MON VALLEY SEWAGE AUTHORITY WASHINGTON AND WESTMORELAND COUNTIES, PENNSYLVANIA

CSO FACILITIES PLANNING

OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY

SERVING

City of Monessen, Borough of Donora and Portions of Carroll Township

JULY 2013



Pittsburgh, Pennsylvania

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PLAN SUMMARY

The Pennsylvania Sewage Facilities Act (Act 537) requires that every municipality within the Commonwealth develop and maintain an up-to-date sewage facilities plan. This Plan was required by the Pennsylvania Department of Environmental Protection (PaDEP) upon submission of the Water Quality Management Permit Part II for Phase II of the Long Term Control Plan (LTCP).

This Plan was prepared in accordance with Act 537 as described in PaDEP's "Guide for Preparing Act 537 Update Revisions," dated January 7, 2003. This Plan is divided into five chapters with supporting documentation and mapping provided in the appendices. Major issues addressed include development of Combined Sewer Overflow (CSO) Control Alternatives, evaluation of the alternatives, and selection of a recommended approach to meet the requirements in the National CSO Policy (CSOP).

The Mon Valley Sewage Authority (Authority) sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP). Monessen, Donora, and Carroll Authority currently maintain their own individual sewage collection systems. The construction of these collection systems, with the exception of the Carroll Authority system, predates the inception of the Authority with much of the sewer systems dating to the early 1900's. Both systems were constructed as combined sewer systems (CSS).

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority owns and operates the 17 CSOs along the main interceptor, it is obligated to meet the

——— Mon Valley Sewage Authority Official Sewage Facilities Plan Update/Special Study, 2013 ———
requirements of the CSOP first adopted by the United States Environmental Protection Agency
(EPA) in 1994.

These CSO structures are located along the Monongahela River and are designed to activate when hydraulic conditions in the CSS exceed 350% of the average dry weather flow. These conditions occur only during wet weather events when these overflows discharge dilute sewage to the Monongahela River.

The CSOP identifies two general approaches for the attainment of Water Quality Standards: the Demonstration Approach and the Presumption Approach. The Presumption Approach was used in developing alternatives for CSO control because this approach provides quantitative performance criteria that could be applied to flow monitoring data.

Concepts used in developing CSO control alternatives included interaction with the Nine Minimum Controls, interaction with other collection and treatment system objectives, and creative thinking. Thirty-five alternatives were developed to meet the CSOP. The LTCP summarized the alternatives in Tables 3-1 through 3-35. A copy of these tables IS included in Appendix D.

The CSO Control Alternatives were divided into two Main CSO Control Alternative categories based on proposed modifications to the collection system: Main CSO Control Alternative I-Partial Sewer Separation and Main CSO Control Alternative II-Complete Sewer Separation.

The partial sewer separation main alternative includes separation of combined sewers in selected sub-sewersheds. The selection of sub-sewersheds designated for separation of sewers was based on anticipated dry and wet weather peak flows, the cost of sewer separation compared with treatment or storage of the associated CSO, and previously planned collection system upgrade projects. The complete sewer separation main alternative includes the separation of all combined sewers in the collection system.

In the Main CSO Control Alternative I-Partial Sewer Separation, the CSO Control Strategy proposed to achieve the CSO Control Goal consists of constructing satellite treatment facilities at selected CSO locations. The final set of 33 CSO Control Alternatives was based on two CSO Disinfection Alternatives, five CSO Sub-Alternatives, and five Levels of CSO Control.

Under Main Alternative II-Complete Sewer Separation, all CSOs would be eliminated. Two Complete Sewer Separation Alternatives were identified to include necessary system upgrades associated with operating and maintaining a dedicated sanitary sewer collection, conveyance, and treatment system.

In each main alternative, there is a set of proposed collection and conveyance system upgrades common to each sub-alternative within the main alternative. There is also a set of upgrades common to both main alternatives. These sets of proposed upgrades comprise the Collection System Base Plans.

In the LTCP, a summary of opinions of probable projects costs for each CSO Control Alternative was included in Table 3-24. Tables 3-25 through 3-35 provided a detailed summary of component costs, construction costs, and project costs for each CSO Control Alternative. These tables are also included in Appendix D.

In order to meet the requirements of the National CSO Policy via the most cost effective means, the Authority has selected Alternative IB-4b. Alternative IB-4b was a slightly modified version of previously developed Alternatives that came about as a result of the May 16, 2007 meeting with PaDEP. Alternative IB-4b implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in Alternative IB-1 in favor of a larger equalization tank. This concept adheres to the idea of maximizing flow to the WWTP, where the Authority is conveying as much flow to the WWTP as economically feasible.

Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15th Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the

City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project cost for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Financing alternatives were evaluated for Phases II and III. The recommended financing alternative for Phase II was a bond issue. The estimated increase to the monthly user fee for Phase II based on a bond issue and 2013 dollars is \$24.00 for a total estimated monthly user fee of \$59.00. The recommended financing alternative for Phase III was a Pennvest loan. The estimated increase in monthly user fee for Phase III based on a Pennvest loan and 2013 dollars is \$23.00 for a total estimated monthly user fee of \$82.00.

The majority of the institutional arrangements necessary for implementation of this Plan already exist. The remaining item that needs to be addressed is the adjustment of sewer user fees for the additional operation and maintenance and debt service for Phases II and III. These will be done during the construction of each Phase. The Authority will be responsible for the design, permitting and obtaining financing for Phases II and III.

Tentative Schedule For The Recommended Alternatives

Task or Milestone	Target Completion Date
Submit Task Activity Report (TAR) to PaDEP for approval	Completed May 30, 2013
Start Act 537 Plan	May 2013
Submit Draft Act 537 Plan to Planning Agencies, MVSA, and Municipalities	August 2013
Close on Initial Phase II Bond Issue	August 2013
Comments Received on Act 537 Plan	December 2013
Finalize Report	December 2013
Adopt Final Act 537 Plan by Official Resolution of MVSA, City of Monessen, Borough of Donora and Carroll Township	January 2014
Submit Final Act 537 Plan to PaDEP	January 2014
Receive Approval of the Act 537 Plan	March 2014
Resubmit Part II Permits for Phase II (E&S approval already received.)	April 2014
Receive Part II Permits	July 2014
Open Bids	August 2014
Apply for Additional Funds	August 2014
Start Construction Phase II	September 2014
End Construction Phase II	September 2016
Evaluate Satellite Facility	September 2017
Start Design of Phase III	March 2017
Submit Permits for Phase III	March 2019
Receive Permits	June 2019
Apply for Additional Funds	August 2019
Start Construction Phase III	September 2019
End Construction Phase III	September 2022

2.0 DESCRIPTION OF PLANNING AREA

Introduction

This report is a special study relating to the construction of wet weather facilities identified in the Long Term Control Plan.

The Pennsylvania Department of Environmental Protection (PaDEP) administers the Act 537 program. PaDEP has produced "A Guide for Preparing Act 537 Update Revisions", dated October 2012, which includes the Act 537 Plan Content and Environmental Assessment Checklist. This Plan has been prepared in conformance with Act 537 and the PaDEP checklist. A completed copy of the PaDEP Checklist indicating where each required item can be found within the Plan is included in Appendix A.

2.1 Planning Area

The Mon Valley Sewage Authority (Authority) sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP). Monessen, Donora, and Carroll Authority currently maintain their own individual sewage collection systems. The construction of these collection systems, with the exception of the Carroll Township system, predates the inception of the Authority with much of the sewer systems dating to the early 1900's. Both systems were constructed as combined sewer systems (CSS). The NPDES Permit issued on October 2, 2002 approved re-rating of the WWTP from 3.66 MGD to 4.96 MGD.

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority

and operates the 17 combined sewer overflows (CSOs) along the main interceptor, it is obligated to meet the requirements of the National CSO Policy (CSOP) first adopted by the United States Environmental Protection Agency (EPA) in 1994. The Plan Area is shown on Exhibit 2-1.

2.2 Physical Characteristics

The Monongahela River and Unnamed Tributaries to the Monongahela River are located in the Planning Area as shown on Exhibit 2-1.

2.3 Soils

The soils in the Planning Area are as follows:

- 1. Culleoka silt loam, CaD, 15 to 25 percent slopes. Moderately deep well drained soils formed from interbedded shale, siltstone, sandstone, and limestone. They are on upland slopes. They have moderate or moderately rapid permeability, a moderate available water capacity and normally have no seasonal high water table. Slope and depth to bedrock are the main restrictions of this soil.
- 2. Dormont-Culleoka silt loams, DtF, 25 to 50 percent slopes. This soil is moderately well drain to well drained, deep to moderately deep, and has moderately slow to moderately rapid permeability. High to moderate available water capacity and runoff is rapid. Slope, seasonally high water table, and depth to bedrock are the main restrictions of this soil.
- 3. Gilpin-Rock outcrop complex, GoF, 45 to 100 percent slopes. Gilpin soils make up 45 percent of the map unit. This component is typically found on the shoulder position of hillslopes. The parent material consists of residuum weathered from acid fine-grained sandstone, siltstone, and shale. The runoff class is high. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). This soil is well drained. The slowest soil permeability within a depth of 60 inches is moderate. Available water capacity to a depth of 60 inches is low, and shrink swell potential is low. Annual flooding is none, and annual ponding is none. The minimum depth to a water table is greater than 6 feet. The assigned Kw erodibility factor is .24. It is nonirrigated land capability subclass 7e. This soil is not suitable for cultivated crops. This component is not a hydric soil.
- 4. Glenford silt loam, GdB, 3 to 8 percent slopes, and GdC 8 to 15 percent slopes. Deep, moderately well drained soils formed from stratified stream deposited material. They are on stream terrace positions above the floodplains. They have moderately slow permeability, a high available water capacity, and a seasonal high water table at 24 to 28 inches of the surface during wet periods of the year. No major restrictions are expected in this soil.
- 5. Guernsey silt loam, GeD, 15 to 25 percent slopes. Deep and moderately well drained. Permeability is slow to moderately slow, and the runoff is rapid with a high available water capacity. Main restrictions are high water table and slow permeability.

- high available water capacity. Main restrictions are high water table and slow permeability.
- 6. Lowell-Culleoka complex, LxF, 25 to 80 percent, very rocky. Well drained, moderately low to moderately high permeability, high available water capacity, runoff is rapid. Limited by the slopes and rapid runoff.
- 7. Urban land, UdA, 0 to 3 percent slopes. This unit consists of areas where more than 85% of the surface is covered by asphalt, concrete, buildings, and other impervious surfaces. Examples are parking lots, shopping centers, and industrial parks. Onsite investigation is needed to determine the suitabilities and potentials for any use.
- 8. Urban land-Culleoka complex, UeB, 0 to 8 percent slopes. Monongahela soils make up 40 percent of the map unit. The parent material consists of old alluvium derived from sandstone and shale. The runoff class is low. The depth to a restrictive feature is 25 to 35 inches to a fragipan. This soil is moderately well drained. The slowest soil permeability within a depth of 60 inches is slow. Available water capacity to a depth of 60 inches is moderate, and shrink swell potential is low. Annual flooding is none, and annual ponding is none. The minimum depth to the top of the seasonal high water table is at 21 inches. The assigned Kw erodibility factor is .43. It is nonirrigated land capability subclass 2e. This soil is not suitable for cultivated crops. This component is not a hydric soil.
- 9. Urban land-Guernsey complex, UhD, 8 to 25 percent slopes. Moderately well drained, runoff is rapid, permeability is slow, available water capacity is moderate. Limitations of this soil are the rapid runoff and slow permeability.
- 10. Urban land-Monongahela complex, UmB, 0 to 8 percent slopes. Moderately well drained, runoff is slow, permeability is slow, available water capacity is moderate. Limitations is the slow permeability.
- 11. Urban land, Us. This unit consists of areas where more than 85% of the surface is covered by asphalt, concrete, buildings, and other impervious surfaces. Examples are parking lots, shopping centers, and industrial parks. Onsite investigation is needed to determine the suitabilities and potentials for any use.
- 12. Weikert-Culleoka complex, WeD, 15 to 25 percent slopes. This map unit is a combination of a) Weibert-Shallow, well drained soils formed from shale, siltstone, and limestone. They are on upland slopes. They have moderately rapid permeability, a low available water capacity, and normally have no seasonal high water table and; b) Culleoka-Moderately deep, well drained soils formed from interbedded shale, siltstone, sandstone, and limestone. They have moderate or moderately rapid permeability, a moderate available water capacity, and normally have no seasonal high water table. Slope, depth to bedrock, gravel and large stone content are the main restrictions of this soil.

A copy of the soil maps is located in Appendix B.

2.4 Geologic Features

A review of the Greater Pittsburgh Region Geologic Map, compiled by W.R. Wagner, J.L. Craft, L. Heyman and J.A. Harper dated 1975 shows the majority of the plan area located in

the Monongahela Group Formation. The formation is cyclic sequences of shale, limestone, sandstone and coal and contains Pittsburgh coal bed at the base. Water quality is affected by calcium bicarbonate content. Dissolved solids range from 272 to 610 mg/l and iron ranges from 0.08 to 35 mg/l.

Conemaugh – Casselman Group Formation is also located in the plan area in the area of the Monongahela River. This formation is cyclic sequence of sandstone, shale, red beds and thin limestone and coal. Dissolved solids range from 99 to 722 mg/l, hardness ranges from 10 to 263 mg/l, and iron ranges from 0.08 to 23.2 mg/l.

Dunkard – Waynesburg Group Formation is also located in small portions in the plan area. This formation is cyclic sequence of sandstone, shale, limestone and coal and contains Waynesburg coal bed at the base. This has generally good quality water, moderately hard.

2.7 Wetlands

A wetland field investigation was conducted during design of Phase I and Phase II of the LTCP which showed no wetlands in the project area. A copy of the wetland field investigation is located in Appendix C. Based on the National Wetlands Inventory Maps, there are no wetlands shown in the areas of the proposed facilities for Phase III. A copy of the wetland maps is also located in Appendix C.

5.0 ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

Identified Needs

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority owns and operates the 17 combined sewer overflows (CSOs) along the main interceptor, it is obligated to meet the requirements of the National CSO Policy (CSOP) first adopted by the United States Environmental Protection Agency (EPA) in 1994. The Long Term Control Plan was developed that evaluated feasible alternatives available to the Authority to continue to successfully comply with the provisions of the CSOP.

5.1 Alternatives to Provide Improved Wastewater Disposal Facilities

5.1.2, 5.1.3, 5.1.4 & 5.1.6 Conventional Collection, Conveyance, Treatment and Discharge Alternatives

Development of Alternatives for CSO Control

Concepts used in developing CSO control alternatives include interaction with the Nine Minimum Controls, interaction with other collection and treatment system objectives, and creative thinking.

Interaction with Nine Minimum Controls

The Nine Minimum Controls include technology based actions or measures to reduce CSOs and their effect on receiving water quality. The two controls that have the largest impact on LTCP development are maximization of flow to the WWTP for treatment and pollution prevention programs to reduce contaminants in CSOs.

In recent years, collection system operating procedures have been aimed at maximizing flow into and through the interceptor to the WWTP. Therefore, data obtained during the extensive flow metering program is reflective of peak flows that may be observed during precipitation events. Pollution prevention programs include street sweeping and a public awareness program (catch basin stenciling). These pollution prevention efforts will improve the effectiveness of potential CSO

Mon Valley Sewage Authority (Official Sewage Facilities P	Plan Update/Special Study, 2013
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treatment facilities.

Interactions with Other Collection and Treatment System Objectives

The Authority completed a system mapping project that identified sewershed areas, separate and combined sections of the system, and CSO outfall locations and developed a hydraulic model of the interceptor. In addition, the Authority conducted a program to clean and internally inspect all the collection sewers within the Monessen and Donora systems. These projects are part of the Authority's continuing effort to characterize and maintain the integrity of the collection system, interceptor, and pump stations. Information obtained during these projects, in conjunction with the flow metering program data, was utilized to identify and evaluate areas of sewer separation, storage facility location and sizing, treatment facility location and sizing, and WWTP upgrade and improvement alternatives.

Creative Thinking

Numerous approaches for integrating the existing conveyance and treatment systems and proposed CSO control facilities were identified and evaluated during LTCP development. The plan proposes innovative methods to integrate the existing collection and conveyance system with state of the art technologies while maximizing the capabilities of the existing WWTP.

Definition of Water Quality and CSO Control Goals

The ultimate goal of the LTCP is compliance with the requirements of the Clean Water Act (CWA), within the framework provided by the CSO Control Policy. The LTCP was developed based on the "Presumption Approach". Accordingly, it is presumed that if the minimum performance criteria (no more than 4-6 annual overflows and/or capture for treatment of 85% by volume of combined sewage) are met then an adequate level of control to meet water quality based requirements of the CWA is provided. However, numerous upstream point and non-point pollution sources can potentially prevent attainment of water quality standards and designated uses. Therefore, based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

CSO Control Goals refer to specific levels of pollution control for CSO sources. CSO Control Goals are established with the objective of providing the means to allow attainment of the Water Quality Goal. The following CSO Control Goals were established.

- 1. To provide a sufficient level of control so that remaining CSO discharges will not prevent attainment of Water Quality Standards or contribute to impairment of the Monongahela River.
- 2. To eliminate the impacts of the Authority's CSOs on the Monongahela River.

The CSO Control Goals provide two levels of CSO Control.

Level 1: CSO Control Goal No. 1 allows limited CSO discharges consistent

with the CSO Control Policy Presumption Approach.

Level 2: CSO Control Goal No. 2 seeks to meet the Water Quality Goal by

minimizing untreated CSOs or completely eliminating all CSOs.

Approaches to Structuring CSO Control Alternatives

The first step in identifying CSO control alternatives to provide the means to meet the CSO control goals was to review the operation of the existing collection and conveyance systems. The collection system consists of a network of combined sewer and dedicated sanitary sewer subsewersheds. The majority of the sub-sewersheds drain to diversion structures upstream of the main interceptors (Monessen Interceptor and Donora Interceptor). Normal flows are directed to the interceptors. Excess flows are diverted to combined sewer overflow outfalls. Several small pump stations are located along the interceptors. The interceptor sewers terminate at the two main pump stations, Monessen Pump Station and Donora Pump Station. Sewage from the two main pump stations is pumped directly to the WWTP. Sewage from Carroll Township is pumped to the WWTP via a pump station owned and operated by Carroll Township.

The existing collection system is extensive with the majority of the system being combined sewers constructed prior to the Monessen and Donora interceptor sewers. The existing Monessen and Donora interceptor sewers and diversion structures were designed to accommodate the pre-existing collection system and topography along the interceptor sewer routes, which parallel the Monongahela River. Pump stations along the interceptor were located and designed based upon anticipated sewage flows and proposed interceptor sewer elevations.

The flow metering data analysis provided estimates of average dry weather flow for the combined sewer sub-sewersheds. Other methods were used to estimate the average dry weather flow for sewersheds with existing or proposed dedicated sanitary sewer systems. To maximize flow to the WWTP, CSO Control Alternatives were based on

- conveying 350% of the average dry weather flow to the interceptor sewers for combined sewer sewersheds located in Donora,
- conveying 350% or greater than 350% of the average dry weather flow to the interceptor sewers for combined sewer sewersheds located in Monessen, and
- conveying 400% of the average dry weather flow to the interceptor sewers for sewersheds with existing or proposed separate sanitary sewer systems (Monessen and Donora areas).

For the majority of the combined sewer sub-sewersheds, the flow metering data analysis also provided an estimate of the peak combined sewage flow rate received at the existing diversion structure. Any CSO control facilities would be expected to handle these peak flow rates. Therefore, the peak observed flow rates were used to size potential CSO control facilities. The analysis of average annual flow volume and overflow occurrence provided estimates of individual CSO satellite treatment facility capacity necessary to achieve the CSO Control Goals. The analysis provided estimated satellite treatment facility capacity needed to

- provide capture and treatment of 100% of the wet weather flow entering the combined sewer system on an average annual basis,
- provide capture and treatment of 85% of the wet weather flow entering the combined sewer system on an average annual basis,

- limit combined sewer overflow events to 4 to 6 events per year,
- provide treatment of the wet weather flow entering the combined sewer system on an average annual basis corresponding to the percent capture representing the "point of diminishing returns" or knee of curve for treatment facility capacity, and
- provide treatment of the wet weather flow entering the combined sewer system on an average annual basis corresponding to the number of annual combined sewer overflow events representing the "point of diminishing returns" or knee of curve for treatment facility capacity.

Using the methodology described above, CSO Control Alternatives were developed with the goal of integrating as much of the existing sewer system infrastructure as technically and economically feasible and utilizing the capabilities of the existing WWTP to the maximum possible extent.

A total of 35 CSO Control Alternatives were selected for evaluation. The CSO Control Alternatives were shown graphically on Figure 3-1 and summarized in Tables 3-1 through 3-35 as part of the LTCP and are included in Appendix D.

The CSO Control Alternatives are divided into two Main CSO Control Alternative categories based on proposed modifications to the collection system: Main CSO Control Alternative I-Partial Sewer Separation and Main CSO Control Alternative II-Complete Sewer Separation.

The partial sewer separation main alternative includes separation of combined sewers in selected sub-sewersheds. Sub-sewersheds are shown on Exhibits 2-2 and 2-3. The selection of sub-sewersheds designated for separation of sewers was based on anticipated dry and wet weather peak flows, the cost of sewer separation compared with treatment or storage of the associated CSO, and previously planned collection system upgrade projects. The complete sewer separation main alternative includes the separation of all combined sewers in the collection system.

In the Main CSO Control Alternative I-Partial Sewer Separation, the CSO Control Strategy proposed to achieve the CSO Control Goal consists of constructing satellite treatment facilities at selected CSO locations. The final set of 33 CSO Control Alternatives is based on two CSO

Disinfection Alternatives, five CSO Sub-Alternatives, and five Levels of CSO Control. These Disinfection Alternatives, CSO Sub-Alternatives, and Levels of CSO Controls are described below.

Under Main Alternative II-Complete Sewer Separation, all CSOs would be eliminated. Two Complete Sewer Separation Alternatives were identified to include necessary system upgrades associated with operating and maintaining a dedicated sanitary sewer collection, conveyance, and treatment system.

In each main alternative, there is a set of proposed collection and conveyance system upgrades common to each sub-alternative within the main alternative. There is also a set of upgrades common to both main alternatives. These sets of proposed upgrades comprise the Collection System Base Plans.

Two planned and now completed as Phase I of the LTCP were collection system improvement projects. These collection system improvements are common to all the alternatives. The first was a stream separation project in the Seneca Street area of Monessen (Exhibit 2-2, Map Area 7). The Seneca Street project included removing stream flow from the combined sewer system. A new trunk sewer was constructed in Seneca Street to collect the adjacent combined sewersheds The stream was routed directly to the Monongahela River via the existing combined sewer piping. The project involved approximately 5,500 feet of a new combined trunk sewer and 460 feet of sanitary sewers.

The Authority also constructed a dedicated sanitary sewer system in the 15th Street area of Donora (Exhibit 2-3, Map Area 21). This project removed the 15th Street stream from the Authority's system, provided sewer service to customers that were not presently sewered, and eliminated CSO 021. The project consisted of 1,700 feet of new sanitary sewers.

5.8 No-Action Alternative

5.8.1 Water Quality/Public Health

The National CSO Control Strategy developed by the EPA recommended that all CSOs be identified and categorized according to their status of compliance with these requirements. It also set forth three objectives:

- Ensure that if CSOs occur, they are only as a result of wet weather
- Bring all wet weather CSO discharge points into compliance with the technology based and water quality-based requirements of the CWA
- Minimize the impacts of CSOs on water quality, aquatic biota, and human health.

Based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

To attain applicable Water Quality Standards in the Monongahela River at all times,
 provided all non-CSO and other upstream pollution sources are adequately controlled
 by others so as to allow this attainment.

If the recommended alternative is not implemented, the Authority will not meet the requirements of the CSOP and Water Quality Goal that was established. Both the short term and long term impact is that CSO discharges will not be reduced and impacts will continue to water quality, aquatic biota, and human health.

5.8.2 Growth Potential

The recommended alternative includes collection system improvement projects and upgrading of interceptor sewers. These projects alleviate overloads to the system which allows growth in the area. If the recommended alternative was not constructed overload conditions will continue and the short and long term impact is tap restrictions by PaDEP on the system which will limit any growth in the municipalities.

5.8.3 Community Economic Conditions

Infrastructure, such as public sanitary sewage treatment facilities, is critical for growth and development. Vacant land becomes more attractive for development if an adequate sewage system is available. If tap restrictions are in place for the system, then development cannot occur on vacant land. The short and long-term impact of no-action is if there is no growth and development, then businesses start to fail causing the economics in the community to drop.

5.8.4 Recreational Opportunities

Recreational opportunities downstream of the CSOs are negatively impacted by raw sewage entering into the streams. The short and long-term impact of no-action is the closure of areas for swimming, fishing, and other recreational activities.

5.8.5 Drinking Water Sources

CSO discharges of untreated sewage in the streams can affect drinking water intakes downstream of the CSO. The short and long-term impact of no-action is problems for drinking water systems resulting in contamination and boil water notices for the users served by the drinking water system.

5.8.6 Other Environmental Concerns

The no-action alternative would continue to allow numerous CSO discharges of untreated sewage into the waters of the Commonwealth. This untreated sewage affects not only the streams but the aquatic, animal and human life. The no-action alternative is not a viable option for any other environmental concern.

6.0 EVALUATION OF ALTERNATIVES

6.1 Consistency Analysis

Wastewater management alternatives developed as part of the Act 537 planning process must be evaluated in terms of their relationship to the goals and objectives of various planning, environmental, and natural resource laws and policies of the Commonwealth of Pennsylvania. Chapter 71.21(a) (5) of PaDEP's regulations requires that the Act 537 Plan address the consistency of each wastewater management alternative with 11 of the Commonwealth's goals and policies. If a recommended alternative is determined to conflict with or is inconsistent with one of the goals and objectives, the conflict and inconsistencies must be resolved before PaDEP will approve the alternative.

The following sections discuss the eight evaluation categories and the consistency analysis. Consistency analyses were performed only for the recommended alternative, Alternative IB-4b, Phases II and III since Phase I is complete. Based on the following analysis, the alternatives are consistent with all eight criteria.

6.1.2 Municipal Wasteload Management Plans

The Authority annually submits a Chapter 94 Municipal Wasteload Management Report to PaDEP for its WWTP and Conveyance System. The 2012 Chapter 94 Report indicates that the plant was not hydraulically or organically overloaded and is not projected to be overloaded within the next five years. As part of the Chapter 94 report, the Authority is to provide the annual CSO Status Report. The report provides information on the overflows in frequency, duration, and volume. The report also provides the operational status of the overflows, any water quality impacts, overflows associated with dry or wet weather, inspection and maintenance on the diversion manholes and regulator structures and if there is a chronic or continuous discharge.

The recommended alternative was developed to meet the requirements of the CSOP and the Authority will continue to provide the annual CSO Status Report as part of the Municipal Wasteload Management Report.

6.1.4 Comprehensive Planning

The Washington County Comprehensive Plan, adopted November 23, 2005, indicated that the Borough of Donora and part of the eastern section of Carroll Township is in Sewerage District #23. This district was identified as a concern area for Combined Sewer Overflows and is considered a high priority area by PaDEP.

The Westmoreland County Comprehensive Plan, dated January 2005 indicated that separation of sewers in those areas with combined sewers would provide further capacity to accommodate growth.

The proposed alternative is consistent with the Comprehensive Plans in that it will reduce the CSOs and meet the requirement of the CSOP and it will separate sewers in selected areas with combined sewers.

6.1.5 Chapter 93, 95, and 102 Antidegradation Requirements

Chapters 93 and 95 under Pennsylvania's Clean Streams Law classifies all surface waters according to use which shall be protected and establishes water quality criteria which need to be maintained in the surface waters.

The Combined Sewer Overflow (CSO) Control Policy identified two general approaches for the attainment of Water Quality Standards: the Demonstration Approach and the Presumption Approach.

The LTCP was developed based on the "Presumption Approach." Based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

 To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

The proposed alternative is consistent with the water quality goal.

Chapter 102 requires a soil erosion and sedimentation control plan be prepared and followed for any construction activity impacting greater then one acre. The project will be completed in compliance with necessary erosion and sedimentation control plans.

6.1.7 Prime Agricultural Land Policy

The policy was established to protect prime agricultural land from irreversible conversions to uses that result in the loss of the land as an environmental or essential food source resource. The sewer separation projects are in the built-up areas of the City of Monessen and the Borough of Donora. The location of the satellite and screening facilities are located in the industrial areas of the City of Monessen and the Borough of Donora.

6.1.8 County Stormwater Management Plans

The recommended alternative is consistent with the County Stormwater Management Plans. Under the Phase II projects, the Authority has obtained NPDES Permits for Stormwater Discharged During Construction Activities. NPDES Permits for Stormwater Discharged During Construction Activities will be obtained for Phase III of the Plan.

6.1.9 Wetlands

A wetland delineation to identify and define the actual location of wetlands and their boundaries was performed during the design phase of the LTCP of Phase II. No palustrine wetlands were identified in the project areas. A copy of the field investigation is located in Appendix C. Wetland Maps were generated from the U.S. Fish and Wildlife Service National Wetlands Inventory of digital map data for Phase III. Based on the generated wetland maps, there are no wetlands in the locations of the proposed satellite or bar screen facilities. If wetland encroachment cannot be avoided, PaDEP and U.S. Army Corps of Engineers approval will be needed. Construction through wetlands, if permitted, may require the use of a U.S. Army Corps of Engineers Nationwide Permit 12 and a PaDEP General Permit BDWM-GP-5. Temporary road crossings through wetlands or streams may require a PaDEP General Permit BDWM-GP-8.

6.1.10 Pennsylvania Natural Diversity Inventory

Pennsylvania Natural Diversity Inventory (PNDI) maintains a database containing site information on regulated plant and animal species, outstanding geological features, and significant natural communities. A PNDI Project Environmental Review Receipt was completed for Phase II and Phase III facilities. A PNDI review was not done for facilities already constructed under Phase I. The receipts indicate there are no known impacts of threatened and endangered species in the project area. Copies of the receipts are included in Appendix E.

6.1.11 Historical and Archeological Resource Protection

Pennsylvania Title 37, Section 507 requires cooperation between public officials and the Pennsylvania Historical and Museum Commission. A cultural resource notice request was sent to the Bureau of Historic Preservation (BHP) for a list of known historical sites and potential impacts on known archeological and historic sites on the site of the WWTP. On August 27, 2013, PHMC responded that the project should have no effect on historic buildings, structures and/or archaeological resources. A copy of the Pennsylvania Historical and Museum Commission's letter is located in Appendix F.

6.2 Resolution of Inconsistencies

Based on the above analyses, it does not appear there are any inconsistencies, at the planning stage, between the alternatives and the various goals and objectives of the planning, environmental and natural resource laws and policies of the Commonwealth of Pennsylvania.

6.3 Evaluate Alternative With Respect to Water Quality Standards, Effluent Limitation and Other Technical, Legislative or Legal Requirements

The CSOP indicates that if the Presumption Approach is followed, it is presumed that Water Quality Standards will be met. Alternative IB-4b creates the most cost effective means to achieve at least 85% capture (actually 86% capture and 83 overflows per year). This meets the presumption approach of the CSOP.

As stated in Chapter 5, and previously under 6.1.5 Chapter 93, 95, and 102 Antidegradation Requirements, based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal

_____ Mon Valley Sewage Authority Official Sewage Facilities Plan Update/Special Study, 2013 _____ was established.

 To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

The CSO Control Goals provide two levels of CSO Control.

Level 1: CSO Control Goal No. 1 allows limited CSO discharges consistent

with the CSO Control Policy Presumption Approach.

Level 2: CSO Control Goal No. 2 seeks to meet the Water Quality Goal by

eliminating untreated CSOs or completely eliminating all CSOs.

The recommended alternative meets that goal.

6.4 Cost Estimates for the Alternatives

As part of the LTCP, an evaluation of the CSO Control alternatives was done based on project cost, performance, non-monetary factors, environmental issues/impacts, technical issues, and implementation issues. Opinions of probable construction and project costs were developed for the alternatives as Tables 3-24 through 3-35 in the LTCP. Copies of these tables are located in Appendix D. Table 3-24 is a summary of opinions of probable projects costs for each CSO Control Alternative. Tables 3-25 through 3-35 provide a detailed summary of component costs, construction costs, and project costs for each CSO Control Alternative. The opinion of probable project costs for the evaluated alternatives range from approximately \$36.5 million to \$66.5 million. The opinion of probable project costs for Alternative IA (1-3) – Partial Sewer Separation with disinfection of all combined sewage not entering the interceptor ranges from approximately \$54.9 to \$61.7 million. The opinion of probable project costs for Alternative IB (1-6) – Partial Sewer Separation with disinfection of only combined sewage receiving high rate clarification ranges from approximately \$36.5 to \$61.7 million. The opinion of probable project costs for Alternative II A and IIB—Complete Sewer Separation ranges from approximately \$63.9 to \$66.5 million. (All in 2007 dollars.)

Each of the 35 alternatives evaluated in the development of the LTCP had the potential to provide the Authority the means to achieve the CSO Control Goals. Each of the alternatives

presented unique technical challenges and financial impacts. A present worth analysis was not done as part of the LTCP to determine the chosen alternative. Several factors were used to evaluate the alternatives. These factors were project costs, performance and non-monetary. The selected alternative was based on providing a cost effective set of system upgrades and operating procedures that should provide compliance with the requirements of the CWA, within the framework provided by the CSO Control Policy.

In order to meet the requirements of the National CSO Policy via the most cost effective means, the Authority has selected Alternative IB-4b. The opinion of probable construction and project cost for Alternative IB-4 in year 2007 dollars is \$28,306,000 (including 20% contingency) and \$36,562,000, respectively. Alternative IB-4b was a slightly modified version of previously developed Alternatives that came about as a result of the May 16, 2007 meeting with DEP. Alternative IB-4b implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in Alternative IB-1 in favor of a larger equalization tank. This concept adheres to the idea of maximizing flow to the WWTP, where the Authority is conveying as much flow to the WWTP as economically feasible.

Alternative IB-4b was broken down into three phases. Phase I is Collection and Conveyance Upgrades and Equalization; Phase II is Sewer Separation Projects and Seneca Street Satellite Facility; and Phase III is Remaining Screening and Satellite Facilities. The breakdown of construction and project cost for each phase in the LTCP is provided below in Table 6-1:

TABLE 6-1 MON VALLEY SEWAGE AUTHORITY

LONG TERM CONTROL PLAN

ESTIMATED CONSTRUCTION AND PROJECT COST (2007 DOLLARS)

Phase	Construction Cost	Project Cost
I	\$4,595,000	\$5,937,000
II	\$8,362,000	\$10,801,000
III	\$13,026,000	\$16,825,000
Total	\$25,983,000	\$33,563,000*

Note: \$3.0 million difference from previous page is the cost of the Donora Place Plan Sewer Project completed by Donora Borough.

Please note that Phase I of the LTCP has been completed. The actual cost for this project is shown in the following Table 6-2:

TABLE 6-2

PHASE I ACTUAL PROJECT COSTS (2012 DOLLARS) MON VALLEY SEWAGE AUTHORITY LONG TERM CONTROL PLAN

ontract Name Contractor Cost	uction of the Pump Station Lone Pine Construction \$1,074,025 mprovements	ruction of the Pump Station David W. Jones Company \$714,700 mprovements	nd Headworks Upgrade (General Three A – Natgun Corporation \$1,731,600 ⁽¹⁾ Three B – Lone Pine Construction \$1,779,900 Four – A-1 Electric, Inc. \$391,000	Relocation / Replacement and Greenland Construction \$ for Improvements	paration and North Interceptor Carl P. Fekula, Inc. \$442,990 h Improvements	Weather Force Main and Donner Greenland Construction \$1,981,635 erceptor Improvements	n Stream Separation JR Contracting \$2,599,076 (3)	Property Acquisition, Financing Multiple \$2,000,000	\$13,408,000
Contract Name	General Construction of the Pump Station Improvements	Electrical Construction of the Pump Station Improvements	Equalization Tank and Headworks Upgrade (General and Electrical)	Donora Force Main Relocation / Replacement and Interceptor Improvements	Donora Stream Separation and North Interceptor South Improvements	Donner Avenue Wet Weather Force Main and Don Avenue Interceptor Improvements	Monessen Stream Separation	Engineering, Legal, Property Acquisition, Financing	
Contract	One	Two	Three A/B & Four	Five	Six	Seven	Eight	Associated Project Costs	Phase I Total

Phases II and III project costs were updated to 2013 dollars. The estimated project cost for Phase II is \$21,500,000 and for Phase III is \$21,600,000. The updated total revised cost of Alternative IB-4b is as follows in Table 6-3:

TABLE 6-3
MON VALLEY SEWAGE AUTHORITY
LONG TERM CONTROL PLAN

UPDATED PROJECT COST OF ALTERNATIVE IB-4b (2013 DOLLARS)

Project Cost
\$13,408,000
\$21,500,000
\$21,600,000 (1)
\$56,508,000

⁽¹⁾ Project scope increased due to existing hydraulics, site conditions, and zoning regulations.

