

North Huntingdon Township Municipal Authority

Chapter 94 Municipal Wasteload Management Report

for

Youghiogheny Wastewater Treatment Plant

NPDES Permit No. PA0027243

Operating Year 2009

Submitted March 2010

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NORTH HUNTINGDON TOWNSHIP MUNICIPAL AUTHORITY
Westmoreland County, Pennsylvania

Youghiogheny Wastewater Treatment Plant
Chapter 94 – Municipal Wasteload Management Report
Operating Year 2009

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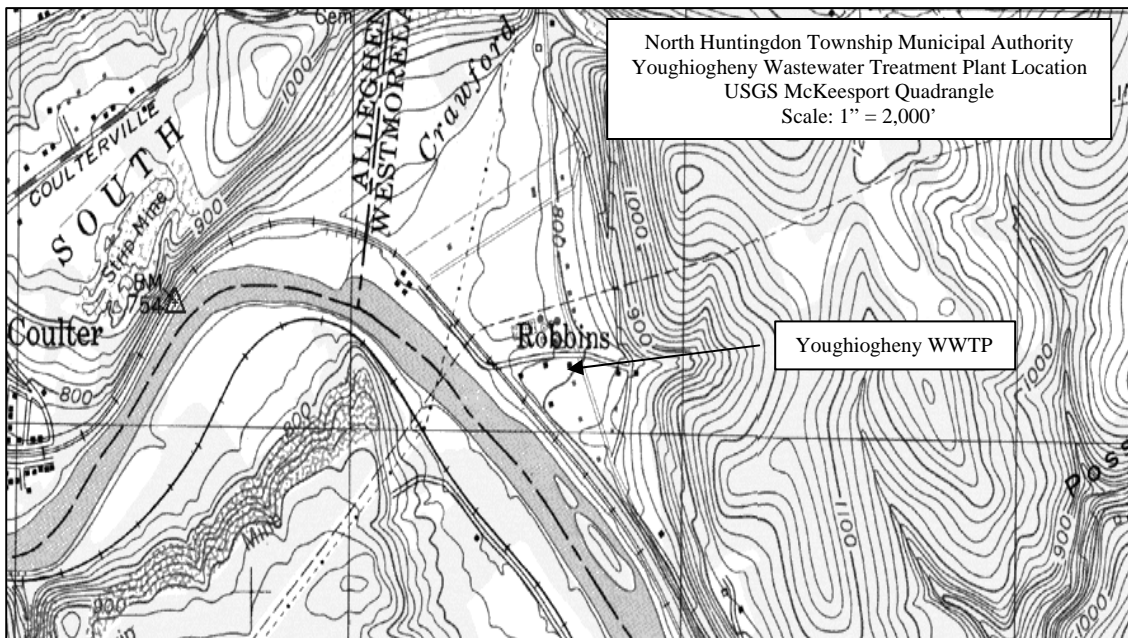
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Westmoreland County, Pennsylvania

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SECTION 1 Introduction

In compliance with Section 94.12, of Chapter 94, Title 25 of the Pennsylvania Code and the Rules and Regulations of the Pennsylvania Department of Environmental Protection, this report is submitted by the North Huntingdon Township Municipal Authority (NHTMA) as a summary of the loadings and conditions existing at the Youghiogheny Wastewater Treatment Plant (WWTP) and its associated pump stations, tributary sewage collection and conveyance sewer systems. In addition, this report also includes a projection of the anticipated loadings at the WWTP for the next five years (2010-2014) and at the sewage pumping stations for the next two years.

The Youghiogheny WWTP is located along Turner Valley Road and discharges into the Youghiogheny River. The plant is owned by NHTMA and operated under State Permit No. 6573448-A2 and NPDES Permit No. PA0027243. The NPDES Permit was renewed on July 3, 2008 and has an expiration date of July 31, 2013.



In addition to the Youghiogheny WWTP, flow from North Huntingdon Township is also conveyed to the Brush Creek WWTP, owned and operated by the Western Westmoreland Municipal Authority, and to the Allegheny County Sanitary Authority's WWTP.

SECTION 2 Hydraulic Loading

In accordance with § 94.12(a)(1) and (3)

Daily flow measurements are taken from the influent flow meter. The historical loadings for the past five years by month are shown on the following chart.

| Actual Hydraulic Loading | | | | | |
|--|------------------------------------|--------------|--------------|--------------|--------------|
| Year | Monthly Average Flows (mgd) | | | | |
| | 2005 | 2006 | 2007 | 2008 | 2009 |
| January | 3.581 | 2.521 | 2.660 | 1.786 | 2.166 |
| February | 2.628 | 1.698 | 1.956 | 2.740 | 1.917 |
| March | 2.394 | 1.685 | 3.329 | 3.005 | 1.332 |
| April | 1.853 | 1.738 | 2.202 | 1.614 | 1.728 |
| May | 1.486 | 1.874 | 1.582 | 2.275 | 1.852 |
| June | 1.492 | 1.803 | 1.580 | 1.753 | 1.950 |
| July | 1.380 | 1.773 | 1.604 | 1.729 | 1.426 |
| August | 1.497 | 1.725 | 2.438 | 1.347 | 1.474 |
| September | 1.360 | 1.828 | 1.495 | 1.371 | 1.252 |
| October | 1.521 | 2.094 | 1.341 | 1.224 | 1.424 |
| November | 1.621 | 1.908 | 1.656 | 1.291 | 1.195 |
| December | 1.671 | 1.479 | 2.658 | 2.759 | 1.921 |
| Annual Average | 1.874 | 1.844 | 2.042 | 1.908 | 1.636 |
| Maximum 3-Month Average Flow | 2.868 | 1.968 | 2.648 | 2.510 | 1.843 |
| Ratio of Max. 3-Month to Annual Average | 1.53 | 1.07 | 1.30 | 1.32 | 1.13 |
| EDUs | 6,062 | 6,139 | 6,342 | 6,359 | 6,402 |
| Flow per EDU (gpd/EDU) | 309 | 300 | 322 | 300 | 256 |

Note: Flows in **RED** are values indicating the highest arithmetic mean of three (3) consecutive months for that particular year.

The following chart is a summary of the hydraulic loading over the past five years. This will be used as the basis for determining both the projected annual average flows and projected maximum 3-month flows for the next five years.

| Summary of Hydraulic Loading | |
|---------------------------------------|-------|
| 5-Year Annual Average of Ratios | 1.267 |
| 5-Year Annual Average of Flows (mgd) | 1.858 |
| 5-Year Average of Flows per EDU (gpd) | 297 |
| Design Capacity (mgd) | 3.31 |

Using the five-year average flow as the starting point (1.858 mgd) and then adding flows from new EDUs annually, the hydraulic loading for the next five years is projected. The Township continues to grow at an average rate; this growth trend is projected to continue over the next five years. Estimated growth from 2010 through 2014 can be seen in the Projected Hydraulic Loading Table below. The number of EDUs is multiplied by the five-year average flow per EDU (297 gpd/EDU) to determine the increase in flow due to growth for each year. The projected annual average flows are shown on the following chart.

