/PCBs EPA 608 Low Level, Sb EPA 200.8, Se EPA 200.8, Semi-VOA EPA 625 PPL/TTO, Semi-VOA EPA 625 SIM Dioxin, Tl EPA 200.8, Zn EPA 200.8

Matrix: Non-Potable Water

Date: 8/26/2020

Type: Composite (Simple)

Time: 0702

A - PI 500ml HNO3

B - AG Liter NM NP

C - AG Liter NM NP

D - AG Liter NM NP

E - AG Liter NM NP

**2028223-02 Morrisville Influent (Grab)**

CN Lachat 10204001X, Phenols EPA 420.4, VOA EPA 624

Matrix: Non-Potable Water

Date: 8/26/2020

Type: Composite (Simple)

Time: 0727

A - PI 500ml NaAsO2 & NaOH

B - AG 250ml WM H2SO4

C - Vial 40ml HCL (pH <2), zero hdspc

D - Vial 40ml HCL (pH <2), zero hdspc

E - Vial 40ml HCL (pH <2), zero hdspc

F - Vial 40ml NP, zero hdspc

G - Vial 40ml HCL (pH 4-5), zero hdspc

*[Signature]* 8/26/2020  
Relinquished By Date/Time

*[Signature]* 8/26/2020 0947  
Received By Date/Time

Relinquished By Date/Time

*[Signature]* 8/26/2020 1410  
Received By Date/Time

Relinquished By Date/Time

Received at Laboratory By Date/Time

Sample Kit Prepared By: <i>MCS</i>	Date/Time <i>8-19-20</i>
Sample Temp (°C): <i>9</i>	Samples on Ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Approved By: <i>[Signature]</i>	Entered By: <i>[Signature]</i>

**M.J. Reider Associates, Inc.**

**MJRA Terms & Conditions**

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

**Sample Submission, Sample Acceptance & Sampling Containers**

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

**Turnaround Times (TAT)**

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (\*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. \*RUSH TAT Surcharges are applied for expedited turnaround times.

**Analytical Results, Sample Collection Integrity & Subcontracting**

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

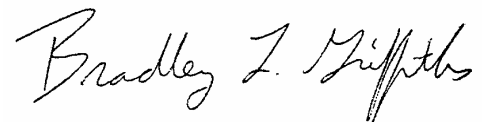
**Payment Terms**

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

**Warranty & Litigation**

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:



Bradley T Griffiths  
Project Manager



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# Certificate of Analysis

**M.J. Reider Associates, Inc.**

ENVIRONMENTAL TESTING LABORATORY  
U.S. EPA/PA DEP #06-00003

**Laboratory No.:** 2028224

**Report:** 09/29/20

**Lab Contact:** Bradley T Griffiths

**Attention:** Rory C. Sullivan

**Project Info:** Sludge Cake (PPL)

**Reported To:** Morrisville Municipal Authority

35 Union Street

Morrisville, PA 19067

**Lab ID:** 2028224-01

**Collected By:** Client

**Sampled:** 09/03/20 10:50

**Received:** 09/09/20 13:30

**Sample Desc:** Morrisville Sludge Cake

**Sample Type:** Grab

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>General Chemistry</b>							
Cyanide	<1.99	mg/kg dry	1.99	Lachat 10-204-00-1X	09/11/20		RCE
Total Phenolics	77	mg/kg dry	5.0	EPA 420.4	09/14/20		TML
Solids, Total	20.1	%	1.0	SM 2540 G	09/10/20		TMH
<b>Organics</b>							
PCB-1016	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20	Q-09	TWH
PCB-1221	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
PCB-1232	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
PCB-1242	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
PCB-1248	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
PCB-1254	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
PCB-1260	<0.2	mg/kg dry	0.2	EPA 8082	09/16/20		TWH
<b>Surrogates</b>							
2,4,5,6-Tetrachloro-m-xylene	111%		33-162	EPA 8082	09/16/20		TWH
Decachlorobiphenyl	84.4%		31-168	EPA 8082	09/16/20		TWH
<b>Organics</b>							
4,4'-DDD	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
4,4'-DDE	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
4,4'-DDT	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Aldrin	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Alpha-BHC	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Alpha-Chlordane	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Beta-BHC	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Chlordane (technical)	<12.4	mg/kg dry	12.4	EPA 8081	09/15/20	O-11	TWH
Delta-BHC	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Dieldrin	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Endosulfan I	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Endosulfan II	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH



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**Lab ID:** 2028224-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Organics</b>							
Endosulfan Sulfate	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Endrin	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Endrin Aldehyde	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Endrin Ketone	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Gamma-Chlordane	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Heptachlor	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Heptachlor Epoxide	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Lindane	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Methoxychlor	<4.98	mg/kg dry	4.98	EPA 8081	09/15/20	O-11	TWH
Toxaphene	<24.9	mg/kg dry	24.9	EPA 8081	09/15/20	O-11	TWH
<b>Surrogates</b>							
<i>2,4,5,6-Tetrachloro-m-xylene</i>	<i>65.0%</i>		<i>33-162</i>	<i>EPA 8081</i>	<i>09/15/20</i>	<i>O-11</i>	<i>TWH</i>
<i>Decachlorobiphenyl</i>	<i>120%</i>		<i>31-168</i>	<i>EPA 8081</i>	<i>09/15/20</i>	<i>O-11</i>	<i>TWH</i>
<b>Semivolatiles</b>							
1,2,4-Trichlorobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
1,2-Dichlorobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
1,2-Diphenylhydrazine (as Azobenzene)	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
1,3-Dichlorobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
1,4-Dichlorobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,2'-Oxybis(1-Chloropropene)	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,4,6-Trichlorophenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,4-Dichlorophenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,4-Dimethylphenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,4-Dinitrophenol	<249	mg/kg dry	249	EPA 8270	09/28/20	Q-26, O-11a	MEB
2,4-Dinitrotoluene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2,6-Dinitrotoluene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2-Chloronaphthalene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2-Chlorophenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
2-Nitrophenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
3,3'-Dichlorobenzidine	<99.5	mg/kg dry	99.5	EPA 8270	09/28/20	O-11a	MEB
4,6-Dinitro-o-cresol	<249	mg/kg dry	249	EPA 8270	09/28/20	Q-26b, O-11a	MEB
4-Bromophenyl Phenyl Ether	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
4-Chloro-3-Methylphenol	<99.5	mg/kg dry	99.5	EPA 8270	09/28/20	O-11a	MEB
4-Chlorophenyl phenyl ether	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
4-Nitrophenol	<249	mg/kg dry	249	EPA 8270	09/28/20	O-11a	MEB
Acenaphthene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB



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Additional accreditations by MD (261), NY(12094)

**M.J. Reider Associates, Inc.**

**Lab ID:** 2028224-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Semivolatiles</b>							
Acenaphthylene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Anthracene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Benzidine	<99.5	mg/kg dry	99.5	EPA 8270	09/28/20	O-11a	MEB
Benzo(a)anthracene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Benzo(a)pyrene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Benzo(b)fluoranthene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Benzo(ghi)perylene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Benzo(k)fluoranthene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Bis(2-chloroethoxy)methane	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Bis(2-Chloroethyl)ether	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Bis(2-Ethylhexyl)phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Butyl Benzyl Phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Chrysene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Dibenzo(a,h)anthracene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Diethyl Phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Dimethyl Phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Di-n-butyl Phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Di-n-octyl Phthalate	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Fluoranthene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Fluorene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Hexachlorobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Hexachlorobutadiene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Hexachlorocyclopentadiene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Hexachloroethane	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Indeno(1,2,3-cd)pyrene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Isophorone	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Naphthalene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Nitrobenzene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
N-Nitrosodimethylamine	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
N-Nitrosodi-n-propylamine	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
N-Nitrosodiphenylamine	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Pentachlorophenol	<249	mg/kg dry	249	EPA 8270	09/28/20	Q-26a, O-11a	MEB
Phenanthrene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Phenol	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
Pyrene	<49.8	mg/kg dry	49.8	EPA 8270	09/28/20	O-11a	MEB
<b>Surrogates</b>							
2,4,6-Tribromophenol	20.5%		1-109	EPA 8270	09/28/20	Q-32, O-11a	MEB
2-Fluorobiphenyl	25.0%		1-124	EPA 8270	09/28/20	O-11a	MEB



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Lab ID: 2028224-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
Semivolatiles							
Surrogates							
2-Fluorophenol	%		1-94	EPA 8270	09/28/20	Q-32a, O-11a	MEB
Nitrobenzene-d5	19.5%		1-117	EPA 8270	09/28/20	O-11a	MEB
Phenol-d5	19.2%		1-116	EPA 8270	09/28/20	O-11a	MEB
Terphenyl-d14	34.0%		1-145	EPA 8270	09/28/20	O-11a	MEB
Semivolatiles							
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ND-02			EPA 8270 SIM	09/29/20		MEB
Total Metals							
Antimony	<10.3	mg/kg dry	22.6	EPA 6010	09/14/20	U	HRG
Arsenic	<5.1	mg/kg dry	22.6	EPA 6010	09/14/20	U	HRG
Beryllium	<2.26	mg/kg dry	2.26	EPA 6010	09/14/20		HRG
Cadmium	<2.26	mg/kg dry	2.26	EPA 6010	09/14/20		HRG
Chromium	19.8	mg/kg dry	2.26	EPA 6010	09/14/20		HRG
Copper	673	mg/kg dry	4.52	EPA 6010	09/14/20		HRG
Lead	20.5	mg/kg dry	4.5	EPA 6010	09/14/20		HRG
Mercury	0.604	mg/kg dry	0.239	EPA 7471	09/10/20		JAF
Nickel	9.80	mg/kg dry	2.26	EPA 6010	09/14/20		HRG
Selenium	9.0	mg/kg dry	22.6	EPA 6010	09/14/20	J	HRG
Silver	<2.26	mg/kg dry	2.26	EPA 6010	09/14/20		HRG
Thallium	<8.5	mg/kg dry	22.6	EPA 6010	09/14/20		HRG
Zinc	2500	mg/kg dry	90.5	EPA 6010	09/14/20		HRG
Volatiles							
1,1,1-Trichloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
1,1,2,2-Tetrachloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
1,1,2-Trichloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
1,1-Dichloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20	V-01c	GXF
1,1-Dichloroethene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20	V-01a	GXF
1,2-Dichloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
1,2-Dichloropropane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
2-Chloroethyl Vinyl Ether	<184	ug/kg dry	184	EPA 8260	09/09/20		GXF
Acrolein	<369	ug/kg dry	369	EPA 8260	09/09/20	Q-07, V-01e	GXF
Acrylonitrile	<369	ug/kg dry	369	EPA 8260	09/09/20		GXF
Benzene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Bromodichloromethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Bromoform	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Bromomethane (Methyl Bromide)	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20	V-01d	GXF
Carbon Tetrachloride	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF



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**M.J. Reider Associates, Inc.**

**Lab ID:** 2028224-01 Continued

	Result	Unit	Rep. Limit	Analysis Method	Analyzed	Notes	Analyst
<b>Volatiles</b>							
Chlorobenzene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Chloroethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Chloroform	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Chloromethane (Methyl Chloride)	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Cis-1,3-Dichloropropene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Dibromochloromethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Ethylbenzene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Methylene Chloride (Dichloromethane)	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Tetrachloroethene (PCE)	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Toluene	426000	ug/kg dry	12400	EPA 8260	09/11/20		GXF
Trans-1,2-Dichloroethene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Trans-1,3-Dichloropropene	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Trichloroethene (TCE)	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20		GXF
Trichlorofluoromethane	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20	V-01b	GXF
Vinyl Chloride	<92.1	ug/kg dry	92.1	EPA 8260	09/09/20	V-01	GXF
<b>Surrogates</b>							
<i>4-Bromofluorobenzene</i>	<i>83.8%</i>		<i>60.1-130</i>	<i>EPA 8260</i>	<i>09/09/20</i>		<i>GXF</i>
<i>Dibromofluoromethane</i>	<i>125%</i>		<i>70-153.2</i>	<i>EPA 8260</i>	<i>09/09/20</i>		<i>GXF</i>
<i>Toluene-d8</i>	<i>94.2%</i>		<i>70-130</i>	<i>EPA 8260</i>	<i>09/09/20</i>		<i>GXF</i>



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**Quality Control**

**General Chemistry**

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010586</b>								
<b>Blank (B010586-BLK1)</b> Prepared & Analyzed: 09/10/2020								
Solids, Total	100	1.0	%					
<b>LCS (B010586-BS1)</b> Prepared & Analyzed: 09/10/2020								
Solids, Total	98.1	1	%	100	90-110			
<b>Batch B010663</b>								
<b>LRB (B010663-BLK1)</b> Prepared & Analyzed: 09/11/2020								
Cyanide	<0.400	0.400	mg/kg wet					
<b>LFB (B010663-BS1)</b> Prepared & Analyzed: 09/11/2020								
Cyanide	20.8	0.400	mg/kg wet	104	90-110			
<b>Batch B010784</b>								
<b>LRB (B010784-BLK1)</b> Prepared & Analyzed: 09/14/2020								
Total Phenolics	<1.0	1.0	mg/kg wet					
<b>LFB (B010784-BS1)</b> Prepared & Analyzed: 09/14/2020								
Total Phenolics	23	1.0	mg/kg wet	91.2	90-110			

**Total Metals**

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010560</b>								
<b>Blank (B010560-BLK1)</b> Prepared & Analyzed: 09/10/2020								
Mercury	<0.047	0.047	mg/kg wet					
<b>LCS (B010560-BS1)</b> Prepared & Analyzed: 09/10/2020								
Mercury	0.363	0.046	mg/kg wet	98.1	85-115			
<b>Batch B010726</b>								
<b>Blank (B010726-BLK1)</b> Prepared & Analyzed: 09/14/2020								
Silver	<0.45	0.45	mg/kg wet					
Arsenic	<4.5	4.5	mg/kg wet					U
Beryllium	<0.45	0.45	mg/kg wet					
Cadmium	<0.45	0.45	mg/kg wet					
Chromium	<0.45	0.45	mg/kg wet					
Copper	<0.89	0.89	mg/kg wet					
Nickel	<0.45	0.45	mg/kg wet					
Lead	<0.9	0.9	mg/kg wet					
Antimony	<4.5	4.5	mg/kg wet					U
Selenium	<4.5	4.5	mg/kg wet					U
Thallium	<4.5	4.5	mg/kg wet					
Zinc	<17.9	17.9	mg/kg wet					



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**Total Metals (Continued)**

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010726 (Continued)</b>								
<b>LCS (B010726-BS1)</b>								
	Prepared & Analyzed: 09/14/2020							
Silver	9.04	0.47	mg/kg wet	95.8	80-120			
Arsenic	40.8	4.7	mg/kg wet	108	80-120			
Beryllium	34.2	0.47	mg/kg wet	90.7	80-120			
Cadmium	35.3	0.47	mg/kg wet	93.6	80-120			
Chromium	42.6	0.47	mg/kg wet	113	80-120			
Copper	37.6	0.94	mg/kg wet	99.6	80-120			
Nickel	40.9	0.47	mg/kg wet	108	80-120			
Lead	34.3	0.9	mg/kg wet	91.0	80-120			
Antimony	40.2	4.7	mg/kg wet	107	80-120			
Selenium	38.8	4.7	mg/kg wet	103	80-120			
Thallium	37.9	4.7	mg/kg wet	100	80-120			
Zinc	44.0	18.9	mg/kg wet	117	80-120			

**Volatiles**

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010482</b>								



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**Volatiles (Continued)**

	Result	Reporting Limit	Units	%REC %REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0482 (Continued)</b>								
<b>Blank (B0I0482-BLK1)</b>								Prepared & Analyzed: 09/09/2020
1,1,1-Trichloroethane	<25.0	25.0	ug/kg wet					
1,1,2,2-Tetrachloroethane	<25.0	25.0	ug/kg wet					
1,1,2-Trichloroethane	<25.0	25.0	ug/kg wet					
1,1-Dichloroethane	<25.0	25.0	ug/kg wet					
1,1-Dichloroethene	<25.0	25.0	ug/kg wet					
1,2-Dichloroethane	<25.0	25.0	ug/kg wet					
1,2-Dichloropropane	<25.0	25.0	ug/kg wet					
2-Chloroethyl Vinyl Ether	<25.0	25.0	ug/kg wet					
Acrolein	<250	250	ug/kg wet					
Acrylonitrile	<250	250	ug/kg wet					
Benzene	<25.0	25.0	ug/kg wet					
Bromomethane (Methyl Bromide)	<25.0	25.0	ug/kg wet					
Bromoform	<25.0	25.0	ug/kg wet					
Cis-1,3-Dichloropropene	<25.0	25.0	ug/kg wet					
Carbon Tetrachloride	<25.0	25.0	ug/kg wet					
Dibromochloromethane	<25.0	25.0	ug/kg wet					
Chloroform	<25.0	25.0	ug/kg wet					
Chlorobenzene	<25.0	25.0	ug/kg wet					
Chloroethane	<25.0	25.0	ug/kg wet					
Chloromethane (Methyl Chloride)	<25.0	25.0	ug/kg wet					
Bromodichloromethane	<25.0	25.0	ug/kg wet					
Ethylbenzene	<25.0	25.0	ug/kg wet					
Methylene Chloride (Dichloromethane)	<25.0	25.0	ug/kg wet					
Tetrachloroethene (PCE)	<25.0	25.0	ug/kg wet					
Trans-1,3-Dichloropropene	<25.0	25.0	ug/kg wet					
Trichloroethene (TCE)	<25.0	25.0	ug/kg wet					
Trichlorofluoromethane	<25.0	25.0	ug/kg wet					
Toluene	<25.0	25.0	ug/kg wet					
Trans-1,2-Dichloroethene	<25.0	25.0	ug/kg wet					
Vinyl Chloride	<25.0	25.0	ug/kg wet					
<hr/>								
<i>Surrogate:</i>	<i>34.4</i>		ug/kg wet	<i>115</i>	<i>70-153.2</i>			
<i>Dibromofluoromethane</i>								
<i>Surrogate: Toluene-d8</i>	<i>29.1</i>		ug/kg wet	<i>97.1</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.0</i>		ug/kg wet	<i>83.2</i>	<i>60.1-130</i>			



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Volatiles (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B0I0482 (Continued)							
LCS (B0I0482-BS1)							
Prepared & Analyzed: 09/09/2020							
1,1,1-Trichloroethane	20.4	25.0	ug/kg wet	102	52-162		
1,1,2,2-Tetrachloroethane	19.4	25.0	ug/kg wet	96.8	46-157		
1,1,2-Trichloroethane	18.4	25.0	ug/kg wet	91.8	52-150		
1,1-Dichloroethane	24.2	25.0	ug/kg wet	121	59-155		
1,1-Dichloroethene	24.3	25.0	ug/kg wet	121	0.1-234		
1,2-Dichloroethane	21.4	25.0	ug/kg wet	107	49-155		
1,2-Dichloropropane	18.8	25.0	ug/kg wet	94.1	0.1-210		
2-Chloroethyl Vinyl Ether	16.2	25.0	ug/kg wet	81.0	1-305		
Acrolein	54.7	250	ug/kg wet	137	70-130		Q-07
Acrylonitrile	23.6	250	ug/kg wet	118	70-130		
Benzene	19.2	25.0	ug/kg wet	96.2	37-151		
Bromomethane (Methyl Bromide)	25.1	25.0	ug/kg wet	126	0.1-242		
Bromoform	20.5	25.0	ug/kg wet	102	45-169		
Cis-1,3-Dichloropropene	18.2	25.0	ug/kg wet	90.8	0.1-227		
Carbon Tetrachloride	21.2	25.0	ug/kg wet	106	70-140		
Dibromochloromethane	19.0	25.0	ug/kg wet	95.0	53-149		
Chloroform	21.4	25.0	ug/kg wet	107	51-138		
Chlorobenzene	20.6	25.0	ug/kg wet	103	37-160		
Chloroethane	21.2	25.0	ug/kg wet	106	14-230		
Chloromethane (Methyl Chloride)	21.0	25.0	ug/kg wet	105	0.1-273		
Bromodichloromethane	19.5	25.0	ug/kg wet	97.7	35-155		
Ethylbenzene	20.4	25.0	ug/kg wet	102	37-162		
Methylene Chloride (Dichloromethane)	21.6	25.0	ug/kg wet	108	0.1-221		
Tetrachloroethene (PCE)	20.2	25.0	ug/kg wet	101	64-148		
Trans-1,3-Dichloropropene	17.7	25.0	ug/kg wet	88.4	17-183		
Trichloroethene (TCE)	20.1	25.0	ug/kg wet	101	71-157		
Trichlorofluoromethane	25.0	25.0	ug/kg wet	125	17-181		
Toluene	19.3	25.0	ug/kg wet	96.6	47-150		
Trans-1,2-Dichloroethene	21.4	25.0	ug/kg wet	107	54-156		
Vinyl Chloride	22.8	25.0	ug/kg wet	114	0.1-251		
-----							
<i>Surrogate:</i>	<i>33.4</i>		ug/kg wet	<i>111</i>	<i>70-153.2</i>		
<i>Dibromofluoromethane</i>							
<i>Surrogate: Toluene-d8</i>	<i>29.0</i>		ug/kg wet	<i>96.7</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>29.8</i>		ug/kg wet	<i>99.2</i>	<i>60.1-130</i>		



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Organics (Continued)

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B010566								
Blank (B010566-BLK1)								
Prepared: 09/10/2020 Analyzed: 09/15/2020								
Alpha-BHC	<0.200	0.200	mg/kg wet					
Lindane	<0.200	0.200	mg/kg wet					
Beta-BHC	<0.200	0.200	mg/kg wet					
Delta-BHC	<0.200	0.200	mg/kg wet					
Heptachlor	<0.200	0.200	mg/kg wet					
Aldrin	<0.200	0.200	mg/kg wet					
Heptachlor Epoxide	<0.200	0.200	mg/kg wet					
Gamma-Chlordane	<0.200	0.200	mg/kg wet					
Alpha-Chlordane	<0.200	0.200	mg/kg wet					
Endosulfan I	<0.200	0.200	mg/kg wet					
4,4'-DDE	<0.200	0.200	mg/kg wet					
Dieldrin	<0.200	0.200	mg/kg wet					
Endrin	<0.200	0.200	mg/kg wet					
4,4'-DDD	<0.200	0.200	mg/kg wet					
Endosulfan II	<0.200	0.200	mg/kg wet					
4,4'-DDT [2C]	<0.200	0.200	mg/kg wet					
Endrin Aldehyde	<0.200	0.200	mg/kg wet					
Endosulfan Sulfate	<0.200	0.200	mg/kg wet					
Methoxychlor	<0.200	0.200	mg/kg wet					
Endrin Ketone	<0.200	0.200	mg/kg wet					
Chlordane (technical)	<0.500	0.500	mg/kg wet					
Chlordane-1	0.00		mg/kg wet					
Chlordane-2	0.00		mg/kg wet					
Chlordane-3	0.00		mg/kg wet					
Chlordane-4	0.00		mg/kg wet					
Chlordane-5	0.00		mg/kg wet					
Toxaphene	<1.00	1.00	mg/kg wet					
Toxaphene-1	0.00		mg/kg wet					
Toxaphene-2	0.00		mg/kg wet					
Toxaphene-3	0.00		mg/kg wet					
Toxaphene-4	0.00		mg/kg wet					
-----								
<i>Surrogate:</i>	<i>0.0239</i>		mg/kg wet	<i>71.8</i>	<i>33-162</i>			
<i>2,4,5,6-Tetrachloro-m-xylene</i>								
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.0292</i>		mg/kg wet	<i>87.7</i>	<i>31-168</i>			



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Organics (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0566 (Continued)</b>							
<b>Blank (B0I0566-BLK2)</b>							
Prepared: 09/10/2020 Analyzed: 09/16/2020							
PCB-1016	<0.2	0.2	mg/kg wet				
PCB-1016-1	0.0		mg/kg wet				
PCB-1016-2	0.0		mg/kg wet				
PCB-1016-3	0.0		mg/kg wet				
PCB-1016-4	0.0		mg/kg wet				
PCB-1016-5	0.0		mg/kg wet				
PCB-1260	<0.2	0.2	mg/kg wet				
PCB-1260-1	0.0		mg/kg wet				
PCB-1260-2	0.0		mg/kg wet				
PCB-1260-3	0.0		mg/kg wet				
PCB-1260-4	0.0		mg/kg wet				
PCB-1260-5	0.0		mg/kg wet				
PCB-1221	<0.2	0.2	mg/kg wet				
PCB-1232	<0.2	0.2	mg/kg wet				
PCB-1242	<0.2	0.2	mg/kg wet				
PCB-1248	<0.2	0.2	mg/kg wet				
PCB-1254	<0.2	0.2	mg/kg wet				
<hr/>							
<i>Surrogate:</i>	0.0249		mg/kg wet	74.6		33-162	
<i>2,4,5,6-Tetrachloro-m-xylene</i>							
<i>Surrogate: Decachlorobiphenyl</i>	0.0315		mg/kg wet	94.6		31-168	
<hr/>							
<b>LCS PCB (B0I0566-BS1)</b>							
Prepared: 09/10/2020 Analyzed: 09/16/2020							
PCB-1016	0.4	0.2	mg/kg wet	112		50-114	
PCB-1016-1	0.4		mg/kg wet	111		50-114	
PCB-1016-2	0.4		mg/kg wet	113		50-114	
PCB-1016-3	0.4		mg/kg wet	113		50-114	
PCB-1016-4	0.4		mg/kg wet	109		50-114	
PCB-1016-5	0.4		mg/kg wet	115		50-114	
PCB-1260	0.4	0.2	mg/kg wet	116		8-127	
PCB-1260-1	0.4		mg/kg wet	120		8-127	
PCB-1260-2	0.4		mg/kg wet	124		8-127	
PCB-1260-3	0.4		mg/kg wet	107		8-127	
PCB-1260-4	0.4		mg/kg wet	120		8-127	
PCB-1260-5	0.4		mg/kg wet	106		8-127	
<hr/>							
<i>Surrogate:</i>	0.0272		mg/kg wet	81.7		33-162	
<i>2,4,5,6-Tetrachloro-m-xylene</i>							
<i>Surrogate: Decachlorobiphenyl</i>	0.0306		mg/kg wet	91.9		31-168	



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Organics (Continued)

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B0I0566 (Continued)								
LCS PEST (B0I0566-BS2)								
					Prepared: 09/10/2020 Analyzed: 09/15/2020			
Alpha-BHC	0.0115	0.200	mg/kg wet	86.3	37-134			
Lindane	0.0125	0.200	mg/kg wet	93.8	32-127			
Beta-BHC	0.0139	0.200	mg/kg wet	104	17-147			
Delta-BHC	0.0136	0.200	mg/kg wet	102	19-140			
Heptachlor	0.0114	0.200	mg/kg wet	85.3	34-111			
Aldrin	0.0112	0.200	mg/kg wet	83.8	42-122			
Heptachlor Epoxide	0.0123	0.200	mg/kg wet	92.3	37-142			
Gamma-Chlordane	0.0125	0.200	mg/kg wet	94.0	30-140			
Alpha-Chlordane	0.0126	0.200	mg/kg wet	94.8	30-140			
Endosulfan I	0.0121	0.200	mg/kg wet	90.8	45-153			
4,4'-DDE	0.0125	0.200	mg/kg wet	93.8	30-145			
Dieldrin	0.0117	0.200	mg/kg wet	88.0	36-146			
Endrin	0.0142	0.200	mg/kg wet	106	30-147			
4,4'-DDD	0.0123	0.200	mg/kg wet	92.5	31-141			
Endosulfan II	0.0125	0.200	mg/kg wet	94.0	1-202			
4,4'-DDT [2C]	0.0138	0.200	mg/kg wet	103	25-160			
Endrin Aldehyde	0.0128	0.200	mg/kg wet	96.2	30-140			
Endosulfan Sulfate	0.0121	0.200	mg/kg wet	90.5	26-144			
Methoxychlor	0.0151	0.200	mg/kg wet	113	30-140			
Endrin Ketone	0.0129	0.200	mg/kg wet	96.8	30-140			
Chlordane (technical)	<0.500	0.500	mg/kg wet		45-119			
Chlordane-1	0.00		mg/kg wet		45-119			
Chlordane-2	0.00		mg/kg wet		45-119			
Chlordane-3	0.00		mg/kg wet		45-119			
Chlordane-4	0.00		mg/kg wet		45-119			
Chlordane-5	0.00		mg/kg wet		45-119			
Toxaphene-1	0.00		mg/kg wet		41-126			
Toxaphene-2	0.00		mg/kg wet		41-126			
Toxaphene-3	0.00		mg/kg wet		41-126			
Toxaphene-4	0.00		mg/kg wet		41-126			
-----								
<i>Surrogate:</i>	0.0232		mg/kg wet	69.6	33-162			
<i>2,4,5,6-Tetrachloro-m-xylene</i>								
<i>Surrogate: Decachlorobiphenyl</i>	0.0288		mg/kg wet	86.5	31-168			



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Organics (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0566 (Continued)</b>							
<b>Matrix Spike PEST (B0I0566-MS2)</b>		<b>Source: 2028224-01</b>		Prepared: 09/10/2020 Analyzed: 09/15/2020			
Alpha-BHC	<4.98	4.98	mg/kg dry				37-134
Lindane	0.199	4.98	mg/kg dry	300			32-127
Beta-BHC	<4.98	4.98	mg/kg dry				17-147
Delta-BHC	0.240	4.98	mg/kg dry	362			19-140
Heptachlor	0.216	4.98	mg/kg dry	325			34-111
Aldrin	<4.98	4.98	mg/kg dry				42-122
Heptachlor Epoxide	0.199	4.98	mg/kg dry	300			37-142
Gamma-Chlordane	<4.98	4.98	mg/kg dry				30-140
Alpha-Chlordane	0.290	4.98	mg/kg dry	438			30-140
Endosulfan I	0.141	4.98	mg/kg dry	212			45-153
4,4'-DDE	0.240	4.98	mg/kg dry	362			30-145
Dieldrin	0.265	4.98	mg/kg dry	50.0			36-146
Endrin	0.216	4.98	mg/kg dry	325			30-147
4,4'-DDD	0.274	4.98	mg/kg dry	412			31-141
Endosulfan II	0.191	4.98	mg/kg dry	288			1-202
4,4'-DDT [2C]	0.158	4.98	mg/kg dry	238			25-160
Endrin Aldehyde	<4.98	4.98	mg/kg dry				30-140
Endosulfan Sulfate	0.191	4.98	mg/kg dry	288			26-144
Methoxychlor	<4.98	4.98	mg/kg dry				30-140
Endrin Ketone	<4.98	4.98	mg/kg dry				30-140
<hr/>							
<i>Surrogate:</i>	<i>0.116</i>		mg/kg dry	<i>70.0</i>			<i>33-162</i>
<i>2,4,5,6-Tetrachloro-m-xylene</i>							
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.199</i>		mg/kg dry	<i>120</i>			<i>31-168</i>

Batch B0I0668



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**Volatiles (Continued)**

	Result	Reporting Limit	Units	%REC %REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0668 (Continued)</b>								
<b>DI Blank (B0I0668-BLK1)</b>								
	Prepared & Analyzed: 09/11/2020							
1,1,1-Trichloroethane	<25.0	25.0	ug/kg wet					
1,1,2,2-Tetrachloroethane	<25.0	25.0	ug/kg wet					
1,1,2-Trichloroethane	<25.0	25.0	ug/kg wet					
1,1-Dichloroethane	<25.0	25.0	ug/kg wet					
1,1-Dichloroethene	<25.0	25.0	ug/kg wet					
1,2-Dichloroethane	<25.0	25.0	ug/kg wet					
1,2-Dichloropropane	<25.0	25.0	ug/kg wet					
2-Chloroethyl Vinyl Ether	<25.0	25.0	ug/kg wet					
Acrolein	<250	250	ug/kg wet					
Acrylonitrile	<250	250	ug/kg wet					
Benzene	<25.0	25.0	ug/kg wet					
Bromomethane (Methyl Bromide)	<25.0	25.0	ug/kg wet					
Bromoform	<25.0	25.0	ug/kg wet					
Cis-1,3-Dichloropropene	<25.0	25.0	ug/kg wet					
Carbon Tetrachloride	<25.0	25.0	ug/kg wet					
Dibromochloromethane	<25.0	25.0	ug/kg wet					
Chloroform	<25.0	25.0	ug/kg wet					
Chlorobenzene	<25.0	25.0	ug/kg wet					
Chloroethane	<25.0	25.0	ug/kg wet					
Chloromethane (Methyl Chloride)	<25.0	25.0	ug/kg wet					
Bromodichloromethane	<25.0	25.0	ug/kg wet					
Ethylbenzene	<25.0	25.0	ug/kg wet					
Methylene Chloride (Dichloromethane)	<25.0	25.0	ug/kg wet					
Tetrachloroethene (PCE)	<25.0	25.0	ug/kg wet					
Trans-1,3-Dichloropropene	<25.0	25.0	ug/kg wet					
Trichloroethene (TCE)	<25.0	25.0	ug/kg wet					
Trichlorofluoromethane	<25.0	25.0	ug/kg wet					
Toluene	<25.0	25.0	ug/kg wet					
Trans-1,2-Dichloroethene	<25.0	25.0	ug/kg wet					
Vinyl Chloride	<25.0	25.0	ug/kg wet					
<hr/>								
<i>Surrogate:</i>	<i>16.2</i>		ug/kg wet	<i>108</i>	<i>70-153.2</i>			
<i>Dibromofluoromethane</i>								
<i>Surrogate: Toluene-d8</i>	<i>15.1</i>		ug/kg wet	<i>101</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.0</i>		ug/kg wet	<i>86.6</i>	<i>60.1-130</i>			



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**Volatiles (Continued)**

	Result	Reporting Limit	Units	%REC %REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0668 (Continued)</b>								
<b>MeOH Blank (B0I0668-BLK2)</b>								
								Prepared & Analyzed: 09/11/2020
1,1,1-Trichloroethane	<1000	1000	ug/kg wet					
1,1,2,2-Tetrachloroethane	<1000	1000	ug/kg wet					
1,1,2-Trichloroethane	<1000	1000	ug/kg wet					
1,1-Dichloroethane	<1000	1000	ug/kg wet					
1,1-Dichloroethene	<1000	1000	ug/kg wet					
1,2-Dichloroethane	<1000	1000	ug/kg wet					
1,2-Dichloropropane	<1000	1000	ug/kg wet					
2-Chloroethyl Vinyl Ether	<2000	2000	ug/kg wet					
Acrolein	<4000	4000	ug/kg wet					
Acrylonitrile	<4000	4000	ug/kg wet					
Benzene	<1000	1000	ug/kg wet					
Bromomethane (Methyl Bromide)	<1000	1000	ug/kg wet					
Bromoform	<1000	1000	ug/kg wet					
Cis-1,3-Dichloropropene	<1000	1000	ug/kg wet					
Carbon Tetrachloride	<1000	1000	ug/kg wet					
Dibromochloromethane	<1000	1000	ug/kg wet					
Chloroform	<1000	1000	ug/kg wet					
Chlorobenzene	<1000	1000	ug/kg wet					
Chloroethane	<1000	1000	ug/kg wet					
Chloromethane (Methyl Chloride)	<1000	1000	ug/kg wet					
Bromodichloromethane	<1000	1000	ug/kg wet					
Ethylbenzene	<1000	1000	ug/kg wet					
Methylene Chloride (Dichloromethane)	<1000	1000	ug/kg wet					
Tetrachloroethene (PCE)	<1000	1000	ug/kg wet					
Trans-1,3-Dichloropropene	<1000	1000	ug/kg wet					
Trichloroethene (TCE)	<1000	1000	ug/kg wet					
Trichlorofluoromethane	<1000	1000	ug/kg wet					
Toluene	<1000	1000	ug/kg wet					
Trans-1,2-Dichloroethene	<1000	1000	ug/kg wet					
Vinyl Chloride	<1000	1000	ug/kg wet					
<hr/>								
<i>Surrogate:</i>	<i>33.3</i>		ug/kg wet	<i>111</i>	<i>70-153.2</i>			
<i>Dibromofluoromethane</i>								
<i>Surrogate: Toluene-d8</i>	<i>29.1</i>		ug/kg wet	<i>96.9</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>26.5</i>		ug/kg wet	<i>88.5</i>	<i>60.1-130</i>			



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Volatiles (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B0I0668 (Continued)							
LCS (B0I0668-BS1)							
Prepared & Analyzed: 09/11/2020							
1,1,1-Trichloroethane	20.1	25.0	ug/kg wet	101	52-162		
1,1,2,2-Tetrachloroethane	19.6	25.0	ug/kg wet	97.8	46-157		
1,1,2-Trichloroethane	20.4	25.0	ug/kg wet	102	52-150		
1,1-Dichloroethane	18.3	25.0	ug/kg wet	91.7	59-155		
1,1-Dichloroethene	18.8	25.0	ug/kg wet	93.8	0.1-234		
1,2-Dichloroethane	19.6	25.0	ug/kg wet	98.0	49-155		
1,2-Dichloropropane	20.1	25.0	ug/kg wet	100	0.1-210		
2-Chloroethyl Vinyl Ether	21.6	25.0	ug/kg wet	108	1-305		
Acrolein	71.9	250	ug/kg wet	180	70-130		
Acrylonitrile	26.1	250	ug/kg wet	131	70-130		
Benzene	21.1	25.0	ug/kg wet	106	37-151		
Bromomethane (Methyl Bromide)	17.3	25.0	ug/kg wet	86.4	0.1-242		
Bromoform	19.6	25.0	ug/kg wet	98.2	45-169		
Cis-1,3-Dichloropropene	20.4	25.0	ug/kg wet	102	0.1-227		
Carbon Tetrachloride	19.3	25.0	ug/kg wet	96.6	70-140		
Dibromochloromethane	20.2	25.0	ug/kg wet	101	53-149		
Chloroform	19.1	25.0	ug/kg wet	95.4	51-138		
Chlorobenzene	19.7	25.0	ug/kg wet	98.3	37-160		
Chloroethane	20.6	25.0	ug/kg wet	103	14-230		
Chloromethane (Methyl Chloride)	16.9	25.0	ug/kg wet	84.6	0.1-273		
Bromodichloromethane	19.7	25.0	ug/kg wet	98.5	35-155		
Ethylbenzene	21.3	25.0	ug/kg wet	106	37-162		
Methylene Chloride (Dichloromethane)	16.3	25.0	ug/kg wet	81.4	0.1-221		
Tetrachloroethene (PCE)	19.3	25.0	ug/kg wet	96.5	64-148		
Trans-1,3-Dichloropropene	19.5	25.0	ug/kg wet	97.4	17-183		
Trichloroethene (TCE)	21.5	25.0	ug/kg wet	107	71-157		
Trichlorofluoromethane	18.2	25.0	ug/kg wet	91.2	17-181		
Toluene	21.1	25.0	ug/kg wet	106	47-150		
Trans-1,2-Dichloroethene	19.0	25.0	ug/kg wet	95.1	54-156		
Vinyl Chloride	18.7	25.0	ug/kg wet	93.5	0.1-251		
<hr/>							
<i>Surrogate:</i>	<i>15.8</i>		ug/kg wet	<i>106</i>	<i>70-153.2</i>		
<i>Dibromofluoromethane</i>							
<i>Surrogate: Toluene-d8</i>	<i>15.3</i>		ug/kg wet	<i>102</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>15.7</i>		ug/kg wet	<i>104</i>	<i>60.1-130</i>		



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Volatiles (Continued)

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B0I0668 (Continued)								
MeOH LCS (B0I0668-BS2)								
Prepared & Analyzed: 09/11/2020								
1,1,1-Trichloroethane	20700	1000	ug/kg wet	104	52-162			
1,1,2,2-Tetrachloroethane	18600	1000	ug/kg wet	93.2	46-157			
1,1,2-Trichloroethane	19100	1000	ug/kg wet	95.7	52-150			
1,1-Dichloroethane	18800	1000	ug/kg wet	93.9	59-155			
1,1-Dichloroethene	19800	1000	ug/kg wet	99.2	0.1-234			
1,2-Dichloroethane	19300	1000	ug/kg wet	96.5	49-155			
1,2-Dichloropropane	19800	1000	ug/kg wet	99.0	0.1-210			
2-Chloroethyl Vinyl Ether	21000	2000	ug/kg wet	105	1-305			
Acrolein	68400	4000	ug/kg wet	171	70-130			
Acrylonitrile	19900	4000	ug/kg wet	99.5	70-130			
Benzene	21000	1000	ug/kg wet	105	37-151			
Bromomethane (Methyl Bromide)	17700	1000	ug/kg wet	88.6	0.1-242			
Bromoform	19200	1000	ug/kg wet	96.2	45-169			
Cis-1,3-Dichloropropene	20100	1000	ug/kg wet	101	0.1-227			
Carbon Tetrachloride	19600	1000	ug/kg wet	98.2	70-140			
Dibromochloromethane	19700	1000	ug/kg wet	98.5	53-149			
Chloroform	20000	1000	ug/kg wet	100	51-138			
Chlorobenzene	19300	1000	ug/kg wet	96.4	37-160			
Chloroethane	21100	1000	ug/kg wet	106	14-230			
Chloromethane (Methyl Chloride)	17900	1000	ug/kg wet	89.4	0.1-273			
Bromodichloromethane	19300	1000	ug/kg wet	96.3	35-155			
Ethylbenzene	21300	1000	ug/kg wet	107	37-162			
Methylene Chloride (Dichloromethane)	16400	1000	ug/kg wet	82.2	0.1-221			
Tetrachloroethene (PCE)	19400	1000	ug/kg wet	97.0	64-148			
Trans-1,3-Dichloropropene	18900	1000	ug/kg wet	94.4	17-183			
Trichloroethene (TCE)	22000	1000	ug/kg wet	110	71-157			
Trichlorofluoromethane	19800	1000	ug/kg wet	99.0	17-181			
Toluene	20700	1000	ug/kg wet	103	47-150			
Trans-1,2-Dichloroethene	19600	1000	ug/kg wet	97.8	54-156			
Vinyl Chloride	22500	1000	ug/kg wet	113	0.1-251			
-----								
Surrogate:	31.4		ug/kg wet	105	70-153.2			
Dibromofluoromethane								
Surrogate: Toluene-d8	29.9		ug/kg wet	99.5	70-130			
Surrogate: 4-Bromofluorobenzene	30.7		ug/kg wet	102	60.1-130			



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Volatiles (Continued)

	Result	Reporting Limit	Units	%REC %REC	Limit Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010668 (Continued)</b>								
<b>Duplicate (B010668-DUP1)</b>								
	<b>Source: 2028224-01RE2</b>			<b>Prepared &amp; Analyzed: 09/11/2020</b>				
1,1,1-Trichloroethane	<12400	12400	ug/kg dry				20	
1,1,2,2-Tetrachloroethane	<12400	12400	ug/kg dry				20	
1,1,2-Trichloroethane	<12400	12400	ug/kg dry				20	
1,1-Dichloroethane	<12400	12400	ug/kg dry				20	
1,1-Dichloroethene	<12400	12400	ug/kg dry				20	
1,2-Dichloroethane	<12400	12400	ug/kg dry				20	
1,2-Dichloropropane	<12400	12400	ug/kg dry				20	
2-Chloroethyl Vinyl Ether	<24800	24800	ug/kg dry				20	
Acrolein	<49500	49500	ug/kg dry				20	
Acrylonitrile	<49500	49500	ug/kg dry				20	
Benzene	<12400	12400	ug/kg dry				20	
Bromomethane (Methyl Bromide)	<12400	12400	ug/kg dry				20	
Bromoform	<12400	12400	ug/kg dry				20	
Cis-1,3-Dichloropropene	<12400	12400	ug/kg dry				20	
Carbon Tetrachloride	<12400	12400	ug/kg dry				20	
Dibromochloromethane	<12400	12400	ug/kg dry				20	
Chloroform	<12400	12400	ug/kg dry				20	
Chlorobenzene	<12400	12400	ug/kg dry				20	
Chloroethane	<12400	12400	ug/kg dry				20	
Chloromethane (Methyl Chloride)	<12400	12400	ug/kg dry				20	
Bromodichloromethane	<12400	12400	ug/kg dry				20	
Ethylbenzene	<12400	12400	ug/kg dry				20	
Methylene Chloride (Dichloromethane)	<12400	12400	ug/kg dry				20	
Tetrachloroethene (PCE)	<12400	12400	ug/kg dry				20	
Trans-1,3-Dichloropropene	<12400	12400	ug/kg dry				20	
Trichloroethene (TCE)	<12400	12400	ug/kg dry				20	
Trichlorofluoromethane	<12400	12400	ug/kg dry				20	
Toluene	429000	12400	ug/kg dry			0.723	20	
Trans-1,2-Dichloroethene	<12400	12400	ug/kg dry				20	
Vinyl Chloride	<12400	12400	ug/kg dry				20	
<hr/>								
<i>Surrogate:</i>	<i>390</i>		<i>ug/kg dry</i>	<i>105</i>	<i>70-153.2</i>			
<i>Dibromofluoromethane</i>								
<i>Surrogate: Toluene-d8</i>	<i>358</i>		<i>ug/kg dry</i>	<i>96.5</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>342</i>		<i>ug/kg dry</i>	<i>92.2</i>	<i>60.1-130</i>			



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Volatiles (Continued)

Batch B0I0668 (Continued)

Matrix Spike (B0I0668-MS1)

Source: 2028224-01RE2 Prepared & Analyzed: 09/11/2020

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
1,1,1-Trichloroethane	255000	12400	ug/kg dry	103	52-162		
1,1,2,2-Tetrachloroethane	213000	12400	ug/kg dry	86.2	46-157		
1,1,2-Trichloroethane	227000	12400	ug/kg dry	91.8	52-150		
1,1-Dichloroethane	224000	12400	ug/kg dry	90.5	59-155		
1,1-Dichloroethene	257000	12400	ug/kg dry	104	0.1-234		
1,2-Dichloroethane	220000	12400	ug/kg dry	89.0	49-155		
1,2-Dichloropropane	231000	12400	ug/kg dry	93.3	0.1-210		
2-Chloroethyl Vinyl Ether	250000	24800	ug/kg dry	101	1-305		
Acrolein	822000	49500	ug/kg dry	166	70-130		
Acrylonitrile	308000	49500	ug/kg dry	124	70-130		
Benzene	250000	12400	ug/kg dry	101	37-151		
Bromomethane (Methyl Bromide)	219000	12400	ug/kg dry	88.5	0.1-242		
Bromoform	220000	12400	ug/kg dry	88.9	45-169		
Cis-1,3-Dichloropropene	236000	12400	ug/kg dry	95.4	0.1-227		
Carbon Tetrachloride	240000	12400	ug/kg dry	97.1	70-140		
Dibromochloromethane	229000	12400	ug/kg dry	92.6	53-149		
Chloroform	231000	12400	ug/kg dry	93.4	51-138		
Chlorobenzene	232000	12400	ug/kg dry	93.5	37-160		
Chloroethane	257000	12400	ug/kg dry	104	14-230		
Chloromethane (Methyl Chloride)	220000	12400	ug/kg dry	88.7	0.1-273		
Bromodichloromethane	223000	12400	ug/kg dry	89.9	35-155		
Ethylbenzene	257000	12400	ug/kg dry	104	37-162		
Methylene Chloride (Dichloromethane)	247000	12400	ug/kg dry	99.7	0.1-221		
Tetrachloroethene (PCE)	238000	12400	ug/kg dry	96.3	64-148		
Trans-1,3-Dichloropropene	224000	12400	ug/kg dry	90.5	17-183		
Trichloroethene (TCE)	264000	12400	ug/kg dry	107	71-157		
Trichlorofluoromethane	245000	12400	ug/kg dry	99.0	17-181		
Toluene	642000	12400	ug/kg dry	87.3	47-150		
Trans-1,2-Dichloroethene	237000	12400	ug/kg dry	95.7	54-156		
Vinyl Chloride	282000	12400	ug/kg dry	114	0.1-251		

<i>Surrogate:</i>	384		ug/kg dry	103	70-153.2		
<i>Dibromofluoromethane</i>							
<i>Surrogate: Toluene-d8</i>	363		ug/kg dry	97.8	70-130		
<i>Surrogate: 4-Bromofluorobenzene</i>	383		ug/kg dry	103	60.1-130		

Semivolatiles

Batch B0I0978

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
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**Semivolatiles (Continued)**

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010978 (Continued)</b>								
<b>Blank (B010978-BLK1)</b>								
Prepared: 09/17/2020 Analyzed: 09/28/2020								
N-Nitrosodimethylamine	<0.50	0.50	mg/kg wet					
Phenol	<0.50	0.50	mg/kg wet					
Bis(2-Chloroethyl)ether	<0.50	0.50	mg/kg wet					
2-Chlorophenol	<0.50	0.50	mg/kg wet					
1,3-Dichlorobenzene	<0.50	0.50	mg/kg wet					
1,4-Dichlorobenzene	<0.50	0.50	mg/kg wet					
1,2-Dichlorobenzene	<0.50	0.50	mg/kg wet					
2,2'-Oxybis(1-Chloropropane)	<0.50	0.50	mg/kg wet					
N-Nitrosodi-n-propylamine	<0.50	0.50	mg/kg wet					
Hexachloroethane	<0.50	0.50	mg/kg wet					
Nitrobenzene	<0.50	0.50	mg/kg wet					
Isophorone	<0.50	0.50	mg/kg wet					
2-Nitrophenol	<0.50	0.50	mg/kg wet					
2,4-Dimethylphenol	<0.50	0.50	mg/kg wet					
Bis(2-chloroethoxy)methane	<0.50	0.50	mg/kg wet					
2,4-Dichlorophenol	<0.50	0.50	mg/kg wet					
1,2,4-Trichlorobenzene	<0.50	0.50	mg/kg wet					
Naphthalene	<0.50	0.50	mg/kg wet					
Hexachlorobutadiene	<0.50	0.50	mg/kg wet					
4-Chloro-3-Methylphenol	<1.00	1.00	mg/kg wet					
Hexachlorocyclopentadiene	<0.50	0.50	mg/kg wet					
2,4,6-Trichlorophenol	<0.50	0.50	mg/kg wet					
2-Chloronaphthalene	<0.50	0.50	mg/kg wet					
Dimethyl Phthalate	<0.50	0.50	mg/kg wet					
Acenaphthylene	<0.50	0.50	mg/kg wet					
2,4-Dinitrophenol	<2.50	2.50	mg/kg wet					
4-Nitrophenol	<2.50	2.50	mg/kg wet					
2,6-Dinitrotoluene	<0.50	0.50	mg/kg wet					
Acenaphthene	<0.50	0.50	mg/kg wet					
2,4-Dinitrotoluene	<0.50	0.50	mg/kg wet					
Fluorene	<0.50	0.50	mg/kg wet					
Diethyl Phthalate	<0.50	0.50	mg/kg wet					
4-Chlorophenyl phenyl ether	<0.50	0.50	mg/kg wet					
4,6-Dinitro-o-cresol	<2.50	2.50	mg/kg wet					
N-Nitrosodiphenylamine	<0.50	0.50	mg/kg wet					
1,2-Diphenylhydrazine (as Azobenzene)	<0.50	0.50	mg/kg wet					
4-Bromophenyl Phenyl Ether	<0.50	0.50	mg/kg wet					
Hexachlorobenzene	<0.50	0.50	mg/kg wet					
Pentachlorophenol	<2.50	2.50	mg/kg wet					
Phenanthrene	<0.50	0.50	mg/kg wet					
Anthracene	<0.50	0.50	mg/kg wet					
Di-n-butyl Phthalate	<0.50	0.50	mg/kg wet					
Fluoranthene	<0.50	0.50	mg/kg wet					
Benzidine	<1.00	1.00	mg/kg wet					
Pyrene	<0.50	0.50	mg/kg wet					
Butyl Benzyl Phthalate	<0.50	0.50	mg/kg wet					
3,3'-Dichlorobenzidine	<1.00	1.00	mg/kg wet					
Benzo(a)anthracene	<0.50	0.50	mg/kg wet					
Chrysene	<0.50	0.50	mg/kg wet					
Bis(2-Ethylhexyl)phthalate	<0.50	0.50	mg/kg wet					
Di-n-octyl Phthalate	<0.50	0.50	mg/kg wet					
Benzo(b)fluoranthene	<0.50	0.50	mg/kg wet					
Benzo(k)fluoranthene	<0.50	0.50	mg/kg wet					
Benzo(a)pyrene	<0.50	0.50	mg/kg wet					
Indeno(1,2,3-cd)pyrene	<0.50	0.50	mg/kg wet					



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Semivolatiles (Continued)

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010978 (Continued)</b>								
<b>Blank (B010978-BLK1)</b>								
Prepared: 09/17/2020 Analyzed: 09/28/2020								
Dibenzo(a,h)anthracene	<0.50	0.50	mg/kg wet					
Benzo(ghi)perylene	<0.50	0.50	mg/kg wet					
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<i>Surrogate: 2-Fluorophenol</i>	4.95		mg/kg wet	74.2	1-94			
<i>Surrogate: Phenol-d5</i>	5.16		mg/kg wet	77.4	1-116			
<i>Surrogate: Nitrobenzene-d5</i>	2.51		mg/kg wet	75.2	1-117			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.62		mg/kg wet	78.6	1-124			
<i>Surrogate: 2,4,6-Tribromophenol</i>	6.54		mg/kg wet	98.1	1-109			
<i>Surrogate: Terphenyl-d14</i>	4.20		mg/kg wet	126	1-145			



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**Semivolatiles (Continued)**

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B0I0978 (Continued)</b>							
<b>LCS (B0I0978-BS1)</b>							
				Prepared: 09/17/2020 Analyzed: 09/28/2020			
N-Nitrosodimethylamine	2.79	0.50	mg/kg wet	83.8	38-113		
Phenol	2.43	0.50	mg/kg wet	73.0	5-112		
Bis(2-Chloroethyl)ether	2.53	0.50	mg/kg wet	75.8	12-158		
2-Chlorophenol	2.66	0.50	mg/kg wet	79.8	23-134		
1,3-Dichlorobenzene	2.51	0.50	mg/kg wet	75.2	0.5-172		
1,4-Dichlorobenzene	2.50	0.50	mg/kg wet	74.9	20-124		
1,2-Dichlorobenzene	2.47	0.50	mg/kg wet	74.0	32-129		
2,2'-Oxybis(1-Chloropropane)	2.89	0.50	mg/kg wet	86.7	36-166		
N-Nitrosodi-n-propylamine	2.93	0.50	mg/kg wet	87.9	0.5-230		
Hexachloroethane	2.43	0.50	mg/kg wet	72.8	40-113		
Nitrobenzene	2.61	0.50	mg/kg wet	78.2	35-180		
Isophorone	3.20	0.50	mg/kg wet	95.9	21-196		
2-Nitrophenol	2.77	0.50	mg/kg wet	83.1	29-182		
2,4-Dimethylphenol	2.23	0.50	mg/kg wet	66.9	32-119		
Bis(2-chloroethoxy)methane	2.85	0.50	mg/kg wet	85.6	33-184		
2,4-Dichlorophenol	2.97	0.50	mg/kg wet	89.1	39-135		
1,2,4-Trichlorobenzene	2.81	0.50	mg/kg wet	84.2	44-142		
Naphthalene	2.44	0.50	mg/kg wet	73.3	21-133		
Hexachlorobutadiene	3.21	0.50	mg/kg wet	96.4	24-116		
4-Chloro-3-Methylphenol	3.04	1.00	mg/kg wet	91.3	22-147		
Hexachlorocyclopentadiene	2.45	0.50	mg/kg wet	73.5	22-113		
2,4,6-Trichlorophenol	3.41	0.50	mg/kg wet	102	37-144		
2-Chloronaphthalene	2.92	0.50	mg/kg wet	87.5	60-118		
Dimethyl Phthalate	3.17	0.50	mg/kg wet	95.0	0.5-112		
Acenaphthylene	2.76	0.50	mg/kg wet	82.9	47-145		
2,4-Dinitrophenol	2.30	2.50	mg/kg wet	69.1	0.5-191		
4-Nitrophenol	3.15	2.50	mg/kg wet	94.6	0.5-132		
2,6-Dinitrotoluene	3.74	0.50	mg/kg wet	112	50-158		
Acenaphthene	2.80	0.50	mg/kg wet	84.1	33-145		
2,4-Dinitrotoluene	3.45	0.50	mg/kg wet	104	39-139		
Fluorene	3.07	0.50	mg/kg wet	92.2	59-121		
Diethyl Phthalate	3.04	0.50	mg/kg wet	91.1	0.5-114		
4-Chlorophenyl phenyl ether	3.38	0.50	mg/kg wet	101	25-158		
4,6-Dinitro-o-cresol	2.57	2.50	mg/kg wet	77.1	0.5-181		
N-Nitrosodiphenylamine	6.31	0.50	mg/kg wet	189	108-244		
1,2-Diphenylhydrazine (as Azobenzene)	3.24	0.50	mg/kg wet	97.3	46-135		
4-Bromophenyl Phenyl Ether	3.75	0.50	mg/kg wet	113	53-127		
Hexachlorobenzene	3.73	0.50	mg/kg wet	112	0.5-152		
Pentachlorophenol	3.45	2.50	mg/kg wet	104	14-176		
Phenanthrene	2.92	0.50	mg/kg wet	87.5	54-120		
Anthracene	2.87	0.50	mg/kg wet	86.2	27-133		
Di-n-butyl Phthalate	2.98	0.50	mg/kg wet	89.3	1-118		
Fluoranthene	3.08	0.50	mg/kg wet	92.3	26-137		
Benzidine	0.09	1.00	mg/kg wet	2.56	0.5-142		
Pyrene	3.36	0.50	mg/kg wet	101	52-115		
Butyl Benzyl Phthalate	3.23	0.50	mg/kg wet	97.0	0.5-152		
3,3'-Dichlorobenzidine	3.12	1.00	mg/kg wet	93.7	0.5-262		
Benzo(a)anthracene	3.07	0.50	mg/kg wet	92.2	33-143		
Chrysene	3.20	0.50	mg/kg wet	96.2	17-168		
Bis(2-Ethylhexyl)phthalate	3.09	0.50	mg/kg wet	92.6	8-158		
Di-n-octyl Phthalate	3.48	0.50	mg/kg wet	104	4-146		
Benzo(b)fluoranthene	3.69	0.50	mg/kg wet	111	24-159		
Benzo(k)fluoranthene	3.31	0.50	mg/kg wet	99.4	11-162		
Benzo(a)pyrene	3.57	0.50	mg/kg wet	107	17-163		
Indeno(1,2,3-cd)pyrene	3.98	0.50	mg/kg wet	120	0.5-171		



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Semivolatiles (Continued)

	Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B010978 (Continued)								
LCS (B010978-BS1)								
Prepared: 09/17/2020 Analyzed: 09/28/2020								
Dibenzo(a,h)anthracene	2.71	0.50	mg/kg wet	81.2	0.5-227			
Benzo(ghi)perylene	4.39	0.50	mg/kg wet	132	0.5-219			
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Surrogate: 2-Fluorophenol	4.83		mg/kg wet	72.5	1-94			
Surrogate: Phenol-d5	5.04		mg/kg wet	75.6	1-116			
Surrogate: Nitrobenzene-d5	2.45		mg/kg wet	73.6	1-117			
Surrogate: 2-Fluorobiphenyl	2.76		mg/kg wet	82.8	1-124			
Surrogate: 2,4,6-Tribromophenol	7.70		mg/kg wet	115	1-109			
Surrogate: Terphenyl-d14	3.52		mg/kg wet	106	1-145			



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Semivolatiles (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
<b>Batch B010978 (Continued)</b>							
<b>Duplicate (B010978-DUP1)</b>							
		<b>Source: 2028224-01</b>		Prepared: 09/17/2020 Analyzed: 09/28/2020			
N-Nitrosodimethylamine	<49.8	49.8	mg/kg dry			30	
Phenol	<49.8	49.8	mg/kg dry			30	
Bis(2-Chloroethyl)ether	<49.8	49.8	mg/kg dry			30	
2-Chlorophenol	<49.8	49.8	mg/kg dry			30	
1,3-Dichlorobenzene	<49.8	49.8	mg/kg dry			30	
1,4-Dichlorobenzene	<49.8	49.8	mg/kg dry			30	
1,2-Dichlorobenzene	<49.8	49.8	mg/kg dry			30	
2,2'-Oxybis(1-Chloropropane)	<49.8	49.8	mg/kg dry			30	
N-Nitrosodi-n-propylamine	<49.8	49.8	mg/kg dry			30	
Hexachloroethane	<49.8	49.8	mg/kg dry			30	
Nitrobenzene	<49.8	49.8	mg/kg dry			30	
Isophorone	<49.8	49.8	mg/kg dry			30	
2-Nitrophenol	<49.8	49.8	mg/kg dry			30	
2,4-Dimethylphenol	<49.8	49.8	mg/kg dry			30	
Bis(2-chloroethoxy)methane	<49.8	49.8	mg/kg dry			30	
2,4-Dichlorophenol	<49.8	49.8	mg/kg dry			30	
1,2,4-Trichlorobenzene	<49.8	49.8	mg/kg dry			30	
Naphthalene	<49.8	49.8	mg/kg dry			30	
Hexachlorobutadiene	<49.8	49.8	mg/kg dry			30	
4-Chloro-3-Methylphenol	<99.5	99.5	mg/kg dry			30	
Hexachlorocyclopentadiene	<49.8	49.8	mg/kg dry			30	
2,4,6-Trichlorophenol	<49.8	49.8	mg/kg dry			30	
2-Chloronaphthalene	<49.8	49.8	mg/kg dry			30	
Dimethyl Phthalate	<49.8	49.8	mg/kg dry			30	
Acenaphthylene	<49.8	49.8	mg/kg dry			30	
2,4-Dinitrophenol	<249	249	mg/kg dry			30	
4-Nitrophenol	<249	249	mg/kg dry			30	
2,6-Dinitrotoluene	<49.8	49.8	mg/kg dry			30	
Acenaphthene	<49.8	49.8	mg/kg dry			30	
2,4-Dinitrotoluene	<49.8	49.8	mg/kg dry			30	
Fluorene	<49.8	49.8	mg/kg dry			30	
Diethyl Phthalate	<49.8	49.8	mg/kg dry			30	
4-Chlorophenyl phenyl ether	<49.8	49.8	mg/kg dry			30	
4,6-Dinitro-o-cresol	<249	249	mg/kg dry			30	
N-Nitrosodiphenylamine	<49.8	49.8	mg/kg dry			30	
1,2-Diphenylhydrazine (as Azobenzene)	<49.8	49.8	mg/kg dry			30	
4-Bromophenyl Phenyl Ether	<49.8	49.8	mg/kg dry			30	
Hexachlorobenzene	<49.8	49.8	mg/kg dry			30	
Pentachlorophenol	<249	249	mg/kg dry			30	
Phenanthrene	<49.8	49.8	mg/kg dry			30	
Anthracene	<49.8	49.8	mg/kg dry			30	
Di-n-butyl Phthalate	<49.8	49.8	mg/kg dry			30	
Fluoranthene	<49.8	49.8	mg/kg dry			30	
Benzidine	<99.5	99.5	mg/kg dry			30	
Pyrene	<49.8	49.8	mg/kg dry			30	
Butyl Benzyl Phthalate	<49.8	49.8	mg/kg dry			30	
3,3'-Dichlorobenzidine	<99.5	99.5	mg/kg dry			30	
Benzo(a)anthracene	<49.8	49.8	mg/kg dry			30	
Chrysene	<49.8	49.8	mg/kg dry			30	
Bis(2-Ethylhexyl)phthalate	<49.8	49.8	mg/kg dry			30	
Di-n-octyl Phthalate	<49.8	49.8	mg/kg dry			30	
Benzo(b)fluoranthene	<49.8	49.8	mg/kg dry			30	
Benzo(k)fluoranthene	<49.8	49.8	mg/kg dry			30	
Benzo(a)pyrene	<49.8	49.8	mg/kg dry			30	
Indeno(1,2,3-cd)pyrene	<49.8	49.8	mg/kg dry			30	



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Additional accreditations by MD (261), NY(12094)



M.J. Reider Associates, Inc.

Semivolatiles (Continued)

Result	Reporting Limit	Units	%REC	%REC Limits	RPD	RPD Limit	Analyte Notes
Batch B0I0978 (Continued)							
Duplicate (B0I0978-DUP1)							
			Source: 2028224-01		Prepared: 09/17/2020 Analyzed: 09/28/2020		
Dibenzo(a,h)anthracene	<49.8	49.8	mg/kg dry			30	
Benzo(ghi)perylene	<49.8	49.8	mg/kg dry			30	
-----							
Surrogate: 2-Fluorophenol	3.90		mg/kg dry	11.8	1-94		
Surrogate: Phenol-d5	6.97		mg/kg dry	21.0	1-116		
Surrogate: Nitrobenzene-d5	3.98		mg/kg dry	24.0	1-117		
Surrogate: 2-Fluorobiphenyl	4.89		mg/kg dry	29.5	1-124		
Surrogate: 2,4,6-Tribromophenol	9.54		mg/kg dry	28.7	1-109		
Surrogate: Terphenyl-d14	5.89		mg/kg dry	35.5	1-145		

Preparation Methods

Specific Method	Preparation Method	Prep Batch	Prepared Date	Prepared By
<b>2028224-01</b>				
<b>General Chemistry</b>				
Lachat 10-204-00-1X	EPA 9013	B0I0663	09/11/2020	RCE
<b>Organics</b>				
EPA 8081	EPA 3550 C	B0I0566	09/10/2020	RJD
EPA 8082	EPA 3550 C	B0I0566	09/10/2020	RJD
<b>Semivolatiles</b>				
EPA 8270	EPA 3550 C	B0I0978	09/17/2020	JLS
EPA 8270 SIM	EPA 3550 C	B0I0978	09/17/2020	JLS
<b>Total Metals</b>				
EPA 6010	EPA 3050 B	B0I0726	09/14/2020	HRG
EPA 7471	EPA 7471	B0I0560	09/10/2020	JAF
<b>Volatiles</b>				
EPA 8260	EPA 5035	B0I0482	09/09/2020	GXF
EPA 8260	EPA 5035	B0I0668	09/11/2020	GXF



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**Notes and Definitions**

- J Estimated value
- ND-02 The semi-volatile extract was analyzed for 2,3,7,8-Tetrachlorodibenzo-p-dioxin. There was no indication of the characteristic ion in the extract.
- O-11 Matrix spike had multiple recoveries outside acceptable limits. Please see QC report.
- O-11a The internal standards Chrysene-d12, Perylene-d12 were outside of the acceptable limits 50-200% ,compared to the middle standard in the curve, at 40.3%, 34.7% in the Blank.
- Q-07 The blank spike was outside acceptable limits of 70-130% recovery at 137%.
- Q-09 The blank spike was outside acceptable limits of 50-114% at 115% for PCB 1016-5.
- Q-26 The calibration verification was outside acceptable limits of 80-120% recovery at 51.5%.
- Q-26a The calibration verification was outside acceptable limits of 80-120% recovery at 67.8%.
- Q-26b The calibration verification was outside acceptable limits of 80-120% recovery at 73.8%.
- Q-32 The surrogate was outside acceptable limits of 1-109% at 115.45% in the blank spike..
- Q-32a The surrogate was outside acceptable limits of 1-94% at 0%.
- U Analyte was not detected above the indicated value.
- V-01 The continuing calibration verification response at +22.0% was outside the acceptable range of +/-20%.
- V-01a The continuing calibration verification response at +23.2% was outside the acceptable range of +/-20%.
- V-01b The continuing calibration verification response at +30.5% was outside the acceptable range of +/-30%.
- V-01c The continuing calibration verification response at +30.9% was outside the acceptable range of +/-30%.
- V-01d The continuing calibration verification response at +39.9% was outside the acceptable range of +/-30%.
- V-01e The continuing calibration verification response at +48.4% was outside the acceptable range of +/-30%.



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**M.J. Reider Associates, Inc.**

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**WORK ORDER  
Chain of Custody**

2028224



Client Code: 3021

Project Manager: Bradley T Griffiths

Report To: Morrisville Municipal Authority - Rich Dulay - 35 Union Street, Morrisville, PA 19067

Invoice To: Morrisville Municipal Authority - Rich Dulay - 35 Union Street, Morrisville, PA 19067

Client: Morrisville Municipal Authority

Project: Sludge Cake (PPL)

Comments: \_\_\_\_\_

Collected By: Rory Sullivan  
(Full Name)

**2028224-01 Morrisville Sludge Cake**

Ag EPA 6010, As EPA 6010, Be EPA 6010, Cd EPA 6010, CN Lachat 10204001X, Cr EPA 6010, Cu EPA 6010, Hg EPA 7471, Ni EPA 6010, Pb EPA 6010, PCBs EPA 8082 Individual, Pesticides EPA 8081, Phenols EPA 420.4, Sb EPA 6010, Se EPA 6010, Semi-VOA EPA 8270 PPL, Semi-VOA EPA 8270 SIM Dioxin, TI EPA 6010, TS-M (Dry Wt) SM 2540G, VOA EPA 8260 PPL, Zn EPA 6010

Matrix: Solid

Type: Grab

- A - Glass Jar 32 oz
- B - Glass Jar 32 oz
- C - Glass Jar 4 oz

Date: 9/3  
Time: 1050

<u>[Signature]</u>	_____	<u>[Signature]</u>	<u>9-9-20 0956</u>
Relinquished By	Date/Time	Received By	Date/Time
_____	_____	<u>[Signature]</u>	<u>9-9-20 1330</u>
Relinquished By	Date/Time	Received By	Date/Time
_____	_____	Received at Laboratory By	Date/Time

Sample Kit Prepared By: <u>MCS</u>	Date/Time <u>8-19-20</u>
Sample Temp (°C): <u>2</u>	Samples on Ice? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>
Approved By: <u>[Signature]</u>	Entered By: <u>[Signature]</u>

**M.J. Reider Associates, Inc.**

**MJRA Terms & Conditions**

All samples submitted must be accompanied by signed documentation representing a Chain of Custody (COC). The COC Record acts as a contract between the client and MJRA. Signing the COC form gives approval for MJRA to perform the requested analyses and is an agreement to pay for the cost of such analyses. COC Records must be completed in black or blue indelible ink (must not run when wet). COC documentation begins at the time of sample collection. Client is required to document all sample details prior to releasing samples to MJRA. All samples must be placed on ice immediately after sampling and shipped or delivered to the laboratory in a manner that will maintain the sample temperature above freezing and below 6C (loose ice is preferred).

**Sample Submission, Sample Acceptance & Sampling Containers**

Included on the COC must be the sample description, date and time of collection (including start and stop for composites), container size and type, preservative information, sample matrix, indication of whether the sample is a grab or composite, number of containers & a list of the tests to be performed. Poor sample collection technique, inappropriate sampling containers and/or improper sample preservation may lead to sample rejection. Suitable sample containers, labels, and preservatives (as applicable), along with blank COCs are provided at no additional cost.

**Turnaround Times (TAT)**

Average TAT for test results range from 5 to 15 working days depending on the specific analyses and time of year submitted. Faster turnaround times (\*RUSH TAT) may be available depending on the current workload in a particular department and the nature of the analyses requested. We encourage you to verify requests for expedited sample results with one of our Technical Directors prior to sample submittal. Without confirmation from a Technical Director, your results may not be completed by your deadline. \*RUSH TAT Surcharges are applied for expedited turnaround times.

**Analytical Results, Sample Collection Integrity & Subcontracting**

Analytical values are for the sample as submitted and relate only to the item tested. The value indicates a snapshot of the constituent content of the sample at the time of sample collection. Analytical results can be impacted by poor sample collection technique and/or improper preservation. All sample collection completed by MJRA was performed in accordance with applicable regulatory protocols or as specified in customer specific sampling plans. Constituent content will vary over time based on the matrix of the sample and the physical and chemical changes to its environment. All sample results and laboratory reports are strictly confidential. Results will not be available to anyone except the primary client or authorized party representing the client unless MJRA receives additional permissions from the client. When necessary, MJRA will subcontract certain analyses to a third party accredited laboratory. If client prohibits subcontracting, it must be provided in writing and include instruction on how to proceed with client samples that require third party analyses.

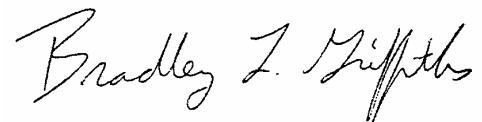
**Payment Terms**

Payment Terms are Net 30 days. Prices are subject to change without notice. A standing monthly charge of 1.5% of the clients over-30-day-unpaid balance may be added to the balance after 30 days and each month thereafter (day 31, 61, 91 etc.). The laboratory accepts all major credit cards, ACH transactions, checks and cash. New clients must pay for all services rendered prior to sample collection and/or in some cases report processing. Clients must contact the MJRA accounting department to pursue a credit-based account. MJRA reserves the right to terminate the client's credit account and to refuse to perform additional services on a credit basis if any balance is outstanding for more than 60 days.

**Warranty & Litigation**

MJRA does not guarantee any results of its services but has agreed to use its best efforts, in accordance with the standards and practices of the industry, to cause such results to be accurate and complete. We disclaim any other warranties, expressed or implied, including a warranty of fitness for a particular purpose and warranty of merchantability. Clients agree that they shall reimburse MJRA for any and all fees, cost and litigation expenses, including reasonable attorney fees incurred by MJRA in obtaining payment for the services rendered. All costs associated with compliance with any subpoena for documents, testimony, or any other purpose relating to work performed by MJRA, for a client, shall be paid by that client. MJRA's aggregate liability for negligent acts and omissions and of an intentional breach by MJRA will not exceed the fee paid for the services. Client agrees to indemnify and hold MJRA harmless for any and all liabilities in excess of said amount. Neither MJRA nor the client shall be liable to the other for special, incidental consequential or punitive liability or damages included but not limited to those arising from delay, loss of use, loss of profits or revenues. MJRA will not be liable to the client unless the client has notified MJRA of the discovery of the alleged negligent act, error, omissions or breach within 30 days of the

Reviewed and Approved by:



Bradley T Griffiths  
Project Manager



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**5. Warner Industrial Park Pump Stations –  
Development of Present And Projected  
Wastewater Flow To Pump Station**

**WARNER INDUSTRIAL PARK PUMP STATIONS**  
**Development of Present and Projected Wastewater Flow to Pump Station**

LOCATION	PRESENT FLOW	5-YEAR PROJECTION
	Average Daily Flowrate (gpd)	Average Daily Flowrate <sup>(2)</sup> (gpd)
<b><u>A. K-MART PUMP STATION DRAINAGE AREA</u></b>		
1. Existing South Warner Industrial Park Area (Subbasin I & II) <sup>(1)</sup>	56,934	56,934
2. Projected South Warner Industrial Park Area		
a. Paper Labeling Manufacturer (in Subbasin II)	-	2,650
b. Office Building (in Subbasin I)	-	280
c. Planned Industrial Park , PIP (in Subbasin I & II)	-	36,750
3. Existing Southern Portion of Planning Area <sup>(1)</sup>	258,451	
4. Projected Within Southern Portion of Planning Area		
a. Existing Mobile Home Park	-	
b. Single-family Dwelling	-	
c. Rental House and Business	-	
d. Proposed Pennwyn Place- Section III	-	
<b>Total Flow:</b>	<b>315,385</b>	<b>96,614 <sup>(3)</sup></b>
Average, gpm:	219	67
Peaking Factor:	3.5	3.5
<b>Total Peak Flow Rate, gpm:</b>	<b>767</b>	<b>235</b>
<b><u>B. PHILADELPHIA AVE. PUMP STATION DRAINAGE AREA</u></b>		
1. Existing North Warner Industrial Park Area - Subbasin III <sup>(1)</sup>	18,541	18,541
2. Projected North Warner Industrial Park Area - Subbasin III		
a. NJ Transit Storage Yard	-	2,500
b. Planned Industrial Park , PIP	-	8,988
c. Heavy Industrial, HI	-	15,400
d. Light Industrial, LI	-	23,100
3. K-Mart Pump Station Drainage Area <sup>(3)</sup>	315,385	96,614
4. Existing Southern Portion of Planning Area (Bypass of K-Mart P.S.) <sup>(1)</sup>	-	258,451
5. Projected Southern Portion of Planning Area (Bypass of K-Mart P.S.)		
a. Existing Mobile Home Park	-	35,550
b. Single-family Dwelling	-	700
c. Rental House and Business	-	700
d. Proposed Pennwyn Place- Section III	-	27,450
e. Light Industrial	-	13,300
f. Heavy Industrial - A district	-	26,600
h. Neighborhood Commercial	-	3,850
i. Neighborhood Commercial Residential	-	5,950
j. Undeveloped Mobile Home Park	-	26,600
k. Future Lovett's MHP Expansion	-	3,500
l. Convenience Store on Lovett's MHP	-	350
<b>Total Flow:</b>	<b>333,926</b>	<b>568,144</b>
Average, gpm:	232	395
Peaking Factor:	3.5	3.3
<b>Peak Flow Rate, gpm:</b>	<b>812</b>	<b>1,282</b>
6. w/ Waste Management Average Daily Flow	84	84
<b>Total Peak Flow Rate, gpm:</b>	<b>896</b>	<b>1,366</b>

**Notes:**

- (1) Existing (Base) flows based on actual quarterly water data 1999 to 2000
- (2) Projected flows are based on 350 gpd/EDU (residential flow)
- (3) A projected annual average flow of 403,001 gallons per day to bypass the K-Mart P.S.
- (4) Maximum of 60,000 gpd per DRBC Docket with a peaking factor of 2.0.

(use 1,425)

**6. Warner Industrial Park Pumping Stations –  
Summary of Pump Station’s Hydraulic Loadings**

# WARNER INDUSTRIAL PARK PUMPING STATIONS

## Summary of Pump Station's Hydraulic Loadings

Description	Present	Projected 5-Year	vs.	*Approximated Maximum Pumping Rate (gpm)
	Peak Flow (gpm)	Max. Hourly Peak Flow (gpm)		
<b>A. K-MART P.S. DRAINAGE BASIN</b> 1. South Warner Industrial Park 2. Southern Portion of Planning Area <div style="text-align: right;"><b>Total:</b></div>	138 <u>628</u> <b>767</b>	235 <u>0</u> <b>235</b>		
3. <i>K-Mart Pump Station</i>	-	-		770
<b>B. PHILADELPHIA AVE. P.S. DRAINAGE BASIN</b> 1. K-Mart P.S. Drainage Basin 2. North Warner Industrial Park 3. **Southern Portion of Planning Area 4. Waste Management (@ 84 gpm A.D.F.) <div style="text-align: right;"><b>Total:</b></div>	767 45 - <u>84</u> <b>896</b>	218 155 910 <u>84</u> <b>1366</b>		
5. <i>Philadelphia Ave. Pump Station</i>	-	-		1425

Note:

1. (\*) Capacity of one pump running at Pump Station, see Pump Manufacturer Curve in Appendix
2. (\*\*) A projected annual average flow of 403,001 gallons per day to bypass the K-Mart P.S.