6.5 Funding Methods

PaDEP guidelines for preparation of Act 537 Plans specify that an analysis be made of funding methods available to finance the proposed improvements/expansion. Financing alternatives will be developed for the recommended Alternative IB-4b.

6.5.1 Funding Sources Available

The upward spiraling of construction costs has made it exceedingly difficult for small municipalities to construct major capital improvements. Brief descriptions of various financing methods which may apply to this project are set forth in the following sections.

a. Grants-in-Aid

The first method of financing available to alleviate partial construction costs is grants-in-aid. A grant is a monetary award to a project without provision for reimbursement. The grant programs which may apply to this project are discussed below.

(1) Washington County/Westmoreland County Community Development Block Grant

Community Development Block Grants are awarded to communities within the County for various public works projects. These grants are awarded on an individual project basis to service areas of low and moderate income. This funding is for municipalities only and would not be available to MVSA unless it could be obtained through the City of Monessen, Borough of Donora or Carroll Township to fund portions of the overall LTCP.

(2) Pennsylvania Infrastructure Investment Authority (PENNVEST)

PENNVEST has been capitalized by State and Federal Funds to provide an innovative approach to financing local infrastructure in Pennsylvania. The PENNVEST Board meets several times each year to consider funding applications and award funds to water and sewage infrastructure development projects. This is usually a grant and loan program. Worthy projects may receive PENNVEST grant awards in conjunction with a loan offer for additional project funds. Grant fund availability differs each fiscal year.

(3) Department of Community and Economic Development (DCED)

DCED has funds available under the Community Revitalization Program. The Community Revitalization Program supports local projects that improve the stability of communities and enhance local economic conditions. Eligible projects include construction or rehabilitation of infrastructure. Assistance from this program is in the form of a grant.

b. Loans

Loans are repaid at an agreed upon rate of return over a stipulated time period. The loan programs which may apply to private as well as public facilities are discussed below.

(1) Commercial or Bank Loans

Bank financing is readily accessible and requires a much shorter interval from project

start to construction. This loan option requires less administrative costs than expected with a bond issue. The main disadvantage to a bank loan is that the term usually does not extend beyond 15 years.

(2) Pennsylvania Infrastructure Investment Authority (PENNVEST)

PENNVEST has been capitalized by State and Federal funds to provide an innovative approach to financing local infrastructure in Pennsylvania. The interest rates for this program are determined based on prevailing economic conditions. A number of grants have also been awarded under this program.

(3) Rural Utility Service (RUS)

The RUS loan and supplemental grant program was established to provide human amenities, alleviate health hazards, and promote the orderly growth of rural areas by meeting the need for new and improved water and waste disposal systems. Restrictions with regard to population of the area, financing capability, and project administration must be met. RUS usually provides a combination grant/loan. The projected population in the MVSA service area exceeds 10,000 therefore this project would not be eligible for RUS funding.

(4) Bond Issues

Bond issues are a common method by which municipalities and authorities obtain money to fund projects. Revenue bond issues are normally calculated to achieve a level annual payment for each year of the issue and are presently issued for a maximum term of 30 years at prevailing interest rates. A 20 year term is more common. The annual payment for debt service (interest and principal) is made from annual operating revenues. Bond Issues normally require 10 to 20 percent coverage on top of the average annual debt service cost.

The costs for legal services and printing of bonds are substantial. As a rule, bond issues may be considered for total project costs in excess of \$500,000.

6.5.2 Cost-Effectiveness of Funding Options

Pennvest was created by the Pennsylvania Legislature to provide financing for public water, wastewater, and storm water facilities. Pennvest also provides loans to private individuals for repair of on-lot septic systems. Securing Pennvest financing is a competitive process whereby the applicant competes against others for the limited available funds. Priority among eligible projects is established according to the applicant's accumulation of points for the following factors: public health and safety, environmental impact, economic development, compliance, and social impact. The projects with the highest accumulated points are awarded financing. Projects providing public sewer service to older communities with a very high percentage of documented septic system malfunctions and where the properties rely on private wells for drinking water, usually receive sufficient points to be awarded financing. Once financing is awarded, Pennvest calculates the anticipated user fee (debt service and projected total system operation and maintenance costs), compares this fee to the community's median household income, then selects the resultant financing package. Pennvest primarily provides financing in the form of low-interest loans, but will provide some supplemental grant funding when the resultant user fee for the project exceeds a certain percentage of the municipality's median household income. Pennvest also considers other available funding sources; such as state grant money, and the municipality's existing sewer system capital reserves, when awarding financing. Preparation of a Pennvest financing application is a relatively lengthy and somewhat expensive process, and will require MVSA to undertake certain environmental assessments not required for a normal bank loan. Pennvest funding is typically a 20year loan, with a reduced interest rate for the first 5 years. Pennvest's current rate for Washington County is 1.484% for years 1 thru 5 and 2.049 for years 6 thru 20. The blended interest rate is 1.908% for Washington County. Pennvest's current rate for Westmoreland County is 1.414% for years 1 thru 5 and 2.014% for years 6 thru 20. The blended interest rate for Westmoreland County is 1.864%.

The second funding scenario uses a standard Sewer Revenue Bond at an assumed interest rate of 4.50% over a 20-year period. A bond issue can usually be obtained much faster than Pennvest funding and does not carry the high application and ongoing administrative fees associated with a Pennvest loan.

Project phasing is required to technically and operationally implement the Long Term Control Plan. Therefore, the Authority will investigate funding alternatives for each phase of the plan as it is implemented over several years. Potential funding sources include rate increases, bond issues, low interest loans via state or Federal sources, or grants including innovative technology grants from state, Federal, or private sources. It is likely that a combination of these funding sources will be utilized to implement the Long Term Control Plan. For the purpose of the Act 537 Plan, the financing alternatives to be compared will be the Pennvest Loan versus the Bond Issue. These financing alternatives will be compared for Phase II and Phase III separately. The Authority has already obtained a \$10,000,000 bond issue for part of Phase II. This will be shown in the financing table for Phase II. A copy of the financing tables are located in Appendix G. The estimated additional monthly user fee based on the financing alternative and the Phase is presented in the Table 6-4 below:

TABLE 6-4
ADDITIONAL MONTHLY USER CHARGE PER EDU
PER FINANCING ALTERNATIVE

AND ADDRESS OF THE PARTY OF THE		
Financing Alternative	Phase II	Phase IIII
Pennvest	\$22.00	\$24.00
Bond Issue	\$23.00	\$34.00

As shown in Table 6-4, the additional monthly user charge per EDU for Pennvest versus Bond Issue for Phase II is comparable. Since the Authority has already obtained a bond issue towards this phase, it is recommended to obtain another bond issue for the remaining amount. A bond issue involves less time during the construction period for processing requests and change orders.

Based on Table 6-4, the Pennvest financing alternative for Phase III is more cost effective than the Bond Issue.

Mon Valley Sewage Authority Official Sewage Facilities Plan Update/Special Study, 2013					
6.6	Evaluate Administrative Opposite tion and I and A	1000	4 70		

6.6 Evaluate Administrative Organization and Legal Authority for Plan Implementation
The functions of the Authority and municipalities will remain as they are now. The Authority
will be responsible for design, permits and financing of the recommended alternative.

7.0 INSTITUTIONAL EVALUATION

7.1 Existing Wastewater Authorities

The Authority was formed on June 24, 1963 under the Municipality Authorities Act of 1945, its supplements and amendments by the City of Monessen, Borough of Charleroi and the Borough of Donora. The Authority was formed to construct facilities necessary to furnish and treat the sewage wastes from the municipalities. The Borough of Charleroi subsequently withdrew from participation in the Authority. The Authority's sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP).

7.1.1 Financial and Debt Status

In accordance with the Trust Indenture and Agreements between the Authority and the City of Monessen and the Borough of Donora, the Authority prepares an annual Sewage Disposal System Report. The report reviews the operations of the system for the prior year, capital additions done in the prior year; recommendations of capital improvements for the next year and an estimate of revenue required for the next year based on the sewer rental rates in effect and projected expenses and capital improvements. Based on the Sewage Disposal System Annual Report dated November 2012, the current rates are adequate for the projected 2013 budget. At the end of November 2011, the Authority had approximately \$18 million in bonds and loans outstanding.

7.1.2 Available Staff and Administrative Resources

The Authority has operated and maintained the system since the completion of construction in 1970. The Authority has maintained adequate staff and that staff will continue to operate and

maintain the system with the additional satellite facilities. The Authority will also continue to utilize their administrative resources for billing and collection and notification as they have done in the past.

7.1.3 Existing Authority to:

7.1.3.1 Implement wastewater planning recommendations

The Authority has implemented wastewater planning recommendations in the past.

7.1.3.2 Implement system-wide operation and maintenance activities

The Authority, as stated previously, has operated and maintained the system since its completion in 1970. They have over the years implemented many system-wide operation and maintenance activities.

7.1.3.3 Set user fees and take purchasing actions

Under the trust indentures, the Authority prepares an Annual Report that reviews the past year expenditures, revenues and capital additions and projects the next year's budget. The budget requirements are compared to the existing user fees and determined if adequate. If not adequate, the Authority increases the user fees as they have done in the past. The Authority has in the past condemned property for their facilities.

7.1.3.4 Take enforcement actions against ordinance violators

The Authority has in the past taken enforcement actions against ordinance violators.

7.1.3.5 Negotiate agreements with other parties

In the past, the Authority has negotiated agreements with other parties.

7.1.3.6 Raise capital for construction and operation and maintenance of facilities

The Authority in the past has obtained grants from Pennvest and Redevelopment Authority of Washington County, loans from Pennvest and Bond Issues for construction, operation and maintenance of facilities.

7.2 Institutional Alternatives Necessary to Implement Plan

7.2.2 Functions of existing and proposed organizations

The functions of the Authority, the Borough, City and Township are anticipated to remain the same.

7.3 Administrative and Legal Activities Necessary to Implement Plan

7.3.2 Development of all required ordinances, regulations, standards and inter-municipal agreements

The Authority and the municipalities have existing ordinances, regulations, and standards pertaining to their sewer systems.

7.3.3 Timeline for Administrative and Legal Activities

Not Applicable. As stated previously, the Authority and the municipalities have existing ordinances, regulations, and standards pertaining to their sewer systems.

7.4 Proposed Institutional Alternative for Implementing the Chosen Technical Wastewater Disposal Alternative

No new municipal departments or municipal authorities are required to implement the recommended project. As stated previously, the functions of the Authority, the Borough, City and Township are anticipated to remain the same.

8.0 SELECTED ALTERNATIVES

8.1 Selected Wastewater Disposal Alternative

8.1.1 Existing Wastewater Disposal Needs

Alternative IB-4b will continue to provide treatment of the existing wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 85% capture.

8.1.2 Future Wastewater Disposal Needs

Alternative IB-4b will provide treatment of future wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 85% capture.

8.1.3 Operation and Maintenance Considerations

The Authority's personnel will continue to operate and maintain the recommended facilities under the Phases for Alternative IB-4b.

8.1.4 Cost Effectiveness

Alternative IB-4b creates the most cost effective means to achieve at least 85% capture (actually 86% capture and 83 overflows per year).

8.1.5 Available Management and Administrative Systems

The Authority's existing management and administrative systems will remain in place for Alternative IB-4b.

8.1.6 Available Financing Method

Pennvest and Bond Issue financing methods are available for Alternative IB-4b.

8.1.7 Environmental Soundness and Compliance With Natural Resource Planning and Preservation Programs

The ultimate goal of the LTCP is compliance with the requirements of the CWA, within the

framework provided by the CSO Control Policy. Alternative IB-4b will provide treatment of future wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 86% capture.

8.2 Selected Capital Financing Plan

Funds will be needed to finance the recommended project. The Authority has already obtained a \$10,000,000 bond issue for a portion of Phase II. This amount was shown on the financing tables as well as the debt service for the bond. Based on the financing tables for Phase II, the difference in the additional monthly user charge per EDU between the Pennvest loan and the bond issue is minimal. The selected financing approach for Phase II is a bond issue with the Pennvest loan as the back-up financing plan. User rates for all users must be adjusted to provide adequate revenue to pay for additional debt service and operation and maintenance costs associated with Phase II.

Based on the financing tables for Phase III, the Pennvest loan is more cost-effective. The Pennvest loan is recommended with the bond issue as the back-up financing plan. User rates for all users must be adjusted to provide adequate revenue to pay for additional debt service and operation and maintenance costs associated with Phase II.

8.4 Implementation

There are no known critical public health hazards in the MVSA service area associated with wastewater that need to be addressed; however, a potential health hazard exists with the discharge of untreated sewage to the waters of the Commonwealth. The tentative completion schedule for Alternative IB-4b is shown in Table 8-1

TABLE 8-1 TENTATIVE SCHEDULE FOR THE RECOMMENDED ALTERNATIVE

Task or Milestone	Target Date
Submit Task Activity Report (TAR) to PaDEP for approval	Completed May 30, 2013
Start Act 537 Plan	May 2013
Submit Draft Act 537 Plan to Planning Agencies, MVSA, and Municipalities	August 2013
Close on Initial Phase II Bond Issue	August 2013
Comments Received on Act 537 Plan	December 2013
Finalize Report	December 2013
Adopt Final Act 537 Plan by Official Resolution of MVSA, City of Monessen, Borough of Donora and Carroll Township	January 2014
Submit Final Act 537 Plan to PaDEP	January 2014
Receive Approval of the Act 537 Plan	March 2014
Resubmit Part II Permits for Phase II (E&S approval already received.)	April 2014
Receive Part II Permits	July 2014
Open Bids	August 2014
Apply for Additional Funds	August 2014
Start Construction Phase II	September 2014
End Construction Phase II	September 2016
Evaluate Satellite Facility	September 2017
Start Design of Phase III	March 2017
Submit Permits for Phase III	March 2019
Receive Permits	June 2019
Apply for Additional Funds	August 2019
Start Construction Phase III	September 2019
End Construction Phase III	September 2022

APPENDIX A

ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST



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

Act 537 Plan Content and Environmental Assessment Checklist

PART 1 GENERAL INFO	RMATION		7			
A. Project Information						
Project Name Official Act Township	t 537 Sewage Facilities Upda	te for the City of M	onessen,	Borough o	of Donora	and Carroll
Brief Project Description Mon Valley Sewage Authority Long Term Control Plan.	An update to the municipaliti	ies planning docun modate wet weath	nents for a er flows ir	additions an	nd modifi ce with th	cations to the ne approved
B. Client (Municipality)	Information					
Municipality Name	County		City		Boro	Twp
Mon Valley Sewage Authority	Washington/	Westmoreland				П
Municipality Contact Individua Name			MI	Suffix	Title	
Additional Individual Last Nam	ne First Name		MI	Suffix	Title	
Municipality Mailing Address L	ine 1	Mailing Address	Line 2			
20 S. Washington Stree						
Address Last Line City		-	State	ZIP+	4	
Donora			PA	1503	3	
Phone + Ext.	FAX (optional)			l (optional)		
724-379-4141	724-379-4690			@verizon.		
C. Site Information			Jaian	O VOITEOTILI	101	
Site (or Project) Name						
		(Mu	ınicipal Na	ame) Act 5	37 Plan	
Site Location Line 1		Site Location Li	ne 2			
D. Project Consultant II	nformation	<u></u>				
Last Name	First Nar	me			MI	Suffix
McBride	Jason				J	
Title	Consulti	ng Firm Name				
Project Manager	Gannett	Fleming, Inc.				
Mailing Address Line 1		Mailing Address Li	ne 2			
Foster Plaza 3		601 Holiday Drive				
Address Last Line - City	State	ZIP+4		Cc	untry	
Pittsburgh	PA	15220		US	SA	
Email jmcbride@gfnet.com	Phone + Ext. 412-922-5575		FAX 412-	922-3717		

PART 2	ADMINISTRAT	IVE COMPLETENESS CHECKLIST
DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
	<u>i-iii</u>	 Table of Contents Plan Summary
	<u>PS-1</u>	 A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
	<u>PS-3</u>	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
	<u>PS-4</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
-	<u>PS-4</u>	 Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
	<u>PS-5</u>	E. Provide a schedule of implementation for the project that identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
	<u> App. H</u>	3. Municipal Adoption: Original, signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
	<u>App. I</u>	4. Planning Commission / County Health Department Comments: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
	App. J	 Publication: Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
	<u>App. K</u>	 Comments and Responses: Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
	<u>PS-5</u>	7. Implementation Schedule: A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, §71.31.d) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.c).
	<u>N/A</u>	8. Consistency Documentation: Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide.

PART 3	GENERAL PLA	AN C	ONTENT CHECKLIST
DEP Use	Indicate		
Only	Page #(s) in Plan		Item Required
	<u>N/A</u>	l.	Previous Wastewater Planning
			A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
	<u>N/A</u>		 Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
	<u>N/A</u>		 Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
	<u>N/A</u>		 Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
	<u>N/A</u>		4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
	<u>2-1</u>	II.	Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
	<u>2-1</u>		A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
	<u>2-2</u>		B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
	<u>2-2</u> <u>App. B</u>		C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
	<u>2-3</u>		D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference-Title 25, §71.21.a.1.iii).
	<u>N/A</u>		E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference-Title 25, §71.21.a.1.ii).
	<u>N/A</u>		F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.
	<u>2-4</u> <u>App. C</u>		G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.

	<u>N/A</u>	III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Net A. Identify, map and describe municipal and non-municipal, individual	
		community sewerage systems in the planning area including:	
_	<u>N/A</u>	 Location, size and ownership of treatment facilities, main intercepting lipumping stations and force mains including their size, capacity, point discharge. Also include the name of the receiving stream, drainage by and the facility's effluent discharge requirements. (Reference-Title §71.21a.2.i.A). 	nt of asin,
	<u>N/A</u>	 A narrative and schematic diagram of the facility's basic treatment proces including the facility's NPDES permitted capacity, and the Clean Stre Law permit number. (Reference-Title 25, §71.21.a.2.i.A). 	sses ams
	<u>N/A</u>	3. A description of problems with existing facilities (collection, conveys and/or treatment), including existing or projected overload under Title Chapter 94 (relating to municipal wasteload management) or violations of NPDES permit, Clean Streams Law permit, or other permit, rule or regulated of DEP. (Reference-Title 25, §71.21.a.2.i.B).	25, f the
	<u>N/A</u>	4. Details of scheduled or in-progress upgrading or expansion of treatr facilities and the anticipated completion date of the improvements. Disc any remaining reserve capacity and the policy concerning the allocation reserve capacity. Also discuss the compatibility of the rate of growt existing and proposed wastewater treatment facilities. (Reference-Title §71.21.a.4.i & ii).	cuss on of h to
	<u>N/A</u>	 A detailed description of the municipality's operation and maintena requirements for small flow treatment facility systems, including the statu past and present compliance with these requirements and any of requirements relating to sewage management programs. (Reference-Title §71.21.a.2.i.C). 	is of other
	<u>N/A</u>	Disposal areas, if other than stream discharge, and any applic groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).	able
S. 	<u>N/A</u>	B. Using DEP's publication titled Sewage Disposal Needs Identification, ider map and describe areas that utilize individual and community onlot sew disposal and, unpermitted collection and disposal systems ("wildcat" sew borehole disposal, etc.) and retaining tank systems in the planning area included.	age ers.
	N/A	1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).	
	<u>N/A</u>	 A sanitary survey complete with description, map and tabulation documented and potential public health, pollution, and operational probl (including malfunctioning systems) with the systems, including violation local ordinances, the Sewage Facilities Act, the Clean Stream Law regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B). 	ems s of v or
-	<u>N/A</u>	 A comparison of the types of onlot sewage systems installed in an area the types of systems which are appropriate for the area according to geologic conditions, topographic limitations sewage flows, and Title Chapter 73 (relating to standards for sewage disposal facilities). (Referentially 25, §71.21.a.2.ii.C). 	soil, 25
	<u>N/A</u>	 An individual water supply survey to identify possible contamination malfunctioning onlot sewage disposal systems consistent with DEP's Sew Disposal Needs Identification publication. (Reference-Title §71.21.a.2.ii.B). 	by <i>age</i> 25
	<u>N/A</u>	 Detailed description of operation and maintenance requirements of municipality for individual and small volume community onlot syste including the status of past and present compliance with these requirements. 	ems.

and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).

(Reference-Title 25, §71.21.a.3.v).

	<u>5-1</u>	V. Id	entify Alternatives to Provide New or Improved Wastewater Disposal Facilities
		Α.	Conventional collection, conveyance, treatment and discharge alternatives including:
	<u>N/A</u>		 The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).
-	<u>5-3 to 5-6</u>		 The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference- Title 25, §71.21.a.4.i).
	5-3 to 5-6		3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).
	5-3 to 5-6		a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).
	5-3 to 5-6		b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).
	<u>5-3 to 5-6</u>		c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).
	<u>N/A</u>		d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).
	<u>N/A</u>		e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).
	<u>5-6</u>		 Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).
	<u>N/A</u>		5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).
	<u>5-3 to 5-6</u>		6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).
	<u>N/A</u>	B.	The use of individual sewage disposal systems including individual residential spray irrigation systems based on:
	<u>N/A</u>		1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).
	<u>N/A</u>		2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
	<u>N/A</u>		3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.
	<u>N/A</u>		4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).
	<u>N/A</u>		 a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).
	<u>N/A</u>		b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).
	<u>N/A</u>		c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).
	N/A	C.	The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference-Title 25, §71.64.d).
	<u>N/A</u>		1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).
	<u>N/A</u>		2. Soil suitability. (Reference-Title 25, §71.64.c.l).

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	<u>N/A</u>		3.	Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
	<u>N/A</u>		4.	그들은 가게 가게 하다 하다 하지 않는데 하다 하고 있었다. 하는데
	<u>N/A</u>	D.	Th	e use of community land disposal alternatives including:
	<u>N/A</u>		1.	Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).
	N/A		2.	Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
	<u>N/A</u>		3.	Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title25, §71.21.a.2.ii.C). See Part "F" below.
	<u>N/A</u>		4.	The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.
	<u>N/A</u>	E.	Th inc	e use of retaining tank alternatives on a temporary or permanent basis luding: (Reference- Title 25, §71.21.a.4).
	<u>N/A</u>		1.	Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
	<u>N/A</u>		2	Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
· ********** **	<u>N/A</u>		3.	Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).
	<u>N/A</u>		4.	Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.
-	<u>N/A</u>		5.	Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
	<u>N/A</u>	F.	Se of	wage Management Programs to assure the future operation and maintenance existing and proposed sewage facilities through:
E	<u>N/A</u>		1.	Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).
	<u>N/A</u>		2.	Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).
	<u>N/A</u>		3.	Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference-Title 25, §71.73.b.2).
	<u>N/A</u>		4.	Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:
	<u>N/A</u>			a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).
	N/A			b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.
	<u>N/A</u>		5.	Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).
:	<u>N/A</u>		6.	Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).

the Planning Guide.

- B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
- C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).

6-4

 Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).

necessary to implement the proposed technical alternatives including:

3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).

1. Need for new municipal departments or municipal authorities. (Reference-

Title 25, §71.61.d.2).

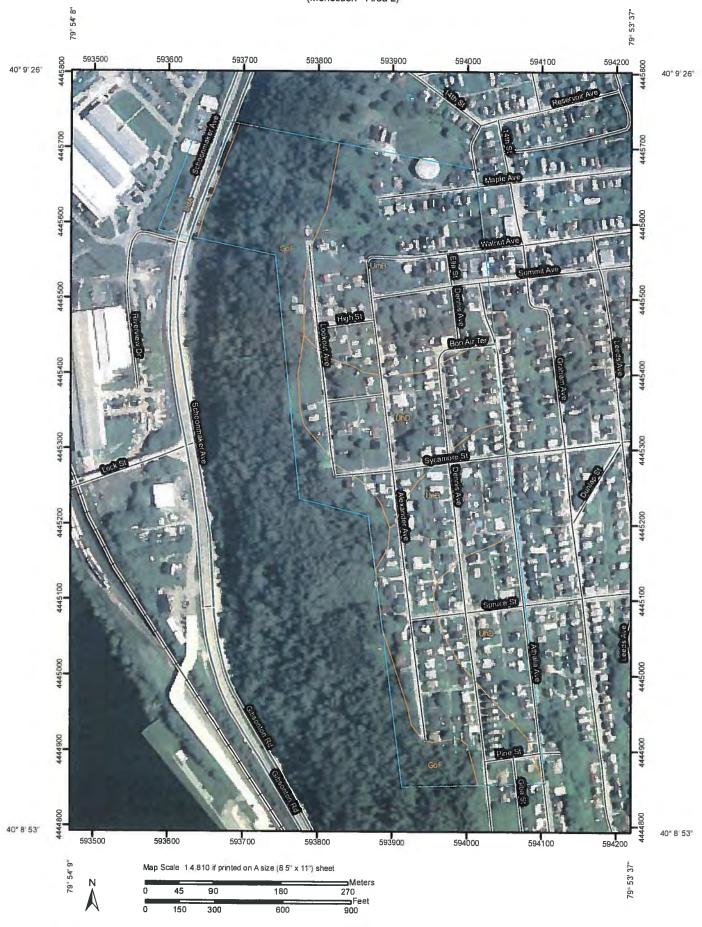
N/A

<u>7-2</u>

<u>N/A</u>

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	<u>7-2</u>		C.	Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
	<u>N/A</u>			1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
-	<u>7-3</u>			2. Development of all required ordinances, regulations, standards and intermunicipal agreements. (Reference-Title 25, §71.61.d.2).
	<u>N/A</u>			3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
	<u>N/A</u>			 Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
	<u>N/A</u>			5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
-	<u>7-3</u>			6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
	<u>7-3</u>		D.	Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).
<u></u>	<u>8-1</u>	VIII.		olementation Schedule and Justification for Selected Technical & titutional Alternatives
			A.	Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
X 	<u>8-1</u>			1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
	<u>8-1</u>			2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
	<u>8-1</u>			3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
	<u>8-1</u>			4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
***********	<u>8-1</u>			 Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
	<u>8-1</u>			6. Available financing methods. (Reference-Title 25, §71.21.a.6).
P	<u>8-1</u>			7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
-	<u>8-2</u>		B.	Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)
	<u>8-2</u>		C.	Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)
	App. L	IX.	Envi Proc	ronmental Report (ER) generated from the Uniform Environmental Review ess (UER)
	App. L		A.	Complete an ER as required by the UER process and as described in the DEP Technical Guidance 381-5511-111. Include this document as "Appendix A" to the Act 537 Plan Update Revision. Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.

APPENDIX B
SOIL MAPS



Soil Map—Westmoreland County, Pennsylvania

2/9/2012 Page 1 of 3

Web Soil Survey National Cooperative Soil Survey

Natural Resources Conservation Service



USDA Natural Resources
Conservation Service

Web Soil Survey National Cooperative Soil Survey

2/9/2012 Page 1 of 3 Soil Map—Greene and Washington Counties, Pennsylvania

.09 19 64

40" 10' 26"

0857444

0127000

077777

0767444

4447300

USDA Natural Resources Conservation Service

.09 .49 .62

4447230

40° 10' 11"

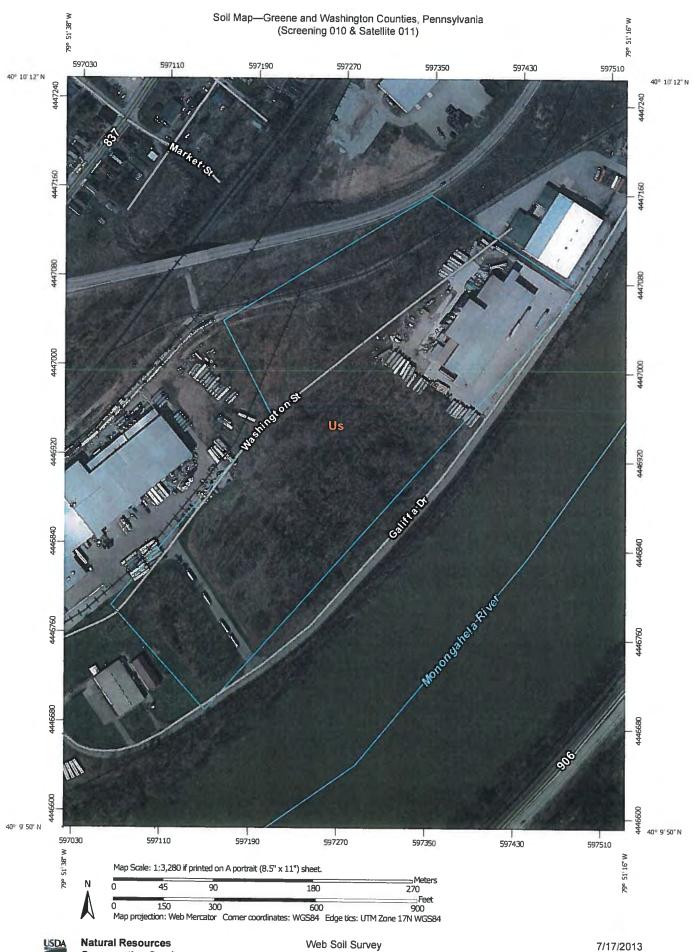
Web Soil Survey National Cooperative Soil Survey





40" 9' 42"

40" 9' 35"



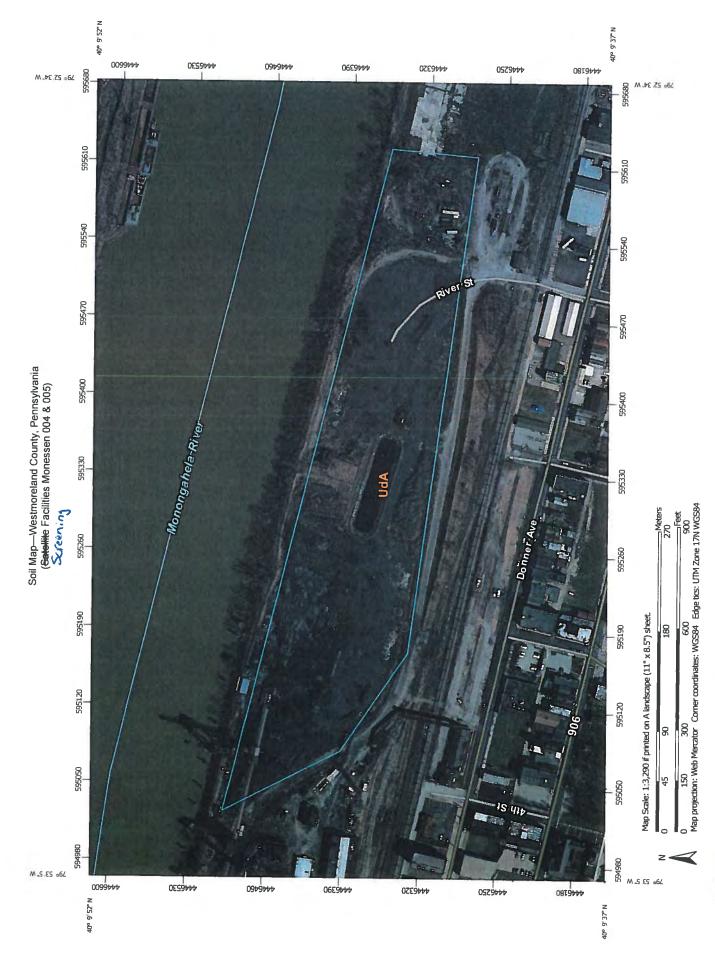






Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey



APPENDIX C

WETLAND FIELD INVESTIGATION AND WETLAND MAPS

Mon Valley Sewage Authority Long Term Control Plan – Phase II Donora and Monessen Sewer Separation Wetland Field Investigation

A wetland field investigation was conducted on May 25, 2012 for the Mon Valley Sewage Authority within the Borough of Donora, Washington County and the City of Monessen, Westmoreland County. The purpose of the investigation was to determine if jurisdictional wetlands (as defined by the 1987 Federal Manual for Identifying and Delineating Wetlands and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region) were located within the project area for the construction of a proposed sewer line. The investigation was conducted for a 40-foot wide study area centered on the alignment. The proposed sewer lines that were investigated in detail are highlighted in green on the attached plan sheets. Jared Govi of Gannett Fleming, Inc. conducted the wetland investigation.

After completing the investigation, no palustrine wetlands were identified within the proposed project area. The project areas consisted of upland forest and residential areas. Copies of the upland test pit data forms (one for the Donora sewer line and one for the Monessen sewer line) are attached.

Furthermore, one intermittent stream (unnamed tributary to the Monongahela River) was identified within the project area (Monessen area). However, no assessments were completed on the physical characteristics or the functional analysis of the project area stream. The project area stream was hand drawn on the project area mapping which is attached to this report.