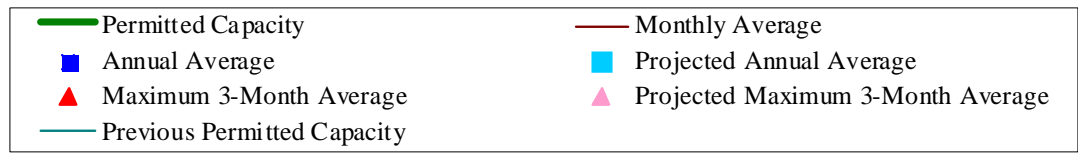
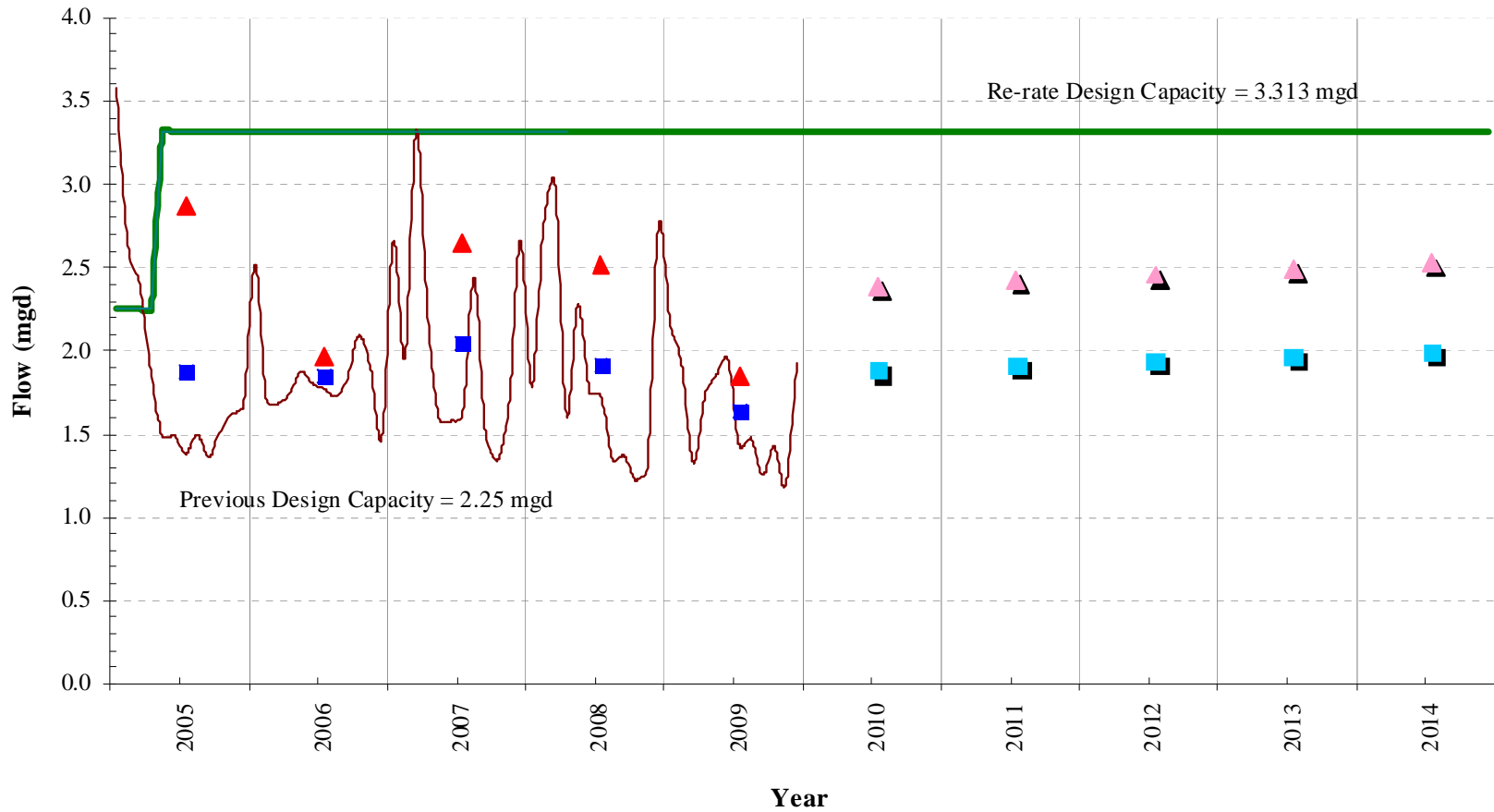
| Projected Hydraulic Loading | | | | |
|-----------------------------|---------------------|-------------------------------|-----------------------------------|----------------------|
| Year | Previous Flow (mgd) | Additional EDUs (297 gpd/EDU) | Additional Increase in Flow (mgd) | Projected Flow (mgd) |
| 2010 | 1.858 | 92 | 0.027 | 1.885 |
| 2011 | 1.885 | 92 | 0.027 | 1.912 |
| 2012 | 1.912 | 92 | 0.027 | 1.940 |
| 2013 | 1.940 | 88 | 0.026 | 1.966 |
| 2014 | 1.966 | 87 | 0.026 | 1.992 |

To determine the three-month maximum flows for the next five years, the projected annual average is multiplied by the average of the ratios from the past five years (1.267). This ratio is the average three-month maximum flow to annual average. The projected flows can be found in the chart below.

| Projected Maximum 3-Month Flows | | | |
|---------------------------------|----------------------|--------------------------|----------------------------------|
| Year | Projected Flow (mgd) | Average of 5-Year Ratios | Max 3-Month Projected Flow (mgd) |
| 2010 | 1.885 | 1.267 | 2.389 |
| 2011 | 1.912 | 1.267 | 2.424 |
| 2012 | 1.940 | 1.267 | 2.458 |
| 2013 | 1.966 | 1.267 | 2.492 |
| 2014 | 1.992 | 1.267 | 2.524 |

The hydraulic loading graph on the next page illustrates the design hydraulic loading; the monthly average, annual average, and maximum three-month average flow for the past five years; the projected annual and maximum three-month average flows for the next five years. As evident in the charts and graph, the maximum three-month flows will not exceed the design capacity of 3.313 mgd. ***Therefore, the Youghiogeny WWTP is not projected to be hydraulically overloaded within the next five years.***

Youghiogheny Wastewater Treatment Plant Hydraulic Loading



SECTION 3 Organic Loading

In accordance with § 94.12(a)(2) and (3)

The design organic loading of the treatment plant is 5,524 lbs BOD/day. The historical loadings for the past five years by month are shown on the chart below.

