



APPENDIX M
TASK ACTIVITY REPORT

NORTHCENTRAL REGIONAL OFFICE

December 18, 2017

Shinglehouse Borough Council
PO Box 156
Shinglehouse, PA 16748

Re: Act 537 Planning
Plan of Study and Task/Activity Report
Shinglehouse Borough, Potter County

Dear Shinglehouse Borough Council:

The Department of Environmental Protection (DEP) has received a Plan of Study and Task/Activity Report for preparation of an Act 537 Official Plan, submitted by Herbert, Rowland & Grubic, Inc., under a cover letter dated October 23, 2017.

The plan will evaluate options for replacing and/or upgrading the existing 0.16 MGD sewage treatment plant components. The existing plant was constructed in 1966 and has reportedly reached the end of its useful life. No additional capacity is needed at this time, as the current flow is approximately 50% of the current permitted capacity and no significant development is projected other than infill of undeveloped lots. The collection and conveyance systems are believed to be in good condition and no work is proposed on those portions of the system.

We have approved your Plan of Study for an estimated total cost of \$20,000.00. The resulting Act 537 Official Plan must be consistent with Act 537, Chapter 71, Sections 71.21 and 71.31 of DEP's regulations, and with information contained in A Guide for Preparing Act 537 Update Revisions (January 2003). Appendix I in this guide contains a comprehensive "Plan Content and Environmental Assessment Checklist" that details information required for a successful Act 537 Plan submission. This checklist is critical. Strictly following it will minimize the chance of submitting an incomplete plan and incurring untimely project delay. In accordance with your approved Task/Activity Report, your completed planning package will be submitted to DEP for review in May 2018.

Act 13 of 2012 established the Marcellus Legacy Fund that allocates funds to the Commonwealth Financing Authority (CFA). You are encouraged to apply for a grant through the CFA for planning costs associated with Act 537, The Pennsylvania Sewage Facilities Act. Grants awarded to applicants from CFA funding may reimburse up to 50 percent of eligible costs, not to exceed \$100,000. Information regarding the CFA funding program and how to apply is available at: <https://dced.pa.gov/programs-funding/commonwealth-financing-authority-cfa/act-13-programs>.

You should not authorize changes in the project scope or costs without prior written authorization from this office, so as to avoid jeopardizing your planning grant eligibility.

December 18, 2017

If you have any questions or concerns, please contact me at 570.327.3688 or wibailey@pa.gov.

Sincerely,



William R. Bailey
Sewage Planning Specialist 2
Clean Water Program

cc: Joshua Fox, Herbert, Rowland & Grubic
Jere Northridge
Dan Thetford
File

HRG

Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
717.564.1121
(FAX) 717.564.1158
www.hrg-inc.com

October 23, 2017

Mr. Thomas Randis
Pennsylvania Department of Environmental Protection
208 West Third Street
Suite 101
Williamsport, Pennsylvania 17701

Re: Shinglehouse Borough (Borough) Act 537 Plan
Task Activity Report (TAR)

Dear Mr. Randis:

Per your direction, Herbert, Rowland & Grubic, Inc. (HRG) is commencing work on completing the Act 537 Plan for Shinglehouse Borough, Potter County. The Plan Area will include the entire Borough.

We anticipate the Plan will be submitted to DEP in May 2018 following the required municipal and public comment periods. Attached are the Plan of Study and Preliminary Cost Worksheet for Act 537 Plan (TAR).

Please review the attached information at your earliest convenience. If you have any questions, please call me. Thank you for your timely consideration of this matter.

Very truly yours,

Herbert, Rowland & Grubic, Inc.



Joshua T. Fox, P.E.
Regional Service Group Manager
Water and Wastewater Group

JTF/JJH/rb

004004.0431

P:\0040\004004_0431\Admin\TAR\2017_10_10 DEP Cover Letter.doc

Enclosure

c: Shinglehouse Borough Council (w/Encl.)
File (w/Encl.)



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OCTOBER 2017

**PLAN OF STUDY
ACT 537 PLAN**

**SHINGLEHOUSE BOROUGH
POTTER COUNTY, PENNSYLVANIA**

HRG Project No. 004004.0431

TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
Introduction.....	1
Project Schedule.....	1
I. Previous Wastewater Planning.....	2
II. Physical and Demographic Analysis	2-3
III. Existing Sewage Facilities	3-4
IV. Future Growth and Development	4
V. Alternatives to Provide New or Improved Wastewater Disposal Facilities	4-5
VI. Evaluation of Alternatives	6-7
VII. Institutional Evaluation.....	7
VIII. Implementation Schedule and Justification.....	7
IX. Environmental Report (ER)	7

APPENDICES

- Appendix A: Planning Area Location Map
- Appendix B: Act 537 Plan Content and Environmental Assessment Checklist
- Appendix C: Preliminary Cost Worksheet for Act 537 Plan Update

INTRODUCTION AND PROJECT SCHEDULE

A. Introduction

Shinglehouse Borough, Potter County, Pennsylvania wishes to prepare an Act 537 Sewage Facilities Plan for their existing 0.16 MGD Wastewater Treatment Plant (WWTP). The Borough’s WWTP, constructed in 1966, has reached the end of its useful life and is in need of replacement for a majority of its components. Through consultation with the Department of Environmental Protection (DEP), the Borough has been advised to complete an Act 537 Official Plan (Plan) in conjunction with the proposed work to replace the aged equipment.