**7. Morrisville Wastewater Treatment Plant  
Calibration Meter Certificates**

# WG Malden

P.O. BOX 196, EAST EARL, PA 17519  
PHONE: (717) 768-0800 FAX: (717) 768-0802

## \*\*\* SERVICE REPORT \*\*\*

MORRISVILLE MUNICIPAL AUTHORITY  
RIVERVIEW ROAD  
MORRISVILLE, PA 19067

**SERVICE DATE:** JANUARY 19, 2021    **SERVICE CONTRACT:** SEMI-ANNUAL (S2)  
**LOCATION:** EFFLUENT  
**METER #:** D0071 AA

**PRIMARY:** FLUME PARSHALL 24 INCH  
**MAXIMUM CAPACITY:** 13950 GPM

**METER:** TELEDYNE ISCO  
**RECORDER:**

**MODEL #:** SIGNATURE US  
**MODEL #:** N/A

**SERIAL #:** 218H01217  
**SERIAL #:** N/A

---

## \*\*\* WORK PERFORMED \*\*\*

<b>METER CALIBRATION</b>	<b>ERROR:</b> -0.5 INCHES	<b>TOLERANCE:</b> ±0.125 INCHES
<b>METHOD:</b> LEVEL MEASUREMENTS AND FLOW CHECKS		
<b>RECORDER CALIBRATION</b>	<b>ERROR:</b> N/A	<b>TOLERANCE:</b> N/A
<b>CHECKED AT:</b> N/A		
<b>TOTALIZER CALIBRATION</b>	<b>ERROR:</b> 0	<b>TOLERANCE:</b> ±1.000 %
<b>CHECKED AT:</b> OPERATING VALUE		

---

## \*\*\* TECHNICIAN COMMENTS \*\*\*

PERFORMED SEMI-ANNUAL CALIBRATION  
CLEANED PRIMARY  
ADJUSTED EQUIPMENT  
VERIFIED TOTALIZER (PASSED)  
LEFT EQUIPMENT OPERATING PROPERLY

**SERVICE REPRESENTATIVE(S):** PATRICK MCNALLY

## **8. Pump Manufacturer Curves**

**FLYGT**

# PERFORMANCE CURVE

PRODUCT  
**NP3153.180**  
TYPE  
**HT**

DATE  
**2004-03-08**

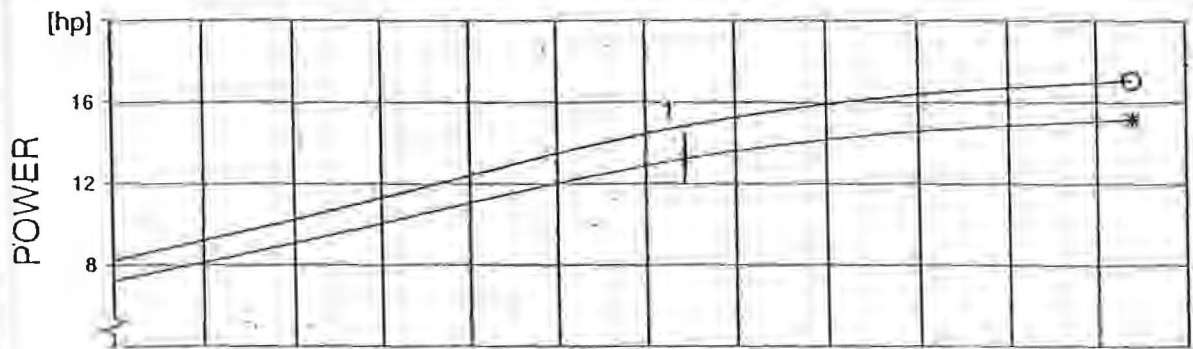
PROJECT  
**MORRISVILLE---K MART**

CURVE NO  
**63-456-00-6050**

ISSUE  
**2**

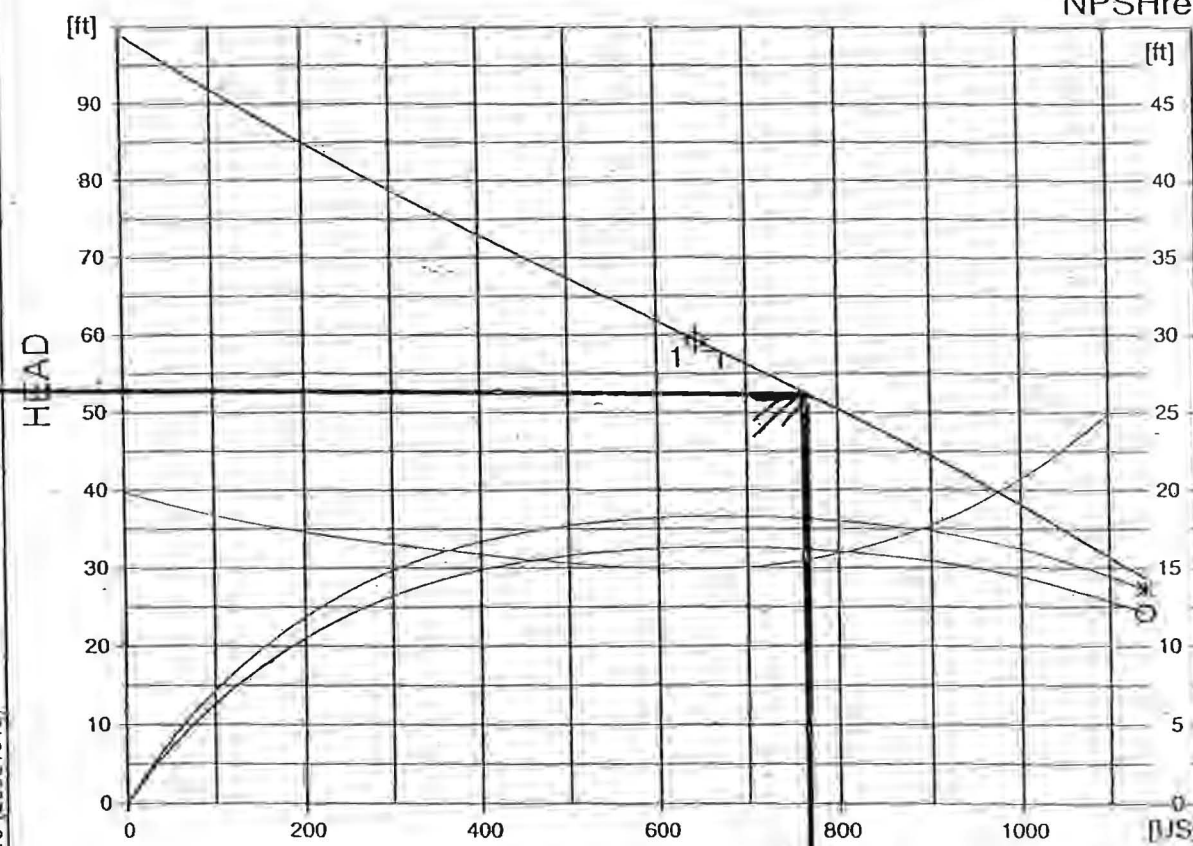
POWER FACTOR	1/4-LOAD	3/4-LOAD	1/2-LOAD	RATED POWER .....	18	hp
	0.82	0.76	0.64	STARTING CURRENT ...	148	A
EFFICIENCY	88.0 %	89.0 %	88.5 %	RATED CURRENT ...	23	A
MOTOR DATA	INLET/OUTLET			RATED SPEED .....	1760	rpm
COMMENTS	- /100 mm			TOT.MOM.OF INERTIA ...	0.083	kgm2
	IMP. THROUGHLET			NO.OF BLADES	2	

IMPELLER DIAMETER			
229 mm			
MOTOR #	STATOR	REV	
21-18-4AA	05YSER	11	
FREQ. ...	PHASES	VOLTAGE	POLES
60 Hz	3	460 V	4
GEARTYPE		RATIO	



DUTY-POINT	FLOW[USgpm]	HEAD[ft]	POWER [hp]	EFF. [%]	NPSHre[ft]
1	645	59.4	14.9 ( 13.3)	65.3 (73.2)	14.9
B.E.P.	672	57.9	15.1 ( 13.5)	65.4 (73.3)	15.0

O OVERALL EFF.  
\* PUMP EFF.  
O INPUT POWER  
\* SHAFT POWER



EFF. [%]  
BEST EFF. POINT : □

54 FT.

FLOW ← 770 GPM

FLY92.19 (20021015)

NPSHre = NPSH3% + min. operational margin  
Performance with clear water and ambient temp 40 °C

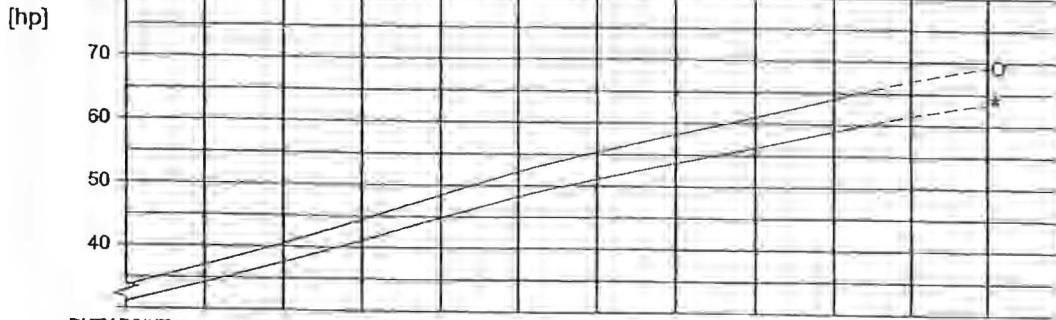
**FLYGT** CURVE



# PERFORMANCE CURVE

DATE <b>2006-05-23</b>		PROJECT: <b>Morrisville - Philadelphia Ave</b>			ISSUE <b>3</b>		PROD <b>NP 3202.180 HT</b>	
NO. OF BLADES..... <b>2</b>		TOT. MOM. OF INERTIA..... <b>0.376 KGM<sup>2</sup></b>		POLES <b>4</b> FREQ. <b>60</b> HZ		CURVE NO <b>63-458-00-30 50</b>		
		RATED SPEED..... <b>1775 RPM</b>		VOLTAGE..... <b>460 V</b>		IMPELLER DIAMETER <b>310</b> MM		
				MOTOR SHAFT POWER..... <b>45 kW</b>		MOTOR TYPE <b>30-24-4AA /01 (10)</b>		
				STARTING TORQUE..... <b>60 hp</b>		GEAR TYPE    RATIO		
				MAX TORQUE..... <b>350 NM</b>				
				TORQUE..... <b>710 NM</b>				
				CURRENT..... <b>68 A</b>				
				STARTING CURRENT..... <b>465 A</b>				
MOTOR COS PHI		1/1-LOAD	3/4-LOAD	1/2-LOAD				
		<b>0.89</b>	<b>0.86</b>	<b>0.79</b>				
MOTOR EFFICIENCY		<b>91.5%</b>	<b>92.5%</b>	<b>92.0%</b>				
GEAR EFFICIENCY								

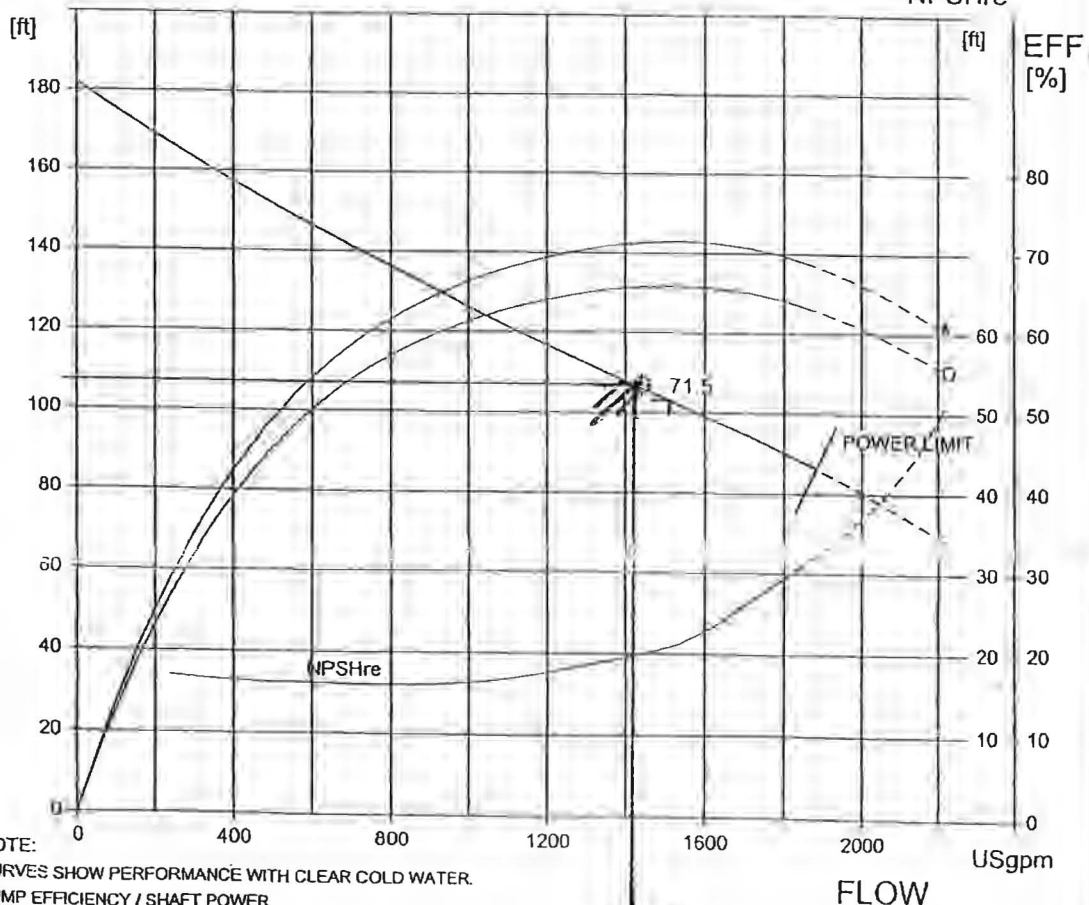
## POWER



DUTY POINTs:

FLOW(USgpm)	HEAD(ft)	EFF. [%]	NPSH <sub>req</sub> (ft)	GUARANTEE
1440	107	65.8 (71.3)	20.6	HI level B

## HEAD



NOTE:  
 CURVES SHOW PERFORMANCE WITH CLEAR COLD WATER.  
 \* : PUMP EFFICIENCY / SHAFT POWER  
 O : OVERALL EFFICIENCY / INPUT POWER  
 $NPSH_{req} = NPSH_3\% + \text{min. operational margin}$

*DESIGN Point*

*1425gpm @ 109ft*

**9. Scheduled or Completed Maintenance  
Work at the Plant**

## **Capital Projects for 2020**

1. Networking Installation
2. Bisulfite Room Rebuild
3. Grit Chamber Chain and Shaft Rebuild
4. PS-1 Pump and Valve Replacement
5. K-Mart Pump and Valve Replacement

**10. Copy of Morrisville Wastewater Treatment  
Plant's National Pollutant Discharge  
Elimination Permit (NPDES).**





**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

**NPDES PERMIT NO: PA0026701**

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.*,

**Municipal Authority of Borough of Morrisville  
35 Union Street  
Morrisville, PA 19067**

is authorized to discharge from a facility known as **Morrisville Borough STP**, located in **Morrisville Borough, Bucks County**, to **Delaware River** in Watershed(s) **2-E** 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** DECEMBER 1, 2014

**THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON** NOVEMBER 30, 2019

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))

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 18, 2014

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

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001 \*, Latitude 40° 12' 13.00", Longitude 74° 45' 58.00", River Mile Index 133, Stream Code 00002

Receiving Waters: Delaware River through existing outfall without diffuser

Type of Effluent: Treated sewage

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	When Discharging	Estimate
Duration of Discharge (minutes)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Recorded

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

\*See other requirement no. VII.

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. B. For Outfall 002, Latitude 40° 12' 14.00", Longitude 74° 45' 54.00", River Mile Index 132.16, Stream Code 00002

Receiving Waters: Delaware River through new outfall with diffuser

Type of Effluent: Treated sewage

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 002 (Primary Outfall)

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. C. For Outfall MP201 , Latitude 40° 12' 13.00" , Longitude 74° 45' 58.00" , River Mile Index 132.160 , Stream Code 00002

Receiving Waters: Delaware River

Type of Effluent: Treated sewage

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)			Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum			Instant. Maximum
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Color (Pt-Co Units)	XXX	XXX	XXX	XXX	XXX	100	1/week	Grab
CBOD5 Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
CBOD5	1,302	1,954 Wkly Avg	XXX	22	33 Wkly Avg	44	1/day	24-Hr Composite
BOD5 Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD20	1,916	XXX	XXX	XXX	XXX	XXX	1/week	24-Hr Composite

**Outfall 201, Continued (from Permit Effective Date through Permit Expiration Date)**

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
CBOD20 % Removal Percent Removal	XXX	XXX	88.5 Min % Removal	XXX	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Suspended Solids	1,775	2,665 Wkly Avg	XXX	30	45 Wkly Avg	60	1/day	24-Hr Composite
Total Dissolved Solids	XXX	59,214	XXX	XXX	1,000	XXX	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/day	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000 *	1/day	Grab
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen	2,070	XXX	XXX	35	XXX	70	1/day	24-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	Report	1/week	24-Hr Composite
Total Copper	4.0	5.9	XXX	0.067	0.10	0.135	1/month	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)			Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum			Instant. Maximum
Total Zinc	35	52.7	XXX	0.594	0.89	1.18	1/month	24-Hr Composite
1,4-Dioxane	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phenolics	Report	Report	XXX	Report	Report	Report	1/week	24-Hr Composite
PCBs (Dry Weather) (pg/L) **	XXX	XXX	XXX	XXX	Report	XXX	2/year	24-Hr Composite
PCBs (Wet Weather) (pg/L) **	XXX	XXX	XXX	XXX	Report	XXX	2/year	24-Hr Composite
Chronic Toxicity - Ceriodaphnia Survival (TUc)***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Chronic Toxicity -Ceriodaphnia Reproduction (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Chronic Toxicity - Pimephales Survival (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Chronic Toxicity - Pimephales Growth (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Monitoring Point MP 201

\* See other requirement no VI, \*\* see other requirement no. V, \*\*\* see other requirement no.IV

**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). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))
  - 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))
  - d. 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. The monthly average percent removal of BOD<sub>5</sub> or CBOD<sub>5</sub> and TSS must be at least 85% for POTW facilities on a concentration basis except where 25 Pa. Code 92a.47(g) and (h) are applicable to facilities with combined sewer overflows (CSOs) or as otherwise specified in this permit. (25 Pa. Code § 92a.47(a)(3))
3. 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.
4. 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 hydraulic design capacity of 8.7 million gallons per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to help determine whether a "hydraulic overload" situation exists, as defined in Title 25 Pa. Code Chapter 94.
- (2) The effluent limitations for Outfalls 001, 001 and 002 were determined using effluent discharge rates of 7.1 MGD, 7.1 MGD and 7.1 MGD, respectively.
- (3) The organic design capacity of 18140 lbs BOD<sub>5</sub> per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to determine whether an "organic overload" condition exists, as defined in 25 Pa. Code Chapter 94.
- (4) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO<sub>2</sub>+NO<sub>3</sub>-N), where TKN and NO<sub>2</sub>+NO<sub>3</sub>-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(l)(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. (EPA Form 2C)

*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. (25 Pa. Code § 92a.2, 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 self-monitoring 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 n<sup>th</sup> root of their product.



*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)

*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.

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

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

*Indirect Discharger* means a non-domestic discharger introducing pollutants to a Publicly Owned Treatment Works (POTW) or other treatment works. (25 Pa. Code § 92a.2, 40 CFR 122.2)

*Industrial User* means a source of Indirect Discharge. (40 CFR 403.3)

*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)

*Municipality* means a city, town, borough, county, township, school district, institution, authority or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes. (25 Pa. Code § 92a.2)

*Municipal Waste 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. (25 Pa. Code § 271.1)

*Publicly Owned Treatment Works (POTW)* means a treatment works as defined by §212 of the Clean Water Act, owned by a state or municipality. The term includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also includes sewers, pipes or other conveyances if they convey wastewater to a POTW providing treatment. The term also means the municipality as defined in section 502(4) of the Clean Water Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. (25 Pa Code § 92a.2, 40 CFR 122.2)

*Residual Waste 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. (40 CFR 122.41(m)(1)(ii))

*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.

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

*Weekly Average Discharge Limitation* means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

### III. SELF-MONITORING, REPORTING AND RECORDKEEPING

#### A. Representative Sampling

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(j)(1)). 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. (40 CFR 122.48, 25 Pa. Code § 92a.61)
2. Records Retention (40 CFR 122.41(j)(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, unless a longer retention period is required by the permit. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

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

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. (40 CFR 122.41(j)(4))

**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))
2. 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

NPDES Enforcement Branch (3WP42)  
Office of Permits & Enforcement  
Water Protection Division  
U.S. EPA - Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

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:
  - 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(l)(4)(ii))

#### C. Reporting and Notification Requirements

1. **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(l)(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(l)(2))
2. **Planned Changes to Waste Stream** – Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA 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 POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR 122.42(b)(3)). 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), 40 CFR 122.42(b)(1))

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

- (i) Any pollutants that were not detected in the facilities' influent waste stream as reported in the permit application; and have not been approved to be included in the permittee's influent waste stream by DEP in writing.
- (ii) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants (40 CFR 122.42(b)(1)).

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), 40 CFR 122.42(b)(2))

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

- (i) Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or have been previously approved to be included in the permittee's influent waste stream by DEP in writing.
- (ii) 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 and/or EPA, 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 POTW, 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, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, 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 BOD<sub>5</sub> 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. The influent BOD<sub>5</sub> characterization for the treatment facility, as reported in the annual Municipal Wasteload Management Report per 25 Pa. Code Chapter 94, must be representative of the hauled-in municipal wastes received.

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(l)(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 (40 CFR 122.41(l)(6)(ii)):
    - (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.
  - (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(l)(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))



**PART B**

**I. MANAGEMENT REQUIREMENTS**

A. Compliance Schedules (25 Pa. Code § 92a.51, 40 CFR 122.47(a))

1. The permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit.
2. 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. (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 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))
3. 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. (40 CFR 122.41(l)(8))
4. The permittee shall provide the following information in the annual Municipal Wasteload Management Report, required under the provisions of Title 25 Pa. Code Chapter 94:
  - a. The requirements identified in 25 Pa. Code § 94.12.
  - b. The identity of any indirect discharger(s) served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the indirect discharger.
  - c. A "Solids Management Inventory" if specified in Part C of this permit.
  - d. The total volume of hauled-in residual and municipal wastes received during the year, by source.
  - e. The Annual Report requirements for permittees required to implement an industrial pretreatment program listed in Part C, as applicable.

D. General Pretreatment Requirements

1. Any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (MGD) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to Pretreatment Standards will be required to establish a POTW Pretreatment Program unless specifically exempted by the Approval Authority. A POTW with a design flow of 5 MGD or less may be required to develop a POTW Pretreatment Program if the Approval Authority finds that the nature or volume of the industrial influent, treatment process upsets, violations of effluent limitations, contamination of sludge, or other circumstances warrant in order to prevent interference or pass through. (40 CFR 403.8)
2. Each POTW with an approved Pretreatment Program pursuant to 40 CFR 403.8 shall develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5(a)(1) and (b), and shall continue to develop these limits as necessary and effectively enforce such limits. This condition applies, for example, when there are planned changes to the waste stream as identified in Part A III.C.2. If the permittee is required to develop or continue implementation of a Pretreatment Program, detailed requirements will be contained in Part C of this permit.
3. For all POTWs, 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. Where POTWs do not have an approved Pretreatment Program, the permittee shall submit a copy of such limits to DEP when developed. (25 Pa. Code § 92a.47(d))

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

1. 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 CFR 122.41(m)(4)(i)(A))
  - 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 paragraph G.4 below. (40 CFR 122.41(m)(4)(i)(C))

3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in paragraph G.2 above. (40 CFR 122.41(m)(4)(ii))

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. (40 CFR 122.41(m)(3)(i))

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 CFR 122.41(c))

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:

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; (40 CFR 122.41(i)(2))
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. (40 CFR 122.41(i)(4))

B. Transfer of Permits

1. 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 (40 CFR 122.61(b)(2))
  - 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 Department 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. (40 CFR 122.41(g))

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. (40 CFR 122.41(b))

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.

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 and 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: **Major Sewage Facility ≥ 5 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 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. 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.

- E. 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.
- F. The permittee shall develop a treatment facility operations and maintenance (O&M) plan addressing key wastewater processes. The plan shall be reviewed annually and updated when appropriate. The plan shall be submitted to DEP for review upon request. For the purpose of this paragraph, a key wastewater process includes any equipment or process that, if it fails, may cause the discharge of raw wastewater or wastewater that fails to meet NPDES permit discharge requirements, or a failure that may threaten human or environmental health. The O&M plan shall include the following, at a minimum:
  - 1. A process control strategy that includes a schedule for process control sampling, monitoring, testing, and recordkeeping.
  - 2. A plan that identifies how key wastewater processes shall be monitored and adjusted while the facility is staffed.
  - 3. A plan that identifies how key wastewater processes will be monitored while the treatment facility is not staffed.
  - 4. For treatment plants that are impacted by wet weather flows, the permittee shall develop and implement a wet weather operations strategy that minimizes or eliminates the wash out of solids from the treatment system while maximizing the flow through the treatment plant.

5. An emergency plan that identifies how the facility will be operated during times of emergency. For example, the plan shall detail how key wastewater processes will be repaired or replaced in the event of a failure while minimizing loss of life and property damage to the facility. This plan shall also include emergency contact numbers for local emergency response agencies, plant personnel, critical suppliers and vendors, and DEP contacts, at a minimum.
  6. A preventative maintenance plan that includes a schedule for preventative maintenance for all equipment within the treatment system. A spare parts inventory shall be included as part of this plan.
  7. A solids management plan that identifies how solids produced by the facility will be wasted, treated, and ultimately disposed of.
- G. The permittee shall not accept hauled-in wastes at the treatment facility under the following conditions, unless otherwise approved by DEP in writing:
- When acceptance of hauled-in wastes would cause a hydraulic or organic overload as defined in Chapter 94.1 of the DEP's regulations.
  - When the treatment facility is considered to be in an existing hydraulic or organic overload condition, as determined by the permittee or DEP, as defined in Chapter 94.1 of the DEP's regulations.
  - When the instantaneous flow at the treatment facility exceeds 26.1 MGD (the Chapter 94 hydraulic design capacity of the facility multiplied by a peaking factor of three), and for 24 hours following exceedance of this threshold.
- H. For the purpose of determining compliance with Part A, Additional Requirements, paragraph 1.d, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water.

## II. POTW PRETREATMENT PROGRAM IMPLEMENTATION

- A. General Requirement – The permittee shall operate and implement a POTW pretreatment program in accordance with the federal Clean Water Act, the Pennsylvania Clean Streams Law, and the federal General Pretreatment Regulations at 40 CFR Part 403. The program shall also be implemented in accordance with the permittee's approved pretreatment program and any modifications thereto submitted by the permittee and approved by the Approval Authority.
- B. Annual Report and Other Requirements – The permittee shall submit a Pretreatment Annual Report by March 31 of each year to EPA that describes the permittee's pretreatment activities for the previous calendar year. The Pretreatment Annual Report shall include a description of pretreatment activities in all municipalities from which wastewater is received at the permittee's POTW. The Pretreatment Annual Report shall include the following information, at minimum:
1. Industrial Listing – The Annual Report shall contain an updated industrial listing providing the names and addresses of all current Significant Industrial Users (SIUs) and Non-Significant Categorical Industrial Users (NSCIUs), as defined in 40 CFR 403.3, and the categorical standard, if any, applicable to each. The listing must: (1) identify any users that are subject to reduced reporting requirements under 40 CFR 403.12(e)(3); (2) identify which users are NSCIUs; (3) identify any users that have been granted a monitoring waiver in accordance with 40 CFR 403.12(e)(2) as well as the pollutants for which the waiver was granted and the date of the last POTW sampling event for each pollutant; and (4) identify any categorical industrial users that have been given mass-based limits in place of concentration-based categorical limits in accordance with 40 CFR 403.6(c)(5) or concentration-based limits in place of mass-based categorical limits in accordance with 40 CFR 403.6(c)(6).

In addition, the Annual Report shall contain a summary of any hauled-in wastes accepted at the POTW including the source of the wastes (domestic, commercial or industrial) and the receiving location for acceptance of the wastes. For each industrial source (whether or not classified as an SIU), the report

shall indicate (1) the name and address of the industrial source; (2) the average daily amount of wastewater received; (3) a brief description of the type of process operations conducted at the industrial facility; (4) whether the source facility is a categorical industrial user (including NSCIU), significant industrial users, or non-significant industrial user; and (5) any controls imposed on the user.

2. Control Mechanism Issuance – The Annual Report shall contain a summary of SIU control mechanism issuance, including a list of issuance, effective, and expiration dates for each SIU control mechanism. For each general control mechanism issued, provide the names of all SIUs covered by the general control mechanism and an explanation of how the users meet the criteria of 40 CFR 403.8(f)(1)(iii)(A) for issuance of a general control mechanism.
3. Sampling and Inspection – The Annual Report shall contain a summary of the number and types of inspections and sampling events of SIUs by the permittee, including a list of all SIUs either not sampled or not inspected, and the reason that the sampling and/or inspection was not conducted. For any user subject to reduced reporting under 40 CFR 403.12(e)(3), the list shall include the date of the last POTW sampling event and the date of the last POTW inspection of the user. In addition, the report shall include a summary of the number of self-monitoring events conducted by each SIU and the number required to be conducted, including a list of all SIUs that did not submit the required number of reports and the reason why the reports were not submitted. For NSCIUs, the report shall provide the date of the compliance certification required under 40 CFR 403.12(q).
4. Industrial User Compliance and POTW Enforcement – The Annual Report shall contain a summary of the number and type of violations of pretreatment standards and requirements, including local limits, and the actions taken by the permittee to obtain compliance, including compliance schedules, penalty assessments and actions for injunctive relief. The report shall state whether each SIU was in significant noncompliance, as that term is defined in 40 CFR Section 403.8(f)(2)(viii), and include the parameter(s) in violation, the period of violation, the actions taken by the POTW in response to the violations, and the compliance status at the end of the reporting period. A copy of the publication of users meeting the significant noncompliance criteria shall be included. In addition, the report shall provide a list of users previously designated as NSCIUs that have violated (to any extent) any pretreatment standard or requirement during the year and the date and description of the violation(s).
5. Summary of POTW Operations – The Annual Report shall contain a summary of any interference, pass-through, or permit violations by the POTW and indicate the following: (1) which, if any, permit violations may be attributed to industrial users; (2) which IU(s) are responsible for such violations; and (3) the actions taken to address these events. The report shall also include all sampling and analysis of POTW treatment plant influent, effluent, and sludge conducted during the year for local limit and priority pollutants identified pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d).
6. Pretreatment Program Changes – The Annual Report shall contain a summary of any changes made or proposed to the approved program during the period covered by the report and the date of submission to the Approval Authority.

A summary of pretreatment activities shall be incorporated into the permittee's Annual Municipal Wasteload Management Report required by 25 Pa. Code Chapter 94 and referenced in Part B I.C.4 of this permit.

- C. Routine Monitoring – The permittee shall conduct monitoring at its treatment plant that, at a minimum, includes quarterly influent, effluent, and sludge analysis for all pollutants for which local limits have been established, and an annual priority pollutant scan for influent and sludge.
- D. Notification of Pass Through or Interference – The permittee shall notify EPA and DEP, in writing, of any instance of pass through or interference, as defined at 40 CFR 403.3(p) and (k), respectively, known or suspected to be related to a discharge from an IU into the POTW. The notification shall be attached to the DMR submitted to EPA and DEP and shall describe the incident, including the date, time, length, cause (including responsible user if known), and the steps taken by the permittee and IU (if identified) to address the incident. A copy of the notification shall also be sent to the EPA at the address provided below.



- E. Headworks Analysis – The permittee shall submit to EPA a reevaluation of its local limits based on a headworks analysis of its treatment plant within one (1) year of permit issuance, and provide a revised submission within three (3) months of receipt of comments from EPA or DEP unless a longer period of time is granted in writing by EPA or DEP. In order to ensure that the permittee's discharge complies with water quality standards, the reevaluation of local limits shall consider, at a minimum, all water quality standards under 25 Pa. Code Chapter 93 applicable to the pollutants included in the reevaluation, unless the POTW is subject to an effluent limitation for the pollutant in Part A of this permit. The list of pollutants to be evaluated, as well as a sampling plan for collection of necessary data, shall be submitted to EPA within three (3) months of permit issuance. Unless otherwise approved in writing, the list of pollutants shall include arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, BOD<sub>5</sub>, TSS, ammonia, any pollutants for which a local limit currently exists, any pollutant limited in this permit, as well as any other pollutants that have been identified in the POTW through monitoring or the receipt of indirect discharges and hauled-in wastes in quantities that have the potential to cause pass through and/or interference. For example, facilities receiving residual waste from oil and gas operations should include pollutants such as Total Dissolved Solids (TDS), specific ions such as chlorides and sulfates, specific radionuclides, metals such as barium and strontium, and other pollutants that could reasonably be expected to be present. Within four (4) months of acceptance of the headworks analysis by the Approval Authority, the permittee shall adopt the revised local limits and, if necessary to ensure that the limits are enforceable throughout the service area, notify all contributing municipalities of the need to adopt the revised local limits.
- F. Changes to Pretreatment Program – EPA and DEP may require the permittee to submit for approval changes to its pretreatment program if any one or more of the following conditions is present:
1. The program is not implemented in accordance with 40 CFR Part 403;
  2. Problems such as interference, pass through or sludge contamination develop or continue;
  3. The POTW proposes to introduce new pollutants or an increased loading of approved pollutants as described in Part A III.C.2 of this permit;
  4. Federal, State, or local requirements change;
  5. Changes are needed to assure protection of waters of the Commonwealth.

Program modification is necessary whenever there is a significant change in the operation of the pretreatment program that differs from the information contained in the permittee's submission, as approved under 40 CFR 403.11.

- G. Procedure for Pretreatment Program Changes – Upon submittal by the permittee, and written notice of approval by the Approval Authority to the permittee of any changes to the permittee's approved pretreatment program, such changes are effective and binding upon the permittee unless the permittee objects within 30 days of receipt of the written notice of approval. Any objection must be submitted in writing to EPA and DEP.
- H. Correspondence – The Approval Authority shall be EPA at the following address:

Pretreatment Coordinator (3WP41)  
 U.S. Environmental Protection Agency  
 1650 Arch Street  
 Philadelphia, PA 19103-2029

### III. SOLIDS MANAGEMENT

- A. The permittee shall manage and properly dispose of sewage sludge and/or biosolids, produced by the system, by balancing the amount of solids maintained within the treatment system. The permittee shall develop a scheduled sludge wasting rate that maintains an appropriate mass balance for the specific treatment process type and system loadings and maintains compliance with permit effluent conditions.

Holding excess sludge within clarifiers or in the disinfection process is not acceptable. The permittee shall compute and set the wasting rate and time so as to maintain an appropriate balance of sludge in the system. Seasonal variations shall be considered in developing sludge wasting rates.

- B. The permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Sewage Sludge/Biosolids Production and Disposal" (Form No. 3800-FM-BPNPSM0438) and "Supplemental Report – Influent & Process Control" (Form No. 3800-FM-BPNPSM0436), as attachments to the DMR on a monthly basis. When applicable, the permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Hauled In Municipal Wastes" (Form No. 3800-FM-BPNPSM0437) and "Supplemental Report – Hauled In Residual Wastes" (Form No. 3800-FM-BPNPSM0450), as attachments to the DMR.
- C. By March 31 of each year, the permittee shall submit a "Sewage Sludge Management Inventory" that summarizes the amount of sewage sludge and/or biosolids produced and wasted during the calendar year from the system. The "Sewage Sludge Management Inventory" may be submitted with the Municipal Wasteload Management Report required by Chapter 94. This summary shall include the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, "Improving POTW Performance Using the Composite Correction Approach" (EPA-625/6-84-008), compared with the actual amount disposed during the year. Sludge quantities shall be expressed as dry weight in addition to gallons or other appropriate units.

#### IV. WHOLE EFFLUENT TOXICITY (WET)

##### A. General Requirements

- 1. The permittee shall conduct chronic WET tests as specified in this section. The permittee shall collect discharge samples and perform WET tests to generate chronic survival/reproduction data for the cladoceran, *Ceriodaphnia dubia* and chronic survival/growth data for the fathead minnow, *Pimephales promelas*.
- 2. Samples shall be collected at Monitoring Point MP 201 in accordance with paragraph E.
- 3. The permittee shall perform testing using the following dilution series: 1%, 2%, 30%, 60%, and 100% effluent, with a control, where 1% is the facility-specific Target In-Stream Waste Concentration (TIWC).
- 4. The determination of whether a test endpoint passes or fails shall be made using DEP's WET Analysis Spreadsheet (available at [www.depweb.state.pa.us/wett](http://www.depweb.state.pa.us/wett)) by comparing replicate data for the control with replicate data for the TIWC dilution or any dilution greater than the TIWC.
- 5. The permittee shall submit only valid WET test results to DEP.

##### B. Test Frequency and Reporting

- 1. WET testing shall be conducted quarterly, beginning within 30 days of the permit effective date. Tests shall be completed within calendar quarters, i.e., one test each during the periods of January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. A complete WET test report shall be submitted to the DEP regional office that issued the permit within 45 days of test completion. A complete WET test report submission shall include the information contained in paragraph H, below.
- 2. If a test failure is determined for any endpoint during quarterly monitoring, the permittee shall initiate a re-test for the species with the failure, at a minimum, within 45 days of test completion. All endpoints for the species shall be evaluated in the re-test. The results of the re-test shall be submitted to the DEP regional office that issued the permit.
- 3. If a passing result is determined for all endpoints in a re-test, the permittee continue with quarterly monitoring, as applicable.

4. If there is a failure for one or more endpoints in a re-test, the permittee shall continue quarterly WET testing for both species. The results of all tests shall be submitted to the DEP regional office that issued the permit. In addition, the permittee shall initiate a Phase I Toxicity Reduction Evaluation (TRE) as specified in paragraph C, below.
5. The permittee must report the results of each test endpoint that has a WET limit in Part A of this permit on the Discharge Monitoring Report (DMR). Test results shall be reported on the DMR in terms of acute or chronic Toxicity Units (TU<sub>a</sub> or TU<sub>c</sub>), where TU<sub>a</sub> is used for acute tests and TU<sub>c</sub> is used for chronic tests. If DEP's WET Analysis Spreadsheet indicates a passing result for an endpoint, report the value obtained from the expression "1/TIWC", which is equivalent to the permit limit. If the Spreadsheet indicates a failure, report the value obtained from the expression "> 1/TIWC". If a dilution higher than the TIWC dilution is used for the comparison with the control, report the value obtained from the expression "1/dilution". For example, an acute test endpoint failure at a TIWC dilution of 50% would be reported as "> 2.0 TU<sub>a</sub>" (1/0.5).
6. The permittee shall attach a completed WET Analysis Spreadsheet for the latest four consecutive WET tests to the NPDES permit renewal application that is submitted to DEP at least 180 days prior to the permit expiration date.

#### C. Phase I Toxicity Reduction Evaluation (TRE)

1. The Phase I TRE trigger is one WET endpoint failure followed by a re-test that confirms the failure for the same species. When the Phase I TRE process is triggered, quarterly WET testing shall be continue. The Phase I TRE may include a Toxicity Identification Evaluation (TIE) if the permittee cannot immediately identify the possible causes of the effluent toxicity and the possible sources of the causative agents.
2. The permittee shall, within one year following the Phase I TRE trigger, submit a Phase I TRE report to the DEP regional office that issued the permit. The Phase I TRE shall be conducted in accordance with EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. If a TIE is conducted as part of the Phase I TRE, it shall conform to EPA's guidance, "Methods for Aquatic Toxicity Identification Evaluations Phase I" (EPA/600/6-91/003), "Phase II" (EPA/600/R-92/080), "Phase III" (EPA/600/R-92/081) and other relevant EPA guidance. The Phase I TRE report shall be submitted with the fourth quarterly WET test report that is completed following the Phase I TRE trigger. The TRE report shall include all activities undertaken to identify the cause(s) and source(s) of toxicity and any control efforts.
3. If all four quarterly WET tests produce passing results for all endpoints during the Phase I TRE process, performances of a Phase II TRE is not required and continue with quarterly WET testing in accordance with paragraph B.1
4. If the four WET tests produce at least one failing result during the Phase I TRE process, the permittee shall continue quarterly WET monitoring for both species and initiate a Phase II TRE in accordance with paragraph D. In this case, the Phase I TRE must include a schedule for completion of the Phase II TRE. The schedule must include interim milestones and a final completion date not to exceed two years from the initiation of the Phase II TRE. The permittee shall implement the Phase II TRE in accordance with the schedule unless DEP issues written approval to modify the schedule or cease performance of the Phase II TRE.
5. Re-tests during the TRE process are required for invalid tests but are optional and at the discretion of the permittee for valid tests. The results of all re-tests must be submitted to the DEP regional office that issued the permit along with the required elements in paragraph H.

#### D. Phase II Toxicity Reduction Evaluation (TRE)

1. The Phase II TRE trigger is one WET endpoint failure during performance of the Phase I TRE. A Phase II TRE, if required, shall conform to EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. A Phase II TRE evaluates the possible control options to reduce or eliminate the effluent toxicity and the implementation of controls.
2. Once initiated, the Phase II TRE must continue until the source(s) of toxicity are controlled as evidenced by four consecutive WET test passing results for all endpoints, and a final TRE report must be submitted on or before the date specified in the schedule, unless otherwise approved by DEP in writing.

#### E. Sample Collection

For each acute testing event, a 24-hour flow-proportioned or time weighted composite sample shall be collected. For each chronic testing event, three 24-hour flow-proportioned or time weighted composite samples shall be collected over a seven day exposure period. The samples must be collected at a frequency of not greater than every two hours and must be flow-proportioned or time weighted. The samples must be collected at the permit compliance sampling location. Samples must be analyzed within 36 hours from the end of the compositing period and must be placed on ice and held at  $\leq 6^{\circ}\text{C}$ . Refer to the sample handling and preservation regulations set forth in 40 CFR 136, 25 Pa. Code Chapter 252, The NELAC Institute (TNI) Standard, and the appropriate EPA methods.

#### F. Test Conditions and Methods

Laboratories must be accredited by the DEP Laboratory Accreditation Program in order to perform and report WET tests for NPDES permit compliance. Laboratories must be either State or NELAP accredited.

1. Acute tests shall be completed in accordance with EPA's "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012, latest edition). Forty eight (48) hour static non-renewal tests shall be used.
2. Chronic tests shall be completed in accordance with EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013, latest edition). Seven (7) day tests shall be used with renewal every 24 hours.
3. The quality assurance and control (QA/QC) requirements and test acceptability standards specified in EPA's test methods and the requirements set forth in 25 Pa Code Chapter 252 or the TNI Standard must be followed
4. If the permittee or its accredited laboratory determines that QA/QC requirements and/or test acceptability standards have not been met, a re-test shall be initiated within 45 days. Original test data must be maintained by the laboratory and be submitted to DEP upon request. The justification for a re-test must be clearly documented and kept on file with the sample results.

#### G. Chemical Analyses

Chemical analyses must follow the requirements of the EPA methods and applicable State and/or Federal regulations.

1. Chemical analysis on effluent samples shall include pH, Conductivity, Total Alkalinity, Total Hardness, Total Residual Chlorine, Total Ammonia (Unionized Ammonia), Dissolved Oxygen and temperature. Chemical analyses as described in the EPA Methods (above) shall be performed for each sampling event, including each new batch of dilution water and each testing event.
2. In addition to the chemical analyses required above, those parameters listed in Part A of the NPDES permit for the outfall(s) tested shall be analyzed concurrently with the WET test by using the method(s) specified in the permit.

#### H. WET Report Elements

WET test reports that are submitted to DEP must include the requirements identified in 25 Pa. Code § 252.401(j)(1) – (15) or in the TNI Standard, or equivalent, as well as the following information:

1. A general test description, including the origin and age of test organisms, dates and results of reference toxicant tests, light and temperature regimes, and other documentation that QA and test acceptability criteria as specified in EPA's methods and DEP's QA Summaries have been met.
2. A description of sample collection procedures and sampling location.
3. Name(s) of individual(s) collecting and transporting samples, including sample renewals, and the date(s) and time(s) of sample collection.
4. All chemical and physical data including laboratory quantitation limits and observations made on the species. The hardness shall be reported for each test condition.
5. Copies of raw data sheets and/or bench sheets with data entries and signatures.
6. When effluents are dechlorinated, dechlorination procedures must be described and if applicable a thiosulfate control used in addition to the normal dilution water control. If the thiosulfate control results are significantly different from the normal control, as determined using DEP's WET Analysis Spreadsheet, the thiosulfate control shall be used in the spreadsheet for comparison with the TIWC condition. The WET report must specify which control was used to determine whether the test result is pass or fail.
7. A description of all observations or test conditions that may have affected the test outcome.
8. Control charts for the species tested regarding age, temperature test range, mortality data and all reference toxicant tests.
9. A completed WET test summary report (3800-FM-BPNPSM0485).
10. A DEP WET Analysis Spreadsheet printout that provides control and TIWC replicate data and displays the outcome of the test (pass or fail) for each endpoint tested.

WETT reports shall be submitted to the DEP regional office that issued the permit and, for discharges to the Delaware River basin, the Delaware River Basin Commission (DRBC).

A copy of the analysis report and a summary of the test results (on the enclosed form) shall be submitted to the following agencies after each reporting period:

Dr. Thomas Fikslin  
Delaware River Basin Commission  
P.O. Box 7360  
West Trenton, NJ 08628-0360

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

## V. PCB MINIMIZATION PLAN AND MONITORING

On December 15, 2003, the U.S. EPA, Regions 2 and 3, adopted a Total Maximum Daily Loads (TMDLs) for PCBs for Zones 2, 3, 4, and 5 of the tidal Delaware River. On December 15, 2006, the U.S. EPA, Regions 2 and 3, adopted a Total Maximum Daily Loads (TMDLs) for PCBs for Zone 6 (Delaware Bay) (For additional use by NJ and DE). The TMDLs require the facilities identified as discharging PCBs to these zones of the Delaware River or to the tidal portions of tributaries to these zones to conduct monitoring for 209 PCB congeners, and prepare and implement a PCB Pollutant Minimization Plan (PMP).

Subsequent monitoring required by DRBC in 2005 confirmed the presence of PCBs, and indicates that this facility contributes to 99% of the cumulative loadings from all point sources.

Therefore, the permittee shall collect two 24-hour (grab or composite) samples annually during a wet weather flow and two 24-hour composite samples annually during a dry weather flow. The samples shall be collected from Outfall(s) 001 and 002.

All sample analyses shall be performed using EPA Method 1668A, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS. EPA-821-R-00-002, December 1999 as supplemented or amended, and results for all 209 PCB congeners shall be reported. Project-specific, sample collection protocols, analytical procedures, and reporting requirements at <http://www.state.nj.us/drbc/quality/toxics/pcbs/monitoring.html> shall be followed. Monitoring information, sample data, and reports associated with PCB monitoring shall be submitted to the Department and DRBC in the form of two compact discs in the format referenced at <http://www.state.nj.us/drbc/library/documents/PCB-EDD011309.pdf>.

In accordance with the U.S. EPA Regions 2 and 3 Total Maximum Daily Loads (TMDLs) for PCBs for Zones 2-5 (or 6 for NJ and DE) of the Tidal Delaware River, the permittee shall submit a Pollutant Minimization Plan (PMP) for PCBs within 12 months from the effective date of the permit. The permittee shall comply with the requirements of Section 4.30.9 of DRBC's Water Quality Regulations. Additional information regarding PMP development may be found at <http://www.state.nj.us/drbc/programs/quality/pmp.html>. In addition, the permittee shall:

- i. Commence implementation of its PMP as submitted within 60 days of receipt of a PMP completeness determination issued by the Department.
- ii. Submit an Annual Report beginning one year from the date of commencement of the PMP to the DRBC and the Department consistent with the guidance specified at <http://www.state.nj.us/drbc/programs/quality/pmp.html>.

The PMP, PMP Annual Report and PCB data shall be submitted to the Department and DRBC at the following addresses:

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

Delaware River Basin Commission  
Modeling, Monitoring & Assessment Branch  
P.O. Box 7360  
West Trenton, NJ 08628

## VI. Seasonal effluent limits for Fecal Coliform

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 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.

**VII. Monitoring at Outfall 001:**

The Borough of Morrisville is required under DRBC Docket D-1987 CP-2 to design and construct new outfall by September 30, 2014 to meet effluent requirements as set forth in the Water Quality Regulations of the DRBC. This new outfall is scheduled to be constructed and become fully operational by November 1, 2014. The proposed project involves the construction of a diversion chamber which will divert flows from the existing 54-inch outfall to a new parallel 30-inch outfall line that will extend approximately 250 feet into Delaware River from the low water line, where the water is approximately 5 foot deep at low tide. There will be a manifold on the end of the outfall line with three 8-inch diffusers to provide mixing of the wastewater plant effluent with the water in the Delaware River. The diversion chamber will divert all plant flow to the new outfall (Outfall 002) under normal conditions. At those times when the plant flow exceeds 12.0 MGD (after days of heavy rainfall) or when the flows in the river are so high that they affect the elevation of the high tide, a portion of the effluent will overflow into the exiting 54-inch outfall line (Outfall 001). This overflow will occur because there will not be sufficient elevation difference between the elevation of the effluent at the plant chlorination tanks and the elevation in the river. Whenever discharge occurs from Outfall 001; Borough must report duration, and amount of flow along with monthly Discharge Monitoring Reports (DMRs) for MP201.



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

**NPDES PERMIT NO: PA0026701**

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.*,

**Municipal Authority of Borough of Morrisville  
35 Union Street  
/Morrisville, PA 19067**

is authorized to discharge from a facility known as **Morrisville Borough STP**, located in **Morrisville Borough, Bucks County**, to **Delaware River** in Watershed(s) **2-E** 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** OCTOBER 1, 2020

**THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON** SEPTEMBER 30, 2025

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))

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** 09/10/2020

**ISSUED BY** Thomas Magge

**Thomas L. Magge  
Environmental Program Manager  
Southeast Regional Office**



**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001 \*, Latitude 40° 12' 13.00", Longitude 74° 45' 58.00", River Mile Index 133, Stream Code 00002

Receiving Waters: Delaware River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Estimate
Duration of Discharge (minutes)	Report	Report	XXX	XXX	XXX	XXX	Daily when Discharging	Recorded

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

\* See other requirement no. VIII on page no. 35

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. B. For Outfall 002, Latitude 40° 12' 14.00", Longitude 74° 45' 54.00", River Mile Index 132.160, Stream Code 00002

Receiving Waters: Delaware River through new outfall with diffuser

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 002 (Primary Outfall)

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. C. For Outfall 003, Latitude 40° 12' 10", Longitude 74° 45' 54", River Mile Index 132.5, Stream Code 00002

Receiving Waters: Delaware River

Type of Effluent: Stormwater

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Iron, Dissolved	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Outfall 003

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. D. For Outfall MP201, Latitude 40° 12' 13.00", Longitude 74° 45' 58.00", River Mile Index 132.160, Stream Code 00002

Receiving Waters: Delaware River

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.
2. 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).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.2	1/day	Grab
Color (Pt-Co Units) (Pt-Co Units)	XXX	XXX	XXX	100	XXX	150	1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1302	1954	XXX	22	33 Wkly Avg	44	1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD5 Minimum % Removal Percent Removal	XXX	XXX	XXX	88.50 Min Mo Avg	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite

Outfall 201 , Continued (from Permit Effective Date through Permit Expiration Date )

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	1775	2665	XXX	30	45 Wkly Avg	60	1/day	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0	1500.0	XXX	1/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 – Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
Fecal Coliform (No./100 ml) Oct 1 – Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000 *	1/day	Grab
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen	1184	XXX	XXX	20	XXX	40	1/day	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Copper, Total	4.0	5.9 Daily Max	XXX	0.067	0.10	0.135	1/month	24-Hr Composite
Zinc, Total	35	52.7 Daily Max	XXX	0.594	0.89	1.18	1/month	24-Hr Composite
1,4-Dioxane	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Phenolics, Total	Report	Report Daily Max	XXX	Report	Report	XXX	1/month	24-Hr Composite
PCBs Dry Weather Analysis (pg/L) **	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
PCBs Wet Weather Analysis (pg/L) **	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
Toxicity, Chronic Ceriodaphnia Survival (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Toxicity, Chronic Ceriodaphnia Reproduction (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TUc) ***	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at Monitoring Point MP 201

\* See other requirement VII on page no. 35, \*\* see other requirement no. VI on page no. 34, \*\*\* see other requirement no. IV on page no. 29.

**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). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))
  - 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))
  - d. 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. For the purpose of determining compliance with this condition, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water. (25 Pa Code § 92a.41(c))
2. The monthly average percent removal of BOD<sub>5</sub> or CBOD<sub>5</sub> and TSS must be at least 85% for POTW facilities on a concentration basis except where 25 Pa. Code 92a.47(g) and (h) are applicable to facilities with combined sewer overflows (CSOs) or as otherwise specified in this permit. (25 Pa. Code § 92a.47(a)(3))
3. 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.
4. 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-BCW0435) 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 hydraulic design capacity of 8.7 million gallons per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to help determine whether a "hydraulic overload" situation exists, as defined in Title 25 Pa. Code Chapter 94.
- (2) The effluent limitations for Outfalls 001 and 002 were determined using an effluent discharge rate of 7.1 MGD.
- (3) The organic design capacity of 18140 lbs BOD<sub>5</sub> per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to determine whether an "organic overload" condition exists, as defined in 25 Pa. Code Chapter 94.

- (4) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N ( $\text{NO}_2+\text{NO}_3\text{-N}$ ), where TKN and  $\text{NO}_2+\text{NO}_3\text{-N}$  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(l)(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. (EPA Form 2C)

*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. (25 Pa. Code § 92a.2, 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 self-monitoring 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 n<sup>th</sup> root of their product.

**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)

**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.

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

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

**Indirect Discharger** means a non-domestic discharger introducing pollutants to a Publicly Owned Treatment Works (POTW) or other treatment works. (25 Pa. Code § 92a.2, 40 CFR 122.2)

**Industrial User** means a source of Indirect Discharge. (40 CFR 403.3)

**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)

**Municipality** means a city, town, borough, county, township, school district, institution, authority or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes. (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. (25 Pa. Code § 271.1)

**Publicly Owned Treatment Works** (POTW) means a treatment works as defined by §212 of the Clean Water Act, owned by a state or municipality. The term includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also includes sewers, pipes or other conveyances if they convey wastewater to a POTW providing treatment. The term also means the municipality as defined in section 502(4) of the Clean Water Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. (25 Pa Code § 92a.2, 40 CFR 122.2)

**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. (40 CFR 122.41(m)(1)(ii))

**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.

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

*Weekly Average Discharge Limitation* means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

### III. SELF-MONITORING, REPORTING AND RECORDKEEPING

#### A. Representative Sampling

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(j)(1)). 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. (40 CFR 122.48, 25 Pa. Code § 92a.61)
2. Records Retention (40 CFR 122.41(j)(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, unless a longer retention period is required by the permit. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

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

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. (40 CFR 122.41(j)(4))

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. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.44, 92a.61(i) and 40 CFR §§ 122.41(e), 122.44(i)(1))
2. The permittee shall use DEP's electronic Discharge Monitoring Report (eDMR) system to report the results of compliance monitoring under this permit (see [www.dep.pa.gov/edmr](http://www.dep.pa.gov/edmr)). Permittees that are not using the eDMR system as of the effective date of this permit shall submit the necessary registration and trading partner agreement forms to DEP's Bureau of Clean Water (BCW) within 30 days of the effective date of this permit and begin using the eDMR system when notified by DEP BCW to do so. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))
3. Submission of a physical (paper) copy of a Discharge Monitoring Report (DMR) is acceptable under the following circumstances:
  - a. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.
  - b. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).
4. DMRs must be completed in accordance with DEP's published DMR instructions (3800-FM-BCW0463). DMRs must be received by DEP no later than 28 days following the end of the monitoring period. DMRs are based on calendar reporting periods and must be received by DEP 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.
5. The permittee shall complete all Supplemental Reporting forms (Supplemental DMRs) attached to this permit, or an approved equivalent, and submit the signed, completed forms as attachments to the DMR, through DEP's eDMR system. DEP's Supplemental Laboratory Accreditation Form (3800-FM-BCW0189) must be completed and submitted to DEP with the first DMR following issuance of this permit, and anytime thereafter when changes to laboratories or methods occur. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))
6. The completed DMR Form shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

- 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 and for co-permittees, 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))

7. 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(l)(4)(ii))

### C. Reporting and Notification Requirements

1. 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(l)(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(l)(2))
2. Planned Changes to Waste Stream – Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA 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-BCW0482), available on DEP's website. The permittee shall provide information on the quality and quantity of waste introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR 122.42(b)(3)). 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), 40 CFR 122.42(b)(1))

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

- (i) Any pollutants that were not detected in the facilities' influent waste stream as reported in the permit application; and have not been approved to be included in the permittee's influent waste stream by DEP in writing.
- (ii) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants (40 CFR 122.42(b)(1)).

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), 40 CFR 122.42(b)(2))

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

- (i) Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or have been previously approved to be included in the permittee's influent waste stream by DEP in writing.
- (ii) 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 and/or EPA, 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 POTW (as defined at 40 CFR 403.3), 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, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, 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 conventional 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-BCW0450) 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) In accordance with 40 CFR Part 435, Subpart C, the permittee shall not accept wastewater pollutants associated with production, field exploration, drilling, well completion, or well treatment for unconventional oil and gas extraction (including, but not limited to, drilling muds, drill cuttings, produced sand, produced water). Unconventional oil and gas means crude oil and natural gas produced by a well drilled into a shale and/or tight formation (including, but not limited to, shale gas, shale oil, tight gas, and tight oil). This prohibition does not apply to wastewater generated from stripper wells as defined at 40 CFR Part 435, Subpart F.
- (iii) 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. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it.

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-BCW0437) 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 BOD<sub>5</sub> 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. The influent BOD<sub>5</sub> characterization for the treatment facility, as reported in the annual Municipal Wasteload Management Report per 25 Pa. Code Chapter 94, must be representative of the hauled-in municipal wastes received.



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(l)(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 (40 CFR 122.41(l)(6)(ii)):
    - (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.
  - (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(l)(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-BCW0440). The reports shall contain the information listed in paragraph C.4.b.(ii) of this section. (40 CFR 122.41(l)(7))

**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))
2. 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 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))
3. 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. (40 CFR 122.41(l)(8))
4. The permittee shall provide the following information in the annual Municipal Wasteload Management Report, required under the provisions of Title 25 Pa. Code Chapter 94:
  - a. The requirements identified in 25 Pa. Code § 94.12.
  - b. The identity of any indirect discharger(s) served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the indirect discharger.
  - c. A "Solids Management Inventory" if specified in Part C of this permit.
  - d. The total volume of hauled-in residual and municipal wastes received during the year, by source.
  - e. The Annual Report requirements for permittees required to implement an industrial pretreatment program listed in Part C, as applicable.

#### D. General Pretreatment Requirements

1. Any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (MGD) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to Pretreatment Standards will be required to establish a POTW Pretreatment Program unless specifically exempted by the Approval Authority. A POTW with a design flow of 5 MGD or less may be required to develop a POTW Pretreatment Program if the Approval Authority finds that the nature or volume of the industrial influent, treatment process upsets, violations of effluent limitations, contamination of sludge, or other circumstances warrant in order to prevent interference or pass through. (40 CFR 403.8)
2. Each POTW with an approved Pretreatment Program pursuant to 40 CFR 403.8 shall develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5(a)(1) and (b), and shall continue to develop these limits as necessary and effectively enforce such limits. This condition applies, for example, when there are planned changes to the waste stream as identified in Part A III.C.2. If the permittee is required to develop or continue implementation of a Pretreatment Program, detailed requirements will be contained in Part C of this permit.
3. For all POTWs, 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. Where POTWs do not have an approved Pretreatment Program, the permittee shall submit a copy of such limits to DEP when developed. (25 Pa. Code § 92a.47(d))

#### 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

1. 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 CFR 122.41(m)(4)(i)(A))
  - 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 paragraph G.4 below. (40 CFR 122.41(m)(4)(i)(C))

3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in paragraph G.2 above. (40 CFR 122.41(m)(4)(ii))

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. (40 CFR 122.41(m)(3)(i))

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.

I. Termination of Permit Coverage (25 Pa. Code § 92a.74 and 40 CFR 122.64)

1. Notice of Termination (NOT) – If the permittee plans to cease operations or will otherwise no longer require coverage under this permit, the permittee shall submit DEP's NPDES Notice of Termination (NOT) for Permits Issued Under Chapter 92a (3800-BCW-0410), signed in accordance with Part A III.B.6 of this permit, at least 30 days prior to cessation of operations or the date by which coverage is no longer required.

2. Where the permittee plans to cease operations, NOTs must be accompanied with an operation closure plan that identifies how tankage and equipment will be decommissioned and how pollutants will be managed.

3. The permittee shall submit the NOT to the DEP regional office with jurisdiction over the county in which the operation is located.

## 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 CFR 122.41(c))

### 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:

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; (40 CFR 122.41(i)(2))
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. (40 CFR 122.41(i)(4))

#### B. Transfer of Permits

1. 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 (40 CFR 122.61(b)(2))
  - 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 Department 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. (40 CFR 122.41(g))

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. (40 CFR 122.41(b))

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.

**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 and 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: **Major Sewage Facility ≥ 5 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 Clean Water  
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 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. 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.

- E. 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. Any addition, loss, change or replacement of an available operator shall be reported to the Department within 15 calendar days utilizing the Department's "Change of Available Operator Form" 25 Pa. Code § 302.1203 (c).
- F. The permittee shall develop a treatment facility operations and maintenance (O&M) plan addressing key wastewater processes. The plan shall be reviewed annually and updated when appropriate. The plan shall be submitted to DEP for review upon request. For the purpose of this paragraph, a key wastewater process includes any equipment or process that, if it fails, may cause the discharge of raw wastewater or wastewater that fails to meet NPDES permit discharge requirements, or a failure that may threaten human or environmental health. The O&M plan shall include the following, at a minimum:
  - 1. A process control strategy that includes a schedule for process control sampling, monitoring, testing, and recordkeeping.
  - 2. A plan that identifies how key wastewater processes shall be monitored and adjusted while the facility is staffed.
  - 3. A plan that identifies how key wastewater processes will be monitored while the treatment facility is not staffed.
  - 4. For treatment plants that are impacted by wet weather flows, the permittee shall develop and implement a wet weather operations strategy that minimizes or eliminates the wash out of solids from the treatment system while maximizing the flow through the treatment plant.



5. An emergency plan that identifies how the facility will be operated during times of emergency. For example, the plan shall detail how key wastewater processes will be repaired or replaced in the event of a failure while minimizing loss of life and property damage to the facility. This plan shall also include emergency contact numbers for local emergency response agencies, plant personnel, critical suppliers and vendors, and DEP contacts, at a minimum.
  6. A preventative maintenance plan that includes a schedule for preventative maintenance for all equipment within the treatment system. A spare parts inventory shall be included as part of this plan.
  7. A solids management plan that identifies how solids produced by the facility will be wasted, treated, and ultimately disposed of.
- G. The permittee shall not accept hauled-in wastes at the treatment facility under the following conditions, unless otherwise approved by DEP in writing:
- When acceptance of hauled-in wastes would cause a hydraulic or organic overload as defined in Chapter 94.1 of the DEP's regulations.
  - When the treatment facility is considered to be in an existing hydraulic or organic overload condition, as determined by the permittee or DEP, as defined in Chapter 94.1 of the DEP's regulations.
  - When the instantaneous flow at the treatment facility exceeds 26.1 MGD (the Chapter 94 hydraulic design capacity of the facility multiplied by a peaking factor of three), and for 24 hours following exceedance of this threshold.
- H. For the purpose of determining compliance with Part A, Additional Requirements, paragraph 1.d, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water.

## **II. POTW PRETREATMENT PROGRAM IMPLEMENTATION**

- A. General Requirement – The permittee shall operate and implement a POTW pretreatment program in accordance with the federal Clean Water Act, the Pennsylvania Clean Streams Law, and the federal General Pretreatment Regulations at 40 CFR Part 403. The program shall also be implemented in accordance with the permittee's approved pretreatment program and any modifications thereto submitted by the permittee and approved by the Approval Authority.
- B. Annual Report and Other Requirements – The permittee shall submit a Pretreatment Annual Report by March 31 of each year to EPA that describes the permittee's pretreatment activities for the previous calendar year. The Pretreatment Annual Report shall include a description of pretreatment activities in all municipalities from which wastewater is received at the permittee's POTW. The Pretreatment Annual Report shall include the following information, at minimum:
1. Industrial Listing – The Annual Report shall contain an updated industrial listing providing the names and addresses of all current Significant Industrial Users (SIUs) and Non-Significant Categorical Industrial Users (NSCIUs), as defined in 40 CFR 403.3, and the categorical standard, if any, applicable to each. The listing must: (1) identify any users that are subject to reduced reporting requirements under 40 CFR 403.12(e)(3); (2) identify which users are NSCIUs; (3) identify any users that have been granted a monitoring waiver in accordance with 40 CFR 403.12(e)(2) as well as the pollutants for which the waiver was granted and the date of the last POTW sampling event for each pollutant; and (4) identify any categorical industrial users that have been given mass-based limits in place of concentration-based categorical limits in accordance with 40 CFR 403.6(c)(5) or concentration-based limits in place of mass-based categorical limits in accordance with 40 CFR 403.6(c)(6).

In addition, the Annual Report shall contain a summary of any hauled-in wastes accepted at the POTW including the source of the wastes (domestic, commercial or industrial) and the receiving location for acceptance of the wastes. For each industrial source (whether or not classified as an SIU), the report shall indicate (1) the name and address of the industrial source; (2) the average daily amount of

wastewater received; (3) a brief description of the type of process operations conducted at the industrial facility; (4) whether the source facility is a categorical industrial user (including NSCIU), significant industrial users, or non-significant industrial user; and (5) any controls imposed on the user.

2. Control Mechanism Issuance – The Annual Report shall contain a summary of SIU control mechanism issuance, including a list of issuance, effective, and expiration dates for each SIU control mechanism. For each general control mechanism issued, provide the names of all SIUs covered by the general control mechanism and an explanation of how the users meet the criteria of 40 CFR 403.8(f)(1)(iii)(A) for issuance of a general control mechanism.
3. Sampling and Inspection – The Annual Report shall contain a summary of the number and types of inspections and sampling events of SIUs by the permittee, including a list of all SIUs either not sampled or not inspected, and the reason that the sampling and/or inspection was not conducted. For any user subject to reduced reporting under 40 CFR 403.12(e)(3), the list shall include the date of the last POTW sampling event and the date of the last POTW inspection of the user. In addition, the report shall include a summary of the number of self-monitoring events conducted by each SIU and the number required to be conducted, including a list of all SIUs that did not submit the required number of reports and the reason why the reports were not submitted. For NSCIUs, the report shall provide the date of the compliance certification required under 40 CFR 403.12(q).
4. Industrial User Compliance and POTW Enforcement – The Annual Report shall contain a summary of the number and type of violations of pretreatment standards and requirements, including local limits, and the actions taken by the permittee to obtain compliance, including compliance schedules, penalty assessments and actions for injunctive relief. The report shall state whether each SIU was in significant noncompliance, as that term is defined in 40 CFR Section 403.8(f)(2)(viii), and include the parameter(s) in violation, the period of violation, the actions taken by the POTW in response to the violations, and the compliance status at the end of the reporting period. A copy of the publication of users meeting the significant noncompliance criteria shall be included. In addition, the report shall provide a list of users previously designated as NSCIUs that have violated (to any extent) any pretreatment standard or requirement during the year and the date and description of the violation(s).
5. Summary of POTW Operations – The Annual Report shall contain a summary of any interference, pass-through, or permit violations by the POTW and indicate the following: (1) which, if any, permit violations may be attributed to industrial users; (2) which IU(s) are responsible for such violations; and (3) the actions taken to address these events. The report shall also include all sampling and analysis of POTW treatment plant influent, effluent, and sludge conducted during the year for local limit and priority pollutants identified pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d).
6. Pretreatment Program Changes – The Annual Report shall contain a summary of any changes made or proposed to the approved program during the period covered by the report and the date of submission to the Approval Authority.

A summary of pretreatment activities shall be incorporated into the permittee's Annual Municipal Wasteload Management Report required by 25 Pa. Code Chapter 94 and referenced in Part B I.C.4 of this permit.

- C. Routine Monitoring – The permittee shall conduct monitoring at its treatment plant that, at a minimum, includes quarterly influent, effluent, and sludge analysis for all pollutants for which local limits have been established, and an annual priority pollutant scan for influent and sludge.
- D. Notification of Pass Through or Interference – The permittee shall notify EPA and DEP, in writing, of any instance of pass through or interference, as defined at 40 CFR 403.3(p) and (k), respectively, known or suspected to be related to a discharge from an IU into the POTW. The notification shall be attached to the DMR submitted to EPA and DEP and shall describe the incident, including the date, time, length, cause (including responsible user if known), and the steps taken by the permittee and IU (if identified) to address the incident. A copy of the notification shall also be sent to the EPA at the address provided below.
- E. Headworks Analysis – The permittee shall submit to EPA a reevaluation of its local limits based on a headworks analysis of its treatment plant within one (1) year of permit issuance, and provide a revised submission within three (3) months of receipt of comments from EPA or DEP unless a longer period of time is granted in writing by EPA or DEP. In order to ensure that the permittee's discharge complies with water

quality standards, the reevaluation of local limits shall consider, at a minimum, all water quality standards under 25 Pa. Code Chapter 93 applicable to the pollutants included in the reevaluation, unless the POTW is subject to an effluent limitation for the pollutant in Part A of this permit. The list of pollutants to be evaluated, as well as a sampling plan for collection of necessary data, shall be submitted to EPA within three (3) months of permit issuance. Unless otherwise approved in writing, the list of pollutants shall include arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, BOD<sub>5</sub>, TSS, ammonia, any pollutants for which a local limit currently exists, any pollutant limited in this permit, as well as any other pollutants that have been identified in the POTW through monitoring or the receipt of indirect discharges and hauled-in wastes in quantities that have the potential to cause pass through and/or interference. For example, facilities receiving residual waste from oil and gas operations should include pollutants such as Total Dissolved Solids (TDS), specific ions such as chlorides and sulfates, specific radionuclides, metals such as barium and strontium, and other pollutants that could reasonably be expected to be present. Within four (4) months of acceptance of the headworks analysis by the Approval Authority, the permittee shall adopt the revised local limits and, if necessary to ensure that the limits are enforceable throughout the service area, notify all contributing municipalities of the need to adopt the revised local limits.

F. Changes to Pretreatment Program – EPA and DEP may require the permittee to submit for approval changes to its pretreatment program if any one or more of the following conditions is present:

1. The program is not implemented in accordance with 40 CFR Part 403;
2. Problems such as interference, pass through or sludge contamination develop or continue;
3. The POTW proposes to introduce new pollutants or an increased loading of approved pollutants as described in Part A III.C.2 of this permit;
4. Federal, State, or local requirements change;
5. Changes are needed to assure protection of waters of the Commonwealth.

Program modification is necessary whenever there is a significant change in the operation of the pretreatment program that differs from the information contained in the permittee's submission, as approved under 40 CFR 403.11.

G. Procedure for Pretreatment Program Changes – Upon submittal by the permittee, and written notice of approval by the Approval Authority to the permittee of any changes to the permittee's approved pretreatment program, such changes are effective and binding upon the permittee unless the permittee objects within 30 days of receipt of the written notice of approval. Any objection must be submitted in writing to EPA and DEP.

H. Correspondence – The Approval Authority shall be EPA at the following address:

Pretreatment Coordinator (3WD41)  
U.S. Environmental Protection Agency  
1650 Arch Street  
Philadelphia, PA 19103-2029

### **III. SOLIDS MANAGEMENT**

A. The permittee shall manage and properly dispose of sewage sludge and/or biosolids by performing sludge wasting that maintains an appropriate mass balance of solids within the treatment system. The wasting rate must be developed and implemented considering the specific treatment process type, system loadings, and seasonal variation while maintaining compliance with effluent limitations. Holding excess sludge within clarifiers or in the disinfection process is not permissible.

B. The permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Sewage Sludge/Biosolids Production and Disposal" (Form No. 3800-FM-BCW0438) and "Supplemental Report – Influent & Process Control" (Form No. 3800-FM-BCW0436), as attachments to the DMR on a monthly basis. When applicable, the permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Hauled In Municipal Wastes" (Form No. 3800-FM-BCW0437) and "Supplemental Report – Hauled In Residual Wastes" (Form No. 3800-FM-BCW0450), as attachments to the DMR.

- C. By March 31 of each year, the permittee shall submit a "Sewage Sludge Management Inventory" that summarizes the amount of sewage sludge and/or biosolids produced and wasted during the calendar year from the system. The "Sewage Sludge Management Inventory" may be submitted with the Municipal Wasteload Management Report required by Chapter 94. This summary shall include the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, "Improving POTW Performance Using the Composite Correction Approach" (EPA-625/6-84-008)), compared with the actual amount disposed during the year. Sludge quantities shall be expressed as dry weight in addition to gallons or other appropriate units.

#### IV. WHOLE EFFLUENT TOXICITY (WET)

##### A. General Requirements

1. The permittee shall conduct Chronic WET tests as specified in this section. The permittee shall collect discharge samples and perform WET tests to generate chronic survival and reproduction data for the cladoceran, *Ceriodaphnia dubia* and chronic survival and growth data for the fathead minnow, *Pimephales promelas*.
2. Samples shall be collected at Monitoring Point MP 201 in accordance with paragraph E.
3. The permittee shall perform testing using the following dilution series: 1%, 2%, 30%, 60%, and 100% effluent, with a control, where 1% is the facility-specific Target In-Stream Waste Concentration (TIWC).
4. The determination of whether a test endpoint passes or fails shall be made using DEP's WET Analysis Spreadsheet (available at [www.dep.pa.gov/wett](http://www.dep.pa.gov/wett)) by comparing replicate data for the control with replicate data for the TIWC dilution or any dilution greater than the TIWC.
5. The permittee shall submit only valid WET test results to DEP.

##### B. Test Frequency and Reporting

1. WET testing shall be conducted quarterly, beginning within 30 days of the permit effective date. Tests shall be completed within calendar quarters, i.e., one test each during the periods of January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. A complete WET test report shall be submitted to the DEP regional office that issued the permit within 45 days of test completion. A complete WET test report submission shall include the information contained in paragraph H, below.
2. If a test failure is determined for any endpoint during quarterly monitoring, the permittee shall initiate a re-test for the species with the failure, at a minimum, within 45 days of test completion. All endpoints for the species shall be evaluated in the re-test. The results of the re-test shall be submitted to the DEP regional office that issued the permit.
3. If a passing result is determined for all endpoints in a re-test, the permittee continue with quarterly monitoring, as applicable.
4. If there is a failure for one or more endpoints in a re-test, the permittee shall continue quarterly WET testing for both species. The results of all tests shall be submitted to the DEP regional office that issued the permit. In addition, the permittee shall initiate a Phase I Toxicity Reduction Evaluation (TRE) as specified in paragraph C, below.
5. The permittee must report the results of each test endpoint that has a WET limit in Part A of this permit on the Discharge Monitoring Report (DMR). Test results shall be reported on the DMR in terms of acute or chronic Toxicity Units (TU<sub>a</sub> or TU<sub>c</sub>), where TU<sub>a</sub> is used for acute tests and TU<sub>c</sub> is used for chronic tests. If DEP's WET Analysis Spreadsheet indicates a passing result for an endpoint, report the value obtained from the expression "1/TIWC", which is equivalent to the permit limit. If the Spreadsheet indicates a failure, report the value obtained from the expression "> 1/TIWC". If a dilution higher than the TIWC dilution is used for the comparison with the control, report the value obtained from the

expression "1/dilution". For example, an acute test endpoint failure at a TIWC dilution of 50% would be reported as "> 2.0 TUa" (1/0.5).

6. The permittee shall attach the WET Analysis Spreadsheet for the latest four consecutive WET tests to the NPDES permit renewal application that is submitted to DEP at least 180 days prior to the permit expiration date.

#### C. Phase I Toxicity Reduction Evaluation (TRE)

1. The Phase I TRE trigger is one WET endpoint failure followed by a re-test that confirms the failure for the same species. When the TRE process is triggered, quarterly WET testing shall be initiated for both species until there are four consecutive passing results for all endpoints. The Phase I TRE may include a Toxicity Identification Evaluation (TIE) if the permittee cannot immediately identify the possible causes of the effluent toxicity and the possible sources of the causative agents.
2. The permittee shall, within one year following the Phase I TRE trigger, submit a Phase I TRE report to the DEP regional office that issued the permit. The Phase I TRE shall be conducted in accordance with EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. If a TIE is conducted as part of the Phase I TRE, it shall conform to EPA's guidance, "Methods for Aquatic Toxicity Identification Evaluations Phase I" (EPA/600/6-91/003), "Phase II" (EPA/600/R-92/080), "Phase III" (EPA/600/R-92/081) and other relevant EPA guidance. The Phase I TRE report shall be submitted with the fourth quarterly WET test report that is completed following the Phase I TRE trigger. The TRE shall include all activities undertaken to identify the cause(s) and source(s) of toxicity and any control efforts.
3. If all four quarterly WET tests produce passing results for all endpoints during the Phase I TRE process, performance of a Phase II TRE is not required, and annual WET testing in accordance with paragraph B.1 may resume.
4. If the four WET tests produce at least one failing result during the Phase I TRE process, the permittee shall continue quarterly WETT monitoring for both species and initiate a Phase II TRE in accordance with paragraph D. In this case, the Phase I TRE must include a schedule for completion of the Phase II TRE. The schedule must include interim milestones and a final completion date not to exceed two years from the initiation of the Phase II TRE. The permittee shall implement the Phase II TRE in accordance with the schedule unless DEP issues written approval to modify the schedule or cease performance of the Phase II TRE.
5. Re-tests during the TRE process are required for invalid tests but are optional and at the discretion of the permittee for valid tests. The results of all re-tests must be submitted to the DEP regional office that issued the permit along with the required elements in paragraph H.

#### D. Phase II Toxicity Reduction Evaluation (TRE)

1. The Phase II TRE trigger is one WET endpoint failure during performance of the Phase I TRE. A Phase II TRE, if required, shall conform to EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. A Phase II TRE evaluates the possible control options to reduce or eliminate the effluent toxicity and the implementation of controls.
2. Once initiated, the Phase II TRE must continue until the source(s) of toxicity are controlled as evidenced by four consecutive WET test passing results for all endpoints, and a final TRE report must be submitted on or before the date specified in the schedule, unless otherwise approved by DEP in writing.

#### E. Sample Collection

For each acute testing event, a 24-hour flow-proportioned composite sample shall be collected. For each chronic testing event, three 24-hour flow-proportioned, composite samples shall be collected over a seven day exposure period. The samples must be collected at a frequency of not greater than every two hours

and must be flow-proportioned. The samples must be collected at the permit compliance sampling location. Samples must be analyzed within 36 hours from the end of the compositing period and must be placed on ice and held at  $\leq 6^{\circ}\text{C}$ . Refer to the sample handling and preservation regulations set forth in 40 CFR 136, 25 Pa. Code Chapter 252, The NELAC Institute (TNI) Standard, and the appropriate EPA methods.

#### F. Test Conditions and Methods

Laboratories must be accredited by the DEP Laboratory Accreditation Program in order to perform and report WET tests for NPDES permit compliance. Laboratories must be either State or NELAP accredited.

1. Acute tests shall be completed in accordance with EPA's "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012, latest edition). Forty eight (48) hour static non-renewal tests shall be used.
2. Chronic tests shall be completed in accordance with EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013, latest edition). Seven (7) day tests shall be used with renewal every 24 hours.
3. The quality assurance and control (QA/QC) requirements and test acceptability standards specified in EPA's test methods and the requirements set forth in 25 Pa Code Chapter 252 or the TNI Standard must be followed.
4. If the permittee or its accredited laboratory determines that QA/QC requirements and/or test acceptability standards have not been met, a re-test shall be initiated within 45 days. Original test data must be maintained by the laboratory and be submitted to DEP upon request. The justification for a re-test must be clearly documented and kept on file with the sample results.

#### G. Chemical Analyses

Chemical analyses must follow the requirements of the EPA methods and applicable State and/or Federal regulations.

1. Chemical analysis on effluent samples shall include pH, Conductivity, Total Alkalinity, Total Hardness, Total Residual Chlorine, Total Ammonia (Unionized Ammonia), Dissolved Oxygen and temperature. Chemical analyses as described in the EPA Methods (above) shall be performed for each sampling event, including each new batch of dilution water and each testing event.
2. In addition to the chemical analyses required above, those parameters listed in Part A of the NPDES permit for the outfall(s) tested shall be analyzed concurrently with the WET test by using the method(s) specified in the permit.

#### H. WET Report Elements

WET test reports that are submitted to DEP must include the requirements identified in 25 Pa. Code § 252.401(j)(1) – (15) or in the TNI Standard, or equivalent, as well as the following information:

1. A general test description, including the origin and age of test organisms, dates and results of reference toxicant tests, light and temperature regimes, and other documentation that QA and test acceptability criteria as specified in EPA's methods and DEP's QA Summaries have been met.
2. A description of sample collection procedures and sampling location.
3. Name(s) of individual(s) collecting and transporting samples, including sample renewals, and the date(s) and time(s) of sample collection.
4. All chemical and physical data including laboratory quantitation limits and observations made on the species. The hardness shall be reported for each test condition.
5. Copies of raw data sheets and/or bench sheets with data entries and signatures.

6. When effluents are dechlorinated, dechlorination procedures must be described and if applicable a thiosulfate control used in addition to the normal dilution water control. If the thiosulfate control results are significantly different from the normal control, as determined using DEP's WET Analysis Spreadsheet, the thiosulfate control shall be used in the spreadsheet for comparison with the TIWC condition. The WET report must specify which control was used to determine whether the test result is pass or fail.
7. A description of all observations or test conditions that may have affected the test outcome.
8. Control charts for the species tested regarding age, temperature test range, mortality data and all reference toxicant tests.
9. A completed WET test summary report (3800-FM-BCW0485).
10. A DEP WET Analysis Spreadsheet printout that provides control and TIWC replicate data and displays the outcome of the test (pass or fail) for each endpoint tested.

WETT reports shall be submitted to the DEP regional office that issued the permit and, for discharges to the Delaware River basin, the Delaware River Basin Commission (DRBC).

## **V. REQUIREMENTS APPLICABLE TO STORMWATER OUTFALLS**

- A. The permittee is authorized to discharge non-polluting stormwater from its site, alone or in combination with other wastewaters, through the following outfall: Outfall 003

Monitoring requirements and effluent limitations for these outfalls are specified in Part A of this permit, if applicable.

- B. Preparedness, Prevention and Contingency (PPC) Plan

1. The permittee shall develop and implement a PPC Plan in accordance with 25 Pa. Code § 91.34 following the guidance contained in DEP's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" (DEP ID 400-2200-001), its NPDES-specific addendum and the minimum requirements below.
  - a. The PPC Plan must identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the facility.
  - b. The PPC Plan must describe preventative measures and BMPs that will be implemented to reduce or eliminate pollutants from coming into contact with stormwater resulting from routine site activities and spills.
  - c. The PPC Plan must address actions that will be taken in response to on-site spills or other pollution incidents.
  - d. The PPC Plan must identify areas which, due to topography or other factors, have a high potential for soil erosion, and identify measures to limit erosion. Where necessary, erosion and sediment control measures must be developed and implemented in accordance with 25 Pa. Code Chapter 102 and DEP's "Erosion and Sediment Pollution Control Manual" (DEP ID 363-2134-008).
  - e. The PPC Plan must address security measures to prevent accidental or intentional entry which could result in an unintentional discharge of pollutants.
  - f. The PPC Plan must include a plan for training employees and contractors on pollution prevention, BMPs, and emergency response measures.
  - g. If the facility is subject to SARA Title III, Section 313, the PPC Plan must identify releases of "Water Priority Chemicals" within the previous three years. Water Priority Chemicals are those identified in EPA's "Guidance for the Determination of Appropriate Methods for the Detection of Section 313

Water Priority Chemicals" (EPA 833-B-94-001, April 1994). The Plan must include an evaluation of all activities that may result in the stormwater discharge of Water Priority Chemicals.

- h. Spill Prevention Control and Countermeasure (SPCC) plans may be used to meet the requirements of this section if the minimum requirements are addressed.
2. The permittee shall review and if necessary update the PPC Plan on an annual basis, at a minimum, and when one or more of the following occur:
    - a. Applicable DEP or federal regulations are revised, or this permit is revised.
    - b. The PPC Plan fails in an emergency.
    - c. The facility's design, industrial process, operation, maintenance, or other circumstances change in a manner that materially increases the potential for fires, explosions or releases of toxic or hazardous constituents; or which changes the response necessary in an emergency.
    - d. The list of emergency coordinators or equipment changes.
    - e. When notified in writing by DEP.

The permittee shall maintain all PPC Plan updates on-site, make the updates available to DEP upon request.

#### C. Minimum Required BMPs

In addition to BMPs identified in the PPC Plan, the permittee shall implement the following minimum BMPs relating to stormwater pollution prevention:

1. If applicable, post-construction stormwater BMPs that are required under 25 Pa. Code Chapter 102 must be maintained.
2. Manage sludge in accordance with all applicable permit requirements.
3. Store chemicals in secure and covered areas on impervious surfaces away from storm drains.
4. For new facilities and upgrades, design wastewater treatment facilities to avoid, to the maximum extent practicable, stormwater commingling with sanitary wastewater, sewage sludge, and biosolids.
5. Efficiently use herbicides for weed control. Where practicable, use the least toxic herbicide that will achieve pest management objectives. Do not apply during windy conditions.
6. Do not wash parts or equipment over impervious surfaces that wash into storm drains.
7. Implement infiltration techniques, including infiltration basins, trenches, dry wells, porous pavement, etc., wherever practicable.

#### D. Routine Inspections.

Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs in the PPC Plan and required by this permit shall be inspected on a semiannual basis, at a minimum, to determine whether they are adequate and properly implemented in accordance with the terms of this permit or whether additional control measures are needed. Documentation of inspections shall be maintained on-site and be made available to DEP upon request.