Soll Map Unit Name: Cipin - Rock outcrop complex, 45 to 100 percent slopes (GoF) NWI classification: NA Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.) Are Vegetation No Soil No, or hydrology No significantly disturbed? Are "Nomal Circumstances" Yes X No present? If needed, explain in Remarks.) Are Vegetation No Soil No, or hydrology No significantly disturbed? Are "Nomal Circumstances" Yes X No present? If needed, explain in remarks they or present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Area within a Wetland Hydrology Present? Yes No X Depth (Inches): N/A Wetland Hydrology Present? Yes No X Depth (Inches): N/A Yes No X Is t		VETLAND	DETERM	MINATIO	N DATA F	ORM -	Eastern M	lountain	s and P	iedmont Pa	orion		
Investigator(s): Jared Govi - Gannet Fleming, Inc. Section, Trownship, Range: City of Monessen Landform (hillslope, lerrace, etc.): Upland Forest Local relief (concave, convex, none): Datum: Soal Map Unit Name: Gilpin - Rock outcrop complex, 45 to 100 percent slopes (GoF) NVI classification: NA Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (ff no, explain in Remarks.) Are Vegetation No, Soil No, or Hydrology No spinicantly disturbed? Are Vegetation No, Soil No, or Hydrology No spinicantly disturbed? Are Vegetation No, Soil No, or Hydrology No spinicantly disturbed? Are Vegetation No, Soil No, or Hydrology No spinicantly disturbed? SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No Remarks: The area was determined to be upland. Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No Aquatic Farna (B13) Sourisce Water (A1) Aquatic Farna (B14) Sourisce Water (A2) Sedment Deposits (B2) Presence of Reduced fron (C4) Dringe Presence of Reduced fron (C4) Dringe Presence of Reduced fron (C4) Dringe Presence of Reduced fron (C4) Foresone of Reduced fron	Project/Site: Long To	erm Control P	lan - Phase	e il									
Intestigator(s):	_							ia				214	
Subregion (Line of MLRA): Lat: Lat: Long: Deturn: NA Are Vigeration / Mo		Jared Gov	/i - Gannett	Fleming, I	пс.						plano restr	-11	
Subregion (LRR or MLRA): Lat			Upland 1	Forest					ne):	T WICHESSEN	Clas	- (0/) -	
Sol Map Unit Name. (Spin - Rock outcrop complex, 45 to 100 percent slopes (GoF) NWI classification: MA celimatic hydrologic conditions on the site by place for this time of year? Yes X No (ff no, explain in Remarks.) Are Vegetation No , Sol No , or Hydrology No significantly disturbed? Are "Normal Circumstances"? Yes X No present? If needed, explain in rem Present? Yes No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the Sampled Area within a Wetland? Yes X No X Is the S							Long:	,		Datum	Slop	e (%)5	
Are climate / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.) Are Vegetation No Soil No, or Hydrology No algorificantly disturbed? Are "Normal Circumstances" Yes X No Axe Vegetation No Soil No, or Hydrology No naturally problematic? Present? If needed, explain in rem SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydropytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area with	Soil Map Unit Name: Gil	pin - Rock ou	tcrop comp	lex, 45 to 1	00 percent s	slopes (G		WI classi	fication:				
Are Vegetation No Soil No or Hydrology No naturally disturbed? Are "Normal Circumstances" Yes X No present? If needed, explain in nem SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrochytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled	Are climatic / hydrologic	conditions or	the site ty	pical for thi	s time of yea	ar?					a to D		
Are Vegetation No , Soil No , or Hydrology No naturally problematic?	Are Vegetation No	_, Soil No	, or Hydi										
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Netland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Netland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Netland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Is the Sampled Area within a Wetland? Yes No X Depth (inches): N/A Wetland Hydrology Present? Yes	Are Vegetation No			-				Are "No	ormal Circi				
Hydric Soil Present? Yes No X Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland Present? Yes No X Depth (inches): N/A Yes No X Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections). If available:	SUMMARY OF FIN	DINGS - A	ttach sit	e map s	howing s	amplin	noint loc	atione	francosi				
Hydric Soil Present? Yes No X Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Remarks: The area was determined to be upland. Hydrology Financy Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B14) Surface Soil Cracks (B8) Water Marks (B1) Oxidized Rhizospheres on Living Roois (C3) Moss Tim Lines (B16) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Algal Mats or Crust (B4) Thin Muck Surface (C7) Saluration (Visible on Aerial Imagery (B7) Water Stained Leaves (B9) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Ves No X Depth (inches): N/A Wetland Hydrology Present? Ves No X Depth (inches): N/A Wetland Hydrology Present? Ves No X Depth (inches): N/A Wetland Hydrology Present? Ves No X Depth (inches): N/A Yes No	Hydrophytic Vegetation I	Present?	Yes		No X		a bount loc	auviis,	uranseci	s, importar	nt feature	s, etc.	
APPROLOGY Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1)	Hydric Soil Present?						le the Some	lank kara .	*** **	'			
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1)	Wetland Hydrology Pres	ent?					is the Samp	iled Area \	within a W	etiand?	Yes _	No _	
Frimary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algali Mats or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Eld Observations: Irrace Water Present? Yes No X Depth (inches): Intrace Water Present? Yes No X Depth (inches): Intrace Water Present? Yes No X Depth (inches): Irrace Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	terrains. The area was	, determined t	o be uplan	d.									
Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (Bt Surface Soil Cracks (B6) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mats or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Rools (C3) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) Aguatic Fauna (B13) Sparsely Vegetated Concave Surface (B16) Surface Soil Cracks (B6) Drainage Pattems (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) Aguatic Table Present? Yes No X Depth (inches): N/A Saturation Present? Yes No X Depth (inches): N/A Saturation Present? Yes No X Depth (inches): N/A Saturation Present? Yes No X Depth (inches): N/A	HYDROLOGY	- 1- N-1-1-1		, o.e.		The special section is			4-4-50				
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Clher (Explain in Remarks) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) Attraction Present? Yes No X Depth (inches): N/A Yes No X Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	2)	is require	d; check a	Aquatic Fa True Aqua Hydrogen Oxidized F Presence (auna (B13) atic Plants (Sulfide Od Rhizospher of Reduced n Reductio	(B14) or (C1) es on Living Ro d Iron (C4) on in Tilled Soils		Secor	Sparsely Veget Surface Soil Cr. Drainage Patter Moss Trim Line Dry-Season Wa	ated Concave acks (B6) ms (B10) s (B16) tter Table (C2	Surface (B8	
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Beld Observations: Inface Water Present? Yes No X Depth (inches): N/A ater Table Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A Cludes capillary fringe) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No X Depth (inches): N/A Yes No X Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No X Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		,							• • • • • • • • • • • • • • • • • • • •				
Water-Stained Leaves (B9) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Rellef (D4) FAC-Neutral Test (D5) ater Table Present? Yes No X Depth (inches): N/A ater Table Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		erial Images, (E	271		Other (Exp	lain in Rer	narks)						
Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) ater Table Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A cludes capillary fringe) scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			<i>11</i>)										
Arface Water Present? Yes No X Depth (inches): N/A ater Table Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A Wetland Hydrology Present? Yes No X Depth (inches): N/A Yes No X Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	TTAICE CLASSICO CESVES	(09)								Shallow Aquitare	d (D3)		
Arface Water Present? Yes No X Depth (inches): N/A ater Table Present? Yes No X Depth (inches): N/A turation Present? Yes No X Depth (inches): N/A Wetland Hydrology Present? Yes No X Depth (inches): N/A Yes No X Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	eld Observations									Microtopographi	c Relief (D4)		
ater Table Present? Yes No X Depth (inches): N/A Wetland Hydrology Present? Ituration Present? Yes No X Depth (inches): N/A Yes No X Cludes capillary fringe) Increase No X Depth (inches): N/A Yes No X Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		Van	Al-							FAC-Neutral Te	st (D5)		
turation Present? Yes No X Depth (inches): N/A Wetland Hydrology Present? Cludes capillary fringe) Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							N/A	١.					
cludes capillary fringe) Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			-				N/A	١	Wetland	Hydrology Pre	sent?		
scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		res	No	<u>x</u>	Depth (inc	ches):	N/A						
		tream gauge	. monitoring	well aeri:	al photos pr	evioue in	coordinate 16						
								avanable.					



	l (Four Strata) - Use scientific names				Sampling Point: Upland Test Pit
Tena Ciratum	(Distains)	Absolute	Dominant	Indicator	Dominance Test Worksheet:
Tree Stratum	/	% Cover	Species?	Status	Numbers of Dominant Species
1	Ulmus rubra	2	No	FAC	That Are OBL, FACW, or FAC: 0 (A)
2	Prunus serotina	2	No	FACU	
3.	Acer rubrum	1	No No	FAC	Total Number of Dominant
4					Species Across All Strata: 1 (B)
5.					
6					Percent of Dominant Species
7					That Are OBL, FACW, or FAC: 0 (A/B)
		5	= Total Cover		Prevalence index Worksheet:
Sapling/Shrub	Stratum (Plot size:)	_		
	N/A				Total % Cover of: Multiply by:
					OBL species x1
3.					FAC species x2
4.					FACUL proving
5.					FACU species x4 UPL species x5
6.			_		
7.					Column Totals: (A) (B)
					-
		N/A	_ = Total Cover		Prevalence Index = B/A
lerb Stratum (Plot size; 5' radius)				Hydrophytic Vegetation Indicators:
1	Urtica dioica	75	Yes	FACU	Rapid Test for Hydrophytic Vegetation
2.		10	No	FACU	X Dominance Test is >50%
3.	Parthenocissus quinquefolia	5	No	FACU	Prevalence Index Is ≤3.01
4.	Phytolacca americana	5	No	FACU	Morphological Adaptations (Provide supporting
5	Phlox pilosa	1	No	FACU	data in Remarks or on a separate sheet)
6.	Rhus radicans	1	No	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
					¹Indicators of hydric soil and wetland hydrology must be
8.					present, unless disturbed or problematic.
9.					Definitions of Vegetation Strata:
10					Tree - Woody plants (excluding vines) 3 in. (7.6 cm) or more
11.					in diameter at breast height (DBH), regardless of height.
12					Sapling/shrub - Woody plants, excluding vines, less than
12.		97	= Total Cover		3 in DBH and greater than 3.28 ft (1 m) tall.
12.			_		
	atum (Plot size: 10' radius)			
		_)	No	Ni	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
oody Vine Str	atum (Plot size: 10' radius Vitis sp.	_)2	No	Ni	size, and woody plants less than 3.28 ft tall.
oody Vine Str			No	NI	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height
loody Vine Str			No	NI	size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height
1		2	No = Total Cover	Ni	size, and woody plants less than 3.28 ft tall.



Depth (inches) 0 to 7 7 to 10 Type: C=Concentratio ydric Soil Indicators:	Matrix Color (moist) 10YR 5/3 10YR 6/4	% 100 100		ox Fea		Loc²		of indicators Texture Silt loam Silt loam		Remarks		
ype: C=Concentratio	Color (moist) 10YR 5/3 10YR 6/4 n, D=Depletion, RM=R	100				Loc ²		Silt loam		Remarks		
ype: C=Concentratio	10YR 5/3 10YR 6/4	100	Color (moist)	%	Type ¹	Loc ²		Silt loam		Remarks		
7 to 10 ype: C=Concentratio	10YR 6/4	100										
ype: C=Concentratio	n, D=Depletion, RM=R							Silt loam				
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators:	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM≖R											
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM=R											
dric Soil Indicators	n, D=Depletion, RM=R		- 1									
dric Soil Indicators:	n, D=Depletion, RM=R											
dric Soil Indicators:	n, b-bepietion, Rivi-R	advect Mar	Aria 840-84-1-1									
		educed Ms	illix, IVIS=IVIASKed	Sand G	rains.		Locati	on: PL=Pore	Lining, M=Matr	ix.		
111-121 44 43							Indicato	's for Probler	natic Hydric S	oils³:		
HIstisol (A1)		s	tripped Matrix (S6)					a \$4 l c4 cm)				
Histle Epiped	on (A2)		ark Surface (S7)			ŀ		cm Muck (A10)				
Black Histic (olyvalue Below Surfa	ce (S8) (UI DA 147 14	. F	Coast Prairie Redox (A16) (MLRA 147, 148)					
Hydrogen Sul			hin Dark Surface (S9			°'	Piedmont Floodplain Solls (F19)(MLRA 136, 147)					
Stratified Lay			oamy Gleyed Matrix (mcrox 1480)		Red Parent Material (TF2)					
2 cm Muck (A			epleted Matinx (F3)			Very Shallow Dark Surface (TF12) Other (Explain In Remarks)						
	ow Dark Surface (A11)		Redox Dark Surface (F6)					Outer (Explain in Remarks)				
Thick Dark Su			epleted Dark Surface									
	Mineral (S1) (LRR N,		Redox Depressions (F8)									
MLRA 147			. ,	•	1 DD N 40 D							
Sandy Gleyed		Iron-Manganese Masses (F12) JLRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122)										
Sandy Redox			edmont Floodplain S									
	•											
dicators or nydropnyth	vegetation and wetlar	nd hydrolog	gy must be presen	t, unles	s disturbed	or prob	lematic.					
strictive Layer (if ob							1	Ī				
Туре:	1	ree root	s and rock				Hy	dric Soil Pres	ent?			
Depth (inches):		A	t 10 inches				1		Yes	No. 3		
marks:									103	No>		



WETLAND DETERMINAT	ION DATA FORM - Eas	stern Mountain	s and Piedmont Region		
Project/Site: Long Term Control Plan - Phase II	City/County: Washingto	on	Sampling Date: 5/25/201	12	
Applicant/Owner: Mon Valley Sewage Authority	State: Pe		Sampling Point: Upland T		
Investigator(s): Jared Govi - Gannett Flemin	g, Inc. Section, To	ownship, Range:	Borough of Donora	estrit	
Landform (hillslope, terrace, etc.): Upland hillslope		(concave, convex, non-		Siope (%) 10	
Subregion (LRR or MLRA): Lat:		Long:	Datum:	Slope (76) 10	
Soil Map Unit Name: Glenford silt loam, 8 to 15 percent	slopes (GdC)	NWI classif			
Are climatic / hydrologic conditions on the site typical for	r this time of year?	Yes X	No(if no, explain in Re	omarks)	
Are Vegetation No , Soil No , or Hydrology			ormal Circumstances" Yes X		
Are Vegetation No , Soll No , or Hydrology		/ 110 / 110		d, explain in remarks.	
SUMMARY OF FINDINGS - Attach site map	showing sampling p	oint locations,			
Hydrophytic Vegetation Present? Yes	No X		State of the late	And the second second second	
Hydric Soil Present? Yes		the Sampled Area v	within a Wetland?	es No X	
Wetland Hydrology Present? Yes	No X				
HYDROLOGY					
Primary Indicators (minimum of one is required; che	çk ail that apply)		Secondary Indicators (minim	mum of two required)	
Surface Water (A1)	Aquatic Fauna (B13)		Sparsely Vegetated Co		
High Water Table (A2)	True Aquatic Plants (B14	4)	Surface Soil Cracks (B		
Saturation (A3)	Hydrogen Sulfide Odor (C	31)	Drainage Patterns (B1	•	
Water Marks (B1)	Oxidized Rhizospheres of	in Living Roots (C3)	Moss Trim Lines (B16)	·)	
Sediment Deposits (B2)	Presence of Reduced Iron	. ,	Dry-Season Water Table (C2)		
Drift Deposits (B3)	Recent Iron Reduction in	Tilled Soils (C6)	Crayfish Burrows (C8)		
Algal Mats or Crust (B4)	Thin Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)		
iron Deposits (B5)	Other (Explain In Remark	(s)	Stunted or Stressed Pl		
Inundation Visible on Aerial Imagery (B7)			Geomorphic Position (
Water-Stained Leaves (B9)			Shallow Aquitard (D3)	• •	
			Microtopographic Relie		
Field Observations:			FAC-Neutral Test (D5)		
Surface Water Present? Yes No X	Depth (inches):	N/A			
Water Table Present? Yes No X	Depth (inches):	N/A	Wetland Hydrology Present?	?	
Saturation Present? Yes No X (includes capillary fringe)	Depth (inches):	N/A	YesN	No X	
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspe	ections), if available:			
		· <u> </u>			
Remarks: No primary or secondary indicators of hydrolog	y were observed.				

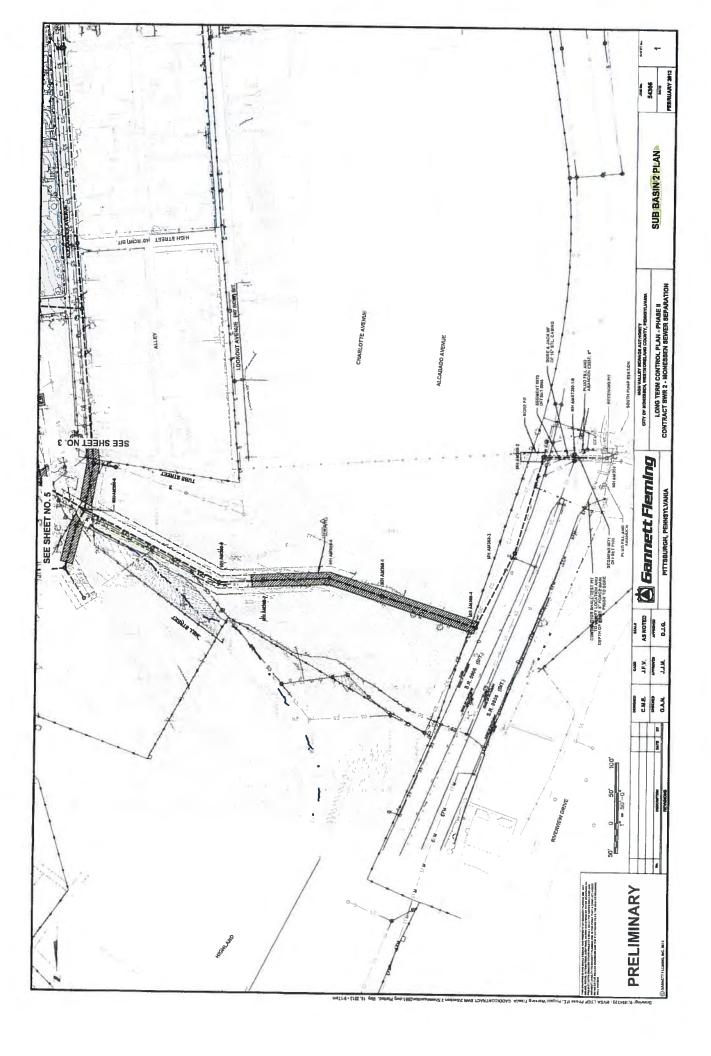


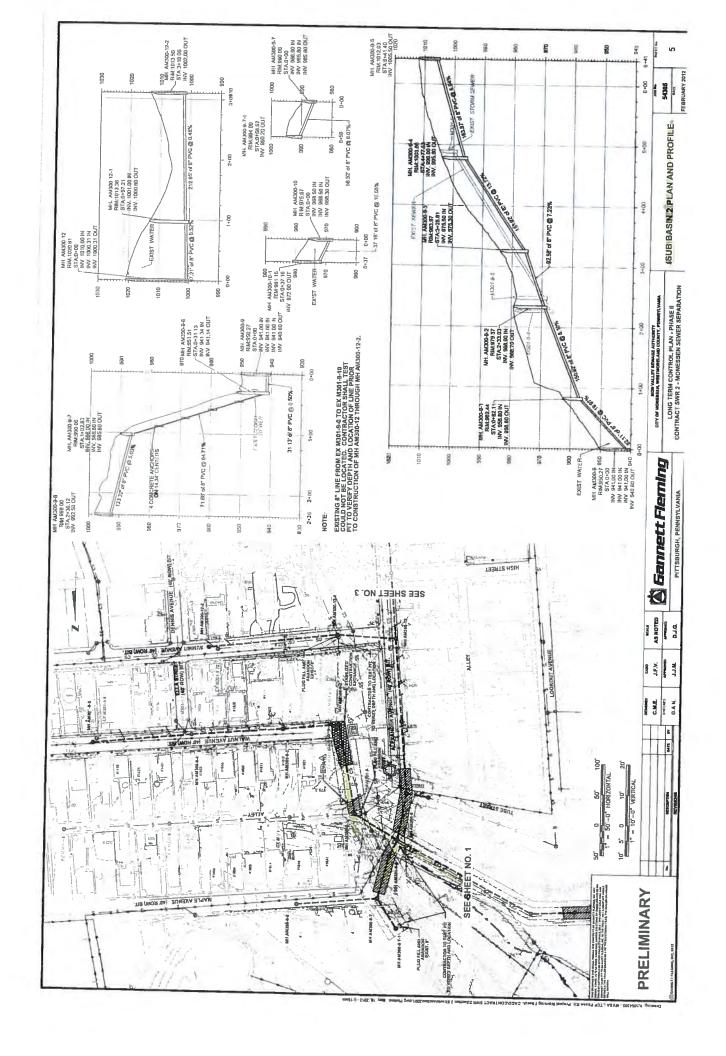
	(Four Strata) - Use scient		Absolute	Dominant	Indicator	Sampling Point: Upland Test Pit Dominance Test Worksheet:
Tree Stratum	(Plot size:)	% Cover	Species?	Status	Numbers of Dominant Species
1.	N/A	 '				
2.						That Are OBL, FACW, or FAC: 0 (A)
						- Talalah I a Garan
4						Total Number of Dominant
						Species Across All Strata: 2 (B)
				_		- _
7						Percent of Dominant Species
						That Are OBL, FACW, or FAC: 0 (A/
			N/A	= Total Cover		Prevalence Index Worksheet:
apling/Shrub S	tratum (Plot size:)			Total % Cover of: Multiply by:
1	N/A		•			
2						FACW species x2
4						FAC species x3
5.						FACU species x4
6.						UPL species x5
7.						Column Totals: (A) (B)
				-		_
			N/A	= Total Cover		Prevalence index = B/A
erb Stratum (Pi	ot size: 5' radius	1				
1.						Hydrophytic Vegetation Indicators:
			60	Yes	FACU	Rapid Test for Hydrophytic Vegetation
2	r nytolacca americana		40	Yes	FACU	X Dominance Test is >50%
4.				•		Prevalence Index is ≤3.01
						Morphological Adaptations (Provide support
5						data in Remarks or on a separate sheet)
0.						Problematic Hydrophytic Vegetation ¹ (Explain
′ ·						¹ Indicators of hydric soll and wetland hydrology must be
o						present, unless disturbed or problematic.
9						Definitions of Vegetation Strata:
10						Tree - Woody plants (excluding vines) 3 in. (7.6 cm) or more
11						in diameter at breast height (DBH), regardless of height.
12						Sapling/shrub - Woody plants, excluding vines, less than
			100	= Total Cover		3 in. DBH and greater than 3.28 ft (1 m) tall.
ody Vine Strat	um (Plot size:	,				
1.	N/A					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tail.
2.		,				
3.						Woody vines - All woody vines greater than 3.26 ft in height.
4.						l
			A1/A			Hydrophytic Vegetation
		-	N/A	= Total Cover		Present? Yes No X

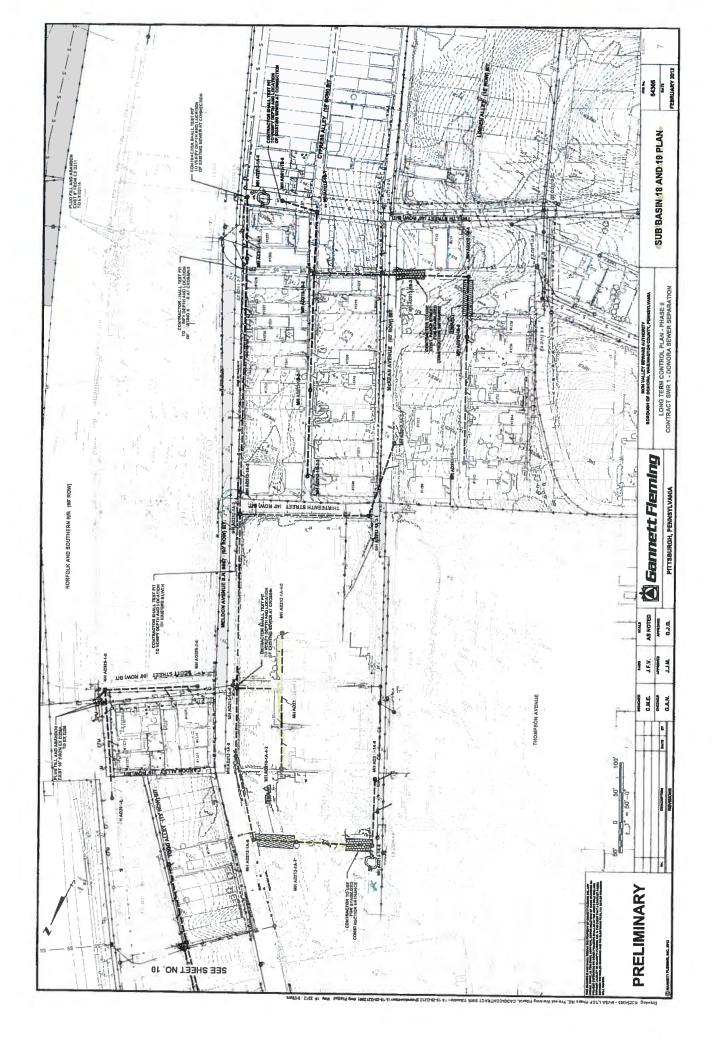


Type: C=Concentration, D lydric Soil Indicators: Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10)	Matrix Color (moist) 10YR 4/3 10YR 5/4	% 100 100 100 Reduced Ma	Rec Color (moist)	%	Type ¹	Loc²	Sampling Point: Up absense of indicator Texture Loam Silt ioam	rs.)	Remarks	
Type: C=Concentration, D ydric Soil Indicators: Histisol (A1) Histic Eplpedon (A1) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10)	Matrix Color (moist) 10YR 4/3 10YR 5/4	% 100 100 100 Reduced Ma	Rec Color (moist)	%	Type ¹		Texture Loam		Remarks	
Type: C=Concentration, D ydric Soil Indicators: Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10)	10YR 4/3 10YR 5/4 D=Depletion, RM=R	100 100				Loc ²	Loam	F	Remarks	
Type: C=Concentration, D ydric Soil Indicators: Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10)	10YR 5/4 D=Depletion, RM=R	100	trix, MS=Masked	Sand G			Loam		CHIANS	
ype: C=Concentration, D ydric Soil Indicators: Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10))=Depletion, RM=F	Reduced Ma	trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A) 2 cm Muck (A10)			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) C cm Muck (A10)			trix, MS=Masked	Sand G		-				
Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) C cm Muck (A10)			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) C cm Muck (A10)			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A			trix, MS=Masked	Sand G						_
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A			trix, MS=Masked	Sand G						_
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A2) 2 cm Muck (A10)			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A			trix, MS=Masked	Sand G		Т				
Histisol (A1) Histic Eplpedon (A1) Black Histic (A3) Hydrogen Sulfide Stratified Layers (A1) 2 cm Muck (A10)			trix, MS=Masked	Sand G	T					
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A			trix, MS=Masked	Sand G						
Histisol (A1) Histic Eplpedon (A Black Histic (A3) Hydrogen Sulfide Stratified Layers (A	A2)	S			rains.		² Location: PL=Pore	Lining, M=Matri	х.	_
Histic Eplpedon (4 Black Histic (A3) Hydrogen Sulfide Stratified Layers (4 2 cm Muck (A10)	A2)	S				i	ndicators for Proble	ematic Hydric S	olis³:	
Histic Eplpedon (4 Black Histic (A3) Hydrogen Sulfide Stratified Layers (4 2 cm Muck (A10)	A2)	3								
Black Histic (A3) Hydrogen Sulfide Stratified Layers (A10) 2 cm Muck (A10)			tripped Matrix (S6)			-	2 cm Muck (A10)			
Hydrogen Sulfide Stratified Layers (/ 2 cm Muck (A10)			ark Surface (S7)	(2.1)				dox (A16) (MLRA 14		
Stratified Layers (/ 2 cm Muck (A10)	(A4)		olyvalue Below Surfa	ce (S8) (I	WLRA 147, 14	B)	Piedmont Flood	olain Solls (F19)(Mi	RA 136, 14	7)
2 cm Muck (A10)			nin Dark Surface (S9)) (LLR R, I	MLRA 149B)	-	Red Parent Mate			
			pamy Gleyed Matrix (F2)		F	Very Shallow Da	rk Surface (TF12)		
Depleted Below D	ark Surface (A11)		epleted Matirx (F3)			-	Other (Explain in	Remarks)		
Thick Dark Surface			edox Dark Surface (F							
Sandy Mucky Mine			epleted Dark Surface edox Depressions (Fi			1				
MLRA 147, 148					. ==					
Sandy Gleyed Mat			n-Manganese Masse			136)				
Sandy Redox (S5)			nbric Surface (F13) (. 1				
			edmont Floodplain So					•		
icators of hydrophytic ve	getation and wetla	nd hydrolog	y must be presen	t, unless	disturbed	or proble	ematic.			
trictive Layer (if observ	/ed):									
Туре:							Hydric Soll Pres	ont?		
Depth (inches):							mydne oon Fies			
narks:								Yes _	No	>











U.S. Fish and Wildlife Service

National Wetlands Inventory



This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

MVSA - Phase 3

Jun 6, 2013

Wetlands

Estuarine and Marine Deepwater Freshwater Forested/Shrub Freshwater Emergent

Estuarine and Marine Freshwater Pond Lake

Riverine

Other

User Remarks:



U.S. Fish and Wildlife Service

National Wetlands Inventory

MVSA - Phase 3 part 2 Jun 6, 2013

Wetlands

Estuarine and Marine Deepwater Freshwater Forested/Shrub Freshwater Emergent

Estuarine and Marine Freshwater Pond

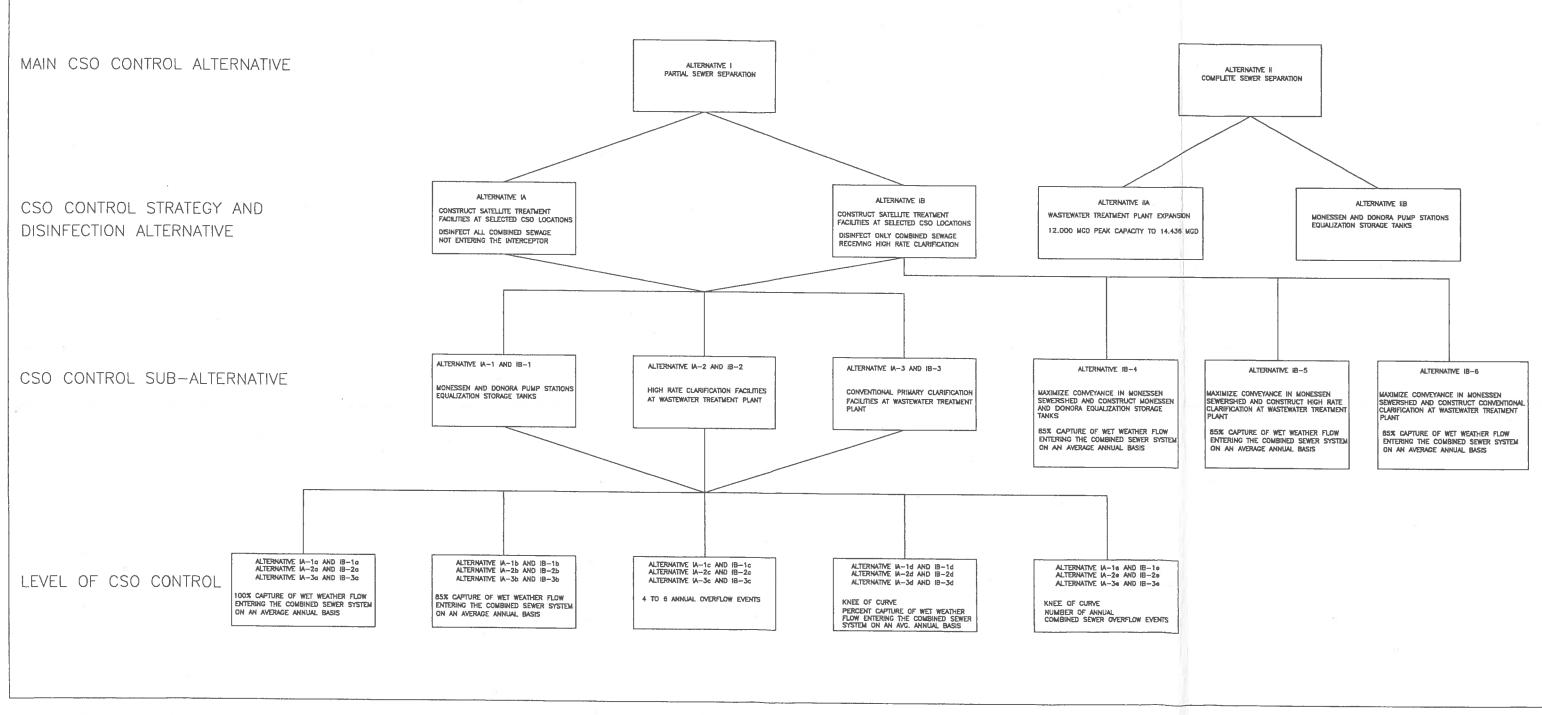
Riverine Lake

User Remarks:

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currenthess of the base data shown on this map. All wellands is nated data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX D
FIGURE 3-1 AND TABLES 3-1 TO 3-35

MON VALLEY SEWAGE AUTHORITY LONG TERM CONTROL PLAN SUMMARY OF CSO CONTROL ALTERNATIVES



3-35

3-23

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Cost Summary Table 3-26 3-26 3-26 3-26 3-27 3-28 3-28 3-28 3-29 3.30 3-32 331 3-33 3-9 and 3-10 3-9 and 3-10 3-9 and 3-10 3-9 and 3-10 3-11 and 3-12 3-11 and 3-12 3-11 and 3-12 3-11 and 3-12 3-13 and 3-14
3-13 and 3-14
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3-13 and 3-14 3 15 and 3-16 3-15 and 3-16 3-15 and 3-16 3-15 and 3-16 3-17 and 3-18 3-17 and 3-18 3-17 and 3-18 3-17 and 3-18 3.7 and 3.8 3.7 and 3.8 3.7 and 3.8 3.7 and 3.8 Upgrades Summary Table 3-19 3.20 3-21 3-22 Alternative Identification 1A-16 1A-16 1A-16 IA-2a IA-2c IA-2d IA-2d IA-2d 18-15 18-16 18-14 18-14 IA-36 IA-36 IA-36 18-26 18-26 18-26 18-26 18-26 IB-4b IB-5h III-6b ź 100% Annual Capture 85% Annual Capture 4-6 Annual Overflows 78. Capture Knee of Curve No. of Annual Overflow Knee of Curve 100% Annual Capture
15% Annual Capture
4-6 Annual Overflows
6 Capture Knee of Cure
No. of Annual Overflow Knee of Cure 100% Annual Capture
15% Annual Capture
14% Annual Overflows
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18 of Annual Overflow Kines of Curve 100% Annual Capture 185% Annual Capture 4-6 Annual Overflows 58 Capture Knee of Curve No. of Annual Overflow Knee of Curve nee of Curve Knee of Curve Level of CSO Control 83% Annual Capture 4-6 Annual Overflows % Capture Knec of Curve No. of Annual Overflow Kn 85% Annual Capture
4-6 Annual Overflows
76 Capture Knee of Curve
No. of Annual Overflow K. 00% Annual Capture 85% Annual Capture 85% Annual Capture 85% Annual Capture 100% Ann Conventional Primary Clarification Facilities at WWTP

Maximize Conveyance in Monessen Sewerthed Monessen and Donora Pump Station Equalization Tanks
Maximiz Conveyance in Monessen Sewershed-High Rate
Clarification at WWTP
Maximiz Conveyance in Monessen Sewershed-Conventional
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High Rate Charification Facilities at WWTP High Rate Charification Facilities at WWTP High Rate Charification Facilities at WWTP High Rate Charification Facilities at WWTP High Rate Charification Facilities at WWTP High Rate Charification Facilities at WWTP CSO Control Sub-Alternative WWTP Expansion Dainfest Only Combined Sevugge Receiving High Rate Clarification Distinfest Only Combined Sevugge Receiving High Rate Clarification Distinfest Only Combined Sevugge Receiving High Nate Clarification Distinfest Only Combined Sevugge Receiving High Rate Clarification Distinfest Only Combined Sevugge Receiving High Rate Clarification Distinfest Only Combined Sevugge Receiving High Rate Clarification Disinfect Only Combined Sewage Receiving High Rate Clarification Parial Sewer Separation Statilite Treatment Pacifisies at Selected CSO Locations Districts Only Combined Sewage Receiving High Rate Charlication Parial Sewer Separation Statilite Treatment Parialism at Selected CSO Locations Districts Only Combined Sewage Receiving High Rate Charlication Parial Sewer Separation Statilite at Selected CSO Locations Districts Only Combined Sewage Receiving High Rate Charlication Parial Sewer Separation Statilite Treatment Parialism at Selected CSO Locations Districts Only Combined Sewage Receiving High Rate Charlication Parial Sewer Separation Statilite Treatment Pacification Statilites at Selected CSO Locations Districts Only Combined Sewage Receiving High Rate Charlication Disinfect Only Combined Sewage Receiving High Rate Clarification Disinfect Only Combined Sewage Receiving High Rate Clarification Disinfect Only Combined Sewage Receiving High Rate Clarification Salellie Treamen Faciliaca at Selected CSO Locations District All Combined Sewage Entering Interceptor Statellier Teatment Faciliace at Selected CSO Locations District All Combined Sewage Entering Interceptor Statellier Treatment Faciliace at Selected CSO Locations District All Combined Sewage Entering Interceptor Statellier Treatment Faciliaca at Selected CSO Locations District All Combined Sewage Entering Interceptor Statellier Treatment Faciliacs at Selected CSO Locations District All Combined Sewage Entering Interceptor Statellier Treatment Faciliacs at Selected CSO Locations District All Combined Sewage Entering Interceptor Satellie Treatment Pacilities at Selected CSO Locations Disinfect AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations Disinfect AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations Disinfect AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations District AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations District AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations District AII Combined Sewage Entering Interceptor Statilities at Selected CSO Locations District AII Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Pacifies at Selected CSO Locations District All Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Pacifies at Selected CSO Locations District All Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Pacifies at Selected CSO Locations District All Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Facilities at Selected CSO Locations District All Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Facilities at Selected CSO Locations District All Combined Sewage Entering Interceptor Partial Sewer Separation Statilite Treatment Facilities at Selected CSO Locations District All Combined Sewage Entering Interceptor CSO Disinfection Afternative ž ž Satellite Treament Pacilities at Selected CSO Locations Statellite Treament Facilities at Selected CSO Locations Statellite Treament Facilities at Selected GSO Locations Statellite Treament Facilities at Selected GSO Locations Statellite Treament Facilities at Selected GSO Locations Satellite Treament Facilities at Selected GSO Locations Satellite Treatment Pacilities at Selected CSO Locations Satellite Treatment Facilities at Selected CSO Locations Satellite Treatment Facilities at Selected CSO Locations Satellite Treatment Facilities at Selected CSO Locations Construct Dedicated Santary Sewer System Construct Dedicated Santary Sewer System NO Control Strategy Partial Sewer Separation Sa Partial Sewer Separation Sa Partial Sewer Separation Sa Partial Sewer Separation Sa Partial Sewer Separation
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Partial Sewer Separation Complete Sewer Separation Complete Sewer Separation Partial Sewer Separation Partial Sewer Separation Partial Sewer Separation Main CSO Control Alternative