The planning area for the proposed Act 537 Plan is the Borough of Shinglehouse. Approximately 522 accounts within the Borough are currently served by a well-maintained public sewer system. No other means of sewer disposal (i.e. on-lot disposal systems (OLDS), holding tanks, packaged wastewater systems, etc.) are reportedly utilized. No future development or subdivision within the Borough is projected, although the infill of undeveloped lots may occur. For the reasons listed above, no capacity-driven alternatives for new or improved wastewater service within the proposed planning area will be evaluated.

This plan of study identifies how the Plan will be completed, as well as the projected schedule and cost. The attached Task Activity Report (TAR) is being submitted in order for all planning to become eligible for partial reimbursement. The Act 537 Plan will be completed in accordance with *The Pennsylvania Sewage Facilities Act – A Guide for Preparing Act 537 Update Revisions (latest version)*. The *Act 537 Plan Content and Environmental Assessment Checklist* (copy attached) will be utilized during Plan preparation.

B. Project Schedule

Submit Task Activity Report (TAR) to DEP	October 2017
Receive TAR Approval from the DEP	October 2017
Begin Work on the Act 537 Plan	November 2017
Submit Draft of Act 537 Plan to Planning Agencies, PHMC and PNDI, and Conduct Public Review and Comment Period	January 2018
Incorporate Comments/Revise Document	March 2018
Advertise for Public/County Review	March 2018
Public/County Comment and Review Period	March 2018 - April 2018
Incorporate Comments into Plan and Finalize	April 2018
Township Adoption of Plan and Submission to DEP	May 2018

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Analyze Existing Wastewater Planning

Shinglehouse Borough does not have an Act 537 Official Sewage Facilities Plan. The existing sewerage planning for the Borough of Shinglehouse was developed prior to the construction of the WWTP in 1966. It shall be noted that Annual Average Daily Flows (ADF) are consistently less than half of the permitted capacity at the WWTP. No future growth within the planning area is projected by the Borough at this time.

B. Identify and Summarize Planning Documents Adopted Pursuant to the Pennsylvania Municipal Planning Code

Shinglehouse Borough does not have a Zoning Ordinance or Comprehensive Plan. The Potter County Comprehensive Plan (PCCP) has however classified the Shinglehouse Borough as a Rural Growth Area, where compact growth in areas that are served by public water and sewer are promoted. No additional planning documents or ordinances are currently proposed.

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identification of Planning Areas

The Plan will encompass Shinglehouse Borough in its entirety. All public sewer within the planning area is owned and operated by the Borough. No potential needs or Special Study Areas will be evaluated as all developed parcels are reportedly connected to the public sewer. No potential growth areas have been identified by the Borough. Compact growth by infill of undeveloped properties with access to public sewer may occur.

A Physical and Demographic Analysis by written description and mapping of the planning area's physical characteristics, soils, geologic features, topography, potable water supplies, and wetlands will be included in the Plan.

B. Preparation of Maps

The mapping mentioned above will be based on best known available data and show all current lots, structures, surface waters, and roads within the planning area. The following maps and information will be provided:

1. General Location – Municipal boundary and location within the county/state.
2. Surface Water Resources and Floodplains – Streams, lakes, impoundments, natural conveyance, channels, drainage basins, watershed boundaries, and flood plains.
3. Soils – Soil types for areas not presently served by sanitary sewer service.
4. Soil Designations – Any Prime Farmland, Farmland of Statewide Importance, and Hydric Soils designations that may exist.
5. Soil Suitability – Areas suitable for in-ground on-lot systems, elevated sand mounds, individual residential spray irrigation systems (IRSIS), and areas unsuitable for soil dependent systems.
6. Geology – Geologic formations and other geographic features present.
7. Topography – Existing contours.
8. Slopes – Classification by range of existing percent slope.
9. Potable Water Supplies – Parcels served by public water.

III. EXISTING SEWAGE FACILITIES

A. Identify, Map, and Describe Municipal and Non-Municipal, Community, and Individual Systems

The Borough's sewage collection and conveyance system conveys wastewater from approximately 522 accounts within the planning area to the Borough's WWTP for primary and secondary treatment before being disinfected and discharged to the Honeoye Creek. There are currently no other existing sewage facilities (i.e. package plants, holding tanks, etc.) reported within the planning area.