#### E. Stormwater Sampling Requirements

If stormwater sampling is required in Part A of this permit, the following requirements apply:



1. All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The 72-hour storm interval is waived when the preceding storm did not yield a measurable discharge, or if the permittee is able to document that a less than 72-hour interval is representative for local storm events during the sample period.
2. Grab samples shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is not possible, a grab sample can be taken during the first hour of the discharge, in which case the discharger shall provide an explanation of why a grab sample during the first 30 minutes was not possible.

## VI. PCB POLLUTANT MINIMIZATION PLAN AND MONITORING

- A. On December 15, 2003, the U.S. Environmental Protection Agency (EPA), Regions 2 and 3, adopted a Total Maximum Daily Load (TMDL) for Polychlorinated Biphenyls (PCBs) for Zones 2, 3, 4, and 5 of the tidal Delaware River. The TMDLs require the facilities identified as discharging PCBs to these zones of the Delaware River or to the tidal portions of tributaries to these zones to conduct monitoring for 209 PCB congeners, and prepare and implement a PCB Pollutant Minimization Plan (PMP). Subsequent monitoring required by DRBC in 2005 confirmed the presence of PCBs, and indicates that this facility does contribute to 99 percent of the cumulative loadings from all point sources.
- B. The permittee shall collect two 24-hour composite samples annually during a wet weather flow and two 24-hour composite samples annually during a dry weather flow. The samples shall be collected from Outfall(s) 001 and 002.
- C. All sample analyses shall be performed using EPA Method 1668A, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS (EPA-821-R-00-002, December 1999) as supplemented or amended, and results for all 209 PCB congeners shall be reported. Project-specific sample collection protocols, analytical procedures, and reporting requirements of the Delaware River Basin Commission (DRBC) shall be followed (see [www.nj.gov/drbc/quality/toxics/pcbs/monitoring.html](http://www.nj.gov/drbc/quality/toxics/pcbs/monitoring.html)). Monitoring information, sample data, and reports associated with PCB monitoring shall be submitted to DEP and DRBC in the form of two compact discs in the format referenced at [www.nj.gov/drbc/library/documents/PCB-EDD011309.pdf](http://www.nj.gov/drbc/library/documents/PCB-EDD011309.pdf).

In accordance with the EPA Regions 2 and 3 TMDLs for PCBs for Zones 2–5 of the Tidal Delaware River, the permittee submitted a PMP for PCBs to the DRBC on March 31, 2015, which was approved on January 14, 2016. The permittee shall continue to comply with the requirements of Section 4.30.9 of DRBC's Water Quality Regulations. Therefore, the permittee shall:

1. Continue to implement the PMP to achieve PCB loading reduction goals.
2. Submit an Annual Report on the yearly anniversary of the commencement of the PMP to DRBC and DEP consistent with the guidance specified at [www.nj.gov/drbc/programs/quality/pmp.html](http://www.nj.gov/drbc/programs/quality/pmp.html).

The PMP Annual Report and PCB data shall be submitted to DEP and DRBC at the following addresses:

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

Delaware River Basin Commission  
 Modeling, Monitoring & Assessment Branch  
 P.O. Box 7360  
 West Trenton, NJ 08628

## **VII. FECAL COLIFORM MONITORING**

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 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.

## **VIII. MONITORING AT OUTFALL 001:**

The Borough of Morrisville was required under DRBC Docket D-1987 CP-2 to design and construct new outfall by September 30, 2014 to meet effluent requirements as set forth in the Water Quality Regulations of the DRBC. The project involved the construction of a diversion chamber which diverts flows from the existing 54-inch outfall to a new parallel 30-inch outfall line that would extend approximately 250 feet into Delaware River from the low water line, where the water is approximately 5 feet deep at low tide. The new outfall line has a manifold with three 8-inch diffusers to provide mixing of the wastewater plant effluent with the water in the Delaware River. The diversion chamber diverts all plant flow to the new outfall (Outfall 002) under normal conditions. At times when the plant flow exceeds 12.0 MGD (after days of heavy rainfall) or when the flows in the river are so high that they affect the elevation of the high tide, a portion of the effluent will overflow into the existing 54-inch outfall pipe (Outfall 001). This overflow will only occur during periods when there will not be sufficient elevation difference between the elevation of the effluent at the plant chlorination tanks and the elevation in the river. Permittee is required to monitor flow at outfall 001 and report the results of flow and duration with monthly Discharge Monitoring Reports (DMRs).

## **IX. LANDFILL LEACHATE ACCEPTANCE**

This permit renewal approves acceptance of 0.12 MGD of landfill leachate for treatment at the sewage treatment plant (STP) as approved in DRBC Docket No. D-1987-008 CP-4. The previous docket approval (D-1987-011 CP-3) approved Municipal Authority of Borough of Morrisville (MMA) to accept up to 0.06 MGD of landfill leachate for treatment the sewage treatment plant. The pilot program to increase the amount of leachate from 0.06 MGD to 0.12 MGD was approved by DRBC Executive Director on June 7, 2015 and was performed by Morrisville Borough between 2015 and 2018. Morrisville Borough is permitted to receive up to 0.12 MGD landfill leachate from GROWS, GROWS North, Tullytown, and Waste Management Fairless Landfills for treatment and discharge form Morrisville Borough STP. The amount of leachate allowed to be received is conditional upon the quantity of inflow to the STP in accordance with Sliding Scale in DRBC Docket. Morrisville Borough is required to maintain a record of daily leachate flows received, corresponding inflows to the sewage treatment plant and STP effluent flows, and to submit a report to DRBC annually summarizing the daily flows by January 31<sup>st</sup> of each year.

The following sliding scale indicates the amount of leachate to be received at different flows to the sewage treatment plant.

**LEACHATE FLOW ACCEPTANCE SLIDING SCALE**

<b>STP FLOW (MGD)</b>	<b>LEACHATE FLOW (GPD)</b>
2.75	45,000
3.0	50,000
3.25	55,000
3.5	60,000
3.75	70,000
4.0	75,000
4.25	85,000
4.5	95,000
4.75	100,000
5.0	105,000
5.25	110,000
5.5	115,000
5.75	120,000
>5.75	120,000

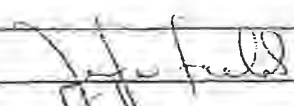
**11. Copy of Water Quality (Part II) Permit for K-Mart and Philadelphia Avenue Pumping Stations**



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT NO. 0906402  
AMENDMENT NO. \_\_\_\_\_  
APS ID 581567  
AUTH ID 630009

**WATER QUALITY MANAGEMENT  
PERMIT**

<p>A. PERMITTEE (Name and Address): <span style="float:right">CLIENT ID#: 64800</span>  <b>The Municipal Authority of the Borough of Morrisville</b>                  35 Union Street                  Morrisville, PA 19067</p>	<p>B. PRIMARY FACILITY (Name):  <b>Falls Township Sewer District: K – Mart and Philadelphia Avenue Pump Stations</b></p>	
<p>C. LOCATION (Municipality, County):  <b>Morrisville Borough</b>  <b>Bucks County</b></p>	<p>SITE ID#: <b>475502</b></p>	
<p>D. <b>This permit approves the modification of sewerage facilities consisting of:</b>  <b>K-Mart and Philadelphia Avenue Pump Station upgrades</b></p>		
<p>Pump Stations: <u>2</u>                  Design Capacity: <u>219,535</u> GPM                  Average Annual Flow: <u>382,715</u>                                                    <u>769,744</u> GPD</p>	<p>Manure Storage:                  Volume _____ MG                  Freeboard: _____ inches</p>	<p>Industrial Wastewater/Sewage Treatment Facility:                  Annual Average Flow: _____ MGD                  Design Hydraulic Capacity: _____ MGD                  Design Organic Capacity: _____ lb/day</p>
<p>E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:</p> <p>1. <b>New Permits:</b> All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated <u>03/10/2006</u>, its supporting documentation, and addendums dated _____, which are hereby made a part of this permit.</p> <p><b>Amendments:</b> All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation, and addendums dated _____, which are hereby made a part of this amendment.</p> <p>Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.</p> <p><b>Transfers:</b> Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.</p> <p>2. <b>Permit Conditions Relating to sewerage</b> are attached and made part of this permit.</p> <p>3. Special Conditions numbered _____ are attached and made part of this permit.</p>		
<p>F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:</p> <p>1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.</p> <p>2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.</p> <p>3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, <u>as amended</u> 35 P.S. §691.1 <i>et seq.</i> Issuance of this permit shall not relieve the permittee of any responsibility under any other law.</p>		
<p>PERMIT ISSUED:   <span style="float:right">June 27, 2006</span></p>	<p>BY: <u></u>                  TITLE: <u>Water Management Program Manager</u></p>	

**12. Copy of Morrisville Wastewater Treatment  
Plant's Amended Water Quality (Part II)  
Permit**



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**WATER QUALITY MANAGEMENT  
PERMIT**

<p>A. PERMITTEE (Name and Address): <b>The Municipal Authority of the Borough of Morrisville</b> <b>35 Union Street</b> <b>Morrisville, PA 19067</b></p>	<p>CLIENT ID#: <u>64800</u></p> <p>B. PRIMARY FACILITY (Name): <b>Morrisville Boro STP</b></p>	
<p>C. LOCATION (Municipality, County): <b>Morrisville Borough</b> <b>Bucks County</b></p>	<p>SITE ID#: <u>449420</u></p>	
<p>D. THIS PERMIT APPROVES AN INCREASE IN THE ORGANIC CAPACITY OF EXISTING SEWAGE TREATMENT FACILITY CONSISTING OF: <b>an aerated grit chamber, an influent pump station, two parallel treatment plants. The North UNOX Plant consists of one UNOX reactor and two circular final clarifiers. The South UNOX Plant consists of one primary clarifier, a UNOX reactor and two rectangular final clarifiers. Effluent from the North and South Plants combined prior to final treatment consisting of filtration and chlorination. Sludge treatment facilities include a DAF thickener, two sludge holding tanks, and two filter presses.</b></p>		
<p>Pump Stations: _____ Design Capacity: _____ GPM Average Annual Flow: _____ GPD</p>	<p>Manure Storage: Volume _____ MG Freeboard: _____ inches</p>	<p>Sewage Treatment Facility: Annual Average Flow: <u>7.1</u> MGD Design Hydraulic Capacity: <u>8.7</u> MGD Design Organic Capacity: <u>20,250</u> lb/day</p>
<p>E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:</p> <p>1. <b>Renewed Permits:</b> All operations and procedures shall be in accordance with the Water Quality Management Permit applications dated <u>05/20/2010</u>, its supporting documentation and addendums dated _____ which are hereby made a part of this permit.</p> <p><b>Amendments:</b> All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation, and addendums dated _____, which are hereby made a part of this amendment.</p> <p>Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.</p> <p><b>Transfers:</b> Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.</p> <p>2. <b>Permit Conditions Relating to Sewerage</b> are attached and made part of this permit.</p> <p>3. Special Conditions numbered <u>I</u> are attached and made part of this permit.</p>		
<p>F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:</p> <p>1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.</p> <p>2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.</p> <p>3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937 P.L. 1987, as amended 35 P.S. §691.1 et seq. Issuance of this permit shall not relieve the permittee of any responsibility under any other law.</p>		
<p>PERMIT ISSUED:  <u>July 2, 2010</u></p>	<p>BY: <u>[Signature]</u> TITLE: <u>Water Management Program Manager</u></p>	

**Sewerage Permit No. 0987403 Amendment No. 1  
The Municipal Authority of the Borough of Morrisville  
Morrisville Borough, Bucks County**

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

- I. 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.

Re 30 (GJS10WTSD)174b



## **13. 2019 WET Weather Pump Station Records**

**(Please note that 2020 records were not taken)**

**2019 Wet Weather - Pump Station Records**

<u>K-Mart Pump Station</u>				<u>Philadelphia Pump Station</u>			
<u>Date</u>	<u>Pump Reading</u> (Hours)	<u>24 Hr. Running Time</u> (Hours)	<u>Rainfall</u> (Inches)	<u>Date</u>	<u>Pump Reading</u> (Hours)	<u>24 Hr. Running Time</u> (Hours)	<u>Rainfall</u> (Inches)
<u>3/21/2019</u>			1.07	<u>3/21/2019</u>			1.07
Pump No. 1	25544.90			Pump No. 1	18076.30		
Pump No. 2	20880.20			Pump No. 2	19483.70		
<u>3/22/2019</u>			0.26	<u>3/22/2019</u>			0.26
Pump No. 1	25547.60	2.70		Pump No. 1	18076.80	0.50	
Pump No. 2	20883.10	2.90		Pump No. 2	19494.70	11.00	
Total Running Hours:		5.60		Total Running Hours:		11.50	
% Running Time:		23%		% Running Time:		48%	


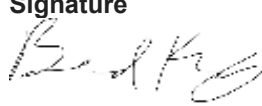
## **14. Authority Response to Notice of Violation**

**NOTE:**

**\*No Notice of Violation in 2020**

## **15. SSO Report**

**SEWAGE INSPECTION REPORT**

Permit Number	Inspection Date	Entry Time	Exit Time	Inspection Type	Inspection ID
PA0026701	11/12/2020	15:41	16:22	INCDT	3109898
Municipality	Morrisville	County	Bucks		
Facility Name	MORRISVILLE BOROUGH STP	Permittee Name	MORRISVILLE MUNI AUTH BUCKS CNTY		
24-Hour Emergency Contact Person/Phone	/	Email	----		
Physical Location Address	100 RIVER ROAD, MORRISVILLE, PA, 19067				
Permit Expiration Date	11/30/2019	Next Submittal ---- Due Date	----		
<b>Violations*</b>	Viol(s) Noted & Immediately Corrected				
					
<ol style="list-style-type: none"> <li><b>25 Pa. Code 91.34(a):</b> CSL - Failure to take necessary measures to prevent pollutants from reaching waters of the Commonwealth Morrisville Borough STP discharged partially treated sewage to the ground.</li> <li><b>P.L. 1987, No. 394, Sec 201:</b> CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth Morrisville Borough STP overflowed partially treated sewage onto the ground from the influent channel to the South Plant Second Secondaries. The overflow was caused by foaming and a higher sludge age in the South Plant. Since the overflow wasting has been increased to reduce sludge age and foaming. The sludge was cleaned up.</li> </ol>					
<b>Recommendations</b>					
Monitor and reduce sludge age by contining to invrease wasting and treat with hypochlorite.					
Person Interviewed Rich Dulay	Date 11/12/2020	Inspector BERNARD J KRASNISKY	Date 11/12/2020		
Signature Covid-19	Phone Number (267) 246-1429	Signature 	Phone Number (484) 250-5134		
Title Superinttendent	Title WTR QLTY SPCST				
Email mmawwtp@verizon.net	Email bkrasnisky@pa.gov				
<p><b>This document is official notification that a representative of the Department of Environmental Protection inspected the above facility. The findings of this inspection are shown above and on any attached pages. *Any violations which were noted during the inspection are indicated. Violations may also be discovered upon examination of the results of laboratory analyses of the discharge and/or review of Department records.</b></p>					

**SEWAGE INSPECTION REPORT**

<b>Facility Details Section</b>			
<b>Responsible Official</b>	JOHN J WARENDA	<b>Title</b>	EXEC DIR
<b>Business Phone</b>	(215) 295-8181	<b>Email</b>	----
<b>Permittee Address</b>	35 UNION ST, MORRISVILLE, PA, 19067-6246		
<b>Certified Operator</b>	DULAY RICHARD A	<b>Client ID</b>	199196
<b>Certificates</b>	A,E-1,2,3,4	<b>Certification Status</b>	Active
		<b>Expiration Date</b>	12/31/2020
<b>Is a Copy of the permit(s) on-site?</b>		----	
<b>Has the interviewed operator/person reviewed the facility's permit(s)?</b>		----	
<b>Comments</b>			
Flow to the North Plant has been reduced to 20-30% by adjusting thensplitter box weir in order reduce the loading to the North Unox.			
<b>Participants:</b>			
----			

SEWAGE INSPECTION REPORT

1 Mon,Rpts&Rcds: 0987403 A2 - MORRISVILLE BORO STP

Influent Sampling

MRR-1	Is influent monitoring required by the permit?	Yes	
MRR-2	Are influent samples collected?	Yes	
MRR-3	Is the influent sampling location prior to all treatment?	Yes	
MRR-4	Is the influent sampling location prior to all return flows?	Yes	
MRR-5	Are representative influent samples collected?	Yes	

Effluent Sampling

MRR-6	Is the effluent sample collected at the location identified in the permit?	Yes	
MRR-7	Where is the effluent sample collection location? Notes: End of CCT	Comments	
MRR-8	Is the effluent sample location after all treatment?	Yes	
MRR-9	Are representative effluent samples collected?	Yes	

Sample Collection

MRR-10	Are samples collected as required by the permit?	Yes	
MRR-11	Is proper sampling equipment / containers used during collection?	Not Observed	
MRR-12	Are the proper type of samples collected in accordance with the permit?	Not Observed	
MRR-13	Are the samples collected at the frequency in accordance with the permit?	Yes	
MRR-14	Is the proper sample size (minimum aliquot 100 mL) collected?	Yes	
MRR-15	Is proper temperature control provided during collection, storage and shipping?	Not Observed	
MRR-16	Is the temperature of the sampler or storage refrigerator monitored using an NIST traceable thermometer and recorded?	Not Observed	
MRR-17	Is the sample storage temperature $\leq 6^{\circ}\text{C}$ ?	Not Observed	
MRR-18	What is the sample storage temperature?	N/O	

On-site Lab Accreditation-by-Rule

MRR-19	Does the facility analyze accredited-by-rule parameters only?	Yes	
MRR-20	Which accredited-by-rule parameters are analyzed by the on-site lab?	pH DO TRC	
MRR-21	Is the on-site lab registered?	Yes	

SEWAGE INSPECTION REPORT

MRR-22	Laboratory Registration ID	See eDMR	
<b>Lab Accreditation</b>			
MRR-23	Does the on-site laboratory analyze permit parameters?	Yes	
MRR-24	Which permit parameters does the on-site lab analyze?	TSS CBOD NH3-N TP BOD NO3-NO2 FC	
MRR-25	Is the on-site lab accredited for those parameters?	Yes	
MRR-26	Laboratory Accreditation ID	See eDMR	
MRR-27	Is the on-site accredited lab supervised by a properly certified operator with subclassification 5 or by a grandfathered lab supervisor?	Yes	
MRR-28	Lab Supervisor Name, Client ID, Certificate Expiration Date (from certificate)	Rory Sullivan	
MRR-29	Are permit parameters analyzed by a contract lab?	Yes	
MRR-30	Contract Lab Name, City, Phone	MJ Reider	
MRR-31	Contract Laboratory Accreditation ID	See eDMR	
MRR-32	Is the contract lab accredited for those permit parameters?	Yes	
MRR-33	Have any changes occurred with the accredited-by-rule or the accredited parameters or labs?	No	
<b>Analysis</b>			
MRR-35	Are approved test methods (per 40 CFR Part 136 or others) used for permit parameters?	Not Observed	
MRR-36	Are the methods used sufficiently sensitive for permit parameters?	Not Observed	
MRR-37	Are the samples analyzed within the required holding time?	Not Observed	
MRR-38	Are laboratory equipment/meters calibrated in accordance with the manufacturers' specifications?	Not Observed	
MRR-39	Are laboratory meters operated and maintained in accordance with the manufacturers' specifications?	Not Observed	
MRR-40	Are pH buffers and other reagent standards current?	Not Observed	
<b>Records</b>			
MRR-41	Are sampling, calibration, laboratory results, chain-of-custody and other required records readily available for review and complete?	Not Observed	
MRR-42	Do the sampling records include collector, date/time, location information?	Not Observed	
MRR-43	Do the analysis records include the analyst's name, the analysis date and time, the test method used, the quantitation limits, and the results?	Not Observed	
MRR-44	Are the required facility records retained for a minimum of 3 years?	Not Observed	
		Not	



SEWAGE INSPECTION REPORT

MRR-45	Are the required sludge use and disposal records retained for a minimum of 5 years?	Observed	
MRR-46	Was access provided to information or to facility records upon request?	Not Observed	

Reports

MRR-47	Identify the month/year of the DMRs and supporting data reviewed.	August 2020	
MRR-48	Are the reviewed DMRs and supplemental reports properly completed?	Yes	
MRR-49	Are the reviewed bench sheets/lab reports consistent with the reported data?	Yes	
MRR-50	Are samples collected more frequently than required in the permit?	Yes	
MRR-51	Are additional sample results incorporated into the DMR calculations?	Yes	
MRR-52	Are DMRs submitted on time?	Yes	
MRR-53	Are the required supplemental reports submitted?	Yes	
MRR-54	Is the facility using the eDMR system, if required?	Yes	

2 Flow Measurement: 0987403 A2 - MORRISVILLE BORO STP

Flow Measurement

Q-2	If influent flows are measured, are they measured before all return lines and after hauled-in waste?	No	
Q-3	Is a flume present?	No	
Q-6	Is a weir present?	No	
Q-8	What is the max flow that can be measured at the primary device (flume or weir)?	0-12.0 MGD	

Meter & Recorder

Q-9	Does the permit require continuous flow monitoring and recording?	Yes	
Q-10	Does the facility have the required flow monitoring and recording capabilities?	Yes	
Q-11	What type of flow meter is used?	Ultrasonic	
Q-12	What type of flow recorder is used?	Totalizer SCADA/Electronic	
Q-13	Are the meter and recorder operable and operating?	Yes	
Q-14	What is the date of the most recent flow meter calibration?	July 2020	
Q-15	What is the calibration range of the flow meter?	See previous	
Q-16	What is the flow range of the recorder?	See previous	
Q-17	What is the current flow meter reading (MGD or gpm)?	N/O	

SEWAGE INSPECTION REPORT

High Flows

Q-18	Does the permit require a High Flow Management Plan?	No	
------	--	----	--

3 TP Treatment Plant: 0987403 A2 - MORRISVILLE BORO STP

Treatment Units

TP-1	Are all treatment units operable?	Yes	
TP-2	Are the treatment units/equipment as described in the WQM permit(s) or in the previous inspection report?	Yes	

Stand-by Power

TP-7	Is stand-by power provided?	Yes	
TP-8	Type of Stand-by Power	Emergency generator	
TP-9	How often is the stand-by power unit maintained?	Yearly	
TP-10	How often is the stand-by power unit exercised?	Weekly	
TP-11	Is the stand-by power unit exercised under load?	No	
TP-12	Is the stand-by power system operable and maintained?	Yes	

Alarms

TP-13	Is an alarm system available?	Yes	
TP-14	Type of Alarm	Other Auto Dialer	
TP-15	How often is the alarm system tested?	Weekly	
TP-16	What conditions trigger an alarm? Select all that apply.	Power failure High level Pump failure	
TP-17	Is the alarm system(s) operable?	Yes	

Chemicals

TP-18	Are chemicals used for treatment or otherwise added to the waste stream?	Yes	
TP-19	Which chemicals are added? Notes: 1. Sodium Hypochlorite 2. Sodium Bisulfite 3. Polymer	Comments	
TP-20	What is the purpose of the chemical addition? Notes: Disinfection	Comments	
TP-21	Where are the chemicals added? Notes: Chlorine Contact Tank Return Sludge Lines	Comments	
TP-22	Are chemicals properly handled and stored to prevent a pollution incident?	Yes	

SEWAGE INSPECTION REPORT

TP-22	Are chemicals properly handled and stored to prevent a pollution incident?	Yes	
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**Bypasses**

TP-23	Did a treatment plant bypass occur since the last inspection?	No	
-------	---	----	--

**Planned Changes**

TP-35	Have any changes (new pollutants, different or increased volume or loadings) to the waste stream from industrial or hauled-in wastes occurred since the last inspection?	No	
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**4 O&M: 0987403 A2 - MORRISVILLE BORO STP**

**O&M**

OM-1	Which of the following treatment plant and equipment records are available?	O&M Manual As-built drawings	
OM-2	Is a daily operations log on-site?	Yes	
OM-3	Is the daily operations log up to date?	Yes	
OM-4	Which operational conditions/actions are recorded in the log?	Observations Process adjustments Problems or Concerns	
OM-5	Are process control parameters monitored? (Record the monitoring frequency and current results)	Yes	
OM-6	Is an influent/process control supplemental report form completed and submitted with the DMR?	Yes	
OM-7	Does the daily operations log include maintenance and repair records?	No	
OM-8	Is a routine preventative maintenance (PM) schedule and log maintained?	Yes	
OM-9	Is a repair log on-site?	Yes	
OM-10	Are the PM and repair logs up to date?	Yes	
OM-11	Were major equipment repairs/replacements done since the last inspection?  <b>Notes:</b> South Unox Compressor was repaired and is back online after leaking oil. A seal is being repaired. North Unox Compressor died due to a cracked piston. It is too old to repair and a new compressor is being purchased. A temporary compressor will be installed to keep the Unox running. The compressor must output 50-60 psi. The Air Liquide fill line cracked off and was repaired on 11/11/2020.	Yes	
OM-12	Is a spare parts inventory, either written or electronic, maintained?	Yes	
OM-13	Are spare parts and equipment (pumps, motors) maintained on-site or readily available?	Yes	

**Solids Management**

OM-14	What is the sludge storage capacity?	N/O	
OM-15	How much sludge was removed from the facility in the past year?	N/O	
OM-16	How does the facility determine how much sludge to waste?	Comments	

SEWAGE INSPECTION REPORT

	<b>Notes:</b> Based on MLSS etc.		
OM-17	Is sludge/biosolids production & disposal information submitted on the applicable supplemental report form with the DMR?	Yes	
OM-18	Does the facility test the removed sludge for %TS?	Yes	
OM-19	Who provides sludge hauling/disposal/land application?	Waste Management	
OM-20	Where is the sludge disposal/biosolids application location?	Grows Landfill	
OM-21	How and where are other solid materials, such as collected screenings and grit, disposed?	Waste Management	
OM-22	Has the facility obtained or assured that contracted agents have the necessary permits and approvals for the disposal of solid materials?	Yes	
OM-23	Are solid materials handled and disposed of in compliance with a disposal permit and requirements?	Yes	
OM-24	Is the facility in compliance with all other Part C Special Conditions regarding Solids Management?	Yes	

Hauled in Wastes

OM-25	Does the facility accept hauled-in wastes?	No	
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Stormwater

OM-37	Does the permit include a special condition or other requirements regarding stormwater management?	No	
-------	--	----	--

Special Conditions

OM-42	Is the facility subject to industrial pretreatment requirements, or does the permit include a Part C Special Condition regarding Industrial Pretreatment?	Yes	
OM-43	Has EPA approved the facility's pretreatment program?	Yes	
OM-44	Have local limits been implemented for industrial users?	Yes	
OM-45	Does the permit contain a condition regarding whole effluent toxicity (WET) tests?	Yes	
OM-46	Has WET testing been conducted?	Yes	
OM-47	Is the facility in compliance with all other permit requirements applicable to WET testing?	Yes	
OM-48	Are any other special conditions in the permit not covered in this inspection report?	Yes	
OM-49	What other special conditions are in the permit not otherwise covered in this inspection report?	N/A	
OM-50	Has the facility complied with the requirements of the other special conditions listed?	Yes	

5 DP Discharge Point: 001 - OUTFALL 001

Outfall

DP-1	Outfall Observations	Effluent is clear	
DP-2	Were field measurements taken?	No	
DP-3	Were effluent samples collected for laboratory analysis?	No	

**SEWAGE INSPECTION REPORT**

<b>DP-4</b>	<b>were effluent samples collected for laboratory analysis?</b>	<b>NO</b>	
<b>Downstream</b>			
<b>DP-10</b>	<b>Is the receiving stream clear of floating or deposited materials, scum, sheen, foam, oil, grease or other substances associated with the discharge?</b>	<b>Not Observed</b>	
<b>DP-11</b>	<b>Were downstream field measurements taken?</b>	<b>No</b>	
<b>DP-13</b>	<b>Were downstream samples collected for laboratory analysis?</b>	<b>No</b>	
<b>Upstream</b>			
<b>DP-19</b>	<b>Was the stream observed upstream from the outfall?</b>	<b>No</b>	
<b>DP-20</b>	<b>Were upstream field measurements taken?</b>	<b>No</b>	
<b>DP-22</b>	<b>Were upstream samples collected for laboratory analysis?</b>	<b>No</b>	

**SEWAGE INSPECTION REPORT**

**3 TP Treatment Plant: 0987403 A2 - MORRISVILLE BORO STP**

**Treatment Units**

<b>TP-1</b>	<b>Are all treatment units operable?</b>			
<b>Treatment Units</b>	<b>Total</b>	<b>On-Line</b>	<b>Inoperable</b>	<b>Comments</b>
Aeration Basin	2	2	0	North Unox flow is cut back on liquid O2
Primary Clarifier	4	4	0	
Secondary Clarifier	10	9	1	Waiting for sprocket
Dissolved Air Flotation	2	2	0	Sludge pipe needs to be replaced
Media Filter	3	2	0	
Chlorine Contact Tank	6	6	0	

**4 O&M: 0987403 A2 - MORRISVILLE BORO STP**

**O&M**

<b>OM-5</b>	<b>Are process control parameters monitored? (Record the monitoring frequency and current results)</b>	
<b>Parameter / Calculation</b>	<b>Frequency Of Testing</b>	<b>Current Testing Results</b>
Settleability	Daily	
Sludge Blanket	Daily	
Mixed Liquor Suspended Solids (MLSS)	Daily	

**SEWAGE INSPECTION REPORT**

**Inspection Images**



Photo #: Sludge line from DAF to Sludge Holding Tanks TP-2 3 TP Treatment Plant-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: CCT #1 TP-2 3 TP Treatment Plant-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: Final Effluent TP-2 3 TP Treatment Plant-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: Repaired O2 tank line OM-11 4 O&M-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY

**SEWAGE INSPECTION REPORT**



Photo #: Cracked Compressor OM-11 4 O&M-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: Cracked North Unox Compressor OM-11 4 O&M-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: Spath Unox Compressor OM-11 4 O&M-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



Photo #: Area of Sludge Overflow OM-11 4 O&M-0987403 A2 Description: Photo taken by BERNARD J KRASNISKY



**SEWAGE INSPECTION REPORT**



Photo #: Souurh Plant Second Secondarya OM-11 4  
O&M-0987403 A2 Description: Photo taken by  
BERNARD J KRASNISKY



Photo #: South Plant Secon Secondary Weirs OM-11  
4 O&M-0987403 A2 Description: Photo taken by  
BERNARD J KRASNISKY



Photo #:



Photo #:

**SEWAGE INSPECTION REPORT**



Photo #:

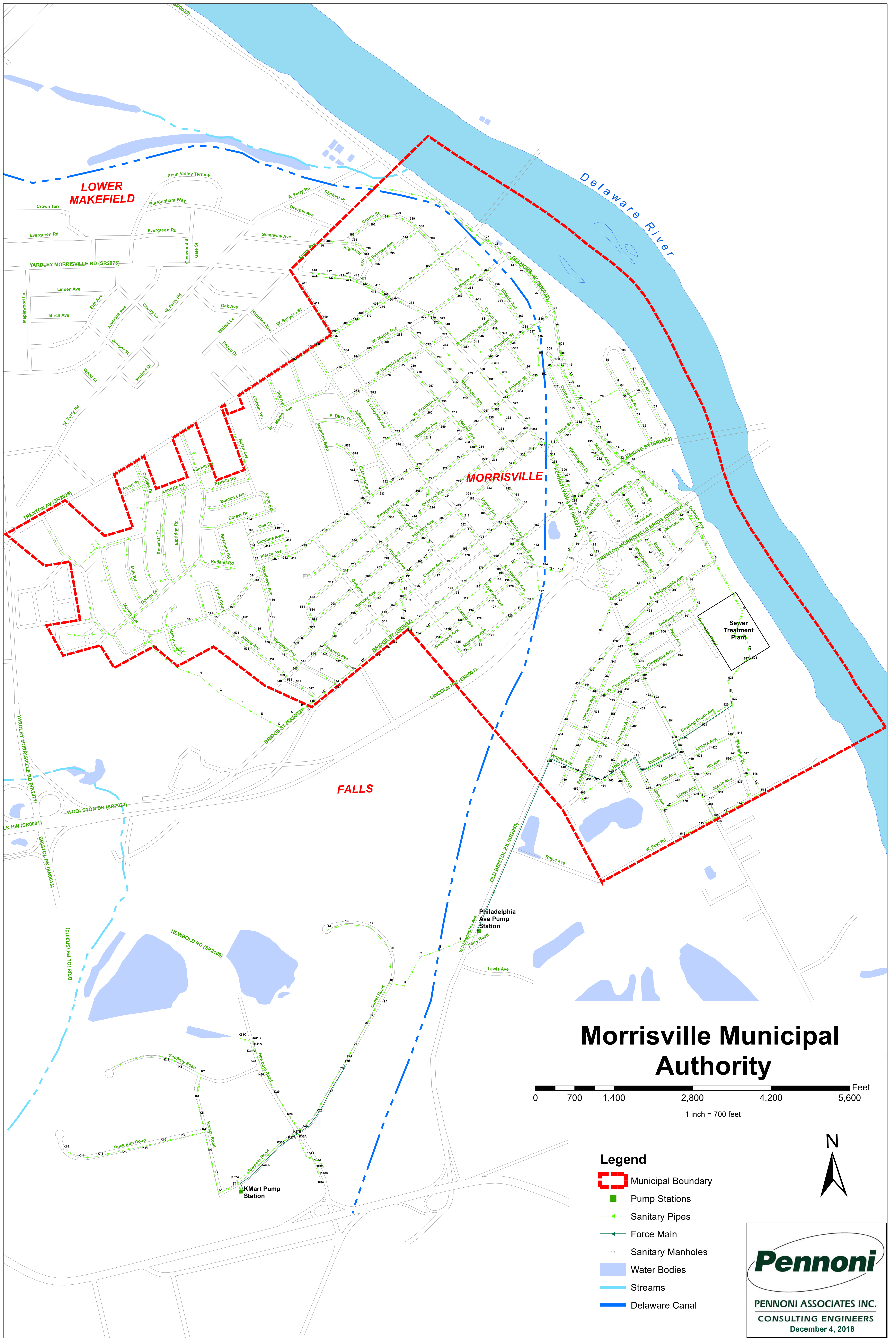


Photo #: North Plant Secondary T-10 OM-11 4 O&M-  
0987403 A2 Description: Photo taken by BERNARD  
J KRASNISKY

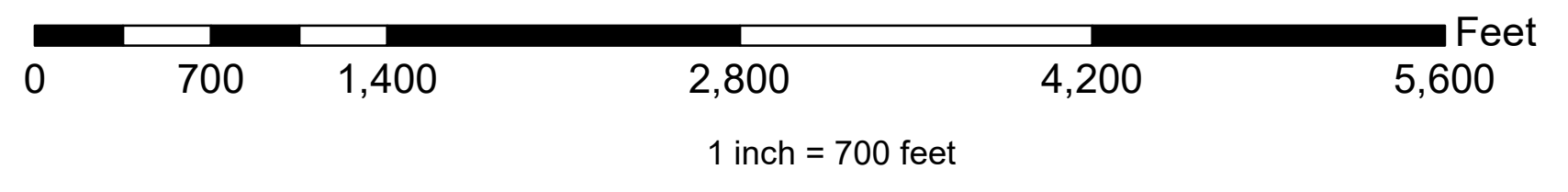


Photo #: South Plant dart T-9 OM-11 4 O&M-  
0987403 A2 Description: Photo taken by BERNARD  
J KRASNISKY

## **16. Morrisville Sewerage Facilities Map**



# Morrisville Municipal Authority



### Legend

- - - Municipal Boundary
- Pump Stations
- - - Sanitary Pipes
- Force Main
- Sanitary Manholes
- Water Bodies
- Streams
- Delaware Canal





**PENNONI ASSOCIATES INC.**  
CONSULTING ENGINEERS  
December 4, 2018

**APPENDIX B**

**LOWER MAKEFIELD TOWNSHIP**

**MUNICIPAL WASTELOAD MANAGEMENT  
ANNUAL REPORT, CALENDAR YEAR 2019**



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

**For Calendar Year: 2020 - MMA Service Area**

- Permittee is owner and/or operator of a POTW or other sewage treatment facility  
 Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	<b>Lower Makefield Township</b>	Permit No.:	<b>PA N/A - Collection System Tributary to Morrisville Municipal Authority</b>
Mailing Address:	<b>1100 Edgewood Road</b>	Effective Date:	
City, State, Zip:	<b>Yardley, PA 19067</b>	Expiration Date:	
Contact Person:	<b>Kurt M. Ferguson</b>	Renewal Due Date:	
Title:	<b>Township Manager</b>	Municipality:	<b>Lower Makefield Township</b>
Phone:	<b>267-274-1100</b>	County:	<b>Bucks County</b>
Email:	<b>kurtf@lmt.org</b>	Consultant Name:	<b>Frederick E. Ebert, P.E., Ebert Engineering, Inc.</b>
CHAPTER 94 REPORT COMPONENTS			
<p>1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (<u>25 Pa. Code § 94.12(a)(1)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input type="checkbox"/> Line graph for flows attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input checked="" type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>			
<p>2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (<u>25 Pa. Code § 94.12(a)(2)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input type="checkbox"/> Line graph for organic loads attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input checked="" type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>			

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

**Attached are spreadsheets for the hydraulic projections within Morrisville Borough Service Area from Lower Makefield Township. The hydraulic projections were calculated based on the 2020 annual average flow and proposed connections for 2021 through 2025 (five year projections).**

**Lower Makefield Township does not own or operate a wastewater treatment plant.**

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

**Check the appropriate boxes:**

- Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment A**)
- List summarizing each extension or project attached (**Attachment B**)
- Schedules describing how each project will be completed over time and effects attached (**Attachment C**)

**Comments:**

**The attached Chapter 94 Plan has been updated to include all extensions to the system completed during the calendar year of 2020.**

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

**Lower Makefield Township checks each meter pit weekly. In 2020, Lower Makefield Township contracted with Private Utility Enterprises, Inc. to assist the Lower Makefield Township staff with operation and maintenance of the pump stations. This will allow their staff to spend more time identifying sources of I/I.**

**Lower Makefield Township significantly increased the Township budget to address I/I issues as well as the need to upgrade their existing pump stations. Starting in 2020 and moving forward Lower Makefield Township has budgeted approximately \$215,000.00 per year for Cured In Place Pipe (CIPP) liners and \$20,000.00 per year to rehabilitate manholes. In 2020 Lower Makefield Township lined approximately 2,125 linear feet of twelve inch sanitary sewer mains and lined six manholes. The same amount of work is currently being bid for 2021.**

**Lower Makefield Township adopted a lateral inspection ordinance in 2019 that requires that all laterals be televised and if necessary repaired for all property transfers. This ordinance was implemented and in effect during 2020.**

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

**Check the appropriate boxes:**

- System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

**Comments:**

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

**Check the appropriate boxes:**

- The collection system does not contain pump stations
- The collection system does contain pump stations (Number – 4)
- Discussion of condition of each pump station attached (**Attachment D**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

**Check the appropriate boxes:**

- Industrial waste report as described in 8 a., b. and c. attached (**Attachment** )
- Industrial pretreatment report as required in an NPDES permit attached (**Attachment** )



9. Existing or Projected Overload.

**Check the appropriate boxes:**

- This report demonstrates an existing hydraulic overload condition. **The data indicates that the Silver Lake Pump Station is in an existing hydraulic overload condition but the flows are based upon pump run hours. The issue is that the existing check valves are leaking which is creating a double accounting of some flows. The pumping rate may have also decreased. The piping and pumps in this pump station are scheduled to be replaced in 2021.**
- This report demonstrates a projected hydraulic overload condition.
- This report demonstrates an existing organic overload condition.
- This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

- Corrective Action Plan attached (**Attachment** )

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- Sewage Sludge Management Inventory attached (**Attachment** )

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

- Annual CSO Report attached (**Attachment** )

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

- Flow calibration report attached (**Attachment E**)

**RESPONSIBLE OFFICIAL CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Frederick E. Ebert, P.E., Authority Engineer**

Name of Responsible Official

**610-584-6701**

Telephone No.



Signature

**March 24, 2021**

Date

### PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

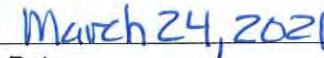
**Frederick E. Ebert, P.E. , Ebert Engineering, Inc.**



Name of Preparer

Signature

**610-584-6701**



Telephone No.

Date



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

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

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

### General Information

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

### Chapter 94 Report Components

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

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

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

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

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

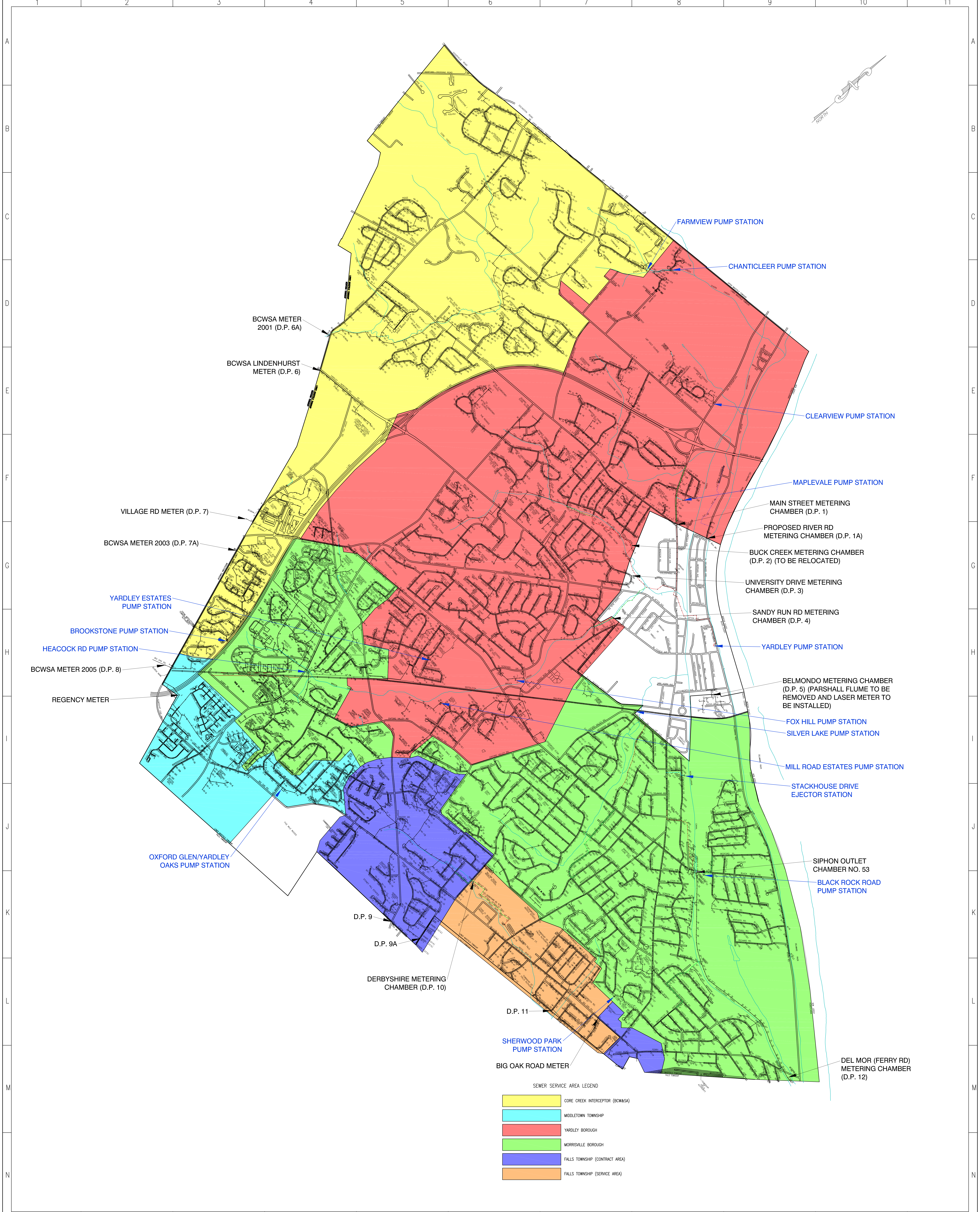
For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

### Certification

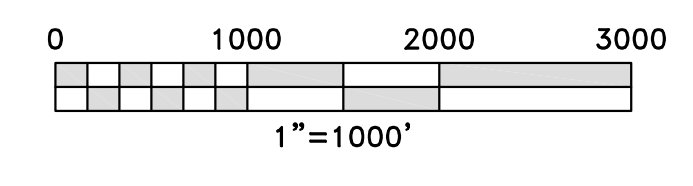
In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

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

**ATTACHMENT A - OVERALL SEWER PLAN FOR LOWER MAKEFIELD  
TOWNSHIP**



This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Ebert Engineering, Inc., and is not to be used in whole or part, for any other project without the written authorization of Ebert Engineering, Inc. This is a copy and not the original drawing. Any liability whatsoever is limited to the original drawing or our last revision to the original. Reproductions of this drawing without an embossed engineer's seal are not valid.



Number	Description	Date	Drawn By	Project Engr.	Checked By	Scale	Job No.	Date	Drawing No.
1	Revision To Morrisville Borough Service Area	8/31/08	EMK	FEE	FEE	1"/1000'	068-001	05/16/16	1 OF 1

**GENERAL PLAN OF SANITARY SEWERS  
WITH SEWER SERVICE AREAS  
FOR  
LOWER MAKEFIELD TOWNSHIP**

**Ebert Engineering, Inc.**  
Water and Wastewater Engineering

PO Box 540  
 4092 Skipack Pike, Suite 202  
 Skipack, PA 19474  
 E-mail: febert@ebertengineering.com  
 Phone: (610) 584 6701  
 Fax: (610) 584 6704

**ATTACHMENT B - LIST OF SEWER EXTENSIONS IN 2020**

**LOWER MAKEFIELD TOWNSHIP  
SANITARY SEWER EXTENSIONS AND CONNECTIONS IN 2020  
MORRISVILLE SERVICE AREA**

<b>Development Name</b>	<b>Length of Pipe (L.F.)</b>	<b>Size of Pipe (in.)</b>	<b>Laterals Installed</b>
Caddis Health (Heartis of Yardley)	700	1.5	1
9 Colonial Ridge Drive (New Home)	No New Pipe Installation		1

**ATTACHMENT C - LIST OF 5-YEAR PROJECTIONS AND POPULATION PROJECTIONS**



**LOWER MAKEFIELD TOWNSHIP  
SANITARY SEWER CONNECTIONS FOR MORRISVILLE BOROUGH  
5 YEAR PROJECTION**

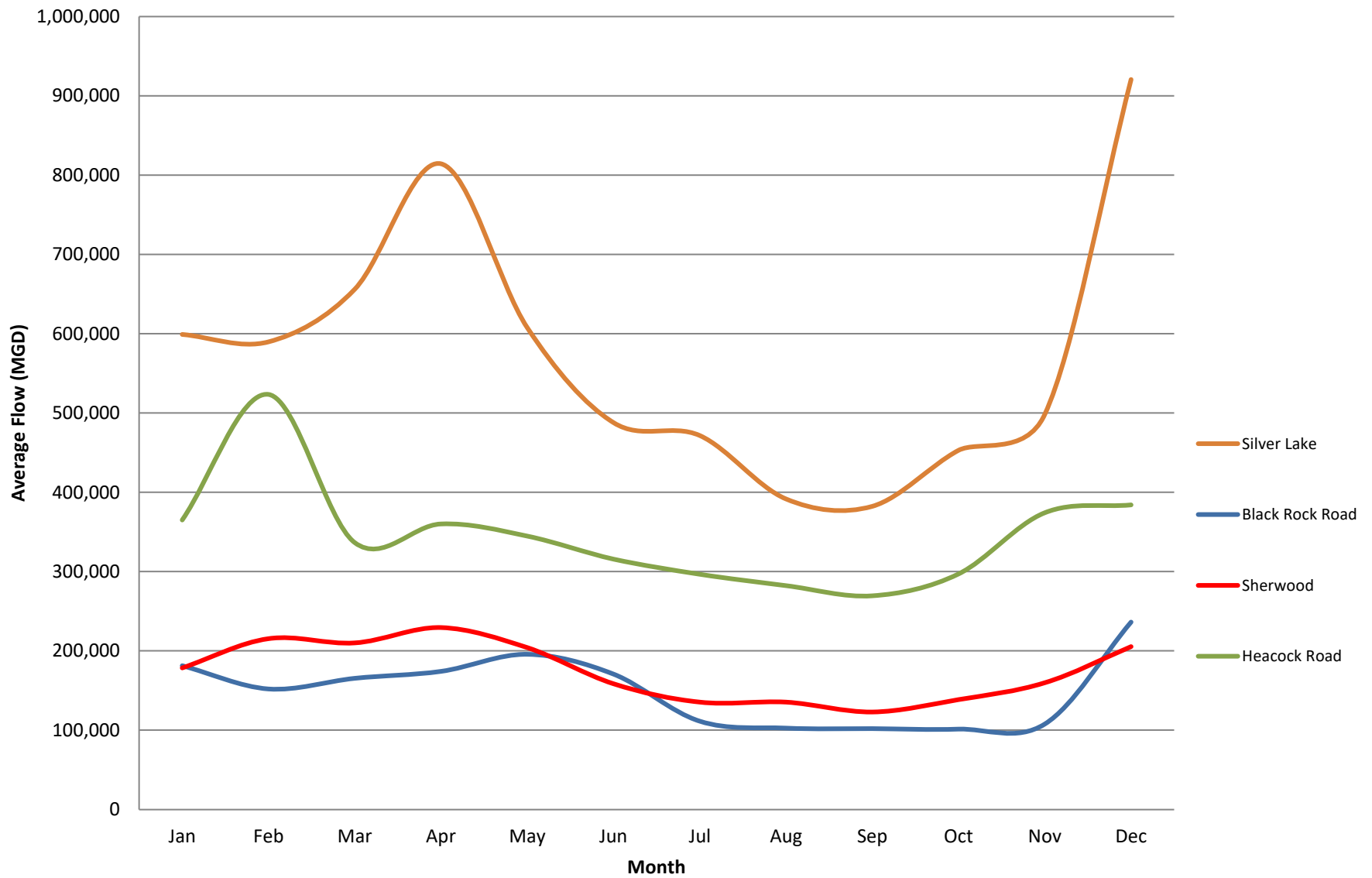
Development Name	Pump Station	Meter	EDU's Planned or Approved	EDU's Connected To Date	EDU's Needed	2021	2022	2023	2024	2025
Marrazzo Garden Center, Pine Grove Road/ Makefield Road - 11 Townhomes	Black Rock Road	Del Mor	11	0	11	5	6	0	0	0
Orleans - Edgewood Road, 60 lots Residential	Heacock Road	Del Mor	60	5	55	0	20	20	15	0
Dobry Road - Erin Development - 76 Residential Units	Heacock Road	Del Mor	76	0	76	5	11	20	20	20
Caddis Health	Heacock Road	Del Mor	40	40	0	0	0	0	0	0
Wintersteen (683-685 Stony Hill Road) - 4 unit attached dwelling	Heacock Road	Del Mor	4	0	4	0	4	0	0	0
Flowers Field at Edgewood - Residential		Buck Creek	48	48	0	0	0	0	0	0
Flowers Field at Edgewood - 21 Commercial Units		Buck Creek	21	0	21	0	10	11	0	0
Dogwood Drive (Harmony lane)		Buck Creek	5	0	5	2	3	0	0	0
Snipes Tract (2 Restrooms)		Buck Creek	2	0	2	0	0	0	2	0
Artis Senior Living Facility - Stony Hill Road, 72 beds proposed (Yardley Service Area) EE Job # 068-027		Buck Creek	29	29	0	0	0	0	0	0
Oxford Valley Road and Stony Hill Road (Yardley Boro Service Area) EE Job # 068-016	Mill Road Estates	Sandy Run Road	22	0	22	0	10	12	0	0
Field Stone - Edgewood Road, 32 Residential Lots	Fox Hill	Sandy Run Road	32	0	32	0	0	10	10	12
Miskiel Darrah Minor Subdivision - 2 Lots (829 Sandy Run Road)		Sandy Run Road	2	1	1	0	1	0	0	0
Shennard Property (1 Residential Connection)	Heacock Road	Del Mor	1	0	1	1	0	0	0	0
<b>Totals</b>						<b>13</b>	<b>65</b>	<b>73</b>	<b>47</b>	<b>32</b>

Population Projections for the Morrisville						
	2020	2021	2022	2023	2024	2025
<b>Populations</b>	24,767	24,809	25,057	25,353	25,517	25,640
<b>EDUs</b>	8,877	8,892	8,981	9,087	9,146	9,190

\*Population projections based on 2019 EDU Audit x 2.79 persons/edu

**ATTACHMENT D - PUMP STATION FLOW INFORMATION**

# Lower Makefield Township 2020 Pump Station Average Flow Morrisville WWTP Collection System



<b>Lower Makefield Township 2020 PUMP STATION DATA</b>				
<b>Morrisville Service Area</b>				
<b>Average Daily Flow (gpd)</b>				
	<b>Silver Lake</b>	<b>Black Rock Road</b>	<b>Sherwood</b>	<b>Heacock Road</b>
<b>Jan</b>	599,079	181,610	178,691	365,313
<b>Feb</b>	589,936	152,283	215,712	523,519
<b>Mar</b>	656,054	165,523	210,187	336,809
<b>Apr</b>	814,517	174,350	229,477	360,350
<b>May</b>	607,554	195,882	204,223	344,952
<b>Jun</b>	487,917	170,960	158,757	315,939
<b>Jul</b>	471,648	111,453	135,439	296,885
<b>Aug</b>	391,763	102,752	135,506	282,506
<b>Sep</b>	382,473	102,079	123,251	269,588
<b>Oct</b>	452,861	101,385	138,573	297,142
<b>Nov</b>	498,126	107,855	159,811	374,423
<b>Dec</b>	920,744	236,629	205,532	384,245
<b>Avg.</b>	572,723	150,230	174,597	345,973
<b>Max. Monthly Flow (gpd)</b>	920,744	236,629	229,477	523,519
<b>AA Permitted Capacity (gpd)</b>	523,584 <sup>(d)</sup>	345,024 <sup>(d)</sup>	278,726 <sup>(d)</sup>	398,189 <sup>(d)</sup>
<b>Pumping Capacity (One pump, gpm)</b>	909 <sup>(c)</sup>	599 <sup>(b)</sup>	483.9 <sup>(b)</sup>	691.3 <sup>(a)</sup>
<b>Pumping Capacity (One pump, gpd)</b>	1,308,960	862,560	696,816	995,472

(a) Pumping capacity determined from drawdown tests performed in February 2017

(b) Pumping capacity determined from drawdown tests performed in April 2019

(c) Two of the three pumps operating

**Lower Makefield Township 2020 PUMP STATION DATA**

**Morrisville Service Area**

**Pump Stations**

Pump Station Name	Number of Pumps	Permitted Capacity		Present	Projected Flow		
		AA Permitted Capacity (gpd)	Hydraulic Design Capacity (gpm)	Annual Average Flow (gpd)	2-year proposed connections	Projected additional Flow	2-Year projected avg. daily flow (gpd)
Silver Lake	3	523,584	909.0	572,723	0	0	572,723
Black Rock Road	2	345,024	599.0	150,230	11	2,750	152,980
Sherwood	2	278,726	483.9	174,597	0	0	174,597
Heacock Road	2	398,189	691.3	345,973	41	10,250	356,223

## Pump Station Descriptions

There are four pumping stations within the Morrisville Borough Service Area and include the following:

### 1. Heacock Road Pumping Station

The Heacock Road Pump Station is a wet well drywell configuration and is located on the east side of Heacock Road just south of Heritage Oak Drive. The pumping station services the surrounding residential developments. The pumping station is equipped with two pumps. Emergency power is provided by an on-site generator set. Based on a drawdown test performed in February 2017, the pumping capacity of the pump station with the largest pump out of service is 691.3 gpm or 995,472 gpd. The annual average permitted capacity is 398,189 gpd.

The average flow rate for the pump station in 2020 was 345,973 gpd. The annual average flow rate is less than the annual average permitted capacity of 398,189 gpd. There is no reported surcharges or overflows at this pump station. The Heacock Force Main Replacement of 1,650 lf SDR-26 Force Main with class 56 DIP and installation of a new air release manhole was completed in 2018. Upon inspection in 2018, the impellers in the existing pumps were worn due to the age of the pumps. The impellers were replaced in 2019. The check valves started leaking in 2020 and had to be replaced.

There is a total of 136 anticipated connections to the Heacock Pump Station over the next five years. This would increase the Heacock Pump Station projected annual average flow to 379,973 gpd [345,973 gpd existing plus 34,000 gpd proposed (136 edus x 250 gpd/edu)], which is less than the permitted capacity of 398,189 gpd. There is no existing or projected hydraulic overload with the anticipated future connections.

### 2. Black Rock Road Pumping Station

This wet well dry well pumping station is located near the intersection of Black Rock Road and Ivy Lane and services the surrounding residential developments. The pumping station is equipped with two pumps. An existing on-site generator provides emergency power. Based on a drawdown test performed in April 2019, the pumping capacity of the pump station with the largest pump out of service is 599 gpm or 862,560 gpd. The annual average permitted capacity is 345,024 gpd.

The average flow rate for the pump station in 2020 was 150,230 gpd which does not exceed the annual average permitted capacity of 345,024 gpd.

There is a total of eleven (11) anticipated connections to the Black Road Road Pump Station over the next five years. This would increase the Black Road Road Pump Station projected annual average flow to 152,980 gpd [150,230 gpd existing plus 2,750 gpd proposed (11 edus x 250 gpd/edu)], which is less than the permitted capacity of 345,024 gpd. There is no existing or projected hydraulic overload with the anticipated future connections.

### 3. Sherwood Park Pumping Station

This wet well dry well pumping station is located just southeast of Essex Lane cul-de-sac and services the surrounding residential developments. The pumping station is equipped with two pumps. An existing on-site generator provides emergency power. Based on a drawdown test performed in April 2019, the pumping capacity of the pump station with the largest pump out of service is 483.9 gpm or 696,816 gpd. The annual average permitted capacity is 278,726 gpd.

The average flow rate for the pump station in 2020 was 174,597 gpd which is less than the annual average permitted capacity of 278,726 gpd. There are no anticipated connections to this pump station over the next five years. There is no existing or projected hydraulic overload at this pump station. There are also no projected connections to this pump station.

### 4. Silver Lake Pumping Station

This wet well dry well pumping station is located north of Oxford Road and services the surrounding residential developments. The pumping station is equipped with three pumps. An existing on-site generator provides emergency power. Based on a drawdown test performed in April 2019, the pumping capacity of the pump station with the largest pump out of service is 909 gpm or 1,308,960 gpd. The annual average permitted capacity is 523,584 gpd.

The average flow rate for the pump station in 2020 was 572,723 gpd. The annual average flow rate exceeds the annual average permitted capacity of 523,584 gpd for this pump station. There were no reported surcharges or overflows at this pump station. The data



indicates that the Silver Lake Pump Station is in an existing hydraulic overload condition but the flows are based upon pump run hours. The issue is that the existing check valves are leaking which is creating a double accounting of some flows. The pumping rate may have also decreased. The piping and pumps in this pump station are scheduled to be replaced in 2021.

There are no anticipated connections to this pump station over the next five years. This Chapter 94 Report identifies the Silver Lake Pump Station as an existing hydraulic overload.

**ATTACHMENT E – CALIBRATION REPORTS**

## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-3  
Calibration Date: 09/21/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.5", meter display 3.31"

Nonresponsive keypad – unable to adjust calibration parameters

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.75", meter display 1.81"

All checks good



(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume

Flow Rate = MGD

Blanking, Min=7.92", Max=47.76"

Totaling at counts x 1

Measured head @ 14.25", meter display 14.21"

All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume

Zero Pt 50.87"

Span changed to 38.87"

Scale = 0-7240 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 13.75", meter display 13.83"

All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume

Flow Rate = MGD

Total Counts x 1

Measured head @ 2.25", meter display 2.31"

All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume

Zero Pt = 21.50"

Span = 9.25"

Scale = 0-611.7 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 1.5", meter display 1.52"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***



(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.875", meter display 8.01"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.9375", meter display 1.0"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.0", meter display 1.05"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stopwatch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-2  
Calibration Date: 06/17/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.25", meter display 3.32"

All checks good

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.875", meter display 1.83"



(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume  
Flow Rate = MGD  
Blanking, Min=7.92", Max=47.76"  
Totaling at counts x 1  
Measured head @ 14.0", meter display 14.09"  
All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume  
Zero Pt Changed to 50.87"  
Span changed to 38.87"  
Scale = 0-7240 GPM  
Low flow shut off at 1 GPM  
Totaling at counts x 1  
Measured head @ 14.25", meter display 14.31"  
All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume  
Flow Rate = MGD  
Total Counts x 1  
(Found) Measured head @ 4.5", meter display 3.5"  
(Left) Measured head @ 2.75", meter display 2.81"  
All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume  
Zero Pt = 21.50"  
Span = 9.25"  
Scale = 0-611.7 GPM  
Low flow shut off at 1 GPM  
Totaling at counts x 1  
Measured head @ 1.4375", meter display 1.43"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***





(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.9375", meter display 8.02"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.875", meter display 0.89"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

IP ###.###.###.###

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.125", meter display 1.12"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stopwatch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-1  
Calibration Date: 04/08/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.125", meter display 3.25"

All checks good

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.5", meter display 1.625"



(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume

Flow Rate = MGD

Blanking, Min=7.92", Max=47.76"

Totaling at counts x 1

Measured head @ 14.5", meter display 14.4375"

All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume

Zero Pt Changed to 50.87"

Span changed to 38.87"

Scale = 0-7240 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 13.75", meter display 13.75"

All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume

Flow Rate = MGD

Total Counts x 1

(Found) Measured head @ 4.5", meter display 3.5"

(Left) Measured head @ 3.125", meter display 3.0"

All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume

Zero Pt = 21.50"

Span = 9.25"

Scale = 0-611.7 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 1.625", meter display 1.54"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***



(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.25", meter display 7.36"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.9375", meter display 0.96"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

IP ###.###.###.###

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.0", meter display 1.01"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stop watch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



**ATTACHMENT F – FLOW METER DATA**

**Lower Makefield Township  
LMT Adjusted Flow Summary 2020**

Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Flow Meter Reading			
Sandy Run		Belmondo		Main Street		Buck Creek		Constant*		Del Mor		Yardley Pump Station		LMT North**		Yardley Borough***		LMT Flows ****	
Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)
JANUARY	0.223599	JANUARY	0.085042	JANUARY	0.053987	JANUARY	0.778237	JANUARY	0.023040	JANUARY	3.024277	JANUARY	1.290328	JANUARY	1.163904	JANUARY	0.126424	JANUARY	2.897853
FEBRUARY	0.200278	FEBRUARY	0.088871	FEBRUARY	0.061499	FEBRUARY	0.855333	FEBRUARY	0.023040	FEBRUARY	3.240144	FEBRUARY	1.371145	FEBRUARY	1.229022	FEBRUARY	0.142123	FEBRUARY	3.098021
MARCH	0.241226	MARCH	0.107883	MARCH	0.057516	MARCH	0.758062	MARCH	0.023040	MARCH	3.219569	MARCH	1.317442	MARCH	1.187727	MARCH	0.129715	MARCH	3.089853
APRIL	0.270736	APRIL	0.098443	APRIL	0.071382	APRIL	0.922820	APRIL	0.023040	APRIL	3.600653	APRIL	1.540346	APRIL	1.386421	APRIL	0.153925	APRIL	3.446728
MAY	0.251111	MAY	0.091908	MAY	0.064395	MAY	0.780393	MAY	0.023040	MAY	3.334146	MAY	1.413769	MAY	1.210847	MAY	0.202922	MAY	3.131224
JUNE	0.198535	JUNE	0.075794	JUNE	0.042992	JUNE	0.508581	JUNE	0.023040	JUNE	2.566368	JUNE	1.021316	JUNE	0.848942	JUNE	0.172374	JUNE	2.393993
JULY	0.183470	JULY	0.068003	JULY	0.036694	JULY	0.433327	JULY	0.023040	JULY	2.347010	JULY	0.902814	JULY	0.744533	JULY	0.158281	JULY	2.188729
AUGUST	0.185529	AUGUST	0.093991	AUGUST	0.041172	AUGUST	0.426590	AUGUST	0.023040	AUGUST	2.426488	AUGUST	0.937910	AUGUST	0.770322	AUGUST	0.167588	AUGUST	2.258900
SEPTEMBER	0.170586	SEPTEMBER	0.103975	SEPTEMBER	0.036625	SEPTEMBER	0.381757	SEPTEMBER	0.023040	SEPTEMBER	2.228664	SEPTEMBER	0.834104	SEPTEMBER	0.715983	SEPTEMBER (1)	0.118121	SEPTEMBER	2.110544
OCTOBER	0.183285	OCTOBER	0.091489	OCTOBER	0.042970	OCTOBER	0.458874	OCTOBER	0.023040	OCTOBER	2.208993	OCTOBER	0.933331	OCTOBER	0.799658	OCTOBER (1)	0.133673	OCTOBER	2.075320
NOVEMBER	0.218879	NOVEMBER	0.091710	NOVEMBER	0.055563	NOVEMBER	0.616227	NOVEMBER	0.023040	NOVEMBER	2.679900	NOVEMBER	1.181488	NOVEMBER	1.005419	NOVEMBER	0.176069	NOVEMBER	2.503831
DECEMBER	0.282145	DECEMBER	0.087478	DECEMBER	0.091260	DECEMBER	0.963751	DECEMBER	0.023040	DECEMBER	3.600238	DECEMBER	1.691467	DECEMBER	1.447674	DECEMBER	0.243793	DECEMBER	3.356445
<b>Monthly Annual Ave Flow</b>	<b>0.217448</b>	<b>Monthly Annual Ave Flow</b>	<b>0.09038</b>	<b>Monthly Annual Ave Flow</b>	<b>0.05467</b>	<b>Monthly Annual Ave Flow</b>	<b>0.65700</b>	<b>Monthly Annual Ave Flow</b>	<b>0.02304</b>	<b>Monthly Annual Ave Flow</b>	<b>2.87304</b>	<b>Monthly Annual Ave Flow</b>	<b>1.20296</b>	<b>Monthly Annual Ave Flow</b>	<b>1.04254</b>	<b>Monthly Annual Ave Flow</b>	<b>0.16042</b>	<b>Monthly Annual Ave Flow</b>	<b>2.71262</b>

\* The constant rate was calculated from 72 edus x 320 gpd/edu = 23,040 gpd  
 \*\*LMT North Flows= Sandy Run Flow + Belmondo Flow + Main Street Flow + Buck Creek Flow + Constant Flow Rate ( 72 edus x 320 gpd/edu = 23,040 gpd)  
 \*\*\* Yardley Borough Flows = Yardley Pump Station Flow - LMT North Flow  
 \*\*\*\*LMT Flows = Delmor Flow - Yardley Borough Flow  
 (1) - The Yardley Pump Station Flows for September and October were calculated utilizing a ratio of flows based upon the Delmor meter flows for months with similar flows at the Delmor meter and rainfall amounts. See EE, Inc. letter dated March 1, 2021 for formula and calculations.



**APPENDIX C**

**YARDLEY BOROUGH**

**MUNICIPAL WASTELOAD MANAGEMENT  
ANNUAL REPORT, CALENDAR YEAR 2019**

**Yardley Borough Sewer Authority  
Bucks County, Pennsylvania**

**2020 WASTELOAD MANAGEMENT REPORT  
(Chapter 94)**

**March 2021**

**Prepared By:**



**GILMORE & ASSOCIATES, INC.**

**Engineers ♦ Land Surveyors ♦ Planners ♦ GIS Consultants**

**65 E. Butler Avenue, Suite 100**

**New Britain, PA 18901-5106**

**215-345-4330**

**215-345-8606 (Fax)**

**[www.gilmore-assoc.com](http://www.gilmore-assoc.com)**



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: **2020**

- Permittee is owner and/or operator of a POTW or other sewage treatment facility  
 Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	Yardley Borough Sewer Authority	Permit No.:	PA
Mailing Address:	56 S. Main Street	Effective Date:	
City, State, Zip:	Yardley, PA 19067	Expiration Date:	
Contact Person:	Cheryl Cler	Renewal Due Date:	
Title:	Operations Administrator	Municipality:	Yardley Borough
Phone:	215-493-2045	County:	Bucks
Email:	ccler@yardleyboroughsewer.com	Consultant Name:	Gilmore & Associates, Inc.
CHAPTER 94 REPORT COMPONENTS			
<p>1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (<u>25 Pa. Code § 94.12(a)(1)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input checked="" type="checkbox"/> Line graph for flows attached (<b>Attachment B</b>)</p> <p><input checked="" type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment A</b>)</p> <p><input checked="" type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>			
<p>2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (<u>25 Pa. Code § 94.12(a)(2)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input type="checkbox"/> Line graph for organic loads attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input checked="" type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>			

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

N/A

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

**Check the appropriate boxes:**

- Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment C**)
- List summarizing each extension or project attached (**Attachment D**)
- Schedules describing how each project will be completed over time and effects attached (**Attachment** )

**Comments:**

**No sanitary sewer extensions were constructed in 2020. Attachment D "Sewage Pump Station" includes the anticipated connections within Yardley Borough's system for the next five (5) year period. The connections listed will not require the construction of new sanitary sewer extensions. Additionally, a list has been included as provided by Lower Makefield Township for projected sewer connections to Yardley Borough over the next five (5) year period.**

**On April 13, 2018 Yardley Borough received Act 537 Plan Update approval from PADEP for the construction of new joint-use (with Lower Makefield Township) sewers to increase the capacity within the conveyance system to Yardley's pump station. The proposed sewer routings are shown on the map in Attachment C. YBSA is currently in the design phase for these sewer improvements. These are not considered to be sewer extensions.**

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

**Yardley Borough Sewer Authority recognizes that inflow/infiltration (I/I) increases the hydraulic loading to the collection, conveyance and treatment system and has been working since 2009 on a program of I/I reduction using the most cost effective means. Types of reduction methods have included cured-in-place sewer lining, both manhole to manhole and spot repairs; open cut replacement of sewer lines; manhole rehabilitation; and lateral sealing. These repairs have shown a decrease in the amount of I/I entering the system. The Authority's goal is to continue to monitor and repair or replace as much of its collection system as necessary to ensure the continued structural integrity of the system, as well as to reduce the higher costs of conveyance and treatment directly related to I/I.**

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

**Check the appropriate boxes:**

- System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

**Comments:**

**The present condition of the sewage collection and conveyance system is good with periodic I/I events that cause elevated flows, but do not cause bypassing or overflows.**

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

**Check the appropriate boxes:**

- The collection system does not contain pump stations
- The collection system does contain pump stations (Number – 1)
- Discussion of condition of each pump station attached (**Attachment D**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

**Check the appropriate boxes:**

- Industrial waste report as described in 8 a., b. and c. attached (**Attachment** )
- Industrial pretreatment report as required in an NPDES permit attached (**Attachment** )

9. Existing or Projected Overload.

**Check the appropriate boxes:**

- This report demonstrates an existing hydraulic overload condition.
- This report demonstrates a projected hydraulic overload condition.
- This report demonstrates an existing organic overload condition.
- This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

- Corrective Action Plan attached (**Attachment** )

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- Sewage Sludge Management Inventory attached (**Attachment** )

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

- Annual CSO Report attached (**Attachment** )

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

- Flow calibration report attached (**Attachment D**) YBSA Delaware Avenue Pump Station Flow Meter

**RESPONSIBLE OFFICIAL CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**David Collins, YBSA Chairman**

Name of Responsible Official

Signature

**215-493-2045**

Telephone No.

Date

**PREPARER CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Brian Brochon, Gilmore & Associates, Inc.**

Name of Preparer

**215-345-4330**

Telephone No.



Signature

3/29/21

Date

**ATTACHMENT A**  
**PADEP CHAPTER 94 SPREADSHEET**



Facility Name:

Permit No.:

Persons/EDU:

Existing Hydraulic Design Capacity:  MGD

Existing Organic Design Capacity:  lbs BOD5/day

Upgrade Planned in Next 5 Years?  Year:

Upgrade Planned in Next 5 Years?  Year:

Future Hydraulic Design Capacity:  MGD

Future Organic Design Capacity:  lbs BOD5/day

**Monthly Average Flows for Past Five Years (MGD)**

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

Month	2016	2017	2018	2019	2020
January	1.322	0.966	1.004	2.131	1.29
February	1.748	0.908	1.821	1.627	1.371
March	1.51	1.07	2.388	1.872	1.317
April	1.088	1.886	1.622	1.479	1.54
May	1.014	1.409	1.589	1.792	1.414
June	0.868	1.214	1.304	1.619	1.021
July	0.765	1.125	0.937	1.235	0.903
August	0.721	1.103	1.111	1.111	0.938
September	0.703	0.887	1.108	0.861	0.832
October	0.692	0.82	1.235	0.816	0.93
November	0.674	0.9	2.028	0.931	1.181
December	0.822	0.859	2.173	1.343	1.691

Month	2016	2017	2018	2019	2020
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

Annual Avg	0.994	1.096	1.527	1.401	1.202
Max 3-Mo Avg	1.527	1.503	1.944	2.111	1.424
Max : Avg Ratio	1.54	1.37	1.27	1.51	1.18
Existing EDUs	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Flow/EDU (GPD)					
Flow/Capita (GPD)					
Exist. Overload?	NO	NO	NO	NO	NO

Annual Avg					
Max Mo Avg					
Max : Avg Ratio					
Existing EDUs					
Load/EDU					
Load/Capita					
Exist. Overload?					

**Projected Flows for Next Five Years (MGD)**

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

	2021	2022	2023	2024	2025
New EDUs					
New EDU Flow	0.001468	0.006968	0.009218	0.003968	0.003968
Proj. Annual Avg	1.245	1.25197	1.26119	1.26515	1.26912
Proj. Max 3-Mo Avg	1.711	1.721	1.733	1.739	1.744
Proj. Overload?	NO	NO	NO	NO	NO

	2021	2022	2023	2024	2025
New EDUs					
New EDU Load	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proj. Annual Avg					
Proj. Max Avg					
Proj. Overload?					

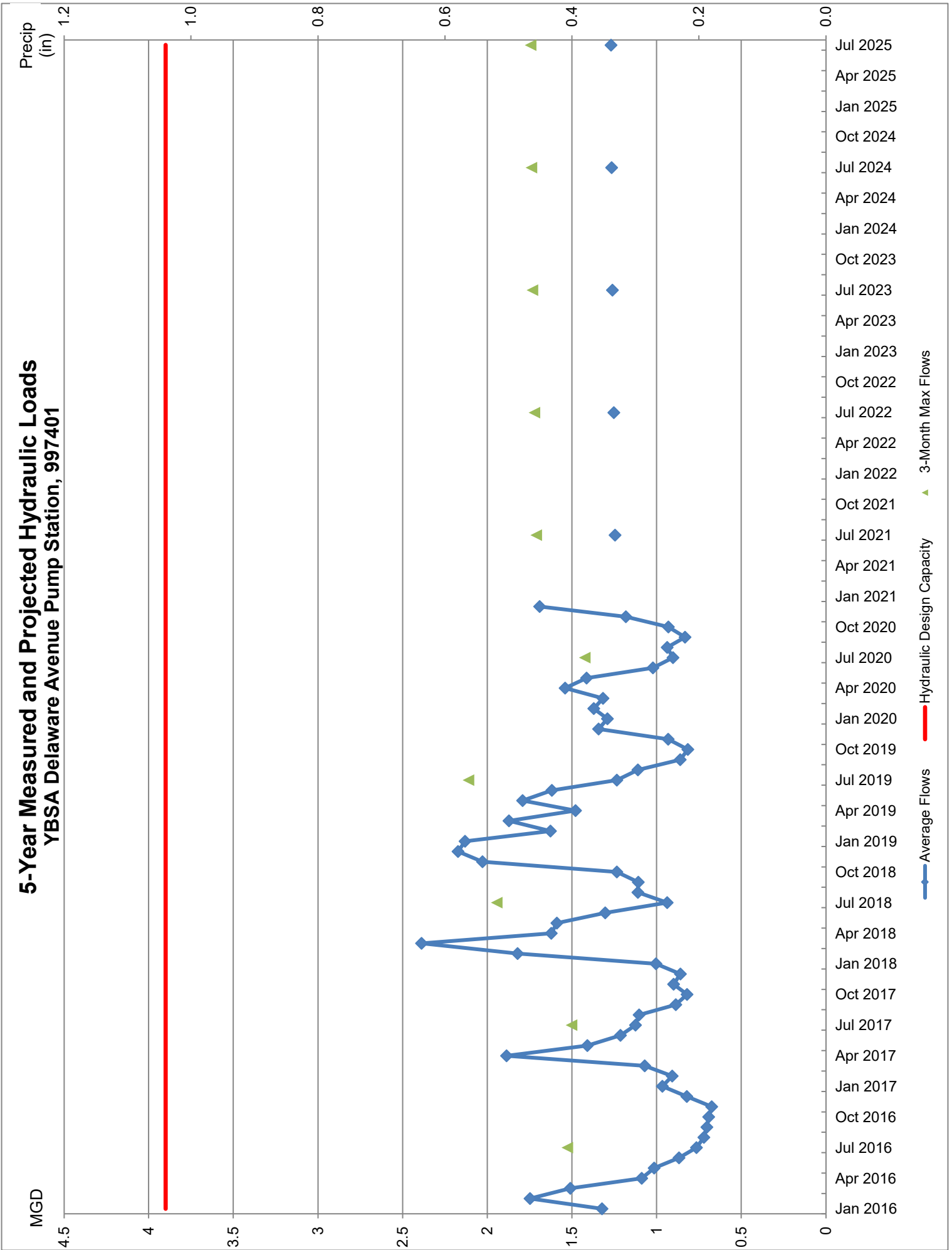
Show Precipitation Data on Hydraulic Graph?

**Total Monthly Precipitation for Past Five Years (Inches)**

Month	2016	2017	2018	2019	2020
January	3.29	3.11	2.09	4.39	1.91
February	4.45	1.37	5.52	1.53	2.66
March	1.62	4.51	3.41	2.8	3.68
April	1.67	3.16	3.57	4.13	3.82
May	3.55	5.25	7.22	7.57	2.46
June	2.11	4.69	5.21	6.03	2.1
July	7.46	3.96	5.65	6.21	2.91
August	1.19	2.86	3.66	3.39	4.59
September	2.38	1.86	6.93	2.17	3.44
October	2.09	5.22	3.27	4.82	3.77
November	2.9	1.54	8.24	1.83	2.6
December	2.65	1.59	5.28	4.7	4.52

**ATTACHMENT B**  
**HYDRAULIC LOADING GRAPH**

# 5-Year Measured and Projected Hydraulic Loads YBSA Delaware Avenue Pump Station, 997401

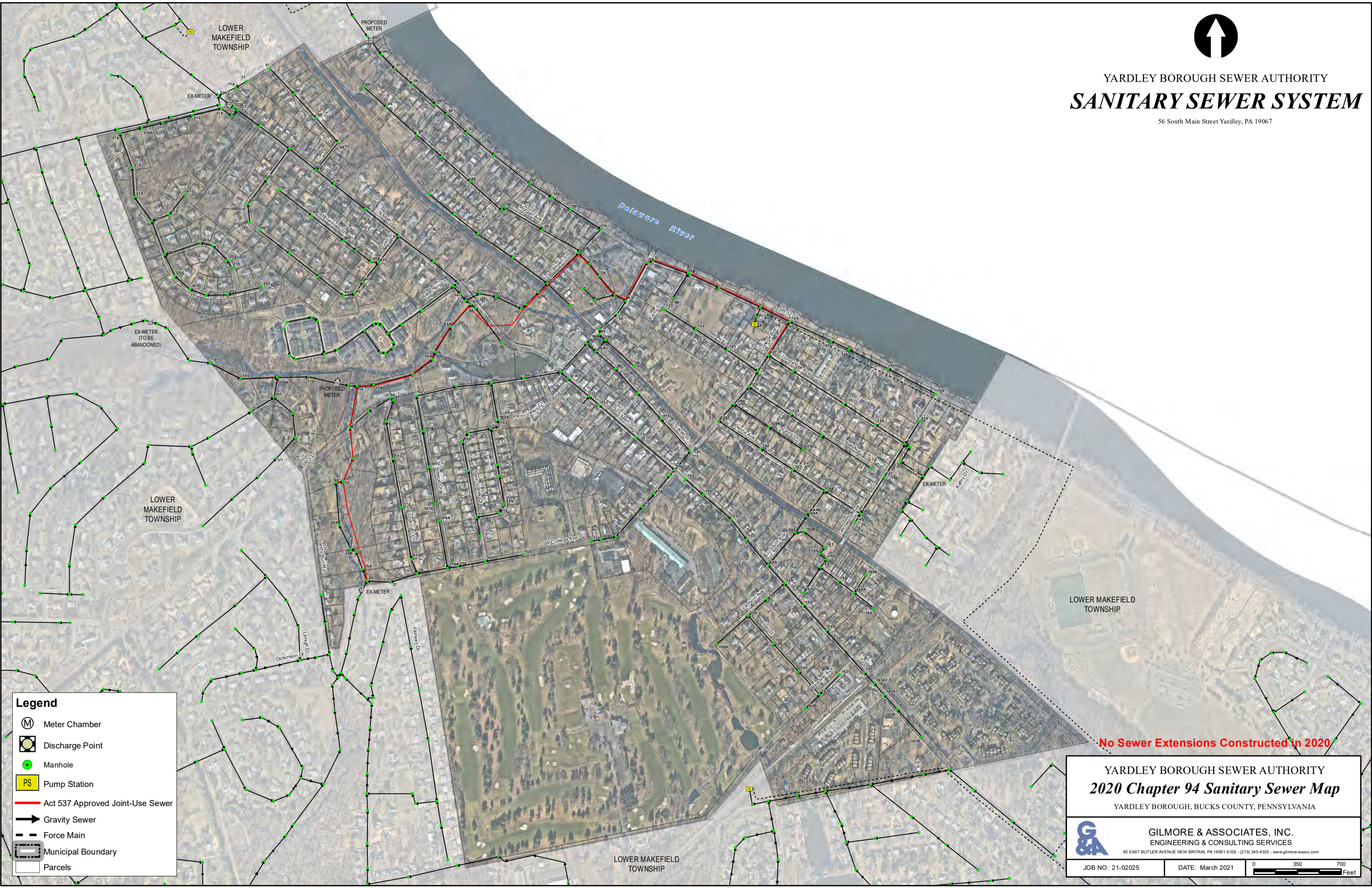


**ATTACHMENT C**  
**SANITARY SEWER MAP**



YARDLEY BOROUGH SEWER AUTHORITY  
**SANITARY SEWER SYSTEM**

56 South Main Street Yardley, PA 19067



**Legend**

- Meter Chamber
- Discharge Point
- Manhole
- Pump Station
- Act 537 Approved Joint-Use Sewer
- Gravity Sewer
- Force Main
- Municipal Boundary
- Parcels

**No Sewer Extensions Constructed in 2020**

YARDLEY BOROUGH SEWER AUTHORITY  
**2020 Chapter 94 Sanitary Sewer Map**  
 YARDLEY BOROUGH, BUCKS COUNTY, PENNSYLVANIA

**GILMORE & ASSOCIATES, INC.**  
 ENGINEERING & CONSULTING SERVICES  
65 EAST BUTLER AVENUE NEW BRITAIN, PA 18901-5106 - (215) 345-4330 - www.gilmore-assoc.com

JOB NO: 21-02025      DATE: March 2021      0      350      700  
 Feet

**ATTACHMENT D**  
**SEWAGE PUMP STATION**

## SEWAGE PUMP STATION

The Yardley Pumping Station is located in Yardley Borough on South Delaware Avenue, adjacent to the Delaware River. This pumping station accepts flows from Yardley Borough and a portion of Lower Makefield Township (LMT). Collected wastewater flows are subsequently conveyed to the Morrisville Wastewater Treatment Plant via a force main and the Canal and Delmorr Avenue Interceptors in Lower Makefield Township. A 1998 upgrade of the pump station brought the facility into compliance with current Regulatory Agency Standards. The station's permitted pumping capacity is 3.9 MGD total design peak instantaneous flow. The pump station continues to serve the Authority well, typically requiring only general maintenance such as wet well cleanings and meter calibrations. However, at the end of July 2018, the flow meter experienced issues and was no longer recording accurate flows. This led to the meter being out of service for the remainder of 2018 and beginning of 2019 until a new meter could be procured and installed. The new meter was placed back into service in February 2019. The flows provided for August 2018 to February 2019 in this report were based upon calculated estimates using a ratio to the flows at LMT's downstream Ferry Road flow meter for months with similar rainfall amounts and flows.