Mon Valley Sewage Authority Lang Term Control Plan Table 3-1 CSO Control Alternatives Marny

Mon Valley Sewage Authority
Long Term Control Plan
Table 3 2
Monessen Sewershed
Sewershed Acak Combined Sewage and Peak Sanitary Flows fro Main Co

000	MM	mercemor	Loice Main	Division Chairman Cha		The second second second			TO DEPRESSION				
CII	€	<u>a</u>	€	ID GI	Location	Sub-Sewershed/ Map Area	Pump Station	Peak Sanitary	Average Dry	Peaking	Peak Combined	Peak Flow	D
				A House Constant				(med)	Weather Flow	Factor	Flow	In D.S. Interceptor	In Force Main
			Aubrey EJ	Aurusey Ejector Frow Capacity = 50 gpm					(mga)		(mad)	(mgd)	(mgd)
he Auhrey E	ector Station Forc	c Main Terminates	The Auhrey Ejector Station Force Main Terminates at MH 304 at Schoonnaker Ave.	unnaker Ave.									
												8	0.072
000	NIV MIT 200	South Int.											
200	DIV MH 500,	4			17sh Comm.								
		South Int.			ו יחו את בו	72	South	0.086	ï	A.	ā	0.072	
				Court De Court								0.158	
				South Pump Station Promised Flow Connects									
	-			All replacements	-							0.158	
Count D			South FM									0.259	
C SOUTH LAIN	p Station Porce M	fam Terminates at a	seed of the South Funds and Terminales at an Existing MH at Morgan Sucer	organ Sucet	1							0,700	
003	REG MH 202A											0.239	0.259
		Donner Int				-	Donne						
							Contine	*	0.713	3.5	2.496		
				Dinner Piran Caston Book Lon								2.755	
				Donner Pump Station Premosed Flow Canada									
												2.755	
080	ME		Donner FM									7 733	
2		tuterceptor	Force Main	Pump Station		Curk Comment.							
	9	€	9	E	Locabon	Map Area	rump Station	Peak Sanitary	Average Dry Weather Flow	Peaking	Peak Combined	Peak Flow	2.733
Dome D.									(pau)		(mid)	In D.S. Interceptor	
John Kr. Full	np Station Price A	Alin Terminates at t	The Journal Fully Station 1990s Main Terminates at Mill26 at Ninth Sirect	cel								(mign)	
		Monessen Int.											
		_											
	DIV MH 117A	_			13							2.755	
004	REG MH 113A	Monessen Int.			on oneer	2	Монеям	ď	×	30			
		Monnecon les			3rd Street		Management					2755	
000	DIV MILLIA						TOTAL SOCIETY		0.857	3.5	3 000		
200		Mondascu Int.			2nd Street	5	Monessen	(31)	0.170	15	2030	5.754	
000	DIV MIL HOA				Raune Channel						0.7.7	0717	
0000	DIV MIL 106B	Monessen Inc.			The same		Monessen	8				64-50	
		Monessen Int.			Senaca Street	7A	Monessen	9	0.000			6.349	
00200	DIV MH 106A								0.062	3.5	0.287		
100		Monessen Int.			Senaca Street	7.8	Monessen	,	0.019	1.5	0.000	929.9	
T	KEG MH 107A				Conner Conner						0.007	1000	
	DIV MH 102A	Monessen Inc.			DONG POHICE		Monessen	*	0.364	3.5	1.274	0.703	
		Monessen Int			Manown Street	6	Monessen	3,8				7.977	
	MII 101									7			
		Monessen Int.			Monongahela St.	M101	Monessen	0,111	*			7.977	
		+										8 088	
9			u)	Monessen Pump Station Peak Inflow			1						

Mon Valley Sewage Authorty
Long Term Control Plan
Table 2.5
Donon Stempton
Summary of Fatimated Peak Combined Sewage and Peak Saminary Flows for Main CSO Control Alternative I Partial Sewer Separation

Peak Flow In Force Main	(pgu)																		0.749																				
Peak Flow In D.S. Interceptor	(phu)		0.024	0.128		0.137	0.137		0.516		775.0	A COLO	0.50	0.612	0.612		0.749	0.749	Peak How	In D.S. Interceptor	(m/a)			PAIL E	LONG!	1.552		2.511	3.381		3.403	3.403		0.571		0.718	0.823	0.823	
Peak Combined Flow	(päu)							0.480											Peak Combased	(paul)	(1)	_	3630				0.959	0.809					0.553	27 1 0	0.147	8010	200		
Factor								3.5											Peatong	5			3.5			3.5	2.2	3.5					3.5	36	2	3.5			
Weather Flow	(miker)							0.137	i		1								Average Dry Weather Flow	(mgd)			0.150			P2C 0		0.231					0.158	0.042	1	0.030			_
Flow	0.024		0.104	1000	UMP			0.037		1900	0.018		0.018						ary.				0.030		0.248	1	-	0.062	5000	7			0008	1					_
Factor	4.0							2											Peaking Factor			_	4		4.0				1				t.					-	
Weather Flow (mgd)	900.0		ė								3		-	1					Average Dry Weather Flow	(mgd)			•	4500	0.007	1121		,											_
Pump Statton	North		North	North				North	North		North	Marie	tillon)			-			Pump Station Pump Station				Donora	Domes	Polinia	Donora		Domora	Donora				FIDILITY	Donora		Donora	†		
Map Area	22	-		20			T.		D212		20	01						7	Map Area				91	>1		140		=	13			10+0173		11+10+D123		0			
Location	Boundary Alley	15th Street		Lustig Alley			11th Street		12th Steet			Scot Street							Location				वता अवस्टा	7th Street		6th Street	Cab Comm	out Street	Допона Р 5			Walnut Street		Locust Surert	Constant Course	Chestian super			
					North Putta Station (Subared)									(North Pump Station (Sutkotal)	North Broad Chair	North Plans Course Beared 13	Section Statement Linguistics (1909 Lapacity	Pultiti Station	Q											Dougra Parto Statum (Subscraft)	(Handania Carana						Donora Pump Station (Subiotal)		Jonera Pump Station Peak Inflow
																	North FM	Force Main	Q																			0	1
	North lut.		North Inc.	North lat.				North Int.	North Int		North Int.	N. Carlot	NONTO EUE				$\overline{}$	Interception	Θ.		8th Street		Donora-N		N-EMBOY I	Dottora-N		Donora-N	Donora-N				Lonora-S	Donora-S		Donora S			
REG MH 207A		RFG MH 205A	DIV MH 202B			Day but but	A12 1184 VIV	MH 212		DIV MH 211A	DIV MH 300A	V 1000						MH	a	-	e Main Teminates at MH D116 at 8th Street	DIV MIT HEA		MI IIIAA	REG MILLIA		REG MH 106A	DIV MIT 1004	VOI IN AN			DIV MII 123A	DIV MIL 121A	Ц	DIV MII 118A	+	1		
022		170				210	Ť			810	010	T						CSO		-	Main Terminate	016	1	T	0140	П	014 R	210			7	010	110	П	0110	1			

Mon Valley Sewage Authority
Long Term Control Pain
Table 3-4
Mutexters Sewerther Sewege and Peak Santiary Flows for 85% Annual Capture, Maximize Combegance in Monessen Sewerthed

Interceptor Force Mann ID ID	Peaking Peak Combined
Aubrey Ejector How Canadata - 50 mm	
The Aubrey Ejector Station Force Man Terminates at MM 304 or Schooling	(mkn) (mkq)
2AV LYMPHINDOLOG NEW CONTROL OF THE	0 033
DIV MH 300A	
South Int	0.072
South Pump Station Peak Inflow	0.158
South Pump Station Proposed Flow Capacity	0310
South FM	0.239
The Section 1 units Statistical Continuates at an Existing MH at Morgan Street	0350
REG MH 202A	0.239
Dottner Int.	0.713 3.5 2.496 0.750
Donner Pump Station Peak Inflow	3.505
Donner Pump Station Proposed Flow Capacity	3 1 50 5
Н	3.505
tor I-or	
GI GI	Average Lhy Peaking Peak Combined Qir at Peak Flow 3 505 Weather Flow Factor Flow R&C Combined R&C Combined Flow R&C Combined Flow Factor Flow Flow Factor Flow Flow Flow Flow Flow Flow Flow Flow
The Donner Pump Station Force Main Ternunates at MH126 at Nittli Street	(pau)
Monessen Int.	
DIVMIELITA	2000
Monessen las.	LOC 1
REG MII 113A	
DIV MIT 111A	0.857 3.5 3.000 0.200 3.505
Monessen Int.	0.170 3.5 0.595 6.704
Munessen Int	
DIV MH 106B	
Monessen Inv.	0.082 3.5 0.287
Monessen Int.	0.019 3.5 0.067
KEU MH 107A	
PHONESSER ISH.	0.364 3.5 1.274
Monessen in:	9:227
Monessen in.	9.227
Monessen Pump Station Pump Inform	
AOURI MENTILLE CONTROL OF THE CONTRO	9.227

Mon Valley Sewage Authority Long Tern Control Plan Table 3-5 Monessen Sewershed

Summers of Besignment Door Co.

CSO	HJW	Interceptor	Force Main	Pures States States Separation of the Separation of Main CSO Control Alternative II-Complete Sewer Separation	iary Sewage 1'10ws 10r	Main CSO Control A1	ternative II-Complete	Sewer Separation				
٩	Ð	Q	В	rump station ID	Location	Sub-Scwershed/ Map Area	Pumo Station	Average Dry	Peaking	Peak Sanitary	Peak Flow	Peak Flow
			A	Aubrey Ejector Flow Capacity = 50 gpm				(pBu)	1.40(0)	Flow (mgd)	In D.S. Interceptor (mgd)	In Force Main
rey Ejec	tor Station Force	Main Terminates a	The Aubrey Ejector Station Force Main Terminates at MH 304 at Schoonraker Ave.	htriaker Ave.								(200
T											2	0.072
200	DIV MH 300A	South Int.										
П		South Int.			17th Street	2	South				0.072	
1										0.086		
				South Pump Station Peak Inflow							0.158	
				South rump Station Proposed Flow Capacity							0.158	
Pittur	Station Force M.		South FM								0.259	
, rumo	Stallon Porce Mai	in ferminates at an	The South Fully Station Force Muin Terminates at an Existing MH at Morgan Street	Organ Street								0.050
003	REG MH 202A											0.239
		Donner Int.				3	Donner	0.713	40	0.300		
†									2	70977		
T				Donner Pump Station Peak Inflow							3.111	
				Doliner Pump Station Proposed Flow Capacity							3.111	
			Donner FM								3,111	
3=	M C	Interceptor	Porce Main	Pump Station		Cut Course of 31						
1	3	3	€	Œ	Location	Map Area	Pump Station	Average Dry Weather Flow	Peaking Factor	Peak Sanitary Flow	Peak Flow	11117
er Pump	Station Force Ma	un Terminates at M	The Donner Pump Station Force Main Terminates at MH126 at Ninth Sweet	122				(piu)		(mgd)	(pBu)	
T		Monessen Inc						_		_		
	+-	The state of the s										
	DIV MH 117A										3.111	
DOD DOD	DEC LOT	Monessen Int.			5th Street	5	Monessen	9	*	2.		
1	_	Monescen Int			3rd Street	4	Monessen	1.000			3.111	
H	DIV MH 111A							/Ca.D	4.0	3.428		
1	TO THE ALL	Monessen Int.			2nd Street	5	Monessen	0.170	4.0	0890	6.539	
T	-	Monessen Int			River Street	2	Monescen				7.219	
0070 D	DIV MH 106B								1	98		
00200	-	Monessen Int.			Senaca Street	7/	Monessen	0.082	4.0	0.328	7.219	
T	DIV MII 100A	Monage 1			Senaca Street	TR.					7.547	
12	REG MOH 107A	INTORICESCH INC.					Monessen	610.0	4.0	0.076		
H		Monessen Int.			Senaca Street	7	Monessen	0.364	4.0	1 456	7.623	
+	DIV MH 102A	Monecen Inc			Manown Street	6	Manageran				9.079	
-	MH 101	very property and					MORESTI			ŝ		
Н	Н	Monessen Int.			Monongahela St.	M101	Monessen				610.6	
										111.0	9.190	
			V.	Monessen Pump Station Peak Inflow				-				

Mon Valley Sewage Authority	Long Term Control Plan	Table 3-6	Donora Sewershed

		Peak Flow	in Force Main	(mga)																	0.818			• • •	T															
		Peak Flow In D.S. Intercentor	(mod)		0.024		0.128	0 123	0.137			0.585	0.646		0.663	1890	0.681		0.818	0.818	Peak Flow	In D.S. Interceptor (mgd)				1.447		1.695	2.791		3.777	007. F	3.799		6370	0.650	0.818		0.938	0.938
		Peak Sanitary Flow	(päu)	0.024		0.104	0000	0.003			0.585	0.061		0.018	0.018						Peak Santary	(mgd)			0.630		0.248	1.096		0.986	0000	7700		0370	0.650	0.168		0,120		_
		Peaking		4.0							4.0			*							Peaking	, actio	_		4.0		4.0	4.0		4.0	G				0.4	4.0		4.0		
	ewer Separation	Weather Flow	(pgm)	0.006			1			100	0.137	G.			3						Average Dry Weather Flow	(mgd)	_		0.150	6,000	790'0	0.274		0.231	30			0.158		0.042	0000	0.030	+	
	native II-Complete Se	Pump Statton		North	North		North			North		North	North		North						Pump Station				Donora	Donor	2000	Donora	Donora	Pionoci	Donora			Donora		Donora	Donorra	DONORS	-	
vershed	Sub-Sewershed/	Map Area		777	21		20			17		D212	18		19						Sub-Sewershed/ Map Area				16	15		140	14		13			10+D123		11+10+D123	011			
Donora Sewershed	THE RESERVE OF THE PERSON NAMED IN COLUMN TO SERVE OF THE	Location	Boundary Alley		15th Street		Lusug Alley			11th Street		12th Steet			Scot Street						Location				8th Street	7th Street		6th Street	5th Street		Donora PS			Walnut Street	Н	Locust Street	Chestaut Street			
Summary of Estimated Peak Sanitary Se	Pump Station Sub-Sewershed/	OII						North Pump Station (Subtotal)								North Pump Station (Subtotal)	2	North Burn Station Peak Inflow	Troum Funity Station Proposed Flow Capacity	D P.	TD ID											Donora Pump Station (Subtoxal)							Donora Pump Station (Subtotal)	Donora Puma Cention Beat 1-0-
	Force Main																		North FM	Force Main	Ð		Street Miles State of the Street of the Stre									Ω							5	
	Interceptor	_L	L	NOTED IBL.	North Inc.	L	North Int.			North Inc.		North Int.	North Int.	Ц	North Int.					Interceptor	Ð	-	m i erminales af M		Donora-N	Donora M	N. BOOK	Donora-N	Donorn N	Polici a-i v	Donora-N		+	Donora-S		Donora-S	Donora. C	COMORAS		
M	<u></u>	REG MH 2074	107 1111	REG MH 205A		DIV MH 202B			DIV MH 213A		MH 212	DIV MH 2114		DIV MH 208A						MH	Ð	Cration Cores Ma	- Ore Mile	DIV MH 116A	NA MA	7411 Um 117	REG MH 111A		KEU MH 106A	DIV MH 100A			DIV MH 123A		DIV MH 121A	Total Maria	WILL TIM ATC			
080	9	022		021					017			018		610						CSO	Ð	The North Prime '		910	510	T	0140	710	T	013			010	П	110	0110	T		-	

Mon Valley Sewage Authority Long Term Control Plan Table 3-7 Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IA-1a, IA-1b, IA-1c, IA-1d, IA-1e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
Monessen and Donora Pump Station Equalization Storage Tanks а-е

Facility CSO 003 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Underflow Pumping Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Feak Flow to Be Disinfected	(mgd)	a- 100% Annual Capture 50 000 5 000 2 496 - 44 654 0.465 18 889	b- 85% Annual Capture 0.833 0.083 0.083 2.496 43.904 44.654 0.465	1.611 1.611 2.496 30.154	d- Percent Capture Knee of Curve 6.111 0.611 0.611 2.496	e- No of Overflows Knee of Curve 9.44 0.94
CSO 003 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Grit Removal Capacity Grit Removal Capacity Orit Removal Capacity Orit Removal Capacity Orit Removal Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capac	(mgd)	\$0 000 5 000 5 000 5 000 2 496 - 44 654 0 465 18 889	0.833 0.083 0.083 2.496 43.904 44.654	Overflows 16.111 1 611 1 611 2.496 30.154	Percent Capture Knee of Curve 6.111 0 611 0 611 2.496	No of Overflows Knee of Curve
CSO 003 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Grit Removal Capacity Grit Removal Capacity Orit Removal Capacity Orit Removal Capacity Orit Removal Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capac	(mgd)	50 000 5 000 5 000 2 496 44 654 0 465	0.833 0.083 0.083 0.083 2.496 43.904 44.654	16.111 1 611 1 611 2.496 30.154	6.111 0 611 0 611 2.496	Knee of Curve 9.44 0.94
Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Grit Removal Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Onit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity District Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	5 000 5 000 2 496 - 44 654 0.465	0.083 0.083 2.496 43.904 44.654	1 611 1 611 2,496 30.154	6.111 0 611 0 611 2.496	9.44
Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Freak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	5 000 5 000 2 496 - 44 654 0.465	0.083 0.083 2.496 43.904 44.654	1 611 1 611 2,496 30.154	0 611 0 611 2.496	0.94
Grit Removal Capacity Interceptor Flow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Underflow Pumping Capacity Underflow Pumping Capacity Underflow Pumping Capacity Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (mgd) (Mgal) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	5 000 2 496 - 44 654 0.465	0.083 2.496 43.904 44.654	1.611 2.496 30.154	0 611 0 611 2.496	0.94
Interceptor Flow Pumping Capacity Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Underflow Pumping Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Underflow Pumping Capacity Orit Removal Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (Mgal) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	2 496 	2.496 43.904 44.654	1 611 2.496 30.154	0 611 2.496	
Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Gnt Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pump Coarse Screening Capacity Treatment Unit Capacity Underflow Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (Mgal) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	44 654 0.465	43.904 44.654	30.154	2.496	0.74
Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Feak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (Mgal) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	44.654 0.465	44.654	30.154	2.770	2.49
Minimum Chlorine Contact Volume CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(Mgal) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	0.465				36.15
CSO 004 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Orit Removal Capacity Interceptor Flow Pumping Capacity Orit Removal Capacity Interceptor Flow Pumping Capacity Interceptor Flow Pump Coarse Screening Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (mgd) (mgd) (mgd)	18 889	0.465			44.65
Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Treatment Unit Capacity Underflow Pumping Capacity Underflow Pumping Capacity Underflow Pumping Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (mgd) (mgd)			0.465	0.465	0.46
Underflow Pumping Capacity Gnt Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (mgd) (mgd)					0.40
Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume (CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd) (mgd)	1.889	0.222	16.111	3.889	6.66
Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd) (mgd)		0.022	1.611	0.389	0.66
Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd) (mgd)	1.889	0.022	1.611	0.389	0.66
Peak Flow to Be Disinfected Minimum Chlorine Contact Volume (CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	3.000	3.000	3.000	3.000	3.000
Minimum Chlorine Contact Volume CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected			16.331	2.031	13.031	10.53
CSO 005 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected		16 531	16.531	16.531	16.531	16.531
Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Coarse Screening Capacity Peak Flow to Be Disinfected	(Mgal)	0.172	0.172	0.172	0.172	0.172
Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected				3,110	0.172	0.172
Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	8.333	0.333	4.444	1.667	2.222
Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	0.833	0.033	0.444	0.167	0.222
Coarse Screening Capacity Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Orit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	0.833	0.033	0.444	0.167	0.222
Peak Flow to Be Disinfected Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	0.595	0.595	0.595	0.595	0.595
Minimum Chlorine Contact Volume CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	お書き	6.988	3.288	5.788	
CSO 007 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	7.288	7.288	7.288	7.288	5.288
Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(Mgal)	0.076	0.076	0.076	0.076	7.288 0.076
Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected					0.070	0.076
Grit Removal Capacity Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	48.333	4.167	21.667	9,444	
Interceptor Flow Pump Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	4.833	0.417	2.167	0.944	14.444
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	4.833	0.417	2.167	0.944	1.444
Peak Flow to Be Disinfected	(mgd)	1.628	1.628	1.628	1.628	1.444
	(mgd)		37.461	21.711	32.711	1.628
	(mgd)	41,211	41.211	41.211	41.211	28.211
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.429	0.429	0.429	41.211
12,552,00				0.425	0.429	0.429
Aubrey Ejector Station						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072		
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO NO	0.072 NO	0.072
South Pump Station					140	NO
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO NO	NO 0.239	0.259
Donner Pump Station					140	NO
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755		2.448
Existing Force Main Size	(in)	12	12	12	2.755	2.755
Force Main Peak Velocity Replace Force Main	(ft/s)	5.4	5.4	5.4	12 5.4	12
		NO	NO	NO 3.4	NO 3.4	5.4
Monessen Pump Station Exist. Peak Flow Capacity					NO	NO
Increase Pures Station Park III	(mgd)	4.982	4.982	4.982	4.982	
Increase Pump Station Peak Flow Capacity to Peak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	4.982
Existing Force Main Size	(mgd)	7.501	7.501	7.501	7.501	8.088
Existing Force Main Size Exist. Force Main Velocity at Peak Flow	(in)	16	16	16	7.501	7.501
Replace Exist. Force Main	(ft/s)	8.3	8.3	8.3	8.3	16
AMPINED CAISE FUICE MAIN		NO	NO	NO	NO 8.3	8.3
Innersen Promo Station FO III						NO NO
fonessen Pump Station EQ Tank						
Monessen Pump Station Equalization Tank Vol.						
		1				
<u> </u>	(Mgal)	0 587	0 587	0.587	0.587	0.587

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-8
Donora Sewershed
Summary of Proposed Facilities and System Upgrades
Alternatives IA-1a, IA-1b, IA-1c, IA-Id, IA-1e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

а-е

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
Monessen and Donora Pump Station Equalization Storage Tanks

		a-	b-	Level of CSO Control		
		100% Annual	b- 85% Annual	с- 4-6 Аппиа!	d-	e-
Facility		Capture	Capture	4-6 Annual Overflows	Percent Capture	No. of Overfl
CSO 017			Саркие	Overflows	Knee of Curve	Knee of Cur
Treatment Unit Capacity	(mgd)	6.667		0.555		- N
Underflow Pumping Capacity	(mgd)	0.667		0.556	0.556	
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.056	0.056	
Coarse Screening Capacity	(mgd)	0.400	5.651	0 480	0 480	
Peak Flow to Be Disinfected	(mgd)	5.651	5.651	5.151	5.151	
Minimum Chlorine Contact Volume	(Mgal)	0.059	0.059	5.651	5.651	
CSO 016	(g/	0.035	0.039	0.059	0.059	
Treatment Unit Capacity	(mgd)	17,222	3.889	11.66		
Underflow Pumping Capacity	(mgd)	1.722	0.389	11.667	6 667	
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	1.167	0.667	
Coarse Screening Capacity	(mgd)	0.323	11.955	0.525	0.525	
Peak Flow to Be Disinfected	(mgd)	15.455		4.955	9.455	
Minimum Chlorine Contact Volume	(Mgal)	0.161	15.455	15.455	15.455	1.
SO 014	(g/	0.101	0.101	0.161	0.161	
Treatment Unit Capacity	(mgd)	58.333	2,444			
Underflow Pumping Capacity	(mgd)	5.833	0.244	17.222	11.667	11
Grit Removal Capacity	(mgd)	5.833		1.722	1.167	
Interceptor Flow Pump	(mgd)	1.768	0.244	1.722	1.167	
Coarse Screening Capacity	(mgd)	1.700	1.768	1.768	1.768	
Peak Flow to Be Disinfected	(mgd)	51.786		36.286	41.286	4:
Minimum Chlorine Contact Volume	(Mgal)	0.539	51.786 0.539	51.786	51.786	5
SO 011	(mgai)	0.339	0.539	0.539	0.539	(
Treatment Unit Capacity	(mgd)	18.611			_	
Underflow Pumping Capacity	(mgd)	1.861	2.111	8.889	5.000	
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	
Interceptor Flow Pump	(mgd)	0.252	0.211	0.889	0.500	
Coarse Screening Capacity	(mgd)	0.000	0.252	0.252	0.105	
Peak Flow to Be Disinfected	(mgd)	16.383	14.483	6.328	8.828	
Minimum Chlorine Contact Volume	(mgd)	0.171	16.383	16.383	16.383	1
SO 010	(IIIgu)	0.171	0.171	0.171	0.171	
Freatment Unit Capacity	(mgd)	2 222				
Inderflow Pumping Capacity	(mgd)	3.333	-	1.944	0.556	
Orit Removal Capacity	(mgd)	0.333	·	0.194	0.056	C
nterceptor Flow Pump	(mgd)	0.333		0.194	0.056	0
Coarse Screening Capacity	(mgd)	0.553	0.553	0.553	0.553	0
eak Flow to Be Disinfected	(mgd)	2.681	2.681	0.931	2.181	1
Minimum Chlorine Contact Volume	(mgd)		2.681	2.681	2.681	2
orth Pump Station	(iligu)	0.028	0.028	0.028	0.028	0
Exist. Peak Flow Capacity	(1)					
Proposed Peak Flow Capacity	(mgd) (mgd)	0.468	0.468	0.468	0.468	0
Exist. Force Main Size	(in)	0.749	0.749	0.749	0.749	0
Force Main Peak Velocity	(ft/s)	B	8	8	8	
Replace Force Main	(105)	3.3 NO	3.3	3.3	3.3	
nora Pump Station	 	INU	NO	NO	NO	NO
xisting Peak Flow Capacity	(mgd)	3.600				
ncrease Pump Station Peak Flow Capacity to	(mgd)		3.600	3.600	3.600	3.
eak Flow in Exist Force Main	(mgd)	4.226	4.226	4.226	4.226	4
xisting Force Main Size	(ingu)	3.865	3.865	3.865	3.865	3.
xist Force Main Velocity at Peak Flow	(ft/s)	16	16	16	16	
Replace Exist. Force Main	(105)	4.3	4.3	4.3	43	
		NO	NO	NO	NO	NO
nora Pump Station EQ Tank						
nora Pump Station Equalization Tank Vol.						
n)	(14-1)					
	(Mgal)	0.361	0.361	0.361	0.361	0.3

Mon Valley Sewage Authority Long Term Control Plan Table 3-9 Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IA-2a, IA-2b, IA-2c, IA-2d, IA-2e

I A 2 а-е

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
High Rate Clarification at Wastewater Treatment Plant

		1		1 1 6000 0		
ll .		a-	b-	Level of CSO Control	d-	
ľ		100% Annual	85% Annual	4-6 Annual		e-
Facility		Capture	Capture	Overflows	Percent Capture Knee of Curve	No. of Overflows
CSO 003			Cupture	Overnows	Knee of Curve	Knee of Curve
Treatment Unit Capacity	(mgd)	50,000	0.833	16.111		
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	6.111	9.444
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	0.611	0.944
Coarse Screening Capacity	(mgd)		43.904	30.154	2.496	2.496
Peak Flow to Be Disinfected	(mgd)	44.654	44.654	44.654	39,154	36.154
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.465	0.465	44.654 0.465	44.654
CSO 004			0.403	0.400	0,463	0.465
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111		
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	3.889	6.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	0.389	0.667
Coarse Screening Capacity	(mgd)	3.000	16.331	2.031	3.000	3.000
Peak Flow to Be Disinfected	(mgd)	16.531	16.531		13.031	10.531
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.172	16.531	16.531	16.531
CSO 005			0.172	0.172	0.172	0.172
Treatment Unit Capacity	(mgd)	8.333	0.333	4,444		
Underflow Pumping Capacity	(mgd)	0.833	0.033		1.667	2.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595		0.167	0.222
Coarse Screening Capacity	(mgd)	- 0.393	6.988	0.595	0.595	0.595
Peak Flow to Be Disinfected	(mgd)	7.288	7.288	3.288	5.788	5.288
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.076	7.288	7.288	7.288
CSO 007	V	0.070	0.076	0.076	0.076	0.076
Treatment Unit Capacity	(mgd)	48.333	4165			
Underflow Pumping Capacity	(mgd)	4833	4.167	21.667	9.444	14.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	0.417	2.167	0.944	1.444
Coarse Screening Capacity	(mgd)	1.028	1.628	1.628	1.628	1.628
Peak Flow to Be Disinfected	(mgd)	41.211	37.461	21.711	32.711	28.211
Minimum Chlorine Contact Volume	(Mgal)	0.429	41.211	41.211	41.211	41.211
	(,	0.429	0.429	0.429	0.429	0.429
Aubrey Ejector Station						
Exist Peak Flow Capacity	(mgd)	0.072	0.072			
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main	(,507	NO NO	NO NO	0.072	0.072	0.072
South Pump Station		110	NO	NO	NO	NO
Exist. Peak Flow Capacity	(mgd)	0.259	0 259			
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main	, , , , , , , , , , , , , , , , , , , ,	NO NO	NO NO	0.259	0.259	0.259
Donner Pump Station		- ""	140	NO	NO	NO
Exist. Peak Flow Capacity	(mgd)	2.448	2 448			
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.448	2 448	2.448
Existing Force Main Size	(in)	12	12	2.755	2.755	2.755
Force Main Peak Velocity	(ft/s)	5.4	5.4	12	12	12
Replace Force Main		NO	NO NO	5.4	5.4	5.4
Monessen Pump Station		1.0	110	NO	NO	NO
Exist Peak Flow	(mgd)	4.982	4.982	4.000		
Increase Pump Station Peak Flow to	(mgd)	8.088	8.088	4.982 8.088	4.982	4.982
Peak Flow in Exist Force Main	(mgd)	8.088	8 088		8.088	8.088
Existing Force Main Size	(in)	16	16	8.088	8.088	8.088
Exist Force Main Velocity at Peak Flow	(fVs)	9.0	9.0	16	16	16
Replace Exist. Force Main		NO	NO 9.0	9.0	9.0	9.0
			110	NO	NO	NO
Satellite Treatment at Wastewater Treatme	ent Plant					
Construct Headworks Flow Separation Facil	ity (med)	12.313	12.313			
Construct High Rate Clarification and Dising	fection Facilities	12.313	12.313	12.313	12.313	12.313
Treatment Unit Capacity	(mgd)	1.052	1.052			
Underflow Pumping Capacity	(mgd)	0.105		1.052	1.052	1.052
Grit Removal Capacity	(mgd)	0-105	0.105	0.105	0.105	0.105
Peak Flow to Be Disinfected	(mgd)	0.947	0.105	0.105	0.105	0.105
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.947	0.947	0.947	0.947
		0.010	0.010	0.010	010.0	0 010

Mon Valley Sewage Authority Long Term Control Plan Table 3-10 Donora Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IA-2a, IA-2b, IA-2c, IA-2d, IA-2e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
High Rate Clarification at Wastewater Treatment Plant

I A 2 a-e

1				Level of CSO Control		
		a- 100% Annual	b-	C-	d-	c.
Facility		Capture	85% Annual	4-6 Annual	Percent Capture	No. of Overflows
CSO 017		Сарише	Capture	Overflows	Knee of Curve	Knee of Curve
Treatment Unit Capacity	(mgd)	6.667				
Underflow Pumping Capacity	(mgd)	0.667	<u>.</u>	0.556	0.556	0.55
Grit Removal Capacity	(mgd)	0.667	•	0.056	0.056	0.05
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.056	0.056	0.05
Coarse Screening Capacity	(mgd)	0.400	5 651	0.480	0.480	0 48
Peak Flow to Be Disinfected	(mgd)	5.651		5.151	5.151	5.15
Minimum Chlorine Contact Volume	(Mgal)	0.059	5.651 0.059	5.651	5.651	5.65
CSO 016		0.033	0.039	0.059	0.059	0.05
Treatment Unit Capacity	(mgd)	17,222	3.889	11.14		
Underflow Pumping Capacity	(mgd)	1.722	0.389	11.667	6.667	8.33
Grit Removal Capacity	(mgd)	1,722	0.389	1.167	0.667	0.83
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	1.167	0.667	0.83
Coarse Screening Capacity	(mgd)	- 0.323	11.955	0.525	0.525	0.52
Peak Flow to Be Disinfected	(mgd)	15.455	15.455	4.955	9.455	7.95
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.161	15.455	15.455	15.45
2SO 014		5.101	V.161	0.161	0.161	0.16
Treatment Unit Capacity	(mgd)	58,333	2.444			
Underflow Pumping Capacity	(mgd)	5.833	0.244	17.222	11.667	10.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768		1.722	1.167	1.000
Coarse Screening Capacity	(mgd)	1.708	1.768 49.586	1.768	1.768	1.768
Peak Flow to Be Disinfected	(mgd)	51.786		36.286	41.286	42.786
Minimum Chlorine Contact Volume	(Mgal)	0.539	51.786	51.786	51.786	51.786
SO 011	(0.539	0.539	0.539	0.539	0.539
Treatment Unit Capacity	(mgd)	18.611			ul I	
Underflow Pumping Capacity	(mgd)	1.861	2.111	8.889	5.000	6.[1]
Grit Removal Capacity	(mgd)		0.211	0.889	0.500	0.611
nterceptor Flow Pump	(mgd)	1 861 0 252	0.211	0.889	0.500	0.611
Coarse Screening Capacity	(mgd)		0 252	0.252	0.105	0.252
Peak Flow to Be Disinfected	(mgd)	16.383	14.483	6.328	8.828	8.328
Minimum Chlorine Contact Volume	(mgd)	0.171	16.383	16.383	16.383	16.383
SO 010	(mgu)	0.171	0.171	0.171	0.171	0.171
Freatment Unit Capacity	(mgd)					
Inderflow Pumping Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Grit Removal Capacity	(mgd)	0.333		0.194	0.056	0.111
nterceptor Flow Pump	(mgd)	0.333	-	0.194	0.056	0.111
Coarse Screening Capacity	(mgd)	0.553	0.553	0.553	0.553	0.553
eak Flow to Be Disinfected	(mgd)		2.681	0.931	2.181	1 681
Ainimum Chlorine Contact Volume	(mgd)	2.681	2.681	2.681	2.681	2.681
orth Pump Station	(mgu)	0.028	0.028	0.028	0.028	0.028
xist. Peak Flow Capacity	(mgd)	0.42				0.028
roposed Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
xist. Force Main Size	(in)	0.749	0.749	0.749	0.749	0.749
orce Main Peak Velocity	(ft/s)	8	8	8	8	8.
Replace Force Main	(105)	3.3	3.3	3.3	3.3	3.3
nora Pump Station		NO	NO	NO	NO	NO 3.3
xisting Peak Flow Capacity	(mad)	2 22 2				110
ncrease Pump Station Peak Flow Capacity to	(mgd)	3.600	3.600	3.600	3.600	3.600
eak Flow in Exist. Force Main		4.226	4.226	4.226	4.226	4.226
xisting Force Main Size	(mgd) (in)	4.226	4.226	4.226	4.226	4.226
xist Force Main Velocity at Peak Flow	(ft/s)	16	16	16	16	4.226
eplace Force Main	(105)	4.7	4.7	4.7	4.7	4.7
	 	NO	NO	NO	NO 4.7	NO 4.7
ellite Treatment at Wastewater Treatment P	lant					140
instruct Headworks Flow Separation Facility (m	and)					
Histruct High Rate Clarification and Disinfection	Eur Hacilities	12.313	12.313	12.313	12.313	12.313
reatment Unit Capacity					12.713	12.313
Inderflow Pumping Capacity	(mgd)	1.052	1.052	1.052	1.052	1.000
Brit Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	1.052
eak Flow to Be Disinfected	(mgd)	0.105	0.105	0.105	0.105	0.105
Minimum Chlorine Contact Volume	(mgd)	0.947	0.947	0.947	0.103	0.105
Tomarine Comact Volume	(Mgal)	0.010	0.010	0.010	0.947	0.947
				0.010		