| Actual Organic Loading | | | | | |
|--|--|-------|-------|-------|-------|
| Year | Monthly Average BOD ₅ Loads (lbs/day) | | | | |
| | 2005 | 2006 | 2007 | 2008 | 2009 |
| January | 5,215 | 1,916 | 1,690 | 1,672 | 1,909 |
| February | 4,224 | 1,669 | 2,034 | 2,058 | 1,657 |
| March | 2,906 | 1,519 | 1,979 | 2,358 | 1,451 |
| April | 3,132 | 2,166 | 2,153 | 1,642 | 2,220 |
| May | 3,565 | 2,286 | 2,241 | 1,791 | 1,917 |
| June | 3,345 | 2,142 | 2,003 | 1,889 | 1,855 |
| July | 2,096 | N/A | 1,874 | 1,878 | 1,968 |
| August | 1,774 | 1,974 | 1,372 | 1,682 | 1,762 |
| September | 1,683 | 1,591 | 1,721 | 1,669 | 1,623 |
| October | 1,847 | 1,836 | 1,688 | 1,451 | 1,650 |
| November | 2,406 | 1,733 | 1,730 | 1,617 | 1,459 |
| December | 1,921 | 1,711 | 1,761 | 1,757 | 1,998 |
| Annual Average | 2,843 | 1,868 | 1,852 | 1,789 | 1,789 |
| Maximum Month Average | 5,215 | 2,286 | 2,241 | 2,358 | 2,220 |
| Ratio of Max. Month to Annual Average | 1.83 | 1.22 | 1.21 | 1.32 | 1.24 |
| EDUs | 6,062 | 6,139 | 6,342 | 6,359 | 6,402 |
| Load per EDU (lbs/day) | 0.469 | 0.304 | 0.292 | 0.281 | 0.279 |

Note: Load in **RED** is the highest value for that particular year.

The maximum monthly average organic loading in 2009 was 2,220 lbs BOD/day, below the design capacity of 5,524 lbs BOD/day. Therefore, the treatment plant is not organically overloaded.

The following chart is a summary of the organic loading over the past five years. This will be used as the basis for determining both the projected annual average loads and projected maximum month loads for the next five years.

| Summary of Organic Loading | |
|--|-------|
| 5-Year Annual Average of Ratios | 1.366 |
| 5-Year Annual Average of Loads (lbs/day) | 2,028 |
| 5-Year Average of Loads per EDU (lbs/day) | 0.325 |
| Design Capacity (lbs/day) | 5,524 |

The average BOD load/EDU of 0.325, which equals 0.127 lbs/day BOD per person (2.56 people per household), is slightly greater than the design standard of 0.22 lbs/capita for households with food waste disposal, which is indicative of the area.

Using the five-year average load as the starting point (2,028 lbs BOD/day) and then adding loads from new EDUs annually, the organic loading for the next five years is projected. The number of EDUs is multiplied by the five-year average load per EDU (0.325 lbs BOD/day) to determine the increase in loading due to growth for each year. The projections are shown on the following chart.

| Projected Organic Loadings | | | | |
|-----------------------------------|--|--|--|---|
| Year | Previous BOD₅ Load (lbs/day) | Additional EDUs (0.325 ppd/EDU) | Additional BOD₅ Load (lbs/day) | Projected BOD₅ Load (lbs/day) |
| 2010 | 2,028 | 92 | 29.9 | 2,058 |
| 2011 | 2,058 | 92 | 29.9 | 2,088 |
| 2012 | 2,088 | 92 | 29.9 | 2,118 |
| 2013 | 2,118 | 88 | 28.6 | 2,146 |
| 2014 | 2,146 | 87 | 28.3 | 2,175 |

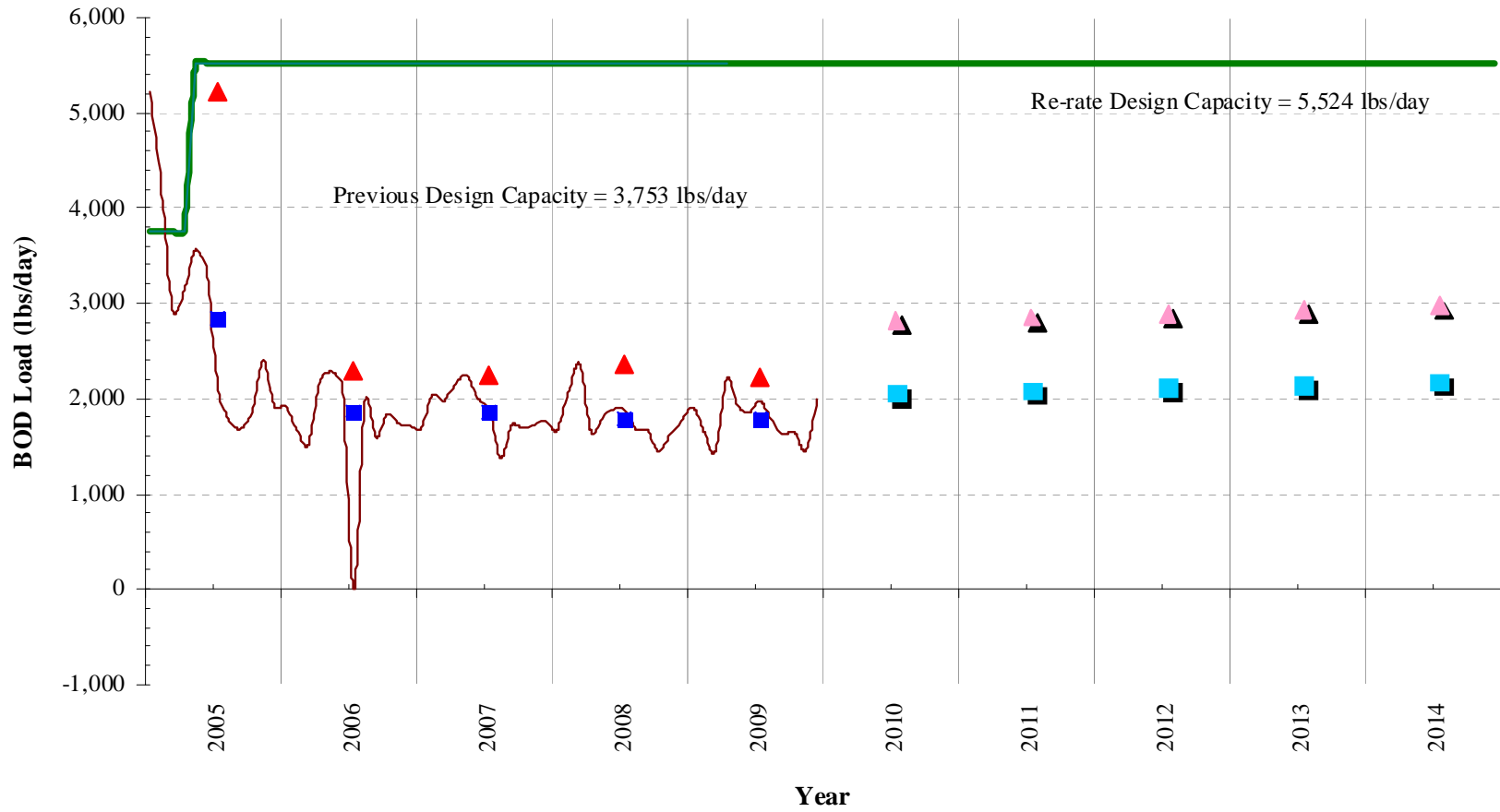
To determine the maximum month loads for the next five years, the projected annual average is multiplied by the average of the ratios from the past five years (1.366). This ratio is the average month maximum load to annual average.