The annual average wastewater flow discharged at the pumping station during 2020 was 1.202 MGD with a daily maximum flow of 2.845 MGD (2.37 peak). A summary of the monthly average hydraulic loading on the pumping station for the past five (5) years is contained in the Chapter 94 Spreadsheet (Attachment A).

A summary of the pump station's projected annual average flows for the next five (5) years is also contained in the Chapter 94 Spreadsheet ("Proj. Annual Avg"). The average of annual average flows for 2016 through 2020 (1.244 MGD) was used as the basis. Future flows were projected on an annual basis by combining the number of anticipated new connections for Yardley Borough (using 242 GPD/EDU) along with EDU projections provided by Lower Makefield Township's "Sanitary Sewer Connections for Yardley Borough 5 Year Projection" (using 250 GPD/EDU) and adding them to the previous year's projected annual average flow. Applying a peaking factor of 3.0 to the two-year projected annual flow of 1.252 MGD results in a projected maximum flow of 3.756 MGD. These projected loadings indicate that the flows are not expected to exceed the 3.9 MGD peak capacity of the pump station.

The following describes anticipated new connections for the next five (5) years within Yardley Borough's system based on development plans known by YBSA:

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
19 W. College Avenue	3	3	3	3	3
Other Connections	1	1	1	1	1
Total	4	4	4	4	4

Information pertaining to Lower Makefield Township's projected flows into the Yardley system from its 2020 Chapter 94 Report is included in the following pages of this report.

**LOWER MAKEFIELD TOWNSHIP  
SANITARY SEWER CONNECTIONS FOR YARDLEY BOROUGH  
5 YEAR PROJECTION**

<b>Development Name</b>	<b>Pump Station</b>	<b>Meter</b>	<b>EDU's Planned or Approved</b>	<b>EDU's Connected To Date</b>	<b>EDU's Needed</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Flowers Field at Edgewood - Residential		Buck Creek	48	48	0	0	0	0	0	0
Flowers Field at Edgewood - 21 Commercial Units		Buck Creek	21	0	21	0	10	11	0	0
Dogwood Drive (Harmony lane)		Buck Creek	5	0	5	2	3	0	0	0
Snipes Tract (2 Restrooms)		Buck Creek	2	0	2	0	0	0	2	0
Artis Senior Living Facility - Stony Hill Road, 72 beds proposed (Yardley Service Area) EE Job # 068-027		Buck Creek	29	29	0	0	0	0	0	0
Oxford Valley Road and Stony Hill Road (Yardley Boro Service Area) EE Job # 068-016	Mill Road Estates	Sandy Run Road	22	0	22	0	10	12	0	0
Field Stone - Edgewood Road, 32 Residential Lots	Fox Hill	Sandy Run Road	32	0	32	0	0	10	10	12
Miskiel Darrah Minor Subdivision - 2 Lots (829 Sandy Run Road)		Sandy Run Road	2	1	1	0	1	0	0	0
<b>Totals</b>						<b>2</b>	<b>24</b>	<b>33</b>	<b>12</b>	<b>12</b>



Population Projections for the Yardley Borough						
	2020	2021	2022	2023	2024	2025
<b>Populatio</b>	7,527	7,533	7,600	7,692	7,726	7,759
<b>EDUs</b>	2,698	2,700	2,724	2,757	2,769	2,781

\*Population projections based on 2019 EDU Audit x 2.79 persons/edu

**ATTACHMENT E**  
**FLOW CALIBRATION REPORTS**



# Service Report

Instrumentation Division

Customer: <u>Yardley Borough / AAI</u>	Service Order: <u>4584297</u>	Report #: <u>JH06022020</u>
Address: <u>S.Delaware Ave &amp; East College Ave</u>	Telephone: <u>215-493-2045</u>	PO No. <u>2-Jun-2020</u>
City/State/Zip: <u>Yardley, PA</u>	Service Engineer: <u>Jason Hammell</u>	I.D. # <u>102202</u>
EMAIL: <u>yardleyboroughsewerauthority@comcast.net</u>	Work Requested: <u>Semi annual Cal</u>	
Service requested by: <u>Cheryl</u>		

Model #: <u>Various</u>	Serial #: <u>Various</u>	Operational Y/N: <u>Y</u>
Environment: <u>Tech support called</u>	Y/N: <u>N</u>	Who: <u>NA</u>
If No, Reason: _____		First call fix Y/N: <u>NA</u>

**Description of Work Performed**

Performed Calibration check of the following equipment:

**Watermaster FEW325400.** SN- 3K620000287192 0-5000 gpm = 4-20mA. Performed Verimaster verification on flowmeter- all tests passed. Saved data and Certificate.

Checked loop to 1392 circular chart recorder sn- 220101-004 , no adjustments necessary.

Checked loop to SM500F paperless recorder sn- 3K210000054233 , no adjustment necessary.

All units working and within manufacturers specifications at this time

Part Number	Qty	Description	Price /Unit	Price
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
<b>Parts Total</b>				<b>\$0.00</b>

TIME ENTRY	SUN	MON	TUE	WED	THR	FRI	SAT
REG			2				
Travel			2				
Overtime							
1.5x							
2x							
3x							

Hours	2	X	\$	_____	/Hr	_____
Travel	2	X	\$	_____	/Hr	_____
OT	0	X	\$	_____	/Hr	\$0.00
OT	0	X	\$	_____	/Hr	\$0.00
OT	0	X	\$	_____	/Hr	\$0.00
<b>Labor Total</b>						<b>\$0.00</b>
Miles	70	X	\$	_____	/Mile	_____
<b>Tolls</b>						<b>\$5.00</b>
<b>Meals</b>						_____
<b>Hotel</b>						_____
Other	_____					_____
<b>Processing Fee</b>						<b>_____ %</b>
<b>Travel &amp; Living Total</b>						_____
<b>Grand Total</b>						<b>Contract</b>

Customer Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Customer Approval: \_\_\_\_\_

REV.8



# Service Report

Instrumentation Division

<b>Customer:</b> <u>Yardley Borough / AAI</u>	<b>Service Order</b> <u>4584297</u>	<b>Report #</b> <u>JH12282020</u>	<u>28-Dec-2020</u>
<b>Address:</b> <u>S.Delaware Ave &amp; East College Ave</u>	<b>Telephone:</b> <u>215-493-2045</u>	<b>PO No.</b> _____	
<b>City/State/Zip:</b> <u>Yardley, PA</u>	<b>Service Engineer:</b> <u>Jason Hammell I.D. # 102202</u>	_____	
<b>EMAIL:</b> <u>yardleyboroughsewerauthority@comcast.net</u>	<b>Work Requested:</b> <u>Semi annual Cal</u>	_____	
<b>Service requested by:</b> <u>Cheryl</u>			
<b>Model #</b> <u>Various</u>	<b>Serial #</b> <u>Various</u>	<b>Operational Y/N</b> <u>Y</u>	_____
<b>Environment:</b> _____	<b>Tech support called Y/N</b> <u>N</u>	<b>Who:</b> <u>NA</u>	<b>First call fix Y/N</b> <u>NA</u>
<b>If No, Reason:</b> _____			

**Description of Work Performed**

Performed Calibration check of the following equipment:

**Watermaster FEW325400.** SN- 3K620000287192      0-5000 gpm = 4-20mA. Performed Verimaster verification on flowmeter- all tests passed. Saved data and Certificate.

Checked loop to **1392 circular chart recorder sn- 220101-004** , no adjustments necessary.

Checked loop to **SM500F paperless recorder sn- 3K210000054233** , no adjustment necessary.

All units working and within manufacturers specifications at this time

Part Number	Qty	Description	Price /Unit	Price
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
<b>Parts Total</b>				<b>\$0.00</b>

TIME ENTRY	SUN	MON	TUE	WED	THR	FRI	SAT
REG		2					
Travel		2					
Overtime							
1.5x							
2x							
3x							

Hours	<u>2</u>	X	\$	_____	/Hr	_____
Travel	<u>2</u>	X	\$	_____	/Hr	_____
OT	<u>0</u>	X	\$	_____	/Hr	\$0.00
OT	<u>0</u>	X	\$	_____	/Hr	\$0.00
OT	<u>0</u>	X	\$	_____	/Hr	\$0.00
<b>Labor Total</b>						<b>\$0.00</b>

**Customer Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Customer Approval:** \_\_\_\_\_

Miles	<u>70</u>	X	\$	_____	/Mile	_____
<b>Tolls</b>						<b>\$5.00</b>
<b>Meals</b>						_____
<b>Hotel</b>						_____
Other	_____	_____	_____	_____	_____	_____
<b>Processing Fee</b> _____ %						_____
<b>Travel &amp; Living Total</b>						_____

<b>Grand Total</b>						<b>Contract</b>
--------------------	--	--	--	--	--	-----------------

REV.8

**APPENDIX D**

**TOWNSHIP OF FALLS**

**MUNICIPAL WASTELOAD MANAGEMENT  
ANNUAL REPORT, CALENDAR YEAR 2019**

**PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**CHAPTER 94  
MUNICIPAL WASTELOAD MANAGEMENT  
2020 ANNUAL REPORT**


**TOWNSHIP OF FALLS AUTHORITY  
WASTEWATER COLLECTION AND CONVEYANCE SYSTEM**

**FALLS TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA**

**March 2021**

**PREPARED BY:**

**REMINGTON & VERNICK ENGINEERS  
1010 STONY HILL ROAD, SUITE 175  
YARDLEY, PA 19067  
Project No. PBFTM154**

  
**Christopher Fazio, P.E., CME  
P.E. License No. 0055338-E**

5-29-2021  
**Date**

**TOWNSHIP OF FALLS AUTHORITY  
CHAPTER 94, 2020 ANNUAL REPORT**

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# **TOWNSHIP OF FALLS AUTHORITY**

## **CHAPTER 94 REPORT 2020 REPORTING YEAR**

### **1.0 INTRODUCTION**

As required by the Pennsylvania Department of Environmental Protection (PADEP), this report is submitted as the 2020 Chapter 94 Municipal Wasteload Management Annual Report (Chapter 94 Report) for the sanitary sewage collection and conveyance facilities owned and operated by Township of Falls Authority (TOFA). TOFA owns and maintains the sanitary sewer collection and conveyance piping within Falls Township, Lower Makefield Township, and Bristol Township. This report also includes review of operation and maintenance, hydraulic and organic loadings data from the past five (5), years and projections for the next five (5) years in accordance with requirements of Title 25 of the Rules and Regulation of the PADEP.

TOFA's service area is located in the southeast section of Bucks County. The TOFA Service Area Map (Appendix A) provides an overview of the service areas in addition to details of the collection and conveyance infrastructure in each respective service area. The service area is bordered to the east by the Delaware River. Lower Makefield Township, Middletown Township, and Bristol Township border the service area to the north and west. Tullytown Borough borders the service area to the southwest.

The sanitary sewer facilities owned by the Authority include approximately 60 miles of sewer main and interceptor sewers, and eleven (11) pumping stations. The sanitary flow is conveyed to the one of three locations. The majority of wastewater collected from the service area is conveyed via the Neshaminy Interceptor to the Northeast Wastewater Treatment Plant, which is owned and operated by the City of Philadelphia. The Neshaminy Interceptor is owned and operated by the Bucks County Water and Sewer Authority. Sanitary flow from the northeastern portion of the service area is conveyed to the Borough of Morrisville Authority's wastewater treatment plant. Sanitary flow from the Levittown area is conveyed to the Lower Bucks County Joint Municipal Authority collection and conveyance system for treatment at the Lower Bucks County Joint Municipal Authority Wastewater Treatment Plant. Additionally, there exists several parcels within the service area that are served by on-site septic systems. Table 1.1 outlines the conveyor and final treatment facility of the various sewage collection system basins within the service area.

<b>Table 1.1 Downstream Conveyance/Treatment Facilities</b>	
<b>Collection and Conveyance System Owner/Operator</b>	<b>Wastewater Treatment Facility Owner/Operator</b>
Bucks County Water and Sewer Authority (BCWSA)	Northeast Wastewater Treatment Plant, City of Philadelphia
Lower Bucks County Joint Municipal Authority (LBCJMA)	Bristol Wastewater Treatment Plant (LBCJMA)
Municipal Authority of the Borough of Morrisville (MABM)	Morrisville Wastewater Treatment Plant (MABM)

The service area includes both retail and contract service areas in Falls Township, Lower Makefield Township, and Bristol Townships. The wastewater collection system in Lower Makefield and Bristol Township Contract Service areas are owned and operated by the respective Townships, but TOFA is responsible for conveying the wastewater for treatment. TOFA owns and operates a portion of the wastewater collection system located in the retail areas of Lower Makefield and Bristol Townships. The Borough of Morrisville Authority owns a portion of the collection and conveyance system within Falls Township that discharges into the Morrisville treatment facility. The service area for Burgess Manor that discharges to the Morrisville system is owned by TOFA. Table 1.2, Township of Falls Authority Service Area, lists the TOFA Contract and Retail sanitary sewer service areas, including their respective land areas.

<b>Table 1.2 Township of Falls Authority Service Areas</b>	
<b>Retail Service Areas:</b>	<b>Area (acres)</b>
Township of Falls	3,938
Bristol Township	348
Lower Makefield Township	356
<b>Total Retail Service Area</b>	<b>4,642</b>
<b>Contract Service Areas:</b>	<b>Area (acres)</b>
Lower Makefield Township	1,068
Bristol Township	1,060
<b>Total Contract Service Area</b>	<b>2,128</b>
<b>Total Retail and Contract Service Area</b>	<b>6,770</b>

The TOFA collection and conveyance system includes the following infrastructure:

- Four Collection Basins: Rock Run; Tyburn Road; South Olds Boulevard; Morrisville Authority
- Eleven (11) Pump Stations
- Approximately 309,000 linear feet of gravity sanitary sewer mains and interceptors in sizes from 8-inches to 36-inches

TOFA owns, operates, and maintains all sanitary mains and pump stations. A summary description of the sanitary sewer main is provided as Table 1.3. Small sanitary mains include Rock Run, Tyburn Road, and Deer Run, each of which convey and conduct flow to the Queen Anne Interceptor. In turn, the Queen Anne Interceptor conveys and conducts flow to the Neshaminy Interceptor and ultimately to the City of Philadelphia’s Northeast Wastewater Treatment Plant.

<b>Table 1.3 Township of Falls Authority Sanitary Sewer Mains (Falls Township Only)</b>	
<b>Sewer Main Pipe Diameter (inches)</b>	<b>Sewer Main Pipe Length (linear feet)</b>
8	269,963
10	7,515
12	4,547
15	600
18	27,472
<b>Interceptor Summary</b>	
Queen Anne (30” and 36”)	Approximately 35,000 linear feet
Rock Run (15” and 18”)	3,148 linear feet
Deer Run (12”)	4,500 linear feet
Tyburn Road (18” and 21”)	3,868 linear feet
<b>Total</b>	<b>Approximately 46,500 linear feet</b>

A summary description of each of the eleven pump stations in the TOFA service area is provided in this report in Section 7.0, Condition of Pump Stations.

## 2.0 HYDRAULIC AND ORGANIC LOADINGS

### 2.1 HISTORIC AND PROJECTED HYDRAULIC AND ORGANIC LOADING

Historic and projected hydraulic and organic loadings for the TOFA service area are based on flow meter derived data, water usage records, billing records, and population information. It also includes information provided by the Delaware Valley Regional Planning Commission.

### 2.2 POPULATION

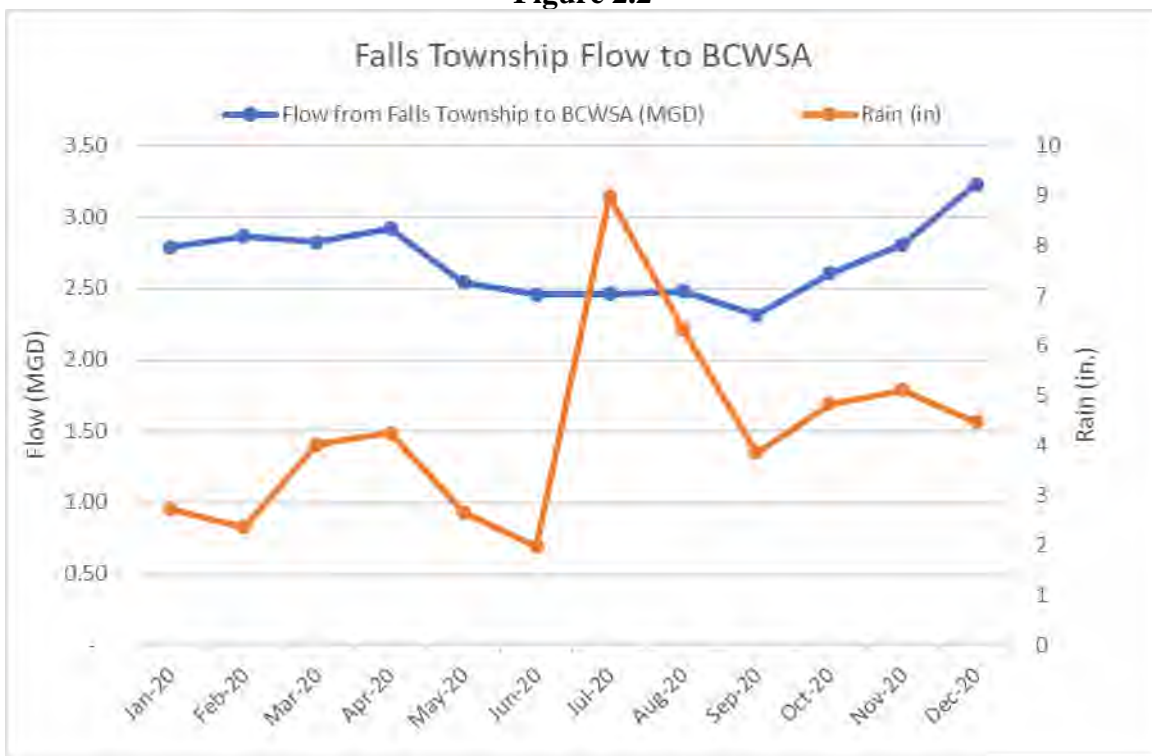
Population data from the 2010 U.S. Census shows a population in Falls Township of 34,300. In 2020, the population was estimated at 33,769. Population projections were not available for 2021 through 2025. Most new construction within the Township is redevelopment, therefore we expect little change in the population projection estimates in Falls Township through 2024. Table 2.2 summarizes past and projected population estimates for the Township that is tributary to BCWSA. The average flow from Bristol Township and Lower Makefield Township is 0.29 MGD. The estimated population tributary to LBCJMA and Morrisville are 1000 and 400 respectively. Figure 2.2 shows the 2020 average flows for the respective months with the flows from LBCJMA and Morrisville removed. Precipitation data comes from the NOAA Northeast Philadelphia Airport Station. There is a negative, though weak correlation (-0.17) between high precipitation and sanitary sewer flow, which suggest that I/I was not a primary contributory of sewer flows.

<b>Year</b>	<b>Avg Flow (MGD)<sup>1,4</sup></b>	<b>Population<sup>2</sup></b>	<b>Household Units<sup>3</sup></b>	<b>Avg. gpd/cap</b>
2016	2.377	32,296	12,422	74
2017	2.191	32,336	12,437	68
2018	2.938	32,304	12,425	91
2019	3.008	32,120	12,354	94
2020	2.690	32,120	12,354	84
2021	2.660	32,120	12,354	83
2022	2.630	32,120	12,354	82
2023	2.600	32,120	12,354	81

2024	2.570	32,120	12,354	80
2025	2.540	32,120	12,354	79

- (1) Flow to BCWSA subtracting average flows from Bristol and Lower Makefield Townships
- (2) Falls Township Population tributary to BCWSA
- (3) Household units based are estimated using an average of 2.6 persons/household.
- (4) Projected flows for 2021 through 2025 reflect the proposed 30,000 gpd/yr reduction in I/I submitted to BCWSA as TOFA/Falls Township Proposed 10 year I/I Reduction Plan of 300,000 gpd over a 10 year period.

**Figure 2.2**



### 2.3 Flow to Bucks County Water and Sewer Authority

Wastewater flows conveyed from Falls Authority to the BCWSA collection and conveyance system in 2020 were approximately 2.98 MGD (annual average) and 3.23 MGD (peak monthly flow). Flows measured at these locations include portions of Falls Township, Lower Makefield Township, and Bristol Township.

Organic loadings to BCWSA from 2017 through 2024 were calculated based on the respective flow rates for the year and an historical average BOD loading of 1500

lb/MGD. In 2020, the average BOD loading was 4,035 pounds per day with a peak BOD loading of 4,991 pounds per day.

Table 2.3 shows the historical and projected flows from Falls Township to the BCWSA system, subtracting flows from Bristol Township and Lower Makefield Township. Projected flows also incorporate the planned 30,000 gallon per day reduction per year from inflow and infiltration abatement per the TOFA/Falls Township Proposed 10 year I/I Reduction Plan of 300,000 gpd over a 10-year period. The Peaking Factor (PF) was determined by dividing the peak monthly flow by the average flow for the previous five years. This number was used in order to calculate projected Peak Flow and Peak Loading values in the upcoming five years.

<b>Table 2.3</b>					
<b>Falls Township Flow to Bucks County Water and Sewer Authority</b>					
<b>(Based on Meter Readings at Meter Station M15 and M16, with Projections)</b>					
<b>Year</b>	<b>Average Flow (MGD)<sup>1</sup></b>	<b>Peak Flow (MGD)<sup>1</sup></b>	<b>Peaking Factor (PF)</b>	<b>Average Loading (lbs. BOD5/Day)<sup>1</sup></b>	<b>Peak Loading (lbs. BOD5/Day)<sup>1</sup></b>
2016	2.377	3.397	-	3,566	5,096
2017	2.191	3.101	-	3,287	4,652
2018	2.938	3.654	-	4,408	5,482
2019	3.008	3.635	-	4,513	5,453
2020	2.690	3.230	-	4,035	4,844
2021	2.660	3.428	1.29	3,990	5,142
2022	2.630	3.390	1.29	3,945	5,084
2023	2.600	3.351	1.29	3,900	5,026
2024	2.570	3.312	1.29	3,855	4,968
2025	2.540	3.274	1.29	3,810	4,910

BCWSA replaced the meters at Meter Station M15 and M16 in 2010. In September 2015 TOFA purchased and installed a permanent flow meter slightly upstream of BCWSA Meter M15 to check the accuracy of the flows and to obtain real time flow data. In accordance with the I/I reduction plan submitted to BCWSA in 2015, TOFA proposes to reduce flows by 300,000 gallons per day (gpd) over a ten (10) year period. The reductions are projected in the flows predicted for years 2020 to 2024.

Based on relatively stable population and noting that the majority of the flow from the TOFA service area is conveyed to BCWSA, it is reasonable to use the projected peaking factor to estimated projected hydraulic and organic loading in other areas of the service area that contribute to flows directed to other wastewater treatment facilities.

TOFA has continued efforts to reduce flows through an ongoing I/I Abatement Program and working with tributary Townships like Lower Makefield and Bristol to reduce I/I. TOFA has been communicating and working with Lower Makefield to determine sources of I/I in the section of the township tributary to TOFA’s system. TOFA’s I/I Abatement Program focuses on sealing mains and manholes indicating that I/I is likely entering the system through privately owned laterals as groundwater levels rise.

In 2019, Falls Township enacted a lateral inspection ordinance. This ordinance requires property owners to make repairs to their laterals if they are inspected and repairs are deemed necessary by TOFA and the Township. Lateral inspections were conducted during the I/I abatement project in 2019 and 2020 will be included in all I/I abatement projects by TOFA in the future.

Lower Makefield Township is tributary to TOFA’s system and has experienced high flows as well. It is TOFA’s understanding that Bristol has begun I/I identification as part of PADEP approval of its Neshaminy Interceptor Plan, though abatement efforts have yet to be performed to date.

**2.4 Flows to Lower Bucks Joint Municipal Authority (LBCJMA)**

Flows conveyed to the LBCJMA were determined based on assigned EDU’s for the respective developments. Based on a total of 386 EDU’s and 300 GPD per EDU, the total daily flow to the LBCJMA is estimated at 0.12 MGD.

Organic loading conveyed to LBCJMA was determined based on assigned EDU’s for the respective developments. Based on a total of 386 EDU’s, and 0.45 pounds BOD5 per day per EDU, the average organic loading to LBCJMA was determined to be 174 pounds BOD5 per day. Table 2.4 provides a summary of flows to the LBCJMA.

<b>Table 2.4 Summary of Flows to Lower Bucks County Joint Municipal Authority (Based on Billed EDU’s)</b>			
<b>Location/Development</b>	<b>Number of EDU’s</b>	<b>Gallons/EDU</b>	<b>Total Flow to LBJMA (MGD)</b>
Wheatsheaf	9	300	0.0027
Nottingham Annex	30	300	0.0090
Penn Village	81	300	0.0237
Nottingham Village	190	300	0.0570
Old Fallsington	76	300	0.0228

<b>Total</b>	<b>386</b>	<b>300</b>	<b>0.12</b>
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The locations/developments shown above cannot accommodate additional development and are considered “built-out” without vacant land or lots available for additional growth. Therefore, future flow projections to LBCJMA are not expected to significantly change over the next 5-year period. It should be noted, however, that should the per capita household size decrease without a decrease in household numbers, flow per EDU would decrease in proportion to the decrease in population.

## 2.5 Flows to Borough of Morrisville Authority

Wastewater flows conveyed to the Borough of Morrisville Authority were determined using quarterly meter derived billing rates to customers based on volume of potable water delivered. TOFA provides the Borough of Morrisville the potable water billing rates of customers and in turn Morrisville provides TOFA the amount of wastewater generated based on those rates. In TOFA’s system, Morrisville accounts for a total of 154 connections (residential and commercial) which translates to approximately a total daily flow of 0.1 MGD.

Average BOD loadings were calculated using 154 total connections, 135 residential EDUs at 0.45 pounds BOD5 per EDU (\*) and 19 commercial EDUs at 0.06 pounds BOD5 per EDU per customer. Using this information, the average BOD5 loading to the system from residential connections is approximately 61 pounds BOD5 per day. Assuming an average of 125 customers per day per commercial facility, the total commercial organic loading to the collection system is approximately 143 pounds BOD5 per day. The total average BOD5 loading for flows conveyed to the Borough of Morrisville Authority is estimated at 204 pounds BOD5 per day. A summary of flows to treatment facilities is provided in Table 2.5, below.

TOFA understands that the Pennsylvania Department of Environmental Protection (PADEP) requests that existing capacity and flows to Borough of Morrisville Authority be measured or recorded through the use of flow meters in order to determine the actual peaking factor for the system. The recording of actual flows will be difficult due to the number of existing interconnections between TOFA’s system and Morrisville’s system. TOFA is exploring the idea of using flow meters in the future.

A summary of flows to treatment facilities in 2020 is provided in Table 2.5, below. This includes flows from Bristol Township and Lower Makefield Township.

<b>Table 2.5</b>		
<b>Summary of Flows to Treatment Facilities</b>		
<b>Treatment Facility</b>	<b>Average Flow (MGD)</b>	<b>Average Loading (pounds BOD5/day)</b>
Northeast Philadelphia Wastewater Treatment Plant	3.244	4,866



Lower Bucks Joint Municipal Authority	0.12	174
Borough of Morrisville Authority	0.10	204

## 2.6 Future Development

There is development occurring in the Authority service area tributary to BCWSA's Neshaminy Interceptor. BCWSA/DEP has released 2017 connections in the Neshaminy Interceptor from TOFA's Queen Anne Interceptor. The Township/Authority negotiated with BCWSA towards signing a supplemental agreement. New development within the Township over the next five (5) years is not anticipated to increase significantly. Any additional development that does occur is expected to be the result of redevelopment of existing properties. The following projects are proposed for connection in the next 5 years:

- 38 E. Cabot Boulevard: 19 EDUs (pharmaceutical)
- 115 Lincoln Highway: 2 EDUs (commercial)
- 640 Lincoln Highway: 2 EDU's (commercial)
- 312 N. Oxford Valley Road: 5 EDUs (commercial)
- 300 W. Trenton Avenue: 1 EDU (commercial)
- 550 W. Trenton Avenue: 13 EDU's (commercial)
- AAA Car Care: 6 EDUs (commercial)
- South Olds Boulevard: 328 EDU's
- Lincoln Highway: 128 EDU's
- Trenton Road: 87 EDU's
- Residential Redevelopment: 6 EDUs
- Population Increase: 170 EDU's

All of the future development listed above is tributary to the BCWSA Neshaminy Interceptor. These projects are mostly commercial in nature and expected to increase flow slightly. The pharmaceutical manufacturing facility proposed at 38 E. Cabot Boulevard that is currently allocated three (3) EDUs but requires sixteen (16) additional EDUs to fully support the project. The facility may also require permitting for industrial pretreatment. Other projects above are similarly staggered over multiple years. Projections of future sanitary sewer connections and associated hydraulic loadings are provided in Table 2.6, below.

<b>Table 2.6</b>							
<b>5-Year Projected Connections and Associated Hydraulic Loading</b>							
	<b>TOTAL</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Proposed EDUs	<b>47</b>	0	118	71	71	71	71

Proposed Flows (gpd)	<b>11,251</b>	0	28,433	17,182	17,182	17,182	17,182
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Table 2.6 reflects EDU's based on Future Growth and Land Development section of the July 2018 Act 537 Plan for Falls Township

### **3.0 PLANS TO REDUCE OR ELIMINATE PROJECTED OVERLOADS**

Township of Falls Authority plans to address areas with suspected overloads in the collection and conveyance system over the next 5-years on a case-by-case basis. Based on recent evaluations, overload is primarily the result of inflow and/or infiltration (I/I). The Authority is currently implementing an Inflow and Infiltration remediation program in its service areas by first addressing the areas with highest amounts of I/I and then addressing the areas with the highest peaking factors. The first phase of the program began in 2008 and was completed in 2009.

The effectiveness of the previous I/I work was determined via flow monitoring in September and October 2016. The current flows from the three (3) drainage basins addressed were compared to the flows of the drainage basins at the time of the 2006 I/I Study. Overall, in those three (3) drainage basins, flows were reduced by almost thirteen (13) percent. In September 2015, TOFA installed a permanent flow meter upstream of BCWSA Meter M15 to check the accuracy of flows and to have access to real time flow data. Flow monitoring will be conducted via temporary flow meters prior to the I/I work and after I/I work is completed to determine the effectiveness of the work.

The 2017 I/I Project addressed 10,718 LF of 8-inch sewer main. The work includes cleaning, televising, pressure testing/chemical grouting of joints, and cured-in-place pipe lining. Manholes would also be inspected and rehabilitated. In 2017, the I/I project included inspection of 59 manholes, rehabilitation of 33 leaking manholes, installation of 15 3' cured-in-place lining sections, and 978 LF of manhole to manhole lining. 460 LF of manhole to manhole lining has been completed to date, with the remainder to occur in the Spring of 2018.

The 2018 I/I Project included the cleaning and televising of sewers, pressure testing and chemical grouting of joints, cured-in place pipe lining, and manhole lining in the area bordered by Trenton Road from Oxford Valley Road to Fairfax Road, Austin Drive from Oxford Valley Road to Fairfax Road, Oxford Valley Road from Austin Drive to Trenton Road, and Fairfax Road from Austin Drive to Trenton Road. This area represents Drainage Subareas E-1, E-2, and E-3. Several I/I defects were found along Devon Road and Oxford Valley Road. Seven 3' cured-in-place lining sections are required to correct these defects. Due to high flows experienced at the Nottingham Pump Station during the last quarter of 2018, the scope of the I/I contract was expanded to include the televising of the sanitary sewers in this area. This included televising 7,200 LF of 8" piping and lining of 3,705 LF of 8" piping.

The subarea tributary to the Rock Run Pump Station in Basin A was evaluated as part of the 2018 Project. TOFA was concerned with the contract area in Lower Makefield Township tributary to Rock Run Pump Station. In August 2018 TOFA staff met with Lower Makefield Public Works Staff to discuss surcharged conditions experienced in Lower Makefield Township drainage area (retail area) tributary to the Rock Run Pump Station. On August 24, 2018, TOFA's I/I Abatement Contractor televised the drainage area in Lower Makefield Township. The video inspection showed that during dry

weather, the sewers in Lower Makefield Township are flowing 70 to 80 percent full, an indication of an I/I issue or undersized pipes. Upon televising TOFA's sewers downstream of this drainage area on the same day, TOFA's sewer that flows to the Rock Run Pump Station was less than 50 percent full. TOFA staff will inspect the conditions in this area during a wet weather event to see how the station operates, observe the sewers in this drainage area, and obtain flow meter records from Lower Makefield Township (contract area). The flow data recorded from the Lower Makefield meter will be compared to the flow meter data recorded at the Rock Run Pump Station once the meter is replaced. Although the dry weather inspection shows that the issue may be solely within Lower Makefield Township, however, a final determination will be made once a wet weather event is witnessed in this area. TOFA will share its findings with Lower Makefield Township, for further discussion and action. If there are deficiencies within the TOFA system tributary to the Pump Station, TOFA will determine based on budget whether the repairs could be made now or later. The timing of the repairs is dependent on the availability of TOFA funds to complete the repairs. TOFA will request an implementation schedule from Lower Makefield Township to address any I/I issue in the drainage area tributary to TOFA's system.

During a sewer investigation of the Nottingham area, significant sources of I/I were found. Twenty-one (21) infiltration points were found leading to excess flow going to LBCJMA. These were unexpected I/I issues that are a priority to prevent overflows at the Nottingham pump station. Due to the high flows experienced at the Nottingham Pump Station, the televised inspection showing leaking joints, sump pump discharges, and defective sewer mains, the previously scheduled 2019 I/I project was pushed back to 2020. TOFA's 2019 capital budget doesn't allow TOFA to do both projects. The 2019 Nottingham project consisted of TOFA actively tracking down sump pump discharge connections in the Nottingham area by home inspections and issuing notices of potential fines and penalties if sump pumps are not disconnected and properly connected to the storm sewer system. The Nottingham Inflow & Infiltration Project consisted of cleaning and televised inspection of 7,200 LF of 8-inch vitrified clay sewer main, 191 lateral inspections, pressure testing and grouting of 2,400 joints, 3,800 LF of cured-in-place manhole to manhole lining, and 5 manhole rehabilitations of the sanitary sewer system in the Nottingham area.

The 2021 I/I Project has already been started and will take place on Moon Drive, Penn Lane, and Chamberlain Way. While TOFA had allocated the necessary funds to be used on the 2021 I/I Abatement Project, TOFA had received a grant which provided additional funding to allow for an early start to the project. In 2020, another project was completed, which focused on South Olds Boulevard from Southway Drive to Oxford Valley Road, Southway Drive, Gobel Road, Winfield Court, Chilton Court, Wistar Road from South Queen Anne Drive to Parkway Drive, Parkway Drive from Wistar Road to South Olds Boulevard, Welsford Road from Stanford Road to Parkway Drive. This area represents Drainage Subareas C-1, C-2, and C-4 as shown on Appendix F, the Metering Basins Plan. Work included televising of 9,800 LF of 8" piping, rehabilitation of five manholes, and approximately 50 LF of relining 8" sanitary sewer. An additional ~350 LF of 8" sewer

pipng requiring rehabilitation was identified and will be repaired under upcoming projects.

Per the I/I Reduction Plan submitted to BCWSA and PADEP in 2015, TOFA's I/I reduction target in the Neshaminy Interceptor is 300,000 GPD over a ten (10) year period or approximately 30,000 GPD per year. TOFA missed the target reduction of 30,000 GPD in 2016 by 11,000 GPD. However, flows were reduced by 186,000 gallons between 2016 and 2017. 2018 and 2019 saw increases in flow. This is consistent with other municipalities in the area as 2018 and 2019 were wet years. Rising ground water tables, I/I entering faulty and defective laterals, and illicit sump pump discharges are suspected explanations to this increase. While there were two SSO's in 2019, both were due to sewer main blockages and not due to any hydraulic capacity issues.

TOFA will continue to endeavor to locate and reduce I/I entering their system including lateral inspections as previously discussed. These continued efforts will also include pursuing I/I reduction plans for the tributary regions from Bristol and Lower Makefield. It should be noted that Lower Makefield's sanitary sewer system is in the process of being sold, though TOFA will coordinate with whomever the owner of the tributary section is going forward. As it is currently understood that both systems strictly engage in standard maintenance of I/I, TOFA will request more active engagement in their I/I reduction to meet TOFA's goal.

#### **4.0 INDUSTRIAL WASTE MONITORING REPORT**

There are two industrial areas within Falls Township, including the former U.S. Steel Plant and Siemens (formerly U.S. Filter) site. All wastewater from the U.S. Steel Plant was previously treated at a privately owned and operated wastewater treatment facility prior to discharge to the Delaware River. This wastewater plant was acquired by the Borough of Morrisville Authority in December of 2020 and they continue to operate the existing wastewater plant until they are able to construct and connect a new wastewater plant. Wastewater discharged from the Siemens facility is monitored by the Philadelphia Water Department prior to discharge to the collection and conveyance system. TOFA is currently working with the Philadelphia Water Department in determining if other businesses should be monitored and regulated by the Department that discharge wastewater to their Northeast Philadelphia Wastewater Treatment Plant.

Falls Township Resolution Number 2000-21 adopts the City of Philadelphia Wastewater Control Regulations to address wastewater quality discharged from the service area to the Northeast Philadelphia Wastewater Treatment Plant. This resolution was effective June 28, 2000.

At the request of TOFA, the Philadelphia Water Department evaluated its permit with Evoqua. In 2010 the Philadelphia Water Department renewed the Municipal Industrial Pretreatment Permit for Evoqua. The new permit restricted the allowable pH range to 5-9. This parameter is in line with the regulations of the Township of Falls Authority for industrial dischargers of its system.

The Headley Pump Station receives the flow from Evoqua. In order for TOFA to continue to handle the corrosive industrial waste from this business, TOFA upgraded this station in May 2016 by replacing pumps with stainless-steel pumps, installing stainless steel piping and check valves, installing bypass piping and a flow meter, lining the wet well, and upgrading the electrical components. The upgrades were completed in August 2016.

In 2017, TOFA completed surveys to determine the uses of commercial businesses located within the service area. Questionnaires were sent to commercial properties to determine if their uses are contributing to the organic overloads of BOD and TSS.

In 2018, TOFA has determined that a Fats, Oils and Grease (FOG) control program is necessary to control the discharge of fats, oils and grease from commercial establishments, which generate FOG, to the sewer system and prevent sanitary sewer overflows. The commercial establishments regulated by this program include, but are not limited to, food service establishments (e.g. restaurants, employee cafeterias, bakeries, pizzerias, senior centers, hospitals, schools, churches, prisons, etc.) and auto service establishments (e.g., car washes, garages, auto repair shops, etc.). The goal of the FOG program is to ensure that all regulated commercial establishments have properly installed and maintained grease, oil or sand interceptors to prevent the discharge of FOG into the sewer system which are difficult and costly to treat. A questionnaire was sent out to

determine if regulated establishments had properly installed pretreatment system, correctly sized, and regularly maintained.

TOFA has surcharged BCWSA in the past for organic overloads of Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). Both parties came to an agreement to settle the surcharges by performing a joint investigation into the source(s) of organic surcharges. Currently there is a \$50,000.00 study being conducted to determine the source(s) of the high strength waste, permit the source(s) to pretreat their waste, and to revise TOFA's Industrial Pretreatment Regulations. The investigation has focused on restaurants and automotive shops potentially discharging FOG. In 2019, 13 restaurant inspections were conducted along Oxford Valley Road, Trenton Avenue, and Commerce Boulevard. Of these 13 locations, 5 establishments were issued notices of violations stating that their grease traps/interceptors required emptying and that grease was being allowed to enter the sanitary sewer system. These efforts are being monitored and recorded in the future. Improper maintenance of these grease traps/interceptors is believed to have contributed directly to grease blockages near the Oxford Valley Pump Station and the BOD overloading. TOFA will continue to monitor these establishments to ensure continued compliance with allowable FOG discharges.

## 5.0 COLLECTION SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

TOFA is committed to address I/I concerns and has initiated evaluation of several portions of the service area due to flow rates identified in the report, “Infiltration/Inflow Removal Plan Phase 2 Final Report”, dated May 2006, by BCM Engineers, that exhibited unusual characteristics. The report addresses several sections of the service area in which I/I is now considered an issue of significant concern.

As stated in Section 3.0, the effectiveness of the previous I/I work was determined by comparing current flows (post I/I work) to flows in the 2006 I/I Study (Pre I/I work) through flow monitoring of three drainage areas previously studied. Flows were reduced in each drainage area. See Table 5.0 TOFA plans to address I/I in the remaining 20% of the service area in the next few years.

In 2019, TOFA performed an I/I study to reassess four (4) basins in the service area tributary to BCWSA. TOFA installed four (4) temporary flow meters on October 10, 2019 through January 8, 2020 to monitor the flows and compare them to the flows from these drainage basins. The data was used to determine the success of the previous I/I abatement efforts, determine current peaking factors, and prioritize areas for TOFA’s next I/I abatement project planned for the year 2020. The results of this study have determined the scope of work for the 2020 Project and laid the ground work for I/I Abatement in subsequent years. Two of the basins assessed are the same basins studied in the 2005 and 2015 I/I studies. Average flows of this 2019 study are shown below as Basins A and B.

<b>Drainage Area</b>	<b>2005 Flows, MGD (Pre-I/I)</b>	<b>2015 Flows, MGD (Post I/I)</b>	<b>Flow Increase/Decrease, MGD</b>	<b>2019 I/I Study Flows, MGD</b>	<b>2019 I/I Study Peaking Factor</b>
Edgley Road (Basin F)	2.692	2.374	- 0.318	-	-
Rock Run (Basin A)	0.626	0.413	- 0.213	0.557	4.135
Woolston Drive (Basin B)	0.857	0.864	+0.007	1.018 <sup>1</sup>	2.347

<sup>1</sup>Flows increased due to additional service connections added in 2018

TOFA upgraded the Headley Pump Station in May 2016 by replacing one of the stainless-steel pumps, installing stainless steel piping and check valves, installing bypass piping and a flow meter, lining the wet well, and upgrading the electrical components. The upgrades were completed in August 2015. This station handles corrosive wastewater and these improvements were necessary for continuous operation of the station and to



make the station more user friendly for the TOFA staff. TOFA has designed upgrades to address the immediate needs of its sewage pumping stations. TOFA is currently in the process to upgrade all pump stations with SCADA and to meet future needs.

Approximately 10,718 LF of 8-inch sewer main was addressed in the 2017 I/I Project. Sewer mains, pipe joints, and manholes were addressed under this project. In 2017, the I/I project included inspection of 59 manholes, rehabilitation of 33 leaking manholes, installation of 15 3' cured-in-place lining sections, and 978 LF of manhole-to-manhole lining. 460 LF of manhole-to-manhole lining has been completed to date.

The I/I work performed in 2019 included cleaning and televised inspection of 7,200 LF of 8-inch vitrified clay sewer main, 191 lateral inspections, pressure testing and grouting of 2,400 joints, 3,800 LF of cured-in-place manhole to manhole lining, and 5 manhole rehabilitations of the sanitary sewer system in the Nottingham area.

The Tyburn Road Pump Station was upgraded with a custom SCADA system in Spring 2018. The system was designed in 2017 and bids will open on March 20, 2018. The SCADA system supports the station's monitoring and controls as well as provisions for multiple setpoints. Improvements to the station also included installation of an ultrasonic flow meter to monitor flows more accurately at the station. Upgrades were completed in December 2018.

Penn's Place Pump Station improvements were completed in 2019. The system was designed in 2018 for improvements and upgrade. These improvements included demolition and removal of existing pumps and piping and wet well concrete cap, installing a larger wet well concrete cap and floor access door with fall protection grating on wet well, site water service line and non-freeze yard hydrant, exterior site light, 3" PVC force main, valves and piping, new pump controls and transducer and backup floats, magnetic flow meter in force main bypass connection manhole, two (2) new submersible pumps with lifting cables, upper guide bar brackets and discharge connections.

Under the 2019-2020 I/I project, 9,802 linear feet of 8-inch sewer main was inspected. In 2020, the I/I project included inspection of 46 manholes, inspection of 147 sewer laterals, rehabilitation of 5 leaking manholes, and installation of 30' cured-in-place lining sections. This project also identified 4 private laterals and an additional 40' of sanitary sewer to be rehabilitated in future projects.

Under the 2021 I/I project, 17,900 linear feet of 8-inch, 1,150 linear feet of 10-inch, and 120 linear feet of 12-inch sewer main is being inspected. In 2021, the I/I project includes inspection of 95 manholes, and inspection of 325 sewer laterals. The project is budgeted to line up to 4,000 linear feet of sewer mains and rehabilitate up to 60 manholes, where appropriate.

## **6.0 CONDITION OF THE COLLECTION AND CONVEYANCE SYSTEM**

The existing sanitary collection and conveyance system in the TOFA service area is in fair to good condition and has adequate capacity to meet present and future hydraulic loading conditions. The sanitary sewer interceptor system is generally in good condition. Notable exceptions include flow restrictions in specific areas due to sediment and/or grease accumulation. Through these efforts, TOFA determined a few sources of I/I in the Queen Anne Interceptor and worked with Bristol Township to address I/I issues.

## **7.0 CONDITION OF PUMP STATIONS**

The Township of Falls Authority operates eleven pump stations within the TOFA service area. The majority of these stations are located within Falls Township. With the exception of Fallsington Woods, TOFA owns and maintains all of the stations. All stations were assessed in 2015 for the purpose of evaluating and prioritizing improvements to the sewage facilities. While maintenance was continually performed on all stations throughout 2020, significant interruptions to pump station improvements were experienced due to staff exposure to Covid-19.

### **7.1 Rock Run Pump Station**

Rock Run Pump Station is located on West Trenton Avenue south of Alden Avenue. It provides service to the area upstream of the Rock Run Stream north of Old Lincoln Highway. This station was constructed in 1962 and upgraded in 1993. The station is in good condition with no history of significant operational issues or concerns.

Rock Run Pump Station contains two, 50-horsepower vertical centrifugal pumps. Each pump is rated for 1,500 GPM at a total head of 81 feet. Station pumping capacity is 2.16 MGD. The average daily flow of the station is approximately 500,000 GPD. The station has adequate capacity to accommodate current and anticipated future flow conditions.

The following maintenance activities have occurred in 2016 to 2019:

January 2016 – Greased pumps and motors.

March 2016 – Cleaned/greased comminutor; cleaned rags out of Pump #1; installed sump pump.

April – December 2016 – Cleaned and greased comminutor.

January 2017 – Cleaned and greased comminutor.

April 2017 – Cleaned and greased comminutor.

May 2017 – Cleaned and greased comminutor.

June 2017 – Cleaned and greased comminutor.

September 2017 – Cleaned and greased comminutor; replaced universal joint and coupling on Pump #1.

October 2017 – Cleaned and greased comminutor.

November 2017 – Installed new filter on mechanical seal on Pump #1; cleaned and greased comminutor.

December 2017 – Cleaned and greased comminutor.

November 2018 – Installed new flow meter.

### **7.2 Tyburn Road Pump Station**

Tyburn Road Pump Station is located on Tyburn Road near Trenton Road. It serves the areas up-stream of Rock Run, Rock Run Pump Station, and Headley Place Pump Station. This station was constructed in 1962 and upgraded in 1994-1995. The station is in good condition with no history of significant operational issues or concerns.

Tyburn Road Pump Station contains three (3), 40-horsepower vertical centrifugal pumps. Each pump is rated for 1,800 GPM at a total head of 55 feet. Average monthly flow through this station is approximately 1.05 MGD. The maximum daily flow of the station is approximately 1.8 MGD. With two pumps operating, the station pumping capacity is 4.536 MGD. Overall station capacity is 3,500 GPM. Based on this data, the station possesses sufficient capacity to accommodate current and anticipated future flow conditions.

The following maintenance activities have occurred in 2016 to 2019:

January 2016 – Changed pillow block bearings on Pump #1; greased pumps and motors.

February 2016 – Cleaned Pump #3 and tightened packing on pump.

April 2016 – Replaced combs on Comminutor #2; routine maintenance on both comminutors.

August 2016 – Changed pillow block bearings on Pump #1.

December 2016 – Repaired check valves on Pumps #1 and #3.

January 2017 – Cleaned comminutors and basement.

February 2017 – Cleaned and greased comminutors; installed new timer on Pump #1.

March 2017 – Cleaned blockage out of Pump #2; cleaned and greased comminutors.

April 2017 – Cleaned blockage from Pump #1.

May 2017 – Cleaned and greased comminutors.

July 2017 – Cleaned and greased comminutors.

August 2017 – Replaced battery on the emergency generator.

September 2017 – Cleaned and greased comminutors.

October 2017 – Replaced packing on Pump #3; cleaned out check valve on Pump #3.

February 2018 – Repair of control panel and motor on Pump #3

March 2018 – Cleaned to remove grease and rags

December 2018 – SCADA install completed

June 2018 – Repaired Pump #1 and maintenance to control panels for Pump #1 and Pump #2

August 2019 – Installed by-pass connection.

<b>Table 7.2</b>	
<b>Tyburn Road Pump Station 2020 Accumulate Flows</b>	
<b>Month</b>	<b>Gallons Per Day (Million)</b>
Jan-20	2.06
Feb-20	2.11
Mar-20	1.86
Apr-20	1.84
May-20	1.79
Jun-20	1.79
Jul-20	1.79
Aug-20	1.67
Sep-20	1.71
Oct-20	1.75
Nov-20	1.68
Dec-20	1.64
<b>Average Flow</b>	<b>1.81</b>
<b>Max. Flow</b>	<b>2.11</b>

### **7.3 Trenton Road Pump Station**

The Trenton Road Pump Station is located on Trenton Road between Olds Boulevard and Pennsylvania Avenue. It serves 15 residences situated on Pennsylvania Avenue. The station was upgraded in 1987.

Trenton Road Pump Station is an above grade station. It contains two (2), 5-horsepower centrifugal pumps. Each pump is rated for 250 GPM at a total head of 30 feet.

This station currently receives flows at rates far below the original design estimates. However, the station is in poor structural condition and in need of repair. Pump station is scheduled to be upgraded in 2021.

The following maintenance activities have occurred in 2016 to 2019:

January 2016 – Wet well was cleaned.

February 2016 – Fuses blown out at station; replaced the fuses and got Pump #1 to run; Pump #2 drive motor is bad.

November 2016 – Stairs to the wet well were repaired.

October 2017 – Replaced packing on Pump #2.

November 2017 – Replaced stainless steel rod on control float for Pump #1.

#### **7.4 Oxford Valley Pump Station**

Oxford Valley Pump Station is located in Middletown Township, on a dedicated lot behind commercial property at the intersection of Old Lincoln Highway and Bristol-Oxford Valley Road. It provides service to the area east of Bristol-Oxford Valley Road and a commercial development along Oxford Valley Road.

Oxford Valley Pump Station was upgraded in 1987 from 225 GPM to 310 GPM. This upgrade included pump replacement and modifications to the mechanical and electrical systems of the station. Site access, security, and sewer main modifications were recently completed. Currently, the station contains two (2), 10-horsepower vertical centrifugal pumps. Each pump is rated at 372 GPM at a total head of 74 feet. A new exhaust system was being designed in 2020. Design is being finalized for construction in 2021. This station is in fair to good condition. It has adequate capacity for current and future projected flows.

The following maintenance activities have occurred in 2016 to 2019:

September 2016 – Replaced packing on Pumps #1 and #2; replaced Pump #1 with rebuilt pump.

October 2016 – Replaced Pump #2 with rebuilt pump.

November 2016 – Installed mixer in wet well for grease prevention.

December 2016 – Cleaned wet well and splitter box.

October 2017 – Replaced Pump #2 with rebuilt pump.

December 2017 – Cleaned blockage from Pump #2.

September 2019 – Installed new exhaust fan

August 2020 – Installed new bypass connection point

## **7.5 Penn Village Pump Station**

Penn Village Pump Station is located on Fallsington-Tullytown Road in the Penn Village neighborhood. This station serves Penn Village and Nottingham Village. It discharges to the LBCJMA sewerage system.

Penn Village Pump Station was upgraded in 1990. Upgrades included the installation of new pumps, construction of a generator building, a new control system, and miscellaneous new piping. Currently, the station contains two (2), 7.4 horsepower vertical centrifugal pumps. Each pump is rated for a 310 GPM discharge flow at a total head of 44 feet. This station has adequate capacity for current and projected flows. This station is in good condition. It has capacity to meet current and projected future flows.

The following maintenance activities have occurred in 2016 to 2019:

January 2016 – Repaired bubbler system in wet well.

November 2017 – Replaced air compressor and tubing for the bubbler system.

January 2018 – Pump #2 was repaired and returned to service

February 2018 – Replaced Pump #2

September 2018 – Pump station emergency bypass construction with flow meter installation

April 2019 – Installed new flowmeter

## **7.6 Penn's Place Pump Station**

Penn's Place Pump Station is located in the Penn's Place Development along West Trenton Avenue. This station serves the Penn's Place neighborhood. The station discharges to a gravity sanitary main connecting to the Rock Run Pump Station.

Penn's Place Pump Station contains two (2), 5-horsepower submersible pumps. Each pump is rated for a 56 GPM flow at a total head of 55 feet. The station is in good condition. This pump station has adequate capacity for current and projected flows.

The following maintenance activities have occurred in 2016 to 2019:

June 2016 – Cleaned grease and rags off floats.

October 2016 – Replaced capacitor on Pump #2.

March 2017 – Cleaned wet well and floats.

April 2017 – Installed new Pump #1.

May 2018 – Chlorine pump tube replaced

December 2019 - Upgraded pump station with new pumps, site improvements, flowmeter, etc.

## **7.7 Nottingham Village Pump Station**

Nottingham Village Pump Station is located in Nottingham Village, west of Route 13. This station was constructed in 2006 and replaced the former station that was abandoned.

This station serves the Nottingham Village neighborhood and Nottingham Annex. It discharges to a gravity sanitary main that conveys flow to the Penn Village Pump Station.

Nottingham Village Pump Station contains two (2), 6-horsepower submersible ITT Flygt pumps. Each pump is rated for a 165 GPM flow at a total head of 70 feet. A bypass pump was included in the new design as well as a new control and generator building.

The station is capable of accommodating existing and projected future flow conditions. A portable pump was purchased for the station in 2016 to handle heavy wet weather flows. As mentioned previously, TOFA is implemented a 2019 I/I Abatement Plan and addressing sump pump connections in the area.

The following maintenance activities have occurred in 2016 to 2019:

February 2016 – Installed a portable pump to bypass to assist with heavy flow.

March 2016 – Removed Pump #2 for repair – installed spare pump.

October 2016 – Removed Pump #2 for bad impeller – installed repaired pump.

September 2017 – Cleaned wet well, floats, and transducer.

December 2017 – Installed new transducer and surge protection device.

March 2018 – Temporary emergency portable diesel pump connected to handle heavy rains

February 2020 – New pumps and control panel installed

## **7.8 Headley Place Pump Station**

Headley Place Pump Station is located near the intersection of Headley Place Drive and Lower Morrisville Road. It primarily serves the adjoining Fallsington Industrial Park. This pump station discharges to a gravity sanitary main that conveys flow to the Tyburn Road Pump Station.

Headley Place Pump Station contains two (2), 11-horsepower submersible pumps. Each pump is rated for a 350 GPM flow at a total head of 65 feet.

This pump station was upgraded in 2016 by replacing iron and steel pump components with stainless steel components. This was done in response to corrosion issues generated by flows from the industrial park. The wet well is also exhibiting signs of deterioration due to aggressive wastewater. TOFA investigated the causes of corrosion by sampling the wastewater at the wet well and manholes from Q-Tech Labs and the Siemens Corporation. Baseline Monitoring Reports (BMRs) were also sent to other businesses of the industrial park to determine if their wastewater discharges should be monitored or permitted. The study results showed the wastewater discharged to the station was corrosive and exceeded pH limits set forth by the Philadelphia Municipal and Industrial Pretreatment Program (MIPP). As stated in Section 4.0, TOFA is working with the Philadelphia Water Department to make sure their wastewater control regulations are being followed. The study data was forwarded to the Philadelphia Water Department for further action. On August 7, 2016, there was a break in the force main. The force main



was repaired immediately. TOFA recently designed an emergency generator to be permanently installed at the station. Construction is expected to be completed in 2020.

The Headley Place PS Flowmeter experienced electrical issues and appears to be recording incorrect data. These issues are being addressed and will be corrected to report annual flow rates for 2021.

The following maintenance activities have occurred in 2016 to 2019:

February 2016 – Cleaned rags off floats.

June 2016 – Cleaned rags off floats.

October 2016 – Installed new alternator for pumps.

December 2016 – Removed old cast iron portion of force main and replaced with C900 pipe.

March 2017 – Cleaned floats and reset flow meter

August 2020 – Installed emergency generator and fence

## **7.9 Wheatsheaf Pump Station**

Wheatsheaf Pump Station is located at the southern end of Wheatsheaf Road. This station contains two (2), 5-horsepower submersible pumps. Each pump is rated for a 70 GPM flow at a total head of 114 feet.

The station is in good condition with no reported problems. It is capable of accommodating existing and projected future flows.

## **7.10 Fallsington Woods Pump Station (AKA Amesbury P.S.)**

Fallsington Woods Pump Station is located near the intersection of Ellerdale Road and Amesbury Road. This station contains two (2), 4-horsepower submersible pumps. Each pump is rated for a 150 GPM flow at a total head of 40 feet.

This station is in good to very good condition with no reported problems. It is capable of accommodating existing and projected future flows. A 35KW emergency generator was installed in 2014.

The following maintenance activities have occurred in 2016 to 2019:

May 2016 – Installed new start capacitor for Pump #1; Cleaned grease and rags off floats.

November 2016 – Cleaned grease and rags off floats.

February 2017 – Cleaned wet well and floats.

August 2017 – Cleaned floats.

September 2017 – Replaced battery on the emergency generator.

## **7.11 Rock Creek Run Pump Station**

Rock Creek Run Pump Station is located adjacent to Pine Grove Road in the northern portion of the service area. It is situated immediately east of both Rock Run Pump Station and Penn's Place Pump Station, north of U.S. Route 1 (Lincoln Highway). This station contains two (2), 5-horsepower centrifugal pumps. Each pump is rated for an 80 GPM flow capacity at a total head of 27 feet.

The station is in fair condition with some reported minor problems. It is capable of accommodating existing and projected future flows.

The following maintenance activities have occurred in 2016 to 2019:

June 2016 – Installed new transducer.

October 2016 – Installed new transducer and power suppression device.

July 2017 – Replaced auxiliary contact on Pump #1.

### **7.12 Pump Stations Capacity Summary**

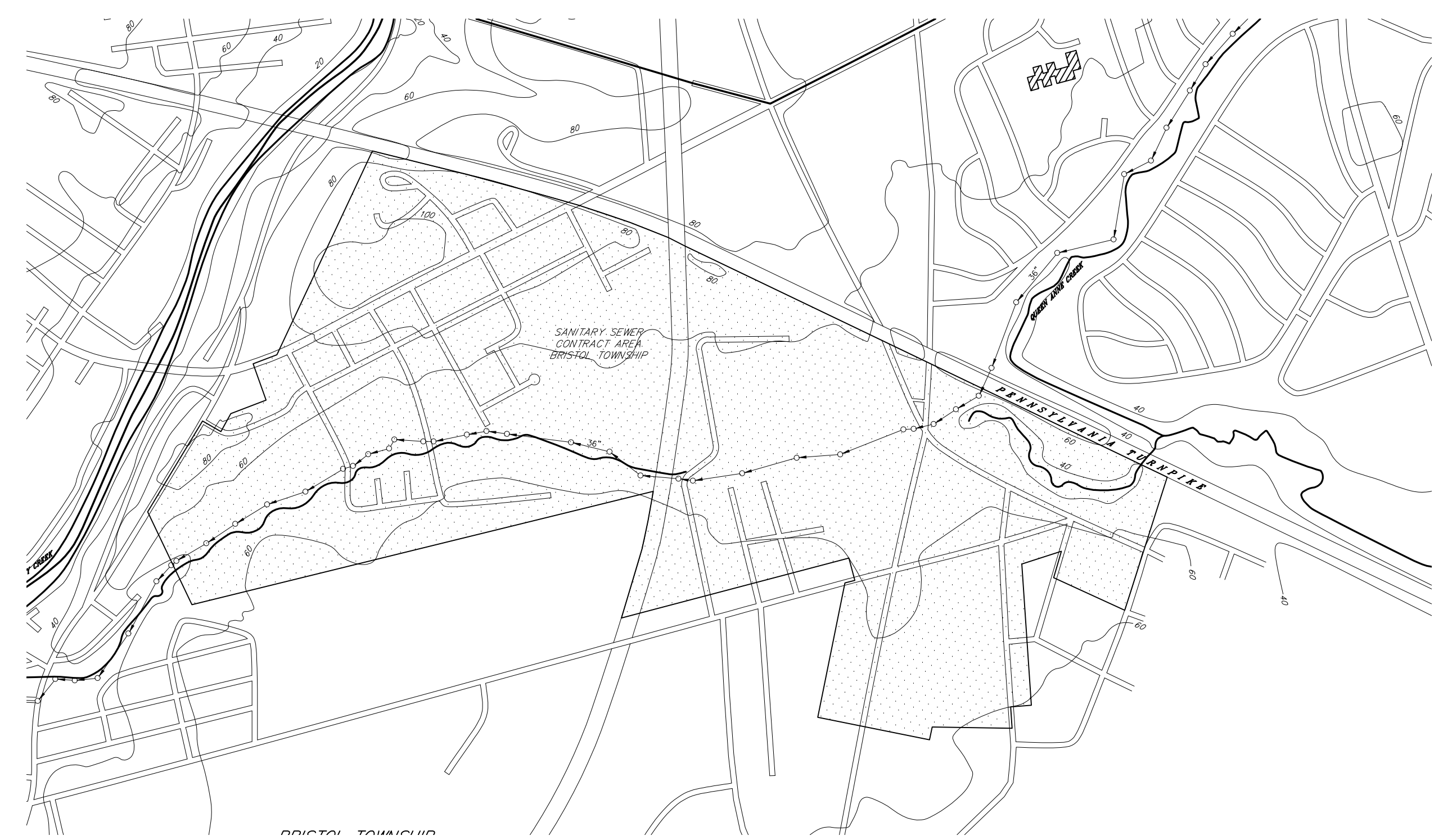
The calculated pumping capacity of each station was determined by conducting draw down tests on each pump, operating both individually and in combination with other pumps of the respective station. Testing was conducted between February and March, 2006. Data is derived from Chapter 94 Municipal Wasteload Management 2006 Annual Report, dated March 2007, by Schoor-Depalma, Inc. Results of the draw down test are provided below as Table 7.12.

Station	Pump 1	Pump 2	Pump 1 and 2	Total Capacity	Design Capacity of Each Pump	
	GPM	GPM	GPM	MGD	GPM	TDH (ft)
Rock Run	1,471	1,485	1,800	2,118,240	1,500	81
Tyburn Road (1)	1,735	1,830	2,860	2,498,400	1,800	55
Trenton Road	250	185	275	266,400	250	30
Oxford Valley	300	280	(2)	403,200	372	47
Penn Village	265	258	(2)	371,520	310	44
Penn's Place	60	65	80	86,400	56	55
Nottingham Village	(3)	(3)	(3)	(3)	165	70
Headley Place	350	335	465	482,400	350	65
Wheatsheaf	80	80	87	115,200	70	114
Fallsington Woods	140	140	150	201,600	150	40
Rock Creek Run	(4)	(4)	(4)	(4)	(4)	(4)

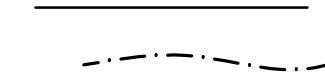
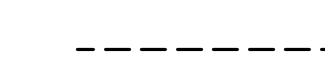
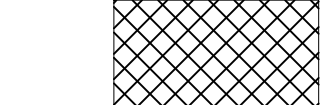
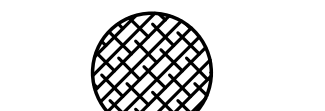
- (1) Tyburn Road Pump Station has three pumps. Pump No. 3 provides 1,774 GPM (2,554,560 GPD).  
Combined rate for Pump No. 2 and Pump No. 3 is 2,854 GPM (4,109,760 GPD)
- (2) Combined rate is unknown
- (3) Combined pump operation flow testing was not conducted at this station in 2006. Nottingham Pump Station was not tested because it was being constructed during the period when draw down testing was being conducted.
- (4) Test data for this pump station were not available at the time of this report.

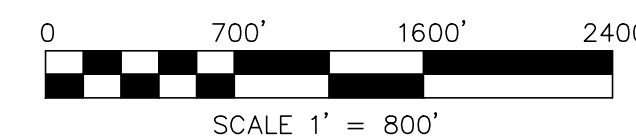
# **Appendix A**

## **TOWNSHIP OF FALLS AUTHORITY SERVICE AREA MAP**



**LEGEND**

-  STREAM/CREEK CENTERLINE
-  FORCE MAIN
-  SEWERS REHABILITATED
-  NEW CONNECTIONS PROPOSED



**SEWER FACILITIES MAP  
PROPOSED CONNECTIONS AND I/I WORK  
FALLS TOWNSHIP MUNICIPAL AUTHORITY**

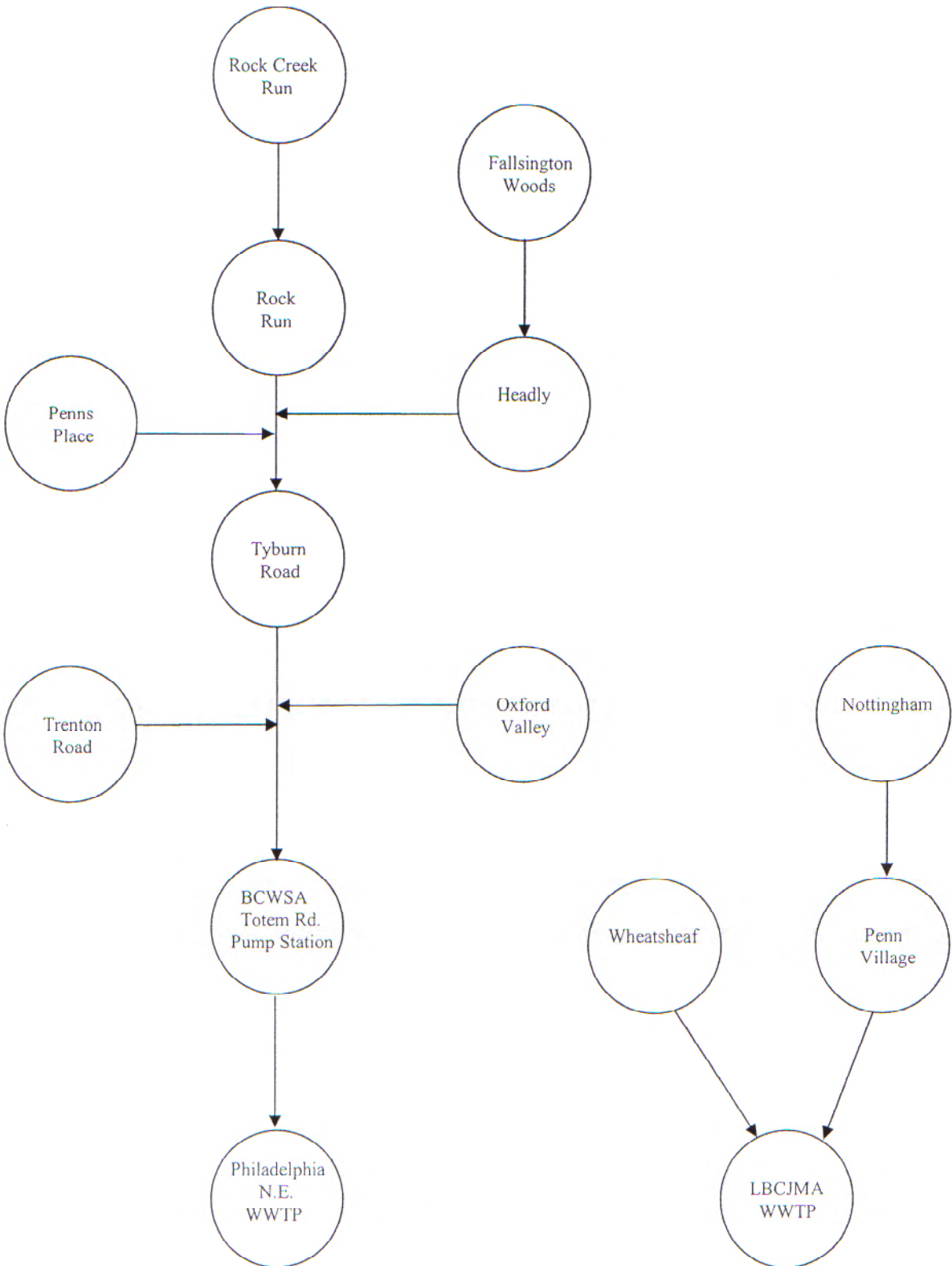
BUCKS COUNTY PENNSYLVANIA  
SCALE: 1" = 800' DATE: MARCH 2021

**RVE**  
1901  
REMINGTON & VERNICK  
ENGINEERS  
922 FAYETTE STREET  
CONSHOHOCKEN, PA 19428  
(610) 940-1050, FAX (610) 940-1161  
WEB SITE ADDRESS: WWW.RVE.COM  
-ENGINEERING EXCELLENCE-

# **APPENDIX B**

## **SUMMARY OF FALLS TOWNSHIP PUMP STATIONS (Pump Station Profiles)**

# TOWNSHIP OF FALLS PUMPING STATION SUMMARY



# **APPENDIX C**

## **PUMP STATION RUN TIMES**



# AMESBURY STATION

PUMP #1

3128.8

0.2

3211.9

0.8

9:07 am

DATE	READING	RUN TIME
1	3124.2	0.5
2	3130.2	0.9
3	3130.9	0.7
4		
5	3132.3	1.4
6	3133.1	0.8
7	3133.8	0.7
8	3134.5	0.7
9	3135.2	0.7
10	3135.8	0.6
11	3136.4	0.6
12	3137.1	0.7
13	3138.0	0.9
14	3138.7	0.7
15	3139.3	0.6
16	3139.9	0.6
17	3140.5	0.6
18	3141.0	0.5
19	3141.7	0.7
20	3142.4	0.7
21	3143.3	0.9
22	3143.9	0.6
23	3144.5	0.6
24	3145.2	0.7
25	3145.7	0.5
26	3146.4	0.7
27	3147.4	1.0
28	3147.8	0.4
29	3148.6	0.8
30	3149.3	0.7
31	3149.9	0.6
		21.1

PUMP #2	READING	RUN TIME
	3212.6	0.7
	3213.4	0.8
	3214.2	0.8
	3215.6	1.4
	3216.4	0.8
	3217.2	0.8
	3217.9	0.7
	3218.6	0.7
	3219.3	0.7
	3219.9	0.6
	3220.7	0.8
	3221.5	0.8
	3222.2	0.7
	3222.9	0.7
	3223.5	0.6
	3224.2	0.7
	3224.7	0.5
	3225.5	0.8
	3226.2	0.7
	3227.0	0.8
	3227.8	0.8
	3228.4	0.6
	3229.0	0.6
	3229.5	0.5
	3230.3	0.9
	3231.3	1.0
	3231.7	0.4
	3232.6	0.9
	3233.3	0.7
	3234.0	0.7
		22.1

TIME
9:34 am
9:40 am
9:41 am
10:11 AM
9:50 am
10:02 AM
10:40 AM
11:00 AM
10:32 am
9:55 am
10:27 am
9:25 am
9:31 am
10:47 AM
10:49 AM
10:52 am
9:40 am
10:50 AM
11:38 AM
10:15 AM
9:53 am
9:52 AM
8:55 PM
7:38 AM
7:38 AM
1:40 pm
8:08 am
9:51 am
10:05 am
11:18 am

TOTAL HOURS

MONTH/YEAR Jan 2020

432

# AMESBURY STATION

1-31-20 3149.9  
PUMP # 1

0.6

3234.0  
PUMP # 2

0.7

11:18 AM

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	3150.4	0.5	3234.5	0.5	10:00 AM
2	3151.1	0.7	3235.2	0.7	10:01 AM
3	3151.9	0.8	3236.1	0.9	11:01 AM
4	3152.6	0.7	3236.7	0.6	10:30 AM
5	3153.3	0.7	3237.4	0.7	10:30 AM
6	3154.0	0.7	3238.1	0.7	1:30 PM
7	3154.6	0.6	3238.8	0.7	10:18 AM
8					
9	3155.7	1.1	3239.9	1.1	7:16 AM
10	3156.6	0.9	3240.9	1.0	8:58 AM
11	3157.3	0.7	3241.8	0.9	8:37 AM
12	3158.2	0.9	3242.7	0.9	2:04 PM
13	3158.8	0.6	3243.3	0.6	11:03 AM
14	3159.1	1.7	3243.9	0.6	10:05 AM
15	3160.3	1.2	3244.8	0.9	1:40 PM
16	3160.8	0.5	3245.3	0.5	9:22 AM
17	3161.5	0.7	3246.1	0.8	9:22 AM
18	3162.2	0.7	3246.8	0.7	0 8 2 4
19	3162.9	0.7	3247.6	0.7	8:30 AM
20	3163.7	0.8	3248.3	0.7	10:40 AM
21	3164.4	0.7	3249.1	0.8	12:49 PM
22	3164.8	0.4	3249.6	0.5	9:30 AM
23	3165.5	0.7	3250.4	0.8	10:13 AM
24	3166.3	0.8	3251.1	0.7	8:58 AM
25	3166.8	0.5	3251.9	0.6	7:50 AM
26	3167.6	0.8	3252.4	0.7	0 9 0 6
27	3168.2	0.6	3253.1	0.7	0 9 2 0
28	3169.0	0.8	3253.9	0.8	11:42 AM
29	3169.5	0.5	3254.4	0.5	10:10 AM
30					
31					

TOTAL HOURS 19.6

20.4

MONTH/YEAR FEB. 2020

40.0

# AMESBURY STATION

2/20/20

3169.5  
PUMP #1

0.5

3254.9  
PUMP #2

11.5

10/10/19

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	3170.1	0.6	3255.1	0.7	7:11 AM
2	3171.1	1.0	3256.1	1.0	7:14.5 AM
3	3171.8	0.7	3256.9	0.8	10:20 AM
4	3172.5	0.7	3257.7	0.8	11:09 AM
5	3173.3	0.8	3258.4	0.7	12:05 P
6	3173.7	0.6	3259.2	0.6	12:00 PM
7	3174.5	0.6	3259.8	0.7	10:05 PM
8	<del>3175</del>				
9	3176.0	1.5	3261.4	1.6	9:00 AM
10	3176.7	0.7	3262.0	0.6	8:22 AM
11	3177.4	0.7	3262.8	0.8	9:03 AM
12	3178.2	0.8	3263.7	0.9	10:00 PM
13	3178.9	0.7	3264.4	0.7	10:10 PM
14	3179.5	0.6	3265.1	0.7	8:30 AM
15	3180.5	1.0	3266.1	1.0	7:45 AM
16	3181.8	0.9	3267.1	1.0	10:18 AM
17	3182.2	0.8	3267.9	0.8	10:23 AM
18	3182.9	0.7	3268.6	0.7	7:00 AM
19	3183.7	0.6	3269.4	0.8	7:00 AM
20	3184.5	0.8	3270.3	0.9	7:00 AM
21	3185.3	0.8	3271.0	0.7	8:45 AM
22	3186.1	0.8	3271.9	0.9	7:50 AM
23	3187.0	0.9	3272.8	1.1	8:00 AM
24	3187.7	0.7	3273.6	0.8	7:50 AM
25	3188.6	0.9	3274.5	0.8	7:55 AM
26	3189.2	0.6	3275.3	0.8	7:15 AM
27	3190.1	0.9	3276.2	0.9	6:50 AM
28					
29	3191.7	1.6	3278.9	2.7	8:16 AM
30	3192.5	0.8	3279.9	0	6:30 AM
31	3193.3	0.8	3279.6	0.7	6:45 AM

TOTAL HOURS

23.8

25.2

MONTH/YEAR

MARCH, 2020

49.0

# AMESBURY STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
	3193.3	0.8	3279.6	0.7	6:45 am
1	3194.4	1.1	3280.5	0.9	8:34 am
2	3195.0	0.6	3281.2	0.7	6:30 am
3	3195.8	0.8	3282.1	0.9	5:30 am
X					
5	3197.6	1.8	3284.1	2.0	8:40 am
6	3198.4	0.8	3284.9	0.8	7:00 am
7	3199.3	0.7	3285.6	0.7	6:25 am
8	3200.2	1.1	3286.8	1.2	7:47 am
9	3200.9	0.7	3287.4	0.6	5:30 am
10					
11					
12					
13	3204.1	3.2	3290.9	3.5	6:45 am
14	3205.6	1.5	3290.9	0	6:45 am
15	3206.4	0.8	3291.8	0.9	8:20 am
16	3207.2	0.8	3292.5	0.7	6:45 am
17	3208.0	0.8	3293.5	1.0	7:10 am
18					
19	3209.5	1.5	3295.1	1.6	7:45 am
20	3210.3	0.8	3296.0	0.9	6:45 am
21	3211.1	0.8	3296.8	0.8	7:25 am
22	3211.9	0.8	3297.6	0.8	8:30 am
23	3212.5	1.0	3298.6	1.0	6:45 am
24	3213.7	0.8	3299.4	1.8	6:15 am
25					
26	3215.4	1.7	3301.1	1.7	10:57 am
27	3216.1	0.7	3301.8	0.7	6:40 am
28	3216.7	0.6	3302.6	0.8	6:43 am
29	3217.6	0.9	3303.4	0.8	9:30 am
30	3218.2	0.6	3304.0	0.6	6:30 am
31					

TOTAL HOURS

24.9

24.4

MONTH/YEAR

April 2020

49.3

# AMESBURY STATION

4/10/20

1213.2

3309.0

6:30 am

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	3218.9	0.7	3304.8	0.8	6:30 am
2	-	-	-	-	-
3	3220.5	1.6	3306.5	1.7	7:43 am
4	3221.2	0.7	3307.2	0.7	6:30 am
5	3221.9	0.7	3308.0	0.8	6:30 am
6	3222.9	1.0	3309	1.0	7:10 AM
7	3223.6	0.7	3304.5	0.8	7:45 AM
8	3224.7	0.7	3310.5	0.8	7:55 AM
9	-	-	-	-	-
10	3225.9	1.6	3312.3	1.8	8:50 AM
11	3226.7	0.8	3313.0	0.7	9:25 am
12	3227.4	0.7	3313.7	0.7	6:35 am
13	3228.2	0.8	3314.5	0.8	8:05 am
14	3228.7	0.5	3315.2	0.7	6:30 am
15	3229.6	0.9	3316.1	0.9	8:56 am
16	-	-	-	-	-
17	3231.2	1.6	3317.8	1.4	10:52 AM
18	3231.9	0.7	3318.5	0.7	6:45 am
19	3232.6	0.7	3319.3	0.8	6:32 am
20	3233.6	1.0	3320.2	0.9	8:10 am
21	3234.9	0.7	3320.9	0.7	6:35 am
22	-	-	-	-	-
23	-	-	-	-	-
24	3236.5	2.2	3323.3	2.4	7:32 AM
25	3237.4	0.4	3324.2	0.9	8:15 AM
26	3238.1	0.7	3324.9	0.7	6:30 am
27	3238.7	0.6	3325.6	0.7	6:40 am
28	3239.5	0.8	3326.4	0.8	6:50 am
29	3240.2	0.7	3327.2	0.8	6:40 am
30	-	-	-	-	-
31	3241.9	1.4	3329.0	1.8	10:20 AM
TOTAL HOURS		23.7		25.0	

MONTH/YEAR

48.7

# AMESBURY STATION

5/21 3241.9 1.7 3329.0 1.8 1020 am

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	3242.6	0.7	3329.6	0.6	6:46 am
2	3243.3	0.7	3330.4	0.9	6:40 am
3	3244.1	0.8	3331.3	0.9	9:40 am
4	3244.7	0.6	3331.8	0.5	6:30 am
5	3245.3	0.6	3332.5	0.7	6:30 am
6					
7	3246.8	1.5	3334.1	1.6	7:49 AM
8	3247.5	0.7	3334.8	0.7	6:30 am
9	3248.3	0.8	3335.6	0.8	7:54 AM
10	3249.0	0.7	3336.4	0.8	9:02 AM
11	3249.8	0.8	3337.1	0.7	9:23 AM
12	3250.5	0.7	3337.8	0.7	8:06 am
13					
14	3251.4	1.4	3339.9	1.4	
15	3252.6	0.7	3340.1	0.8	6:35 am
16	3253.3	0.7	3340.7	0.8	6:07 am
17	3254.1	0.8	3341.6	0.7	8:51 am
18	3254.7	0.6	3342.3	0.7	6:15 am
19	3255.4	0.7	3343.1	0.8	6:15 am
20					
21	3256.9	1.5	3344.6	1.5	8:09 AM
22	3257.7	0.8	3345.4	0.8	8:28 am
23	3258.3	0.6	3346.2	0.8	8:10 AM
24	3259.1	0.8	3347.0	0.8	11:00 am
25	3259.7	0.6	3347.6	0.6	8:20 AM
26	3260.3	0.6	3348.2	0.6	6:15 am
27					
28	3261.8	1.5	3349.9	1.7	8:47 AM
29	3262.5	0.7	3350.6	0.7	6:32 am
30	3263.2	0.7	3351.3	0.7	6:30 am
31					