A description and mapping of all wastewater facilities within the Borough will be included in the Plan. The description will include ownership, location, size, capacity, point of discharge, existing problems, remaining reserve capacity, reserve capacity allocation policy, compatibility of the rate of growth to existing and proposed facilities, and scheduled or in-progress upgrades or expansions. A narrative and schematic diagram of the WWTP's basic treatment processes, including the National Pollutant Discharge Elimination System (NPDES) permitted capacity, effluent discharge requirements, compliance status, hydraulic

and organic loadings, operation and maintenance requirements, and the Clean Streams Law permit number will be included in the Plan.

B. Determine the Type and Investigate the Condition of Existing OLDS

No existing on-lot disposal systems (OLDS) are reported within the planning area. No sanitary survey or water supply survey or analysis will be performed as part of this Plan.

C. Identify wastewater sludge and septage generation, transport and disposal methods.

Sludge generated at the WWTP is stored on-site until it can be dewatered using manually cleaned drying beds. The dewatered sludge is transported by truck for disposal via landfilling.

IV. FUTURE GROWTH AND DEVELOPMENT

Undeveloped lots will be identified in the Compact Growth Infill Potential Map. The number of developed and undeveloped lots will be tabulated. Currently, no planned growth within the planning area has been identified by the Borough. The Potter County Comprehensive Plan, along with planning documentation provided by the Borough, will be used to identify future land use, projected growth, and development areas. Projected population and flows for 5 and 10-year future planning periods will be estimated and used to examine the feasibility of proposed wastewater treatment alternatives.

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

No alternatives regarding the Borough's existing collection and conveyance facilities will be considered as they are currently adequately sized and operating sufficiently. The Borough will continue to annually budget for maintenance activities within the sewer collection and conveyance system to identify and remove inflow; infiltration.

Small repairs and modifications at the Borough's WWTP have been made over the past 50 years to keep the facility in operation and in compliance with the NPDES Permit; however, all major equipment is now currently in need of major repair or replacement. Herbert, Rowland & Grubic, Inc. (HRG) prepared an October 2016 study on the Borough's WWTP to provide a structural evaluation, headworks analysis, treatment analysis, and disinfection analysis for long term upgrades and improvements to the existing WWTP. To replace the existing aged equipment and 1966 technology

with more efficient advanced technology, enhance water quality during the harsh winter months of northern Pennsylvania, and be better equipped for total nitrogen (TN) or total phosphorus (TP) limits if they were added to the NPDES Permit in the future, the following alternatives have been developed and will be evaluated in the Plan:

1. Existing WWTP Upgrade (Alternative 1)

- a. Headworks Upgrade
- b. Primary Clarifier Upgrade
- c. Trickling Filter Upgrade
- d. Secondary Clarifier Upgrade
- e. New Denitrification Filter System (if needed)
- f. Inclusion of existing Chlorine Disinfection System
 - i. (no upgrades to the existing system)
- g. Effluent Pump Station Upgrade
- h. Inclusion of existing Aerobic Digesters
- i. Use of existing chemical feed system

2. Modified Ludzack-Ettinger (MLE; Alternative 2)

- a. Headworks Upgrade
- b. New Grit Removal System
- c. Elimination of the existing Primary Clarifier
- d. Elimination of the existing Trickling Filters
- e. Secondary Clarifier Upgrade
- f. New Oxidation Ditch BNR (MLE) System
- g. Inclusion of existing Chlorine Disinfection System
 - i. (no upgrades to the existing system)
- h. Effluent Pump Station Upgrade
- i. Inclusion of existing Aerobic Digesters
- j. Use of existing chemical feed system

3. Sequential Batch Reactor (SBR; Alternative 3)

- a. Headworks Upgrade
- b. New Grit Removal System
- c. Elimination of the existing Primary Clarifier
- d. Elimination of the existing Trickling Filters
- e. Elimination of the Secondary Clarifier
- f. New Sequential Batch Reactor (SBR) System
- g. Inclusion of existing Chlorine Disinfection System
 - i. (no upgrades to the existing system)
- h. Effluent Pump Station Upgrade
- i. Inclusion of existing Aerobic Digesters
- j. Use of existing chemical feed system

4. No Action (Alternative 4)

VI. EVALUATION OF ALTERNATIVES

A. Consistency

Technically feasible alternative(s) will be evaluated for consistency with respect to the following:

1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act.
2. Municipal wasteload management plans.
3. Applicable plans developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987.
4. The Potter County Comprehensive Plan.
5. Anti-degradation requirements as contained in PA Code, Title 25, Chapter 93, 95, and 102.
6. State Water Plans.
7. Pennsylvania Prime Agricultural Land Policy.
8. Act 167 Stormwater Management Plans.
9. Wetland protection regulations.
10. Rare, endangered, or threatened plant and animal species protection regulations.
11. Historical and archaeological resource protection requirements.