| Projected Maximum Month Organic Loading | | | |
|--|---|--------------------------|--|
| Year | Projected BOD₅ Load (lbs/day) | Average of Ratios | Max. Month Projected Load (lbs/day) |
| 2010 | 2,058 | 1.366 | 2,810 |
| 2011 | 2,088 | 1.366 | 2,851 |
| 2012 | 2,118 | 1.366 | 2,892 |
| 2013 | 2,146 | 1.366 | 2,931 |
| 2014 | 2,175 | 1.366 | 2,970 |

The organic loading graph on the next page illustrates the design organic loading; the monthly average, annual average, and maximum month loads for the past five years; the projected annual and maximum month load for the next five years. As evident in the charts and graph, the

maximum month loads will not exceed the design level of 5,524 lbs BOD/day. *Therefore, the Youghiogeny WWTP is not projected to be organically overloaded within the next five years.*

Youghiogheny Wastewater Treatment Plant Organic Loading



SECTION 4 Sewer Extensions
 In accordance with § 94.12(a)(4)

The following table shows the planning modules that have been approved in recent years, the number of vacant lots and the year the EDU’s will connect into the system. A miscellaneous group has been added to account for future residential development anticipated to occur within the next five years.

| Summary of Projected EDUs | | | | | | | | |
|---------------------------|-------------------------------|-------------------|-----------------------------|-----------|-----------|-----------|-----------|----------------|
| Name & Phase | Vacant Lots as of 12/31/09 | Drainage Basin | Year Connecting Into System | | | | | Prepaid Y/N |
| | | | 2010 | 2011 | 2012 | 2013 | 2014 | |
| Ardara/Masters | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Atwood (Stella De Oro) | 9 | Yough | 2 | 2 | 2 | 2 | 1 | N |
| Atwood Extension | 2 | Yough | 1 | 1 | 0 | 0 | 0 | N |
| Bella Mia | 8 | Yough | 1 | 2 | 2 | 2 | 1 | N |
| Betty George | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Bobak | 2 | Yough | 1 | 1 | 0 | 0 | 0 | N |
| Chad Good - Caroline | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Chad Good - Carpenter | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Cherry Hill (sold)* | 19 | Yough | 0 | 0 | 7 | 6 | 6 | N |
| Chestnut Hill | 63 | Yough | 10 | 10 | 10 | 10 | 15 | N |
| Clay Pike Development | 2 | Yough | 0 | 1 | 1 | 0 | 0 | N |
| Dartmoor, Phase 1 | 2 | Yough | 1 | 1 | 0 | 0 | 0 | Y |
| Dartmoor, Phase 2 | 29 | Yough | 5 | 5 | 5 | 5 | 9 | N |
| Dartmoor Phase 3 | 62 | Yough | 10 | 10 | 10 | 10 | 12 | N |
| Doris Weeber | 3 | Yough | 1 | 1 | 1 | 0 | 0 | N |
| Harrison | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Industrial Park | 2 | Yough | 1 | 1 | 0 | 0 | 0 | Y |
| Mike Road | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Miscellaneous | 15 | Yough | 3 | 3 | 3 | 3 | 3 | N |
| Mt. Ridge | 39 | Yough | 5 | 5 | 5 | 5 | 5 | N |
| Redstone Colonial Phase 1 | 28 | Yough | 6 | 6 | 6 | 6 | 4 | N |
| Redstone Colonial Phase 2 | 22 | Yough | 4 | 4 | 4 | 4 | 2 | N |
| Ryan Moving & Storage | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Spagnolli | 2 | Yough | 1 | 0 | 1 | 0 | 0 | N |
| St. George Estates | 18 | Yough | 1 | 2 | 2 | 2 | 2 | Y |
| Villa De Bona Vita | 4 | Yough | 1 | 2 | 0 | 1 | 0 | Y |
| Ward | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Whitehead | 1 | Yough | 1 | 0 | 0 | 0 | 0 | N |
| Willow Estates, Phase 1 | 58 | Yough | 10 | 10 | 10 | 10 | 10 | N |
| Willow Estates, Phase 2 | 66 | Yough | 10 | 15 | 15 | 15 | 11 | N |
| Willow Glenn Phase 1 | 18 | Yough | 1 | 4 | 5 | 5 | 3 | N |
| Willow Glenn Phase 2 | 1 | Yough | 1 | 0 | 0 | 0 | 0 | Y |
| Willow Glenn Phase 3 | 3 | Yough | 1 | 0 | 1 | 0 | 1 | N |
| Woodridge | 13 | Yough | 5 | 5 | 1 | 1 | 1 | Y |
| Zona | 6 | Yough | 1 | 1 | 1 | 1 | 1 | N |
| | | Prepaid | 10 | 11 | 3 | 4 | 3 | 31 |
| | | Not Paid | 82 | 81 | 89 | 84 | 84 | 420 |
| TOTAL YOUGH | | Yough | 92 | 92 | 92 | 88 | 87 | 451 |

SECTION 5 Sewer System Monitoring, Maintenance, Repair, and Rehabilitation
 In accordance with § 94.12(a)(5)

The North Huntingdon Township Municipal Authority is responsible for the operation and maintenance of the Youghiogheny WWTP and approximately 200 miles of its collector and interceptor sewers, and thirteen pump stations. These responsibilities include the administration, operation, maintenance, and monitoring of the plant and sewer system.

The routine monitoring employed at the Youghiogheny WWTP is conducted in compliance with state permit requirements and federal National Pollutant Discharge Elimination System (NPDES) permit requirements. The parameters monitored, the frequency of analysis, and the type of sample collected are shown below:

| <u>Parameter</u> | <u>Frequency</u> | <u>Sample Type</u> | <u>Sample Location</u> |
|-------------------------|------------------|--------------------|-----------------------------|
| Total Flow | Continuous | Recorded | Raw Influent |
| CBOD ₅ | Twice/Week | 8-hour Composite | Raw Influent/Final Effluent |
| Suspended Solids | Twice/Week | 8-hour Composite | Raw Influent/Final Effluent |
| Fecal Coliform | Twice/Week | Grab | Final Effluent |
| pH | Twice/Week | Grab | Raw Influent/Final Effluent |
| Total Residual Chlorine | Daily | Grab | Final Effluent |

Additional routine tests conducted on raw and anaerobically digested sludge include volatile suspended solids, pH, temperature and alkalinity.

The Authority submits monthly operational reports, Discharge Monitoring Reports, and other reports as required to the DEP and EPA.

Major equipment maintenance operations at the treatment plant are grouped into three general service categories of maintenance: preventive maintenance, corrective maintenance, and major repairs. Preventive maintenance consists of maintenance functions that are generally performed while the treatment plant is operating. Corrective maintenance measures are the various repairs made while the plant is still in operation with minimum equipment downtime. These maintenance functions include packing pumps, changing belts, replacing bearings, and

replacing electric motor brushes. Major repairs generally result in a unit being out of service, and if not performed by the operator, contracted out to a third-party.