Mon Valley Sewage Authority Long Term Control Plan Table 3-11 Monessen Sewershed Summary of Proposed Pacilities and System Upgrades Alternatives IA-3a, IA-3b, IA-3c, IA-3d, IA-3e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
Conventional Primary Clarification at Wastewater Treatment Plant

				Level of CSO Control		
5		a- 100% Annual	b-	C-	d-	e-
Facility		Capture	85% Annual Capture	4-6 Annual	Percent Capture	No. of Overflo
CSO 003		Captac	Capture	Overflows	Knee of Curve	Knee of Curv
Treatment Unit Capacity	(mgd)	50.000	0.833		1000	
Underflow Pumping Capacity	(mgd)	5.000	0.083	16.111	6.111	9.
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	0.611	0.
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)		43.904	30.154	2.496 39.154	2.
Minimum Chlorine Contact Volume	(mgd)	44.654	44.654	44.654	44.654	36.
CSO 904	(Mgal)	0.465	0.465	0.465	0.465	44. 0.
Treatment Unit Capacity					0.103	0.
Underflow Pumping Capacity	(mgd)	18.889	0.222	16.111	3.889	6.
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.
Interceptor Flow Pump	(mgd)	1.889	0.022	1.611	0.389	0.0
Coarse Screening Capacity	(mgd)	3.000	3.000	3.000	3.000	3.0
Peak Flow to Be Disinfected	(mgd)	16 621	16.331	2.031	13.031	10.:
Minimum Chlorine Contact Volume	(Mgal)	16.531	16.531	16.531	16.531	16.
SO 005	(ivigai)	0.172	0.172	0.172	0.172	0.
Freatment Unit Capacity	(mgd)	8.333				0.
Underflow Pumping Capacity	(mgd)	0.833	0.333	4.444	1.667	2.3
Urit Removal Canacity	(mgd)	0.833	0.033	0.444	0.167	0.3
nterceptor Flow Pump	(mgd)	0.595	0.033	0.444	0.167	0.3
Coarse Screening Capacity	(mgd)	0.393	0.595	0.595	0.595	0.4
Peak Flow to Be Disinfected	(mgd)	7.288	6.988	3.288	5.788	5.2
Minimum Chlorine Contact Volume	(Mgal)	0.076	7.288	7.288	7.288	7.2
SO 007	(1.5)	0.070	0.076	0.076	0.076	0.0
Freatment Unit Capacity	(mgd)	48,333	4.160			
Inderflow Pumping Capacity	(mgd)	4.833	4.167	21.667	9.444	14.4
irit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.4
nterceptor Flow Pump	(mgd)	1.628	0.417	2.167	0.944	1.4
Coarse Screening Capacity	(mgd)	1.028	1.628	1.628	1.628	1.6
eak Flow to Be Disinfected	(mgd)	41.211	37.461 41.211	21.711	32.711	28.2
finimum Chlorine Contact Volume	(Mgal)	0.429	0.429	41.211	41.211	41.2
		0.125	0.429	0.429	0.429	0.43
brey Ejector Station						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072			
roposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.0
Replace Force Main		NO	NO 0.072	0.072 NO	0.072	0.07
uth Pump Station				NU	NO	NO
xist. Peak Flow Capacity	(mgd)	0.259	0.259	2000		
imit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.25
eplace Force Main		NO	NO U.Z.J.	0.259 NO	0.259	0.25
nner Pump Station			1.0	NU	NO	NO
xist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448		
roposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.448	2.44
xisting Force Main Size orce Main Peak Velocity	(in)	12	12	12	2.755	2.75
eplace Force Main	(ft/s)	5.4	5.4	5.4	12	I
nessen Pump Station		NO	NO	NO 3.4	5.4	5.
kist. Peak Flow				110	NO	NO
crease Pump Station Peak Flow Capacity to	(mgd)	4.982	4.982	4.982	4.982	
ak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	4.98
isting Force Main Size	(mgd)	8.088	8.088	8.088	8.088	8.08
ist Force Main Velocity at Peak Flow	(in)	16	16	16		8.08
place Exist. Force Main	(ft/s)	9.0	9.0	9.0	9.0	10
The state of the s	 	NO	NO	NO NO	NO 9.0	9.0
lite Treatment at Wastewater Treatment I	N				110	NO
nstruct Headworks Flow Separation Facility (1801					
nstruct Conventional Primary	mgd)	12.313	12.313	12.313	12.313	
rification and Disinfection Facilities	1				14.313	12.313
reatment Unit Constitution Facilities			ŀ	1	1	
reatment Unit Capacity Inderflow Pumping Capacity	(mgd)	0.947	0.947	0.947		
rit Removal Capacity	(mgd)	NA	NA NA	NA 0.947	0.947	0.947
eak Flow to Be Disinfected	(mgd)	NA	NA	NA NA	NA NA	NA
linimum Chlorine Contact Volume	(mgd)	0.947	0.947	0.947	NA COAT	NA
Chlorine Contact Volume	(Mgal)	0.010	0.010	0.947	0.947	0.947
				0.010	0.010	0.010

Mon Valley Sewage Authority Long Term Control Plan Table 3-12 Donora Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IA-3a, IA-3b, IA-3c, IA-3d, IA-3e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

A 3 a-e

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect All Combined Sewage Not Entering the Interceptor
Conventional Primary Clarification at Wastewater Treatment Plant

		a-	b-	Level of CSO Control		
- 00		100% Annual	85% Annual	c- 4-6 Annual	d-	e-
Facility CSO 017		Capture	Capture	Overflows	Percent Capture Knee of Curve	No. of Overfl
Treatment Unit Capacity				- Overnous	Rates of Curve	Knee of Cur
Hederflow Process	(mgd)	6.667		0.556	0.556	
Underflow Pumping Capacity Grit Removal Capacity	(mgd)	0 667		0.056	0.056	
Interceptor Flow Pumping Capacity	(mgd)	0 667		0.056	0.056	
Coarse Screening Capacity	(mgd)	0.480	0.480	0.480	0.480	(
Peak Flow to Be Disinfected	(mgd)		5.651	5.151	5.151	
Minimum Chlorine Contact Volume	(mgd)	5.651	5.651	5.651	5.651	
SO 016	(Mgal)	0.059	0.059	0.059	0.059	- 0
Treatment Unit Capacity	(1)					
Underflow Pumping Capacity	(mgd)	17.222	3.889	11.667	6.667	
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	
Interceptor Flow Pumping Capacity	(mgd) (mgd)	1.722	0.389	1.167	0.667	
Coarse Screening Capacity	(mgd)	0.525	0.525	0.525	0.525	
Peak Flow to Be Disinfected	(mgd)		11.955	4.955	9.455	7
Minimum Chlorine Contact Volume	(Mgal)	15.455	15.455	15.455	15.455	15
SO 014	(ivigai)	0.161	0.161	0.161	0.161	0
Treatment Unit Capacity	(mgd)	50.33-				
Underflow Pumping Canacity	(mgd)	58.333	2.444	17.222	11.667	10
Jrit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1
nterceptor Flow Pump	(mgd)	5.833	0.244	1.722	1.167	
oarse Screening Capacity	(mgd)	1.768	1.768	1.768	1.768	
eak Flow to Be Disinfected	(mgd)	51.786	49.586	36.286	41.286	42
Minimum Chlorine Contact Volume	(Mgal)		51.786	51.786	51.786	51
O 011	(trigar)	0.539	0.539	0.539	0.539	0
reatment Unit Capacity	(mgd)	10.611				
Inderflow Pumping Capacity	(mgd)	18 611	2.111	8.889	5.000	6
irit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0
iterceptor Flow Pump	(mgd)	1.861	0.211	0.889	0.500	0
oarse Screening Capacity	(mgd)	0.252	0.252	0.252	0.105	0
eak Flow to Be Disinfected	(mgd)	16 200	14.483	6.328	8.828	8
linimum Chlorine Contact Volume	(mgd)	16.383	16.383	16.383	16.383	16.
O 010	(ingu)	0.171	0.171	0.171	0.171	0.
reatment Unit Capacity	(mgd)	2.000				0.
nderflow Pumping Capacity	(mgd)	3 333		1.944	0.556	I.
rit Removal Canacity	(mgd)	0.333	-	0.194	0.056	0.
terceptor Flow Pump	(mgd)	0.333		0.194	0.056	0.
parse Screening Capacity	(mgd)	0.553	0.553	0.553	0.553	0.
ak Flow to Be Disinfected	(mgd)	2.681	2.681	0.931	2.181	. 1.
inimum Chlorine Contact Volume	(mgd)	0.028	2.681	2.681	2.681	2.
th Pump Station	(g=/	0.028	0.028	0.028	0.028	0
xist. Peak Flow	(mgd)	0.468				
oposed Peak Flow	(mgd)	0.749	0.468	0.468	0.468	0.4
tist. Force Main Size	(in)		0.749	0.749	0.749	0.1
erce Main Peak Velocity	(ft/s)	3.3		8	8	0.,
place Force Main	(103/	NO 3.3	3.3	3.3	3.3	
ora Pump Station		140	NO	NO	NO	NO
isting Peak Flow	(mgd)	3 600				
crease Pump Station Peak Flow to	(mgd)	4.226	3.600	3.600	3.600	3.6
ak Flow in Exist. Force Main	(mgd)	4.226	4.226	4.226	4.226	4.2
isting Force Main Size	(in)	16	4.226	4.226	4.226	4.2
ist. Force Main Velocity at Peak Flow	(ft/s)	4.7	16	16	16	
place Force Main	1	NO 4.7	4.7 NO	4.7	4.7	-
2 10 10 1		11.0	NU	NO	NO	NO
lite Treatment at Wastewater Treatme	ent Plant					
struct Headworks Flow Separation Facil	ity (mgd)	12.313	10.210			
instruct Conventional Primary		15.313	12.313	12.313	12.313	12.3
rification and Disinfection Facilities	1					
reatment Unit Canacity	(mgd)				1	
nderflow Pumping Capacity	(mgd)	0.947	0.947	0.947	0.947	0.9
rit Removal Capacity		NA	NA	NA	NA 0.947	
eak Flow to Be Disinfected	(mgd)	NA	NA	NA	NA NA	NA NA
linimum Chlorine Contact Volume	(mgd)	0.947	0.947	0.947	0.947	NA OO
	(Mgal)	0.010	0.010			0.94
			0.010	0.010	0.010	0.01

Mon Valley Sewage Authority Long Term Control Plan Table 3-13 Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IB-1a, IB-1b, IB-1c, IB-1d, IB-1e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
Monessen and Donora Pump Station Equalization Storage Tanks

				Level of CSO Control		
l		a- 100% Annual	b-	c-	d-	e-
Facility			85% Annual	4-6 Annual	Percent Capture	No. of Overflow
CSO 003		Capture	Capture	Overflows	Knee of Curve	Knee of Curve
Treatment Unit Capacity	(mgd)	50.000	0.000		1 200 0000	
Underflow Pumping Capacity	(mgd)	5.000	0.833	16.111	6.111	9.4
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.9
Interceptor Flow Pumping Capacity	(mgd)	2.496	0.083	1.611	0.611	0.9
Coarse Screening Capacity	(mgd)	2.490	2.496 43.904	2.496	2.496	2.4
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	30.154	39.154	36.1
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	14.500	5.500	8.5
CSO 004		0.700	0.008	0.151	0.057	0.0
Treatment Unit Capacity	(mgd)	18.889	0.222			
Underflow Pumping Capacity	(mgd)	1.889	0.022	16.111	3.889	6.6
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.6
Interceptor Flow Pump	(mgd)	3.000		1.611	0.389	0.6
Coarse Screening Capacity	(mgd)	5.000	3.000	3.000	3.000	3.0
Peak Flow to Be Disinfected	(mgd)	16.531	16.331	2.031	13.031	10.5
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.200	14.500	3.500	6.0
CSO 005	1	0.172	0.002	0.151	0.036	0.0
Treatment Unit Capacity	(mgd)	8.333	0.333			
Underflow Pumping Capacity	(mgd)	0.833	0.033	4.444	1.667	2.22
Grit Removal Capacity	(mgd)	0.833		0.444	0.167	0.22
Interceptor Flow Pump	(mgd)	0.595	0.033	0.444	0.167	0.22
Coarse Screening Capacity	(mgd)	- 0.393	0.595	0.595	0.595	0.59
Peak Flow to Be Disinfected	(mgd)	7.288	6.988	3.288	5.788	5.28
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.300	4.000	1.500	2.00
CSO 007		0.070	0.003	0.042	0.016	0.02
Treatment Unit Capacity	(mgd)	48.333				
Underflow Pumping Capacity	(mgd)	48.333	4.167	21.667	9.444	14.44
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.44
Interceptor Flow Pump	(mgd)	1.628	0.417	2.167	0.944	1.44
Coarse Screening Capacity	(mgd)	1.028	1.628	1.628	1.628	1.62
Peak Flow to Be Disinfected	(mgd)	41.211	37.461	21.711	32.711	28.21
Minimum Chlorine Contact Volume	(Mgal)	0.429	3.750	19.500	8.500	13.00
	1 (110	0.425	0.039	0.203	0.089	0.13
ubrey Ejector Station						
Exist. Peak Flow Capacity	(mgd)	0 072				
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.07
Replace Force Main	(ingu)	NO 0.072	0.072	0.072	0.072	0.07
outh Pump Station	 	110	NO NO	NO	NO	NO
Exist. Peak Flow Capacity	(mgd)	0.259				
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.25
Replace Force Main	1607	NO 0.239	0.259	0.259	0.259	0.25
onner Pump Station			NO	NO	NO	NO
Exist. Peak Flow Capacity	(mgd)	2 448				
Proposed Peak Flow Capacity	(mgd)	2.755	2.448	2.448	2.448	2,448
Existing Force Main Size	(in)	12	2.755	2.755	2.755	2.755
Force Main Peak Velocity	(ft/s)	5.4	12	12	12	13
Replace Force Main	1	NO J.4	5.4 NO	5.4	5.4	5.4
onessen Pump Station		- 110	NO	NO	NO	NO
Exist. Peak Flow Capacity	(mgd)	4.982	1000			
ncrease Pump Station Peak Flow to	(mgd)	8.088	4.982	4.982	4.982	4.982
Peak Flow in Exist. Force Main	(mgd)	7.501	8.088	8.088	8.088	8.088
Existing Force Main Size	(in)	16	7.501	7.501	7.501	7.501
xist. Force Main Velocity at Peak Flow	(ft/s)	8.3	16	16	16	16
Replace Exist. Force Main		NO 0.3	8.3 NO	8.3	8.3	8.3
			NO	NO	NO	NO
nessen Pump Station EQ Tank						
messen Pump Station Equalization Tank						
l. (min)	(Mgal)	0.587	0.509			
	· · · · · · ·	0.307	0.587	0.587	0.587	0.587

Mon Valley Sewage Authority Long Term Control Plan Table 3-14 Tance 3-14 Donora Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IB-1a, IB-1b, IB-1c, IB-1d, IB-1e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
Monessen and Donora Pump Station Equalization Storage Tanks

Facility CSO 017 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity Coarse Screening Capacity	(mgd)	a- 100% Annual Capture	b- 85% Annual	C-	d-	e.
CSO 017 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity			85% Annual			
CSO 017 Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity		Capture		4-6 Annual	Percent Capture	No. of Overflow
Treatment Unit Capacity Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity			Capture	Overflows	Knee of Curve	Knee of Curve
Underflow Pumping Capacity Grit Removal Capacity Interceptor Flow Pumping Capacity						
Grit Removal Capacity Interceptor Flow Pumping Capacity		6.667		0.556	0.556	0.5
Interceptor Flow Pumping Capacity		0.667	-	0.056	0.056	0.0
Coarse Screening Canacity	(mgd)	0.667	-	0.056	0.056	0.0
	(mgd)	0.480	0.480	0.480	0.480	0.4
Peak Flow to Be Disinfected	(mgd)		5.651	5.151	5.151	5.1
Minimum Chlorine Contact Volume	(mgd) (Mgal)	5.651		0.500	0.500	0.5
CSO 016	(Wgai)	0.039	•	0.005	0.005	0.0
Treatment Unit Capacity	(mgd)	17.222		The second second		
Underflow Pumping Canacity	(mgd)	1.722	3 889	11.667	6.667	8.3
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	8.0
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.389	1.167	0.667	0.8
Coarse Screening Capacity	(mgd)	0.323	0.525	0.525	0.525	0.5
Peak Flow to Be Disinfected	(mgd)	15.455	11.955	4.955	9.455	7.9
Minimum Chlorine Contact Volume	(Mgal)	0.161	3.500	10.500	6.000	7.5
CSO 014	, Barr	0.101	0.036	0.109	0.063	0.0
Treatment Unit Capacity	(mgd)	58.333	2.444	45.5		
Underflow Pumping Capacity	(mgd)	5.833	0.244	17.222	11.667	10.00
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.00
Interceptor Flow Pump	(mgd)	1.768	1.768	1.722	1.167	1.00
Coarse Screening Capacity	(mgd)		49.586	1.768	1.768	1.70
Peak Flow to Be Disinfected	(mgd)	51.786	2.200	36.286 15.500	41.286	42.71
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.023		10.500	9.00
SO 011			0.023	0.161	0.109	0.09
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889		
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	5.000	6.11
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.61
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.500	0.61
Coarse Screening Capacity	(mgd)	-	14.483	6.328	0.105	0.25
Peak Flow to Be Disinfected	(mgd)	16.383	1.900	8.000	8.828	8.32
Minimum Chlorine Contact Volume	(mgd)	0.171	0.020	0.083	4.500 0.047	5.50
SO 010				0.003	0.047	0.05
reatment Unit Capacity	(mgd)	3.333		1.944	0.556	
Inderflow Pumping Capacity	(mgd)	0.333		0.194	0.556	1.11
irit Removal Capacity	(mgd)	0.333		0.194	0.056	0.11
nterceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.056	0.11
Coarse Screening Capacity	(mgd)		2.681	0.931	2.181	0.55
eak Flow to Be Disinfected	(mgd)	2 681		1.750	0.500	1.00
Animum Chlorine Contact Volume	(mgd)	0.028		0.018	0.005	1.00
orth Pump Station				0.010	0.003	0.01
Exist. Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	
Proposed Peak Flow Capacity	(mgd)	0.749	0.749	0.749	0.749	0.46
Exist. Force Main Size	(in)	8	8	8	8	0.74
Force Main Peak Velocity Replace Force Main	(ft/s)	3.3	3.3	3.3	3.3	
nora Pump Station		NO	NO	NO	NO 3.3	NO 3.3
xisting Peak Flow Capacity					- 110	NU
ncrease Pump Station Peak Flow Capacity to	(mgd)	3.600	3.600	3.600	3,600	3.600
eak Flow in Exist Force Main	(mgd)	4.226	4.226	4.226	4.226	4.226
xisting Force Main Size	(mgd)	3.865	3.865	3.865	3.865	3.865
xist Force Main Velocity at Peak Flow	(in)	16	16	16	16	3.80
eplace Exist. Force Main	(ft/s)	4.3	4.3	4.3	4.3	4
The state of the s		NO	NO	NO	NO	NO 4.
nora Pump Station EQ Tank						
nora Pump Station Equalization Tank Vol.						
n)	(Mgal)	0.361	0.361			

Mon Valley Sewage Authority Long Term Control Plan Table 3-15

Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IB-2a, IB-2b, IB-2c, IB-2d, IB-2e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

I B 2 а-е

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
High Rate Clarification at Wastewater Treatment Plant

				Level of CSO Control		
		a- 100% Annual	b-	c-	d∙	e-
Facility		Capture	85% Annual Capture	4-6 Annual	Percent Capture	No. of Overflo
CSO 003	T		Сарине	Overflows	Knee of Curve	Knee of Curv
Treatment Unit Capacity	(mgd)	50.000	0.833	16111		
Underflow Pumping Capacity	(mgd)	5.000	0.083	16 111	6.111	9.
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496		0 61 1	0.
Coarse Screening Capacity	(mgd)		43,904	2.496	2 496	2.
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	30.154 14.500	39.154	36.
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	0.151	5.500	8
CSO 004			0.008	0.131	0.057	0.
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111		
Underflow Pumping Capacity	(mgd)	1.889	0.022	16.111	3.889	6
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0
Interceptor Flow Pump	(mgd)	3.000	3.000	1.611	0.389	0.
Coarse Screening Capacity	(mgd)		16.331	3.000	3.000	3.
Peak Flow to Be Disinfected	(mgd)	16.531	0.200	2.031	13.031	10.
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.002	14.500	3.500	6
CSO 005		3.1.2	0.002	0.151	0.036	0.6
Treatment Unit Capacity	(mgd)	8.333	0.222			
Underflow Pumping Capacity	(mgd)	0.833	0.333	4.444	1.667	2.:
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.3
Interceptor Flow Pump	(mgd)	0.595		0.444	0.167	0.2
Coarse Screening Capacity	(mgd)	0.353	0.595	0.595	0.595	0.5
Peak Flow to Be Disinfected	(mgd)	7.288	6.988	3.288	5.788	5.2
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.300	4.000	1.500	2.0
SO 007	(8/	0.078	0.003	0.042	0.016	0.0
Treatment Unit Capacity	(mgd)	40.222				
Underflow Pumping Capacity	(mgd)	48.333	4.167	21.667	9.444	14.4
Unit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.4
Interceptor Flow Pump	(mgd)	4.833	0.417	2.167	0.944	1.4
Coarse Screening Capacity	(mgd)	1.628	1.628	1.628	1.628	1.6
Peak Flow to Be Disinfected	(mgd)		37.461	21.711	32.711	28.2
Minimum Chlorine Contact Volume	(Mgal)	41.211	3.750	19.500	8.500	13.0
	(Ivigal)	0.429	0.039	0.203	0.089	0.1
ubrey Ejector Station			74.1			0.11.
Exist. Peak Flow Capacity	(b				-	
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.0
Replace Force Main	(mgd)	0.072	0.072	0.072	0.072	0.0
uth Pump Station		NO	NO	NO	NO	NO NO
Exist. Peak Flow Capacity	4 1					NO
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.25
Replace Force Main	(mgd)	0.259	0.259	0.259	0.259	
nner Pump Station		NO	NO	NO	NO 0.239	0.25 NO
xist. Peak Flow Capacity						NO
Proposed Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	
xisting Force Main Size	(mgd)	2.755	2.755	2.755	2.755	2.44
orce Main Pk Velocity	(in)	12	12	12	12	2.75
Replace Force Main	(ft/s)	5.4	5.4	5.4	5.4	
nessen Pump Station		NO I	NO	NO	NO J.4	NO 5
xist. Peak Flow Capacity					- 110	NU
screase Pump Station Peak Flow Capacity to	(mgd)	4.982	4.982	4.982	4.982	
eak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	4.98
xisting Force Main Size	(mgd)	8.088	8.088	8.088	8.088	8.08
xist Force Main Velocity at Peak Flow	(in)	16	16	16		8.08
eplace Exist. Force Main	(ft/s)	9.0	9.0	9.0	16	1
		NO	NO	NO 3.0	9.0 NO	9.
ellite Treatment at Wastewater Treatment P					NO	NO
nstruct Headworks Flow C	lant					
enstruct Headworks Flow Separation Facility (n	ngd)	12.313	12.313	12.313	- 0	
enstruct High Rate Clarification and Disinfection Freatment Unit Capacity				14:313	12.313	12.31
Indeedland Day Co.	(mgd)	1.052	1.052	1.000		
Inderflow Pumping Capacity	(mgd)	0.105	0.105	1.052	1.052	1.05
orit Removal Capacity	(mgd)	0 105	0.105	0.105	0.105	0.10
eak Flow to Be Disinfected	(mgd)	0 947	0.947	0 105	0.105	0.10
Aintmum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.947	0.947	0.94
			0.010	0.010	0.010	0.010

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-16
Donora Sewershed
Summary of Proposed Pacilities and System Upgrades
Alternatives IB-2a, IB-2b, IB-2c, IB-2d, IB-2e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

I B 2 a-e

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
High Rate Clarification at Wastewater Treatment Plant

		g-	b-	Level of CSO Control	12-4-1-2	
Facility		100% Annual Capture	85% Annual	c- 4-6 Annual	d- Percent Capture	No. of Over
SO 017		Captule	Capture	Overflows	Knee of Curve	Knee of C
Treatment Unit Capacity	(mgd)	6.667				
Underflow Pumping Capacity	(mgd)	0.667		0.556	0.556	
Grit Removal Capacity	(mgd)	0.667	:	0.056	0.056	
nterceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.056	0.056	
Coarse Screening Capacity	(mgd)	0.700		0.480	0.480	
Peak Flow to Be Disinfected	(mgd)	5.651	5.651	5.151	5.151	
Minimum Chlorine Contact Volume	(Mgal)	0.059	·	0.500	0.500	
SO 016		0.039	-	0.005	0.005	
Treatment Unit Capacity	(mgd)	17 222				
Inderflow Pumping Capacity	(mgd)	1.722	3 889	11.667	6.667	
irit Removal Capacity	(mgd)		0.389	1.167	0.667	
terceptor Flow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	
oarse Screening Capacity	(mgd)	0.525	0.525	0.525	0.525	
eak Flow to Be Disinfected	(mgd)	<u> </u>	11.955	4.955	9.455	
finimum Chlorine Contact Volume	(Mgal)	15 455	3.500	10.500	6.000	
O 014	(Mgal)	0.16!	0.036	0.109	0.063	
reatment Unit Capacity	(mad)				100	
nderflow Pumping Capacity	(mgd)	58 333	2.444	17.222	11.667	
rit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	
terceptor Flow Pump	(mgd) (mgd)	5.833	0 244	1.722	1.167	
oarse Screening Capacity		1.768	1.768	1.768	1.768	
eak Flow to Be Disinfected	(mgd)	136	49.586	36.286	41.286	
Inimum Chlorine Contact Volume	(mgd)	51.786	2.200	15.500	10.500	
O 011	(Mgal)	0.539	0.023	0.161	0.109	
eatment Unit Capacity				0.101	0.109	
nderflow Pumping Capacity	(mgd)	18.611	2.111	8.889	5.000	
rit Removal Capacity	(mgd)	1.861	0.211	0.889		
it Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	
terceptor Flow Pump	(mgd)	0 252	0.252	0.252	0.500	
parse Screening Capacity	(mgd)		14.483	6.328	0.105	
ak Flow to Be Disinfected	(mgd)	16 383	1.900	8 000	8 828	
nimum Chlorine Contact Volume	(mgd)	0.171	0.020	0.083	4.500	
0 010			0.020	0.083	0.047	
eatment Unit Capacity	(mgd)	3.333	-	1 4 7		
derflow Pumping Capacity	(mgd)	0.333		1.944	0.556	
t Removal Capacity	(mgd)	0.333		0.194	0.056	
erceptor Flow Pump	(mgd)	0.553		0.194	0.056	(
arse Screening Capacity	(mgd)	- 0.555	0.553	0.553	0.553	
k Flow to Be Disinfected	(mgd)	2.681	2.681	0.931	2.181	
nimum Chlorine Contact Volume	(mgd)	0.028		1.750	0.500	
th Pump Station		0.028		810.0	0.005	(
ist. Peak Flow	(mgd)	0.450				
posed Peak Flow	(mgd)	0.468	0.468	0.468	0.468	(
ist. Force Main Size	(in)	0.749	0.749	0.749	0.749	(
ce Main Peak Velocity	(ft/s)	8	8	8	8	
place Force Main	(103)	3.3	3.3	3.3	3.3	
ora Pump Station		NO	NO	NO	NO	NO
sting Peak Flow	(mgd)					
rease Pump Station Peak Flow to	(mgd)	3.600	3.600	3.600	3,600	3
k Flow in Exist. Force Main		4.226	4.226	4.226	4.226	3
sting Force Main Size	(mgd)	4.226	4.226	4.226	4.226	
st Force Main Velocity at Peak Flow	(ft/s)	16	16	16	16	4
lace Force Main	(105)	4.7	4.7	4.7	4.7	
1997		NO	NO	NO	NO 4.7	NO
te Treatment at Wastewater Treatme	nt Plant					140
truct Headworks Flow Separation Facilit	ar a thint					
truct High Rate Clarification and Disinfe	y (mga)	12.313	12.313	12.313	12.712	
atment Unit Capacity				12.313	12.313	12.
derflow Pumping Capacity	(mgd)	1.052	1.052	1.052		
t Paracral Commission	(mgd)	0.105	0.105		1.052	1.
t Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	0.
k Flow to Be Disinfected	(mgd)	0.947	0.103	0.105	0.105	0.
nimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.947	0.947	0.5
						0.0

Mon Valley Sewage Authority Long Term Control Plan Table 3-17 Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternatives IB-3a, IB-3b, IB-3c, IB-3d, IB-3e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
Conventional Primary Clarification at Wastewater Treatment Plant

B 3 a-c

I

		<u> </u>		Level of CSO Control		
		a- 100% Annual	b- 85% Annual	C-	d-	e-
Facility		Capture	Capture	4-6 Annual Overflows	Percent Capture	No. of Overf
CSO 003			Captage	Overriows	Knee of Curve	Knee of Cu
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111		
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	6,111	
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	
Interceptor Flow Pumping Capacity	(mgd)	2.496	2 496	2.496	0.611	
Coarse Screening Capacity	(mgd)	- 1	43 904	30,154	2.496	
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	14,500	39.154 5.500	
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	0.151	0.057	
SO 004				0,131	0.037	
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	2.000	
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	3.889	
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	0.389	
Coarse Screening Capacity	(mgd)		16.331	2.031	3.000	
Peak Flow to Be Disinfected	(mgd)	16.531	0.200		13.031	1
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.002	14.500	3.500	
SO 005			0.002	0.151	0 036	
Freatment Unit Capacity	(mgd)	8.333	0.333	4.4.1		
Inderflow Pumping Canacity	(mgd)	0.833	0.033	4.444	1.667	
int Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	
nterceptor Flow Pump	(mgd)	0.595	0.595	0.444	0.167	
Coarse Screening Capacity	(mgd)		6.988	0.595	0.595	
Peak Flow to Be Disinfected	(mgd)	7,288	0.300	3.288	5.788	
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.003	4.000	1.500	
SO 007		0.078	0.003	0.042	0.016	
reatment Unit Capacity	(mgd)	48.333	1160			
Inderflow Pumping Capacity	(mgd)	4.833	4.167	21.667	9.444	14
int Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	
nterceptor Flow Pump	(mgd)	1.628	0.417	2.167	0.944	
oarse Screening Capacity	(mgd)	1.028	1.628	1.628	1.628	
eak Flow to Be Disinfected	(mgd)	41.211	37.461	21.711	32.711	21
finimum Chlorine Contact Volume	(Mgal)	0.429	3.750	19.500	8.500	13
	(gai)	0.429	0.039	0.203	0.089	(
brey Ejector Station						
xist. Peak Flow	(mgd)	0.070				
roposed Peak Flow	(mgd)	0.072	0.072	0.072	0.072	
eplace Force Main	(ingu)	0 072 NO	0.072	0.072	0.072	
uth Pump Station		NU	NO	NO	NO	NO
xist. Peak Flow	(mad)					1.0
imit Peak Flow to	(mgd) (mgd)	0.259	0.259	0.259	0.259	
eplace Force Main	(mga)	0.259	0.259	0.259	0.259	. 0
nner Pump Station		NO	NO	NO	NO	NO
xist. Peak Flow	(1)					
roposed Peak Flow	(mgd)	2.448	2.448	2.448	2.448	2
xisting Force Main Size	(mgd)	2.755	2.755	2.755	2.755	2
orce Main Pk Velocity	(in)	12	12	12	12	
eplace Force Main	(ft/s)	5.4	5.4	5.4	5.4	
nessen Pump Station		NO	NO	NO	NO	NO
xist Peak Flow	- C - D					140
crease Pump Station Peak Flow to	(mgd)	4.982	4.982	4.982	4.982	4.
ak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	8
isting Force Main Size	(mgd)	8 088	8.088	8 088	8.088	8.
sist Force Main Velocity at Peak Flow	(in)	16	16	16	16	
place Exist. Force Main	(ft/s)	9.0	9.0	9.0	9.0	
PARTY DATE OF COMME		NO	NO	NO	NO	NO
lite Treatment at Wastewater Treatm						140
nstruct Headworks Flow Constitution	ent Plant					
nstruct Headworks Flow Separation Faci	iity (mgd)	12.313	12.313	12.313	12.313	
nstruct Conventional Primary	1			10.313	14.313	12.
urification and Disinfection Facilities			1			
reatment Unit Capacity	(mgd)	0.947	0.947	2015		
Inderflow Pumping Capacity	(mgd)	NA NA	NA 0.947	0.947	0.947	0.9
rit Removal Capacity	(mgd)	NA NA	NA NA	NA NA	NA	NA
eak Flow to Be Disinfected	(mgd)	0.947	0.947	NA .	NA	NA
finimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.947	0.947	0.9
		0.010	0.010	0.010	0.010	0.0

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-18
Donora Sewershed
Summary of Proposed Facilities and System Upgrades
Alternatives IB-3a, IB-3b, IB-3c, IB-3d, IB-3e

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control

B 3 a-e

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
Conventional Primary Clarification at Wastewater Treatment Plant

				Level of CSO Control		
		a-	b-	C-	d-	e-
Facility		100% Annual	85% Annual	4-6 Annual	Percent Capture	No. of Overflows
CSO 017		Capture	Capture	Overflows	Knee of Curve	Knee of Curve
Treatment Unit Capacity	(mgd)	6.667				
Underflow Pumping Capacity	(mgd)	0.667		0.556	0.556	0.5
Grit Removal Capacity	(mgd)	0.667	<u>-</u>	0.056	0.056	0.0
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.056	0.056	0.05
Coarse Screening Capacity	(mgd)	- 0.480	5.651	0.480	0.480	0.48
Peak Flow to Be Disinfected	(mgd)	5.651	3.031	5.151 0.500	5.151	5.15
Minimum Chlorine Contact Volume	(Mgal)	0.059	-	0.005	0.500	0.50
CSO 016				0.003	0.005	0.00
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667		
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	6.667	8.33
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667 0.667	0.83
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.83
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)		11.955	4.955	9.455	0.52 7.95
Minimum Chlorine Contact Volume	(mgd)	15.455	3.500	10.500	6.000	7.50
CSO 014	(Mgal)	0.161	0.036	0.109	0.063	0.07
Treatment Unit Capacity						0.07
Underflow Pumping Capacity	(mgd)	58.333	2.444	17.222	11.667	10.00
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.00
Interceptor Flow Pump	(mgd) (mgd)	5.833	0.244	1.722	1.167	1.00
Coarse Screening Capacity	(mgd)	1.768	1.768	1.768	1.768	1.76
Peak Flow to Be Disinfected	(mgd)	51.786	49.586	36.286	41.286	42.786
Minimum Chlorine Contact Volume	(Mgal)	0.539	2.200	15.500	10.500	9.000
CSO 011	(ivigat)	0.339	0.023	0.161	0.109	0.094
Treatment Unit Capacity	(mgd)	18.611				
Underflow Pumping Capacity	(mgd)	1.861	2.111	8.889	5.000	6.111
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.211	0.889	0.500	0.611
Coarse Screening Capacity	(mgd)	0.232	14.483	0.252	0.105	0.252
Peak Flow to Be Disinfected	(mgd)	16.383	1.900	6.328	8.828	8.328
Minimum Chlorine Contact Volume	(mgd)	0.171	0.020	8.000 0.083	4.500	5.500
SO 010			0.020	0.063	0.047	0.057
Freatment Unit Capacity	(mgd)	3.333		1.944	0.555	
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.556 0.056	1.111
Grit Removal Capacity	(mgd)	0.333		0.194		0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.056 0.553	0.111
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	-	2.681	0.931	2.181	0 553
Minimum Chlorine Contact Volume	(mgd)	2.681		1.750	0.500	1.681
orth Pump Station	(mgd)	0.028	-	0.018	0.005	1.000
Exist Peak Flow Capacity					0.003	0.010
Proposed Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
Exist. Force Main Size	(mgd)	0.749	0.749	0.749	0.749	0.749
Force Main Peak Velocity	(in) (ft/s)	- 8	8	8	8	8
Replace Force Main	(IUS)	3.3	3.3	3.3	33	3.3
onora Pump Station	 	NO	NO	NO	NO	NO
xisting Peak Flow	(mgd)	2.000				7.0
ncrease Pump Station Peak Flow to	(mgd)	3.600	3.600	3.600	3.600	3.600
Peak Flow in Exist Force Main	(mgd)	4.226 4.226	4.226	4.226	4.226	4.226
Existing Force Main Size	(in)	16	4.226	4.226	4.226	4.226
xist Force Main Velocity at Peak Flow	(ft/s)	4.7	16	16	16	16
Replace Force Main	 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	NO 4.7	4.7 NO	4.7	4.7	4.7
			- NO	NO	NO	NO
tellite Treatment at Wastewater Treatmen	nt Plant					
onstruct Headworks Flow Separation Facili	ty (mgd)	12.313	12.313	12.212		
Construct Conventional Primary			14.313	12.313	12.313	12.313
larification and Disinfection Facilities	1	j		j		
Treatment Unit Capacity	(mgd)	0.947	0.947	0.045		
Underflow Pumping Capacity	(mgd)	NA U.547	NA 0.947	0.947	0.947	0.947
Gnt Removal Capacity	(mgd)	NA NA	NA NA	NA NA	NA	NA
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	NA NA	NA
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.947	0.947	0.947
			0.010	0.010	0.010	0.010