TOTAL HOURS

21.3

22.3

MONTH/YEAR

43.6

July 2020

AMESBURY STATION

6:00 am

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
	3263.2	0.7	3351.3	0.7	
1	3263.9	0.7	3352.0	0.7	6:15 am
2	3264.4	0.5	3352.6	0.6	6:25 am
3	3265.2	0.9	3353.5	0.9	11:39 AM
4					
5					
6	3267.2	2.0	3355.6	2.1	6:20 am
7	3267.8	0.6	3356.2	0.6	6:30 am
8	3268.5	0.7	3357.0	0.8	8:34 am
9	3269.1	0.6	3357.6	0.6	6:25 am
10	3269.8	0.7	3358.4	0.8	6:40 am
11					
12	3271.2	1.4	3359.9	1.5	8:17 AM
13	3271.9	0.7	3360.7	0.8	6:20 am
14	3272.8	0.9	3361.7	1.0	1:29 PM
15	3273.3	0.5	3362.1	0.4	6:30 am
16	3273.9	0.6	3362.8	0.7	6:55 am
17	3274.7	0.8	3363.6	0.8	6:30 am
18					
19	3276.2	1.4	3365.2	1.5	8:03 AM
20	3276.9	0.8	3366.0	0.9	9:26 AM
21	3277.4	0.7	3366.7	0.9	10:29 AM
22	3278.2	0.6	3367.5	0.8	10:40 AM
23	3278.8	0.6	3368.1	0.6	8:00 AM
24	3279.5	0.7	3368.9	0.8	10:00 AM
25					
26	3280.8	1.3	3370.2	1.3	7:43 am
27	3281.6	0.8	3371.0	0.8	7:40 am
28	3282.3	0.7	3371.9	0.7	6:30 am
29	3283.0	0.7	3372.6	0.9	8:00 am
30	3283.7	0.7	3373.3	0.7	6:29 am
31	3284.5	0.8	3374.1	0.8	6:30 am
		21.3		22.8	

TOTAL HOURS

MONTH/YEAR

July 2020

49.1

# AMESBURY STATION

7.31.20

3284.5

0.8

3374.1

0.8

6:30

PUMP # 1

PUMP # 2

DATE

READING

RUN TIME

READING

RUN TIME

TIME

1					
2	3285.9	1.4	3375.6	1.5	7:50 AM
3	3286.6	0.7	3376.4	0.8	6:15 AM
4	3287.4	0.8	3377.2	0.8	6:39 AM
5	3288.2	0.8	3378.0	0.8	7:54 AM
6	3288.9	0.7	3378.7	0.7	6:20 AM
7	3289.5	0.6	3379.4	0.7	6:25 AM
8	<del>3290.1</del>				
9					
10	3291.8	2.3	3381.9	2.5	6:30 AM
11	3292.4	0.6	3382.6	0.7	6:30 AM
12	3293.0	0.6	3383.3	0.7	6:21 AM
13	3293.7	0.7	3384.0	0.7	6:25 AM
14	3294.2	0.5	3384.5	0.5	6:27 AM
15					
16					
17	3298.7	4.5	-	-	9:28 AM
18	3299.7	1.0	-	-	6:30 AM
19	3301.2	1.5	-	-	7:16 AM
20	3302.7	1.5	-	-	10:55 AM
21	3303.5	0.8	-	-	6:10 AM
22					
23					
24	3307.3	3.8	-	-	6:10 AM
25	3308.6	1.3	-	-	6:15 AM
26	3309.9	1.3	-	-	6:46 AM
27	3311.0	2.9	-	-	6:18 AM
28	3312.5	1.5	-	-	6:20 AM
29					
30					
31	3316.5	4.0	-	-	6:15 AM

32.0

10.4

TOTAL HOURS

MONTH/YEAR

42.4



# AMESBURY STATION

8/31/20

1316.5

4.0

6:15 am

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	3317.7	1.2	-	-	6:30 am
2	3319.1	1.4	-	-	7:26 am
3	3320.4	1.3	-	-	6:21 am
4	3321.7	1.3	-	-	8:13 am
5					
6					
7	3326.2	4.5	3384.5	0.0	1:44 PM
8	3327.2	1.0	3384.5	0.0	6:20 am
9	3328.5	1.3	3384.5	0.0	8:00 am
10	3329.7	1.2	"	"	10:00 am
11	3331.3	1.6	3384.5	0.0	10:36 am
12					
13					
14	3334.9	3.6	" "		6:20 am
15	3336.2	1.3	" "		6:15 am
16	3337.5	1.3	" "		7:42 am
17	3338.7	1.2	" "		6:15 am
18	3339.9	1.1	" "		6:15 am
19					
20					
21	3344.1	4.2	" "		6:18 am
22	3345.7	0.6	3384.5	0.0	10:50 AM
23	3347.1	1.4	3384.5	0.0	11:23 PM
24	3348.2	1.1	3384.5	0.0	10:19 AM
25	3349.3	1.1	3384.5	0	8:10 PM
26					
27	3351.7	2.4	-	-	7:45 am
28	3353.1	1.4	-	-	7:35 am
29	3354.5	1.4	-	-	8:15 am
30	3355.9	1.4	-	-	8:30 am
31	3357.3	1.4	-	-	8:15 am

TOTAL HOURS 39.4

0.0

TOTAL HOURS

MONTH/YEAR

Sept 2020

39.4

# AMESBURY STATION

DATE	PUMP # 1		PUMP # 2		TIME
	READING	RUN TIME	READING	RUN TIME	
1	3357.3	1.4	3384.5	0	8:15 am
2	3358.7	1.1	" "	0	9:35 am
3					
4					
5	3367.6	4.7	3384.5	0	10:19 AM
6	3363.9	1.3	3384.5	0	9:00 am
7	3365.1	1.3	" "	" "	8:30 am
8	3366.3	1.2	" "	" "	7:31 AM
9	3367.8	1.5	" "	" "	10:30 am
10					
11	3370.1	2.3	" "	" "	7:55 AM
12	3371.9	1.8	" "	" "	9:05 am
13	3373.3	1.4			9:10 am
14	3374.9	1.6	3384.5	0.0/off	11:48 am
15	3376.0	1.1	" "	" "	
16	3377.5	1.2	3384.5	0	11:15 AM
17	3379.0	1.5	3384.5	0.0	12:00 PM
18	3379.8	1.8	" "	" "	7:30 am
19	3381.4	1.6	" "	" "	7:55 AM
20	3382.8	1.4	3384.5	0.0	8:55 am
21	3383.8	1.0	3384.5	0	8:10 AM
22	3385.2	1.4	3384.5	0.0	9:00 AM
23	3386.4	1.3	3384.5	0.0 off	9:40 AM
24					
25	3384.0	1.4			
26	3390.6	1.6			9:00 am
27	3391.9	1.3	3384.5	0.0	9:55 AM
28	3393.2	1.3	3384.5	0.0	11:29 AM
29	3394.2	1.0	" "	" "	7:45 am
30	3395.4	1.2	" "	" "	8:10 AM
31	3396.1	0.7	3385.1	0.6	7:40 AM
TOTAL HOURS		38.8		0.6	

MONTH/YEAR October, 2020

39.4

# AMESBURY STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
10/31	3396.1	0.7	3385.1	0.6	7:40 AM
	PUMP #1		PUMP #2		
1	3396.8	0.5	3385.7	0.6	8:10 AM
2	3397.7	0.9	3386.4	0.7	8:20 AM
3	3398.4	0.7	3387.1	0.7	10:35 AM
4	3399.0	0.6	3387.6	0.5	8:40 AM
5	3399.7	0.7	3388.3	0.7	10:40 AM
6	3400.3	0.6	3388.9	0.5	10:30 AM
7	3400.8	0.5	3389.3	0.5	7:45 AM
8	3401.6	0.8	3390.0	0.1	8:10 AM
9	3402.1	0.8	3390.5	0.7	12:50 PM
10	3402.8	0.4	3391.2	0.5	8:05 AM
11	3403.3	0.5	3391.6	0.4	5:17 AM
12	3404.1	0.8	3392.3	0.7	7:00 AM
13	3404.9	0.4	3392.9	0.4	8:16 AM
14	3405.2	0.5	3393.4	0.7	7:20 AM
15	3406.0	0.8	3394.1	0.6	7:42 AM
16	3406.7	0.7	3394.7	0.6	7:45 AM
17	3407.3	0.6	3395.3	0.6	6:18 AM
18	3408.1	0.8	3396.0	0.7	7:41 AM
19	3408.9	0.8	3396.6	0.6	7:37 AM
20	3409.5	0.6	3397.3	0.7	10:35 AM
21	3410.1	0.6	3397.8	0.5	7:45 AM
22	3410.9	1.1	3398.4	0.8	10:00 AM
23					
24	3412.2	1.4	3400.0	1.4	10:29 AM
25	3412.9	0.6	3400.5	0.5	8:15 AM
26	3413.8	0.9	3401.3	0.8	11:08 AM
27	3414.7	0.9	3402.0	0.7	10:25 AM
28	3415.3	0.6	3402.6	0.6	7:15 AM
29					
30					
31					

TOTAL HOURS 19.2

17.5

MONTH/YEAR Nov 20

36.7

# AMESBURY STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	TIME
11/28	3415.3	0.6		3402.6	0.6	7:15 AM
	PUMP #1			PUMP #2		
1	3417.8	2.5		3404.9	2.3	10:23 AM
2	3418.4	0.6		3405.4	0.5	7:15 AM
3	3419.1	0.7		3406.2	0.3	10:16 AM
4	3419.8	0.8		3406.9	0.7	11:27 AM
5	3420.4	0.5		3407.4	0.5	6:55 AM
6						
7	3422.2	1.1		3409.8	2.5	9:53 AM
8	3422.8	0.6		3409.6	0.6	7:35 AM
9	3423.6	0.8		3410.1	0.6	8:40 AM
10	3424.3	0.9		3410.8	0.6	8:58 AM
11	3424.9	0.6		3411.5	0.7	8:20 AM
12	3425.5	0.6		3412.1	0.6	9:35 AM
13	3426.4	0.9		3412.8	0.9	10:40 AM
14	3427.1	0.7		3413.4	0.6	<del>6:55 AM</del>
15	3427.8	0.7		3414.1	0.7	8:00 AM
16	3428.5	0.7		3414.8	0.7	7:43 AM
17	3429.4	0.9		3415.5	0.8	11:00 AM
18	3430.0	0.6		3416.1	0.6	7:52 AM
19	3430.7	0.7		3416.7	0.6	7:20 AM
20	3431.7	1.0		3417.6	0.9	11:07 AM
21	3432.7	1.0		3418.5	0.9	11:11 AM
22	3433.2	0.5		3419.0	0.5	9:50 AM
23	3434.1	0.9		3419.8	0.8	8:29 AM
24	3434.9	0.8		3420.5	0.7	7:10 AM
25	3435.8	0.9		3421.4	0.9	9:06 AM
26	3436.6	0.8		3422.2	0.8	7:15 AM
27						
28	3438.5	1.9		3423.8	1.6	10:08 AM
29	3439.3	0.8		3424.6	0.8	11:44 AM
30	3439.9	0.6		3425.2	0.6	8:00 AM
31	3440.7	0.8		3425.9	0.7	7:47 AM

TOTAL HOURS

25.4

27.3

MONTH/YEAR DECEMBER, 2020

48.7

# BARGIN CITY STATION

12/31/19

541.9  
PUMP #1

1.0

9224.0  
PUMP #2

0.0

7:45 am

DATE	READING	RUN TIME
1	540.9	1.2
2	542.0	1.8
3	542.7	2.07
4	543.6	0.9
5	544.6	1.1
6	545.6	1.2
7	546.6	1.0
8	550.5	3.9
9	557.5	2.0
10	559.7	2.2
11	564.2	4.5
12	572.6	8.4
13	575.2	23.4
14	596.8	1.6
15	597.2	0.4
16	597.5	0.3
17	598.0	0.5
18	598.7	0.7
19	599.5	0.6
20	600.2	0.7
21	600.6	0.4
22	601.0	0.4
23	601.3	0.3
24	601.7	0.4
25	602.0	0.3
26	609.5	7.5
27	611.2	1.7
28	611.7	0.5
29	612.2	1.5
30	612.6	0.4
31	613.0	0.4

DATE	READING	RUN TIME
1	9224.0	0.0
2	9224.0	0.0
3	9224.0	0.0
4	9224.0	0.0
5	9224.0	0.0
6	9224.0	0.0
7	9224.0	0.0
8	9224.0	0.0
9	9224.0	0.0
10	9224.0	0.0
11	9224.0	0.0
12	9224.0	0.0
13	9224.0	0.0
14	9224.0	0.0
15	9224.0	0.0
16	9224.0	0.0
17	9224.0	0.0
18	9224.0	0.0
19	9224.0	0.0
20	9224.0	0.0
21	9224.0	0.0
22	9224.0	0.0
23	9224.0	0.0
24	9224.0	0.0
25	9224.0	0.0
26	9224.0	0.0
27	9224.0	0.0
28	9224.0	0.0
29	9224.0	0.0
30	9224.0	0.0
31	9224.0	0.0

TIME
7:45 am
1:07 PM
7:47 am
7:45 am
7:31 am
11:00 am
8:29 am
7:33 am
8:30 am
8:09 am
7:33 am
7:40 am
6:11 am
7:30 am
8:03 am
8:00 am
7:29 am
07:32
7:10 am
8:51 am
7:06 am
8:25 am
8:43 am
07:30
8:10 am
8:05 am
7:57 am
8:00 am
7:36 am
7:30 am
9:03 am
9:02 am

TOTAL HOURS

73.2

0.0

MONTH/YEAR Jan 2019

73.2

# BARGIN CITY STATION

1/31/20 613.0

0.4

9:02 am

DATE	PUMP # 1 READING	RUN TIME	PUMP # 2 READING	RUN TIME	TIME
1	613.3	0.3	9224.0	-	7:35 AM
2	613.7	0.4	-	-	7:14 AM
3	614.1	0.4	-	-	7:38 AM
4	614.2	0.3	-	-	7:32 AM
5	614.7	0.3	-	-	8:27 AM
6	615.2	0.5	9224.0	0	1:01 PM
7	615.7	0.5	9224.0	0	9:33 AM
8					
9	617.4	1.7	-	-	7:30 AM
10	618.2	0.8	-	-	7:42 AM
11	619.1	0.9	-	-	7:38 AM
12	620.7	1.6	9224.0	0.0	7:20 AM
13	622.0	1.3	9224.0	0.0	0734
14	624.2	2.2	9224.0	0.0	7:30 AM
15	626.4	2.2	9224.0	0.0	7:33 AM
16	628.1	1.7	-	-	
17	630.5	2.3	9224.0	-	9:15 AM
18	632.0	2.7	9224.0	0.0	10:38 AM
19	634.7	1.7	9224.0	0.0	7:30 AM
20	637.2	2.5	9224.0	0.0	0747
21	639.1	1.9	9224.0	0.0	7:33 AM
22	640.7	1.6	9224.0	0.0	7:35 AM
23	643.0	1.2	-	-	7:05 AM
24	643.6	1.6	-	0	11:30 AM
25	644.9	1.2	-	0	7:30 AM
26	645.8	1.4	9224.0	0.0	1:50 PM
27	646.4	0.6	9224.0	0.0	0748
28	648.5	2.1	9224.0	0.0	1:10 PM
29	649.5	1.0	9224.0	0.5	7:58 AM
30					
31					

TOTAL HOURS

36.5

0.0

MONTH/YEAR 2/2020

36.5

# BARGIN CITY STATION

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
1	651.5	2.0	9224.0	0.0	7:39 AM
2	671.7	20.2	9224.0	0.0	2:07 PM
3	672.0	0.3	9224.0	0.0	11:27 AM
4	672.4	0.4	9224.0	0.0	9:10 AM
5	677.8	0.4	9224.0	0.0	10:04 AM
6	678.1	0.3	9224.0	0.0	7:20 AM
7	678.7	0.4	9224.0	0.0	7:20 AM
8					
9	678.0	1.5	9224.0	0.0	11:20 AM
10	678.8	0.8	9224.0	0.0	7:29 AM
11	677.1	1.3	9224.0	0.0	0:52 PM
12	678.3	1.2	9224.0	0.0	11:03 AM
13	679.6	1.3	9224.0	0.0	7:47 AM
14	681.1	1.5	9224.0	0.0	3:45 PM
15	682.1	1.3	9224.0	0.0	2:16 AM
16	683.6	1.2	9224.0	0.0	0:53 PM
17	685.9	5.2	9224.0	0.0	7:27 AM
18	690.5	1.7	9224.0	0.0	0:21 PM
19	690.9	0.4	9224.0	0.0	0:23 PM
20	691.5	0.6	9224.0	0.0	0:32 PM
21	693.0	0.5	9224.0	0.0	8:20 AM
22	692.4	0.4	9224.0	0.0	8:37 AM
23	692.8	0.4	9224.0	0.0	0:23 PM
24	693.7	0.9	9224.0	0.0	0:21 PM
25	694.4	0.7	9224.0	0.0	0:27 PM
26	695.0	0.6	9224.0	0.0	0:20 PM
27	695.8	0.8	9224.0	0.0	0:26 PM
28					
29	698.9	3.1	9224.0	0.0	10:26 AM
30	700.5	1.6	9224.0	0.0	0:24 PM
31	703.2	2.7	9224.0	0.0	0:22 PM

TOTAL HOURS

53.7

0.0

MONTH/YEAR

March 2011

53.7

# BARGIN CITY STATION

3/31

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
	708.2	2.7	9224.0	0.0	0721
1	706.6	3.4	9224.0	0.0	0715
2	707.9	1.3	9224.0	0.0	0731
3	708.2	0.4	9224.0	0.0	0733
4	<del>709.2</del>	<del>0.9</del>	-	-	9:30
5	709.2	0.9	-	-	9:30 AM
6	709.6	0.4	9224.0	0.0	0757
7	710.0	0.4	9224.0	0.0	0728
8	710.5	0.6	9224.0	0.0	10:00 AM
9	711.0	0.5	9224.0	0.0	12:05 PM
10					
11					
12					
13	714.0	3.0	9224.0	0.0	0843
14	718.5	4.5	9224.0	0.0	0811
15	719.2	0.7	9224.0	0.0	0808
16	719.8	0.6	9224.0	0.0	0815
17	720.4	0.6	9224.0	0.0	0828
18					
19	721.6	1.2	-	-	9:20 AM
20	722.2	0.6	9224.0	0.0	0804
21	723.0	0.3	9224.0	0.0	0759
22	724.0	1.0	-	-	7:41 AM
23	724.9	0.9	9224.0	0.0	0752
24	725.9	1.0	9224.0	0.0	0745
25					
26	731.1	5.2	-	-	9:42 AM
27	734.6	3.5	9224.0	0.0	0804
28	735.2	0.6	9224.0	0.0	0830
29	735.7	0.5	9224.0	0.0	0852
30	736.0	0.3	9224.0	0.0	0819
31					

TOTAL HOURS

32.8

0.0

MONTH/YEAR

April 2020

32.8



9/30

# BARGIN CITY STATION

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
1	736.5	0.5	9224.0	0.0	07:04
2	-	-	-	-	-
3	737.4	0.4	-	-	6:48 AM
4	737.9	0.5	9224.0	0.0	08:15
5	738.2	0.3	9224.0	0.0	08:00
6	738.6	0.4	9224.0	0.0	09:08
7	738.9	0.3	9224.0	0.0	08:32
8	739.2	0.3	9224.0	0.0	07:45
9	-	-	-	-	-
10	739.9	0.7	-	-	7:42 AM
11	740.3	0.4	9224.0	0.0	08:08
12	740.6	0.3	-	-	9:00 AM
13	740.9	0.3	9224.0	0.0	08:42
14	741.2	0.3	9224.0	0.0	07:58
15	741.5	0.3	9224.0	0.0	07:48
16	-	-	-	-	-
17	742.1	0.6	-	-	7:52 AM
18	742.4	0.3	9224.0	0.0	08:23
19	742.7	0.3	9224.0	0.0	8:53 AM
20	743.0	0.3	9224.0	0.0	08:35
21	743.3	0.3	9224.0	0.0	08:43
22	743.5	0.2	9224.0	0.0	07:58
23	-	-	-	-	-
24	744.3	0.8	-	-	9:51 AM
25	744.6	0.3	-	-	7:15 AM
26	744.9	0.3	9224.0	0.0	11:40 AM
27	745.1	0.2	9224.0	0.0	08:46
28	745.4	0.3	9224.0	0.0	07:37
29	745.7	0.3	9224.0	0.0	07:40
30	-	-	-	-	-
31	746.3	0.6	-	-	11:25 AM
TOTAL HOURS		10.3	0.0		

MONTH/YEAR 9/30 2020

10.3

# BARGIN CITY STATION

5/31

746.3

9224.0

11:25 AM

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
1	746.6	0.3	9224.0	0.0	0757
2	746.9	0.3	9224.0	0.0	0803
3	747.3	0.4	9224.0	0.0	0830
4	747.8	0.5	9224.0	0.0	0830
5	748.1	0.5	9224.0	0.0	8:51 AM
6					
7	749.3	1.2	-	-	7:10 AM
8	749.8	0.5	9224.0	0.0	0807
9	750.3	0.7	9224.0	0.0	9:15 AM
10	751.0	0.5	9224.0	0.0	0821
11	751.7	0.7	9224.0	0.0	0738
12	753.3	1.4	9224.0	0.0	9:54 AM
13					
14	756.5	3.4	-	-	7:06 AM
15	757.8	1.3	9224.0	0.0	0841
16	759.2	1.4	9224.0	0.0	9:03 AM
17	760.8	1.6	9224.0	0.0	0825
18	762.2	1.4	9224.0	0.0	0746
19	762.6	0.4	9224.0	0.0	0757
20					
21	763.2	0.6	-	-	6:51 AM
22	763.6	0.4	9224.0	0.0	0824
23	763.7	0.7	9224.0	0.0	8:45 AM
24	764.4	0.5	9224.0	0.0	0750
25	764.7	0.3	9224.0	0.0	0752
26	765.0	0.3	9224.0	0.0	0751
27					
28	765.6	0.6	-	-	6:55 AM
29	765.9	0.3	9224.0	0.0	0758
30	766.3	0.4	9224.0	0.0	0821
31					

TOTAL HOURS

20.0

0.0

MONTH/YEAR

JUNE

2020

20.0

# BARGIN CITY STATION

DATE	766.3 PUMP #1 READING	0.4 RUN TIME	9224.0 PUMP #2 READING	0.0 RUN TIME	0821 TIME
1	766.2	0.2	9224.0	0.0	8:34 AM
2	767.0	0.3	9224.0	0.0	0731
3	767.3	0.3	9224.0	0.0	7:00 AM
4					
5					
6	768.4	1.1	9224.0	0.0	0731
7	769.0	0.6	9224.0	0.0	9:32 AM
8	769.5	0.5	9224.0	0.0	11:24 AM
9	769.9	0.4	9224.0	0.0	8:41 AM
10	770.4	0.5	9224.0	0.0	9:00 AM
11					
12	775.3	4.9	-	-	7:11 AM
13	776.5	1.2	-	-	9:26 AM
14	777.5	1.0	-	-	9:34 AM
15	778.3	0.8	-	-	7:38 AM
16	779.2	0.9	-	-	
17	780.2	1.0	-	-	8:53 AM
18					
19	782.2	2.2	9224.0	0.0	7:17 AM
20	783.9	1.5	9224.0	0.0	7:43 AM
21	785.2	1.3	-	-	9:00 AM
22	786.4	1.2	9224.0	0.0	0746
23	787.5	1.1	9224.0	0.0	0745
24	789.0	2.5	9224.0	0.0	0831
25					
26	791.2	2.2	9224.0	0.0	8:35 AM
27	792.6	1.4	9224.0	0.0	0740
28	794.0	1.4	9224.0	0.0	0812
29	795.4	1.4	9224.0	0.0	0857
30	796.6	1.7	9224.0	0.0	0856
31	798.0	1.4	9224.0	0.0	8:00 AM
TOTAL HOURS		31.7		0.0	

MONTH/YEAR July 2020

31.7

# BARGIN CITY STATION

DATE	PUMP #1 - 798.0		PUMP #2 - 9224.0		8:00 AM
	READING	RUN TIME	READING	RUN TIME	TIME
1	-	-	-	-	-
2	800.4	2.4	9224.0	0.0	8:15 AM
3	801.7	1.3	9224.0	0.0	0800
4	803.3	1.6	9224.0	0.0	0738
5	804.9	1.1	9224.0	0.0	0744
6	804.8	0.4	-	-	7:49 AM
7	805.3	0.5	9224.0	0.0	0744
8					
9					
10	805.7	1.4	9224.0	0.0	0831
11	807.3	0.6	9224.0	0.0	0743
12	807.7	0.4	9224.0	0.0	0825
13	808.2	0.5	9224.0	0.0	0805
14	808.7	0.5	9224.0	0.0	0730
15					
16					
17	810.2	1.5	9224.0	0.0	0937
18	810.7	0.5	9224.0	0.0	0731
19	811.1	0.4	9224.0	0.0	0846
20	811.6	0.5	9224.0	0.0	0812
21	812.1	0.5	9224.0	0.0	0842
22					
23					
24	813.4	1.3	9224.0	0.0	0800
25	813.8	0.4	-	-	10:01 AM
26	814.1	0.3	9224.0	0.0	0836
27	814.4	0.3	9224.0	0.0	0844
28	814.8	0.4	9224.0	0.0	1243 PM
29					
30					
31	815.8	1.0	9224.0	0.0	0820
TOTAL HOURS		17.8		0.0	

MONTH/YEAR August, 2020

17.8

# BARGIN CITY STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
8/31	815.8	1.0	9224.0	0.0	0920
	PUMP #1		PUMP #2		
1	816.1	0.3	-	-	7:25 AM
2	816.6	0.5	9224.0	0.0	0907
3	817.0	0.4	9224.0	0.0	0952
4	817.4	0.4	9224.0	0.0	09:29 AM
5					
6					
7	818.5	1.1	9224.0	0.0	11:20 AM
8	818.8	0.3	9224.0	0.0	0756
9	819.2	0.4	9224.0	0.0	10:00 AM
10	819.5	0.3	9224.0	0.0	0817
11	820.0	0.5	9224.0	0.0	8:15 AM
12					
13					
14	820.8	0.8	9224.0	0.0	0800
15	821.1	0.3	9224.0	0.0	10:28 AM
16	821.4	0.3	9224.0	0.0	0747
17	821.8	0.4	9224.0	0.0	0802
18	822.2	0.4	9224.0	0.0	0803
19					
20					
21	823.4	1.2	9224.0	0.0	0753
22	823.9	0.4	9224.0	0.0	7:25 AM
23	824.3	0.5	9224.0	0.0	7:30 AM
24	824.7	0.4	9224.0	0.0	7:25 AM
25	825.3	0.6	"	"	130 P
26	826.0	0.7	"	"	6:30 AM
27					
28	826.4	0.4	9224.0	0.0	0810
29	826.8	0.4	9224.0	0.0	0737
30	828.5	1.7	9224.0	0.0	0823
31					

TOTAL HOURS

10.7

0.0

MONTH/YEAR September 2020

10.7

# BARGIN CITY STATION

9/30

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
1					
2	829.5	1.0	9224.0	0.0	0817
3					
4					
5	830.7	1.2	11	0	0800
6	831.1	0.4	9224.0	0.0	7:30 AM
7	831.1	0.0	9224.7	0.7	10:00 AM
8	831.1	0.0	9225.2	0.5	0849
9	831.1	0.0	9225.7	0.5	9:00 AM
10					
11	11	11	9226.8	1.1	
12	831.0	0.0	9227.3	0.5	0802
13	831.1	0.2	9228.4	0.9	7:20 AM
14	831.1	0.0	9229.1	0.7	0836
15	831.1	0.0	9229.6	0.5	0740
16	11	11	9230.1	0.5	7344
17					
18	11	11	9232.1	2.0	
19	11	11	9232.8	0.7	230P
20	831.1	0.0	9233.2	0.4	9:55 AM
21	11	11	9233.8	0.6	1050 AM
22	831.1	0.0	9234.2	0.4	0757
23	831.2	0.0	9234.2	0.5	11:10 AM
24			9235.11	0.5	6:50 AM
25					
26	831.1	0.0	9235.9	0.5	0726
27	831.1	0.0	9236.5	0.6	9:16 AM
28	831.1	0.0	9237.0	0.5	0807
29	831.1	0.0	9237.5	0.5	0741
30	831.1	0	9239.8	2.3	11:08
31	831.1	0.0	9241.0	1.2	11:15 AM

TOTAL HOURS

26

17

MONTH/YEAR October 2020

19.6

# BARGIN CITY STATION

10/31	831.1 PUMP #1	0.0	9241.0 PUMP #2	1.2	0.151112
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	11	11	9241.9	0.9	10:07 AM
2	831.1	0	9242.0	1.1	11:17 AM
3	831.1	0.0	9243.7	0.7	9:39 AM
4	831.3	0.0	9244.5	0.2	9:00 AM
5	831.1	0.0	9245.2	0.7	0802
6	831.1	0.0	9245.7	0.5	7:30 AM
7	831.1	0.0	9246.3	0.6	6:15 AM
8	-	-	9247.0	0.7	5:31
9	-	-	9247.5	0.5	9:00 AM
10	831.1	0.0	9248.1	0.5	9:43 AM
11	831.1	0.0	9248.5	0.4	5:48 AM
12	11	11	9249.9	1.4	1:34 PM
13	831.1	0.0	9250.0	0.7	9:07 AM
14	831.1	0.0	9251.4	0.8	6:15 AM
15	-	-	9252.2	0.8	7:01 AM
16	831.1	0.0	9252.2	0.7	08:32
17	831.1	0.0	9253.5	0.6	0746
18	831.1	0.0	9254.2	0.7	10:16 AM
19	831.1	0.0	9254.8	0.6	0811
20	831.1	0.0	9255.4	0.6	11:03 AM
21	831.0	0.0	9255.9	0.6	6:05 AM
22	831.3	0.0	9256.6	0.7	10:38 AM
23	831.3	0.0	9257.2	0.8	10:56 AM
24	831.3	0.0	9257.2	0.5	7:59 AM
25	831.3	0.0	9258.4	0.7	10:06 AM
26	831.1	0.0	9259.1	0.7	10:10 AM
27	831.1	0.0	9259.8	0.8	7:54 AM
28	831.1	0.0	9260.2	0.3	6:10 AM
29	-	-	9261.4	0.1	-
30	831.1	0.0	9261.4	1.2	0840
31	-	-	-	-	-

TOTAL HOURS

0.0

20.4

MONTH/YEAR

Nov 20

20.4

11/30

# BARGIN CITY STATION

0840

DATE	831.1 PUMP #1 READING	0.0 RUN TIME	9261.4 PUMP #2 READING	1.2 RUN TIME	TIME
1	831.1	0.0	9263.5	2.1	0822
2	831.1	0.0	9264.5	0.9	0827
3	831.1	0.0	9265.1	0.7	0807
4	831.1	0.0	9265.8	0.7	8:49 AM
5	831.1	0.0	9266.4	0.6	5:50 AM
6	-	-	9267.9	1.4	7:00
7	-	-	9268.8	1.0	10:40 AM
8	831.1	0.0	9269.4	0.6	0749
9	831.1	0.0	9270.0	0.6	10:35 AM
10	831.1	0.0	9270.6	0.6	0735
11	831.1	0.0	9271.2	0.6	0803
12	831.1	0.0	9271.8	0.6	6:20 AM
13	831.1	-	9272.4	0.6	10:21
14	831.1	0.0	9272.9	0.5	0857
15	831.1	0.0	9273.5	0.8	0821
16	831.1	0.0	9274.4	0.7	0754
17	831.1	0.0	9275.0	0.6	11:43 AM
18	831.1	0.0	9275.6	0.6	0813 AM
19	831.1	am	9276.2	0.6	6:10 AM
20	-	-	9277.0	<del>0.6</del> 0.8	9:58
21	-	-	9277.6	0.6	9:30
22	831.1	0.0	9278.4	0.8	9:40 AM
23	831.1	0.0	9279.4	1.0	9:00 AM
24	831.1	0.0	9280.2	0.7	6:05 AM
25	-	-	9282.1	1.9	
26	831.1	0.0	9283.7	1.6	6:15 AM
27					
28	831.1	0.0	9285.6	1.9	
29	831.1	0.0	9286.4	0.8	11:05 AM
30	831.1	0.0	9287.0	0.6	0755
31	831.1	0.0	9287.6	0.6	0757
TOTAL HOURS		0.0		26.2	

MONTH/YEAR Dec. 2020

26.2



Headley Station

Month - July 2011

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13529.0	1.6	14269.3	2.2	69737939	2675	9:25 AM
2	13589.7	0.7	14271.1	1.4	69734259	1350	10:19 AM
3	13592.6	2.9	14285.3	4.2	69747209	7920	9:55 AM
4	-	-	-	-	-	-	-
5	13597.1	4.9	14279.1	11.6	69746570	18311	10:05 AM
6	13599.1	2.0	14282.3	2.4	69745027	14507	10:00 AM
7	13602.4	3.3	14284.9	2.6	69813661	28634	10:10 AM
8	13606.7	4.3	14289.5	4.6	69849532	35821	11:19 AM
9	13610.1	4.0	14293.5	4.0	69867959	48407	
10	13614.8	4.7	14297.6	4.1	69887285	19326	10:39 AM
11	13617.8	3.8	14300.0	2.4	69900054	12769	9:40 AM
12	13618.5	0.9	14300.7	0.9	69900808	754	10:34 AM
13	13620.2	1.7	14301.9	1.5	69906499	5669	7:20 AM
14	13621.5	1.9	14304.8	2.9	69916391	9814	11:22 AM
15	13626.2	2.7	14307.6	2.8	69919662	3371	10:28 AM
16	13629.8	3.6	14311.8	4.2	69924035	4373	11:00 AM
17	13632.9	3.1	14315.3	3.5	69939787	15754	10:46 AM
18	13634.4	1.5	14317.6	2.3	69941757	1998	9:55 AM
19	13635.3	0.9	14318.4	1.1	69942731	944	11:18 AM
20	13636.8	1.5	14321.9	3.2	69950118	7387	11:30 AM
21	13640.0	3.2	14325.8	3.1	69958739	8621	10:18 AM
22	13642.6	2.6	14327.4	2.4	69961576	2837	10:16 AM
23	13645.1	2.5	14330.2	2.8	69969420	7844	09:42
24	13647.4	2.3	14333	3.1	69972519	3099	4:21
25	13649.7	2.3	14336.0	2.7	69975180	2661	7:46 AM
26	13650.8	1.1	14337.6	1.6	69976415	1235	7:42 AM
27	13653.2	2.4	14340.3	2.7	69979110	2695	1:25 PM
28	13654.4	1.2	14341.3	1.0	69980211	1101	8:00 AM
29	13657.5	3.1	14345.1	3.8	69987344	7133	11:00 AM
30	13660.4	2.9	14349.2	3.1	6999895	12581	10:13 AM
31	13663.4	3.0	14353.1	3.9	70015144	15249	11:30 AM

76.0

86.1

287,880

Total Hours

Total Hours

160.1

Total Flow

0

# Headley Station

Monthly

13140 PUMP #1 13665.7 3.0 14353.1 PUMP #2 3.9 70015014 15.249 11:20 AM

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13665.9	2.5	14354.9	1.8	70020164	7.920	9:55 AM
2	13666.7	0.3	14357.4	0.5	70023603	6.39	9:51 AM
3	13669.1	2.4	14357.4	2.0	70041074	17.471	11:08 AM
4	13674.5	5.4	14358.6	2.2	70055685	14.121	10:52 AM
5	13677.6	3.1	14364.7	5.1	70073647	17.962	10:59 AM
6	13681.5	3.9	14369.4	4.7	70084026	10.376	1:40 PM
7	13684.1	2.4	14372.1	2.7	70106382	22.559	10:25 AM
8							
9	13687.1	3.2	14370.2	4.1	70126733	20.151	7:21
10	13688.7	1.4	14377.6	1.4	70128111	11.372	9:08
11	13692.9	3.3	14381.4	3.8	70145959	17.918	8:30 AM
12	13697.0	4.6	14385.5	4.1	70176391	30.432	8:18 AM
13	13702.7	5.7	14391.2	5.7	70212033	41.642	11:18 AM
14	13706.7	4.0	14395.2	4.0	70243338	25.305	10:10 AM
15	13710.5	3.2	14398.2	2.2	70259482	14.144	1:24 PM
16	13711.3	0.8	14398.9	0.8	70258231	7.49	9:15 AM
17	13713.5	2.1	14401.7	1.8	70257812	9.575	7:07 AM
18	13717.1	3.8	14412.0	11.3	70302640	35.834	0:21
19	13720.7	3.3	14422.9	10.9	70321032	17.392	9:00 AM
20	13724.1	3.7	14425.7	2.3	70324354	13.322	11:20 AM
21	13728.3	4.2	14430.4	4.7	70342330	17.970	12:51 PM
22	13737.0	0.5	14431.3	1.4	70348000	5.130	9:00 AM
23	13738.8	1.0	14432.5	0.7	70348215	6.44	10:25 AM
24	13740.0	1.2	14436.2	3.8	70354943	6.728	8:40
25	13742.4	2.4	14438.3	2.0	70357971	3.028	7:43 AM
26	13744.6	2.2	14441.1	2.8	70360436	24.65	0:35
27	13746.6	2.0	14443.7	2.6	70363439	8.001	0:30
28	13750.3	3.7	14450.8	7.1	70342408	23.971	11:51 AM
29	13751.8	1.3	14451.7	3.1	70340330	17.4	7:00 AM
30							
31	13753.8	2.0	14454.3	1.4	70396105	17.1	13.4

Total Hours 90.4

Total Hours 101.2

191.6

380,969

Total Flow

0

Headley Station

Month March 2011

PUMP #1

PUMP #2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13752.7	2.9	14457.6	5.7	703745211	830	10:00
2	13753.8	2.0	14454.5	1.7	703745211	1741	11:34
3	13750.5	2.7	14467.0	1.7	70411522	14330	10:30
4	13762.7	4.2	14470.4	3.4	70421532	11230	1:47
5	13764.0	3.5	14481.7	11.3	70441845	20352	11:18
6	13765.6	1.1	14480.5	10.1	70460457	14754	10:57
7	13761.4	5.2	14489.1	15.1	70470590	9751	9:00
8							
9	13766.6	1.8	14491.7	1.8	70473212	2622	9:50
10	13771.9	3.3	14514.5	2.5	70476884	3677	8:13
11	13774.2	2.3	14517.9	3.4	70486860	9971	11:33
12	13776.1	1.9	14520.2	2.3	70492105	5145	11:29
13	13778.1	2.0	14522.8	2.1	70501782	9757	10:09
14	13779.4	1.8	14524.5	2.2	70511779	10247	8:50
15	13780.8	0.9	14525.6	1.1	70508945	11016	7:57
16	13782.2	1.4	14527.3	1.7	70516433	7438	10:03
17	13786.0	3.8	14532.1	4.8	70539732	23099	10:52
18	13788.3	2.3	14534.9	2.8	70550208	10476	7:00
19	13790.9	2.6	14536.6	7.7	70556135	5927	7:15
20	13793.0	2.1	14538.4	2.3	70558953	2818	7:10
21	13792.8	2.9	14541.9	3.0	70564909	8011	3:00
22	13796.6	0.8	14542.6	0.9	70567884	920	8:01
23	13797.6	1.0	14543.5	0.9	70568885	1001	7:00
24	13800.8	3.2	14547.2	3.7	70589284	2039	7:10
25	13804.6	3.8	14551.1	3.9	70603189	13905	7:42
26	13807.9	3.3	14554.9	3.3	70613050	9861	7:00
27	13809.4	1.5	14556.4	2.0	70615143	2093	8:00
28							
29	13812.7	3.3	14559.1	2.9	70618110	3667	8:09
30	13813.9	1.0	14560.0	0.9	70620172	1202	6:50
31	13817.1	0.0	14565.5	3.5	70624360	14248	6:30

Total Hours 65.3 3.4

Total Hours 110.6 0

175.9

239,969  
Total Flow

0

Headley Station

Month: Apr 1 2020

13817.1

14723.1

70634300 14398

PUMP #1

PUMP #2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13821.1	4.0	14568.1	4.6	70639583	24228	7:00
2	13823.5	2.9	14570.7	2.6	70667287	57701	6:38
3	13826.8	3.0	14575.3	2.6	70678205	10921	5:35
4							
5	13831.3	4.5	14577.9	4.6	70690812	121624	8:31
6	13832.3	1.0	14578.9	1.0	70691755	963	7:10
7	13835.3	3.0	14583.0	4.1	70715050	23255	6:40
8	13840.7	5.4	14586.7	3.4	70754776	39726	6:50
9	13845.5	4.8	14589.9	3.5	70800118	45342	5:35
10							
11							
12							
13	13853.1	7.6	14596.9	7.0	70846366	46248	7:00
14	13858.8	5.7	14601.7	4.8	70895801	49501	6:55
15	13863.0	4.2	14606.2	4.5	70925612	29745	6:35
16	13866.7	3.7	14609.7	3.4	70944381	22769	7:00
17	13871.8	5.1	14613.5	3.8	70980391	32010	7:00
18							
19	13877.2	3.1	14616.6	2.1	71001143	26752	8:36
20	13876.0	0.8	14618.7	1.1	71004444	3801	6:50
21	13879.8	3.8	14623.1	3.4	71037292	32348	6:45
22	13883.0	3.2	14625.8	3.7	71051493	26201	6:50
23	13884.8	1.4	14628.1	2.3	71086513	14720	6:55
24	13888.2	3.4	14631.7	3.6	71087541	21028	6:30
25							
26	13892.4	6.7	14636.6	6.9	71108960	20914	10:20
27	13893.9	1.0	14637.5	0.9	71109662	1202	6:45
28	13896.9	3.0	14642.0	4.5	71134386	24724	6:55
29	13899.4	2.5	14646.4	4.4	71140732	6346	6:45
30	13903.2	3.8	14649.1	2.1	71160726	19774	6:35
31							

Total Hours 86.1

Total Hours 85.6  
171.7

Total Flow 526,366

# Headley Station

Month Nov

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13905.6	2.4	14652.7	3.2	71147320	687	
2	-	-	-	-	-	-	
3	13909.4	3.8	14652.1	4.8	71186830	17.626	7.50
4	13910.4	1.0	14658.1	1.0	71189069	1203	6:15
5	13913.8	3.1	14664.6	3.5	71215769	27698	6:35
6	13916.5	2.7	14664.5	2.9	71226487	10720	10:00
7	13919.8	2.5	14668.8	4.3	71246252	19165	6:18
8	13923.0	3.2	14677.8	3.5	71262219	11017	5:00
9							
10	13927.0	4.0	14675.2	3.9	71275482	13213	8:51 AM
11	13927.9	0.9	14676.0	0.8	71276397	915	11:25 AM
12	13931.3	3.4	14680.6	4.3	71292486	16089	6:40 AM
13	13934.3	3.0	14689.6	4.0	71308482	17996	6:22 AM
14	13936.5	2.7	14687.8	3.2	71308336	7854	6:37 AM
15	13938.6	2.1	14691.0	3.2	71319289	10953	4:00 AM
16							
17	13941.1	2.5	14694.8	3.6	71320966	7677	10:17 AM
18	13941.6	0.5	14695.2	0.7	71322667	701	6:55 AM
19	13942.6	1.0	14696.3	1.1	71328778	1111	6:40 AM
20	13944.3	1.7	14698.5	2.2	71330988	2210	6:41 AM
21	13947.0	2.7	14702.3	3.8	71339936	8948	6:42 AM
22	13950.8	3.0	14706.7	4.4	71366324	26588	7:36 AM
23							
24	13954.1	4.1	14710.8	4.1	71386146	16967	7:32 AM
25	13954.5	0.7	14711.4	0.6	71386976	230	
26	13955.4	0.6	14712.2	0.8	71387682	706	6:58 AM
27	13957.7	2.3	14714.5	2.3	71390152	2490	7:24 AM
28	13960.1	3.4	14718.3	3.8	71399331	9129	6:55 AM
29	13964.4	3.3	14721.7	3.1	71411514	12183	6:45 AM
30							
	13967.4	3.0	14726.1	4.4	71416653	4579	10:11 AM

Total Hours 64.2

Total Hours 77.0

141.2

Total Flow 255,327

0

# Headley Station

Month June

S/P 13967.7 3.0  
PUMP # 1

14720.1 4.7 71416040 4577 818700  
PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	13967.9	0.5	14720.6	0.5	71416040	587	6:58
2	13970.3	2.4	14730.4	3.8	71720393	3753	6:45
3	13975.3	3.0	14734.9	4.5	71935012	14619	6:50
4	13974.3	1.0	14737.1	2.2	N/A		6:40
5							
6	13975.2	0.9	14738.1	1	N/A		
7	13978.2	4.0	14741.6	3.5	N/A		7:56.1
8	13978.7	0.5	14742.2	0.6	N/A		6:50
9	13982.3	3.6	14746.5	4.3			8:40 AM
10	13985.3	3.0	14749.4	2.9			8:56 AM
11	13988.1	2.8	14752.3	2.9			8:56 AM
12	13990.5	2.4	14754.8	2.5	71458253	53241	8:13
13							
14	13992.4	2.4	14757.4	2.6	71491537	3284	7:54 AM
15	13993.3	0.4	14758.0	0.6	71492209	672	6:40
16	13995.5	2.2	14760.3	2.3	71495291	3090	6:75
17	13995.1	2.9	14763.7	3.4	71499228	3929	6:38
18	14000.9	2.5	14766.2	2.5	71505022	5794	6:35
19	14003.6	2.7	14768.4	3.2	71508789	3767	6:22
20							
21	14005.9	2.3	14771.9	1.5	71511862	3066	8:18 AM
22	14006.4	0.2	14772.4	0.5	71512365	510	6:40
23	14009.3	2.0	14775.0	3.0	71516119	3824	5:16 PM
24	14011.5	2.2	14777.5	2.1	71519586	2347	1:30
25	14012.8	1.3	14779.1	1.6	71520462	1176	8:00 AM
26	14014.3	1.5	14780.8	1.7	71522393	1931	6:20
27							
28	14016.6	2.3	14783.8	2.0	71525483	3090	8:50 AM
29	14017.1	0.5	14784.3	0.5	71525945	462	6:40
30	14019.8	1.7	14785.9	1.6	71528015	2070	6:4
31							

Total Hours 51.4

Total Hours 59.8

111,968  
TOTAL FLOW

111.8

Headley Station

Month July 2020

1931108 - 10 - 147857 - 11 - 7152845 - 20/2 - 0.5m

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	14021.3	2.5	14788.5	2.6	71531233	3218	6:36am
2	14023.9	2.6	14791.1	2.6	71534933	3600	6:35am
3	14026.6	2.7	14794.1	3.0	71538535	3082	12:49pm
4							
5							
6	14028.0	1.4	14795.6	1.5	71540184	11669	6:25am
7	14030.0	2.0	14797.6	2.5	71542485	2301	6:37am
8	14032.0	2.2	14799.8	1.2	71545286	2801	6:36am
9	14035.2	3.0	14803.0	2.2	71549234	3248	6:30am
10	14038.5	3.1	14806.6	3.6	71553730	4096	6:28am
11							
12	14043.4	5.1	14812.7	6.1	71560492	7162	8:11am
13	14044.1	0.7	14813.5	0.8	71561794	1002	6:25am
14	14048.4	4.3	14818.8	5.1	71567449	5955	1:35pm
15	14050.1	1.7	14820.7	1.8	71569628	2,224	7:30am
16	14052.5	2.4	14823.1	2.7	71572771	3093	6:30am
17	14055.8	3.5	14826.6	3.5	71577005	4237	6:37am
18							
19	14059.5	3.7	14831.5	4.2	71578231	5026	7:16pm
20	14065.5	0.8	14832.0	0.8	71583023	992	8:20am
21	14068.2	2.6	14834.8	2.5	71586303	3280	8:03am
22	14068.7	2.8	14838.5	3.7	71590285	3982	10:04
23	14068.5	2.8	14841.2	2.7	71593689	3404	11:04
24	14071.5	3.0	14845.3	4.1	71600561	6072	10:19
25							
26	14074.5	3.0	14848.2	2.9	71606903	6,342	7:48pm
27	14075.1	0.6	14848.9	0.7	71607651	748	6:30am
28	14077.4	2.3	14851.7	2.8	71615014	7363	6:40am
29	14080.3	2.5	14855.2	3.5	71622567	7553	8:21am
30	14082.7	2.6	14858.0	2.8	71626343	3776	6:35am
31	14086.0	3.1	14861.9	3.4	71636824	10481	6:43am

Total Hours 67.2

Total Hours 75.5  
 (142.7)

Total Flow  
 (105,180.9)

Headley Station

Month

Aug 2020

15770100  
PUMP # 1

1786104  
PUMP # 2

171036822

183300

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	-	-	-	-	-	-	-
2	14090.2	4.3	14825.1	3.7	71641664	9,840	7:00am
3	14090.8	0.6	14866.6	0.5	71642370	706	7:30am
4	14074.0	3.5	14807.1	3.5	71650295	738	7:45
5	14095.3	1.3	14896.7	1.6	71652045	2060	7:00am
6	14056.2	0.9	14875.4	0.7	71653070	1725	6:30am
7	14099.5	3.3	14874.9	0.5	71657371	4301	6:30am
8							
9							
10	14102.3	2.8	14878.1	3.2	71660939	3566	6:39am
11	14105.7	3.4	14881.5	3.4	71665029	4087	6:40am
12	14109.0	3.3	14885.6	4.1	71669716	4692	6:41am
13	14111.9	2.9	14898.7	3.1	71673569	3853	6:30am
14	14114.9	3.0	14891.4	2.7	71681642	8073	6:31am
15							
16							
17	14119.1	4.2	14896.1	4.7	71691945	5,303	9:18am
18	14121.8	2.7	14898.7	2.6	71693945	17000	6:40am
19	14104.2	2.4	14901.1	2.4	71704115	10,170	8:53am
20	14127.9	3.7	14904.9	3.8	71714124	10,009	10:16
21	14130.0	3.0	14907.9	3.0	71716725	2601	6:20am
22							
23							
24	14133.7	2.8	14910.9	2.5	71724853	8128	6:15am
25	14136.8	3.1	14913.8	3.4	71729111	4258	6:30am
26	14139.4	2.6	14917.0	3.2	71732926	3815	6:15am
27	14141.6	2.2	14919.1	2.1	71735049	3323	6:21am
28	14143.9	2.3	14921.2	2.1	71738759	3110	6:30am
29							
30							
31	14148.4	4.5	14926.2	5.0	71744472	5663	6:0

Total Hours 62.4

Total Hours 69.8

187.2

Total Flow 107598



Headley Station

Month Sept 2020

8/31/20 14148.1 - 4.5 - 14926.0 - 5.0 6194422 - 5663 25700

PUMP #1

PUMP #2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	14150.6	2.2	14928.3	2.1	71750200	5784	6:40am
2	14152.6	2.0	14950.5	2.2	71753286	3260	7:50am
3	14154.6	2.0	14932.6	2.1	71755897	2111	6:26am
4	14157.7	3.1	14936.6	4.0	71765977	10102	8:25am
5							
6							
7	14161.0	3.3	14940.3	3.7	71774673	6674	2:10pm
8	14162.4	1.2	14940.8	0.5	71775407	1734	6:38am
9	14165.0	2.6	14944.6	3.8	71780290	4883	6:15am
10	14169.4	4.4	14948.8	4.2	71790091	16401	6:10am
11	14173.2	3.7	14953.4	4.6	71811681	14990	8:27am
12							
13							
14	14177.7	4.5	14958.7	5.3	71826992	15311	6:55am
15	14180.1	2.4	14960.7	2.0	71834325	17333	6:24am
16	14185.3	3.2	14965.8	3.1	71842422	8097	6:19am
17	14185.9	2.6	14966.8	3.0	71853456	11339	6:23am
18	14188.1	2.2	14969.3	2.5	71856737	3281	6:38am
19							
20							
21	14192.6	4.5	14973.8	4.5	71867547	10810	6:27am
22	14196.4	3.8	14977.1	3.5	71879113	10366	10:30am
23	14200.1	3.7	14981.2	4.1	71891393	13480	11:26am
24	14201.7	1.6	14982.8	1.6	71893372	1979	10:29am
25	14203.3	1.6	14984.4	1.6	71893370	1998	8:59
26							
27	14206.4	3.1	14987.7	3.3	71903357	7487	9:19am
28	14209.1	0.7	14988.4	0.7	71904239	8177	7:46am
29	14209.8	2.7	14990.8	2.4	71913279	8060	8:33am
30	14211.2	1.4	14992.0	1.2	71918931	6637	5:40am
31							

Total Hours 62.8

Total Hours 65.8

(128.6)

Total Flow 174,509

0

Headley Station

Month Oct 2020

Day	PUMP #1		PUMP #2		Meter	Flow	Time
	Reading	Run Time	Reading	Run Time			
1	14213.5	2.3	14945.0	3.0	71925888	6957	8:30 am
2	14215.1	1.0	14990.5	1.5	71928033	2145	7:45 am
3							
4							
5	14219.0	3.4	1500.4	3.9	71937370	4937	10:02
6	14221.8	2.8	15003.2	2.8	71950926	13456	8:35 am
7	14223.5	2.1	15005.2	2.0	71953936	3110	9:25 am
8	14226.9	3.0	15009.3	4.1	71974930	20894	8:41 am
9	14228.6	1.7	15011.2	1.9	71977051	2227	10:57 am
10							
11	14230.4	1.8	15012.8	1.6	71979265	2258	8:01 am
12	14231.6	1.2	15013.9	1.1	71980466	1201	9:15 am
13	14232.9	1.3	15014.9	1.0	71981926	1510	9:15 am
14	14234.3	1.4	15016.6	1.2	71990737	8761	8:46 am
15	14236.3	2.0	15018.7	2.1	71996938	6201	9:42 am
16	14238.9	2.6	15021.8	3.1	72007967	6528	10:25
17							
18	14241.2	2.3	15024.1	2.3	72008187	2723	7:25
19	14242.2	1.0	15024.9	0.8	72007141	1054	8:25 am
20	14245.2	3.0	15028.0	3.1	72021689	14448	9:04 am
21	14247.8	2.6	15031.1	3.1	72025200	3571	7:42 am
22	14251.1	3.3	15034.1	3.0	72032394	2184	8:30 am
23	14254.2	2.9	15037.2	2.9	72039694	4300	10:03 am
24							
25	14256.2	2.2	15041.6	2.2	72042150	2450	8:15 am
26	14257.1	1.1	15040.9	1.3	72043786	1336	9:15 am
27	14259.0	1.9	15045.2	4.3	72051610	7824	9:43 am
28	14261.8	2.8	15051.2	6.0	72069792	18182	1:22 pm
29	14263.9	2.1	15052.3	1.1	72076892	6210	7:30 am
30	14265.1	1.2	15054.6	2.5	72078426	1534	9:10 am
31	262.6	2.5	15058.7	4.1	72092809	14383	7:30 am

Hours 54.1

Total Hours 63.7

117.8

Total Flow 166,931

# Headley Station

Month Dec 2011

10/14 14281.6 PUMP #1 2.8 14281.7 PUMP #2 4.1 72017000 14281 10:10 AM

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	14268.7	1.1	15059.9	1.2	72014002	1192	7:45 AM
2	14269.7	1.0	15061.3	1.4	72095346	1345	3:15 PM
3	14275.2	3.5	15065.0	3.7	72109785	14439	10:30 AM
4	14275.2	2.0	15068.0	3.0	72117738	2953	7:50 AM
5	14275.2	2.0	15068.0	2.0	72120528	12311	10:30 AM
6	14291.9	3.3	15076.1	4.1	72149399	14860	10:36 AM
7	14283.2	1.1	15078.3	2.2	72156070	8691	7:25 AM
8	14283.2	0.9	15078.3	0.9	72157127	1287	9:43 AM
9	14283.2	1.5	15084.4	1.8	72158020	225	1:19 PM
10	14287.6	2.2	15082.4	2.0	72177414	13754	8:00 AM
11	14289.3	1.7	15084.1	1.7	72179464	2050	5:22 AM
12	14291.5	2.2	15087.8	3.7	72189032	1968	8:40 AM
13	14295.2	4.0	15091.2	3.2	72220597	21515	8:30 AM
14	14297.6	2.1	15094.7	3.1	72238640	18043	7:15 AM
15	14298.4	0.8	15095.6	0.9	72239546	906	7:51 AM
16	14299.1	0.7	15096.1	1.0	72240557	1011	7:32 AM
17	14302.1	3.0	15100.6	4.0	72253174	12617	6:23 AM
18	14303.9	1.8	15102.8	2.2	72264176	10972	6:55 AM
19	14305.1	1.2	15104.4	1.6	72265348	1402	7:46 AM
20	14307.5	2.4	15108.7	4.3	72285051	19503	10:42 AM
21	14310.2	2.7	15110.8	2.1	72295625	10624	7:10 AM
22	14312.1	1.9	15112.2	1.4	72297315	1646	10:18 AM
23							
24	14317.7	5.0	15118.2	6.8	72342109	44794	10:16 AM
25	14321.7	4.0	15121.1	3.9	72367112	25063	9:56 AM
26	14324.8	3.1	15125.5	3.9	72370481	3339	
27	14325.4	0.6	15126.2	0.2	72371187	906	10:11 AM
28	14326.10	0.6	15127.0	0.7	72371864	617	7:10 AM
29							
30							
31							

Total Hours 58.4

Total Hours 68.3  
126.7

Total Flow 279,055

# Headley Station

Month DECEMBER 2020

145260  
PUMP #1

5.10

15128  
PUMP #2

7.7

237120

1177

7.10 AM

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	14331.9	4.9	15131.3	4.3	72394638	22,774	9:30 AM
2	14334.5	3.6	15134.8	3.5	72424724	30,126	7:10 AM
3	14339.1	4.6	15138.9	4.1	72453581	23,817	10:57 AM
4	14343.2	4.2	15142.8	3.6	72487859	24,278	10:00 AM
5	14346.2	3.5	15145.9	3.4	72518134	30,475	6:50 AM
6							
7	14350.4	3.7	15149.9	4	72528303	29,404	4:30 PM
8	14353.5	2.4	15153.8	2.9	72539467	11,138	7:00 AM
9	14356.6	3.3	15157.9	2.6	72570523	31,176	7:40 AM
10	14360.4	3.8	15161.5	3.6	726014930	39,381	10:02
11	14362.1	1.7	15165.6	2.1	72623863	13,933	8:28 AM
12	14365.1	2.0	15166.8	1.2	72640457	16,594	7:25 AM
13	14366.5	1.4	15168.3	1.5	72641804	14,62	6:35 AM
14	14367.5	1.0	15169.4	1.1	72642869	10,10	6:40 AM
15	14371.4	2.9	15172.7	4.3	72675645	32,526	7:10 AM
16	14374.8	3.4	15176.7	3.0	72679138	2,443	7:10 AM
17	14377.8	3.0	15180.1	3.4	72676521	17,433	10:55 AM
18	14380.1	2.9	15182.9	2.8	72712264	15,673	7:30 AM
19	14382.4	1.7	15185.4	2.5	72722265	16,804	2:20 PM
20	14384.0	1.6	15187.1	1.7	72723944	16,26	6:09
21	14386.9	2.9	15190.2	3.1	72745286	21,391	11:25
22	14389.6	1.7	15193.2	2.0	72758697	9,412	8:30 AM
23	14392.0	3.4	15195.2	3	72777015	22,388	7:51 AM
24	14395.3	3.2	15198.1	2.9	72794490	17,395	2:00 AM
25	14397.0	1.7	15200.1	2.0	72796214	1,664	9:12
26	14398.8	1.8	15201.9	1.9	7279701	1,669	6:50 AM
27							
28	14403.4	4.6	15207.3	5.4	72830019	52,266	10:20 AM
29	14409.4	6.0	15213.3	6.0	72915659	85,640	11:39 AM
30	14413.0	3.6	15217.3	4.0	72963485	47,826	08:21
31	14416.4	3.4	15220.8	3.5	72998810	30,411	7:55 AM

Total Hours 96.4

Total Hours 93.8

184.2

0

Total Flow  
622,032

0

Nottingham Station

Month 2/20

11-30 44963.4  
PUMP # 1

00

36952.7  
PUMP # 2

0-0

2525885

41.106

1:24 pm

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	44963.4	0.0	36952.7	0.0	2891954	65,969	10:05 AM
2	-	-	-	-	2677802	86,013	10:06 AM
3	-	-	-	-	2771190	93,324	11:17 AM
4	-	-	-	-	2859035	87,845	1:53 pm
5	-	-	-	-	2935876	71,641	1:05 pm
6	N/A	~	N/A	~	3023999	88,123	2:49 pm
7	N/A	~	N/A	~	3090199	146,300	8:02 AM
8	-	-	-	-	-	-	-
9	-	-	-	-	3261630	171,421	7:02 AM
10	-	-	-	-	3362370	100,750	9:16 AM
11	-	-	-	-	3450788	88,418	-
12	0.43	~	0.35	~	3504088	113,300	1:18 pm
13	1.76	1.27	1.29	0.94	3667488	103,400	2:53 pm
14	7.26	5.56	5.68	4.39	3751080	83,592	10:00 am
15	14.53	6.82	11.02	6.63	3821994	113,914	1:48 pm
16	18.43	4.28	15.81	4.1	3940116	75,322	9:23 AM
17	20.32	6.59	21.29	5.42	4004024	105,168	11:15 AM
18	29.53	4.71	25.70	4.47	4130920	85,636	08:39
19	04.77	5.24	30.60	4.09	4223424	92,504	9:06 am
20	40.22	5.45	35.43	4.83	4316426	93,002	10:51 am
21	45.64	5.42	40.30	4.83	4410663	94,237	1:01 PM
22	49.44	3.5	43.91	3.65	4479547	85,134	9:05 am
23	52.41	4.07	48.65	4.14	4568343	88,446	10:30 AM
24	58.99	4.58	53.48	4.48	4651450	87,107	9:17 AM
25	63.23	4.24	59.21	4.13	4728056	76,646	8:00 am
26	68.25	5.02	62.00	4.29	4817999	89,903	10:03 am
27	72.71	4.46	66.43	4.43	4899091	81,092	09:35
28	78.00	5.29	71.56	5.07	4995817	94,726	1:45 PM
29	81.67	5.61	78.01	5.01	5059055	65,263	10:20 AM
30							
31							

Total Hours 81.67  
156.68

Total Hours 75.61  
2,533,000

Nottingham Station

Month 11/21/2011

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	85.49	3.83	78.74	3.73	51288771	69,790	6:58 AM
2	90.98	5.49	84.08	5.32	5227657	48,780	11:55 AM
3	95.18	4.20	88.11	4.15	5305627	15,913	11:49 AM
4	100.11	4.43	92.82	4.71	5343385	86,750	1:14 PM
5	104.66	4.05	96.28	3.96	5466249	73854	12:2 P
6	104.10	3.96	101.45	3.61	5518773	70814	11:05 AM
7	112.38	4.16	104.58	4.13	5617501	76653	10:35 AM
8	<del>112.38</del>						
9	121.07	8.65	112.92	8.39	5771598	157990	9:20 AM
10	125.50	4.47	117.37	4.45	5854421	82,803	10:55 AM
11	129.82	4.32	121.44	4.07	5932595	78,474	10:53 AM
12	134.10	4.27	125.55	4.11	6011157	78,262	11:41 AM
13	137.42	3.83	129.37	3.92	6083037	71870	10:45 AM
14	141.59	3.67	132.48	3.33	6150746	64119	8:25 AM
15	145.82	4.23	137.01	4.04	6224349	78423	8:04 AM
16	152.79	4.87	141.70	4.67	6320229	90,880	10:49 AM
17	154.91	4.12	145.79	4.09	6397373	77,144	10:36 AM
18	158.71	3.88	149.33	3.54	6466367	68,994	8:30 AM
19	162.79	4.08	153.35	4.62	6542798	76,431	7:25 AM
20	167.71	4.92	158.19	4.84	6625570	92,972	7:15 AM
21	172.53	4.02	162.91	4.14	670529	90,254	8:52 AM
22	177.06	4.53	167.22	4.3	6809912	83,383	8:11 AM
23	181.29	4.68	171.71	4.49	6897449	87,537	8:25 AM
24	187.00	5.26	176.82	5.11	6994929	97,480	7:52 AM
25	192.17	5.17	181.94	5.17	7071911	96,982	7:41 AM
26	200.77	4.66	187.12	4.18	7187193	95,282	7:20 AM
27	203.59	4.77	186.49	4.32	7280424	53,231	7:05 AM
28							
29	208.31	4.77	196.27	4.83	7493344	812,070	11:31 AM
30	208.02	5.71	200.70	4.46	7577168	821,224	7:00 AM
31	214.15	6.43	205.89	5.19	7695688	98,220	7:00 AM

Total Hours 163.08

293.96

Total Hours 130.89

2,616,603

Nottingham Station

Month April 2020

244115  
PUMP # 1

6.7

205.51  
PUMP # 2

5.10

702300

13,400

711111

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	251.62	6.18	211.23	5.34	7775960	100.22	8:03am
2	257.88	6.26	216.01	4.78	7867338	91.395	7:22am
3	263.97	6.09	220.70	4.69	7956326	88.988	5:45am
4							
5	276.31	12.34	230.79	10.04	8144079	187.753	8:15AM
6	282.07	5.76	235.39	4.58	8230444	86.365	7:20am
7	287.81	5.74	240.00	4.63	8311764	87.020	8:00am
8	293.30	5.49	245.02	5.02	8410999	92.235	8:41am
9	299.25	5.95	249.59	4.57	8496549	85.600	8:01am
10							
11							
12							
13	321.03	21.78	267.78	19.19	8839116	342.517	7:50am
14	329.38	8.35	273.00	5.22	8950616	111.500	7:02am
15	337.00	7.62	278.94	5.94	9066524	115.408	8:45A
16	344.51	7.31	286.06	7.12	9171688	105.164	9:55am
17	349.21	9.9	291.26	5.2	92516599	84.911	7:20am
18	-	-	-	-	-	-	-
19	360.06	10.85	302.21	10.95	9453588	146.989	8:31A
20	365.34	5.28	307.18	4.97	9546594	93.306	7:30am
21	370.46	5.12	312.13	4.95	9639292	52.378	7:10am
22	375.97	5.31	317.59	5.46	9737126	97.854	8:49am
23	380.87	4.6	322.07	4.48	9820748	83.692	7:20am
24	385.21	4.84	326.62	4.55	9907066	86.868	6:38am
25							
26	397.11	11.9	338.47	11.85	121615	219.404	10:31AM
27	406.87	4.78	343.01	4.54	213582	85.969	7am
28	409.18	5.29	348.00	5.29	311844	97.767	7:20am
29	412.51	5.33	353.26	5.06	406989	95.610	7:50am
30	417.18	4.07	358.07	4.11	493552	86.573	6:45am
31							

Total Hours 170.43

304.61

Total Hours 152.18

2,817,864

Nottingham Station

Month 11/16

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	412.53	5.38	321.05	5.18	521.521	97,221	6:30 am
2							
3	434.13	11.01	374.65	11.4	803057	212,478	7:30 am
4	439.70	5.57	380.01	5.36	703679	100622	7:48 am
5	445.11	5.41	385.16	5.15	10001577	96,878	6:43 am
6	450.13	5.22	390.7	5.02	1102754	102177	5:50 am
7	455.16	5.25	396.59	5.04	1197030	94,475	4:7 PM
8	460.74	4.86	401.54	4.67	1284940	87601	5:15 PM
9							
10	470.80	10.06	410.57	10.03	1462505	183,365	9:00 am
11	475.54	4.74	415.05	4.48	1552847	84,542	7:15 am
12	480.34	4.8	419.72	4.67	1639845	87,001	6:45 am
13	485.43	5:09	424.87	5.15	1733915	94,067	8:35 am
14	489.71	4.78	428.85	4.78	1809556	75641	6:33 am
15	494.90	5.19	433.97	6.12	1904053	94,497	4:36 am
16							
17	504.01	9.11	443.03	9.06	2070438	106,385	10:55 am
18	507.89	3.88	446.75	3.72	2146207	69,767	6:57 am
19	512.18	4.29	451.13	4.38	2219927	79,620	6:44 am
20	516.67	4.49	455.47	4.34	2301198	87,371	7:31 am
21	520.72	4.05	459.63	4.16	2377095	75,897	6:48 am
22	525.34	4.52	464.34	4.71	2464074	86,779	09:37
23							
24	531.36	7.47	472.21	7.37	2611621	147,547	7:49 am
25	537.41	4.16	476.47	4.26	2684961	76,340	6:21 am
26	541.40	3.98	480.44	3.97	2765284	73,323	6:16 am
27	545.89	4.47	484.98	4.54	2845903	82,617	9:05 am
28	549.61	3.72	488.68	3.7	2913451	67,548	7:05 am
29	553.73	4.12	492.70	4.02	2987655	74,204	6:57 am
30							
31	562.30	8.17	501.41	8.71	7146185	158,570	10:58

Total Hours 145.12

288.46

Total Hours 143.34

2,652,633



Nottingham Station

Month June

5/1 562.30  
PUMP #1 8:57

5/1 507.59  
PUMP #2 8:71

5/1 617.28 109.83 14:22

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	565.63	3.33	509.65	3.24	3207072	60281	7:03am
2	570.03	4.4	507.59	2.94	3275444	68427	6:50am
3	574.99	4.96	510.74	3.15	3351200	75701	7:00am
4	579.73	4.74	513.07	2.33	3417211	66011	7:38am
5	583.88	4.15	516.17	3.10	3485471	68260	6:45am
6							
7	591.76	7.88	524.00	7.83	3631123	149,652	8:08 AM
8	595.35	3.59	527.77	3.77	3705064	69941	6:44am
9	599.33	3.98	531.76	3.99	3781001	75,937	7:45 AM
10	603.50	4.17	535.82	4.06	3859512	78,511	9:59 AM
11	6070.4	3.54	539.30	3.48	3925597	66,089	9:31 am
12	610.57	3.33	542.61	3.31	3989371	63,774	8:02 am
13							
14	617.28	6.91	549.66	6.95	4122911	139,540	8:31 AM
15	620.48	3.20	552.06	3.10	4184554	61643	6:46 am
16	623.80	3.38	556.12	2.36	4247765	65,211	6:20 am
17	627.50	3.64	559.85	3.73	4320713	70,948	8:17 am
18	630.63	3.13	562.85	3.00	4394416	58,703	6:35 am
19	634.03	3.40	566.22	3.37	4445170	65,754	6:30 am
20							
21	641.30	7.27	572.72	6.5	4577410	132,740	8:16 am
22	644.83	3.53	576.09	3.37	4644606	66,696	8:21 am
23	<del>648.47</del>	3.5	579.33	3.44	4707132	66,511	8:00 am
24	651.92	<del>3.5</del>	582.34	3.21	4774921	65,234	8:12 am
25	655.21	3.29	585.54	3.0	4835545	60,514	9:00 am
26	658.47	3.26	588.34	2.8	4893778	58,233	6:22 am
27							
28	665.64	7.17	594.90	6.56	5076162	132,384	8:50 AM
29	668.88	3.24	598.88	2.98	5046399	9,537	2:30 am
30	672.13	3.15	600.81	2.93	5145671	59,592	6:43 am
31							

Total Hours 109.83

Total Hours 99.4

209.23

1,999,506

Nottingham Station

Month 1-14 2020

67218 - 125 - ~~5101~~ - 573 - 5105 - 54571 - 29

PUMP #1 PUMP #2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	675.42	3.29	683.88	3.07	5206888	61.197	8:05am
2	678.21	2.79	686.49	2.61	5259520	52.622	6:35am
3	681.98	3.77	689.95	3.46	5329607	70.047	11:24AM
4							
5							
6	690.60	8.62	697.88	7.93	5490493	100.886	6:35am
7	693.95	3.35	620.37	3.21	5552472	61.929	6:40am
8	697.13	3.18	623.52	2.93	562195	59.723	7:10am
9	700.10	2.97	626.55	2.73	5667247	55.052	6:32am
10	703.04	2.74	629.33	2.78	5723172	55.925	7:00am
11							
12	711.36	3.32	637.07	3.74	5879802	156.630	8:01AM
13	714.76	3.40	640.18	3.11	594227	62.425	6:35am
14	719.07	4.31	644.14	3.96	6023547	81.370	1:20 PM
15	721.77	2.70	646.65	2.51	6073916	50.317	8:45am
16	<del>724.77</del>	2.68	648.11	2.46	6123880	49.764	6:45am
17	727.34	2.89	652.08	2.97	6180592	56.712	6:42am
18							
19	733.28	5.99	657.08	5.3	6294379	113.737	7:50 AM
20	736.45	3.15	661.24	3.32	6357650	62.921	8:03am
21	739.73	3.2	664.43	3.49	6419807	62.957	10.11 AM
22	742.34	2.61	666.89	2.45	6469112	49.308	9:07
23	745.43	3.89	669.66	2.77	6526631	57.566	09:39
24	748.56	3.13	673.02	3.36	6587137	60.452	9:50am
25							
26	754.32	5.76	678.58	5.56	6695312	108.179	8:00 am
27	<del>757.39</del>	2.84	681.41	2.83	6747463	54.151	6:41am
28	759.77	2.81	684.30	2.89	6803689	54.226	6:45am
29	762.89	2.92	687.19	2.89	6858837	55.148	7:25am
30	765.71	2.82	689.83	2.64	6910690	51.853	6:43am
31	768.50	2.79	692.60	2.77	6963312	52.622	6:52am

Total Hours 96.37

187.16

Total Hours 91.79

1,817,621

Nottingham Station

Month Aug 2020

768.50 2.99

642.60 2.77

676.332 5.622

Adam

PUMP #1

PUMP #2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	-	-	-	-	-	-	-
2	774.07	5.57	648.20	9.10	7064644	106,392	7:55am
3	776.87	2.90	700.99	2.77	7122930	53,236	7:38am
4	779.78	2.91	703.74	2.75	7177112	54,182	6:45am
5	784.03	4.25	707.91	4.17	7257374	80,262	8:50am
6	786.88	2.95	710.85	3.04	7317558	57,184	6:31am
7	790.17	3.19	714.04	3.09	7374174	59,614	6:35am
8							
9							
10	799.03	9.14	723.76	9.72	7560157	185,780	6:25am
11	803.03	6.00	726.78	3.02	7619054	58,897	6:41am
12	806.14	3.14	729.72	2.94	7678325	57,271	7:14am
13	808.89	2.75	732.55	2.83	7732807	54,482	6:39am
14	811.72	2.83	735.35	2.80	7787698	54,891	6:40am
15							
16							
17	820.56	8.84	749.97	9.62	7958755	141,055	11:02am
18	820.87	2.31	746.37	2.41	80074179	45,726	6:42am
19	825.63	2.76	749.08	2.71	8058769	54,290	6:46am
20	828.15	3.77	752.28	3.20	8121582	62,183	11:03am
21	830.58	2.13	754.30	2.02	8161943	40,391	6:29am
22							
23							
24	839.23	8.25	762.45	8.15	8320536	158,593	6:26am
25	841.93	2.70	765.18	2.73	8373647	53,111	6:40am
26	844.63	2.70	767.89	2.71	8425700	52,053	7:15am
27	847.71	3.08	770.40	2.51	8475142	49,442	6:32am
28	849.79	2.08	773.06	2.06	8526052	50,910	6:40am
29	850						
30							
31	858.70	8.91	781.76	8.70	8697227	171,170	7:00am

Total Hours 90.2

Total Hours 89.16

179.36

1,733,910

Nottingham Station

Month: Sept 2020

PUMP #1

PUMP #2

8207200, 91,000

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	861.46	2.76	784.53	2.82	8751350	54,123	6:48am
2	864.22	2.86	787.45	2.87	8806706	55,356	7:05am
3	867.18	2.86	790.04	2.64	8858650	51,544	6:33am
4	870.11	2.93	793.19	3.10	8916661	58,011	8:08am
5							
6							
7	877.00	8.89	801.98	7.78	9086670	167,609	1:32 PM
8	881.00	2.00	803.84	1.86	9125290	37,026	6:45am
9	883.64	2.64	806.55	2.71	9174391	51,001	6:50am
10	886.32	2.68	809.11	2.56	9224951	50,590	6:35am
11	889.64	3.38	812.41	3.3	928996	64,015	10:00am
12	897.26		819.99				
13							
14	897.26	17.62	819.97	17.56	9437958	148,992	6:40am
15	899.86	2.60	822.57	2.60	9489138	51,150	6:30am
16	902.47	2.61	825.13	2.56	9540766	51,628	7:06am
17	904.93	2.46	827.75	2.62	9591220	50,454	7:10am
18	907.37	2.46	830.18	2.43	9659052	48,632	6:46am
19							
20							
21	9157.8	8.39	838.13	8.30	9806044	166,242	6:38am
22	911.10	3.3	841.69	3.16	9870656	69,565	11:00am
23	921.90	2.80	844.40	2.52	9926998	56,342	12:35pm
24	924.29	2.39	846.78	2.32	9974106	47,108	10:30am
25	926.50	0.21	848.96	3.18	18348	49,442	5:50PM
26							
27	931.17	4.67	853.59	4.63	119242	94,694	7:56am
28	933.74	2.60	856.21	2.62	166270	53,028	7:36am
29	936.37	2.63	858.84	2.63	220264	53,994	8:16am
30	939.17	3.00	861.87	3.03	280674	60,410	6:31am
31	942.93	3.56	865.31	3.44	352883	72,209	8:10am

Total Hours 84.23

Total Hours 83.55

167.78

1,655,661

Nottingham Station

Month Oct 2020

912.93 - 3.54 - 865.51 - 3.44 - 853.93 - 3.207

Flow

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1							
2	945.87		865.20		911825		7.50 am
3							
4							
5	955.28	9.41	873.60	9.40	519914	192059	10:37 AM
6	950.88	2.60	850.18	2.58	650724	50810	9.10 am
7	960.57	2.69	882.84	2.66	703626	495402	7.55 am
8	963.62	3.05	885.80	2.96	763879	69703	
9	966.48	2.86	888.65	2.85	820545	567166	11.05 am
10							
11	971.24	4.76	893.48	4.83	916261	45666	8.07 AM
12	974.58	3.27	896.78	3.30	982895	66134	9.56 am
13	978.50	3.95	900.78	3.92	1060845	78450	9.06 am
14	982.04	3.51	904.12	3.49	1130207	69362	10:48 am
15	984.79	2.75	906.98	2.82	1184536	54329	8.90 am
16	988.25	3.46	910.34	3.35	1252115	67879	11.40 am
17							
18	995.16	6.91	917.04	8.73	1381734	188921	7.20 AM
19	998.87	3.71	920.25	3.68	1458112	71873	8.38 AM
20	1002.97	3.50	924.23	3.48	1525973	67861	9.16 am
21	1005.95	3.08	927.34	3.16	1586629	60656	8.30 AM
22	1008.74	3.29	930.52	3.13	1648900	62271	9.28 AM
23	1012.53	3.39	933.73	3.31	1712197	63247	9.23 am
24							
25	1017.31	5.11	937.56	5.93	1725129	112647	8.11 AM
26	1021.01	3.2	942.74	3.18	1853587	62398	8.00 am
27	1024.51	3.56	946.08	3.34	1954401	161814	10:08 AM
28	1027.64	3.13	949.21	3.13	2015427	61068	10.35 am
29	1030.76	3.12	951.97	3.76	2068539	53120	7.50 am
30	1035.17	4.41	956.79	3.82	2162168	95579	8.45 AM
31	1039.73	4.56	961.14	4.35	2249095	95927	7.50 am

Total Hours 96.8      192.63      Total Hours 95.83  
1,895.212

Nottingham Station

Month Jan 201

1081 1071.73 5556  
PUMP #1

981.14  
PUMP #2

4.25

2095075

45927

7:52 AM

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	1044.13	4.40	965.54	4.40	2732749	83607	7:45A
2	1049.14	5.06	970.42	4.88	2725253	95484	8:05A
3	1053.92	4.73	975.14	4.72	2517163	941430	10:57AM
4	1057.64	3.72	979.84	3.7	2587987	701321	4:30AM
5	1062.04	4.40	983.16	4.22	2671038	831054	10:57AM
6	1065.94	3.90	986.96	3.80	2742449	71411	10:25
7	1069.12	3.78	990.18	3.22	2803602	61156	7:50AM
8	1073.45	4.33	994.32	4.14	2824012	41451	4:57A
9	1077.75	4.30	998.52	4.20	2921134	63072	12:31PM
10	1080.98	3.03	1001.59	2.87	3023278	56144	8:10 am
11	1083.88	3.10	1004.79	3.20	3082689	59411	5:27 am
12	1087.06	5.18	1009.72	4.93	3180717	98024	9:45 PM
13	1095.3	4.2	1014.0	4.22	3262229	81520	3:00 am
14	1097.33	4.07	1018.08	4.08	3340535	78296	7:30 am
15	1101.71	4.38	1020.32	4.26	3472245	96110	7:58 AM
16	1106.07	4.36	1026.65	4.33	3505041	32916	8:00 am
17	1109.98	3.91	1030.76	4.11	3578511	73800	6:31 am
18	1114.40	4.42	1034.82	4.06	3662478	83611	8:00 am
19	1118.14	3.34	1038.71	3.89	3735376	72918	7:32 am
20	1122.70	4.56	1043.04	4.33	3820176	84830	10:51 am
21	1125.81	3.4	1046.24	3.2	3890505	60329	8:55 AM
22	1130.14	4.37	1050.49	4.25	3963059	72554	10:25 am
23							
24	1138.13	7.94	1058.32	7.53	4114226		
25	1141.65	5.52	1062.01	3.64	4187582	64356	8:45 AM
26	1146.18	4.53	1066.30	4.29	4268725	85143	11:22 AM
27	1150.53	4.37	1070.50	4.32	4352504	83199	10:58 AM
28	1154.06	3.51	1074.01	3.43	4419768	67264	7:00 AM
29							
30							
31							