Major, corrective, and preventive maintenance are performed periodically at the WWTP. Records are kept to indicate all work done and when preventive maintenance is needed on a piece of equipment.

Maintenance of the sewage collection and conveyance system is performed under two categories of maintenance: preventive maintenance and emergency maintenance. Most maintenance operations can be classified under one of the above categories.

Preventive maintenance operations conducted by the Authority personnel include routine inspections of manholes, sewers, and pump stations, as well as routine sewer and/or manhole cleaning. Manholes are inspected more intensely during high ground water periods, and leaks found are repaired. Manholes are raised to grade when paving or landscaping dictates. The Authority typically cleans sewers and manholes if a routine inspection indicates that a potential for blockage exists. Pump stations are checked frequently for unusual conditions and pumps are examined internally for wear or damage and repaired as necessary based on the results of the examination. Emergency maintenance operations conducted by Authority personnel include the repair of a broken sewer or force main, alleviating a blocked sewer line or manhole, repair of a malfunctioning pump station, etc.

The Authority also performs special monitoring to include the inspection of the sewage collection and conveyance system. The Authority personnel inspect various manholes for signs of structural damage, blockages, unusually high volumes of sewage, and unusual appearance of sewage. The Authority has a two man crew who inspect the pump stations daily to ensure proper operation and maintenance of the stations.

The Authority's sewage system consists of many lines that were built by developers then contributed to the Authority. The Authority has an inspection crew which monitor developer built sewer lines during their construction to ensure proper installation. The developer must vacuum and air test the sewer lines. The results of the testing must then be approved by both

the inspector and the consulting engineer before the Authority will assume ownership of the line.

The sewerage system is maintained by a staff of fifteen maintenance personnel under the direction of the Authority Manager, Systems Superintendent and Operations Supervisor. The Authority employs a total of thirteen Pennsylvania Certified Treatment Plant Operators between management, plant operations, and sewer maintenance departments.

The Authority owns a sewer jet truck and a camera truck which is used to inspect various sewer lines, including private sanitary sewer service laterals, which allows the Authority staff to correct problems within the system as they are identified. Two Authority employees are dedicated to the daily operation of the camera truck.

The Authority also flow monitors continuously in the Tinkers Run Interceptor. One flow meter is in the Upper Tinkers Run Interceptor and one flow meter is in the Lower Tinkers Run Interceptor. The Upper Tinkers Run Interceptor used to be a 15-inch line, which was upgraded to a 24-inch line. The Lower Tinkers Run Interceptor is an 18-inch line. At the time of the replacement of Upper Tinkers Run, it was determined that the slope of the 18-inch line allows adequate capacity to convey the flow from the 24-inch Upper Tinkers Run Interceptor. This was agreed to by all parties as long as the Authority flow monitors the interceptor to ensure the lower portion does not become hydraulically overloaded.

SECTION 6 Condition of the Sewer System

In accordance with § 94.12(a)(6)

The general condition of the collector and interceptor sewers owned and maintained by the Authority is fair to good. The Authority rehabilitates portions of its system annually, reducing the volumes of infiltration and inflow into the system. In 2009, the Authority replaced approximately 3,300 feet of 8-inch, 10-inch, 12-inch and 18-inch VCP interceptor sewer along Lower Five Pines Road.

The Township has an ordinance requiring waste facilities, roof leaders and lawn and driveway drains to be dye tested before the sale of a property. This is to ensure that the lines are not connected into the Authority's system. If the lines are connected into the system, the owner is responsible for disconnecting the lines; this is done to reduce the amount of storm water and infiltration and inflow that enters the system.

In 2009, as required by its Rules and Regulations, the Authority continued with its inspection of individual private sanitary sewer service laterals prior to the sale, transfer or refinancing of any property. Any private owner of a sanitary sewer service lateral determined by the Authority to have a National Association of Sewer Service Companies (NASSCO) condition grade of 3 or above is required to repair or replace the sanitary sewer service lateral. In addition to the "time of sale" inspection, the Authority also conducts a system wide inspection program with the goal of reducing inflow and infiltration into the sanitary system. Since the inception of the private lateral inspection program in May 2008, 824 inspections have been conducted on home sales and refinancing, with 288 failures. 227 inspections have been completed in the program areas, with 136 failures.

The Authority is entering the eighth year of its continuing Five-Year Capital Plan. The Plan includes maintenance, upgrades, and pump replacements on the older pump stations. The Five-Year Plan also includes a budgeted amount of money each year for the replacement of various sewers throughout the system. There is also a budgeted amount of money for any type of equipment replacement that may be required at the Youghiogheny WWTP.

SECTION 7 Pumping Stations
 In accordance with § 94.12(a)(7)

The North Huntingdon Township Municipal Authority operates twelve sewage pumping stations in the Youghiogheny sewer-shed and one pumping station in the Brush Creek sewer-shed. Each pumping station, its design capacity and average daily flows (in gpd) are shown in the table on the following page. Three of the Authority's pump stations have continuous flow meters; all other stations contain a timer and this is used to estimate the flows.

| <u>Pump Station</u> | <u>Design Capacity</u> | <u>2008 Average Daily Flow</u> | <u>2009 Average Daily Flow</u> | <u>Change</u> |
|----------------------------|-------------------------------|---------------------------------------|---------------------------------------|----------------------|
| Woodside Drive | 259,000 | 40,000 | 31,000 | -9,000 |
| Hartford Heights | 403,000 | 46,000 | 39,000 | -7,000 |
| Highland Terrace | 864,000 | 167,000 | 125,000 | -42,000 |
| Stewartsville | 2,220,000 | 476,000 | 405,000 | -71,000 |
| Long Run | 3,456,000 | 800,000 | 800,000 | 0 |
| Thomas Drive | 288,000 | 12,000 | 11,000 | -1,000 |
| Indian Lake | 1,116,000 | 315,000 | 317,000 | +2,000 |
| Falcon Ridge | 186,000 | 31,000 | 30,000 | -1,000 |
| Ardara Road | 115,000 | 13,000 | 12,000 | -1,000 |
| Masters Lane | 65,000 | 3,000 | 3,000 | 0 |
| Mountain Ridge Estates | 115,000 | 1,000 | 1,000 | 0 |
| Process Lift Station | 1,620,000 | 500,000 | 500,000 | 0 |
| Larimer (Brush Creek) | 259,000 | 29,000 | 23,000 | -6,000 |

SECTION 8 Industrial Waste
In accordance with § 94.12(a)(8)

The Authority's Sewer Use Rules and Regulations provide for the acceptance of certain industrial wastes that are not deemed harmful to the sewage system and treatment facility. Unacceptable industrial waste discharges are defined and provisions are made to monitor and to determine acceptable volumes of industrial wastes. However, at the present time, the Youghiogheny WWTP receives no industrial discharges into the sewage system and therefore there are no problems suspected to be caused by industrial dischargers.