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-19
Monessen Sewershed
Summary of Proposed Facilities and System Upgrades
Alternative IB-4b

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative

Partial Sewer Separation
Satellite Treatment Facilities at Selected CSO Locations
Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
Maximize Conveyance at 85% Capture in Monessen Sewershed and
Construct Monessen and Donora Pump Station Equalization Storage Tanks
85% Capture on an Average Annual Basis

Level of CSO Control

	en Sewershed	Level of CSO Control	Don	ora Sewershed	0.000
		b-	-		Level of CSO Control
Fit	1	85% Annual	1		b-
CSO 903		Capture	Facility		85% Annual
Treatment Unit Capacity			CSO 017		Capture
Underflow Pumping Capacity	(mgd)	- 27	Treatment Unit Capacity	(mad)	
Gnt Removal Capacity	(mgd)	· · · · · · · · · · · · · · · · · · ·	Underflow Pumping Capacity	(mgd)	
Interceptor Flow Pumping Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	<u> </u>
Coarse Screening Capacity	(mgd)		Interceptor Flow Pumping Canacity	(mgd)	(4)
Peak Flow to Be Disinfected	(mgd)	43 90-	Coarse Screening Capacity	(mgd)	0
Minimum Chlorine Contact Volume	(mgd)	2542	Peak Flow to Be Disinfected	(mgd)	5
CSO 004	(Mgal)	(0)	Minimum Chlorine Contact Volume	(Mgal)	
Treatment Unit Capacity	(m - f)		CSO 016	(115,607)	(4)
Underflow Pumping Capacity	(mgd)	141	Treatment Unit Capacity	(mgd)	
Grit Removal Capacity	(mgd)		Underflow Pumping Capacity	(mgd)	3.
Interceptor Flow Pump	(mgd)	· ·	Grit Removal Capacity	(mgd)	0.
Coarse Screening Capacity	(mgd)	- 4	Interceptor Flow Pumping Capacity	(mgd)	0
Peak Flow to Be Disinfected	(mgd)	16.331		(mgd)	0.9
Minimum Chlorine Contact Volume	(Mgal)		Peak Flow to Be Disinfected	(mgd)	3.9
CSO 005	(111)		Minimum Chlorine Contact Volume	(Mgal)	0.0
Treatment Unit Capacity	(mgd)		CSO 014	1 min 1	0.0
Underflow Pumping Capacity	(mgd)	 	Treatment Unit Capacity	(mgd)	2.4
Grit Removal Capacity	(mgd)		Underflow Pumping Capacity	(mgd)	0.2
Interceptor Flow Pump	(mgd)	-	Grit Removal Capacity	(mgd)	0.2
Coarse Screening Capacity	(mgd)	6.988	Interceptor Flow Pump	(mgd)	1.7
Peak Flow to Be Disinfected	(mgd)	- 0.700	Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	49.5
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(mgd)	2.2
SO 007			CSO 011	(Mgal)	0.0
Treatment Unit Capacity	(mgd)	4.167	Treatment Unit Capacity		
Underflow Pumping Capacity	(mgd)	0.417	Underflow Pumping Capacity	(mgd)	2.1
Grit Removal Capacity	(mgd)	0 417	Grit Removal Capacity	(mgd)	0.21
nterceptor Flow Pump Coarse Screening Capacity	(mgd)	1.628	Interceptor Flow Pump	(mgd)	0.21
Peak Flow to Be Disinfected	(mgd)	37.461	Coarse Screening Capacity	(mgd)	0.25
Minimum Chlorine Contact Volume	(mgd)	3.750	Peak Flow to Be Disinfected	(mgd)	14.48
Cidentic Collida Volume	(Mgal)	0.039	Minimum Chlorine Contact Volume	(mgd) (mgd)	1.90
ubrey Ejector Station	+		CSO 010	(mgu)	0.02
Exist Peak Flow Capacity	-		Treatment Unit Capacity	(mgd)	
Proposed Peak Flow Capacity	(mgd)	0 072	Underflow Pumping Capacity	(mgd)	
Replace Force Main	(mgd)	0 072	Grit Removal Capacity	(mgd)	
oth Pump Station	├──- }	NO	Interceptor Flow Pump	(mgd)	
Exist. Peak Flow Capacity	(m = d)		Coarse Screening Capacity	(mgd)	0.55
imit Peak Flow to	(mgd) (mgd)	0.259	Peak Flow to Be Disinfected	(mgd)	2.68
Replace Force Main	(mgu)	0.259	Minimum Chlorine Contact Volume	(mgd)	
nner Pump Station		NO	North Pump Station	(11/541)	
xist. Peak Flow Capacity	(mgd)		Exist. Peak Flow Capacity	(mgd)	
roposed Peak Flow Capacity	(mgd)	2.448	Proposed Peak Flow Capacity	(mgd)	0.46
xisting Force Main Size	(in)	3 505	Exist Force Main Size	(in)	0.74
orce Main Peak Velocity	(fl/s)	12	Force Main Peak Velocity	(ft/s)	7
eplace Force Main	1 127	NO 6.9	Replace Force Main		NO 3.
messen Pump Station			Donora Pump Station		110
xist. Peak Flow Capacity	(mgd)	4.982	Existing Peak Flow Capacity	(mgd)	3 600
crease Pump Station Peak Flow Capacity to	(mgd)	9.338	Increase Pump Station Peak Flow Capacity to	(mgd)	4 226
tak Flow in Exist. Force Main	(mgd)	7.501	Peak Flow in Exist Force Main Existing Force Main Size	(mgd)	3 86
xisting Force Main Size	(ín)		Exist Force Main Velocity at Peak Flow	(ia)	16
sist. Force Main Velocity at Peak Flow	(ft/s)	8.3	Replace Exist. Force Main	(ft/s)	4.
place Exist. Force Main		NO	TOPICS LAIM. FORCE MAIN		NO
Corne Burn Cornel To Co					
nessen Pump Station EQ Tank tessen Pump Station Equalization Tank Vol.			onora Pump Station EQ Tank		
icasen rump Station Equalization Tank Vol.					
	(Mgal)	1 000 00	onora Pump Station Equalization Tank Vol. (min)		

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-20
Monessen Sewershed
Summary of Proposed Facilities and System Upgrades
Alternative IB-Sb

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control	I B 5	Construct High Rate Clarification	ge That is Diverted from the Interceptor and Receiv Capture in Monessen Sewershed and on Facilities at Wastewater Teatment Plant	es Satellite Treatment	
<u></u>	ssen Sewershed	85% Capture on an Average An	nual Basis	F =0	
11000	Sen Sewershed	Level of CSO Control	Do	nora Sewershed	
		b-	-		Level of CSO Control
Facility		85% Annual	1		b- 85% Annual
CSO 003		Capture	Facility		Capture
Treatment Unit Capacity	(mgd)		CSO 017		- Compilation
Underflow Pumping Capacity	(mgd)		Treatment Unit Capacity Underflow Pumping Capacity	(mgd)	
Grit Removal Capacity	(mgd)	<u> </u>	Grit Removal Capacity	(mgd)	
Interceptor Flow Pumping Capacity Coarse Screening Capacity	(mgd)		Interceptor Flow Pumping Capacity	(mgd) (mgd)	-
Peak Flow to Be Disinfected	(mgd) (mgd)	43.90-	Coarse Screening Capacity	(mgd)	0
Minimum Chlorine Contact Volume	(Mgal)		Peak Flow to Be Disinfected	(mgd)	5
CSO 004			Minimum Chlorine Contact Volume CSO 016	(Mgal)	
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity		
Underflow Pumping Capacity Grit Removal Capacity	(mgd)		Underflow Pumping Capacity	(mgd) (mgd)	31
Interceptor Flow Pump	(mgd)		Grit Removal Capacity	(mgd)	0.
Coarse Screening Capacity	(mgd) (mgd)	16.331	Interceptor Flow Pumping Capacity	(mgd)	0.
Peak Flow to Be Disinfected	(mgd)	10.331		(mgd)	11.9
Musumum Chlorine Contact Volume	(Mgal)		Peak Flow to Be Disinfected Minimum Chlorine Contact Volume	(mgd)	3.5
CSO 005			CSO 014	(Mgal)	0.0
Treatment Unit Capacity Underflow Pumping Capacity	(mgd)		Treatment Unit Canacity	(mgd)	
Gnt Removal Capacity	(mgd)		Underflow Pumping Capacity	(mgd)	24
Interceptor Flow Pump	(mgd) (mgd)	· ·	Grif Removal Capacity	(mgd)	0:
Coarse Screening Capacity	(mgd)	6.988	Interceptor Flow Pump	(mgd)	17
Peak Flow to Be Disinfected	(mgd)	• 0.740	Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	49.5
Minimum Chlorine Contact Volume SO 007	(Mgal)		Minimum Chlorine Contact Volume	(mgd)	22
Treatment Unit Capacity			CSO 011	(Mgal)	00
Underflow Pumping Capacity	(mgd) (mgd)	4.167	Treatment Unit Capacity	(mgd)	2.1
Grit Removal Capacity	(mgd)	0.417		(mgd)	0.2
nterceptor Flow Pump	(mgd)	1.628	Grit Removal Capacity Interceptor Flow Pump	(mgd)	0 2
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	37.461	Coarse Screening Capacity	(mgd)	0.2
Minimum Chlorine Contact Volume	(mgd)	3 750	Peak Flow to Be Disinfected	(mgd) (mgd)	14.4
Contact Volume	(Mgal)	0.039	Minimum Chlorine Contact Volume	(mgd)	1.90
ubrey Ejector Station			CSO 010		00.
Exist. Peak Flow Capacity	(mgd)	0.072	Treatment Unit Capacity Underflow Pumping Capacity	(mgd)	
Proposed Peak Flow Capacity	(mgd)	0.072	Grit Removal Capacity	(mgd)	
Replace Force Main oth Pump Station		NO	Interceptor Flow Pump	(mgd)	
Exist Peak Flow Capacity	1-1-1		Coarse Screening Capacity	(mgd) (mgd)	0.5
imit Peak Flow to	(mgd) (mgd)	0.259	Peak Flow to Be Disinfected	(mgd)	2 68
Replace Force Main	(iiigu/	0.259 NO	Minimum Chlorine Contact Volume	(mgd)	.
nner Pump Station		NO.	North Pump Station		
xist. Peak Flow Capacity	(mgd)	2.448	Exist. Peak Flow Capacity Proposed Peak Flow Capacity	(mgd)	0 46
roposed Peak Flow Capacity assting Force Main Size	(mgd)	3.505	Exist. Force Main Size	(mgd)	0.74
orce Main Peak Velocity	(in) (ft/s)	12	Force Main Peak Velocity	(in) (fi/s)	
eplace Force Main	(103)	ND 6.9	Replace Force Main	12.7	NO 3
messen Pump Station			Donora Pump Station		
xist. Peak Flow Capacity	(mgd)		Existing Peak Flow Capacity		
eak Flow in Exist. Force Main	(mgd)	9.338	Increase Pump Station Peak Flow Capacity to	(mgd)	3 60
xisting Force Main Size	(mgd)	7.030	reak Flow in Exist Force Main	(mgd)	4.22
xist. Force Main Velocity at Peak Flow	(in) (fVs)	16 [Existing Force Main Size	(in)	4 22
eplace Exist. Force Main	(103)	YES 103	Exist Force Main Velocity at Peak Flow	(ft/s)	1
III.		165	Replace Exist. Force Main		NO
ellite Treatment at Wastewater Treatment	Plant				
nstruct Headworks Flow Separation Facility (nstruct High Rate Clarification and Disinfect	Channel	13.563			
reatment Unit Capacity					
Inderflow Pumping Capacity	(mgd) (mgd)	2.441			
irit Removal Capacity	(mgd)	0 244			
eak Flow to Be Disinfected	(mgd)	2.197			
finimum Chlorine Contact Volume	(Mgal)	0.023			

Mon Valley Sewage Authority Long Term Control Plan Table 3-21 Monessen Sewershed Summary of Proposed Facilities and System Upgrades Alternative 1B-6b

Main CSO Control Alternative CSO Control Stategy CSO Disinfection Alternative CSO Control Sub-Alternative Level of CSO Control	B 6		ge That is Diverted from the Interceptor and Receive Capture in Monessen Sewershed and y Clarification at Wastewater Teatment Blanch	es Satellite Treatment	
Monesse	n Sewershed				
		Level of CSO Control	D ₀	nora Sewershed	
		b-	7		Level of CSO Control b-
Facility		85% Annual Capture			85% Annual
CSO 003	Ť -	Captalo	CSO 017		Capture
Treatment Unit Capacity	(mgd)		Treatment Unit Capacity		
Underflow Pumping Capacity Grit Removal Capacity	(mgd)		Underflow Pumping Capacity	(mgd)	· · ·
Interceptor Flow Pumping Capacity	(mgd) (mgd)	· · · · · · · · · · · · · · · · · · ·	Grit Removal Capacity	(mgd)	
Coarse Screening Capacity	(mgd)	43.90	Interceptor Flow Pumping Capacity	(mgd)	
Peak Flow to Be Disinfected	(mgd)	43.50	4 Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	
Minimum Chlorine Contact Volume CSO 804	(Mgal)		Minimum Chlorine Contact Volume	(mgd) (Mgal)	
Treatment Unit Capacity	(0		CSO 016	(Wigal)	· · · · · · · · · · · · · · · · · · ·
Underflow Pumping Capacity	(mgd) (mgd)		Treatment Unit Capacity	(mgd)	3
Uni Removal Capacity	(mgd)		Underflow Pumping Capacity Grit Removal Capacity	(mgd)	
Interceptor Flow Pump	(mgd)	· · · · · ·	Interceptor Flow Pumping Canacity	(mgd)	0
Coarse Screening Capacity Peak Flow to Be Disinfected	(mgd)	16.331	Coarse Screening Capacity	(mgd)	0
Minimum Chlorine Contact Volume	(mgd) (Mgal)		Peak Flow to Be Disinfected	(mgd)	
CSO 005	(11(241)		Minimum Chlorine Contact Volume CSO 014	(Mgal)	0.0
Treatment Unit Capacity	(mgd)		CSO 014 Treatment Unit Capacity		0.0
Underflow Pumping Capacity	(mgd)		Underflow Pumping Capacity	(mgd)	2
Grit Removal Capacity Interceptor Flow Pump	(mgd)		Unit Kemoval Capacity	(mgd)	0.
Coarse Screening Capacity	(mgd) (mgd)		Interceptor Flow Pomp	(mgd)	0
Peak Flow to Be Disinfected	(mgd)	6.988	Capacity	(mgd)	1.
Minimum Chlorine Contact Volume	(Mgal)		Peak Flow to Be Disinfected Minimum Chlorine Contact Volume	(mgd)	2.
CSO 607 Treatment Unit Capacity			CSO 011	(Mgai)	0.0
Underflow Pumping Capacity	(mgd)	4.167		(mgd)	
Grit Removal Capacity	(mgd) (mgd)	0 417	Underflow Pumping Capacity	(mgd)	2.
Interceptor Flow Pump	(mgd)	0.417	Grit Removal Capacity	(mgd)	0.:
Coarse Screening Capacity	(mgd)		Interceptor Flow Pump Coarse Screening Capacity	(mgd)	0.
Peak Flow to Be Disinfected Minimum Chlorine Contact Volume	(mgd)	3.750	Peak Flow to Be Disinfected	(mgd)	14 4
Charle Contact volume	(Mgal)	0 039	Minimum Chlorine Contact Volume	(mgd)	0.02
ubrey Ejector Station	 		CSO 010	(,)	0.0.
Exist. Peak Flow Capacity	(mgd)	0 072	Treatment Unit Capacity	(mgd)	
Proposed Peak Flow Capacity	(mgd)	0.072	Underflow Pumping Capacity Gnt Removal Capacity	(mgd)	
Replace Force Main outh Pump Station		NO	Interceptor Flow Pump	(mgd)	
Exist Peak Flow Capacity			Coarse Screening Capacity	(mgd) (mgd)	0.5
Limit Peak Flow to	(mgd) (mgd)	0 259	Peak Flow to Be Disinfected	(mgd)	26
Replace Force Main	(, 0)	0.259 NO	Minimum Chlorine Contact Volume	(mgd)	
onner Pump Station		110	North Pump Station Exist. Peak Flow Capacity		
roposed Peak Flow Capacity	(mgd)	2.448	Proposed Peak Flow Capacity	(mgd)	0.4
ixisting Force Main Size	(mgd) (in)	3.505	Exist. Force Main Size	(mgd) (in)	0.74
orce Main Peak Velocity	(ft/s)	12	Force Main Peak Velocity	(ft/s)	1
Replace Force Main	· · · · · · ·	NO 6.9	Replace Force Main		NO
onessen Pump Station			Donora Pump Station	-	
ixist. Peak Flow Capacity acrease Pump Station Peak Flow Capacity to	(mgd)	4.982	Existing Peak Flow Capacity	(mgd)	
eak Flow in Exist. Force Main	(mgd) (mgd)	9.338	Increase Pump Station Peak Flow Canacity to	(mgd)	3.60
xisting Force Main Size	(in)	9.338	Peak Flow in Exist Force Main	(mgd)	4.22
sist. Force Main Velocity at Peak Flow	(fl/s)	10.3	Existing Force Main Size Exist Force Main Velocity at Peak Flow	(in)	4 230
eplace Exist. Force Main		YES	Replace Exist. Force Main	(ft/s)	4.7
ellite Treatment at Wastewater Treatment P	ant				NO
instruct Headworks Flow Separation Facility (mi	rd)	19.65			
onstruct Conventional Primary		13.563			
arification and Disinfection Facilities					
Freatment Unit Capacity	(mgd)	2.197			
Inderflow Pumping Capacity Urit Removal Capacity	(mgd)	NA NA			
eak Flow to Be Disinfected	(mgd)	NA NA			
dinimum Chlorine Contact Volume	(mgd) (Mgal)	2.197 0.023			

Table 3-22

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-22
Summary of Proposed Pacilities and System Upgrades
Alternative IIA

Main CSO Control Alternative Complete Sewer Separation Alternative

Complete Sewer Separation
 Wastewater Treatment Plant Expansion

Monessen Sewershed	ershed		Donora Serverehed	hed	
		Pronoced	The state of the s		
Facility		Upgrades	Facility		Proposed
Aubrey Ejector Station					Operates
Exist. Peak Flow Capacity	(mgd)	0.072	0.072 North Pinns Station		
Proposed Peak Flow Capacity	(pau)	0.077	Raise Dank Class Consists		
Replace Force Main		ON		(mgd)	0.468
South Pump Station			Frier Gorne Main City	(mga)	0.818
Exist. Peak Flow Capacity	(med)	0.250	┸	(ut)	8
Limit Peak Flow to	(mgd)	0.259		(IVS)	3.6
Replace Force Main		ON			02
Donner Pump Station			Donorn Pumn Station		
Exist. Peak Flow Capacity	(med)	2 448	Frieing Deat Glan Commission	-	
Proposed Peak Flow Capacity	(mgd)	3.111	Increase Pluma Station Beat Glass	(mgm)	3.600
Existing Force Main Size	(a)	12	Pant Glow in Coope Man-	(mga)	. 4.737
Force Main Peak Velocity	(fus)	1.9	Respine Come Main Cin	(mga)	4.737
Replace Force Main		CN	Gyer Borne Main Valoria or 11 11 12	(iii)	91
			Deniare Lores Man	(sns)	5.2
Monessen Pump Station				1	S
Exist. Peak Flow Capacity	(mary)	1000			
Increase Pump Station Peak Flow Capacity to	(med)	0 100			
Peak Flow to Force Main	(mgd)	061.6			
Existing Force Main Size	(t1)	91			
Exist. Force Main Velocity at Peak Flow	(fVs)	10.2			
Replace Exist. Force Main		YES			
Proposed Force Main Size	(in)	20			
Proposed Force Main Velocity at Peak Flow	(fVs)	6.5			
		300000000000000000000000000000000000000			
Wastewater Treatment Plant					
Existing WWTP Peak Capacity	(pgw)	12.000			
Proposed WWTP Peak Capacity	(pgm)	14.560			
					-

Mon Valley Sewage Authority
Long Term Control Plan
Table 3-23
Summary of Proposed Pacilities and System Upgrades
Alternative IIB

Main CSO Control Alternative Complete Sewer Separation Alternative

Complete Sewer Separation
 Main Pump Station Equalization Tanks

Monessen Sewershed			S Society C		
		December	Lonora Sewershed	sped	
Facility		Upgrades	- E	_	Proposed
Aubrey Elector Station			Amon .		Upgrades
Exist. Peak Flow Capacity	(mgd)	0.072	0.072 North Parms Starton		
Proposed Peak Flow Capacity	(pgu)	0.072	Exist. Peak Flow Canacity	(hour)	257.0
Replace Force Main		NO	Proposed Peak Flow Canacity	(pam)	0.468
South Pump Station			Exist Force Main Size	(ngm)	0.818
Exist. Peak Flow Capacity	(mgd)	0.259	Force Main Peak Velocity	(111)	20 0
Limit Peak Flow to	(mgd)	0.259	Replace Force Main	(car)	3.0
Replace Force Main		ON			NO.
Donner Pump Station			Donora Puma Stution		
Exist. Peak Flow Capacity	(pam)	2 448	Reigner Death River Connects.		
Proposed Peak Flow	(pau)	1111	Increase Diana Conton Dark Cl.	(DELLI)	3.600
Existing Force Main Size	(10)	12	Peak Flow in Force Main	(mga)	4.737
Force Main Peak Velocity	(ft/s)	6.1	Evision Deep Mars Co.	(mga)	3.865
Replace Force Main		CN	בייות בייות בייות אותום אובב	(an)	16
			Exist Force Main Velocity at Peak How	(tvs)	4.3
Monecum Prema Clarica	Ī		Replace Force Main		ON.
The state of the s					
Exist, Peak Flow Capacity	(pgu)	4.982	4.982 Donora Puma Station EO Tank		
Increase Pump Station Peak Flow Capacity to	(mgd)	9.190		Mani	0.00
Peak Flow in Force Main	(mgd)	7.501		in Grant	7/0.0
Existing Force Main Size	(iii)	16			
Exist. Force Main Velocity at Peak Flow	(fVs)	8.3			
Replace Exist. Force Main		ON			
Proposed Force Main Size	(10)	AN.			
Proposed Force Main Velocity at Peak Flow	(ft/s)	NA AN			
Monessen Pump Station EQ Tank					
Monessen PS EQ Tank Vol. (min)	(Mgal)	1.689			
	-				-

Mon Valley Sewage Authority Long Term Control Plan Table 3-24 Summary of Probable Opinions of Project Costs

Cost Table	Reference Table 3-25 Table 3-26	Table 3-27	Table 3-28	Table 3-29	Table 3.30	OC-COURT	Table 3-31	Table 3-32		Table 3-33	T-11.	1 able 3-34	Table 3-35
	61.2	61.2	61.7	61.2	61.2		34.8	35.4	<u>-</u>	35.7	3 99	Con	63.9
Range of Project Costs	55.4 to \$ 54.9 to \$	9	to s	20	0		٧,	S		5	-		\$
Range of	55.4	0.00	44.0	43.5	43.6					1			
-	w w v	, -	S	S	\$	+				+	-		
CSO Control Sub-Alternative or Complete Sewer Separation Alternative	Equalization Tanks High Rate Clarification at WWTP Conventional Clarification at WWTP		Equalization Tanks	High Rate Clarification at WWTP	Conventional Clarification at WWTP	Maximize Conveyance at 85% Capture in	Monessen Sewershed-Equalization Tanks Maximize Conveyance at 85% Capture in Monessen Sewershed-High Rage Clarification	At WWIP Maximize Conveyance at 85% Capture in	Monessen Sewershed-Conventional		WWTP Expansion	Monessen and Donora Pump Station	Lydall catton 1 anks
CSO Disinfection Alternative	Disintect All Combined Sewage not Entering Interceptor Disinfect All Combined Sewage not Entering Interceptor Disinfect All Combined Sewage not Entering Interceptor	Disinfect Only Combined Sewage Receiving High Rate Clarification	Disinfect Only Combined Sewage Receiving High Rate	Disinfect Only Combined Sewage Receiving High Rate Clarification		Disinfect Only Combined Sewage Receiving High Rate Clarification	Disinfect Only Combined Sewage Receiving High Rate	Clathication	Usunect Only Combined Sewage Receiving High Rate Clarification		NA	NA	
CSO Control Strategy Satellite Treatment Facilities	Satellite Treatment Facilities	Satellite Treatment Facilities	Satellite Treatment Facilities	Satellite Treatment Facilities		Satellite Treatment Facilities	Satellite Treatment Beatising	Callina I market	Satellite Treatment Facilities	A'X		NA	
	Partial Sewer Separation Partial Sewer Separation	Partial Sewer Separation	Partial Sewer Separation	Partial Sewer Separation		Partial Sewer Separation	Partial Sewer Separation		Partial Sewer Separation	Complete Sewer Separation		Complete Sewer Separation	
CSO Control Alternative IA-1	IA-2	IB-1	IB-2	IB-3		IB-4b	IB-5b		IB-69	VII	£		

Notes: (1) Costs are presented in 2007 dollars.

Loug Term Copyrights
Table 3.93
CSO Copyred Alerman of Income IA.1

Man CSO Count Alemance	-	Paul Sener Separation	HOME					
CSO Distriction Aleranics CSO Council Sub Aleranics Level of USO Council	< 4	Satellite Treathe Distibled All Con Monesten and Du	Sattifite Treatment Factines in Selected CSO Lox anors. Uninfect All Combined Sewage That is Diversed from the Monesten and Dumora Phanp Station Equalication Steray.	Souther Transpass Facilises as Selected (2501-xx anons). Dissubers Alf Combined Sewape That is Diversed from the Baen epico. Monecisea and Dispos Plump Science Equalit atom Sterape Tails.				
Collection System								
Monessen Scheisked Azza				Dointe Sewersheel Area				
Sub Sewershed Area	Sewer Separation	-						
	Cost	Con	Cost	Sub Sewershed Asta	Sewer Separation	Upprate	Total	
	663,400	2 000	٠.		\$ 90.400	\$ COM	Con	Notes
1		3 50,000	-	77	\$ 2.097,010	2	\$ 2097 Ded	
\$ 100		\$ 5 000	_		\$ 57,300	~	\$ 57,300	
1, 10, 18		\$ 475 DOL	2		72.600	\$	\$ 72.6FtU	
MIGI	18 300	5 0	\$ 38.300		3.48.1641		11.500	
Maneasen Collection System Subsenal		-			2	5 (0)		Stortin Sewer Construction to Delsacato Drive
			2 13.600	10	_	900		
				11	\$ 143,800	~	S 142 Eta)	
Contagant System				540	2	\$ 5,000	_	
Scweisbed Area			Total Cox	-	~	~		
Monessen			3 750 000		3 340 300		\$ 140 100	
(Nucka			\$ 125,000			\$ 5001	_	
C. BRITCHARGE STREET SUSPICIOL			\$ 875,000	10 657 6	7	5 314,43	_	
				Donnes Colles		4	1	
Collection and Conveyance System Construction Subsessed	Hon Nubsected						\$ 3,110.Hz	
Pump Station Upgrades	1	3,214,000						
Monessen Sewershed Area				Damora Sewershed Area				
	Upgrade Cost	,		Diens Course				
Aubre's Ejecture	3			North Punn Station	Captack Con			
Douger Parsp Station 5	15,000			Donora Pump Stepan	\$ 186,000			
Munessen Punp Station 5	358,000							
Moneyacti Patript Stations Subjectal \$	431,0ml	_		Ducora Purau Stations Subsout	111.000			
Paus Station Upgrade Construction Subtotal	_	\$ 664,808						
Equalization Tauks								
Moderson Panyi Staney EO Lark	41.3 faut							
	POOR'S A			Ponora Purp Stateon EQ Task	000'686 5			
Equation Tanks Construction Subjects		5 901,666						
	c							
				CSO County Alternative				
Cub. Countries and	-	IA Is	LA Ib	IA IS	IA s.d			
BANC BARRIES AT ANY	(W)	The State of	1		'4 Capt Knee	Audual Overflows		
Moneagn		IOU'S LEPHINE	BY'A Capture	4-6 Assessi Overflaws	of Curve	Knee of Curve		
	003	\$ 4.R01080	\$ 4,369,000	5				
	HDO	3,627,000	_	_				
7-74-7H	500	1,774,000	2	2				
Monesseu-Subsoul	3	3.524,000	\$ 5,191,000	2	L			
Douora	Ī	13,730,000		15 727,000	\$ 15,19,000 \$	15.428 Oct.		
17	017	1.815.000	\$ 6.16.00s					
16	Olb	\$ 1,879,000	Ļ			1,787,009		
14+140	014	1 5,940,000	\$ 5,181,000	_	3 3,889,000 \$	3,924,000		
01111	010	\$ 4,061,000	\$ 4,001,000	2		3,539 (80)		
Denora-Subtoral	010	1,568,000	\$ 521.000	1,661000		1 635 (101		
	1	17,283,IAU	3 14,199,000	5 17.199.0xx	\$ 16.991.000	16.9% CNN		
Satellite Treatment Facility Construction Subtotal	late 1	\$ 32,995,080	\$ 28.947.080		_			
			" Jr	32,426,000	\$ 32,230,000 \$	12,354,000		
CSO Control Alternative		IA Ia	LA-1b	Suggest of Contraction and Project Costs	ert Casts			
Constituence of the of Courses		\$ 12.784.000	35,751,000	19,715,000	T MAID ON O	IA it		
Project Count (35% of Countraction Substant)		3 7,957,000 \$		1 7,943,030	S 7.804.000 S	1 6 10 000		
		13,924,0001	12 51 5 (000 5	13.900,000		13,700,000		
Total Project Cost	ľ	\$ 61.665.088 5	2 64 41.1 000 0					
		T. Company	1	090'835'19	\$ 00.150.000 \$	aB 672 B80		

And are personnel to Design to the

Lang Terra Crawel Plan Lable 3:30 1 SO Cumin Akenganye 14-2

Main CSO Courtel Attenuario CNO Courtel Strategy	-	Partiel Sewer Separation	pend					
CSO Dumberson Abernative CSO Control Sub Abertanive	< 11	District All County	r Kitules & Scheled (ned Sewage That is I: 100 f-schines & Wage	nweine ir zamen freihieß is Seferio (SOLL, anger Dissible All Cembrico Sowage That is Inverted him the labered no High Rate Citation son the titles is Water and Treumen Price				
Care of Caro Challos	9.6							
Collection System Minerises Severabed Area								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Dumura Sewershed Area				
	Sewer Separation Cont	Upgrade	Tural	Sub Sewershed Area	Schot Sepandos	Uppiata	loal	
	1,000,000	<u>"</u>	2	72	2 90 40b	Cost	NOU	Notes
		2,000		21	\$ 2,097,040		5 2 (M2 DE4)	
*	2	\$ 5,000	\$ 5000	22	\$ 57,100		\$ 57,100	
7, 74, 78		\$ 475,000	2		72,600	-	\$ 72,600	
MIGI	18,300		\$ 18,300	D213	\$ 248 100		31,800	
Monesten Collection System Subnest			. 118 440	17	2	\$ 3,000		Scotti Sewer C Distribution to Detsundro Preve
			ar ar ar ar	10		\$ 5,000	_	
Chargeance System				140	\$ 100,040	2000	\$ 142,600	
Sewershed Area				7	~	\$ 5000		
Regiscatori			35000		S ND KK		\$ 340,90	
Contraction			\$ 125,000			5000		
A STATE OF THE PROPERTY OF THE				10, D123		3 (44)	3 000	
				DOMAIN Collection System Subsocial			\$ 3.110,300	
Ledection and Conveyance System Communication Subserval Punsa Station Upgrades	ruction Subserut	\$ 5,124,000						
Mouesses Sewented Area				Donota Sewershred Area				
Things Station	Upprade Cox			Parko Sistem	The state of the s			
Swell Pung Station	36 0003		īei	North Pump Stateon	\$ 50,000			
Donner Pump Stations 5	50,000		-1,	Doades Pump Station	\$ 187.000			
Monascu Dana Scatton	350,000		-					
The state of the s				Dotasm Pump Stallogs-Subtotal	\$ 217,000			
Paring Station Upgrade Construction Selectal	Hal	\$ 679,990						
Table California description in Land California 1875	imen Pacifics		-					
High Rate Charlication Lacinson	374,000							
WWTP Satelbie Treatment Facilities Construction Subtotal	traction Subtetal	\$ 574,000						
c otter nom System Salethie Treatment Farinder	letter							
				CSO Control Alternative				
Sub-Sewerated Area	183	2	14 15	IA-IA	[A 1d	IA-Ic		
	3	100% Capture	85% Capture	4-6 Agusti Overflows	* Capt. Nace	Aunual Overflows		
Rate State	100					VDCC OF LAINE		
7	100	4,803,000 \$	4,369,000 \$	1,640,000	\$ 1473,000 \$	4,527,000		
3	100	1,774 000 \$	1.790 000 \$	3,794,000	3 020,000 \$	3.616,DuO		
7+74-78	007	\$ 5.524,000 \$	5, 693 (20)	000,54 6.1	ı	1,911,000		
Monetaen-Subject		11,730,000 \$	14.763,000	15,727,000 \$	15.239.000 \$	5,374,000		
13	017	1 115 000 4	414 000 4		Н	000000000000000000000000000000000000000		
16	016	3.879,000 \$	3.859.000 5	1,787,000	1	000,117,1		
14-140	914	\$ 940,004 \$	5.182,000 \$	5 674 000 s 7 8 8	ł	3.924 (0.0)		
200	011	4.063.000 \$	4,001,000 \$	4.045.000	Į	0.319 P. C.C.		
Ponera-Subsoral		2 266 000 5	\$ 000.158	1.663.000 \$	1,661,000 \$			
		C CHILDREN	14 199 1000 \$	17,199,000 \$	16.991,000 \$	=		
Satelifte Treatment Facility Construction Subtetal	bietal	32,995,880 8	28,962,860 \$	0 5 32.926.000 5 32.236.000 c	32,238,888 5	17 15 400		
SO Coatrol Algorative			So	manary of Construction and Project	Costs			
DRIFING HOST Subsocial		39,463,000 \$	15 430 100 6	14-3c	IA-2d	IA:		
Contagency (20% of Construction Suboral)		7,893,000 \$	7.036,000 \$	7.879.000	3 628 000 3	38.822,000		
The control of the Control of the Substitution		13.812.000 \$	12,401,000 \$	13,788,000 \$	11.544.000 \$			
Total Project Cost	5	41,168,905 \$	54.917.000 €	A 040 (28)				
				c i navitarira	59.982,000 \$	69.174.000		

Costs are presented in 2007 dealists

Mings (1) Cours are presented in 2007 declars

Aldo Vales San age Antionis, Long Terra Committee. Table 5.37 CSO Committee IA.1 Diction of Fronties (C. Guissiana and Propert Coss.)