B. Cost Evaluation

Technically feasible alternative(s) will be evaluated based on cost effectiveness. The 20-year present worth for construction, financing, administration, operation and maintenance of the technically feasible alternative(s) will be calculated and evaluated. An analysis of the funding methods available to finance the proposed alternatives evaluated will be provided in the Plan. The need for immediate or phased implementation of each alternative will be analyzed and discussed in the Plan.

C. Coordination

Meetings will be required with the Shinglehouse Borough Council throughout Plan preparation and specifically during the evaluation of alternatives.

VII. INSTITUTIONAL EVALUATION

During Plan preparation the ordinances, regulations, inter-municipal agreement(s) and other legal and administrative measures necessary to implement the selected technical alternative(s) will be identified. The Borough of Shinglehouse will be evaluated for financial and administrative resources necessary to implement and fund the selected alternative(s) identified in the Plan.

VIII. IMPLEMENTATION SCHEDULE AND JUSTIFICATION

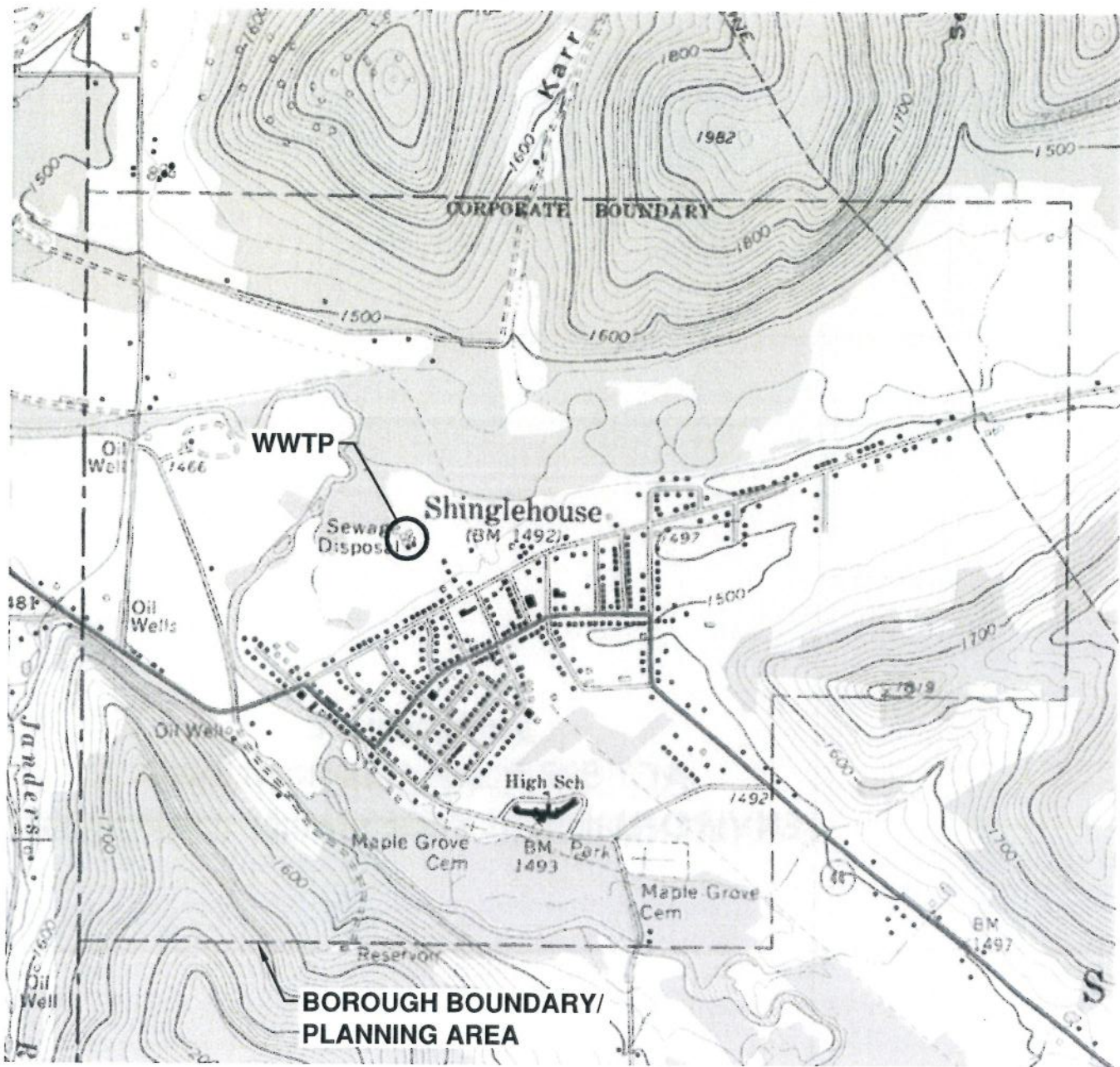
The most technically and economically feasible alternative(s) will be determined based on existing and future wastewater disposal needs, operation and maintenance, cost-effectiveness, available management, available financing, and environmental considerations. A schedule for implementation of the selected alternative(s) will be provided in the Plan.