SECTION 9 Review of Overload Conditions
In accordance with § 94.12(a)(9)

As previously discussed in Sections 2 and 3, the Youghiogheny WWTP is not projected to be hydraulically or organically overloaded in the next five years.

The Authority continues with the requirements of the Consent Order and Agreement (CO&A), entered into with the DEP in 2004, to review and make corrections to the portion of the collection system that discharges to the Allegheny County Sanitary Authority (ALCOSAN). The CO&A specifically outlines the work to be completed by the designated timeline. The work scope is divided into two phases. The following is a summary of the work that is being completed:

Phase I

- **Physical Survey/Visual Inspection** of all accessible manholes, exposed sewer lines, sanitary sewer overflow (SSO) structures, siphon chambers, pump station and exposed force mains
 - The work shall identify defects related to safety, structural stability, accumulated sediment and debris deposits, visible flow bottlenecks, evidence of present or prior surcharging or overflows, location of all SSO structures, defects including the conveyance of streams, receiving stream backflow and any sources of infiltration and inflow (I&I)

- **Sewer Line Cleaning & Closed Circuit Television (CCTV) Internal Inspection**
 - Sewer line cleaning must be done immediately prior to the CCTV, unless the lines are sufficiently clean to allow internal inspection
 - CCTV shall detect structural defects, misalignment, I&I sources and root intrusions
 - As a result of CCTV the Authority shall record all defects that allow I&I, all structural defects, all defects that compromise or diminish the carrying capacity of the system, all defects in siphons and any conditions and/or modifications of the system that allow for SSOs.
 - CCTV shall include audio/video documentation and written summary of the location of roots, defective joints, defective pipes, sewer line depressions, break-in lateral connections, grease accumulations, sediment accumulations, and a location reference and incorporate a defect code and defined level of severity or grade associated with each condition noted in the report.
- **Sewer System Mapping** shall be submitted in accordance with the GIS Protocol set forth in the CO&A
- **Sewer System Dye Testing and Enforcement**
 - Dye testing shall be completed of all structures to determine the sources of surface stormwater such as roof leaders, yard drains and driveway drains
 - All private and municipal catch basins within 100 feet of the sanitary sewer shall be dye tested
 - All illegal connections will either be reported on the GIS map or in a digital format
 - The Township must institute and enforce an ordinance prohibiting connections of surface stormwater to the sewer system and an ordinance that requires a visual inspection and dye test of roof leaders and yard and driveway drains at the time of property sales
- **Sewer System Deficiency Corrections**
 - All of the structurally deficient manholes, all defective siphons, pump stations and force mains shall be repaired
 - All streams and springs connected to the sewer system shall be removed
 - Within 30 days of discovery, the Authority shall initiate the repair of all significant structural defects and complete the repairs within six months of discovery

- **Hydraulic Design Capacity Evaluation**

- The Authority shall complete a hydraulic design capacity evaluation of the entire system that discharges to ALCOSAN, which will include a capacity analysis of each sewer line, inclusive of siphons, force mains and pump stations.

Phase II

- **Flow Monitoring**

- The Authority shall perform flow monitoring to determine the average dry and peak wet weather flows conveyed to ALCOSAN
- Provide quality assured/quality controlled data suitable for system hydraulic characterization efforts, wet weather plan development, feasibility studies and associated alternative analyses
- Data will quantify base infiltration, dry weather flow and the relationship between wet weather induced I&I and precipitation

- **Feasibility Study in Conjunction with an ALCOSAN Enforcement Order**

- The Authority shall participate and cooperate with ALCOSAN in the development of their Wet Weather Plan and/or LTCP by calculating the quantity and rate of flow to the ALCOSAN system and develop a feasibility study evaluating options to construct sewage facilities to retain, store, convey and treat any sewage flows that ALCOSAN cannot accommodate or ALCOSAN could accommodate but the Authority decides to address in a separate manner
- The Authority shall submit the Feasibility Study which evaluates a range of alternatives to eliminate SSOs and estimate the cost and time necessary to implement or construct each alternative

- **Semi-Annual Progress Reports** shall be submitted, in writing, to the DEP until all of the Authority's obligations are completed.

The following table shows the implementation schedule and the Authority's progress to date:

| Consent Order and Agreement Implementation Schedule | | | |
|--|----------------------------|---------------------------------|---|
| Task Description | Proposed Start Date | Required Completion Date | Actual Percentage Of Project Completed |
| Phase I: System Inventory/Operation and Maintenance | | | |
| (A) Physical survey (Year 1) | June 1, 2004 | May 31, 2005 | 100% |
| Physical survey (Year 2) | June 1, 2005 | May 31, 2006 | 100% |
| Physical survey (Year 3) | June 1, 2006 | May 31, 2007 | 100% |
| (B) Cleaning / CCTV (Year 1) | June 1, 2004 | May 31, 2005 | 100% |
| Cleaning / CCTV (Year 2) | June 1, 2005 | May 31, 2006 | 100% |
| Cleaning / CCTV (Year 3) | June 1, 2006 | May 31, 2007 | 100% |
| Cleaning / CCTV (Year 4) | June 1, 2007 | May 31, 2008 | 100% |
| Cleaning / CCTV (Year 5) | June 1, 2008 | May 31, 2009 | 100% |
| Cleaning / CCTV (Year 6) | June 1, 2009 | May 31, 2010 | 100% |
| (C) GIS Mapping (Year 1) | June 1, 2004 | May 31, 2005 | 100% |
| GIS Mapping (Year 2) | June 1, 2005 | May 31, 2006 | 100% |
| GIS Mapping (Year 3) | June 1, 2006 | May 31, 2007 | 100% |
| (D) Dye Testing (Year 1) | June 1, 2004 | May 31, 2005 | 100% |
| Dye Testing (Year 2) | June 1, 2005 | May 31, 2006 | 100% |
| Dye Testing (Year 3) | June 1, 2006 | May 31, 2007 | 100% |
| (E) Enforcement-illegal connections | June 1, 2004 | November 30, 2007 | 100% |
| (F) Ordinance development | | | |
| (i) Point of Sale Ordinance | June 1, 2004 | November 1, 2004 | 100% |
| (ii) Prohibit Storm Water | June 1, 2004 | November 1, 2004 | 100% |
| (G) Deficiency corrections (Year 1) | June 1, 2005 | November 30, 2006 | 100% |
| Deficiency corrections (Year 2) | December 1, 2006 | November 30, 2007 | 100% |
| Deficiency corrections (Year 3) | December 1, 2007 | November 30, 2008 | 100% |
| Deficiency corrections (Year 4) | December 1, 2008 | November 30, 2009 | 100% |
| Deficiency corrections (Year 5) | December 1, 2009 | November 30, 2010 | 100% |
| (H) Complete hydraulic design capacity evaluation (Year 1) | June 1, 2004 | May 31, 2005 | 100% |
| Complete hydraulic design capacity evaluation (Year 2) | June 1, 2005 | May 31, 2006 | 100% |
| Complete hydraulic design capacity evaluation (Year 3) | June 1, 2006 | May 31, 2007 | 100% |
| Complete hydraulic design capacity evaluation (Year 4) | June 1, 2007 | May 31, 2008 | 100% |
| Phase II: Planning | | | |
| Flow monitoring | June 1, 2007 | May 31, 2008 | 100% |

SECTION 10 Biosolids Disposal

The biosolids generated by the Youghiogeny WWTP are stabilized by anaerobic digestion and dewatered onsite using a belt filter press. The dewatered biosolids are hauled to the National Waste and Energy DBA Valley Landfill Site, which is the Authority's primary disposal site. The Authority also has secondary sites, Kelly Run Sanitation, Inc. and Y&S Maintenance Inc., where the sludge could be disposed. Youghiogeny WWTP disposed of 207.03 dry tons in 2009.