Main CSO Control Attenuative CSO County Seruegy CSO United Law A Merinative A CSO COLLEGE AND	Pad Sed Stat	nal Sewar Separa tilde Treatment F merci All Conde	tron makines ne Selectoriè and Sewage That is E	Parini Sewar Sepantapa Solelike Trestineur I kashira ni Seleciel CSO Laxaiton Danatra Alf Confinenci Sewage That it Darental trast the Inservance				
Level of CSO Country	(0	i Cuttonal Pratar	Clanfication of Wa	dender Treatment Plans				
Caltertion System Mesessen Severaled Area								
Sub Sewerihed Ares Sewer Separation	1001	Upgrade	Total	Color of the Color				
Corl		Can	Con	PMV BWEINER VIET	Sewer Separation		Total	
	665 300 1		S		1	Cali	Cost	Norr
		\$ 000			1 1007.004		20,400	
		30,000	1 59,000		\$7,100		00011007	
7,7A,718		TO THE TOTAL			\$ 72.60	2 0	33 400	
5	18 100 1	47,000		=	\$ 31,800	1	11 ftm	
M101	-	ľ	S SE HOO	0212	3 248,160	1	1 248,100	Starts Sewer Construction to Defendent Process
Minnessen Collection System-Substated			1,718,600	~	_		1 5,000	
					4	\$ 5,000	5	
				071	4 - 1(K)		\$ 142,839	
Carriera System						8 4000	,,	
SCACHICA Area			TotalCost			3,000	_	
Complete			\$ 710,000	110	177.004			
Capacitance Section Cultured			\$ 125,000		_	0.00	3,000	
			1 175,000	10 DI23		2		
CoMertion and Conneyance System Construction Subsocial	^	5,224,000		The state of the s			3 3 10 300	
Party Statem Upgrades								
Munester Sewerthed Area								
				Donois Sewarshed Asea				
States Category								
Aubrey Fiector				Pamp Station	Upprede Cost			
	25,000			North Passp Station	3 50 005			
	50 000			Account a version of decions	3 187,010			
Muhesaea Panto Statua	358 000		-					
-	413,000		1	Chinges Purep Stations-Subsaral	\$ 217,000			
Pump Statten Upgrade Construction Subtesal	w	678.990						
Wastewater Treatment Plant Solelike Treatment Facilities								
west Presery Clerification								
ecisters \$	611.00 0							
WWTP Satellite Treatment Fuelilities Construction Subtestal	•	613,000						
Collection System Satelitte Treatment Facilities								
	-							
_		IA de	14.14	CSO Control Abernative				
Sub-Sewershed Argo	_	_	:	31.41	The Free	A Ic		
Montree	300	1004 Copture	IS's Capture	4 th Amuel Overflows	of Curve	Anne of Curve		
		000000			П			
7		1 677 000 3	4.167.000 \$	4 640,000	П	4,527,000		
\$		1.774 000 \$	2 AGR GOD 8	3.794.000 \$	\$ 1,620,000 \$			
	_	5.524 000 3	\$ 101 000 5	1.730.003	1			
dutal		15,730,000 \$	14.761.000 S	1,783,180	1	5,374,000		
				1000				
17 017	s	1,815,000 \$	\$ 000,060	1 317 000				
		3.679,000 \$	3 159,000 \$	100007				
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		4.063,000 \$	4.001.000 \$	4 04 5 000				
photo	_	1,561,000 \$	321 000 1	000 1991	\$ 1.663,000	\$ 1,622,000		
		17.203.DUU 5	14.199,000 \$	17.199,000	\$ 16.991 0101			
Salelite Treatment Facility Construction Subjectal	so.	32,995,000 \$	28.962.0	2 000				
	-		0000	12,728,000	5 32,230,000	32,354,060		
CSO Control Alternative		1A 3a	IA. Ib	White of Constitution and Frage	ct Costs	П		
Construction Subtotal		39.102.000 1	15 460 (1	20.41	IA-30	IA 3		
mingency (20% of Countruction Subtend)		7 900 0001 \$	7.094 DE	7 682 000	3 717.000			
Uptci Custs (33% of Construction Subsect)		13.826,000 \$	12,414.00	UNIT YES	2 747.000	7,772,000		
				Company of the Compan	DYNING .			
		61,228,000 \$	54.977.00	61,122,860 S	5 68,842,000 \$	000,13,000		
			1	006727119				

Mac Vales by mage Audients
I or I first contact Pass
Table 1 First Contact Pass
Cit Control August III:
(history of Firstands Contact and Physics Cont.)

Mate CSO Control Abertanne	Partial Sewer Separation	2 per estant					
CSO Domention and Parameter CSO Counted Statements 14 CSO Counted Sub-Abermane 1 Level of CSO Counted Statements 1 Level of CSO Counted Statem	Sache Tiean Dismert Only Moterisch and	Sachle Treameir Farison in Schene (2011 na aiom Distabri (taly Combaird Schage Tha in Discrete from Moterison and Doesn's Pump School Equals Anna Stoca	Specials: The amen's Fusions in Selection CNO I in a moon Disasters (Sulv.) Combined See age. Than in Direction throw the Batterpoin and Moontest Sulve Bill I transment Moontest and Doornes During Science Equalations Stocking Tacks	Certical Sae Me Treatmen			
Collection System							
Makinen Seu criked Area			Donnes Sewerning Area				
Sub Sewerstand Area	Chgrade	Total					
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				1 1 CONTRACT		90,400	
7		S I I I		\$ 57 100		1 D/1/00)	
7, 7A, 7H s				2,611		57,500	
~	39.100		473,100	31.600		1000	
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				~	~	CAN	
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The state of the s		5 875,000			S DAD S	\$ (00.0)	
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Collection and Contragator System Construction Soluted	\$ 5,224,800	000				3 110,100	
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			District Sewershed Ages	,			
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	9		Device of the control	5 163,040			
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			Parava Parapi Stations Subsocal	\$ 211 (40)			
r weep seation Opprave Countriction habited	\$ 664,000	00					
Fqualitation Tanks							
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Equalitation (Tasks Construction Subjects)	000'186 \$	00					
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_	9		CSO Count Alterative				
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	109T Current	6644 41		" Capi Kiner	Append Overflower		
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(00)	\$ 4,605,00	_					
007	1,627,0kg				3,493,040		
7+74-78	\$ 1.774 000				3.170.0x0		
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Danata	15,740,007	1 11,450,000 5	14.577,000 \$	1 \$ 12.417.000 \$	4.650 (8.0)		
17	2000			l	13.48 U.D.		
	1 879 feet	1			1 454 (481)		
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	\$ 4.063 (30)				4 146,000		
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	17,265 (x)()				1.479 (810)		
Satelifte Treatment Facility Construction Subtoxal	12 005 000				DEST CONTROL		
		77,010,000	~,	\$ 24.511,000 \$	27,118,049		
CSO Constral Alternative	21 @		Numbery of	test Costs			
TUCHU SHORISI	\$ 39,784,000		3) (1)	- 1	Its te		
LANGETTE VIEW CONTRACTION STATEMENT	\$ 7,957 (10) \$	\$ 5.660 CICU	3 3214 041 5	5 99,300,000 S	34 107,003		
TRIOGRAM STORY	1 17,924,000	ш	~	1	6.621.000		
Total Project Cent	41 1/4 000	-			11,937,000		
	Wighten W	3 41.019,000	\$ 56.518,000 \$	\$ 51.415.000 \$	C3 84.6 days		
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Who Voiles See age Audions, Long Tene Castern Paul Table 4, an CAO Courses Afternative III-2 Opinion of Propolity Courtivation and Project (var.

1 Comp. Neuropienes 1 Comp. Neuropie Verification 1 Comp. Neuropie 1	CSO COMINS Sub-Alternative	District Only Con	FACINITY ALDERER ABITED SEWAYE TAN HIGH FACILITY OF W.	Danadret (Daly Consisted Sawage Than to Describe ASA) assumes. Iligh Rase Charles asson is actions as Waden are Treatment Plan	receives Saleline Treation	202		
1	Collection 53 sters							
1	Morester Sewershed Area			Donnes Sewershed Area				
1	_	Upprak	Toxal	Sub-Sewershed Area	County of the Co			
1	П		Cust To		Cou		THE COLUMN	
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1	3	\$ 5000	_		\$ 57,100		\$ 2007,01K	
1	7B S	_			5 72,600		3 37.100	
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CSG 100 10 10 10 10 10 10	WWTF Salellite Treatment Facilities Construction Subters; \$ Collection System Salellite Treatment Parliable.	574,660						
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S DANSITTE & LONGINGE	S S S S S S S S S S S S S S S S S S S	61,168,680 \$	43,521,060 \$	56 811 840				
	Netcs.					52,165,000		
I case presented to 2407 dollars	I CORE AT PRESENCE IN 2007 BOILERS							

Long Terral Coulon Plan
Table 1-30
CSO Countral Asternative IB-3
Ususan of Prohibits Countral and III-3

CSO Daukerien Akengine CSO Daukerien Akengine CSO Caugal Sub-Akengine	× -	Satellite Treatment Figure Desirated Only Combined	Facilities at Selected in Mainted Sewage That is	Amerikan dan Septemberan Sebester Ostot na amaza Semilar teramental bizatean at Sebester Ostot na amaza Pontakes Only Casabiand Sewage Thas a Diverted from the Lakacepter and Receiver Sambar Transmission	ceiter, Sarellan Transmissi			
Level of CSO Cochol	3.5	THE PERSON NAMED IN COLUMN	uy Charteana Fali	ies al Wascwater Treatment Plan	100 Total 100 To			
Coortings 29 Steps								
Moreuch Secretard Area				Ehwoya Seweraled Area				
Sub Severaled Area Sewe	Sewer Separaton	Upgrade	Testal					
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				23	100 00		Cost	N
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7,7A 7H		1 130	_	01	17.11	1 3	1 57 340	
9	16 7281	3 475,(FIU	3 \$ 475 (03)			\$ 0	\$ 72,000	
N101			\$ 300		248 (81)	4	11.6.11	
THE PARTY OF THE PARTY STATES STATES STATES			1 311 640		2	S CONTRACTOR	248.100	Switte Sewert Countractual to Debaustra Drive
			Tradition of the last	92	~			
Conveyance System				071	142,500	1		
Sewershed Area						\$ 5,000	5,000	
Mourien			Total Cen		140 140	(47) 5		
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THOUGHT CANADAGA TO THE PARTY OF THE PARTY O			S 875 Day			S. S. S. S.		
				Date et a Collec		2	S. Calent	
Collections and Courtyante System Construction Solstotal	Hal	\$ 5,224,000					1 3,110,100	
Carry a Metro account of the community of the carry								
Moressen Sewesshed Area								
				Patenta Sewershed Area				
Marion Station	Hantada Can							
~				Parties Station	Uperade Cou			
Planter Parent Statem	25,000			North Puttap Station	\$ 50 (0.0)			
Monester Pump Station	10/01			- Antolia Publish Statish	3 107,000			
Measuren Pump Stations Subjectal	433 (41)							
Dame Applies Household			-	Norwall Pursp Stations Subjectal	1 217,0x0			
Water ater Transment Plant Safetie Treatment Facilities	2	\$ 6.78,000						
Cohermon Prayer Charles								
actions and annually to the same as	100174							
WWTP Satelite Treatment hacklides Combruction hubinital Collection System Satellite Treatment hacklides	Bital	9007 19						
Sub Science land Area	_	11 11	H Ib	CSO County Alternative				
130	Q	-	_		PI E	13 1c		
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(10)	-	4 805 DIXI	1001/001					
		3,627,000	2 760 000 \$	OUD GRA'S				
	-	1,774,000 \$	1,562,0xtc \$	NOW THE				
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		13.730,001	1 450,040 S	14,527,000	\$ 12.432.000 1	4 830,000		
	2	1.815 (00) 3	116 (19)		Н			
	~	3,879,000 \$	3.127.001 S	1.555,01U	_	1,515,010		
11+130		\$ 940.DK#) \$	3 445 (88) \$	1,010,000	۵,	3,442,000)		
		4.063.030	3,255,000 \$	1,549,000				
		1) 265 (III) S	138.000 \$	1,584,0001	\$ 1,541,000 \$			
Nate Milde Treatment Pacifile Camping Indian Sudden			ŀ	15,105,000	_	14 G70,0x0		
Tripping water and the second	1	32,995,000 \$	21,619,90d s	29.642.808 \$	34 611 000			
CSO Cantrol Alternative		111111		Supplementy of Cumuraction and Praised Cours	1 Cody	27,318,060		
oralituctions Subsocial	-	10 501 000 6	- 1	IN 3c	FB-17	E		
Shi the first (2021 of Countries last) Subsect als	~	7.900 (xx) \$	\$ 673,000 s	36,149,000 8		33.825 (00)		
The result of the control of the con	5	(3.9% 000 3	9,811,000 5	7,231 (010) 1		6.765,000		
Total Project Cost				12 (446), (100)	11,555,000 \$	1,833 (tx)		
	2	61,228,000 \$	41,587,000 5	1				

Long Ten, Cowage Authority
Long Ten, Compaid Plate
Table 3-31
CSO Control Alematice III 4h
Radon of Probable Communescentes and Strengton

CSO Coursed Strategy CSO Coursel Strategy CSO Coursel Strategy CSO Coursel State Alternative Use of Castical State Alternative Lavel of USO Castical	= = = = = = = = = = = = = = = = = = = =	Partial Sewer Separation Sateliste Treatment Facility Distribert Only Combined Martinare Conveygre at BVI Capture on an Avera	Partial Sower Separation Sackled Teatings of Eatings Sekered USO Lectural District Oxly Combined Sewage That is Diverted from Astribuse Computation at 83% Capture in Moseries See FVI Capture on an Avange Amail Bain	See Paril Sees Cytologies and See Paril Paril Paril Paril Paril Paril See Paril Pari	reives Satellate Treatment	dakzavon Siorage Tankı		
Culterthin System								
				Dynama Sewershed Area				
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	665,300	_		300	Cost	Cost	Cast	Second
		5	5.000 \$ 5.000		\$ 2007.00	2	Q	
		2		20	\$ 57,330		\$ 57,300	
7 7A, 7B		_	475.(ILI) \$ 475		5 72 Ca.k	5	- \$ 72,6/x)	
MIGI	18,340				3 348 1770		\$ 31,800	
Materies Colection System Subsaul		_			,		001) \$ 244,100	Starm Sewer Continuenta Debaratia Drive
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Cathornia Contact				071	142,800		, a	
Severaled Area							5,040 S S(R.O.	
Mousten			Tutal Cost		\$ 340.30m		١.	
Diama			1 176	000		2	5 (41) 5 5 (20)	
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				Donny Collect				
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		0.00,047	В					
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Momenton Pump Station EQ Tana \$	959,000			Personal Physics Courses T.O.T.				
Equalization Tanks Construction Substati		1 118 000	2	TENT D'2 Manuel de la company	389,000			
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				9 655				
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11+110	110		755,000	3	5			
10	010	50	\$ 138,000 \$	3				
Liotanie Subliotat		3	1 (C.16) OR	1				
Satellite Treatment bacility Contraction Subtetal	-		16 846 000					
				и.	2			
Construction Solution		NA	q+ (I)	NA NA	Jert Costs	17.7		
Distingering (20% of Construction Subasial)			\$ 23,588,000		2	V.	10	
Payers Costs (35% of Construction Substitute		2	\$ A 256 CHO					
Total Preject Cost	Ī						-	
***************************************	1		\$ 36,562,000	3				

THE COSTS are presented to 2007 dollar

CSO Desalection Alertains	- 25	Pattal Sewer Separation Satable Treatment Locals Dynafest Data Costs ment	Safaffee Treatment Lockmen of Selected CSO Lin alones Described Only Continued Selected CSO Lin alones	cotal CSO Learn	120				
Lavel of CSU County	- 4	Manuface Conve	Manuface Conveyance at \$52 Lapane in \$53. Capane in \$53. Capane in \$15.00 Average Animal Hays	Elire Ja Manersaea	Madaiber Conveyane et 1979, aante de meetre propiete descriptor als Herieras Sondher Frankeis. 1878 Capters on de Antage Amerika Hans.	eives Savellare Treateurs Disamon Lacetses at Wa	A Bechaler Treatment Mass		
Collection System				-					
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Sub-Sewezahad Area Sewer	School Separation	Desixte	100	7					
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MIGI	38 WE	-		8 300	0313	5 240 H	\$ 00	31 600	
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				B (300)	9	_	~	L	
						147 600		\$ 142,860	
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Sewershort Area			Total Cost				. 5	_	
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C. WHAT PEREZ STREET SUBSECUL			1 1011	5 (D.X.)	10,000		5.000		
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Collection and Conveyance System Campinglan Sub		, e 10 s der	i					\$ 3.110 Van	
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Desarr Punp Series	150,000			L'aotecta l'	onto Station	\$ IRECON			
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	137			Parate Pa	Physics Pump Stational Subtanal	\$ 231 (0)3	7		
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Pater Minte Upgrades Construction Subsects	**	1,100,000		_					
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High Rate Clarification Facalates S	0.16 (HID			_					
WWTP Satellite Treatment Facilities Construction Solutions Collection System Satellite Treatment Facilities	ditotal S	626,000							
	1	NA	40		CSO Central Alternative				
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	-						William Colored		
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			\$ 5.191.00	200					
District			5 5 186.00	\$ 00	-				
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110 01111			\$ 135,00u				1		
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	-		5 10 16J PH	\$ 00		-	-		
Satellite Treatment Facility Countrieston Subjects			\$ 14,046,000 \$						
CO Court Alexander				1	Summary of Construction and Project Con-		2		
Construction Subjects	-	NA	18.49	1 1	× 2	NA	NA		
AND STREET STORY OF CONTINUES SUBSESSION	-		21,966,110	9 .		-	3		
speci Couts (35% of Couplington Subsoul)			1 181 00				2		
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	1		\$ 37,147,000 \$	8 0					

1) Cotts are presented in 2017 slotte.

Long Terral Court of Year Lang Terral Court of Year Lang Leave Africantive (I) (I)

CSO Database Sanger	Station Separation Strategies Station Station Station Contract Character Conveyance # \$5''' Lepture on an Aver	cibies of Scheled C and Schage 1884 II in \$5'4 Copture in crage Annual Basis	inst bered yirlen be bullen at Mechal (SOLtaneau Dimatel Oby, Caraband Street E and in formal free the features and Rearten Saudher Treaters Little Character Services at \$150, Cape as a Meeting Serviced Courtemant Plants Chariteman I white area Treaters From LIV Upper on an Arraye, Annual Rico.	utives Satelbae Treatess Priesary Charlicascoo Fa	ub.	Ham	
Collection System							
			Dopera Sewreshed Area				
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	000	\$ 5000		\$ 2.097.00		OCT CA	
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9 9	1001241 8 and 11	5 475(03)		2 2 60		\$ 72,640	
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APPENDIX E
PNDI REVIEW RECEIPTS

1. PROJECT INFORMATION

Project Name: MVSA - Sat Fac 004
Date of review: 6/21/2013 2:53:05 PM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid

waste/Effluent, Wastewater treatment plant (construction, expansion or modification)

Project Area: 1.4 acres

County: **Westmoreland** Township/Municipality: **Monessen** Quadrangle Name: **MONONGAHELA** ~ ZIP Code: **15062**

Decimal Degrees: 40.161785 N, -79.879325 W

Degrees Minutes Seconds: 40° 9' 42.4" N, -79° 52' 45.6" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

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RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn?

Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

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PNDI Project Environmental Review Receipt

Project Search ID: 20130621409474

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

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5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 16801-4851 17105-8552 Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. NO Faxes Please

PA Fish and Boat Commission

Division of Environmental Services NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management 450 Robinson Lane, Bellefonte, PA. 16823-7437 Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie
Company/Business Name: Gannett Deminitor
Address: Forter Plana 3 601 Hol: Day Dr
City, State, Zip: PITTSUESA, PA 15220
Phone: (412) 927-5575 Fax: (412) 922-3717
Email: dsupple (0) + tret, com.

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

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1. PROJECT INFORMATION

Project Name: MVSA - Proposed location of Sat Fac 011 & Screening 010

Date of review: 6/19/2013 1:38:22 PM

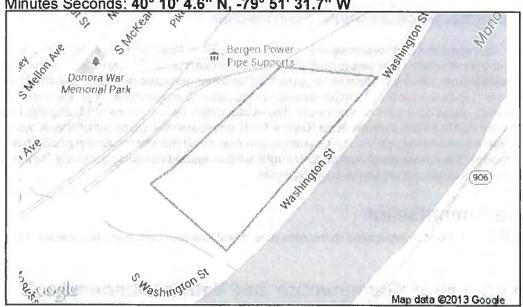
Project Category: Waste Transfer, Treatment, and Disposal, Liquid

waste/Effluent,Wastewater treatment plant (construction, expansion or modification)

Project Area: 15.1 acres

County: Washington Township/Municipality: Donora Quadrangle Name: DONORA ~ ZIP Code: 15033 Decimal Degrees: 40.167944 N, -79.858812 W

Degrees Minutes Seconds: 40° 10' 4.6" N, -79° 51' 31.7" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn? Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

PNDI Project Environmental Review Receipt

Project Search ID: 20130619409049

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552 Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA, 16823-7437 **NO Faxes Please**

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Supple	
Company/Business Name: Game H Flenka, Inc.	Ξ
Address: Foster Plaza 3, 601 Holiday Drive.	
City, State, Zip: Pittsburgh, PA 15220'	
Phone: (412) 922 - 5575 Fax: (412) 922-3717	_
Email: dsupple @gFnet.com	

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

1. PROJECT INFORMATION

Project Name: MVSA Sat 014

Date of review: 6/19/2013 1:49:27 PM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid

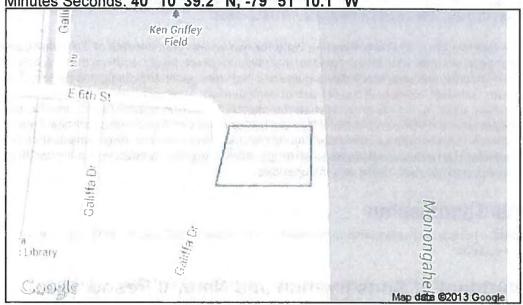
waste/Effluent, Wastewater treatment plant (construction, expansion or modification)

Project Area: 1.1 acres

County: Washington Township/Municipality: Donora Quadrangle Name: DONORA ~ ZIP Code: 15012,15033

Decimal Degrees: 40.177565 N, -79.852793 W

Degrees Minutes Seconds: 40° 10' 39.2" N, -79° 51' 10.1" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn?

Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Game Commission

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PA Department of Conservation and Natural Resources

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PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to <u>federally</u> listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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PNDI Project Environmental Review Receipt Project Search ID: 20130619409059

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

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PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 NO Faxes Please

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please.

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Dalahie Sania
Name: Debbie Sappie
Company/Business Name: Gannett Fleming, Inc
Address: Foster Plaza 3, 601 Holiday Drive
City, State, Zip: P: th-wah, PA 15220
Phone: (412) 922-5575 Fax: (412) 922-3717
Email: dsappie @ gFnet.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

1. PROJECT INFORMATION

Project Name: MVSA Sat 016

Date of review: 6/19/2013 1:59:10 PM

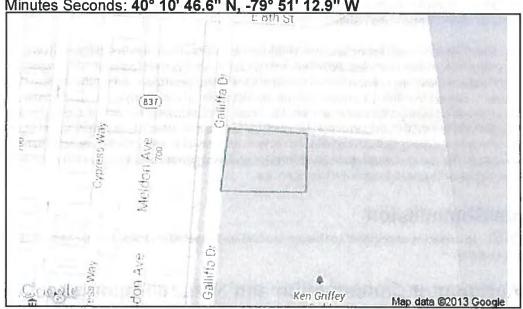
Project Category: Waste Transfer, Treatment, and Disposal, Liquid

waste/Effluent,Wastewater treatment plant (construction, expansion or modification)

Project Area: 1.1 acres

County: Washington Township/Municipality: Donora Quadrangle Name: DONORA ~ ZIP Code: 15033 Decimal Degrees: 40.179622 N, -79.853571 W

Degrees Minutes Seconds: 40° 10' 46.6" N, -79° 51' 12.9" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn?

Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to <u>federally</u> listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

PNDI Project Environmental Review Receipt Project Search ID: 20130619409066

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552 Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 **NO Faxes Please**

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie
Company/Business Name: Gannett Fleming, Inc.
Address: Foster Piaza 3, 601 Holiday Drive
City, State, Zip: PiHsheroh PA 15220
Phone: (4/2) 422-5575 Fax: (4/2) 922-3717
Email: dsappie @ gfret.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change. I agree to re-do the online environmental review.

applicant/project propenent signature

1. PROJECT INFORMATION

Project Name: MVSA sat 017

Date of review: 6/19/2013 3:07:44 PM

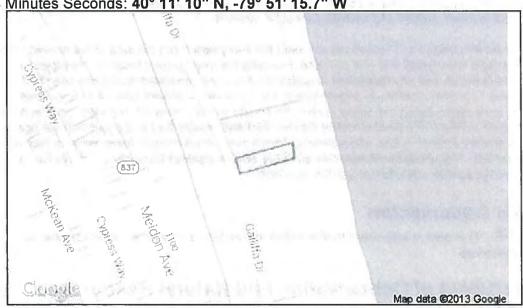
Project Category: Waste Transfer, Treatment, and Disposal, Liquid

waste/Effluent,Wastewater treatment plant (construction, expansion or modification)

Project Area: 0.2 acres

County: Washington Township/Municipality: Donora Quadrangle Name: DONORA ~ ZIP Code: 15033 Decimal Degrees: 40.186108 N, -79.854368 W

Degrees Minutes Seconds: 40° 11' 10" N, -79° 51' 15.7" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn?
Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

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4. DEP INFORMATION

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PNDI Project Environmental Review Receipt Project Search ID: 20130619409108

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552 Fax:(717) 772-0271

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 NO Faxes Please

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please.

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie
Company/Business Name: Gannett Fleming, Inc.
Address: Foster Plaza 3, 601 Holiday Drive
City, State, Zip: Pittsburgh, PA, 15280
Phone: (412) 922-5575 Fax: (412) 922-3717
Email: dsappie @gfnet.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature O/14/2/13

1. PROJECT INFORMATION

Project Name: MVSA Phase II - Donora Date of review: 6/19/2013 3:16:53 PM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer

line maintainence-repair, replacement of existing line

Project Area: 185.7 acres

County: Washington Township/Municipality: Donora Quadrangle Name: DONORA ~ ZIP Code: 15033 Decimal Degrees: 40.185602 N, -79.859949 W

Degrees Minutes Seconds: 40° 11' 8.2" N, -79° 51' 35.8" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

3. AGENCY COMMENTS

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PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et sea. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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5. ADDITIONAL INFORMATION

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section 315 South A 400 Market Street, PO Box 8552, Harrisburg, PA. 16801-4851 NO Faxes P Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA 16801-4851 NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie
Company/Business Name: Gannett Fleming, Inc.
Address: Foster Plaza 3, 601 Holiday Drive
City, State, Zip: P. H. Shuran, PA 15220
Phone: (412) 922 - 5575 Fax: (412) 922 - 3717
Email: dsannie @ gfret.com

8. CERTIFICATION

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1. PROJECT INFORMATION

Project Name: MVSA EQ tank

Date of review: 6/21/2013 12:57:58 PM

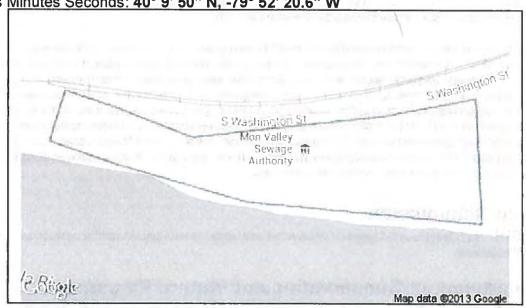
Project Category: Waste Transfer, Treatment, and Disposal, Liquid

waste/Effluent,Wastewater treatment plant (construction, expansion or modification)

Project Area: 7.1 acres

County: Washington Township/Municipality: Carroll Quadrangle Name: DONORA ~ ZIP Code: 15063 Decimal Degrees: 40.163897 N, -79.872394 W

Degrees Minutes Seconds: 40° 9' 50" N, -79° 52' 20.6" W



2. SEARCH RESULTS

Agency	Results	Response	
PA Game Commission	No Known Impact	No Further Review Required	
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required	
PA Fish and Boat Commission	No Known Impact	No Further Review Required	
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required	

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn? Your answer is: 1. Yes

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PA Game Commission

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PA Department of Conservation and Natural Resources

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PA Fish and Boat Commission

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U.S. Fish and Wildlife Service

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PNDI Project Environmental Review Receipt Project Search ID: 20130621409451

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5. ADDITIONAL INFORMATION

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552 Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie	
Company/Business Name: Gannett Fleming, Fire.	
Address: Foster Plaza 3 GOI Holiday Drive	
City, State, Zip: P. H. Soucan, DA 15-220	
Phone: (412) 922-5575 Fax: (412) 922-3717	
Email: dsappie e gPnet.com	

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change. I agree to re-do the online environmental review.

applicant/project properted signature

1. PROJECT INFORMATION

Project Name: MVSA Monessen sewers Date of review: 6/19/2013 3:24:22 PM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer

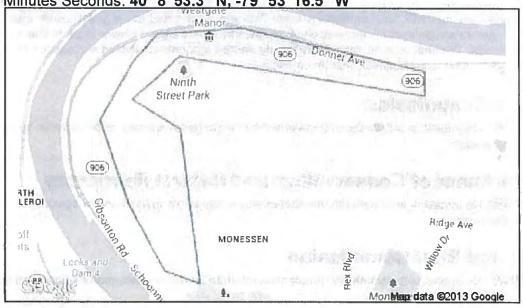
line maintainence-repair, replacement of existing line

Project Area: 273.4 acres

County: Westmoreland Township/Municipality: Monessen Quadrangle Name: MONONGAHELA ~ ZIP Code: 15062

Decimal Degrees: 40.148142 N, -79.887911 W

Degrees Minutes Seconds: 40° 8' 53.3" N, -79° 53' 16.5" W



2. SEARCH RESULTS

Agency	Results	Response		
PA Game Commission	No Known Impact	No Further Review Required		
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required		
PA Fish and Boat Commission	No Known Impact	No Further Review Required		
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required		

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

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PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 16801-4851 17105-8552 Fax:(717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section 315 South Allen Street, Suite 322, State College, PA. NO Faxes Please:

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 **NO Faxes Please**

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie	
Company/Business Name: Gannett Fleming, Inc.	
Address: toster Maza 3, 601 Halday Drive	
City, State, Zip: Pittsburgh, PA 152BO	
Phone: (412) 922 - 5575 Fax: (412) 922 - 3717	
Email: dsuppie e gfret.com	

8. CERTIFICATION

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applicant/project proponent signature

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1. PROJECT INFORMATION

Project Name: MVSA - Seneca St. Sat Fac Date of review: 6/21/2013 12:52:51 PM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid

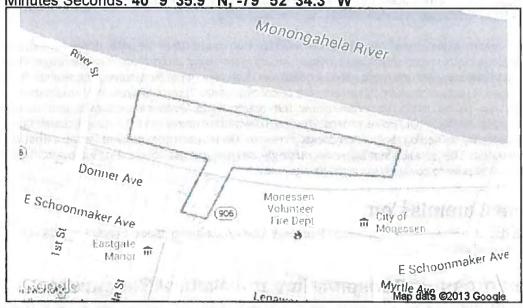
waste/Effluent, Wastewater treatment plant (construction, expansion or modification)

Project Area: 11.8 acres

County: Westmoreland Township/Municipality: Monessen Quadrangle Name: MONONGAHELA ~ ZIP Code: 15062

Decimal Degrees: 40.159967 N, -79.876195 W

Degrees Minutes Seconds: 40° 9' 35.9" N, -79° 52' 34.3" W



2. SEARCH RESULTS

Agency	Results	Response	
PA Game Commission	No Known Impact	No Further Review Required	
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required	
PA Fish and Boat Commission	No Known Impact	No Further Review Required	
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required	

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn? Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and **Natural Resources**

Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552

Endangered Species Section

U.S. Fish and Wildlife Service

315 South Allen Street, Suite 322, State College, PA. 16801-4851 NO Faxes Please.

Fax:(717) 772-0271

PA Fish and Boat Commission

Division of Environmental Services 450 Robinson Lane, Bellefonte, PA. 16823-7437 **NO Faxes Please**

PA Game Commission

Bureau of Wildlife Habitat Management Division of Environmental Planning and Habitat Protection 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797 Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Debble Sappie
Company/Business Name: Gannett Fleming, Inc.
Address: Foster Plaza 3 GOV Holiday Drive
City, State, Zip: P. Hswigh, PA 15220
Phone: (4/2) 922 - 5525 Fax: (4/2) 922 - 3717
Email: d Sappic @ Freticon

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

APPENDIX F

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION RESPONSE



Commonwealth of Pennsylvania Pennsylvania Historical and Museum Commission Bureau for Historic Preservation

Commonwealth Keystone Building, 2nd Floor 400 North Street Harrisburg, PA 17120-0093 www.phmc.state.pa.us

27 August 2013

Deborah A. Sappie Gannett Fleming Foster Plaza III, Suite 200 601 Holiday Drive Pittsburgh, PA 15220-2728

RE:

ER# 2013-1864-042-A

DEP: Mon Valley Sewage Authority Sewage Facilities Plan Update/Special Study, Combined Sewer Overflow Control, Donora and Monessen, Washington and

Westmoreland Counties.

Dear Ms. Sappie:

The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999 and 2004, and under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). These requirements include consideration of project potential effects upon both historic and archaeological resources.

There may be historic buildings, structures, and/or archaeological resources located in or near the project area. In our opinion, the activities described in your proposal should have no effect on these resources. Should the scope and/or nature of the project activities change, the Bureau for Historic Preservation should be contacted immediately.

If you need further information in this matter please consult Ann Safley at (717) 787-9121.