P1 Total Hours 114.27 hr

227.78

P2 Total Hours 112.91 hr

2171.673

Nottingham Station

Month 11

PUMP #1

PUMP #2

PUMP #3

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	1168.20	14.19	1087.86	13.35	1092070	272.302	10:21 AM
2	1172.77	4.57	1092.31	4.45	4780582	88.512	8:56 AM
3	1177.66	4.89	1099.13	4.82	4875468	94.836	0:55
4	1182.24	4.93	1101.2	4.93	4968729	93.201	11:00 AM
5	1186.28	3.84	1105.27	3.91	5044398	75.169	7:00 AM
6							
7	1191.66	11.38	1116.56	11.08	5264808	970.410	9:50 AM
8	1202.77	5.11	1121.51	4.66	5355610	90.202	7:45 AM
9	1207.95	4.66	1126.57	5.26	5455724	100.109	7:45 AM
10	1212.44	5.66	1131.42	4.85	5552424	96.712	9:41 AM
11	1216.73	4.24	1135.81	4.39	5636754	84.325	8:35 AM
12	1221.39	4.66	1140.16	4.35	5723610	86.956	9:55 AM
13	1226.34	6.00	1144.98	4.82	5818477	94.863	6:41 AM
14	1230.14	3.75	1148.94	3.96	5894777	76.301	7:05 AM
15	1235.41	5.27	1154.07	5.13	5993517	98.743	8:18 AM
16	1239.81	4.4	1158.47	4.4	6078504	84.987	7:08 AM
17	1245.08	5.27	1163.69	5.22	6179441	100.437	11:27 AM
18	1249.03	3.95	1167.50	3.91	6254635	75.194	8:30 AM
19	1253.43	4.4	1171.77	4.37	6337786	83.151	7:30 AM
20	1258.83	5.14	1177.08	5.31	6411629	103.845	11:15 AM
21	1263.48	4.65	1181.69	4.55	6531013	84.334	11:08 AM
22	1267.58	4.1	1185.65	4.02	6609994	78.981	9:35 AM
23	1272.67	5.09	1190.68	4.95	6707868	4787.4	7:17 AM
24	1277.79	5.12	1195.52	4.92	6805808	98.000	7:15 AM
25	1284.61	6.82	1202.14	6.62	6937197	131.759	6:26 AM
26	1291.24	1.63	1208.64	6.5	7055787	123.410	7:25 AM
27							10:28 AM
28	1305.32	14.58	1222.68	14.04	7194731	278.944	
29	1312.35	2.03	1229.78	7.1	7481577	136.866	1:30 AM
30	1317.55	4.7	1234.31	4.53	7571150	89.583	10:00 AM
31	1323.08	5.53	1239.78	5.47	7677340	106.190	7:38 AM

Total Hours 169.02

Total Hours 165.77

334.79

3,857,572

# OXFORD VALLEY STATION

12-JAN 1979 1.9

PUMP # 1

3.3

16439.2

PUMP # 2

2.7

8:30 AM

DATE	READING	RUN TIME
1	19744.3	2.7
2	19796.5	2.2
3	19778.6	2.1
4	19749.6	1.0
5	19803.6	3.0
6	19805.2	2.6
7	19807.5	2.5
8	19810.6	2.5
9	19813.0	2.4
10	19815.2	2.2
11	19817.3	2.1
12	19819.1	1.8
13	19820.7	1.6
14	19823.2	2.5
15	19825.5	2.3
16	19828.1	2.0
17	19830.6	2.5
18	19833.1	2.5
19	19835.5	2.4
20	19837.9	2.4
21	19840.2	2.3
22	19842.5	2.6
23	19845.2	2.4
24	19847.2	2.0
25	19849.4	2.2
26	19852.9	3.5
27	19855.4	2.3
28	19858.2	2.8 2.1
29	19861.2	3.0
30	19863.5	2.3
31	19866.3	2.8

74.4

READING	RUN TIME
16941.2	2.0
16943.1	1.9
16944.7	1.8
16945.7	1.0
16948.3	2.6
16950.4	2.1
16952.4	2.5
16954.5	2.1
16956.5	2.0
16958.5	2.0
16960.2	1.3
16961.7	1.5
16963.0	1.3
16965.0	2.0
16967.0	2.0
16968.9	1.9
16971.0	2.1
16973.0	2.0
16974.9	1.8
16976.9	2.0
16978.9	2.0
16981.2	2.1
16983.0	2.0
16984.6	1.6
16986.3	1.7
16989.2	2.9
16991.2	2.0
16993.3	2.2
16995.5	2.2
16997.4	1.9
16999.6	2.2

60.4

TIME
7:30 AM
10:17 AM
8:13 AM
8:40 AM
7:55 AM
8:55 AM
7:44 AM
8:51 AM
9:30 AM
7:48 AM
8:45 AM
8:32 AM
8:34 AM
0853
8:54 AM
0839
7:45 AM
7:52 AM
8:53 AM
8:31 AM
8:20 AM
7:50 AM
0826
6:26 AM
6:44 AM
7:36 AM
7:44 AM
8:55 AM
7:44 AM
1:15 PM

TOTAL HOURS

MONTH/YEAR

JAN. 2070

134.8



# OXFORD VALLEY STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	19868.1	1.8	17000.9	1.3	8:40 AM
2	19870.1	2.0	17002.3	1.4	7:24 AM
3	19872.1	2.0	17003.7	1.4	8:00 AM
4	19874.4	2.3	17005.5	1.8	8:01 AM
5	19877.0	2.6	17007.3	1.8	8:51 AM
6	19877.5	2.5	17009.2	1.9	8:50 AM
7	19882.9	3.5	17011.6	2.4	8:39 AM
8					
9	19889.7	6.8	17013.4	4.8	7:58 AM
10	19892.3	2.5	17017.4	2.0	7:47 AM
11	19895.0	2.8	17020.5	2.1	7:39 AM
12	19898.7	3.7	17023.2	2.7	8:51 AM
13	19901.7	3.0	17025.3	2.1	8:45 AM
14	19904.9	3.7	17027.7	2.4	8:36 AM
15	19908.0	3.5	17030.0	2.3	12:47 PM
16	19910.2	2.2	17031.6	1.6	7:54 AM
17	19912.5	2.3	17033.8	1.3	7:53 AM
18	19915.3	2.8	17035.4	2.0	8:59 AM
19	19917.9	2.6	17037.5	2.1	8:35 AM
20	19920.4	2.5	17039.4	1.9	8:02 AM
21	19922.8	2.4	17041.4	2.0	8:58 AM
22	19925.3	2.5	17043.5	2.1	7:00 AM
23	19927.5	2.2	17045.4	1.9	7:50 AM
24	19929.5	2.0	17047.1	2.7	7:46 AM
25	19931.7	2.3	17048.9	1.8	7:36 AM
26	19934.3	2.6	17051.1	2.2	8:48 AM
27	19936.8	2.6	17053.4	2.1	7:50 AM
28	19940.1	3.2	17056.2	2.8	9:17 AM
29	19942.6	2.5	17058.5	2.3	7:53 AM
30					
31					

TOTAL HOURS

76.3

58.9

MONTH/YEAR FEBRUARY, 2020

135.2

# OXFORD VALLEY STATION

7/19

DATE	199926 PUMP #1	215 RUN TIME	170039 PUMP #2	2.3 RUN TIME	1:05:11 TIME
1	19945.3	2.7	17060.9	2.4	7:51 AM
2	19947.5	2.2	17062.9	2.5	8:02 AM
3	19950.1	2.6	17065.9	2.5	8:03 AM
4	19953.0	2.9	17068.3	2.9	9:56 AM
5	19955.2	2.2	17070.6	2.7	8:10 AM
6	19957.7	2.5	17073.2	2.6	7:40 AM
7	19960.5	2.8	17076.1	2.1	8:20 AM
8					
9	19964.9	4.4	17081.5	5.2	10:00 AM
10	19966.9	2.0	17084.0	2.5	08:05
11	19969.2	3.3	17087.0	3.0	7:52
12	19972.0	2.8	17090.8	3.8	11:50 AM
13	19973.5	1.0	17093.5	2.9	8:09 AM
14	19976.5	3.5	17097.0	3.8	9:05 AM
15	19978.1	1.6	17099.9	2.5	6:50 AM
16	19979.5	1.4	17102.2	2.4	7:27 AM
17	19981.9	2.2	17106.9	4.2	1:30 PM
18	19983.3	1.4	17108.6	2.2	10:28 AM
19	19985.1	1.5	17112.2	3.12	8:58 AM
20	19987.1	2.0	17116.2	4.0	9:48 AM
21	19989.2	2.1	17119.0	3.4	9:55 AM
22	19990.5	2.3	17122.2	2.6	8:49 AM
23	19991.7	1.2	17124.8	2.0	9:14 AM
24	19994.0	2.3	17130.9	6.1	8:42 AM
25	19996.1	2.1	17136.4	5.5	9:27 AM
26	19997.2	1.4	17139.9	3.5	7:36 AM
27	19998.5	1.4	17143.3	3.4	7:37 AM
28	20000.9	2.5	17146.7	3.4	8:45 AM
29					
30	20143.9	3.5	17159.4	10.7	9:55 AM
31	20205.1	1.2	17161.9	4.5	8:11 AM

TOTAL HOURS 62.5

MONTH/YEAR March 2000

165.9

103.4

# OXFORD VALLEY STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
3/31	2005.1	1.2	17101.9	4.5	8:14 AM
	PUMP #1		PUMP #2		
1	2006.5	1.4	17117.2	5.3	8:33 AM
2	2008.0	1.5	17176.0	8.8	6:30 pm
3	2009.7	0.7	17189.8	7.8	8:07 AM
4	2009.4	0.1	17176.3	1.4	9:00 AM
5					
6	20014.3	4.9	17199.1	2.9	8:17 AM
7	20017.2	3.9	17199.1	0.0	8:30 AM
8	20020.10	3.4	17199.1	0.0	8:50 AM
9	20024.1	3.5	17199.1	0.0	8:22 AM
10					
11	20032.5	6.4	17199.1	0.0	8:30 AM
12					
13	20036.7	6.2	17199.1	0.0	9:29 AM
14	20042.3	5.6	17199.1	0.0	8:00 AM
15	20044.3	4.0	17199.1	0.0	8:34 AM
16	20049.7	3.4	17199.1	0.0	8:36 AM
17	20052.8	3.1	17199.1	0.0	8:44 AM
18	20055.5	2.7	17199.1	0.0	8:45 AM
19					
20	20060.4	4.9	17199.1	0.0	8:37 AM
21	20063.9	3.5	17199.1	0.0	8:20 AM
22	20067.0	3.1	17199.1	0.0	8:54 AM
23	20069.7	2.7	17199.1	0.0	8:27 AM
24	20073.6	3.9	17199.1	0.0	9:43 AM
25	20077.9	4.2	17199.1	0.0	9:10 AM
26					
27	20084.7	6.9	17199.1	0.0	9:21 AM
28	20087.7	3.0	17199.1	0.0	8:09 AM
29	20090.8	3.1	17199.1	0.0	8:02 AM
30	20093.9	3.1	17199.1	0.0	8:10 AM
31					

TOTAL HOURS 89.8 37.2

MONTH/YEAR April, 2020

126.0

# OXFORD VALLEY STATION

(4/30) 20093.9		3.1	17199.1	0.0	8:10 AM
PUMP #1			PUMP #2		
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	20098.1	4.2	17199.1	0.0	8:12 AM
2	20102.1	4.0	17199.1	0.0	8:55 AM
3					
4	20109.1	7.0	17199.1	0.0	8:16 AM
5	20112.4	3.3	17199.1	0.0	8:14 AM
6	20115.7	3.3	17199.1	0.0	8:30 AM
7	20118.7	3.0	17199.1	0.0	8:22 AM
8	20121.7	3.0	17199.1	0.0	8:11 AM
9					
10					
11	20131.0	9.3	17199.1	0.0	8:54 AM
12	20133.9	2.9	17199.1	0.0	8:17 AM
13	20137.0	3.1	17199.1	0.0	8:35 AM
14	20140.1	3.1	17199.1	0.0	8:15 AM
15	20142.9	2.8	17199.1	0.0	8:24 AM
16	20146.0	3.1	17199.1	0.0	8:25 AM
17					
18	20150.8	4.8	17199.1	0.0	8:03 AM
19	20153.7	2.9	17199.1	0.0	8:20 AM
20	20156.7	3.0	17199.1	0.0	8:25 AM
21	20159.5	2.8	17199.1	0.0	8:14 AM
22	20162.5	3.0	17199.1	0.0	8:08 AM
23	20166.1	3.6	17199.1	0.0	8:25 AM
24	<del>20169.1</del>				
25					
26	20174.5	8.4	17199.1	0.0	8:20 AM
27	20178.2	3.7	17199.1	0.0	8:35 AM
28	20182.0	3.8	17199.1	0.0	8:10 AM
29	20185.7	3.7	17199.1	0.0	8:15 AM
30	20189.5	3.8	17199.1	0.0	8:40 AM
31					

TOTAL HOURS 95.6 0.0

MONTH/YEAR MAY, 2020

95.6

# OXFORD VALLEY STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
5/30	20187.5	3.8	17199.1	0.0	8:40am
	PUMP #1		PUMP #2		
1	20195.9	6.4	17199.1	0.0	10:59 AM
2	20198.6	2.7	17199.1	0.0	8:22 AM
3	20202.4	3.8	17199.1	0.0	8:35 AM
4	20207.3	4.9	17199.1	0.0	10:03 AM
5	20212.6	5.3	17199.1	0.0	8:51 AM
6	20218.4	6.3	17199.1	0.0	8:26 AM
7					
8	20226.7	7.5	17199.1	0.0	8:39 AM
9	20231.4	4.7	17199.1	0.0	10:53 AM
10	20235.9	4.5	17199.1	0.0	8:14 AM
11	20240.8	4.9	17199.1	0.0	8:44 AM
12	20245.4	4.6	17199.1	0.0	8:54 AM
13	20249.4	4.0	17199.1	0.0	8:50 AM
14					
15	20255.9	6.5	17199.1	0.0	8:13 AM
16	20260.2	4.3	17199.1	0.0	8:29 AM
17	20264.2	4.0	17199.1	0.0	8:25 AM
18	20268.5	4.3	17199.1	0.0	8:52 AM
19	20272.8	4.3	17199.1	0.0	8:09 AM
20	20277.0	4.2	17199.1	0.0	8:18 AM
21					
22	20284.9	7.7	17199.1	0.0	8:30 AM
23	20289.0	4.3	17199.1	0.0	8:36 AM
24	20293.5	4.5	17199.1	0.0	8:32 AM
25	20297.5	4.0	17199.1	0.0	7:00 AM
26	20301.6	4.1	17199.1	0.0	7:55 AM
27	20305.8	4.2	17199.1	0.0	8:40 AM
28					
29	20314.6	8.8	17199.1	0.0	9:37 AM
30	20318.5	3.9	17199.1	0.0	8:50 AM
*					

TOTAL HOURS 119.0 0.0

MONTH/YEAR June 2020

119.0

# OXFORD VALLEY STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	20322.6	4.1	17199.1	0.0	8:21 AM
2	20326.8	4.2	17199.1	0.0	8:53 AM
3	20330.7	3.9	17199.1	0.0	8:30 AM
4	20335.1	4.4	17199.1	0.0	6:45 AM
5					
6	20342.8	7.7	17199.1	0.0	8:19 AM
7	20347.9	5.1	17199.1	0.0	11:03 AM
8	20352.0	4.1	17199.1	0.0	7:54 AM
9	20350.9	4.9	17199.1	0.0	7:53 AM
10	20361.6	4.7	17199.1	0.0	7:39 AM
11					
12					
13	20379.1	17.5	17199.1	0.0	8:50 AM
14	20384.0	4.9	17199.1	0.0	8:04 AM
15	20388.8	4.8	17199.1	0.0	7:53 AM
16	20393.6	4.8	17199.1	0.0	7:58 AM
17	20398.4	4.8	17199.1	0.0	9:24 AM
18	20402.7	4.3	17199.1	0.0	6:40 AM
19					
20	20410.1	7.4	17199.1	0.0	8:01 AM
21	20414.9	4.8	17199.1	0.0	8:13 AM
22	20420.2	5.3	17199.1	0.0	8:58 AM
23	20425.3	5.1	17199.1	0.0	8:11 AM
24	20431.4	6.1	17199.1	0.0	8:13 AM
25	20435.3	5.5	17199.1	0.0	8:15 AM
26					
27	20434.9	0.0	17199.3	0.2	8:31 AM
28	20434.9	0.0	17199.3	0.0	8:02 AM
29	20434.9	0.0	17199.3	0.0	8:27 AM
30	20434.9	0.0	17199.3	0.0	8:25 AM
31	20434.9	0.0	17199.3	0.0	9:45 AM

TOTAL HOURS

116.4

MONTH/YEAR

July, 2020

Pump #1 was jumped  
to pump #2  
to test.

116.6

Ord

# OXFORD VALLEY STATION

7/31 20434.9 0.0			17199.3 0.0		8:48 AM
PUMP #1			PUMP #2		
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	20434.9	0.0	17199.3	0.0	8:30 AM
2	20434.9	0.0	17199.3	0.0	8:30 AM
3	20434.9	0.0	17199.3	0.0	8:40 AM
4	20434.9	0.0	17199.3	0.0	8:15 AM
5	20440.4	5.5	17199.3	0.0	8:30 AM
6	20446.2	5.8	17199.3	0.0	9:04 AM
7	20451.7	5.5	17199.3	0.0	8:20 AM
8	20457.7	6.0	17199.3	0.0	8:15 AM
9					
10	20467.9	10.2	17199.3	0.0	8:11 AM
11	20473.3	5.4	17199.3	0.0	8:23 AM
12	20479.2	5.9	17199.3	0.0	8:26 AM
13	20485.3	6.1	17199.3	0.0	8:49 AM
14	20490.6	5.3	17199.3	0.0	8:55 AM
15	20495.3	4.7	17199.3	0.0	8:26 AM
16					
17	20504.0	8.7	17199.3	0.0	8:17 AM
18	20508.2	4.2	17199.3	0.0	8:16 AM
19	20512.6	4.4	17199.3	0.0	8:03 AM
20	20517.2	4.6	17199.3	0.0	9:53 AM
21	20521.4	4.2	17199.3	0.0	8:23 AM
22	20525.7	4.5	17199.3	0.0	8:35 AM
23					
24	20534.2	8.5	17199.3	0.0	8:59 AM
25	20538.9	4.7	17199.3	0.0	8:57 AM
26	20542.2	4.3			8:11 AM
27	20547.6	4.4	17199.3	0.0	8:00 AM
28	20552.3	4.7	17199.3	0.0	8:23 AM
29	20557.6	5.1	17199.3	0.0	8:25 AM
30					
31	20568.4	10.8	17199.3	0.0	9:22 AM
TOTAL HOURS		133.5			0.0

MONTH/YEAR August, 2020

133.5

# OXFORD VALLEY STATION

5/21 20568.4 10.8 17199.3 0.0 9:32 AM  
 PUMP #1 PUMP #2

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	20573.5	5.1	17199.3	0.0	8:18 AM
2	20579.4	5.7	17199.3	0.0	10:15 AM
3	20586.2	6.8	17199.3	0.0	2:00 PM
4	20590.9	4.7	17199.3	0.0	10:54 AM
5					
6					
7	20604.7	13.5	17199.3	0.0	10:31 AM
8	20608.5	3.8	17199.3	0.0	9:39 AM
9	20613.6	5.1	17199.3	0.0	10:18 AM
10	20619.1	5.5	17199.3	0.0	8:55 AM
11	20624.7	5.6	17199.3	0.0	8:55 AM
12	20629.5	4.8	17199.3	0.0	8:20 AM
13					
14	20638.2	8.7	17199.3	0.0	10:17 AM
15	20643.1	4.9	17199.3	0.0	9:30 AM
16	20648.1	5.0	17199.3	0.0	9:56 AM
17	20652.7	4.6	17199.3	0.0	8:22 AM
18	20657.9	5.2	17199.3	0.0	8:19 AM
19	20663.0	5.1	17199.3	0.0	8:30 AM
20					
21	20673.0	10.0	17199.3	0.0	8:16 AM
22	20678.7	5.7	17199.3	0.0	9:50 AM
23	20684.4	5.7			9:13 AM
24	20689.6	5.2	17199.3	0.0	7:43 AM
25	20695.5	5.7	17199.3	0.0	8:53 AM
26	20700.1	5.6	17199.3	0.0	8:15 AM
27					
28	20710.5	10.4	17199.3	0.0	8:36 AM
29	20716.3	5.8	17199.3	0.0	8:38 AM
30	20725.3	9.0	17199.3	0.0	8:32 AM

TOTAL HOURS 156.9 0.0

MONTH/YEAR Sept. 2020

156.9



# OXFORD VALLEY STATION

9/30 20725.3

9.0

17199.3 0.0

8:52 AM

PUMP #1

PUMP #2

DATE READING RUN TIME

READING RUN TIME

TIME

1 20731.6 6.3

17199.3 0.0

7:26 am

2 20137.7 6.1

17199.3 0.0

8:57 AM

3 \_\_\_\_\_

4 \_\_\_\_\_

5 20753.7 11.0

17199.3 0.1

8:26 am

6 20759.5 5.8

17199.3 0.0

8:30 AM

7 20764.9 5.4

17199.3 0.0

8:20 AM

8 20770.4 5.5

17199.3 0.0

9:46 AM

9 20776.4 6.3

17199.3 00/off

11:06 am

10 20781.0 4.8

17199.3 0.0

8:46 am

11 \_\_\_\_\_

12 20791.7 10.7

17199.3 1.1

7:48 am

13 20799.3 8.3

17199.3 0.0

8:39 am

14 20806.2 6.4

17199.3 1.1

10:10 AM

15 20810.5 4.3

17199.3 0.0

8:34 AM

16 20815.2 7.4

17199.3 0.0

7:38 AM

17 20824.9 9.2

17199.3 0.0

8:36 am

18 \_\_\_\_\_

19 20834.5 10.1

17199.3 0.0

8:30 am

20 20839.5 5.0

17199.3 0.0

8:44 AM

21 20845.7 6.2

17199.3 0.0

10:30 AM

22 20850.3 4.6

17199.3 0.0

8:55 AM

23 20854.7 4.4

17199.3 0.0

8:05 AM

24 \_\_\_\_\_

25 \_\_\_\_\_

26 20867.4 12.7

17199.3 0.0

7:00 AM

27 20871.9 4.5

17199.3 0.0

8:39 AM

28 20876.4 4.5

17199.3 0.0

8:41 AM

29 20881.0 4.6

17199.3 0.0

8:19 AM

30 20891.3 10.3

17199.3 0.0

8:30 am

31 20899.3 8.0

17199.3 0.0

8:50 am

TOTAL HOURS

174.0

0.0

MONTH/YEAR

Oct. 2020

1740

# OXFORD VALLEY STATION

DATE	20's 19's PUMP #1 READING	8's RUN TIME	17199.3 PUMP #2 READING	0.0 RUN TIME	5:50 AM TIME
1	20905.0	5.7	17198.4	0	9:00 A
2	20911.0	6.0	" "	"	8:38 AM
3	20917.2	6.3	17199.4	0.0	0855
4	20923.5	6.3	17199.3	0.0	10:20 AM
5	20928.8	5.3	17199.3	0.0	0855
6	20934.2	5.4	" "	0.1	8:34 AM
7	20939.3	5.1	17199.1	0.0	9:00 AM
8	20944.3	5.0	-	-	11:32 AM
9	20947.7	3.9	17199.3	0.0	09:27
10	20952.6	4.9	17199.3	0.0	10:04 AM
11	20956.7	4.1	17199.3	0.0	7:30 AM
12	20965.9	9.2	"	"	2:15 P
13	20970.3	4.3	17199.3	0.0	8:14 AM
14	20975.7	5.5	17199.3	0.0	7:55 AM
15	20981.0	5.8	17199.4	0.1	9:03 AM
16	20985.6	4.6	-	-	9:24 AM
17	20990.6	5.0	17199.4	0.0	0903
18	20996.3	5.5	17199.3	0.0	8:44 AM
19	21001.4	5.3	17199.4	0.0	10:07 AM
20	21006.2	4.8	"	0	8:00 A
21	21011.6	5.4	17199.4	0.0	9:10 AM
22	21015.6	4.0	-	-	8:45 AM
23	21019.2	3.6	17199.4	0.0 / off	8:05 AM
24	21025.5	6.3	17199.4	0.0 / off	2:45 PM
25	21028.1	2.6	17199.4	0.0	8:10 AM
26	21032.3	4.2	17199.4	0.0	7:21 AM
27	21036.3	3.9	17199.4	0.0	8:36 AM
28	21040.4	4.0	17199.4	0.0	8:00 AM
29					
30	21047.1	6.9	17199.4	0	7:38 PM
31					

TOTAL HOURS 147.8

MONTH/YEAR NOV. 201

(147.8)

# OXFORD VALLEY STATION

#	21047-1 PUMP #1	6.9	17199.4	0	7:35 am
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	21056.1	9.0	17199.4	0	11:15 am
2	21061.0	4.9	17199.4	0.0	10:40 am
3	21065.8	4.3	17199.4	0	7:46 AM
4	21070.5	5.2	17199.4	0.0	10:01 AM
5	21075.2	4.7	17199.4	0.0	7:55 AM
6	21081.7	6.5	-	-	8:40 am
7	21085.6	3.9	17199.4	0.0	8:25 AM
8	21090.4	4.8	17199.4	0.0	9:27 AM
9	21094.9	4.3	17199.4	0.0	9:30 AM
10	21099.8	4.2	17199.4	0.0	9:16 AM
11	21103.5	4.5	17199.4	0.0	9:31 AM
12	21107.3	3.8	17199.4	0.0	7:53 AM
13	21112	3.9	-	-	9:31 AM
14	21116.3	3.1	17199.4	0.0	9:04 AM
15	21119.4	5.1	17199.4	0.0	10:00 AM
16	21124.1	4.7	17199.4	0.0	10:02 AM
17	21127.9	3.8	17199.4	0.0	9:02 am
18	21132.1	4.2	17199.4	0.0	9:12 AM
19	21136.1	4.0	17199.4	-	8:20 AM
20	21139.7	3.6	-	-	9:15 AM
21	21143.2	3.5	17199.4	0.0	9:04 AM
22	21148.0	4.8	-	-	7:51 AM
23	21154.0	6.0	17199.4	0	8:45 AM
24	21158.5	4.5	17199.4	0.0	8:00 AM
25	21166.4	7.4	-	-	8:13 AM
26	21173.0	6.6	17199.4	0.0	9:00 AM
27	21182.2	-	17199.4	0.0	-
28	21182.2	9.2	17199.4	0.0	8:39 am
29	21187.3	5.1	17199.4	0.0	10:32 am
30	21191.2	3.9	17199.4	0.0	8:42 am
31	21195.2	4.3	17199.4	0.0 / OFF	11:00 AM

TOTAL HOURS

148.6

0.0

MONTH/YEAR: 12/2020

148.6

Penn Village Station

Month Jan 2005

Utility 644000 PUMP # 1

Utility 141000 PUMP # 2

55978.121

17710000

17710000

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	6444.1	5.2	1500.2	7.2	52147029	170,802	9:10am
2	6472.6	5.7	1513.7	7.8	56732521	185,492	1:59pm
3	6479.9	4.3	1519.5	5.6	56469217	136,696	10:00pm
4	6484.6	4.7	1535.4	5.9	56613552	140,235	8:53am
5	6489.8	5.2	1533.4	7.0	56771170	163,098	11:23am
6	64115.1	5.5	1539.7	7.8	46946233	169,615	10:50am
7	6499.5	4.4	1545.4	5.7	57079289	133,056	8:40am
8	6504.2	4.7	1551.3	5.9	57220024	142,735	8:11am
9	6509.4	5.2	1557.7	6.4	57378973	154,946	11:25am
10	6513.2	3.8	1562.5	4.8	57492144	115,171	8:27am
11	6517.7	4.5	1568.0	5.5	57627062	134,918	9:10am
12	6521.9	4.2	1573.2	5.5	57760625	133,563	7:23am
13	6527.1	5.2	1580.0	6.5	57919812	159,187	9:12am
14	6531.7	4.6	1585.7	5.7	58059999	140,187	10:11am
15	6535.9	4.1	1590.7	5.0	58185899	125,900	9:00am
16	6540.4	4.6	1596.3	5.6	58329108	142,269	9:53am
17	6545.0	4.6	1601.9	5.6	58470545	142,377	11:15am
18	6548.7	3.7	1606.2	4.3	58577496	106,951	8:50am
19	6553.2	4.5	1611.8	5.6	58707348	130,247	7:04am
20	6558.7	5.5	1618.3	6.5	58872206	164,463	11:06am
21	6562.7	4.3	1623.4	5.1	58991545	119,339	8:37am
22	6567.4	4.7	1628.8	5.4	59121510	129,965	8:52am
23	6573.3	5.9	1633.9	5.1	59262808	141,298	11:02am
24	6579.2	5.9	1638.5	4.6	59387982	125,174	11:00am
25	6585.2	6.2	1642.8	4.3	59508421	120,487	10:06am
26	6590.4	5.2	1641.3	8.5	59657358	178,889	7:25am
27	6597.3	8.9	1640.3	7.0	59919187	230,831	2:00pm
28	6604.0	4.7	1644.8	4.5	60039183	120,994	8:30am
29	6613.1	5.1	1640.4	5.6	60197991	158,808	8:30am
30	6621.0	8.0	1676.3	5.9	60357069	159,078	9:16am
31	6625.0	3.9	1679.4	3.1	60438376	81,307	9:16am

56315 6.5 1683.0 11.2 60583577 47.21 9:11am

Total Hours 166.76

Total Hours 184.8

348.6

Total Flow 4,589,476

1-31-20

Penn Village Station

Month ~~March~~ Feb 2020

6635.0 39  
PUMP #1

1679.4  
PUMP #2 31

9116

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	6631.8	6.8	1683.6	4.2			9:00 AM
2	6639.9	8.1	1688.7	5.1	60721213	155,616	9:10 AM
3	6648.1	8.2	1694.0	5.3	60884780	143,547	9:15 AM
4	6655.6	7.5	1698.6	4.6	61027168	192,388	9:04 AM
5	6662.6	7.0	1703.1	4.5	61165787	138,619	8:46 AM
6	6671.2	8.6	1708.5	5.4	61335571	169,784	10:50 AM
7	6679.7	8.5	1713.8	5.3	61501032	165,461	9:46 AM
8							
9	6695.7	26.0	1725.8	12.0	61827184	376,152	8:57 AM
10	6704.4	8.7	1729.1	3.3	62005237	170,053	5:16 PM
11	6712.0	7.6	1734.9	5.3	62174392	171,155	9:03 AM
12	6722.0	16.6	1740.10	10.2	62373855	191,296	8:37 AM
13	6731.8	9.8	1746.8	6.2	62576494	203,806	10:50 AM
14	6741.2	9.4	1752.9	6.1	62766141	189,647	9:48 AM
15	6749.4	8.3	1757.5	5.0	62926647	164,507	7:29 AM
16	6759.8	10.4	1764.4	6.5	63134431	207,183	9:43 AM
17	6769.1	9.3	1770.0	5.6	63318941	194,052	9:32 AM
18	6778.2	9.1	1775.5	5.5	63500136	181,655	9:03 AM
19	6787.2	9.0	1780.8	5.3	63678465	175,329	9:48 AM
20	6795.7	8.5	1785.9	5.1	63848293	172,828	11:06 AM
21	6803.7	8.0	1790.8	4.9	64006644	158,351	11:05 AM
22	6811.3	7.6	1795.8	0.1	64173173	216,514	8:40 AM
23	6821.0	9.7	1790.9	0.0	64343145	194,167	9:36 AM
24	6830.5	9.5	1790.9	0	64444793	156,648	9:57 AM
25	6835.6	5.1	1795.2	4.3	64583407	143,614	8:49 AM
26	6840.4	4.8	1800.9	5.7	64729561	145,174	10:50 AM
27	6844.7	4.3	1805.9	5.0	64866429	136,846	09:57
28	6849.7	5.0	1811.9	6.0	65027109	166,982	1:25 PM
29	6853.0	5.3	1815.6	5.7	65133295	182,608	9:50 AM
30							
31							

278.0

Total Hours

136.7

Total Hours

364.2

4,561,418

Total Flow

0

Hemi Village Station

Month \_\_\_\_\_

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	6857.0	4.0	1830.1	4.5	657871258	123,743	6:47 AM
2	6862.9	5.9	1827.1	7.0	65438260	157,002	22:17
3	6871.5	8.6	1837.6	10.5	6554279	111,019	9:06 AM
4	6875.4	4.4	1840.5	4.9	65420134	140,950	8:25
5	6881.1	5.2	1848.7	6.2	6586151	171,966	8:00 PM
6	6884.3	3.1	1902.6	3.9	6540827	105,942	9:55 AM
7	6883.5	4.0	1857.2	4.6	6607534	100,987	9:07 AM
8							
9	6877.1	8.7	1867.5	10.3	66383746	250,777	5:55 PM
10	6901.7	4.6	1872.8	5.3	665330560	149,315	10:29 AM
11	6905.7	4.0	1877.6	4.8	66663674	130,618	09:47
12	6909.8	4.1	1882.5	4.7	66796217	132,535	10:13 AM
13	6914.8	4.2	1887.2	4.6	66922163	125,954	9:58 AM
14	6917.7	3.3	1891.6	4.5	6705773	116,011	7:50 AM
15	6922.9	4.1	1897.6	6.0	67186608	144,835	11:18 AM
16	6927.5	4.6	1902.6	5.0	67319422	130,814	11:20 AM
17	6931.0	3.5	1906.8	4.2	67423950	104,520	7:41 AM
18	6935.3	4.3	1911.8	5.0	67547806	125,936	7:55 AM
19	6939.8	4.5	1917.2	5.4	67684457	134,568	7:35 AM
20	6945.1	5.3	1923.5	6.3	67838842	154,388	7:21 AM
21	6950.5	5.2	1929.9	5.9	6798151	146,049	3:00 PM
22	6955.5	5.2	1936.1	6.7	68141608	156,777	10:46 AM
23	6960.0	4.5	1941.3	5.2	68271403	129,735	8:36 AM
24	6965.7	5.7	1948.7	7.4	68451128	179,725	8:00 PM
25	6971.3	5.1	1955.5	6.8	68627939	176,806	8:08 PM
26	6976.0	4.7	1962.1	6.6	68797998	170,054	9:00 PM
27	6981.7	5.7	1968.0	5.9	68948963	150,775	7:15 PM
28							
29	6993.7	12	1983.5	19.5	69313160	361,144	11:12
30	6998.6	5.2	1988.5	6.0	69463688	150,228	11:10 AM
31	7004.2	5.6	1995.0	6.5	69621728	163,540	7:10 AM

Total Hours 151.2

Total Hours 179.4

330.6

4,499,213

Penn Village Station

Month Apr 1 2022

7004.1 5.6  
PUMP #1

1797.0  
PUMP #2

6.2 41627228 164510 7/11

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	7009.9	5.7	2001.4	6.4	69790470	1163.742	7:24 am
2	7015.2	5.3	2008.0	6.6	69742978	152.308	6:50 am
3	7020.4	5.7	2014.0	6.0	70085566	142.788	5:50 am
4	<del>7031.1</del>		<del>2026.3</del>				
5	7031.1	11.7	2026.3	12.3	70388571	303.005	7:55 am
6	7036.1	5.0	2037.3	8.0	70536283	147.772	7:25 am
7	7041.1	5.0	2037.8	3.5	70615884	139.601	6:47 am
8	7046.4	5.3	2043.8	4.5	70726021	150.337	8:11 am
9	7050.9	4.5	2049.0	5.2	70857221	131.500	6:00 am
10							
11							
12							
13	7070.7	19.8	2071.9	22.9	71543520	585.771	7:15 am
14	7077.4	6.7	2081.1	9.2	71763438	219.918	7:15 am
15	7093.6	6.2	2088.6	7.5	71958045	154.607	8:00 am
16	7089.2	5.6	2095.1	6.5	72127590	169.545	7:15 am
17	7095.0	5.8	2101.8	6.7	72299523	171.933	7:30 am
18							
19	7106.6	11.6	2115.7	13.9	72616846	347.323	10:18
20	7111.3	4.7	2121.7	6.3	72786840	149.000	7:00 am
21	7116.6	5.3	2129.0	5.3	72936344	149.478	6:55 am
22	7122.2	5.6	2134.6	7.6	73100366	164.022	9:02 am
23	7126.7	4.5	2140.1	5.5	73230872	130.506	7:50 am
24	7131.9	5.2	2146.2	6.1	73380167	149.295	6:45 am
25							
26	7147.9	12	2161.0	14.8	73741961	361.797	8:18
27	7149.6	5.7	2167.4	6.9	73914482	172.518	7:05 am
28	7155.1	5.5	2174.6	6.7	74083554	189.072	7:12 am
29	7160.3	5.2	2180.5	6.3	74239010	155.456	6:58 am
30	7165.5	5.2	2187.1	6.9	74399278	156.268	6:40 am
31							

Total Hours 161.3

Total Hours 192.3

353.6

4,768,080  
Total Flow

0

Penn Village Station

Month Aug 2020

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	7171.3	5.8	2144.2	16.9	74563099	172,391	6:46
2	-	-	-	-	-	-	-
3	7187.6	12.3	2209.2	15.0	74976982	368,433	7:27
4	7189.9	5.8	2216.3	7.1	75120641	173,659	6:55
5	7195.0	5.6	2223.8	6.5	75274438	116,999	6:55
6	7200.3	5.3	2229.7	6.9	75437075	162,640	7:54
7	7205.4	5.1	2239.9	10.2	75589582	152,610	8:34
8	7210.4	5.0	2242.0	2.1	75771451	14,886	7:10A
9							
10	7221.0	10.6	2255.2	13.2	76056658	323,207	8:22
11	7225.8	4.8	2261.2	6.0	76203916	147,058	7:06
12	7230.9	5.1	2267.2	6.0	76352541	148,825	7:00
13	7235.9	5.0	2274.2	7.0	76498284	145,743	7:30
14	7240.4	4.5	2278.8	6.6	76633734	135,452	6:55
15	7245.6	5.2	2285.3	6.5	76791127	157,391	9:42 AM
16							
17	7254.6	9	2296.2	10.9	77057179	266,052	8:37
18	7259.1	4.5	2301.6	5.4	77195865	131,686	7:05
19	7262.7	4.6	2307.1	5.5	77322425	133,610	6:51
20	7268.6	4.9	2312.5	5.4	77450476	134,001	6:55
21	7273.6	5.0	2317.8	5.3	77588527	132,101	6:58
22	7278.5	4.7	2323.0	5.8	77728036	137,459	9:11
23							
24	7287.7	9.2	2331.4	10.8	77924367	256,331	7:57
25	7292.8	4.8	2334.9	5.5	78113442	174,075	7:56
26	7297.3	4.8	2345.4	5.5	78232490	126,048	6:52
27	7302.1	4.8	2350.7	5.3	78366491	127,001	7:31
28	7306.6	4.5	2356.1	5.4	78488040	121,579	7:15
29	7311.1	4.5	2361.7	5.6	78605243	121,173	7:00
30							
31	7321.2	10.1	2379.2	13.0	78876016	266,273	11:14

Total Hours 155.7

Total Hours 186.4

348.1

Total Flow 4,480,798

0



Penn Village Station

Month June 2020

PUMP # 1

PUMP # 2

266493

Day	Reading	Run Time	Reading	Run Time	Merer	Flow	Time
1	7324.9	3.7	2378.5	4.8	78995001	99045	7:52am
2	7329.2	4.3	2383.9	5.4	79089563	114502	7:00am
3	7333.8	4.6	2389.6	5.7	79210275	120732	8:00am
4	7338.0	4.2	2395.0	5.4	79327677	117382	7:00am
5	7342.5	4.5	2400.4	5.4	79444213	106530	6:50am
6							
7	7352.4	9.9	2412.7	12.3	79692205	257592	8:16am
8	7356.7	4.3	2418.1	5.4	79806847	114642	6:40am
9	7361.6	4.9	2423.9	5.8	79931193	124346	7:28AM
10	7366.2	4.6	2429.5	5.4	80044704	118511	8:29am
11	7371.2	5.0	2435.6	6.1	80179777	130073	10:55am
12	7375.0	3.8	2440.3	4.7	80279487	98210	7:55am
13							
14	7383.5	9.5	2450.5	10.2	80493124	215137	7:22am
15	7387.5	4.0	2455.2	4.7	80595787	102663	6:56am
16	7391.5	4.0	2460.1	4.9	80700700	106973	6:50am
17	7395.8	4.3	2465.4	5.3	80816739	113999	7:40am
18	7399.6	3.8	2469.9	6.5	80917529	100780	6:41am
19	7403.7	4.1	2475.0	5.1	81025599	109370	6:36am
20							
21	7411.7	8.0	2485.1	10.1	81240748	214944	7:24am
22	7415.9	4.2	2490.2	5.1	81350138	107390	7:24am
23	7420.1	4.2	2495.2	5.0	81460652	110494	7:35am
24	7424.2	3.9	2500.0	4.8	81570775	106343	8:00am
25	7427.6	3.6	2504.7	4.7	81666612	99697	7:40am
26	7431.5	3.9	2508.9	4.2	81767428	100816	6:32am
27							
28	7439.5	5.0	2518.1	9.2	81962101	211714	7:44am
29	7443.5	4.0	2522.6	4.5	82086022	103863	7:40am
30	7447.1	3.6	2526.9	4.3	82196648	100626	6:55am
31							

Total Hours 125.9

Total Hours 153.2

279.0

3,310,630

Penn Village Station

Month July 2020

7447.1 - PUMP #1

25247 - PUMP #2

82181078 - 100000

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	7450.9	3.8	2531.3	4.4	82278203	101,555	7:20 am
2	7454.3	3.4	2535.2	3.9	82378801	90,658	6:43 am
3	7458.0	3.7	2539.4	4.2	824760861	98,003	7:50 am
4							
5							
6	7468.8	10.8	2551.7	12.3	82766524	289,660	6:46 am
7	7472.7	3.9	2556.2	4.5	82872640	106,116	6:49 am
8	7476.7	3.7	2560.3	4.1	82973252	99,611	6:25 am
9	7479.9	3.5	2564.3	4.0	83069246	96,594	6:41 am
10	7483.4	3.5	2568.3	4.0	83165758	91,512	7:10 am
11							
12	7493.0	9.6	2580.1	11.8	83457539	291,781	7:00
13	7497.1	4.1	2584.7	4.6	83572949	115,910	6:45 am
14	7502.2	5.1	2590.4	5.7	83716991	144,042	1:44 PM
15	7504.8	2.6	2593.5	3.1	83792783	75,792	7:53 am
16	7508.2	3.4	2597.5	4.0	83891583	98,800	6:55 am
17	7511.8	3.6	2601.4	3.9	83992614	104,031	6:50 am
18							
19	7518.1	6.9	2609.7	7.9	84194508	201,914	7:31 am
20	7522.3	3.4	2613.6	4.9	84301716	107,188	7:32 am
21	7526.3	4.5	2618.0	4.4	84416211	114,495	9:25 am
22	7529.2	2.9	2621.5	2.5	84504149	87,938	8:10 am
23	7532.6	3.9	2625.4	3.9	84607392	108,243	8:59 am
24	7536.5	3.9	2629.6	4.2	84722663	115,271	8:20 am
25							
26	7543.5	7.0	2637.5	7.9	84936672	214,009	8:18 am
27	7546.8	3.2	2641.1	3.6	85033475	96,803	6:50 am
28	7550.1	3.3	2644.9	3.8	85134599	101,524	6:52 am
29	7553.3	3.2	2648.5	3.6	85231370	96,301	7:00 am
30	7556.4	3.1	2652.0	3.5	85327079	93,009	6:53 am
31	7559.6	3.2	2655.4	3.4	85418325	93,946	7:01 am

Total Hours 112.5

Total Hours 118.5 (2410)

Total Flow 3,231,677

0

Penn Village Station

Month Aug 2020

7559.6  
PUMP # 1

3.2

2658.4  
PUMP # 2

3.8

85419325 33270

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	-	-	-	-	-	-	-
2	7565.8	6.2	2667.4	7.0	85610630	192305	6:50am
3	7565.0	3.2	2666.0	3.6	85701042	98412	6:45am
4	7572.1	3.1	2669.8	3.8	85809742	100900	6:57am
5	7576.5	4.4	2675.2	5.4	85154715	144993	6:52am
6	7580.3	3.8	2679.4	4.2	86071185	116470	6:40am
7	7583.9	3.6	2683.7	4.3	86182385	11200	6:45am
8	<del>7594.8</del>						
9							
10	7594.8	10.9	2696.3	12.6	86512582	330197	7:00am
11	7598.1	3.3	2700.1	3.8	86616440	113858	6:55am
12	7601.5	3.4	2703.9	3.8	86722467	106027	7:40am
13	7604.6	3.1	2707.2	3.3	86821088	98621	6:45am
14	7609.7	3.1	2710.7	3.5	86927716	101628	6:47am
15					872		
16							
17	7617.5	9.8	2721.4	10.7	87238027	315305	9:16am
18	7620.3	2.8	2724.5	3.1	87325438	87417	6:50am
19	7623.2	2.9	2727.8	3.3	87417832	92374	6:25am
20	7626.5	3.3	2731.4	3.6	87523212	105380	8:25am
21	7629.1	2.6	2734.4	3.0	87610385	87173	6:26am
22							
23							
24	7638.1	9.0	2744.3	9.9	87702273	292888	6:37am
25	7641.3	3.2	2747.6	3.3	88004677	101404	6:47am
26	7644.3	3.0	2751.0	3.4	88105771	101094	8:00am
27	7647.0	3.7	2754.1	3.1	88197591	91820	6:40am
28	7649.9	2.9	2759.3	5.1	88293198	95607	6:42am
29	7653.7	3.8	2761.0	1.8	88413946	126748	11:10am
30					8861186		
31	7659.7	6.0	2767.6	6.6	88611186	197246	6:30am

100.1  
Total Hours

112.2  
Total Hours

212.3

3, 192, 861  
Total Flow

0

Penn Village Station

Month Feb 20

17000 PUMP #1 17000 PUMP #2 17000 17000 17000

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	7750.2	N/A	2370.5	5.0	9158244	151,341	8:00 AM
2	7753.7	3.7	2374.9	4.1	91704960	119,316	7:50 AM
3							
4							
5	7764.5	10.6	2387.2	12.3	92049636	944676	11:48
6	7767.1	2.6	2390.1	2.9	92104228	84,592	9:50 AM
7	7769.9	2.9	2393.3	3.2	92227560	93,332	7:46 AM
8	7773.1	3.2	2396.8	3.5	92321054	114,144	8:05
9	7776.6	3.5	2400.9	4.1	92439129	118,075	11:18 AM
10							
11	7782.0	5.4	2406.9	6.0	92609245	169,516	6:56 AM
12	7785.7	3.7	2411.3	4.4	92728956	119,701	8:10 AM
13	7793.9	8.0	2415.7	7.4	92884930	155,984	7:20 AM
14	7802.8	4.2	2427.3	8.6	93027036	142,106	8:40 AM
15	7806.3	3.5	2431.8	4.5	93131831	104,795	9:30 AM
16	7810.2	3.9	2436.5	4.7	93250615	118,759	10:20 AM
17							
18	7819.4	9.6	2448.3	11.4	93534356	283,141	10:40 AM
19	7823.8	9.1	2452.7	5.4	93656258	122,430	10:25
20	7828.0	4.2	2458.2	4.5	93768491	111,703	9:36 AM
21	7832.1	4.1	2464.0	5.8	93894996	126,505	9:40 AM
22	7835.9	3.8	2468.4	4.4	93997957	102,961	7:40 AM
23	7839.6	3.2	2473.4	5.5	94108185	110,228	8:15 AM
24							
25	7841.4	9.1	2482.5	9.1	94377170	213,985	8:12 AM
26	7851.4	3.8	2487.5	5.0	94429180	107,010	7:20 AM
27	7856.3	4.9	2499.0	5.5	94559767	130,587	10:52 AM
28	7860.1	5.8	2497.5	4.5	94669102	104,335	09:10
29	7863.8	3.7	2502.6	5.1	94765213	101,111	8:15 AM
30	7870.8	7.0	2513.3	10.7	94958001	228,783	10:23 AM
31	7876.1	5.3	2520.2	6.9	95137133	149,132	6:45 AM

130.3  
Total Hours

154.4  
Total Hours

284.7

5,762,870  
Total Flow

Menn Village Station

10/31 1999  
PUMP # 1

10/31 1999  
PUMP # 2

Month Nov 30

1991 11182 119,112 11/1/1999

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	7887.2	6.1	3070.5	7.3	95294884	157,551	7:24A
2	7889.8	7.6	3036.8	9.8	95484233	159,549	11:08A
3	7894.7	4.9	3043.0	6.2	95607692	123,459	8:04PM
4	7900.7	5.0	3050.4	7.4	95255013	147,321	10:15AM
5	7905.6	7.9	3056.7	6.3	95381419	125,400	07:50
6	7911.6	6.0	3064.3	7.6	96037944	156,525	11:00AM
7	7915.8	4.2	3068.1	4.8	96191065	109,131	6:45AM
8	7920.6	5.8	3015.0	6.2	96304026	156,461	
9	7926.1	4.5	3081.7	5.8	96429399	125,323	8:40AM
10	7930.9	4.8	3087.7	6.0	96553516	124,117	8:10AM
11	7935.9	5.0	3092.9	5.2	96673527	120,011	5:35A
12	7943.2	7.3	3102.6	9.7	96873060	199,533	10:25A
13	7949.4	6.2	3109.4	6.3	97056292	163,232	6:20AM
14	7954.9	5.5	3116.3	6.9	97184265	198,473	6:40AM
15	7961.6	6.7	3124.3	8.0	97360967	176,702	10:11AM
16	7966.8	5.2	3131.3	7.0	97501781	140,814	8:10AM
17	7971.8	5.0	3135.5	7.2	97645587	143,808	6:37AM
18	7977.9	6.1	3146.7	8.2	97809549	163,960	8:22AM
19	7983.1	5.2	3152.7	6.0	97935743	126,394	7:00AM
20	7989.5	6.4	3159.6	6.9	98080262	144,319	10:08AM
21	<del>7994.0</del>	4.5	3164.6	5.0	98184390	104,128	7:15AM
22	8000.4	1.4	3170.5	5.9	98320286	135,890	7:51AM
23	8011.6	11.2	3187.3	11.2	98604426	284,140	7:44AM
24	8011.6	11.2	3182.3	11.2	98604426	284,140	11:44AM
25	8018.2	7.2	3188.3	6.2	98748928	144,503	5:26AM
26	8025.0	6.2	3194.7	6.4	98895475	146,546	10:25AM
27	8031.2	6.3	3201.2	6.4	99045526	150,037	9:36AM
28	8036.8	5.6	3207.4	6.3	99194562	139,041	6:40AM
29							
30							
31							

Total Hours 189.9

Total Hours 212.7

397.6

Total Flow 4,416,600

0

Penn Village Station

Month 12/2020

8036.8  
MUMP #1

5.6

3207.4  
MUMP #2

6.3

99184567

139,041

246.22

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	8061.0	24.4	3232.9	25.5	99711290	526.723	10:58 am
2	8068.7	7.7	3240.4	7.5	99889021	177.731	
3	8077.2	8.5	3247.8	7.4	100059469	170.446	09:34
4	8080.2	8.8	3254.6	6.8	100218726	158.260	9:50 am
5	8094.8	8.1	3260.5	5.9	100354981	141.255	6:57 am
6							
7	8114.6	19.8	3280.2	19.7	100702458	408.537	8:34 am
8	8125.1	10.4	3286.8	6.6	100947275	125.757	9:41 am
9	8132.0	11.9	3294.1	7.3	101146822	199.521	10:50 am
10	8146.8	4.8	3300.5	6.4	101317757	170.435	9:07 am
11	8156.6	9.8	3306.3	5.8	101479630	161.873	8:47 am
12	8165.1	8.1	3311.3	5.0	101624442	144.812	6:45 am
13	8176.5	10.8	3317.8	6.5	101817584	189.097	10:54 am
14	8184.5	8.0	3322.9	5.0	101958424	144.835	7:15 am
15	8195.4	10.9	3329.5	6.6	102147150	188.726	8:56 am
16	8204.7	9.3	3334.9	5.4	102303289	156.139	8:40 am
17	8216.7	10.8	3341.0	6.7	102458610	195.321	10:51 am
18	8224.6	7.9	3345.8	4.2	102628603	124.993	9:00 am
19	8235.8	7.2	3351.0	5.2	102775941	152.338	6:50 am
20	8245.1	11.3	3357.4	6.4	102946622	190.417	10:22
21	8255.9	10.8	3369.2	5.9	103118946	162.087	10:22 am
22	8265.2	9.3	3368.8	3.2	103262132	143.992	7:50 am
23	8277.6	10.9	3375.2	6.6	103420124	187.992	7:52 am
24	8284.0	6.4	3382.6	7.6	103619789	168.865	6:57 am
25	8291.4	7.4	3393.2	10.6	103814926	216.057	7:56
26	8307.4	6.0	3408.1	14.9	104173789	166.963	6:55 am
27	8310.4		3				9:24 am
28	8310.4	13.0	3433.9	25.8	104572186	418.247	
29	8316.9	6.5	3445.5	11.6	104791063	218.977	11:07 am
30	8322.8	5.3	3453.0	7.5	104948918	157.835	9:00 am
31	8328.3	6.1	3462.0	9.0	105123952	175.054	7:20 am

Total Hours ~~229.1~~  
267.3

Total Hours 229.1 (496.4)

Total Flow (51939,425)

0

RENNS PLACE

Month January

12 11 19 46 32  
PUMP # 1

2 12 48 18  
PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Water	Flow	Time
1	48.32	2.46	51.33	2.41	245.2	13.0	11:10 AM
2	51.35	2.32	53.99	2.4	258.0	12.3	11:10 AM
3	53.20	1.85	55.95	1.76	267.8	9.8	10:10
4	54.87	1.61	57.55	1.6	276.2	9.4	7:55 AM
5	57.07	2.30	59.94	2.39	285.2	11.8	5:46 AM
6	60.01	3.89	62.76	2.92	303.0	15.0	10:43 AM
7	61.79	1.73	64.55	1.74	312.2	9.2	11:16 AM
8	63.69	1.70	66.36	1.81	321.8	9.6	9:50 AM
9	65.50	<del>1.74</del> 1.74	68.15	1.79	331.3	9.5	10:20 AM
10	67.28	1.78	69.93	1.78	340.7	9.7	10:00 AM
11	68.79	1.51	71.51	1.58	349.0	9.3	7:10 AM
12	71.45	2.66	74.04	2.53	362.9	13.9	9:26 AM
13	73.79	2.34	76.44	2.40	375.9	13.0	11:00 AM
14	75.23	1.92	78.15	1.71	385.1	9.5	10:48 AM
15	77.25	1.74	79.77	1.82	389.7	9.8	10:32 AM
16	79.31	2.06	81.99	2.02	406.0	11.1	1:29 AM
17	80.99	1.68	83.76	1.77	415.1	9.1	1:05 PM
18	82.21	1.33	84.92	1.16	421.3	6.2	6:40 AM
19	84.51	2.29	87.27	2.35	433.8	12.5	6:28 AM
20	86.79	2.17	89.41	2.14	444.7	10.1	6:14 AM
21	89.33	2.85	91.99	2.58	457.9	13.2	9:16 AM
22	91.76	1.0	94.05	2.04	467.9	10.0	9:00 AM
23	93.14	1.81	95.84	1.82	475.2	9.4	9:15 AM
24	95.44	2.25	98.10	2.21	488.7	11.4	0955
25	97.51	2.07	100.15	2.03	499.2	10.5	11:32 AM
26	100.26	2.75	102.98	2.85	513.6	14.1	9:03
27	103.14	2.82	105.85	2.90	528.3	14.9	1:10 PM
28	105.10	1.96	109.94	2.06	538.4	10.2	11:42 AM
29	107.63	1.93	109.93	1.99	549.1	9.7	9:50 AM
30	109.31	2.28	112.15	2.32	559.9	11.8	1:08 PM
31	111.26	1.95	114.01	1.86	569.7	9.8	11:43 AM

Total Hours 64.94

Total Hours 65.03  
129.970

Total Flow 537,500

0

FINNS PLACE

Month 2-20

1.31.20 11.26  
PUMP #1

1.98

111.09  
PUMP #2

1.86

569.7

9.8

11.43

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	112.58	1.32	115.39	1.38	570.6	6.9	7.10 AM
2	115.22	2.64	118.04	2.65	590.2	13.0	10.20 AM
3	117.69	2.47	120.56	2.52	603.0	12.8	1.09 PM
4	119.61	1.92	122.57	2.01	612.9	9.9	1.10 PM
5	121.40	1.79	124.24	1.67	621.7	3.8	1.05 PM
6	124.05	2.65	126.83	2.59	634.8	13.1	3.10 PM
7	125.87	1.87	128.69	1.86	643.9	9.1	11.30 AM
8							
9	130.10	4.29	133.03	4.34	665.7	11.8	3.11 AM
10	132.50	2.34	135.24	2.41	677.2	12.2	10.26 AM
11	134.56	2.06	137.43	2.19	688.3	10.4	9.00 AM
12	136.73	2.17	139.58	2.15	699.5	11.2	10.51 AM
13	138.93	2.20	141.80	2.22	710.0	11.5	1.17 PM
14	141.07	2.14	143.87	2.07	721.9	10.9	10.40 AM
15	143.81	2.74	146.21	2.77	730.2	14.2	5.09 PM
16	145.83	2.02	147.85	1.21	742.5	6.3	6.58 PM
17	147.27	1.44	150.15	1.3	754.2	11.7	7.13 AM
18	149.74	2.52	152.72	2.57	767.2	13.0	10.05 AM
19	151.15	1.36	154.81	2.04	777.0	9.8	9.55 AM
20	152.70	1.55	157.08	2.27	788.0	11.0	1.12 PM
21	154.17	1.47	159.31	2.23	798.8	10.8	1.54 PM
22	154.81	0.24	160.45	1.12	810.0	2.6	11.57 AM
23	156.82	1.91	162.52	2.89	819.9	14.5	6.05 AM
24	158.77	1.45	165.32	3.0	833.9	15	12.12 AM
25	160.17	1.8	168.23	1.91	843.2	9.9	10.03 AM
26	161.67	1.50	170.49	2.26	854.9	11.1	10.31 AM
27	162.17	1.3	172.38	1.59	864.2	7.3	9.00 AM
	164.07	1.0	174.01	1.65	872.5	8.5	7.13 AM
	165.33	1.20	175.35	1.81	881.6	9.1	0.55 AM

54.07

al Hours

61.84

Total Hours

115.91

0

311,900

Total Flow

0



PENNS PLACE

Month \_\_\_\_\_

PUMP # 1

PUMP # 2

5511

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	167.15	1.82	176.57	2.72	895.1	13.5	9:19am
2	169.22	2.07	181.39	1.82	909.7	14.6	11:07am
3	170.80	1.62	183.75	2.04	920.5	10.8	1:33pm
4	171.98	1.02	185.00	1.57	928.8	8.3	8:45pm
5	173.52	1.54	187.08	2.08	938.9	11.8	10:58am
6	174.91	1.44	188.01	2.00	949.9	12.0	1:10pm
7	176.15	1.24	189.00	1.94	950.0	1.7	1:00pm
8							
9	179.73	3.74	196.14	5.12	965.3	26.7	07:55
10	181.89	1.96	198.67	2.53	979.7	13.4	10:23
11	185.28	1.49	200.58	1.91	1009.7	10.0	10:04
12	185.13	1.75	202.66	2.08	1030.6	10.9	10:16am
13	186.59	1.44	204.79	1.63	1029.6	9.0	8:08pm
14	188.23	1.71	206.83	1.93	1059.9	10.3	7:50pm
15	191.81	2.93	209.61	3.45	1058.4	18.5	10:14am
16	194.09	2.89	212.86	3.19	1075.4	17.4	10:20am
17	195.48	1.39	214.47	1.61	1084.5	8.7	08:08
18	197.19	1.71	216.49	2.03	1095.3	10.6	8:16am
19	199.26	2.09	218.59	2.50	1107.2	12.6	7:44am
20	201.18	1.92	221.02	2.33	1119.5	11.7	7:49am
21	203.84	1.81	223.24	2.67	1130.7	11.2	7:50am
22	205.44	1.45	226.10	2.86	1145.4	14.7	10:56am
23	207.30	1.86	228.33	2.19	1156.3	10.9	7:47am
24	209.68	2.38	230.90	2.73	1170.5	14.3	7:54am
25	211.11	1.43	233.34	2.38	1182.9	12.4	8:05am
26	213.75	2.04	235.75	2.45	1195.4	12.5	8:28am
27	215.57	1.82	239.95	2.16	1206.5	11.7	8:34am
28	217.21	1.64	239.99	1.91	1216.4	9.9	7:30am
29	<del>221.39</del>	<del>4.42</del>	244.91	5.09	1241.2		
30	221.39	4.18	244.99	5.01	1241.10	25.3	7:56am
31	223.20	1.81	247.30	2.33	1252.10	11.0	7:26am

57.87  
Total Hours

71.45  
Total Hours

129.35  
0

371,100  
Total Flow

0

Month 30, 2020 PENNS PLACE 1 2019 2019 MONTH APR 1 2020 # 2  
 PUMP # 1 PUMP # 2 1202 12 11.0 7.0

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	225.44	1.94	249.65	2.34	1263.25	11.2	7:43am
2	227.38	2.13	252.28	2.51	1276.20	12.0	8:11am
3	229.26	1.94	254.62	2.33	1286.20	10.2	7:48am
4	230.11	1.91	256.55	2.11	1297.20	10.4	7:51am
5	—	—	—	—	—	—	—
6	235.31	4.19	261.39	4.09	1320.2	23.3	7:54am
7	237.22	1.97	264.26	2.33	1331.2	11.2	8:07am
8	239.24	2.03	266.56	2.35	1343.2	11.2	8:56am
9	241.29	2.05	268.84	2.28	1354.2	10.6	7:54am
10	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—
13	250.36	9.07	279.39	10.25	1403.2	49.4	8:34am
14	253.24	3.13	282.23	3.04	1420.2	16.8	8:33am
15	255.69	2.0	285.43	2.23	1437.2	12.0	7:26am
16	257.83	2.19	287.80	2.49	1444.2	12.5	8:06am
17	260.06	2.23	290.44	2.52	1456.2	11.2	8:23am
18	261.28	1.22	292.93	2.09	1467.2	11.3	7:20am
19	—	—	—	—	—	—	—
20	267.66	5.32	298.96	6.03	1495.2	37.9	8:06am
21	269.24	2.13	301.05	2.04	1507.2	11.3	8:07am
22	272.29	2.43	304.36	2.76	1519.2	12.3	8:27am
23	274.54	2.23	307.26	2.90	1531.2	11.2	8:26am
24	277.11	2.57	310.11	2.85	1544.2	12.2	8:27am
25	279.41	2.73	313.94	3.33	1558.2	14.0	2:51am
26	—	—	—	—	—	—	—
27	285.56	5.76	319.82	6.44	1585.2	27.2	7:42am
28	288.21	2.73	322.83	2.95	1598.2	13.2	8:26am
29	291.11	2.82	325.91	3.16	1613.2	13.5	10:48am
30	293.22	2.12	328.56	2.07	1623.2	11.0	8:26am
31	—	—	—	—	—	—	—

Total Hours 70.09      81.26      151.35      370,600  
 Total Flow 0

PENNS PLACE  
 Month "May"  
 PUMP # 1      PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	296.28	3.0	331.70	3.14	1637.2	14.0	10:11am
2	317.26	3.11	337.90	3.29	1647.1	9.8	7:45am
3	—	—	—	—	—	—	—
4	303.34	5.23	340.06	6.07	1673.5	26.4	7:53am
5	305.42	2.37	347.01	2.75	1685.2	12.0	8:06am
6	308.39	2.37	345.26	2.45	1697.6	12.4	8:07am
7	310.34	2.0	347.37	2.43	1709.7	12.2	8:07am
8	312.34	2.0	350.11	2.29	1721.4	11.3	8:06am
9	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—
11	319.44	6.9	358.03	7.52	1760.2	39.4	8:11am
12	322.26	2.32	361.29	3.20	1775.2	15.2	11:29am
13	324.23	1.47	365.73	2.20	1786.4	10.9	8:59am
14	326.29	2.06	365.92	2.49	1797.9	11.3	8:03am
15	328.69	2.4	368.21	2.39	1811.3	13.4	8:07am
16	331.1	2.33	371.36	2.44	1827.5	11.3	7:25am
17	—	—	—	—	—	—	—
18	336.74	5.13	377.03	5.73	1848.3	25.4	7:54am
19	338.53	2.39	379.13	2.10	1860.3	12.0	7:40am
20	340.77	2.46	382.20	3.43	1872.3	12.0	7:57am
21	343.81	2.55	385.92	2.36	1886.19	14.0	8:28am
22	346.07	2.26	388.03	2.26	1897.4	11.3	8:36am
23	348.16	2.14	390.25	2.6	1908.5	10.9	7:00am
24	—	—	—	—	—	—	—
25	354.78	6.46	399.69	9.61	1944.0	36.0	7:41am
26	↓	↓	↓	↓	↓	↓	↓
27	357.17	2.19	402.27	2.6	1956.5	11.3	7:41am
28	359.43	2.26	404.99	2.1	1968.3	11.2	8:06am
29	361.75	2.32	407.59	2.6	1980.2	11.2	7:54am
30	363.91	2.18	409.98	2.39	1990.7	10.7	7:15am
31	—	—	—	—	—	—	—

Total Hours 76.64      Total Hours 81.42      Total Flow 152.06      Total Flow 367,400      0

PENNS PLAGE

Month June 2016

480  
PUMP #1

7.16  
489.98  
PUMP #2

2.34 1190.7 10.7 7.151997

Day	Reading	Run Time	Reading	Run Time	Merer	Flow	Time
1	369.53	5:40	416.17	6:19	2017.8	27.1	6:529
2	371.44	2:32	418.55	2:43	2028.4	10.6	7:51am
3	373.74	2:30	421.21	2:04	2039.2	11.2	8:29am
4	375.75	2:01	423.02	2:31	2049.4	9.2	9:06am
5	376.00	2:23	426.20	2:6	2060.3	10.9	10:06am
6	380.14	2:14	438.78	2:53	2070.9	10.0	7:10am
7	—	—	—	—	—	—	—
8	385.01	5:47	435.04	6:28	2080.2	25.9	8:11am
9	388.33	2:72	438.23	3:42	2110.2	13.2	12:18am
10	390.36	2:23	441.03	2:23	2121.2	11.5	11:06am
11	392.62	2:06	443.50	2:47	2132.7	11.2	8:36am
12	395.00	2:38	446.24	2:76	2146.0	13.3	8:36am
13	396.77	1:17	448.34	2:13	2156.4	10.4	7:00am
14	—	—	—	—	—	—	—
15	400.02	4:26	453.53	5:4	2181.0	25.2	10:56am
16	402.73	1:72	455.79	1:46	2191.3	9.2	8:43am
17	404.92	2:03	457.21	2:32	2203.0	11.7	8:26am
18	406.30	1:72	459.42	2:22	2213.4	10.2	9:38am
19	408.92	2:42	462.21	2:29	2227.2	14.4	1:26pm
20	410.12	1:2	464.23	1:32	2231.9	6.9	7:15am
21	—	—	—	—	—	—	—
22	414.24	4:19	468.96	4:33	2259.2	24.4	9:49am
23	416.93	2:46	471.77	2:21	2273.3	14.2	2:03pm
24	418.31	1:36	473.34	1:27	2271.2	7.2	8:06am
25	420.06	1:45	475.49	2:15	2292.2	10.2	8:11am
26	422.23	2:2	478.00	2:31	2304.2	12.2	11:20am
27	423.71	1:47	479.77	1:17	2312.4	8.1	7:00am
28	—	—	—	—	—	—	—
29	427.52	4:19	484.21	5:04	2335.2	23.2	8:26am
30	430.36	2:34	487.56	2:15	2347.9	12.6	11:21am
31	—	—	—	—	—	—	—

66.33  
Total Hours

77.58  
Total Hours

143.91

357,200  
Total Flow

PENNS PLACE  
 430  
 PUMP # 1

2.11

487.92  
 PUMP # 2

Month JULY 2020

2.10

2347.2

12.6

11.21

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	432.26	2.10	487.92	2.36	2358.7	10.3	1:24 PM
2	433.21	1.55	491.79	1.55	2367.3	8.6	10:20 AM
3	435.74	1.93	493.95	2.18	2378.3	11.9	2:02 PM
4	436.91	1.17	495.29	1.34	2385.1	6.9	8:00 AM
5	-	-	-	-	-	-	-
6	440.33	3.92	495.68	4.4	2407.2	22.5	9:43 AM
7	442.52	2.01	502.03	2.34	2419.5	11.5	10:33 AM
8	444.21	1.15	504.25	2.26	2430.5	11.0	11:05 AM
9	446.59	2.02	508.34	2.30	2442.0	11.2	10:26 AM
10	448.47	1.54	508.14	1.09	2450.4	8.4	7:50 AM
11	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-
13	456.15	7.68	517.19	8.81	2492.2	42.2	7:52 AM
14	459.42	2.27	519.68	2.49	2504.4	11.8	8:01 AM
15	460.92	2.3	522.32	2.2	2515.9	13.2	10:30 AM
16	463.52	2.13	524.95	2.37	2528.00	10.2	10:28 AM
17	465.03	1.98	527.26	2.31	2538.2	10.3	10:26 AM
18	466.45	1.8	529.13	1.87	2547.6	8.8	7:45 AM
19	-	-	-	-	-	-	-
20	471.83	5.0	534.22	5.25	2572.11	25.2	10:26 AM
21	474.81	2.98	537.83	2.45	2584.9	12.0	1:03 AM
22	475.39	0.58	538.45	0.62	2591.1	6.4	7:09 AM
23	477.20	2.51	541.20	2.12	2605.5	14.4	9:07 AM
24	470.12	2.17	543.42	2.29	2617.2	11.4	11:03 AM
25	481.64	1.57	545.05	1.79	2625.9	8.7	6:30 AM
26	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-
28	499.90	2.64	552.93	2.9	2662.6	13.5	10:00 AM
29	490.65	1.85	554.87	2.04	2672.5	9.9	8:04 AM
30	494.22	3.57	558.02	3.15	2687.5	15.0	8:54 AM
31	496.41	2.19	560.05	2.03	2699.3	10.7	7:30 AM

66.15  
 Total Hours

72.49  
 Total Hours

138.64

350,300

Total Flow

0

PENNS PLACE

Month Aug 20

7/21 498.46  
PUMP #1

30.9

66000  
PUMP #2

1000

1698.2

10.9

2.000

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	498.46	1.99	562.18	2.13	2709.1	10.9	6:25 AM
2	—	—	—	—	—	—	—
3	502.98	4.54	567.02	4.84	2732.7	24.6	10:07 AM
4	504.96	2.02	569.11	2.09	2744.8	11.1	8:11 AM
5	507.57	2.61	572.10	2.99	2754.5	14.7	7:55
6	509.63	2.06	574.25	2.15	2770.5	11.0	7:45 AM
7	511.49	1.57	576.38	2.17	2780.7	10.2	8:00 AM
8	513.48	1.99	578.50	<del>2.18</del>	2791.1	10.9	6:45 AM
9	—	—	—	—	—	—	—
10	518.05	4.57	583.39	4.89	2815.1	14.0	8:00 AM
11	520.57	2.52	586.20	2.81	2828.2	13.1	7:36 AM
12	522.71	2.14	588.57	2.37	2840.3	12.1	7:31 AM
13	525.04	2.33	590.97	2.40	2852.7	12.4	7:52 AM
14	<del>527.09</del>	2.05	593.09	2.12	2863.8	11.1	7:25 AM
15	529.07	1.98	595.05	2.06	2874.5	10.7	6:50 AM
16	<del>532.34</del>	<del>1.92</del>	<del>598.89</del>	<del>1.54</del>	—	—	—
17	533.34	4.22	599.65	4.54	2897.9	23.4	7:28 AM
18	535.17	2.38	602.23	2.54	2910.4	12.2	10:29 AM
19	537.71	1.96	604.32	2.09	2921.1	10.5	8:10 AM
20	539.77	2.06	606.54	2.22	2932.1	11.0	8:00 AM
21	541.55	1.78	608.52	1.95	2941.6	9.5	8:10 AM
22	543.33	1.78	610.41	1.89	2950.7	9.1	6:50 AM
23	—	—	—	—	—	—	—
24	547.55	4.11	614.98	4.57	2979.5	12.8	10:00 AM
25	549.41	1.86	618.95	1.97	2983.3	9.8	10:42 AM
26	551.43	2.02	619.19	2.24	2994.1	11.1	10:10 AM
27	553.20	1.77	621.11	1.92	3003.8	9.4	9:25 AM
28	555.00	1.80	623.12	2.01	3013.5	9.7	7:51 AM
29	557.32	2.38	625.60	2.48	3022.1	8.6	6:45 AM
30	—	—	—	—	—	—	—
31	562.49	5.87	631.76	6.16	3054.3	12.2	11:11 AM

66.89  
Total Hours

76.71  
Total Hours

137.99

352,100  
Total Flow

PENNS PLACE

Month SEPTEMBER 2020

07341100 021 09  
PUMP # 1

3.91

641.46

2.16

3050.3

25.3

10.00

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Water	Flow	Time
1	565.14	2.115	634.145	2.73	3023.1	12.7	10.01
2	562.91	1.77	630.47	1.98	3013.0	9.9	7.35
3	569.41	2.50	639.27	2.8	3096.8	13.8	10.18
4	571.36	1.95	641.47	2.21	3097.6	10.2	10.07
5							
6							
7	577.07	5.75	647.73	6.25	3127.8	20.2	0612
8	579.22	2.19	650.22	2.52	3139.3	11.5	9.06
9	580.92	1.69	651.92	1.81	3148.1	8.8	7.35
10	582.60	1.74	654.15	2.23	3158.9	10.8	7.37
11	584.72	2.06	656.13	1.98	3168.3	9.4	7.25
12	586.63	1.91	658.28	2.15	3178.5	10.2	6.35
13							
14	591.00	4.37	663.22	4.94	3201.8	23.3	0553
15	593.12	3.12	665.60	3.41	3213.2	11.4	11.01
16	594.85	1.73	667.57	1.95	3222.5	9.3	0900
17	596.58	1.73	669.45	1.88	3231.4	8.9	7.25
18	598.69	2.11	671.29	2.34	3242.1	10.7	7.40
19	600.42	1.73	673.04	1.99	3250.9	8.5	6.40
20							
21	605.03	4.61	678.77	5.07	3273.6	22.7	0501
22	606.90	1.77	680.64	1.97	3283.0	9.4	8.54
23	608.37	1.59	682.54	1.85	3291.9	8.9	7.53
24	610.72	2.33	685.03	2.49	3304.6	12.7	1.00
25	612.09	1.53	686.47	1.44	3310.9	7.3	7.50
26	614.70	2.04	688.20	1.79	3320.8	8.9	6.50
27							
28	616.16	4.46	688.17	4.91	3342.7	23.9	10.00
29							
30	623.10	4.94	695.13	5.06	3367.6	24.9	8.22
31							

57.96

66.47

129.43

319,300

Total Hours

Total Hours

Total Flow

PENNS PLACE

Month October 2020

632.10  
PUMP #1

688.23  
PUMP #2

3269.6

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	615.24	2.14	700.59	2.36	3380.5	10.9	7:36 AM
2	627.91	1.47	702.04	2.1	3400.1	9.6	7:30 AM
3							
4							
5	634.15	2.08	710.41	1.92	3425.5	9.7	11:11 AM
6	636.46	2.27	713.09	2.48	3436.2	10.7	10:43 AM
7	638.24	1.78	715.23	2.14	3445.2	9.0	8:19 AM
8	640.88	2.44	718.06	2.83	3457.6	9.4	6:06 PM
9	642.31	1.79	719.31	1.75	3465.2	13.4	11:56 AM
10	644.61	1.7	721.61	1.30	3470.9	7.9	6:30 AM
11							
12	649.53	5.52	727.88	6.21	3500.1	27.2	10:41 PM
13	651.80	2.27	730.50	2.62	3512.8	12.7	10:08 AM
14	653.53	1.73	732.47	1.93	3522.4	9.6	8:54 AM
15	655.37	1.84	734.40	1.97	3532.2	9.8	8:10 AM
16	657.51	2.14	736.18	1.78	3543.9	11.7	9:43 AM
17	659.77	2.90	739.09	3.16	3550.0	13.3	8:45 PM
18	664.02		<del>743.98</del>		<del>3575.8</del>		
19	664.02	4.25	743.98	4.64	3578.8	34.9	7:52 AM
20	666.24	2.22	746.44	2.46	3590.6	11.8	9:54 AM
21	667.86	1.64	748.25	1.81	3599.2	8.6	07:50
22	670.17	2.29	750.67	2.42	3610.8	11.6	9:10 AM
23	672.00	1.83	752.72	2.05	3620.2	9.4	2:35 PM
24							
25							
26	678.18	6.18	759.62	6.90	3651.8	31.6	7:28 AM
27	680.39	2.2	762.11	2.44	3663.4	11.6	9:36 AM
28	682.43	3.65	764.37	2.86	3674.7	14.3	12:19 PM
29	683.84	1.56	765.88	1.51	3682.2	7.5	7:57 AM
30	687.04	3.2	769.59	3.71	3700.2	18.0	2:05 PM
31	689.74	2.1	772.61	3.02	3715.2	16.0	9:50 AM

66.64  
Total Hours

74.78  
Total Hours

141.02

345,600  
Total Flow



PENNS PLACE

MONTH Nov 20

10/21 689.77

11

112.61

1.00

3115.2

15.0

1.5000

PUMP # 1

PUMP # 2

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	691.77	2.23	775.01	2.40	3727.0	11.5	10:44
2	694.38	2.41	778.98	2.77	3741.0	14.0	9:25
3	696.53	2.15	780.15	2.37	3751.5	10.5	11:00 AM
4	698.40	1.87	782.21	2.06	3761.4	9.5	8:54
5	700.80	2.40	784.35	2.64	3774.2	12.8	11:26 PM
6							
7	704.05	3.35	788.63	3.78	3792.0	17.8	9:57 AM
8	704.87	1.82	790.66	2.05	3804.7	7.7	7:17
9	708.02	2.75	792.67	2.01	3816.3	12.6	11:09 AM
10	710.57	1.95	795.77	2.08	3826.4	10.1	10:59 AM
11	712.02	1.45	797.38	1.61	3834.0	7.6	6:38
12	714.54	2.52	800.25	2.82	3847.4	13.4	7:45 AM
13	717.14	2.60	803.25	3.00	3860.2	13.8	10:09 AM
14	718.87	1.73	805.19	1.94	3870.2	9.0	9:00 AM
15	721.14	2.27	807.73	2.54	3882.0	11.8	5:52
16	723.57	2.43	810.38	2.65	3894.3	12.3	7:47
17	725.71	2.24	812.71	2.33	3906.2	10.9	7:50
18	728.25	2.54	815.71	3.0	3918.3	13.1	11:00 AM
19	730.25	2.00	817.94	2.23	3928.6	10.3	10:00 AM
20	732.09	1.81	819.92	1.98	3938.2	9.6	08:35
21	734.24	2.25	822.56	2.04	3950.9	12.7	10:20 AM
22	736.32	1.95	824.82	2.26	3961.7	10.1	
23	738.57	2.19	827.05	2.26	3972.8	11.8	7:40 AM
24	741.03	2.52	829.2	2.26	3986.3	15.5	10:03 AM
25	743.00	1.92	832.05	2.19	3996.7	10.4	8:10 AM
26	745.61	2.61	834.97	2.92	4011.5	14.8	11:48 AM
27	747.53	1.92	837.07	2.1	4022.6	11.3	9:40 AM
28	749.60	2.07	839.21	2.16	4034.1	11.5	9:45 AM
29							
30	751.21	4.65	841.30	5.07	4060.8	26.7	1:10
31							

64.51  
Total Hours

71.69  
Total Hours

136.20  
0

345,600  
Total Flow

0

PENNS PLACE

Month Dec 2022

7/30 26.16 PUMP # 1 4.65 847.00 PUMP # 2 5.07 4060.00 26.7 10/14/22

Day	Reading	Run Time	Reading	Run Time	Meter	Flow	Time
1	757.12	2.87	847.63	3.23	3877.5	16.7	10:27 AM
2	759.26	2.14	849.86	2.23	4052.3	16.8	10:25 AM
3	762.50	2.14	852.41	2.55	4103.7	19.4	9:50 AM
4	764.47	1.97	854.51	2.10	4114.8	11.1	9:33 AM
5	766.52	2.11	856.86	2.35	4126.8	12.0	9:53 AM
6							
7	771.32	4.78	852.12	5.21	4154.4	27.6	10:41 AM
8	773.12	1.76	864.67	1.94	4164.3	9.9	9:25 AM
9	775.25	2.13	866.41	2.34	4176.3	12.0	10:34 AM
10	776.46	1.74	868.41	2.00	4186.2	9.9	8:45 AM
11	779.14	2.18	870.86	2.41	4197.2	11.2	9:54 AM
12							
13	782.40	3.76	874.99	4.17	4218.2	20.3	7:36
14	785.34	2.44	877.57	2.58	4231.3	13.1	9:30 AM
15	787.55	2.21	880.03	2.46	4243.3	12.0	10:02 AM
16	789.24	1.09	881.84	1.81	4257.3	9.0	8:45
17	791.28	2.04	884.85	3.01	4267.4	11.1	10:25 AM
18	793.33	2.04	886.57	1.45	4274.8	11.2	10:27 AM
19	794.95	1.63	888.25	1.82	4283.7	8.9	9:25 AM
20	797.07	2.84	892.48	2.43	4295.0	11.5	7:5
21	799.90	2.01	893.88	3.02	4304.9	14.2	10:11 AM
22	801.45	1.55	896.26	1.78	4318.1	8.2	7:18
23	803.80	2.35	898.07	2.41	4325.1	11.5	
24	805.92	2.12	900.39	2.32	4340.9	11.0	9:45 AM
25	808.44	2.57	903.94	2.95	4354.8	13.9	7:30 AM
26							
27							
28	816.52	8.03	912.29	8.95	4396.8	42.0	11:06 AM
29	818.04	7.02	914.54	2.36	4407.4	16.6	10:42
30	820.33	2.19	916.51	1.82	4416.4	9	8:10
31	822.92	2.07	918.74	2.23	4427.0	10.5	8:08