Monthly operating reports are provided to the Department of Environmental Protection, and Annual Sewage Sludge Discharge Monitoring Reports are submitted to the United States Environmental Protection Agency.

The biosolids processing capacity is available for the projected organic loadings of the plant for the next five years.

| Month | Dry Tons |
|--------------|---------------|
| January | 8.75 |
| February | 12.14 |
| March | 5.47 |
| April | 26.40 |
| May | 26.70 |
| June | 20.83 |
| July | 41.31 |
| August | 29.61 |
| September | 4.95 |
| October | 14.72 |
| November | 10.62 |
| December | 5.53 |
| Total | 207.03 |

SECTION 11 Certification

In accordance with § 94.12(a)

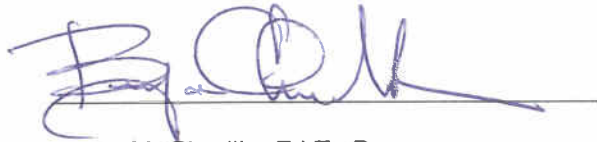
I certify that the information provided in this report is true and correct to the best of my knowledge and belief.



Katherine B. Petrosky, Manager
North Huntingdon Township Municipal Authority



David A. Coldren, P.E., Reviewer
KLH Engineers, Inc.



Bryan M. Churilla, E.I.T., Preparer
KLH Engineers, Inc.

APPENDIX A
Hydraulic and Organic Loading Data

**APPENDIX A
HYDRAULIC AND ORGANIC LOADING DATA**

| DAILY LOADINGS FOR 2009 (JANUARY THROUGH JUNE) | | | | | | | | | | | | | | | | | | |
|---|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|
| DAY | JAN | | | FEB | | | MAR | | | APR | | | MAY | | | JUN | | |
| | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) |
| 1 | 1.84 | | | 2.88 | | | 1.43 | | | 1.61 | | | 2.24 | | | 1.55 | 131.5 | 1,698 |
| 2 | 1.74 | | | 2.16 | 104.1 | 1,874 | 1.38 | 134.0 | 1,539 | 1.52 | | | 1.61 | | | 1.50 | 131.3 | 1,644 |
| 3 | 1.60 | | | 1.94 | 110.6 | 1,791 | 1.20 | 133.4 | 1,334 | 5.50 | | | 1.48 | | | 1.39 | | |
| 4 | 1.71 | | | 1.72 | | | 1.23 | | | 3.10 | | | 4.34 | 117.5 | 4,254 | 1.33 | | |
| 5 | 1.56 | 141.7 | 1,842 | 1.60 | | | 1.28 | | | 2.16 | | | 2.52 | 77.6 | 1,629 | 1.19 | | |
| 6 | 3.77 | 120.6 | 3,789 | 1.50 | | | 1.21 | | | 2.04 | 177.5 | 3,022 | 3.50 | | | 1.40 | | |
| 7 | 6.00 | | | 2.87 | | | 1.29 | | | 1.74 | 133.5 | 1,933 | 2.42 | | | 1.32 | | |
| 8 | 3.60 | | | 3.10 | | | 1.44 | | | 1.69 | | | 2.08 | | | 1.19 | 169.6 | 1,687 |
| 9 | 2.41 | | | 2.15 | | | 1.36 | 142.9 | 1,617 | 1.53 | | | 1.90 | | | 1.54 | 155.9 | 2,007 |
| 10 | 3.18 | | | 2.95 | 81.0 | 1,991 | 1.24 | 136.6 | 1,412 | 1.60 | | | 1.65 | | | 1.29 | | |
| 11 | 2.44 | | | 2.89 | 73.7 | 1,774 | 1.24 | | | 1.56 | | | 1.97 | 120.4 | 1,978 | 2.86 | | |
| 12 | 2.24 | 70.9 | 1,328 | 2.33 | | | 1.20 | | | 1.43 | | | 1.76 | 96.7 | 1,406 | 1.95 | | |
| 13 | 1.90 | 106.9 | 1,694 | 1.95 | | | 1.20 | | | 1.49 | 160.4 | 1,989 | 1.50 | | | 1.51 | | |
| 14 | 1.76 | | | 1.95 | | | 1.27 | | | 1.56 | 144.9 | 1,880 | 1.45 | | | 1.47 | | |
| 15 | 1.65 | | | 1.78 | | | 1.30 | | | 1.67 | | | 1.61 | | | 1.45 | 151.8 | 1,832 |
| 16 | 1.62 | | | 1.67 | | | 1.25 | 155.9 | 1,626 | 1.49 | | | 1.74 | | | 1.63 | 176.2 | 2,403 |
| 17 | 1.66 | | | 1.87 | 101.7 | 1,585 | 1.23 | 143.9 | 1,479 | 1.47 | | | 1.51 | | | 4.74 | | |
| 18 | 1.65 | | | 1.80 | 90.7 | 1,362 | 1.21 | | | 1.50 | | | 1.51 | | | 4.99 | | |
| 19 | 1.54 | 140.9 | 1,812 | 1.61 | | | 1.16 | | | 1.40 | | | 1.47 | 117.7 | 1,463 | 4.39 | | |
| 20 | 1.40 | 123.9 | 1,443 | 1.46 | | | 1.07 | | | 1.53 | 220.1 | 2,805 | 1.61 | 116.5 | 1,131 | 2.33 | | |
| 21 | 1.36 | | | 1.53 | | | 1.20 | | | 1.44 | 209.1 | 2,518 | 1.57 | | | 2.34 | | |
| 22 | 1.37 | | | 1.57 | | | 1.22 | | | 1.31 | | | 1.36 | | | 1.81 | 96.7 | 1,464 |
| 23 | 1.74 | | | 1.41 | 136.9 | 1,514 | 1.16 | 162.3 | 1,568 | 1.34 | | | 1.49 | | | 2.11 | 110.5 | 1,943 |
| 24 | 1.64 | | | 1.33 | 123.0 | 1,363 | 0.69 | 154.5 | 883 | 1.45 | | | 1.16 | | | 1.83 | | |
| 25 | 1.54 | | | 1.33 | | | 1.75 | | | 1.51 | | | 1.54 | | | 1.85 | | |
| 26 | 1.43 | 149.6 | 1,779 | 1.47 | | | 2.04 | | | 1.54 | | | 1.79 | 154.7 | 2,089 | 1.61 | | |
| 27 | 1.43 | 133.0 | 1,586 | 1.46 | | | 1.41 | | | 1.58 | 146.9 | 1,933 | 1.45 | 111.5 | 1,391 | 1.64 | | |
| 28 | 4.99 | | | 1.45 | | | 1.48 | | | 1.38 | 146.3 | 1,679 | 2.38 | | | 1.50 | | |
| 29 | 2.58 | | | | | | 2.12 | | | 1.28 | | | 1.70 | | | 1.33 | 170.9 | 1,890 |
| 30 | 2.01 | | | | | | 1.57 | 112.9 | 1,474 | 1.43 | | | 1.62 | | | 1.45 | 163.6 | 1,981 |
| 31 | 1.83 | | | | | | 1.50 | 126.2 | 1,578 | | | | 1.50 | | | | | |
| AVG | 2.17 | | 1,909 | 1.92 | | 1,657 | 1.33 | | 1,451 | 1.73 | | 2,220 | 1.85 | | 1,917 | 1.95 | | 1,855 |