IX. ENVIRONMENTAL REPORT (ER)

Due to potential PENNVEST funding for selected alternative(s) identified in the Plan, an Environmental Report (ER) generated from the Uniform Environmental Review (UER) process will be prepared as part of the Plan. The ER will be prepared in accordance with *DEP technical guidance 381-5511-111*.



**APPENDIX A
PLANNING AREA LOCATION MAP**



LOCATION MAP

SCALE: 1"=1500'



GRAPHIC SCALE

1500' 750' 0' 1500'



SCALE: 1"=1500'

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**PLANNING AREA LOCATION MAP
FOR
SHINGLEHOUSE BOROUGH
ACT 537 PLAN TASK ACTIVITY REPORT**

SHINGLEHOUSE BOROUGH POTTER COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - JH
CADD - RSF
CHECKED -
SCALE - AS NOTED
DATE - OCT. 2017

DRAWING NO.
1
SHEET NO.
1 OF 1
PROJECT 004004.0431



**APPENDIX B
ACT 537 PLAN CONTENT AND
ENVIRONMENTAL ASSESSMENT CHECKLIST**

INSTRUCTIONS FOR COMPLETING ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

Remove and recycle these instructions prior to submission.

CHECKLIST INSTRUCTIONS

These instructions are designed to assist the applicant in completing the *Act 537 Plan Content and Environmental Assessment Checklist*.

This checklist is composed of three parts: one for "General Information," one for "Administrative Completeness," and one for "General Plan Content". A plan must be **administratively complete** in order to be formally reviewed by the Department of Environmental Protection (DEP). The "General Plan Content" portion of the checklist identifies each of the issues that must be addressed in your Act 537 Plan Update based on the pre-planning meeting between you and/or your consultant and DEP.

Use the right-hand column blanks in the checklist to identify the page in the plan on which each planning issue is found or to reference a previously approved update or special study (title and page number).

If you determine a planning issue is not applicable even though it was previously thought to be needed, please explain your decision within the text of the plan (or as a footnote) and indicate the page number where this documentation is found.

When information required as part of an official plan update revision has been developed separately or in a previous update revision, incorporate the information by reference to the planning document and page.

For specific details covering the Act 537 planning requirements, refer to 25 Pa. Code Chapters 71 and 73 of DEP's regulations.

Wastewater projects proposing funding through the following sources must prepare an "Environmental Report" as described in the Uniform Environmental Review (UER) process and include it with the plan submission designated as "Plan-Appendix A". The following funding programs use the UER process.

- The Clean Water State Revolving Loan Fund (PENNVEST, DEP, EPA)
- The RUS Water and Waste Disposal Grant and Loan Program (USDA-RD)
- The Community Development Block Grant Program (DCED, HUG)
- Other Federal Funding Efforts (EPA)

The checklist items or portions of checklist items required in the Act 537 Plan Update revision and that are also included in the UER process are indicated by **shading**. Most of the "Environmental Report" document may be constructed from the Act 537 Official Plan Update revision by using "copy & paste" techniques. The technical guidance document *Guidelines for the Uniform Environmental Review Process in Pennsylvania* (381-5511-111) is available electronically in DEP's eLibrary online at www.dep.pa.gov.

After Municipal Adoption by Resolution, submit 3 copies of the plan, any attachments or addenda and this checklist to DEP.

A copy of this completed checklist must be included with your Act 537 plan. DEP will use the "DEP USE ONLY" column during the completeness evaluation of the plan. This column may also be used by DEP during the pre-planning meeting with the municipality to identify planning elements that are not required to be included in the plan.



ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Shinglehouse Borough Act 537 Plan
2. Brief Project Description Borough-wide study of sewage facilities needs

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Shinglehouse Borough	Potter	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Church	Barry	L		Pres. of Boro Council
Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
PO Box 156	
Address Last Line -- City	State ZIP+4
Shinglehouse	PA 16748
Phone + Ext.	FAX (optional) Email (optional)
814-697-6711	814-697-6712

C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
Shinglehouse Borough	
Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Harman Jr.	Jeffrey	J	E.I.T.
Title	Consulting Firm Name		
Water and Wastewater Staff Professional	Herbert, Rowland & Grubic, Inc.		
Mailing Address Line 1	Mailing Address Line 2		
369 East Park Drive			
Address Last Line -- City	State	ZIP+4	Country
Harrisburg	PA	17111	USA
Email	Phone + Ext.	FAX	
jharman@hrg-inc.com	717-564-1121	717-564-1158	

PART 2 ADMINISTRATIVE 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 DEP. Incomplete plans may be <i>denied</i> unless the municipality is clearly requesting an advisory review.
_____	_____	1. Table of Contents
_____	_____	2. Plan Summary
_____	_____	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - 25 Pa. Code §71.21(a)(7)(i)).
_____	_____	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 - 25 Pa. Code §71.21(a)(7)(ii)).
_____	_____	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
_____	_____	D. Identify the municipal commitments necessary to implement the Plan. (Reference - 25 Pa. Code §71.21(a)(7)(iii)).
_____	_____	E. Provide a schedule of implementation for the project that identifies the <i>major</i> milestones with dates necessary to accomplish the project to the point of operational status. (Reference - 25 Pa. Code §71.21(a)(7)(iv)).
_____	_____	3. Municipal Adoption: <i>Original</i> , 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 - 25 Pa. Code §71.31(f)) Section V.F. of the Planning Guide.
_____	_____	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 - 25 Pa. Code §71.31(b)) Section V.E.1 of the Planning Guide.
_____	_____	5. 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 - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
_____	_____	6. Comments and Responses: Copies of <i>all</i> written comments received and municipal response to <i>each</i> comment in relation to the proposed plan. (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
_____	_____	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 - 25 Pa. Code §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 - 25 Pa. Code §71.21(c)).
_____	_____	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 25 Pa. Code §71.21.(a)(5)(i-iii). (Reference - 25 Pa. Code §71.31(e)). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	_____	I. Previous Wastewater Planning A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	_____	1. Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
_____	_____	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
_____	_____	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
_____	_____	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)).
_____	_____	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).
_____	_____	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference - 25 Pa. Code §71.21(a)(1)(i)).
_____	_____	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 Pa. Code §71.21(a)(1)(ii)).
_____	_____	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 (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 Pa. Code §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 Pa. Code §71.21(a)(1)(iii)).
_____	_____	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 - 25 Pa. Code §71.21(a)(1)(iii)).
_____	_____	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 - 25 Pa. Code §71.21(a)(1)(ii)).
_____	_____	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 - 25 Pa. Code §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
_____	_____	G. Wetlands-Identify wetlands as defined in 25 Pa. Code Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) 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 - 25 Pa. Code §71.21(a)(1)(v)). Appendix B, Section II.I of the Planning Guide.

- 5. Sewage planning necessary to provide adequate wastewater treatment for 5 and 10-year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference - 25 Pa. Code §71.21(a)(3)(v)).

V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Conventional collection, conveyance, treatment and discharge alternatives including:

- 1. The potential for regional wastewater treatment. (Reference - 25 Pa. Code §71.21(a)(4)).
- 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i)).
- 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference - 25 Pa. Code §71.21(a)(4)(ii)).
 - a. Repair. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)).
 - b. Upgrading. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)).
 - c. Reduction of hydraulic or organic loading to existing facilities. (Reference - 25 Pa. Code §71.71).
 - d. Improved O & M. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(C)).
 - e. Other applicable actions that will resolve or abate the identified problems. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(D)).
- 4. Repair or replacement of existing collection and conveyance system components. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)).
- 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(iii)).
- 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)).

B. The use of individual sewage disposal systems including IRSIS systems based on:

- 1. Soil and slope suitability. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
- 2. Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
- 3. The establishment of a SMP. (Reference - 25 Pa. Code §71.21(a)(4)(iv)). See also Part "F" below.
- 4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference - 25 Pa. Code §71.21(a)(4)).
 - a. Existing technology and sizing requirements of 25 Pa. Code Chapter 73. (Reference - 25 Pa. Code §73.31-§73.72).
 - b. Use of expanded absorption areas or alternating absorption areas. (Reference - 25 Pa. Code §73.16).
 - c. Use of water conservation devices. (Reference - 25 Pa. Code §71.73(b)(2)(iii)).

§71.73(b)(8)).

6. Requirements for bonding, escrow accounts, management agencies or associations to assure O & M for non-municipal facilities. (Reference - 25 Pa. Code §71.71).

G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference - 25 Pa. Code §71.21(a)(4)).

1. Modification of existing comprehensive plans involving:

a. Land use designations. (Reference - 25 Pa. Code §71.21(a)(4)).

b. Densities. (Reference - 25 Pa. Code §71.21(a)(4)).

c. Municipal ordinances and regulations. (Reference - 25 Pa. Code §71.21(a)(4)).

d. Improved enforcement. (Reference - 25 Pa. Code §71.21(a)(4)).

e. Protection of drinking water sources. (Reference - 25 Pa. Code §71.21(a)(4)).