Sincerely,

Douglas C. McLearen, Chief

An birst

Division of Archaeology & Protection

DCMcL/ras

APPENDIX G
FINANCING TABLES

MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN Conventional Funding Formula - Pennvest PHASE II

Construction Costs	Year 2013 Alternative IB-4b
Seneca Street Satellite Facility (CSO 007) Donora Borough Sewer Separation City of Monessen Sewer Separation Total Construction Cost	\$12,700,000 \$3,000,000 \$2,200,000 \$17,900,000
Related Project Costs (20%)	\$3,580,000
Estimated Total Project Cost	\$21,500,000
Existing Bond Issue for Phase II	\$10,000,000
Pennvest Loan Amount	\$11,500,000
SYSTEM COSTS	
Annual Costs Debt Service Averaged Periodic Interest Rate Number of Payment Periods 1.9% 20 years	\$697,074
Existing Bond Issue Debt Service and Coverge	\$661,000
Additional Operation and Maintenance Cost	\$90,000
Total Annual Costs	\$1,448,074
SYSTEM REVENUES	
Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,448,074
Estimated Annual User Charge per EDU	\$263
PROPOSED MONTHLY INCREASE PER EDU PER PHASE II	\$22
EXISTING MONTHLY MVSA CHARGE PER MONTH	\$30
AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE	\$5
TOTAL MVSA MONTHLY SEWAGE FEE PER EDU	\$57

MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN Conventional Funding Formula - Bond Issue PHASE II

	Year 2013 Alternatives IB-4b
Construction Costs Seneca Street Satellite Facility (CSO 007) Donora Borough Sewer Separation City of Monessen Sewer Separation Total Construction Cost	\$12,700,000 \$3,000,000 \$2,200,000 \$17,900,000
Related Project Costs (20%)	\$3,580,000
Estimated Total Project Cost	\$21,500,000
Existing Bond Issue for Phase II	\$10,000,000
Bond Issue Amount	\$11,500,000
SYSTEM COSTS	
Annual Costs Debt Service Averaged Periodic Interest Rate Number of Payment Periods 5.0% 30 years	\$748,092
Debt Service Coverage (15% of Annual Debt Service Payment)	\$112,214
Existing Bond Issue Debt Service and Coverge	\$661,000
Additional Operation and Maintenance Cost	\$90,000
Total Annual Costs	\$1,611,305
SYSTEM REVENUES	
Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,611,305
Estimated Annual User Charge per EDU	\$293
PROPOSED MONTHLY INCREASE PER EDU FOR PHASE II	\$24
EXISTING MONTHLY MVSA CHARGE PER MONTH	\$30
AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE	\$5
TOTAL MVSA MONTHLY SEWAGE FEE PER EDU	\$59

MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN Conventional Funding Formula - Pennvest PHASE III

	Year 2013 Alternative
Construction Oct	IB-4b
Construction Costs Locust Street Satellite Facility (CSO 011) 5th/6th Street Satellite Facility (CSO 014) 8th Street Satellite Facility (CSO 016) Donora CSO Screening Facilities (CSO 010 & 017) Monessen CSO Screening Facilities (CSO 003, 004, 005) Total Construction Cost	\$4,700,000 \$5,100,000 \$4,500,000 \$800,000 \$1,500,000 \$16,600,000
Related Project Costs (30%)	\$4,980,000
Estimated Total Project Cost	\$21,600,000
Pennvest Loan Amount	\$21,600,000
SYSTEM COSTS	
Annual Costs	
Debt Service Averaged Periodic Interest Rate 1.9% Number of Payment Periods 20 years	\$1,309,286
Additional Operation and Maintenance Cost	\$220,000
Total Annual Costs	\$1,529,286
SYSTEM REVENUES	
Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,529,286
Estimated Annual User Charge per EDU	\$278
PROPOSED MONTHLY INCREASE PER EDU FOR PHASE III	\$23
EXISTING MONTHLY MVSA CHARGE PER MONTH	\$30
AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE	\$5
MONTHLY INCREASE PER EDU FOR PHASE II	\$24
TOTAL MVSA MONTHLY SEWAGE FEE PER EDU	\$82

MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN Conventional Funding Formula - Bond Issue PHASE III

	Year 2013		
	Alternatives		
	IB-4b		
Construction Costs			
Locust Street Satellite Facility (CSO 011)	\$4,700,000		
5th/6th Street Satellite Facility (CSO 014)	\$5,100,000		
8th Street Satellite Facility (CSO 016)	\$4,500,000		
Donora CSO Screening Facilities (CSO 010 & 017)	\$800,000		
Monessen CSO Screening Facilities (CSO 003, 004, 005) Total Construction Cost	\$1,500,000		
Total Construction Cost	\$16,600,000		
Related Project Costs (30%)	\$4,980,000		
	4 1,000,000		
Estimated Total Project Cost	\$21,600,000		
Bond Issue Amount	\$21,600,000		
SYSTEM COSTS			
Annual Costs			
Debt Service	\$1,733,240		
Averaged Periodic Interest Rate 5.0%			
Number of Payment Periods 20 years			
Debt Service Coverage (15% of Annual Debt Service Payment)	\$250 DDG		
Debt Service Coverage (15 % of Affilial Debt Service Payment)	\$259,986		
Additional Operation and Maintenance Cost	\$220,000		
Total Annual Costs	\$2,213,226		
SYSTEM REVENUES			
Number of EDUs	5,500		
	·		
Required Annual Sewer Revenue	\$2,213,226		
Estimated Applied Ligar Chargo per EDIT	6400		
Estimated Annual User Charge per EDU	\$402		
PROPOSED MONTHLY INCREASE PER EDU FOR PHASE III	\$34		
	40.		
EXISTING MONTHLY MVSA CHARGE PER MONTH	\$30		
AVC EVICTING CITY OF MONEGOENUPOROUGH OF ROUGH			
AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE			
SEVER LINE MAINTENANCE FEE	\$5		
MONTHLY INCREASE PER EDU FOR PHASE II	\$24		
	424		
TOTAL MVSA MONTHLY SEWAGE FEE PER EDU	\$93		

APPENDIX H
RESOLUTIONS

CERTIFICATION

I,Paul Berardelli, Secretary, Be certify that the foregoing is a true copy of the Authorithis13thday ofJanuar	
MON VALLEY SEWAGE AUTHORITY SECRETARY	AUTHORITY SEAL



RESOLUTION FOR PLAN REVISION

RESOLUTION 2 OF 2014

RESOLUTION OF THE BOARD OF MON VALLEY SEWAGE AUTHORITY, WASHINGTON AND WESTMORELAND COUNTIES, PENNSYLVANIA (hereinafter "the authority").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the **Pennsylvania Code**, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewage Facilities Plan Update/Special Study, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I - Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.

Phase II - Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III - Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennyest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

NOW, THEREFORE, BE IT RESOLVED that the Board of the MVSA hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. MVSA hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

ATTEST:

MON VALLEY SEWAGE AUTHORITY

Secretary

Chatrman

CARROLL TOWNSHIP RESOLUTION NO. 2014-785

RESOLUTION FOR PLAN REVISION

RESOLUTION OF THE BOARD OF SUPERVISORS OF CARROLL TOWNSHIP, WASHINGTON COUNTY, PENNSYLVANIA (hereinafter "the township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewage Facilities Plan Update, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I - Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.

Phase II - Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III - Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennyest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

		9	-ba,

hereby adopts the above referenced Township hereby assures the Depart	RESOLVED that the Board of Supervisor Act 537 Sewage Facilities Plan Update/Supert of the MVSA's complete and timely on 5, Pennsylvania Sewage Facilities Action	Special Study. Carroll implementation of the
I, Sharon Cramer Supervisors of Carroll Township, Township's Resolution No. January , 2014	hereby certify that the foregoing is a $\frac{2014}{785}$, adopted this 6th	Secretary, Board of true copy of Carroll day of
CARROLL TOWNSHIP SECRETARY By:	TOWNS CARROLL TOWNSHIP BOARD OF SUPERV	SHIP SEAL COUNTY OF STREET
	Thomas Rapp, Chairman James D. Harrison, Vice Chairman Gary Lenzi, Member	

		*

RESOLUTION NO. 2013 - 11

BOROUGH OF DONORA WASHINGTON COUNTY, PENNSYLVANIA

RESOLUTION FOR PLAN REVISION

A RESOLUTION OF THE COUNCIL MEMBERS OF THE BOROUGH OF DONORA, WASHINGTON COUNTY, COMMONWEALTH OF PENNSYLVANIA (hereinafter "the borough").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (hereinafter "the department") adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, requires the Borough of Donora to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Mon Valley Sewage Authority (hereinafter "MVSA") has prepared an Act 537 Sewage Facilities Plan Update/Special Study, which provides for the construction of Combined Sewer Outflow (hereinafter "CSO") facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, the Borough of Donora, and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

WHEREAS, the Borough of Donora finds that the Act 537 Sewage Facilities Plan Update described above conforms to applicable zoning, subdivision, other ordinances, and plans of the Borough of Donora and to a comprehensive program of pollution control and water quality management; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

- Phase I Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.
- Phase II Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.
- Phase III Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the

Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a PENNVEST loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

NOW, THEREFORE, BE IT RESOLVED that the Council of the Borough of Donora hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. The Borough of Donora hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Dennis C. Fisher, Borough of Donora Administrator, Treasurer, and Secretary for the Council of the Borough of Donora, hereby certify the foregoing is a true copy of the Borough of Donora's Resolution Number 2013 - 11, adopted this 26th day of December, 2013.

BOROUGH OF DONORA

BOROUGH SEAL

SECRETARY

DULY ADOPTED at, and recorded in the minutes of, a properly constituted meeting of the Governing Body of the Borough of Donora held on the date set forth herein.



ENACTED AND RESOLVED this 26th day of December, A.D., 2013.

ATTEST:

BOROUGH OF DONORA

Administrator/Treasurer/Secretary

President of the Council
Of the Borough of Donora

EXAMINED AND APPROVED this 26th day of December, A.D., 2013.

RESOLUTION NO.:

1 of 2014

INTRODUCED BY:

Mayor Louis Mavrakis January 15, 2014

ENACTED:

CITY OF MONESSEN WESTMORELAND COUNTY, PENNSYLVANIA

RESOLUTION FOR PLAN REVISION

RESOLUTION OF THE COUNCIL OF THE CITY OF MONESSEN, WESTMORELAND COUNTY, PENNSYLVANIA (hereinafter "the city").

WHEREAS, Section 5 of the Act of January 24, 1066, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, required the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revised said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, THE Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewages Facilities Plan Update, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora, Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

WHEREAS, the City of Monessen finds that the Act 537 Sewage Facilities Plan Update/Special Study described abo e conforms to applicable zoning, subdivision, other ordinances and plans of the City of Monessen and to a comprehensive program of pollution control and water quality management; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I – Two stream separations, interceptor upgrades, five (5) pump stations upgrades and an equalization facility.

Phase II – Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III – Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is 21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

NOW, THEREFORE, BE IT RESOLVED THAT THE Council of the City of Monessen hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. The City of Monessen hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Holly Minno, City Clerk to Council of the City of Monessen, hereby certify that the foregoing is a true copy of the City of Monessen's Resolution No. 1 of 2014, adopted this 15th day of January, 2014.

BY:

LOUIS MAVRAKIS, MAYOR

ATTEST:

HOLLY MINNO, CITY CLERK

APPENDIX I

PLANNING COMMISSION NOTIFICATIONS AND RESPONSES



August 28, 2013

City of Monessen Planning Commission Monessen Municipal Complex 1 Wendell Ramey Lane, Suite 400 Monessen, PA 15062

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Re:

Mon Valley Sewage Authority

Washington and Westmoreland Counties, Pennsylvania Official Sewage Facilities Plan Update/Special Study

GF 54305

Ladies/Gentlemen:

We have enclosed one (1) copy of the draft Act 537 Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. This Plan Update/Special Study incorporates CSO Control Alternatives evaluated in the Long Term Control Plan that was approved by the Pennsylvania Department of Environmental Protection.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15th Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in August 2014 and end construction in August 2016. Phase III is scheduled to begin construction in June 2020 and end construction in June 2023.

August 28, 2013 Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

JASON J. MCBRIDE, P.E. Project Manager

Enclosures

cc: MVSA

City of Monessen, (w/c)



August 28, 2013

Borough of Donora Planning Commission 601 Meldon Avenue Donora, PA 15033

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Re: Mon Valley Sewage Authority

Washington and Westmoreland Counties, Pennsylvania Official Sewage Facilities Plan Update/Special Study

GF 54305

Ladies/Gentlemen:

We have enclosed one (1) copy of the draft Act 537 Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. This Plan Update/Special Study incorporates CSO Control Alternatives evaluated in the Long Term Control Plan that was approved by the Pennsylvania Department of Environmental Protection.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15th Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in August 2014 and end construction in August 2016. Phase III is scheduled to begin construction in June 2020 and end construction in June 2023.

August 28, 2013 Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

JASON J. MCBRIDE, P.E.

Project Manager

Enclosures

cc: MVSA

Borough of Donora, (w/c)



August 28, 2013

Carroll Township Planning Commission 130 Baird Street Monongahela, PA 15063

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Re:

Mon Valley Sewage Authority

Washington and Westmoreland Counties, Pennsylvania Official Sewage Facilities Plan Update/Special Study

GF 54305

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August 28, 2013 Page 2

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Sincerely,

GANNETT FLEMING, INC.

JASON J. MCBRIDE, P.E. Project Manager

Enclosures

cc: MVSA

Carroll Township, (w/c)



August 28, 2013

Westmoreland County Planning Commission Fifth Floor, Suite 520 40 N. Pennsylvania Ave. Greensburg, PA 15601

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Re:

Mon Valley Sewage Authority

Washington and Westmoreland Counties, Pennsylvania Official Sewage Facilities Plan Update/Special Study

GF 54305

Ladies/Gentlemen:

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August 28, 2013 Page 2

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Sincerely,

GANNETT FLEMING, INC.

JASON J. MCBRIDE, P.E.

Project Manager

Enclosures

cc: MVSA

Vashington County Planning Commission

100 West Beau Street, Suite 701 Washington, PA 15301-4470

> **Executive Director:** Lisa L. Cessna

Board Members: Charles A. Crouse Thomas Jennings R. Christopher Wheat, P.E. Kenneth J. Kulak II, AIA David B. Miller

Phone: 724-228-6811

Fax: 724-250-4110

Richard Burig Leslie P. Midla

County Commissioners: Larry Maggi Chairman Diana Irey Vaughan Vice - Chairman Harlan G. Shober, Jr.

October 24, 2013

Jason J. McBride, P.E. **Project Manager** Gannett Fleming, Inc. Foster Plaza III, Suite 200 601 Holiday Drive Pittsburgh, Pennsylvania 15220-2728

RE: Mon Valley Sewage Authority

Dear Mr. McBride:

The Washington County Planning Commission has received and reviewed the Draft Mon Valley Sewage Authorities CSO Facilities Planning Official Sewage Facilities Plan Update/Special Study (dated July 2, 2013). The Plan provides for the orderly implementation of Alternative 1B-4b of the LTCP. Phase I has been completed and Phase II & III will be permitted and constructed over the next 10 years.

The Plan is consistent with the objectives and strategies of the 2005 Washington County Comprehensive Plan. Maintaining and replacing our existing infrastructure, "Fix-it-First" concept, is a high priority throughout the Washington County Comprehensive Plan.

We have no direct comments on the Draft Plan. If you require future assistance or comment please feel free to contact the Planning Commission office at 724-228-6811.

Jeffery W. Leithauser **Development Manager**

JWL/ds xc: File

APPENDIX J
PROOF OF PUBLICATION



Proof of Publication of Noti

Under the Act of July 9.

Commonwealth of Pennsylvania

County of Westmoreland

SS:

ROBERT HAMMOND, Division Manager of the Trib Total Media with places of business in Greensburg, Westmoreland County being duly sworn, deposes and says that the Valley Independ Westmoreland County, Pennsylvania, and elsewhere, publishe 1902, and issued every day since that date. A copy of the printe

viz: LEGAL# 5721048, RE: PUBLIC NOTICE FOR MON VAI

Affiant further deposes that she/ he is an officer duly Valley Independent, to verify the foregoing statement ur the subject matter of the aforesaid notice of publication time, place and character of publication are true.

Division Manager Trib Total Media, Inc.

Statement of Advertising Costs

MON VALLEY SEWAG AUTHORITY 20 SOUTH WASHINGTON STREET DONORA, PA 15033

To Trib Total Media, Inc.

For Publishing the notice or advertisement attached hereto on the above stated dates \$ 358.69

Probating Same

Total \$ 358.69

Legals
PUBLIC NOTICE FOR
MON VALLEY SEWAGE AUTHORITY

Legals

OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY FOR CITY OF MONESSEN, BOROUGH OF DONORA AND CARROLL TOWNSHIP

NOTICE IS HEREBY GIVEN that the Mon Valley Sewage Authority has developed an Official Sewage Facilities Plan Update/Special Study for Combined Sewer Overflow (CSO) Control Alternatives. The Plan/Special Study incorporates the approved Long Term Control Plan that was developed to meet the requirements of the National CSO Policy.

The Plan was developed in accordance with Act 537, enacted January 24, 1966, P.L. 1535 (35 P.S. 750.1), known as Pennsylvania Sewage Facilities Act, as amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection, Chapter 71 of Title 25 of the Pennsylvania Code. The proposed Plan contains a description of the planning area, identification of planning alternatives, alternative evaluation and implementation, selected alternative, financing of the project, and arrangements for implementation.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15th Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the CSO Seneca Street Satellite Facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project cost for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

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This notice begins the required 30-day public comment period for the Plan. The Plan is available for review at the Mon Valley Sewage Authority's office, 20 S. Washington Street, Donora, PA 15033, Borough of Donora, 601 Meldon Avenue, Donora, PA 15033, City of Monessen, 1 Wendell Ramey Lane, Suite 400, Monessen, PA 15062 and Carroll Township, 130 Baird Street, Monongahela, PA 15063 during normal office hours. Comments must be written and may be mailed to Gannett Fleming, Inc., Foster Plaza 3, 601 Holiday Drive, Pittsburgh, PA 15220, to the attention of Jason J. McBride, P.E. or hand delivered or mailed to the Authority's Office.

Mon Valley Sewage Authority Mr. Thomas Salak, General Manager 11/22

Publisher's Receipt for Advertising Costs

The **Trib Total Media**, **Inc.**, publisher of The **Valley Independent**, a newspaper of general circulation, hereby acknowledges a receipt of the aforesaid advertising and publication costs, and certifies the same have been fully paid.

Trib Total Media Inc., Publisher of The Valley Independent, a Newspaper.

HV	
DV	,
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Proof of Publication of Noti

Under the Act of July 9.

Commonwealth of Pennsylvania

County of Westmoreland

SS:

ROBERT HAMMOND, Division Manager of the Trib Total Media with places of business in Greensburg, Westmoreland County, being duly sworn, deposes and says that the Valley Independe Westmoreland County, Pennsylvania, and elsewhere, published

viz: LEGAL# 5721048, RE: PUBLIC NOTICE FOR MON VAL

Affiant further deposes that she/ he is an officer duly Valley Independent, to verify the foregoing statement unc the subject matter of the aforesaid notice of pubication, time, place and character of publication are true.

Division Manager Trib Total Media, Inc.

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To Trib Total Media, Inc.

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Probating Same

Total

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Trib Total Media Inc., Publisher of The Valley Independent, a Newspaper.

Legals

PUBLIC NOTICE FOR MON VALLEY SEWAGE AUTHORITY

OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY FOR CITY OF MONESSEN, BOROUGH OF DONORA AND CAR-**ROLL TOWNSHIP**

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> Mon Valley Sewage Authority Mr. Thomas Salak, General Manager

Sworn to and subscribed before me this

day of , 2013

Notary Public

COMMONWEALTH OF PENNSYLVAN Notarial Seal

Rec 4. Stefan, Notary Public City of vionessen, Westmoreland County

Priy Commission Expires Aug. 2, 2016

MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

By

PUBLIC NOTICE

FOR

MON VALLEY SEWAGE AUTHORITY

OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY FOR CITY OF MONESSEN, BOROUGH OF DONORA AND CARROLL TOWNSHIP

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Mon Valley Sewage Authority Mr. Ton Salak, General Manager

APPENDIX K
COMMENTS RECEIVED AND RESPONSES

Mon Valley Sewage Authority

20 S. Washington Street

Donora, PA 15033

Phone 724-379-4141

December 27, 2013

Attn: Jason McBride, P.E. Gannett Fleming, Inc. 601 Holiday Drive Pittsburgh, PA 15220-2728

Dear Mr. McBride:

The 30-day public comment period has ended for the Official Sewage Facilities Plan Update/Special Study as part of the Act 537 for the Borough of Donora, City of Monessen and Carroll Township. During this time, no public comments were received by the Mon Valley Sewage Authority.

If you have any questions, please notify me at the Office.

Very truly yours, Mon Valley Sewage Authority

rehamme de Salle

Thomas A. Salak General Manager

TS/kat



November 15, 2013

Mr. Robert Nedzesky W.E.C. Engineers, Inc. 1370 Washington Pike Bridgeville, PA 15017

Re: Mon Valley Sewage Authority

Washington and Westmoreland Counties, Pennsylvania Official Sewage Facilities Plan Update/Special Study

GF 54305

Dear Mr. Nedzesky:

On behalf of the Mon Valley Sewage Authority, we are responding to your comments on the draft Official Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. Listed below are our responses in order of your comments:

- 1. We concur that the City was requested to respond with comments by September 30, 2013.
- 2. The implementation schedule on pages PS-5 and 8-3 has been revised with adoption of the revised plan by the City of Monessen in January 2014.
- 3. We concur that the general concept of the plan are satellite treatment facilities and equalization facilities to handle peak wet weather flows. The adopted Long Term Control Plan (LTCP) Alternative IB-4b eliminates three satellite treatment facilities identified in Alternative IB-1 for a larger equalization tank located at the Mon Valley Sewage Authority's Wastewater Treatment Plant.
- 4. We concur that the plan's recommended alternative is the most cost effective alternative that will achieve at least 85% capture (actually 86% capture and 83 overflows per year).
- 5. We have <u>estimated</u> disturbance of one acre for each of the five mechanical bar screen facilities proposed in Phase III.
- 6. Not applicable. This comment was directed to the City of Monessen's Planning Commission.
- 7. Enclosed are copies of the requested water quality sample results.

Mr. Robert Nedzesky November 15, 2013 Page 2

- 8. Invitations to attend and participate in the pre-bid and preconstruction meetings for the Phase II and Phase III contracts will be extended to the City of Monessen and their engineer.
- 9. Exhibit 2-2 was revised to include the City's Grand Boulevard Sanitary Sewer Replacement project.
- 10. The Mon Valley Sewage Authority will obtain applicable City permits and pay the appropriate fees.
- 11. The National Combined Sewer Overflow Policy allows for the identification of alternatives to limit combined sewer overflow events to 4 to 6 events per year OR provide capture and treatment of 85% of the wet weather flow entering the combined sewer system on an average annual basis,
 - Based on the alternatives, Alternative IB-4b created the most cost effective means to meet CSO Policy by achieving at least 85% capture (actually 86% capture and 83 overflows per year). As indicated in the Long Term Control Plan, the cost to achieve 99% capture (6 overflows per year) was not economically viable for the Authority.
- 12. We concur. According to Pennsylvania Department of Environmental Protection (PaDEP) Chapter 94 Municipal Wasteload Management, a ban on connections will be imposed by PaDEP whenever, PaDEP determines that the sewerage facilities or any portion thereof are either hydraulically or organically overloaded or that discharge from the plant causes actual or potential pollution of the waters of the Commonwealth.
- 13. The plan evaluated eight categories of the goals and objectives of various planning, environmental and natural resource laws and policies of the Commonwealth. Based on the evaluation, it did not appear that any inconsistencies at the planning stage existed between the alternatives and the goals and objectives.
- 14. We concur. There is no known critical public health hazards that need addressed immediately. Discharges of untreated CSO into the Monongahela River are being addressed by the LTCP approved by PaDEP. The Act 537 Plan includes a schedule for the completion of the recommended alternative in Phases.
- 15. We concur that a Chapter 106 permit will be required from PaDEP for the satellite facility.
- 16. We concur that other screening facilities within Monessen are located in an area designated as Other Flood Areas.

Mr. Robert Nedzesky November 15, 2013 Page 3

If you have any questions, please do not hesitate to contact us.

Sincerely,

GANNETT FLEMING, INC.

JASON J. MCBRIDE, P.E.

Cc: MVSA

City of Monessen

Summary MVSA Sewage Facilities Act 537 Plan Updated July 2013

September 23, 2013

Alternative IB-4b — Partial Sewer Separation; maximize conveyance in Monessen; construct Donora equalization tank, and 85% capture of wet weather flow entering the combined sewer system on an average annual basis limiting overflows to 4 to 6 events per year. Goal is to completely eliminate all overflows.

Phase I - Completed

- Seneca Street stream separation;
- 15th Street stream separation;
- conveyance upgrades;
- pump station upgrades; and
- construct equalization tank.

Phase II - Construction August 2014 - August 2016

- Seneca Street satellite facility; and
- 15,000 If of sewer separation in Donora and Monessen.
- Cost \$21.5 million (2013 dollars) Bond issue
- Additional monthly user charge per EDU is \$24.00 (total \$59/month).

Phase III - Construction June 2020 - June 2023

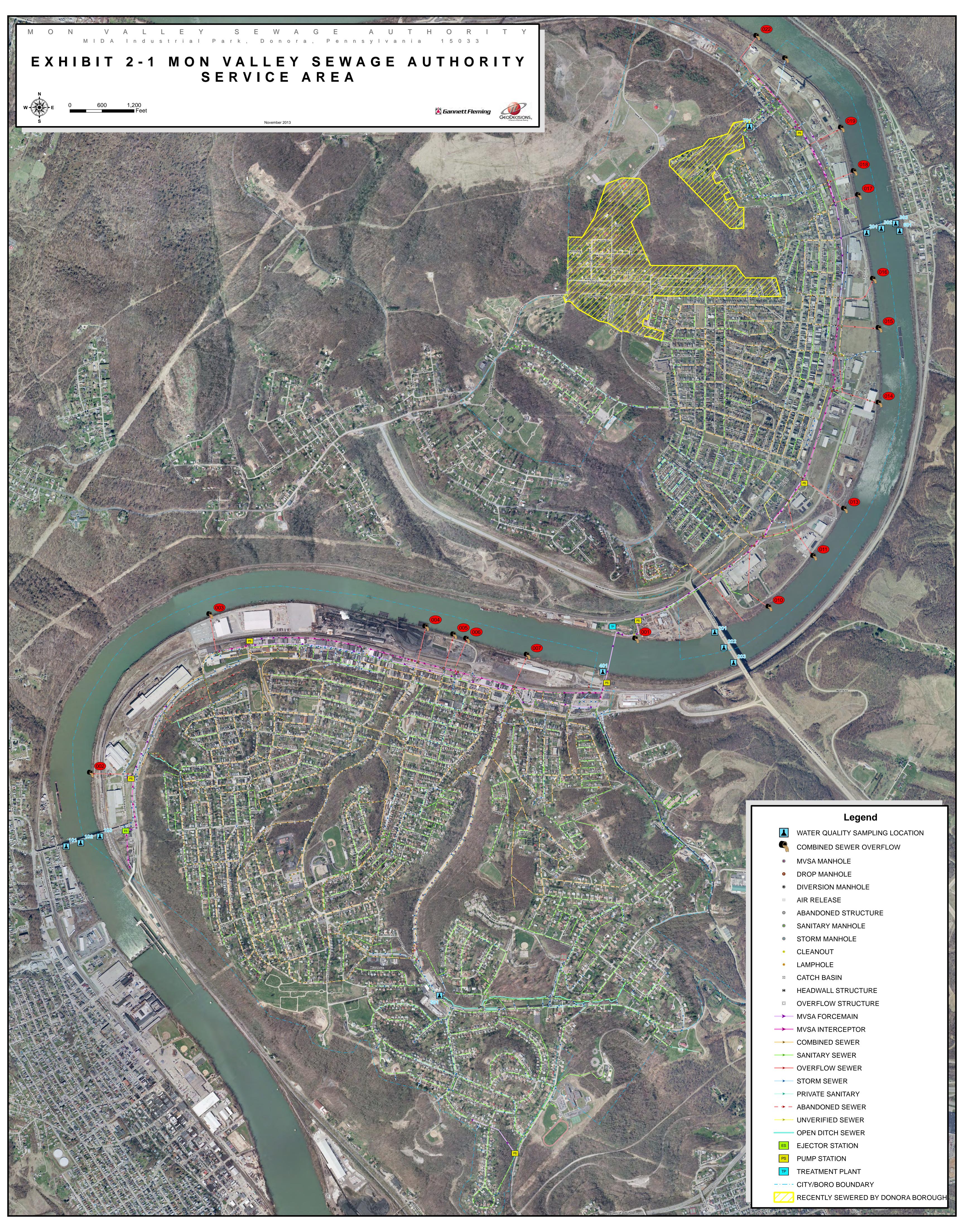
- 3 additional CSO satellite facilities in Donora;
- 2 mechanical bar screen facilities in Donora; and
- 3 mechanical bar screen facilities in Monessen.
- Cost \$21.6 million (2013 dollars)
- Additional monthly user charge per EDI is \$23.00 (total \$82/month)

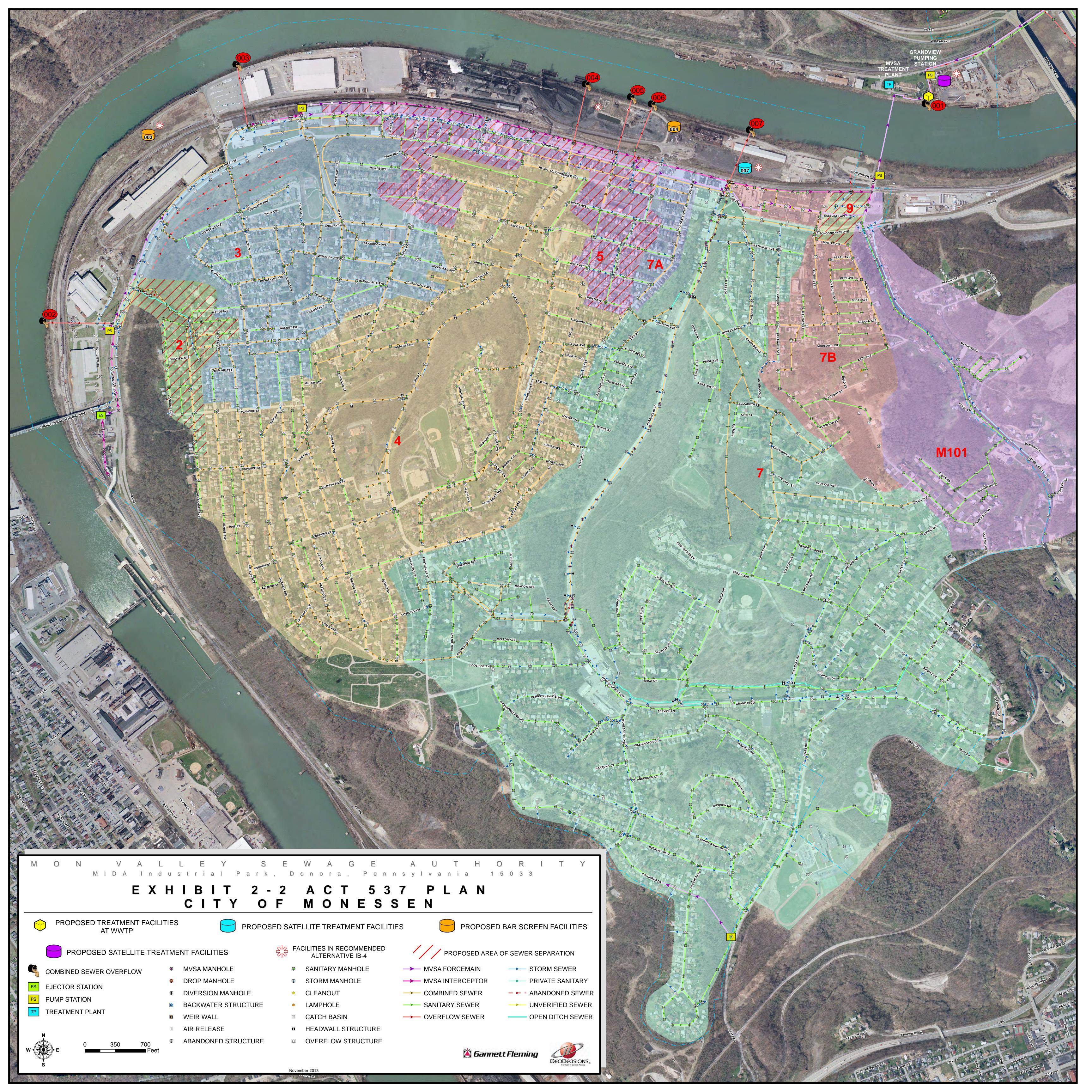
Comments:

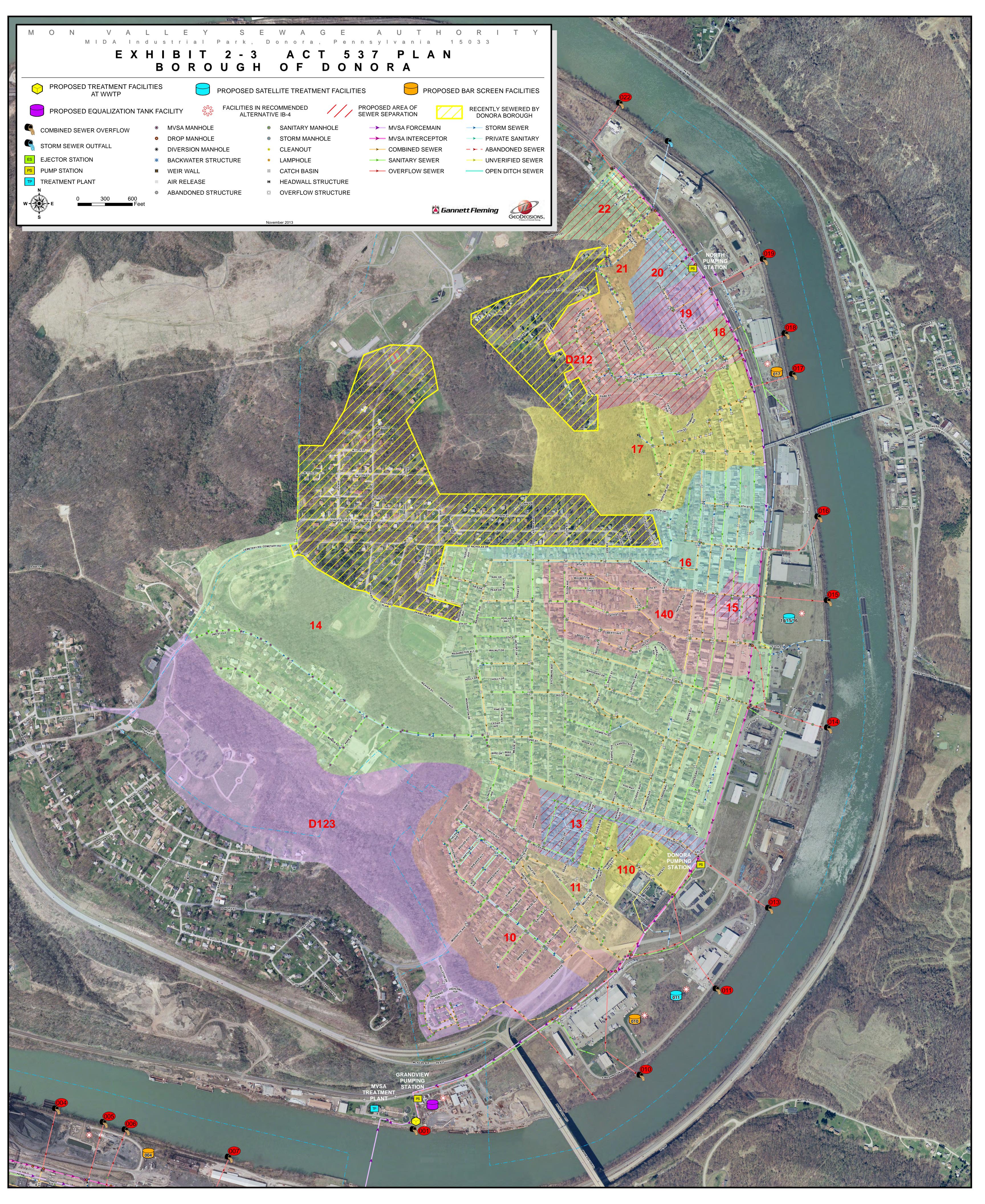
- 1. The City is requested to respond with comments by September 30, 2013;
- 2. In accordance with the tentative schedule on page PS-5, Monessen is to adopt the revised plan by resolution by December 2013 (the resolution is in Appendix H);
- 3. Slightly modified from 2007 Plan. Implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in favor of a larger equalization tank in Donora. This concept maximizes flows to the wastewater treatment plan as much as economically feasible;
- 4. Will achieve at least 85% capture (actually 86% capture and 83 overflows per year) assuming upstream flow is controlled (page 8-1);
- 5. The three proposed mechanical bar screens are located within the mill site (refer to Plan Exhibit 2-2 at the back of the Study; approximately one acre will be disturbed for each facility;
- 6. The Planning Commission should verify the Act 537 Sewage Facilities Plan Update/Special Study conforms to applicable zoning, subdivision, and other ordinances and plans of the City and make a recommendation to Council for approval;
- 7. Request copies of the results of the water quality samples from location 103, 401 and 501 located in Monessen;
- 8. Request invitations to attend and participate in the pre-bid and preconstruction meetings for the Phase II and Phase III contracts;
- 9. Exhibit 2-2 should be revised to reflect completion of the City's Grand Boulevard Sanitary Sewer Replacement Project showing the sewer shed as now completely separated;
- 10. Remind MVSA that contractor's must obtain City permit and pay appropriate fees as establish by Ordinance;
- 11. The Combined Sewer Overflow (CSO) Control Goals analysis provided estimated satellite treatment facility capacity limiting combined sewer overflow events to 4 to 6 events per year;
- 12. The report states that the projects alleviate overloads to the system which allows growth in the area. If not constructed overload conditions will continue with tap restrictions by PaDEP which will limit growth in the City. Development of vacant land cannot occur with tap restrictions;
- 13. According to the report there does not appear to be any inconsistencies with the various goals and objectives of PA planning, environmental and natural resources laws;
- 14. The report states that there are no known critical public health hazards in the MVSA service area associated with wastewater that needs to be address; however, a potential health hazard exists with the discharge of untreated sewage into the Monongahela River;
- 15. The Seneca Street CSO Satellite Facility is located in the 100-year floodplain; the first floor elevation is 1 ½' above the 100-year flood elevation and requires a Chapter 106 Permit from DEP;
- 16. The other satellite facilities within Monessen are located in an area designated as Other Flood Areas.

APPENDIX L

UNIFORM ENVIRONMENTAL REPORT (BOUND SEPARATELY)







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