**APPENDIX A
HYDRAULIC AND ORGANIC LOADING DATA**

| DAILY LOADINGS FOR 2009 (JULY THROUGH DECEMBER) | | | | | | | | | | | | | | | | | | |
|--|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|---------------|----------------------------|--------------------------|
| DAY | JUL | | | AUG | | | SEP | | | OCT | | | NOV | | | DEC | | |
| | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) | Flow (mgd) | BOD ₅ (mg/l) | BOD ₅ (lb) |
| 1 | 1.25 | | | 1.83 | | | 1.29 | 175.0 | 1,882 | 1.20 | | | 1.30 | | | 1.168 | 136.0 | 1,326 |
| 2 | 1.35 | | | 2.25 | | | 1.35 | 176.4 | 1,980 | 1.29 | | | 1.29 | 140.3 | 1,505 | 1.857 | | |
| 3 | 1.27 | | | 1.74 | 107.9 | 1,570 | 1.33 | | | 1.20 | | | 1.18 | 168.3 | 1,650 | 1.661 | | |
| 4 | 1.18 | | | 1.51 | 134.5 | 1,693 | 1.27 | | | 1.27 | | | 1.17 | | | 1.286 | | |
| 5 | 1.48 | | | 1.24 | | | 1.27 | | | 1.27 | 132.8 | 1,403 | 1.20 | | | 1.334 | | |
| 6 | 1.53 | 162.9 | 2,083 | 1.23 | | | 1.21 | | | 1.14 | 159.7 | 1,521 | 1.11 | | | 1.308 | | |
| 7 | 1.43 | 151.4 | 1,802 | 1.33 | | | 1.31 | | | 1.09 | | | 1.27 | | | 1.266 | 147.8 | 1,562 |
| 8 | 1.56 | | | 1.16 | | | 1.13 | 188.2 | 1,767 | 1.14 | | | 1.34 | | | 2.991 | 171.5 | 4,281 |
| 9 | 1.29 | | | 1.58 | | | 1.20 | 172.3 | 1,723 | 2.12 | | | 1.14 | 140.9 | 1,342 | | | |
| 10 | 1.38 | | | 1.79 | 142.1 | 2,123 | 1.16 | | | 1.48 | | | 1.11 | 163.1 | 1,515 | | | |
| 11 | 1.27 | | | 1.46 | 115.3 | 1,406 | 1.02 | | | 1.30 | | | 1.13 | | | 2.034 | | |
| 12 | 1.42 | | | 1.36 | | | 1.10 | | | 1.24 | 151.2 | 1,558 | 1.13 | | | 2.033 | | |
| 13 | 1.42 | 170.0 | 2,016 | 1.59 | | | 1.27 | | | 1.17 | 150.4 | 1,466 | 1.10 | | | 2.036 | | |
| 14 | 1.39 | 192.1 | 2,222 | 1.51 | | | 1.12 | 181.8 | 1,705 | 1.27 | | | 1.06 | | | 1.925 | 142.3 | 2,286 |
| 15 | 1.32 | | | 1.51 | | | 1.24 | 178.9 | 1,857 | 2.19 | | | 1.02 | | | 1.760 | 37.8 | 555 |
| 16 | 1.36 | | | 1.53 | | | 1.21 | | | 1.66 | | | 0.95 | 119.6 | 946 | 1.668 | | |
| 17 | 1.22 | | | 1.53 | 154.9 | 1,980 | 1.09 | | | 1.66 | | | 0.88 | 150.3 | 1,103 | 1.608 | | |
| 18 | 1.13 | | | 1.16 | 160.1 | 1,554 | 1.24 | | | 1.33 | | | 1.09 | | | 1.597 | | |
| 19 | 1.10 | | | 1.49 | | | 1.28 | | | 1.81 | 163.8 | 2,474 | 1.56 | | | 1.708 | | |
| 20 | 1.31 | 178.8 | 1,956 | 1.60 | | | 1.25 | | | 1.20 | 143.9 | 1,446 | 1.09 | | | 1.675 | | |
| 21 | 1.43 | 139.2 | 1,666 | 1.62 | | | 1.12 | 174.4 | 1,634 | 1.30 | | | 1.18 | | | 1.633 | 150.2 | 2,047 |
| 22 | 1.62 | | | 1.50 | | | 1.52 | 67.0 | 848 | 1.92 | | | 1.20 | | | 1.632 | 151.9 | 2,069 |
| 23 | 1.73 | | | 1.19 | | | 1.11 | | | 1.49 | | | 1.26 | 182.4 | 1,912 | 1.676 | | |
| 24 | 1.46 | | | 1.34 | 157.4 | 1,756 | 1.08 | | | 1.68 | | | 1.23 | 155.6 | 1,593 | 1.619 | | |
| 25 | 1.18 | | | 1.45 | 165.9 | 2,012 | 1.08 | | | 1.42 | | | 1.29 | | | 4.408 | | |
| 26 | 1.37 | | | 1.41 | | | 1.53 | | | 1.26 | 147.9 | 1,551 | 1.28 | | | 3.409 | | |
| 27 | 1.55 | 133.3 | 1,723 | 1.50 | | | 1.91 | | | 1.44 | 147.6 | 1,777 | 1.30 | | | 2.421 | | |
| 28 | 1.40 | 195.6 | 2,279 | 1.05 | | | 1.47 | 127.6 | 1,561 | 1.57 | | | 1.21 | | | 2.150 | 104.4 | 1,873 |
| 29 | 1.26 | | | 1.43 | | | 1.20 | 127.7 | 1,276 | 1.33 | | | 1.23 | | | 1.893 | 125.4 | 1,981 |
| 30 | 1.47 | | | 1.43 | | | 1.20 | | | 1.24 | | | 1.59 | 117.9 | 1,568 | 1.893 | | |
| 31 | 3.11 | | | 1.38 | | | | | | 1.47 | | | | | | 2.063 | | |
| AVG | 1.43 | | 1,968 | 1.47 | | 1,762 | 1.25 | | 1,623 | 1.42 | | 1,650 | 1.20 | | 1,459 | 1.92 | | 1,998 |