2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference - 25 Pa. Code §71.21(a)(4)).

3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference - 25 Pa. Code §71.21(a)(4)).

4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference - 25 Pa. Code §71.21(a)(4)).

H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference - 25 Pa. Code §71.21(a)(4)).

1. Water quality/public health. (Reference - 25 Pa. Code §71.21(a)(4)).

2. Growth potential (residential, commercial, industrial). (Reference - 25 Pa. Code §71.21(a)(4)).

3. Community economic conditions. (Reference - 25 Pa. Code §71.21(a)(4)).

4. Recreational opportunities. (Reference - 25 Pa. Code §71.21(a)(4)).

5. Drinking water sources. (Reference - 25 Pa. Code §71.21(a)(4)).

6. Other environmental concerns. (Reference - 25 Pa. Code §71.21(a)(4)).

VI. Evaluation of Alternatives

A. Technically feasible alternatives identified in Section V of this checklist must be evaluated for consistency with respect to the following: (Reference - 25 Pa. Code §71.21(a)(5)(i)).

1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)). Appendix B, Section II.A of the Planning Guide.

2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under 25 Pa. Code Chapter 94. (Reference - 25 Pa. Code §71.21(a)(5)(i)(B)). The municipality's recent Wasteload Management (25 Pa. Code Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.

3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A.

1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A 1251-1376). (Reference - 25 Pa. Code §71.21(a)(5)(i)(C)). Appendix B, Section II.E of the Planning Guide.

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4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference - 25 Pa. Code §71.21(a)(5)(i)(D)). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.
 5. **Antidegradation requirements** as contained in 25 Pa. Code Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference - 25 Pa. Code §71.21(a)(5)(i)(E)). Appendix B, Section II.F of the Planning Guide.
 6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference - 25 Pa. Code §71.21(a)(5)(i)(F)). Appendix B, Section II.C of the Planning Guide.
 7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference - 25 Pa. Code §71.21(a)(5)(i)(G)). Appendix B, Section II.G of the Planning Guide.
 8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference - 25 Pa. Code §71.21(a)(5)(i)(H)). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix Section II.H of the Planning Guide.
 9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference - 25 Pa. Code §71.21(a)(5)(i)(I)) Appendix B, Section II.I of the Planning Guide.
 10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference - 25 Pa. Code §71.21(a)(5)(i)(J)). Provide DEP with a copy of the completed *PNDI Manual Project Submission Form*. Also provide a copy of the response letters from the 4 jurisdictional agencies regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.
 11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission (PHMC). (Reference - 25 Pa. Code §71.21(a)(5)(i)(K)). Provide DEP with a completed copy of a *Cultural Resource Notice* and a return receipt for its submission to PHMC. Provide a copy of the response letter or review stamp from the Bureau of Historic Preservation (BHP) indicating the project will have no effect on, or that there may be potential impacts on, known archaeological and historical sites and any avoidance and mitigation measures required. Appendix B, Section II.K of the Planning Guide.

f. Raise capital for construction and O & M of facilities. (Reference - 25 Pa. Code §71.61(d)(2)).

B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:

1. Need for new municipal departments or municipal authorities. (Reference - 25 Pa. Code §71.61(d)(2)).
2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 Pa. Code §71.61(d)(2)).
3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 Pa. Code §71.61(d)(2)).

C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:

1. Incorporation of authorities or agencies. (Reference - 25 Pa. Code §71.61(d)(2)).
2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 Pa. Code §71.61(d)(2)).
3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 Pa. Code §71.61(d)(2)).
4. Adoption of other municipal sewage facilities plans. (Reference - 25 Pa. Code §71.61(d)(2)).
5. Any other legal documents. (Reference - 25 Pa. Code §71.61(d)(2)).
6. Dates or timeframes for items 1-5 above on the project's implementation schedule.

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 - 25 Pa. Code §71.61(d)(2)).

VIII. Implementation Schedule and Justification for Selected Technical & Institutional 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:

1. Existing wastewater disposal needs. (Reference - 25 Pa. Code §71.21(a)(6)).
2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 Pa. Code §71.21(a)(6)).
3. O & M considerations. (Reference - 25 Pa. Code §71.21(a)(6)).
4. Cost-effectiveness. (Reference - 25 Pa. Code §71.21(a)(6)).
5. Available management and administrative systems. (Reference - 25 Pa. Code §71.21(a)(6)).
6. Available financing methods. (Reference - 25 Pa. Code §71.21(a)(6)).
7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference - 25 Pa. Code §71.21(a)(6)).