68.17  
Total Hours

74.64  
Total Hours

142.61  
0

366,000  
Total Flow

0

WEATHER	TIME	READING	GALLONS
SUNNY	9:45 AM	49682503	1,378,746
cloudy	10:53 am	497922029	1,219,526
Sunny	1:03 pm	499012599	1,080,570
Rain	10:20 am	499904511	821,912
Rain	7:30 am	500913391	909,390
		501928625	1,114,734
SUNNY	11:15 AM	503189898	1,261,273
OVERCAST	10:59 AM	504192926	1,005,250
OVERCAST	11:26 am	505154729	901,803
SUNNY & Cloudy	10:20 AM	506100810	946,081
OVERCAST	10:41 am	507076922	976,112
Sunny	7:25 AM	507819099	742,117
Sunny	9:43 AM	508889301	1,070,202
Cloudy	10:42 am	509940926	1,051,525
Cloudy	11:26 am	510904328	963,502
Sunny	12:01 PM	511861752	957,424
PARTLY SUNNY	1:58 PM	512883425	1,021,673
Sunny	1:40 PM	513826980	943,555
Cloudy	6:55 AM	514434302	607,322
cloudy	6:35 am	515433972	998,630
Sunny	6:50 am	516476534	1,045,562
Sunny	9:44 am	517589860	1,113,326
Sunny	11:53 am	518544639	754,794
Sunny	7:50 AM	518382906	501,252
Sunny	0741	520205041	819,135
RAIN	11:50 AM	521325999	1,120,558
Sunny / Cloudy	9:00 AM	522879008	1,553,009
OVERCAST	1:26 pm	524367524	1,488,921
cloudy	1:20 pm	525435075	1,009,546
Sunny	1:50 pm	526468283	1,033,208
Sunny	1:25 pm	527466724	998,441
Sunny	12:37 pm	528422435	955,711

MONTH OF JAN. 2020

TOTAL 31,859,932

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

SUNNY

WEATHER

12:37 pm  
TIME  
52842435  
READINGS

955.711  
GALLONS

1	Cloudy	7:25 AM	529137681	710,246
2	Sunny	10:43 AM	531131735	1,197,054
3	Sunny	1:28 PM	531522550	1,202,815
4	Cloudy	1:28 PM	532474133	951,583
5	'	1:12	533331179	857,046
6	Partly Sunny	4:08 PM	534742270	1,411,091
7	Rain	11:20 AM	535880696	1,138,426
8				
9	Sunny	9:37 AM	538158246	2,273,050
10	Cloudy / Rain	1:41 PM	539506212	1,332,446
11	Rain	9:02 AM	540514514	1,008,302
12	Sunny	8:29 AM	541931370	1,416,846
13	Partly Sunny	2:00 PM	543501146	1,569,772
14	Sunny	11:18 AM	544798700	1,297,554
15	Sunny	3:20 PM	546252129	1,453,429
16	Cloudy	7:14 AM	546967712	715,583
17	Sunny	7:20 AM	548140737	1,173,177
18	Cloudy	10:37 AM	5494606360	1,319,797
19	Sunny	1:16 AM	550659119	1,199,143
20	Cloudy	1:41 PM	551713139	1,053,360
21	Sunny	2:22 PM	552774344	1,246,205
22	Sunny	7:20 AM	553435341	655,598
23	Sunny	7:10 AM	554416433	921,091
24	Sunny	10:52 AM	555770399	1,317,866
25	Clouds / Rain	10:34 AM	556740470	1,010,171
26	Cloudy	10:52 AM	557773180	1,032,716
27	Sunny	9:05 AM	558792331	1,019,151
28	Cloudy	7:35 AM	559781406	989,069
29	Sunny	7:00 AM	560773885	992,429
30				
31				

MONTH OF 2/20

TOTAL 32,351,450

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

WATER METER READING

DATE	WEATHER	(Accumulated Service Time) T. 30 min TIME	72 READING	5114 GALLONS
1	Sunny	9:18 AM	561891924	1116,014
2	Sunny	9:20 AM	562972814	1,000,835
3	Cloudy	1:53 PM	564135823	1,112,31018
4	Sunny	10:42 AM	565024353	884,471
5	"	10:57 AM	565935762	915,401
6	Cloudy	9:15 AM	56744214	909,152
7	Sunny	7:00 AM	56761849	882,652
8				
9	Sunny	11:18 AM	567879066	2,247,167
10	Cloudy	10:21 AM	570305543	226477
11	Sunny	10:45 AM	571733333	927,940
12	Cloudy	10:44 AM	572685247	951,714
13	Cloudy	2:55 PM	573530792	845,545
14	Sunny	7:30 AM	574486634	955,812
15	Sunny	10:20 AM	575579156	1,086,522
16	Sunny	10:40 AM	576610852	1,037,690
17	Raining	0845	577448140	837,288
18	Sunny	10:18 AM	578480729	1,332,539
19	Raining	8:22 AM	579563429	1,082,700
20	Sunny	11:29 AM	581135126	1,571,699
21	Sunny	7:12 AM	582062673	926,447
22	Sunny	11:32 AM	58330404	11301,936
23	Raining	8:24 AM	584236328	872,317
24	Cloudy	8:26 AM	585877326	1,640,998
25	Cloudy	9:43 AM	587219129	1,341,803
26	Sunny	8:40 AM	588321326	1102,159
27	Sunny	9:48 AM	589497729	1,196,408
28	Haze	7:50 AM	590514975	1,013,244
29				
30	Cloudy	8:20 AM	593502629	2,987,656
31	Raining	8:43 AM	594742429	1,239,800

MONTH OF March - 2006

TOTAL 33,968,544

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

DATE	WEATHER	TIME	READING	GALLONS
1	SUNNY	10:23 AM	546014526	1,222,097
2	SUNNY	9:54 AM	59711629	1,091,103
3	Light Rain/Cloudy	9:29 AM	598134928	1,093,299
4	Cloudy	8:20 AM	591112802	1,071,968
5	<del>SUNNY</del>	<del>8:20 AM</del>	<del>591112802</del>	<del>1,071,968</del>
6	SUNNY		601264106	2,127,218
7	OVERCAST	9:26 AM	602303629	2,039,523
8	SUNNY	10:56 AM	603379529	2,075,960
9	Cloudy	9:32 AM	604392626	1,993,091
10	Rain Heavy	9:30 AM	<del>604392626</del>	<del>1,993,091</del>
11				
12				
13	Heavy Rain	10:14 AM	608754229	4,321,603
14	SUNNY	9:44 AM	610586126	3,831,397
15	SUNNY	11:02 AM	611959529	4,373,403
16	SUNNY	10:11 AM	613146392	2,186,863
17	SUNNY	10:07 AM	614306528	2,160,136 / 2,160,136
18	Rain	7:45 AM	615332276	1,625,748
19				
20	cloudy	10:06 AM	617726429	2,394,153
21	OVERCAST	10:07 AM	618856626	1,130,197
22	SUNNY	10:53 AM	620062628	1,206,002
23	Cloudy	10:06 AM	621030929	968,301
24	Heavy Rain	10:07 AM	622421829	1,390,800
25	Sunny	7:46 AM	623715802	1,303,923
26	<del>SUNNY</del>			
27	Cloudy	10:09 AM	626541929	2,816,127
28	SUNNY	9:54 AM	627709526	1,117,599
29	OVERCAST	10:06 AM	628855829	1,146,303
30	Rain Heavy	10:25 AM	629981207	1,125,378
31				

MONTH OF APRIL 2020

TOTAL 35,238,778

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

17021  
5/1/2020

Henry Basin

NO. 111  
7/25/19  
Accumulated

FORM F-22  
629,981,207  
Service Form

1,125,378

WEATHER

TIME

READING

GALLONS

1	Cloudy / Rain	9:41am	631,799,329	2,518,182
2	Sunny	7:30am	634,772,977	1,271,643
3	—	—	—	—
4	Sunny	9:43am	635,385,326	2,612,349
5	Sunny	9:58am	636,539,954	6,142,028
6	Cloudy	10:36am	637,659,929	1,125,975
7	Sunny	9:32am	638,673,181	1,013,252
8	Cloudy	10:54am	639,797,828	1,124,649
9	—	—	—	—
10	—	—	—	—
11	Cloudy	10:07am	643,164,826	3,366,998
12	Sunny	1:29pm	644,389,756	1,224,930
13	Sunny	8:03am	645,110,526	920,790
14	Sunny	9:07am	646,133,427	1,022,901
15	Sunny	9:36am	647,137,811	1,004,384
16	Cloudy	7:55am	648,001,899	910,657
17	—	—	—	—
18	Sunny	10:36am	650,194,829	2,143,381
19	Clear	8:04am	651,029,336	834,507
20	Sunny	10:52am	652,057,529	1,028,193
21	Sunny	7:54am	652,847,892	790,363
22	OVERCAST	10:07am	653,044,969	196,877
23	Rain	7:25am	654,647,664	1,602,875
24	—	—	—	—
25	—	—	—	—
26	Cloudy	8:46am	657,645,391	2,997,747
27	Cloudy	8:40am	658,437,856	792,465
28	OVERCAST	9:41am	659,270,628	832,772
29	Cloudy	8:28am	659,491,229	720,601
30	Sunny	7:50am	660,739,807	748,578
31	—	—	—	—

MONTH OF May 2020

TOTAL

30,758,600

LOW READING

HIGH READING

REMARKS:

5/30 Sunny

DATE: 5/30 FROM: 12:00  
 7:50 AM 660739807  
 (Accumulated Sewage Flows)

748,578

	WEATHER	TIME	READING	GALLONS
1	Sunny	12:12	662445890	1,706,033
2	Cloudy	9:16 AM	663084,836	638,906
3	Sunny	8:20 AM	663765800	680,974
4	Sunny	8:11 AM	664536326	790,520
5	Sunny	10:28 AM	665446605	890,279
6	Cloudy	7:35 AM	666172551	835,946
7	—	—	—	—
8	OVERCAST	7:36 AM	6668062,992	1,290,441
9	Sunny	10:03 AM	669,034,226	971,234
10	Sunny	9:58 AM	669,782,429	748,203
11	Cloudy	9:50 AM	670,499,960	717,497
12	Sunny	9:29 AM	671,252,381	752,455
13	Sunny	7:45 AM	672038971	784,590
14	—	—	—	—
15	Sunny	8:44 AM	673,754,206	1,717,235
16	Sunny	9:03 AM	674,593,628	839,422
17	Sunny	9:30 AM	675,365,669	772,041
18	Rain	9:58 AM	676,200,626	834,957
19	Sunny	7:59 AM	677057,529	856,903
20	Sunny	8:20 AM	677879498	821,969
21	—	—	—	—
22	SUNNY	10:00 AM	679,797,029	1,897,531
23	SUNNY	2:20 PM	680,779,206	1,002,177
24	SUNNY	11:31 AM	681,497,481	718,275
25	SUNNY	10:11 AM	682,250,028	752,547
26	SUNNY	7:54 AM	682,965,481	715,453
27	Cloudy	6:40 AM	683,733,014	767,563
28	—	—	—	—
29	SUNNY	7:39 AM	685,476,326	1,743,282
30	SUNNY	7:43 PM	686,307,556	831,230
31				

MONTH OF June 2020

TOTAL 25,567,749

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_



7/1/20

SUNNY  
WEATHER

Approximate  
Time

Serial, Final  
GPE, 309, 552  
READING

731,230  
GALLONS

1	SUNNY	10:26 AM	687,182,792	875,236
2	SUNNY	7:56 AM	687,764,354	681,522
3	PARTLY SUNNY	2:33 PM	688,885,4102	1,030,108
4	Cloudy	8:50 AM	689,484,482	590,030
5				
6	SUNNY	6:03 AM	691,120,456	1,635,974
7	SUNNY	11:03 AM	691,499,328	818,892
8	Cloudy	8:09 AM	692,681,711	682,583
9	SUNNY	9:56 AM	693,520,007	838,296
10	Rain	8:25 AM	694,203,470	693,463
11				
12				
13	CLEAR	7:52	697,488,900	3,285,450
14	SUNNY	9:03	698,395,676	906,256
15	SUNNY	8:15 AM	699,099,429	703,753
16	OVERCAST	8:11 AM	699,812,126	712,697
17	Cloudy	10:03 AM	700,645,006	832,880
18	Sunny	8:15 AM	701,297,981	652,895
19				
20	SUNNY	10:03 AM	703,013,081	1,715,100
21	SUNNY	12:00 NOON	703,897,228	884,147
22	SUNNY	10:00 AM	704,579,129	681,951
23	OVERCAST	8:06 AM	705,292,226	713,097
24	Cloudy	8:11 AM	706,201,211	908,985
25	Cloudy	7:25 AM	707,116,279	955,188
26				
27			708,777,911	1,522,502
28	Sunny	10:57	709,469,850	916,949
29	"	9:45	710,600,840	730,790
30	"	8:09 AM	711,319,376	718,536
31	Cloudy	8:45 AM	712,108,561	789,185

MONTH OF July 2020

TOTAL 25,801,005

REMARKS:

LOW READING \_\_\_\_\_  
HIGH READING \_\_\_\_\_

7/51	Cloudy WEATHER	Approximate Rainfall TIME	Flowmeter Reading	789,185 GALLONS
1	Sunny	7:20 am	710252394	743,833
2	<del>Sunny</del>	7:42 am	<del>714414707</del>	<del>1,562,313</del>
3	Sunny	7:42 am	714414707	1,562,313
4	Rain	7:34 am	715237118	822,411
5	Sunny	9:22 am	716646837	1,453,719
6	Rain	8:20 am	717854970	1,164,113
7	"	8:11 am	718443794	588,824
8	Sunny	7:58 am	719191690	747,876
9			<del>721</del>	
10	Mist	5:27 am	720795851	1,604,191
11	Stompy + Hot	8:49 am	721562849	766,968
12	"	8:49 am	722804323	741,424
13	"	8:42 am	722893434	689,111
14	"	8:12 am	723703123	709,689
15	Cloudy	7:35 am	724503317	900,194
16				
17	Sunny + Pleasant	8:19 am	72664909	1,561,542
18	Sunny & Comfortable	8:00 am	726880928	816,019
19	Cloudy	10:00 am	727720151	839,223
20	Sunny	8:15 am	728391971	671,220
21	"	7:52 am	729104534	713,163
22	Cloudy	7:30 am	729820583	715,849
23				
24	Sunny	1:00 pm	731575175	1,184,768
25	Sunny	11:23 am	732243774	668,546
26	Sunny	10:39 am	732948154	704,302
27	Sunny	11:07 am	733717412	709,262
28	Sunny	8:13 am	734315566	597,950
29	Rain	7:30 am	735102980	787,614
30				
31	Cloudy	10:48 am	736851428	1,254,448

MONTH OF August 2020

TOTAL 29,748,859

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

40331-241

10.42mm  
 Accumulated  
 736851428  
 Source Ponds

1.757.448

	WEATHER	TIME	READING	GALLONS
1	Cloudy	10:00 AM	737004051	712,625
2	Cloudy	10:02	738210099	777,646
3	Sunny	10:44 AM	739067055	775,356
4	Sunny	10:26 AM	739812411	745,356
5				
6				
7	<del>Sunny</del>	08:37	741838898	2,026,487
8	Sunny	08:07 AM	742625428	986,530
9	Cloudy	9:45 AM	743352190	726,762
10	Partly Cloud	8:37 AM	744114898	762,768
11	Sunny	7:50 AM	744921187	506,299
12	Sunny	7:05 AM	745709389	799,202
13				
14	Sunny	10:17 AM	747498652	1,789,263
15	P.E.H.C	7:41 AM	748064815	566,466
16	Sunny	10:36 AM	748809569	744,751
17	Sunny	8:15 AM	749370289	560,660
18	Cloudy	7:57 AM	75005533	635,304
19	Sunny	7:10 AM	75060228	597,688
20				
21	LI	8:04 AM	752104061	7,500,810
22	Sunny	9:35 AM	75282515	719,454
23	Sunny	1:05	753712422	926,107
24	Cloudy	1:19 PM	754512968	760,546
25	Cloudy	7:15 AM	754979834	486,865
26	Cloudy	7:05 AM	755660572	660,538
27				
28	Cloudy	10:59 AM	757241100	1,576,728
29				
30	Cloudy	7:34 AM	759196582	1,955,462
31				

MONTH OF \_\_\_\_\_

TOTAL 22,345,134

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

DATE 30 2020 - C16004

Accumulated Storage From 7:17 TIME 7:17:22 READING

1,455,462 GALLONS

WEATHER	TIME	READING	GALLONS
1 Sunny + Brist	8:27 A	760282800	1,085,733
2 Rain	8:25 am	761051692	769,392
3			
4			
5 Cloudy	11:30 am	763517353	2,465,661
6 Sunny	11:01 AM	764230647	713,294
7 "	10:52 A	764916169	715,522
8 Sunny	1:25 AM	765742562	796,393
9 Sunny	10:40 am	766328329	585,767
10 Sunny	2:15 PM	766320796	542,107
11			
12 Rain	11:10 am	768581581	1,711,145
13 Sunny	10:30 am	769696876	1,115,295
14 "	10:28	770558997	862,121
15 "	8:57 A	771275517	719,520
16 RAIN	9:57 am	772093588	815,071
17 Sunny	7:55 AM	773211495	1,183,711
18			1,836,908
19 Sunny	8:00 am	77514207	
20 RAIN	7:58 AM	775922429	808,222
21 Cloudy	08:21	776747642	825,213
22 Cloudy	9:25 am	777567285	819,643
23 Cloudy	7:55 AM	778259083	691,798
24			
25			
26 Rain	8:27 A	780537771	2,278,685
27 Sunny	11:01	781386397	848,626
28 Cloudy	10:49 AM	782129968	743,571
29 Rain	8:27 A	782766514	636,546
30 Rain	8:15 am	784520918	1,175,404
31 Sunny	10:30 AM	786044455	1,528,037

MONTH OF October 2020

TOTAL 26,852,393

REMARKS:

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

10/31	Sunny WEATHER	Morning (Start of Service Flow) 10:00 AM TIME	756 015 155 READING	1,538,437 GALLONS
1	Cloudy	10:58 AM	797142226	1,093,271
2	Clear	10:48 AM	798422408	1,286,182
3	Sunny	11:31 AM	789459448	1,037,040
4	"	9:32 AM	790282451	873,003
5	Sunny	11:49 PM	791356517	1,079,066
6				
7	Sunny	10:15 AM	792916578	1,150,061
8	Sunny	7:29 AM	793723670	810,054
9	Sunny	1:31 PM	794889697	1,167,088
10	Sunny	11:45 AM	795643361	753,164
11	Cloudy	6:52 AM	796210608	623,247
12	Rain	11:30 AM	797657068	1,390,460
13	RAPID	10:45 AM	799151830	1,444,762
14	Sunny	9:45 AM	800223477	1,071,647
15	Cloudy	10:05 AM	801110201	1,186,724
16	Sunny	10:57 A	802680387	1,270,186
17	Sunny	8:05 A	803637021	787,694
18	Sunny	10:17 A	804068521	1,037,500
19	"	10:14 A	805521866	853,745
20	Sunny	09:50	806380846	858,780
21	Sunny	10:45 AM	807204371	823,725
22	no day	7:25 AM	807486574	784,204
23	Rain	7:55 AM	809025616	1,037,041
24	Sunny	9:29 AM	810037081	1,011,465
25	"	10:04 A	810944969	907,808
26	Sunny	11:09 AM	812074487	1,135,018
27	Sunny	9:21 AM	813054129	454,142
28	Sunny	10:10 AM	813984659	950,530
29				
30	Rain & Rain	10:47 A	815975119	1,990,460
31				

MONTH OF Nov. 31

TOTAL 29,926,164

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ROPER SUN FLOW METER

(Accumulated Sewage Flow)

	WEATHER	TIME	READING	GALLONS
1	Cloudy	11:42 AM	817867827	1,581,955
2	Partly Sunny	10:52 AM	818936690	1,067,613
3	Sunny	8:49 AM	819904144	1,072,454
4	Cloudy	9:58 AM	821088106	1,115,962
5	Rain	10:45 AM	822358557	1,220,451
6	<del>Sunny</del>			
7	Sunny & chilly	9:37 AM	825057875	2,678,308
8	Cloudy	10:20 AM	826115109	1,017,214
9	Partly Sunny	10:12 AM	827232124	1,127,025
10	Sunny	9:12 AM	828217439	979,305
11	Sunny	10:06 AM	829274329	1,056,890
12				
13	Sunny	9:12 AM	831180078	1,828,749
14	Rain	9:41 AM	832191869	1,041,791
15	Sunny	11:29 AM	833551887	1,390,018
16	Cloudy	10:04 AM	834430974	849,081
17	Sunny	10:41 AM	835435575	1,002,601
18	OVERCAST	10:07 AM	836473526	1,037,951
19	Sunny	10:15 AM	837376489	907,963
20	Cloudy	7:50 AM	838292355	915,866
21	Cloudy	9:29 AM	839388120	1,095,765
22	Rain	7:31 AM	840417423	1,079,303
23	Sunny	7:54 AM	841839311	1,421,228
24	Sunny	10:30 AM	843084475	1,245,164
25	Rain	7:45 AM	844776746	1,692,221
26	Sunny	9:55 AM	846521121	1,794,375
27				
28	Cloudy	11:21 AM	849226705	2,655,584
29	Sunny	11:24 AM	850310341	1,087,636
30	Sunny	11:40 AM	851215328	904,987
31	Rain	09:30	852057465	842,137

MONTH OF December 2020

TOTAL 36,083,346

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

# ROCK RUN STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	DATE	READING	RUN TIME
12-31	31927.0	4.2	32588.4	5.2	9:15 am			
	PUMP #1		PUMP #2					
1	31932.2	5.2	32603.0	4.6	10:53 am			
2	31937.0	4.5	32607.5	4.5	1:03 pm			
3	31940.2	3.2	32610.7	3.2	10:20 am			
4	31943.5	3.3	32614.0	3.3	7:26 AM			
5	31947.6	4.1	32618.1	4.1				
6	31952.3	4.7	32622.7	4.6	11:15 AM			
7	31955.9	3.6	32626.3	3.6	10:59 am			
8	31959.3	3.4	32629.7	3.4	11:26 am			
9	31962.7	3.4	32633.1	3.4	10:54 am			
10	31966.2	3.5	32636.6	3.5	10:41 am			
11	31969.0	2.8	32639.0	2.6	2:25 AM			
12	31973.9	3.9	32643.1	3.9	9:50 am			
13	31976.7	3.8	32646.8	3.7	10:42 am			
14	31980.2	3.7	32650.2	3.9	11:20 am			
15	31983.5	3.4	32653.5	3.3	12:01 PM			
16	31987.0	3.5	32657.0	3.5	1:58 PM			
17	31990.2	3.2	32660.2	3.2	1:40 PM			
18	31992.3	2.1	32662.3	2.1	6:55 AM			
19	31995.8	3.5	32665.9	3.6	6:35 AM			
20	31999.5	3.7	32669.4	3.5	6:50 AM			
21	32003.3	3.8	32672.3	3.9	9:44 am			
22	32006.6	3.3	32676.6	3.3	10:55 AM			
23	32009.4	3.3	32679.5	2.9	4:50 am			
24	32012.2	2.8	32682.3	2.8	0741			
25	32016.1	3.9	32686.3	4.0	11:50 AM			
26	32021.6	5.5	32691.9	5.6	9:02 AM			
27	32026.2	5.2	32697.2	5.2	1:26 pm			
28	32030.3	3.2	32700.3	3.7	1:20 pm			
29	32034.0	3.5	32704.5	3.6	1:30 pm			
30	32037.5	3.5	32707.9	3.4	1:25 pm			
31	32040.7	3.2	32711.3	3.4	12:34 pm			

TOTAL HOURS

113.7

MONTH/YEAR

JUN 2020

206.6

112.9

# ROCK RUN STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	TIME
1-31-20	32040.7	3.2	32711.3	3.4		12:37 pm
	PUMP #1		PUMP #2			
1	32043.2	2.5	32713.8	2.5		7:25 AM
2	32047.3	4.1	32718.0	4.2		10:42 AM
3	32051.5	4.2	32722.3	4.3		1:28 PM
4	32054.8	3.3	32725.7	3.4		1:23 PM
5	32057.8	3.8	32728.7	3.8		11:10 AM
6	32062.7	4.9	32733.6	4.9		4:08 PM
7	32066.7	4.0	32737.6	4.0		11:20 AM
8						
9	32074.8	8.1	32745.5	7.9		6:33 AM
10	32079.3	4.7	32750.2	4.7		11:40 AM
11	32083.1	3.1	32753.8	3.6		9:02 AM
12	32087.1	5.0	32758.9	5.1		8:29 AM
13	32093.5	5.4	32764.3	5.4		2:00 PM
14	32098.1	4.6	32768.9	4.6		11:48 AM
15	32103.1	5.0	32773.9	5.0		3:20 PM
16	32105.6	2.5	32776.4	2.5		7:12 AM
17	32109.8	4.2	32782.5	4.1		7:00 AM
18	32114.4	4.6	32785.1	4.6		10:37 AM
19	32118.7	4.3	32789.3	4.2		1:16 PM
20	32122.4	3.7	32793.0	3.7		1:41 PM
21	32126.2	3.8	32796.7	3.7		2:22 PM
22	32129.6	2.4	32799.1	2.4		7:20 AM
23	32132.1	3.5	32803.6	3.5		6:12 AM
24	32136.7	4.6	32807.1	4.8		10:56 AM
25	32140.2	3.5	32810.4	3.2		10:54 AM
26	32143.8	3.6	32814.2	3.6		10:52 AM
27	32147.4	3.6	32817.7	3.5		9:05 AM
28	32150.8	3.4	32821.2	3.5		7:33 AM
29	32154.7	3.5	32824.6	3.4		7:30 AM
30						
31						

TOTAL HOURS

113.6

113.3

MONTH/YEAR

2/20

226.9



# ROCK RUN STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	DATE	TIME
1	32158.2	3.9	1	32808.6	4.0	1	9:30 AM
2	32162.0	3.2	2	32832.3	3.2	2	9:29 AM
3	32166.6	4.0	3	32838.4	6.1	3	10:57 AM
4	32169.1	3.1	4	32839.4	1.0	4	10:42 AM
5	32172.4	3.7	5	32842.7	3.8	5	10:57 AM
6	32175.3	2.4	6	32850.6	2.4	6	9:55 AM
7	32178.4	1.1	7	32853.7	3.1	7	7:00 AM
8			8			8	
9	32186.6	8.2	9	32856.8	8.1	9	11:15 AM
10	32189.9	3.2	10	32860.1	3.3	10	10:51 AM
11	32193.0	3.4	11	32863.5	3.4	11	10:44 AM
12	32196.2	3.4	12	32866.9	3.4	12	10:46 AM
13	32199.7	3.0	13	32869.9	3.0	13	8:55 AM
14	32203.1	3.4	14	32873.4	3.5	14	7:30 AM
15	32207.1	4.0	15	32877.5	4.0	15	10:20 AM
16	32210.8	3.7	16	32881.2	3.7	16	10:46 AM
17	32213.8	3.0	17	32884.4	3.2	17	10:59 AM
18	32217.3	3.1	18	32888.1	3.2	18	10:18 AM
19	32220.2	4.0	19	32892.2	4.2	19	8:26 AM
20	32227.0	4.9	20	32898.0	5.0	20	11:20 AM
21	32230.3	3.3	21	32901.4	3.4	21	7:40 AM
22	32234.9	4.6	22	32906.2	4.8	22	11:37 AM
23	32238.3	3.4	23	32909.2	3.5	23	8:29 AM
24	32244.4	6.2	24	32916.3	6.0	24	8:44 AM
25	32249.4	5.0	25	32921.4	5.2	25	10:48 AM
26	32253.3	3.8	26	32925.6	4.2	26	8:40 AM
27	32257.2	4.2	27	32930.3	4.0	27	9:48 AM
28	32261.2	3.7	28	32933.4	3.8	28	10:04 AM
29			29			29	
30	32272.2	11.0	30	32945.3	11.4	30	8:29 AM
31	32276.0	4.4	31	32949.9	4.2	31	8:43 AM

TOTAL HOURS

122.3

125.3

MONTH/YEAR

March 2020

247.6

APRIL 30  
2020

# ROCK RUN STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
	32276.6	4.4	32949.9	4.2	8:43 AM
1	32281.2	4.6	32954.6	4.7	10:28 AM
2	32285.3	4.2	32958.9	4.3	9:54 AM
3	32289.3	4.0	32963.0	4.2	9:44 AM
4	32294.8	3.6	32966.7	3.7	8:50 AM
5					
6	32300.2	8.0	32975.0	8.3	8:44 AM
7	32304.9	3.4	32978.9	3.9	9:26 AM
8	32308.2	4.0	32983.0	5.0	10:56 AM
9	32312.4	3.7	32986.6	2.7	9:23 AM
10	<del>32316.0</del>	<del>15.0</del>	<del>32990.0</del>	<del>6.0</del>	<del>10:00 AM</del>
11					
12					
13	32322.0	16.2	33003.9	17.3	10:14 AM
14	32335.0	6.5	33011.5	7.6	9:44 AM
15	32340.0	5.0	33016.3	5.0	11:06 AM
16	32344.3	4.3	33020.0	4.2	10:11 AM
17	32348.6	4.3	33025.0	4.3	10:07 AM
18	32357.2	3.6	33028.6	3.6	7:45 AM
19					
20	32361.0	8.2	33037.3	8.7	9:54 AM
21	32365.2	4.2	33041.7	4.4	10:07 AM
22	32369.3	4.3	33045.7	4.0	10:53 AM
23	32373.0	3.5	33049.2	3.5	10:06 AM
24	32378.0	5.0	33054.2	4.9	10:07 AM
25	32382.0	5.0	33058.2	5.1	7:40 AM
26					
27	32393.3	10.3	33069.6	10.4	10:11 AM
28	32397.3	4.6	33073.6	4.0	9:54 AM
29	32401.3	4.4	33077.4	4.2	10:06 AM
30	32405.0	4.2	33081.9	4.0	10:25 AM
31					

TOTAL HOURS

131.3

MONTH/YEAR APRIL 2020

263.1

131.8

17021  
30/20/20

ROCK RUN STATION					
DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	32411.6	5.2	33087.5	5.8	9:41 AM
2	32416.3	4.7	33092.2	4.7	7:30 AM
3					
4	32426.3	10.0	33102.3	10.3	9:43 AM
5	32430.6	4.3	33106.0	4.2	9:58 AM
6	32434.3	4.2	33110.5	4.2	10:36 AM
7	32438.6	3.2	33114.4	3.2 / 3.2	9:32 AM
8	32442.8	4.2	33118.6	4.2	10:54 AM
9					
10					
11	32455.2	12.9	33131.3	12.7	10:07 AM
12	32460.3	4.4	33136.0	4.7	1:29 PM
13	32463.3	3.0	33138.7	2.7	8:03 AM
14	32467.6	3.2	33142.6	3.9	9:07 AM
15	32470.2	3.1	33146.3	3.1	9:36 AM
16	32474.1	3.5	33149.7	3.4	7:55 AM
17					
18	32482.3	8.2	33157.7	8.5	10:36 AM
19	32485.5	3.2	33160.8	3.1	8:04 AM
20	32489.5	4.0	33164.2	3.2	10:56 AM
21	32492.3	2.2	33167.6	2.9	7:54 AM
22	32496.3	4.0	33171.3	3.2	10:07 AM
23	32499.2	2.9	33174.2	2.9	7:15 AM
24					
25					
26	32510.1	16.9	33185.0	10.8	6:48 AM
27	32510.3	OFF	33191.5	6.2	8:40 AM
28	32510.2	OFF	33198.3	6.8	9:41 AM
29	32510.2	OFF	33204.3	6.0	8:28 AM
30	32510.1	OFF	33210.6	6.3	7:50 AM
31					

TOTAL HOURS 104.1

128.9

MONTH/YEAR May 2020

233.0

# ROCK RUN STATION

5/30	32510.1	OFF	33215.6	6.3	7:50 AM
	PUMP #1		PUMP #2		
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	32510.1	0.0	33225.0	14.4	12:12
2	32510.3	OFF	33230.2	5.5	9:03 AM
3	32510.1	0.0	33236.2	5.7	8:20 AM
4	32512.9	2.2	33239.5	3.3	8:11 AM
5	32516.2	3.3	33242.9	3.4	10:28 AM
6	32519.6	3.4	33246.4	3.5	7:35 AM
7					
8	32526.3	6.2	33253.3	6.9	7:36 AM
9	32529.7	3.4	33256.7	3.4	10:03 AM
10	32532.4	2.2	33259.7	3.0	7:58 AM
11	32535.3	2.9	33262.7	3.0	7:50 AM
12	32538.6	3.3	33266.3	3.0	8:29 AM
13	32541.4	2.9	33268.9	2.6	7:45 AM
14					
15	32547.8	6.2	33275.3	6.4	8:44 AM
16	32550.2	2.9	33278.3	3.0	9:03 AM
17	32553.2	2.7	33280.9	2.6	7:31 AM
18	32556.3	3.2	33283.7	2.2	7:58 AM
19	32559.3	3.0	33286.9	3.2	7:59 AM
20	32562.6	2.7	33289.7	2.8	8:00 AM
21					
22	32568.6	6.6	33296.3	6.6	10:06 AM
23	32572.2	3.0	33299.9	3.9	2:20 PM
24	32574.6	2.2	33302.3	2.6	11:31 AM
25	32577.3	2.7	33304.7	2.4	10:00 AM
26	32579.7	2.4	33307.3	2.6	7:54 AM
27	32582.9	2.7	33309.9	2.6	6:40 AM
28					
29	32588.2	6.2	33316.0	6.2	7:39 AM
30	32591.3	2.2	33318.7	2.7	7:43 AM
31					

TOTAL HOURS 81.2

108.1

MONTH/YEAR June 2020

189.3

# ROCK RUN STATION

July  
30th

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	32594.5	3.2	33321.4	3.0	10:26 AM
2	32596.7	2.2	33324.9	2.6	7:56 AM
3	32600.3	3.6	33327.7	3.4	2:33 PM
4	32602.4	2.1	33329.7	2.0	8:30 AM
5					
6	32608.0	5.6	33335.2	5.5	9:03 AM
7	32611.0	3.0	33338.9	3.4	11:03 AM
8	32613.3	2.3	33340.3	2.2	8:29 AM
9	32616.3	3.0	33343.3	2.2	8:50 AM
10	32618.5	2.2	33345.6	2.3	8:25 AM
11					
12					
13	32627.9	11.4	33356.8	11.2	7:56 AM
14	32633.1	3.7	33360.1	3.3	4:02 AM
15	32635.7	2.4	33362.2	2.0	8:15 AM
16	32638.6	2.4	33365.2	2.2	8:11 AM
17	32641.6	3.0	33368.3	3.0	10:05 AM
18	32643.8	2.2	33370.7	2.2	8:15 AM
19					
20	32649.6	5.8	33376.6	5.9	10:03 AM
21	32652.6	3.0	33379.5	2.6	12:00 NOON
22	32654.2	2.2	33381.2	2.3	10:00 AM
23	32657.3	2.3	33384.2	2.5	8:10 AM
24	32660.3	3.0	33387.3	3.0	8:11 AM
25	32661.5	3.1	33390.5	3.3	7:25 AM
26					
27					
28	32677.6	3.1	33399.6	3.1	10:51
29	32675.0	2.4	33402.1	2.5	9:44
30	32677.4	2.4	33404.5	2.4	8:09 AM
31	32680.0	2.6	33407.1	2.6	8:45 AM

TOTAL HOURS

88.7

88.4

MONTH/YEAR

JULY 2020

177.1

# ROCK RUN STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	TIME
1	32682.5	2.5	1	33407.1	2.6	8:45 AM
2	32687.7	-	2	33409.6	2.5	7:00 AM
3	32687.7	5.2	3	33414.8	-	-
4	32690.5	2.8	4	33414.8	5.2	7:43
5	32695.4	4.0	5	33417.5	2.7	7:35
6	32698.3	2.9	6	33422.5	5.0	8:22 AM
7	32701.2	2.9	7	33425.5	3.0	8:20 AM
8	32705.8	2.6	8	33428.4	2.9	8:10 AM
9	-	-	9	33431.0	2.6	7:15 AM
10	32709.2	5.4	10	33436.5	5.3	8:22 AM
11	32711.7	2.5	11	33439.0	2.7	8:49 AM
12	32714.3	2.6	12	33441.5	2.5	8:48 AM
13	32716.6	2.3	13	33443.8	2.3	8:40 AM
14	32719.0	2.4	14	33446.2	2.4	8:10 AM
15	32721.7	2.7	15	33448.9	2.7	7:35 AM
16	-	-	16	-	-	-
17	32726.9	5.2	17	33451.2	5.5	8:17 AM
18	32729.7	2.8	18	33456.7	2.7	8:00 AM
19	32732.5	2.8	19	33457.7	2.8	8:10 AM
20	32734.8	2.3	20	33462.0	2.3	8:15 AM
21	32737.2	2.4	21	33464.2	2.2	7:50 AM
22	32739.6	2.4	22	33466.8	2.6	7:30 AM
23	-	-	23	-	-	-
24	32744.5	5.4	24	33472.7	5.1	11:00 AM
25	32747.7	2.2	25	33474.0	2.3	11:30 AM
26	32750.1	2.4	26	33477.2	2.4	12:15 AM
27	32752.6	2.5	27	33479.8	2.6	11:43 AM
28	32754.6	2.0	28	33481.7	1.9	8:12 AM
29	32757.3	2.7	29	33484.4	2.7	7:30 AM
30	-	-	30	-	-	-
31	32763.2	5.8	31	33490.2	5.8	10:42 AM

TOTAL HOURS 83.1

MONTH/YEAR Aug 20'

166.2

# ROCK RUN STATION

08-31 7000

32763<sup>1/2</sup>  
PUMP #1

5.8

33490<sup>2</sup>  
PUMP #2

5.8

10:42 AM

DATE	READING	RUN TIME
1	32765.6	2.5
2	32768.0	2.4
3	32770.6	2.6
4	32773.2	2.6
5		
6		
7	32780.2	7.0
8	32788.9	2.3
9	32785.5	2.5
10	32789.5	4.0
11	32794.4	4.9
12	32799.3	4.9
13		
14	32811.2	11.9
15	32815.3	4.1
16	32818.4	3.1
17	32820.5	2.1
18	32822.7	2.4
19	32825.9	2.4
20		
21	32830.6	5.3
22	32833.0	2.4
23	32837.2	4.2
24	32842.0	4.8
25	32843.7	1.7
26	32845.9	2.2
27		
28	32851.3	5.9
29		
30	32858.1	6.8
31		

95.0

READING	RUN TIME
33492.6	2.4
33495.1	2.5
33497.6	2.5
33500.2	2.5
33502.2	7.0
33510.0	2.3
33512.4	2.4
33513.0	0.6
33513.0	0.0
33513.0	0.0
33513.0	0.0
33513.0	0.0
33515.4	2.4
33517.5	2.1
33519.9	2.4
33522.1	2.2
33522.2	5.1
33529.6	2.4
33531.3	1.7
33531.3	0.0
33533.2	1.7
33536.2	2.2
33541.4	5.3
33547.0	6.8

56.8

TIME
10:25 AM
10:52 AM
11:44 AM
10:26 AM
0:27
08:07 AM
9:04 AM
8:24 AM
7:50 AM
7:05 AM
10:17 AM
7:41 AM
10:36 AM
8:15 AM
7:54 AM
7:10 AM
8:00 AM
8:35 AM
1:05 AM
1:19 PM
8:15 AM
7:05 AM
11:00 AM
7:30 AM

TOTAL HOURS

MONTH/YEAR

151.8

Sept 30, 2020

# ROCK RUN STATION

32858.1  
PUMP #1

+ 6.8

33547.0  
PUMP #2

+ 6.6

7.54

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	32861.8	3.7	33550.2	3.7	8:38 A
2	32869.5	2.7	33553.2	2.5	8:55 AM
3					
4					
5	32873.2	3.7	33561.6	3.9	11:30 am
6	32875.7	2.5	33564.0	2.4	11:01 AM
7	32878.2	2.5	33576.5	2.5	10:55 A
8	32881.0	2.6	33569.2	2.7	1:28 AM
9	32883.2	2.2	33571.3	2.2	10:40 AM
10	32885.0	1.9	33573.1	1.8	7:05 AM
11					
12	32891.1	6.1	33577.0	5.9	11:10 AM
13	32895.1	4.0	33582.9	3.9	10:20 AM
14	32898.1	3.0	33585.8	2.9	
15	32900.6	2.5	33588.2	2.4	8:37 A
16	32903.4	2.8	33591.0	2.8	9:57 AM
17	32907.6	4.2	33595.0	4.0	7:05 AM
18					
19	32914.0	6.4	33601.3	6.3	9:00 AM
20	32916.8	5.2/2.2	33604.3	2.2	7:58 AM
21	32919.7	2.9	33606.9	2.8	08:31
22	32922.6	2.9	33609.7	2.8	9:28 AM
23	32925.1	2.5	33612.1	2.4	7:55 AM
24					
25					
26	32933.3	8.2	33620.1	8.0	8:28 A
27	32936.4	3.0	33623.1	3	11:01 AM
28	32938.9	2.5	33625.6	2.5	10:49 AM
29	32941.5	2.4	33627.9	2.3	8:09 A
30	32947.5	6.2	33634.9	7.0	8:15 AM
31	32952.9	5.4	33637.2	4.3	10:30 AM

TOTAL HOURS

99.8

92.2

MONTH/YEAR October 2020

187.0



# ROCK RUN STATION

10/91	329529	5.4	33657.2	4.3	10:50 AM
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	32956.9	4.0	33643.1	3.9	10:57 AM
2	32961.4	4.5	33647.6	4.5	10:48 AM
3	32965.1	3.7	33651.1	3.5	11:31 AM
4	32968.1	3.0	33654.1	3.0	9:28 AM
5	32971.9	3.7	33657.8	3.7	1:49 PM
6					
7	32977.2	5.4	33663.1	5.3	10:15 AM
8	32980.1	2.9	33666.8	2.7	7:38 AM
9	32984.1	4.0	33669.2	3.9	1:31 PM
10	32986.7	2.6	33672.3	2.6	11:45 AM
11	32989.0	2.3	33674.5	2.2	6:52 AM
12	32993.9	2.9	33677.6	3.0	7:30 AM
13	33007.2	8.2	33681.4	3.9	10:45 AM
14	33014.0	6.4	33681.7	0.3	9:45 AM
15	33021.5	7.6	33681.4	0.0	10:05 AM
16	33024.7	7.9	"	"	10:40 AM
17	33030.6	5.9	"	"	"
18	33040.3	9.7	"	"	10:14 AM
19	33043.4	3.1	"	"	10:15 AM
20	33046.5	3.1	33690.0	0.0	0950
21	33049.5	3.0	33692.9	2.9	10:45 AM
22	33052.1	2.6	33695.0	2.7	7:25 AM
23	33054.0	6.7	33695.0	0.1	7:57 AM
24	33062.7	3.7	33699.5	3.5	9:29 AM
25	33066.0	2.3	33702.2	2.0	10:00 AM
26	33070.1	4.1	33706.2	4.0	12:09 AM
27	33073.0	3.5	33709.5	3.3	9:06 AM
28	33076.9	3.5	33712.2	3.2	10:15 AM
29					
30	33084.1	7.2	33719.7	7.0	10:45 AM
31					

TOTAL HOURS

131.2

80.5

MONTH/YEAR

Nov 20

21.7

11/30

# ROCK RUN STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
	33084.1	7.2	33719.7	7.0	10:45 AM
	PUMP #1		PUMP #2		
1	33090.8	6.7	33726.6	6.9	11:42 AM
2	33094.6	3.8	33730.5	3.7	10:00 A
3	33098.8	4.2	33733.4	3.1	8:48
4	33106.5	7.7	33737.4	0.0	9:58 AM
5	33110.0	4.5	33737.8	4.4	10:45 AM
6					
7	33120.9	9.9	33747.4	9.6	9:36 AM
8	33124.7	3.3	33751.2	3.3	10:20 AM
9	33128.2	4.0	33755.1	3.9	10:16 AM
10	33132.2	3.5	33758.4	3.3	9:09 AM
11	33136.0	3.2	33760.2	3.2	10:44 AM
12					
13	33142.8	6.8	33766.8	6.7	9:12 AM
14	33146.6	3.8	33772.5	3.7	9:40 AM
15	33151.0	5.0	33776.4	4.9	1:04 PM
16	33154.7	3.1	33780.5	3.1	10:04 AM
17	33158.4	3.7	33784.0	3.5	10:41 AM
18	33162.2	3.2	33787.2	3.4	10:07 AM
19	33165.5	3.3	33791.0	3.3	10:15 AM
20	33168.9	3.4	33794.4	3.4	7:50 AM
21	33173.0	4.2	33798.3	3.2	4:29 AM
22	33176.8	3.8	33802.1	3.8	7:35 AM
23	33182.2	5.3	33807.2	5.4	7:54 AM
24	33186.7	4.6	33812.1	4.6	10:30 AM
25	33193.1	6.4	33818.8	6.7	7:42 AM
26	33199.8	6.1	33825.3	6.5	9:37 AM
27					
28	33209.8	10.0	33835.2	9.9	11:21 AM
29	33213.9	4.1	33839.4	4.2	11:20 AM
30	33217.6	3.7	33843.0	3.6	11:40 AM
31	33221.0	3.4	33846.4	3.4	09:30

TOTAL HOURS 136.9

126.7

MONTH/YEAR Dec. 2020

263.6

YOUNG TANK METER  
 (Accumulated Sewage Flow)  
 DATE: 1/24/12  
 READING

NO	WEATHER	TIME	READING	GALLONS
1	Sunny	8:54 AM	164105319	2,033,000
2	Sunny	9:55 AM	164107232	2,012,000
3	Rain	10:00 AM	164107402	2,071,000
4	Rain	2:30 PM	16411110	1,722,000
5	Sunny / Cloudy	10:26 AM	16413092	1,982,000
6	Sunny	10:15 AM	16414502	1,710,000
7	Sunny	10:28 AM	16416657	1,855,000
8	Sunny	12:45 PM	16418799	2,142,000
9	Sunny	9:42 AM	16420592	1,793,000
10	Cloudy	11:16 AM	16422803	2,211,000
11	Sunny	7:30 AM	16424558	1,705,000
12	Cloudy / Rain	7:33 AM	16426436	1,918,000
13	Cloudy	7:30 AM	16428215	1,779,000
14	Cloudy	9:03 AM	16430234	2,019,000
15	Sunny	11:22 AM	16432247	2,013,000
16	Partly Sunny	11:43 AM	16434121	1,914,000
17	Sunny	11:31 AM	16436072	1,911,000
18	Cloudy	7:10 AM	16437847	1,775,000
19	Sunny	10:14 AM	16440205	2,398,000
20	Sunny	12:30 AM	16442604	2,359,000
21	Sunny	11:15 AM	16444646	2,042,000
22	Sunny	1:06 PM	16446937	2,291,000
23	Sunny	11:22 AM	16448929	1,992,000
24	Sunny	8:30 AM	16450958	1,924,000
25	RAIN	9:55 AM	16453251	2,343,000
26	Sunny	7:50 AM	16455439	2,188,000
27	Cloudy	1:30 PM	16458351	2,912,000
28	Cloudy	1:45 AM	16460083	1,932,000
29	Sun	1:00 PM	16462782	2,700,000
30	Sunny	10:30 AM	16464939	2,156,000
31	Sunny	11:33 AM	16467181	2,200,000

MONTH OF Jan 2012

TOTAL 63,895,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

(Accumulated Sewage Flows)  
 11:35A  
 16467181  
 TIME READING

2,300,000  
 GALLONS

WEATHER	TIME	READING	GALLONS
1	Cloudy	7:50 AM	16463967
2	Sunny	10:19 AM	16471426
3	Sunny	11:31 AM	16473674
4	Cloudy (Rain)	11:03 AM	16475643
5	Cloudy	11:08 AM	16477546
6	Cloudy	2:30 PM	16479863
7	Cloudy	10:35 AM	16481775
8			
9	Sunny	7:36 AM	16485753
10	Cloudy / Rain	10:07 AM	16488127
11	Rain	4:15 AM	16490159
12	Sunny	7:44 AM	16492218
13	Partly Sunny	11:31 AM	16494750
14	Sunny	10:28 AM	16496795
15	Sunny	9:11 AM	16498543
16	Cloudy	7:24 AM	16500628
17	Sunny	7:25 AM	16502704
18	Cloudy	6:25 AM	16504816
19	Sunny	7:36 AM	16507061
20	Cloudy	11:27 AM	16509525
21	Sunny	11:47 AM	16511635
22	Sunny	7:50 AM	1651336
23	Sunny	6:35 AM	16515351
24	Sunny	11:00 AM	16517535
25	Cloudy	7:45 AM	16519835
26	Cloudy	11:36 AM	16522394
27	Sunny	10:34 AM	16524483
28	Sunny	1:56 PM	16526841
29	Sunny	7:30 AM	16529232
30			
31			

MONTH OF 2/20

TOTAL 61,201,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

Accumulated Sewage (Gross)  
1000000  
 TIME READING

1,374,000  
 GALLONS

DATE	WEATHER	TIME	READING	GALLONS
1	Sunny	7:30 AM	16530438	2,054,000
2	"	1:15 P	16535106	2,608,000
3	Cloudy	11:09	16534949	1,643,000
4	Sunny	9:43	16536605	1,800,000
5	"	11:45	16530929	2,089,000
6	Cloudy	9:50 AM	16540579	1,275,000
7	Sunny	3:30 P	16540271	1,675,000
8	"	11:00 P		
9	"	11:00 P	16546459	4,187
10	Cloudy	8:00 AM	16547970	1,511,000
11	Sunny	11:57 AM	16550036	2,106,000
12	Cloudy	10:01 AM	16551713	1,677,000
13	Rain	7:52 AM	16553231	1,518,000
14	Sunny	7:40 AM	16555052	9,366,000
15	Sunny	8:25 AM	16556962	1,910,000
16	Cloudy	11:46 AM	16554033	2,071,000
17	CLOUDY	11:11 AM	165520743	1,710,000
18	Sunny	09:07	16562340	1,597,000
19	RAIN	07:09	16564010	1,670,000
20	Foggy	07:44	16565886	1,876,000
21	Sunny	7:55 AM	16561778	1,523,000
22	Sunny	8:23 AM	16569756	1,978,000
23	Rain	08:14	16571582	1,826,000
24	Cloudy	08:32	16573472	1,890,000
25	Rain	08:25	16575272	1,800,000
26	Sunny	08:41	16577202	1,930,000
27	Cloudy	08:01	16578912	1,710,000
28				
29	Cloudy	8:02	16582580	3,668,000
30	Cloudy	08:27	16584252	1,672,000
31	Rainy	08:16	16585912	1,660,000

MONTH OF March 2020

TOTAL 57,530,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

3/3

RAIN  
WEATHER

(Accumulated Sewage Flow)  
DATE 16595912  
TIME READING

1,660,000  
GALLONS

	WEATHER	TIME	READING	GALLONS
1	Cloudy	0743	16587721	1,809,000
2	Sun	0804	16589598	1,877,000
3	Cloudy	0830	16591280	1,682,000
4				
5	Cloudy	9:23AM	16594768	2,488,000
6	Sun	0835	16596505	1,737,000
7	Cloudy	0810	16598317	1,812,000
8	Cloudy	0830	16600253	1,936,000
9	Cloudy	1155AM	16602505	2,252,000
10				
11	Sunny	7:45AM	16605872	3,162,000
12				
13	Rain	10:00AM	16609760	3,888,000
14	Cloudy	0720	16611356	1,596,000
15	Cloudy	0747	16613312	1,956,000
16	Cloudy	0748	16615208	1,896,000
17	Rain	0746	16616997	1,789,000
18				
19	Sunny	8:57AM	16620692	3,645,000
20	Cloudy	0730	16622446	1,754,000
21	Cloudy	0725	16624307	1,861,000
22	Sunny	7:57AM	16626143	1,890,000
23	Cloudy	0720	16627929	1,796,000
24	Rain	0754	16629828	1,839,000
25				
26	Rain	8:21	16633633	3,905,000
27	Rain	0730	16635434	1,801,000
28	Cloudy	0730	16637297	1,663,000
29	Cloudy	0735	16639434	2,137,000
30	Cloudy	0710	16641179	1,795,000
31				

MONTH OF APRIL 2020

TOTAL 55,267,000

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

REMARKS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

130 Utility

(Accumulated Sewage Flow)  
DATE 10/5/77 TIME READING

1745000  
GALLONS

WEATHER	TIME	READING	GALLONS
1 Cloudy	0720	16642220	1641000
2			
3 Rain/Cloudy	8:10 AM	16646564	3,744,000
4 Clear	0718	16646204	1,700,000
5 Clear	0716	16649972	1,708,000
6 Cloudy	0753	16651868	1,592,000
7 Clear	0814	16653755	1,887,000
8 Cloudy	0812	16655614	1,559,000
9			
10 Sunny	8:36 AM	16658988	3,374,000
11 Cloudy	0723	16660773	1,785,000
12 Sunny	10:01 AM	16662868	2,095,000
13 Sunny	0750	16664474	1,626,000
14 Sunny	0738	16666274	1,740,000
15 Cloudy	0721	16667782	1,768,000
16			
17 Cloudy	7:46 AM	16671740	3,752,000
18 Cloudy	0728	16673579	1,839,000
19 CLEAR	8:33 AM	16675391	1,812,000
20 CLEAR	0737	16677115	1,724,000
21 CLEAR	0740	16678979	1,884,000
22 Cloudy	0803	16680817	1,818,000
23			
24 Cloudy	7:10 AM	16684255	3,438,000
25 Cloudy/Sunny	7:32 AM	16686104	1,844,000
26 Sunny	1:38 PM	16688143	2,039,000
27 Cloudy	10:07 AM	16689642	1,499,000
28 Cloudy	0721	16691207	1,665,000
29 Cloudy	0722	16693016	1,809,000
30			
31 Sunny	7:08 AM	16696542	3,526,000

MONTH OF June 1977

TOTAL 55,363,000  
LOW READING \_\_\_\_\_  
HIGH READING \_\_\_\_\_

MARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

731 SUMMIT

Accumulated Sewage Flow  
TIME 166718513

2,526,000 GALLONS

WEATHER	TIME	166718513	2,526,000 GALLONS
1 Clear	0831	166718513	1,971,000
2 Cloudy	0739	16700247	1,734,000
3 Cloudy	0712	16702020	1,773,000
4 Sunny	0854	16703973	1,953,000
5 Bloody	8:14 AM	16705299	1,716,000
6			
7 Sunny	8:25 AM	16709291	3,602,000
8 Sunny	0744	16711108	1,817,000
9 Sunny	11:35 AM	16713290	2,192,000
10 Sunny	0723	16714766	1,476,000
11 Cloudy	0713	16716506	1,740,000
12 Sunny	07:29 AM	16718227	1,721,000
13			
14 Sunny	8:40 AM	16721446	3,419,000
15 Sunny	0737	16723639	1,693,000
16 Sunny	07:26 AM	16725406	1,708,000
17 Sunny	0734	16727210	1,808,000
18 RAIN	0733	16729106	1,896,000
19 Snow	0829	16730974	1,868,000
20			
21 Cloudy	7:55	16734495	3,521,000
22 Sunny	0751	16736268	1,773,000
23 Sunny	11:10 AM	16738308	1,916,000
24 Sunny	0804	16739770	1,569,000
25 Sunny	0830	16741527	1,757,000
26 Sunny	0845	16743226	1,699,000
27			
28 Sunny	8:21	16746622	3,396,000
29 Sunny	0723	16748306	1,684,000
30 Sunny	0951	16750233	1,927,000
31			

MONTH OF JUNE 2020

TOTAL 53,691,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_



	SUNNY WEATHER	(Accumulated Sewage Flow) TIME	READING	GALLONS
1	Sunny	7:44 AM	16751830	2,597,000
2	Sunny	0842	16753660	1,830,000
3	Sunny	1:32 PM	16755775	2,115,000
4				
5				
6	Sunny	0730	16760667	4,892
7	Sunny	9:41 AM	16762526	1,859,000
8	cloudy	10:40 AM	16764435	1,904,000
9	Sunny	8:35 AM	16766029	1,594,000
10	Rain	8:45 AM	16767924	1,895,000
11				
12	Sunny	8:35 AM	16771317	3,393,000
13	Sunny	8:40 AM	16773168	1,851,000
14	Sunny	8:45 AM	16774958	1,790,000
15	Sunny	9:29 AM	16776781	1,823,000
16	Cloudy	9:04 AM	16778416	1,635,000
17	Cloudy	8:41 AM	16780046	1,630,000
18				
19	SUNNY	7:05 AM	16783539	3,493,000
20	Sunny - EXCESSIVE HEAT	7:32 AM	16785421	1,882,000
21	Sunny	9:15 AM	16787398	1,917,000
22	Sunny	0847	16789173	1,775,000
23	Cloudy	0754	16790887	1,714,000
24	Cloudy	0817	16792789	1,702,000
25				
26	Sunny	8:03 AM	16796254	3,465,000
27	Sunny	0722	16798039	1,785,000
28	Sunny	0721	16799974	1,935,000
29	Sunny	0710	16801855	1,881,000
30	Sunny	0733	16803746	1,891,000
31	Cloudy	7:46 AM	16805573	1,827,000

MONTH OF July 2020

TOTAL 55,340,000

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

REMARKS: \_\_\_\_\_

\_\_\_\_\_

Cloudy to Rain  
WEATHER

Accumulated Sewage Flow  
7:46 AM 16805573  
TIME READING

1827,000  
GALLONS

1			
2	Cloudy	8:05 AM	16809162
3	Sunny	0823	16811097
4	Rain	0717	16812879
5	Sunny	0721	16814571
6	Rain	9:11 AM	16816049
7	Cloudy	0728	16817956
8			
9			
10	cloudy	0741	16822851
11	Sunny	0711	16824547
12	cloudy	0721	16826319
13	Cloudy	0736	16827976
14	Cloudy	0713	16829513
15			
16			
17	Sunny	0745	16834320
18	Sunny	0715	16835942
19	Cloudy	0711	16837528
20	Sunny	0720	16839169
21	Sunny	0821	16840861
22			
23			
24	Sunny	0739	16845693
25	Sunny	10:23 AM	16847543
26	Sunny	10:01	16849220
27	Cloudy	0801	16850718
28	Sunny	9:55 AM	168521032
29			
30			
31	Cloudy	0723	16857474

MONTH OF August 2020

TOTAL 51,901,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

Cloudy  
WEATHER

(Accumulated Sewage Flow)  
0723 16857474  
TIME READING

4882000  
GALLONS

1	Cloudy	11:46 AM	16857474	2,072,000
2	cloudy	0745	16860951	1,425,000
3	cloudy	0830	16862587	1,636,000
4	SUNNY	07:20 AM	16864080	1,443,000
5				
6				
7	sunny	0736	16868961	4,881,000
8	sunny	0728	16870575	1,614,000
9	cloudy	0725	16872210	1,635,000
10	Cloudy - RAIN	0756	16873867	1,657,000
11	Sunny	8:54 AM	16875422	1,553,000
12				
13				
14	cloudy	0737	16880488	5,066,000
15	Sunny	10:46 AM	16882359	1,871,000
16	cloudy	0804	16883858	1,499,000
17	cloudy	0748	16885527	1,669,000
18	cloudy	0738	16887201	1,674,000
19				
20				
21	sunny	0736	16892391	5,190,000
22	Sunny	7:40 AM	16894138	1,747,000
23	SUNNY	9:05 AM	16896181	2,043,000
24	cloudy	11:01 AM	16898285	2,104,000
25	Foggy	7:40 AM	16900048	1,763,000
26				
27	cloudy	8:25 AM	16903786	3,738,000
28	cloudy	0751	16905470	1,684,000
29	cloudy	0726	16907115	1,645,000
30	sunny	0857	16908862	1,747,000
31				

MONTH OF September 2000

TOTAL 51,388,000

REMARKS:  
\_\_\_\_\_  
\_\_\_\_\_

LOW READING \_\_\_\_\_  
HIGH READING \_\_\_\_\_

WEATHER

Accumulated Sewage Flows:  
0859 16908862  
TIME READING

1,747,000  
GALLONS

DATE	WEATHER	TIME	READING	GALLONS
1				
2	RAIN	0813	1691223	3361,000
3	Beats, Fuel	1055	16917552	5355,000
4				
5				
6	Clear	8:10 am	16919163	1581,000
7	Clear	0812	169211959	1794,000
8	Clear	0805	16922716	1759,000
9	Sunny	10:37 AM	16924675	1959,000
10	Sunny	10:50 AM	16926586	1711,000
11	Sunny	8:18 AM	16928014	1628,000
12	RAIN	0745	16929709	1695,000
13	RAIN	07:45 am	16931541	1838,000
14	Clear	0728	16933289	1748,000
15	Clear	0732	16935100	1811,000
16	Rain		16937082	1982,000
17				
18	Sunny	7:00 AM	16940323	3,241
19	"	7:11 A	16942092	1768,000
20	CLOUDY	7:31 AM	16943805	1797,000
21	Drizzle	7:50 A	16945678	1789,000
22	RAIN	0743	16947420	1802,000
23	RAIN	7:54 am	16949231	1951,000
24				
25				
26	RAIN	0726	16954565	1774,000
27	CLOUDY	9:30 AM	16956436	1871,000
28	RAIN	0828	16958037	1601,000
29	RAIN	0723	16959583	1546,000
30	"	0748	16961107	1529,000
31	Clear	6:25 AM	16963065	11958,000

MONTH OF October 2020

TOTAL 54,203,000

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

2/3/21 1/2  
WEATHER

Actual (Average Flow)  
6:25 AM 169635.65  
TIME READING

11,958,000  
GALLONS

LINE	WEATHER	TIME	READING	GALLONS
1				
2				
3	CLEAR	9:57 AM	16962974	2,057,000
4	SUNNY	8:10 AM	16970772	1,798,000
5	Foggy	0736	16972420	1,648,000
6	SUNNY	10:52 AM	16974246	1,826,000
7	SUNNY	6:50 AM	16975625	1,429,000
8	SUNNY	9:36 AM	16971616	1,941,000
9	SUNNY	12:19 AM	16971616	1,973,000
10	SUNNY	7:37 AM	16981092	1,435,000
11	Cloudy	5:45 AM	16982702	1,657,000
12	RAIN	8:22 AM	16984758	2,050,000
13	RAIN	7:39 AM	16986488	1,730,000
14	SUNNY	6:25 AM	16988016	1,528,000
15	Cloudy	10:25 AM	16989968	1,952,000
16	SUNNY	09:50 AM	16991571	1,655,000
17	Cloudy	07:55	16993170	1,599,000
18	SUNNY	9:41 AM	16995389	2,219,000
19	SUNNY	0800	16997279	2,390,000
20	SUNNY	0819	16999308	2,029,000
21	SUNNY	10:05	17001266	1,958,000
22	Cloudy	7:34	17002892	1,516,000
23	RAIN	7:34 AM	17004629	1,789,000
24	SUNNY	7:31 AM	17004874	245,000
25	SUNNY	8:03 AM	17004874 ?	NOTIFIED KS (SHORE POND)
26	SUNNY	11:34 AM	1593.88	new flow meter
27	SUNNY	7:15 AM	1607.81	13.93 / something w/
28	Cloudy	6:20 AM	3783.16	working meter
29			1488.84	
30	RAIN	0754	17004874	(NOT WORKING)
31				

MONTH OF Nov 2011

TOTAL 50,361,610

REMARKS: \_\_\_\_\_

LOW READING \_\_\_\_\_

HIGH READING \_\_\_\_\_

DATE	WEATHER	(Accumulated Sewage Flow)		GALLONS
		TIME	READING	
1	clear	0756	5552.61	
2	clear	0750	10282	1,730.2
3	Sunny	0850	11953	1,671.00
4	Cloudy	9:08 AM	13482	1,529,000
5	Rain	6:00 AM	15018	1,536,000
6	Sunny	10:20 AM	17470	2,452,000
7	Sunny	10:32 AM	19225	1,755,000
8	cloudy	0808	20542	1,317,000
9	cloudy	0919	22132	1,590,000
10	clear	0724	23572	1,440,000
11	sunny	0742	24971	1,399,000
12	cloudy	6:30 AM	26360	1,357,000
13	Sunny	10:28 AM	27972	1,612,000
14	Rain	0826	29211	1,239,000
15	clear	0819	30867	1,756,000
16	cloudy	0744	<del>30</del> 32375	1,408,000
17	cloudy	1019	33954	1,579,000
18	cloudy	0741	35310	1,356,000
19	Sunny	6:20 AM	36726	1,416,000
20	cloudy	11:03	38292	1,566,000
21	cloudy	9:20 AM	39719	1,427,000
22	cloudy	7:15 AM	41385	1,566,000
23	Sunny	8:15 AM	43344	2,059,000
24	cloudy	5:55 AM	45077	1,733,000
25	Rain	10:23 AM	48177	3,000,000
26	Sunny	6:00 AM	50196	2,119,000
27				
28	sunny	10:43 AM	54391	4,222
29	sunny	1:15 PM	56427	2,036
30	cloudy	0827	57774	1,347,000
31	Rain	0825	59334	1,560,000

MONTH OF Dec 2020

TOTAL 50,781,390  
 LOW READING \_\_\_\_\_  
 HIGH READING \_\_\_\_\_

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
1	3522.3	7.8	10389.4	6.0	4028.1	2.6	16405.3	19.7
2	3511.4	8.1	10496.0	10.2	4058.9	6.0	16405.3	20.3
3	3517.4	6.5	10503.0	7.0	4049.4	10.5	16407.5	20.7
4	3530.9	14.5	10503.0	6.0	4049.5	0.1	16409.3	20.7
5	3533.9	8.0	10513.1	9.3	4052.5	3.0	16411.0	19.7
6	3533.9	13.9	10530.9	8.6	4052.5	-	16413.0	19.8
7	3562.7	9.7	10532.7	-	4052.5	0	16414.8	19.8
8	3577.4	14.9	10544.8	11.9	4052.5	0	16416.5	18.5
9	3592.3	14.9	10550.7	5.9	4052.5	0	16418.9	21.2
10	3603.8	11.5	10556.7	6.0	4052.5	8.3	16420.5	17.9
11	3611.9	8.1	10565.7	9.0	4060.8	8.3	16423.8	22.1
12	3617.9	6.0	10571.7	6.0	4069.6	8.3	16425.8	17.5
13	3627.1	9.2	10577.6	5.9	4077.6	8.6	16426.5	19.1
14	3635.7	8.6	10586.8	9.2	4083.5	5.9	16428.2	17.7
15	3641.7	6.0	10595.5	8.7	4094.4	10.9	16430.3	20.1
16	3653.5	11.7	10602.7	7.2	4101.3	6.9	16432.4	20.3
17	3661.1	7.6	10613.4	10.7	4106.3	5.0	16434.6	19.4
18	3668.8	8.7	10619.3	5.9	4118.3	8.0	16436.7	19.1
19	3677.4	7.6	10625.3	6.0	4120.2	2.9	16439.4	17.5
20	3686.3	8.9	10637.2	11.9	4120.2	6.0	16440.2	20.8
21	3694.6	8.3	10643.1	5.9	4138.1	11.9	16442.0	21.9
22	3704.2	9.6	10650.1	7.0	4144.0	5.9	16444.6	20.4
23	3716.2	6.0	10660.9	10.8	4152.9	8.9	16446.9	20.9
24	3727.3	7.1	10666.9	6.0	4161.8	8.9	16448.4	19.7
25	3734.0	4.5	10672.8	5.9	4167.8	0.0	16450.5	19.2
26	3742.0	7.2	10684.3	11.7	4173.7	5.9	16452.5	23.3
27	3753.9	8.0	10690.9	6.4	4183.7	12.0	16455.4	21.4
28	3759.8	11.9	10700.2	9.3	4191.9	8.2	16457.5	21.2
29	3769.8	5.9	10706.4	6.2	4197.9	6.0	16460.8	17.3
30	3777.7	7.9	10714.7	8.3	4207.9	12.0	16463.7	27.0
31	3783.7	6.0	10721.0	6.2	4215.9	5.9	16464.9	21.5
TOTAL		280.5	10722.5	11.5	4223.1	7.3	16467.8	200
				247.3		190.2		

717.9

MONTH Jan 200

TYBURN W/4

TYBURN ROAD PUMP STATION.

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
1-31-20	3783.1	6.0	10732.5	11.5	4223.1	7.3	16467.81	22.00
1	3747.6	6.5	10735.5	6.0	4231.1	8.0	16468.67	17.56
2	3801.5	11.9	10744.6	6.1	4239.6	8.5	16471.26	2.45
3	3807.5	6.0	10756.3	11.7	4247.0	7.4	16473.674	22.48
4	3814.5	6.8	10762.3	6.0	4257.5	10.5	16478.643	19.69
5	3828.4	11.1	10769.2	6.9	4263.5	6.0	16477.546	19.03
6	3831.3	5.9	10780.1	10.9	4273.6	10.1	16479.665	23.17
7	3837.7	6.4	10786.1	6.0	4281.4	1.8	16481.775	19.12
8								
9	3845.3	17.5	10804.2	15.1	4299.7	11.0	16483.883	3.97
10	3851.2	6.0	10809.8	8.0	4307.1	11.8	16485.987	3.70
11	3877.1	10.9	10815.9	6.0	4311.3	6.2	16490.159	2.082
12	3879.2	7.1	10825.3	9.5	4317.3	6.0	16492.218	20.54
13	3886.5	7.3	10833.6	8.3	4327.2	11.9	16494.550	25.32
14	3897.1	10.6	10839.9	6.3	4335.2	14.0	16496.975	20.15
15	3903.0	5.8	10842.6	8.8	4341.2	6.0	16498.349	17.68
16	3909.0	0	10857.4	8.8	4350.4	9.3	16500.32	3.685
17		1.3	10860.8	1.1	4359.6	8.7	16502.76	1.71
18	3926.9	8.6	10873.1	9.7	4365.1	6.0	16508.16	27.16
19	3932.4	6.0	10881.3	8.2	4374.7	7.3	16507.061	22.55
20	3944.5	11.9	10888.4	7.1	4382.9	8.5	16509.525	24.64
21	3950.5	6.0	10899.1	10.7	4390.5	7.0	16511.635	3.110
22	3956.7	3.0	10905.0	6.5	4399.1	7.6	16513.115	13.30
23	3961.0	7.3	10911.0	5.9	4406.8	8.2	16515.357	16.86
24	3974.6	7.6	10922.9	11.9	4413.7	6.9	16517.865	35.87
25	3980.6	6.0	10928.9	6.0	4422.1	8.4	16519.335	19.47
26	3992.4	11.8	10936.8	7.3	4430.6	8.5	16522.394	25.59
27	3998.4	6.0	10946.8	10.6	4436.6	6.3	16524.483	20.89
28	4005.1	9.7	10952.7	5.9	4443.4	11.5	16526.571	23.58
29	4013.7	5.0	10959.7	6.0	4452.4	6.6	16528.221	1.54
30								
31								
TOTAL		230.6		286.2		231.3		

688.1

MONTH 2/20



TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
1	4033.7	8.5	10967.9	9.2	4460.4	6.0	16530438	1.036
2	4030.1	9.7	10976.5	8.6	4472.3	11.9	16533106	2.068
3	4030.1	5.9	10983.2	6.9	4471.2	5.9	16530929	1.033
4	4030.1	5.9	10983.2	10.7	4490.2	6.1	16535065	1.826
5	4053.5	7.5	11000.7	10.4	4496.1	11.9	16538724	2.064
6	4063.8	9.1	11000.7	10.0	4520.1	6.1	16540171	1.676
7	4063.8	10.6	11015.9	10.0	4540.1	6.0	16543017	1.672
8	4087.6	17.8	11030.0	14.5	4525.9	17.8	16546959	4.187
9	4093.7	4.1	11034.8	8.8	4531.9	6.0	16547970	1.511
10	4100.0	6.3	11047.0	9.0	4545.0	11.9	16550038	2.066
11	4119.4	10.4	11053.2	10.0	4549.8	6.0	16551713	1.677
12	4119.4	7.1	11062.4	8.6	4556.8	6.0	16553231	1.518
13	4132.6	9.2	11071.5	9.0	4570.7	9.1	16556963	1.910
14	4141.3	8.7	11087.4	5.9	4580.1	6.4	16559033	2.071
15	4147.2	5.9	11095.3	5.9	4591.5	11.4	16560743	1.710
16	4155.4	7.8	11101.2	6.9	4597.5	6.0	16562340	1.590
17	4165.1	8.7	11109.2	7.9	4603.4	5.9	16564010	1.670
18	4171.1	6.0	11119.2	10.0	4611.9	8.5	16565886	1.876
19	4189.0	9.0	11134.3	6.0	4627.3	11.9	16569756	1.978
20	4194.9	5.9	11143.0	11.1	4636.7	6.0	16571582	1.826
21	4204.3	7.9	11147.7	8.7	4645.2	5.5	16572472	1.890
22	4213.0	8.7	11158.1	9.7	4651.2	6.0	16573272	1.800
23	4219.0	6.0	11166.8	8.7	4660.7	5.9	16574202	1.930
24	4227.9	8.7	11172.8	6.0	4669.1	9.4	16578912	1.710
25	4243.3	15.0	11180.3	17.5	4683.9	14.8	16582510	3.668
26	4252.5	8.2	11186.3	6.0	4693.0	8.1	16584252	1.672
27	4251.2	8.9	11215.6	8.3	4699.5	8.5	16585912	1.660
TOTAL		247.7		246.9		245.1		

739.7

MONTH

TYBURN WK4

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
3/21	4267.4	3.9	11205.6	9.3	4690.5	6.5	16585912	1660
1	4267.5	6.1	11215.4	9.8	4709.1	9.6	16587721	16609
2	4277.4	9.9	11222.0	6.6	4718.3	10.2	16588538	16677
3	4285.6	8.2	11231.5	9.5	4725.6	6.3	16591280	16682
4	4301.7	16.1	11240.5	1.5	4743.9	7.3	16594768	3,488
5	4309.4	7.0	11255.9	9.4	4747.9	6.0	16596505	1,737
6	4315.4	2.0	11264.4	8.5	4758.8	8.9	16598517	1,812
7	4328.5	7.6	11270.3	5.9	4767.8	9.0	16600253	1,976
8	4333.2	3.6	11290.2	2.9	4774.9	6.7	16602303	2,252
9	4341.8	14.2	11309.2	11.6	4781.6	12.1	16605271	2,361
10								
11								
12								
13	4363.7	16.3	11312.0	17.8	4803.4	16.8	16609760	3,888
14	4372.5	8.8	11319.9	7.7	4817.9	9.2	16611356	1,576
15	4382.4	9.9	11327.9	9.2	4823.9	6.1	16611331.7	1,876
16	4388.4	6.0	11337.7	9.8	4832.3	8.6	16615208	1,876
17	4396.9	6.5	11343.7	6.0	4841.6	9.3	16616997	1,789
18								
19	4412.3	15.4	11361.5	17.8	4857.9	15.7	16620692	3,098
20	4420.5	8.2	11367.4	5.9	4865.5	8.2	16622446	1,755
21	4433.8	9.2	11375.5	8.1	4871.4	5.9	16624307	1,851
22	4446.2	2.8	11383.3	2.7	4876.2	8.8	16627989	1,586
23	4448.3	8.1	11391.1	5.8	4889.3	8.1	16629489	1,776
24	4454.1	9.8	11399.1	8.0	4895.3	6.0	16629623	1,839
25								
26	4469.2	12.1	11410.0	15.9	4913.2	17.9	16633633	3,005
27	4475.0	8.8	11423.3	8.5	4919.2	6.0	16635424	1,801
28	4483.9	5.7	11432.9	9.4	4922.5	8.3	16637292	2,663
29	4491.2	15.3	11438.2	5.9	4937.1	9.6	16639439	2,133
30	4501.8	7.6	11446.7	7.9	4943.1	6.0	16641179	2,252
31								
TOTAL		240.4		241.2		247.6		

698.1

74 APRIL 2020

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READINGS	DAILY FLOW
1	4501.3	7.6	11946.7	7.9	4983.7	6.0	16691139	1745
2	4502.3	6.6	11936.8	10.1	4950.4	7.3	16692620	1641
3	4526.4	13.1	11921.7	14.0	4966.7	16.3	16646564	3744
4	4538.4	6.0	11930.7	7.0	4974.7	8.0	16648264	1700
5	4540.4	8.0	11926.6	5.7	4984.5	9.8	16649972	1708
6	4550.3	9.9	11975.3	8.7	4996.5	6.0	16651868	1896
7	4556.2	5.7	11504.5	7.2	4999.4	8.9	16653755	1887
8	4565.2	9.2	11510.5	6.0	5008.4	9.0	16655614	1859
9								
10	4680.1	14.9	11528.3	17.8	5023.7	15.3	16658988	3374
11	4658.1	8.0	11534.3	6.0	5032.2	5.5	16660773	1785
12	4697.9	4.9	11545.1	10.4	5038.2	6.0	16662868	2095
13	4603.4	5.9	11552.2	7.1	5046.6	5.6	16664474	1606
14	4612.1	8.3	11558.1	5.9	5056.1	7.2	16666314	1742
15	4621.7	9.6	11566.2	5.1	5062.0	5.9	16667782	1768
16								
17	4636.1	14.4	11581.4	15.7	5079.9	17.9	16670220	3758
18	4645.5	9.4	11578.7	8.2	5085.9	6.0	16672579	1837
19	4657.5	6.0	11599.8	9.7	5093.1	9.8	16675591	1912
20	4659.8	8.3	11605.9	5.9	5103.7	6.6	16677115	1724
21	4669.1	9.5	11614.1	8.4	5109.7	6.0	16678999	1834
22	4679.3	6.0	11623.5	7.4	5115.4	5.7	16680819	1816
23								
24	4693.2	17.9	11638.3	14.8	5132.4	15	16682755	3748
25	4699.2	6.0	11647.2	6.0	5142.7	9.9	16684614	1949
26	4718.2	16.1	11655.8	6.4	5143.8	1.1	16686415	2039
27	4725.2	10.5	11664.0	8.4	5143.8	0.0	16688292	1499
28	4737.4	11.6	11671.0	7.0	5143.8	0.0	166891207	1565
29	4751.2	13.8	11677.0	6.0	5143.8	0.0	166903016	1609
30								
31	4776.7	14.5	11696.6	10.1	5143.8	-	166916542	31626
TOTAL		274.9		6.646		246.7		

7855

MONTH: May 2022

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
31	4776.7	19.5	11696.6	19.6	5143.8	0.0	16696548	3526
1	4789.6	12.9	11702.9	6.3	5143.8	0.0	16696518	1971
2	4801.3	11.7	11711.8	8.3	5143.8	0.0	16700247	1734
3	4811.1	9.8	11720.6	7.6	5143.8	0.0	16703020	1972
4	4814.6	3.5	11731.7	11.1	5143.8	0.0	16703973	1953
5	4826.7	12.1	11740.6	8.9	5143.8	0.0	16705689	1716
6	4831.7	2.6	11755.4	14.5	5143.8	0.0	16709291	3607
7	4845.5	12.8	11762.8	8.4	5143.8	0.0	16711108	1817
8	4857.9	14.1	11773.2	9.4	5143.8	0.0	16713290	2182
9	4870.1	10.4	11779.1	5.9	5143.8	0.0	16714762	1475
10	4903.9	13.9	11787.6	8.0	5143.8	0.0	16716506	1740
11	4915.3	11.3	11796.6	9.2	5143.8	0.0	16718237	1721
12	4946.5	21.9	11812.2	16.3	-	-	16721916	3714
13	4953.8	11.3	11820.6	8.4	5143.8	0.0	16725637	1693
14	4960.3	18.5	11826.3	5.8	5143.8	0.0	16725906	1768
15	4981.0	13.7	11834.7	8.2	5143.8	0.0	16727210	1802
16	4992.6	16.6	11840.3	9.6	5143.8	0.0	16729106	1896
17	5007.2	15.1	11850.3	6.0	5143.8	0.0	16730974	1865
18	5032.3	24.0	11865.1	17.8	-	-	16734995	3521
19	5046.3	14.0	11874.1	6.0	5143.8	0.0	16736265	1773
20	5050.0	12.7	11883.9	10.3	5143.8	0.0	16738000	1910
21	5071.9	17.9	11892.0	6.1	5143.8	0.0	16739770	1567
22	5086.1	18.2	11898.6	6.0	5143.8	0.0	16741527	1767
23	5088.6	14.5	11907.9	9.4	5143.8	0.0	16743226	1699
24	5124.4	25.8	11921.7	14.3	-	-	16746012	3714
25	5137.5	13.1	11929.8	8.1	5143.8	0.0	16748326	1882
26	5150.7	13.2	11939.9	7.7	5143.8	0.0	16750233	1827
27								
28								
29								
30								
31								
TOTAL		374.0		292.9		0.0		

616.9

MONTH January 2020

TYBURN, WYO

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
6/30	5150.7	13.3	11939.5	9.7	5143.3	0.0	16750233	1727
1	5163.3	12.5	11945.7	5.9	5143.3	0.0	16751850	1397
2	5176.9	13.2	11954.7	7.3	5142.3	0.0	16753600	1850
3	5192.9	16.0	11963.1	8.4	5143.8	0.0	16755775	2115
4								
5								
6	5225.9	33.0	11986.8	23.7	5143.6	0.0	16760567	4892
7	5241.0	15.1	11992.9	6.1	5143.8	0.0	16762726	1859
8	5252.2	11.5	12004.3	11.4	5143.8	0.0	16764439	1909
9	5263.7	11.5	12010.7	6.4	5143.8	0.0	16766025	1894
10	5277.9	14.0	12016.7	6.0	5143.8	0.0	16767974	1892
11								
12	5304.5	26.6	12030.6	19.9			16771317	31395
13	5319.3	14.8	12042.6	6.0	5143.8	0.0	16773168	1851
14	5332.0	12.7	12052.0	9.7	5143.8	0.0	16774968	1790
15	5344.7	12.7	12060.4	3.4			16776781	1829
16	5358.6	17.9	12066.0	9.0			16778416	1638
17	5376.9	12.1	12075.8	9.4	5143.3	0.0	16780046	1630
18								
19	5394.9	24.2	12090.2	14.2	5143.3	0.0	16783839	3493
20	5408.7	13.8	12098.4	8.2	5143.3	0.0	16785921	1872
21	5421.6	12.3	12107.9	9.5			16787396	1977
22	5434.7	13.2	12118.9	6.0	5143.6	0.0	16789173	1720
23	5448.8	12.9	12127.1	8.0	5143.6	0.0	16790387	1714
24	5460.2	12.9	12132.1	10.0	5143.6	0.0	16792784	1703
25								
26	5487.8	27.5	12147.1	15.0	5143.8	0.0	16796254	31165
27	5499.1	11.3	12156.0	8.9	5143.8	0.0	16798039	1785
28	5512.7	13.6	12162.9	2.0	5143.8	0.0	16799974	1935
29	5526.7	14.0	12169.9	7.9	5143.8	0.0	16801658	1881
30	5532.8	11.1	12179.8	9.9	5143.8	0.0	16803706	1871
31	5551.5	13.7	12185.7	5.9	5143.8	0.0	16805573	1827
TOTAL		400.8		216.8		0.0		