- 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 - 25 Pa. Code §71.21(a)(6))
- C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a SMP. (Reference – 25 Pa. Code §71.31(d))

IX. Environmental Report (ER) generated from the UER Process

- 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.**

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

Municipalities that propose to implement their official sewage facilities plan updates with PENNVEST funds must meet additional requirements to be eligible for such funds. See *A Guide for Preparing Act 537 Update Revisions* (362-0300-003), Appendix N for greater detail or contact the DEP regional office serving your county listed in Appendix J of the same publication.

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	_____	1. Environmental Impact Assessment. (Planning Phase) The UER replaces the Environmental Impact Assessment that was a previous requirement for PENNVEST projects.
_____	_____	2. Cost Effectiveness (Planning Phase) The cost-effectiveness analysis should be a present-worth (or equivalent uniform annual) cost evaluation of the principle alternatives using the interest rate that is published annually by the Water Resources Council. Normally, for PENNVEST projects the applicant should select the most cost-effective alternative based upon the above analysis. Once the alternative has been selected the user fee estimates should be developed based upon interest rates and loan terms of the selected funding method.
_____	_____	3. Second Opinion Project Review. (Design Phase)
_____	_____	4. Minority Business Enterprise/Women's Business Enterprise (Construction Phase)
_____	_____	5. Civil Rights. (Construction Phase)
_____	_____	6. Initiation of Operation/Performance Certification. (Post-construction Phase)

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES

Aquaculture
Aquifer Recharge
Biological Aerated Filters
Constructed Wetlands
Direct Reuse (NON-POTABLE)
Horticulture
Overland Flow
Rapid Infiltration
Silviculture
Microscreens
Controlled Release Lagoons
Swirl Concentrator

SLUDGE TREATMENT TECHNOLOGIES

Aerated Static Pile Composting
Enclosed Mechanical Composting (In vessel)
Revegetation of Disturbed Land
Aerated Windrow Composting

ENERGY RECOVERY TECHNOLOGIES

Anaerobic Digestion with more than 90 percent
Methane Recovery
Cogeneration of Electricity
Self-Sustaining Incineration

INDIVIDUAL & SYSTEM-WIDE COLLECTION TECHNOLOGIES

Cluster Systems
Septage Treatment
Small Diameter Gravity Sewers
Step Pressure Sewers
Vacuum Sewers
Variable Grade Sewers
Septic Tank Effluent Pump with
Pressure Sewers



**APPENDIX C
PRELIMINARY COST WORKSHEET FOR ACT
537 PLAN**

PRELIMINARY COST WORKSHEET FOR ACT 537 PLAN

Singlehouse Borough
Municipality

Order
County

Singlehouse Borough (Entity)
Proposed Planning Area

10/06/2017
Date of Report

Date Completed Plan will be submitted to DEP

5/14/2018

Estimated Cost of Plan

\$20,000

Task Activity Number from Appendix I	Senior Professional		Staff Professional		Senior Technician		Technician		General		FRG	
	Rate/hour	Cost	Rate/hour	Cost	Rate/hour	Cost	Rate/hour	Cost	Rate/hour	Cost	Hours	Cost
I Feasibility Masterplan Planning	1.00	\$165.00	4.00	\$660.00	2.00	\$330.00	28.00	\$4,620.00	2.00	\$330.00	7.00	\$1,155.00
II Physical and Derivative Analysis	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	2.00	\$330.00	2.00	\$330.00	14.00	\$2,310.00
III Expense Survey Estimates	1.00	\$165.00	2.00	\$330.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	14.00	\$2,310.00
IV Future Growth and Development	2.00	\$330.00	12.00	\$1,980.00	1.00	\$165.00	2.00	\$330.00	1.00	\$165.00	18.00	\$2,970.00
V Alternatives to Provide New/ Improved Wastewater Disposal	4.00	\$660.00	8.00	\$1,320.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	18.00	\$2,970.00
VI Evaluation of Alternatives	12.00	\$1,980.00	18.00	\$2,970.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	55.00	\$9,075.00
VII Preliminary Estimation	2.00	\$330.00	8.00	\$1,320.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	10.00	\$1,650.00
VIII Implementation Schedule & Instruction	2.00	\$330.00	6.00	\$990.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	16.00	\$2,640.00
IX Professional Fees	1.00	\$165.00	6.00	\$990.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	16.00	\$2,640.00
X Professional Fees	26.00	\$4,290.00	104.00	\$17,160.00	1.00	\$165.00	2.00	\$330.00	2.00	\$330.00	185.00	\$30,675.00

STIMINARY Engineering Fees \$18,860.00
Professional Fees \$640.00
ENGINEERING TOTAL \$19,500

Administrative Fees \$500.00
FINAL TOTAL \$20,000.00

Name and Title of Person Completing Report: Joshua T. Fox, P.E., Project Manager
Signature: *Joshua T. Fox*
Approved Stamp: *Joshua T. Fox*