647.0

MONTH: July 2020

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
1	5531.5	12.7	12135.7	5.9	5143.8	0.0	16825573	1827
2	55741.1	31.6	12201.5	0.8	5143.8	0.0	16909162	3590
3	55866.3	12.2	12289.5	6.8	5143.8	0.0	16811297	1955
4	55986.0	11.7	12217.3	7.8	5143.8	0.0	16812899	1752
5	56096.5	11.5	12226.6	11.3	5143.8	0.0	16814571	1722
6	56211.0	12.1	12291.6	6.2	5143.8	0.0	16816003	1402
7	5637.5	10.5	12282.8	8.2	5143.8	0.0	16815458	1485
8								
9								
10	5668.3	33.8	12266.3	29.0	5143.8	0.0	16812851	7893
11	5676.2	7.9	12277.8	11.0	5143.8	0.0	16824519	1696
12	5688.1	11.9	12283.8	6.0	5143.8	0.0	16826319	1772
13	5700.6	12.5	12291.1	8.5	5143.8	0.0	16827976	1657
14	5710.2	9.6	12301.6	9.5	5143.8	0.0	16829513	1537
15								
16								
17	5744.6	34.4	12325.3	23.7	5143.8	0.0	16837520	4807
18	5756.0	11.4	12331.2	5.9	5143.8	0.0	16835942	1622
19	5768.6	12.6	12339.1	7.9	5143.8	0.0	16837528	1524
20	5778.0	9.4	12349.0	7.9	5143.8	0.0	16839189	1697
21	5791.2	13.2	12355.0	6.0	5143.8	0.0	16840861	1692
22								
23								
24	5822.9	31.7	12378.7	23.7	5143.8	0.0	16895693	2832
25	5835.1	12.2	12389.7	11.0	5143.8	0.0	16847543	1850
26	5845.6	10.5	12396.5	6.8	5143.8	0.0	16849260	1677
27	5856.6	11.0	12402.6	6.0	5143.8	0.0	16850718	1493
28	5868.4	11.8	12413.1	10.0	5143.8	0.0	16852032	1914
29								
30								
31	5891.1	2.7	12449.9	36.8	5143.8	0.0	16857472	4732
TOTAL		319.6		264.2		0.0		

583.8

MONTH August 2020

TYBURN RC-30 PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
31	5271.1	2.7	12449.9	36.8	5143.8	0.0	168574.74	4842
1	5355.3	11.6	12459.2	41.7			168598.74	2107
2	5391.3	9.8	12465.5	5.9	5143.8	0.0	168607.51	425
3	5908.3	12.0	12474.7	9.2	5143.8	0.0	168823.67	1836
4	5933.2	9.2	12485.8	8.6	5143.8	0.0	168640.82	1493
5								
6								
7	5947.2	53.4	12507.5	23.7	5143.8	0.0	168669.61	4881
8	5958.5	11.3	12513.0	5.0	5143.8	0.0	168705.75	614
9	5970.8	12.2	12520.1	8.1	5143.8	0.0	168722.10	635
10	5980.6	9.8	12530.8	9.7	5143.8	0.0	168738.67	657
11	5991.8	12.2	12536.7	5.9	5143.8	0.0	168754.28	1552
12								
13								
14	6026.2	33.4	12560.5	23.8	5143.8	0.0	168804.38	5065
15	6038.4	12.2	12571.9	11.4	5143.8	0.0	168823.54	1971
16	6048.0	7.6	12578.3	6.4	5143.8	0.0	168838.58	1476
17	6059.7	11.7	12584.3	8.0	5143.8	0.0	168855.27	1669
18	6072.0	12.3	12592.7	8.4	5143.8	0.0	168872.01	1694
19								
20								
21	6105.7	33.7	12616.4	23.7	5143.8	0.0	168923.91	5190
22	6115.0	9.3	12625.9	4.5	5143.8	0.0	168941.28	1747
23	6128.5	13.0	12631.9	6.0	5143.8	0.0	168970.18	2043
24	6138.7	10.7	12643.16	11.7	5143.8	0.0	168982.95	2104
25	6147.9	8.2	12649.6	6.0	5143.8	0.0	169000.78	1767
26								
27	6171.6	73.7	12664.7	15.1			169039.6	5178
28	6181.5	8.9	12678.3	8.6	5143.8	0.0	169054.70	1684
29	6193.5	12.0	12679.3	6.0	5143.8	0.0	169071.15	1645
30	6203.5	10.0	12693.7	14.4	5144.3	0.5	169086.62	1747
31								
TOTAL		338.4		243.8		6.5		

576.7

MONTH September 2022

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
9/30	6203.5	10.0	12693.7	14.4	5144.3	0.5	16903362	1749
1	6226.8	23.3	12747.8	14.1	5144.3	0.0	16912223	3351
2	6271.4	45.1	12732.9	29.1			16917152	5357
3	6280.1	11.5	12741.6	8.7			16919163	1881
4	6296.2	13.9	12751.3	10.2	5144.3	0.0	16922897	1984
5	6311.8	14.9	12757.7	7.9	5144.3	0.0	16922715	1959
6	6327.8	24.6	12775.6	15.9	5144.3	0.0	16924695	1959
7	6339.9	4.5	12780.9	11.0	5144.3	0.0	16926392	1711
8	6353.5	11.0	12801.0	12.1	5144.3	0.0	16928914	1128
9	6375.4	11.6	12815.7	14.7	5144.3	0.0	16929709	1695
10	6385.4	11.6	12825.4	9.2	5144.3	0.0	16931341	1832
11	6397.4	12.0	12831.4	6.0	5144.3	0.0	16933287	1948
12	6399.8	12.4	12839.6	8.2	5144.3	0.0	16935100	1811
13	6398.7	10.9	12849.2	9.6	5144.3	0.0	16937058	1982
14	6394.6	23.9	12863.0	13.1			16940329	3241
15	6387.2	12.5	12878.5	15.1			16942092	1761
16	6387.3	0.1	12893.8	15.3	5144.3	0.0	16943889	1797
17	6389.3	12.5	12902.0	8.2	5144.3	0.0	16945678	1257
18	6409.4	0.6	12911.6	9.6	5144.3	0.0	16947450	1802
19	6421.6	12.2	12919.5	5.2	5144.3	0.0	16949231	1751
20	6425.3	24.6	12925.7	17.8			16952081	1520
21	6454.9	11.4	12941.3	6.0	5144.3	0.0	16954565	1774
22	6467.2	12.3	12951.5	15.2	5144.3	0.0	16956434	1871
23	6472.1	9.9	12959.1	7.6	5144.3	0.0	16958037	1601
24	6483.7	11.6	12965.1	6.8	5144.3	0.0	16959583	1546
25	6504.6	5.9	12974.7	9.6			16961107	1524
26	6517.3	13.6	12984.3	9.6	5144.3	0.0	16963063	1953
27	6544.9	313.7		290.6				
TOTAL								

604.3

MONTH October 2020

TYBURN/2020



TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	PUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
10/31	6517.2	12.6	12999.3	9.6	5144.3	0.0	16563.68	1953
1	6537.4	14.5	12990.2	6.0	5144.3	11.0	16563.68	1958
2	6542.4	11.5	13001.5	11.2	5144.3	0.0	16563.68	1958
3	6544.3	0.9	13033.3	36.5	5144.3	0.0	16563.68	1958
4	6557.2	12.9	13023.3	6.0	5144.3	0.0	16563.68	1958
5	6568.1	10.9	13037.6	9.3	5144.3	0.0	16563.68	1958
6	6580.3	12.1	13046.2	8.1	5144.3	0.0	16563.68	1958
7	6590.3	12.1	13052.2	6.0	5144.3	0.0	16563.68	1958
8	6600.3	12.1	13052.2	11.5	5144.3	0.0	16563.68	1958
9	6610.3	12.1	13070.0	6.0	5144.3	0.0	16563.68	1958
10	6620.3	9.6	13076.0	4.0	5144.3	0.0	16563.68	1958
11	6630.3	11.6	13083.4	17.4	5144.3	0.0	16563.68	1958
12	6640.3	11.6	13085.4	12.6	5144.3	0.0	16563.68	1958
13	6650.3	12.0	13102.2	7.4	5144.3	0.0	16563.68	1958
14	6676.9	11.9	13112.1	9.3	5144.3	0.0	16563.68	1958
15	6681.3	12.6	13120.6	10.5	5144.3	0.0	16563.68	1958
16	6690.3	13.6	13128.5	5.9	5144.3	0.0	16563.68	1958
17	6713.7	11.8	13137.9	9.4	5144.3	0.0	16563.68	1958
18	6726.4	12.7	13146.5	8.6	5144.3	0.0	16563.68	1958
19	6737.6	13.2	13152.4	5.9	5144.3	0.0	16563.68	1958
20	6751.7	13.1	13162.5	10.1	5144.3	0.0	16563.68	1958
21	6764.6	12.9	13170.6	8.0	5144.3	0.0	16563.68	1958
22	6771.6	13.1	13170.6	6.4	5144.3	0.0	16563.68	1958
23	6790.4	13.2	13186.3	9.5	5144.3	0.0	16563.68	1958
24	6803.4	12.5	13195.3	9.3	5144.3	0.0	16563.68	1958
25	6819.0	15.6	13201.3	6.8	5144.3	0.0	16563.68	1958
26	6833.4	14.2	13217.4	12.2	5144.3	0.0	16563.68	1958
27	6845.2	11.8	13217.4	6.3	5144.3	0.0	16563.68	1958
28	6853.6	13.0	13245.6	5.4	5144.3	0.0	16563.68	1958
29	6865.0	16.8	13245.6	17.8	5144.3	0.0	16563.68	1958
30	6885.0	16.8	13245.6	17.8	5144.3	0.0	16563.68	1958
31	6885.0	16.8	13245.6	17.8	5144.3	0.0	16563.68	1958
TOTAL		348.2		259.1		0.0		

SOME  
2000  
SOMETHING  
10/31  
11/1/2000  
NOTHING

627.3

MONTH about 201

TYBURN WICK

TYBURN ROAD PUMP STATION

DAY	PUMP 1 READING	PUMP 1 HOURS	PUMP 2 READING	PUMP 2 HOURS	FUMP 3 READING	PUMP 3 HOURS	FLOW READING	DAILY FLOW
11/30/2020								
1	5365.4	36.8	13243.4	17.8	5144.3	0.0	-	-
2	6905.8	19.8	13252.8	9.8	5144.3	0.0	8552.81	-
3	8417.5	13.3	13264.9	11.7	5144.3	0.0	10282.88	1730
4	8132.2	10.7	13273.1	8.0	5144.3	0.0	11953	1571
5	6949.0	16.8	13279.8	6.1	5144.3	0.0	13482	329
6	6950.6	10.6	13288.2	8.4	5144.3	0.0	15018	236
7	6978.0	14.3	13297.7	9.3	-	-	17171	2452
8	6998.0	10	13308.8	6.1	-	-	19325	1752
9	6998.7	9.8	13312.6	7.3	5144.3	0.0	20592	1317
10	7011.0	12.3	13321.5	7.9	5144.3	0.0	22132	1590
11	7023.7	12.2	13327.5	6.0	5144.3	0.0	23572	1440
12	7035.9	12.2	13336.9	9.1	5144.3	0.0	24971	1589
13	7046.4	10.8	13345.1	8.4	5144.3	0.0	26360	1389
14	7062.7	16.3	13351.6	6.3	-	-	27972	1612
15	7072.1	9.4	13361.5	9.9	5144.3	0.0	29271	1239
16	7084.7	12.6	13369.1	9.6	5144.3	0.0	30767	1756
17	7097.7	13.0	13375.1	6.0	5144.3	0.0	32375	1908
18	7112.0	13.0	13387.3	11.9	5144.3	0.0	33984	1579
19	7122.0	11.3	13393.0	6.5	5144.3	0.0	35310	1352
20	7135.5	13.8	13400.0	6.0	5144.3	0.0	36726	1916
21	7149.1	13.6	13410.8	11.9	-	-	38242	1566
22	7162.0	15.8	13416.9	6.0	-	-	39719	1477
23	7176.3	15.7	13422.8	6.0	5144.3	0.0	41295	1566
24	7191.0	14.7	13432.5	9.7	5144.3	0.0	43344	2059
25	7203.7	12.7	13441.1	8.6	5144.3	0.0	45677	1733
26	7225.6	19.9	13455.1	13.6	5	-	48077	3600
27	7234.8	11.2	13462.4	12.3	5144.3	0.0	50196	2119
28								
29	7267.9	33.1	13484.8	17.4	5144.3	0.0	51991	4122
30	7282.3	14.0	13496.6	11.9	5144.3	0.0	53727	2036
31	7295.0	13.7	13502.9	6.3	5144.3	0.0	55774	1347
TOTAL	7310.9	15.9	13507.2	5.3	5144.3	0.0	58334	1560
TOTAL		465.5		265.9		0.0		

691.3

MONTH Dec 2020

TYBURN.WWA

# VALLEY VIEW STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
12-31-19	9645.5	3.8	10581.8	2.3	9:00 pm
	PUMP #1		PUMP #2		
1	9760.5	4.7	10580.4	3.2	10:36 am
2	9705.7	5.5	10589.9	4.9	12:31 pm
3	9719.5	3.8	10594.4	4.5	9:20 am
4	9711.6	2.1	10598.8	3.9	7:15 am
5	9717.8	2.6	10605.8	2.8	7:03 am
6	9718.8	4.6	10604.4	3.6	11:01 am
7	9722.3	3.2	10607.2	2.6	10:38 am
8	9725.4	3.1	10611.7	1.9	10:31 am
9	9728.4	3.0	10610.7	1.8	10:45 am
10	9731.7	3.3	10612.5	2.7	10:07 am
11	9733.9	2.2	10613	1.5	7:10 am
12	9739.1	5.2	10612.2	1.9	9:34 am
13	9743.6	4.5	10618.2	2.0	10:01 am
14	9747.1	3.5	10620.9	1.8	11:10 am
15	9750.9	3.8	10621.7	1.7	11:16 am
16	9755.3	4.4	10623.6	1.9	1:42 pm
17	9758.8	3.5	10625.2	1.6	1:14 PM
18	9762.9	2.6	10626.2	1.0	6:50 am
19	9765.7	4.9	10628.0	1.8	6:44 am
20	9770.4	5.2	10629.8	1.8	6:55 am
21	9775.2	4.3	10632.1	2.3	9:32 am
22	9776.8	4.1	10633.2	1.7	11:10 am
23	9782.5	4.0	10634.2	1.6	9:35 am
24	9786.2	3.3	10637.4	2.0	10:20 am
25	9791.0	4.8	10639.5	2.1	11:41 am
26	9796.9	5.9	10641.3	1.8	9:16 am
27	9804.1	9.3	10644.0	2.2	12:51 pm
28	9808.1	4.0	10645.9	1.9	11:34 am
29	9813.0	4.9	10647.9	2.5	10:55 am
30	9817.1	4.1	10650.5	2.6	1:16 pm
31	9819.8	2.7	10653.2	2.7	11:59 am

TOTAL HOURS 124.3

MONTH/YEAR JAN. 2020

195.7

# VALLEY VIEW STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1-31-20	9819.8	2.7	10653.2	2.7	11:59 am
	PUMP #1		PUMP #2		
1	9821.6	1.8	10654.7	1.5	7:15 AM
2	9836.7	7.1	10657.2	2.5	10:34 AM
3	9834.9	6.2	10659.7	2.5	4:17 PM
4	9839.8	4.9	10661.9	2.2	1:17 PM
5	9843.2	3.4	10664.3	3.4	10:45 AM
6	9849.0	5.8	10667.5	3.2	3:30 PM
7	9852.0	3.0	10670.2	2.7	11:10 am
8					
9	9857.9	5.4	10673.6	5.4	9:37 AM
10	9861.8	3.8	10678.0	3.1	10:08 am
11	9865.8	4.0	10681.7	3.0	11:00 am
12	9870.7	4.9	10683.9	2.2	11:27 AM
13	9877.4	6.7	10687.6	3.7	1:31 pm
14	9880.6	3.2	10690.1	10.5	10:50 am
15	9882.2	5.8	10693.2	5.6	3:15 PM
16	9888.5	2.3	10706.4	2.7	7:15 AM
17	9893.5	5.0	10710.6	4.0	2:10 PM
18	9899.3	5.8	10714.5	4.2	10:22 AM
19	9904.2	4.9	10717.4	2.6	11:04 AM
20	9908.2	4.0	10721.3	3.9	1:26 PM
21	9911.1	3.4	10724.2	2.9	2:07 PM
22	9913.1	1.5	10727.0	1.4	7:15 AM
23	9915.1	2.3	10729.7	2.1	6:25 AM
24	9918.0	2.6	10730.7	3.0	10:28 AM
25	9920.2	2.2	10732.5	2.2	10:20 am
26	9923.7	3.6	10735.3	2.4	1:20 PM
27	9926.1	2.5	10737.5	2.0	9:10 am
28	9928.7	2.7	10739.4	2.1	7:27 AM
29	9932.0	3.2	10742.4	2.0	7:10 AM
30					
31					

TOTAL HOURS

112.6

88.2

MONTH/YEAR

FEB. 2020

200.8

# VALLEY VIEW STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	9936.0	3.6	10744.1	2.7	9:22 AM
2	9940.3	4.3	10746.5	2.4	11:40
3	9943.8	2.9	10748.7	5.2	2:04 AM
4	9975.7	1.5	10750.5	2.1	9:32 AM
5	9948.5	2.8	10752.7	2.2	4:15 PM
6	9950.4	2.4	<del>10754.5</del>	3.0	9:20 AM
7	9953.1	2.1	10756.1	1.7	9:20 AM
8					
9	9968.7	5.6	10761.5	5.1	11:00 AM
10	9961.3	2.6	10763.6	2.1	10:38 AM
11	9963.9	2.6	10766.2	2.6	10:24 AM
12	9965.9	2.0	10769.0	2.8	10:33 AM
13	9967.9	2.0	10777.5	3.1	8:26 AM
14	9969.9	1.0	10778.3	4.7	7:40 AM
15	9973.2	3.3	10781.1	4.3	10:33 AM
16	9975.8	2.6	10786.1	5.0	10:31 AM
17	9978.0	2.2	10790.0	3.9	08:27 AM
18	9981.4	3.4	10794.0	4.0	8:53 AM
19	9985.1	3.7	10801.4	7.4	8:40 AM
20	9986.8	1.9	10814.6	13.2	8:28 AM
21	9993.7	5.5	10818.6	4.6	7:30 AM
22	10002.5	16.2	10818.6	-	11:27 AM
23	10010.2	8.2	10818.6	Ø OFF	8:06 AM
24	10021.5	10.3	10818.6	Ø OFF	8:11 AM
25	10031.5	10.9	10818.6	Ø OFF	8:56 AM
26	10040.6	9.2	10818.6	Ø OFF	9:07 AM
27	10050.2	9.6	10818.6	Ø OFF	8:56 AM
28	10059.7	9.0	10818.6	0	2:45 AM
29					
30	10086.4	27.2	10818.6	Ø OFF	8:10 AM
31	10097.2	10.7	10818.6	Ø OFF	8:11 AM

TOTAL HOURS

164.7

77.2

MONTH/YEAR

March 2020

241.9

m m d. 31.  
7.20

# VALLEY VIEW STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
	10097.2	10.2	10818.2	φ OFF	8:11 am
1	10109.2	12.0	10818.2	φ OFF	8:48 am
2	10122.4	13.2	10818.2	φ OFF	9:09 am
3	10137.5	14.4	10818.2	φ OFF	8:34 am
4	10154.5	17.0	10818.2	-	7:51 am
5	-	-	-	-	-
6	10182.2	27.0	10818.2	φ OFF	8:16 am
7	10193.2	9.0	10818.2	φ OFF	8:48 am
8	10206.4	13.2	10818.2	φ OFF	9:43 am
9	10219.7	13.5	10818.2	φ OFF	8:41 am
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-
13	10277.4	57.3	10818.2	φ OFF	9:28 am
14	10293.0	15.6	10818.2	φ OFF	8:29 am
15	10306.7	3.8	10818.2	φ OFF	9:46 am
16	10317.5	10.6	10818.2	φ OFF	8:44 am
17	10327.2	9.0	10818.2	φ OFF	8:43 am
18	10336.1	7.0	10818.2	-	1:51 am
19	-	-	-	-	-
20	10357.2	21.0	10818.2	φ OFF	9:26 am
21	10364.7	9.9	10818.2	φ OFF	8:54 am
22	10371.4	7.0	10818.2	φ OFF	9:54 am
23	10378.3	6.0	10818.2	φ OFF	8:48 am
24	10388.4	10.2	10818.2	φ OFF	9:29 am
25	10393.6	5.2	10818.2	φ OFF	7:55 am
26	-	-	-	-	-
27	10406.9	13.3	10818.2	φ OFF	8:59 am
28	10414.0	7.9	10818.2	φ OFF	8:56 am
29	10422.6	8.0	10818.2	φ OFF	8:29 am
30	10430.6	8.0	10818.2	φ OFF	9:23 am
31	-	-	-	-	-

?

TOTAL HOURS

333.5

6.6

MONTH/YEAR

APRIL 2020

333.5

May 2020

10430.6

# VALLEY VIEW STATION

10818.6

OFF

9:23 AM

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
1	10439.3	8.2	10818.6	OFF	8:29 AM
2	10445.6	6.3	10818.6	0.0	1:55 PM
3					
4	10464.0	13.4	10818.6	OFF	9:07 AM
5	10473.6	9.6	10818.6	OFF	8:58 AM
6	10481.0	7.4	10818.6	OFF	9:26 AM
7	10488.3	7.3	10818.6	OFF	8:36 AM
8	10496.3	7.8	10818.6	OFF	8:34 AM
9					
10					
11	10528.7	32.4	10818.6	OFF	8:46 AM
12	10541.3	12.6	10818.6	OFF	2:07 PM
13	10548.7	7.4	10818.6	OFF	10:07 AM
14	10557.3	8.3	10818.6	OFF	9:03 AM
15	10563.2	6.3	10820.6	2.0	8:59 AM
16	10568.6	4.9	10820.6	1.6	7:55 AM
17					
18	10579.3	10.3	10831.3	8.2	8:24 AM
19	10583.5	4.4	10835.6	4.3	7:52 AM
20	10588.3	4.3	10839.3	4.2	8:56 AM
21	10592.3	4.0	10844.2	4.5	8:54 AM
22	10596.2	3.9	10849.3	5.3	9:06 AM
23	10600.1	3.9	10850.0	4.5	7:00 PM
24					
25					
26	10623.5	23.4	10862.4	8.4	6:31 AM
27	10634.6	11.2	10864.3	1.9	10:07 AM
28	10639.7	5.2	10866.2	1.2	8:29 AM
29	10644.7	5.0	10868.3	2.2	9:06 AM
30	10650.6	5.9	10870.3	2.0	7:40 AM
31					

TOTAL HOURS

220.0

51.7

MONTH/YEAR

May 2010

271.7

# VALLEY VIEW STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
5/30	10652.6	5.9	10870.5	2.0	3:40 AM
	PUMP #1		PUMP #2		
1	10661.1	10.5	10877.2	6.9	0:05.5
2	10664.2	3.6	10882.2	5.5	8:29 AM
3	10669.3	4.8	10888.9	6.2	9:26 AM
4	10674.9	4.5	10897.9	8.8	10:26 AM
5	10678.7	4.3	10907.5	9.0	11:11 AM
6	10681.7	3.0	10913.2	5.9	7:25 AM
7					
8	10691.2	9.8	10925.3	12.0	8:56 AM
9	10700.6	9.5	10928.0	2.8	11:50 AM
10	10705.0	4.4	10933.4	5.4	10:20 AM
11	10710.0	5.5	10938.5	5.3	11:31 AM
12	10714.3	3.7	10944.6	6.1	11:21 AM
13	10717.0	2.7	10949.9	5.1	7:30 AM
14					
15	10724.5	7.5	10966.0	16.1	11:36 AM
16	10726.9	2.4	10971.6	5.6	10:11 AM
17	10729.6	2.1	10977.0	5.4	9:14 AM
18	10732.4	2.8	10982.6	5.6	8:11 AM
19	10735.3	3.4	10989.3	5.2	8:47 AM
20	10740.6	4.8	10997.8	0.0	7:10 AM
21					
22	10751.2	11.2	10997.2	off - 0.0	11:32 AM
23	10755.6	3.9	10997.8	off - 0.0	2:39 PM
24	10758.6	3.0	10987.8	off - 0.0	11:47 AM
25	10762.2	3.0	10987.8	off - 0.0	11:26 AM
26	10766.0	9.1	10987.8	off - 0.0	12:43 PM
27	10769.1	8.1	10987.8	off - 0.0	6:15 AM
28					
29	10775.3	10.2	10987.8	off - 0.0	11:06 AM
30	10784.0	4.3	10987.8	off - 0.0	10:54 AM
31					

TOTAL HOURS

133.4

117.5

MONTH/YEAR

June 2020

250.9



Pump #2  
IR

## VALLEY VIEW STATION

JUNE 30

10984.0 / 4.7 = 10987.8 / off-0.0

10:54am

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	10787.6	5.6	10987.8	off-0.0	11:06am
2	10795.3	5.7	10989.8	off-0.0	9:54am
3	10802.5	7.2	10987.8	0.0	2:17 PM
4	10806.2	3.7	10987.6	0.0	8:00am
5					
6	10825.9	19.3	10987.8	off-0.0	10:29 am
7	10833.3	7.6	10987.0	off-0.0	11:36am
8	10839.7	6.4	10987.8	off-0.0	1:54 pm
9	10844.5	4.6	10987.8	off-0.0	10:59 AM
10	10848.9	4.6	10987.8	0.0	8:00am
11					
12					
13	10873.7		10987.8		
14	10879.9	6.2			8:48 AM
15	10885.7	5.3	10987.8	off-0.0	11:30 am
16	10892.6	6.7	10987.8	off-0.0	1:54 pm
17	10898.7		10987.8	off-0.0	10:56 am
18	10904.1	5.4	10987.8	OFF	7:55 AM
19					
20	10919.3	15.2	10987.8	off-0.0	10:59 am
21	10924.0	4.7	10987.8	off-0.0	1:26 pm
22	10927.7	3.2	10987.8	off-0.0	2:28 pm
23	10931.8	4.2	10987.8	off-0.0	11:07 am
24	10936.2	5.2	10987.8	off-0.0	10:29 am
25	10940.5	3.6	10987.8	OFF	7:59 AM
26					
27					
28	10958.5	7.1	10987.8	-	10:15 AM
29	10962.7	4.2	"	"	8:30 AM
30	10969.9	7.2	"	"	8:00 AM
31	10976.0	6.3	10987.8	0.0	8:10 AM

TOTAL HOURS

192.2

0.0

MONTH/YEAR July 2020

192.2

# VALLEY VIEW STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	10976.2	6.3	10987.8	0.0	8:00 AM
	PUMP #1		PUMP #2		
1	10980.1	3.4	10987.8	0.0	7:05 AM
2					
3	10989.3	9.2	10987.8	-	8:10 AM
4	10994.5	5.2	10987.8	-	8:45 AM
5	11000.9	6.4	10987.8	-	7:38 AM
6	11006.8	5.9	10987.8	0.0	8:00 AM
7	11012.6	5.8	10982.8	0	7:48 AM
8	11017.6	6.5	10987.8	0.0	7:00 AM
9					
10	11028.5	10.9	10987.8	0	7:30 AM
11	11034.4	4.9	10987.8	0	8:38 AM
12	11039.8	5.2	"	"	8:15 AM
13	11045.6	6.0	"	"	8:10 AM
14	11052.1	9.5	"	"	7:40 AM
15	11060.5	9.4	10987.8	0.0	7:05 AM
16	<del>11071.9</del>		"	"	7:40 AM
17	11079.9	14.4	"	"	7:40 AM
18	11091.2	11.3	10988.3	0.5	11:09 AM
19	11097.4	6.2	10994.5	6.2	8:30 AM
20	11101.0	3.6	11001.1	6.6	8:08 AM
21	11105.3	4.3	11007.5	6.4	7:20 AM
22	11109.3	4.0	11014.0	6.5	7:05 AM
23					
24	11121.6	12.3	11021.8	7.3	11:00 AM
25	11125.8	4.2	11020.8	1.5	11:00 AM
26	11130.1	4.3	11024.5	1.2	9:18 AM
27	11135.6	5.5	11028.4	2.4	11:21 AM
28	11138.8	3.8	11029.0	2.1	8:02 AM
29	11144.2	5.4	11032.6	3.6	7:10 AM
30					
31	11157.8	13.6	11040.0	4.2	11:07 AM
		181.6		53.2	

TOTAL HOURS

MONTH/YEAR August 2020

233.8

09/30/2020

# VALLEY VIEW STATION

DATE	PUMP #1 READING	RUN TIME	PUMP #2 READING	RUN TIME	TIME
	11151.8	13.4	11040.2	9.7	11.09 AM
1	11151.9	4.2	11045.1	5.6	10:11 AM
2	11156.3	3.9	11052.9	7.9	10:26 AM
3	11161.7	4.4	11062.4	9.5	10:36 AM
4	11172.4	8.9	11072.4	9.6	10:36 AM
5					
6					
7	11182.7	10.3	11097.5	25.5	08:26
8	11186.3	3.6	11107.2	9.7	9:54 AM
9	11190.0	3.7	11113.7	6.5	8:20 AM
10	11193.4	3.4	11121.5	7.8	7:50 AM
11	11196.3	2.9	11129.3	7.8	7:40 AM
12	11200.8	4.2	11136.0	6.7	6:55 AM
13					
14	11211.7	11.2	11152.6	16.6	09:28
15	11218.3	6.6	11155.3	2.7	10:28 AM
16	11223.9	5.6	11157.7	2.9	09:49
17	11227.0	3.1	11159.4	2.2	8:00 AM
18	11230.5	3.5	11161.7	1.8	7:52 AM
19	11233.6	3.1	11163.5	2.8	6:52 AM
20					
21	11243.3	9.1	11168.0	4.9	7:45
22	11249.0	5.7	11170.2	2.2	8:40 AM
23	11254.7	5.7	11174.9	4.7	10:12 AM
24	11260.3	5.6	11178.8	3.9	1:13 PM
25	11263.8	2.5	11180.9	2.1	8:25 AM
26	11267.9	5.0	11183.4	2.5	6:50 AM
27					
28	11281.1	13.2	11190.1	7.3	11:00 AM
29					
30	11290.2	9.1	11212.5	11.8	11:00 AM
31					

TOTAL HOURS

128.3

172.5

MONTH/YEAR

September 2020

300.8

# VALLEY VIEW STATION

DATE	PUMP #1		PUMP #2		TIME
	READING	RUN TIME	READING	RUN TIME	
1	11294.6	4.4	11218.7	6.2	8:17 A
2	11300.2	5.6	11221.7	3.0	8:00 AM
3					
4					
5	11322.8	22.6	11235.1	13.4	11:20 am
6	11328.7	5.9	11243.1	8.0	10:52 am
7	11331.7	2.6	11251.5	8.4	8:52 AM
8	11335.4	4.1	11262.6	11.1	11:13 AM
9	11339.6	4.2	11269.9	6.4	8:11 am
10	11342.0	3.0	11276.5	7.4	6:55 AM
11					
12	11348.1	5.5	11303.9	27.5	11:02 am
13	11351.3	3.2	11315.5	11.6	10:16 AM
14	11355.5	4.2	11324.4	8.9	8:18 AM
15	11360.8	5.0	11331.3	6.8	8:25 AM
16	11365.6	4.8	11339.9	8.6	9:52 AM
17	11369.6	4.0	11345.7	8.8	7:05 AM
18					
19	11376.8	17.2	11367.9	19.2	7:52 am
20	11383.0	6.2	11375.2	7.2	10:26 am
21	11387.1	4.1	11381.8	6.7	6:31.0
22	11394.9	7.8	11389.8	8.0	9:19 AM
23	11400.4	5.5	11394.3	4.5	7:45 AM
24	<del>11412.5</del>		<del>11402.2</del>		
25					
26	11418.5	13.1	11399.8	5.5	8:10 AM
27	11416.5	3.0	11411.9	2.1	10:22 am
28	11419.7	3.2	11403.9	2.0	10:07 AM
29	11423.3	3.6	11405.4	1.5	8:10 AM
30	11430.8	7.5	11407.5	2.1	8:00 am
31	11437.2	6.9	11409.7	2.2	10:00 AM

TOTAL HOURS

147.5

197.2

MONTH/YEAR

October 2020

344.7

# VALLEY VIEW STATION

10/31	11433.7	6.9	11905.7	2.2	10.000000
	PUMP #1		PUMP #2		
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	11445.2	7.5	11411.6	2.9	11:00 AM
2	11456.5	11.6	11413.2	1.6	9:30 AM
3	11461.9	5.1	11416.8	3.6	11:20 AM
4	11462.0	5.1	11419.9	3.1	8:50 AM
5	11473.2	6.2	11427.1	7.2	11:38 PM
6					
7	11477.5	4.2	11442.9	15.8	9:45 AM
8	11479.5	2.0	11448.3	6.4	7:00 AM
9	11481.6	2.1	11464.6	15.2	4:20 PM
10	11483.2	1.6	11473.8	9.2	11:17 AM
11	11488.3	5.1	11473.9	0.0	6:47 AM
12	11498.4	10.1	11473.9	0.0	7:40 AM
13	11508.3	9.9	11473.9	0.0	10:22 AM
14	11515.4	7.1	11473.9	0.0	9:10 AM
15	11524.6	11.2	11473.9	0.0	9:58 AM
16	11534.5	9.9	11473.9	0	10:00 AM
17	11544.1	9.6	11473.9	0.0	7:45 AM
18	11557.2	13.1			9:40 AM
19	11562.6	10.4			10:00 AM
20	11576.7	9.1	11473.9	0.0	0848
21	11587.3	10.6	11473.9	0.0	10:25 AM
22	11597.4	10.1			7:17 AM
23	11613.1	15.0			2:40 AM
24	11629.2	16.2	11473.9	0.0/OFF	9:17 AM
25	11644.8	15.1			8:50 AM
26	11665.3	20.5	11473.9	0.0	11:57 AM
27	11674.4	14.2	11473.9	0.0/OFF	9:20 AM
28	11695.7	16.3	11473.9	0.0	9:50 AM
29					
30	11724.9	29.2	11473.9	0	10:00 AM
31					

TOTAL HOURS

287.2

64.2

MONTH/YEAR

Nov. 20'

351.4

# VALLEY VIEW STATION

11/30

DATE	READING	RUN TIME	READING	RUN TIME	TIME
	11724.9		11473.9	0.0	10:40 AM
	PUMP #1		PUMP #2		
1	11732.8	7.9	11473.9	0.0	11:06 AM
2	11739.9	7.1	11473.9	0	9:30 AM
3	11744.8	4.9	"	0	8:17 AM
4	11752.8	8.0	11473.9	0.0	9:47 AM
5	11759.4	6.6	11473.9	0.0	10:25 AM
6	11766.5	7.1	-	-	9:52 AM
7	11771.8	5.3	"	0	9:10 AM
8	11776.5	4.7	11473.9	0.0	9:40 AM
9	11781.8	5.3	"	1	9:40 AM
10	11785.9	4.1	"	1	9:10 AM
11	11790.1	4.3	11473.9	0.0	11:57 AM
12					
13	11799.3	8.6	-	-	9:00 AM
14	11804.2	5.4	"	1	9:25 AM
15	11810.3	5.2	11473.9	0.0 / off	10:20 AM
16	11814.8	4.6	11473.9	0.0	9:09 AM
17	11820.3	5.5	11473.9	0.0	10:23 AM
18	11826.8	5.9	11473.9	0.0 / off	11:00 AM
19	11830.6	4.4	11473.9	0.0	9:40 AM
20	11835.8	5.2	11473.9	-	7:12 AM
21	11842.3	6.9	11473.9	0.0 / off	10:29 AM
22	11846.8	4.3	11473.9	0.0	7:24 AM
23	11852.8	6.2	11473.9	0.0 / off	10:00 AM
24	11864.9	12.0	11473.9	0.0	9:55 AM
25	11877.4	12.5	-	-	7:37 AM
26	11887.5	9.7	11473.9	0.0	9:30 AM
27					
28	11919.8	32.7	11473.9	0.0	11:13 AM
29	11930.0	26.2	11473.9	0.0	11:12 AM
30	11958.4	22.6	11473.9	0.0	
31	11970.5	11.9	11475.1	1-2	7:49 AM

TOTAL HOURS 245.6

MONTH/YEAR Dec 2020

246.8

# WHEATSHEAF STATION

7/21/19 488 0.04

586.15 0.09

8:30 AM

DATE	PUMP #1 READING	RUN TIME
1	588.56	0.08
2	588.65	0.12
3	588.75	0.07
4		
5	588.43	0.17
6	589.02	0.10
7	589.09	0.07
8	589.15	0.06
9	589.26	0.11
10	589.33	0.07
11	589.40	0.07
12	589.50	0.10
13	589.61	0.11
14	589.68	0.07
15	589.77	0.09
16	589.85	0.08
17	589.92	0.07
18	589.99	0.07
19	590.04	0.05
20	590.17	0.13
21	590.22	0.05
22	590.29	0.07
23	590.36	0.07
24	590.41	0.05
25	590.45	0.04
26	590.54	0.04
27	590.64	0.10
28	590.70	0.09
29	590.78	0.08
30	590.84	0.06
31	590.92	0.08

PUMP #2 READING	RUN TIME
586.20	0.08
586.35	0.12
586.43	0.05
586.54	0.16
586.69	0.10
586.74	0.05
586.82	0.08
586.91	0.09
586.98	0.07
587.05	0.07
587.14	0.09
587.25	0.11
587.34	0.09
587.41	0.07
587.50	0.09
587.57	0.07
587.62	0.05
587.68	0.06
587.71	0.11
587.84	0.05
587.91	0.11
587.99	0.08
588.05	0.06
588.09	0.04
588.16	0.07
588.29	0.11
588.34	0.07
588.41	0.07
588.48	0.07
588.55	0.07

TIME
10:03 AM
11:08 AM
9:15 AM
9:56 AM
7:18 AM
9:12 AM
9:30 AM
11:05 AM
9:02 AM
9:30 AM
7:09 AM
9:50 AM
10:56 AM
10:01 AM
10:27 AM
10:29 AM
9:16 AM
11:11 AM
11:06 AM
8:54 AM
9:37 AM
09:14
10:40 AM
7:20 AM
7:17 AM
2:10 PM
9:00 AM
10:30 AM
9:35 AM
9:53 AM

2.44

2.37

TOTAL HOURS

MONTH/YEAR JUN 2020

4.81

# WHEATSHEAF STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1-31-20	590.92	0.08	588.55	0.07	9:53 AM
	PUMP #1		PUMP #2		
1	591.01	0.104	588.62	0.07	9:25 AM
2	591.06	0.05	588.69	0.07	9:31 AM
3	591.17	0.11	588.80	0.11	9:31 AM
4	591.24	0.07	588.86	0.06	9:55 AM
5	591.31	0.07	588.93	0.07	9:12 AM
6	591.39	0.08	589.00	0.07	11:24 AM
7	591.44	0.05	589.08	0.08	10:00 AM
8					
9	591.57	0.13	589.21	0.13	9:05 AM
10	591.68	0.11	589.32	0.11	8:42 AM
11	591.73	0.05	589.37	0.05	8:30 AM
12	591.84	0.11	589.46	0.09	11:05 AM
13	591.90	0.06	589.51	0.05	10:24 AM
14	591.96	0.06	589.59	0.08	9:30 AM
15	592.03	0.12	589.81	0.22	1:12 PM
16	592.12	0.14	589.74	0.07	9:00 AM
17	592.22	0.10	589.85	0.08	9:00 AM
18	592.30	0.08	589.91	0.08	09:34
19	592.39	0.09	589.00	0.09	1:15 PM
20	592.46	0.07	590.09	0.09	10:06 AM
21	592.55	0.19	590.18	0.09	10:39 AM
22	592.64	0.07	590.24	0.06	9:05 AM
23	592.72	0.10	590.33	0.09	9:56 AM
24	592.83	0.11	590.45	0.12	10:15 AM
25	592.91	0.08	590.51	0.06	10:15 AM
26	592.98	0.07	590.60	0.09	08:35
27	593.08	0.10	590.68	0.08	08:37
28	593.26	0.18	590.80	0.12	11:10 AM
29	593.35	0.09	590.87	0.07	9:00 AM
30					
31					

LT →

TOTAL HOURS

2.43

2.32

MONTH/YEAR

FEB. 2020

4.75



# WHEATSHLEAF STATION

DATE	592.16 PUMP #1 READING	0.07 RUN TIME	590.96 PUMP #2 READING	0.09 RUN TIME	TIME
1	593.45	0.10	590.96	0.09	17:21 AM
2	593.54	0.07	591.05	0.07	13:10
3	593.60	0.06	591.12	0.07	10:14 AM
4	593.67	0.05	591.17	0.05	9:30 AM
5	593.78	0.11	591.30	0.13	2:15 P
6	593.81	0.05	591.35	0.05	10:10 AM
7	593.91	0.05	591.41	0.06	9:10 AM
8					
9	594.06	0.15	591.57	0.16	10:00 AM
10	594.15	0.19	591.64	0.07	9:55 AM
11	594.21	0.06	591.70	0.06	07:53
12	594.26	0.05	591.77	0.07	11:05 AM
13	594.33	0.07	591.84	0.07	8:40 AM
14	594.43	0.05	591.93	0.08	7:05 AM
15	594.50	0.07	592.01	0.09	7:36 AM
16	594.61	0.11	592.12	0.11	08:15
17	594.69	0.08	592.20	0.08	9:25 AM
18	594.77	0.08	592.27	0.07	8:20 AM
19	594.88	0.11	592.35	0.08	7:37 AM
20	595.02	0.14	592.44	0.09	8:31 AM
21	595.12	0.10	592.50	0.06	8:00 AM
22	595.20	0.08	595.50	0.06	7:45 AM
23	595.27	0.15	592.05	0.09	7:35 AM
24	595.37	0.10	592.72	0.07	8:20 AM
25	595.46	0.08	592.82	0.10	7:37 AM
26	595.55	0.09	592.91	0.09	7:40 AM
27	595.64	0.09	593.01	0.10	8:00 AM
28					
29	595.78	0.14	593.16	0.15	8:38 AM
30	595.85	0.07	593.24	0.09	7:42 AM
31	595.93	0.08	593.33	0.09	7:33 AM
		<u>2.58</u>		<u>2.46</u>	

TOTAL HOURS

MONTH/YEAR MARCH / 2020

78 (5.04)

# WHEATSHEAF STATION

3/31

DATE	PUMP #1 READING	PUMP #1 RUN TIME	PUMP #2 READING	PUMP #2 RUN TIME	TIME
	595.43	0.08	593.33	0.09	7:33 AM
1	596.02	0.09	593.42	0.09	7:36 AM
2	596.13	0.11	593.51	0.09	7:40 AM
3	596.14	0.16	593.57	0.06	7:42 AM
4					
5	596.36	0.17	593.76	0.19	7:44 AM
6	596.43	0.07	593.84	0.08	7:46 AM
7	596.51	0.08	593.90	0.06	7:48 AM
8	596.59	0.08	593.97	0.07	7:50 AM
9	596.67	0.08	594.07	0.10	7:52 AM
10					
11					
12					
13	596.95	0.31	594.35	0.31	7:54 AM
14	597.05	0.07	594.45	0.07	7:56 AM
15	597.13	0.08	594.53	0.08	7:58 AM
16	597.24	0.11	602.10	7.57	7:59 AM
17	597.35	0.14	602.30	0.20	8:01 AM
18					
19	597.52	0.14	602.43	0.13	8:03 AM
20	597.59	0.07	602.52	0.09	8:05 AM
21	597.69	0.10	602.59	0.07	8:07 AM
22	597.79	0.10	602.65	0.06	8:09 AM
23	597.88	0.09	602.72	0.07	8:11 AM
24	597.97	0.09	602.78	0.06	8:13 AM
25					
26	598.17	0.20	602.91	0.13	8:15 AM
27	598.29	0.12	603.02	0.11	8:17 AM
28	598.37	0.08	603.08	0.06	8:19 AM
29	598.44	0.07	603.15	0.07	8:21 AM
30	598.55	0.11	603.20	0.05	8:23 AM
31					

TOTAL HOURS

2.69

9.57

MONTH/YEAR

April, 2020

12.49

(4/30) 598.55

# WHEATSHEAF STATION

603.20 0.05  
PUMP #2

7:25 AM

PUMP #1

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	598.04	0.09	603.29	0.07	7:34 AM
2					
3	598.80	0.16	603.40	0.13	7:19 AM
4	598.89	0.09	603.47	0.07	7:27 AM
5	598.98	0.09	603.54	0.07	7:29 AM
6	599.05	0.07	603.60	0.06	7:24 AM
7	599.12	0.07	603.64	0.04	7:30 AM
8	599.27	0.15	605.10	11.46	7:30 AM
9					
10	599.67	0.90	605.14	0.04	9:13 AM
11	599.78	0.11	605.14	0.00	7:26 AM
12	599.94	0.16	605.27	0.13	7:38 AM
13	600.06	0.12	605.27	0.00	7:25 AM
14	600.16	0.10	605.27	0.00	7:21 AM
15	600.29	0.13	605.27	0.00	7:28 AM
16					
17	600.51	0.11	605.42	0.15	11:05 AM
18	600.57	0.06	605.48	0.06	7:25 AM
19	600.64	0.07	605.55	0.07	7:35 AM
20	600.73	0.09	605.64	0.09	7:28 AM
21	600.82	0.09	605.72	0.08	7:26 AM
22	600.89	0.06	605.79	0.07	7:27 AM
23					
24	601.04	0.16	605.94	0.15	7:21 AM
25	601.15	0.11	606.05	0.11	7:48 AM
26	601.21	0.06	606.12	0.07	7:29 AM
27	601.28	0.07	606.19	0.07	7:17 AM
28	601.37	0.09	606.27	0.08	7:33 AM
29	601.43	0.06	606.32	0.05	7:27 AM
30					
31	601.58	0.18	606.50	0.18	10:09 AM

TOTAL HOURS

3.03

13.3

MONTH/YEAR MAY, 2020

16.33

# WHEATSHEAF STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	TIME
1	601.65	0.07	616.59	0.07	7:38 AM	
2	601.76	0.11	616.66	0.09	7:28 AM	
3	601.84	0.08	616.75	0.07	7:26 AM	
4	601.86	0.02	616.78	0.03	10:47 AM	
5	602.03	0.17	616.96	0.18	7:37 AM	
6						
7	602.19	0.16	617.14	0.18	7:38 AM	
8	602.27	0.08	617.22	0.08	7:40 AM	
9	602.34	0.07	617.29	0.07	9:06 AM	
10	602.42	0.08	617.36	0.07	7:28 AM	
11	602.49	0.07	617.43	0.07	7:33 AM	
12	602.57	0.08	617.52	0.09	7:26 AM	
13						
14	602.71	0.14	617.66	0.14	7:39 AM	
15	602.77	0.06	617.73	0.07	7:27 AM	
16	602.84	0.07	617.82	0.09	7:29 AM	
17	602.93	0.09	617.91	0.09	7:16 AM	
18	603.03	0.10	617.99	0.08	7:34 AM	
19	603.10	0.07	618.08	0.09	7:23 AM	
20						
21	603.25	0.15	618.23	0.15	7:20 AM	
22	603.30	0.05	618.29	0.06	7:25 AM	
23	603.39	0.09	618.38	0.09	7:49 AM	
24	603.47	0.08	618.47	0.09	7:41 AM	
25	603.55	0.08	618.55	0.08	7:40 AM	
26	603.61	0.06	618.61	0.06	7:24 AM	
27						
28	603.76	0.15	618.75	0.14	7:28 AM	
29	603.84	0.08	618.83	0.08	7:29 AM	
30	603.92	0.06	618.92	0.09	8:03 AM	
	~	~	~	~	~	

TOTAL HOURS 2.32

2.42

MONTH/YEAR JUNE / 2020

4.76

# WHEATSHEAF STATION

6/30 603.90		618.92		8:03 AM	
PUMP #1		PUMP #2			
DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	603.99	0.09	619.01	0.09	7:38 AM
2	604.05	0.06	619.08	0.07	7:29 AM
3	604.15	0.10	619.18	0.10	7:19 AM
4					
5					
6	604.39	0.24	619.43	0.25	7:28 AM
7	604.48	0.09	619.50	0.07	10:35 AM
8	604.55	0.07	619.57	0.07	7:30 AM
9	604.62	0.07	619.65	0.08	7:27 AM
10	604.74	0.12	619.76	0.11	7:22 AM
11					
12	604.92	0.18	619.94	0.18	7:41 AM
13	605.03	0.11	620.07	0.13	7:43 AM
14	605.12	0.09	620.16	0.09	7:30 AM
15	605.21	0.09	620.23	0.07	7:27 AM
16	605.29	0.07	620.32	0.09	7:38 AM
17	605.37	0.09	620.41	0.09	10:29 AM
18					
19	605.56	0.19	620.59	0.18	10:06 AM
20	605.65	0.09	620.69	0.10	7:34 AM
21	605.73	0.08	620.76	0.07	7:24 AM
22	605.81	0.08	620.84	0.08	8:07 AM
23	605.88	0.07	620.93	0.09	7:29 AM
24	605.99	0.11	621.04	0.11	7:20 AM
25					
26	606.20	0.21	621.28	0.24	7:25 AM
27	606.32	0.12	621.39	0.11	7:20 AM
28	606.40	0.08	621.49	0.10	7:23 AM
29	606.51	0.11	621.58	0.09	7:25 AM
30	606.60	0.09	621.69	0.11	7:28 AM
31	606.74	0.18	621.80	0.31	7:26 AM
TOTAL HOURS		2.88	9.08		

MONTH/YEAR JULY 2020

11.96

# WHEATSHEAF STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	-	-	-	-	-
2	607.00	0.12	628.20	0.20	7:15 AM
3	607.08	0.08	628.30	0.10	7:29 AM
4	607.17	0.09	628.39	0.09	7:27 AM
5	607.19	0.02	628.41	0.02	7:45 AM
6	607.31	0.19	628.60	0.19	7:55 AM
7	607.46	0.08	628.70	0.10	7:39 AM
8	-	-	-	-	-
9	-	-	-	-	-
10	607.77	0.31	629.00	0.30	7:29 AM
11	607.84	0.07	629.09	0.07	7:26 AM
12	607.93	0.09	629.15	0.11	7:39 AM
13	608.03	0.10	629.29	0.11	7:58 AM
14	608.13	0.10	629.37	0.08	8:12 AM
15	-	-	-	-	-
16	-	-	-	-	-
17	608.41	0.28	629.65	0.28	7:30 AM
18	608.51	0.10	629.76	0.11	7:27 AM
19	608.101	0.10	629.89	0.13	7:21 AM
20	608.71	0.10	629.99	0.10	7:27 AM
21	608.80	0.09	630.06	0.07	7:31 AM
22	-	-	-	-	-
23	-	-	-	-	-
24	609.06	0.26	630.32	0.26	7:54 AM
25	609.15	0.09	630.42	0.10	7:29 AM
26	609.23	0.08	630.51	0.09	8:00 AM
27	609.33	0.10	630.60	0.09	8:55 AM
28	609.38	0.05	630.66	0.06	7:46 AM
29	-	-	-	-	-
30	-	-	-	-	-
31	609.69	0.30	630.99	0.33	7:53 AM
TOTAL HOURS		2.9	2.99		

MONTH/YEAR August, 2020

5.89

# WHEATSHEAF STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
1	609.78	0.10	631.08	0.09	7:42 AM
2	607.88	0.10	631.18	0.10	9:38 AM
3	609.97	0.09	631.28	0.10	2:37 PM
4	610.04	0.07	631.34	0.06	7:19 AM
5					
6					
7	610.29	0.25	631.59	0.25	11:43 am
8	610.31	0.07	631.10	0.07	9:00 AM
9	610.45	0.09	631.74	0.08	8:21 AM
10	610.52	0.07	631.81	0.07	7:53 AM
11	610.59	0.07	631.89	0.08	11:26 am
12					
13					
14	610.84	0.25	632.16	0.27	9:03 AM
15	610.91	0.07	632.22	0.06	7:55 AM
16	610.99	0.08	632.30	0.08	7:37 AM
17	611.06	0.07	632.39	0.09	7:37 AM
18	611.15	0.09	632.46	0.07	9:42 AM
19					
20					
21	611.40	0.25	632.73	0.27	7:37 AM
22	611.48	0.08	632.80	0.07	10:30 AM
23	611.57	0.09	632.90	0.10	10:57 AM
24	611.65	0.08	632.97	0.07	9:58 AM
25	611.73	0.08	633.08	0.11	9:52 AM
26					
27	612.16	0.37	633.08	0.0	
28	612.25	0.15	633.09	0.0	7:46 AM
29	612.33	0.09	633.19	0.11	7:56 AM
30	612.39	0.06	633.25	0.06	7:41 AM

TOTAL HOURS

2.71

2.26

MONTH/YEAR

Sept. 2020

4.97

# WHEATSHEAF STATION

DATE	READING	RUN TIME	DATE	READING	RUN TIME	TIME
9/30	612.39	0.06	633.25	0.00		7:41 AM
	PUMP #1			PUMP #2		
1	612.47	0.08	633.37	0.12		9:19 pm
2	612.52	0.05	633.43	0.06		7:52 AM
3						
4						
5	612.78	0.26	633.73	0.30		9:00 AM
6	612.83	0.05	633.78	0.05		7:52 AM
7	612.91	0.08	633.86	0.08		10:00 AM
8	612.98	0.07	633.94	0.08		7:38 AM
9	613.00	0.08	634.02	0.09		11:27 AM
10						
11	613.19	0.13	634.19	0.16		7:30 AM
12	613.31	0.12	634.32	0.13		9:14 AM
13	613.37	0.06	634.40	0.08		10:43 AM
14	613.48	0.08	634.49	0.09		11:00 AM
15	613.52	0.07	634.54	0.05		7:55 AM
16	613.58	0.06	634.62	0.08		8:50 AM
17						
18	613.71	0.33	634.72	0.15		7:45 AM
19	613.81	0.10	634.80	0.09		10:00 AM
20	613.88	0.07	634.95	0.08		8:05 AM
21	613.96	0.08	635.04	0.09		9:10 AM
22	614.03	0.07	635.11	0.07		8:14 AM
23	614.12	0.08	635.22	0.11		10:36 AM
24						
25	614.28	0.17	635.34	0.17		7:04 AM
26	614.36	0.08	635.50	0.11		11:08 PM
27	614.42	0.06	635.58	0.08		10:39 AM
28	614.47	0.05	635.61	0.03		8:03 AM
29	614.54	0.09	635.64	0.08		7:40 AM
30	614.61	0.07	635.76	0.07		7:58 AM
31	614.67	0.06	635.83	0.07		7:13 AM

TOTAL HOURS 2.28

2.58

MONTH/YEAR Oct. 2020

4.86



# WHEATSHEAF STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
10/31	614.67	0.00	635.83	0.07	7:15 AM
	PUMP #1		PUMP #2		
1	614.76	0.09	635.97	0.10	6:45 AM
2	614.83	0.07	636.00	0.07	10:10 AM
3	614.90	0.07	636.09	0.09	9:40 AM
4	614.97	0.07	636.17	0.08	9:45 AM
5	615.00	0.05	636.23	0.07	11:10 AM
6	615.10	0.05	636.31	0.07	10:10 AM
7	615.17	0.07	636.37	0.06	7:10 AM
8	615.25	0.06	636.40	0.11	11:10 AM
9	615.30	0.06	636.59	0.11	11:51 AM
10	615.41	0.05	636.64	0.05	9:36 AM
11	615.47	0.06	636.70	0.06	6:17 AM
12	615.54	0.07	636.77	0.07	11:00 AM
13	615.58	0.02	636.83	0.06	8:44 AM
14	615.66	0.11	636.90	0.06	7:10 AM
15	615.73	0.1	636.99	0.09	7:31 AM
16	615.83	0.10	637.09	0.10	9:50 AM
17	615.90	0.07	637.16	0.07	08:31
18	615.96	0.06	637.24	0.08	10:00 AM
19	616.01	0.05	637.31	0.07	08:35
20	616.09	0.08	637.38	0.07	10:17 AM
21	616.13	0.04	637.43	0.05	7:20 AM
22	616.19	0.11	637.55	0.12	9:15 AM
23	616.26	0.08	637.64	0.09	10:21 AM
24	616.39	0.07	637.71	0.07	10:44 AM
25	616.46	0.07	637.76	0.05	7:48 AM
26	616.55	0.09	637.86	0.01	10:48 AM
27	616.58	0.09	637.95	0.09	11:20 AM
28	616.69	0.07	638.00	0.05	6:55 PM
29	616.78	0.19	638.18	0.15	9:00 AM
30	616.88	~	~	~	~
31	616.98	~	~	~	~

TOTAL HOURS

2.21

2.35

MONTH/YEAR

Nov 15

4.56

# WHEATSHEAF STATION

DATE	READING	RUN TIME	READING	RUN TIME	TIME
11/30	616.80	0.09	638.18	0.10	9:00 AM
	PUMP #1		PUMP #2		
1	616.93	0.05	638.27	0.09	8:16 AM
2	617.01	0.08	638.34	0.07	9:42 AM
3	617.08	0.07	638.41	0.07	10:00 AM
4	617.13	0.05	638.49	0.08	8:01 AM
5	617.20	0.07	638.58	0.07	6:30 AM
6					
7	617.35	0.15	639.73	0.07	7:42 AM
8	617.42	0.07	638.90	0.07	9:09 AM
9	617.50	0.08	638.97	0.07	10:42 AM
10	617.58	0.05	638.97	0.07	10:24 AM
11	617.62	0.07	639.01	0.07	7:55 AM
12					
13	617.77	0.15	639.17	0.16	11:18 AM
14	617.80	0.09	639.22	0.05	8:02 AM
15	617.87	0.07	639.29	0.07	9:15 AM
16	617.95	0.08	639.36	0.07	0 8 2 0
17	618.00	0.05	639.42	0.06	10:00 AM
18	618.05	0.05	639.49	0.07	7:44 AM
19	618.14	0.09	639.56	0.06	6:55 AM
20	618.25	0.11	639.68	0.12	10:19 AM
21	618.32	0.07	639.70	0.08	8:22 AM
22	618.39	0.07	639.85	0.09	8:05 AM
23	618.49	0.10	639.93	0.08	9:58 AM
24	618.53	0.04	640.00	0.07	6:45 AM
25	618.63	0.10	640.10	0.10	8:51 AM
26					
27					
28	618.85	0.22	640.36	0.36	9:48 AM
29	618.92	0.07	640.42	0.06	11:16 AM
30	619.49	0.07	640.49	0.07	8:30 AM
31	619.89	0.08	640.53	0.10	10:42 AM

TOTAL HOURS

2.19

2.41

MONTH/YEAR DECEMBER, 2020

4.60

# **APPENDIX D**

## **CONNECTION MANAGEMENT PLAN**

Revised (date) March 5, 2021																	
Falls Township Connection Management Plan																	
	Sewage Facilities Planning Status		Construction Status		Connection Status		Connection Proposed Prior to Release of 2016					Actual Proposed Connections					
	DEP Code No.	Flow Approved (GPD)	Construction Status	Building Permits Issued	EDU's Needed	EDU's Allocated	2015	2016	2017	2018	2019	2016	2017	2018	2019	2020	2021
(Municipality Name)																	
Township of Falls Authority																	
Viking Associates	1-09002-224-3J	9,680	Planning	yes	40	40	40										
640 Lincoln Highway		484	Planning	no	2	2		2									2
550 W. Trenton Avenue		3,100	Planning	no	13	13	13										13
212 Lincoln Highway		242	Planning	no	1	1		1				1					
115 Lincoln Highway		500	Planning	no	2	2		2									2
38 E. Cabot Boulevard		4,488	Planning	no	19	19		19							3		16
440 Lincoln Highway		484	Planning	no	2	2		2				2					
188 Lincoln Highway		484	Planning	no	2	2		2									
312 N. Oxford Valley Road		1,210	Planning	no	5	5		5									2
AAA Car Care		1,452	Planning	no	6	6				6							5
300 W. Trenton Avenue		242	Planning	no	1	1											1
Residential Redevelopment		4,840			20			20				20					6
Non-Residential Redevelopment		5,808			24			24				23					

# **APPENDIX E**

## **LOWER MAKEFIELD CHAPTER 94 REPORT**



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

**For Calendar Year: 2020 - Falls Contract Area**

- Permittee is owner and/or operator of a POTW or other sewage treatment facility  
 Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	<b>Lower Makefield Township</b>	Permit No.:	<b>PA N/A - Collection System Tributary to Falls Contract Area</b>
Mailing Address:	<b>1100 Edgewood Road</b>	Effective Date:	
City, State, Zip:	<b>Yardley, PA 19067</b>	Expiration Date:	
Contact Person:	<b>Kurt M. Ferguson</b>	Renewal Due Date:	
Title:	<b>Township Manager</b>	Municipality:	<b>Lower Makefield Township</b>
Phone:	<b>267-274-1100</b>	County:	<b>Bucks County</b>
Email:	<b>kurtf@lmt.org</b>	Consultant Name:	<b>Frederick E. Ebert, P.E., Ebert Engineering, Inc.</b>
CHAPTER 94 REPORT COMPONENTS			
<p>1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (<u>25 Pa. Code § 94.12(a)(1)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input type="checkbox"/> Line graph for flows attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input checked="" type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>			
<p>2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (<u>25 Pa. Code § 94.12(a)(2)</u>)</p> <p><b>Check the appropriate boxes:</b></p> <p><input type="checkbox"/> Line graph for organic loads attached (<b>Attachment</b> )</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (<b>Attachment</b> )</p> <p><input checked="" type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>			

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

**Attached are spreadsheets for the hydraulic projections within the Falls Contract Service Areas from Lower Makefield Township. The Flow Meter reading summary and Derbyshire run hours are included in Attachment E.**

**Lower Makefield Township does not own or operate a wastewater treatment plant.**

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

**Check the appropriate boxes:**

- Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment A**)
- List summarizing each extension or project attached (**Attachment B**)
- Schedules describing how each project will be completed over time and effects attached (**Attachment C**)

**Comments:**

**The attached General Plan of Sanitary Sewers has been updated to include all the connections to the system performed during the calendar year of 2020.**

**Attachment C provides a list of projects which are proposing to be constructed and connected to the system in 2021.**

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

**Lower Makefield Township inspects the metering facility on a weekly basis. Lower Makefield Township based upon wet weather inspections will televise portions of the sanitary sewer mains to identify sources of I/I to be included in their yearly I/I Removal Plan. Lower Makefield Township also inspects individual manholes for leaks and has leaking manholes lined by an outside contractor.**

**As discussed with TOFA at the February 25, 2019 meeting, the Township has adopted a lateral ordinance which became effective in 2020.**

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

**Check the appropriate boxes:**

- System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

**Comments:**

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

**Check the appropriate boxes:**

- The collection system does not contain pump stations
- The collection system does contain pump stations (Number – )
- Discussion of condition of each pump station attached (**Attachment** )

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

**Check the appropriate boxes:**

- Industrial waste report as described in 8 a., b. and c. attached (**Attachment** )
- Industrial pretreatment report as required in an NPDES permit attached (**Attachment** )



9. Existing or Projected Overload.

**Check the appropriate boxes:**

- This report demonstrates an existing hydraulic overload condition.
- This report demonstrates a projected hydraulic overload condition.
- This report demonstrates an existing organic overload condition.
- This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

Corrective Action Plan attached (**Attachment** )

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

Sewage Sludge Management Inventory attached (**Attachment** )

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

Annual CSO Report attached (**Attachment** )

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

Flow calibration report attached (**Attachment D**)

**RESPONSIBLE OFFICIAL CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Frederick E. Ebert, P.E., Authority Engineer**

Name of Responsible Official



Signature

610-584-6701

Telephone No.

March 1, 2021

Date

**PREPARER CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

**Frederick E. Ebert, P.E. , Ebert Engineering, Inc.**



Signature

Name of Preparer

**610-584-6701**

**March 1, 2021**

Telephone No.

Date



## CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

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

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

### General Information

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

### Chapter 94 Report Components

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

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

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

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

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

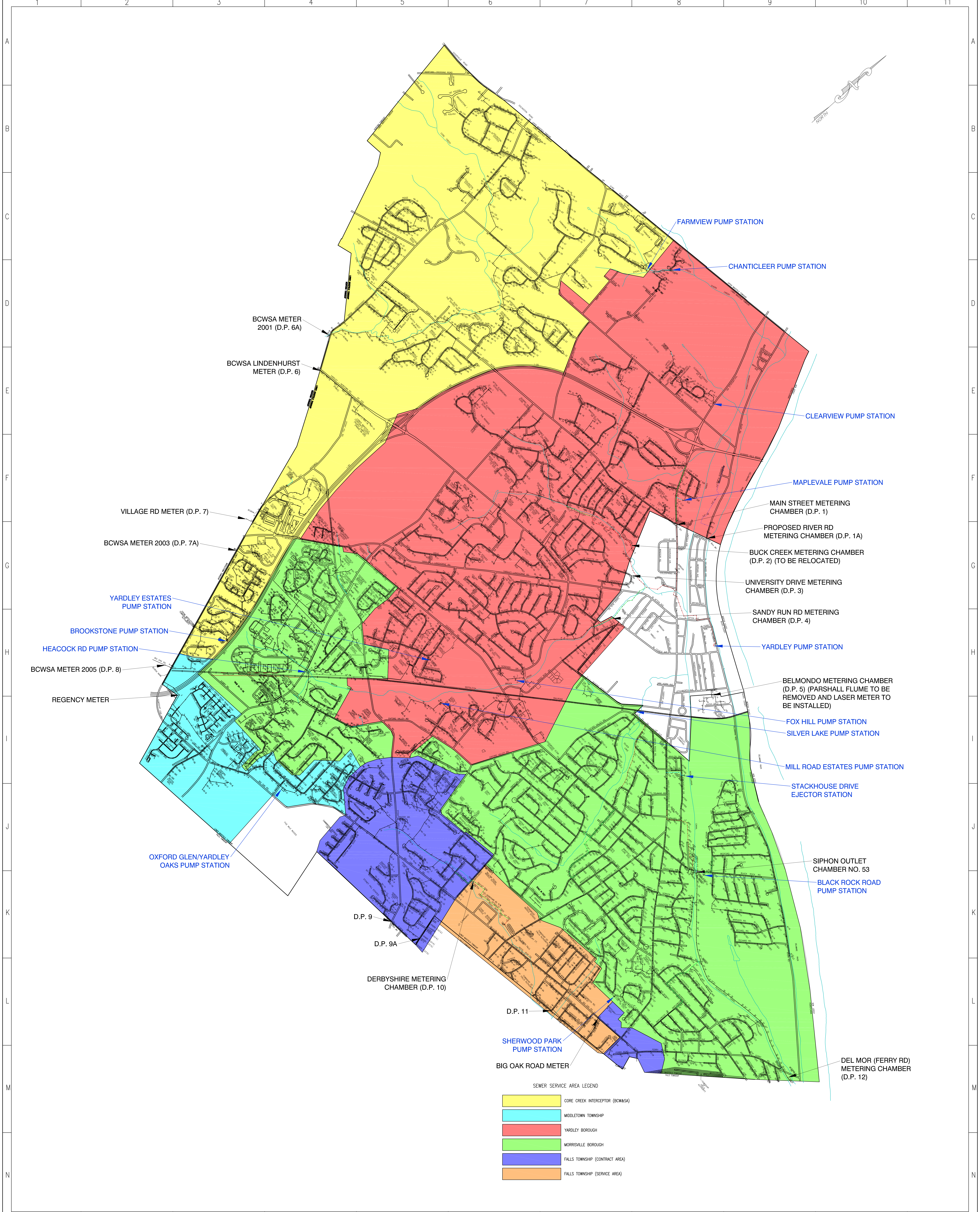
For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

### Certification

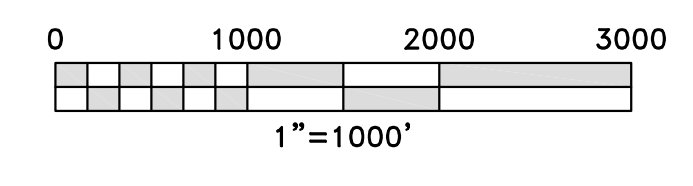
In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

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

**ATTACHMENT A - OVERALL SEWER PLAN FOR LOWER MAKEFIELD  
TOWNSHIP**



This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Ebert Engineering, Inc., and is not to be used in whole or part, for any other project without the written authorization of Ebert Engineering, Inc. This is a copy and not the original drawing. Any liability whatsoever is limited to the original drawing or our last revision to the original. Reproductions of this drawing without an embossed engineer's seal are not valid.



Number	Description	Date	Drawn By	Project Engr.	Checked By	Scale	Job No.	Date	Drawing No.
1	Revision To Morrisville Borough Service Area	8/31/08	EMK	FEE	FEE	1"/1000'	068-001	05/16/16	1 OF 1

**GENERAL PLAN OF SANITARY SEWERS  
WITH SEWER SERVICE AREAS  
FOR  
LOWER MAKEFIELD TOWNSHIP**

**Ebert Engineering, Inc.**  
Water and Wastewater Engineering

PO Box 540  
 4092 Skipack Pike, Suite 202  
 Skipack, PA 19474  
 E-mail: febert@ebertengineering.com  
 Phone: (610) 584 6701  
 Fax: (610) 584 6704

**ATTACHMENT B - LIST OF SEWER EXTENSIONS IN 2020**

**LOWER MAKEFIELD TOWNSHIP  
SANITARY SEWER EXTENSIONS AND CONNECTIONS IN 2020  
FALLS CONTRACT SERVICE AREA**

<b>Development Name</b>	<b>Length of Pipe (L.F.)</b>	<b>Size of Pipe (in.)</b>	<b>Laterals Installed</b>
No new connections in 2020			

**ATTACHMENT C - LIST OF 5 YEAR PROJECTIONS**



**LOWER MAKEFIELD TOWNSHIP  
SANITARY SEWER CONNECTIONS FOR FALLS CONTRACT AREA  
5 YEAR PROJECTION**

<b>Development Name</b>	<b>Pump Station</b>	<b>Meter</b>	<b>EDU's Planned or Approved</b>	<b>EDU's Connected To Date</b>	<b>EDU's Needed</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Prime Properties (1155 Big Oak Road)			2	0	2	2	0	0	0	0
Fiorelli Grove - Approved 3 Lots, Big Oak Road and Derbyshire Road			3	0	3	0	3	0	0	0
<b>Totals</b>						<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>

**ATTACHMENT D - CALIBRATION REPORTS**

## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-1  
Calibration Date: 04/08/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.125", meter display 3.25"

All checks good

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.5", meter display 1.625"



(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume

Flow Rate = MGD

Blanking, Min=7.92", Max=47.76"

Totaling at counts x 1

Measured head @ 14.5", meter display 14.4375"

All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume

Zero Pt Changed to 50.87"

Span changed to 38.87"

Scale = 0-7240 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 13.75", meter display 13.75"

All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume

Flow Rate = MGD

Total Counts x 1

(Found) Measured head @ 4.5", meter display 3.5"

(Left) Measured head @ 3.125", meter display 3.0"

All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume

Zero Pt = 21.50"

Span = 9.25"

Scale = 0-611.7 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 1.625", meter display 1.54"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***



(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.25", meter display 7.36"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.9375", meter display 0.96"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

IP ###.###.###.###

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.0", meter display 1.01"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stop watch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-2  
Calibration Date: 06/17/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.25", meter display 3.32"

All checks good

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.875", meter display 1.83"

(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume

Flow Rate = MGD

Blanking, Min=7.92", Max=47.76"

Totaling at counts x 1

Measured head @ 14.0", meter display 14.09"

All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume

Zero Pt Changed to 50.87"

Span changed to 38.87"

Scale = 0-7240 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 14.25", meter display 14.31"

All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume

Flow Rate = MGD

Total Counts x 1

(Found) Measured head @ 4.5", meter display 3.5"

(Left) Measured head @ 2.75", meter display 2.81"

All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume

Zero Pt = 21.50"

Span = 9.25"

Scale = 0-611.7 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 1.4375", meter display 1.43"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***





(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.9375", meter display 8.02"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.875", meter display 0.89"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

IP ###.###.###.###

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.125", meter display 1.12"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stopwatch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



## CALIBRATION AND INPECTION REPORT

### Customer Information:

Lower Makefield Township  
1100 Edgewood Rd  
Yardley, PA 19067

Report No. LMT20001-3  
Calibration Date: 09/21/20  
By: William M. Paone

**SITE: Multiple**

### Service Description

#### (5) - SANDY RUN

W College and Fairway Dr Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Level input - 310 sensor 217g01029

Rate - Continuous

Flow Rate = MGD

Blanking, Min= 13" - 50"

Totaling at counts x 1

Measured head @ 3.5", meter display 3.31"

Nonresponsive keypad – unable to adjust calibration parameters

#### (4) - BELMUNDO

Letchworth Ave

ISCO Laser Flow Meter used with 8" round pipe and square channel

IP 166.145.33.178: 1700

Measurement Settings

- Level Input - 360 Level 218E03477
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - square channel
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance .75" - 12.50"

Totaling at counts x 1

Measured head @ 1.75", meter display 1.81"

All checks good

(2) - EAST FERRY RD

Morrisville

ISCO Signature Series Meter used with a 12" Parshall flume

Flow Rate = MGD

Blanking, Min=7.92", Max=47.76"

Totaling at counts x 1

Measured head @ 14.25", meter display 14.21"

All checks good

(1) - DELMORR AVE

203 S Delmorr Ave Morrisville

Control Electronics model PDS used with a 12" Parshall flume

Zero Pt 50.87"

Span changed to 38.87"

Scale = 0-7240 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 13.75", meter display 13.83"

All checks good

(3) - DERBYSHIRE

Morrisville

ISCO Signature Series Meter used with a 10" Palmer Bowlus flume

Flow Rate = MGD

Total Counts x 1

Measured head @ 2.25", meter display 2.31"

All checks good

(7) - MAIN STREET

Main Street and Dolington Dr Morrisville

Control Electronics model PDS used with a 6" Parshall flume

Zero Pt = 21.50"

Span = 9.25"

Scale = 0-611.7 GPM

Low flow shut off at 1 GPM

Totaling at counts x 1

Measured head @ 1.5", meter display 1.52"

**\*\* Meter keypad malfunction, cannot enter program mode to calibrate \*\***



(6) - BUCK CREEK

Knoll Drive Morrisville

ISCO Signature Series Meter used with a 6" Parshall flume

Flow Rate = MGD

Blanking, Min=12", Max=50"

Totaling at counts x 1

Measured head @ 7.875", meter display 8.01"

All checks good

Big Oak Road

404 Big Oak Rd, Yardley

ISCO Laser Flow Meter used with 8" round pipe

IP 192.88.94.6: 1700

Measurement Settings

- Level Input - 360 Level 215E01623
- Velocity input - 360 Velocity

Flow Conversion

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 8"
- Positive flow only

Blanking Distance 0" - 135.92"

Total at counts x 1

Measured head @ 0.9375", meter display 1.0"

All checks good

Regency at Yardley

Installed customer supplied Signature series flow meter (replace portable 2160)

ISCO Laser Flow Meter used with 8" round pipe

Measurement Settings

- Level Input - 360 Level
- Velocity input - 360 Velocity

Flow Conversion (GPM)

- Area Velocity
- Measurement device - round pipe
- Silt Level 0"
- Diameter - 17.5"
- Positive flow only

Blanking Distance 0" - 22.05"

Total at counts x 1 (net)

Measured head @ 1.0", meter display 1.05"

All checks good



Equipment Used: Fluke 725 Process Calibrator, stopwatch, standard scale, ISCO Open Channel Flow Measurement Handbook

I hope you find this information helpful. I may be reached at 610-955-6000 if you have any questions.

Respectfully,



William M. Paone  
PAONE ELECTRIC, LLC



**ATTACHMENT E – FLOW METER DATA**

Lower Makefield Township Falls Township Meter Readings 2020							
Monthly Flow Meter Reading		Monthly Flow Meter Reading		Monthly Water Meter Reading		Monthly Water Meter Reading	
Derbyshire		Big Oak		D.P. 9*		D.P.9A*	
Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)	Date	Monthly Average Flow (MGD)
JANUARY	0.160582	JANUARY	0.023241	JANUARY	-	JANUARY	-
FEBRUARY	0.227192	FEBRUARY	0.025580	FEBRUARY	-	FEBRUARY	-
MARCH	0.211018	MARCH	0.026170	MARCH	0.00744	MARCH	0.005574
APRIL	0.229453	APRIL	0.029733	APRIL	-	APRIL	-
MAY	0.174209	MAY	0.022774	MAY	-	MAY	-
JUNE	0.108615	JUNE	0.013062	JUNE	0.006622	JUNE	0.005457
JULY	0.099577	JULY	0.011453	JULY	-	JULY	-
AUGUST	0.089918	AUGUST	0.009544	AUGUST	-	AUGUST	-
SEPTEMBER	0.080126	SEPTEMBER	0.009411	SEPTEMBER	0.01037	SEPTEMBER	0.00678
OCTOBER	0.132982	OCTOBER	0.013386	OCTOBER	-	OCTOBER	-
NOVEMBER	0.175743	NOVEMBER	0.015865	NOVEMBER	-	NOVEMBER	-
DECEMBER	0.220264	DECEMBER	0.024418	DECEMBER	0.008131	DECEMBER	0.005864
<b>Monthly Annual Ave Flow</b>	<b>0.15914</b>	<b>Monthly Annual Ave Flow</b>	<b>0.01872</b>	<b>Monthly Annual Ave Flow</b>	<b>0.00814</b>	<b>Monthly Annual Ave Flow</b>	<b>0.00592</b>

\* D.P. 9 and D.P. 9A use water meter readings for billing purposes to Falls Township.

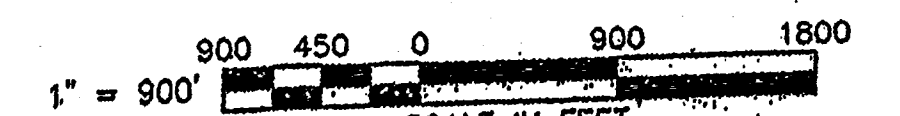
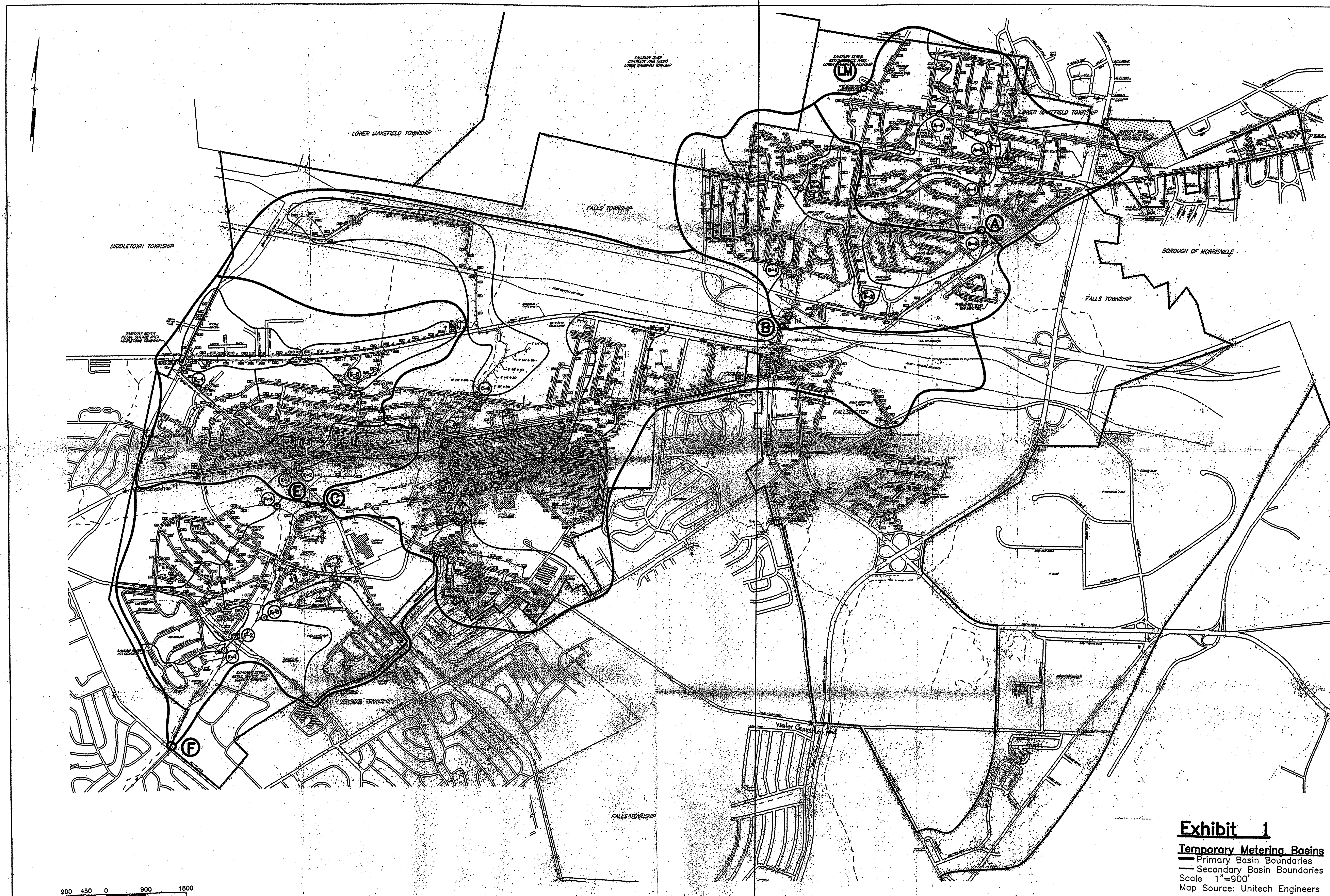


<b>Derbyshire Pump Station- Pump Hours Summary</b>	
<b>Falls Contract Area</b>	
<b>Date</b>	<b>Run Hours</b>
1/15/2020	383.7
2/21/2020	387.9
3/2/2020	387.9
3/10/2020	387.9
3/16/2020	387.9
3/24/2020	395.2
4/2/2020	395.2
4/14/2020	407.1
4/30/2020	407.1
6/8/2020	407.1
7/7/2020	407.1
7/22/2020	409.7
8/3/2020	409.7
8/5/2020	412.2
9/5/2020	412.2
10/1/2020	416.0
10/29/2020	424.4
11/20/2020	437.7
12/2/2020	447.8
12/30/2020	470.7



# **APPENDIX F**

## **METERING BASINS PLAN**



**Exhibit 1**  
**Temporary Metering Basins**  
 — Primary Basin Boundaries  
 — Secondary Basin Boundaries  
 Scale 1"=900'  
 Map Source: Unitech Engineers